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A Clinical Lecture
ON
SUDDEN CEREBRAL LESIONS: THEIR DIAGNOSIS AND IMMEDIATE TREATMENT.

DELIVERED AT THE POLYCLINIC,

BY SIR WILLIAM R. GOWERS, M.D., F.R.S.,

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GENTLEMEN,—Sudden cerebral lesions are among the uncommonplaces of medical practice. They are sure to be met with, and yet not frequently enough to furnish practical experience adequate to deal with them, at any rate with the promptness and confidence that their urgency requires. They are among the most perplexing problems the practitioner encounters, more so indeed than he always recognizes. The nature of the lesion must be discerned at once, as clearly as the symptoms permit, in order that treatment may be wise and prompt. Yet the measures needed may be diametrically opposite in cases which present almost the same symptoms. Confidence in diagnosis is essential for decision in treatment. The urgency arises from the fact that with the practitioner who first sees the case rests most of the opportunity for treatment. After the first few hours the chief part of the opportunity is over. Hence the necessity for a sure grasp of the elements of the diagnosis on the part of those who first see the patient. These elements are not so extensive as to preclude the hope that I may be able to give you an outline of them in the brief time at my disposal, but no account, however exhaustive, no knowledge, however full, will prevent occasional perplexity. Then you must be clear in your uncertainty, and adopt measures which, whatever the nature of the case, can do no harm and may do some good. Experience shows that, even at the present day, a better knowledge of the elements of the diagnosis is really needed.

It is unnecessary to tell you that the most common evidence of a sudden lesion of the brain is hemiplegia, very rarely diplegia, affecting both sides. Sometimes there is only loss of speech or impairment of articulation. Rarely there is loss of sensation without affection of motor power, and not uncommonly there is loss of sight to one side—lateral hemianopia. This is a symptom always to be looked for, if there is reason to think an organic lesion is possible; it is quite as significant as hemiplegia, and generally overlooked. Often there are convulsions.

An organic lesion of the brain of sudden onset, coming on in a few minutes or a few hours, is a vascular lesion. Rarely the onset occupies one or two days. Moreover, in the vast majority of cases it is an arterial lesion; it is due to the rupture of an artery causing haemorrhage, or the closure of an artery causing necrotic softening. This also you know. But it is important to realize that the primary morbid state, although in the brain, is not of the brain itself. Its effects are manifested by disturbance of cerebral function, but the disease itself is of the vascular system and circulation. The fact is of extreme importance, as we shall see presently.

The several arterial states which cause these lesions differ in their frequency in the first and second periods of life. In later life they are commonly due to degenerative changes in the walls of the vessels; in the former, to other disease. The causes that are active in the first half may, however, extend on into the second, but it is convenient to begin with the later forms. Most sudden lesions—most cases of hemiplegia, for instance—occur in later life, and therefore the problem they present is the most important because the most common.

DEGENERATIVE LESIONS.

Hence the first question in a case of sudden hemiplegia is the age of the patient. Has he reached the degenerative period of life? This may be said to begin at 50 in fairly normal individuals but earlier under two conditions. First, there is occasionally an inherited tendency to early arterial degeneration. We meet with families in which many members have suffered from hemiplegia during the later forties, and, in such cases, the probability of premature arterial degeneration must be recognized. Secondly, Bright's disease may induce arterial degeneration at a still earlier age. Bright's disease may lead to cerebral haemorrhage even in the early thirties. Certain constitutional maladies, such as leucocythaemia and pernicious anaemia, may have the same effect at any age. In the absence of these or other obtrusive influences, one of two lesions is probable, as you know—haemorrhage from the rupture of a minute artery which has dilated to a "miliary aneurysm," or necrotic softening from thrombosis in a larger artery the seat of atheroma, or in one or more branches arising at the atheromatous part. The distinction between the two is of immediate importance because the immediate treatment is opposite in some of its features.

The diagnosis rests on several indications. If all point in the same direction, a conclusion can be drawn with confidence. If they differ, the balance must be ascertained. For this it is not enough to count the points, the relative weight of each must be taken into consideration. The first point to be noted is not within the nervous system. It is the condition of the pulse and heart, the state of the circulation. The importance of this arises from the fact I just mentioned: these diseases are in the brain, but not of it; they are primarily vascular.

The first point, therefore, to consider is whether the state of the pulse and heart are such as to show a condition of the circulation likely, on the one hand, to dilate and burst an artery, or, on the other, to permit a clot to form within it. The two are opposite in nature, and so are their indications. High tension of the pulse and a strongly acting hypertrophied heart are the conditions that point to haemorrhage, and a soft feeble pulse with a weak dilated heart are the indications of thrombosis. If this element is decided in its character, it has great weight. A man was admitted to hospital with severe hemiplegia, which I think had come on with loss of consciousness. But from the state of his heart and circulation I expressed the opinion that it was thrombosis from atheroma of the middle cerebral. A few days later he suddenly became comatose, with hemiplegia on the second side. His condition so closely resembled that produced by ventricular haemorrhage that I changed my

opinion; I thought I had been wrong, and that it must be haemorrhage which had burst into the ventricles. He never recovered consciousness, and we found the first diagnosis was right; each middle cerebral was atheromatous and closed by clot. The fact illustrates the weight that may be placed on the state of the circulation, if its indication is clear. Distinct degeneration of the arteries of the arm is perhaps a little in favour of atheroma, but they may be soft when the cerebral vessels are affected. Tortuosity of the temporal arteries is sometimes regarded as significant, but it only means the mechanical influence of hard hats, and is no index to the state of the arteries within the skull. It must also be remembered that atheroma is present in most cases of cerebral haemorrhage, and softening may have resulted, so that the state of the heart and circulation is of more importance than the indications of degeneration of the arteries elsewhere.

If a heart, whether weak or strong, presents also a valvular murmur, the diagnosis from embolism arises, but the question can be better considered in connexion with this lesion. The presence of albuminuria, such as indicates organic renal disease, is in favour of haemorrhage before the degenerative period, but subsequently has little influence on the diagnosis. It conduces to atheroma as well as miliary dilatation. Even a few haemorrhages on the retina leave the problem unchanged, but a high degree of albuminuric retinitis, especially if acute in course and haemorrhagic, is in favour of haemorrhage. The condition of the retinal arteries is of little differential significance.

Preceding cerebral attacks, if slight, and especially if repeated, are strongly in favour of thrombosis and softening. But a single attack of definite severity has much less significance. It may occur in haemorrhage as well as in softening. Moreover, this indication is always subordinate to any other strong evidence as to the nature of the present seizure. An attack of haemorrhage may have been preceded by others clearly thrombotic. It has been mentioned that atheroma is often found in cases of haemorrhage due to miliary aneurysms. In a recently published case, fatal haemorrhage into the pons was preceded by an attack having the features of thrombotic softening in the region of the middle cerebral, and found to be such and due to atheroma of that artery.

Other important indications are furnished by the conditions under which the attack comes on and by its features. A valuable series of facts, from fatal cases, has lately been published by Dr. Ernest Jones.* Important and instructive as they are, the limitation to fatal cases, essential for certainty, narrows much the application of the inferences to the needs of practical diagnosis.

Warning symptoms during the few days before the attack are an important indication of thrombosis. They consist of tingling in the parts afterwards paralysed, transient weakness, brief loss or impairment of speech, giddiness, and the like. They are probably due to the impairment of the circulation in the narrowed vessel. In haemorrhage they are absent, although slighter symptoms may immediately precede the onset in which they culminate. Probably this is because the sudden onset of the definite attack often does not correspond to the actual commencement of the escape of blood, especially when this is into the white substance and attains some size, a point I will refer to presently.

The opposite character of the two processes naturally leads us to expect a corresponding contrast between the causal conditions that precede the onset or in which it occurs—that haemorrhage would occur during exertion or mental excitement, thrombosis during exhaustion. The former is seldom to be traced—a fact made very clear by E. Jones. It may be that the small size of the arteries on which the aneurysms occur makes the effect of exertion on these slight; it may be that it is partly due to the fact that the onset of symptoms often succeeds, at an interval, the actual rupture. This may be the explanation of the cases often met with in which the onset is during the exertion of dressing, which may cause a previous slight extravasation to become larger and produce laceration.

On the other hand, in thrombosis, a condition of fatigue, exhaustion, or depression is often to be traced just before the attack. It is important to recognize the three conditions on which this lesion depends: (1) There is the chronic disease of the artery; (2) often a blood state, which promotes coagulation, as in the gouty condition; (3) an enfeeblement of the circulation, which lessens the blood-flow, especially just above the narrowed part. At the sides of a branch, the orifice of which is almost closed, and where the inner wall is changed, a clot readily begins if the circulation is enfeebled. Physical fatigue is a frequent antecedent of thrombosis—a tiring journey, a walk unwisely long, a day's shopping, influences often combined with insufficient food. Diarrhoea may be the excitant, a potent cause of faintness. In other cases the attack follows mental distress, a sudden shock, or depressing grief, which for long may enfeeble the action of the heart. Such preceding influences are of definite significance as an indication that the lesion is thrombosis. In passing I may mention that if there have been no preceding slight attacks, such an excitant distinctly improves the prognosis, as regards a recurrence. It makes it probable that the state of the circulation had a larger share in the causation than the degree of atheroma. I have met with many illustrations of this.

The onset of the symptoms in thrombosis is much more frequently during sleep than in the case of haemorrhage; more than twice as frequently in Jones's series, in which, however, the cases of softening were few. When the attack is slow in course, as often in softening, it sometimes begins, in slight degree, in the evening, and becomes severe during the night.

The features of the attack vary in each lesion to a greater degree than they differ in the two lesions. Its course is partly determined by the rapidity with which the process develops. The onset of symptoms in cerebral haemorrhage is usually supposed to coincide with the commencement of the haemorrhage. It is doubtful whether this is always correct. The relation between the symptoms and lesion probably depends on the structure into which the blood first escapes. If this is the white substance, it probably first merely separates the fibres and causes few or no symptoms until it begins to lacerate them, or reaches grey substance which is readily torn. When the extravasation is first into the central ganglia, laceration occurs at once and the symptoms occur much earlier. The early separation of the fibres was shown, in an exaggerated degree, by a girl who, having had a blow on the left parietal bone some time before, had slight and equivocal symptoms for two days, and then sudenly became unconscious, with bilateral palsy, and died in a few hours. Beneath the site of the blow was found thickening of the meninges, which had prevented a traumatic aneurysm of a large branch of the middle cerebral bursting externally. The blood had escaped into the substance of the hemisphere and had extended as a thin sinuous riband, ½ in. wide, from the aneurysm to the lateral ventricle. The blood had suddenly poured into the ventricles, but had apparently taken two days to make its way through the white substance. That which happened here doubtless sometimes occurs on a smaller scale from the rupture of a miliary aneurysm. These are always numerous and others adjacent may give way when liquid blood replaces external support, and they rapidly increase the extravasation and its effects.

Loss of consciousness occurs in either lesion, but in haemorrhage more readily than in softening, especially if the severity of the paralysis is considered. It is probably first due to irritative inhibition of the cortex, which is maintained by increased intracranial pressure. The laceration causes powerful irritation, and when the haemorrhage is into structures that have a wide relation to the cortex, as in the pons, a small extravasation, which can have little effect on intracranial pressure, causes early loss of consciousness, which endures. We can understand from what has been said that in some cases the loss is not the first symptom; slighter symptoms precede it, which are part of the onset, and, as it were, lead up to it.

In thrombotic softening loss of consciousness depends chiefly on the size and importance of the artery that is closed and on the suddenness of the closure. The size of the vessel involves the extent of cerebral tissue that is

* Dr. Ernest Jones, The Onset of Hemiplegia in Vascular Lesions, *Brain*, 1905. He has ascertained the facts, as far as recorded, in all the fatal cases contained in the old case-books of University College Hospital, and, in publishing the results, he has compared them with the facts ascertained by others. Only verified cases can be sure evidence, but the records of a general hospital unfortunately contain a disproportionate number of lesions quickly fatal.

suddenly deprived of blood. Closure of the middle cerebral, for instance, commonly causes it; while that of one of its branches to the cerebral ganglia usually does not. The clot more often forms in a branch than in the main artery, and so this symptom is comparatively infrequent. For that reason there is a history of loss of consciousness in a larger proportion of the cases that die in hospitals, because thrombosis in a main artery is more often fatal. When loss occurs it is usually an initial symptom, because it coincides with the actual arrest of the blood supply to an important region of the brain.

But old hospital records are liable to fallacious interpretation, because a patient is often said to be unconscious when he is only in a condition of what we should call partial stupor. Indeed every degree of delirium, even slight, is popularly designated as "loss of consciousness." It is surprising how different are the first statements of friends from those ascertained by careful questioning, and this is one of many points on which records are of value only if taken with the special point in view. It is, therefore, essential to ascertain, regarding a case seen at a later stage, whether what is called loss of consciousness is a definite comatose state. If it is initial and brief, and attends a lesion that is evidently extensive, this is rather more likely to be thrombosis than haemorrhage, while the latter is more probable if it develops soon after the commencement of the symptoms, and is prolonged. But, unless it is profound and of long duration, it must only be regarded as one of the series of symptoms to be considered and compared, as evidence of the nature of the lesion.

Convulsions at the onset are more frequent in softening than in haemorrhage, at any rate if they are unilateral; and their significance is greater if they are partial and repeated, and attend imperfect hemiplegia. Their occurrence in such cases two or three days after the actual onset has still greater significance of the same character. The reason is because they are generally caused by partial disease of the motor cortex, and a small cortical lesion is much more frequently due to thrombosis in a terminal branch of the middle cerebral than to haemorrhage. On this point also the evidence of hospital cases is misleading. True aphasia has the same significance for the same region. If it occurs alone, with little evidence of hemiplegia, it is almost always due to arterial closure. If it accompanies the onset of complete right hemiplegia no inference can at first be drawn from it, because transient aphasia may attend a lesion even in the central ganglia which interrupts the motor path. But enduring aphasia means destruction of the cortex, which is seldom due to haemorrhage. A week or more must elapse before the duration has this significance, but it may be suspected from the first, if complete aphasia exists with only slight hemiplegic weakness, or if accompanied only by weakness of the tongue and face, the indication of softening is still more definite.

Locality has some further significance. Hemianopia, alone or with hemianaesthesia, suggests softening, because this is, as a fact, more frequent in the region of the posterior cerebral artery than is haemorrhage. The same is true of lesions of the pons. Consciousness is readily lost, in haemorrhage early, and may be attended with rapid and fatal hyperpyrexia. Coma also attends thrombosis of the basilar, but usually comes on gradually as deepening stupor, always of the gravest augury in such an association.

Lastly, early signs of considerable irritation are in favour of haemorrhage. The laceration of the nerve elements has this effect in a marked degree. It causes loss of consciousness by upward irritative inhibition, and sometimes, though not often, it causes convulsions. It also, acting downwards, may cause early and great rigidity, but sometimes initial flaccidity of the paralysed limbs, even with loss of the knee-jerk during the first twelve or twenty-four hours, while on the second day it becomes excessive, with foot clonus. Early rigidity with clonus may be met with during the first few days in softening, but the irritative inhibitory relaxation is probably confined to cases of haemorrhage. Considerable depression of temperature during the first day—two, three, or four degrees below the normal—is a sign of haemorrhage. A rise of temperature to about 100° about the third day is more common in softening.

The rare cases in which death occurs in a few minutes do not afford time for a diagnosis; there is usually haemorrhage into the lower part of the pons or the medulla, or into the third ventricle. Cases of primary haemorrhage into the membranes, not due to the rupture of an aneurysm, are too uncommon to make it worth while to confuse you with their complicated facts.

"Ingravescence," the steady increase of coma from a slight to a profound degree, when it takes place in a few hours, signifies haemorrhage. When it occupies one or several weeks it is usually the result of spreading thrombosis from extensive atheroma. As just stated, a peculiar state of deepening stupor, from which at first the patient can be roused, often attends thrombosis of the basilar, other evidence of which can usually be found. A rapid rise of temperature to a "hyperpyrexial" degree sometimes attends ventricular haemorrhage, but is especially suggestive of a lesion in the upper part of the pons, which may be of any character. It gives great significance to anomalous ocular symptoms; usually it means death, but I have seen a patient who survived a temperature of 110.8°, apparently due to embolism of the extremity of the basilar.*

To sum up. The patient is in the degenerative period of life, or has advanced kidney disease. The indications of haemorrhage are few; hypertrophy of the heart and a tense pulse; an onset is attended with loss of consciousness, either profound and of long duration, or disproportionate to the degree of paralysis, and there is often a considerable initial depression of temperature, and sometimes complete flaccidity of the paralysed limbs. To these symptoms the absence of the indications of thrombosis may be added.

These indications are more numerous: A feeble, soft pulse, and weak, often dilated heart, sometimes irregular; previous attacks, especially of slight degree; transient premonitory symptoms, often headache; the onset often deliberate, with loss of consciousness if the paralysis is severe. Convulsion at the onset is not of much significance, but, later, is in favour of softening; and so with aphasia, which, if lasting, indicates softening. So does much impairment of articulation or swallowing, suggestive of a pontine lesion; and also hemianopia, showing that the mischief is in the region of the posterior central artery.

In the immediate treatment, some measures may be adopted in each lesion. A gouty state is common, and generally presumable, because age-imperfection of the organs generally leads to an approximate condition, and justifies some lithia or potash, combined with a diuretic, nitrous ether and spirits of juniper, to which some digitalis may be added—more if thrombosis is suspected than if haemorrhage is probable. The opposite rule should obtain with an aperient. If a clot has formed, only gentle action of the bowels should be secured; if a vessel has ruptured, an active purge is wise, such as croton oil, to lower the blood pressure. Salines, it should be remembered, seldom alone act well in the horizontal posture; they need the aid of gravitation. Blood should be drawn to the extremities.

If there is reason to regard the lesion as thrombosis, little more can be wisely done. We have no practical agent to reduce the coagulability of the blood. Citric acid is said to have this effect, and may be given as lemon juice in plenty of water. When haemorrhage may be confidently diagnosed, the treatment should be such as to increase the tendency of the blood to clot. Salts of calcium have this effect, and may be given in whatever form can be most promptly obtained. If the lactate or chloride is not at hand, common chalk may be converted to a soluble salt by any suitable acid that is available. Arsenic, by hypodermic injection, has a similar effect, and $\frac{1}{8}$ grain of the arsenate of sodium may be given in a few drops of water. There is no reason to believe that small doses of iodide of potassium, which are constantly given at the early or later stage, exert the slightest influence.

But one measure is imperative in every case of either kind—physical tranquillity. It should surely be superfluous even to mention this, but experience shows, too often, that it still needs to be insisted on. Even in the slightest

* The patient had mitral constriction and the attack was just after rheumatic fever. The clot probably broke up and passed on into the terminal branches (perhaps supplying the red nucleus or part of the cerebellum), leaving universal and enduring inco-ordination of movement. The temperature was observed and carefully verified by Mr. Townsend Barker, of Fulham.

case, if the patient must be moved, it should be as little as possible, and he should be absolutely passive. Some months ago I saw a man who had an attack, probably of haemorrhage, at his office in a provincial city. By medical consent, instead of being moved passively to another room, or the very nearest place available, he was put into a cab, taken to and over a long ferry, and then driven three miles over the roughest, most jolty, road in the United Kingdom. I can testify, for I traversed it afterwards in a similar vehicle. When he reached his home he was unconscious, and his state when I saw him later, showed that the damage to the brain was the most severe and extensive that could possibly be survived. Let me mention also a striking contrast to this. A lady was seized with hemiplegia, probably also due to haemorrhage, while consulting the late Sir Russell Reynolds. She was laid on the sofa of his consulting room, and from that room he would not allow her to be moved. There she lay until her death some weeks later. He would not permit any degree of inconvenience to him to weigh against the slightest risk of increasing the danger to her.

PREDEGENERATIVE LESIONS.

During the first part of adult life, up to 45 or 50, most sudden cerebral lesions are due, as you well know, to arterial closure. They are due to embolism, or to thrombosis the result of syphilitic disease of the wall of a cerebral artery. These are not, indeed, limited to this period. Each occurs later, during the period of arterial degeneration, and it is then that the chief diagnostic difficulties are encountered. Each may occur in earlier life, but arterial disease from inherited syphilis is very rare.

EMBOLISM.

In considering the problem presented by cerebral embolism, it is better to leave aside the cases that are due to malignant endocarditis. The presence of this is sufficiently evident by its special symptoms; its embolic effects are often multiple and severe; they may be attended by extravasation of blood, and in the membranes this may be the chief manifestation of multiple minute emboli. These cases furnish an undue proportion of the fatal cases met with in general hospitals or in their records. But the simpler form chiefly concerns us in the general diagnosis of sudden cerebral lesions.

In the predegenerative period the diagnosis of embolism, as a rule, presents a simple problem. It depends on the discovery of a source from which the embolic plug has come. With rare exceptions, this source is a diseased valve on the left side of the heart, and therefore the presence of an organic cardiac murmur, aortic or mitral, in the absence of any other causal condition, justifies the diagnosis. Not only does it justify, it is essential for the diagnosis. An embolus has sometimes come from a clot in a dilated left auricle, but mitral disease usually coexists with this. It has sometimes come from a roughened area in the aorta, but a murmur may accompany this, and the source is not frequent enough to be important. I have never met with it. Some mysterious cases suggest that minute plugs may reach the cerebral arteries through the lungs, but the diagnosis in these cases is scarcely justified. Local thrombosis, perhaps set up by particles brought from the general circulation, is a more reasonable explanation.

Yet difficulties may arise even at the time of life when the diagnosis is simplest. No features of the onset have such a special relation to embolism as to afford much help. It is sometimes useful to remember that the mitral orifice is a far more frequent source of a plug than the aortic, and that mitral constriction is specially prone to give rise to detachable vegetations. Perhaps this is because the blood flows through it slowly during the diastole, when vegetations easily increase in size, and swiftly during the auricular systole, favouring their detachment. But no murmur is overlooked so easily or so often as the simple presystolic. I have more than once known this fact to cause a clear case of cerebral embolism to be regarded as altogether mysterious. Moreover, some months after the onset the absence of a cardiac murmur does not exclude embolism, because acute endocarditis may have passed away and left the heart sounds clear. A known cause of endocarditis just before the onset may, in that case, be adequate evidence. A girl, during chorea, attended with endocarditis and a loud systolic mitral murmur, had sudden severe left hemiplegia. A year later no murmur could be heard, but subsequently, without any fresh inflammation, a presystolic murmur developed, the contraction of the once inflamed orifice having produced constriction.

A very important fact is that in embolism there are no related preceding symptoms. There may have been a slighter preceding attack of the same nature, but this is rare. The state of the vessels is normal until the embolus is brought by the blood current. Suspicion should therefore be felt as to the nature of any case, apparently embolic, in which premonitory symptoms were distinct, especially unfamiliar headache. A clergyman of 35, with a double aortic murmur, had an attack of hemiplegia, naturally ascribed to embolism. But he had much headache for some weeks before the attack. A few months after the hemiplegia a node developed on the forehead, and a history of syphilis in his younger days was obtained. Indirectly the case reminds us that, as I have said, the aortic orifice is not a common source of embolism.

Embolism may occur also in the degenerative period of life, at any age, and the diagnosis is then much more difficult; indeed it is often impossible. Embolism less commonly results from degenerative changes in the valves than from actual endocarditis, but it does occur from them. Such changes often exist in cases of thrombosis, and sometimes in haemorrhage. In proportion as the indications of either of these lesions are pronounced, the existence of valve disease has less significance, and it has also less the older the patient. The problem of distinction from haemorrhage seldom arises, unless the cardiac affection is aortic regurgitation with much hypertrophy, and then the signs of haemorrhage have undiminished significance. Usually the problem presents itself in cases of mitral disease with a feeble heart, in which a clot may have been formed *in situ* or carried from the heart. In some cases the occurrence of premonitory symptoms, or previous slight attacks, added to the evidence of arterial degeneration, decide the diagnosis in favour of thrombosis. No features of the attack are of special value in the diagnosis. There is a slight excess of lesions on the left side of the brain in embolism, and also considerable aphasia is more frequent, while pyrexia during the first week is more pronounced, but the preponderance of these is not enough to have diagnostic weight.

One point is sometimes of significance; embolism of the basilar is much rarer than thrombosis, and is rendered especially improbable by indications of closure of the branches of this artery to the pons. The region of the cerebrum supplied by the terminal arteries in which the basilar ends is also seldom the seat of embolic softening; hence this is rendered unlikely by the presence of hemianopia.

It is probable, indeed, that embolism sometimes occurs in late life when its diagnosis is not justified by the symptoms. As I have said, it is uncertain how far it is associated with thrombosis in cases of septicaemia, in which particles that can pass through the lungs seem to be arrested and to excite a secondary clot in the brain, but such cases are beyond my subject.* The distinction between embolism and thrombosis is not of great practical importance in regard to treatment, which differs little in the two conditions. It has some significance in prognosis. In embolism there is far less danger of a recurrence than in atheromatous thrombosis.

It must be remembered that valvular disease is one of the chief causes of intracranial aneurysm, by embolic transplantation of inflammation from the heart. Hence, at any age, even in the young, heart disease may accompany the most fatal form of cerebral haemorrhage. In embolism loss of consciousness is not rare, but is seldom of long duration. Symptoms that strongly suggest haemorrhage are not made less significant by the presence of heart disease, however young the patient. In these cases there is not the tension of the pulse or unexplained hypertrophy of the heart met with in the ordinary form.

Of the treatment of embolism there is little to say. It is chiefly that of the cardiac and general state. Whatever

* So also are the cases recorded by Newton Pitt in his third Goulstonian lecture (1890) in which no source for a plug could be discovered. I have necessarily passed unnoticed many points that are outside the limitation of practical diagnosis.

tends to excite the heart must be carefully avoided and its action steadied and strengthened, with the object of hindering the extension of the clot and of promoting the establishment of any collateral circulation that may be possible. It is believed that sometimes a soft plug breaks up into particles small enough to pass away, but this can only be possible during the first few hours, and no means of promoting it are known, nor would any attempt be wise. Occlusion, once established by distal clot, must endure, and so must its effects, unless the blood supply can be renewed by collateral communication.

Syphilitic Arterial Disease.

The other cause of sudden hemiplegia in the predegenerative period of life is thrombosis in an artery narrowed by syphilitic disease of its walls. Although the primary condition is a slow, gradual process, the actual closure is sudden or rapid, because the flow of blood through the narrowed passage becomes less and less, until at last clot suddenly occludes it. The thrombus probably begins to form just beyond the narrowing, where the flow is reduced to the middle of the lumen, and at the sides the blood must be almost stationary. It must be so, whether the cavity of the main artery is thus reduced, or the orifice of a branch at the spot diseased is progressively narrowed. It is important to realize this fact, that the vessel is closed by a process independent of the syphilitic disease which causes it, because the clot cannot be influenced by the treatment that may lessen the disease in the arterial wall, and an artery once closed is closed for ever.

This cause may be assumed, in any case during the predegenerative period without heart disease, with confidence when previous syphilis is known, and with probability whenever it is possible. It is rendered possible by any risk of infection. The fact should never be forgotten that, among the subjects of certain specific lesions, one out of every five, on an average, is unaware of the primary disease. In the case of married women, in whom the problem often arises, premature births adequately confirm the suspicion, or some other conclusive indication may be found. Without such indications, less harm is done in women by treatment that may be needless than by questions to the husband that may cause enduring distress.

Always remember that the absence of positive evidence has little negative weight. Yet how often we hear, "It cannot be syphilitic, for the children are quite healthy." Such a fact does not neutralize the slightest ground for suspicion. Always look carefully over the skin, especially of the legs, for any suspicious scars. Although vascular disease is usually early, it sometimes coexists with symptoms generally late. I have found in several cases loss of the light reflex of the iris, always strong evidence of preceding syphilis, and also the even more conclusive leukoplasia on the tongue.

In most cases the absence of any other causal condition, and the fact of certain or presumable syphilis, suffice for the diagnosis and render the special features of the attack of subordinate importance. But this is not always the case. Heart diseases may coexist, and the possibility of embolism then arises, or the patient may have reached the degenerative period of life. Then the conditions and characters of the attack may be important.

If a cardiac murmur is found, remember that aortic disease is not a common cause of embolism, and is sometimes caused by syphilis. The most important evidence is afforded by premonitory symptoms, especially headache, during a week or more before the onset. Sometimes there is a history of mental dullness, giddiness, or of numbness, tingling, or passing weakness in the limbs afterwards paralysed. Some symptom of this character is to be heard of in more than half the cases; showing as it does a morbid state before the attack, it is an almost conclusive distinction from embolism. But such premonitory symptoms are of less weight in the degenerative period of life, when they may be due to atheroma, but even then severe unaccustomed headache seldom precedes an attack due to any other cause.

No features of the onset present a special character or frequency sufficient to be of strong weight in the diagnosis. It occurs during sleep in a third of the cases (14 in 44). Loss of consciousness is rare. Transient loss can, of course, only be recognized when the onset is in the waking state, but of these it was described only in 12 per cent. Perhaps this is because branches of a large artery are more often closed than the trunk itself. Neither convulsion nor considerable aphasia is common, but either may occur. Initial convulsions are prone to occur afterwards. Compared with other morbid processes, syphilitic disease has a disproportionate tendency to affect the basilar artery sufficient to be of some diagnostic significance in a doubtful case.

When the past history of a patient is known, the length of time that has elapsed since the primary disease is an element that may properly be allowed some weight. After what interval is arterial disease intrinsically improbable? I have found that one half of the cases occur during the first five years after infection, and a quarter during the second five years; during the first fifteen years, seven-eighths of the whole occur, and after twenty years examples are doubtful. Hence the probability is low after fifteen years and negligible after twenty. But we may not draw any similar inference from the age of the patient. The lesion is, indeed, rare in late life; it is absolutely rare, and still more in proportion to other sudden processes. But syphilis may be acquired at any age, and in later life the tendency to secrecy is far greater than in earlier years, and is often, indirectly, the cause of death. A man of 65, for long alcoholic, presented symptoms of a lesion of the pons, sudden right hemiplegia with a great degree of impairment of articulation, presumably due to thrombosis of branches of the basilar, consequent on atheroma. But it was preceded for two or three months by an unusual amount of occipital pain. A few days after the onset of the right hemiplegia, his left side suddenly also became paralysed, and he died. The day before his death his doctor was informed by a friend that the man had a severe attack of syphilis at 55. Characteristic syphilitic disease was found in the lower part of the basilar, a recent clot throughout it and in the posterior cerebrals, and an area of softening in the left side of the pons.

I remember another case of basilar thrombosis due to the same cause in a woman of 60, who had a presystolic murmur; there was also atheroma of the middle cerebrals, and advanced mitral constriction was found. Without knowledge of the syphilis, the recognition of the exact lesion in such cases is impossible. I mention these cases also because they illustrate the tendency of the basilar to suffer.

It is needless to tell you that iodide should be promptly given in such a case. Twelve or fifteen grains may be given every three hours for the first two days, then every four hours, and reduced to three times a day at the end of a week. Larger doses are unwise, because they may increase the coagulability of the blood. You may afterwards employ a course of mercury, but lesions of the type of that in the arterial walls seem to yield very promptly to iodide, and the system can be saturated with iodide as it cannot with mercury. Of course, nothing can influence accomplished occlusion. A thrombosed artery can never again become permeable. Improvement generally follows, just as it does in embolism, because the initial symptoms are more severe and extensive than those that are permanent. The reason for energetic treatment is that the disease generally exists in other arteries also; its amount cannot be known, and some other vessel may be on the verge of closure. Equally important is the prompt treatment of premonitory symptoms. I remember one case in which I believe a practitioner thus averted thrombosis in branches of the basilar, perhaps in its trunk, and probably thus saved the patient's life. Of course, it is desirable also to adopt the measures recommended for atheromatous thrombosis.

Miscellaneous Lesions.

These processes do not exhaust the causes of sudden lesions of the brain. Puerperal hemiplegia is probably due, in most cases, to thrombosis in a normal artery in consequence of the blood state. A tendency to coagulate with readiness seems normally evolved to facilitate the closure of the uterine vessels when the placenta separates, and sometimes to become excessive and to lead to the formation of a clot where it is undesirable. This influence may co-operate with another cause. If there is heart disease, the blood state may assist vegetations to form on the valves, or increase their size, and so may lead to embolism. This is clearly the cause of post-puerperal hemiplegia in some cases. Again, the same influence may apparently

facilitate the formation of a clot in an artery previously the seat of syphilitic disease. The recognition of the latter is difficult and depends on preceding symptoms, such as headache, etc., combined with evidence of the constitutional malady. Its importance arises from the fact that iodide, then necessary, is to be avoided in other cases, lest it increase, even in the slightest degree, the clotting tendency of the blood.

The hemiplegia that occurs during or after acute disease is generally thrombosis from exhaustion but sometimes embolism. Endocarditis may result from almost any acute specific disease, and least rarely from scarlet fever. A grave sudden lesion in tuberculous patients is generally venous thrombosis on the convexity of the brain. In these cases the causal association is sufficient guide to the diagnosis.

A sudden lesion, sometimes severe, leaving lasting hemiplegia, occasionally occurs in young adults, chiefly girls, who are in feeble health. Beyond this, no indication of its nature can be discerned. The heart is healthy, and no suspicion of arterial disease can arise. The general health, though not good, is not attended by such prostration as would reasonably account for spontaneous thrombosis. Yet no other cause is conceivable. The cases are very rare, and I think it is possible that the accident is determined by some congenital anomaly in the arterial distribution. We sometimes meet with such, unsuspected, and they are occasionally found to have altered the symptoms of disease. It is conceivable that such an anomaly may enfeeble the circulation in some vessel, so as to determine the formation of a clot in it, when the blood state is inadequate alone to induce the thrombosis. The treatment for such a case should be that suited to thrombotic softening.

The sudden cerebral lesions that occur in infancy constitute a subject too large and too special to be dealt with now. I have endeavoured to help you to perceive more clearly the nature of the cases that occur in adult life and to adopt measures that can do no harm and may do good, sometimes much good. What you achieve you cannot know. That which we prevent is always unperceived, but we may feel sure that it is definite, if not distinct, and often it is greater than we conceive.

A Lecture

ON

LAËNNEC AND THE EVOLUTION OF THE STETHOSCOPE.

DELIVERED BEFORE THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF OXFORD.

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LAËNNEC was a very remarkable man, a Breton by birth, a man of very enthusiastic disposition, distinguished by his love for his country and by his great talent for original research. At his birthplace, Quimper, the French Government erected a statue to his memory in front of the fine cathedral, and at a later date they published a cheap edition of his great work at their own expense.

His father was a lawyer, who died early, but our Laënnec was educated by an uncle, a professor of medicine at Nantes, whose influence gave a distinct bias to his studies, and he soon showed a great predilection for medicine and morbid anatomy. Shortly after he was qualified he was sent as an assistant surgeon to the Army of the West to quell the troubles in the Morbihan, and this was his only military service. On his return he went to Paris and joined the clinic of Corvisart at the Charité Hospital, at once commencing work of singular merit, chiefly in morbid anatomy.

He fortunately became acquainted with Bayle, who was also himself interested in tubercle, and the two became great friends and fellow workers. He remained three years in Paris, working indefatigably, and collected no fewer than 400 clinical cases, of which he took notes and drew up detailed descriptions, and these formed the basis of his future researches. His first published work was *Histoires d'Inflammation du Péritoine*, consisting of a series of cases detailed in a very clear and satisfactory manner, illustrated by much learned annotation, and terminated by general conclusions, specifying the anatomical characters and signs of peritonitis in a more accurate manner than had been previously done. His next publication was a *Lettre sur les tuniques qui enveloppent certains viscères*, addressed to Dupuytren, then principal anatomist in the School of Medicine. He also gave a course of lectures on pathological anatomy, which, it seems, was his favourite study previous to his being given charge of wards.

In 1816 he was appointed chief physician to the Necker Hospital, and then it was that he took up clinical medicine, and was in the same year rewarded for his labours by the discovery of Mediate Auscultation. In June, 1818, less than two years after the introduction of the stethoscope, he published his great work entitled, *De l'Auscultation Médiate, ou Traité du Diagnostic des Maladies des Poumons et du Coeur, fondé principalement sur ce nouveau moyen d'exploration.* The book has gone through five editions, two of which were translated into English by Sir John Forbes and Dr. Theophilus Herbert. The production of this momentous work was too much for the delicate frame of Laënnec; it injured his health and obliged him to resort to his native air a month after its publication. He recovered after a long stay in his beloved Brittany, and returned to Paris to receive the public appreciation which his great discovery warranted. He was made Professor of Medicine and of Clinical Medicine of the College of France. His lectures were attended by zealous students from every country in Europe, among whom was the late C. J. B. Williams. He showed the utmost courtesy and consideration to all who were attracted to his clinic by his great name and the wish to perfect themselves in the use of the stethoscope, and he was a most successful teacher. Nevertheless, with all his engagements, he did not neglect his great work, which he enlarged and corrected and brought to a second edition, which again exhausted his physical powers and compelled him once more to retire to his native province.

He had been attacked with pulmonary consumption, the very disease which he had done so much to elucidate, and he died on August 13th, 1826, at the age of 45, presenting all the features of advanced consumption.

In order to estimate the debt of medicine to Laënnec we must glance at what thoracic pathology was before the stethoscope was introduced.

The only means for diagnosing lung disease or diseases of the heart were, first, the well known *percussion* method, invented by Avenbrugger, which Laënnec did much to advance, and, secondly, that of *palpation*, of which a great exponent was Dr. Matthew Baillie, who was blamed by Sir Henry Halford for thus treating a patient with too much familiarity. Thirdly, there was what has been called non-mediate auscultation, that is, simply by putting the ear to the chest wall with linen intervening. This is sometimes impossible with females, and it is not possible to auscultate the supraclavicular or suprascapular regions in this way. There was, therefore, a great want of some means of diagnosis, and Laënnec's discovery met it. His discovery was made in this way, to quote his own account: "In 1816 I was consulted by a young woman labouring under general symptoms of diseased heart, and in whose case percussion and the application of the hand were of little avail on account of the great degree of fatness. The other method just mentioned being rendered inadmissible by the age and sex of the patient, I happened to recollect a simple and well-known fact in acoustics, and fancied, at the same time, that it might be turned to some use on the present occasion. The fact I allude to is the augmented impression of sound when conveyed through certain solid bodies—as when we hear the scratch of a pin at one end of a beam of wood, on applying our ear to the other. Immediately, on this suggestion, I rolled a quire of paper into a kind of cylinder, and applied one end of it to the region of the heart and the other to my ear, and was not a little surprised and pleased to find that I could thereby perceive the action of the heart in a manner much more clear and distinct than I had ever been able to do by the immediate application of the ear. From this moment I imagined that the circumstance might furnish

means for enabling us to ascertain the character, not only of the action of the heart, but of every species of sound produced by the motion of all the thoracic viscera, and, consequently, for the exploration of the respiration, the voice, the *râle* or *rhonchus*, and perhaps even the fluctuation of fluid extravasated in the pleura or pericardium."

Laënnec tried to make this paper into a solid body, but he could not roll it up tight enough. There was always the "longitudinal aperture" left in the paper thus rolled, and this led him accidentally to the discovery that this aperture was necessary. He had also to find a good conducting medium. He tried goldbeaters' skin inflated with air, with the central aperture formed of pasteboard, but this did not suit. He found that the lighter kinds of wood were preferable, and consequently he translated the paper stethoscope into the wooden one. His stethoscope was made of a cylinder of boxwood 1½ in. in diameter and 13 in. long, perforated longitudinally by a bore ¼ in. wide, and hollowed out into a funnel shape to the depth of 1½ in. at one of its extremities. Here is one of his first stethoscopes, made by himself, and presented to my father, who bequeathed it to me (Fig. 1). In its construction there were two elements to be considered—first, the solid body; and second, the column of air. Laënnec thought he could hear the heart sounds better by using a stopper or plug, and the breath sounds by removing the stopper and using the conical opening as a collector of sound. He evidently had also tried different woods without the central aperture at all, for here is one of his solid stethoscopes (Fig. 2).

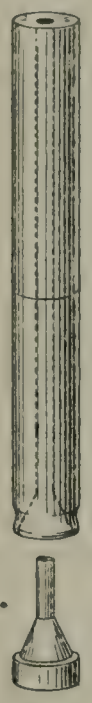

Fig. 1.

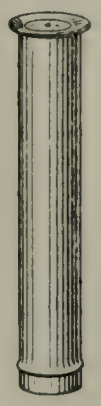

Fig. 2.

Fig. 3.

When Sir Charles Scudamore went to Laënnec to try this instrument (Fig. 1) it was found that he could hear nothing, on account of the large size of the tragus of his ear. Laënneć accordingly hollowed out the ear-piece, and this improvement enabled Sir Charles to hear. He returned to London rejoicing, and shortly after published a pamphlet in favour of auscultation.

The next improvement came from Piorry, who reduced the stem of the instrument to the thickness of a finger, and when thus made portable it was found to convey the sounds quite as well as the solid cylinder. Next, changes were made in the pectoral end. A bell form was first employed, which certainly intensified and condensed the sound, but exaggerated it to such a degree as to lead to mistakes. The somewhat sharp rim caused pain to women and stout patients, and was complained of. C. J. B. Williams therefore suggested a trumpet-shaped ending, which gave rise to no discomfort, and, fitting close to the chest wall, confined the column of air completely and prevented any escape through tilting. By making the other end trumpet-shaped also, but of smaller size, and introducing a movable ear-piece, he facilitated auscultation above the clavicle and scapula and rendered the instrument complete, leaving to auscultators a thoroughly useful form of stethoscope (Fig. 3).

Fig. 4.

Williams next devoted considerable attention to the material for constructing the stethoscopes, using wood as a basis. He found mahogany and walnut less brittle than larch and cedar, and finally adopted ebonite on account of its strength and of the ease with which it could be cleansed. Stethoscopes should be cleaned after examination of each patient, though this is not always done, and ebonite is easily rendered aseptic. It was soon found by auscultators that it was not necessary to have a solid vibrating-wall, and that one could hear as well with an indiarubber tube, where the air column was the conductor of sound, and hence the flexible monaural stethoscope (Fig. 4) came into existence. The flexible double stethoscope followed, the great advantage of which is that two ears are brought into action at the same time. If one ear only is used, the nerve of that side is more likely to become exhausted than when two are employed, and the flexibility and easy adaptability of the binaural stethoscope is of advantage. As regards accuracy, I have tried the one against the other, and the conclusion I came to was that the single stethoscope is the most accurate. The late Dr. Leared claimed to have invented the double stethoscope in 1851. I present for your inspection (Fig. 5) a curious specimen of a binaural stethoscope which my father constructed in the year 1829, and which is probably the first binaural stethoscope ever made. It consists of a trumpet-shaped chest-piece of mahogany, the end of which is screwed into a connexion to which were attached two bent lead pipes (for indiarubber had not been introduced at that time), which could be adjusted to the ears. The pipes had no ear-pieces or fittings of any kind, and were difficult to apply, contrasting with the later but more elegant instrument of Leared.

I show you a great variety of binaural stethoscopes, kindly lent by Mr. William Parson of Godalming, by Messrs. Hawkesley and Messrs. Krone and Seseman of London. One of the most recent is the clinical stethoscope of Dr. Aitchison Robertson, which by connecting a number of binaural tubes to one sound collector enables 10 or 12 auscultators to listen to one patient at the same time, which in cases of aneurysm of the aorta, where frequent examination is inadvisable, is very useful. It is much used at the Polyclinic lectures. Dr. Denison, of Colorado, has introduced a large condenser, which can be applied with advantage when it is desirable to elicit the character of obscure and doubtful sounds. I once was able to detect the presence of a bronchiectasis by its help which I had failed to localize by other means. The last development shown is a binaural stethoscope, designed in flexible metal and said to be of service in tropical countries, where indiarubber perishes so readily. Curiously, in France, the country of Laënnec, the stethoscope has never been so extensively in use as in England and America and other countries. For a long time the French only used it for the heart, and trusted to non-mediate auscultation for the lungs. When I was a student in Paris in 1865, Professor Trousseau told us that every physician was expected by the public to auscultate, and that he knew a deaf physician who always did so. "Il ausculte toujours," said Mons. Trousseau; "Il entend jamais."

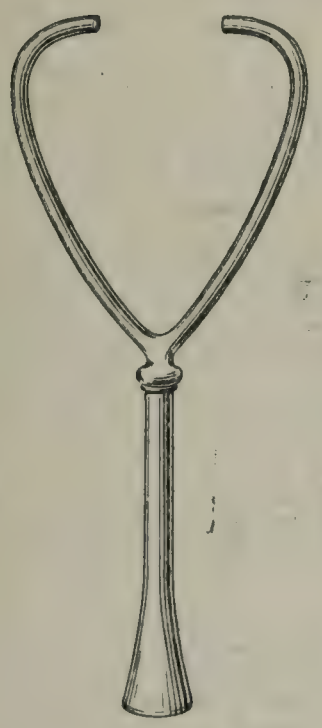

Fig. 5.

Nowadays other methods are found serviceable in the diagnosis of chest diseases, such as examination of the sputum and the *x* rays, the opsonic index standard and other means. No method, however, is so simple as that of auscultation, and the stethoscope remains an instrument which all medical practitioners ought to know well, for good hearing and patience is all that is required. Some patients have no sputum to test and the shadows of the *x* rays may be capable of many explanations. Auscultation, therefore, holds its own and will continue to do so to the end of time.

What does Medical Science Owe to Laënnec?

By his great discovery he bequeathed an instrument which can be used, and, though modified in its construction, has been in common use to this day. What we owe most to him is the introduction of a new sense into our investigation of disease. Our eyes and the sense of touch alone being formerly used, he taught us to use our ears. Consider that the organs of the heart and lungs are packed into the bony cavity of the thorax and cannot be approached very easily. By bringing the sense of hearing to bear he unlocked the secrets of the heart and lungs. He further investigated thoroughly by his method the physiology and pathology of these organs. In *De l'Auscultation Médiate* you will find hardly any disease unnoticed. The last thing that he did was to provide a proper nomenclature for diseases of these organs. Before the invention of auscultation one could not describe the sounds of mitral stenosis, of aortic regurgitation, or of aortic obstruction. They were not known. All that was known of heart disease was that certain lesions were found after death, the diagnosis in those days being generally made on the *post-mortem* table. These were the grand legacies which Laënnec bequeathed to medicine, and remembering that he died at the age of 45, we must all agree that he died too soon. He attributed his death from phthisis to a *post-mortem* wound from a tuberculous subject, which had been neglected, and he used to cauterize this wound with butter of antimony, and he maintained that if his lungs were affected it was through this wound, which is highly interesting in the light of later experience. The nomenclature of lung and heart disease consists largely of French terms, such as "râles," "bruit," "bronchophonie," and "oegophonie," all of which were invented by Laënnec.

The late Sir Prescott Hewett used to tell a humorous story of the use of the term "bruit" in the early days of the stethoscope. When the experiments were being carried on by Dr. Hope and Dr. C. J. B. Williams on a donkey in the St. George's Hospital dissecting room, experiments which led to the discovery of the cause of the second sound of the heart, there appears to have been on one occasion a difference of opinion. The experimenters and several medical men present could not agree as to the audibility of a bruit or murmur which one said was present, while others denied it. They bethought themselves of getting the impartial evidence of a fresh ear to decide the point, and called to their aid the dissecting room porter, who no doubt had overheard the discussion, and was beginning to get familiar with the new terminology. He applied the stethoscope to the donkey, listened attentively, and looking satisfied, said, "Yes, gentlemen, I hears the *brute*."

Finally, we must never forget that, in addition to the grand field of scientific work which Laënnec opened to us, he also bequeathed his own brilliant example as an investigator.

Major Anderson, I.M.S., has described in *The Indian Medical Gazette* recently 2 cases of abscess in the spleen in malarial individuals in the Andaman Islands—a very rare condition. Of his 2 cases, 1 recovered after operation, the other died, and he quotes Catrin as stating that Grand Mourse collected particulars of 14 cases recognized during life and operated upon, 11 of them recovering. Marchiafava's and Bignami's theory that such abscesses are the result of pyogenic cocci is generally looked upon as correct, the malarial parasite *per se* never producing pus. Major Anderson also publishes some notes on the occurrence of *Amoeba coli* in Port Blair. He believes that the parasite may be placed in the category of a harmless commensal. Perhaps he has not read the recent American researches in the Philippines on this subject, researches which attribute to the amoebae a very important part in the causation of one of the forms of tropical dysentery.

WHERE PHYSICIAN AND SURGEON MEET.*

By ROBERT KIRKLAND, M.B.,
SENIOR PHYSICIAN TO THE CHELTENHAM GENERAL HOSPITAL.

Within recent years the physician and surgeon have made great advances undreamt of years ago, the former in diagnostic ability and a more correct interpretation of the phenomena of disease, the latter in greater manipulative skill, boldness, and careful technique. They have now met face to face, especially in the region of the abdomen, and it is about some of the diseases, acute and chronic, of this region I wish to say a few words.

The responsibility in the acute cases should, as a rule, first rest with the physician, for it is essential to a correct carrying out of treatment that a quick and accurate diagnosis should be made and then quick and decisive action taken. In acute abdominal affections the physician must take no half-hearted action with regard to the calling in of his surgical colleague. Opposition of friends to operation must not deter him from doing his duty, and he should not wait to suggest it until the patient is too ill for operation to be successful. Lives may thus be saved or relieved which are otherwise doomed to death or prolonged suffering. But let me insist that to effect this it is necessary that a careful diagnosis should be made and the surgeon's aid sought early. It is manifestly unfair to him to ask him to operate, say, in a case of acute gastric perforation, after twenty-four hours have elapsed, or in a case of abdominal obstruction with great distension, free fluid in the abdominal cavity, and other evidences of peritonitis. Now, in these affections correct diagnosis is not always possible, but every care should be taken by eliciting the history of the onset of the illness, examining the patient, and giving due weight to the clinical symptoms, to arrive at a fair conception of the state of matters. I am no advocate of the practice of "here is an abdominal case; let us make an opening and look in." I agree with Mr. Mansell Moullin that no surgeon should have a roving commission inside the abdomen, and I am sure none of the surgeons connected with our Branch would desire it.

Persistent Jaundice.

At times, however, after every care has been taken to arrive at the nature of an acute abdominal lesion, we may be in doubt, and it may then be necessary to make an exploratory incision, for by this means only can we clear up the nature of the case, and be able to deal with it promptly. For example, if you think you have a case of acute pancreatitis you are bound to have the abdomen opened, for the condition so closely simulates acute obstruction in every particular that nothing but exploration can clear it up. Again, suppose we have not such an acute case, but a case of persistent jaundice; by this I mean jaundice which has lasted more than six weeks. Are we to wait for some more weeks until intermittent hepatic fever and cholangitis with pus in the ducts enables us to diagnose obstruction of the common duct with calculus from chronic pancreatitis or malignant disease of the larger bile ducts? If so, the prospect of healing becomes bad, and there is risk from haemorrhage and septicaemia. The diagnosis of chronic jaundice of about six weeks' duration is admittedly sometimes most difficult. Within the past two years I saw, in consultation with the same friend, Dr. Foljambe Forster, two cases of this nature. In both, the onset of the jaundice was fairly sudden, but without any pain or vomiting.

One was a lady over 55 years old; the jaundice was marked; there was a history of an isolated attack of colic ten years before, but no sudden chills with fever. The liver was not enlarged, but in the right hypochondrium could be felt an oval, even swelling continuous with the liver and with its long axis vertical. We were in doubt whether this was an enlarged gall bladder or a Riedel's lobe, the tongue-like projection of the right lobe so often felt in connexion with former attacks of acute cholecystitis and gall-stone mischief. But its junction with the liver seemed constricted or narrowed and not broad, as is the case with a Riedel's lobe. We could discover no other source of malignant disease in breast, uterus, stomach, or bowel, and the left supraclavicular gland was not enlarged, nor was there to be felt the little tell-tale gland behind the left sterno-mastoid in the posterior triangle of the neck. There was no salivation nor was there any sugar in the urine nor fat in the motions, which were clay-

* A paper read before the Gloucestershire Branch.

coloured. Believing that the tumour we felt was an enlarged gall bladder, and remembering Courvoisier's law that in jaundice due to gall stones the gall bladder is small, whereas in jaundice due to the pressure of a growth on the duct the gall bladder forms a palpable tumour, we thought the most likely diagnosis was cancer of the head of the pancreas. The patient was taken up to see Mayo Robson, and, as it was just possible it might be a calculus in the common duct on account of the attack of colic years before, an exploratory operation was advised. The tumour we felt was found to be a Riedel's lobe, with the gall bladder beneath and adherent, containing one stone. There was no disease of the head of the pancreas, but the unusual and rare condition of primary malignant disease of the hepatic duct.

The other case was that of a gentleman over 60. He had a feeling of slight cold, and in a day or two jaundice supervened which became intense, with clay-coloured stools and troublesome itching of the skin. As the jaundice had come on insidiously, it was naturally supposed to be a case of gastro-duodenal catarrh or simple catarrhal jaundice. But it had persisted for over five weeks when I saw him, and it was not lessening. Simple catarrhal jaundice was therefore now out of court. The liver was not enlarged, there was no pain on pressure over Mayo Robson's point, and so far not much wasting. He had never suffered from spasms, and had no pain or vomiting previous to the onset of jaundice and no intermittent temperature or chills. Nothing could be felt in the region of the gall bladder. We thought the condition was most likely to be chronic pancreatitis the result of the extension of the duodenal catarrh up the lumen of the pancreatic duct, or due, but this less likely, to a stone in the ampulla of Vater. The jaundice still persisting, he also consulted Mayo Robson, who was unable to give a definite opinion. An exploratory operation was performed, when, strange to say, primary malignant disease of the common hepatic duct was again found.

A few years ago I should have taken grave exception to any operation being performed on either of these cases, for the first seemed most likely to be malignant disease of the head of the pancreas and the other simple pancreatitis, which, with rest and dieting, in course of time, as a rule, gets well of itself. Recently I have seen, in consultation with Dr. Halliwell, a case somewhat similar to the two preceding cases.

The patient was about 60. The jaundice had come on in an insidious way with no pain or vomiting, and with no past history pointing to gall stones. The stools were clay-coloured and the urine contained bile. The jaundice, instead of clearing up after five weeks, persisted, and became more intense. Then I saw her. The liver was not enlarged, there was no tenderness or pain to be elicited over the gall bladder region even by Murphy's method, and the gall bladder was not palpable. No primary source of malignant disease could be found in breast, uterus, stomach, or bowel. Until the jaundice came on she had felt in her usual state of health. At first it was hoped that it was simple catarrhal jaundice, but this idea had to be put aside when the jaundice instead of lessening after four weeks, became more intense. It seemed to me that it must be one of four things—either malignant disease of the larger bile ducts, malignant disease of the head of the pancreas, chronic pancreatitis, or impacted stone in the common bile duct. Malignant disease of the liver could be excluded, for the liver was not enlarged, and when the liver is enlarged, as it sometimes is in either of the four maladies mentioned, it is a uniform enlargement, smooth and regular, with an even edge. Cirrhosis of the liver could also be excluded, for here the jaundice is not intense, and the stools are not typically clay-coloured. Besides, we have other symptoms, such as haematemesis, vomiting, ascites, and enlarged spleen. It was not likely to be impacted stone, as there was no past history of spasms or jaundice, and the attack of jaundice had come on without vomiting or pain in the right hypochondrium, radiating round to the lower angle of the right scapula; nor were there any periodic attacks of intermittent hepatic fever, although perhaps these had hardly time to develop. This being so, I suggested waiting for the time factor to help.

If Dr. Cammidge's pancreatic reaction urine tests were thoroughly reliable, they would be of inestimable value in this connexion, for they would, if conjoined with steatorrhoea or fat in the stools, at once separate the pancreatic affections from malignant disease of the bile ducts. Unfortunately these tests are still *sub judice*, for other competent observers state that these reactions sometimes occur in other pathological conditions and even in normal urine. I have no experience of these and can give no opinion. We are therefore thrown back on clinical observation, but at this early period of the jaundice, it does not help us much in the differentiation of the three other maladies—cancer of the head of the pancreas, malignant disease of the larger bile ducts, or chronic pancreatitis. Age over 50 and more rapid wasting would be in favour of the two first-mentioned illnesses, and perhaps an enlarged, distended, and palpable gall bladder would point more to cancer of the head of the pancreas. Greasy white motions and sugar in the urine would also indicate pancreatic disease. If my diagnosis were uncertain I should recommend at first rest in bed, a diet of milk and chicken broth with the avoidance of everything fatty. With regard to drugs, I should prescribe sodium salicylate to keep down the infection of the bile ducts, and I should give at night a pill of iridin with a morning draft of Carlsbad salts or Cheltenham Lansdown water warmed, and with ten grains of urotropin added. This to be slowly sipped. If after six or eight weeks the jaundice remained as intense, and especially if it increased, and if any symptoms now pointed to impacted calculus in the common duct, I should advise operation—a choledochotomy or duodeno-choledochotomy. In quiet impaction the presence of a Riedel's lobe would guide me to the same decision. If the probabilities were against it being an impacted stone, and if the patient were over 50, I should then state to the patient or his friends my fear of its being malignant disease of the head of the pancreas or larger bile ducts, and the only chance of palliation by surgical means would be if the growth were situated in the common bile duct. Here resection with implantation of the hepatic duct into the duodenum, or putting the gall bladder into communication with the small intestine, might obviate cholaemia with its attendant symptoms, and thus greatly improve the patient's condition. Most of us are never likely to see primary carcinoma of the hepatic duct, as it only occurs 18 times in 80 cases of malignant disease of the larger biliary ducts; but I do think we are likely to meet, if we have not already met, with the disease in the common duct. The prevalence of the disease is doubtless commoner than is thought, since it may be easily overlooked or the jaundice ascribed to something else. At any rate, it is suggestive that within the past fifteen years the number of cases described has increased fourfold. If an operation were declined I should try Dr. Beard's treatment, the injection of trypsin into the deeper subcutaneous tissue of the buttock or back, of course with strict antiseptic precautions. I should begin with five minims of trypsin injection daily, increasing up to 20 minims by the end of the first week, and 40 minims by the end of the third week. Combined with this I should give by the mouth one capsule of holadin, which is an extract of the entire pancreatic gland, thrice daily one hour before meals with a pepule of ox gall compound at night.

GASTRIC AND DUODENAL ULCERS.

It is difficult to draw a hard-and-fast line between the acute and chronic forms. Perforation and haemorrhage are the immediate dangers in the former; in the latter there are, in addition to these, all the troubles that arise from an open sore and the production of contracting cicatrices. From the sex, age, and history, you can arrive at a fairly correct conclusion whether the ulcer be gastric or duodenal. Simple ulcer of the stomach is a common condition, more common in women, and these young and chlorotic, than in men. Pain generally comes on soon after the introduction of food into the stomach, and is relieved by vomiting. Haematemesis is common, but seldom fatal. Contrast with this ulceration of the duodenum, where the patients are usually men from 30 to 45 years of age. When pain occurs it is at some interval after a meal, caused by the food passing from the stomach into the duodenum, and the introduction of food into the stomach often relieves the pain. This is a useful point to remember. Vomiting is not usual, but haematemesis, should it occur, is often fatal. When haematemesis and melaena occur in duodenal ulcer you may sometimes detect a round soft lump just below the ribs and just outside the right rectus, although I have never seen this mentioned in the textbooks. This is blood clotted *in situ*, for large blood clots can form in the duodenum. Twice I have demonstrated this in cases seen in consultation. Another interesting point is the occurrence of transient attacks of jaundice in duodenal ulcer, and as tenderness can generally be elicited over an area just above and to the right of the umbilicus, in the same situation that tenderness is found in cholelithiasis, it is most difficult sometimes to diagnose duodenal ulcer from gall stone trouble. In a case which I saw in consultation

I made this mistake and diagnosed gall-stone trouble, until the occurrence of haematemesis and melaena cleared up its nature. Later on I shall revert to this case.

It may be, however, that the first indication of gastric or duodenal ulcer is sudden perforation. What are the usual symptoms of such a catastrophe? Shortly these: At the moment of rupture the patient may volunteer the statement that he or she is conscious of something having given way, and that immediately they felt a burning pain in the epigastrium as if something hot were being poured out. In the epigastric region the pain and tenderness are most marked, but I have seen in perforation of a duodenal ulcer the pain referred to the right iliac region, simulating perforation of an appendix, as I have seen the pain in perforation of the stomach referred to the left iliac region. Collapse is extreme if the leak be large, not so evident if the leak be small. The pain is constant, unlike the intermittent colicky pains of obstruction. We note that the abdomen is rigid, motionless, and retracted. After the lapse of a few hours this gives place to a tense, distended lympanitic condition. The bowels usually remain constipated. In all but the rapidly fatal cases the temperature after the collapse begins to rise and the pulse to increase in frequency; in two hours the pulse may rise from 90 to 120. Obliteration of the liver dullness due to free gas in the peritoneal cavity with retraction of the abdomen is a very important sign. These signs and symptoms, then, with or without a previous history of indigestion, pain in the epigastric region immediately or three or four hours after taking food, haematemesis or melaena, should suggest such an accident.

There can be no difference of opinion as regards the need of a surgeon in a case such as this. But he must act promptly, and the sooner the abdomen is opened the better. After 36 hours it is useless. The mortality among those operated on under 12 hours, according to Mayo Robson, is 28.5 per cent.; among those operated on from 12 to 24 hours, 53.6 per cent.; this is with reference to perforation of a gastric ulcer. As to perforated duodenal ulcer, Mr. Moynihan has collected from various sources 51 cases, 2 only of which were correctly diagnosed, and 18 were operated on under the impression that the cause of the peritonitis was appendicitis. I do not think the diagnosis should be so difficult if careful attention be paid to the previous history. Fortunately, the gastric and duodenal contents are usually at the time of perforation but slightly septic, and Mayo Robson hopes that if a skilful surgeon be obtained within twelve hours of the rupture of a duodenal ulcer, and if when the abdominal cavity is drained the ruptured intestine be closed, the mortality should be only 10 per cent. At present, when the operation is performed within 24 hours of the rupture, the mortality is 38 per cent.; after 24 hours, 82 per cent.

CHRONIC ULCER OF THE STOMACH.

Here the question—When is the physician to cease and the surgeon to take up the thread?—is not quite so simple. The diagnosis of this condition is not so easy as it seems, because the symptoms of anaemic gastralgia are those also of gastric ulcer, with the exception of the haematemesis, and it is notorious that this symptom, on which, perhaps, most reliance is placed, frequently occurs without any evidence *post mortem* of gastric ulcer. Dr. Hale White, I think, was the first to point out that many women who have severe and alarming gastric haemorrhage, and who are said to have gastric ulcer, have have not got gastric ulcer at all. With this haematemesis we have gastric pain, nausea, and sickness, and this condition chiefly affects women between the ages of 20 and 40, so that its diagnosis from genuine gastric ulcer is very difficult. Of course, such cases never get any symptoms due to the mechanical effects of ulcers, such as adhesions, pyloric stenosis, or subphrenic abscess. Have I any proofs personally of this state of affairs? Well, yes I have, for I have had two such cases admitted into hospital under my care with a diagnosis of gastric ulcer, in which diagnosis I concurred. One was a woman of 40, the other a woman about 50. Both were pale but well-nourished women, who had complained for years of pain after food and nausea. One had had heamatemesis before her present illness; the other had a first attack. Both died suddenly with symptoms of internal heamorrhage, followed by profuse haematemesis, and on *post-mortem* examination there was no aneurysm, no atrophic cirrhosis of the liver, no evidence of granular kidney or heart disease, no duodenal ulcer, or other condition to account for it—simply small pin-head erosions of the mucous membrane of the stomach, from which the blood had come, but these were not ulcers.

As I have already said, many cases of simple anaemic gastralgia are said to have gastric ulcer. But I think that pain after food—and only then—is not so marked in anaemic gastralgia. It may occur apart from food, and especially on exertion. In gastric ulcer, too, the skin tenderness is more localized; in simple anaemic vomiting there is a large area of superficial tenderness. The vomiting, too, in the latter condition is often dependent on heart stretching. But the two significant signs of gastric ulcer are defined deep-seated pain, and the presence even of small quantities of blood in the faeces or vomit. Then, last of all, there is the therapeutic test. If you put girls with anaemic vomiting on to arsenic, it will, as a rule, stop their vomiting very soon if combined with rest in bed. Two minims of the liquor arsenicalis are quite sufficient given thrice daily. Again, before diagnosing chronic gastric ulcer try the knee-jerks and look at the gums. This may seem superfluous advice, but I remember a young man about 30 coming to my out-patient room complaining of severe gastric pain, at times with vomiting, which had troubled him for several months. He had been an in-patient at a large hospital, where his stomach had been washed out, and test meals administered and withdrawn for chemical examination. In a routine way I tried his knee-jerks and found they were absent, but this was the only symptom pointing to locomotor ataxy with the exception of rather small sluggish pupils. Later on he developed the distinctive Argyll-Robertson eye phenomena with Romberg's sign and ataxic gait. I have read of a case of lead poisoning with colic in a barmaid diagnosed as probable perforation of a chronic gastric ulcer. The blue line on the gums led to a correct interpretation of the condition.

Cases of anaemic gastralgia, locomotor ataxy, and lead poisoning are entirely within the physician's province, but what about the cases of profuse haematemesis which have not gastric ulcer? Physicians and surgeons disagree as to the treatment. Dr. Hale White implores us not to operate on such people, because, as he says all experience has shown that, if you do, they may die soon after the operation, and obviously if the stomach is oozing blood you cannot stop it by surgery. Whenever, therefore, you think you have got one of these oozing cases, do not open the stomach, but give adrenalin chloride. In marked contrast to this, Mr. Mansell Moullin says that in every case of his own in which there was general oozing, the haemorrhage has been arrested, without the least difficulty, as soon as the stomach has been opened and the mucous membrane exposed to the air. I am hardly qualified to give a decision in this matter, but I should be inclined, first, to try rest in bed, and the internal administration of adrenalin chloride with rectal feeding. If it be a case of haematemesis with ulcer, this is certainly the right course to adopt, because it is very exceptional for a patient to die from actual haematemesis due to gastric ulcer. In an ordinary case of gastric ulcer the ideal treatment would be rest for two or three months, the first four or five weeks being absolutely in bed. If there be haematemesis, I should give by the mouth sips of warm water only, and 15 minims of a 1 in 1,000 solution of adrenalin chloride every three hours for twenty-four hours. I should give rectal enemata consisting of 4 oz. of beef tea and milk, half a tube of Fairchild's peptonizing powder, a dessertspoonful of glucose, and a little salt every four hours, first cleansing out the bowels by a simple enema. The nutrient enemata should be administered at a temperature of 99° F. through a funnel with rubber tubing and glass nozzle, held about 1 ft. above the patient's hips. In the intervals between the rectal feeds give a 4 oz. enema of a normal saline solution at 99° F. Wash the mouth out several times daily with a solution of hydrogen peroxide or izal. While, theoretically, it would seem better to give the stomach a complete rest for a week, practically this strict limitation does not seem necessary. So, after four or five days, if the haemorrhage does not recur, I give 2 oz. of an equal mixture of milk and lime water every hour. When milk is not well borne, Valentine or Leube's beef solution or albumen water may be substituted.

This may be continued for five or six days, then we may give 7 oz., of beef solution at 8 a.m., 10 oz. of peptonized milk at noon, the beef solution again at 4 p.m., and the peptonized milk at 8 p.m. At the end of a month, if the patient has improved, she may be allowed scraped beef, pounded chicken, and farinaceous or custard puddings. In the way of medicine I give, if an aperient be necessary, one teaspoonful of Carlsbad salts in a tumblerful of warm water in the morning, and if there be pain and nausea, a mixture of bismuth carbonate, soda bicarbonate, and hydrocyanic acid, with or without a little cocaine hydrochloride. When convalescing, I give two or three 3-grain tablets of alginoid iron thrice daily after food, or 1 drachm liq. ferri manango-peptonati in water in the same way.

The majority of cases will get well by these measures, but if after this prolonged treatment the symptoms persist, or they return as soon as the patient begins to lead his or her ordinary life, then I should unhesitatingly call in a surgeon. For this may mean slow perforation of an ulcer with adhesions, or beginning cicatrization of an ulcer near the pylorus, or perigastritis. You may be astonished to hear that among cases severe enough to be admitted into hospital, 18 per cent. die and 42 per cent. relapse. This is based on the statistics of all the cases of gastric ulcer admitted into the London Hospital from January, 1897, to August, 1902. They were just 500 in number—98 men and 402 women. Of these 89 died, and 210 had been treated before for similar attacks. Bad as these figures are they are not the worst, for no account is taken here of the late sequelae or complications. In these cases are not included patients admitted for pyloric stenosis, hourglass contraction of the stomach, gastric dilatation, subphrenic abscess, or perigastric adhesions, nor is cancer of the stomach alluded to, although, according to Schlesinger, this follows in 5 per cent. of the cases of chronic ulcer, developing on the site of the old ulcer. In the absence of these we may still have grave anaemia, and a deteriorated condition of health ending in tubercle as the result of this disease. Let me repeat, I should call in a surgeon for the purpose of doing a posterior gastro-jejunostomy if after treatment for two or three months the symptoms persisted or if the patient relapsed again as soon as he began to lead his ordinary life, and was thus unable to earn his living. If this practice were more universal we should not see so many cases of pyloric stenosis with dilated stomach, or hopelessly distorted stomachs with ulcers eating into the liver or pancreas, representing years of suffering, and chronic misery often ending in death by haemorrhage, as in the following case:

On August 1st, 1905, my late friend and colleague, Dr. G. Bagot Ferguson, asked me to see a patient of his, a lady aged 60, who had complained off and on for many years of severe abdominal pain, indigestion, and nausea. No history of haematemesis or jaundice. During the past two months she had become much emaciated and paler, and her weakness was extreme. She now suffered agonizing pain in the left epigastric region, which could only be controlled by large doses of morphine. The abdomen was a little full in the upper part, but no peristalsis was visible. On palpation the left epigastric region was occupied by a mass with a somewhat oval irregular surface. Its long diameter was transverse, and extended almost to the middle line. Its anterior margin was not sharp or notched, and the fingers could be slipped between its posterior margin and the left lower ribs. Splenic dullness normal. Neither the left supraclavicular nor groin glands were enlarged. In spite of this I gave a definite opinion that it was malignant disease of the body of the stomach. The profound anaemia, rapid loss of flesh and strength, with a hard tumour mass, seemed to me to warrant this conclusion. I think Dr. Ferguson himself thought there was something more than this in it. Be that as it may, two months afterwards he told me the mass had almost disappeared, and asked me again to see her. Certainly little could now be felt, but shortly afterwards she suddenly died with symptoms of internal haemorrhage. We obtained a *post-mortem* examination, and found the stomach full of blood. There was an hourglass contraction of the stomach, with part of the posterior wall adherent to the pancreas. Fresh ulcerations had occurred at the site of the old ulcer, and had eaten into the pancreas, laying open some of its vessels. This eroded part of the pancreas was lying bare in the stomach. No doubt what we felt at first was the inflammatory exudation thrown out on active ulceration occurring again at the site of the old adhesion, and which as time went on had become to a great extent absorbed.

Duodenal Ulcer.

Before discussing the treatment of duodenal ulcer may I refer to its frequency? Andral gives the proportion of duodenal to gastric ulcer as 1 in 40; some textbooks give it as 1 in 50, and this until lately has seemed to be the prevalent opinion. I have long thought that this was an error due partly to many cases of anaemic gastralgia being labelled gastric ulcer, and partly to cases of primary duodenal ulcer being designated gastric ulcer. In our own hospital for the past year we had five duodenal ulcers to eighteen gastric. We must remember that duodenal ulcer occurs in that part of the duodenum near the pylorus; 90 per cent. of all cases, according to Mayo Robson, are situated within 1 in. of the pylorus, so that the symptoms and complications of both are very similar. It is to the surgeon that we owe a clear and explicit statement on this point, for his examinations *in vivo* are infinitely more instructive than *post-mortem* records. Here pathology based on autopsy has been corrected by the study of disease in the living body. To Drs. Charles and William Mayo of Rochester, U.S.A., in particular we owe the correction of this error, for in their last 200 cases of operation for peptic ulcer, 86 were found to be duodenal, a proportion, roughly, of about 2 duodenal to 5 gastric. In the preoperative diagnosis of duodenal ulcer from gastric ulcer, they lay great stress on the seat of pain and rigidity, to the right of the middle line in duodenal ulcer, to the left in gastric ulcer.

I can recall to mind 10 cases of duodenal ulcer I have seen within the past two or three years; 6 died from haemorrhage—an unusually large proportion—2 I lost sight of, 1 recovered after an operation for subphrenic abscess, and the tenth was the most interesting of all, for he had typical signs and symptoms of the disease, with its complications and catastrophes, and although reduced to a skeleton, and several times on the brink of death, recovered after a posterior gastro-jejunostomy, and is now, nearly four years after the operation, in good health. I shall give you this case *in extenso*, as it illustrates so well the phases of the malady, its diagnostic points and complications.

On May 17th, 1902, I was asked by Dr. Moore of Churchdown to see a patient of his, a gentleman of about 50. He had suffered at intervals for many years from severe pains, a little above and to the right of the umbilicus, with flatulency and heartburn. The pain often occurred late at night. Between these attacks he enjoyed good health. When I saw him he had a slightly icteric tinge after a few days of severe paroxysmal pain at the usual site. He felt sick and had great discomfort from flatulency and acidity. Bowels were constipated. Over the situation of the pain I could detect a somewhat indefinite swelling which I thought might be gall bladder. No tumour could be felt near the pylorus, the stomach was not dilated, and there was no haematemesis. The recurrence of these attacks for years, the site of pain, and the slight jaundice, led me to conclude he had gall stones with probably adhesions round the gall bladder. This is a pardonable error, for these recurring attacks of regional peritonitis in duodenal ulcer much resemble prolonged gall-stone colic. A stone, too, impacted in the cystic duct with a contracted gall bladder closely simulates chronic duodenal ulcer. Of course, a haematemesis or the passage of even a minute quantity of blood per rectum would clear up the diagnosis. He recovered from this attack, and some months later came to reside in Cheltenham.

On November 14th of the same year, about 1 a.m., I was sent for, as he had been suddenly seized with very severe pain in the right upper quadrant of the abdomen, with vomiting and collapse. There was rigidity of the right rectus and localized tenderness below the ribs on the right side. Subsequently he had a slight rise of temperature. It was only now that it occurred to me that it might be a case of duodenal ulcer with perforation, and local peritonitis due to limiting adhesions. This attack subsided without the formation of an abscess. As time went on he had retention of the stomach contents with haematemesis and melaena, making the diagnosis certain. I now urged him to have an operation done, a posterior gastro-jejunostomy, for the haemorrhage had been severe, and he was pale, ill-looking, and much emaciated. He refused, however, to have anything done. On June 24th, 1903, he had another attack of localized perforative peritonitis, and recovered again without the formation of an abscess. He was a Scotchman. To show the never-say-die character of the man, when convalescing from this attack a friend called to inquire for him. When ushered into his bedroom the sick and sorely tried patient raised himself on his elbow, and with a dry twinkle in his eye exclaimed, "Well, M——, have you brought the wreath?" His cheery determination inspired us all. Eventually, however, he had to deliver himself up into the hands of the Philistines, and in August, 1903, he was operated on by Mr. Swain, of Bristol. Most extensive adhesions were found, and the parts were so

matted together as to be almost unrecognizable, but a posterior gastro-jejunostomy was performed, with a result as splendid as can be found anywhere in the annals of surgery.

By a curious coincidence, while I was writing this I was sent for by Dr. Moore to see him again. But his present illness has nothing to do with his old duodenal trouble. I found him to be suffering from paroxysmal dyspnoea and dyspnoea on exertion due to granular kidney, arterial sclerosis, and dilated heart. The apex beat is diffuse and weak, and epigastric pulsation is marked. The heart's action is very arrhythmic, in fact, the condition is that of cardiac delirium. The liver is much enlarged, smooth and even, its lower border extending below the border of the umbilicus. There is congestion of both bases of the lungs and beginning oedema, so that I fear his fight is nearly over.

If I do not weary you I should like to read you the following case, as illustrative of the difficulty in diagnosing ruptured appendicular abscess from ruptured duodenal abscess, the rupture taking place into the general peritoneal cavity:

On February 5th, 1907, I was called to see a case the history of which was as follows: Patient, male, aged 65, had been in service in India, where he had several attacks of malarial fever, and an indefinite history of an abdominal attack which necessitated his staying in bed for over a week. Since returning home he had dyspepsia with great flatulency, and had been subject to frequent seizures of pain underneath the liver edge, which pain was so severe as to double him up and required the application of hot bottles. He did not vomit, nor were any of the attacks followed by jaundice. The pain radiated slightly downwards, but not to the groin or testicle, and he never passed any blood or pus in the urine No history of haematemesis or melaena. He saw several medical men on account of this trouble, both in Cheltenham and in London, but no definite opinion was given. Five days before I saw him—that is, on January 31st—he sent for his medical attendant, as he had a recurrence of pain, paroxysmal in character, at the old site, with a temperature varying from 100° F. to 102° F. The pain was quite limited to the right side. There was no vomiting or jaundice, and no pain or frequency in micturition. The tongue was coated and bowels constipated. He improved, and on the morning of the day I saw him seemed much better, his temperature being normal. But in the afternoon, when rising up in bed, he was suddenly seized with agonizing pain in the abdomen, and became collapsed, but still no vomiting. At the moment of the seizure he felt as if his right testicle were being pulled up into the abdomen. I saw him about 7 p.m. He had the typical ominous, anxious, abdominal face—by far the best criterion of the extent and severity of an abdominal lesion. His breathing was short and quick—60 respirations per minute—and entirely thoracic. His brow was cold and damp with perspiration. Pulse only 85, small and weak; his normal pulse I was told was 60; temperature, 100.5° F. As the pulse respiration ratio (pulse 85, respirations 60) was so abnormal a very careful examination of the bases of both lungs was imperative, especially on the right side, to see if there were any complicating pneumonia, pleurisy, or subphrenic mischief. Nothing, however, was discovered. The abdominal muscles were on guard, hard, rigid, contracted, quite immobile, and the legs drawn up. There was tenderness all over the retracted abdomen, if anything perhaps greater on the right side high up. No diminution of hepatic dullness. On examination per rectum nothing could be detected on the right side, but certainly there was more tenderness here on pushing the fingers towards the right iliac fossa

The most interesting point was the pain in and drawing up of the right testicle at the moment of seizure. But this was no renal or hepatic colic My reasoning was as follows: Was there from the history of pain in the past near the gall bladder region, with flatulent dyspepsia, and oft-recurring pains some time after food, an old duodenal ulcer with fresh inflammatory mischief and abscess? Had this abscess then burst into the peritoneal cavity? Although there had never been jaundice or vomiting, could there be an acute empyema of the gall bladder which had likewise burst? or the third alternative, could it be a ruptured appendicular abscess? His abdominal trouble in India might have been a previous attack of appendicitis, and there was this fact, that on rectal examination more tenderness was felt towards the right iliac region than the left. But the collapse was greater than is usually the case in perforation or rupture of an appendicular abscess, for I never saw a man so hard hit. The most likely hypothesis, at any rate, was the bursting of an abscess either connected with a duodenal ulcer or appendix trouble.

Without delay I summoned my surgical colleague, Mr. Buckell, for immediate operation. An incision was made high up, a little to the right of the middle line, and on opening the peritoneal cavity foul-smelling pus welled up, but it seemed to come from below the transverse colon, and on enlarging the incision downwards, a ragged abscess cavity in connexion with the appendix was found. The pus was gently mopped up, and, after a difficult search for the appendix, it was removed. He had normal saline injection by the bowel as recommended by Murphy of Chicago, and afterwards subcutaneously. He was maintained in the Fowler position—that is, the semi-sitting position—to encourage drainage towards the pelvis, and away from the dangerous absorbing subdiaphragmatic peritoneal area. He had profound toxaemia for some days after the operation, then diarrhoea set in. This was favourable so far, but the motions contained varying quantities of blood, and we know how unfavourable vomiting of blood is in septic peritonitis. He became delirious, and on several occasions his condition seemed almost hopeless. But Mr. Buckell stuck tenaciously to him, and we persisted for days with subcutaneous injections of normal saline solution and strychnine. He was thus kept going until the toxins were washed out of his system. He is now well, and able to go out.

With regard to the treatment of duodenal ulcer, do you wonder that, with an experience of 6 deaths among the last 10 cases I have seen, whenever I make a definite diagnosis I urge operation—a posterior gastro jejunostomy? I am afraid to wait, for in the first 2 cases I was quite unprepared for the sudden and fatal haemorrhage; the next 2 cases I advised operation, which was refused; and in the last 2, after haematemesis and melaena, we arranged for an operation, but one died during the night from recurring haemorrhage, and the other on the morning of the day of the proposed operation from the same cause. I am inclined to believe that whenever duodenal ulcer has reached the stage of being recognized by definite symptoms it is not amenable to medical treatment.

Well, gentlemen, I fear I have trespassed on your good nature. Incidentally I have pointed out what I have considered the duty of the physician to the surgeon. To the surgeon may I say, when in doubt do not hastily operate, for that way lies the tendency to neglect clinical observation or to shirk the trouble of accurate diagnosis? Also, with whatever class of patient we may be dealing let us all remember the warning on the little French mechanical toys: "Quoiqu'elle soit très solidement honté il ne faut pas brutaliser la machine."

In the compilation of this paper I am indebted to the writings of Mr. Mansell Moullin, Dr. Hale White, Mr. Mayo Robson, Dr. Wm. J. Mayo, and Mr. George Heaton.

NOTES OF AN EXPERIENCE OF STOVAIN AS A SPINAL ANALGESIC IN 100 CASES.

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THE very admirable paper of Mr. Barker which recently appeared in the JOURNAL on the subject of spinal anaesthesia was doubtless read by many with great interest, and probably with as great satisfaction, for a careful perusal of the facts given by him must, to any unprejudiced mind, justify the statement he makes that there is a place for spinal anaesthesia. With this statement I entirely agree, for, while my experience is not so extended as Mr. Barker's, I have used the method in over 100 cases; and, although I have had a good many failures, in the successful cases there has been produced a most admirable analgesia. Nearly all of the patients whose operations have been done under the influence of the stovain have been greatly pleased with the complete absence of pain, and much satisfied with the fact that their consciousness was no tabolished—a factor of very great importance to a very large number of people.

Some of my patients have had experience of the effects of chloroform or ether, either before or after the stovain, but all of these unhesitatingly give the preference to stovain. One patient has had stovain four times, and has elected every time after the first to have it rather than chloroform or ether. Previous to using stovain, I had tried cocaine alone, and cocaine along with adrenalin, but every time with entirely unsatisfactory results, probably largely due to defective technique; the cocaine injections were all made through the third lumbar space, and in several of them there was a defective flow of the cerebro-spinal fluid. After these failures I used Chaput's solution of stovain in two or three cases, but all were unsuccessful; quite recently, however, I have twice used Chaput's solution with complete success in two patients, and believe

now that my early failures were due to want of experience in the process, and not to any defect in this special solution of the drug. Except in these cases, my experience has been entirely with Bier's preparation of stovain with epirenane, as put up by Billon of Paris, sterilized and ready for use in hermetically-sealed ampoules. The following notes refer to ninety eight patients who got Bier's solution and two patients who got Chaput's.

I have almost invariably given the injection with the patient sitting up and with the shoulders arched; the needle is introduced from one side of the middle line. The patients, as a rule, complain of but little pain during the introduction of the needle; but if its point come in contact with bone, it usually, but not always, is associated with some pain. In a very few cases patients have complained of some pain where the needle went straight through into the spinal canal without any obstruction, during its passage through the soft parts, and where the pain could not have been due to impact with the spinal nerve trunks themselves. Only in two or three instances has the injection been made while the patient was lying in the lateral position, and then because for some reason it was not desirable or possible to have the patient sitting up.

In my early cases the injection was made in the third lumbar space, but after several patients in succession failed to develop the anaesthesia, and this had been associated with a defective flow of the spinal fluid, I went to the second space, where the flow seemed to be more free, and now usually inject it in the first space, where the flow is better still. It is essential to get a free run of the cerebro-spinal fluid; if I cannot get this in any patient, I know from experience that the anaesthesia will be slight or not appear at all. I use Bier's syringe, and, after withdrawal of the trocar, if a free flow of fluid does not come at once, the cannula can, with a gentle rotation, be pushed a little further in or withdrawn a little, and usually a good flow will follow, but not always; in some patients it seems to be impossible to get a free run. After the stovain (from 0 04 to 0.06 cg.) is injected the pressure of the cerebro-spinal fluid is, in the majority of patients, sufficiently great to force the syringe plunger back into the barrel, and I generally allow this to occur several times and so ensure a good mixture of the solution with the fluid. The impression I have is that a better anaesthesia results when this is done than when the pressure of the cerebro-spinal fluid is not great enough to allow this mixing to be brought about.

In one patient, a feeble man, aged 70, I failed to get any cerebro-spinal fluid after puncturing four times and without any doubt that the needle was well in position in the canal at each puncture.

There is no difficulty in introducing the needle; the ligamentum subflavum is strong and offers a considerably increased resistance, but the cessation of this just as the needle gets through it is quite obvious and at once allows one to recognize that the needle is into the spinal canal. After the cannula is withdrawn the puncture is covered with collodion and the table raised at the foot, the patient being kept supine.

My experience as to the time required to get the effects produced is much the same as Mr. Barker's, from five to fifteen minutes or thereabouts. Usually muscular paralysis of the lower limbs is complete before the sensation is abolished; in only one of my cases was sensation abolished while the power of moving the lower limbs was retained. Analgesia has on the average reached the level of the tenth dorsal nerve, but has often been much higher in ten minutes from the time of the injection; in several cases it has been as high as the fifth or fourth. In one patient analgesia was complete up to the clavicle on both sides, without any respiratory difficulty being induced. The highest incision I have made under stovain analgesia has been for umbilical hernia.

In only one patient in whom the analgesia failed to develop was a second injection given. In this case two minutes after receiving the second injection the patient was unable to move his lower limbs, but it quite failed to diminish his sensation in any way. He got at each of the two injections 0.06 cg. stovain.

Very few of the patients have manifested any discomfort during the period they were under the influence of the drug. There has been a little retching or vomiting in the case of a few, which, however, was nearly always slight, but four patients had syncopal attacks, always associated with retching or vomiting; they were treated with stimulants, hypodermic injections of strychnine, ether, etc., but in no case was there any anxiety about the condition.

One patient, in whom stovain had not acted sufficiently, and who, therefore, got chloroform, had a syncopal attack during its administration, but I do not know that this is to be attributed to the stovain.

One patient, an enormously fat woman, who was being operated on for a strangulated umbilical hernia, died in the operating theatre; she was in such a state on her admission that a general anaesthetic was impossible, but I thought the operation might be done with stovain. She got 0 04 cg., and analgesia extended to the fourth intercostal space. The sac contained a small piece of omentum and in it a small knuckle of bowel, the omentum being adherent all round the ring. As soon as separation of this omentum was begun she commenced to vomit, and every time any tension was put upon the parietal peritoneum she vomited. She died rather suddenly, just as the wound was being closed. In my opinion the stovain was not responsible for the death at all. In two other operations, one inguinal colostomy and the other removal of the vermiform appendix, the analgesia was excellent for the incision, but when the parietal peritoneum came to be handled the patients complained of so much pain that a general anaesthetic had to be given. Except in these three patients manipulation of the peritoneum, which naturally has always been most severe in the hernia cases, has not been noticed by patients any more than the making of the incision.

The oldest patient with whom I have used stovain was 80 years and the youngest 13. The old patient, who had strangulated hernia, became rather drowsy, and either could not or would not reply to questions; but there has not been any other patient whose cerebral activity appeared to be affected by the drug.

In two patients unilateral analgesia only occurred. In one of them, operated on for a fracture of the left tibia, which required to be fixed, this was not of any moment, for the analgesia fortunately was present in the limb to be operated on, while in the other patient, who was to be operated on for a right inguinal hernia, the analgesia was perfect in the left lower limb and up the left side of the abdomen to the tenth dorsal nerve, but strictly limited to the left side, it did not pass beyond the middle line at all. On the right side sensation was not in the slightest degree affected, so that he required a general anaesthetic for his operation. Both patients were injected to the left of the middle line.

The following is a list of 100 cases in which stovain has been injected:

Amputations (thigh 2, leg 2, ankle 1, toes 1)	6
Hernia (radical operation 29, herniotomy for strangulated hernia 2)	31
Appendicitis	12
Wiring fractures	7
Varicose veins	6
Hydrocele	6
Haemorrhoids	6
Plastic operations on urethra...	4
Suprapubic prostatectomy	3
Lithotomy	2
Inguinal colostomy	2
Varicocele	2
Fistula *in ano*	2
Skin grafting	2
Loose semilunar cartilage	2
Prolapse of uterus	1
Removal of testicle	1
Excision of coccyx	1
Acute central osteomyelitis of femur ...	1
Double osteotomy for genu valgum... ...	1
Pyonephrosis	1
Amputation of penis	1
	100

Among these 100 patients there were 22 cases of failure to induce analgesia sufficient to allow the operation to be completed. These failures may be divided into two classes: A, Cases of partial failure; B, cases of complete failure.

A. *Partial failures*, of which there were 7. Under this term I include those patients in whom analgesia was established but hardly reached a height sufficient to

enable the proposed operation to be carried out or completed. With one exception, a case of haemorrhoids, these were all cases of operations above the level of Poupart's ligament. In the haemorrhoid case the analgesia stage only lasted for thirty minutes, and although the operation was almost finished the patient required a little chloroform at the end. The stovain in this case was not satisfactorily injected as there was a very poor flow of cerebro-spinal fluid. In the others of this class of partial failures the analgesia was good up to a certain level and the injection was well made; they were as follows:

1. D. R., aged 60. Inguinal colostomy.—The abdomen was opened without any pain, but any manipulation of the parietal peritoneum caused great pain, and he required to have a general anaesthetic to enable fixation of the colon in the wound to be made.
2. J. D., aged 61. Carcinoma of penis.—The stovain produced good analgesia to the level of the anterior superior spinous processes of the ilium. As in these cases of carcinoma of the penis I always remove the glands in both Scarpa's triangles, as well as in both iliac fossae, the analgesia in this patient was not sufficiently high for this latter part of the operation.
3. G. L., aged 36. Appendicitis.—Stovain produced complete analgesia as high as Poupart's ligament on each side, but no higher after twenty minutes.
4. M. K., aged 27. Appendicitis.—Analgesia developed to the level of first lumbar nerve, just short of the site of the incision.
5. J. B., aged 51. Right inguinal hernia.—Stovain produced good analgesia in the left side up to the umbilicus, but none at all in the right side of the middle line.
6. L. C., aged 36. Appendicitis.—Analgesia perfect on both sides to a point just below the site of the incision.

B. *Complete failure* to produce analgesia, of which there were 15 instances. In 6 of these patients the injection was not satisfactory, owing to a deficient flow of the cerebro-spinal fluid. I think there can be no doubt that it is absolutely essential for successful analgesia that the flow of cerebro-spinal fluid shall be free. It must run from the cannula, and about 5 or 8 c.cm. should be permitted to escape before the injection is made. These six cases were as follows:

Appendicitis	2
Hydrocele	1
Hernia, radical operation	1
Amputation of leg	1
Prostatectomy	1

In the last patient complete muscular paralysis of the lower limbs was caused, but no loss of sensation occurred after twenty-five minutes from the time the injection was made.

In the remaining 9 cases the injection of the solution was well carried out. There was no defect in the technique whatever, but the patients did not develop any analgesia at all. I can only suppose that this was due to some idiosyncrasy on their part towards the drug. Those patients were all males, whose ages ranged from 22 to 61. Only one of them received a second injection, which also failed, after being well injected, to produce any analgesia, though the second injection caused muscular paralysis of the lower limbs.

The after-effects of stovain have not been troublesome at all, so far as I have seen; in fact, I have been surprised that there has been so little after-discomfort. Headaches have been complained of by some patients, one or two have vomited a very little after the operation, but none of the patients have ever complained of the severe headaches so often seen after ether and chloroform, and the vomiting has been trivial to a degree as compared with what is often met with after these two anaesthetics. But a good many of the patients have complained greatly of pain in the wounds for the first hour or two after operation, very much more so than patients who have a general anaesthetic do, and I imagine this is due to the fact that these latter patients have their cerebral activity so dulled by the anaesthetic that they do not appreciate the irritation of the nerves of their wounds, whereas the stovain patients, who have their intellect unimpaired throughout the operation, are not only capable of appreciating any unusual sensations, but are on the look-out for them. None of the patients who got stovain injections had any trouble with the bladder function after it.

I have thought it might be worth while to publish these notes, for there is no doubt that in stovain we have a very excellent anaesthetic, although it may be a little uncertain in its action, for the region comprising the lower limbs and lower part of the abdomen, and it will undoubtedly prove a great boon to many people who hold back from an operation simply in consequence of their fear of the general anaesthetic, their chief dread of an operation being the idea of the loss of consciousness inseparable from the use of chloroform, ether, etc. These patients deserve every consideration, and in stovain injected into the spinal fluid we have an agent which comes nearer towards supplying their want than by any other means.

THE CARE OF THE PATIENT DURING SERIOUS ABDOMINAL OPERATIONS.

BY H. BELLAMY GARDNER, M.R.C.S., L.R.C.P.LOND.,
LATE INSTRUCTOR IN ANAESTHETICS AT CHARING CROSS HOSPITAL.

THOSE who undertake the care of the patient's general state in anaesthesia during difficult and dangerous abdominal operations should particularly consider the methods by which reserve force may be retained for the later hours of physiological readjustment when depressing factors and complications may be encountered. These methods are directed towards increase of vasomotor tone, maintenance of temperature, elimination of anoxaemic (asphyxial) factors, prevention of shock, arrest of and compensation for haemorrhage, mechanical circulatory considerations, and correct degree of anaesthesia.

In my experience a marked improvement of vascular tone is attained by the internal administration of liquor strychninae hydrochloratis ♏v three times a day for a week to patients about to undergo serious abdominal operations, for not only is the nervous system fortified against the event, but early signs of exhaustion are not then displayed during the surgical manipulations.

I also observe that strong purgation lowers the general blood pressure for a time, and consider it should be avoided on the night immediately preceding a serious operation.

The effect of rest in bed for two or three days previously, combined with the regulation of the diet and bowels and compliance with nursing discipline, assist materially in improving the tranquillity and in reducing the after-effects of anaesthesia.

In the next place a thin blanket is not enough covering for a patient during an operation, for lowering of temperature takes place from anaesthesia *per se* as well as from exposure of skin surfaces and of internal organs. As loss of bodily heat may turn the scale against even the most robust, woollen stockings, night garments and one doubled blanket to cover the chest and arms, with another double blanket to wrap up the legs and feet are required to maintain the temperature. A hot-water bed or tank covered with blankets beneath the patient is of distinct advantage during long operations, but hot bottles should not be used for anaesthetized patients, as they are very likely to burn the skin with which they may come in contact. Heated blankets are equally efficient and more easily applied.

Large surfaces of the body near the wound should not be exposed or covered with wet cloths, which produce rapid chilling of the skin by cooling and evaporation, and if these are to be used mackintosh and, if possible, blanket also should lie beneath them.

It must not be forgotten in this connexion that exposed intestines and other vascular organs produce a rapid loss of heat and should be covered when drawn out by a succession of warm sponges or wads of gauze. A patient always begins to flag when eviscerated bowel is allowed to cool.

It is not enough that a patient should continue breathing during a prolonged operation; but adequate oxygenation of the blood should be proceeding, for no more depressing factor can be at work than partial anoxaemia (asphyxia), both by exhausting the vitality of the nervous system and weakening the force of the heart.

The best method of ensuring adequate oxidation is by establishing oral respiration by means of a mouth prop between the teeth, and further in some cases the use of a small tongue clip to prevent the occlusion of the airway by this organ touching the pharyngeal wall.

Feeble respiration can be stimulated by friction of the lips with a towel under chloroform, and may also be

deepened by the addition of ether upon the mask or a change to the C_1E_2 mixture.

Shock or the exhaustion of the nervous centres, which is rapidly produced after a transient primary stimulation by traction, stretching or prolonged manipulation of certain highly-sensitive structures such as the mesentery, the peritoneum within Douglas's pouch, and the pedicles of abdominal organs and tumours, can best be met by the use of ether during such stages.

In my opinion ether possesses a specific action in blunting and in some cases preventing the transmission of nerve stimuli more effectually than chloroform, and when used at particular stages of an operation which may be proceeding under chloroform protects the patient from the occurrence of the respiratory and circulatory shock which otherwise appears as the result of the operative measures.

When ether is contraindicated and the reflex effect of surgical stimuli disturbs the breathing so far as to interfere seriously with efficient oxygenation by causing laryngeal spasm, the hypodermic injection of morphine grain ¼ proves of considerable value in additionally narcotizing the peripheral nerves and allowing respiration to proceed unhampered by the surgical manipulations. Besides shock, lowering of general blood pressure, with feeble respiration due to anaemia of the medullary centres, may occur from haemorrhage alone. The anaesthetist should inform the surgeon that the loss of blood is affecting the patient when he first observes a change in the depth of respiration, other causes in his judgement being excluded, before blanching of the skin has definitely appeared.

Recovery of vascular tone and respiration is remarkably rapid from the moment of complete arrest of haemorrhage, and this is the most urgent and vitally important treatment. The injection of a pint and a half or more of hot saline solution into the rectum, with raising of the feet and lowering of the head, are next in value. A funnel, tubing, and silver nozzle for the transfusion of saline fluid into a vein of the arm should always be at hand in case of more severe haemorrhage.

Syncope due to the removal of the weight of fluid or tumours from the splanchnic area may be anticipated and prevented by the surgeon removing the tension slowly, and the anaesthetist lowering the patient's head at the same time.

After an operation conducted in either the Trendelenburg or the lithotomy position, if haemorrhage has occurred it is best not to let the patient down flat at its termination, but to keep the feet raised for some hours afterwards to prevent the supervention of cerebral anaemia before the blood pressure has returned to normal level.

In deep stages of anaesthesia the vasomotor mechanism is paralysed and whenever shock or haemorrhage begin to appear the anaesthesia should be lightened so that the vasomotor system may recover its activity and readjust the disturbed blood pressure.

These points being all carefully put into practice preserve the vitality of the patient in such a manner that a period of many hours in which the general state borders on collapse after abdominal operations is replaced by a condition of general warmth and good colour, rapid recovery of consciousness and normal circulation.

STERILITY AMONG X-RAY WORKERS.

BY ALFRED C. JORDAN, M.D., B.C.CANTAB.,

MEDICAL RADIOGRAPHER, GUY'S HOSPITAL, AND ROYAL HOSPITAL FOR DISEASES OF THE CHEST.

THE fact is now well-known that azoospermia is produced by exposure to *x* rays. What is not yet appreciated is the fact that a worker who has taken "every reasonable care" to avoid exposing himself unduly to their action becomes sterile after working daily for a year or so. By "reasonable care" I mean that he has had his *x*-ray tube enclosed in a protective box, has worn a protective apron, has conducted *x*-ray treatment with the tube in a protective shield, and has himself kept at a distance of a few yards from the tube.

Dr. Albers Schönberg, of Hamburg, has adopted the expedient of erecting a cabin, lined with sheet lead, in the middle of his skiagraphy room; within this cabin is the switch-board from which he starts the current. There is a small window of lead-glass, through which he is able to observe the tube and the patient. As he takes all his skiagrams with the tube unshielded, no less complete measure would suffice to afford him and those working with him sufficient protection. Unfortunately, he is precluded by his method from carrying out a very important branch of the work—namely, the examination with the fluorescent screen. For surgical work this can, perhaps, be dispensed with and no great loss ensue; in the examination of the chest and stomach, however, the screen examination is of great importance, and it becomes necessary to devise other means of protecting the operator.

The tube-box which is ordinarily supplied in this country is far from efficient; the top has a quantity of red lead or white lead packed between wooden boards, and the sides are of lead-glass, or often of ordinary plate-glass. More often than not there is an area between the side and the top which is almost entirely unprotected. If a box of this description be carefully examined at close quarters with the screen while the tube is in action, it will be seen that quite an appreciable quantity of *x*-rays filters through the walls of the box.

The means which I suggest as probably sufficient are the following: The tube-box should be made entirely of wood, and should be completely lined on the outside with an efficient protective rubber material with the exception of an aperture at the top which is controlled by an adjustable diaphragm. A view of the tube may be obtained through a small lead-glass window covered with a flap of the protective material. The rubber material which truthfully answers the description of "protective" is manufactured by Messrs. Müller of Hamburg, and tested by Dr. Albers Schönberg, probably the most exacting man in Germany where the question of protection from *x* rays is concerned. The operator should always wear a protective apron reaching from the shoulders to below the knees, and, as these two means are not sufficient, he should also have an upright rectangular wooden screen, 3 ft. 3 in. in height and 2 ft. in width, lined on both faces with 3-lb. sheet lead, and should place it close to the couch between himself and the tube box. A larger screen (say 4 ft. square) should be supplied for use while *x*-ray treatment is in progress. The screens may be mounted on castors. Screens of the sort I describe are not in the operator's way to an uncomfortable extent. For treatment the tube should always be completely enclosed. Eventually I believe sheet metal shields and tube-boxes will be available, but this cannot well be before static machines have been so far improved and developed as to be used in place of induction coils, as is done with great success in Paris, in Dr. Sabouraud's treatment department.

I would urge those who are taking up *x*-ray work not to allow themselves to be influenced by the unsympathetic remarks of their colleagues, who perhaps consider them to be taking excessive precautions; surely their worst enemies would not desire them to injure themselves, did they appreciate the actual facts of the case.

I am not aware of any reliable data bearing on the interesting question of the possibility of recovery from sterility, once it has become complete; assuming the condition to be recognized early enough, say while there are still immobile spermatozoa, it would appear possible that two or three years of complete abstinence from *x*-ray work might result in some degree of recovery, but I do not see how a man could expect to recover otherwise unless he were to take such extreme measures of precaution as would preclude the possibility of his doing really useful work.

Considering the entirely undefended position of the testes, it is no matter for surprise that they should be affected by very small doses of *x* rays, provided the doses be repeated often enough. Wisdom suggests the advisability of inserting a small protective apron under the clothes as an additional measure. This expedient is in fairly general use, but it is merely an adjuvant, and cannot be relied upon in the absence of the other measures I have described.

MISS MARY ANN MELLOR DAVIDSON, of Higher Broughton, Salford, who died on May 17th, left £1,000 each to St. Mary's Hospital, Manchester; Manchester Royal Infirmary and Dispensary, and Stockport Infirmary.

SPONTANEOUS ANEURYSM OF THE DORSALIS PEDIS ARTERY.

By ARCHIBALD CUFF, B.A., M.B., B.C., F.R.C.S.,
SURGEON TO THE ROYAL INFIRMARY, SHEFFIELD.

Aneurysm of the vessels of the foot is of such rare occurrence (Chauvel, quoted by von Bergmann, could only collect the records of twenty such), and, when it does occur, is nearly always to be traced to definite trauma, that I have thought the history of the following case of spontaneous aneurysm occurring in my hospital practice worth recording.

The patient, a woman aged 53, had noticed a small swelling on the dorsum of her left foot for over two years. It had until the last four or five weeks given her very little inconvenience, but of late had been enlarging and had given her a good deal of pain. There had never been any injury of the foot, and no history of syphilis was to be obtained.

On the dorsum of the foot was a pulsating, expansile swelling about the size of a small walnut, over which the skin was slightly reddened and thinned. It presented all the typical and usual signs of aneurysm, and was situated towards the point of termination of the dorsalis pedis artery. The patient's arteries generally were slightly thickened, the pulse tension increased, and the second sound over the aortic valves accentuated. Nothing else abnormal was to be made out in her physical condition.

The treatment adopted was excision of the aneurysm, and the patient made a good recovery. Well-marked endarteritis of the resected portions of the artery was present, with very considerable thickening of its walls.

The Science Committee
of the
British Medical Association.

REPORT CII.

UPON THE BACTERIOLOGY OF THE SUMMER DIARRHOEA OF INFANTS.

[Second Communication.]

By H. de R. MORGAN, M.A.Oxon., M.R.C.S.Eng.,
L.R.C.P.Lond., D.P.H.Cantab.,
ERNEST HART MEMORIAL SCHOLAR.
(From the Bacteriological Department, Lister Institute of Preventive Medicine.)

Summary of Last Year's Report.

In my previous report, which was published in the British Medical Journal of April 21st, 1906, a detailed account was given of my investigations into the bacteriology of the summer diarrhoea of infants in London during the course of the summer of 1905.

The non-lactose fermenting bacteria isolated from the stools or intestines of 58 cases of summer diarrhoea were compared with those isolated from the stools of 20 normal infants under 2 years of age. By this comparison it was possible to show that a certain bacillus pathogenic to animals, which has been designated by me as "No. 1 bacillus," was isolated in 28 out of the 58 cases of summer diarrhoea, whereas that bacillus was found in the stools of only 1 of the 20 normal cases, and even then its identity was doubtful, as in that case it was found to be non-pathogenic for experimental animals. The pathogenicity of Bacillus No. 1, which was isolated from cases of summer diarrhoea, was then tested by feeding experiments. A series of young rats and young rabbits were fed on various strains of the bacillus, half an agar tube being used in the case of the former, and one tube in the case of the latter, with the result that all the animals were attacked with diarrhoea and died within a few days, the bacillus being recovered from their spleens after death.

I made inquiries from Dr. Houston and also from Dr. MacConkey, both of whom had made extensive bacteriological examinations of water, sewage, human faeces and milk, as to whether either of them had ever isolated this bacillus from any of the above sources. They both very kindly looked up their notes, and were able to assure me that they had never isolated any such bacillus, and so far as I can ascertain the bacillus has not hitherto been described.

The characteristics of this bacillus are very distinctive. It is a motile rod about the size of the *Bacillus enteritidis* of Gaertner, it is non-sporebearing, does not liquefy gelatin, and gives a negative reaction on broths containing mannite, dulcite, lactose and cane sugar, but produces acid and a small amount of gas on glucose broth. The fact of its producing acid and gas on glucose broth, and not on mannite broth, brings this bacillus into a comparatively small group, the only important pathogenic member of which is the hog cholera bacillus of McFadyean from which, however, it is easily differentiated by other tests.

These results aroused the suspicion that this bacillus might be an important factor in the causation of the summer diarrhoea of infants, and this suspicion was strengthened by the fact that it was isolated in pure culture from the stools of one of the nurses who had contracted diarrhoea in the ward set apart for this disease in the Hospital for Sick Children, Great Ormond Street.

In view of the importance of the results obtained from one year's investigations, it seemed advisable to continue the work on the same lines during another summer epidemic. I therefore wrote to the authorities at the Hospital for Sick Children, Great Ormond Street, who very kindly promised to supply me with specimens for another year. Dr. Batten also undertook to supply the stools and *post mortem* specimens from the ward set apart for diarrhoea at that hospital, independently of whether he diagnosed them as suffering from summer diarrhoea or not, at the same time withholding his diagnosis until after the bacteriological examination.

This Year's Research.

During last summer (1906) 54 cases from the special ward set apart for diarrhoea at the Hospital for Sick Children, Great Ormond Street, were examined bacteriologically in the same manner as during the previous year, except that on this occasion the spleens and mesenteric glands were examined as well as the stools and small and large intestines.

Methods Adopted for the Isolation of the Bacteria.

A small portion of material, either from the faeces or scrapings from the mucous surface of the small or large intestine, was transferred to a tube of sterile peptone beef broth and an emulsion made; from this the bile-salt-neutral-red-lactose-agar plates of MacConkey were inoculated, and incubated for twenty-four hours at 37° C. In the examination of the spleens and mesenteric glands, the outside of these organs was previously sterilized in a Bunsen flame, and a small portion taken from the inside and rubbed direct on to the lactose agar plates, which were then incubated. On the following day all the colourless colonies—that is, the non-lactose fermenters—were picked off, and put into tubes of lactose broth. These tubes were then incubated for five days at 37° C., at the end of which time all those that had not produced acid and gas were retained and the rest discarded. The former were then used to inoculate gelatine tubes, and set aside for future investigation. In the numerous instances where no colourless colonies were to be found on the agar plates, the same material, which had been kept frozen in the cold room, was used for reinoculating fresh agar plates.

TABLE I.

Nomenclature.	Morphology.	Glucose.	Mannite.	Dulcite.	Lactose.	Cane Sugar.	Litmus Milk.			Indol.	Sorbite.	Gelatine.	No. of Cases in which Found.
							1 Day.	3 Days.	15 Days.				
1	M. B.	A. G.	—	—	—	—	0	0	Alks.	+	—	—	19
3	N. M. B.	A.	A.	—	—	—	0	0	0	+	A.	—	3
4	N. M. B.	A.	A.	—	—	—	0	0	0	—	—	—	1
4A	N. M. B.	A.	A.	—	—	—	A.	A.	A. C.	—	—	—	5
4B	M. B.	A.	A.	—	—	—	A.	0	Alk.	+	—	—	1
4C	M. B.	A.	A.	—	—	—	A.	0	Alk.	—	—	—	1
5	M. B.	A.	—	—	—	—	0	0	Alks.	+	—	—	4
6	M. B.	A. G.	A. G.	A. G.	—	—	A.	0	Alk.	—		—	4
7	M. B.	A. G.	A. G.	A. G.	—	—	A.	Alk.	Alk.	+		—	4
7A	N. M. B.	A. G.	A. G.	A. G.	—	—	A.	0	A. C.	+		—	1
10	N. M. B.	A. G.	A. G.	A. G.	—	A. G.	A.	A.	A. C.	+		—	1
11	M. B.	A. G.	A. G.	A. G.	—	A. G.	0	0	Alk.	+		—	2
11A	M. B.	A. G.	A. G.	A. G.	—	A. G.	A.	A.	Alk.	—		—	3
11B	M. B.	A. G.	A. G.	A. G.	—	A. G.	0	A.	A. C.	+		—	1
13	M. B.	A. G.	A. G.	—	—	A. G.	A.	A.	A. C.	+		—	3
13A	N. M. B.	A. G.	A. G.	—	—	A. G.	A.	A.	A. C.	+		—	2
14	M. B.	A. G.	A. G.	—	—	—	A.	A.	Alks.	+		—	1
14A	N. M. B.	A. G.	A. G.	—	—	—	A.	Alk.	Alk.	+		—	3
14B	M. B.	A. G.	A. G.	—	—	—	A.	A.	A. C.	+		—	3
14C	N. M. B.	A. G.	A. G.	—	—	—	A.	0	A. C.	+		—	2

TABLE II.

Bacterium.	Morph.	Glucose.	Mannite.	Dulcite.	Lactose.	Cane Sugar.	Litmus Milk.			Litmus Whey.		Indol.	Sorbite.
							1 Day.	3 Days.	15 Days.	1 Day.	7 Days.		
B. dysentery, Flexner, Philippines	B. Non-motile	A.	A.	—	—	—	A.	Alks.	Alks.	A.	Alks.	+	—
B. dysentery, Shiga ..	,,	A.	—	—	—	—	A.	Alks.	Alks.	A.	Alks.	—	
B. typhoid	B. Motile	A.	A.	—	—	—	A.	A.	A.	A.	A.	—	A.
B. enteritidis, Gaertner..	,,	A. G.	A. G.	A. G.	—	—	A.	Alk.	Alk.	A.	Alk.	—	
B. paratyphoid B, Schottmüller	,,	A. G.	A. G.	A. G.	—	—	A.	Alk.	Alk.	A.	Alk.	—	
B. paratyphoid A, Schottmüller	,,	A. G.	A. G.	A. G.	—	—	A.	A.	A.	A.	A.	—	
B. hog cholera, McFadyean	,,	A. G.	—	—	—	—	A.	A.	A.	A.	A.	+ Slight	

A. = Acid. G. = Gas. C. = Clot. S. = Slight. — = No reaction. M. B. = Motile bacillus. N. M. B. = Non-motile bacillus.

It was thought advisable to continue the use of the lactose agar plates this year, in order to isolate as many of the non-lactose fermenters as possible, so as to compare the relative frequency of each species. If, however, Bacillus No. 1 had been looked for exclusively, mannite agar plates would have been more serviceable, since that bacillus does not ferment mannite. But if this method had been adopted, the frequent occurrence of some other organism might have been overlooked, since the non-mannite fermenting group of bacilli is relatively smaller than the non-lactose fermenting one.

The next step was to examine all the cultures that had not liquefied gelatine at the end of six weeks, and to cultivate them on the various media used for differentiation—namely, broth containing glucose, mannite, dulcite, lactose, cane sugar, and litmus milk—to examine their morphology, motility, etc., and their capability of producing indol in peptone beef broth when incubated for five days.

In Table I is shown the results of the examination of the morphology and cultural characteristics of sixty-seven organisms of the lactose non-fermenting class isolated from the spleens, mesenteric glands, intestines, or faeces of infants suffering from diarrhoea.

Table II gives the characteristics of some of the known pathogenic intestinal bacteria.

Bacillus No. 6.—It will be seen on comparing the two tables that this bacillus, which was isolated from four patients after death, resembles the *Bacillus enteritidis* of Gaertner, and it was subsequently proved by its agglutination reactions to belong to this group.

Bacilli Nos 3 and 4—There is a partial resemblance between these bacilli and the Philippine dysentery bacillus of Flexner. No. 3, however, differs in its reaction on sorbite, on which it produces acid, whereas Flexner's bacillus does not do so, and No 4 does not produce indol, whereas Flexner's bacillus gives a well-marked indol reaction. Bacilli Nos. 3 and 4 also both fail to agglutinate with dysentery serum (Flexner).

Bacillus No. 5 resembles the *Bacillus dysenteriae* of Shiga in its cultural reactions, but differs in its distinct motility and its absence of agglutination with antidysentery serum (Shiga).

Bacillus No. 1, as was pointed out in my last year's report, resembles no other known pathogenic organism, except the bacillus of hog cholera of McFadyean, from which it differs, however, in its alkaline reaction on litmus milk, its greater production of indol, and its failure to produce acid and gas on arabinose, maltose, and dextrin.

As regards the cultural reactions of No. 1, a considerable amount of variation was found in the degree of alkalinity produced in various batches of litmus milk. The amount

of gas produced in glucose broth also varied considerably' certain strains of this bacillus producing so little gas that the Durham's tube failed to catch any, and it was only by making a glucose agar shake culture that the production of gas could be determined.

The use of glucose agar shake cultures seems to be important when looking for this organism, in order to differentiate it from Bacillus No 5, which culturally closely resembles it, except that it produces acid, but no gas on glucose. The gas-producing power of Bacillus No. 1 on glucose media seems to be decreased by its being kept for some time on artificial media. It has been observed that cultures which shortly after their isolation gave a measureable amount of gas in the Durham's tube failed to do so after eighteen months' growth on artificial media. When, however, agar shake cultures were made from them, their gas production became quite evident.

MATERIAL FROM WHICH BACILLI NOS. 1 AND 6 WERE ISOLATED.

Bacillus No. 1 was isolated from the stools of 16 cases, from the scrapings of the large intestines of one case, from the scrapings of the large and small intestines of one case, and from the mesenteric glands and large and small intestines of another. It was never found in the spleen of any case examined, which was disappointing in so much as it had been invariably found present in the spleens of young rats and young rabbits fed on it experimentally. It will be seen later, however, that invasion of the mesenteric glands and spleen did not occur in feeding experiments on monkeys.

Bacillus No. 6, or the Gaertner type of bacillus, was isolated from the spleens and mesenteric glands in 3 cases, and from the spleen only in the fourth case.

RELATIVE FREQUENCY OF THE BACILLI ISOLATED: PREPONDERANCE OF BACILLUS NO. 1.

Material from 54 cases was examined, and of these 27 had been diagnosed clinically as being due to acute infective diarrhoea, 7 to catarrhal diarrhoea, 2 to Gaertner infections, and the remaining 18 to various ailments complicated with diarrhoea.

Bacillus No. 1 was isolated from 12 out of the 27 acute infective diarrhoea cases, and from 3 of the 7 catarrhal diarrhoea cases; in other words, this bacillus was isolated in 15 out of 34 cases of summer diarrhoea, giving it a large preponderance over any other bacillus isolated. The bacillus which held the second place in frequency of occurrence was No. 4a, which was found in only 5 cases out of the 54 examined.

Bacillus No. 1 was also found in 4 out of the remaining 18 cases, the 4 in which it was found having been diagnosed clinically as being due respectively to marasmus, tuberculosis and diarrhoea, cleft palate and diarrhoea, and bronchopneumonia and diarrhoea. Considering, however, that these 4 cases were complicated with diarrhoea, and were taken from the ward set apart for that condition, it is not surprising that this bacillus should have been isolated from their stools.

AGGLUTINATION REACTION EXPERIMENTS.

The agglutination of certain of the bacilli was tested with serums obtained from animals immunized with known pathogenic micro-organisms.

Bacilli Nos. 3 and 4 were tested with the Lister Institute dysentery serum, which gives a reaction with dysentery bacilli in a dilution of 1 in 100,000; but no reaction was obtained with either No. 3 or No. 4 in a dilution of 1 in 1,000, which, together with their slight difference in cultural characteristics from Flexner's dysentery bacilli, excluded the possibility of their belonging to that group.

The four strains of Bacilli No. 6 were next tested against the serums of three rabbits immunized against the *Bacillus enteritidis* of Gaertner, the *Bacillus enteritidis* of Aertrycke, and the *Bacillus paratyphoid* B. of Schottmüller respectively. These serums agglutinated their own bacilli in a dilution of 1 in 2,000. Two of the strains of No. 6 gave a distinct reaction with Gaertner serum, and two with the Aertrycke serum, in a dilution of 1 in 2,000, but all failed to give any reaction with the paratyphoid B. serum.

The inter agglutination of the various strains of Bacillus No. 1 was next investigated. A rabbit was immunized by intravenous injection with the bacillus isolated from Patient No. 33, and a serum was obtained which agglutinated this bacillus in a dilution of 1 in 2,000.

TABLE III.—*Agglutination of Various Strains of Bacillus No. 1, with Serum Agglutinating Strain 33 M in a Dilution of 1 in 2,000.*

Strain of Bacillus.	Dilution of 1 in 20.	Dilution of 1 in 200.	Dilution of 1 in 2,000.
33 M	3	3	3
7	3	3	0
12	3	3	0
15	3	3	2
16	3	0	0
19	0	0	0
22	3	2	0
26	0	0	
28	0	0	
30	0	0	
35	3	3	2
36	3	0	0
41	0	0	0
44	0	0	0
46	3	3	0
47	3	3	0
51	3	3	2
52	3	3	2

3 = Complete reaction; 2 = distinct reaction; 1 = slight reaction.

It will be seen from Table III that of the 17 strains of Bacillus No. 1 which were investigated, 4 were agglutinated in a dilution of 1 in 2,000, 5 in a dilution of 1 in 200, 2 in a dilution of 1 in 20, and 6 failed to react at all. Very similar results to these were obtained last year from the various strains of this bacillus isolated during the previous summer.

THE PATHOGENICITY OF THE BACILLI ISOLATED FROM THE PATIENTS.

One of the two bacilli which were so readily agglutinated by the serum made by the injection of Aertrycke bacilli, and classed under No. 6, was injected subcutaneously into a rabbit in the dose of ¼ c.cm. of a

TABLE IV.

No. of Case from which Bacillus was Isolated.	Experimental Animal.	Dose.	Diarrhoea.	Died No. of Days after Experiment.	Bacillus Recovered from Spleen.
7	young rat	½ agar tube	?	8	0
12	,,	,,	?	9	0
15	,,	,,	+	19	+
16	,,	,,	?	12	0
19	,,	,,	+	3	0
20	,,	,,	+	11	0
22	,,	,,	+	2	+
26	,,	,,	+	11	+
28	,,	,,	+	10	+
30	,,	,,	+	3	+
33	,,	1 agar tube	+	1	+
35	,,	,,	+	1	+
36	,,	,,	+	1	0
41	,,	,,	?	lived	—
44	,,	,,	?	6	0
46	,,	,,	+	1	0
47	,,	,,	+	1	+
51	,,	,,	+	2	+
52	,,	,,	?	lived	—

24-hours old broth culture, for the purpose of immunization, with the result that the rabbit died on the sixth day, and the organism was recovered from the heart blood, thus proving that this organism is a virulent race of the Aertrycke bacillus.

In order to test the virulence of the various cultures of No. 1 bacillus, each of these was used for feeding experiments on young rats. Half an agar culture of each of the nine different strains of No. 1 was used for feeding nine young rats, one rat being used for each strain, and an equal number of control rats being kept. In the next experiment young rats were fed on the remaining ten strains of No. 1, a whole agar culture in this case being used for each rat, an equal number of control rats being kept. Table IV shows the result of these experiments.

It will be observed that all the rats died with the exception of two, in which case the experiment was repeated three times with fresh rats with the same result, showing that these two strains of No. 1 were of a lower virulence for rats than the rest.

Diarrhoea was observed in 12 out of the 19 rats, but its occurrence in the others might easily have escaped detection. The bacillus was recovered from the rats' spleens after death in 9 cases out of the 19; it was not looked for in any of the other organs.

It was then thought that monkeys, being more closely allied to human beings, might be more suitable than rats as experimental animals. Four small full-grown monkeys were fed on one agar tube of Bacillus No. 1. A different strain was employed for each monkey. The results of these experiments are shown in Table V.

TABLE V.

No. of Case from which Bacillus was Isolated.	Experimental Animal.	Dose.	Diarrhoea No. of Days Before Death.	Died No. of Days After Experiment.	Stools or Organs from which Bacillus was Recovered.
35 R	Monkey	1 agar tube	1 day	3	Bile.
35	,,	,,	2 days	12	Faeces and small intestine.
30	,,	,,	6 days	8	Faeces 3rd and 7th day. large and small intestines.
52	,,	,,	3 days	15	Faeces 13th day.

It will be observed that the onset of the diarrhoea varied from two to twelve days after the feeding. The bacillus was recovered from all four of the animals after the onset of the diarrhoea, from three after death, and from the faeces of three after the onset of the diarrhoea. The bacillus was not found in the spleens of these animals, a condition analogous to that found in infants suffering from summer diarrhoea.

It will be seen that Strain 52, which proved non-virulent for rats, produced diarrhoea and death in a monkey, the only difference from the other strains being that the incubation period before the onset of the diarrhoea was onger.

The condition produced in monkeys by these feeding experiments closely resembled infective diarrhoea in infants, the diarrhoea being acute and progressive in severity, accompanied by rapid emaciation followed by death. No vomiting was observed in any of the monkeys. Control monkeys kept under identical conditions remained quite healthy all the time.

The virulence of Bacillus No. 1 was also inadvertently tested on a goat, which for the purpose of immunization had been injected intravenously with an agar culture of a strain of that bacillus, which had been isolated from the mesenteric glands of a child that had died of acute infective diarrhoea. The goat died in about eighteen hours, and the bacillus was recovered from the heart blood, spleen, and liver. Considering that a rabbit not one-twentieth part of the weight of this goat had been successfully immunized with half the dose of the same culture of Bacillus No. 1 intravenously injected, this experiment points to the much greater susceptibility of the goat to this organism.

CONCLUSIONS.

In the course of the present investigation into the bacteriology of summer diarrhoea, there has been isolated a bacillus, designated Bacillus No. 1, which, so far as I have been able to ascertain, has not hitherto been described, and which appears to me to be entitled, in the absence of further knowledge, to be regarded as a factor, perhaps the most important factor in the causation of the disease. The reasons on which this conclusion is based are as follows:

It has never been isolated in any other morbid condition, nor has it been observed in water, milk, sewage, or human faeces.

In all the cases of the disease examined during two consecutive summers, it was found to preponderate in frequency over all other non-lactose fermenting bacilli—for example, out of 58 cases examined during the summer and autumn of 1905 it was isolated from 28, and out of 34 cases in 1906 it was isolated from 15 cases.

It is pathogenic for animals, producing diarrhoea and death in young rabbits, rats, and monkeys, when these animals are experimentally fed on cultures.

It differs from the bacillus of hog cholera of McFadyean, to which it appears to be most closely allied, in its reaction on litmus milk, in the production of a larger amount of indol, and in its failure to produce acid and gas on arabinose, maltose, and dextrin.

It is probable that the difficulties of clinical diagnosis in such a condition lead to the classification under one name of cases due to different micro-organisms. An analogy to this is seen in the case of enteric fever, under which all cases now designated as paratyphoid were till recently included.

It is improbable, from the bacteriological standpoint, that a sharp line of demarcation should be found to exist between acute infective diarrhoea and catarrhal diarrhoea in infants, and this is borne out by the results obtained in the present investigation.

In one case of acute infective diarrhoea the *Bacillus enteritidis* of Gaertner was isolated from the spleen and mesenteric glands, and it seems probable that other allied micro-organisms which produce a condition with even less marked clinical features (than does that organism) may not infrequently be involved in the production of what is designated clinically "infective diarrhoea of infants."

It is remarkable that again this summer no bacilli of the true dysentery Flexner type were found, whilst Duval and numerous workers at the Rockefeller Institute found that organism to be the causal agent of the disease in America.

It is true that bacilli somewhat resembling *Bacillus dysenteriae* (Flexner) were isolated from four cases, but they were not culturally identical with any of the various types of this bacillus, nor were they agglutinated by anti-dysentery (Flexner) serum.

This emphasizes what was said in my last year's communication, that the type of summer diarrhoea of infants in America appears to be clinically and bacteriologically different from that which occurs in this country.

My thanks are due to Dr. Batten, who took the greatest interest in this research, and for the second summer supplied me with the material from the Hospital for Sick Children, Great Ormond Street; also to Dr. Dean and Dr. Boycott, of the Lister Institute, for their most valuable assistance and advice.

MEMORANDA:
MEDICAL, SURGICAL, OBSTETRICAL

AMBIGUOUS REACTIONS IN SUGAR TESTING.

THE article by Dr. Maclean in the BRITISH MEDICAL JOURNAL for June 22nd, On the Causes and Significance of Certain Ambiguous Reactions Obtained in Testing Urine for Sugar, is of great clinical interest, more especially to general practitioners, who have not the time to devote to prolonged urinary tests, and who no doubt are frequently puzzled by these doubtful reactions.

My object in writing this letter is to draw attention to a test described some few years back, which may be performed rapidly and appears to be a reliable confirmatory test after doubtful reactions with Fehling's solution. The test I have used regularly in asylum practice in examining the urines of new acute cases of insanity where sedative

drugs of the chloral order have possibly been administered prior to admission. It is not at all uncommon to obtain a very decided reaction with Fehling's solution which in the ordinary course of events might be taken as an indication of the presence of sugar, but which is evidently due to glycuronic acid. The test is as follows:

Two to three c.cm. of the urine diluted with an equal quantity of water is boiled with phenylhydrazine hydrochloride 0.1 gram, and sodium acetate 0.5 gram. Solution of caustic soda (10 per cent.), 10 c.cm., is then added, the test-tube inverted a few times, and then allowed to stand. A pink to red coloration of the whole liquid occurring within five minutes is to be regarded as an indication of sugar present in proportions of clinical significance.

It would be interesting to hear of any possible fallacies with this test, as it is such a readily performed one.

Melton, Suffolk. STEPHEN G. LONGWORTH.

POST-SCARLATINAL DESQUAMATION.

IN November, 1903, I was asked to see a little girl, daughter of a brother practitioner, who had developed scarlet fever. She had, apart from scarlatina maligna, the most copious rash I have ever seen. She was isolated in another house and nursed by her mother. Although closely looked for, desquamation of even the most floury nature was never observed. At the end of about five weeks she returned home for Christmas. She appeared perfectly well, except for a very slight aural moisture. Two or three weeks afterwards her father developed scarlatina with every other symptom of the disease, *except a rash*. This no one ever could detect. At the end of six weeks, no desquamation having taken place, and feeling perfectly well, he suggested to me that he should take a fortnight's holiday, at the expiration of which he considered he might safely resume his practice. I assented to this, and he departed. A few days later I received a letter from him informing me that he was peeling profusely, and he returned home. It was nearly two months before all the desquamation ceased.

Three months after her attack was apparently cured, the little girl was sent to her grandmother's in the country. While out for a walk, a nursemaid, accompanied by the child and a small boy cousin, used her own pocket-handkerchief to both the boy and the girl. Both the boy and the nursemaid developed scarlatina in a few days, and had it severely. There was at that time no other case in the district. I have long come to the conclusion that the desquamation stage of scarlet fever is not infectious, provided the throat is well and there is no nasal nor aural discharge.

F. J. VINCENT HALL, M.B., Ch.B., etc.

Redhill, South Yardley, Birmingham.

A CASE OF SPLENOMEGALIC POLYCYTHAEMIA.

THE following case is of interest in connexion with Dr. Saundby's paper published in the BRITISH MEDICAL JOURNAL of May 18th. The patient, a labourer, aged 67, was recently admitted to the South Devon Hospital, under the care of Dr. Fox. His history was that for seven months he had had pain in his left side, followed by the appearance of a swelling. He had lost flesh and complained of weakness.

State on Examination.—He is of a very florid appearance, but is not cyanosed and does not complain of shortness of breath. His body is covered with psoriasis, but there is no oedema anywhere. There is no enlargement of the heart. The sounds are clear. The pulse is regular, 78, and the blood pressure 140. The spleen is much enlarged, reaching to the umbilicus and to the middle line. It is not tender. The liver can be felt three fingerbreadths below the costal margin. The urine is normal. With the ophthalmoscope the retinal veins are seen to be large and full but not tortuous. The optic disc is normal. There are some opacities in the lens. The knee-jerks are normal. Examination of the blood shows:

Red corpuscles	...	... 8 320,000.
Haemoglobin	...	... 140 per cent.
Leucocytes	...	... 12,000.

The differential count of the leucocytes shows nothing abnormal. The red cells are large, and evidently contain plenty of haemoglobin.

On puncturing the lobe of the ear the blood does not run readily, and it has the appearance of very dark venous blood. In making films, on account of the increased viscosity, the blood does not flow out easily between the two cover-slips. Coagulation takes place slowly.

REMARKS.—This case is evidently one of splenomegalic polycythaemia. The man is older than any previously recorded case of the disease, which is at present only in its early stage, for the patient is able to be up and about, and has no urgent symptoms. I regret that lack of time has prevented me from making more than the ordinary clinical examination of the blood, but I hope to be able to make some further observations later. I am indebted to Dr. Fox for permission to publish the case, and to Mr. R. A. Bowling, House-Physician, for some of the notes.

W. L. PETHYBRIDGE, M.D., B.Sc.,

Plymouth. Honorary Pathologist, South Devon Hospital.

A CASE OF SIMULTANEOUS DISLOCATION OF BOTH SHOULDERS.

T. M., aged 26, a powerfully-built labourer, was recently admitted to the Durham County Hospital suffering from a subglenoid dislocation of the left shoulder and a subcoracoid of the right, produced simultaneously.

He was controlling, by means of a hand crane, the descent down an incline of a wagon loaded with a heavy boiler. The rope became temporarily slackened by an obstacle, the removal of which caused the crane handle to fly rapidly round, dragging the man with it. It is remarkable that there were no other injuries.

Durham. D. G. HUNTER, M.B.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

SUNDERLAND INFIRMARY.

A CASE OF COMPLETE VOLVULUS OF THE SMALL INTESTINE.

(Reported by WILLIAM ROBINSON, M.S.Durh., F.R.C.S.Eng., Honorary Surgeon.)

THE patient in the following case—a cartman, aged 49—was seen by me, in consultation with Dr. Morton, on March 19th, 1907, suffering from complete constipation and vomiting for three days, unrelieved by medicines and enemata.

State on Examination.—There was a big and old-standing left inguinal hernia, which was tense and without impulse, and a truss had been worn for years. Strangulation of the bowel was diagnosed, and he was removed at once to the infirmary.

First Operation.—An hour later I cut down on the sac, which was overlaid by a thick pad of indurated fat. The sac contained a mass of livid, lustreless, and lobulated omentum, twisted on itself four times from left to right, but not adherent. A loop of purple and much distended small intestine was found constricted at the internal ring, and the bowel above much congested. Serous fluid escaped from within the abdomen, and on enlarging the opening several other coils of small intestine within the abdomen were seen to be in the same state. A radical cure by Bassini's method was performed.

Result.—The obstruction was relieved, and diarrhoea set in, which continued more or less up to April 23rd; his temperature remained normal, or almost so, but his pulse was always somewhat thready and very frequent (100 to 120), and he was not quite comfortable in his abdomen. On April 25th he went home, and immediately began to vomit, and his bowels refused to act. On the 28th I saw him again, with Mr. Morton, and found his abdomen much distended, with big, visible coils of intestine, frequently in a state of peristalsis.

Readmission.—I recommended his immediate return to the infirmary, but he did not consent to this until April 30th, when he was readmitted with five days' complete obstruction; pulse 120, temperature subnormal, a pinched face, and frequent pumping up of green bilious vomit.

Second Operation.—Under ether, an incision was made along the left semilunar line, and after a difficult search among the enormously-distended and congested gut, it was found that the mesentery of the lower four-fifths of the small intestine had become twisted on itself through a complete circle from left to right (clockwise), that there were two strong bands of adhesions compressing loops of the bowel under the liver, and the coils of the implicated small gut were matted together by innumerable slight fibrous adhesions, which could be broken down with the finger. After dividing the two strong bands it was found impossible to unfold the volvulus, and as it was of no use performing an enterostomy just below the duodenum, especially as the patient was in a hopeless and

collapsed condition, the bowel was returned with difficulty and the wound closed.

Result.—He died in eighteen hours. Our pathologist, Dr. Cunningham, had considerable difficulty in unfolding the twist after breaking down and cutting many more adhesions. The twisted mesentery was found to be very long (about 12 in.), its attachment very narrow (about 4 in. as compared with the customary 6 in.), and its structure thickened (chronic mesenteritis). The rest of the contents of the belly (which alone was examined) was found to be normal. The omentum was retracted upwards close to the transverse colon, and the stump where previously ligatured was hardly distinguishable.

REMARKS.—Such an extensive volvulus of the small intestine is extremely rare. Volvulus of one or a few coils of the small gut has occasionally been described, but then the twist is generally secondary to growths, etc., in the mesentery or bowel. In the above case there were the usual predisposing causes, namely, a long mesentery with a narrow basal attachment; the dragging of the loop of small gut in the left inguinal hernia before the first operation may have started the act of rotation, and would, by its anchorage, so long as it was in the sac of the rupture, prevent its becoming complete. This dragging, too, would tend to cause the chronic mesenteritis. Possibly the two dense bands of adhesions, by causing more or less obstruction, set up exaggerated peristaltic movements, which ended in the complete twist. From the disposition of the attachment of the mesentery to the posterior abdominal wall—obliquely from left to right—one would expect the volvulus to take place clockwise from left to right, when the process is once started by the rolling movements of the bowel, extending downwards from above on the left side. Why the omentum in the left inguinal rupture should also have been twisted from left to right I cannot explain, unless it be that the exaggerated rolling movements of the bowel (when partially obstructed lower down) beginning on the left side above, tends to carry the left edge of the omentum over the right and so twist it. It is said that this twisting of the omentum when it does occur is always from left to right. One twist having been produced, it would seem easy for the process to be repeated—in this case four times. Owing to the omentum usually occupying the left side of the belly more than the right, it is more common to find it in left ruptures than in those of the right side. The discomfort in the belly between the two operations may have been due to partial twistings and untwistings of the mesentery before the final complete twist occurred. Once the process was started, the interference with the blood supply by the volvulus of the mesentery would lead to congestion beyond it in the mesentery and the affected bowel with subsequent adhesions. The whole of the implicated bowel was, of course, distended (as well as congested) owing to there being two obstructions, namely, one at the commencement and the other at the ending of the portion of the bowel affected.

THE INFIRMARY, CARDIFF.

A CASE OF COMPLETE SEPARATION OF RECTUM FROM ANUS.

(By P. RHYS GRIFFITHS, M.B., B.S.Lond., Senior Surgeon.)

W. B., a miner, aged 35, was admitted into Insole Ward on November 10th, 1905. He stated that he had been jammed between a wire rope and a post on which there was a projecting knob. This knob he thought must have pressed into his perineum. He fell and was unconscious.

State on Admission.—The perineum presented a curious picture. The anus could not be seen, but at its usual site was a large ragged opening about 1½ in. in diameter. A finger passed into the wound—the patient being under an anæsthetic—discovered that the actual anal canal had retracted for 1 in. or more into the wound, being connected with the skin by only one small tag. The pelvis was fractured to the left of the symphysis.

Operation.—A silver catheter was passed down the urethra until the point emerged in the wound, and after a little search the torn distal end of the urethra was discovered. With a Wheelhouse guide the catheter was then introduced into the distal end of the urethra and on into the bladder, into which it was tied. The anal canal was then brought down and stitched to the edges of the skin.

Progress.—Some of the sutures gave way, and there was free suppuration from the wound, which gradually healed up by granulation. The bladder was washed out with boracic lotion daily.

Result.—The patient was discharged on January 20th, 1906, having complete control over defaecation and micturition; his medical attendant informed me a few months ago that he was going on well.

REMARKS.—This case resembles somewhat the very interesting one published on June 15th from the Leigh Infirmary. The condition for a time was grave, but the ultimate result very satisfactory. Our experience of mining accidents at the Cardiff Infirmary is a very extensive one, but I believe this case to be unique of its kind.

REVIEWS.

ALCOHOL AND THE HUMAN BODY.

IN *Alcohol and the Human Body*[1] Sir VICTOR HORSLEY and Dr. MARY D. STURGE have produced a book which is remarkable for several reasons. It is the first attempt that has been made in this country to analyse systematically the effect of alcohol upon the different parts of the body. It is written not only for the medical profession but for all who are interested in the subject. Its language is almost free from technical terms (of the few that are used there is a glossary at the end of the book), and yet it gives the results of the most accurate scientific investigations that have been made into the effect of alcohol upon the body. It is essentially a scientific study of the question, and one for which there has been for some time a demand both from the medical profession and the public. The general trend of medical opinion upon this question is shown by the steady fall in the amount of alcohol used in hospitals during the last forty years. In seven of the leading London hospitals (St. Bartholomew's, Guy's, Middlesex, St. George's, St. Mary's, University College, and Westminster), with 2 254 beds, the expenditure upon alcohol in 1862 was £7,712, and on milk £3,026; in 1902, with 2,309 beds, the expenditure upon alcohol was £2,925, and on milk £9,035. We doubt, however, if the profession as a whole is cognizant of the results obtained from the scientific investigation into the effect of alcohol upon the body. For this reason every medical man should study this book, which is admirably written, arranged, paragraphed, and printed, and is full, from cover to cover, of interesting and instructive facts. The authority for every statement is clearly given, and many of the statistics and pathological results of alcohol are illustrated by figures and plates. It is shown how all life rests upon a cell basis, and how alcohol acts as a narcotic and irritant to the cell protoplasm of the lower forms of animal and vegetable life. The same action obtains in the higher forms, and explains the depressing effect of alcohol upon nervous, muscular, liver, and other tissues.

The effect upon the nervous system (and, of course, through this upon the whole body) is dealt with fully. Professor Kraepelin's experiments are given in detail. Small doses of alcohol lower the quality and the speed of the simplest mental work, hamper the function of memory, and have a slowing effect upon the higher powers of the mind—that is, those involving association of ideas and formation of judgements. Kraepelin himself had always shared the popular belief that a small quantity of alcohol had an accelerating effect on the activity of his mind, but when he carried out experiments to test the matter he was astonished to find that he had accomplished the mental operations not more, but less, quickly than before, showing that alcohol had interfered with his power of forming correct judgements.

In the chapter devoted to the neuro-muscular system the experience of military experts is quoted, and amongst them that of Sir Frederick Treves, who, speaking of the relief column that moved on to Ladysmith, says, "In that enormous column of 30,000 the first who dropped out were not the tall men, or the short men, or the big men, or the little men—they were the drinkers, and they dropped out as clearly as if they had been labelled with a big letter on their backs." The chapter on disease and degeneration of the nervous system is most depressing reading. The close connexion between alcohol and insanity has been long known, but we do not

[1] *Alcohol and the Human Body.* An Introduction to the Study of the Subject. By Sir Victor Horsley, F.R.S., F.R.C.S., etc., and Mary D. Sturge, M.D. With a chapter by Arthur Newsholme, M.D., F.R.C.P., D.P.H. London: Macmillan and Co., Limited. 1907. (Demy 8vo, 386 pages, 21 figures, and 14 plates. 5s.)

think that the general public is aware of the large percentage of cases of insanity attributed to alcohol.

There has been much controversy upon the question whether alcohol may be regarded as a food or not. Because it is oxidized in the body, it is not necessarily a food; some poisons are got rid of by oxidation; it does not produce energy for muscular work; the small amount of heat produced by its oxidation is far outbalanced by the fact that alcohol causes a marked loss of heat by the skin; it does not help to build up the tissues, and Romeyn has shown that alcohol never diminishes, and often increases, the elimination of nitrogen, thus failing to prevent tissue waste. It does not, then, fulfil any of the functions of a food. As regards its effect upon the heart, direct experiment has shown that alcohol has not the augmenting power usually attributed to it, but that, on the contrary, it slowly depresses the action of the heart muscle, and ultimately partly paralyses not the muscle only, but also the cardiac nerves.

Other chapters are devoted to a discussion of the effects of alcohol on the digestive system, on the liver and kidney, on the blood and on metabolism. There is a special chapter on the effect of alcohol on the tissues of children and another on the influence of parental alcoholism upon the race. The latter subject is fully dealt with, and its difficulties fairly faced, but we may content ourselves with quoting the concluding paragraph, which seems to sum up the position very justly:

> It must always be borne in mind that the upward trend of evolution is in favour of the effacement of morbid and wrong tendencies; that all things being equal, the good surmounts the evil, and that it is health which strives to have the last word. Hence the existence of an alcoholic tendency in a family is not to be regarded as implicating all its members, but merely means that, being forewarned, they should be able to counteract any special dangers which may have been inherited, by assiduously cultivating habits of right living and by the careful avoidance of the use of alcohol in any form, this being a danger which they are forbidden to brave.

In a final chapter, Dr. Arthur Newsholme deals with the influence of the drinking of alcoholic beverages on the national health; in it he gives a brief but comprehensive discussion of the statistical evidence as to the deleterious effect of alcoholism on the prospect of longevity.

The volume is well illustrated by diagrams and by drawings, some coloured and others in black and white, made with much artistic fidelity by Miss Kelley. What has been said will give a general idea of the scope of the volume, and it will suffice to add that it contains the results of much accurate investigations, and is written in a moderate and impartial way, free from speculations and exaggerations. We strongly recommend all who are concerned with the health of the nation, all who are anxious to raise the physical standard of our young men and young women, and to prevent any deterioration, and all who wish to help their country to hold its own in the keen struggle for supremacy to read it.

THE ADMINISTRATION OF ANAESTHETICS.

IN the fourth edition of Dr. DUDLEY BUXTON'S well-known *Anaesthetics*[2] the work is brought well up to date, and may be thoroughly recommended as providing a concise and comprehensive review of the whole subject. The author has a practised pen, and the interest excited by the introductory historical chapter is well maintained throughout the book. Although Dr. Buxton writes from his own experience, he does not often permit himself to be unduly didactic in stating his opinions on controversial points. He appears to aim at giving a summary of our present knowledge of the subject, so that while to the casual reader the conclusions may sometimes seem a little vague, the careful student can obtain a wide knowledge of anaesthetics from a study of this book. Fresh articles appear in the present edition upon dosimetry in chloroform, the use of ethyl chloride, and spinal anasthesia. Of the new chloroform inhalers described—Dubois's, Levy's, and Vernon Harcourt's—the author gives the fullest description of Harcourt's, of which he is a strong advocate. His testimony to its merits is so striking as to demand the earnest attention of all those who give chloroform. He says:

> Speaking from an experience of three years and some thousands of cases, many of the gravest character, I may say I have found the inhaler fulfils all the purposes for which it was constructed. . . . There have been no dangerous symptoms due to the anaesthetic in the cases in which I have used the inhaler, and no failures.

There is a short reference to the use of oxygen with ether, which the author has employed for some years. As so many of the undesirable symptoms often met with during the use of this safe agent—such as cyanosis, obstructed breathing, congestion, and increased secretion of mucus—are, if not entirely caused by, at any rate largely aggravated owing to a diminished oxygenation of the blood, and as ether is now largely given abroad by the open method, we regret that further details of this plan are not given. The chapter on ethyl chloride is complete, and will be found of much practical value. One of the features of the book is the excellent account given of local anaesthetics, including in this edition an article upon spinal anaesthesia, which is illustrated by the frontispiece—a stereoscopic photograph taken by Mr. Mackenzie Davidson to show the exact position of the entrance of the needle. The medico-legal aspects of the administration of anaesthetics are considered in a useful chapter of 20 pages which should be read by all administrators. We have referred to the comprehensive character of Dr. Buxton's book. He states in the preface that he has included only such material as seems essential, but it is nevertheless in the wide review that it gives of the entire subject that its principal value is to be found.

MEDICAL ASPECTS OF WORKMEN'S COMPENSATION.

RECENT legislation having given such a wide extension to the principle of insurance against accidents, the subject of the relation of diseases to injuries has become of serious practical importance, so that Dr. RICHARD STERN'S work on the traumatic origin of internal diseases,[3] of which the first part only has reached us, deserves the serious attention of the medical profession. Dr. Stern is the Medical Director of the Saxony State Railways, and in this capacity has, during the last twenty years, gained a large experience of traumatic diseases. He has also read widely and collected information from all available sources to form as broad a basis as possible for his conclusions. The present part deals only with infectious diseases and diseases of the circulation. At first sight it may be thought somewhat remarkable to suggest that infectious diseases may have a traumatic origin, but every surgeon is familiar with the attacks of scarlet fever that occur among children in the surgical wards; it is true that some surgeons deny that these are true cases of scarlet fever, and some may be rightly attributed to infection acquired before admission, but we are not in a position to deny the possibility of injuries playing some part in the development of the disease. Diseases of the circulation also might be thought to be outside the circle of those which are caused by accident, yet any one who reads the cases quoted in this book will admit that it is inconsistent with candour to maintain an attitude of absolute denial of their possibility. Not only may endocarditis arise in connexion with wounds, but cases have occurred in which without any external breach of surface all the signs of acute inflammation of the endocardium have developed after injuries, and even violent exertion has been noticed in more than one case to be followed by an attack. Ruptures and tears of the valve cusps are well known to occur after violent muscular efforts and injuries, but acute aortitis, aneurysm, and varicocele are among the less well-known consequences of injury. When the whole work is completed it might perhaps be worth translating, as there is no book in English on this subject.

A small book of 160 pages on *Injuries of the Eyes of the Employed*[4] has been written by Mr. BEAUMONT, of Bath, for the purpose of assisting the surgeon in examining a patient whose eye has been injured, and who is in a

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[2] *Anaesthetics, their Uses and Administration.* By Dudley Wilmot Buxton, M.D., B.S., M.R.C.P. Fourth edition. London: H. K. Lewis. 1907. (Cr. 8vo, pp. 415; 62 illustrations. 7s. 6d.)

[3] *Ueber traumatische Entstehung Innerer Krankheiten.* Klinische Studien mit Berucksichtigung der Unfall-Begutachtung von Dr. Richard Stern. Erstes Heft: Infektions-Krankheiten der Kreislaufsorgane. Zweite Auflage. Jena: Gustav Fischer. 1907. (Super-royal 8vo. pp. 164, M 350.

[4] *Injuries of the Eyes of the Employed and the Workmen's Compensation Act. Problems in Prognosis.* By W. M. Beaumont, Surgeon to the Bath Eye Infirmary. London: H. K. Lewis. 1907. (Crown 8vo, pp. 168. 5s.

position to claim compensation from his employer for the accident. The book is divided into eight chapters. The first is on Acts of Parliament, the giving of evidence in law courts, and industrial diseases; the various injuries of the eye and orbit are then discussed, and the final chapter deals with the tests for malingerers and feigned blindness. The book is certainly an instructive guide to those practitioners who are not seeing eye cases every day, and the probable result of an injury may be gathered by those who consult this work far more accurately, and with much less trouble, than is necessary in order to look up these points in a textbook on ophthalmic surgery.

SYPHILIS AND THE SPIROCHAETE.

IN his monograph on the experimental investigation of syphilis[5] Dr. NEISSER reviews and criticizes recent research upon this subject. He defends the specificity of Schaudinn's spirochaete against the recent attacks of Schulze and Saling who have declared that the alleged spirochaetes demonstrable in tissues by the silver method are really nerve fibrils, or artefacts of one sort or another, and hence speak of them satirically as "silver spirochaetes." Dr. Neisser is well acquainted with these misleading appearances, but fails to see that they afford the slightest ground for denying the existence of the true spirochaetes. The production of experimental syphilis in anthropoid apes and monkeys is very fully dealt with, and, in addition to the well-known fact that the anthropoids are more susceptible to the disease than the more distant relatives of man, it is pointed out that even amongst the former class differences exist, the chimpanzee appearing to be of greater susceptibility than either the gibbon or the orang-outang. The value of animal inoculation for the purpose of diagnosis in cases in which the presence of active syphilis in the human subject is doubtful, the paths of dissemination, the question of excising the primary lesion as a curative or palliative measure, and the attempts which have been made to obtain a means of active or passive immunization are all carefully considered in the light of recent experiments. But in most of these matters, as Dr. Neisser admits, we are still very much in the dark; discussion and controversy serve a useful purpose, but a practicable and reliable method for the suppression of syphilis has not yet been discovered. Dr. Neisser's book is well worth reading as a means of ascertaining the work which has been accomplished, the gaps in our knowledge, and the subjects of controversy which are at present occupying rival investigators.

Professor HOFFMANN'S short treatise on the etiology of syphilis[6] is sure to be read with interest, as he was closely associated with Schaudinn in the work which proved the causal relationship of the *Spirochaeta pallida* to syphilis. Many writers on this subject, Professor Hoffmann complains, fail to give him the credit which he deserves; they attribute the work solely to Schaudinn and ignore his collaborator; though the discovery of the *Spirochaeta pallida* was due to Schaudinn, the proof of its constant relationship to the lesions of syphilis was based on the joint work of the two investigators. The main value of Professor Hoffmann's book consists in its excellent description of the morphology of the syphilitic organism, its differential diagnosis under the microscope, and the instructions for staining the organism both in smear preparations and in sections. On these matters the author has a right to speak as an authority, and his guidance will be appreciated by those who find it difficult to discriminate between the more and the less helpful suggestions offered by the many ardent investigators in this field. The strictly "etiological" part of the treatise is also of interest, but it can hardly be said that it contains much which is new; we are already overburdened with records of the variety of syphilitic conditions under which the *Spirochaeta pallida* is demonstrable.

[5] *Die experimentelle Syphilisforschung nach ihrem gegenwärtigen Stande.* Von Dr. A. Neisser. Berlin: Julius Springer. 1906. (Demy 8vo, pp. 114. M.2.40.)

[6] *Die Aetiologie der Syphilis.* Von Professor Dr. Erich Hoffmann. Berlin: Julius Springer. 1906. (Medium 8vo, pp. 58, with 2 plates.)

THE NEW GYNAECOLOGICAL CLINIC AT DRESDEN.

PROFESSOR LEOPOLD and Herr REICHELT, State Architect, have prepared this official publication, *Die neue königliche Frauenklinik*,[7] the new volume of which should be studied by all concerned in the subject—doctors, ruling authorities in universities, and architects. The latter will approve of the long series of plans, for they often complain that the architectural drawings in medical works are too meagre, and prepared as though to impress subscribers and students rather than to instruct those of their own profession who undertake to construct hospitals and medical school buildings. In this instance an architect holding an official position has prepared the plans, and his authority will be accepted by others in his profession. The large series of photogravures, almost amounting to two score, are, as works of art, exceedingly good, and on the whole rather more instructive than the now very familiar illustrations of the same class to be found in British and American works on operative surgery and hospital management. As usual, some of the engravings seem superfluous; two demonstrate that the private rooms of the resident medical officer and head midwife are most elegant and comfortable apartments, but such facts may be taken for granted by the reader. In this case, we must observe, the illustrations were prepared on official command, and therefore the compilers were bound to insert them; moreover, they are, of course, desirable for the architect. This third volume gives a very complete report of the methods of teaching, the arrangements of beds, and the housing of pupils, which deserve study in English-speaking lands, although Teutonic manners and customs are, even in medical establishments, different from those pertaining to the Briton and the American citizen. One main distinction is of special interest. Might not gynaecology and obstetrics be more generally blended amongst us, as in Germany? The association of lying-in apartments and beds for the diseases of women independent of pregnancy under the same roof is logical, practical, and scientific. Lastly, the reader will be attracted by Plate 26, which is a photograph of an operation showing not the surgical procedure itself but the marshalling of the pupils in such a position as to allow every one present to see it.

[7] *Die neue königliche Frauenklinik in Dresden.* Von Professor Dr. Leopold und Geh. Baurat Reichelt. III Band. Der Arbeiten aus der königslichen Frauenklinik in Dresden. [The New Royal Clinic for the Diseases of Women in Dresden.] Leipzig: Hirzel. 1906. (Demy 8vo, 67 pages. M.4.)

NOTES ON BOOKS.

UNDER the auspices of the American Medical Association a new *American Medical Directory* has been published by Messrs. W. B. Saunders, of Philadelphia, U.S.A., and of Henrietta Street, Covent Garden, London. The work contains a complete list of all practitioners in the United States who, according to the regulations in force in the different localities, can be regarded as legally qualified practitioners. In respect of each of them some information as to the nature of their diplomas, education, and age is supplied. In addition, there is information as to the laws regulating the practice of medicine in the various American States, lists of hospitals and their principal officials, and particulars as to the constitution of State boards of health, and medical examining boards and colleges. Similar information is also supplied in respect of Canada and its medical practitioners. Altogether the number of physicians and surgeons about whom more or less ample information is given reaches over 128,000. The volume contains 1,482 imperial octavo pages, and, bound in half leather, is sold at 35s.

The edition for 1907, the sixteenth in succession, of the *Charities Register and Digest* has just been published by Messrs. Longmans, Green and Co. As a reference work the value of this volume has long been recognized by all those who in any way have to deal with charities situated in, or intended partly or entirely for the benefit of inhabitants of the metropolis. In addition, the valuable articles on different branches of charitable work which precede each section make the volume of general interest. All of them are written by persons more or less well known in connexion with the subject treated and having special knowledge of its bearings. The price of the book is 5s. net.

A useful little volume has just been published by Messrs. John Bale, Sons, and Danielsson, in the shape of a descriptive catalogue of all sanatoriums in England intended for the open-air treatment of tuberculosis. Amongst private sanatoriums some thirty-eight receive notice. Whether this list is exhaustive we are not certain, but in any case the information with regard to those which are noticed is useful. In addition there are accounts of some fifty public sanatoriums, which either receive patients gratis or accept them at reduced fees or on special terms or conditions. The price of the volume is 5s.

The volume annually published by Edward Lloyd, Limited, Salisbury Square, E.C., under the title of *The London Manual*, has now appeared for the eleventh time, the edition having had as editor Mr. Robert Donald. It is not only a useful reference book with regard to all public bodies in London, but, as it contains short articles descriptive of the work of each of them, it will be specially useful to those to whom the multiplicity of institutions concerned in the administration of London is somewhat confusing. The price is 1s. 6d.

Some two or three years ago the *Guardian* published a series of articles entitled, Our Sons: Their Start in Life. These were reprinted as a pamphlet, and have now made a third appearance in a revised edition. Brought up to date as the series is, and with the addition of a couple of articles on occupations for women, it might well supply a useful hint to parents engaged in the settlement of the vexed question indicated. It may be obtained from the *Guardian* Office, 5, Burleigh Street, Strand, price 1s.

VOLUME XXXI of *The Transactions of the American Gynaecological Society*, which has recently appeared, relates to the thirty-second annual meeting of the society held in May, 1906. It contains some thirty scientific papers, each followed by a discussion, which throw a light on current views on gynaecology in America. As a whole these seem to denote tendencies of a more conservative tone than heretofore. The papers include a useful review of 5,000 cases of induced labour in the obstetrical department of the Johns Hopkins Hospital.

MEDICINAL AND DIETETIC PREPARATIONS.

Alaxa.

FROM the time when cascara sagrada began to fill the place it now holds as a laxative, there have been many attempts, more or less successful, to present preparations or combinations of the drug which should possess its activity without its bitter and disagreeable taste. In the product which Messrs. Burroughs, Wellcome, and Co. (Snow Hill Buildings, E.C.) are now issuing under the name of "Alaxa," a high degree of success has been achieved. This preparation is described as "an aromatic liqueur of cascara sagrada," and much more resembles a liqueur than a medicine. It is of an orange-red colour, not at all suggesting cascara, having only a slight aromatic bitterness together with a considerable degree of sweetness, and an agreeable complex flavour in which an expert palate can just detect that of the drug. It mixes with water with only a slight cloudiness, making a yellow solution. Analysis showed it to contain 66.5 per cent. by volume of alcohol, which is more than is contained in most liqueurs. In dosage it is equivalent to rather less than half its volume of the official liquid extract of cascara sagrada.

Soluble Arsenate of Iron.

The official iron arsenate is described in the *Pharmacopoeia* as "ferrous arsenate, with ferric arsenate and some iron oxide," and a report on some twenty-eight samples presented to the Pharmaceutical Conference in 1903 showed considerable variations in the proportions of both iron and arsenic present. Messrs. Burroughs, Wellcome, and Co. have submitted to us a sample of a soluble iron arsenate which they are now producing, which should prove to be of more constant composition, in addition to the advantage that it can be prescribed in solution. It is in the form of thin green scales, forming a bright solution in water; analysis showed it to contain 31.4 per cent. of iron in the ferric state, and arsenic equivalent to 14.7 per cent. of arsenious oxide.

Zinc Salt of Sulphanilic Acid.

Recent years have seen the addition to the materia medica of a number of silver compounds in which the caustic properties of the ordinary salts have been overcome, as well as the incompatibility with albuminous substances, while retaining their antiseptic and other properties. An attempt to do the same for zinc has led to the introduction of the sulphanilate. This compound, which Messrs. Burroughs, Wellcome, and Co. are issuing under the name of "Nizin," is said to produce no irritation and no toxic effects. A sample which we have examined was a white crystalline salt, readily soluble in water, neutral in reaction. The solution gave a precipitate with albumen, but not in the form of a coagulum. Soloids containing 2 grains each readily disintegrated and dissolved to a bright solution. The strength of solution recommended is 1 grain to the ounce for gonorrhoeal ophthalmia and other eye affections, and from 2 to 6 grains to the ounce for urethral or vaginal injection.

MEDICAL AND SURGICAL APPLIANCES.

Bimetric Minimeter.

THE gradual introduction of the use of metric measures into medicine renders necessary the employment of measuring vessels graduated on both the old and the new system, particularly for small quantities. The "bimetric minimeter," made by Messrs. Parke, Davis, and Co., 111, Queen Victoria Street, E.C., is a very useful measure of this kind. It consists of a pipette with indiarubber ball for filling, the latter having a simple valve for emptying by draining; the pipette is marked with a double scale, one set of divisions giving minims up to 84, and the other cubic centimetres up to 5, and tenths of a cubic centimetre. From the form of valve used, the contents can be run out quickly or drop by drop, with equal ease.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

V.—OBESITY CURES.

THE next class of nostrums which we have taken for examination consists of those advertised for the reduction of corpulence. In general, the claims that are made for these articles are less extravagant than in many other cases, and a reason for this is not far to seek; it is important that the consumer of the medicine shall be encouraged to persist in its use for a considerable time, and any statements as to the rapid cure which would very soon be found to be at variance with the facts would probably only lead to discontinuance of the medicine, and therefore defeat the maker's object. Nevertheless, the emphatic and confident statements, backed by testimonials, which are so important a weapon to the quack-medicine maker, are by no means abandoned, as some of the quotations below will show. The prices named below for the various articles described refer to the smallest size of package; in most cases larger packages, containing sufficient for several weeks' or months' consumption, are supplied at proportionally lower rates, and purchasers are urged to obtain these larger packages.

While certain of these preparations present no particular difficulty to the analyst, the majority not only contain vegetable preparations devoid of well-marked characters, but since the most important of these, extract and fluid extract of *Fucus vesiculosus*, are not prepared according to any official formula, and are naturally therefore liable to great variation, it is best to refer again to the reservations made in a previous article of this series.† It is not possible to arrive with perfect certainty at the precise composition of such articles by analysis; and when, as in the case of any nostrums, the maker can draw on all unofficial and even non-medicinal substances for his ingredients, it is inevitable that some shall remain not certainly identified. It may fairly be assumed, however, that such unknown substances possessing no well-defined chemical characters, will not be likely to have much, if any, therapeutic importance.

In a lecture given in 1903 at the London Hospital on patent medicines, Dr. Robert Hutchison gave the principal constituents of a number of nostrums, and it may be of interest to quote his remarks on the class of preparations here dealt with. He said:

> The obesity preparations have given me more trouble than any of the others. In the case of some, at least, I was entirely unable to discover the exact composition. I fully expected to find that some of them would contain thyroid extract, but in that I was disappointed. One of them consisted mainly of

* Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL: 1904, vol. ii, p. 1585; 1906, vol. ii, p. 27, p. 1645; 1907, vol. i, p. 213.

† BRITISH MEDICAL JOURNAL, 1906, vol. ii, p. 1645.

extract of *Fucus vesiculosus* (bladder-wrack), which has long been believed to have a tendency to diminish stoutness, though its claims rest on no very strict scientific basis. Another consisted chiefly of citric acid, which is interesting when one remembers the popular belief that sucking lemons makes one thin. As regards several of the others I confess to being puzzled. This, however, I must say in fairness, that I had the curiosity to write to some of the people who had supplied testimonials to the makers of these remedies, and found that, so far as I could discover, the testimonials were genuine, and that those who supplied them believed at least that their weight had been reduced by the medicine. I can only say that I wish I knew of any remedy which could be counted upon safely to reduce weight in the absence of any change of diet.

ANTIPON.

Supplied by the "Antipon" Company, 13, Buckingham Street, Strand; 2s. 6d. per bottle, holding a little over 6½ fluid ounces.

The bottle bears no label, but has the word "Antipon" blown in the glass. A circular enclosed with the bottle gives a number of rules on the subject of dietary, together with statements on the merits of the article, from which the following extracts are taken:

As a really permanent cure for corpulence, combining remarkable fat-reducing properties with tonic principles of the highest quality, "Antipon" is justly regarded by the most competent authorities as one of the most valuable discoveries in modern therapeutics, solving once and for all the vexed question of the radical cure of obesity without harmful after-effects. "Antipon" absolutely and definitely replaces all the weakening and frequently dangerous processes, systems and medicines which have hitherto done duty as remedies for the disease of obesity. It provides the medical practitioner and the public with a powerful and entirely harmless specific not hitherto within their reach.

Within a day and a night of taking the first dose there will be a reduction of weight varying from 8 oz. to 3 lb., in extreme cases even more. The subsequent daily decrease will be persistent until normal weight and dimensions are attained, when the doses may be discontinued.

Directions for Use.—Take two dessert-spoonfuls in half a wine-glassful of water, immediately after meals. N.B.—After taking dose, cork the bottle securely.

Analysis showed the liquid to be a solution of citric acid in water, of the strength of 39.3 grains in a fluid ounce; a red colouring substance is also present, and 0.4 per cent. of alcohol, the latter being doubtless introduced with the colouring. The red colour can be perfectly matched with cochineal, but the behaviour towards alkalies and other reagents shows differences; cochineal, with the addition of a little methyl orange, however, shows in most respects a similar behaviour.

Estimated cost of ingredients (6½ fluid ounces), 1⅓d.

RUSSELL'S ANTI-CORPULENT PREPARATION.

Supplied by F. C. Russell, Woburn House, Store Street, London, W.C. Price 6s. per bottle, holding 12½ fluid ounces.

This preparation, like the previous one, is in a bottle bearing no label; the letters "F.C.R." are blown in the glass, and the bottle is enclosed in a perfectly plain case, with no printed matter accompanying it. A pamphlet on the subject of the medicine is posted separately to the person ordering it; in this it is explained that,

Acting upon the many suggestions received, principally from ladies, the bottles are packed quite plainly, and without the ordinary trade labels usually found upon medicines, etc. The box is quite devoid of advertisements or anything whatever likely to denote its contents. The servants and others attached to the household may therefore be safely entrusted to open the box; inquisitiveness, if present, will not be rewarded.

In this pamphlet very detailed directions are also given for taking the medicine, and for diet and exercise. It is also stated:

In a very short space of time, say twenty-four hours, a considerable quantity of the most unhealthy fat will have been removed from that part of the system most in need of relief from the adipose matter oppressing it (the quantity varies from 8 oz. to 2 lb., or even more).

The dose is one tablespoonful in a half-wineglassful of water, within, say, ten minutes after each meal.

Analysis showed the liquid to consist of a solution of citric acid in water, containing 37 grains in a fluid ounce. The orange colour was found to be due to iron, which is present to the extent of 0.012 per cent.; and 0.4 per cent. of alcohol was also found. Addition of this proportion of iron in the form of the ammonio-citrate was found to give a practically identical colour, and the formula is thus:

Citric acid, 37 grains.
Iron and ammonium citrate, ¼ grain.
Rectified spirit, 2 minims.
Water to 1 fluid ounce.

Estimated cost of ingredients (12½ fluid ounces), 2.1 pence.

ABSORBIT REDUCING PASTE.

This and the following preparation are supplied by Miss Johnson, "The Celebrated Hygienic Skin Specialist," 41, Conduit Street, W. The paste, or both preparations, appear to be also known under the name of "Zobeide," as the paste was supplied in response to an order for "Zobeida," and the jar bears a label giving a so-called "analysis" (which it is needless to say is no analysis) beginning, "We have carefully examined the Zobeide Tissue Absorbers and Paste." The price of the paste is 3s. 6d., and the jar contained just over 2 ounces.

The directions on the label are:

Rub in a circular direction, at night, where needed, for five minutes or more; firm, even movements, and only use as much as the skin will absorb.

The "paste" is a pink ointment, containing 93 per cent. of a fatty basis, 4.8 per cent. of a substance which agreed in its characters with dried bile, and was evidently ordinary "purified ox-bile," and a little carmine, the remainder being moisture. Further examination of the fatty basis showed a considerable proportion of beeswax, and the analytical results obtained agreed with a mixture of

Beeswax, 23 parts.
Lard, 46 parts.
Rapeseed (colza) oil, 31 parts.

It is not possible, however, to assign an exact formula to a mixture of fatty substances like this. The composition of the paste is thus (approximately):

Purified ox bile	5 per cent.
Beeswax	22 ,,
Lard	44 ,,
Oil	29 ,,
Carmine	q.s.

A trace of perfume is also present.

Estimated cost of ingredients (2 oz.), threepence.

J. Z. OBESITY TABLETS.

Supplied by Miss Johnson, 41, Conduit Street, London, W. Price 2s. a box, containing twenty-five.

The directions are:

Two at night dissolved in the mouth as an ordinary lozenge.

The "tablets" are flat oval lozenges weighing 19 grains each. Analysis showed their composition to be as follows:

Sulphur	24 per cent.
Ginger, about	4 ,,
Sugar	61 ,,
Acacia gum	8 ,,
Moisture	3 ,,

Estimated cost of ingredients (25 lozenges), one halfpenny.

PURE FOOD.—The *Nineteenth Century* for June contains an article by Lady Priestley on the "Homes of Our Food Supply." A forcible description is given of the insanitary conditions which prevail in a typical Highland farm, and it is shown that, particularly in rural districts, neither English nor Scottish local authorities exercise an adequate supervision over the places from which we derive our food. The greater part of the article is devoted to the relation of tuberculosis to the milk supply, and the danger of human infection from the milk of tuberculous cows is strongly insisted upon. The Royal Commission on Tuberculosis has recently declared that there is a necessity for more stringent measures than those at present in force in order to prevent the sale and consumption of milk containing tubercle bacilli. Lady Priestley suggests that the testing with tuberculin of all cows supplying milk ought to be made compulsory by law. "To do any practical good," she remarks, "we must go to the fountain head—the farm—and establish properly-qualified veterinary surgeons to examine the cattle with tuberculin and separate the healthy from the unhealthy, and, further, to start fresh breeds in sound and sanitary conditions." These are sensible remarks, and it is to be hoped that they will do some good.

IMPERIAL CANCER RESEARCH FUND.

THE annual meeting of the general committee of the Imperial Cancer Research Fund was held at Marlborough House, on Monday, July 1st, H R.H. the PRINCE OF WALES presiding. Among those present were Sir William Church, Sir Richard Douglas Powell, Mr. Henry Morris, Sir Henry R. Swanzy, Sir Henry Howse, Sir John McFadyean, Dr. John Tatham, Dr. Rose Bradford, Mr. H. T. Butlin, Mr. W. Watson Cheyne, Mr. Ludwig Neumann, Mr. S. Neumann, Mr. Edmund Owen, Mr. H. J. Stiles, Dr. E. F. Bashford (General Superintendent of Research), Dr. J. A. Murray, Dr. Haaland, Sir Julius Wernher, and Sir C. Morrison Bell. The Secretary, Mr. F. G. Hallett, announced that Mr. Arthur Balfour, Sir William Broadbent, Lord Strathcona, Mr. H L. Bischoffsheim, Mr. Astor, Adeline Duchess of Bedford, Lady Leconfield, Lord Rothschild, and Sir Thomas and Lady Glen-Coats had written expressing their regret at their inability to be present.

REPORT OF EXECUTIVE COMMITTEE.

The annual report of the Executive Committee rehearsed the proceedings of the fifth meeting of the General Committee, held on July 25th, 1906, under the presidency of Lord Strathcona. The General Superintendent took part in a discussion on cancer at the annual meeting of the British Medical Association held in Toronto last August. He subsequently proceeded to the United States and visited many of the important laboratories, including the Rockefeller Institute, in which cancer investigation is being carried out.

In September Dr. Bashford also attended, as the representative of the Imperial Cancer Research, the German International Cancer Congress held in Heidelberg and Frankfort, of which he was elected one of the Honorary Presidents. Whilst in Germany he was able to obtain a valuable interchange of views with Professor Ehrlich and others engaged in the investigations on cancer.

Since that meeting a communication had been received from some of the German representatives proposing the establishment of a permanent international conference on cancer, and forwarding an outline scheme of organization, with its head quarters in Berlin. The General Superintendent was asked to organize a British branch and to become one of the representatives, but he was of opinion that at present little advantage was to be gained by such a conference, and that pending more exact knowledge of the etiology of cancer, more good would be obtained by encouraging active individual intercourse and exchange of material between those investigators who were actually studying cancer in the laboratories of different countries. With that view the Executive Committee fully concurred, and in pursuance of this policy the General Superintendent provided material for investigation to many other workers, both at home and abroad, amongst whom were mentioned Dr. Monckton Copeman, F.R.S., and Dr. Hake; Dr. Twort, London Hospital Pathological Department; Dr. Lazarus-Barlow, Middlesex Hospital Cancer Department; Professor Uhlenhuth, Imperial Ministry of Public Health, Berlin; Professor Ranzi and Professor Exner, Vienna; Professor Ascoli, Padua; Professor Czerny and Professor von Dungern, Institute of Cancer Research, Heidelberg; Professor Ritter, Greifswald; Professor Jensen, Copenhagen; Professor Goldmann, Freiburg; and Dr. Powell White, Cancer Research of University of Manchester.

The staff of workers in the laboratory had received a valuable accession in Dr. Magnus Haaland, who previously held the appointment of Assistant in the Pathological Institute of the University of Christiania, and had conducted important researches on cancer under Professor Borrel in the Institute Pasteur and also under Professor Ehrlich, Director of the Royal Prussian Institute of Experimental Therapeutics, and with Professor Harbitz, Christiania, and with Professor Aschoff, Director of the Pathological Institute, University of Marburg.

The General Superintendent and staff had been continuously engaged in laboratory investigation, and a considerable number of new facts had been ascertained. They were not, however, yet ripe for publication in the form of a third scientific report. The progress of the investigations was recorded in the papers from the laboratory, which had been communicated to scientific journals and societies since the appearance of the second scientific report—namely:

Einige Ergebnisse der experimentellen Krebsforschung (*Berl. klin. Woch.*, No. 46, 1905).

Einige Bemerkungen zur Methodik der experimentellen Krebsforschung (ibid., No. 16, 1906).

On the Occurrence of Heterotypical Mitoses in Cancer (*Royal Society Proceedings*, 1906).

Are the Problems of Cancer Insoluble? (*Lancet*, and BRITISH MEDICAL JOURNAL, December 9th, 1906)

Experimental Analysis of the Growth of Cancer (*Royal Society Proceedings*, May, 1906).

L'Etat actuel de la question du Cancer (*Revue Scientifique*, Juin 2 et 9, 1906).

Illustrations of Propagated Cancer (BRITISH MEDICAL JOURNAL, May 26th, 1906).

Imperial Cancer Research Fund, London (*La Science au XXme Siècle*, November, 1906).

The Investigations of the Imperial Cancer Research Fund (British Medical Association, Toronto, 1906).

Real and Apparent Differences in the Incidence of Cancer (*Transactions of the Epidemiological Society of London*, January 18th, 1907).

Carcinoma Mammae in the Mouse (*Lancet*, March 23rd, 1907).

The Natural and Induced Resistance of Mice to the Growth of Cancer (*Royal Society Proceedings*, 1907).

The Application of Experiment to the Study of Cancer (*Science Progress*, July, 1907).

Zahl und Grössenverbältnisse der Chromosomen bei *Lepidosiren parodoxa* Fitz (*Anatomischer Anzeiger*, Band xxix, 1906).

Quelles épreuves scientifique a-t-on aujourd'hui de la nature parasitaires des néoplasies, spécialement du Cancer? (XV Congrès International de Médecine, Lisbon, 1906).

Classification des Sarcomes (ibid.).

Die experimentelle Analyse des Carcinomwachstums. (*Zeitschrift für Krebsforschung, 1907*).

A grant of money had been made to Mr. W. Sampson Handley towards the expenses of an investigation into the mode of growth and dissemination of cancer of the stomach. The Museum of the Royal College of Surgeons had been provided with a series of preparations showing the growth of cancerous tumours in mice, with a complete series of histological preparations illustrative of their development. The Government of Cape Colony had forwarded an important report of a Committee of the House of Assembly appointed to investigate certain reputed cancer cures, principally consisting of herbal remedies. The report was in accordance with the experience of the Fund that the claims made on behalf of such remedies, when thoroughly and impartially investigated, could not be substantiated. Since the last general meeting, Dr. Sidney Martin, F.R.S., had been re-elected a member of the Executive Committee by the Royal College of Physicians. Sir John Tweedy and Mr. Edmund Owen had been elected by the Council of the Royal College of Surgeons to fill the vacancies on the Committee occasioned by the expiration of Mr. John Langdon's period of office on the council, and by Mr. Henry Morris becoming *ex-officio* a member of the Committee in virtue of his appointment as President of the Royal College of Surgeons, whilst Mr. Henry T. Butlin was also re-elected a member of the Committee by that College. Dr. Rose Bradford was again nominated by the Royal Society as their representative on the Committee. The Committee once more expressed its appreciation of valuable services rendered by the Foreign, Colonial, and India Offices in obtaining and forwarding information relating to cancer throughout the Empire.

In December the Committee received from one of the vice-presidents, Mr. H. L. Bischoffsheim, an intimation that he intended to give a donation of £40,000 in commemoration of his golden wedding. This munificent gift, which was warmly acknowledged by the Committee, was particularly gratifying as evidence of the confidence felt by the donor in the efforts being made by systematic scientific investigation to arrive at a more exact knowledge of the nature, causes, and treatment of cancer.

GENERAL SUPERINTENDENT'S REPORT.

In his report Dr. Bashford said the wide range of research had been maintained as in previous years, but the hopes of advancing knowledge of cancer had become more and more centred in experimental investigations. The experiments on living animals continued to be controlled and the results supported by comparative biological and statistical investigations. During the past year they

had learnt from experiments more of the nature of the local and of the constitutional conditions associated with the origin of cancer, and they had been able to form more definite conceptions of the nature of the change responsible for the rapid multiplication of cancer cells.

The thanks of the Executive Committee were again due to the Foreign, India, and Colonial Offices for the continued incentive given to the collection of data within the areas under their jurisdiction, as well as to the Governments of India, Egypt, Cape Colony, Natal, and other dependencies.

The statistical investigations had been continued in the London and provincial hospitals, in India and in various Colonies and Protectorates. During the past year 1,282 fresh cases had been reported from the London hospitals and 392 from provincial hospitals.

Of 1,806 cases of cancer which up till now had been reported from India, in 1,513 persons cancer affected the surface of the body, and only in 76 affected internal organs; 335 occurred in persons living on a vegetable diet, and 608 in persons living on a mixed diet, mainly flesh. Isolated reports had been forwarded by individual investigators, from India, from the Colonies, and from the Protectorates, to which full justice would be done when the statistics of the ethnological distribution of cancer are considered in detail. Reports of careful investigations had been forwarded from Natal by Dr. Watkins Pitchford, from Tasmania by Dr. I. G. L. Elkington, from Ceylon by Sir A. Perry and Dr. Chalmers, from Egypt by Dr. Keatinge and Professor Ferguson, from Kashmir by Dr. Neave and Dr. Rawlence, and from Basutoland by Dr. Long.

Statistical investigations had arrived at a point at which experiment had become essential in order to solve definite problems relating to the incidence of cancer, which statistics alone were unable to decide. Up to the present the investigations had revealed very considerable differences in the numbers of cases recorded in various races of mankind. Some of these differences were only apparent; to determine whether or not others were real required more prolonged investigation, for example, as to the longevity of the inhabitants of Tasmania, which might possibly account for the fact that cancer of the lip was so very frequent in the returns from that Colony.

Although a basis for accurate statistical comparison was still wanting, it was of interest to find that the incidence of cancer as recorded for different sites of the body varied, so that cancer of particular sites preponderated in the records and specimens of the cases of cancer forwarded from particular regions. Thus, melanotic sarcoma in the native races of Africa had been frequently reported, and always as arising on the soles of the feet. For India the returns referred mainly to the surface of the body, and in the case of Kashmir, epithelioma of the anterior abdominal wall occurred with a constancy met with nowhere else. The limited anatomical distribution of the disease in other native races—for example, in Mohammedans, Tamils, and Cingalese—was well illustrated in a special report from Ceylon.

Peculiar forms of local chronic irritation, associated with native customs or religious rites, were reported to affect portions of the body corresponding to the sites on which the majority of the cancers were recorded. The development of cancer in tissues which had suffered direct injury—for example, fracture of bone—illustrated the same relationship as did the development of cancer in tissues which had long been the seat of chronic disease of recognized infective nature—for example, some forms of keratosis linguae and lupus.

Cancer was universal in vertebrate animals which, while escaping the effects of many of the chronic forms of irritation affecting man, suffered from other external irritants. No one form of external agency was constantly associated with the development of cancer. Since there was still no evidence necessitating or even justifying the assumption that the disease is communicated from one person to another, the search for the clue to cancer in any one species of animal must take account of possible peculiarities in the individual beings attacked and in those which escaped. Hence the questions of individual and of family liability had received still greater attention during the past year.

Dr. William Ogle, in the Registrar-General's report for 1889, stated that 1 out of 21 men and 1 of 12 women reaching the age of 35 eventually died of cancer. From Dr. Tatham's most recent figures of national mortality in the Registrar-General's report for 1905, it had been calculated by using Dr. Ogle's method that, on an average, the chance that a man who reached the age of 35 would eventually die of cancer was 1 in 12, and the chance that a woman who reaches the same age will eventually die of cancer was 1 in 8. The chances of dying of cancer for the two sexes, as calculated from the national figures were therefore approximati g. It was unprofitable to discuss the question of the real or apparent increase of cancer, until the additional data which, with Dr. Tatham's collaboration, were accumulating, justified this being done. It was to be noted, however, that cancer as a cause of illness was rare when compared with the frequency of illness from infective diseases which were important causes of death, for example, tuberculosis, pneumonia, enteritis. This was due to the exceptionally high case-mortality of cancer, so that the number of deaths represented very nearly the total number of cases observed. The following table showed how often, taking the above proportions, no death, or one, two, three, etc, deaths from cancer might be expected to be recorded in 100 families, half the numbers of which are men and half women, no hereditary tendency being assumed, od excluding all persons dying under 35:

Number of Cancer Deaths in Family.	Per 100 Families of 6 Members, namely, 3 Men, 3 Women.	Per 100 Families of 8 Members, namely, 4 Men, 4 Women.	Per 100 Families of 10 Members, namely, 5 Men, 5 Women.
None	51	41	33
One	36	39	39
Two	11	16	20
Three or more ...	2	4	8
	100	100	100

The frequency of cancer as a cause of death was so great that few families of large size escaped. Nevertheless, it played but an insignificant part as a cause of mere illness compared with diseases of known infective nature. Were detailed analyses practicable of the incidence of cancer in a large number of families, and if they showed great variations above and below the average given in the preceding table, the probable existence of a family susceptibility would be enhanced. In man such an analysis was impracticable because of the length of life and low fecundity, and because of the progressive alteration in the value to be attached to records of the occurrence of cancer. Resort to experiments was necessary in order to define more accurately the circumstances associated with the spontaneous appearance of cancer.

The difficulty could be obviated in the case of short-lived animals. In the mouse it was now in a fair way to a definite settlement by means of breeding and in-breeding experiments on a large scale. As in man, so in the mouse, the total number of cases of cancer occurring in different strains varied. The disease had been so frequent as to lead some observers to assert the occurrence of epidemics in certain cages. Their prolonged investigations had given no support to this interpretation of the apparent greater frequency of cancer in some communities of mice as compared with others. The surgical removal of spontaneously-occurring tumours had enabled them to prolong the life of many mice and to breed from them. In that way they had obtained mice of a known cancerous parentage. By successively crossing other spontaneously-affected animals with the offspring of cancerous parents, strains were being obtained in which the cancerous heredity was $\frac{1}{2}$, $\frac{3}{4}$, or $\frac{15}{16}$, and even higher. This concentration of a hypothetical hereditary factor in a known amount, and in large numbers of animals of known age, should in the course of a few years definitely settle whether there was a family or only an individual liablity to the disease. At the same time mice of known cancerous stock might be indispensable to further attempts to produce cancer experimentally—for example, by the artificial application of external agencies having a mediate relation to its spontaneous appearance. All attempts to produce cancer experimentally had thus far failed in animals chosen at random. They had frequently

pointed out the origin of cancer was something entirely different from its continued growth either in spontaneously attacked or in inoculated animals. The resemblance between the continued growth of spontaneous and of inoculated cancer was, however, very close. The origin of cancer must be studied in spontaneous cases. Other experimental investigations had been conducted by Drs. Murray and Haaland and Mr. Bowen along the same lines as heretofore, with results confirming and extending those already recorded. Those meriting special attention still referred to cancer in mice. Forty-eight additional spontaneous tumours in mice had been added to those previously studied. The tumours successfully propagated now numbered forty, and included two fresh groups (certain carcinomata). Dr. Murray, Dr. Haaland, and Mr. Bowen had now propagated haemorrhagic tumours with a degree of success surpassing that previously obtained. These tumours were the most frequent form of cancer in the mouse. The experiments yielded further evidence that the growth of cancer consisted of a succession of phases of increased and diminished energy of assimilation and growth. As regards animals naturally suffering from cancer, it had been shown that the continuation of growth was only exceptionally obtained when their tumours were transplanted either into themselves or into other animals naturally suffering from cancer. The results spoke for a greater suitability of the soil provided by individual mice, but not for a greater suitability on the part of all mice which were naturally the victims of cancer. Mouse cancer could not be grown in animals of different species. Attempts to cultivate tumour cells outside the body, even in the organic fluids of the mouse, had proved fruitless, and it was only in the responsive living environment of the mouse's body that the vitality and peculiar energies of the tumour cells manifested themselves. This response was partly local and partly general. The local reaction consisted in furnishing the vascular and supporting structures necessary to convey the food supply. One aspect of the general response, first observed by them, in collaboration with Dr. Cramer, had been investigated by Dr. Monckton Copeman, F.R.S., and Dr. Hake on the stomachs of 700 mice supplied from the laboratory. They had demonstrated that the cancer cell, growing in a previously normal mouse, induced an increase in the amount of physiologically active hydrochloric acid during digestion. This increased digestive activity was necessary to furnish foodstuffs for the rapid building up of protoplasm in the tumour which developed. It was a remarkable fact, throwing a most instructive light upon the relations subsisting between the transplanted tumour and the normal animal, that a fragment or tissue no bigger than a pin's head at the time of its introduction was able to influence the whole economy of the normal animal in this way. It was at least probable that the continued growth of spontaneous tumours stood in the same relation to the tissues of the mice attacked. Should the compensatory increase in digestive activity be insufficient, as in young animals, the general nutrition suffered, and an analogous relation might explain certain cachectic states occasionally met with in mice spontaneously attacked.

It had now been amply demonstrated that the soil was rendered unsuitable for growth, (*a*) when a mouse had recovered from a previous successful inoculation of cancerous tissue of its own species, (*b*) when previous inoculation had not been successful, but had led to the absorption of cancerous tissue, (*c*) after a previous inoculation of normal mouse blood, (*d*) ill-health in a mouse, in consequence of infective disease, in which, as was well known, digestive activity was depressed, hindered the growth of cancerous tissue when inoculated. The active agent in inducing the protection, mentioned under (*c*) was the corpuscles, injections of serum having no effect. On the contrary, the growth of cancer in mice had not been inhibited by inoculating the cancerous tissues or the blood of other species.

They had found that the protection conferred by the spontaneous absorption of tumours which had grown for a time was most efficient against subsequent inoculations of tumour tissue from the same strain as that which had been absorbed. The protection was less for tumours of a different strain, and might even be wanting. The degree of protection against any one strain of tumour was proportional to the amount of that tumour which had been absorbed.

Mice which apparently had been completely protected against the inoculation of cancer had developed the disease spontaneously. Their methods for protecting mice only prevented the grafts from taking, and did not hinder growth once the grafts had taken and organic union with the host had been established. The fact that cancer had developed spontaneously in animals completely protected against the inoculation of grafts pointed to the probability that the organic union between the tumours and the animals attacked was established from the very beginning of the disease. Satisfactory evidence was still wanting of the existence in the serum of protected animals of substances directly harmful to the cancer cell.

Serious attention had been given to the additional alleged cancer cures which had been brought to their notice during the past year. Unfortunately, it was impossible to assign a curative value to any of them. It was desirable from a public point of view to allude specifically to one alleged remedy for cancer which had been tested last year and had again been subjected to renewed tests. This alleged remedy—trypsin alone or in conjunction with amylopsin or as pancreatic extract, in which trypsin, as such, was absent—had received a quasi-scientific basis by the assertion that its employment had cured two mice inoculated with Jensen's carcinoma. When the assertion was made, its validity was carefully tested on mice with rapidly-growing tumours. The large number of observations then made showed that the cures claimed were based on fallacies inseparable from so small a number of experiments. The reinvestigation of this alleged remedy, with the modifications since suggested, had shown that it was incapable of curing mice of inoculated cancer or of influencing the progressive growth of tumours.

In the course of their investigations they had had to employ animals which had suffered from cancer, but had been freed from the disease by means other than spontaneous disappearance. The only means whereby they had been able to effect this object had been by the surgical removal of the tumours. This procedure had proved itself efficacious when properly carried out, both in animals in which transplanted tumours were growing, and in animals spontaneously affected with the disease.

HONORARY TREASURER'S REPORT.

The report of the Honorary Treasurer for the year ending June 24th, 1907, stated that in August, 1906, the Fund was increased by a donation of £1,000 received through His Royal Highness the President from an anonymous donor. This was followed in December last by the munificent donation of £40,000 from Mr. and Mrs. Bischoffsheim on the occasion of their golden wedding.

The amount in donations and subscriptions received during the year, apart from the Bischoffsheim Fund, was £3,515 11s. This compared favourably with the amount (£2,315 2s.) received during the year 1905 6. Special reference was made to the gift of £600 received through Sir Samuel Wilks, Bart., F.R.S., a past President of the Royal College of Physicians, who took a keen interest in the work; also to the gift of £500 from Miss Black; and to the sum of £120 from the Government of Hong Kong, which represents the subscription of £30 per annum for the years 1904-7 inclusive which was obtained through the good offices of the Governor, Sir Henry A. Blake, G.C.M.G. In addition to several fresh donors of varying sums, eight new annual subscribers had been added to the list this year, one of whom was the Worshipful Company of Carpenters. This was the first City company to become an annual subscriber. The Worshipful Company of Pewterers had, however, given a third donation. At the present time there were eighteen annual subscribers. Besides these, the list of contributions showed sixteen donors of two donations each, twelve of three donations each, eleven of a fourth, three of a fifth, and two of a sixth donation each. Three sums of £100 each and one of £90 had been received; also two of 50 guineas, one of £51, and six of £50, two of £25, six of £20, nine of £10 and upwards, and nineteen of 5 guineas or £5. Various amounts from 4 guineas to the widow's mite of 1s. went to make up the total. It was stated that the

Executive Committee had recently felt itself enabled to make an increase in the salaries of the original members of the staff amounting in the total to £250 per annum. The Fund was still deficient to the extent of nearly £13,000 on the estimated amount required to provide a sufficient and permanent income from invested capital.

Sir WILLIAM CHURCH moved the adoption of the report.

Sir HENRY R. SWANZY, in seconding the motion, said the thanks of all were due to Dr. Bashford and his assistants for the sustained, well-directed, and skilful efforts made by them to solve the many problems surrounding the subject of cancer. Substantial progress was being made, and a confident hope might be entertained that the time would come when they would understand the nature and cause of cancer, and also find a cure for it. One fact brought out by the report was that experimental research was necessary for the elucidation of many of the obscurities which surrounded cancer. It was most important that the general public should recognize the fact that there was a body of opinion opposed to this method, which, if it were to prevail, would frustrate the object the Imperial Cancer Research Fund had in view—an object which must be one near to the heart of every right-thinking man. The Royal College of Surgeons of Ireland, over which he had the honour to preside, was deeply interested in this Fund and in its work, and had the utmost confidence in it. They believed that nothing which scientific skill could devise was being omitted to solve this problem.

The resolution was carried unanimously.

Sir JULIUS WERNHER proposed a vote of thanks to the Chairman and members of the Executive Committee, the Subcommittees, the Honorary Treasurer, the Secretary, Auditor, and others who had assisted in the work of the Fund during the past year. It was sometimes said that the work of the Fund was, perhaps, slow; but very few people recognized the nature of the scientific difficulties which had to be surmounted.

Mr. H. L. FLORENCE seconded the motion, which was unanimously agreed to.

THE BISCHOFFSHEIM DONATION.

Mr. HENRY MORRIS next moved:

> That the General Committee desire to place on record their deep sense of gratitude to Mr. and Mrs. Bischoffsheim for their recent munificent gift of £40,000, which, together with Mr. Bischoffsheim's original donation of £5,000, will do so much towards placing the Imperial Cancer Research Fund on a secure financial basis.

Amidst the difficulties and disappointments which surrounded the starting of the Cancer Research Fund, three donations, or promises of donations, were the means of giving much-needed encouragement to its promoters. These donations were each of £5,000, by the Worshipful Company of Goldsmiths, Messrs. Wernher, Beit, and Co., and Mr. Bischoffsheim. Mr. Bischoffsheim's £5,000 had nearly as much power in bringing the Fund into existence as this recent gift of £40,000 would have in putting it on a sound and permanent foundation. He added that in a letter regreting his inability to be present, Mr. Balfour, who was one of the Vice-Presidents of the Imperial Cancer Research Fund, stated that the regret was rendered more acute by the fact that, as he understood, a vote of thanks was, on that occasion, to be passed to Mr. and Mrs. Bischoffsheim for their munificent gift of £40,000, and that it would have given him peculiar pleasure to have taken a share in any proceedings designed to express gratitude for this piece of splendid liberality.

Sir CHARLES MORRISON BELL seconded the motion, which was passed unanimously.

On the motion of Dr. ROSE BRADFORD, seconded by Mr. LUDWIG NEUMANN, Mr. Watson Cheyne was re-elected a representative of the General Committee on the Executive Committee; and on the motion of Mr. BUTLIN, seconded by Sir JOHN MCFADYEAN, Sir John Tweedy was elected a member of the General Committee.

Sir R. DOUGLAS POWELL, in proposing a vote of thanks to the Prince of Wales for presiding, referred to the great interest which His Royal Highness had shown in the Fund from its foundation. His continued interest was a great encouragement to the Executive Committee and to the officers engaged in research work, and also an assurance to the public that any efforts which achieved success would at the earliest moment be applied to the practical relief and prevention of this very dire disease which affected so many of the public.

Mr. EDMUND OWEN, in seconding the motion, remarked that the presence of His Royal Highness in the chair set the seal upon the past year's work of the Imperial Cancer Research Fund. It was a proof to the public, if proof were needed, that the work of the Fund was worthy of their trust, of their hope, and of their generous support.

The motion was passed by acclamation.

SPEECH BY THE PRINCE OF WALES.

The PRINCE OF WALES, in reply, said it was a great pleasure to him to have been able to preside at the meeting. He had been much interested in listening to Sir William Church's remarks on this year's report of the General Superintendent. They had every reason to be satisfied with the growing confidence of the public in the work of the Fund. This was evident from the wide development of its investigations, in which workers in all parts of the world were now taking part; from the endeavours which were being made in France, Belgium, Scandinavia, and the United States to organize similar investigations; and last, but not least, by the munificent donation from Mr. and Mrs. Bischoffsheim. The broad lines of inquiry undertaken by the Imperial Cancer Research Fund had, they felt certain, influenced the whole nature of investigation at home and abroad. It was recognized that the work was conceived and carried out in a liberal spirit; that whatever facts were ascertained were immediately made known to every one; that the material was freely placed at the disposal of all qualified to use it to good advantage; that their staff was not working for its own ends, but with a whole-hearted desire to help on a solution of the problem. From the General Superintendent's report they might gather that the result of the research had been to leave behind various vague issues which it was necessary to investigate in order to clear away doubts and to narrow down the issue to a certain definite line of investigation, in which the clue to the nature of cancer must be sought. Although many new facts had been ascertained they did not as yet justify hopes of a new treatment. Good progress was being made in a scientific sense, which was, after all, the object of the work, and as scientific research must be sure and accurate so must it be laborious and slow. It was hoped, therefore, that the public would continue by its sympathy and financial assistance to support the work of the Imperial Cancer Research Fund, and be willing to exercise the patience necessary for prolonged and systematic investigation. Compared with other diseases, cancer had, alas! such peculiar terrors of its own that impatience for the discovery of the cause and of successful treatment was only natural. But the fact that alleged cures were being submitted to impartial tests, such as the report showed to have been done in the case of trypsin, would, he hoped, assure the public that everything would be done to take full advantage of any means that might be discovered to alleviate suffering. Another tribute to the success of the efforts of the Fund was the number of applications from skilled investigators to take part in the work. Thanks to the liberality of the Royal Colleges, further accommodation had been placed at the disposal of the General Superintendent, and he had, therefore, been enabled to add materially to the staff.

His Royal Highness concluded by expressing his thanks to the chairman and members of the various committees, Dr. Bashford, and the officers of the Fund for the valuable and untiring services which they had given during the past year to the work of the Fund.

THE authorities of Clayesmore School, Pangbourne, Berks, imbued with the spirit of the system adopted by the Admiralty for entrance into the Naval College, intend in future to award four scholarships—two major and two minor—after an examination conducted, not on the ordinary specialized or academical lines, but designed to test the general intelligence, interest, and alertness of the candidates. They will be subjected to a simple written examination, and will then be interviewed by the Board of Examiners, who will have before them reports from former masters and tutors. The object of the scheme is to get rid of the mere examination test and so to free the preparatory schools as far as possible from the rigid system of education which they must at present follow in preparing boys to enter a public school.

LORD LISTER HONOURED BY THE CITY.

AN interesting ceremony took place in the Council Chamber at the Guildhall on June 28th, when Lord Lister was presented with the honorary freedom of the City of London, in recognition of his distinguished services to humanity as the discoverer of antiseptic surgery. The Lord Mayor presided, and the Aldermen and members of the Common Council in their many-coloured robes made a picturesque effect in the body of the hall. The medical profession was largely represented, among those attending being Sir Richard Douglas Powell, who was present in his official capacity of President of the Royal College of Physicians, and also as the medical adviser of the venerable surgeon who, it is no secret, dreaded the excitement of the occasion; Mr. Henry Morris, Sir Victor Horsley, Mr. R. J. Godlee, Mr. Watson Cheyne, Mr. Jonathan Hutchinson, Professor Howard Marsh, Mr. Pearce Gould, Dr. Sidney Phillips, Dr. Ewart, Mr. Stonham, Dr. C. J. Martin, Director of the Lister Institute; Dr. Forman, Deputy Chairman of the London County Council; Dr. Darra Mair, representing the Chief Medical Officer of the Local Government Board; and many others. Among representatives of general science were Sir Henry Roscoe and Sir Norman Lockyer. The gallery was crowded with keenly interested spectators, among them being a number of ladies.

Lord Lister, whose sombre attire made a striking contrast with the blaze of colour around him, was greeted with loud cheers as he walked to the dais, where the Lord Mayor sat in state, escorted by a deputation of the City Lands Committee, consisting of Alderman Sir James Ritchie, Bart., Mr. Alderman Hanson, Captain Hall, Mr. F. G. Painter, Mr. T. Pimm, Mr. Walter Dennis, and Mr. V. I. R. Longman. Mr. Alderman Hanson and Mr. Alderman Guthrie, on behalf of the Merchant Taylor's Company, presented the great surgeon for the freedom. Lord Lister took a seat on the left hand of the Lord Mayor, while the Recorder (Sir Forrest Fulton, K.C.), in his crimson robes, sat on the right hand. The Chamberlain (Sir Joseph Dimsdale, Bart.), wearing his robe of office over the uniform of a Privy Councillor, sat on Lord Lister's left hand.

The ceremony began by the reading of the following resolution, passed recently by the Court of Common Council for conferring the freedom, by the Town Clerk:

> That the freedom of this City, in a suitable gold box, be presented to the Right Honourable Lord Lister, O.M., M.D., F.R.S., D.C.L., etc., in recognition of his eminence as a surgeon, and of the invaluable services rendered to humanity by his discovery of the antiseptic system of treatment in surgery, whereby so great a progress in surgical science has been achieved, so much suffering has been alleviated, and so many valuable lives have been prolonged.

Mr. G. A. Pickering, the Chief Clerk to the Chamberlain, read the declaration of the Compurgators, Mr. F. P. Alliston, Alderman and Cordwainer; Mr. J. W. Domoney, citizen and Loriner; Mr. Deputy Algar, citizen and Cook; Mr. J. Tickle, citizen and Blacksmith; Mr. Walter Dennis, citizen; and Mr. W. H. Pitman, citizen and Painter Stainer. Then came the presentation of the freedom, the quaint ceremonial of which was reduced to its simplest expression in order to spare the illustrious recipient of the honour all unnecessary fatigue. The declaration which Freemen are called upon to make was read for him by Sir Joseph Dimsdale. It runs as follows!

> I, ..., do solemnly declare that I will be good and true to our Sovereign Lord King Edward VII; that I will be obedient to the Mayor of this City; that I will maintain the Franchises and Customs thereof, and will keep this City harmless, in that which in me is; that I will also keep the King's Peace in my own person; that I will know no gatherings nor Conspiracies made against the King's Peace, but I will warn the Mayor thereof, or hinder it to my power: and all these points and articles I will well and truly keep, according to the Laws and Customs of this City, to my power.

The CHAMBERLAIN, in formally admitting Lord Lister to the freedom of the City, delivered the following address, for a copy of which we are indebted to his courtesy:

A century ago the Corporation of London paid her tribute of honour to the great professions of which Lord Lister is so bright an ornament.

In 1803 the Freedom of the City was presented to Dr. Jenner, whose name will ever be associated with the discovery of vaccination, and whose researches superseded the system of inoculation—at that time so successfully and usefully employed to combat the dread disease of small-pox by such men as Dr. Fothergill and Dr. Dimsdale.

To day we meet to do honour to one whose life-long labours mark another epoch in the history of Medicine and Surgery.

During the last half-century the strides made both in Medicine and Surgery have been little short of marvellous. What was impossible a few years back is now of daily and hourly occurrence. The treatment of disease—the safety in operations—and the careful and tender nursing of the patient are a few of the many developments of our time, and throughout this period Lord Lister has held a foremost place, and has been recognized as one of the greatest and most prominent among Surgeons.

But it is not only as a great Surgeon he is known. He is equally a great Scientist; and it is by blending his Antiseptic treatment with modern Surgery that he has made possible so much that has—until lately—been *impossible.*

He stands out as one who has been instrumental in assuaging suffering, lessening disease, and, under God's blessing, prolonging and saving numberless lives.

Few are permitted to see the full fruition of their lofty aims and aspirations, but it is with sincere pleasure we greet Lord Lister in this ancient Guildhall, and rejoice to feel that he is able to enjoy the honours conferred upon him by his Sovereign.

To be the recipient of universal expressions of esteem and admiration of his work from all seats of learning, while eulogiums from every quarter of the globe proclaim the appreciation the world in general feels for his life-long labours; it remains for posterity to fully gauge and comprehend the magnitude of the legacy he bequeaths to mankind.

The City of London—and through her the country—places, I venture to think, the coping-stone to-day to the monument of his fame.

The citizens, in expressing their deep gratitude for his great services to the human race, ask his acceptance of the highest honour it is in their power to bestow. But while they fully recognize his great work, probably the trait that touches the hearts of his fellow-countrymen most is his abnegation of self, and his humble-mindedness, which, amid all his triumphs, recognizes that it is under Divine blessing he has achieved so much.

Well might Lord Lister, in the autumn of his life, take to himself the words of Lord Byron:

> No lengthen'd scroll, no praise-encumber'd stone—
> My epitaph shall be my name alone;
> If *that* with honour fail to crown my clay,
> Oh may no other fame my deeds repay;
> *That*, only *that*, shall single out the spot,
> By *that* remember'd, or *with* that forgot.

The name of "Lister" requires no embellishment, nor is the sculptor's art needed to perpetuate it in posterity.

As long as humanity exists! As long as kind and sympathetic hearts beat in the breasts of mankind! As long as the human race is capable of estimating the worth and value of the truly great and good! So long will the name of "Lister" live, and the memory of him who bears it remain enshrined and held in affectionate reverence by succeeding generations.

To be the medium of conveying to Lord Lister the sentiments of London and the country to-day is to me a pride and pleasure. Three-quarters of a century ago there lived in adjacent houses at Upton in Essex two Quakers, Joseph Jackson Lister and Joseph Dimsdale, my grandfather. A dear relative of mine, still living, can well remember "little Joseph Lister" as a playmate. The "little Joseph Lister" of those days is the great Lord Lister to whom we pay just and heartfelt honour to day.

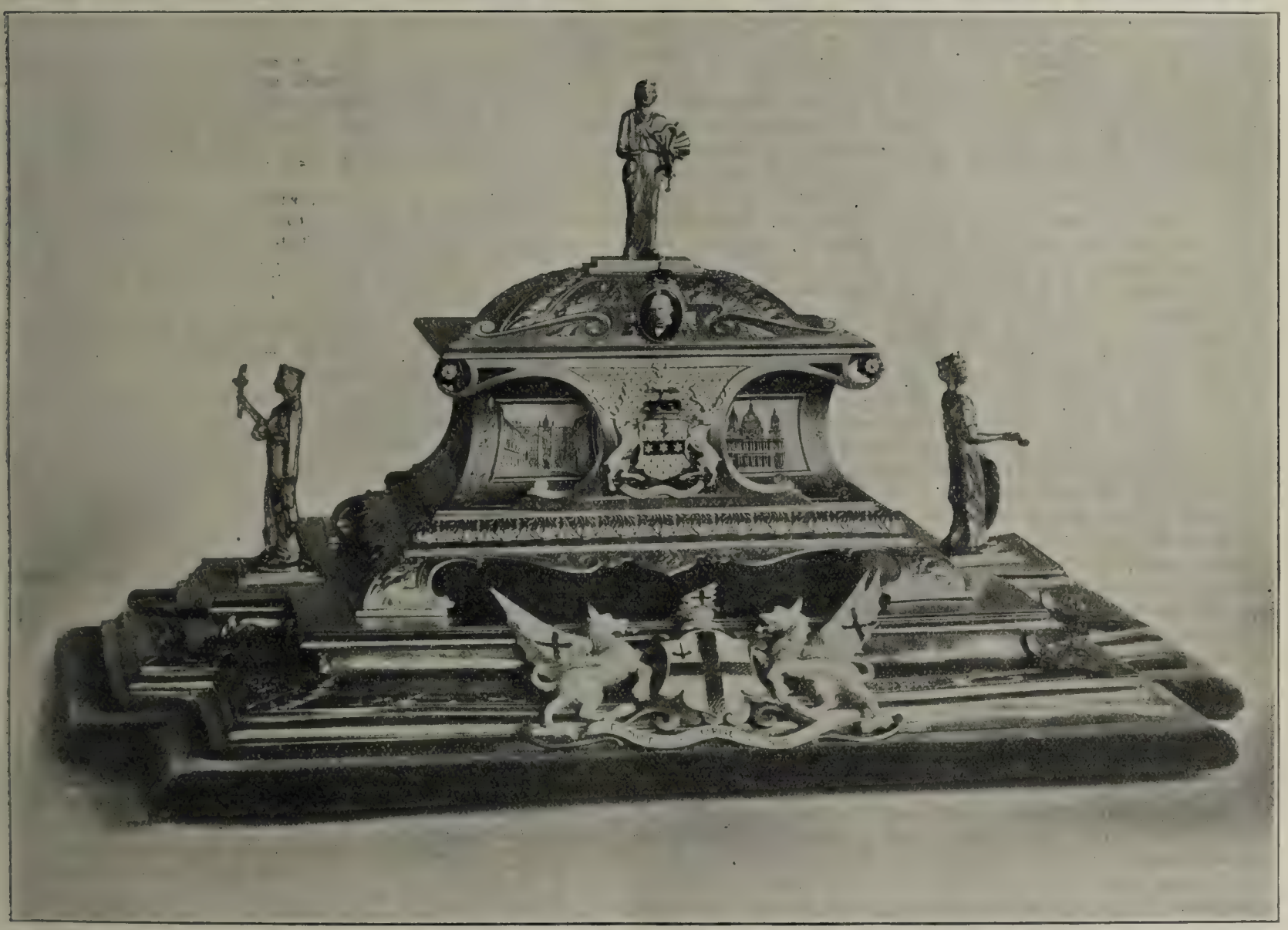
Then, turning to Lord Lister, the Chamberlain presented him the casket containing a copy of the document

constituting him a freeman of the City of London. He said:

Lord Lister, I offer you the right hand of fellowship, claim you with pride as a citizen of London and a Merchant Taylor, and, on behalf of the Lord Mayor, the Court of Aldermen, and the Court of Common Council, ask you to accept this casket containing a copy of your freedom. We to-day add your name to our roll of fame, and you will find it associated with the names of some of the greatest and noblest of our countrymen. There would, I venture to say, be a great omission if to that illustrious roll the name was not added of the great Lord Lister.

Lord LISTER, who appeared to be greatly moved, replied in a voice which, though weak, was heard distinctly in the gallery. He said: Sir Joseph Dimsdale,—I thank you from the bottom of my heart for your overpowering kind words. The work in which it has been my great privilege to be engaged has brought its own all-sufficient reward. Perhaps I need not say that I value in the highest degree this distinction, the greatest civic distinction in the world. My Lord Mayor, if it were possible to enhance the honour which you have conferred upon me to-day, this has been done by the extraordinary consideration shown by you and your Court for my personal convenience. Had it not been for this extreme kindness it would not have been possible for me, in my infirm state of health, to receive your gift in this historic building.

The new Freeman was then presented to the mover (Mr. Alderman Alliston), and seconder (Mr. J. W. Domoney) of the resolution for conferring the freedom, the sheriffs, one of whom, Sir Thomas Crosby, a well-known member of the medical profession, had received the honour of knighthood, and Alderman Sir Walter Wilkin. Mr. Alderman ALLISTON moved that the address of the Chamberlain and the reply by Lord Lister should be entered on the minutes, and a copy sent to every member of the Court. Mr. DOMONEY seconded the motion, which was adopted. The proceedings then terminated, Lord Lister being escorted amid cheers through the Guildhall to his carriage. The casket, of which, thanks to the courtesy of the City Chamberlain, we are enabled to give an illustration, is the handiwork of the Goldsmiths' and Silversmiths' Company. The following is the official description of the casket:



It is of 18 carat gold, and is supported by four scroll feet, in the interspaces of which are emblems relating to science and learning. The shape of the box itself is richly curved, and derives a distinctive appearance from a canopy, depending from the upper moulding, with English roses as finials. It falls in a convex form, and bears in the centre the full heraldic blazon of the recipient. Two views of London in enamel are shown on the box, the form of the canopy giving an effective framework. Two other views appear on the reverse, with the following inscription engraved in the centre:

Presented by
The CORPORATION of the CITY of LONDON
with the Freedom of the City
to the Right Honourable LORD LISTER, O.M., M.D., F.R.S., D.C.L., etc.,
in recognition of his eminence as a Surgeon and of the invaluable services
rendered to humanity by his discovery of the
Antiseptic System of Treatment in Surgery.
Guildhall, E.C., June 28th, 1907.

The end panels are decorated with emblems relating to Lord Lister's distinguished career, and foliated repoussée work completes the decoration. As a counterpart of the canopy, the lid is shown with a cornice of harmonious character; in the centre of this is an oval cabochon, on which is a finely-painted miniature of the recipient; this is surmounted by a coronet. The lid, which is richly chased, rises on a bold dome, and has on the summit a figure representing Hygeia with the snake and cup. The casket stands on a silver-gilt base, at each end of which are pedestals bearing two finely-modelled figures, one representing the City of London offering the Scroll of Freedom and the other symbolizing Medical Science holding out the Torch of Fame. On the curve of the base are embossed a series of emblems relative to scientific research, and on the central position of the obverse is the full coat of arms of the City with supporters in heraldic colours. The whole rests upon a velvet-covered plinth.

[For the photograph of the casket here reproduced we are indebted to the Goldsmiths' and Silversmiths' Company, Limited, 112, Regent Street, W., who are the makers of the "suitable boxes" in which the freedom of the City is presented to distinguished persons.]

LITERARY NOTES.

THE article on Women's Suffrage, by Mrs. E. M. Simon, which appeared in the May number of the *Monthly Review* (the demise of which we regret to see announced), has been reprinted, together with a preface by the author, and is published by Messrs. Cornish Brothers, of Birmingham. As Mrs. Simon is the wife of a Birmingham physician, her work has some interest for the medical profession in addition to its intrinsic worth. Unlike most of the contributions to this subject, her article is a moderately stated and well-balanced argument against the exercise of the political suffrage by women, on the ground of their special physical and mental organization unfitting them for the rough scramble of politics. On the other hand, it is urged that they possess in a high degree qualities in which men are conspicuously deficient, that are wanted in the family, the house, and in the work of many public bodies in which their co-operation is gladly accepted.

Dr. Henry Barnes of Carlisle has sent us some of the most recent fruits of his indefatigable antiquarian researches in the form of two reprints from the Cumberland and Westmorland Antiquarian and Archaeological Society's *Transactions*. One of these, in vol. vi of the new series of that collection, deals with a stone coffin and chalice found at St. Nicholas, Carlisle. He had already given some attention to the practice of burial in stone coffins and endeavoured to trace the history of such coffins as had been found in the district. The most interesting local specimen of these coffins is one mentioned in Jefferson's *History of Carlisle* as having been found near the site of the Leper Hospital at St. Nicholas, Carlisle. The exact date when it was dug up is uncertain, but Mrs. Isaac Cartmell, of St. Nicholas View, says it was on the premises when her grandfather first occupied them, before 1770; and the pewter chalice which, according to family tradition, was found in the coffin, has lately been presented by that lady to the Tullie House Museum. The coffin was used in Mrs. Cartmell's grandfather's time as a watering trough for horses and cattle. The lid of the coffin was a plain oblong, thick, grey stone, and was used as a stone table. The coffin has since passed into other hands, and is now at Englethwaite, near Cotehill, where Dr. Barnes had an opportunity of inspecting it. It is of red sandstone, similar to that which is found on the Gelt, a few miles east of Carlisle. It is 78 in. long, 27 in. across the widest part, 18 in. across the narrowest part, and 16½ in. deep. The width of the inside is 8½ in. at the head, 19 in. at the shoulder, and 13 in. at the feet. The depth of the interior of the coffin is 11 in. There is a deep furrow running down the middle from the shoulders, terminating in a hole in the bottom of the coffin. The lid is of grey sandstone, but Dr. Barnes was assured it might have come from the same quarry. It is 77 in. long, 21 in. wide at the top end, 16 in at the bottom, and about 6 in. in thickness. On its upper surface it has bevelled edges all round. There is no carving on the coffin, but there are a few linear chisel marks on the lid. Dr. Barnes could not make out any inscription. The chalice said to have been found in the coffin is of pewter; the interior of the bowl bears traces of having been silver-plated. It has unfortunately been broken. It belongs to the early type of pre-Reformation chalices, and closely resembles some of the earliest known chalices which have been found in the tombs of the ecclesiastics. A few have been found in the tombs of bishops and priests of the eleventh and following century. The fact that the chalice and coffin which Dr. Barnes has been describing were found near the site of the ancient hospital of St. Nicholas at Carlisle raises a strong presumption that the coffin contained the remains of some former master of the hospital. It is known that the hospital had a very ancient foundation. In vol. x of the old series of the *Transactions* of the Cumberland and Westmorland Antiquarian and Archaeological Society Dr. Barnes gave some account of its early history, and the names of some of its masters. It was founded and endowed for thirteen lepers, one master chaplain to reside, and sing Mass at his discretion. There is nothing now to mark the hospital. Mrs. Cartmell states that there were some large blocks of stone in the field near the old buildings, which are now known as "Old St. Nicholas," but that these blocks were removed at the time the railway was made. At this time seven skeletons were found lying side by side, a number of broken pots, and some coins; but it is not known whether they were the remains of lepers or rebels. Mrs. Cartmell also told Dr. Barnes that in the field above mentioned there was a well which had a great reputation, its water being considered a valuable remedy for sore legs, or sores on any part of the body. Drawings are given both of the coffin and the chalice. Dr. Barnes's other paper, which is reprinted from vol. vii of the new series of the Cumberland and Westmorland Antiquarian and Archaeological Society's *Transactions*, refers to the Kirkoswald coffin chalice and paten, and two others found in Cumberland. These are described and figured.

To the *Revista de Medicina y Cirugia Practicas* of June 7th Don Manuel de Foronda contributes an interesting note on the treatment of infectious diseases by red light. In studying the documents relating to the journeys of Charles the Fifth he has come across an account of an attack of small-pox through which the future Emperor passed at Lille in 1509, when he was 9 years old. The following is an exact copy of the document, which shows that the little patient was enveloped in red bed-clothes, while red curtains were hung around his bed:

Chambre des comptes de Lille: recette générale des finances. B. 2 210.

1509. Compte de Jean Micault, receveur général des finances de Maximilien Empereur et de Charles, Archiduc d'Autriche pour un an començant le 1er janvier, 1508 v.st. = A Gerard de la Roze, marchant de draps de layne demourant à Bruxelles, la somme de soixante-quinze livres pour parties de draps de layne qu'il a vendues et delivrées durant le mois de novembre XVe et neuf.

Et premièrement pour dix aulnes trois quartiers de fine escarlatte rouge, pour en faire ung couvertoir et deux corssetz pour monseigneur l'Archiduc pour s'en servir durant sa derrenière maladie des verrolles. . . . Item pour six aulnes de fin drap rouge pour tendre alentour de son lit durant sa dicte maladie pour la veue . . . . etc.

A pocket edition, in three volumes, of Dr. John Brown's *Horae Subsecivae* will, it is announced, be published shortly by Messrs. Blackwood.

We learn that the next addition to the Oxford Medical Publications, to be ready next week, is *Operations of General Practice*, by Messrs. Edred M. Corner and H. I. Pinches. The volume, which will contain upwards of 175 illustrations, is meant to be a guide to the general practitioner in the performance of the more strictly surgical part of his daily routine. The first of the seven volumes of Professor Osler's *System of Medicine* is also nearly ready for publication. This deals with predisposition and immunity; diseases caused by physical, chemical, and organic agents, by vegetable parasites, by protozoa, by animal parasites; nutrition; and constitutional diseases. It has been arranged that the volumes shall be obtainable separately.

At a recent meeting of the Berlin Ophthalmological Society Professor Hirschberg gave an account of what he described as the oldest existing illustration of an operation for cataract. The Greeks, he said, had illustrated works on medicine and science, of which very few have survived. Of five treatises on diseases of the eye that are known to have existed, none have come down to us. Between A.D. 870 and A.D. 1370 the Arabians produced at least thirty textbooks of ophthalmology of which thirteen are still extant. Hunain gave the first picture of the eye, Salah-ad-din reproduced ophthalmic instruments, such as a syringe for the suction of soft cataract, besides optical figures and a cross-section through the eye. As the Mohammedan religion, however, forbids the representation of the living body, this author gives no illustration of cataract extraction. Halifa, who flourished about 1255, gives illustrations of about thirty-six eye instruments. The later Persian writers give no illustrations, and Salomon of Toledo gives none of cataract extraction. In regard to this the Middle Ages are blank up to the seventeenth century. The first author to give an illustration of cataract extraction was George Bartisch, but, according to Professor Hirschberg, he made the same blunder that was made by Rembrandt in his picture of Tobias healing his father of blindness; he shows the operator's left hand, not fixing the eyeball, but resting on the forehead. In an edition of his book published one hundred and three years later, the same mistake is again made. The first who gave an accurate representation of the procedure was Lorenz Heister in 1713.

Nova et Vetera.

RENÉ THÉOPHILE HYACINTHE LAËNNEC.

In the lecture on Laënnec and the evolution of the stethoscope, which is published in this issue of the Journal, Dr. Theodore Williams has told in a most interesting manner the story of the great discovery which gave the precision of an exact science to the investigation of the lungs and heart, and made the movements of these organs and the changes wrought in them by disease almost *oculis subjecta fidelibus*. To his account of Laënnec's work we have nothing to add. But some details as to the man may not be uninteresting.

Laënnec was a native of Brittany, and he had the tenacity of purpose and single-minded integrity characteristic of the best type of Breton. He was born at Quimper, in Lower Brittany, on February 17th, 1781. His father was a lawyer, the brilliancy of whose intellectual gifts tended to lead him away from the dusty road that leads to success in the law into the flowery by-paths of literature. Young Laënnec was placed under the care of one of his paternal uncles, a Doctor of the Sorbonne, who was vicar of the parish of Elliant near Quimper. From him doubtless Laënnec imbibed the principles of religion to which he steadfastly adhered throughout his life. From him, too, he got a knowledge of the classics which never left him, and in particular, a familiar mastery of Latin which enabled him in after-life to conduct his professional correspondence in that language. Indeed, Laënnec was wont to express regret that Latin had ceased to be the international language of science. Preferment in the Church removed his teacher from the neighbourhood, and Laënnec was then sent to Nantes, where he was placed under the wing of another uncle, who was a professor of medicine there, chief physician to the Hôtel-Dieu, and titular medical Councillor in Ordinary to the King of France. Under his auspices young Laënnec not only completed his literary education, but laid the foundation of a sound knowledge of medicine. The Revolution destroyed the old medical schools of France, and in the troublous times that followed, there was urgent need of surgeons for the army. Laënnec, like Récamier and many others, found himself, while still a young student, burdened with all the responsibilities of a military surgeon.

In 1800 he was released and went to Paris to complete his studies. He studied at the Charité under Corvisart, whose favourite pupil he soon became, and so ardently did he devote himself to the study of disease under that great master that he made detailed notes of some four hundred cases. These observations formed the groundwork of his later clinical researches. In 1802 he was awarded the two principal prizes in medicine and surgery given by the Government. He took his doctor's degree on June 11th, 1804, his inaugural thesis being entitled *Propositions sur la Doctrine d'Hippocrate appliquée à la Médecine Pratique*. He had already begun to lecture on morbid anatomy in 1803. In 1812 he was appointed physician to the Beaujon Hospital, and four years later he became senior physician to the Hôpital Necker. It was in that hospital that he made the discovery which has given him a place among the Immortals of Medicine.

Dr. Theodore Williams quotes his own account of the manner in which the discovery was made, and we need only complete the quotation by adding the few sentences which follow: "With this conviction," says Laënnec, "I forthwith commenced at the Necker Hospital a series of observations which have been continued to the present time. The consequence is that I have been enabled to discover a set of new signs of diseases of the chest, for the most part certain, simple, and prominent, and calculated, perhaps, to render the diagnosis of the diseases of the lungs, heart, and pleura as decided and circumstantial as the indications furnished to the surgeon by the introduction of the finger or sound, in the complaints wherein these are used."

In 1818 Laënnec submitted the results of his labours to the Académie des Sciences, which received them as such august bodies usually receive new things—with Olympian indifference. Dr. Cowan told Sir Benjamin Ward Richardson that Laënnec's epoch-making memoir was listened to "with respect but without the slightest trace of enthusiasm." In the following year appeared his great work, *De l'Auscultation Médiate, ou Traité du Diagnostic des Maladies des Poumons et du Coeur, fondé principalement sur ce nouveau moyen d'Exploration*. Sir John Forbes, who was in a position to know the facts at first hand, says of this book, which is a conspicuous landmark in the history of medicine, that it was at first received by the profession with considerable distrust, and the new mode of diagnosis and especially the instrument, was attempted to be turned into ridicule. It is the eternal story of the difficult birth of new truth. There are men living who can remember the derision with which some old practitioners treated the "toy" invented by the French physician; there were others who, wishing to appear

up-to-date, applied the wrong end to the chest, and listened with an air of knowledge that would have done credit to Thurlow, of whom it was said that no one was so wise as he looked. Forbes goes on to say: "Indeed, but for the admirable descriptions of the diseases contained in the work, which proved the vast industry and talent of the author, and rendered his volumes infinitely valuable, whether his diagnosis were true or false, it seems probable that the discovery of Laënnec, like that of Auenbrugger, might have been allowed to fall into temporary oblivion. As it was, however, the work soon excited a great sensation in Paris, and the new method of diagnosis was hailed, especially by the younger members of the profession, as a discovery fraught with the most splendid results. Fortunately the whole of the author's investigation had taken place in the eye of the public and before numerous and zealous pupils, both able and willing to prosecute the methods which they had seen productive of such wonderful effects in the hands of the master. These pupils, with a fervour natural to their years, soon spread the practice of auscultation not only in France, but conveyed it, in some degree, into every country of Europe."

The publication of his book was followed by a breakdown which brought the author to the edge of the grave. He had to leave Paris, and seek renewal of health in his native air. He was a man of unambitious character and simple tastes, and country life suited him. Though small and of weakly frame he was fond of outdoor sports, and when out shooting thought nothing of walking over many miles of country. During his enforced retirement he gave himself to the study of Celtic, and his knowledge of the language of Brittany often opened to him the way to the hearts of the patients from that part of France. Forbes relates of him that when in 1814 the hospitals of Paris were filled with wounded soldiers, he volunteered for service at the Salpêtrière. "Among the young soldiers who at that unhappy period crowded the hospitals, overwhelmed at once with bodily fatigue and distress of mind, there happened to be a great number of conscripts from the Bretagne, who did not know one word of French, and whose sufferings in consequence were greatly and fatally aggravated by nostalgia of the worst description. These poor fellows were speedily congregated in the wards under the charge of Laënnec, where they derived as much benefit from the care and kindness of their countryman, and from the delight of being understood and spoken to in their native language, as from the skill with which they were treated."

FROM A SKETCH BY DR. C. J. B. WILLIAMS.

In 1821 Laënnec returned to his work in Paris. He was appointed physician to Her Royal Highness the Duchesse de Berry, and in 1822 became Professor of Medicine at the Collège de France. Political storms which arose soon after led to the closure of the Faculty of Medicine for a time. When it was reopened Laënnec was appointed Professor of Internal Medicine in the Faculty and delivered clinical lectures at the Charité. His fellow student and lifelong friend, Bayle, says of him at this time: "It was here, at La Charité, surrounded by his patients, that we had an opportunity of admiring at once the delight he took in the improvement of his art, and his courage in overcoming habitual suffering in order to indulge in his favourite pursuits. His painful efforts were rewarded in a manner most agreeable to him, by a numerous concourse of pupils and even of distinguished physicians whom his great reputation attracted to Paris from every country in Europe."

We have also a graphic account of the man about this time from the pen of Dr. Charles J. B. Williams. In his *Memoirs of Life and Work*, now out of print, for the loan of which we are indebted to the courtesy of Dr. Theodore Williams, that famous physician says:

The commencement of the session of the schools and hospitals inaugurated our systematic winter work. After due consideration I resolved to make the hospital of La Charité and the clinic of Laënnec the chief field of my work. His visit was from ten to twelve in the forenoon, giving ample time for the examination of patients, and the demonstration of the signs of auscultation to the students. M. Laënnec at the bedside always spoke in Latin, to avoid alarming the patients by the description of their maladies; and also for the benefit of many foreigners attending the clinic, who might not understand French. The visit was terminated by a clinical lecture in French; unless there was a *post-mortem* examination, which he superintended, with the safeguard of a long pair of forceps in his hand and the free use of chloride of lime in the room. He was always fearful of infection, and was not aware that he was already consumptive. He died of phthisis little more than a year after. Yet, although very thin, and sometimes becoming exhausted by long exertion, his vivacity and quickness of perception and intelligence were unimpaired, and showed the integrity of those wonderful powers of observation and reflection by which he had become the discoverer of a new system and new art.

We counted ourselves fortunate in thus having the personal instructions of the great master, when most matured by the latest observations and practice. It was surprising how little he was valued by French students. Those who attended his clinic were chiefly foreigners; and at his lectures on medicine at the College of France there was only a sprinkling of his own countrymen. They were attracted more by the infectious Broussais, who captivated them by a grand idea—a sweeping hypothesis, without troubling them with the details of objective facts or careful observation. Broussais generally ascribed diseases to inflammation; and his treatment lay chiefly in different modes of blood-letting and starvation. I soon found that Laënnec had a bias, from his opposition of these views, to go to the other extreme and deny the existence of inflammation where it really exists. Andral took an eclectic view of the question, and, guided by Laënnec's auscultation (only without the stethoscope) compared with the investigations of pathological anatomy, succeeded in giving a more rational and complete view of the processes of disease than had been attained by either Broussais or Laënnec before him. It was my good fortune to be in a position to profit also by his labours, at the same time that I was attending the wards of Laënnec.

Elsewhere Dr. Williams writes:

Besides his clinic at La Charité, Laënnec held the Professorship of Systematic Medicine in the College of France. I attended his lectures there also, and, although they were not first rate, I took notes of them in Latin, for, finding the study of French and Italian were making me forget my Latin, I resorted to this expedient to regain it. I have lately found a book of these notes, containing also some of the pencil sketches, in which I endeavoured to preserve likenesses of my old teachers. The most distinguished of these were professors at the Sorbonne, and in the afternoons I found time to attend several during this winter.

He goes on to say:

The clinic of Laënnec, and the study of auscultation under him, were my foremost objects; and by close attention I succeeded in fairly understanding and practising what he taught. Laënnec was somewhat partial in his attentions to pupils. His favourite was Dr. James Gregory, son of the professor at Edinburgh, and my particular friend. To him he made a point of showing everything, and often called on him to explain matters to the other English pupils, much to the annoyance of the few French in attendance. On Dr. Gregory's

leaving Paris, Laënnec wrote a very high testimonial in his favour. On my departure, somewhat later, he told Dr. Edwin Harrison and myself that he should mention our names in the preface of the forthcoming edition of his work, among those who had become proficient in the art of auscultation. This we considered as a more complimentary testimonial than any written merely for ourselves. At the same time he asked us to tell him of any others whom we might know as having attended his clinic and obtained a good knowledge of auscultation, as he was anxious to do them the same justice. I mentioned the names of Dr. Thomas Hodgkin and Dr. Alexander Urquhart, whom I knew to have studied successfully under him; accordingly their names, with ours, appeared in his preface.

It is with no little satisfaction that I am able to present to my readers a real likeness of Laënnec, just as he appeared in making his visit at the clinic of La Charité. As might be expected, the drawing is faulty; but still it has succeeded in giving somewhat of his fine, sharp, intelligent features and amiable expression of countenance; and, with his ordinary costume of straight-cut grey frieze coat and embroidered decoration, it may be acceptable, as a reminiscence of the celebrated inventor and teacher of auscultation. It was in this capacity that he was best known in the clinic of La Charité. He had been a great worker and writer in pathological anatomy; but little of this came out in his clinic. There he was full of the art of auscultation in diagnosis, which by his own experience he had worked out and clothed in a new phraseology, and taught on the authority of his own experience and knowledge. These were marvellously large, and reflected great credit on his industry and powers of observation, as well as on his intelligence and inventive genius; but it is another question whether they quite warranted the dogmatic precision which he tried to give to the rules of his new art, as if it were complete and decisive, instead of tentative and progressive. Yet the chief discoveries of auscultation, and its large development, were undoubtedly his, and have placed him in the foremost rank among the benefactors of mankind. To these, as well as to his personal teaching, I owe not only some of the most valuable knowledge that I ever acquired, but also the opening up of new avenues of knowledge which will be inexhaustible till the end of time. It was the new idea of bringing another sense—the sense of hearing—to aid us in investigating the organs in health and in disease, and, through studying its indications, learning, as it were, a new language, which would tell us of their changes in condition or motion—that gave vastness to the discoveries of Laënnec, and would render them fruitful far beyond his own share in them.

Dr. Williams's sketch of Laënnec is reproduced on the previous page. He says of it in a footnote:

> The able engraver, who has taken the trouble of reproducing my rough sketches, has fairly succeeded in preserving the likeness; but he has not materially mitigated their faults, which are those of an unpractised amateur.

The sketch, though somewhat recalling a well-known student of medicine known to fame as Mr. Benjamin Allen, has a character about it which serves to give an idea of the living man even more, perhaps, than the other portrait, also reproduced here, showing the dignified professor in full academic pontificals.

Laënnec, notwithstanding the celebrity which he finally achieved, never made a large professional income. He was indifferent in the matter of fees, often refusing to see the rich while never turning a deaf ear to the poor. His private practice never brought him more than £1,000 a year. His salary as professor was only £200, while his ministrations to the Duchesse of Berry seem to have been thought to be amply remunerated by a wage of £160 a year. Though respected for his scientific knowledge and the uprightnsss of his character, he was probably too unbending to be popular with his royal patrons. He is somewhat disparagingly referred to by a lady of the Court as *ce petit sec*.

By an irony of fate, of which there are several examples in medical history, he died of the disease which he had done so much to elucidate. In 1826 symptoms of phthisis manifested themselves, and, recognizing that the hand of death was upon him, he returned to his native place to die. There he passed away, worn out by work as much as by disease, on August 13th, 1826, in the 46th year of his age. He left a widow, to whom he was married two years before his death, but no child.

In the long roll of illustrious physicians, there are few greater names and no nobler character than René Théophile Hyacinthe Laënnec. He was that noblest work of God, an honest man.

IT is announced that Mrs. Russell Sage has given £60,000 for the endowment of an institute in New York to be devoted to research into the diseases of aged people.

THE VITAL STATISTICS OF TEN YEARS.

INFECTIOUS DISEASES OF CHILDHOOD.

IN a short article published last week the appearance of the first part of the decennial supplement (1891–1900) to the annual report of the Registrar-General was announced, and some general particulars reproduced. We may now refer to the section of the report in which the causes of death are analysed, and the balance of loss and gain in mortality from certain diseases indicated. The net result is that in the decennium 1891–1900 an average annual saving of 540 lives was achieved in each million of the population of England and Wales. The diseases which showed a higher fatality than in the corresponding period immediately preceding were influenza, measles, diphtheria, diarrhoea, pneumonia, cancer, diabetes mellitus, and Bright's disease. In the case of all other diseases the fatality was lower.

Measles, Whooping-cough, Diphtheria, and Scarlet Fever.

The statistics with regard to these four diseases, so frequent and fatal in early life, may be taken together. The fatality attributed both to measles and diphtheria in the decennium 1891–1900 was higher than in any of the three preceding decennial periods, whereas the mortality from whooping-cough showed a slight, and from scarlet fever a very remarkable, decline; these facts are displayed in the accompanying table (I):

TABLE I.—*Measles, Whooping-cough, Diphtheria, Scarlet Fever, Annual Mortality per Million living in Successive Decennia: England and Wales.*

	All Ages.	0—	5—	10—
Measles.				
1861–70	391	3,011	243	29
1871–80	334	2,579	203	22
1881–90	406	3,127	271	23
1891–1900	414	3,247	221	18
Whooping-cough.				
1861–70	467	3,782	153	8
1871–80	451	3,667	135	6
1881–90	414	3,366	128	4
1891–1900	377	3,086	96	3
Diphtheria.				
1861–70	171	771	395	137
1871–80 ...	112	474	292	89
1881–90	153	689	424	100
1891–1900	263	1,362	679	125
Scarlet Fever.				
1861–70	890	4,644	2,193	504
1871–80	649	3,504	1,522	326
1881–90	312	1,667	763	154
1891–1900	158	844	353	81

In the SUPPLEMENT for 1881–90 Dr. Tatham discussed the question whether the rapid decline of scarlet fever mortality in recent years was due to a diminished prevalence or to a milder form of infection, but now states that re-examination of the reports of the Metropolitan Asylums Board from 1872 onwards indicates that the latter is probably the true explanation. The average mortality among the vast number* of scarlet fever cases treated annually in the hospitals of the Board has decreased almost steadily during the last twenty years.

During the last forty years the registered mortality from whooping-cough has fallen by about 19 per cent., and the fall has been nearly continuous throughout the period; but Dr. Tatham observes that it is certain that the ratio of 377 per million living does not completely represent the loss of life for which whooping-cough is responsible, many of the deaths from bronchitis and other diseases of the lungs having their origin in antecedent whooping-cough.

* 14,539 in 1901.

The mortality from measles has not varied very greatly during the last forty years, but it has shown an upward trend, the rate for all ages per million living having increased from 391 in 1861-70 to 414 in 1891-1900. A reference to Table II shows that this increase in the rate for all ages is due to the increase at ages under 5, a period during which not less than 93 per cent. of the deaths occur. On analysing these figures further, it appears that this disease levies its heaviest death-toll not on infants in their first year, like whooping cough, but on children between 1 and 2 years.

TABLE II.—*Mortality during each of the First Five Years of Life per 1,000 Births: England and Wales.*

	Under 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.
Measles	3 14	5.60	2 25	1.25	0.74
Whooping-cough	5 81	3.82	1.44	0 77	0 40
Diphtheria, croup	0.67	1.52	1 52	1.66	1.45
Scarlet fever	0.29	0.70	0.85	0 84	0.66

The deaths registered from diphtheria or from membranous croup at all ages were 263 per million living, an increase of 72 per cent. on the rate in the decennium immediately preceding. Nevertheless, Dr. Tatham considers that the mortality from diphtheria is still probably understated, since it is known that of the deaths ascribed to such conditions as tonsillitis, quinsy, ulcerated sore throat, catarrhal and membranous laryngitis, a considerable proportion are really diphtheria. He believes that with the more general adoption of bacteriological methods of diagnosis it is probable that a still higher proportion of these deaths will eventually be returned as diphtheria, and adds that the mortality under every one of the above indefinite headings has steadily fallen in recent years. When the recorded mortality from diphtheria is combined with that from croup, two facts may be observed (Table III)

TABLE III.—*Diphtheria and Croup: Annual Mortality per Million Living in Successive Decennia: England and Wales.*

	All Ages.	0—	5—	10—
1861-70	390	2,371	644	150
1871-80	261	1,525	503	98
1881-90	286	1,595	641	109
1891-1900	314	1,719	756	128

—first, that the increase in the fatality from the two assigned causes taken together is notably less than the increase from diphtheria alone, the rate from diphtheria and croup being, in fact, lower at the present time than forty years ago. The second point is that when the headings are combined, the age incidence of the mortality in the earlier decennia tallies much more closely with the known incidence of fatal diphtheria to-day than would have been the case had the formerly dominant factor of croup been left out of account.

For the purpose of comparing the mortality in town and country, the counties of England and Wales have, as was mentioned last week, been placed in two groups, the one containing those counties which at the census of 1901 were mainly urban in character, containing the chief centres of industry, and the other counties which, although they contained some considerable urban communities, were nevertheless mainly rural in character. When the statistics for the four diseases under consideration are compared in this way, it is seen that each is much more fatal in towns than in rural districts; diphtheria is nearly twice as fatal, measles and scarlet fever more than twice as fatal; this is shown in Table IV.

TABLE IV.—*Measles, Whooping-cough, and Diphtheria: Annual Mortality per Million Living under 5 Years of Age in Urban and Rural Counties and in England and Wales.*

	Urban Counties.	Rural Counties.	England and Wales.
Measles	4,067	1,573	3,247
Whooping-cough ...	3,540	2,392	3,086
Diphtheria	1,653	829	1,362
Scarlet fever	1,102	466	844

THE RETIREMENT OF POSTAL MEDICAL OFFICERS UNDER AN AGE LIMIT.

SOME ten months ago the Postmaster-General intimated that he had decided to review annually the efficiency of postal medical officers over 60 years of age, retaining those only who were found to be thoroughly efficient, and retaining none in any circumstances after 70 years of age. On behalf of the postal medical officers it has been urged that much hardship was involved in making so unexpected a regulation retrospective; that the method of determining the question of efficiency was not satisfactory, because it was based on secret reports, to which the medical officers had no access, and to which they had no opportunity of replying, and that a medical consultative board should be appointed before which postal medical officers would have the right to be heard. It was also pointed out that postal medical officers would be the only servants of the Post Office liable to dismissal for inefficiency without warning of any kind being given, and that they would be the only public servants to be retired from public appointments under an age limit without any pension or gratuity.

On June 27th Mr. Buxton received a deputation representing the Association of British Postal Medical Officers, consisting of the President, Dr. Adeney (Tunbridge Wells); the President-elect, Dr. George Mason (London); Dr. Dunlop (Bradford), Dr. Campbell (Dundee), Dr. Walton Browne (Belfast), Dr. McVeagh (Coventry), Dr. Higgs (Dudley), Dr. Berridge (Redhill), Dr. Coates (Streatham), and the Honorary General Secretary, Dr. Giddings (Nottingham). Mr. Buxton was accompanied by Mr. Babington Smith, C.B., C.S.I., the Secretary to the Post Office, and Dr. Arthur Wilson, the Medical Officer-in-Chief to the Post Office. All points raised by the deputation were discussed by Mr. Buxton in a most conciliatory and considerate manner, and the deputation withdrew thoroughly gratified with their reception and his decisions, which were as follows:

1. That present and prospective postal medical officers over 70 years of age are, if they desire to retain their appointments, to personally bring their cases under the notice of the Postmaster-General, and in all cases where they can be shown to be still efficient, he will favourably consider them for retention in their present positions.

2. That only where a postal medical officer is hopelessly inefficient and his inefficiency is such that there is no possibility of him improving, will he in future be discharged without a warning; but that where a postal medical officer is getting slack and showing inefficiency in the opinion of the Department, he will be given twelve months' notice and will be reported upon again at the expiration of that time, and if it should occur that he can then be reported as being efficient, his services will be retained.

3. That whenever a postal medical officer is reported as being inefficient he will be given information of the nature of his inefficiency in general terms, and if any specific charge is preferred against him it will be stated. If any postal medical officer reported as inefficient considers that the charge is an unjust one, he will in future be entitled to have a personal interview with the medical officer in chief or the second medical officer at the London head office and to lay then before him any matters in explanation or extenuation of the charge.

4. That Mr. Buxton requested to be supplied by the Association of British Postal Medical Officers with a memorandum of its proposed scheme of superannuation for medical officers, and promised to accord it his sympathetic consideration, adding, however, that if it converted him it would still be a matter for the Treasury to decide upon. The scheme as outlined seemed to appeal to Mr. Babington Smith, who evinced an interest in it.

DR. R. WELSH BRANTHWAITE will deliver the second Norman Kerr Memorial Lecture, in connexion with the Society for the Study of Inebriety, on October 8th.

EPSOM COLLEGE.

Annual General Meeting.

The annual general meeting of the Governors of Epsom College was held on June 28th, under the presidency of Mr. Henry Morris, Treasurer. Among those present were: Sir R. Douglas Powell, Bart.; Sir William Church, Bart.; Sir Constantine Holman, Mr. J. Paul Bush, C.M.G.; Mr. C. L Smiles, Dr. Godson, Mr. Croft, Dr. Charles Caldecott, Dr. Needham, Dr. Collier, Dr. St. Clair Shadwell, Dr. F. Taylor, Mr. George Eastes, and Dr. Tirard.

The report presented by the Council for the year 1906 showed that there had been an improvement in subscriptions, donations, and bequests, with the result that the account showed a surplus of £836, after a further sum of £771 in connexion with the drainage and sanitary operations had been deducted. The amount expended on these extensive but necessary works had reached the large total of £8,000, and to provide this all the stocks belonging to the general purposes fund had been sold, the only remaining asset being sundry mortgages amounting to £2,550. The Council pointed out that there were so many deserving candidates for pensionerships and foundation scholarships that great distress would be caused if the numbers at present assisted were to be reduced; yet the Council could not possibly continue to fill all vacancies as hitherto unless the income of the foundation be maintained. Each year many supporters were lost through death, so that it was essential that fresh annual subscribers should be secured to take their places if the beneficent work of the foundation was to be continued uninterruptedly. The Council proposed, owing to the rapid increase in the number of applicants, to amend the rules for Morgan annuities so as to raise the limit of age for candidates from 60 to 65 years. Under the will of the late Miss Mary Grace Cheyne, who left a sum of £1,000, duty free, the Council has been able to found an annuity of the annual value of £30 "for the daughters of medical men, they being Protestants." The three Morgan annuities and the new annuity are the only pensions available for the daughters of medical men. Under the will of the late Miss M. N. H. Armstrong an Armstrong scholarship of £60 a year has been founded, to be tenable for three years at the University of Oxford or Cambridge, and will be awarded to a boy who on leaving Epsom College passes a creditable examination in classics at the summer examination of the school. The report on the discipline, work, and health of the school was very satisfactory. A number of open scholarships and exhibitions had been won at the universities, and fourteen boys had passed the whole or part of the preliminary scientific examination at the University of London.

The Chairman, in moving the adoption of the report, referred to the deaths of Sir Joseph Fayrer, Bart., who had generously supported the College since 1858, and had been for fourteen years chairman of the council; Sir Arthur T. Watson, Bart., K.C., who had been a member of the council for twenty years, and had during that period given professional advice unreservedly for the benefit of the College; and Mr. Thomas H. Wakley, a Vice-President, who had been greatly interested in the College since its foundation, and had generously aided the scheme by which annuitants received an increased pension in lieu of residence at the College. The number of boys at present in the College—263—was the highest on record, and the greater facilities provided by the Council last year for the admission of day boys had resulted in an increase in their number.

The result of the election for pensioners and foundation scholars was declared as follows:

Pensioners.

	Votes.
France, Mary	6118
Phillips, Thomas G.	5243
Hemingway, Louise	3994

Foundation Scholars.

	Votes.
Harlock, Eric D.	13212
French, Desmond A.	6223
Beasley, Henry E.	6219
Barr, John W.	5342
Ewbank, Charles H. P.	5112
Wood, Arthur R.	4857
Bland, L. Harry F.	4731

MEDICAL NEWS.

By command of the King the Anthropological Institute will henceforth be known as the Royal Anthropological Institute of Great Britain and Ireland.

At a meeting of the British Balneological and Climatological Society on May 30th, Dr. W. J. Tyson, of Folkestone, was appointed President for the year commencing October 1st, 1907. Dr. Fortescue Fox was elected to succeed Dr. Morgan Dockrell as librarian.

Last week the Earl of Rosebery opened at Cheddington, Bucks, a complete water system, constructed at an approximate cost of £2,000, as a memorial to the late Lady Rosebery. This is, we believe, the first occasion —at any rate, in recent times—when a memorial has taken this highly practical and commendable form. Lord Rosebery said that whatever were the causes which induced people to leave the country for the towns, one clear duty was to make the country worth living in; Cheddington now had an abundant supply of pure water, which perhaps had more to do with health than anything else, with the exception of air.

The annual general meeting of the Poor-law Medical Officers' Association of England and Wales was held at the Trocadero, Piccadilly Circus, W., on June 27th. Surgeon-General Evatt, C.B., President of the Association, was in the chair. The report of the Council and balance sheet were duly presented and unanimously adopted. The financial condition was considered very satisfactory, and it was decided to invest another £100 in Consols. The officers and Council for last year were re-elected, with the exception of the Treasurer, Dr. Gayton, who desired to retire from that office. Dr. Napper was unanimously elected Treasurer in his place, and the thanks of the Association were given to Dr. Gayton for his long and able services in the past. The members and their friends afterwards dined together. A musical entertainment was given by Mr. T. F. Noakes, and a very pleasant evening was passed.

The third annual general meeting of the Association of Scottish Medical Diplomates was held on June 19th at 11, Chandos Street, London, W. The report of the council and the treasurer's balance sheet were presented and adopted by the meeting. The rules of the Association, as finally drafted by the Council, were unanimously approved after full discussion. The retiring president, Dr. A. Farrer, was appointed Honorary Vice-President; Dr. David Walsh was unanimously elected to the office of President for the ensuing year, 1907-8, while Mr. Sydney Stephenson, F.R.C.S.Ed., was re-elected Treasurer; and Dr. Arthur Harries, Honorary Secretary for the same period. Some appointments to vacancies existing on the executive council were likewise filled. The new president congratulated the Association on the energy that it had hitherto displayed, and anticipated a career of prosperity with the hearty co-operation of London and provincial diplomates. Scottish diplomates can obtain further information from the Honorary Secretary, 11, Chandos Street, London, W.

A conversazione was given at the Cancer Hospital, London, on July 2nd, the guests being received by Lord Ludlow, the President of the institution, and Lady Ludlow. The wards and grounds were decorated for the occasion, and in the course of the evening opportunity was afforded to all present of making a thorough examination of the hospital and of its departments and annexes, including the nursing home and the unusually pretty chapel. The latter is supplied with an electrophonic arrangement which enables patients not allowed up to follow the services. Care was taken to bring home to the visitors the meaning and practical value of all they were shown, especially of the new pathological department and the museum. Attention was also directed to the active part the hospital is now playing in research work, a matter in which the lay authorities of the hospital show much interest; special beds are set aside for the trial of the different remedies which from time to time are thrust upon the notice of the public. In the same connexion delegates were sent some time ago to investigate the cancer serum introduced by Dr. Doyen of Paris, and also to attend the Congress on Cancer at Heidelberg. The hospital last year received 817 in-patients, and afforded relief in one form or another to over 17,000 persons attending the out-patient department. The finances of the institution are in a very unsatisfactory condition. Of late years it has been necessary to draw heavily upon the capital fund to meet annual maintenance expenses.

British Medical Journal.

SATURDAY, JULY 6TH, 1907.

THE ANNUAL MEETING.

THE arrangements for the seventy-fifth annual meeting of the British Medical Association, which will be held in Exeter at the end of this month, are practically completed, and a revised programme, giving in some detail the work of the Sections, is published in the SUPPLEMENT for this week. As will be seen, subjects have been selected for discussion in each Section, and in a few instances we are enabled to publish a synopsis of the remarks by which the discussion is to be introduced. Unfortunately, it has not hitherto been possible to obtain such synopses in the majority of cases, although experience shows that their publication beforehand tends to add to the interest of the debate. On looking over the programme of the thirteen Sections, it will, we think, generally be agreed that opportunity will be afforded to members who take an interest in any one of the great departments into which the science and practice of medicine now naturally fall, to give the results of their own experience and observation, and to hear the views of others.

The President of the Association for 1907-8, Dr. Henry Davy, Physician to the Royal Devon and Exeter Hospital, will be inducted at the adjourned general meeting on Tuesday afternoon, July 30th, and will deliver the annual presidential address on the evening of that day. The address in medicine will be given on Wednesday afternoon by Dr. W. Hale White, Physician to Guy's Hospital, who will advance "a plea for accuracy "of thought in medicine." The address in surgery will be delivered by Mr. H. T. Butlin, Consulting Surgeon to St. Bartholomew's Hospital, and formerly Treasurer of the British Medical Association, on Thursday afternoon; his address will be "on the con-"tagion of cancer in human beings, auto-inoculation." The popular lecture, a comparatively new feature in the Association week, suggested by the late Dr. Bagot Ferguson, of Cheltenham, by whom the first was delivered in 1904, will be given this year by Sir John William Moore, of Dublin, who will speak on weather, climate, and health, illustrating his subject by a large number of screen and lantern slides.

The Sections will meet on Wednesday morning, July 31st, and on the two following days, but the Annual General Meeting will be held on Saturday, July 27th, at 9.30 a.m., and will be followed immediately by the Representative Meeting, which, at the conclusion of its business on that day, will adjourn until the following Monday morning at 9 30 a.m.

The Association has not held its annual meeting in Exeter since 1842, but it met at Torquay in 1862 and in Plymouth in 1871. Great changes have taken place in the conditions of natural life and work during the sixty-five years since the Association last met in Exeter, and these changes have found their reflex in the medical profession; corresponding changes have taken place also in the Association itself, the most remarkable of which is the fact that the membership has increased from 1,350 to nearly 21,000. Moreover, during this long period the Association has undergone more than one change of constitution, each designed to adapt its organization to the changing needs of the profession and the rapid growth in membership. By the most recent reconstitution it has been sought to bring the organization of the Association, as it were, to the door of every member by the institution of Divisions and by the regular publication of a SUPPLEMENT to the JOURNAL containing full accounts of all the medico-political activities. So far as the annual meeting is concerned, the most striking result of the change has been the calling into existence of the Representative Body; by it the policy of the Association is directed, and through the reports presented to it, and through its discussions, social and political questions affecting the profession are brought to the notice of the whole body of members. The agenda paper containing the business for the Representative Meeting this year seems likely to be less voluminous than on some previous occasions; few notices of motions were received from the Divisions, except those relating to the Charter, which came before the Special Representative Meeting, and the business coming before the meeting in Exeter will therefore be chiefly the presentation and discussion of reports. In addition to the annual report of the Council, issued in the SUPPLEMENT of May 4th, the meeting will receive from the Central Ethical Committee its report on the ethical aspects of medical consultation, which was submitted to the last Representative Meeting, by which, as there had not then been time for its full consideration beforehand, it was referred to the Divisions. The report has been considered by the Divisions during the past year, and the opinions expressed by them will be brought before the Representative Meeting, together with the recommendation of the Council, embodied in its annual report. This is to the effect that a decision on the matter should be deferred until a conference has taken place with some body representing consultants, on the ground that the concurrence of consultants is necessary to the success of any project of reform in procedure. Among the subjects dealt with in the annual report of the Medico-Political Committee is one at least which presses for immediate attention, since it is practically certain that one of the Bills rendering medical inspection of school children compulsory will become law before the end of the present session; it is very desirable, therefore, that the Representative Meeting should formulate conclusions upon this subject. The report of the Hospitals Committee is also likely to give rise to considerable discussion, inasmuch as though some of the proposals of the Joint Committee embodied in the annual report of the Hospitals Committee were approved by the Representative Meeting at Oxford, others have not previously been considered by it.

The temporary pathological museum has in recent years become one of the most interesting features of the annual meeting, and the collection this year is not likely to fall behind any of its predecessors. The Pathological Museum Committee has sought the co-operation of the officers of the various Sections, and will display in the museum specimens, photographs, diagrams, and microscopical slides, many of which it is hoped may illustrate the subjects discussed in the various Sections. The usual annual exhibition of foods, drugs, medical and surgical instruments, sanitary and ambulance appliances, etc., will be opened from Tuesday, July 30th, to Friday, August 2nd, from 9 a.m. to 6 p.m. on each day.

Needless to say, having regard to the proverbial

hospitality of the West Country, the arrangements for the social side of the meeting have not been neglected. On Tuesday afternoon the Mayor of Exeter will give a garden party; on Wednesday afternoon garden parties will be given by the President of the South-Western Branch, Dr. Deas, and by Dr. Samways; on Thursday afternoon Sir Thomas Dyke Acland, Bart, will give a garden party, and Dr. Gidley, Cullompton, will entertain a picnic party at tea; on Friday afternoon the High Sheriff of Devon, who is also President of the Royal Devon and Exeter Hospital, Sir Dudley Duckworth King, Bart., will give a garden party at Wear House; and there will be luncheon parties at Teignmouth, Torquay, and Sidmouth. On Wednesday evening there will be a reception by the South-Western Branch on Northernhay; and on Friday evening the civic authorities will hold a reception in the Albert Memorial. The annual dinner of the Association will take place on Thursday evening, and on the same evening ladies accompanying members will be entertained at the theatre by the Ladies' Committee. On Saturday several long excursions have been arranged. One party will visit Plymouth, where the Mayor will entertain them at luncheon, and they will have the opportunity of visiting Devonport Dockyard; the Station Hospital, Devonport; the Royal Naval Hospital, Plymouth; and the gunnery, torpedo, and training ships. In the afternoon Plymouth Sound and the River Tamar will be visited, and the party will be entertained at tea by the Earl of Mount Edgcumbe. Other parties will visit Falmouth and Ilfracombe; others Bideford and Clovelly, where they will be entertained by Mrs. Hamlyn of Clovelly Court; and others Tavistock, driving thence to Endsleigh, where they will be entertained at luncheon by the Duke of Bedford.

LORD LISTER'S LATEST HONOUR.

THOSE who were privileged to be present at the interesting ceremony in the Guildhall on June 28th, when the Freedom of the City of London was conferred on Lord Lister, will not forget the historic scene. More fortunate than most discoverers, the founder of antiseptic surgery has lived to see the universal acceptance of his teaching and the splendid results of his beneficent work. There may be doubts as to the real greatness of other men whose names are familiar in our mouths as household words, but of his there can be none. Napoleon used to ask of any one of whom he heard, "*Qu'est ce qu'il fait?*" In the case of many whom the world honours it might be difficult to give a satisfactory answer to this question; but of Lister it may be said that he has already done incomparably more for the preservation of human life than Napoleon did for its destruction. Honoured by his Sovereign, by his profession, and by the representatives of science throughout the world, there was only one distinction left to be conferred upon Lord Lister, and on Friday last the City of London honoured itself by adding to its long roll of famous names one which, according to the true scale of truth, is the most illustrious of all. The scene, which is described elsewhere, though in deference to the wish of Lord Lister it was reduced to its simplest expression, was at once picturesque and impressive. Among those who had gathered together to witness the ceremony were the leading representatives of surgery in this country and a thrill went through the assembly when the venerable figure was seen advancing towards the place of honour by the side of the Chief Magistrate of the greatest city in the world, with slow and somewhat uncertain steps, but still upright. A striking incident was the spontaneous homage rendered by all present rising to their feet on his appearance. Age and infirmity have written their characters on the once stately frame of Lord Lister, and, on recalling what he was only a few years ago, the lines of Scott involuntarily rose to the memory:

> His giant form, like ruined tower,
> Though fallen its muscles' brawny vaunt,
> Huge-boned, and tall, and grim and gaunt,
> Seemed o'er the gaudy scene to lower:
> His locks and beard in silver grew.

Although the excitement of the ceremony must have been trying to him, he went through his part of it with simple dignity. Though obviously stirred by deep emotion, his voice was perfectly audible. His speech of thanks, though brief, was characteristic of the man: it breathed the spirit of modesty which has always marked him, and no one who heard it could doubt the sincerity of his statement that his work had brought its own sufficient reward.

The speech of Sir Joseph Dimsdale, the City Chamberlain, in admitting Lord Lister to the Freedom, was admirably conceived and impressively delivered. He recalled the fact that in 1803 the city had conferred the same honour on Edward Jenner, the discoverer of vaccination. In well-chosen words he sketched the marvellous strides which had been made by the art of healing during the last half-century. What was impossible a few years back was, he said, now of daily and hourly occurrence, and for this mankind had to thank the work of Lister. He struck a true note when he said that while they fully recognized Lister's great work, probably the trait that touched the heart of his fellow countrymen most was his humble-mindedness, which amid all his triumphs recognized that it was under the Divine blessing he had achieved so much. So true is this that we feel sure Lord Lister would say with as much sincerity as Ambroise Paré: *Je le pansay; Dieu le guarist.*

Sir Joseph Dimsdale said that to be the medium of conveying to Lord Lister the sentiments of London and the country, was to him a pride and a pleasure. In turn we may say that to the whole profession of which Lord Lister is the greatest ornament, it is a pride and a pleasure to see what the new Freeman himself justly called the greatest civic distinction in the world conferred upon one whom it holds in such honour. It was especially appropriate that the orator to whom fell the duty of welcoming the new Freeman should be one who is himself descended from a famous member of the medical profession. It is a curious circumstance that the method of inoculation against small-pox which was practised with such success by Thomas Dimsdale, was superseded by the discovery of Edward Jenner, on whom the City of London conferred its freedom in a "suitable gold box," as it has now been done in the case of Lord Lister. An illustration of that box was published in the Jenner Centenary Number of the BRITISH MEDICAL JOURNAL, May 23rd, 1896, p. 1260. Sir Joseph Dimsdale, the City Chamberlain, is, we believe, a cousin of Baron Dimsdale, who is the seventh in descent from Thomas Dimsdale, M.D., of Hertford. Thomas Dimsdale served in the Rebellion of 1745 under the Duke of Cumberland. He afterwards became so famous as an inoculator that in 1768 he was invited to Russia by the Empress Catherine to inoculate herself and her son. The operation was successful in both cases, and the gratitude of the Empress showed itself in a manner probably without a parallel. The fortunate

physician received a fee of £10,000, a further sum of £2,000 to cover the expenses of his journey, and a life pension of £500 a year, together with the titles of Baron and Physician to the Empress, and the rank of a Russian Councillor of State. The Empress further presented him with miniatures of herself and her son, the Grand Duke Paul, set in diamonds. In 1784 Dr. Dimsdale was again called to Russia to inoculate the Grand Duke Alexander and his brother Constantine, and the Empress on that occasion presented him with her own muff, made of the fur of the black fox, which in Russia only members of the Imperial Family are allowed to wear. He died in 1800.

We are sure we express the heartfelt wish of the medical profession throughout the world in giving utterance to the hope that Lord Lister may long enjoy the honours which have been so deservedly showered upon him.

THE NEW WORKMEN'S COMPENSATION ACT AND RULES.

We publish elsewhere in this issue an article explanatory of the recently published rules under the Workmen's Compensation Act, which have been framed by the Rule Committee, consisting of five county court judges, for the purpose of carrying the Act into effect. The rules are for the most part concerned with legal procedure, and the article deals with them in so far as they are of general interest to practitioners and of special interest to medical referees. It is to be borne in mind that these rules supplant those which were in force with regard to the Act of 1897; and, just as that measure has been modified and expanded by the Act of 1906, so the rules of 1907 contain many provisions which do not appear in those which have now become obsolete.

With regard to the provisions of general application, a study of the rules must inevitably bring home to every one the paramount necessity of insurance against all the liabilities imposed by the Act. We have no means of judging what may be the actual cost of resisting a claim under the Act; but it is certain that legal assistance would have to be invoked by any employer who desired adequately to safeguard his interests. Even under the old Act, the procedure was by no means free from complexity, and we doubt whether the new measure is calculated to reduce litigation to the vanishing point. It is manifest, however, that every prudent employer should take care that he is so protected that whenever a claim is made against him he may lay the whole burden of defence on the shoulders of an insurance company.*

One problem which is by no means easy of solution is now being discussed in legal circles. Suppose a British subject sends his servant abroad, and that servant is injured in the course of his employment in a foreign country, can he claim compensation? We have it on good authority that leading members of the legal profession have already given conflicting opinions upon this question; and neither the Act itself nor the rules provide any logical solution of the difficulty. Again, it may be a surprise to the non-legal mind to be told that neither the Act nor the rules lay down any procedure by which, when a claim is made against an employer, an insurance company can be compelled to come in and contest the case. The only exception to this arises in cases in which, upon the bankruptcy of the employer, the workman is allowed to pursue his remedy against the insurance company.

With regard to medical referees, the rules contain a number of new and useful provisions which were foreshadowed in the text of the Act itself. Thus, a county court judge may now, if he thinks fit, summon a referee to sit with him as assessor. Again, an important duty is imposed upon the medical referee to act as a kind of court of appeal from the decisions of a certifying surgeon upon questions relating to industrial diseases. A medical referee may also be called upon to decide whether the incapacity of a workman is due to the accident. He may also be asked to give a certificate as to the condition of a workman and his fitness for employment. In each of the above cases his decision will be final. A medical referee may also be called upon to examine workmen who are about to reside abroad.

It will be noticed that the rules which affect medical referees make frequent reference to regulations made by the Secretary of State and the Treasury. It is presumed that in order to carry out the provisions of the Act a new series of Treasury regulations will shortly be published.

* Under the policy issued through the Medical Insurance Committee by the Guardian Assurance Company, Limited (see advertisement page 9), all costs incidental to litigation which may arise in connexion with disputed claims under the Act will be fully borne by the Company, which will take over the conduct of all such claims. The following is the clause in the policy: "The Company shall indemnify the employer against all liability and claims for costs or otherwise in connexion with negotiations or legal proceedings which they may take or defend in his name." Further particulars can be obtained on application to the Medical Insurance Committee, c.o. British Medical Association, 6, Catherine Street, Strand, W.C.

THE ANNUAL MEETINGS OF 1908 AND 1909.

At the meeting of the Central Council on Wednesday it was announced that the Sheffield Division had decided by a unanimous vote to invite the British Medical Association to hold its annual meeting in Sheffield next year. The invitation was received with great pleasure by the Council, and will, we make little doubt, be accepted by the Annual General Meeting this year. It was further announced that the Sheffield Division would nominate Mr. Simeon Snell, Ophthalmic Surgeon to the Sheffield Royal Infirmary and Professor of Ophthalmology in the Sheffield University, for the office of President-elect in the event of the invitation being accepted. We understand that the invitation has the approval of the incoming Lord Mayor and Master Cutler, and that the Council of the University of Sheffield has offered the use of the University buildings, which it is believed will be amply large enough to provide all the accommodation necessary for an annual meeting and the annual exhibition of surgical instruments, foods, drugs, etc. The Association last held its annual meeting in Sheffield in 1876, and since then great developments have taken place in the provision for higher education, the creation of the university being the last and most striking. It may be safely predicted that the meeting will be largely attended, since three main lines give Sheffield an excellent service to all parts of the country; the hotel accommodation is adequate and will shortly be increased, and there are very interesting works in the town, which is also a good centre for excursions to Chatsworth, Haddon Hall, Hardwicke Hall, Matlock, Buxton, the Peak district and the Dukeries; moreover there are half a dozen good golf courses within reach, and, all things considered, we anticipate that Yorkshire hospitality will be put to a test from which we have equally little doubt that it will emerge triumphantly. It is understood that an invitation will be received from Belfast to hold the annual meeting there in 1909.

BIRTHDAY HONOURS.

On the occasion of the celebration of his birthday the King has announced his intention of conferring the honour of knighthood upon Dr. H. R Swanzy and Mr. Alderman Thomas Boor Crosby, M.D., F.R.C.S. Dr. Swanzy is President of the Royal College of Surgeons in Ireland and of the Ophthalmological Society of the United Kingdom, he is the author of a well-known handbook on diseases of the eye, and his reputation as an ophthalmologist is world-wide. Dr. Crosby is at the present time one of the sheriffs of the City of London, within whose bounds he has practised for many years. The Director-General of the Royal Navy Medical Department, Herbert Mackay Ellis, is nominated a Knight Commander of the Order of the Bath; Deputy Inspector-General T. G. Gimlette, R.N., Surgeon-General Francis Wollaston Trevor, A.M.S., Colonel G. D. Bourke, A.M.S., Colonel C. H. Beatson, I.M.S., are appointed Companions of the Bath. An interesting feature of the list is the recognition given to veteran officers who served during the Indian Mutiny; the medical officers thus distinguished are Surgeon-General Thomas Tarrant, Honorary Physician to the King, late A.M.S., Deputy Surgeon-General Edward Malcolm Sinclair, late A.M.S., Deputy Surgeon-General Alfred Eteson, I.M.S., who are nominated Companions of the Bath. Surgeon-Lieutenant-Colonel W. R. Crooke-Lawless, M.D., Coldstream Guards, Surgeon to His Excellency the Viceroy, is nominated a Companion of the Order of the Indian Empire, and Dr. Jean Etienne Justin Schneider, Principal Doctor of the First Class, French Army, late Chief Doctor to the Shah, and President of the Sanitary Council of Persia, is appointed an Honorary Companion of the same Order. Rai Bahadur Dr. A. Mitra, Chief Medical Officer Kashmir, and President of the Srinagar municipality, receives the Kaisar-i-Hind medal. Two veteran members of the medical profession who have won distinction in other fields have also been honoured by the King. Sir William MacGregor, K.C.M.G., C.B., Governor of Newfoundland, receives the distinction of the Grand Cross of the Order of St. Michael and St. George, and Sir Joseph D. Hooker, late Director of the Royal Gardens, Kew, who began life as a surgeon in the Royal Navy, receives the high honour of the Order of Merit. We have also to congratulate Professor Ray Lankester on receiving in the honour of K.C.B. a recognition by the Crown of his great services to biological science both before and since his appointment as Director of the Natural History Museum.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.

THE present part of this great dictionary runs from *Misbode* to *Monopoly*. It contains a rather smaller number of medical terms than usual, but there are some of more than ordinary interest. There is *mis-born*, with its meanings of prematurely born, abortive, deformed, or misshapen from birth. "That which the "Latines call abortus . . . they (the Anglo-Saxons) called "Miss-borne" is an illustrative quotation of the seventeenth century. *Miscarriage* and *miscarry* are copiously illustrated by quotations showing both the literal and the figurative sense; here is an interesting instance of the latter from Pope: "You have prov'd yourself more "tender of another's embryo's than the fondest mothers "are of their own, for you have preserved everything "that I miscarried of." *Miscegenation*, or the mixture of races, or more particularly the sexual union of whites with negroes, is illustrated by quotations, the earliest of which has the date 1864 appended. A rare meaning of *misprision* is malformation, apparently regarded as a mistake on the part of Nature. *Mitosis* is a well-known word nowadays. It is derived from the Greek *μίτος*, the thread of a warp, and so has come to mean the splitting up into threads of the nucleus of a cell. *Mitral* in its anatomical and medical meanings is fully considered. *Mittent* is a pathological term now obsolete; it was said of the organ or part which, according to the old humoral theories, was supposed to send peccant humours to another. The following quotation from Wiseman's book, published in 1676, illustrates its use: "Vicious Humours, peccant in quantity or quality, "are either thrust forth by the Part mittent . . . or "attracted by the Part recipient." *Mixture*, in its medical sense, is defined as a preparation for medicinal or other purposes, consisting of two or more ingredients mixed together, and an illustrive quotation of so late a date as 1904 says, "I took a sip of the horrid mixture." *Mochlic* is an obsolete medical term signifying either a drastic purge or relating to the reduction of a dislocated bone; it is derived from a Greek word *μοχλός*, a lever. Several compound words beginning with *mogi-* are defined and illustrated, such as *mogigraphia* or writer's cramp; the Greek root is *μόγος*, toil or pain. The words *mola* and *mole* introduce some interesting etymological problems. One of the meanings of *mola* is a false conception, a fleshy mass occurring in the womb, or a mooncalf, a more ordinary form, however, is *mole*. But there are moles and moles; thus, there are the spots or blemishes, or pigmented pimples sometimes carrying hair which are seen on the skin; these seem to have no etymological affinity with the moles or masses expelled from the uterus or with the small mammals so often reputed blind. The origin of the different moles is somewhat obscure, as is also their connexion with the term *mooncalf*, upon which an article appeared in this JOURNAL some years ago.[1] Other medical terms dealt with in this section of the *Dictionary* are *molimen*, meaning an impulse or effort, and especially the straining to bring about the menstrual flow; *mollities*, or softness, for example, *mollities ossium* or softening of the bones; *mongolian*, as applied to a variety of idiots; and a great many compound words beginning with *mono-*, such as *monoblepsia*, *monocephulus*, *monoculus*, *monocystic*, *monocrotic*, *monomania*, and *monospasm*.

SCHOOLS FOR MOTHERS.

THE idea that mothers should receive instruction in their duty is no new one in this country, but the mothers' meeting of the past was a very ineffectual agency, and certain foreign countries have, under the inspiration of the medical profession, found a more excellent way. A few months ago we published a short account of schools for mothers established in Bonn under the direction of Dr. Esser, and in the Bavarian town of Weissenberg by Dr. Doerfler; there is a school for mothers working successfully in Ghent. Last year the Marylebone Health Society, with the help of the Marylebone General Dispensary, started a scheme for infant consultations which included what was practically a school for mothers. Some account of the scheme was published in the JOURNAL on March 2nd, 1907, page 506, and we now have the report presented to a meeting which was held under the chairmanship of Lord Robert Cecil, M.P., on July 2nd. From it we learn that in all 98 babies had been brought to the consultations, that 58 had attended regularly, and that 46 of them had made satisfactory progress. Lord Robert Cecil, K.C., M.P., who presided at the meeting, said that there was abundant evidence to prove that, while poverty was sometimes the cause of infant mortality, the great cause was ignorance of the way in which a child should be cared for during the first year of its existence. While there would probably always be a certain amount of poverty, ignorance could be dispelled, and the importance of an educational

[1] BRITISH MEDICAL JOURNAL, vol. i, 1900, p. 780.

movement such as that started by the Marylebone Health Association could not be too highly estimated. The terrible infant mortality was a great blot on the civilization of our country. On the motion of the Rev. H. Russell Wakefield, seconded by Mr. W. McAdam Eccles, the report was adopted. The Duchess of Sutherland distributed to mothers and foster-mothers, who brought their infants with them, eight prizes and some twenty certificates, with gifts of clothing. Her Grace congratulated the women upon the appearance of the children, and dwelt upon the evils of ignorance and neglect. She expressed a hope that England would follow in the wake of France and Germany, which with poorer material had a happier knack of bringing up a healthier human race. The proper feeding of the body was necessary in order that life might be possible, and the imagination should be stimulated to make life worth living. On July 1st Lord Robert Cecil also presided over a conference on the prevention of infant mortality and the welfare of nursing mothers and suckling infants, promoted by the St. Pancras Mothers' and Infants' Society. At this meeting a school for mothers was inaugurated, at which mothers, newly-married women, and girls will be shown how an infant should be clothed, fed, washed and tended, and treated in small ailments. A trained lady will be on duty at certain times to give object lessons, and to weigh mothers and babies. Other ladies will give demonstrations on how to cut out and make infants' clothes, and the relative value of foods will be explained. With the special design of promoting natural feeding of infants, dinners for underfed nursing mothers will be regularly provided on the premises. A mother, for a small sum, will be able to obtain a good meal, day by day, for from two or three months before the birth of her child to as long as nine months afterwards, provided she is herself nourishing the child, so that two persons will be fed at the expense of one. The dinners will also be utilized as object lessons in the economic provision and preparation of nourishing food. The Society being anxious to preserve and raise to the utmost the self-dependence of the people, and in no way to lessen the responsibilities of the father towards his family, any remission or partial remission of the cost of the dinners for a mother will only be made after careful investigation. Mothers bearing certificates from private medical practitioners, provident dispensaries, or hospitals, that they are unable or have been advised not to nurse their babies, will be instructed how to proceed, and assisted as circumstances and experience may dictate, in procuring pure milk, in the mode of feeding, in periodical weighing, etc. At the meeting on July 1st the scheme which is the result of the joint efforts of Miss Evelyn Bunting and Dr. Sykes, M.O.H., St. Pancras, received the cordial support of Sir Thomas Barlow, Dr. Paramore, Mrs. Scharlieb, M.D., Mrs. Humphry Ward, and other speakers.

BURIAL AT SEA.

CAN the relatives of a person who dies on a ship at sea prevent the burial taking place at sea? This is a question which is about to arise in a concrete form in America. It appears that the wife of Dr. Chalmers Prentice, of Chicago, died on the North German Lloyd Liner, *Konigen Luise*, soon after the steamer left Gibraltar, and her body, as is alleged, was buried at sea in spite of the protests of her daughter. Dr. Prentice has commenced an action for damages against the company. Our English law books and reports are silent upon the question whether the captain of a ship has an absolute discretion in this matter. It has probably not arisen before, since in the old days of sailing ships, when the date of arrival could not be calculated almost to an hour as with the modern liner, it would not have been reasonable to request the retention of a body on board for an uncertain and perhaps prolonged period. According to English law the executors are prima facie the persons entitled to the possession of a body, and are responsible for the burial; but it is conceived that even the executors could not prevent its being buried at sea if the captain thought for sanitary reasons that such a course was desirable. In America it has been decided that the relatives of a deceased person have rights in his body which the Courts will protect, for the reason that such persons "have duties to perform toward it arising out of our "common humanity." Thus the Court directed the restoration of a body to a grave in which it had been buried by the next-of-kin, and from which it had been removed by the widow for the purpose of interment in a different place provided by her. In another American case, where it was held to be an indictable offence to cast a body into a river, the following words were uttered by the presiding judge: "If it be a crime to "disturb the ashes of the dead, it must also be a crime "to deprive them of a decent burial, by a disgraceful "exposure or disposal of the body, contrary to usages "so long sanctioned, and which are so grateful to the "wounded hearts of friends and mourners." He pointed out, however, that different considerations apply to burial at sea, where the usual method of sepulture is out of the question.

VAGITUS UTERINUS.

MUCH scepticism has been expressed as to whether a child can be heard to cry *in utero*, some believing that a noise resembling a cry must be due to the entrance of air or to other causes. There seems, however, reason to believe that such a phenomenon may occur. Peiser, in 1903, spoke of 15 authentic cases.[1] He himself, exploring during labour, distinctly heard a cry for several seconds; then meconium and stained liquor amnii came away. An anaesthetic was administered, and a fresh examination made, when the child was once more heard to cry. It was delivered with forceps, and cried out vigorously after birth. Bacura[2] reported in 1904 an instance of vagitus uterinus during version; as the foot was drawn down the fetus was heard to cry twice, the assistants all hearing the sounds which it made. The child after delivery breathed well for three hours, in spite of the fact that it was asphyxiated at birth, and after its death, before it was five hours old, dislocation of the cervical vertebrae was detected on dissection. Bacura observed that this case proved that a child might live for several hours after its neck had been broken during delivery. That accident, in his opinion, occurred in his case during extraction, that is to say, after the cries were uttered. This case might have proved of medico-legal interest. Dr. S. Marx recently read a report of a case of vagitus uterinus before a meeting of the New York Obstetrical Society.[3] He had already heard a fetus cry *in utero* when he introduced his hand into the uterus for version in the course of a labour a few years ago. On the second and more recent occasion the arm presented, the child was big and version had been unsuccessfully attempted; he was then called, in and on introducing his hand into the uterine cavity several distinct muffled cries were heard, "pitiable and whining." They were repeated on three occasions, for the hand was passed into the uterus three times before the version was completed. There was great difficulty in delivering the after-coming head, and the child, about 12 lb. in weight, was dead when extracted. Marx considers that the vagitus, which he calls the weirdest call for help that can

[1] *Monats. f. Geb. u. Gynäk.*, August, 1903.
[2] *Zentralbl. f. Gynäk.*, No. 5, 1904.
[3] Transactions of the New York Obstetrical Society, *Amer. Journ. Obstet.*, April, 1907, p. 555.

be imagined, is uncanny, for it means that not much can be done, since most if not all the children are lost before they can be extricated. Peiser, however, concluded from cases recorded that the prognosis when a cry is heard is by no means unfavourable to the fetus. Marx's case was clearly an incident in a very severe labour, the big fetus was impacted and unsuccessful attempts at delivering it had already been made by another doctor; possibly many of the cases included in Peiser's series took place in maternities where version was more readily and skilfully undertaken than in private. Dr. Marx states that the term in question can only be applied when the fetus is actually *in utero*. Cries when the head is in the vagina are, according to his own experience, not so very rare. Very possibly vagitus vaginalis has been confounded with vagitus uterinus more than once.

THE RELATION OF FAT TO CAISSON DISEASE

IN a paper recently communicated[1] to the Royal Society, Dr. H. M. Vernon describes some interesting determinations of the solubility of air in various fats. He has shown that, at body temperature, the fat of mammals probably dissolves at least five times as much nitrogen as water or blood plasma, and he points out that these results may have a direct bearing on caisson disease. It has been said that spare men can endure rapid decompression better than corpulent subjects, and Dr. Vernon's experiments throw some light on this alleged difference. Dr. Vernon suggests that the richness of the spinal cord in fat-like substances (nearly 20 per cent.) may account for the frequency with which spinal lesions occur in caisson workers. This possibility deserves consideration. The immediate cause of the spinal injury is, in most cases, gaseous embolism; an actual intercellular or intracellular liberation of bubbles has not been definitely proved to occur. Evidently, however, an abnormally large amount of dissolved gas would facilitate the production of an embolus. The special liability of adipose tissue to injury on rapid decompression is perhaps a resultant of two factors—its greater solvent power and relatively limited blood supply. These factors would reinforce one another, since more gas would be dissolved and its removal would be less easy than in other tissues. Dr. Vernon's paper is of much theoretical and practical importance.

[1] The Solubility of Air in Fats, and its Relation to Caisson Disease, by H. M. Vernon, M.D., read May 30th, 1907.

DECAPSULATION OF THE KIDNEY IN PUERPERAL ECLAMPSIA.

EDEBOHLS'S operation, as it may conveniently be termed is not difficult when undertaken by a surgeon accustomed to operate on the kidney. To make an incision in the loin, to draw out the kidney, to explore it and incise it if necessary, and lastly to return it to its proper place, are manœuvres which many general surgeons frequently practise. The tearing off of the renal capsule involves but little extra difficulty, nor does it demand great manual dexterity. With the obstetrician it is different. He may have no experience in renal surgery, and in practice outside hospitals decapsulation would be in most cases out of the question for several obvious reasons. One of these reasons, however, applies to the operation under the most favourable circumstances. Is it clear that decapsulation is satisfactory, or even justifiable, in cases of puerperal eclampsia? The question has not yet been settled. At the recent meeting at Algiers of a French Congress, Dr. Félix Piéri, of Marseilles, has endeavoured to show that the operation is good surgery, and deserves to be established, and that not only decapsulation is to be undertaken, but in some cases Albarran's complete nephrotomy should also be practised. His report[1] is a good monograph, which deserves to be studied, though his arguments are not very convincing on account of the scanty evidence on which his conclusions are based. He relates six cases with four recoveries, adding, we must note, a fifth successful case which was published in the *Semaine Médicale* of March 8th last, where M. de Bovis of Rheims was the operator. An active discussion followed the reading of Dr. Piéri's paper. Professor Treub of Amsterdam admitted that he had once performed the operation, and that the patient died within eight hours, but she would most certainly have succumbed under expectant treatment. On the other hand, he pointed out that de Bovis himself had admitted that in his case intervention was precocious, and that the woman might very possibly have recovered without it. He further insisted that it was not clear how far intervention was precocious in the three cases reported by Edebohls. Dr. Queirel of Marseilles supported loyally his colleague, for Piéri lost his own case, observing that the patient's condition was manifestly improved for a short time; in fact, it was an argument in favour of early intervention. Dr. Piéri noted that there was already a considerable bulk of evidence in favour of decapsulation in nephritis which justified its application to cases of eclampsia of renal origin. He had laid stress on this limitation when reading his paper, generalized toxic conditions where the kidneys were not diseased being, he had indicated, unsuitable for surgical treatment. Boursier had witnessed one successful case, and followed up the after-treatment. Cure, as well as recovery, was complete, and was without doubt to be ascribed to the operation. Dr. Hartmann disputed, however, with Dr. Boursier one theory which the latter had added to his arguments based on one case of eclampsia. We observed, said Boursier, almost daily the immediate good results following nephrotomy for calculous anuria; in Pousson's successful case, that which he had watched, both kidneys were decorticated, and one was also incised from pole to pole, and the immediate results were manifestly good. Hartmann insisted that it was a great mistake to imply that operations of this kind for nephritis were homologous with similar operations for calculous anuria. He had practised nephrotomy for the latter condition, where there was a mechanical obstacle to the evacuation of urine, with excellent results, but he had experienced opposite effects in the few cases where he had operated for acute nephritis of the epithelial type. Therefore he felt little tempted to undertake decapsulation as a remedy in acute puerperal nephritis until he heard of strong evidence in its favour. Altogether decapsulation as a remedy in the acute nephritis of children remains of doubtful value, but M. Piéri deserves credit for his candid report, especially of his own case. Maybe, as far as we can judge, nephrotomy has a better chance of becoming popular than decapsulation.

[1] De la Décortication du Rein et de la néphrotomie dans le traitement des formes graves de l'éclampsie. Rapport présenté au Congrès national de Gynécologie, Obstétrique et Pédiatrie, Alger, 1907. *Annales de Gynéc. et d'Obstét*, May, 1907.

AN OBJECT LESSON.

THE harm done to the profession by cheap contract work at the present time is probably more far-reaching than is imagined. From time to time little incidents occur which tend to show how the cheap rates originally accepted for attendance on the poorer working classes only have depreciated the value of professional services generally in the eyes of the public. At a meeting last week of the Council of the City of Westminster, a proposal was brought forward to employ medical practitioners to attend their workmen during sickness at the rate of 4s. a year each. This, it was stated, was the "average" club rate for "medical certificates, attend-

"ance, and medicine," and that there would be no difficulty in getting doctors on these terms. It was further urged that up to the present the Council were paying more for certificates of disablement at the rate of 2s. 6d. each than under the proposed scheme they would have to pay for certificates and medical attendance in addition, and figures were quoted in proof the accuracy of which there is no reason to dispute. It is to be hoped for the credit of the profession that medical practitioners will not allow themselves to be exploited in this manner, and will reject with indignation such unworthy terms. Up to the present the Council's workmen have been paying for their own medical attendance like others of their class, and have made no objection. The Council for their own protection have paid a certain sum annually for certificates. To get this work done a little cheaper, it is proposed to alter the existing arrangement by tempting the workmen to accept medical attendance for nothing at the expense of their employers, who themselves expect to make a good thing out of the change. No doubt, the scheme is plausible enough: all the parties are gainers, except the doctor. That a responsible body like the Council of the City of Westminster should even contemplate making such an offer to the medical profession is far from flattering.

ALCOHOL AND ABSTINENCE.

STATEMENTS have been frequently made to the effect that much of the popularity of patent medicines as a class depends upon the fact that so many of them are merely disguised alcohol, and investigations recently made in the United States seem to prove that the connexion between the two trades is even closer. Dr. Grinnell, Vice-President of the New York Medical Legal Society, has produced facts which seem to suggest that their independence is so great that under present circumstances the one trade is likely to rise as the other falls. In the State of Vermont, where the sale of alcohol is absolutely prohibited, the patent medicine trade has increased to a greater extent during the last few years than in any other part of America, and the sale of certain drugs, opium in various forms, cocaine, Indian hemp, and to a less extent quinine, has greatly risen. The amounts which Dr. Grinnell has ascertained to be sold in the State of Vermont must certainly be very far above anything which the medical needs of the inhabitants can justify; they are estimated at being equal to not less than one and a half doses of opium a day for every adult in the State, a dose being calculated as 1 gr. of opium, $\frac{1}{8}$ gr. of morphine, $\frac{1}{2}$ oz. of paregoric, and 20 minims of laudanum. These statements show that stimulants do not necessarily mean recognized alcoholic drinks, and that a man cannot safely be classed as a total abstainer in the true sense of the term simply on the ground that he eschews wine, spirits, and beer. Those who would be truly temperate must be careful to avoid dosing themselves with domestic remedies in real or fancied illness, and especially be wary in respect of all fluid proprietary medicines.

TYPHOID AND THE PUERPERIUM.

WHEREVER an epidemic of typhoid fever is present the obstetrician is not likely to be off his guard, especially when a parturient or puerperal case shows rise of temperature with other more suspicious symptoms less familiar in childbed. It is apparently otherwise in the towns of Eastern Europe where fevers are endemic and puerperal septic infection very frequent. Rosenfeld has reported a very instructive case in which labour set in, close upon term, when the patient was passing through the onset of typhoid fever.[1] This case occurred in Smolensk, where typhoid is even more thoroughly endemic than in most other Russian towns. The patient was a primipara aged 19; the pelvis was flat and rachitic, but not palpably narrow. When admitted she was troubled with diarrhoea of three days' duration, adenoids were detected in the naso-pharynx, and the area of cardiac dullness was increased; the heart sounds were faint. Labour was very lingering, the long forceps could not be used owing to the pelvic deformity, and symptoms of heart failure set in, which ceased when the child was delivered by craniotomy. The subsequent clinical report, published in full by Dr. Rosenfeld, deserves close study both by physicians and obstetricians. Unfavourable symptoms puzzled the patient's attendants, and on the fourth day fulminating septicaemia was suspected, and antistreptococcus serum injected. There was meteorism, but no other sign of peritonitis; the uterus was undergoing involution as well as in a healthy subject, and there was no fetid discharge. The serum injection proved of no avail. Distinct enlargement of the spleen was noted, and the cardiac condition excited suspicion. It was not, however, until the twelfth day that typhoid was accurately diagnosed by Widal's test. The course of the fever subsequently was mild but typical, no complication occurred, nor was there any coincident pelvic trouble. Recovery was not slow, considering the circumstances. Rosenfeld recalls Schröder's teaching that typhoid in childbed is not easy to diagnose from puerperal endocarditis, as in his own patient the heart symptoms during the first week suggested infective endocarditis. Similar confusion may arise when typhoid develops its symptoms after an abdominal operation.

[1] Zur Kasuistik des Typhus Abdominalis unter der Geburt und im Puerperium, *Zentralbl. f. Gyn.*, No. 17, 1907, p 479.

GAUZE FIVE MONTHS IN ABDOMINAL CAVITY.

WE recently reported Stewart and Gruzdew's cases where an overlooked forceps was in both instances retained for several years in the peritoneal cavity. Dr. Le Roy Brown exhibited before a meeting of the New York Obstetrical Society in February a strip of iodoform gauze a yard wide and two yards long which had lain for five months in the peritoneal cavity.[1] The patient, a single woman, aged 30, underwent an operation for the removal of both appendages in September, 1906. The abdominal incision failing to heal, the operator reopened it a month later without any satisfactory results. At the end of January, 1907, the patient came under Dr. Brown's care. He found that there were two suppurating sinuses in the cicatrix, which was short and median. A week later the sinuses were laid open and a probe passed backwards came in contact with a soft mass which proved to be gauze. The strip lay in part immediately behind the parietal peritoneum and extended backwards and downwards into Douglas's pouch. The peritoneum was drained through the vagina, and the patient recovered. The patient had worked as a domestic servant for nearly four months, with the mass of gauze in the abdomen; strange to say, although the gauze still smelt distinctly of iodoform, she had not suffered from any symptoms of poisoning by that compound.

[1] Iodoform Gauze removed from the Abdomen of a Patient, *Amer. Journ. Obstet.*, April, 1907, p. 554.

THE ORAL SYSTEM OF TEACHING THE DEAF.

A MELANCHOLY interest attaches to the annual meeting of the Association for the Oral Instruction of the Deaf and Dumb, held on June 28th, for it was followed almost immediately by the sudden demise, from angina pectoris, of Mr. William Van Praagh, who had been for thirty-seven years director of the Training College for Teachers and of the school carried on at 11, Fitzroy Square. Mr. Van Praagh was, indeed, the pioneer of

the oral system in England, which he introduced from Rotterdam in 1867, when he was appointed director of the Jews' Deaf and Dumb Home in London, founded by the late Baroness Meyer de Rothschild. Three years later the Association was formed with the object of naturalizing in this country the oral system in the instruction of the deaf and of training teachers in this method. A practising school was also established, available as a day school for deaf children of varying ranks and creeds. Lord Crewe presided at the annual meeting, and in moving the adoption of the report, congratulated the Association on its continued success. The report contained a record of excellent work both as regards the training of teachers and the instruction of children. The Board of Education was willing to do all in its power to give financial aid to the Association in its work, and the London County Council had founded scholarships to assist students from the training colleges to take a third year's course in the Fitzroy Square College. In conclusion, he appealed for increased annual subscriptions to enable the Association to pay its way. The adoption of the report was seconded by Mr. H. F. Pooley (formerly Assistant Secretary to the Board of Education), and carried unanimously. After a practical demonstration of the oral method of instruction, and a distribution of prizes, the proceedings, in which Mr. Van Praagh had taken his usual active part, terminated with the customary vote of thanks. The subsequent news of Mr. Van Praagh's sudden illness and lamented death came as a great shock to all who had been present.

A DAY OF REST FOR DOCTORS.

THE Medical Syndicate for the Department of the Rhone, acting on the principle laid down by the Congress of Medical Practitioners held not long ago in Paris, has issued a notification to the public that from July 1st fees for visits and consultations on Sundays and holidays will be fixed at double the usual rate.

AT the meeting of the Central Council on Wednesday last Mr. Edmund Owen, F.R.C.S, was unanimously elected Chairman in the room of Dr. Langley Browne, whose resignation was accepted with regret. Mr. Edmund Owen, who was President of the Section of Diseases of Children at the annual meeting at Portsmouth in 1899 and of the Section of Surgery at the meeting at Swansea in 1903, was Chairman of the Reconstitution Committee appointed in 1900, and has also been Chairman of the Colonial Committee.

THE final meeting of the Obstetrical Society of London was held on Wednesday evening, July 3rd. At the conclusion of the meeting the President, Dr. Herbert Spencer, referred to the successful career of the Society, founded forty-eight years ago and now to be merged into the obstetrical and gynaecological section of the Royal Society of Medicine. He also announced that the meetings of the section will be held on the second Thursday of each month instead of on the first Wednesday, and will begin at 7.45 p.m. instead of 8 p.m. In three or four of the winter months two meetings will be held. Dr. Herbert Spencer will be the first President of the section. The Laryngological Section of the newly-constituted Royal Society of Medicine will hold its first general meeting at 20, Hanover Square, on Tuesday next, at 5 p.m., for the adoption of rules, the election of a council, and the transaction of other necessary business. The first meeting of the Pathological Section of the Royal Society of Medicine, which is the successor of the Pathological Society of London, will be held at the same place on Wednesday next at 5 p.m., when the by-laws and regulations proposed by the provisional committee will be considered, and the officers and council of the section for the ensuing year will be elected.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

King Edward's Hospital Fund for London Bill came on for consideration on Monday night, and Dr. Rutherford moved the recommittal of the Bill with an instruction for the insertion of clauses to provide that the control and management should be vested in the President and Council, and that the Council should be constituted on representative lines. He objected to the unlimited, uncontrolled, and unchecked power of the President unless assisted by a representative council. He thought the public requirements would be met if members were elected to represent the City, the County Council, the London University, the Royal Colleges of Physicians and Surgeons, and the British Medical Association, together with one each from the Hospital Sunday and Saturday Funds, and the Central Hospital Council. He argued that it was unfair and unjust to the President to invest him with undivided and unshared responsibility. Mr. Trevelyan, who seconded the motion, pointed out that the Bill made a permanent constitution for the Fund, and, however good it might be under present conditions, it would apply to the future under conditions impossible to foresee. Mr. Jowett, who supported the proposal, spoke strongly against any large representation of the medical profession, and criticized the conditions under which money subscribed to hospitals had been diverted to the support of medical schools. After this the Attorney-General defended the Bill, and pointed out that the Fund was one given to the late President, and by him entrusted to the present President, whose successor would have to be nominated by the Prime Minister, the Lord Chancellor, and the Governor of the Bank of England. It would be difficult to construct an elected Council, and it was clear that there would be under the Bill a large representative element. Since the Bill left Committee an important addition had been made. There had been inserted a clause limiting the individual power of the President, so that on his own part, and on his own authority, the President could deal with neither the distribution, nor the investment, nor the application of the property; and that covered nearly the whole of the objects of the fund. Mr. George Greenwood supported the amendment, and Sir Wm. Collins accepted the improvements in the Bill indicated by the Attorney-General with satisfaction; and then the Prime Minister pointed out the great success of the Fund, and how wide had been the constitution of the Council, and how most representative men had been selected; and said there was no reason to doubt that the same practice would continue in the future. Mr. Balfour also supported the Bill, and finally the amendment was withdrawn and the Bill ordered for third reading.

The Public Health Bill.—A remarkable piece of work was done in Grand Committee C. on Monday last, when this Bill, with its 142 clauses, was considered, amended, and passed to the House of Commons for its report stage. The object of the Bill is to enable local authorities, by following the mode of procedure of the Act of 1890, to adopt many of the clauses which, having been introduced into private Bills of recent years, have been accepted by Parliament, and to confer on the Local Government Board the power to extend the Act to rural districts. The Bill consists of eleven parts, which were described as (1) general clauses, (2) those relating to streets, buildings, and sewers, (3) sanitary provisions, (4) infectious diseases, (5) milk provisions, (6) common lodging-houses, (7) recreation grounds, (8) fire brigade, (9) sky signs and hoardings, (10) slaughter-houses, and (11) miscellaneous. Some clauses connected with food, tuberculosis, and some minor matters, were withdrawn on the understanding that the Government would introduce legislation at an early date to meet the points involved.

The Bacteriologist at the Local Government Board.—Mr. Morton asked the President of the Local Government Board, having regard to the fact that the bacteriologist employed by the Local Government Board at the National Vaccine Establishment received a salary of £600 per annum, would he explain why he was allowed to make a profit on vaccine lymph sold to the Local Government Board for Scotland. Mr. John Burns answered that the bacteriologist referred to was formerly not required to devote his whole time to the duties of his office, and he had received an extra payment in respect of his services in connexion with the supply of lymph to the Scottish Local Government Board, consisting of the sum received from the Scottish Board less the cost of producing the lymph supplied. The arrangement had, however, now been altered. The bacteriologist had to devote his whole time to his duties. He received an inclusive salary, and no extra allowance was payable to him in connexion with lymph supplied to Scotland.

The Visitation of Poor-law Infirmaries.—Mr. W. F. D. Smith asked the President of the Local Government Board whether the metropolitan Poor-law infirmaries were visited by inspectors of the Board at regular intervals or only occasionally, at the discretion of the inspectors; and whether considerable intervals were sometimes allowed to elapse between inspections. Mr. John Burns replied that these infirmaries were, in ordinary circumstances, visited at regular intervals as well as occasionally, either at the discretion of the inspectors or for special reasons. All the infirmaries had been inspected this year by the assistant inspectors, and a considerable number had also been visited by the senior medical inspector for Poor-law purposes. He might add that the arrangements in connexion with these inspections were now under consideration.

The Cost of Calves for Vaccine.—Mr. Weir asked the President of the Local Government Board if he would state how many calves had been purchased during last year for the purpose of producing glycerinated calf lymph, and their cost; also the number sold during the same period, and the amount thus realized; and would he explain why the amount derived from the sale of calves by the National Vaccine Establishment was not indicated in the Estimates. Mr. John Burns said the calves in question were not purchased and resold, but payment was made in respect to each calf supplied for the purpose of vaccination, the calf being afterwards returned to the contractor. The sum paid during the last financial year was £860 17s. 6d. in respect of 505 calves.

The Training of Medical Officers of Health.—Mr. Sloan asked the Chief Secretary to the Lord Lieutenant of Ireland last week what special training, if any, medical officers of health had got in veterinary matters; and whether, seeing that by the Public Health Act they were expected to diagnose diseases in animals used for food of man, he would give instructions to all sanitary authorities that only veterinary surgeons be employed in the inspection of meat and milch cows in all cases where the medical officer of health had no special training. Mr. Birrell answered that in the case of county boroughs, any person who was appointed as medical superintendent officer of health was required to possess a diploma in sanitary science, public health, or State medicine. This requirement ensured that the person appointed possessed the requisite training to enable him to discharge the duties which devolved upon him in the inspection of meat intended for human food. In other districts in which a medical superintendent officer of health was appointed, the officer was required to possess a similar diploma. Any sanitary authority might appoint a veterinary surgeon for the purpose of the inspection of meat to be used for human food. and such appointments had been made in the case of Dublin and Belfast.

Cancer.—In reply to Captain Faber, who asked the Prime Minister whether he could now state if he was able to appoint a Royal Commission to examine into the causes of the national scourge, cancer, Sir H. Campbell-Bannerman said that he had made inquiries of the authorities who were best qualified to express an opinion on a matter which all must feel to be of the utmost importance, and he was advised that it would not be expedient at present to recommend the appointment of a Royal Commission to inquire into the causes of cancer. Though much research work was being systematically carried on in this country in connexion with the Imperial Cancer Research Fund and otherwise and abroad, he was advised that much remained to be done before any facts could be brought before a Royal Commission with any likelihood of their making such an inquiry fruitful for the public advantage. Mr. Lee asked whether the right hon. gentleman would consider the advisability of giving financial assistance to the Imperial Cancer Research Fund. Sir H. Campbell-Bannerman replied that did not arise out of the question.

The Notification of Stillbirths.—Last week Mr. William Pearce asked the President of the Local Government Board if he could give the number of stillbirths which were notified to the local supervising authorities by certified midwives under the Midwives Act, 1902, during the year 1906. Mr. John Burns replied that he had made inquiry, but had not been able to obtain the information.

Australia and Tuberculous Immigrants.—Mr. Vincent Kennedy asked the Under Secretary of State for the Colonies if he would say what method was used to prevent the landing of persons affected with pulmonary consumption in the Commonwealth of Australia; and would he supply fully the details of any legislation existing on this subject. Mr. Churchill replied that under the Commonwealth Immigration Restriction Act, 1901, any person suffering from an infectious or contagious disease of a dangerous character was a prohibited immigrant and might be detained for the purpose of medical examination by any officer entrusted with the administration of the Act for a period not exceeding twenty-four hours, in such place and in such custody as he thought fit. The Secretary of State had no information as to the exact method in which the examination was conducted, but would ask the Governor-General of the Commonwealth for a report, if the honourable member desired.

The Sanitary Inspection of Piershill Barracks.—Mr. Charles Price asked the Secretary of State for War what were the dates upon which the first report was made as to the sanitary condition of Piershill Barracks, and the report of the medical officer of health and the chief sanitary inspector for the city of Edinburgh; whether, subsequent to the latter report, another inquiry was made by the War Office; and, if so, had such inquiry been concluded, a report issued, and when. Mr. Secretary Haldane replied that the first report on the sanitary condition of Piershill Barracks was made by the sanitary engineer of the War Office and the sanitary expert of the Army Medical Advisory Board in April, 1906. A second report was made by the Director-General, Army Medical Service, in May, 1906. A conjoint inspection was made by the sanitary engineer of the War Office and the sanitary expert of the Army Medical Advisory Board on the one hand, and the medical officer of health for the borough of Edinburgh and the chief sanitary inspector, Dr. Williamson, on the other, in December, 1906, and a third report submitted by the two first-named officials. The report of the Director-General, Army Medical Service, and the report dated December, 1906, by the sanitary engineer of the War Office and the sanitary expert of the Army Medical Advisory Board, were laid before Parliament in 1906 [Cd. 2996]. There had been no inquiry later than that mentioned—namely, December, 1906.

Insanitation in the Lewis.—Mr. Weir was in a questioning mood last Monday, and put several queries to the Secretary for Scotland respecting the public health administration and the water supply in the island of Lewis. Mr. John Sinclair said, in reply, that he was aware of the position, but he was convinced that it was impossible at present to put further pressure on the local authority, who had for some years past imposed the maximum assessment of 1s. in the pound, and had no funds for carrying out the recommendations of the medical inspector of the Local Government Board. As regards the water supply, it was a matter for the local authority, whose funds were not at present adequate for the work that should be undertaken.

Manchester.

Conjoint Meetings of Divisions.

For some time past it has been felt in Manchester that the partition of a large town into a number of small Divisions by the British Medical Association has some disadvantages, though on the whole, perhaps, the advantages preponderate. Thus, when the working of the Midwives Act in Manchester was being discussed, which was of course of general interest to the whole town, a joint meeting of the five Divisions of Manchester and Salford was found not only more convenient, but the resolutions passed by it carried more weight than similar resolutions from the separate Divisions. In the same way, when the St. Mary's Hospitals introduced a system of working the extern maternity department by appointing district obstetric officers, who were paid by the hospital half a guinea for each confinement attended for the hospital, another joint meeting of the Divisions was held which strongly condemned the system, and there can be little doubt that resolutions from so widely representative a meeting had some influence in getting the system abolished. The success of these joint meetings suggested a union of the five Divisions into one, but there were obvious objections to that course. First of all, Manchester and Salford would then have had only one representative in the Annual Representative Meeting instead of five, as at present; and as voting "by card" is only exceptional, the idea was dropped, at any rate for the present. Moreover, in discussing local ethical questions affecting individual practitioners, the smaller local Divisions have an advantage, as most of the members are probably better acquainted with the local conditions. Thus it was decided to retain the autonomy of the separate Divisions. Nevertheless, the advantages of the larger joint meetings were so great that some method was sought by which the separate Divisions, while retaining their autonomy, might delegate some of their powers to joint meetings. By the constitution of the Association each Division has powers to appoint its own officers and Representatives, it has control over its finances, and the right to express its opinion on the matters referred to Divisions, and also it has certain powers in ethical matters. Evidently these powers could hardly be delegated to the joint meetings, for which no machinery is provided. Further, while the Divisions are too small, the Lancashire and Cheshire Branch is too large. It was thought to be hardly advisable to summon members from all over Lancashire and Cheshire to discuss matters of purely local interest.

For over a year a Committee has been in existence appointed by the Manchester and Salford Divisions, to summon joint meetings whenever it considered them advisable, but the Committee felt itself hampered by its very limited powers, and the unofficial character of the meetings. After considerable discussion, therefore, a more comprehensive scheme was drafted and submitted to the various Divisions which all approved and accepted. As a somewhat similar movement has been contemplated in several other towns it may be of some interest to give the provisions of the scheme adopted, though they may yet be modified as further experience is gained. The scheme at present is as follows:

1. Each of the five Divisions of Manchester and Salford shall, at its annual meeting, appoint five Representatives, of which the Divisional Secretary shall be one, to serve on a joint Committee.
2. The Committee shall serve for one year, and shall at its first meeting elect a Chairman and Secretary.
3. The duties of the Committee shall be as follows:
   (*a*) To convene at its discretion combined general meetings of members of the five Divisions to consider any matters with which such meetings are for the time being authorized by the Divisions to deal.
   (*b*) To carry into execution resolutions of combined meetings on matters with which they are authorized to deal.
   (*c*) To act on behalf of any individual Division in Manchester and Salford in any matter affecting the local interests of the profession with regard to which the said Division and the Committee shall be of opinion that the interests of the profession will be better served by action through the Committee than through the Division.
   (*d*) To consider Association matters with a view to promoting the condensation of work.
4. That combined general meetings of the five Divisions convened by the Joint Committee be authorized to deal on behalf of the five Divisions (subject to proviso in paragraph 5) with any question affecting the general interests of the medical profession in the area of the five Divisions or of any particular class or classes of the profession in the said area, and also to deal with any question affecting the interests of the profession in any one Division, upon which the said Divisions shall seek the opinion or support of the combined Divisions.
5. That the authority conferred by paragraph 3 upon combined general meetings shall be subject to the following conditions:
   (*a*) That combined general meetings shall not deal with questions of medical ethics, except by way of expressions of collective opinion when desired for the information of the Divisions; that no resolution of a combined general meeting shall be held ethically binding upon any individual member of a Division, and that individual members shall be deemed responsible as regards their professional conduct only to the Divisions of which they are members, to the Branch, and to the general body of the Association.
   (*b*) That combined general meetings shall not deal with any questions affecting the internal affairs of the Association or the policy of the Association in other than local matters nor interfere in any way with the autonomy of the Divisions in respect of such matters, except by way of expressions of collective opinion for the information of Divisions, with a view to affording Divisions the opportunity of arriving at uniform decisions when so desired.

A joint committee has already been appointed by the five Divisions and has held its first meeting, at which it elected Dr. Helme as its chairman, and Dr. Prowse as the honorary secretary. It has also resolved to meet at regular intervals, and already quite a number of important questions are awaiting combined meetings. The pressing question of hospital reform will probably be among the first to be dealt with. A movement in the same direction has also been started in Liverpool, and if the Manchester scheme is successful probably other large towns will follow suit.

Durham.

County Consumption Sanatoriums.

A Second Sanatorium to be Provided.

The annual meeting of the Society for the Prevention and Cure of Consumption in the County of Durham took place at the Sanatorium, Stanhope, on June 29th. Mr. J. A. Hildyard presided, and Dr. W. Robinson (Sunderland) moved, and Councillor Elliott (Gateshead) seconded, the adoption of the annual report in which the measures taken by the Society and by the various sanitary authorities in the year to stop the spread of the disease were mentioned. The Lanchester R.D.C. is using the empty wards of its isolation hospital for consumptives with satisfactory results, and Sunderland is obtaining powers to ensure a tubercle free milk supply. Special homes for advanced cases were strongly advocated. The death-rate from tuberculosis in the county is steadily declining. The Sanatorium contains forty-five beds and the average daily number of patients was 43·4, each patient staying on an average 13.2 weeks and costing 17s. 10d. a week. Applications for admission numbered 257 and 176 patients were admitted. The results of treatment were considered eminently satisfactory. In seven years the applications had been about 1,400 and the admissions 800. An after-care association and a working out-door colony were much needed. The income for the year was £3,362 and the expenditure £1,995. Local authorities subscribed £1,223, and sent 79 patients, and working men subscribed (at 1s. per annum by each man, retained at the works) £761, and sent 38 patients. Payments by patients, at various rates up to two guineas a week, amounted to £1,071, and £196 was received from private subscribers.

Dr. Gray read his annual report, and a resolution, moved by Mr. C. E. Thompson, J.P., empowering the committee to provide a second sanatorium at a cost not exceeding £6,000, was carried. Mr. Thompson promised £100 to the fund for the purpose, and thought a second sanatorium was greatly needed; it would enable the men to be treated in one and the women and children in the other. The election of officers for the year and thanks to the chairman concluded the meeting.

West Yorkshire.

BRADFORD ANTHRAX INVESTIGATION BOARD.

At a recent meeting of the Anthrax Board, a letter was read from the Home Office stating that it proposed calling a conference to consider the question of extending to East India wools certain regulations applying to dangerous wools. Attention was called to the necessity for the better classification not only of wools considered "dangerous," but also of those involved in cases of anthrax. Dr. Eurich reported that since the last meeting of the Board on March 25th there had been 4 cases of anthrax, 2 of which had terminated fatally. He had made 40 experiments in association with a local engineering company as to the electrical sterilization of wool, but the investigation was not yet completed.

RELIEVING OFFICERS AND INSANITARY HOUSES.

A good deal of discussion took place at a meeting of the North Bierley Board of Guardians on June 26th, at which the Poor-law Inspector was present, in connexion with his suggestion that every relieving officer called on to investigate a new case should devote special attention to the sanitary regulations. It was asked whether in cases where the sanitary arrangements were found unsatisfactory the relieving officer's first duty was not to relieve destitution. The inspector said that when the guardians offered the full maintenance of the house they had done their duty. Obstinacy and destitution should be differentiated. The responsibility on the guardians was to see that there was no starvation.

Scotland.

PROFESSOR MCKENDRICK OF GLASGOW.

Early this year a movement was set on foot for the purpose of recognizing in some appropriate manner, on the occasion of his retirement from the Chair of Physiology in the University of Glasgow, after a tenure of thirty years, the distinguished services of Dr. McKendrick as a scientific and public man, and to give expression to the personal esteem in which he is held by his many friends throughout the country. A committee was formed of which the conveners are Sir James D. Marwick, LL.D., ex-Town Clerk of Glasgow; the Rev. John Smith, D.D., Convener of the Business Committee of the University General Council; Professor Stockman, Dean of the Faculty of Medicine in the University of Glasgow; and Dr. W. L. Reid, President of the Glasgow Faculty of Physicians and Surgeons. The duties of Secretary and Treasurer were undertaken by Mr. Archibald Craig, LL.B., 149, West George Street, Glasgow. The movement has now made such progress that the Committee has been able to decide upon the form the recognition should take. It is to include the presentation to Dr. McKendrick of his portrait, and the furnishing with suitable equipment of a laboratory for experimental psychology in the new Physiological Buildings of the University of Glasgow. It is understood that the latter object will be specially gratifying to Professor McKendrick. Experimental psychology has always attracted a large part of his time and attention, and so convinced is he of its importance that at his suggestion two rooms have been set apart for this subject in the new University Buildings. Friends desirous of associating themselves with the movement, who have not yet sent in their names, are invited to do so forthwith to the Honorary Secretary and Treasurer, Mr. Craig, in order that the fund may be closed.

EDINBURGH ROYAL INFIRMARY RESIDENTS' CLUB.

The annual dinner of the Royal Infirmary Residents' Club, which has come to be regarded by the medical profession in Edinburgh as one of the most important social events of the year, was held this year on June 28th. Some forty old residents have been enrolled during the past year, a striking proof of the growing popularity of the club. A complete list of the Royal Infirmary residents since the year 1843, the work of the treasurer of the club, Dr. Macrae Taylor, was issued some months ago, and it is proposed to issue soon a revised edition of this list. Dr. Taylor will be glad to receive intimations of change of address at an early date. The chair at the dinner was occupied by the President, Dr. David Christison, who, although he has long abandoned medicine for other scientific pursuits, has taken an active interest in the welfare of the club since its foundation. Dr. Christison devoted his speech from the chair to reminiscences of the days he spent as house-physician in the old Royal Infirmary. A photograph of the President and his fellow residents, taken in the year 1854, was reproduced on the dinner card. The group was probably the most remarkable in the history of the infirmary. There were seven house-physicians and house-surgeons at that time. In this group were Alexander Struthers, a very brilliant student and a brother of the late Sir John Struthers, who died of cholera in the Crimea; Dr. Hogarth Pringle, who went to Australia; Dr. Beddoe, the distinguished anthropologist; Dr. Patrick Heron Watson; John Kirk, afterwards G.C.M.G., K.C.B.; Joseph Lister, and the President. Professor Chiene, Drs. James, Lovell Gulland, Templeman, Harold Ballantyne, H. P. Thompson, Darling, Dalmahoy Allan, and Mr. Caird contributed to the success of the evening's entertainment. Dr. Yellowlees conveyed to the club a message of greeting from Sir William T. Gairdner, a resident of sixty years ago, whom he had seen that afternoon. It must have been among Sir William's last words, for within an hour or so afterwards the great physician, of whom Scotland was so justly proud, had passed peacefully away in his sleep.

ABERDEEN COMPANIES R.A.M.C. (VOLS.).

The annual inspection of the Aberdeen companies was held on June 29th in the ground of the Aberdeen Grammar School. Colonel Corker, Principal Medical Officer of the Scottish Command, was inspecting officer. The corps, drawn up as a field ambulance, with transport and sanitary detachments, received the inspecting officer with the general salute. Colonel Corker then inspected the men most minutely, and thereafter the corps marched past in column of companies to the strains of the pipe band of the corps. Afterwards the men gave an exhibition of field ambulance work, wounded being given first aid and conveyed in wagon and stretcher to collecting and dressing stations. During these operations Colonel Corker visited all parts of the field and put questions to the men bearing on the work they were doing. At the conclusion of the work the inspecting officer addressed a few words to the men and complimented them on the efficiency displayed and on the general all round smartness of the corps, and congratulated Major Scott Riddell, M.V.O., the commanding officer, upon the excellent instruction which had been imparted, particularly to the recently constituted Sanitary Section under the control of Lieutenant Rorie. Mrs. Corker then presented medals and certificates gained at the examination in connexion with lectures delivered during the winter session on ambulance work, etc. The officers present at the Inspection were Major Scott Riddell, Captains Ashley, Macintosh, Fortescue, Kelly, Ogston, Fraser, Mitchell, Smart, Noble, Lieutenants Howie, Milne, Innes, Rorie, Cruickshank, Quartermasters Cromer, Duthee, and Chaplin, Rev. J. Smith. The parade numbered 17 officers, 5 buglers, 6 pipers, 215 rank and file. In the evening the officers met at dinner in the Grand Hotel, Major Scott Riddell in the chair. The chief guests were Colonel Corker, Colonel Johnston, Newton Lee, Major Watson, R.A.M.C., Captain Fenton, I.M.S., Fleet Surgeon Hall, R.N., Surgeon-Captain Williamson, Gordon Highlanders (Vols.)

EPIDEMIC CEREBRO-SPINAL MENINGITIS.

The Registrar-General for Scotland reports that in the week ending Saturday, June 29th, 20 deaths were due to cerebro-spinal meningitis, or 8 more than in the previous week. Of these, 16 were in Glasgow, 3 in Edinburgh, and 1 in Dundee. During the same period, 8 cases were notified in the City of Edinburgh as suspicious cerebro-spinal meningitis, of which 7 were removed to the City Hospital. Two deaths occurred, and 19 cases remain under observation.

Ireland.

ROYAL SANITARY INSTITUTE.

The annual conference of the Royal Sanitary Institute was opened in Dublin on June 25th, under the presidency of Sir Charles Cameron, C.B. The meeting was held in

Trinity College, and at the first the President delivered an interesting address on the work done in Dublin.

On the following day the President read a paper on Poor Law and Sanitary Administration in Ireland, in which he advocated the abolition of *ex officio* health officers and their replacement by whole-time officers. After a discussion in which Dr. Birmingham of Westport, Mr. E. Magennis, Dr. Mocre of Huddersfield, Mr. J. Lindsay (Glasgow), Mr. Matheson (Registrar-General), Surgeon-Colonel Edgar Flinn, Dr. Anthony Roche, and Dr. Kean (Newry) took part, the following resolution was adopted:

> That this Conference is of opinion it would be desirable to have county medical officers of health, with a sufficient staff of qualified sanitary inspectors, appointed in Ireland, and that the Council of the Royal Sanitary Institute be requested to take steps to urge this opinion upon the consideration of the Government.

Dr. McWeeney read a paper on the rôle of sanatoriums as a factor in checking consumption. Dr. Handford (Nottingham), Dr. Anthony Roche, Dr. Willoughby (Eastbourne), Mr. Hall (London), Mrs. Rushton, Mr. Lambie, and Dr. Park (Bolton) took part in the discussion.

On June 27th Mr. P. C. Cowan, M.I.C.E., read a paper on the economic housing of the working classes in town and country. Sir Lambert Ormsby, Dr. Cameron (Leeds), Mr. Dagg, Dr. Chalmers, Mr. Duncan (Athy), Mr. Munce (Belfast), and others spoke. Mr. W. Kaye Parry, F.R.I.B.A., read a paper on—Could the existing statutory and departmental requirements as to sewage disposal be relaxed in certain cases with advantage to the community? and it was discussed by Professor Adeney, Professor Bostock Hill (Warwickshire), Professor Letts, Mr. Fyfe (Glasgow), Mr. Fowler (Manchester), and Dr. McWeeney.

On June 28th Sir John Moore gave an interesting address on the Climatology of Ireland in relation to Public Health. Dr. Kaye (West Yorkshire), Sir C. Cameron, Dr. S. Cameron (Leeds), and Dr. Birmingham (Westport) spoke. A resolution directing the Council to impress on health officers the importance of pretuberculous conditions, moved by Dr. McVittie and seconded by Dr. Hillis, was carried.

Mr. Rideal read a paper on Disinfection considered from a Medical, Chemical, and Bacteriological Standpoint, and this was discussed by Mr. A. E. Moore (Cork) Dr. S. G. Moore (Huddersfield), Major Elliott, R.A.M.C., Dr. Edgar Flinn, Dr. McWeeney, and the Registrar General.

The delegates were received at a garden party on June 27th by the Lord Lieutenant and Lady Aberdeen; and on June 28th by the Provost and Fellows of Trinity College. The Lord Mayor gave a smoking concert, and visits were paid to Guinness's Brewery, the Iveagh Trust Buildings, etc. On June 29th there were excursions to Wicklow, Killarney, and the Shannon.

The meeting next year will be held at Cardiff.

HEALTH OF BELFAST.

Earlier and Fuller Information of Deaths.

At the meeting of the Public Health Committee on June 27th, the Chairman explained that a small deputation from the Committee had waited on the Local Government Board regarding the fuller and earlier notification of deaths in the city; this information would give the name of the deceased, the residence, and the disease. At present the local registrars send the registration to the Registrar General, and he submits some of the information to the health authorities at Belfast; but this information, as has been pointed out times out of number, is totally inadequate to enable the health officers to deal with any epidemic or to locate such diseases as phthisis and pneumonia.

The Local Government Board referred the deputation to the Registrar-General.

This seems to be another instance of the "Circumlocution Office" of Dublin Castle. It makes the man in the street perfectly speechless when a deputation from the responsible authority, which waits upon the Local Government Board to ask for reform which has been demanded for at least six or seven years, which was brought forward again and again at the special inquiry lately held by the Board in Belfast, and practically agreed to by every one, is told to "approach the Registrar-General."

CEREBRO-SPINAL FEVER.

The epidemic of cerebro-spinal fever is not disappearing as quickly as was expected; 16 new cases were reported at last week's meeting, and 39 were still in hospital. If Belfast is to suffer more severely during the second year of the epidemic, as did New York and Glasgow, it bodes ill for the poor of the city during next winter.

New South Wales.

FOOD ADULTERATION.

IN the Public Health Act there are stringent provisions against food adulteration, but from a return furnished to the Board of Health it appears that in many portions of the metropolitan area these provisions are not enforced. The Act is supposed to operate in forty districts, and nearly the whole of these are under municipal control, yet during the past year the inspectors in no less than twenty-four of these failed to make any test of the quality of the milk supply and other foods over which they are supposed to exercise control. In the whole of the northern suburban area, comprising a population of over 55,000, only fifteen samples of milk were taken for analysis, and these were taken by one inspector in one small district. In the city proper and some of the nearer thickly-populated suburbs, the inspectors were on the alert, and the small percentage of adulterations discovered is in itself a proof of the efficiency of the supervision. Out of a total of 996 samples of milk taken in these suburbs, 72 were found to be adulterated. Where the local authority neglects to carry out the provisions of the Health Act, the Health Department has power to step in and do the work of securing samples and prosecuting the offenders, but under a recent Supreme Court decision there is a difficulty in recovering the incidental cost. It has been suggested, accordingly, that the Board of Health should be given full power to prosecute all inspectors for neglect of duty, or to ask the residents in any district that is neglected to take the power in their own hands and force the municipal representatives to carry out the provisions of the Act. The Board of Health, in order to assist each municipal council in the discharge of this important work, undertakes to pay half the salary of a sanitary inspector if an inspector of nuisances is also kept. This is done to assist those districts where the work of sanitary inspector and inspector of nuisances is combined in one officer, and is proving too much for one officer to overtake. The extent to which the food adulterations provisions of the Act were enforced is shown by the following figures: In the whole of the metropolitan area the number of samples of milk analysed was 1,211; other foods, 637; total, 1,762. The samples found adulterated were: milk, 92; other foods, 123; total, 215. The total amounts paid in fines was £667.

THE METROPOLITAN WATER SUPPLY.

The condition of the Sydney water supply has been giving rise to some anxiety in the minds of the officials of the Metropolitan Board of Water Supply and Sewerage. There has been a long spell of dry weather on the catchment area, and the supply of water in the Prospect Reservoir has fallen considerably. Some years ago, in consequence of the increased demand for water in the metropolitan area and the diminished supply, the Board undertook to erect another huge dam for conserving a larger amount of water. This has been partially completed, and at present is storing a certain amount of water. Owing to the shortage of water in the Prospect Reservoir it has been replenished by that in the Cataract Dam. At the request of the Department of Public Works, the Medical Officer to the Water and Sewerage Board, Dr. Stokes, has furnished a report on the character of the water in the Cataract Dam. He found that the water as it left the dam was highly coloured, deficient in dissolved oxygen, and contained an excessive amount of organic matter of vegetable origin. When this water reaches the gauge weir at Broughton's Pass it possesses practically the same degree of colour, is fully aërated, and shows a reduction of 46 and 29 per cent. in albuminoid ammonia and oxygen absorbed respectively, but still contains an undesirable amount of organic matter. The water in the Prospect Reservoir is, and has been for the last five years, a water of excellent character and purity, and the discharge into it of the water from the Cataract Dam in its present condition would inevitably lead to its deterioration. Dr. Stokes compares the water in the two

reservoirs as regards the albuminoid ammonia, and the amount of oxygen absorbed. His figures are; Prospect, albuminoid ammonia 0.010, oxygen absorbed 0.100; Cataract, albuminoid ammonia 0.016, oxygen absorbed 0.249. It would appear that this excessive amount of organic matter is due to the fact that, in spite of the repeated requests of the Water Board to have all the vegetation on the catchment area of Cataract removed, very little of this work has been done. Consequently, at a recent meeting of the Board, a full discussion on the situation took place, with the result that it was decided to interview the Public Works Department, and urge upon them to allow the Board to undertake the clearing away of all vegetable matter on the catchment area in advance of the water line.

DR. C. P. B. CLUBBE.

Dr. C. P. B. Clubbe, Senior Surgeon to the Royal Alexandra Hospital for Children, and President of the Committee of Management, who is shortly leaving for a trip to England, was entertained at dinner by his colleagues on the staff of the hospital. Dr. Clubbe has just completed his term of office as Honorary Surgeon to the Royal Prince Alfred Hospital, and is to be entertained on the occasion of his retirement from the hospital by his colleagues on the staff at dinner at the Australian Club on April 5th.

SPECIAL CORRESPONDENCE.

BERLIN.

Professor von Leyden—Sale of Medical Practices.

PROFESSOR VON LEYDEN, the celebrated clinician, will at the close of the present session resign his professorship, his post at the Charité Hospital, and all the official duties connected with this position. At the age of 75, and after an exceptionally strenuous life, Leyden has fully earned the right to spend the evening of his days in repose. His successor is already appointed—Professor von Krehl of Heidelberg.

The German highest court of justice, the *Reichsgericht*, domiciled in Leipzig, has ruled that the sale of a medical practice is a contravention of morality, and therefore illegal. The case was curious. Dr. X. of Dresden, in December, 1902, sold his practice to Dr. Y. for the sum of M.70,000 (£3,500), to be paid in monthly instalments of £75. Dr. Y. took over the practice in April, 1903, but was unable to keep up his monthly payments to Dr. X., and was then, at the instance of Dr. X., pronounced a bankrupt. Upon this Y. sued X., denying the validity of the selling contract, and obtained a verdict in his favour in one of the Dresden law courts, on the ground that the sale of a medical practice is contrary to the rules of medical etiquette as laid down by the medical societies of Saxony. The defendant, however, appealed to the Saxon High Court. This confirmed the first verdict, and again the defendant appealed, this time to the court of supreme instance, the German High Court at Leipzig, where again, and now finally, he lost his case. The Court was of opinion that the obligation to pay so considerable a sum month by month must result in a smaller amount of attention being given to poor and needy patients, since all efforts would be concentrated on getting high fees; further, that this heavy constant burden was calculated to destroy all enthusiasm and capacity for private and public work for the good of others; and further, that in the sale of any medical practice whatever there was this offence, that the seller would naturally be more inclined to consider the sum which a buyer was willing to pay than his ability and character. That, therefore, the sale of a medical practice is not only contrary to medical etiquette, but likewise contrary to general morality, and therefore not permissible.

A SCHOOL for mothers has been established at Ghent. Informal lectures on infantile hygiene, illustrated with lantern demonstrations, etc., are given on Sundays. There is a similar school for children's nurses. These institutions form part of a Society of Assistance for Mothers founded by Dr. Miele; it includes, besides dispensaries, crèches and places for the supply of pure milk.

ON the initiative of the medical profession, a school of nurses on the model of those of this country has been established in Belgium.

CORRESPONDENCE.

PROPOSED INSTITUTE OF MEDICAL SCIENCES AT SOUTH KENSINGTON.

SIR,—The vote given on Friday, June 28th, by the medical faculty of the University of London, must, I think, have been given without a full understanding of the negotiations which have taken place between the Senate of the University and St. George's Hospital. In order that there should be no misapprehension of the attitude of this hospital on the subject, I would ask you to extend the courtesy of your columns to the enclosed letter, which I addressed on April 22nd last to the Vice-Chancellor of the University at the request of my Board.

I feel confident, however, that the Senate of the University is not to be coerced into breaking the definite undertaking which has been given to this hospital, at the bidding of a majority of five, in a meeting of 149 members of the medical faculty, more especially as I learn that a site, valued at £120,000, and £70,000 in cash have been given for the express purpose of erecting the institute which formed the basis of our negotiations.—I am, etc.,

A. WILLIAM WEST,
Treasurer of St. George's Hospital.

London, S.W., July 1st.

*** The letter addressed to the Vice-Chancellor is printed at p. 60.

TEACHING OF HYGIENE AND TEMPERANCE IN PUBLIC ELEMENTARY SCHOOLS.

SIR,—The phrase in Dr. Fuller's letter of last week, "true temperance," is often used, and was obviously used by him to indicate the taking of some amount of alcohol; as he would say, "taking it in moderate quantities," but without any definition of the term "moderate." By implication, the total abstainer is intemperate.

Now, Sir, I desire to protest against this use of the word. "Temperance" strictly means a measured practice, or living according to rule and proportion, so it comes to indicate restraint or self-control. If it can be proved that the use of alcohol in certain quantities is of value, *then* the true temperance man will take those quantities, neither more nor less. If, on the other hand, it be proved that a man can live more wisely and well, and is likely to live longer if he do not take any alcohol, then the true temperance man will be an abstainer. I say "proved," for it is easy to *manifesto* the value but not so easy to manifest it. Indeed, the results of insurance companies and the work of investigators like Kraepelin increase one's conviction that abstinence is the true temperance.—I am, etc.,

E. CLAUDE TAYLOR.

London, N.W., July 1st.

THE HOSPITAL FUNDS AND THE EXCLUSION OF SCOTTISH DIPLOMATES FROM THE MAJORITY OF LONDON HOSPITALS.

SIR,—Mr. St. Aubyn-Farrer, President of the Scottish Medical Diplomates' Association, in his complaint (BRITISH MEDICAL JOURNAL, June 29th, p. 1571) anent his fellow diplomates being excluded from election on to the staffs of certain London and other hospitals, seems to forget that he presumably belongs to a corporation which possesses and fully exercises the privilege of exclusive appointment for its Fellows to certain hospitals and charitable medical institutions. I refer to the Edinburgh colleges and hospitals, the College rights being recited in various charters and deeds of incorporation and in regulations for staff.

In Edinburgh the local university degrees, as all other than the local "College" Fellowships, carry no privilege for election on to local staffs. The same obtains, I believe, in Dublin and other medical centres.

If Mr. St. Aubyn-Farrer and his Association fancy that they can carry a "free-trade" policy while themselves members of a College with privileges, I fear they are in a false position. Their remedy is simply to take the local—in this case London—Fellowships, when their grievance will disappear, at least in part.

Originally the privileges of the "Colleges" arose from the share their Fellows took in founding certain hospitals. These privileges have now in many cases become chartered rights, and the modern excuse for their retention is that if a man be a Fellow of a certain college he is amenable to

the control of his guild brethren, at least ethically. Even were the one-portal system of qualification established, hospital appointments would still go by favour, and outsiders would still be left out in the cold.

The fact that a man who has worked through his curriculum at any, say a local, hospital has a fair chance some day, if he be ambitious, of getting on to the staff of his hospital, is a powerful argument in favour of men studying and remaining at their local—for example, provincial—hospital instead of (unless they possess outstanding merit) going to a strange centre, and then complaining. Should the members of the Diplomates' Association commence a free-trade campaign they would be in danger of interfering with the privileges of their respective colleges, and would thus render themselves amenable to college discipline unless they took the precaution of resigning, when they would be equally powerless!—I am, etc.,

Edinburgh, June 29th. JAMES CAMERON.

BOLD ADVERTISEMENT.

SIR,—I do not think—writing as a medical officer of health of twenty-one years' standing—that Sir Frederick Treves at all appreciates the difficulties which he has increased for those within whose province lies the prevention of infective diseases. My desire is to obtain from him the knowledge of the means by which the public can secure immunity from all infective disease.

Epidemics of the various infective diseases have a very common history (I do not deal with an endemic disease like tuberculosis, which differs fundamentally from those with which Sir Frederick Treves connects it), and that history is, first, a sporadic case, or several cases, ill-defined and with no signs or symptoms of standard type; secondly, a group of cases presenting symptoms of varying degrees of standard type; and thirdly, a large number of cases presenting a standard severe type. After the epidemic has attained its maximum, a gradual decline occurs until the cessation of the epidemic. The teaching which I have given to my sanitary authority has invariably been this—that if the early cases, in which there are no very defined signs and symptoms, are properly treated by medical methods and segregated, no epidemic will occur. An epidemic can be nipped in the bud, but when fully developed it will run its course. The answer to this, Sir Frederick will say, is that early cases of infective disease can be abolished. I ask, how?

Dr. Goadby some years ago read a paper before the Epidemiological Society which proves by bacteriological examination that the mere isolation of children suffering from diphtheria is insufficient to stay the spread of the disease. He examined the throats of two schools, one infected and the other in which no diphtheria had occurred for two years, with the following results:

	Children.	A.	B.	C.	D.	A, B, C. KLB.	D. KLB.	Total. KLB.
Infected School.	536	161	262	35	128	Per cent. 32.3	Per cent. 32.6	Per cent. 32 4
Healthy School..	100	11	31	0	58	35 7	6 6	13.0

Class A comprises cases in which the throat was in a condition of hyperaemia.

Class B comprises cases in which the tonsils were enlarged.

Class C comprises cases in which the throat was in the stage of exudation.

Class D comprises cases in which the throat was in a healthy state.

The columns headed KLB represent the percentage of children belonging to the classes in which the diphtheria bacillus was present.

I venture to believe that medical prophylaxis is of the utmost importance, and must always be, if infective disease is to be sufficiently dealt with. Sir Frederick Treves's pronouncement is calculated to do harm, from my point of view, unless he is able to put on the ground measures which will place medicine out of court. There is no doubt that the tenor of his remarks was generally accepted by the community at large as being directed against the use of medical methods, and advocating methods which are usually described as hygienic, to the exclusion of all medical treatment.—I am, etc.,

Hatfield, June 24th LOVELL DRAGE.

ACUTE PNEUMONIA IN CHILDREN.

SIR,—With regard to the differences between the acute pneumonia of children and that of adults referred to by Dr. Montague Murray and Dr. Samuel West in the JOURNAL for June 8th and 22nd, it has long seemed to me that these differences own in part a physical basis. It has been shown that fluids like urine could be kept sterile although exposed to air if that air were first made to pass through tortuous tubing, bacilli being caught in the angles of the tube. Airborne bacilli will be caught much nearer the centre of the lung because of the smallness of the bronchi in the case of children than in the case of adults. Hence:

1. The more bronchitic character of pneumonia in children.
2. Its radiate, patchy spread.
3. The fact that it develops from centre to surface of lung instead of in the reverse direction, although it is worthy of note that radiography has lately shown that central development is more common in adults than was suspected.
4. The fact that the physical signs of pneumonia are got in children near the crisis, in adults at the onset.

Therefore, with perhaps the exception of the raised pitch and altered tone of the percussion note over the affected area, the symptoms are of more importance than physical signs in early diagnosis, and of these the altered pulse-respiration ratio and the occurrence of the respiratory pause after inspiration instead of after expiration are chief.

The treatment varies in consequence. But for all pneumonia one great point is an open window; the carrying away of carbonic acid is more valuable than an oxygen cylinder. Fresh and pure air treatment is more important in pneumonia than in phthisis because the disease is more acute. Until this is acted on the death-rate of pneumonia in hospitals will not be so low as it should be.—I am, etc.,

Hamilton, June 29th. JAMES ADAM, M.D.

THE ORIGIN OF "CIRCUMCISION."

SIR,—Mr. Bland-Sutton's article in your issue of June 15th on circumcision is interesting, and I am pleased to supply him with the origin and meaning of this ceremony.

Circumcision and subincision was a totemic rite practised originally by the Egyptians at the time of the early Stellar Mythos. In Chapters 17 and 58 of the *Book of the Deed* he will find the following, which is one version of the history of creation, or part of it: "They are the drops of blood which came forth from the phallus of Ra when he went forth to perform mutilations upon himself." In another version of Creation it says: "Anuk-pu hat-a em Khefa-a tataat-na em Khaibit-a Kher-na em re-a teches-a ashesh-na Shu Tefnut-na em Tefnut an atef-a nu," and in the Mesopotamian legend we find that they copied the Egyptians and made man out of the blood of Marduk, or copied this from the Assyrians, who obtained it from the Egyptians. Moses, who was a priest of On and well versed in the Stellar and Solar doctrines, when he left Egypt with his followers tried to obliterate as much as he could of the Stellar Mythos and retain the Solar with their eschatology, altered the date of age of circumcision as far as the Jews went. All the so-called laws of Moses were the old laws of the Egyptians, which is clearly proved by the inscription on the Code of Hammurabi (dates at least 1,000 years before Moses lived), and the custom had been in practice thousands of years before this, and was carried all over the world by an exodus that left Egypt at the time of the earlier Stellar Mythos. The practice of circumcision and subincision was part of their totemic ceremonies, and signified that the boy had now become a man and must be regarded as a begetter, an increaser, a father, a creator, etc.

The version in the Egyptian is expressed in a gross form, but the meaning is clearly spiritual We must remember that these ancients expressed their ideas regarding spiritual life in a material and dramatic way—they had, in fact, no other means of doing so, not having the language to use as we have now; and, although expressed in a gross form, I am of opinion that the meaning was not such, but expresses the action and idea of emission of divine words and will from the Creator.

I find that the practice was universal at one time; and,

as we see from Dr. Edward Seler's so-called "Twenty-day Sign" amongst the Mexicans and Zapotecs, it was practised there where the Solar Mythos never reached. (I do not agree with any of his decipherments of this sign; I have proved them to be quite different.)

It is a question whether the pygmies practise circumcision, and, although these primitive little people believe in spirits and have some sacred ceremonies, they have not reached the stage of totemism, which is the first sign language in forms and symbols and ceremonies to express their ideas, thoughts, and beliefs, and which was first worked out by the Nilotic negroes; and all was done dramatically, to impress upon their minds that which they had no words for. There must have been a great exodus of these at a very remote time, as from all anatomical and ethnological studies I find they all correspond, as well as the signs and symbols in use amongst them, in all parts of the world. The meanings of all these rites and ceremonies are now lost to living natives. The only answer they give you "it has always been," but the meaning and the key we find in the Stellar Mythos of Egypt, and to these only can all be traced back.

Although the quotation above refers to "Ra" and "Khepere" of the Solar Mythos, the rite originated ages before this, in fact during earlier Stellar, and was associated primarily with Horus I, as is proved by finding it amongst those where the Solar never reached.

I have completed a large work on this subject, with many photographs taken on the spot in various parts of the world, and as soon as I can find a publisher to publish it I will send you a copy, but up to the present I have not been successful.—I am, etc.,

South Norwood, S.E., June 15. Albert Churchward.

THE AVERAGE LEVEL OF THE DIAPHRAGM.

Sir,—Dr. William Ewart's comment on the necessity and difficulty of finding a standard of measurement for the movements of the diaphragm is of much practical interest. Some time since, when working on the subject of the diaphragm in its relation to the general mechanism of respiration, I was met by the same difficulty, which Dr. Ewart has also experienced, of finding a fixed basis from which to measure. Practically, it is found advisable to take some landmark, the position of which it is easy to verify in the living subject, and which as nearly as possible corresponds with the average cadaveric position of the diaphragm. The costal arches are extremely variable in position; even in individuals of the same sex and age, the width of ribs, cartilages, and intercostal spaces may differ markedly, and moreover may be relatively unequal on the two sides. The nipple level is still more unreliable. I am unable, with Dr. Ewart, to regard the vertebral column as "the only one strictly reliable anatomical standard," for reasons which I shall endeavour to show in a forthcoming paper.

Although the meso-metasternal sutural line (junction between gladiolus and ensiform) presents slight variations according to race and sex, it is nevertheless the most convenient point that I have yet found. If, in all cases, comparison be made between corresponding phases of respiration, the error caused by the vertical portion of the movement of the lower end of the sternum becomes very slight. Hence I have adopted the meso-metasternal articulation as the basis from which to measure, and the line drawn horizontally through this point—the meso-metasternal plane—as the plane to which the level of the rise and fall of the diaphragm on each side may be referred.

The suggestion of a still more practical standard would be welcome, since more is not claimed for the above than that it is the least imperfect yet discovered.—I am, etc.,

London, W., June 19th. J. F. Halls Dally.

FRACTURE OF THE LACRYMAL BONE WITH PERFORATION OF THE LACRYMAL SAC.

Sir,—I have just noticed the memorandum on "Fracture of the Lacrymal Bone with Perforation of the Lacrymal Sac" in your issue of May 4th, p. 1054, and think my own experience may be interesting.

Some years ago, while playing in a lacrosse match, I received a hard blow from the ball on my right eye and the right side of the nose. Although dazed, I was able to resume play after a few minutes. Nearly an hour later, while walking to the station, I blew my nose. There was a curious hissing sound, and to my surprise my right eye became closed at once, and I soon found I could obtain the slight crackling sensation of surgical emphysema. I was careful not to blow my nose for the next day or two. The condition subsided, much like an ordinary "black eye," without special treatment. I have little doubt the injury was the same as that described by Fleet Surgeon Marsh Beadnell in your columns.

A lacrosse ball is about two-thirds the size of a cricket ball, and, except for a small cavity in the centre, is made of solid indiarubber.—I am, etc.,

Malvern Link. C. F. Hadfield, M.D.Cantab.

THE REMUNERATION OF SHIPS' SURGEONS.

Sir,—I am unaware if any decisive steps have been taken recently in the question of the remuneration of ships' surgeons, or, as they should now be officially called, ships' medical officers. In this age of competitive commercialism it is useless to expect that the Board of Trade will insist upon a minimum remuneration, but now that vessels carrying up to 3,000 passengers and crew are being built it is not too much to ask in the interest of the travelling public that a sliding scale on some basis may be established. To obtain a man of mature experience £400 to £500 a year must be offered; this is the usual net income of a practitioner having charge of 1,500 people, the equivalent for twice that number of healthier people on board ship.

On the big lines no doubt the medical officers make more than this, but at the expense of being included amongst the class expecting tips, a position that no medical man should occupy. Has this scheme been thought out? Where companies employ a medical man because regulations alone compel them to do so, the usual standard is board, lodging, and £8 a month. The larger the number of passengers the larger the number of steerage people, and therefore, the more work, is the usual rule.

Let the minimum be the board, lodging, and £100 a year, a newly-qualified man's remuneration for a vessel registered to carry crew and passengers up to 100. Between that number and 250 let it be £125; between that number and 500 let it be £150. From 500 crew and passengers for every increment of 250 persons let there be an increase of pay at the rate of £25 a year; at the last figures of 2,750 to 3,000, this will work out at £400.

If such regulations as to increase of pay were compulsory, it would fall with equal incidence on all companies alike; the increase in the salary could be met by a fractional charge on each first and second class ticket, to which surely passengers would not object if they knew such charge was a guarantee for the probability of attendance by a medical man of mature standing and steady conduct, with no expectation of a fee if ill. It would never prevent a present in cases of special severity or friendly regard if the patient thought fit.

Two more points gained from living on board ship, though not serving there: It should be illegal for the medical man to be compelled to do other work as a consideration for his engagement. On one line I could mention the vessels on a special run had the doctors doing pursers' clerical duties. Again, if the medical officer is not the supreme judge, as in the public services, as to whether or not a man is fit for duty, let him be compelled by law to fill in a daily state of the crew, one column being whether fit or unfit for duty—this to be rendered to the captain to be filed by him.

If an influential representation were made soon, I am convinced that the present Board of Trade, as represented by its chief, would give every consideration to some such scheme.—I am, etc.,

May 15th. G. R. H.

Mr. Charles Greenwood, Organizing Secretary of the Association of Public Vaccinators of England and Wales (1, Mitre Court Buildings, Temple, London, E.C.), requests that Public Vaccinators will let him know immediately any arrangements which have been made between them and their guardians with regard to fees to be paid under the recent Vaccination Order. Such information may be of the greatest assistance in cases where arrangements are pending.

OBITUARY.

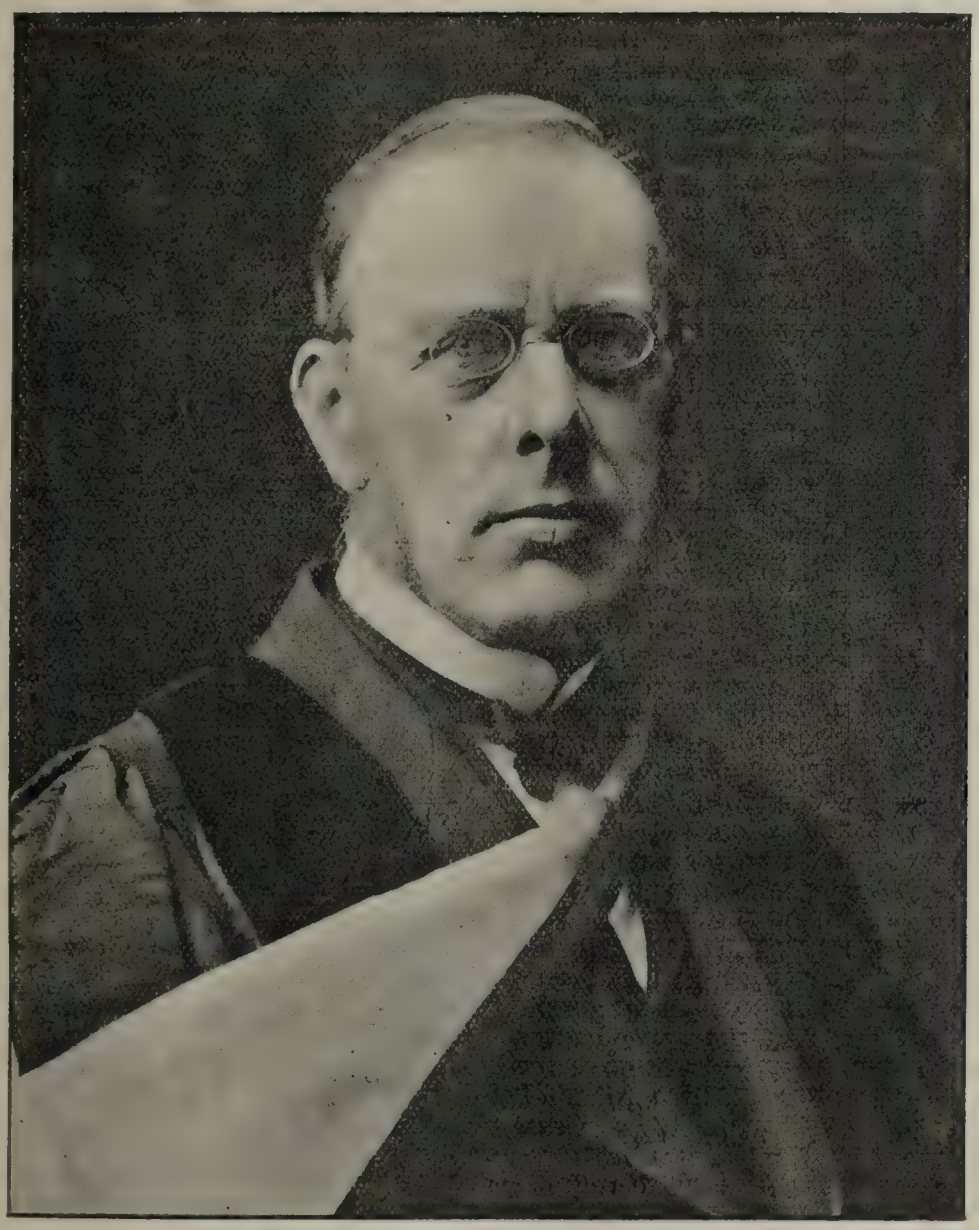
SIR WILLIAM TENNANT GAIRDNER, K.C.B., M.D.,

F.R.C.P.EDIN., F.R.S.,

PHYSICIAN IN ORDINARY TO HIS MAJESTY THE KING IN SCOTLAND; HONORARY CONSULTING PHYSICIAN, WESTERN INFIRMARY, GLASGOW; LATE PROFESSOR OF MEDICINE IN THE UNIVERSITY OF GLASGOW.

SIR WILLIAM GAIRDNER, so well known and so well loved by many generations of medical students in the University of Glasgow, passed peacefully away in Edinburgh on Friday, June 28th. For some years he had presented the typical symptoms of Stokes-Adams disease, and for five years he had had a pulse-rate of from twenty to twenty-eight a minute, which occasionally sank much lower. In the afternoon he had received one of his oldest friends with his usual cheerful serenity and, after bidding him good-bye, lay down on a sofa with a book; less than an hour afterwards he was found to be dead, having probably passed away in his sleep.

After retiring from his Professorship in Glasgow University in 1899, Sir William returned to his old haunts in Edinburgh, as he thought his severance from practice ought to be complete, and that his closing days would be better passed amongst familiar scenes endeared to him since early childhood. For a time he was able to go about, and he even attended meetings of the General Medical Council in London when obviously unfit for such journeys; but for the last few years he suffered from curious seizures of a nervous nature, associated with remarkable slowness of the pulse. Some reference was made to his case by Dr. G. A. Gibson in a communication submitted to the Section of Medicine at the Oxford meeting of the British Medical Association in July, 1904. Probably more may yet be heard of these attacks. "The ruling passion strong in death" was exemplified by the great pathological and clinical interest which the patient took in his own case, and he even dictated long reports of his symptoms.



SIR WILLIAM TENNANT GAIRDNER, K.C.B., M.D.

Up till 1870 Professor Gairdner was a bachelor. In that year he married Miss Helen Bridget Wright, of Norwich, by whom he had a large family. Two of his sons are in the medical profession; another is engaged in mission work abroad. His eldest surviving daughter is married to Dr. Lewis Sutherland, Professor of Pathology in Dundee. Lady Gairdner survives her husband.

William Tennant Gairdner was born in Edinburgh on November 8th, 1824. He was the son of Dr. John Gairdner (1790-1876), long in practice there, and held in high esteem by his professional brethren, being President of the Royal College of Surgeons of Edinburgh in the troublous times of 1830-32, but perhaps best known as Treasurer of the College during very many years. Sir William's paternal grandfather was Captain Robert Gairdner, of the Bengal Artillery. His mother was Susanna Tennant, a granddaughter of William Dalrymple, D.D., of Ayr (the "D'rymple mild" of Burns). His father and mother were cousins. A brother of his, James Gairdner, is well known as Editor of the Calendar of State Papers of Henry the Eighth's Reign. Of tall and slender build, Gairdner had somewhat precarious health as a young man, but he seemed to outgrow any delicacy of constitution, and during his long life any illnesses he had were trivial till near the end.

EDINBURGH CAREER AS PATHOLOGIST AND PHYSICIAN.

In early life, Sir William's education had evidently been carefully attended to, but he was not a graduate in arts. He seems, indeed, to have had a poor opinion of the hard and fast curriculum required in the Scottish universities for such a degree, and he propounded a scheme characterized by flexibility to suit different minds and different plans of life (*Idea for an Extension and Alteration of the Curriculum in Arts in the University of Glasgow.* Glasgow, 1865). By the great variety of ways in which these degrees can now be obtained under the new ordinances some of his objections are met. In his medical course at Edinburgh University and Infirmary he was chiefly indebted to Alison, for whom he had a profound veneration; to Christison, of whom as a physician he gives an estimate in the second volume of his *Life;* and to Graham, whose name is now but little known.

Immediately after his graduation in medicine, in August, 1845, he received an important supplement to his education which he always felt to have been of the greatest value to him, namely, a visit to Rome, of five or six months' duration, with Lord and Lady Beverley (afterwards the Duke and Duchess of Northumberland). The great archaeological and classical interest of the famous city expanded his mind, while the art treasures there helped, no doubt, to lay the foundations of his knowledge and love of painting and sculpture. Probably the visit also cultivated his taste for music, of which he had considerable technical knowledge, and of which he remained passionately fond till the end.

On his return to Edinburgh he was for two years Resident Assistant in the Royal Infirmary, and he tells how he had to grapple with the application of a long splint without having ever seen one actually being applied; and he used to tell, partly with amusement and partly perhaps with a little feeling of the old superiority which pure physicians were wont to assume, that although a full-fledged M.D. of a famous university, he had never been present at a case of labour (*Edin. Hosp. Reports*, vol. ii, 1894). If Rome imparted a colouring to his whole subsequent life, residence in the Infirmary during 1846-48 influenced no less his professional career. In that awful time fever, chiefly typhus, was rampant in the large towns of Scotland, favoured by overcrowding and poverty and by the arrival of a multitude of poor Irish immigrants. He used often to speak of the terrible scenes in the wards set aside for fever, and of "two

large garrets [to quote his own words] which had never been used for accommodating patients before, but which by placing mattresses and blankets upon the floor were made to do duty as additional wards. They were almost instantly filled, but in the overworked condition of the hospital staff the inmates were in some danger of being neglected; and I well remember being urgently requested by Mr. McDougall, the Superintendent, late one evening, to take charge of the patients in those attics. On that evening, after 10 o'clock, and after all the ordinary or rather extraordinary duties of the day, I visited upwards of one hundred fever patients, in all stages of the disease, and whose faces were all new to me. To visit them I had to walk along a narrow foot pathway, between crowded beds, in a room in which I could not walk without stooping; to feel their pulses and to look at their tongues I had to kneel or sit on the floor, and the attention of the nurses had to be administered after the same fashion" (Letter to *Scotsman*. January 1st, 1858, partly reproduced at the end of his book on *Public Health*, Edinburgh, 1862). This experience was, no doubt, the dominating influence which led him to lecture on public health, and subsequently to undertake the practical duties of health officer. That he escaped while so many of the nurses and residents fell victims to this dreadful epidemic is explained by his having had this fever two winters before.

The next step in his career influenced, in another way, his whole subsequent life. In 1848 he was appointed Pathologist to the Infirmary—a new office, to the duties of which he applied himself assiduously. In the first year of his tenure he published a series of pathological papers in the *Monthly Journal of Medical Science* (reprinted and issued separately as *Contributions to the Pathology of the Kidney*, Edinburgh, 1848, pp. 54). The most interesting feature of these observations was the early description of the "waxy" kidney. He often referred to the association he then had in this work with Sir John Kirk, afterwards Consul at Zanzibar, who, as a pupil of his, had engaged in this investigation (BRITISH MEDICAL JOURNAL, 1879, vol. i, p. 509, and also p. 585). Another important study, dating from his work as pathologist, was On the Pathological Anatomy of Bronchitis and the Diseases of the Lung connected with Bronchial Obstruction (*Edinburgh Monthly Journal*, 1850-51; issued separately, Edinburgh, 1850). This contribution at once stamped him as an original and ingenious worker; he himself, in his later years, attached such importance to it that he intended including it in a fresh edition of his *Clinical Medicine*, but this was never brought out. His ingenious theory of "inspiratory" emphysema, advocated in these papers, has not been generally adopted, except for the explanation of partial or localized patches, the "expiratory" theory affording the favourite explanation for the ordinary forms which are so common. The young pathologist was not content with merely working in his laboratory; he was desirous of teaching, and the subject being new, there were not a few who were anxious to learn, practically, something of this important branch of medicine. Some even who had already taken their degrees joined this young graduate's class. The list of his students in 1848–9 includes the name of Dr. Warburton Begbie, who was somewhat junior to Gairdner, and was to become the foremost consultant in Scotland; of Dr. Thomas Keith, the celebrated ovariotomist; of Dr. W. R. Sanders, who became professor of pathology in Edinburgh University; and of the veteran professor of medical jurisprudence, Sir Henry Littlejohn. The full list (forty-three in number) may be seen in the testimonial which Gairdner issued when applying, unsuccessfully, for the Chair of Medicine in Glasgow University in 1852. This unsuccessful application was backed by recommendations from Bright, Walshe, Todd, Budd, West, Parkes, and Paget.

Gairdner's career as a pathologist was curtailed by a certain susceptibility which he had to the injurious influences of *post-mortem* work. While holding this post he was, for a short time latterly, on duty in the Infirmary as "Special Assistant Physician," but from 1853 till 1862, he was a full physician in charge of wards. As such, he had the privilege of clinical lecturing (outside of the university clinics) along with his senior colleague, Dr. William Robertson; but notwithstanding that physician's ability and reputation, he absolutely refused to take part in this work; and so it came about that, had he so chosen, Gairdner could have had a monopoly of the clinical teaching of medicine in the extra-academical portion of the Infirmary cliniques. Monopoly in clinical teaching was always repugnant to Gairdner's mind. His conception of such instruction was to bring the students into personal relationship with the patients, and mere lecturing once or twice a week to a crowd of students on cases which many of them might never have seen did not meet his views of what was required under this name. Accordingly, with characteristic magnanimity, he associated himself with Dr. Warburton Begbie and Dr. Keiller (the latter for gynaecological cases) in conducting an extra-academical clinic (see *Edin. Hosp. Reports*, vol. ii, 1894). By a curious chance, he who had voluntarily renounced a monopoly in clinical teaching when it was within his power had to fight, in later years, for his right to a share in the official clinical teaching as a University Professor in Glasgow; this arose from the foundation there of a new Chair of Clinical Medicine in 1874. This long fight was a painful episode, and very distressing to him at the time from the personal elements involved; but he gained his point after a hard and bitter struggle. ("Statement for the University Court of the University of Glasgow in support of Professor Macleod's Appeal against a Decision of the Senate of the University on February 14th, 1878." The final decision was given May 8th, 1878.)

In 1853, at the age of 29, and with charge of wards in the Edinburgh Royal Infirmary, Gairdner started as a

private lecturer on Practice of Medicine; he continued teaching in this way till his removal to Glasgow in 1862. His first class only numbered 12 students, his second 52, while in the third year it reached 124—enough to satisfy his ambition in this direction.

LECTURES ON PUBLIC HEALTH.—STYLE OF LECTURING.

Although thus occupied in the clinical and systematic teaching of medicine, he found time, in the comparative leisure of the summer session, to start a new enterprise in 1861 by a course of lectures delivered to "an audience partly composed of students of medicine and partly of persons otherwise interested in public health." From the shorthand notes of a few of these lectures, with certain alterations and expansions, he issued his volume on *Public Health in Relation to Air and Water* (Edinburgh, 1862). Here he felt he was to a large extent on new ground; Scotland was not abreast of England in this subject, either on its scientific or its practical side. The lecturer not only discussed the evils of overcrowding and the dangers of scanty or impure water supply, but he also indicated the lines on which, as he thought, action should be taken, by processes of investigation and instruction, by moral suasion, and only when absolutely necessary, by legal compulsion on the part of the municipal or imperial authority. It is worthy of remark that this volume of nearly 400 pages, published little over 40 years ago, does not contain a single reference, however faint, to the omnipresent microbes which bulk so largely in such discussions now. They are not referred to even in connexion with their function as scavengers, the decomposition of effete animal substances being dealt with as if it were purely a matter of chemical oxidation. Still less is their pathogenic action referred to, of which Gairdner was to hear, four or five years later, after going to Glasgow as the colleague of Lister. Even at this date, notwithstanding all the subsequent development of hygiene in this country, these lectures may be read with interest. Should anyone wish to get a good idea of Gairdner's style of lecturing, or to recall it to his memory, the introductory lecture may be recommended. The Sanitary Code of Mount Sinai, the laws of Lycurgus, the Platonic ideal of polity and physical culture, the *Archiatri Populares*, the *Cloaca Maxima*, Defoe's *History of the Plague*, Government Blue Books, Dr. Farr's statistics, Quetelet *Sur l'homme*, Catlin's reports on the North American Indians, and a multitude of other matters are all laid under contribution and worked up into an interesting discourse, with quotations from the New Testament and professional experience of Edinburgh life. His systematic lectures on medicine were not mere collations of current knowledge on the subjects dealt with. He did not aim at going over the whole realm of medicine; his subjects were limited in number, and some of them at least were always dealt with at considerable length, discussed in the light of the most recent literature, and presented to the students as they appeared to the mind of a physician of experience. The lectures were regarded by most of his hearers as an intellectual treat, and were enjoyed by them quite apart from any value they had for examination purposes. His ideas on the subject of teaching are formulated by himself in a pamphlet printed for private circulation (Glasgow, 1877), *Lectures, Books, and Practical Teaching*.

GLASGOW PROFESSORSHIP: "CLINICAL MEDICINE."

As already stated, in 1862 his great opportunity came with the call to Glasgow to fill the Chair of Medicine, which he was so well fitted to adorn. Amongst his colleagues the following may be named: Lister had come two years before from Edinburgh, where he also had been a private teacher; his reputation as a scientific surgeon was quite established; he was already a Fellow of the Royal Society of London, and Croonian Lecturer on the Coagulation of the Blood; but his revolution in the practice of surgery was still in embryo. Allen Thomson was widely recognized as a graceful lecturer and a leading authority on comparative anatomy aud embryology, and he was shortly to be called on to edit the seventh edition of *Quain's Anatomy*. Andrew Buchanan was a man of high culture and original mind, who lectured on physiology; although not very successful as a teacher, his researches on the coagulation of blood, long neglected, have now received everywhere their due recognition. Easton, whose name is widely known in connexion with his "Syrup," taught materia medica with enthusiasm, while his grandiose rhetoric and poetical quotations added to a dry subject a daily fund of amusement probably never before or since known in connexion with discourses on castor oil and sulphur. Dr. Harry Rainy (father of the late leader of the United Free Church of Scotland) taught forensic medicine with scholarly care, but had little to do with actual practice in this department. In the Faculty of Arts, Professor William Ramsay had not yet resigned; he had been an indefatigable teacher and worker, and his published researches on Roman antiquities were everywhere regarded as standard authorities. Professor Lushington established his fame as a Greek scholar not by any published works, but by his wonderful influence on his pupils, such as the great Homeric scholar, afterwards Provost of Oriel, Lewis Campbell, Emeritus Professor of Greek, and many others. Professor Thomson, now Lord Kelvin, had even then attained world-wide celebrity after the laying of the Atlantic cable. Dr. John Caird, subsequently Principal of the University, entered the Senate as Professor of Divinity the same year as Gairdner, and Edward Caird, late Master of Balliol, joined them a few years later.

Such were some of the colleagues with whom Gairdner was to work. Great as most of these names were, still, in the teaching of practical medicine, there was much room for development. Gairdner's immediate predecessor was Dr. John Macfarlane, a man who had an immense and apparently well-deserved reputation in the West of Scotland as a consulting physician; but his early laurels had been won in the field of surgery, he had given up clinical teaching, and as a professor of medicine he cannot be said to have achieved distinction. Lister and Gairdner both set themselves to develop teaching at the bedside in order to illustrate and supplement their systematic prelections in the university class room; both were enthusiasts, and their enthusiasm kindled something of a similar spirit in their respective classes. The Royal Infirmary visit hour in those days was half-past eight, and Gairdner's long investigations or reports at the bedside or at inspections in the deadhouse sometimes ran him perilously near his 10 o'clock lecture hour at the old College in High Street, a little distance off; and it was no rare sight to see professor and students, equally gay, scampering down the hill together to the College so as to be in time for the lecture in the practice of medicine classroom.

Just about the time of his appointment to the Glasgow chair, but before he left Edinburgh, he issued in July, 1862, an important work—*Clinical Medicine: Observations Recorded at the Bedside, with Commentaries* (Edinburgh, 1862). This book was hailed by the profession as an original contribution, by a fresh mind, untrammelled by any undue deference to authority. Many of the chapters are from notes furnished by resident assistants and students, whose "unremunerated but not unprofitable work" he acknowledges in the preface.

Sir William Gairdner was the representative of the University of Glasgow on the General Medical Council from November, 1893, till his retirement after the winter session of the Council in 1902.

OFFICER OF HEALTH IN GLASGOW.

After settling in Glasgow, he was soon introduced to a new sphere of work in which he was already deeply interested. The Corporation for some time had been moving in the direction of sanitation and public health. Mr. John Ure (afterwards Lord Provost of the city) was the mainspring of this movement; in a new Police Act, obtained in November, 1862, some powers were given for forming a sanitary committee and for the appointment of "one or more medical officers." In January, 1863, Gairdner was appointed the first "Medical Officer of Health." With his usual desire for co-operation, he got the five district surgeons of police to act as his assistants in this new departure, and in the face of a grave epidemic of typhus and relapsing fever, some years later, he even made an attempt at enlisting the parochial surgeons all over the city as coadjutors. The powers possessed under the local Police Act of 1862, however, were not very great, and the appliances for dealing with epidemic disease, which was then spreading, were non-existent. The situation is thus described by his successor, Dr. J. B. Russell: "Dr. Gairdner was in the position of a commander-in-chief newly appointed, an

active enemy swarming over the land, holding every strategetical point, well found and well equipped, while he possessed nothing but his commission. He had to recruit, and drill and equip his army, to subsidize mercenaries, to bear a brave front, and make the most of his meagre resources." He succeeded, however, in getting the corporation to provide hospital accommodation for fever patients who were not paupers, and this was opened in April, 1865. For this new hospital he secured, as resident physician, Dr. J. B Russell, who, by previous experience in general and in fever wards, was eminently fitted for the post. In making this selection he paved the way for Dr. Russell's appointment as his successor in 1872, with his whole time devoted to the work and with fuller powers and ampler resources. (For a full account see Dr. Russell's *Evolution of the Function of Public Health Administration.* Glasgow, 1898.)

In 1866 an opportunity for the exercise of Gairdner's powers in his new office was presented by the threatened invasion of the city by cholera. Fortunately, this never attained serious dimensions (only sixty-eight deaths), owing probably to the pure water supply introduced into Glasgow several years before. He organized temporary cholera hospitals in various districts, and instituted a system of house-to-house visitation to deal early with cases of illness. Perhaps the most striking and characteristic feature of his campaign was the enlisting of visitors supplied by churches of nearly all denominations. In response to Gairdner's appeal, the number who volunteered for this work was quite remarkable, and their response was so hearty that a movement was inaugurated for making the arrangements, meant for a temporary purpose, the basis of a more permanent scheme for social and sanitary amelioration. (For details of this remarkable movement see "Report of the Inspectors and Visitors of Sections in the Recent Sanitary Visitation Movement, with suggestions as to a permanent scheme; also, Proceedings of a public meeting and Appendix of relative documents. Submitted by Dr. Gairdner," Glasgow, May, 1867.) By 1872, as already stated, the time had fully come for a complete change as regards the work of the Medical Officer of Health in Glasgow. It was thought at the time by some of Gairdner's friends that the City did not treat their officer quite as well as he deserved; but the situation was difficult. They offered him, it is true, a nominal post and a nominal salary as a "consulting" officer. Fortunately he declined; he was, however, almost on the point of accepting, by way of showing that he had not taken offence at the new arrangements. It was doubtful, indeed, if his position for nine years, under a Committee of the Town Council, had not impaired his reputation as a consulting physician. To be engaged in conflicts with well-known citizens and to differ from them, perhaps, on important matters of policy which came before the public, was apt to lessen, in some quarters, the authority and respect due to his opinion as a consulting physician. Many of his best friends were glad when he was fairly quit of this connexion, and any regret at his retirement was lessened when there was appointed as his successor one whom he had originally introduced to the service of the city. Dr. J. B. Russell carried on the sanitary work nobly in Glasgow and subsequently in the Local Government Board in Edinburgh till his death in 1904.

As a Consultant.

We may here say something of Gairdner's position as a consulting physician. After he left the sanitary office in 1872, and, perhaps, more particularly after Dr. Warburton Begbie's death in 1876, his consulting practice, which at first had been of slow growth, became very important and much wider in its range. The reputation which he had gained among his Glasgow as well as his Edinburgh students had had time to tell, and the death of the great Edinburgh consultant no doubt left him a wider field. By some, even of those warmly disposed in his favour, Gairdner was regarded as lacking certain of the arts calculated to give the practical assistance required by those who seek consultations in difficult or critical circumstances. Some thought that the diagnosis and the pathological interest of the case, rather than the treatment, engrossed the attention of the professor. Probably his very slight experience of general practice when a young man hindered at times his seeing what kind of aid he was expected to render. These drawbacks, often very unduly exaggerated, did not keep the profession generally from recognizing the great value of his services as a consultant, and in an obscure case the most captious were usually willing and eager to secure his help. His downright honesty was admired, but some questioned the wisdom of a great consultant occasionally obtruding the fact, however true, that he was ignorant of the condition before him, when some less abrupt expression might have served the purpose. In consulting practice, however, as in the wards, he had no disguises or subterfuges.

In his relationship to fellow-workers he was singularly free from jealousy, always keeping an open mind for any fresh views, and to younger members of the profession, whether his pupils or not, he was most generous in his appreciation of anything they did or tried to do, and ever ready to render what help he could.

Question of Returning to Edinburgh: Unsuccessful Application.

A critical period in his career arose in 1876. In February of that year Dr. Warburton Begbie died. There was obviously room in Edinburgh for a consulting physician of established reputation. Some thought that Gairdner should have boldly changed his residence then, particularly as he knew that it was almost certain that he would have been offered the post of medical adviser to the Scottish Widows' Fund, left vacant by Begbie's death, and this would have supplied, at once, a substantial nucleus of an income. Certainly, if he entertained the idea of ever going back to his native city, this seemed his chance; for it was well known that the health of the Professor of Medicine in Edinburgh University was such that his incumbency could not last very long, and when that ceased another post was likely to fall naturally to him, if he were on the spot; this position, moreover, carried with it hospital work and clinical teaching. Gairdner could not, however, face the change at this time, as it implied his severance, for an uncertain period, from his class and his hospital work, which were his very life. As it happened, the Chair of Medicine in Edinburgh University did actually become vacant, in September of the same year, by the death of Professor Laycock. It was a matter of grave difficulty for Gairdner to decide whether he should seek the vacant Chair as a successor of Alison, whom he revered, and as physician to the old hospital which he loved. His attitude was that he would take the appointment if it were offered to him, but he hesitated about applying. Ultimately, after much dubiety, and partly perhaps moved by family considerations, he decided to become a candidate; but his long hesitation, or local influences in Edinburgh which had had time to work, proved fatal to his application, and so he was passed over by the Board of electors. He was well content to continue in the city of his adoption, where he had made so many friends, and he remained in Glasgow University and the Western Infirmary till his retiral in 1899.

Gairdner's resignation at the age of 75 was not due to want of mental power or of lively interest in his hospital work, but more especially to failure of eyesight. Always highly myopic, he had latterly suffered from detachment of the retina, and also from cataract, defects which did not confine themselves to one eye; his failing vision impaired his usefulness in many ways. He also felt that with the growing developments of pathology in the direction of bacteriology, and of therapeutics in the direction of serum treatment, he had not, especially with poor eyesight, the ability to deal at first hand with these new problems. Even after his retiral, and even after the grave symptoms of his later illness occurred and recurred with alarming frequency, he manifested a wonderfully keen interest not only in old subjects, but in many new ones, and he continued to write notes and post-cards, as of old, to his professional friends on various matters till he was reduced to the necessity of dictating his correspondence to a member of his family.

At Medical and Other Meetings.

As a speaker at a meeting, or even in after-dinner toasts, he was remarkably interesting—provided always there was no hurry. He was apt at times to be too long, and perhaps too discursive, for the occasion. At

medical societies, which he attended with wonderful regularity, his contributions to the discussions were almost always much enjoyed. He had worked personally at so many subjects, and his mind was so fully stored with information on all sorts of matters, that without warning or preparation he could usually say something important and something interesting. A curious feature—well known to all his friends, a peculiarity not limited to his later years—was the facility with which he fell asleep, sometimes only for a minute or two, sometimes for longer periods, during the reading of a paper or even during a short communication. It was a source of astonishment to those who had not seen it before that, on being called on to propose a vote of thanks or to take part in the discussion, his remarks were so pertinent to what had been said, that, if it had not been seen, one could scarcely have believed that he had missed any part of the proceedings. "*Quandoque bonus dormitat Homerus.*"

This facility in going to sleep, coupled with a remarkably good digestion, accounted, no doubt, for the power he possessed of going through an enormous amount of work. His daily hospital visit for twenty-five years was from 9 to 11, and his systematic lecture at the College 11 to 12; these he scarcely ever missed. For his lectures he prepared assiduously by much reading and some note-taking, and for his set clinical lectures he often worked till 2 a.m. With consultations at his house in the afternoon, and consultations all over the country at other times, with meetings of all kinds in the University and city, it was amazing how he kept so well; his capacity for sleep and food stood him in good stead. No doubt many consultants in London have had a much more extensive practice, both in their houses and outside; but in their case they seldom, if ever, had daily hospital visits and clinical teaching, and a daily lecture of a systematic nature as well. As he said when receiving his portrait: "I am perhaps a typical example, in some respects, of the difference between a Scottish professor and a London teacher of medicine. The Scottish professor is a professor till the end of the chapter, whilst a London man is, as a rule, only a teacher until he has got floated into such a lot of practice that he does not care to teach any more."

PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION: LATER PUBLICATIONS.

Sir William Gairdner was President of the Section of Medicine when the British Medical Association met at Leeds in 1869, and at the Dublin meeting he delivered the Address in Medicine. Until a few years ago he was a frequent attendant at the annual meeting, and often took a prominent part in the work of the sections.

When it was decided to hold the meeting of the British Medical Association in Glasgow in 1888, Gairdner was obviously the man pre-eminently fitted to be the President, and he entered into the arrangements *con amore*. At the meetings he was quite in his element, going from section to section, and renewing acquaintance with old friends from all parts of the country, and with many former members of his Edinburgh and Glasgow classes. His address as President, published in the BRITISH MEDICAL JOURNAL, August 11th, 1888, was recognized as worthy of the man. It forms the title piece of a volume of essays subsequently published—*The Physician as Naturalist: Addresses and Memoirs Bearing on the History and Progress of Medicine chiefly during the last Hundred Years.* (Glasgow, 1889). This volume also contains the presidential address to the Glasgow Pathological and Clinical Society, founded in 1873 by some of the younger members of the profession, and warmly taken up by Professor Gairdner, who was naturally its first president—The Progress of Pathological Science: John Baptist Morgagni and his successors (BRITISH MEDICAL JOURNAL, October 24th, 1874). Another volume issued by him in conjunction with a former pupil, the late Professor Joseph Coats, was a record of lectures delivered by them jointly as a post-graduate course: *Lectures to Practitioners: Tabes Mesenterica*, by W. T. Gairdner. *On the Pathology of Phthisis Pulmonalis*, by Joseph Coats (London, 1888). In these lectures he reverted to a subject which had engaged his attention in a series of papers published in the last volumes of the *Medical Times and Gazette*, 1884-5. About this time, also, he issued a pamphlet of 70 pages, giving a portion of his lectures on insanity. This disorder had always attracted his interest and attention, and in his regular courses he sometimes enlarged on this subject. In 1879 he was appointed Morisonian Lecturer in Edinburgh, but the lectures were never published in full. In the *Glasgow Medical Journal*, vols. xxiii and xxiv, 1885, he published portions of the lectures, with appendices, and likewise issued as a reprint the pamphlet referred to (*Insanity: Modern Views as to its Nature and Treatment.* A portion of the Morisonian Lectures on Insanity delivered in 1879 By W. T. Gairdner, M.D., LL.D. Glasgow, 1885). In addition to the volumes already named in this notice, the only other book issued by him was one on a religious subject, which will be referred to subsequently. His other publications consist of pamphlets, reports, and addresses (some printed privately), and a multitude of papers, reviews, and clinical cases contributed to a variety of medical journals, and of communications to be found in the *Transactions* of various societies. These are too numerous to be specified here. Exception, however, may be made in naming the following contributions, as being in book form: "Angina Pectoris and Allied States, including Certain Kinds of Sudden Death," in *Reynolds's System of Medicine*, vol. iv, 1877; "Aneurysm of the Aorta," in *Clifford Allbutt's System of Medicine*, vol. vi, 1899; "The Physiognomy of Disease, in *Finlayson's Clinical Manual*, 1878 and 1886; and the estimate of Sir Robert Christison as a physician, in his *Life*, vol. ii, 1886.

HONOURS.

Of the many honours bestowed on him, only one or two need be detailed. He was particularly gratified by his election as a Fellow of the Royal Society of London in 1893—an honour entirely unsolicited and unexpected. He had for so many years ceased to do the kind of work for which that distinction is usually bestowed that the unexpected announcement pleased him greatly. Some of those influential in the Council of the Society thought that his distinguished position as a physician and his early work in public health deserved this recognition. The presentation of his portrait by his former pupils, after thirty years' occupancy of the Glasgow chair, could not fail to be highly gratifying to him. The portrait, painted by Sir George Reid, hangs in the Hunterian Library of the University of Glasgow, and a replica was presented to Lady Gairdner. This was on January 28th, 1893, and the proceedings were reported in the next issue of the *Glasgow Herald*, a reprint being sent out to the subscribers. The honour conferred on him as Knight Commander of the Bath, in 1898, was a graceful act of Queen Victoria. It is an open secret that ten years before (possibly also at an even earlier date) he had been approached as regards a knighthood. Rightly or wrongly, he had always maintained, and often openly stated, that such an honour was not a suitable recognition in the case of medical and scientific workers, however appropriate for many others. It was no surprise, therefore, to his intimate friends that the list of Jubilee honours did not contain his name. When, however, on the subject being reverted to, Her Majesty proposed this high and special distinction, he felt that he had no choice, and he accepted the title amidst the congratulations of the profession and of a multitude of friends.

ATTITUDE TO RELIGION.

A notice of Sir William would be incomplete without some reference to his attitude to religion. In Chaucer's description of the "Doctour of Phisik" in the *Canterbury Tales*, it is said, "His studie was but litel on the Bible" This could not be said of Gairdner. As already indicated, both the Old and New Testaments were frequently brought forward in his lectures. His students were amused, surprised, and generally pleased to see their professor bringing his Greek Testament to the class room to illustrate, for example, some obscure problem as to the perversion of the will or its enfeeblement in insanity, by passages from the Epistle to the Romans (vii, 15). He had, in fact, almost a technical knowledge of some points in Biblical criticism. His father had been driven from the Church of Scotland by his aversion from the rigid doctrines of Scottish Calvinism as regards predestination, reprobation, etc., and he was for a time a leading supporter of the Unitarian church in Edinburgh, although he afterwards returned to the Church of Scotland. His son, while profoundly Christian, shared his father's dislike of these doctrines as expounded in traditional

Scottish theology of the orthodox type. His mind, however, was essentially and deeply religious, and it was a treat which the writer of this notice once had to hear him expounding, in his family circle, the scope and meaning of the Epistle to the Galatians. In his later years he repeatedly occupied various pulpits, and delivered set sermons and addresses. The little book already mentioned contains one sermon thus delivered by him in the Paisley Abbey Church in 1900, and two others which were read there, although he was unable to deliver them in person: The Three Things that Abide: Faith, Hope, Love. [With an address also on ΑΓΑΠΗ to the White Cross Society of the University of Edinburgh in 1890.] London, 1903. His powers in the sermonizing direction were so well known in Glasgow, even in 1888, that it was humorously said of the Presidential address with its religious tone in some of its parts that *he* delivered the sermon in the Bute Hall, and that the Rev. Principal Caird delivered the scientific address in the Glasgow Cathedral, at the opening of the British Medical meetings. In his remarks at the presentation of his portrait by his old students, he was naturally led to speak of old colleagues and pupils, and of old professional friends now dead, whose "ghosts," as it were, filled for him the old familiar haunts; and he referred to some discussion he had had with one who had tried to prove the utter impossibility of the existence of any "ghosts." In reply to this denial, he went on to say: "One thing I could not escape from—that I felt absolutely sure of—was that I at least had quite a real 'ghost' inside; and that as I did not make the universe, or even the small portion of it known to me, it was reasonable to suppose that there were other ghosts about, not to speak of the Holy Ghost, the Spirit of the Living God, 'in whom we also live and move and have our being.'"

The truly religious spirit, however, of Sir William Gairdner is not to be sought for in any set words or addresses, but in the consistent tenor of his beautiful life.

Professor T. OLIVER, Newcastle-upon-Tyne, writes: The announcement of the death of Sir William Tennant Gairdner comes not with surprise to those who knew how precarious the state of his health had been for years. Sir William had for long felt that at any moment the call might come. He was quite prepared for it whether it came soon or late. Although prepared for, and in hope looking forward to the change, there was nothing in his attitude of expectancy but the exhibition of respectful resignation and Christian patience.

It is not so very long since the writer had the privilege of sitting by his bedside and of listening to a description of the symptoms of his illness detailed as carefully and as graphically as if he had been delivering a clinical lecture.

It was in 1872 that the writer, when at Glasgow University, came under the spell of Professor Gairdner. The acquaintance then formed between professor and student gradually ripened as the years rolled by into a friendship which has only been broken by death. There are few teachers to whom it has been given to retain so permanently a place in the affection of their students as was the case with Sir William Gairdner. At one of the annual meetings of the British Medical Association several years ago, as the subject of this sketch and the writer were walking down the street of a large provincial town, the arm of the professor through that of his pupil, a member of the Association stopped the couple, and, on the grounds of being an "old student," begged the privilege of a shake of the hand with his teacher. After parting, the professor, turning to the writer, said, "Oliver, I have been much touched to-day by the large number of men who have come to me and introduced themselves as 'old students,' but it is impossible for me to remember them all." Not only at home, but in every part of the civilized world where his old students are there will be genuine grief expressed at the death of their late Professor of Medicine. Sir William Gairdner did not, either in the class-room or in the infirmary wards, appeal to all students. To the careless and inattentive man he conveyed little information, and by the student who set before himself as the one thing essential the acquisition only of such knowledge as would enable him to pass his examination he was regarded as too slow. On the other hand, to the painstaking and thoughtful student no teacher was ever more inspiring. Apart from the high example which as college professor and as hospital physician he set his students, his lectures were marked by a breadth of thought, careful preparation, select rather than wide reading, and by a philosophic grasp of the subject—a combination of qualities rare in any teacher. The writer at this moment can recall the voice, the attitude, and the thoughtful face of the lecturer as, when descanting upon some subject of special interest, or upon one that was particularly his own, such as mitral stenosis, aortic aneurysm, asthma, and aphasia, he, in well-chosen words but in never-ending sentences, gave to his audience of his best.

There were few men in whom the ties of family affection were so strong as in Sir William Gairdner, or in whom friendship became so much akin to love. Who of the large number of students that had the privilege of hearing it will ever forget the beautiful oration which was delivered to the Practice of Medicine class on the occasion of the death of an intimate friend, Dr. Warburton Begbie, of Edinburgh? There are few, too, who will fail to remember the lectures on auscultation and percussion, and the Professor's allusion to "Gairdner's corner." It was the writer's fortune to have had the privilege of listening to several of the unexpected addresses, one of the most remarkable and interesting of which was based upon the accidental administration to Professor Gairdner by himself and to one of his children of morphine in mistake for pulv. Jacobi. Facing his class one memorable Monday morning, the pallor of the lecturer's face intensified by the horror of what had been experienced, and heightened by the white silk handkerchief thrown loosely round his neck, he, with a realism not surpassed by Zola, told the story of the accident in feeling terms only to point the moral never to take from a medicine bottle for administration to patients any drug without the most scrupulous verification. Closing the address with these words, "I nearly lost a beloved boy, and you your Professor of Medicine," the class at once realized the affectionate father and sympathetic teacher, and was grateful for what it had been spared. To Lady Gairdner and her family there will be extended in their sad bereavement expressions of the deepest sympathy from all who knew Sir William Gairdner.

Dr. YELLOWLEES (Glasgow) writes: By the death of Sir William Tennant Gairdner, K.C.B., Scotland has lost her foremost physician, and medicine one of its greatest expounders. His life was devoted to the teaching of medicine, and no man was ever more fitted for the work by nature, training, and attainments, while his personal character was so high-toned and pure that it enhanced and commended his other gifts, and made them fully available for the good of humanity.

He taught medicine without a break for nearly fifty years; even his splendid intercurrent work as Medical Officer of Glasgow was but the teaching of sanitation to the municipality, and his lucid eloquence as a lecturer was as remarkable as his wonderful skill in diagnosis.

Great ability, wide culture, a highly philosophic mind, unswerving love of truth, and remarkable clearness and fluency in elucidating and expounding it, made Gairdner a great teacher. Teaching was a joy to him, and even when in large practice as a consultant he rarely failed to meet his students, either in the class-room or in the wards of the infirmary. He never wrote out a lecture for his students, and if he had he could never have delivered it. He spoke with great ease and fluency from full knowledge, old as well as new, and from a vast experience, on which he drew largely for illustrations. Thus he was always fresh and interesting, and if, from the very width of his knowledge, he sometimes strayed from the special subject into some tempting by-path, the seniors enjoyed the divergence, though the juniors were apt to think of their examinations. Gairdner was no "grinder," and to his philosophic mind mere facts were of little value without their significance and relations.

Perhaps he was greatest as a clinical teacher, and when seated at the patient's bedside with his students around him. Due consideration was always given to the condition and the feelings of the patient. A most painstaking investigation was made to ascertain the exact facts, careful discussion was held on the various possible

inferences they suggested, by eliminating the unwarranted inferences a definite diagnosis was reached, and the proper treatment prescribed. No patient ever resented examination by Gairdner, but all felt that their illness was receiving the fullest and best consideration. The students sometimes thought it slow work, but when they came to face the responsibilities of practice they blessed "Old G." for the training, and realized that besides diagnosis and treatment he had taught them conscience in duty, sympathy with suffering, and reverence for death.

Gairdner's students loved him, and many of them all the world over will grieve to hear of his death. No one who knew him could help loving him, for when you knew Gairdner you knew him once for all. He was always and everywhere and only—*himself*. Affectation or pretence never marred the transparent truthfulness and serene sincerity of his nature. His ready sympathy alike with joy and sorrow was unfailing, and his counsel and help were gladly given to all who sought them. His perfect candour and simple truthfulness were refreshing and beautiful. His opinions were always carefully formed, and were firmly held and vigorously defended, for a man so true must needs be strong in the truth. Yet in matters outside his knowledge he was humble, interested, and eager to learn. Apart altogether from his gifts, attainments, and skill, he was one of the most lovable of men, and alike in the home—which was always the centre of his earthly happiness—and in the world of men his life was bright and cheerful, noble and good, for he had seen Him who is invisible, and dwelt in the light.

Worldly wisdom was foreign to him—he had never graduated in that school; but he was greatly gifted with the "Wisdom that is from above, which is first pure, then peaceable, gentle, easy to be entreated, full of mercy and good fruits, without partiality and without hypocrisy."

Dr. George A. Gibson (Edinburgh) writes: On the present occasion, it is unnecessary for me to add a single word to what has already been said as to the great qualities of head and heart presented in such full measure by the late Sir William Gairdner, or to make any remarks upon the great debt we owe him as a man and as a physician, but I may be allowed to make a few remarks as to the value of his contributions to the study of the circulation. Throughout the whole of his life, Sir William took a keen interest in everything belonging to the circulation, and he certainly made most important additions to our knowledge of it in many different aspects. From the pathological point of view, he very thoroughly studied its relations to the different organs of the body, and produced many valuable memoirs on the morbid anatomy of the heart and vessels. He was undoubtedly the first observer to note the intimate relation between obstruction of the coronary arteries and the condition of the myocardium. He added largely to what is known of the reciprocal influence of the lungs and the heart upon each other. His study of hypertrophy and dilatation remains a monument of careful observation and philosophic deduction. In the clinical investigation of circulatory diseases Sir William Gairdner was even more at home. It will never be forgotten that he was the first to introduce the system of denoting the sounds and murmurs of the heart by means of diagrams, and that in this way he rendered clinical facts easy of comprehension. Along with Stokes, Balfour, and Fagge, he made the diagnosis of mitral obstruction a matter of absolute certainty, and he was undoubtedly the earliest to place the recognition of tricuspid obstruction upon a sure basis. The wonderful case which he described in *Clinical Medicine*, and afterwards in the *Edinburgh Hospital Reports*, was the first instance of tricuspid obstruction ever diagnosed during life and verified after death. His researches upon aneurysm were of the highest importance. It is true that Walshe observed the inequality of the pupils in thoracic aneurysm but made no attempt to explain the symptom, and it was left to Sir William Gairdner to add observations of much value regarding the phenomenon, and to give an explanation of its significance. He also described the varying conditions of the skin as to perspiration brought about by interference with the sympathetic nerve. The article on angina pectoris in *Reynolds's System of Medicine* will always remain a medical classic; for beauty of diction and wealth of illustration, it has no equal in our language upon the subject with which it deals; even the lectures of the eloquent Latham, exquisite though they are, fall short of it. It is given to very few men to have left, in the midst of a life crowded with multifarious and arduous duties, such a magnificent record of achievement in one out of many departments of medicine in which he laboured.

Sir James Barr (Liverpool) writes: I wish to add a few words in appreciation of my old friend Sir William Tennant Gairdner. A very warm friendship existed between us ever since my student days, a friendship which has now only been broken by a death which I much deplore. To know Sir William Gairdner was to honour, love, and admire. He was in many respects a most remarkable man, and he has left no one that I know at all comparable to him. He was the modern type of Sir Thomas Browne, and could have written a much better *Religio Medici*, and, if possible, in even purer English. He had very strong religious feelings, which, however, he never unduly obtruded on his friends, but every one who came in contact with him could not help feeling a better man for the association. He was a Nathaniel, but he would denounce in very vigorous language every form of dishonourable conduct, and in this respect he was no respector of persons. He set a very high ideal example of conduct and action before his students, and I do not know any teacher who has ever had a greater following, or one who was more beloved by his pupils. I know no student of Gairdner who did not hold him in the highest reverence, and to his honest work, and high and noble example many will ascribe a fair share of their success in life. He was a very versatile man, and one who invariably wrote and spoke in the purest English. He was very cultured, and, besides medicine, he would have adorned any chair in literature, in art, in history, or even in divinity. In medicine he had a rare power both of synthesis and analysis, and his descriptive powers were unrivalled. There was no detail too minute for his investigation, and he could then gather the fragments into one harmonious whole. He could not only do the work of the subaltern, but, like the general, he could bring order out of chaos and confusion. Any subject which he touched was at once illuminated by the scintillations of his masterly wisdom. It has been said that out of the fullness of the heart the mouth speaketh, and in this instance my heart is so replete that the words choke my utterance, and I feel that I cannot do adequate justice to the memory of a man who stood on a pedestal which there is no one of the present day fit to adorn. He had attained a ripe old age, and of him it may be truly said, "Well done, good and faithful servant; enter thou into the joy of thy Lord."

ROYAL NAVY AND ARMY MEDICAL SERVICES.

VOLUNTEER MEDICAL ASSOCIATION.

The annual competition for the Association Challenge Shield took place at Wellington Barracks on Saturday, June 29th, when seven teams competed. The contest was very close, especially in first aid and bandaging. The winning team was from the 2nd Volunteer Battalion Royal Fusiliers, with 297 marks out of 350; the second team represented the 1st Lanarkshire Volunteer Rifle Corps, with 279 marks. The 1st Cadet Battalion King's Royal Rifles, who were the winners last year, were only 1 mark behind the Lanarkshires, with 278 marks. All the teams showed great improvement in their work compared with former years. It is suggested that the competition be held in the Guildhall next year, when a large number of entries are expected.

NEW INDIAN MILITARY DECORATION.

A supplement to the *London Gazette* of June 28th contained a Royal Order for the institution of a new Indian military decoration, to be designated the Indian Distinguished Service Medal. The medal, which is to be conferred by the Governor-General of India, is to be bestowed upon officers and men of the Indian regular forces, including the reserves of the Indian army, border militia, and levies, and military police and Imperial service troops under the orders of the Government of India who have distinguished themselves in peace or on active service.

The Chesterfield silver medal of the St. John's Hospital for Diseases of the Skin for proficiency in dermatology has been awarded to Mr. E. J. D. Mitchell, M.A., M.B., B.C.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

PROPOSED INSTITUTE OF MEDICAL SCIENCES AT SOUTH KENSINGTON.

The Committee of the Senate.

AT a meeting of the Institute of Medical Sciences Committee of the Senate on June 11th, the general question of the scheme for the Institute of Medical Sciences was considered in view of the fact that the Commissioners of the 1851 Exhibition have agreed to reserve a site for the proposed institute until December 31st, 1907. The Committee also had before it the following communication from the Board of Governors of St. George's Hospital:

St. George's Hospital, S.W.,
April 22nd, 1907.

To the Vice-Chancellor of
The University of London.

Sir,—The Board of Governors of St. George's Hospital have had it brought to their knowledge that some change of policy is likely to be urged upon the Senate of the University of London, with regard to the concentration of the courses of instruction in the preliminary and intermediate subjects of the medical curriculum. The Board respectfully beg you to remind the Senate of the University of the following facts: In July, 1905, an arrangement was concluded between the University authorities and the Board of this hospital, which provided for—(1) the cessation of any course of instruction in the preliminary and intermediate subjects of the medical curriculum at St. George's Hospital Medical School; (2) the transference of students and of certain teachers in these subjects from the medical school to other centres of the university—namely, University College and King's College; and (3) the guarantee on the part of this Board of the payment of £500 per annum for three years to the University chest. The Board were given to understand that the University had decided definitely to adopt the policy of the concentration of the preliminary and intermediate studies, and that in the near future a further centre for instruction in these subjects would be erected in the immediate neighbourhood of the Imperial Institute; for without this centre there could be no effective concentration, inasmuch as University College and King's College did not meet the requirements of other schools. The representatives of the Board pointed out to the delegates of the University that the transference of their students to University College and King's College must act to the detriment of their school and diminish the number of students entering each year, until this third centre had been erected; but they agreed to sacrifice their own immediate interests and adopted the agreement of July, 1905, referred to above, as they felt so strongly that the policy of the university was the right one, and the one most calculated to assist medical education in London and to attract students to the metropolis. They entered into this agreement, however, on the distinct understanding that a third centre of instruction would be erected in the immediate neighbourhood of the Imperial Institute within a few years. They were informed that such a scheme was the settled policy of the Senate of the University, that it had been approved *nemine contradicente* by the Medical Faculty, that an appeal had been issued soliciting funds for such an institute, that His Majesty the King had expressed approval of the scheme and had graciously subscribed to the Appeal, that His Royal Highness the Prince of Wales had referred to the matter in terms of appreciation, and that King Edward's Hospital Fund had expressed satisfaction on the ground that such concentration would put an end to the practice of the funds of the charitable public, which were subscribed for hospital purposes, being diverted to the purposes of medical education.

The Board is of opinion that any departure from the settled policy of the University in the matter of the erection of a third centre in the immediate neighbourhood of the Imperial Institute would be a grave breach of the contract entered into between the University and this hospital, and they feel assured that the Senate will refuse, when all the facts are considered, to countenance any such breach of faith.

I am, Sir,
Your obedient servant,
(Signed) A. WILLIAM WEST,
Treasurer.

The Committee also had before it the resolution adopted by the school meeting at Guy's Hospital on May 7th, published in the JOURNAL of June 15th, p. 1461.

In view of the fact that the sum hitherto raised for the Institute of Medical Sciences is inadequate to cover the expenses of the scheme generally approved by the Senate on October 22nd, 1902, the Committee recommended as follows:

That the Institute of Medical Sciences Committee be authorized to prepare a modification of the above-mentioned scheme, with power to communicate with the governing bodies of the medical schools of the University, and of the hospitals with which they are connected, with the faculty of medicine, and with such experts on scientific, medical, and architectural questions as they may think desirable.

The Principal was instructed to inform the treasurers of St. George's Hospital and of Guy's Hospital respectively that their communications are receiving the earnest attention of the Senate.

The Faculty of Medicine.

At a meeting of the Faculty of Medicine held on Friday, June 28th, the following resolution was proposed by Dr. Leonard Hill:

That in view of the inadequate response to the appeal for the proposed institute of medical sciences, the incorporation of University College, the impending incorporation of King's College, and the published decision of four of the medical schools not to participate in the scheme of concentration at South Kensington, this faculty is of opinion that it is no longer desirable to proceed with the scheme for the institution of a third centre for the teaching of preliminary and intermediate medical sciences at South Kensington.

An amendment was proposed by Professor Starling:

That the Senate be advised to proceed with the provision at South Kensington of an institute for teaching the preliminary and intermediate medical subjects, for the students of such medical schools as are willing to give up the teaching of those subjects; on the understanding that no attempt be made, by method of examination or otherwise, to favour the university centres at the expense of other medical schools, and that any person at present engaged in teaching the preliminary and early medical subjects at schools which are desirous of taking part in this scheme shall not suffer either in position or emolument.

After considerable discussion the amendment was put to the meeting and was lost by 72 to 77 votes.

The original resolution was then put and carried by 77 to 72 votes.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.

At Westminster Hospital, on July 2nd, Mr. Alfred Lyttelton distributed the prizes to the successful students of the medical school. Mr. E. P. Paton announced that the Epsom Scholarship of 120 guineas was awarded to Mr. A. E. Newth, and that Mr. S. Hoyte had won scholarships amounting to £51.

Mr. Lyttelton, in his address to the students, referred to the manifold qualities necessary for the successful practitioner of medicine. A doctor could rarely know all the circumstances in a case, and had to exercise divination and combine with the gentlest manner the virile qualities of decision and authority aided by intuition. There were two qualities that were as valuable for success as intellectual gifts, and those were patience and a cheerful continuity of perseverance. It was difficult to go on improving in professional studies without the encouragement of some reward, but Mr. Lyttelton declared that in this "tough" world the men who did big things were those who went on improving after about 35. Turning to the question of athletics, he said that they were overdone in the present age, but that that should not prevent rational men from doing what was necessary to keep body and nerve sound and true.

ST. THOMAS'S HOSPITAL.

Prize Distribution.

Mr. H. Rider Haggard distributed the prizes to the successful students at St. Thomas's Hospital Medical School on June 26th in the Governors' Hall of the Hospital. Mr. J. G. Wainwright, the Treasurer of the Hospital, spoke of the difficulties of carrying on medical education at the present time, and said that the Governors of the Hospital recognized that the preliminary teachers in the Medical School were most inadequately paid, whilst the hospital physicians and surgeons received absolutely nothing for their lectures and teaching. Certain Government and County Council funds were available for secondary education, but medical education was apparently considered not to need any such help. Owing to this the London Medical Schools were handicapped in competition with the Provincial Universities able to offer many attractions and a cheaper education to students seeking to qualify for the profession. The Governors of the hospital had determined to make an appeal for the endowment of a Pathological Research Fund to promote the study of pathology.

Mr. Rider Haggard, after distributing the prizes, delivered an address to the students. He said, referring to his novel, *Dr. Therne*, that in the second chapter of this novel there was a ghastly description of the ravages of small-pox in a small town in a wild part of Mexico; in the course of his travels he had seen a great deal of the terrible results of the want of vaccination, and he had used fiction in order to bring home the error of their ways to some who did not believe in vaccination. His plan was so successful that many of the people who had disbelieved consented to be vaccinated. He then proceeded to deal with the superstitions of the present day. The scientific and religious heresy of Christian Science came from America and was spreading and increasing in this country, and thousands of people were arguing that the medical profession was useless. Mr. Rider Haggard then turned to the subject of the Peculiar People, and described how a man had been imprisoned for two months for causing the death of two of his children by refusing to call in a doctor. The speaker next touched upon the question of rural depopulation, and observed that medical men would have to face the modern condition of the crowding of a large population into the cities. No one knew what was to be the result of that vast, silent, and continuous movement from the land into those collections of

boxes of bricks and mortar called towns The concentration caused suffering and sickness, and although medical men could not remedy the condition they must try to deal with the effects. The remorseless shrinkage of the birth-rate would engage their attention when they went into practice, and the frightful wastage of child life must be dealt with by the scientists of the future and necessary precautions instilled into the minds of the parents. Mr Rider Haggard concluded by pointing out that medical men by cultivating imagination would gain in sympathy, and with sympathy they would be endowed with greater insight. He exhorted the students to devote themselves to hard continuous work, and thereby earn the noble title of "the beloved physician"

UNIVERSITY OF MANCHESTER.

Vice-Chancellor's Annual Statement.

FROM the annual statement for 1906-7 it appears that the total number of students attending in the Faculty of Medicine was 325, including 14 women students. Of these 167 were working in preparation for the Degree Examinations of this University; 13 for the University of London; 4 for other universities; 4 were preparing for the Fellowship of the Royal College of Surgeons; 49 were preparing for the Conjoint Examination of the Royal College of Physicians and Surgeons of England; 15 for the Triple Qualification of the Scotch Colleges; 73 were working in the following special departments, namely, dental, 36; pharmaceutical, 6; public health, 31.

The important change in the medical curriculum, under which a larger part of the five years' curriculum will be devoted to clinical work and to the subjects subsequent to the second M.B. Examination, has now come into force. A new ordinance has also been passed under which it will be possible to proceed to the degree of M.D. by examination as an alternative to the presentation of a dissertation. The examination will be of an advanced character, and will include clinical and practical work as well as written papers.

New regulations have been made for securing that the course of practical study for students in midwifery shall be thorough and complete. Regulations of a similar character have since been laid down by the General Medical Council. The facilities afforded in St. Mary's Hospitals make it possible to carry these regulations into effect in Manchester in a satisfactory manner.

The number of students in the four halls of residence was 111.

Graduation Ceremonial.

The Graduation Ceremonial took place on June 29th, when the degree of Doctor of Medicine was conferred on Roy Appleton, Colin McKean Craig, Henry Dean Haworth, Charles Sefton O'Neill, Eric Maurice Wilkins.

The dissertations of Drs. Craig, O'Neill, and Wilkins were deemed worthy of commendation.

The University Prize in Medicine was divided between Herbert Evelyn Allanson and John Gow.

The following candidates have been approved at the examinations indicated.

FIRST M.B. (*Part I: Chemistry and Physics*).—N. Duggan, A. H. Holmes, L. W. Howlett, D. S. Jones, W. H. Kauntze, W. H. Laslett, N Matthews, Jane C. Miller, L. Moss, F. Oppenheimer, S. B. Radley, C. F. Scott, C. M. Stallard, R. P. Stewart, J. S. B. Stopford, G. K. Thompson, W. Warburton, H. D. Willis, *H. G. Peake.

FIRST M.B. (*Part II: Biology*).—C. E. Butterworth, V. S. Cox, N. Duggan, C. W. Fort, A. H. Holmes, L. W. Howlett, D. S. Jones, W. H. Kauntze, W. H. Laslett, T. W. Martin, N. Matthews, Jane C. Miller, L. Moss, F. Oppenheimer, W. H. Parkinson, H. G. Peake, S. B. Radley, J. Rothwell, C. M. Stallard, R. P. Stewart, W. Stirling, J. S. B. Stopford, G. K. Thompson, W. Warburton.

*Physics.

UNIVERSITY OF WALES.

UNIVERSITY COLLEGE, CARDIFF.

IN return for a grant of £200 the authorities of University College, Cardiff, have offered to allocate to Newport five free studentships and admission to certain classes at a fee of £13 13s. instead of £30 Newport students who attend for a portion of a course are to be admitted to the majority of classes on payment of one-third the usual fees, and Newport is to have the right to elect a representative on the Council of the College. The Secondary Committee recommend that the offer should be accepted.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE Barker anatomical prize for 1908 is offered for dissections to illustrate the muscular and ligamentous anatomy of the shoulder-joint. The prize, which is of the value of 20 guineas, is open to any student whose name is on the anatomical class list of a school in the United Kingdom. Preparations must be received on or before April 30th, 1908, by the curator, from whom further particulars can be obtained.

TRINITY COLLEGE, DUBLIN.

THE following candidates have been approved at the examinations indicated:

PRELIMINARY SCIENTIFIC (*Physics and Chemistry*).—B. G. Quinlan, R. G. M'Entire, H. L. W. Woodroffe, P. Murphy, J. M. Elliott, T. G. Harpur, A. Chance, E. Ll. F. Nash, T. L. Bookey, F. C. Crosslé, A. F. Shaw, L. Shiel, O. C. Tandy, E. H. H. Lloyd Dodd, F. Breen, A. E. Malone, G. M. Maybury, R. W. Murphy, H. E. Williams, H. M'C Fleming, M. M'Knight, J. C. Kelly, A. A. Louw, R. C. M'Kelly, H. L. Blackley.

PRELIMINARY SCIENTIFIC (*Botany and Zoology*).—*H. L. W. Woodroffe, *A. F. Shaw, *F. C. Crosslé, *T. G. Harpur, *Georgina Revington, *H. T. Bates, *Eileen M. Hewitt, *F. B. M'Carter, *G. G. P. Beckett, Dorothy K. Milne, F. Usher, P. D. Long, R. W. Murphy, J. T. Higgins, T. King-Edwards, H. S. Campion, A. Chance, Marjory Chapman, F. T. G. Corscadden, R. Grandy, R. P. Pollard, J. N. G. Nolan, C. Rutherford, B. D. Crichton, B. G. Quinlan, R. G. Ball

FINAL (*Part II, Midwifery*).—F. R. Seymour, H. de C. Dillon, W. A. R. Spong, W. E. M. Armstrong, R. de C. Wheeler, A. E. Knapp, T. P. Dowley, J. H. Waterhouse, A. H. Smith.

FINAL (*Part II, Surgery*).—*W. Pearson, *R. E Wright, *R. G. S. Gregg, *A. J. Powell, W. E. M. Armstrong, F. Stevenson, H. de C. Dillon, O. St. J. Gogarty, T. B. W. MacQuaide, R. Holmes, W. D Mitchell, J. C. C. Hogan, Madeleine S. Baker, C. H. O'Rorke, J. E. McFarlane, J. C. Ridgway, W. A. R. Spong.

* Passed on high marks.

Medico-Legal.

THE WORKMEN'S COMPENSATION ACT AND THE MEDICAL PROFESSION.

THE DEFINITION OF "WORKMAN"

THE following note on this point appeared in the *Law Journal* for June 29th: The first question which naturally suggests itself is, Who is a workman within the meaning of the Act? Subject to the exception of (1) any person employed otherwise than by way of manual labour whose remuneration exceeds £250 a year, (2) any person whose employment is of a casual nature and who is employed otherwise than for the purposes of the employer's trade or business, (3) policemen, (4) outworkers, and (5) resident members of the employer's family, "workman" means any person who has entered into or works under a contract of service or apprenticeship, and it is not necessary that his work be manual. This definition implies that unless the relation of master and servant exists between the parties, there is no right to compensation, and difficult points will certainly arise in determining whether an applicant is a servant or a contractor, especially as regards persons who do work of a domestic kind. For instance, is a man engaged to clean windows once a week a "workman"? Probably not, in most cases, for he only has to do a definite job, and is entitled to do it in his own way. Again, the position of a charwoman or laundress who is engaged to clean offices or chambers is not free from doubt. Frequently she can choose her own time provided that she keeps out of the way in business hours, and is not, in fact, subject to any control in the performance of her work. It is impossible at present to lay down any general rule as to her legal position.

ALLEGED STREET OBSTRUCTION BY A MOTOR CAR.

A CASE which was heard on June 29th at Redditch involved a point of some interest to the practitioner who uses a motor and acts as his own chauffeur. Mr. Richard Henry Spencer, surgeon, of Alchester, was charged with obstructing the free passage of the Worcester Road, Inkberrow, on June 19th. A constable stated that at 8.50 p.m. on the night in question he saw a motor car standing in the Worcester Road. He watched it until half-past 10. Two horses which were being driven down the road shied, and refused to pass the car. When he spoke to defendant about causing an obstruction he replied he had been on business. In cross-examination he said that if a car had been there for a minute he would charge the driver with obstructing the road. Witness accepted the statement that the road was 19½ ft. wide, and that the width of the car was 4 ft. 9 in. at its widest part. He admitted that he did not draw Mr. Spencer's attention to the matter until he came out of the house. The car was silent. Lewis Simpson, farm labourer, Inkberrow, corroborated, but admitted that the car was close to the kerb, and there was plenty of room for vehicles to pass. It was submitted on behalf of the defendant that there was no case for him to answer. There was no wilful obstruction. The Chairman said the Bench were of opinion that there was no case against defendant. The charge was accordingly dismissed. The Superintendent of Police intimated that he should ask the Bench to state a case.

THE report for the year 1906 of the British Ophthalmic Hospital, Jerusalem, belonging to the Grand Priory of the Order of the Hospital of St. John of Jerusalem in England, shows that a great deal of useful work is being done, and that the hospital is winning still high opinions both from the authorities and from the people it is designed to benefit. The Patriarch of the Orthodox Greek Church has sent a donation of £16 to maintain a bed for one year, and the Turkish Government has now granted exemption from taxation to the whole of the property of the Order in Jerusalem. The number of in-patients in 1906 was 942, and of new out-patients 8,528; the number of operations was 1,542, anaesthetics being administered in 780 cases. The operations on in-patients included 719 for diseases of the cornea and 120 for diseases of the lens.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

ACCOMMODATION FOR HOP PICKERS AND FRUIT PICKERS.

AN exceptionally interesting report by Dr. Reginald Farrar upon the lodging and accommodation of hop pickers and pickers of fruit and vegetables has recently been issued. The report contains a large amount of information relating to the growth of hops in England, all of which has an important bearing upon the prospects of the hop-picking industry. Hop growing is admittedly an undertaking of a highly speculative character. It has been said with some truth that after three successive good years the hop grower can make enough profit to buy his farm, while three bad years in succession send him into the bankruptcy court. The initial expenditure involved in the preparation of the hop field—the hoeing and the washing and training of the plants—may be altogether thrown away, the crop being so small as not even to be worth picking. All this means, as Dr. Farrar points out, that the industry is getting more and more into the hands of large capitalists and the smaller growers are being squeezed out. From a public health point of view this may possibly be a good thing. The small farmer can only afford to provide temporary, and often inadequate, accommodation for his pickers in farm buildings or in tents, whereas the larger grower can, and in many cases does, provide accommodation of a more or less permanent character. The accommodation at present provided for "foreign" hop pickers on different farms consists either of ordinary farm buildings, of tents, or of specially-constructed huts. The farm buildings include barns, lofts, cart sheds, stables, cow-sheds, and, in a few instances, pigstyes. Dr. Farrar found that, as a rule, these buildings were dry and weather-proof, and that little fault could be found with respect to the amount of cubic space, the ventilation, or lighting. Most of those he saw were cleansed and whitewashed, except in those districts where no by-laws are in force. The use of tents as sleeping places for hop or fruit pickers he does not recommend. The site on which the tent is pitched is rarely if ever trenched, the tent itself is often worn out and not weather-proof, and the occupants seldom understand the proper use of tents, taking no trouble to slacken or tighten the ropes, and by leaving articles in contact with the stretched canvas, encouraging the admission of rain. In Kent and in a part of Worcestershire adjoining Herefordshire there are specially-constructed huts. Plans of these are included in Dr. Farrar's report, and they would seem to fulfil the purpose for which they have been built. There does not appear to be any evidence that hop or fruit-pickers act to any extent as disseminators of infectious disease, and the general health of the pickers is said to be good. Dr. Farrar recommends that by-laws in respect of hop-pickers and pickers of fruit and vegetables, and also by-laws in respect of tents, vans, sheds, and similar structures should be adopted in all districts which hops, fruit, or vegetables are grown in such quantities as to require the introduction of immigrant pickers to harvest them. He also recommends that the medical officers of health and inspectors of nuisances should be directed to keep themselves acquainted with the conditions of such immigrant pickers, and, most important of all, should see that the by-laws are properly carried out. Included in an appendix to the report is a copy of the model by-laws of the Local Government Board with respect to the accommodation of hop-pickers and fruit-pickers, together with certain modifications which are in force in the Ongar Rural District. We understand that already several district councils who have not yet adopted by-laws have had the report under consideration, and are discussing the desirability of adopting by-laws for the districts under their jurisdiction. The standard set by the model series is certainly not high, and it is difficult to understand how any sanitary authority can reasonably refuse to adopt them, and, when adopted, to enforce them.

NOTIFICATION FEES.

A "BUSY PRACTITIONER" asks if it is legal or reasonable that a medical practitioner should be required to send to the sanitary authority a periodical statement of the fees due to him for notifying cases of infectious disease?

*** This statement might be made out in the department of the medical officer of health, but the difficulties connected with such a procedure arise from the fact that a fee of 2s. 6d. is paid for a certificate in respect of a private patient and 1s. for one in respect of a case attended by the practitioner as medical officer of a public body or institution. There is, as a rule, nothing on the face of the certificate to indicate to which class the patient belongs, so that the medical officer of health has not the complete data necessary for the filling up of the statement.

PENSION TO MEDICAL OFFICER WHO HAS NOT CONTRIBUTED TO SUPERANNUATION FUND.

SENEX asks the following question: Is a medical man, aged 70, who has completed thirty-six years' Poor-law service entitled to a pension? He has not paid into the Superannuation Fund.

*** As our correspondent has not contributed to the Superannuation Fund established by the Act of 1896 we assume that he voluntarily contracted himself out of the provisions of that Act soon after it was passed and before it came into operation; having done so he cannot now claim any pension which he might otherwise have been entitled to. This, however, does not prevent him from falling back on the powers of the Superannuation Act of 1864, which empowers the guardians if they think fit, to award him a pension which in their opinion may be properly awarded to an officer who has served efficiently for ten years or more, and this pension, if awarded, may be for life or for a limited period only, and it would probably require the sanction of the Local Government Board. Whether a Board of Guardians would now consider it their duty to award a pension under this last-mentioned Act (1864) to an officer who contracted out of the Act of 1896, and thereby spared contributing towards a pension in any form, is a matter for our correspondent to consider.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

DURING the weeks ended May 25th, June 1st, and June 8th, the deaths from plague in India numbered 52,098, 38 992, and 25,064. The seizures during the same periods amounted to 56,927, 42,705, and 27,068 respectively. The deaths in the different provinces during the weeks ended May 25th and June 1st were: Bengal, 925 and 642; United Provinces, 6,454 and 4,377; Punjab, 43,126 and 31,750; North-West Frontier Province, 131 and 182; Central Provinces, 208 and 84; Madras Presidency, 1 and 4; Burmah, 128 and 115. During the week ended June 8th the fresh cases in the Punjab numbered 21,606 and the deaths from the disease amounted to 20,012.

PERSIAN GULF.

In Bahrein Island 700 deaths from plague were recorded during the two weeks ended May 24th.

HONG KONG.

During the weeks ended June 8th, 15th, 22nd, and 29th, the fresh cases of plague numbered 15, 13, 15, and 20, and the deaths from the disease amounted to 12, 12, 14, and 21.

No further cases reported from Mauritius or Australia.

SOUTH AFRICA.

King Williamstown.—During the weeks ended May 11th, 18th, 25th, and June 1st the fresh cases of plague numbered 2, 0, 1, and 1; the deaths from the disease amounted during the weeks in question were *nil*.

HOSPITAL AND DISPENSARY MANAGEMENT.

CITY OF LONDON LYING-IN HOSPITAL.

ON July 1st the new building was opened by the Princess Christian of Schleswig-Holstein, who was received on her arrival at the hospital by the Lord Mayor and Sheriffs. A large marquee had been erected at the back of the building, and here the opening ceremony was conducted in the presence of a large assembly, among whom were many local notabilities.

The Lord Mayor welcomed the Princess on behalf of the governors, and Mr. Joseph Francis, J.P., gave a short account of the history of the institution and the cause of its rebuilding; £40,000, he said, had been expended in carrying out the recent work, and the charity was in great financial straits, but he trusted it would not appeal in vain to the generosity of the public. After the Bishop of Stepney had conducted a short service Her Royal Highness declared the new hospital open and consented to the naming of one of the wards after herself.

The hospital is a handsome building, standing in the City Road, at the corner of Old Street, and is equipped with all the latest appliances for obstetrical work. The wards are spacious, and situated on three floors. Above them are isolation wards completely cut off from the rest of the building, with open air between. On each floor in the centre is a large and well-lighted labour room, and running up through each floor is a well-appointed lift. The governors are to be congratulated on their fine hospital, and deserve success in their appeal for public assistance. We heartily commend to the charitable this useful institution, and trust that funds will soon be forthcoming to enable the governors to continue their benevolent work, so necessary for the poor of East London.

ST. ANDREW'S HOSPITAL FOR MENTAL DISEASES, NORTHAMPTON.

THE Committee of Management of this large private asylum for the middle and upper classes is able to present a very satisfactory report for the year 1906. The financial state is satisfactory although important improvements have been carried out, and the income from patients has been the largest since the foundation of the institution. During the year the number of patients who were assisted in their payments was 77, the aid rendered to make up their payments to the lowest rates ordinarily charged being £3 235 6s. 6d. The Medical Superintendent, Dr. Joseph Bayley, reports that there were 401 patients in the asylum on January 1st, 1906, that the total number under treatment during the year was 492, and that there remained 412 in the hospital on December 31st, 1906. During the year 91 patients in all were admitted, of whom 19 were the subjects of first attacks within three and 10 more within twelve months of admission; in 37 the attack was a not-first attack within twelve months of admission, and in the remainder, including 1 congenital case, the attacks were of more than twelve months' duration on admission. The admissions were classified as to the forms of mental disorder into: Mania of all kinds 55, melancholia of all kinds 21, dementia 12, general paralysis 2, and 1 case of congenital defect. As to the probable causes of the insanities, alcoholic intemperance was assigned in 4, or 4.4 per cent., previous attacks in 19, old age and the menopause in 2 each, mental anxiety in 9, other moral causes in 12, and various bodily diseases in 5. Hereditary influences were ascertained in 13 or 14 per cent. During the year 22 were discharged as recovered, giving a recovery-rate on the admissions of 35.48 per cent., 11 as relieved, 28 as not improved. There were also 20 deaths, giving a percentage death-rate on the average numbers resident of 4.87. The death were due in 6 cases to general paralysis, in 3 cases to exhaustion following the mental disease, in 2 cases to other cerebro-spinal diseases, in 5 cases to cardio-valvular disease, in 3 cases to pulmonary diseases, and in 1 to senile decay. The general health was excellent throughout the year, no cases of suicide or serious accident had to be recorded, and there was no case of infectious disease either at the hospital or in the houses at Moulton Park or in North Wales. The seaside house at Bryn-y-Neuadd, Llanfairfechan, was occupied during the greater part of the year, 158 patients having resided there for periods ranging from one to six months. The hospital and its dependencies were visited twice during the year by the Commissioners in Lunacy, who left very favourable reports of the condition and management.

JAMAICA LUNATIC ASYLUM.

WE have received the annual report for this asylum for the year ending March 31st, 1906, of Dr. D. J. Williams, the medical superintendent. On April 1st, 1905, there were 536 males and 498 females, or a total of 1 034 patients, resident. During the year a total number of 1,264 were under care, and on March 31st, 1906, there remained 1,057. During the year 230 were admitted, of whom 165 were first admissions, 61 not-first admissions, and 4 recaptured. Of the total number 154 were black, 56 brown, 12 white, and eight coolies. The great majority—192—were admitted from constabulary lock-ups, 10 from prisons, 6 from almshouses, 3 from public general hospitals, and only 14 from their own homes. No tables are furnished giving information as to the forms of mental disorder among the admissions or the probable etiological factors, but Dr. Williams states that 176 suffered from maniacal excitement, 9 from mental depression, and 11 from epilepsy. The forms which mental disorders assume amongst native peoples and the relative incidence of general paralysis are points of considerable interest to the student of comparative psychiatry, and it is, therefore, to be hoped that the Medical Superintendent of this institution, in future editions of this report, will furnish tables dealing fully with these matters. Dr. Williams mentions, however, that in 32 per cent. of the admissions a heredity of insanity was ascertained, that 26.5 per cent. had had previous attacks, that in 2 the disorder was attributed to ganjah-smoking (Indian hemp), and in 1 each to alcohol, syphilis, enteric fever and malaria. During the year 105 were discharged as recovered, giving a recovery rate on the admissions of 48.20 per cent., 9 as relieved, 6 as not improved, and 86 died. The deaths, which give a death-rate on the average numbers resident of 8 2 per cent., were due in 26 cases to cerebro-spinal diseases, in 30 to chest diseases, in 22 to abdominal diseases, and in 8 to general diseases, none being attributed to either senile decay or accident. The table in which the causes of death are given does not particularize more closely than the above, but Dr. Williams says that the number of deaths due to dysentery has been reduced, as compared with the previous year, from 22.5 per cent. to 10 4 per cent., and those due to pulmonary consumption from 35.0 per cent. to 19.7 per cent.

THE women of the Medical Corps of the United States Army have collected a fund for the purpose of furnishing a room in the new Army General Hospital in memory of officers of the army. A majority of the women of the corps have already contributed.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

MR. R. M. RIGGALL L.R.C.P., etc. (Hathersage, via Sheffield), would be obliged for information bearing on the theory that the vernix caseosa is caused by sexual connexion during pregnancy.

ANSWERS.

D. P. H. is referred to the article in the Educational Number of the BRITISH MEDICAL JOURNAL (September 1st, 1906, p. 538) entitled, British Practitioners Abroad, from which he will see that all the foreign States in the South American continent require any one who seeks permission to practise to pass an examination, irrespective of any degrees which he may hold; the examinations are conducted, as a rule, in Spanish.

DUST-EXTRACTING MACHINES

A MEMBER'S wife writes: In reply to Dr. E. L. Williams's inquiry (June 8th) about a dust-extracting machine, I can *most strongly* recommend the Witch Dust Extractor, made by the Witch Company, 28, Masshouse Lane, Birmingham. I have had one in almost daily use for a year, and I have no hesitation in saying that it is as superior to a broom as the garden-hose is to a watering-can. In a house where there are many books, instruments, china, etc., it is invaluable. It lessens the work enormously. The six-guinea size, easily worked by the feet or bellows, is sufficient for any ordinary house.

HYPERAEMIA AS A REMEDY.

A. E. HODDER.—We do not know of an English or French translation of Bier's monograph on this subject. The method is described in Nothnagel's *Encyclopaedia of Practical Medicine*, English edition, vol. Tuberculosis, p. 595, and in Rose and Carless's *Surgery*, 6th edition, p. 665, and more briefly in Da Costa's *Modern Surgery*, 1903, p. 185. A good deal of information can be obtained from the catalogue of Bier's instruments and apparatus, published by F. A. Eschbaum, Bahnhoffstrasse 11, Bonn-am-Rhein, containing descriptions in French and English. A copy would, we believe, be sent on application.

BEE STINGS AND RHEUMATISM.

DR. JOS. WM. GILL writes to call attention to a letter in the BRITISH MEDICAL JOURNAL of February 8th, 1896, in which he related the case of a patient suffering from rheumatic gout who was stung on the forehead by a bee. A severe swelling resulted, and he was very ill for a few hours; after that he got rapidly better, and the rheumatic gout left him, and for six months he had good health. The patient has since died of heart disease as the result of rheumatic fever. Dr. Gill adds that he has suggested that if the active principle of the poison ejected by the bee could be isolated for medicinal use by injection it might prove a most valuable remedy for those conditions of the blood which account for rheumatism, and perhaps gout.

LETTERS, NOTES, Etc.

THE ACCIDENTAL RASHES OF VARICELLA.

DR. J. D. ROLLESTON (London) writes: Since the publication of my paper on this subject in the BRITISH MEDICAL JOURNAL of May 4th, p. 1051, Professor W. Ebstein of Göttingen has kindly drawn my attention to an important paper of his in the *Münchener medizinische Wochenschrift*, No. 19, 1906, on forms of varicella simulating small-pox. In 4 out of 5 cases there recorded accidental rashes were noted. I have also to thank Dr. Ringrose of Newark for referring me to a case reported by him in the *Lancet* of March 28th, 1906, p. 950, in which a post-eruptive scarlatiniform eruption occurred in varicella. By an unfortunate oversight, my reference to Dr. Rundle's case was mentioned in the text, and did not appear in the bibliography. The case was reported in the *Lancet* of June 16th, 1906, p. 1692.

EGGS IN THE DIET OF INFANTS.

DR. T. CLIFFORD LAST (New Milton, Hants) writes that the prescription for the mixture recommended by Dr. Midelton to which he referred in his letter (p. 1573) should have included 5 minims of yolk of egg.

"NISBET'S MEDICAL DIRECTORY."

MR. L. E. CREASY (Editor of *Nisbet's Medical Directory*, 21, Berners Street), writes: May I through your valuable columns ask those medical men who have not returned the circulars issued for the above directory to do so, as it will be a matter of regret for all concerned if the information desired arrives too late for insertion?

Central Midwives Board.

Dr. W. Shaw (Maidstone) writes: Apropos of Dr. Rhodes's letter under the above heading in the Journal of June 29th, p. 1580, I think it is high time attention was called to the "side" exhibited by this new order of practitioner—the "certificated midwife." I have before me a card, which reads as follows:

"Miss ——
"L.O S., C.M.B.,
"St. Mary's Hospital,"

and this designation also appears on a brass plate at this nurse's residence. Dr. Rhodes points out that the working man can scarcely discriminate between the lady graduate and the certificated midwife. I venture to think the difficulty is by no means confined to the case of the former, for in these days, when so many practitioners are in the habit of appending their qualifications to their names instead of keeping to the older custom of simply Dr. ——, or Mr. ——, surgeon, the puzzle of discrimination is largely increased. L.O.S. is sufficiently like L.M.S., which is about to appear instead of L.S.A., and C.M.B. is certainly somewhat suggestive of M.B., C.M. It is already beyond question that the advent of the certificated midwife has seriously diminished the midwifery list of the general practitioner, and to my mind this further move will tend to reduce it to vanishing point. I would suggest that a partial remedy might be found if the Board would instruct their diplomates to use the words "certificated nurse" (or midwife) only, and to discontinue the mystical letters, as their use is confusing, and liable to misconstruction.

A Doctor's Water rate.

Dr. H. E Bruce-Porter, Honorary Secretary of the Committee of Medical Men who are Users of Motor Cars, asks us to state that the appeal against the Harrogate Corporation mentioned in the British Medical Journal of June 29th, p. 1561, was conducted on Dr. Mackay's behalf by the Motor Union. Dr. Bruce-Porter adds that the benefits conferred on medical motorists by the various actions of that Union are very great, and he hopes that it will lead to every medical motorist who is not already a member joining the Union, either directly or through his local motor club.

Treatment of Pediculosis Capitis.

Dr. Hugh M. Raven writes from St. Mary's Convalescent Home, Broadstairs: At this home our certificates are in the form of question and answer, yet to the question, "Is the head free from pediculi and nits?" the answer is almost invariably "Yes," while lice (to the number of 111 in a case this week) are found in the hair of over 80 per cent. of the girl arrivals. I suppose the answer given to this protest will be that it is a hopeless business for mothers to keep their children's heads clean. Now this is not really so, especially if the mother is wise enough to keep her girl's hair short till she has reached the age for leaving school. Our treatment at this home is most effective, easy, cheap, and short, though not very sweet. The hair is first combed out and brushed, the more obvious lice being swept away; the brush is then dipped in a saucer full of oil of sassafras, and the whole head again well brushed through, plaited, and coiled up, and a closely-fitting linen cap put on. This is kept on for twenty-four hours, and practically never fails to destroy all the lice and the vitality of all the nits, as they never appear to mature, though, of course, they are not removed till after many days' combing. The nurses in charge of the children say that there is no treatment like it in efficacy. The child with 111 animals on arrival had no return after the first night of treatment. Nor is the oil expensive; 3s. 6d. is the cost of a pint bottle, sufficient for about thirty children, so that each head can be cleaned in twenty-four hours for a little over one penny. The only drawback is the smell, but this is a slight matter when the debilitating effects which these conditions and their sequelae have on the health of the children of the poor is considered.

Tubercle and Erysipelas.

Dr. W. A. Valentine, M.D Dub. (Appledore, Devon) writes: I have read with interest Dr. C. B. Whitehead's case with above heading. The following case occurred in my own practice. In 1899 a joiner, aged 17, had all the classical signs and symptoms of phthisis pulmonalis, he was seen and carefully examined by two other medical men who were agreed as to the diagnosis and considered that an examination of the sputum for tubercle bacilli was superfluous and unnecessary to confirm it. In 1904, after five years getting slowly worse, he contracted erysipelas, through a wound on his left leg, from a relative whose disease he assisted to dress. This ran a most virulent course, laying bare the extensor tendons of foot and leg. His chest was during the illness repeatedly examined and a marked diminution of signs was found, there were fewer râles and the air entered more freely. The temperature ran for days between 104° F. and 105° F., the pulse 120 to 140 per minute. He recovered after some weeks. The improvement continued from this time till now (May, 1907) he is able to resume his occupation. Twice since 1904 his sputum has been examined for tubercle bacilli with negative result. It is much to be regretted that an examination was not made previous to the erysipelas.

Congenital Hypotonia.

Dr. Carey Coombs (Clifton) writes: I shall be grateful if you would print the following references to papers on congenital hypotonia, most of which have appeared since my paper (published in the Journal of June 15th) was written: Baudouin, *La Semaine Médicale*, May 22nd, 1907; Bernhardt, *Neurologisches Centralblatt*, January 2nd, 1907; Bing, *Med. Klinik*, January 6th, 1907; Cattaneo, *Clinica Moderna*, June 13th, 1906; Kundt, *Thesis*, Leipzig, 1905; Rosenberg, *Deutsche Zeitschrift für Nervenheilkunde*, 1906, xxxi, 1–2, p. 130; Schüller, *Wiener klinische Wochenschrift*, June 23rd, 1904, p. 722. Baudouin's paper is very complete, and gives an account of an autopsy in which deficient myelinization of the anterior lumbar roots and of various nerves was found. The affected muscles showed variation in the size of the fibres and an excess of connective tissue, changes which Baudouin believes to be secondary to the arrested development of the nerves supplying them. In Bernhardt's cases an acute polyneuritis occurring during infancy produced general flaccid paralysis which completely disappeared, so that they were only superficially similar to the cases described by Oppenheim.

Leucocytosis of Hydatid Disease.

Dr. D. A. Welsh (the University of Sydney) writes: In your issue of March 30th, on page 52 of the Epitome of Current Medical Literature, there appears an abstract of a paper on the leucocytosis of hydatid disease from which the name of my colleague, Dr. Barling, has inadvertently been omitted. As Dr. Barling is responsible equally with myself for the work on which the paper is based, I would be obliged if you would kindly rectify the omission by the insertion of this letter at an early date.

Motors for Medical Men.

Work and Play.

Dr. E G. A. Walker (Ightham, Kent) writes: Possibly my experience of a reliable moderate-priced car may be useful, as I have for twenty-five years worked hard in country practice, and been generally very fortunate with horses, and only reluctantly, on score of saving time, bought a motor. In May, 1906, I bought a Cadillac car, price 220 guineas. Since then I have gradually sold off four horses, as I found I could rely on the car, and do my work more quickly and in greater comfort. In the twelve months my repair bill has not exceeded £1 tyre repairs, and renewals amount to £28. In twelve months I have never stopped on the road for mechanical breakdown, and only once for a puncture, and I found on the average I get about twenty-three miles to the gallon of petrol. Needing a holiday. I thought I would trust the car for a tour, and started on May 27th, travelling through Reigate, Kingston, Windsor, to Oxford, and on to Witney the first day. In the next week I crossed the Cotswold Hills, visited Leamington, Tewkesbury, Worcester, Ludlow, Shrewsbury, and so into Wales, staying at Machynlleth and Aberystwith, from where a visit to Devil's Bridge should not be missed, though rather a stiff climb, then back to North Wales over Corris Pass by Tallyin Lake and Dogelly to Bala, Corwen, and Llangollen, then back through Shrewsbury and Church Stretton to Ross and Hereford and down the Wye Valley to Chepstow. Another day or two's rest at Tintern Abbey, and a homeward journey through the Forest of Dean and its miles of oak forest, but almost continuous hills—some very steep—and roads not too good to Gloucester; through Cheltenham to Oxford, thence by Henley home. Total distance was 870 miles, petrol consumption 34 gallons; the scenery was of all types of the best in England or Wales, and seen under pleasanter and more independent conditions than is possible in any other form of travelling. The tour was made more enjoyable, of course, by the car continuing to run with the same regularity and absence of any form of breakdown from the day I left home to my return. I did not have even one puncture; the car had no attention except for myself supplying it with oil and petrol, and twice after rainy days I had it washed by the ostler at the hotel. No doubt nowadays there are other makes of car which can boast equally good records for about 10,000 miles running, but for the price and horse power, silence in running, and hill-climbing capacity, I feel sure a medical man cannot wish for any car more satisfactory than my Cadillac has proved to be. I may add that the surface of roads in Wales were almost uniformly very good.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

A Clinical Lecture

ON THE

SIMULATION OF MALIGNANT DISEASE BY CHRONIC INFLAMMATORY AFFECTIONS OF THE SIGMOID FLEXURE.

DELIVERED AT THE LIVERPOOL NORTHERN HOSPITAL.

BY K. W. MONSARRAT, M.B., F.R.C.S.E.,

LECTURER ON CLINICAL SURGERY, UNIVERSITY OF LIVERPOOL; SURGEON TO THE NORTHERN HOSPITAL, LIVERPOOL.

THE question of the diagnosis between carcinomatous and chronic inflammatory disease arises not uncommonly in different parts of the digestive system. In the case of the stomach it is a familiar problem, and you will have observed how frequently it is a matter of considerable difficulty, and how occasionally it is impossible to decide between the alternatives of chronic ulcer and malignant disease. You will have seen cases in which, even after the exposure of the affected area by abdominal section, there has still remained a margin of doubt as to which of the two conditions the lesion was due. We have, however, a knowledge of the clinical course and the associated signs of these affections which enables us to solve the problem on most occasions. We have difficulties of the same kind sometimes presented to us in the case of caecal disease, but here the usual chronic affection which simulates malignant disease is tuberculosis. This disease occurs in or about the caecum in a very well characterized type. A tumour-like mass develops, associated usually with symptoms of intestinal stenosis; and, unless there are signs of tuberculous infection elsewhere, the diagnosis from malignant disease may be impossible.

The two patients to whom I wish to direct your attention to-day are examples of chronic disease at the other extremity of the colon—the sigmoid flexure.

1. The first is that of a tinsmith, aged 44, who was sent to us from one of the medical wards. The history was that six months previously he had had an acute illness, which commenced suddenly with severe general abdominal pain. He says that he vomited then continuously for twenty-four hours, and that his abdomen became distended. His acute pain lasted for three days, and it was not until the eighth day after onset that he had an action of the bowels. He was treated after this with enemata and aperients, and improved, but did not get rid of a gnawing pain which settled down in the left iliac region. This pain lasted off and on until he came to hospital, and he had suffered much from flatulent distension. He had lost weight considerably, his limbs had wasted, while his abdomen had become fuller.

When he was admitted his complaint was of a dull pain in the left lower part of the abdomen, and here we found very definite physical signs in the shape of a mass about the size of an ordinary apple, firm in consistence and somewhat tender on pressure. It could be moved with the hand fairly freely upwards towards the umbilicus. His constipation was very obstinate; there was no blood or mucus in the stools, and he did not complain of any pain of the nature of tenesmus. His abdomen was opened five days after admission, with the expectation of finding a carcinoma of the sigmoid flexure. The large mass which had been felt on abdominal palpation was brought out of the wound after separating some adhesions, and it was found to involve the sigmoid loop about its middle. There was nothing in the mass to cause doubt as to the accuracy of the diagnosis, and, after clamping the gut above and below, the affected portion was removed, along with a corresponding area of mesentery, and a Paul's tube was fixed in both extremities. There was nothing remarkable in the subsequent course of the case. I chose to complete the procedure by destroying the spur with an enterotome, and, after one failure, closed his colostomy by a simple plastic operation. On examining the portion of bowel removed, it was somewhat of a surprise to find that, although there was a definite stricture, the mucous membrane was intact, there was no malignant growth, and the stricture was caused by a mass of cicatrix and inflammatory infiltration surrounding and constricting the gut.

The specimen showed us that there had been a perisigmoiditis—an inflammatory process around the sigmoid flexure—giving rise to a considerable exudation and the building up of scar tissue to an extent sufficient to cause stricture.

We have to ask ourselves whether there is anything in the clinical history which should have enabled us to form a more correct opinion as to the true cause of the stricture, and I think that a closer attention to the history of the attack which he describes as having taken place six months before admission would at any rate have raised a doubt as to the malignant character of the mass in his sigmoid.

For this history we had to rely entirely upon the man's own recollection, and he did not know whether the attack had been associated with fever or not. It was evidently, however, an acute illness coming on suddenly and not preceded by other morbid symptoms; severe abdominal pain had been followed by distension, vomiting, and constipation, and this group of symptoms argues rather an acute peritoneal inflammation than an attack of intestinal obstruction. Fortunately the history in cases resembling this one is usually more enlightening, and it is on this history of an attack of peritonitis preceding the appearance of the "tumour" that we have chiefly to rely for a differential diagnosis. This case shows you that the physical signs taken alone may leave one quite unable to decide the question if the history of an acute antecedent attack is not clear.

Sometimes when such cases are carefully investigated other points can be made out which, while not inconsistent with malignant disease, will tend to throw a doubt on its presence. For example, it is not quite usual to find such a definite chronic intestinal obstruction as was present in this case; and, again, it may be of service to remember that tenesmus and the passage of blood in the stools is rarely absent in cases of malignant disease below the descending colon. A mass in the sigmoid colon unassociated with these two signs should therefore raise the suspicion of an inflammatory lesion.

It is evident that a correct diagnosis may be of the greatest moment, as it may save the patient from an unnecessary operation. In this case of course an operation was quite necessary to relieve the chronic obstruction which was present, but the patient without obstruction requires no operation, and will get rid of his symptoms and the inflammatory mass under a *régime* of confinement to bed, a milk diet, and a regular aperient.

This treatment may, in fact, be of considerable use as an aid to diagnosis. If the condition is one of perisigmoiditis and not malignant disease, one may expect a gradual subsidence of symptoms and a progressive diminution in the size of the "tumour"; but in the case of carcinoma no such result will follow.

In many such cases, therefore, although the actual physical signs present may simulate a malignant growth in the closest possible manner, yet a careful attention to the history, a close clinical investigation, and possibly an experimental palliative course of treatment will reveal their true nature.

The second case, a man who has only quite recently come under observation, has presented difficulties in diagnosis of a somewhat similar nature, although his symptoms differ in several respects from those which we have been considering.

2. The patient is 47 years of age. He tells us that a year ago he first began to be troubled with constipation, and this has been particularly so since the beginning of this year. Three and four days have often passed without an evacuation, and then, as a rule, would come an attack of diarrhoea. During this attack the motions were loose, very offensive, and contained blood. During the two months previous to admission these attacks had been associated with a great deal of tenesmus. When the desire to go to stool came he had to hurry, and often the amount got rid of was quite small, usually of a brownish-yellow colour and bad-smelling. He has had very little pain in the abdomen, and complains more of sharp shooting pains in his back on a level with the upper border of his sacrum. His constipation has continued right through, that is to say, he has only at intervals of several days, and by the use of aperients, had a satisfactory motion, and on the other hand these attacks of tenesmus, with the passage of brownish fluid material in small quantities, have become more frequent of late. Recently, whenever the bowels have been properly opened, there has been blood mingled with the faeces.

He had a healthy appearance, fair appetite, and a furred tongue. His abdomen was not distended, and on examining it systematically by palpation and percussion the only abnormal physical signs discoverable were in the left iliac region. Here there was a swelling of firm consistence running obliquely inwards and downwards from the level of the iliac crest, and passing below into the pelvis. It was 5 to 6 in. in length and about 2 in. in diameter; moderate pressure upon it caused no pain. A finger in the rectum found nothing abnormal there, and a small-sized rectal bougie was passed a

distance of 10 in. from the anus. At this point, that is to say about 4 in. up the pelvic colon, the onward passage of the bougie was arrested. Although no considerable force was used there was a good deal of haemorrhage following this examination. He had no pyrexia except on one occasion eight days after admission, when there was an evening rise up to 100.6°, but except for headache he had no new symptoms, and the temperature was subnormal all the next day.

In many respects, therefore, this man presented signs and symptoms suggestive of malignant disease of the sigmoid flexure. In this condition a history of constipation, increasing in obstinacy, associated with tenesmus and the passage of small watery stools, is quite usual; haemorrhage, too, is always to be expected in the same form as it occurred in this case. The one sign which led us to reserve our diagnosis was the character of the tumour itself. Aperients and enemata were followed by satisfactory evacuation, but the characters of the swelling remained the same. The infiltration of such an extent of large bowel with malignant disease is quite unusual, and though on the proximal side of a malignant stricture there is always some colitis, this is usually associated with distension and thinning of the bowel wall, so that you have a hyperresonant coil above when it has been emptied by the usual methods. Here the length of bowel showing firm infiltration and induration was at least 6 in., and this was decidedly a point against malignant disease.

Occasionally carcinoma of the sigmoid does occur as a cylindrical swelling as much as 4 or 5 in. in its long axis, but in such a case the greater part of the mass is due to hypertrophy of the muscular wall above a stricture due to the attempts of the bowel to empty itself through a much-narrowed lumen. In these circumstances the signs and symptoms of stenosis are present in a marked form; there is pronounced colic and distension—signs which were absent in our case, in which the only symptoms pointing to stenosis were the constipation and associated diarrhoea.

The operation confirmed our doubts. We found the whole length of a rather short sigmoid loop converted into a rigid-walled tube, and bound down to the parietal peritoneum of the left iliac fossa by old-standing adhesions. With the exception of these adhesions there was no lesion outside the bowel itself. With a view to the treatment of the condition by rest and other methods I performed a colostomy. Since the operation we have demonstrated with the speculum the presence of areas of shallow ulceration in the bowel, and a feature of the condition has been the large amount of thick yellow pus which has discharged through the opening and been washed up from below. This has been so considerable that one might think an abscess cavity was emptying itself into the bowel, but care was taken at the operation to exclude this complication, and we satisfied ourselves completely that the lesion was confined to the bowel itself. We propose to keep his artificial anus open until such time as the sigmoiditis subsides and the ulceration heals. When this may be expected is a matter of some doubt, as the affection is usually very obstinate and, without colostomy, usually progresses in spite of treatment, often ending fatally after long illness. As an astringent wash, we are now using a 0.2 per cent. solution of protargol, and the discharge is lessening in quantity.

If we ask ourselves in what respects the clinical history and signs in this case differ from those usual in malignant stricture of the sigmoid, the first point which strikes us is the long time during which the symptoms had been present, and, in spite of this, the absence of any definite signs of mechanical obstruction of the large bowel. He gave no history and presented no symptoms of the colic of obstruction and the abdominal distension which accompanies it. Now although there is often a long latent period in cancer of the intestine, yet once the stenosis has declared itself a more or less steady increase in the symptoms due to this is to be expected, and the patient has not only irregularities in the action of the bowels but abdominal pain during the periods of constipation and distension. Even more definite than this point in the history is the physical sign to which I have already referred, the extent of bowel infiltrated. In infiltrative sigmoiditis, which is the descriptive term most suitable to the cases of which this is an example, the whole length of the sigmoid loop is converted into a tube with firm, rigid walls, and if care is taken to thoroughly clear out the contents of the colon, palpation will reveal this extensive infiltration. The nature of the condition will be still more clear if the descending colon is involved.

These two cases represent two types of chronic inflammatory lesion in the sigmoid flexure. To the condition present in our first patient the name chronic adhesive pericolitis has been applied. When he first came for treatment the lesion was distinctly of a chronic type, but we cannot doubt, considering the history, that it was a sequel to an acute affection, an acute perisigmoiditis. Such a course of events appears to be the rule. Not that an acute perisigmoiditis always eventuates in this chronic lesion; it may end in two other ways—either by gradual and uncomplicated subsidence or by abscess, and both of these latter are quite frequent. On the other hand, the cases of chronic adhesive pericolitis which have been recorded would appear to indicate that there is usually an acute stage preceding the onset of the symptoms characteristic of the chronic stage; and if this is true, we possess in this fact an important aid in differential diagnosis. A history of this acute stage and the absence of one or other of the usual signs of malignant stricture—stenosis, haemorrhage, tenesmus—will enable one to discover the real state of affairs in the majority of cases. It must be admitted, however, that in a minority of cases the simulation of malignant disease is so exact that differential disease is impossible.

Fortunately, in such cases a mistake in diagnosis will not lead to any serious mistake in treatment, for a pericolitis producing a definite stenosis and the other common signs of malignant disease can only be relieved by operation.

There is nothing in the clinical history of the case which throws light on the etiology, except the chronic constipation. The long retention of faecal matter in the sigmoid reservoir is as a matter of fact probably the prime factor in all such cases, the direct result being such damage to the bowel that intestinal bacteria permeate and set up a local peritonitis. Such a peritonitis ends in one of the three ways I have mentioned. It is necessary to note that actual structural perforation and general septic peritonitis may also result from a like cause.

In some cases the damage is done not by retention of faecal matter in the lumen of the gut, but by its lodgement in acquired diverticula, hernial protrusions of the mucosa and submucosa, which are more commonly met with in the sigmoid flexure than in any other part of the large or small bowel.

To turn from this case of chronic adhesive perisigmoiditis to the condition present in our second patient. The infiltrative sigmoiditis from which he is suffering is present in a subacute form. It is not associated with any marked degree of general intoxication, but the copious discharge shows that the process is active. From the beginning he has had no acute symptoms, and in this respect he conforms to the usual type of the disease, for typically it is chronic or subacute with occasional exacerbations; exceptionally it runs a rapid course with perforation and septic peritonitis.

The evacuations are also characteristic. Constipation, as far as ordinary faecal matter is concerned, associated with the painful discharge of small fluid motions is the common history, but the amount of haemorrhage and purulent exudation in this case is rather unusually large.

In the milder forms of this disease success in treatment may be expected without resort to operation. Progress is, however, notoriously slow, and some of these patients go through years of suffering. Most important is a strict regulation of diet; while the disease is active it is best to insist on confinement to bed and a milk diet, but as soon as the local tenderness, the pain, and the diarrhoeic discharge have to a certain extent subsided, it is best to get the patient up and out. After this stage a diet should be chosen which will leave as little residue as possible, and while the colon is given rest in this way it should also be cleansed by a daily enema. Probably an olive oil enema is the best.

In our own case colostomy was decided upon, because the signs pointed to an active process likely to lead to complications outside the bowel. This is one of the indications for operation, and it is also indicated in chronic cases when the palliative treatment I have mentioned fails after a thorough trial.

Finally, I must be careful not to leave you with the impression that these two types of colon disease are peculiar to the sigmoid flexure. They are much more common in this than in other parts of the large bowel, but both may arise in any part of its extent. Very well characterized cases of chronic adhesive pericolitis have been described in which the ascending colon and the transverse colon have been the seat of the disease. I myself removed a mass involving the transverse colon and adherent to the greater curvature of the stomach some three years ago, which in the light of subsequent knowledge I recognized as an example of this disease. An extensive resection was performed under the impression

that malignant disease was being dealt with. Similar cases have been similarly treated by other surgeons, and it is only comparatively recently that it has come to be recognized how closely the two conditions may resemble each other in symptoms and signs.

Infiltrative colitis also occurs in other parts of the colon besides the sigmoid, but it seems that this segment of bowel is almost always involved when the disease affects the descending and transverse colon. Usually in the descending and transverse colon it occurs as an extension backwards from the sigmoid. On the other hand, the primary seat is sometimes the ascending colon and caecum. We are much in need of further information on the pathological anatomy of the disease. Up to the present we have only clinical observations from which to draw conclusions. No doubt this needed knowledge will soon be forthcoming now that clinical study has led to its recognition as a condition with well-characterized signs and symptoms.

THE DIAGNOSIS AND TREATMENT OF APPENDICITIS.*

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APPENDICITIS is a malady that has come much to the front of late years; so much so, that most of our patients are acquainted with it, at any rate, by name. But if we look into any of our older textbooks—for example, the first edition of Fagge's *Medicine*, published in 1886—we shall find no mention of appendicitis, although what is no doubt the same disease is described under the name of "perityphlitis," and is looked upon as having its origin in the caecum; a note is, however, made that Dr. Wilks (now Sir Samuel Wilks) had ascertained *post mortem* that some cases were associated with ulceration or perforation of the vermiform appendix.

When we consider, however, that at the present time appendicitis and its complications account for nearly 40 per cent. of all cases of peritonitis, and that in times past numbers of deaths are stated to have occurred simply from peritonitis—or, as it was called, "inflammation of the bowels"—we can have no doubt that a great number, or, if we put aside the very young and the very old—in whom acute abdominal trouble is most generally due in the one case to intussusception and in the other to malignant disease—the greater number of these deaths must have been due to appendicitis, although not at the time recognized as such.

As, therefore, appendicitis is the cause of many serious and fatal illnesses, it may be worth our while to consider its diagnosis, and by what treatment we can best reduce this heavy mortality.

In order to clear the ground it may be well to take into consideration a few facts regarding the anatomy and pathology of the appendix.

The vermiform appendix in the fetus is directly continuous with the caecum, representing its terminal portion, but as development proceeds becomes more clearly marked off, becoming provided with a fold of mucous membrane at its orifice, the valve of Gerlach, which tends to prevent foreign bodies from passing into it from the caecum. The appendix consists of a lining mucous membrane, a submucosa, a muscular and an outer serous coat. It is provided with a meso-appendix, in which run vessels, nerves, and lymphatics. The mucous membrane contains tubular glands lined with a single layer of columnar epithelium, but the most noteworthy point about it is its richness in lymphoid tissue—a richness which is particularly marked between the ages of 10 and 30, after which age it diminishes in amount, the whole mucosa undergoing atrophy. From this richness in lymphoid tissue the appendix has been called the "intestinal tonsil," and it is probable that this lymphoid tissue performs some function of a protective nature against the bacteria which are found in such abundance in the caecum. It is noteworthy that in those animals which have no appendix there is a mass of lymphoid tissue at the apex of the caecum.

* Read before the Boston and Spalding Division of the British Medical Association.

Looking at the diseases of the appendix from the clinical point of view, this analogy to the tonsil is helpful in explaining the origin and course of the majority of cases of appendicitis.

The appendix used to be looked upon as a receptacle for all manner of foreign bodies, from cherry-stones to shot-pellets, and when appendicitis first became recognized it was considered due to the entrance of these bodies. But we now know that it is very rare for a foreign body to obtain entrance into the appendix, and that the apparent foreign bodies are generally concretions of faecal material largely consisting of bacteria, material which, at first liquid, has gradually become consolidated. These concretions are generally only met with in appendices which have in time past been the subject of inflammation; they are the result, rather than the cause, of appendicitis.

To what, then, must we look as the cause or causes? Probably in every case these are of a septic nature, the bacteria in the caecum and appendix setting up inflammatory changes in the lymphoid tissue, just as in the throat tonsillitis has so often a septic origin.

Slight attacks may pass unnoticed, but may lead to a fibrotic change in the mucous membrane and submucosa, just as repeated attacks of tonsillitis cause fibrosis of the tonsil. These fibrotic changes will render the appendix more liable to trouble from retention of its secretion with increased bacterial growth and the formation of concretions, until the first sign that the patient has of any trouble is an acute attack.

The analogy between appendicitis and tonsillitis is further borne out by the undoubted fact that many cases are rheumatic in their nature, and are relieved by the administration of salicylates, just as these will so often give relief in tonsillitis.

If the resistance of the patient is diminished by cold or fatigue, and if there is a superabundance of bacteria, a very slight indiscretion in diet may precipitate an attack, without any previous changes in the organ, an attack which may be of such severity as to cause ulceration or gangrene of the appendix, rapidly and without warning.

CLASSIFICATION OF CASES OF APPENDICITIS.

Clinically we may divide appendicitis into:

1. *Catarrhal Appendicitis*, the mildest form which has a strong tendency to recovery; but it is to be noted that in this catarrhal form the epithelium of the tubular glands of the appendix, which is a single layer, is shed, and thus there is opened a door for infection which may spread to the deeper tissues.

2. *Ulcerative Appendicitis*, in which not only is the epithelium shed, but the mucous and submucous coats are opened up. The mischief may stop at this point, but all the same, if the patient recover he will carry about with him a damaged appendix with a weakened mucous membrane, and probably a strictured lumen, leading to the formation of a cystic dilatation, the contents of which will form an excellent nidus for further infective organisms.

3. *Appendicitis* (with or without perforation) *and Abscess.*—Here we may have:

(*a*) An abscess pointing through the abdominal wall.

(*b*) An abscess in the peritoneal sac, more or less shut in by adhesions.

(*c*) More rarely an abscess outside the peritoneal sac, generally well to the right side, creeping up behind the ascending colon.

(*d*) An extension of the suppuration along a definite route, which, according to some surgeons, varies according to the position of the appendix—that is, if this lies to the outside of the caecum, we may meet with pus tracking upwards along the outer side of the ascending colon to the right kidney pouch, then beneath the liver, and then between the liver and diaphragm, forming a subphrenic abscess; this may track still further, penetrating the right pleura, or it may in an extreme case perforate the suspensory ligament of the liver and be found beneath the left half of the diaphragm.

If the appendix is situated below the caecum, pus will be more likely to be met with in the pelvis, and if it is internal, then we may meet with pus passing inwards among the coils of small intestine, leading to:

(*e*) General suppurative peritonitis.

4. Lastly, if we have to deal with an intensely acute inflammation, the disease may run a terribly rapid course

—the so-called "fulminating appendicitis"—the patient dying of toxaemia within forty-eight to seventy-two hours, unless relieved by operation, and even then the recorded mortality is from 75 to 95 per cent. It is to these fulminating cases that I would particularly direct your attention when we come to consider the question of diagnosis and treatment.

DIAGNOSIS OF APPENDICITIS.

The important symptoms in a case of simple acute appendicitis are pain, tenderness, and rigidity of the abdomen, most marked over the appendicular region.

The pain often follows an indiscretion in diet, exposure to cold, or exertion; it may at first be referred to the epigastrium or umbilicus, but after twelve hours it is usually referred to the right iliac fossa. It sometimes radiates in the direction in which the appendix lies, although this is by no means an absolute rule. This may afford some indication for the operation to be performed.

It is sometimes difficult to distinguish this pain from pain in the right ovary; more particularly as an attack of appendicular colic may precede a menstrual period, probably caused by the ovary receiving part of its blood supply from a branch of the artery to the appendix; the premenstrual congestion of the ovary being accompanied by a congestion of the appendix. Conversely, a diseased condition of the appendix may cause ovarian pain and menorrhagia, and I can recall one case of my own in which removal of the appendix was followed by a cessation of the menorrhagia.

It is not infrequent to meet with cases, especially in children, in which there is pain over the bladder at the end of micturition. This may be so acute that the child refrains from passing water for as long as possible.

The tenderness is generally most marked at the point called after McBurney, where the line drawn from the right anterior superior iliac spine to the umbilicus crosses the edge of the right rectus. This point is said to indicate the point of origin of the appendix. Generally, however, this is a little lower down, at the point called "Clado's" point, where the line drawn from one anterior superior iliac spine to the other crosses the outer edge of the right rectus.

Mr. Sherren has shown that the tenderness may be met with over any part of the area supplied by the eleventh dorsal nerve. It may be elicited by gently pinching up the skin, so long as the appendix is not perforated, after which occurrence this sign is generally absent—a point of some importance in the diagnosis.

The rigidity is confined in a simple case to the lower right quadrant of the abdomen.

To these chief symptoms must be added obstinate constipation, vomiting which usually subsides after the first few hours, except in the fulminating forms.

The temperature is generally raised, except in a case of simple appendicular colic, or in a case of fulminating appendicitis which is rapidly going the wrong way.

The pulse is generally increased in frequency to some extent; its rate and character afford an indication of the progress of the case of the utmost importance, a steadily increasing frequency being the most marked sign of ill omen, whilst a steadily diminishing rate affords a good prognosis. As a general rule a rate above 100 per minute should be regarded as a danger signal.

The tongue is furred, and in some cases may be very dry and coated.

A rectal examination should never be omitted, as although in a simple case nothing abnormal may be found, yet we shall in this way obtain valuable information in a case in which there is pelvic peritonitis or suppuration.

Such an attack may terminate in—

1. Complete recovery, the temperature falling to normal about the third day, the pulse steadying down, the pain subsiding, and the bowels acting.
2. Apparent recovery, but with a tendency to relapse.
3. Localized suppuration.
4. General suppuration.
5. The attack may prove to be one of the fulminating type.

The symptoms are those of an acute attack, but of greater intensity, the pain much greater, the tenderness all over the abdomen, with early tympanites. In some of the worse cases there may be a cessation of pain.

Often there is an initial rigor. The pulse rapidly increases in frequency, becoming small and feeble, the face has an anxious, drawn expression, the skin becomes clammy, and the temperature falls below normal. The progress of the case is rapid, the patient generally dying of intense toxaemia within forty-eight hours of the onset.

TREATMENT.

1. *The Treatment of Simple Appendicitis during the Attack.*

Here we are on extremely debatable ground, some surgeons urging early operation and removal of the appendix; others, of whom I am one, holding that we should wait, and, unless the symptoms point to fulmination, endeavour to tide the patient over the attack by rest and treatment.

Sir F. Treves[1] says, "Hospital statistics are satisfactory only up to a certain point, since they of necessity deal with cases of the most severe type. The best record which could be obtained would be based upon the experience of a large number of men in private practice"

It is principally with this end in view that I have chosen this subject for our discussion.

My own small experience is that simple cases can with care be tided through the attack.

The line of treatment that appears to be most useful is:

(*a*) Absolute rest and quiet; the knees being placed over a pillow.

(*b*) Very low diet, the food being the simplest liquid food, such as albumen water or Brand's essence and water. It is by no means bad treatment to give nothing but water for the first twenty-four hours. Milk if given should be diluted and peptonized.

(*c*) The application at frequent intervals of hot fomentations to the abdomen, a piece of lint thickly covered with the glycerine of belladonna being applied to the seat of pain under the fomentations.

(*d*) Speaking generally no attempt should be made to move the bowels until the fourth or fifth day, and not until the seventh if an abscess is forming, when calomel and a saline aperient, such as phosphate of soda, may be given, followed, if necessary, by an enema.

(*e*) A simple saline mixture with hyoscyamus, or belladonna, or with salicylate of soda if there is any suspicion of a rheumatic tendency.

(*f*) The flatulence is best kept in check by salol in powder.

Here two points present themselves for discussion: the advisability of giving or withholding opium, and the use of aperients.

Opium used, in time past, to be regarded as our sheet-anchor in all cases of peritonitis, relieving the pain and quieting the restless patient, and it certainly produces an appearance of the very greatest improvement in the state of the case—the pulse becoming slower, the aspect more cheerful, and the patient in every way feels better. But this is only too often merely the appearance of improvement, the disease continuing unchecked until the time has passed for any help to be given. I would most strongly urge that opium should on no account be given in appendicitis unless it be in the case of a patient having to undertake a journey to the hospital, when morphine might be given, the hospital house-surgeon being, however, informed of the fact. Apart from the danger of the symptoms being masked, opium is a source of danger by paralysing the intestines and causing tympanites.

As to the use of aperients, a simple saline aperient might be useful in a case of appendicular colic to clear away any peccant substance, but we have to carefully discriminate between such simple cases and those that are more severe, in which an aperient would at once disturb the inflamed parts. Some surgeons are strong advocates for the use of an enema, but we must be careful to bear in mind the close relationship of the rectum to the inflamed area.

2. *Treatment during the Interval.*

There is no question that, in the case of patients who have had several attacks of simple appendicitis, the correct treatment is to remove the appendix during a quiet interval; in careful hands this has a mortality of only about ½ per cent. How many attacks should a patient be allowed to go through before having the appendix removed?

Provided that a patient takes warning from his first attack, and carefully avoids anything that might lead to another, such as hurrying over meals, eating indigestible

substances, neglecting the regular daily action of the bowels, careless exposure to wet, cold, or over-fatigue, he may never have a second attack; but yet statistics show that from 25 to 44 per cent. of first cases relapse, the relapse generally taking place within two years.

Such a recurrence indicates some permanent damage to the appendix, and a consequent liability to further attacks, any one of which may fulminate. I think, therefore, that the removal of the appendix during a quiet interval should be strongly urged upon a patient who has had two attacks; and he would be well advised to bear the operation after the first attack if it had been severe.

3. *The Treatment of a Fulminating Attack.*

Here the patient is in a desperate condition, which has been well compared to a strangulated hernia or a perforated gastric ulcer. If left the case becomes hopeless within forty-eight hours, and operation affords the only chance, and that but a slender one unless performed within twenty-four hours.

Fortunately, only about 1 per cent. of all cases are of this character; but it is in these that some means of diminishing the heavy mortality is so much to be desired.

Such a case occurred in my practice a few months ago, and it may, perhaps, be worth our while to consider it somewhat in detail as an illustration of the symptoms and diagnosis of this fulminating form.

I was called at 6 p.m. to see a servant girl, aged 20, who was violently sick and had pain in the abdomen. She had been very well until dinner time, when she had eaten some cold roast duck very heartily. I found her sitting up in bed, with her knees drawn up, vomiting a green bilious fluid, complaining of intense pain at the epigastrium. Her face had a typical abdominal expression. The bowels had been open the day before, but not freely; she was of a constipated habit. The pulse was 96; temperature, 99°.

What were the various possibilities of the case?

In the first place she might be suffering simply from an acute attack of indigestion. She looked, however, rather too ill for this. There was no hernia to be found, an inquiry which should never be omitted. The situation of the pain was suggestive of a gastric ulcer which had perhaps perforated. It is however unusual for this to recur without some previous history of gastric pain. She had never had this, nor yet haematemesis or melaena. The comparatively quiet pulse was rather against a perforated gastric ulcer. Nevertheless this was a possibility which weighed strongly with me. The menses were regular, which enabled one to put on one side the possibility of tubal pregnancy.

There was no history of jaundice, so that the pain was not likely to be due to a gall stone, neither was it like that of renal colic, which may at times be difficult to distinguish from appendicitis.

The bowels had been moved the day before, so that we had hardly to deal with a case of acute obstruction.

Bearing in mind that pneumonia will sometimes at its onset give rise to acute abdominal symptoms, I examined the chest, but there was nothing abnormal to be found.

It seemed to me that the case was either one of acute indigestion with bilious vomiting, or, more likely, a case of appendicitis of which the symptoms had not yet become definite, or possibly, but less probably, a case of gastric ulcer. Looking at the case as a whole, I felt justified in waiting a few hours until the shock had passed off and more definite symptoms had declared themselves. I therefore procured the attendance of a nurse, and ordered hot fomentations to the abdomen. Having regard to the green vomit and pain at the epigastrium, I ordered a simple stomach mixture of sod. bicarb. and acid. hydrocyanici dil., with calomel gr.j, to be repeated in one hour—a useful way of giving calomel if there is sickness.

I did not give any opium lest the symptoms should have become masked—a point the importance of which I would most strongly urge; over and over again have I seen abdominal cases where the patient was so deeply under the influence of opium that the whole aspect of affairs was entirely altered—the pain gone, the expression cheerful, the pulse quiet and steady, although the patient was within a few hours of death.

After the expiry of twelve hours the symptoms pointed definitely to appendicitis; there were pain and tenderness at McBurney's point, rigidity of the right lower quadrant of the abdomen, a slight rise of temperature to 100°; a rise in pulse-rate, 108.

Was this a case of acute appendicitis which might be tided over, or was it one of fulminating appendicitis? The severity of the onset pointed to its being the latter, and I removed the patient to the hospital. After her arrival the pulse-rate was found to be increased to 130.

On opening the abdomen in the appendicular region some turbid fluid was found round the appendix, which was gangrenous for the greater part of its length. This necrosis had evidently been of very rapid and acute onset, for there was no macroscopic solution of continuity in the organ. It was as though an intensely virulent inflammation had caused thrombosis of the vessels. The appendix was removed, and the wound drained with gauze. The patient made a good recovery, somewhat delayed by local suppuration.

From this case we may, I think, learn:

1. That every now and then cases will occur in which the disease is of the most acute type, inflammation arising in the appendix, and progressing with such rapidity and violence that the whole organ is speedily destroyed, and an acute septic peritonitis set up unless operation is done without delay.
2. That if the fulminating appendix is removed within a few hours of the onset all may yet be well.
3. That a case may take on a fulminating character from the very beginning, and that our only chance of saving life lies in the watching of the case at short intervals, refraining from giving opium, and operating as soon as the malady is seen to be steadily and rapidly becoming more acute.

In these cases there is often a period of comparative quiet, after the first shock of the onset has passed off; this is the surgeon's opportunity, for an operation may now be done with almost as much ease as in the interval between the attacks. If the opportunity be allowed to pass, the patient becomes rapidly worse, and the operation is fraught with the extremest danger. The pulse-rate is our best guide, a steadily-increasing frequency showing that the heart muscle is being poisoned by toxins calls for immediate interference, especially if, with the rise in pulse-rate, is conjoined a fall in temperature.

Beside the pulse-rate, the facies, tongue, pain, and increasing leucocythaemia are all danger signals, but of these the pulse-rate is the most valuable.

If the operation is done within the first twelve hours there is good hope of saving the patient's life, but every hour's delay adds to the danger, and after thirty-six hours the hope is but a slender one.

4. *The Treatment of Appendicitis with Suppuration.*

Here we have to distinguish between two widely different conditions—(*a*) localized suppuration, where the pus is shut off from the general peritoneal cavity, and (*b*) general diffused suppurative peritonitis, in which there is no shutting off by adhesions, but pus spreads throughout the whole peritoneal cavity, causing a rapidly fatal toxaemia.

Sir Frederick Treves in 1902[2] laid it down as a rule that "immediate operation is demanded in every example in which there is reasonable suspicion that suppuration has taken place." But this is a matter upon which there is great diversity of opinion, many surgeons preferring to wait until after the fifth day if there are signs that the pus is localized and shut in by adhesive peritonitis, so that it may be evacuated easily and safely without risk of causing general infection.

Here it may be of interest to trace the history of operative procedure in these cases.

When appendicular abscesses were first recognized and opened, there is no doubt, as was shown by Mr. James Berry, that many patients died rapidly from general infective peritonitis, owing to the abscess having been opened in such a manner that the general cavity of the peritoneum was at the same time exposed to infection. He urged that the best and safest procedure was to wait until the pus had been shut in by adhesions, which generally occurred by the fifth day, when the abscess could be opened safely.

But, unfortunately, in many instances the pus does not become thus limited in extent. The infection may be so intense and suppuration so profuse that pus rapidly makes its way between the coils of the intestines; or if a circumscribed abscess forms, yet it may speedily burst; or if it does not, yet it may burrow, forming cavities which can only be drained with difficulty, and death may occur from septic absorption.

Experience alone can tell us in these cases when to operate and when to delay; but speaking generally, if there is a definite circumscribed tumour, we shall be justified in waiting until after the fifth day, always supposing that the patient's general condition remains satisfactory. A rigor should be a signal for immediate action; so, too, should an increasing frequency of pulse. If it can be done, a leucocyte count, taken at short

intervals, may give an indication whether pus is forming or not, a leucocytosis of 20,000 or more pointing to the presence of pus. During the past five years our technique has much improved, and it is now safe to evacuate pus from an appendicular abscess as soon as it can be recognized, provided that before doing so the area of operation is localized and shut off from the general peritoneal cavity, by careful packing with a double bulwark of gauze, the outer layer of which can be left *in situ* for twenty-four hours after the evacuation of the pus.

One of the greatest advances in the treatment of these cases in the past two years has been the greater attention that is paid to the position of the patient—the head and shoulders being raised, and if necessary the head of the bed also raised, so that pus may tend to gravitate into the pelvis, instead of tracking up into the subphrenic region, where it is much more likely to cause a fatal toxaemia.

It may be necessary to drain freely, using large rubber drains. In one such case that I saw successfully operated upon, pus poured out from incisions above the pubes, and in the right and left iliac regions. Four large drain tubes were put in, down to Douglas's pouch in each iliac region, and running up to the liver. The patient steadily and speedily recovered.

Our hope of saving such cases of general suppurative peritonitis has been immensely increased by the method of continuous subcutaneous infusion, several pints of saline solution being run into the thighs by one or two hollow needles and a simple siphon. No attempt should be made to flush out the abdomen, for this will only result in spreading the infection still further.

In these cases of general suppurative peritonitis it is absolutely necessary to get the bowels to act, calomel being given in grain doses hourly.

CONCLUSION.

I would recapitulate our position in dealing with appendicitis as follows:

1. The majority of cases will get over the attack if treated on simple medicinal lines.
2. During the quiet period the appendix should be removed.
3. During an attack the patient should be carefully and frequently watched, and on any sign of fulmination operation should be done at once.
4. If there be suppuration, if all is going on otherwise satisfactorily, the evacuation should be deferred until after the fifth day, care being taken not to open the general peritoneal cavity. But if in doubt whether to wait, the pus may be directly evacuated. If the appendix present in the wound it should be removed, but no elaborate search should be made for it. It may be removed later on.
5. In general suppurative peritonitis the use of drainage, massive infusions, and calomel.

REFERENCES.
[1] BRITISH MEDICAL JOURNAL, June 28th, 1902. [2] Ibid.

ONE YEAR'S WORK IN ACUTE APPENDICITIS.*

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DURING the year 1906 it fell to my lot to operate upon 47 cases of appendicitis at some period of the acute stage of an attack, and in order to conveniently study the results obtained I have classified them into four groups:

1. "Early" cases, where the infection was found at the operation to be still limited to the appendix, there being as yet no evidence of peritonitis.
2. "Abscess" cases, where an abscess was present, more or less securely shut off by localized peritonitis from the rest of the peritoneal cavity.
3. "Diffuse spreading" peritonitis, where the peritoneum was becoming rapidly and progressively infected, without any attempt at limitation of the process.
4. "General" peritonitis, where at the operation it was actually seen that the peritonitis extended everywhere, from the pelvis to the diaphragm. The difference between the two last groups is merely one of extent of peritoneum involved, and many would include them together under the term "general" in contrast to "local" peritonitis. To do so, however, gives a wrong impression as to the recoverability of general peritonitis, for in many of these cases the infection, though rapidly spreading and tending to become general if left alone, yet has not actually done so at the time of operation, and, in fact, may by means of the operation be prevented from so doing. Truly general peritonitis is very rarely recovered from, and can be diagnosed with certainty only when, at the operation, the infection is actually seen to extend from pelvis to diaphragm.

	Cases.	Deaths.	Mortality.
Group 1. Early cases	6	0	—
,, 2. Abscess cases	19	2	10.5 per cent.
,, 3. Diffuse spreading peritonitis	19	0	—
,, 4. General peritonitis	3	2	66.6 per cent.
Total ...	47	4	8.5 per cent.

This total mortality of 8.5 per cent. compares very favourably with what I have obtained in previous years (17.6 per cent. over a series of 26 cases in 1905, and 22.8 per cent. over 21 cases in 1904), and it is to be attributed to the undoubted tendency on the part of the medical practitioner to call in a surgeon at an earlier stage than hitherto. The 4 deaths that have occurred (2 in abscess cases and 2 in general peritonitis) cannot reasonably be attributed to the operation *per se*, but are unquestionably the result of the operation being delayed too long.

"Early" Cases.—Appendicitis is undoubtedly at first a purely local disease; it is absolutely limited to the appendix. The time which elapses before the infection spreads to the peritoneum varies in different cases, and hence the limit of forty-eight hours, as usually given, is not to be taken as absolute, but merely as a rough guide. I have found peritoneal infection as early as eighteen hours after the onset of the attack, and, on the other hand, have on the fourth day found a gangrenous appendix without any evidence of peritoneal reaction. If the appendix is removed at this localized stage the process is cut short, and all the possible dangerous consequences of delay avoided. Operation at this period is as safe as an "interval" operation—that is, it has a mortality which is practically negligible; it is, moreover, easier of performance, since there are no firm adhesions such as are frequently found at an operation during the quiescent period. The convalescence is short, drainage, even if necessary, is only so for a few days, and the risk of subsequent weakness of the scar is extremely slight.

In the early stages of an attack of appendicitis there are no signs by which we can foretell with any degree of confidence whether the infection will remain limited to the appendix and so subside without operation, or whether it will spread to the peritoneum and operation subsequently become inevitable. In many cases, by the time it is certain that it *is* spreading and *will* necessitate operation it is only too evident that the chances of recovery are against the patient. The ideal measure is to remove the appendix while the infection is as yet limited to it, at a time when recovery can practically be guaranteed.

Of the objections that have been put forward to the routine adoption of early operation in acute appendicitis the most important are: (1) The high mortality after operations performed in the acute stage. Taking all cases together, the mortality at the present time is undoubtedly high, not, I maintain, on account of the operation *per se*, but because of the toxic condition into which the patient has been allowed to drift before operation is undertaken. In no class of case is it more important to distinguish carefully between deaths *after* operation and deaths *from the* operation. The correct deduction from the present high mortality after operations in the acute stage of appendicitis is to have them performed before the patient reaches such a state of toxaemia that he will die *in spite of* and not *on account of* operation. Such deaths can, with far greater justice, be ascribed to medical rather than surgical treatment, inasmuch as reliance upon medical measures has been the

* Portion of a paper read before the Darwen Medical Society, February 21st, 1907.

cause of the operation being delayed. (2) The fact that many cases get well without operation, so that if one operates on every case in the early stages, then some cases will be operated upon who would have recovered (that is, so far as the immediate attack is concerned) without operation. This is, of course, quite true, but I would ask what harm has been done to them? They have, with a minimum of risk, been insured against death from appendicitis at a time when the issue of their case was doubtful; the premium they have been called upon to pay is not in any way out of proportion to the benefits secured. Whatever the mortality of appendicitis in the hands of "opportunist" surgeons may be, it is certainly greater than that of appendicectomy carried out while the infection is still limited to the appendix. Moreover, if, as many now advocate, the appendix ought to be removed after recovery from one definite attack, then early operation simply antedates the removal by three or four weeks' time without increasing the risk, and thus the patient gains this much in time alone. (3) The objection of the patient and his friends to operation. If the medical attendant is himself convinced of the advisability of early operation, and, having placed the matter fairly before the patient or friends, is met with a refusal, he has, at any rate, relieved himself of the responsibility of any untoward event that may subsequently ensue. If a case of appendicitis dies without any operation having been performed, it will be difficult nowadays to convince the friends that operation would not have saved life; and if an operation has been performed and death has nevertheless ensued, the former tendency to put the blame upon the operation or upon the operator is being gradually replaced by a tendency to blame the one who was responsible for the operation not having been done sooner—*i.e.*, in some cases, unfortunately, still the medical attendant. My experience of the past twelve months leads me to believe that the general public is becoming more and more alive to the proper treatment of appendicitis, and it is becoming correspondingly less difficult to obtain consent for operative measures.

Supposing, however, that the period where the infection is limited to the appendix has been allowed to pass, and that, instead of subsiding, the infection spreads, then we have peritonitis, which may be of one of the three types already mentioned—localized (abscess), diffuse spreading, or general. Whichever type the peritonitis assumes, an operation will be required.

"*Abscess*" *Cases.*—Of the three, localized abscess is usually regarded as the most favourable for the patient, and even at the present time there are some who teach that operation should not be performed in the acute stage of appendicitis unless pus has formed and has had time to become well shut off from the rest of the peritoneal cavity. For my part, I cannot look upon an appendicular abscess without a reproachful regret that the opportunity of preventing it has been missed. Operation in the stage of local abscess does not possess a single advantage over that carried out in the early stage where the infection is limited to the appendix, but has several well-marked disadvantages—the mortality is greater, not so much on account of the operation *per se*, but because of the greater toxic state of the patient; convalescence is more prolonged; the appendix is in many cases left behind, and unless it has completely sloughed away may cause a persistent sinus, or may give rise to further attacks of the disease; the drainage necessary, often for several weeks, leaves a weak scar, and predisposes, therefore, to hernia; and the numerous adhesions inevitably left after an appendicular abscess has formed may be a source of permanent discomfort, and may also be a cause of intestinal obstruction at a later date. Of the 19 cases of abscess in my list, 2 died three days and seven days respectively after the opening of the abscess from advanced toxaemia. Of the remaining 17, three have since had to undergo appendicectomy on account of persistent sinus, which in each case was found to lead down directly to a perforation in the organ; 2 still have a sinus after 4 months and 9 weeks respectively; 2 had recurrent abscesses locally; and 1 had three recurrent abscesses, the last of which burst into the lung; in only 5 of the 19 cases was the appendix removed at the time the abscess was opened. This analysis indicates that appendicular abscess is far from being the satisfactory condition it is commonly supposed.

"*Diffuse Spreading*" *Peritonitis.*—Here operation is urgently demanded if life is to be saved, as, if left, the case soon becomes one of general peritonitis—an almost hopeless state. One often hears it said that operation between the second and fifth days is more dangerous than at other times, because of the absence of adhesions walling off the infected area. Such is, however, not the case; the mortality increases directly with the length of time that has elapsed before operation is undertaken. By means of strips of sterilized gauze the infected area can be safely packed off from the rest of the peritoneal cavity, and this can be done at least as readily in the early as in the later days. Delay merely increases the general toxaemia and lessens the chances of recovery. Moreover, the more one trusts to natural adhesions forming the less would one be willing to disturb them by searching for the appendix, and, consequently, it becomes increasingly more and more probable that the appendix—the primary source of the infection—will be left behind. In all of the 19 cases of this class perforation or gangrene of the appendix was present, with diffuse peritonitis around. In all the appendix was removed as the first step of the operation, the peritoneal cavity flushed out with sterile saline solution, drainage arranged for (in all the female cases vaginal as well as abdominal), and the Fowler position of the patient maintained for at least forty-eight hours after operation. It is interesting to compare the successful issue in each of these instances with the results of the "abscess" cases; the number of each was the same—19—but in the abscess series were two deaths, and this in spite of the much greater severity of the operation *per se* in diffuse spreading peritonitis.

"*General*" *Peritonitis.*—The chances of recovery after true general peritonitis has supervened are very small indeed, and this ought to be most carefully explained to the patient's friends before any operation is performed. I certainly think that one is justified in saying that, although very small, yet the chances of recovery *after* operation are greater than if no operation is undertaken. The difference, however, is not sufficiently marked to justify one in strongly urging an operation when convinced that the peritonitis has become generalized. The *pros* and *cons* should be fairly placed before the relatives (or, under certain circumstances, the patient himself) and the decision left to them.

"*Subsiding*" *Cases.*—Sometimes one is called to a case of appendicitis where the symptoms are admittedly improving, and where it seems only reasonable to suppose that the patient will recover without operation. Under these circumstances no operation is to be done; the case should be carefully watched, and any relapse, or any doubt whatever as to the continuance of the improvement should be met by immediate operation. In this connexion I must offer a caution against the possibility of mistaking the deceptive improvement which sometimes occurs when the appendix becomes gangrenous or perforated for real improvement; in such cases the improvement is due to a temporary arrest of toxin absorption—from arrest of circulation in gangrene, from suddenly diminished tension in perforation. Such improvement is merely a dangerous calm before a mighty renewal of the storm, and is of a very temporary character, and any failure to recognize it is fraught with the gravest danger to the patient.

What course is to be pursued after a patient has recovered from one attack of appendicitis without operation? Many surgeons hold the view that the appendix ought to be removed after the subsidence of the first attack as a routine measure, but to this I cannot subscribe. If, according to this view, a single attack of appendicitis is *ipso facto* to condemn a patient to operation, then surely it is more rational to give him the benefit of that operation in the early stages of his attack, at a time when the issue of his case is doubtful, and when operation is at least as safe and in all probability easier to perform. Is he to receive no reward for having successfully braved the storm? I venture to think that were the holders of this view to fully explain to their patients in the early period of the first attack that they would in any case now have to submit to operation, the majority, if not all, would wish the operation to be undertaken at once. When recovery has occurred after a single attack it is by no means certain that a recurrence will take place, there is a very fair chance that it will not. The logical position to my mind is to

wait until a recurrence has actually occurred, and then to remove the appendix in the early hours of the second attack. An exception should, of course, be made where a patient is so situated that early surgical assistance would not be available.

In conclusion, then, I maintain that, for a disease which in its early stages is a purely local infection, appendicitis has yet far too high a mortality. Early removal of the infected appendix is the only means we have of reducing the mortality to a minimum, and will, I am convinced, ultimately become the generally adopted rule of practice.

THE TREATMENT OF COMPLICATIONS AND SEQUELAE OF GASTRIC AND DUODENAL ULCERS.*

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I WISH to draw special attention to only one of the many complications of gastric and duodenal ulcers, and that is as to the immediate treatment of perforation of ulcers situated in either of these viscera.

At present it is a surgical dictum that prompt surgical interference is the right and proper treatment when this calamity occurs, and the earlier the abdomen is opened and the ulcer closed the higher will be the percentage of lives saved. I do not think that any medical man will question the wisdom of treating these cases by operating early, rapidly, and skilfully; but the circumstances and the conditions are frequently such that it is not only difficult, but impossible to carry it out.

It is everybody's experience to hear histories of cases which point to perforation, the patients having recovered or died without operation; it is necessary to examine very carefully under what conditions recovery took place without surgical interference.

It is not possible in most cases to judge or to form opinion from the history of a case, or from the condition of the patient, whether the perforation be small or large, or to locate its anatomical position with precision; but what we do know is that perforation usually takes place when the stomach is full and not when it is empty, and we also know that the majority of such patients rapidly slide downwards towards a precipice with the valley of death below if Nature is left unaided whilst waiting for the coming of a surgeon.

I desire to invite your attention to a method of treatment which seems to me to be the most rational, and it should be carried out as a matter of routine and without delay in every case pending surgical interference.

The natural forces which cure cases of perforation vary according to the symptoms from which the patient suffers, and these symptoms have been described as beneficent, in the sense that they call forth some reserve force to attempt to prevent extravasation of the contents of the viscera into the peritoneum. I would tabulate the symptoms and their indications as to what we should do to assist Nature to get on the right path to cure. For example:

1. *Collapse* makes the patient assume the horizontal position, and stops peristalsis of the intestine and prevents the force of gravitation in disseminating the visceral contents towards the lower part of the abdomen.

2. *Tenderness and rigidity* of the abdominal walls indicate that palpation and manipulation of these must be harmful and dangerous.

3. *Cramp and colic* make the patient draw up his knees and roll from side to side; by so doing he gives the great omentum an opportunity of getting nearer the seat of the perforation.

4. *Thirst* indicates that water is needed in the system, and therefore it should be given, *but not* by the mouth.

5. *Vomiting*, when it takes place (usually does, I believe, in cases which recover without operation), indicates the use of a stomach pump.

We know from recent war experiences that Nature has cured a large number of bullet perforations of the stomach, and that the conditions under which such happy results have taken place were:

1. The patient had an empty stomach when shot.
2. He had no food nor drink given him for long hours afterwards.
3. Suffered from shock.

We also know that a complete tear across the jejunum has been temporarily mended by natural processes under similar circumstances of profound shock and no food.

Knowing all these facts, which demonstrate that conservative surgery of a very high order can be performed by the peritoneum and the omentum under favourable conditions, therefore we must act in like manner in ordinary cases of perforation of the stomach and duodenum, and I think the proper treatment should be the following:

1. Place the patient in the horizontal position.
2. The administration of morphine in sufficient doses to relieve pain and to check peristalsis.
3. The avoidance of palpation and manipulation of the abdomen.
4. The emptying of the stomach by means of a stomach pump. Ordinary siphonage is unsatisfactory, because the solid contents of the stomach cannot be thus satisfactorily removed.
5. No food nor drink to be given by the mouth.
6. The abdomen should be covered with several inches' thickness of cotton-wool and bandaged.
7. Water and food to be given by the rectum only.

Never blister the abdomen in acute abdominal pain of unknown cause. It is not only a pernicious habit, but it very seriously interferes with subsequent surgical interference when required; one so often sees blisters applied in abdominal trouble that it is necessary to protest against the habit until it is discontinued.

The principles which Dr. Ochsner of Chicago has so clearly laid down for the treatment of cases of perforative appendicitis which have not been subjected to an early operation should, I think, be applied also to cases of perforation of the stomach at the earliest possible moment. If necessary, a local or general anaesthetic should be given in order to completely empty the stomach, and I feel convinced that many lives could be saved if immediate medical treatment on the above lines were adopted instead of wasting valuable hours in the search for a surgeon.

In two cases of perforative peritonitis in which I operated, I simply mopped out gastric contents from the abdomen, drained and washed out the stomach. The patients were *in extremis*, and only the slightest surgical interference was justifiable, yet both recovered without my closing the perforations.

When I operate for perforation of the stomach, of course, wherever possible, I suture the opening, but I have joined the school which simply mops out quickly the peritoneum and drain according to circumstances, suprapubically, loins or vagina, according to the exigencies of the case.

I have given up for some years flushing out the abdomen with normal saline solution, as I had a series of four deaths and then a series of recoveries by the "other method." I have never adopted the still more radical method of evisceration and leaving the abdominal wound open; it seems to me to be founded upon want of confidence in natural processes of repair and of misplaced confidence in bacteriological considerations. The practice is revolting and barbarous, and seems to me to be unscientific.

The sequelae of duodenal or gastric ulcers are so numerous that time will not allow me but to touch upon one aspect of the question. It is important for the surgeon to have an open mind as to what particular operation, if any, he will perform after opening the abdomen upon patients who are "chronic dyspeptics" from the effects of ulcers. During the last three or four years the operation of gastro-jejunostomy has been so highly lauded as a curative agency in these cases that some surgeons to my knowledge have advised it before seeing what the actual conditions were within the abdomen; under these circumstances an unnecessarily severe operation may be performed upon these cases unless careful examination be made of the conditions of the viscera suspected of causing the trouble.

The following case is a striking example of the curative

* A paper read before the South Wales and Monmouthshire Branch of the British Medical Association.

effect of a simple and safe operation on a lady who had been a martyr to indigestion for over twenty years. She was a patient of Dr. C. C. Shepherd, of Cardiff, who suggested that surgical interference might be desirable, and sent her to me.

History.

Since 1883 Mrs. X. had suffered from indigestion and had consulted doctors in many provincial centres and London. Her history pointed to probable perforation of the stomach in 1883. When I saw her she was pale and very emaciated, and it was feared she had become a morphinomaniac. Her dyspeptic symptoms were purely subjective, and no tumour nor displacement of the stomach could be made out, and it could be distended with air without suffering; she had tenderness over the right hypochondriac region. Pain after taking any food, either solid or liquid, was so bad that she had been taking sedatives for over four years at least twice a day.

Operation.

On May 2nd, 1903, Mrs. X. was anaesthetized by Dr. C. C. Shepherd, and Dr. W. S. Haughton, of Dublin, was present at the operation. I opened the abdomen, and found the stomach and the first part of duodenum to be healthy, but on drawing up the liver I discovered that the under surface of the gall bladder and beginning of the cystic duct were adherent, and caused kinking at the angle of junction of the first and second part of the duodenum. By drawing the liver and gall bladder upwards and the duodenum downwards the adhesions were easily divided; they were about 1½ to 2 in. long; the raw surface on the gall bladder and the duodenum were covered with peritoneum.

After-History.

The patient on the third night after the operation stated that her old pain had disappeared, and that she did not need any morphine. From that day she has been quite free from indigestion, and has not taken any more drugs for it.

In 1903 I used to perform gastro-jejunostomy *en Y*, and if one had overlooked or failed to discover the real cause of her trouble, one would have been tempted to do the operation I had a bias for at the time on account of the wasting and severity of the subjective symptoms; but the fact that the patient took morphine would have made me hesitate to do such a severe operation considering that there was no evidence of old disease of the stomach or pylorus. I would, therefore, wish to emphasize the scientific importance of having an open mind as to what operation, if any, should be performed upon chronic dyspeptics until the abdomen is opened; if the surgeon finds no evidence of old disease of the stomach and duodenum, nor contraction of the pylorus, it is wise to close the abdomen without risking life by doing a gastro-jejunostomy, for old dyspeptic symptoms usually recur as soon as the irritative effects of the operation have passed away. It is better to encourage such patients to face their "normal conditions of ailing" than to submit them to an operation which will bring undeserved reproach upon it and discredit to the operator.

SOME OBSERVATIONS ON NEPHRECTOMY,

WITH STATISTICS OF A SERIES OF CASES OPERATED ON DURING THE LAST TEN YEARS.*

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MR. PRESIDENT,—The subject I wish to bring before the Society to-night was suggested to my mind by an exceedingly interesting case under my care in hospital. Apart from the interest of the case itself, the methods of investigation employed to determine whether nephrectomy was permissible are so generally applicable, that I think I cannot do better than place on record full details concerning this patient as an introduction to some further observations.

Mrs. ——, aged 41, was admitted under my care on January 14th, 1907, complaining of severe pain in the region of the left kidney. Five months previously a stone had been removed from this kidney in another hospital; the operation gave relief until the patient resumed active life, when pain returned with greater intensity than before. The pain supervened at night as well as by day and at varying intervals of time; it did not partake of the nature of ordinary renal colic, but was described as a tense, full feeling in the left side of the abdomen, as though something would burst, and was not accompanied by vomiting. The left kidney could be palpated bimanually, and was found to be enlarged somewhat, but it was not tender unless an attack of pain was being experienced; the right kidney, which was freely mobile, could also be palpated, but it was not tender, nor did it appear to be enlarged. The past history was of great interest. Ten years ago, after a bad confinement, a vesico-vaginal fistula formed, which was treated by the late Lawson Tait by suprapubic section of the bladder. The fistula was completely closed, but almost from that time discomfort was experienced in the left kidney; this steadily increased, and was associated with haematuria occasionally.

Examination of the urine during several days after admission to hospital showed an unsatisfactory excretion; the amount varied from 30 oz. to nearly 40 oz., the specific gravity from 1007 to 1012; a small quantity of pus was always present and an occasional cast; the amount of urea varied from 120 to 180 grains, the patient taking an ordinary mixed diet and lying in bed.

In considering what means should be adopted to give relief to the pain, which was extremely disabling to the patient, the possibility of nephrectomy had to be kept in mind. The elimination of waste products, as shown by the quantity of the urine, its specific gravity, and the amount of urea excreted, all indicated that there was but a small margin of safety, which might easily be jeopardized if the left kidney were functionating and were removed, thus further reducing an already insufficient excretion.

The past history of a plastic operation for the cure of a vesico-vaginal fistula and the persistent trouble in the left kidney, beginning almost immediately afterwards, suggested that the left ureter was stenosed and the kidney pelvis dilated; the enlargement of the left kidney and the character of the pain confirmed this view.

To obtain more complete information two further methods of investigation were employed—cystoscopy and separation of the urine from the two kidneys. Cystoscopic examination failed to recognize the orifice of the left ureter; its position and the median portion of the trigone were obscured by scar tissue. The right ureteral orifice was easily found, but the ureteral bar was distorted, and the orifice looked upwards and outwards to the right lateral wall of the bladder. Separation of the urine was effected by Luys's separator, the instrument being retained in position for forty minutes, during which time about ℥vj were collected from the right ureter, and practically none from the left. Everything therefore pointed to the left kidney being entirely disabled, and so far enhanced the value of the right, from which the whole of the urea excreted was derived. A quantity of urea, often below and never above 180 grains, and the low specific gravity of the urine, together with distortion, and probably therefore some embarrassment of the right ureteral orifice, hinted strongly that the efficiency of the right kidney was damaged. Methylene blue did not colour the urine until thirty-six hours had elapsed after its administration.

Under these circumstances it was determined to expose the left kidney by lumbar incision, and to do nephrectomy only if no alternative course seemed feasible. As in nearly all secondary nephrectomies freeing of the kidney was difficult, but was thoroughly effected, and the organ brought out of the wound for investigation. Stone was recognized in the pelvis and in the dilated calyces; the pelvis and ureter were both considerably dilated. The ureter was opened and a bougie passed down it, which stopped abruptly close to the bladder; smaller bougies were tried, but nothing passed through the obstruction. Mere removal of the calculi was, in the face of the facts recited, little likely to give relief to the symptoms complained of; nephrectomy was therefore performed. As a final precaution, the peritoneum was opened in the anterior part of the wound and the right kidney examined with the hand; its mobility was confirmed, but no gross change, such as dilatation of its pelvis or calculus, could be detected in it, which, so far as it went, was reassuring. The artery, vein, and ureter of the left kidney were ligatured separately and the organ removed.

An uninterrupted recovery followed without incident of any kind. The excretion of urea on the day of operation was 180 grains, and for the three following days respectively it was 330 grains, 520 grains, and 315 grains. Gradually this enhanced excretion fell to about 250 grains on the tenth day, and to 160 grains on the eighteenth day, the quantity of urine being 50 oz., of specific gravity 1010. The diet taken was an ordinary light diet, much as before the operation. Clearly the right kidney is damaged but is at present sufficient. It responded, as I have often noticed that these kidneys do, after removal of the other extensively diseased organ, to the stimulation of an increased blood supply, or to some other perhaps unrecognized factor, and the urea output ran up enormously; but the increase was only a temporary one, and this I find to be usual after nephrectomy.

What is the normal amount of urea excreted by a healthy person? The physiological textbooks estimate it as about 500 grains, but this presumably means by a person actively employed, and on a full nitrogenous diet. Certainly nothing like this prevails in patients lying in bed, and taking a light diet of fish, chicken, vegetables, milk, bread, and tea. In my hospital patients, before they are submitted to any considerable operation, the

* A paper read at a meeting of the Midland Medical Society, March 27th, 1907.

urea is in many cases estimated, and I find that the amount is generally about 300 grains, occasionally as low as 200 grains, but the amount varies of course with body weight, and perhaps with age and sex. If the excretion of urea falls below 200 grains, whatever the nature of the operation, I look askance at the patient, but do not necessarily refuse operative measures even when nephrectomy is contemplated, as the case I have already quoted shows.

An interesting question worth asking is, What effect upon urea excretion has an operation of similar severity to nephrectomy but not involving the kidney? I have had several observations made on this point, and some are now being carried out by my dresser, Miss Eglington. Their general effect appears to be that the amount of urea rises considerably after most operations, but not to the same extent as after nephrectomy, and that it falls to the normal more rapidly. The increased excretion is perhaps due in part to the anaesthetic, and, it may be, to absorption of certain materials from the wound (not septic). This would occur in nephrectomy as in other operations, but in the former there appears to be some other potent factor at work such as I suggested in some of my earlier remarks.

The case I have described illustrates very well the methods generally available to determine the renal adequacy and the value of each kidney separately. Some of these investigations are in many cases unnecessary, but when all have been employed in a given case there is seldom much doubt in the mind of the surgeon as to the risk his patient runs of uraemia after nephrectomy.

During the time I have worked at our present hospital—that is, nearly ten years—I have had occasion to perform nephrectomy thirty times for various conditions, and in the same period I have in private work removed the kidney nine times, making a total of thirty-nine nephrectomies, with one death, a hospital case. Death occurred from shock and commencing peritonitis thirty-six hours after operation for a huge pyonephrosis.

The patient was a male, aged 29, admitted with an extensive perinephritic suppuration, as well as pyonephrosis. The pus around the kidney was evacuated and the abscess drained for some days before nephrectomy was attempted. At the latter operation the difficulties experienced were very great—the kidney was densely adherent, the peritoneum was widely torn, the pus soiled the peritoneal cavity, and the pedicle, though secured without mishap, gave exceptional trouble. In other cases anxiety arose from time to time, though all eventually came through, but in no instance did uraemic symptoms occur or ever threaten.

The route adopted for attacking the kidney was, except in one case, by the loin, through an oblique incision parallel with, and close to, the last rib. This incision can be prolonged downwards and forwards, if necessary, up to the line of the deep epigastric artery, and allows of removal of kidney and the whole of the ureter post-peritoneally down to the bladder. If there is one point I would lay stress on in nephrectomy more than another, it is that for safe removal of the kidney the operator should not cramp himself by too limited an external incision.

I have removed in this way very large kidneys, from 9 to 12 in. long by 5 and 6 in. across, and in no instance has it been necessary to resect the rib nor has the thorax been at all invaded. It appears to me to be inviting misfortune to remove a suppurating kidney transperitoneally when it can be taken out through the loin. Such organs are apt to be torn in enucleating, making it impossible to avoid soiling the peritoneum if the transperitoneal method is adopted. By the lumbar route the peritoneum is frequently torn, but by quickly detecting this and suturing the rent, or by packing it off when suturing is not feasible, the peritoneal cavity is much more easily protected than when the other method of operation is employed.

In my one transperitoneal operation this route was adopted because the tumour, a hypernephroma, appeared to be attached to stomach or duodenum. This proved to be the case, and the growth had to be carefully peeled off the duodenum and the walls of the latter sutured. After a lumbar nephrectomy careful suturing of the divided muscles and fascia should be effected, otherwise a weak scar will result which may become the seat of a hernia with much inconvenience and disability. The frequency of this form of hernia has much increased of late years, and operative measures to give relief are generally unsatisfactory owing to the wide retraction of the muscular edge.

In securing the pedicle I prefer to tie its constituents separately and with as little tissue in the grasp of the ligature as may be. Occasionally ligation cannot be safely effected either because of the density of the pedicle or owing to the critical state of the patient from haemorrhage, when the saving of every minute of time is essential. As an instance of an untieable pedicle I may mention a case of pyelonephritis following a hysterectomy performed by another surgeon in which one of the ureters was injured with a resulting ureteral fistula in the anterior abdominal wall. At the time of the nephrectomy, some months after the hysterectomy, the patient was in a septic feeble state, the kidney was most firmly adherent and the pedicle in my opinion too dense for safe ligature. I accordingly applied two powerful curved clamps and cut the kidney away, removing the clamps without difficulty or danger on the fourth and fifth days respectively; a safe recovery followed. In one patient operated on for secondary haemorrhage after incision of the kidney to discover stone, the loss of blood had produced such collapse that clamping of the pedicle was adopted as quicker than tying. A faecal fistula resulted, but did not appear until some days after removal of the clamps; it was caused no doubt by my dragging a little of the wall of the colon into the grasp of the clamp forceps, a mishap due to haste and to bad light, for the operation had to be performed by artificial light. I heard subsequently that the fistula had been closed by a plastic operation performed by another surgeon. This is the only instance in which I have known harm to result from the use of clamps.

Some of the nephrectomies followed previous operations on the kidney, as, for instance, nephrolithotomy, or fixation of the kidney, when hydronephrosis was complicated by extreme mobility and it was hoped that fixation might give relief to the symptoms and save the remnant of kidney tissue. These secondary nephrectomies are as a rule much more difficult than primary operations. In the desire to conserve some part of the kidney in such conditions as I have above instanced, a desire altogether praiseworthy, risk of secondary nephrectomy must be borne in mind with its added difficulty and therefore added danger. Unless there is real prospect of the organ settling down after the lesser operation and of giving a certain amount of help to the economy by its excretory power, the bolder measure of removal is fully justified in view of the changes around the organ which result from previous interference.

I have never attempted partial nephrectomy, and only once have I been tempted to do so. This was in a patient with a well-encapsuled hypernephroma at the lower end of the kidney, so circumscribed as to prompt removal of the lower third of the organ and the growth. Reflecting on the uncertain degree of malignancy of the tumour, I removed the whole organ, and feel justified by the fact that, although a complete extirpation was done, the patient was eventually the victim of a local recurrence for which I should have blamed myself if I had performed only a partial removal of the kidney.

During the period to which I have referred—the past ten years—I have on no occasion performed nephrectomy for injury of the kidney. More than once I have been tempted to, either almost immediately after the injury or at varying intervals of time, but waiting has eventually justified non-intervention; all the cases have recovered unless the injury to the kidney were associated with other injuries which brought about a fatality. The experience is worthy of note in a hospital of 300 beds which receives a large proportion of accident cases.

Analysis of the conditions for which nephrectomy was performed shows that:

Pyonephrosis or pyelitis from calculus, tubercle, etc., was responsible for 21 cases.
Hydronephrosis with pretty complete destruction of the kidney for 9, and with lesser dilatation for 3.
Malignant growth (hypernephroma) for 2.
Secondary haemorrhage after incision for stone for 2.
Stone and papilloma of kidney pelvis for 1.
Cystic kidney for 1.
A total of 39 operations with one death, a case of pyonephrosis and perinephritic suppuration.

In 3 cases of hydronephrosis of moderate degree combined with mobility, fixation was first effected, but pain

and disability continuing, nephrectomy was eventually resorted to.

The subsequent fate of patients submitted to nephrectomy must always be worthy of attention, but the comparatively short period which has elapsed since many of my operations were performed, and the difficulty of tracing hospital cases, renders the record I am now about to mention of less value than it would otherwise have been.

Eight of the 9 patients operated on outside the General Hospital remain well; 1 is suffering from recurrence of growth; the longest interval of time since the first of these operations is nine years.

Of the hospital patients I am unable to learn anything concerning 10; of the remaining 20, 19 are alive, and as far as can be gathered in reasonable health, several of them expressing themselves as "in very good health." One patient is dead, a woman operated on five and a half years ago, when 38 years of age, for a huge polycystic kidney. The other kidney, at that time just palpable, rapidly increased in size, but remained for a long time fairly efficient in its excretory functions, and the patient was enabled to lead an active and useful life, which without nephrectomy would not, I think, have been possible. In September, 1906, the excretion by the remaining kidney was becoming very insufficient, and the patient died in January last, after a brief illness the details of which I have not been able yet to obtain.[1]

REFERENCE.

1 *Lancet*, May 20th, 1906, p. 1326.

A CASE OF PYONEPHROSIS CONTAINING TYPHOID BACILLI IN PURE CULTURE.

BY FRANCIS L. A. GREAVES, F.R.C.S.ENG.,

HONORARY SURGEON TO THE DERBYSHIRE ROYAL INFIRMARY AND TO THE SPECIAL DEPARTMENT FOR DISEASES OF THE THROAT, NOSE, AND EAR.

IN the report of the proceedings of the Clinical Society of London held on May 10th, 1907, Drs. H. French and M. Louisson contributed a paper on the extent to which Widal's reaction persists after recovery from typhoid. The following case is worth recording from this point of view:

History.

A. B., aged 35, who was sent to me at the Derbyshire Royal Infirmary by Dr. Chawner of Clay Cross, suffered from typhoid fever rather more than six years ago. The disease was acquired from contaminated well water. After eleven weeks' illness he apparently became convalescent and was allowed to get up, but a week later he had a severe relapse and was in bed again for about seven weeks. He recovered and returned to work as a collier.

He said that during his illness he had occasional difficulty in passing water. He passed "lumps of flesh like liver as big as peas" for about a fortnight; he then passed thick water with pieces of "phlegm" in it, especially towards the end of micturition. This has occurred occasionally ever since.

Seventeen weeks before admission he complained of pain in the left loin and was attended by Dr. Chawner of Clay Cross for nephritis. After eleven weeks of pain he returned to his employment and managed to work for three weeks, when the pain became worse, and he went to bed again. Two weeks before admission a swelling was noticed in the left loin. The pain had been constant in the left side, but had extended occasionally to the left groin and testicle. There had been occasional attacks of vomiting. He had lost flesh considerably; the bowels had been fairly regular, but lately somewhat constipated.

Condition on Admission.

He was a distinctly emaciated and anxious-looking man, with a pale, earthy complexion, and a somewhat dry, slightly-furred tongue. The temperature was normal and the pulse 80. The urine, 1028, acid, contained neither albumen nor sugar.

A large, tender swelling was seen extending from the left costal margin to about 2 in. from the left iliac crest. It extended forwards to the middle line, and was more prominent above the level of the umbilicus. The swelling did not descend on respiration. It was tender on palpation, was smooth and rounded, and no irregularities, such as notches or nodules, could be felt anywhere. A distinct thrill could be felt by a hand placed on the tumour in front if light percussion was made in the loin; fluctuation could also be made out. The percussion note was dull and could not be separated from splenic dullness. The liver was not felt. Nothing abnormal was detected in the chest, and no signs of disease were found elsewhere.

On the day following admission the urine was examined with the result: Specific gravity, 1020; acid; trace of albumen; no sugar; deposit of urates. Segregation of the two ureters was performed on two occasions by Luys's separator. No urine was obtained from the left half of the bladder.

Operation.

On April 12th, three days after admission, he was placed under an anaesthetic and cystoscopy performed.

The right ureteric opening was seen to be normal. The left ureteric opening was difficult to see, as it was surrounded by a stellate arrangement of engorged veins. No urine was observed to issue from it, and no pus. Nothing else abnormal was seen in the bladder. The patient was placed semi-prone on the right side, and the usual left lumbar incision was made. After the muscles were incised, a trocar and cannula was introduced into the tumour, and pus appeared. This was received into a sterilized test tube for further examination. The opening was enlarged, and an exploratory finger felt a large stone in the left ureter. This was extracted without much difficulty. The sac was enormous, but soon contracted on being emptied. Its content was pus with hardly any urinous odour. Two drainage tubes were inserted, and the wound closed in the usual way.

After-history.

The operation was followed by a quite uninterrupted recovery. The average urinary output before operation was 22 oz., after operation 67 oz. Three weeks after operation there was only a small sinus left; one week later the last tube was removed, and this rapidly closed. He was sent to the Convalescent Home five weeks after the operation.

Bacteriological Report.

The pus was sent to the Clinical Research Association, and the following reports were received:

I.

The only organism met with in the pus and in the culture prepared from it is a Gram-negative bacillus, belonging apparently to the *enteritidis* group. Its pure cultures will require further investigation, and the identification of the bacillus is difficult and may be impossible. A further report will follow in due course.

II.

The organism isolated from your case of pyonephrosis has all the cultural and microscopical characters of the *Bacillus typhi-abdominalis*. When freshly isolated the bacillus showed no tendency to become agglutinated on treatment with a serum from a case of enteric, and we were therefore inclined to believe it was not the typhoid bacillus. However, after subcultivation several times the organism now gives a fairly well-marked reaction.

The suggestion was made that Widal's reaction should be tried, and a specimen of the patient's blood was sent up and the following report was received:

This serum shows the reaction characteristic of typhoid fever with all the dilutions employed—namely, 1 in 10, 1 in 25, 1 in 50.

A fortnight later a second specimen is reported upon as follows:

The serum gives a well-marked Widal's reaction, producing rapid agglutination of typhoid bacilli in dilutions of 1 in 10, 1 in 25, 1 in 50, and well-defined clumping within thirty minutes with a dilution of 1 in 200. An attempt was made to isolate the bacilli from a portion of the dressings and drainage tube, but without success, owing to contamination by other organisms.

The calculus was nearly entirely phosphatic, with a centre which contained phosphates and a predominance of oxalates.

I have no knowledge of calculous disease as a sequela of typhoid fever, and on looking up the subject of typhoid pyelitis I can find no case recorded where a calculus was formed subsequently. It is possible that the calculus was pre-existing, but I do not think it probable, as there were no symptoms of urinary trouble before the attack of enteric, and they were so extremely prominent during the attack. I think the case is sufficiently interesting to report, both on account of its rarity and on account of the persistence of the typhoid bacilli in the kidney for so many years.

TWO CASES OF SUPRAPUBIC LITHOLAPAXY.

BY R. HEARD, M.B., B.CH., ETC., I.M.S.,

SIMLA, INDIA.

THE two cases of vesical calculus reported below are interesting in so far as they were dealt with, with excellent results, in a manner somewhat different to that usually adopted. The patients were both young children of poor physique, on whom it was impossible to perform the usual "crushing operation," even with modern perfected instruments.

The stones could only be removed by the suprapubic

route. No attempt was made to remove the stones entire through the bladder wound; they were first broken through a small opening, with a lithotrite of the usual pattern, into a few small fragments. These were extracted, with fine dressing forceps, thus avoiding unnecessary wounding of, or damage to, the bladder.

Though suprapubic lithotomy is the operation of election with surgeons in England, it would seem to be looked upon with a certain amount of disfavour by surgeons of experience in India, who appear to prefer the perineal route, a crushing operation being performed through a median urethral incision. By this route I have myself crushed and evacuated, with excellent results, a stone weighing 8 oz., but cases are often met with where this method is not available. In India the after-treatment of operative cases is often beset with much difficulty, as it is, at times, impossible to procure efficient nursing. In the majority of cases the patient has to be left to the care of his "friends," who are usually of small intelligence and most unreliable.

A point that requires to be taken into consideration is the damage which is not infrequently sustained by the bladder during the extraction of a large stone entire with forceps, which, though intended for that purpose, are clumsy, and take up a great deal of space. This difficulty is largely obviated by using, before extraction, a lithotrite to break the stone, and by then employing (to remove the fragments) ordinary dressing forceps, whose blades have been dressed with a flake of cotton-wool, whilst a stream of boracic solution is kept flowing through the bladder by means of a cannula passed either through the urethra or, where this is not possible (as in Case II), into the wound. By this method the damage to the bladder and its mucous membrane is reduced to a minimum.

The operation is lengthened a little by the crushing procedure; this, however, is not of much importance in the majority of cases. In cases where a saving of time is a consideration, as in a litholapaxy in small children, where a large stone has to be crushed very fine to admit of its being evacuated through a fine cannula, I have found the binaural sound (of my own design) most useful in rapidly locating the fragments, and thus preventing the delay in searching for them, which is unavoidable if they are felt for in the ordinary way.

Another very simple expedient is to allow the patient, after the first crushing and evacuation, partially to regain consciousness, and the bladder will then contract, driving the particles of stone into the trigone, whence they can be removed without difficulty.

CASE I.

A Mohammedan male child, aged 7 years, of poor physique, who had had symptoms of stone for eight months, was sounded on June 7th, and the stone found to be too large to be crushed by the largest lithotrite that could be passed.

On June 8th I performed suprapubic cystotomy, assisted by Mr. David Heron, F.R.C.S.E. A small opening only was made in the bladder, through which the stone was broken into a few fragments with a No. 10 lithotrite. The fragments were removed separately with a fine dressing forceps, while a stream of boracic solution was kept flowing through the bladder by means of a cannula passed through the urethra. The fragments of stone (phosphatic) weighed ½ oz. The bladder and abdominal wounds were sutured, a small piece of rubber drainage tube being placed in the lower part of the abdominal wound. Urine was passed by the urethra for three days. The patient received an aperient on the third day, after which, probably from straining, the urine began to pass through the wound. On June 22nd all urine passed in the natural way, and patient left the hospital, cured, on June 29th, twenty-one days after the operation.

CASE II.

A Sweeper male child, aged 3 years, was, as regards bodily development, more like an infant of 9 months. He was very weak and emaciated and the subject of chronic malaria. Symptoms of stone, present since 1 year of age, had very much increased for the past five months. No ordinary sound could be passed owing to the smallness of the parts. A stone was felt with a bent probe, passed into the bladder, and found to be of considerable size. On June 27th I removed the stone, as in Case I, with the exception that the stream of boracic solution was kept flowing into the bladder through the abdominal wound, as no catheter could be passed by the urethra. The bladder was sutured, but urine passed through the wound from the first; it passed by natural channel on July 6th, and the patient left hospital on July 11th, the local conditions being perfectly satisfactory, the wound healed, and the general condition much improved. Quinine was administered during convalescence, owing to a sharp attack of malarial fever the day after the operation. In this case the stone (uric acid) weighed 100 grains.

I have also removed another stone by the same method in the case of a boy 7 years of age, in whose bladder the blade of the lithotrite broke after partial crushing of the stone. The boy was practically well twelve days after the operation.

SUPPURATING VAGINAL CYSTS.

BY J. B. HELLIER, M.D.LOND.,
HONORARY OBSTETRIC PHYSICIAN, LEEDS INFIRMARY.

SUPPURATION in vaginal cysts may cause severe and irritating leucorrhoea. These cases are rare, but it is important that their occasional occurrence should be recognized.

The first case I saw was that of a young girl of about 17, who was brought to me by her mother several years ago, because of severe purulent leucorrhoea. The hymen was normal. On rectal examination it was easy to feel an elongated, soft oval swelling in the vagina. Vaginal examination showed that this lay between the anterior vaginal wall and the bladder, and it was discharging by a small aperture near the os uteri. Incision and packing soon cured the abscess, which was not very large, but which extended from near the meatus urinarius to the cervix.

I now quote a case which is quite recent, and I am indebted to Dr. Mary E. Phillips, of Leeds, for the opportunity of treating it.

Miss Y., aged 35, had enjoyed perfectly good health till six months before I saw her, and had always menstruated regularly without pain and without excess. For the last six months she had not felt very well, but four months previously she had some vaginal haemorrhage. A fortnight previously she had some symptoms which she ascribed to influenza and at the same time began to have a very offensive purulent vaginal discharge. When I first entered the room which she occupied the fetor was so extreme that I suspected malignant disease. She had a healthy aspect, and was not emaciated. The vulva, perineum, and adjacent parts were reddened and inflamed on account of the irritant action of the thin sero-purulent leucorrhoea. The vagina was of virgin type, and the os was reached with difficulty. The anterior vaginal wall bulged into the canal like a cystocele, but the insertion of a bladder sound showed that the bladder did not extend into the swelling. No pain or other local symptom was complained of. On May 4th I incised the cyst wall freely, and let out a considerable quantity of thin fetid pus. I made no attempt to dissect out the cyst wall, but scraped it thoroughly, swabbed it with tincture of iodine, and packed with gauze. The cavity healed up by granulation in a very satisfactory way.

It is most probable that both these cysts were derived from Gaertner's duct. The aperture by which the abscess was discharging in the second case was not seen. If in either of these cases the discharge had flowed through a somewhat larger opening, so that the cyst cavity had ceased to be obviously distended, the true diagnosis might have long remained undiscovered, and such a case might be treated for an almost indefinite period by vaginal injections without cure.

Systematic examination in some other cases of purulent vaginal discharge may reveal discharging sinuses. There was no gonorrhoea in either of these patients, but this is a condition that might have been thought of on account of sudden purulent leucorrhoea arising without obvious cause, and a serious and unjustified suspicion might have been entertained. Gonorrhoeal vaginal discharge is, however, not strikingly offensive except in patients who fail to cleanse the external parts, and who suffer from eczematous vulvitis, etc. Apart from pregnancy and the puerperal state, there are only four causes of *very* offensive vaginal discharge which are at all common: First, retained pessaries or foreign bodies; secondly, malignant disease; thirdly, necrotic changes in myomata or polypi; fourthly, discharging sinuses or fistulae.

THE provincial meeting of the Incorporated Society of Medical Officers of Health will be held at the Town Hall, Colchester, on Saturday, July 13th, at 11.15 a.m. After the transaction of formal business, Dr. W. G. Savage, President of the Eastern Counties Branch of the Society, will open a discussion on recent work upon the bacteriology of typhoid fever in its relationship to preventive measures. After luncheon a visit will be paid to the Byfleet oyster beds, where the methods of the oyster fishery will be illustrated by hauls in different parts of the beds. Dr. W. G. Savage will provide afternoon tea on board the hospital ship.

A CASE OF SPREADING PERITONITIS CURED BY DRAINAGE OF PELVIS, THE FOWLER POSITION, AND RECTAL INSTILLATION OF SALINE SOLUTION.*

BY C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P.,
PLYMOUTH.

MAYO ROBSON's definition of a spreading peritonitis[1] is as follows:

By a spreading peritonitis I mean one in which there are no lymph barriers, but in which the peritonitis has not yet involved the whole cavity of the peritoneum.

In the following case there was involvement of the peritoneum below the level of the transverse colon.

The patient, an anaemic young woman, unmarried, aged 21, was seen in consultation with Dr. J. E. C. Wilson of Devonport on November 24th, 1906.

Previous History.—Menorrhagia since the age of 15. Three years ago a severe haematemesis. Intermittent dyspepsia since. Normal period ceased four days ago.

Present Illness.—Three days ago, at 5 a.m., while in bed, the patient had very acute pain in the epigastrium. She did not faint. The pain has recurred at frequent intervals.

Present Condition.—Abdomen very distended, universally tympanitic, only slightly tender, the tenderness being most marked in the epigastrium. Respiratory movement very slight. No liver dullness in right nipple line. Borborygmi audible in left iliac region. No tumour felt either in abdomen or per rectum. Patient during the past forty-eight hours repeatedly sick. Pulse, 115. Temperature, 99.8°.

Diagnosis.—Perforated gastric or duodenal ulcer.

Operation.—At patient's house. Anaesthetic, ethyl chloride followed by ether. Operation by lamplight, with patient semi-erect. Median incision above umbilicus. The stomach, moderately distended and normal, and the transverse colon, enormously distended by flatus, were drawn from the abdomen. On passing the hand from incision towards pelvis there was a flood of brown turbid, stinking fluid, the odour resembling that of an appendix abscess. Adherent lymph was seen on the under-surface of the colon, the small intestines being distended and injected. The distended colon required puncture and suture in two places before it could be replaced. A rubber tube of ½ in. lumen was passed to the bottom of the pelvis through a suprapubic incision. No effort was made to wash or swab out the turbid fluid, and no further exploration of the abdomen was attempted. The upper incision was closed, without drainage, by mass sutures of silkworm gut. The operation lasted three-quarters of an hour, the greater part of this time being occupied in emptying and replacing the distended colon and in closing the incision. The patient was carried back to bed in a sitting position and at once propped at an angle of 45°, and continuous rectal instillation of warm saline solution commenced. The pulse at the end of the operation was 140.

After-Progress.—The patient rallied at once, the vomiting ceased, and her expression, instead of being drawn, became placid. The saline instillation, of which about 3 pints were absorbed in the first two days, was continued for three days, the patient, after the first twenty-four hours, being able to take large quantities of liquid by mouth. During the first twenty-four hours, 1½ pints of urine were secreted, while brown stinking fluid was withdrawn through the suprapubic opening. The pulse and temperature gradually dropped, and on the fifth day were 100 and 98° respectively. The bowels for the first four days produced a brown foul liquid, and later acted well in response to saline enemata. The abdominal distension entirely subsided. The silkworm-gut sutures were removed on the twelfth day, the wound being healed.

COMMENTS.

Prior to operation, the symptoms, signs and history pointed to a lesion in the epigastric region. Operation showed the infection to be in the lower abdomen. The infection probably originated in the appendix, although it is impossible to exclude an infected ovarian cyst or Fallopian tube as a possible, though improbable, source. Whatever the cause, the lower abdomen was infected with bacteria from the intestine.

Recovery was due to drainage of the lower abdomen, and the Fowler position combined with continuous rectal instillation of saline solution.

Accessory factors were the shortness and simple nature of the operation, the semi-sitting position during operation and during removal to bed, the fact that the severely-poisoned patient was not further reduced in vitality by removal to a nursing home or hospital, and that ether was the anaesthetic employed. Taking these points in detail:

* Read at a meeting of the South-Western Branch of the British Medical Association.

1. *The Fowler Position, etc.*

The object of the Fowler position is to prevent infection of the upper abdomen, which is far more fatal than an infection below the level of the transverse colon, absorption taking place much more actively through the lymphatics of the diaphragm than through those of the pelvis.

If infection of the upper abdomen has already taken place, the infective fluid is given a chance of gravitating to the pelvis, where it is least harmful and can be removed by drainage.

Another advantage of this position is that, in a patient with a distended abdomen, the heart and lungs can work much more easily in the semi-erect than in the recumbent posture.

The continuous supply of saline solution per rectum supplies the patient with the water of which he has been deprived by vomiting and starvation, and causes a copious secretion of peritoneal fluid, rich in leucocytes and opsonins, which washes the peritoneum from above downwards.

Murphy of Chicago considers that the copious supply of fluid "reverses the current of the lymphatic stream, so that, instead of absorption taking place from the peritoneal surface, the mouths of the lymphatics pour out fluid which bathes the peritoneum and carries the infection down to the pelvis." The kidneys act freely and perform their share in eliminating the poison.

The effect of the saline solution on the renal secretion is shown by the fact that in this patient, who for the forty-eight hours prior to operation had vomited repeatedly, and who in the twenty-four hours following operation took nothing by mouth, the kidneys in the first twenty-four hours were able to secrete 1½ pints. In some of the recorded cases this activity of rectal absorption and renal secretion has been even more marked.

A patient with an infection of any region of the abdomen should be at once placed in the semi-sitting posture, and maintained in this position during removal to and from the operation table, during the operation, and during the first days of convalescence.

It is illogical to allow a patient with septic peritonitis to be laid flat on a stretcher or to be carried on a stretcher upstairs feet foremost or downstairs head first. A more effectual way of infecting the upper abdomen could not be devised.

Unless this point is attended to, there is considerable risk that the efforts of the surgeon to limit the infection to the lower abdomen will be neutralized by the hospital porters.

2. *The Shortness of the Operation.*

In these severely poisoned cases, act on the American maxim, "Get in quick—and get out quicker." Do as little as possible.

If a viscus in the upper abdomen is leaking, the perforation must be either closed or shut off. If the infection is limited to the lower abdomen, unless the source of the infection can be quickly shut off or removed, it is inadvisable to do more than drain the infected area, by loin, above the pubes, per vaginam, or by all these routes.

With free drainage, Nature will localize the infection. A long operation, theoretically perfect, too often results in the death of the patient, whose life might have been saved by the exercise of elementary common sense.

3. *Moving of Severely Poisoned Patients.*

A person severely poisoned, or severely injured, is not in a state to stand being carried about. In any given case it is impossible to say that a fatal result would not have occurred, but it is absolutely certain that when such a patient has been carried about and then dies, if any chance of recovery remained to this patient before being carried about, this chance has been obliterated by the unreasoning procedure adopted.

The argument that the patient's surroundings render operation in the patient's home inadvisable or even impossible is entirely fallacious. For the operator it is naturally easier to work in a hospital or nursing home. The man who can only operate successfully when surrounded by aseptic luxuries is but a poor surgeon.

4. *The Anaesthetic.*

In this, as in most operations, the stimulating action of ether makes it far preferable to chloroform with its depressing effects.

Operators who cannot operate during ether anaesthesia, because of the increase in the respiratory movements, might with advantage pay a visit to the United States, where ether is used almost exclusively, and where nothing is heard of "abdominal excursions."

For cases of septic peritonitis, ether, especially if given by an expert, as in the above case, is almost ideal.

REFERENCE.
1 *Lancet*, December 29th, 1906, p. 1767.

PRELIMINARY NOTE ON THE LIFE CYCLE OF A SPECIES OF HERPETOMONAS FOUND IN CULEX PIPIENS.

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IT is well known many insects are infected with harmless flagellate organisms the majority of which are very imperfectly known, the adult forms having alone been described. A large number of these parasites belong to the genus Herpetomonas, and are characterized by the absence of an undulating membrane, the flagellum passing out directly from the anterior end. Excepting a short account of *Herpetomonas subulata* by Léger,[1] which I shall refer to later, the only description of the development of one of these parasites is that of *Herpetomonas muscae domesticae* by Prowazek,[2] who in addition to giving a detailed account of its structure, mentions three possible methods of infection and a complicated process of propagation.

In December, 1905, when feeding mosquitos (*Culex fatigans*) on cases of kala-azar, it was found that a small percentage of the females were infected with flagellates very similar to the cultural forms of the Leishman-Donovan body, and a little later Christophers saw similar parasites in the males of *Culex fatigans* and certain developmental stages in the larvae. As far back as 1898 Ross found these flagellates in the larvae, nymphs and adults of *Culex fatigans*, and since then Léger and others have found similar parasites in the intestinal tracts of many insects.

The similarity between the developmental forms of the Leishman-Donovan body in the bedbug (*Cimex rotundatus*) and these flagellates of insects has led to the careful investigation of the life-cycle of a species of Herpetomonas found in *Culex pipiens*. Having seen certain stages of these flagellates in the larvae and the mature parasites in the faeces of the adult mosquitos, I concluded that the larvae probably became infected by ingesting the flagellates passed into the water. The hind gut of a larva was dissected out, the anterior portion isolated, spread out on a slide with two fine needles, and stained deeply with Giemsa's stain. Lying apparently in the gut, and in many cases close up to the nuclei of the intestinal cells, there were a number of round and oval parasites (Fig. 1), measuring from 4 μ to 8 μ in length and from 3 μ to 5 μ in breadth; their protoplasm, stained deep blue, was granular, and contained a few vacuoles. The macronuclei, which were circular in shape, staining light pink, and containing a number of fine chromatic granules, were usually seen lying at one end, while the micronuclei, staining almost black, were rod-shaped, and situated at the periphery or the centre of the parasites. Many of these cells, which were much enlarged, were seen in all stages of simple longitudinal division (Figs. 3*a*, 4*a*, and 5*a*), and in some the macronuclei and micronuclei had divided a number of times and arranged themselves along the periphery, and on the protoplasm dividing from four to six parasites were produced (Figs. 3*b*, 4*b*, and 5*b*). All these changes were seen taking place while still attached to the wall of the hind gut; some of the parasites had already flagellated, and were lying in pairs (Fig. 8*b*) with flagella of varying length, and had undoubtedly resulted from the longitudinal division of the round and oval parasites. In the nymphs some of the free forms had increased considerably in size, their macronuclei and micronuclei dividing again and again, resulting in the formation of rosettes (Figs. 6*a*, 7, 8*a*, and 9). In the older nymphs the individuals had flagellated, and the rosettes were beginning to break up, and in the adult mosquitos the parasites were seen as elongated spindles with oval macronuclei and rod-shaped micronuclei lying between them and the anterior ends, from which long wavy flagella protruded (Fig. 11).

From this short description it will be seen that this parasite has a stage in its development when it is very similar in form to the Leishman-Donovan body, and, further, that it multiplies by longitudinal division and multiple segmentation* as that parasite does in the human tissues. When free in the hind guts of the larvae and nymphs it further multiplies in a similar manner to the Leishman-Donovan body in the bedbug.

Though there are still some gaps in the life-cycle of the Herpetomonas of *Culex pipiens*, enough is already known to compare it shortly with *Herpetomonas muscae domesticae*. Prowazek regards the parasite of the house fly as a bipolar flagellate in which the body has become bent so that the two ends have fused, the two flagella remaining distinct. Excepting the forms showing longitudinal division, I have never seen a single parasite with two flagella; further, there is at present no evidence of the bipolarity of any flagellate. In addition to the motile forms, Prowazek describes gregarine-like parasites, and believes their appearance confirms Léger's view of the relationship of these flagellates to the gregarines. I have frequently noticed these so-called gregarine-like forms both in the development of this parasite and in that of the Leishman-Donovan body, and they appear to represent either parasites whose flagella have not yet developed or have not been sufficiently stained.

Prowazek does not mention any stage in the development of *Herpetomonas muscae domesticae* similar to that of my parasite in the hind gut of the mosquito larvae. He describes a process of copulation in the parasites of the house fly prior to which there is a marked reduction in the flagellate apparatus, and two similarly constituted forms are then seen lying side by side. The macronuclei and micronuclei of the two parasites then unite to form a single macronucleus and micronucleus, and later a permanent cyst is formed which is passed out in the faeces of the fly. Prowazek also mentions three methods of infection: (1) The indifferent individuals from the cysts may be again taken up by flies; (2) the sexually differentiated forms copulate, forming a permanent cyst, which is passed out in the faeces and may be ingested by other flies; (3) sexually differentiated forms penetrate into the ovaries, where they undergo autogamy and infect the next brood, but no description of the parasites in the eggs is given.

I have so far been unable to observe any sexual process in my parasite and the examination of ovaria and eggs has proved negative.

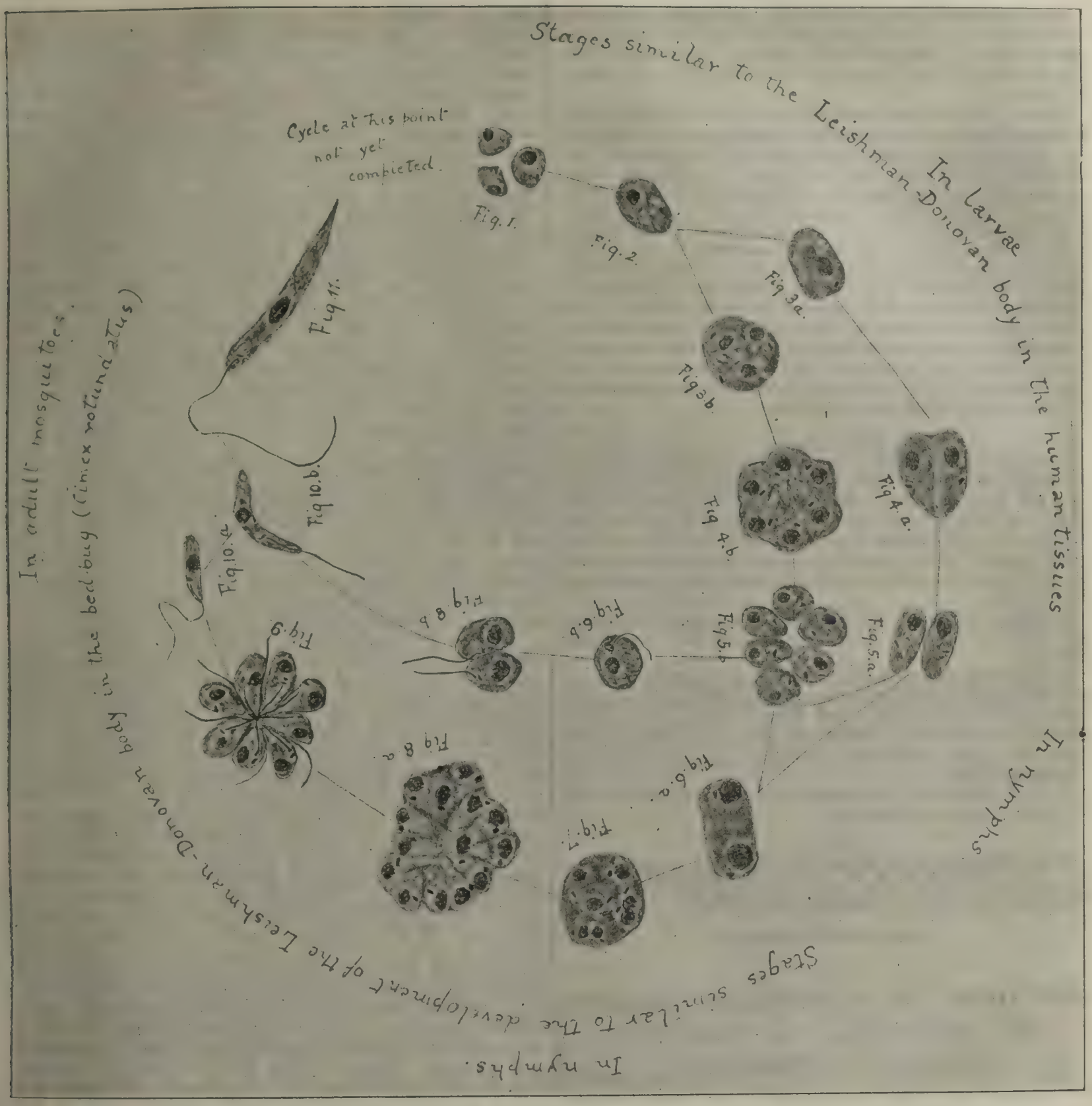
I have also been able to follow some of the stages in the life-cycle of a species of Crithidia found in a small Homoptera. In the mid gut of the young nymphs of this water-bug there were similar round and oval bodies (Fig. 12) apparently lying in the epithelial wall with circular macronuclei and rod-shaped micronuclei. Longitudinal division was also observed resulting in masses of round and oval forms attached to the epithelium, but there was no evidence of multiple segmentation. While still attached flagellation takes place, and these parasites are then seen undergoing equal and unequal longitudinal division resulting in forms of all sizes.

The adult parasite is a long, sickle-shaped organism (Fig. 13) with both ends attenuated, the anterior being prolonged as a rudimentary undulating membrane along which the flagellum is attached. This parasite is very similar to *Herpetomonas subulata* described by Léger from *Tabanus glaucopis* and *Haematopota italica*, of which he recognizes two types:

1. *Formes monadiennes*, represented by the adult flagellate, which is a long attenuated parasite with a central macronucleus and a round or rod-shaped micronucleus situated near it; both ends of the flagellate are drawn out, the anterior being prolonged as a rudimentary undulating membrane to which the flagellum is attached.

2. *Formes grégariennes*, represented by oval or round parasites which are usually seen lying in masses attached to the epithelium. These forms undoubtedly represent the earlier stages in the development of the parasite, which are characterized by longitudinal division and development of the flagella.

*It is interesting to note that Schaudinn depicts very similar herpetomonad methods of multiplication in his figures of the spirilliform stages of *Leucocytozoön ziemanni* in *Culex pipiens*.



CYCLE OF THE DEVELOPMENT OF HERPETOMONAS OF "CULEX PIPIENS."

Fig. 1.—Small round and oval forms similar to the Leishman-Donovan body.

Fig. 2.—Similar form further enlarged.

Fig. 3*a*.—Division of the macronucleus and micronucleus preparatory to simple longitudinal division.

Fig. 3*b*.—Multiple division of the macronucleus and micronucleus prior to multiple segmentation.

Fig. 4*a*.—Simple longitudinal division into two oval bodies.

Fig. 4*b*.—Further stage of multiple segmentation.

Fig. 5*a*.—Two oval forms, the result of longitudinal division.

Fig. 5*b*.—Six oval and round parasites the result of multiple segmentation.

Fig. 6*a*.—Enlargement and division of the macronucleus and micronucleus preparatory to the formation of a rosette.

Fig. 6*b*.—Flagellation of a round parasite.

Fig. 7.—Further stage of a rosette, the micronuclei dividing more rapidly than the macronuclei.

Fig. 8*a*.—Large rosette: the macronuclei and micronuclei are arranging themselves along the periphery, and the protoplasm is beginning to divide.

Fig. 8*b*.—Longitudinal division of the round flagellate into two.

Fig. 9.—Small rosette of eight flagellates attached by their anterior ends.

Fig. 10*a*.—A small flagellate from a rosette. The micronucleus is still close up to the macronucleus.

Fig. 10*b*.—Elongated flagellate developed from a free round flagellate.

Fig. 11.—The adult flagellate, showing the central oval macronucleus, the rod-shaped micronucleus, and the long free flagellum.

The cycle omitted between Figs. 11 and 1 has not yet been fully worked out. All the parasites were drawn with a camera lucida, and are magnified about 900 diameters.

THE CRITHIDIA OF THE WATER-BUG.

Fig. 12.—Two oval forms similar to the Leishman-Donovan body attached to an epithelial cell.

Fig. 13.—The fully-developed flagellate. The micronucleus is situated close to the macronucleus, and the flagellum is attached to a rudimentary undulating membrane.

Drawn with a camera lucida, and magnified about 900 diameters.

The presence of an undulating membrane, the more central position of the micronucleus and the method of development of *Herpetomonas subulata* suggest that, like the parasite of the water-bug, it belongs to the genus Crithidia.

Léger[1] believes that some of these Crithidia and Herpetomonas found in blood-sucking insects represent stages in the development of haemoflagellates of vertebrates and considers Schaudinn's observations on *T. noctuae* in *Culex pipiens* confirm his opinion. Many parasitologists, however, now believe that Schaudinn was dealing with more than one parasite in *Culex pipiens*, namely, either *Leucocytozoon ziemanni* or *Halteridium danilewski*, together with the trypanosome of the owl and the Herpetomonas of *Culex pipiens*; and further, I have often seen many spirilla of large size with more than one chromatic dot in their protoplasm in the mid guts of *Culex pipiens* and *Culex fatigans*. There can be little doubt that the Crithidia of the water-bug is in no way connected with any blood parasite. I shall reserve for a later occasion a complete account of the life-histories of these two parasites.

CONCLUSIONS.

1. The Herpetomonas of *Culex pipiens* and the Crithidia of the water-bug have a stage in their life-cycles in which they are very similar in form to the Leishman-Donovan body, and, further, that the former multiplies in a similar manner to the human parasite. In order to study the early stages of these parasites it is necessary to examine the hind guts and mid guts of the larvae and nymphs of the insects.

2. These two parasites pass their complete cycles in their insect hosts, and have no connexion with any blood parasite.

3. The early stages of these parasites and their method of development, together with the constant anterior position of the blepharoplast and the absence of the fully-developed undulating membrane in the mature flagellates, all suggest that they are quite distinct from the Trypanosomata.

4. There is at present no evidence of a sexual cycle or of the infection being inherited.

REFERENCES.
[1] Léger, Sur un nouveau Flagellé des Tabanides, *Comptes Rendus de la Soc d. Biol.*, T. 57, N. 37. [2] Prowazek, Die Entwicklung von Herpetomonas, einem mit dem Trypanosomen verwandten Flagellaten, *Arb. a. d. Kaiserl. Gesundheitsamte*, B. XX.

ON

THE DUTY OF RESTORING HEARING BY OPERATION IN CHRONIC AURAL SUPPURATION.

AN ADDRESS DELIVERED BEFORE THE WEST KENT MEDICO-CHIRURGICAL SOCIETY.

BY CHARLES J. HEATH, F.R.C.S.ENG.,
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AURAL appendicitis is the name by which chronic aural suppuration might be known, for disease of that mucous cul-de-sac the mastoid antrum or appendix of the ear is responsible, according to my investigations, for the perpetuation of the discharge. Like appendicitis in the abdomen, that in the ear is also a latent danger. In both situations it is a grave disease on account of its liability to infect neighbouring and vital parts. In the abdomen it may cause local abscess or fatal septic infection of the serous peritoneum (peritonitis); in the ear it may cause local or cerebral abscess, or fatal septic infection of the jugular vein or the serous pia mater (meningitis). Now no careful surgeon waits for abscess in abdominal appendicitis, nor in my opinion should he wait for it in the ear, for just as removal of the abdominal appendix will eradicate the danger there, so will timely elimination of the aural appendix usually restore the ear to function and to safety.

Before alluding to the investigations resulting in the proof of these opening words,[1] I will ask you to examine this patient, M. L. Her illness of five years ago has rendered her a person of great interest, for the restoration of hearing which accompanied the repair of the drum of her ear encouraged the hope of ultimately discovering how this remarkable reparative power could be made generally available. She had suffered for many months from a foul aural discharge. This culminated in acute mastoiditis, and the disease having thus become critical, operative relief was urgently needed. The disease had already destroyed the posterior fourth of the drum membrane, and the operation I performed was adapted to the condition of the ear. The mastoid process being extensively diseased was all removed, and the antrum was opened as far forward as the attic of the tympanum. The posterior wall of the bony meatus and parts of the attic bridge and tympanic ring were also removed. The small bones and the remains of the drum membrane were retained and preserved from injury, and though the tympanum was full of granulations they were left untouched. She rapidly recovered, and now you can see there is no external disfigurement, and no internal sign to indicate that she had had an operation, nor that anything has been amiss with her ear. The extensive damage to the drum membrane has been repaired, and there is full restoration of hearing. Careful observation of her recovery encouraged other investigations, and thus little by little information was obtained, which, by the institution last year of an appropriate operation, has led to the restoration of hearing in over a hundred persons. There can be no doubt that in time to come vast numbers will receive similar relief. This sudden change in treatment is due to the recognition of our ability to restore hearing by the new operation, and implies dissatisfaction with the old radical method which does not do so.[2]

In 1904 I endeavoured to render more satisfactory the method known as the radical or complete operation, which was the one in general use; but I found, among the other defects of that severe measure (which was founded on the assumption that it was necessary to clear out the drum as well as the mastoid antrum in order to effect a cure), that removal of the drum membrane, which is part of the proceeding, destroyed all chance of full restoration of hearing, and further, there was no certainty of saving the little that remained. Therefore, I returned to the study of the means by which Nature had assisted this patient, M. L., to make such a remarkable recovery. Observation of her ear after operation proved that the drum possessed great capacity for repair. Close attention was therefore given, during and after the performance of many operations, to the state of the tympanic walls, to the changes that appeared in the small bones removed from the ear, to the pathological conditions found in the mastoid antrum, and to the relation they might hold to those in the tympanum. Also to the conditions present in those patients in whom acute disease had caused destruction of the whole or a large part of the drum membrane and ossicles, and where no tympanic barrier existed to free drainage from the dangerous mastoid antrum. Observation of these and other matters resulted in the conclusion that, if the antrum could not recover its health when there was no tympanic obstruction to its drainage, then the operation known as ossiculectomy (that is, removal of drum membrane and small bones), with the object of influencing the disease in that cavity, was futile, in spite of the sacrifice of the vibrating apparatus and consequent certainty of defective hearing. Treatment of the tympanum through the meatus, by dealing also with the effect and not with the cause of this disease, was usually found equally ineffective, and in early cases even worse. The delays such proceedings must entail were found to give time for the affection to advance beyond the point at which restoration of hearing might be brought about by operation. During operations it was also found that slight disease may exist in the mastoid antrum, yet not be identified, because of the obscuring presence of blood, and that all haemorrhage must be prevented if trustworthy observations were to be made.

Now, these studies have shown, as clearly as such things can be proved, that the mastoid antrum is affected in every case of chronic aural suppuration—that is the plain teaching of careful observation of upwards of 500 operations. It was only by the performance of operations that this most important information was forthcoming, and even then it could not be demonstrated except when absolute freedom from haemorrhage permitted of full and critical view.

Conclusions thus founded left little doubt that, though the original disease may have affected the whole middle ear, the mastoid antrum was the part which was least capable of recovery, and was therefore the locality where disease was most prone to persist. The chief disease was therefore shown to be, not in the tympanum, but in the mastoid antrum and its communications in the petro-mastoid bone, and that these parts must be eradicated in order to ensure safety to life, and to restore the hearing, for discharge from that cul-de-sac was found capable, even if only of small amount, of perpetuating and increasing the disease in the tympanum, and thus causing destruction of the drum membrane.

It was proved, too, that granulations, polypi, and mucous swellings in the tympanum, which had hitherto been considered as implying grave disease of that chamber, far from being so, were generally found to be protective and beneficent and secondary to the advent of irritating secretions from the mastoid antrum, and spontaneously disappeared, with restoration of the drum and hearing, when these secretions were cut off by this conservative operation. Discharges from the mastoid cavity were also shown to be capable of causing caries in the tympanum and facial paralysis, and these are grave conditions which might easily progress so far as to cause labyrinthine suppuration, meningitis, and death. Even these dangerous complications were also proved to be amenable to the same operative remedy without loss of the drum membrane or of hearing.[1]

Two important questions, however, arose—first, whether this aspect of the pathology, which was contrary to that hitherto taught and generally accepted (and upon which the old radical operation was founded), could be relied upon; and, secondly, whether these conclusions, although drawn from a very large number of careful clinical observations, were correct. It was difficult to settle these matters except by designing an operation in accordance with these fresh observations, and performing it in a sufficiently large number of cases. This course I adopted in May, 1906, when in a month nine such operations were performed. The results of those operations, with a description of the measure and a record of the case of this patient, M. L, were published in the *Lancet* of August 11th, 1906. The patients who underwent this surgical treatment (I have named it the conservative operation, as it preserves all the structures essential to good hearing) were exhibited before a meeting of the British Laryngological and Otological Association on November 9th last (1906).

The operation has since become extensively adopted and is steadily displacing the radical operation, as the following short record will attest. It illustrates the trend of opinion, though it is from the practice of only three of the many surgeons who have lately adopted this operation, and they have authorized the publication of their names.

Dr. Percy Jenkins, Surgeon to the Central London Throat and Ear Hospital, has recently performed 29 mastoid operations for chronic aural suppuration, and of these 25 were by this new conservative method.

Dr. Frederick Spicer, Surgeon to the Metropolitan Ear and Throat Hospital, has lately done 14 mastoid operations, of which 9 were by this conservative method. He mentions in his letter his intention to exhibit the patients, so complete is their recovery.

Mr. John Bark, Aural Surgeon to the Stanley Hospital, Liverpool, has lately done between 20 and 30 mastoid operations, of which all but 2 were by this conservative method, and the last 20 were all carried out in that way. He says the results are so good that he has twice exhibited the patients—namely, at the conjoint meeting of the Lancashire, Cheshire, and North Wales Branch of the British Medical Association at Chester,[3] and also at the Liverpool Medical Society.

A few of my patients (18) have already been exhibited at the British Laryngological and Otological Association; some were referred to in the *Lancet*.[1] The cases mentioned were of old standing; but if the operation were done earlier, and therefore before disease had much advanced, it would be suitable for almost every case; hearing would thus be saved and future danger avoided.

Let me now draw your attention to a few of the advantages of this conservative operation. The following five paragraphs have been drawn up by Mr. Bark, one of these surgeons whose names I have mentioned.

1. Your operation does not destroy the drum (as does the old complete or radical method) nor jeopardise the hearing; therefore it can be performed early and before disease has caused much destruction. It can also be performed on, and thus restore and save, the only useful ear (as in Case I, the *Lancet*, April 27th, 1907). Neither the radical operation nor ossiculectomy can be adopted under such conditions for fear that total deafness will follow the destruction of the drum.

2. From this operation there is practically no liability to facial paralysis.

3. It is a less severe surgical proceeding than the radical operation, recovery is quicker, and yet it removes the dangers of this disease.

4. It will restore hearing in the majority of cases that come under treatment, and if done early in practically all.

5. The same operation is suitable for acute or chronic suppuration.

While fully approving I will briefly supplement them, for as originator of this treatment it was desirable that I should know the limits of its usefulness. My investigations have shown that full recovery may take place in the old as well as in the young, and apparently after disease of any duration (it has been proved up to thirty-two years), also that perforation in any part of the drum membrane will heal, though in some situations more readily than in others. Also that if the affection of the ear is complicated with disease in the brain, the latter can be dealt with, as can also thrombus of the lateral sinus, without destroying the hearing. I have in one case dealt with the brain; to deal with the lateral sinus is somewhat easier, as it is further from the ear. The operation has also been safely performed in a case of acute mastoiditis occurring in the course of chronic suppuration in an old person (sixty-eight years) suffering from aciduria and diabetes. The operation was quickly performed and but little ether administered—as a rule it is not so suitable as chloroform.

There are three more patients here for your inspection and to illustrate the various advantages of the operation; they were all exhibited before the British Laryngological and Otological Association on December 7th last, though they were not then described.

I.—T. V. was admitted to the Throat Hospital at the end of October with acute mastoid disease. The discharge from his ear had lasted six weeks, and when admitted at 8 p.m. he suffered so much from vertigo that he needed assistance, for he was unable to stand alone.* Operation was performed at once. The disease being extensive, the whole mastoid process was removed. The perforation was found to be large and badly situated for extensive healing, so if other conditions more favourable for repair had not been present, one might have been disposed to perform the radical operation and remove the drum membrane. He was, however, by the conservative method given the chance of complete recovery. Next morning, at 9 o'clock, he was found reading the newspaper quite free from pain and shock, and this satisfactory condition should be attributed mainly to the short duration of the operation (half an hour). The importance of the rapid performance of these operations is not sufficiently recognized, and any detail which will shorten their duration should be taken advantage of, for those patients recover most quickly who are but a short time under the anaesthetic. It was interesting to watch the closure of the large perforation, and you can now observe that the drum membrane is intact and his hearing good.

II.—A. P. suffered from the condition until lately known as "attic" disease, because the perforation was in the loose upper portion of the drum membrane, where it covers in the lower part of the attic of the tympanum, and he could not hear my watch when placed in contact with his ear. This showed that his labyrinthine sensibility was impaired. There was a polypus growing from the attic and protruding through the perforation into the meatus, which recurred after removal; the antrum was filled with thick pus and granulations, yet there were no symptoms to indicate this perilous condition. I have proved that affection of the attic cannot be differentiated from that in the tympanum, and that both are dependent on mastoid disease. By acting in accordance with this pathological fact, and removing from this patient all the mastoid disease, and that only, the attic trouble, being secondary to and depending upon it, was allowed to get well. You may now observe that there is complete recovery, the discharge has ceased, the perforation healed, the hearing returned, and therefore the same conservative measure is shown to be effective in this upper or so-called attic variety of the affection as in the lower and commoner sort, and as both conditions have been proved to be due to disease in the mastoid antrum they should be regarded simply as varieties in the complications of that disease.

Now, had I performed ossiculectomy on this patient (that is, removal of the drum and small bones), not only

* For the cause of this vertigo see my report of similar cases in the *Lancet*, April 27th, 1907.

should I have failed to reach the dangerous disease in the mastoid antrum, but should doubtless have caused deafness, for, as I pointed out last autumn, persons with deficient sensibility of the labyrinth do not hear without a drum. Therefore radical operation, too, as hitherto almost universally practised, by removing the drum, would for the same reason have been a misfortune and destroyed his hearing. He is, I believe, the second person who has been relieved by operation from attic disease without destruction of the drum, the first being a girl on whom I performed a similar operation in hospital last October. To her this matter was of far greater importance, as the affected ear was her only useful one, and was being gradually destroyed by the disease. As this patient, A. P., had no urgent symptoms, and as I desired to avoid operation, I treated him for months without actual benefit, but with what I have since found to have been risk to life and hearing, for at the operation the disease was discovered to be chiefly in the mastoid antrum, and was therefore beyond reach by any other proceeding. In a similar case this line of treatment should not be repeated, but safety to life and hearing should be ensured earlier by operation on the same conservative lines as those that were finally adopted.

III.—E. S., a boy, was admitted as an urgent case to the Throat Hospital during my absence attending the meeting of the British Laryngological and Otological Association (on November 9th) of which mention was made just now. The President had expressed a wish to see this method of operation, so he was informed of the admission to the hospital and was present with other surgeons when it was performed. The boy had been delirious at night for a week, and the purulent contents of the mastoid antrum were found to be under great and serious pressure. It is the rule, during the performance of this conservative operation to examine the drum membrane carefully and be guided by its condition (for it is often impossible to see it before), and the proceeding is so adapted as to permit of this inspection. When exposed in this boy's ear it appeared like a piece of wet scarlet cloth. No signs of normal structure were visible, nor any outline of the malleus, nor indeed of the situation of the perforation, for it was occluded by the granulations which filled the tympanum. I remarked that there was a perforation somewhere, and that it could be found with the aid of a probe. A slender instrument was passed gently over the surface until it found its way through the opening, and the dimensions of the aperture were shown by moving the probe to and fro. The operation was completed, and at its conclusion I expressed to those present my firm conviction that the perforation would be healed within a month. It was actually healed on the ninth day after operation, although it had been in existence seven years. The boy went home on the fifteenth day with restored hearing, and if ever he is called upon to perform such exceptionally responsible duties as those carried out by his father in the police, there is at least the satisfaction of knowing that deafness will no longer render him unfit for the duty. He had suffered all these years from aural suppuration following an attack of scarlet fever, and had thrice undergone operation for the removal of adenoids with the hope of arresting the discharge.

You will now understand that, if it was impossible to see this perforation during the operation when the drum membrane was as visible as a coin in the palm of the hand, how useless are the usual attempts to treat the tympanum through such a perforation and a tiny meatus. Further, how futile such treatment must now appear, for it can at last be recognized that the chief disease is not in the tympanum at all, but in the mastoid antrum, where these investigations have shown it to exist in every case, and there the tympanic treatment cannot reach it.

These three patients are much indebted to the other one (M. L), for had it not been for her illness and the information derived from observation of her remarkable recovery I should have removed their drum membranes by the usual radical operation, even last year, and they would now be deaf. Such cases are clear proof that by this radical measure patients were rendered permanently deaf, while the method adopted on these four patients is capable, as you see, of restoring the ear to full health and usefulness.

Three of these patients were treated at the Throat Hospital, and at the time of operation were in great danger, and more sufferers are admitted to that hospital in a condition dangerous to life from this disease than from all others together. It is thus perceived how grave a complaint is this of aural suppuration and the serious attention it demands, for the mastoid antrum is the seat of danger. It was by early interference alone that my operations were freed from mortality. While preparing this address I was summoned to the country on two successive days to operate on patients with mastoid disease which had become acute, one of whom had recently attended a special hospital. The first was found to be dying from meningitis; the second had passed away before my arrival. I feel bound to condemn the dilatory methods which are responsible for such calamities, and to insist on the necessity of earlier operative assistance, for thus alone can safety be assured.

Though the dangerous mastoid conditions can be removed by this operation, the damage to the drum and hearing resulting from long-standing disease may have gone beyond repair. The small bones, too, may have necrosed and disappeared, as sometimes happens in scarlet fever and other acute disease; but this does not occur in chronic suppuration. For such sad cases there will still be the radical operation; but it is a measure far too drastic for general use. The surgeon's aim should be the restoration of a perfect ear; and, after seeing such cases as those before you, surely he would be content with nothing less!

The membrane of the middle or hinder brain is often exposed in the foul mastoid cavity, from destruction of the bony walls; it is over fifty times as common there as above the attic of the tympanum. Rarely is there warning of this danger. Bone, too, is a weak barrier against disease; far more effective is the dura mater. That white and shiny membrane alone is the "silver streak that prevents invasion," it may be for months or years.

Now it has been shown that the mastoid antrum, and not the tympanum, is the chief seat of danger and disease; the old treatment must be changed, for we no longer have the right to dally with such risks. Faith in lotions will abate, for they do not reach the goal. Operations, now bereft of their destruction of hearing and most of their former dangers, will be earlier done. They will, I doubt not, increase tenfold; hearing will thus be saved, and deafness and the many deaths from this disease should well-nigh cease. Not one in 100 of these sufferers has hitherto undergone operation in time to save the hearing, and even when performed the old operation destroyed the drum[2]; but I have given you proof that a wholesome change is coming. The old operations had some dangers, and also destroyed the drum; then there were valid reasons for delay. Now those reasons are removed, for operation by the new method has hitherto been followed by no deaths, and hearing can be restored.

REFERENCES.
[1] *Lancet*, August 11th, 1906; April 27th, 1907. [2] See discussion at the British Laryngological and Otological Association, BRITISH MEDICAL JOURNAL, January 5th, 1907. [3] BRITISH MEDICAL JOURNAL

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL

TWO CASES OF GUMMA OF THE CILIARY BODY.

THE following two cases exhibited almost exactly similar symptoms, and as they were of a somewhat unusual and interesting character I think the cases are worth recording.

CASE I.

Mr. W. consulted me on June 18th, 1906, about his right eye. The eye was very much injected at the upper part of the cornea. In the deeper layers of the cornea at its upper border was a quantity of pus. On careful examination no ulceration of the cornea could be made out. A few days later pus began to accumulate in the anterior chamber, and this went on until the chamber was quite full. On July 23rd I incised the cornea near its lower border and evacuated the pus. The eye was now very acutely inflamed, and the cornea hazy, but there was no sign of ulceration. There was now quite distinct appearance of bulging in the upper ciliary region. There was a definite specific history, and I diagnosed gumma of the ciliary body with breaking down. Under liberal antispecific treatment and the frequent use of atropine the eye began rapidly to improve, and on August 14th was much better. The cornea had now a stippled appearance like that seen in interstitial keratitis. The eye continued to improve and vision to return, but in the course of a week or two the case passed out of my hands.

CASE II.

The next case was similar but worse. T. A., 45, plater's helper, was admitted into the North Riding Infirmary, Middlesbrough, on July 16th, 1906, suffering from disease of the left eye. He had already lost the right eye, which made matters much more serious for him.

The symptoms affecting the left eye were exactly the same as in the previous case—namely, injection of the upper part of the eye with pus apparently in the deep layers of the cornea at its upper border, the pus gradually falling down and filling up the anterior chamber, demanding its evacuation. At this time there was intense injection of the globe and very distinct bulging of the upper ciliary region. After evacuation of the pus there was a certain amount of haemorrhage into the anterior chamber, and at one time the iris had a gummatous look. Vision was reduced to the barest perception of light. In this case also there was a distinct specific history, and my experience of the former case led me to put him on large doses of potassium iodide with liq. hydrargyri perchloridi; atropine was used frequently. Under this he steadily improved. On November 18th, 1906, as there was a good deal of central opacity of the cornea, I performed iridectomy at the inner side.

On December 1st vision was $\frac{4}{60}$. Under the use of dionine, 1, 2, and 3 per cent., the cornea cleared somewhat, and on February 25th, 1907, vision was $\frac{5}{18}$. Up to this time he was still taking antispecific treatment off and on. For an interval all treatment was stopped, as no further improvement in vision could be obtained. But, as $\frac{5}{18}$ was not sufficient to enable him to do his work, an attempt was made by a further course of internal treatment and pushing dionine to 6 per cent. to get the cornea to clear, but on May 13th vision was still $\frac{5}{18}$, and has not improved further. It is interesting to note at this time the dionine began to cause bullae on the cornea, a result arising out of its continued use, which, I believe, has already been observed. I should add that unguent. hydrarg. ox. flav. 2 per cent. was used for a short period night and morning.

G. VICTOR MILLER.
Stockton-on-Tees. Ophthalmic Surgeon to the Middlesbrough and Stockton Hospitals.

CALCIUM CHLORIDE IN HAEMORRHAGE.

I WAS much interested in Dr. Stanley Green's case of haemorrhage after tooth extraction, because, when living in Formosa a few years ago, I had a very similar experience with a "bleeder."

The patient, a Chinese gardener, aged about 40, came to have two upper molars extracted. There was no remarkable haemorrhage after their removal, and the man went home, but two days later sent for me, as the sockets were still bleeding. He must have lost a good deal of blood in the interval, judging by the amount that continued to flow during the next twenty-four hours in spite of adrenalin, plugging, and the exhibition of various styptic remedies. The patient was then removed to hospital, and given calcium chloride, grains xxx, every hour for three doses, and continued thenceforward every four hours. The sockets were firmly plugged with compound tincture of benzoin gauze. After the second dose of calcium chloride the haemorrhage ceased. The drug was continued thrice daily in 15-grain doses for two more days, when the patient returned home. He had previously suffered severe haemorrhage from a cut finger.

A. C. LAMBERT,
M.D., C.M., Trin. Coll., Canada.
The Chung Si Hospital, Nanking, China.

ON THE TREATMENT OF MENIÈRE'S DISEASE AND MENIÈRE'S SYMPTOMS BY SETON.

SINCE publishing a paper on the above subject in the May 11th issue of the BRITISH MEDICAL JOURNAL I have had letters from different parts of England and from America asking me (1) where I place the seton, (2) how I make it, and (3) what material I use for it. In the JOURNAL of February 9th, 1901, page 336, Mr. Walter Whitehead of Manchester gave an excellent account as to the way he performed this simple operation. As my method is somewhat different in detail to his, I should like to state it briefly. The seton is inserted in the nape of the neck on that side on which the ear trouble is most pronounced. I pinch up a good fold of the skin in this region and pass a sharp knife through it in such a way that the entrance and exit incisions lie about 1½ in. to 2 in. apart after the fold has been freed. These incisions are best made in a slanting direction, so that what discharge may form will tend to gravitate to the lower one. I keep the knife in position (passed from the lower to upper incision) until I have inserted into the upper incision a sterilized bodkin, threaded with a piece of sterilized tape, about ¾ in. broad and about 20 in. long. As the knife is withdrawn through the lower incision the bodkin follows it from the direction of the upper incision, and thus the seton is passed. I use a long piece of tape, as the old practice of pulling the same piece of material from side to side each day does not commend itself to me in that it is both dirty and unsurgical. I pull a fresh piece of tape through each day and cut off the old portion that has lain in the wound during the previous twenty-four hours. The long end I bunch up in a small pocket made of boracic lint (about the same size and shape as the chamois-leather watch-pockets provided by jewellers) with a small flap to it, so as to keep the unused tape sterile. When the long piece is coming to an end I stitch on a fresh long piece, and so on. The lint pocket should be placed above the higher incision, so that it may not become contaminated by discharge. Each day the wounds should receive an antiseptic wash and be covered afresh with a long pad of boric lint. There is then no fear of sepsis, and the patient may wear the seton for six months practically without any pain or discomfort. Nitrous oxide should be administered during the passing of the seton, and in quick hands the little operation only takes a few seconds.

T. WILSON PARRY, M.A., M.D.Cantab.
Crouch End Hill, N.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

SPILSBY COTTAGE HOSPITAL.

APPENDICAL ABSCESS: PERFORATED GANGRENOUS APPENDIX: APPENDECTOMY AND RECOVERY.

(Reported by RICHARD SLOCOCK, M.R.C.S., L.R.C.P.)

THE patient in this case, a labourer, of bold physique, aged 22, working on his father's farm, was admitted on April 21st, 1907, suffering from a first attack of appendicitis.

History.—On Friday, April 12th, he returned home hot and sweating from working horses, felt the wind cold across his back, turned chilly, and, after "eating a good dinner," went to bed. The next morning he woke up with a pain in the right groin and hip, and took a large rhubarb pill. Diarrhoea followed, and lasted a week. On Sunday, April 14th, the pain was still bad, but he went out shepherding. On Monday 15th, becoming worse, went to bed early; at night the pain was at its worst; he used hot fomentations, which relieved him. Tuesday, 16th, he was easier, but stayed in bed all day. Pain returned on Wednesday, 17th, and he was sick twice, some "yellow bile" being vomited. His father called at my surgery on Wednesday evening for medicine "for pain and cold in right side," and asked me to call and see his son in the morning. An opiate draught was sent.

State on Examination.—On Thursday, April 18th, I found him downstairs, and on examination he did not appear to be very ill. There was localized pain at McBurney's point, not severe except on pressure, slight dullness, no swelling; temperature 99.6°, pulse full—84. I advised rest and liquid diet, and medicine with tr. belladonnae, sodae bicarb. and sp. am. co. Saturday, April 20th, my colleague, Dr. Burrell, saw him and found him much worse. Temperature 102°; pulse 100, full and bounding; dullness more pronounced, and some tension in the right iliac region. In the evening the temperature was 103°. On Sunday, April 21st, we visited him together and found he was worse, with pronounced symptoms of appendicitis, swelling, and tension of right iliac region; no tumour present; dullness more defined; temperature 103.4°; rigors. We recommended his removal to hospital and immediate operation as the only chance of saving life. As the mother was averse to this course I suggested another opinion, and Dr. Moxham of Stickney met us at the hospital, and agreed that an immediate operation was necessary.

Operation.—At 3.30 p.m., ether being administered by

Dr. Burrell, I made an incision about 4 in. long parallel to and about 2 in. above Poupart's ligament. The peritoneum was tense and bulged forward into the opening, and on being divided the caecum presented hard and distended. I explored with my finger for the appendix, and on lifting the caecum to the left a gush of foul faecal pus escaped from a large abscess cavity beneath, in the right iliac region. The appendix was found with difficulty adhering tightly to the under surface of the caecum, with a meso-appendix of about two-thirds its length, which was 4 in. The end was bulbous. After freeing the appendix from adhesions and tying the meso-appendix, I found at about 1 in. from its caecal end a gangrenous perforation, with a faecal concretion the size of an orange pip lying loose externally. I ligatured the appendix close up to the caecum with silkworm gut, divided it, and touched the stump with pure carbolic. The abscess cavity was well flushed out with hot sterilized water and drained with rubber tubing and iodoform gauze. The peritoneum was approximated as well as its tense condition would allow and the sides of the wound closed; $\frac{1}{30}$ grain of strychnine was given, as patient was suffering from shock.

Result.—The temperature fell after the operation to 99.2°, and fluctuated for the next three days between 100° and 99°. The pulse slowed down from 100 to 68. Fortunately no sickness or vomiting occurred after the anaesthetic or at any time afterwards. Catheterism was required for three days. The patient was fed per rectum entirely for three days, saline enemata given to relieve thirst, and soap enemata caused daily action of the bowels; the motions were liquid and offensive for the first few days, and contained mucus; no pus present. Liquid food was gradually increased by mouth after third day. The wound discharged a copious amount of foul-smelling pus until some dirty-looking sloughs were passed on May 4th. The cavity was plugged with iodoform gauze soaked in glycerine and iodoform, and drained by aid of rubber tubing. Lysol 1 in 100 was used as a douche. Solid food was commenced on temperature remaining normal after May 4th. Motions were formed on May 9th, and bowels acted regularly. Except for a small tracking sinus along course of sutures, which healed rapidly on plugging with gauze to the bottom, the wound healed soundly by May 16th. The patient was discharged in good health, wearing an abdominal belt, on May 31st.

REMARKS.—The above case, though one of a disease of frequent occurrence nowadays, presents some features of interest to the general practitioner. The onset, probably caused by a severe chill in an otherwise healthy person, with no previous history of constipation or appendicitis, the self-administration of a strong aperient, and the duration of the subacute symptoms for a week, ending in a fulminating crisis—warn us that appendicitis, however mild to begin with, requires constant supervision, and may terminate acutely and call for immediate surgical treatment. The tension from pressure beneath was so great that rupture must have taken place either into the intestine or general peritoneal cavity, unless relieved.

I am indebted to Dr. Moxham for his assistance and to the matron, Miss Bird, for her careful preparation and constant attention during the after-treatment of the case.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

ULSTER BRANCH.

Professor SYMINGTON, F.R.S., President, in the Chair.

Belfast, June 29th, 1907.

President's Address.—The PRESIDENT gave an address on some recent observations on cranio-cerebral topography, with demonstrations of a new method, illustrated by specimens, photographs, and diagrams.

Typhoid Fever with Unusual Complications.—Dr. CALWELL gave an account of a case of typhoid fever with unusual complications, probably due to the presence of *Bacillus coli* in the urine.

Splenomegalic Polycythaemia.—Dr. W. B. MCQUITTY read notes of a case. He said the condition known as splenomegalic polycythaemia was first described by Vaquez in 1892, and ten years later by Russell of Birmingham. Subsequently Parkes Weber and Watson, Professor Osler, Robert Hutchison and Miller, Begg and Bullmore, as well as a number of Continental observers, including Senator, Köster, and Reckzeh, had recorded cases with, in a few instances, the *post-mortem* findings. The cardinal signs were three in number: (1) *Increased number of red corpuscles.* This was constant, although the number may vary within fairly wide limits, and might even in pyrexia sink to the normal. (2) *Enlargement of the spleen*, which might be slight or considerable. This was almost constant. Several cases had been described with spleen of normal size. (3) *Cyanosis.* This was usually present. The earliest subjective symptoms were throbbing headache, debility and lassitude, gastro-intestinal disturbance and attacks of vertigo. Sometimes there was epistaxis or other haemorrhages with temporary alleviation of symptoms. The blood pressure was usually above normal; the viscosity and the specific gravity of the blood were increased. There was often a polymorphonuclear leucocytosis of a moderate grade. The patients were, generally speaking, of middle age, and both sexes were equally affected. It was probable that the triad of polycythaemia, enlarged spleen, and cyanosis constituted a definite clinical entity, and that its pathological explanation was an increased activity of the erythroblastic tissue of the bone marrow. The occasional presence of myelocytes in the blood was in favour of this view, which was first suggested by Türk, afterwards by Parkes Weber, and still later by Hutchison and Miller. The prognosis was unfavourable but the progress was, as a rule, slow and might extend over years. Remissions might occur just as is the case in pernicious anaemia. Treatment was unfortunately of little avail, but on theoretical grounds it would be advisable to limit the amount of animal food, to encourage the patient to take whatever gentle exercise his strength would permit, and to avoid haematinic drugs such as iron and arsenic. With the object of diminishing the viscosity of the blood, citric acid in doses of grains xx three times a day might be given.

The following were the notes of a case which recently came under the observation of the author:

Mrs. —, aged 68, consulted him (at the request of Dr. George M. Thompson, Bellaghy) on November 19th last for weakness and loss of flesh.

Family history showed a tendency towards arterial degeneration.

Personal History.—Ten or twelve years ago patient suffered from typhoid fever and two years later from slight congestion of the liver. Otherwise her health had been good prior to the onset of present illness.

Present Illness.—Began in June, 1905, when she took ill with diarrhoea, followed in two or three days by severe pain in the upper part of the abdomen, which was not specially localized in one or other side, and for which she was poulticed. The pain did not last more than a day, and there was some rise of temperature. In a fortnight she was better again, but felt weak. At this stage she came under the care of Dr. Thompson, who found her very much thinner than when in her ordinary health. There was some unusual resistance on palpation in the region of the gall bladder, and there was a slightly yellowish tinge in the skin. The spleen was enlarged; the urine free from albumen and sugar. There were occasional attacks of diarrhoea, sometimes once a week, sometimes once a fortnight, in consequence of which she had to be carefully dieted for some months. By degrees she was able to eat most ordinary digestible articles of food with comparative safety. At the beginning of November, 1906, her condition was better than it had been since the onset of her illness, but her most prominent symptom was that she was very easily tired. It should be mentioned that in June, 1906, she had a severe pain, lasting a few hours, in the left side of the chest in front, for which she was treated by Dr. Spence.

Present Condition.—Patient looks well coloured—the cheeks are red; sclerotics slightly yellow; tongue very red, somewhat cracked, with smooth mucous membrane between the fissures and discrete red spots here and there. (In her ordinary health she had a "geographical tongue.") Thyroid gland a little larger than normal. Weight, 9 st. 5 lb. (two years ago, 12 st.; six months ago, 9 st. 2 lb. or 3 lb.). Pulse 120 at beginning of examination, 108 at the end. Arterial tension a little above the average; artery not thick. Temperature, 97.6°.

Heart.—Apex beat in fifth interspace one finger-breadth outside nipple line, rather forcible; cardiac dullness not increased in any other direction. No murmurs and no accentuation of the aortic second sound.

Lungs.—Nil.

Abdomen.—Four inches of liver dullness in the nipple line; the liver comes down one finger-breadth below costal margin at the end of inspiration. The spleen can be easily felt and comes down three finger-breadths at the end of inspiration. The lower third of right kidney can be palpated. The muscles in the right hypochondriac region were on guard at first, but relaxed towards the close of the examination.

Rectum.—Nil.

Urine.—Clear, acid, specific gravity 1018; albumen negative by nitric acid test, but a minute trace is shown by the boiling test; sugar, *nil.*

Having regard to the high colour of the face and mucous membrane of the lips and mouth together with the en-

largement of the spleen, it occurred to Dr. McQuitty that this might be a case of splenomegalic polycythaemia, and accordingly he sent the patient to Dr. Thomas Houston who kindly made the following blood-count:

Red corpuscles = 9,500 000 per c.mm.
White ,, = 13,000 ,,
Haemoglobin = 116 per cent.

Differential count:

Polymorphonuclear cells	= 46	per cent.
Small lymphocytes	= 22	,,
Large lymphocytes	= 27	,,
Transitional cells	= 5	,,
Eosinophile cells	= 0	,,

The red corpuscles were well formed and there were no nucleated red corpuscles. The blood was more viscous than normal. The differential count shows a large increase of the large lymphocytes and a relative decrease of polymorphonuclear cells. The diagnosis of splenomegalic polycythaemia was therefore established. At Dr. Houston's suggestion the patient was put on citric acid grains xx t.d. Dr. McQuitty did not see the patient again, but Dr. Thompson told him her general condition remained much the same until about January 12th, when she began to suffer from attacks of giddiness, which kept up for a fortnight and were relieved by pot. bromidi grains xx t.d. These attacks were not accompanied by deafness or noises in the ears. On March 13th she was seized with pain in the left side of the chest in the front and the temperature rose. A good deal of crepitation developed at both bases, and there was marked delirium on the second day. The breathing was quiet, and the temperature ranged between 101° and 103°. The patient gradually sank and died on the fourth day. For the last three or four weeks the palms of both hands were bright red, especially on the thenar and hypothenar eminences. Dr. McQuitty pointed out that the points of interest in the case were: (1) The absence of cyanosis; (2) the marked loss of flesh and strength; (3) the decrease in the polymorphonuclear cells, and the large increase of large lymphocytes (large mononuclears); (4) the low colour index. He wished, in conclusion, to express his indebtedness to Dr. George M. Thompson for the history of the case and of its subsequent progress, and to Dr. Thomas Houston for the blood examination, which was essential to the diagnosis.

Excision of Rectum for Carcinoma.—Mr. FULLERTON showed a case in which carcinoma of the rectum had been removed three years previously. The patient was a woman, aged 65 years at the date of operation. The growth was a columnar-celled carcinoma, and almost surrounded the interior of the rectum about a finger's length from the anus. The operation was performed by making a posterior incision, and after removing the coccyx the tumour, with the greater part of the rectum proper and the glands in the hollow of the sacrum, was incised. The upper portion of the bowel was brought out at the anus and sutured to the everted anal canal. A Paul's tube was inserted before the bowels acted to protect the line of junction. Fistulae formed at this line in front and behind, but these soon healed up. The patient had now full sphincteric control, is free from stricture, and is in excellent health.

Gastro-enterostomy for Ruptured Duodenal Ulcer.—Mr. FULLERTON also showed a case of ruptured duodenal ulcer treated by suture and gastro-enterostomy at the same operation. The patient, a woman aged 40, was admitted to the Royal Victoria Hospital for fractured olecranon, which was wired. Sixteen days later, while lying in bed, she was seized with violent abdominal pain and vomiting of bloody material. The abdomen soon became rigid in the upper part. No food had been taken for ten hours previously. Operation was performed four hours after the onset of symptoms. A large dilated stomach, full of grumous material, was found, and in the duodenum at the upper margin a large ulcer had perforated. The edges of the ulcer were hard, thick, and friable. The perforation was treated by infolding and suture with linen thread. A posterior gastro-enterostomy was then performed, and the escaped fluid, of which there was a fair amount, was mopped up by dry sponging with gauze. The abdomen was closed without drainage. No attempt was made to wash out the stomach or irrigate the peritoneal cavity. The patient left hospital on the twentieth day after the rupture quite well. She was now in better health than she had been in for years, and her stomach was much reduced in size. She could take ordinary food without discomfort.

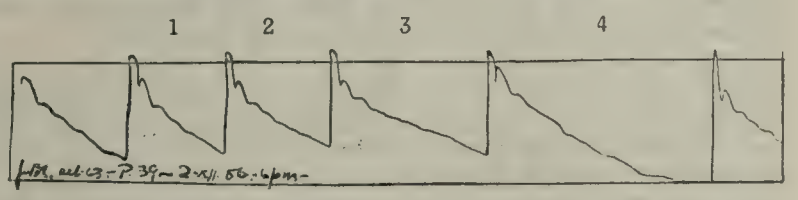
These cases were discussed by Drs. CALWELL and DARLING.

Retroperitoneal Lipoma.—Mr. R. J. JOHNSTONE read a paper on a case of recurrent retroperitoneal lipoma.

Coccygeal Cyst.—Dr. DEMPSEY read notes of a case of coccygeal cyst operated on by him, and Dr. DARLING described a similar case which he had just seen.

Hysterectomy for Ruptured Uterus.—Dr. DARLING read notes of a case of ruptured uterus, with hysterectomy and recovery.

A Case of Heart-block.—Dr. J. L. RENTOUL related this case: J. M., aged 60, came to him in June, 1904, complaining of "weak turns." He described these as faintings preceded by dizziness. On examination he found the man had a systolic murmur in the mitral and a diastolic murmur in the aortic area. The latter was the more pronounced and serious of the two. The pulse was full and strong; rate 80. In June, 1906, Dr. Rentoul was sent for, as his weak turns were more numerous and lasted longer. On this occasion the heart sounds were as two years previously. The pulse was regular if high; tension rate 24. The ventricular rate was also 24. The pulsations in the jugular veins were about three or four times faster than the radial. He put the patient on strychnine. His pulse-rate rose to 39 and kept so till September, when it again fell to 24 and the same phenomenon of fast jugular pulsations with slow radial associated with "weak turns." In December, 1906, the patient was much worse, and remained much longer unconscious. The pulse was peculiar in that twice per minute for four beats the individual beats became slower and longer till the fourth, when they resumed the usual 39 rate. The pulse tracing



shows this well. He then put the patient on tr. belladonnae and liq. trinitrini, on which he did well, the pulse going at the rate of 60. The belladonna and trinitrin was stopped and the pulse remained at 60 for three days; it then fell to 40. Vomiting set in, which lasted ten hours, after which the patient died of exhaustion. The only explanation Dr. Rentoul could think of for the peculiarity in the pulse referred to above was that the "block" was most effective at certain times, so causing a longer period between the ventricular beats. It might be that some one had met with a similar condition and would be able to give an explanation. Dr. MCQUITTY discussed the case, agreeing in the diagnosis.

Cases.—Dr. CECIL SHAW showed two patients, one a man of 43 suffering from a tumour of the larynx, the diagnosis between syphilis and malignant disease being doubtful; the other a girl of 5 operated on by him three months ago for papilloma of the larynx. Mr. H. H. CUNNINGHAM showed a patient, a child, suffering from tuberculous periostitis in the orbit.

SOUTH-EASTERN BRANCH: BRIGHTON DIVISION.

W. A. HOLLIS, M.D., in the Chair.

Brighton, June 12th, 1907.

A Case of (?) Achondroplasia.—Dr. HOBHOUSE showed this case:

Beatrice L., aged 5½, was sent from a London hospital where she was being treated for rickets. Family history *nil*, previous history not fully known. The child had some of the rickety stigmata, but she showed in addition some peculiar features. The femora were bowed and very short, the femur being 7¾ in., the tibia 6¼ in. in length. The body was of about normal length. When the child stood up the lordosis was very marked. The bones of the hands and fingers seemed to be almost non-existent, the fingers being movable in any direction; the arms were short as compared with the body, but the bones were not deformed. The child was very bright and quite intelligent.

Dr. Hobhouse did not feel certain that this was a case of achondroplasia, but he thought that it was extremely probable, as it was unlike rickets in many respects. Of course, there was rickets too, but he thought there was something more, namely, that the rickets was superadded on an achondroplasic condition. The latter, which was also called chondrodystrophia fetalis or fetal cretinism, consisted essentially in a dwarfing of the bones which were ossified from cartilage before birth, whereas rickets was marked by a hyperproliferation of the cartilage cells at the epiphyseal junction. The intelligence was not affected in achondroplasia, and there were no nervous symptoms as in rickets. It was not an uncommon disease; many of the dwarfs seen in the streets were achondroplasic, but in the early stage it was hard to be certain of the diagnosis.

Cerebral Diplegia.—Dr. HOBHOUSE also showed this case:

W. G., aged 2½ years, was a very typical case of cerebral diplegia; he was one of triplets, the others having died. It was very probable, therefore, that delivery was difficult. The child had never had any use in the arms or legs, he could not sit up or turn himself, had no control of sphincters, and had had a squint from birth. No history of convulsions.

The condition was that of a birth palsy due practically in all cases to meningeal haemorrhage, the secondary lesions resulting from which were (1) meningo-encephalitis, (2) atrophy and sclerosis of cortex, cysts, and secondary degeneration of cord; to the latter is due the rigidity and scissor position of the legs, which is seen in this case. The cases varied indefinitely in severity, but there was usually some degree of mental impairment with ocular paralysis, and sometimes more or less optic atrophy. No treatment or improvement was possible.

Sarcoma.—Mr. HUTCHISON showed microscopical specimens of sarcoma, and read notes of the three cases. (1) A boy, aged 14 years, suffering from osteo-sarcoma of both superior maxillae; (2) a woman suffering from disease of the middle and internal ear (left). In both these cases there was great prominence of superior maxillae.

In the boy the protuberances were almost symmetrical, but rather more marked on the right than on the left side. The swelling extended from the root of the nose and below the eyes over the front of the face down to the alveolar margin of the maxilla. In the alveolus the swelling was most pronounced on the outer surface, less on the palatal surface, from the first molar tooth on the right side to about the same position on the left. The teeth were not much displaced; there was a little irregularity of the incisors, and the permanent canines were erupting through the gum above and in front of the milk canines, which were *in situ*. The nose was almost completely obstructed, the outer wall bulging into the nasal fossa and pressing on the septum, but it was possible to pass a fine probe along the middle meatus on each side. The nasal ducts were obstructed, and he suffered from lacrymation and epiphora. Radiographs showed the teeth quite clearly, and showed nothing abnormal about the roots—no dentigerous cyst, etc. On transillumination the cheek was quite dark, no infraorbital crescent of light, no fundus reflex, and no subjective sensation of light.

History.—Nothing special in the family history. About two years ago some obstruction of the nose was noticed, but passed off under the use of a nasal douche. Nothing further was remarked until about three or four months ago, when the swelling in the face was first noticed. Since then the swelling had increased steadily. There was no pain, and the general health was apparently not much affected.

Diagnosis.—No definite diagnosis could be made without an exploratory opening of one or both maxillary antra. Puncture through the inferior meatus with trocar and cannula was impossible, no point could be found where the trocar would penetrate. The muco-periosteum was therefore raised from the right canine fossa—or rather from the bone where the fossa ought to be—and an opening made into the protuberance. No antrum could be found. The swelling consisted of soft bone, easily drilled into and easily cut with chisel or gouge. Some of this was cut out and sent to Dr. Bushnell, who reported the specimen to be a spindle-celled osteo-sarcoma.

The second patient came under treatment in December, 1905, on account of pain and discharge from the left ear. A very peculiar condition was found, namely, (1) some granulation tissue sprouting through Shrapnell's membrane; and (2) a complete ring at the inner end of the meatus quite denuded of epithelium. This bled readily on touching with a probe, but no bare bone could be found. This raw surface extended from the margin of the membrana tympani outwards to about the junction of the bony with the cartilaginous meatus. After trying a variety of local applications without any effect, the patient was anaesthetized, the auricle turned forward, and all the diseased tissue removed. This operation in March, 1906, gave some relief, but did not stop the progress of the disease. In November, 1906, a further operation was performed, practically the whole of the mastoid being removed. The large operation cavity was partly filled up with new bony tissue, and the hard swelling spread over the skull back almost to the middle line, upwards to beyond the level of the attachment of auricle and downwards to a limit that could not be made out. Paralysis of the left side of the tongue followed, then difficulty in swallowing, then paralysis of the left side of the face, and the patient died in April, 1907.

(3) Mrs. B., aged 43, first seen in June, 1904. History of nasal polypi for ten or more years. When first seen the nose was completely blocked on both sides by a firm rather fleshy mass beyond which it was impossible to pass a probe. A piece was removed from the left side with a snare and profuse haemorrhage followed, necessitating firm packing of the nose which had to be kept up for four days. Under an anaesthetic the finger was passed well behind the palate, and on pressure the tumour ruptured, and a large quantity of pus escaped, followed by profuse haemorrhage. The finger then passed into an immense cavity, so that practically all the sinuses at the back of the nose had been broken down into one large cavity. The whole of the bony septum had been destroyed. With a large spoon passed through the nose and guided by the finger behind the palate, the cavity was scraped out as well as possible. The cavity was packed with two long strips of gauze. The patient made a good recovery, and was in perfect health two years after the operation.

A microscopical examination of some of the tissue removed showed it to be of a sarcomatous nature.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.—At the annual meeting held at Furness Abbey on Wednesday, June 26th, A. J. CROSS, M.D., President, who was in the chair, delivered an address on the Medical Aspect of Elementary Schools. He dealt with (1) the insanitary condition of such schools; and (2) the effects produced from this condition on the children attending such schools. He said the *cloak rooms* were a breeding ground for lice and the germs of tinea tonsurans and impetigo, due to want of numbering and allocating to each child a peg for its own use. He referred to the want of provision for drying clothes whilst children were in school. The *ventilation* was generally bad, and even if fairly good was unable to carry away foul smells due to emanations from lungs and bodies of children. The bad ventilation was in many cases due to tinkering with the original system, and also to putting up glass screens to form class rooms, and so totally altering the original system; the latter was often inadequate in summer and not properly used in winter, owing to the temperature required by code not being produced without closing means of ventilation. The interstices between the flooring boards were full of dust permeated with germs, and were stirred up by children marching into and out of school, and again at night by cleaners; some form of impermeable flooring that might be flushed at least once a week was required. Schools were thoroughly scrubbed out twice only a year except after epidemic disease. Children should not be admitted until 5 years of age, being more susceptible at that time to measles and whooping-cough; the greater percentage of deaths under 5 years were of children affected with these and other zymotic diseases; while physical deterioration was favoured by insanitary condition of babies' class rooms, and restraint for considerable periods of time. *Epidemic disease* was more frequent than in former years. This was due (1) to the stirring up of dust impregnated with germs; (2) to the admission of children under 5 years; (3) to the mildness of disease preventing it being diagnosed by parents, and children suffering attending school; (4) to the return of children to school too soon after infection; (5) to the want of frequent medical inspection of children attending school during epidemic, and also when schools were reopened after closing for epidemic; (6) to the indiscriminate use of reading books and writing materials. *Long desks* were now being replaced by *dual desks*. Each child should now have reading books and writing materials for its own particular use which could be at once destroyed after it was found that they had been used by infected children. On dual desks also provision might be made for hanging cloaks and hats. Dr. Cross then discussed the general question of medical inspection (1) of children before being allowed to attend school; (2) of badly nourished children to see if properly fed; (3) the inspection of skins and throats during and after epidemics of measles, scarlet fever, and diphtheria; (4) the inspection of girls on reaching age of puberty before leaving school;

and (5) the special inspection of teeth, eyes, etc.—Dr. A. F. RUTHERFORD showed a baby with symmetrical maldevelopment of the upper extremities, with absence of radii. It was also born with an imperforate anus. Dr. Rutherford read notes of a case of embolism of the superior mesenteric artery following an injury to an aneurysm of the abdominal aorta.—Dr. W. H. COUPLAND exhibited numerous dissections and diagrams illustrating the auriculo-ventricular band of His.—Dr. G. BLAIR demonstrated under the microscope: (1) Spirochaete of African tic fever; (2) larva of tunicate; (3) section of amphyoxus; (4) Purkinje's fibres in heart of sheep; (5) striated muscle of frog and rabbit.—The following specimens were also shown: Dr. A. F. RUTHERFORD: (*a*) Twin ovum in ectopic gestation; (*b*) melanotic cancer of penis. Mr. J. H. IRVIN: Large lipoma of mamma. Dr. F. E. DANIEL: Modification of stem pessary. Mr. A. S. BARLING: (*a*) Myoma of uterus; (*b*) renal calculus.

REPORTS OF SOCIETIES.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

J. O. AFFLECK, M.D., President, in the Chair.

Wednesday, July 3rd, 1907.

BACTERIOLOGICAL TREATMENT OF GENERAL PARALYSIS.

DRS. W. FORD ROBERTSON AND DOUGLAS MCRAE, in a paper on The Treatment of General Paralysis and Tabes Dorsalis by Vaccines and Antiserums, said that the two types of diphtheroid bacilli used by them both showed marked virulence to mice, and produced in rats a disease resembling general paralysis. Probably there were several different but closely allied species of diphtheroid bacilli which were capable of producing the same effect. They had treated by vaccines 8 cases of general paralysis and 1 of tabes, in most of which there was a distinct improvement in the patients' physical and mental condition, followed by relapse after several weeks. In one case of general paralysis the improvement persisted for a year, when the patient was removed from the asylum. Their antiserum they obtained from sheep, administering it hypodermically or by the mouth in doses of 20 c.cm. A temperature reaction followed, and in their opinion this was diagnostic. It consisted in a rise to 100° F., when the serum was given hypodermically. The rise occurred within twelve hours, and had passed away in twenty-four hours. Out of 12 cases of general paralysis thus treated for over a period of three months, 10 had shown marked improvement. Two cases of tabes which had been similarly treated showed progress, the severity of the lightning pains had diminished, and the length of the periods of remission had increased. Nine control cases had been subjected to the antiserums and in none did any specific reaction occur. Several cases of general paralysis had also been subjected to treatment with the serum of normal sheep and also with antistreptococcic serum, and in no case were the injections followed by any reaction similar to that which ensued upon injection of the antiparalytic serum.

Dr. G. M. ROBERTSON read a paper on the presence of a bacillus (Muirhead's diphtheroid) in the blood of persons suffering from general paralysis, adding observations on the *Bacillus paralyticus*. The bacteriological researches on which the paper was based had been carried out by the staff of the Stirling District Asylum, their object being to test the conclusions of Dr. Ford Robertson. The primary observations were restricted to cultures made from the blood and cerebro-spinal fluid of living general paralytics. The mucous surfaces were avoided owing to the recognized occurrence of diphtheroids in those regions in other conditions, and *post-mortem* results were treated as of secondary importance owing to the tendency to *ante mortem* invasion by micro-organisms, and the rapid putrescence of those dying from general paralysis. The positive result of those researches was the finding in the blood of a bacillus of the *xerosis* group of diphtheroids differing from the *Bacillus paralyticans* of Dr. Ford Robertson. Cultures of this bacillus had been grown on suitable media.

Dr. CLOUSTON said he had been very much impressed by the diagnostic value of Drs. Ford Robertson's and McRae's antiserum, and by the marked improvement which followed in the condition of the patients who had been subjected to its administration.

Dr. BRUCE (Murthly Asylum) thought that the rise of temperature following the administration of the antiserum might be a coincidence, since it was well known that the temperatures of general paralytics were subject to considerable variation. He had not succeeded in isolating any organism from the blood or cerebro-spinal fluid of general paralytics.

Dr. LAWSON considered that the treatment of cases of general paralysis by serum was unsatisfactory in its present state. The serum was not standardized, and the method of administration was empyrical. Furthermore, no experiments had been made as to whether a reaction followed injection of the antiserum into healthy persons.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Sir PATRICK MANSON, K.C.M.G., M.D., President, in the Chair.

Wednesday, June 26th, 1907.

INAUGURAL ADDRESS.

THE first meeting of this newly-formed Society was held at 20, Hanover Square, W.

The PRESIDENT delivered an inaugural address in the presence of over one hundred Fellows and guests. He took as a subject the enormous strides that tropical medicine had made in the last ten years, and compared existing knowledge of the subject to-day with that contained in Davidson's book on *Hygiene and Diseases of Warm Climates*, which was published some fifteen years ago. Almost every subject contained in that work, he pointed out, had had to be entirely rewritten to-day, and whereas the word "mosquito" did not occur in the chapter on malaria there, hundreds of pages had had to be devoted to it and other insects in the volume on Tropical Diseases in the new Allbutt and Rolleston's *System of Medicine*. Similarly, with Malta fever, sleeping sickness, and other diseases, the same story could be told. In the old days, when a man came home from abroad, anxious to keep abreast of the times and to obtain information in the special branches in which he was interested, he had no place to go or no one to turn to. Now what a difference existed! Tropical schools and post graduate schools abounded, in which the newly-returned doctor could revel in work and discoveries to his heart's content and meet and converse with many of his compatriots. Still, there must always be a class of men passing through town and only having a little time to spare, to whom such institutions did not appeal, and to those such a Society as now had been founded would prove of the greatest value. Some exception had been taken to the original founding of the tropical schools, and the same feeling might creep in with regard to this Society, but as success had followed the former so also would it follow the latter.

LANTERN DEMONSTRATION.

At the conclusion of the address Dr. DANIELS gave a lantern demonstration of some of the commoner parasites that cause so many of the tropical ailments, and also exhibited some very interesting photographs of Central Africa, showing the home and breeding grounds of the malarial mosquitos.

VOTE OF THANKS.

The proceedings then concluded with a vote of thanks to the President.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—This Society held its final meeting on June 26th before amalgamating with the Royal Society of Medicine, Dr. LESLIE ROBERTS, President, in the chair. The following were among the exhibits:—Dr. A. EDDOWES: (1) A case of *Chronic pruriginous eczema* of long duration in a girl of 16. (2) A woman aged 56, with a *Scarring eruption* upon the left temple, resembling clinically a rodent ulcer, but it was probably syphilitic. (3) Photographs of a case of *Malignant syphilis* in which great destruction of the nose had occurred. Mr. T. J. P. HARTIGAN: (1) A man with *Lupus erythematosus* of the scalp of the atrophic type; the disease had lasted for forty years, and had not affected the general health at all. (2) The daughter of this patient with an acute eczematous eruption of the scalp and a history of having been bald

since the age of 10; it was possible that the whole condition might have been due to an old-standing favus, but the diagnosis of lupus erythematosus had also to be considered. (3) A man with the scar of a *Rodent ulcer* upon the left cheek which the exhibitor had treated with radium with marked success. (4) A little girl who had had a *Hairy Mole* upon the right cheek similarly treated. Mr. SPENCER HURLBUTT: A little boy, aged 4, with a single patch resembling psoriasis upon the abdomen, which had been present for four months and was said to have begun as a ringworm. In spite of treatment the patch had continued to spread, and now there was a question as to the possible tuberculous nature of the patch. The opinion of the members was divided with regard to the diagnosis of this case. Dr. G. NORMAN MEACHEN: A case of *Bromide eruption* in a child of 8 months, affecting primarily the vaccination scars and afterwards the thighs. It had not been possible to trace the administration of the drug. Dr. T. D. SAVILL: (1) A case of *Epidermolysis bullosa hereditaria* in a young woman, aged 25. The lower limbs were mainly affected, and the condition had been held in check with some success by the administration of small doses of ergot, given twice a day. The nails of both hands and feet were all deformed. (2) A young woman with *Exfoliation of the palms*, connected with hyperidrosis. The condition had manifested itself for three successive summers.

OBSTETRICAL SOCIETY OF LONDON.—At a meeting on July 3rd, Dr. H. R. SPENCER, President, in the chair, a case in which suppuration in an ovarian cyst was caused by the *Bacillus typhosus* was recorded by Dr. F. E. TAYLOR.

The patient, a 4-para, aged 37, was admitted into Chelsea Hospital for Women in April, 1907. She had lived in India for the last fifteen years, and had enjoyed good health until April, 1906, when she had an attack of typhoid fever. During convalescence a freely movable abdominal tumour was discovered. This gradually increased in size, but caused no further signs or symptoms. On opening the abdomen, the tumour was found to be a cyst of the left ovary, deeply congested or inflamed. There were some adhesions to the omentum only. The cyst was easily removed entire. Recovery was ideal. The tumour was a unilocular cyst, the size of a man's head, and held 2½ pints of greenish-yellow pus, free from odour. A pure culture of *Bacillus typhosus* was obtained from the pus.

The writer considered that the infection reached the cyst by way of the blood stream, and that the case demonstrated the pyogenetic properties of the typhoid bacillus. The PRESIDENT asked whether Widal's reaction was considered positive proof of the presence of typhoid fever. He knew that physicians did not regard it as such a few years ago. He was surprised to hear that the *Bacillus typhosus* could survive in ovarian fluid for twelve months. Mr. ALBAN DORAN referred to a case recorded by him of perforating ulcers of the ileum from obstruction after ovariotomy, published in the thirtieth volume of the *Transactions of the Pathological Society*. Dr. TAYLOR, in reply, said that the value of Widal's reaction in diagnosis greatly depended upon the technique of its performance, especially with regard to the dilution and time limit employed. The reaction was not absolutely infallible.—Miss ALDRICH-BLAKE showed a skeleton of an extrauterine fetus from a woman in whom there was no history suggestive of such a gestation.—Dr. LEWERS demonstrated two specimens of fibroid associated with bleeding after the menopause, and the PRESIDENT a calcified fibroid enucleated for bleeding fifteen years after oöphorectomy. This meeting was the last occasion on which the Society will assemble as an independent institution, as it has now become amalgamated with the Royal Society of Medicine.

A MEETING was held at University College, London, on July 3rd to promote the establishment of a residential hall for the men students of University College. It is expected that the directors of the Hampstead Garden Suburb Estate will grant a building lease of an acre of ground for 99 years at a ground rent of £80 a year. The cost of a building to accommodate sixty students is estimated at about £10,000 and of equipment about £2,000; it is proposed to raise this sum in shares or debentures of a limited company. A resolution approving of the scheme, moved by Sir William Ramsay, and seconded by the Provost (Dr. T. Gregory Foster), was carried *nem. con.*

REVIEWS.

TROPICAL MEDICINE.

VOLUME II, Part ii of ALLBUTT and ROLLESTON'S *System of Medicine*[1] is devoted to the tropical diseases and animal parasites, and the extent of the growth of this branch of medicine may be gauged by the fact that no fewer than 1,039 pages are required to contain all the material at hand. As is explained in the preface, the volume is entirely new in arrangement and largely so in substance, all the tropical diseases and animal parasites, whether limited to hot climates or not, being now grouped together. The services of zoologists of standing have been very wisely requisitioned to write special articles on subjects such as protozoology and entomology, so as to make the volume a complete work on tropical medicine. No formal or rigid classification of the diseases described has been attempted, and the growth of the subject is so rapid and changes so imminent, that this would certainly appear to be the wisest course that could be adopted. The contents of the volume consist of (1) an introduction by Sir Patrick Manson; (2) zoological articles; (3) tropical diseases; (4) animal parasites and the diseases they cause. The list of contributors, 33 in number, contains the names of so many eminent authorities that the different articles should represent the standard of our knowledge of them at the present day.

Sir Patrick Manson fittingly opens the volume with a very interesting introduction, explaining here that the term "Tropical Diseases," though in no sense scientific, is useful and practical, being based on experience and practical needs. The objections to the use of this convenient term, first brought into prominence by Sir Patrick himself, who has done so much for the advancement of this special branch of medicine, have always seemed rather pedantic. He calls attention to the important influence, as yet hardly sufficiently recognized, of modern travel and improved means of communication on the spread of diseases formerly confined to limited areas. This is a point on which too much stress can hardly be laid by those responsible for the health of tropical colonies. The zoological articles, which fill the next part of the volume, have a very direct bearing on many of the diseases that follow. The hope expressed by the editors of the System, that the space given up to these descriptive zoological articles will be fully justified, is bound to be fulfilled. Without them the work would have been deficient in one of its most important branches.

Professor Minchin writes the article on the Protozoa, giving a very clear account of the different groups. Apparently much confirmatory work still requires to be done in this difficult subject looking at it merely from the medical point of view. Schaudinn's work on the development of the halteridium in the mosquito, for example, has never been followed out by anyone but himself, and the trend of opinion at present is that he was working with mixed infections and confusing those different forms with stages of the cycle he described. If this be so, then the idea of a pigmented intracorpuscular parasite developing into a trypanosome falls to the ground, and we will have to go back to the simpler classification which prevailed before his statements upset all preconceived ideas. Again, the question of whether a spirochaete is a protozoon or a bacterium still appears to be *sub judice*, and there seems to be a certain amount of doubt in the minds of some as to whether the *Spirochaeta pallidum*, now called the *Treponema pallidum*, is really the cause of syphilis. Professor Minchin, of course, is not responsible for this, he gives the most recent work, with the author's name, for what it is worth, and does not here commit himself to criticism, and this is, of course, the correct attitude to assume in such an article. The Leishman-Donovan parasites he classifies in a suborder of the flagellata along with or near the genera Herpetomonas and Crithidia; until the complete life-history of this very important and interesting parasite is thoroughly worked out little more can be said.

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[1] *A System of Medicine by Many Writers.* Edited by Thomas Clifford Allbutt, M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College; and Humphry Davy Rolleston, M.A., M.D., F.R.C.P., Physician to St. George's Hospital and to the Victoria Hospital for Children, sometime Fellow of St. John's College, Cambridge. Vol. ii, Part II. Tropical Diseases and Animal Parasites. London: Macmillan and Co. New York: The Macmillan Co. 1907. (Med. 8vo, pp. 1073. 25s.)

The article on mosquitos is by Mr. Theobald. How closely medicine and entomology have come together is illustrated here. A few years ago even entomologists only recognized three or four genera of the Culicidae, but the discovery of the part certain of those insects play in the dissemination of malaria has given such an impetus to entomological research that no fewer than 82 genera are described in the present article; similarly many blood-sucking and other flies have been discovered and accurately described solely as a result of the impetus medicine has given to this branch of science.

The second part of the volume deals with the different tropical maladies. All the articles have been thoroughly revised or rewritten and brought up to date in every respect; this is especially noticeable in the articles on the affections of the skin, which are ably treated by Dr. MacLeod. This latter branch of medicine has been more or less neglected in the past as regards the tropics, but it has a very promising future before it. The last part of the volume, on the parasitic worms, has also been made very complete and the most recent nomenclature has been adopted, Sir Patrick Manson having had the valuable co-operation of Mr. Shipley in this task. A special article on Hydatid Disease, by Professor Stirling and Dr. Verco, completes this part and also the volume. We should have liked to mention some of the articles throughout the volume in detail, but space will not permit; it is sufficient to say that the hope of the editors that the volume will serve as a complete work on tropical medicine has been realized; it should, in fact, become the standard of the subject in the English language, both as a book of reference and for study.

DERMATOLOGY.

DERMATOLOGY has been dealt with in a classificatory and alphabetical manner. It has now been surveyed from the regional and topographical point of view[2] in SABOURAUD'S work, an English translation of which has been prepared by Mr. C. F. MARSHALL, and published under the title, *Elementary Manual of Regional Topographical Dermatology*. In it skin diseases, including syphilis, are described as they affect the various parts of the body. An ingenious table of contents in twelve diagrams gives the page indication required. That this plan may be of service is true enough, but, unfortunately, cutaneous affections do not, as a rule, affect one part of the body exclusively. Howbeit, the book is instructive, and will assist the student and practitioner in getting clues, at any rate, to diagnosis, and in this the illustrations will to some extent help them.

In some clinical lectures on practical therapeutics delivered recently before the University of Montpellier, Dr. G. RAUZIER has dealt with the treatment of syphilis.[3] After reviewing the general symptomatology, he considers treatment in the various phases of the disease. As to when treatment should commence he is, perhaps, overcautious, and personally he waits for secondary manifestations, an example that is certainly not to be imitated unless, of course, there be any doubt about the diagnosis of the chancre. In many cases there can be no doubt whatever, but at times there may be difficulties, a fact that was wittily put by Ricord, when he exclaimed: "L'étude du chancre aboutit à des résultats singuliers; voyez plutôt; quand on a vu cent chancres, on sait son chancre, c'est une affaire finie; et cependant quand on a vu mille chancres, on sait moins bien son chancre; et quand on en a vu dix mille, on n'y connaît plus rien du tout . . . On a acquis la science de ne pas savoir." This, like the premature news of Mark Twain's death, is a little exaggerated, but there is something in it. Dr. Rauzier touches on a variety of connected points such as the prevention of syphilis, syphilis and marriage, and so forth. He refers to the well-known statistics concerning the age when syphilis is most infective among prostitutes. Of course, the younger the prostitute the more chances there are of infection—50 in a 100 between 15 and 20, and only 6 in a 100 from 30 to 35. Though approximate these figures are worth bearing in mind, and conform in a general way to what one finds clinically.

The third edition of Dr. REINHOLD LEDERMANN'S very practical volume on the treatment of skin and venereal affections[4] may be commended to those who are conversant with German for ready reference, especially as it is provided with a good index. The first part, devoted to a general review of the subject and the various methods of treatment, contains much useful information well brought up to date. In the second portion the various skin diseases are reviewed and the appropriate treatment for each discussed. Soft sore, syphilis, and gonorrhoea are discussed in a thoroughly practical way. The illustrations are mainly reproductions of instruments. The book is written in a clear manner, which no doubt accounts for the success it has deservedly met with, in German-speaking countries especially.

The coloured presentation of histological details of diseases of the skin has advantages over plain photographic reproductions. The *Atlas*[5] just issued in English by Dr. MAX JOSEPH, of Berlin, and Dr. J. B. VAN DEVENTER, of the Netherlands East Indian Army, will be found very useful by those desiring to visualize the changes which occur in morbid skin conditions. The artistic part of the work has been ably carried out by Dr. VAN DEVENTER. The authors have included such a rare condition as hydrocystoma tuberosum multiplex, which is still another name for the old lymphangioma tuberosum multiplex of Kaposi, a better designation for which appears to be naevi cystepitheliomatosi disseminati. On page 8 "folliculitis" should be "folliclis," correctly printed in the plate. As to the extracellular situation of the lepra bacilli, this is not sufficiently insisted on by saying that the bacilli are sometimes found lying free in the lymphatics. As a matter of fact, the bacilli are both extracellular and intracellular; but the so-called lepra cells are frequently, perhaps mainly, nothing more nor less than gloeal masses. The authors and publishers are to be congratulated on the handsome volume—a useful companion to clinical atlases, and it is hoped that their labours and enterprise will not remain unrewarded in English-speaking countries.

An English edition of the Supplementary Dermochromes to Jacobi's Atlas[6] is before us, and it may be stated at once that the subjects depicted have been well selected. The dermochromes have been executed from models in various collections under the supervision of Dr. Hebert of Munich, who first devised the present method of delineation. With reference to Fig. 210, perhaps pigmentary syphilide would be a better designation than leucodermia syphilitica (neck). As to caries syphilitica ossium cranii (Fig. 226), this is practically never met with now in London, but in the old days it used to be not uncommon among soldiers from India.

THE PATHOLOGICAL ANATOMY OF THE EAR.

MR. A. H. CHEATLE'S Hunterian Lectures on *Some Points in the Surgical Anatomy of the Temporal Bone from Birth to Adult Life*[7] well deserved to be collected into a volume. They are based upon a series of five hundred specimens, and embrace all the points in the details of the anatomy of the temporal bone which are of practical importance to aural surgeons, including variations from the more typical conditions. The situation and relations of the mastoid antrum are dealt with in a most complete manner, and Mr. Cheatle emphasizes the fact that this antrum is in reality a definite part of the middle ear and not an outgrowth from it. He thus supports the position

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[2] *Elementary Manual of Regional Topographical Dermatology.* By R. Sabouraud. English translation by C. F. Marshall. London: Rebman. 1906. (Demy 8vo, pp. 660, 231 illustrations. 21s.)

[3] *Traitement de la Syphilis.* [The Treatment of Syphilis.] Par le Dr. G. Rauzier, Professeur adjoint à la Faculté de Médecine de Montpellier. Montpellier: Goulet et Fils. 1906. (Crown 8vo, pp. 65. Fr.1.)

[4] *Die Therapie der Haut- und Geschlechtskrankheiten.* [Treatment of Skin and Venereal Diseases.] Von Dr. Reinhold Ledermann. Third edition. Berlin: O. Coblentz. 1907. (Cr. 8vo, pp. 318; 35 illustrations. M. 6.)

[5] *Atlas of Cutaneous Morbid Histology.* Consisting of 53 coloured figures on 24 plates and text. By Dr. Max Joseph and J. B. Van Deventer. 1906. London: Archibald Constable and Co. (Price 18s. net.)

[6] *Portfolio of Dermochromes.* By Professor Jacobi. English adaptation of the text by J. J. Pringle, M.B., F.R.C.P. London: Rebman Ltd. 1906. (Demy 4to, 76 coloured illustrations. 31s. 6d.)

[7] *Some Points in the Surgical Anatomy of the Temporal Bone from Birth to Adult Life.* By A. H. Cheatle, F.R.C.S. London: J. and A. Churchill. 1907. (Demy 8vo, pp. 131, 112 figs. 5s.)

taken up by Professor Young and Dr. Milligan, of Manchester, when the Otological Society met in that city. Mr. Cheatle carefully defines all the dangers met with in operations on the middle ear and the mastoid area, and indicates the way by which they may be avoided. He goes, however, much further, and after describing the internal ear and its relations in a most clear and precise manner, the lucidity of which is enhanced by numerous excellent figures, he proceeds to show how the various parts of it may be operated upon with success and without running too much danger; indeed, everything is made to seem so simple that the uninitiated, reading the account of experts' work, may be inclined to underrate the dangers to which attention is drawn. The advances made in aural surgery during recent years have been so great that now operators do not hesitate to attack any part of the auditory organs either to remove diseased tissue or to relieve annoying symptoms; and, as may be gathered from these lectures, if the operator's knowledge of the anatomy is sufficient, and he uses due care, he may to-day hope to get results which were scarcely dreamt of a few years ago. It is, however, obvious that his pathway is beset with manifold dangers which he can scarcely escape if his knowledge, not only of the ordinary anatomy of the temporal bone, but also of its variations, is deficient. It is to be regretted that in his descriptions of the anatomical features of the young temporal bone Mr. Cheatle has not used terms which are now quite ordinarily accepted. It would certainly have been simpler to give to the two processes of the squamous part of the temporal bone which he has chosen to describe as the anterior and posterior triangular processes, their proper names of post-glenoid and post-auditory processes. The terms he uses denote nothing but shape, whilst those which are now in common use indicate the positions of the parts described, and are applicable to the temporal bones of all mammals. These, however, are small points and they detract little from the great value of the book, which contains, in a remarkably small space, a very great amount of most precise and valuable information.

Dr. Paul Manasse in a short monograph on chronic progressive labyrinthine deafness[8] makes a valuable contribution to the pathological anatomy of an affection that has received scant attention. His investigations, extending over a period of ten years, are based on the examination of 36 temporal bones obtained from 22 persons who had suffered from chronic progressive deafness. In 31 specimens he found changes in the labyrinth and auditory nerve. These, briefly stated, consisted in atrophy of the nervous elements and their replacement by new connective tissue. The regions involved were the cochlear duct, the spiral ganglion, the fine ramifications of the auditory nerve in the cochlea, and the trunk of the auditory nerve. The author considers the labyrinthine as perhaps the commonest form of chronic progressive deafness. The clinical reports of the cases examined microscopically by him were unfortunately incomplete, and consequently he has little to say regarding etiology and symptomatology. He suggests, however, that middle-ear inflammations probably play a part in the causation of the atrophy, for in those cases in which labyrinthine disease (which was always bilateral) was associated with a unilateral middle ear affection, the atrophy was more marked on the side with the middle-ear disease. He points out also the striking similarity of the anatomical changes found by him in chronic progressive labyrinthine deafness to those described by others as present in congenital deaf-mutism. The chief differences are that the nerve trunk, as a rule, is markedly affected in acquired deafness, while in the congenital form it is free, and that special changes are sometimes found in the labyrinth or central nervous system in congenital deafness which are absent in the acquired form.

TEXTBOOKS OF SURGERY.

The textbook of special surgery, edited by Professor Hochenegg,[9] is a new work based upon the well-known textbook of the late Professor Albert. The groundwork of the older work, which has become a classic, has been retained, but the whole of the text has been rewritten. The book is to appear in two volumes, and the first part of the first volume, which is now issued, treats of the surgical affections of the head and neck. One of the first impressions derived from its perusal is that it has been ably edited. The various articles are well balanced, and each subject appears to be given just that prominence its importance requires. The one criticism which it appears worth while to offer is that the historical reviews of various procedures might well be shortened, and in some instances omitted altogether, without detracting from the value of the whole. The modern textbook of surgery is tending to assume enormous proportions, and it would be well to unload its historical paragraphs on to special monographs. The subjects included in the first section of this volume are the affections of the skull and face and of the nose, mouth, and ear; in the second section the affections of the neck, including those of the thyroid gland, larynx and trachea, and oesophagus. The articles on the nose and the ear are specially excellent; each contains an adequate anatomical description of the parts concerned, with good illustrations, and the operative procedures described are those approved by the best authorities. There is room found throughout the book for numerous short records of clinical cases, and these very materially add to its value and interest. The chapters on diseases of the thyroid gland are comprehensive and more adequately illustrated than some of the others. The anatomical illustrations throughout are new and good; the others are less satisfactory. There is little value in pictures of tumours of vast size and entirely unusual characters; the drawing on page 132 is a typical example of a useless illustration, which has nevertheless found a place in more than one textbook. Much more useful to the student are pictures and photographs of typical conditions and of operative procedures. With the exception of this one matter of illustrations, the volume deserves nothing but praise, and is quite worthy of the distinguished school of surgery in Vienna to which its contributors belong.

In Professor Da Costa's new edition of his work on *Modern Surgery*,[10] we find fresh proof of the energy and zeal he has exercised in adapting his manual to the requirements of the surgical reader, whether student or young practitioner, of the present time. The book has been thoroughly revised, and many new illustrations have been added. The long list of extended sections and of new matter given in the preface shows that the author has taken note of the increasing number of additions to the strictly scientific questions, as well as to the therapeutics of modern surgery. As is implied by its title, the book deals with the views and facts of the most advanced surgery; presenting much that is new, the author does not hesitate to set the good example of omitting much that is old and obsolete. Though faulty and incomplete in its earlier editions, it has been so much improved in the course of a short time, that we can fairly repeat our opinion of the fourth edition that this work is one of the amplest and most authoritative works on modern surgery with which we are acquainted.

FORENSIC MEDICINE.

Dr. Marx, who is Assistant to Professor Strassmann of Berlin, and also a prison medical officer, in his *Einführung in die gerichtlichen Medizin für praktische Kriminalisten*,[11] presents four of his university lectures to a wider public. They make no pretence of covering the whole field of this department of medicine, but are expressly limited to descriptions of deaths by violence and of crimes of a specific sexual character. Further, they treat of these subjects only from the point of view of the medical man called in to give evidence at inquests and higher legal

[8] *Uber chronische, progressive, labyrinthäre Taubheit.* Von Paul Manasse. Wiesbaden: J. F. Bergmann, and Glasgow: F. Bauermeister. 1906. (Post 4to. pp. 75. 3s. 9d.)

[9] *Lehrbuch der speziellen Chirurgie, für Studierende und Artze.* Herausgegeben von Professer Dr. J. Hochenegg. [Textbook of Special Surgery, for Students and Practitioners. Edited by Professor D. J. Hochenegg.] Vol. i, Part I. Berlin and Vienna: Urban and Schwarzenberg. 1906. (Roy. 8vo., pp. 648; figs. 256. M.20.)

[10] *Modern Surgery, General and Operative.* By John Chalmers Da Costa, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Fifth edition, thoroughly revised and enlarged. Philadelphia and London: W. B. Saunders. 1907. (Roy. 8vo, pp. 1283; 872 illustrations. 24s.)

[11] *Einführung in die gerichtlichen Medizin für praktische Kriminalisten.* [Introduction to Forensic Medicine.] By Dr. Hugo Marx, Assistant Professor in Medical Jurisprudence, University of Berlin. Berlin: August Hirschwald. 1907. (Demy 8vo, pp. 140; 14 illustrations. M.2.40.)

courts as to objective facts, and are thus entirely practical in aim. In the first chapter the procedure which should be followed and the precautions which should be observed by the medical man at the place of the crime are discussed, and the facts which help to determine such things as the manner, cause, and time of death brought out. In the second chapter the various forms of violent deaths are described, the differentiating facts contrasted, and the numerous points—for example, the markings of the skin or clothing, the so-called "vital reaction" in wounds, by which it is possible to distinguish between *ante-mortem* and *post-mortem* wounds, etc., on any one of which the whole result of the trial may hinge—are indicated and illustrated by excellent photographs. The third chapter contains a brief account of the facts to be sought for in crimes of a sexual character; and the fourth and last —the microscopic and differentiating values of blood spots, hair, and seminal fluid are outlined. The book is not intended to replace larger textbooks, and is very elementary; but by its rigid limitation to practical objective facts, its careful treatment of some of these—such as the significance, according to their shape and and direction, of blood spots—it will doubtless be found of use to many who may at any time be required to investigate and give evidence upon cases of sudden or violent death.

NOTES ON BOOKS.

A Manual of Personal Hygiene,[1] the third edition of which has reached our hands, is a collection of essays by various American writers, issued under the editorship of Dr. W. L. PYLE of Philadelphia. Its general object is to set forth plainly the best methods of developing and maintaining physical and mental vigour. The information given is of a detailed character, and, being clearly expressed and not over-burdened with scientific phrases, a study of the contents of the volume would probably be useful to those for whom it is intended, the general public, and help to render them less susceptible to the guiles of quackery of all forms.

[1] *A Manual of Personal Hygiene.* Edited by Walter L. Pyle, A.M., M.D. Third edition. Revised and enlarged. Philadelphia and London: W. B. Saunders Company, 1907. (Demy octavo, pp. 451. Price 6s. 6d.)

MEDICAL AND SURGICAL APPLIANCES.

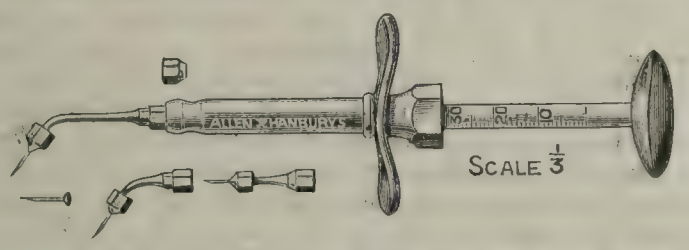
Syringe for Local Anaesthesia or Paraffin Injection.

Mr. CHARLES W. CATHCART, F.R.C.S. (Edinburgh), writes: When paraffin is being forced into the tissues to fill up deficiencies or give support, or when a solution of cocaine is being injected into dense fibrous tissue, as in Dupuytren's contraction of the palmar fascia, there is a great advantage in using a syringe in which the piston is driven on by the aid of a screw. Several devices have been employed by which the ordinary sliding movement can be transformed into a screwing one, but as I was not satisfied with any of them I asked Messrs. Young and Son, surgical instrument makers, Edinburgh, if they could not suggest a simple way of attaching at will the regulating screw nut—which is commonly fitted to the piston rod of hypodermic syringes—to the body of the syringe. As soon

as the screw nut was so fixed the piston would only move by being turned round. This they have done in a way which seems to me to be at once very simple and efficient. The screw nut working on the male screw thread of the piston rod is fitted with a small projecting male screw which works into a corresponding female screw at the end of the syringe. In order to bring the screwing movement into play, all that is necessary is to screw the regulating nut down to the syringe, and then continue to screw it till it enters the screw which is ready to receive it. This locks the piston rod to the syringe, and then, by turning the piston rod the solid metal plunger is forced on by a screwing movement. To unlock, one or two turns of the screw nut in the reverse direction sets it free. The screw nut can be used for its original purpose of checking the piston rod if desired, as locking does not take place unless the screw nut is screwed into the syringe. The syringe is otherwise the same as that usually made for paraffin injection or for infiltration anaesthesia. The accompanying illustration will make the description of the mechanism more easily followed. I have not had an opportunity of using the syringe for paraffin yet, but it worked admirably in a case of Dupuytren's contraction of the palmar fascia, where local anaesthesia was induced with cocaine.

A Syringe for Local Anaesthesia in Tooth Extraction.

Mr. J. W. PARE, M.D.Edin., L.D.S., R.C.S. (London) writes: Messrs. Allen and Hanburys have made for me a sterilizable metal syringe for the injection into the gum of local anaesthetics having the following advantages: (1) The barrel is metal and cannot burst even with the great force occasionally needed to overcome the resistance of the gum and alveolus. (2) The piston is solid; it is of the same diameter throughout, and so prevents the fluid passing back between it and the cylinder, and so ensures the ejection of the contents of the syringe. It also fits closely to the interior of the barrel and it is graduated in minims and cubic centimetres. (3) The washer is made of asbestos string which can be boiled and also easily renewed. The method of applying the asbestos is as follows: The string is wetted and then wound round the piston in parallel circles about five or more times. It should then be tucked into the nut and all three should be boiled *in situ*, a small amount of



common soda being added to the water to prevent corrosion of the metal. (4) The nozzles carrying the needles have been made of varying length and form, rendering them available for any position of the alveolar process. (5) The Schimmel needles and carriers have been much reduced in length to enable the operator to insert them conveniently into the gum even on the buccal surface of the superior third molar—a difficult procedure with any other syringe. If it is thought unnecessary to use a new needle for each patient, then a brass wire should be passed down the needle, needle-holder, and nozzle, and all three should be sterilized together without unscrewing. Should the needle-holder containing a needle be separated from the nozzle, it will be found to leak when the parts are screwed together a second time owing to the lead washer at the proximal end of the needle not making a tight joint. (6) A very serviceable wrench, 4½ in. long, to screw the nut and nozzles perfectly tight. The needle-holder can be screwed on with the fingers or any pliers. The whole instrument is supplied in a sterilizable metal box.

An Improved Galabin's Pessary.

Mr. ROBERT SIMPSON (Plymouth) writes: The illustration shows a modified form of Galabin's pessary which will be found to overcome a difficulty which arises in the use of this pessary as originally suggested. It frequently happens that when *in situ* the pessary loses its curve, and becomes straightened when acted upon by the heat of the body and by the use of hot vaginal douches, the patient is thus deprived of the very excellent support which this pessary otherwise affords. The modification which I have suggested is that it should be made of celluloid, instead of vulcanite, and with a copper wire running through its centre; it is by this means enabled to resist the action of heat and preserve its original curve, thus obviating the loss of support and consequent discomfort to the patient. Messrs. Arnold and Sons, of West Smithfield, have carried out my suggestions in a very admirable manner, and have made a pessary which has stood the test of prolonged use without in any way altering its shape.

THE amount received at the Mansion House up to July 5th, on account of the collections made in the churches of the metropolitan area on Hospital Sunday, totalled £40,000.

AMERICAN MEDICAL ASSOCIATION.

(Continued from the JOURNAL *for June 29th, page 1548).*

THE fifty-eighth annual session of the American Medical Association was held in Atlantic City, New Jersey, on June 4th, 5th, 6th, and 7th, under the presidency of Dr. Joseph D. Bryant, of New York.*

Oration on State Medicine.

The oration on State Medicine was delivered by Dr. Samuel G. Dixon, who took as his subject Law, the Foundation of State Medicine. After some introductory remarks, he said that just as it was wise in a general to be guided in all matters pertaining to the health of his forces by the advice of his medical officers, so it was the part of wisdom in lawmakers, when called on to legislate on subjects involving questions of health, hygiene, or medicine, to consult scientific medical men, who had devoted their lives faithfully and conscientiously to the study of these matters, rather than to lend an ear to the opinions of men learned in the law, perhaps, but entirely destitute of scientific knowledge, or to the vagaries of quacks and visionaries. It was a frequent remark that in a representative government health laws could not go far in advance of the intelligence of the people, all of whom, illiterate as well as educated, foolish as well as wise, had the right of suffrage. And, unfortunately, pseudo-scientists and acute legal gentlemen who were ready, for a consideration, to undertake to prove the worse the better cause on any medical or scientific subject, no matter how profound, swarmed in every lobby. Was not the suggestion worth consideration that the scientific men who in one way or another occupied official positions in connexion with a State Government should as a matter of course be called on for advice in the decision of all questions involving scientific knowledge and training? Let them give their legislators credit for, in the main, honestly striving to arrive at just conclusions on such questions. How were they to distinguish with any certainty between the false advisers and the true? How, unless the Government formally called on the scientific, thoroughly educated medical and sanitary experts connected with her various services and departments to consider questions of this kind coming before Congress, and to advise as to their solution in the interest of the nation's welfare, giving their reasons for such advice? If a provision of this kind were satisfactorily established in connexion with the national legislature, the States would not be long in following the example. Still better would be the proposition already advocated more than once by that Association, to establish a Department of Health, with a Secretary of Health at its head who should have a seat with the President's advisers, and who would make it one of his urgent duties to keep legislation of this character under close scrutiny, and to see that no member voted wrongly for lack of accurate information and definite explanation as to the merits of a question. The intelligence and knowledge of the masses in regard to such matters depended not only or mainly on the little smattering of sanitary knowledge acquired at school in early life, but on the frequent intelligent imparting of such knowledge by the medical man to his patients. By the sick bed, at the fireside, in the social circle, the physician had constant opportunities of conveying valuable and much-needed instruction and of combating the erroneous teaching of fanatics and charlatans. But no matter how great efforts they might make to educate the people, unless they had the written law to fall back on, State medicine, while it might be a beautiful science, could never be a practical art. They must fairly and squarely recognize the fact that, during conditions of ordinarily good public health, the great majority of mankind were neither wise enough voluntarily to submit to the requirements of sanitary law for the sake of preserving their own health and those of their loved ones, or righteous enough to be willing to exercise self-denial and repress the cravings of avarice to save others from sickness, suffering, and death. Laws they must have, and these laws must reach into all the relations of human life. As their basis they must start with the prompt and accurate registration of births, deaths, and marriages, and of the presence of transmissible and communicable diseases, and they must embrace the control of epidemics by domiciliary quarantine; the employment of prophylactics and disinfectants; the supervision of the transportation both of the quick and the dead, and the burial of the dead; the construction, heating, and ventilation of homes and public buildings; the protection of water supplies and the restoration to purity of their polluted streams and lakes; the manifold occupations and industries of the people; the protection of foodstuffs, including milk and other beverages, and of drugs, from adulteration and impurity; the education of physicians, dentists, and veterinarians, and the barring of their doors against the introduction of communicable diseases and pestilences from foreign countries. Only by the enactment of judicious legislation of this kind, and its rigid enforcement when enacted, could they hope to perpetuate a vigorous race of American parentage on this North American continent. The wise husbandman profited by the latest discoveries of science in order to determine the nature of the blight that was falling on his crops. He sought the diagnosis of the disease that was attacking his trees from the men who, having patiently acquired an education in science as applied to the study of the pathology of plant life, had devoted their lives to making further discoveries in this domain. He knew better than to apply to a lawyer, a cobbler, or a tailor for this knowledge. Yet when the life and health of the animal organism in the form of their loved ones were in peril, thousands of otherwise intelligent people in the land scorned the advice of the educated scientific physician and threw to the winds the means and appliances which science had taught might be of service in combating disease, pinning their faith rather to any nostrum seller, impudent charlatan, or miracle-monger who pretended to powers of healing. A still more reprehensible neglect to use the means which experience had placed in their hands for fighting disease was found in the case of the antivaccinationists. Another class of well-meaning but misguided persons who planted themselves directly in the way of advance in medical science were the antivivisectionists. These kind-hearted sentimentalists would permit thousands of children to die rather than that a few dogs should suffer. It afforded him sincere satisfaction to be able to announce that at the session of the Legislature of his own State which had just concluded, a Bill which would have absolutely put a stop to modern scientific research, and would have forbidden the continued manufacture of diphtheria antitoxin, vaccine virus, and all the curative and prophylactic serums in the State, after an obstinate struggle, was not only defeated but was dropped from the calendar. The orator proceeded to speak of recent sanitary legislation in Pennsylvania. For a State Board of Health there had been substituted a Department of Health with a single official at its head, under the title of Commissioner, such official having a seat in the Governor's Cabinet. The increase in effectiveness due to concentration of authority, coupled with absolute power of initiative, could readily be understood. In only two States and one district had this form of administration been adopted previously—namely, New York, Texas, and the District of Columbia, and with very satisfactory results. The addition of an advisory Board whose principal specified duty consists in the preparation of regulations in no way limited the executive powers of the Commissioner. Secondly, the Legislature placed under the charge of the Commissioner all the waters of the State, and laid on him the formidable duty of reclaiming them from pollution. Under the provisions of this Act no new system of waterworks for the supply of water to the public, and no addition to a system already existing, and no new sewerage system, or addition to a sewerage system already existing, might be made without a permit from the Commissioner, in whose office must be filed certified copies of the plans, surveys, and descriptions of such systems. In the third place, Pennsylvania was up to that time without a State system of registration of vital statistics. Its Central Bureau of Vital Statistics possessed little more than a paper existence. The Legislature removed this blot from the escutcheon of the State by passing an "Act for the Immediate Registration of Births and Deaths." In order to make this law effective in the rural districts it became necessary to appoint nearly a thousand local registrars and two hundred

* For advance proofs of the President's Address and of the Orations on Medicine and on State Medicine we are indebted to the courtesy of the Editor of the *Journal of the American Medical Association.*

subregistrars. This was accomplished before the end of the year, so that January 1st, 1908, found the machinery complete, and in six months from that time Pennsylvania was admitted to the list of registration States by the United States Census Bureau. During the year ending December 31st, 1906, 171,713 births and 122,484 deaths were reported, and the report indexed and bound for permanent future reference. While vital statistics, however, were most essential as the basis of all health work, they did not furnish the information needful to enable a department or a Board of health to do prompt executive work in repressing the spread of communicable diseases. For this object morbidity reports of that class of diseases were necessary, and those can only be satisfactorily collected through physicians themselves. For this purpose postal cards had been distributed to all the physicians practising in rural districts, approximating 8,000 in number. These cards contained on the left-hand margin a list of reportable diseases, and on the remainder of the face blanks for the various items of information desired.

Including the returns from cities and boroughs, the entire number of cases of communicable diseases reported during the first year was 87,952. By this method they had been able to keep their finger on the pulse of the State to its remotest corner. One of the first important pieces of information gleaned by the department from its morbidity reports was the extreme prevalence and fatal character of diphtheria in the State. He knew that many lives could be saved if the parents were able to provide the physicians with antitoxin. From this conviction it was but a step to the belief that it was the duty of the State to furnish it. For this purpose an immense number of dépôts had to be established and stocked and the physicians notified of the location of those stations. Reliable men had to be secured as distributors and instructed in the method of distribution. The system was inaugurated November 4th, 1905. Since November, 1905, up to March 1st, 1907, the number of cases treated was 4,635, and the number of deaths 445, or 9.6 per cent. The number of exposed persons who had received immunizing injections had been 2,813. The number of those who had contracted the disease after attempted immunization, all of whom recovered, had been 73. A liberal calculation showed that, on the average, each life saved cost the State a little over 6 dollars. The number of stations at present was 510. The clinical reports must, after a time, furnish data of immense value for the study of this method of treatment of diphtheria. A careful analysis of them was now being made from all the various standpoints. But morbidity reports were of little immediate practical use unless they possessed the machinery for repressing these outbreaks; and reports of nuisances causing pollution of streams had little value unless they had a force by which these nuisances might be abated. This machinery the department had created by the appointment of local health officers in the rural districts, responsible directly to the Department of Health, and dependent on it for their remuneration. There were about 700 such State officers supervised in their work by the sixty-six county medical inspectors. The morbidity cards, together with the routine correspondence from county medical inspectors, Boards of health, health officers or physicians or others, calling attention to the prevalence of communicable diseases at any particular point, or of disease-breeding nuisances, were first received by the chief medical inspector or one of his assistants. The morbidity reports were usually the first and most reliable indications of an incipient epidemic. Unless the circumstances were of an unusual character, they were at once replied to and the necessary instructions were issued from the medical division. The relationship of the county medical inspector to the department was that of a consultant, to be called on to diagnose doubtful cases, to investigate epidemics and to order such enforcement of the regulations as he might consider necessary to protect the public health. The relation of the State health officer to the department was that of a sanitary agent whose duties were to placard premises where communicable diseases had been reported by a physician; to establish quarantine in manner and form prescribed by the regulations of the department; to furnish the householder with circulars governing the care of the special disease reported; to disinfect, to raise quarantine and to remove placards when instructed by the county medical inspector; to report to the department any alleged nuisances, to make sanitary inspections, arrest offenders against the sanitary laws and regulations and order abatement of nuisances. Thus they had a State system of sanitary administration complete and symmetrical, its head at the seat of power in the State, untrammelled in the exercise of authority, reaching down through the subdivisions of county and township to the people, and a department in daily touch with every nook and corner of the State through its faithful allies, the physicians of the commonwealth. The orator proceeded to pass in review what had been recently accomplished by other States. Among the measures taken he mentioned that hospitals or sanatoriums for consumptives were projected, established, or aided in eight States: Massachusetts, Michigan, Missouri, Rhode Island, Wisconsin, Georgia, Indiana, New Hampshire. Acts to regulate the practice of medicine were established in fifteen States: Colorado, Indiana, Michigan, New York, Missouri, South Carolina, South Dakota, Tennessee, Texas, Washington, Wyoming, Florida, Michigan, North Dakota, and Wisconsin. Cigarette smoking was considered an evil of such magnitude as to require prohibition in five States: Arizona, Indiana, Nebraska, Oklahoma, and Pennsylvania. State laboratories for bacteriological or chemical analysis were established in four States: California, Connecticut, North Carolina, Wisconsin and Pennsylvania. The examination and registration of nurses was provided for in four States: California, Colorado, Connecticut, and New Jersey. Seven States adopted more stringent provisions to regulate the sale of poisons and narcotic drugs: Connecticut, Massachusetts, Minnesota, Nebraska, North Carolina, Texas, and Wyoming. An Act to provide a method for locating and destroying mosquito-breeding areas had been adopted by the State of New Jersey. The limitation of tuberculosis by curing the disease in its early stages, before it became a serious menace to the public health, especially in the case of the indigent, had received considerable attention at the hands of Legislatures. The scheme which they were outlining in Pennsylvania for this purpose was a comprehensive one. It contemplated utilizing the great forest reservations of the State for the purpose of hospital or sanatorium treatment. It was proposed to have two colonies at widely separated points that they might be accessible from different parts of the State. Instead of large and massive structures of brick or stone, they proposed to erect a large number of frame cottages, each of which would accommodate but a comparatively small number of patients. Somewhat apart from these would be an infirmary for those in the more advanced stage of the disease. In that building those to whom no hope of recovery could be held out would be afforded shelter and the comforts of a home in the closing days of life, and this extension of relief would be more than justified in the fact that they were removing them from their confined, crowded, ill-ventilated, and often impoverished homes at the time when they would be most in danger of communicating the disease to other members of the family and the greatest menace to the public.

After recovery the male patients would be offered opportunities for work in forestry, for which they would be entitled to their board and clothing, for a sufficient time to test their strength and the reality of the cure. Men whose previous occupations had been such as to create irritating dust, such as saw-sharpeners and stone-cutters, would be urged to seek permanent work of a less objectionable nature, and patients of both sexes would be counselled so far as possible to find opportunities for work in the country.

Entirely distinct from that enterprise, which was so elastic as to be capable of almost indefinite expansion, while it reduced expenditures to a minimum compatible with the best results, was their plan to establish in each of the sixty-six counties of the State a dispensary for tuberculosis, also under the direct supervision of the Department of Health. The object of these dispensaries would be twofold: First, that many patients who might be unable to leave their homes for a prolonged stay in a sanatorium could frequently come for advice in regard to matters of diet, medication when needed, and the open-air treatment, so far as it was possible of being carried on at home. Secondly, they would also receive careful instruction in all the precautions necessary to be observed for the protection of others; and their compliance with these

instructions would be made an essential to their continuing to receive State treatment. The dissemination of knowledge relating to the prevention and cure of tuberculosis and for the study of social and occupational conditions that predispose to its development was expressly noted in the Bill creating the system as one of its important objects. The Pennsylvania Legislature had just appropriated the sum of one million dollars, to be used in the manner indicated, at the discretion of the Department of Health, and had at the same time authorized the selection of one or two tracts of land, within the boundaries of State forestry reservations, to be devoted to this object.

LITERARY NOTES.

ON the initiative of M. d'Estournelle de Constant, a system of international correspondence is being organized by the Conciliation Internationale (119, rue de la Tour, Paris) for the purpose of bringing persons of different nationalities into direct communication with each other and diffusing a knowledge of foreign languages, the foreigner writing in French to his French correspondent who answers in the foreigner's language. *La Science au XXe Siècle* has published lists of English students who wish to be brought into relation with French correspondents on subjects of medicine, chemistry, and archaeology.

A second edition of the bibliography of Sir Thomas Browne's *Religio Medici*, compiled by Mr. Charles Williams of Norwich, has just been printed at Norwich for private circulation. It is compiled from the lists drawn up by Samuel Wilkin and Dr. W. A. Greenhill. The former, according to Mr. Williams, terminates with the edition printed in 1736, the latter with that published by Longmans in 1874. Since that date sixteen editions have issued from the press, making in all, to the end of 1906, fifty English and sixteen foreign. During the lifetime of the author 23 editions appeared in print, of these 13 were English and 10 foreign—7 Latin, 1 Dutch, 1 French, and 1 German. From 1682 to 1906, 43 editions have been published, of which 37 are English (including 4 American), 2 Latin, 2 Dutch, 1 French, and 1 German, making a total of 66 editions in 264 years. Mr. Williams states, on the authority of Browne himself, that the work had also been translated into High Dutch and Italian. There are in existence seven manuscript copies of the *Religio Medici* as it was originally composed, before the idea of publication had entered the mind of the author. The appearance of two anonymous editions in one year (1642), without Browne's knowledge or sanction and without his name, determined him to acknowledge and revise the work for the press, and the first authorized edition appeared in 1643. That edition was, according to Mr. Williams, certainly corrected and greatly improved by Sir Thomas Browne himself. He divided it into two parts and each part into sections. As to subsequent editions, said to have been "corrected and amended," they do not profess to contain any special corrections by the author's own hand, "for the same errors are continued from one edition to another, and, in some cases, most unauthorized alterations have been made, and even quotations from the works of other authors have been added to the text." It would appear that when once the author had given to the world in an authentic form a "true and full coppy" of his work, he took no further interest in the matter. He did not even take the trouble to see that the Errata, which had been specially noted on a separate leaf, were corrected in later editions, and in his old age he spoke of the book slightingly as "a piece of mine published long ago."

In the *France Médicale* of May 25th M. Camille Viellard gives an account of operation for cataract taken from the *Chronique et Annales de Gilles le Muisit*, published by M. Henri Lemaitre for the Société de l'Histoire de France in 1905. Gilles, who was elected Abbot of Saint-Martin of Tournai in 1331, tells there the story of a double operation for cataract which he underwent successfully in 1351, when he was 80 years of age. About 1345 the abbot, who till then had enjoyed excellent health, began to suffer from defective vision. So complete did his blindness become that he was compelled to give up active life, and was unable even to say mass. To this enforced leisure we owe his chronicles. He says he bore his affliction with patience till a German "master" came to Tournai who, after examining his eyes, promised, with the help of God, to cure him. The first eye was operated upon on the Sunday after the Exaltation of the Holy Cross, which fell on September 18th, the other one five days afterwards. The operation was, he says, almost painless, and consisted in the introduction into the eye of a certain instrument shaped like a needle with which the veil that shut off his sight was torn. The abbot recovered his sight, not certainly (he says) as it was in his youth, but to a degree suitable to his age. He could see the sky, the sun, the moon, the stars, but he could not recognize persons. Nor could he read or write, but he could get about sufficiently for his needs. He had been blind about three years. From a poem written by the worthy abbot in celebration of the event, we learn that the surgeon's name was Jehan de Meence (Mayence), and that the needle he used was made of silver. In a manuscript of Gilles's *Chronique*, which M. Vieillard thinks may have been written at his dictation, there is a small sketch of the operation which may have been made by some one who was present at the operation. The patient, is shown seated on a chair with his hands resting on its arms. The head is inclined towards the right, so as to allow the operator to have free access to the left eye. The surgeon with his left hand supports the patient's chin while he is about to introduce the needle which he holds in his right hand. A young assistant holds the patient's arm with his right hand, while with his left arm he fixes his head. In the JOURNAL of July 6th Professor Hirschberg was quoted as saying that the first illustration of a cataract operation was to be found in Lawrence Heister's treatise on surgery published in the early part of the eighteenth century. If M. Vieillard is right, the operation was illustrated four centuries earlier. It appears that there is an illustration of cataract extraction, as described by Ambroise Paré in 1652, in Jacques Guillemeau's *Surgery*; this is reproduced in M. Alfred Franklin's *Variétés Chirurgicales*.

Some of our readers may be interested to learn of the existence of the Manorial Society, founded in 1906, which is described as the "only society giving separate organized attention to manorial records and institutions." The society consists of Fellows (lords and ladies and seneschals or stewards of manors, etc.) and Associates. In addition to Fellows and Associates, persons who do not wish to be enrolled as members, but who are sufficiently interested in the aims and objects of the Society to support it by a small subscription, and thereby keep in touch with its work and share in its privileges, can be enrolled as correspondents. A correspondent of the Society is entitled to copies of the annual report, and to certain of the other books and pamphlets published by the Society, and he is invited to enter into correspondence with the Society upon matters within the scope of its objects. In this connexion it may be pointed out that the intrinsic value of the Society's publications may considerably exceed the amount of the annual subscriptions of correspondents and associates. The objects are: (*a*) The aiding and encouragement of the safe keeping and the study of Court Rolls and other Manorial Records. (*b*) The keeping of a register or Roll of Manors, etc., and of Manorial Lords and Seneschals, or other chief officials. (*c*) The collection of printed books, pamphlets, etc., concerning manors, etc., and of manuscripts, comprising Court Rolls, deeds, and other documents relating thereto; and, when necessary, to cause such manuscripts, etc., to be deciphered, translated, and reproduced; and also to compile a bibliographical record of manorial literature. The publication of Court Rolls, particularly those of an early date, as suggested by the late Professor Maitland, receives special attention. (*d*) Assistance in obtaining facilities for access to Manorial Court Rolls with reference to their value as sources of genealogical information, especially as regards periods anterior to the establishment of parish registers. The Chairman of the Council is the Earl of Chichester, and the Registrar is Mr. Charles Greenwood, F.C.I.S. The Consulting Palaeographist is Mr. M. S. Giuseppi, F.S.A., the Archivist Mr. N. J. Hone, the Annalist Mr. Charles L'Estrange, the Genealogist Mr. S. A. Bartlett, and the Librarian Mr. W. A. Latham. The address of the Society is 1, Mitre Court Buildings, Temple, E.C.

RECENT ADVANCES IN STATISTICAL METHODS.

IT has long been known that many of the problems with which the medical profession has to deal can only be solved by an application of statistical processes. Unfortunately the methods employed have not been sufficiently refined to permit of definite conclusions being attained, and it is largely a result of this defect that antivaccinators and other faddists have influenced some few persons not wholly uneducated.

In the last fifteen years, thanks to the work of Professor Karl Pearson and his pupils, great progress has been made, and it can fairly be said that this school has transformed statistics into a branch of exact science. As it is probable that these methods will soon be applied on a large scale to medical problems, it seems desirable to give a sketch of the subject as free from technicalities as possible, so that readers of memoirs and reviews in which modern statistical notation is employed may at least have some idea of the meaning of the various terms used.

If we consider any measurable character in a sample of the population—for example, stature or the weight of the heart—we find that the individual measurements differ, that there is variation, and we first require some way of describing this variability. For this purpose, biometricians use the "Standard Deviation," a function defined by the following expression:

$$\text{The standard deviation } (\sigma) = \sqrt{\frac{n_1 a_1^2 + n_2 a_2^2 + n_3 a_3^2 + \dots}{N.}}$$

Where n_1 n_2, etc., are the numbers of individuals having the same measurement, and a_1 a_2, etc., are the number of units separating each group value from the mean value of the whole sample N. Suppose in a sample of 100 flowers 15 individuals had 5 petals, 30 had 6; 30, 7; 20, 4, and 5, 3; then the arithmetic mean is 5 6 petals, and the standard deviation:

$$\sqrt{\left(\frac{15 \times (-.6)^2 + 30\,(.4)^2 + 30\,(1\,4)^2 + 20\,(-1\,6)^2 + 5\,(-2\,6)^2}{100}\right)}$$

or:

$$\sqrt{1.54} = 1.241 \text{ (approx.)}.$$

Since the greater the distance between any group value and the mean the larger the number by which the total of individuals in the group is multiplied, the standard deviation gives us some knowledge as to how the observations are distributed about the mean; the more they are scattered the larger the standard deviation, as is shown in Diagram I, which represents two distributions having the same mean but different standard deviations. The dotted curve, whose standard deviation is the greater, evidently corresponds to a more scattered arrangement of the observations.

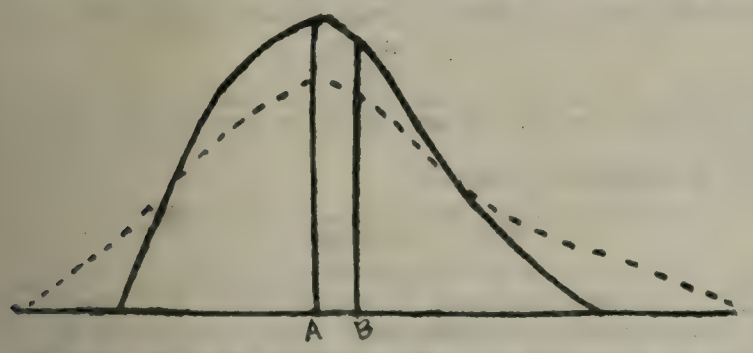


Diagram 1.—Two distributions having the same mode (A) and mean (B), but different standard deviations, that of the dotted curve being the greater. (After Elderton.)

In considering the respective degrees of variation in two samples, we cannot, of course, compare the standard deviations themselves unless the means coincide; when this is not the case, we reduce to a common form by dividing each standard deviation by its corresponding mean and multiplying by 100. For example:

The S.D. of 413 hearts was 1.946 oz.; the mean, 11.24 oz.
" " kidneys (pairs) was 2.016 oz.; the mean, 12.01 oz.

$$\frac{1.946}{11.24} \times 100 = 17.30, \text{ and } \frac{2\,016}{12.01} = 16.80.$$

The variabilities are, accordingly, in the ratio of 17.3 : 16.8.

$\frac{\text{The standard deviation}}{\text{Mean}} \times 100$ is termed the "coefficient of variation."

If we wish to know more exactly the manner in which the various observations are arranged, it is necessary to find some curve which represents graphically the distribution of the variates; such a diagram is called a "frequency curve," and represents the formula or law of distribution obeyed by the statistics. The simplest case would be when the number of individuals having values in excess or defect of the mean increased quite regularly from zero up to a maximum at the mean (Diagram 2). In such a case the value which most frequently occurs, the "mode," as it is called, coincides with the arithmetic mean and the curve is symmetrical. If, however, the mode and mean do not coincide the curve will be more or less asymmetrical or "skew," and its skewness (Diagrams 3 and 4) can be measured by dividing the difference between mean and mode by the standard deviation.

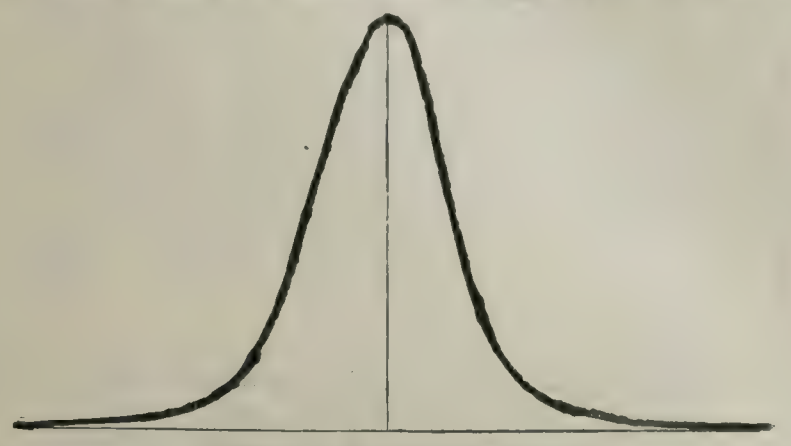


Diagram 2.—A symmetrical curve.

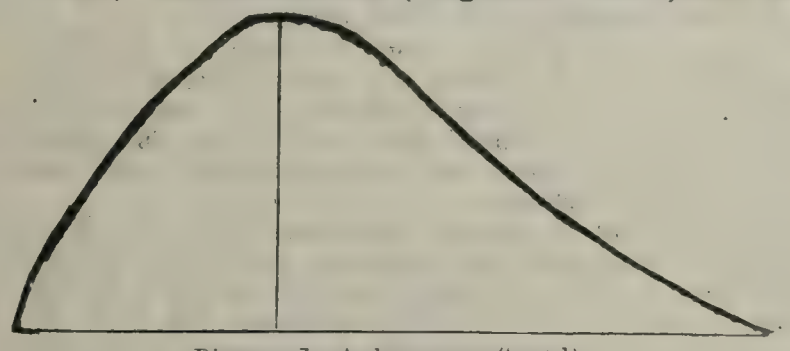


Diagram 3.—A skew curve (type 1).

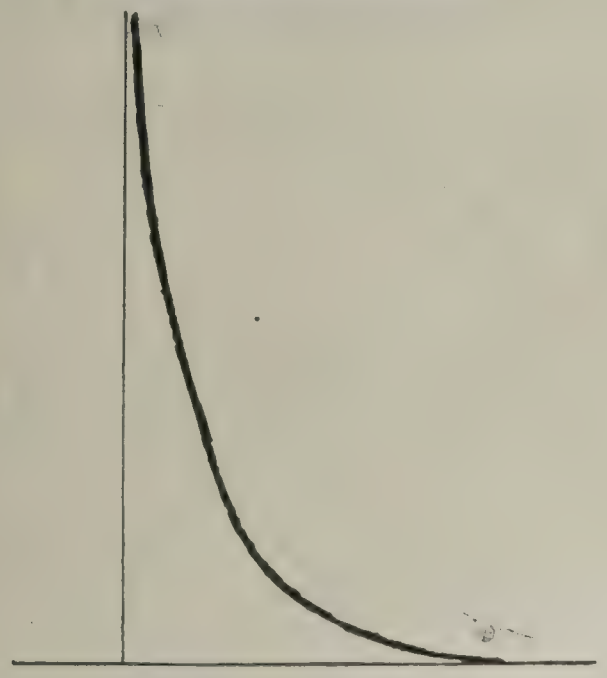


Diagram 4.—A skew curve (type 3).

$$\text{Skewness} = \frac{\text{Mean} - \text{mode}}{\text{S.D.}}$$

That this is a reasonable measure will be seen on referring to Diagram 1; the dotted curve with its larger standard deviation is evidently more nearly symmetrical than the other.

It has been found in practice that most (homogeneous) frequency distributions can be adequately described by using one of seven curves. The way in which these curves were deduced need not detain us,* their graphical characters may be summarized in this way:

1. The "normal curve of error." Symmetrical; unlimited in either direction.
2. Limited range in both directions; skew (Pearson's type 1).

* See Palin Elderton's *Frequency Curves and Correlation*, p. 36, etc.

TABLE I.

Kidneys in Ounces. Mean 12.01 oz. S.D. 2.016 oz.	Hearts in Ounces.* Mean 11.24 oz. S.D. 1.916 oz.									
	7.125-8.125	8.125-9.125	9.125-10.125	10.125-11.125	11.125-12.125	12.125-13.125	13.125-14.125	14.125-15.125	15.125-16.125	Totals.
7.125- 8.125	1	3	—	2	2	1	—	—	—	9
8.125- 9.125	1	6	5	1	3	1	—	—	—	17
9.125-10.125	7	7	6	14	6	4	3	1	1	49
10.125-11.125	2	8	23	17	11	4	2	2	1	70
11.125-12.125	1	5	11	22	19	12	7	3	1	81
12.125-13.125	1	4	17	12	11	13	8	1	1	68
13.125-14.125	3	2	8	7	12	9	7	4	2	54
14.125-15.125	1	—	4	3	5	5	8	2	5	33
15.125-16.125	1	1	1	1	4	2	7	4	3	24
16.125-17.125	—	—	—	1	2	1	—	2	1	7
17.125-18.125	—	—	—	—	1	—	—	—	—	1
Totals ...	18	36	75	80	76	52	42	19	15	413

* Greenwood, *Biometrika*, vol. iii, p. 78.

3. Limited range in both directions; symmetrical (Pearson's type 2).
4. Limited range in one direction; skew (Pearson's type 3).
5. Unlimited range; skew (type 4).
6. Limited range in one direction; skew (type 5).
7. Limited range in one direction; skew (type 6).

The advantage of these curves in practice is that they enable us to describe briefly the type and range of variation with respect to any character in a manner more accurate than any hitherto employed. They also permit us to form some idea of the factors involved in the particular form of variation.

We next have to consider correlated variation. If we take the case of associated organs, for example, heart and kidneys, and obtain the weights of several pairs, we may find no relation between the variables; but if, on the average, a large heart goes with large kidneys, or when one organ is large the associated organs are small, then we can infer that the variables are positively or negatively

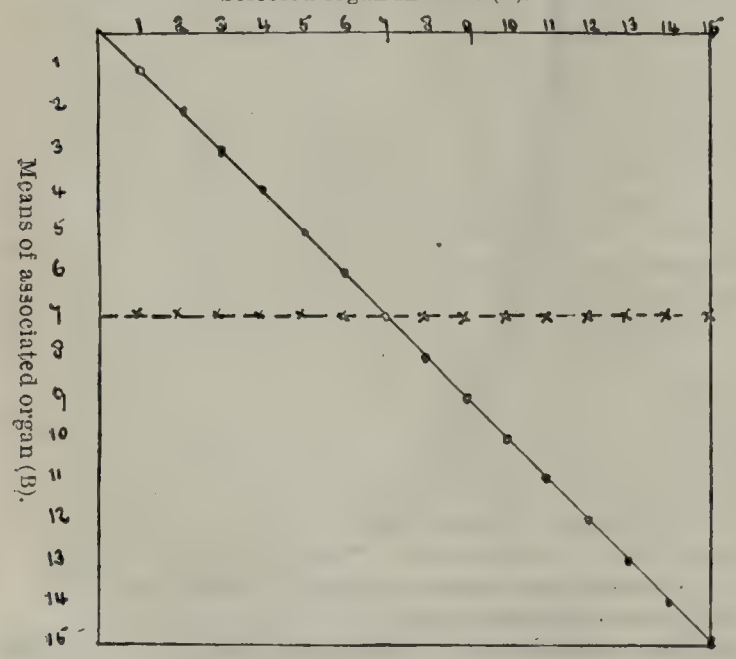


Diagram 5.—A regression line.

correlated, and the problem is to obtain a quantitative measure of this relationship.

The simplest case would be when the characters or organs are each measured in the same unit, and have the same mean and standard deviation.

If we have measured a number of pairs, the results may be tabled in this way (Table I), corresponding to the value a in one organ, we have the values b_1, b_2, b_3, b_4, etc., of the associated organ, and similarly for other values of the selected character. We can now plot on a diagram the mean values of B's associated with each value of A, and in this way obtain a series of points distributed over the diagram. If all these points lie on a straight line, or a straight line can be fitted to them, we obtain a measure of the correlation. Suppose the relationship to be complete, then the mean value of B's associated with A's containing one unit must be 1; that associated with A = 2, 2, etc., and the line through the mean B's is a diagonal of the figure (Diagram 5) inclined at an angle of 45° to the horizontal. If, on the other hand, there is no relationship, the mean value of B, associated with any group of A's, is simply the mean of all the B's, and the line becomes parallel with the base. Therefore, the slope of this line, called the "regression line," is a measure of the correlation.

If the two organs have not the same standard deviation, that of the A's being σ, of the B's σ_1, then the slope is simply altered in the ratio of $\frac{\sigma_1}{\sigma}$ and if we call it r in the first case it now becomes $\frac{\sigma_1}{\sigma}r$. This r is called the "Coefficient of Correlation," and may take any value between 0 and $\pm$ 1; if it is positive the characters increase together; if negative, as one increases the other decreases. The value of r is readily determined. For instance, take the case of heart and kidneys in respect of weight. A table of pairs (Table I) is formed, and the mean and S.D. of each variable calculated. The deviations of each subgroup from the means of the respective organs are multiplied together and by the number of individuals in the subgroup, and "r" is then found from the equation.

$$r = \frac{\Sigma(x.y)}{n\sigma_1\sigma_2}$$

Where $\Sigma(xy)$ is the sum of all the products of deviations; n is the total number of pairs; σ_1 is the S.D. of one variable and σ_2 that of the other.

In the example, we have:

$$r = \frac{1 \times (-3.615) \times (-4.385) + 3 \times (-2.615) \times (-4.385) + \text{etc.}}{413 \times 1.946 \times 2.016}$$
$$= .4004 \pm .0279.$$

This method can always be used when the characters are quantitatively measurable, and instances of its application to medical problems are the following:

Characters.	Correlation.	Observer.
Birth-rate and cancer death-rate ...	$-.563 \pm .089$	Heron.
Prevalence of phthisis and birth-rate	$.594 \pm .084$	Heron.
Hospital admissions for acute rheumatism and August rainfall	$-.472 \pm .094$	Greenwood and Thompson.
Ditto and barometric height ...	$.3576 \pm .1056$	Greenwood and Thompson.
Weight and length of new-born male infant	$.644 \pm .012$	Pearson.

Useful as the method just described undoubtedly is, many cases present themselves, especially in medical inquiries, where the characters can hardly be measured in terms of a quantitative scale. Vaccination statistics afford an excellent illustration. We wish to obtain an exact measure of the prophylactic value of vaccination,

and we can reduce neither the degrees of effective vaccination nor the varying severity of small-pox to terms of an exact quantitative scale.* We can, however, always divide our returns into four broad classes, as shown in Table II. If the reader compares this with the analysis of material in Table I, it will be seen that while in the latter the observations are grouped in a number of small, finely-graduated classes, in the former there is a wide division into two "upper" and two "lower" groups. Given such a classification, it is possible to show that the value of "r" can be deduced, provided certain conditions, mostly realized in practice, are fulfilled.† The proof of this statement is complex, but its arithmetical application not much more laborious than in the quantitative type of investigation.

In the example of Table II the correlation between degree of effective vaccination and strength to resist small-pox was found to be 0.7692 ± 0.0124—a very high value.

TABLE II.—*Strength to Resist Small-pox when Incurred* *

Degree of Effective Vaccination.	Cicatrix.	Recoveries.	Deaths.	Total.
	Present	3,951	200	4,151
	Absent	273	274	552
	Total	4,220	474	4,703

* Sheffield outbreak 1887-8. (See W. R. Macdonell, *Biometrika*, vol. i, p. 375. For analysis of 1893 epidemic, M.A.B. returns, see K. Pearson, *Phil. Trans.* A., vol. 193, p, 43.)

Another instance is the effectiveness of diphtheria antitoxin serum (Table III) where the correlation between the use of antitoxin and recovery works out at $.4708 \pm .0292$.

Lastly, we have to consider data in which not only have we no quantitative scale, but, further, the observations cannot be ranged in "upper" and "lower" groups (recoveries, deaths, with cicatrix, without cicatrix, etc.), as in the last two illustrations. An example of this sort would be an answer to the question whether, on the average, sons tend to adopt the professions of their fathers, for it is plain that we can adopt no quantitative scale of professions. The fundamental conception which is the starting-point of such an inquiry is simple. We take a sample of men classified in professions and their respective parents also grouped in professions, and form a table similar to those already given, except that the order of grouping is quite arbitrary. We have:

		Profession of Sons.				
		Church.	Army.	Law.	—	—
Profession of Fathers.	Church ..	a	c_1	a_2	a_3	etc.
	Army	b	b_1	b_2	b_3	etc.
	Law	c	c_1	c_2	c_3	etc.

TABLE III.—*Metropolitan Asylums Board "Report," 1896.**

Laryngeal Cases.	Recoveries.	Deaths.	Totals.
With antitoxin, 1896 ..	319	143	462
Without antitoxin, 1894 ..	177	289	466
Totals	496	432	928

* Pearson, *Phil. Trans.*, A, vol. cxcv, p. 44.

Now let us imagine that in 1,000 sons 50 are lawyers, and in the 1,000 fathers, 60 are lawyers. Then the chance of any son, at random, being a lawyer is—

$$\frac{50}{1000}$$

and of any father being a lawyer—

$$\frac{60}{1000}$$

Now *if these events are independent*, the chance of their happening together, of a lawyer father having a lawyer son, is—

$$\frac{50 \times 60}{1000 \times 1000}$$

and in the whole number of cases this should occur—

$$1000 \times \frac{50 \times 60}{(1000)^2} \text{ times} = 3.$$

But if in fact the observed number of cases in which father and son are both lawyers is greater (or less) than 3, the inference is that the events are not independent but associated or "contingent." This gives a clue to the solution of such problems. The difference between the most probable value (on the hypothesis of no relationship between the events) and the observed value for each group is found, squared, and divided by the theoretical value; the results are added together and divided by the whole number of observations. If we call the result ϕ then—

$$\sqrt{\frac{\phi^2}{1+\phi^2}}$$

is called the "first coefficient of contingency" (C_1), and is a measure of the relationship between the two variables. It can be proved that with sufficiently fine grouping the value obtained in this way approximates to that of r found by the ordinary method.

We have therefore a method of measuring relationship between two variables when (1) a quantitative scale is given, (2) the material is divisible into four groups, (3) when no quantitative order can be assigned. The extension of these ideas to more than two variables cannot be discussed here.

The importance of the question of "probable errors" is so great that we must not omit a few words as to the principle involved.

Were we able to measure the whole population or make an infinite number of trials, the statistical constants obtained would be accurate; but in practice we can only get a sample. What, then, is the chance that in a second sample of the same material the constants deduced will not differ from those calculated on the basis of the first sample by more than a specified amount? In practice what we determine is the deviation which is as likely as not to occur, and this is called the "probable error." For instance, in the example of vaccination, the value of r (.7692) had a "probable error" of $\pm .0124$. This means that in a second sample of the same material deviations as great as or greater than $\pm .0124$ are as likely as not to occur; the chances against deviations as great as or greater than $2 \times .0124$ are 4.5 to 1, against a deviation of as much as or more than five times the probable error 1310:1, and so on.

It is clear, therefore, that the magnitude of the "probable error" is a criterion of the weight to be attached to any statistical constant. Since the exact degree of improbability to be regarded as decisive is a matter of individual opinion, no fixed rule can be framed; most biometricians hold that a constant less than three times the size of its "probable error" is hardly likely to be significant, and that, unless two constants differ by three times the "probable error" of the difference, no argument can be based upon their ostensible inequality.

The method of calculating "probable errors" must be passed over; formulae have been obtained for the errors of all important constants and reference should be made to the papers cited below.

It is essential to remember that statistical constants unaccompanied by their "probable errors" are of no scientific importance.

In conclusion, it is certain that immense service can be rendered to medical science by the adoption of biometric methods. It is idle to say that these things are of interest only to mathematicians. That in developing the processes we need mathematical reasoning is true; it is also true that the construction of a microscope involves mathematical reasoning. A bacteriologist, however, does not consider himself freed from the obligation of using a microscope because he knows nothing of mathematical physics, and a statistician is not justified in neglecting the instruments of biometry because he is not well acquainted with their theoretical basis.

It is especially necessary that medical men should use these methods of research, because often they, and they

* See, however, *Biometrika*, vol. v, pp. 361 et seq., and vol. iv, pp. 105 et seq.

† For complete account see Pearson, *Phil. Trans.*, A., vol. cxcv, pp. 1, etc. An elementary sketch of the principle involved will be found in Pearson's *Grammar of Science*, second edition, 1900, pp. 432, etc.

alone, can estimate rightly the nature of the material to be analysed, and so avoid the loss of time which results from the application of elaborate processes to unreliable data. It is undesirable that we should have in the future two classes of investigators, statisticians who know little of medicine and medical men who know nothing of statistics.

BIBLIOGRAPHY.

TEXTBOOKS.

Two textbooks of biometric methods have appeared: *Statistical Methods, with Special Reference to Biological Variation*, by C. B. Davenport, 2nd edition, 1904 (Chapman and Hall); *Frequency Curves and Correlation*, by W. Palin Elderton (C. and E. Layton).

[Professor Davenport's book is clearly written, and contains a useful collection of tables; the theoretical parts are, however very inadequate, and some misprints are to be found; it is also not quite up to date. The work is perhaps more suitable for medical readers than the second book mentioned. Mr. Elderton gives a good and clear account of the more important theoretical points, but it is necessary for the reader to have a fair knowledge of the infinitesimal calculus, and the illustrations being exclusively actuarial are not very illuminating to the layman.]

MEMOIRS.

The following are some important papers:

Frequency Curves.

1. Pearson, K., Skew Variation in Homogeneous Material, *Phil. Trans.*, A., vol. clxxxvi, p. 343, and vol. cxcvii, p. 443.

Correlation.

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Contingency.

3. Pearson, K., On the Theory of Contingency and its Relation to Association and Normal Correlation, *Drapers' Company Research Memoirs*, Biometric Series 1.

Probable Errors.

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EXAMPLES OF MEDICAL INTEREST.

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THE VITAL STATISTICS OF TEN YEARS.

(*Continued from p. 36.*)

TUBERCULOSIS.

In continuation of the review of the Decennial Supplement to the Registrar-General's Report, we may now refer to the section dealing with tuberculosis. It contains an interesting summary of the statistics during the last forty years, and a comparison of those of the decennia 1851-60 and 1891-1900. There are two sources of fallacy in any such summary or comparison, the one being due to looseness of nomenclature in death certificates which has steadily diminished since civil registration was instituted, and the other to changes in the method of classification. Corrections have been as far as possible made for the latter in the tables from which we shall quote. They have also been corrected on the basis of the age and sex constitution of the population at the census 1901.

There has been a very remarkable decline in the aggregate number of deaths attributed to tuberculosis in all its forms, whether the statistics be compared year by year or decennium by decennium, although in the former case the curve shows a good many inequalities in its descent. The statistics for all ages, for both sexes, and for each sex separately are shown in Table V, from which it is also seen that the decline has been greater in females than in males:

TABLE V.—*Tuberculosis (All Forms) Annual Mortality per Million Living Among Persons, and Males and Females in Successive Decennia (all ages).*

	1851-60.	1861-70.	1871-80.	1881-90.	1891-1900.
Persons ...	3,457	3,239	2,862	2,429	2,010
Male ...	3,452	3,327	3,053	2,633	2,265
Female ..	3,462	3,156	2,684	2,238	1,771

In the decennial period 1851-60 the death-rate of 3,457 per million living meant that tuberculosis was the cause of 15·6 per cent. of the deaths from all causes, whereas in 1891-1900 the percentage had fallen to 11.0. When all the corrections that can legitimately be allowed have been made it appears that the total death-rate from tuberculosis has fallen by nearly 38 per cent. within the last forty years, in the course of which period considerable changes have taken place in the fatality of its several forms. Whilst, on the one hand, tuberculosis of the lung, the brain, and the peritoneum is now less destructive than formerly, on the other hand, there has been a significant increase in the fatality of the other manifestations of tuberculosis, including general tuberculosis and scrofula, as well as tuberculous affections of the bones, joints, and other organs not mentioned above. In the ten years 1891-1900, out of every hundred deaths from tuberculosis 69 were ascribed to phthisis, 11 to tuberculous meningitis, 11 to tuberculous peritonitis (formerly called tabes mesenterica), and 9 to other forms of tuberculosis.

Table VI shows the mortality rates from various forms of tuberculosis at all ages during four decennia.

TABLE VI.—*Tuberculosis (Various Forms) Annual Mortality per Million Living; Both Sexes and All Ages.*

	1861-70.	1871-80.	1881-90.	1891-1900.
All forms	3,239	2,862	2,429	2,010
Phthisis	2,545	2,190	1,775	1,391
Tuberculous meningitis ..	310	284	234	216
Tuberculous peritonitis ..	266	285	257	217
Other tuberculous diseases ..	118	103	163	186

Phthisis.

Although pulmonary tuberculosis was in the last decennium still by far the most fatal form of tuberculous disease, the death-rate attributed to it has diminished very much. The decline has been from an average of 2,730 per million in the decennium 1851-60 to 1,391 in the last decennium; the fall has therefore amounted to 49 per cent. within fifty years; even allowing for the fact that in the earlier decennia there may have been some looseness in diagnosis there can be no doubt that the decline has been very considerable. This decline has been more marked in females, especially in adult females, than in males. In both sexes it is with the approach of maturity that the real liability to death by phthisis begins, and this is true of recent as well as of earlier years. Thus during the last decennium, at the age-group 15 to 20 years, males succumbed to phthisis in the proportion of 995, and females in the proportion of 1,290, per million living at that age, From this age the mortality increases steadily as one decade succeeds another, attaining the maximum at the age 45 to 55 in men, and ten years earlier—namely, 35 to 45—in women, at which ages respectively the rates were 3,144 and 2,121 per million. The mortality thereafter declines, at first slowly and then more rapidly, until the close of life. There are so many fallacies in the diagnosis of pulmonary tuberculosis in young children that not very much reliance can be placed on the deduction that females appear to be less liable than males to die of phthisis at ages under 5 years. The statements that females are more liable at ages from 5 to 20 years and again less liable at subsequent ages may be accepted with more confidence.

Comparing the statistics for 1851-60 with those for 1891-1900, it appears that phthisis mortality has fallen among males by about two-fifths (from 2,625 to 1,580), and among females by more than half (from 2,828 to 1,214 per million). Speaking generally, the amount of reduction in mortality is greatest among the young and least among the middle-aged. Taking separately the figures relating to each sex, it appears that among males up to the age of 25 the mortality has been reduced by more than 50 per cent. From the 25th year until the age-group 45 to 55 the amount of improvement gradually diminishes, but at subsequent ages it again increases. Among females the amount of reduction is spread more uniformly over the various ages, being equal to 60 per cent. up to the twenty-fifth year, and to nearly 50 per cent. thereafter. It is worthy of note that among young children the mortality in the later decen-

nium from this form of tuberculous disease is only one-third of that in the earlier decennium.

Dr. Tatham states that the careful examination of the records suggests the probability that the reduction, although in great part real, is not wholly so. He says it may safely be assumed that in the "fifties" and "sixties" of last century a considerable portion of the deaths were uncertified, for it is known that in those days many persons died without medical attention. As recently as the year 1879 the uncertified deaths in Cornwall, in South Wales, and in North Wales were as high as 10 per cent., 13 per cent., and 14 per cent. respectively. In remote parts of the country many fatal cases of lung affection associated with expectoration were put down without question as phthisical. On the other hand, many deaths which in earlier years would have been returned as from phthisis are now referred to as "tuberculosis" simply without mention of the organ affected.

Table VII, in which the changes in the age of maximum mortality from phthisis during the last fifty years are shown, indicates that it has been postponed in both sexes:

TABLE VII.—*Phthisis, 1851-1900. Ages of Maximum Mortality. Age-groups in Italics have the Maximum Rates, the others being Approximate.*

Periods.	Males.	Females.
1851-60	*20-25*, 25-35, 35-45	*25-35*
1861-70	25-35, *35-45*	*25-35*
1871-80	*35-45*	*25-35*
1881-90	*35-45*, 45-55	*25-35*, 35-45
1891-1900	35-45, *45-55*	25-35, *35-45*

With regard to the effect of urban conditions on mortality from phthisis, Dr. Tatham gives a table containing the following corrected rates:

TABLE VIII.—*Phthisis, Urban and Rural Mortality; Corrected Rates per Million Living.*

	Urban County Group.	Rural County Group.
Males	1,753	1,347
Females	1,250	1,240
Both sexes	1,493	1.292

The remarkable difference between the urban and rural rates in males will not escape attention.

Tuberculous Meningitis.

In the last decennium the general mortality from tuberculous meningitis, including acute hydrocephalus, was lower by 8 per cent. than that in the preceding decennium, about 72 per cent. of the total deaths occurring in children under 5 years old; at ages under 5 the mortality among boys was greater than among girls, the rate among boys being 1,481 per million, exceeding that among girls by 320 per million. But on the other hand, during the course of the last forty years, the mortality among boys has decreased by 43 per cent. and that among girls by 37 per cent. It has not been possible to tabulate the mortality from tuberculous meningitis for the decennium in urban and rural counties respectively, but in the quinquennial period ended 1902 it was distinctly more fatal to young children in town than in the country, the figures being 1.98 for the urban counties and 1.24 for the rural group.

Tuberculous Peritonitis.

As compared with the preceding decennium, the mortality at all ages referred to tuberculous peritonitis or to tabes mesenterica was lower by 16 per cent.; 80 per cent. of the deaths were in children under the age of 5 years. Again, the rate for boys—1,613 per million living—was higher than that for girls—1,304 per million—and the decline within the last forty years was only 19 per cent among boys, as compared with 24 per cent. among girls. The comparison between town and country again shows a higher mortality in the urban group of counties (3.53) than in the rural group of counties (2.07).

Other Tuberculous Diseases.

Under this heading in the report are included general tuberculosis, scrofula, lupus, and tuberculous affections of the bones, joints, and other parts of the body not separately specified in the tables. Again, under this head, more than half the victims are under 5 years old; and again the rate is higher among males than among females. The deaths registered under this head have increased considerably in the course of the last forty years, more especially among children under 5 years, whose mortality has increased since 1861-70 by 81 per cent. Recent annual reports show that the increase since 1900 has been under the head of tuberculosis of bones, joints, etc., the deaths from general tuberculosis as well as from lupus and from scrofula having shown no increase.

Nova et Vetera.

THE PLAGUE PLOTS OF GENEVA.

READERS of Manzoni's *Promessi Sposi* will call to mind the vivid description of the "Great Plague of Milan," which occurs in the second volume of that masterpiece. The epidemic raged in 1630, daily carrying off more than 500 of the Milanese; but the sickness itself was scarcely as terrible as the panics and the real abuses which attended it. One of the chief terrors of the visitation, for instance, lay in the conduct of those whom the Government of the city had deputed to combat it. The *monatti*, as they were called, were the officially-appointed removers of the sick and dead and the notifiers of fresh cases of illness. Drawn from the criminal classes, seeing that the respectable dared not venture their lives among the plague-stricken, these *monatti* became infamous as seizers of heritages, wholesale robbers and maltreaters of the sick and dying. Manzoni graphically describes an attack made by *monatti* upon Don Rodrigo, one of his principal characters, whom Griso, a servant, first betrays into their hands and then robs with their assistance.

The proved iniquities of such men in Milan, and of their congeners in other plague-stricken towns, gave rise during the Middle Ages to a myth or superstition as sinister as any that has led to the torture and death of human beings. The *monatti* and those like them came to be regarded as disseminators of the very disease they were paid to stamp out. To the panic-stricken Milanese of 1630 there was nothing improbable, as being contrary to human nature, in this wild suspicion. Once they believed the plague to be spread by miscreants for purposes of gain, they were ready to find victims at every street corner. Thus it happened that a petty officer of health—one Guglielmo Piazza, employed to report cases of plague to the Sanità or health authorities of Milan—was seen by a woman of the people to wipe his hand upon a wall. He probably was wiping away an ink-stain, but the popular imagination saw in the act, doubtless customary with him, an attempt to spread infection. He was accused of smearing an ointment previously infected with the plague upon the wall of a house, and his barber, one Mora, was convicted of supplying him with it. Mora's house was razed to the ground and the site marked by a column—the *Colonna Infame*, or pillar of infamy—which stood in Milan until the latter years of the eighteenth century.

The whole sinister episode of Piazza's and Mora's tortures, confessions, and death has been described by Manzoni in his historical tractate, *La Colonna Infame*, of which no English translation exists. The miserable men were probably innocent of any attempt to spread the plague, for, though they confessed, their confessions were made in moments of agony in order to win respite from pain. Indeed, they were ready to say anything their torturers might suggest. Yet there was no escape for them. The public of Milan was bent on their destruction. They were *unctores*, *untori*, or, as we should say, "anointers." This belief in "anointers" crops up constantly in mediaeval epidemics of plague.

As early as 1530, just a century before the plague of Milan, the *unctores* appear in Geneva and play a grand rôle as *sémeurs de peste*. There were, in fact, two great Genevese plague plots—the first in 1530, the next in 1545—which terrified and misled the generation of Calvin and the Reformers. The history of the plots has been

carefully set forth by Dr. Léon Gautier in his recently-published work, *La Médecine à Genève jusqu'a la fin du dix-huitième siècle*. And it is to his learned pages we shall now refer.

Geneva, owing to its central position in Europe and its early expressed adherence to the principles of the Protestant Reformation, had become, at the beginning of the sixteenth century, at once a refuge for the persecuted, especially from the south of Europe, and a starting-point of missionaries. It was crowded with immigrants and intending emigrants, and was thus in every way fitted to be a nidus of the plague; indeed, the plague was endemic there in the sixteenth century. The Government of the Genevese Republic would seem to have been conscious of this state of things, and to have taken measures accordingly. At a time when in other lands no sort of, or very imperfect, provision was made to cope with infection a pest-house already existed in Geneva, while a nursing system in connexion with it had been brought to some degree of perfection. The nurses and plague attendants in the employ of the Genevese hospital were both male and female, and of these the plague attendants, or *cureurs*, were told off to perform much the same duties as those of the Milanese *monatti*. Though not such criminals as the last-named, they were probably at no time conspicuous for a high *morale*. Plunder and petty blackmail probably came naturally to them, but that they could be guilty of deliberately spreading the plague in the way of business is scarcely conceivable. Yet of this awful crime the sober Genevese citizens accused them, and even now the medical historian, despite all that has been written in their behalf, cannot definitively pronounce them innocent of the accusation laid to their charge.

The facts, as they appeared at the time of the plots and as set forth by Dr. Léon Gautier, are briefly these:

In the spring of 1530 a dissolute youth of good family, Michel Caddod by name, was arrested on the Rhone Bridge in Geneva after he had been seen to throw down a handkerchief near a shop. The handkerchief was ill-smelling, and was at once supposed to contain the plague infection.

Caddod's confession under torture led to the seizure of Jean Placet, alias Frecher or Teraillon; Placet's wife, son, and servant; and Dom Jehan Dufour, a priest. Placet, though an irregular surgeon without diploma or science, was in charge of the pest-house, of which Dufour was the priest and confessor. Partly under torture these six persons confessed to having taken a solemn oath to spread the plague through Geneva, and to reap profit from either nursing or robbing the sick. They had sworn standing round a stone table near the hospital, and the priest had administered the oath upon a book of hours. Then Placet and his wife had undertaken to prepare the plague poison from poultices used upon bubonic sores. These they dried by a fire and afterwards powdered. To the powder was added "véraroz"-root—that is, white euphorbia (*Veratrum album*). This poison was enough to kill of itself.

Of the powder thus prepared some was spread on handkerchiefs and on artificial flowers made of silk, which Caddod and his mistress, neither of whom had taken the oath, undertook to scatter about the streets. The rest was retained by Placet, who put some into the mouths of several sick persons in the hospital, thereby causing their deaths with but one exception.

The plague still increasing, Placet was suspected, and a coadjutor was given him in the person of Bastian Granger, barber-surgeon, with whom was a servant. Madame Placet, however, got rid of these interlopers by putting plague-powder in their food. They died in three days of their toxic repast.

In the end Placet and Caddod were *tenaillés* through the streets, or, in other words, tortured with red-hot pinchers, before being beheaded. Dom Dufour was unfrocked, handed over to the secular arm, and executed. The two women had their hands cut off in front of the houses of their supposed victims, and then shared the fate of the men. Young Placet was hanged, his youth counting in his favour.

After these criminals had been executed the plague rapidly decreased, and that at the period of its annual increase. A similar decrease was noted some fifteen years later, when another plot had been suppressed.

The history of the second plague plot of Geneva is not unlike the first, and may be briefly told. In January 1545 the Council of Geneva were informed by the Bailiff of Thonon that he had arrested one Bernard Dallinge, who, with one Jehan Lentille, had cut off the foot of a corpse, fallen from the gallows, and had used it as an ingredient in the preparation of a plague unguent. This unguent, which was otherwise prepared on the same lines as the powder before described, was smeared by the malefactors upon the locks of doors. This mention of locks and of dead men's limbs introduces an element of magic into the plot, which is in other respects as dull and horrible as possible. Confessions and tortures were now the order of the day, and eventually, in March, 1545, as many as forty prisoners had been accused of taking part in the tragic conjuration. These included several surgeons, and many plague-attendants male and female. All these persons were accused of swearing to spread the disease, and of giving themselves body and soul to Satan. They had greased many door-locks, and declared that the disease had followed in every case where infection had been sown. In handling the toxic paste they used paper, or if their bare skin came in contact with it, then they washed their hands in their own urine. A number of the accused being searched on a boulevard near the fortifications were found in the possession of boxes of paste presumably infected with plague. These boxes were held to be convincing proof of guilt, but they may have contained an innocent prophylactic. The whole question is wrapped in doubt. Contemporary evidence is all in favour of the prisoners' guilt. The famous Reformer Calvin was alone on the side of mercy, though he wrote to Myconius in Latin on March 27th, 1545, describing the extent and nature of the supposed plot. In the State records of Geneva we find the following entry, quoted at length by Dr. Léon Gautier:

"Lundy 9 Mars (1545) Monsieur Calvin ministre.

"Lequelt a faict grande requeste pour les povres que sont condamnés à mort, mesmes pour ces empoisonneurs, c'est que l'on advise de non les fère languyr, etc. Ordonné qu'il soyt commandé à l'exéquuteur des maffycteurs (malfaiteurs) qu'il soyt plus diligens qu'il n'est pas quand il leur coppe les maens et quand il viendra à les brusler, qu'il meste moyen qu'ils soyent incontinent mors par un estrangle-chaet (chat) ou aultrement."

Calvin, who had burnt Servetus for heresy, may perhaps have been suffering from twinges of conscience when he thus begged that the accused might be mercifully and promptly strangled. Of the so-called poisoners, nineteen women and seven men were executed during the first half of 1545. It has been suggested that many of them were Catholics who hated the new Calvinism.

The belief in artificially-caused epidemics of plague died very hard in Geneva as in Italy. And the superstition can even be paralleled in Russia to-day where health officers have often been accused by an ignorant peasantry of speading plague and cholera. The belief, too, in the guilt of the "anointers" was long an article of faith with medical historians. It was not until the publication of Count Pietro Verri's book on torture in 1804 that the guilt of Mora and Piazza was questioned and disproved. And it is only in the course of the nineteenth century that the medical historians of Geneva began to cast doubts on the credibility of the two plague plots of their own city—conspiracies so fatally similar to those in other places, so contrary to human nature and involving such fearful tortures and such scanty material profits for the accused.

PHYSIOLOGICAL EFFECTS OF PROLONGED STRAIN.

MR. EDGE'S RECORD MOTOR DRIVE.

DR. L. P. GIBSON (Cowes) sends us the following notes upon Mr. Edge's condition before and after his record drive on the Brooklands motor race course:

Knowing that a great many readers of the BRITISH MEDICAL JOURNAL are motorists, my subject needs no apology. I wonder if "a great majority of readers" is as true as "a great many readers," or whether we must wait a year or so for this state to come about. Anyway, to medical motorists, and motorists who are incidentally doctors, a short account of Mr. S. F. Edge's method of preparing for and carrying out his wonderful ride, and some few facts concerning his physical

condition before and after will be of interest. That Mr. S. F. Edge set out to drive a car sixty miles an hour for twenty-four hours, and that he actually drove it 1,581 miles 1,310 yards in the time, averaging 65 miles 1,594 yards per hour, are matters of history; and it is not difficult to imagine the strain on man and car involved in this world's record. Mr. Edge is a teetotaler, non-smoker, and great believer in systematic exercise, and so keeps fitter than most men in an ordinary way, although a very busy man with office hours that would shock many people who think themselves hard-worked. Before the race for some time he took all opportunities of long motor drives about the country, and then one week's absolute rest from business and from any lengthy drives just before the race, to avoid staleness. He took no kind of special training diet, only living very simply, taking plenty of fruit, cocoa, fish, vegetables, a moderate amount of meat, and no tea. During the race he had fruit (oranges, grapes, strawberries, and bananas), with occasional drinks of cocoa and beef-tea (very little), some chocolate and beef lozenges; he also took 1 grain extract coca, made up with chewing gum, every hour. He ate no so-called solid food at all.

During the short stops in the race the chief cause of discomfort and exhaustion was bruising and backache from a light, not very comfortable seat fitted to a chassis from which a heavy touring body had been removed, the springs being too curved for comfort at high speed over a track worn in some places.

After the race a few peas and bread and a drink of water were taken, and he was in bed and asleep within three hours of the finish, slept well all night, and was eating a good breakfast at nine o'clock next morning. The pulse, temperature, and respiration were normal, and he was none the worse for the extraordinary and exhausting strain he had been through.

His temperature before starting was 98.4°, pulse 74, of which Fig. 1 is a sphygmographic tracing. At the end of

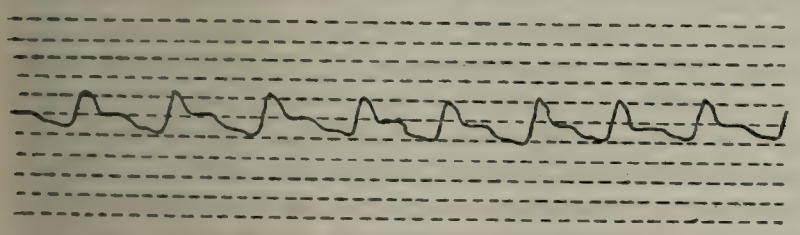

Fig. 1.

the race his temperature was 100°, and his pulse, of which Fig. 2 is a sphygmographic tracing, 70. I take it that

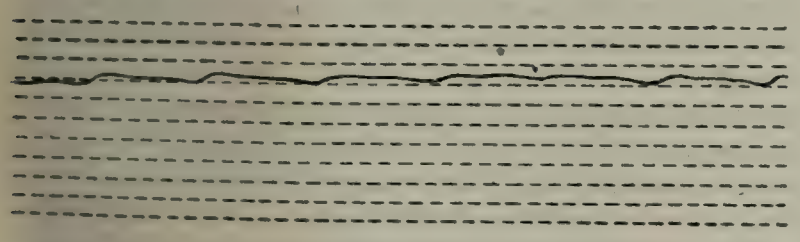

Fig. 2.

the slowing was due to exhaustion, that the blood pressure was low, due to vagus control, and that the residual blood in the left ventricle was increased in amount. This condition of weak pulse may be accentuated by the fact of the blood being "soaked up, as it were, by the lungs," owing to the long-continued rapid movement through the air. The expression in inverted commas I borrow from Colonel H. E. Deane's paper on respiratory pulse curves in the *Journal of the Royal Army Medical Corps* (May, 1907)

The rapid recovery of Mr. Edge after a night's rest speaks volumes for his methods of training, and there is no doubt that abstinence and exercise, by keeping the blood pressure low, will allow large strains to be undergone without leaving behind any serious effects.

Before the ride a specimen of blood was taken and examined for the tuberculo-opsonic index, which was found to be 0.85 Another specimen taken directly after the race gave 1.17. That the power of resistance to the tubercle bacillus should be raised after the long journey is very noteworthy, and helps to strengthen the opinion held by many of us, that motoring is an effective treatment in some cases of tuberculosis, and that the gloomy prophecies of some, anent the bad effects of great speed on the system, were incorrect.

Mr. Edge may therefore be congratulated on the success of his ride, and also on the fact that this effort of his remains as one of the finest possible object lessons of and pleas for the simple life, and as such is recommended to the young man of the present day to be read and marked.

MEDICAL NEWS.

DR. CESARE LAMPUGNANI, a Poor-law medical officer of the Porta Garibaldi quarter of Milan, has died in the Hospital of the Fatebenefratelli, of cerebro-spinal meningitis, contracted in the course of his professional attendance on patients suffering from that disease.

AT a public meeting in Chester Town Hall on July 4th Mr. James Taylor, F.R.C.S.Eng., was the recipient of an address and of various gifts on the occasion of his retirement from the post of Surgeon to Chester Infirmary. With this institution Mr. Taylor, who was at one time the President of the Lancashire and Cheshire Branch of the British Medical Association, was connected for some forty years, serving it first as House Surgeon and ultimately as Senior Honorary Surgeon. The address presented to him was signed on behalf of the donors of the gifts by the Mayor of Chester, by the Chairman of the Board of Management of Chester Infirmary, by the President of Chester Medical Society, and by the honorary treasurer and honorary secretary of the special fund, both of the latter being medical men. The gifts included a cheque, and a clock and candelabra, while a silver tea and coffee service was presented to Mrs. Taylor. In expressing his thanks Dr. Taylor drew an interesting sketch of nursing as it had been in the past and as it was in the present, and claimed for Chester Infirmary the credit of being the first institution in England to introduce isolation wards for the treatment of cases of infectious diseases.

WEST AFRICAN MEDICAL STAFF.—The first dinner of the West African Medical Staff took place on July 3rd, at the Trocadero Restaurant. There was a large attendance of medical officers, including Dr. Prout, C.M.G., late P.M.O., Sierra Leone, who presided; Dr. Langley, C.M.G., P.M.O., Gold Coast; Dr. Forde, P.M.O., Sierra Leone; Dr. Hood, S.M.O., Gambia; Dr. Langley Hunt, C.M.G.; and others. After the toast of "The King" had been duly honoured, Dr. Prout proposed "Success to the West African Medical Staff Dinner, and Prosperity to the Staff." He pointed out that a great development had taken place in West Africa of recent years, and a corresponding increase in the number of medical officers, who now formed a homogeneous staff, distributed over the different Colonies. But for many reasons there was still a lack of union and cohesion, and he believed that the reason why the suggestion of a dinner had been received so enthusiastically was that medical officers realized that it would give them opportunities of meeting, of becoming better acquainted with each other, of exchanging views, and of informally discussing matters of interest in West Africa. He was sure that such meetings would eventually not only be productive of good to themselves, but what was still more important, would have a result which they all had at heart, the welfare of the people among whom they had to work. It was decided that a dinner should be held twice a year, and that the next should take place on the last Wednesday in January, 1908.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 6, Catherine Street, Strand, W.C., on June 28th, Dr. de Havilland Hall in the chair. The accounts presented showed that the progress of the business of the Society during the early part of this year had been very satisfactory, the number of new entrants exceeding that in any previous six months of the Society's working. The large number of claims paid by the Society brings the business under the notice of an ever-increasing number of members of the profession, and this evidence of the practical value of membership is the best advertisement. The mild epidemic of influenza which increased the claim accounts in the early part of the year has subsided, and the sickness experience is now a little under the average. Several recent additions have been made to the list of those who will, in all probability, remain on the funds until they die, but the total of these does not grow very rapidly. A substantial addition has been made to the funds of the Society since December 31st, at which date they stood at over £208,000, for, although the amount disbursed in sickness claims steadily grows, the income of the Society increases more rapidly. Prospectus and all particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, W.C.

British Medical Journal.

SATURDAY, JULY 13TH, 1907.

THE SIMULATION OF MENTAL DISEASE.

THE unmasking of a malingerer, and particularly of the simulator of insanity, is at times simple, but is much more often a matter of the greatest difficulty. This is due to the fact that in mental diseases the diagnosis necessarily rests very largely on symptoms of a purely subjective order. In recent years, however, a voluminous literature has sprung up round the subject, and valuable objective data have been furnished by the psycho-physical investigation of neuro-psychic disorders which at once facilitate diagnosis and throw much light on the tortuous mental paths and vagaries of conduct of simulators and dissimulators. In consequence, the regard in which these and other examples of "pathological lying" has been held has undergone considerable change, and persistent simulation is coming to be viewed more and more as an evidence of a defective or abnormal constitution, some, indeed, going so far as to affirm that pure simulation does not exist.

One of the most valuable studies of the simulation of insanity is that of Professor Penta of Naples,[1] who, in his capacity of expert examiner in Naples of prisoners whose sanity appeared doubtful, has had an unusually large experience of this subject. Professor Penta affirms that the Neapolitan, amongst European peoples, is particularly prone to deceit of all kinds, partly as the result of economic conditions, but much more by reason of his temperament and constitution. This gives the reason of the abundance of the author's material and furnishes his main argument, which is that this, like all other forms of lying, is an evidence of an inferior level of development.

Professor Penta has placed on record careful clinical notes of 120 cases observed by himself, and has added many other interesting cases from the literature. The whole collection illustrates the principal forms of insanity simulated, and the characteristic phenomena which indicate malingering. The fact, of which almost every prison affords records, that, over and over again, prisoners treated drastically as malingerers have subsequently been certified as insane and incurably demented, is exemplified by numerous cases. This fact, however, does not necessarily carry with it the implication that these prisoners were insane from the beginning, but merely that insanity is more likely to occur in simulators than others. Simulation and its counterpart dissimulation are both known to occur amongst the insane, and Professor Penta relates an instructive case in which a prisoner, entirely ignorant that he suffered from one form of insanity, simulated another. Professor Penta discusses simulation in a scientific spirit, traces its comparative evolution from the widespread protective mimicry of lower animals through the relatively frequent adoption of deceit as a weapon in the struggle for existence by lower human races, its still frequent practice by children and women, and its practical disappearance in the highest type of civilized man. Its ethnological distribution is then discussed in relation to its clinical significance in the neuroses and psycho-neuroses, in degenerates and criminals. Professor Penta's views deserve careful study, both by reason of his broad treatment of a subject of the deepest interest, and from the wealth of reference which he gives to the published cases and writings of others.

Outside the insanities proper, however, there exist numbers of allied conditions which are often simulated, and still more in which the possibility of a desire on the part of the subject to obtain some ulterior benefit or compensation suggests simulation. Such are the epilepsies, hysteria, neurasthenia, and other neuropathies, with their fixed ideas, phobias, obsessions, and impulsive acts. At one time, and not very long ago, the appearance of one or some of these in certain circumstances—after a railway accident, during or after criminal proceedings, etc.—would in many cases have been held to justify the assertion that it was voluntarily assumed. Nowadays the advances which general medicine has made towards a better knowledge of biochemical, auto-intoxicative and humoral alterations, with their well-known tendency to paroxysmal expression, elucidate many of the departures from recognized clinical types and their episodic appearance which formerly made diagnosis difficult and often put medical witnesses at variance.

It is particularly on this ground that an essay recently published[2] by Dr. P. Chavigny will be found of much value, although it covers the whole field of simulation from the clinical point of view. Recognizing the great frequency of simulation, there runs through the whole book the idea, well expressed in Lasègue's aphorism, "*On ne simule bien que ce que l'on a*"—that is to say, simulation is, generally speaking, an evidence of pre-existing defect, and further, the form of defect as a rule determines the form of simulation. Dr. Chavigny treats the simulation of insanity on very broad lines, and lays stress on the fact that here, as in simulation generally, there is no special diagnostic procedure, but only that minute methodical examination which pertains to general medicine. In many recent trials where the plea of insanity has been raised by the defence, great weight has often been laid on the so-called bodily "stigmata of degeneration" as in themselves affording prima facie evidence of neuropsychic instability. The value of these signs, therefore, in simulation deserves careful consideration. Professor Penta assumes throughout that these stigmata are of first importance as differential criteria; Dr. Chavigny on the other hand, and, as we think, rightly, maintains that the evidence so far accumulated does not warrant any such conclusion, though doubtless, as Dr. Chavigny says, they should be given proper weight, along with other phenomena, in the attempt to arrive at an estimate of any individual.

Dr. Chavigny, as an army medical officer, has had great experience in all forms of simulated diseases; he has read widely, and he supplies, in addition to the results of his own investigations, a complete commentary on a most comprehensive casuistic culled from European and American literature. In every branch of a wide subject his writing is distinguished by clear expression, sound and temperate judgement, and methodical division of the matter, which is essential for the practical, didactic exposition of such a subject.

[1] *Die Simulation von Geisteskrankheit.* Authorized German translation from the Italian of Professor P. Penta. Translated by Dr. Rudolf Ganter. Würzburg: A. Stuber. 1906. (Demy 8vo, pp. 214. M. 3.50.)

[2] *Diagnostic des Maladies Simulées* (The Diagnosis of Simulated Diseases). By Dr. P. Chavigny, Médecin-Major de 2e classe. Répétiteur à l'Ecole du Service de santé militaire de Lyon. Preface by Professor A. Pierret. Paris: J. B. Baillière et Fils. 1906. (Cr. 8vo, pp. 512. Fr. 10.)

DILUTED MILK.

THE decision given by the magistrates sitting on the Enfield Petty Sessional Division Bench on May 27th, unless reversed on appeal, will materially affect those dealing with the supply of milk. The case was one in which the inspector under the Food and Drugs Acts for the county of Middlesex took out a summons against a retail milk dealer, and also against a farmer, for selling milk to which a certain percentage of water had been added. The retail dealer defended himself by stating and bringing evidence to support his contention, that the milk which he sold was milk received under contract from the farmer, and had not been tampered with or otherwise altered. He therefore claimed that he should not bear any responsibility for the adulteration. The case against him was dismissed, as the Bench found that he had not tampered with the milk. In the case of the farmer, the defence set up was that as the milk was sent out in churns, not sealed or locked, but merely fastened, the adulteration, if any, had taken place during the transit, and that there was therefore no breach of warranty. The milk was sold as "new cow's milk," under contract, and the farmer contended that he dispatched the milk in a pure condition as received from the cows. A second case against him was that another sample of milk had also been tested and found to contain 8 per cent. of added water. Hitherto the defence relied on in such cases—namely, the warranty defence—has held good, the claim being allowed that milk sold is not guaranteed to be pure unless, as is rarely the case, it is sent direct from the farmer to the consumer in sealed cans or churns. This sealing naturally is not frequently carried out, as when it is, all chance of defence is gone. The Bench, however, found that in the present instance it was evident that the milk had been diluted on the two occasions respectively to the extent of 14 per cent. and 8 per cent. with water, and that the farmer must be held to be responsible. Another point of importance in the case is that a precedent is established for holding that the inspector under the Food and Drugs Acts can intervene in the interest of the public and can act as a common informer even in the face of a private contract.

The adulteration of milk in London is no longer a matter of surmise, and one has long since ceased wondering when some energetic steps will be taken to put an effective stop to the practice. Many difficulties certainly have beset those who have attempted to improve the supply, and it is a matter of satisfaction that a recent report on the bacterial purity of London milk shows that the metropolitan supply is certainly not less good than that of other large towns both in this country and on the Continent. But although it appears to be a comparatively harmless thing simply to add a little *aqua pura* to the milk, the fact of dilution being a common practice is ground for serious complaint. It must be remembered that in the difficult question of infant feeding, one has to choose between sterilized or pasteurized milk, or ordinary milk or diluted milk. The argument used against the use of boiled or sterilized milk is that it is more likely to call forth some one of those insidious disturbances of metabolism of which the most important is rickets. The objection usually raised against the use of undiluted milk is that, as the proportions of fats and casein in cow's milk differ very considerably from those in mother's milk, the former when given in a pure condition is difficult for the infant to digest. Recent researches, especially those of Hamburger, however, show that the indigestibility of cow's milk for weakly infants depends on the proteid, and that metabolic disturbances can be produced by feeding young animals on mixtures containing proteid material derived from the milk of other species. But however this point may be determined, the fact remains that a very large number of infants are brought up on diluted milk. If the mother buys milk which is already diluted to an unknown extent, the result to the infant when further dilution takes place must not infrequently be practical starvation. In this respect the recent decision must be greeted with satisfaction. Whether the activity of the inspector under the Food and Drugs Act can be relied on in the future to safeguard milk against dilution remains to be seen, but in any case a healthy movement toward reform must undoubtedly follow the decision of the Enfield magistrates, should their decision be unchallenged or upheld.

In another respect some movement toward reform in the matter of milk product adulteration is in progress. The Special Committee of the House of Commons appointed to inquire into the question of the adulteration of butter has advised the introduction of a Bill, and this the Board of Agriculture has already steered into its Committee stage. This Bill provides for the regulation and inspection of the factories, and imposes a limit of 16 per cent. of moisture in pure butter and margarine, and of 24 per cent. in butter substitutes. An attempt to restrict the nature of butter substitutes to milk-blended butter only, to the exclusion of all imitations of butter, failed, although it is difficult to exactly follow the arguments used against this restriction. As soon as the Bill has passed through the Committee stage, one will be better able to judge what effect it will have on the guarantee of a pure butter supply. But even at present, one can confidently hope that the efforts now being made will improve the supply of dairy produce, and this taken together with the decision in the milk dilution case, will alter the position of matters considerably within a comparatively short space of time.

THE DECLINE IN THE DEATH-RATE FROM PHTHISIS.

ELSEWHERE in this issue will be found an article giving the main facts deduced by Dr. Tatham from his examination of the vital statistics of England and Wales in respect of tuberculosis, made for the decennial supplement to the report of the Registrar-General. He has been able to deal with the figures for fifty years (1851–1900), and although certain reservations and qualifications must be made, he brings out very clearly two changes which are worthy of careful consideration.

The first change is that the mortality from tuberculosis in all its forms has decreased to a very large extent at all ages and in both sexes; in fact, in 1891–1900 there were only 58 deaths for every 100 in 1851–60. Deaths from phthisis, from tuberculous meningitis, and from tuberculous peritonitis are distinguished in the returns, while a relatively small number of deaths, due chiefly to general tuberculosis and tuberculosis of bones and joints, are classified under "other forms of tuberculosis." There has been a marked fall in the rate of mortality due to phthisis, tuberculous meningitis, and tuberculous peritonitis, but as pulmonary tuberculosis is the cause of 69 per cent. of all the deaths ascribed to tuberculosis, the great fall in the general rate from the disease is mainly due to the decrease of phthisis. This decline in the rate of mortality from phthisis has affected both sexes, but has been more marked among females than among males. The

decrease has been fairly steady, the slight irregularities to be observed in the yearly curve disappearing when the averages for decennia are taken. So rapid has been the decrease of the rate of mortality from phthisis among females that the position of the two sexes has been reversed, and whereas fifty years ago more females than males died of phthisis, now more males than females so die. If we look at the statistics in which the mortality in urban and rural districts are compared, it will be seen that the greater mortality among males is largely due to the fact that the rate among males in towns was some forty per cent. higher than among females. Since 1900, if we may judge by the statistics for 1905, the last available, the decrease in the mortality from phthisis has not only continued, but has continued at an accelerated pace, the improvement affecting both sexes in about the same proportion, so that the position of females is now as favourable when compared with males as it was in the decennium ending 1900. We shall not be rash enough to attempt to theorize as to how much of this is to be attributed to general sanitary improvement and how much to the spread of knowledge in regard to the specific and infectious nature of tuberculous disease. We can only point to two facts: first, to the steadiness of the decline, which tends to negative the belief that it can have had anything to do with the latter cause; and secondly, to the fact that the greatly higher mortality among males in towns than among males in the country seems to suggest the influence of the workshop and an indoor life as predisposing causes. This latter conclusion is rather favoured by the circumstance that women in the country suffer nearly as heavily as women in towns.

The other change to which we would direct attention is in the age of greatest incidence of phthisis. There has been a very distinct tendency to a postponement of the age of death, and probably, therefore, the age of infection. Fifty years ago the disease was most fatal in both sexes at the age-period 25 to 35 years. In females there was no change during the next two decennia, but in males the age of greatest mortality advanced to the period 35 to 45 years, though in the first of these two decennia (1861–70) it was only a little more fatal at this age-period than in the age-period 25 to 35. In the last decennium the age of greatest incidence advanced for men to the period 45 to 55 years, and for women to the period 35 to 45 years. What explanation can be offered for this change we cannot venture to say; it is improbable that it can be due merely to an extension of the life of the consumptive. Whatever its explanation, it appears to mean a great saving of life during the most useful years, and must therefore represent a great gain to the nation.

DEATH OF SIR WILLIAM BROADBENT.

WE have to record with deep regret the death, in his 73rd year, of Sir William Henry Broadbent, which occurred in London on July 10th. Sir William Broadbent had an attack of influenza in October last, attended by pleuropneumonia, which left a deep interlobular empyema. Under suitable surgical treatment he made a perfect recovery; but unfortunately he had a second attack of influenza, which left him in a very debilitated state of health; he never recovered his strength, and on July 6th symptoms of malignant endocarditis attended by severe rigors developed, and he passed away, as has been said, early on the morning of July 10th. Sir William Broadbent, who graduated M.B.Lond. in 1858 and M.D. in 1860, was a student at Manchester, and, so far as we are aware, settled in London without any special advantages. The great position he achieved was won solely through his own exertions, and was due not only to wide knowledge and experience, but also to a remarkable force of character. For many years he was probably one of the hardest working men in the profession, active in the study and teaching of clinical medicine, while at the same time burdened with all the cares of a successful consulting physician. He was Physician Extraordinary to Queen Victoria and on her death was appointed Physician in Ordinary to the King; he was also Physician in Ordinary to the Prince of Wales. Sir William took an active interest in the scientific work of the British Medical Association; he was President of the Section of medicine at the annual meeting at Brighton in 1886, delivered the address in therapeutics at the annual meeting in Birmingham in 1890, and the address in medicine at the annual meeting in London in 1895. A full biographical notice will be published in an early issue. A memorial service will be held at St. Peter's Church, Vere Street, at 11.30 a.m. on Saturday; the interment will take place at Wendover, Bucks, on the afternoon of the same day.

POSTERIOR BASAL MENINGITIS AND CEREBRO-SPINAL FEVER.

THE order made by the London County Council, requiring the notification of cerebro-spinal fever for a period of six months, came into operation on March 12th, 1907, and down to June 18th 56 cases were so notified. In connexion with them the question has been raised whether the term "cerebro-spinal fever" includes for the purposes of notification cases of posterior basal meningitis. The Public Health Committee of the County Council sought advice from the President of the Royal College of Physicians, Sir Richard Douglas Powell, who appointed a Committee to consider the question. This Committee has reported: "That although, clinically, as regards symptomatology and duration, there are some differences which might separate the most marked cases of cerebro-spinal fever (epidemic cerebro-spinal meningitis) and posterior basal meningitis from one another, nevertheless intermediate cases occur in which such differentiation is impracticable." The Committee states, further, that "it cannot at present be maintained by experts with absolute certainty that there is any demonstrable difference in the bacteriology of the two diseases. The organism which is commonly associated with each disease is microscopically the same meningococcus (*Micrococcus intracellularis, Diplococcus intracellularis meningitidis*), such variations as may be met with being dependent on minor differences in cultural characters." It is also thought noteworthy that, "so far as has been ascertained at present, both diseases tend to occur during the earlier months of the year, and that, although the occurrence of the disease in both instances is epidemic, in neither has it the characteristics of a spreading malady." The recommendations of the Committee were as follows: "(1) That, inasmuch as the season in which the disease is liable to be prevalent will not recur for seven to nine months, the order of notification at present issued should continue in force for a period of two years, in order to cover two possible epidemic periods. (2) That, in the order of notification distributed to practitioners, it should be stated that for notification purposes the disease at present known as posterior basal meningitis is included under the term 'cerebro-spinal fever.' (3) That, after notification, further details of the cases should be obtained (*a*) in hospitals through the courtesy of the medical officers in charge, (*b*) in private

"by a special officer available to investigate the "cases bacteriologically or otherwise if desired, in "association with the practitioner in charge." The operation of the notification order now in force will expire on September 12th, 1907, but the Public Health Committee intends to recommend the London County Council to give effect to the recommendation of the College that the order of notification should continue for two years. The Committee is already in communication with the London hospitals, and has asked them to co-operate with the Council by furnishing details of cases admitted; and it is intended that the services of Dr. Wanklyn, the Assistant Medical Officer of Health, who has recently, through the courtesy of Dr. Chalmers, M.O.H. for Glasgow, had an opportunity of studying the course of the outbreak in that city, should be available with a view to the investigation of cases in association with medical practitioners in London should they so desire. Arrangements are also being made for the bacteriological examination suggested by the College.

INCOME TAX ON PENSIONS.

IN the BRITISH MEDICAL JOURNAL for April 27th last we expressed a hope that the Government would take the view that pensions should be regarded as deferred pay and taxed at the ninepenny rate. The point came up in the Committee on the Finance Bill last week, when the Chancellor of the Exchequer made the welcome announcement that pensions would be treated as "earned income," the definition of which will now run: "Any income from any office or employment of "profit held by the individual, including any pension, "superannuation allowance, or deferred pay in respect "of past services in that office or employment. . . ." This definition appears to be broad enough to include all naval, military, and civil pensions and superannuation allowances paid by local authorities and private employers from a pension fund or otherwise. The decision to treat pensions in this manner has not been arrived at without much consideration, the difficulty having been to find a good reason for distinguishing between an annuity in the form of a superannuation allowance and one derived from the accumulation and investment of savings. In the one case an employé may be regarded as agreeing to work for a smaller present salary in consideration of an undertaking on the part of his employer to pay him a pension after a certain length of service; in the other he may be looked upon as contracting for a present salary equal to the full market value of his services, with no title to pension, and saving and investing annually a portion of his salary, in order to purchase for himself an old-age annuity. There are insuperable practical difficulties in the way of treating the produce of invested savings as "earned income," and, therefore, Mr. Asquith had to distinguish between the cases just adduced. He has found a threefold distinction: (1) A pension is deferred pay and part of the consideration for the original contract of service. (2) It ceases with the pensioner's life. (3) It is not a form of property in the ordinary sense, and cannot be bought and sold or bequeathed to children. In each of these respects an annuity purchased by the annuitant himself differs, or may differ, from a pension. Mr. Asquith admitted that the limit of the concession he had announced was not reconcileable with any strict and logical rule, but justified it on the broad grounds of equity and policy. The practical result is that a pensioner whose total income does not exceed £2,000 will be taxed on his pension at the lower rate of ninepence in the pound, and those who benefit by the concession are not likely to cavil at its logical incompleteness. To the annuitant who does not come within its scope we can only offer the consolation that if his income be small, the abatements, which apply to all classes of income alike, will do something to mitigate the hardships of a tax that stands at a nominal rate of one shilling in the pound.

OPENINGS FOR MEDICAL WOMEN.

THE annual prize-giving at the London School of Medicine for Women took place on July 4th, when the chair was taken by Mrs. Garrett Anderson. The prizes were distributed by Professor Osler, who, in addressing the students, pointed out that there were four avenues open to medical women. The first, which he commended to those who had a liking for science, was work in connexion with the scientific branches of medicine. There were many women specially adapted for working at the highest problems of scientific medicine, and a great deal of the best work in bacteriology, in histology, and in many departments of pathology was being done at the present time by women. The second line of work which women could very well follow was in connexion with institutions, especially asylums for the insane. Throughout the United States there were at the present time many women physicians doing excellent work in asylums. The third sphere of activity for women was general practice. Though it was a hard life, there were many women who were very successful in general practice, and able to meet worry, care, and trouble and the daily anxieties and annoyances incidental to practice. Women were especially adapted for dealing with the diseases of women and children, but the difficulty in that connexion was the mistrust and distrust of women for women; an important duty for the students he addressed was so to conduct their lives that every woman would have trust in them. When a paternal Government instituted a proper system of school inspection it was the women who should carry out that work, and the filling of such positions by women would be of incalculable value to the community. The fourth field of work for women was India. Probably there was no place in the world where so much good could be done by women as in India. Those who decided to go there would perhaps live harder lives, but probably they would lead happier lives than those who remained in this country. He urged those who had the desire, to go out to India and help their unfortunate sisters there. Professor Osler concluded by advising the students to accept as their philosophy of life that they were in the world not to get what they could out of it, but to do what they could for the happiness of others. The report of the Council of the school, which was received by the meeting, stated that the Senate of the University of London had appointed a Committee to consider the question of the incorporation of the school with the University, and that the report of that Committee would shortly be laid before the Senate. It was also stated that the Council of the Royal College of Surgeons of England had recently of its own accord brought up the question of the admission of women to the conjoint examinations for renewed consideration. The School Committee had therefore decided to send in a further petition to the Royal College of Surgeons of England and the Royal College of Physicians of London. The meeting terminated with a vote of thanks to Professor Osler, proposed by Dr. Brodie and seconded by Miss Anderson.

COUNTRY MILK AND INERT LOCAL AUTHORITIES.

WE are glad to see from the last report of Dr. Collingridge, M.O.H. for the City of London, that he strongly supports the view, with regard to the kind of legislation required to safeguard the milk supply, which we have frequently ventured to express in these columns.

After stating that in the course of recent investigation into some cases of enteric fever occurring within the City it was found advisable to examine the milk supply, he says: "Two points are clear—first, the urgent need "for general legislation with regard to the milk supply. "This must deal with the question at the farm itself, and "must be the duty of the local authority. No half-"hearted measure giving the metropolis, or any other "district, power to exclude infected or dirty milk is of "any real service. If milk from a particular source is "excluded by order from one place, it will be sent to "another, either to be consumed therein, or possibly to "be again forwarded to the excluded area. Secondly, "the local authority where the farm is situated alone "can effectively deal with the question." The difficulty for the legislator, however, is to devise a means of compelling a recalcitrant local authority to act. Dr. Collingridge thinks there would be no difficulty in devising a system whereby the Board of Agriculture and Fisheries would act in case of default of a local authority. We think, however, that the alternative of giving the Council of the county in which the local authority is situated power to act in default is worthy of consideration—the machinery would be less cumbrous, and we have not heard any serious objection to the proposal save that founded upon the fact that some county councils have not yet appointed a medical officer of health. It seems clear, however, that this will have to be done before very long. Dr. Collingridge's report contains the results of bacteriological examinations by Dr. Klein; they were in all cases unsatisfactory, and, commenting upon the whole story, Dr. Collingridge says: "No better instance could be given of the reckless "disregard of the public health shown by those respon-"sible for the milk supply; the farmers themselves are "quite indifferent, and the dairy company concerned "apparently takes no steps to safeguard its customers "until attention is called to the condition of the milk. "In two instances out of three the cows were found to "be diseased, while in all three the premises were defec-"tive (one requiring slight repairs only), two being "insanitary." In consequence of the action taken by the City authorities the diseased cows have been removed from these particular farms, but apparently no steps have been or can be taken to prevent the animals being used for milk or food elsewhere. At the meeting of the London County Council on July 9th Dr. Forman, the Chairman of the Public Health Committee, presented a report on proposals for legislation in 1908, in the course of which it was stated that the most urgent need was to secure to the inhabitants of London a pure and uncontaminated milk supply. The Committee recommended that power should be obtained for the medical officer of the Council to take samples at railway stations, and to stop the supply of milk to London from cows affected with tuberculosis of the udder. Dr. Forman added that as the President of the Local Government Board had notified that he would bring in a national Bill on the subject, the Public Health Committee would accept an amendment by Mr. Felix Cassel to that effect, and proposing that representations should be made to the President of the Local Government Board. This course was eventually taken.

A NEW FORM OF PUFF.

The art of puffing, as it was understood in his day, was expounded by Macaulay in his famous review of Robert Montgomery's poems. His enumeration of the various methods was founded on that put into the mouth of Puff by Sheridan in *The Critic*. That master of the art says: "Puffing is of various sorts; the prin-"cipal are, the puff direct, the puff preliminary, the puff "collateral, the puff collusive, and the puff oblique, or "puff by implication. These all assume, as circum-"stances require, the various forms of letter to the "editor, occasional anecdote, impartial critique, obser-"vation from correspondent, or advertisement from the "party." He proceeds to develop the system in detail in its application to plays and other matters which do not concern us here. In his list, however, we miss at least one which may be very effective when properly used. This we should call the puff responsive, as it takes the form of an answer to an apparently innocent question. For instance, let us say, some one asks in a medical journal for information from his professional brethren as to a beer that will not cause acidity, or a cocoa that can be drunk without fear of "bilious" consequences. The question is inserted by the unsuspecting editor, with the result that answers come at first, perhaps, as single spies, but very soon in battalions. With a unanimity generally found only on the stage and rare indeed among medical men, all bear testimony to the excellent qualities of a beer or cocoa, as the case may be, sold by a particular firm. The thing begins, like Launcelot Gobbo's father, to "have a kind of taste," and the flavour of the "puff" becomes very pronounced when a correspondent, less guileless than the others, sends a typewritten letter from the firm in question, calling his attention to the inquiry and inviting him to express his opinion of its product through the columns of the journal, of which it is considerate enough to give the present address and the last day on which communications for the current issue are dealt with. We do not for a moment suggest that a firm acting thus does anything wrong in its natural endeavour to secure a gratuitous advertisement; it only shows a spirit of enterprise that, from the commercial point of view, is praiseworthy. And for all we know to the contrary, the stuff which it offers for sale may be all that it is declared to be by the thirty or forty readers of the journal who have joined in a chorus of praise of the product. The only moral which the tale seems to point is that the microbe of puffery is as ubiquitous and as insidious as any of the others that go up and down the world seeking whom they may devour, and that it is at least as difficult to keep a journal puff-proof as it is to keep a hospital free from germs. This fact is perhaps not always sufficiently appreciated by those "rigidly righteous" persons to whom Burns addressed the remonstrance:

> What's done we partly may compute,
> But know not what's resisted.

THE PSYCHOLOGY OF THE HAT.

Mark Twain has recently entertained us with his story of the archdeacon who took away his hat, leaving one of distinctly inferior quality in its place. It is remarkable, by the way, that when such accidents occur the exchange is invariably to the advantage of the person who makes the mistake. No one ever heard of any sane man taking a worse hat or umbrella than his own. This problem might engage the attention of Professor Lombroso more profitably than the investigation of the eccentricities of "spiritual" manifestations. The hat in its psychological aspects forms the subject of a careful study by Professor H. Gross in a book on criminal psychology recently published at Leipzig. He has made a number of observations on the way of wearing the hat in its relation to character, and has formed conclusions of the accuracy of which he has satisfied himself by a long experience. He holds that a hat worn exactly perpendicular to the vertical axis of the head is a sign that a man is upright but a pedant and a bore. Men who are gentle and amiable and full of the milk of human kindness wear the hat a little on one side. We venture to offer this fact as a hint to those witnesses before the Royal Commission on Vivisection who urge that applicants for a licence

under the Act should produce a certificate of humanity, but seem to find a difficulty in defining how the possession of the quality is to be guaranteed. The wearing of the hat very much on one side is said by the German writer to be a mark of insolence and swagger. There is a possible fallacy in this observation to which it may be worth while to refer. The late Sir Robert Peel, for instance, who wore his hat in a fashion that would have made Dr. Gross write him down an arrant swashbuckler, did so, we believe, to hide an ugly scar on the temple. According to our German authority, wearing the hat on the back of the head may be taken as a proof of recklessness and being in debt; the further back it is, the nearer bankruptcy is the wearer. This may be a useful piece of information to members of the Stock Exchange, but we have ourselves seen millionaires wear their hats in the manner of Sir Gorgius Midas as portrayed by Du Maurier. Perhaps these cases illustrate Juvenal's warning, *Fronti nulla fides*. On the other hand, if the hat is worn over the forehead, it indicates a man of difficult temper, sulky—in short, in the words of the Scottish song, "a sumph to keep up "spite." Dr. Gross seems to have omitted the style of the hat itself, which we think is also an index of the mental constitution of the wearer. Unless one is known to be wealthy, the mere fact of wearing a bad hat is a proof of strength of character. Then there would seem to be a relationship between strictness of morality and breadth of brim; while extra curliness of brim suggests rakishness. It would lead us far afield, however, to consider too curiously, as Horatio says, the numerous questions that arise in connexion with the shape of the hat. To return to the subject with which we are dealing: There is the obvious objection that a man may wear his hat in a style differing from that natural to his character with deliberate intent to deceive. Or, again, he may be a disciple of the "No Hat" cult. This Dr. Gross meets by an ingenious system of checks based on scarpology—the science of the footgear, to the study of which he has devoted much labour. Thus, he has observed that a man who wears down the heels of his boots evenly may safely be put down as an energetic man of business or a trustworthy official. If they are worn down on the outer side, the owner is gifted with imagination and is of an adventurous spirit. If they are worn down on the inner side, he is weak and undecided in character; this diagnostic sign, however we are told, is more to be relied upon in the case of men than of women.

THE IMPOTENCE OF THE LOCAL GOVERNMENT BOARD.

IT is to be regretted that so few county councils have realized that the Local Government Act, 1888, empowers them to make a representation to the Local Government Board whenever they are of opinion that the local sanitary authorities within the administrative area of the county are not properly carrying out the Public Health Acts. The Durham County Council is one of the exceptions, and, acting upon the advice of the county medical officer, Dr. Eustace Hill, the attention of the Local Government Board has been called many times during the past ten or fifteen years to the indifference of local authorities in the county. The County Council has not always received the support from the central authority which it might have expected; but, in spite of rebuffs, the Council has quietly pursued its course and persistently pressed for reforms where they were required in the interests of the public health. This attitude of the Durham Council stands out in a most striking manner in the recently-issued report of Dr. L. W. Darra Mair, one of the medical inspectors of the Local Government Board, upon the sanitary condition of the Whickham Urban District. As long ago as 1896 the Durham County Council represented to the Board that a certain part of the urban district called Marley Hill was in an insanitary condition, owing chiefly to the existence of a large number of back-to-back cottages, which were overcrowded. The Board decided to take no action in the matter. At the end of 1905 the county council made a second representation, and this time an inspection of the district was directed to be made on behalf of the Board. The result of the inspection is recorded in Dr. Mair's report. The conditions he describes are such as urgently call for speedy amendment. This opinion is not, however, held by the Whickham District Council, the members of which maintain that the houses in question are not insanitary, and refuse to take the initial steps necessary to put them in a better state. This being so, Dr. Mair contends that the Board is helpless in the matter and cannot exercise its powers under Section 299 of the Public Health Act, 1875. It has always been supposed that this section enabled the Board to compel a defaulting authority to enforce the Act of 1875; but if Dr. Mair is right in his contention, no action can be taken by the Board unless the authority admits that it is in default, and this is just what the local sanitary authority will not do.

ELECTRICAL DEPARTMENT AT THE EXETER HOSPITAL.

AN electrical department is about to be opened at the Royal Devon and Exeter Hospital at Exeter. The necessity for such a department has been forced on the attention of the staff for some years, but considerable difficulty was found in selecting a suitable set of rooms. By utilizing certain rooms in the basement this difficulty has now been overcome. The Committee has taken a very sensible view of the representations of the staff, and on their backing up the representations, a member of the staff was able to inform them that a valued old subscriber to the hospital had promised £100 and her daughter £10 towards the necessary expenses. A little later the lady increased her gift to £210. With this sum in hand it was felt that there need be no further delay, and the rooms were altered and wired and fitted up for the reception of the valuable apparatus required. This, however, cost a considerable amount, and the expenses ran up to £350 in all; but to the surprise and delight of the Committee the lady wrote a cheque and defrayed the whole expense. The installation begun under the presidency of Mr. J. Ley, and finished in that of Sir Dudley Duckworth-King, will be opened next week by Lady Duckworth-King. The poor of Exeter and the surrounding large area, who seek this hospital when in need of medical help, will now be able to receive such assistance as electricity in its most modern developments can give. The installation includes a Finsen-Reyn lamp, an ultra-violet lamp, high-frequency outfit, *x*-ray outfit, a sinusoidal dynamo, faradic primary and secondary and direct currents, and arrangements are made so that these latter currents can be given by immersion in a bath, or in limb troughs separately, or by Dr. Schnee's four-celled arrangement. A rhythmic interruptor, and the apparatus for ion treatment and cataphoresis will immediately be added, when it is hoped this installation will be hardly second to any in the kingdom.

CHAIR OF PATHOLOGY, OXFORD.

THE electors have appointed Dr. George Dreyer to the newly-made Chair at the University of Oxford. Dr. Dreyer is a lecturer on pathology in the University at Copenhagen and chief assistant to Professor Salomonsen. He is well known for his able researches on bacteriology, pathological histology, and the complex problem of immunity. Those who were at the meeting of the

Pathological Section of the British Medical Association at Oxford will remember the able part he took in the discussion on immunity. He speaks English with great facility. Dr. Dreyer worked for some time with the late Sir John Burdon-Sanderson, and is very well known to the younger Oxford men, a number of whom have carried on researches with him at Copenhagen. Dr. Dreyer is the son of Captain Dreyer of the Danish navy, and was born at Shanghai in 1873.

THE ANNUAL MEETING.

WE may remind members of the Association who intend to be present at the Annual Meeting at Exeter that it is expected that they will wear academic costume when attending the service at Exeter Cathedral at noon on July 30th; special seats will be reserved for them, and they will robe in the chapter-house and cloisters, and thence proceed in procession to the west door, where they will be met by the Cathedral dignitaries and the choir; the processional hymn will be sung as the procession passes up the nave. There will be a short choral service, and the Bishop of Exeter will preach; after the sermon the Te Deum (Hopkins in C) will be sung. Local members express the hope that the service will be well attended by visiting members. We are also able to announce that the Rev. Provost Hobson has arranged a service for Roman Catholic visitors at the Church of the Sacred Heart, South Street, at noon on July 30th; the service will be Solemn Benediction of the Blessed Sacrament, and the Bishop of Plymouth has promised to officiate.

THE ASSOCIATION'S SCHOLARSHIPS AND GRANTS.

AT the meeting of the Council last week the recommendations of the Science Committee with regard to the appointments to research scholarships and the allotment of scientific grants of the Association were confirmed and adopted. Mr. Major Greenwood, junior, having held a scholarship for the usual term, Dr. A. E Barnes was elected in his place. Dr. Barnes, who at the time of his application held a resident appointment at the Royal Infirmary, Sheffield, will work in the laboratories of the university there. He proposes to investigate some points in the metabolism of infectious diseases in order to ascertain whether there are any variations in metabolism coinciding with variations in the opsonic powers of the blood. He intends to direct his attention especially to the metabolism of phosphorus, chlorine, the purin bases and nitrogen in the more acute infections, such as erysipelas, pneumonia, pyaemia, and infective endocarditis, but especially in acute rheumatism. To the Ernest Hart, Memorial Scholarship Mr. John Paul McGowan, M.A., M.B., formerly University Assistant to Sir Thomas R. Fraser, and now working on immunity in the laboratory of the Royal College of Physicians in Edinburgh, was appointed. The subject to which he specially intends to give attention is that of aggressins and the relations they may have to the production of a more powerful antiserum. Mr Thomas Shirley Hele and Mr. Willoughby Henwood Harvey were reappointed research scholars for a further period of one year. A number of renewed grants were made to the amount of £131, and fresh grants were made to the amount of £219. The reports of the scholars and recipients of grants made to the Committee in respect of the year 1906-7 were published in the SUPPLEMENT of June 22nd, 1907, p. 408, et seq. The total sum voted for 1907-8 was £1,000, being £650 for the scholarships and £350 in grants.

THE MIDDLEMORE PRIZE.

THE Science Committee reported to the last meeting of the Council that the adjudicator for the Middlemore Prize had informed them that one essay sent in in competition possessed outstanding merit and was a complete and scholarly production. On opening the sealed envelope it was found that the author was Mr. Sydney Stephenson, M.B., F.R.C.S.Edin., the subject of the essay being Ophthalmia Neonatorum. The adjudicator further reported that three other essays appeared to him to be excellent, and expressed the hope that their various authors would make public in some form the important information they contained.

A COMMITTEE, of which M. Emile Loubet, ex-President of the French Republic, is Chairman, has been formed for the erection of a monument to the late Professor Brouardel. The artist selected for the execution of the work is M. Denys Puech.

WE understand that the circumstances attending the dismissal of Dr. J. D. Lloyd from his appointment as surgeon to the Brynkinalt Colliery, of which some account is given on page 112, are being investigated by the Denbigh and Flint Division of the British Medical Association. In the meantime, any practitioner who may contemplate applying for the prospective vacancy will doubtless suspend action until the investigations are complete. Inquiries may be addressed to the Medical Secretary, British Medical Association, 6, Catherine Street, Strand, W.C.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

The Finance Bill, which occupied several days last week and one day this week in Committee, gave rise to some interesting discussions on the incidence of the income tax, and led to one amendment of some importance to the profession. Many members have felt all along that it was not just to class pensions with incomes from investments, and that the pensioner should have the benefit of any remission relating to an earned income. Mr. Asquith said the question had cost him much anxious thought whether a pension ought to be regarded in some form or another as remuneration or as a form of investment. He had not been able to reconsider the decision at which he had arrived with any strict and logical rule, but, after giving full consideration to the matter with his colleagues, he had come to the conclusion that the pensioner, speaking in broad and general terms, came in reason and equity, and in point of policy upon the side of the line to which relief ought to be given. He afterwards carried an amendment which made the first definition of an earned income to read "any remuneration from office or employment of profit held by the individual, including any pension, superannuation allowance, or deferred pay in respect of past services in that office or employment." This is intended to cover the whole range of pensions.

The Public Health Acts.—Sir Ivor Herbert asked the President of the Local Government Board whether, having regard to the inconvenience experienced by local authorities in the administration of the Public Health Acts, from the fact that the law had to be sought in a large number of public Acts, and in some cases was affected by private Acts of Parliament, he could hold out any hope of bringing in a Bill next year to consolidate all enactments bearing upon the public health and to confer equal powers in respect thereto on all local authorities. Mr. Burns said that he was afraid it would not be practicable to confer equal powers in respect of public health on all local authorities. That would involve an undue interference with special powers conferred by local Acts. Moreover, powers which might be properly conferred in respect of one district would not always be suitable to another of a different character. He realized the advantages there would be in consolidating the Public Health Acts, though he thought it would probably be found necessary in the first instance to amend them in some respects. He could

not give any pledge as to legislation for next year, but should be glad when opportunity offered to take steps in the direction indicated.

The Prohibition of Medical Practice by Companies Bill.—On the motion of Lord Hylton, this Bill was read a third time last week in the Lords. On Clause 1 (companies not to practise or act as physicians, surgeons, or medical practitioners), the Earl of Crewe said that when the Bill was last before the House the point arose whether, in the case of a company contravening its provisions, all the directors and officers should be made personally liable, and it was suggested that in some cases that might operate very hardly. They therefore proposed to amend this clause so as to provide that, while the company itself should be liable, "every director, manager, or other officer of the company who knowingly and wilfully authorizes or permits such contravention shall incur the like penalty." The amendment was agreed to, and the Bill was passed.

London Meat and Milk Supplies.—Last week Mr. Bramsdon, in putting a question to the President of the Local Government Board, quoted the report of the Medical Officer of Health for Portsmouth to the effect that during the past twelve months sixty-seven diseased cows had been sold for human food, and that the diseased meat had mostly been disposed of in London; he also referred to the statement of the same officer that the milk of badly-diseased cows suffering from tuberculosis was systematically sold, to the serious hurt of the infant population, and asked what steps the Government proposed to take to meet these urgent evils. Mr. Burns said he was aware of the reports referred to. As regards the first question, he did not gather that the diseased meat of the cows mentioned had been disposed of in London, although London was stated to be the destination of many of the animals. He might point out that if any diseased animal or meat intended for the food of man was exposed for sale it was liable to inspection and seizure. All these matters were receiving his consideration.

Borax as a Food Preservative.—Mr. Carr-Gomm asked the President of the Local Government Board whether he was aware that borax and boracic acid were largely used in the United Kingdom for the preservation of ham, bacon, milk, and other articles of food; whether their use for this purpose was permitted in the countries exporting such articles of food to the United Kingdom; whether, to be effective, the borax or boracic acid must penetrate the article treated; whether, if so, any deleterious effect could be prevented by superficial washing; and whether he intended to introduce a measure forbidding the application of such preservatives to articles of food intended for consumption in this country. Mr. John Burns replied that he was aware of the facts as regards the use in the United Kingdom of borax and boracic acid for the preservation of certain articles of food, and that in some countries from which such articles were sent here the use of these preservatives was prohibited, although in certain of these countries the prohibition did not extend to foods prepared for export to the United Kingdom. If boron preservatives were used for packing such articles of food as hams and bacon they usually penetrated the substance of the meat, and would not be removable by superficial washing, whilst penetration must, of course, occur if solutions containing these preservatives were used for pickling or injection. The Public Health (Regulations as to Food) Bill which he had introduced, and which was now before the House, would enable the Local Government Board to make regulations for the prevention of danger to public health from the importation, preparation, and storage of articles of food intended for human consumption, and thus to deal with the matter referred to in the question.

Workhouse Inmates.—Last week, in answer to a question put by Mr. Lyulph Stanley, Mr. John Burns gave the following interesting statistics: The total number of inmates of the institutions mentioned in the question was on January 1st, 1907, excluding the casuals and insane, 248,945. Of these, 60,421, or 24.3 per cent., were under 16, and 188,524, or 75.7 per cent., were 16 or over that age. Of the latter number, 136,663, or 72.5 per cent., were classed as not able-bodied or infirm. This left 51,861 classed as able-bodied, but of these 31,556 were sick or temporarily disabled. Thus the total number of able-bodied inmates in health was only 20,305, of whom 11,508 were men and 8,797 women. The returns from which these figures were taken did not distinguish the number of paupers who were 65 years of age or upwards. The most recent information on this subject related to September 1st, 1903. On that date the number of indoor paupers of 65 or upwards (exclusive of vagrants) was 75,214, or 47.1 per cent. of the total number of inmates of 16 years of age and over.

The Notification of Tuberculosis in Belfast.—Last week Mr. J. Devlin asked the Chief Secretary to the Lord-Lieutenant of Ireland whether his attention had been called to the recommendation of the medical superintendent officer of health for Belfast, Dr. Bailie, that the co-operation of all the medical practitioners of the city should be invited in the voluntary notification of tuberculosis, and that great advantages would result therefrom in regard to precautions dealing with tuberculous houses and areas; whether the deaths from tuberculosis in Ireland were over 12,000 per annum, or 16 per cent. of the total deaths registered, and that the number in Belfast was exceptionally high; and whether, in view of the importance of the subject and the unanimous sentiment amongst Irish medical men in favour of its being dealt with promptly and thoroughly, he would put himself in communication with the local authorities in Belfast, Dublin, and the principal centres of the country, with a view to taking such measures as would tend to mitigate the ravages of this disease. Mr. Birrell said that the attention of the Local Government Board had been called to the recommendation referred to in the first part of the question. The statements made in the second part of the question were substantially correct. The Local Government Board was constantly urging upon Irish local authorities the necessity for the full exercise of their powers under existing legislation with a view to checking the mortality from tuberculosis. With regard to the concluding part of the question he might say that he had already been in communication with the General Council of Irish county councils upon the subject of possible further legislation in this important matter, and had promised to receive a deputation from the council on the subject in the coming autumn.

Plague in India.—Mr. Field asked the Secretary of State for India whether he could state the total number of deaths in India from plague since it appeared, giving the number in each year; and what measures had been taken with a view of prevention. Mr. Secretary Morley answered that, according to a return which the Government of India had lately issued, the deaths were:

1896	1,704
1897	56,055
1898	117,953
1899	134,788
1900	93,150
1901	273,559
1902	577,427
1903	851,263
1904	1,022,299
1905	950,863
1906	332,181
1907 (January 1st to May 31st) ...	991,003
Total	5,402,245

The preventive measures which had proved most sucessful were: (1) The systematic destruction of rats; (2) disinfection of houses and clothing; (3) evacution of infected localities; (4) inspection of travellers; (5) segregation of the sick; and (6) inoculation. He hoped shortly to lay papers upon the table which would give a fuller account of the policy of the Government of India.

King Edward's Hospital Fund for London Bill was read a third time and passed with amendments in the Commons on July 5th, and when the Lords have agreed to the amendments the Royal Assent will make it law.

Manchester.

NEW HULME HALL OF RESIDENCE FOR STUDENTS.

THERE can be no doubt of the advantages accruing to the students of a university situated in a great commercial and industrial centre such as Manchester by the establishment of halls of residence both for men and women students. There are two residential halls for men and two for women associated with the University of Manchester. Some time ago a scheme was sanctioned by the Charity Commissioners for a new building for Hulme Hall, which was formerly situated in Plymouth Grove. A hall of residence for students was first opened in Manchester in 1870, the Hulme Hall just vacated was opened in 1887, and now we have its successor. The old building was not all that could be desired; now, thanks to the aid, financial and other, and the enthusiasm of Sir William Houldsworth and others, a magnificent hall, providing every accommodation for forty students, was opened on July 5th. The total cost has been about £21,000, of which £18,000 has been raised. The hall is beautifully situated in Victoria Park, and is in close proximity to the University, the new Royal Infirmary, the Eye Hospital, and St. Mary's Hospital. Sufficient space has been acquired to enable the governors, when the necessary funds are raised, to erect accommodation for sixty students. The hall, as regards endowment, will receive some benefit under the new scheme recently agreed upon between the Hulme Hall governors and Brasenose College, Oxford; it was sanctioned by the Charity Commissioners. It is now awaiting the approval of the House of Lords.

THE MILK SUPPLY OF MANCHESTER.

The contamination of the milk supplied to Manchester has recently been the subject of special inquiry by the *Evening Chronicle*. A large number of farms in Derbyshire and Cheshire have been visited, and in many cases the state of affairs was found to be most alarming. Unhealthy, tuberculous cows with udders caked with excrement, insanitary shippons reeking with ammonia, badly lighted, and kept shut up from an idea that the cows must be warm, cowsheds with brick floors never washed from year's end to year's end and only half drained, milk cans never scalded out but merely rinsed with dirty well-water, milkmen who went straight to the milking from moving manure which lay in heaps close to the shippon doors—such are some of the abominations revealed. Confirmation has been forthcoming from Dr. Serjeant, Medical Officer to the Lancashire County Council, who stated that the condition of cow-houses with which he had acquaintance was no better than it was thirty years ago. Can there be any wonder that Professor Delépine has found that some of the milk injected into guinea-pigs quickly killed them? Place these facts side by side with the fact that more and more children are being bottle-fed, and there need be no surprise at the terrible infant mortality of Manchester. If only half the revelations be true the facts are a disgrace to civilization, and one hardly knows who deserves the greatest censure—the farmers who supply such milk or the sanitary authorities who allow them te do so. As a commentary on this, it was stated in the Liverpool City Council on July 3rd that in the three years since sterilized-milk dépôts had been established in the city the infant death-rate had gone down 17 per 1,000.

"SIXPENNY DOCTORS."

The increase in the number of "sixpenny doctors" in Manchester of late years has been undoubtedly favoured by the fact that so many of the hospitals, with only a pretence of an inquiry into patients' circumstances, accept small donations of about sixpence or make a small charge for medicines. Patients then think that they are paying full value for what they receive, and cannot understand why they should pay any more to the general practitioner. No less than three societies—the Medical Guild, the Medico-Ethical Association, and the North Manchester Medical Union—have recently passed resolutions to the effect "that sixpenny doctors ought not to be recognized professionally nor be met in consultation." As far as can be gathered, the large majority of the consultants are inclined to adhere loyally to these resolutions, though it is somewhat surprising to find one or two exceptions who openly defy the societies. The feeling, however, is so strong, that this attitude is likely to prove a short-sighted policy.

CONVALESCENT HOME AT PENMAENMAWR.

On Saturday, June 29th, the Lord Mayor of Manchester formally opened at Penmaenmawr a new convalescent home for patients from Manchester and Salford. The building will accommodate about 50 convalescents, and it is intended to be self-supporting. The Lord Mayor said that it will belong to the workpeople themselves, and will be entirely controlled and managed by them; by paying 1d. a week any man is entitled, after subscribing for three months, to spend a fortnight or more there when convalescent from illness. An appeal was made for new members on business lines, it being stated that there is no element of charity in the concern. Over £9,000 had been already obtained by means of a grand bazaar for this and another similar home for women at Arnside. This is felt in Manchester to be a move in the right direction. It draws a sharp distinction between charitable and self-supporting institutions. One cannot help wondering why there should not be the same distinction drawn in the case of hospitals, for at the present time hospitals which are supposed to be charitable institutions have many of their beds occupied by paying patients and in consequence it is no rare thing for urgent cases among the poorer non-paying patients to have to wait for a bed.

CRIPPLED CHILDREN.

Thanks to the Crippled Children's Help Society, the third annual motor-car outing given to these poor unfortunates was a great success. Through the kindness of their owners something like 130 motor cars were placed at the disposition of the Society, and over 500 crippled youngsters were given an outing to Chelford near Alderley Edge on Saturday last.

West Yorkshire.

THE MUNICIPALIZATION OF BRADFORD CHARITIES.

AN interesting article in the Bradford *Evening Telegraph* of June 18th drew attention to many points connected with this subject. It would require a rate of 3½d. to provide for the maintenance of the main charities of the city as at present carried on, no payment being made for the medical services rendered. It is considered that it would be necessary to raise a twopenny rate for the payment of the medical men connected with the various institutions. As 1d. in the £ on the Bradford rates at present produces £5,790, it will at once be seen how the medical profession assists by its services the causes of charity in the city.

PROPOSED LADY HEALTH VISITOR FOR KEIGHLEY.

At a meeting of the Keighley Town Council, held on July 2nd, a somewhat prolonged discussion took place on a recommendation from the Health Committee that a lady health visitor be advertised for at an annual salary of £80, the person appointed to be a trained nurse and certificated midwife, and to hold the certificate of the Royal Sanitary Institute. The infantile death-rate in Keighley in 1906 was 149, and it was suggested that a lady qualified as suggested might do something to reduce it. It was pointed out by one or more of the speakers that some of the suggested visitor's duties infringed on the domain of the medical man, and on being put to the vote the motion was negatived by 9 to 6.

HALIFAX GUARDIANS.

Mr. Bagenal, one of the general inspectors of the Local Government Board, is reported to have made some indiscreet observations on medical matters at a meeting of the Halifax Board of Guardians held on July 3rd. In connexion with the difficulty that has arisen between the medical profession and the Halifax Board because the latter body will not pay the medical men adequately for services rendered, Mr. Bagenal is reported to have said:

The guardians had got a medical House of Lords in Halifax and however much they might want to shift them he did not see how they were going to do it. The medical men had laid down the salaries the guardians had to pay, and, as far as he could see, they intended to carry that out. It was

not a satisfactory state of affairs. Whether the guardians made the knot themselves or whether the blame was on the other side he did not pretend to say, and he was not prepared to advise them in public what to do.

Why the inspector should go out of his way to make these observations is not very clear. The medical profession is entitled to set its own value on its services, and possibly the Halifax guardians may see in the course of time that doctors rightly have some say on the question of payment for the services rendered by them to the public.

Bristol.

DR. JOHN BEDDOE, F.R.S.

A LITTLE over a year ago a portrait of Dr. John Beddoe, F.R.S., by Miss Warn, was exhibited in a local art gallery, and efforts were subsequently made to purchase the picture with a view of presenting it to the city. The rules of the Municipal Art Gallery prevented the hanging of a portrait of a living person; but this difficulty was got over by the Museum Committee agreeing to accept it for the Bristol room in the museum. The amount the artist asked having been subscribed by Dr. Beddoe's friends, the formal presentation to the chairman of the Museum Committee, Alderman R. W. Barker, took place on July 5th. The presentation on behalf of the subscribers was made by the Right Hon. Lewis Fry, who referred to the distinguished position Dr. Beddoe held in the scientific world as an ethnologist. His reputation, founded on the numerous works he had published, had been recognized by all countries, which had made him a member of their learned societies. But that was not the only reason the subscribers had for presenting his portrait to the city he had lived in for so many years. It was that they might have his representation always before them to remind them of his many kindnesses and his skill as a physician, of which many could still speak with knowledge, though he had retired from practice more than sixteen years ago. Mr. Alderman Barker, in accepting the portrait for the city, referred to Dr. Beddoe's interest and work in antiquarian matters, and said the city was proud to have the excellent portrait and to honour such a distinguished citizen. Dr. Beddoe, who was present, thanked the speakers for their kind expressions of affection.

ADMISSION OF WOMEN TO THE MEDICAL SCHOOL.

Bristol University College has taken the important step of admitting women to the full medical curriculum Under previous rules they had been allowed to attend certain lectures, and by permission of the lecturer certain others, but they had not availed themselves to any extent of these privileges. The rules now admit them to the whole course on exactly the same footing as men.

ST. JOHN AMBULANCE.

At the invitation of the Dean of Bristol, a large gathering of University College professors, medical men, and nurses attended a special service, on St. John's Day, to assist in helping forward the ambulance work in connexion with the St. John Brigade. The Lord Mayor, High Sheriff, and some of the Town Council attended in state, as well as the Chief Constable and several superintendents. The nave of the cathedral was nearly filled by the invited guests, as not only was the invitation largely accepted by those invited, but the members of the St. John Ambulance Brigade and many others interested in ambulance work, such as the Midland Railway men, were also present. The service was of a very simple nature, and a sermon of an appropriate character was delivered by the Dean. The collection on behalf of the Brigade amounted to £13.

In spite of miserable weather, the annual competition for the ambulance corps was held in June at the Zoological Gardens. There were three cups to be won—the Davies for general proficiency amongst all workers, the Squire for those only who possess medallions, and a new cup, called the Novices', for first-year certificate holders. The examination of the various teams was of a searching character, being both practical and *viva voce*, and the work was extremely well done, the men being smart and efficient, not allowing speed to interfere with care or attention to details. In the end the judges announced that both senior cups had been won by the Midland Railway team. Mrs. Daniel, the wife of the High Sheriff, presented the cups to the captain of each winning team and a special medallion to each man.

North Staffordshire.

THE HEALTH OF HANLEY.

THE report of the medical officer of health (Mr. J. Clare) for 1906 has recently been published. With a population of 66,360 and acreage of 1,962, the density of population is 36.5 per acre. The birth-rate was 34 per 1,000, an increase of 0.5; and the death-rate 19.6, excluding public institutions, 16.3.

The deaths of children under 1 year to 1,000 births were 159, the average for the preceding ten years being 199; this is a marked decrease. The death-rate from phthisis was 1.1 per 1,000. No case of small-pox occurred. Of measles there were only 25 notifications, with 1 death. Notification of the first case in a house is paid for. A chart based on the numbers of notifications for previous years shows a regular alternation of epidemic years and comparatively free years. Thus in 1904, 1902, 1900, 1898, and 1896, notifications amounted to 700 or more each year, but in each of the intervening years to less than 100. The year 1906 shows a low figure instead of continuing the high series, but the slight outbreak towards the end of the year, on which the return is based, has extended at the time of writing to a considerable epidemic in 1907.

The decrease of diphtheria in 1905 has been maintained. Liquid disinfectant has been used in schools for washing slates and pencils, and latterly these have been abolished. Antitoxin has been freely used, not only therapeutically, but as a prophylactic; medical men being paid 2s. 6d. for the first case and 1s. for every other case injected in any house.

The fine weather of August and September brought an epidemic of diarrhoea; 162 deaths occurred, and of these 126 were in children under 1 year. Of the latter, there were only 3 deaths in cases in which the children were entirely breast-fed. Sterilized milk is procurable in the borough.

The report includes a section by the Assistant Medical Officer, Miss M. Mackenzie, M.B., whose duties are to supervise the midwives of the borough, in accordance with the rules of the Central Midwives Board, and to act as lady sanitary inspector. There are thirty-four registered midwives. There have been five cases of puerperal fever attended by a registered midwife, in each of which the midwife has been suspended from practice during the disinfection of her clothes and appliances.

The systematic visitation of houses in the poorer parts of the borough has been continued, and 2,410 visits have been made. Where artificial feeding of infants is necessary, the mothers have very little idea of the proper food to prepare. The use of the dummy teat is universal. Very few cradles are used. Unprotected kitchen fires are the rule. Bedroom ventilation is in most cases bad; not only are the windows seldom opened, but the fireplaces are blocked up, though this is often needed to prevent the room being filled with smoke from the fire downstairs.

The only remedy for many domestic evils is the teaching of household management in the girls' schools, as the mothers cannot teach their daughters, and in many cases they go to work.

Wales.

INFANT MORTALITY IN ABERDARE.

A FEW months ago the Local Government Board instructed Dr. Spencer Low to conduct an inquiry relative to infectious diseases in the Aberdare Urban District Council area, and his report has now been issued. The population of Aberdare, which was 38,431 in 1891 and 43,365 in 1901, is now estimated at 46,181. The general district rate for 1906 was 3s., poor-rate 4s. 5d., making a total of 7s. 5d. in the £. Dr. Low says the standard of the housing varies. In some of the older parts, such as the centre of Aberdare town, Abernant, and Aberaman, dilapidated buildings are found, but in almost all directions abundant evidence of activity in building is to be seen. Tables are given showing the increase of the number of houses from 7,428 in

1891 to 9.551 in 1906. In this connexion Dr. Low refers to the large number of houses in the district erected by building clubs, which he warmly commends. Reference is made to a number of houses in the district unfit for human habitation. The water supply and the sewerage works also, as a whole, are sufficient. The need of a better system of refuse disposal —by destructor—is urged, as also the need of a small-pox hospital. Dr. Low deals with the exceptionally high infantile mortality, the death-rate of infants under 1 year of age in 1904 having been 238 per 1,000 births registered, 198 in 1905, and 209.6 in 1906. He deals with the prevalence of infectious diseases, but he says the mortality, especially from diphtheria, is low, and this he attributes to the free use of antitoxin. After recommending the appointment of a whole-time medical officer of health—a recommendation already carried out—he advises more thorough methods of dealing with infectious diseases, such as the erection of a new isolation hospital, the framing of new by-laws, and the investigation of the causes of the high infantile mortality in the district.

THE FEEDING OF SCHOOL CHILDREN.

The Roath (Cardiff) Lodge of the Friendly Society of Operative Masons has passed a resolution urging the City Corporation to adopt the Act for the feeding of necessitous school children.

MERTHYR BOROUGH COUNCIL.

At a meeting of the Health Committee of the Merthyr Council held on July 3rd there was a discussion as to the disposal of the two isolation hospitals now disused. The hospital at Pant, being built upon land held from Messrs. Guest, Keen and Co., was the subject of a letter from the company applying for possession. The Committee decided that part of the building must be burnt down, and resolved to inform the company of its decision. On the report of the medical officer of health, it was decided to represent as unfit for human habitation some twenty houses. It was decided to take steps to reduce the overcrowding at a two-roomed house in Dowlais, where a widow and her daughter and three sons occupied one room on the ground floor, and a man and wife and four small children were the occupants of the upper floor. Two other houses in the same row were similarly dealt with. One cellar was occupied by husband, wife, sons 19, 9, and 1 year respectively, and daughters 15 and 5 years, while the room upstairs was occupied by a man and wife and three sons. Another cellar was occupied by husband, wife, and three children, and four rooms above by husband, wife, and five children. The medical officer's return showed a birth-rate of 38 per 1 000 for the four weeks ended June 22nd, as compared with 35.5 for the corresponding week last year, and a death-rate of 16.2 as compared with 14.7. The infantile mortality-rate was 116 per 1,000 births. Thirty-five cases of infectious diseases had been notified, as against 36 last year.

WELSH DOCTOR'S PROTEST.

Surgeon-Colonel J. D. Lloyd, V.D., of Chirk, has been medical officer to the Brynkinalt Colliery for seven years, and on June 29th he received notice to terminate his engagement. He stated that he had not been approached as to any grievance that might exist, and the matter was laid before the members of the Chirk Oddfellows' Lodge by Dr. Lloyd at their annual gathering, when, in replying to a personal toast, he dealt with the matter at length. Dr. Lloyd said he had in his hand a presentation made to him in 1883. It was from the Brynkinalt Colliery employés, thanking him for his indefatigable labours during a severe twelve months' scarlet fever epidemic in the neighbourhood. "His unwearied attention," the text said, "genial manner, combined with the professional skill he had brought to bear when the lives of their children were hanging in the balance, would be gratefully remembered by them. They felt as working men they were highly favoured by having amongst them so skilled a practitioner." Continuing, Dr. Lloyd said that by that morning's post he received a registered letter from the Brynkinalt colliers giving him three months' notice that the men were withdrawing from the existing arrangements as to medical attendance. He had spent the best years of his life for Chirk people, and when he went to Chirk he spent £1,500 on a practice not worth begging For fifteen years he never had a penny piece from the working men to remunerate him. He worked day and night, and though he did not care for any man, he wanted to be treated like a man. Under those circumstances if any medical man went to Chirk he would brand him before the profession as a pirate. If any man had a grievance why did he not say so? If any man made an assertion and could not substantiate it, he would resort to the law court; if he could substantiate it, he (the doctor) would make restitution. He would have no nonsense while he was at Chirk. He had been to considerable expense in bringing up his son to follow him. It was an important matter financially to him, and he made no bones about it. Was that the gratitude he was to expect from the rising generation he had brought into the world? (See also p. 108.)

AMBULANCE WORK.

A meeting was held at the City Hall, Cardiff, on June 29th for the purpose of presenting certificates to the lady members of the Cardiff Branch of the N.U.T. who had successfully passed the first aid examination of the St. John Ambulance Association. These ladies had attended classes established last year and conducted by Dr. Alfred Howell and Dr. Eric Evans as honorary lecturers. Mrs. Forrest presented the certificates. Dr. James, the Director of Education for Glamorgan, said that, in response to an inquiry from the Glamorgan Education Office, Sir H. Perrott, the Chief Secretary of the St. John Ambulance Society, had stated that he agreed to the work of the Society in the county being done through the Cardiff centre. Mrs. Forrest also presented Dr. Alfred Howell with an auroscope and Dr. Eric Evans with a hypodermic syringe on behalf of the class as small mementos of the services rendered. The usual vote of thanks being passed, the meeting concluded.

Ireland.

THE NURSING OF THE SICK POOR.

THE twenty-fourth annual meeting of the Holywood Society for Nursing the Sick Poor was held on June 24th in the Town Hall, Holywood, Sir John Byers, M.D., in the chair. There was a very good attendance, including a large number of ladies. After the presentation of the annual report and the statement of accounts, Sir John Byers delivered an address. He congratulated all those connected with the Society for Nursing the Sick Poor of Holywood on what had been accomplished by their organization during the past year. He said it was unnecessary for him to add anything as to the value of skilled nursing. To anyone who had passed through a serious illness like pneumonia, typhoid fever, or influenza this was evident, and they all knew how surgery was invading more and more every branch and speciality of medical science, and that the most exquisite care was needed in the nurse's technique, not merely at the time of an operation as an aid to the surgeon, but in the preparation of patients beforehand and in attending to them afterwards. He was specially pleased to notice that their Society employed a maternity nurse, and that the cases looked after by her had done so well; for in that important branch of practice they had come to see that the same painfully precise cleanliness and attention to details were demanded as in surgery, and that their employment was followed by equally satisfactory results—a matter of the very greatest importance to the poor. There was no greater fallacy than to imagine that any woman could become a nurse, as no calling demanded more varied gifts, and few entailed more arduous duties. A good nurse, like the poet, was in the same sense born. She had to go through a lengthened practical training and education, during which, in addition to learning the principles of the art and science of nursing and invalid cooking, she had to cultivate the power of observation; but, further, she needed tact and judgement, sympathy, patience, firmness, and kindliness to deal with people who in times of sickness often had severe pain, or who, from a functional derangement of the brain—apt to arise in various forms of disease—were often wayward, capricious, and exacting. It was in such circumstances that no detail which concerned the comfort or well-being of a patient could be too minute for a

nurse's attention. She might by a change of posture, by rearrangement of a pillow, or the altering of the position of a limb, greatly ease a patient's sufferings, while, at the same time, humour their whims by judicially directing away their attention from their own ailments. She must always recollect that in every case of illness she had charge not merely of a "case," but of a disease and the human being who was suffering from it. Those who had experienced what the presence of a thoroughly educated nurse was in times of sickness, who realized that her calling, in addition to being a means of living, was in the highest and truest sense a mission, would agree with what the most masterful physician of the Victorian era had said, "Nursing has sometimes been made a trade, sometimes a profession; it will never be what it should be until it is made a religion." The Society for Nursing the Sick Poor in Holywood had been in existence for twenty-four years, during which it had alleviated a great deal of suffering, but he wished to impress, especially upon those ladies who took an active interest in its workings, that since it was formed medical science—especially in recent years—had moved more and more in the direction of the prevention of disease, and consequently they could utilize it for another object, and that was to spread the knowledge of what might be done in every home and by every householder to guard against disease, and to promote the upbringing of a healthy and vigorous race. In view of what medical science was constantly teaching them, one of the most pressing problems of the present day was to bring home to the people that many of the diseases and deaths which occurred in their midst could be prevented if they would only be persuaded to obey the laws of hygiene and sanitation. This process of education was being carried out by the medical profession (in the most unselfish way as regards their own interests) by public health authorities, and by the distribution of literature. But above and beyond all these admirable agencies, he thought they wanted to bring the facts directly before the people by a process of direct personal education, and one of the means by which this could be accomplished was by societies such as theirs. He mentioned three subjects which might be discussed: (1) The value of cleanliness, fresh air, good water, and pure milk, and the hygiene of the home. (2) The importance of a knowledge of hygiene and diet to expectant and nursing mothers, so as to enable them, like that hardy race the Japanese, to nurse their own infants. It had been shown from statistics which appeared in the report of the Inter-Departmental Committee on Physical Degeneration that, while the death-rate of children nursed by their mothers was 2.6 per cent., it was 10 per cent. among those artificially reared. In other words, if all children could be brought up by their mothers over 80,000 infants would every year be saved in England and Wales, while, if the parents had a knowledge of health and diet, and especially of the proper foods needed during the period of development and growth, thousands of children would be healthy and strong who live on in constant misery and pain. (3) The desirability of educating the poor in the choice and preparation of plain wholesome food. It was of the utmost importance that public opinion in Ireland should be aroused to the importance of this matter, because unfortunately little progress had been made so far in that country in the science of the prevention of disease. While the death-rate in England for all forms of tuberculosis had fallen as well as in Scotland, in Ireland in 1905 it was appalling to read that for every 100 deaths 16 were victims of tuberculous disease, and that there were more deaths from tuberculosis than from old age, or than from all the epidemic diseases combined. He appealed to them all to join in the educational health campaign with those who were trying to save their race from extinction.

Royal Hospital for Incurables.

At the annual meeting of the supporters of the Royal Hospital for Incurables, Dublin, the report submitted showed that 210 beds had been daily occupied during the year. Out of 102 candidates, 47 were elected, comprising cases of consumption, cancer, paralysis, heart disease, and rheumatism. The deaths numbered 40. The ordinary expenditure was £7,312 18s. 10d., and the hospital was maintained in a state of complete efficiency.

Among the speakers were Mr. W. Fry, Chairman; Sir John Nutting, Bart.; Sir W. Thornley Stoker, Mr. Laurence Malone, Sir J. W. Moore, and Dr. Magee Finny.

In his speech the Chairman mentioned an interesting fact. The hospital was in debt to the bank. Among those who received their appeal was Mr. Richard Croker, whose horse Orby lately won the Derby, and he had responded manfully. Mr. Croker wrote to the Secretary, "Please let me know what is the amount of your overdraft to-day." He was told the amount, and the next post brought them £371 17s. 7d. Lord Iveagh also sent them £100.

Scotland.

School of Medicine of the Royal Colleges, Edinburgh.

At a meeting of the Governing Board of the School of Medicine of the Royal Colleges, Edinburgh, the Secretary and Registrar, Mr. R. N. Ramsay, reported that the number of students attending the School during the winter session 1906-7 was 1,048, and during the summer session 961.

Edinburgh Royal Infirmary.

At the weekly meeting of the managers on July 8th, G. Lovell Gulland, M.A., B.Sc., M.D., F.R.C.P.E., Assistant-Physician; Mr. David Wallace, M.B., C.M., F.R.C.S.E., Assistant-Surgeon; and Mr. Alexis Thomson, M.B., C.M., F.R.C.S.E., Assistant-Surgeon, were reappointed to their respective offices for a further period of five years as from October 3rd next.

Diphtheria in Edinburgh.

During the week ending July 6th, 44 cases of diphtheria were notified to the medical officer of health. This is approximately double the usual number of cases to be looked for at this season. The additional cases have practically all occurred in one street, which is one densely populated by working men and their families. The outbreak has consisted for the most part of cases recognized bacteriologically rather than clinically. The efforts of the public health authorities to find any cause in milk or drains have been fruitless. The probability is that one or more mild ambulatory cases have been at the root of the mischief. Already the wave is subsiding, and the alarm caused by sensational and exaggerated reports is passing away.

Epidemic Cerebro-spinal Meningitis in Scotland.

The Registrar-General for Scotland reports that in the week ending Saturday, July 6th, 16 deaths in eight principal towns of Scotland were due to cerebro-spinal meningitis; of these 10 occurred in Glasgow, 3 in Edinburgh, and 3 in Leith. In the city of Edinburgh, during the same period, 5 cases were notified as suspicious cerebro-spinal meningitis, of which 4 were removed to the City Hospital at Colinton Mains. Three deaths occurred during the week, and 19 cases remained under observation.

Anatomical and Anthropological Society of Aberdeen University.

At a meeting of this society held in the Anatomy Department, Marischal College, on July 6th, Professor Reid in the chair, papers on anatomical subjects were read by Messrs. J. Fettes and S. G. Trail. Professor Reid intimated the presentation to the museum of a stone cyst by Mr. William Bear Moir of Scotstown. Dr. Low gave a short description of the cyst and its contents, and showed several lantern slides depicting it *in situ*. The treasurer's report was read and approved. The following office-bearers were appointed for the ensuing year: *President*, Professor R. W. Reid; *Vice-Presidents*, Dr. Alex. Low, Dr. R. W. Salmond, Mr. James Watt; *Secretary*, Mr. N. J. Calder; *Recording Secretary*, Mr. J. D. Fiddes; *Treasurer*, Mr. R. Richards.

Incorporated Sanitary Association (Scotland).

This Association is to hold its meetings in Aberdeen this year on September 4th, 5th, 6th, and 7th. On Wednesday, September 4th, business will begin in the Town Hall, being followed by a lecture. Lord Provost Sir Alexander Lyon will formally welcome the delegates on Thursday morning, and later the President will deliver his address. At 4 o'clock the visitors will be entertained by the Corporation. The official dinner of the Association will be held on the

same evening. After the business meeting on Friday the delegates will, on the invitation of the Town Council, visit some of the public institutions in the city, and in the evening the Corporation will hold a reception. On Saturday the delegates and friends will in all probability visit Donside or Deeside.

SANITARY ASSOCIATION OF SCOTLAND.

The annual congress of the Sanitary Inspectors' Association of Scotland was held recently at Dunoon. Mr. George Dunne, Chief Sanitary Inspector, Govan (President), occupied the chair, and there were about fifty delegates present. The President's address was devoted to "a few observations on sanitary progress and holiday resorts," with special reference to Scotland. After referring briefly to the pollution of the atmosphere by smoke, the waste-paper nuisance, and the dust and smells of motors on country roads, he said the improved health conditions of towns and cities had not rendered less necessary the recruiting and invigorating influence of holiday resorts. What were the essential conditions of a holiday resort? The sanitary inspector should co-operate with the local authority in removing everything that could be regarded as a nuisance, and in making all quarters of the place sweet and clean. The streets should contain nothing that would offend the eye or be injurious to health, and where seaside conditions prevailed there ought to be no matter of an unseemly character on the foreshore. To put it briefly, the drainage should be as perfect and satisfactory as possible; the water supply wholesome and abundant; reasonable arrangements with landed proprietors where possible should exist whereby visitors would have access to hills and dales, to fields and woods; a commodious and comfortable place of shelter should be provided for inclement weather, and there ought to be hospital accommodation to cope with possible emergencies. The great object of an association such as theirs ought to be the sanitary education of the individual citizen, and especially of the housewife. Pure air, wholesome water, and sanitary conveniences were vitally necessary, and when properly utilized were all-powerful factors in the production and maintenance of health. Ignorance and indifference, however, on the part of the individual might render them abortive.

THE LATE DR. ANDREW BALFOUR.

On Saturday afternoon, July 6th, Sir Charles Dalrymple, Bart., unveiled a handsome drinking fountain which the villagers of New Craighall have erected near the parish church and the village school to the memory of the late Dr. Andrew Balfour, J.P. A plate on the canopy of the fountain bears the following inscription:

Erected by the people of this district to show their high esteem for the memory of Dr. Andrew Balfour, who for thirty years took a great interest in the welfare of this village. Died 26th December, 1906. Erected July, 1907.

New Zealand.

ANIMAL TUBERCULOSIS.

IN his report for 1906 to the New Zealand Department of Agriculture, Mr. J. A. Gilruth, Chief Veterinarian and Bacteriologist, provides some statistics with reference to the prevalence of animal tuberculosis in New Zealand. During the three years ending March, 1905, 236,657 fat bullocks and heifers were examined, and of these 8,835 were found to be affected with tuberculosis, giving a percentage of 3.7. It is noteworthy that this percentage of affected cases was discovered amongst animals which were apparently healthy and in good condition. Out of 45,742 cows examined, 4,718, or about 10 per cent., proved to be tuberculous. "Dairying," Mr. Gilruth remarks, "is no doubt the greatest indirect cause of the spread of tuberculosis, for it is that industry alone which induces an owner to preserve the life of an old, and probably diseased, milk-cow, to the detriment of the remainder of his herd and of the district generally, in addition to spreading tuberculosis by contaminated milk from the factory." Tuberculosis has also been found to be prevalent to a serious extent amongst pigs. Out of a total of 124,898 which have been examined the disease was detected in 4,913, or nearly 4 per cent. Most of these animals were killed when not more than a year old, and the situation of the lesions clearly showed that in the majority of cases infection was due to contaminated food. "The spread of the disease in pigs is undoubtedly due to milk containing the tubercle germ, and on this hypothesis alone can we account for the greater part of the disease in swine inspected." Mr. Gilruth points out that when bacilli are present the skim milk, on which these animals are usually fed, will contain most of the germs, since they are of greater specific gravity than the cream. And the danger is intensified by the fact that the farmer does not usually feed his calves and pigs on his own skim milk, but receives it from a factory or creamery which is supplied from various sources. This method obviously involves the risk that one infected farm may contaminate its neighbours, unless the sterilization of the skim milk used for feeding animals is made compulsory.

South Africa.

THE TUBERCULOSIS QUESTION.

AN influential deputation of members of Parliament, mayors, and medical officers of health, recently waited upon Colonel Crewe, the Cape Colonial Secretary, with whom was Dr. Gregory, the Medical Officer of Health for the Colony. The requests of the deputation were, we learn from the *South African Medical Record*, two—one that the Government should endeavour to arrange for an Intercolonial Commission to inquire into the whole subject of the prevention of tuberculosis; the other that immediate provision should be made for the care and isolation of indigent persons in an advanced state of the disease. The views of the deputation were expressed by Dr. M. Hewat and by the Mayor of Capetown, the latter assuring the Colonial Secretary that he intended to start an agitation throughout the country. Colonel Crewe and the Medical Officer of Health, however, were doubtful on the one hand whether a commission would bring any valuable facts to light, while on the other they were certain that it would be a tedious and expensive piece of machinery. Dr. Gregory laid special stress on improved general sanitation as being the most effective way of combating tuberculosis, which he said was one of the easiest of all diseases to prevent. He did not think the segregation of tuberculous people could ever be carried out. All the deputation succeeded in extracting from the Colonial Secretary was a promise to set apart in the new Alexandra Hospital some beds for indigent people in advanced stages of consumption.

SANITATION OF MINES.

A Government Gazette Extraordinary issued on May 11th announced the appointment of a Commission to inquire into and report upon the following matters:—(1) The working of the mines, works and machinery regulations, and to make recommendations for any amendments thereto necessary for the better protection of the health and safety of persons working in mines, with special reference to the following subjects: (*a*) Prevention of accidents; (*b*) ventilation; (*c*) underground sanitation; (*d*) change houses. (2) The present system of measuring up contract work underground, and to make recommendations as to the necessity or otherwise for legislation on this subject. (3) The question of extending the operation of the Mining Certificates, Ordinance No. 50 of 1903, to engine drivers driving stationary and traction engines, not being man-hauling engines. His Excellency the Governor has approved of the appointment of Dr. F. E. T. Krause, M.L.A., as Chairman; Messrs. C. J. Price, James Nicholson, A. Heymann, and Dr. C. Porter as members of the said Commission; and of Mr. Ben Auret as Secretary.

THE first Congress of the German Urological Society will be opened at Vienna on October 2nd by His Imperial and Royal Highness the Archduke Rainer. The subjects proposed for discussion are tumours of the kidney, to be opened by Professors Küster and von Eiselsberg; renal calculi, to be opened by Drs. Kümmell, Holzknecht, and Kienböck; and albuminuria, to be opened by Professors von Noorden and Posner. All communications relative to the Congress should be addressed to Dr. Kapsamer, IX Maria Theresien-strass 3, Vienna.

DR. W. H. BRUMBY, State Health Officer of Texas, has, we learn from the *Medical Record*, announced his intention of issuing a proclamation quarantining all persons suffering from advanced tuberculosis.

SPECIAL CORRESPONDENCE.

PARIS.

Professor Calmette of Lille on Early Diagnosis of Tubercle by Ophthalmo-reaction to Tuberculin.—X Rays for the Detection of Tubercle as an Aid to Meat Inspection.

IN the BRITISH MEDICAL JOURNAL of June 15th a summary was given of the experiments by M. Vallée (Alfort) in regard to the early diagnosis of tubercle in cattle by the "cuti-reaction," or inoculation of tuberculin on the scarified skin. Professor Calmette (Lille) has made experiments to see if the healthy mucous membranes, and especially the conjunctiva, would show an analogous reaction after contact with tuberculin. Professor Calmette, in a recent number of the *Presse Médicale*, describes the first series of experiments which he has carried out in collaboration with his pupils, MM. Breton and G. Petit in the hospitals at Lille. The experiments were made on 25 patients (children and adults), of whom 16 suffered from tuberculous and 9 from non-tuberculous affections. In order to avoid the irritating effects of glycerine on the conjunctiva they used exclusively dry tuberculin precipitated by alcohol at 95° in a 1 per cent. solution in sterilized distilled water. The solution was always freshly prepared, and one drop was placed in the conjunctival sac—in one case five hours after the instillation, in some cases even after three hours; all the tuberculous patients showed a very apparent congestion of the palpebral conjunctiva, which became bright red, and was the seat of more or less intense oedema. The conjunctiva swelled, became red, and was covered with a slight fibrinous exudation. The injection of the blood vessels increased gradually, and was accompanied by secretion of tears. In six hours the fibrinous secretion became more abundant, and collected in filaments in the lower conjunctival sac. The reaction reached its maximum in six to ten hours. The patients felt no pain, but only a little discomfort with slight sensation of burning and some disturbance of vision *in ratio* to the abundance of the exudation. There was no chemosis. The rectal temperature was not appreciably altered. The intensity of the reaction could easily be appreciated by comparison with the non-inoculated eye. The congestion gradually disappeared in children after eighteen hours, and in adults in from twenty-four to thirty-six hours. In healthy persons or patients with non-tuberculous diseases the instillation of tuberculin produced, as a rule, no effect, but sometimes one to three hours afterwards a slight redness was observed, which soon disappeared, and was not accompanied by either fibrinous secretion or tears. The reaction was positive in 16 cases of pulmonary or pleuritic tubercle and in tuberculosis of bronchial ganglia. The reaction was negative in the following cases: Sciatica and hysterical hemianaesthesia, Bright's disease, tabes with inco-ordination, lymphangitis with wound of the forearm, mitral and tricuspid incompetence, mental confusion, cerebro-bulbar sclerosis, influenza, acute rheumatism with mitral endocarditis. This phenomenon, which Professor Calmette proposes to call the "ophthalmo-reaction to tuberculin," appears to be very sensitive. It deserved to be studied, he thought, by clinicians because it was extremely easy to show; it appeared much sooner than the cuti-reaction, which required forty-eight hours, and it caused no pain nor durable discomfort. It, moreover, did not appear to give rise to any of the drawbacks or dangers attending the injection of tuberculin under the skin. Professor Calmette hoped that by this method it would be possible to make a positive early diagnosis of tuberculous affections, and to prove the definite cure of old tuberculous lesions. At a recent meeting of the Société de Biologie, Dr. Maurice Letulle communicated the first results of his use of the ophthalmo-reaction of Calmette; 65 tuberculous cases all gave a positive reaction with the exception of five, four of whom were very gravely affected or moribund.

At a recent meeting of the Académie des Sciences, M. H. Martel made a communication on the result of the inspection of tuberculous meat by radioscopy and radiography. Cattle and pigs had, he said, this peculiarity that their tuberculous lesions were easily invaded by deposits of lime salts. Healthy ganglia only gave a slight shadow, while the tuberculous ganglia were projected in the form of a granular spot of greater or less extent, according to the degree of invasion. This method was valuable, as it enabled tuberculous foci to be discovered which were not even suspected in the absence of a previous tuberculin test on the living animal.

CORRESPONDENCE.

THE EVOLUTION OF THE STETHOSCOPE.

SIR,—The interesting lecture by Dr. Theodore Williams on the evolution of the stethoscope in the JOURNAL of July 6th, p. 6, reminds me that I gave a similar illustrated lecture twenty-five years ago at Guy's Hospital, an abstract of which is to be found in the *Lancet* for November 25th, 1882. I mention there the flexible tube used by Dr. Golding-Bird at Guy's, but I seem to have some recollection of a Westminster Hospital physician claiming priority. I also allude to an apparently binaural instrument invented by Mr. Comins, and called by him "a flexible stethoscope."[1] This was only twelve years after Laënnec's invention. Mr. Comins expresses his surprise that the discoverer of mediate auscultation did not suggest a flexible instrument, as he says "it can be used in the highest ranks of society without offending fastidious delicacy."

I am writing this note more especially to give an extract from my lecture on the interesting physiological fact of what occurs by the union of the two sounds from both ears. I used to point out to the students that these two subjective sounds became an objective one. Since this time I have found most medical men ignorant of the fact, as they tell me it is not mentioned in text-books. If this be so, it is evident that, although of physiological interest, it possesses no practical importance. The fact of the body being made up of two halves, to which I allude also, gives the clue to the question of left-handedness and ambidexterity. The following is the extract from my lecture:

"A very interesting fact was first pointed out to me by Dr. Andrew Clark, with respect to a peculiarity of the binaural in the objective appreciation of sounds, that if each earpiece be separately used and any sound be made near the mouthpiece, it is heard in the ear itself, but if the two earpieces are employed together, the sound is heard at the spot where it is produced. The fact is very interesting in a physiological point of view, and further corroborates the theory as to the value of a double set of senses; or, in a word, of the body being made up of two halves, for, just as the two hands feeling different parts of an object gain an idea of extension, and the two eyes, by obtaining different views of any substance, get a knowledge of its solidity, so in the same way the two ears listening to the same sound more thoroughly appreciate its objectivity.

"If you look at this series of drawings of stethoscopes you may perceive but little resemblance between the first figure and the last; but, take them one by one, you will see that the figures are really progressive. My story of development is not imaginary but historical."—I am, etc.,

Hampstead, July 6th. SAMUEL WILKS.

THE TREATMENT OF ACUTE INTUSSUSCEPTION.

SIR,—In the BRITISH MEDICAL JOURNAL issued on February 23rd, there appears a communication from W. G. Williams (Cardiff) on the subject of intussusception. After reading this I came to the conclusion that the principles of treatment which were there so strongly and confidently recommended, should not be allowed to pass unchallenged. I have allowed an interval of nearly three months to pass before taking this step, so that other surgeons who have had greater experience than myself might criticize the course of treatment recommended by Dr. Williams; but as this has apparently not occurred, I proceed myself. I am encouraged in so doing by the unanimous support of my fellow practitioners, who at a recent meeting of the Derby Medical Society expressed the opinion that acute intussusception when diagnosed should be submitted to operation forthwith.

I am in complete agreement with Dr. Williams when he says: "In intussusception it is of the utmost importance that the case should be seen and diagnosed early, and" (but

[1] *Lancet*, August 29th, 1829.

from this point we differ) "at once put under the influence of morphine. An attempt at reduction should also be made as soon as possible, as in this way a good many lives can be saved. In this particular case an injection only was not sufficient, but a little traction applied worked admirably." The traction mentioned was applied through the abdominal parietes! In the first place the use of morphine in an acute abdominal case is much to be deprecated:

1. It disguises symptoms.
2. It tends towards paralytic distension of the bowel.
3. It inhibits leucocytic mobility.

These points are so largely recognized by all surgeons that I need not further insist upon them.

Next the question of injection must be considered. This method of reduction has undoubtedly been successful in many cases. It is a matter of great difficulty to arrive at the exact value of the treatment from a statistical point of view, as in all cases of disease successful results are prone to be reported and fatal results to be forgotten.

I find, however, in an excellent paper by Mr. Bernard Pitts, at St. Thomas's Hospital, out of 31 cases, injection without anaesthesia was tried in 4, with 3 failures and 1 success; with anaesthesia one case was injected and failed. But when one considers the reduction of an intussusception from the anatomical point of view, I think it is obvious that there are a great many cases where injection must fail. Some of these are intussusception of the small intestine (enteric intussusception), invagination of Meckel's diverticulum, invagination of the vermiform appendix, cases where the intussusception is due to polypus, all cases where adhesions have formed between the intussuscipiens and intussusceptum, and cases where, together with the entering intestine and mesentery, the peritoneum (with its folds and complicated fossae often containing lymphatic glands in the neighbourhood of the ileo-caecal valve) is also dragged in.

Now practically none of these untoward conditions can be diagnosed without exploration. But, it may be asked, why should we not try the reduction by injection or inflation first, and only operate if these fail? The retort is not only that it is wasting precious time, but (what is far more important) that it is often quite impossible to tell whether reduction has been effected or not. Thus Mr. Pitts quotes four cases where the tumour was apparently reduced under anaesthesia (by inflation) and *post mortem* the reduction was found to be incomplete. A case which was under the care of one of my fellow practitioners was treated by injection. The next day, as a tumour was still perceptible, he opened the abdomen and found the reduction was complete, but the engorged and oedematous bowel caused a palpable tumour. Again, the diagnosis is not always clear, and exploration often offers the best chance of successfully dealing with such doubtful cases.

Now, what is the case for immediate operation? I here use the statistics of the Derbyshire Royal Infirmary during the past six years. All cases of intussusception have immediately been submitted to operation on admission.

Nineteen cases were operated upon for intussusception; in two the diagnosis was at fault, and both these cases recovered. One case was chronic and does not count, and of the remainder nine cases were operated upon within twenty-four hours of the first onset of symptoms, and all recovered. The remainder, seven in number, all died; and these were operated on from periods of forty-eight hours to ten days from the first onset of symptoms.

From these figures it appears that if a case is seen early, diagnosed, and operated upon within twenty-four hours of the onset, the mortality is *nil*, whereas if they have been left more than this time the mortality is terribly high.

As regards the operation, rapidity is of the utmost importance, and every precaution should be adopted to prevent heat loss, especially in the case of infants. The limbs should be swathed in wool and flannel bandages. Hot sterile abdominal towels should be ready to cover over the intestine should it find its way out of the abdominal cavity.—I am, etc.,

FRANCIS L. A. GREAVES, F.R.C.S.Eng.,
Honorary Surgeon, Derbyshire Royal Infirmary; and Surgeon to the Special Department for Diseases of Throat, Ear, and Nose.

TUBERCULOUS SOLDIERS.

SIR,—Though serving with the United States army, my medical education is British, and, to put it very mildly, I read with grave surprise the communication of a "Surgeon-General (Retired)" in your issue of March 9th—that Mr. Haldane has stated that it is impracticable (*sic*) to care for British soldiers who have contracted tuberculosis "in and by the service." That such men are discharged, becoming a menace to their relatives and to the community in which they live after they have given their health to their country, is not a fact for a great nation to be proud of.

Leaving out all sentiment, and all question of what a country owes to its defenders in their need, it is a sad waste of material, this casting out of these invalids. In this matter Britain can learn a lesson from her sister across the Atlantic. For a number of years an army post known as "Fort Bayard" has been established in the dry salubrious climate of New Mexico. This post is, in fact, a general hospital or sanatorium for the treatment of consumptives in a climate especially adapted for the treatment and cure of tuberculosis. Not only is Fort Bayard an asylum where afflicted officers and soldiers have all the comforts due them in their sad condition, but American medical officers aim to discover these cases in their incipiency; and any of us can point to a number of men now serving with their various regiments who have been completely cured by their sojourn at Fort Bayard. A number of these men, had our Government shared Mr. Haldane's views, would either be dead or else a menace to their neighbours, and in many cases a charge on their various communities.

Trusting this communication may be so fortunate as to meet the eye of some one who will be interested enough to inquire further into the advantages of the establishment of a Fort Bayard, and that the matter will later be brought before the proper authorities, and that Britain's brave defenders may in the near future enjoy the advantage of their American cousins in the United States Service, I am, etc.,

E. K. JOHNSTONE, M.D., L.R.C.S., etc., Edin.,
Consulting Surgeon, United States Army.
Yosemite Valley, California, U.S.A.

THE "PANCREATIC" REACTION IN THE URINE.

SIR,—I had an opportunity of examining specimens of urine and faeces from both the cases of primary malignant disease of the bile ducts described by Dr. Kirkland on p. 9 of your issue of July 6th, and should have been glad to furnish him with copies of the full reports.

In one of the cases the "pancreatic" reaction in the urine was negative and the faeces contained 90 per cent. of fat, of which 32 per cent. was "neutral fat" and 57 per cent. "combined fatty acid." A diagnosis of complete blocking of the common bile duct, but without any lesion of the pancreas, probably due to an impacted gall stone, was consequently made. In the other the urine contained 0.85 per cent. of sugar and, when that had been removed, gave a fairly well-marked pancreatic reaction; 26 per cent. of the dry weight of the faeces was found to be fat, 25 per cent. being "neutral fat" and under 1 per cent. "combined fatty acid." As a result of a complete examination of the excreta, and taking into account that the fact that the patient was on a milk diet, I expressed an opinion that the glycosuria was probably due to disorganization of the pancreas by malignant growth and that there was also complete obstruction of the common duct due to growth.

Considering the rarity of the condition, and that I had not previously examined specimens from a similar case, I do not think a more accurate diagnosis could have been made in either instance, but should I in the future meet with similar analytical results, especially those of the first case, the question of primary malignant disease of the common duct would enter more seriously into my calculations. A point that influenced me to put malignant disease out of court in the first instance was the presence of 0.16 per cent. of physiologically active hydrochloric acid and a well-marked reaction for free hydrochloric acid, in a specimen of stomach contents withdrawn one hour after a test meal. Subsequent experience has shown that a marked diminution or complete absence of free hydrochloric acid is uncommon in malignant disease of the bile passages and liver. In the second case, I think it is probable that the glycosuria and pancreatitis were due to secondary deposits of growth in the pancreas, in a

similar way to that in which a primary growth of the gall bladder was recently shown *post mortem* to have set up changes in the pancreas which were indicated during life by a well-marked "pancreatic" reaction.

The "pancreatic" reaction has now been proved to be a valuable aid to diagnosis not only in my own hands, but also in those of other observers in this country, on the Continent, and in America, so that the difficulty some early investigators experienced in obtaining satisfactory results was apparently not due to inadequacy of description or inherent faults in the methods. I have recently received a lengthy communication concerning the reaction from Dr. Sergi Agabekoff of the St. Mary's Hospital for the Poor, St. Petersburg, from which I may be allowed to quote the following: "I have the honour and pleasure to signify to you the striking results of your reaction which I have obtained during a year's experimenting at the St. Mary's Hospital. These brilliant results and the study of your reaction have furnished the material for a report to the Board of the hospital . . . The corroboration of our diagnosis, shown by the results of autopsy, made a very real sensation. In three very dark cases, which by all the symptoms could be taken for malignant disease of the top part of the pancreas, the negative result of your reaction enabled us to make a right diagnosis. Experiments with your reaction in cases of cancer of the stomach, ulcer of the same, cirrhosis of the liver, typhus, tuberculosis, and other ailments have all given negative results."—I am, etc.,

London, W., July 8th. P. J. CAMMIDGE.

THE ORIGIN OF "CIRCUMCISION."

SIR,—The practice of circumcision is, as Dr. Churchward suggests, more widespread than is generally believed. All the Semitic races practised it, as did the Phoenicians, a non-Semitic people. The custom exists among certain of the Australian tribes, and I found it prevalent among the South American Indians: for instance, among the Witotes on the Caqueta River. I heard of its being practised by many other of these Indian tribes.

Dr. Churchward's account of its origin differs from that given by Mr. Frazer, who, in *The Golden Bough*, traces it back to the common Semitic custom of human sacrifice; he writes:

> We can hardly resist the conclusion that before the practice of redeeming them was introduced, the Hebrews, like the other branches of the Semitic race, regularly sacrificed their firstborn children by the fire or the knife (p. 49).

I was disappointed that Mr. Bland-Sutton made no reference to any possible physiological function of the prepuce. The organ is found in a large range of mammals, yet I have consulted physiological works in vain; they are all silent. Seeing how commonly circumcision is recommended, one would like to know what function the prepuce possibly subserves—if any. I can invent a dozen guesses, but I have no facts to offer.—I am, etc.,

London, W., July 8th. M. D. EDER.

EGGS IN THE DIET OF INFANTS.

SIR,—May I add the testimony of my favourable experience in the past to that which you have already published? My latest patient on "egg feeding" (Herbert S., aged 16 months, brought up on condensed milk) is still under treatment at the Belgrave Hospital for Children, where he was admitted on June 21st for severe entero-colitis. Stomach and colon lavage having proved ineffectual against the vomiting and the fetid diarrhoea, and diluted milk, peptonized milk, and even whey failing to be digested, I stopped all milk, and substituted a mixture of three eggs, half a drachm of cane sugar, and six drachms of lactose shaken up in 24 oz. of water; of this, 2 oz. to be taken every two hours, with the addition of 10 drops of brandy in view of the threatening exhaustion. This was soon followed by a definite rally and improvement as regards frequency of vomiting and condition of stools. Subsequently the dilution was reduced from 24 oz. to 15 oz. of water, and the frequency of administration to every four hours only; whilst half-way between the feeds a lighter meal was supplied, consisting of a third of a drachm of cream and a third of a drachm of maltine in 1 oz. of water, which seemed to be relished and had an excellent effect, so that the brandy was discontinued twenty-four hours after the alteration. After eight days of egg feeding this diet has now been given up for whey and albumen water, and there is more diarrhoea as a result, though this may perhaps be due to the disease. This method of furnishing that additional amount of carbohydrate and of fat which has been suggested by Dr. Clifford Last might prove equally serviceable to some other infants temporarily restricted to an egg diet; and there is probably a practical advantage in alternating the supplies in the manner which I have stated.—I am, etc.,

London, W, July 1st. WILLIAM EWART.

SWEATING OF THE MEDICAL PROFESSION BY PUBLIC BODIES.

SIR,—I feel strongly that there is at the present time an urgent need for united action by the whole of the medical profession in order that a resolute stand should be made against the small fees which the Local Government Board, and public bodies generally, pay to medical men for the duties required of them. I quote the following examples:

1. The Local Government Board (represented by Mr. Burns) has ordered a considerable reduction of the minimum fee for vaccination, notwithstanding the fact that the duties (responsibility, time, labour, and expense) required of the public vaccinator are not by any means liberally paid for by the present minimum fees.

2. The certifying factory surgeon has to visit a factory (which may be a mile or more distant) to examine, as to age and fitness for the work, one to five young persons or children, and fill in sundry columns of a book for the fee of 2s. 6d., and 6d. each for any above five in number. If the young persons attend at the surgery the fee is only 6d. Now a fresh regulation has been issued under the Workmen's Compensation Act; the fee for certain certificates (which include examination of the person as to the result and effect of an accident, etc.) is 1s.

3. The fee for notification of infectious disease in respect of a case occurring in a medical man's practice as medical officer of any public institution or body (as Poor Law) is 1s.

4. Various public bodies connected with primary education offer to pay the fee of 1s. for examination of and certifying as to fitness or otherwise of a child to attend school.

I feel convinced that if no stand is at once made by the whole body of the medical profession the fee of 1s. will become the standard recognized fee for certificates supplied to public bodies. If the whole of the duty devolving upon medical men in connexion with certificates consisted of appending their signature to a form, a 1s. fee might reasonably be considered a sufficient remuneration, but when (as is the fact) a medical man in signing a certificate takes upon himself a certain (and oftentimes serious) responsibility (allowing nothing for time and the necessarily acquired experience) a 1s. fee is absurdly and most unreasonably inadequate.

My opinion is that all our numerous and various associations and societies should unanimously resolve (and endeavour to bind their members) that no less fee than 2s. 6d. should be accepted by the profession for supplying certificates to public bodies and that each of the above societies (either in union or separately) should notify to the Local Government Board and all public bodies (stating reason and justification) the resolution agreed upon, and should persistently urge for an alteration of the fees in accordance with it. The Local Government Board should be especially approached and urged to withdraw the recent vaccination order reducing the minimum fee paid to the public vaccinators.—I am, etc.,

Stourport, July 3rd. W. MOORE.

THE HOSPITAL FUNDS AND THE EXCLUSION OF SCOTTISH DIPLOMATES FROM THE MAJORITY OF LONDON HOSPITALS.

SIR,—The letter that appeared over the signature of Mr. St. Aubyn Farrer seems to me to have strayed somewhat wide of the incident that prompted it, and to have thereby evoked the very reasonable reply of Dr. James Cameron. But the actual facts and the principles involved can be briefly stated as follows:

1. Under the ancient charters and regulations of some colleges, hospitals and other corporations, specific and exclusive restrictions have been created, both in Scotland and in England, with respect to the staff appointments to certain hospitals. These restrictions are as much exercised in Edinburgh as they are in London, and, being of the nature of ancient and contracted rights, Scottish

Fellows resident in England can have no legitimate cause of complaint against them.

2. The exercise of these ancient restrictions by a London hospital cannot be claimed necessarily to entail a greater efficiency on the part of its staff, and it can therefore be affirmed that, although ancient restrictions may have to be conformed to, still they cannot be shown to be of public benefit.

These facts being so, I think that it is quite reasonable to urge that restrictions which are dependent on ancient usage, and which can be shown to be of no public benefit should not be recreated in modern days, and still less that they should be countenanced by the trustees of a Royal Fund that is eminently modern in its philanthropic efforts for the public good. And in the specific instance which has given rise to this correspondence, the point can even be more forcibly argued, for, in the amalgamation of the three orthopaedic hospitals, two are, if I understand rightly, to be deprived of their former liberty to elect Scottish Fellows to the staff appointments. Against such a modern deprivation of pre-existent enjoyment I think there are fair grounds for protest.—I am, etc.,

London, July 6th. HEATHER BIGG.

SMALL-POX AND VACCINATION IN CHINA.

SIR,—With reference to the able and interesting paper on small-pox and inoculation in China in the BRITISH MEDICAL JOURNAL of January 12th, there is one statement which needs correction. The writer states:

> In the southern and western parts of China, so far as I remember, pock-marked persons are the exception, not to say very rare; and I believe from inquiries recently made that small-pox is, as a matter of fact, comparatively uncommon south of the Yangtse, where alone, on the other hand, leprosy is found.

In the last nine years I have been working in the southern half of the province of Fuhkien, and this statement is certainly not true as regards this wide area. Of all the epidemic diseases small-pox is the most widely spread and most prevalent, always endemic, and occasionally breaking out in epidemic form. It is not at all an uncommon sight to see children in the convalescent stage, with the scabs separating, playing about in the streets. I have also seen many of the worst confluent forms, and in these years I must have seen at least 150 children under the age of 5 with one or both eyes permanently blind from this cause.

As for pock-marked persons, out of my seven students at the present time, four are pock-marked.

Both inoculation (sometimes with disastrous results) by the introduction of crusts into the nostril and vaccination are practised. The latter practice is undoubtedly steadily winning its way, and as it does so the visible effects of the disease will undoubtedly diminish. Unfortunately this is being taken advantage of in some regions by the quack, and I have heard of vaccinations being performed with milk. In this region, however, the rule is no vaccine vesicle no pay, and such fraudulent action is kept in check. —I am, etc.,

J. PRESTON MAXWELL, M.B., F.R.C.S.

Fuhkien, South China.

TEACHING OF HYGIENE AND TEMPERANCE IN PUBLIC ELEMENTARY SCHOOLS.

SIR,—Dr. Claude E. Taylor's letter in the JOURNAL of July 6th renders my position clear. He gives the definition of temperance as total abstinence. We are, therefore, in agreement that the Association is taking up the question of total abstinence as one of its objects; this being so, I say again that this action of the Association will alienate the sympathies of a large proportion of its members.

Dr. Taylor proceeds with his argument that every one should live by "rule and proportion," measuring everything he drinks, and, I suppose, everything he eats, and everything he does, and the reward he offers is not that he will enjoy life, but that he will live long—in my opinion hardly a sufficient recompense for the tremendous self-concentration required during his existence. Dr. Taylor evidently is not one of the believers in the "happy despatch" at 40; his individual should surely be put in a glass case, and tended by "rule and proportion," so that he may live long as a scientific triumph.

Sir Victor Horsley says, in his reply to my letter, that I am under a misapprehension. If that is so, Dr. Taylor's letter clears that up. I agree, of course, with Sir Victor Horsley that all children should be total abstainers, but I say they should be that by force, not have it *taught* them as a special subject at the ratepayers' expense.

If they are taught hygiene, that will instruct them in the principles of true temperance, but let the Association leave something for their future judgement when they have arrived at maturity.

I am glad we have got at the meaning of the word "temperance," for now the Association has either to discountenance that part of the programme, or bring forth a strong opposition to the adoption of such a controversial subject as total abstinence.—I am, etc.,

London, N., July 9th. J. R. FULLER.

THE ASSOCIATION AND THE GENERAL MEDICAL COUNCIL.

SIR,—Will you allow me space to say that the Council, having at its last meeting for the second time refused to interfere with the expressed intention of the Central Ethical Committee to prosecute cases before the General Medical Council, there appears to be no alternative left for members of the General Medical Council but to sever their connexion with the Association if they wish to avoid complications at the November session. I have therefore, with a keen pang of regret, sent in my resignation to the General Secretary.—I am, etc.,

Birmingham, July 8th. ROBERT SAUNDBY.

THE APOTHECARIES ACT, 1907.

SIR,—In view of the numerous inquiries I am receiving from those holding the diploma of the Society of Apothecaries as to the effect of the Act upon their diploma, may I be allowed to state that the result of the Act, so far as concerns those who have obtained the "L.S.A." since June 30th, 1887, is to enable them, *on application to the Society* and on payment of the prescribed fee, to have granted to them a diploma conferring the qualification of "Licentiate in Medicine and Surgery of the Society of Apothecaries." Subject to obtaining this new diploma from the Society, the qualification can be entered upon the *Medical Register*.

The form of the new diploma and other matters connected therewith are at the present time under the consideration of the Court of Assistants of the Society, and I hope to be in a position to make a definite statement as to the Society's requirements in the course of next month. —I am, etc.,

A. MOWBRAY UPTON,
Clerk to the Society.

Society of Apothecaries of London, Blackfriars, London, E.C., July 9th.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL ARMY MEDICAL CORPS.

Examination of Majors for Promotion.

THE subjects selected for the year 1908 for the examination of Majors for promotion to the rank of Lieutenant-Colonel will be as follows: Subject 3 (*a*)—The medical history of the more important campaigns and the lessons to be learnt therefrom; the medical history of the Afghan campaign, with especial reference to the march from Cabul to Candahar; and the medical history of the advance of Lord Roberts to Bloemfontein. Books recommended: "Diary (Medical) of the March of the Field Force of Lieutenant-General Sir Frederick Roberts, V.C., G.C.B., from Cabul to Candahar" (Army Medical Department Report for 1879); "Special Report on the Hospital Organization, Sanitation, and Medical History of the Wars in Afghanistan, 1878-79-80" (Army Medical Department Report for 1880); *Forty-one Years in India*, by Lord Roberts, V.C., etc., chapters 59-62 (thirty-fifth edition, 1902, vol. ii); "Report on the Medical Arrangements in the South African War," by Surgeon-General Sir William D. Wilson, K.C.M.G., first 44 pages; *The "Times" History of the War in South Africa*, 1899-1900, vol. iii, chapters 12 to 15 and chapter 17. Subject 3 (*b*) —A knowledge of the army medical services of the more important Powers; the medical organization of the French and Italian armies, as described in the *Handbook of the Medical Organizations of Foreign Armies*, 1902.

AT a meeting of the Medico-Legal Society on July 23rd, a discussion on the teaching of medical jurisprudence as conducted in Paris and London respectively will be opened by Mr. George Pernet.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF DUBLIN.

CONFERMENT OF HONORARY DEGREES.

THE honorary degree of Doctor of Medicine was conferred by the University of Dublin on Drs. Conolly Norman and Pye-Smith. The recipients of the distinction were each introduced by the Public Orator in an appropriate Latin speech. Translations are subjoined.

Of Dr. Conolly Norman it was said: There is little need for me to introduce to you the eminent physician who now comes before you, Conolly Norman, a man well known to us and well beloved. As Superintendent of the Richmond Asylum in Dublin he is deservedly praised by the whole community for the devoted care, singular humanity, and great skill with which he strives to lighten the unhappy lot of the mentally afflicted. Nor is his labour in vain. He clearly sees that they should not be allowed to brood on their disordered fancies, but that they should be put to wholesome work, and so gradually be awakened to new interests and new aspirations; and, further, it is his view that they should not, as it were confined in prison, seem to undergo a penalty for crime, but—as was formerly held by Dymphna, an Irish woman, gifted with inspiration from on high, whom we justly venerate as a saint—living out among good families, by the mutual affections and pieties of gracious family life, they should imperceptibly come to a calm and rational frame of mind—a hope soon to be fulfilled, which seems to us most gratifying. Pythagoras it was, if I mistake not, who counselled men not to "eat their own heart;" in this respect our friend appears to us as a true Pythagorean. And Bellerophon, who, as Homer says,

> To the Aleian plain
> Alone did wander, there he ate away
> His soul, and shunned the busy haunts of men,

if he had been able to consult Conolly Norman would soon have been brought to a more wholesome mode of life, and set to dig a garden, or do something useful; and he would not be careering about on that winged horse of his (and he was somewhat flighty himself too), "have spurned the ground and caught at clouds and void." But, joking apart, we rightly desire to honour this illustrious man. As editor of the *Journal of Mental Science*, a brilliant writer himself, too, and an able lecturer in our schools, he is among the foremost of those who are labouring to place the study of insanity on a strictly scientific basis. I need not enumerate his writings, but I must not omit to mention with special praise his lucid treatises *On Obsessions* and *On Dementia Praecox*. And now that our energetic, learned, courageous, and kind-hearted friend is about to receive our Honorary Degree, I do not ask for your applause, for I know well that there is no power that can restrain your shouts of acclamation.

In introducing Dr. Pye-Smith the Public Orator said: The physician who restores health to the mind is followed by a distinguished physician who completes the other requirement of a happy life, and gives health to the body. What greater good is there than good health? As a philosopher in the street, I declare that it is the highest good; and, in my opinion, the man who enjoys good health is the really Wise Man; that man

> is half divine,
> Rich, free, great, handsome, king of kings in fine:

and is easily superior to all those "budge doctors of the Stoic fur." However, it is all very well to philosophize, but one must, as the ancients said, do so "in few words." Accordingly, I return to my subject, and herewith present to you Philip Henry Pye-Smith, Fellow of the Royal Society, formerly Vice-Chancellor of the University of London, and representative for many years of that University on the General Medical Council, a man not only held in the highest honour by the whole medical profession, but also justly esteemed by all who respect liberal studies. After having become a consummate master of anatomy, physiology and pathology, he then devoted himself to the cure of the sick, and as he had a thorough knowledge of the scientific side of his profession, he was able, by his well-trained power of observation, to examine scientifically and fully grasp his cases, so that before long he deservedly attained the highest position in his art. When eight years ago, at the International Congress, men sent by all nations met in conference at Berlin that they might take counsel together how war was to be waged on the "white plague," the herald of whiter Death—I mean phthisis—Great Britain sent him, who is a most accomplished linguist, as her delegate, knowing full well that, if he represented British medicine, no better appointment could have been made in the interests either of the subjects of the discussion or the dignity of the profession. We rightly applaud his *Textbook of the Principles and Practice of Medicine* (begun by his friend Hilton Fagge), which has recently reached the fourth edition, a work truly called "golden," since it sets forth the severe facts of science with such literary charm that, like refined gold, it combined both sterling value and rare brilliancy. This physician is plainly deserving of the highest honours; and now, while he is inscribing his name on the Roll of our Honorary Graduates, as you hope, if occasion arises, to have the benefit of his medical skill, so, in your accustomed manner, give him your most cordial salutations.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on June 19th.

Election of Vice-Chancellor.

Sir William J. Collins, M.D., M.S., M.P., was elected Vice-Chancellor for the year 1907-8, in the room of Sir Edward Busk, to whom a vote of thanks was passed for his services during his tenure of office.

Academic Council.

Mr. H. J. Mackinder, M.A., has been elected Vice-Chairman of the Academic Council for the year 1907-8. The medical members of this Council are Dr. H. A. Caley, Mr. Leonard Hill, F.R.S., Dr. L. E. Shaw, and Dr. A. D. Waller, F.R.S.

Appointments.

The addition of Professor Halliburton, F.R.S. (King's College) to the Board of Examiners in Physiology for the B.Sc. Examination for internal students was reported.

Professor W. D. Halliburton, F.R.S., and Professor T. G. Brodie, F.R.S., were appointed external Examiners in Veterinary Physiology for the year 1907-8.

Dr. Pye-Smith and Dr. Mears have been elected respectively Vice-Chairman and Treasurer of the Physiological Laboratory Committee for the year 1907.

Brown Animal Sanatory Institution.

The annual report of the Committee of the Brown Animal Sanatory Institution was received. It stated that 7,451 out-patients and 563 in-patients were treated last year. The Committee further reported that Mr. Malcolm Allan, M.R.C.V.S., had been appointed veterinary assistant in succession to Mr. A. M. Porteous.

Award of the University Medal.

The University Medal at the M.B., B.S. examination has been awarded to Mr. Henry John Nightingale, of St. Thomas's Hospital.

Rogers Prize.

Under the will of the late Dr. Nathaniel Rogers the Senate offers a prize of £100, open to all members of the medical profession in the United Kingdom, for the best essay or dissertation setting forth the results of original investigations made by the candidate on any medical pathological subject during the preceding two years; papers published during the preceding year as a dissertation will be permitted. The essay or dissertation, by preference typewritten or printed, must be sent to the Clerk of Committees at the University not later than May 1st, 1908.

GUY'S HOSPITAL MEDICAL SCHOOL.

The prizes were distributed to the successful students of Guy's Hospital Medical School on July 4th by Sir Arthur W. Rücker, Principal of the University of London. Mr. Cosmo Bonsor, Treasurer of the Hospital, presided in the Theatre of the new school buildings, and many of the Governors, most of the members of the medical and surgical staff, and a large general company were also present. Dr. H. L. Eason, the Dean, read the report of the School for the past year. The entry of students for the full term was in that period the highest for thirteen years, and amounted to 92. The Governors, recognizing the increased importance of skiagraphic investigations, had, upon the recommendation of the medical staff, created two new appointments, namely, those of Dr. Alfred Jordan and Dr. C. J. Morton to be medical and surgical radiographers respectively. An orthopaedic department had been formed, and Mr. R. P. Rowlands had been appointed the first surgeon in charge of it. A special department of pathology was about to be instituted, under the charge of a lecturer who would give his whole time to the duties of the office, would be called the Gordon Lecturer of Pathology, and, assisted by the present endowment of the Gordon Lectureship, would have a salary of £500 a year. The staff of the Dental School had decided to accept pupils for two years' mechanical training, to fit up by October 1st next a special laboratory for their instruction, and to appoint as operative demonstrator of mechanical chemistry Mr. H. Chapman. A large new out-patient department for the exclusive use of dental patients was to be equipped. In response to the appeal made last year for more funds for the endowment of medical education and research several handsome donations had been received by the Treasurer; but more remained to be done towards this particular endowment. During the last fifty years the curriculum had been lengthened, and the complexity of the course of study had much increased, but the fees for the complete course remained unaltered. For two reasons fees could not be increased in London without prejudice to the entry of students—because the average income to be made from the practice of medicine was so small that the cost of a medical education would bear too high a proportion to the ultimate return, and because the competition of provincial schools, largely supported by that local patriotism which was commonly wanting in the metropolis, would render such a course inadvisable. Hence again this year there was an appeal for funds for the benefit of medical education and research.

Sir Arthur Rücker then distributed the prizes, and, afterwards addressing the students and guests, spoke of the valuable service rendered by Guy's to the University of London, which was getting into touch with its various schools and was growing at an extraordinary rate. Various institutions had

placed themselves entirely in the hands of the University; and he hoped that students of each school of the University, while maintaining patriotism and affection for their own school, would always be proud of the great University to which it belonged.

Dr. Hale White, in proposing a vote of thanks to Sir Arthur Rücker for kindly presiding, distributing the prizes, and giving the students such an excellent address, said that Guy's Medical School ought to be very grateful to Sir Arthur, as he was such an extremely busy man. Nevertheless, it was very appropriate that he should preside, for there were more students at the University from Guy's than from any other medical school. Frequently both the pass and honours lists contained more names from Guy's than from any other school, and the close association between Guy's and the University of London had existed ever since the foundation of the University. Mr. Golding-Bird seconded the vote of thanks, which was carried with applause, and suitably acknowledged by Sir A. Rücker.

The governors and medical staff gave a garden party with music in the grounds of the hospital, and the laboratories, museums, college, nurses' home, and the wards were all open for inspection.

UNIVERSITY COLLEGE.

Dr. Charles Spearman has been appointed Reader in Experimental Psychology, in the first instance, for the session 1907-8.

KING'S COLLEFE.

Lectures to Teachers.

The Council of King's College, in conjunction with the London County Council, has arranged a course of Saturday morning lectures for teachers during the ensuing session. Professor W. D. Halliburton will give a course on the principles of practical physiology; Professor Dendy and Mr. W. Woodland on animal life (animal biology); Professor W. J. R. Simpson and Dr. Sommerville on the teaching of hygiene; and Professor C. S. Myers, M.A., M.D., on the application of experimental psychology to problems of educational interest.

UNIVERSITY OF BIRMINGHAM.

THE following candidates have been approved in all subjects of the examinations indicated:

FIRST M.B., CH B.—†G. E. Elkington, *E. Davies, *C. C. C. Court, *J. L. A. Grout, *T. Hampson, *C. C. Jones, *A. C. Tibbits, *A. J. Tomkinson, *A. A Wilkinson.

SECOND M.B., CH.B.—*E. W. Assinder, *‡O. M. Holden, *Elizabeth S. Impey. *R. D. Nelson, *C. W. Heywood, *A. H. Newton.

THIRD M.B., CH.B. (*Part I*).—†‡H. H. Sampson, *W. C. Blackham, *N. A. Boswell, *H. G. Browning, *Mary Clarke, *J. S. Edwards, *H. A. Evans, *H. F. Humphreys, *G. F. Jotham, *Violet M. McCready, *J. L. Ritchie, *H. C. Terry, *Ethel H. Waldron, *K. D. Wilkinson.

THIRD M.B., CH B. (*Part II*).—†‡H. H. Sampson, *W. C. Charles, *N. H. Boswell, *H. G. Browning, *Mary Clarke, *H. F. Humphreys, *G. H. C. Mold, *C. E. Molino, *J. L. Ritchie, *Ethel H. Waldron, *H. H. Whitcombe, *K. D. Wilkinson.

FOURTH M.B., CH.B.—†‡J. Dale, *J. Adams, *Charlotte Bailey, *G. H. C. Mold, *D. P. Smith, *H. C. Terry, *E. V. Whitby.

FINAL M.B., CH.B.—‖W. F. E. Ashton. *H. C. H. Bracey, ‡*§J. Fenton, *P. J. Mason, *N. C. Penrose, *H. A. Sanders, *A. J. Smith, *R. W Thompson, *H. H. Warren.

M.D.—L. G J. Mackey.

† Class I. * Class II. ‡ Queen's Scholarships.
§ Ingleby Scholarship.
‖ Under regulations for past students of Birmingham Medical School.

At the examination for the Diploma in Public Health, T. W. Beazeley and A. E. Remmett have been approved in Part I, and E. F. Wharton in Part I and Part II.

DENTAL DEPARTMENT.

The Council of the University of Birmingham has appointed Mr. Alfred William Wellings, B.D.S.Bir., L.D.S.Edin., as Lecturer in Dental Histology and Dental Pathology, in place of Mr. H. P. Pickerill, M.B., B.D.S.Bir., who has been appointed Director of the Dental Department of the University of Otago, New Zealand.

UNIVERSITY OF WALES.

Committee of Inquiry.

THE Treasury has appointed a Committee to inquire and report upon the character of the work accomplished by the University of Wales and its constituent colleges, the financial position and lines of development of the colleges, and their probable requirements for staff or otherwise. The members of the Committee are: Sir T. Raleigh, K.C.S.I. (Chairman); Sir John Rhys, Principal of Jesus College, Oxford; Principal Donald MacAlister, Glasgow University; Mr. F. G. Ogilvie, C.B.; Professor W. S. McCormick; and Dr. Alex Hill, Master of Downing College, Cambridge. Mr. G. L. Barstow of the Treasury will act as secretary to the Committee.

University College, Cardiff.

At a meeting of the Council of the University College of South Wales and Monmouthshire held on July 3rd, the Earl of Plymouth (President) in the chair, Mr. D. G. Taylor, M.A., was reappointed Lecturer in Pure Mathematics; Mr. D. F. Thomas, B.Sc. (Wales) and B.A. (Cantab.), was appointed Assistant Lecturer and Demonstrator in the Department of Physics; Mr. Caleb Rees, B.A., was appointed Assistant Lecturer in the Training Departments (men); Mr. J. H. Sugden, M.Sc., F.I.C., was promoted to be Lecturer in Hygienic Chemistry in the Public Health Department; Mr. W. J. Roberts, M.A., was appointed to give a special course of lectures in psychology for students in the secondary training departments. Diplomas in mining, metallurgy, civil, mechanical and electrical engineering were awarded to several candidates.

THE UNIVERSITY OF SHEFFIELD.

THE University Council has appointed Mr. Percival E. Barber, B.A. (Cantab.), M.R.C.S., L.R.C.P., Surgeon to the Jessop Hospital for Women, to the post of Lecturer in Midwifery and Diseases of Women, in succession to Dr. J. W. Martin.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE meeting of the Fellows for the election of four members of Council was held on Thursday, July 4th. The poll was open from 3 p.m. to 5 p.m. After the votes had been counted, a process which lasted for one hour and twenty minutes, the President declared the result as follows:

Mr. Charters Symonds	...	452, 26 plumpers
Mr. Bruce Clarke ...	...	413, 52 ,,
Mr. Mansell Moullin	...	403, 6 ,,
Mr. F. S. Eve ...	...	388, 3 ,,
Mr. Herbert Page	...	349, 11 ,,
Mr. W. D. Spanton	...	348, 34 ,,
Mr. C. Higgens ...	...	234, 10 ,,

The President declared Messrs. Symonds and B. Clarke to be duly elected, and Messrs. Moullin and Eve duly re-elected, members of Council; 1,189 voting papers were sent out, 878 being returned; of these, 3 were invalid and 3 too late. This is a record poll; on the other hand, the voters in person mustered but 14. The total thus amounted to the high figure of 892 votes, of which 886 were valid.

Mr. F. S. Eve, being fourth on the poll, becomes substitute member for Sir John Tweedy until 1912, as Sir J. Tweedy retained his seat in 1904, being President.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved in the subjects indicted:

SECOND EXAMINATION (*Anatomy and Physiology*).—R. B. Adams, F. C. Alter, D. D. Baria, A. M. Barlow, F. Basford, M. B. Bayly, E. C. Beddows, G. C. Birt, W. P. Bonner, E. M. Browne, E. S. Calthrop, R. G. Dainty, S. Danziger, F. N. Doubleday, A. Downes, F. C. Endean, H. A. Evans, G. J. French, G. H. C. St. G. Griffiths, A. E. Hamlin, L. A. Harwood, C. E. Howden, H. R. B. Hull, S. G. Johnson, H. D. Kanga, C. H. Knowles, J. M. Land, M. McW. Lopez, D. McCully, R. G. Maglione, P. S. Martin, H. S. Mason, G. Matthews, J. W. E. Mendis, C. C. Messiter, T. A. Milroy, R. S. Overton, P. E. H. Patey, H. Platts, R. B. N. Reade, W. A. Reynolds, E. A. Runting, A. L. Saul, E. A. Saunders, W. Shipton, W. F. V. Simpson, R. S. S. Statham, M. P. Thomas, G. Y. Thomson, W. V. Tothill, R. H. Vicary, P. B. Wallis, A. Watson, J. E. P. Watts, G. Whittington, F. C. Wright.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examination indicated:

Preliminary.—J. L. Bulcock, R. Burriss, M. F. Coffey, A. Cohen, H. E. Elliott, M. J. Hillery, G. W. Jackson, Miss E. M. Kennedy, J. L. Moulang, J. A. Mulligan, M. McCloskey, S. D. G. McEntire, E. O'Gorman, B. Scher, E. Sewell, F. J. Smith, I. M. Swanepoel, P. J. Teggart, H. T. Whiteman.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE competitions at the end of the summer session in the medical schools conducted by the College of Surgeons resulted in the following awards: The *Barker Prize* in Anatomy, value £31 10s., was adjudged to G. S. Levis; the *Carmichael Scholarship*, value £15, to J. Lenton; the Gold Medals for *Operative Surgery* to P. G. M. Elvery and T. Sheehy (equal); and the *Stoney Memorial* Medal in Anatomy to Miss I. M. Clarke and G. C. Sneyd (equal). Prizes, medals, and certificates were also awarded for practical histology, practical chemistry, biology, materia medica, and public health and forensic medicine. The lectures and practical courses of the winter session will commence on October 15th.

TRINITY COLLEGE, DUBLIN.

DEGREES.

THE following degrees were conferred on June 29th:

M.D. (*Honoris Causa*).—Conolly Norman, Philip Henry Pye-Smith.

M.D. (*Ordinary*).—The Rev. R. B. Bryan, J. G. Burno, P. B. Egan, O. St. J. Gogarty, J. C. C. Hogan, G. C. MacFetridge, T. B. W. MacQuaide, E. H. M'Cready, B. L. Middleton, G. B. Morgan, G. Pearson, T. H. Peyton, T. C. Somerville, J. B. B. Whelan, J. S. Wilson, T. Wilson.

M.B., CH.B., B.A.O.—G. E. M. Armstrong, Madeleine S. Baker, H. de C. Dillon, O. St. J. Gogarty, H. P. Hart, J. C. C. Hogan, R. Holmes, T. King-Edwards, T. B. W. MacQuaide, J. E. McFarlane, C. H. O'Rorke, G. Pearson, A. Powell, J. C. A. Ridgway, G. A. R. Spong, F. Stevenson, R. E. Wright.

The Licence in Medicine, Surgery, and Obstetrics was conferred on E. T. Jameson and T. C. Knapp.

The following candidates have been approved at the examinations indicated:

INTERMEDIATE (*Part I*).—*A. Stokes, *C. M. Finny, M. A. Diemont, H. Müller, R. A. Albertyn, V. M. Fisher, Beatrice M. Hamilton, P. G. Leeman, V. G. Best, D. Duff (Sch.), J. H. Woodroffe, E. F. Lawson (Sch.), J. G. Ronaldson, A. C. Hallowes, B. A. Molyneux, L. Trichard, J. G. Dods, E. P. Allman-Smith, E. B. Bate, B. H. Moore, C. Pentland.

INTERMEDIATE (*Part II*).—*A. J. Stals, J. D. Kernan, C. P. Smyly, D. Duff (Sch.), B. A. Molyneux, E. B. Bate, A. K. Cosgrave, L. Trichard, H. S. Metcalfe, W. A. Nicholson.

FINAL MEDICAL (*Part I*).—*J. C. Pretorius, *J. A. W. Ponton, *R. P. Hadden, H. H. Ormsby, C. W. Laird, A. E. Wynne, W. E. Hopkins, S. F. Charles, F. Smartt, D. G. Madill, A. V. J. Richardson, J. F. Clarke, G. Halpin, H. V. Stanley, G. G. Meeredy, D. P. Clement, A. H. Laird, G. B. M'Hutchison, E. C. Lambkin, A. S. M. Winder, J. P. S. Dunn, N. P. Jewell, W. H. M'Carthy.

* Passed on high marks.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved at the examinations indicated:

PRIMARY, PART I.—*Chemistry:* H. Cox, V. P. Norman, C. B. Welsby. *Materia Medica and Pharmacy:* W. C. D'Eath, F. S. Hawks.

PRIMARY, PART II.—*Anatomy:* T. C. Clarke, W. E. Dimond, W. H. S. Hodge, W. S. Hughes, E. M. Johnstone, J. A. Jones, L. F. G. Lewis, D. J. McKinnon, P. E. H. Patey, H. C. Pugh. *Physiology:* T. C. Clarke, E C Fisher, W. H. S Hodge, E. M. Johnstone, A. Jonathan, J. A. Jones, L. F. G. Lewis, H. I. Welsh.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

MEDICAL ETIQUETTE.

H. W.—We have been asked to give an opinion on the following case, which we briefly summarize: A medical practitioner, A., was present at a street accident, and had the injured man removed to his house, where he and his partner dressed the wounds, and A.'s partner arranged to visit the patient at his own house, where he continued in attendance. The patient's regular medical attendant, B., has demurred to this action. Each claims to be preferred by the patient, but as the district council has accepted liability for the costs of medical attendance, A. argues that he is not employed by the patient but by the district council, and that, although his presence on the spot was fortuitous, an official had already been sent to fetch him. We are asked to say: (1) Whether the case should have been handed over to B? (2) whether it was the duty of A. to ask the name of the patient's usual medical attendant? and (3) whether, when A. learnt that the man was B.'s patient, he should have offered to hand over the case?

*** Before agreeing to attend the patient at his own home A. should have asked whether he had a regular medical attendant, and, if so, have suggested that he should be called in. If A. had done this, and the patient had said in effect, "Yes, I have been attended by B. in former illnesses, but as you have dressed my wounds I should like you to see this case through," we do not think that B. would have had any cause of complaint had A. continued in attendance. The statements as to the patient's wishes are, however, conflicting. When a practitioner is in regular attendance upon a sick person the position is different; no other practitioner should supersede him until the patient has clearly communicated his wish to his former medical attendant that his attendance should cease.

UNDERSELLING.

RASHEE writes: An appointment worth £200 per annum is held by A., who dies. B. acts as *locum* for his widow *pro. tem.* B. and C. apply for the vacant post, B. on same terms as A., but C. offers to accept £150, and is accepted. Is C.'s conduct professional?

*** We know of no rule that prevents a practitioner from putting his own value on his services, and although underselling is undoubtedly injurious to the medical profession, and C.'s conduct would generally be regarded with disapproval, we cannot say that he has broken any recognized professional rule.

CONTRACTS NOT TO PRACTISE

A. sold his practice to B., agreeing not to practise within a radius of ten miles unless in consultation, and now lives some miles outside the radius. Can a former patient who has moved to a house nearer A., but still within the radius, be treated by A. at his surgery?

*** We should say no, except with the consent of B.

MEDICAL TITLES.

D. M. MASINA asks whether it is legitimate or within the bounds of professional etiquette for a Fellow of the Royal College of Surgeons of Edinburgh or Ireland to sign after his name the letters "F.R.C.S." without adding "E." or "I" to indicate the source of the diploma?

*** There is no obligation in law for a practitioner to indicate the source of the diploma he holds. Such matters must be regulated by taste.

Medico-Legal.

THE WORKMEN'S COMPENSATION ACT AND THE MEDICAL PROFESSION.

INDUSTRIAL DISEASES.

IT is only by degrees that the full liabilities imposed upon many members of the community by the Workmen's Compensation Act can come to be realized. As our readers are aware, persons suffering from industrial disease are victims of "accident" within the meaning of the Act, and certain processes and diseases were scheduled to the Act, power being given to the Home Secretary to extend the list. This power he has recently exercised, with the result that the following diseases and processes are to be included:

1. Poisoning by nitro derivatives and amido derivatives of benzene (dinitro benzol, anilin, and others) or its sequelae. *Process:* Any process involving the use of a nitro derivative or amido derivative of benzene or its preparations or compounds.
2. Poisoning by carbon bisulphide or its sequelae. *Process:* Any process involving the use of carbon bisulphide or its preparations or compounds.
3. Poisoning by nitrous fumes or its sequelae. *Process:* Any process in which nitrous fumes are evolved.
4. Poisoning by nickel carbonyl or its sequelae. *Process:* Any process in which nickel carbonyl gas is evolved.
5. Arsenic poisoning or its sequelae. *Process:* Handling of arsenic or its preparations or compounds.
6. Lead poisoning or its sequelae. *Process:* Handling of lead or its preparations or compounds.
7. Poisoning by *Gonioma kamassi* (African boxwood) or its sequelae. *Process:* Any process in the manufacture of articles from African boxwood.
8. Chrome ulceration or its sequelae. *Process:* Any process involving the use of chromic acid or bichromate of ammonium, potassium, or sodium, or their preparations.
9. Eczematous ulceration of the skin produced by dust or caustic or corrosive liquids, or ulceration of the mucous membrane of the nose or mouth produced by dust.
10. Epitheliomatous cancer or ulceration of the skin or of the corneal surface of the eye due to pitch, tar, or tarry compounds. *Process:* Handling or use of pitch, tar, or tarry compounds.
11. Scrotal epithelioma (chimney-sweeper's cancer). *Process:* Chimney sweeping.
12. Nystagmus. *Process:* Mining.
13. Glanders. *Process:* Care of any equine animal suffering from glanders.
14. Compressed-air illness and its sequelae.
15. Subcutaneous cellulitis of the hand (beat hand). *Process:* Any process carried on in compressed air.
16. Subcutaneous cellulitis over the patella (miners' beat knee). *Process:* Mining.
17. Acute bursitis over the elbow (miners' beat elbow). *Process:* Mining.
18. Inflammation of the synovial lining of the wrist joint and tendon sheaths. *Process:* Mining.

DUTIES OF MEDICAL MEN UNDER THE ACT.

In order to complete the machinery necessary for putting the Workmen's Compensation Act, 1906, into operation, the Home Secretary and the Treasury have recently issued a number of rules dealing with the powers and duties of medical men. These include (*a*) regulations as to the examination of a workman by a practitioner employed and paid by the employer in accordance with the provisions of the first schedule to the Act; (*b*) regulations as to the duties and fees of certifying and other surgeons, and as to references to, and remuneration of, medical referees who may be called upon to review the decisions of certifying and other surgeons with regard to industrial diseases; and (*c*) regulations as to the general duties and remuneration of medical referees. The texts of all these regulations have come to hand so late that we are unable to deal with them in this issue. We hope, however, to treat of them fully next week.

BANKRUPTCY OF A PARTNER.

COCAINE.—The effect of bankruptcy of one partner is to dissolve the partnership. The trustee does not become a co-partner with the solvent partners (Fox *v.* Hanbury, Cowp. 445). Strictly speaking, the trustee is entitled to put a person in possession of the whole of the firm's property, but this is seldom done, and the solvent partner, either by consent or

through the Court, makes arrangements for securing to the trustee payment of the bankrupt's share in the firm's assets (*Lindley on Partnership*, 6th edition, 686). In the case of a medical partnership it is anticipated that so long as the trustee gets the bankrupt's share of the assets, a surviving partner may do what he likes with the goodwill. The answer to the further question whether if the bankrupt has not paid the full purchase money to his predecessor he must have the latter's consent to the sale of a share would depend upon the terms of the arrangement between the bankrupt and his predecessor.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES

REMUNERATION OF DISTRICT MEDICAL OFFICERS AND PUBLIC VACCINATORS.

OUR attention has been directed to an advertisement which appeared in the *South Wales Daily Post* of June 27th, from which we gather that the guardians of the Pontardawe (Glamorganshire) Union invite applications from medical practitioners for appointments in five different districts of their union as well as for a medical officer to their workhouse who, when appointed, will be eligible for election to No. 1 District, also each district medical officer will be appointed public vaccinator for his own medical district. The salaries fixed by the guardians for these medical appointments vary from £12 10s. to £15, and they amount in the aggregate to £85 per annum; this includes the payment for the workhouse.

We find from the last published reports that the acreage of the union is 57,168, and the population 26,718; it is therefore no wonder to us to find that these six medical appointments are now vacant, but it is a great surprise to hear that such unremunerative salaries should be now offered, and it would appear as if the guardians themselves also regard the proposed salaries as being inadequate and not likely to attract suitable candidates who wish for permanent appointments.

This is clearly indicated by one of the conditions on which the appointments are to be held, and it appears as a part of the advertisement in question. It is as follows:

> Each officer shall agree to give an undertaking in writing not to resign either appointment without vacating every other office held by him under the guardians.

We sincerely hope that the Local Government Board will not give its consent to any such unjust and unusual conditions, which, if sanctioned, would have the effect of enabling Boards of Guardians to use the powers they have acquired under the Vaccination Acts to enable them to procure medical attendance for the poor of their respective unions at such a low rate as must in the near future be found to be quite inadequate.

EXTRAS FOR PATIENTS ORDERED BY DISTRICT MEDICAL OFFICER.

T. B. G. asks for information regarding the power of a Union medical officer to order necessaries for patients. The relieving officer recently sent him an order to attend an old woman (not in receipt of regular relief), and finding she needed milk and could not get it, he ordered her one pint daily. He noticed she seemed almost afraid to take the order to the relieving officer. T. B. G. received a note from the latter saying that as the patient had two married daughters living near he could not allow the milk. It seems that if parish attendance was necessary it was also necessary to supply proper food which she could not get.

*** District medical officers have no power to *order* extras for any of their pauper patients; they can only *recommend* such, and this should always be put into writing. The best form is to certify that such-and-such patients require such-and-such extras; if the relieving officer declines to supply the extras recommended, he has his reasons for doing so, and he risks the consequences of his refusal when he has to face either the Board of Guardians or the public. We should advise our correspondent after a few days to give a further similar certificate if he considers the extras recommended are still required; and in our opinion he would strengthen his own position by *posting* these certificates one after another to the *relieving officer*, and not handing them to the patient, who would naturally hesitate to present a second certificate if the first had been disregarded.

THE late Miss Helen Perry, of Wolverhampton, bequeathed £5,000 each to the Wolverhampton and Staffordshire Hospital, the Women's Hospital, Wolverhampton, and the Wolverhampton Nursing Institution. She also left a sum of £3,000 to the Wolverhampton Eye Infirmary, and directed that the residue of her estate, which is estimated to amount to £50,000, shall be divided in equal shares between the Wolverhampton and Staffordshire General Hospital, the Women's Hospital, and two other charities.

Obituary.

EMMANUEL MENDEL, M.D.,

PROFESSOR OF PSYCHIATRY, UNIVERSITY OF BERLIN.

ANOTHER of the coryphaei, so long the just pride of Berlin University, has passed away. Emmanuel Mendel, the great neurologist and alienist, died on June 23rd, at the age of 67, of heart failure brought on by progressive arterial calcification.

Mendel was a Silesian by birth; he studied at the Breslau and Berlin Universities, and took his degree in 1861. His dissertation showed the bent of his intellect, for it was on a subject taken from the domain of neurology. Nevertheless Mendel was far from beginning his professional career as a specialist. After visiting some foreign hospitals, he settled down as a general practitioner in a suburb of Berlin—Pankow—then a modest village of poor little houses, now known wherever neurology is taught or practised as the site of Mendel's asylum.

In Prussia's three great campaigns—1864, 1866, and 1870—Mendel did service. At Le Bourget a shot struck him, fracturing the tibia; a little earlier a bullet had been turned aside by the Red Eagle decoration which he carried in his waistcoat pocket.

In 1873 he began to lecture at the Berlin University, and from the first showed himself a master of this branch of his science as well as of its practical side. His course—On responsibility—became famous, and was attended by jurists and medical students alike.

Mendel's best-known books were on mania, on the progressive paralysis of the insane, the neurologist's expert opinion on diseases caused by accidents, a guide to the science and treatment of mental disease, but important publications of his are scattered throughout the medical periodicals of the last thirty years.

Mendel's geniality of character, his acuteness, and wide experience made his expert opinion sought and valued in the courts wherever crime was associated with mental disease. And when, fifteen years ago, the codification of German common law was taken in hand, and the lunacy laws were to be remodelled with the rest, it was Mendel who, in a series of admirable papers, indicated the necessary reforms, and who had the satisfaction of seeing his advice followed in almost every particular.

Mendel's patients—and their number was legion and of every class—venerated and loved their doctor. His large-heartedness and generosity were proverbial. He spared no effort to make Pankow, the home of his adoption, a thoroughly sanitary place, and when, years ago, waterworks were to be built there, and all borings—except on a plot of land belonging to Mendel—gave no result, he immediately presented the plot to the corporation.

ALFRED SQUARE COOKE, M.R.C.S., L.S.A.,

CONSULTING SURGEON, STROUD GENERAL HOSPITAL.

DR. ALFRED SQUARE COOKE died a few weeks ago in Stroud, a place to which he had devoted over forty years of an active career. He was the youngest son of the late Mr. Boulter Cooke, Coroner of the city of Gloucester, and was born in 1842. He entered St. Bartholomew's Hospital in 1860, and completed his student career as M.R.C.S.Eng., L.S.A., in 1863. Some two years later he went to Stroud, and then began a close connexion with the Stroud General Hospital which proved of great importance to that institution. Some account of Dr. Cooke's work for the hospital was given in these columns last autumn, on the occasion of a presentation to him of a testimonial by the Governors and other supporters of the hospital. The institution when he joined it as its first regular House-Surgeon was a small building in George Street, Stroud, and to his energies and to those of other members of the staff of that time, all of whom have long passed away, the erection of the present building was due. Although in private practice, he served the institution in the double capacity of Secretary and House-Surgeon for some eleven years, then became in succession full Surgeon, Senior Surgeon, and finally, in September last year, Honorary Consulting Surgeon.

Dr. Cooke also held for some thirty-seven years the appointment of Medical Officer to Stroud Workhouse, and into its nursing arrangements introduced a complete

reform, to the great benefit of its inmates. Appointments as Admiralty Agent and a Medical Officer of the Post Office were others that he filled. At the same time he carried on a large practice, and, thanks to long and intimate relationship with all classes of the community, gained a clear insight into the needs of the locality and of its poorer inhabitants; he was thus led to take up the organization of a district nursing association, and to bring about the establishment of a Hospital Sunday Fund in the locality. He early became a member of the British Medical Association, and served it more particularly as President of the Gloucestershire Branch in 1897, and as Vice-President of the Section of Gynaecology at the annual meeting of the Association at Cheltenham. Dr. Cooke's work for Stroud and its inhabitants was long and conscientious; throughout it he showed a sympathetic comprehension of the needs of the poor, but it was well known that he could be stern when he pleased, and that he would exact precise compliance with his instructions from a patient whatever his position in life might be. His funeral on June 6th was attended by a large concourse of people; among the many wreaths laid on the coffin being one from a number of his old patients in the workhouse infirmary. Dr. Cooke married, in 1871, a daughter of the late Mr. John Howard of Stroud, and is survived by his wife and by seven children, of whom one has adopted his father's profession.

ALFRED ALEXANDER DE LESSERT, L.D.S.,

ABERDEEN.

FORMER medical students of Aberdeen University, and particularly those who spent some time in the University company of the Royal Army Medical Corps (Volunteers) during the years 1889 to 1903, will hear with much regret of the death at Gloucester, on July 4th, of Mr. Alfred Alexander De Lessert, L.D.S., R.C.S.Ire. Mr. De Lessert, who had been in ill health for some time, was born at Wolverhampton over sixty years ago, and received his education at King William's College, Isle of Man. He belonged to a family of dentists, his father and other immediate relatives having occupied leading positions as dental surgeons. He settled in Aberdeen in 1869, and began a practice which developed very largely, and for a long period he was one of the leading dental surgeons in Aberdeen and the north of Scotland. While resident in Aberdeen, Mr. De Lessert was dental surgeon to the Aberdeen Dispensary, to the Boys' and Girls' Hospital, and to the Royal Hospital for Sick Children. He was twice married, first to Miss Mayer, daughter of Mr. Samuel Mayer, solicitor, Gloucester, and secondly to Miss Rubberds (sister of the Bishop of Brechin and niece of the late Lord Sempill), by whom he is survived. Mr. De Lessert was a prominent member of the Medical Staff Corps. He was gazetted Quartermaster in 1889, when the Aberdeen company originated, and, passing the proficiency examination in the following year, he took rank as Quartermaster and Lieutenant in the corps. The duties of this office he performed in a most excellent manner, and he proved a most popular and efficient officer, whose resignation a few years ago was received with much regret. Old corps members will recall vividly his exceedingly courteous and dignified presence, his kindly manner, his skill as a raconteur, and his mastery of all the detail of a quartermaster's duty, particularly where it concerned the comfort of the volunteers when in camp. About two years ago he left Aberdeen and took up residence in Gloucester.

COUNT COSTA DE BASTELICA, M.D., who passed away at his residence, near Ajaccio, in Corsica, on May 26th, in his 87th year, was for more than forty years a highly respected medical officer of the French army. He was the author of a number of reports on recruiting, for two of which, in 1866 and 1872, prizes were awarded to him by the Académie de Médecine. He was also awarded a gold medal by the same body for an important memoir on Corsica and recruiting there from the historical, statistical, and medical points of view. His chief work was a report on the sanitation of the eastern plain of Corsica, which won for him the distinction of Corresponding Member of the Academy. In that report he recommended the draining and other measures which have made that marshy and fever-haunted region comparatively healthy.

GLASGOW has lost one of its old and highly-respected practitioners in the person of Dr. GEORGE YEAMAN, who died at his son's house in Hanley on June 19th. Dr. Yeaman took the degree of M.D.Glasgow in 1854 and had a long and honourable professional career. He was a member of the Medico-Chirurgical and Geological Societies in Glasgow, and at one time held the posts of Assistant-Physician to the Lying-in Hospital and Physician to the Dispensary of Women and Children. He was a man of firm character and clear intellect, and at the same time possessed a very kind heart, as no doubt many of his old patients have good reason to know. Lately old age and infirmity began to tell on him, and he retired to England where he spent his remaining days. His son, writing from Hanley on June 20th, says: "... My dear father passed away here peacefully in his 81st year." And so ends the record of one who faithfully discharged the arduous duties of our profession for fifty years, and earned the gratitude of his patients and the esteem of the public.

WE regret to announce the death of Dr. THEODORE VON JÜRGENSEN, Professor of Medicine and head of the Medical Poliklinik in the University of Tübingen. Born at Flensburg in 1840, he graduated in medicine in 1843, and was *Privatdocent* at Kiel from 1864 to 1869. He was then Extraordinary Professor in that university till 1873, when he was called to the chair at Tübingen, which he occupied till his death. He contributed a good deal to medical literature. He was the author of a textbook of special pathology and therapeutics, and of a number of monographs on acute infectious diseases, and affections of the lungs and heart, which were published in the encyclopaedic works brought out under the editorship of Ziemssen, Nothnagel, and Penzoldt Stintzing.

LIEUTENANT-COLONEL JAMES BENNETT KELLY, Royal Army Medical Corps, retired, formerly of the 23rd Royal Welsh Fusiliers, died at Kingstown, co. Dublin, suddenly, from heart failure, on June 29th. He was appointed Assistant Surgeon, September 30th, 1864; Surgeon, March 1st, 1873; Surgeon-Major, September 30th, 1876; granted the rank of Lieutenant-Colonel, September 30th, 1884; made Brigade-Surgeon-Lieutenant-Colonel, May 31st, 1890; and retired from the service, May 3rd, 1893. He took part in the Burmese campaign in 1888 90, and had received a medal with clasp.

MAX SCHUELLER, who died recently of cancer of the stomach at the age of 64, studied medicine at Jena under von Ried and at Leipzig under Thiersch and Czermak. On the completion of his studies in 1869 he became Assistant in the Surgical Department of the Municipal Hospital, Hanover. After serving in the war between France and Germany, he practised for some years in Saxony. In 1876 he was appointed Assistant to Professor Hueter, who then occupied the Chair of Surgery at Greifswald, and in 1880 the title of Professor was conferred upon him. In 1883 he migrated to Berlin, where he lectured in the University. He was in charge of the Surgical Department of the Policlinic of the Association of Domestic Hygiene. He was author of monographs on the surgery of bones and joints, on diseases of the larynx, and on surgical tuberculosis, which won for him a considerable reputation. In recent years he had devoted himself chiefly to the investigation of the etiology of cancer, the cause of which he believed he had discovered in protozoa-like cells.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Augustus Charles Bernays, of St. Louis, one of the most noted of the surgeons of the South-West of the United States, aged 53; Dr. Augustus Vermer, of Beauraing, in Belgium, one of the oldest members of the profession in Belgium, and a poet of some celebrity, aged 90; Dr. A. Charrin, Professor of General and Comparative Pathology at the Collège de France, Physician to the Paris Hospitals and *agrégé* of the Faculty of Medicine, aged 52; Dr. Alexander Bulyginski, Emeritus Professor of Medical Chemistry in the University of Moscow, aged 68; and Dr. Villard, representative of the Creuze Department in the French Senate.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

D. asks whether any good gloves can be obtained to protect the hands of workers with the *x* rays.

HOME FOR IMBECILE GIRL.

R. asks: Is it possible to procure admission to a home for imbeciles for a girl, aged 6½, daughter of a farm labourer? The parents can contribute nothing towards her support. The child is not dirty in habits and can be controlled.

*** Such a case would be eligible for the wards for imbecile children at the Northampton County Asylum, admission to which would be obtained through the Poor-law authorities of the district.

DESTRUCTION OF SENSE OF SMELL BY AMMONIA.

B. writes: Some time since I incautiously took a good "sniff" at an unlabelled bottle for the purpose of ascertaining its contents, which, unfortunately for me, proved to be liquor ammon. fort. Since then my sense of smell appears to have been destroyed. Can any one recommend a remedy which might restore my sense of smell?

*** Similar cases are on record in which the sense of smell has been placed in abeyance or destroyed by strong vapours and odours. As regards treatment, insufflations of powders containing strychnine have been suggested, but where the sense of smell has been restored time appears to have been quite as much an agent as any remedy. It would perhaps be as well to exclude any other local contributory factor in the case before assuming that treatment is useless.

ANSWERS.

PREMATURE FALLING OF THE HAIR.

DR HENRY WALDO (Bristol) writes that he would be pleased to send "M." (BRITISH MEDICAL JOURNAL, June 29th), a brochure of his on the subject.

QUANTITATIVE ANALYSIS OF URINE.

S. W.—Any elementary textbook of physiological chemistry (for instance, Halliburton's *Essentials of Chemical Physiology*) would give the simple methods usually employed for the estimation of sulphates (organic and inorganic) and phosphates in the urine. A few chemical reagents are necessary; a burette, a flask, and a beaker would be about all in the way of apparatus necessary. No simpler methods than these are known; and if these are too elaborate for S. W. it would probably be best for him to send his specimens to a chemical laboratory for analysis.

LETTERS, NOTES, Etc.

DR JOHN COCK (Exmouth) writes: It is interesting to know that the stormy weather of the month of June now past is not without recorded precedent. The following account of the weather during June, 1745, is to be found in a treatise *De aëre et morbis epidemicis*, by Dr. John Huxham, of Plymouth:

> Fuit et hic mensis frigidus admodum et pluvius, africo saepissime perflante, coro saepe; interfuit autem vulturnus a 21 ad 24. Aër fuit maxime crassus ac humidus, tristisque tempestas; hiemalem potius, quam aestivam putares, adeo omnia sunt uda et squalida: raro vides papilionem, imo vix muscam; torpent omnia.

His description of the weather during July of the same year begins, "Jam tandem aestas affulget."

EGGS IN THE DIET OF INFANTS.

DR. W. J. MIDELTON (Bournemouth) writes: I am very much gratified that Dr. Last should corroborate my views as to the value of eggs in the diet of infants. I venture to think, however, that 15 minims of yolk of egg given to an infant 4 days old would make it sick. Then, again, why should one wait until the child has dyspepsia before commencing the egg diet?

INTERNATIONAL STATISTICS.

SURGEON-GENERAL writes: The returns of the Registrar-General could be made still more interesting and useful if he would contrast his figures, so far as possible, with those of important European States. In countries where conscription is in force most accurate vital statistics must be kept; and it could, I think, be arranged to exchange our information with those countries. What could be more useful than to contrast, say, the birth and death rates, average expectation of life, the marriage-rates, mortality from infectious diseases, tuberculosis, etc., the number and percentage of women at marriageable ages, say, from 18 to 25 years, and who are not married, in such countries as Germany, France, and England, etc.? The information on the above points might indicate measures that would be not only beneficial to the countries referred to, but to ourselves. I would suggest that the information should be kept before the public by appearing quarterly in the Registrar-General's returns. The social progress or the reverse of our commercial rivals would be not only usefully known to the medical profession, but to the general public so far as trade is concerned.

POST-PARTUM HAEMORRHAGE.

DR. J. REID (London, E.C.) writes: On June 21st Mrs. G. gave birth to her fourth child, a male. Her other children were healthy, except the last, which was stillborn. In December she had a fall. The placenta came away, but a little of the amnion did not. Blood came in occasional gushes, and ergot was given. Without waiting long I detached the amnion, and found a membrane lining the uterus, except the site of the placenta. I managed to detach it with fingers, but, from its slippery nature and from the soft state of the interior of the uterus, I could not readily pull it out. Haemorrhage ceased, and the membrane, which was like mesentery and inflamed in parts and of considerable size, was expelled immediately. Was it decidua degenerated? There were no distinctive marks of such a membrane. Recovery was uneventful, without drugs. The child is suckled, and, apart from slight snuffles, is healthy.

THERAPEUTIC USES OF RADIUM.

MR. T. J. P. HARTIGAN, F.R.C.S. (London, W.), writes: With reference to a paragraph headed "A Demonstration in the Paris Radium Laboratories," reported in the BRITISH MEDICAL JOURNAL of June 29th, p. 1554, and the statement that "up to the present the value of radium has received far more study in France than elsewhere," as long ago as 1903, nearly three years before the Paris Institution was founded, radium was being successfully employed by me in all the different maladies mentioned, and I exhibited numerous cases at the Dermatological Society in January of the following year, as a reference to the *British Journal of Dermatology* will show. In the same volume of that journal will also be found an illustrated account of the method devised by me for the treatment of port-wine stain (naevus flammeus). At the visit of the French physicians in the autumn of 1904 they admitted having no knowledge of the therapeutic uses of radium, and when shown a case of naevus flammeus treated by me, so surprised were they that some of them went so far as to declare the patient never had a port-wine stain at all. This particular case had been previously shown to the Society in the earlier stages of treatment. Further references to the work done will be found in the succeeding numbers of the *Dermatological Journal* for the years 1905-6-7, and I would specially refer to the *Transactions* of the Ophthalmological Society for 1905-6, which contains a discussion on this subject explaining what has been accomplished more fully. For a considerable time foreign visitors to our clinic at Blackfriars Skin Hospital, who are conversant with what is taking place in the capitals of Europe, have assured me there is nothing to be seen anywhere abroad compared with cases treated at this institution. Our researches, too, have not been confined to clinical investigation, but have extended to testing microscopically the action of the salt on normal and diseased structures, and all these results are freely open to the inspection of practitioners in accordance with the foundation of that institution.

AN OFFICER OF THE "LANCERS."

The following story is told of a famous Dublin surgeon of past days. Sir Philip Crampton was Surgeon-General to the Forces in Ireland, and appeared at the levées of the Viceregal Court in a resplendent military uniform. An English stranger asked Lord Norbury, who was then Chief Justice of the Irish Common Pleas, who the distinguished soldier might be. "Oh!" was the reply, "he is General Crampton." "What command does he hold?" "He is the General of the Lancers."

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A Clinical Lecture

ON THE

VIBRATING SENSATION IN DISEASES OF THE NERVOUS SYSTEM.

DELIVERED AT THE MANCHESTER ROYAL INFIRMARY.

BY R. T. WILLIAMSON, M.D.LOND., F.R.C.P.,

ASSISTANT PHYSICIAN, ROYAL INFIRMARY, AND LECTURER IN MEDICINE, VICTORIA UNIVERSITY, MANCHESTER.

WHEN the foot of a vibrating tuning-fork is placed over subcutaneous bony prominences or surfaces, in many parts of the body, a peculiar vibrating sensation is felt. To this sensation the names of "vibrating sensation or feeling," "bone sensibility," and "pallaesthesia" have been given. Though the sensations produced by vibrating tuning-forks had been studied by Rumpf and by Treitel in Germany many years ago, it was Egger, in France, who especially directed attention to the subject in 1899. Subsequently the vibrating sensation has been carefully studied by Seiffer and Rydel, by Goldscheider, and others in Germany, by Minor, and by Sterling in Russia, and by Marinesco in Roumania. Some tuning-forks produce a much better vibrating sensation than others. Many of the smaller English tuning forks produce very little of the sensation, and are almost useless in clinical work. Moreover, there is often considerable difficulty in comparing the results of different observers, owing to various kinds of tuning-forks having been employed. The ingenious tuning-fork devised by Gradenigo has been used for measuring accurately the sensibility for the vibrating feeling at various parts of the body. Also a footpiece is attached to many of the tuning-forks which have been employed. The tuning-fork which I have used has not been of the kind just mentioned; and, though it may not be the most suitable instrument for testing the vibrating sensation accurately, nevertheless it has the advantage of not being too delicate. Probably its vibrations would not be felt in some affections in which a sensation would be caused if a more powerful instrument were employed. I have used the same kind of tuning-fork in all my observations, both in health and disease. I have learned, by testing a large number of healthy individuals where the vibrations of this tuning-fork can and cannot be felt in the normal condition; and hence in disease I believe it is a reliable instrument as a qualitative test for the vibrating sensation, though it may not be satisfactory for accurately measuring the intensity of the sensation. For rapid clinical work, and for the detection of marked changes in the vibrating sensation, I believe the tuning-fork which I have employed is probably as useful *practically* as the more delicate and more powerful instruments. The tuning-fork (C^1) is 9 in. long, and its prongs 5½ in. long.

In all healthy individuals whom I have examined the vibrations of this tuning-fork are able to produce a vibrating or trembling sensation when its foot is placed over the following points: The styloid process of the ulnar bone, the internal and external malleolus, the inner surface of the tibia, the anterior superior spine of the ilium, and the sternum. Usually it produces a vibrating sensation on the vertebral spines, and often on many other points. But I have only tested the bony points mentioned in diseased conditions, because I know that the vibrations of the tuning-fork I have employed are *always* felt at these points in health, whilst at many other points the vibrations are not always felt, even in the normal state. The vibrations of the tuning-fork I have used also produce a vibrating feeling in all healthy individuals when its foot is placed (1) on the palm of the hand, over the heads of the metacarpal bones; (2) on the sole of the foot (at the heel and anteriorly at the region of the heads of the metatarsal bones); and (3) on the nails of the fingers and thumb and on the nail of the big toe. Often better vibrating sensation is felt if a penny is placed on the palm of the hand, or on the sole of the foot, at the points just mentioned, and the foot of the vibrating tuning-fork held firmly in contact with the penny.

When the vibrating sensation is normal it is usually not necessary for the boots to be taken off when the feet are tested. The tuning fork I have used produces a distinct vibrating sensation when its foot is placed on the sole of the boot over the points just mentioned (heels and at the region of the heads of the metatarsal bones), the vibrations being transmitted through the boot sole, unless it is extremely thick.

The tuning-fork I have used produces no vibrating sensation when its foot is placed on the bones of the skull.

In testing the limbs, I have found three points very suitable for clinical examination—the styloid process of the ulna, the internal malleolus, and the inner surface of the tibia, about the middle of the bone. In fifty healthy men the vibrating tuning-fork produced a vibrating feeling in every case, when its foot was placed at the three points just mentioned. The nails of the thumbs, fingers, and big toes, and the palms of the hands and soles of the feet are also very convenient points for clinical examination.

LOSS OF THE VIBRATING SENSATION IN DISEASE.

During the last four years I have tested the vibrating sensation in a large number of cases, and the following are the results I have obtained.

When there is marked impairment or loss of other forms of sensation, the vibrating sensation is usually also lost. But the point of chief interest is the fact that it is sometimes lost (or, at least, it is lost when tested with the tuning-fork, which I have employed) when other forms of sensation are felt.

1. *Tabes Dorsalis.*

In a number of cases of early tabes (examined as already described) I have found the vibrating sensation lost on the legs (at the malleoli, inner surface of the tibia, or on the soles of the feet), when sensations of touch, pain, and temperature were felt distinctly. (In some of these cases there was no ataxia, in others ataxia was present.) The same results were obtained in some cases of suspected very early tabes, when the symptoms were very few. Hence the loss of the vibrating feeling is of value (though not diagnostic) as an additional symptom in favour of early tabes.

2. *Peripheral Neuritis.*

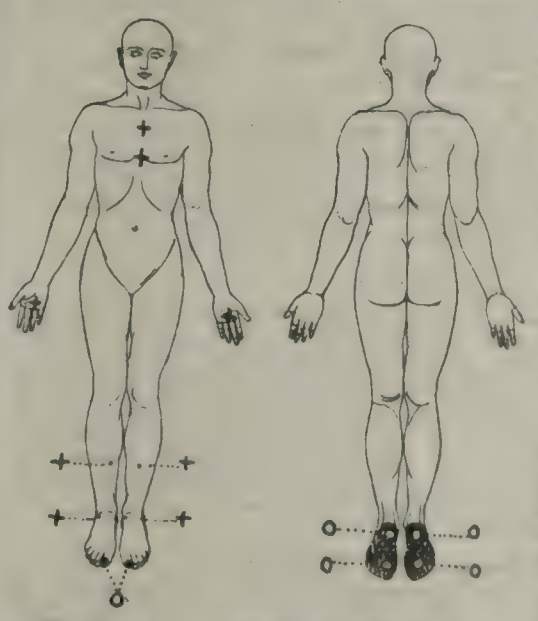
In slight cases of this affection the vibrating feeling may be lost when sensations of touch, pain, and temperature are felt.

CASE I.

History of great alcoholic excess and of well-marked symptoms of neuritis. Loss of power in muscles of the legs. Knee-jerks and tendo Achillis jerks lost. Great tenderness of calf muscles, sensation of numbness in the legs and feet; sensation as if walking on cotton-wool. Sensations of touch, pain, and temperature present on the feet and legs. Vibrating sensation lost on the soles of the feet; lost on the left internal malleolus, but felt on the left tibia and external malleolus; lost on the external and internal malleolus of the right leg, but felt on the tibia; felt on the palm of the hand and styloid process of the ulna on each side.

3. *Diabetes Mellitus.*

The vibrating feeling is lost at some part of the legs in many cases of diabetes mellitus and chronic glycosuria. It is often lost on the soles of the feet and big toe nails, and sometimes also on the tibia and malleoli. There may be no other nervous symptoms, or there may be also slight or severe symptoms of "diabetic neuritis."



Figs. 1 and 2.—Diabetes mellitus (Case II). Vibrating feeling lost at parts shaded and marked o; felt at pars marked +.

CASE II.

Man, aged 48. Severe form of diabetes. Vibrating feeling lost on the soles of the feet and on the big toe nails; felt on the malleoli and tibia. Touch with the head of a pin, prick with the pin point,

and hot and cold objects all recognized distinctly on the feet and legs. Knee-jerks and tendo Achillis jerks presents. Calf muscles tender. (See Figs. 1 and 2.)

CASE III.

Woman, aged 50. Mild form of diabetes; pruritus of vulva. Vibrating sensation lost on the soles of the feet and on the big toe nails; felt on the malleoli and tibia; sensations of touch, pain, and temperature recognized distinctly. Knee-jerks and tendo Achillis jerks present.

CASE IV.

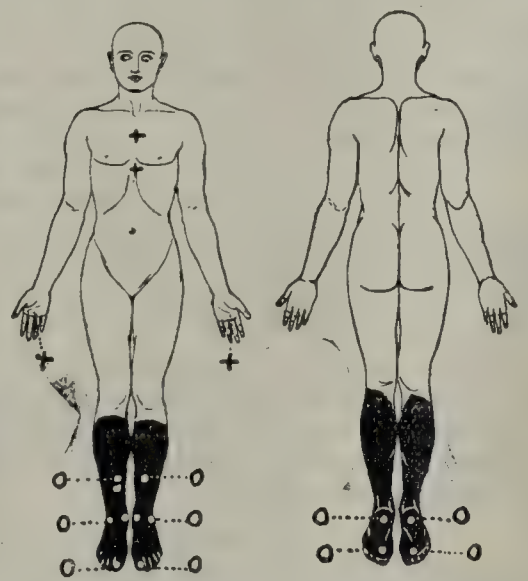
Woman, aged 34 Severe form of diabetes. Vibrating feeling lost on the soles of both feet at region of heads of metatarsal bones, lost on the nails of the big toes, lost at the left heel, felt slightly at the right heel; felt on the malleoli and inner surface of tibia; no other form of anaesthesia. Knee-jerks and tendo Achillis reflexes present. Cramps in the calf muscles.

CASE V.

Woman, aged 53. Diabetes of medium severity. Vibrating feeling lost on big toe nails, on the malleoli and tibiae, felt very slight on the soles of the feet. No loss of sensation to touch, pain, or temperature. Knee-jerks present, tendo Achillis jerks lost. Calf muscles very tender on pressure. Burning pain in the toes, with tenderness. Patient cannot bear the bedclothes to touch the toes; pain keeps her awake at night.

CASE VI.

Woman, aged 71. Diabetes for 10 years. Vibrating feeling lost on the soles of the feet, on the big toe nails, on the malleoli and tibiae; felt on the hands. Sensations of touch, pain, and temperature recognized well on the legs and arms. Severe gnawing pain in the legs, much worse at night. Pain and burning sensation in the toes and feet. Muscles, especially calf muscles, and skin of the toes and feet very tender (muscular and cutaneous hyperaesthesia and hyperalgesia). Knee-jerks present, tendo Achillis jerks absent (see Figs. 3 and 4.



Figs. 3 and 4 (Case VI).—Diabetes mellitus. Vibrating feeling lost at parts shaded and marked o; felt at parts marked +.

4. *Spinal Syphilis.*

In cases of spinal syphilis (Erb's syphilitic spinal paralysis and syphilitic meningo-myelitis) the vibrating sensation may be lost when other forms of sensation are felt quite well, or it may be lost over a more extensive area than other forms of sensation.

CASE VII.

Man, aged 60. Meningo-myelitis; syphilis six years ago. Pain in the lower dorsal region of the spine and girdle pain at the upper part of the abdomen, followed in six months by weakness of the right leg and afterwards of the left leg. On examination the following were the chief symptoms: Knee-jerks present, right greater than left; ankle clonus right side but not on the left; decided paresis of right leg, slight paresis of left; sensation for pain felt at all parts, but sensation for touch and temperature impaired in the legs (chiefly in distribution of sacral and last lumbar nerve roots), but not on the trunk. Vibrating sensation not felt on the sole of the foot, malleoli, tibia of both sides; not felt on the left anterior superior iliac spine, felt slightly on the right; not felt on the vertebral spines up to the last dorsal spine; felt on the vertebral spines above the last dorsal and on the arms quite well.

CASE VIII.

M. S.; man aged 23. History of gonorrhoea, syphilis very probable. Gradual onset of weakness of legs. Pain in the middle and lower dorsal regions; girdle pain. Spastic gait, rigidity of legs, weakness of movements, knee-jerks increased, ankle clonus and the Babinski type of plantar reflex on each side. Occasional dribbling of urine and difficulty in passing urine. No spinal curvature. Sensation to touch, pain, and temperature felt on both legs quite well. Vibrating sensation not felt on the legs, but felt on the iliac crest, sternum, and arms.

5. *Compression Myelitis.*

In compression "myelitis" from caries of the spine, at the early stage, there may be loss of the vibrating sensation when no other form of anaesthesia can be detected.

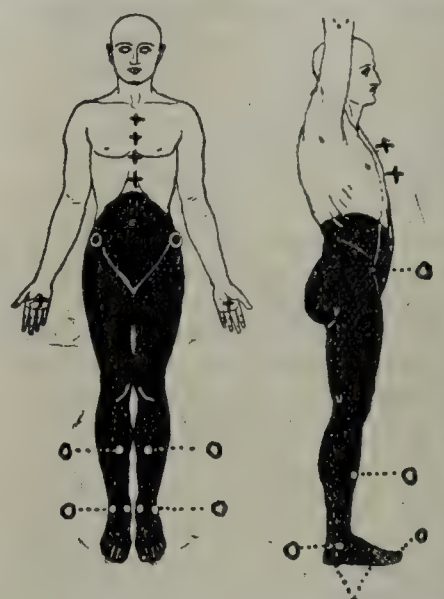
CASE IX.

Woman, aged 45. Lymphatic glands in the neck became enlarged and were removed by operation. Six months later she commenced to suffer from pain in the mid-dorsal region of the spine, followed in a few weeks by paresis of the legs. When first seen there was marked paralysis of both legs, the knee-jerks were increased, ankle clonus was present, and there was a slight Babinski's reflex on each side, and a marked Oppenheim's reflex. There was a well-marked projection of the fourth dorsal vertebral spine; at this point there was pain on movement (flexion and rotation of the spine), and pain on percussion and pressure. The vibrating sensation was lost on the legs (at the internal and external malleoli, on the tibiae, and on the right anterior superior iliac spine); it was lost on the lower vertebral spines up to the fifth dorsal; but above that point it was felt quite well on the vertebral spines; it was felt also on the sternum and arms. Sensations of touch, pain, and temperature were felt quite well on the legs, trunk, and arms. Paralysis of the bladder and rectum developed a week later, and a short time afterwards complete tactile anaesthesia developed on the legs, abdomen, and lower part of the thorax.

CASE X.

Man, aged 27. An enlarged gland was removed from right side of the neck three years ago. Pain in upper lumbar region region of the spine for three months; tenderness on percussion of the lowest dorsal and upper lumbar region. Irregularity of the outline of the body of the first lumbar vertebra seen in *x*-ray photograph.

Spastic paraplegia developed and gradually increased. The legs became very rigid, the knee-jerks became much increased, ankle clonus and the Babinski type of plantar reflex were present on both sides. The sensations of touch, pain, and temperature were recognized quite well on the legs and trunk. But the vibrating feeling was completely lost on the legs (soles of feet, malleoli, tibiae) and on the anterior superior iliac spines; it was very greatly diminished, almost lost, on the sacrum and spines of the lumbar vertebrae, but it was felt well on the spines of the dorsal vertebrae, and on the sternum, and arms (see Figs. 5 and 6).



Figs. 5 and 6 (Case X).—Spinal caries. Vibrating feeling lost in shaded area at parts marked o; felt at parts marked +.

CASE XI.

Boy, aged 13. The chief symptoms were spastic paresis of the legs, spastic gait, increased knee-jerks, ankle clonus, the Babinski type of plantar reflex, and an irritable condition of the bladder. The sensations of touch, pain, and temperature were felt quite well on the limbs and trunk. The vibration sensation was lost on the malleoli (external and internal) of both legs, and at the left anterior superior iliac spine, but felt slightly on the right. On the arms and trunk the vibrating sensation was normal. The boy was very thin, and soon the temperature rose in the evenings. A loud pleuritic friction sound developed, and all the symptoms and signs of left-sided pleurisy, with a little effusion, rapidly followed. Recovery from the pleurisy occurred in a few weeks, and, after a prolonged rest in bed, the muscular power in the legs improved considerably. Though there was no spinal curvature, it was very probable that the nervous symptoms were due to a slight compression myelitis from tuberculous vertebral caries.

6. *Nervous Disease Affecting only Motor Fibres or Cells.*

There are many cases of disease of the nervous system in which the sensations of touch, pain, and temperature are felt quite well, and the differential diagnosis appears to be restricted to the diseases which are known to affect the motor structures only; but on examination with the vibrating tuning-fork it is found that the vibrating feeling is lost. This fact enables us to say that the disease is not one of the affections implicating only motor structures, and hence it may be of diagnostic value.

CASE XII.

Man, aged 60. Paralysis of both legs, of subacute onset: knee-jerks present, no ankle clonus, no Babinski reflex, no affection of bladder or rectum, no anaesthesia to touch, pain, or temperature. The disease appeared to be one affecting only motor parts of the cord, but examination with the vibrating tuning-fork revealed loss of the vibrating sensation in the legs. This fact showed that the disease affected other

parts beside purely motor structures. The course of the disease confirmed this view. In a few weeks the bladder and rectum became paralysed. Tactile anaesthesia developed, the legs became spastic, ankle clonus and the Babinski type of plantar reflex developed. The symptoms pointed to a subacute transverse myelitis. Partial recovery occurred.

In cases of amyotrophic lateral sclerosis, which is well known to affect only motor structures of the cord, I have found that the vibrating sensation was felt quite well on the legs, arms, and trunk, even at a late stage of the disease.

7. *Hysterical Hemianaesthesia.*

The vibrating sensation may be of service in the differential diagnosis between anaesthesia due to organic disease and anaesthesia due to hysteria, traumatic neurosis, and malingering.

On the sternum the vibrations of the tuning-fork are felt extremely well in the normal condition, even when the foot of the fork rests only on the margins of the sternum, the vibration being transmitted across the bone. Thus, in the normal condition, the vibrations of the tuning-fork are felt when its foot rests on the edge of the sternum at either of the points A or B in Fig. 7.

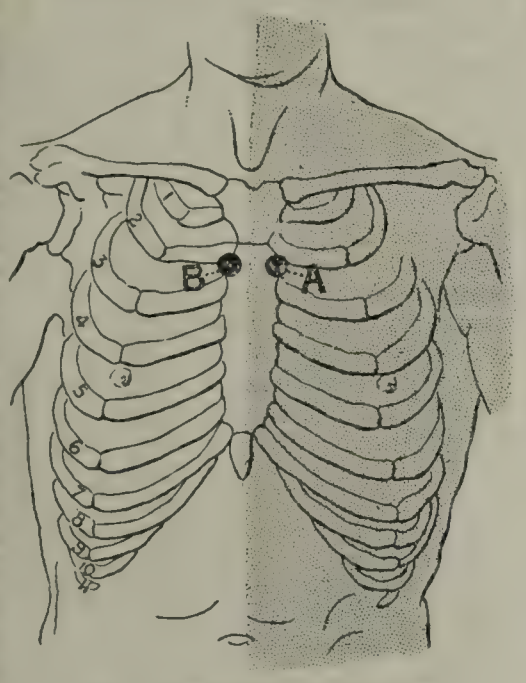


Fig. 7.—Anaesthetic side shaded.

In cases of hemianaesthesia from organic lesions it appeared probable that, if the foot of the tuning-fork were placed in contact with the edge of the sternum on the anaesthetic side (A in figure), though it might not produce any sensation at the *point of contact*, the vibrations would be transmitted across to the other side of the bone into the area where the sensation was normal, and a vibrating sensation would be felt. The overlapping of the sensory nerve fibres of the two sides in the middle line would also aid the patient in detecting the vibrations of the tuning-fork when it is placed on the edge of the sternum (as at A). But it appeared probable that in hemianaesthesia due to hysteria, neurosis, or malingering, the vibrating sensation would *not* be felt when the foot of the vibrating tuning-fork rested on the edge of the sternum on the anaesthetic side (A in Fig. 7). Cases which I have examined support this view.

In four cases of hemianaesthesia, which were undoubtedly due to organic lesion, the vibrating sensation was felt when the foot of the vibrating tuning-fork was placed in contact with the edge of the sternum on the anaesthetic side (at A in Fig. 7). (In these cases there were symptoms of spastic hemiplegia, with ankle clonus, and the Babinski reflex on the side of the anaesthesia.) In two cases of hemianaesthesia, in which there could be no doubt that there was *no* organic disease, the vibrating sensation was *not* felt when the foot of the tuning-fork was placed firmly in contact with the edge of the sternum on the anaesthetic side (at A in Fig. 7), but it was felt quite well on the other side (at B in Fig. 7). In these two cases careful examination failed to reveal the slightest sign of organic disease. In one case the symptoms developed a week after a very slight accident, and there can be no doubt that they were due to traumatic hysteria (traumatic neurosis). In the other case careful examination did not reveal the slightest sign of organic disease; also Janet's symptom of hysterical anaesthesia was obtained. The patient's eyes were closed, and she was touched lightly with the finger, first on the normal and then on the anaesthetic side; she was told to say "Yes" when she felt the touch and "No" when she did not feel it. She at once said "Yes" when the normal side was touched, and "No" directly the anaesthetic side was touched. The other symptoms all pointed clearly to hysterical hemianaesthesia. This case was under the care of Dr. Graham Steell, who kindly gave me permission to make the examination.

Further observation will be required to prove the value of the vibrating sensation in the diagnosis of hysterical hemianaesthesia. I think, however, that it is extremely probable that hemianaesthesia is due to hysteria or malingering if the vibrating tuning-fork produces no vibrating feeling when placed firmly in contact with the edge of the sternum on the *anaesthetic* side, but a definite vibrating feeling when in contact with the edge of the sternum on the other side. If the vibrating tuning-fork resting on the edge of the sternum on the anaesthetic side produces a vibrating feeling, the affection may be either organic or hysterical.

CONCLUSIONS.

1. The vibrating sensation is a delicate test for detecting slight impairment of sensation. The vibrating sensation may be lost when other forms of sensation (to tactile impressions, pain, and temperature) are felt quite well, or are only very slightly impaired. This is sometimes the case in early tabes, in slight peripheral neuritis, and often in diabetes mellitus.

2. In diabetes mellitus the vibrating sensation may be lost on the feet, or feet and legs, when there are no other nervous symptoms; but often the latter are present. In many cases of diabetes the nervous symptoms are chiefly (1) severe pains, tenderness, and hyperaesthesia in the legs; (2) loss of the tendo Achillis jerks; (3) loss of the vibrating sensation.

3. In diseases strictly limited to the motor structures, the vibrating sensation is not lost even at an advanced period of the disease. (Thus it is not lost at an advanced period of amyotrophic lateral sclerosis.)

In any case in which the disease appears to be one causing lesion only of the motor parts of the nervous system, if it should be found that the vibrating sensation is lost, this fact indicates that the disease is affecting also sensory structures; and thus it may be of diagnostic value.

4. In cases of paraplegia from spinal caries, and occasionally in spinal syphilis, the loss of the vibrating feeling may be the only objective symptom of affection of sensation, at an early stage of the disease.

5. In hemianaesthesia, if the vibrating feeling is lost when the foot of the tuning-fork is placed on the edge of the sternum on the side of the tactile anaesthesia, but felt on the other side, the case is one of hysterical or functional hemianaesthesia, or of malingering; whilst in hemianaesthesia due to organic disease the vibrating sensation is felt when the foot of the vibrating tuning-fork is placed on the edge of the sternum on the side of the tactile anaesthesia.

An Address

ON

THE SPA TREATMENT OF NEURASTHENIA.

DELIVERED AT THE ANNUAL MEETING OF THE BATH AND BRISTOL BRANCH,

BY EDWARD J. CAVE, M.D., M.R.C.P.,

PRESIDENT OF THE BRANCH.

GENTLEMEN,—My first duty is to thank you for electing me to the honourable post which Dr. Davies has just yielded to me. When I look back on the roll of former presidents of this Branch, I can say with all truth and humility that, as I cannot hope to equal their success, so I feel all the more sensible of the honour that you pay me in inviting me to preside over your meetings for the coming year.

First, gentlemen, let me give expression to the sorrow that we all share in the recent untimely loss of one of the most distinguished occupants of this chair. While yet seemingly in the full vigour of life, and in many useful fields giving us the ripened fruits of his experience, wise alike in counsel and decision, the death of Dr. Markham Skerritt has robbed the Association of one of its most indefatigable workers and trusted advisers, and this

Branch and the medical profession in the West of England of one of our proudest ornaments.

With the piety of a student towards his master, may I also make a brief reference to the late Dr. Goodridge, who was President of the Branch in 1876. When I came to Bath twenty-three years ago as Resident Medical Officer to the Royal United Hospital, Dr. Goodridge was in the habit of paying a daily visit to the hospital and of practising the most careful and detailed examination of every patient in his charge. Full accounts were written of every case and every daily fluctuation; and those who knew how carefully he collected and preserved these records always hoped that a permanent publication would preserve to the profession some of the fruits of his industry. He had an extraordinarily accurate habit of physical examination, and his observations were never coloured by preconceived ideas. Hence his remarkable skill in diagnosis, an art in which, I think, I never met his equal. At first sight and on superficial acquaintance there was little in the late Dr. Goodridge to excite enthusiasm, but those who were privileged to follow for any length of time his daily practice in the hospital wards always became reverent admirers of this simple-minded seeker after truth, always learning, always teaching, always in the van of the highest medicine of his time. His name will long live in honour among us and in the affections of his old house physicians.

Turning over in my mind the subject to which I should devote the brief half hour which it is customary for the president to occupy on first assuming his office, I soon realized that the strenuous days of busy professional work left little leisure for the proper presentment of any subject of medical interest which was not incidental to the day's work, and that I must draw on my experience in daily practice, and talk to you on some subject with which my special field of work makes me more familiar. And I proposed to discuss some of the conditions of chronic disease which my experience as a "spa" physician led me to believe were specially amenable to the modes of treatment there practised, and yet in which the desirability of such a course is not so commonly, by average professional opinion, kept in mind.

If a man has a patient with an intractable form of gout or muscular or articular rheumatism, or one of the many forms of chronic arthritis, or neuritis, he speedily bethinks himself, when the ordinary therapeutic measures are lagging in effect, of the benefit to be expected from a well-directed course of baths, waters, and the general alterative treatment obtainable at a spa like Bath. But most practitioners are less ready to avail themselves of the same or similar measures in many other chronic disorders where a radical change of metabolism is equally essential. As examples, I might instance the condition of biliary lithiasis and some of its complications; the tendency to deposit uric-acid gravel from the urine; various forms of scaly skin disorders, more particularly scaly eczema of the lower limbs in gouty subjects, which often derives quite remarkable benefit from a series of exposures to the natural vapour rising from the hot spring. So, too, the condition of glycosuria in gouty or obese subjects and the condition of obesity itself, which, in the first instance, can be most advantageously dealt with by a course of spa treatment followed by a watchful regulation of the diet and daily regimen under the conditions of ordinary life. Over and over again I have seen patients drop in weight from 1 up to 3 and 4 st., with nothing but good as the result, in a "cure" extending from three to eight weeks.

NEURASTHENIA.

The condition of arterio-sclerosis and the later degenerative changes in old-standing syphilis, although on the whole less amenable, are also frequently materially benefited by well-directed hydrotherapeutic measures at a natural spa. But the consideration even in the most cursory form of all these states of disorder, comprising as they do the great majority of chronic diseases, would occupy far more time than I have at my disposal, and I propose, therefore, to discuss a little more fully, but yet only in outline, the varied therapeutic resources which we can bring to bear on one common malady which must often be the despair of the practitioner and is notorious for its defiance of the *British Pharmacopoeia*. I mean that strange disorder, old as the history of mankind, but vastly more common under the stress and strain of modern civilization, affecting every function of the body, and so variable in its symptoms as to be considered in the light of a perversion of every normal physiological process, and a pathological appendix to every chapter in the textbook of physiology, victimising alike the innocent children, inheritors of their father's sins, the dissipated idlers of an effete civilization, and those who by too strenuous efforts after right doing exhaust prematurely the limited stock of nervous energy that is each man's lot—I mean the condition of nervous exhaustion, nervous debility—neurasthenia.

It is an indisputable fact that heredity plays a part in the production of neurasthenia, and when we consider the physical conformation that is sometimes associated with certain forms of neurasthenia, the hollow back and protuberant, sagging abdomen, with a tendency to laxness of all the abdominal viscera, the mobile heart that shifts its apex several inches to the left when its owner lies on the same side, and the general vasomotor instability, we can realize how inevitably some men "are born to trouble as the sparks fly upwards." Nervous and other pathologic heredity is a factor in probably 40 or 50 per cent. of all cases, and as no man can escape his forbears, this is an unalterable predisposition. When the hereditary factor is strongly marked in some young subjects the condition is hopeless. But the disposable factors in etiology are at least equally important, and it is in a consideration of these conditions that lies the clue to any successful treatment. I cannot stay to discuss the relative importance of exhaustion of the cerebral cells, of intoxications of these cells by various products of abnormal metabolism or excessive supply of normal metabolic products, or of the vasomotor conditions and control, but must proceed at once to a consideration of the means at our disposal to mitigate their effects. And I may at once make a considerable clearance when I say that all the really severe forms of neurasthenia, especially the acquired forms—traumatic, toxic, exhaustive—are best dealt with by a thoroughgoing "rest cure" according to the principles laid down by Weir Mitchell. Often enough, however, the patient at the end of his rest cure is in no condition safely to resume his ordinary habits of life and work, and a few weeks spent under the conditions to be presently described are a useful step in the journey towards thorough rehabilitation. In very many cases, moreover, the symptoms are too moderate to justify the prolonged, severe, and expensive proceedings involved in a vigorous application of Weir Mitchell's method, and it is in these that a spa cure offers a legitimate field, and one which is by no means devoid of success. It is perhaps, more especially in cases in which the nervous exhaustion is most obvious in regard to the innervation of the thoracic and abdominal viscera that the spa cure is most to be recommended. Not that I would altogether exclude the cerebral, the spinal, and the sexual forms. But in cases of cardiac and gastro intestinal neurasthenia the benefits derivable from a special course of treatment at a spa are often more marked than after even a rigorous and carefully planned rest cure. In the first place, let me premise that the general environment must be favourable to the cure. The climate must be suitable, and should be varied. Many neurasthenics do best to start with in a sedative rather than in a stimulating and bracing climate. But it should be possible, as the cure progresses, either to transfer the patient altogether to a high and bracing situation, or to insist that a certain number of hours in each day should be spent in such surroundings. This is easily accomplished in Bath by substituting for the calm sleepy influence of the river valley the exhilarating breezes of the open downs, and the higher slopes of the hills that enclose it. Moreover, there should be sufficient varied interest in the locality to afford some food for the mind and occupation for the body of the convalescent. The charm of rural scenery, of architectural beauty, of historical and literary association, the well-preserved relics of older orders of civilization, the facilities for outdoor sports and amusements, all combine to strengthen the hands of the physician in dealing with the cases I have in mind. The general air of old-time quietude and repose has a restful influence, and it is a great advantage that the custom of the city is opposed to the herding in great institutions of large numbers of neurotic and neurasthenic individuals such as prevails in most hydrotherapeutic institutions.

In treatment the first principle is *rest*, and the second is *exercise*. Rest, that is, until the exhausted nerve cells have recovered a sufficiently healthy metabolism and a sufficient store of their natural energy to enable them to put forth daily a certain modicum of function; and exercise which by the gentlest gradations may lead back from zero to the full activity of normal life.

Rest to begin with may require to be absolute, as in a real rest cure. But short of this, in all cases and in all stages, a sufficient proportion of the day and night should be set aside for this negative purpose. Generally nine hours should be insisted on as a minimum time to be spent in bed, and often it will be well to extend this by one or two hours, or to ensure a similar time being spent in repose after the midday meal.

In diet it is generally a safe rule to try to change the natural habit. If a patient is lean, try to fatten him. This can generally be best effected in bed, and the lean neurasthenic should, as a rule, begin his cure by a spell of absolute rest. Then, beginning with a milk cure for some days, fattening articles of diet can be rapidly added to the daily menu until with increasing weight comes better-nourished nerve tissue, and the gradual substitution of exercise for rest becomes feasible. If, on the other hand, the patient be fat, and more especially in cases where there is abdominal plethora—as in obese gouty subjects and the numerous class who with recurrent or occasional abdominal distension make complaint of palpitation and cardiac discomfort—the greatest benefit will result from a diet freed as far as possible from all carbohydrate constituents. Sugar is easily eliminated and saxin as a substitute, more palatable than saccharin, answers all reasonable requirements. The exclusion of starch is a little more difficult, but must be insisted on. The farinaceous foods like rice, sago, tapioca, macaroni, vermicelli, etc., are easily dispensed with, and the only really practical difficulty lies in substitutes for breadstuffs (bread, toast, biscuits, cakes) and other culinary preparations of which wheaten flour is an ingredient. Sometimes it may be permissible to take a small quantity of toast with breakfast, but in the later meals some of the now numerous non-starchy preparations, mostly derived from milk albumen, must be substituted. This reduces the dietary to animal food, fat and lean (meat, fish, poultry), and the non-starchy vegetables, fruits, eggs, milk, butter and cheese, meat and vegetable broths—an ample repertory.

The meals should be taken with sufficient intervals, generally four to five hours, any habitual intermediary indulgences being interdicted or replaced by a clear meat extract like "oxo" or Brand's essence. Efficient mastication and masticatory organs are imperative, and the meal should be taken with as little fluid as possible. Half a tumblerful of plain water, hot or cold, or diluted alcohol, is sufficient. As regards the use of alcohol, one should mostly be guided by the patient's previous habits, but generally the less the better. Having now settled the fundamental requirements of rest and feeding, we must proceed to occupy the patient's time, his mind, and body, with such special modes of treatment as are applicable to his particular symptoms. Broadly, we may generally divide his cure into two stages—a preliminary stage of purification or elimination; and, later, a gradual process of invigorating rehabilitation.

For the former the drinking of water on an empty stomach, from which it is rapidly absorbed and rapidly excreted, is the most obvious procedure. The mineral water should be sipped slowly, always in the late forenoon, and in the afternoon as a substitute for tea. In the spring and summer months it is often well to begin with a moderate libation before breakfast, which may be fortified if necessary by the addition of Carlsbad or other aperient salts, and any desirable saline ingredients, such as iodide of potassium, may be added to or taken with the water drunk later in the day. The quantity taken at one time will vary with individual requirements from 6 up to 12 oz., which latter quantity may be repeated several times at intervals of twenty-five to thirty minutes, if a very marked diuretic effect is desired.

An eliminating bath is generally a sweating proceeding, and there are various modes in vogue of inducing diaphoresis. The most ordinary, the most characteristic, and on the whole the most useful, is by a sufficiently prolonged immersion in the natural hot water of the spring. A stay of fifteen to twenty minutes in a bath at a temperature between 98° and 104° Fahrenheit is amply sufficient. After the bath the patient lies on a couch packed closely in hot towels and blankets for a further period of fifteen or twenty minutes, thus inducing a further and more obvious diaphoresis. The bath may be of the reclining type, much as in an ordinary bathroom, or a more capacious "deep" bath may be employed (the piscina of the formal hydrotherapeutist), with a capacity of close on a thousand gallons, in which the patient stands or sits, and which permits of freer movements of the limbs and trunk.

In either case a current of water of high temperature and varying force may be directed against any parts where a determination of blood is desired—for example, over an aching or inflamed nerve or joint, or against an internal organ, such as the liver. Another sweating bath of great utility, which may be advantageously employed in the presence of such complications as subacute multiarticular gout or of scaly skin eruptions, is that known as the "Bertholet" vapour bath, in which the limbs only, or the patient bodily, with the exception of the head, are enclosed in a box or chamber, which is filled with the natural hot vapour arising from the spring. This may be borne from fifteen to twenty-five minutes at a temperature varying from 108° to 114°, or even higher, and induces a free sweating. At the end the accumulated sweat and the moisture are washed off with a hot-water spray, gradually cooled off, and the patient may rest for a while in a comfortable warm wrap before being carried back to his bed in a closed chair.

There is a notion that the high radio-activity of the spring is obtained in its most intense form in the natural vapour bath, and this may help to explain its undoubted efficacy in presence of the conditions I have previously mentioned.

Ebstein has specially emphasized the importance of gout and arthritism as factors in the etiology of neurasthenia.

The simpler inductions of diaphoresis by hot dry air, as in the Greville or Dowsing systems, I need only refer to, except to remark that the actinic effects of the rays form an arc light are not to be expected from the ordinary form of incandescent lamp.

In relation, however, to neurasthenia the stimulating and invigorating hydrotherapeutic measures possess more importance than those we have just passed in review. Perhaps the best known are those which are specially, though not exclusively, employed in cardiac and vascular neurasthenia, and described as the "Nauheim" system of bathing. These are too well known to need description, but it seems desirable again to emphasize the essentially progressive character of the course, beginning with a bath of short duration, and temperature little, if at all, below that of the blood, and with each administration prolonging the immersion and diminishing the temperature to the limits of 92° to 90°, or even 88° F., and twenty to twenty-four minutes of time. On no account should a hot pack be employed after these baths, which are essentially invigorating and stimulating, and the induction of perceptible sweating is an evidence of error in regulation or technique. After the bath the patient may be enveloped in a warm sheet for a few minutes, and should then dress and be carried to his bed or couch for a rest of at least one hour. Whatever may be the case in the presence of organic heart disease, the addition of the various salts and the induction of effervescence are certainly not essential in ordinary cardiac or abdominal neurasthenia. Here temperature and duration are the important factors, and the exhilarating effect may be increased by the addition of pine essence or needles.

May I here refer to the presence of neurasthenia as a complication of any long-standing organic disease? Perhaps this is as well illustrated in relation with organic heart troubles or chronic nerve disorders as in most other diseases. How common it is to see and how difficult to estimate the relative proportion of symptoms associated with a chronic valvular or muscular defect which cannot be regarded as belonging to the irreducible minimum of distress, which is mechanically produced, and inevitably the result of the faulty working of the circulatory apparatus regarded as a machine, but rather are due to the effects of the disturbed circulation on the

highest nerve organs, and still more to the disturbed imaginings, the apprehensions, the introspections, to which we are all subject, but which have so variable an influence according to the different temperaments of individuals. The same consideration applies to chronic spinal maladies, chronic gout and rheumatism, indeed in all chronic disorders whatsoever, and in very many instances the distress occasioned by these superadded sufferings bulks as largely as the underlying element of irreducible mechanical disability. Thus at times it is possible to relieve many of the pains of an incurable malady, and it is the consideration of these cases that leads up to the use of local applications in the treatment of neurasthenia. These comprise the local applications of water as in douches or packs, of electricity, and massage. I have already referred to the local determination of a douche of hot water in a bath, producing a hot and forcible current, the so-called wet or under-current douche. The ordinary or "dry" douche will vary in temperature, force, duration, and in the character determined by the shape and nature of the orifice or jet through which it is projected. As compared with a bath, the duration of a douche should generally be short, especially if the temperature is at all extreme. The temperature may often be advantageously varied, a hot douche, as in the universal needle bath, being gradually or rapidly cooled at the end of the administration; or a current alternately hot and cold may be directed upon the affected part—the "alternating" douche—a severe, stimulating application suited to the less debilitated cases of neurasthenia, applicable, for example, in some functional spinal disorders and sexual neurasthenia.

At Bath the alternating douche is often administered as a final stage to the massage douche while the patient sits in a hot bath of flowing brine.

Less severe than the alternating douche is the true "Scottish douche," in which a hot douche of varying force and duration, say of a gradually-attained temperature of 110°, is quite suddenly changed to a cold application of the same force and character, but lasting only for a few seconds. This should induce an immediate reaction, with bright scarlet colour of the skin, and is very serviceable in many cases of neuralgia.

Like most other refinements in the practice of douching, this form has been especially elaborated and described by the numerous French writers on hydrotherapeutics, but the origin of the term "douche Ecossaise," seems to lack reasonable explanation. In some cases it may be advisable to repeat the Scottish douche at the same sitting, the series of events comprising a gradually augmented hot douche of two to five minutes, a sudden cold application from five to ten seconds, again the hot douche for a similar period to the first, and a final cold application for ten or fifteen seconds. This is the double Scottish douche, and produces an active local reaction.

For the relaxed abdomen of many gastro-intestinal neurasthenics, a cool or cold douche may be applied direct to the belly from a fan-shaped terminal orifice, or an ordinary nozzle may be used, and its current broken by the fingers of the attendant.

Another measure which is often of service in the functional dilatation of the stomach so common in neurasthenics is the so called Neptune's girdle. A coarse linen bandage, 10 or 12 in. wide and long enough to encircle the abdomen three times, is wrung out of cold water for a third only of its length. It is then wrapped round the body, the moistened portion being first applied next the skin, and covered with the dry remainder of the bandage. This may be applied at bedtime, or it may be renewed two or three times in the twenty-four hours, and maintained for twenty to thirty minutes; applied lower on the abdomen, it is sometimes serviceable against another common neurotic complication—mucous colitis, and irregular spasmodic contractions of the colon.

I need not describe the various modes of electrical application, as they differ in no way from those universally practised in medicine. They comprise the application of the faradic or galvanic current, the latter continuous or with slow interruptions, and the use of static electricity and currents of high frequency. One of the most favoured arrangements for general or local electrification in neurasthenia is by means of the electric immersion bath in which a sinusoidal current is passed from suitable electrodes through an ordinary reclining bath of the natural mineral water. By means of a movable spade-shaped electrode the currents can be concentrated on any desired limb or surface.

We pass now to the last of the methods of physical therapeutics, to which I shall refer as commonly prescribed at spas in the treatment of neurasthenia, namely, massage and passive movements, health exercises and active movements, movements resisted manually, and those carried out with the aid of various gymnastic appliances and machines. It will generally be best to begin with simple massage, and here while the skill and training of the rubber go for much, natural aptitude and personality go for more, and the daily encouragement, quietly and insensibly instilled during the more or less prolonged visits of a healthy-minded, suitable and acceptable rubber, is not the least of the benefits to be derived therefrom.

In neurasthenia, as a rule, massage may be most usefully practised in the patient's own room on a couch or bed, and should always be followed by a period of complete rest for from thirty to sixty minutes. But, when desired, it may be given as the patient lies in a warm bath or immediately on his exit from the same. The special form of massage under jets of water known as the "Aix douche massage" is another very favourite mode of administration, and is more especially useful in spinal neurasthenia and during convalescence.

As regards the physical effects of massage, the nutrition of the muscles can be maintained during complete or comparative rest; and, while this advantage is gained, the fatigue due to the constant output of nervous energy in muscular innervation is avoided. But here, again, at a suitable stage, rest must be followed by exercise, the partially recuperated motor nerve cells must be trained back to full vigour and stability by a gradually-increasing functional employ. Passive movements and rubbing, or electrically-induced contractions of the muscles, must be replaced by natural movements instigated by the normal method of volitional nervous impulse. The rubber may round off his *séance* by directing various movements of the limbs and trunk for five or ten minutes. Gradually the time of the massage is reduced, that of the exercise prolonged. Then the latter are made with more vigour, or against the manual resistance of the attendant, but always stopping short, with the motto *festina lente* constantly in mind, of the production of fatigue that persists.

Now and then a day or even more may be spent in a further rest, to be followed by renewed activity. If interest flags—and the neurasthenic is apt to be a fickle creature and a constant seeker after new experiences—let him go to the gymnasium, where the same principles of movement against resistance are carried out by means of mechanical apparatus. We are fortunate in Bath in the accessibility of an excellently equipped and admirably conducted institution for the medico-mechanical treatment of disease. The various and elaborate machines devised by Zander of Stockholm for the gradual development of muscular power by a carefully increased resistance, together with the more ordinary fittings of a gymnasium, are admirably adapted for the later stages of the treatment of neurasthenic patients.

The discipline with rest necessary for the development of a sound body are equally essential to the establishment of a healthy mind.

In the later stages of the cure it is well to remember that the mind, equally with the body, must be accustomed to more strenuous spells of effort, and I often recommend that a certain prescribed portion of each day shall be spent in some novel intellectual exercise. The reading for an hour daily of a book on some subject demanding a moderately concentrated effort is often a suitable prescription, for example, a book on political economy, on moral science, or one of the natural sciences, or on a historical subject, and for preference the reading should be from one of the permanent classics of literature. In some cases it is an advantage that the reading should be "aloud," a favourite recommendation of the old classical physicians. When by these and similar methods the neuro-muscular system is sufficiently invigorated to permit of a reasonable amount of daily outdoor exertion the usual outdoor pursuits and recreations should be substituted for the more or less artificial resources which we have been considering. Walking, gardening, cycling, riding, games such as golf, swimming, out-of-door hobbies like field

botany and geology, field sports, especially fishing—these are some of the most obvious resources for the completion of the cure and after-cure; and the taste for their pursuit as hobbies after a return to the ordinary routine of life and work is one of the most effectual prophylactics against a recurrence of the disorder which led up to their acquirement.

In several cases where protracted muscular effort was badly borne I have known the much-abused motor car form a therapeutic agent of the greatest value. An old school friend of my own, who enjoyed and still enjoys a leading practice at the Bar, has recovered from a condition of seemingly hopeless neurasthenia with insomnia by the acquisition, on my advice, of a small car, on which he habitually makes his circuit. In cardiac neurasthenia and in some cases of neurasthenia with persistent insomnia I have found the exhilarating effect of motoring to be most beneficial, particularly if the neurasthenic will consent to act as his own chauffeur.

I have attempted to describe nothing new; and, gentlemen, this brief and incomplete summary of some of the means at our disposal and the method of applying them must be like a beaten track to many of you who are more familiar with their employment than myself.

In medical practice few modes of treatment are permanent; they have their fashions and their decline;

> Windy ways of mortal men
> That, like dust, are lifted up
> And are lightly laid again.

But in all sound treatment the principles that underlie these methods are permanent, and are in relation with the causes and the natural cure of disease.

LARYNGISMUS STRIDULUS IN NEW-BORN INFANTS.

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THE association between laryngismus stridulus and rickets has been insisted upon so often that the spasmodic attack is usually regarded as being merely a complication of the rickety state. Indeed, it is commonly assumed that the complaint is one which occurs only in rickety subjects; and few practitioners seem to be aware that a laryngeal disturbance similar in kind to, if not actually identical with, the spasm so familiar to us in the rickety child may not only arise quite independently of that disease, but may affect healthy-looking infants of a few weeks old. Even when associated with rickets, the connexion is probably a purely accidental one. I believe the spasmodic seizure to be an essentially reflex act which occurs only as the result of a definite local stimulus seated usually in the naso-pharynx; and I believe it to be allied with rickets in so many cases merely because the nervous system in that disorder is in a state of heightened nervous susceptibility so that it responds with exceptional activity to every peripheral irritation.

I have met with a number of cases—all in well-to-do families—of laryngismus attacking healthy young infants within the first month of life. Three very severe examples have come under my notice quite recently. In these and in all other cases that I have seen, without exception, I have remarked one common feature, namely, that they were all suffering from extreme nasal obstruction due to adenoid overgrowth and post-nasal catarrh. Some children are born with an excess of adenoid tissue in the naso-pharynx. This in itself is probably a matter of little moment, but when, as usually happens, a catarrh of the mucous membrane is set up, the consequent irritation may be considerable. The swelling and copious secretion practically close the nasal passages to the entrance of air, and the mucus being carried down into the stomach in large quantity upsets the digestion and makes feeding difficult. It is no doubt to the presence of this acrid mucus that the digestive disturbance which has so often been remarked upon as complicating the attacks of laryngismus is to be attributed. In a certain proportion of cases the irritation thus excited in the post-nasal fossa is reflected to the muscles about the glottis and gives rise to the spasm of the larynx. That this does not follow in all cases depends, probably, upon the relative nervous irritability of the individual infant. The patient often comes of a family marked by strong neurotic tendencies, or is hampered by a special instability of the respiratory centre. In a bad case the whole breathing apparatus seems to be thrown out of gear, and it is a curious peculiarity of the seizures at this early age that the body often remains perfectly limp without an attempt at inspiration or any sign of muscular movement either in the chest or abdomen. The closure of the glottis seems to be the consequence of a spasmodic action of the vocal cords; but it occasionally happens, especially in cases where the body is rigid with signs of carpo-pedal contraction, that the muscles at the root of the tongue are concerned in the seizure—the stylo-glossi and palato-glossi, which drag the tongue backwards until it presses like a ball-valve upon the laryngeal opening. This, however, in some cases appears to be due not to a purely morbid spasm, but, as Clover originally pointed out, to an arrested movement of deglutition, the tongue remaining fixed at the roof of the mouth in the position into which it was drawn in preparation for the act of swallowing. In these cases the finger can be passed only with difficulty between the tongue and the palate.

In many cases the spasmodic movement is not confined to the larynx, but involves the gullet as well. This most interesting and important complication I have only seen in cases such as I am describing where the complaint affects children in the earliest infancy. If it ever occurs in older children, an instance has never come under my observation. The oesophageal spasm may be met with in every variety of seizure, whether the muscular system generally be rigid or limp, and is often so obstinate that it assumes the chief prominence in the mind of the mother, whose sole anxiety seems to be lest her baby should be starved. I have recently seen three cases of this kind. In one of these—a baby girl, 6 weeks old, the subject of extreme nasal obstruction—the child had suffered since the third day after birth from spasm affecting both the larynx and gullet. The patient at first could take only 1½ oz. of milk in the twenty-four hours. One dessertspoonful was the largest quantity which could be borne at one time without exciting a spasm, and this was trickled cautiously into the mouth from a spoon. If more were given it set up a spasm at once, not only in the gullet but often also in the glottis as well. That laryngismus in these cases often follows an attempt to swallow may be explained by the fact that during deglutition the vocal cords are closely approximated, as appears from an experiment made by Dr. Mount Bleyer reported by Dr. William Gay; and it is conceivable that the movement of adduction may pass into spasm as readily as the movement of swallowing provokes a tonic contraction of the gullet. The arrest of breathing may also be induced, as was mentioned above, by an incomplete act of deglutition, which fixes the tongue backwards in such a way as to prevent the passage of air into the glottis. The oesophageal spasm can occur independently of the laryngeal convulsion, and seems, like the latter, to be an essential part of the disturbance, so that the gullet may contract and remain rigidly closed for a time without any concurrent interruption of the respiratory movement. If a very pronounced symptom, the difficulty of swallowing may be attributed to a supposed congenital malformation; but the irregularity with which the spasms occur should dispel this suspicion, for in most cases there are times when food can be taken in small quantities without much difficulty; also the co-existence of laryngeal spasm is an indication of the utmost value as pointing to the cause of the oesophageal difficulty. I think laryngismus is always present in these cases—at any rate, I have never yet seen the gullet suffer alone, although the two passages are not necessarily affected at the same time.

I have said that in all the cases which have occurred in my own experience there have been pronounced signs of nasal obstruction and naso-pharyngeal catarrh, and that I believe the irritation thus induced to be the exciting cause of the seizures. That this is so is made highly probable by the fact which I have noticed with no little interest—namely, that in its frequency and intensity the laryngeal spasm is found to vary in exact correspondence with the degree of nasal discomfort shown by the patient. I may cite, as one example amongst many, the following case:

I saw several times recently, with Dr. John Gay, a well-nourished little girl, 6 weeks old, who, at the age of 3 weeks, caught a cold on the chest and began to cough. A few days later she showed unmistakable signs of severe post-nasal catarrh, and at the end of the week the attacks of laryngismus began. The spasm at first was set up by the cough, but soon it was also induced by an attempt to take food. When given a little milk the child seemed unable to swallow it, and after a few seconds was seized with a spasm of the larynx. In these attacks there was no crow, or, as far as one could tell, any attempt at inspiration. The chest merely ceased to move, and the face grew darker and darker as inspiration was delayed. The child remained quite limp, without any stiffening of the body or sign of tetany. After a few seconds the spasm passed off, the chest re-expanded, and the child began to cry. The seizures recurred very frequently during the following days, being repeated between twenty and thirty times in the twenty-fours hours, and as the child could not swallow, whether a laryngeal spasm was present or not, food had to be administered by means of a stomach tube introduced through the mouth, for the nasal obstruction was such that the tube could not be passed through the nose. The child was taking a grain of chloral every four hours, and, owing no doubt to the sedative effect of the drug, which caused some drowsiness, the passage of the tube excited no spasm, although any attempt to swallow still induced it at once. The patient was also ordered drops consisting of 1 grain of cocaine, 1 drachm of the 1 in 1,000 solution of adrenalin chloride, and 1 grain of resorcin in ½ oz. of normal saline solution. Of this four drops were instilled into the nostril every four hours. All this time the post-nasal catarrh had continued, and the difficulty of nasal breathing was shown by the frequent occurrence of little snorts or half snores whenever the child tried to draw in air through the nose. For a day or two there was a great improvement in this respect, and it was noticeable that during this period of amendment the spasms also underwent such a favourable change, both as to frequency and severity, that hopes began to be entertained of their speedy cessation. Unfortunately, in spite of extreme care, the post-nasal catarrh soon grew worse again, and at the same time the seizures returned as often and as severely as before.

The duration of the illness was three weeks. The power of swallowing was never regained, and the laryngeal troubles continued until the end. Dr. Gay was indefatigable in his efforts to preserve the life of the patient, but, in spite of all his skill and resource, the infant sank very suddenly. During the last ten days of life the temperature had been raised to 101°-103°, but there was no sign of pulmonary inflammation or other discoverable complication to which the febrile state could be referred. This case was one of exceptional obstinacy, and I cannot recall one which showed so little response to remedial measures. As a rule, the spasms can be decidedly influenced by sedative remedies and local antiseptic treatment.

In another case the child also suffered from conjoined laryngismus and oesophageal spasm.

A female infant of a few weeks old was sent to me by Dr. E. J. P. Olive. The difficulty in swallowing had begun three days after birth. Food could be taken only in small quantities at a time, and any attempt to increase the amount seemed to close up the gullet at once. The attacks of laryngeal spasm also were very frequent and alarming. In this case the completeness of the nasal obstruction was shown by the snuffling and snorting sounds and the retraction of the soft parts of the chest at each inspiration. When the breathing became quieter and the snorting sounds ceased, as happened sometimes when the catarrh temporarily improved, the child would go a whole day without a single spasm, but when the obstruction returned the laryngeal seizures became again as bad as before. With the recollection of Dr. Gay's case still vividly in my mind—for the child's death had occurred only a few days previously—and being impressed with the imminent danger to life in so young an infant if the spasms were not arrested, I advised that the naso-pharynx should be scraped. This was done, but unfortunately the child sank shortly afterwards.

In newborn infants, as in older children, the degree of laryngeal distress varies widely from an occasional crow or croak in mild cases to a severe and prolonged spasm in which breathing completely ceases, the face grows slate-coloured, and the infant seems at the very point of suffocation. I have known a child to lie for several minutes in an absolutely inanimate state, without any attempt to draw his breath, and yet be brought round after what seemed a dreadfully long interval by artificial respiration. This happened several times in both the cases referred to. Sometimes the patient does die in spite of all our efforts to get the lungs to re-expand. In the various examples of this derangement which have come under my notice at this early period of life I have had the opportunity of seeing many of these seizures. They are not always quite the same. The attack has generally come on silently without any preliminary crow (in the bad seizures); then in some cases the child has stiffened himself out with rigid fingers and incurved thumbs; in others he has lain back in his nurse's arms with perfectly limp muscles and a livid face. The association with tetany is exceptional in the newborn baby, and the connexion with general convulsions is not as common as one would expect to find it at this period of life, although it may occur.

It need not be said that in a bad attack the laryngeal spasm in so young a child is a symptom of the utmost gravity, or that recovery is doubtful in the extreme. If the case be a severe one the infant may die suffocated, but more often he sinks worn out by the frequency and severity of the attacks, or succumbs to pulmonary collapse, owing to weakness of the inspiratory muscles and the difficulty of filling the lungs with air. The occurrence of general convulsions does not, perhaps, appreciably influence the issue, but, if the spasm affect the gullet as well as the larynx, the difficulty of supplying adequate nourishment is a disadvantage which must not be lost sight of in estimating the chances of recovery.

As to the nature of these cases: I have spoken of them throughout as being due to laryngeal spasm, for I believe them to be in the main similar in mechanism to the attacks of laryngismus which are familiar to us in the subjects of rickets. It is true that in early life the seizure often begins quite suddenly without any preliminary crow to indicate what is about to befall, but the same thing may happen in older children, and I have the authority of Dr. F. W. Hewitt for stating that the closure of the glottis which sometimes occurs during the administration of an anaesthetic may come on quite suddenly and without the slightest sound. Many cases are, however, ushered in by stridor, and, if very mild, the attack may be limited to this symptom, so that an occasional crow in the inspiration is the only morbid condition to be observed. That the intake of air is suspended in severe cases is shown by the advancing cyanosis and the cessation of all movement in the chest and abdomen. The inability to swallow, which at this age is often a definite part of the attack, must be due to a spasmodic contraction of the gullet, and it is not unreasonable to accept a similar explanation for the concurrent closure of the glottis. Moreover, the occasional conjunction of the respiratory disturbance with tetany and general convulsions is an additional argument in favour of this view. But while the cases which are associated with other evidence of muscular spasm may be accepted with little hesitation, as being of a similar nature to those occurring in older children, it may not be the same with the class of seizure in which the infant lies back limp and inanimate without any effort to draw his breath. Here the loose, relaxed state of the whole muscular system may seem to disprove the assumption that the glottis is in a state of spasmodic contraction. But this argument is hardly a sound one, and is certainly not of universal application, for spasm in one situation does not necessarily imply spasm elsewhere. Still, some support is lent to the objection by the fact that in these cases the tongue can be hooked forward with perfect ease, showing that there is no spasm of the muscles forming its root, and also that when inspiration is resumed at the end of the attack—as I noticed in two cases in which the seizures occurred in my presence—the breath is drawn silently and without a suspicion of stridor.

I have thought it possible that the cessation of breathing might be due to something more than a mere disturbance of the muscles of the glottis, and might include the whole respiratory apparatus in a temporary arrest of function, so that the diaphragm did not contract, nor the ribs rise, nor the lungs expand, although there was no actual obstruction in the glottis to the entrance of air. Again, it might be argued, from another point of view, that although not shut by spasmodic action there might be a real closure of the glottis by a falling in of the soft parts about the rima. Dr. Marshall Hall long ago showed that this consequence followed experimental exhaustion of the air in the trachea; and Dr. Vivian Poore suggested in 1880 that the laryngeal stridor might be owing to partial blocking from this cause, and not to any spasmodic closure of the laryngeal opening. Either assumption seems plausible, and I give them for what they are worth. Unfortunately, a laryngoscopic examination is out of the question either on account of the brevity of the attack or, in the more prolonged seizures, from the imminent danger to the patient and the necessity of employing active

measures to bring it to an end. In the absence of direct evidence, no explanation can be more than conjectural or of other than doubtful value. With the observed facts, however, it is different. They are in no degree uncertain, but are as I have described them.

The treatment consists in removing the cause, and, judging from the close relation which exists between the degree of nasal obstruction and the frequency and severity of the attacks, I believe this cause is to be found in the naso pharynx. In the mild cases where the catarrh is not apparently the cause of much discomfort, a few drops of a resorcin solution, one or two grains to the ounce of normal saline, instilled into the nostrils several times a day as the infant lies on his nurse's lap, will soon put a stop to the crowing. But in bad cases, where nasal obstruction appears to be complete, and the spasms are obstinate and prolonged, the naso-pharynx must be scraped before local remedies can be expected to bring about any material improvement. To be of service, however, the operation must be performed early, and not be postponed until the child is becoming exhausted by the continually recurring seizures. Half a grain to a grain of chloral given sufficiently often to keep up a sedative influence upon the patient is useful, especially for its value in controlling the oesophageal spasm when nourishment has to be given by mechanical means.

In cases where the spasm of the gullet almost puts a stop to the taking of food the patient for days together may have to be fed by means of a tube passed into the stomach. The operation must be conducted, if necessary, under an anaesthetic; but it may happen, especially if chloral is being given, that the passage of the tube excites no spasm, although an attempt to swallow a mouthful of milk brings it on at once.

If the child be seen during a seizure, the tongue should be hooked forwards by a finger passed into the throat or grasped with the tongue forceps and traction made upon it so as to excite a return of respiration. Little shocks are useful, such as applying a cold wet towel to the face, slipping the hands into cold water, holding a bottle of smelling salts under the patient's nose, or using friction to the lips with a dry cloth. If our efforts to restore respiration meet with no immediate response, we should make use at once of artificial respiration and persevere with it for some time, even although the child continue to lie limp and inanimate, as if he were dead. Insufflation was successful in an obstinate case of arrested breathing from anaesthesia reported by Dr. F. W. Hewitt in his well-known treatise.

REMARKS ON THE VALUE OF RHYTHMICAL EXERCISES IN THE TREATMENT OF SPASMODIC NEUROSES.*

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IN all our dealings with the nervous system we cannot afford to forget the important part played by *habit*. Whether it be in the regulation of our own lives, or in the endeavour to restore regular action to the muscles of our patients, the law of habit must not be ignored.

What we call habit is based upon the physiological law that the more a nerve path is used the more easily does it transmit nerve impulses, or the more any particular nerve mechanism is used, within the limits of its power of nutrition, the more easily does it work in the future.

I need not say anything as to the power of habit over the higher faculties of the nervous system; we all know too well the tyranny of bad habits and the satisfactory results of good training of our nervous mechanism. But I shall in this paper deal with some ways in which recognition of this law may aid us in our dealings with disordered functions of the nervous system. Not only must we remember the power of habit in connexion with the spasmodic affections with which I am mainly dealing in this paper, but habit has also bearings upon our treatment of paralysis due to cerebral disease, and a few words upon this may well clear the way for the main subject of this paper. For instance, we shall make a mistake if we tell a patient to try and use a paralysed limb when as yet there is no return of muscular power in it, and, if there be any hysterical element in the case, the mistake may be a very serious one indeed. For every time the patient tries to use a limb which he cannot use, he does something else—probably using muscles adjacent to those paralysed—and thus establishes a habit of directing his nerve impulses along some other path than the right one. If there be any hysterical element in the case, this may produce so well-worn a track in a wrong direction that when the damage has been repaired any effort which the patient may make to open up the newly restored track may prove ineffective, because the nerve impulse simply travels along the well-worn but ineffective nerve path, and the paralysis in this way may become permanent so far as the patient's unaided efforts are concerned. In such a case of paralysis, therefore, we must reckon with this law of habit, and tell the patient not to try and use the limb, or, in a case of aphasia, not to speak till the power begins to come back.

SPASM.

This law of habit is of still greater importance when we have to deal with excess of movement instead of paralysis, and in spasmodic neuroses such as spasmodic wry-neck, habit must play an all-important part. The frequent repetition of the movements cannot but lead to an increasing difficulty of restraint by voluntary effort, and hope of cure must lie in our power of breaking the habit. In any case of recurring spasm of this nature we cannot be sure how much is organic and how much is functional until we have eliminated this factor of habit. Even in such a disease as paralysis agitans the movement can be materially lessened and the strength restored by counteracting the morbid habit of tremor.

In the usual treatment of spasmodic torticollis this is attempted by removing a piece of the nerve supplying the affected muscles, and thus giving them rest for a time. But I think a more rational way of neutralizing the habit factor in these cases is to induce another habit of movement of such a nature as to counteract the morbid one. To attain this end a new habit must be established, not only in the case of the individual muscles directly or indirectly concerned in the spasm, by means of rhythmical exercises very frequently repeated, but also in the case of the groups of muscles which have acquired a morbid habit of combined movement. Therefore another aim in our treatment must be to break up this combination and get the affected muscles into the habit of rhythmical movements in which they are associated with healthy groups of muscles. These movements must be kept up continuously for some days, or in some cases for some weeks, the whole of the energy of the muscles being each day expended on the exercises, thus leaving but little energy for the production of the spasmodic movements.

TREATMENT OF SPASMODIC TORTICOLLIS.

From what I have said it will be evident that each case must be treated individually, and exercises must be given which are best calculated to break up the morbid combinations and induce the habit of new associated movements. Nevertheless, broad lines of treatment can be laid down for each class of case. Thus, in spasmodic torticollis the muscles concerned are those of the neck and shoulders; and, as our object is to give regular rhythmical exercises, it is evident that our first aim must be to control the irregular spasmodic movements and prevent their interference with the treatment. In the slighter cases this can be done by steadying the head by the patient's own hands during the exercises, but in more severe cases it must be done by some one strong enough to prevent these irregular movements. This is easily done if the patient be seated in a chair and the head be grasped firmly by some one standing behind it. An essential point in the treatment is that the movements should be rhythmically repeated, and always at the same rate. I have found that a rate of two seconds per movement, or four seconds for each combined movement to and fro, is more efficacious than a more rapid or a slower rate. Each movement should be repeated over and over again continuously for several minutes. The movement, however, must not be a passive one, but must be performed by the patient's own muscles, the assistant's hands merely following its movements with a view to ensuring regularity and the prevention of any jerking of the head.

*Read before the Birmingham Branch of the British Medical Association, January, 1907.

In the exercises special attention must be given to the movements whereby the sterno-mastoid most involved is exercised in a condition of full extension. Thus, if during the spasm the chin be drawn down to the right shoulder, much time should be given to an exercise where, with the head held back, the chin is made to travel from the middle line as far as possible up and to the left. Another specially useful movement is where the chin is raised to the right, then lowered to nearly touch the sternum, and then raised to the left, and so on.

But no one exercise must, as I have said, be relied on. All the neck muscles must be exercised, and also combined movements of the neck, shoulder, and arm muscles must be practised. It will, moreover, be found best to adopt some regular routine of movements, such, for example, as the following: First, simple elevation and depression of the chin with the face looking straightforward, then with it looking to the right, then to the left. Then rotation of the head to one side with the chin low, then with it higher, then with the chin as high as possible. Then a similar series with the chin rotated to the other side. Then a series of movements combining rotation and elevation in various ways, such as the first two movements referred to; also combined movements of arm, shoulder, and neck. After a week or more of steady work the tendency to spasm will probably have been so far overcome that the head can now be steadied by the patient's own hands placed on each side of the head, and therefore any other assistance dispensed with.

An important point of the treatment is, as I have said, that day by day for days or weeks the muscular mechanism must be kept so constantly tired by various rhythmical exercises that there is no energy left for the irregular spasmodic jerkings.

TRADE SPASM.

The same rule holds good for such conditions as trade spasm of various kinds, and I feel sure that the rhythmical exercise cure will prove of far more value than the rest cure.

Within the last twelve months I have had a most severe case of spasm under my care in the General Hospital, a case which might almost be dignified by the term paramyoclonus multiplex, for the spasm was one involving most of the muscles of the body. The attacks were so violent and uncontrollable that it was hardly safe to approach near the patient for fear of being knocked down by a sudden jerk of his body, for he was a big powerful man, a navvy by occupation. The patient was aged 56, though he looked less. The history of the past few years is as follows: He had an alarming fall seven or eight years ago; a year afterwards he had a little trembling of the limbs, and this got decidedly worse twelve months later after suffering from sewer gas poisoning. From this time onward—namely, for the last five years, he has suffered more or less from attacks of trembling, worse, as a rule, in the winter than in the summer.

He has during this time never been entirely free, but has been able to work from time to time. About twelve months ago his power of speaking began to be interfered with, and sometimes he was unable to speak for a minute or two. Of late the spasm has got worse, and during the last six weeks the attacks have been so severe as to prevent him from walking at all. He was admitted to hospital November 14th, 1905.

He suffered from two types of chronic contractions: First, a simple coarse tremor (four or five per second) involving the arms, especially the left, the trunk, muscles, and the left leg. The tremor was not increased by movement. Secondly, combined movements, whereby the left arm would be suddenly thrown out with force from the side, either alone or accompanied by a lurching movement of the body. If he were sitting with his feet on the ground, he would sometimes be suddenly half raised from his seat and jerked along towards the right, because the left leg was the most affected. He was quite unable to walk because of the occurrence of the spasms and the weakness of his legs. The movements were so sudden and so strong that it was dangerous to be near him. These jerky movements of the limbs were often repeated two or three times in quick succession. The head also was often jerked to one side or the other simultaneously with the other movements. When spoken to he was sometimes prevented from answering for some seconds by spasm of the throat or neck muscles. There was slight want of mental clearness at night, with occasional wandering and delusions, but this may in part have been due to the full doses of bromide he was given. For the first few days there were slight single jerky movements of the limbs during sleep, but these soon ceased. Rest and bromides decidedly lessened the severity of the spasm, but no satisfactory progress was made until he was ordered exercises some fortnight or so after admission. He was given a Sandow exerciser which he used while sitting in bed, as he could not stand. He used the exerciser with great regularity from 9 a.m. till 9 p.m., resting only at meal times and for an interval of ten or fifteen minutes every hour or so. After a week the severe spasms were entirely checked, and there was only slight tremor, which was checked in a few minutes by resuming the exercises. By January 10th, after six weeks' exercises, he could stand and walk a little, and was quite free from both tremors and jerkings. From this time onwards he used to do his exercises standing up as a rule, and continued free from tremor.

The genuineness of the complaint and his desire to be cured were evidenced by the diligence with which he continued to carry out the exercises unceasingly all day.

On February 6th he was discharged completely cured.

On careful analysis of his movements there seemed good ground for considering this to be only an aggravated case of trade spasm. The man was by occupation a navvy, and the movements of the body and arms to left and right were suggestive of those recurring where a man throws a shovelful of soil up over his shoulder to left or right. This theory of his illness was confirmed by the after-history, for after he left the hospital completely cured, poverty not only prevented him from continuing his exercises, but also forced him to return to his digging, with the result that in a few months he returned with the spasm nearly as bad as ever. A few weeks of continuous exercising speedily checked this, and he was again cured.

Although it is now many years since I first treated spasmodic torticollis by exercises, it is, I am ashamed to say, only months and not years since I saw the applicability of the same treatment to trade spasm, otherwise I am sure I should have been able to refer to at least one other completely successful case. As it is, I can only speak of him as a case I failed to cure. I refer to a most interesting case of severe general spasm of the body and limbs, with jerking of the head.

The man was a professional pigeon shooter employed outside the ring at pigeon-shooting matches to kill the birds which escaped the guns of the amateurs. For this purpose very heavy charges of powder and shot were needed, as well as very straight shooting. The strain of constant employment of this sort was too much for him, and he developed spasms of the arms, neck, and body; but the interesting point about his case was that he was free from all tremor only in one attitude, and that was the attitude of pointing a gun and looking along the barrels. He was treated by the rest cure, and was getting on very well, when he became tired of the treatment and left the hospital—to return a few weeks later much worse again and much less amenable to treatment. He scarcely improved at all during his second stay, and soon left dissatisfied. Another interesting point about his case was that when alone and quiet he could keep the spasms away by writing, and he used to fill many notebooks with writing with this end in view.

I have no doubt that continuous rhythmical exercises with an elastic exerciser would have cured him, and I greatly regret the lost opportunity.

I have had very good results in a severe case of paralysis agitans under the same treatment. The gain in muscular strength and steadiness was most marked while he continued his exercises, but in such a case as this there is not the same need for wearying the muscles as in cases of trade spasm. The exercise need not be so prolonged, and the periods of rest can be longer than in the last-named cases. The value of the treatment of paralysis agitans by frequent repeated rhythmical exercises is undoubted, and will prove very serviceable in the future in lessening the spasm in this troublesome disease.

In writer's cramp, also, the same principles must be adopted, and an elastic apparatus constructed for exercising the fingers, and also for finger exercise combined with movements of the whole arm, so as to break the habit of combined movement of the finger and arm muscles as in writing. As all these movements must be even and regular ones, it is of importance that the elastic, whatever its strength, should be yielding enough for one part of the exercise not to require more force than another, as would be the case if a short, strong elastic cord were used. Such an elastic cord as that supplied with the Whiteley exerciser is preferable to a shorter one with less range of movement. The associated exercises must be the reverse of the usual movements of writing. Thus a large elastic rubber ball must be squeezed by the fingers at the same time as the wrist and arm are extended, and for the reverse exercise an elastic ring made up of many strands of thin elastic must be opened out by the fingers whilst the wrist and arm are being flexed. This ring can easily be carried in the pocket, and then during spare minutes by day the fingers can be

exercised, and if, instead of a ball, a metal ring fitted with steel springs be used, this also could be carried about, and the fingers could then be exercised quietly in the coat pockets while walking about town or in trams, etc., as well as having the regular exercises before and after business hours.

In stammering we must give the patient regular exercises of his speech muscles quietly by himself, as Demosthenes is reported to have done, under surroundings different from those which are apt to induce the spasm. In other cases, such as those of spasms of the laryngeal muscles, where exercises are less available, it may be necessary to resort to hypnotic suggestion in order to break the habit, but I have not yet seen such a case myself, and, on general principles, I should not resort to hypnotism unless I had failed to devise curative measures of a less dangerous kind.

In all these cases a careful study of the morbid habit acquired will give us the clue as to the best way of counteracting that habit, and so curing, or, at all events, greatly relieving, our patient.

THE EDUCATIONAL ASPECT OF THE CANCER QUESTION.

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THOUGH all attempts to elucidate the origin of cancer have hitherto ended in disappointment, yet it cannot be contended that effort, whether clinical, pathological, experimental, or, lastly, surgical, has, during the last quarter of a century, been barren of result. It has been devoid, it is true, of any discovery startling enough to arrest the attention of either the medical profession or the public. It has been one of plodding—we may say almost unconscious—progress, and it is only by a retrospect of the past and a contrast with the present that it becomes manifest that a gap exists between our views of cancer and our means of combating this terrible disease then and now. In cancer of the breast, for instance, Sir Benjamin Brodie, after an operative trial of some 600 cases, came to the conclusion that life was rather shortened than prolonged by surgical procedure, and decided never to remove another breast for cancer without explaining to the patient his experience of its results. Benedikt of Breslau, during the last seventeen years of his career as a surgeon, gave up operating in this disease altogether. Sir James Paget, in his *Lectures on Surgical Pathology*, writes:

> I will not say that such a thing as cure is impossible, but it is so highly improbable that a hope of this occurring in any single instance cannot be reasonably entertained.

Like statements pervade the writings of all surgeons of the last century, and, wherever are recorded their experiences, the same universal note of despondency is apparent. Cancer of the tongue was removed by methods which in the light of modern knowledge were hopelessly inadequate attempts to eradicate it, and was invariably followed by rapid recurrence. In cancer of the uterus the most that was undertaken was a scraping or cauterizing of the foul and ulcerating surface. Cancer of the stomach and intestine was inoperable.

Melancholy enough as is the picture in our treatment of cancer at the present time, it must be admitted that it forms a forcible contrast with that just portrayed. Cure in a certain proportion of cases in all regions of the body where it occurs, in the sense that the patient lives on from year to year and oftentimes reaches the normal span of life without any manifestation of recurrence; and a considerably greater prolongation of life than formerly in a certain other large proportion of cases constitute the improvement in the prospect of the present sufferer from cancer, if he applies in time to render surgical interference at all hopeful. Again, while formerly, owing to its invariable recurrence after removal, the weight of professional opinion pronounced the disease to be primarily a blood dyscrasia, of which the tumour was the local manifestation, few are not now convinced that, however the soil may be prepared in the individual, the disease itself is primarily a local one. All recent evidence—clinical, microscopical, and experimental—points to this conclusion, and it seems to be verified in practice by its non-recurrence after local removal in a certain proportion of cases. The paths of its embolic lymphatic dissemination have in many regions been accurately defined, and in the breast its lymphatic permeation along the planes of the deep fascia has been recently conclusively demonstrated. On clinical grounds there is ample reason for the supposition that in other regions a similar insidious centrifugal spread occurs. Improved microscopes and improved microscopists have shed light on its distinctive microscopical characters, and are able to furnish a more accurate and earlier diagnosis. Clinical determination, on which formerly chief reliance was placed, by signs which are now known to be those of advanced and usually hopeless cancer, has been superseded by expert microscopical examination. There is no longer any reasonable argument in favour of saturating a patient having a suspicious ulcer on the tongue for weeks with iodide of potassium, to see whether it will disappear, because he happens to give a history of previous syphilis. It is not necessary to labour examples further. Wherever we turn, it is manifest that, in all departments of research into this disease as well as in the science of its treatment, there has been advance, though falling short of the grand discovery of its cause, and indicating thereby the lines on which we should seek its prevention or cure.

In so far as concerns the subject matter of this paper, our present knowledge, it would seem, justifies us in making the following categorical statements in reference to cancer:

1. That for all practical purposes it is a disease confined to the last half of life.
2. That, while not denying there may be unknown hereditary or acquired constitutional conditions favourable to its existence and growth, the development of the disease is primarily local.
3. That its further development consists in an insidious centrifugal spread from its original local site, both by lymphatic permeation and by embolism along the channels of lymph and blood vessels.
4. That usually this centrifugal extension takes place early in the disease, but that this factor is inconstant for different varieties of cancer as well as for individual cases of the same variety.
5. That early cancer has no symptoms.
6. That early cancer has no clinical signs or naked-eye appearances by which it can certainly be distinguished.
7. That the symptoms and clinical signs usually recognized as characteristic of cancer, such, for instance, as pain, wasting, fixity, lymphatic enlargement, etc., are those of advanced cancer only, and are worthless from the point of the essential condition of its successful treatment, early diagnosis.
8. That the microscopical finding is the only reliable means of diagnosis.
9. That in a certain proportion of cases the disease does not recur after removal by modern methods, and that in those in which it does recur there is generally a longer period of immunity than formerly.
10. That such freedom from recurrence is presumably due to the local operation having been successful in eradicating every cancer cell, or, in default of this, that the natural powers of the patient are capable of destroying any which have escaped removal.
11. That recurrences are due to failure in eradicating every cancer cell, and that the natural powers of the patient are insufficient to deal with those which have been left behind; in other words, that every recurrence is owing to omission on the part of the surgeon to overtake the centrifugally-spreading disease.

If the truth of the above statements be admitted—and they do not, I think, go further than we are reasonably warranted in doing—the possible means of improvement in the treatment of cancer, within the limits of our present knowledge of it, are only two. It is certain, in the first place, that its paths of extension will be still more accurately defined, as has recently been done by Cheatle in cancer of the tongue and Handley in cancer of the breast. But it is evident that not much further progress in dealing surgically with cancer will accrue from this source, and for the following reason: It has already been largely discounted by the wide local removals which constitute the radical operation, having for their object the reaching into healthy tissues in every direction beyond the disease, irrespective of our know-

ledge of the exact paths of its spread. The scope of these operations is not capable of much modification or extension. In cancer of the breast, for instance, a wide excision of skin fascia and muscle in every direction from the primary growth, and a complete dissection of the axilla, and the removal of its contents in one piece with the breast, coupled with that of the fat and lymphatics in the supraclavicular fossa, are, from anatomical reasons, about as far as we can go. The extensive excisions of the tongue and the contents of the neck, and of the whole uterus with its adnexa, as well as the cellular tissue and glands of the pelvis, constitute a practical limit to our efforts in dealing with cancer in these regions. The conclusion, therefore, is that, though possibly we may attain some minor modifications in point of accuracy, these operations must remain substantially as they are—our means for the eradication of the disease in question. If, however, we direct our attention along a different line in our endeavours to better the results in the operative treatment of cancer, the possibilities of improvement are enormous. It is not my intention to burden this paper with figures such as every surgeon can readily supply from his own records. I propose merely to submit in the briefest terms, as illustrative of the point for which I am contending, a few examples of the interval which usually exists between the first appearance of the signs of cancer and the operation for its attempted eradication. All of the cases here submitted were considered operable, and were actually operated upon. The word "operable" is used in the sense in which it is interpreted by most surgeons in dealing with cancer, that is, it appeared possible to remove the disease locally, and there were no signs of distant metastatic invasion.

(*a*) *Cancer of the Breast.*

An analysis of the histories of twenty-five consecutive cases of cancer of the female breast, on which I have recently operated, gives the following result. Six had noticed swellings in their breasts for periods ranging from two and a half to five years. They eventually came into my hands because the swellings were found to be rapidly enlarging, or because some other symptom, for example, pain, discharge from the nipple, oedema of the arm, etc., had intruded itself on the patient's attention. Whether the subjects of these very long histories had actually suffered from carcinoma from the beginning, or whether the disease had supervened on some precancerous condition, it is impossible to say. In the averages given below the most favourable interpretation is placed upon them. They are calculated to have had cancer for only such time as one of the later symptoms had been evident. For instance, one patient had been cognizant of a hard lump in her breast for three years; previously stationary, in the last three months it had doubled its size. The duration of her cancer is reckoned as three months, though it was almost certainly much longer, possibly three years. The delay is therefore reduced to a minimum; it is exhibited in the most favourable light. Reckoning on this basis, the average duration of delay between the patient first noticing the disquieting sign and the submission to operation was eight months five days.

(*b*) *Cancer of the Tongue and Floor of the Mouth.*

In a consecutive series of 19 cases of epithelioma in this region in my own practice the average delay works out at five months five days.

(*c*) *Cancer of the Cervix Uteri.*

In a consecutive series of 51 cases of cancer of the cervix which were operated upon (most of them at St. Mary's Hospital, Manchester) and information with regard to which was kindly supplied to me by Dr. de Ville Mather, of Owens College, Manchester, the average delay between the patient first noticing a deviation from the normal menstrual discharge (usually irregular bleeding) and submission to operation was eight months. In conclusion I submit the figures of Winter of Königsberg, as they may not be familiar to English readers. He analysed a very large number of cases of uterine cancer, 1,062 in all. It is not stated what percentage of these were operable. The patients, after noticing a deviation from the normal menstrual function, had waited before seeking surgical advice—

Longer than 1 month.	Longer than 2 months.	Longer than 3 months.	Longer than 6 months.	Longer than 9 months.	Longer than 1 year.	Total.
135	319	283	118	126	81	1062

Commenting on this table, Winter aptly remarks: "If the operation is too late the fault lies with the patient, not with the cancer." Figures such as these are not exceptional. They could be published from the case records of any operating surgeon. They indicate—what, indeed, is common knowledge—how real a part delay plays in the rôle of this disease, and furnish a direct measure of the possibilities of improvement in its operative treatment. So long as early eradication remains our only possible means of curing cancer, it is a truism to say that along the line of elimination of delay our chief hopes of improvement lie. Education, both medical and lay, furnishes the key to the problem. Valuable as are the advances in our knowledge of the paths of dissemination of cancer, they must go hand in hand with education, if they are to lead to tangible results. It is useless to define the paths of its centrifugal spread, and to practise scientific methods for its eradication so long as most patients, when they present themselves for surgical treatment, have delayed till the disease has extended beyond the circle of possible local removal. The majority of cases are inoperable at all, or inoperable from the point of view of cure, when they first come into the hands of the surgeon, and they will remain so in spite of any advances in operative technique, till delay, the *fons et origo mali*, is seriously dealt with. Looking now to the ways and means of improvement in this direction, delays may be divided into two classes, each contributing its share to the result: (*a*) That for which the medical practitioner is responsible; (*b*) that for which the patient is responsible. In the first class various causes are at work, most of them easily remediable. They may, I think, be fairly stated thus:

1. An attachment to antiquated teaching, which indeed appears even in modern surgical textbooks, leading the practitioner to look for and to wait for typical clinical signs of cancer, which are in reality those of the advanced and usually hopeless stage, instead of the universal recognition of the fact that the microscope can furnish the diagnosis long before any of these manifest themselves. In the descriptions of cancer in textbooks the disease should be divided into two distinct stages—first, the early and hopeful stage, in which the only suspicious sign is the age of the patient, and the only reliable sign the microscopical finding; and, secondly, the late and usually hopeless stage, the signs of which are the ordinary textbook ones, such as pain, wasting, fixity of growth, adhesion to skin, lymphatic enlargement, *et hoc genus omne inutile.*

2. An unwillingness on the part of the practitioner to frighten his patient, and possibly earn the reputation of being an alarmist. He is, therefore, tempted to allay his patient's fears, to wait and watch. He sees him in a fortnight; he is just as uncertain as at the first visit. A month is wasted. Still the clinical signs he is waiting for to make him certain are absent. Further delay is invoked, and it may be many months before he dare hint the word "cancer." All the while the insidious lymphatic permeation and embolic dissemination has been steadily going on, and when he feels sure enough of his ground to make a definite pronouncement the opportunity of cure has long since slipped away. Now, however natural the dislike of alarming the patient may be, obviously it should not, in the light of our conviction of the only possible method of curing cancer, have any weight at all. If it is possible to cure cancer—as it is possible, should it be radically removed early enough—then to let the opportunity escape for such a paltry reason as dislike of alarming the patient is nothing less than criminal. It is, like the last, an attachment to antiquated notions. When cancer was always incurable, the practice of postponing the death sentence on the patient as long as possible was defensible. I recollect my old friend and teacher, the late Mr. Henry Smith, saying to me twenty years ago, "I never use the word 'cancer' to my patient." This was sound advice then. It is equally unsound now. Viewing the question from the least altruistic point, if a mistake is to be made, how

much better to make it, even for our own reputation's sake, on the side of suspecting and boldly facing the possibility of cancer when it is not present, than of pooh-poohing the possibility when it is. The former is an error at all events on the right side; the latter not only means almost certain death to the patient, but it will ere long involve a serious reflection on the practitioner, when the public becomes alive—as it inevitably must become alive—to the possibility of cure in early cancer. It will then be generally recognized that a medical man who watches a cancer for weeks or months has been guilty of a grave dereliction of duty to his patient, and he will thereby damage his reputation to a far greater degree than he would have done by calling attention to its possibility early, even though his fears should prove unfounded, and he may have occasioned an unnecessary alarm. The days are passing away among educated communities when the medical man is credited with omniscience, and the omission of the announcement of the nature of his patient's illness is ascribed to an unwillingness on his part to alarm him or the family. The public is coming to a shrewd suspicion that possibly he did not know. A frank avowal of the impossibility of knowing will seldom find the patient unreasonable or unsympathetic. Any stick to beat the doctor with is, on the other hand, only too readily seized should an error be subsequently detected.

3. An adherence to the practice of giving potassium iodide in doubtful cases. This most frequently occurs in cancer of the mouth. The grafting of cancer on syphilis in this region is well recognized. Iodide of potassium is likely to produce, and does produce, apparent improvement. There is inducement to persist in the treatment for many weeks. When later it is manifest that the case is one of cancer, the uncomfortable reflection arises that the microscope could have revealed its presence from the very first.

Having passed in review the causes of delay, after the patient has consulted the doctor, attention may be riveted on the points which should come uppermost in the practitioner's mind when a patient consults him with symptoms referable to a region where cancer primarily occurs.

1. The possibility of cure in early cancer.
2. The age of the patient. If he be in the latter half of life, the disease which it is all-important to exclude or confirm is cancer.
3. The dismissing from his mind of all the generally recognized clinical signs of cancer, which are those of the advanced stage of the disease only.
4. The determination in any case of doubt to put frankly before the patient the possibility of cancer, and the urgent necessity of clearing up the doubt without delay. From the patient's point of view this is obviously the only safe course, and from that of the medical attendant it is to be commended, for it relieves him from the outset of a great responsibility.
5. The method of clearing up the doubt by expert microscopical examination which should be recognized as the only reliable means, and should supersede every other in the determination of cancer. In its practical application, this fortunately presents no difficulty in the majority of instances. Take the disease in its most common situations—the skin, external orifices of the body, mouth, cervix uteri, breast, and intestinal tract. In the first four, the removal of a fragment for microscopical examination does not involve any operative procedure worthy the name, and should form the essential part of the routine examination in every case of possible cancer in these situations. In the case of the breast, so large a majority of the tumours occurring in the last half of life are carcinoma, and the difficulties in diagnosis in some instances are so great that the rule of advising the immediate removal of every breast tumour after 35 years of age should be universal, however innocent it appears from its clinical signs. I do not think that the *pros* and *cons* of cancer should be considered at all. A tumour is present. It should be removed. Operations in this region are nowadays so entirely devoid of danger that operative risks which were rightly put in the scale a quarter of a century ago during the consideration of any operation have no weight at all; and objections to removing a tumour of the breast, which if left behind might cause no harm, have disappeared. Added to this the possibility of the occurrence of malignant disease as a sequel to some innocent condition cannot be ignored, and the relief to the patient's mind from the assurance that can be given her after the operation that the disease was not cancer is well worth the sacrifice of the tumour. It need hardly be insisted that the surgeon should obtain the patient's consent to act according to the finding in operating in this region on a doubtful case. In five out of six, therefore, of the most usual situations of cancer the course which will lead to its certain detection if present, without delay, is clear. In the case of the intestinal tract (excluding the rectum) the difficulties are, I fear, at present insuperable. A careful investigation into the case will have been made, including an examination of the vomit and faeces, and of the abdomen and rectum, under an anaesthetic, for a tumour. These may be negative, and yet suspicion may point to carcinoma. There remains the exploratory laparotomy. Though undoubtedly defensible from a surgical standpoint, inasmuch as it involves very little risk, and is the only method we possess for the further elucidation of a suspected cancer in this region; yet it will not usually appeal to the patient, and the medical man cannot help feeling the weakness of his position when putting the suggestion before him. Some people may be reasonable enough to submit to it, but the majority do not see the force of being cut open to see whether there is anything serious inside them. The doctor is supposed to know that. Still, as it is the only course open, it should be frankly placed before the patient and the onus of the decision be left to him. The medical attendant is comforted by the reflection that a suggestion which, under the circumstances, is surgically sound has been made to the patient, and that he has been relieved of a load of responsibility should his fears prove well founded. At the same time, should the patient consent to it and the exploration prove negative, the practitioner will not derive much kudos from having advised it. Such a suggestion had better perhaps come from a consultant, one of whose numerous privileges is to bear the responsibility of unpleasant and dubious situations.

From the foregoing considerations it is evident that, in the usual situations of cancer, if the knowledge of the fallaciousness of its early signs were fully recognized and acted upon, and if the means at our disposal for its early detection were universally adopted, there should be no such thing as delay emanating from the medical man—unless the patient go contrary to the advice tendered him, and this is only likely to occur in those cases of suspected cancer in the stomach or intestine, where the diagnosis cannot be arrived at without an exploratory laparotomy.

Turning our attention next to the delay for which the patient is responsible—that which occurs prior to his seeking medical advice—the causes of this are not far to seek. Just as the delay emanating from the medical man has been shown to be due to an attachment to old watchwords, that in question has its origin in similar conservatism. Formerly cancer was invariably a fatal disease; this is the light in which the public still regard it. Though probably every modern operating surgeon could produce individual cases of cure from his own practice—that is, cases in which many years had elapsed without any sign of recurrence after removal, which, after all, whether this can scientifically be called a cure or not, is the blissful state in which the patient desires to find himself—these bear such an infinitesimal proportion to the total number of fatal cases that there is no convincing evidence before the public of the possibility of cure. The ordinary sequence of events, the long and painful illness terminating, either without or in spite of operation, eventually in death, naturally determines the public verdict on cancer. If a sufferer here and there lives on without recurrence after operation, such solitary evidence of the possibility of cure is swallowed up in the sea of fatal cases. It is soon forgotten, and teaches no lesson. Consequently dread of the confirmation of what the public regards as an inevitably fatal disease generally keeps the unfortunate sufferer away from the doctor, until he is driven—as eventually, of course, he is driven *nolens volens*—to seek advice. In addition, he knows that operation will almost certainly be the offer made him, and that without the guarantee of cure; whereas there

ever looms before his vision the seductive stock-in-trade of the advertising quack, which invariably contains a certain cure without the knife. The medical man, therefore, becomes in a large number of cases the *dernier ressort* of the cancer-stricken patient. The circle is maintained in all its viciousness, ignorance of the possibility of cure and of the conditions governing it and fear of receiving a sentence of death, leading to procrastination, which itself is the cause of the impossibility of cure. In addition, the early manifestations of cancer are apparently so harmless that the sufferer has every inducement to believe what he hopes, and what his friends, if he consults them, are sure to tell him: that his ailment must be a trivial one.

These are the chief causes of delay among educated people who know something of cancer and its common situations. Among the poorer and less educated classes unadulterated ignorance plays the greater share. They do not commonly regard anything which causes no pain or feeling of illness as of any consequence whatever, and these symptoms are conspicuous by their absence in early cancer. The everyday reply of the poor at hospital, with advanced cancer of the breast, uterus, and even tongue, to the question, "Why did you not apply sooner?" is, "As I felt well and suffered no pain, I did not think it could be anything serious," "I thought it was only a cold," or something equally absurd. It is manifest that such a state of affairs can only be dealt with by improved education, and by this is understood not an attempt to make of the public amateur doctors, judges of their own complaints and of their own symptoms, but a dissemination of knowledge in the following two particulars: first, in that of the possibility of cure in early cancer; and, secondly, in that of the fact that early cancer produces no symptoms of pain or ill-health, and that in the latter half of life any deviation from normal health in certain organs—to wit, the mouth, digestive tract, uterus, and breast, must carry with it the determination to immediately exclude or confirm cancer, if the patient means to make a bid for his life. It is very little to know. In the case of other diseases, such, for instance, as typhoid fever, tubercle, etc., plain facts, requiring no medical training, have become common property, and are acted upon to their advantage by the educated public. There does not seem to be any *a priori* reason why similar and just as simple knowledge should not be disseminated with regard to cancer. In my recent book, *The Control of a Scourge; or, How Cancer is Curable*, I have endeavoured to instil into the public mind in regard to this disease a view more hopeful and more consonant with the generally accepted opinion among modern surgeons of the possibility of cure in early cancer than exists to-day; and I have adduced evidence to show that this opinion has a convincing foundation in actual practice. I have indicated there some of the lines on which education in this matter might, in my opinion, be put a step further. The general practitioner, who is constantly in touch with the public, has the largest opportunity of helping education forward, and he should lose no occasion of impressing upon his patients the cause of the generally fatal character of cancerous disease, and of the possibility of securing vastly better results in its treatment than do actually obtain at the present time. Then it is obvious that medical and surgical nurses might easily be equipped with the knowledge of these elementary facts about cancer. They are almost as ignorant as lay women. Not only have I witnessed the experience of nurses themselves applying with advanced and inoperable cancer, but conversations with them in hospital have demonstrated that they regard cancer as inevitably fatal. This is not to be wondered at when we consider the numbers they see who perish of it in our hospital wards, and that those in whom the disease does not recur after removal escape their subsequent cognizance. Owing to its sites of election in women, nurses are no doubt frequently consulted by their own sex about early cancer, when from readily intelligible motives the patient hesitates to approach a medical man. It is essential, therefore, that their knowledge should be accurate, and the necessary information could be easily imparted to them by including in their syllabus of lectures one on the elementary facts of this disease. Midwives might be similarly instructed. They are brought daily into close contact with the ignorant classes, the most difficult of all to get at, and they no doubt are consulted frequently on matters outside their immediate calling, amongst others on early cancer. Their information, therefore, should also be accurate, and in like manner there would be no difficulty in including in their repertoire a little elementary knowledge of cancer. We might reasonably go even a step further in our endeavours to lighten the load of cancer mortality. Lectures might easily be provided for clergymen, clergymen's wives, district visitors, and those generally who are constantly in touch with the poor and ignorant classes on this subject as well as on others in which the possession of accurate knowledge would furnish the means of rendering valuable assistance in the saving of human life. Such lectures have long been in vogue to provide for surgical emergencies where skilled assistance is not immediately to hand. We might anticipate far more tangible results from a similar spread of information in regard to those diseases in which ignorance of the most elementary facts leads to disastrous and irremediable consequences. Among such none plays a more conspicuous part than cancer. The above are some of the means whereby might be substituted sound knowledge for the despair and ignorance which hold the public in their grip, and it cannot be questioned that there would result an appreciable control of the ravages of this deadly disease. Until education has been tapped our present means, and at present our only means, of dealing with cancer have not been exhausted. In conclusion, it may be safely asserted that the early recognition of cancer will not be a matter of indifference whenever, if ever, the cause of this disease is discovered and methods more scientific than eradication by the knife are found for dealing with it; for it is not to be supposed that whatever means the future may have in store for combating this disease, it will be a matter of no importance whether, for instance, a woman suffering from cancer of the breast presents herself for treatment when the disease is early and limited or when she is the victim of its later stages, with secondary deposits in the thorax and liver. At all events, there are abundant reasons now for an endeavour to bring the lay knowledge of cancer into line with present surgical views of it, and to convince the public that a considerable share in the possibility of cure rests with them, and that it varies inversely with the delay in seeking advice.

A CASE THAT SEEMS TO SUGGEST A CLUE TO THE POSSIBLE SOLUTION OF THE CANCER PROBLEM.*

BY CHARLES GORDON MACKAY, M.B., C.M.

THERE can be little doubt that occasionally a true cancerous tumour comes to a pause in its growth, when it seems in fact to have lost its power of further attack on healthy tissue, and then a cure, more or less complete, is said to have taken place. When this has happened it is reasonable to suppose that some agent must have been at work either as aiding the body tissues in their resistance to attack or acting in antagonism to the cancer cell and so diminishing its invasive vigour. If there be such an active agent, what is it? Is there possibly elaborated in the body of the patient a something which can act in this way and so effect a spontaneous cure? A case has been recently under my care which seems to suggest an answer to this question.

Miss X. Y., aged 37, had a typical mammary scirrhus in the autumn of 1904. I first saw the case early in October and diagnosed carcinoma. Some weeks later the case was seen by my friend Dr. Bruce, Dingwall, who was of the same opinion. She immediately went to Edinburgh and entered the Deaconess Hospital, where the tumour was removed by Mr. Alexis Thomson. Thirteen months after the disease recurred and in such a form as to render a second operation inadmissible and *x*-ray treatment was recommended and used for some time. The other breast became involved, a troublesome cough came on, and later pleurisy, first in one side and then in the other.

Since this paper was read I have received, by the kindness of Mr. Thomson, a copy of the hospital report, from which I have extracted the following:

*Read to the Northern Counties of Scotland Branch on March 1st, 1907.

Miss —, 37 years of age, admitted Deaconess (Hospital) November, 1904. She had noticed a lump in the right breast since April, and had seen Dr. Mackay, of Lochcarron, and Dr. Bruce, of Dingwall. She was in very good health.

There was a circumscribed cancer in the outer quadrant of the right breast, adherent to the skin, and nothing was to be felt in the axilla The complete operation was performed on November 4th, 1904 : the axillary glands were infected but there was nothing at the operation to show that the case was specially unfavourable. She made a good recovery and went home.

The microscopical diagnosis was the common form of scirrhous cancer. On January 9th, 1906, she showed herself again. There were small fixed nodules in the scar, a large fixed one below the clavicle, and there was bulging of the sternum. As it was quite out of the question to operate she was put on a course of the *x* rays, and these were pushed to the extent of reddening and scaling of the skin. The result was that the progress of the disease seemed to be arrested.

She returned to the hospital in August, 1906, for another course of *x* rays. The disease had again made progress after the manner observed in recurrent cancer of the breast. She had an irritating cough, which was regarded as being due to pressure on the recurrent laryngeal nerve, and there was a marked degree of breathlessness and dullness over the pleural cavity on both sides.

On the first occasion on which she was tapped 40 oz. of blood-stained fluid were drawn from the left pleural cavity, and 10 oz. of similar fluid from the right; after the tapping there was dullness up to the lower angle of the scapula on both sides, and there was also dullness of the right apex. A fortnight later 28 oz. of blood-stained fluid were drawn from the left pleura. The breathlessness returned. An attempt was made to tap the left pleural cavity, but only a few ounces of blood-stained fluid were drawn off. It was inferred that the dullness was now mostly due to thickening of the pleura and consolidation of the lung, due to metastasis of the cancer. She gradually failed in health, and made up her mind to go home (November 8th, 1906). In his covering note Mr. Thomson says: "The diagnosis of cancer was based on the usual complete microscopical examination of the tumour of the breast and of the glands. There is absolutely no doubt of the disease being cancer."

The patient came home from the hospital on November 8th last in a hopeless condition, and for several weeks in December her state was one of semi-collapse. The disease then was evident by a deep blue discoloration over the whole front of the chest from the clavicles to a line a little above the level of the upper margin of the liver. The left breast was of great size and hard. The left axilla was obliterated, filled with malignant growth. In the right axilla matters were much the same, though not quite to the same extent. Both sides of the chest contained fluid almost to the clavicles. The respiration was 44. Swallowing anything, even a teaspoonful of water, was difficult, and sometimes impossible.

This state continued up to and including December 27th. On the morning of December 28th it was found that the condition had entirely altered. She was much better and felt comparatively comfortable. She could swallow quite easily. The respiration had fallen from 44 to 24. The fluid in the chest was in greater part gone. She gradually took food in fairly good quantity and improved in every way. Still more remarkable was the fact that the seat of the local disease (the front of the chest) gradually underwent a change for the better quite as great as in the general condition. In its whole extent the deep purple discoloration became very markedly lighter. In some places the skin regained its original whiteness and where it had been tensest and shining it became at first wrinkled and then flaccid.

The diseased parts that had not been treated with the *x* rays have undergone an extraordinary change. On the left side the breast, which had grown to a large size and felt hard, has absolutely disappeared with the exception of a circular flat disc the size of a sixpence, fully $\frac{1}{8}$th of an inch thick, brown-yellow, and of horny consistence and appearance, which occupies the place where the nipple had been. There is no trace of a gland and where it had been the skin is flat and close to the ribs. The left axilla, which was full of cancerous growth, is now a cavity into which I can place my closed hand. In the right axilla there is a similar result.

The space where the right breast, which had been excised, had been and the parts adjacent had all been subjected repeatedly to *x*-ray treatment, and here the improvement though quite as decided has gone on at a slower pace. Though there is healthy action, the tissues seem to be in a semi-paralysed state. The *x* ray has not been elective in action. It has affected the disease and the healthy tissues in equal degree.

The cough, which had never been absent for ten months, ceased on a certain day, January 6th, and has not been heard once since. Up to this date, February 11th, there has been steady improvement in every way. Morphine, of which $1\frac{1}{4}$ grains was the routine dose for some time, was gradually reduced, and lately stopped altogether. For the last week the only anodyne needed was sulphonal—15 grains at night.

What is the meaning underlying this? What really took place? The patient had been in a half starving condition—starved of food and of water—a state most favourable to the absorption of a thoracic exudation. When absorption took place pressure was taken off the oesophagus and swallowing became possible. The same cause relieved the lungs, and the respiration fell to 24. Improvement, not only general, but also local, coincided exactly in point of time with the disappearance of fluid from the chest. How did this affect the cancerous tumour? Let us consider the facts as they appear, and then endeavour to account for them. The fluid (serum) had been suddenly, rapidly, and in considerable quantity taken into the system. It thus came into contact with a malignant growth which at that moment was overwhelmingly master of the situation. Be the cause what it may, the sequel was that thenceforward the growth not only ceased to advance, but actually withered and steadily parted with the most marked features which constitute its character. To the onlooker seeing this day by day it appeared as having only one meaning. There was hardly escape from the conclusion that these two things stood related to each other as cause and effect.

It seems certain that in this instance there was some powerful agent at work which in a very short period of time produced a profound effect on cancerous growth. What is the agent? Judging by this case alone, the active something, whatever it be, seems to be in the serum. That is the conclusion I feel driven to, founding on the clinical evidence in the case, and it acquires additional force from the fact that it is in harmony with opinion founded on results obtained by experimental research. There is a very large mass of evidence of this kind which almost conclusively proves that the serum contains something which is antagonistic to malignant growth. What say the great experimenters? Their names (Clowes, Ehrlich, Gaylord, Bashford, Beebe, Ewing, Jensen, and others) are known, and many of them, it is not too much to say, are master spirits. What say they? Practically, they voice one note on this point. Dr. Clowes of Buffalo, U.S.A.[1] says that experimental research with mouse cancer goes to prove that a growing cancer produces in the serum a force which is antagonistic to the development of cancer.

Does it not appear almost certain that this spontaneous cure I have recorded may be due to such an agency? Bashford and Clowes[2] are of opinion that the body fluids of some protected mice when injected with experimental cancer have given indication of a power to retard the growth of well-established tumours. Ehrlich[3] says haemorrhages are associated with retrogression of tumours.

In other words, does not this mean that serum causes a tumour to retrograde? Ordinary healthy serum offers some resistance to cancerous growth, but this resistance is partial and ineffective. As the strife goes on the progress of the malignant disease is accompanied by the formation in the blood of an antibody, a virus. This virus is the child of the cancer cell. In the blood vessel, that is, while it forms a factor of the blood, it is inert; outside the vessel it may become all-powerful. A question arises, Does this virus, as such, exist at all in the blood, or does it date its existence from the moment the serum which forms its vehicle separates from the other blood constituents?

If this latter view be correct, then the first thing formed might be a ferment only, but which had the power of forming the virus at the moment the serum parts company with the blood. Whichever it be, the fact of practical importance is, that under some circumstances, did we but have the gift to see it, the child of the cancer cell turns on the parent and destroys it.

Surely this has practical bearings. My patient would certainly have died nine weeks ago but for the pleural fluid which was an accident, not an essential element of the main cause. By that fluid she was inoculated, if I may so describe it, and the inoculation saved her life. Speaking on the principle involved, apart from questions of method, it is pertinent to ask: "Could not that inoculation have been done artificially?" The developments in this case are full of suggestiveness.

Is it too visionary to entertain the hope that a method founded on imitating what appears to have taken place in this case may eventually be possible? I think it no dream. There is at least some evidence which goes to show that when the disease is in the form of recurred nodes a serum can be used which appears to cause increased activity in the region primarily occupied by the disease, but which has decided effect on the node. The

results are a marked diminution in size, with disappearance of the attachment of the node to the skin and to the underlying tissues, and ultimately almost complete freedom from pain.

The latest Bradshaw lecturer[4] has expressed his confident hope "that the final victory over cancer will not solely be by the knife." I am a sharer in this confidence, and feel certain that the victory will ultimately be by a serum.

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INFLAMMATORY CHANGES IN POSTERIOR SPINAL ROOT GANGLIA IN CASES OF CUTANEOUS CANCER.

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IN the BRITISH MEDICAL JOURNAL, April 13th, 1903,* I pointed out that the spread of cancer in skin was associated with degeneration changes in the posterior spinal root ganglia which supplied the area invaded, and I described the changes observed. These intracellular changes were not observed in the corresponding ganglia of the opposite side, which were in marked contrast to them. In the article to which I have referred I did not demonstrate inflammatory changes within the ganglia in question. In the present article I publish 2 cases in which cancer had begun on the cutaneous distribution of one ganglion and spread into the cutaneous distribution of its neighbours, yet it is only in the ganglion on the distribution of which the cancer had begun that inflammatory changes can be seen, whilst the ganglia into whose cutaneous distributions the cancer had spread showed the changes of degeneration to which I referred in my paper of 1903.

Fig. 1.

CASE I.

The head of a woman, aged 71, who had a rodent ulcer on the face for about thirty years, is shown in Fig. 1. The disease began on the left side of the nose near the inner canthus, and spread on to the right side of the face. Pain was of a very marked, severe, and uncontrollable nature.

EXAMINATION OF THE GASSERIAN GANGLIA.

The right Gasserian ganglion is normal except for the intracellular degeneration which existed in the ganglion cells. There is no sign of inflammation in the ganglion and parts with which it is surrounded. The left Gasserian ganglion is enclosed in a very thickened capsule, and between the ganglion cells there is a marked inflammatory change. Here can be seen an infiltration of polynuclear neutrophile leucocytes and an accumulation of lymphocytes. There is no haemorrhage, but a great deal of intracellular degeneration change in the ganglion cells. There is no inflammatory change to be seen in the membranes surrounding the ganglion. The pituitary body, which was also microscopically examined, was normal.

CASE II.

Fig. 2 is the photograph of a man, aged 52, who had been a porter for thirty years, and whose duty it was to load carts for certain stores. He could not associate any mechanical or other irritation with the seat of his lesions. There was no history or evidence of syphilis, although in the microscopical examination of his posterior spinal root ganglia changes can be seen in the walls of some of the blood vessels, which suggest that syphilis may have been their cause. Agonizing pain, which was very difficult to relieve, was the chief complaint of this patient. In the photograph two lesions (B and C) are to be seen on the left side. They are quite distinct from each other, clinically and microscopically; B has all the characteristics of "Paget's disease of the nipple." At the time when the medical societies were meeting the patient was too ill to be moved, otherwise I would have shown him. Dr. Arthur Whitfield came to see the case with me, and he diagnosed this lesion, clinically and microscopically, to be the same as Paget's disease of the nipple. I have shown sections to Mr. Shattock and Dr. Radcliffe Crocker, and they agree with that opinion.

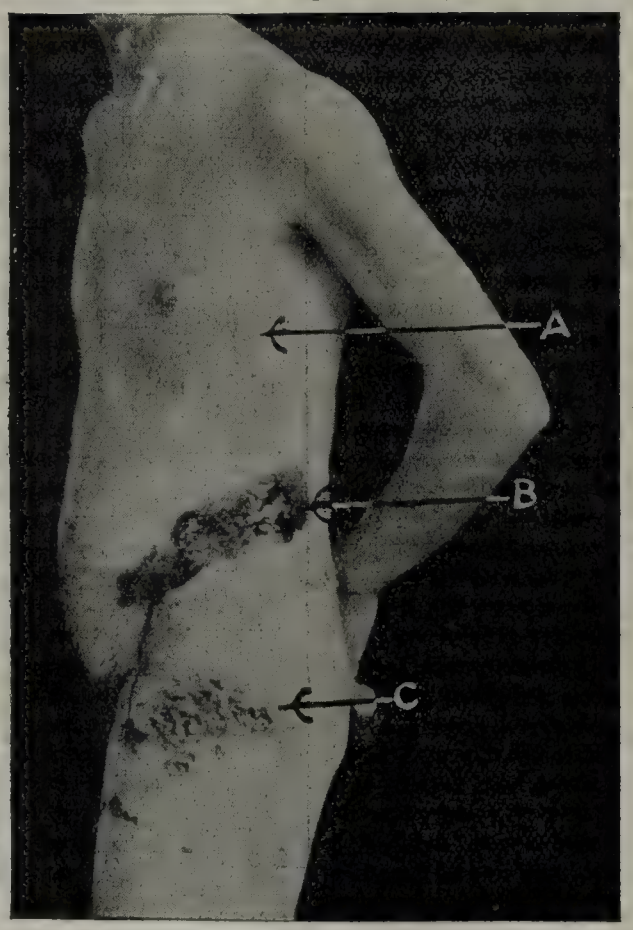

Fig. 2.—A, Secondary deposit to tumours at C; B, "Paget's disease of the nipple"; C, squamous epithelioma.

The disease began four years ago at the point where the lateral branch of the eleventh dorsal nerve becomes cutaneous. There was no reason to suppose from the man's history or the situation that it began on a supernumerary nipple in this region. The disease spread mainly backwards and slightly forwards.

The distribution of this disease seen in the photograph is that of the lateral cutaneous branch of the eleventh dorsal nerve, but he remained in hospital until he died, four months after this photograph was taken, and during this time it spread backwards towards the spinal column, a little more forwards, but, so far as we could see, it did not spread upwards or downwards; so it practically covered the area supplied by the eleventh dorsal posterior spinal root ganglion. It is very similar to the distribution of the herpes zoster in Fig. 3 and of the morphoea at E in Fig. 4. And I have a case kindly sent to me by Mr. J. Sherren, in which the lateral cutaneous branches of the tenth and twelfth dorsal nerves are covered by leucodermia, whilst that of the eleventh dorsal nerve escaped and was free from leucodermia.

In most of the cases of Paget's disease of the nipple which I have seen in other parts of the body, the areas were peripheral, but when they affected the same region in different cases they, as a rule, occupied the same areas. I hope in some future communication to refer to the nature of Paget's disease of the nipple.

The lower lesion C, situated upon the upper part of the left thigh, is a squamous epithelioma which began eight months ago (three years and four months after the lesion B). It rapidly spread to the size shown, and diffused itself by appearing as apparently discrete herpetic looking spots down the limb, across the hypogastric region, and reached the upper part of the thigh on the opposite side. All these foci were squamous epithelioma. There was also

* Note upon a Possible Relationship between Carcinoma and Nerve and Trophic Areas.

a large secondary deposit at A, and the axillary glands on the left side and the inguinal glands of both sides

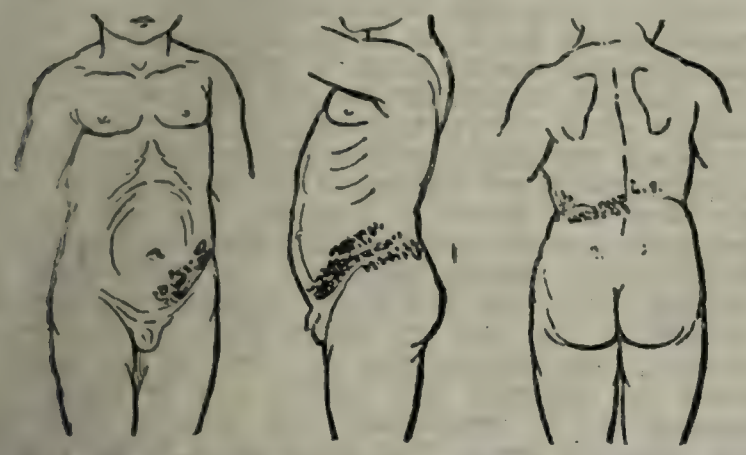

Fig. 3.—From *The Pathology of Herpes Zoster, and its Bearing on Sensory Localization.* Henry Head, M.B., F.R.S., and A. W. Campbell, M.B.

also contain squamous epithelioma. The swollen condition in the left leg is mainly due to lymphatic and venous obstruction. The lymphatic glands of the abdomen were apparently free of disease.

Many of the facts described above were ascertained from *post-mortem* examination. Dr. Purves Stewart gave me his able assistance in securing and preparing for microscopical examination the posterior spinal root ganglia.

The result of this examination was as follows: On the left side, the ninth, tenth, and twelfth dorsal ganglia were normal; the eleventh dorsal and first lumbar ganglia were inflamed; in the eleventh dorsal there was a small haemorrhage as well. The inflammation was not so intense as is usually seen in the ganglia in cases of herpes zoster, but the eleventh dorsal and first lumbar ganglia contained an infiltration of polynuclear neutrophile leucocytes and an accumulation of lymphocytes. Also a few mast cells. It will be seen (Fig. 2) that the squamous epithelioma began on the distribution of the posterior spinal ganglion of the first lumbar of the left side.

The corresponding ganglia of the right side did not show signs of leucocyte invasion and accumulation of lymphocytes. Hence it is the fact that the only ganglia to show inflammatory changes were those on whose distribution cancer began.

I did not know before, nor can I find any reference to this fact of there being inflammatory changes within posterior spinal root ganglia in cases of cancer. One thing seems to be accounted for with certainty by the knowledge of the fact, and that is the cause of the intolerable and agonizing pain which was the chief source of complaint in these two cases. It was a root pain, and not only one of peripheral origin. Hence it is more than probable that the pain in other cases of cancer is one of root origin, as well as due to a peripheral cause.

There are, however, much more fundamental questions arising out of the observation:

1. Is the inflammatory change within the posterior spinal root ganglia in any way connected with the origin or spread of cancer?

2. If it is, did it exist before the cancer began? and hence, had it anything to do with the genesis or point of incidence?

3. Or if it occurred secondary to the cancer, had its presence anything to do with the spread of that disease?

At present it is impossible to answer any of these questions with certainty; I have already pointed out that rodent ulcers and this case of Paget's disease of the nipple began on parts of the skin where nerves, particularly the smaller nerves, become cutaneous; and that areas of occupation of cancer in the skin correspond to nerve areas in a very suggestive manner; and in their distribution resembles the area of the spread of morphoea, leucodermia, naevi, herpes zoster on the head and face, and some cases of moles.

However, in connexion with this question it may be said that if the lesions in the ganglia were secondary to the lesions of the skin then one would have expected that these would have been also secondary inflammatory changes in all the ganglia whose peripheral branches were involved in the lesions, but that does not occur in these two cases, in spite of the fact that these particular branches had been involved for many years.

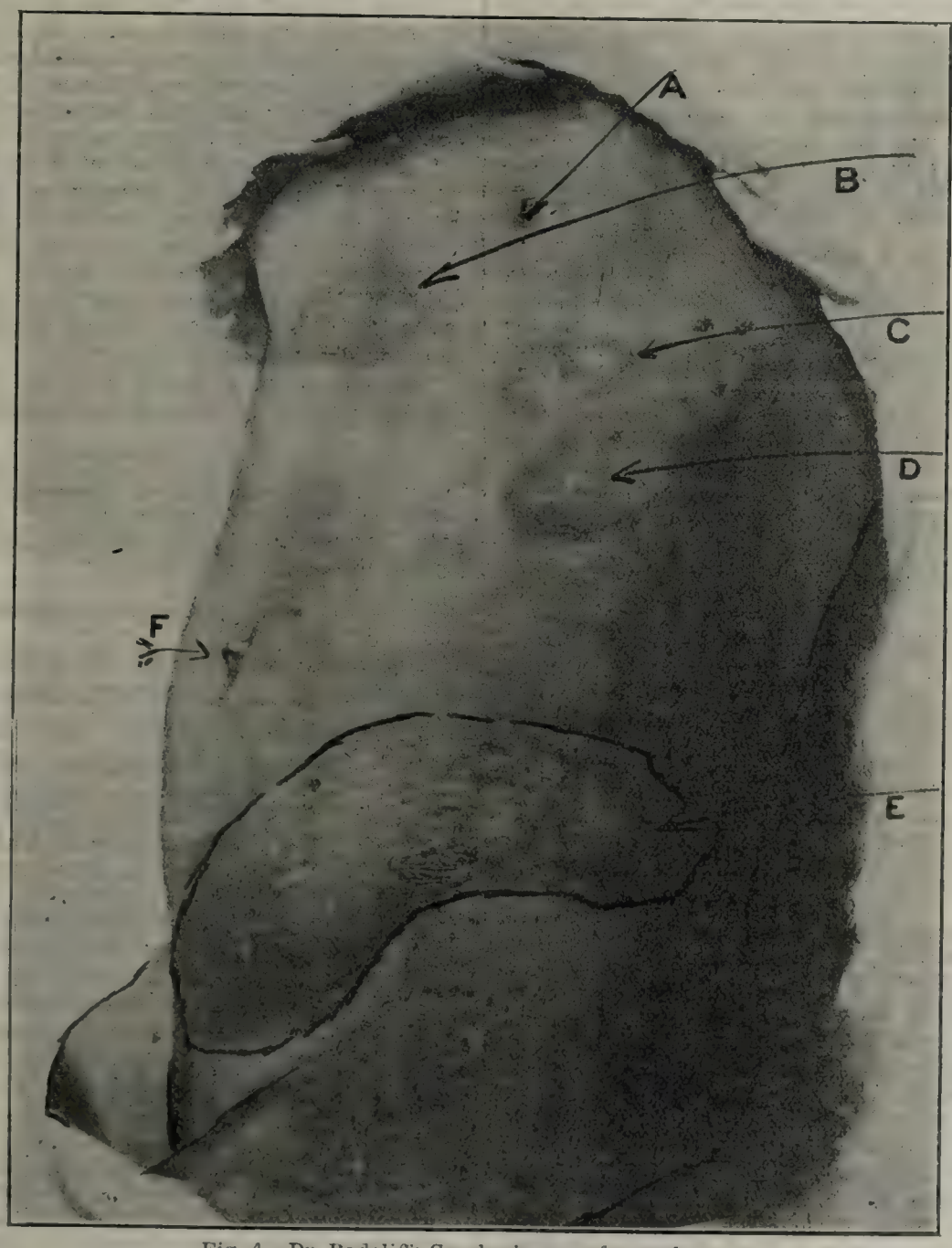

Fig. 4.—Dr. Radcliffe Crocker's case of morphoea.

REUTER'S Agency states that the Treasury has authorized the expenditure of the funds necessary to carry out the scheme for the suppression of sleeping sickness in Uganda recommended by the Commissioner, Mr. Hasketh Bell. The natives are to be removed from the fly-infested district on the shores of Lake Victoria, and the sick are to be placed in segregation camps, where they will be treated by what is called the atoxyl treatment, although, we understand, this has already been superseded in the estimation of competent authorities by a combination with mercury. Landing stages on Lake Victoria, forts, ferries, and water holes will be completely cleared of vegetation, in the hope of stamping out the fly.

BY a recent decision of the Minister of Public Instruction, alopecia areata (*pelade*) has been removed from the list of diseases which came under the law relating to epidemics in the schools of Paris.

A CASE OF STREPTOCOCCIC CONJUNCTIVITIS.

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CONJUNCTIVITIS due to a pure or almost pure streptococcic infection does not appear to be a common disease, and in view of the virulence of the affection and the unfortunate termination of the case here recorded, one is thankful that these cases are not more numerous.

A. F., aged 2 years, was brought to the hospital on March 12th, 1907, the mother stating that the child had suffered from a sore eye (left) for the previous three weeks; the lids were glued together on some mornings, but this was not a marked symptom. There was an eruption on the face, dry in character, situated on the forehead, cheeks, and chin, which the mother stated had been there before the eye became affected. On examining the eyes, the right eye and its appendages were apparently healthy; on the other hand, there was a slight oedema of the left lids, palpebral conjunctivitis, but not very marked, and very slight injection of the ocular conjunctiva. The cornea and iris were healthy. There was a large swelling on the left side of the neck involving the parotid area, at first sight resembling the enlargement of the parotid gland seen in specific parotitis, but there were no symptoms of this disease present. The swelling had been there for three weeks and its appearance seemed to coincide with that of the sore eye, though this could not be definitely ascertained, the swelling was fairly hard, solid, and not painful on palpation, the preauricular gland was not enlarged, but a number of enlarged, hard, discrete glands were felt in the posterior triangles of the neck. There were no *Pediculi capitis*. The child was said to be "not so well" for the last two days, being somewhat drowsy. Two other children in the house were said to have been affected with "colds in their eyes," previous to the present child being affected. No history of tuberculosis nor of syphilis was obtained.

The case was treated as a catarrhal conjunctivitis, and ordered frequent applications of boracic lotion, the glands in the neck being looked on as that type of tuberculous adenitis so common in these children. Three days later the child was seen again, when the enlargement of the lymphatic glands and the swelling in the region of the left parotid gland was in a similar condition to that described above, the eruption in some parts of the face was becoming purulent, but now there was marked oedema of the left eyelids, which were a little red in colour, and which were markedly swollen; the palpebral conjunctiva was much injected, and the ocular conjunctiva was in a state of chemosis; on separating the lids muco-purulent discharge was found in the palpebral sac, the cornea and iris were clear and apparently unaffected. The right eye was not affected. Frequent application of warm boracic lotion to the eye and face, to be followed by boracic ointment, was ordered. Four days later the child was again seen, when the glandular enlargements were unaltered, the eruption on the face was less and cleaner, the oedema of the lids was a little decreased, but they were still red. On separating the lids free muco-purulent discharge was seen, being in greater quantity than on the previous date; the chemosis was marked, the whole of the cornea was cloudy; there was a large deep central ulcer in the cornea, with shreds of fibrinous lymph adherent to it, and which had apparently perforated, though this could not be made out with certainty owing to the chemosis and oedema of the lids, and the struggling of the child. There was also a large hypopyon half filling the anterior chamber, and the eye was lost.

A swab was taken from the palpebral sac, which, both under the microscope and in culture, gave the typical appearances of streptococci and that in almost pure culture.

This is a case which in its earlier appearances did not differ very materially from the ordinary acute catarrhal conjunctivitis due to Weeks's bacillus, and one often sees these cases complicated by oedema of the lids and chemosis. Again, as there was a semipurulent eruption on the face, an auto-inoculation at once suggests itself. Against this is the fact that the right eye was not affected during the whole course of the disease, and one would have expected to have found it implicated both in such a condition, and sooner or later in a Weeks's conjunctivitis; and further, in a purulent skin eruption it is usual to find more than one variety of micro-organism, and one would therefore expect to find some, at any rate, of these micro-organisms in an inoculation conjunctivitis.

This would, then, appear to be a streptococcic conjunctivitis *per se*, and which is evidently a rare disease, for many of the textbooks on ophthalmology make scanty reference to streptococci in their descriptions of conjunctivitis, and do not describe a similar condition to that given above; for example, Fuchs[1] only quotes Morax as stating that streptococci are found in cases of catarrh accompanied by lesions of the lacrymal sac. Inglis Pollock[2] on examining bacteriologically 362 cases of conjunctivitis only found the *Streptococcus pyogenes* in three cases, of which one was a case of ophthalmia neonatorum with Neisser's diplococcus, and the others were two old-standing cases of blepharitis marginalis in which large numbers of organisms, staphylococci, air bacilli and several indefinite bacilli and diplobacilli were found as well. This case does not appear to resemble that rare disease, Parinaud's lacrymal conjunctivitis, which is a streptococcic conjunctivitis, usually unilateral, in which there is swelling of the lids, and of the conjunctiva, especially the ocular; but also in which there is only *slight* secretion, the preauricular as well as the cervical glands are enlarged and tender, and in which the lacrymal sac is implicated; thus differing from the case described above. The enlargement in the parotid area and of the cervical glands suggests that type of conjunctivitis[3] described by Parinaud in 1889 and which now bears his name; but in this disease, which is unilateral, granulations are found in both fornices; there is no suppuration in the conjunctival sac, though the enlarged preauricular gland frequently breaks down and suppurates, and in which bacteriological investigation up to the present has been unable to describe the offending micro-organism.

Is an endogenous streptococcic conjunctivitis possible or probable in such a case as this? One doubts it. Parsons[4] describes a pseudo-membranous form as a group of streptococcic conjunctivitis more frequently met with than Parinaud's lacrymal conjunctivitis, and in which the eye is frequently lost through corneal ulceration; he states that Coppez has collected thirteen cases from the literature, and quotes Uhthoff as stating that the association of membranous conjunctivitis with impetigo of the face, in which latter condition large numbers of streptococci are present, is well known. Therefore, although no membrane or pseudo-membrane was seen in the case described above, one is inclined to place it in the category of those mentioned by Uhthoff.

In conclusion, I would like to thank Dr. Wilson of Queen's College for kindly examining the swab for me.

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PRELIMINARY NOTE ON SOME BODIES FOUND IN TICKS—ORNITHODOROS MOUBATA (MURRAY)—FED ON BLOOD-CONTAINING EMBRYOS OF FILARIA PERSTANS (MANSON).

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FOR several years I have been interested in the problem as to how *Filaria perstans* is transmitted from person to person, and on several occasions have made feeding experiments with a number of species of mosquitos and other biting flies (*Tabanus*, *Haematopota*, *Chrysops*, *Stomoxys*, etc.), and also with fleas; but, as was the fate of other observers, results were always negative. Never, with one doubtful exception, have I succeeded in getting developmental forms in such insects.

My failure to solve the question on the hypothesis that some haemophagous insect is the disseminator led me to make feeding experiments with ticks. My first attempts with these animals, made over two years ago at an altitude of nearly 6,000 ft. above sea level, were likewise negative for *Ornithodoros moubata*, *Amblyomma variegatum*, and *Rhipicephalus decoloratus*. More recently, however, working at a lower altitude and in a consequently warmer zone (about 4,000 ft.), I have succeeded in cultivating what appear to be developmental forms of *Filaria perstans* in one species of tick (*Ornithodoros moubata*), which feeds habitually on human blood. I have submitted specimens of my preparations to my friend and former teacher, Dr. George C. Low, and he writes me that he agrees with my opinion

that the embryos in the ticks used in my experiments are developmental filariae.

In my first experiments I used young ticks collected by my black boys in pig-sties, etc.; but, as the sources of fallacy under such circumstances were so obvious, I used the results thus obtained only as a suggestion for future work, and at once set myself to breed out young ticks from pregnant females, and have repeated all my observations, using young ticks that had never before sucked blood either from men or animals. Numerous controls were used to check all experiments.

As the dissection of the species of tick employed presents considerable difficulties, and section cutting of all ticks is well known to be very unsatisfactory, I have not yet satisfied myself as to all the details of development, which differs in some points from that of *nocturna* in mosquitos, notably in the much more rapid growth of the nematode during the first few days after its ingestion by the tick. The development seems to be practically complete at about the twenty-first to the twenty-third day, although the large forms may be obtained from the ticks for at least two months after that, and probably for a much longer period. When some time has passed after feeding, the embryos cannot be demonstrated except by pressure and rolling of the tick. This doubtless means that the worms bore through the walls of the digestive tract and go on to their further development in some of the firmer tissues of the host's body. Observations on these points and also regarding human infection are not yet complete, but from what I have already learned I am inclined to conclude that, as Dr. Low has already suggested to me in a recent letter, the parasite undergoes changes (analogous to those studied in other filariae) in *Ornithodoros moubata* as its intermediate host, and is then inoculated back directly into man, its definitive host.

One point the definite settlement of which has given me some trouble, and which led me to delay the publication of this paper for months after it was sent to London, was the possibility that the nematodes are natural parasites of the ticks which the controls (on account of slightly different environment, etc.) might lack the opportunity of acquiring; but numerous and extended experiments (some of which are difficult owing to danger of infecting controls through feeding to keep them alive), using ticks bred from eggs and also those from *perstans* districts and districts free from filariasis, seem to have disposed of the possibility that the age or environment is a factor in the infection of the ticks.

A detailed account, with drawings and other data, of the experiments here reported and those still in progress, together with the literature on the subject, will be presented in due time.

It is of interest to mention briefly in connexion with my work the observations of others.

Christy has suggested that *Ornithodoros* may be the host of *F. perstans*. He based his idea on the fact that his black servant, after being bitten with ticks, showed filariae in his blood which had before been free from them. I am not aware that he made any experiments to prove his point.

Feldman has claimed that man is infected with *F. perstans* through eating bananas. This author states that when ticks (he unfortunately does not give the species or even genus) suck the blood of natives affected with *perstans*, the worms undergo a certain development in the ticks, and then are deposited with the tick's eggs in ripe bananas, from whence they are carried into the alimentary canal of man. From this position he conceives that they bore their way into the tissues of the abdominal cavity, and develop into the adult form. These assertions are interesting, but the methods used to arrive at them are open to grave fallacies. I can glean from Dr. Feldman's paper no evidence that the ticks used were bred from eggs, or that any controls were employed, or whether the embryos found in bananas were proved to have any relation to the forms seen in ticks, nor, in fact, that any of the usual precautions used to eliminate error from scientific research were employed. On the other hand, my experiments with bananas have all been entirely negative. According to my observations, the ticks oviposit in the dust of the floor and not on bananas, which in this district are generally hung from the ceiling. It should also be remembered that the geographical distribution of bananas does not coincide with that of *F. perstans*, and that microscopic nematodes occur naturally in bananas.

To sum up: in view of my researches, so far I am inclined to the opinion that the intermediate host of *F. perstans* (Manson) in tropical Africa is a tick, *Ornithodoros moubata* (Murray), and that the cycle is probably (as in the case of other filaria carried by insects) direct, from man to tick and from tick back to man. In British Guiana, etc., where *perstans* is also found, some other member of the genus—for example, *O. turicata*, *O. talaje*, etc. (which are natives of South America)—possibly plays the same part as *O. moubata* in Africa.

In conclusion, I wish to record my indebtedness to Dr. Low for criticisms, suggestions, and encouragement during the course of a long and tedious series of experiments.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

IODINE AND TYPHOID FEVER.

ABOUT six years ago I employed for the first time the internal administration of iodine in the treatment of enteric fever. I was led to do so by having read an article in the *Journal de Médecine* as far back as the year 1859. My cases are not many, but the results in some have been so striking that I venture to bring my experience of such treatment before the profession. That iodine has a marked and beneficial influence in typhoid I am convinced, be the explanation what it may, and if administered from the beginning it acts almost like a specific, shortening the duration of the illness, which in some cases would appear to abort, and modifying favourably most of the symptoms.

How does iodine act? Modern research shows it to stimulate the formation of white corpuscles necessary to the defence of the system (phagocytism). It renders lymphoid tissue active, and Peyer's patches being of lymphoid nature it may have some specific action on them the moment it enters the circulation.

The way in which I have administered it has been in the form of *B.P.* tincture, 3 to 15 minims diluted in ℥j or ℥ij of rum or cognac in about 1 or 2 oz. of water with a little sugar. This is administered three or four times in the twenty-four hours.

Puerto Orotava, Teneriffe. GEORGE V. PEREZ, M.B.Lond.

SIMULTANEOUS DISLOCATION OF BOTH SHOULDERS.

THE publication in the BRITISH MEDICAL JOURNAL of July 6th, page 20, of a case of the above, reminds me of an exactly similar case that I met with, quite ten years ago, in Sydney, New South Wales.

A woman, aged about 45 or 50, was climbing a step-ladder in her house one night, when she missed her footing and fell heavily on the floor. She was picked up and placed in bed, and was seen by me very shortly afterwards. She had both shoulders dislocated, and there were absolutely no other injuries.

London, W.C. M. J. LYDEN, M.D., Ch.M., R.U.I.

A FIFTEEN PINT HYDROCELE.

THE patient in the following case, a Gold Coast native, aged 30, presented himself at the Addah Hospital with his scrotum enormously enlarged and hanging below his knees. At first sight it appeared to be a case of elephantiasis or lymph scrotum, but on closer examination the swelling proved to consist of a small double inguinal hernia and a left hydrocele. The penis was buried in the scrotal tissue; the testicle could not be located; that on the right side was rather enlarged. From the history disclosed it appeared that the man had had a right inguinal hernia for eight years. This hernia was followed after two years by a left hydrocele, and this again by a left hernia. The scrotum having been carefully cleansed, the hydrocele was tapped and a measured quantity of fifteen pints of fluid removed, in addition to about half a pint which was unavoidably lost. The fluid was yellow, specific gravity 1020, cloudy from a cholesterine plates, and a few leucocytes, alkaline in reaction, and was almost solid with albumen on boiling; no spermatozoa were to be found on microscopical examination.

I have no data to refer to here, but I think that this quantity of fluid in a single hydrocele must be almost a record. After tapping, the left testicle could be felt as a

small soft mass posterior to the sac. Sexual intercourse had been possible, the patient informed me, from the beginning of the hydrocele up to the time of tapping.

A. E. HORN, M.D., B.Sc.Lond., D.T.M.Camb.,
West African Medical Service.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

WEST RIDING ASYLUM.

A CAVERNOUS ANGIOMA IN THE TEMPORO-SPHENOIDAL LOBE OF THE BRAIN.

(By MARGARET B. DOBSON, M.D.Lond.,
Pathologist to the Asylum.)

THE patient in the following case, a male epileptic idiot, was admitted in August, 1904, and died in February, 1907, at the age of 8 years, in the condition of status epilepticus.

Family History.—His parents were healthy, and no other of their children suffered from epilepsy. His maternal uncle was weak-minded, alcoholic, and epileptic; his maternal aunt was melancholic, probably suicidal. His maternal grandfather was a heavy drinker. His paternal aunt was already in the asylum, suffering from puerperal melancholia.

Clinical History.—Mentally the patient was a low-grade idiot, quite unable to do anything useful for himself. He made strange noises, but was unable to communicate his ideas to others. Extremely irritable and passionate, he would, if thwarted in any way, bang his head against the wall or floor. It was impossible to gain his voluntary attention. He frequently performed curious automatic movements; he would tap the left frontal eminence with the middle finger of the left hand several times in succession, at the same time rotating the right hand backwards and forwards with the palm turned upwards. Physically he was well developed and well nourished. He possessed no well-marked stigmata of degeneration. His respiratory, circulatory, and alimentary systems were normal. Tactile sensibility was obtuse, and his eyesight appeared to be defective. He suffered from epileptic seizures of the "*grand mal*" type. The convulsions were typical, a short tonic stage being followed by clonic contractions, equally affecting both sides of the body. The number of fits on admission was about two or three a week, but under bromide treatment these were considerably reduced. On February 9th, 1907, five days before his death, the patient began a series of paroxysms so closely following one another that status epilepticus resulted. The total number of fits in five days was 524. At first, between the convulsions, consciousness was partly regained, but afterwards coma was continuous between the seizures. The temperature was raised and the pulse and respiration increased in frequency in proportion to the resulting exhaustion.

Post-mortem Examination.—An autopsy was made twenty-seven hours after death. The calvarium was thickened, more especially in the occipital region. The density was greatly increased in this region, elsewhere the diploë were much congested. The contour of the skull was symmetrical. The dura mater, thick and fibrous, was markedly adherent to the skull and slightly adherent to the arachnoid mater over the Rolandic areas. The pia arachnoid was thick, gelatinous, and opaque over the fronto-parietal regions, and finely granular over the left occipital lobe. The blood vessels were extremely congested and dilated. The veins over both occipital lobes were engorged with blood, being distended, hypertrophied, and slightly tortuous. The brain, weighing 1,180 grams, appeared to be well developed. The convolutions, complicated, firm, and rounded, were of increased consistence, but, on examining the under surface of the brain, the greater portion of the left hypocampal gyrus and a small part of the adjoining gyrus occipito-temporalis-lateralis (lobus fusiformis) was found to be bright yellow in colour, atrophied, membranous-looking, and much softened. On further examination a most unusual vascular growth was found within the brain. On making a horizontal section through the left temporo-sphenoidal and occipital lobes the posterior and descending horns of the lateral ventricle were exposed. Situated in the medulla, directly opposite the diverging descending and posterior horns, a large naevoid growth was found. It was 1 in. in diameter, and bulged into the ventricular cavity, occupying the triangular expansion known as the "trigonum ventriculi." Macroscopically, the tumour was composed of a mass of thick-walled blood vessels, varying in size, intermingled with large irregularly-shaped blood sinuses. An area of softened tissue extended from this growth to the above-mentioned softened cortical area. The growth was supplied by a large branch of the posterior cerebral artery. In the white matter of the left occipital and parietal lobes two very small angiomatous growths were found, and a third was discovered in the left cerebellar peduncle. The ependymal lining of the lateral ventricles was coarsely granular, and in places presented a somewhat mouse-eaten appearance.

Fig. 1.—Horizontal section through left temporo-sphenoidal lobe, showing the site of angioma.

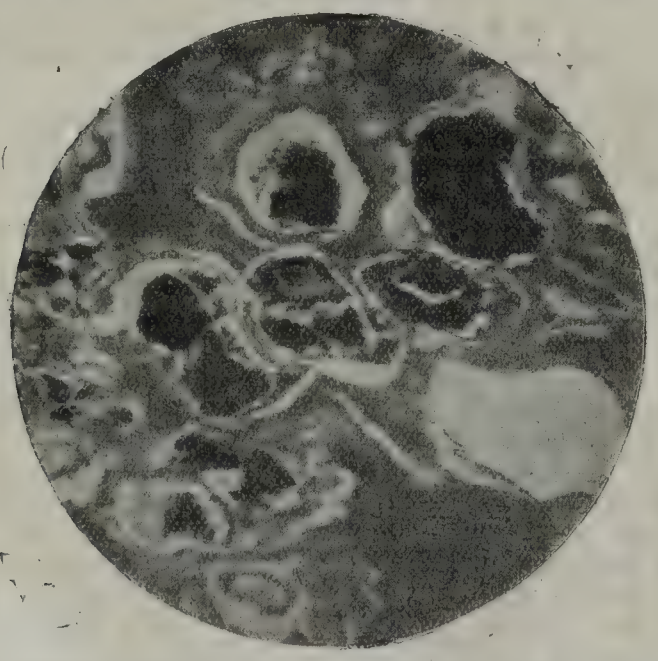

Fig. 2.—Photomicrograph showing irregular spaces filled with dark masses composed of red blood corpuscles. (Low power.)

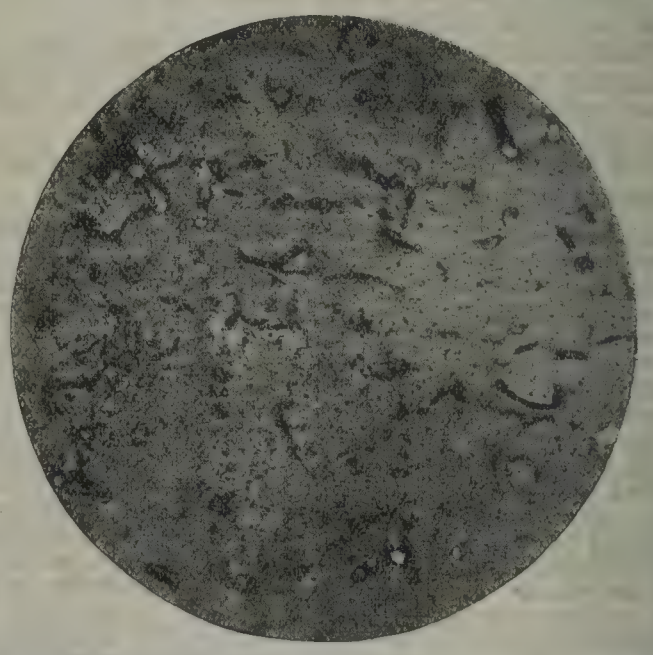

Fig. 3.—Photomicrograph showing innumerable small blood vessels in another part of the growth. The vessel walls have undergone hyaline degeneration. (Low power.)

Microscopical Examination.

The Vascular Growth.—The growth consists of (*a*) numerous large irregularly-shaped blood sinuses, separated from each other by thin fibrous partitions. In other parts of the growth these sinuses are more isolated, and each is surrounded by a thick fibrous wrinkled coat. (*b*) Innumerable

small arteries, the walls of which present a very curious pathological appearance. Endarteritis obliterans is evident in many of the smaller arteries They for the most part preserve their round outline, while the tunica intima has undergone an albuminoid change, thick layers of an amorphous-looking material have been deposited, having a somewhat concentric arrangement, so as to almost obliterate the lumen of the vessel. (*c*) A few medium sized vessels, the adventitial coat of which has undergone a well-marked myxomatous degeneration.

Rolandic Area of the Cortex.—The small pyramidal cells occupying the second layer of the cortex exhibit very characteristic degenerative changes. The nucleus contains one or more bright spherical bodies, and in some cells where more than one existed, they appear to have coalesced so as to form an irregular-looking glistening body with the nucleus. In other cells, where the degenerative change is further advanced, nuclear vacuolation is marked, and this is best seen by means of the aniline blue-black fresh method of Bevan-Lewis. The matrix is mottled and granular-looking, suggestive of nervous disintegration, and scattered among the nerve elements are innumerable detached portions of dendrons and dentrites. Many of the larger pyramidal cells are swollen and globose in form, and possess a badly stained, indistinctly outlined nucleus. Well-marked neuroglial overgrowth is seen in the superficial layers of the cortex. The pial investment is thick and felted—the blood vessels are enormously distended between the sulci. The cortical capillary blood vessels are numerous, and their coats are thickened; the area round a few of these vessels appears to be infiltrated with leucocytes.

REMARKS.—I have to thank Dr. W. Bevan-Lewis, Medical Director of the West Riding Asylum, Wakefield, for permission to publish this case. I am indebted to Dr. J. C. Murphy, Assistant Medical Officer, for the clinical history. A somewhat similar case I find recorded in the *Archives of Neurology* from the Pathological Laboratory of the London County Asylums by C. F. Beadles. It is entitled, A Telangiectasis of the Left Frontal Lobe with Epileptiform Convulsions.

REPORTS OF SOCIETIES.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—At a meeting on July 12th, Mr. PRIESTLEY SMITH (President) in the chair, Dr. FUKALA, of Vienna, read a paper dealing with the treatment of various eye conditions. For marginal blepharitis he advocated an 8 per cent. to 10 per cent. solution of silver nitrate applied to the edges of the lids daily, care being taken that none of the solution entered the eye. For scleritis both of the superficial and deep types he recommended the daily application of a 1 in 4,000 solution of perchloride of mercury. The procedure advocated was first to anaesthetize the eye by cocaine and then with a pledget of cotton-wool dipped in the solution to rub the sclerotic gently with a circular movement around but not touching the cornea. This was thought to influence the ciliary blood vessels. Similar treatment was stated to be effective against choroiditis with vitreous opacities and also occasionally against embolism of the central artery of the retina.—Mr. W. H. JESSOP read a paper on some cases of acute uniocular optic neuritis. The patients were three boys, aged 12, 17, and 14. In each there was in one eye marked papillitis, the swelling of the optic disc being about 1 mm., and the vision was reduced to counting fingers. No cause could be found in two of the cases, but in one of them two months after the commencement of the papillitis an abscess discharging a quarter of a pint of pus broke into the rectum. He was operated on afterwards for appendicitis. The probability was that all cases were due to toxaemia. In each case the acuity of vision returned to the normal, in two patients after two months and in the third after four months. In two cases there was a marked central scotoma, and probably also in the third, so that besides papillitis there was also retrobulbar neuritis. The cases were treated by mercurial inunctions, iodide of potassium, and protection of eyes by peacock-green glasses. The prognosis in such cases seemed good, as, though the vision was much reduced, there was complete recovery with normal acuity of vision and normal fields; the optic nerves remained slightly pale. In the discussion which followed several similar cases were mentioned. The condition was held to be one of retrobulbar neuritis, possibly of a toxaemic origin, and the prognosis to be, on the whole, good.—Mr. A. LAWSON showed a case of Thiersch grafting for symblepharon, the result of pemphigus, seven years after operation. The left eye had kept well, and, although some slight shrinkage had gone on, movement and vision remained good. In the right eye the shrinking process went on somewhat more rapidly, so that two years ago it was necessary to do a further grafting operation; since then the eye had remained well. Among other cases shown were:—Mr. L. V. CARGILL: Solitary quiescent tubercle of the choroid; Mr. S. STEPHENSON: A case presenting curious ophthalmoscopic change; and Mr. MCNAB: Congenital opacity of the cornea in three members of one family.

THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—At a meeting on July 10th, Sir PATRICK MANSON, President, in the chair, Dr. J. W. W. STEPHENS (Liverpool School of Tropical Medicine) showed: (1) Specimens received from Captain Christophers, I.M.S., indicating the development of *Piroplasma canis* in the tick (the club-shaped bodies and the sporozoits). (2) A new protozoal parasite, the *Histoplasma capsulata* of Darling, from a case recently described in America from Panama. The parasites resemble somewhat the Leishman-Donovan bodies, being found in cells of the lungs and other organs. Macroscopically the lesions in the lungs resembled tubercle. (3) A macroscopic specimen of *Bothriocephalus* passed by a Syrian in Tasmania. (4) An *Echinorhynchus* (? *moniliformis*) passed by a native child in British Honduras, two parasites of the same order from rats being exhibited for comparison. (5) An *Echinorhynchus gigas* from a sheep. (6) A new nematode parasite, ♂ and ♀, passed from the gut of a Chinaman, which had not yet been named.—Dr. BREINL (Liverpool School of Tropical Medicine) exhibited specimens illustrating the morphology of *Trypanosoma gambiense*, the parasite of sleeping sickness. By a new method of fixing blood films by Flemming's solution and then staining by safranin, polychrome, methylene blue, and orange tannin, details could be made out that were impossible by the older methods.—Dr. NIERENSTEIN (Liverpool School of Tropical Medicine) contributed a short paper on the treatment of trypanosoma infections by atoxyl. He advocated strongly the use of mercury as well as this drug in the treatment of sleeping sickness, and gave details of animal experiments, showing the efficacy of the combined treatment.—Dr. TODD (Liverpool School of Tropical Medicine) read a paper on some protozoal parasites found in animals on the Congo. He described some of the phases seen in the study of a *leucocytozoon* from the blood of a hawk, a new parasite of a snake, and a trypanosome of frogs. In the discussion that followed the PRESIDENT (Sir Patrick Manson) spoke of the treatment of trypanosomiasis in Europeans by atoxyl. Several cases under his care undergoing this treatment were doing very well, and he founded great hopes on this method. Just as mercury was given in syphilis, so should atoxyl be administered in trypanosomiasis—namely, in small doses for prolonged periods. One case so treated was now free from fever, his blood did not infect when inoculated into animals, and he was apparently cured.

BRITISH GYNAECOLOGICAL SOCIETY.—At a meeting on July 11th, Mr. W. D. SPANTON, President, in the chair, Dr. J. HUTCHINSON SWANTON showed a *Fibromyoma of the vagina* removed from a widow aged 40, with a history of five pregnancies and four abortions, the last being five years previously. The clinical history was one of endometritis. The tumour was discovered in routine examination high up on the anterior wall, and presented no symptoms. Removal was recommended, as it had increased in size recently. It was found to be a pedunculated fibromyoma three-quarters by one-third of an inch. In the discussion which followed, Dr. MACNAUGHTON-JONES said such tumours were comparatively rare. It was important to know whether they became degenerated or malignant. They were sometimes sarcomatous. Professor J. W. TAYLOR had met with similar growths four times, one of them, although histologically a simple myoma, recurred three times after removal. Dr. SWANTON also showed a *Cystic adeno-carcinoma* of the ovaries and vermiform appendix; it had been removed from a patient aged 69, and originated in cystic growths. The PRESIDENT said that growths arising in such a manner often proved extremely malignant. Dr. A. E. GILES said that, in the absence of free fluid, carcinoma of the ovary was not often directly diagnosed. Dr. MACNAUGHTON-JONES considered

that the prognosis depended upon whether the carcinomatous fluid escaped into the peritoneum or otherwise.—Dr. MACNAUGHTON-JONES showed a large *Myoma* removed from an unmarried patient, aged 32, who complained of menorrhagia and secondary anaemia. The growth was encapsuled in peritoneum, and arose from the right side of the uterine body and cervix, burrowing under the peritoneum. Another peculiarity was the presence of a lymphatic sac, which seemed like the dilated and thinned-out body of the uterus undergoing degeneration. Both ovaries were removed, as they were cystic and had degenerated. Professor TAYLOR thought the cavity might be accounted for by separation of layers of the peritoneum. The PRESIDENT considered the condition might be the result of peritonitis. — Dr. J. HUTCHINSON SWANTON showed a *Cyst of the clitoris* removed from a patient, aged 20. The contents were blood, pus, and sebaceous matter. Its presence had been observed for three months, the patient believing it to be due to a blow. This being the last meeting of the Society previous to its amalgamation with the Royal Society of Medicine, the PRESIDENT then delivered a valedictory address. In this he expressed a hope that the power of this great Society would act as an incentive to closer observation and improved scientific methods. He hoped that provincial members would play as active a part in the future of the new Section of Gynaecology as they had in the old Society. Of the work accomplished by the latter in its twenty years' existence he gave an interesting summary. The first specimen shown was a multiple uterine myoma removed by hysterectomy. The criticism the case met with was that which would be still made, namely, that to extirpate a tumour which gave little or no trouble, and simply because it was a tumour, was an action which a surgeon ought to decline. In concluding his address, he moved votes of thanks to those who had assisted in bringing about the amalgamation. The meeting also unanimously agreed: "That we desire to record our appreciation of the courtesy and cordiality with which the Obstetrical Society of London united with our Society in their arrangements for amalgamation." The last act was the formal signature of the minutes by the President.

ERRATUM.—In the report of the scientific proceedings of the Ulster Branch, published in the JOURNAL of July 13th, p. 85, line 22 from the top of the right-hand column, the words, "The pulse was regular if high; tension rate 24," in the abstract of a paper on a case of heart-block by Dr. J. L. Rentoul, should be, "The pulse was regular, of high tension; rate 24."

THE Therapeutical Section of the Royal Society of Medicine paid a visit to Oxford on July 6th, the expedition being one which had been arranged before the dissolution of the Therapeutical Society. The visitors having first been received at Queen's College by Sir W. T. Thiselton-Dyer, the first president of the old Society, proceeded to the Museum, where, after having been shown over the library by Professor Osler, they visited the various laboratories. In one of these Professor Gotch explained some of his more recent investigations into the mechanism of the movements of the heart, and demonstrated a method, depending on the different focal lengths of red and violet rays, of determining the near point in the vision of any individual. Dr. Ramsden, in the same laboratory, showed some interesting experiments regarding the separation of solids in the surface-layers of solutions and suspensions. In the anatomical rooms Professor Arthur Thomson showed, amongst other specimens, a dissection of a calf's heart displaying the auriculo-ventricular bundles of His. Specimens were exhibited, and Dr. Gibson gave, in the pathological laboratories, a demonstration of Jaquet's polegraph (modified). After luncheon at Queen's College the visitors inspected the Botanical Gardens and other places, finally assembling at a garden party at Professor Osler's house. At this Professor Osler showed some of the more interesting books in his collection. In the evening the visitors dined at Queen's College, the health of the President of the Section, Dr. Burton Brown, being proposed by Sir James Sawyer. The expedition was arranged by Dr. Cecil Wall, who acted cicerone to the party throughout, and rendered it a great success.

THE annual meeting of the Caledonian Medical Society will be held at the Royal Eye Hospital, Bradford, on Thursday, July 25th, under the Presidency of Dr. Andrew Little, of Bradford. The annual dinner will take place on the same evening in the Midland Hotel, Bradford.

REVIEWS.

"THE OXFORD MEDICAL PUBLICATIONS."

AMONG the earliest volumes of the Oxford medical publications issued under the supervision of Dr. J. Keogh Murphy by the firms of H. Frowde and Hodder and Stoughton, is the fifth edition of Dr. SAMUEL GEE'S clinical work, *Auscultation and Percussion*.[1] The book, Dr. Gee tells us in a short preface, is a record of the methods, facts, and doctrines which he has for many years found useful in the practice of his profession, and it is true also that the facts as lucidly stated by Dr. Gee in this book, have been useful to many others who can begin to look back upon many years of practice in the profession. The book is too well known to call for an elaborate review. Its great merits are accuracy, brevity, and the pains which, as Dr. Gee truly says, he has taken to use technical words in their proper and original meaning, to pervert the sense of no word clearly defined, and to introduce no new words to denote signs already well denominated. It would be well if writers in other departments of clinical medicine would follow Dr. Gee's example. In the preface he expresses his acknowledgements for the help he has received in the preparation of this edition from Dr. T. J. Horder.

In the same series we have a second edition of *Medical Lectures and Clinical Aphorisms* by the same author[2]—it appears to be, in fact, a reprint of the previous edition, reviewed in our columns in October, 1902. The first part of the volume is as well worth reading through now as it was five years ago, and the aphorisms in the second part as well worth conning.

Another volume in the same series, that on *Cancer of the Womb*, by Dr. F. J. MCCANN[3] is a new work, and will be read with interest as a well-prepared summary of the author's investigations. There is much merit in the illustrations, which are nearly all original and for the most part photographs taken from specimens and sections. The superiority of such illustrations as "true and lively portraitures" is evident if we compare Plate 40 with Plate 2, the latter being one of the exceptions, photographed from a drawing. The photomicrographs also represent microscopic appearances with accuracy, being free from the suspiciously regular wall-paper pattern appearance familiar to us in the pages of several recent foreign publications. In the chapter on etiology Dr. McCann appears more than sceptical about the relationship of laceration of the cervix to cancer. He reminds us how many women pass through bad labours complicated by these lacerations and subsequent chronic inflammatory disease, yet remain free from cancer. The best and most original chapter in the book is the third, which is entitled, "Cancer of the Neck and Body of the Womb." The author limits the varieties of carcinoma of the cervix and body to three—the papillomatous, the infiltrating, and the superficial flattened types, rejecting unscientific subdivision which makes distinct varieties out of purely secondary conditions, especially ulceration and sepsis. This chapter is a clear, systematic demonstration of its subject based on the author's own clinical experience, and rendered particularly lucid by the good quality of the illustrations, to which we have already referred. The cases described in this chapter as illustrating the different types of uterine cancer are given in abstract, with many others out of Dr. McCann's practice, in a separate chapter towards the end of the book. He declares that he has conscientiously attempted to treat by a radical operation every case in which there was a prospect of cure or of relief for a lengthened period—a principle

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[1] *Auscultation and Percussion.* By S. Gee, M.D. Fifth edition. London: Henry Frowde and Hodder and Stoughton. (Cr. 8vo, pp. 343. 5s.)

[2] *Medical Lectures and Clinical Aphorisms.* By Samuel Gee, M.D. Second edition. London: H. Frowde and Hodder and Stoughton. 1907. (Crown 8vo, pp. 314. 5s.)

[3] *Cancer of the Womb; its Symptoms, Diagnosis, Prognosis, and Treatment.* By Frederick John McCann, M.D.Edin., F.R.C.S.Eng., M.R.C.P.Lond., Physician to In-Patients, Samaritan Free Hospital, London; Lecturer on Gynaecology, Medical Graduates' College and Polyclinic, London; Honorary President, Section of Obstetrics and Gynaecology, Fifteenth International Medical Congress, Lisbon, 1906. London: Henry Frowde and Hodder and Stoughton. (Royal 8vo, pp. 182, 46 plates. 20s.)

of treatment fully justified by results in several unpromising cases. He now more frequently performs the abdominal operation than he did a year or two ago, and intends to publish his results at a later date. Like all British operators, he finds that the tracing of former patients in this country is attended with difficulties which in many cases cannot be overcome. He does not approve the practice of scraping and cauterizing before vaginal hysterectomy, as he believes that it may favour the spread of septic infection and disseminate the cancer. He rightly teaches the reader to be careful to free the bladder from its lateral attachments before dividing the tissues which unite it to the cervix, as by that practice damage to the ureters is the more surely avoided. Dr. McCann brings down and turns out the fundus uteri before severing the womb from its lateral connexions above the level of the os internum. He concludes by giving the statistics of results as published by numerous living authorities, without much comment, admitting that recurrence of the disease is only too frequent. Percentages of operable cases are unreliable, as individual operators differ about indications for and against operations. He allows the five years limit, although he reminds us that recurrence has in a few cases been recorded after that space of time. Dr. Herbert Spencer, in his inaugural address given last March before the Obstetrical Society of London, now of green and pious memory, noted some sources of fallacy as to recurrence too often overlooked. Thus, had certain deaths from operation and from "other causes" not occurred, recurrence might or might not have followed, but that matter must remain absolutely out of our calculation. Dr. McCann furnishes the reader with a full account of abdominal hysterectomy as he performs it, but relegates to a later chapter "the extended abdominal operation," as he terms it. In that chapter he quotes Wertheim's minute, yet clear, description of his method of extirpating uterine cancer, as given at the Leicester meeting of the Association in 1905, and published, with illustrations, in the BRITISH MEDICAL JOURNAL, vol. ii, 1905, p. 689. Dr. McCann considers that further experience of the results of Wertheim's hysterectomy is needed before a final verdict can be given, and objects to the extensive "dissection operations" advocated by some Continental and American authorities on the strength of false analogies between uterine and mammary cancer. It is impossible to clear away all the glands and lymphatics surrounding the abdominal aorta. Dr. McCann points out in his anatomical introduction how difficult it must be to remove enlarged and inflamed glands adherent to the walls of big veins, especially near the bifurcation of the common iliac vessels. He speaks, however, of the necessity for the removal of glands in that region as a routine measure in the description of his own operations. After all, however, as he says, this glandular infection is a late sign in uterine cancer, so that, when present, operation is not rarely contraindicated for other reasons. The merit of Wertheim's method lies not in his extensive dissections above the pelvic brim, but in his free removal of the parametrium and the excision of the upper part of the vagina. Dr. McCann states, in italics, that the upper half of that canal should be removed in all operations for cancer of the cervix, whether by the vaginal or the abdominal routes. In speaking of the local treatment of inoperable cancer, Dr. McCann insists that those portions of the growth which are beyond the reach of the sharp spoon must be destroyed, as far as is safe, by the cautery, and that all haemorrhage set up by the scraping must be arrested. The old cautery irons are, in his opinion, preferable to Paquelin's instrument. Opium, according to Dr. McCann, remains the most satisfactory drug for the relief of pain. Two good and well-illustrated chapters are devoted to sarcoma and to deciduoma malignum. He gives a report of his classical case, where malignant deciduoma developed eighteen months after the menopause, as well as two others in his practice, all being of different histological varieties. He considers that there is still a great deal of mystery about the subject, and we must agree with him in his opinion that if we are ever to solve the many important problems connected with deciduoma, it will be by the analysis of careful and accurate records of cases, keeping out of view all preconceived theories of causation. Although the Saxon word "womb" is preferred to the Latin word "uterus" in the title of his treatise, Dr. McCann, like Dr. Beatson, objects to the German practice of instructing the general public in the early signs and symptoms of cancer by the free distribution of leaflets which, in the author's opinion, can only give rise to much mental disturbance. On the other hand, he believes that much good might be done by the supply of such leaflets to midwives and district nurses. An elementary knowledge of the signs and symptoms of uterine cancer would enable them to advise women to submit to a timely pelvic examination.

Mr. PERCY SARGENT'S book on *Surgical Emergencies*,[4] another volume in the same series, though written by an experienced and practical surgeon, certainly capable of giving efficient instruction, fails to fulfil the conditions of a very favourable review. It is difficult to make out the precise object of this manual and the class of professional readers for which it is intended. The author himself seems to be in some doubt as to the scope of his book, which in the preface is assumed to afford explicit directions on active surgical treatment, and, at the same time, is regarded as being rather of the nature of an essay based on his hospital experience. The subject of surgical emergencies and their treatment is too large to be satisfactorily dealt with in so small a volume as this, which, as is candidly acknowledged, lays no claim to completeness. To the expert it cannot be of much use, and by the young surgeon with but slight experience it will be found too condensed and incomplete. The teaching, though good and sound, has really no special character, and differs in no essential points from that given in the best textbooks of general surgery. Mr. Sargent writes for those who have every surgical appliance at hand, and fails to give any instruction as to the best method of overcoming the many difficulties with regard both to prompt action and aseptic dealing that are likely to occur outside hospital walls in the treatment of emergencies. The absence of illustrations, which form so useful an element in the well-known treatise of Lejars, is clearly a serious failing in a work of this kind.

TEXTBOOKS OF MIDWIFERY.

THIS book, *The Puerperium*,[5] is written by a young physician whose qualification for his task is the experience gained in the appointments specified on the title page. Its modest aim, as stated in the preface, is to help the young general practitioner and the midwife. It is divided into two parts, the first part, of 170 pages, being given to the mother, the second part to the infant. It is written in an easy colloquial style, occasionally enlivened by metaphors and *obiter dicta*. As a sample we may quote the following: When the monthly nurse leaves the house "the care of the infant devolves as a rule upon a young maidservant, who may have picked up a smattering of algebra and French at a Board school, but is totally ignorant of the methods of bringing up a baby." The implication is very sensible, and may it prevail. The directions given for the conduct of the normal puerperium are excellent. The weakness of the book arises from the very perfection of the conditions in which the author has learnt his business. Antisepsis has been so well carried out in Queen Charlotte's Hospital that Dr. Longridge has seen little of puerperal diseases, and therefore does not write from observation on such subjects. Speaking on septic disease, he says: "It can be stated that a healthy, well-fed country woman is less likely to suffer than an anaemic, half-starved, gin-drinking slum dweller." Those who are old enough to remember surgery before the days of antiseptics will recall that the physical condition of the patient made no difference whatever to his or her chance of septic infection. How many of the young women who come to have their babies in Queen Charlotte's Hospital deserve the epithets "half-starved, gin-drinking"? Dr. Longridge is here stating what he imagines to be the facts,

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[4] *Surgical Emergencies.* By Percy Sargent, M.B Cantab., F.R.C.S.Eng., Assistant Surgeon, St. Thomas's Hospital, the National Hospital for the Paralysed and Epileptic, Queen Square, and Victoria Hospital for Children, Chelsea. London: Henry Frowde, Oxford University Press, and Hodder and Stoughton. 1907. (Crown 8vo, pp. 256. 5s.)

[5] *The Puerperium, or the Management of the Lying-in Woman and Newborn Infant.* By C. Nepean Longridge, M.D.Vict., F.R.C.S.Eng., M.R.C.P.Lond., Pathologist and Registrar, late Resident Medical Officer at Queen Charlotte's Lying-in Hospital. London: Adlard and Son. 1906. (Cr. 8vo, pp. 272. 5s.)

not what he knows. "The infant is as potter's clay delivered into the hands of a good nurse, who, by a little patience and care, can lay the foundations of a regularity of function lasting *for a lifetime*." (The italics are ours.) Is not this rather a flight of imagination? "Barley water is best prepared from Robinson's patent barley" (p. 228). Has the author so carefully examined samples of barley from different dealers that he is sure that Robinson's is different from, and superior to, any other? At page 184 we notice what seems to us an inadvertence. The author advises washing the eyelids with 1 in 1,000 corrosive sublimate and dropping the 2 per cent. solution of silver nitrate on to the conjunctiva (to prevent ophthalmia), and then he says: "Many prefer to use perchloride of mercury instead of the silver nitrate, claiming that no reaction is set up. The results are just as satisfactory with this antiseptic." The author should have stated that the sublimate solution which has given such good results is a *1 per cent.*, not 1 in 1,000. Perhaps we have given too much space to noting slight slips. The book as a whole is a good one, and gives promise of better work. We hope its reception may be such as to encourage the author and stimulate him to more ambitious original work.

The Practice of Obstetrics,[6] by Dr. R. P. PETERSON, is so weighty a volume that the student will not be tempted to lounge in his easy chair while he is reading it. He must sit at a table if he is to study this solid work. It is characteristically American. It is written by ten different authors; and the function of the editor appears to have been limited to the selection of these gentlemen and the writing of the preface. In it he says: "As it was impossible in a volume of this kind to include a complete bibliography, it was deemed best to dispense with such references." We know not why it was impossible in so ponderous a volume to give bibliographies; but we do know that when a man is set free to write without giving references, the temptation is great to write without referring to the original sources of information. This is what the authors have done: they have written *currente calamo*, without much acquaintance with any literature except the most recent American. The section on "labour complicated with anomalies of bony pelvis" is for this reason exceedingly poor. Thus we read: "Preliminary to descent one or the other parietal eminence sinks into the pelvis. It is a debated question as to which eminence sinks first. According to the French authorities (Tarnier and Varnier) it is the posterior; according to the German authorities (Litzman) [*sic*] it is the anterior parietal eminence." The author cannot have read the "authorities" he professes to quote. If he had done so, he would know that there was no "debate" between these authors, for they describe entirely different things. Varnier pointed out and demonstrated that the head of a small child entering a normal pelvis often does so with the posterior parietal bone slightly in advance. Litzmann described how the head of an average-sized child entered a flat pelvis with the head tilted so that the anterior parietal bone is in advance. As the author goes on to say that "it is impossible to accurately describe the varieties of descent of the presenting part in all species of contracted pelves, because the details of such mechanisms are not known," it is clear that he has not only not read Litzmann, but is not acquainted with the most recent English books on the subject. The whole of this section is not up to the standard of the English Conjoint Board examination. In the section dealing with "the complications of pregnancy" we find an astonishing recommendation. In incarceration of the gravid uterus we are told, "In extreme cases it is impossible to introduce the catheter and the bladder must be punctured. This is done by inserting a trocar just above the symphysis or by means of a vaginal incision. The latter procedure is given preference by the majority of obstetricians." We do not know of any London teacher who recommends that, in retention of urine caused by a retroverted gravid uterus, the practitioner should cut into the bladder from the vagina. The general opinion here is that a competent man using his eyes, a light, and a male catheter can always pass it in this condition; and most know also—what American obstetricians seem unaware of—that if the patient is kept recumbent, and the catheter passed every six hours, the uterus will almost always spontaneously right itself. The chapter on the mechanism of labour shows that the author has either not read or not digested the best obstetrical literature. A drawing is given of a fetal skull, with lines ruled across it to indicate the obstetrically important diameters. Two of these are marked "occipito-frontal," and neither of them corresponds to the definition of the occipito-frontal diameter given in the text. The most important of all the measurements in the sagittal plane—the suboccipito-frontal—that is, the measurement from the nape of the neck to the most distant point of the frontal suture, the one upon which the amount of stretching of the perineum depends, is neither figured nor described. The writer can find no better explanation of the frequency with which the fetus lies with its back in front than that in 75 per cent. of cases the placenta is implanted on the posterior wall. No authority is given for the statement, and if it were so the cause seems inadequate. The researches into the site of the placenta with which we are acquainted, those of Gusserow (188 cases), Bidder (139 cases), and Schrader (73 cases), show nothing like 75 per cent. of implantation on the posterior wall. The projection forward of the lumbar spine is surely a better explanation, and has been given as the sufficient reason in most modern English textbooks. There is no analysis of the different effects of uterine contraction at different stages of labour, no differentiation between retraction and contraction; indeed, the word "retraction" is not to be found in the index. We find no account of prolapse of the cord, a condition of some clinical importance, and from this omission we infer that the editor's work has been of an almost nominal character. In short, looking at this book from an academical point of view, it is a very imperfect one. There is, however, one thing that we can commend, and that is the wealth of illustration. Many of the pictures are photographs, made expressly for this work; some are diagrams which have done duty many times before. The section on the physiology and development of the ovum is distinctly good, as well as being well illustrated. A system of obstetrics written by men who are not acquainted with the obstetrical classics cannot but be imperfect.

[6] *The Practitioner's Library: The Practice of Obstetrics*, in original contributions by American authors. Edited by Reuben Peterson, A.B., M.D., Professor of Obstetrics and Gynecology in the University of Michigan, Ann Arbor, Mich.; Obstetrician and Gynecologist-in-Chief to the University of Michigan Hospital. London: Henry Kimpton. 1907. Roy. 8vo, pp. 1087 523 engravings, 30 full-page plates. 31s. 6d.)

INDIA.

A THIRD edition of the late Sir W. W. HUNTER'S *magnum opus*[7] is in course of publication. The first edition of *The Imperial Gazetteer of India* was published in nine volumes in 1881 and the second in fourteen volumes in 1885–7. The article on India was in 1893 separately issued in enlarged form under the title of *The Indian Empire; its Peoples, History and Products*. The present edition, based on the census of 1901, has grown into twenty-six volumes, of which the first four consist of the expanded *Indian Empire*, an atlas constitutes a fifth volume, and the remaining twenty-one are the gazetteer proper. The whole has been thoroughly revised and largely rewritten under the direction of Sir Herbert Risley, Messrs. W. S. Meyer and R. Burn in India, and of Mr. J. S. Cotton in this country. The four volumes of the *Indian Empire* are denominated "Descriptive," "Historical," "Economic," and "Administrative." The several chapters are written by authors specially selected on account of their knowledge of the subject matter. We have received vols. i and iv.

Vol. i—descriptive—contains chapters on the physical aspects, geology, meteorology, botany, zoology, ethnology and castes, languages, religions, population, public health and vital statistics of the Indian Empire, written by competent and well-known authors, and presenting an admirable general view of the anatomy of the empire. The chapter on Public Health and Vital Statistics is written by Lieutenant-Colonel A. E. Roberts of the Indian Medical Service. It sets forth the various influences—geographical, meteorological, economic, social, and domestic—conditioning public health, and the outcome

[7] *The Imperial Gazetteer of India*: published under the authority of His Majesty's Secretary of State for India. London: the Clarendon Press. 1907. Twenty-six vols. (Demy 8vo. Price, £5 cloth, or £6 6s. with morocco back.)

of these conditions as manifested by the vital statistics of the populations and the prevalence of infective and epidemic diseases. It is a very readable and instructive article, and gives evidence of reduced sickness and mortality in communities—soldiers and prisoners—of whom accurate statistics are available since the commencement of what he calls the "sanitary era."

Vol. iv—administrative—contains chapters on the government of India, administrative divisions, the native States, foreign relations, legislation and justice, finance, land revenue, miscellaneous revenue, local and municipal government, public works' organization, army, police and gaols, education, medical administration, hospitals and sanitation, surveys, and currency and banking. To pursue the metaphor, these chapters portray the physiology of the empire, and are profoundly interesting. The chapter on medical administration, hospitals, and sanitation, written by Mr. R. Nathan, C.I.E., gives a summary description of the arrangements obtaining for purposes of the prevention and treatment of disease, including laboratories and vaccination. As illustrative of progress in medical relief measures a table is given showing that in 1880 there existed 1,212 institutions, in which 7,409,000 patients were treated and 372,219 surgical operations were performed, whereas in 1902 there were 3,442 institutions in which 26,600,000 patients were treated and 895,226 operations done. The paragraph on medical colleges and schools in the chapter on education is very sketchy, and might have been expanded with advantage. On the whole these volumes, to each of which a carefully compiled index is appended, furnish a most excellent account of the India of the present day, and it is evident that no pains have been spared in rendering most of them as exhaustive and accurate as possible.

SANITARY SCIENCE IN BAHIA.

In a comprehensive monograph[8] Dr. Pereira, who is evidently not a little proud of the fact that Salvador—the official name of the capital that we call Bahia—is not only the healthiest city in South America, but one of the healthiest in the world, begins with a short summary of the climate and population of the place, and after a comparison of its general mortality with that of other large cities, passes on to a rather full description of the sanitary service of which he is the Director. He then treats seriatim of the various infectious diseases of the city, and discusses the question of marine sanitation and disinfection, lamenting the deplorable inadequacy of the methods in the other Brazilian ports. From the abundant tables of statistics provided by Dr. Pereira we learn that Bahia had a mortality of only 14 52 in 1905, a somewhat different figure from the 77.1 of Natal, the capital of Rio Grande. The low mortality is no doubt in great measure due to the careful organization of the Sanitary Boards. Notice is compulsory in the case of the following diseases—cholera, plague, small-pox, tuberculosis, typhoid, diphtheria, dysentery, and (when occurring in schools or public establishments) measles and scarlet fever. Though not compulsory, notification is also strongly recommended in puerperal fever, erysipelas, lepra, malarial fever, beri-beri, and ophthalmia neonatorum. The regulations as to schools and colleges are very stringent, especially as to the interdiction of dry sweeping, which with us, unfortunately, seems a rule rather than an exception, the use of tea-leaves having long ago disappeared with the old-time servant.

The public conveyances are under strict rules as to cleanliness, and all expectoration is forbidden. Cholera reached Brazil for the first time in the year 1855, when it killed 170,000 persons, but it has not occurred for many years. Yellow fever was certainly known as far back as 1686, when it was called the *pestilencia da bicha*. It has occurred in many small epidemics, but has never been an endemic disease, and there have been no cases since 1901. Vaccination and revaccination are compulsory, but gratuitous. There are a large number of statistical tables in the book, which leaves us with the impression that sanitary matters are well attended to in Bahia, and that the *molestias infectuosas* of which Dr. Pereira writes are by no means permitted a fair field.

[8] *As Molestias Infectuosas na Bahia e sua Prophylaxia Official.* Dr. A. Pereira, Director do Serviço Sanitario do Estado da Bahia. Typ. Bahiana. (8vo, pp. 144.)

NOTES ON BOOKS.

In publishing its *Matriculation Directory*,[9] the University Correspondence Press, after commenting *inter alia* on the unreasonable length and unsatisfactory nature of the French paper, and on the puzzling character of the last question set in mathematics, criticizes the examiners in history for setting questions unsuitable for matriculants, because they demand at once a good knowledge of history, time for reflection, and the power of rapid expression.

The *Handbook of Clinical Microscopy and Chemistry*, by Professor Dr. H. Lenhartz, reviewed in this Journal on October 8th, 1904, has reached its fifth edition,[10] a fact which confirms the favourable opinion expressed nearly three years ago. Professor Lenhartz, in a preface to this edition, states that the whole book has been subjected to careful revision, and that new articles have been introduced dealing with the staining methods for blood and bacteria, with cyto-diagnosis, with the *Spirochaeta pallida*, with trypanosomes, and with some other subjects. He expresses his thanks to Dr. Otten, his assistant at the Eppendorfer Hospital, for his help in preparing this edition.

Since our first mention of the publication of *Birds of the British Islands*,[11] by Mr. Charles Stonham, C.M.G., F.R.C.S., three additional parts—IV, V, and VI—have been issued. In them are included, among other birds, the wagtails, the swallows and allies, some of the finches, the sparrows, the buntings, the starlings, the chough, jay, and magpie. The high standard of excellence set in the first parts has been maintained, and the illustrations by Lilian M. Medland are as good representations in black and white as can be desired. Their special merit is the characteristic attitude in which the bird is, as a rule, represented; the drawing of the red-backed shrike, the cock feeding a nestling, is particularly charming. Part IV, which completes the first volume, contains maps of the zoological areas of the world and of the British Isles, showing heights above sea level. Mr. Stonham's descriptions continue to be satisfactory both for the lover of birds and the specialist, and we may again mention the interest of his etymological notes.

A useful little pamphlet entitled, *Aids to the Identification of Rats Connected with Plague in India*,[12] by W. C. Hossack, M.D., has just been published by the Trustees of the Indian Museum. The rat plays so important a part in the spread of plague in India that some information as to the different species of those rodents is necessary, and this the pamphlet supplies. The important rats of India are seven in number, and those are fully described; in addition information is given concerning the measurement of rats, the preparation of skins, the preparation of skulls, the preservation of specimens, and on various diagnostic points. Throughout the pamphlet the author's endeavour has been to keep the language simple and free from technicalities, and this being so it should prove useful to laymen as well as to medical men. Those who wish further details are referred to a memoir by the same author on the "Rats of Calcutta," now being issued as part of the first volume of the *Memoirs of the Indian Museum*.

[9] *Matriculation Directory*, No. 46. June, 1907. Cambridge: University Tutorial Press. (Crown 8vo, pp. 146. 1s.)

[10] *Mikroskopie und Chemie am Krankenbett.* Von Professor Dr. H. Lenhartz. Fünfte Auflage. Berlin: J. Springer. 1907. (Demy 8vo, pp. 4.7. Tafeln IV. M. 9.)

[11] London: E. Grant Richards. 1907. (Doub. sup. roy. 8vo. 7s. 6d. each part.

[12] *Aids to the Identification of Rats Connected with Plague in India, with Suggestions as to the Collection of Specimens.* By W. C. Hossack, M.D., Plague Department, Calcutta. Published by the Trustees of the Indian Museum. Price, 8 annas. Printed at the Pioneer Press, Allahabad. 1907.

The Ninth French Congress of International Medicine will be held in Paris on October 17th, 18th and 19th. The subjects to be discussed are the treatment of simple gastric ulcer; the pathogenesis and treatment of Basedow's disease; and haemophilia.

The first Congress of Stomatology will be held in Paris from August 1st to 5th, under the presidency of Dr. Galippe, of Paris, and Dr. Revier, of Lille. Practitioners of all nationalities will be allowed to take part in the proceedings.

The Hygienic Exhibition which is to be held in connexion with the fourteenth International Congress of Hygiene at Berlin in September, will be under the auspices of the Cultus-Minister, the Imperial Health Bureau, and the Medical Departments of the Army and Navy, as well as leading representatives of hygienic science in general. The President is Professor Radner.

MEDICINAL AND DIETETIC PREPARATIONS.

Nutritive Liquid Peptone.

MESSRS. PARKE, DAVIS, AND CO. (111, Queen Victoria Street, E.C.) have submitted a sample of a preparation which they are issuing under the above name. This is stated to contain beef-peptone prepared by the action of the digestive ferment of the pineapple, together with extract of malt. It is a bright liquid, of pleasant, aromatic, sweet taste; heating causes no coagulation or precipitation. Analysis showed it to contain 0.3 per cent. of nitrogen, corresponding to 1.82 per cent. of proteid, 10.5 per cent. by volume of alcohol, and reducing sugars equivalent to 17.1 per cent. of maltose; diastase was shown to be present by its digestive action on gelatinized starch. This preparation is also made with the addition of creosote 1¼ min. and guaiacol ¾ min. in each fluid ounce; these additions are easily recognized by the taste, but do not render it unpalatable.

Quinine Acetyl-Salicylate.

Acetyl-salicylic acid having become established in use as preferable to salicylic acid in very many cases, its compounds may be expected to show corresponding advantages. The acetyl-salicylate of quinine, of which we have received a sample of the "Wellcome" brand from Messrs. BURROUGHS, WELLCOME, AND CO. (Snow Hill Buildings, E.C.), is a white, finely granular, crystalline powder, moderately soluble in cold water. In the dilute acid fluid of the stomach acetyl-salicylic acid is liberated, and salicylic acid is not formed until the alkaline contents of the intestine are reached. This compound will doubtless prove useful where the therapeutic effects of quinine and salicylic acid are required, without the gastric disturbance which may be caused by the latter if quinine salicylate is administered. The drug is also supplied in the form of tabloids under the name of "Xaxaquin"; samples of these which we examined disintegrated perfectly when placed in water.

Tunbridge Wells Water Biscuit.

We have received samples of the wafers, or water biscuits, prepared by Messrs. ROMARY under the above name. They differ from most biscuits in not possessing a brown exterior and whiter interior, but being homogeneous; a "crust" is, in fact, practically impossible, as the wafers are only of about the thickness of a sixpenny-piece; they are delicately flavoured, and will form an attractive and easily digested article of diet. Examination showed iron to be present, corresponding to the chalybeate nature of the Tunbridge Wells water.

"Thermasep" Thermometer Case.

An ingenious little contrivance for sterilizing the bulb of a clinical thermometer has been introduced by Mr. W. MARTINDALE (10, New Cavendish Street, W.). The "Thermasep" clinical case, as it is named, resembles the ordinary case of a clinical thermometer except that the bottom is an open grating, and on to the end fits a small extra chamber intended to contain paraform. As the latter substance slowly and steadily decomposes into its isomer formaldehyde, which passes in the form of vapour into the case, the bulb of the thermometer, as long as it is in the case, is continually exposed to this powerful antiseptic.

MEDICAL AND SURGICAL APPLIANCES.

Non-inflammable Flannelette.

THE many deaths from burning, especially of children, that have been due to standing by a fire when clad in flannelette, have abundantly shown the grave risks due to the highly inflammable nature of this material. But, in spite of the warnings of coroners, flannelette retains great popularity for night garments and underclothing, doubtless on account of its soft, warm feel and moderate price. An article which shall possess the good properties of flannelette without its dangerous combustibility is therefore a great desideratum, and such an article appears to have been found. The patentees of "Non-flam" flannelette (Aytoun Street, Manchester) have submitted samples of their product, and we have tested these with excellent results. A great part of the danger of the ordinary material is due to the soft woolly nap, which causes fire to traverse the entire surface with very great rapidity; in "Non-flam," however, the surface shows practically the same soft nap, and the material has also the soft, woolly feel of flannelette, but this rapid travelling of a fire does not occur. Pieces of this and of ordinary flannelette were thoroughly dried in an oven and then swung to and fro in the upper part of a gas flame; the ordinary flannelette ignited almost instantaneously, the flame at once travelling over the whole piece, which burnt fiercely and was quickly in ashes; the "Non-flam," on the other hand, although kept gently moving in the flame for some minutes, did not take fire; the portion actually in the flame slowly and quietly burnt to an ash, but without the flame spreading. If a piece was held stationary in the flame it was found possible to set it fairly alight, but it burned in a half-hearted manner and was readily extinguished. This invention deserves to be widely known, and will doubtless prevent many fatal accidents that might occur with the ordinary material.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

V.—OBESITY CURES.

(Continued from page 25.)

HUGHES AND HUGHES'S XL REDUCING PILLS.

SUPPLIED by Hughes and Hughes, York Grove, Brighton. Price 2s. 9d. per box, containing twenty-eight pills. This medicine is described, in a circular enclosed with the box, as

A remedy at once safe, speedy, and efficacious, and of marked value from the health point of view, as it combats the special ills to which the corpulent have a liability. It is very easy to take, the pills being tasteless, and does not necessarily oblige any special course of diet.

The directions are:

2 pills twice a day, after principal meals.

The pills are coated with French chalk, and coloured pink on the outside. After removal of the coating they have an average weight of 3 grains. Analysis showed them to contain a vegetable extract, powdered ginger, powdered liquorice, iron, potassium, phosphate, and iodide; in addition to the mineral constituents just named, the ash showed all the constituents of the ash of extract of bladderwrack; various other tests applied to the pills indicated this extract to be present, and failed to show any other ingredients. The quantities of the respective substances were determined as accurately as possible, and the formula found to be approximately:

Potassium iodide	0 15 grain
Iron phosphate	0.35 ,,
Powdered ginger	0.2 ,,
,, liquorice	0 1 ,,
Extract of *Fucus vesiculosus* ...	2.2 grains
In one pill.	

Estimated cost of ingredients (28 pills), 1¼d.

HUGHES AND HUGHES'S XL REDUCING LOTION.

For external use only, with the XL reducing pills. Supplied by Hughes and Hughes, York Grove, Brighton. Price 4s. 6d. per bottle, containing 2¼ fluid ounces.

Directions for Use.—To a little of the lotion add three or four times the amount of water (to a spoonful, three or four spoonfuls of water). The lotion is in a highly-concentrated form, and equals a bottle four times the size. The lotion should be applied night and morning, gently, without rubbing, by means of the hand, or a piece of rag, to the part desired. Any part that is abnormally enlarged can be so treated, except the face, to which it should not be applied. The XL lotion will not irritate the most delicate skin, but it should not be used when there is any scratch or abrasion.

Analysis showed the presence of chloride, bromide, and iodide of potassium, glycerine, and a small quantity of a resinous substance in combination with alkali. The amount of the last constituent is very small, the resinous substance only amounting to 0.08 per cent.; it is a somewhat bitter substance, with little colour, and showing no characteristic reactions or properties by which it could be identified. The proportions of the other ingredients were found to be:

Potassium iodide	9.7 grains
Potassium bromide	13.5 ,,
Potassium chloride	6.9 ,,
Glycerine	105 minims
Water	To 1 fluid ounce.

Estimated cost of ingredients (2¼ fluid ounces), three farthings.

* Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL: 1904, vol. ii, p. 1585; 1906, vol. ii, p. 27, p. 1645; 1907, vol. i, p. 213.

Nova et Vetera.

JEWISH PHYSICIANS AT THE ENGLISH COURT.

In the Middle Ages Jewish physicians were held to be in a special sense depositories of medical learning. So much was this the case that, notwithstanding the cruel persecutions to which the ordinary Hebrew was subjected by nearly all Christian rulers, Jews were chosen as physicians by many monarchs. Perhaps the most remarkable testimony to their reputation for skill in physic is found in the fact that many Popes chose Jewish doctors to minister to them. It may, indeed, be said that for several centuries the health of the Popes was entrusted to the keeping of Jewish doctors, who were expressly exempted from the penalties and disabilities which weighed on their countrymen and co-religionists. It seemed to be thought that there was something in their race that gave them "mystical lore" in the domain of physic. It is related that a King of France asked another potentate to send him his physician, who was a man of great reputation. The first thing the sick monarch did when the doctor presented himself at his bedside was to ask him if he was a Jew. On the man of art confessing that he was a Christian, the august patient forthwith dismissed him, as he would not trust his life to the ministrations of any doctor but one of the seed of Abraham.

At the English Court Jewish physicians do not seem to have been in such favour. It must be admitted that in this country the Jews were often treated with a savage brutality which compares unfavourably even with the treatment they received in other countries in the Middle Ages. It is true there is, so far as we are aware, no record of wholesale burnings such as we read of in French history under Philip the Fair, who is said to have purged his country of Semitic taint by disposing in this summary fashion of about eleven thousand of them on a charge—which has sometimes been brought on equally flimsy evidence even at the present day—of poisoning the wells. It is probable that the French King was moved to this wholesale massacre, not so much by a belief in the truth of the charge as by the financial instincts which inspired the English sovereign, who would, as Calverley says,

> Day by day extract a grinder
> From the howling Israelite.

We confess that we have not made any minute research on the point, but, speaking from a general impression, we recall only two Jews who held the responsible office of Physician at the English Court.

One of these was Ruy or Roderigo Lopez, who was Physician to Queen Elizabeth and who is believed by some authorities to be the original of Shylock. He was a Portuguese Jew, whose skill in medicine won for him the favour and patronage of Queen Elizabeth. He is said to have settled in London in 1559, and he was the Queen's Chief Physician for many years, till he suffered himself to be drawn into the whirlpool of politics, in which he found his doom. He held the office of Resident Physician at St. Bartholomew's Hospital between 1567 and 1675, and during that period various orders are recorded in the hospital journals for repairing his house and gardens, and to "board his parloure," in consideration for which he was to be "more painful" in his care for the poor. He received 40s. a year, which with his house and a certain allowance for "billetts and coales," were given him by way of salary. Among his colleagues at the hospital was the famous surgeon, William Clowes, who, in a work on Gunshot Wounds (1591), remarks that Lopez "showed himself to be both careful and very skilful, not only in his counsel in dieting, purging, and bleeding, but also for his direction of Arceus' apozema," a remedy which Lopez caused his assistants at St. Batholomew's to adopt. An "apozema," we know, was a decoction of various medicinal substances, but who was Arceus? Before 1569 Lopez had become a member of the College of Physicians, in the roll of which his name appears in the Latinized form "Lopus"; in 1569-70 he was selected to read the Anatomy Lecture at the College, but paid a fine to escape the duty.

FERNANDO MENDEZ, M.D.

He figures in the census of foreigners living in London in 1571, as a resident in the parish of St. Peter le Poer, and is described as "Dr. Lopus, a portingale, householder denizen," who "came into this realm about twelve years past to get his living by physic." He was accused of unprofessional practices; in 1571 the College ordered him to return a fee which he had received from a servant of Lord Burghley on undertaking to cure a swollen shin-bone. Nevertheless, he gained the confidence of influential patients like Sir Francis Walsingham and the Earl of Leicester, who probably introduced him to the Queen. Elizabeth granted him a monopoly for the importation of aniseed and sumach in England. In 1586, when he basked in the favour of the Court, he is referred to in comments on the chief doctors of the day, written by Gabriel Harvey, on his copy (now in the British Museum), of *In ivdaeorum Medicastrorum Calumnias et Homicidia pro Christianis pia exhortatio. . . . A Georgio Maria Vyrecceburgio Doctore Medico Marpurgi et aliis.* 1570. Of Lopez, Harvey writes that, though "descended of Jews" he was himself a Christian. "He is," Harvey continues, "none of the learnedest or expertest physitians in the Court, but one that maketh a great account of himself as the best, and by a kind of Jewish practis hath growen to much wealth and sum reputation as well with ye Queen herself as with sum of ye greatest Lordes and Ladyes." Lopez's attendance at Court soon brought him the acquaintance of the Earl of Essex, who thought to

make use of him to get political intelligence from Spain. The cautious physician refused the Earl's offer of employment, and communicated the negotiation to the Queen. He consented, however, to act as interpreter to Antonio Perez, a victim of persecution at the hands of Philip of Spain, whom Essex and his friends brought to England in 1590 in order to intensify the hostility of the English public to Spain. In the summer of 1593 Lopez divulged to Antonio and his friends some professional secrets "which did disparage to the Earl's honour." Lopez's ultimate conviction may, according to Mr. Sidney Lee (*Dictionary of National Biography*) be as fairly ascribed to political intrigue and religious prejudice as to the weight of evidence against him.

Lopez is said to have been offered 50,000 crowns to take a part in the Spanish plot to assassinate the Queen, and was so far compromised that he was imprisoned in the Tower in 1594, and tried at Guildhall before a Special Commission presided over by the Earl of Essex. He was condemned, and beheaded on June 7th in that year. Munk says he was hanged; at any rate, he was executed. In regard to his having supplied a model for Shylock, Martin Hume points out that the Earl of Essex, who was mainly instrumental in procuring his death, was his bitter enemy; anything, therefore, that presented a Jew like Lopez in an odious light would have pleased the Earl and his party. Lopez certainly figured in other plays soon after his death, as, for instance, in Marlowe's *Jew of Malta* and "Dr. Faustus," in Dekker's *Lady of Babylon*, and in Middleton's *Game at Chess*. The *Merchant of Venice* was first seen on the stage two months after Lopez's execution, when all the country was ringing with the news of the detested Jew's fate. It was matter of common knowledge that Lopez was a grasping, miserly man; it was believed that he was a poisoner by profession, and that he had only outwardly conformed to Christianity. It may be recalled that when Portia in the trial scene demands that Shylock shall become a Christian he makes no demur. Lopez, indeed, was fond of dwelling upon his Christianity, and constantly speaks in his letters to the Spanish agents of the "great remedy for Christendom" that is to be effected by his means. On the scaffold, even, he is said to have made a despairing reference to his love of Christ. Shakespeare may have had this in his mind when he put these words into the mouth of Antonio:

> The Devil can cite scripture for his purpose.
> An evil soul producing holy witness
> Is like a villain with a smiling cheek—
> A goodly apple rotten at the heart.

The other Jewish physician at the English Court was Fernando Mendez, who was born of Jewish parentage in the province of Beira, Portugal. He took the degree of Doctor of Medicine at the University of Montpellier in December, 1667, and became Physician to John IV of Portugal. When Catharine of Braganza was on her way to England to become the wife of Charles II, she was attacked during her journey through New Castile with erysipelas, and Mendez was sent to attend her. He gained such favour with the princess that she made him a member of her household, and desired him to accompany her to England, and settle there. Mendez reached this country on October 25th, 1669, and was appointed Physician-in-Ordinary to the Queen. He was one of the many physicians in regular attendance on Charles II during his last illness. By the charter of James II he was created a Fellow of the College of Physicians, and was admitted on April 12th, 1687; but on the accession of William and Mary his name was removed from the roll. Mendez died in London on November 15th, 1724. By his wife, Miss Marquer, he had a son, James (died 1739), and a daughter, Catharine (named after the Queen, who acted as godmother), born about 1678 in the royal palace of Somerset House. Mendez's only published work was his thesis for the degree of M.D., entitled, "Stadium Apollinare, sive Progymnasmata medica, ad Monspeliensis Apollinis Laurum Consequendam," Lyons, 1668. Prefixed is his portrait engraved by Nicolas Reguesson, for a photograph of which, here reproduced, we are indebted to the kindness of Mr. Herbert Sieveking. A letter in Portuguese from Dr. Mendez to John Mendez da Costa, dated 1663, is amongst the Additional MSS. in the British Museum.

So far we have followed the *Dictionary of National Biography*. In the *Jewish World* of May 24th, however, Mr Lucien Wolf gives a different account of Fernando Mendez. He complains that the *Jewish Encyclopaedia* does very scant justice to this eminent man, besides repeating the absurd stories about his early life which first appeared in Lindo's *History of the Jews of Spain and Portugal*, and were subsequently fathered by Dr. Gaster. Mendez, according to Mr. Wolf, was never Court Physician to King John IV. of Portugal, nor did he attend Catharine of Braganza when she came to England in 1662, nor did he have a brother named Andrea Mendez da Costa who was Court Chamberlain to the Queen, nor did he and his brother openly embrace Judaism on their arrival in this country. All this, he says, is fiction. Mendez was a young medical student at Leyden at the time of Catharine's marriage, and he did not set foot in this country until 1669. His appointment as Physician in Ordinary did not take place until some years later. Fernando Mendez, was, however, a very distinguished man. He attended Charles II on his deathbed, and was one of the signatories of the Royal Death Certificate. He was created a Fellow of the College of Physicians by the Charter of James II, and was admitted in 1687. He died in 1724, and left an immense fortune, chiefly derived from his business partnership with his cousin, Alvaro da Costa, the eminent banker and merchant.

It may be added that a grandson of Fernando Mendez, Moses Mendez, combined in himself the apparently incompatible characters of stockbroker and poet. He wrote songs, dramatic plays, and "musical entertainments," some of which were fairly successful. He was a friend of James Thomson, the author of *The Seasons*. He married Anne Gabrielle, daughter and coheiress of Sir Francis Head, Bart. His two sons, Francis and James Roper, were authorized to take the surname of Head. His grandson, Francis Bond Head, who was Lieutenant-Governor of Canada, and was well known in his day as an author by his *Rough Notes of Journeys in the Pampas and Andes* and other works, was created a baronet in 1838. He gave his name Bond Head to a place some fifty miles north of Toronto, where William Osler, now Regius Professor in the University of Oxford, was born in 1849. The fourth baronet succeeded his father, Sir Robert Head, who died a short time ago.

THE LONDON MATRICULATION AS A SCHOOL-LEAVING CERTIFICATE.

Ecce Iterum Crispinus!

It is the avowed intention of the University of London that its entrance examination should be taken by schoolboys without requiring any form of specialized training, and that it should fall into line with the ordinary school curriculum, and be taken merely as an incident in the course of routine school work. That this condition is not realized is abundantly proved by the fact that the schools find it necessary to establish a special matriculation form, that University College and King's College are compelled to provide courses for students who wish to enter the portals of the University, that the many coaching establishments which flourish in London, make their matriculation successes the main feature of the prospectuses they issue, and that the private tutor expects to make the half of his income out of the pupils who come to be specially prepared for this examination.

Now, quite apart from the eccentricity of individual examiners, which seems to have been somewhat checked in the matriculation papers set last June, the whole character of the syllabus is unsatisfactory as a school test. An illustration of this can be most suitably afforded by comparing the papers set by the Oxford and Cambridge Schools-leaving Certificate Board and those of the matriculation examiners. In the first place, the briefest inspection will show that, whereas the matriculation syllabus is vague and indefinite and has little relation with the work done in the schools, that of the Oxford and Cambridge Board is definite and precise in every subject and properly adapted to the needs of the schools.

Thus, in English, while the matriculation candidate has his "knowledge and command of English" tested by "questions in composition, *précis* writing, paraphrase, and analysis of sentences," and is expected to show a "knowledge of the most salient facts in English history and

geography," the Oxford and Cambridge Board content themselves with asking their candidates to write an essay on some simple subject, to write a *précis* of definite length, summarizing a portion of a set of Government dispatches or the like, and the reproduction of a story read out in the examination room. By salient facts in English history the examiners for the matriculation included last month "The rise and growth of Wessex," "The development of representative government in the thirteenth century," and "The conflict of the Church with the early Angevin Kings," and set these as subjects for an English essay. They asked for a *précis* of a philosophical passage from Coleridge. Among the syntactical comments the candidates were told to discuss the case of the words in italics in the following passage:

5 (1) Woe worth the *chase!* Woe worth the *day*
That cost thy life, my gallant grey!

They had to correct faults in the syntax or phraseology of

5 (4) No man inveigh against the withered flower,
But chide rough winter that the flower hath killed.

The Oxford and Cambridge Board asked candidates for their views as to the advantages or drawbacks of conscription; or to explain the value of the study of history, or to give the arguments by which it is proved that the earth is round, or to comment on the chief causes and results of the migration of the population of England from the country into the towns. The story to be summarized was an incident in the Armada taken from Motley's *United Netherlands*, while the *précis* dealt with the treaty negotiations with Thibet.

The mathematical papers do not lend themselves satisfactorily to detailed comparison, for the Oxford and Cambridge Board grade their questions according to the standard of knowledge professed by their candidates, while the matriculation authorities demand that all students should pass in the two papers set. The former method takes account of the facts of school organization, the latter does not.

From the Latin papers set it is clear that the Oxford and Cambridge Board considers that the grammatical knowledge of candidates is sufficiently tested by the rendering of English sentences and an English prose into Latin and by the translation of a couple of not too easy unseen passages from Latin into English. A few simple comments on the pieces set for translation are also asked. As examples of the sentences we may quote the following:

(3) He is so prudent that he never remains either at Capua or at Baiae.

(5) Fabius, by delaying, prevented the Poeni from getting possession of the city of Rome.

In the matriculation, however, questions are often set which are outside the scope of a Latin grammar as complete and as recognized as Kennedy's, while, in addition to the set sentences, which are often tricky, the candidate is asked (IV, 2) to give Latin sentences illustrating the use of quisquis, quis, quilibet, quisquam—a type of question to which the average boy is quite unable to give an adequate answer.

In the French examination a similar state of things exists. The Oxford and Cambridge Board tests the knowledge of the candidate by sentences and prose, and he is also asked to give a brief account in French of a narrative read out by the examiner during the course of the examination and to translate a number of unseens. The candidate's knowledge of oral French is ascertained by dictation, by viva-voce examination, and by his being required to himself read out a simple piece of French prose. The matriculation in this subject and in German is hopelessly out of touch with school methods. The examiners require evidence of practice in some form of phonetic script. They set their last question in French, and ask the candidate to rewrite a portion of the unseen passage, changing singular to plural, first person to third, and the like.

But it is in the natural science papers especially that the matriculation fails as a test of school work. Again and again has the importance of practical work been emphasized at the conferences held by teachers of science, and this side of school life has won ample recognition from the Oxford and Cambridge Board. The examiners of this body insist on the boys showing a competent knowledge of ordinary laboratory manipulation, simple problems being set to test their power in working with the apparatus, to whose use they should have been accustomed in their school routine. The syllabus includes the simple manipulation of the more elementary gases. The papers in chemistry and physics are an admirable example of what should be aimed at in school examinations. The matriculation examiners rest content with stating that a practical laboratory knowledge is insisted on, and attempt to test it by the papers which they set. Again, the Oxford and Cambridge Board ask their candidates in the theoretical paper questions such as

5. State Ohm's law.

Two battery cells are connected in turn with a galvanometer and give the same deflection. They are connected in series, and still give the same deflection, but in parallel they give a still larger deflection. What should you conclude from these observations?

On the other hand, the first question set in the paper for the matriculation is obscure, long-winded, and typical of the whole examination.

State the law of force between two magnetic poles.

Three thin bar magnets lie in the magnetic meridian, one of them suspended horizontally by a thread from its centre, while the other two are fixed horizontally, on a level with the former, at equal distances on either side of it, with their north-seeking poles opposite each other, and facing (*a*) north, (*b*) south. The equilibrium of the suspended magnet is found to be stable in one case but unstable in the other. Explain this, giving diagrams showing the forces acting upon the suspended needle in each case when it is deflected slightly from the meridian.

This and similar questions are all that the matriculation authorities can offer as a test of practical training in natural science—a series of questions which hardly succeed in testing whether the candidate has ever seen experiments performed, let alone whether he has ever done any for himself.

The few examples quoted are illustrative of the difference in character between these two examinations. At the matriculation, when knowledge of detail is asked for, it is the detail found in the small print of the recognized textbooks—the detail which should never be required of the elementary student. The other questions set aim at testing how far the examinees can argue from the knowledge which they possess to solve problems different in kind from those which they have hitherto encountered.

It is undeniable that the matriculation examiners thus aim at discovering the presence or absence of a most valuable quality, but their methods are apparently vitiated by ignorance of the elements of psychology. Practical schoolmasters have long realized that a boy's reasoning power is not developed, and in the case of many boys, is barely awakened, by the age of 16 or 17, whereas their powers of observation and their capacity for absorbing fact knowledge is greater then than at any other time in their lives. The whole system of school education is based on the appreciation of this very elementary truth. Nearly the whole teaching ability of the past has been poured into the classical textbooks which are at present in daily use in the schools. These textbooks go on the principle of laying down simple rules and then giving hosts of examples which depend on their application. Subtleties are avoided, and in the ideal textbook for boys every kind of instruction is reduced to a formal type. The schoolmaster has realized the limitations of the boy mind, and, for the most part empirically, has hit on the best method for training it.

Again, the teacher of experience has long been aware that it is useless, in teaching the average boy, to give him vague directions as to the work that is required. If a definite problem is set it forms an adequate and satisfactory test of his abilities. If the problem is indefinite, however, its nature is usually not appreciated, and the result is waste of time. It is from this standpoint that the matriculation is a menace to the efficient work of the schools. Not unnaturally, parents who wish their sons to follow up their school life by a career at the London University are influenced in the choice of a school by the successes obtained in the London matriculation. And so, under the sanction of success, the schoolmaster is forced to neglect educational methods which he knows to be the best, and to have a special matriculation form in which his ordinary boys are coached on scholarship lines. Examination conditions force him to teach his boys to run before they can walk, and the consequence is that examination polish takes the place of solid groundwork, and second-rate scholarship of that

preparation by which alone first-rate scholarship can be attained. The disorganization entailed in the process permeates the whole educational life of the school, and is largely responsible for the unsatisfactory condition in which boys enter the professions.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR THE YEAR 1906.*

THE work of the factory department of the Home Office goes on increasing year by year, and the trend of modern legislation is still further to extend rather than to diminish it. At the end of the year 1906 there were upon the registers 109,065 factories and 146,124 workshops, including laundries but excluding men's workshops, docks, warehouses, and domestic workshops, an increase of 3,377 over the previous year.

The number of persons employed in factories is 4,150,000, in workshops 700,000, and in laundries 100,000. There were 111,904 accidents, an increase of 11.2 per cent. as compared with 8.2 per cent. in 1905 and 0.4 in 1904. In fatal accidents there was an increase of 5.0 per cent., the total number being 1,116. The Notice of Accidents Act (1906), which came into force at the commencement of the present year will tend to simplify and extend the grounds for report. Lead poisoning increased from 592 cases in 1905 to 632 in 1906, and the deaths rose from 23 to 33. By the Workmen's Compensation Act (1906), which came into force this month, the scope of the earlier Acts of 1897 and 1900 is extended so as to include compensation, hitherto limited to accidents, to certain scheduled industries. The report of the Departmental Committee appointed to inquire into the industrial diseases that ought to be scheduled has already been noticed in the BRITISH MEDICAL JOURNAL.

WOMEN WORKERS.

In previous annual reports of the Principal Lady Inspector of Factories attention has been directed to the scanty provision of sanitary conveniences for women in factories. Very frequently these places are anything but sanitary. There is no slackening of the efforts on the part of the lady inspectors to bring about a more hygienic condition of things in this direction, and already good has followed. Attention is also being directed to keeping the walls, ceilings, and floors of factories and workrooms cleaner. We all know how disease lurks in the dust collected on the rafters of workshops; annual cleaning of workshops and workrooms, limewashing of walls, and better sweeping of floors are steps in the right direction, and especially so in confectionery works and places where articles of food are made. In such there should be not only personal cleanliness of the workers, but clean workrooms. It is in the remedying of defects and negligences such as these that the value of the work done by lady inspectors is apparent. In addition to cleanliness, ventilation of workrooms is important. Any escape of coal-gas ought at once to be attended to, since the continued inhalation of even small quantities of carbon monoxide during working hours is sufficient to lower the general health by causing anaemia and malnutrition. The importance of good ventilation cannot be too much insisted upon where large numbers of young women are engaged in millinery work, where the occupation is sedentary and the work long. In laundries there was a large increase in the number of accidents—301, as against 276 for 1905. As the increase affects women and girls more than men, it would seem as if some were due to the growing use of ironing machinery and the increasing employment of young, unskilled girls in operating and cleaning it. Four deaths are notified—2 from tetanus, the after-result of an accident; 1, a girl of 15, got a splinter under her nail; the other was a man who received injuries when helping to start an engine. The source of the tetanus in these cases is not stated by the lady inspector.

Another interesting point alluded to in this part of the report is the prevalence of lead poisoning in women employed in white lead works. Although forbidden by Home Office regulations to work in the white beds and stoving, the so-called dangerous processes, women are engaged in cleaning up and are allowed to wash the acid pots, towels, etc. Many of the women thus employed have become poisoned by lead. In 1906 there were reported in earthenware and china works 107 cases of lead poisoning as compared with 84 in 1905, a rise of 23 cases, of which four terminated fatally. Miss Vines attributes the rise in this industry to carelessness in the observance of special rules. Two other subsidiary factors are said to be (1) the extremely high temperatures constantly found in dipping and ware cleaning houses, due to their being used as drying rooms, and (2) the heavy strain imposed upon the women employed in lead processes in moving and lifting the heavy sanitary ware and the cleaning of dipping boards and dipping tubs. There is a want of cleanliness and an amount of untidiness in the earthenware and china works both in Staffordshire and Scotland which are but a reflex of the rough and unskilled women found in many of the factories, and among whom it would be difficult to find any willingness to co-operate in the carrying out of regulations. Allusion is made by the lady inspector to the flourishing condition of the cigarette trade. No definite apprenticeship is required, and as a consequence many of the female hands employed are young foreigners; some of them are Jewesses; most are unmarried. With flexible fingers a woman may turn out 1,500 to 2,000 hand-made cigarettes in a day. Machinery is fast supplanting hand labour in this industry. Some of the machines turn out 600 cigarettes a minute. In one factory alone, where forty-seven machines were in operation, 7¼ million cigarettes could be produced daily. The industry is not regarded by the lady inspectors as unhealthy.

ELECTRICAL WORKS.

The Electrical Inspector reports 191 non-fatal and 8 fatal accidents as occurring in factories, engineering works, etc. This is a considerable increase over the previous year, when only 122 electrical accidents were reported, as against 199—which is an increase of 60 per cent. The greatly-extended use of electricity is largely responsible for the increased number of accidents.

LEAD POISONING AND ANTHRAX.

The medical inspector draws attention to the increased number of cases of lead poisoning—namely, 632, as against 592 for the previous year. Fluctuations are no doubt to be expected in accordance with the varying activities of the industries. "Coach painting" is responsible for some of the increase, especially in moto-rcar works, and is the result of the sandpapering of successive coats of paint when dry. The need for the notification of cases of lead poisoning will probably be lessened by the inclusion of industrial plumbism among the diseases scheduled under the Compensation Act, but for statistical requirements it is essential that the notification should continue as heretofore. Among the cases of lead encephalopathy are included 3 of optic neuritis, all in women working as tile cleaners in the same factory. Printing is still responsible every year for a few cases of lead poisoning. The cause of the lead poisoning is not always ascertainable. It may be due to the fume from the casting-pot or lino melting-pot, or from the dust given off by the metal in the compositor's box. Anthrax figures largely as an industrial disease, there being 67 cases, with 22 deaths. This is the highest record since anthrax in 1896 became notifiable. Bradford contributed 14 cases; 7 of these assumed the internal form, in only 1 of which was there recovery after the use of Sclavo's serum.

The annual report for 1906 comes quite up to the level of its predecessors. It contains a large amount of valuable information, which, owing to the more amplified indices, is more readily accessible in this report than in those of former years. This, which is a step in the right direction, is one too frequently neglected in Blue Books.

* Wyman and Sons, Fetter Lane, London, E.C., price 3s. 2d.

THE French Surgical Association will hold its twentieth annual Congress in Paris on October 7th, under the presidency of Professor Paul Berger. The questions proposed for discussion are: (1) The influence of the x rays on malignant growths; (2) nervous, muscular, or tendinous transplantations in the treatment of paralyses; (3) chronic surgical affections (tuberculosis and cancer) in their relations with accidents to workmen. There will be an exposition of instruments, dressings, and electrical apparatus in connexion with the Congress.

Reports
ON
PLAGUE INVESTIGATIONS IN INDIA.

THE Advisory Committee, appointed by the Secretary of State for India, the Royal Society and the Lister Institute, acting in conjunction, to inquire into some of the problems concerning plague, has now presented a further report, which, like the first, is published as a special number of the *Journal of Hygiene*.[1] An analysis of the first report was published in the BRITISH MEDICAL JOURNAL of October 20th, 1906, p. 1045 *et seq.* The members of the Commission are:

George Lamb, M.D., Major, I.M.S., Director of the Pasteur Institute of India, Kasauli.
William Glen Liston, M.D., Captain, I.M.S., member of the staff of the Plague Research Laboratory, Parel.
George Ford Petrie, M.D., assistant bacteriologist, Lister Institute.
Sydney Rowland, M.A., M.R.C.S., L.R.C.P., assistant bacteriologist, Lister Institute.
Thomas Henry Gloster, M.B., B.Ch., Captain, I.M.S., late port health officer, Rangoon.
M. Kasava Pai, M.B., C.M., assistant surgeon; lent by the Government of Madras.
V. L. Manker, L.R.C.P., L.R.C.S., D.P.H.Camb.
P. S. Ramachandrier, first-class hospital assistant, Mysore Government; lent by the Government of Mysore.
C. R. Avari, hospital assistant; lent by the Government of Bombay.

The present report, like the first, contains the results of observations and experiments made in the laboratory. The results and the analysis of the extensive epidemiological observations of the Commission both in Bombay and in Punjab villages will appear in two future reports.

The second report contains the following papers:

XI.—THE DIAGNOSIS OF NATURAL RAT PLAGUE.

During sixteen months' work the Commission examined about 150,000 rats, of which 19,000 proved to be plague-infected. The *post-mortem* records of 4,000 of these plague rats have been carefully analysed. The authors consider that the most important naked-eye signs by which plague may be identified are the presence of a bubo (present in 85 per cent.), the presence of general subcutaneous congestion with haemorrhages both under the skin and in the organs, a "granular" liver in which the surface of the organ is dotted over with minute white or grey specks, and an abundant clear pleural effusion. The size and appearance of the spleen was found to be variable and of subsidiary diagnostic import. In the earlier part of the work great importance was attached to microscopical examination of smears of the blood and organs. Subsequent experience, however, coupled with experiments with inoculated and normal rats, carefully devised to test the skill of the examiners, convinced the authors that naked-eye examination by an experienced observer is more satisfactory for purposes of diagnosis than microscopical examination alone. Naturally, in isolated cases both methods must be employed, but the results clearly show that the omission of the routine microscopical examination of every rat in an investigation conducted on a large scale does not necessarily impair the accuracy of the work, while the saving of labour is, of course, very great. The bubo is shown to be the most important organ to examine microscopically. Thus, out of 1,000 plague-infected rats with buboes, plague bacilli were by microscopical examination found in the bubo of 991, in the spleen of 901, and in the heart-blood in only 375. The inoculation of suspected material upon the shaven abdomen of the guinea-pig has proved of the greatest value for diagnosis; the method appears to fail only in about 2 per cent. of fresh and about 10 per cent. of putrid rats. In this connexion the authors point out that the bacilli found in naturally-infected rats are fully virulent, 62 per cent. of the inoculated animals dying of acute plague in five days or less. No disease of the rat was met which caused any material difficulty in diagnosis.

[1] Cambridge: The University Press: London: Cambridge University Press Warehouse; and H. K. Lewis, Gower Street; New York: G. P. Putnam's Sons: Leipzig: Brockhaus: Bombay and Calcutta: Macmillan and Co. Price 6s. net.

XII.—THE SPLEEN AND LIVER IN SPONTANEOUS RAT PLAGUE.

The pathological history of the spleen and liver in spontaneous rat plague has been examined by Dr. Ledingham, of the Lister Institute, in material collected by the Commission in Bombay. In the spleen the incursion of bacillary swarms produces in the early stages extensive haemorrhages, congestion of the pulp sinuses, and perinodal areas of necrosis. In later cases definite abscess formation occurs, and is accompanied by extensive reaction on the part of the plasma cells, which form a barricade separating the lymphoid tissue of the node from the necrotic zone. The bacilli are very rarely found in the interior of the nodes, yet karyorrhexis of the nodal cells is frequently far advanced through a toxic action. In the liver, focal necroses may be so numerous that little healthy liver tissue remains. Bacilli are nearly always found in the central capillaries of these foci, and actual bacillary embolism was frequently noticed. In some cases no free bacilli were demonstrable, all the organisms having been taken up by endothelial cells, which appear to be largely responsible for the removal of the bacilli. The author also notes the occurrence of giant cells of Langhans's type in the neighbourhood of necrotic foci.

XIII.—TRANSMISSION OF PLAGUE BY FEEDING RATS WITH INFECTED MATERIAL.

During the last ten years in which plague has been experimentally investigated, much work has been done with the view of settling the questions (1) as to whether it was possible to produce the disease in animals by feeding; and (2) as to whether this method of transmission played an important part in the epizootic or epidemic spread of the disease. The Indian Plague Commission (1901) pointed out that while three workers in India—namely, Gibson, Hankin, and Simond—had failed to infect rats by means of feeding, both the German and Austrian Plague Commissions had been able to give the disease to animals by this method. Kolle (1901), Kister and Schumacher (1905), Berestneff (1906), and Klein (1906) also conveyed plague to rats by feeding them with infective material.

The experiments carried out by the present Commission may be briefly summarized as follows:

Four hundred and fifteen wild Bombay rats (*M. rattus* and *M. decumanus*) were given one meal, consisting of about one-eighth of the viscera of a rat or guinea-pig dead of acute plague; 16 per cent. died within five days of acute plague, and in all 21 per cent. were infected. In comparison with these animals, a series of rats (*M. rattus*) caught on ships in Bombay, and which presumably had not experienced any epidemic of plague, were fed in the same way, and 44 per cent. were infected. A further series of wild Bombay rats were fed on the whole carcasses of dead plague rats (that is, including bone and other hard material), and 38 per cent. were infected. Similar experiments were also made in the Punjab with *M. rattus*. Of 28 animals, which each received one-half of the liver and spleen of a plague rat, 19 (68 per cent.) died, all of acute plague, in five days.

The authors direct special attention to the *post-mortem* appearances of the rats thus infected by feeding. These differed markedly from those seen in naturally infected rats in that subcutaneous haemorrhages were uncommon, the intestines were congested with haemorrhages and ulceration of Peyer's patches, and three-quarters of the animals with bubos had mesenteric buboes, which do not occur in naturally-infected rats. These observations afford very strong evidence that rats in Nature are not infected by feeding, as has been often surmised.

The paper concludes with a record of experiments in which 194 rats were fed with urine from 35 cases of acute human plague; none of the animals became infected.

XIV.—ON THE SIGNIFICANCE OF THE LOCALIZATION OF THE PRIMARY BUBO IN ANIMALS INFECTED WITH PLAGUE IN NATURE.

Almost all observers are agreed in the opinion that the primary bubo develops in the glands in connexion with those lymphatics by way of which the plague bacillus has entered the body. Hunter (1904-6), on the other hand, holds that the primary bubo is merely an enlarge-

ment of a group of glands in the course of an acute septicaemic disease, and is no indication of the path by which infection has taken place.

In the present report experiments are detailed showing that the primary bubo develops in those groups of glands which are in direct lymphatic connexion with the skin area through which the plague bacillus gains an entrance into the body. Analysis of the records of a large number of animals infected naturally and in the laboratory gave the following results as to the localization of buboes: Of rats found infected with plague in nature in the plague season in Bombay, in the off-plague season in Bombay, and in the Punjab villages, 72, 72, and 57 per cent. had cervical buboes, and none had mesenteric buboes; three series of rats infected in the laboratory by the transmission of infected fleas showed cervical buboes in 67, 50, and 61 per cent., and no mesenteric buboes; while of rats infected by feeding only 36 per cent. showed cervical buboes, and 72 per cent. had mesenteric buboes. The following table summarizes these observations as shortly as possible:

Table Showing the Percentage Frequency of Buboes in Different Parts.

	Naturally Infected.	Infected by Fleas.	Infected by Feeding.
Rats examined ...	5,188	117	119
Rats without buboes ..	16 %	18 %	8 %
Cervical bubo	72	61	36
Axillary	23	22	1
Inguinal	18	25	1
Mesenteric...	0	0	72 5

The authors conclude, therefore, that naturally-infected rats are not infected by feeding, and that these results afford additional evidence that they are infected by the agency of fleas. A similar series of analyses shows that the distribution of buboes in guinea-pigs artificially infected by fleas is identical with the distribution in those animals which become infected in sequence to being placed for a few hours in plague-infected houses in Bombay.

XV.—TRANSMISSION OF PLAGUE BY FLEAS.

Further observations on the transmission of plague by fleas, with especial reference to the fate of the plague bacillus in the body of the rat flea (*P. cheopis*), are recorded. It was shown in the previous report that plague may be transferred from rat to rat by the transference of fleas from a septicaemic to a healthy animal. In the present communication the following questions are dealt with:

1. The fate of the plague bacillus in the body of the rat flea.
2. Whether a single rat flea can transmit the infection.
3. Whether both male and female rat fleas can transmit the infection.
4. Whether other species of fleas can transmit the infection.
5. The mechanism by which the flea infects a healthy animal.

The results of the investigation of these points may be summarized thus:

1. The average capacity of a rat flea's stomach is approximately 0.5 c.mm. On this basis a flea imbibing the blood of a plague rat showing a good septicaemia might take as many as 5,000 germs into its stomach.
2. Multiplication of the plague bacillus takes place in the stomach of the rat flea.
3. The approximate proportion of fleas in the stomach of which multiplication of plague bacilli takes place has been determined, and it has been shown that the proportion varies with the season of the year, being six times greater in the epidemic season than in the non-epidemic season.
4. Plague bacilli are present in the rectum and faeces of fleas taken from plague rats, and such faeces are infective to guinea-pigs both by cutaneous and by subcutaneous inoculation.
5. On rare occasions plague bacilli have been found in the oesophagus, but never in any other region of the body, such as the body cavity or salivary glands.
6. During the plague season fleas might remain infective for fifteen days after imbibing infective blood, but during the non-epidemic season no animal was infective after the seventh day.
7. A single rat flea may transmit the disease.
8. Both male and female rat fleas can transmit the infection.
9. Experimenting with cat fleas (*P. felis*) and human fleas (*P. irritans*), 27 experiments with the former were unsuccessful, and out of 37 experiments with the latter three successes were obtained. Two experiments were made with *C. fasciatus*—both were successful. Multiplication of the plague bacillus takes place in the stomach of the human flea.
10. The plague bacillus has never been seen in the body cavity or in the salivary glands of infected fleas.

Evidence has been obtained to show that the bite of a healthy flea affords a sufficient avenue for infection by septicaemic blood if it is spread upon the bitten part.

No evidence has been obtained in favour of infection by contaminated mouth-parts or regurgitation from the stomach, but the possibility of infection by such means cannot be excluded.

XVI.—EXPERIMENTAL PRODUCTION OF PLAGUE EPIDEMICS AMONG ANIMALS.

In the first report several series of experiments were described which had as their object the determination of the relative importance of the Indian rat flea, *Pulex cheopis*, and of actual close contact in the absence of fleas in the dissemination of plague from animal to animal. These observations were carried out in a series of small go-downs or cabins which were built especially for the purpose. The experiments recorded in the present report are a continuation of those already published. They were carried out during the off-plague season of 1906 and the plague season of 1907. In the first paper the structure of the go-downs was described in detail, but it may be noted that the essential difference between them lies in the structure of the roofs. The roofs of four of the go-downs are tiled with material which offers protection and shelter to the wild rat of Bombay; the flea supply in the interior is therefore more or less abundant. The roofs of the two remaining go-downs are constructed of "reinforced concrete"; in consequence of this these go-downs remained absolutely free from fleas, so that a number of clean-contact experiments were obtained.

Five guinea-pigs inoculated with plague were confined in one of the go-downs with 25 healthy animals. It is shown that the healthy animals never contract plague in the absence of fleas, though living, in some instances, for several weeks in close contact with plague-infected animals. In the huts which were not flea-proof the epidemics of plague were shown to progress differently at different seasons of the year. In the height of the prevalence of epidemic plague the progress was very rapid, while in the off-plague season the infection travelled more slowly through the healthy guinea-pigs, and in some cases killed only a portion of them. It is shown that the progress of the epidemic among the guinea-pigs is proportional to the abundance of fleas, and that the explanation of its seasonal variation is probably to be found in the effect of seasonal influences on the prevalence of these insects. Another series of experiments shows that in go-downs containing plenty of fleas, animals do not contract plague if they are protected by being suspended in mid-air, or by a cage of wire gauze impervious to fleas.

XVII.—EXPERIMENTS IN PLAGUE HOUSES IN BOMBAY.

In a paper published in the first report, a number of observations carried out in plague houses in Bombay were detailed, which went to prove that in a plague-infected house the infection is due to the presence therein of infected rat fleas capable of transmitting the disease to animals.

During the epidemic of 1907 these observations have been confirmed and amplified. Guinea-pigs were allowed to run about in plague-infected houses overnight; in 18 out of 100 experiments the animals subsequently died of plague. Fleas caught on guinea-pigs or rats in plague-infected houses were transferred to healthy guinea-pigs in flea-proof cages in the laboratory; in 34 experiments these animals died of plague in fourteen instances (41 per cent.). By using guinea-pigs as flea traps, an estimate was made of the abundance of fleas in different houses. Houses proved to be plague-infected were found to yield twelve times as many fleas as houses which were not plague-infected, and three times as many as those which were only suspected of being plague-infected. Of 130 fleas dissected, 32 per cent. were found to contain abundant plague-like bacilli in their stomachs.

XVIII.—THE RECOGNITION OF THE INDIAN RAT FLEA.

A paper on the external anatomy of the Indian rat flea (*P. cheopis*), and its differentiation from some other common fleas, gives a detailed account of the external

anatomy of the rat flea, with two illustrative plates. A third plate shows the cat, human, and other fleas, and the points by which *Pulex cheopis* may be distinguished are dealt with. The authors consider that *P. cheopis* is identical with *P. pallidus*, *P. murinus*, *P. philippinensis*, and several other species which have been described.

XIX.—The Natural Occurrence of Chronic Plague in Rats.

In continuation of a previous note, the authors describe 45 cases of localized encapsuled abscesses containing virulent plague bacilli, which they have met with in *Mus rattus* in the Punjab villages. In 27 instances these abscesses were in the situation of peripheral lymphatic glands, and may probably be taken to represent the remains of buboes. These cases occurred chiefly during the period of the decline of the epizootic of acute plague; in the remainder, however, they were situated in the spleen (12), mesentery (5) or liver, and these animals were found in the interval between the epizootics. The rats were in all cases trapped alive and appeared healthy. In Bombay only one such case has been met with in 19,000 plague-infected rats, while in the Punjab these examples of chronic plague account for more than 10 per cent. of all rats found infected. While pointing out that these localized abscesses are the only place where plague bacilli are known to occur during the off-plague season in the Punjab, the authors can find no direct evidence that such a condition ever lights up into an acute septicaemia, and, chiefly on anatomical grounds, express doubts as to whether it can be a source of origin for the acute epizootic.

XX.—Man as a Host of the Indian Rat Flea.

Experiments already published, and since repeated with similar results, afford ample confirmation of the observation of Simond (1898) and of Gauthier and Raybaud (1902, 1903) that plague may be transmitted from rat to rat by the agency of rat fleas. The direct experiment to show that plague can be conveyed in the same way from rat to man can never be made, and the inferential transference of the results of the experiments on rats to the spread of human plague has been not a little opposed, notably by Galli-Valerio (1900, 1903), on the ground that rat fleas do not bite men. This may be true of the fleas (*C. fasciatus* and *T. musculi*) commonly found on rats in Western Europe, but Gautier and Raybaud (1902, 1903) in Marseilles, and Tidswell (1903) in Sydney, obtained direct evidence to the contrary with regard to *P. pallidus* (=*P. cheopis*), and Liston (1905) found that *P. cheopis* in Bombay readily attacks man during the plague season.

The Commission has made many observations which show that *P. cheopis* will make use of man as a host, and may be captured in large numbers on men in plague-infected houses. The following was one of the methods employed:

About 40 fleas, caught on wild Bombay rats, were placed in a wide-mouthed jar, which had a little sand at the bottom. Twice daily a man's hand and forearm were introduced into the jar and left in for fifteen minutes each time. Fleas which crawled up the forearm were gently pushed back before they could escape. It was observed that the fleas bit readily, and the man himself was soon cognizant of the fact. About every ten days the sand was removed and fresh sand substituted, so that multiplication of the original fleas by breeding was excluded. Five experiments in all were done after this method, with the following result:

Experiment 1. One flea was found alive on the twenty-fourth day.

Experiment 2. One flea was found alive on the ninth day. In this experiment the sand had not been washed, and there was present a fine dust, which by blocking the tracheal openings was probably prejudicial to the lives of the fleas. They were often observed to be dusted over with this material.

Experiment 3. One flea was found alive on the twenty-fifth day.

Experiment 4. One flea was found alive on the twenty-fifth day.

Experiment 5. One flea was found alive on the twenty-seventh day.

From the above experiments it is seen that it was possible to keep rat fleas alive for nearly four weeks by feeding them on human blood. There was a considerable mortality during this time, but the main facts stand out (*a*) that they fed readily on man, and (*b*) that some of them were still alive after twenty-five days.

It may be mentioned that rat fleas kept under similar circumstances, but without food, never survived longer than one week.

The following observations, which were carried out in a building unusually severely stricken with plague, are also of interest in this connexion:

1. April 17th: 40 fleas were caught on a man who went into one of the rooms for a short time. They were all *P. irritans*.
2. April 18th: 113 fleas were caught on a man who entered one of the rooms. The species were as follows: *P. irritans*, 55; *P. cheopis*, 51; *P. felis*, 7.
3. April 19th: 76 fleas were caught on a man who entered one of the rooms for a short time. The species were as follows: *P. irritans*, 40; *P. cheopis*, 34; *P. felis*, 2.
4. April 20th: 80 fleas were caught on a man who entered one of the rooms. The species were as follows: *P. irritans*, 18; *P. cheopis*, 60; *P. felis*, 2.

Thus, in three out of four rooms of this chawl, which was badly infected, abundant rat fleas were taken on the legs of men who entered the rooms only for a short time.

HOMES FOR INEBRIATES.

Yorkshire Certified Inebriates' Reformatory.

In his report for the first twenty months to December 31st, 1906, Dr. Hearder has some interesting facts to give concerning the inmates, more or less identical with the experiences of other observers in other institutions of the kind. He gives examples of exceedingly bad family histories among the inmates under his care. For instance: "Father, mother, brother, and grandfather intemperate; mother and brothers weak-minded." "Father, brother, sister, and grandfather intemperate; sister insane; two sisters criminals."

Dr. Hearder reports that the youngest inmate is 20 years old and the oldest 64. The older inmates are the better behaved.

There is a bad record among the first batches of discharges, but every case was, to a greater or less extent, weak-minded. The report says: "Any one accustomed to asylum work at once recognizes the general resemblance of these cases to the insane and imbecile, and, in truth, there is only a difference in degree and quality. They are moral imbeciles, and show their want in their lack of control. Their brain instability is most pronounced when small quantities of alcohol have reduced such inhibitory powers as they may possess."

The women, as a rule, work better than the men, many of whom are "born idlers" and "corner boys," without a vestige of self-respect, and utterly wanting in the elements of discipline and personal cleanliness. Almost all the cases have markedly improved physically, and many are showing decided mental improvement. This is more marked in the women than in the men. Still, after months of enforced abstinence most continue unstable and very irritable. They quickly lose their temper and become noisily abusive. They are unable to argue rationally, are inveterate grumblers, and loudly assert their rights. Dr. Hearder points out that of 21 men having 610 convictions, 1 only is for being drunk and "incapable"; this man was "incapable" once only out of 50 convictions. Of 16 women with 603 convictions, 5 have between them only 7 convictions for being "drunk and incapable"; 1 with 175 convictions was only once "incapable." The reason is fairly obvious. Owing to brain irritability they become disorderly, riotous, etc., long before they have drunk sufficient to render them incapable, and, as such, get into the hands of the police.

Invernith Lodge Retreat.

In his report for 1906 Dr. Donald states that 75 per cent. of the patients admitted during the year have undergone one of the so-called drug cures. According to their own admission, they were in many cases made worse instead of better.

Dr. Donald is a great believer in (among many other means) cultivating in his patients "an adverse attitude towards alcohol and all connected with it, and cultivating healthy habits and appetites." This is one reason, in his mind, for a long course of steady treatment in a retreat. Another reason is the length of time required for the adequate repair of damaged nerve tissue. In treating cases of morphinomania Dr. Donald is an advocate of the gradual reduction method. He also relies on the usefulness of bromide in staving off attacks of delirium tremens in patients suddenly deprived of their alcohol. He considers that delirium tremens is in some cases actually brought on by the administration of morphine to alcoholic patients, and finds this practice, in his own experience, entirely contraindicated. He is emphatic in his view that inebriety is a moral insanity, and that it is useless to treat it by specifics.

THE estate of the late Dr. Robert Barnes has been sworn at a net value of £175,176. Amongst the bequests in his will is one of £500 to St. George's Hospital, similar sums going to St. George's Hospital Medical School, St. Thomas's Hospital, the Dreadnought Hospital for Seamen, and Epsom College. The will also directs that £300 shall be paid to the Royal Maternity Charity, and £200 each to the London Hospital Medical School and the Princess Alice Memorial Hospital at Eastbourne.

LITERARY NOTES.

DR. CABANÈS, editor of the *Chronique Médicale*, has recently founded a medico-historical society in France. Its object is not the study of the history of medicine, but the study of medicine in relation to general history, literature, and art. Dr. Cabanès himself, Galippe, Brachet, Littré, and others have shown what light may be thrown on obscure problems of history by a study of the physical constitution and illnesses of rulers. Similar studies have been made of Maupassant, Zola, Flaubert, Alfred de Musset and other writers and poets, and have done much to elucidate their intellectual outlook and to supply the physical grounds for their criticism of life. The committee of the new society includes the names of Drs. Brissaud, Debove, Fournier, Gilbert, Galippe, Grasset, Huchard, Lacassagne, Landouzy, Lannelongue, Pinard, Poncet, Pozzi, Régis, Charles Richet, and Albert Robin as representatives of medicine, and those of such men as Anatole France, Jules Lemaitre, Victorien Sardou, and Jules Clarétie among representatives of literature. Altogether there are forty members of the Committee of Direction and Patronage, all members of the Institute of France, the Academy of Medicine, or connected with the Collège de France or the University. The new society therefore begins its existence under the happiest auspices, and we shall look forward with the keenest interest to the results of work in which the most advanced science is combined with all that is best in literature and art.

The July number of *Science Progress*, a "quarterly journal of scientific thought," edited by Dr. N. H. Alcock and Mr. W. G. Freeman, B.Sc., F.Z.S., and published by Mr. John Murray, contains an article by Dr. E. F. Bashford on the application of experiment to the study of cancer. Mr. T. Crook writes on the use of the electro-magnet in petrography; Dr. G. A. Buckmaster on the coagulation of the blood; Dr. E. P. Cathcart on protein metabolism; R. H. Aders Plimmer, D.Sc., gives an account of the work of Emil Fischer and his school on the chemistry of the proteins; Professor H. A. Miers describes some recent research upon the birth and affinities of crystals; Miss Ida Freund treats of double salts; and Dr. H. M. Vernon discusses the mechanism of tissue circulation. The journal is excellently printed and presents a handsome appearance.

Dr. Weir Mitchell has lately published some memoranda in regard to William Harvey. As he says, it would seem unlikely that any new material of interest concerning Harvey should turn up in America. Dr. Weir Mitchell has, however, been fortunate enough to become the possessor of a manuscript in his handwriting, which is interesting on its own account and because of its surroundings. No scrap of Harvey's handwriting is known to exist up to the date of his notes for his Lumleian Lectures delivered in 1616. These were reproduced in autotype by the Royal College of Physicians of London in 1886. In the Sloan MS. Collection in the British Museum there is a manuscript of the later Lumleian Lectures, dealing with the muscles, delivered by Harvey in 1627. Between the dates of the two sets there is on a medical certificate, dated 1624, the signature, "Will: Harvey." After giving a full list of the other extant specimens of Harvey's script and some account of the peculiarities of his very difficult handwriting, Dr. Weir Mitchell goes on to describe his own find. Through the kindness of Dr. John S. Billings he was enabled last year to buy in London the Commonplace Book of Heneage Finch, afterwards Lord Chancellor and Earl of Nottingham. Born in 1621, Finch married in 1646 Elizabeth, niece of Daniel Harvey, and niece of William Harvey. Within a year or two of his marriage he seems to have consulted Harvey about his health. Harvey wrote for him on one page of the Commonplace Book a page of prescriptions in Latin, and on another directions for their use, with advice as to diet, exercise and drinks in English. Dr. Weir Mitchell quotes the directions in full. They are to the following effect:

Let Mr. Finch first take his Clyster about four of the clock in the afternoon, and after take his purge early in the next morning so as Hee may sleepe after it until it works, but after it beginneth to worke let him not sleepe and keepe his Chamber.

The next day about eight or nine of the clock let Him bleed out of the arme eight or nine ounces of blood, afterwards to continue to take his Apozem for three weekes or a month twice in the day, a draft early in the morning and at foure in the afternoone, and walke abroad and use moderate exercise.

And while Hee taketh this ounce in five or sixe dayes take his purge again or if that worke much, take two or three pills as big as pease, either an hour before supper or going to bed, if taking them before supper they worke in the night before next morning.

When Hee taketh his pills Hee needeth not much observance of keeping in, but may drinke a draft of his Apozem after them. But that day Hee taketh his Apozem let him keepe in and drinke after them a little thin broth.

After Hee hath continued in this Course of clearing his body 14 or 15 dayes, let Him every morning before Hee arise out of his bed have his belly and sides rubbed and chaffed in with a soft hand, for almost an houre together, and then taking his drinke, arise and walke abroad early.

All this while Hee taketh this physicke let his dyet bee temperate, of one dish, rise early, walke much, abstaine from wine, strong drinke and all salt meats.

Harvey.

Dr. Weir Mitchell calls attention to the abdominal massage here recommended, and says that all of the final advice seems reasonable. Salt meats were much used in Harvey's time, because of the difficulty of preserving the flesh of animals. The signature of the surname alone might excite suspicion, but Dr. Weir Mitchell states that Mr. William J. Harvey, a wel-lknown genealogist not of the anatomist's family, after careful study of all the existing specimens of William Harvey's writing, is certain of the genuineness of the script. Dr. Weir Mitchell also quotes Dr. Persifor Frazer, whom he describes as "our best expert in handwriting." After a long and careful comparative study of the pages in Finch's Commonplace Book, of the lecture notes of 1616, and of all the various reproductions of Harvey's handwriting, Dr. Frazer concluded in favour of the authenticity of the document. Dr. Weir Mitchell urges the London College of Physicians to reproduce the still unpublished Lumleian Lectures of William Harvey. He adds an interesting list of portraits of the discoverer of the circulation of the blood.

Professor Forgue of Montpellier, in a recent lecture on the respect that practitioners should have for human life, told the story of Desgenettes, which was alluded to recently in the BRITISH MEDICAL JOURNAL. The story, though well known, is worth telling again as it is told by Desgenettes himself in his *Memoirs*. When the French were about to evacuate Jaffa the question arose, What was to be done with the plague-stricken soldiers in the hospital? Desgenettes says:

Shortly before the raising of the siege—that is to say, on the 27th—General Bonaparte sent for me very early in the morning to his tent, where he was alone with his chief of the staff. After a short preamble as to our sanitary condition he said to me, "If I were you, I should end at once the sufferings of those stricken with plague, and should end the dangers with which they threaten us by giving them opium." I answered simply, "My duty is to preserve life." Then the General developed his idea with the greatest coolness, saying that he was advising for others what in like circumstances he would ask for himself. He pointed out to me that he was, before any one else, charged with the conservation of the army, and, consequently, it was his duty to prevent our abandoned sick from falling alive under the scimitar of the Turks. "I do not seek," he went on, "to overcome your repugnance, but I believe I shall find some who will better appreciate my intentions." Desgenettes goes on to say that opium was, as a matter of fact, given to some thirty patients. It happened, however, that a certain number rejected it by vomiting, were relieved, got well, and told what had happened.

The story has been told in various ways, and the fact of the poisoning of the sick soldiers has been accepted by the enemies of Napoleon and denied by the defenders of his memory. Desgenettes's narrative bears the stamp of truth.

Messrs. W. B. Saunders Company will publish at an early date an important new work dealing with the pancreas, its surgery and pathology, by Mr. Mayo Robson and Dr. P. J. Cammidge. The work will incorporate the results of the original investigations of the authors.

THE VITAL STATISTICS OF TEN YEARS.

(*Continued from p. 99.*)

CANCER, MALIGNANT DISEASE.

IN his note on cancer in the Decennial Supplement, Dr. Tatham states that the annual mortality from cancer as shown by the returns made to the Registrar-General for

England and Wales in the decennium 1891-1900, exceeded by 25.9 per cent. the average death-rate in the preceding decennium, after allowing for changes in the age constitution of the population. The death-rates given are based upon deaths stated in the death certificate to be due to cancer, or found after an inquiry addressed to the certifying practitioner to be due to this disease. Dr. Tatham adds that the practice of writing to medical attendants for further information concerning an indefinitely stated cause of death has resulted in the addition of a large number of deaths to this heading, and has probably also indirectly led in many cases to a more precise statement of the cause of death.

The increase noted in the last as compared with the previous decennium is a continuation of a tendency observed since civil registration was instituted. For every 100 deaths attributed to cancer in the decennium 1851-60, 233 were assigned to this disease during the decennium 1891-1900. A chart is given in the report, on which the rates for both sexes and for males and females are plotted, and in all three instances the rise is practically steady, although the increase has been more rapid among males than among females. In both decennia the mortality from cancer was much higher among females than among males, but it was twice as high in 1851-60, and only one and a half times as high in 1891-1900. During the last forty years the corrected death-rate has trebled among males and doubled among females; but if attention is directed only to the age after 35 years, it is found that at the age 55 and upwards the mortality in the recent decennium is about three and a half times as heavy among males and about two and a half times as heavy among females as in 1851-60. As all statistics tend to prove, this preponderance of mortality among females occurs only after the age of 25 years, is heaviest between that age and the 55th year of life, and is accounted for entirely by the larger number of deaths from cancer of the female generative and mammary organs.

Taking the mortality among both sexes together, it is found that an analysis of the deaths according to the part of the body affected shows that the increase is largely due to the more frequent detection of internal cancer, as a result either of operation or of *post-mortem* examination, so that the increase is probably to a large extent due to the more favourable opportunities of correct diagnosis which have become available in recent years. An extended table, giving the mortality at various ages, shows that it is very low up to the age of 25 years, and is not high until after the 35th year of life. Dr. Tatham adds that the relative incidence of cancer will be most satisfactorily represented by temporarily disregarding both the deaths and the population under 35.

Cancer: Annual Mortality per Million living at all Ages and at Ages above 25 Years in Five Successive Decennia.

		All Ages.	25—	35—	45—	55—	65—	75 and Upwards
1851-60	Persons.	325	103	390	862	1 412	1,960	2,071
1861-70	Persons.	390	113	446	1,054	1,776	2,374	2,568
1871-80	Persons.	477	124	527	1,257	2,209	3,100	3,289
1881-90	Persons.	602	128	586	1,552	2,871	4,180	4,312
1891-1900	Persons.	758	139	646	1,833	3,662	5,604	6,145
1851-60	Males.	194	62	175	422	932	1,503	1,738
1861-70	Males.	240	60	205	539	1,206	1,874	2,269
1871-80	Males.	313	71	240	706	1,593	2,605	2,989
1881-90	Males.	437	80	299	1,002	2,302	3,758	3,926
1891-1900	Males.	600	90	384	1,300	3,160	5,325	5,824
1851-60	Females.	448	140	595	1,283	1,857	2,355	2,326
1861-70	Females.	532	161	670	1,539	2,302	2,806	2,798
1871-80	Females.	632	174	793	1,764	2,765	3,524	3,520
1881-90	Females.	756	173	855	2,051	3,375	4,531	4,601
1891-1900	Females.	906	175	891	2,323	4,099	5,892	6,377

MEDICAL NEWS.

THE new out-patient department at St. Bartholomew's Hospital is to be opened on Tuesday afternoon next by the Prince of Wales.

PROFESSOR ALEXANDER MACPHAIL, of St. Mungo's College, Glasgow, has been appointed Lecturer on Anatomy at the Charing Cross Hospital Medical School.

UNDER the will of the late Mr. R. Stirrup, of Bowdon, the following bequests are made: £250 to Manchester Royal Infirmary, £100 to Manchester and Salford Hospital for Skin Diseases, £250 to the Cancer Pavilion, £100 to Altrincham and Bowdon Hospital, £1,500 for a scholarship, and the residue of his estate to the University of Manchester.

As it is anticipated that the successful formation of the Royal Society of Medicine will lead to greatly increased use of the library at the premises of the old Medico-Chirurgical Society in Hanover Square, considerable alterations of the internal arrangements are to be made. These will necessitate the closing of the library for about two months, commencing from August 1st. Application forms for the use of persons who desire to become Fellows of the Society or members of one or more of its sections can now be obtained from the Secretary, 20, Hanover Square, W.

As has already been announced in the BRITISH MEDICAL JOURNAL, the third International Congress on Provision for the Insane will be held at Vienna from October 7th till the 11th, 1908, under the presidency of Professor Obersteiner. Notice of intention to take part in the Congress, of communications to be made, and of demonstrations to be given must be conveyed on or before July 1st, 1908, to the General Secretary of the Congress, Docent Dr. Alexander Pilcz, ix Lazaretthasse 14, Vienna, from whom also all information relative to the Congress may be obtained. A detailed programme will be issued later.

NORTH-EAST LONDON POST-GRADUATE COLLEGE.—A vacation course will be held at the Prince of Wales's General Hospital, Tottenham, N., during September, commencing on the 9th of the month, the arrangements for which have been adapted to the requirements of those engaged in active practice. They include daily clinics in the wards, demonstrations in the out-patient and special departments, classes on clinical methods, other practical clinical demonstrations, and clinical lectures with lantern demonstrations. The fee for the course, which will last a fortnight, is 1 guinea. Full particulars may be obtained from the Dean at the hospital.

UNITED STATES IMMIGRATION LAW.—The new Immigration Law came into force on July 1st. Its provisions are designed to raise the standard of persons admitted to the United States, and the head tax on all aliens entering the country is raised from 2 to 4 dollars. The excluded classes are increased by the addition to the list of imbeciles, feeble-minded persons, persons afflicted with tuberculosis, those certified upon medical examination to be mentally or physically defective to such an extent as to affect their ability to earn a living, and all persons coming into the United States for any immoral purposes. One section (says the *Medical Record*) makes the decision of a Board of special inquiry final, not only as to the rejection of aliens afflicted with loathsome or dangerous contagious diseases, or with mental or physical disability bringing them within the excluded classes, but also as to persons afflicted with tuberculosis.

A QUARTERLY Court of Directors of the Society for Relief of Widows and Orphans of Medical Men was held on July 10th, at 11, Chandos Street, Cavendish Square, Dr. Blandford, President, in the chair. Twenty-one directors were present. The deaths of Sir William Broadbent and Dr. Robert Barnes were reported. Both had held the office of director. The Secretary was directed to send letters of condolence to Lady Broadbent and Mrs. Barnes. Two new members were elected. Since the last quarterly court one of the widows, an annuitant of the charity, had died. Her husband paid a life subscription fee of £26 5s., and the widow had received in grants the sum of £490. Six letters had been received from widows of medical men asking for relief, but in each instance this had to be refused as their husbands had not been members of the Society. The sum of £1,300 10s. was voted for the half-yearly grants to the 49 widows and 20 orphans at present on the books of the Society. Membership is open to any registered medical practitioner, who at the time of his election is residing within a twenty-mile radius of Charing Cross. Full particulars may be obtained from the Secretary at 11, Chandos Street, Cavendish Square, W.

British Medical Journal.

SATURDAY, JULY 20TH, 1907.

THE ANNUAL REPRESENTATIVE MEETING.

The Annual Representative Meeting of the Association will assemble in the Royal Public Rooms, Exeter, on Saturday, July 27th, immediately after the Annual General Meeting, which will be held at 9.30 a.m. We understand that it is the intention of the Chairman, Dr. J. A. Macdonald, to make a short statement to the meeting embodying an account of the progress made during the past year in carrying out the instructions and wishes of the Representative Body.

The first motion before the meeting will, we presume, have relation to the Standing Orders for the conduct of its business; with respect to these a number of amendments will be submitted by the Organization Committee. The most important would appear to be the proposed change in the Standing Order in which the mode of election of Committees is prescribed. Apart from certain minor matters of detail, the change suggested is that in the voting paper issued to each voter the names of all candidates duly nominated shall be arranged in three lists under the heads of England and Wales, Scotland, and Ireland respectively. In counting the votes the candidates on the English list who have obtained the highest number of votes, being not more than one-half of the total number of members to be elected, the candidates on the Scottish list who have obtained the highest number of votes, being not more than one-fourth of the total number to be elected, and the candidates on the Irish list who have obtained the highest number of votes, being not more than one-fourth of the number of candidates to be elected, shall be deemed to be elected. If any place on the Committee be still vacant, that candidate or those candidates shall be deemed to be elected who shall have obtained the highest number of votes, irrespective of the list in which the name of any such candidate appears. The object of the proposed change is of course to ensure that in the constitution of all Standing Committees the principle of regional representation shall be recognized, at any rate so far as the three kingdoms are concerned.

Upon the annual report of the Central Ethical Committee at least two questions of considerable general interest will arise. It will be remembered that a special report of this Committee on the ethical aspects of medical consultation[1] embodying a series of recommendations with regard to the proper method of arranging for and conducting consultations was submitted to the Representative Meeting in London last year. It was very briefly considered on that occasion, and afterwards on the motion of the Chairman referred to the Divisions, which had not then had the opportunity of considering it. A number of replies have been received from the Divisions, and will come up for discussion at the Representative Meeting this year; the suggested alterations all seem to be in the direction of making the wording of the preamble and the recommendations more precise, definite, and stringent. For instance, in the preamble as passed by the Committee, it was stated that if a patient sought an opinion from a practitioner other than his ordinary medical attendant without any introduction it was in general the duty of the practitioner consulted to ascertain whether the patient was already under medical treatment, and, if so, refuse to see the case until he had communicated with the ordinary medical attendant, provided that, if for any reason he thought it necessary to see the case at once, he should immediately afterwards communicate with the ordinary attendant. The Norwich Division suggests that this should be modified in such a way as to make it the duty of the practitioner consulted to decline to see the case "unless he receives permission to communicate "at the conclusion of the consultation with the ordi- "nary attendant." With regard to the arrangement of any future consultation, and as to any communication between the consultant and the patient subsequent to the first consultation, the Committee had recommended that, as a rule, such future consultations should be left to the initiative of the practitioner, and that all future communications should be made through the practitioner in attendance; the Blackpool Division desires to omit the words "as a rule." The Representative Meeting will also have before it in the annual report of the Council an expression of that body's regret that the report on the ethics of consultation has not been submitted to the opinion of some body representing consultants, whose concurrence is necessary to the success of any project of reform in procedure; the Council therefore suggests that any decision on the matter be deferred until such conference has taken place; there is also a motion from the Northampton Division to the effect that the report should be referred back to the Ethical Committee for further consideration. The Editorial experience is that there are few matters which are more fruitful sources of misunderstanding between honourable members of the profession than this of arranging consultations. The conduct of a consultation once it has been brought about is by comparison a simple matter. If the suggestion of the Ethical Committee "that it might "be to the advantage both of the profession and the "public if formal recognition was made for a distinct "class in the profession to be specially design- "ated consultants"—a proposal which has the support of several Divisions—were adopted it would no doubt simplify matters very much. The Committee suggest that the term "consultant" should be defined as meaning a practitioner who has adopted the rule of seeing only those patients who are referred to him by other practitioners already in attendance, and who does not himself act as a regular attendant in any case. So far as we are aware, such a class can hardly be said to exist at the present time; it could only be created by mutual consent, and there are no doubt certain practical difficulties in the way not unconnected with financial questions. There is also the closely-allied question of the proper position of the specialist. Many specialists—men of the highest personal honour and universally respected by the profession—hardly seem to regard themselves as, in the strict sense of the word, consultants. We miss from the recommendations any distinct reflex of a paragraph in the preamble dealing with cases seen at the consultant's house; but it may be that the Committee did not consider it desirable to overburden its report by entering into this department of the subject.

The other matter of particular interest arising in con-

[1] Supplement to the British Medical Journal of July 28th, 1906, p. 98 et seq.

nexion with the report of the Ethical Committee is the position of the Association with regard to the presentation of cases to the General Medical Council for inquiry. The report of the Committee gives a full explanation of the action taken by it pursuant to the instructions of the last Representative Meeting that the Association should act as complainants in cases before the General Medical Council, and the issue will be directly raised by a motion of which Dr. Hamilton, the representative on the Council of the Glasgow and West of Scotland Branch, has given notice, to the effect that, in view of the letter of the President of the General Medical Council, and in view of counsel's opinion placed before the Central Council on June 5th, the Representative Meeting should rescind for the present the resolution that it is absolutely necessary, in the interests of the medical profession, that the Association should take up penal cases before the General Medical Council.

The report of the Hospitals Committee also raises points of no little general interest. Last August the result of the deliberations of the Joint Committee, consisting of representatives of the Association and of many hospital Boards, were circulated to all hospitals in the country. During the deliberations of the Joint Committee there had been a certain amount of give and take, and as a result the representatives of the Association agreed to waive for the time being the recommendation approved by the Representative Meeting at Oxford to the effect that no payment should be made by a patient at a hospital. The report contains a number of recommendations as to general hospitals, cottage hospitals, the relation of hospitals to provident dispensaries, and other matters not as yet fully considered at a Representative Meeting, and the Hospitals Committee of the Association considers that the time has arrived when all these matters should be fully discussed, the movement for co-operation between the Association and the hospitals having been brought to a definite point by the conference held in London, in December last. The Representative Meeting at Exeter will be asked to pronounce upon all the recommendations of the Joint Committee, and also to consider a number of motions brought forward by Divisions as the result of their discussion of the report.

During the year, the Special Finance Inquiry Committee appointed at the meeting at Caxton Hall has held numerous meetings, and has prepared a report, which will be circulated immediately to the Chairmen, Secretaries, and Representatives of Divisions, and an opportunity will no doubt be found at the Representative Meeting for a discussion of its conclusions and recommendations. We understand that the report will show reasons for the opinion that there are no grounds for viewing the financial position of the Association with any alarm.

THE PATHOGENESIS OF MALIGNANT TUMOURS.

PROFESSOR E. VON LEYDEN AND Dr. P. BERGELL, of Berlin, have published recently a preliminary communication, giving the results of their recent investigations on the action of certain ferments on malignant tumours.[1] Since local pathogenesis and enormous energy of growth are the main characteristics of cancerous growths, and since, when a growth is locally damaged, it always responds by an increased growth, they argue that any destruction which is never followed by a reaction of increased growth must be regarded as a specific disintegration. From a study of the action of radio-active substances and of the pancreatic ferment, they came to the conclusion that these substances only possessed a theoretical interest, and had no real or practical importance. The cell solution produced by pancreatin is mostly only a circumscribed process, and when sufficiently large quantities of the ferment are injected, there is no selection between the carcinomatous and healthy tissue. The process consists in a more or less extensive necrosis of the tissue cells, which lose the capability of taking up the nuclear stain. Bacterial action may be regarded as being excluded.

In order to gain fresh light on the subject, they experimented with various proteolytic ferments. The ferment derived from the liver was one of the first tested. This was prepared by a method described by Bergell and Lewin.[2] It has been found to digest that portion of simple peptone which pancreatin does not digest, and further to dissociate glycylalanin, a peptide which resists the action of pancreatin. For the purposes of the experiments they used only the expressed juice of fresh livers. On introducing small quantities of the liver ferment into three large extensive malignant tumours, they were able to watch a rapid progressive disintegration of the masses. One of the cases was a large sarcoma of the neck, the second was a recurrent mammary carcinoma and the third was a uterine carcinoma extending to the vagina. All the cases were progressing rapidly and already showed signs of metastatic growths. This was confirmed in each case *post mortem*. The cases showed clearly that this liver ferment caused a progressive destruction of tissue, which has the typical characteristics of a necrosis produced by an enzyme and of a solution of tissue. The macroscopical appearance was that of softening and liquefaction of the tissue, while microscopically necrosis and loss of staining power of the nucleus were observed. Caseation was not met with, but a form of caseation was seen by Bergell and Lewin when small quantities of the ferment were introduced into carcinomata of mice. This caseation corresponds to the changes observed in cases of spontaneous cure of these tumours. A definite selection in the action is seen, inasmuch as practically only the carcinomatous tissue is attacked. Comparing the selectivity of the various forms of specific disintegration, they find that when tumours are exposed to the action of radium the selectivity is very slight. Radio-active substances when injected, on the other hand, do not act equally on all growths; but when they do act, the selection is much more marked. The destruction, however, is not permanent and is not progressive. In the case of pancreatin, the action is that of very incomplete selection. Compared with this, the action of the liver ferment has a high degree of selectivity.

It appears to be extremely difficult to utilize these observations practically in treatment. The destruction mentioned takes place so extensively and rapidly, and results in such toxic substances as products, that it would seem as if the new ferment could not be used as a therapeutic agent. The authors compare the action with an explosive. It is like a nitro-glycerine for which the "Kieselguhr" has not yet been discovered. The difficulties will be better understood if it is remembered that the ferment acts as an intracellular body, and therefore no dilution can effect a toning down of the action.

Leyden and Bergell, however, do not despair of finding some means of applying the theoretical considerations to practical use. In attempting to

[1] *Deut. med. Woch.*, June 6th, 1907.

[2] *Zeit. f. Exp. Pathol. u. Therap.*

explain the pathogenesis of carcinoma, they suppose that the tumour tissue is an extremely suitable substratum for the action of a ferment. Since the destruction and solution extends in the form of a sort of liquefaction in the environment of the cell, it may further be assumed that the action is that of a proteolytic ferment. It seems, however, that the liver ferment does not attack the albumin of the tumour when isolated or removed from the living organism. Pepsin does not attack the albumin of the living tumour, and leaves dead carcinomatous material fairly intact, and isolated albumin from the tumour proves refractory to pepsin. Pancreatin digests isolated tumour albumin fairly easily, and also digests the tumour *in vitro*, but it has less action on the living tumour. Liver ferment, on the other hand, is relatively indifferent toward isolated albumin and tumour *in vitro*, but acts with avidity on the living tumour.

The observations made by the authors have driven them to frame a theory as to the nature of carcinoma. They say: "We must assume that the unimpeded "growth of the tumour, which evidences its malignancy, "depends on the want or insufficiency of a ferment "hydrolytic power on the part of the organism. This "power is probably specific. . . . We assume, on the "basis of our experiments, that the capability of the "formation of a local 'varying,' in the sense in which "Kraus explained it, albumin synthesis, governs the "nature of malignancy, but not in the sense in which it "has been erroneously understood, that a specific "carcinoma albumin exists, or even that there is such a "thing as a specific cancer poison." If this theory be accepted, it would follow that the carcinomatous growth does not contain a certain ferment-like substance which is present in the healthy body. The absence or diminution in quantity of this substance would then explain the local unlimited growth. The avidity of the carcinoma cell itself can only be an element in the pathogenesis of secondary importance. Further experimental studies are required to clear up many points, and will, the authors believe, bring to light further facts in support of their theory.

THE INSECURITY OF TENURE OF MEDICAL OFFICERS OF HEALTH.

One of the most recent instances of the inability of local sanitary authorities to appreciate their responsibilities comes to us in an account of a meeting of the rural district council of Southwell in Nottinghamshire. Southwell has a population approaching 20,000 persons, and an area of 177,484 acres. For nearly thirty years Dr. Charles Wills has been the medical officer of the district at a salary of £214 per annum. In accordance with the extraordinary and baneful custom which prevails in the provinces he has been subject to re-election year by year. He is also medical officer of health for four other districts, the whole area under his administration having a population of about 67,000 persons, and being in extent some 234,000 acres. At the last meeting of the Southwell District Council a resolution was carried by 9 votes to 7 appointing Dr. Wills for a further period of one year, but at a salary of £107, or one-half that which he has been receiving hitherto. Fortunately for the credit of local government this resolution cannot take effect until the sanction of the Local Government Board has been obtained, and we cannot believe that the Board will consent to be a party to such shabby treatment towards an official whose best years have been spent in looking after the public health interests of this district. If Dr. Wills had neglected his duties there might, perhaps, be some excuse for penalizing him in this way; but the contrary is the fact. Dr. Wills's reports show that he is active in carrying out his duties, and one member of the council quite frankly accused him of writing to the Local Government Board and advising the appointment of a second sanitary inspector. An additional inspector was appointed, at a cost to the council of £100 per annum, and the council desire apparently to make Dr. Wills pay this sum because the Local Government Board was of opinion, from the facts stated in his annual reports (he did not write specifically on the subject), that the district required more sustained sanitary inspection. This story is not at all pleasant reading, and ought to bring home to those who have hitherto opposed the measure the absolute necessity of making the appointments of all medical officers of health non-lapsing. No one could then be subjected to such outrageous treatment as that which this District Council proposes to mete out to Dr. Wills, but which we trust the Local Government Board will refuse to permit.

AN AMATEUR IN DRUGS.

It is possibly too much to expect that the ordinary layman should bestow serious attention on the rules of medical ethics framed primarily not for the advantage and protection of medical practitioners, but of the world of men and women among whom they practise. Here and there an individual may be met with who can grasp the axiom that, in medicine, the end does not always justify the means; but, as a rule, the ordinary layman remains stone-deaf to the argument that things which it is better for medical men not to do, it is better for him also not to do. There is one question, however, which should be reiterated to the amateur prescriber, Is it good to advertise and recommend drugs (of the real action of which one knows nothing) on the sole authority of the vendors; and is it good to be instrumental in putting these things into the bodies of persons of whose real condition one knows nothing at all, or to whose diseases one could not, if called upon to do so, give a name? The goodness of heart of the amiable amateur in drugs is undoubted, even if his want of physiological imagination and ordinary common sense is little short of appalling. The guiding principle of such a person seems to be: When unwell, take something; and, rather than take nothing, take anything. For every symptom there is a drug. Restore, recuperate, stimulate, and the cure is complete. It is true that over-fatigue, sleeplessness, tired nerves, failing memory, incapacity for mental effort are symptoms —often early symptoms—of all kinds of serious organic disease; but what does the amateur prescriber know or care about that? It is a small matter when some well-known individual gives a picturesque testimonial advertising a skin food, a hair dye, or a soap. These things carry their own rewards and punishments with them. Proprietors of those really useful preparations prescribed by medical men on account of sterling merit do not invoke the aid of the philanthropist, the actor, or the popular preacher in advertising their goods, for the simple reason that they do not stand to benefit in the long run by this method of making their preparations known. There are wiser ways. An example of a particularly unwise way emanates from the pen of a well-known philanthropist —Lady Henry Somerset. It is in the form of a letter to a friend and runs, "there does not seem to me to be any "reason why you should continue so overweighted "by a weakness which is not brought about by any con- "dition of actual disease, but which seems *to arise from* "*an even graver trouble.*" (The italics are ours). It might be thought that a "graver trouble" than "actua disease" was one in which medical men themselves

might hesitate to intervene. Here, however, Lady Henry Somerset steps in with confidence, and proceeds to prescribe a preparation which she informs her friend is "essentially a nerve reconstructive," whatever that may mean. It is also said by her to have an "invigo- "rating power on worn-out nerves," and to give tone to "exhausted tissues." It is also said to be a substitute for alcoholic stimulants and "restores sleep." There are two other respects in which the advertisement is an example of how *not* to advertise. It is addressed from the Inebriate Farm Colony at Duxhurst, and reference is made to the good the preparation has done to the patients in that institution "whose health had been so seriously undermined by "their own misdeeds." Whatever the misdeeds of the unfortunate people who have placed themselves for treatment at Duxhurst, they hardly deserve to be pilloried in this fashion to support a proprietary remedy. Charity and good taste seem to demand something different from this. Their own opinion on the matter would probably be interesting to hear. Again, the Inebriate Farm Colony at Duxhurst has a medical officer. If any one is responsible for the drugs given at Duxhurst, it is or ought to be the medical officer. Lady Henry Somerset's learned discourse on her own medical experiences among his patients is no compliment to their real doctor. If testimony or sound medical reports are to be given concerning advantageous methods of treatment followed at Duxhurst, the person to give them is undoubtedly the medical officer of the institution himself. Lady Henry Somerset would be well advised, in the interests of all concerned, to abandon the rôle of amateur prescriber through the advertisement pages of a popular magazine.

THE FOUNDER OF THE ANILINE INDUSTRY.

IN the death of Sir W. H. Perkin, on July 14th, we have to record the loss of perhaps the most eminent of those English scientists who have devoted the main portion of their energies to the application of scientific discovery to the development of commerce. Sir William Perkin was connected with the great names of chemistry such as Faraday and Hofman, attending Faraday's lectures on electricity when a boy of 14, and being admitted shortly after leaving school to Hofman's private research laboratory at the Royal College of Science. The discovery of the first of the aniline dyes, with which his name will ever be associated, was the result of researches undertaken with a view to the artificial synthesis of quinine. Encouraged by Messrs. Pullar's report, Perkin, then only a boy of 18, aided by his father and brother, built his works at Greenford Green for the preparation of the dye. Other processes were soon added, including the production from anthracene of alizarin, the red dye formerly obtained from the root of the madder. He was also honourably connected with the chemistry of the artificial manufacture of indigo. His contributions to theoretical chemistry were also considerable. In 1867 he read before the Royal Society a paper in which he showed that tartaric acid was not tetrabasic as had been supposed by many observers but that it was succinic acid in which two hydrogen atoms were replaced by alcoholic hydroxyl, his method consisting of acting on tartaric ether with the chlorides of acid radicals. An even more important research was that reported in the same year on salicylic aldehyde when, by replacing the supposed alcoholic hydrogen by benzoyl, he found that the body retained the properties of an aldehyde and was, therefore, both an alcohol and an aldehyde, for had the hydrogen replaced formed part of an aldehyde group he would have had a mixed acid radical. The accuracy of his original statement was confirmed by further experiments conducted during the next few years. Another research of considerable value resulted in the discovery of the famous "Perkin's Reaction" whereby the principle of "condensation" is utilized in the preparation of many of the unsaturated carbon acids, while his work on the relation between magnetic properties and the stöchiometric constitution of chemical compounds won recognition from the Royal Society in the shape of the Davy medal in 1889. Sir William Perkin was a Fellow of the Royal Society, and was awarded the Royal medal. He was both Secretary and President of the Chemical Society, which granted him the Longstaffe medal in 1889. He received the Hofman medal from the Deutsche Chemische Gesellschaft, the Lavoisier medal from the Société Chimique de Paris, and the Albert medal from the Society of Arts. In connexion with the fiftieth anniversary of the aniline discovery last year Sir William was granted the honour of knighthood, while his latest distinction was to receive the honorary degree of D.Sc. from the University of Oxford.

CHRISTIAN SCIENCE IN FICTION.

MEDICINE and its professors occupy a large place in modern fiction, and therefore it is not surprising that one of the "eminent hands" in that line of literary work should make Christian Science the subject of a novel. Considered simply as a novel, we confess we do not find Mr. E. F. Benson's *House of Defence* particularly interesting. It can safely be taken to bed without risk of the fascination of the story cheating one of hours that should be given to sleep; indeed, we should be disposed to recommend it as a useful substitute for some possibly less harmful "drowsy syrup." The book is dedicated to a friend who is reminded that he was cured, as both he and the author know, of a disease that medical science had pronounced incurable, by a certain Christian Science healer, who used neither knife nor drugs upon him. Both the author and the patient think that the disease was nervous in origin, and a "wise and "skilful physician" (who by the way is described as wearing a black frock coat, with yellow boots and a red tie!) is said to have shared this belief. But the disease, whatever it may have been, was already organic when the patient went to the oracle, and he, after consultation with others, pronounced it incurable. "At the same "time," we are told, "he acknowledged its nervous "origin, and you [it is the patient who is addressed] "will acknowledge that with the utmost frankness he "confessed entire inability to say *how* a nervous affec- "tion entered the more obviously material world of "organic trouble." This does not inspire us with confidence in the knowledge of the "wise and skilful man" who clearly knows little of neurology. Mr. Benson's faith is not so strong as that of his friend, for he declines to believe that "any man living upon this "earth can make it happen that bones that are broken "should join together (especially when the fracture is "compound and they stick out of the skin) without "assisting Nature by what you call 'mere manipula- "'tion,' but by what I call 'setting the bone.'" Mr. Benson's knowledge of the healing process would seem to be no greater than his friend's. His difficulty in regard to compound fractures reminds us of the answer of a French lady to some *esprit fort* who was arguing against the miracle of Saint Denis (of whom the legend says that he carried his severed head in his hands for several miles) because it was incredible that a decapitated man could have walked so far: "Eh, monsieur, dans une "telle promenade ce n'est que le premier pas qui "coute!" Mrs. Eddy herself has confessed that surgery lies outside the sphere of influence of Christian Science. But if faith can heal a broken bone, it can unite a compound as easily as a simple fracture. What old critics called the "catastrophe" of the book, however, is the cure of the opium habit by the Christian

Scientist, who drinks before the patient a dose that "by all that is known of the drug" should have killed him. The saving grace, we gather, was the "complete "and absolute confidence" of the disciple of Mrs. Eddy that the drug could not possibly hurt him. To the ordinary mind this would seem to prove that the drinking was a harmless amusement rather than a "beastly habit." But the logic of the Christian Scientist is like Bottom's dream, in that it hath no bottom; therefore, it gives no footing for men who are guided by mere reason. Mr. Benson himself appears to have some suspicion of the conclusiveness of the case which he quotes, for he says: "It is true . . . that it is not "quite easy to poison oneself with laudanum, because "the amateur will usually take too much and be sick, or "too little and thus not imbibe a fatal dose." If he is interested in the subject beyond the immediate purpose of his fiction, he may with advantage refer to that not very recondite work, the *Confessions of an English Opium Eater*, in which he will find that De Quincey at one time habitually took 320 grains of opium daily, without any apparent ill-effect, and that he once gave a Malay a quantity of opium, "enough to kill some half "dozen dragoons together with their horses," which his Asiatic visitor bolted at one mouthful without anything particular happening. De Quincey quotes the case of a London magistrate who, on the first occasion of his trying laudanum for the gout, took forty drops, the next night sixty, and the fifth eighty without any effect whatever. We may add that, as is well known, the celebrated Scottish metaphysician, Sir William Hamilton, could swallow an ounce of opium without its having any action at all upon him, and this peculiarity was inherited by his eldest son. It would, of course, be rash for any person to follow these examples; we merely quote them to show the futility of Mr. Benson's *instantia crucis* of the Christian Scientist's immunity in regard to poisons. The doctrine seems to us open to objection in other ways. Thus, is drunkenness to be cured by the "healer" sharing the whisky bottle with the patient? Of the silliness of Mr. Benson's description of a poor gillie dying of typhoid, after perforation has taken place, being cured by being told that all the false belief which has made him ill is coming out of his mind, and assured that "sin is gone, illness is gone; all is gone except "the great light," we forbear to speak. We sympathize with those who believe in the healing effect of prayer, and we do not know enough of what are called the "laws" of Nature to affirm that miracles are impossible. But with the make-believe which denies the existence of pain and disease we have no patience. If Christian Science is true, it should expel not only sin but death from the world, yet the disciples of Mrs. Eddy die like other people; they are fed with the same food, hurt with the same weapons, and subject to the same diseases. Mr. Benson's book is mischievous in its tendency, particularly in the suggestion which it conveys that an epidemic of typhoid fever can be checked by the shallow patter of Christian Science.

NATIONAL ASSOCIATION FOR THE FEEBLE-MINDED.

THE eleventh annual report, lately issued, shows considerable increase in the multifarious activities of this Association for the welfare of the feeble-minded. Aiming, as it does, at the co-ordination of many scattered efforts for this afflicted class, it is satisfactory to find from a map of England illustrating the report that centres of work connected with the Association extend from Newcastle and Morpeth in the north-east to Brighton and Plymouth in the south and west, and that though more concentrated in the metropolitan area, many of the large provincial towns are represented. During the past year the honorary medical consulting staff has been considerably augmented, especially by the addition of well-known provincial physicians. Their primary function is to examine candidates and visit homes; they meet also periodically as a Medical Committee, thus giving an opportunity for general discussion upon questions of medical interest in relation to the feeble-minded. At a recent meeting alcoholism was considered in its bearing upon mental deficiency, and the conclusions reached have been already reported in this JOURNAL.[1] A considerable amount of information with regard to family history is accumulating in the case-papers of candidates, and may lead to further interesting discussions. The number of branches has increased during the year, and a new Home for Feeble-minded Girls has been opened at Shepherd's Bush in premises formerly occupied by feeble-minded mothers and their infants, now removed to more rural surroundings at North Finchley. Thus there are at present four homes directly connected with the Association, one of them (at Upshire, Essex) being for youths beyond school age who are trained in farm and garden work. The more promising among the latter are from time to time placed out in situations as farm hands, and eighteen so placed are periodically visited and reported on by the Master of the Home. The necessity of after-care is very obvious with regard to all defective cases, however well trained, and one of the objects of the Association has been the organization of after-care committees throughout the country to watch over and assist the career of the children taught in the special schools. An annual conference of representatives of such committees has been established, the first having been held in London last autumn. The most effectual form of after-care for the majority of defectives will no doubt be found in industrial colonies where, under supervision, their work can be turned to account. Indeed, an appeal has been issued, bearing the signature of H.R.H. Princess Christian, Patroness of the Association, for funds to provide such a colony, in connexion with which there will be residential schools for feeble-minded children as well as industrial homes for adults. About £1,200 has already been promised for this object and additional contributions will be welcomed by the Secretary, Miss A. Kirby, Denison House, Vauxhall Bridge Road, S.W.

DEATH OF PROFESSOR GRANCHER.

BY the death of Professor Grancher, who passed away a few days ago in Paris, at the age of 64, France has lost one of her most eminent physicians and the war against tuberculosis one of its most prominent champions. Jacques Joseph Grancher was born at Felletin in the Creuse department in 1843. In early life he had to struggle with poverty, and only the self-sacrifice of a devoted mother made it possible for him to enter the medical profession. He studied in Paris, and became Professeur Agrégé in 1873. At the time when Pasteur was making his researches on rabies, and had succeeded in rendering dogs refractory to the infection, Grancher was working in his laboratory. The story of how, on July 6th, 1885, Pasteur was suddenly appealed to by the mother of Joseph Meister, a boy of 9, who had been bitten by a rabid dog, is well known. The medical advisers to whom Pasteur turned in the emergency were Vulpian and Grancher, and it was on their recommendation and in their presence that the first inoculation was made. Later, when the escape of Meister from the dreaded disease was noised abroad and persons who had been bitten by rabid dogs began to flock to Paris, Grancher was one of four—the others being Roux, Chantemesse,

[1] BRITISH MEDICAL JOURNAL, May 11th, 1907, p. 1140.

and Charrin—who undertook to make the inoculations in the temporary buildings which had been assigned for the purpose. In January, 1887, when during Pasteur's absence on the Riviera owing to ill health his theory and even his honesty was violently attacked in the Académie de Médecine, Grancher stood forward as one of his most ardent and effective defenders. In 1879 Grancher won the appointment of Physician to the Paris hospitals, and in 1885 he succeeded Parrot as Clinical Professor of Children's Diseases. Shortly afterwards he was elected a member of the Academy of Medicine. Thenceforward he devoted himself largely to the hygiene of infancy, and in particular to the prevention of tuberculosis in childhood. He was the initiator of a movement for the safeguarding of the health of children in schools and in the family. He examined more than 4,000 children in the Paris schools, who either showed signs of tuberculosis or were threatened with the disease. On the basis of these examinations he drew up a series of statistics, which he laid before the municipal authorities, from whom he obtained a promise that open-air schools would be established. He also insisted that whenever tuberculosis showed itself in any member of a family the children should be boarded out in the country among healthy people. At the present time 290 children are thus provided for, and the example of Paris has been followed by Marseilles, Bordeaux, Lille, Havre, and other towns, which have some 200 children boarded out in the country. Professor Grancher's work was all the more remarkable from the fact that he was himself for some thirty years the subject of tuberculosis, and he owed the preservation of a life so useful to his fellow-men solely to intelligent care of his health, and to that strenuous will to resist the encroachments of the disease of which M. Léon Daudet has given so vivid a picture in his recent novel, *La Lutte*. He was the author of a number of works on tuberculous and caseous pneumonia, the early diagnosis of pulmonary phthisis, antituberculous vaccination, a treatise on diseases of children, etc. He had been more or less an invalid for more than thirty years. To science his death is a heavy loss not only on account of his indefatigable labours in the elucidation of the problems of tuberculosis, but perhaps still more because his help enabled Pasteur to pursue his researches on rabies to their triumphant issue. Pasteur was not a member of the medical profession, and it was Grancher who first took the bold step of testing the inoculations on man. He was one of the first who formed a true conception of the ideas and aims of Pasteur, and he contiuued to collaborate with the famous investigator. At the time of his death he was Chairman of the Council of Management of the Pasteur Institute. As soon as the news of his death was announced the President of the French Republic sent a representative to convey his condolences to the widow. Grancher was a man of the noblest and most unselfish character, and of so retiring a disposition that strangers were often repelled by the coldness of his manner. But beneath the icy surface he concealed a heart burning with the zeal of humanity.

JAPANESE FOLK MEDICINES.

We learn from our always interesting contemporary *Janus* that a general meeting of the Asiatic Society of Japan was held at Tokyo on February 20th. Taking as his text a paper on Japanese Patent Medicines read by Mr. W. M. Royds, British Acting Vice-Consul at Kobe, Mr. Ernest W. Clement read some interesting notes on Japanese Folk Medicine. Among the remedies mentioned were *hotan* (gem or jewel medicine), a cordial composed of camphor and peppermint; *hankontan*, which means "reviving soul medicine," and is credited with the power of restoring the dead to life; *chujoto*, a specific for female complaints, the name of which comes from the Princess Chujo, who lived in the time of the Empress Koken (A.D. 749-758) and the Emperor Junnin (A.D. 759-764); *hyakuso* ("hundred-grasses"), a strong, bitter medicine for diarrhoea and stomach troubles, which is said to have been discovered by a virtuous Emperor of China who, with the object of finding a good medicine for his subjects, tasted one by one all the plants he could get, and at last found this one, which is profitable to all. If this account is to be believed, it can only have been the virtue of the Emperor that preserved him from death by poisoning. We know from the dispatches of the generals and admirals in the late war how potent is the virtue of the Japanese Emperor, and that of his imperial brother of China would appear to be in its way not less thaumaturgic. We are sorry to be unable to give his name, but we hope our antivivisectionist friends will take note of his self-sacrifice. Then there is *Uiro-gusuri*, or *Uiro*, a nostrum originally brought from China, and supposed to be a specific for expectoration. It is sold in Odawara, a grand old building, with an eight-ridged roof, much admired by old-fashioned carpenters. *Usaikaku*, or powdered rhinoceros horn, is used as a specific in fevers of all kinds. The manifold virtues of *Seishintan*, or refreshing heart medicine, may be gathered from the following advertisement:

> Seishintan (Pilla).
> Indispensable both at Home and Abroad.
> (In Case, Bottle, Package, Nickel, Tin, etc.)
>
> As an invigorator and for curing Headache, Giddiness, and for refreshing the Drooping Mind. Those occupied in busy professions are advised to provide themselves with Our Pills without fail.
>
> Take a few of Our Pills after every meal, and Your Digestions will be improved, and Your Stomach and Bowels be kept healthy, whereby you will always be a stranger to all sorts of ailments arising from the disorder of those parts.
>
> Very Fragrant; keep the mouth from all Offensive Smell as well as from Fever; clear the throat of Phlegm, keep it moist, and clear the Voice. Very necessary for a Vocalist and Society Ladies and Gentlemen.
>
> Have Mysterious Powers of remedying Seasickness and every sort of illness to which you may be liable during the hot or cold season. Ward off the Attack of Dangerous Fever.
>
> Good for Stomachache, Diarrhoea, etc., arising from the use of strange drinking water, and for any other sort of illness you may often suffer from while on a journey. A Traveller, careful of his health, ought to carry Our Seishintan.
>
> Sold at all the druggists througbout Japan, but purchasers are cautioned against Fradulent Imitations, looking always for our Trade Mark "Mermaid."

This advertisement shows that the Japanese have shown an adaptiveness to Western methods in the matter of advertising equal to that displayed by them in the other arts of peace and war. Considerations of space prevent our mentioning more remedies, except one, known as *nihachisui*, or "twice-eight water," which is warranted to make girls sweet sixteen. What would not our Society beauties give for an elixir that could be trusted to work this miracle for them? Some Japanese proverbs relating to medicines are suggestive. "There is no medicine for a fool" might find an application elsewhere. "Good medicine is bitter to the mouth" embodies a belief which is widely prevalent among ourselves. The fact that the doctor does not always practise what he preaches is expressed in the phrase *Isha no fuyojo* ("the doctor's carelessness").

BRITISH DENTAL ASSOCIATION.

The annual meeting of the North Midland Branch of the British Dental Association was held in Manchester last week, under the presidentship of Mr. G. O. Whittaker. The Vice-Chancellor of the University, in an address of welcome, referred to the closer connexion between the University and the dental profession which had grown up within recent years. To meet the growing requirements of that profession the University had

instituted a degree and a diploma in dentistry, of which many of the dental students studying at the University were taking advantage. The President, in his address, pointed to the amount of physical disability caused by neglect of the teeth, and to the consequent national loss. He suggested that the Manchester education authority should be asked to appoint a dentist to one of the elementary schools; to provide for dental hygiene lectures being given at pupil-teacher centres and training schools; to have dental hygiene charts hung in the schoolrooms; to make rules that no teacher should be engaged whose teeth had not been properly attended to, that no pupil be admitted to a scholarship unless his teeth had been treated as required, and that teachers be instructed to see that the children's teeth are kept clean as well as their hands and faces. He thought it was also desirable that a dentist should be appointed on the Committee of the Manchester and Salford Sanitary Association. At the annual dinner it was stated that the Committee of the Victoria Dental Hospital was short of £7,000 for the completion of the new hospital now being erected near the university. The hospital relieves about 17,000 people a year, or one in twelve of the population.

THE CHARITY GREEN FLY.

THE current number of the *World* contains a very timely article on a form of pest infecting social charity enterprises which is not inaptly compared to green fly on a rose; the individual parasites are insignificant, but their combined effect is to blight the rose. A chance collection of amateurs brought together haphazard for some social function in aid of a charity is rarely competent to undertake the executive duties of organizing an enterprise which involves collecting a good deal of money and spending not a little on clerical labour, workmen, and contractors. Hence a person having experience in such organizing work is engaged, and is annually paid stipulated fees or commission. So far all is above board, but our contemporary goes on to say: "Unfortu-
" nately, apart from these professional organizers, too fre-
" quently the green fly in the guise of hangers on, male and
" female, appears." One will undertake to get paragraphs into the papers, charging the charity committee a fee for each paragraph published; another will arrange for the loan of chairs from a charitable tradesman, but charges an absurd price for cartage, and so on. Finally, when the accounts come to be made up, the expenses, especially under the convenient head of petty cash, are found to be much larger, and the sum to be paid to the charity much smaller, than was expected. We are afraid that the picture is not at all overdrawn, and that, in fact, it might have been painted in much darker colours. The remedies suggested are either the publication of a full balance sheet or a business audit. We would have supposed that the one implied the other; but however this may be, we entirely agree that in connexion with some at least of the more ambitious fêtes given on behalf of charities abuses exist which, though they may be individually small, become serious in the aggregate, and that the true remedy is the application of business methods to the supervision of the financial side of such undertakings and the fullest publicity for the auditor's report and statement of income, expenditure, and balance. The *World* has done a useful service by publishing an outspoken article which in its pages will, it may be expected, be read by those classes of society without whose help these big charity fêtes could not hope for success.

THE Royal Society has awarded the studentship in biology to Dr. H. M. Woodcock to aid him in working out the life-history of certain hematozoa of birds; the investigation will be carried out at the Lister Institute. The income of the Gunning Fund accrued during the past three years has been placed at the disposal of Dr. F. H. Scott for the continuance of his investigations into the metabolic processes in nerve cells.

MEMBERS attending the Annual Meeting at Exeter, who intend to be present at the Cathedral service and President's address in academic costume, are requested to communicate their names to Dr. A. Fortescue Sayres, the Barnfield, Exeter.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

The Board of Education and a Medical Bureau.—Last week, in the discussion on the Education Estimates, Mr. Masterman criticized the action of the Education Department as regards its administration of the Act passed last session for feeding school children. He contended that the comparative failure of the Act had been largely due to the manner in which the Board of Education had brought it to the notice of the authorities. The circular implied that only in special circumstances of emergency was there to be an attempt to feed the children. That was contrary to the intention of Parliament. He also argued that grants to necessitous districts were insufficient, and urged that provision should be made for organizing a Central Medical Department of the Board of Education to carry out the medical inspection of children, and that moral instruction should be made a compulsory subject. Mr. McKenna, in his reply, said the circular issued by the Board with regard to the feeding of school children was framed solely with the intention of inciting local authorities to act up to the spirit of the Act. With regard to medical inspection, it was the intention of the Board, if the Bill now before Parliament passed, to establish a medical bureau, which would guide and advise local authorities as to the nature of the work they would have to do under the Act, and he hoped that when the names were published the House would be fully satisfied.

The Medical Bureau of the Education Department.—Mr. Alden asked the Secretary to the Board of Education if he could state the nature and work of the Medical Board which it was proposed to form in connexion with his department; what would be the number of doctors which would compose that Board; how many of them would be women; and whether their duties would be of a purely advisory character? Mr. Lough replied that when the duty of medical inspection of children in public elementary schools had been imposed by statute upon local education authorities, the Board of Education proposed to establish a medical staff to assist them in advising local education authorities in regard to certain points arising under the Bill, to collect and correlate the information obtained through the medical inspection carried out by the authorities, and to issue periodical reports based upon that information. In making appointments regard would of course be had to the possession of special knowledge of such branches of medicine as bear upon the medical treatment of children, hygiene, public health, including sanitation, and kindred subjects. It would be premature to enter into greater detail at the present time.

Health Teaching in Public Elementary Schools.—Mr. Wedgwood asked the President of the Board of Education whether his attention had been drawn to a volume by Sir Victor Horsley and Dr. Mary Sturge, entitled *Alcohol and the Human Body*, in which it was stated that evidence was steadily accumulating that the stunted frames and weak development of many poor children was at any rate partly due, both directly and indirectly, to the action of alcohol; that one of the most frequent causes of evil habits and of sexual immorality among young people was the taking of alcohol; that for the sake of national morality as well as physique it was clear that in no form whatever should alcohol be used by the young, either in childhood or adolescence; if he would say what teaching, if any, was given on the subject in the public elementary schools;

and whether he would prescribe and enforce lessons thereupon in all schools over which he had any authority. Mr. M'Kenna said that the answer to the first paragraph of the question was in the negative, but he would draw his honourable friend's attention to paragraph 7 in the prefatory memorandum to the new Code of Regulations for Public Elementary Schools, and to paragraph 4 in the prefatory memorandum to the new Regulations for Training Colleges, just issued, which would show, he thought, that the Board of Education was doing its best to secure adequate and efficient teaching in the important matters referred to.

Epileptics and the Workmen's Compensation Act — Mr. Gulland asked the Secretary of State for the Home Department on Monday whether he was aware that throughout the country there were many workers subject to epileptic fits; that, under the Workmen's Compensation Act, the insurance companies would not undertake the risk of insuring them against accidents; that, contracting out not being allowed, they were in danger of losing their employment; and what steps, if any, he proposed to take to prevent this class from being deprived of the opportunity of earning a livelihood. Mr. Secretary Gladstone said he had no official information on the matter referred to. He believed, however, it was the fact, apart from the Compensation Act, that epileptics had difficulty in finding employment. The new Act might aggravate the difficulty, though such cases might have been provided for by an amendment which he moved on report, but which, after being left to the judgement of the House, was rejected. The matter was one which obviously could not be considered with reference merely to the effect of the Act, and the whole question of the treatment of the feeble-minded, including epileptics, was under the consideration of a Royal Commission, whose report might be expected shortly.

Label Licking in Thread Factories.—On Monday Mr. Chiozza Money asked the Secretary of State for the Home Department if his attention had been directed to the report by Miss Squires, His Majesty's Inspector of Factories, that in one thread factory she found forty little girls all licking and moistening adhesive labels by the mouth, the number of labels so treated being about thirty gross per girl per day; that the tongues of most of the girls had the polished tip and brown coating characteristic of label lickers, and that the girls complained that the work made them feel sick at times; and whether, in the absence of legislation on such points, he would give the name of the firm referred to that public opinion might be exerted in the matter. Mr. Secretary Gladstone said he thought there would be objection to publishing the name of this particular firm. As regards the practice referred to, he might say that it formed the subject of inquiry some years ago by a Departmental Committee, and they did not see their way to proposing its prohibition. The inspectors had instructions to recommend the use of dampers and the abolition of the practice as far as possible.

A Consumption Hospital at Belfast.—Last week Mr. Devlin asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the decision of the Belfast Corporation sanctioning an arrangement for ten years with the Committee of Management of the Forster Green Hospital for Consumption, under which arrangement the hospital authorities were to reserve twenty-five beds for patients nominated by the Corporation and approved as suitable by the medical superintendent of the hospital, the Corporation to pay the sum of 35s. per week per bed and two members of the Corporation to be on the Board of Governors of the hospital; whether he was aware that the Forster Green Hospital was situated in a hollow and was built and equipped over thirty years ago, before the value of an elevated situation and open-air treatment for consumption became recognized by the best authorities on the disease, and at the present time was quite unsuitable for the treatment of tuberculous patients; whether he was aware that the sum agreed upon was 10s. per bed per week in excess of that which was the basis of negotiations between the parties in 1903, and that the opinion of an expert taken by the Corporation on the Forster Green Hospital and site was suppressed by the Corporation Public Health Committee, despite the appeals of several councillors for its publication; and whether, seeing that it was estimated that the cost of establishing a municipal consumptive hospital for Belfast on a suitable site, and equipped in a thoroughly up-to-date manner for twenty-five patients, would be £12,500, which would be cheaper than the present arrangement, and that the present arrangement was part of a scheme to help the Forster Green Hospital until the sum of £40,000, on the subscription of which a large bequest was contingent, was forthcoming, and that the death-rate from consumption in Belfast was exceptionally high, and seeing that the present arrangement was opposed to the public interest, he would refuse to sanction it, and order an inquiry into the whole question. Mr. Birrell replied that the Local Government Board had received an application from the Belfast Corporation for sanction to an arrangement with the Committee of the Forster Green Hospital on the terms indicated in the first part of the question. A protest had been made to the Board on substantially the same grounds of objection as were recited in the question, and the matter was at present under the Board's consideration.

The R.A.M.C. and Indian Allowances.—Mr. Campbell asked the Secretary of State for War, on Monday, whether he was aware that officers of the Royal Army Medical Corps, under the substantive rank of colonel, but holding the appointment of senior medical officer in a command in India, had been refused the additional daily allowance of 5s. to which such officers were by the terms of paragraph 4 of the Army Order of January 10th, 1907, expressly entitled if serving abroad, and that such refusal had been justified on the ground that service in India was not service abroad within the meaning of the Army Order; and, if so, seeing that such a construction was a direct violation of the letter as well as of the spirit of the Order in question, he proposed to take any, and, if any, what, action in the matter. Mr. Secretary Haldane replied that the Army Order referred to published a Royal Warrant modifying certain paragraphs of the pay warrant of the army, the preamble of which specially exempted the Indian Empire from the sphere within which the Warrant was in force. Officers of the R.A.M.C. serving in India received special Indian rates of pay as laid down in the Indian Army Regulations, and it was not proposed to disturb the arrangement.

Frozen Meat for the Army.—Colonel Kenyon-Slaney asked the Secretary of State for War whether any Militia battalion now out for training was being fed on frozen beef; and, if so, whether, in view of the paragraph in the Supply Handbook for the Army Service Corps which stated that frozen beef was at present excluded from the contract, as it was considered that the process of thawing the meat, which was essential before consumption, rendered it unnutritious, he would take steps to secure that Militia officers sent to attend supply courses should not find that the rules they were there taught were ignored by the authorities. Mr. Secretary Haldane replied that frozen beef was being admitted on two days a week under present army meat contracts. The instructions in the Supply Handbook, published in 1899, were now under revision. The improved conditions under which frozen meat was imported had justified experts in changing their opinion as to the nutritive value of such meat.

Plague in India.—In reply to Dr. Rutherford, Mr. Secretary Morley stated on Tuesday that the plague figures for June were: Punjab, 58,821 deaths; whole of India, 69,064. For the six months ending June: Punjab, 632,953; whole of India, 1,060,067.

The Registration of Nurses.—On Tuesday Mr. Hart-Davies asked the Secretary of State for the Home Department whether he would consider the advisability of establishing a Government system of certificates and registration of trained nurses. Mr. Secretary Gladstone replied that this matter had been under consideration for some time, but serious objections and difficulties stood in the way of the establishment of any such system as was proposed. He was not prepared to take any action in the matter.

Manchester and Salford.

NOTIFICATION OF PHTHISIS.

A SYSTEM of voluntary notification of phthisis has just been introduced in Salford. Last week practitioners received from the medical officer of health a letter saying that the Health Committee is prepared to pay a fee of half a crown for each case reported by private practitioners, and one shilling for each case reported from public institutions. In order to encourage the reporting of all cases, Salford has adopted an alternative form of notification (*a*) on a blue card which is supplied, when the Health Department will not interfere in any way with the patient; (*b*) on a pink card, when the officials of the department will visit the homes of the patients, and keep the cases under observation, to see that proper precautions are taken. "In no case," it is stated, "will this visiting be allowed to interfere with the patients' opportunities of earning a livelihood, *so long as proper precautions are carried out*," and the Health Committee expresses a hope that practitioners will only use the blue card in cases where they are satisfied that proper precautions will be carried out.

A system of voluntary notification has been in existence in Manchester for some time, but we are convinced from inquiries that it is quite valueless for purposes of statistics of phthisis, and of only very limited value in other respects, as many cases are not notified. A short time ago a coroner's jury rebuked a medical man for informing a patient of the disease he was suffering from, as the knowledge so preyed on the patient's mind as to lead to premature death. Of course medical men will judge each case on its merits in deciding whether to divulge the existence of phthisis. Some months ago one of the medical societies of Manchester expressed its opinion that the notification of phthisis was not advisable, as the fact that a person was suffering from any chronic disease, if it became known, might interfere with such person's business. The medical man's first duty is to his patient, and many complex questions will arise when he has to consider the advisability of notification. The effect it will have on insurance of relatives when family history is inquired into, the question whether employers of a chronic phthisical patient who is still able to work will take alarm and dismiss him, the effect of the knowledge on the patient himself—these and other questions will all have to be considered; and we are inclined to think that, except in advanced, hopeless, and self-evident cases which are past working, the notification will often be omitted. Everything will depend on the way in which the Health Department acts, and on what it means by "proper precautions." If the precautions which it may insist on are at all irksome or calculated to draw attention to the patient's ailment, patients will object to being notified, and their medical attendant will certainly have to consult their wishes, as long as the notification is optional. At the same time, medical men are fully alive to the value of proper precautions, and no doubt will assist the Health Committee as far as possible.

HOSPITAL REFORM.

It is somewhat regrettable that whenever anything is said by practitioners about hospital abuse there is a tendency to regard it as an attack on the medical and surgical staffs of the hospitals, and a feeling of tension is apt to arise where co-operation is not only desirable but necessary. In attacking hospital abuses the practitioners of Manchester have solely in their minds those abuses for the removal of which the Hospitals Committee of the Association has made such valuable suggestions. It ought not to be necessary to say that the leaders in hospital reform in Manchester absolutely and entirely dissociate themselves from all personal attacks on the medical and surgical staffs, and much more from the virulent attacks on surgeons generally which appear from time to time in the lay press. The abuses which at the present are agitating medical circles in Manchester are those which arise from the lay boards and from the public tendency to exploit the profession. We may go even further, for it is not denied that general practitioners themselves are not free from blame, for it is far too common a thing, when they get any case which for any reason they do not wish to treat, to refer it to some hospital, quite regardless of the question of its eligibility for free treatment. Nevertheless, when all this is admitted, the abuses are there, whoever is to blame; and it is reasonable to suppose that the general practitioner, going about, as he does, among the people's homes, has far better chances of detecting cases of abuse than the consultants at hospitals, who only see the cases for a few minutes, and have no personal opportunity of making effective inquiry. It is fully recognized that the hospital staffs are, by themselves, almost powerless to remedy many of the abuses, of the extent of which they seem to be hardly aware, and it is felt in Manchester that unless there is some sort of joint consideration and co-operation between all members of the profession on this subject, the evils will increase until they are beyond remedy. It is often thought that the chief sufferers are the general practitioners, because, perhaps, they talk most about it. They talk most because they see most, but they are quite certain from extensive observation that the consultants are ignorant, perhaps blissfully ignorant at present, of the losses they are themselves sustaining from an unscrupulous section of the population that preys on public charity.

MEDICAL UNION IN MANCHESTER.

On Saturday last the five medical societies of Manchester joined in an excursion to Buxton. The societies represented were the Medical, the Clinical, the Pathological, the Medico-Ethical, and the Medical Guild, the idea of joint social functions having been originated by Dr. Le Page and the Clinical Society. In spite of the extremely unfavourable weather, an enjoyable afternoon was spent, and it is to be hoped that this is the beginning of a closer fellowship between the various societies, which have in the past been far too exclusive. Several years ago there was an idea of establishing a central medical hall where all the societies might hold their meetings. The idea went to the extent of collecting a few guineas for preliminary expenses, and sending out a few circulars, but since that nothing more has been heard of it. Perhaps la few joint social functions like that of Saturday last wil break down the want of mutual sympathy that has existed, and there may then be a better chance of obtaining a central medical hall, if not some amalgamation of the societies.

"KOSHER" MEAT.

For two days of last week the Civil Court at Manchester was occupied with a libel action in which four Jewish butchers claimed damages from the members of the Manchester Shechita Board for issuing a notice warning Jews against purchasing meat from them because it was not "kosher"—that is, it was not killed under the prescribed rules. The Chief Rabbi (Dr. Hermann Adler) stated that among his duties was the examination of candidates for several offices, including "shochetim"—that is, "killers"—and to issue certificates of fitness to them. The Manchester Shechita Board was appointed by authority. The slaughtering and preparing of meat, so as to render it fit to be eaten, according to Jewish law must be done by the shochetim, or killers of unblemished reputation. They must also be well trained in the theory and practice of killing, so as to prevent undue or unnecessary pain being inflicted on the animals. They must also be competent to examine the lungs of the slaughtered animals to see that they are free from disease. These killers were appointed by a duly-appointed authority. Each "killer," or "shochet," must hold a certificate of fitness, and no one was recognized by the Shechita Board without it. The jury returned a verdict for the defendants.

West Yorkshire.

THE BRADFORD MUNICIPAL MILK DÉPÔT.

A SOMEWHAT prolonged discussion on this subject took place at a meeting of the Bradford City Council on July 9th. The Chairman of the Health Committee said that there was no doubt that the milk sold was being used by the poorer classes of the community. Some of the very poorest were receiving the milk through charitable agencies—such as the Cinderella Club—the reason being that a week's feeding for a baby cost 1s. 6d., and these people were not able to pay so much. The supply of pure milk was needed to stop the terrible

waste of infant life. In some of the worst wards in Bradford the average death-rate of children under 12 months during the past five years was 213 per 1,000 births. In the better wards the average was 119. In the Exchange Ward, which was the worst, the death-rate was 265, whilst in North Bierley it was only 82. One-fourth of all the deaths registered in Bradford were of children under 12 months, and if they could obtain the same conditions for Bradford as for Bournville, near Birmingham, they could save the lives of 500 children every year. The cost of the attempt to improve matters by the establishment of the milk dépôt was £101 in the first year, £126 in the second year, £130 in the third, and £114 last year, while the estimate for the current year was £152. In addition to the high death-rate amongst children, the birth-rate was declining, and unless something were done to save the lives of the children a very serious position would have to be faced. The suggestions of the Committee were eventually adopted.

Water Charges at Halifax.

A case of considerable importance to medical practitioners was raised at the Halifax Police-court on July 10th. Dr. W. C. F. Smith was summoned with respect to the non-payment of 6s., the amount of the water-rate for a tap in his stable yard. On behalf of the Corporation it was explained that the charge was 3s. for a horse and 3s. for a two-wheeled trap. Dr. Smith disputed the legality of the charge on the ground that it had been decided before Mr. Justice Darling and Mr. Justice Lawrence last month, that a motor-car or a carriage came under the head of "domestic purposes." At the request of the Corporation the case was adjourned.

Liverpool.

The School of Tropical Medicine.

Sir Alfred Jones, K.C.M.G., President of the Liverpool School of Tropical Medicine, has, we learn from the *Liverpool Journal of Commerce*, received from the President of the Republic of Peru a letter acknowledging the receipt of 20 copies in Spanish of a report by Dr. H. Wolferstan Thomas, a member of the Yellow Fever expedition sent out by the school, on the health of the river port of Iquitos. The President of Peru says to the President of the Liverpool School that it has been a source of great pleasure to the Peruvian Government to know that a group of distinguished members of the celebrated and beneficent institution presided over by Sir Alfred Jones have included in the field of their important investigations such a valuable zone of Peruvian territory. The Peruvian President goes on to say that he has read with all the attention they deserve the conclusions arrived at by Dr. Thomas as to the deplorable sanitary condition of Iquitos, and has also taken duly into account the wise measures advised by him to remedy this state of things. He adds that the pamphlets will be sent to the authorities at Iquitos, and the report which they contain will be transcribed in the *Bulletin*, which serves as the official organ of the Department of Public Health. The necessity of improving the sanitary state of Iquitos has for a long time past had the undivided attention of the Peruvian sanitary authorities. Understanding that the fundamental and most urgent works were those connected with the supply of drinking water, the elimination of decaying matter, and land drainage, the sanitary engineer, Mr. R. Terradas, was commissioned at the end of the year 1905 to carry out the necessary investigations in order to draw up a scheme of sanitation for that town. The engineer carried out his commission satisfactorily, and the vast and complete sanitary scheme which he drew up is being submitted to the necessary scrutiny. The Government is only awaiting the approaching meeting of Congress to obtain the passage of a law authorizing them to expend the funds necessary to carry out the sanitary works planned.

Recently Dr. J. L. Todd, late Director of the Runcorn Research Laboratories of the Incorporated Liverpool School of Tropical Medicine at Runcorn, who is returning to Canada, and Drs. Barrett and Yorke, who are about to proceed to the West Coast of Africa to investigate blackwater fever, were entertained at a farewell dinner, over which Sir Alfred Jones, K.C.M.G., presided. There was a numerous company of merchants and medical men interested in the health of the tropics, amongst those present being the Bishop of Liverpool, Lord Mountmorres, Major Ross, C.B., Colonel Bruce, R.A.M.C., C.B., Sir Rubert Boyce, Mr. Shipley (Cambridge), Professor Sherrington, Mr. Robert Miller, Professor Carter, Dr. Alexander, Dr. Macalister. Dr. Breinl, Dr. Prout, C.M.G., Dr. Stephens, Mr. Newstead, the American Consul, the Consul-General of Mexico, and Mr. A. H. Milne (Honorary Secretary of the School). The Chairman and numerous speakers dwelt upon the good work that Dr. Todd had accomplished during the years which he had been associated with the Liverpool School, and gratefully referred to his action in trying to establish a Chair of Tropical Medical Research in commemoration of his old colleague and co-worker, the late Dr. Dutton, towards the creation of which Chair he had himself contributed £1,000. Major Ross remarked that Drs. Barrett and Yorke were fully alive to the very difficult nature of the investigation which they had undertaken. One of the speakers urged that the Committee of the School should lose no time in fitting out another expedition, with head quarters at Boma, to investigate as thoroughly as possible the atoxyl-mercury method of treatment of sleeping sickness. It was pointed out that this method of treatment was gaining a firm hold amongst the principal investigators in Europe.

A Congress of University Students.

The fourth Congress of students of British universities was held in Liverpool last week, and resulted, amongst other things, in the adoption of the following resolution:

> The present lack of uniformity in professional examinations at the British universities, both with regard to the grouping of subjects and to the standard of knowledge required, is detrimental to the progress of medical education. It is desirable to establish uniformity, both in grouping of subjects at professional examinations in medicine and in the standard of knowledge required for the same. To meet these requirements a State examining Board should be appointed to control examinations.

In support of this resolution it was urged that abroad the system of State-controlled examinations worked admirably, and that if examinations were standardized many anomalies now existing in the teaching of medicine would be abolished. If established, the student of the future would be able to acquire different portions of his knowledge as a pupil of the professors whom he preferred, while, if lacking in means or anxious to obtain the general stamp of the graduate of one particular university, he could complete his whole curriculum at one centre. In opposition, it was urged that if such a system were introduced, there would be a tendency for each university to specialize in some subject for the teaching of which it had unusual facilities; in other subjects its teaching would be neglected. This would create a serious difficulty for such students as had to complete their education at one centre, for one undoubted result of the institution of State-controlled examinations would be that the minimum amount of knowledge required to obtain a registrable qualification would be raised. It was also suggested that the advantages ascribed to sitting at the feet of great men were exaggerated; such men, with a few brilliant exceptions, lacked ability to teach. Some amendments to the resolution were therefore moved, but eventually, after a trial ballot among the medical representatives alone, the Congress adopted the resolution here printed.

Scotland.

The Royal Edinburgh Asylum Centenary Celebration.

The Managers and Physician-Superintendent of the Royal Edinburgh Asylum gave a garden party on July 12th to celebrate the centenary of the asylum, which received its Royal Charter on May 2nd, 1807. About 1,500 guests were invited; they were representatives of the local authorities throughout Scotland interested in asylum work, public bodies of Edinburgh, the medical profession, and the clergy. The guests were received in the avenue of Craig House by Professor Rankine, K.C., the Chairman of the Board of Managers, and Dr. Clouston, the Physician-

Superintendent. The beautiful grounds of Craig House were open to the visitors, as was also old Craig House and the greater part of new Craig House. A map of the grounds and buildings enabled the guests readily to find their way about. Refreshments were served in a large marquee erected over the tennis court of old Craig House. On the adjoining lawn the Polton Mills Band—the winners of all the championship cups of the Scottish Amateur Band Association—gave a programme of excellent music. The day, happily, was fine, and the party was thoroughly enjoyed by the large company.

THE DIPHTHERIA OUTBREAK IN EDINBURGH.

Only 15 cases of diphtheria were notified in the week ending Saturday, July 13th, as compared with 44 in the previous week. Fifteen cases are about the ordinary weekly number at this season of the year, so that the outbreak of the previous week has been shortlived.

CEREBRO-SPINAL MENINGITIS IN SCOTLAND.

The Registrar-General for Scotland reports that in the week ending Saturday, July 13th, 14 deaths from cerebro-spinal meningitis occurred in eight principal towns of Scotland. Of these 6 were in Glasgow, 4 in Edinburgh, 2 in Leith, and 1 in Dundee and Paisley respectively. Four cases were notified to the Public Health authorities in the same period, 4 deaths were registered, and 14 cases remained under observation.

SIR A. R. SIMPSON.

On July 15th the committee in charge of the complimentary recognition of Emeritus Professor A. R. Simpson, M.D., LL.D., met the Board of Directors of the Edinburgh Royal Maternity and Simpson Memorial Hospital, and asked those authorities to accept a sum of money towards the endowment of a bed to show their appreciation of Sir Alexander Simpson, of the interest he always took in the Hospital and of the work he did for it.

Ireland.

THE ROYAL VISIT TO IRELAND.

ON the occasion of their recent visit to Dublin the King and Queen received a number of addresses of welcome from various bodies. One from the Royal College of Physicians of Ireland was presented by Dr. John Redmond, another from the Royal College of Surgeons in Ireland by Sir H. R. Swanzy, and a third from the Apothecaries' Hall of Ireland by Lieutenant-Colonel Adye-Curran, F.R.C.S.I. In his reply to the addresses, His Majesty expressed his thanks for the hearty greeting and cordial welcome tendered to the Queen and himself, and accepted with sincere gratification the loyal assurances of devotion to his Throne and person.

ULSTER MEDICAL SOCIETY.

At the annual meeting of the Ulster Medical Society, the President, Dr. Gaussen (Dunmurry), in the chair, Dr. Howard Stevenson, the Honorary Secretary, read the annual report of Council. Dr. Fielden, Honorary Treasurer, presented the statement of accounts, showing a balance in favour of the Society of £30 10s. 8d., and Dr. Storey, Honorary Librarian, presented the library report. When these reports had been discussed and passed, the following were elected office-bearers for the ensuing session, 1907-8: *President*, Dr. John McCaw, Senior Physician to the Belfast Hospital for Sick Children; *Vice-Presidents*, Dr. A. Fullerton and Dr. Wallace; *Treasurer*, Dr. Fielden; *Librarian*, Dr. Storey; *Secretary*, Dr. Howard Stevenson; *Editing Secretary*, Dr. Rankin; *Council*, Drs. R. J. Johnstone, T. Houston, S. A. Craig, A. G. Robb, W. St. C. Symmers, W. B. McQuitty.

HEALTH OF BELFAST.

The death-rate still keeps high for the season; at the meeting of the Public Health Committee on July 11th it was returned as 20.3. Only 6 cases of cerebro-spinal meningitis were notified as compared with 11 in the previous week. There were 72 patients in the Fever Hospital, of whom 35 were suffering from cerebro-spinal meningitis; there was one death which was due to this disease. The special Local Government Board Health Commission resumed its sittings on July 15th in the Town Hall. It seems still to have a large amount of work to get through.

South Wales.

THE DISPUTE IN EBBW VALE.

A CASE arising out of the dispute between Cwm and Waunllwyd workmen and the Ebbw Vale workmen's doctors' fund was heard before Judge Owen at Tredegar on July 16th, when Henry Bourton, a collier employed by the Ebbw Vale Steel and Iron Company, claimed the return from the company of moneys deducted by it towards the medical fund. Mr. Sankey, who appeared for the plaintiff, said that the central committee had appointed medical officers at certain collieries who did not commend themselves to some of the men. An overwhelming majority of the men employed at Cwm and Waunllwyd signed a petition to have their own doctors, but on the central committee they were in a minority. They had sent notices to the Ebbw Vale Company to discontinue the deductions from wages, and were now seeking to have the agreement to deduct the contributions revoked. In the course of the case it appeared that the plaintiff had not signed the agreement with the Ebbw Vale Company sanctioning the deduction; and the judge held that it was absolutely essential that a written sanction should be given, and gave judgement for the plaintiff for the return of the money illegally deducted. Mr. Sankey stated that he would bring another action in which a plaintiff had signed the agreement and also a notice to revoke such agreement.

We understand that it has not been possible to inspect the contract books of the company, so that it is not known how many other workmen are in the same position as the plaintiff in this case. As the legal representative of the defendants agreed to the course proposed by Mr. Sankey with regard to another action, we may assume that the matter will then be tried out.

DRAINING OF SWANSEA.

At a meeting of the Swansea Water and Sewers Committee on July 9th, the borough engineer submitted a revised scheme for the drainage of the western portion of the town. This provides for a new drainage course beginning at the Hafod and proceeding to Brynmill, and finally finding an outlet at Mumbles Head. This scheme would not only meet existing needs, but would provide for the future and meet the requirements not only of Swansea, but the Mumbles. The estimated cost is from £100,000 to £200,000. A special meeting will be called to consider the proposal.

MONMOUTHSHIRE WATER.

Another conference of the Monmouthshire local authorities was held at Newport on July 10th, when the question of conserving the Monmouthshire water was further considered. The proceedings were private, but it was announced that resolutions had been adopted affirming the necessity of conserving the water supply of the county and of promoting a Bill next session to carry out the engineer's recommendations. The lines of such a Bill would provide that the costs of the Bill and of the acquisition of lands should be a general county charge, to be recouped eventually out of the profits of the water undertaking when it reached a profit-earning stage; that the works should not be commenced until the county council had made such contracts with water distributors (whether companies or local authorities) as would ensure the payment by them of a water rental not less in the aggregate than the amount of the interest and sinking fund upon the loans to be raised on the security of the county rate to defray the cost of the works and of maintenance and administration; that any water company taking water from the county council should be compelled under penalties to supply its whole district under constant pressure; that if the county council supply any company in bulk, such supply shall in no way add to the value of the company's undertaking on a sale to the local authority; that no water company should be eligible to enter into a contract with the county council to

take water in bulk unless it should have first offered, subsequently to the passing of the Bill, to sell by arbitration the water undertaking to the local authorities in whose area it held the rights of supply; that the expenditure to be charged upon the county rate in any one year, exclusive of interest and repayment on the loan for the promotion of the Bill, should not exceed a rate of ½d. in the £.

The engineer's report recommended the construction of three large reservoirs on the Gruyne River, on the border of Breconshire and Monmouthshire, at a cost of £200,000, £250,000, and £280,000. The total cost of the works to supply four million gallons per day was estimated at £730,000.

Cardiff Infirmary.

At a meeting of the Cardiff Infirmary Board of Management on July 10th, the Secretary reported that the bank overdraft now amounted to £13,873. Colonel Bruce Vaughan said Miss Talbot, of Margam Castle, had promised £1,000 and Lord Aberdare £500 to the new wing fund, which now totalled a little over £11,000. Miss Talbot wrote that she would give a larger sum if other people in the county who were well able to subscribe would do so. It may be remembered that Mr. John Cory, J.P., D.L., promised to subscribe £5,000 towards the erection of a new wing, providing an additional £25,000 was raised. Colonel Bruce Vaughan, in proposing a vote of thanks to Mrs. Lewis, said he wished members of the Management Committee would go round the infirmary. They would then see things which would melt the hardest heart and enlist practical support. There were 600 patients waiting for admission, many of them as bad as those now in the infirmary, so that the need of additional accommodation was painfully brought home to them. Dr. T. Wallace seconded the resolution, which was carried.

Haverfordwest and Local Government Board.

There was a long discussion at the meeting of the Haverfordwest Rural District Council on July 10th as to the appointment of a medical officer. A reply was received from the Local Government Board declining to sanction the appointment of a medical officer for the Haverfordwest district only at a salary of £150, and pressing on the council the advantages of joining with Narberth and appointing an officer for the combined area at £300. In another communication the Board said that no objection would be offered to the new medical officer of health being appointed vaccination officer, but in such a case he should receive a salary of not less than £600, and a condition of the appointment should be the possession of a motor car. Mr. Reynolds (Treglenais) held that the council should not insist on a motor car, but should encourage the breeding of horses. Another member said the council had been fighting the Local Government Board on this question since 1898. The Local Government Board had always carried the day, and would do so on this question. Eventually it was decided to ask the Local Government Board to consent to a medical officer of health being appointed for the Haverfordwest district only, provided he were also appointed vaccination officer.

Health of Swansea.

Dr. Eben Davies, Medical Officer of Health to the Borough of Swansea, has just issued his annual report. The estimated population in the mid-year 1906 was 100,690. The increase in the period 1891-1901 had been phenomenally low, the result of depression in the trade and the resulting migration of some thousands of the population. These conditions no longer exist. Since 1901 the industrial conditions of the district have greatly improved. The birth-rate was 31.9, the death-rate 17.95, and the infantile death-rate 157 per 1,000 births. Among legitimate children the proportion of deaths under 1 year to births registered was 15.2 per cent.; among illegitimate children 28.7 per cent.; so that the prospect of survival of a legitimate child over the first year is nearly double that of an illegitimate child. There has been a considerable increase in the houses dealt with under the Housing of the Working Classes Act, 1890. The number of samples analysed during the year was 296, giving an average of 1 to every 347 of the estimated population. The number of samples reported against was 21, being 7.1 per cent. of the total number.

New South Wales.

The Friendly Societies and the Medical Profession.

The Friendly Societies Association of New South Wales, the objects of which are the fostering and promotion of the various registered friendly societies, held its annual meeting recently, and the report of the Executive deals with a variety of subjects, some of them of vital importance to the medical profession. It is stated that the total membership of these societies in New South Wales is 101,463, and the total funds £960,668. The amount paid for sick payment was £83,375, and the amount paid for medical benefits was £87,465. The total receipts were £390,465; the total expenditure, £314,491; increase of income over expenditure, £75,974; interest earnings, £34,324. The following paragraph in the report is significant of the attitude adopted by some of the members towards the medical profession:

> The relations between the medical fraternity and the societies are assuming proportions inimical to the best interests of the societies. The publication of a form of agreement with friendly societies, as finally adopted by the Council of the New South Wales Branch of the British Medical Association, had put a kind of cap on everything. At the request of the Association a conference was arranged, and after two sittings the business was determined. The final paragraph in the agreement, where the wage limit was referred to, was the rock upon which it was supposed the conference would show some difference of opinion. The doctors were resolute for a wage limit to be fixed at £200 per annum. The friendly societies' representatives were equally adamant in their opposition to any wage limit. Finally, as a compromise the following was agreed to: (1) The adoption of the principle of a £200 wage limit at joining; (2) subsequent to joining the wage limit to be increased to £300; (3) members earning above £300 to be debarred from free medical attendance; this wage limit not to be retrospective.

The Honorary Secretary in discussing this report said that the societies should see that they would not be taken by surprise by the medical men. Who knew but that at some future time the doctors might say:

> We will not admit any one unless his wages are declared to be under £200 per annum. He was strongly opposed to the wage limit, and it would have a disastrous effect on the country where the doctors were the masters of the situation. In this respect matters were very different in the city areas Already an opposition medical association had been formed, called "the Australian Medical Association."

These extracts serve to show the attitude of some of the officials of these societies towards the medical profession, but they do not seriously represent the views of a majority of the members of the friendly societies, who are really in earnest in seeking a satisfactory solution of the relations between the lodges and their medical officers. At the conference already referred to, between some members of the Council of the New South Wales Branch of the British Medical Association and delegates from the friendly societies, a deadlock was threatened over the question of a wage limit, and it was owing to the firm attitude of Dr. Antill Pockley, the President of the New South Wales Branch of the British Medical Association, that the delegates were compelled to discuss the question. As a compromise, it was agreed to alter the clause in the Lodge Agreement bearing on the wage limit, so as to allow members whose incomes reached £300 per annum to receive medical benefits, and, further, to agree not to make the wage limit retrospective. These proposals were unanimously agreed to by the conference, and it was further agreed that the delegates on both sides should use their influence with their respective bodies to induce them to accept these proposals. The delegates from the friendly societies also stated that they would be glad if some of the members of the British Medical Association would attend the annual meetings of the lodges and explain the aims and objects of the British Medical Association. In accordance with this suggestion, Dr. W. H. Crago attended the annual conference of the M.U.I.O.O.F. He explained that it was a mistake to suppose that the members of the British Medical Association were all opposed to the lodges; the medical profession recognized that the lodges did excellent work and were a necessity for the working classes. The profession were in favour of payment *per caput* rather than by fixed salary. He urged the acceptance of the principle of the wage

limit as being only a fair thing. After a short statement to this effect, the members were asked to put any questions they wished, and at the conclusion of the interview a hearty vote of thanks was passed to Dr. Crago for his address and the information therein conveyed. There can be no doubt that a straight-out talk face to face with the representatives of the lodges does much more good than any amount of correspondence and side-talk, but it is clear that it will take a long time to convince the friendly societies that a wage limit is a necessity if they wish to secure efficient medical attendance in the future. It is rather amusing to learn that an opposition association has been started, and called the "Australian Medical Association." As a matter of fact, this new Association consists, wholly or mainly, of medical men ineligible for membership of the British Medical Association. It is necessary to warn any medical man who may be approached with a view to his taking any lodge appointments in New South Wales that he should not be misled by any such high-sounding terms as the "Australian Medical Association," and that he should be most careful to communicate with the secretary of the New South Wales Branch of the British Medical Association before either accepting an appointment or purchasing a practice in New South Wales.

ROYAL ARMY MEDICAL CORPS.

Official notification has been made that commissions in the Royal Army Medical Corps are now open to candidates who have qualified in the medical schools of the Australian Commonwealth. One candidate is to be nominated each half-year. He is expected to arrive in England not later than the middle of January or the middle of July in each year. It is stated that the nominated candidates will take seniority below the list of successful candidates at the competitive examinations held in London, but they will be allowed to compete for higher places at the examination, and in such cases will take seniority among the successful candidates, according to the number of marks obtained at this examination and at the examination held after the course of instruction at the Royal Army Medical Corps College at Aldershot. The method of selection of candidates will be left to the Governor-General.

CONDEMNED MEAT.

The Board of Health keeps a watchful eye on the meat killed and sent to the market, not only in the metropolis, but also in the country towns. A return is furnished each month of the number of animals slaughtered and the number of animals condemned. During the month of April, 1907, 122,732 head of stock were slaughtered at the Sydney abattoirs, and 104,445 at 28 suburban slaughter-houses. At the Sydney abattoirs 72 beeves were condemned on account of tuberculosis, and 5 as unfit for food; 377 calves were considered unfit for food; 177 pigs were affected with tuberculosis, and 5 were otherwise found unfit for food; 19 sheep were condemned for tuberculosis. At the suburban yards 36 beeves were condemned for tuberculosis, and 6 as otherwise unfit for food; 13 calves were condemned, and amongst the pigs 60 were condemned for tuberculosis, 20 for swine fever, 2 for pneumonia, 2 for pleurisy, and 2 otherwise unfit for food. At 5 bacon factories in country towns, out of 5,207 pigs slaughtered, 203 were condemned for tuberculosis, and 13 for other causes.

India.

INFANTILE MORTALITY IN CALCUTTA.

DR. J. NEILD COOK, Health Officer of Calcutta, has recently presented a memorandum, pointing out that the mortality of infants per 1,000 births in Calcutta is 340 8, or more than double that in the large towns in the United Kingdom. He thinks that this crude figure should be corrected, as all births in Calcutta are not registered, and estimates the true rate at 304.3. Deaths attributed to premature birth and congenital weakness, which in 1906 numbered 1,258 out of 4,902 deaths during the first year of life, are, in Dr. Cook's opinion, largely due to the conditions under which the mother lives. The youth of the mother is often an important factor, a large proportion being delivered of their first child under the age of 15; inexperience and want of practical knowledge supplement physical immaturity in the causation of mortality amongst the offspring of young women. The mortality among infants Dr. Cook considers can only be diminished by caring for the mother, feeding her being the most economical way of feeding the infant both before and after birth. The difficulty is that the working poor are very averse to give up any chance of earning money. Dr. Cook suggests that those charitable persons who now feed a large number of beggars should instead give two good meals a day to any poor woman who came with a child in her womb or an infant in her arms. Bronchitis causes a larger number of deaths (1,626) than any other single disease. Dr. Cook believes that it is closely associated with overcrowding, and that a number of deaths from tuberculosis and bronchial pneumonia are included under this head, but thinks that exposure to cold—due to insufficient clothing—is a contributing cause. Although there is much ignorance as to the feeding of infants, yet as the majority are suckled, and any cows' milk which is given is usually boiled, the mortality from diarrhoeal disease is relatively low. Tetanus, however, is a frequent cause of death in infants up to 6 months old; no fewer than 723 infants died from this cause within the first three months of life, owing, as Dr. Cook believes, to the dirty methods of the native midwife; the cord is divided with a bamboo stick and the stump is dressed with cowdung ashes and covered with a burnt rag. Dr. Cook sums up the causes of infantile mortality as: (1) The insanitary conditions of the dwelling; (2) insufficient nutrition of the mothers combined with manual labour; (3) bad midwifery; (4) improper feeding and inadequate clothing of the infant.

The remedies he suggests are: (1) General improvement of the city by the proposed Improvement Trust and the removal of minor sanitary defects by the Corporation. (2) The establishment of a charity organization for supplying free meals to carrying and nursing mothers; this might be subsidized from municipal funds, but would mainly depend on donations. He also advocates the provision of municipal midwives, who would also act as health visitors, instructing the people in the duties of maternity and the feeding, clothing, and general care of infants.

THE UNREST IN INDIA.

It is a matter of common knowledge that the anti-European agitation, of which little or no notice had been taken by Government till quite recently, has now assumed so serious an aspect, that action of a decided kind has become necessary. The present unrest affects medical men in India partly in a personal manner. In common with the other Europeans, they suffer the annoyances and discomforts which are caused by the antipathy of the disaffected classes. In Eastern Bengal and Assam the state of affairs is really almost intolerable, especially for those who have wives and children to think of. But the most important aspect of the question is the part played by plague in keeping up the unsatisfactory state of affairs that exists; but this is a subject which merits fuller consideration than is now possible, and so its consideration must be postponed till another occasion.

Victoria.

IMPORTATION OF MEDICINES.

THE Acting Comptroller-General of Customs has issued instructions to collectors of customs throughout Australia in regard to the examination of imported medicines and medicinal preparations. Arrangements have been made with State Governments under which Government analysts are to assist the Customs Department in the examination of samples with a view to testing the accuracy of trade descriptions, and to advise whether the preparations are likely to be injurious to health. Collectors are instructed to exercise a reasonable discretion in the matter, and avoid unnecessary trouble to importers. Examinations will not be required when the composition of the preparation is already known to the analyst and when the preparations are known to the analyst to be free from any of the substances mentioned in Regulation 6 (2) (b), and are of established repute as remedial agents.

Regulation 6 (2) (b), referred to, provides that the trade description of medicine prepared ready for use shall, if it

contains any of the undermentioned drugs or the salts or derivations thereof, set out the names of such drugs—opium, morphine, cocaine, heroin, stramonium, nux vomica, cannabis indica, bromides, sulphonal, trional, veronal, paraldehyde, or any synthetic hypnotic substance, phenazonum, phenacetinum, or acetanilidum, or any allied synthetic substance, chloral hydrate, belladonna, cotton root, ergot, or any abortifacient.

SPECIAL CORRESPONDENCE.

VIENNA.

Lectures during the Holiday Months.—Culices in Vienna.—Resignation of Professor Chrobak on Account of Ill-health.

DURING the months of August and September two cycles of post-graduate lectures will be delivered by members of the medical faculty of the University of Vienna. The first will take place from August 5th till 31st; the second from September 2nd till 28th. The subjects of these lectures comprise special surgery, courses on bacteriology and anatomy, and others will be arranged on any desired subject if there is a sufficient number of applicants. The fees vary between £2 2s. and £4 4s., and four gentlemen at least are considered sufficient to make up a special course. Besides, the assistants of the clinics may permit gentlemen applying for it to allow the practice in the clinics. Another cycle of special classes will be the so-called "Aerztekammereurs," which is intended in the first instance for members of the Vienna Medical Corporation. If other gentlemen wish to join such classes they will have to pay a sum of 7s. 6d. for one week, or 15s. for two weeks, as these classes, which are also post-graduate classes, will last only one or two weeks between September 30th and October 12th. This cycle will comprise chiefly instruction in the latest scientific methods, special procedures, and therapeutics (cryoscopy, radioscopy, staining of spirochaete, immunization), and also practical and diagnostic questions. The summer term of the University ended on July 13th. The "capping" of new graduates will take place on July 20th. It is interesting to note that the number of medical students which for seven years has shown a steady decrease, has for the last two years been rising again, though the number of students qualifying for the M.D. is still smaller than it was ten years ago, 194 having obtained the diploma during the last summer term.

The present summer has brought to the City of Vienna unwelcome visitors in the shape of numerous insects of the *Culex* family which infest certain parts of the public parks and gardens. As yet no increase of diseases transmitted by them has been observed, but cases of dangerous stings have been treated in the hospitals. For five years these troublesome insects have been kept away from the city, but there must have been either some neglect on the part of the disinfecting machinery or for some other unknown reason prevailed, for they have been able to multiply. The weather during the spring was favourable to the development of the larvae. Measures have been adopted to destroy not only the larvae but also the eggs of the insects. Pools and ponds in the neighbourhood of the city have either been dried or, if too large, covered by a thin layer of oil or paraffin or naphtha. Frogs were brought in large numbers into the public gardens as they feed on the larvae, and special care has been recommended in regard to swallows, singing birds, and other enemies of the culices. It may be mentioned that amongst other towns, Breslau in Germany, which for many years suffered severely from this form of summer visitors, has succeeded in ridding itself of this pest by similar measures.

At the end of the summer term Professor Chrobak, a well-known gynaecologist, who has voluntarily resigned his post as director of the gynaecological clinic and lying-in maternity wards, took leave of his pupils and his clinic. The extraordinary esteem in which he was held by his pupils and friends was shown by the fact that many hundreds of practitioners, students, and past and present assistants assembled a few days ago in his lecture hall. The professor was addressed by representatives of the students' corporation and the hospital staff. Chrobak, whose name became known in connexion with the radical operation for cancer of the uterus, is a conservative but energetic surgeon, whose personal qualities and scientific achievements not only made his private practice a very brilliant and successful one, but won for him the admiration of his *confrères* in the faculty. Correct diagnosis and exact indications were the principles of his teaching. His successor will for the moment be his present first assistant, Docent Dr. Peham, who has already during the last two years, when the failing health of the professor kept him away from the clinic, acted as head of the wards. In 1908 the new gynaecological pavilions in the general hospital, now in course of construction, will be ready for use, and then Professor Rosthorn (now in Heidelberg), who has been appointed successor to Chrobak's chair, will take over the clinic. The distinction thus offered to Dr. Peham is exceptional, as he will also be permitted to examine the students in the final examinations. Professor Chrobak, who has not yet reached his 66th year, has resigned for reasons of health.

CORRESPONDENCE.

THE ASSOCIATION AND THE GENERAL MEDICAL COUNCIL.

SIR,—As Dr. Saundby has, I cannot but think unfortunately, repeated in the BRITISH MEDICAL JOURNAL the suggestion, repeatedly explained to be mistaken, that the decision to act as prosecutors before the General Medical Council was that of the Central Ethical Committee, I am compelled to explain the matter to your readers to avoid the creation of an erroneous impression.

I must, therefore, again point out here, as I have already done in the Council that the Central Ethical Committee has only acted under the instruction (Minute (312) of the Representative Meeting, 1906, and that, as also stated at the last Council meeting, July 3rd, the following resolution was passed unanimously by the Central Ethical Committee at their meeting, June 21st.:

> That the Committee report the facts to the Representative Meeting, and in the meantime take no action as regards bringing penal cases before the General Medical Council.

It seems a pity, therefore, that Dr. Saundby should now write as if the Central Ethical Committee had acted or intended to act *proprio motu*.

As was also stated in Council, no one will regret more than the Central Ethical Committee the loss to the Council and the Association of the able members now on the General Medical Council, who have done so much and such good work for the Association and for the profession, but the loss need only be temporary and as other able men have done before, they can all resume their position in the British Medical Association when their period of dignified service on the General Medical Council expires.

In the meantime, though no longer members of the British Medical Association, they will no doubt, from the experience therein gained, be able to render invaluable services to the profession at large.

The alternative would be for the Representative Meeting of this year to rescind the resolution (Minute 312) of last year and let some of the less fortunate and prosperous but not necessarily less worthy members of the profession go to the wall without lifting a finger to help them. This I sincerely hope will not be done, and I think Dr. Saundby himself will understand my position when he recollects that in April, 1905, when chairman of the Central Ethical Committee, he joined in recommending the Council to authorize the expenditure of a sum not exceeding £10 in preparing for the consideration of the General Medical Council any case in which there might appear to be sufficient prima facie evidence to justify further investigation.

The temporary sacrifice of the feelings and the loss for a time of the services of a few distinguished members is likely to be less detrimental to the Association than the permanent sacrifice of the material interests of perhaps a larger number of men less able to help themselves. After all, the law of service is self-sacrifice.—I am, etc.,

R. H. KINSEY,
Chairman of the Central Ethical Committee.

British Medical Association, 6, Catherine Street, Strand, W., July 17th.

FRAUDULENT ADVERTISEMENT.

SIR,—For years past the medical profession has been crying out and asking for protection against the evils of quackery; but it seems to me that it has been asking for a thing that no trade or profession has as yet obtained in Free Trade England—that is, the assistance of other trades and professions in the protection of what it is considered should be obtainable in the cheapest market; and it is inconceivable that it ever will be obtained unless it can be shown to be for the public good.

Now all quackery depends on advertisement; without it quackery would be a failure; and the advertisement that it depends on is of a lying or fraudulent nature. But in this the quackery that preys on the medical profession is not singular; it applies to every trade, business, or profession. Many perfectly honest business men and tradesmen have to compete with and suffer from fraudulent advertisement; all the newspapers and all the streets are full of it.

One of the most wonderful things of the present day is the amount that can be done by advertisement; but a very large amount of it is fraudulent and to the detriment of the honest trader. That man whose goods would sell by reason of their intrinsic merit is very often handicapped by having to compete with the man who is advertising as the "best" goods that are of a smaller value, though perhaps fairly good.

To advertise a particular pill as a cure for kidney disease is a fraud, but it is equally a fraud to advertise a tea as the "best" when the price is 1s. per lb., or furniture as the "best" when a similar article can be bought next door for the same price, or jams as "home-made" which have been made in a factory, or "Britain's best" when there are better; in fact, the majority of advertisements are examples rather of a catch-phrase or of a poor alliteration than of the truth. Numerous examples might be given, and many fortunes might be mentioned which have been built up and increased solely by the aid of fraudulent advertisement; in fact, one of the hardest conditions of modern life is the competition of honesty against fraudulent advertisement.

In the BRITISH MEDICAL JOURNAL there are frequently remarks and correspondence on the subject of quackery, all futile, because there is never any suggestion for its cure, only the constant iteration of its wrongfulness. The medical man can perhaps understand the point of view of others more easily than they can appreciate his; and I think that if, instead of crying out perpetually against the quackery that he objects to but which the man in the street does not bother himself about, he tried to devise some scheme which, while benefiting himself, would at the same time assist the honest dealer in any kind of goods, he might be able to get that done which should be done towards the suppression of an ever-increasing evil.

I believe that the end could be achieved by making it a punishable offence to fraudulently advertise; and a Bill to this effect could, perhaps, be best advocated by the medical profession. There might be difficulties in the working, and very often the proof that an advertisement was fraudulent might depend on expert evidence; but if an enactment could be passed to this effect, a lift would be given to honest trade, and quackery would receive a severe blow.—I am, etc.,

J. TERTIUS CLARKE.

Batu Gajah, Perak, F.M.S., June 17th.

WEST AFRICAN MEDICAL SERVICE.

SIR,—I have read with great interest the remarks of "Reform" in your issue of June 29th; and although they show in parts a slight tendency to exaggeration, yet in the main they correctly express the general opinion of medical officers on the subject. There is no doubt that a very serious feeling of dissatisfaction exists, not only with the personal conditions of service, but with the relationship of the medical departments to the Executive and to the Colonial Office.

It is very difficult to go exhaustively into this matter in the space which I can expect you to place at my disposal, so that it will only be possible for me to indicate one or two points for consideration; and I do not propose to enter here into any of the details as to personal emoluments, gratuities, allowances, etc., as these have been touched upon with some degree of fullness by "Reform."

But I should like to examine briefly this question from a somewhat higher standpoint than mere personal considerations, namely, that of the good of West Africa. Is the present system the one which is best calculated to promote the health of the people, Native and European, of West Africa, and to further sanitary progress? I think that a brief review of existing conditions will lead to an unhesitating reply in the negative. I do not believe that there is a single medical officer, especially in the senior ranks, who has resided on the West Coast of Africa for any length of time, who cannot point to valuable recommendations ignored and buried in the depths of minute papers, perhaps to be dug up and acted on years afterwards on pressure being brought to bear from outside, frequently to disappear entirely; and I do not hesitate to say that if only one-tenth of the recommendations which have been made by medical officers during the last fifteen years had been carried out, even partially, the sanitary condition of the West Coast would have been infinitely better than it is now. How often, for example, do we receive the heart-breaking reply that the financial condition of the colony does not admit of sanitary expenditure, while we see money being freely poured out in other directions?

The truth is, that under existing conditions in the Crown Colonies (I am referring especially to West Africa), the average Governor is not the best man to deal with problems of health and sanitation, and the Principal Medical Officer, who ought to be the expert adviser in such matters, is in most cases merely a medical secretary who registers the decrees of the Governor. The Colonial Office places itself on the horns of a dilemma by its attitude at present; it selects a man to advise the Governor on medical questions, and presumably does so because he possesses special qualifications, and yet it allows the advice given to be deliberately ignored. Either take the advice or get rid of the man as inefficient, but do not make a laughing-stock of him by doing neither. I do not suggest that a Principal Medical Officer is infallible and that his advice should invariably be followed; but I do suggest that a Governor is not qualified in most cases to decide on questions requiring special training and knowledge.

I knew one Governor who invariably made up his mind on a subject *before* he consulted his Principal Medical Officer. If the Principal Medical Officer happened to agree with the Governor the advice was followed; if not, it was ignored!

On one occasion a junior medical officer made certain sound recommendations on a sanitary matter which did not agree with the Governor's views. He called upon the medical officer to withdraw them, and when this was not done, directed him to attend at Government House with the Principal Medical Officer. He then opened fire on the unfortunate junior with his big guns, and although the Principal Medical Officer supported his subordinate, and was able to show that the latter was perfectly justified in his recommendation, what was the result? The medical officer was subsequently heard to remark, "Well, if I am to be hauled up before H. E. and bullied every time I make a recommendation, I am going to sit tight in future and do nothing." And he did.

Take another instance. A few years ago, a P.M.O. strongly recommended the provision of microscopes for his staff, and urged the absolute necessity for supplying them for purposes of diagnosis, etc., in view of modern knowledge and requirements. A sum of about £120 was required, and on this being put before the Governor he laughed. "Absurd, totally unnecessary, can't afford it," and ordered it to be struck out. Then came the sequel. Some considerable time afterwards a circular came from the Colonial Office, pointing out that recent advances in Tropical Medicine rendered it advisable that microscopes should be supplied to all medical officers, and suggesting that if H.E. agreed, steps should be taken to have this done at once, the inference being (very mildly conveyed it is true), that P.M.O.'s had been somewhat neglectful in this direction. Needless to say the money was found at once, though a supplementary vote had to be taken.

It is necessary to give specific instances of this kind of obstruction, though these may appear somewhat trifling; but they could be multiplied *ad infinitum*. Nor is this all. The powers of a Governor are delegated to subordinate

executive officers. District Commissioners and Provincial Commissioners have the power of overriding the suggestions of medical officers. A District Commissioner who a short time before had been a prison warder, but who, I am willing to admit, showed considerable ability in other directions, ventured to correct the diagnosis of a competent medical officer, and a Provincial Commissioner took upon himself to review the requisition from a district hospital, and to strike out certain items!

Now, what is the inevitable effect of this state of matters? It must produce a constant feeling of irritation and of heart-breaking disappointment at the apathy and indifference to sanitary progress, while the final result is a disappearance of that "keenness" which is so essential to efficient work. Medical officers are only human, and no man, however conscientious, can be expected to do good work in the face of perpetual discouragement and disappointment. He must tend to become slack, he does as little work as he can consistent with the due performance of his routine duties, and thinks only of counting the days until his next leave is due. On the other hand, if by any unfortunate mischance, anything goes wrong, the medical officer is the first to be "jumped on" and to be called to account. The medical officer is, then, in a most unsatisfactory and difficult position; he is, so to speak, between the devil and the deep sea, and it redounds greatly to the honour of the medical staff that they have shown so much courage and persistence.

Of course it will be said at once that there is a final appeal from a decision of the Governor to the Secretary of State. Theoretically this is so, but how does it work out in practice? The appeal *must* take place through the Governor, the Colonial Office does not like to be worried with constant appeals, they almost invariably support the Governor whether he is right or wrong, and the man who appeals frequently is apt to have a black mark put against him as being troublesome. Then, there is the power which the iniquitous system of confidential reports (made by the Governor, remember, *not* by the Principal Medical Officer) puts in the hands of a Governor, most of whom, I am glad to think, are too upright and fairminded to use it unfairly, but some, I am sorry to know, have not scrupled to do so. Then in some mysterious way a man's promotion suddenly stops—he receives no intimation of the unfavourable report—he only sees juniors put over his head, and awakens slowly to the fact that there is something against him. It is not right that this terrible power should be put in the hands of any one man: he should not be exposed to the temptation. Even if this impression is incorrect, it exists, and must be reckoned with, and very few men have the courage to risk their whole future career by "fighting" the Governor.

It is clear, then, that this right of appeal is one which in practice does not exist, and this is the more unfortunate, because in the great majority of instances, the Colonial Office appears to be in ignorance of what is going on, for otherwise it is inconceivable that it would allow matters to rest as they are.

The situation is difficult, but it should not be impossible to devise a remedy, and the direction in which this should be found is indicated by "Reform" in one of the concluding paragraphs of his letter. In my humble opinion there are three alternatives: (1) The formation of a West African Medical Council; (2) the appointment of a Director-General of the West African Medical Staff, or, better still, (3) a combination of Nos. 1 and 2.

The easiest step, and the one which would involve least friction in its initial stages, and which would prevent the personal element intruding between Governors and the staff, would be formation of a Council. It is unnecessary here to work out the details; it should consist not only of well-known tropical experts, but also of those possessing local knowledge, retired medical officers and senior officials in active service on leave. Medical reports would be submitted to it, it would consider and advise on medical and sanitary questions, it would consider grievances, and, if possible, might be allowed to select officers and suggest promotions. It would certainly be better qualified to judge of these than either Governor or Colonial Office. Such a Council would be acceptable to the Staff, would be welcomed by the public in West Africa, and would have the confidence of the trading firms at home.

Some such change must inevitably come, but how long shall we have to wait for it? How long will it be before the summation of repeated stimuli will be able to throw the central mechanism of the Colonial Office into activity, and result in a movement of reform? It will depend to a large extent upon the intensity of the stimuli, and for this we must look to the support of the public and the medical profession at home. If the Colonial Office can only once be got to realize the urgent necessity for some reform, I have sufficient confidence in their sense of fairness, and in the desire which they have always shown for the welfare of West Africa, to believe that they will not hesitate to take such steps as may be necessary, even though it may involve breaking through some of their most cherished traditions. But, until this is done, I would strongly recommend to any one who is contemplating joining the West African Medical Service at present, a serious study of the famous advice which *Mr. Punch* once gave to those about to marry.—I am, etc.,

July 8th. W.A.M.S.

KÜSTER'S OPERATION OF POST-AURICULAR MEATAL ANTROTOMY AND MR. HEATH'S CLAIM.

SIR,—In the BRITISH MEDICAL JOURNAL of July 13th you published a communication from Mr. Charles Heath, in which he repeats the claim he made a year ago[1] as the originator of a "new conservative" method of treating suppuration of the tympanum and its adnexa. Mr. Heath traces the evolution of this alleged new operation in his own practice, and we are privileged to gather how it was that it dawned upon Mr. Heath that it was unnecessary in all cases to do a complete Stacke operation, and that stopping short of removing the external attic wall ("bridge") and ossicles was often a sufficient and efficient procedure. He insinuates that otologists generally are wedded to Stacke's more radical operation, and know of no more conservative measure, and he certainly implies that that was his own state of mind before he undertook those "researches" and "investigations" of his. He might have been spared a deal of bother in making up his mind if he had taken the trouble to study the literature of post-aural operations for the last two decades. For many years past the operation Mr. Heath has independently evolved so successfully, albeit so tardily, has been performed by myself nearly, if not quite, as frequently as Stacke's method and its modifications, and I know that most leading otologists are not in the habit of setting out to do some particular operation in all cases, but are guided by what is found on exploration; and I have no doubt that the incomplete Stacke, or, more properly speaking, Küster's operation, figures largely in the operative work of any otologist of experience and learning. It is usually adopted by me in acute cases in adults, though I mostly prefer Schwartze's operation in young children. In chronic cases with good hearing Küster's is *the* operation to perform *if symptoms warrant surgical interference;* but in most chronic cases with acute exacerbations, or when for other reasons operation seems indicated, the choice will, in my experience, more often lie between ossiculectomy and some more radical measure, such as that of Stacke.

Küster's[2] first communication on post-aural operations for dangerous aural suppurations was published in 1889. His plan consisted of removing the posterior wall of the meatus right up to the tympanum after having performed a larger or smaller Schwartze operation according to the state of the mastoid cells. The operation may be described as a post-auricular mastoido-meatal antrotomy. Küster with an experience of nearly a hundred cases of this operation in 1889 was not sanguine, as Mr. Heath appears to be, that this form of meatal antrotomy would do away with the necessity of tympanic evisceration; on the contrary, he says plainly that he has found it necessary in bad cases of tympanic disease to adopt that additional measure as recommended by Schwartze, Kessel, and Löwenberg. Küster's operation is little spoken of because it was almost immediately overshadowed by Stacke's method, which was brought out shortly afterwards. All that Stacke did, however, over and above Küster was to remove the "bridge" or attic wall (along with the ossicles). It at once became *the* operation in the

[1] Vide *Lancet*, August 11th, 1906.
[2] *Deutsche med. Wochenschr.*, 1889, xv, 185, 213, 233, 254.

worst class of cases, and in these, in my judgement, it is unlikely to be superseded by any less radical operation. As for Küster's operation, it is a good one in a limited field of usefulness, but space prevents me saying more than that now. I may add, however, that in the discussion which followed Küster's communication to the Berlin Medical Society Jacobson stated that two hundred of these operations had been performed at one institution alone—namely, in Professor Lucae's Clinic (Royal Ear Hospital, Berlin)—and it was widely practised elsewhere.

Any one wishing for information on the major operations (including Küster's) on the temporal bone, cannot do better than consult the works of Allen (Cincinnati, 1892), Broca and Lubet-Barbon (Paris, 1895), and Oppenheimer (London, 1906).

I append a few sentences referring to the essential points of the operation both from Professor Küster's communication and from Mr. Heath's article in parallel columns.

After describing the exposure of the cells and antrum, Küster says:

. . . One must be prepared to consider the radical removal of the posterior wall of the bony auditory meatus from without inwards. If the remaining portion of the membrane and the ossicles are still to be preserved, the meatus is to be opened as nearly as possible laterally up to the tympanic membrane. . . . . It is true that in these measures the exposure of the middle ear is by no means complete, but these are for the slighter cases, which nevertheless frequently recover.—(Küster, 1889, op. cit.)

After exposure and necessary treatment of the antrum and any communicating cells and cavities . . . . any granulation found in the aditus must be removed, and the orifice shaped to fit the cannula (see illustration). . . . . Most of the posterior part of the bony meatus must now be removed if necessary, even portions of the upper and lower walls, according to the size of the meatus, until complete freedom of access to the drum-membrane is obtained.—(Heath, *Lancet*, August 11th, 1906.

Küster, though anticipating Mr. Heath by nearly twenty years as regards the essential operative principle of throwing the antrum into the meatus and conserving the tympanum, makes no mention of having recourse to the array of instruments in which Mr. Heath seems to revel.

Although I consider Mr. Heath has laid himself open to criticism in adopting Küster's principle without acknowledgement (as did Malherbe at the Otological Congress in 1899), I may be allowed to add that Mr. Heath has the reputation of being a bold, rapid, and dextrous operator, and his writings, apart from marked egotism, display a keen appreciation of the problems involved, and a commendable desire to improve technique by attention to detail; and in this respect it is quite possible that he may have something to teach those who are somewhat heavyhanded in dealing with the tympanum.—I am, etc.,

WILLIAM HILL,
Surgeon for Diseases of the Ear, St. Mary's Hospital.

London, W., July 15th.

MIDWIVES IN COUNTRY DISTRICTS.

SIR,—Dr. W. Shaw, in the BRITISH MEDICAL JOURNAL of July 6th, 1907, says: "It is already beyond question that the advent of the certificated midwife has seriously diminished the midwifery list of the general practitioner." This may be the case in towns, but I do not think that the midwife will ever prove a serious rival in the country.

The income earned by a registered midwife in a country district is extremely small. For instance:

At *A*, a village with a population of 329 last year (April 1st, 1906, to March 31st, 1907) the midwife only attended 3 cases, and her gross earnings only amounted to 1 guinea.

At *B.*, a village with a population of 111, the registered midwife attended 7 cases, and her gross earnings were 49s.

At *C.* with a population of 671, the registered midwife attended 20 cases; gross earnings, £10 2s.

At *D.*, the midwife attended 3 cases, earning £1 2s., the population of the village being 386.

At *E.*, with a population of 1,833 (mostly brickmakers), the midwife attended 99 cases, her gross earnings being £51 19s. 6d.

At *F.*, with a population of 2,017, the midwife receives a salary from an association of ladies. Last year she attended 44 cases. The previous year she attended 60. The Committee tell me that they are never able to obtain from her patients the amount of salary which they pay her.

Personally, I think that before long the supply of midwives will run short, and, although in my opinion no one (neither man nor woman) should be allowed to practise midwifery without being qualified in medicine and surgery also, I fear that the Act will press rather hardly on the poor.

A doctor should not be expected to attend the poor gratuitously. The guardians are not very willing to give medical orders. If the midwives who charge from 3s. 6d. to 7s. 6d. per case are non-existent, it is difficult to see what the poor will do.

My Council is willing to pay for the training of a midwife; but no one has been forthcoming, because, they say, "the game is not worth the candle."

I have suggested to the Council that it should ask the various Boards of Guardians to direct their relieving officers to give or issue on loan medical orders for confinement to *any* poor person applying, and recover the cost of them if they think fit, in the same way that they do now in cases of sickness. If it is to the advantage of the community that children be vaccinated free, surely it is equally to their advantage that every woman should have skilled attendance at her confinement; and I am inclined to think that in the end it would be a direct saving in the rates, because many cases of ill-health, prolapse, etc., would be prevented, to say nothing of ophthalmia, with its subsequent blindness, and I believe it would cost less than educating and subsidizing the midwives.

In Huntingdonshire, which has an area of 233,984 acres and a population of 54,125, there are 11 registered midwives, 2 less than last year. From April 1st, 1905, to March 31st, 1906, they attended 213 cases, and from April 1st, 1906, to March 31st, 1907, they attended 262 cases.—I am, etc.,

EDWARD J. CROSS, M.D.Durh., D.P.H.Camb.,
Medical Officer under the Midwives Act, 1902, to the Hunts County Council.

St. Neots, July 10th.

PS.—The average number of births in the county for the years 1898-1904 was 1,409.

SIR WILLIAM GAIRDNER AND THE MORPHINE EPISODE.

SIR,—I had the great and enjoyable privilege of being a member of this beloved man's class with my friend Professor T. Oliver, of Newcastle, in 1872 when Gairdner related to us his misfortune with morphine. Though it does not materially affect the object of the incident, as far as my memory serves me it was scammony powder and not "pulv. Jacobi" that Gairdner thought he was using. He had just then returned with Lady Gairdner from a holiday, and he had taken with him on starting a small bottleful as he thought of scammony powder. That lay in his bag untouched during his holiday trip. In retiring to bed one night it occurred to him that both he and his boy would be the better of a dose of scammony. He administered the doses there and then. On lying down he felt the effects of a narcotic on himself, and had only just time to rouse his household and summon several doctors in Bath Street, Glasgow (where Sir William then lived), who promptly used the stomach pump on father and child, and saved both from what would otherwise have been inevitable death. The bottle contained enough morphine to last a household two or three generations.—I am, etc.,

Aylesbury, July 10th. DONALD STEWART.

THE NEW VACCINATION ORDER.

SIR,—May I suggest the extreme desirability of holding special meetings of the Divisions to discuss the "order" lately issued by the Local Government Board with respect to the fees of public vaccinators?

Whatever our opinion may be with regard to public vaccinators, I dare assert that the whole profession will be united in thinking that a fee of 2s. 6d. for the performance of the operation according to the orders of the Local Government Board is a totally inadequate one.

If we calmly accept such remuneration from the boards of guardians we cannot expect the respect of the public.—I am, etc.,

Cardiff, July 13th. T. GARRETT HORDER.

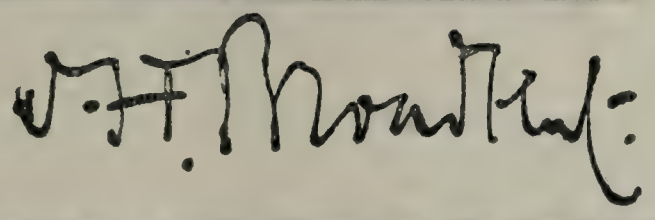
OBITUARY.

SIR WILLIAM HENRY BROADBENT, BART., K.C.V.O.,

M.D.Lond., F.R.C.P., F.R.S., Hon.LL.D.Edin., St.And., and Toronto, Hon.D.Sc.Leeds,

PHYSICIAN IN ORDINARY TO THE KING AND TO THE PRINCE OF WALES; CONSULTING PHYSICIAN TO ST. MARY'S HOSPITAL.

SIR WILLIAM BROADBENT, whose death on July 10th was briefly announced last week, was born at Longwood, near Huddersfield, on January 23rd, 1835. From early days his tastes lay in the direction of medicine, and in 1852, at the age of 17, shortly after leaving school, he was apprenticed to a surgeon in Manchester. Here, in uncomfortable surroundings, when studying for his preliminary medical examinations and attending lectures at the Royal School of Medicine, he had to visit patients, dispense medicines, and frequently make long rounds on foot at night. In spite of this, in 1855 he gained medals in botany, materia medica, and midwifery, and in 1856 medals in anatomy, physiology, medicine, surgery, and operative surgery. He also carried off the gold medals in chemistry, anatomy, and physiology at the First M.B. examination of the University of London. In 1857 he qualified by passing the College's examination in London. He then applied for the post of House-Surgeon at the Manchester Infirmary, but was passed over. This disappointment he felt keenly at the time, and in order to widen his experience he went to Paris, where he studied for eight months under Trousseau, Ricord, and others, and acquired a remarkable proficiency in the French language. He returned to London in 1858 for the M.B. examination at the University of London, at which he took first-class honours in medicine and the gold medal in obstetric medicine.



Having no friends or interest in London, and no capital, he now thought of returning to Manchester or Huddersfield to practise, but was advised that the distinctions he had earned at the recent examinations might secure him a post at one of the London hospitals. Hearing that the post of Obstetric Officer at St. Mary's Hospital was vacant, he applied for this and was at once elected. From this year till 1896, when his term of office as Senior Physician expired, he was actively engaged in the service of the hospital and medical school of St. Mary's. In 1859, on the termination of his obstetric appointment, he became Resident Medical Officer, working under Sibson and Alderson, and in the following year he was appointed Pathologist to the hospital, and Lecturer on Physiology and Zoology in the school. In the same year, at the age of 25, he took the degree of M.D. at the University of London, and in 1861 he became a member of the Royal College of Physicians. In 1864 he was appointed Physician to out-patients at St Mary's Hospital. In 1869 he was elected a Fellow of the Royal College of Physicians, of which he was Censor in 1889 and Senior Censor in 1895.

In 1871 he became Physician in charge of in-patients at St. Mary's Hospital, and was appointed Lecturer in Medicine, a post which he held for seventeen years. He was Physician to the London Fever Hospital from 1860 to 1879, and subsequently acted as Consulting Physician.

He was elected a Fellow of the Royal Society in 1896. In 1898 the honorary degree of LL.D. was conferred on him by the University of Edinburgh, and in the following year he was made an LL.D. of St. Andrews. In 1904 the University of Leeds conferred on him the degree of Doctor of Science, and in 1906 he received the honorary degree of LL.D. from the Universities of Toronto and Montreal on the occasion of his visit to Canada to attend the meeting of the British Medical Association at Toronto.

He was President of the Medical, Clinical, Neurological, and Harveian Societies, a Vice-President of the Imperial Cancer Research Fund, and Chairman of the National Association for the Prevention of Tuberculosis, in the organization of which he took a prominent part.

He was also chairman of His Majesty's advisory committee appointed to draw up plans for the construction of the King's Sanatorium at Midhurst, and was consulting physician to this institution and to the King Edward VII Hospital for Officers. He was an honorary member of many distinguished foreign medical societies, of the Verein für Innere Medicin, Berlin, of the Gesellschaft für Innere Medicin und Kinderheilkunde, Vienna, of the Société Médicale de Genève, and of the Imperial Society of Constantinople. He attended the present Prince of Wales, then Duke of York, when he was attacked by typhoid fever, and was in attendance on the Duke of Clarence in 1892 during his fatal illness. In 1892 he was appointed Physician in Ordinary to H.R.H. the Prince of Wales, now our King, and in 1898 Physician Extraordinary to Queen Victoria. On the death of Her Majesty he was appointed Physician in Ordinary to His Majesty the King and to H.R.H. the Prince of Wales.

He was created a baronet in 1893 and a Knight Commander of the Victorian Order in 1901, and in 1904, on the occasion of the visit of the English physicians and surgeons to Paris, he was invested with the Grand Cross and Insignia of a Commander of the Legion of Honour.

His contributions to medical literature covered a wide and varied field. He was deeply interested in the study of the problems of diseases of the nervous system. One

of his earliest publications dealing with this subject was an important paper entitled, The Sensori-motor Ganglia and Association of Nerve Nuclei, in which he enunciated his memorable "hypothesis" explaining the immunity from paralysis of bilaterally associated muscles in hemiplegia. In 1869 he published a paper on The Structure of the Cerebral Hemisphere, in which he gave a description of the course of the various groups of nerve fibres in the cerebral hemisphere, based on a series of careful dissections which he had been carrying out for some years. In a lecture on The Theory of Construction of the Nervous System, delivered at Wakefield in 1876, he referred to these dissections, and gave a lucid exposition of his views on the mechanism of speech and thought, and the problems of aphasia, a subject in which his interest was maintained throughout his life. To this his papers on A Case of Amnesia, on A Particular Form of Amnesia, Loss of Nouns, read before the Royal Medical and Chirurgical Society in 1878 and 1884 respectively, and an article in the British Medical Journal as late as June 15th this year, on Some Affections of Speech, bear witness. Indeed, at the time of his death he was engaged in writing a treatise on Aphasia. Amongst other publications dealing with diseases of the nervous system, were Remarks on the Pathology of Chorea, published in the British Medical Journal in 1869, the Lettsomian lectures on Syphilitic Affections of the Nervous System, delivered before the Medical Society of London in 1874, and papers on Ingravescent Apoplexy and on Alcoholic Spinal Paralysis, read before the Royal Medical and Chirurgical Society in 1876 and 1884. In 1866, the year in which he published his "Hypothesis," he contributed an article on Prognosis in Heart Disease to the British Medical Journal. In 1884, before the Harveian Society of London, he gave the Harveian lectures on Prognosis in Valvular Disease of the Heart. In 1887, at the Royal College of Physicians, he delivered the Croonian lectures on The Pulse, and in 1891 the Lumleian lectures on Structural Diseases of the Heart from the Point of View of Prognosis. These lectures constituted the foundation of a work on *Heart Disease*, published in 1896, in the preparation of which he was assisted by his son, Dr. John Broadbent, and of which a revised and enlarged edition appeared in 1906.

His early interest in the scientific application of therapeutics was shown by a paper entitled, An Attempt to Apply Chemical Principles in Explanation of the Action of Remedies and Poisons, published in 1869; and the line of thought in this was followed out in later years in an address on The Remote Effects of Remedies, read at the annual meeting of the British Medical Association in 1886, and in his Presidential address delivered before the Clinical Society on The Relation of Pathology and Therapeutics to Clinical Medicine. Amongst other notable contributions to the literature on therapeutics is the Cavendish lecture on Some Points in the Treatment of Typhoid Fever, which he delivered before the West London Medico-Chirurgical Society in 1894.

The following appreciation is from Mr. Edmund Owen:

Sibson and Broadbent were the finest clinical teachers that it was ever my good fortune to meet. Had I known Jenner I should probably now place the three together, for I have always heard of him as a great master in clinical methods. When Broadbent was less taken up with private practice than has been the case during the last twenty years, he spent an enormous amount of time in the out-patient department and in the wards of St. Mary's Hospital. And he did his work freely and ungrudgingly, for whilst he was teaching he also was learning. He made it his business and his pleasure to take endless pains at the bedside, and it was there that his most valued teaching was done. His set lectures in the medical school were not so successful, for they were less full of freedom, eloquence and life. But, then, it is impossible to teach the clinical art in a lecture-theatre, and no doubt Broadbent felt it to be so. Probably the time is not far off when the didactic method of teaching Medicine and Surgery will entirely cease; and the sooner this comes about the better.

As one looks back one cannot but feel that it was almost a pity that the Public found out so soon that Broadbent was a great Physician, for the discovery was the cause of his being dragged away from that work in the wards in which he was perfectly happy and triumphantly successful. But it could not be otherwise—a city that is set on a hill cannot be hid. I have met with people inside our Profession as well as outside it who have spoken of Broadbent as if they thought him a *lucky* man. But no one at his old Hospital would for a moment admit the truth of such a suggestion—accusation, let me rather call it. In his Medical School the opinion was strongly held that every reward that he had received he had rightly *earned*. We considered that the many years of plodding but brilliant work which he had spent in the stuffy and crowded out-patient rooms, in the wards, and in the pathological laboratories, entitled him to the very highest honours which the Profession could offer or the Court bestow. And long before the Public had "discovered" him his students had marked out for him a magnificent future. And students, though often severe and critical, are not bad judges, as a rule. It was, therefore, a grievous disappointment to them when, later on, their great

clinical teacher was passed over for the Presidency of the Royal College of Physicians. It had always appeared to them that this was an office for which his high professional distinctions as well as his great social and intellectual qualities specially marked him out. We thought, and we think still, that at that time as a Physician he held a place second to no one in the Profession, and I cannot but believe that to him also the failure to be elected was a great disappointment, though to me, at any rate, he never referred to it. Strong man that he was, he went on cheerfully and doggedly with his work as if nothing had happened, for he was not one to wear his heart upon his sleeve for daws to peck at.

Inasmuch as I am not composing an epitaph, I am not going to speak as if I thought that Broadbent monopolized all those qualities which are generally supposed to characterize the perfect man of the world. Being a person of high character, strong feelings and quick impulse, he was apt to form an opinion upon any question, especially upon an ethical or a personal one, in a not impartial manner, basing his judgement upon the view as it first presented itself to him. And having once made up his mind, good Yorkshire man that he was, it took a very great deal to make him alter it. I, personally, am not going to write down this mental feature as a fault. Indeed, I rather admire it, though I am willing to admit that its possession is sometimes apt to be a little dangerous. But, at any rate, it shows that the man is human, and that he is not likely to lay claim to having a mind so judicial, so delicately balanced, that is, that at last a piece of evidence of the weight of a single hair will turn the scale. Broadbent, I say, was not a man of this sort; as he felt, so he spoke and so he wrote; and, in consequence, his words and his writings, which were always full of life, bore the unmistakable marks of sincerity and truth. Waxing wroth, a few years ago, because sufferers from tuberculosis were being led astray by what he took to be arrant quackery in connexion with the exploitation of a certain drug, he wrote a condemnatory letter on the subject to the *Times*, which had the effect of starting a wordy warfare which was long in subsiding. Perhaps he had better have left it alone. But he was roused and indignant, and it is impossible for some men when in this mood to leave an abuse alone, even though they are fully aware that they have no other satisfaction to expect from an attack than the feeling of having done a public duty. In his spare time, Broadbent was a great reader. I wonder if amongst his favourite books was the history of that dear, upright Spanish gentleman, the renowned knight of La Mancha, for there was in the heart of each of those two men a noble, chivalrous spirit, which, in these days of push and bustle, is as rare as it is delightful—I almost hesitate to let this sentence remain, lest it should be misunderstood; but he who understands will not mistake my meaning, and those who mistake it I must leave in their error. It was the absence of that mental quality to which I have referred, and the possession of the other about which I have merely given a hint, which, to me at least, made Broadbent's character so attractive. His was no fine-weather friendship; rather was it one which grew stronger and closer as the occasion for sympathy and help became keener; and he would shirk no trouble and would spare no fatigue in his determination to get a wrong redressed, or to obtain justice for one whom he deemed to be oppressed.

Broadbent seemed to me to pass through life with his face ever directed towards that which he felt to be right, and on his journey I doubt if he once looked to either side to see if there were not a something for which he might reach out and grasp as advantageous to his own interests. There was no self-seeking or time-serving about him. He was, moreover, strangely destitute of suspicion as to the motives of others, and, being a man of unfailing kindness, he was apt to render himself too easy of access by those who might be wishful to use his high position and his great influence for the advancement of their own concerns.

Broadbent's success, as I have already insisted, though fairly earned and thoroughly deserved, was so marked that it could hardly escape criticism. And it would doubtless have been a good thing if, a dozen years or so ago, he could have been induced to see that, though a great physician, he was but human, and that it was impossible for him to accomplish more than a human amount of work. At one time the professional demands made upon him were so excessive that he had almost to depend upon his country journeys for needful rest. And could he then have been induced to quadruple his ordinary charges, and to decide never to see another patient—not even a friend—except in consultation with some other practitioner, it would have been better. A physician who has more work thrust upon him than he can conveniently accomplish, is apt to overlook some feature in an obscure case, which a man with more time at his disposal might possibly detect. And, speaking metaphorically, one is less likely to form a correct estimate of some delicate, half-hidden thoracic lesion if, whilst one's ear is applied to the stethoscope, an eye has to be fixed upon the clock.

But to return to Broadbent. His skill, tact and judgement, and his insight into, and his general survey of, a case were, so far as I could form an opinion, of an extraordinarily high quality. I remember, many years ago (it was in the Seventies), when the late Dr. Mahomed was pathologist at St. Mary's, discussing with him the revelations and surprises which the mortuary must often have for the physician who followed his cases down to the final court of appeal. Mahomed did not attempt to dispute the suggestion, but he said that Broadbent's diagnoses made in the wards were never found wanting in accuracy when the subject was upon the mortuary table. I do not think that it would be possible for a pathologist to pay a physician a higher compliment than that which was contained in Mahomed's remark. And yet there were people who spoke of Broadbent as *lucky!* It may please a physician to be theatrical in the wards, or to delight a crowd of students with sparkling epigram, but it is only the truly great physician who can triumphantly lead a class of students back from the mortuary—And Broadbent was such a one!

The great success to which Broadbent attained, and the honours which he so rightly received, had not the effect of inducing in him that unpleasant condition known as "swollen head." He remained always the same cheery, simple, unaffected man that some of us first knew more than forty years ago. During that long while a very liberal amount of his time and of his professional help has always been at the disposal of his old pupils, as well as of other medical men who have been in want of him in the case of their own illness, or of that of some member of their family. Countless have been the journeys which he has made into the suburbs and into the country out of pure affection or kindness of heart; and many medical men other than those who counted themselves amongst his old pupils, could tell of instances in which Broadbent has neglected his private interests in order to give them a help in time of need. And not only were his time and his skill at the disposal of his friends, but many a man could tell also of financial help being generously and quietly supplied by him.

As I read over these notes I feel that they but poorly set forth what I would like to say of my old teacher and friend. I send them, however, in answer to the request of the Editor of the JOURNAL that I would write "something personal on the man and his character—not details of his appointments, books, and so on." They are the thoughts which come crowding into my mind as I jot them down without embellishment or elaboration. Other persons, no doubt, will be found to treat his memory in a more academic manner. I have merely written of "the man and his character" as they appeared to me. And if the Editor had asked me to condense my impressions into a single sentence, I would have said that the subject of them was a warm-hearted and clear-headed Yorkshire gentleman of unblemished reputation, who, by untiring work, made for himself a splendid and enviable position in the Profession of Medicine; who, for some reason or another, and greatly to the regret of his many friends, failed to be elected to the Presidential Chair of his College, but whose memory will ever be kept green by a crowd of grateful pupils and patients, and whose work in the Science and the Art of his Profession will always stand as proof of his skill as a Teacher and of his greatness as a Physician.

Sir THOMAS BARLOW has, in response to our request, sent the following notes: Sir William Broadbent was a many-sided man, but he was before all things a great

physician. He was a shrewd independent observer—of the whole as well as of the parts—and he never forgot the wood whilst he looked at the trees. He was keen and clear in the deductions which he drew from physical signs, and terse and definite in his lines of treatment. He was essentially an all-round general physician, for although he was greatly attracted by the study of heart lesions and their prognosis, and by all the problems of circulation, especially those of increased and lowered arterial tension, in the elucidation of which he was a pioneer, yet there was no branch of medicine in which he was not at home, and there were few on which he had not made independent observations. He had a wide experience of fevers, gained as physician to the London Fever Hospital and in private practice. His papers on brain lesions associated with affections of speech were models of clear observation and exposition. It was one of the aspirations of his later years that when he had finished with practice he might be able to collate his early investigations as to the path of the fibres of the brain and to show the full bearing of the doctrine formulated by him years ago of the double representation of brain functions and the limits of compensation. In regard to therapeutics he had a singularly open mind and was ready to welcome new methods and to readjust his practice to real advances alike in surgery and pathology.

In a remarkable paper submitted several years ago to the Royal Medical and Chirurgical Society, but not published in its *Transactions*, he anticipated the development of pharmacology on the lines of chemical affinities of the elements.

Broadbent's strength as a teacher both in the lecture theatre and in the wards was universally recognized by his colleagues and pupils at St. Mary's. He never aimed at rhetorical effect, but his teaching was sound, thorough, and practical, and his diagnosis at the bedside stood the crucial test of the *post-mortem* room.

It is greatly to be regretted that his extensive consulting practice limited his literary output, but his books, papers, and addresses alike showed the same qualities as his clinical work—namely, accurate, independent observation, close reasoning, wide outlook and clear statement. Broadbent was a Yorkshireman through and through, and some people might say that he had the faults of his qualities. He was frank and outspoken in his utterances, but he was not given to flattery or effusiveness of speech. He was businesslike in the discharge of duty, and begrudged neither time nor thought in its performance, but he was a man of few words, went quickly to the point, and never laid himself out specially to please.

He worked on his own lines, and was not greatly concerned with authorities, but he was thorough and unstinting in the recognition of the work of his contemporaries, as was exemplified in his Hughlings Jackson lecture and likewise in the acknowledgement of advances in knowledge made by his younger brethren.

Whenever there was real trouble and difficulty he was the strong man to whom one could go, assured of sympathy, guidance, and support.

He had come to London with small pecuniary resources, but with a strong physique and great courage and tenacity. His early professional career was frugal; his home life was always a tower of strength to him; he never cared for display, and he was simple in his tastes, but when he reaped the reward of his talents and industry he was most hospitable to his brethren and generous to the poor and needy and to every good work the claims of which were submitted to him. He was specially good to his poorer brethren, and the Medical Benevolent Fund has sustained an irreparable loss in his death. But he was generous too, and wise in counsel and inspiration to those who had stumbled by the way and who needed a strong arm to lift them up. Broadbent took an active share in the principal medical societies, and was always a loyal supporter of the British Medical Association. He had throughout his professional life a keen sense of the obligations of medical citizenship.

The quality which above all others endeared him to those who knew him best was his readiness to help forward any good movement when once he was convinced that it was right.

Though he valued the good opinions of his brethren he did not ask himself whether a given project would command universal professional approval, but having satisfied himself that fundamentally it was sound, and that it came within practical politics, he threw in his lot with it, and did his best to make it a success.

The antituberculosis crusade was a case in point. There was doubt in the minds of many as to the wisdom of taking the public into complete confidence, but Broadbent saw that it was imperative to secure a wide and enlightened popular sympathy, and his policy has been justified. To his courage, perseverance, and self-sacrifice the fresh start in dealing with this disease in England is largely due.

And now we bid a sad farewell to one whose life was full of work and strenuous endeavour, who received in his time some of the highest rewards of his profession, and was one of the most successful physicians of the Victorian period, and who through his long career maintained the lofty standard of English medicine, and left a memory of humble Christian faith, of high and noble aims, and of devotion to the service of man.

Dr. Hughlings Jackson, F.R.S., has responded to our invitation to contribute in the following terms:

Sir William Broadbent has left a record of splendid work done in the advancement of neurology. The value of what he did towards the elucidation of different problems presented by cases of aphasia is universally acknowledged. This is not the place to give details of any of his researches. I shall limit remarks to the wide bearings of a great principle he established, to what is known as "Broadbent's hypothesis." This principle has brought method into the analysis of complex symptomatologies of some very different nervous maladies. Before beginning what is little more than an outline sketch of Broadbent's hypothesis, I, as one of his disciples, heartily acknowledge great indebtedness to this distinguished physician for the help his writings have for very many years given me in my medico-neurological studies.

More than forty years ago (*British and Foreign Med.-Chir. Review*, April, 1866), Broadbent published an article on "the Bilateral Association of Nerve Nuclei to the Higher Centres." These words, his latest but not his best deliverance on the subject, are from a lecture he delivered before the Neurological Society, published in *Brain*, No. 103, p. 347, Autumn, 1903. To quote more on his hypothesis from that lecture: "The principle is that when muscles on the two sides of the body always act together, their nuclei situate in opposite sides of the cord are so closely associated by commissural fibres as to be practically one nucleus." Whatever modifications and corrections of details have been required what is essential in the principle the hypothesis embodies has not been invalidated. I take for first illustration of it a case of ordinary hemiplegia—say right—owing to disease of the left half of the brain. In such a case there is loss of power of the right limbs, that is, of those parts of the body which are most nearly unilateral, and, as we may say, "most voluntary" in their actions; but there is no, or very little, disability of the intercostal muscles of either side of the chest. Nevertheless there is loss of many *movements* of the intercostal *muscles* of *both sides*, that is to say, there is paralysis *in the sense of loss of movements* of the intercostal muscles of both sides, but without disability of these muscles. The seeming paradox in this statement disappears when we reflect that, as Broadbent told us long ago, in such a case the intercostal muscles of both sides of the chest remain represented in another set of movements in, and are still empowered by, the undamaged right half of the brain; there is almost complete compensation by the right half for the effects of the destruction lesion in the left half. The truth of this hypothesis is demonstrated in two ways. In some cases of what may here be called Rolandic epilepsy (it is sometimes called "cortical epilepsy") there is from a local lesion of the motor region of the cortex cerebri of one half—say, left—of the brain occasionally convulsion of the limbs of the right side of the body and of both sides of the chest. In the facts of hemiplegia contrasted with those of the case of Rolandic epilepsy there is a striking verification of Broadbent's hypothesis. To look back on the facts of the two cases: From a destruction lesion of part of one half of the brain there is no, or very little, obvious

disability of the intercostal muscles of either side, whilst from a discharge lesion of a part of the cortex (a part belonging to the same anatomico-physiological system as that part which is the seat of a destruction lesion in hemiplegia) there is great spasm of the intercostal muscles of both sides. Another, a third, confirmation of the hypothesis is given by so-called pseudo-bulbar paralysis; in cases of this malady there is a double cerebral destruction lesion, causing great disability of bilaterally acting muscles of a certain region of the body—of both sides of the tongue, lips, and palate. A destruction lesion of the left half of the brain only causes very slight, almost no, disability of the bilaterally acting parts mentioned, compensation being for the effects of that one-sided lesion practically complete. But when that compensation is lost from a lesion of the right half also, there is very great disability of the bilaterally acting parts mentioned. Speaking more at large, it follows from Broadbent's hypothesis that "double hemiplegia" is more than the double of hemiplegia.

So much for three applications of the hypothesis. There is another one of great importance which I shall do little more than mention. The hypothesis "leads" (I am now quoting Broadbent again, *Brain*, op. cit.) "to the conclusion that words are represented in the right as well as in the left hemisphere."

I hope that what I have said shows how fundamental and how widely applying Broadbent's hypothesis is. This basic contribution to neurology has lasted forty years, and is still not only valuable for the explanation of certain neural symptomatologies, but is also fruitful in its indications for further research in medical neurology. Moreover, I think that it and deductions or inferences from it, will be found of great value in the study of still larger problems than those dealt with in the foregoing—of great value in investigations into the physiology of the organism, when that physiology is considered as especially corresponding to psychology, both to the psychology of the sane and that of the insane.

Dr. CHEADLE, Consulting Physician to St. Mary's Hospital, writes: My acquaintance with Sir William Broadbent extended over forty years, and my friendship for him has for an equal period known no break or weakening. A staunch comrade and colleague—genial and kindly, moreover, with those with whom he worked. A born leader, a determined fighter in what he judged to be a just and right cause—"Vir justus ac proposita tenax."

His energy was remarkable. He spared neither time nor labour, and no trouble was too great for him to take in order to forward the end in view. His devotion to the advancement of his hospital and medical school bore excellent fruit. The rise of St. Mary's as a medical school was coincident with his career. It is hardly too much to say that it was chiefly owing to his untiring work and wise counsel, the zeal and enthusiasm which he aroused in colleagues and students, together with the personal reputation which he achieved, that St. Mary's gained the position which it holds.

Sir William Broadbent's chief characteristics were thoroughness in all he did, a high moral courage, undaunted by hostile criticism, or prejudiced opposition; with this an intellectual power and grasp of the subject in hand rarely equalled.

The work he has done towards the advancement of medical knowledge, such as his lectures on the heart and pulse, is of sterling value, and will endure; and his efforts in the public service—as, for example, in the campaign against tuberculosis—have borne rich fruit, and will be of permanent benefit to mankind.

As a practising physician his leading distinction was a certain sound and acute judgement in diagnosis. It was impossible to examine a case in conjunction with him and not be impressed by his originality of view. He gave no mere stereotyped opinion, but constantly developed some point the value of which had perhaps been underrated, if not overlooked, and I always felt afterwards that I had gained something in clinical wisdom. No other Master in Medicine whom I have met has thus influenced me, with the sole exception of the late Sir William Gull, who possessed the same faculty of fresh insight.

Sir William Broadbent's teaching at the bedside was eagerly sought after by the students, who were not slow to appreciate the value of his lucid exposition of the clinical problems before them, and he won their attachment and esteem as fully as their admiration and respect. In his dealings with patients—rich and poor alike—he was always considerate, courteous, and long-suffering of many a tedious tale.

As a lecturer and speaker his delivery was in some degree marred by a curious hesitancy. He had not that dangerous Celtic fluency of speech which now and again leads the possessors of it to utterance in advance of correct and accurate thought and judgement. Yet his dealing with the subject in hand was lucid and complete. It commanded attention in spite of this drawback of the slow and careful search for the precise word best fitted to express with accuracy the idea intended, and which he always succeeded in finding.

In fine, Sir William Broadbent was a man of exceptional brain power, well trained and effective, a marked and forceful personality, one of the big men of the profession in our time.

The funeral took place on July 13th, the first part of the service being conducted at St. Peter's, Vere Street, by the Rev. Canon Page Roberts, assisted by the Rev. H. Lafone, son-in-law of Sir William Broadbent. Among the wreaths with which the coffin was covered was one from the Queen bearing the inscription, "In grateful remembrance, from Alexandra." Among those present at the service at Vere Street were the Hon. Sidney Greville, representing the King; Sir James Reid, representing the Prince of Wales; Sir R. Douglas Powell, President, and Dr. Liveing, Registrar, of the Royal College of Physicians; Sir William Church, Sir Thomas Barlow, Dr. Frederick Roberts, Dr. Pye-Smith, Dr. Hughlings Jackson, Dr. Ferrier, Dr. Bastian, Mr. Henry Morris, President of the Royal College of Surgeons; Sir Thomas Smith, Mr. Jonathan Hutchinson, Sir William Bennett, Professor Howard Marsh, Mr. Mayo Robson, and Mr. Pearce Gould. The British Medical Association was represented by Mr. Edmund Owen, Chairman of Council; Dr. Radcliffe Crocker, Treasurer; and Dr. Frederick Taylor, President of the Metropolitan Counties Branch; the University of London by Dr. J. Kingston Fowler; the Society of Apothecaries by Mr. E. Parker Young, Master; the British Medical Benevolent Fund by Dr. Samuel West; Epsom College by Sir Constantine Holman and Mr. J. B. Lamb, Secretary; the Invalid Children's Aid Association by Mr. J. Warrington Haward; and the National Association for the Prevention of Consumption by Dr. Theodore Williams. Among others present were Sir R. Finlay, K.C., Sir Squire Bancroft, Sir Anderson Critchett, Sir James Blyth, Sir Felix Semon, Bishop Welldon, Sir Lauder Brunton, and Mr. Charles Schwann, M.P., as well as Dr. Cheadle, Sir A. E. Wright, Mr. Pepper, Dr. Caley (Dean), and many other members of the staff, past and present, of St. Mary's Hospital. The interment took place at Wendover, the officiating clergy being the Rev. H. Lafone and the Rev. A. Smith, vicar.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession who have lately died are Dr. Giuseppe Corradi, formerly Professor of Surgery in the Superior School of Medicine, Florence; Dr. Moritz Litten, Extraordinary Professor of Medicine in the University of Berlin, author of many original contributions on contusion pneumonia, endocarditis, etc., aged 62; Dr. Jules Dubrisay, President of the Paris Society of Medicine, for many years one of the leading practitioners of the French capital, author of papers on pediatrics and hygiene, and founder of the first dispensary for children in Paris, established in 1863; Dr. André Cannieu, Professor of Anatomy in the Medical Faculty of Bordeaux, author of numerous writings on embryology and general anatomy; Dr. N. E. Sokoloff, Extraordinary Professor of External Pathology in the Medical Faculty of Khartoum; Dr. Felix Formento, of New Orleans, an Italian who formerly served in the Sardinian army, and took a prominent part in organizing the army hospital service in Missouri, was Vice-President of the International Congress of Hygiene held at Geneva, and was the author of several works on military surgery, aged 70; and Professor J. J. Grancher, of Paris, founder of a society for the preservation of children from tuberculosis, aged 63.

UNIVERSITIES AND COLLEGES.

THE ROYAL UNIVERSITY OF IRELAND.

THE following candidates have been approved at the examination indicated:

FIRST EXAMINATION.—C. Barragry, *D. J. Barrett, J. L. Brown, P. A. Charkin, M. J. Cogan, *E. J. Colgan, P. J. Corcoran, J. F. Craig, *T. P. Davy, *J. C. Denvir, *B. Doyle, B.A., *G. Fitzgerald, T. F. S. Fulton, M. J. Gallagher, J. M. A. Gorman, T. D. Graham, *G. S. Harvey, J. Hill, *J. O. Hodnett, *N. L. Joynt, *F. J. Keane, *J. J. Keirans, J. L. Kilbride, J. Laverty, H. T. S. McClintock, *R. J. McConnell, L. J. J. McGrath, *M. McGuire, *A. D. MacMahon, R. C. McMillan, *D. McSparron, C. Martin, *W. Megaw, *W. M. Millar, A. G. Mitchell, *J. J. H. Mitchell, H. H. Mulholland, *H. J. V. Mullane, D. O'Brien, J. P. O'Brien, J. O'Connor, T. F. O'Donoghue, W. M. O'Farrell, J. A. O'Flynn, P. J. O'Grady, O. J. O. O'Hanlon, *H. O'Neill, *J. Patrick, J. Porter, J. H. Porter, *J. M. Rishworth, W. N. Rishworth, M. J. Roche, J. M. Rowe, *H. A. Skillen, *T. Smyth, F. J. D. Twigg, *W. Wilson.

*Candidates against whose name a star is affixed may present themselves for further examination for honours in one or more subjects.

UNIVERSITY OF DUBLIN.

THE recent competitions in the Faculty of Medicine have resulted in the following awards: The Medical Travelling Prize has been adjudged to Mr. R. E. Wright, and the two scholarships in anatomy and institutes of medicine to Messrs. A. A. M'Connell and T. A. Hughes, and the corresponding scholarships for Physics, Botany, Chemistry, and Zoology, to Messrs. H. J. Smyly and H. de L. Crawford. The winner of the Purser Medal in the institutes of medicine is Mr. C. M. Finny.

UNIVERSITY OF LONDON.

London Hospital Prize Distribution.

MR. HUDSON KEARLEY, M.P., distributed the prizes to the successful students at the London Hospital on July 17th. Mr. D. Hoare, the chairman of the College Board, in the course of his speech introducing Mr. Kearley referred to the pecuniary assistance given by him to the research work at the hospital, and declared that money thus spent on the discovery of the causes of disease was wisely expended, and would yield results of far-reaching importance. He was proud to observe that in regard to the number of students entering the medical schools of the metropolis, the London Hospital again headed the list. Mr. Kearley, in the course of his address, said that the research work done at the London Hospital deserved well of the community; side by side with the alleviation of pain and sickness there was carried on at the London Hospital an investigation into the causes of disease with a view to its prevention in the future. He affirmed unhesitatingly that in no other hospital were there better-equipped laboratories for research into the causes of disease. Unfortunately, however, research work did not appeal to the charitable public. After Mr. Kearley had distributed the prizes to the medical students, Mr. Sydney Holland introduced three nurses, who duly received prizes. At the termination of the ceremony Dr. Leonard Hill exhibited the experimental chamber in which he and Mr. Greenwood had submitted themselves to air compressed to very high pressures, and showed a diver at work in a tank on the lawn. Dr. Hill also demonstrated an apparatus for saving life in mines after explosions, the wearer entering an experimental hut and enduring a stifling atmosphere of smoke in safety.

UNIVERSITY OF LEEDS.

Degrees.

ON Thursday, July 11th, the degrees of Bachelor of Medicine and Bachelor of Surgery were conferred by the Vice-Chancellor on Messrs. J. P. Bibby and W. L. Dibb.

Examinations.

The following candidates have been approved at the examinations indicated:

SECOND M.B., CH.B. (*Anatomy and Physiology*).—C. S. Brown, C. G. K. Sharpe. (*Materia Medica and Pharmacy*): J. P. Brown, T. Elliott, J. B. Fisher, W. S. Hart, H. V. Lamb, N. V. Milton, B. A. Slocombe, G. V. Stockdale, N. S. Twist.

FINAL M.B., CH.B. (*Part I.*)—W. H. Butler, H. Vallow.

The diploma in Public Health has been granted to Messrs. W. Scatterty and F. A. Sharpe.

UNIVERSITY COLLEGE OF NORTH WALES.

ON July 9th, the King, accompanied by the Queen and Princess Victoria, visited the city of Bangor, and were received with a welcome which for cordiality and enthusiasm could not have been exceeded. His Majesty laid the foundation stone of new buildings for the University College of North Wales, and then, to the delight of thousands of spectators, who apparently were quite unprepared for the incident, conferred the honour of knighthood upon Dr. Henry Rudolf Reichel, M.A., the Principal of that institution from its foundation twenty-three years ago. In his address the King paid a high tribute to the love of the people of Wales for education. Sir Henry Reichel is a brilliant scholar and a man of progressive ideas. He was selected to be one of the three representatives from Wales on the Mosely Education Commission to America in 1902, and the report he drew up was considered of great educational value. The University College of North Wales, Bangor, was opened in 1884, and, like its sister college at Cardiff, is a direct result of the report of the Departmental Committee (presided over by the late Lord Aberdare), appointed by Mr. Gladstone in 1880 to inquire into the condition of intermediate and higher education in Wales and Monmouthshire. Thirteen towns in North Wales competed for the seat of the College, and the decision was referred to Lord Carlingford, Lord Bramwell, and Mr. Mundella, who unanimously selected Bangor. From the very outset the College was enthusiastically supported by the people. Parliament voted it an annual Treasury grant of £4,000, and to supplement this an endowment fund of £30,000 was raised, towards which there were nearly 8,000 subscribers. In October, 1884, the College was opened in premises previously known as the Penrhyn Arms Hotel. Bangor, following the example of Cardiff, presented the College with the magnificent site on which the new buildings will ere long be reared. The site is 13¾ acres in extent, and cost the city £19,000; the townspeople have in addition subscribed upwards of £4,700 to the College Building Fund. It was in 1902 that this gift was made, since which time £42,725 has been collected or promised out of the total expenditure, which is roughly estimated at from £150,000 to £175,000. Early in 1906 the Chancellor of the Exchequer promised a grant in aid of £20,000.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE quarterly council was held on July 11th, Mr. Henry Morris, President, in the chair.

Arnott Legacy and Gift.

By the death of Miss Moncrieff Arnott on June 10th the legacy of £1,000 bequeathed to the College by Mr. James Moncrieff Arnott will become payable to the College free of legacy duty on November 11th next. Miss Arnott's executors, in accordance with her desire, offered to the College the portrait in oil of her father, which is in the Mansion House of Chapel, Fifeshire. The President stated that he had accepted the portrait on behalf of the Council, and had conveyed to Miss Arnott's executors the assurance that the presentation of this portrait of a past president of the College would be warmly appreciated.

Election of President and Vice-Presidents.

Mr. Henry Morris was re-elected President for the ensuing year. Mr. R. J. Godlee was re-elected the Vice-President, and Mr. William Watson Cheyne was elected as the second Vice-President for the ensuing year.

Vacancy on the Court of Examiners.

The vacancy occasioned by the retirement of Dr. C. H. Golding-Bird will be filled up at the Council on July 25th, as will the vacancy on the Board of Examiners in Dental Surgery occasioned by the resignation of Mr. A. Pearce Gould. The expiration of the period of office of Mr. W. B. Paterson will occasion a further vacancy. Mr. Paterson proposes to seek re-election.

Donation.

The best thanks of the Council were given to Sir John Tweedy for his donation to the College of *Rymer's Foedera*, twenty volumes folio, 1711.

Election of Lecturers.

The following gentlemen were elected Lecturers for the ensuing year: *Hunterian Professors*—William Sampson Handley (one lecture), William Francis Victor Bonney (three lectures), Donald John Armour (three lectures), Arthur Ralph Thompson (two lectures), Frank Charles Shrubsall (three lectures). *Arris and Gale Lecturers*—Francis Arthur Bainbridge (one lecture), Major Greenwood, Jun. (two lectures). *Erasmus Wilson Lecturers*—Samuel George Shattock, John William Henry Eyre, Leonard Stanley Dudgeon (one lecture each).

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT a meeting on July 5th, Messrs. W. Boxwell, W. J. Dargan, and W. G. Harvey were admitted to the Membership of the College. At the same meeting the licences in Medicine and Midwifery were conferred on Mr. B. Hogan.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Fellowship Examination.

NOTICE is given that on and after January 1st, 1910, all examinations for the Fellowship of this College will be conducted under the scheme of examination now known as Grade I. No candidate after above date will, under any circumstance, be admitted to examination for the Fellowship of this College under the scheme now known as Grade II, which will then cease to be used.

ERRATUM.—In the Birmingham University pass lists published in our issue of July 13th, the names of the successful candidates at the D.P.H. examinations should have read Part I, T. W. Beazeley and A. E. Remmett Weaver, and Parts I and II, E. F. Wharton Bywater.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examination indicated:

SECOND PROFESSIONAL.—J. Alston, H. G. P. Armitage, *Miss M. M. S. Coghlan, O. G. Connell, C. P. Corbett, W. Crymble, M. Drummond, *A. Foley, G. J. Fraser, J. Gormley, W. V. Johnston, F. R. Jones, F. M. Kirwan, C. Lapper, A. M. Lanphier, J. Mitchell, H. M. Montgomery, C. McDonnell, H. M. E. H. McAdoo, R. O'Connor, P. T. O'Farrell, M. F. O'Hea, J. H. O'Neill, *J. S. Pegun, J. B. Power, T. P. Seymour, T. Sheedy, *W. A. Swan, R. C. Thomson, H. R. Tighe, *R. H. Weir, H. Q. C. Wheeler, *R. White, T. J. Williams.

* With honours.

Medico-Legal.

AN ASSAULT.

DR. S. BUTLER MASON of Pontypool recently prosecuted W. King, a nailmaker, for assault. Dr. Mason stated that he had attended the recently-deceased sister of the defendant for over twenty years, and in making out the death certificate he certified that death was due to a certain chronic disease. The certificate prevented the defendant's family from securing certain insurance money, and Dr. Mason, having refused to alter the certificate, the defendant abused him and finally struck him on the chest. Corroborative evidence as to the assault was given. The defendant denied it, but admitted that he had used abusive language; he asserted that his sister's health had been ruined by vaccination. The Bench, having extracted a promise from the defendant that he would not repeat the assault, fined him £3. Dr. Mason is the Poor-law medical officer for the district, and had treated the patient in that capacity. We congratulate Dr. Butler Mason on the course which he took.

A DOCTOR'S WATER-RATE.

C. R. W. writes: With reference to the paragraph in the BRITISH MEDICAL JOURNAL of June 29th, p. 1561, I get my water supply from the —— Corporation. The following is a list of their charges:

	Per annum.
Premises	£1 17 5
Hose-pipe	0 7 6
Trade	0 6 6
Two horses	0 12 0
Four-wheeler	0 3 0

I have been innocently paying these charges for the past five years. The hose-pipe is used for washing the trap and for swilling the yard, etc.—not for gardening. I supposed that I was liable for the trade charge because I use the water for dispensing purposes. I should be much obliged if you would kindly give me your opinion as to whether I am liable for all or any of these extra charges, and if it would be possible to get them returned for the past five years in case I am not liable.

*** The answer to this question depends upon the terms of the Corporation's Water Act, to which we have no access.

HOSPITAL AND DISPENSARY MANAGEMENT.

LEBANON HOSPITAL FOR THE INSANE.

WE have received the eighth annual report for the year ending March 31st, 1906, of the Lebanon Hospital for the Insane, Asfûriyeh, near Beyrout, Syria. The number of patients benefited through the existence of this hospital since its opening in 1900 is 434, of whom 113 have recovered, and about 100 more much improved. "This may well be a cause of much satisfaction," the Committee say, "and the more so when it is remembered that, almost without exception, each of these patients has either been taken to one of the so-called holy caves, where they have undergone some of the almost indescribable tortures meted out to the poor insane in those places, or they have been treated no less harshly by their relatives in their own homes." The report of the Medical Superintendent, Dr. Harry Thwaites, shows that on March 31st, 1905, there were 63 patients in residence, and that on the same date in 1906 there were 65. During the year 94 cases were admitted, of whom 59 were men and 35 women, representing 90 fresh cases, 4 of the cases being readmitted during the year. No table is furnished showing a comparison of the admissions with those of previous years, but Dr. Thwaites says that the admissions are steadily increasing, thus demonstrating the place the hospital holds in the country, and that, further, the inclusion in these numbers of patients holding different creeds and religions is a proof of its acceptance as an international institution, irrespective of denomination. This is borne out by a table giving the admissions classified as to religious denomination, from which we see that there were 21 Maronites, 3 Roman Catholics, 14 Moslems, 9 Jews, 2 Druses, 12 Protestants, 27 belonging to the Greek Orthodox Church, and 6 to the Greek Catholic Church. The admissions were further classified as to the forms of mental disorder into: Mania 25, melancholia 17, dementia 34, epileptic insanity 2, delusional insanity 5, hysteria 5, and alternating insanity, general paralysis, and insanity from coarse brain lesion 1 each. There were also 2 cases of congenital defect, and 1 not insane. As to probable causation, Dr. Thwaites says that 18 per cent. gave clear histories of direct inheritance, but that this factor was probably much greater than the statistics would show. Alcohol was the principal etiological factor in 12 per cent., and Dr. Thwaites also notes that there were no cases of confusional insanity dependent upon hasheesh or opium habits such as are common in Egypt. During the year 34 were discharged as recovered, giving a recovery rate on the admissions of 36 per cent., 28 as improved, 24 as not improved, and there were 6 deaths. The deaths were due in 3 cases to exhaustion depending upon the nervous condition, in 1 case to suicide, and in 1 each to nephritis and heart failure.

There was an entire absence of infectious and epidemic diseases during the year, though in the summer there were a few cases of fever of mild non-malarious type. This freedom from zymotic disease is all the more satisfactory, as in Beyrout a severe outbreak of enteric fever prevailed throughout the winter. The institution is entirely supported by voluntary contributions, collected mainly in Great Britain, but also in Holland, Switzerland, America, and Germany. The venerable founder of the hospital, Mr. Theophilus Waldmeier, recently visited Europe and America in the interests of the hospital, and his account of his travels is included in this annual report.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Pontypridd.—The annual report of Dr. Howard Davies (M.O.H. Pontypridd), just issued, contains an indictment of the water supply of the district, but shows a marked decrease in the rate of mortality. The statistics dealing with infantile mortality show an improvement, the figure being 164·6 per 1,000 in 1906, and 181 for 1905. As compared with the average infantile mortality for England and Wales, it is pointed out that there is room for still further improvement. The births registered during the year totalled 1,099, or a decrease of 200 as compared with the previous year. The death-rate was equivalent to 13.8 per 1,000, this being the lowest recorded since 1873, or 1.6 below the average for England and Wales. The chief feature of the report is the portion dealing with the water supply, which Dr. Davies says is monopolized by the Pontypridd Waterworks Company, and was most unsatisfactory during the year under review. "Not only was the water supply scarce," proceeds the report, "but throughout the year there was marked evidence in the water supplied to the public that scant, if any, attention was paid by the company to filtration. Besides peat and vegetable matters, which were more or less always present, worms, insects, and lizards were frequently brought to my notice by householders." Upon analysis the water was always found to contain dissolved lead, being invariably acid or neutral in reaction, thus possessing plumbo-solvent action. "I consider," continues Dr. Davies, "the question of the water supply to be one if not the most important problem that requires your most careful and serious attention and consideration. It was gratifying to be able to state that the Council had taken a deep concern in the question, and had appointed an eminent waterworks engineer to make a special report upon the water supply." Regarding the water supply necessary to meet the future development of the district, Dr. Davies contends that the reservoirs of any scheme must be outside the area of the coalfield, in consequence of the frequent subsidences experienced. The result of land disturbances has been that many well-known springs of water have entirely disappeared. "As the supply of the district," concludes the report, "is dependent entirely upon the rainfall . . . . after our experiences of the present and past I view with apprehension and anxiety the conditions that will exist if some steps are not immediately taken to increase the water supply of the district, which I consider, even now, most inadequate."

ROYAL NAVY AND ARMY MEDICAL SERVICES.

DEPUTY TO THE PRINCIPAL MEDICAL OFFICER IN INDIA.

THE *Statesman* of Calcutta understands that an important addition is to be made to the medical staff by the appointment of a senior officer of the Indian Medical Service to be Deputy to the Principal Medical Officer with His Majesty's Forces in India.

THE charge of the new orthopaedic department at Guy's Hospital has been entrusted to Mr. R. P. Rowlands, M.S., Assistant Surgeon to the hospital.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

CONSTIPATION asks for a receipt for making Lancashire oat-bread. It is in oval cakes, rather thinner than lint.

FIBROSITIS asks for suggestions as to a suitable English locality for an August holiday for sufferers from muscular rheumatism and rheumatoid arthritis. The seaside would be preferred.

LOW asks to be referred to an authoritative account of experience of the action and use of caustics (zinc chloride, silver nitrate, arsenic, etc.) in the destruction of papillomatous growths of the lip. A patient under his care, who has typical papilloma of the lip of two months' duration, is unwilling to submit to surgical treatment.

ANSWERS.

HYPERAEMIA AS A REMEDY.

WITH reference to the reply to Dr. A. E. Hodder published July 6th, 1907, p. 63, Dr. Boswell Dodds (Starcross, South Devon) writes to mention the French translation of Professor Bier's monograph *L'Hyperémie et son Action Thérapeutique*, traduit par les Docteurs Alfred Machard et Arnold Vallette (Paris: Masson et Cie.).

SUBACUTE RHEUMATISM.

DR. JOHN MCMULLEN (Capetown) writes: In answer to the query of "H. H." as to a patient with subacute rheumatism and startings, etc. (BRITISH MEDICAL JOURNAL, June 8th, 1907, p. 1403), increasing doses of liq. arsenicalis or of zinc sulphate, or, preferably, the two combined, should cure his patient in ten or twelve days. I should give the above in the ordinary soda salicylate mixture. I have always succeeded with the above. I look upon zinc. sulph. as a sheet anchor in these cases.

GLOVES FOR *X*-RAY WORKERS.

DR. WILLIAM MITCHELL (Electrotherapist and Radiographer, Bradford Royal Infirmary) writes in reply to "D.": Take a pair of *thick* leather gloves (for example, pruning gloves), and soak thoroughly in saturated solution of bismuth chloride, made by dissolving bismuth carbonate in pure HCl. Then throw the gloves into cold running water for an hour. This causes an interstitial precipitation of oxychloride of bismuth which is highly insoluble. Next *thoroughly* dry and repeat process, and again repeat for two or three times. A glove to a high degree protective will then be obtained, much more protective than the usual rubber gloves, and not poulticing the hands as rubber gloves do. Bismuth having a higher atomic weight than lead gives more protection than gloves with interstitial precipitation of lead salts.

DR. A. HOWARD PIRIE (London) writes: In answer to "D." as to *x*-ray gloves. Let him beware of instrument makers' *x*-ray proof gloves. They are effective but clumsy, heavy and impossible to work with. If he will take the trouble to make them for himself he will find the following effective: Get a pair of cotton gloves (price 6½d.). Let him put one glove on his hand and paint it over on the back only with the following: Solution of rubber as used for vulcanizing one part by volume (to be got at a motor-car dépôt); red oxide of lead one part by volume. Paint this on thickly with several (about six) coats till a thickness of one-sixteenth of an inch is attained. Do the same with the other glove. It is only necessary to do the backs of the gloves. Send the gloves to a motor-car dépôt to be vulcanized. Watson and Sons, in Holborn, to whom I suggested this method, might be able to supply them to "D."

LETTERS, NOTES, Etc.

WANTED, A SCALE OF FEES.

SUFFERER writes: In this town fees are extraordinarily low for the middle class, and in some respects far too high for the masses. The system of small flats prevails for the artisan class, who are charged 2s. 6d. for visit and medicine. This is quite right, but people residing in houses with rents of £30 to £50 are charged the same fee by the younger practitioners and men who have no good class practice—in other words, men who do not respect themselves or the profession. I do not charge less than 3s. 6d. to 5s. to this class: the result is I am being gradually and surely left out in the cold. This is what I term "prostituting the profession"—lowering it. Now, why can we not have fixed fees, strictly laid down by the Association? Men who ought to go out as assistants plant themselves down, run family clubs, and disgrace the profession by charging low fees, dragging down honourable men to their own level. Another anomaly: Why charge 2s. 6d. to persons who come to the surgery after the first so-called consultation and medicine? Surely, after the first time 2s. is quite sufficient. This I would concede. It does not appear to me just that the same fee at home should be charged as a visit and medicine to a person at his home.

FORMATES IN RHEUMATISM.

A. M. writes: On reading Dr. Ainley Walker's letter regarding the popular belief that the sting of bees is both protective and curative for rheumatism, it occurred to me that if it were so then the formates should be useful in that affection. I was suffering at the time from an attack of lumbago, which had been more troublesome than usual to get rid of. After taking two doses of 15 grains the pain had quite gone. In two other cases I have had equally good results. I cannot find any reference to the use of sodium or potassium formates in gout or rheumatism, but from their diuretic action one would expect them to be beneficial. Their tonic effect on the heart and muscular system generally is a point in their favour as compared with most of the other drugs used in these diseases.

*** Formic acid diluted with an equal quantity of water has been used in the treatment of neuralgia and rheumatic pains. Spiritus formicarum, or spirit of ants prepared by mixing 2 parts of formic acid with 35 parts of alcohol and 13 of water, all by weight, is found in old pharmacopoeias, and was used as a rapidly diffusible stimulant in doses of 20 to 60 minims.

THE STETHOSCOPE.

DR. A. CORDES (Geneva) writes: Apropos of Laënnec and the stethoscope (BRITISH MEDICAL JOURNAL, July 6th, 1907, p. 6), I remember that Professor Gubler, of Paris School, used to say that he very seldom used the stethoscope; his hand, he said, was sensitive enough for *hearing* the cardiac bruits. He added, with a smile, "When I am called in consultation and people see the other consultants using an instrument, and me using my bare hand, they have a very small opinion of my capacity."

DR. DAVID A. ALEXANDER (Clifton, Bristol) writes: When at a loss for a stethoscope I ask for a wineglass, a faithful and serviceable auscultatory medium, which most patients have at hand.

FINGER NAILS EXFOLIATION.

PSORIASIS writes: I had a case somewhat similar to that of "W. W." (see BRITISH MEDICAL JOURNAL for June 8th, 1907, p. 1403), also in a young woman. The nails of the toe were affected as well as those of the fingers. They were loosened around the free edges, thickened and furrowed, and the nail-bed was very evidently affected. The condition was very unsightly. None of the nails were shed. As mentioned by Mr. Hutchinson, there was not only common psoriasis of the arm in the patient, but also in her mother and grandmother (maternal). Various kinds of treatment were tried, amongst which was arsenic, but perhaps not for a long enough period. Soaking in antiseptic lotions had little effect, and I am sorry to say the condition is much the same now as it was 15 years ago, and the patient is resigned, regarding it as incurable. Since seeing Mr. Jonathan Hutchinson's reply, I shall try a long course of arsenic. The psoriasis of the arm was easily cured under arsenic internally and chrysophanic acid externally.

VAGITUS UTERINUS.

IN a paragraph on this subject which appeared in the BRITISH MEDICAL JOURNAL of July 6th, 1907, p. 42, some mention was made of the experiences of Peiser and of Marx of New York. We may add that, nine years ago, Dr. Charles Kevin reported another case, in the JOURNAL for May 14th, 1898, p. 1258. When sitting by the bedside during the interval between the pains Dr. Kevin heard a distinct sobbing, smothered cry, which continued when he engaged the patient in conversation, so that she could not have been deceiving him by ventriloquizing. The os at the time was but little dilated. Two hours later, after the cry had been heard several times, the child was delivered; it screamed lustily during the last pain, and did not require artificial respiration.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

Eight lines and under	£0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 6, Catherine Street, Strand, London, not later than first post on Wednesday morning preceding publication; and if not paid for at the time, should be accompanied by a reference.

N.B.—It is against the rules of the Post Office to receive letters at *Poste Restante* addressed either in initials or numbers.

Remarks
ON AN
OUTBREAK OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

BY WILLIAM ROBERTSON, M.D., D.P.H.,
MEDICAL OFFICER OF HEALTH, LEITH.

I SHALL not attempt to give a detailed historical survey of epidemic cerebro-spinal meningitis, but the recapitulation of one or two facts of outstanding interest may not be amiss.

The first written account of the disease in its epidemic form was given by Vieusseaux, who described the Geneva outbreak of 1805. During this epidemic there were 33 deaths. In the following year, Danielson and Mann called attention to the existence of the disease in Massachusetts. From that centre the disease spread throughout New England, and continued to make its presence felt for the ten subsequent years. The epidemic occurrence of this disease has been grouped into the following periods: 1805-30, 1837-50, 1854-75, 1876 onwards. In the first period, America was seriously involved, only isolated epidemics appearing on the Continent. During the second period, widespread epidemics occurred in France, Italy, Algeria, America, and Denmark. The third period found the disease established in Europe, Asia, Africa, North and South America. In the fourth period, Germany, Italy, and the United States were attacked.

It will be thus observed that nearly every European country has been involved. It is surprising, therefore, that Great Britain has escaped an epidemic visitation so long. Ireland suffered in the Forties and Sixties, but England, Wales, and Scotland have not, within recent times at least, been seriously affected. Sunderland was invaded in the year 1830.

In Creighton's *History of the Epidemics of Britain*, one finds reference to spotted-fever epidemics, but it is impossible to say definitely that the spotted fever there described is the same as that now known as epidemic cerebro-spinal meningitis. The only clue we have in favour of the similarity of the two diseases is the fact mentioned by the earliest observers, about the seventeenth century, that the mortality, in London especially, was amongst children, though adults did not escape. And in view of the present ambiguity with regard to the method of spread of the disease, it is highly interesting to note that Sir Joseph Mayerne, the King's physician, in 1624, wrote that the disease was "not so much contagious as common through an universal disposing cause." Also at that time the idea prevailed that cucumbers contaminated by water from foul ditches and polluted watercourses had promoted the spread of the disease. Sporadic cases of cerebro-spinal meningitis have been recognized by many physicians and pathologists, but, as I have said, the epidemic form of the disease has not been well known. I shall therefore now attempt to offer a possible explanation for the present involvement of Scotland.

In the first place it falls to be observed that the towns which have principally suffered from attack in Scotland have been Glasgow, Edinburgh, Leith, Grangemouth, and Falkirk. Leith is really the seaport of Edinburgh, Grangemouth standing in the same relation to Falkirk. In Ireland, Belfast and Cork have been attacked, and, later, Dublin became involved. Passing over to America, one finds that New York, New Orleans, Boston, and Massachusetts and San Francisco have suffered severely from the ravages of the malady. The foregoing enumeration shows that the chief centres of attack in this country and America have been seaport towns.

When attention is directed to the Continent, one is able to point to Hamburg, Copenhagen, Naples, and Gibraltar as other seaport towns that have suffered. Since the intimate connexion of these ports with one another is actual, the opportunities for oversea conveyance of infection are many. Further, thousands of immigrants and transmigrants annually arrive in Leith from infected European countries. This naturally prompts the pertinent question: Why should Glasgow have been involved before Leith, when one knows that the latter is the port of debarkation? The answer can, I think, be supplied by the following explanation. Coming, as they do, from Antwerp, Hamburg, Rotterdam, Copenhagen, and other Continental ports, these foreigners —in many instances most undesirable subjects—have been collected from Russia, Poland, Germany, Austria, Italy, Bulgaria, and other countries. As soon as they reach Leith they are, without delay, entrained for Glasgow, their sojourn in Leith being measured by minutes. On arriving in Glasgow, a residence of a few days there is often necessary until a steamer is ready to sail for America, consequently the opportunities afforded for sowing the seeds of infection in Glasgow were considerably greater than in the case of Leith. When one learns how infection may be spread, the force of my contention will be strengthened. It is generally believed that the infection of Hamburg and other cities in Northern Germany as well as Copenhagen, was conveyed from America, where the disease had become endemic. That this method of conveying infection between Europe and America is likely, is borne out by the fact that many passenger steamers sail direct between the two continents. Had the infection of Scotland been traceable to America, then Liverpool and Southampton ought to have shared in the present attack, since the oversea connexion between Liverpool, Southampton, and America is much more intimate than it is with Glasgow. We know that the meningococci can be recovered from the upper air passages of what I shall call "intermediaries" for a period of three weeks. The voyage between the Continent and America can be completed within that period, and it is reasonable to suggest that the final settling place of "infection carrying" transmigrants will receive the chief brunt of attack. That the constant conveying of infection carriers to Leith resulted in converting the ships themselves into infected places will be presently proved.

Lanarkshire shared in the first epidemic of cerebro-spinal meningitis, that is, the epidemic which occurred in Glasgow last year. But whether the outbreak occurring in Lanarkshire preceded that of Glasgow I am not in a position to state. It is highly significant, however that Polish miners are employed in large numbers in the Lanarkshire coalpits. Epidemic cerebro-spinal meningitis had been very prevalent among the coal-mining population of certain Continental countries. It is not, I think, improbable, therefore, that miners coming to this country may have played an important part in conveying infection with them. The Leith outbreak may be said to have begun late in December of 1906, when several sudden deaths of a suspiciously obscure nature occurred among children. In one or two instances death was certified as having been due to convulsions, accompanied in one or two cases by gastro-intestinal disturbance. Such sudden and obscure deaths among young children continued to occur at intervals. Early in January, however, several cases of peculiar illness were admitted to the Leith General Hospital, where suspicions became centred upon epidemic cerebro-spinal meningitis. Lumbar puncture verified the worst fears. The cases were notified to me, and I became aware of the fact for the first time that Leith was involved in the outbreak which had been raging in Glasgow and Belfast for a considerable time. It is interesting to observe at this point that some weeks before the above cases were verified a boy was admitted to the scarlet fever ward of the Fever Hospital with all the symptoms of that disease—a rash, with throat injection—the symptoms of onset consisting of acute headache, rigors, and vomiting. Subsequent investigation proved that the onset of illness had been peculiarly sudden. The boy afterwards developed head retraction of an exaggerated form, and lumbar puncture verified the diagnosis of epidemic cerebro-spinal meningitis. This patient lay for five months, growing progressively worse, until he became, like all other chronic types of this disease, a mere skeleton. I have digressed to mention this case in order to point to the occasional association of scarlatiniform-like rashes and throat symptoms with this disease. At first the cases coming under notice were separated by wide intervals, but as time went on the victims were notified with greater frequency, though up to the end of May there were lapses of several days between notifications. Now and again an entire week would pass without the notification of new cases, but the hopes that the outbreak had begun to decline were rudely shattered by the occurrence of as many as 9 or 10 cases within twenty-four hours, such cases occurring

in different parts of the community and apparently having no connexion with one another. This, to my mind, is one of the inexplicable features underlying the spread of the disease.

Types of Cases Encountered.

The first cases of epidemic cerebro-spinal meningitis when encountered by the practitioner are most puzzling. The usual experience is somewhat as follows: The medical man is called in to see a patient who has been seized with sudden illness. The onset is always sudden. In the case of children and young persons convulsions may herald the attack, and these may begin and terminate the illness; in other words, only a few hours may separate the onset of attack from the moment of death. Shivering and vomiting are fairly constant accompaniments. Extreme restlessness may and often does ensue. This in adults becomes occasionally violent. Headache is often frontal and acute. Occasionally the pain is referred to the nape of the neck. A characteristic stiffness of the neck invariably manifests itself, and when attempt is made to lift the head from the pillow great pain is complained of. Even should the sufferer be in a comatose condition, this pain is evidenced by the distortion of the face or perhaps the crying of the patient. In fact, children invariably cry when the least movement of the head is made. Another very constant feature in acute cases is hypersensitiveness. Yet when left alone the patient may lie as still as a log, with eyes shut and with apparent freedom from suffering. Temperature readings have not much significance, for the simple reason that fever is far from being a constant feature. To illustrate the various phases of the disease that may be encountered, let me briefly quote the following types:

1. A woman, aged 60, was well when she went to bed at night. About 3 next morning a daughter was roused by her mother's restlessness. The restlessness became exaggerated until ultimately the patient fell on the floor and grovelled under the bed. About 10 a.m., when I saw the patient, she was lying perfectly still, her eyes closed and her temperature subnormal. There was no rash of any kind on her body. It was difficult to elicit a clear history of the mode of onset. Pain in the neck had been complained of, and the patient had twice attempted to vomit. The absence of temperature and the peculiar nature of the symptoms rendered the diagnosis very difficult, but the sudden onset suggested epidemic cerebro-spinal meningitis, the existence of which was verified by lumbar puncture, the syringe withdrawing turbid fluid. The patient died at the expiry of sixteen hours. There was no head retraction, but herpes subsequently developed about the mouth and alae of the nose.

2. A boy, aged 10, was admitted to hospital showing exaggerated head retraction, acute cyanosis, the finger tips being livid and his body perfectly cold. In this case, too, the onset was quite sudden, the boy having been in the best of health the day before. His legs were tightly flexed, as were his arms and fingers. When his head was raised from the pillow the whole body moved with it, and intense suffering accompanied the movement. The boy's chest and abdomen were marked by a distinct purpuric eruption. This may be taken as a typical picture of acute epidemic cerebro-spinal meningitis, as seen especially among children. The boy died within twenty-four hours. His temperature on admission was 102° F.

3. A little girl, aged 6, was bright and happy about 6 at night. In fact, her parents remarked that their daughter had seldom been in better spirits. She went to bed apparently perfectly well. At 1 a.m. an elder sister was roused by the vomiting of the little girl, who afterwards lapsed into a condition of drowsiness. During the forenoon the patient could be roused to whisper her name and to show her tongue. She lay on her back in a comatose condition, her eyelids being shut. There appeared to be pain when the head was moved. The surface of her body was perfectly cold, and there was no fever. There was not the least evidence of head retraction. About 4 p.m. purpuric spots appeared on different parts of the trunk, and at 6 the patient died, restlessness having supervened.

4. A woman, aged 56, took suddenly ill during the night. She was very restless, had a great deal of pain at the nape of her neck, and early during the ensuing forenoon herpes appeared on the lips and cheek. She gradually became more restless, and died at the end of twenty-four hours. She had a temperature of 101° F.

5. A girl, aged 16, suddenly became violently ill, vomited repeatedly, and complained of severe frontal headache. Urine was suppressed, and that drawn off was loaded with albumen. She grew gradually worse, and died next day. Everything pointed to uraemia, but the sudden onset and lumbar puncture proved the existence of epidemic cerebro-spinal meningitis.

A peculiar feature of attack is its almost invariable onset at night.

Though the vast majority of cases, especially among children, are typical in respect of head retraction with the manifestation of Kernig's sign, the above have been quoted to indicate how extremely difficult it is to diagnose the disease in its varying phases. It is true that typical clinical features, especially among children, predominate, but such puzzling and aberrant types as some of those quoted are not uncommon. Among children one encounters instances of illness of fairly sudden onset. The cheeks are flushed, the tongue is furred, and other evidences are suggestive of gastro intestinal disturbance. The patient is perfectly conscious, is very fretful, and eats sparingly. There is no head retraction, but attempts to move the head are accompanied by manifestations of pain. In these cases the duration of illness is not infrequently prolonged, death resulting after the patient has become extremely emaciated. During the course of such an illness as that instanced there may be bright periods in the patient's condition when the medical attendant may be buoyed with the hope of recovery. But in all such cases it will be found wise to be guarded in the prognosis. One or two of our patients who appeared to have no chance of recovery, and in whom the manifestations of the disease were of a most pronounced kind, ultimately got well without any sequelae. They were reduced to mere skin and bone, and their convalescence was very protracted. That the difficulty in prognosis is extremely great will be best borne out if I quote one or two examples.

A young man, between 20 and 30 years of age, had been under treatment for a month, and was apparently on the fair way to recovery. He was feeling perfectly well, was very intelligent, his condition being considered eminently satisfactory. He was being regularly treated by lumbar puncture and the injection of lysol. Ten minutes after injection of lysol he complained of sudden faintness, and fell back dead.

Two patients suffering from slight attacks of epidemic cerebro-spinal meningitis were sent home from hospital after a brief residence there. The patients felt and looked perfectly well, and in each case the diagnosis had been verified by lumbar puncture. One of them died suddenly a fortnight after leaving hospital; the other on being remonstrated with by his mother, put his hand to his head, complained of acute pain there, and fell back dead. These two cases convey a very far-reaching lesson and point to the necessity for prolonged rest and convalescence. It is well to note, however, that the second boy had been playing football two days before he died, and had sustained head injuries whilst at play.

The influence of shock or sudden emotion has been commented upon by writers upon this subject. Another noteworthy feature, which has also been observed, was the onset of illness immediately following head injuries. In six different Leith cases the parents ridiculed the diagnosis of epidemic cerebro-spinal meningitis, pointing to the fact that the sudden onset must have been due to head injuries recently inflicted. For example, in the case of a man attacked, the history given was injury sustained during a Saturday night brawl. On the Monday he was seized with illness verified to be cerebro-spinal meningitis, death resulting.

In only a small proportion of the cases were purpuric or other rashes encountered. In only one adult were purpuric spots seen. I have cited the case of a boy with a scarlatiniform rash. In a few instances the rash was of a measly character. Herpetic eruptions were never present in any of our patients under 16 years of age. In most of our adult patients herpes appeared on the lips, chin, cheek, and alae of the nose. These eruptions appeared soon after the onset of acute manifestations. A highly suggestive feature was the injected appearance of the fauces of most of the patients attacked. During the later periods of the epidemic some of the patients suffered from illness which closely simulated typhus fever. The temperature was fairly high, occasionally rising to 104° F., the pupils contracted, conjunctivae injected, and the tongue furred. The patients were dazed, and only lumbar puncture established the diagnosis. This type of the disease deserves notice, since the earliest writings on the subject of epidemic cerebro-spinal meningitis indicate that spotted fever was believed to be no other than a new form of typhus fever. From many of the patients a peculiar odour was detected, a fact mentioned by the earlier writers. This odour, however, may have been due to the fact that the vast majority of the patients suffering from epidemic cerebro-spinal meningitis were affected by incontinence of urine and faeces. No more arduous task can be

allotted to nurses than the attendance upon patients suffering from this terrible malady. The suffering of the patients is constant, their wants are many, and in numerous instances nasal feeding has to be resorted to. Should treatment by hot-water baths be called for, the nurse's labours become most exacting and exhausting.

IS THE DISEASE INFECTIOUS?

On this point there can be no possible doubt. The disease is infectious, but, contradictory as it may sound, it is not the sufferer who is the source of danger to others but an "intermediary." That a sufferer from epidemic cerebro-spinal meningitis is comparatively harmless as an agent in spreading infection is borne out by the fact that many patients have been treated in the medical wards of general hospitals without harm resulting to others. One of our patients was treated in the scarlet-fever ward among highly susceptible subjects for a period of three weeks, and no other case developed. The peculiar feature of this disease, then, lies in the fact that it is an "intermediary" who is the carrier of infection. Dr. Jehle, of Vienna, was, as far as I am aware, one of the first to point to this feature. A parent or visitor harbours the meningococci about his throat or nostrils, and, as I have said, may retain them there for a period of three weeks. During that time he blows his nose, coughs, or sneezes, or spits about his house or its precincts, or in some public place, thus causing infection to be blown in all directions. While, then, in the case of scarlet fever or other epidemic disease we trace infection to its original source, the actual sufferer, in the case of epidemic cerebro-spinal meningitis we look for the source in some person who is not actually suffering from the disease. It has been the experience on the Continent, as well as in this country, that the disease followed the example of typhus fever by invading, in the first instance at least, the houses not only of the poorer classes, but also selected its victims from among the dirty and dissolute. When, however, infection lays thorough hold of a community, the infecting agent becomes widely distributed, and the disease no longer confines its attentions to the slums. This was the experience of Boston during its second epidemic. The first epidemic found the poorer classes chiefly attacked; the second claimed its victims from among rich and poor alike.

With one or two exceptions, our first twenty cases had links connecting them with one another. Let the following be taken as instances:

Ellen D. became ill on January 10th, and died on the 15th. Infection was traceable to a child called Davie. This child's aunt, the "intermediary," frequently saw Ellen D. during her illness. Child F. died on January 17th after three days' illness. Mrs. F. removed Ellen D. from one house to another. Mrs. I. washed clothes for Mrs. D. and dressed the dead body of Ellen D. Mrs. I. also took clothes to Mrs. F. On January 24th the granddaughter of Mrs. I. sickened and died; the child had been constantly about the D.'s house. A girl called H., aged 7, took ill on January 21st and died next day. She was frequently playing in the D.'s house. During the first weeks of the epidemic repeated instances like the foregoing came to light, thus proving that infection could be conveyed from one house to another.

Continental authorities have remarked upon this feature, and have advised medical men when attending cases of cerebro-spinal meningitis to make their last visits to those cases lest infection might be conveyed from house to house. As has already been said, it became more and more difficult to trace connexion between cases when the infection became widespread.

Another feature, however, which manifested itself, and one of peculiar interest, was the grouping of cases in particular districts. These groupings were made very manifest on the spot map used to indicate the course of the epidemic. This aggregation of cases recalls to the mind of the medical officer of health the manner of the spread in the case of scarlet fever, and to a lesser degree, perhaps, diphtheria. An unrecognized case of scarlet fever is often the nucleus of a group of other cases, especially if the district involved be a densely-populated one, and tenement properties common.

Two factors must, therefore, be taken into account for the spread of the disease in the manner just detailed—namely: (1) The diffusion of meningococci by the sputum on the one hand; and (2) the contact of those from infected houses on the other. A person living in an infected house may convey the meningococci about, and may himself escape the disease.

HOW IS INFECTION CONVEYED?

When the outbreak was in its infancy in Leith, I was struck with the fact that the victims of epidemic cerebro-spinal meningitis were to be found solely among families of the casual or regular dock labourers. This feature was gradually lost when the epidemic became widespread. The case in favour of oversea conveyance of infection was made strong by this involvement of dock labourers. The selection of the families of dock labourers for attack suggested to Drs. Fraser and Comrie of Edinburgh a closer study of the subject, with the result that the meningococci were recovered from the posterior nares of several of those in whose households there had been recent cases of epidemic cerebro-spinal meningitis. Further, a very striking lesson was afforded by the fact that Petri dishes exposed in the engine-room of a steamer plying between Leith and the Continent were found, on incubation, to yield unmistakable meningococci. Still another interesting feature, which afforded a very good index to the method of spread of infection, was manifested by the occurrence of cases of epidemic cerebro-spinal meningitis among the families of five different fathers who had worked in a gang in the hold of this particular steamer. The steamer had been laid up in dry dock for some time, and no doubt the men's spitting habits had permitted the meningococci to be diffused about the hold. The meningococci may have been spread about the hold by Continental "intermediaries" in the first instance. No more convincing proof of oversea conveyance of infection could be adduced than the recovery of meningococci from the engine room.

That foreigners coming to this country, either to stay there or on their way to America, had conveyed infection with them, was brought into striking prominence by the fact that a ship steward whose work brought him into intimate contact with these aliens developed epidemic cerebro-spinal meningitis and died; that a railway clerk whose duties consisted in looking after transmigrants at one of the Leith Railway Stations also took ill and died; finally, that a 6 year-old daughter of a Customs officer was seized with illness and succumbed. The employment of labourers at the docks is not regular, consequently groups of them stand about the quays or dock entrances waiting for work. Inside the docks smoking is strictly prohibited, chewing is accordingly resorted to, and spitting accompanies chewing. Should the sputum contain meningococci, they are readily blown about the extensive sheds which adjoin the quays. At the dock gates the idlers, or those looking for work, collect in more compact groups. Smoking and chewing are indulged in, and spitting is constant. Here also diffusion of meningococci becomes easy.

Now it is the case that during the period when epidemic cerebro-spinal meningitis was at its height in Leith, cold, dry, and dusty weather prevailed. Consequently the elements all favoured the spread of infection by the blowing about of dust. Continental authorities have remarked upon the prevalence of epidemic cerebro-spinal meningitis during dry and dusty weather. The distribution of houses in the municipality in which cases of the disease occurred clearly indicates that there was a preference for congested areas and imperfect sanitary environment. One might, however, be inclined to assume that, owing to the greatest incidence of the cases being within close proximity to the docks, these had a decided influence in spreading the disease within their immediate vicinity. But the fact that the poorest localities are situated nearest the docks prevents one from dogmatizing upon the point. I am strongly of opinion, however, that the germs of epidemic cerebro-spinal meningitis can be airborne in the manner suggested. Dr. Jehle has, in a most convincing manner, demonstrated the association of dust in coal mines with the spread of infection. For instance, he has cited the case of a mine having four separate shafts. In shaft No. 4 infection was scattered about by the coughing and spitting of those men harbouring meningococci about their upper air passages. Only the families of the men working in shaft No. 4 were attacked by epidemic cerebro-spinal meningitis. The families of the men working in the other three shafts escaped.

While the aggregation of cases in particular streets may

have been due to the scattering of infection by sputum' one must also take into consideration the possible danger lurking in the ashbucket. These receptacles invariably contain the floor sweepings, which, when collected from a house in which an "intermediary" has lived, facilitate the blowing about of meningococci. The working man is not always careful as to the use of a spittoon, consequently the housewife, when sweeping about the fireplace, may gather up with the household dust dried meningococci. The sweeping of the floor has also to be taken into consideration as a means of swirling meningococci about an apartment, and thus exposing susceptible subjects, such as children, to the risk of infection.

What is the Portal of Infection?

This question is not readily answered. Though the meningococci are to be found in the nose and throat, it does not necessarily follow that the organisms pass into the interior of the skull by the route which appears to be obviously the shortest—namely, through the bony structures. In fact, I have the assurance of my respected teacher of anatomy, Professor Cleland of Glasgow, that it is extremely unlikely that the meningococci can pass readily, if at all, by the nasal route—that is, through bony structures. Moreover, *post-mortem* appearances do not lend weight to the theory that meningococci pass first to the brain cavity from the naso-pharynx. For the present, therefore, the idea that infection reaches the meninges through the cribriform plate may be departed from in favour of some other more feasible route. Drs. Fowler and Stuart-Macdonald of Edinburgh have advanced the theory that the disease is carried by food. In support of this, they put forward the following strong arguments:

1. The cord lesion is of longer standing, and therefore antecedent to that in the brain.
2. The abolition of the abdominal reflex suggests spinal involvement.
3. The retention of the mental faculties is, in many cases, characteristic, thus freeing the brain of early involvement at least.
4. They state that no exclusively breast-fed infant has been attacked by the disease.

This latter contention has been contradicted because breast-fed infants have been attacked. Arguing from the standpoint of Drs. Fowler and Stuart-Macdonald, I might supplement their theory by offering the opinion that many an infant may be breast-fed yet may be readily infected by an "intermediary" who harbours meningococci in the naso-pharynx. This especially will apply among the poorer classes. Many mothers wet their nipples with saliva before applying the infant to them. It is also a common practice to soften a biscuit or rusk in the mouth to feed the infant. The food-infection theory has much to be said in its favour when Leith, for instance, is cited as an example. The following table indicates the class of houses in which cases of epidemic cerebro-spinal meningitis occurred:

Table I.

Number of 1-roomed houses involved				... 15
,,	2	,,	,,	,, ... 44
,,	3	,,	,,	,, ... 11
,,	4	,,	,,	,, ... 3
,,	5	,,	,,	,, ... 2
,,	6	,,	,,	,, ... 1

From these figures it is seen that the greatest number of cases occurred in the houses of one or two rooms. The inmates of these houses are not always careful in their methods, nor have they the necessary accommodation for the proper storage of food. In fact, bread, butter, and other foodstuffs are allowed to lie about uncovered, and often on a very filthy table, from beginning to end of the day. Dishes are carelessly washed, and cloths used for drying are not over-clean. In small, badly-kept houses the surroundings favour the food-infection theory. Further, since children are most commonly attacked amongst the poorer classes in the first instance, it is easy to understand why food may be blamed in their case. Among the working classes children are fed by occasional pieces of bread, and if they do receive milk it has been exposed to varieties of contamination. It is well to explain that Dr. Jehle suggested that children were most frequently attacked because they played about floors, and were thus much more liable to be infected by the meningococci spread by the promiscuous spitting of the infection-carrying "intermediary," such as the father.

Whilst food infection must appeal to us very forcibly as a probable mode of infection, one cannot overlook the possibility of the entrance of meningococci through the tonsils or abraded buccal surfaces. I have mentioned the feature of throat injection observed in many of the cases treated at the Infectious Diseases Hospital. This feature suggests the possibility that infection may be by the tonsillar path. We know that the meningococci lodge about the back of the throat and nose. One can readily understand, therefore, that a ready entrance is afforded to the germs under favourable conditions—the favourable conditions being impaired mucous surfaces. In two consecutive cases attack followed teeth extraction, both victims being adults. No matter what path the meningococci mark out for themselves—intestinal, buccal, or tonsillar—it is obvious that the route to the meninges cannot be by the lymphatics to the spinal cord and brain, because the current in the lymphatics is in the opposite direction. Accordingly to reach their destination, the meninges, the meningococci must pass into the blood stream. Premonitory symptoms, especially among children, are conspicuous by their absence. This may be accounted for by the fact that it is only upon reaching the meninges that the virulence of the meningococci manifests itself. The incubation period of the disease, as far as one can gather, is extremely short. In fact, it may be measured by the length of time which elapses between the entrance of the meningococci into the blood stream and their lodgement on the meninges. Intravenous injection of such a drug as ether manifests itself in the odour of the breath of the patient in a space of time which is incredibly short. The analogy between such a volatile substance as ether and meningococci may not be strictly accurate, but the illustration serves to show that organisms possessing such marked affinity for the meninges will not be long delayed in their journey once they reach the blood current.

Another method of infection may be by inhalation. The occasional existence of pulmonary complication lends strength to that view. Pneumococcal infection must not, however, tempt me into a digression at present.

Experience has taught that school epidemics do not occur. This has been remarked upon by Continental observers. Fourteen different Leith schools were involved, but investigation proved that the schools which suffered most were attended by children drawn from among the very poorest classes. The need to discuss school closure does not, therefore, exist.

Age-Distribution and Fatality Rates.

Table II provides a very striking commentary upon these features. The figures speak for themselves, and I need not dwell upon them.

Table II.

No. of Cases.	Age.	Deaths.	Death-rate per Cent.	Under Treatment.	Discharged.
10	Under 1 year	10	100.0	—	—
24	1–5 years	20	83.3	3	1
32	5–15 ,,	21	65.6	8	3
7	15–25 ,,	4	57.1	2	1
9	25–60 ,,	7	77.7	2	—
1	over 60 ,,	1	100.0	—	—
Totals...83	—	62	74 7	15	5

Duration of Illness.

Table III indicates more clearly than words can that there are two types of cases—the acute and chronic. I

Table III.—*Periods of Illness (Deaths).*

6	under 1 day.			1	between	60–70	days.
23	between	1–2	days.	—	,,	70–80	,,
9	,,	2–5	,,	—	,,	80–90	,,
5	,,	5–10	,,	—	,,	90–100	,,
6	,,	10–20	,,	—	,,	100–150	,,
6	,,	20–30	,,	1	,,	150–200	,,
2	,,	30–40	,,	—			
—	,,	40–50	,,	Total 62			
3	,,	50–60	,,				

have already alluded to the trying task imposed upon those who are called to nurse chronic cases. In one or two instances our patients appeared, after four months' residence, to be progressing favourably, yet relapses took place and death resulted. In one instance, so great was the deformity of a boy in death that his coffin took the shape of a square box.

TREATMENT.

Serumtherapy has as yet given no promise of success, either as a preventive or curative. Specifics in the form of drugs are not yet known. One must rest content with combating acute symptoms, more especially pain, by the exhibition of such sedatives as morphine. Lumbar puncture and the repeated withdrawal of fluid appear to afford temporary relief, and much was hoped from the injection of such antiseptics as lysol. The results have been far from encouraging. The best palliative has so far been treatment by means of hot baths at frequent intervals. The sufferings of the patient are greatly relieved, and when the immersion comes to an end the patient grumbles. Systematic immersion in hot water demands a greatly increased staff, and entails almost perpetual labour. Cupping is now suggested as another mode of treatment, the cupping being applied along the course of the spine.

Administrative Control.

To control the spread of epidemic cerebro-spinal meningitis is a most difficult problem. The "intermediary" must be discovered and properly dealt with if any hope of arresting the spread of infection is to be entertained. If, therefore, the earliest cases are immediately brought under notice the possibility of keeping the disease in check exists. As I shall presently show, and as Dr. Jehle has truthfully said, the mere isolation of the patient and a routine disinfection of the house constitute a waste of public funds. The spread of infection is not arrested if the disease carrier, the "intermediary," is left to spread meningococci either in the workshop, factory, or other place of public resort. Take, for example, the modern place of public entertainment in which smoking is permitted, and the floors rendered filthy by constant spitting. Should meningococci be in the sputum it requires no stretch of imagination to realize how the atmosphere of such a place becomes laden with disease-producing germs. If this fact could be appreciated by the managers of theatres and music-halls, the necessity for spraying the interiors of their resorts would at once appeal to them. When I look back upon the histories of the earlier cases that occurred in Leith, I can well understand that our outbreak might have been very considerably limited in its extent, because the "intermediaries" would have been promptly dealt with. It was only after investigation proved the presence of meningococci in the upper air passages of "intermediaries" that I was prompted to adopt the practice to be presently detailed. This consisted in the systematic application of a bactericide to the nasal and buccal cavities. As soon as the patient was removed to hospital and the house disinfected, the lady sanitary inspector, who also holds a nurse's qualification, visited the infected houses, and douched the nostrils and sprayed the throats of every remaining member of the household. The disinfectant solution used was chlorine water. This treatment was never resented, because it was pointed out to the people that it might be the means of either averting an attack or the spread of the malady. At intervals of two days this treatment was continued, each "intermediary" being douched three times. The procedure suggests the need for systematic bacteriological examination of swabs taken from the posterior nares before and after treatment by douching. It would certainly be wise to take second swabs from those "intermediaries" who gave positive results before douching.

A very pleasing preparation of formaldehyde came under my notice in the form of formamint lozenges. These are well flavoured, and children are easily persuaded to permit the sweets to slowly dissolve in their mouths. I am satisfied that this formamint preparation is a very valuable accessory in dealing with "intermediaries." The formamint was given out by the lady inspector during her rounds. Another very important consideration in dealing successfully with epidemic cerebro spinal meningitis is the isolation of those living in infected houses, especially in the smaller and the dirtier houses. In fact, upon the systematic practice of this procedure much will depend if the spread of the disease is to be cut short. During their residence in the Leith Reception House contacts were periodically treated with the chlorine solution. In the interval their houses were radically disinfected. It has been found on the Continent that epidemic cerebro-spinal meningitis is very prone to spread in barracks, asylums, and workhouses. Accordingly, when within a few days of one another, two children were attacked in a low type of common lodging-house in Leith, I isolated the remaining members of the families, eleven persons in all. Though there were many susceptible children in the lodging-house in question, no other case occurred, and the conditions were distinctly favourable for the spread of the disease. The segregation of the "intermediaries" entails expense, but the money spent constitutes a true system of economy. If, then, the earlier cases are recognized and brought under notice of the medical officer of health, he may reasonably expect to arrest the spread of the death-dealing malady by effectually and immediately controlling the "intermediaries."

SECONDARY CASES.

TABLE IV.

J.—1st case, February 7th; 2nd case, March 5th. Interval between cases, 36 days.
A. (1).—1st case, February 22nd; 2nd case, March 15th. Interval between cases, 21 days.
A. (2).—Next door to above cases, was in house taking tea with first case on February 22nd, sickened on February 28th.
E.—1st case, February 26th (mother); 2nd case, March 2nd (child). Interval between cases, 4 days.
F.—1st case, March 8th; 2nd case, March 21st. Interval between cases, 13 days.
S.—1st case, March 27th; 2nd case, March 29th. Interval between cases, 2 days.
P.—1st case, April 14th; 2nd case, May 1st. Interval between cases, 17 days.
G.—1st case, May 3rd (child); 2nd case, May 10th (father). Interval between cases, 7 days.

In only one instance did a second case of the disease arise in a house after douching began to be practised. In this case the father of the child first attacked became the victim. When the lady inspector went to douche the nostrils of the inmates the father complained of feeling out of sorts, and in a few days he himself was struck down by the disease. This case is the last on the list of those noted.

Disinfection of a perfunctory nature is too frequently practised. Accordingly, when epidemic cerebro-spinal meningitis is encountered, more than ordinary methods are called for. The meningococcus is capable of retaining its activity for long periods in its dry state. Jaeger found that meningeal pus dried upon cotton-wool, and retained in Petri dishes for 127 days, contained meningococci which were capable of development. Panienski, in dealing with an epidemic which occurred in the garrison of Karlsruhe during the winter of 1892-3, was convinced that the disease had been conveyed from that town to another by improperly disinfected clothing. Disinfections must, therefore, be twofold; and, to best convey my meaning, I shall instance the practice adopted in Leith during May.

Having removed the patient, every nook and cranny of the interior of the house was sprayed with formaldehyde. The spraying was continued in the case of tenement properties down to the street entrance, the pavement in the immediate neighbourhood being included, the object being to deal with sputum lying about. In addition to the bedding removed for steam disinfection, all wearing apparel that could possibly be spared by the inmates was also taken away. Lastly, in the houses of the poorest classes all foodstuffs were confiscated and replenished with provisions at the expense of the local authority. I am thoroughly satisfied that the time, money, and labour spent in putting the foregoing measures into operation have proved valuable and instrumental in keeping the outbreak under control.

Seaport towns have all suffered very severely from epidemic cerebro-spinal meningitis, and I consider that Leith has escaped the ravages which have characterized outbreaks at other places similarly situated. It is fortunate, therefore, that some confidence can be promised in success-

fully coping with a disease which, if permitted to take its own course, can in an incredibly brief space of time claim too many victims.

Remarks
ON
OCULAR SYMPTOMS IN CEREBRO-SPINAL MENINGITIS.

NOTES BASED ON THE EXAMINATION OF 73 CASES.

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THROUGH the courtesy of the superintendents and staffs of the Glasgow Fever Hospitals, the writer has, within the last few months, had opportunities of investigating the condition of the eyes in a number of cases of cerebro-spinal meningitis. Adding to these a few cases seen elsewhere, the total number of cases examined amounts to 73.

As clinical reports embracing the details of the eye conditions in this disease have not been numerous, it may be of interest to give an account of the symptoms found in the present series of cases.

In each case where possible a complete examination was made, but it will be readily understood that often, especially in young children who were acutely ill, many points had to be omitted.

The series includes cases in all stages of the disease, from acute cases seen on the second day of illness to others which had long before subsided into a state of chronic hydrocephalus. One of the latter cases was first seen in the thirtieth week of the disease. The ages of the patients ranged from 3 months to 47 years.

Eye symptoms of any kind were absent only in 4 cases; of these 2 were convalescent. The others were seen on the sixteenth and sixty-fourth day respectively.

EYELIDS.

The only lesion found on the lids themselves was an eruption of herpes on both lids of one eye, in an acute case at the end of the first week of illness.

Abnormalities of the palpebral fissures were noted in 17 cases. In 2 of these the only abnormality was inequality. In 2 cases the palpebral fissures were abnormally wide and at the same time unequal. In another, who had alternations of retraction and drooping of the lids, the inequality of the palpebral fissures disappeared when the lids were in a state of retraction. In another similar case the inequality was present both with drooping and with elevated lids. In this one the inequality was perhaps due to weakness of the orbicularis, since voluntary efforts caused only partial closure of the wider palpebral fissure.

In none of the cases was there a drooping of one or both lids which could be described as ptosis.

Retraction of the Eyelids.

This was observed in 15 cases. It was observed as early as the fourth day, but most of the cases in which the symptom was well marked were cases which had passed into the chronic stage. The most marked case of all, in which sclera was well exposed both above and below the cornea, was that of a boy, seen the day of his death, who had been long in the chronic hydrocephalic state. *Post mortem*, no trace of exudate was found, but a great excess of clear fluid both in the ventricle and in the subarachnoid space. The patients in whom the symptom was observed in the early acute stage (4 in number) all died in the acute stage. Seven of the 11 chronic cases have already died; 1 has definitely recovered; the other 3 are still in hospital. The case in which recovery took place is of some interest. The writer first saw her on the fifty-fourth day. She was then convalescent, but four weeks earlier she had had all the appearance of a chronic case likely to prove fatal. The retraction of the upper lids was very marked, 2 or 3 mm. of sclera being visible above each cornea. It was fairly constant, was still present a week later, but had disappeared by the sixty-seventh day. The retraction of the lids in this case was accompanied by typical von Graefe's sign.

In 12 patients retraction of the lids was associated with dilated pupils, in which the light reflex was absent or very defective. In 1 case the pupils were small and inactive. In the other 2 cases the pupils were not investigated. In 3 it was associated with absence of the cilio-spinal reflex. In a fourth the latter was present in a slight degree.

Retraction of the lids was seldom a constant symptom, and it nearly always disappeared while the patient was asleep. In 1 case, in addition to the retraction of the lids a degree of exophthalmos seemed to be present.

Taking into consideration the facts above mentioned as to the further history of the cases in which this symptom was found, it would seem to be confined to cases in which the chance of recovery is small.

The cause of retraction of the lids is obscure. It is a recognized symptom of chronic hydrocephalus, and the majority of the cases above referred to might come under that heading.

In the acute cases it was never quite so marked, and in these cases it might be due to sympathetic irritation, either in the cilio-spinal centre or elsewhere in the sympathetic path to the eye. The dilated inactive state of the pupils would be quite in keeping with such an explanation. It is scarcely likely that sympathetic irritation plays a part in producing lid retraction in the later stages, in which the symptoms as a whole are referable more to the abnormal physical condition set up in the cerebro-spinal system than to inflammatory action. Tooth[1] has suggested that it is a local manifestation of muscular rigidity analogous to head retraction, Kernig's sign, etc. The case I have mentioned, in which the symptom persisted well into the stage of convalescence, may lend some support to this, as it is not uncommon for stiffness of the neck and other manifestations of muscular rigidity to persist in a similar way after the patient is in other respects well. Increased intracranial pressure may be a necessary element in its causation. This is suggested by the frequency of its occurrence in chronic hydrocephalus from other causes. In 1 case of the present series the retraction, which was occasional, was associated with wrinkling of the forehead and complaint of increased frontal headache, and at the same time the eyes were turned strongly downwards and the pupils dilated and inactive.

Blepharospasm.

This was very frequent. In the great majority of the cases general hyperaesthesia was a marked symptom, and in the course of the eye examination this showed itself in the occurrence of a strong lid spasm, sometimes excited by the lightest touch upon the lids, more generally by attempts to separate the lids. This at first sight suggested photophobia and is probably the symptom sometimes described as such in cases of cerebro spinal meningitis, but the writer never observed true photophobia in this series of cases. Spasmodic resistance to separation of the lids was almost the rule, but the patients could often be induced to open the eyes spontaneously, after which even prolonged ophthalmoscopic examination was tolerated so long as the lids were not touched. The absence of true photophobia is somewhat remarkable in view of the great general hyperaesthesia which is present in most of the cases. In one or two early acute cases the lightest touching of the eyelids set up a spasm of all the facial muscles. These occurrences were just as marked in unconscious as in conscious patients.

As a rule reflex blinking occurred on lightly stroking the eyelashes. Its absence was observed only in one hydrocephalic case a few days before death.

In one child who had repeated convulsive attacks, the left eyelids were involved in clonic spasms which affected the left side.

In 4 cases frequent winking was noted, each lid movement being accompanied by a jerky nystagmus-like movement of the eyeballs laterally or vertically.

Conjunctiva.

Hyperaemia of the bulbar and palpebral conjunctivae occurred in many of the cases. A certain degree of bulbar injection is quite common, even in the first few days of the disease, and it may persist for some time.

Actual catarrhal conjunctivitis, with more or less purulent discharge, was found in 13 of the cases. In the majority it was a symptom of the early acute stage, but in several

where it was first observed in the later stages, it might quite well have been due to outward infection from the incomplete closure of the lids, associated with a state of unconsciousness. No attempt was made to work out the bacteriology of these discharges. In the films taken from a few cases a number of organisms were found, but none closely resembling the typical meningococcus. Axenfeld, in his recently-published work on the bacteriology of the eye, points out the difficulty of proving the identity of the meningococcus in conjunctival discharges, and indicates that only a few unequivocal positive findings have been made. Among these is that of J. Canby Robinson,[2] who succeeded in cultivating the meningococcus from the discharge in one case of acute cerebro-spinal meningitis.

Conjunctival haemorrhages do not seem to have been hitherto described in cerebro-spinal meningitis, although haemorrhages corresponding with the petechiae in the skin are known to occur in many other situations throughout the body. Dr. Macgregor of Belvidere, who mentioned the symptom to me, saw conjunctival haemorrhages quite frequently in the earlier cases of the Glasgow epidemic, usually in the acute stage, and even in the absence of such spots in the skin. I saw them in 2 cases of this series, one on the fourth day of the disease, no haemorrhagic skin rash being present; the other on the day of death (thirty-fourth day of illness) associated with an abundant crop of cutaneous haemorrhages. In 2 other cases of the series conjunctival haemorrhages had been present at an earlier period (third day and fourth day respectively), but had faded by the time of my examination. As conjunctival haemorrhages are rare in acute illnesses, with the exception of whooping-cough, their presence in a patient suspected to be suffering from cerebro-spinal meningitis should carry a certain weight.

CORNEA.

In only 1 case was a corneal lesion present. This was a child seen the day before death—tenth day of illness. She lay unconscious, with eyelids half closed; winking movements were infrequent and incomplete; the corneae were rather insensitive, and each cornea presented a horizontally oval *ulcer* in its lower segment, obviously due to exposure. There was also abundant sero-purulent discharge.

The *corneal reflex* was tested for in 25 cases. It was only found to be quite absent in 1, in which the other eye reflexes also were absent or very deficient. In 2 others the corneal reflex was present but deficient, 1 of these having corneal ulcers already referred to. Death occurred in these 3 cases.

UVEAL TRACT.

No evidence of iritis, cyclitis, or choroiditis was found in any of the cases.

PUPILS.

Abnormalities of the pupils were the most common symptoms. Thus only 6 out of 69 cases in which the pupils were examined had no pupillary abnormality. Three of them were acute cases in the fifth, tenth, and sixteenth days respectively.

Inequality of the pupils was noted eighteen times. In the great majority of cases where the pupils were unequal the pupil reflexes were deficient. In 2 of them one pupil showed the striking changes of size which will be referred to later, while the other pupil was more constant in size. In several others the reflexes were more active in one iris than in the other.

The size of the pupils was measured in 65 cases. Taking 3 to 5 mm. as the normal limits, dilated pupils were found in 34, contracted in 5, and normal in 26. When mydriasis was present, it usually had the characters of an "irritation" mydriasis, that is, dilated pupils with deficient contraction to light and in convergence, and no dilatation to sensory stimuli. In 2 of the cases, to these features was added some retraction of the eyelids. Further evidence of a hypersensitive condition of the sympathetic reflex was afforded by the striking contrast in the size of the pupils in the waking and sleeping states. Pupils which during sleep were as small as 2·5 or 3 mm., would dilate on waking to about 7 mm. This is a larger change than would occur under normal conditions.

Changes in the size of the pupils were common. These were often merely due to *hippus* of the ordinary kind, a certain degree of which is often found in normal persons, but in many there were much larger changes of diameter, which occurred at intervals of seconds or minutes or even longer, and various gradations were found between the latter phenomenon and ordinary hippus. On the whole, the hippus observed in this series of cases was of greater amplitude than normal, and inclined to persist as long as illumination of the eye was maintained. It showed great variety in speed, in rhythm, and in amplitude, even in the same case. Hippus was noted as present in 31 and absent in 19 cases. The other phenomenon referred to was present in 29 cases. Many of these cases showed hippus, as well as the more occasional and more striking changes of diameter. These changes of diameter often had a range of 3 mm. or more. In 2 cases they were more distinct in one eye than in the other. They occurred independently of the illumination or distance of fixation object. Thus they sometimes occurred with perfectly steady fixation during indirect ophthalmoscopic examination. In the middle of such an examination the pupil, which had been widely dilated, would suddenly and unexpectedly contract, and after an interval of seconds or minutes dilatation would occur again just as unexpectedly. This symptom, however, is not peculiar to cerebro-spinal meningitis. The writer has seen it in several cases proved by *post-mortem* examination to have been tuberculous.

PUPIL REFLEXES.

The light reflex was normal, or nearly so, in 24 cases, deficient as regards speed or amplitude or both in 26, absent in 7, and variable in its activity in 11.

The contraction of the pupil in *near vision* was good in 21, deficient in 15, absent in 7, and variable in 2. In 5 of the cases with deficient or absent reflex there was a corresponding deficiency of the faculty of convergence, which would account for the defect. The test for the convergence reflex could not be quite satisfactory, the results depend so much upon the visual acuity and the mental condition of the patient. It was sometimes found, for instance, that while a child manifested no convergence or pupil contraction on being asked to fix the finger tip or handle of the ophthalmoscope, these reflexes were immediately elicited by a more interesting fixation subject, such as a penny.

The cilio-spinal reflex was present eighteen times and absent fourteen times.

The orbicularis reflex was present five times and absent seven times.

The pupil changes described by Squires[3] as found in cases of basal meningitis (contraction when the head is flexed and dilatation when it is extended) were looked for in 3 cases, but not found.

Total absence of pupil reflexes with contracted (2 mm.) pupils was observed in 1 case on the day of death.

In some cases the activity of the reflexes varied in the course of the examination without obvious cause. In 1 case Cheyne-Stokes respiration was present at the time of examination, but no pupil changes were found to correspond with the different phases of the respiration.

None of the pupillary phenomena, with the exception of total absence of the reflexes, seemed to be of any value as regards diagnosis or prognosis.

ACCOMMODATION.

It was only possible to test the accommodation in 7 cases, and in none of them was it defective.

STRABISMUS.

Strabismus was found in 15 cases. Eight others had a history of squinting or diplopia, either before or after admission to hospital.

It is noteworthy that in only 1 of the 15 cases observed by the writer was evidence found that the squint was a paralytic one (paralysis of both external recti). This contrasts with the state of affairs in other forms of meningitis, tuberculous for example, in which paralytic squints are much more common.

It was difficult in some cases to say whether the squint had existed at an earlier date or was a symptom of the disease. In 1 case, although the amplitude of the squint (convergent) varied from time to time, the fact that the eyes moved conjugately, with no apparent limitation in any one direction, suggested that it was a pre-existing concomitant squint.

In 3 others convergent squinting alone was observed. It was spasmodic in character, not constantly present, and varying in degree. In 1 of these cases the squinting eye sometimes turned into its position of greatest convergence by a series of rapid jerky movements. This patient, who died three days after the observation, was found to have suffered from a combination of tuberculous and meningococcal infection.

In the other 10 cases the squint was either entirely divergent or varied from convergence to divergence. All were variable in degree and not constantly present. In some the condition was quite evidently a spasmodic one, passing from one eye to the other, or affecting both eyes simultaneously. Some of these cases might perhaps be better described as examples of dissociated movements, since various degrees of convergence and divergence occurred in rapid succession, owing to independent movements of the eyeballs.

In 4 cases of divergent strabismus, the divergence only occurred when the patient was unconscious or asleep. These were probably only examples of the divergence which constitutes the resting position of the visual axes.

From the histories of cases of cerebro-spinal meningitis, it would seem that squints of various kinds, transient and probably spasmodic, are not uncommon among the symptoms of the period of onset.

THE OCULAR MOVEMENTS.

The *conjugate movements* of the eyes were noted as normal in 41 cases.

Constant conjugated *rolling of the eyes* from side to side was present in 1 case in the hydrocephalic stage.

Conjugate deviation of the eyes was found in 4 cases. In 1 of these it occurred in the course of a unilateral convulsion, at first towards the convulsed side, and later towards the unaffected side.

Convergence was normally performed in 25 cases, deficient in 9 and absent in 3. Two of the deficient cases were myopic. In some the defect was due to mental apathy, in others to visual defect making the test unsatisfactory. Often there was a combination of these two circumstances. This difficulty has already been noticed in connexion with the reflex contraction of the pupil in near vision.

Nystagmus was found 7 times. In 2 of these it was *vertical* and occasional; in 1 it was vertical and constant. In 1 case rotary nystagmus was found. In 1 of the cases exhibiting occasional vertical nystagmus and in 3 others a symptom was present which consisted of rapid winking movements of the lids, each wink being accompanied by a jerky movement of both eyes to one or other side or even in a vertical direction. Nystagmus seems to occur only in severe cases. Of the 7 in whom it was observed 2 had relapsed into the chronic stage, and the other 5 died a few days after the symptom was noted.

Pseudo-nystagmus, or jerky movement of the eyes at the limits of the field of fixation, was seen in 5 cases. It appeared to have no significance.

VISION.

It was often very difficult to get any reliable information as to the state of vision, but when the patient could not be tested with types, he was considered to have good vision if he recognized small objects, followed the finger, etc.

In this sense vision was good in 34, in 12 it was defective, in 9 absent, and in 7 it varied between very deficient and absent in the course of the examination. One case of defective vision was a high myopia with choroidal atrophy.

The visual defect was seldom to be entirely explained by any condition discovered by the ophthalmoscope, but in 2 cases in which vision was abolished there was optic neuritis. In a third the discs were congested, their margins blurred, and the veins full.

The cause of the visual defect in most of the cases must probably be looked for in the higher centres, although amblyopia or amaurosis was never found associated with perfect pupil reactions.

None of the convalescent cases in this series had any notable defect of vision.

OPHTHALMOSCOPIC CHANGES.

Ophthalmoscopic examination was made in 61 cases.

Double optic neuritis, well marked, was found in 5 cases.

One of these, who was seen on the fourteenth day of his illness, died on the seventeenth day, and was found *post mortem* to have been suffering from a combination of tuberculous and diplococcal meningitis.

Another, a boy of 11, after apparent recovery, had relapsed into a chronic illness, with repeated attacks of sickness, head retraction, and other symptoms. The optic neuritis was seen at two examinations on the twenty-second and forty-third days respectively.

The third case, a man of 21 years, when first seen (on the thirtieth day of his illness) was apparently convalescing, but he suffered a relapse. On the forty-ninth day the posterior fossa was trephined for drainage. Ophthalmoscopic examination was repeated on the fifty-first day, and the optic neuritis found to be unchanged.

The fourth case was a child aged 4, who had been in hospital for about four months at the time of the examination. *Post mortem* he was found to have marked internal hydrocephalus.

The fifth case was a man aged 20, whose history was that he had suffered for some weeks from indefinite symptoms of illness, chiefly pains in the head and neck, attributed to influenza. Sudden increase in the severity of the symptoms caused him to leave work and seek admission to hospital. The ophthalmoscopic examination was made on the twelfth day of the acute illness. Besides the well-marked double optic neuritis, there was in the left eye a moderately large flame-shaped haemorrhage passing across the upper inner edge of the swollen disc.

Besides the 5 cases of well-marked optic neuritis there were 9 cases in which blurring of the disc margins, congestion of the discs, and fullness or tortuosity of the vessels raised a suspicion of optic neuritis. These observations were made at periods ranging from the fifth day (3 cases) to the one hundred and eighty-first day, and they were not cases of unusual severity. In the very chronic case referred to, the swelling of the optic nerve, which was definite though slight, was more marked in the right eye, and was not always present to the same degree.

In a number of patients the fundus presented the highly-coloured disc, full veins, and tortuous arteries so often met with in fever from any cause. In 2 of the 5 cases of optic neuritis the vision was defective; in 2 of them absent. Among the 9 other cases the vision was, on the whole, poor, but not more so than among all the cases of the series.

In 2 cases, one of them highly myopic, extensive choroidal atrophy of old standing was present. With the exception of the retinal haemorrhage already mentioned, no other abnormality of the fundus was observed.

In no case was there any obscuration of the fundus from disturbances of the media other than corneal nebulae which existed prior to the present illness.

CONCLUSION.

It will naturally be asked whether the ocular symptoms of cerebro-spinal meningitis are likely to afford any help in diagnosis or prognosis. The frequency of the presence of eye symptoms shows that it is worth while to have the eyes frequently and carefully examined.

Perhaps the most striking feature of these cases is the great variation in the symptoms—squint, retractions of the lids, sizes and reactions of the pupils, vision, etc.—in the same patient from day to day, and even in the course of a single examination. This is brought out by the records of the writer's own examinations as detailed above, but even more markedly by comparison of these with the notes made from time to time in the hospital journals. In this respect cases of cerebro-spinal meningitis seem to the writer to differ somewhat from other forms of meningitis.

As conjunctival haemorrhages, so far as one is aware, do not occur at the onset of other acute febrile illnesses, their presence might afford a useful aid in diagnosis. The same may perhaps be said of herpes of the lids. This has been seen to occur, and it is quite conceivable that it might occur on the eyelids alone or even on the cornea, among the earlier symptoms.

The conjunctivitis, which also occurs as an early symptom, would be most likely to assist in distinguishing cerebro-spinal from other forms of meningitis. Unfortunately the examination of conjunctival smears for the organism is of little value, as nothing short of careful cultural tests is sufficient to prove the identity of the meningococcus in these discharges.

Comparing cerebro-spinal with tuberculous meningitis[1] the infrequency of paralytic squint and optic neuritis, and the comparative frequency of spasmodic squints and dissociated movements are somewhat striking. It is probable also that defect or absence of vision without ophthalmoscopic changes is more common than in the tuberculous form.

With regard to prognosis, it is perhaps impossible to gather reliable data from such a limited series of cases, but the writer would express the opinion that retraction of the eyelids, corneal complications, absence of the pupil reflexes, true nystagmus, lid winking combined with jerky movements of the eyes, and optic neuritis, are among the symptoms of graver significance.

The absence of ocular symptoms does not, of course, justify a favourable prognosis.

In conclusion, the writer desires to express his special obligation to Drs. Macgregor, Connal, and McPhee for their assistance in carrying out these examinations.

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A Lecture

ON

INFECTIVE CYCLITIS IN RELATION TO PENETRATING WOUNDS OF THE EYEBALL.

DELIVERED AT THE WEST LONDON POST-GRADUATE COLLEGE.

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EVERY penetrating wound of the eyeball, especially in the ciliary region, was regarded by our forefathers with dread and misgiving. The reason for this was the dire complication affecting the fellow eye which frequently accompanied the injury, to which they gave the name of sympathetic ophthalmia. They thought that when one eye was injured, and the injury was followed by inflammation in the other, the only way of explaining the catastrophe was the sympathy which must of necessity exist between the two eyes. So far, indeed, as their knowledge went the explanation was satisfactory enough. But we are now in the twentieth century, equipped with knowledge beyond that which was within the reach of our forefathers, and it seems, therefore, to be only in accord with the scientific advancement of our age to make some effort to improve a terminology which is obviously out of date, inaccurate, impossible.

Let us first take the word "sympathy." What is the pathology of sympathetic? Dictionaries define sympathy as "the quality of feeling affected by the affection of another with corresponding feelings." In plainer language, therefore, when one eye is injured the other eye, out of pure affection for its fellow, is so overwhelmed with grief that it becomes inflamed too. How can an inflammation be due to such a source? Is there anything in modern pathology to explain and endorse such a cause of inflammation as this? Again, let us take the word "ophthalmia," or "ophthalmitis," as its supposed improved variant. The literal meaning of "ophthalmitis" can only be inflammation of the eye as a whole, as is expressed by the word "panophthalmitis." But there is no such general inflammation of the tissues of the eye in so-called sympathetic ophthalmia. The above are facts the self-evidence of which is beyond dispute, so much so that further discussion regarding them is unneedful and wasteful of time.

Seeing, then, that the term "sympathetic ophthalmia" is inaccurate, if not absurd, in a twofold degree, what substituted definition of the disease to which it refers can be made use of? Here we must revert to what is known of the pathology of the disease. Before, however, entering upon the discussion of this part of our subject, let us briefly pass in review some of the special general features of the disease which have an intimate bearing upon the case.

In the first place, we may note three stages in its incidence—(*a*) the period of infection; (*b*) the period of incubation; (*c*) the period of development. With regard to the infection period, there is always some history of injury to the eye, either accidental or operative. The subtlety of the mode of infection is one of the remarkable features of the disease; it has even followed so slight an operative procedure as that of tattooing the cornea.

The next period—that of incubation—is somewhat especially noteworthy in that it does not apparently follow any determinate rule as to limitation of time. Nevertheless, the fact that an incubation period does exist in this disease is proved by the lapse of time which occurs before the disease becomes manifest after an eye has been injured.

The earliest time of development on record is that of ten days—a very exceptional case—inasmuch as from three to six weeks, as recorded cases have shown, is the earliest date at which the disease usually declares itself. On the other hand, the disease has been observed after the lapse of months and many years following accidental injuries to, or operative interference upon, an eye. Do not these facts appear to introduce a paradox into the discussion of this subject?

I think not, for if we seek for some analogy among other diseases, we can readily find one by which the difficulty is at once disposed of. Take traumatic tetanus. In almost every particular this disease bears the closest analogy to so-called "sympathetic ophthalmia." In traumatic tetanus there is first the period of infection, and next that of incubation; in regard to the latter, the same indefiniteness exists as to the time of incubation of Nicolaier's bacillus as is the case in so called sympathetic ophthalmia. Again, in the third stage, that of the period of development, traumatic tetanus exhibits a predilection for certain tissues of the body to which its destructive effects are primarily confined. In traumatic tetanus the fact has been freely demonstrated that one or more nerves in connexion with a wound shows signs of acute inflammation for some distance along its proximal course. Then as the disease progresses the spinal cord becomes involved, leading to the development of those distressing symptoms which in bad cases have invariably a fatal termination. But because the nervous tissue of the body generally in traumatic tetanus undergoes practically the same changes as those observed at the seat of the original infection, it has never been suggested to describe tetanus as a sympathetic disease, or one in which "the quality of feeling affected by the affection of another with corresponding feelings" is illustrative of the definition of sympathy.

Again, let us recall the similarity of the lesions, which, for the most part, are associated with the production of traumatic tetanus on the one hand, and so-called sympathetic ophthalmia on the other. In each instance the most favourable condition for the cultivation of the infection is that of the nature of a punctured wound. What possible incubating medium, for example, could be designed for any pathogenic organism than that which is present in a punctured wound of the ciliary region?

Imbedded in a highly-delicate tissue, mainly composed of blood vessels and nerves, the micro-organism is provided with every luxury—warmth and food supply being in abundance, with the vitreous close at hand in which as a cultivation medium it can simply revel. Nothing could be conceived more directly favourable for the cultivation of a pus organism or any other pathogenic infection than the conditions environing a penetrating wound of the ciliary region. Have not, then, the above facts an extremely important bearing upon the treatment of these serious lesions? Obviously they point to the common-sense conviction that wounds of the ciliary region should be dealt with in accordance with general surgical principles adapted to the necessities of the case.

The ophthalmic surgeon confronted with such an injury suspects at once the possibility of the supervention of so-called "sympathetic ophthalmia." He is, therefore, forewarned. The general surgeon, on the other hand, only rarely finds himself in a similar position, as to the possible development of tetanus. He is, therefore, not forewarned. Should, however, the nature and the position of the wound be such as to cause him to suspect the possible occurrence of tetanus, I apprehend that the

last thing which he would think of doing would be suturing the wound and closing it, with the view of obtaining primary union. Such a procedure would be clearly a case of playing into the hands of the aërobic organism, upon which the disease depends. But so it is, when a patient is attacked by traumatic tetanus, the surgeon, not having been forewarned, proceeds at once to lay the wound open, scrape it, or even excise the tissues surrounding it, simply in order to give effect to an ordinary principle in surgery.

How are we to regard the application of this principle in respect to the practice of suturing the sclerotic and the closing of a wound in the ciliary region? From the obvious circumstances of the case, a ciliary wound which has been followed by so-called sympathetic ophthalmia cannot be scraped, or the tissues in which it is situated excised. Ophthalmic surgeons have, therefore, the only alternative of resorting to enucleation. But seeing that by closing the wound the development of the disease has followed the wrong application of a surgical principle, the ophthalmic surgeon is confronted with a problem of conscience as to whether he has not perpetrated an error in treatment, as the result of which that most serious of all ocular diseases, namely, so-called "sympathetic ophthalmia," has supervened.

This brings me to the consideration of what I have been accustomed to describe as the open treatment of wounds of the ciliary region; and here I may preface my remarks thereon by observing that for many years, during which a large number of these injuries have been under my care, both in hospital and private practice, I have never sutured the sclerotic, conjunctiva, or interfered surgically with the wound, even to the extent of replacing any portion of the ciliary body which might happen to have been prolapsed. The above, in categorical terms, expresses the procedure adopted in my cases so far as surgical intervention is concerned. The principle, of course, underlying this method is to put in practice that treatment which would be most calculated to prevent any infective process to which the receipt of the wound would render the eye liable. Thus by leaving the wound, the ciliary processes, and the vitreous exposed to the mechanical and germicidal effect of a useful antiseptic solution, how could we expect the result of this treatment to be different from that which in the ordinary course follows the application of a general surgical principle elsewhere in the body? On the other hand, to close the wound, to run the risk of imprisoning within the eye micro-organisms which will simply revel in the comfort of their surroundings, is merely to court disaster. Clearly, after suturing a ciliary wound, no matter how efficiently the antiseptic treatment of it may have been, there is no certainty that some pathogenic organisms have not been enclosed within the globe, and will not ultimately produce their destructive effects.

Thus it is, and thus only, by the open treatment of ciliary wounds that so-called sympathetic ophthalmia can be averted. In every sense the morbid process is analogous to that of an infective disease. Again, just as the virulence of tetanus depends not upon the bacillus but upon the toxin it creates, so it may be reasonably inferred that the toxin created in cases of so called "sympathetic ophthalmia" is conveyed by the blood to the healthy eye and exerts its effects mainly upon the nerves of the ciliary region, as the situation of special predilection—precisely as the toxin created by the tetanus bacillus in an infected wound of the soft parts ultimately affects the spinal cord.

So we come to the question of the correct terminology of the disease which has hitherto been known as "sympathetic ophthalmia." Seeing that the signs of inflammation in the infecting eye are those of inflammation of the ciliary region, what other name under the circumstances could be suggested than that of "infective cyclitis"? The micro-organism upon which the disease depends, the reality of which, although it has never been isolated, I apprehend no one is prepared to dispute, creates a toxin which is taken up by the blood, and thus is excited a similar cyclitis of the fellow eye, by virtue of the ciliary region being a special seat of predilection for the evolution of the effects of this particular poison.

But there are other points of similarity between traumatic tetanus and that disease which I shall now proceed to call infective cyclitis.

In the first place, tetanus, which in former days constituted a comparatively common sequel of operative surgery, is now never met with in this connexion, while it is also rare as a complication of injuries. Similarly, infective cyclitis, which used to be common, has for many years shown so diminishing an incidence that it may now be regarded as almost an ocular pathological curiosity. This fact I believe I was the first to point out in a lecture which I gave in this College and subsequently published in the *Lancet* in 1898. In each instance this desirable consummation has followed and coincided with the introduction of Listerism.

Obviously, therefore, there can only be one inference—namely, that both diseases being dependent upon an infective origin, their progress and development are checked and prevented by the rigid adherence to the principles of antiseptic surgery.

Again, there is a similarity between traumatic tetanus and infective cyclitis in the degree with which each disease pursues either an acutely virulent or a mild course, the result in this connexion being due to the varying intensity of the primary infection. In the former case acute traumatic tetanus is always fatal, in the latter recovery usually follows. So is it with infective cyclitis so far as the fellow, or infected, eye is concerned. In the septic days of wound treatment both eyes were usually destroyed as the result of infective cyclitis, owing doubtless to the extreme virulence of the infection. Nowadays, on the other hand, a common result when infective cyclitis occurs is not only the preservation of the infected eye, as distinct from the infecting eye, in which the disease originated, but also the recovery of full vision. We may look for the explanation of this in the fact that, while the antiseptic measures resorted to have failed to prevent the onset of the attack of infective cyclitis, yet the virulence of the micro-organism has been so far checked as to render it comparatively harmless. In respect to the question of the degree of virulence of infection, I have for some time taught in my classes that the so-called "sympathetic" irritation, which is usually regarded as a separate and distinct pathological entity, is in all probability the early stage of infective cyclitis, in so mild a form that the degree of infection is insufficient to cause a full development of the disease. We have an exact analogy to this in the fact that trismus—one of the earliest signs of tetanus—has been known to occur and be recovered from after an injury to the soft parts without any other tetanic symptom becoming manifest. Lastly, there is a further similarity between tetanus and infective cyclitis. Cases have been recorded of recovery from tetanus, in which the arrest of the symptoms have followed section of the inflamed nerve communicating with the infected wound. In this regard, what closer analogy between tetanus and infective cyclitis could be shown, inasmuch as in the majority of cases of the latter disease the safety of the infected eye is secured by the enucleation of the infecting one?

Attention may now be drawn to another point. How is it possible to explain the delayed evolution of the symptoms which occurs in some cases of infective cyclitis? How is it that the disease may suddenly declare itself after some months, or even years, after the receipt of a penetrating wound of an eye?

I think the explanation is to be found in the theory which I believe is a favourite one with Mr. Jonathan Hutchinson. He affirms that pathogenic micro-organisms may become in certain cases encapsuled in the tissues, and being so encapsuled are prevented from doing immediate harm. Then something happens which disturbs their encapsulation, as the result of which they escape into the surrounding healthy tissues, and at once begin to exert their characteristic virulent effects. He illustrates this by stating that a patient who has suffered from one attack of erysipelas is very liable to a recurrence of the disease, owing to some of the micro-organisms, after having been encapsuled, escaping into the tissues of the part in which the primary attack occurred. I believe that such a theory is quite possible in respect to penetrating wounds of the ciliary region. I may illustrate this conviction by narrating the following case:

Some years ago a woman was admitted into the West London Hospital under my care suffering from acute panophthalmitis of the left eye. Two years previously both eyes had been operated upon for senile cataract elsewhere, unfortunately in each instance with an unfavourable result. The right eye had been removed, and in the left no recovery of vision had ensued. The history given was that about three days before admission, while in her usual health, the left eye had suddenly become very painful and acutely inflamed. She could not recall that the eye had received any blow. As there was no direct history to account for the panophthalmitis, it seemed possible that some pus organisms had become encapsuled at the seat of the extraction wound, and that the sudden onset of the symptoms was due to some change ensuing in the eye by which they escaped into the surrounding ocular tissues. Enucleation was forthwith performed for the relief of her acute suffering.

I now come to the expression of some views upon the question of infective cyclitis which, perhaps, may be regarded as somewhat transcending the limit of our knowledge of the etiology of the disease.

Admitting the close analogy which, as I have endeavoured to show, exists between traumatic tetanus and infective cyclitis, I presume it will be conceded that, so far as prevention is concerned, what applies to one disease must apply to the other. For example, a general surgeon, to whom the catastrophe has happened of a patient developing tetanus after an operation, could not conceal from himself that some failure must have occurred in the practice of his aseptic technique, and the same I believe to be true when infective cyclitis follows any operative procedure undertaken by the ophthalmic surgeon. To define this position more clearly, I would affirm that infective cyclitis is solely the result of the defective practice of the principles of antisepticism.

The question of the nature of the wound, its position, whether it is confined or not to the ciliary region, is, I maintain, entirely secondary as to whether the wound is or is not aseptic. The traditional fear of ciliary wounds is still almost generally as great in the present day as was the case in the days of old, and yet for such dread and misgiving there is no need. The ciliary region, as I have already pointed out, merely consists of highly vascular tissue with an extremely delicate distribution of nerves, and practically the only special feature concerning it is that it forms the most perfect cultivation medium for micro-organisms to be found in the body.

But so prevent any pathogenic organisms from reaching its environment, or deal with any, by skilled treatment, which may have reached it, and the tissues of the ciliary region become just as ordinary in their behaviour after injury as those of the body generally. A prolapse of the ciliary body which has become adherent to the edges of a ciliary wound is not, *per se*, a source of danger to an eye. The prolapse soon becomes covered with conjunctival tissue in the course of the natural repair of the wound. There is nothing to show that the natural processes of repair of any tissue in the body is accompanied by signs of irritation. Does the peritoneum become inflamed after having been stitched to the edges of an aseptic abdominal wound, or does it show signs of irritation when contraction takes place during the later stages of cicatrization? A prolapse of the ciliary body has gained a notorious reputation for evil doing, but not because of the prolapse *per se*, but rather because of the failure of the measures to which resort is made of keeping it aseptic. The ciliary body is just as tolerant of injury or disturbance of its integrity as any other tissue of the body, provided a condition of perfect asepticity is maintained. On the other hand, should any signs of irritation or inflammation occur, under any circumstances in which it has been injured, the obvious conclusion is that such signs of reaction are pathogenic in origin. And so it is that I have come to regard wounds of the ciliary region as being only of secondary significance so far as they may become the source of an infective cyclitis. So long as the tradition of the past respecting the dread of these wounds is still allowed to sway the ophthalmic surgeon's mind, there can never be any advancement in regard to their more perfect treatment. In thus being always trepidant of the evolution of infective cyclitis, the surgeon is apt to pay less regard to, and lose sight of, the only means by which the disease can be prevented.

The next point which claims attention is that of the question of enucleation in respect to a serious penetrating wound of an eye involving the ciliary region. What are the difficulties which are supposed to confront the ophthalmic surgeon in arriving at a decision in this regard? I need not here delay to discuss them, forasmuch as from my point of view no such difficulties exist. Personally, when I am called upon to treat a wound of this description I ask myself three questions:

1. Is there any evidence of the retention within the eye of a foreign body?
2. Is the injury of too extensive a nature to preclude the eye from recovering under any circumstances?
3. Recovery being possible, what are the prospects of useful vision being ultimately obtained?

Here it will be noted that no question is raised as to the supervention of infective cyclitis, and for the reasons already given, under the circumstances named, I do not deem it necessary ever to take the matter into consideration. My practice always is never to resort to immediate enucleation, no matter how severe the injury may happen to be. By allowing a few days to pass over, we are enabled to glean some indication of what Nature intends to do in the case. But if after the expiration thereof no attempt at repair is evident, enucleation is carried out, as some of you may have seen was the case some weeks ago in the young girl whose left eye was severely lacerated by the bursting of a soda-water bottle. The prospect of the ultimate result being good so far as vision is concerned depends upon the condition of the cornea, iris, and the lens. If the central, or pupillary, area of the cornea be intact, the iris and the lens sound, whatever the nature of the wound otherwise, the duty of the surgeon is to attempt to save the eye.

In the open treatment of ciliary wounds, I find that the rule is for recovery to take place without any ciliary reaction. Can this be so, it may be asked, in those cases in which there is prolapse of some portion of the ciliary body, with escape of the vitreous? Unquestionably this is the fact, when the cases are dealt with in accordance with the precise aseptic and antiseptic details which observation and experience have enabled me to elaborate. Inflammation of the ciliary region, following ciliary wounds, can only be due to septic infection; but when from first to last the wounds heal without any signs of inflammation, just as aseptic wounds in the soft parts heal, there is no need to fear untoward consequences resulting from pathogenic organisms, productive on the one hand of suppuration, and on the other of infective cyclitis.

Perhaps, however, it might be urged that inasmuch as these ciliary wounds are usually more or less gaping, it is only in accordance with ordinary surgical principles to bring the edges together by means of a suture. But the obvious answer to this is that the gaping of the wound is rather a favourable feature than otherwise in the treatment of the case. For example, it ensures a more certain application of the aseptic measures to the deepest recesses of the lesion. Moreover, a suture is unnecessary, even from the point of view of providing the wound with support to resist the intraocular tension, for, as a matter of fact, the tension remains minus for many weeks, and long before the natural tension is restored the wound has soundly healed.

Mackenzie mentions that he never saw in his day infective cyclitis follow any of the operations for cataract. That is not surprising, for in the septic days of old it was only rarely that cataract operations had any other result than that of suppuration of the globe, and panophthalmitis has never been known to be followed by infective cyclitis.

In 1883 the Ophthalmological Society made an inquiry into the subject of so called "sympathetic ophthalmitis," in the course of which various questions were asked to which replies were desired. These questions were ten in number, the bulk of which do not call for special notice, since they mainly refer to statistical evidence There are, however, two out of the number with which I propose to deal. The first is, Can any operation on the exciting eye, other than excision, influence the "sympathetic" inflammation after it has begun? Before proceeding to comment thereupon I may draw attention to the report of the Committee in which the details referring to the cases are discussed. The cases were 8 in number, in which an operation had been performed upon the "exciting" eye with the hope of arresting the "sympathetic" inflammation which had lately set in in the other.

The operation was iridectomy in 5, and section across the wound scar in 1 of the cases; in 2, the operation was optico ciliary neurotomy. With regard to the iridectomy and section cases the significant fact is that the eyes made a good recovery—that is to say, iridectomy in one instance was performed upon both eyes, and in three cases upon the infecting eye only, with the result that in all of these the symptoms were arrested and the disease cured. The same also was the case in the patient in whom the section operation was performed.

There can only be one inference to be drawn from these facts—namely, that the operation in each instance arrested the disease by opening up the infecting wound and thus allowing the infection to be destroyed by more perfect antiseptic treatment. Thus the axiom may be evolved that in all cases of infective cyclitis in which reasons are present for preserving the infecting eye, the treatment should consist in making a section through the wound scar, laying it open, and exposing it to the efficient action of thorough antiseptic douching—a method which is merely illustrative of a general surgical principle. The point is one of extreme interest. It seems to suggest the solution to the effective arrest of an attack of infective cyclitis—a disease which, owing to the introduction and practice of Listerism, has now become of so rare occurrence.

The second question contained in the Committee's report, to which I shall now allude, is as follows: "When the exciting eye, retaining useful vision, is not excised, what is its final state?" The terms of this query might have been differently expressed. They presuppose that every case of infective cyclitis is of the same intensity, which is far from being the fact. In these cases, just as in tetanus, the infection may be of a mild or very virulent type. It is impossible to comprehend how useful vision could be long retained in an eye in which a virulent attack of infective cyclitis has supervened. Hence we find from the report above mentioned that in the 36 cases in which the "exciting eye, not being disorganized by the immediate result of the injury, was allowed, for one reason or another, to remain," complete recovery occurred in 9, partial in 17, and in 10 cases the eyes were lost. We may, therefore, assume that the result in each instance was merely dependent upon the intensity of the attack. In the mild attacks the eyes suffered but little, and made complete or partial recoveries; in the bad cases the globes were destroyed.

I will now refer to 3 cases out of the large number which have been under my care, not because they all made good recoveries, but because the injuries which they received were of so severe a nature, that any attempt to save the eyes appeared at first to be practically impossible. Of these cases, 2 were under treatment in the hospital, and the third was seen in private.

The latter was that of a little boy of 12 years of age, brought to me by Dr. J. Herbert Menzies three years ago. The history given was as follows: On the evening previous to the visit, the boy with some companions was ascending the staircase at one of the metropolitan railway stations. The boy in front of him was swinging his umbrella, in the course of which the ferule struck the left eye of my patient, inflicting a lacerated wound of the globe. He was brought to me on the following morning. The globe was partially collapsed; the wound involved the corneo-scleral junction on the outer side, and extended from the horizontal meridian upwards and outwards for 7 mm.; there was prolapse of the iris, the lens was injured, and the anterior chamber was half-full of blood. Having regard to the weapon with which the injury was caused, nothing more septic could be conceived than the ferule of an umbrella, and from the extent and nature of the injury, there did not appear to be any chance of saving the eye. On further inquiry, however, two notable features of good augury were elicited. First, that the boy to whom the umbrella belonged had just had it repaired with a new ferule, which had never been soiled with mud; the second, that the injured eye was thoroughly douched with warm boracic lotion shortly after the accident, when the boy reached his home. The case was treated entirely on the principles to which I have alluded, and the eye recovered perfectly without any bad symptom. The traumatic cataract was gradually absorbed, leaving only a small tag of opaque capsule in the pupillary area. The last time that I saw the patient, about a year ago, the wound scar was hardly perceptible and the vision was good—$\frac{6}{18}$ with correction. The other eye was quite normal.

In the second case the patient was a labourer, aged 50, who was brought to the hospital two hours after having been accidentally struck in the right eye with a pickaxe by a fellow workman.

I saw him on admission. There was a perforating wound of the lower lid, which communicated with a large lacerated perforation of the globe, involving the corneo-scleral junction, at the lower and inner quadrant; the iris was torn from its ciliary attachment, the lens was absent, and a large quantity of vitreous had escaped, leaving the globe collapsed. The nature of the wound and the septic body which had caused it seemed to suggest that any attempt to save the eye would be followed by panophthalmitis. In two days' time, however, the eye was beginning to do well, and in a month's time it had made an excellent recovery. The vitreous cleared, and the fundus was everywhere plainly visible, but the man, when seen last about six months ago, maintained that, even with correction, he could not see with the eye.*

The last case was that of a little boy aged 5, who was admitted under my care on October 7th, 1906, with the history of having been shot in the left eye with a ramrod fired from a toy gun.

When first seen there was a lacerated punctured wound of the globe involving the ciliary region on the inner side. The iris, cornea, and lens were intact; the wound was discharging vitreous freely, and was partially filled by prolapse of the ciliary body. The anterior chamber was almost full of blood. Here, apparently, everything was favourable for septic infection of the eye, either by means of pus organisms or by those to which infective cyclitis may be attributed. Nevertheless, the eye made a perfect recovery in about six weeks' time, with the retention of full vision, and when last seen, about two months ago, both eyes were perfectly well.

A few words of comment only are called for in regard to these cases. Let us suppose that in each instance the wounds had been closed, in accordance with the common practice pertaining to such injuries—would the results have been the same? I feel certain that they would not have been, for the reasons which I have already explained. But of the precise details which were followed in the treatment of these cases, and the special measures which I adopt in the treatment of all similar cases which come under my care, I must defer a description to another lecture.

An Address

ON

MEDICINE IN ANCIENT GREECE:

THE METHODS OF HIPPOCRATES AND WORK ACCOMPLISHED BY HIM.

DELIVERED AT THE ANNUAL MEETING OF THE MIDLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

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THE origin of Greek medicine is involved in obscurity. There is no reason to believe that medical knowledge, any more than philosophy, was introduced into Greece from Egypt, though Greek physicians may subsequently have become acquainted with the state of knowledge which had been reached in Egypt, as well as with Egyptian methods.

The earliest allusion to the healing art is found in the writings of Homer, who claims for it a divine origin. The sons of Æsculapius are mentioned, not as priests, but as warriors in the Greek army, having special skill in the treatment of wounds. The first recorded instance of surgical treatment is that of the wounded Menelaus by Machaon.[1] There are other allusions to physicians in Homer; they are always referred to with regard and veneration, and it would seem that, in the state of society then described, there were physicians distinct from the priesthood. But in later times we know that medicine was cultivated by the Asclepiadae, the doctor-priests of the temples of Æsculapius. The asclepeia, or temples of Æsculapius, were erected in healthy sites, near thermal springs, and the sick and maimed resorted to them to seek the aid of the god of health. In some respects they resembled modern hospitals, but a health resort like Buxton in the fourteenth century was a typical asclepeion, for there the sick and maimed resorted to drink and bathe in the waters of St. Ann and to worship in her chapel and to invoke her healing aid.

Votive tablets recorded the symptoms of those healed,

* On inquiry a week ago I was informed that this patient had emigrated to Canada.

and from these primitive clinical records of theurgic medicine the Asclepiadae compiled the data upon which the earliest generalization of medicine as an inductive science was based; but in the state of knowledge and philosophical speculation at that time, the anger of a god was a sufficient reason for a disease and a dream for treatment, and that a physical phenomenon must have a physical cause was not, as now, a fundamental principle in physical science.

In one of the most distinguished of the asclepeia, namely, that of Cos, pre-eminent and high above all others of the Asclepiadae, stands out that great central figure, whose name will for all time be connected with the foundation of medicine. Born about 470 B.C. of a family of priest physicians, and said to be a lineal descendant of Æsculapius, Hippocrates lived during the most brilliant epoch of the intellectual activity of ancient Greece, and, relatively, in the history of the world,* and in circumstances which combined by a magnetic influence to exercise a widespread power on the current of Greek life and thought; so that, in this period of great intellectual development, it only needed a master mind like that of Hippocrates to bring to bear upon medicine the same influences which were at work in the other sciences.

Hippocrates studied under the philosophers Gorgias and Democritus, who was celebrated as the originator of the doctrine of atoms, so that he was thoroughly conversant with the philosophy of his age, and besides he travelled extensively.

It is evident that before the time of Hippocrates there was a considerable knowledge of medicine, but in addition to the contributions he did make to the sum of previous knowledge, there were three things which he had the merit of recognizing. In the first place, he had the merit of dissociating medicine from superstition, for he absolutely denies the supernatural origin of disease. No one disease, he says, is either more divine or more human than another, and none arises without a natural cause. Therefore, he discarded all belief in popular superstitious charms and incantations. Secondly, he had the merit of discovering the great truth that accurate observation (*ἀκρίβεια*) in medicine is the real foundation of all knowledge, and directing attention only to the natural history of disease — according to true inductive philosophy he generalized from the phenomena observed—and therefore "rational experience," as distinct from blind empiricism, was the foundation of his practice, for his first and well-known aphorism, *ἡ πεῖρα ὀφαλλερὴ ἡ κρίσις χαλεπή* (experience is fallacious, judgement difficult), shows that he was strongly opposed to a blind empiricism. In the third place, Hippocrates based his principles and practice on the theory of a spiritual restoring essence or principle *φύσις*, the *vis medicatrix Naturae*—the restorer of whatever had been disordered; thus, he was led to consider that the chief art of a physician consisted in watching the operations of Nature and in managing them, an art only to be gained by experience. Our natures are the physicians of our diseases *νουσῶν φύσιες ἰητρόι*; and, again, he says, *ἰητρικὴ γὰρ ἐστὶ πρόθεσις καὶ ἀφαίρασις*—for the art of medicine consists in addition and subtraction, or, in other words, in the restoration of that harmony in the condition of health, the derangement of which constitutes the essence of disease. His conviction and belief in the *vis medicatrix Naturae* made him a careful observer of the operations of Nature, cautious in interfering with them, and resolute in having two objects in view: as he says—to do good and to do no harm. Neither was he a purely expectant practitioner, for, as Sydenham has expressed it, "there is abundant proof his object was to support Nature when she was enfeebled, and to coerce her when she was outrageous." Hence he made use of powerful remedies (emetics, cathartics, and diuretics) to remove from the system the peccant humour according to the humoral doctrine of his time. Moreover, he practised blood-letting freely and cupping, and has laid down precise rules for their employment.

To the subject of diet and regimen Hippocrates gave careful attention, and he has carefully described dietaries suited for different stages and conditions of illness, and has laid down useful instructions for the use of wine.

In his treatise, *Περὶ ἀερῶν ὑδατῶν καὶ τοπῶν*, we have the oldest exposition we possess on the principles of public health—on the influences the atmosphere, the seasons, and the dwellings of people have on the production of health and disease; in fact, the first treatise on public hygiene and preventive medicine, which is now the duty and work of medical officers of health.

Hippocrates attached great importance to the doctrine of crisis, which was an integral part of his humoral system; and critical events in fevers and acute diseases were marked by evacuations from the different emunctories (skin, bowels, kidneys). Connected with this was the Hippocratic doctrine of critical days and its bearing on the subject of prognosis, which he estimated and foretold with skill.

It may be observed that the ancient Greek physicians did not use the words "crisis" and "critical" in the same sense as they are used by us in modern times. Crisis (*κρίσις*) meant with them the act of judging, and a critical day was a day for judging. Certain days from the onset of the disease on which the crisis occurred, were considered to be favourable, and others the reverse. Hippocrates, probably influenced by the Pythagorean doctrines of number, taught that critical days were to be expected on days fixed by certain numerical rules—in some cases on odd in others on even numbers.

The doctrine of crisis and critical days was not altogether a matter of superstition and imagination, but had a residuum of truth, and was founded on careful observation.

We know, for instance, that on certain days in the course of an acute pneumonia a rise or fall of temperature is of evil omen or the contrary. My own experience has been that the fourth and eighth days are always of cardinal moment as to judging the final issue.

It is to Hippocrates that we first trace the system of case-taking in clinical medicine, and he has in a concise and clear manner recorded the summary of 42 cases.

To illustrate some observations actually made and achievements attained by the Father of Medicine, let me cite some instances, for he was far in advance of his age. In the first place, a fatal case of fever is recorded in the first book of the Epidemion, in which a peculiar form of breathing is described, and let me compare and test it in the light of modern knowledge.

CASE I.

"Philischus[2] was laid up—first day acute fever, he perspired; second day aggravation of symptoms. On the morning of the third day, and up to noon appeared free from pain, but in the evening acute fever with perspiration, thirst, tongue dry, passed black urine, did not sleep, delirium. Fourth day, general paroxysms, urine black. On the fifth day, about noon, blood escaped from the nostrils; urine varied in appearance, with thready clouds resembling semen irregularly suspended in it; night distressing; insomnia, delirium, cold extremities, lost speech, had a cold sweat, extremities livid. About the middle of the sixth day he died. *The respiration was throughout large and rare, like that of a person who required to be reminded to breathe.*"

The feature of interest in this case is the description given by Hippocrates of the respiration (*πνεῦμα μέγα ἀραιὸν*).† Galen, commenting on the passage, observes that the breathing was like that of a person who forgot for a time the need of breathing, and then suddenly remembered.

Ancient commentators and learned critics are of one and the same opinion—that the description of the breathing by Hippocrates was: "First large, then it became small, and at intervals; then the patient forgot, and suddenly remembered to breathe."

About 2,200 years afterwards there was recorded in the Dublin Hospital Reports, 1816, a case of apoplexy in which the breathing was said for several days to be irregular. "It would entirely cease for a quarter of a minute, then it would become perceptible though very low, then by degrees it became heaving and quick, and then it would gradually cease"; and Dr. Cheyne, whose description I have quoted, claimed to have described a case of breathing unique and without precedent.

But clearly the character of the breathing described by both observers is not only *similar* but *identical*, and without doubt the *πνεῦμα μέγα ἀραιὸν* of Hippocrates is

* It was the age of the great dramatists Aeschylus and Sophocles, of Plato, Socrates, and Thucydides.

† *ἀραιος*—in the writings of Hippocrates as applied to the pulse or respiration signifies small—interrupted at intervals.

identical with what is now known as the "Cheyne-Stokes" respiration, for the first description of which the Father of Medicine has priority of claim.

A physiological explanation of the phenomenon was, of course, unknown to Hippocrates, but does the hypothesis of the modern physiologist about the lower centres of respiration being unable to control the tendency to rhythmic and periodic movements in consequence of the lowering of the higher centres satisfactorily explain it, or add to our knowledge?

But to take another illustration. Was Hippocrates aware of the occasional presence of albumen in the urine? The evidence upon this question is contained in the 34th Aphorism of the 7th Book:

"*When bubbles settle on the surface of the urine, they indicate disease of the kidneys and that the complaint will be protracted.*"[3]

Sir Robert Christison,[4] who was among the first to investigate the chemistry of albuminuria after the discovery of Bright, describes albuminous urine thus: "The urine froths more than usual, and, on blowing through a tube, bubbles are formed as with soapy urine. This property is confined to urines which are loaded with albumen"; and Dr. Adams, the learned translator of the works of Hippocrates, has added this commentary upon the aphorism: "It can hardly admit of a doubt that our author here refers to albuminous urine, which, it is well known, is also frothy, and is now generally admitted to be connected with disease of the kidneys." It seems a fair presumption that albuminuria is most probably implied though not explicitly stated, and that Hippocrates was treading on the confines of truth though he only partially realized it; he "saw through a glass darkly"; and one cannot but wonder at the amazing observation of the immortal author, who in this short and pregnant aphorism has typified and foreshadowed the discoveries of after ages.

Generally, it may be said, Hippocrates noted disease of the kidneys with frothy urine. Bright noted disease of the kidneys with albuminous urine, and subsequent observers have noted disease of the kidneys with turbid urine.

But to take another illustration—Hippocrates was the first to employ immediate auscultation, and Laënnec, the author of the practice of auscultation, freely admits that the idea was suggested to him by the study of Hippocrates, who, treating of the presence of morbid fluids (empyema), gives very particular directions, by means of succussion, for arriving at an opinion regarding their nature.

The succussion of the chest, as a means of diagnosis of hydropneumothorax, is still known by the name of Hippocratic succussion, and the splashing sound enables us to distinguish that condition alone. Hippocrates fell into error when he regarded the sound as distinctive of pus from water in the pleural cavity. This, however, does not deprive him of the merit of being the first to make use of immediate auscultation, and recognizing sometimes the presence, sometimes the absence, of a splashing and a tinkling sound.

Next with regard to the removal of empyema, Hippocrates was the first to employ thoracentesis, and he has with precision and exactness laid down rules for treatment. The operation is not to be performed till the fifteenth day from the commencement of the effusion. There are two modes of operating: (1) Either to open into one of the intercostal spaces by actual cautery or bistoury; or (2) by perforating a rib. Whatever method is chosen, it is essential that the wound remain open till the fluid is entirely evacuated, and there is no further tendency to effusion. If the opening should show a tendency to close, it must be prevented by introducing a metallic sound. Hippocrates laid down some dicta in regard to prognosis which may be noted. An empyema on the left side is less dangerous than on the right side. When the pus was clear (sero-albuminous) the prognosis was more hopeful; but when from the first the fluid had the colour of yolk of egg, and subsequently it became thick, pale-green colour, and fetid odour, the prognosis was unfavourable.

The operation of thoracentesis fell into comparative disuse, but in modern times has been revived, principally from the advocacy of Trousseau, who ascribes to Hippocrates the merit of its introduction, and its place is now securely established by improved technique and the advances of modern surgery.

One other instance may be cited. Hippocrates was well acquainted with gout, and his writings show considerable knowledge of the disease. He has pointed out its incurable character in the aged, where there are tophi in the joints, and where the constitution has been previously deteriorated.

He directs attention to its prevalence in the spring and autumn, and its relation to the organs of generation—the exemption of eunuchs from it, and of women until the catamenia have ceased.

Were these statements absolutely true they might have some bearing on the question of a neurotic as distinct from an exclusively humoral pathology of the disease, but they were questioned by subsequent writers, who affirm that gout was known both among women and eunuchs during the luxury and debauchery of the Roman Empire.

We know that articular gout in women before the menopause is rare, and it is most probable that the statements of Hippocrates were correct at the time at which he wrote, for it is a disease liable to be altered in type, or modified and affected by racial difference, luxury, social habits, and environment.

It would be easy to adduce references to important and suggestive passages in the writings of Hippocrates, but enough has been cited to show his transcendent powers of observation.

For some centuries after the time of Hippocrates there was considerable activity in medical research. With Galen, however, we reach the highest point of progress in the Greek school, for after his time medicine rapidly deteriorated and superstition increased; while during the Middle Ages the horizon darkened and medicine sank to a very low condition.

After the revival of learning, the work of rescuing medicine from the supernatural and superstitious accretions which had gathered around it had practically to be undertaken *de novo*; but, divested of these, its foundation was fixed on the solid basis of anatomy and physiology, in more auspicious circumstances, and with more assured prospects of stability and progress. Reference can only be made to some of the influences which then contributed to the more scientific progress of medicine—the work of anatomists in Italy, the discovery of the circulation, the influence of the philosophy of Descartes on the current of thought, the subsequent schools of medical thought, the iatro-chemical, the iatro-mechanical, and, afterwards, not the least important, the rise and growth of the positive school in France, all of which have had some influence in eliminating vague and animistic hypotheses, and effecting a union with medicine and the physical sciences which has become closer as medicine has become more exact.

In conclusion, it may be observed that though the genius of Hippocrates accomplished so much by careful deductions from well-observed facts, in the state of knowledge at that time, when we compare the position of medicine and surgery, then one complete and comprehensive whole, the contrast with modern medicine is very great—the enormous growth, expansion, and subdivisions of the latter are ever developing an increasing number of specialisms; and though there are specialists and specialists, still it is in accordance with the principle of division of labour which we see in every field of active life, and is justified by more work better done.

Next, if we reflect on the methods of observation by Hippocrates and those in modern times, the former were made entirely by the medium of his unaided senses, the latter by means also of instruments of extreme accuracy, delicacy, and precision.

Perhaps our ancestors, depending entirely on their unaided senses, and by refined cultivation of them, attained a perfection in pithy and graphic description of disease which will never be surpassed—for instance, the description of approaching dissolution by Hippocrates, still appropriately known as the "facies Hippocratica"—and the word pictures of disease by Sydenham and Groves stand out in graphic contrast to the redundant mass of pointless verbiage in some modern descriptions of disease.

But if description is less graphic, by the aid of powerful instruments and physical and chemical methods of research observations have been extended into the realms of the invisible world and data have been obtained and recorded with almost mathematical precision.

We have known the limits of our unaided senses; we

know what has been revealed to our aided senses; but we do not know, nor can we even guess, at the limits of the means by which they may be assisted, or "the invention of instruments, which will become only a little more separate from our mental selves, than the outer sense organs with which we are constructed."

Further, Hippocrates knew little of human anatomy, for the reverence for the dead among the ancient Greeks precluded dissection; and he knew still less of physiology, for, such as it then was, it was subject-matter of study for the philosophers, but the sciences of chemistry and biology, which have sprung up centuries after his time, have secured for medicine a scientific foundation.

It is to the growth and progress of the physical sciences and their closer and more intimate union with medicine that its present advanced position may be ascribed rather than to a relatively increased knowledge in the art of medicine by observation from experience.

But whatever advances may in the future be achieved by the progress of the physical sciences—whether on a purely physical basis of life, and by the most rigid experimental methods, the iatro chemico physicist may produce all the phenomena of disease in the physiological laboratory and appropriate to himself the whole domain of medicine, or whether the two spheres are co-ordinate and complementary of each other—still all orthodox clinicians must trace their apostolical succession to Hippocrates and his method of reasoned experience.

Finally, let the high ethical tone be noted which pervades the writings of Hippocrates, and his serious and elevated conception of the duties and responsibilities of a physician. "Medicine," he says, "is of all arts the most noble"; and, again, enumerating the qualities of a good physician, honesty of purpose and love of work for its own sake, he adds: "Physicians are many in title but few in reality"—a remark which even at present cannot be entirely denied, for within the pale of the profession as well as outside, there is unfortunately no security against disloyalty, the sophisticated perversion of knowledge, and the abuse of trusting confidence for sordid ends.

> Seditione, dolis, scelere, atque libidine et ira
> Iliacos intra muros, peccatur et extra.

The sentiments which he then expressed as to the sacred confidence of physician and patient—the singleness of aim, the avoiding of imposture, the solemn responsibilities of the duty of a physician, and in spending his life in purity and self-denial, are still as binding as when they were uttered by the Father of Medicine—uttered in the dim twilight of pagan philosophy and polytheism, but worthy of the more advanced epochs in the moral evolution of the world.

REFERENCES.

[1] *Iliad*, Book iv, 216. [2] *Works of Hippocrates*, vol. i, p. 370 (Sydenham Society). [3] Ibid., vol. ii, p. 766. [4] *Granular Degeneration of the Kidneys*, p. 33.

ABNORMAL FAT ASSIMILATION ASSOCIATED WITH SOME DISEASES OF THE INTESTINE.

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THE difficulties surrounding the study of the absorption of fat and the different views held thereon depend largely upon the limitation of knowledge regarding the various fats concerned, and the difficulties of the chemical technique connected therewith. Except in such conditions as the failure of the fat-digesting secretions to reach the intestinal tract associated with obstruction to the flow of bile and pancreatic juice, little is known of any abnormality of fat digestion. The present views of the digestion of fats is stated by B. Moore [1] as follows:

It is now generally accepted that the neutral fats of the foods are completely split up in the course of intestinal digestion by the lipase of the pancreatic juice into free fatty acids and glycerine, and that the fatty acids are then rendered soluble by the bile salts and lecithin, either in the form of free fatty acids or as alkaline soaps, so that all the constituents formed in fat digestion are finally taken up in soluble form.

In the same contribution this author points out that from solutions containing soaps and glycerine the living cell is capable of inducing the synthesis of neutral fat, and thus rendering the soaps capable of absorption.

The clinical and chemical observations recorded in this contribution tend to show that there are conditions in the intestines in which certain soaps or other insoluble compounds of fatty acids are not absorbed by the intestinal mucous membrane, and that with the presence of these conditions certain diseases of the alimentary tract are related. The analyses here given show that true intestinal sand, appendix concretions, and some bodies formed in the intestines are largely formed of fats and soaps. The fats and soaps present are compounds of saturated fatty acids. The constitution of these bodies and their relation to each other in chemical constitution throws, in my opinion, much light upon the etiology of appendicitis and mucous colitis, and possibly upon the underlying factors in certain diseases accompanied by colic.

Investigations of other foreign bodies different from the above occurring in the intestine, such as concretions formed by inspissated faeces, by inorganic salts, gall stones, and *false* intestinal sands, have been examined, but their chemical constitution shows that they have no relation to the pathological processes accompanying fat digestion.

In the following analyses determinations have been made of total ethereal extractive, free fatty acid and combined fatty acid, soaps insoluble in ether, iodine values of the fatty acids showing percentages of saturated and unsaturated fatty acid present (Hubl and Köttstorfer methods,* non-saponifiable matter, cholesterine, etc), and the bases present in combination with fatty acids and in organic combinations.

INTESTINAL LITHIASIS.

Cases in which intestinal sand has been passed in the stools have been recorded from time to time, the most noteworthy being the one recorded by Duckworth and Garrod.[2] In this as in others the amount of organic and inorganic material, with the nature of the latter, has been recorded. I have only been able to find one observation which calls attention to the presence of fat in the material, Roesser[3] reporting that 10 per cent. of his specimen contained fatty substance soluble in ether.

The sand is found as a "gravel" adhering to the bottom of the vessel from which the faeces have been emptied. It varies in colour from grey to brown, and is often mixed with small quantities of faeces which tend to hide its appearance as an abnormal constituent. When the specimens are washed and dried they in all cases show the characteristic appearance of the sand. This looks much like ordinary sand, but has not the same gritty feeling, but rather feels like soap, and in well-marked cases I have observed fair-sized particles appearing and feeling like ordinary soap. My attention was first drawn to this material by Professor Vaughan Harley, at whose request I examined it in his laboratory. It contains:

	Per cent.
Organic material and water ...	55 6
Inorganic material	44.4

The ash after combustion contains:

	Per cent.
CaO	65 65
Fe_2O_3	6.5
MgO	0.15
P_2O_5	23.1
CO_2	3 3
SO_4	1 3
Cl	Trace
Total fatty acids in specimen ...	18 per cent.

Of the total calcium present, only 34.1 per cent. is present as calcium phosphate. The remaining 31.5 per cent., as is seen from the above table, has no inorganic acid with which it could be combined.

An investigation was therefore made to find the combination in which this calcium existed. The material on being burnt showed a smoky white flame, which suggested the presence of fat. The original material was accordingly treated with ether, and 10 per cent. of its total weight was found to be soluble. This ethereal extract contained free and combined fatty acids.

After all the fats soluble in ether had been removed the

* In the present state of our knowledge a systematic classification of fats is not possible. In previous investigations of the fats in faeces only their melting points have been determined, and these have been taken as expressing differences in their nature. The most convenient classification appears to be given by arranging them according to their iodine values. This value expresses the amount of iodine which 100 grams of fat are able to take up and combine with, and divides the fatty acids into two main groups, the saturated and the unsaturated. Of the saturated fatty acids palmitic and stearic acids, and of the unsaturated fatty acids oleic acid, occur in the animal fats.

material was treated with hydrochloric acid, and again treated with ether, when a further 8 per cent. was found to be soluble. This was found to be free fatty acid, the hydrochloric acid having therefore split up the calcium soaps and liberated their fatty acids.

That the fats present were saturated (palmitic or stearic or both) was shown by their low iodine values, the fat first extracted having the value 18 per cent., the fatty acids from the soaps 13.3 per cent.

During the past year, in the wards of the Royal Infirmary, Liverpool, I have seen several specimens of faeces containing particles resembling sand. I have been able to collect seven well-marked specimens, and in these I have found the same constitution as that noted above, all showing presence of fat soluble in ether and soaps insoluble in ether, all the fatty acids from these being of the saturated type. To obtain the material from well-formed stools they were allowed to stand under a slowly-running tap to disintegrate them and then carefully emptied, the sand remaining at the bottom of the vessel.

The nature of the cases is shown in the following brief summary. Cases I and II will be referred to in greater detail later.

CASE I.—A female, aged 22, under the care of Sir James Barr. The patient's appendix had been removed one year previous to admission to hospital on account of repeated attacks of abdominal pain. The pain recurred one month after operation. On admission she was suffering from abdominal pain with much mucus in the stools.

CASE II.—Under Mr. Paul's care. A male, suffering from symptoms suggesting the presence of gall stones. The patient had colic.

CASE III.—A female, aged 16, under the care of Sir James Barr. The patient had a large ovarian cyst. On admission she was suffering from abdominal pain, constipation, and vomiting. The vomiting had no relation to food. Intestinal sand was found in the stools both before and after the operation for removal of the cyst.

CASE IV.—Sir James Barr's case. A female, aged 34, suffering from colic. She was markedly constipated. Purgatives relieved the pain after the passing of faeces containing intestinal sand. The appendix vermiformis was felt to be thickened.

CASE V.—Sir James Barr's case. A female suffering from thrombosis of the femoral vein following parturition. The patient was very ill and the leg much swollen and very painful.

CASE VI.—A male, under the care of Dr. Bradshaw, suffering from ulcerative colitis, with pus and blood in the stools.

CASE VII.—A female, under the care of Mr. Paul, suffering from malignant disease of the caecum. The caecum was removed. Intestinal sand was found both before and after operation.

Harley and Goodbody[4] state that the sand is not uncommonly found in the stools if looked for. On many occasions, in addition to the seven typical cases mentioned above, I have been able to find small quantities of similar material by placing the faeces in a bag with an open top, made of several layers of muslin, and allowing it to hang in running water until most of the faeces had been washed away. The material when present in any quantity was found in cases where there was abdominal pain of a colicky nature, and it may hence be suggested that the material acted as a chemical irritant, giving rise to painful contractions of the intestine to eliminate it. The richness of these intestinal sands in calcium, iron, and phosphoric acid, and also in fatty constituents which are all usually described as constituents of the secretion of the intestinal mucous membrane, point to their originating in the intestine as a result of some excess in secretion or defect of absorption.

APPENDICITIS.

Concretions occurring in the appendix when dried cut quite easily; they appear almost always to be white, and the cut surface has a smooth appearance like soap. This is quite different from the section of a faecal concretion, which is deeply pigmented and has a gritty feeling to the touch. That the concretions from the appendix contain fat is shown by the following analyses:

	Fat Soluble in Ether.	Fatty Acids from Soaps Insoluble in Ether.
Specimen A	14.97 per cent.	15 6 per cent.
,, B	16.2 ,,	1.2 ,,
,, C	7.1 ,,	2.1 ,,

Of the fats soluble in ether all were present as combined fats (except in A, in which there was 5 6 per cent. of free fatty acids). The low iodine values of both the above fractions (from 4 to 18 per cent.) show them all to be fats of the saturated type.

The amount of calcium in each concretion was: A, 3.3 per cent.; B, 3.6 per cent.; C, 3.2 per cent.

A faecal concretion from the intestine examined at the time contained only 0.68 per cent. of calcium.

The extraction of fat from several faecal concretions was undertaken for comparison, but the amount and nature could not accurately be determined owing to the amount of pigment always taken up by the ether interfering with the reactions—another point of difference between an appendix concretion and one formed of inspissated faeces.

Further facts which point to the fact that appendix concretions are not, as they are almost invariably called, faecal concretions are the following:

Appendix concretions are usually of sufficient size to markedly dilate the terminal portion of the appendix, and to do this it would presuppose an abnormal amount of force acting from the caecum to so distend the narrow lumen, a condition of affairs impossible to understand with the lumen of the caecum so large to carry away the faeces acted on by such a force did it conceivably exist. The appendix concretions are invariably concentrically laminated, proving conclusively that they are formed by successive depositions on all sides, the terminal as well as the proximal, and that they are formed *in situ*.

That the appendix has a secretion which, under abnormal conditions, could form these concretions, is to be seen in any appendix in the *post-mortem* room. Sir William Macewen[5] has demonstrated the presence of such a secretion during life. Schmidt[6] states that the intestinal mucous membranes excrete inorganic salts, such as those of iron, calcium, and phosphoric acids, and also fatty substances. Hermann[7] has shown that a loop of intestine separated from the intestinal tract, sewn up in the form of a ring, and restored to the abdomen, soon becomes filled with a mass resembling faeces.

It is probable that the faecal-like masses found in the appendix are formed in a similar manner; this would explain their containing fat and calcium in such large quantities. In a case in the Royal Southern Hospital under the care of Mr. Newbolt, I was able to collect a glairy mucoid-looking material which was being excreted by a loop of intestine shut off from the rest of the alimentary tract and discharging on the surface. This contained 3 8 per cent. of fatty substance which contained saturated fatty acids (iodine value 12.2 per cent.). This shows that the fatty substances excreted by the intestinal mucous membranes are of the saturated type.

The above facts are evidence to show that the concretions in the appendix containing insoluble calcium soaps of saturated fatty acids are formed by the secretion of the appendix itself.

It is generally agreed that these concretions, when they occur, play a define rôle in the pathogenesis of appendicitis. Of a case observed, Nothnagel[8] states:

> The appendix after removal was opened while still warm and while the muscular fibres were still contracting. The mucous membranes were pale and perfectly normal in appearance except at the distal extremity in the immediate vicinity of a hard rounded calculus, the size of a cherry stone, where it was injected, and light red in colour. An observation of this kind conclusively shows, to my mind, that the localized catarrh, which was unquestionably due to the presence of the faecal concretion, would have ultimately led to other and probably grave results.

Though the majority of cases occur without the formation of a concretion, it may be suggested that the same pathological processes which allow of their formation may have a deleterious effect even before a concretion is formed. The appendix normally tends to become obliterated as the result of age. Zuckerkandl[9] shows this to be the result of involution changes.

> The mucous membrane undergoes atrophy, the glandular structures desquamate, and the opposing layers of the inner surface of the organ grow together. At the same time, or occasionally before this time, the submucous coat undergoes thickening, and *fat* accumulates at this part of the wall. The muscular coat does necessarily show any changes, but may also reveal an accumulation of fat.

The lumen of the appendix is so small that the slightest swelling of its wall leads to its obliteration. I have cut open several appendices not containing concretions immediately after their removal by operation and placed them in osmic acid. The walls stained black, but on the surface of the lumen there remained a layer which did not stain, this layer being the secretion adherent to the walls. This

is significant, as the saturated fatty acids—palmitic and stearic acids—do not stain with osmic acid, whereas unsaturated fatty acids such as oleic acid do. I would therefore suggest that these fat compounds secreted or excreted by the tubular glands may under abnormal conditions block the lumen of the gland, and so render them liable to be more easily infected by micro-organisms than they would be if carrying out their normal functions.

The close relationship between appendicitis and colitis has been frequently suggested. Harley and Goodbody,[10] in discussing the etiology of mucous colitis, do not admit that it is generally consequent on appendicitis. A great number of cases undoubtedly follow appendicitis, but this fact does not necessarily imply that the appendicitis is responsible for the condition. The underlying pathological condition which caused the appendicitis is probably the same as that which caused the colitis.

Intestinal lithiasis is, according to Nothnagel, usually associated with mucous colitis, and may be prolonged over many years.

In relation to the above views, Case I, mentioned above, is of interest.

The appendix was removed in November, 1905, on account of repeated attacks of abdominal pain. The patient stated that one month afterwards the same pain recurred, and continued intermittently until December, 1906, when she was admitted to Sir James Barr's wards. Colic was present at this period, with attacks of nausea and vomiting. The vomiting was unrelated to food. The patient was of a neurotic temperament. In the stools were found much mucus and quantities of intestinal sand. The sand was not immediately obvious, and was gathered by the methods mentioned above. It was analysed and shown to be true intestinal sand. After some weeks' treatment the symptoms and stools were much the same as on admission. With the view of relieving the symptoms the patient was placed on a diet containing much unsaturated fat (olive and sardine oils, both of which have very high iodine values). After a week on this diet the amount of sand and mucus in the stools was very much diminished. On the patient resuming a diet containing butter fat and meat fats (saturated), the sand and mucus increased very definitely in quantity. The stools were carefully collected under these conditions, and are being subjected to special examination for separation and determination of the different saturated and unsaturated fatty acids. After three months' treatment with olive oil, the pain is much less, and there is very little sand or mucus in the stools. The fact that unsaturated fats might be of value was suggested by obvious theoretical considerations, the formation of more soluble and more easily split-up soaps. This is borne out in a case related to me by Dr. Thomas Clarke who, many years ago, had a patient suffering from abdominal symptoms, with which was associated intestinal lithiasis. Treatment for a very considerable time failed to relieve the patient until she was placed on a diet containing olive and salad oils, when the symptoms and sand both disappeared in a few weeks.

French authors (Dieulafoy, Matthieu, Talamon, Reclus, and others) attach special importance to a peculiar form of catarrh as being the cause of the formation of intestinal sand, a catarrh which they consider to stand in close relationship to enteritis membranacea or also to gout, and which, according to some, is also the cause of appendicitis. Dieulafoy[11] has called attention to the number of patients suffering from muco-membranous typhlo-colitis who are operated on for an appendicitis which they have not got. He described thirteen cases, all suffering from abdominal pain. It has frequently occurred that patients have been operated on for appendicitis when they have had entero-colitis, and Dieulafoy has observed the painful crises to recur at the same spot and with the same intensity after the operation. Bottentuit[12] has similarly collected 22 cases who have suffered from muco-membranous typhlo-colitis, or intestinal lithiasis, who have been operated on for a non-existent appendicitis.

It is therefore possible that the observations recorded above may afford a solution to the suggestions which have been made as to the relations between appendicitis and mucous colitis on the one hand, and mucous colitis and intestinal lithiasis on the other, and go still further to suggest a possible relation between the three diseases, they having in common some abnormality in the conduction of the processes associated with the digestion and absorption of fat, and the production of calcium salts of saturated fatty acids.

FAT CONCRETIONS IN THE INTESTINE.

That these are not the only conditions in which pathological fat processes are associated with disease is seen from the following cases:

From a patient suffering from acute intestinal obstruction Mr. Paul removed a mass which was causing the obstruction. It was situated in the small intestine in the upper part of the jejunum. Recognizing the unusual character of the mass, Mr. Paul kindly sent it to me to examine. It was about the size of a small Tangerine orange. In the centre was a raisin, around which was a bright yellow pultaceous mass held together by stroma of vegetable material. The exterior was stained by faecal material. It was found to contain 34.1 per cent. of fat (of this 74 per cent. was present as combined fat having the low iodine value of 18 per cent.). The unsaponifiable material was isolated, and proved to be cholesterine. That this was not a concretion such as is sometimes formed by the administration of large quantities of olive oil was proved by the nature of the fat.

In another case of Mr. Paul's, a male, the symptoms suggested the presence of gall stones. Intestinal sand was found in the stools. When operated upon there were found in the bile passages and neighbouring portions of the intestines numerous very small brownish-red granules, but no stones. An analysis of these granules showed that they contained fat in quantity. This specimen is of interest in relation to the work of Duckworth and Garrod, who, from the nature of the pigments in their specimen of intestinal sand, suggested that it had been formed in the region of the duodenum.

The fact that the fatty acids present in all the above conditions are saturated—such as palmitic and stearic—is of high interest, for it is well known that these fats, when given alone, are only absorbed in very small quantities, from 86 to 91 per cent. remaining as residue in the faeces, whereas, when given mixed with unsaturated fatty acids, such as oleic, they are absorbed to a higher degree. Olive oil, when given alone, is almost all absorbed, only 2 per cent. remaining in the faeces.

Equally interesting, from the point of view of the value of the various fats in human food, is the fact that human milk contains a very high proportion of unsaturated fatty acids compared with the milk of the cow. The fact that unsaturated fatty acids aid the absorption of the saturated suggests that in the above conditions, where insoluble compounds of saturated fatty acids occur, the administration of olive oil might be of value in aiding the absorption of these deleterious products.

Observations which are being made tend to show that the nature of the fats in the diet have some effect in producing the conditions mentioned in this paper.

My thanks are due to Professor Vaughan Harley, in whose laboratory the work was commenced, and to Mr. Thelwall Thomas for many valuable specimens. To the surgeons and physicians of the Royal Infirmary, Liverpool, I am indebted for the use of their cases, for specimens, and for the time to conduct these researches. The work was conducted in the Bio-chemical Laboratory of the University, under the direction of Professor Benjamin Moore. My thanks are due to him for his valuable advice, and to my colleagues in the laboratory for much kind assistance.

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ON THE ETIOLOGY AND PATHOLOGICAL HISTOLOGY OF BERI-BERI.*

BY

R. TANNER HEWLETT, M.D., F.R.C.P., and W. E. DE KORTÉ, M.B.

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A NUMBER of hypotheses have been advanced respecting the etiology of beri-beri. It has been ascribed to a microbial infection by a staphylococcus (Pekelharing and Winkler), by a bacillus (Rost), by a micrococcus found in the urine (Okata and Kokubo), to arsenical poisoning, to nitrogen starvation, to an intoxication from emanations

* Abstract of a paper read at the British Medical Association Meeting at Toronto, 1906. The publication of this paper has been delayed owing to the loss of the manuscript in transmission.

from the soil (Manson), or from bad rice, etc. Hamilton Wright believes it to be an intoxication due to products formed by a large bacillus living in the duodenum; Daniels suggests that it is due to a protozoan, the parasite being conveyed probably by lice.

We have recently obtained several monkeys suffering from a disease which in some respects bears a considerable resemblance to beri-beri. The animals were evidently very ill, in most of them there was considerable oedema of the face and genitals, much like renal dropsy, but the urine never contained any albumen, and the knee-jerks were either increased, or diminished, or absent. They all died, and the only constant lesion found was congestion of the kidneys, which showed cloudy swelling of the renal epithelium, and in scattered areas haemorrhages into the convoluted tubes with denudation of their lining epithelium, and congestion of the glomerular vessels. Hyaline casts were constantly found in the urine, which in some of the animals contained highly refractile cells of an unknown nature (? protozoa). Attempts to infect healthy monkeys from the sick were not very successful, the condition of marked oedema was never obtained, but in two animals the eyelids became puffy, they became weak and ill, and the knee-jerks were exaggerated. These results suggested that possibly in beri-beri an infective organism exists, protozoan in nature, and eliminated in the urine, by which the infection may be conveyed.

We therefore fed monkeys with the urine of cases of beri-beri occurring at the Seamen's Hospital, Royal Albert Dock. These experiments unfortunately were vitiated by the presence of tuberculosis in some of the animals, but in two which were free from tubercle a condition of illness, emaciation, puffiness, cyanosis, weakness of hind legs, and alteration of the knee-jerks seemed to result from the feeding with urine.

We also examined the urine of cases of beri-beri at the Seamen's Hospital. The urine in the acute stage is generally concentrated and high-coloured, and deposits urates. Centrifugalized, the deposit constantly shows hyaline and granular casts more or less abundantly. Small refractile spherical bodies are also present, measuring 2 to 3 μ in diameter, apparently having a thick capsule, enclosing hyaline contents. These do not give the reactions for fat with osmic acid and Sudan III, but may be products of degeneration (? "myelin bodies"). Other cells also occur; these measure 20 μ in diameter, are globular, and contain a cytoplasm studded with very refractile granules and having a single nucleus. A third form of cell may be met with, 30 μ in diameter, enclosed within a thick capsule, and containing a finely granular oval nucleus with rounded nucleolus. Both the last two varieties of cells stain faintly with neutral red, methylene blue, and methyl green in physiological salt solution in wet specimens, but if smears be made and dried they seem to disintegrate and cannot be found. These cells either are peculiar degenerate cells or possibly are protozoa.

We have also examined a number of kidneys obtained from cases of acute beri-beri, kindly forwarded to us by Dr. McDougall of Singapore, to whom we would tender our best thanks. Sections of these kidneys show changes similar to those met with in the monkeys' kidneys, but in a more intense form—namely, congestion of the glomerular vessels and haemorrhages into the glomeruli, scattered patches of haemorrhages into the tubuli recti and convoluted tubules, with denudation of epithelium in these areas, and much widespread cloudy swelling of the renal epithelium. We believe that these changes have not been described before.

In conclusion, as a working hypothesis, we would suggest that beri-beri is a protozoan infection, that the infecting agent is eliminated in the urine, and that the urine is the source of infection.

ARTHRITIS AND ERYTHEMA NODOSUM.

BY J. ODERY SYMES, M.D., D.P.H. (LOND.),
PHYSICIAN TO THE BRISTOL GENERAL HOSPITAL.

THE generally-accepted view with regard to the arthritis which sometimes accompanies erythema nodosum is that it is a true acute articular rheumatism. This view is founded on the fact that endocarditis develops or is found to be present in a large proportion of the cases. Mackenzie collected records of 108 cases of erythema nodosum (90 females and 18 males), and 15.7 per cent. showed definite arthritis, and a further 15.7 per cent. complained of rheumatic pains; 21.3 per cent. of the total had or developed signs of endocarditis. Goodhart and Still found that of 29 cases of erythema nodosum, 19 were rheumatic, 5 were not rheumatic, and in 5 the history was not inquired into.

My own experience of six years in the medical outpatient department has been that the signs or a history of chorea, endocarditis, or arthritis are not found in more than 10 per cent. of all cases of erythema nodosum.

Other points in favour of erythema nodosum being a rheumatic manifestation are: The age-incidence of the two diseases (rheumatic fever and erythema nodosum) are practically identical, the majority of cases (63.2 per cent. of 125 cases of erythema nodosum, 55.8 per cent. of 193 cases of rheumatic fever) occurring in the second and third decades of life; the incidence of disease is, too, in both cases heaviest upon girls between the ages of 10 and 15 years. There is some evidence to show that both diseases occasionally occur in epidemic form, and may be infectious, and they have in common such symptoms as various forms of erythema, arthritis, tonsillitis, and endocarditis.

Erythema nodosum differs, however, from rheumatic fever in that it much more commonly attacks females than males (of 125 cases of erythema nodosum, 36 were males and 89 females). It is most prevalent in the last and the first two quarters of the year, whilst acute rheumatism in Bristol is most prevalent in the third quarter. A long prodromal period of malaise, comparative freedom from the risk of recurrence, slight constitutional disturbance during the pyrexial period, and the presence of phlyctenulae in the eyes, are characteristics of erythema nodosum. To these differences I wish to add another—namely, that the arthritis of erythema nodosum may differ entirely from that met with in rheumatic fever, and that this arthritis and the accompanying pyrexia and rash are little influenced by the administration of salicylates. In illustration of this last point I would quote the following three cases:

CASE I.

Mrs. W., aged 63, had suffered from erythema nodosum when 5 years old. With the exception of an attack of influenza when 50 years of age, which was followed by neuritis, and which had left her with an irregular action of the heart, her health had been good. On August 10th, 1906, she left for a holiday at the seaside, and for the first fortnight of her stay suffered from lassitude and pains about the limbs and trunk.

About August 24th there was fever, with dry, coated tongue, the joint pains became worse, and by August 28th the articulations were distinctly red and swollen, and a rash was noted on the arms and legs. She returned home, and was seen by me on September 2nd. The temperature when the patient was first seen was 101°, and, in spite of large doses of salicylate of soda and aspirin, pushed until tinnitus and delirium were produced, it remained between 100° and 102° for ten days. The joints affected were those of the wrists, ankles, fingers, and knees, and there was slight stiffness in the temporo-maxillary joints. Contrary to the condition generally seen in rheumatic fever there was much redness and puffiness of the joints, the overlying skin pitting as it does in gout. Although there was a sensation of stiffness the joints were not painful, even on movement. They did not resume their natural appearance for ten days. The rash of erythema nodosum was present on the arms and legs, and fresh crops of nodules appeared from time to time, lasting in all for five weeks. During the first week there was profuse sweating, and a sudaminal rash appeared on the trunk. There was oedema of the legs. There was no cardiac bruit or dilatation of the ventricles. The pulse-rate at no time reached a hundred beats per minute. Beyond some stiffness in the joints and slight pyrexia when aspirin was withdrawn, recovery was uninterrupted. In the early weeks of the illness there had been a pricking sensation in the conjunctivae, nose, and throat. This attack differed from acute rheumatic fever in that it did not yield readily to salicylates, also in the nature of the arthritis, which was painless, and accompanied by much reddening and oedema of the skin. There was never grave constitutional disturbance, but early in the illness there was slight bronchitis.

CASE II.

G. S., a married man, aged 36, attended the Bristol General Hospital on April 3rd, 1905, complaining of pains in both knees and in the left elbow. The pains were of five or six weeks' duration and were worse when in bed. The joints were swollen, painful and stiff, and suggestive of gonorrhoeal rheumatism, or of rheumatoid arthritis. Seven years previously he had a slight attack of rheumatism, but not of such a nature as to keep him home from work. Twelve months previously he had gonorrhoea, the discharge appeared again

recently, and recurred again whilst he was attending the hospital for his arthritis. Three weeks ago he had otitis media. There was no cardiac bruit. Over both arms extending as high as the shoulders there was the rash of erythema nodosum and this persisted for four weeks. There was no rash on the legs or thighs. The treatment adopted was administration of aspirin and hot air baths for the affected joints. Later, full length electrical baths, massage, blisters, salol, iodides, tonics were tried, but the arthritis was not relieved sufficiently to enable the patient to resume work until the expiration of four months. At the end of eight months he had made a complete recovery, but the urine still showed a few pus cells and prostatic threads. After the patient had been attending for six months Mr. Walker reported that he was suffering from retinitis. Except for the presence of erythema nodosum and of retinitis I should have had no hesitation in classifying this as a case of gonorrhoeal rheumatism.

CASE III.

C. T., a married woman, aged 50, attended as an out-patient and was admitted to the hospital on December 9th, 1905. About a fortnight before admission she had suffered from chilliness, sore throat, pains in the limbs, and a rash on the arms and legs. Owing to the pains she had kept in bed. On admission the temperature was 100.4° F. There was no history of previous rheumatic affection. The rash of erythema nodosum was thickly covering the extensor surfaces of the thighs and legs, and the ulnar and extensor surfaces of the arms, extending for a short distance above the elbows. There were pains and stiffness in both elbows, ankles, and knees, and in the carpo-metacarpal joints. There were no objective signs of arthritis, and the pains were better when the patient was in bed. The axillae were much pigmented and the trunk freckled. At the heart's apex there was a soft blowing systolic bruit conducted outwards. The legs were oedematous, and there was slight albuminuria. A few rhonchi were heard over the lungs. Examination of the blood showed: Haemoglobin, 80 per cent.; red cells, 4,250,000; white cells, 20,000. A differential count showed:

Finely granular oxyphile leucocytes...	74 per cent.
Coarsely " " " ...	1 "
Large hyaline	7 "
Lymphocytes	18 "

—a result similar to what one would expect to find in acute rheumatism. The highest temperature recorded was 102.4° F., but under large doses of salicylate of soda it fell to normal in three days. During a brief attack of delirium tremens the drug was discontinued for a few days, and the temperature rose again. A fortnight after admission the rash had disappeared and the temperature was normal. There was still a cardiac bruit, and pain and stiffness in the joints persisted. Her convalescence was very slow, but when discharged to the convalescent home on January 25th, 1906, there was no cardiac bruit and very little stiffness in the limbs. This attack differed from typical rheumatic fever in the absence of sweating and of objective joint symptoms, and in the persistent nature of the pains and stiffness in the joints.

These 3 cases illustrate the fact that not only is it difficult in a large proportion of cases of erythema nodosum to recognize any rheumatic taint, but that even when arthritis is present it may differ very markedly from that found in acute rheumatic fever.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

A NOTE ON INTERSTITIAL PANCREATITIS IN ITS RELATION TO SPRUE.

THE discovery of the association of pancreatic catarrh or of the more advanced condition, interstitial pancreatitis, in cases on which I have been consulted with regard to treatment, after they had been diagnosed as sprue by well-known physicians devoting special attention to tropical diseases, is, I think, worth noting.

I have operated on several of these cases beneficially by draining the bile ducts either by cholecystotomy, or, what is better, cholecystenterostomy, in which the drainage is of a more permanent character.

This preliminary note I hope to supplement later, after my observations are more complete, by a more extended reference to cases. The subject is also noted briefly in a work on the pancreas, now in the press, by Dr. Cammidge and myself.

I have seen a considerable number of cases of chronic pancreatitis in Europeans who have returned invalided from India, Ceylon, and other tropical countries, and from information I have received from medical men practising in those countries I suspect diseases of the pancreas are frequently unrecognized.

It may be, and I think it is highly probable, that some of the cases diagnosed as sprue owe their origin to inflammatory disturbance of the pancreas, and in other cases the pancreatic disease forms an important complication requiring treatment.

A. W. MAYO ROBSON, D.Sc., F.R.C.S.

A CASE OF GONOCOCCAL PYAEMIA.

THE object in reporting this case is to put on record a cell count from a pleural effusion which I believe to be unusual.

The patient, a woman of 35, had suffered from joint pains and stiffness since Christmas; at Easter the pain, swelling, and tenderness of the joints had become much worse, and was associated with profuse sweating.

On April 7th the wrists and ankles were affected, contained fluid, and were very painful and tender. The skin was covered with miliaria, and showed also the remains of an eruption stated to have been chicken-pox. The pulse was 80, and the heart sounds were normal, but there was a pleural friction sound in the left axilla. The temperature was 102° F. There was some not very marked anaemia. No leucorrhoea.

April 30th. Signs of fluid at the right base. A rather densely-opalescent fluid was drawn off from the right base. Pus was drawn off from a tendon sheath on the right wrist. A film of the pus showed large numbers of typical gonococci. Films from the centrifugalized deposit of the pleural fluid did not show any gonococci but the following count:

Eosinophile leucocytes (some of these appear to be uninuclear)	147
Mast cells	123
Endothelial cells	112
Lymphocytes	112
Polynuclear leucocytes	25

The fluid was aspirated and did not reaccumulate.

May 23rd. She had a singing aortic diastolic murmur and was getting very anaemic.

Blood Count.

Red corpuscles...	3,376,000
White cells	12,600
Haemoglobin	55 per cent.
Differential count of 400 cells:	
Polynuclear leucocytes...	248
Lymphocytes	138
Mast cells	10
Eosinophile leucocytes...	4

June 4th. Systolic and diastolic murmurs in the aortic area: systolic mitral murmur. Complained of pain in the splenic area.

June 26th. Patient died. During the whole of this period the evening temperature varied from 102° F. to 104° F., the morning temperature from 99° F. to 100° F., and the anaemia and emaciation were progressive.

The autopsy showed ulcerative endocarditis of the aortic and mitral cusps. There were no adhesions at the right base. There was a large splenic infarct.

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HYPERTROPHIC CIRRHOSIS OF THE LIVER IN AN INFANT.

SOME weeks ago I was asked to see an infant who had been "unable to swallow any food for two days." The child, aged three months, was emaciated and nearly comatose, and obviously had but a few more hours to live. The abdomen was distended by a greatly enlarged liver, which could be mapped out with ease; its sharp anterior edge extended from the anterior superior iliac spine on the right to the eighth or ninth rib on the left, crossing the middle line at the level of the umbilicus. A few hours later the child died, and I obtained permission to open the body. The liver was found to occupy about two-thirds of the abdominal cavity, the stomach and intestines being compressed and empty. The spleen I judged to be twice the normal size. The enlargement of the liver was perfectly uniform, so that the normal shape was quite unaltered. There were no adhesions, and no sign of peritonitis or other inflammatory trouble. In colour the liver was paler than normal, and when cut more resistant to the knife. I had no means, unfortunately, of ascertaining its weight. The lungs and heart were healthy, but the thoracic cavity was diminished in size by the upward push of the enlarged liver on the diaphragm. I excised a small piece of the liver, and sent it to Professor Hewlett, of King's College, who very kindly had sections prepared in his laboratory. Some of these he sent to me in due course, and stated

in his report: "There is a well-marked condition of cirrhosis present—I should say undoubtedly congenital syphilis."

Under the microscope the sections showed everywhere a widely-diffused growth of fibrous tissue, replacing the liver cells and separating those that remained into small nests or groups—about 6 to 10 cells in each group. All traces of lobular structure had disappeared. I could not obtain from the mother any history of miscarriages or other syphilitic symptoms, but she informed me that the child she had borne previously to the present one "began to waste a few weeks after birth, and died suddenly when 4 months old." In the case just described the cirrhotic changes in the liver probably commenced during intrauterine life, but the size to which the organ had attained in rather less than three months from birth seems sufficiently remarkable to make the case worth recording.

Weybridge. H. S. WILLSON, M.D., D.P.H.

POISONING BY BROMOFORM.

ON a recent occasion I was called urgently, at 2.15 p.m., to a child 1 year and 9 months old. She had been suffering from whooping-cough for some weeks, and was being treated with bromoform.

History.—About 1.50 the mother had given the last dose of medicine in the bottle. A few minutes afterwards the child reeled and staggered, ran towards its mother, and became unconscious. The father, a medical man, just coming in, administered some salt and water, which made the child vomit, and he followed this with some strong coffee.

State on Examination.—The child was lying on her mother's lap, unconscious, the skin cold, pale, and dusky; breathing shallow and irregular, pulse feeble, pupils moderately dilated and reacting very sluggishly to light, conjunctiva almost insensitive. There had been an involuntary evacuation of faeces, but no bromoform odour was noticed in this or the vomit.

Treatment.—Hot fomentations were applied to the heart. About $\frac{1}{150}$ grain of the sulphate of strychnine was given hypodermically, and by means of slapping and shouting the child was kept in a semicomatose state. Every two or three minutes the semicoma would deepen, and at such times the stopper from a bottle of the liquor ammon. fort., held to the child's nose, seemed to act as a strong restorative.

Result.—After an hour's perseverance consciousness returned, the child began to cry, and gradually came round.

REMARKS.—The mixture had been made with tincture of senega, as recommended in Martindale and Westcott's *Extra Pharmacopoeia*, and the dose of bromoform had been gradually increased to 1 minim. Of some of the cases reported of poisoning by bromoform, the bad effects seem to have been produced by the last dose of medicine in the bottle. In the BRITISH MEDICAL JOURNAL of May 18th, 1901, Dr. Burton Fanning draws attention to this matter, and suggests several methods of avoiding the difficulty. Many practitioners, I believe, refrain from using this powerful drug on account of the dangerous symptoms it sometimes produces. Pharmacists here have an opportunity of giving us a method of dispensing bromoform in a mixture suitable for children—palatable and reliable.

Wigan. M. BENSON, M.D.Brux., M.R.C.S.Eng., M.R.C.P.Lond.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL NAVAL HOSPITAL, PLYMOUTH.*

THREE CASES TREATED BY BACTERIAL VACCINES.

(Reported by M. L. B. RODD, Staff Surgeon, R.N.)

CASE I.

THE patient, a man 43 years of age, was admitted November 1st, 1906, complaining of pain and frequency of micturition and persistent vomiting, with the following history. For the last two years he had suffered from gastric catarrh, and comparatively recently had been in both Malta and Gibraltar hospitals. Nearly every morning he was sick, and vomited ropy mucus; this was accompanied by intense headache. As the day progressed the symptoms and headache subsided, and towards evening the stomach was tolerant of food, and the patient comfortable.

State on Examination.—The stomach was dilated, but neither liver nor spleen was enlarged. The patient was anaemic and run down, and constipation in a minor degree existed. The urine was acid, specific gravity 1021, smelling very offensively, and thick and cloudy. There was a precipitate of mucus, and a trace of albumen. Microscopically numerous pus cells, leucocytes, and bacteria could be seen.

Treatment.—The urine was drawn off by a sterile catheter into a sterile flask with all antiseptic precautions. Of this urine 5 c.cm. were placed in peptone broth and plated out. From the colonies "stroke cultures" on agar were grown. The *Bacillus coli* was isolated, and a pure growth obtained on four agar slope cultures. A vaccine was made from the growth with normal saline solution, heated at 60° C., and then standardized, so that the dose equalled 100 million *Bacillus coli*. The first injection was given on December 1st. There was no local reaction, and no appreciable difference for three days. Five days after the injection the bad odour was absent, and never returned. On December 10th, nine days after the first injection, the urine gave specific gravity 1019, was acid, clean, and amber coloured. There was no odour, and no albumen. A few pus cells and bacteria could be seen. The same day a second dose was given double the first, as the latter caused no reaction. There was again no local reaction, but the urine returned to its old condition, except that there was still no bad odour.

The third injection, the dose being as in the first instance (100 million), was delayed until December 27th. After this injections were given regularly at ten days' interval; the condition of the urine steadily improved until it became normal except that the specific gravity was low (1011). He is now performing his ordinary duties, his bladder trouble having quite subsided. Eleven injections were given.

CASE II.

This patient, aged 24 years, was admitted on February 20th, 1907, complaining of pains in the head and eyeballs. There was apparent fullness of the neck on either side of the middle line, proptosis, but no increased tension of the eyes. The chest and abdominal examination showed nothing abnormal. The urine, specific gravity 1014, was acid, pungent in odour, and contained a trace of albumen. Under the microscope pus cells were found to be numerous, the specimen full of bacteria.

He was treated at first by rest in bed, limited diet, and urotropin grains x t.d.s. His condition, however, did not improve. On March 21st the *Bacillus coli* was isolated from the urine and a vaccine made, each dose containing 100 million. The first injection was given on March 27th. The odour disappeared and the microscopical characters greatly diminished. He was given four injections, and the condition steadily improved.

CASE III.

This man, aged 29 years, was admitted September 20th, 1906, for disease of glands, and giving the following history: In 1901 he had been sent to Malta Hospital for enlarged axillary glands. These were removed, but suppuration and sinuses followed. Fresh abscesses kept appearing about the axilla and root of neck. On opening these abscesses sinuses formed and persisted, and had been discharging ever since. Meantime he had had Malta fever. On admission seven sinues were found, most of them communicating. No dead bone could be felt. The liver and spleen were enlarged. He said he was liable to attacks of diarrhoea and there was evidence of lardaceous disease.

Treatment.—Cultures were taken on "agar slopes" and a staphylococcus isolated. From this a vaccine was prepared and standardized, so that each dose equalled 500 million bacilli. The first injection was given on December 19th; a marked reaction followed, and the discharge from the sinuses greatly diminished. The albumen in urine markedly diminished. The injections were given every ten days, and soon the case required to be dressed only every third day instead of twice daily as hitherto on account of the discharge. On January 16th, 1907, the second sinuses had quite healed: the patient had gained weight and was in every way much improved. On February 15th the remaining sinuses were opened up and scraped. He was given fourteen injections, and was steadily gaining ground.

REMARKS.—In all 3 cases the patients were kept absolutely at rest in bed for forty-eight hours after each injection. Case I completely recovered; and Cases II and III were steadily improving when I had to give up the care of these patients, but the results were so encouraging that they seem worth recording.

* Forwarded by the Director-General, Medical Department, R.N.

AT a meeting held at the Chelsea Infirmary on July 22nd it was agreed unanimously to form an association of Poor-law infirmary matrons. A constitution was drawn up, and it was decided to hold quarterly meetings for the discussion of questions of interest.

REVIEWS.

DIGESTION AND INDIGESTION.

THE three volumes on the treatment of digestive disorders, the treatment of diseases of the stomach and intestine,[1] by Dr. WALTER ZWEIG, on the essentials of the medical treatment of diseases of the stomach and intestine,[2] by Dr. P. RODARI, and on diseases of the stomach and their treatment,[3] by Dr. LOUIS BOURGET, afford evidence, especially when taken together with several similar books of which we have published notices during the last twelve months, that a large amount of attention is being given to the treatment of these diseases on the Continent, where it is no longer supposed that stomach derangements can be adequately treated by a few doses of calomel or blue pill followed by a course of rhubarb and soda, and that careful diagnosis, diligent searching after causation, and minute attention to regimen are more essential to the cure than the administration of drugs. If we could learn from our neighbours their serious spirit of clinical inquiry, and give up the superficial routine which characterizes our appreciation and treatment of stomach disorders, if we no longer told our patients that their "livers" were out of order, and abandoned our belief in pills, there would be room for hoping that some general progress was being made in the better understanding and more rational management of this very common class of disease. There is nothing very special to distinguish the works now before us from one another or from others on the same subject. That of Dr. Zweig is the largest, but they all practically deal with the same subjects in much the same way. They contain nothing that cannot be found in one or more of the recent English handbooks for the treatment of diseases of the digestive system, the width of the gap being not between the teaching here and abroad, but between the general practice of the medical profession in England and the teaching and practice of stomach specialists here and in Germany. The greater diffusion of better practical methods in Germany is probably due to the large number of watering places where special attention is given to the treatment of stomach diseases, to which we have no parallel in this country, although the waters of Cheltenham are as good as those of Kissingen for the purpose.

The little book on diet in health and disease,[4] written by Dr. F. CAYLA, one of the professors in the University of Bordeaux, is obviously better suited for France than for England. It is, however, founded upon general principles which obtain acceptance in all civilized countries, the details alone differing according to local preferences or prejudices. But there are some minor points upon which it departs from English practice; for example, we do not think it would be usual here to order a patient suffering from gastritis to take for an early breakfast, "between seven and eight in the morning," ham, bread, or toast, and butter and tea; nor should we regard a diabetic diet as really "strict" which includes toast, potatoes, apples, and milk, and contains at least 2,000 grains of carbohydrates. Under "Asthma," a disease which is often influenced greatly by diet, there are no especial directions, the reader being merely referred to what has been said under bronchitis. Typhoid fever patients are kept upon liquid diet for ten days after the fall of temperature, a rule which contrasts with the common practice in this country by its excessive stringency. We have often desired to know the real difference between "soupe" and "potage," and we are grateful to Dr. Cayla for defining it, although he admits that Littré regarded the words as synonymous: "Soupe" is bouillon in which slices of bread have been boiled, while "potage" is bouillon in which vegetables have been boiled.

In judging of the value of the *Nouveau Traité de Médecine et de Thérapeutique*, published under the nominal direction of the late Professor Brouardel and Professor A. Gilbert, it is right to bear in mind that it is an exceedingly cheap publication, at least in comparison with the encyclopaedias and systems of medicine which have been published in English or in German. The volume before us, No. xii, entitled *Maladies de la Nutrition—Goutte, Obésité, Diabète*,[5] written by Drs. H. RICHARDIÈRE and J. A. SICARD, consists of 360 pages, royal 8vo, but costs only 7 francs, or 5s. 10d. in English money. It is therefore not surprising if it is not quite equal to English books of the same sort, and one cannot help wondering how it is possible to produce so well written and so well printed a work at such an extremely low price. It is illustrated by fifteen figures among which we may single out for praise the excellent drawings of gouty hands, and the radiographic plates of gouty deposits in the olecranon and phalanges. The first two sections of the book are devoted to gout and obesity, but altogether do not occupy more than a third of the space; the greater part being devoted to diabetes. The information contained is well arranged under paragraphs headed in distinct type; but the authors, while considering it their duty to include much that is purely theoretical, have shown some want of courage in affording guidance to their readers in the choice of opinions, so that the student left to himself must wonder what he should believe. The impartiality of their attitude is only modified by a patriotic tendency to give the last word to French writers, and to convey too favourable an impression of the scientific value of certain doctrines, such as, for example, Professor Lépine's theory of diabetes as dependent upon diminished glycolysis in the blood. Under "Gout," Schmoll's theory of thyminic acid in its relation to uric acid is given without comment, although it is eminently a question upon which further information, and especially the results of clinical observations, are required. The relation of gout to lead poisoning is put too absolutely, and no reference at all is made to the criticisms of that doctrine which have been published from time to time. A. Gautier's views on bread as a source of uric acid are quoted at length but also without comment; the doctrine is so much at variance with the views generally accepted and the practice followed in this country that it deserves attention. We are somewhat surprised to see abuse of exercise figuring prominently as a cause of gout, for while without doubt an acute attack of gout may follow the excessive use of a joint, it is a commonplace observation in this country that gouty men keep well only so long as they can take regular exercise, and when from any cause they are deprived of this gouty manifestations appear. In the cure of obesity some stress is laid upon abstinence from salt. In the treatment of diabetes it is remarkable to see that none of the modern bread substitutes made with a milk basis seem to be known to our authors, who speak only of gluten bread. It is also remarkable that nothing is said about the relation of alcohol to glycosuria. The usefulness of the book is diminished by the absence of an index.

TUBERCULOSIS.

THE essay on the *Influence of Cod-liver Oil and Cod liver Oil Emulsion upon the Nutrition of Normal and Tuberculous Pigs*,[6] by Dr. J. W. WELLS, is founded on a series of carefully conducted experiments. It tends to prove that cod-liver oil may be regarded as something more than a useful addition to the dietary of the consumptive. The results obtained by Dr. Wells show that cod-liver oil has some distinct curative influence on tuberculosis. The present series of experiments points to the same conclusions as the previous investigations made by Dr. Wells in 1903, when cod-liver oil was shown to be not only an easily

[1] *Die Therapie der Magen- und Darmkrankheiten.* Von Dr. Walter Zweig. Berlin: Urban und Schwarzenberg. 1907. (Royal 8vo, pp. 402. Mit 28 Abbildungen. M. 10.)

[2] *Grundriss der medikamentösen Therapie der Magen- und Darmkrankheiten einschliesslich Grundzüge der Diagnostik.* Zweite durch Einfugung der speziellen Diätetik der Magen- und Darmkrankheiten vermehrte Ausgabe. Von Dr Med. P. Rodari. Glasgow: F. Bauermeister; und Wiesbaden: J. F. Bergmann. 1906. (Royal 8vo, pp. 278. 4s. 10d.)

[3] *Die Krankheiten des Magens und Ihre Behandlung.* Klinische Vorträge für Studierende und Aerzte. Von Dr Louis Bourget. Glasgow: F. Bauermeister; und Wiesbaden: J. F. Bergmann. 1906. (Royal 8vo, pp. 196. Mit 2 Tafeln. 4s. 9d.)

[4] *Régimes Pathologiques et Régime Parfait.* Par Dr. F. Cayla. Paris: Vigot Frères; et Bordeaux: G. Gounouilhou. 1907. (Post 8vo, pp. 192, Fr. 2.)

[5] *Nouveau Traité de Médecine et de Thérapeutique.* Publié en Fascicules sous la Direction de MM. P. Brouardel et A. Gilbert. XII. *Maladies de la Nutrition—Goutte, Obésité, Diabète.* Par H. Richardière et J. A. Sicard. Paris: J. B. Baillière et Fils. 1907. (Royal 8vo, pp. 378, avec 15 figures dans le texte. Fr. 8.50.)

[6] *A Comparative Study of the Influence of Cod-liver Oil and Cod-liver Oil Emulsion upon the Nutrition of Normal and Tuberculous Pigs.* By J. W. Wells, M.D., D.P.H., F.C.S. Manchester: University Press. 1907. (Crown 8vo, pp. 83. 2s. 6d.)

assimilated fatty food but a drug possessing the therapeutical property of increasing the assimilation of other fats in the food and diminishing body waste (vide BRITISH MEDICAL JOURNAL, October 18th, 1902). In this series of observations young pigs were taken of the same breed and of the same age; they were kept in sties of the same type and size and under identical external conditions. They were fed regularly, the food being given in quantities bearing the same proportion to the body weight in all cases. After an initial period of observation cod-liver oil and emulsion respectively were administered in doses proportionate to the body weight. After ascertaining that the pigs were able to take the dose of oil given to them, they were all rendered tuberculous, either by ingestion of bovine tuberculous organs or by inoculation of cultures of bovine and human tubercle bacilli. Some of the pigs were killed at the end of four months to ascertain the state of comparatively early lesions; others were kept for seven or eight months for the study of later changes. A careful examination was made of each pig immediately after its death. In some cases where bacilli could not be demonstrated, inoculation of guinea-pigs was resorted to for proof of the tuberculous nature of the pathological conditions noted. The experiments showed that the nutrition of tuberculous pigs was improved by the addition of cod-liver oil to their food, and that this improvement was most marked when an emulsion was given instead of plain oil. Changes indicative of progress towards recovery were also observed in the tuberculous glands of animals taking the emulsion. These changes included the following: considerable production of fibrous tissue in connexion with the stroma and capsule of the glands, well-marked evidence of calcification, and reduction in the number of tubercle bacilli. The exact results obtained as regards weight, together with details of the amount and nature of the food given and the dosage of oil or emulsion, are detailed in tables. It appears from these experiments that the use of cod-liver oil, and still better of an emulsion of the oil with hypophosphites, forms a very important addition to different measures employed in the treatment of tuberculosis.

The third edition of Dr. ARTHUR LATHAM'S *The Diagnosis and Modern Treatment of Pulmonary Consumption*[7] differs from the second edition chiefly in respect that new sections have been inserted on the value of the opsonic index in diagnosis and treatment, on the use of Koch's new tuberculin in treatment, and the value of manual labour. We venture to think that Dr. Latham might have avoided a certain amount of repetition in treating this subject, and in particular that it was not necessary to give Dr. Paterson's interesting observations and directions with regard to his experience of manual labour at Frimley Sanatorium twice over within a few pages. In spite of this slight defect the book remains one of the most useful on the subject with which it deals. We would particularly recommend it to any practitioners who have occasion to treat patients either by the open-air method at home, or who are charged with the direction or conduct of open-air sanatoriums.

Professor SAHLI of Berne has issued as a pamphlet[8] a revised and enlarged edition of a paper he contributed to the *Correspondenz-Blatt für Schweizer Aerzte* in 1906. He has had a considerable experience in the use of tuberculin, extending over more than ten years, and he considers that it has not always been carried out on correct principles, and occasionally harm rather than good to the patient has followed. Professor Sahli devotes a great part of his article to the very important subject of the technique and dosage of tuberculin injections. He discusses the different tuberculins of Koch, Denny, and Beraneck. The latter, which is a new tuberculin from the laboratory of Professor Beraneck in Neuchatel, has been employed by Professor Sahli in some 150 cases. The various tuberculins, though differing in certain details of preparation and composition, are similar in their essential properties, and equally good results may be obtained from all if properly employed. In the matter of dosage, there is a difference in the scale of dilutions for the different tuberculins. The most usual scale is that in which the different dilutions vary by tenths, each being ten times as strong as the dilution next below. This appears to the author to be unsatisfactory, for reasons which he details, and on his suggestion the Beraneck tuberculin has been issued in dilutions such that each is only twice as strong as the one next in the scale. With the improved means of exactly graduating the dosage of tuberculin Professor Sahli considers that it may safely be used as an aid to diagnosis; and, further, he expresses the belief that the prophylactic employment of tuberculin—vaccination against tuberculosis—has before it a great future, and will eventually play a similar important part to that of vaccine in regard to small-pox.

A small volume on tuberculosis,[9] by Drs. VALTORTA and FANOLI, issued as one of the well-known Hoepli manuals, is addressed rather to the intelligent layman or young practitioner than to the student, for its aim is to give a popular, but up-to-date and scientific, account of the present state of medical knowledge with regard to phthisis. On the whole the authors may be said to have accomplished their object in a satisfactory manner. Considerable stress is rightly laid on the importance of early diagnosis and treatment, and a common-sense perspective view taken of the individual value of the daily increasing so-called early signs of phthisis. It is the combination of several indications rather than the existence of any single one (excluding, of course, the detection of tubercle bacilli, which, however, is seldom a very early sign), that is important. After a brief account of the history and statistics, the authors describe the main facts in connexion with Koch's bacillus. Then follow chapters on the sources of infection, predisposition, histology, pathology, symptomatology, diagnosis, and prognosis. A brief but interesting chapter is devoted to the psychology of phthisis. Treatment is discussed in some detail, both in its individual and social aspects, and due notice is taken of the many attempts at prophylaxis and cure by means of various serums, vaccines, etc., attempts which, as yet, cannot be accepted as entirely satisfactory. The illustrations are not much aid to the text, and, except as suggestions to the uninitiated, might have been omitted. There is a meagre bibliography at the end but no index (though the summary of the chapters at the beginning of the book may serve the same purpose to a certain extent).

The main purpose of Dr. CRICHTON'S[10] book on *Pulmonary Tuberculosis* is to enunciate and defend the contention that the underlying state in pulmonary tuberculosis is

> a condition of paresis of the sympathetic nerves as shown by loss of vascular tone, and that the same state is also found in the pretubercular period, and, although to a much less extent, in the tubercular diathesis.

The idea is further explained, towards the end of the book, in the following words:

> It appears that before an individual can be infected with tuberculosis of the lungs, his blood pressure must be persistently reduced. Should it be again raised from some cause there will be a tendency to recovery. When it remains reduced for a long time there is a suspicion of tuberculosis.

The application of the writer in looking up the recent literature concerning pulmonary tuberculosis, and extracting from the various articles any passages which fit in with his theory, must command our respect. The result is a good example of special pleading which, as in all such efforts, loses some of its force from insufficient recognition and discussion of such facts as might tell for the other side. That low blood pressure is common in pulmonary tuberculosis may be conceded without agreeing that this is the cause, or even a necessary antecedent, of tuberculosis; but we seem to want arguments tending to dispose of the alternative proposition—namely, that the tuberculosis may be the cause of the low blood pressure. As the writer himself acknowledges, "it is usual in propounding a theory to depend for evidence upon one's own experience." The wisdom of this practice is illustrated

[7] *The Diagnosis and Modern Treatment of Pulmonary Consumption.* By Arthur Latham, M.A., M.D.Oxon., etc. Third Edition. London: Baillière, Tindall, and Cox. 1907. (Demy 8vo, pp. 268. 5s.)

[8] *Ueber Tuberkulinbehandlung.* Von Professor Sahli. Zweite Auflage. Basle: Benno Schwabe. 1907. (Super roy. 8vo, pp. 44. M.0.80.)

[9] *La Tuberculosi.* Per M. Valtorta and G. Fanoli. [Tuberculosis. By M. Valtorta and G. Fanoli.] Milan: U. Hoepli. 1907. (Med. 16mo, pp. 312. L.3.)

[10] *Pulmonary Tuberculosis, its Predisposition, Environment, and Treatment.* By D. Crichton, L.R.C.S.E., L.R.C.P.E., L.F.P.S.G. Dundee: J. Leng and Co., Ltd. 1907. (Demy 8vo, pp. 68. 2s. 6d.)

by this book, for an argument elaborated by extracts from the writings of others when unsupported by personal investigations is not convincing. The references at the end of the chapters may be useful as a guide to many of the recent contributions to the literature of pulmonary tuberculosis in the medical journals.

ABDOMINAL OPERATIONS.

THE second edition of Mr. B. G. A. MOYNIHAN'S *Abdominal Operations*,[11] although following closely on the first, has been considerably enlarged. It contains seventy new illustrations, and these, together with several new articles and additions to many of the others, increase the size of the book by over a hundred pages. In the second chapter are new sections on the treatment of adhesions and on drainage after abdominal operations. Acute dilatation of the stomach and post-operative phlebitis and thrombosis are added to the complications which receive consideration, and the paragraph on parotitis has been rewritten. In the chapter on tuberculous peritonitis emphasis is laid anew upon the importance of discovering and removing when possible the primary seat of the abdominal disease. New and important tables are those of the recorded cases of peptic ulcer of the jejunum and of the author's cases of gastric cancer. Of the additions to operative technique the following are the most important: A new method of low sigmoid colostomy, appendicostomy, Page's method of liver resection, and the "mucosa" stitch in intestinal union. The first edition was reviewed in the BRITISH MEDICAL JOURNAL of 1906. A very favourable opinion of the book was there expressed, and the additions to this issue considerably enhance its value.

The Technic of Operations on the Intestines and Stomach[12] is the title of a volume by Dr. ALFRED H. GOULD, of Boston. The book commences with a chapter in which are given the results of experimental work on the repair of intestinal wounds. In this work the author had a collaborator in Dr. F. B. HARRINGTON, and the results of their studies may be summarized as follows: In union by simple suture the exudation between the serous surfaces is organized in ten days; the muscular coats are gradually approximated by contraction of the intervening scar tissue; the muscularis mucosae is not reproduced; the mucous membrane is repaired in twenty-one days. There are other matters of interest and importance in this study which are worth attention. The second chapter is devoted to sutures, knots, needles, and clamps, and contains elaborate illustrated accounts of many different methods. The third chapter deals with the anatomy of the intestines in particular relation to the blood and lymphatic supply, and the question of intestinal localization. The last two chapters are concerned with operations. The author's criticisms of methods are based on experimental studies in dogs, and for the rest he relates those which have the approval of the best authorities. There are also here and there some original recommendations. He describes a new mattress stitch which is, perhaps, superior to the usual type, and he also figures a modification of the Doyen clamp. Of more interest is an original method of end-to-side anastomosis particularly adapted to the union of small to large intestine, and a substitute for lateral anastomosis. To replace the latter it will have to prove more rapid and easy of execution; the illustrations suggest some difficulty in the placing of the outer row of sutures, but this may possibly not be so in actual practice. In Finney's operation it is recommended that clamps should be used; this is also advised by Moynihan, and there is no doubt that the technique is facilitated thereby. Possibly their use will increase the popularity of this operation, not much practised in this country, but probably destined to replace gastro-enterostomy to a considerable extent in cases of pyloric stenosis. The author has shown wisdom in the selection of operations described. One oversight is the omission of E. J. Senn's method of gastrostomy, which is the simplest of all and functionally satisfactory. The illustrations are very successful, they are beautifully drawn and as clear as illustrations can be. Figures 173 and 174 do not show well, what is explained in the text, that the lesser omentum must be ligatured short of its right edge; they would be improved by depicting the position of the bile duct and the vessels in this edge. As a whole the book is a decided success; a complete study of intestinal methods such as it gives was a distinct want, and Dr. Gould has supplied it very satisfactorily.

[11] *Abdominal Operations.* By B. G. A. Moynihan, M.S., F.R.C.S. Second Edition. London: W. B. Saunders and Co. 1906. (Demy 8vo, pp. 815; figs. 305. 28s.)

[12] *The Technic of Operations upon the Intestines and Stomach.* By Alfred H. Gould, M.D. Philadelphia and London: W. B. Saunders and Co. 1906. (Royal 8vo, pp. 302; 190 illustrations. 21s.)

BLOOD-SUCKING ARTHROPODA.

THE importance of ticks as carriers of diseases of man and domesticated animals is now so well recognized that we welcome this book by Professor DÖNITZ on ticks of economic interest.[13] Though specially dealing with these pests as they occur in Africa, the book will be of value to workers in other countries, as many of the species described are widely distributed throughout Asia and elsewhere. The descriptions of the various anatomical structures, particularly of those used for the purposes of classification, are clear and concise, and should be intelligible to medical men with no previous knowledge of the subject. The illustrations are well selected, and are not so overloaded with detail as to obscure the points to be observed. The special feature of the book is the detailed account of the species described; with these descriptions the identification of the species is comparatively simple. The table of specific differences is well arranged and of practical value, and less confusing than such tables frequently are. We note that Professor Dönitz retains the genus *Boophilus* (Curtice), though *Margaropus* (Kursch) has the priority and should therefore be adopted. It is of importance that confusion in the nomenclature should be avoided, as there is no doubt that our knowledge will rapidly increase, and uncertainty in such matters greatly increases the difficulties. Professor Dönitz appears to prefer the spelling *ornithodorus* to the orthodox *ornithodoros*. The diseases carried by ticks are briefly considered by the author, who includes in these the spotted fever of the Rocky Mountains—a doubtful instance. He also considers kala-azar to be a piroplasmosis, and therefore as probably tickborne, though the Leishman-Donovan bodies have now been shown to be the resting stage of a flagellate. These are small defects, and as the object of the book is the study of the ticks and not of the diseases carried by them, it is well adapted for its purpose and will be of great value to the investigators of these carriers of disease to man and animals.

DR. KARL GRÜNBERG'S useful monograph on the blood-sucking diptera[14] provides a general guide to the identification of the more important varieties of these insects, and devotes special attention to the forms which occur in the German colonies in Africa. The construction of the book is excellent. The first chapter gives a general account of the anatomy of the diptera, and makes it much easier to follow the systematic descriptions of each insect which occupy the subsequent pages. These descriptions are necessarily a mass of detail, but they are concise, well illustrated, and supplemented from time to time by tabular statements, showing at a glance the essential points of difference between closely allied varieties. The book is written from the zoologist's standpoint, and does not enter into any discussion of the relative importance of these blood-sucking parasites in the transmission of disease. But, whilst not trenching upon the pathologist's domain, Dr. Grünberg's treatise is of obvious utility to the student of tropical medicine, as it provides him with the knowledge necessary for identifying the agents which transmit such diseases as malaria and sleeping sickness. And, as the part played by insects in the transmission of pathogenic organisms is only just beginning to be understood, a closer acquaintance with species which are at present little known except to the zoologist may lead medical investigators to further discoveries.

[13] *Die wirtschaftlich wichtigen Zechen mit besonderer Berücksichtigung Afrikas.* Von Professor Dr. W. Dönitz. Leipzig: Johan Ambrosius Barth. 1907. (Royal 8vo, pp. 128. Tafeln 6. M. 5.)

[14] *Die blutsaugenden Dipteren.* Von Dr. Karl Grünberg. Jena: Gustav Fischer. 1907. (Super-roy. 8vo, pp. 194, with 127 illustrations in the text. M. 4.50.)

A SANATORIUM for tuberculous patients has been established near Arroyo Arenas, twelve miles from Havana. It has accommodation for 60 patients.

MEDICINAL AND DIETETIC PREPARATIONS.

"*Miol.*"

UNDER the name "Miol," an oleo-maltose preparation has been placed on the market by the MIOL MANUFACTURING CO. (66, Southwark Bridge Road, S.E.). Such preparations are usually made with cod-liver oil, but in the present case olive oil is employed, with the addition of iodine and phosphorus. Miol is stated to contain $\frac{1}{3\frac{1}{2}}$ grain free iodine and $\frac{1}{2\frac{1}{0}\frac{1}{0}}$ grain free phosphorus in each teaspoonful. Examination showed it to be a uniform mixture of agreeable taste, and, of course, free from the fishy flavour which some people find objectionable in cod-liver oil combinations. On analysis it yielded 22 per cent. of oil free from rancidity, and 0.4 per cent. of nitrogen, corresponding to 2.5 per cent. of proteids; the reducing sugars found, calculated as maltose, amounted to 47 per cent., and the digestive action on starch showed it to possess good diastatic power. Free phosphorus was readily detected; iodine was found in combination, but not free, and in presence of so large a proportion of oxidisable material it is not to be expected that it would remain uncombined.

Compound Solutions of the Formates.

The reports that have been published of the use of formates for increasing muscular vigour, with general beneficial results to the circulatory and alimentary systems, have led to the appearance of a large number of preparations for their exhibition. The formates of the alkali metals and some of the alkaline-earth metals and formic acid itself have all proved to be suitable forms for administration. In certain preparations which we have examined the formates of several bases are mixed in the same way as phosphates of several bases are mixed in Parrish's and Easton's syrups. Mr. GEORGE LUNAN (20, Queensferry Street, Edinburgh) has submitted a sample of the compound elixir to which he has given the name "Coformalix." This contains phosphates of lime, soda, and strychnine ($\frac{1}{5\frac{1}{0}}$ grain in 1 drachm), and free formic acid. It is a clear, acid, palatable liquid that will, no doubt, find favour for the administration of these substances. We have also received a sample of "Elixoid" Formates Compound from Messrs. BURROUGHS, WELLCOME, AND CO. This contains calcium formate 12 grains, sodium formate 6 grains, and magnesium formate 6 grains in each fluid ounce. It possesses the attractive qualities usually associated with the products of this firm, and will prove a useful combination.

Essence of Calisaya.

We have examined a new preparation of yellow cinchona, of the nature of an elixir, which Messrs. PARKE, DAVIS, AND CO. are now preparing. Although in some cases the use of a tincture or similar preparation of a drug has been superseded by the employment of the pure active principle, quinine has by no means driven galenical preparations of cinchona out of the field; nor is this matter for surprise, considering the number of other alkaloids which the bark contains, some of which, at least, possess medicinal value. The essence of calisaya in question is an elegant representative of liquid preparations of cinchona; each fluid ounce represents 24 grains of yellow cinchona bark, together with aromatic ingredients which give an agreeable flavour; it proved to contain 30 per cent. by volume of alcohol.

Pine Tar.

Messrs. BURROUGHS WELLCOME AND CO. have submitted a sample of a recent addition to their elixoids, consisting of a mixture containing tar, oil of pine, terpin hydrate, tolu, ipecacuanha, and Virginian prune. It is a bright liquid of pleasant taste, in which the flavour of pumilio pine predominates, freely miscible with water. In treatment of coughs, bronchitis, and other affections of the respiratory organs, it will no doubt prove a useful, as it is certainly an elegant, combination.

Iodalbin.

An organic compound of iodine is put forward for medicinal use by Messrs. PARKE, DAVIS, AND CO., under the name of iodalbin; it is described as an iodo-proteid compound, containing 21.5 per cent. of iodine, but the exact chemical nature and source are not stated. We have received a sample of the capsules supplied by the firm, each containing 5 grains of the new substance, a brown powder, practically tasteless, insoluble in water or dilute acid, but readily soluble in solution of alkaline hydroxide or carbonate. As taken from the capsules it contained 20 8 per cent. of iodine, which agrees pretty well with the proportion stated to be present in the pure dry substance. An iodine compound of this nature would naturally pass through the stomach unchanged and undergo absorption in the intestine, thus avoiding the gastric irritation sometimes caused by the alkaline iodides. Experiments on animals and clinical trials are stated to have given very favourable results, iodalbin having produced the alterative effect of the inorganic iodides without their disadvantages.

Algiron.

It has long been recognized that the amount of iron administered in the treatment of anaemia is of small importance in comparison with the form in which it is given, and a considerable number of organic combinations of iron have been put forward as leading to better absorption of the iron than occurs when inorganic salts are employed. One of these organic compounds is the alginoid iron supplied by Messrs. EVANS, SONS, LESCHER, AND WEBB (60, Bartholomew Close, E.C.), for which the name of "Algiron" has now been adopted. This is a tasteless brown powder containing iron in combination with alginic acid from seaweed. A sample which we examined contained 8 per cent. of iron, equivalent to 11 per cent. of ferric oxide; it is devoid of astringency, and its action is described as slightly laxative rather than constipating; excellent results are ascribed to its use. The firm are now also supplying pills containing algiron in combination with various other drugs, such as cascara, arsenic, quinine and strychnine, etc.

MEDICAL AND SURGICAL APPLIANCES.

A Splint for Local Heat Application.

MR. J. F. HALLS DALLY, M.A., M.B.Camb., Holland Park, W., writes: The accompanying illustration represents a form of splint which has been devised for the purpose of supplying continuous heat to a portion of the lower limb. It is of the posterior gutter variety with rectangular footpiece; it is parallel lengths of lead piping which join a marginal tube, having at its proximal extremity a tap to which may be attached an indiarubber tube and funnel. Another piece of indiarubber tubing is attached to the tap on the footpiece, and leads into a receiver which catches the overflow. The funnel is raised above the level of the tap attached to the footpiece, both taps being open, and boiling water is run in. As soon as the splint is full, the water runs out of the tube attached to the footpiece. Both taps are then closed. The splint is previously lined with flannel to the required thickness, and by periodic renewal of the hot water supply, which can

be accomplished without disturbing the patient, the flannel is heated, and continuous dry heat thus applied to the limb. This latter is immobilized in the splint by some form of suitable appliance, and, if necessary, its anterior surface is enveloped in some non-conducting material. The splint may be also used for the continuous application of cold, after the manner of Leiter's coil. Reference to a case of post-typhoid venous thrombosis, under the care of Mr. Keetley, in which this splint was used with advantage for the purpose of supplying continuous heat, will be found in the *West London Medical Journal*, vol. xi, 1906, p. 330. This splint has been made to my design by Messrs. Arnold and Sons, West Smithfield, E.C.

PROTECTION OF THE PERINEUM.

Dr. JOHN F. ELLIOTT (Verulam, Natal) writes: I am indebted to Dr. Alex. Maclennan of Glasgow for a reprint from the *Glasgow Medical Journal* describing an instrument designed by him in 1900 for the protection of the perineum during labour. It is on parallel lines to the one suggested by me in your issue of April 27th, 1907, p. 1000, with the difference that his is not solid but is looped like the blade of a forceps. I find that a smooth, continuous metal surface allows the head to glide rapidly and easily to its birth, and acts as a protective medium to the posterior vaginal wall and perineum.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

V.—OBESITY CURES.

(*Continued from page 150.*)

TRILENE TABLETS.

SUPPLIED by the Trilene Manufacturing Co., 66, Finsbury Pavement, London. Price 2s. 6d. per box, containing 66 tablets.

A little booklet is enclosed with the package, containing testimonials, directions, etc.; also a small circular giving instructions as to diet, with the addition—

We desire to say that such precautions are not indispensable by any means, but we formulate the above for the guidance of those in whom any peculiarity of Constitution may render such care salutary, and to promote rapidity of cure.

The directions are:

Three of the tablets three times a day 10 minutes before meals, either dissolved on the tongue or taken as pills. (*No change of diet being essential.*)

It is also added:

The present supply lasts one week, in which time the weight begins to lessen, but a marked change in appearance naturally occupies *several weeks* to effect.

Two separate packages of the tablets were obtained for analysis at an interval of several weeks; in the first supply the tablets were of a dirty white colour and contained no dye, but in the second they were bright yellow, and contained a yellow dye, which appeared to be one of the coal-tar colours, in addition to the ingredients previously found. The average weight of one tablet is 0.9 grain, and they were found to contain 87 per cent. of sugar, 2.4 per cent. of moisture, and 0.5 per cent. of ash; about three-quarters of the remainder was starch, principally potato starch, but with a little maize. The residual 2 or 3 per cent. was a gelatinous substance showing no marked reactions or characters, and exhibiting only traces f cell tissue when examined microscopically. Analysis of the ash showed it to contain sodium, potassium, calcium, magnesium, chloride, sulphate, and phosphate; these are the constant constituents of the ash of extract of fucus vesiculosus; an aqueous extract of the tablets contained a small quantity of mucilage similar to that yielded by the same drug. By taking some fucus vesiculosis in the wet state, pounding it to a pulp and boiling it, a material was obtained agreeing with the gelatinous substance from the tablets, and there appears no ground for doubting the identity of the two. Careful search was made for alkaloids and other substances in small quantity, but without any being found. The formula thus becomes—

Fucus vesiculosus, in pulp...	3	per cent. (dry weight)
Starch	7	,,
Sugar	87	,,
Water	3	,,
Yellow dye	q.s.	

Estimated cost of ingredients (66 tablets), one-fortieth of a penny.

HARGREAVES'S REDUCING WAFERS.

Supplied by F. Hargreaves, 324, Coldharbour Lane, Brixton, S.W. Price 1s. 1½d. per box, containing twenty-one. A circular enclosed with the box gives a number of testimonials, with directions, etc., and the following are extracts from it:

"Purely vegetable. Contain nothing harmful. Can be taken at any time with perfect safety. Dose: Three wafers daily. One after Breakfast, Dinner and Supper. If Supper is not taken, one after Tea instead. May be dissolved on the tongue or taken as pills. No change in diet necessary." "The supply sent herewith lasts one week, in which time the Fat commences to get less. In most cases, however, to complete a cure takes about seven weeks, therefore clients should now send for the further six weeks' treatment."

The "wafers" are really compressed tablets of the ordinary shape, coated with French chalk, and coloured pink externally with eosin. After removing the coating the average weight of the tablets is 2.4 grains; they consist of substances of "extract" nature, with about 10 per cent. of powdered liquorice. Analysis of the ash showed all the constituents of the ash of extract of fucus vesiculosus, and other tests indicated this extract to form about one-half of the tablet; the other constituent (or constituents) also of "extract" nature, showed no reactions or properties by which it could be identified, and it is probably present merely as excipient.

ALLAN'S ANTI-FAT.

Supplied by the Botanic Medicine Company, Buffalo, New York, and London, England. Price 6s. 6d. a bottle, containing 6½ fluid ounces. On the wrapper appear the words:

Purely vegetable. Perfectly harmless. Always efficacious.

Also:

We call special attention to the efficacy of our Anti-Fat in the cure of that distressing complaint—indigestion or dyspesia. It acts solely upon the food in the stomach, regulating and putting the liver and discharging organs in good working order.

A circular is enclosed with the bottle, entitled, "How to get lean without starvation," from which the following extracts are taken:

A very extensive observation has convinced us, since our first circular treatise was issued, that in the majority of cases the Anti-Fat must be taken for from two to three, and, in rare cases, even four weeks before the patient will begin to notice much reduction of flesh, after which the loss goes on rapidly—generally from three to five pounds a week. In some cases the diminution in weight commences from the first two or three days' use of it.

The treatment of obesity has hitherto rested on no sure basis. Through the study of physiological chemistry, a *specific* has at length been discovered, which, from the name of the discoverer, has been called Allan's Anti-Fat.

Directions: Take two teaspoonfuls of the Anti-Fat in a wineglass full of water or sweet milk before each meal.

A small slip is also enclosed headed "CAUTION!!" which states:

The color, as well as the flavor, of the Anti-Fat, varies somewhat with age and exposure to light, but neither in the least impairs its virtues. The temperature of the weather at the time of the manufacture of this remedy has also much to do with its clearness, or transparency, but does not affect its properties.

Analysis showed the presence of alcohol, glycerine potassium iodide, salicylic acid, and a vegetable extract which from its properties and the analysis of the ash is evidently a purified extract of fucus vesiculosus. The proportion of the latter drug represented cannot, of course be determined with certainty for the reasons referred to above; the amounts of the other ingredients were ascertained by analysis, and the formula is approximately as follows:

Potassium iodide	0 3 grain.
Salicylic acid	1.0 ,,
Glycerine	40 minims.
Fluid extract of fucus vesiculosus	70 ,,
Water	To 1 fluid ounce.

Estimated cost of ingredients (6½ fluid ounces), 3d.

THE building of the New Orthopaedic Hospital in Bolsover Street appears to be making good progress; the out-patient and in-patient departments will occupy different sides of the street, but be connected by a subway. It is intended to provide accommodation for altogether 213 in-patients.

THE British Consul for La Rochelle, in his recently-published report to the Foreign Office, comments on a rather severe epidemic of the "sweating fever" which occurred last year in his district and its neighbourhood, and seems to have escaped general notice. It broke out during the months of May and June, and nearly 6.000 cases occurred in the space of six weeks, with a mortality of about 150. The epidemic, as is frequently the case, was distinctly localized, affecting a portion of the Departments of the Charente and the Charente Inférieure only. It spared the large towns, and ceased before it reached La Rochelle, its progress being arrested by isolation and disinfection and the interdiction of fairs and markets. Both the Charentes and the Deux Sèvres Departments have suffered during late years from invasions of field mice, and it is curious that the disease took its course from west to east just as did the hordes of field mice (*Microtus arvalis*), and coincided with them, while the area affected was also identical, and the mice disappeared with the same rapidity as that with which the epidemic diminished in virulence. The district would appear to be rather favourite ground for the *suette miliaire*, for epidemics have previously appeared in this part of France at intervals of about twenty years; on one occasion the disease was confined to the Isle de Ré, off the coast of the Charente Inférieure.

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*Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL: 1904, vol. ii, p. 1585; 1906, vol. ii, p. 27, p. 1645; 1907, vol. i, p. 213; vol. ii, p. 150.

ROYAL COMMISSION ON TUBERCULOSIS.

THE PATHOGENIC EFFECTS OF BOVINE VIRUSES.

Volume I of the Appendix to the Second Interim Report of the Royal Commission on Tuberculosis[1] consists of the report by Dr. A. Stanley Griffith, assisted by Dr. F. Griffith, on the Pathogenic Effects of Bovine Viruses.

Plan of the Work.

Inoculation experiments with tubercle bacilli of bovine origin have been made (1) to supply a basis of comparison for experiments with tubercle bacilli of human origin; (2) to determine the range of variation in the virulence of different strains of tubercle bacilli isolated from the bovine; (3) to test the susceptibility of different species of animals to the bovine tubercle bacillus. A very thorough investigation has also been made of the susceptibility of different animals to bovine tubercle bacilli introduced by feeding.

The viruses used in the experiments are thirty in number, and have been derived from animals naturally infected with tuberculosis; the infection in the majority of these animals originated in the thorax, but in some it took place through the alimentary canal, and in one case it was probably congenital. Most of the material was obtained from the Metropolitan Cattle Market, but in one instance it consisted of butchers' meat which had been sold as food. The thirty viruses are representative of the ordinary forms of natural tuberculosis met with in the ox, and include cases of severe general tuberculosis, slight general tuberculosis, and tuberculosis limited to certain glands.

Fifteen different species of animals have been used for experimental investigation—namely, the ox, the goat, the pig, the chimpanzee, the monkey (*Macacus rhesus*), the baboon (*Papio porcarius*), the lemur, the dog, the cat, the rabbit, the guinea-pig, the hedgehog, the mongoose, the rat, and the mouse.

The detailed records of Dr. Griffith's experiments, occupying several hundred pages, form an extremely valuable feature of his report. The clinical history of all the more important experimental animals is carefully recorded and illustrated by temperature charts; the *post-mortem* details are exceptionally thorough, and include a record of all organs examined and found normal; in the case of doubtful lesions smear preparations have been examined for bacilli, and, when necessary, guinea-pigs have been inoculated to clear up the diagnosis; and the course of the experiments, which in the case of many viruses have been very lengthy and involved, is made clear by numerous tables and diagrams, enabling the reader to follow at a glance the consecutive stages in a series of inoculations.

Estimation of Doses.

In a large number of the cases where the bacilli were administered in the form of a tissue emulsion or of tuberculous milk it was thought desirable to estimate the number of bacilli used in the experiment. For this purpose a sample of the material prepared for administration was sent to Dr. Eastwood, who estimated its richness in tubercle bacilli by the following method: Films were prepared containing each 5 c.mm. either of the original sample or a known dilution of it, the quantities being measured out by means of a Nabarro's pipette. After fixing and staining, the bacilli in each film were counted with the aid of the mechanical stage. From two to six films were searched for each estimate; the average of the counts was taken, and from this the number of bacilli per c.cm. which the sample contained was calculated. When Dr. Griffith desired to make inoculations with prearranged doses, the sample was sent in the morning, and Dr. Eastwood telephoned the result of the estimation on the afternoon of the same day.

The doses of cultures were estimated by Dr. Griffith volumetrically, the growth from the surface of serum tubes being finely emulsified and then centrifugalized. "The doses," Dr. Griffith remarks, "are expressed in milligrams, but in reality cubic millimetres would be more correct. The method, however, gives a result which is in close agreement with that given by the gravimetric method, as was shown in one case in which the culture was first weighed and then estimated by the volumetric method."

Inoculation Experiments upon Bovines.

(*a*) *Inoculation of Tissue Emulsions.*

Twenty-three calves were inoculated subcutaneously with emulsions of tuberculous tissues, the doses of bacilli varying from 542 million to so small a number that none could be demonstrated after prolonged microscopic search. Five of the calves died or were killed when dying in periods varying from thirty-five to seventy-one days, and showed severe generalized tuberculosis. Another, a much older animal than the others, inoculated with the largest dose, was killed when ill 160 days after inoculation, and was found to be suffering from a slowly progressing general tuberculosis. The other animals remained well, and were killed in periods varying from seventy-eight to 202 days; in one there was a local lesion only; in others there was slowly progressing general tuberculosis; and in others, again, there were found samples of tuberculosis "of every intermediate degree of severity."

Nine adult bovines, three of which were shorthorns, were also inoculated subcutaneously with tissue emulsions. Two were killed when ill after thirty-five and forty-eight days, and were found to have general progressive tuberculosis. None of the other animals became ill, and when killed in periods varying from sixty-two to 147 days had increased considerably in weight. In one the disease had not extended beyond the nearest glands; in another there were, besides a local lesion, a tuberculous prescapular gland, a few caseous nodules in the thoracic glands; most of the others had slight disseminated tuberculosis which appeared to be retrogressive.

(*b*) *Inoculation of Cultures.*

Cultures from twenty-one different bovine viruses were inoculated subcutaneously into calves. Thirty-three calves inoculated each with 50 mg. of culture representing nineteen distinct viruses died or were killed when moribund in periods varying from eighteen to seventy-six days; only one of those lived for seventy-six days, the duration of life in the other cases varying from eighteen to forty-seven days. In only one instance did a bovine virus, inoculated in a dose of 50 mg., fail to produce fatal infection in a calf. Two calves were inoculated each with 25 mg., one with 12.5 mg., and one with 5 mg. All these animals were killed when ill forty-two to sixty days after inoculation; the calf which received 5 mg. was quite as severely affected as those which received 25 mg. Twelve calves were inoculated each with 10 mg. Eight of these died, in periods varying from thirty-three to fifty-three days, from acute generalized tuberculosis. The remaining four were killed after ninety days. One was ill when killed, and showed slowly progressing generalized tuberculosis; the others were in good condition, and, although there was tuberculosis disseminated all over the body, the lesions had a definitely retrogressive character. In one the tubercles were very minute, and were comparable to those often produced in calves by bacilli of much lower virulence.

In order to observe the influence of age on resistance to infection, an adult animal (a bull) was inoculated at the same time as a calf and with the same dose of culture (50 mg.). The calf died forty-two days after inoculation from severe general tuberculosis, and the bull was killed at the same time for the purpose of comparison. It was found that both in extent of distribution and in the number of tubercles in individual organs and glands the disease was less severe in the bull than in the calf; many of the lymphatic glands in the former animal were unaffected, whereas those of the calf were all severely affected. Moreover, the general health of the bull was scarcely altered, and smear preparations from the lesions showed tubercle bacilli to be very scanty.

(*c*) *General Results.*

Dr. Griffith gives the following general description of the lesions produced in the bovine after subcutaneous inoculation with 50 mg. of bovine tubercle bacilli.

At the *post-mortem* examination the following appearances are seen: The local lesion is found to be composed of a subcutaneous mass of firm yellow caseo-necrotic tissue intimately

[1] Second Interim Report of the Royal Commission appointed to Inquire into the Relations of Human and Animal Tuberculosis. Part II, Appendix, vol. i The Pathogenic Effects of Bovine Viruses. By Dr. A. Stanley Griffith. (711 pages, with numerous charts and photographic reproductions.)

adherent to and infiltrating the skin and muscles on either side; in the centre of the mass there is often a small cavity containing serous fluid and caseous flocculi, or there may be merely a series of small spaces filled with serous fluid; sometimes the greater part of the mass undergoes colliquative necrosis, and a large cyst is formed lined internally with caseous substance and filled with watery fluid containing caseous flakes. The muscles under the tumour are infiltrated to a varying depth, and are fibroid and closely beset with caseous nodules; lymphatic vessels between the local tumour and adjacent glands are frequently thickened and caseous, the infiltration often extending into the muscles around. The two nearest glands, the prescapular and spherical prepectoral glands, are composed throughout of dense pinkish-yellow homogeneous caseous substance which may, if the animal has lived some time, contain calcareous grains. Many of the cervical glands may wholly or in part resemble the prepectoral. The appearance of the lesions in the internal organs depends to a large extent upon the duration of life of the animal. When the animal has lived a short time only all the organs contain typical miliary tubercles with caseous centres, always more numerous in the lungs, liver, and spleen than in the kidneys; the tissue of the lungs is extensively consolidated, the cephalic, right, middle, and antero-ventral portions of the caudal lobes being dark red, and often quite airless; the bronchi in these consolidated lobes become filled with muco-pus. The thoracic, portal, and coeliac glands are enlarged, and show their cortices often uniformly tuberculous, but in a less advanced stage of caseation than the prescapular; all other lymphatic glands contain discrete caseating miliary tubercles, the renal and lumbar glands always containing more than the peripheral lymphatic glands. Tubercles are also found on the omentum and pleura, in the intestine, suprarenal bodies, heart, gall bladder, and trachea. In animals which live a much longer time, but finally succumb, the distribution of the disease is the same, but the lesions in the organs and glands are larger, more advanced in caseation, and frequently contain calcareous grains. In the lungs nodules often coalesce, or hepatized patches become tuberculous, and large caseating masses may be found affecting the whole or part of a lobule. Although the lungs are usually more severely affected than the spleen and liver, occasionally the reverse obtains. The calves in these cases become progressively more and more emaciated, and die without any very marked signs of respiratory trouble.

Comparing these results, obtained by doses of 50 mg., with results obtained by other subcutaneous inoculation experiments, Dr. Griffith remarks:

The inoculation of smaller doses of culture or of tissue emulsion has frequently given rise to effects as severe as those above described. On several occasions a more chronic but still progressive form of general tuberculosis has been established. In these cases the disease is not so widespread in its distribution and many of the peripheral lymphatic glands, the kidneys, suprarenal bodies, tonsils, intestines, trachea, etc., which are so frequently found to be tuberculous in calves inoculated with 50 mg. of culture, are often normal. The nodules in the affected organs, frequently very large, have dense fibrous capsules and softened caseous contents. . . . In many cases, particularly after the inoculation of small doses of tissue emulsions, a very mild form of tuberculosis has been produced and the general health of the animal, save for a transient rise of temperature, has remained unaffected. In these cases . . . . on *post-mortem* examination the local lesion is found to be composed of dense caseo-calcareous substance surrounded by fibrous tissue or to be a cyst with caseo-purulent contents and fibrous walls; the adjacent glands and some of the thoracic and abdominal glands contain caseo-calcareous patches, and there is a varying number of calcareous tubercles in the organs, the kidneys rarely being affected.

EXPERIMENTAL PRODUCTION OF TUBERCULOUS MILK.

Nine cows were inoculated, each in two quarters of the udder, with emulsions of tuberculous tissues, and one with culture. Seven of the animals inoculated with tissue emulsions died or were killed when very ill in periods varying from thirty-two to forty-eight days. They became ill very soon after inoculation, and the illness ran a very typical course, which is fully described in the experimental records. The inoculated quarters and nearest glands underwent great enlargement. On *post-mortem* examination it was found that the disease in four of the animals had not extended beyond the nearest glands; in the others there was early tuberculosis in the internal organs. The milk yielded by the inoculated cows was used for feeding experiments, and was shown to be tuberculous by inoculation tests which were made from time to time upon guinea-pigs.

In order to throw light upon the highly-important practical question whether tubercle bacilli may be excreted in the milk of a tuberculous cow with a normal udder, Dr. Griffith subcutaneously inoculated 100 mg. of culture into the neck of a cow which was in full milk. Before inoculation she was tested with tuberculin, and her milk was inoculated into eight guinea-pigs, two from each quarter of the udder; in every test the result was negative. After inoculation of the cow five series of eight guinea-pigs were inoculated, each with 5 c.cm. of milk, two from each quarter, at intervals of seven, sixteen, twenty-one, twenty-eight, and thirty days respectively. Two pigs were also fed with the milk for a week, no other food being administered during this period. The cow died suddenly thirty days after inoculation, and *post mortem* it was found that death was due to acute tuberculosis; the udder appeared normal to the naked eye. The two pigs were killed eighty-two and seventy-five days respectively after the commencement of the feeding, and were found to be free from tuberculosis. The inoculation experiments on guinea-pigs showed that the milk was capable of setting up tuberculosis in these animals at the end of the first week, and on every subsequent occasion until the death of the cow. Dr. Griffith concludes, therefore,

that the milk of a tuberculous cow without tuberculous disease of the udder is liable to contain tubercle bacilli, should tubercle bacilli ever gain access to the general circulation. In this case, although the number of tubercle bacilli circulating in the blood stream was probably very large, larger than would ever be present in natural conditions, nevertheless only a small number of bacilli appear to have been excreted in the milk, as shown in the comparatively mild type of disease in most of the guinea-pigs inoculated and in the failure to infect pigs by feeding.

These results may be compared with an interesting case where a cow was inoculated subcutaneously in the neck with a human virus, known to be of low virulence for bovines, and tubercle bacilli were detected in the milk yielded twenty-four hours after inoculation.

INOCULATION OF ANTHROPOID APES AND MONKEYS.

Two young chimpanzees were inoculated subcutaneously under the skin of the back with culture of bovine bacilli. One of them, which received 1 mg., died in fifty-six days from acute miliary tuberculosis. The other received only 0.001 mg., but nevertheless died in eighty-seven days from general tuberculosis. Two young baboons were inoculated each with 1 mg. of culture. One died a short time after inoculation and showed a local lesion only; the other died in forty-nine days from general tuberculosis. Three rhesus monkeys were inoculated intravenously with emulsions of tuberculous tissue, and died from acute tuberculosis in nine, fifteen, and nineteen days respectively; in the animal which died in nine days there were no definite tuberculous lesions, but tubercle bacilli were numerous in all the organs. Two monkeys inoculated subcutaneously with emulsions of tissue died in forty-one and forty-three days respectively from acute general tuberculosis. Six rhesus monkeys inoculated with doses ranging from 0.001 to 10 mg. all developed severe general tuberculosis, which proved fatal in periods varying from thirty-three to fifty-six days. Two lemurs were inoculated subcutaneously with culture. One, which received 1 mg., was killed when moribund in twenty-three days; the other, inoculated with 0.01 mg., died in thirty days. The first lemur showed *post mortem* a local lesion, caseation of the nearest glands, and early tuberculosis of the spleen. In the other lemur the disease was rather more advanced, a few tubercles being visible in the lungs, spleen, and liver.

THE VIRULENCE OF THE BOVINE BACILLUS FOR RABBITS.

Cultures from each of the thirty bovine viruses have been inoculated systematically into rabbits by the intravenous, intraperitoneal, and subcutaneous methods. All the viruses were found to be highly virulent for the rabbit and proved capable of setting up a fatal general tuberculosis, "howsoever inoculated and in whatsoever dose." After an intravenous or an intraperitoneal inoculation of culture in a dose of 1 mg. or 0.1 mg. the rabbit succumbs in a very short time from an acute generalized tuberculosis. After subcutaneous inoculation the duration of life is longer and a more chronic disease develops; but the disease is progressive and invariably, even after very small doses, causes the death of the animal. Of the two severe methods of inoculation Dr. Griffith prefers the intravenous. When the intraperitoneal method is used, some part of the intestine may be accidentally penetrated and receive part of the fluid, or there may be leakage into

the subcutaneous tissues or muscular wall of the abdomen. Dr. Griffith therefore considers that it would be unsafe to rely absolutely on the intraperitoneal method in attempting to bring out differences in degree of virulence. Dr. Griffith's tabulated statistics of his experiments and *post-mortem* examinations performed on rabbits form a very valuable record.

INOCULATION OF PIGS.

Seven pigs were inoculated subcutaneously with doses of culture varying from 0.1 mg. to 10 mg. The experiments showed that general tuberculosis is very readily set up in the pig by this method of inoculation; the disease produced, however, is not necessarily fatal, and when the dose is small, or when the animal is an adult, may run a very chronic course and become apparently arrested. In several of the pigs which were killed in good health the uniformity in the size of the lesions was very noteworthy. Dr. Griffith has shown that tubercle bacilli are very quickly disseminated over the body of a pig after subcutaneous inoculation, and he considers that the severity of the resulting disease depends to a large degree on the extent of this initial dissemination.

INOCULATION OF GOATS.

Only a small number of inoculation experiments were performed on goats, but they were sufficient to show that general progressive tuberculosis is readily set up in these animals when the material is inoculated subcutaneously. Three goats were inoculated with tissue emulsions containing estimated numbers of tubercle bacilli. One of them, which received four and a half million bacilli, died in fifty-four days from general tuberculosis, the lungs being very severely affected and riddled with small cavities. Another goat, which also received four and a half million bacilli, was killed when apparently well, 165 days after inoculation, but revealed *post mortem* a slowly progressing general tuberculosis. The third animal, which received approximately 5,000 bacilli, was killed 161 days after inoculation, and also showed general tuberculosis, but of a much less severe type than in the second animal; in both cases the intestines and mesenteric glands were tuberculous. A fourth goat, inoculated subcutaneously with 0.17 mg. of culture, was killed, in apparently good health, ninety-one days after inoculation; on *post mortem* examination the animal was found to have slowly progressing general tuberculosis. Dr. Griffith notes that the lesions in the goat exhibit a marked tendency to break down and soften, and in the lungs cavities filled with caseo-pus are formed, which often ulcerate into the bronchi. As companion experiments to the four goats, four calves were inoculated subcutaneously with identical doses of culture or emulsion. The disease produced in the latter animals was less severe than in the former, and Dr. Griffith concludes from this comparison that the goat is more susceptible to the bovine tubercle bacillus than the calf.

INOCULATION EXPERIMENTS ON OTHER ANIMALS.

Guinea-pigs have been very extensively used for routine purposes. All the bovine viruses have been found to possess high virulence for this species of animal, and cause fatal general tuberculosis even when inoculated in excessively minute doses. The appearance and distribution of the lesions vary with the duration of the life of the animal, and are determined to a large extent by the number of bacilli inoculated and the mode of injection. Dr. Griffith gives a very careful and detailed description of the lesions he has observed in his *post-mortem* examinations of these animals.

Dogs have been inoculated both subcutaneously and intraperitoneally. Dr. Griffith finds that

> the dog is very resistant to subcutaneous inoculation of bovine tubercle bacilli, but may develop general tuberculosis when the material is inoculated intraperitoneally.

Cats have also been inoculated by these two methods, and it has been found that by each method tuberculosis is readily set up. Cats appear to be less susceptible than kittens.

> In kittens tubercle bacilli, whether inoculated intraperitoneally or subcutaneously, are quickly disseminated over the body, and may, when the dose is sufficiently large, multiply in the tissues so rapidly that death ensues, probably from toxaemia, before definite tuberculous lesions have had time to develop in the internal organs.

Rats have been found very refractory to subcutaneous inoculation. Two rats died of tuberculosis after subcutaneous inoculation, but in both cases there was reason to think that some of the fluid had found its way into the peritoneal cavity. Most of the animals, killed after survival for a long period, showed no naked-eye evidence of disease beyond the local lesion; tubercle bacilli, however, were found in some of the organs and glands.

> To intraperitoneal inoculation rats are more susceptible, and, when the dose is sufficiently large, the animals die of tuberculosis; the smallest dose to produce a fatal infection has been 5 mg. . . . The disease produced in rats by intraperitoneal inoculation differs in a striking manner from that produced in almost all other species of animals. The rat dies as a result of the multiplication of the bacilli in its tissues, and there is usually no development of the ordinary tubercle so characteristic of the disease in other animals. The organs and glands always contain numerous bacilli, and bacilli have sometimes been demonstrated in the blood. The spleen is greatly swollen. The lungs are fuller and firmer than normal, and have a congested mottled appearance. The bronchial glands are often enlarged, congested, and oedematous. The liver is normal to the naked eye, and generally the kidneys also. In 2 cases the kidneys have shown in the cortex numerous dark grey foci, resembling small tubercles, and in 1 the lungs were infiltrated with grey translucent foci.

Mice, both after subcutaneous and intraperitoneal inoculation, appear to offer less resistance than rats to the growth of the tubercle bacillus in their tissues.

Two *mongooses* were inoculated, one subcutaneously and one intraperitoneally, each with 1 mg. of culture. Both animals died twenty-nine days after inoculation, and both appeared to have died from acute tuberculosis, but death occurred too early for definite lesions to form in the internal organs.

Hedgehogs were successfully inoculated but did not appear to be very susceptible.

FEEDING EXPERIMENTS.

Five series of feeding experiments were instituted. In (1) animals were fed with the milk of a cow artificially infected in the udder with tuberculosis. In (2) some of the animals were fed with milk from a cow with tuberculous disease of the udder, whilst the rest were fed with an emulsion made from the tuberculous organs of guinea-pigs. In (3) the animals were all fed with culture. In (4) the animals were fed at different times and with tuberculous material from different viruses. In (5), a series planned with a view of ascertaining the paths of infection from the alimentary tract, animals were fed with large doses and were killed at short intervals subsequently; emulsions of their organs were made and inoculated into guinea-pigs; and, in the case of dogs, chyle from the thoracic duct was collected under an anaesthetic before the animal was killed and tested for the presence of tubercle bacilli. Throughout his experiments, Dr. Griffith has carefully borne in mind the possible danger of inhalation infection which, if not rigorously guarded against, may produce results of a misleading nature.

(*a*) *Racial Susceptibility.*

The different species of animals used in the investigation are classified into three groups:

In the first group the animals are very susceptible to the action of the tubercle bacillus, and ingestion, however small the dose, is almost invariably followed by general progressive tuberculosis. The animals placed in this group are the chimpanzee, baboon, rhesus monkey, lemur, rabbit, and guinea-pig.

In the second group general progressive tuberculosis can be set up, but this depends on the dose of the infecting agent, and on the age of the animal. This group includes the pig, the goat, the calf, the cat, and the dog. In all these species, with the possible exception of the young pig, when the dose is small the tuberculosis may be limited to and arrested in the glands along the alimentary tract; and whereas in the first group the age of the animal does not affect the result, in this group the adults are in all cases less susceptible than the young. These species exhibit varying degrees of susceptibility to tuberculosis, the young pig being the most susceptible, the adult dog the most resistant. The goat is less susceptible than the pig, and the calf apparently less susceptible than the goat. Cats are much more easily infected than dogs. General progressive tuberculosis is with difficulty set up in dogs, the adults of the species being more highly resistant than the young.

In the third group are included the rat and the fowl, which are apparently insusceptible to tuberculosis by feeding. Several rats have been fed with enormous numbers of tubercle bacilli, and nothing has been found in them beyond some minute

necrotic foci in the mesenteric glands. In the few experiments performed with fowls no disease at all has been produced.

(b) Course of Infection.

Dr. Griffith's observations have led him to draw the following conclusions:

The introduction of tubercle bacilli into the alimentary tract is not necessarily followed by the development of tuberculosis, and when fed with tuberculous material the most susceptible animals may escape infection; the bacilli in such cases either pass straight through the canal, or if absorbed are taken up by leucocytes and destroyed. When tubercle bacilli are absorbed from the alimentary tract, either through the tonsils and pharyngeal mucous membrane or through the intestinal mucous membrane, they may remain in the mucous membrane and set up characteristic tuberculous lesions, or they may pass through the mucous membrane into the nearest glands and leave no trace of their passage.

Furthermore, it has been conclusively shown that tubercle bacilli which have been ingested may within a very short time find their way into the lungs, where they set up tuberculous lesions; pulmonary tuberculosis so induced may or may not be accompanied by lesions in the mucous membrane of the alimentary tract, or glands in connexion with it.

In all species of animals, whenever generalized tuberculosis is produced by feeding, the lungs are usually affected, often to a greater extent than any other organ in the body.

The bronchial glands almost invariably become affected after the lungs; in none of the experiments is there any evidence that the reverse has occurred; in a few instances lesions have been found in the thoracic glands without apparent disease of the lungs.

(c) Anthropoid Apes and Monkeys.

Dr. Griffith finds that both anthropoids and monkeys are very susceptible, and that the disease usually runs a progressive course. For example, in five chimpanzees, including animals fed with such small doses as 0.01 mg., the disease produced was generalized and progressive, and led to fatal results in periods varying from 56 to 113 days. Baboons also proved to be highly susceptible, and the older animals appeared to be no more resistant than the younger.

In anthropoids and monkeys, Dr. Griffith finds, the mucous membrane of the alimentary tract is specially liable to infection, and typical tuberculous ulcers may be found along the whole length of the small intestine. The tonsils are often attacked and sometimes entirely destroyed by caseation. The lymphatic glands associated with the alimentary tract always become enlarged and caseous, and sometimes by fusing together they form large tumours both in the neck and the mesentery. The omentum and peritoneum very soon become infected, and in several instances the process was so intense as to resemble an intraperitoneal inoculation. In several instances in the baboon caseous nodules and typical tuberculous ulcers have been found in the stomach.

(d) Guinea-pigs and Rabbits.

As to guinea-pigs and rabbits, Dr. Griffith writes:

There may or may not be lesions at the sites of entry of the bacillus. Both species are very susceptible, and infection appears to be always followed by progressive tuberculosis which in the end would terminate fatally. The characters of the lesions found in the internal organs do not differ from those produced by subcutaneous inoculation.

The anatomical distribution of the tuberculosis differs in important respects in these two species. The lungs and kidneys of the rabbit in cases of general tuberculosis are always more severely affected than the liver and spleen; often the latter organs are perfectly healthy. In guinea-pigs, on the other hand, the liver and spleen are always more severely affected than the lungs and kidneys; the kidneys only rarely contain tubercles.

(e) Pigs.

Tuberculosis is readily set up in pigs by feeding, and in the younger animals is usually of a progressive type. The intestinal mucous membrane often escapes infection; the bacilli generally pass through without leaving any lesions, or, when lesions occur, they are usually few and inconspicuous. The tonsils and pharyngeal mucous membrane are more frequently affected than the intestines, and the glands of the neck are usually more extensively diseased than those in the mesentery.

In young pigs tubercle bacilli are disseminated into the internal organs very soon after their administration, and miliary tubercles may be found in all the organs, but chiefly in the lungs and liver, six weeks after inoculation. These tubercles in animals which have lived some time may attain the dimensions of a pea, and have caseous and calcareous centres and fibrous margins; in the lungs a tuberculous pneumonia sometimes develops, and this may affect the whole of a lobe or be limited to single lobules. The bronchial and portal glands become tuberculous after the lungs and liver. Infection soon spreads to the serous surfaces, an eruption of nodules appearing first in the omentum and on the peritoneum; on the peritoneum the nodules are found chiefly on the right side of the diaphragm and between the coils of the large intestine.

(f) Calves.

Calves have been found to be much less susceptible to tuberculosis by feeding than pigs, and a larger dose of bacilli is required in order to produce generalized disease.

Twenty-two calves in all were fed with tuberculous material and in only two of these was general tuberculosis established; in some of the others a few calcareous nodules were found in the internal organs, but in the rest the disease had not, in the period of observation, made its way beyond the nearest glands. The intestines of the calf, Dr. Griffith finds, are more liable to infection than those of the pig; in all the animals except one tuberculous nodules or ulcers were present. In the two cases in which general tuberculosis was produced the tuberculous process was very severe along the whole length of the alimentary canal and in one instance numerous large nodules were found in the wall of the stomach.

In six of the feeding experiments on calves the animals were suckled for periods varying from thirty-three to 190 days by cows which had been artificially infected in the udder with tuberculosis. In this series of experiments relatively little disease was set up. In only one animal was the disease at all severe, and even in this case the disseminated lesions were encapsuled and partially calcified, and were not numerous enough to have seriously impaired the functions of the organs in which they were found. Comparing the methods of feeding (1) by a single dose, and (2) by frequently repeated doses, Dr. Griffith is inclined to think that "a single dose of tubercle bacilli may give rise to a more extensive tuberculosis than the same or a larger dose spread over several weeks."

(g) Goats.

Not many experiments have been performed, but it has been shown that the goat is readily infected and general progressive tuberculosis has been set up; but, with small doses, the lesions are usually limited to the alimentary tract and glands in connexion with it. The lesions show a marked tendency to soften and break down, and in the lungs they may ulcerate and discharge their contents into the bronchi.

(h) Cats.

Dr. Griffith states that in cats the mucous membrane of the alimentary tract is not frequently affected, and with small doses of bacilli the disease may not extend beyond the nearest glands; when generalization occurs infection spreads first to the lungs, which in three cases were affected by a miliary tuberculosis, and in two others showed discrete nodules.

(i) Dogs.

As to dogs he writes:

Dogs are very resistant to tuberculosis by feeding, especially the adults of the species, and in only one case, that of a puppy, has the disease been at all severe. The mucous membrane of the alimentary tract is rarely attacked. An interesting anatomical feature in this species is the frequency with which lesions have been found in the lungs without apparent disease of the alimentary tract or glands in connexion with it.

LITERARY NOTES.

THE *St. Louis Medical Review*, which under the able editorship of Dr. Kenneth W. Millican has for the last two or three years been one of the most readable of the American journals, will, it is announced, henceforth appear monthly instead of weekly.

Dr. A. C. Houston, Director of Water Examination to the Metropolitan Water Board, has been invited by the Egyptian Government to examine the Cairo water supply, and will proceed to Egypt for that purpose in October. In connexion with this it may be of interest to some of our readers to learn that the problem of the purification of the waters of the Nile engaged the attention of physicians many centuries ago. In a brief account of a visit to Egypt (*Recuerdos de un viaje a Egipto*) Dr. Rodolfo del Castillo y Quartelliers, Clinical Professor of Diseases of the Eye in the Instituto de Terapeutica Operatoria del Dr. Rubio of Madrid, relates

that at Cairo he made the acquaintance of Dr. Mohamed Eloui Pacha, who has a great reputation in Egypt as an ophthalmologist and a writer on medical subjects. He has given much attention to the study of medical history, and is familiar with the collection of manuscripts relating to Arabian medicine in the Khedivial Library at Cairo. Among these is one written by Ebn-Raduan in the year of the Hegira 460, corresponding to 1068 of our era, which refers to the purification of the waters of the Nile. He says:

The waters of the Nile, if they are to be used for drinking or cooking purposes, must be taken from a part of the river where the current is rapid; that is where they hold in suspension a smaller quantity of decomposing matters, as in the place known by the name of Kom-El-Alunar (now old Cairo, beyond Guizeh). Water taken there must be subjected to special purifying procedures according to the constitution of those who use it. For those who suffer from the heat during summer it will be useful to clarify the water, dissolving therein chalk, Armenian bole, pounded lotus fruit, and vinegar. For those who feel the cold during winter, bitter almonds, thyme (*Thymus serpyllum*) and anetum, which he thinks must be fennel. After leaving it to rest for a suitable time to allow precipitation of the substances in suspension thrown down to the bottom of the vessel by the aforesaid clarifying substances, it only remains to decant the water to make it fit for use. The water may also be purified by simple filtration through media of baked clay or unvarnished porcelain. Another means of purification consists in heating the water at the fire, afterwards exposing it to the night air, and when the foreign matters have been deposited at the bottom of the vessel, collecting the clear part by decantation. But if after that operation the water should still have a disagreeable taste, it should be boiled and again exposed to the night air under the open sky, and finally clarified by means of the substances above mentioned. Nevertheless, the best means of freeing water from principles harmful to health consists in exposing it at once to the action of fire or to coction, exposing it to the night air, again submitting it to coction, clarifying it by means of one of the substances mentioned, and finally passing it through a filtering vessel exposed to the night air. Water so treated is then suitable for use in alimentation. During the summer this water should be kept in vessels of baked clay or earth made in the month of Tuba (which is explained to be the month of the Coptic calendar corresponding to January, which is the coldest in Egypt), in receptacles or skins coming from Hedjaz, or, finally, in any other refrigerating vessel. In spring the water should be stored in vaults which have their windows exposed to the north wind (the freshest in Egypt). In winter, however, it will be necessary to keep the water by preference in warm places and to store it in glass bottles and vessels that have been made in spring. To make water fresher it may be mixed with rosewater, or, better still, place in it chalk, purslain seeds, white poppy, *moghra* (a mixture of oxide of iron and clay), wrapped and bound in a piece of linen, so that the water may acquire freshness by contact with these substances without being contaminated by them. During the spring the vessels should be cleansed by rubbing them with broken pieces of Delft, barley flour, purslain, and sandalwood, and afterwards exposing them to fumigation with camphor and sandal wood. In winter the vessels should be rubbed with alkalies and cyperus, and they should be fumigated with mastic gum and *alud* (a resinous wood of an agreeable smell like guaiacum). The water of the Nile is very bad at the season of its rise and fall, inasmuch as the current is then slower. In both cases it should be boiled and clarified with greater care by means of bitter almonds and substances such as destroy its viscosity. On the other hand, the Nile furnishes a water of excellent quality from all points of view during the month of Tuba—that is to say, in midwinter. The Egyptians were not long in finding this out. Many of them, therefore, learnt to preserve the water collected during that month in large receptacles of glass or porcelain, so as to use it for domestic use during the whole year. They suppose that this water is never liable to deterioration, and on that account they use no means of purifying it, persisting in believing that it always keeps good. But you must not follow this example, and without believing what they tell you you must clarify the water whatever be its state, since water thus preserved is undoubtedly subject to changes.

From this it appears that more than 800 years ago Ebn-Raduan had grasped the notion, which we are apt to consider modern, that water may contain matters injurious to health and that it can be purified by filtration or by boiling. His direction that the vessels for the storing of the water should be made of clay in the month of Tuba appears to suggest that he knew that in Egypt at that time of the year the morbid principles existed in smaller quantity both in the water and in the earth, and therefore he seems to have thought that vessels made of earth at that time would be more free from disease-producing matter.

To the *Caledonian Medical Journal* for July Colonel Kenneth Macleod contributes an interesting "historical and personal sketch" of Indian medical administration. From January 2nd, 1871, to April 2nd, 1879, he held the appointment of Secretary to the Surgeon-General, Indian Medical Service, Bengal. The head of the Bengal Medical Department was at that time Surgeon-General (afterwards Sir) John Campbell Brown, a Scotsman of strong sense, sound judgement, and kindly disposition. He was succeeded in July, 1875, by Surgeon-General John Fullarton Beatson, C.I.E., generally known as "handsome Jack." He was very energetic, self-reliant, and well gifted intellectually. His style of composition was somewhat florid, and was known in other offices as "Beatsonese." The office establishment was composed of Eurasian and native clerks. There was a correspondence, a record, and a statistical department, each with a head and a staff of assistants. Typewriting had not come into fashion, and all letters were neatly written by native copyists. Records were kept on the bundle system, but in former times all the proceedings were copied into large, strongly-bound books, which formed a library of considerable size. Much interesting information was selected from these volumes and published in the *Indian Medical Gazette*. When Dr. Macleod joined the secretariat of the Medical Department in 1870, the head of the service was styled inspector-general of hospitals, the two subordinate inspectors having been abolished, and the deputies (eleven in number) were called deputy inspectors-general. These titles were changed in 1873 to surgeon-general and deputy surgeon-general. In the same year the rank of assistant-surgeon was discontinued. The administration was purely Indian, and embraced all medical institutions—military and civil—all hospitals of native regiments, station staff, and lock hospitals, medical stores, medical schools, hospitals, and dispensaries throughout the presidency, gaol hospitals, lunatic asylums, and vaccination. The establishments under control were (1) officers of the Indian Medical Service; (2) some uncovenanted officers in charge of the smaller civil stations; (3) the apothecary subordinate establishment (afterwards military assistant-surgeons) for service with European troops; (4) the subassistant surgeon (afterwards civil assistant surgeon) class, for service in the principal civil hospitals throughout the presidency, and in medical schools; and (5) the hospital assistant class, for service in native regiments, and the smaller civil hospitals and dispensaries. The amalgamation of the medical and sanitary departments in 1880, the unification of military medical administration, and the assignation to local governments of administrative officers under their own control in the same year, removed a number of anomalies, and led to more contented and useful action; but in the seventies these necessary adaptations to altered circumstances had not been made, and the confusion of double or triple and overlapping agencies of control caused embarrassment and heart-burning. The struggle to maintain the prestige and utility of the medical department was no light one. One result of this rivalry was to stimulate the writing of reports, as evidence of industry and importance. The number and bulk of these were astounding. In addition to current office work, Dr. Macleod had to prepare annually (1) a report of Calcutta medical institutions, (2) of Bengal dispensaries, (3) vaccination, (4) lunatic asylums, (5) a report of the native army, and (6) a summary report of lunatic asylums, hospitals and dispensaries, and vaccination for the whole presidency. In the year 1871 these amounted in the aggregate, with their elaborate tables, to over 1,000 folio pages. Deputies and executive officers were similarly burdened with returns and reports, and were obliged to prepare others for other departments. This plague of report writing continued rampant until Lord Curzon took the matter in hand, had the whole question investigated by a strong committee, and issued orders which largely curtailed their number and length. In addition to these regular reports, Colonel Macleod prepared a number of special reports on medical schools, vaccination, and many other subjects. Since that period the circumstances of the Indian Medical Service and of Indian medical administration have undergone many changes—most of them salutary. These are being fully described in the *Indian Medical Gazette* by Lieutenant-Colonel D. G. Crawford, of the Indian Medical Service.

ST. BARTHOLOMEW'S HOSPITAL.

The First New Block.

Some five years or more ago an agitation, quite remarkable for its vehemence and persistence, was started with the object of forcing the Governors of St. Bartholomew's Hospital to abandon the existing site of this ancient city hospital and move elsewhere. For some time it seemed as if those in charge of the institution would have to give way, but they stood firm to their original ideas and the firstfruit of the labour of those concerned, of the City of London, which is practically the governing body of the hospital, of its lay administrators, and of the medical staff, is now to be seen. It consists of a new out-patient and casualty department, of new quarters for the resident staff, and of a new dispensary and kitchen; and the block containing these departments, though internally not yet quite completed, was formally declared open by the Prince of Wales on Tuesday, July 23rd. The Prince, who was accompanied by the Princess of Wales, was received in the Great Hall on his arrival by the Treasurer, Lord Ludlow, and Lady Ludlow, the five almoners, the senior physician (Dr. Norman Moore), the senior surgeon (Mr. Harrison Cripps), the matron (Miss Stewart), and the clerk (Mr. Thomas Hayes). A procession was then formed to the new Waiting Hall, where the Lord Mayor and a large number of guests were in attendance. Prayers were then said by the Archdeacon of London, and afterwards the Treasurer first gave a short account of the undertaking and of the scheme of which it forms part, and then asked the Prince of Wales to declare the building open.

In his reply, the Prince of Wales said that it gave peculiar pleasure to himself and the Princess to be present. His father had preceded him in the office of President, and it was the King who had laid the foundation stone of the now completed building. Indeed, the institution was one with which throughout its very long history the reigning monarch or some member of his family had always been closely associated. He was sure that the new building would greatly increase the facility with which the noble work of the hospital was carried on, and, by helping to secure its efficiency, prove of great benefit to those who had occasion to seek its assistance. He hoped that the rest of the scheme in view would be completed with equal success, thanks to the liberality of the public, and that in particular it would soon be possible to erect the greatly-needed nurses' home.

The opening ceremony completed, the Princess of Wales, who was elected a Governor of the institution at a General Court on June 27th, received and assented to the "Charge" which by ancient custom is read to all Governors. This done, their Royal Highnesses made a tour to the new buildings, and afterwards paid a visit to Mark and President Wards, those in which the senior physician and senior surgeon respectively work. The general proceedings then terminated in the Great Quadrangle, where the band of the 1st Life Guards was playing, and tea was served.

The New Buildings.

In the address read to the Prince of Wales it was stated that the new building

> would add greatly to the efficiency of the hospital both as a place for the relief of present suffering and for that enlargement of medical knowledge which leads to the prevention or the cure of disease in future times and all over the world.

And, in a further passage, that

> it provides that every out-patient at St. Bartholomew's Hospital shall have the advantage of the most perfect methods of observation and of treatment.

It may at once be conceded that these are but modest statements of indubitable fact. The environment alike of those who enter this out-patient department as patients, and of those who work in it as students and practitioners of any branch of medicine or surgery, will, when the internal fittings are fully complete, be most excellent. The arrangements have been well thought out, the details are in most respects excellent, and the scale upon which all the departments are planned is magnificent. Indeed, in their present condition—empty and not quite complete—the rooms assigned to different portions of the work to be done seem so large and so numerous that a tour of them leaves an impression that they cannot all really be required. Doubtless, however, when work is in full swing, the value of the ample provision of floor space and of rooms will be fully felt, and the generous proportions upon which everything has been planned will greatly contribute to the efficiency with which the work, therapeutic and educational, is carried on. The new block really consists of three semi-detached buildings, of which one runs along Giltspur Street in a line with the library and the old gateway. This portion, which contains quarters for the resident staff, has in its course absorbed the bookshop, instrument shop, and cheese store in Giltspur Street with which old students are familiar. In its centre is a new gateway forming the entrance to the out-patient department proper, which lies at right angles to Giltspur Street and the old library buildings—running, in short, parallel with the school buildings which separate it from the Rahere and Colston block on the west side of the quadrangle. At the end of the building and at its side is the third portion, which lies close to the old dispensary. Patients enter this new extern department through the gateway already mentioned. There is a separate inner door for ordinary patients and another for accidents leading direct into the rooms in which these cases will be received. From the hospital the main entry to the new buildings is through a door at right angles to the library entrance, a broad passage having been cut through the old medical theatre and the rooms formerly occupied by the school staff.

The Out-Patient Department.

This is the most important part of the new building, and its ground floor is given up entirely to a waiting hall and accommodation for casualty work. This hall, supported on square columns, is 140 ft. long and 48 ft. wide, and it is calculated that it will, if need be, accommodate no fewer than 850 patients. Around the hall there are no fewer than twenty consulting rooms for the use of casualty physicians, house-surgeons, house-physicians, and other members of the junior staff; in addition, there is a room for teeth extraction and two ordinary operating rooms. The general waiting hall communicates by a broad passage with the dispensary building and with the upper floors by lifts and stairs. All the rooms surrounding the waiting hall are not only large but, with two exceptions, have the advantage of top lights. The important work of examining cases on their first arrival and of deciding the department to which they shall be assigned if not disposed of forthwith will therefore be performed in the most convenient circumstances.

The first floor of the building is divided between the assistant physician and the assistant surgeon who are on duty for the day. On the medical side there is a waiting room for patients, a room for the clinical assistant, another for the clinical clerks, a dark room, a clinical laboratory, and a private room for the physician himself. The consulting room in which the patients will finally be examined is so large that it will allow of the convenient presence of a great number of students. The surgical out-patient department is upon the same elaborate scale, the arrangements including also an operation theatre and rooms for the preparation of dressings and the sterilizing of instruments.

The second floor is given up to the department for diseases of women, for cases of eye disease, diseases of the ear, and diseases of the throat and nose, four departments in all, each of them having its own operating theatre, waiting and various other rooms. The third floor also holds four departments, namely, those for the treatment of diseases of the skin, for electro-therapeutics, for dental surgery, and for orthopaedic treatment. The latter, in addition to an operation theatre, a dressing room, an instrument room, a waiting hall, and a private apartment for the surgeon, and a general consulting room, has its own operating theatre and a room for the performance of special exercises.

The skin department and the electrical department each has an *x*-ray rooms of its own, in addition to waiting rooms, consulting rooms and various other facilities for work. Moreover, the electrical department has separate rooms for testing the reactions of patients, a machine room, and one given up to an array of electrical baths. The accommodation for dental surgery comprises a waiting hall, an operating room, another in which operations entailing the administration of gas will be conducted, and a

fifth in which patients who have been anaesthetized can be given time to recover themselves.

It will be seen, therefore, that provision has been made for eight separate special departments, and that the arrangements for each of these are of the most elaborate character. Finally, it should be noted that in this building are to be found some small single-bed wards for the temporary detention of cases of doubtful character, and also a theatre in which lectures on clinical subjects will be given.

The Dispensary.

A new dispensary and dispensary waiting hall have been provided in the third building, to which allusion has been made. The dispensary is very large, and should enable patients to be served with their medicines or other drugs with rapidity; and connected with it is an extensive pharmaceutical laboratory. Immediately above the dispensary is a new chemical laboratory, which has attached to it a special room for practical instruction in public health work, as well as a balance and lecturers' rooms. The top floor is given up entirely to a new kitchen for the whole hospital; it is 75 ft. long and 25 ft. wide, and well fitted up for cooking by gas and steam.

The Residential Block.

This part of the new building faces, as already indicated, Giltspur Street, and is six stories high. The provision for students includes a large common room, a room for meetings of the committees of the various clubs of the Students' Union, and a luncheon and dining hall; while on the upper floors are the quarters for the resident staff. It is already in occupation, the whole establishment being under the general charge of a resident caterer, who has been provided with a kitchen and everything else necessary to enable him to supply meals at reasonable prices. The quarters for the residents include rooms for the sixteen permanent officers and for an average of eight students doing maternity work, and therefore necessarily resident at the hospital. Each of the former has his own bedroom and sitting-room, as well as the use of the rooms common to all the residents. Much care has been bestowed on the furnishing of the rooms. It is in all respects attractive, and combines some ideas for the prevention of accumulation of dust on the tops of wardrobes and like articles of furniture which might be adopted with advantage by furniture manufacturers generally.

Lighting and Heating.

The whole block—residential quarters, out-patient department, and dispensary—is built of fire-proof material, and every floor has ready access also to outside iron staircases, provided for use in case of fire. The flooring for the most part is of terrazzo, while the inner walls are entirely faced with glazed tiles, chiefly white, with ornamental bands in light green. The natural lighting is everywhere excellent, as the rooms are lofty, are well provided with windows, and have bright wall surfaces. Ventilation is effected by a modification of the plenum system, arranged so as to change the air throughout the building not less than ten times an hour. Labour-saving devices have been freely introduced, there being eleven lifts altogether, and numerous telephones connected with the general exchange room of the hospital. Nothing, in short, has been forgotten which can help to ensure the full attainment of the general and special objects of new buildings.

It is anticipated that the department will be in full working order early in the winter session.

INTERNATIONAL CONGRESS OF SCHOOL HYGIENE IN LONDON.

THE second International Congress of School Hygiene will be opened in London on Monday, August 5th, when the delegates and members will be received and an inaugural address delivered by the President, Sir Lauder Brunton, M.D., F.R.S. The Congress will meet in the University of London, and the reception rooms and offices there will be opened on Saturday morning, August 3rd, for the issue of tickets and information regarding the Congress. Between 12 and 3 on that day there will be an informal reception in the University; in the afternoon the Marchioness of Londonderry, President of the Ladies' Reception Committee, will be "at home" to members, and in the evening the Mayor of Westminster will give a reception at Caxton Hall. A reception and *conversazione* will be held in the University of London on Monday evening. The business of the sections will commence on Tuesday, August 6th, at 10 a.m., and the sections will meet on the following Wednesday, Thursday, and Friday at the same hour, rising at 2 p.m. on each day. The following are the officers of the sections:

OFFICERS OF SECTIONS OF THE CONGRESS:

1. The Physiology and Psychology of Educational Method, and Work. President, Sir James Crichton-Browne, Kt., J.P., M.D., LL.D., F.R.S.; Honorary Secretaries, F. E. Batten, M.D., F.R.C.P., Robert Jones, M.D., F.R.C.P., F.R.C.S.
2. Medical and Hygienic Inspection in School. President, Professor Wm. Osler, LL.D., F.R.C.P., M.D., D.Sc., F.R.S.; Honorary Secretaries, Ralph H. Crowley, M.D., M.R.C.P., A. H. Hogarth, B.A., M.B., D.P.H.
3. The Hygiene of the Teaching Profession. President, T. J. Macnamara, M.P., LL.D.; Honorary Secretaries, Alice V. Johnson, F.R.C.S.I., D.P.H.Camb., Marshall Jackman.
4. Instruction in Hygiene for Teachers and Scholars. President, Sir William J. Collins, M.P., D.L., J.P., M.D., M.S.; Honorary Secretaries, H. Meredith Richards, M.D., B.Sc., Miss A. Ravenhill, F.R.San.I.
5. Physical Education and Training in Personal Hygiene. President, Sir John W. Byers, M.A., M.D., M.Ch., M.A.O.; Honorary Secretaries, James Cantlie, M.A., M.B., F.R.C.S., John G. Kerr, M.A., LL.D.
6. Out-of-School Hygiene, Holiday Camps, and Schools: The Relation of Home and the School. President, the Right Hon. Lord Kinnaird, F.R.G.S., D.L., J.P.; Honorary Secretaries, Mrs. Kimmins, E. M. Niall, M.D.
7. Contagious Diseases, Ill-health, and other Conditions affecting Attendance. President, Sir Shirley F. Murphy, M.R.C.S.; Honorary Secretaries, C. J. Thomas, M.D., B.Sc., D.P.H., W. H. Hamer, M.D., F.R.C.P.
8. Special Schools for Feeble-minded and Exceptional Children. President, W. H. Dickinson, M.P., J.P., D.L., B.A.; Honorary Secretaries, R. Langdon Down, M.B., G. E. Shuttleworth, B.A., M.D.
9. Special Schools for Blind, Deaf, and Dumb Children. President, the Right Hon. the Earl of Crewe, P.C.; Honorary Secretary, B. P. Jones.
10. Hygiene of Residential Schools. President, Clement Dukes, J.P., M.D., B.S., F.R.C.P.; Honorary Secretaries, A. Lambert, M.D., W. Attlee, M.A., M.D.
11. The School Building and its Equipment. President, Thomas Edward Colcutt, President, R.I.B.A.; Honorary Secretaries, J. Osborne Smith, F.R.I.B.A., J. R. Kaye, M.B., D.P.H.

Certain subjects have been selected for discussion at general meetings of the whole Congress which will be held on each day at noon. On Tuesday, August 6th, a discussion on methods for the first and subsequent medical examination of school children will be introduced by Dr. Leslie Mackenzie, Dr. Mery of Paris, and Dr. Heinrich Kokall of Brunn. On Wednesday there will be a general discussion on the lighting and ventilation of class rooms, introduced by Sir Aston Webb, R.A.; Dr. R. Dinet, Secretary of the French League of School Hygiene; and Dr. Wilhelm Prausnitz, Professor of Hygiene in the University of Graz. On Thursday the subject to be discussed at the general meeting will be the school and its relation to tuberculosis, introduced by Dr. Arthur Newsholme, M.O.H. Brighton; Dr. J. Courmont, Professor of Hygiene, Lyons; and Professor Schumburg of Strassburg. On Friday the general meeting will discuss school work in its relation to the duration of lessons, the sequence of the subject, and the season of the year; the discussion will be introduced by Dr. William Henry Burnham, Professor of Pedagogics, Clark University, Worcester, Massachusetts; Professor Chabot, Professor of Education, Lyons; and Professor Leo Burgerstein of Vienna. Evening lectures will also be delivered on Tuesday evening by Bishop Welldon, on the effect of school training on mental discipline and control in adolescene; on Thursday evening by Dr. Dolèris of Paris, on the hygiene of games for women and girls; on Friday evening by Professor Griesbach of Mulhausen, on the connexion between medicine and pedagogy.

Numerous excursions and entertainments have been arranged for the afternoons of Tuesday, Thursday, and Friday.

The Royal Sanitary Institute has arranged an exhibition in the University buildings of objects illustrating the planning and construction and equipment of school buildings, school furniture, and teaching appliances of all kinds. The exhibition will remain open until August 14th.

THE STATE SERUM INSTITUTE OF DENMARK, COPENHAGEN.

A SHORT account of this institute will be interesting from two points of view—first, as a description of an up-to-date science laboratory built with a view to its special purpose; and, secondly, as an example of how a small and somewhat isolated independent State such as Denmark has met and satisfactorily solved an important problem of State medicine.

There had been in the University of Copenhagen for many years a department of pathology, including bacteriology, presided over by Professor C. J. Salomonsen, but in 1894, after the publication of Roux's experiments with Behring's seratherapy applied to diphtheria, it became necessary to establish a department more especially devoted to the study and production of antidiphtheritic serum. Professor Salomonsen visited the Pasteur Institute in Paris, and on his return petitioned the State to allow about £600 for such a purpose. This he obtained, and a sero-therapeutic department was estabilshed in connexion with the University Laboratory of Medical Bacteriology. It soon became apparent that the production of the serum was attended with such difficulties that its success depended on its preparation being in the hands of workers who were thoroughly acquainted with the latest development of modern research working in an *experimental pathological laboratory* equipped with all the best implements for carrying out the most elaborate technique; for example, the variations in strength of different samples of serum led to the gravest practical difficulties; different races of diphtheria bacilli giving toxines of very various strengths. As one of the objects of the department was eventually to supply every medical practitioner in Denmark with the serum free of charge, it was seen that a new and up-to-date laboratory was absolutely necessary. A sum of about £10,000 was obtained, and a site was given by the Government, the result being the erection of the present building.

Front elevation

The laboratory stands in its own grounds in an open part of the city, and consists, as can be seen from the annexed plan (Fig. 1), of a main building, a stable, and a house for small animals. The main building is composed of basement, ground floor, first floor, and attics. The laboratory occupies the basement, the ground floor, and part of the attics. The first floor is reserved as a private residence for the chief of the laboratory. The two plans annexed show the rise and arrangement of the buildings; the illustration, the south side of the laboratory, also showing pond. From the main staircase (1) leads the corridor (2) into the chemical room (3) adjoining the weighing-room (5). The chemical room will accommodate several workers, each of whom has ample counter space with separate arrangements for gas, electricity, and exhaust filter. Noticeable here is a centrifuge of great power, built from the design of Dr. Georges Dreyer of the University Bacteriological Institute. It stands about 2 ft. 6 in. high, and its exterior is composed of armour plate steel about 1 in. or more in thickness. Driven by electricity, it attains a maximum speed of 9,000 revolutions per minute, each 100 revolutions being indicated by the striking of a small bell. It is estimated that the velocity attained is such that were a tube to become detached at the maximum speed it would traverse a distance of five or six miles, hence the necessity for the extremely strong case. Sedimentation can here be rapidly carried to an extreme degree. A shaking machine for the production of emulsions is also worked from this same motor. From the corridor (2) access is gained to the bacteriological laboratory (6). Out of this are the incubator room (7) and a small sowing room (8) in which the flasks are inoculated and passed through a trap-door directly into the incubator room. At the other end of (6) is the room (9) where the media are prepared, and where the smaller and larger autoclaves and other sterilizing apparatus are placed. Through an ante-room (10) is the research laboratory, entirely isolated from the rest of the building, where work upon such organisms as must be carefully kept away from the rooms in which antidiphtheritic serum is made is carried on. (16) is a dark room, (14) and (15) are the rooms in which the blood is treated. It is egouttated and filtered in room (14) and bottled in room (15), Only the person actually engaged in these processes is ever admitted to these two rooms. In the basement (19) is the corridor. On the north side are two spacious rooms (20, 21) for small animals and a third room (24) for isolating any animals when required. Small animals, such as guinea-pigs and rabbits, are kept in wooden frames without a bottom, resting on the concrete floor. These frames are half-filled with moss litter, which absorbs all excreta. When the half-yearly cleaning becomes necessary the frames are lifted, and the foul litter shovelled away. By this means epidemics are prevented, and the animals have much liberty. (22) is boiler room, (25) washing room, (26) workshops, (27) wood cellar, (31) gas engine and dynamo, (32) accumulators; (32) is quite isolated from the rest of the building. In addition to these there are hot chambers (23 and 26),

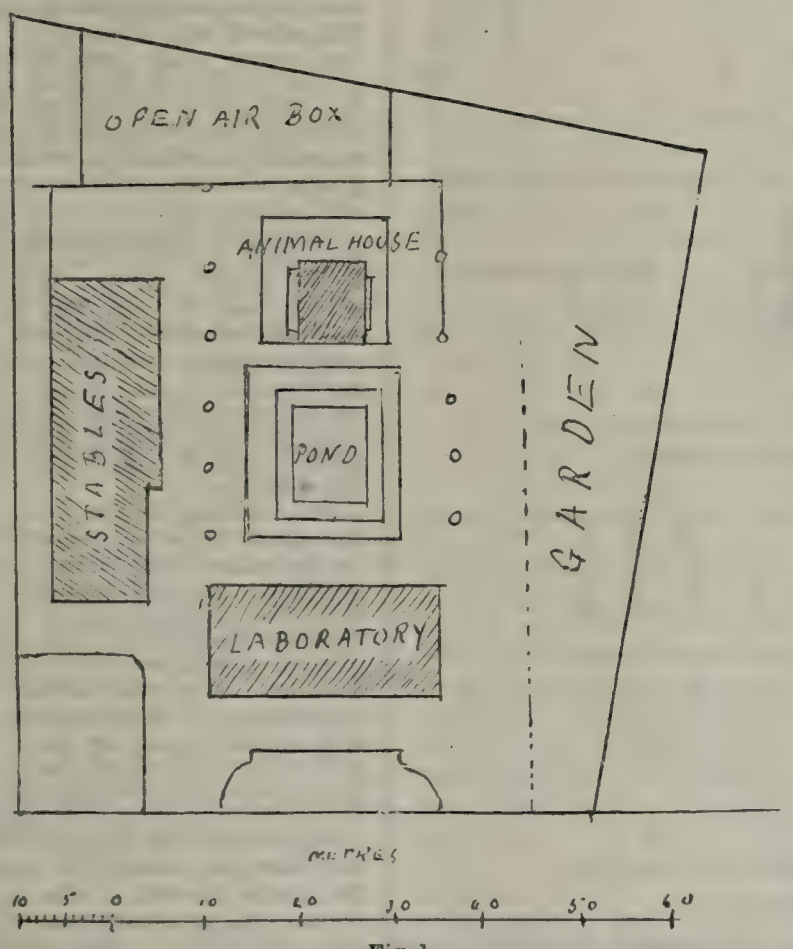

Fig. 1.

and a double cooling storage chamber (28, 29) where both toxins and serums are kept.

The stables consist of a large central space (35) entered by a large door (34). This contains six stalls (K) and two loose-boxes (6); (36) is also a horse box. (39, 40) are boxes for goats and are near the goat pen; (41) is a research room for work best done in the stable. At the other end of the building is (47) a large bleeding stall. This occupies the height of two stories of the building, and gets light from above. In (48) the drawn blood is left to coagulate; 49 and 50 are isolation boxes for suspicious cases of disease among the horses. The small animal house has an impervious floor, and is surrounded by pens open to the air. The arrangement for animals is the same as in the basement. Here are also rats, mice, poultry, and pigeons; next to this is a pond for aquatic birds, frogs, etc. In the open-air box are a herd of goats. There is an additional paddock for horses, not shown in the plan.

Dr. T. H. Madsen is the chief of the laboratory, under Professor Salomonsen as director; he is allowed one or more assistants, in addition to which advanced students of many nationalities are often working in the institute.

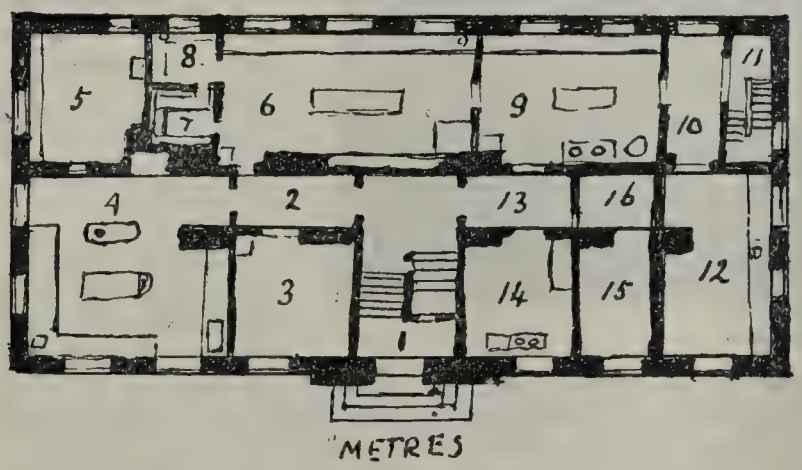

Fig. 2.—Laboratory, ground floor.

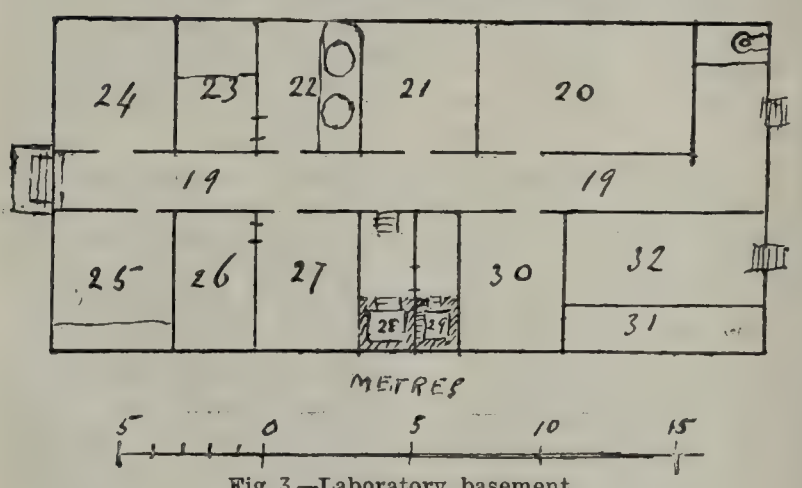

Fig. 3.—Laboratory, basement.

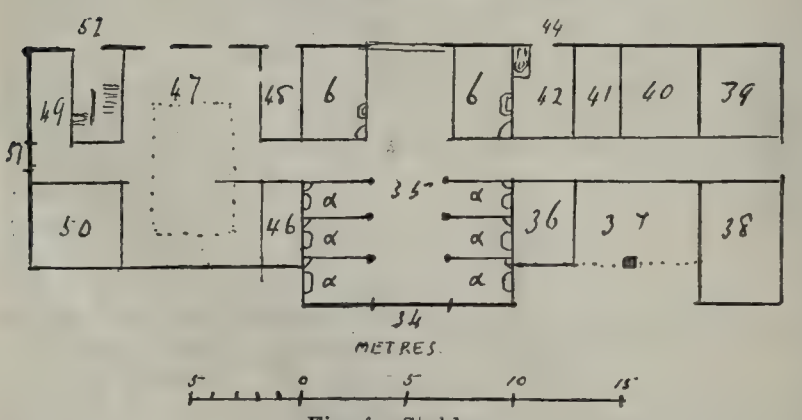

Fig. 4.—Stables.

Not being a teaching centre great concentration has been possible in the arrangements of the laboratory, and Dr. Madsen lays stress on the fact that if research in a particular direction seems necessary the entire force of the staff can be utilized in pursuing it, and results thereby obtained in a short time. The great work up to now has been the standardization of the serum sent out, and in order to do this and to be able to give mathematical formulae for its antitoxic and immunizing power special processes had to be invented and tests devised. Already a considerable number of brochures dealing with the special work of the Institute have been issued not only in Danish but in English, French, and German. The work of the Institute has been greatly helped by its association with the department of Medical Bacteriology in the University, which under Dr. Georges Dreyer has arrived at a very remarkable degree of efficiency—Dr. Dreyer's modification of Widal's agglutinin reaction test by means of sedimentation in tubes containing graduated amounts of culture and serum, of which an account will shortly appear in English, being a remarkable advance in clinico-pathological methods.

NEW SYDENHAM SOCIETY.

THE following report will be presented to the forty-eighth annual meeting of the New Sydenham Society, to be held at Exeter on Thursday, August 1st, at 9 a.m.:

The works issued during the year 1906 consisted of two double fasciculi of the *Clinical Atlas* illustrating the subjects of variola, vaccinia, and varicella, and of a printed volume containing selected papers on the parasites of syphilis and small-pox. For the current year a double fasciculus is already in the hands of the members, and a second double fasciculus devoted to gynaecological subjects is almost ready for issue. The fasciculi of the *Atlas*, though fewer in number, are illustrated at greater cost than usual, since almost the whole of the plates are coloured.

The Treasurer's accounts have been audited, and show that at the end of the year (December, 1906) there was a balance of £124 2s. 1d., but, as two cheques amounting to £91 6s. had not been presented for payment, the real balance amounted to £32 16s. 1d. Against this, however, were to be set off certain liabilities chiefly for work in progress. Part of this has since been discharged, and the Secretaries are of opinion that at the close of the present year it is not likely that more than £250 will remain due.

For several years past the Treasurer and Council have been unable to contemplate without some misgiving the financial position of the Society. Too sanguine expectations were entertained during the first years of the issue of the *Clinical Atlas*, and these led not only to the printing of an edition much larger than has been required, but to a more liberal expenditure on plates and letterpress than could be afforded. It was anticipated that there would be a larger demand for the back fasciculi than has been realized. The nature of this work rendered it inevitable that the arrangements should be made well beforehand and obligations undertaken. The result was that for several years past the annual income has been to some extent burdened by debts incurred in former years as well as by some which were prospective. It was impossible to allot to each year its own share in expenditure, and the auditors were repeatedly obliged to note that whilst the income and outgoings were balanced there remained some outstanding accounts with artists, etc.

By careful management during the last two or three years this state of affairs has in part been rectified. No liabilities which could possibly be avoided have been incurred. The edition sent to press has been reduced, advertisements have been almost wholly stopped, the Society's agent has accepted a smaller salary, and in every direction the strictest economy has been enforced. If the Society were to cease receiving subscriptions at the end of the current year it would be free from engagements beyond the above-mentioned indebtedness of £250, which the realization of its stock in hand should suffice to discharge.

At a meeting of the Council held in December, 1906, when the above facts were fully discussed, a resolution was passed to the effect that it was desirable to submit to the annual meeting a proposal that the Society should wind up its affairs. It was felt and expressed by several members of the Council that the Society had to a large extent completed its vocation. The activity of medical publishers of the present day is wholly different from that which prevailed when the Society was instituted half a century ago. Publication under the auspices of a council, bound by rules which entail delay, and controlling only a limited annual income, cannot now compete with the energy and promptitude of individuals who are free to exert their own untrammelled judgement and to act promptly. The works left for the Society's selection are now for the most part only those for which the publishers do not think there would be much demand; this applies especially to large printed books, but, to some extent also, to pictorial illustrations. For the production of the latter new and improved processes are constantly being produced, of which a society having a work in current issue and unable to encounter pecuniary risk cannot well avail itself.

Six months have passed since the resolution just referred to was adopted, and nothing during that time has transpired to induce those who know most about the details to change their views. For several years the loss of members by death or resignation has been in excess of its gains, and it is obvious that if, under closer financial pressure, the annual issue of books should be reduced, the resignations would be likely to increase.

It may seem to some almost a defect in courage or energy to contemplate the winding up of a society which yet numbers over nine hundred members and enjoys a corresponding income. It is true that such an income would suffice for a respectable annual issue of medical literature. The Society at the present appears, however, to have no aims before it sufficiently definite and attractive to prevent further dwindling. The *Atlas* in its present form requires for success a very large income. It has been planned on too large a scale, and in endeavouring to meet the requirements of all it has disappointed many. It is clear that it must be either much modified or be discontinued. Nor does the Council feel that there are any works suitable for translation the publication of which would be acceptable and likely to revive the Society's former prosperity. Under the circumstances which have been explained the Society has determined to submit to the judgement of the annual meeting the subjoined proposals:

1. That the Society be continued on the understanding that the Council will restrict itself to certain defined objects as follows: In the first place the issue of an annual volume consisting of short monographs or essays carefully selected and translated promptly after their original publication, and in the second place of one or more fasciculi of the *Atlas* which should concern themselves chiefly with illustrations of the subjects dealt with in the printed volume, or of those exhibited in the annual museum of the British Medical Association. Each fasciculus to be complete in itself.
2. That the Society be continued, but its work be restricted to the translation and publication for series of foreign monographs or essays, the publication of the *Atlas* or of expensive illustrations in any form being discontinued.
3. That the Society be continued, its scope being left as heretofore to the judgement of the Council for the time being.
4. That the Society shall not be continued beyond the end of the current year. That the present officers be requested to be good enough to remain in office in order to wind up its affairs, and be empowered to deal as may be thought best with the stock in hand and with any profits that may accrue from its sale.

At a large and influential meeting of the Council held in London on July 18th it was decided to recommend the adoption of proposal No. 4 to the annual meeting, but it was also decided that in the event of this proposal not meeting with approval, the alternative proposals 1, 2, and 3 be put before the members.

A WORKING COLONY FOR THE TUBERCULOUS.

The Maitland Cottage Sanatorium.

ON July 20th the Hon. F. W. D. Smith, M.P., presided over a meeting held at the Kingwood Sanatorium, Peppard Common, in support of a scheme for the extension of the work of the neighbouring Maitland Cottage Sanatorium, and the establishment in connexion therewith of a "working colony" where those who have so far recovered as to be capable of some work, however light, may find an opportunity to prolong their stay under the supervision of the medical officers, and within the disciplinary conditions of the sanatorium. Where the establishment charges are guaranteed, the weekly cost of the non-working patient is about 30s., and this can be reduced by the earnings of the "working" patient to 15s.; at this very moderate figure it seems within the bounds of possibility to provide for a stay of from six months to a year, which is needed for complete arrest of the disease in many instances. A commencement of the work of the Colony has already been made, several old patients being at present employed in carpentering, painting, stable work, and gardening. Arrangements will also be made for the reception of children suffering from tuberculosis in any form, who will have the advantage, when in a condition to profit by it, of schooling on kindergarten principles. The Committee appeals for £10,000 to carry out the proposed extensions and to establish an endowment fund, the income from which would be available for assisting those branches of the work which were not entirely self-supporting.

The CHAIRMAN, in opening the proceedings, said that while the public was fully alive to the importance of the general problem of tuberculosis, there was as yet no adequate provision for the sanatorium treatment of the working classes. The results attained in the Maitland Cottages, however, were so satisfactory as to demand the establishment of the institution upon a larger scale and upon a financially sound and permanent basis.

Professor OSLER said the problem of tuberculosis could be stated by a quotation from the report of the Registrar-General: the mortality in England and Wales in the year 1905 from tuberculosis was 55,759, or 10.7 of the total mortality. At a moderate estimate this meant that there were some half a million suffering from the disease. A brighter picture was the steady reduction of the death-rate since 1860 to which there had been several contributory factors. The conditions conducive to recovery were now recognized and the public were enlisted in the conflict with the disease. The essentials for a successful fight were—compulsory notification, early diagnosis, treatment of early cases upon certain recognized lines, and arrangements for the treatment of advanced cases in cities. Three alternatives offered to the poor patient: Hospitals, the Home, and Sanatoriums. It was impossible to get all the poorest tuberculous patients housed in sanatoriums, but every one who had seen the Maitland Sanatorium with its simple but satisfactory buildings, not in too great contrast with the homes of the patients, its strict management, rigid discipline, good food, and education in the value of continuous fresh air, would realize that the problem might be solved, and that such places would help greatly in the battle. Referring to the "phthisophobia" said to prevail in the locality, he remarked that there was probably no place in Oxfordshire where there was less danger; it had in fact been shown, at a sanatorium in the Adirondacks, that the air of the institution held fewer tubercle bacilli per cubic yard than that of neighbouring estates. The crusade was one for the individual, and contributions were needed in money, but also in educational effort. Of course there were many subsidiary questions of importance, such as housing conditions, cleanliness, the care of children, cooking, and alcohol; but it was mockery to tell this to those living in the slums. It was rather a question for city authorities. He offered his congratulations to Dr. Esther Carling, who was a credit to the profession, the district, and the county.

Dr. SIDNEY DAVIES, Medical Officer of Health for Woolwich, proposed a resolution expressing the approval of the meeting and pledging every effort to further the scheme. Woolwich was well content with the results attained by the patients the municipality had sent to the beds they subsidized in the Maitland Cottages; not only were the patients themselves benefited, but the educational value of the lessons they learned had quickly been manifested in the district from which they went. The cost to Woolwich was a rate of one-sixth of a penny. It had, however, become apparent that for the permanent restoration of wage-earning power a longer stay was necessary than had hitherto been possible. To this end it was proposed to establish a "labour colony," where those who had so far recovered as to be able to do some work might do so under the most favourable conditions. It was also proposed to start a "sanatorium school," where provision would be made for children.

The resolution was seconded by Dr. STEWART ABRAM, of Reading, who remarked upon the rapidity with which children respond to sanatorium conditions, and mentioned the estimate of cost—15s. a week for "workers" and 15s. for children—which was the outcome of the experience of the past few years, and said much for the administration.

Dr. ESTHER CARLING, in thanking the Regius Professor for his presence there, said that she belonged to a generation of doctors to whom the writings of Dr. Osler had come as an inspiration; there were no longer any dry bones in medicine; she was therefore doubly glad to have the opportunity of thanking him.

The Committee includes, besides Professor Osler and the Hon. W. F. D. Smith, M.P., the Bishop of Oxford, Dr. Abram, Dr. Ashby, Dr. Walter Carr, Dr. Julia Cock, Dr. W. S. Colman, Dr. Sidney Davies, and Mr. Hastings Gilford, F.R.C.S.

Donations and subscriptions may be sent to the Honorary Secretaries, Dr. Esther Carling and Dr. Marie Pethick, Kingwood, Peppard Common, Oxon.

THE Empress of Austria has consented to be Protector of the Tuberculosis Conference to be held in Vienna from September 19th to 21st, under the presidency of the Minister, Herr Bourgeois. The Organization Committee consists of Professors Leopold von Schroetter, and Anton von Weichselbaum, with Count Heinrich Larisch as Honorary President.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

DURING the weeks ended June 15th, 22nd, and 29th, the deaths from plague numbered 19,934, 10,830, and 8,651 respectively. The fresh cases recorded during the periods in question amounted to 21,647, 12,010, and 9,282 respectively. The Punjab still returns the highest figures of all Indian departments; during the three weeks the deaths from plague in the Punjab were returned as 17,277, 9,423, and 7,596, so that the returns for other districts are unimportant.

AUSTRALIA.

Queensland.

Brisbane.—During the weeks ended June 1st, 8th, and 15th the fresh cases of plague numbered 3, 1, and 0; the deaths from the disease, 0, 1, and 0. No case of plague had occurred, since the case occurring during the last week of May, for forty-three days. Infected rats were found during the week in Brisbane. The total cases of plague in Brisbane since January 1st, 1907, now amounts to 36.

Ipswich.—One of the cases included in the Brisbane returns came from near Ipswich.

HONG KONG.

During the weeks ended July 6th and 13th the fresh cases of plague numbered 25 and 27, and the deaths from the disease 25 and 27 respectively.

SOUTH AFRICA.

King Williamstown.—During the weeks ended June 8th, 15th, and 22nd the fresh cases of plague numbered 0, 1, and 1. There were no deaths from the disease during the periods in question. On June 22nd 4 cases of plague remained under treatment. Many rats and mice have recently been found to be infected by plague in King Williamstown.

MAURITIUS.

One case of plague reported during the week ended July 4th, and one death from the disease. The last case of plague in Mauritius occurred during the week ending April 24th.

MEDICAL NEWS.

A NEW JERSEY State sanatorium for consumptives will be opened in August.

THE Belgian National Anti-Tuberculosis League will hold its annual general meeting this year at Saint-Trond on August 4th.

IN the week June 23rd to 29th, the number of cases of cerebro-spinal meningitis officially notified in Prussia was . The number of deaths was 29.

MR. EGBERT C. MORLAND, M.B., B.Sc.Lond., has received he M.D. degree of the University of Bern for a thesis entitled "Die Opsonine, ihre klinische Bedeutung."

A PASTEUR Institute is to be opened at Minneapolis on August 1st. It will be under the direction of the State Board of Health. The Legislature has voted £1,000 a year towards its maintenance.

THE French Minister of Finance has introduced into the Chamber of Deputies a Bill providing for the creation of hydro-mineral stations and the imposition of special taxes in these stations, with the object of developing the hydro-mineral industry.

THE Anglo-American Medical Society of Berlin, founded some four years ago to help English-speaking medical men visiting Berlin for post-graduate study, meets every Saturday evening at the Heidelberger Restaurant in the Central Hotel. Further particulars can be obtained from Dr. J. H. Honau, Lützowstrasse 78, Berlin.

THE Income Tax Reduction League has now completed its organization; the President is Lord Avebury, the Vice-President the Hon. Herbert Gibbs, the Chairman of the Executive Committee Sir John Puleston, and the Honorary Treasurer and Secretary Mr. T. Hallett Fry, 2, Cloisters, Temple, E.C., from whom further particulars can be obtained.

AN appeal is being made for immediate assistance for the Factory Girls' Country Holiday Fund, which performs very useful work in assisting girls employed in London workshops to obtain a short holiday in the country. The girls contribute a portion of the expenses. Subscriptions can be sent to the Treasurer, H. Rendel, Esq., 23, Russell Square, W.C.

THE chairman of the Coventry and Warwickshire Hospital at Coventry states that there has been considerable difficulty in obtaining a junior house surgeon, and thinks that this may possibly be due to medical men confusing the hospital with the Coventry dispensary. The hospital is a distinct institution, containing seventy-five beds used mainly for surgical cases.

THE authorities of the Post-graduate College, West London Hospital, have decided to give a short vacation course of twenty-four demonstrations and lectures, beginning on Monday, August 12th, and terminating on Friday, September 6th. The fee is £2 2s., or for only fourteen days of the course £1 11s. 6d. Those wishing to take advantage of the arrangement should apply to the Dean at the hospital, which is in Hammersmith Road.

ON July 24th the Queen opened the new buildings in Fitzroy Square of the Hostel of St. Luke, established in 1892 for the medical and surgical treatment of the clergy of the Church of England, their wives and children. The Queen, who was accompanied by the Princess Victoria, was received by the Archbishop of Canterbury, President; Archdeacon Utterton, Chairman; Dr. F. H. Champneys, Dr. de Havilland Hall, Mr. A. Carless, and other members of the medical staff and Executive Committee.

THE Home Secretary, acting under the powers given him by the Workmen's Compensation Act, cancelled recently all existing appointments as medical referee, and has since made a number of new selections. The fees receivable remain unchanged, namely, two guineas and mileage for reports, and three guineas a case when the referee is asked to sit in court as assessor. We are informed that an endeavour is being made to induce the Home Office to suggest to the judges concerned that all compensation cases should be heard on one particular day in each week or month when ordinary work is not taken.

IT has been decided that meetings of the newly-formed United Services Medical Sociey shall be held at the Royal Army Medical College at 8.30 p.m. on the second Thursday in each month, commencing on October 10th, 1907, that the annual subscription be 5s. payable in advance, and that a notification of the formation of the Society, accompanied by an invitation to join, be sent to all medical officers on the active lists and to those on the retired lists whose addresses can be discovered. Should any medical officer on the active or retired list of the navy, the British and Indian armies, or the auxiliary and Colonial Forces not receive an invitation the Council hope that, if desirous of joining the Society, he will communicate with one of the Honorary Secretaries, Fleet Surgeon W. W. Pryn, R.N., "Tredown," 25, Idmiston Road, West Norwood, S.E., or Lieut.-Colonel C. H. Melville, R.A.M.C., Royal United Service Institution, Whitehall, S.W.

THE twentieth congress of the French Surgical Association will be opened in Paris on Monday, October 7th, under the presidency of Professor Paul Berger, Surgeon to the Necker Hospital. The programme of discussions includes the following questions: (1) Influence of the Roentgen rays on malignant tumours, to be opened with reports from MM. Béclère, of Paris, and Maunoury, of Chartres; (2) Nervous, muscular, and tendinous transplantations in the treatment of paralyses (reporters, MM. Kirmisson, of Paris, and Gaudier, of Lille); (3) Chronic surgical affections (tuberculosis and cancer) in their relations with accidents to workmen (reporters, MM. Segond, of Paris, and Jeanbrau, of Montpellier). An exhibition of surgical instruments, dressings, medical electricity, etc., will be held in the great hall of the Faculty of Medicine during the congress. Communications should be addressed to the general secretary, Dr. Walther, 68, Rue de Bellechasse, Paris.

IN an article contributed to the *International Journal of Surgery* (December, 1906), Dr. A. Lapthorn Smith expresses the opinion that cancer is increasing at an alarming rate all over the world. This loss of human life he regards as "due to the terrible mistake which has been made of treating as hereditary and unpreventable a disease which is highly contagious and which consequently could be absolutely eradicated from off the face of the earth within the next ten or twenty years." He considers that cancer is, at its commencement, a strictly local disease, and can be completely removed "during the first few weeks," but to wait until a positive pathological diagnosis has been made "not only removes all chance for the life of the patient, but also, as the growth will surely recur, the patient will thus remain a centre for spreading the contagion." These opinions are based on the work of Eisen, who claims to have discovered the "amoeba" which causes cancer. This "amoeba," Dr. Smith tells us, may remain dormant a long time in its dry state and then resume activity under suitable conditions. Hence the importance of thoroughly disinfecting a room or house vacated by a cancer case before it is again occupied. Unfortunately Eisen's theory has not yet gained general acceptance, and in the meantime Dr. Smith will probably find it difficult to persuade the majority of medical men that cancer can be so easily and speedily eradicated.

British Medical Journal.

SATURDAY, JULY 27TH, 1907.

THE FICTION OF CHRISTIAN SCIENCE.

ELSEWHERE we publish a letter from Mr. Frederick Dixon in reply to an article under the heading "Christian Science in Fiction," which appeared in the BRITISH MEDICAL JOURNAL of July 20th. Mr. Dixon says he has no patience with the make-believe which denies the existence of pain and disease, and we of course unhesitatingly believe his affirmation. But we venture to doubt whether he is to be accepted as a correct interpreter of Mrs. Eddy's doctrine. This is no reflection on his intelligence, for the Prophetess of Christian Science seems to have taken as her great exemplar in exposition John Ruskin, who said that he never thought he was getting near the truth till he had contradicted himself a dozen times. If this be the way to reach the truth, we are willing to admit that no one has ever followed the right path so undeviatingly as Mrs. Eddy. Her book, *Science and Health*, which contains what she calls her "sacred discovery," is so full of contradictions as to give the ordinary reader the impression that her teaching either has no meaning at all or that she is incapable of conveying it to "mortal "mind, or, rather, to the mind of mortal." When she says (p. 81) "What is termed disease does not exist. It "is not mind or matter"; and again (p. 392), "Man is "never sick; for mind is not sick and matter cannot "be," we are irresistibly reminded of what Byron says of another idealist philosopher:

> When Bishop Berkeley said "there was no matter,"
> And proved it—'twas no matter what he said.

When she goes on: "It is well to be calm in sickness; "to be hopeful is still better; but to understand that "sickness is not real, and that Truth can destroy it, "is best of all," etc., we begin to wonder how one can be calm in a state which does not exist, and how Truth can destroy something which is not real. Again, when Mrs. Eddy (p. 409) says: "If you mentally and silently "call the disease by name, as you argue against it, as a "general rule the body will respond more quickly." Some persons of an inquiring turn of mind might be glad to know how arguing against something which has no existence can have any practical effect, even if you call the "airy nothing" by its name.

Mrs. Eddy condemns drugs, yet (p. 413) she takes the trouble to explain why opiates relieve inflammation. It is true, she adds that they "do not remove the pain in "any proper sense of the word," but most people, we fancy, would be only too glad to get relief without troubling whether it came by metaphysical aid or from a physical property in the drug. Her views on the action of drugs are amusing, if not exactly enlightening. She says (p. 48), "When the sick recover, by the use "of drugs, it is the law of a general belief, culmi- "nating in individual faith, which heals; and according "to this faith will the effect be. Even when you take "away the individual confidence in the drug, you have "not yet divorced it from the general faith. The chemist, "the botanist, the druggist, the doctor, and the nurse "equip the medicine with their faith, and the majority "of beliefs rule." This, if it means anything, implies that disease is sometimes cured by drugs; and here, again, few will care whether they are cured of a headache by faith or by phenacetin.

Mrs. Eddy, who states (p. 86) that usually, when healing, she says to the patient, "Go, and tell no man," makes no scruple of boasting (p. 53) that she "has "restored health in cases of both acute and chronic "disease, and in their severest forms. Secretions have "been changed, the structure has been renewed, "shortened limbs have been elongated, cicatrized joints "have been made supple, and carious bones have been "restored to healthy conditions." If this passage shows something of the simplicity of the dove, the wisdom of the serpent is displayed in the following significant warning to her disciples (p. 400): "Until the advancing "age limits the efficacy and supremacy of Mind, it is "better to leave the adjustment of broken bones and "dislocations to the fingers of a surgeon, while you "confine yourself chiefly to mental reconstruction and "the prevention of inflammation or protracted confine- "ment. Christian Science is always the most skilful "surgeon, but surgery is the branch of its healing which "will be last demonstrated." She adds, however, by way of saving clause—in the face, it may be said, of her own statement (p. 86) that she has "never believed in "receiving certificates or presenting testimonials of "cure"—"It is but just to say that the author has "already in her possession well-authenticated records "of the cure, by herself and her students, through "mental surgery alone, of dislocated joints and spinal "vertebrae." It may be remembered that one illuminating specimen of the results of Christian Science in such cases was not long ago before a court of justice in this country.

Mrs. Eddy has no belief in hygiene. She says: "If "half the attention given to hygiene were given to the "study of Christian Science and its elevation of "thought, this alone would usher in the millennium." She goes on (p. 381) to preach what we can only call a gospel of dirt: "Bathing and rubbing to alter the "secretions or remove unhealthy exhalations from the "cuticle receive a useful rebuke from Christian Science." Again (p. 411) she says: "The daily ablutions of an "infant are no more natural or necessary than would "be the process of taking a fish out of water every "day, and covering it with dirt, in order to make it "thrive more vigorously thereafter in its native element. "'Cleanliness is next to godliness'; but washing should "be only for the purpose of keeping the body clean, and "this can be effected without scrubbing the whole sur- "face daily. Water is not the natural habitat of "humanity." Her system of preventive medicine is expressed in the following passage (p. 389): "'Agree to "'disagree' with approaching symptoms of chronic or "acute disease, whether cancer, consumption, or small- "pox. Meet the incipient stages of disease with such "powerful eloquence as a legislator would employ to "defeat the passage of an inhuman law. Rise, in the "conscious strength of the spirit of Truth, to overthrow "the plea of matter, or mortal mind, arrayed "against the supremacy of Spirit. Blot out the images "of mortal thought, and its beliefs in sickness and "sin." This, we suppose, is how the hero of Mr. Benson's novel stopped the epidemic of typhoid fever in a Highland village. The town of Peterhead in Aberdeenshire is, we learn from the Scottish newspapers, at present suffering from a severe visitation of the same scourge. In this case it is, as usual, the natural penalty of a water supply which is at once deficient in quantity and bad in quality. Will Mr. Dixon under-

take to stop the epidemic by blotting out the image of mortal thought and its beliefs in sickness and sin?

Mrs. Eddy says there is no such thing as death, which she describes as an obsolete illusion. Yet she herself has told the world that her first husband was suddenly attacked by that "insidious disease," yellow fever, "which in his case proved fatal." Her third husband, Mr. Eddy, died, according to the physicians, of heart disease, but Mrs. Eddy declared that his death was the result of arsenical poisoning mentally administered! At any rate, she seems to admit that he died. The sad event led her to try an interesting experiment on herself. She says: "When the mental mal-"practice of poisoning people was first undertaken by a "mesmerist, to test that malpractice I experimented by "taking large doses of morphine to see if Christian "Science could not obviate its effect; and I say, with "tearful thanks, 'the drug has no effect on me what-"'ever.' The hour has struck, 'If they drink any "'deadly thing, it shall not hurt them.'" The result of her experiment must be comforting to Mrs. Eddy, but it is not clear how the fact that she was able to take morphine with impunity could have saved her husband from the effects of arsenic mentally administered.

Her doctrine on poisons is curious. She says (p. 70): "If a dose of poison is swallowed through mistake and "the patient dies, even though physician and patient "are expecting favourable results, does belief, you ask, "cause this death? Even so, and as directly as if the "poison had been intentionally taken. In such cases a "few persons believe the potion swallowed by the "patient to be harmless; but the vast majority of "mankind, though they know nothing of this particular "case and this special person, believe the arsenic, the "strychnine or whatever the drug used, to be poisonous, "for it has been set down as a poison by morbid mind. "The consequence is that the result is controlled by "the majority of opinions outside, not by the in-"finitesimal minority of opinions in the sick chamber." How, then, it is natural to ask, can Christian Science make deadly things harmless if the belief of the majority overpowers that of the "infinitesimal "minority"?

But enough of this sorry delusion, which, as we have shown, is wholly built on make-believe; whether pain or disease is absolute or relative, it is absolutely real to the sufferer, and he wants to get rid of it. In certain cases, no doubt, faith can move a mountain of disease, and we do not deny that Christian Science, like other forms of healing, may sometimes do good when rational medicine has failed. But a "mountain," to be moved by faith, must be made of what in our ignorance we must at present be content to call "nerves." When it is of a more material structure the cure must be on the lines laid down by the sensible old German priest who, in blessing his parishioners' fields, came to one of particularly unpromising look and was heard to mutter: "Here praying and singing are insufficient; *hier muss "man düngen!*"

EXPERIMENTS WITH BOVINE TUBERCLE BACILLI.

IN addition to its purely scientific value as a very extensive piece of research, Dr. Griffith's experimental work on the pathogenic effects of the bovine tubercle bacillus (see p. 210) has an important bearing on practical questions concerning the spread of human tuberculosis through the food supply. We know that cow's milk often contains tubercle bacilli, and we know that these bacilli are pathogenic for the human being; it is, therefore, of direct importance for human pathology that bovine tuberculous viruses should be exhaustively studied. This subject has engaged the attention of many investigators in all parts of the world. Compared with the results already published by other observers it will be found that the experimental research entrusted to Dr. Griffith by our Royal Commission on Tuberculosis has been conducted on a much more extensive scale than has ever been attempted elsewhere, and that fuller and more precise information has been gathered concerning the capacity of bovine tubercle bacilli for producing disease.

We can here only direct attention to a few of the particularly instructive features in Dr. Griffith's report. A wide range of animals, including fifteen different species, has been used for testing the virulence of the bovine tubercle bacillus, and with animals which are of special importance, such as the bovine, the anthropoid ape, and the monkey, the tests have been numerous and thoroughly representative of different experimental conditions. A few experiments have previously been published by other pathologists, which show that the bovine bacillus is capable of setting up tuberculosis in the anthropoid ape; these results are corroborated by Dr. Griffith's work on the chimpanzee, and it is now established beyond question that bacilli of bovine origin are highly pathogenic to the nearest representatives of man. It has already been amply proved that bovine bacilli, when inoculated in very large doses, produce in calves a rapidly fatal disease. But Dr. Griffith has not confined himself to the use of overwhelming doses; in many instances he has used either small doses of culture or emulsions of tuberculous tissue containing relatively few bacilli, and by these means he has been able to approximate much more closely to the processes of spontaneous infection and to show that every variety of lesion, from the chronic and retrogressive at the one end of the scale to the progressive and rapidly fatal at the other, can be experimentally produced in the bovine by inoculation with bovine bacilli.

Particular attention ought to be called to some of Dr. Griffith's work on the experimental production of tuberculous milk. With the object of throwing light on the highly important practical question whether tubercle bacilli may be yielded in the milk of a tuberculous cow with a normal udder, he subcutaneously inoculated a large dose of bacilli into the neck of a perfectly normal cow yielding milk proved to be free from tubercle bacilli. After inoculation, the cow's milk was tested systematically upon guinea-pigs, and was found to be capable of setting up tuberculosis in these animals at the end of the first week and on every subsequent occasion until the death of the cow. At the *post-mortem* examination the udder appeared normal to the naked eye. This experiment lends emphasis to the fact, upon which Rabinowitsch and others have urgently insisted for many years, that cows which give a positive reaction to the tuberculin test, though exhibiting no disease of the udder, may yet yield tubercle bacilli in their milk. How many milch cows are there in this country which, though possessing apparently healthy udders, would, if tested, give a positive reaction to tuberculin? This question raises problems which are of vital concern to the public health, and the necessity for the Local Government Board to cope with them is imperative and immediate.

As the bovine bacillus finds its way to man through the food supply, and generally through milk, a large share of Dr. Griffith's work has naturally been devoted to feeding

experiments. The study of experimental infection through the alimentary tract by the bovine bacillus has never been worked out so thoroughly before. A summary of Dr. Griffith's main results concerning the dissemination of disease induced by feeding and the relative susceptibility of various species of animals is given elsewhere, but special mention may be made of two points—the readiness with which the bacilli make their way to the lungs, and the fact that anthropoids can be infected with doses which are so small as to suggest a very significant parallelism between the fate of these animals and the fate of children spontaneously infected with such numbers of tubercle bacilli as are likely to be present in tuberculous milk.

INSPECTION OR POLICE SUPERVISION?

WHEN the House of Commons went into Committee of Supply on July 18th, Mr. Smeaton, M.P. for Stirlingshire, on the vote for the salaries and expenses of the Home Office, took the opportunity of raising the question of inspection in regard to experiments on animals. He said the report of the Royal Commission contained revelations of a most startling kind, and proved that the law of 1876 was habitually disobeyed, in some cases flagrantly violated, and that in the operations of vivisection the motives of humanity seemed very rarely to actuate the operator. There was, he urged, need for greater vigilance, and he described the inspections as inefficient and far too rare. Mr. Smeaton contrasted the great jealousy which had been shown during the debate in regard to the inspection of workmen, with the indifference as to the sufferings of dumb creatures which were "made the "victims of men who, although they ought to be "restrained by the law, were convicted by the Blue "Book of gross illegality and positive inhumanity and "cruelty." He suggested that the inspectors should be increased in number, and the Home Office should be put in a position to judge whether they had conducted their inspections efficiently. He suggested that high fees should be charged for licences, which should go towards the remuneration in part of the increased body of inspectors.

Mr. Akers-Douglas, as a former Home Secretary, said that his experience was that the administration of the Act and the conduct of the inspectors was most humane He was certain there was nothing like undue cruelty. He went on to say that a great many charges had been made against those who carried on scientific work, which could not be justified on examination. His experience went to show that every care was taken to see that licences were not scattered broadcast, but were granted only to those who were authoritatively recommended. The present Home Secretary, Mr. Gladstone pointed out that the law caused great difficulty in administration. Not having special knowledge he could only, like his predecessors, exercise such common sense as he possessed in the endeavour to secure the observance of the law with no want of humanity, but keeping sentiment with considerable strictness within the bounds of reason. It was impossible, he added, to carry matters in relation to this subject further pending the report of the Royal Commission.

The antivivisectionists, however, are by no means content to wait for the report. The evidence so far published has been, as they evidently feel, wholly detrimental to their cause, and they are anxious to make up for the plentiful lack of facts in the statements of their witnesses by inflaming public opinion beforehand, in the hope that the case will be prejudged by popular sentiment before the report is published. Mr. Smeaton says the report of the Royal Commission (by which he doubtless means the Minutes of Evidence) contains revelations of a most startling kind. In this we agree with him, for nothing could have been more startling to people with any sense of straightforward dealing than the disregard for truth and the recklessness in statement shown by some of the witnesses on the antivivisection side. We do not say these people deliberately lied; charity compels us to believe that they have no notion of what is meant by proof, and that they mistake the figments of their overwrought imaginations for facts. Have we not heard from an ardent sympathizer with their cause that they do not scruple to use what they themselves call "platform "facts" for what, out of regard to ears polite, we will call rhetorical purposes? Mr. Smeaton overlooks what we daresay he deems the trifling detail that the startling revelations did not bear the test of cross-examination. His statement that the law of 1876 was habitually disobeyed is directly contradicted by the evidence so far given before the Commission. That evidence he either has not read or he looks upon the officials of the Home Office, the Inspectors under the Act, the President of the Royal College of Physicians, and the heads of the medical profession as bearers of false witness. We hope Mr. Smeaton will forgive us if we ask what reason he can show why his unsupported assertion should be taken against the unanimous testimony of all who have first-hand knowledge of the working of the Act?

He asks for more inspection, and he suggests that the experimenters themselves should pay for it by heavy fees for their licences. There is something distinctly farcical in the proposal that men who are doing work of incomparably greater importance to mankind than the average member of Parliament should pay for the privilege of having a detective always at their elbows in their laboratories. If it be not police supervision that Mr. Smeaton wants, will he tell us what manner of men he would choose as inspectors? If he means nothing more than the appointment of some additional inspectors of the class of Professor Thane and Sir James Russell, we can tell him beforehand that this will not satisfy the antivivisectionists. If they disbelieve two or three competent and honest inspectors, they will disbelieve twenty or, for that matter, two hundred. On the other hand, if inspectors of the class designated with unconscious humour by Mr. Arnold Lupton as "expert antivivisectionists" are chosen for the duty, the state of things will be worse still, for these humane persons are all at sixes and sevens, and could scarcely resist the temptation to direct their malevolent inspection on each other more than on the vivisectors.

Mr. Smeaton and those who think with him can perhaps scarcely be expected to appreciate the feelings of men who shun delights and live laborious days in doing unremunerative work for the mere love of truth. But we are sure that all right-minded people will agree with us that it would be an intolerable outrage to subject such men to the attention of inspectors who, if selected in accordance with the ideas of the antivivisectionists, would be mere spies of the nature of private inquiry agents. We take leave to state emphatically that, in respect of humanity, the physiological and pathological investigators of this country need fear comparison with no class of the community. If their work is to be inspected in the jealous and suspicious spirit which seems to animate Mr. Smeaton, Parliament, if it is to be consistent, must establish a similar system of inspection of sport.

THE EXETER MEETING.

LORD BEACONSFIELD once, when a general election was impending, summed up the duty of a citizen who wished to take his proper part in the conduct of the affairs of his country in the words, "Register, register, register!" We venture to give the same advice to all members of the Association who propose to attend the forthcoming annual meeting at Exeter, with the addition of the word "early" to Lord Beaconsfield's formula. If as soon as they arrive at Exeter they will take the trouble to enter their names on the register at the Royal Albert Memorial, they will at once secure their card of membership, the guide books prepared for their benefit, the coupons of application for all entertainments and excursions, and all other necessary tickets. This will be greatly to the convenience of members, and will add much to their enjoyment of the meeting, besides saving a good deal of needless trouble to officials. The registration room will be open on Saturday, July 27th, from 9 a.m. to 1.30 p.m., during which hours Mr. Russell Coombe, one of the Local Secretaries, will be in attendance to register members.

"A BOOK OF THE SOUTH-WEST."

A COMMITTEE has prepared, and Messrs. William Pollard and Company, Limited, of Exeter, have published, for the approaching annual meeting of the British Medical Association in Exeter, *A Book of the South-West*, intended "to provide a reliable work of reference for those who "may be called upon to recommend a locality in "Devonshire or Cornwall either for a short stay or for "permanent residence." The volume is really a sumptuous production, well printed, lavishly illustrated, and bound in white. It opens with an admirable sketch of the history of Devon and Cornwall by Mr. Alfred Wallis, illustrated by portraits of Drake, Raleigh, Richard Grenville, and other western worthies. Then follows an essay on the climate of Devon and Cornwall, consisting of three parts, the first dealing with the general physical characteristics of the two counties; the second discussing the influence of the climate on health and disease; and the third giving advice as to the choice of locality for various diseases. Following on this are notes on the climatology of different localities, arranged in alphabetical order, from Barnstaple to Yelverton, almost every section being illustrated by a photograph. Next come chapters on points of interest in Exeter and in Devonshire, and further on there are notes on places of interest in Cornwall. This last section is preceded by a charming little essay on "The Secret of Cornwall," by Mr. A. T. Quiller Couch, who tells us that his father, his father's father, and two of his father's brothers were Cornish doctors, all but one of them scientific observers, who kept and published records of the western climate and its effects on organic life, from men to mosses. He has one or two stories to tell, and we may be permitted to quote one: "Said one 'Polperro housewife, mother of a long family, to her "neighbour, 'I all'ys pays doctor ver one, when I "'engages un ver the next, an' the laast I'll never pay "'ver,' and an uncancelled entry in the old man's "ledger attests that she never did." "Q." professes to tell us the secret of Cornwall, which he declares to be a mystery brooding behind the little changes and developments in this or that coast town or resort of tourists, a mystery deep rooted as the hills and vague as the mists rolling over them. This also is vague, and though we gather that the root of the mystery is to be found in the evidences of the life of prehistoric man, we suspect that even to feel the mystery, to say nothing of solving it, it is necessary to spend some time in the south-west—in Devon or in the "Delectable Duchy," the term which Mr. Quiller Couch says he himself first applied to Cornwall. At the end of the volume is a collection of photographs showing screens and pulpits in Devonshire churches, and two exquisite specimens of Devonshire lace. The book, which contains also a map of the south-western peninsula of England, a plan of Exeter in the eleventh century, a plan of the city at the present day, and a plan of the cathedral, is one which medical men will be glad to possess and to keep on their bookshelves for reference.

PROPORTIONAL VOTING.

DR. G. CRICHTON (114, Lexham Gardens, Kensington, W.), Vice-Chairman of the Kensington Division of the Metropolitan Counties Branch, who is anxious to see the method of proportional representation generally adopted in the Association, especially in the election of committees by the Annual Representative Meeting, writes to say that he will be glad to send explanatory pamphlets to the Honorary Secretary of any Branch of the Association. Some account of the system, founded upon the publications of the Proportional Representation Society, of which Mr. J. H. Humphreys, 117, Algernon Road, Lewisham, S.E., is the honorary secretary, was given in the JOURNAL on April 13th, 1907, p. 894, and again on May 18th, 1907, p. 1205. The system was tested at the recent election of four vice-presidents of the Metropolitan Counties Branch and of five representatives of the Branch on the Central Council, and Mr. Humphreys assisted in conducting the scrutinies. A full report of the election and of the scrutinies was published in the SUPPLEMENT of June 22nd, p. 417. The result in the election of vice-presidents was not very striking, inasmuch as the four candidates who obtained the largest number of votes were returned at the head of the poll and in the same order after the principle of the single transferable vote had been applied during the scrutiny. With regard to the election of the five members of the Central Council, the members finally elected included four of those at the head of the first count, but not in the same order; while the candidate who stood fifth on the first count was defeated on the final count, this being due to the fact that the candidate finally successful was a second or later choice of a larger number of members of the Branch. As was stated in the report published in the SUPPLEMENT, the distinctive claim for the new method of voting is that any Division of a Branch which contains a quota of voters can secure the particular representative it desires, and cannot be deprived of its influence through the action of a larger Division of the Branch, as it is argued might be the case under the ordinary system of voting, since the largest Division of a Branch could, if it so desired, monopolize the representation by running, and voting for, a full list of candidates. The scrutiny undoubtedly appears a formidable task, but, as is stated in the report, the operations in this case were completed in about two hours. As this is the first occasion on which the system has been used in England for practical purposes, it is probable that the scrutiny might be conducted in the future somewhat more rapidly; in any case, the duration of the scrutiny will be influenced by the number of candidates, as well as by the actual number of voters.

A CANCER CANARD.

EDITORS are of course always "able"; so well recognized is this that the epithet has become as indissolubly attached to the title as that of "swift-footed" is to Achilles. By virtue of their office, too, they are in a conventional sense infallible. It must be admitted, however, that some of them are almost as subject to error as ordinary men. Especially in regard to medical matters is their simplicity liable to be abused. As an example, we may quote some illuminating remarks which appeared in the *Daily Chronicle* of July 20th. "No article," says our con-

temporary, "has appeared in the medical press "for many a year to equal in importance one printed "to-day in what may be called the trade union journal "of the profession. For it is an article which begins to "cede to trypsin, as a possible cure for cancer, not "merely a respectful consideration, but also something "of a welcome. The unsuspecting public, as Whistler "would have said, is there informed of experiments in "Germany, tending to show the successful 'action of "'certain ferments on malignant tumours.' These 'cer-"'tain ferments,' alluded to elsewhere in the article as "'pancreatic ferments' and as 'pancreatin,' are, of course, "neither more nor less than our old friend trypsin." The *Chronicle* goes on to remind its readers that trypsin has often been put forward in its columns as "a cure "for the disease most cruelly doing to death 30,000 of "us in England every year." To which we reply, in the classic words of Mrs. Gamp, "Who deniges of it, "Betsey?" The *Chronicle* has, indeed, done its best, in all innocence we believe, to propagate a belief for which, unfortunately, there is, as yet at least, no solid foundation. The treatment which it has been made the medium of "booming" to an unsuspecting public (in the highly original words of Whistler), has been tried at the Middlesex Hospital and by the workers of the Imperial Cancer Research Fund, without any success. This our contemporary might have learnt from the "trade union journal" which it has, albeit unwittingly, misrepresented in a manner which must seem ridiculous, if not worse, to those who know the facts and have no interest in distorting them. From the very article which it professes to be quoting the *Daily Chronicle* might have learnt that so far from "ceding" anything to trypsin, it was expressly stated the German investigators whom it named came to the conclusion, from a study of the pancreatic ferment, that it only possessed a theoretical interest and had no real or practical importance! In the face of this plain statement what is to be said of a writer—for we cannot hold the editor responsible in such a matter for more than invincible ignorance—who speaks as follows: "The silence or opposition of the "medical press in the past about the trypsin cure, and "the veiling of terms now that the tide begins to turn "in its favour, suggests that 'made in Germany' is the "demanded label for a remedy among the countrymen "of Harvey and Jenner, of Simpson and Lister"? We have all along declined to discuss the theories on which the extravagant claims made for Dr. Beard's treatment are built. What we ask for are some authentic facts in proof of its practical value. It is a modest demand, but so far it has not been met in a satisfactory manner. We may say again, as we have repeatedly said before, that we shall be glad to be convinced that a cure for cancer has been found, and we will welcome it frankly and joyfully whether it come from Edinburgh or Timbuctoo. But although we look with all the eagerness of Sister Anne, we are sorrowfully bound to say that as yet we see no sign of a deliverer from the fell scourge.

A NEW UNOFFICIAL FORMULARY.

THE history of the evolution of the *British Pharmacopoeia*, with its Indian and Colonial *Addendum*, is the history of the steady growth of uniformity in the composition of medicines, at first in the United Kingdom and then throughout Greater Britain. In the nature of the case, however, an official work of the kind can never include formulae for all the medicines in fairly common use, but must necessarily be limited for the most part to those which have been firmly established as valuable by experience. The constant influx of new remedies and modified preparations into the materia medica available to prescribers has always provided ample scope for unofficial works giving formulae for such medicines and notes on their nature and therapeutic properties, and it is safe to say that certain of these books are far more frequently in the hands of prescribers than is the *Pharmacopoeia*. All such unofficial formularies, however, being partly of the nature of commercial enterprises, must always fail to some extent in securing uniformity in unofficial medicines, and attempts have been made to establish such a formulary on a non-commercial and semi-official basis. For many years the British Pharmaceutical Conference has published an "Unofficial Formulary," representing the voluntary labours of the most experienced pharmacists, and the letters "B.P.C." after the name of a preparation are almost as familiar as "B.P." This small work, however, is now to be merged in a larger one; the Pharmaceutical Society of Great Britain will shortly publish a compendium of medicines, under the title of the *British Pharmaceutical Codex*. We have received specimen pages of this work, together with a paper descriptive of the book, read by its editor, Mr. John Humphrey, at a meeting of the Pharmaceutical Society. From these it appears that the preparation of the volume has occupied a committee of pharmacists for some three and a half years, and that it will embody the results of much work done expressly for it, as well as a careful compilation of previously published papers; we learn also that the property in the "Conference Formulary" is now vested in the Society, and, as already noted, the forthcoming volume will supersede the older and smaller one. The *Codex* is to consist of about 1,200 pages of demy octavo size, and will contain some 2,500 monographs and formulae; the descriptions of the various substances will be supplemented by chemical and pharmacological notes, with suggestions as to the best methods of prescribing and dispensing the remedies. Judging by the specimen pages before us, the work appears likely to be one of very high utility, to prescribers no less than to those engaged in the preparation of medicines. We note that the book is to be published by subscription at 10s. 6d., and that further particulars with regard to it can be obtained from the publisher at 72, Great Russell Street, London, W.C.

THE EPIDEMIC OF SMALL-POX AT METZ.

THE Imperial Health Bureau of Germany, in reply to a request for information as to the present state of Metz as regards the small-pox epidemic, the causes of the outbreak in so well-vaccinated a country as Germany, and the total number of the deaths, has courteously replied to the following effect: The epidemic outbreak in Metz and in the surrounding country died out in May of this year, and was, in fact, extinct at the time of its previous mention in the BRITISH MEDICAL JOURNAL. The disease was imported from Luxemburg, and the spread of the infection in Metz is attributed to the presence of numerous persons who had been vaccinated more than ten years previously, especially amongst the foreign working population, and to the carelessness of the population in general engendered by the rarity of small-pox in Germany, and the consequent ignorance of its danger. As regards the total mortality from the epidemics, a table is supplied, from which it appears that in Metz city the small-pox deaths have numbered 33 since October, 1906—namely, 6 deaths in 1906 and 27 during the present year up to April, inclusive, since which time there have been no more deaths. In the country immediately surrounding Metz there have been in all only 6 deaths from small-pox, the last of which occurred in May. Thus the total small-pox mortality due to the outbreak amounts to 39. These facts are just what might have been expected. The outlying towns of Germany have occasionally to bear the brunt of invasion from countries less well vac-

cinated. This is inevitable; and there are local outbreaks every year without exception on the Russian frontier. This time the epidemic began from the French frontier, but the interior of the German Empire remains wonderfully free from small-pox, thanks to the German system of revaccinating all school children. The sooner this is introduced into this country the better it will be for the public health.

A CRUSADE AGAINST IMMORAL ADVERTISEMENTS.

AT a recent meeting of the Chicago Medical Society, Dr. Rudolph W. Holmes, Chairman of the Committee, reported that the work had been principally in the direction of securing the removal of advertisements of abortionists from the daily press. In this, according to the *Medical Record*, the Committee has been remarkably successful. It has removed all criminal medical advertising from the Chicago newspapers. Three of the leading newspapers consented to this line of action after a presentation of the facts by the Committee. The others complied only after being notified by the postal authorities that they must comply or have their papers excluded from the mail, the Committee having furnished the Government with proof that the advertisers were willing to perform abortions. The Committee also rendered valuable service in the prosecution of criminal operators, with the result that at least two have been sent to the Joliet Penitentiary, others have left the city, some are being prosecuted, and the others and the newspapers are being watched.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE London School of Tropical Medicine, Victoria and Albert Docks, was the scene of an interesting little ceremony on July 19th. Mr. Percival A. Nairne (Chairman of the Seamen's Hospital Society) unveiled a portrait of the Hon. Bomanji Petit of Bombay, who some time ago gave a lakh of rupees (£7,000) to the school. Among those present were Sir Patrick Manson, Sir Francis Lovell, C.M.G. (Dean of the School),, Sir William Hood Treacher, Sir W. Bennett Sir F. Young, Mr. W. M. Haffkine, Mr. P. Michelli, C.B. (Secretary), and Mr. H. C. W. Verney, of the Colonial Office. An especially interesting feature of the assembly was the presence of a number of Parsee guests. Among these were Mr. and Mrs. Dhunjibhoy B. Petit, son and daughter-in-law of the benefactor in whose honour the ceremony was held; Sir Manchergee Merwangee Bhownagree, K.C.I.E., late M.P. for Bethnal Green; Dr. S. A. Kapadia, Mr. P. D. Patel, Mr. and Mrs. F. F. Karaka, Dr., Mrs. and Miss M. R. Sethna, Mr. and Mrs. F. P. Khan, Mr. N. J Moolla, Mr. H. D. Cama, Mr. and Mrs. B. R. Mehla, F. P. Talejarkhan, J. P. Bomon-Behran, Mr. C. B. Jassawalla, Mr. S. Dhudabhoy Bhedwar, Mr. K. B. Pudumjee, Mr. P. H. Chichgear, Mr. and Mrs. S. F. Panday, Mr. Ardshir Pestonjee Jal, Mr. Ardeshir Jamshedi Chanje Mistry, and Mr. E. M. Mullaferoz Mr. Nairne recalled the circumstances of the gift which was the outcome of a mission to the East undertaken by Sir Francis Lovell. Besides giving his munificent donation, Mr. Petit wrote that the school was worthy of the greatest support which could be given it, because, while affording ample scope for the study of diseases which well-nigh devastated the East, it would be the means of bringing the Western and Eastern minds together, and thus cement a union of hearts. Sir Patrick Manson said it was a misfortune that a great city like London should have to go to Bombay for assistance in such matters. But for Mr. Petit's gift the work of the school would have been very much cramped, and brought into danger of an abrupt conclusion. Good progress was now being made in the tutorial department, and since the establishment of the school they had sent out more than 700 students equipped for the treatment of the diseases they would encounter in the tropics. They had three Chairs in connexion with tropical medicine. They trusted that these would be permanent. At all events, they had assurances from the Government that two of them would be continued for a period of five years. They were anxious to send out expeditions to different parts of the world to work out problems in tropical pathology. He could enumerate a dozen problems of that kind which could probably be solved if one or two men could go out and work at them. He contrasted the liberality which enabled the Liverpool School of Tropical Medicine to send out scientific expeditions with what he called the lack of patriotism of London. Mr. Dhunjibhoy Petit said that his father's greatest reward in making the gift was that one of the objects of the school was the betterment of the suffering multitudes of India. Sir M. Bhownagree, in moving a vote of thanks to Mr. P. A. Nairne, said that the school would be a significant symbol of that union of hearts which patriotic men like Mr. Petit wished to see flourish between Great Britain and India. We may add that the school has as many students as it can accommodate. A sign of its growing influence is the increasing number of officers of the Indian Medical Service who go through the course of instruction provided. The only thing wanted to place the school on a secure basis is an adequate endowment. George the Third recorded in his diary that he had made a man happy with a gift of £10; we have reason to believe that those responsible for the conduct of the London School of Tropical Medicine would be made happy by a gift of £3,000. It seems a small sum for the richest city in the world to provide to develop the usefulness of an institution which has already done splendid work in the service of the Empire.

THE GENEVA CONVENTION AT SEA.

THE first piece of work actually completed by the Peace Conference at the Hague is the adoption of a convention for the adaptation to maritime war of the principles of the Geneva Convention of July 6th, 1906. The convention, the preparation of which occupied the time of a special committee of the Conference for five weeks, replaces the convention adapted at the first Hague Conference in 1899, which adopted the principles of the Geneva Convention of 1864 to naval warfare. The new convention contains twenty-six articles in place of fourteen. Hospital ships belonging to belligerents must be distinguished by being painted white with a horizontal green band a metre and a half wide, other hospital ships, equipped by private persons or by recognized societies in neutral countries, must also be painted white, but the horizontal stripe is to be red. By day the ships must fly distinctive flags, and by night must adopt measures to render the colours in which they are painted sufficiently visible if they wish to claim immunity under the convention. By day a hospital ship must, in addition to the national flag, hoist the white flag with the red cross of the Geneva Convention, and if belonging to a neutral side must also fly at the mainmast the national flag of the belligerent at whose service it is placed. A special article permits hospital ships to be fitted with apparatus for wireless telegraphy. Another article authorizes belligerents to appeal to the charitable zeal of merchantmen yachts or other neutral vessels to receive and care for the wrecked wounded or sick, and ships responding to this appeal, or spontaneously collecting the sick wounded or wrecked will enjoy protection and immunity. Sick, wrecked, or wounded sailors taken on board a neutral war vessel must be prevented from again taking

part in the operations of the war. During an action the sick bays on board a war vessel must be respected and avoided as much as possible, but the protection due to hospital ships and sick bays ceases from the moment they are used to commit acts injurious to the enemy. The obligation is laid upon both belligerents after an action to take measures, with due regard to military interests, to find the wrecked, wounded or sick and to protect them, as well as the dead, against pillage or bad treatment; both belligerents will be required to keep each other informed as to the entries to hospital and the deaths among sick or wounded remaining under their control. Another article adopted by the majority, but to which the British representatives took exception, provides that the warship of a belligerent party may demand the surrender of wounded, sick, and shipwrecked on board military hospital ships belonging to relief societies or private persons, or on board merchantmen, yachts, or vessels of whatever nationality. The British delegates declined to acquiesce in the view that a belligerent's warship had the right to require the surrender of wounded, sick, or shipwrecked on board merchantmen sailing under a neutral flag, and argued that such a right would not be based upon existing principles of international law. M. Renault, one of the French representatives who had drawn up the report accompanying the convention, argued that the proposal was an advance upon the existing situation, since under the old convention a belligerent would not only capture the sick and wounded of an enemy on a neutral vessel, but could also confiscate the vessel itself as having rendered unneutral service. He urged that if shipwrecked men could escape on board a neutral vessel, belligerents would be inclined to ignore the claims of humanity by refusing opportunities of charitable assistance, on the ground that they might prove prejudicial to military interests. The British delegates also received the articles with regard to the misuse of Red Cross emblems in time of war, subject to the reservation, also applicable to the Geneva Convention of 1906, that an Act of Parliament would be required before they could be put into effect. Although not embodied in the convention, it would appear that the principle of allowing Turkey to employ the Red Crescent and Persia the Red Lion and Sun on a white ground, in each case as distinctive flags of hospital ships, was accepted by the Conference.

AN INDUSTRIAL SETTLEMENT FOR CONSUMPTIVES.

WE learn from the *Journal of the Outdoor Life*, published at Trudeau, Saranac Lake, in the Adirondacks, that an industrial settlement has been formed for the purpose of providing employment for consumptives in whom the disease has been arrested, but who are not considered fit to withstand the conditions of city life. As an initial experiment, the Settlement has leased an area of five acres in the village of Saranac Lake, at which a limited number of the workers will be boarded at a reasonable price. Non-residents will also find employment and instruction in the Settlement as far as the resources of the foundation warrant. A poultry plant has already been established, which furnishes occupation to two or three persons at a time. A garden has also been planted where vegetables and flowers will be grown for the market. A cottage is set aside for the making of fine leather goods. Sewing and mending are other industries undertaken, and instruction will be given in fine needlework, weaving, metal work, basket-making, and other handicrafts will be introduced as opportunity offers. Instruction will also be given in farming. In another column some account is given of a movement in the same direction which was inaugurated last week at the Maitland Cottage Sanatorium, by an interesting address by Professor Osler. The results obtained by Dr. Paterson at the Frimley Sanatorium of the Brompton Hospital appear to show that graduated labour under careful medical supervision may in suitable cases have the most beneficial effect not only on the physical but on the mental condition of patients.

PROFESSOR W. HIS, a son of the famous anatomist, has been appointed to succeed Professor von Leyden in the Chair of Special Pathology and Therapeutics in the University of Berlin, which the distinguished clinician will vacate at the end of the current semester.

WE are requested to state that the Irish Medical Schools' and Graduates' Association will hold its summer meeting and luncheon at the Rougemont Hotel, Exeter, on Thursday, August 1st, at 1 p.m. Members intending to be present at the luncheon will oblige by sending their names to Dr. W. Douglas at Pople's New London Hotel, Exeter.

SIR RICHARD DOUGLAS POWELL, Bart., K.C.V.O., President of the Royal College of Physicians of London, has been appointed one of the Physicians-in-Ordinary to the King in the room of the late Sir William Broadbent; and Dr. Bertrand Dawson, Physician to the London Hospital, has been appointed one of the Physicians Extraordinary to His Majesty. Sir Thomas McCall Anderson, Regius Professor of Medicine in the University of Glasgow, has been appointed one of His Majesty's honorary physicians in Scotland in the room of the late Sir William Gairdner. The other honorary Physician-in-Ordinary to the King in Scotland is Sir Thomas Fraser of Edinburgh. In the first notice in the *Gazette* it was stated that Sir Thomas McCall Anderson was appointed in the place of Sir Thomas Fraser; this error was corrected by a special notice subsequently published. Sir Thomas Fraser, we are glad to know, is in his usual health.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

The Home Office and Industrial Diseases.

Last week, when the Home Office vote came on in Committee of Supply, the Home Secretary made an interesting statement as to the work of his department. After referring to the increase of accidents in factories and workshops, which he regretted, he said that boxwood poisoning had been added to the schedule of industrial diseases. Anthrax had troubled him on account of the increase in the number of cases. The figures did not support the view that this increase was due to growth of trade. As regards Persia, there had been a decrease in the cases from 15 to 9, and there had been a decrease in the importation of Persian wool. On the other hand, there had been a considerable increase in the wool imported from East India, but the cases had gone down from 13 to 12; so he was obliged to conclude that there was no relation between the amount of wool handled and the cases of anthrax. An inquiry was going on into the subject between manufacturers and officials, and he hoped science would soon suggest a remedy for this disease. As regards poisoning by aniline and nitro and amido derivatives of bezene, a committee had been inquiring, and these conditions had been scheduled under the Compensation Act. The fruit preserving industry had also been put under a new order by which no woman or young person under 16 should be employed before 6 a.m. or after 10 p.m., and in the case of young persons ten hours must elapse between the end and beginning of a day's work. An inquiry had taken place into a case of phosphorus poisoning in a match factory, and the accident was shown

to have originated from causes existing before the new special regulations came into force. A return of the accidents arising from poisoning was made early in each year. An investigation was also to be made into the conditions of labour in places where a high degree of humidity was combined with a high degree of heat. He pointed out, in conclusion, the increase made in the inspectorate, and the amount of work done by the department.

Sir Charles Dilke followed, and referred mainly to industrial diseases and fruit preserving and fish curing. First, as regards phosphorus poisoning in the match trade, we had held ourselves up in this country as being able to put an end by scientific apparatus to all industrial poisoning without forbidding the use of the dangerous ingredient. That applied to both phosphorus and lead. The revision of the rules showed that we had not reached a satisfactory position in either case. The reports showed that there was an increase in lead poisoning after there had been a decrease. The cases reported in 1905 were 209, while in 1906 280 were recorded. The number of cases among women were rising. There had been an increase of plumbism and fatal cases in china and earthenware works, and there was an enormous infantile mortality and stillbirth mortality due to the extensive employment of women at such works. The existing regulations required to be improved, for the increase of lead-poisoning cases could not be explained away. He strongly condemned certain officials for not advocating the use of leadless glaze, and argued that in this direction the Government departments were to blame in not insisting more strongly on the use of leadless ware.

Mr. Ramsay Macdonald followed, and after referring to the increase of lead poisoning among coachmakers, condemned the factory inspection as inadequate, and quoted the figures of 14,500 factories not visited in 1906.

Mr. Herbert Samuel said that, as regards the three questions raised by Sir Charles Dilke—namely, lead, fruit preserving, and fish curing—on all these points the Home Office had within the last twelve months taken action. It was no doubt lamentable that the figures in lead poisoning again showed an upward tendency. Every case meant a terrible amount of human suffering, and it was but a poor consolation to say that compensation would be paid. The number of cases last year was 632, against 519, a considerable increase; but it should be noted that in 1899 the number was 1,268, and in the year after that 1,058, so that they had, at an any rate, the consolation of knowing that the average number had been reduced by something like 50 per cent. since that time. Although the reduced figures might give some satisfaction, they in no sense afforded any reason for the relaxation of efforts to stamp out industrial diseases. The condition of things could not be described as satisfactory until they had been reduced to an absolute minimum. The Home Office had endeavoured during last year to cope in various ways with this question. They had made regulations for the safety of workers in the trade of grinding paints and colours. The earthenware trade regulations were about to be overhauled, and it was hoped they would effect a large reduction in the cases of lead poisoning. The draft of a new Order dealing with the fruit-preserving industry had been published. Should the new Order be criticized on the ground that it did not go far enough in regard to the hours of labour, it should be remembered that in the case of the fruit-preserving and fish-curing industries the powers of the Department were limited by certain statutory exemptions extended to these industries. The fish-curing industry was being made the subject of a special inquiry, with a view to deciding as to the best mode of revising the regulations. The inquiry would specially include the question of sanitation, which was one of great gravity. The medical inspectors' reports were exceedingly voluminous, but such portions of them as could properly be published would be published with the report of the inquiry. The departmental committee regretted that they could not recommend the scheduling of fibrosis of the lungs, although it was a disease which could be definitely traced to certain industries. In its early stages it was undistinguishable from ordinary cough or bronchitis, and the result of scheduling it would be prejudicial to workmen, who might lose their employment on mere suspicion that they were developing the disease, the employers fearing that they would be unable to insure them. The view of the Committee was supported by the Grinders' Trade Union, who urged them not to schedule the disease. Dr. Haldane took the same view, and said that to schedule the disease would be disastrous to the tin mines in Cornwall. Dr. Oliver, one of the greatest authorities on dangerous trades, took the same line, and said that on the whole it was not to the advantage of the workmen that this disease should be scheduled. With regard to the opinion of the hon. member for Berwickshire that they ought to have scheduled naphtha, the Committee had come to the conclusion, after visiting a number of indiarubber factories where the naphtha poisoning was alleged to take place, that there was no industrial disease due to naphtha. The suggestion of the medical evidence was that the poisoning attributed to the naphtha was due to carbon bisulphide. Other points which had been mentioned would be carefully considered.

Vivisection.

On the Home Office vote last week the question of vivisection was raised by Mr. Smeaton who moved the reduction of the salary of the Home Secretary by £100. The report of the Royal Commission on the operations of vivisection contained revelations of a most startling kind, and proved that the law of 1876 was habitually disobeyed, in some cases flagrantly violated, and that in the operations of vivisection the motives of humanity seemed very rarely to actuate the operator. There was need for greater vigilance. During 1905 there were 38,000 experiments, between 2,000 and 3,000 of which were vivisection, but inspection took place in only 23 cases, at a cost of 850 guineas. For the past three years out of 89,581 operations only 93 were made the subject of inspection at a cost of 2,550 guineas. That was simply ridiculous—a flagrant waste of public money. There were two inspectors, one getting 500 guineas and the other 350 guineas. These gentlemen, though not at all times officers, received whole-time fees. The inspections were inefficient and far too rare. He complained that the Home Office took no steps to detect or investigate cases of unlicensed vivisection, and consequently unlicensed operations would go on; and, further, that no inquiry was made to ascertain whether a candidate for licence was likely to show humanity in conducting operations. One eminent professional man had actually, contrary to the law, signed the certificate under which his own licence had been granted. The moral he drew was that, whereas during the debate great jealousy had been shown in regard to the inspection of workmen, in melancholy contrast to this dumb creatures were made the victims of men who, although they ought to be restrained by the law, were convicted by the Blue Book of gross illegality and positive inhumanity and cruelty. He suggested that the inspectors should be increased in number, and the Home Office should be put in a position to judge whether they had conducted their inspections efficiently. There ought, too, to be a high fee charged for licences, which should go towards the remuneration in part of the increased body of inspectors.

Mr. Akers-Douglas said he wished to dissociate himself from the remarks of the hon. member with regard to the inhumanity of the administration of the Vivisection Act. His experience was that the administration of that Act and the conduct of the inspectors was most humane. He was certain there was nothing like undue cruelty.

Mr. Smeaton said he had not imputed to the inspectors that they condoned cruelty, but that they did not take the opportunity of examining cases.

Mr. Akers Douglas accepted the correction, but Mr. Smeaton had said that sufficient care was not taken in granting licenses to the profession.

Sir F. Banbury supported Mr. Smeaton, and arguing that the inspectors were insufficient in number.

Mr. Akers-Douglas, continuing his remarks, said that a great many charges had been made against those who carried on this scientific work which could not be justified on examination. His experience went to show that every care was taken to see that licences were not scattered broadcast, but were granted only to those who were authoritatively recommended.

In replying to the debate, Mr. Gladstone said the question of vivisection raised matters of extreme im-

portance and complication. The law caused great difficulty in administration. Not being a surgeon, physician, or physiologist, he could not penetrate the mysteries of these things beyond a certain point; he could only, like his predecessors, exercise such common sense as he possessed in the endeavour to secure the observance of the law with no want of humanity, but keeping sentiment with considerable strictness within the bounds of reason. It was impossible, he suggested, to carry matters in relation to this subject further pending the report of the Royal Commission.

Infantile Mortality and Medical Relief.—Mr. Summerbell asked the President of the Local Government Board whether infant mortality among the poorer classes usually rose greatly in the latter part of the summer and early autumn; whether the mortality would be reduced if parents who were unable to pay for a doctor for their children would apply for medical relief at an early stage of the children's illness; and whether he would advise the guardians to give all facilities to such parents to obtain medical relief for the children, and not to make it a debt or offer it on condition that the parent came into the workhouse. Mr. John Burns replied that he was aware that there was usually an increase in infant mortality in the latter part of the summer and early autumn, especially in hot seasons, and it might be accepted that competent medical advice and treatment at an early stage of the illness would tend to reduce the mortality. He had, however, no reason to suppose that guardians were unwilling to afford medical relief for children whose parents were unable to provide it, or that persons properly entitled to receive medical relief were deterred from applying for it by the considerations referred to in the last part of the question. If his honourable friend was aware of any cases of failure to give relief to the infants of parents unable to provide it, and would inform him of the particulars of such cases, he would consider them.

Pauper Children, Boarding Out and its Cost.—In answer to two questions put on Tuesday by Mr. Pike Pease, Mr. Burns said that, as he had stated in April last, the number of children in district and separate schools on January 1st, 1907, was 11,809, and in cottage, scattered, and other homes, 15,889. On the same day 6,806 children were boarded out within the union, and 1,853 beyond the union. The sums paid in respect of a child who was boarded out varied according to the arrangements made with the foster parents, but the amount paid for the maintenance of the child could not exceed £13 a year. Some other payments were made for medical attendance, repair and renewal of clothing, schooling, etc. These usually amounted to between £2 and £3 a year.

Vaccination.—Mr. Lupton asked the President of the Local Government Board if his attention had been called to the case of a boy who died in Croydon on April 29th last as the result of vaccination; if he was aware that the case was investigated by Dr. Copeman, of the Local Government Board; that the child had sores on the head, face, and arms, and lingered in agony for three months; would he say if he was still supplying public vaccinators with the same class of lymph; and if he would lay Dr. Copeman's report upon the table. Mr. Burns said he was aware of the case referred to, though he did not know that the child lingered in agony for three months, nor had he been informed of his death. The case was investigated by Dr. Copeman and several medical men. Twenty other cases were vaccinated with the same lymph as this child, and, so far as was ascertained, the case in question was the only one in which the child subsequently had sores. The sores appeared to have been in fact "bromide rash," and to have been due not to vaccination, but to doses of bromide of potassium administered by the mother on account of the fits from which the child suffered. It is estimated that 178 gr. of the drug were given to him. Dr. Copeman's report was a confidential document, and he could not undertake to lay it on the table.

Plague Statistics.—Mr. O'Grady asked the Secretary of State for India whether he was aware that the estimates given by the Indian Statistical Department of the plague victims in the year 1904 varied between highest and lowest in round figures 200,000; and whether he would look into the administration of this department with a view to the matter presented for publication being made intelligible and consistent. Mr. Morley said that the extreme variation alluded to was due to the fact that the higher figures referred to the whole of India, including native States, and the lower one to British India only. The figures which he had quoted in replying to a question on the 8th instant were taken from a special return recently published by the Government of India, and differed from the figures in their annual sanitary report, from which the statistics given in the moral and material progress report and the statistical abstract were taken. He had asked for an explanation of the discrepancy.

Inoculation for Plague in India.—Mr. John Robertson asked the Secretary of State for India whether inoculation for the plague continued to be practised in India in general and the Punjab in particular. Mr. Secretary Morley replied that in all provinces inoculation was offered to the people, and was performed free of charge by the district medical staff. In the Punjab of late it had been accepted by increasing numbers. In April last over 21,000 persons were inoculated in that province. The extent to which the remedy was used must necessarily rest with the people themselves, as no one was inoculated against his will.

Vital Statistics and Lunacy.—On Tuesday, in answer to a series of questions put by Mr. Vincent Kennedy, Mr. Birrell stated that the excess of births over deaths in 1906 per 1,000 of the population was in England and Wales 11.6, in Scotland 11.9, and in Ireland 6.6. In the cases of England and Scotland the figures agreed as nearly as could be with the averages for the past ten years, but in the case of Ireland the figures were a little more than 1 per 1,000 above the average for 10 years. In none of the three countries, therefore, was a progressive decline shown in the excess of births over deaths. In 1851, 1 out of every 1,291 persons in Ireland was recorded as a lunatic; in 1881, 1 out of 529; and in 1901, 1 out of 225. The proportion of male and female lunatics in Ireland in 1901 was 100 males to 92 females; in England 100 males to 115 females; and for Scotland 100 males to 105 females. The proportion of persons suffering from mental derangements in the year 1901 was in England 1 in 245, in Scotland 1 in 220, and in Ireland 1 in 178. It must, however, be borne in mind that in England and Scotland the feeble-minded as well as lunatics and idiots were included, whereas the Irish figures comprised lunatics and idiots only. The proportion of deaf and dumb persons, according to the Census of 1901, was in England 1 in 2,134, in Scotland 1 in 1,695, and in Ireland 1 in 1,450.

Colwyn Bay and its Water Supply.—Mr. Weir asked the President of the Local Government Board, seeing that the Colwyn Bay Council now realized that the water supply was insufficient, would he ascertain whether any steps were being taken to augment the supply, especially in view of the increased demand for water during the holiday season. Mr. John Burns said that the district was supplied with water by the Conway and Colwyn Bay Joint Water Supply Board. The district council, who were one of the constituent authorities of the Joint Board, had for some time been pressing them to lay an additional main from the intake in Lake Cowlyd, so as to supply more water into the constituent districts, and about a week ago the Joint Board resolved to seek powers next Session to take more water from the lake.

The Vaccination (Scotland) Bill which was read a first time in the House of Lords on July 22nd is a measure to give Scotland the right to have conscientious objectors even as England.

Public Health Bills.—The Public Health Bill, which passed the Grand Committee in the Commons a week or two ago with such great rapidity, has been ordered by the House back to Grand Committee for reconsideration, and will be considered on Monday next. The Public Health (Scotland) Amendment Bill is a short measure, introduced in the Lords on July 22nd, to amend Sections 57, 58, and 59 of the Public Health (Scotland) Act, 1897, relating to the prevention of infectious diseases.

Manchester and Salford.

THE GREAT CENTRAL RAILWAY MUTUAL PROVIDENT SOCIETY.

THE experience that Manchester has had of the Mutual Provident Society of the Great Central Railway will make the Manchester Divisions take great interest in the vigorous action of the Sheffield and the Stockport, Macclesfield and East Cheshire Divisions. The Society was inaugurated over forty years ago by the Great Central Railway Company (then the Manchester, Sheffield and Lincolnshire Company) for the benefit of its employees, the company itself contributing to its funds. It is managed by an Executive Committee elected annually of which the chief officers of the company are *ex-officio* members. Thus the railway company itself is largely responsible for the rules and management, and membership of the Society is compulsory on certain classes of the employees. The Society has, throughout the country, 203 medical officers, of whom 114 are members of the British Medical Association, by far the greatest proportion belonging to Lancashire, Cheshire and Yorkshire. The fees paid to medical officers are either (*a*) 4s. a head per annum for single members, or (*b*) 8s. for attendance and medicine for a family, including the husband, the wife and all children under 14 years of age. This does not, however, include confinements, nor attendance on the wife or infant for one month after confinements, nor miscarriages occurring after the second month of pregnancy. In addition, the medical officer has to attend without fee any members of the Society who belong to other districts, but who may be temporarily residing in his district on the business of the railway company. The distance limit is three miles from either the residence of the medical officer or the nearest station, which is by no means compensated for by the fact that the company says that it may "at its pleasure" grant a free pass to enable the medical officer to visit distant patients. There is no wage-limit for membership; any officer or servant of the company has the option of joining, and if he leave the service of the company after seven years' membership he may still retain membership, with right of medical attendance, whatever his salary may be and however dangerous his occupation, and though his subscription to the society is increased the medical officer gets no more than before. Thus a man may be receiving a salary of £1,000 a year, and yet obtain for 8s. a year medical attendance for himself, his wife, and all children under 14 years of age. Another most objectionable rule is that if a member suffering from fracture or dislocation becomes dissatisfied with the medical officer, he may, by permission of the secretary, consult a bonesetter, whose fees will be paid by the society. Such a rule is an insult to the profession, and it is a question whether any medical man is not open to a charge of unprofessional conduct who agrees to work under such a rule. Of course nothing can prevent a patient consulting a bonesetter, but the medical officer ought to refuse to give the required fortnightly certificate, or to be in any way responsible for patients who are not solely under his own care.

The Sheffield Division has already objected to any medical man accepting the post of medical officer for the sum of 8s. a year for whole families, and in deference to this objection an additional medical officer recently appointed has resigned the post. The experience of a few years ago, when some of the Manchester medical societies objected to these rules without success, proves that a determined and united front will have to be shown. The Manchester attempt failed from want of cohesion among medical men; but since then the Divisions have been organized, and it should now be possible to insist that adequate fees shall be paid, that the attendance shall be confined to male members of the Society, and that several other obnoxious rules shall be revoked entirely.

ETHICAL RULES FOR DIVISIONS.

The Manchester Divisions of the British Medical Association are becoming alive to the great importance of adopting some code of ethical rules. It is a fact that until recently neither the Branch itself nor any of the Manchester or Salford Divisions have had any ethical rules. The model rules of ethical procedure were the only rules that could be said to have been adopted, though the central authorities have long since declared that these are quite insufficient to enable Divisions to deal with many important questions. The Branch Council has already found itself embarrassed in attempting to deal with certain cases, and has accordingly recently adopted a proper code of ethical rules, and these have been confirmed by the Central Council. It is also announced that the Ethical Committee has approved of the adoption of the Bradford rules and Rule Z, *a* and *b*, by the Salford Division. As matters now stand, the members of the other Divisions are under no obligation to act in conformity with the opinion of their Divisions in many matters of great importance. For instance, resolutions affecting club rates or scales of minimum fees for certain districts, resolutions calling on members to insist on certain reforms in clubs, or against meeting in consultation with any medical man, or announcements by circular that any practitioner has been guilty of unprofessional conduct—all such resolutions are *ultra vires* unless some code of ethical rules, authorizing in general terms such specific resolutions, has been adopted by the Division and confirmed by the central authorities. Questions of this kind have already been before some of the Divisions, but have fortunately not had to be pressed to extremes; if they had, the Divisions might have found themselves in the very awkward position of passing resolutions which were not strictly legal.

It has been objected that the Bradford and Z rules, or similar rules which would authorize action in such cases, might put too much power in the hands of a few members. There need be little fear in this respect, as special provision is made in the Bradford rules for the protection of minorities, and also, before extreme measures can be taken, the sanction of the central authorities must be obtained. The fear is rather of an opposite kind, for it will always be difficult under any rules to coerce unwilling members into conforming with recognized professional customs. In any case, the importance of every Division speedily adopting some code of ethical rules has recently been urged by the Branch Council, and is now being considered by the Committee of the Joint Divisions, as it is felt to be advisable, as far as possible, to have a uniform code for the whole of Manchester.

PLAYING FIELDS.

The Manchester and Salford Playfield Society, brought into existence at a recent meeting in the Lord Mayor's parlour, seeks to increase the existing supply of public and private playing fields and other open spaces, and, if necessary, to purchase or lease suitable land; but the Society will also endeavour to influence public and private bodies to provide sufficient playing fields to meet the requirements of the various districts. Experience proves that even if existing parks were nearer the crowded centres of population, the regulations in many cases prevent their being effectively used for games. It was said at the meeting that there are some 10,000 lads, to say nothing of girls, for whom no opportunity of healthy outdoor exercise is provided. It is urged that during the period of adolescence outdoor games and exercises should form a large part of the educational system, since the basis of all healthy physical development is exercise in the open air. Every municipality, it was said, should have large powers to acquire land and regulate building operations, so that in every district built over part of the area should be systematically set aside for outdoor exercises and health-giving play. It is estimated that something like £10,000 will ultimately be required, and of this amount only £1,300 has been promised. It was pointed out that the corresponding society in London had been able during the seventeen years of its existence to make provision for 179 cricket pitches, 43 lawn tennis grounds, and 54 football grounds.

West Yorkshire.

WEST RIDING RIVERS BOARD.

THE annual report of this Board, presented at a meeting held in Wakefield last week, shows that the constant pressure put by the Board on all the local authorities and individuals within its jurisdiction in order to prevent river pollution is undoubtedly having a favourable in-

fluence on public health. The terrible contamination of the West Riding rivers by all sorts of filth was long believed to be one of the penalties which must be paid for commercial activity; but the Board is beginning to prove that it is possible to carry on industries successfully without spoiling the whole face of nature. Great efforts to treat sewage effectually are being made by all the local authorities. It is hoped that a time may come in the not too distant future when the West Riding rivers may again run through the towns and country in their pristine purity and beauty.

HALIFAX GUARDIANS AND THE MEDICAL PROFESSION.

We are glad to hear that there is every prospect of a settlement of the dispute between the guardians and the medical profession. At the last meeting of the guardians a compromise was considered, and the opinion was expressed that the Board would probably meet the wishes of the medical profession by paying a salary of £110 per annum, without dispensing, to the resident medical officer at the Halifax Poor-law hospital. But some farther arrangements have still to be made with the Halifax Division before the matter is finally settled.

WATER CHARGES AT HALIFAX.

With reference to the case in which Dr. W. C. F. Smith was summoned by the Halifax Corporation in respect of a charge of 6s., water-rate for a tap in his stable yard, we are informed that Dr. Smith has received an intimation from the Town Clerk notifying him that he will be exempted from payment.

EMERGENCY MEDICAL VISITS.

At a meeting of the Bradford Division held some time ago it was determined to send a deputation to the Bradford Education Committee with regard to fees paid for medical attendance on school children in an emergency. In some cases it was stated that medical men had not been paid when called in to see children taken suddenly ill in the elementary schools of the city, and the Local Government Board Auditor had recently intimated to the Education Committee that the payment of such fees was of doubtful legality. The Committee, however, informed the deputation, in an interview which took place last week, that it was not their intention to repudiate any reasonable changes made for attendance on children in emergency due to accident or sudden illness in the schools.

THE BRADFORD POLICE SURGEONSHIP.

There is every prospect of an amicable settlement of the dispute in connexion with these appointments, to which attention has several times been drawn in this JOURNAL. Three of the officials of the Bradford Division last week met a similar number of representatives of the Watch Committee of the Bradford Corporation on the invitation of the Mayor. The matter was thoroughly discussed, and proposals which would to a large extent meet the wishes of the medical profession were made. A meeting of the profession is to be held this week to consider these proposals, and we hope in a future issue to be able to state that a definite settlement has been arrived at.

Birmingham.

MEDICAL BENEVOLENT SOCIETY.

AT a special meeting of the Birmingham Medical Benevolent Society held at the Medical Institute, Mr. W. F. Haslam, who recently retired from the post of honorary secretary of the Society after sixteen years' service, was presented with an address and a silver tea and coffee service, kettle, and rose bowl. A large number of members were present and the presentation was made by the President, Dr. Whitcombe, who said in the course of his address that Mr. Haslam had thrown his whole heart into his work for the Society during sixteen years, and that he had shown a great amount of tact, ability, energy, and devotion as honorary secretary. To his devotion and labour the present satisfactory position of the Society was largely due. The President was supported by Sir James Sawyer and Sir Thomas Chavasse who also paid tribute to the unselfish devotion and untiring energy of the late Secretary. Mr. Haslam, in returning thanks for the presentation, spoke of the work of his predecessors in the post of secretary, and pointed out that the Society was doing most excellent work in a quiet and unobtrusive way. During his term of office the number of members had increased from about 300 to 400, and he was disappointed that more medical men had not joined, for the Society ought to be supported by all members of the profession residing in the district.

THE GENERAL HOSPITAL.

In order to reduce the number of out-patients treated at the hospital it has been decided to appoint three receiving room officers, who shall be non-resident, with a salary of £150 a year. Their duties will be to see all the patients when they first come to the hospital, and to decide whether they are suitable cases for hospital treatment. Probably all the patients will be treated in the first instance, but these officers will arrange whether they are to be made out-patients or not. This new system of filtration of the patients will be commenced in October next. The receiving-room officer's post should be a very valuable one to him.

Scotland.

SIR ALEXANDER R. SIMPSON.

As some misunderstanding has arisen it should be explained that a sum of £600 had been collected for the purpose of obtaining some kind of memorial, portrait or otherwise, of the successful career of Sir Alexander R. Simpson. On the return of Sir Alexander Simpson to this country, after his tour round the world, the Committee in charge ascertained his views with regard to the sum collected. They learned that he wished the whole amount to be handed over to the Royal Maternity Hospital towards the endowment of a bed in that institution. While grateful to the subscribers for their kind recognition he did not wish any public ceremony in connexion with the disposal of the fund. Accordingly the chairman, secretary, and treasurer of the committee have handed over to the directors of the hospital the sum collected (further contributions to be paid to the treasurer to the hospital), which was cordially accepted towards the endowment of a bed to be named after Sir Alexander, the chairman of directors stating that they considered it a high honour to the institution to have such a permanent memorial of Sir Alexander Simpson.

CEREBRO SPINAL MENINGITIS IN SCOTLAND.

The Registrar-General for Scotland reports that in the week ending July 20th, 11 deaths were due to cerebro-spinal meningitis, 7 in Glasgow, 3 in Edinburgh, and 1 in Leith.

Sir Henry Littlejohn reports that in the same period in the City of Edinburgh 1 case had been notified as suspicious cerebro-spinal meningitis, and was removed to the City Hospital. Two deaths had occurred during the week, and 14 cases remained under observation.

ROYAL ARMY MEDICAL CORPS.

Glasgow.

Hitherto this corps has always gone into camp at Netley or Aldershot for the annual training, but this year the corps was sent to Stobs. The advantages of Netley consisted in the valuable experience which the men received in ward work in the Netley Hospital, but against this there was the fact that no real field training could be obtained. To some extent this was remedied by the change to Stobs, as the men were able to take part in the sham fights and obtain training in searching for wounded, etc., and other field duties of the corps. The number that went to camp was not so great as in former years, but about 250 men were present, under the command of Captain Halliday.

Aberdeen.

For the first time for a number of years the Aberdeen Companies had their annual camp training in Scotland and went into camp at Barry, Forfarshire, on July 20th, under the command of Captain T. Fraser. The other officers were Captains Rorie and Milne, Lieutenants Innes and Howie, Quartermaster Cromar and Chaplain Rev. James Smith, and the total number going under canvas was about 200. On Sunday, July 21st, church parade was held in camp, along with the first Volunteer Battalion

Gordon Highlanders, the Chaplain of the R.A.M.C. (Volunteers) officiating, and lessons being read by Colonel Stewart of the Gordons and Captain Frazer. During the week the time will be fully occupied in the practice of field ambulance work in all its branches. In former years it was usual for the corps to go into camp at Aldershot or at Netley, where the members of the corps who were not medical students had an opportunity of working in the hospitals at these centres during the camp week and of getting some practical knowledge of their work. It is to be hoped that in the future opportunity will be given every few years for this being done, as it undoubtedly increases the efficiency of the corps, though admittedly the expense of transporting two or three hundred men so far from home is considerable.

OUTBREAK OF ENTERIC FEVER AT PETERHEAD.

During the last six or seven weeks considerably over 200 cases of enteric fever have occurred in Peterhead, a town in the county of Aberdeen, with a population of 15,000. The great majority of the cases are of a mild type, and the death-rate is little over 5 per cent. The source of the fever has been traced to one of the reservoirs which supply the town with water. The town, like so many other fishing towns on the east and north-east coast of Scotland, is inadequately supplied with water. This inadequacy is exaggerated during the herring fishing season, when the population is increased by from 3,000 to 5,000 inhabitants. The Local Government Board sent Dr. Dittmar to investigate, and after a careful examination, he made recommendations with which the Town Council has indicated its desire to comply. No case of enteric fever has occurred in the convict prison at Peterhead. It has a private water supply under the control of the Admiralty and Prison Commissioners, who have kindly come to the help of the local authority by giving from 30,000 to 50,000 gallons a day of their water. The Channel Fleet was to have called at Peterhead, but the Admiralty issued instructions that this part of the programme should be cancelled.

GLASGOW MATERNITY HOSPITAL.

In their seventy-second annual report, which has just been issued, the Directors of the Glasgow Maternity Hospital make an earnest appeal for funds to carry on the new building scheme. An interesting summary of the history of the institution is given from its start in the Grammar Wynd School in 1834. Seven years later it was moved to St. Andrew's Square, where for nineteen years it was carried on. When these premises became too small the hospital was removed to a house in Rottenrow at the top of North Portland Street. In the course of twenty years these premises in their turn proved inadequate, and in 1880 the present hospital was built on the same site. For a number of years the want of space in the present building has been acutely felt by the Directors, and has handicapped the institution as a teaching centre. The number of the patients has steadily risen. In 1860 the outdoor and indoor patients numbered 950; in 1880, 1,300; and in 1906 the numbers had grown to 3,687. To meet the demand for increased space the Directors acquired property in Ure Place, where they are building an up-to-date hospital with ample ward accommodation and proper equipment for teaching practical gynaecology and obstetrics. It is to enable them to finance this building that the present appeal for funds is made. The sum required is £30,000, of which £15,000 is required to pay for the site, while the buildings are estimated to cost £60,000, and furnishing about £5,000.

Ireland.

INJUNCTION AGAINST A LIMITED LIABILITY DENTIST COMPANY.

LAST week, before Mr. Justice Barton, in Dublin, the Attorney-General, at the relation of Mr. Kevin O'Duffy, Honorary Secretary of the Irish Dental Association, made application for an injunction restraining Myddleton, Ltd., of Belfast, from practising as surgeon dentists, and from permitting the company from remaining on the registry of joint stock companies. Mr. Alfred Myddleton and his wife were associated with the company as defendants.

The statement of claim alleged that they had fraudulently, with intent to injure and deceive the public, and to injure persons registered under the Dentists Act, 1878, conspired together and procured to be registered the defendant company, which was incorporated on June 28th, 1902, with a nominal capital of £1,000, in £1 shares, of which 993 were allotted to Mr. Alfred Myddleton. The directors were stated to be Mr. Alfred Myddleton and his wife, and he was also described as manager and secretary of the company, whose objects were alleged to be to carry on in any part of the United Kingdom or elsewhere the trade or business of surgeon dentists, etc. In pursuance of the conspiracy it was asserted that the company's business was extensively advertised in Belfast and other towns in the North as "Myddleton, Ltd., surgeon dentists and specialists in American dentistry, the largest dentists in Ireland," and the advertisements and handbills were issued with the object of inducing the public to believe that the company was carried on by persons registered under the Dentistry Act, or specially qualified to practise dentistry. The defence was a specific denial of all the foregoing allegations, while there was an alternative special defence denying that any of the acts complained of were unlawful. They also represented the relator as secretary of an organization which was seeking to create in Ireland for its members a mischievous monopoly for the treatment of teeth. The defence also stated that Parliament had refused to restrain limited companies from carrying on such trade. The defendants further alleged that as the result of the relator's organization malpractices and the exactment of exorbitant charges were shielded. Accordingly they submitted that competition would prevent the formation of a "ring."

Mr. Justice Barton said in applying to the present case the authorization which had been cited during the hearing the particular form and character of this proceeding had to be borne in mind, as well as the peculiar nature of the rather scanty evidence which the plaintiff had laid before the Court. Jaffe's case was an appeal from a justice's conviction under Section 3 of the Dentists Act, 1878. Rowell's case, so often referred to, was an application for a mandamus to the Registrar of the Joint Stock Companies to register a limited company. Appleton's case was like the present one, an action for a Chancery injunction, at the suit of the Attorney-General to restrain a public fraud, but there was an important difference, as in Appleton's case fraud was admitted. In the present case nothing was admitted. He could not say that the memorandum of association in this case was open to legal objection. The title of the company did not contain the word "dentist" or any of its synonyms, or any allusion to dentistry. The principal purpose of incorporation was to carry out dental operations by means of properly-qualified persons—a purpose which is not *per se* illegal. If the company were to carry out dental operations by means of unqualified persons serious questions might arise, including the question of *ultra vires*. But there was no evidence in this case upon that question of fact. The plaintiff had, however, established his right to the relief claimed in restraining the defendants from registering the company as dentists. That relief was limited to misrepresentation as regarded Alfred Myddleton or persons of that name. It had not been proved that Alfred Myddleton or any person of his name had, since the incorporation of the company, carried out any of the dental operations of the company. But they knew that neither he nor any individual of his name was a registered dentist. In the Register of Directors and Managers, Alfred Myddleton was described as dentist, and the register was signed by him. It was admitted that the description of Alfred Myddleton as a dentist could not be justified, but it was an act not recently repeated. In the advertisements of the company several passages occurred which were calculated to lead the public to believe that the company comprised or employed persons named Myddleton, who were registered dentists. In conclusion, the judge said: I am disposed to think that defendant's counsel endeavoured to form upon Jaffe's case a larger claim of privilege for companies than the decision in that case will support. They claim for limited companies as a result of that case an unobstructed right to use the word "dentist," or its synonyms in any and every shape and in any and every context. Jaffe's case decided that the word "person" in Section 3 of the Dentists Act, 1878, does not include individual persons, and that the section hits individuals but does not hit limited companies. But a company, although it may be exempted from the penalties imposed by that section, is not, in my opinion, thereby privileged to make false representations which are calculated to mislead the public as to the qualifications of the individuals whom it composes or employs. I think that the official documents and advertisements to which I have referred contain representations of that kind. There will be an injunction to restrain the defendant company and the directors and members thereof from employing the defendant Alfred Myddleton under the title of surgeon dentist or dentist, to carry on business under the memorandum of association of the said company, and from holding forth or representing in the register of directors and managers, or the reports or returns pursuant to the Companies Act to the Registrar of Joint Stock Companies, or in their advertisements to the public, or otherwise, or elsewhere that the defendant, Alfred

Myddleton is a dentist, or that the defendant company comprises or employs persons of the name of Myddleton who are dentists. The plaintiff has practically succeeded, and if he had limited his claim he would be entitled to the whole costs of the action. The order as to costs will be that the plaintiff shall have the costs of the action, save in so far as they may have been increased by the relief claimed in other parts of the statement of claim.

BELFAST HEALTH COMMISSION.

The Special Commission appointed by the Local Government Board to inquire into the health of the city resumed its sittings on July 15th. The evidence on the second day was chiefly in reference to the sewerage of the city; the city surveyor explained that the delay in dealing with the sewage arose from the difficulty in deciding upon the best method; he thought that enough beds could be put in to treat the normal outflow within twelve months; the sewers were large enough and well adapted for their object. Dr. Letts, Professor of Chemistry, explained that his experiments were now far enough advanced to allow the corporation to proceed with their plans. On July 18th evidence was given on the milk supply of the city and the want of control; there were about 3,000 cows supplying milk inside the city and many more outside. Fault was found with the drainage scheme and disposal of the sewage by a former city councillor, and the underpaying of female workers was pointed out by a lady sanitary subofficer.

On July 19th a member of the trades council pointed out the deficiency in maps showing the incidence of disease, which he advocated should be hung up in the public library, so that all intending house-takers could see the localities to be avoided; he also maintained that much of the drunkenness was due to the poverty, and that this was quite as true as that the poverty was due to drunkenness. Several of the district medical officers of health gave evidence in regard to their own districts. All agreed as to the prevalence of phthisis. Dr. S. B. Coates, Port Medical Officer of Health, detailed the facts concerning the port, the number of foreign vessels which visited the harbour, and the measures taken. He also said that Belfast was laying itself open to small-pox owing to the slack way in which vaccination was performed.

New South Wales.

UNIVERSITY DENTAL ASSOCIATION.

AT the annual reunion and dinner of the dental graduates and undergraduates of the University of Sydney Mr. Dolan, B.D.S., in proposing the toast of "The University Dental School," referred to the obstacles that it had overcome during the six years of its existence. Professor Anderson Stuart, in replying, related the difficulties he had had to contend with in the establishment of the school. Opposition had been met with in all quarters, but was now happily being overcome. He hoped that the English recognition of the Sydney dental degree would not now be long delayed, and also that the erection of the present department into a faculty would be accomplished at no distant date. It was desirable that the status of the dentist should be raised, and the entrance examination now being imposed by the Dental Board of New South Wales would be a step in the direction of securing some general culture, as well as a sound scientific training for the dentist. Professor Welsh, in responding to the toast of "The Teaching Staff," stated that the year had been memorable in the history of the school, both from the number of its graduates and the fact that, though so young, it had been able to institute a successful postgraduate course.

RESEARCH IN TROPICAL MEDICINE.

Public attention is being now directed to the necessity for research in tropical medicine in Australia. A large part of the north of Australia lies within the tropics, and the Bishop of North Queensland has written to the Universities of Adelaide, Melbourne, and Sydney, urging the establishment of a School of Tropical Medicine at Townsville, where the authorities of the hospital have agreed to erect a small laboratory in the grounds. The letter has been considered by the Senates of the universities, and they have all agreed to support the proposal for research in tropical medicine. But the exact form in which that support is to be given is not yet decided. Dr. Welsh, Professor of Pathology in the University of Sydney, is giving this proposal active support, and with the consent of the Senate has offered accommodation in his laboratory for a research student or a scholar. At the present time a considerable amount of attention is directed to tropical disease in the course of lectures and practical work in pathology for the ordinary degree in medicine in the University, so that what is already known of tropical disease is being taught. What is required, therefore, is study and research in the special diseases which occur in tropical Australia. It is hoped that the Commonwealth Government will see its way to render financial assistance to the scheme.

RATS AND THE PLAGUE.

Sporadic cases of bubonic plague continue to be reported at intervals in the city, and plague-infected rats continue to be caught in the old areas of infection. Dr. Ashburton Thompson, the President of the Board of Health, has expressed the opinion that it is exceedingly improbable, although not impossible, that any method will be found effectual for the extermination of the rats. It must be remembered, so Dr. Thompson states, that hitherto no method for the destruction of rats has been effectual in producing any marked diminution in the number of members of the rat tribe as a whole. He reiterates the opinion he expressed at the beginning of the plague outbreak in 1900, that in as far as prevention of plague goes, nothing worth speaking of can be done by the destruction of rats, except in very restricted localities and places, and that the hope of safety lies entirely in measures taken to keep the rats outside the inhabited buildings. That is practical; that can be done; but the rats, as a whole, cannot be destroyed so as to prevent plague. Dr. Thompson refers to the bacterial virus called "ratin," which is now being energetically advertized as a means for the extermination of rats. He sent for a supply of this some months ago and has been experimenting with it since. The experience so far gained is not favourable. It has only killed two mice. This failure, however, as Dr. Thompson explains, may possibly be due to a deterioration of the virus in course of the two months' voyage. Some experiments are still being made with it on some ships, and these may prove it to be more effectual than it has appeared in the past.

South Africa.

MEDICAL SUPERVISION OF SCHOOL CHILDREN IN THE TRANSVAAL.

THE question of the medical supervision of school children in the Transvaal has, we learn from the *South African Medical Record*, recently come prominently before the public in that colony. There exists in Johannesburg a Committee composed of teachers, medical men, and one or two prominent laymen, which has for its object the promotion of a system of medical inspection by the education authorities. Some months ago this Committee drew up a practical working scheme for the routine medical inspection of all children attending Government schools, both rural and urban, in the Transvaal. This scheme provides for: (1) The creation of a central School Medical Department under the direction of either the Education or the Public Health Department; (2) the appointment of a staff of medical officers under the direction of a Chief Medical Inspector of Schools, whose main duties comprise: (*a*) The medical examination of all new pupils on admission to school, and the re-examination of every child at subsequent stated intervals; (*b*) the paying of fortnightly routine visits by the medical officers to each school; (*c*) the submission of a quarterly report upon the sanitary condition of the school (lighting, ventilation, etc.); and (*d*) the instruction of the teachers in the principles of physiology, hygiene, and temperance. Provision is also made for the careful recording of all data elicited at the inspections. Under the scheme medical inspection is provided for every town and country educational centre in the Transvaal containing not fewer than 150 children within a radius of five or six miles. The cost of the scheme, at a liberal estimate, works out at about 3s. 1d. per child per annum—that is, if the pupils attending Government schools number about 32,000, as according to the latest

official returns, the total cost of medical inspection would amount to rather less than £5,000 per annum. Owing to impending administrative changes, active steps to urge the project further were not taken for the time being. When, however, the Colonial Secretary announced his intention of recasting the educational system of the Transvaal at an early date, it was felt that the time had come when the pressing need for the systematic medical inspection of schools should be brought prominently before the authorities. A letter was consequently drafted to the Colonial Secretary setting forth the advantages of the innovation, and explaining the nature of the working scheme proposed by the Committee. The promoters of the scheme have received assurances of sympathy from the authorities, and the Colonial Secretary has consented to receive a deputation on the subject. A public meeting will shortly be summoned by a number of prominent citizens for the discussion of the subject of the medical supervision of school children, and it is hoped that the Government may be brought to realize that, important though the curtailment of expenditure may be, it would be criminal to ignore a system which has been shown in other countries to be fraught with the greatest benefit to the well-being of the children.

The East Africa Protectorate.

CLIMATE AND HEALTH

THE Colonial Office Report on the East Africa Protectorate is a lengthy document of nearly 150 pages. It gives a clear idea of the condition of things in what is undoubtedly one of the most valuable possessions of England in Africa, and is a record of distinctly satisfactory progress. To anyone contemplating residence in the country it is of especial service, for it is not usually easy to get an accurate conception of the very various climates of the different parts of the country which are here described in some detail. The coast belt is very hot, but it is on the whole not unhealthy for Europeans, owing perhaps to the cool sea breezes, which afford refreshing nights excepting at the change of the monsoon. Malaria and tropical illnesses generally are not common, but nervous diseases have been responsible for the invaliding of several officers. The highland district of the Protectorate is composed of ridges and plateau land ranging from 4,000 to 9,000 ft. in height. The altitude thus affords a brisk atmosphere by day, and cool, if not cold, nights, and this part of the country, speaking generally, is very healthy, the white children born and brought up here being particularly healthy-looking. It is far otherwise with the low-lying district around Lake Victoria. Here malaria is common, and is very apt to pass on into blackwater fever. Here, too, tropical disorders are more prevalent, and in Kavirondo sleeping sickness has been very fatal, though now apparently abating.

There are at present 1,813 whites resident in the country, of whom 264 are Government officials. Hospitals have been established at Mombasa and Nairobi. With regard to birth and death certificates, it may be remarked that, as much of the Protectorate still remains unexplored, anything of the kind except in the case of the whites is impossible. The general sanitary condition of the towns is described as being "as good as can be expected in a tropical country which is as yet at an early stage of development," which does not sound particularly high praise. The water supply at Nairobi is brought a distance of nine miles from the Kikuyu hills, and the town is well scavenged, but its position, lying as it does in a sort of cup, is unsatisfactory.

The veterinary surgeon's report, which appears in the appendix, reveals East Africa as a country conspicuous for parasitic diseases. The dreaded "coast fever" has already made its appearance, Texas fever prevails both in Uganda and East Africa, and the cryptococcus of epizootic lymphangitis has been found in many cases of ulcerated limbs of horses and cattle. The horses suffer from the South African horse sickness and from piroplasmosis, while trypanosomiasis has a fair field with no less than five species of Glossina prevalent. In sheep, "heart water" is carried by the bont tick, and in dogs piroplasmosis by *Haemaphysalis leachii*, while at least twelve other species of tick are known, some, if not all, of which are no doubt concerned in playing their part in the transmission of disease to man and animals.

Hong Kong.

THE COLONIAL OFFICE REPORT.

THE Colonial Office Report on Hong Kong places the population of the entire colony at 327,000 persons, of whom 306,000 are Chinese, 12,000 non-Chinese civilians, and 8,657 belong to our army and navy in nearly equal proportions. During the year much was done to render dwelling-houses rat proof, nearly 1,000 houses having had the ground floors laid with concrete and rat runs stopped. Fifty-one houses were demolished under the Insanitary Properties Resumption Act, and the scavenging lanes which have to be provided in the rear of all newly-built dwellings have greatly improved matters. There were, nevertheless, 842 deaths from plague during the year, as against only 287 in the previous year, and malaria accounted for 448 mortalities as against 207, which looks as if less was being done in mosquito work. Beri-beri was also very fatal, causing 561 deaths, but this figure shows marked reduction from 1905, being 117 less. It is interesting to note that much attention has been given to the teaching of hygiene. It is a compulsory study in the four highest classes in all schools where English is taught, and steps are being taken to have it taught in the vernacular schools.

BUBONIC PLAGUE.

The total number of cases of bubonic plague from January 1st to June 8th, 1907, was 75, and of these 64 proved fatal. Of the total number, 72 were Chinese and 3 Indians. Cleansing operations have been carried out as in former years, and as the number of cases has been so far small, it would seem that the colony may this year escape a severe epidemic.

THE DUMPING OF DEAD BODIES IN THE STREETS.

The Sanitary Board has discussed the question of how best to deal with the dumping of dead bodies in the streets. During 1906 there were 1,447 bodies dumped in the streets, and during the first quarter of 1907 377. A motion was made to recommend to the Government that all bodies found should be cremated, but the motion was strongly opposed, and as a result cremation has not been put in force. A remedy has still to be found for this practice.

Federated Malay States.

THE INSTITUTE FOR MEDICAL RESEARCH.

IN the report on the Institute for Medical Research, Federated Malay States, for 1906, Dr. H. Fraser describes the work accomplished during that year. The staff of the institute has been enlarged, a bacteriologist, a chemist, and an entomologist having been added in the course of the year. The Acting Government Veterinary Surgeon has also co-operated in some of the research work carried out. The work done on beri-beri has been limited, attention both in the Malay States and in the Straits Settlements having been mainly directed to the rice theory which has been so strongly advocated by Braddon. Some work has also been done on trypanosomiasis in horses and bullocks, experiments carried out with biting flies (two species of *Tabanidae*) having demonstrated that those insects can transmit the disease mechanically. In addition 164 autopsies have been performed, and numerous laboratory investigations and analyses have been conducted by Mr. Eaton, the chemist. The work done on *Tabanidae* as disseminators of trypanosomiasis is very interesting, especially in view of the fact that the tsetse fly would seem to be the only insect capable of transmitting trypanosomiasis (human included) in Africa. It is certainly peculiar that those flies (*Tabanidae*) should be capable agents in one part of the world and not in another. One might suggest that more work should be carried out in the institute to prove or disprove Braddon's views with respect to "uncured" rice as the cause of beri-beri. If there is anything in this, it certainly means much to those parts of the world.

CORRESPONDENCE.

THE ASSOCIATION AND THE GENERAL MEDICAL COUNCIL.

SIR,—I am sorry that my friend Mr. Kinsey should, by suggesting that my letter of resignation contains a misrepresentation of the action of the Central Ethical Committee, make it necessary for me to trouble you again. I avoided any reference to controversial matters, but was obliged to state the fact that the decision of the Central Ethical Committee to undertake the prosecution of cases before the General Medical Council was the reason that I was compelled to sever my connexion with the Association. Mr. Kinsey writes that I ought to have explained that in so doing the Central Ethical Committee is only obeying a resolution passed by the Representative Meeting; but why should I do so? The question at issue, to which I did not refer, is whether the Central Ethical Committee is justified in deciding to carry out that resolution under the present constitution of the Association, and before any laws and by-laws have been passed to guide and govern the Association in the performance of this new duty.

Mr. Kinsey, in his speech before the Council, justified this action on the ground of the urgent obligation to render assistance to members of the Association, and the majority of the Council appeared to agree with him that there was sufficient justification for putting aside the question of law. In my opinion such a doctrine is a dangerous one for a public body to act upon, for although there might be circumstances in which it is excusable to pass over a strict interpretation of the law, this should be in a special emergency and not be a basis for a new undertaking. Mr. Kinsey, moreover, has himself been hardly fair in referring to the resolution of April, 1905, as if it sanctioned a procedure of the kind which the Central Ethical Committee is now prepared to undertake, for he is perfectly aware that I have always opposed this proposal. The meaning of that resolution is that the Ethical Committee from time to time was consulted as to whether certain matters should be made the subject of complaints before the General Medical Council, and it was passed to allow the Medical Secretary to get the help of the solicitor in giving preliminary assistance on the understanding that the Association would have no other connexion with the proceedings.—I am, etc.

Birmingham, July 22nd. ROBERT SAUNDBY.

SIR,—Mr. Kinsey's letter in the JOURNAL of July 20th has made matters a little clearer for me. When he used similar arguments in the Council I took them for mere flights of rhetoric designed to influence members to vote as Mr. Kinsey wished. It is evident from his letter that he was serious in suggesting that Professor Finlay, Professor Saundby, and myself, conscious all the while that the true interests of the profession demanded our sacrifice, were nevertheless struggling for reasons of our own to retain our connexion with the Association. Were this suggestion true, it seems to me that we are most fortunate in being allowed the opportunity of resignation, for, if guilty, we would more than deserve expulsion from the Association.

Were I convinced that the majority of the Association really desired that the Association should appear as complainants before the General Medical Council, I would, of course, give way; but as all the information I have is to exactly the opposite effect, I still remain a member.

Mr. Kinsey refers to Minute 312 of the Representative Meeting, 1906, the terms of which are familiar; but he makes no allusion to Minute 313:

> Resolved, "That the recommendation (ii) of the Ethical Committee . . . *be referred back for further consideration.*"

And what is No. (ii)?

> That in order to effect this, members of the said Council, who are also members of the British Medical Association, should at once on election, or immediately after election, cease to be members of the British Medical Association during such time as their appointment lasts.

Is it not clear that the meeting, in declining to accept the clause which made No. (i) operative, was not convinced of its wisdom?

The fact is that the largeness of Mr. Kinsey's heart has obscured the clearness of his vision; he has looked altogether at one sentimental aspect of the question and has omitted to give sufficient consideration to the whole.

If the Representative Meeting, with all the facts now for the first time clearly before it, rejects Dr. Hamilton's motion, and thus decides that the Association and the General Medical Council, each in different ways representative of their profession, should be entirely separated and no longer related by mutual membership, we shall be driven to gather our information elsewhere than through the Association, in the service of which most of us gained our medico-political experience and through which we were kept in close touch with the views of the profession. —I am, etc.,

Edinburgh, July 22nd. NORMAN WALKER.

SIR,—In view of the letter from Professor Saundby in the BRITISH MEDICAL JOURNAL of July 13th, I think it would be for the advantage of the Association if the whole question of the relations between it and the General Medical Council were explained in your columns.

There seem to be two points that require to be made clear: (1) Is it legal for the Association to prosecute before the General Medical Council or not? If it is, one reason for seeking a Charter is done away; if not, how long will it be before such is made clear to all, so that gentlemen situated like Professor Saundby need not feel that they are obliged to resign their membership? (2) Supposing that the Association can appear to prosecute before the General Medical Council, is it quite clear that members of the latter body must, if already members of our Association, resign that membership? When a question affects one of the corporations represented on the Council does its member resign or refrain from voting on that question? Further, does not the Society of Apothecaries appear as a complainant, and yet have a right to a representative?

If, however, it is decided definitely that members of the General Medical Council must not be members of our Association, would it not be well to try to retain them in the Association by making them "associates," who would have all the rights of membership except that of voting? —I am, etc.,

Dublin, July 17th. F. C. MARTLEY.

SIR,—Anyone knowing Mr. Kinsey could not believe him capable of writing upon any question in other than the frank and benevolent terms of his letter upon Dr. Saundby's resignation, but few of your readers will regard so lightly the loss of such men as he and Dr. Langley Browne and other valuable members, forced out by the unwise action of the Representative (?) Meeting. For myself, the desertion from our ranks of these and many other distinguished men, who have done good work, not only for the Association but for the profession, is a bad sign for the future—indeed, it is the beginning of the end.

The tension between this so-called Representative Meeting and the Council, which *really* represents the Association, has reached snapping point. What then? Further struggle, financial ruin, and a rival association! If the malcontents determine upon this last course the British Medical Association would in half a dozen years be forgotten.—I am, etc.,

Old Trafford, July 22nd. JAS. BRASSEY BRIERLEY.

"CHRISTIAN SCIENCE IN FICTION."

SIR,—I am of course perfectly aware of your views on the subject of Christian Science, and those views are equally well known to your readers. There is consequently not the least chance of your being misunderstood in publishing this letter, but even if there were I believe you would consent to do so, because the very strength of your opposition to Christian Science would appeal to your sense of justice for the most scrupulous fairness in controverting it.

On the subject of Mr. Benson's book, I have nothing to say here. He is not a Christian Scientist, but he has written with a sympathy for their cause which Christian Scientists would be ungrateful if they did not welcome. At the same time, it is obvious that he has not presented the case as a Christian Scientist would have presented it, and I hope equally obvious that Christian Scientists do not propose to cure drunkenness by "sharing the whisky bottle with the patient."

What I do wish to refer to is your comment that "with the make-believe which denies the existence of pain and disease we have no patience." May I be permitted to say at once and without equivocation that neither has any Christian Scientist? The members of the medical profession have for centuries devoted their lives, have even often given their lives, to the struggle which has for its object the overcoming of disease and pain. No Christian Scientist who denied this would be worthy the name. The Christian Scientist has come to join in the struggle, to spend his life in pressing to the same goal. Surely it would be unworthy of the physician to deny this, and unworthy of a great medical journal, however much it might discredit the means, to misstate the method.

Christian Science, then, does not teach that disease and pain have no existence in the ordinary sense of the word. But it does distinguish between an existence which is an expression of the absolute and one which is nothing beyond a subjective condition of the human mind. In other words, Christian Science is Idealism pushed unshrinkingly to its ultimate and logical conclusions. It contends that pain and disease are unreal, inasmuch as they are no part of divine law; it admits that they have a relative existence as a subjective condition of the human mind. "Sickness," writes Mrs. Eddy in *Science and Health*, "is neither imaginary nor unreal—that is to the frightened false sense of the patient. Sickness is more than fancy; it is solid conviction. It is therefore to be dealt with through right apprehension of the truth of being. If Christian healing is abused by mere smatterers in Science, it becomes a tedious mischief-maker. Instead of scientifically effecting a cure, it starts a petty crossfire over every cripple and invalid, buffeting them with the superficial and cold assertion, 'Nothing ails you.'"

In attempting the demonstration of this problem the student of Christian Science relies on nothing but the understanding of divine Principle as taught by Jesus to His disciples, and in proportion to his power to grasp this, and not in any way in dependence on the will of man, will the demonstration be quickened or protracted. It is this fact which gives perennial force to that great saying of Gamaliel, "If this counsel or this work be of men, it will come to nought; but if it be of God, ye cannot overthrow it."—I am, etc.,

London, S.W., July 20th. FREDERICK DIXON.

HEALTH VISITORS AS UNQUALIFIED ASSISTANTS.

SIR,—I wonder whether the majority of medical men at all realize that we are living in an age of transition, an age when changes of the most fundamental character in the functions of the entire profession are silently preparing, for which it is in a high degree important that we should be ready to adapt ourselves when the time is ripe. In an interesting speech recently published, Sir James Barr has called attention to the desirability of these changes, forecasting a day when the work of the general practitioner will be mainly of a preventive rather than a curative nature.

In a paper on Preventive Medicine and the Individual, contributed to the Bristol Congress of the Royal Sanitary Institute last year,[1] I ventured some suggestions as to the way in which this transition might be furthered by co operation of the private practitioner and the medical officer of health. But the fact is, and it is regrettable, that the medical officer of health seems upon the whole desirous of keeping preventive work in his own hands, relying for assistance, where assistance is indispensable, upon lay satellites rather than upon his medical brethren. I will go so far as to say that medical men, when once they have entered the official world, are too often forgetful of the pit whence they have been digged, and that many of them fall into the way of thinking and speaking contemptuously of the mere general practitioner.

I have an old and valued friend who by dint of sterling pluck and ability has achieved an honourable position in the world of medical officialdom. With him I have had many a tussle over this very question of the supposed slackness and incapacity of the "average general practitioner." While approving in principle of the reforms I advocate, he objects that they depend for success upon the intelligent co-operation of this deplorable person, from whom intelligent co-operation is, in his opinion, upon the whole past praying for. Perhaps this opinion is more typical of the attitude of medical officials towards their non-official brethren than is at all suspected by its objects, or, shall I say, victims? Possibly this is the reason that in most of our large towns what I consider distinctively medical functions are, in daily increasing measure, being assigned by the health authorities, with hearty support from their medical officers, to unqualified persons. I refer in particular to the growing army of "health visitors," paid by the municipalities to visit the poor in their dwellings, collect statistical materials, advise parents, and assist the medical officer of health in the study of infectious diseases. In the case of minor ailments they are supposed, I believe, to press for the summons of a medical man where they consider it necessary. But who are they to say whether it is or is not necessary to summon medical aid? And if they do not consider it necessary, what guarantee have we that they will refrain from prescribing on their own account? None whatever, it seems to me, but, considering the universal itch for amateur doctoring, a moral certainty of the opposite.

I am sorry to say that my conscience will not permit me to advocate an attitude of uncompromising hostility to the employment of unqualified health visitors. The claims of the poor and, above all, of their children are paramount; and the funds at present available for these purposes are in most places insufficient to allow of the provision of qualified medical men or medical women. Still the fact remains that the functions discharged by health visitors are *medical* functions, and cannot be properly discharged by unqualified persons, however docile or well meaning. We in our curative work are prohibited from the employment of even partially trained (but unregistered) assistants. What is sauce for the unofficial goose should be sauce for the official gander.

There are numbers of qualified men and women who, lacking capital, are, through no fault of their own, hard put to it to earn a living. Medical officials are in honour bound to remember this; and as, with the inevitable growth of State Socialism—for that is what it amounts to—more and more preventive work is forced upon their department, it should be their constant endeavour to see that the bulk of this is assigned to those who are alone competent to undertake it. And practitioners in general, especially those living in large towns, where money for preventive work is, or ought to be, forthcoming, should be vigilant in resistance of any tendency upon the part of the health authorities to allocate—save provisionally or under a genuine economic compulsion—distinctively medical work to unqualified individuals.—I am, etc.,

Bath, July 18th. CHARLES J. WHITBY, M.D.Cantab.

[1] *Journal of the Royal Sanitary Institute*, vol. xxvii, No. 8, 1906.

"KUSTER'S OPERATION OF POST-AURICULAR MEATAL ANTROTOMY AND MR. HEATH'S CLAIM."

SIR,—Under the above heading there is an interesting letter from the pen of Dr. William Hill in your issue of July 20th. It is welcome as adding another to the large number of methods which the mastoid operation I practise and teach is erroneously supposed to resemble. It also exemplifies the difficulties surgeons experience in understanding complicated operations from mere descriptions. Those who, like Dr. Hill, have not seen the procedure are apt to form erroneous impressions regarding it. One such surgeon described my method as "an incomplete Stacke operation"; another, Dr. Fox, at the British Laryngological and Otological Association in December last, asked how it differed from a "modified Swartze." He then and there received the explanation.[1] Now Dr. Hill boldly describes my method as a "Küster operation" *pur sang*. Doubtless other comparisons will follow, and equally foreign to the fact. Verily it is something of importance thus to be persistently attacked. I am the last to expect or desire everybody to agree with me. Were it so, there would be no spice in the pie, and, moreover, by full discussion the truth must ultimately prevail. Now, Dr. Hill, in his accusation that I have adopted Küster's operation and called it my own, appears to rely on the portion of it which deals only with the bone, and gives quotations from Küster's writings and from mine side by side. I repeat these quotations verbatim,

[1] *Lancet*, January 26th, 1907.

and from them alone shall easily prove that there is not the slightest ground for Dr Hill's assertion.

After describing the exposure of the cells and antrum, Küster says:

> . . . One must be prepared to consider the radical removal of the posterior wall of the bony auditory meatus from without inwards. If the remaining portion of the membrane and the ossicles are still to be preserved, the meatus is to be opened as nearly as possible laterally up to the tympanic membrane. . . . . It is true that in these measures the exposure of the middle ear is by no means complete, but these are for the slighter cases, which nevertheless frequently recover.—(Küster, 1889, op. cit.)

> After exposure and necessary treatment of the antrum and any communicating cells and cavities . . . . any granulation found in the aditus must be removed, and the orifice shaped to fit the cannula (see illustration). . . . . Most of the posterior part of the bony meatus must now be removed and, if necessary, even portions of the upper and lower walls, according to the size of the meatus, until complete freedom of access to the drum-membrane is obtained.—(Heath, *Lancet*, August 11th, 1906.

From these quotations it will be seen: First, that Küster removed the post-meatal wall alone, whereas I remove the superior, posterior, and inferior walls, and lately a surgeon who omitted to remove the floor and roof himself told me that, like Küster, he could not get exposure of the middle ear. I explained his error, and now he is successful. Secondly, Küster acknowledged his failure to get complete exposure of the middle ear, whereas my method ensures this, and also, what is more important, provides access thereto, and a perusal of the cases quoted in my paper referred to by Dr. Hill[2] will show that I not only dealt with the membrane, but even with some of the pathological contents of the cavity; and in my later article[3] it is shown that the attic is thus accessible. Thirdly, Küster's measure, in his own words, "is for the slighter cases, which nevertheless frequently recover." Whether they recover spontaneously, as slight cases often do, or as the result of his operation, it is difficult to understand; nor does it much matter, for my method is effective in all the slighter cases, and even in most of the severe ones, as a reference to the ten serious cases recorded in my paper will attest.[4] Those 10 patients were all exhibited last November at the British Laryngological and Otological Association.[5] At the discussion which followed, my method was described as "a distinct advance in aural surgery," and I received the unanimous congratulations of the many speakers. I am not unduly sensitive to such attacks as those of Dr. Hill and others—they are but natural—but I cannot approve his mode of treatment of the opinions of the gentlemen who saw the cases and spoke at that meeting, for they are all experienced hospital surgeons of repute, and most of them are nominated for the coming Council of the Otological Section of the Royal Society of Medicine. Surely they are as competent as is Dr. Hill to know what is, or is not, original, and what is a discarded method of the past. They have seen my operation and its results, and have adopted the measure, and never until now has the name of Küster been associated with it. Every one who has seen the operation describes it as entirely novel. Among many other important purposes it is designed with the object of, and is effective in, insuring both at and even after the operation that access which Küster acknowledges he did not succeed in getting even at the operation.

Dr. Hill is also inaccurate with regard to my attitude towards the radical operation, for every communication I have made has plainly stated that there must be a residuum of hopeless cases which will need relief by that measure. Now happily their numbers will diminish. What I have done is to denounce the routine practice of the radical operation for chronic aural suppuration, but my crusade would have been futile without the provision of a conservative substitute for that drastic measure. If Küster's method had been effective it would not have been discarded, and the fact that British surgeons, who a year ago performed the severe radical operation alone, are practising my operation in 80 to 95 per cent. of their cases is evidence that my method has proved to be effective in a way that cannot be claimed for Küster's, and even Dr. Hill claims but a small field of usefulness for that discarded plan, and prior to his letter I had never heard of its being performed in this nor in any country. It should not be surprising that my method is unlike that of others, for its pathological basis is different, and, as my articles clearly show, it is the outcome of prolonged clinical investigation. If that foundation is not reliable the surgical superstructure will surely fall, therefore attacks are welcomed in order to test its stability; but if the foundation is sound it will resist all assaults, and nothing Dr. Hill, nor I, nor indeed any one, can say will prevent the adoption of my operation. Every one who has witnessed its gradual evolution—for it has taken years—well knows that it has been entirely designed by me.

In conclusion, I would point out that Dr. Hill has attacked only one of the seven important combined and co-ordinated features of the operation, all of which are essential, and has no more justification for calling it a "Küster" than Dr. Fox had for considering it a "modified Swartze," and without some of my instruments the operation cannot be performed, as many surgeons have already found.—I am, etc.,

CHARLES J. HEATH,
Surgeon to the Throat Hospital, Golden Square, W.

London, July 22nd.

[2] Ibid., August 11th, 1906.
[3] Ibid., April 27th, 1907.
[4] Ibid., August 11th, 1906.
[5] BRITISH MEDICAL JOURNAL, January 5th, 1907.

HOLIDAY PRACTICE.

SIR,—Now that the holiday season is approaching, may I be allowed to call the attention of the profession to the very unfair way in which many doctors treat and prescribe for patients when they are away on their holidays? It is a very common experience to be told afterwards by a patient that "Dr. So-and-So was staying at my house and treated me for rheumatism or some other complaint." Last year a well-known professor from London treated a severe accident to a lady who was staying in the same village as he was, and, as they were well-to-do people, I presume he did not do it for nothing. I see the professor is a member of the British Medical Association. There must be many members in seaside villages who depend a good deal upon the visitors, and I feel sure it is only thoughtlessness on the part of the doctors on their holidays that allows them to rob their brother practitioners in this way. But it is doubly hard to bear when consultants condescend to such practice. Of course nothing can be said against doctors rendering first aid in case of emergency.—I am, etc.,

July 18th. SEASIDE PRACTITIONER.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT, 1906.

SIR,—The Regulations of the Secretary of State as to the duties of Medical Referees have been sent to the various Medical Referees on their appointment under the present Act, and your readers may be interested to know if the examinations will be made with a due regard to medical etiquette. To those who considered the matter it was quite clear that the Secretary of State could not enforce the attendance of medical men acting on behalf of either employer or workman, unless he was prepared, with the consent of the Treasury, to pay their fees, and this was held to be impossible owing to the great expense which would result.

I am glad to say it will not be the fault of the Secretary of State or of the Medical Referees if any breach of medical etiquette occurs. The Regulations instruct Medical Referees to send notices of the time and place of any proposed examination to the workman or his solicitor, if he has one, and also to the employer or his solicitor, and forms are provided on which it is distinctly stated that any statement made or submitted by either party will be considered.

It will be in the interest of both employer and workman that the fullest statement of medical views held by each individually shall be placed before the Medical Referee, and this can only be done by a medical man by word of mouth. I feel sure that Medical Referees will be pleased to meet any qualified medical practitioner, provided and paid by the employer or workman, and, in fact, by the wording of the Regulations they could not refuse to do so.

I am certain that if medical men will impress on employers and workmen the danger of having a decision made, from which there is no appeal, by a Medical Referee who has not had the facts or views of each side fully before him, medical men will be instructed to attend, and that medical etiquette, which really exists for the protection of the public, will be adhered to.—I am, etc.,

ALBERT BENTHALL, F.R.C.P.Edin., etc.

London, N.W., July 23rd.

THE VIBRATING SENSATION IN DISEASES OF THE NERVOUS SYSTEM.

SIR,—In the current number of the BRITISH MEDICAL JOURNAL I am pleased to see a report of a lecture on the above subject delivered by Dr. R. T. Williamson. In the *Lancet* of 1902 I published a communication entitled "The Tuning Fork as a Means of Diagnosis," and at that time I was unaware of the fact that any other medical man, Continental or at home, had ever worked with this instrument excepting in ear cases. I am personally convinced that there is a great sphere of usefulness in the use of the tuning fork in the diagnosis of disease, and on an enlarged scale it is even probable that some therapeutic properties might also be traced to its use.—I am, etc.,

SEYMOUR STRITCH,

Dublin, July 22nd. Deputy Governor, Apothecaries' Hall, Ireland.

OBITUARY.

JAMES DUNSMURE, M.D., F.R.C.S.E., LL.D.EDIN.

THE medical profession of Edinburgh was somewhat shocked to read in the morning newspaper of July 16th an intimation of the death on the previous day of Dr. James Dunsmure at the age of 62. Few outside a small circle knew that he had recently undergone suprapubic lithotomy for stone in the bladder. He seemed to be making a good recovery and his death was quite unexpected and unlooked for. He had in the morning arranged about a shooting in the Highlands. Death was believed to be due to a thrombus in the heart. He was suddenly seized with severe pain in the region of the heart at 4 p.m. and died some three hours later.

The son of a well-known and highly-respected Fellow and President of the Royal College of Surgeons of Edinburgh, James Dunsmure was educated at the Edinburgh Academy and afterwards at the University of Edinburgh, where he graduated M.B., C.M. in 1867, and M.D. in 1870. In 1867 he became a Licentiate, and in 1871 a Fellow of the Royal College of Surgeons of Edinburgh, of which College he was later President. He was House-Surgeon to Professor Spence in the Edinburgh Royal Infirmary, and later House Physician to Dr. Haldane in the same institution. For ten years he was one of the Physicians to the Royal Edinburgh Hospital for Sick Children, and for some years he was Obstetrician to the New Town Dispensary. In 1901 the University of Glasgow conferred on him the honorary degree of LL.D. during the time he was President of his College. Not content with the medical courses in the University and Extra-Academical School of Edinburgh he studied at Vienna, Berlin, and Prague. On his return to Edinburgh he joined his father in practice, and ultimately succeeded him. Such was his standing in his profession that he was appointed Medical Officer of the Trinity College Hospital, Physician to Watson's Institution, and to the Church of Scotland Training College, Surgeon to the Trades Maiden Hospital, and to the North British Railway Company. He had been a Manager of the Edinburgh Royal Infirmary, and was one of the Governors of Donaldson's Hospital.

Like his father before him, a President of the Royal College of Surgeons of Edinburgh, he took a profound interest in his College, and played a very active part in the arrangements for the quatercentenary celebration two years ago, and to him and Mr. Dowden much of the success of that function was due; no two men worked harder to make it a success. At the time of his death he was a member of the President's Council of his College. He was an excellent man of business.

Midwifery and diseases of children formed the bulk of his practice when at its best. He used to assist Matthews Duncan when his ordinary assistant was away on holiday. He was one of the Examiners in Midwifery for the Fellowship of the Royal College of Surgeons from the time that examination was started.

He was a keen sportsman, a good shot and a skilful fisherman. He was a member of the Honourable Company of Edinburgh Golfers, and frequently played on their course at Muirfield. It was at the time that Musselburgh was the course of the Honourable Company that Dr. Dunsmure became a member, and with three friends he played a foursome every Wednesday for very many years.

Like his father, he was a member of Session of the parish church of St. Andrews of Edinburgh.

He was a somewhat shy and retiring man, but kind-hearted and most genial. He was excellent company, whether at his own table or on the golf course or moor.

He was a widower. His wife died about a year after marriage, soon after the birth of his only child, a daughter, at the time his father was lying on his death-bed.

James Dunsmure had many friends and no enemies. Edinburgh will miss him. He was a man of sterling integrity.

ALFRED LLOYD OWEN, M.D., B.A.DUB., M.R.C.S.ENG.,

CONSULTING SURGEON TO THE ROYAL PORTSMOUTH HOSPITAL.

WE greatly regret to record the death of Dr. Lloyd Owen, of Southsea, on July 4th, and this sad and unexpected event has deprived a large circle of friends of a greatly-valued adviser and his professional brethren of a wise, experienced, and much esteemed colleague.

Lloyd Owen was born at Portsmouth in August, 1845, and he was the third son of Mr. Jeremiah Owen, who then held a high and important position in the Royal Portsmouth Dockyard. He was educated at Christ's Hospital, and on leaving school he went to Trinity College, Dublin, where he passed through a distinguished career as a student, and in 1866 obtained the degrees of B.A. and M.B.; he took the diploma of M.R.C.S.Eng. in the same year. After a short absence he returned to Trinity College and took the degree of M.D. He was appointed House-Surgeon to the Royal Free Hospital, London, in 1867.

In 1869 he married the daughter of the late Dr. William Gibney, Surgeon of the 15th Hussars, and soon afterwards entered into partnership with the late Mr. Husband, Senior Surgeon of York County Hospital, and at that time Treasurer of the British Medical Association. Dr. Lloyd Owen did not, however, remain long in Yorkshire, for in 1870 he commenced practice in Southsea, formerly only a suburb of Portsmouth. At this period, however, it had become a fashionable resort, largely due to the skill and enterprise of Dr. Lloyd Owen's uncle, Mr. Thomas Owen, who for several years was Mayor of Portsmouth and occupied a leading position in the neighbourhood. By his natural ability, unflagging industry, and extreme courtesy, Dr. Lloyd Owen soon obtained a high professional reputation and an extensive practice. He held the appointment of Surgeon on the staff of the Royal Portsmouth Hospital for thirty-five years with great distinction. On his retirement in 1906 he received the warm and hearty thanks of the Committee of Management, and was elected Consulting Surgeon to the hospital. During this long period his services were greatly appreciated by the suffering poor, and he did much to help forward the progress and development of the institution. For many years he also held the important post of Admiralty Surgeon at Portsmouth.

Dr. Lloyd Owen was always an ardent supporter of the British Medical Association, and he was appointed a Vice-President of the Surgical Section when the annual meeting was held at Portsmouth in 1899. He was one of the original members of the Southern Branch, frequently attended the local meetings, and a short time since he occupied the chair as President of the Portsmouth Division.

As a surgeon, Lloyd Owen's career was very successful. He was an excellent practitioner, painstaking in the discharge of every duty, and he enjoyed to a remarkable extent public confidence and esteem. Of his qualities of head and heart no one could speak too highly. The writer of these few lines had for years many opportunities of estimating his character. He was a true and faithful

friend, with a transparent integrity and courtesy visible in every action.

A striking example of this kindness of heart was exhibited during his last illness by his anxiety to secure a grant of money from the Surgical Aid Fund of the hospital to help a poor girl to obtain an artificial limb.

In his early days Dr. Lloyd Owen was fond of sport. He was a first-rate cricketer, and frequently played for Dublin University. In recent years it was a favourite recreation with him to watch a first class match. He was also a good horseman, and during his early professional life always enjoyed a run with the hounds in the winter months.

In his home life he was a devoted husband and father, and the deep sympathy of all who knew him is with his widow and her family in their sudden and irreparable loss and sorrow. Dr. Lloyd Owen leaves behind him five sons and one daughter. Two of his sons are officers in the Royal Navy and two are in the Army.

The funeral took place at Southsea on July 8th amid universal expression of regret. Around the grave there was a great gathering of friends and colleagues, who were present to pay a last tribute to one whose memory will ever be associated with the warmest and kindest recollections.

JOHN SHERWOOD STOCKER, M.D., M.R.C.P.,

CONSULTING PHYSICIAN, WESTERN GENERAL DISPENSARY, LONDON.

DR. JOHN SHERWOOD STOCKER, formerly of Montague Square, London, W., who died on July 18th, came of medical stock, for his father practised at Great Cumberland Place, and his grandfather, Richard Stocker, was for forty years apothecary to Guy's Hospital, an office which at that time involved duties analogous to those fulfilled by the dean of a medical school and by a resident medical officer; the father of this Richard Stocker was John Stocker, who practised at Fareham. John Sherwood Stocker, who was born on April 9th, 1826, was educated at King's College School and Guy's Hospital, taking the diplomas of M.R.C.S. and L.S.A. in 1849. He graduated M.B Lond. with honours in surgery and medicine in 1851, and took the degree of M.D. two years later. During his student life he spent some time in Paris, and was there during the Revolution of 1847. After settling in London he was for many years physician, and subsequently consulting physician, to the Western General Dispensary, and was for some time assistant physician to the Samaritan Free Hospital for Women. He was a member of the Court of Examiners of the Society of Apothecaries from 1884 to 1892, was Junior Warden in 1897, Senior Warden in 1898, and Master in 1899. A colleague on the Court of Examiners writes that he was an excellent Chairman, devoted to his work, and spared no pains to foster the friendly feeling which always existed among the examiners.

A consulting surgeon at Guy's Hospital, one of his few surviving contemporaries there, writes of the high esteem and affection in which he was held by all associated with him. His generosity was well known, and not less conspicuous was his cheery and happy disposition and the simplicity and the sincerity of his character.

A London graduate who knew him well writes: His leading professional trait, in my opinion, was his wonderful aptitude at diagnosis; I often marvelled at the facility with which he could make a diagnosis by mere scrutiny and without making any further physical examination.

He was twice married, first to the daughter of Mr. Richard Worlidge Southby, and secondly to the sister of the Right Hon. Sir J. C. Dimsdale, Bart. He was a widower at the time of his death, and leaves two sons.

THE LATE SIR WILLIAM BROADBENT.—Dr. Samuel West writes: No account of Sir William Broadbent's life would be complete without special reference to one quality which leavened the whole character of the man. I refer to the tenderness of heart and native sympathy which found its practical application in benevolence. The full measure of this cannot be known for he was one of those who did good by stealth, and except when his object was to arouse benevolence in others did not speak of it so much as practise it. He could not turn a deaf ear to a tale of misery and distress or refuse help on such an appeal. In the eye of the profession it was with the British Medical Benevolent Fund that he was most closely associated, for he had been first its Financial Secretary, then its Treasurer, and lastly its President. Most of the public appeals made in recent years had been written and signed by him, and among the list in response his own contribution would ever be one of the largest. His active interest in the fund was but the natural expression of the gentle sympathetic character of the man, who loved to do good and spared not himself in the doing of it.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. William B. Fletcher, who had a share in the organization of the Indianapolis Medical College in 1869, in which at different times he was Professor of Physiology, Materia Medica, Anatomy, Practice of Medicine, Therapeutics, and Medical Diseases, and afterwards Professor of Nervous Diseases in the Central College of Physicians and Surgeons, Indiana, aged 70; Dr. L. Lepage, Demonstrator of Physiology in the Lille Faculty of Medicine; Dr. Salomon Flesch, one of the leading physicians of Hungary; Dr. Franz Brenner, President of the Medical Chamber of Moravia, and a strenuous advocate of the interests of the profession in Austria, aged 59; and Dr. A. Aubeau, a well-known Paris surgeon, Honorary President and Founder of the Société Clinique des Praticiens, author of papers on a new operative procedure for the radical cure of large hernias, modification of the blood under the influence of chloroform anaesthesia, applications of micrography and bacteriology to surgical diagnosis, etc., aged 55.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

MR. ADAM SEDGWICK, F.R.S., Fellow of Trinity College, was on July 22nd elected Professor of Zoology and Comparative Anatomy in the room of the late Professor Newton. Mr. Sedgwick has been Director of the Morphological Laboratory since the death of Professor F. M. Balfour in 1882, and for the last ten years has been a tutor of Trinity College.

UNIVERSITY OF LONDON.

M.S. EXAMINATION.—The following candidates have been approved for the degrees indicated:

MASTER OF SURGERY.—S. A. Boyd, Charing Cross Hospital; H. Collinson, University of Leeds; *P. M. Heath, University College; H. T. Mant, University College; T. Perrin, M.D., London and St. Thomas's Hospitals.

M.D. (*in Medicine*).—H. E. Dyson, University College; H. Finzel, St. Bartholomew's Hospital; M. L. Hine, Middlesex Hospital; T. Lewis, University College; R. H. Miller, St. Mary's Hospital; R. Milne, London Hospital; L. G. Parsons, University of Birmingham; †J. R. Steinhaeuser, Guy's Hospital; *F. G. Thomson, University of Cambridge and Middlesex Hospital; R. O. Williams, Guy's Hospital.

M.D. (*in Pathology*).—T. S. Vincent, University of Birmingham, University College, and University of Edinburgh.

M.D. (*in Mental Diseases and Psychology*).—P. A. M. Green, London Hospital.

M.D. (*in Midwifery and Diseases of Women*).—V. Z. Cope, St. Mary's Hospital; C. D. Holdsworth, University College; *E. L. Holland, King's College; Helen N. Payne, London School of Medicine for Women; F. T. H. Wood. Guy's Hospital.

M.D. (*in State Medicine*).—A. H. Gerrard, University College.

M.D. (*in Tropical Medicine*).—E. E. Maples, St. Bartholomew's Hospital and London School of Tropical Medicine.

* University Medal. † Obtained the number of marks qualifying for the University medal.

UNIVERSITY OF GLASGOW.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—W. W. Adamson, G. V. Anderson, A. H. Arnott, D. Arthur, B.Sc.; H. Bertram, R. I. Binning, W. Brown, M.A., B.Sc.; J. Cairncross, T. H. Campbell, R. P. Cartwright, T. G. Copestake, A. J. Couper, A. D. Cowan, J. R. Craig, C. A. Crichlow, N. Davie, H. W. Dempster, J. A. Doctor, D. Duncan, W. H. Duncan, A. Dunsmuir, L. J. Dunstone, A. W. Eadie, W. M. Elliott, A. Fairley, T. H. Forrest, T. Forsyth, B. Gale, G. Garry J. Gemmell, D. Gibson, H. M. Granger, J. V. Grant, T. P. Grant W. C. Gunn, L. Hislop, A. Hogg, A. J. Hutton, C. L. Kerr, A. T. I. Macdonald. N. MacInnes, M.A.; R. M'Inroy, J. B Mackay, T. C. Mackenzie, A. D. M'Lachlan, D. C. Maclachlan A. N. R. M'Neill, C. J. C. Macquarie, C. Marshall, J. H. Martin, H. Matthews, W. S. Melville, J. C. Middleton, M.A., B.Sc.; J. W. Miller, T. Miller, M.A.; J. R. Mitchell, H. Morton, J. Muir, R. C. Muir, P. O'Brien, D. M'Kinlay Reid, D. Renton, M. M. Rodger, T. D. C. Ross, A. Scott, J. M. Smith, J. Steedman, C. K. Stevenson, M. J. Stewart, L. Storey, J. A. Struthers, J. M. Taylor, R. S. Taylor, D. A. Thomson, M.A.; H. J. Thomson,

J. A. Thomson, R. Todd, J. Turnbull, M. Turnbull, W. B. Watson, J. Weir, F. R. Wilson, S. Wilson, M.A.; W. M. T. Wilson, T. Winning, M.A.; G. Y. Yardumian, M. Young.

The following women candidates were also approved:

J. M. Andrew, M. M. Buchan, M. G. Forrest, E. S. Hill, M.A., A. M'Crorie, J. A. Macvea, J. D. Rankin, M.A., B.Sc., J. I. Robertson, M.A.

The following passed one or more subjects of the examination with distinction:

D. Arthur, H. Morton, M. J. Stewart, W. C. Gunn, Jeannie M. Andrew, W. Brown, Martha M. Buchan, T. H. Campbell, J. R. Craig, C. A. Crichlow, D. Duncan, W. M. Elliott, A. Fairlie, Margaret G. Forrest, S. N. Galbraith, B. Gale, J. W. Georgeson, H. M. Granger, T. P Grant, J. D. Gray, Ella S. Hill, A. Hogg, A. J. Hutton, T. Miller, M.A., D. M. Reid, G. W. Scott, J. Steedman, C. K. Stevenson, L. Storey, D. A. Thomson, H. J. Thomson, S. Wilson, M. Young, J. M'Vittie, H. Matthews, A. D. M'Lachlan, A. Scott.

UNIVERSITY OF MANCHESTER.

The Chair of Medicine.

DR. GRAHAM STEELL, F.R.C.P.Lond., has been appointed by the Council Professor of Medicine in the University. Dr. Graham Steell graduated as M.D. in 1877, and obtained a gold medal for his thesis submitted on that occasion. He has had a long and intimate connexion with the Royal Infirmary of Manchester, having acted successively as Resident Medical Officer and Physician in that institution, of which he is at present the Senior Physician. For many years Dr. Steell has been a Lecturer, first in the Owens College and subsequently in the University, where he has held the posts of Lecturer in Clinical Medicine and also of Lecturer in Diseases of the Heart.

At a meeting of the friends of the late Professor Dreschfeld held recently, it was agreed to make arrangements for securing some permanent memorial of him in Manchester.

Appointments.

The following appointments have been made:

Junior Demonstrator in Anatomy, Mr. A. E. Quine, M.B., Ch.B.Man.; Demonstrators in Anatomy for the Winter Session, Mr. S. H. J. Kilroe, M.B.Lond., and Mr. T. W. Todd, Junior Demonstrator in Physiology, Mr. Philip Ferguson, M.B., Ch.B.Man.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Tuesday, July 16th, Dr. Underhill (President) in the chair.

The late Sir William Tennant Gairdner.

The President made feeling reference to the loss which the College had sustained by the death of Sir William Tennant Gairdner.

Admission to the Membership.

On a ballot, the following candidates were admitted to the Membership of the College:—James Ritchie, M.D., Edinburgh; David Halliday Croom, M.D., Edinburgh; and Leonard Horner Bryson, M.B., C.M., St. Andrews.

Admission to the Licence.

The Registrar reported that since the last quarterly meeting of the College, eighteen persons had obtained the Licence of the College by examination.

Recognition of Lecturer.

Dr. G. Lovell Gulland, F.R.C.P.E., was recognized as a lecturer on medicine.

Curriculum and Examinations.

The regulations regarding the single licence and Membership and Fellowship of the College for the ensuing year were approved.

Expulsion of Licentiate.

By vote of the College, James William Ayres, a Licentiate of the College, was expelled from the College and deprived of his licence to practise, as granted by the College, and of all his rights and privileges as Licentiate.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following gentlemen were admitted to the Fellowship of the College on July 16th:

E. Archer-Brown, W. B. Bell, A. G. Coullie, D. E. Dickson, W. A. Dickson, H. T. Holland, W. L. MacCormac, A. McKendrick, C. E. R. Rendle, H. W. Riggs, G. A. Upcott-Gill, and W. Young, Major, I.M.S.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE quarterly examination of this Board, held in Edinburgh, were concluded on July 22nd, with the following results:

First Examination, Four Years' Course.—Mr. Thomas Kennedy, Belfast, passed the examination.

First Examination. Five Years' Course.—Of 37 candidates entered the following 17 passed the examination:

J. R. Smith, Carlisle; Maneck Bomanjee Motafram, Bombay; Hormusji Jehangir Dadysett, Bombay; Arthur Saldanha, Bombay; R. E. I. Mason, Newcastle-on-Tyne; V. C. L. van Someren, Australia; J. Ross, Skye; M. P. Power, co. Cork; D. A. Evans, Conway; W. J. H. Davies, Liverpool; E. J. Fisher, Nairn; A. Hegarty, Ireland; J. A. Hutchinson, co. Derry; Satis Chandra Das, Calcutta; H. C. Sutton, Sale; F. D. Johnson, New Zealand; and Gajanan Jinabhai Mahimtura, Bombay; and 6 passed in Physics, 9 in Biology, and 2 in Chemistry.

Second Examination, Four Years' Course.—Of 3 candidates entered the following 2 passed the examination:

M. J. O'Shea, Brisbane, and R. B. Sephton, Culcheth.

Second Examination, Five Years' Course.—Of 41 candidates entered, the following 18 passed the examination:

E. B. Keen, Chelsea; J. W. Hitchcock, Suffolk (with distinction); C. B. Robinson, Yorks; T. N. Usher, New Zealand (with distinction); G. F. Neill, Scotland (with distinction); A. E. Tughan, Belfast; R. G. Walker, Montrose (with distinction); R. C. Fuller, co. Cork; R. H. Jones, Wales; H. H. Field-Martell, Australia; A. D. Turnbull, Edinburgh; R. Massie, Edinburgh; MacW. Henry, Yorkshire; W. T. Torrance, Shotts; K. M. McC. Wilson, Australia; Syed Abdul Karim, India; B. Flack, Lancashire; and I. J. McDonough, Melbourne; and 4 passed in Anatomy and 2 in Physiology.

Third Examination, Five Years' Course.—Of 30 candidates entered, the following 17 passed the examination:

J. Young, Newcastle-on-Tyne; Baldev Singh, India; Surendra Kumar Sen, India; A. R. H. Harrison, co. Cork; G. FitzW. Forde, co. Cork; T. J. George, Wolverhampton; Edith Huffton, Madras; Marguerite A. C. Douglas, Capetown; E. Eccles, Lancashire; W. Watson, co. Tyrone; C. E. Watts, Dewsbury; F. S. Crean, Clonmel; J. Morham, Edinburgh; H. A. Higginson, Bolton; Lily Holt, Melbourne; Hormusji Jehangir Dadysett, Bombay; and Gajanan Jinabhai Mahimtura, Bombay; and 4 passed in Materia Medica.

Final Examination.—Of 54 candidates entered the following 17 passed the examination and were admitted L.R.C.P.E., L.R.C.S.E., and L.F.P and S.G:

E. F. Niven, Canada; D. G. McCabe-Dallas, London; W. A. Huston, Belfast; Lakshmi Narayan Ghosh, Lucknow; R. H. La Barte Cummins, Melbourne; F. E. R. Bartholomeusz, Ceylon; T. R. McKenna, Queensland; Samuel J. Nanji Kotak, Poona; J. S. Ward, Queenstown; O. Carlyle, London; J. E. Cox, Hastings; J. A. C. Tull, St. Vincent; W. Clegg-Newton, Manchester; T. McClure, Randalstown; Rajanja Robert Williams, Madras; D. W. Anderson, South Queensferry, and Thirukamu Sundara Reddy, Madras; and 5 passed in Medicine and Therapeutics; 3 in Surgery and Surgical Anatomy; 8 in Midwifery, and 10 in Medical Jurisprudence.

EDINBURGH DENTAL HOSPITAL AND SCHOOL.

THE annual "At Home" and distribution of prizes was held on July 19th, when Professor Annandale presided over a large company of students and friends of the institution. The Chairman congratulated the Directors on the continuous success of the school, which, he said, became every year a more important constituent part of the great Edinburgh Medical School. The Dean in his report remarked that the men turned out by the school furnished the best possible testimonial to the efficiency of the teaching. An excellent programme of music was rendered during the evening.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—†M. L. Ford, *†R. J. W. McKane, †G. B. Messenger, †O. C. H. L. Moll, C. S. Ormsby.

MEDICINE.—E. R. Bastard, *F. H. W. Brewer, *J. Brierley, †M. L. Ford, *†F. B. O'Dowd, *†H. W. Phillips, †S. K. Poole, *†G. Rollason, *†J. S. Ward.

FORENSIC MEDICINE.—E. R. Bastard, F. H. W. Brewer, J. Brierley, L. G. H. Furber, A. J. Hopper, F. B. O'Dowd, R. Rowlands, E. E. C. Vollet, C. J. Wolfe.

MIDWIFERY.—A. R. Hardy, M. Rathbone, G. H. Rodolph, E. E. C. Vollet.

* Section I. † Section II.

The Diploma of the Society has been granted to Messrs. E. R. Bastard, M. L. Ford, A. J. Hopper, R. J. W. McKane, G. B. Messenger, E. E. C. Vollet, and J. S. Ward.

Medico-Legal.

HABITUAL INTEMPERANCE AND LIFE ASSURANCE.

AN insurance case of some medical interest was heard at the recent Leeds Assizes. The representative of a veterinary surgeon, who was found dead in his stable yard, having evidently fallen out of his trap, sued the Legal and General Assurance Society for £2,000 under a policy of insurance, the company declining payment on the ground that the policy was granted on the faith of a representation that the habits of the assured man were habitually temperate, and that this representation was untrue. It was alleged by the witnesses for the defendant that the deceased was under the influence of drink when he met his death, but the evidence as to his habits in this respect was conflicting. Council for the plaintiff took the point that the jury before they could find against the plaintiff must find that the deceased was not only habitually intemperate but knew that he was so habitually intemperate as to make his statement to the contrary a fraudulent one. The jury found a verdict for the plaintiff for the amount claimed with interest at 4 per cent.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES

METROPOLITAN WATER BOARD.

IN the BRITISH MEDICAL JOURNAL of March 2nd, 1907, it was noted that the Water Commissioners of the City of Belfast had invited, amongst others, Dr. A. C. Houston, Bacteriologist to the Metropolitan Water Board, to investigate and report on the water supply of Belfast in connexion with an outbreak of typhoid fever in their city.

At a meeting of the Metropolitan Water Board on July 19th the report of a Committee was received, and the following recommendation was agreed to: "That Dr. Houston be permitted to receive the sum of 400 guineas, the amount of his fees and expenses for services rendered to the Belfast City and District Water Commissioners, on the understanding that the sum of £50 be retained by the Board."

The Clerk of the Board then stated that the Water Examination Committee had consented to a request made by the Egyptian Government for the assistance of Dr. Houston in connexion with the Cairo water supply, for which he was to receive the sum of £750. The Clerk explained that Dr. Houston would do this work during his vacation. After some discussion, the Board sanctioned the arrangement by 18 votes to 13.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Kirkby-in-Ashfield Urban District.—The large number of deaths of illegitimate children during 1906 in Kirkby-in-Ashfield, an urban district with a population of nearly 16,000 persons, calls for some comment. Among legitimate children the infantile mortality-rate was equal to 129 per 1,000 legitimate births, but among illegitimate children it was equal to 437 per 1,000 illegitimate births. That is to say, barely one-half of the illegitimate children survived the first year of their lives. Dr. John MacKenzie refers to the increased work attached to the compilation of the various statistical tables required by the Local Government Board and by the Home Office. Although his report, including all these tables, is printed, he appears to send written copies of the tables to the county council, the Local Government Board, and, in the case of factories and workshops, to the Home Office. This is surely an unnecessary labour on his part, for the departments concerned would be quite satisfied with printed copies.

Bourne Rural District.—The sanitary authority of the Bourne Rural District, where there is an estimated population of 13,000 persons, does not appear over-anxious to carry out the duties cast upon it by the Public Health Acts. Dr. W. J. Burdwood, in his annual report, writes: "The same nuisances recur again and again in the same places and in the same villages, proving that some better system of drainage should be inaugurated." There is no adequate provision in the district for dealing with cases of infectious disease. An isolation hospital is available, but, as there is no accommodation in it for nurses, Dr. Burdwood very properly objects to make use of it. His recommendation to provide an ambulance and a steam disinfector has been ignored; and when, during an outbreak of scarlet fever in Pointon, he reported that an infected child was allowed to go about the village and play with other children, no steps were taken by the council to prosecute the parents. It is not at all surprising to find, therefore, in a district with such lax administration that during 1906 there were as many as 36 cases of diphtheria with 9 deaths, and 89 cases of scarlet fever with 3 deaths. The death-rate from the principal zymotic diseases was 1.1 per 1,000, and from all causes in the whole of the rural district the death-rate was 15.1 per 1,000; but in the Deeping Sub-District it was as high as 20 per 1,000.

Borough of Colne—Dr. Lyon Lovett records another instance of the laudable desire of prominent laymen to give practical assistance to the attempt to lessen the large amount of infantile mortality. In 1906 the infantile mortality rate in Colne was equal to 175 per 1,000 births, and in the previous five years the rate averaged 156 per 1,000 births. In his report for 1905 Dr. Lovett recommended the appointment of a woman health visitor, and in the spring of 1906 an effort was made to secure the services of such an official at the joint cost of the corporation and of the managers of the Cottage Hospital. The Mayor of the town, Alderman Carr, then very generously offered to defray the entire expense of a trained nurse as to salary, uniform, and board for a period of five years on condition that her duties should primarily be the attention of infants, and that she should be under the control and jurisdiction of the Health Committee, and that a scheme should be adopted by the Corporation for the early notification of births. Effect has now been given to Alderman Carr's proposal. A health visitor has been appointed, and the town council has agreed to pay 1s. to any medical practitioner, midwife, parent, or guardian who sends to the town hall the notification of the birth of a child within forty-eight hours of its birth. Dr. Lovett's report is compiled with a great deal of care, and he has included a large number of valuable statistical tables, but he has not given the five Local Government Board tables.

County Borough of West Bromwich—In his seventeenth annual report, Dr. Herbert Manley refers to the fact that he has now completed a term of service equal to that of his father, who was Medical Officer of Health for West Bromwich from 1872 to 1889. He compares the sanitary condition of the town as it was in the Seventies with that of the present day. In the earlier period scarlet fever claimed an average of 63 deaths yearly. In 1906 there were only five deaths from this disease. Thirty years ago more than half the population drank water from wells polluted with sewage; there was no deep drainage, the contents of what drains there were ran down the gutters until it reached the River Tame; there was no mortuary, no disease notification, no isolation hospital, and no supervision of food or milk. The population of West Bromwich is now approaching 70,000, and the area of the borough is under 6,000 acres; it is quite time, therefore, that the members of the Corporation paid serious attention to the recommendation of their Medical Officer of Health to provide a refuse destructor, and to hasten on the abolition of the privy middens with their accompaniment of nauseous pollution of the air at night time.

Stafford.—The Corporation of Stafford will be well advised in acting upon the advice of their medical officer of health and providing adequate accommodation for isolating cases of infectious disease in place of the existing temporary buildings which are now used for this purpose. Of the 47 cases of scarlet fever which occurred in 1906 only 2 were nursed at home. Dr. Blumer considers that the fact of these 47 patients coming from forty different houses shows how seldom the disease spreads to the other members of a household when the first case is seen early and promptly isolated. The death-rate from phthisis in Stafford is high. In 1906 it was 1 54 per 1,000, and in the previous ten years it was 1 45 per 1 000. It would be of interest to know what steps are being taken to combat this high death-rate.

Govan.—The population of the Burgh of Govan in 1864 was only 9,000, and in 1906 was over 91 000. In this period the death-rate of the town has fallen from 33 per 1,000 to 16.5 per 1,000. The infantile mortality rate in 1906 was 122 per 1,000 births, and in connexion with this the medical officer of health (Dr. James Barras) emphasizes the importance of a pure and wholesome milk supply. He considers that what should be aimed at is the delivery of milk in as pure a condition as possible by the adoption of the strictest cleanliness in every stage through which it passes from the cow to the consumer. After being drawn from the cow the milk should be immediately placed in clean and stoppered bottles kept in a cool place, and delivered in the bottles.

Crewe.—Dr. Andrew Laird discusses in some detail the question of lessening the number of deaths among young children. The infantile mortality-rate in Crewe in 1906 was 118 per 1,000 births. Among the methods of prevention of this loss of life, suggested by Dr. Laird, are the abolition of the remaining privies in the town, the paving of back yards, the frequent removal of domestic and trade refuse, frequent watering of the streets, and a rigid enforcement of the regulations under the Daries, Cowsheds, and Milkshops Orders. There are in Crewe, where there is a population of 47,142 persons, 128 retail milksellers, and in many the need for greater cleanliness is apparent. The following regulation is now in force in the town: "Every purveyor of milk or person selling milk by retail shall cause every vessel containing milk for sale to be kept properly covered, or to be otherwise sufficiently protected from contamination by dust or flies." Upon an inspection of the milkshops, it was found that in all but ten covers of some description had been provided. Most of the covers were of muslin, metal, or wood, but in a few paper was used, and in some dinner plates and tea trays.

HOSPITAL AND DISPENSARY MANAGEMENT.

HOSPITAL MORTALITY AFTER OPERATIONS.

M.B., C M.—The statement to which our correspondent draws attention appears to have been made for the purpose of justifying before a committee of laymen a mortality which the committee had been informed was extraordinarily high. A medical man is at a great disadvantage in attempting to discuss or explain such matters to laymen, and that a hospital committee should ask for such an explanation argues an unfortunate absence of confidence in their medical staff. The statement itself cannot, of course, be taken seriously. The reasons why the hospitals in large centres of medical education are able to show better statistics than those which do not possess the advantages of the former are obvious. There is, however, a vast amount of good work done in the smaller hospitals at home and in the colonies, and to condemn it because it does not attain a standard which is impossible under the circumstances would be unjust as well as foolish.

NORTH BIERLEY JOINT HOSPITAL.

THE annual report of the medical superintendent of this hospital states that there were 221 admissions to the hospital during the year ended March 31st last, making, with the 25 under treatment at the commencement of the year, 246 treated altogether. This is somewhat above the average, the increase

being mainly due to an outbreak of diphtheria, of which there were 85 cases, including 20 fatal ones. Of these 20, 10 died within thirty hours of admission; and of 5 fatal cases of typhoid, 3 died within thirty-six hours. Deducting the 15 cases mentioned which were admitted too late, the mortality on the total admissions was only 5.67. Of the total cases, 109 were scarlet fever, 85 diphtheria, 21 typhoid, and 6 other diseases.

DERBY BOROUGH ASYLUM.

THE annual report for the year 1906 of Dr. S. Rutherford Macphail, the medical superintendent of this asylum, shows that on January 1st, 1906, there were 317 patients in residence, and that this number had increased to 331 on the last day of the year, the average number daily resident being 332. Of the number remaining at the end of the year 306 were Derby Union and 25 private patients. A table prepared by Dr. Macphail shows a steady increase in the Derby Union cases, and as there were at the time of the report only 11 vacancies in the asylum, all available accommodation will be taken up by the end of this year and further extension of the asylum will be required. During the year 98 patients were admitted, of whom 16 were readmissions. There were fewer hopeless melancholics than usual and a smaller number of senile dements. Of the whole number about one-half suffered from recognizable physical disease, and only 43, or 67 per cent., belonged to the curable forms of mental disorder. In 58 the attacks were first attacks within three and in 13 more within twelve months of admission; in 10 not first attacks within twelve months of admission and in the remainder the disorder was either of more than twelve months' duration (8) or of congenital origin (9) on admission. The admissions were further classified as to the forms of mental disorder into: Mania of all kinds, 49; melancholia of all kinds, 22; dementia and general paralysis, each 7; acquired epilepsy 4, and congenital or infantile defect 9. As to the probable causes of the mental disorders, alcohol was assigned in 11, or 11.2 per cent., venereal disease in 3, periodic causes (puberty, old age, and the menopause) in 17, and "moral" causes in 29. Previous attacks were ascertained as having been present in 16, and hereditary influences were established in 37, or 37.7 per cent. Congenital defect was ascertained in 6 more, and the remaining causes were fairly evenly distributed over other usually assigned etiological factors. During the year 35 patients were discharged as recovered, giving a recovery-rate on the admissions of 41.2 per cent. Dr. Macphail, however, takes care to point out that the method of calculating the recoveries on the admissions do not show the proportion of permanent cures. "Some of the cases relapse and are readmitted. Our statistics show that the 660 cases shown as recoveries refer to 580 individuals. In other words, 121, or 20 per cent., of the patients discharged recovered during the last eighteen years, relapsed and were readmitted once or oftener." There were also 6 discharged as relieved and 6 not improved. During the year there were 37 deaths, giving a percentage death-rate on the average numbers resident of 11.1. These deaths were due to the usual causes of asylum mortality: In 21 to cerebro-spinal diseases, including 10 from general paralysis; in 2 to pneumonia; and in 5 to disease of heart and blood vessels: in one case to peritonitis; and in 8 to general diseases, in only 3 of whom was tuberculous disease the cause of death. Dr. Macphail was able to report that no case of suicide or serious accident had occurred, that all casualties were of a minor character, and that throughout the year there had been an entire absence of zymotic disease. Dr. Macphail was thus able to present a thoroughly satisfactory report for the year, this being borne out by the favourable observations of the Lunacy Commissioners printed with last year's report.

CORK DISTRICT ASYLUM.

THE annual report of the Inspector of Lunacy was received at the meeting of the Committee of Management of the Cork District Lunatic Asylum on April 16th. The Inspector opened his report by expressing great regret that since the last statutory inspection of the asylum Dr. Oscar Woods, who was for many years the Resident Medical Superintendent, had died after a long illness. He had previously served as Medical Superintendent of the Killarney Asylum. He had a distinguished career as an alienist, and was a past-President of the Medico-Psychological Association of Great Britain and Ireland, of which he was a valued member. His death at the comparatively early age of 58 was deplored by all with whom he had come in contact. The changes which have taken place amongst the patients in the asylum since the date of the last visit were as follows:

On the register at the date of last visit (December 8th, 1905), 802 males and 775 females = 1,577; admitted since, 197 males and 193 females = 390; total 999 males, 968 females = 1,967. Discharged recovered, 47 males, 54 females = 101; discharged unrecovered, 32 males, 22 females = 54; died, 69 males, 61 females = 130; transferred to Youghal Auxiliary Asylum, 69 males, 32 females = 101; total, 217 males, 169 females = 386. On the register and resident on December 22nd, 1906, 782 males and 799 females = 1,581.

These figures showed a net increase of 4, the males having decreased by 20 and the females increased by 24. The overcrowding referred to in previous reports therefore still continued, and had become so acute on the female side that at present 35 beds had to be laid on the floor in places where there was no room for more bedsteads. The percentage of recoveries on the admissions since last inspection had been 25.9—namely, 23.9 amongst males and 28 amongst females. Cases of enteric fever continued to occur, 10 having been reported during the period under review; 5 ended fatally. Three female patients had suffered from erysipelas, and a member of the male staff from scarlatina. Seclusion was used in the treatment of 44 males on 21 occasions for 457 hours in all, and in the cases of 25 females on 66 occasions for a total duration of 281 hours; while mechanical restraint by means of a strait waistcoat or gloves was used with 6 males and 7 females for a period of 298 hours, to prevent them from injuring themselves or removing surgical dressings. The average cost of maintenance had been considerably reduced, the gross amount including repayment of loans obtained from buildings, land, etc., being £26 8s. 5d. per patient during the financial year ending March 31st, 1906, while the net average cost, including such loan, repayments, and deducting receipts from paying patients, sales of farm produce, etc., was £22 10s. per patient. The general condition of the institution was reported as fairly satisfactory, the buildings clean, the clothing good, and the conduct on the whole satisfactory.

SOHO HOSPITAL FOR WOMEN.

THE supporters of the Hospital for Women, Soho Square, were informed at the annual meeting on April 26th, that 57 beds out of a possible 60 had been daily occupied throughout the year—a convincing proof of the high pressure at which the charity carried on its work. Financially, although the weekly cost of patients compared favourably with that of similar institutions, the year had been one of the worst on record, resulting in the mortgage debt of the hospital being increased by £1,000.

WEST LONDON HOSPITAL.

AT the annual meeting of the Governors of the West London Hospital on April 10th the report submitted and adopted recorded the satisfactory completion of the improvements which have been in hand for some time past; they include a new and well-arranged casualty room. The Post-Graduate College, which works in connexion with the hospital, but which does not cost it a penny, had had, it was noted, a very successful year, 1,247 students being on its rolls.

THE HOSPITAL FOR EPILEPSY AND PARALYSIS.

THE report submitted and adopted at the annual meeting of the supporters of the Hospital for Epilepsy and Paralysis, Maida Vale, showed that during the year 165 in-patients had been under treatment, while the number of out-patient attendances reached 12,568. The expenditure, nearly £3,000 a year, overtopped the reliable income by some £2,500; hence, in default of greater support, more capital would have to be realized.

THE ALEXANDRA HOSPITAL.

THE balance-sheet presented and adopted at the annual meeting of the supporters of the Alexandra Hospital for Children with Hip Disease, Queen Square, W.C., on May 6th, showed that the institution is now free from debt, and that income last year was slightly in excess of expenditure. Out of the 97 beds provided in London, at the Country Branch at Clandon, and at the Convalescent Home at Painswick, 95 were in daily occupation throughout the year. As far as possible, all patients are now kept in the open air.

THE CENTRAL LONDON THROAT HOSPITAL.

FROM the reports submitted and adopted at the annual meeting of the Central London Throat and Ear Hospital on April 19th a great access of work would appear to have followed the opening last year of the new in-patient wing, and it is noteworthy that over one-third of all the patients treated in the wards were persons not resident in the metropolis but in distant parts of the country. Of the out-patients, who numbered 10,069, about one out of every four came with a letter of recommendation from a medical practitioner. A considerable portion of the cost of the structural alterations completed or contemplated still remains to be collected.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

OFFICERS SELECTED FOR REWARDS.

IN the *Monthly Army List* for July the list of officers hitherto classed as "receiving rewards" is now described as "officers who have been *selected* for Rewards for Distinguished and Meritorious Service." The following names of retired officers of the Indian Medical Service have been added, presumably with a view to the grant of a reward either immediately or at some future date: Surgeon-Generals G. Bidie, C.I.E., M.B., K.H.S.; J. Leghorn, C.S.I., M.D., K.H.S.; Sir C. Colvin-Smith, K.C.B., M.D., K.H.S.; C. E. McVittie, K.H.P.; Sir B. Simpson, K.C.I.E., M.D.; L. D. Spencer, C.B., M.D., K.H.S.; Surgeon-Major General P. S. Turnbull, M.D., K.H.S.; Surgeon-Colonel C. P. Costello; Colonel G. M'B. Davis, C.B., D.S.O., M.D.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* **BRITISH MEDICAL JOURNAL** *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that **ALL letters** on the editorial business of the **JOURNAL** be addressed to the **Editor** at the Office of the **JOURNAL**, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the **JOURNAL**, etc., should be addressed to the **Manager**, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the **BRITISH MEDICAL JOURNAL** are requested to communicate with the **Manager**, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the **EDITOR** of the **BRITISH MEDICAL JOURNAL** is *Aitiology, London.* The telegraphic address of the **MANAGER** of the **BRITISH MEDICAL JOURNAL** is *Articulate, London.*

TELEPHONE (National):—

EDITOR,	GENERAL SECRETARY AND MANAGER,
2831, Gerrard.	2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

LIP READING.

SCOTUS asks for the best books on lip reading for a deaf patient. Also how long it generally takes to learn "lip reading."

RADIUM AFTER EXCISION OF BREAST.

J. J. A. asks information as to the results of wearing a capsule of radium in the axilla after removal of the breast and axillary glands in a case of scirrhosis of breast in a young woman.

TREATMENT OF PERSISTENT HICCOUGH.

H. G. F. asks for suggestions for treating a case of hiccough which, with but little intermission, has persisted almost daily for some four years; stomach lavage for a time gave the best results, but latterly has failed to ameliorate the condition.

DOMESTIC DRAINAGE.

A. B. asks whether the following arrangement is safe from a sanitary standpoint? W.C. with siphon trap attached on outside wall of house; 4 in. metal soil-pipe directly through wall and continued as ventilator to above roof connected below by two yards (or less) of glazed 4 in. earthenware pipe with main sewer without intervention of any other trap. The 4 in. earthenware pipe also receives a tributary branch (about 3 ft. long) which terminates in a gully trap into which falls the bath waste in the open.

*** The arrangement described is quite in accordance with present day ideas of good sanitation. The model by-laws of the Local Government Board provide that there shall not be any trap between the soil-pipe and the drains, or any trap (other than such as may necessarily form part of the apparatus of a water-closet) in any part of the soil-pipe.

ANSWERS.

B. W.—(1) It is not usual to inject the arteries of a rabbit for any ordinary dissection, but if an injection is to be made the best materials are either gelatine or glycerine mixed with colouring substance, such as carmine, Prussian blue, or gamboge. The advantage of using glycerine as a vehicle is that the mixture can be used cold. Full particulars as to the making up of injection fluids will be found in Bolles Lee's *Microtomists' Vade Mecum* (London: J. and A. Churchill). (2) Earth worms are much better dissected fresh after being killed by dropping into chloroform for a few minutes. If they are to be dissected after preservation they should be pickled in a mixture of 4 per cent. formol and 90 per cent. alcohol—half and half. (3) We do not know where frogs' brains and skeletons and snakes' skeletons can be purchased. Bolton of Birmingham can supply living frogs and, perhaps, snakes. (4) We know of no one book which illustrates the whole field of biology, but there are some popular books which might be of some assistance—for example, *Life in Ponds and Streams*, by W. Furneaux (Longmans, Green, and Co., 1897), and *Ponds and Ditches*, by M. C. Cooke (S.P.C.K., 1880).

INSECT BITES.

URBAN.—In reply to a similar question inserted last year, Dr. Arthur W. Thomas, of Boscombe, wrote to recommend tincture of pyrethrum dabbed on exposed parts as a preventive. Dr. J. Hepworth (Penmon, Beaumaris) recommended a small quantity of essential oil of citronella, adding that as this is a volatile oil the effect only lasts for an hour or two. We shall be glad to receive further suggestions for prevention or treatment, especially of mosquito bites.

LETTERS, NOTES, Etc.

A DISCLAIMER AND A WARNING.

DR. ARTHUR KEITH (Lecturer on Anatomy, the London Hospital Medical College) writes: I crave the courtesy of your columns to warn medical men against one who is obtaining access to their hospitality and assistance by pretending that he is sent to them by me. The man in question (aged about 40, dressed as a ship surgeon) does not deserve the charity he claims.

CENTRAL MIDWIVES BOARD.

MR G. W. DUNCAN (Secretary, Central Midwives Board, Caxton House, Westminster, London, S.W.) writes: My attention has been called to a letter from Dr. W. Shaw, of Maidstone, in your issue of July 6th, objecting to the use by a certified midwife of a card and a doorplate with the letters L.O.S., C.M.B., appended to her name. He points out that these letters are liable to convey the idea of a medical qualification to the uninstructed mind, and suggests that the Central Midwives Board should instruct those holding their certificate to use the words "certificated nurse" (or midwife) only, and to discontinue the mystical letters. The Board had already foreseen the liability to misconstruction to which Dr. Shaw calls attention, and accordingly framed the following rule, much in the terms suggested:

> The proper designation of a certified midwife is "Certified Midwife," thus, *e.g.*,
>
> Mary Smith,
> Certified Midwife.
>
> No abbreviation in the form of initial letters is permitted, nor any other description of the qualification.

I have only to add that if Dr. Shaw will be good enough to communicate the particulars of the case to me, the Board will see that the rule is enforced.

THE ORIGIN OF CIRCUMCISION.

DR. ARTHUR G. DAMPIER-BENNETT (Kingston, co. Dublin) writes: The origin of circumcision is in all probability very closely connected with the history of the evolution of man.

There is a certain amount of evidence to justify the belief that in all primitive peoples there is a peculiar tendency to epilepsy. In some instances this may only be evidenced by blind unreasoning passion, which may assume a homicidal direction. This or the true epileptic seizure was commonly regarded as due to demoniacal possession.

If we may assume that the holes found in certain prehistoric skulls are really trephine holes, the question at once arises: For what purpose were they made? We can only answer this by the light of our own experience and knowledge—to relieve epileptic seizures . . . to let out the (d)evil.

But it may be urged that at that period of the world's history (which after all is the history of mankind) the knowledge of the people was insufficient to enable them to arrive at such conclusions as are manifested by these operation marks. True, but the knowledge of the priests and leaders of the people was in some respects profound, and fully justifies our confidence in their capabilities and wisdom. As evidence, I may mention the wonderful observatories of Stonehenge and Maes Howe.

But I believe the operation of circumcision antedated that of trephining by many ages. The causes of epilepsy are not only those of direct cerebral pressure, but also of indirect irritation.

I think if any one has the opportunity of observing, and takes the trouble to do so, he will notice that the prepuce of the ape is very long. Nor must we assume that its length is a matter of accident. It is not. It is another manifestation of the mysterious working of the law of survival. It undoubtedly serves to protect the delicate glans from scratches and abrasions which might be caused by twigs and thorns, to which form of injury these arboreal inhabitants would be specially exposed.

Some time ago a child was brought to me suffering from epileptiform convulsions—a bright, intelligent little boy of about 4 years of age. After making an exhaustive examination and finding nothing to account for the affliction in the way of heredity, accident, or worms, it occurred to me to examine the prepuce. I found it to be remarkably long and adherent to the glans by its mucous surface. Micturition caused violent straining, and afterwards a peculiar twitching of the head and rolling of the eyeballs, which was always present, became greatly exaggerated. Circumcision was performed and in a year or two all the trouble subsided. The foreskin, no longer required for protective purposes, becomes an actual source of danger.

Now I think it more than likely that, amongst wild tribes,

who, after all, are the most nearly related to the arboreal ancestor, it has been discovered that a pacifying result follows the performance of the operation, and I believe that in this way the idea of Good has at length grown to our present conception. I am strengthened in this belief by the fact that I have been told that amongst the Begwani there is a religious ceremony performed on boys at about the age of 12, during which time they are separated from their companions and tribe, and that part of it consists in the removal of the foreskin. Although this ceremony is regarded as sacred, there is as yet no word in the language which indicates that the people have arrived at the conception of the idea of a deity.

Again, there must be some very widely-distributed reason, some very general fundamental cause, for the universal dissemination of the practice of this rite, and I believe the explanation to be such as I have given. It is impossible in the course of a short letter to do more than indicate a general outline of the probable course of events. They may be mere guesses, but, in tracing the history of any custom so widely prevalent, and so very ancient, as that of circumcision, only guesses can be made. In making such guesses, however, it is well to bear in mind that certain things are possible, others probable, others neither possible nor probable, while certainties are seldom encountered. It would be interesting to know what Dr. Eder's guesses are as to the function of the prepuce. Personally, I believe it to be purely protective, as all the rest of the epidermis is.

EARLY LOCAL TREATMENT OF SYPHILIS.

DR. ARTHUR W. THOMAS (Boscombe, Hants) writes: Now that it seems almost conclusively proved that syphilis is caused by one of the protozoa, may I ask if it has ever occurred to any one to treat the initial lesion with a strong solution of quinine? I ask this because it is well known that quinine quickly and certainly destroys all forms of protozoal life, and, indeed, in this power its success in malarial and other tropical fevers depends. I doubt if this power would be exercised when the parasite is well established in the system: it would be difficult or impossible to give large enough doses to reach each individual parasite. But if the primary chancre were well soaked with a quinine solution, or better still injected, it seems to me quite possible that the parasite might be destroyed and an attack of syphilis aborted.

THE TREATMENT OF SCABIES.

DR. LOUIS KNUTHSEN (London) writes: The most perfect treatment of this complaint is carried out at the St. Louis Hospital, in Paris, and the following is a description of the method employed there: This disease is most prevalent in Paris, at least 25 per cent. of the patients in the ordinary out-patient department at St. Louis suffering from it. A large building is devoted entirely to these patients. First of all, the patient is rubbed from head to foot with black soap by himself and a masseur or masseuse, as the case may be; then he has to lie for half an hour in a very hot bath. After this he is well dried and is rubbed all over with sulphur ointment. "Black soap" is soft soap to which a small proportion of tar has been added. In two days' time he returns and the same process is gone through. This is repeated on six occasions. While the patient is having his first bath his clothes are completely disinfected by heat for twenty-five minutes, so that he is able to put on, even after his first bath, clothes freed from the scabies. If the anointing with sulphur proves too irritating, the patient is given a complete immersion in a starch bath. The importance of this cannot be over-estimated. The treatment is successful because it is thorough, and one never sees, as one so often does in hospitals in this country, patients who have been and still are suffering from scabies of many months' standing.

THE PERILS OF STERILIZATION.

DR. JOHN F. ELLIOTT (Verulam, Natal, S.A.) writes: Dr. Alexander Duke's suggestion (in the BRITISH MEDICAL JOURNAL of May 18th, 1907, p. 1224) of producing sterility by amputation of the cervix recalls to my mind a case at which I assisted some seven years ago, when a friend, having placed the forceps in position, locked them easily, and delivered the patient without any difficulty. To our dismay, however, encircling one blade of the forceps on removal was a complete ring, which there was no mistaking as the cervix uteri. The woman made a good recovery, and I attended her in her confinement again some three years ago. There must have been a spontaneous rupture or tear of the cervix in the first case, and through this rent one blade of the forceps passed, the amputation becoming complete with the descent of the head, the lateral tension thus produced, and the downward traction of the forceps. In this case amputation did not mean sterilization.

SHIP SURGEONS.

MEDICUS asks for the views and experiences of readers who have acted as ship surgeons regarding the status of the profession at sea, and also of the surgeon's position relative to that of the other officers. In many cases, he asserts, the conditions under which the ship surgeon has to discharge his duties are such as are impossible for any self-respecting professional man to accept. This applies more particularly to those ships, usually of passenger companies charging low fares, in which the doctor only makes a few trips, or it may be only a single voyage, and where, as in the Scottish companies, there is no medical superintendent ashore. Here there are generally one or two officious persons on board who in their own estimation know much more of how the surgeon's duties ought to be discharged than he does himself. For instance, in one case a ship captain who is a great believer in nostrums, of which he keeps a complete outfit, is in the habit of visiting any of the crew who are sick and dosing them as he considers fit without any regard to the surgeon's opinion. In another case a purser brought one of the stewards to the doctor, informed him that he was suffering from "rheumatism," and instructed him to have the man put to bed and to give him large doses of "salicylate." This patient on examination was found to be suffering from syphilis. Should the surgeon resent such interference he is made the subject of an unfavourable private "report" in the "office" on the ship's return to head quarters. In one instance a chief steward was instructed to give the surgeon the use of a vacant passenger's room; not being able to obtain the like privilege for himself, he quarrelled with the doctor over it, but had to give way. This steward, on the ship's return, reported that the surgeon was a "morphine taker" and a victim of the "drug habit." For this there was not the shadow of a foundation; the result was that the surgeon was dismissed, the only explanation given being that "the company had no further need of his services." So far as I know, he does not know the reason of his dismissal to this day. As no opportunity is afforded of meeting or disproving such charges, I think no one will deny that medical men generally, and particularly those who are newly qualified and who might more readily accept a situation without due inquiry, will do well to consider whether they can consistently with their self-respect and professional dignity accept any situation where they will be subject to surveillance, espionage, and impertinent interference. I understand that on steamers carrying Italian emigrants there were such scandalous cases of the ship surgeon being got rid of on false and frivolous pretexts whenever by conscientiously discharging his duties he caused trouble or inconvenience on board, especially in the steward's or purser's departments, that the Italian Government took the matter into its own hands, and now appoints the ship surgeon as well as the Commissioner, requiring the companies to pay the surgeon's salary through the Government, and depriving them of all authority to either appoint or dismiss him. With the application of the Employers' Liability Act to seamen and the consequent great increase in the surgeon's responsibility, their standing and salary should be much improved, and, by mutually supporting one another, much may be done to restore the seafaring part of the medical profession to its old-time dignity and respect.

TRANSFER OF DYING PATIENTS.

BOTH houses of the New York State Legislature have passed a Bill making the transfer of patients in a dying condition from one hospital to another a misdemeanour, punishable by a fine of £20. It has long, says the *Boston Medical and Surgical Journal*, been asserted that the large private hospitals of New York were in the habit of shipping dying patients to Bellevue Hospital, in order that their own death-rate might be kept as low as possible, and the object of the Bill is to put an end to the alleged practice. The Bill was vetoed by the Mayor as being too sweeping in its provisions, in that it does not permit hospital authorities to refuse cases of contagious disease or delirium tremens or other cases unsuitable for the wards that might be available. His veto was, however, overruled by the Legislature.

HEROIN.

IN the account given in the EPITOME on June 1st of a recent review by Duhem of the chemistry and therapeutics of heroin, one or two obscurities have arisen. The true formula of the drug is $C_{21}H_{23}NO_5$. It is obtained from morphine ($C_{17}H_{19}NO_3$) by substituting for two of the hydrogen atoms of that drug two acid (acetyl) radicals. Heroin, therefore, is chemically diacetyl morphine. It may be noted that, though this drug has been mainly exploited in Germany, the credit of its discovery is due to Edinburgh.

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President's Address

DELIVERED AT THE

SEVENTY-FIFTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

BY

HENRY DAVY, M.D., F.R.C.P.,

PHYSICIAN, ROYAL DEVON AND EXETER HOSPITAL.

SCIENCE IN ITS APPLICATION TO NATIONAL HEALTH.

My first duty is to thank the members of the British Medical Association for the honour they have done me by electing me their President for the year. It is an honour of which any one may be proud, for the great professional Association has rapidly become representative of all the best medical science in Great Britain and in her Colonies, and is each year extending its influence and doing good work for the profession. I can assure you, therefore, that I keenly appreciate, and thank you for, the honour you have done me.

It is also my duty to welcome the Association to the ancient and loyal city of Exeter. I shall not attempt to give you the history of Exeter, which has been so admirably given by Mr. Alfred Wallace in our guide-book. As he so well shows, from the earliest times in history, Exeter has been connected with most of the stirring events which have taken place in England, so that the history of Exeter is more or less a history of England, with which you are already well acquainted.

Still, it is not often that the Association has the opportunity of meeting in a city with so ancient and so honourable a lineage. You may appreciate this by asking the Town Clerk to produce for your inspection some of the treasures in his keeping. He can show you Exeter's first charter signed by Henry II, and witnessed by Thomas à Becket, and he can show you letters bearing the sign manual of each and every King of England, from that date down to the present, whilst, if you will examine the Municipal Records, and the old archives and books in the Cathedral Library, you may trace out the manners and customs of our nation from Anglo-Saxon days down to our own. It is not, indeed, often that the Association meets under the shadow, as it were, of so venerable a cathedral, combining, as it does, the massive Norman towers flanking on north and south a choir and nave of the Decorated style, which is the highest development of Gothic architecture. It reminds us of the long periods that have passed away in our history as a nation, and still raises in us the highest and most solemn thoughts when we engage in such beautiful services and music as we have taken part in to-day.

Nor, gentlemen, shall I give you a long account of the medical history of the city. Our hospital, founded by Alured Clarke, Dean of Exeter, in 1741, ranks amongst the earliest and largest of the provincial hospitals, and throughout its history it has had a medical and surgical staff worthy of the best traditions of the profession. I can only mention a few names: Dr. John Blackall, who partially anticipated the work of Dr. Bright, publishing in 1813 his important work *Observations on the Nature and Treatment of Dropsies*, in which he showed that dropsy is often associated with albumen in the urine, which led him to expect that in these cases the kidneys were diseased, which suspicion was verified when, in 1836, Dr. Bright published his work and showed the constant relation between renal disease and dropsy.

Another physician was Dr. Thomas Shapter, who did so much to extend the prestige of the hospital and wrote a lucid account of the cholera in Exeter in 1831–2 and 1849, as well as a book on *The Climate of South Devon* which has up to the present time been the standard work on this subject, besides contributing many articles to *Quain's Dictionary of Medicine*.

Among surgeons, John Sheldon is perhaps the best known. He was a Fellow of the Royal Society of London and did much to increase the surgical status of the hospital. He had three pupils, all of whom followed him as surgeons to the institution, and were all widely known throughout the county for their energy and skill: Samuel Barnes, John Harris, the grandfather of our present senior surgeon, and John Haddy James, who was President of this Association when, under the name of the Provincial Medical and Surgical Association, it met in Exeter in August, 1842, just sixty-five years ago.

What changes these sixty-five years have brought about in the condition of our profession and in the condition of our country! I am going to ask you to consider some few of these changes and the causes which have produced them, although the subject is too large for me to do more than examine a very small part of it in the time at my disposal.

For we must consider that these years represent a period almost the most active in our national history in every department of mental activity and scientific discovery, and that diseases vary with the varying environment of the people, while their treatment varies with the knowledge which the science of the day is teaching us.

The most important function of the medical profession is the practical application of the science of their day to the health and life of the individual and through him to the community; and our success and usefulness depend on the truth and the value of the knowledge which the science of the day has reached. In earlier times there was very little in the knowledge of the day of which medical men could avail themselves usefully to explain or to combat disease, and the place of true scientific knowledge was occupied by more or less inaccurate theories as to the causes and the best way of treatment of the various diseases; such theories, for instance, as those of Brown and Rasori, which held that all disease was due to too much or too little stimulation and which led to bleeding and the abuse of stimulants, in the treatment of disease, that may be observed right down to the time of our last meeting in Exeter. Theories which, as the late Dr. Moxon once said, "were then thought to be the pride of medicine, but which we now consider as at any rate the curse of the patients who were hurried into the next world with the lancet or the brandy bottle "on rational principles."

In considering the changes which have taken place in medical knowledge and treatment during these sixty-five years, we have to remember that the knowledge which we use in the profession of medicine is of two kinds—empirical and scientific, using these terms in their highest sense. Each of these systems is of great importance. Much of the best information about disease and many of the most useful plans for its treatment have been handed down to us from remote ages as the product of experience and observation, and are thus truly "empirical," and a large part of the empirical observation of the early Forties is as good to-day as it was then. The knowledge which we call scientific—that gained by systematic experiment and reasoning—is of even more importance; in fact, when founded upon proved truth, it is all-important, and it is the possession of such accurate and true knowledge that distinguishes the medicine of to-day from the medicine of the early Forties.

Much of this accuracy is due to the perfection of the microscope and to the development of organic chemistry, which have enabled us to gain a more or less complete knowledge of the organs of the body and to understand the chemical changes which are constantly taking place in them, both in health and in disease; while it has in some cases also revealed to us the actual germs to which many diseases are due, and the actual toxins which these germs form in the body. These discoveries have entirely reconstructed our knowledge of the various organs of the human body and of their functions, and in the same way they have revolutionized our theories of diseases, of their causes and modes of onset, so that, for the first time in the history of medicine, we are possessed of scientific facts on which to base both theories and practice. And what a gain is this for the profession of medicine in its relation to the public!

We, who have to be the teachers of science to the public in its practical application to the health of the individual and of the nation, have at last certain truths to tell them, which are in many cases proved as absolutely as that the combination of hydrogen and oxygen forms water, and truths which cannot be disregarded if the health of the individual and of the nation is to be preserved and maintained.

Gentlemen, we have reached a position with splendid opportunities for usefulness, and a position which will have to be much more definitely recognized by the nation at large if all its advantages are to be fully utilized. It is a position which also carries with it great responsibilities, and we must be careful how we use it. Let us be careful that we teach only what we know to be the truth, avoiding the "premature generalization" and "rational theories" of the ancients, using both our empirical and our scientific knowledge when necessary, but not attempting to force the acceptance of anything unless it can be demonstrably proved to be true.

One of the greatest events which has happened in the sixty-five years we are considering has been the promulgation of the Darwinian theory. I do not think that the importance of this theory has as yet been sufficiently recognized by the public at large, nor do I think that the lessons to be drawn from it have been sufficiently insisted on. It has hitherto been used and discussed as though it explained or did not explain the creation of the world and of man, and it has been examined and re-examined from this aspect with very little benefit to any one.

Now, for ourselves as a profession, I think that few if any of us look upon the Darwinian theory as completely explaining the creation of the world or of man as we know him, and its discussion from this point of view is, I think, of little practical utility. But nevertheless Darwin's work has a great meaning for our profession, for his demonstration "that the only way to maintain any organ or structure of the body in its proper condition of health and development is by a proper and adequate use of it" is the great scientific keynote of health in every department of life, whilst his statement that "in the struggle for existence the fittest will survive" seems to be as entirely a law of Nature as Newton's law of universal gravitation. But, if the survival of the fittest in the struggle for existence be true, then it follows that in this struggle the healthiest must be the fittest. We see this in everyday practice as regards individuals; we know that it must apply to nations.

Now, see what importance this law of Nature gives to our profession, the profession concerned entirely with the health of the individual and of the nation—health, without which no nation can long continue without deterioration, without which boon no individual can succeed. The ancient Greeks showed a true appreciation of health when they gave divine honours to Æsculapius, the first physician of the Argonauts, and to his daughter, Hygeia, the Goddess of Health.

It would be well if in these days people could be made to understand thoroughly that the cultivation of health is the first necessity of useful lives, and, if they strove to attain it, as the first object of their solicitude; if they recollected that the chief and best asset of a nation is the number of healthy individuals it contains; and if they would also recognize the great principle that no educational system is good which does not aim at producing well-developed, healthy bodies as well as well-trained minds.

Carlyle gave very sound advice to the students at Edinburgh in his inaugural address as the Rector of the University when he said:

> Finally, Gentlemen, I have one piece of advice to give you which is practically of very great importance, though a very humble one. In the midst of your zeal and ardour—for such, I see, will rise high enough in spite of all counsels to moderate it which I can give you—remember the care of health. I have no doubt you have amongst you young souls ardently bent to consider a life cheap for the purpose of getting forward in what you are aiming at of high; but you are to consider throughout much more than is done at present, and what it would have been a very great thing for me if I had been able to consider that health is a thing to be attended to continually; that you are to regard it as the very highest of all temporal things for you. There is no kind of achievement that you can make in the world that is equal to health. What to it are nuggets and millions? The French financier said: "Why is there no sleep to be sold? Sleep was not in the market at any quotation."

Now, what is health? Health has been defined as "soundness of the body"; as "that condition of a living organism, and of its various parts and functions, which conduces to efficient and prolonged life." But such definitions help us, as I think, but little. We, as medical men, know that a person may have good health even though some of his most important organs are not sound, and when he may have no chance of living to a prolonged old age; and much of our work as medical men is to attempt to make, and very often to succeed in making, patients with one or more diseased organs enjoy good health. No; health is not to be defined merely as "soundness of the body," although soundness of the body may be necessary to perfectly efficient, vigorous health. I think the best definition of health is that given by Carlyle when he says, "Health is harmony." Let me quote the passage:

> For does not health mean harmony, the synonym of all that is true, justly ordered, good; is it not in some sense the net total, as shown by experiment of whatever worth is in us? The healthy man is the most meritorious product of Nature so far as he goes. A healthy body is good; but a soul in right health, it is the thing to be prayed for beyond all others; the blessedest thing this earth receives from heaven.

It is a fine passage and one which will appeal to medical men most especially. We, who recognize more than any one else the influence of the mind on the body, will quite agree with Carlyle's view that perfect health, perfect harmony, demand *Mens sana in corpore sano.*

Yes, health is harmony—the actions of all the organs of the body perfectly adjusted the one to the other in order to produce this effect; and our work as medical men is often to effect this necessary adjustment.

Take, for instance, the man with diseased valves of the heart constantly doing too much work, and suffering in consequence from dropsy and breathlessness and all the other miseries of ill health. We strengthen the heart's muscles and slow down its action with drugs. We adapt the amount of work to the heart's capacities, and the patient lives for years in good health until he again disregards our injunctions, or until an access of some fresh disease overtakes him. Or again, take the man with disease of his kidneys—and it may be that we find him lying unconscious or convulsed. You eliminate his urea, through his skin and bowels, with drugs; you regulate his clothing, his food, and his exercise; you restore the adjustment of his organs, and you restore harmony to his system, and he enjoys health, it may be, for years.

I do not say that these patients enjoy perfect or vigorous health. I do not say that their lives are not circumscribed. But I do say that in these and in numberless instances which will occur to you we can restore to diseased patients that harmony which is health.

Now, in considering all questions of health we have to consider not only the individual patient, but also his environment; meaning by this the sum total of influences which modify and determine the development of his life and character. This question of "environment" has of late years come very much to the front with regard to the question of physical deterioration of the nation as illustrated by the number of would-be recruits for the army who are found to be so physically undeveloped that they do not come up to the requisite standard. It has been carefully and ably dealt with in the report of the Interdepartmental Committee on Physical Degeneration of 1904, a report which ought to be studied by every one who has the health and welfare of the nation at heart.

Time will not allow me to deal very fully with the subject, but I would ask your attention to one or two points, marking them carefully, because they so fully illustrate the scientific teaching which we have gained since 1842.

As I have before stated, Darwin shows "that the only way to keep any organ or structure in health is by proper and adequate use thereof," and I think that the value of this axiom has not been sufficiently recognized in considering the question of physical deterioration and its remedy, especially as it affects the muscular system; for many changes have taken place since 1842 in the environment of the individual and of the nation, all tending to reduce the muscular work done by the people, and in advance of everything else which has effected this result I would place the extended use of machinery. In every department of work, in every trade and business each succeeding year finds us depending more and more on "labour-saving machines," every new machine tending more and more to replace muscular work, until at last in some manufactures the operative has little or no work for

his muscles to do except just attending to the machine driven by steam or electricity by which all the work which used to be the result of his muscular activity is now accomplished.

But, in addition to the development of machinery, many other causes have contributed to the same end. The nation has become much more urban than it used to be. Villages and country towns, with all their facilities for healthy muscular work in the open air, have diminished; big centres of trade and manufactures have increased in population. Railroads have extended networks of lines in every direction, so that travelling is made easy without any exertion, and the inhabitants of our towns have, in addition, tramways and omnibuses to take them from their houses to their work without the necessity of even the exercise of a long walk.

Then, too, our habits have changed. We have perhaps as great a love of games as ever, but much of the muscular work has been taken from them. Your rich man sits or stands whilst his grouse or his pheasants are driven towards him, instead of walking the moors or woods to find them; the poorer man pays his entrance money to see a few experts playing cricket or football instead of exercising his muscles by playing the game himself; whilst some of the most manly and best exercises, such as wrestling, boxing, and fencing, have almost become extinct throughout the country. As Henry Drummond so well puts it, "Vigour of limb is not to be found in common life, we look for it in the gymnasium; agility is relegated to the hippodrome; once all men were athletes, now you have to pay to see them."

Now this subject, relating to deficient use of the muscles, opens out a very wide question, affecting as it does the work of every other organ of the body, and it is needful that our profession should recognize its importance. For a large part of the metabolism of food takes place in the muscular system, so that the amount of food required by the body, the amount of animal heat to be produced and to be got rid of, the amount of excretory products to be eliminated by the excretory organs, should all depend upon the amount of muscular work done; and much disease would be prevented, and in many cases much better health enjoyed, if this fact were more thoroughly understood and acted upon. It is somewhat of a reflection on our profession that we often treat our patients with drugs when all that they require is more exercise or less food. Also, that we are leaving it to various professors of Swedish exercises to teach us how much can be done to restore health, and to keep people in good health, by properly regulated muscular work.

History repeats itself; the first physicians appointed by the authorities of the ancient Greek towns were trained gymnasts from more or less celebrated gymnasia, who treated their patients with regulated diet and regular exercise; and if the English in the twentieth century are to keep themselves free from physical deterioration, our profession must put themselves in the van of a similar movement and show how necessary physical culture and muscular activity are to a nation of "muscular degenerates."

It should not be left to professors of Swedish exercises to lecture on physical culture, to advertize its sovereign virtues, and to direct the kind of exercise to be used. I will go further, and say that if it is left entirely in non-professional hands much harm will eventually result; for no treatment requires more care and supervision than Swedish exercises when used by anaemic patients or those with weak conditions of the heart; and although I believe that these exercises are of the very greatest value to healthy men, and can with great advantage be used by all who are compelled to lead a sedentary life, yet in a condition of ill-health they ought only to be used under the careful supervision of a qualified and experienced medical man.

Physical culture is, in my opinion, one of the most pressing questions of the day, for it is by it alone that we have a proper remedy for the state of muscular degeneration which is so prevalent. It ought to be considered by every educational authority, for by its use dwellers in city and country alike can have their muscular systems built up and developed to a healthy standard. There is no need that any collection of children who are not diseased should become a class of muscular degenerates.

It is a very serious matter, when you come to think of it, that a considerable number of healthy, well-fed boys from some of our best public schools are too physically undeveloped to join the army as officers until they have undergone a course of physical culture after leaving school, and that large numbers of children in the elementary schools are diseased and physically undeveloped.

For the children of to-day are the men and women who compose the nation of to-morrow, and if they are diseased and physically deteriorated, the nation in the near future will be equally affected.

Is it sufficiently recognized how greatly the future of the nation is decided during the school life of its children? It is while the children are at school that you must give them the foundations on which the whole of their future, physical, intellectual, and moral, is to be reared, and if they are not shown how to develop their bodies and keep them in health, the only chance of their learning it has been missed. It is also essential to see that during their school life they are not exposed to contamination from disease, and this can only be done by placing them under the supervision of a trained and qualified medical man, as is done in Japan and in nearly every other country in Europe except England. As the Committee on Physical Deterioration emphatically recommends, every school in the country without exception should be under the supervision of a properly trained medical officer. It should be his duty, with his assistants, to examine every pupil, to see who are healthy and who are diseased, who are fit for a course of physical culture and who are not, and generally to look after the health and development of the children. How necessary such medical supervision must be is proved by the fact that Dr. Alfred Greenwood, Medical Officer of Health for Blackburn, in an examination of 388 school children of that town, found that no less than 54 children were affected with some form of tuberculosis, and of this number 34 had tuberculosis of one or both lungs.

I would recommend to the notice of all educational authorities the example of Rugby School and of the scheme originated there by Dr. Dukes, one of the best-recognized authorities on the health of public schools. There every new boy undergoes a carefully recorded and rather full physical examination, and the games and exercises that he "may play" and "ought to be made to play" are also recorded. But we must go further than this system of games. I quite agree that every boy in every school ought to have a course of physical exercises prescribed for him, adapted to his particular need, and that he should not be allowed to play any game unless he has attained a certain level of muscular development; then we should have a very different condition of affairs from that just revealed. In a public school it would be a point of honour to reach the necessary degree of muscular development to play games, and in the elementary schools the physical exercise would itself develop the muscular tone which is wanted. I would urge on the educational authorities that they are responsible for the development of the pupils' bodies as well as their minds, and that it is of little use to the nation to bring up men with their minds stored with facts but their bodies left ill-developed and generally degenerate.

Playgrounds are as necessary for the healthy development of our children as school buildings, gymnasia as class rooms, trainers in physical exercises as school teachers, and if every Board school cannot be provided with these necessary adjuncts, they should at all events be provided in certain areas, so that physical development is provided for and insisted on for all children. Games are, of course, most valuable for those who play them, but there is no muscular activity in watching others play them; moreover, few games bring into action the whole of the muscular system with the same completeness as does a properly-devised system of physical exercises. Games, too, are impossible in many cases for the pupils in the elementary schools in large cities, whereas physical exercises take up little room, and there are few places in which arrangements might not be made for carrying them out in connexion with the existing schools, to the great and lasting benefit of the individual child and of the nation at large.

We may see the great value of gymnastics, games, and

physical exercises by following the history of Japan during her recent development. I will quote this history to you from a lecture recently delivered under the auspices of the University of London by Baron Kikuchi, one of Japan's experts in education.

"In the old feudal days the retainers of the Daimyos or the Samurais received a high degree of intellectual culture and training in Chinese literature, mainly works on philosophy and history. A large portion of their time was also spent in learning the exercise of the military arts of archery, riding, fencing, and the use of spears, and thus they obtained a very good physical training."

"With the abolition of the feudal system the Samurais lost their privileges, all classes of people became equal before the laws, and every able-bodied man was liable to military service."

"In 1872 the first code of education was promulgated, the principle of which was free and compulsory education up to a certain point for all without any distinction of class or sex. It seemed no longer necessary for the children of the Samurais or any one else to practise the military art. Young men, advanced beyond the elementary stage, were occupied with the study of foreign languages and sciences, and physical training was neglected altogether. The consequence was that the physique of educated youths suffered very greatly; short sight and pale consumptive features came at one time to be regarded as characteristic of students. Such a state of things could not be allowed to go on long; there was a strong feeling that something must be done to remedy this one-sided education."

Baron Kikuchi goes on to describe how in 1878 the Government established a gymnastic training school in Tokio, where an American teacher was engaged and a system of gymnastics based chiefly on the German model was taught to pupils specially admitted for the purpose of becoming teachers in gymnastics; how in 1880 it was deemed proper that military drill should be taught in the schools, partly because every youth was liable to military service, but also because it was useful as moral and intellectual as well as physical training; how in 1886 great reforms were made in the general system of education, and, amongst others, a much greater importance was given to the teaching of gymnastics in the schools of every grade and of all kinds, and so it has continued, he says, to the present day; from three to as much as six hours a week are now allotted to it, according to the kind of school. Finally, in 1904 a Committee was appointed in the Department of Education, consisting of doctors of medicine, teachers of gymnastics, and several others, who, in the latter part of 1905, reported in favour of adopting the Swedish system of gymnastics with certain modifications. He goes on to describe the practical details of the course of gymnastics given in each school, but I cannot give you these details now; I must call your attention to the results. "From figures given me by the Minister of War," says Baron Kikuchi, "I find that in five years—from 1891 to 1895—slightly over 1,823,000 young men were examined for conscription, out of whom 10 per cent. were above 5 ft. 4 in., 70 per cent. between 5 ft. 4 in. and 5 ft., and 20 per cent. below 5 ft. For the five years between 1901 and 1905 the number of men examined was a little over 2,011,000, of whom 13.5 per cent. were above 5 ft. 5 in., 71 per cent. between 5 ft. 4 in. and 5 ft., and only 15 per cent. were below 5 ft." It is with much pleasure that I quote these figures about Japan; they so completely bear out all that I have said as to physical culture, although my opinions were written out weeks before I had the opportunity of reading Baron Kikuchi's lecture.

Next to this question of physical culture, and of equal importance, is the question of the feeding of the people, and it is one of the problems on which we, as teachers of the science of our day, ought to have much to say. "Food," says Dr. Eichholz in his evidence before the Committee, "is the point about which turns the whole problem of degeneracy"; and no one who reads the Report of the Committee on Physical Degeneracy can doubt that the ignorance of people in relation to this matter is truly lamentable.

Now, during the last sixty-five years we have gained an immense amount of accurate knowledge with regard to food. We have accurately determined the elements of food and the kind of work which each performs in the system; we know the actual processes by which they are digested, and the part which the various organs take in each process; we have determined the metabolisms they undergo and the excretory products which they form, and how, and by what channels, these products are eliminated. We can estimate the amount of each element required to keep a person in health, and understand the diseased states which are produced by the consumption of too much or too little of the various elements.

But, gentlemen, although we have learnt so much about food, I do not think that we have ever yet succeeded in teaching this knowledge in a practical and useful way to the world at large.

We may judge of the way in which a well-educated medical man writes when he wishes to teach "the man in the street" the kind of food which is good for him, and the amount on which he is to live, by the following paragraph which I recently copied from one of our widely-read newspapers:

> Authorities have agreed for years that a diet containing the requisite combination of alimentary principles for just maintaining health in a person of average height and weight, under exposure to a moderate climate and doing a moderate amount of work, is made up of about 46 oz. of solid food, which, reckoning that ordinary food contains 50 per cent. of water, would be about 23 oz. of dry, solid matter. This 23 oz. of solid matter should be made up of 5 oz. of dry (water-free) proteid, 3 oz. of dry fat, and 15 oz. of dry carbonydrates. The nitrogenous matter should constitute about one-fifth of the water-free food, and under ordinary conditions 4 or 5 oz. is adequate for the daily supply. With an inactive life, 3 oz. would be considered ample by many students of dietetics.

But "the man in the street" was, I am sure, very puzzled as to what he should eat after reading this learned exposition, and I very much question whether most of my medical friends here to-night would not be in much the same puzzled condition if they tried to apply it to their daily dietary.

No, gentlemen, "the man in the street" wants to know how many kidneys or eggs he may eat for breakfast, what he had best consume in the middle of the day, and what it is permissible for him to take in the late evening. He wants to know how many slices of bread of average size and how many potatoes go to make up the 15 oz. of dry carbohydrates which he requires, and what he must eat to get his 3 oz. of dry fat; he also wants to know the quantity of liquid he should drink every day, the best kind of fluids which he can take and the best times at which he should take them, and I do not think that we have ever given him a plain, intelligible, and short answer to these questions; nor do I think that we sufficiently inculcate on our patients the necessary amounts of the various elements of food which they must eat, or give them the scientific reasons for their adoption.

In the consideration of this question of food the fads and fancies of various more or less eminent individuals have been allowed far too much prominence, so that the scientific principles which should guide the people to a sensible and right conclusion have been entirely obscured, and the opinions expressed have sometimes brought the whole subject under ridicule. We must remember that food can never be served out by weight, and that, provided the average amount of the various elements of food is kept fairly well within the scientific limits required of them, no great harm will be done to health by non-insistence on fractional details.

We must also realize that the feeding of civilized man is not merely a question of "stoking the engines" of the body, and that no harm is done to the system by cooking the food in a tempting and pleasant way, provided the scientific amounts of food be not greatly exceeded. I expect that the exquisitely-cooked food of a first-class chef is far more digestible and healthy than the same food unappetizingly cooked by an ignorant general servant.

We want, then, as a profession, to set out clearly, plainly, and shortly the scientific knowledge we have gained, as regards food, in a really practical way that can be understood by the multitude and can be applied to their everyday life; and until this is done I do not see how we can deal with the popular ignorance which prevails on the subject.

It is a matter demanding the careful consideration of every thoughtful Englishman that the Committee on Physical Deterioration can in this twentieth century state that the infant mortality in certain towns in

England is no less than 210, 223, and 233 per 1,000, and that they can report that the "infant mortality in this country has not materially decreased during the last twenty-five years, notwithstanding that the general death-roll has fallen considerably." Much of this mortality is traceable to causes which can only slowly be altered, but a great part of it is directly traceable to the absolute ignorance of the great majority of our nation on all questions of food, elementary hygiene, and science.

It is a sad reflection that we are obliged to appoint a committee to inquire into the physical deterioration of our people when we possess enough knowledge to maintain a very high standard of health if only this knowledge was utilized; and I am glad that this Association is pressing this point on the attention of the Government, and that the views of the deputation which it recently sent seem to have been more or less accepted by the educational authorities.

Gentlemen, I know of nothing more worthy of the attention of this great Association and of its powerful organ in the press than that duty of pressing on the statesmen of the day the need for making elementary physiology and hygiene a compulsory part of the education of all the children in this country.

We shall never be able to deal satisfactorily with physical degeneracy and the prevention of disease so long as the majority of the men and women in the nation remain in absolute ignorance of the very rudiments of science and hygiene. It is not creditable to our educational systems that a so-called "well-educated" gentleman, who may one day be called on to legislate for his country in Parliament, should be able to go through one of our best public schools, and take a degree at one of our oldest universities, without the least knowledge of the composition of the atmosphere, and without the most elementary ideas as to food and hygiene; but so it is, and I despair of improving the health of this country, and of preventing a mass of preventable disease, so long as this anomalous condition of education exists. For in the prevention of disease we as a profession can do little or nothing unless we have the support of public opinion behind us to assist in carrying out the precautions which science shows to be necessary. It is, I think, greatly to our credit that we have accomplished as much as we have in diminishing disease under the present condition of affairs; that we can do little or no more until public opinion is aroused in the matter I will illustrate by asking you to consider the history of pyaemia, typhoid, and tuberculosis.

These three diseases have been proved to be caused by the development of certain microparasites which have all been discovered within the last thirty years. Pyaemia and typhoid are, as you know, in the category of diseases which come under the supervision of the Act which deals with infectious diseases, while tuberculosis is not; so that in the latter case we have no means of enforcing the precautions which we know to be necessary.

Now, in the case of pyaemia, the magnificent work done by Lord Lister has shown the world not only the cause of this disease, but the actual precautions by which it may be prevented, the use of these precautions depending on the surgeon and his assistants and on no one else. And so well are these precautions carried out that pyaemia has become almost extinct within these past ten years throughout the civilized world, with a saving of life and misery which cannot be calculated.

Typhoid is also becoming more and more infrequent, and this is generally credited entirely to the improved sanitation and better water supply of the country. But I think these are by no means the chief factors in the case, for there are plenty of insanitary houses still remaining in England, and the water supply is too often open to the gravest suspicion.

The decline of typhoid fever is largely due to the fact that medical men have done much to destroy it. Its bacilli nowadays are never allowed a chance, at any rate in this county. In every case of the slightest doubt, days before there is any possibility of making a certain diagnosis of typhoid, it is the invariable practice to thoroughly disinfect the patient's stools; and it is to this constant and systematic destruction of its bacteria by disinfectants that, I believe, the diminution of typhoid is chiefly due; and that if these measures of disinfection are continually carried out, this disease will in a few years be as rare as its kindred disease, pyaemia.

How greatly it has disappeared in this neighbourhood, and with what loss to our profession, may be gauged by the following facts. My immediate predecessor in practice told me that fifty years ago he frequently made £300 a year from patients suffering from this disease. I can tell you that for the past fifteen years I have not taken £50 a year from this source, and that during the past few years my income from typhoid has hardly averaged 5 guineas a year.

Far different is the history when we come to examine tuberculosis, the exact nature of which as an infectious parasitic disease was discovered by Koch twenty-five years ago. Now at the onset I know that there are still a few members of our profession who do not like to class it with the other infectious diseases, fearing that the effect of so describing it will bring great hardship on the consumptives in England. I admit that under ordinary conditions the consumptive is not infectious to other people coming merely in contact with him; and that if he will take the necessary precautions with his sputum he may not be infectious to anyone. We all, too, recognize that he is not infectious unless his sputum contains the tubercle bacilli, and that that is often not present, if at all, until very late in the disease.

But, nevertheless, consumption is an infectious disease in precisely the same manner as is typhoid. In the one you have the bacilli of infection in the sputum, and in the other in the motions, and unless you disinfect them both the infection becomes generally distributed.

Now compare the history of tuberculosis with those of typhoid and pyaemia. I am quite aware that it has decreased under the influence of improved sanitation during the past few years, but yet its prevalence is even now appalling. Approximately, its death-roll in Great Britain is 60,000 persons a year; and Dr. R. W. Philip, of Edinburgh, has shown "that the ascertained mortality from consumption may be safely multiplied by ten in order to represent approximately the number of persons living and already seriously affected at the time, so that Great Britain at the present moment contains 600,000 poor patients with a preventable infectious disease, the large majority of whom are bound slowly to die of an illness which will linger on for from two to five years.

And, worse than all this, during a considerable part of this long illness (in the case of the majority of poor patients at any rate) no real effort is made to prevent them from infecting their families or those with whom they come in contact while at work; so that a constant infection is going on of persons around them, and the toll of the death-roll is continuously kept up.

I think it is time that we spoke out the truth about this disease with no uncertain voice; for surely it is time that something was done officially in this matter, and that the attempt to stay the ravages of this terrible disease be no longer left to voluntary associations who must of necessity be unable satisfactorily to deal with a task of such magnitude. Are we to admit that tuberculosis alone amongst the infectious diseases is to have no precautions insisted on with regard to disinfection? Are we forever to allow consumptives to disseminate their infectious sputum in the streets of our towns? or are we to allow them alone of infectious patients to stay in any hotel or lodging in England without taking any precautions? Every nation in Europe, except England, has awakened to the need of dealing with this disease on scientific lines, and it is time that we followed their example.

I am quite aware of the difficulties which surround the whole question, and I do not wish to put forward my own views as to the measures which are practicable in dealing with the disease. All one-sided statements only tend to obscure the issues and increase the difficulties of the situation. Satisfactory legislation can only be obtained by its careful consideration from many points of view; but is it not the time for the Government to make a careful inquiry into the subject, and that, having obtained the best expert and other opinion available, and having considered the precautions which other countries are taking, they should bring forward legislation to deal with this disease, which yearly destroys nearly 60,000 of our people and brings misfortune and sorrow into some 600,000 homes in our country.

For, gentlemen, it is only by careful inquiry and by carefully applying the science of the day, as far as is

practicable, that we can hope to do away with a large mass of disease which we already know to be preventable, and it is in this direction that our Association can do much useful service. It is here at these our annual meetings and in the pages of our weekly journal that so much of the truth is arrived at about disease, its causes, and its modes of treatment. It is here that we examine the theories and opinions of individuals, and filter, as it were, the unproved residuum from the truth which is to be of use to the world. But it must remain, after all, with the Government to apply this truth to the legislation of the country and to the everyday life of the people. That it is possible for a Government to do this has been proved by the Government of Japan. You have here a nation which had its own civilization, and whose people were well educated in Chinese classics and literature, but who were not acquainted with the science which is the distinguishing feature of Western civilization. For 250 years this people enjoyed peace, and during this time had been able carefully to examine the work being done by other nations. They saw the value of science and scientific developments of the Western world, all of it new to their modes of thought and life, they determined to bring it into their mode of life, and they have done this in a thoroughly systematic manner.

Earlier in this address I quoted to you the systematic manner in which they introduced physical exercises, gymnastics, and games into all their schools, and we can see the value of their system yet further shown in the marvellous freedom from disease which was apparent in their armies during the late Russo-Japanese war. Through the kindness of Admiral White I have been able to make a study of the book of rules which each Japanese officer took into that campaign. They were drawn up by a body of experts, military surgeons, and they deal with almost every contingency likely to be met with in warfare. There has never before in history been so systematic an application of the science of the day to the everyday life of a soldier, nor are there many armies in the world sufficiently educated in hygiene to understand such minute details. But all the children in Japan are taught in their schools the principles of elementary hygiene, and, carrying out the directions given to them, the soldiers marched to victory with less illness from preventable disease than ever occurred in any previous campaign; and they thus gave a demonstration to all nations of the importance of the application of the science of the day in the prevention of disease. If Japan can thus bring science to assist in preserving the health and physique of their nation, England can do the same, or else she must eventually take a back seat in that concourse of nations in which only the fittest will be supreme.

In one of his most striking passages Rudyard Kipling says: "We are a great people and very strong, but we build our empire in a very wasteful way—on the bones of the dead who have died from disease!" It is for our profession, gentlemen, as the advisers of the nation on all matters of health, to show how much of this terrible waste can be prevented; and just in proportion as we succeed in doing this, in that proportion shall we be carrying out the highest purpose of our profession in maintaining the health of the individual and in preventing the degeneration of the nation

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WE learn from American newspapers that a committee of Filipinos appointed to investigate the inoculation of prisoners at Bilibid Prison, in Manila, with contaminated serum in the course of a series of experiments with cholera virus last November has reported that it finds no one was responsible for the accident. The Committee specifically exonerates Dr. R. P. Strong of the Bureau of Science, who was in charge of the bacteriological work of the laboratory system, and was conducting the experiments. A committee of scientific experts who investigated the case found that 13 prisoners out of 24 who were inoculated died from the inoculation of attenuated plague cultures mixed with the cholera serum. The committee of Filipinos agrees with the verdict of these experts, and further finds that a scientist who was visiting Dr. Strong at Bilibid at the time he was preparing the cholera serum was left alone in the room a few minutes while Dr. Strong went to the laboratory. This visitor was examining plague germs of a virulent type; but it is not believed that these were mixed with the serum, for the reason that all inoculated did not die. The committee recommends that a liberal provision be made by the Philippine Commission for the families of the deceased, and that measures be taken to prevent a recurrence of the accident.

Address in Medicine

DELIVERED AT THE

SEVENTY-FIFTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

BY

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SENIOR PHYSICIAN, GUY'S HOSPITAL.

A PLEA FOR ACCURACY OF THOUGHT IN MEDICINE.

MY first duty is to thank the Council of this Association for having so honoured me as to ask me to give this address, and my second duty is to ask your indulgence for the many imperfections in it which will be presently revealed to you. For months past my daily thought has been what to say and how to say it. I might discourse upon some technical subject selected as particularly interesting to me, but it does not follow that it would be of equal interest to all of you, or I might try to give a condensed account of the recent progress of medicine. That the science of medicine is advancing rapidly is happily true, and we have every right to feel proud that we belong to a profession which does far more to relieve suffering than it did, and that it is the work of our life to study a science which is fascinatingly interesting for its own sake.

There is room for doubt whether motor cars and telephones have added to the total of human happiness, but when—to take but a single instance—we reflect that, owing to progress in the science of medicine, the number of children who die from diphtheria has been very considerably lessened—at any rate, medicine has added to the joy of many mothers. But, although no one here feels greater pride in his profession than I, yet I do not intend this afternoon to speak of our advances, for they are known to all of you; and, further, it is unseemly that we should blow our own trumpet, therefore I shall venture to indicate some ways by which I believe we may ourselves expedite the solution of many of the unsolved problems of our science.

I propose to consider a few of the directions in which we can help ourselves by greater accuracy of thought when attacking medical problems, but before doing so let me beg of you to take all the opportunities you are able of bringing before the public the duty they owe to medicine. Those of you who do that successfully do, indeed, help us. We and our allies working at physiology and pathology are constantly trying our hardest to diminish suffering and get rid of disease, yet we get little help from the very public whose suffering we are endeavouring to lessen. There ought to be fully-endowed professorships for teaching and research, so that those having a taste and ability for such work might do it, and not, as now, have to pass it by because they cannot earn their bread and butter by it. A little has been done by a very few wealthy, far-seeing, generous donors, and all of us, both public and doctors, are grateful to them, but to show how much more help is needed it is only necessary to mention that in London not a single medical school has a fully-endowed professorship of pathology. But to return to the question of how we can help ourselves.

It seems to me that sometimes we retard the progress of our science by being afraid to say we do not know. All human beings desire to find explanations. This is laudable, but it should not lead us to such hasty greed that we swallow false explanations which do us more harm than good, for then we resemble the unreasoning thirsty child who drinks salt water. Wrong explanations may be worse than none, because many people accept them comfortably, without stopping to inquire if they are reasonable; but if no explanation was in the field, some thinkers would devote themselves to the problem which they now pass by, being soothed by the false interpretation, as, indeed, physicians were for the centuries during which the humoral doctrines prevailed.

It might be thought that in the present scientific age the habit of being content with rubbish in place of an explanation was a mental malady that had left us, just as

the dancing mania of the Middle Ages has departed; but I am afraid we sometimes show symptoms of it. Accumulated observation and experience have taught us a great deal about gout, but all we really know of its pathology is that urate of sodium is deposited in some cartilages and other structures, and that there is an excess of uric acid in the blood. Nevertheless often, instead of boldly saying to ourselves we do not know the cause of many cases of neuralgia, sciatica, bronchitis, and several other diseases, we set them down to gout; but where are the figures from the *post-mortem* room showing that urate of sodium is excessively frequently found in the cartilages or fibrous structures of, for example, people suffering from sciatica, or that they have an excess of uric acid in their blood? If we think accurately, we ought not to say a person has gouty sciatica unless we believe that he has urate of sodium in some of his cartilaginous or fibrous structures, or an excess of uric acid in his blood, and that these facts are etiologically related to his sciatica; further, we ought, as a result of the experience of ourselves or others in the *post-mortem* room, to have such good evidence in support of our belief that we should not feel our reputation for skill in diagnosis seriously damaged if the patient was killed on the spot and no urate of sodium or excess of uric acid was found. Some, perhaps feeling the impropriety of calling these conditions gouty on such slender evidence as others deem sufficient, and yet susceptible to the Mesopotamia-like soothing influence of words, irrespective of their meaning, have said: "Here are a number of symptoms we cannot explain. We do not think they are due to gout; but let us imagine that the gout is irregular, or atonic, or undeveloped, or suppressed, and then we can ascribe them to it." In passing, the thought arises, If gout is undeveloped or suppressed, how can it cause symptoms? This method of nomenclature is worthy of Gilbert and Sullivan; but seriously, is it creditable? As Sir Dyce Duckworth says: "Without doubt many morbid states have often been flippantly or erroneously set down to irregular gout which owned no such designation, and thus a cloak for ignorance has always been at hand to throw over careless observation, ignorance, or wilful misinterpretation of symptoms."

But others have gone further on the slippery downward path reached by the habit of jumping to conclusions instead of saying, "We do not know," for they have not only declared that patients have irregular gout, but have linked to it one of the only certain pathological facts we know about true gout, and so have ascribed the symptoms of irregular gout to an excess in the blood of uric acid or bodies allied to it. Some do this without knowing the amount of uric acid present in the blood of a healthy person, without drawing any distinctions between endogenous and exogenous uric acid, without any attempt to estimate the uric acid in the patient's blood, without any experimental evidence that the injection of uric acid into the blood produces the symptoms in question, and without any thought of the fact that in some forms of leukaemia there is an excess of uric acid in the blood without the symptoms supposed to indicate suppressed gout. This doctrine has become so widespread that even the public tell us that their symptoms are caused by an excess of acid. Having assumed, not proved, that the symptoms the patient has are due to irregular gout, and having assumed, not proved, that this is due to an excess of uric acid, the next assumption made is that certain foods cause an excess of uric acid; some say carbohydrates, some say fats, some say proteids, and it would be quite easy for a patient to consult three doctors in turn, and if he followed all, his diet would be water and nothing else. He who believes proteids harmful is the most artistic, for he has an eye to colour, and may, as a concession, allow white meat although he prohibits red. Where on earth is the justification for this? Are there any experiments showing that steak leads to more uric acid in the blood than chicken? Have a hundred cases of so-called irregular gout been published and contrasted with another hundred similar in their treatment except that in one series red meat was replaced by an equal amount of white? Surely you will agree with me that all this is not a credit to us as members of a scientific profession. The simple fact that although gout has become much less common the consumption of meat has enormously increased, ought alone to make those who forbid proteids pause. The imagination of some has carried them still further. The fact that both gout and chronic osteo-arthritis are long-lasting diseases of joints has led them to think that as sufferers from one should be dieted, so those afflicted with the other, hence we find patients who have chronic osteo-arthritis forbidden various articles of food, sometimes, for example, sugar. Looked at calmly this is extraordinary, for there is not an atom of evidence that any particular article of food influences chronic osteo-arthritis. Have we in some of our statements about the harmfulness of particular foods advanced beyond Ibu Haukal, who, in about A.D. 950, describing the inhabitants of Palermo, said, "Their evil habit of eating raw onions in excess; for there is not a person among them, high or low, who does not eat them in his house daily, both in the morning and evening. This is what has ruined their intelligence, and affected their brains, and degraded their senses, and distracted their faculties, and crushed their spirits, and spoiled their complexions, and so altogether changed their temperament that everything, or almost everything, appears to them quite different from what it is." I strongly suspect that in those days onions were a cause of irregular gout.

For many years disordered action of the liver has been invoked to explain certain forms of indigestion known as hepatic dyspepsia. Here, too, doctors have sinned so often that a very favourite diagnosis with the laity is "liver out of order." This is a bad instance of our accepting an explanation which has nothing to support it instead of saying we do not know. The liver may be almost destroyed by new growth or abscess and yet none of these symptoms arise, they have never been produced experimentally as a result of interference with the liver, there is no constant appearance in the liver after death when these symptoms have been present during life, and it has been shown that the so-called cholagogue drugs which experience has taught us benefit these symptoms have no effect on the secretion of bile. In spite of these facts the diagnosis of hepatic dyspepsia has been made, I will undertake to say, many times this day. Every one who makes it, instead of confessing that he does not know the cause of the symptoms, shuts out from his mind all thoughts as to what can be the correct interpretation of these symptoms, and so, perhaps, retards the progress of knowledge.

A few generations ago physicians taught that blood might come from the gastric mucous membrane, although after death no source for the bleeding could be found. This they attributed to vicarious menstruation, but when it was shown that this interpretation was incorrect, the medical profession was not content to say it did not know the cause of the haematemesis, but said, "Let us suppose it is due to a gastric ulcer"; and accordingly it was stated that gastric ulcer was much commoner in women than in men, and whenever a young woman vomited blood she was, unless some other obvious cause for the haematemesis was apparent, said to be suffering from a gastric ulcer. I am sure it will be conceded that many young women have been said to have an ulcer of the stomach solely because they had haematemesis. A consideration of the experience gained in the *post-mortem* room would have shown that morbid anatomy reveals no such excess of gastric ulcers in women as we should have expected if all the cases of haematemesis in women were due to an ulcer; and now we know from knowledge derived from the deadhouse, and also from that acquired by seeing the stomach opened during life, that there is a condition, to which the term "gastrostaxis" has been applied, in which blood oozes from the gastric mucous membrane without ulceration, and that this is commoner in women than in men. So, simply because instead of saying they did not know and diligently studying these cases in the *post-mortem* room, physicians hastily concluded that they were all examples of gastric ulcer, hundreds of young women have been put through the irksome and deleterious treatment of prolonged rectal feeding for an ulcer which they have not had, and our knowledge of gastrostaxis has been kept back many years.

Sometimes, as we have already seen when speaking of irregular gout, we attempt to pacify this dislike to acknowledge that we do not know by words which do not really help us at all—in fact, by lulling us into the belief that

they explain facts when they do not, they lead us to imagine that our knowledge has rock for its foundation when in truth it is built upon sand. For example, a teacher tells his students that alcohol is the cause of the peripheral neuritis from which the woman before him is suffering, but in saying this he fails to explain the remarkable facts that the disease is commoner in women than in men, and picks out the anterior tibial nerves before any others. There must be something different in the nerves of women from those of men, and of the nerves in women the anterior tibials must be different from the others. Now is the opportunity for the soothing influence of words; instead of being helped to face these facts as inexplicable in the present state of our knowledge, we are told that alcohol has a selective action upon these nerves, especially in women, just as lead is said to have a selective influence on the musculo-spiral nerves. But does this help us? Surely not, it merely restates the fact that is evident to everybody; it is no explanation, but only an attempt to befog us with words and so possibly to retard the true explanation.

Then, further, when reflecting upon the way in which alcohol causes disease, we must remember that no explanation is entirely satisfactory which does not explain how it is that some patients—noticeably a few children—have cirrhosis of the liver indistinguishable from that ascribed to alcohol, and yet have not taken it; and how it is that, whilst over-indulgence in Munich often leads to a beer-drinker's heart, it rarely does this in London, but often leads to cirrhosis of the liver. It may be that the bodies of the inhabitants of London differ from those of the dwellers in Munich; or the different results may be owing to the different composition of the alcoholic beverages in the two places, but it certainly does not help to say that in Munich alcohol has a selective influence on the heart and in London on the liver. But these are only two or three of the many difficulties that arrest us when we attempt to understand how alcohol causes disease, and which we try to gloss over by the phrase "selective action," as though alcohol were a living being capable of exercising choice. One of the greatest discoveries ever made in medicine will come to pass on the day when the mysteries now concealed by the phrase "selective action" are made plain, and we understand why, for example, the rash of measles comes first on the forehead, that of scarlet fever on the chest, that of typhoid fever chiefly on the abdomen, and why, of all nerves in the body, the poison of diphtheria is specially harmful to those supplying the palate and the ciliary muscle.

Want of time prevents my bringing forward other instances of the years of delay in arriving at a truthful diagnosis that follow from cowardice in acknowledging that we do not know the cause of many symptoms, but it would not be difficult to do so, especially from among chronic diseases of the joints and diseases of the heart. I notice at the present time an increasing tendency to consider the muscle of the heart to be at fault. I believe that in the past we have not considered this nearly as much as we ought, and probably we have often overlooked disease of the cardiac muscle, but, unless we check our clinical work by histology, we run great danger of believing disease of the cardiac muscle to be present when it does not exist. I think I could show that the heart has often been said to be feeble or dilated on insufficient grounds, and the orthodiagraph will, I think, teach us that we have frequently been in error when we have thought the heart altered in size, just as the clinical use of the manometer has taught us that the estimation of the arterial tension by the finger is not so accurate as we have been inclined to believe. But I have wandered from the point I am trying to press home—namely, that although we may make a diagnosis in the case of many diseases, for example, epilepsy, of which we do not at present certainly know the cause, and which we recognize as a definite assemblage of symptoms, we should not make a diagnosis which implies a cause unless we have grounds from the previous experience of ourselves and others for prophesying what will be found at a *post-mortem* examination made with all the modern aids of histology, bacteriology, and chemistry if the patient died there and then. I quite admit that we shall often have to say we do not know, and no doubt our diagnosis will sometimes be wrong, but at any rate our reticence and our mistakes will not retard, but will rather advance, the progress of medicine.

He is the best physician who spends much of his time in the *post-mortem* rooms and is not afraid to say he does not know. But the inability to make this confession is not peculiar to our profession. Since I drew up this address I have come across the following from the pen of Sir Alfred Wills: "A constant source of difficulty in judicial investigations lies in what seems almost like an ineradicable tendency of human nature—an impulse to appear to know everything about occurrences of which the witness in reality knows but a part and often a small part. . . . It seems to require some moral courage to say 'I don't know.' It is not that the witnesses mean to deceive, but they have reasoned out what they never really observed, and confound the impressions so produced with those of actual observation." Again, Mr. Baron Alderson says: "The mind was apt to take a pleasure in adapting circumstances to one another and even straining them a little, if need be, to force them to form parts of one connected whole; and the more ingenious the mind of the individual the more likely was it, in considering such matters, to overreach and mislead itself, to supply some little link that is wanting, to take for granted some fact consistent with its previous theory and necessary to render them complete." With doctors the temptation not to acknowledge they do not know is particularly strong, for patients are often so insistent upon an explanation that they thrust one upon the unfortunate doctor. Let us hope that they will do this the less as general education improves.

Talking of unwillingness to confess our ignorance leads us to think of instances in which, while trying to treat medicine scientifically, we are wofully inaccurate, because we make excursions into sciences in which our training is inadequate. For example, the light and airy way in which some of us play with figures, as though there were no science of statistics, is astounding. Professor Karl Pearson truly says, "Approaching pathological inheritance from the modern statistical standpoint it is almost heartrending to notice the great amount of effort and energy wasted in the collection of data bearing on the inheritance of disease"; but, unfortunately, much effort and energy have been thrown away upon other medical statistics besides those connected with inheritance. Sometimes the very words are used wrongly. I often read at the end of an insurance report a prophecy that the proposer will live to the average age; but this is almost certain, that whatever his age at death may be it will not be the average age.

It must be left to expert statisticians to reform technical errors, but it is easy to indicate a few that are obvious. Frequently the mistake is made of dealing with far too few figures; often the very data are wrong, as I have just shown in connexion with haematemesis; allowance is rarely made for the number of persons alive at different ages; it is very common to see figures published believed to prove the effect of this or that treatment, without any allusion to the rapidity of recovery if no treatment had been adopted, and often the figures do not tell us what we desire to know. For example, statistics are published showing the frequency of recovery after some difficult operation. In the first place, for these to be of any practical use we want to be able to contrast them with figures showing the mortality among those not submitted to operation. Next, we ought to compare the expectancy of life among those who are not operated upon with that of those who submit to operation, for it is clear that if the operation considerably shortens the life of many, the total harm done by the operation may be more than the total good. Then, again, although it is interesting to know the degree of perfection to which any particular surgeon can carry the difficult art of operating, and so lower the mortality, yet, as all the patients cannot possibly go to the one skilful man, it is far more important to know the usual mortality among operating surgeons. These are only some of the points we have to consider, but let us take as an illustration the operation for a gall stone impacted in the common duct. When trying to estimate the propriety of this we must bear in mind that when impacted in the common duct a gall stone rarely causes death. From the years 1854 to 1894 only one patient not operated upon died in Guy's Hospital from an

impacted gall stone, the total number of deaths from all causes having been over 20,000. Naunyn has only once known the condition fatal. Some distinguished surgeons have operated upon several cases with complete success, but, on the other hand, Mr. Bland-Sutton, doing the right thing, and taking the figures not only of an individual surgeon, but from the chief London hospitals, and the Leeds and Newcastle infirmaries, finds that out of 35 cases operated upon 10 died, or nearly 30 per cent. But it might be urged that, bearing in mind the risk of fatal cholangitis, and the tediousness and discomfort of passing an impacted gall stone naturally, it is worth while to submit to operation, but before coming to this conclusion we must proceed very carefully, considering the high mortality following operation. Further, it is notoriously difficult to distinguish between an impacted gall stone and malignant disease, so that in estimating the benefit that follows operation we must take into account the shortening of life owing to operation among those who are operated upon in the belief that they have a gall stone, although they really have malignant disease. Again, figures have been published showing that after excision of a cancer from the stomach a few patients were alive at the end of four or five years, and it is assumed that their life has been prolonged; this may be so, but we ought, before concluding that it is wise to excise cancers from the stomach, to know how many people have had their life shortened, and, as nearly as possible, how much it has been shortened by the operation. To take another example. A variety of operations have been performed for the relief of those who suffer from exophthalmic goître, but before we can decide whether this should be done we ought to know the subsequent health and duration of life of all those operated upon, and contrast it with the subsequent health and expectancy of an equal number of patients who, having the disease equally severely, have not submitted to operation. Please let it be understood that I am not in any old-fashioned way objecting to the advances of surgery. Far from it, the debt that physicians owe to modern surgery is very great; every year hundreds of people whom we physicians are powerless to help have their health restored to them by surgeons, and my surgical friends know well that not a week goes by but that I seek their aid. Nor am I here attempting to decide whether gall stones should be excised from the common duct, or cancer from the stomach, or whether operations should be performed for exophthalmic goître. The sole reason why I have taken examples of operations upon medical cases to illustrate the care which must be exercised before arriving at a conclusion derived from figures is that it is easier to see the result of a surgical operation than that of other modes of treatment; but I can readily take an instance from medicine—namely, the treatment of typhoid fever by bathing. Many large collections of cases have been published showing that if all the patients whose temperature exceeds a certain point are bathed the mortality is lowered, and from that fact it is argued that all patients whose temperature exceeds that point should be bathed. But this does not follow, for, supposing the bathing killed some who would otherwise not have died, but saved more who would have died if they had not been bathed, the mortality would be lowered, although the treatment would have killed some. Surely the right thing to do is not to bathe all, but to select to the best of our judgement those who should be bathed.

But when we have got our figures the problem is often much more obscure than any of those just quoted, and demands a special training in the use of statistics that few doctors possess. A good illustration of the extreme difficulty of dealing with medical statistical problems is the question whether tuberculous disease is hereditary, or, as we should now say, whether the children of tuberculous parents inherit any special liability to infection by the tubercle bacillus. Many papers have been written on this subject, but hardly any are free from fallacy; some are so full of errors that they are quite valueless. Often the evidence is fallacious, as, for example, when the writer forgets that all experience gained in the *post-mortem* room shows that many have tuberculous disease who, as far as we know, gave no evidence of it during their life. Even figures from life insurance societies dealt with by actuaries are not free from fallacies of evidence, for they can take no account of those who are born of tuberculous parents and die of tuberculous disease before they come up for examination for life insurance.

Often the reasoning is fallacious, also, as, for instance, it is stated that such and such a proportion of sufferers from phthisis have consumptive parents, forgetful of the fact that this is worth little unless we know what proportion of people who have not got phthisis have consumptive parents; and, beyond obvious pitfalls such as these, there are others that only expert statisticians can avoid. A few years ago, when it was discovered that there could be no phthisis without infection by tuberculous bacilli, many of the medical profession, without any careful consideration, threw overboard the belief that inheritance played any part, and it was maintained that the children of tuberculous parents were not more liable than others to phthisis; but Professor Karl Pearson has recently published a paper in which he states that the inheritance of a special liability to infection by tubercle bacilli plays a very important part. Much has been made of cases in which it appeared that phthisis has been transmitted from husband to wife, or vice versa; but, as a rule, no attempt is made to calculate the probability that both might have such a common disease quite apart from infection from one to the other, and therefore it is interesting to read that Professor Karl Pearson says, "There is clearly no need in such cases to appeal to infection from husband or wife to account for the small number of cases in which both parents suffered." I am afraid that frequently we describe conditions as having a special association without any endeavour to determine whether they are more frequently associated than might be expected as a matter of chance. The statistics about insanity and cancer also show the extreme difficulty of a proper use of medical figures. I have often urged what I am glad to see he urges, that as to deal with figures requires a special training which is enjoyed but by few of us, we should not draw conclusions from statistics unless we obtain the help of those specially educated to their use. But statistics are only part of a larger matter—namely, the extraordinary width of knowledge required for our science of medicine. To properly appreciate the differences between the vitalists and their opponents a training in metaphysics is desirable. A doctor ought to know his physiology and pathology well, but much of these is founded on chemistry and physics; indeed, physiological chemistry is already a department of physiology, and bacteriology and protozoology are linked to pathology. It is in truth quite impossible for a doctor to keep abreast of the many sciences which bear upon his own; all that he can hope is that by the width of his own education he may be prevented from rushing in where angels fear to tread. Further, it is clear that many medical problems can be best solved by our working in conjunction with those versed in other sciences, from whom such of us as have the opportunity of studying medical problems should constantly seek help.

Yet another hindrance to the advance of medical knowledge is the acceptance of facts upon authority. In bygone days, in spite of Roger Bacon's teaching, this was commoner than it is now; indeed, through the dark centuries of medicine that preceded the discovery of the circulation of the blood everything was accepted on authoritative teaching, most of which was entirely wrong. Even in recent times there have been some remarkable examples. Thus the haemoptysis of phthisis was often ascribed to vicarious menstruation; although it occurs equally in men and women, it may be met with in females who are of such an age that menstruation does not take place, and it has no monthly periodicity; but, perhaps, the most striking instance of subservience to authority was the almost universal habit of bleeding solely because the teaching of the day said that people should be bled. Often patients were actually bled to death, yet those who did it were so blinded that they ascribed the death to the illness and not to the bleeding. If he had done nothing else, Marshall Hall would have proved his genius by pointing this out, as he did in his *Researches principally Relative to the Morbid and Curative Effects of Loss of Blood*. To take one case among many that he gives: A man fell from a scaffold and fractured his ribs; he was taken to the hospital and bled to 18 oz. Twenty-four hours later 18 oz. more were taken from him, and about seven hours afterwards 18 oz. more, and fifteen hours later a further 20 oz. "The pulse after this time became a

mere flutter, and the man survived only a few hours." Could anything illustrate subservience to authority more strongly?

Not so very long ago that extremely powerful poison, antimony, was given for many diseases because it was stated by authorities to do good. No one would now contend that any considerable proportion of the thousands of patients who took antimony were one whit the better for it. When a student begins his work he must for a little while accept some statements upon the authority of his teacher; but with every day of his career the necessity for this becomes less and less, for medicine is a science in which Nature performs experiments on every patient that those who have eyes to see can watch and so observe for themselves if the statements commonly made are correct. I would say to all but the youngest students: Accept nothing on authority, but look for yourselves and see if the usual teaching is true; believe nothing you do not see, be sceptical about everything you are told. Do not think I mean that no respect should be paid to the experience of skilled clinical or pathological observers or experimental pathologists, but all of us should be always on the alert to see if they are correct, and we should respect those who are.

Speaking of the use of antimony and venesection as illustrating the harmful effect of authority reminds us that no department of medicine shows this better than that which deals with treatment. Sometimes authority in one country advises different treatment from that employed in another. Thus, whilst in England we often give strychnine when the pulse is feeble, in Germany camphor is used for the same condition. This seems absurd; one or the other must be the better. Often little attention is paid to the natural course of the disease towards recovery, for example, many methods of treatment by drugs, electricity, serums, or operation are said to benefit exophthalmic goître, regardless of the fact that if the patient is put to bed and kept quiet she will usually recover without any other treatment. With many diseases the natural tendency to get well is so great that, unless there is a strong consensus of opinion as to the efficacy of one particular mode of treatment—for example, iron for chlorosis, mercury for syphilis, thyroid for myxoedema—probably no special treatment by drugs does any good. It may be laid down that when more than two drugs are praised as benefiting any disease, probably no one that we know does so.

Unreflecting adhesion to authority has a particularly serious effect in keeping back the advent of correct knowledge, for, in the first place, when the authority is found to be wrong much energy that might be utilized in the search for truth is expended in demolishing that which is false, and in the second place it seems almost a law that we should rush to extremes of thought, so that having been for years wrong in one direction, we travel for years wrongly in another course, before attaining the true position. For example, for many years after it was shown that bleeding had been frequently practised for diseases in which it did harm, it was very rarely done, and many patients were therefore deprived of the relief it would have given them, and it is only now that we have learnt to correctly know when to employ it. The history of our views upon the relationship of the different varieties of Bright's disease shows the same thing. At one period it was taught that many of the acute cases passed into interstitial nephritis, then it was believed that none did. "It is almost always the unhappiness of a victorious disputant to destroy his own authority by claiming too many consequences or diffusing his proposition to an indefensible extent."

Much of the excessive zeal for treatment by drugs arises not only from an unwise adhesion to so-called authority, but from a lack of appreciation that pathology is the basis of all medicine. The primary duty of a physician is to find out what is the matter with his patient, proper treatment can only be secondary to that; all treatment apart from a correct diagnosis, which in most cases should include a correct visual impression of the way in which the body is disordered, is bad, and may well lead to more harm than good. Another reason for incorrect treatment is that many say "You must do something" I can never see the reasonableness of this. The very fact that the doctor does not know what to do is actually used as a reason why he should do something; surely, it is the very reason why he should do nothing, for he may well do more harm than good. To know when to interfere and when not to interfere with Nature is a fine test of the sagacity of a clinical physician. Think of the harm that was done not many years ago by the wholesale administration of antipyretic drugs. Do not, however, imagine I am urging that treatment is rarely of use. Far from it. Never at any period in the history of medicine has treatment been more skilful than now, and never did our art save more lives than now. We have only to look back a little to see that we have improved. A hundred and fifty years is a short time in history, yet we find such a distinguished physician as William Saunders in the year 1767 recommending that a sufferer from the "iliac passion" should have crude mercury given him by the mouth, tobacco fumes by the anus, and that cold water should be thrown on his body. I am only pleading that we should try to observe and think clearly and accurately each for himself; if we do this the gibe that doctors treat diseases of which they know little by drugs of which they know less will pass away.

The last point to which I have time to draw your attention is that it usually requires considerable trouble to train ourselves to receive new ideas properly, and by failing in this respect we retard the progress of medical thought. In this matter there are two chief kinds of mind. Those having the one usually claim that they are critical, but they are obstructive rather than fair critics. For the most part they are extremely slow to assimilate anything new; strange to say they frequently pride themselves on this and take great comfort from the sad fact that many suggestions which when first promulgated appeared fruitful have turned out to be barren. Such as these are satirized in Mr. Thomas Diafoirus whose father said of him with pride "that he is blindly attached to the opinions of the ancients, and that he would never understand nor listen to the reasons and experiences of the pretended discoveries of our century concerning the circulation of the blood and other opinions of the same stamp." Those having the other are easily enticed away by new notions just because they are new, they absorb new ideas too rapidly without digesting them—in popular language, they are ready to swallow anything. Furtunately, our profession contains many who fall into neither of these classes, because they have an evenly balanced mind trained to estimate the value of novel suggestions.

Pardon me for having in these fragmentary remarks only stated what you all know, and what many have taught at various times during many centuries. My excuse for urging a plea for accurate thinking is that the more accurately we think the more rapidly will medicine progress. Perhaps, having listened to me so far, you may despair of advance; but a moment's glance at medicine of, say, a few years ago, will show that we have gone forward notwithstanding our many mistakes. For, happily, "Time effaces the fictions of opinion and confirms the determinations of Nature."

SOUTH AMERICAN TRYPANOSOMIASIS.—On the disease affecting the Equidae in South America known as mal de Cadeiras a good deal has been published. In 1901 Dr. Elmassian, of the Bacteriological Institute of Asuncion, first discovered the malady to be a trypanosomiasis—a fact afterwards confirmed by Laveran and others; and in 1903 a full memoir of the disease by Elmassian and Migone appeared in the *Annales de l'Institut Pasteur*. Mal de Cadeiras is very prevalent and severe in Matto Grosso, Paraguay, and Uruguay, but in the State of Sao Paulo it seems to be limited to certain districts, and to be of much less severity. A description of the leading features of the malady and its symptoms are given in a recent number of the *Revista Medica de S. Paulo*, where Dr. Vital Brazil calls attention to the fact that, contrary to the experience in the States just mentioned, where every case appears to be fatal, the animals attacked in S. Paulo not infrequently recover, which seems to suggest that the parasites may be merely congeneric, not actually identical. The mildness of these cases may, however, possibly be due to restricted infection, the parasites not being very numerous in the blood in the instances examined. As yet the cause of the malady remains unknown, though some of the parasitic diptera have been suspected of being the infecting agents. There are facts, however, which it is difficult to reconcile with this theory.

Address in Surgery

DELIVERED AT THE

SEVENTY-FIFTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

BY

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ON THE CONTAGION OF CANCER IN HUMAN BEINGS: AUTOINOCULATION.

Mr. President, Ladies, and Gentlemen,—

The question of the contagion of cancer in human beings has been often raised and as frequently decided—sometimes in favour of contagion, sometimes against it, according as the evidence is accepted or rejected. For there are two kinds of evidence—that which satisfies the inquirer who wishes to believe, and that which is required by the sceptic, just as there are two kinds of evidence regarding most theories and events. If the occurrence of cancer in a man and his wife who live in the same rooms be accepted as evidence of the contagion of cancer, whether the two were affected at the same time or years apart, whether the cancer of the one was of the same kind as the cancer of the other, whether the cancer was exposed or covered, then the case of contagion is not difficult to prove. And, if the occurrence of cancer in the attendant on a cancer patient be accepted as evidence of the contagion of cancer, whether the cancer be of the same variety in both the patient and the attendant, whether it be internal or external, and whether it occur immediately in the attendant or only after the lapse of years, then surely there is ample evidence that cancer is contagious in the human subject. And of such a kind, for the most part, is the evidence which is adduced to prove the case.

But, if the philosophical mind is to be persuaded that cancer is contagious in human beings, it can never be by means of such flimsy evidence as this. Certain conditions must be laid down for the evidence, and those conditions must be adhered to with the strictest impartiality. I will presently state them. But, in order to do so with the greatest effect, it is first necessary to lay, as it were, a foundation for the discussion of the question, and even to define some of the terms which will be employed.

Let me say that, when I speak of cancer as contagious, I mean only that it is *communicable*; and I use the former term because it is more convenient and not so ponderous as the latter, but when I use it I do not do so with the intention of expressing a peculiar or special mode of communicability.

Next, I would draw attention to certain conditions of cancer which are quite well known, but which should be actively before the mind of him who investigates this subject.

Thus, two or more cancers may occur in the same individual. It is a matter of common observation that several rodent ulcers may attack the face, but no direct relation can be traced between them. In like manner, the surface of the tongue may present two or more squamous carcinomata. Or an individual may suffer from squamous carcinoma of the larynx and from cylindrical carcinoma of the rectum. We speak of all these as cases of *multiple carcinoma*, and for the present we accept the theory that they have no direct relation to one another, in the sense that no one of them depends for its occurrence on any other of them.

Next, carcinoma occurs in parts of the body which are in direct relation with one another through the medium of the lymph or blood. Thus, the breast is the seat of carcinoma, and the axillary glands become affected. Or, carcinoma attacks the rectum, and growths of carcinoma are discovered in the liver. In these cases, the carcinoma of the glands or liver is of the same variety as the carcinoma of the breast or rectum, and the theory is universally accepted that the one disease depends for its existence on the other, and that some part of the carcinoma, or something derived from the carcinoma, is conveyed from the breast into the glands through the medium of the lymph, or from the rectum into the liver through the medium of the blood. We call the carcinoma of the breast and rectum the primary disease, and the carcinoma of the glands and liver the secondary disease; and we speak of this transference of the carcinoma as a *metastasis*, not a very good term, perhaps—for it is defined to mean "the removal of the seat of a disease from one place to another"—but good enough, for every person who uses it in the pathology of malignant disease uses it in the same sense, and each one knows what the other means by it.

Again, carcinoma is conveyed experimentally from one part of the same body to another, or from one animal to another of the same species. A fragment or broken-up portion of the carcinoma is inserted, for the most part beneath the skin, where it takes root and grows, and conducts itself with regard to its new surroundings precisely as the carcinoma from which it was derived does with regard to its surroundings. The fragment or portion thus planted is spoken of as a graft (*greffe*, *Impfung*), and the process is termed grafting, or inoculation, or transplantation; but the term *implantation* is more generally used in place of these terms, and I shall speak of this process throughout as implantation, that there may be no doubt of my meaning.

It is sometimes said that every successful implantation is neither more nor less than a metastasis; and this, to a certain extent, is true, but only within limits, for the conditions which surround the material which is implanted differ in some important respects from those which occur in metastasis. Nevertheless, so frequent and successful is natural metastasis, that it might reasonably be expected that carcinoma would be most easily and readily conveyed from one animal to another by introducing some of the carcinomatous material into the blood, which presumably would convey it to various organs of the body, in one or other of which it would be likely to find a suitable soil and nourishment for its maintenance and development. Experiment has, however, taught us that this method is very unsuccessful, and it has almost ceased to be employed by those who experiment with cancer. Injection experiments might, perhaps, be more successful if they were practised in the lymph vessels; but this procedure is wellnigh impossible in the small animals with which experimenters have to do. We have further learned by experiment that the carcinoma which is successfully implanted invariably presents the characters of the carcinoma from which it was implanted, and that its metastases, like the metastases of the original carcinoma, are always of the same variety, and that no transformation has yet been observed of one variety of carcinoma into another variety. It is conceivable that future experiments may yield a different result, but for the present we have no right to assume that the implantation of one variety of carcinoma can produce any other variety of carcinoma. We have learned that successful implantation is not easy, even in animals and with tumours which have been most successfully dealt with, and that success depends largely on experience and practice, and on the most minute observance of detail. We have learned that sepsis, whether of the implanted material or of the part in which the material is implanted, is an almost insuperable obstacle to success. We have learned that animals in which experimental implantation is most easy may be fed during long periods of time on food mixed with carcinoma without contracting the disease. And finally, we have learned that healthy animals, which can be easily treated by implantation, do not contract the disease merely by being kept in the same dwellings (cages) with animals which are suffering from the disease.

This accumulation of knowledge of the last few years enables us to formulate, much more definitely than we could before, the conditions under which carcinoma is likely or unlikely to be accidentally communicated from one human being to another. Thus it will be at once apparent that all cases of reputed contagion of cancer in which the disease is not of the same variety must be unhesitatingly rejected; that cases must not be accepted where there is no evidence that the affected parts of the two individuals were from time to time in contact; that it is extremely improbable that contagion should take place from a covered cancer, such, for instance, as a cancer buried in the breast; or that the disease could be implanted in a part the covering of which has not been

broken. These exclusions largely limit the number of possible cases of contagion, and the limitation is still greater when it is taken into account that sepsis of the tumour or of the broken part which comes in contact with it is an almost absolute obstacle to the success of accidental implantation. For it is notorious that cancers which are exposed for the most part rapidly become septic, and ulcerate and suppurate. Indeed, the conditions which generally prevail are so unfavourable to accidental implantation in human beings that the event might be regarded as wellnigh impossible and scarcely worth the trouble of investigation, were it not for the occasional occurrence of what appear to be examples of successful implantation in different parts of the body of the same individual. Such cases have long been known under the name of *autoinoculation*, and it is to them that I shall devote this address. For the key to the problem of the communicability of cancer in human beings must surely lie in the study of autoinoculation. If autoinoculation can be proved on such evidence as would be admitted in a court of law, there is a prima facie case for contagion. And, if the proof of autoinoculation falls through from lack of sufficient evidence, whether in quality or quantity, it is no longer worth while to pursue the study of contagion from individual to individual. Seeing the many papers and theses which have been written and the number of cases which have been brought forward to prove autoinoculation, the case in favour of it, if there be a case, ought to have been proved conclusively long years ago. But for the same reason as for the case of contagion—the imperfection or flimsy character of the evidence, the possibility of explaining many of the cases on some other theory, and the absence of autoinoculation under conditions in which it might be expected to take place—there is as yet no agreement on the question. The only cases which should be accepted are those which fulfil the following conditions: The disease must be of the same variety in the primary carcinoma and in the reputed contact-cancer. The identity of the disease must be proved by microscopical examination. The primary disease must have been exposed at the time at which contact is known to have taken place; and there should be such evidence of contact of the primary carcinoma with the seat of the reputed contact-cancer as would satisfy a jury.

The necessity of proof by microscopical examination is exhibited in the following case: I was informed that a certain museum in London contained a specimen which would interest me. It was a case of primary epithelioma of the gum, with a small, isolated epithelioma of the cheek exactly opposite to it. My informant offered to bring the microscope slides to my house for examination, but the promise was so long of fulfilment that I drove one day to the museum in which the specimen lay. The curator of the museum met me with an expression of disappointment, and told me he was ashamed to confess that, although this specimen had been exhibited to various persons as an example of the contagion of cancer, it had never been examined microscopically until my friend had informed him that I wished to see the sections, when he had at once proceeded to cut them; with the result that, while the primary disease was typical epithelioma, the ulcer of the cheek only exhibited the ordinary characters of inflammatory ulceration! Yet both he and the surgeon who had operated had been previously convinced that the disease was of the same nature in both the sores.

Although a large number of cases of reputed autoinoculation may be found in surgical literature, it is remarkable how few of them fulfil the conditions which I have laid down as essential to their acceptance. There are two of them which merit the gravest attention, for they are cases in which a portion of a tumour was deliberately implanted in another part of the body of the patient who had grown the tumour. Professor Cornil brought one of them before the French Academy of Medicine in 1891, but the tumour was a fibro-sarcoma, and as my inquiry is limited to carcinoma I cannot use it. The other case was thought by Professor Hahn, who related it at the Berlin Medical Society in 1887, to be an absolute proof of the possibility of autoinoculation, and would undoubtedly have come down to us as such, had not Professor Virchow happened to occupy the chair that day. Hahn cut out three nodules of a disseminated carcinoma, and planted them apart and in quite distant parts of the body of the patient. All three nodules took root and grew, and were examined microscopically and were found to present the characters of the primary disease. Professor Virchow asked if the skin in which the nodules were growing had been transplanted with them, and, receiving an answer in the affirmative, objected to the conclusive nature of the experiment, on the ground that the surgeon had transplanted the soil in which the nodules grew, and without which they might have failed to grow. And the objection of that most sagacious of pathologists and philosophers must be admitted, so the case falls through. I am not aware that any direct experiments, which are so strongly condemned by our profession throughout the world, have since been practised.

In order to supplement the very barren material supplied by surgical literature with new and original material, I published a short letter in our Journal last November, asking for cases of reputed contagion of cancer, whether in the same individual or from one individual to another. In reply I received some very kind letters, some of which contained cases which were incomplete in one respect or another, with one exception to which I shall presently refer. On the other hand, there was one letter which contained no actual case in point, but which interested me very much. It was from Dr. Dauber, Physician to the Hospital for Women in Soho, and was to this effect: "Replying to your letter in the British Medical Journal of this week, I need hardly remind you how very common it is for a squamous-celled carcinoma on one labium of the female to affect the opposite one, whether it be the labium minus or majus. It infects the opposite side of the vulva by direct contiguity as surely as a condyloma. Time only is necessary and a certain amount of moisture to make it invariably the rule in my opinion. . . ." Now I had no idea that this was so, for cancer of the vulva has comparatively rarely come under my notice, either in hospital or private practice. I lost no time in asking two or three of my obstetric friends their experience, and I consulted two or three books in which I thought some reference might be made to it. Neither my friends nor the books confirmed Dr. Dauber's statement, and I was disposed to believe either that he had exaggerated the frequency of the occurrence or that his experience had been very exceptional. I even wrote to suggest this to him. And I might have set the matter on one side as little worthy of credence had it not happened that my assistant in this investigation wrote shortly afterwards to tell me that he had looked out all the cases of cancer of the vulva which had been in the wards of St. Bartholomew's Hospital in the past ten years, that they were 23 in number, and in 5 of the 23 cases the disease was on the two sides. His words were: "In 5 out of the 23 cases of epithelioma of the vulva I find that one labium was first affected, and subsequently the other labium. This is not including those cases in which the disease seems to have spread by direct extension. . . ." Thus Dr. Dauber's statement, though not confirmed to the full, was powerfully supported; and I began to suspect that this was one of those curious instances in which facts lie at our very feet and are either overlooked or only casually noticed until our attention is forcibly directed to them and to their import.

I instantly issued a circular letter to a large number of specialists or persons interested in gynaecology, begging of them cases of contact-cancer of the vulva; and as about the same time I discovered an excellent case of reputed contact-cancer of the larynx by Dr. Newman, of Glasgow, in the *Transactions* of the Clinical Society, I issued a similar letter to those persons who are interested in laryngology.

I received, through the kindness of my friends, quite a large number of replies. Those of the gynaecologists exhibited a singular divergence of experience; for, while some of the writers had not, so far as they could recollect, seen a single case in point, several of them had seen at least one case, and two or three of them had seen a number of such cases. I do not attempt to explain this divergence of experience, but of course the positive experience is much more valuable than the experience which is negative. Unfortunately, very few of the cases which were reported to me were complete in all respects.

Cases.

Vulva.

Case I (under the care of Dr. Griffith).—M. A. B., 67 years of age, was admitted to Martha Ward in St. Bartholomew's Hospital in July, 1897, suffering from a raw, moist growth on the inner aspect of the right labium majus, the size of a five-shilling piece and ½ in. in thickness, of a year's duration. It was freely cut out on August 6th. Shortly after the operation she began to suffer from irritation of the left labium majus, and in October she noticed a lump there. She was seen by Dr. Griffith in November and advised to have the lump removed, but she would not enter the hospital until January, 1898. There was then an ulcer the size of a shilling. The scar on the right labium was quite sound. The disease was cut out on January 7th. Both the growths showed the typical characters of squamous carcinoma. Owing to the many years which have elapsed since this patient was under care, I have found it impossible to obtain such information as I could have desired regarding the exact seat of the second growth, whether it was just opposite the seat of the primary disease; so the case is not wholly complete.

Case II (for which I am indebted to my colleague, Mr. Bruce Clarke).—J. V., aged 52, was admitted into St. Bartholomew's Hospital in April, 1904, with an epithelioma of the left labium majus, which had extended on to the labium minus. It had been noticed three months. Immediately opposite to it, on the right labium majus, was a small, hard nodule, not ulcerated like the disease on the left side. The left inguinal glands were diseased. The cancer of the left side and the nodule of the right side were freely removed, together with the affected inguinal glands. In the month of June she was again admitted with recurrence of the disease in the left labium majus and with slight recurrence in the corresponding groin. The scar in the right side was sound, but there was a mass of glands in the right inguinal region. The diseased parts were removed, and all the parts which were removed on each occasion were examined microscopically, and were found to present the characters of epithelioma.

Case III.—In December, 1905, Miss Aldrich-Blake removed an epithelioma of the left labium of a woman, 53 years old. It was of several months' duration, and was situated ¼ in. below and 1¼ in. to the left of the orifice of the urethra. It proved to be a squamous carcinoma. During the time the patient was in the nursing home she complained of soreness of the other labium, opposite the seat of the ulcer, but no lesion was discovered. In October, 1906, she again came under the care of Miss Aldrich-Blake for a circular, flat, hard patch on the right labium, exactly opposite the spot where the ulcerated cancer had been removed from the left labium. She said she had never lost the sensation of discomfort of which she had complained when she was in the home, and that she had noticed that the place was growing hard for the last four months. The plaque was removed, and found to be a squamous carcinoma. I have here photographs of the microscopical characters of the disease on both sides, which were admirably taken by Miss Debenham. They are the more valuable because they show the exact limit of each growth, and the healthy tissues beyond its margin.

Case IV.—Dr. Cuthbert Lockyer was so good as to show me a preparation of the parts which he removed a year ago from a woman, 57 years of age. She was suffering from an ulcerated growth on the right labium majus. There was a similar growth on the clitoris, and there was half an inch of healthy tissues between the two growths. The patient was not very intelligent, and could only tell that she had been suffering pain on micturition for about a year and a half, but she did not know that there were two separate growths upon the vulva. Dr. Lockyer cut sections of the disease in both places, and found that it was the same in both, squamous carcinoma.

Case V.—On February 9th of this year, Mrs. Scharlieb brought me a large portion of a vulva which she had just removed. She had first seen the patient in the previous October for a circular sore on the left labium majus. The sore did not heal, and in January a fragment was removed for microscopical examination. It presented the characters of squamous carcinoma. At this time there was, immediately opposite to it, a smaller sore on the right labium majus. The two sides were removed by a complete operation. I conveyed the specimen to Dr. Eastes's laboratory, where it was examined by Dr. Cuthbert Lockyer, whose report was that "the one ulcer is definitely epitheliomatous. The other is chronic inflammatory, the thickened epithelial edge not having as yet undergone malignant change." I examined the sections myself, and, being suspicious of the nature of the disease at one spot, took them down to Dr. Bashford and Dr. Murray of the Imperial Cancer Research. They found it difficult to determine the exact nature of the disease as, owing to an oversight, I had not taken the specimen to be prepared until it had lain in my house for several hours. But they eventually expressed the same opinion as Dr. Lockyer had expressed. I bring this case forward, therefore, not as a case in point, but because it is a case of interest as showing what may probably be the preparation for the occurrence of contact cancer. It also again illustrates the absolute necessity of microscopical examination. The same thing may be said of a specimen which Dr. McCann of the Samaritan Hospital sent down to the College of Surgeons. There was an epithelioma of one side of the vulva, and immediately opposite to it a hard warty growth, which looked like a warty epithelioma. But Mr. Shattock, who examined the parts, reported that this growth did not present the characters of epithelioma.

Larynx.

From my laryngological friends I received many letters, the very large majority of which were to the effect that the writers had never seen a case of autoinoculation. On the other hand, I can report three cases in point.

Case VI.—In the *Transactions* of the Clinical Society for 1889 (xxii, 101), Dr. David Newman of Glasgow described the case of a man, aged 49, who suffered from an elevated ulcer of the left false cord midway between the anterior and posterior attachments. Dr. Newman watched the case at the Glasgow Infirmary. In the month of June, 1887, he observed a localized redness of the right false cord, limited to a point where the free surface of the tumour impinged upon it. In spite of careful treatment, an ulcer formed at this spot in the month of December of the same year, and soon attained a larger size than the ulcer on the left false cord. The tissues in front and behind the ulcers were free from disease, so that there was no continuity between the growths. The patient died in April, 1888, when two ulcerated tumours were found, one on each false cord, extending forwards towards the commissure so as almost to meet in the middle line in front, but there the continuity was broken. Microscopic examination of the tumours showed them to be epitheliomata.

Case VII.—In the xxxixth volume of the *Pathological Transactions*, Sir Felix Semon and Mr. Shattock relate the case of a man, 57 years of age, the whole of the right half of whose larynx, except the epiglottis, was converted into an immovable, red, infiltrating mass. This was removed by knife and scissors. Before the operation was completed, an isolated infiltration of the size of a split pea was discovered on the lower surface of the left cord in front, not continuous with the mass on the other side. This was also freely excised. The parts were submitted to Mr. Shattock for examination. There was a widespread swelling beneath the mucous membrane, most marked in the region of the true cord, where the growth was exposed by ulceration. The tumour removed from the left cord was an isolated lenticular tumour, 0.7 cm. in diameter. The tissues around it were apparently quite healthy. Horizontal sections of this tumour showed a growth 0.2 cm. in thickness and 0.7 cm. in width, with surrounding healthy tissues. The microscopical examination discovered that the disease on both sides was typical epithelioma.

Case VIII.—In February of this year (1907) I went down to see an old man with Dr. Boyd, of Victoria Park, in consequence of a communication which was made to me by Dr. Hunter Tod. The patient was suffering from extensive disease of the larynx, the right half of which was swollen almost throughout, but chiefly at the posterior end of the true cord, where there was prominent ulceration. The left true cord was diseased from end to end, but the growth was most prominent and ulcerated immediately opposite to the most prominent ulcerated disease of the right cord. There was undoubted continuity of the disease in front. Dr. Lambert Lack had examined the patient three months previously, and he told me that the left cord was free from disease

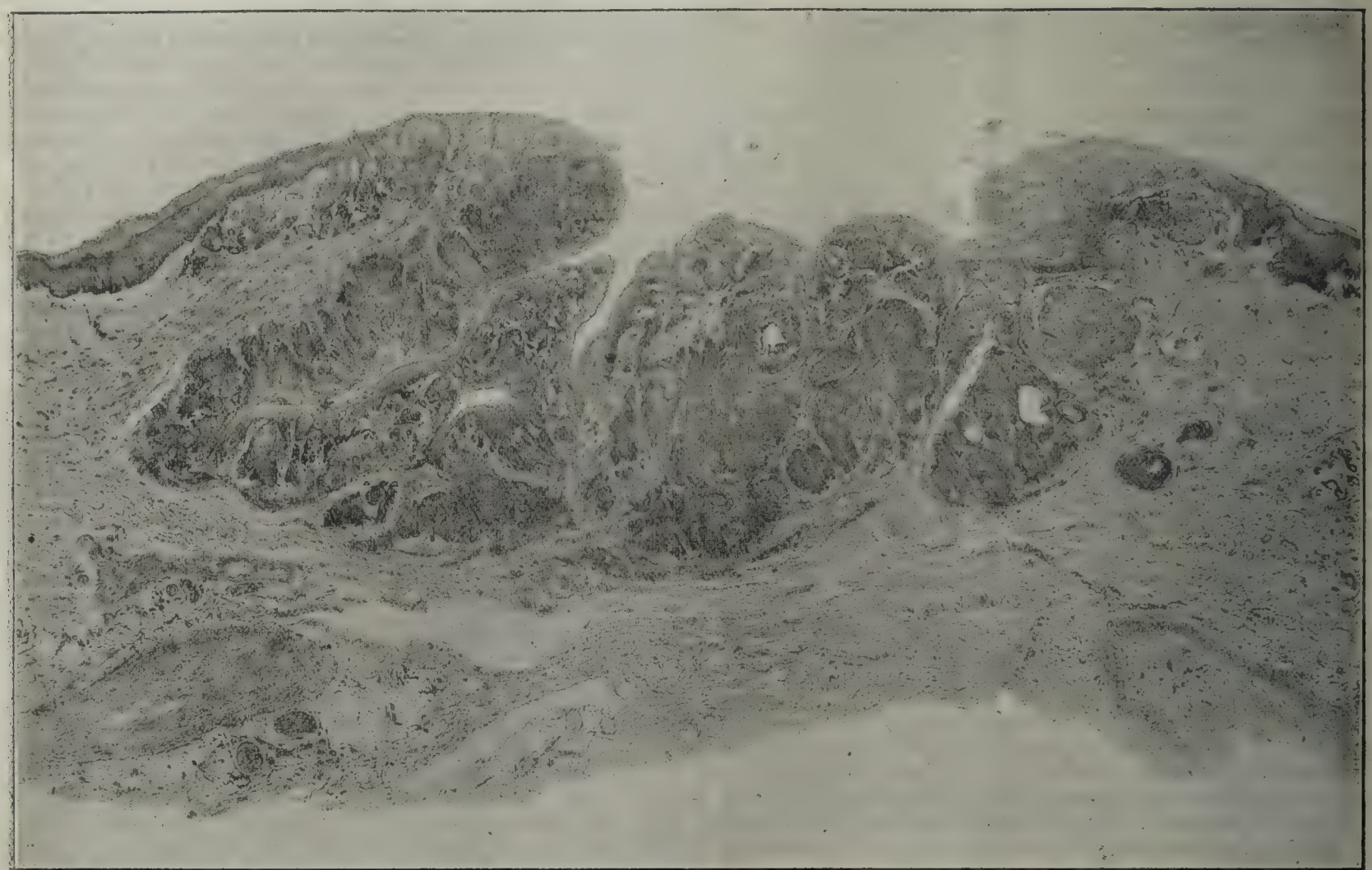


Fig. 1.—Case III. Epithelioma of labium majus, first operation, December 20th, 1905 × 10.

Fig. 2.—Case III Epithelioma of labium majus, second operation on opposite side, November 15th, 1906. × 10.

at that time. Two months later, when he was first seen by Dr. Tod, there was a growth on the left cord, at the point where the disease was most developed when I saw him, and the fore-part of the cord was free from the disease. After the patient's death the growths on both cords were examined by Dr. F. W. Andrewes, who found that both of them presented the typical characters of epithelioma.

If this patient had come under observation for the first time in the month of February, probably there would have been no suspicion of autoinoculation, and the occurrence of the disease on both sides would have been attributed to continuity of growth. This case suggests that some of the cases in which there is advanced disease on both sides of the larynx, with continuity in front particularly, may really have been cases of autoinoculation, the first stages of which had not been observed for want of opportunity.

In this relation I would mention a case, of which Dr. Tilley told me, of a patient whom he exhibited seven years ago at the Laryngological Society. Dr. Tilley removed an epithelioma of the anterior third of the right vocal cord. The left vocal cord, immediately opposite to the epithelioma, was raw, as if it had been "chafed" by the growth, but it bore so suspicious an aspect that the anterior third of the cord was also removed. The sore place was examined microscopically, but showed only "heaped-up epithelium and signs of inflammation in the deeper tissues." Had the disease been allowed to continue unoperated upon for a little longer epithelioma might have developed, as in the case related by Dr. Newman. Once more the necessity of microscopical examination is demonstrated, for the naked eye took a more serious view of the nature of the sore than was warranted by the histological examination.

Lips.

In the course of an important discussion on cancer which took place in Glasgow just over twenty years ago (*Glasgow Medical Journal*, 1886) Sir Hector Cameron expressed an opinion unfavourable to autoinoculation. As a part of his argument he said: "The upper lip in every case of epithelioma of the lower lip is in close contact with the disease by night and day. Moreover, the prolabium is even a more favourable surface for contamination than the skin. But has any one ever seen the upper lip become affected by direct contamination under such circumstances? That it is capable of becoming affected is shown by the fact that an epithelioma of the lower lip not infrequently extends to the upper, round one or other commissure."

Since that discussion took place two or three cases have been reported, but not one of them was confirmed by microscopical examination until recently. I am, now, however, able to furnish one complete example.

Case ix.—In November, 1887, Professor von Bergmann showed to the Berlin Medical Society a man, 66 years of age, with a cancer of the middle of the lower lip. It was ulcerated. In the upper lip, exactly opposite to it, was a similar disease. Each was about half the size of a hazel nut. The tumour of the lower lip had been noticed for three months, and the tumour of the upper lip began to form six weeks later, soon after the first tumour became ulcerated. That case has been quoted on many occasions and Kirmisson, a year later, said that he had had a similar case in his own practice. But neither of these cases appeared to have been examined microscopically, so that the just objection might have been raised against them that there was no proof of the precise nature of the ulcer of the upper lip. I sought in vain for a further report of von Bergmann's case, but did not succeed in finding it. In January of this year, therefore, I wrote to him, and received the following reply: "I removed both epitheliomata and examined them microscopically. They were unmistakable epitheliomata" ("Beide Epitheliome habe ich excidirt und microscopisch untersucht. Sie waren deutliche Epitheliome").

There is thus one undoubted case of contact epithelioma of the lips. I also communicated with Professor Kirmisson, but received no reply from him, so that I must conclude that his case was not microscopically investigated.

If it be wondered why autoinoculation of cancer of the lip is so very infrequent, I would point out that there are several reasons why this should be so. The upper lip is notoriously unfavourable to the development of primary carcinoma. It has probably a considerable power of resistance. And it does not in the least affect the argument that cancer may extend to it by direct continuity, for there is scarcely a tissue of the body which is not liable to the continuous extension of cancer. The discharges from the ulcer do not lie on the upper lip as they would do on the lower lip, if the primary disease were situated on the upper lip. The upper lip is not frequently excoriated or cracked as is the lower lip in many persons; and the lips are so frequently wiped or even washed in the course of every day that the cancer cells have very little chance of remaining sufficiently long upon it to effect a permanent hold.

Upper and Lower Jaw.

Case x.—(I am indebted for this case to Mr. Stonham, and for the notes to Mr. Swainson, the surgical registrar to the Westminster Hospital.) A man, 60 years of age, was admitted into Westminster Hospital with a large cancerous ulcer of the alveolar portion of the back part of the right side of the lower jaw, which extended down the side into the floor of the mouth. Immediately opposite to the growth there was, on the alveolar process of the upper jaw, an ulcer the size of a sixpence. The history was very defective, but it appeared that the patient had pulled out a loose tooth from the lower jaw about three months previously, and had noticed that a piece of the gum came away with it. A fortnight later the same occurrence had been noticed in regard to another tooth; but he was not even aware that there was anything the matter with his upper jaw. Mr. Stonham removed the disease of both jaws and the adjoining parts, together with a number of affected glands, and I went down to the Westminster museum to see them. They were most kindly examined for me by Mr. Swainson, who reported that the disease of both jaws was carcinomatous. The only doubt in this case was whether the upper and lower alveoli came in contact at the back, but Mr. Stonham was convinced that this was so.

Uterus and Vagina.

Case xi.—In the *Annales de Gynécologie et d'Obstétrique* (T. iv, p. 65, February, 1907) Hartmann and Lecène describe the case of a woman, aged 49, who had an ulcerated tumour of the neck of the uterus. She had had pain for eight years, and discharges of blood for four years. On the right posterior lateral wall of the vagina, 3 cm. from the neck of the uterus, was an uneven ulcerated surface, with hard edges, but moving freely on the subjacent tissues. The diseased uterus and the ulcer of the vagina were removed by Dr. Hartmann. Microscopical examination showed that the disease in both places was of the same variety—cylindrical carcinoma. The carcinoma of the vagina stood in the midst of squamous epithelium, and was quite circumscribed. The surrounding tissues were examined, and were found to be free from carcinoma, and the lymphatic vessels did not contain carcinoma cells.

This case is the more convincing because the vagina is lined with squamous epithelium, and is, therefore, subject to squamous, not to cylindrical, carcinoma.

Distant Parts of the Body.

Case xii.—Sir William Macewen, of Glasgow, was so good as to supply me with the following interesting case: A patient with an ulcerated epithelioma of the lower lip consulted him, and, during the consultation, pressed his forefinger against the ulcer and then quickly rubbed the tip of his nose with the same finger. The nurses at the Home, to which he was sent for operation, independently noticed this curious habit; and, when the gentleman was asked why he did it, he replied that gentle pressure on the ulcer relieved a tingling sensation in it, but that he was not even conscious of his trick of rubbing his nose after he had pressed his finger on the ulcer. The growth of the lip was removed, and was found to be an epithelioma. Twenty months later he returned to Sir William Macewen with a large ulcerated patch on the tip of his nose which extended from one ala to another. He had first noticed it about three months after the operation on the lip. It was removed and presented the same histological characters as the cancer of the lip.

Case xiii.—In the year 1879 Dr. C. Kaufmann published the following well reported case.[1] An old woman of 81 had on the back of her right hand an ulcerated

cancer which had apparently been there for about five years. She had also a cancer on the conjunctiva of the right eye, which had been present about a year and a half. She herself could supply no information in regard to the relation of the two diseases, but the person who brought her to the hospital volunteered the information that she believed the old woman had caused the ulcer of the eye by her own action. For she had been continually in the habit of rubbing the eye, which "wept," with the back of her right hand, and at that time she wore no covering on the ulcerated hand. The patient died in the course of the next few months, and Kaufmann obtained permission to examine the two ulcers; they were both typical specimens of squamous carcinoma.

Mr. Jonathan Hutchinson, junr., was good enough to send me an account of a somewhat similar case. Some years ago he operated on an old man for cancer of the lower lip and of the back of the right hand. The disease was squamous carcinoma in both places, for sections were examined by Mr. Hutchinson. Unfortunately, the notes of the case cannot be found, and there is no evidence to show which of the cancers preceded the other, or whether the patient was in the habit of rubbing his lip with the back of his hand, so that the case is incomplete from our present point of view.

I have thus brought together a certain number of cases which fulfil the conditions which were laid down in the early part of this address. They are not so numerous but I would fain have more of them, and I hope to do so by the kindness of some of those who are present here to-day, and of those who may chance to read the address. But, I think they are too many and too constant in the circumstances of their occurrence to be explained on the theory of coincidence. If two persons meet on a certain day at a certain place, the meeting may be regarded by those who witness it as a chance, curious or not, according to the conditions which are associated with it. But if the meeting is frequently repeated under similar conditions, the witnesses begin to suspect that there is something more than mere chance, especially if one of the persons is male, the other female, and a cause is sought for. So the repetition of such occurrences as I have described appears to be too frequent to permit them to be regarded as coincidences. But there is much more in the evidence than the mere repetition. It will be observed that I have brought forward only two cases in which the reputed contact-cancer was on the skin, and that all the other cases were on surfaces which are covered with mucous membrane, that they were most frequent on mucous surfaces which are usually moist, that they were most frequent on mucous surfaces which are generally not kept scrupulously clean, that they occurred most often on surfaces which were constantly or frequently in contact, such as the opposite sides of the vulva, and less often on surfaces which only come in contact from time to time, with the exception of the upper and lower lip. All these are circumstances which tend to confirm the theory of contact-cancer. They are such as might be expected from *a priori* reasoning. And there is yet one more important point. The reputed contact-cancer in one of them was of a variety which does not naturally grow as a primary disease in the part where it occurred.

I do not know whether I shall be deemed to have proved the case of autoinoculation. For myself, I think the evidence is conclusive. But then I must confess that my belief that carcinoma is a parasitic disease and that the carcinoma cell is the parasite, strongly disposes me to believe that the disease should be capable of autoinoculation.

Is a broken surface essential to successful autoinoculation? Had I been asked that question a few months ago, I should have probably replied, I think it is. But the following case, for which I am indebted to Dr. Michels, suggests that autoinoculation may occur on a plane, unbroken surface. So that I should now be disposed to say that it probably almost always precedes, and is helpful rather than essential to autoinoculation.

CASE XIV.—A woman, aged 40 years, was admitted into the German Hospital with a large tumour in the situation of the left kidney, and a history of haematuria of about four years' duration. Cystoscopic examination discovered a papillary growth at the orifice of the left ureter. This was removed through a suprapubic incision and it was hoped that the swelling of the kidney would subside. But, as it did not do so, and the haematuria continued, the kidney was removed a few weeks later. It was found to contain a large papillary tumour, like that which had been removed from the ureter. The microscope showed that the disease was malignant and of the same variety in both tumours. At the time of the first operation, a considerable portion of the ureter above the growth was removed and found to be perfectly healthy. By the kindness of Dr. Michels I am able to exhibit drawings of the microscopical structure of both tumours. The last account of this patient was that she was suffering from a large mass in the abdomen, presumably due to disease of the lymphatic glands.

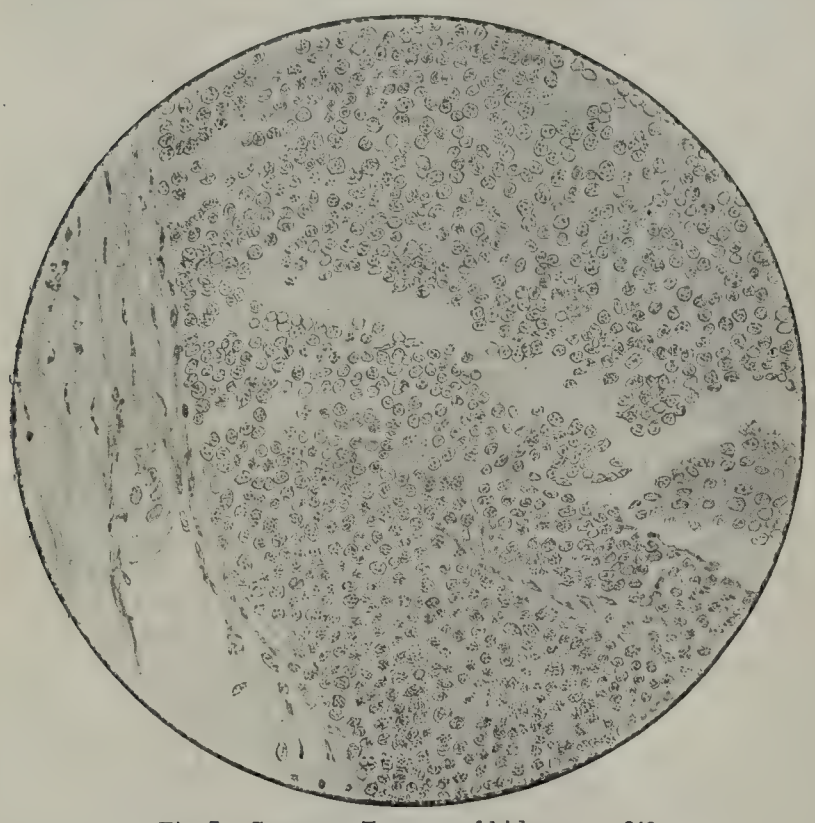


Fig. 3.—Case XIV. Tumour of kidney. × 240.

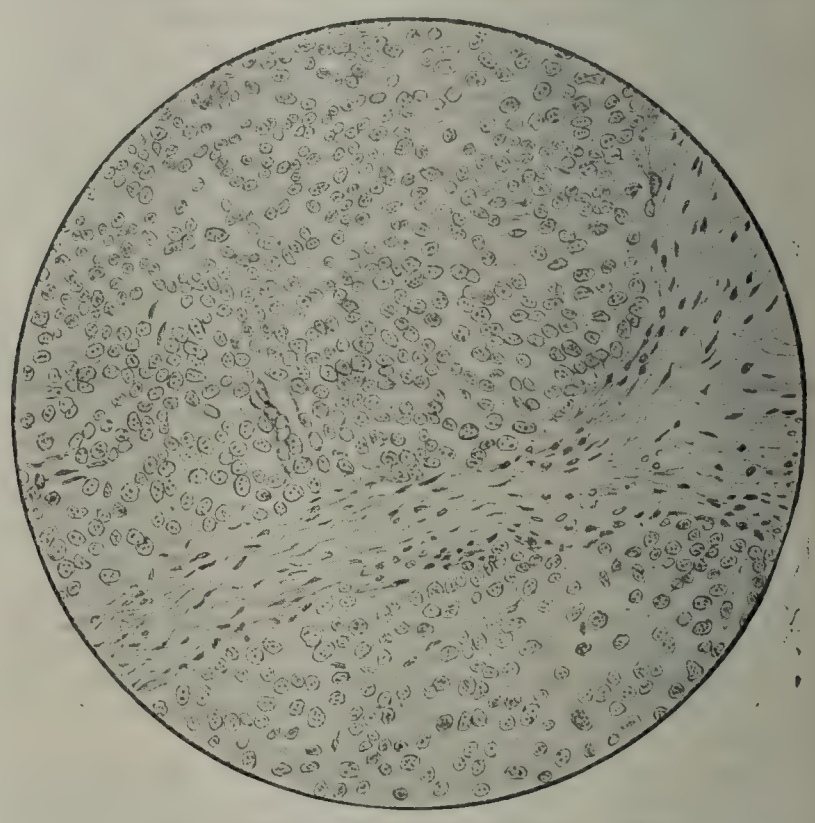


Fig. 4.—Case XIV. Tumour of bladder. × 240.

A corresponding case is described by Hartmann and Lecène (*loc. cit.*).

CASE XV.—A lady, 50 years of age, began to suffer from haematuria in January, 1905. In November of the same year a villous tumour, the size of an egg, was removed from the left side of the bladder, by Dr. Hartmann, through the suprapubic incision. It was examined microscopically and declared to be innocent. Symptoms of recurrence soon began to manifest themselves, and in May, 1906, a pedunculated tumour was removed through the old incision, but it was situated at the back and right

side of the neck of the bladder so as to hide the orifice of the ureter. The histological examination of this tumour again suggested that it was not malignant, but it was of more doubtful character, and there were many cells in process of karyokinesis in the basal portions of the growth. In the following October there were again symptoms of recurrence, and in addition there was a small tumour projecting from the meatus of the urethra. In November the tumour was removed from the urethra and was found to be attached immediately behind the orifice. At the same time the bladder was again opened and a large mass of soft friable material was removed, which had its seat behind and to the right side of the neck. Both tumours were subjected to microscopical examination, which proved that both presented the same characters, and that the characters were such as are proper to carcinoma of the bladder (épithéliome atypique vésical). The authors state that they have never seen a primary cancer of the urethra which presented these characters.

These cases and those in which the material is conveyed into the end bronchi of the lung, and there takes root and grows, of which a good example is recorded in the *Pathological Transactions* by Moxon, may be placed in a special class, as it were between metastasis and autoinoculation. The cancerous material does not lie surrounded by what we term nutrient fluids, such as the lymph and blood, nor is it constantly or frequently in contact with, or rubbed into, the part in which it succeeds in gaining a foothold.

I cannot deal with other side-issues which naturally present themselves in connexion with the question of autoinoculation, for time will not permit it. Such, for instance, as the length of time which may elapse before the appearance of the reputed contact-cancer. But I must not pass without notice one point of practical importance, the possibility of wound infection in operations for cancer. For some years past surgeons have been more cautious than they used to be in dealing with cancerous growths, and many cases have been recorded in which there was reason to believe that recurrence was due to implantation during the operation rather than to imperfect removal of the disease. Ten years ago Dr. Lambert Lack wrote on this subject a paper which was published in the *Lancet* (June 13th, 1896), and described cases, of which he had made the microscopical examination, which threw the gravest suspicion on instruments and the tearing of breaking-down cancers as the cause of immediate recurrence of the disease. I think his cases are some of the most conclusive I have read in this regard, and the possibility of the occurrence must never be lost sight of. Cancers should not be cut into unless for diagnosis, and the wound should be tightly closed before the actual operation is commenced. The instruments which were used for the purpose of diagnosis must not be used again until they have been boiled. Exposed or ulcerated cancers should not be pressed against or dragged across raw surfaces made in the course of the operation. And care should be taken that breaking-down cancers are not opened during operation. If they are opened by mischance, means should be taken to cleanse the surface of the wound and to destroy the exuded contents of the cancer cavity.

In the early part of this address I stated that the study of autoinoculation is, for me, only preparatory to the study of the communicability of cancer from one human being to another. And I have set myself the task of investigating this question. That it is an exceedingly difficult investigation there can be little doubt. And, from what has transpired in the course of this address, there can be even less doubt that such cases must be very rare. The small number, if there are any such cases, must be compensated by the quality of those which are discovered. I have thought out the conditions in which contagion is most likely to take place, and have come to the conclusion that coition is the most likely of all conditions to place either the male or the female in danger of contracting cancer. The organ of the male and the os uteri of the female are frequently the seat of cancer. These parts are subject to the same variety of cancer, squamous carcinoma, although the uterus is also liable to cylindrical carcinoma. Cases of coition-cancer have been from time to time reported. But they are very few in number, and I have not yet discovered one of them in which the essential conditions are fulfilled. The remark has frequently been made that, if cancer is contagious in the human subject, cases of coition-cancer ought to occur with some degree of frequency. I do not think so, for the following reasons: The presence of an ulcerated cancer in the male would render him disinclined to coition, so that the female would be but rarely exposed to contagion. The cancer of the female is generally septic when it is exposed (that is, ulcerated), and unless it is ulcerated, the disease is not likely to be communicated; although coition is known to take place even in the presence of an exposed carcinoma of the uterus, it is not likely to be frequent; ulcer or excoriation of the male organ, which is probably almost essential to contagion, is a condition which deters the male from coition. Again, auto-inoculation is probably rendered more easy by the fact that the patient is more or less prone to the occurrence of cancer. And, if there be persons who are prone to a disease, it is reasonable to suppose that there are other persons who are much less prone to it, or even immune. They possess a resisting power against the disease which it may be impossible to overcome, or which can only be overcome with difficulty. Far, then, from wondering at the rarity of reports of coition-cancer, I should be surprised if they were more frequent. Yet I believe they do occur, and Mr. Etherington-Smith (who has been assisting me in this investigation and to whom I am already much indebted) and I are devoting our attention to the discovery of cases in which cancer may have been communicated by coition. One of the chief reasons which led me to choose the subject of this address was the hope that the publication of it might assist us in finding some of the cases we are seeking; for they are more likely to fall under the observation of those who are engaged in general practice and are acquainted with the histories of their patients than under the observation of those who, like myself, are engaged in a special branch of our profession. And I think they are more likely to be recognized among patients in higher than in lower social conditions.

Postscript.—In the foregoing it will at once be apparent to those persons who have made a study of this subject that I have not used all the cases (which fulfil the essential conditions) which may be collected from surgical literature. I preferred to use only a few cases, provided I knew something personally of them or could obtain special information regarding them, and I have only used some of the old published cases on account of the excellent reports which belong to them or to fill in gaps. Again, it will be noticed that I have made no mention of cases of reputed contact-cancer of the bladder or of the intestine. I have left them out, not because they did not appear to me to be true examples of contact cancer, but because objections might be raised against them which could not be made in most of the cases I have described. It is probable that I shall soon publish a much larger number of cases and introduce a good deal of material which would not serve as a proper foundation for the proof of autoinoculation, but which will serve as an excellent superstructure.

REFERENCE.

1 Ueber Multiplicität des primären Carcinoms, *Virchow's Archiv*, 75, 317.

NOTWITHSTANDING the efforts of the medical profession, the New York State Senate has passed a Bill creating an examining Board for opticians and giving them the right to practise in a limited way what is defined by the new medical law as "a speciality of medicine." Dr. Frank Van Fleet, chairman of the committee on legislation of the Medical Society of the County of New York, has addressed a circular letter to the members urging them to send to the members of the Assembly and the Governor protests against the passage of the Bill. In the course of his letter he says: "Year after year we have successfully fought these efforts to create new Boards, and we had hoped that the law creating a single Board for all sorts of doctors would do away with the need for such effort; but the refracting opticians seem not to be satisfied. One of the checks on 'Christian Scientists' doing harm is that the law requires parents and guardians to secure the services of physicians when children are sick, but this optometry Bill gives the opticians the right to fit children with glasses for the relief of headache and other reflex symptoms. If four years of study is necessary properly to equip physicians to treat children, why should opticians receive similar privileges without complying with the same requirements?"

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF ACUTE ENTERIC INTUSSUSCEPTION WITH APPARENT REDUCTION BY IRRIGATION: ABDOMINAL SECTION, AND FATAL RESULT.

THE following case is of some interest in relation to the question whether cases of acute intussusception should be operated upon as soon as a definite diagnosis is established, or whether irrigation or inflation of the bowel should first be tried.

In the ileo-caecal, ileo-colic, and colic varieties, irrigation is undoubtedly successful in reducing the intussusception in a large number of cases. In the enteric variety, however, which, according to Leichtenstern, forms 30 per cent. of all cases, it cannot possibly be of any use, and may, as in this case, cause delay in resorting to abdominal section.

The question arises, whether the passage of a quantity of faecal material, some time after the injection, in addition to the disappearance of the tumour, is not a definite sign of reduction of the intussusception, at least in cases where for some hours nothing but mucus and blood has been passed.

A boy of 3 years of age was seen one evening, complaining of acute paroxysmal pains in the abdomen, which had come on suddenly about six hours before. The attacks of pain, sharp and cutting in character, recurred at intervals of about fifteen minutes, and lasted for one or two minutes. The bowels had moved twice, a slight tinge of blood appearing the second time. The child had also vomited once since the onset of pain, the vomited matter consisting mainly of raw rhubarb, of which he had eaten freely some hours before. Temperature and pulse were normal, and the abdomen showed no swelling, hardness, nor tenderness.

Next morning the child was again seen, and now he appeared rather prostrated, dull, and apathetic. He lay on his back with knees drawn up, and complained of occasional sharp attacks of abdominal pain.

Tenesmus was now present, with the passage, in small quantities, of both mucus and blood; and vomiting occurred immediately after every attempt to take food. The temperature was 100°, and pulse about 100 per minute. Examination of the abdomen now showed some slight general swelling and tympanites, with a quite definite elongated swelling, not at all sausage-shaped, about 2 in. long and 1 in. broad, lying obliquely downwards and inwards in the left iliac region, and dull on percussion. Rectal examination, contrary to what was expected, showed nothing abnormal.

The diagnosis of acute intussusception was then made, and treatment at once instituted, by means of an injection of warm water, without any anaesthetic. The child was placed on his right side, with hips raised high on a pillow, and, by means of a Higginson's syringe, over a pint of warm water was gradually injected into the bowel.

On examining the abdomen then no tumour could be detected, so the syringe was removed, and the water gradually escaped, accompanied by a small quantity of blood-stained mucus. Examination of the abdomen again, with the child on his back, did not reveal any tumour.

The patient was seen early next day, and was found still in a collapsed state. Tenesmus was still present, with the passage of blood-stained mucus, but no faecal material had been passed. Vomiting had taken place several times, and there was only a very occasional twinge of pain in the abdomen. Temperature was 99°, and pulse about 100. The abdomen was now found distended and tympanitic, and the tumour was again present in the left iliac region, as before; hard and dull on percussion, but not tender.

Dr. Murray, of Coatbridge, on being called in consultation, confirmed the diagnosis, and the child was thereupon chloroformed. Dr. Murray made a digital examination of the rectum, also without any result, and then a large enema of warm water was injected into the bowel. The tumour was then found to have disappeared completely, and after all the water had escaped, the child being still under chloroform, no tumour could be felt anywhere.

Three hours afterwards, however, the tumour was felt again, in the same place, and no faecal material had been passed.

The child was then removed to hospital, where Dr. Renn'e, of Coatbridge, prepared for abdominal section; but before opening the abdomen, and while the child was under chloroform, he injected an enema, and found that the tumour completely disappeared. However, in a few moments it was felt higher up, in the left side, and it gradually moved downwards, lying again in the left iliac region.

The abdomen was then opened, and distended coils of bowel at once protruded. Some coils of small bowel were found, however, in the cavity, quite collapsed, and these were rapidly traced upwards to the junction between them and the distended coils, where an invagination of the small bowel was found, about 2 in. or so in length. This was easily reduced, without much manipulation, and the bowel which had been invaginated was found fairly healthy; it was only slightly congested, and no trace of any adhesions between the peritoneal layers was seen. The distended bowel gave some trouble before it was finally replaced and the abdominal wound closed.

The patient recovered well from the operation, and passed a large distinctly faecal motion; but thirty-six hours after operation he became collapsed and died.

Glasgow. WILLIAM TEMPLETON, M.B.

IODINE AND TYPHOID FEVER.

DR. PEREZ'S memorandum in the JOURNAL of July 20th reminds me of former experiences in the younger days of practice, when a case of typhoid fever came under my care. A North Country general practitioner of great shrewdness advised me to try iodine and carbolic acid. I did so in all cases that came under my care subsequently, and with invariable success. The directions were to put 1 minim of pure carbolic acid and 2 minims of tincture of iodine into a tumbler of water, and to let the patient drink as much as he wished during the day or night. I can testify that the results were uniformly good: the tongue cleaned, the temperature fell, diarrhoea ceased, and there was a rapid general improvement, with a gratifying absence of complications that I have witnessed under no other method of treatment, such as cold sponging, quinine, and other antipyretic measures or the ordinary expectant plan. The use of carbolic acid and iodine is not mentioned in the majority of textbooks. Osler in his *Practice of Medicine* (1901) says good results have been claimed for the iodine and carbolic acid treatment, but, personally, he cannot testify to its inefficiency. It would be of much interest to have the point investigated in a prolonged series of cases, say at one of the large metropolitan fever hospitals, or by a collective committee.

London, W. DAVID WALSH.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

WEST LONDON HOSPITAL.

SARCOMA OF FEMUR WITH LARGE HAEMORRHAGIC EFFUSION.

(By G. L. WEBB, M.B., B.C.Cantab., House-Physician, late House-Surgeon.)

THE patient in this case was a man, aged 62, admitted into the hospital under Mr. L. A. Bidwell, with swelling of the right thigh and leg.

History.—He had suffered pain in this part for about three months previously, and had latterly been obliged to take to his bed on this account, but had noticed no increase in the size of the limb until fourteen days before admission. The right thigh then began to swell rapidly, with extension into the leg and foot, and the pain became more severe.

State on Examination.—The thigh, along its whole extent, was seen to be nearly twice its normal size, the skin tense and shiny, and fluctuation could be obtained all over the upper part; there was no pulsation of the swelling, it was slightly tender, and the skin over the trochanter was very inflamed. The leg and foot were swollen and oedematous. Movements at the hip-joint were not impaired, and an *x*-ray photograph showed

an indefinite shadow enveloping and obscuring the femur along its whole extent, including the hip-joint. For six days the temperature was irregular, the maximum point reached being 100.6°.

Operation.—An incision was made in the upper and outer part of the thigh, where fluctuation was most marked, and 5 pints of dark blood gushed out, containing numerous masses of tissue, which on microscopical examination proved to be mixed-cell sarcoma, with a few giant cells. The femur was found to be covered with an extensive growth, more especially at the upper extremity. There was no evidence of secondary deposits elsewhere, but owing to the position and extent of the tumour, and the weak condition of the patient, amputation was deemed inadvisable.

Remarks.—Death occurred a few days later, and a *post-mortem* examination was not obtained. The chief points of interest in this case are the rapidity and the extent of the haemorrhage into the sarcomatous tissue, while the diagnosis was rendered somewhat difficult by the large effusion masking the condition and outlines of the bone.

COLONIAL HOSPITAL, GIBRALTAR.

A CASE OF TUBERCULOUS MAMMARY TUMOUR.

(By L. D. Parsons, M.B., Assistant Surgeon.)

The patient in the following case, a Spanish labourer, aged 33 years, was admitted under my care on April 20th, 1907, suffering from a tumour in the left mammary region. He gave a history of pain, with a small swelling in that region which had been gradually getting larger for the past three months.

State on Admission.—His temperature was normal and in the region of the left mamma was a hardened, reddened swelling 4 to 5 in. in diameter and about 1½ in. in depth. The skin was infected with small punctate abscesses chiefly at the base of the hair follicles. The tumour was quite immovable, but the skin over the surface was free except for a small area to the inner side of the nipple.

Treatment.—Boracic fomentations and antiseptic dressings were applied with a view to getting the part into a more favourable condition for operation, and he was given potassium iodide grains x twice daily in a mixture with decoc. sarsae co.

Operation.—On April 29th, nine days after admission, the patient being under chloroform, a curved incision, 4 in. long, was made over the middle of the tumour and the skin edges dissected up. It was then seen that the mass consisted of caseating tuberculous material affecting the origin of the pectoralis major where that muscle arises from the cartilages of the ribs. A small incision, 1½ in. long, was made transversely from the centre by the inner flap, and as far as possible the affected tissues removed. A portion of the pectoralis major was excised, the sternum cartilages and portions of ribs thoroughly scraped with a sharp spoon, the cavity washed out with a 1 per cent. watery solution of iodine, the skin edges brought together with silkworm sutures and a gauze drain inserted, and the whole area dressed with cyanide gauze.

Progress.—Unfortunately, owing, I think, to the fact that the skin was already infected before operation, the wound became septic, and his temperature rose on May 4th—that is, five days after operation—to 100.2° F., having remained normal till that date. The stitches were removed, and the wound fomented with lint soaked in 1 per cent. iodine lotion. The temperature soon dropped, but although every care was taken with the dressing, there was no attempt at healing, and the parts remained angry, reddened, and painful. One had now to deal with an infected tuberculous wound, and the outlook was not bright.

Serum Treatment.—On May 13th I injected 5 c.cm. of a polyvalent serum (marked A 249) obtained from Burroughs, Wellcome, and Co., and repeated the dose on May 14th, 15th, and 16th. I was led to do this, as the serum had been obtained for another case under my care suffering from diabetic gangrene, and it struck me that if the pyogenic infection of this wound could be overcome the tuberculous disease would be arrested also. I was more than pleased with the result. The patient showed distinct improvement after the first injection, which was maintained daily. Unfortunately, on May 16th, we finished the last phial of the polyvalent serum (Series A 249). The patient for whom the serum had been obtained was moribund, and died shortly after; and no more serum could be obtained without telegraphing expressly to London.

Change of Serum.—In these circumstances I turned to antidiphtheritic serum, of which we had a large quantity, and I gave my patient 2,000 units by the mouth on May 17th, and thereafter 2,000 units in the same way on May 19th and 21st.

Result.—On May 22nd he complained of a scarlatiniform rash over the legs, ankles, and feet, and he was given no more serum until June 4th, when the rash had entirely faded away. All this time improvement in the local condition of the operation wound was uninterrupted, and the man left the hospital on June 7th with a soundly-healed scar, no redness, no pain, and with perfect freedom of movement in his left arm. The case seems worth reporting because of the marked improvement in an infected tuberculous lesion, due, probably, to the action of a polyvalent serum, and the subsequent perfect healing of the wound.

THE GAOL HOSPITAL, BASSEIN.

UNABSORBED CATGUT LIGATURES.

(By P. Dee, Captain I.M.S., Civil Surgeon.)

The patient in the following case was admitted to the Gaol Hospital on November 12th, 1906, and seen by me for the first time on the morning of the following day.

The notes made by my hospital assistant on the medical history sheet are to the effect that "patient was suffering from slight fever of a couple of days' duration, very constipated, and complained of pain and tenderness in right iliac region." He had suffered two years previously from malarial fever, but had been quite healthy ever since.

Progress.—For the next month the history of the patient was one of slight fever, constipation, and pain either in right iliac or right lumbar regions. He lost weight and became rather emaciated. His cheeks fell in, and his face took on an earthy hue. The pain of which he complained varied much in both place and intensity. Occasionally it was in the neighbourhood of the kidney or lower edge of liver, but most frequently in the neighbourhood of the vermiform appendix. Deep pressure at or near McBurney's point nearly always gave rise to pain.

Operation.—The urine and sputum were frequently examined with negative results. Septic absorption was going on somewhere or other, possibly in the appendix. On November 18th he developed a slight dry cough. No tubercle bacilli was found, although almost daily examination of the sputum was made. As the pain seemed by this time to be more localized to the region of the appendix, I determined to make an exploratory incision. On December 15th the abdomen was opened by the usual incision. On examination the appendix did not show any signs of recent inflammation, but it was very elongated and bent nearly double on itself. It was also fixed firmly (or rather the caecum was) to the posterior abdominal wall. No sign of any abscess could be discovered. As the appendix was elongated and twisted in this way on itself it was removed.

After-progress.—The wound healed by first intention; the bowels acted the second day after operation; pain disappeared and the temperature remained slightly below normal until January 20th, 1907. Just as I was about to congratulate myself, the same old up-and-down variation of temperature started again, but with the difference that morning temperature was nearly always normal instead of 99° or 99.5° F. as happened previously. One morning at the weekly inspection of gaol I discovered the patient in the condemned cells. It appeared that he was an under-trial prisoner when I operated on him, and in the meantime had been condemned to death. Nothing further happened until February 13th, 1907. On the morning of that date he said he had "for some days past been suffering from pain in the region of the right loin." On examination a diffuse swelling was discovered of somewhat brawny appearance. Patient was taken to hospital and a deep incision made, when a large quantity of healthy laudable pus was evacuated from a deep abscess. The abscess seemed to be in the muscular structure of the postero lateral wall of abdomen. There was no faecal smell from the pus, and nothing to show that it was in connexion with the intestines. March 18th: The patient is now gaining weight and strength. The abscess cavity has healed, and temperature has been normal since the abscess was opened on February 13th.

Remarks.—The patient was executed on March 28th. At the *post-mortem* examination the neighbourhood of the appendix was found quite healthy; two catgut sutures that had been used to suture the parietal portion were still *in situ* unabsorbed, and one chromic catgut suture with which the appendix mesentery was ligatured was also unabsorbed. The abscess in the loin when traced, showed that the abscess cavity was situated in the abdominal wall, but a small narrow track perforated rather deeply. The capsule of the right kidney was thickened and very adherent. The right perinephritic tissue was hard and thickening, more particularly on the inner aspect, evidently the result of inflammation, and the kidney was firmly attached on its inner side to the spinal column. The abscess in the loin did not seem to have any connexion with the perinephritic tissue, and what its original cause was I was unable to determine.

The late Dr. Julius Dreschfeld of Manchester left property of the net value of £68,914 12s. 11d.

REVIEWS

DIET, NUTRITION, AND WORK.

PROFESSOR CHITTENDEN'S new book, *The Nutrition of Man*,[1] is the outcome of a course of eight lectures delivered before the Lowell Institute of Boston in the early part of this year, and can be strongly recommended to those readers who are interested in his work but may have been repelled by the closely-packed tables and figures of his former book, *Physiological Economy in Nutrition*. The first four chapters are devoted to an account of the physiology of metabolism, written in a clear and easy style, and made as readable as is possible considering the complexity of the subject. The outcome of the discussion is to show that all but a very small part of proteid taken as food passes out of the body rapidly as urea, so that he asks whether any advantage can be derived from this large proteid katabolism. He regards as little credible Pflueger's view that all proteid is organized before being katabolized, and directs attention to Folin's experiments which indicate that creatin and uric acid contain the nitrogen derived from the tissues, while urea represents that of the food. The former conclusion has the merit of relative antiquity, for Liebig observed an increase of the creatin of muscle amounting to ten times the normal average in hunted foxes, and one of the latest to produce trustworthy evidence in its favour is Gregor, who, on a non-flesh diet and fourteen hours' cycling, found a rise of 0.57 gram to 1.34 gram. In the fifth chapter Chittenden develops his argument by pointing out that the authority of the so-called standard dietaries is based upon the fallacious assumption that the habits of people are equivalent to their physiological requirements, for a large proportion of mankind is addicted to the tobacco habit, but no one would think of arguing that tobacco is one of the physiological needs of the body. He summarizes the observations and experiments described in *Physiological Economy in Nutrition*, by which he claims to have proved that it is possible to maintain health and perform hard work for many months on a diet containing less than half the standard quantity of proteid, and he points to the fruitarians of California and the Japanese as examples of people who enjoy health and vigour on a low proteid diet. But as the question can be best solved by careful feeding experiments on animals, he recapitulates what has been done in this direction, referring to the investigations of Munk and Rosenheim, which have tended to show that dogs fed on low proteid diet lose their health and die; but Jaegerroos, whose experiments were equally unfortunate, believed his dogs died from the unhealthy conditions under which they had been kept and not from the insufficiency of the diet. Guided by this suggestion, Professor Chittenden has carried out experiments upon six dogs at the Sheffield Scientific School, the animals being kept under observation from six to twelve months, and their condition at various periods is demonstrated to the reader by photographs, from which it seems certain that they preserved perfect health upon the low proteid diet. For example, in the first case the experiment lasted for eleven months, and for ten months the animal lived in perfect comfort and in good condition on an average daily intake of 0.27 gram of nitrogen per kilogram of body weight. The experiments seem to justify the conclusion that dogs kept under healthy conditions need only a small amount of proteid food, but a little animal proteid in some form seems necessary to their health, as on purely vegetable diet they fall away. Upon this latter point Professor Chittenden lays stress, and draws attention to the marked differences in the decomposition products of various kinds of proteid, any of which may be needed for what he calls corner-stones in the building up of the tissues of a particular kind of animal, or for the performance of the special functions required from the individual. These facts strengthen the conclusion that the current opinion in favour of the necessity for a daily consumption of 100 grams of proteid is ill-founded, and that the ideal diet should contain no more than is necessary to maintain the body in health and vigour, with only such small surplus as may be needed to form the proteid reserve. This result is best attained by moderation in the amount of food, and by simplicity in the character of the dietary, and the recompense for any sacrifice involved is increased health, strength, longevity, and efficiency.

A valuable confirmation of the good results of low proteid diet, as recommended by Professor Chittenden, is afforded by the experiment on nine healthy students carried out by Dr. IRVING FISHER, Professor of Political Economy in the University of Yale.[2] These students, who presumably had heard of Professor Chittenden's work, asked to be allowed to try the effects upon themselves under supervision, and after some demur on the part of Professor Irving Fisher, who not being a physiologist did not care to take such a responsibility until he was assured of the support of his physiological colleagues, they organized themselves into an eating club, and began with an endurance test on January 14th, 1906. The first half of the experiment was to test the claims made by Mr. Horace Fletcher, that by thorough mastication, with implicit obedience to the instinct of appetite, the total quantity of food is reduced, the desire for animal food lessened, the digestion and general health improved, and the capacity for endurance greatly increased. The men were allowed to choose their own diets from a liberal bill of fare, the portions being served for convenience of reckoning in quantities of 100 calories; a careful record was kept of the amounts eaten by each man daily, and they were especially warned during the first half of the experiment against the conscious effort to decrease the quantity of food, proteid, or meat. The first period lasted from January 14th to March 27th, and the second from March 28th to June 1st. In the second period the men were directed to choose their diet from lists arranged in order of the proportion of proteid, and if appetite and taste approved to give a preference to articles of low proteid value. The result was that, commencing in January on a diet consisting of an average of 2,880 calories, this was reduced in March to 2,570 calories, while the calories of proteid per pound of body-weight were reduced from an average of 2.6 to 2.16. In the second half of the experiment, where there was a conscious effort at reduction, the effect was naturally more marked; for, commencing with a diet containing an average of 2,570 calories, it was reduced to 2,220, while the calories of proteid per pound of body-weight dropped from 2.1 to 1.4. During the whole of this period the men were working hard, some of them studying too much for their health, so that there was a slight loss of strength, according to the tests that were tried. Expressed in figures, this shows that the average total strength exhibited by the nine men was in January 1,075, on March 28th 1,118, and on June 16th 995; but this slight fall makes all the more remarkable the extraordinary rise in endurance which was observed in the same period. The tests employed were the repetition of the same movements by particular sets of muscles, such as rising on the toes as many times as possible, deep knee-bending, holding the arms from the sides horizontally for as long a time as possible, running on a track as far as possible. In the earlier tests much pain was suffered by the men in consequence, and not only did the test taken in June show that there was an average improvement of 140 per cent., or, if we exclude one of the class who had been a careless experimenter, and who actually showed a falling-off of 44 per cent., there was an average increase of 150 per cent. on the whole of the men, ranging from 80 per cent. in one case to 450 per cent. in another, but at the same time the tests caused very much less pain. A mental test, adding up a specified number of figures, showed less marked results, but the men were mentally fatigued by college examinations on the day they entered for it. The experiment was thought to be too short to be of value, and Professor Fisher recommends that a different method should be employed in future, but the subjective impressions of the men as to their mental working power were that they had improved, and all held their own in the College examinations.

[1] *The Nutrition of Man.* By Russell H. Chittenden, Ph.D., LL.D., Sc.D. London: William Heinemann. 1907. (Med. 8vo, pp. 332. 14s.)

[2] *The Effect of Diet on Endurance.* Based on an experiment in thorough mastication, with nine healthy students at Yale University. January to June, 1906. By Irving Fisher, Ph.D., Professor of Political Economy at Yale University. Newhaven, Connecticut. 1907. *The Influence of Flesh Eating on Endurance.* By Irving Fisher, Professor of Political Economy at Yale University.

THE SURGERY OF THE LIVER.

Professors Terrier and Auvray have issued a second volume of their studies on the surgery of the liver and bile passages.[3] The first was devoted to injuries and tumours of the liver and movable liver; the present deals with hydatid disease, hepatic suppurations, tuberculosis, and actinomycosis. All of these subjects are treated on the same plan. First a short historical review is given, and this is followed by a study of the pathological anatomy and symptoms of each affection; then the surgical treatment is discussed, the different operative measures are given in detail, and the results obtained are set forth. Each chapter also contains a bibliography. Hydatid disease of the common type is the subject of the first chapter, and the exhaustiveness with which it is discussed may be gathered from the fact that the chapter occupies 191 pages. The greater part is occupied with descriptions of the various operations. The discussion of their relative values is of great interest; the authors consider enucleation and extirpation only exceptionally practicable, and finally conclude that evacuation, followed by suture and reduction without drainage, is the method of choice. The advantages of this plan over marsupialization are obvious, and the authors are able to show that it has the support of most surgeons whose experience of hydatid cyst is large and recent. A special chapter is devoted to that form of echinococcus infection which takes the form of multiple alveolar cysts of the liver, and hepatic resection beyond the limits of the disease is held to be the only satisfactory surgical procedure. Chapter III is on hepatic suppurations. The etiology, development, and clinical course of the various types of liver abscess are described, but the chief interest again lies in the discussion of methods of surgical treatment. The abdominal route is first considered, and the method of fixation of the liver by suture and opening the abscess at one sitting is selected as the most satisfactory. Following this is an account of the technique of Knowsley Thornton's method for abscesses on the convex surface by the transpleural route. French surgeons, it is stated, have always favoured the plan of free incisions, while English surgeons, and particularly the surgeons of the Shanghai Hospital, have preferred methods the principle of which is to make as small an opening as possible compatible with the evacuation of the pus. We do not think that these latter methods are particularly in favour with English surgeons to-day, though they are no doubt practised when the necessity for relief is urgent, and when the surgical equipment available is not of the best. Medical men in colonial and foreign service must often find themselves in the presence of these conditions, and therefore these methods must continue to have a distinct place. Chapters on tuberculous abscess and on actinomycosis complete the volume. The book as a whole is a type of publication particularly in favour with French surgeons of late years, not merely a textbook, but a critical and exhaustive study, based partly on personal experience, and partly on a wide acquaintance with progress elsewhere. It is a valuable contribution to the literature of surgery of the liver, and one to be added to all surgical libraries.

TREATMENT OF LARYNGEAL TUBERCULOSIS.

The first portion of the essay on the treatment of laryngeal tuberculosis, particularly in regard to galvano-cautery, puncture, and operation from the outside, by Dr. Grünwald of Munich,[4] is occupied with a consideration of some of the pathological conditions, both local and general, met with in tuberculosis of the larynx, together with a discussion of the therapeutic requirements. This is followed by a few pages intended to show how the galvano-caustic treatment in many cases fulfils these requirements, and to lay down special indications for endolaryngeal treatment generally. The last and greater part of the paper is concerned with the treatment by various forms of external operation. While recognizing the force of the *a priori* arguments put forward by Dr. Grünwald in favour of the use of the galvano-cautery in certain varieties of laryngeal tuberculosis, we cannot but regret that he has not included in his paper any detailed account of the results which he has obtained by this method. The opinion of many, perhaps of the majority, of the authorities in this country does not, we believe, differ essentially from that expressed in a recently published textbook, that the use of the galvano-cautery for the destruction of tuberculous tumours "offers no advantages over removal with forceps, and is liable to be followed by much inflammation and oedema." That a violent and dangerous reaction may follow an attempt to *eradicate* tuberculous masses by means of the galvano-cautery is undisputed, but Dr. Grünwald and others maintain that in suitable cases no such result is to be feared from even deep insertion of a narrow cautery point into the tuberculous tissue. The author claims that this method possesses two very pronounced advantages. In the first place, the fibrotic process to which it gives rise, extends both in the depths and laterally far beyond the part actually destroyed; and, secondly, no large unprotected raw surface is exposed to the risk of fresh infection. Additional favourable features are that the least possible damage is done to important structures, and the general health does not suffer. The true value of the galvano-caustic treatment can scarcely be estimated until it has been given a more extended trial; and this, we believe, it should receive.

In his consideration of the treatment by means of external operative measures the author undertakes a somewhat elaborate analysis of the results hitherto obtained. He mentions 93 cases subjected to some form of external operation since the year 1870; five of these are his own, and of these three have not previously been published. That such a combination of circumstances may occur as to make laryngo-fissure or some other external operation advisable must be admitted, but, even on Dr. Grünwald's own showing, such cases must be very exceptional. We note that Dr. Grünwald prefers a local to a general anaesthetic for the performance of laryngo-fissure, and advises against tracheotomy in association with this operation.

PRACTICAL THERAPEUTICS.

Although on its title page the *Clinique Thérapeutique du Praticien*[5] bears the name of Professor Huchard as well as that of Dr. Fiessinger, it is explained in the preface that all the articles have been written by the latter, the real contribution of the former to the book being that the methods which Dr. Fiessinger describes are those of Professor Huchard. Most of the articles have already been published in the *Journal des Praticiens*, of which Dr. Fiessinger is editor. Certainly nothing could be better than the notion of giving to the profession the details of methods followed by an accomplished and experienced practitioner like Professor Huchard, and the book contains many suggestions which are worth knowing. The first chapter is perhaps the best, as it deals with the methods to be employed in conditions of urgency, discussing such subjects as bleeding, purging, diet, lumbar puncture, subcutaneous injections of serum, of caffeine, of morphine, of ether, and of camphorated oil; of washing the stomach it is said that it has "become nowadays what it ought to have remained from the beginning, an emergency remedy." The chapter closes with a section on the rectal administration of drugs. Under diet it is pointed out that the restriction of food in the treatment of infectious diseases has been taught since the time of Hippocrates, and the disposition in the present day to depart from it in forgetfulness of the facts that a spare diet diminishes the work of elimination, and augments the resistance of the organism to microbial toxins is deprecated. Experiments upon animals have shown that the inoculation of a toxin is followed by more rapid symptoms when food is given, an experiment which might well be called superfluous, but for the constant demand for new "experimental" evidence in support of the most time-honoured clinical doctrines. In the dieting of cases of appendicitis water or bouillon is recommended and milk is rejected; hot water, it is advised, should be given at the commencement of all acute diseases, for from one to four days, while salt should be withheld; for example, beef-tea should not contain salt. In the treatment of

[3] *Chirurgie du Foie et des Voies Biliaires.* [Surgery of the Liver and Bile Passages.] Par F. Terrier et M. Auvray. Paris: Félix Alcan. 1907. (Roy. 8vo, pp. 367; 47 figures Fr.12.)

[4] *Die Therapie der Kehlkopftuberculose mit besonderer Rücksicht auf den galvanokaustischen Tiefenstich und äussere Eingriffe.* Dr. Ludwig Grünwald. München: J. F. Lehmann's Verlag. 1907. (Demy 8vo, pp. 147. M. 5.)

[5] *Clinique Thérapeutique du Praticien.* Par H. Huchard et Ch. Fiessinger. Paris: A. Maloine. 1907. (Demy 8vo, pp. 497.)

cirrhosis of the liver the Talma-Morison operation is not recommended. A wide sphere of usefulness for lumbar puncture is recognized, for example, in tinnitus, aural vertigo, and Ménière's disease, and the headaches of chlorosis and uraemia. Hypodermic injections of artificial serum should be used in moderate quantities, not exceeding 100 c.cm., solution of sodium sulphate being preferable to sodium chloride, 10 parts per 1,000; they are valuable in the gastro-enteritis of infancy, in cholera, and enteric fever with haemorrhages, wherever in fact there is considerable loss of fluid from the body; they are useless or harmful in acute diseases, dangerous in renal and cardiac affections, and of doubtful value in such intoxications as eclampsia and uraemia. The injection of caffeine is praised as a cardiac stimulant where immediate action is required; the formula is caffeine 2.50 grams (37.5 grains); sodium benzoate, 3 grams (45 grains); distilled water, 10 c.cm. (150 minims); and the dose is from 0.25 to 0.50 gram (3.75 to 7.5 grains) for an adult, and 0.1 to 0.15 (1½ to 2 grains) for a child. Lumbago is a painful disease, but not one that English patients would like treated by the actual cautery (quelques pointes de feu). The formula for the turpentine baths, called at Bath "pine baths" is equal parts (100 c.cm.) of soft soap and turpentine to be mixed in a large bath in which the patient remains for ten minutes. As prevention is better than cure, it is well to know that influenza may be warded off by the regular use of a nasal spray of menthol and oil, and a gargle of thymol. Exercise is said to favour the elimination of the alkaloids of digitalis and so to prevent the risk of poisonous symptoms from their accumulation in the body; therefore there is greater need of caution when the remedy is being taken by patients who are kept at rest. The book is sadly in need of a good index.

In his lectures on practical therapeutics,[6] Professor RAUZIER of Montpellier discusses the treatment of commonplace disorders in a commonplace manner, for he describes a disease by name only and gives its treatment in a series of paragraphs, which set out remedies of the latest fashion, including *x* rays, high-frequency currents, and so forth. Scientific treatment should be based upon an accurate definition of the pathological condition present, the structural or functional change upon which the symptoms depend, and the causes which have brought these conditions about, their duration, and their removability or the reverse. Professor Rauzier deals with a comparatively small number of conditions—haemoptysis, acute and chronic bronchitis, capillary bronchitis, atonic dyspepsia, worms, mucous colitis, acute rheumatism, malarial fever, scarlatina, epilepsy, migraine, and syphilis. He enumerates under the description of atonic dyspepsia symptoms that are not "atonic," and attributes the condition, amongst other things, to the abuse of alcohol and to defective teeth, thereby suggesting that his conception of "atony" does not exclude inflammatory conditions. We should prefer to restrict the term to a condition depending upon debility and characterized by depression of the motor and chemical functions of the stomach; it may be complicated by or associated with inflammatory changes, yet may also occur alone, and often may remain after other lesions have been cured. Its treatment should be kept separate from that of its complications, but this Dr. Rauzier has not done. Carlsbad is generally beneficial for a patient suffering from chronic gastritis, but is harmful to the subject of atonic dyspepsia, and conversely high-frequency currents, though possibly useful in functional atony, can do little good in gastritis. The dose of sodium salicylate recommended in acute rheumatism is much smaller than that which our experience has justified. nor do we share our author's dread of its depressing effects upon the heart, which is attributable to poisonous by-products that should be got rid of by greater care in its manufacture, and are entirely absent from the natural salt prepared from oil of winter-green. A dose of 10 grains, may be ordered every hour until the pain is relieved, and every two hours for the remainder of the first twenty-four hours, so that as a rule the patient gets about 160 grains during the first day, but according to Dr. Rauzier this is an excessive amount; he says 45 to 60 grains are sufficient, and he gives a prescription for half a gram (7½ grains) every three hours. Acute rheumatism, like other diseases, may have its local peculiarities, and possibly in France the common type of case yields to small doses, but there is no ground for suggesting that the administration of larger doses is attended with danger. In the treatment of migraine he pays some attention to diet, but says nothing of the value of the minced meat and hot water regimen which is so frequently successful when a non-nitrogenous diet fails; he puts antipyrin first among drugs, although combinations of caffeine and phenacetin or acetanilide have proved equally successful.

[6] *Leçons de Thérapeutique Pratique* Par G. Rauzier. Montpellier: Goulet et Cie. 1907. (Demy 8vo, pp. 333. Fr.4.50)

OTOLOGY.

PROFESSOR BEZOLD'S writings are so well known and so highly appreciated that the announcement of the publication of his textbook of otology[7] will be a source of gratification both to students and professors of this branch of medical science and art. The work is founded mainly on his own observations and deductions, and is, therefore, eminently personal. This makes his teaching highly impressive, and though in some details it may differ from that of some of his younger contemporaries, his views on the essentials of otology will meet with general acceptance, and the reasons he gives for the faith that is in him will in most cases be found convincing. It is interesting to note the appreciation of the priority of Newton Pitt's statistical and analytical report of the 57 cases of death resulting from aural suppuration in 9,000 consecutive autopsies made at Guy's Hospital. Among numerous experimental observations Bezold draws special attention to the fact that the movements of a fluid in a manometer fixed in the labyrinth are four or five times greater when changes of pneumatic pressure are effected through the Eustachian tube (acting on the membrane of the round window) than when through the external meatus (on the stapes in the fenestra ovalis) (p. 18). The physiological action of the muscles of the Eustachian tubes is well described and illustrated (p. 26), as also the possible compression of the calibre of the tube apart from its orifice, by an enlarged pharyngeal tonsil (p. 151). Several hints regarding inflation through the tube, which are not usually described, will be found valuable (p. 36). Tuning-fork tests receive considerable attention, but the author's description of the curve of decrement of vibration would seem to suggest that he considers the curves of all tuning-forks to be the same, a point on which other observers differ from him (p. 71). He asserts that perforation in Shrapnell's membrane does not occur as the result of acute inflammation (p. 187), but as the result of long-standing Eustachian obstruction (p. 220). He considers that diabetes is no contraindication for opening the mastoid cells (p. 204), and that in tuberculous disease of the petrous bone operation is often of the greatest benefit (p. 236). We observed no reference to Gelle's test in connexion with the diagnosis of oto-sclerosis (p. 278). Possibly he holds that its diagnostic value is invalidated by his observations on the fenestra rotunda (p. 18). A full account of the major surgical procedures such as the radical mastoid operation, operations on the sinuses and bulb and the evacuation of cerebral abscesses, is outside the scope of Professor Bezold's book, and for an account of injuries to the ear he refers the student to Passow's recent monograph on the subject. The lectures on diseases of the inner ear, which are well up to date, have been mainly contributed by Professor Siebenmann of Bâle, and no better authority could be wished for. The book concludes with a lecture on deaf-mutism, a subject to which Professor Bezold has given much attention, especially in the light of investigations with his "continuous tone series." All who read German will do well to procure this book.

The fourth edition of Dr. BACON'S *Manual of Otology*[8] has been considerably enlarged and brought up to date. The number of illustrations has been increased, and Dr. Clarence Blake has contributed a thoughtful introduction. Dr. Bacon is a cautious and experienced aural surgeon, and his book may be safely recommended as a trustworthy guide to beginners. The sections on otitis and its mastoid

[7] *Lehrbuch der Ohrenheilkunde für Aerzte und Studierende* [Textbook of Otology for Practitioners and Students]. In thirty-two lectures. By Dr. Friedrich Bezold, Professor of Otology in the University of Munich. Wiesbaden: J. Bergmann, and Glasgow: F. Bauermeister. 1906. (Roy. 8vo, pp. 346, with 75 illustrations in the text and a plate. 9s.)

[8] *A Manual of Otology*, by G. Bacon, B.A., M.D., pp. 485; 132 illustrations. London: H. Kimpton. (12s. net.)

and cerebral complications show the author at his best, and evidently quite at home. This is more than can be said of the chapters on associated diseases of the nose and throat. The descriptions are necessarily brief, but the methods described are by no means the best, and constitute rather a serious blemish in an otherwise excellent book.

OPHTHALMOLOGY.

In 1904 Grimsdale wrote a small book entitled, *The Chief Operations of Ophthalmic Surgery*, essentially intended as a guide to eye operations as applied to animals' eyes and the cadaver. A volume, *A Textbook of Ophthalmic Surgery*,[9] appears under the joint authorship of Grimsdale and Brewerton. It is very much larger that its predecessor, and contains numerous illustrations, all taken from drawings, which, though not perhaps as artistic as they might be, yet serve very well to illustrate the points under consideration. The description of each operation is preceded by a discussion of the conditions for which it is required, but in no case is this unduly long. It is difficult for ophthalmic surgeons to remember the names and exact details of the numerous operations which are from time to time described, more especially on the lids, and it is not always easy or convenient to refer to the original article in which they appeared. This difficulty is almost entirely removed by this book, for not only are all the really useful operations well and clearly described, but the reference to the paper or periodical in which they first appeared is given at the end of each chapter. There is nothing particularly original in the volume, but that does not detract from its value as a book of reference, and we shall be surprised if it does not take its place as a standard English work on ophthalmic surgery.

A large and elaborately got-up book on *Prevalent Diseases of the Eye* has been brought out by Dr. Samuel Theobald, of the Johns Hopkins Hospital.[10] It appeared to the author that most textbooks, though written ostensibly for the general practitioner and student, are really more suitable for the specialist, and so he has set himself to describe carefully the conditions which might with certainty be treated by the practitioner without seeking special assistance. After a few preliminary remarks, the methods of examining the eye in general use are described, while the second chapter contains general observations upon treatment of ocular diseases, all given in a very readable and interesting form. Then comes a systematic description of the diseases of the eye. Such structures as the conjunctiva and cornea are rather fully discussed, but the retina and optic nerve are more lightly touched upon, as these are considered to belong to the province of the ophthalmic surgeon. An excellent description is given of glaucoma, and every care is taken to describe the various signs and symptoms on which a diagnosis must rest, though warning is given that, unless under urgent circumstances, it is unwise for any one not accustomed to eye operations to attempt to perform the iridectomy required in such cases. The errors of refraction and accommodation are well described, and a final chapter is devoted to injuries of the eye. In an appendix prescriptions are given, accompanied by indications for their use. The book is beautifully illustrated both with coloured drawings and also with black and white blocks, and it certainly well fulfils the purpose for which it has been written.

Yet another book appears to swell the list of those devoted to retinoscopy. It is written by Dr. Mark D. Stevenson, of Ohio, and, perhaps to give more air of originality to a threadbare subject, he calls it *Photoscopy*.[11] It looks at first sight rather a big book, but it is well printed on thick paper and with rather large type, and the text proper consists of only 95 pages. Many of the expressions used are difficult to understand, and we doubt much whether even Americans would care to own some of them. We wonder, for instance, whether the President of the United States would acknowledge the parentage of such a word as "diagnosticated," which occurs on page 18. On page 27 we are told that "small closets and sweat boxes are not conducive to good work," and therefore the author recommends that the dark room should be as large as possible. A curious sentence, at the meaning of which one can only guess, occurs on page 53: "The writer has an assistant place the required lenses in the trial frame as directed." On page 56 he directs what is to be done in order to obtain a correct retinoscopic observation when "an image of a hyaloid artery, another vessel or vessels, masses of connective tissue sometimes even in the vitreous, or the nerve ending, may be seen." One would have thought it immaterial what the refraction was if the vitreous were full of "connective tissue." The best part of the book is its short historic survey at the end, but we suspect that in spite of this it will not prove a serious competitor with other well known books on the subject.

[9] *A Textbook of Ophthalmic Operations.* By Harold Grimsdale, M.B., F.R.C.S., and Elmore Brewerton, F.R.C.S. London: Kegan Paul, Trench, Trübner and Co., Limited. 1907. (Demy 8vo, pp. 349. 12s.)

[10] *Prevalent Diseases of the Eye.* By Samuel Theobald, M.D. Philadelphia and London: W. B. Saunders Company. 1906. (Demy 8vo, pp. 551; 19s.)

[11] *Photoscopy (Skiascopy or Retinoscopy).* By Mark D. Stevenson, M.D. Philadelphia and London: W. B. Saunders Company. 1906. (Demy 8vo, pp. 126. 5s.)

MEDICAL AND SURGICAL APPLIANCES.

Lyxhayr: A New Bedding Material.

We have received a sample of a new material for stuffing mattresses, etc., which is supplied under the above name by Lyxhayr, Limited, Grove Mills, Mitcham. There are obvious disadvantages in the use of animal material, such as horsehair or cowhair, wool, flocks, or feathers, and it is claimed that the new material is not attacked by vermin and insects. It is a light, springy material, not unlike horsehair. A portion was sterilized by heating in steam at 212° F. for twenty minutes, and then baking for two hours in a water oven, and after this it showed no loss of springiness or other change. Microscopical examination after suitable treatment showed it to consist of vegetable fibre.

"Securitas" Tourniquet.

Messrs. S. Maw, Son, and Sons (7 to 12, Aldersgate Street, E.C.) have introduced a new tourniquet, to which they have given the name of the "Securitas." The constricting material is the usual thick-walled india-rubber tubing, which passes through a metal piece furnished with two hooks; each end of the band, after passing round the limb, is thus secured independently of the other, and the tension of one can be regulated without altering the other. The tourniquet is very simple of application and adjustment; a series of trials showed that if it is to remain in position for any considerable time the tubing must be knotted beyond the hook holding it.

"Glaseptic" Spray and Nebulizer.

Messrs. Parke, Davis and Co (111, Queen Victoria Street, E.C.) have introduced a new all-glass spray which possesses certain advantages. The whole apparatus, except the pneumatic ball and tube, is made in one piece, and entirely of glass; solutions cannot therefore become contaminated by contact with metal or vulcanite, the whole apparatus can be cleaned and sterilized by boiling or immersion in an appropriate liquid, and the freedom of every part from foreign matter can be readily seen. The spray is intended for alcoholic or aqueous solutions, or for oils of low specific gravity, and discharges such liquids in a finely divided form. The firm are also the makers of the "Glaseptic" nebulizer; this, like the spray, is entirely of glass, and made in one piece; with oily liquids this gives an extremely fine nebula, which it discharges in an upward direction for use in the nose, while an additional tube gives it a horizontal direction, if required, for application to the throat.

Official statistics recently published show that in the whole of Austria there are 254 hospitals, with a total of 37,610 beds. These are distributed as follows: Lower Austria, 32, with 7,395 beds; Upper Austria, 13, with 1,383 beds; Salzburg, 2 hospitals, with 414 beds; Styria, 16 hospitals, with 3,265 beds; Carinthia, 3 hospitals, with 890 beds; Carinola, 2 hospitals, with 506 beds; Coastland, 6 hospitals, with 2,328 beds; Tyrol, 22 hospitals, with 3,071 beds; Bohemia, 84 hospitals, with 8,960 beds; Moravia, 19 hospitals, with 2,766 beds; Silesia, 12 hospitals, with 961 beds; Galicia, 35 hospitals, with 4,248 beds; Bukowina, 4 hospitals, with 846 beds; Dalmatia, 4 hospitals, with 579 beds. The number of public lying-in institutions is 18, with 2,017 beds; that of public lunatic asylums is 36, with 16,434 beds.

FOUNDER'S DAY AT EPSOM COLLEGE.

A large company assembled at Epsom College on July 27th to celebrate Founder's Day, with distribution of prizes to the boys and the dedication of the Jubilee Memorial Window. At choral evensong in the College Chapel Mr. Henry Morris, Treasurer of Epsom College, was requested by the Head Master, Dr. T. N. H. Smith-Pearse, to unveil the east window in the Chapel.

ADDRESS BY MR. HENRY MORRIS.

Before unveiling the window Mr. Henry Morris, P.R.C.S., Treasurer of the College, addressed the congregation as follows: "Founder's day, which annually brings us here together, is this year a special occasion, because of the Jubilee Memorial window which is now about to be unveiled, and which immediately afterwards will be dedicated with all the sacred ceremony of a religious rite. The thought of celebrating the Jubilee of the College by beautifying the chancel of our chapel by this new East window was originated, I believe, by Mrs. Smith-Pearse, and certainly she has bestowed a great deal of time and labour in accomplishing her object. The idea was that the window should be the product of an appeal made chiefly, if not exclusively, to old Epsomians, and this idea has been fairly well realized. The window itself will, I think, be regarded by all as a tribute worthy of the occasion, as a great ornament to the chapel and as a pictorial expression of the veneration and reverence suitable to the solemnity and sanctity of a house devoted to divine service. The window and the sentiment which it embodies would have delighted the spirit of the humane and warm-hearted founder of the College. As a work of art, in its conception and execution, it cannot fail to be a permanent source of gratification and satisfaction to the donors; whilst it will recall to the minds of those who examine it, and think upon it, examples in life of self-sacrifice and courage, of benevolence and fortitude, of charity and loving-kindness. May we not expect that this beautiful window will be an incentive to, and a forerunner of, the reconstruction of the body of this chapel in a size of greater dimensions, and in a style consistent with the eastern or chancel end of the chapel? May we not hope that present and future Epsomians looking upon this window will see there a witness of the fact that the old Epsomians of the pre-jubilee period came back to their Alma Mater, as it were, to erect it as an emblem of the love and gratitude they carry in their hearts towards their old school? May we not also express the hope that those here now and those who will follow in the times to come will find in the subjects which are portrayed in this window promptings to guide them rightly in their careers of life? In the words of our president, the Earl of Rosebery, which he used in an address delivered several years ago when referring to the thousands of emigrants who annually leave our shores to settle in different parts of the world, may we not express the hope that those who now and in the future come to study in this school, and to worship in this chapel with this superb window in front of them may go forth from here as a broad and bright and beneficent river of life, fertilizing as the Nile, beloved as the Ganges, and sacred as the Jordan; and that like the fabled fountain Arethusa, which, passing under the sea from Greece to Sicily, yet retained its original source in Arcadia, so the old Epsomians of the future may be able to trace back the source of their useful and honourable careers to the impressions they received at school, and to the inspirations they derived from the contemplation of such actions and motives as are illuminated in the window which I will now unveil to you?"

DISTRIBUTION OF PRIZES.

After Mr. Morris had performed the ceremony the window was dedicated by the Dean of Winchester with a special prayer. The congregation then left the chapel and immediately reassembled in the Hall of the College, where the Head Master introduced the Dean of Winchester, and called upon him to present the more important prizes. The Dean, in the course of his address, dwelt on the importance of the cultivation by boys of the habit of close observation.

After the prize-giving the cadet corps gave a display in the college grounds, and the visitors inspected the college. Amongst those present were Sir W. S. Church, Sir Constance Holman, Dr. Needham, Dr. Godson and Mr. Kiallmark.

BRITISH MEDICAL BENEVOLENT FUND.

AT the July meeting of the Committee reference was made by the Chairman to the recent death of Sir William Broadbent, the President, and a resolution was passed to express the Committee's deep regret and sympathy, and to record their sense of the invaluable services rendered by him to the Fund.

The banking account was reported to show a deficit, and it was therefore necessary, having regard to the urgent nature of the applications, to draw upon a small reserve fund created after the last special appeal. No fewer than thirty-two cases were considered, and grants amounting to £256 voted in relief, one applicant only being passed over. The sums given were in most instances smaller than usual, and much disappointment has consequently been caused. Appended is an abstract of the cases assisted.

1. Daughter, aged 62, of late M.D.St. Andrews, who practised in Devonshire. Only income an annuity of £11, and has been obliged through ill-health to give up post as companion. Voted £12.

2. Widow, aged 71, of M.R.C.S.Eng., L.R.C.P.Edin., who practised in Lancashire. Is at present penniless, but has a chance of receiving an allowance if certain unavoidable expenses can be met. Voted £20.

3. Daughter, aged 66, of late M.R.C.S., L.S.A., who practised in Wales. Has a small annuity and a little help from relatives, but means are insufficient to bear the unavoidable expenses of moving from unsuitable lodgings. Voted £2.

4. Widow, aged 61, of M.D Edin., who practised in Liverpool. No income; a small weekly allowance received from a Lancashire benevolent institution will shortly cease. Health delicate. Two children, unable to help. Voted £12.

5. Widow, aged 50, of M.B., C.M.Aberd., who practised in Fifeshire, and has recently died from phthisis after a long illness. Expects to have an income of about £20 a year and proposes to take boarders. Three children, the eldest 13. Voted £12.

6. Widow, aged 37, of M.B., C.M.Aber., who practised in Pembrokeshire. Quite unprovided for at recent death of husband. Slight help from relatives, and is endeavouring to obtain boarders. Two children, aged 9 and 7. Voted £5.

7. Widow, aged 67, of M.R.C.S.Eng., who was a surgeon in the Indian Emigration Service. No income, no children. Voted £12.

8. Widow, aged 51, of M.R.C.S., L.S.A., who practised in Lincolnshire and London. No income; a little assistance from a struggling son-in-law; children unable to help. Voted £12.

9. Widow, aged 62, of L.S.A., who practised in Derbyshire. No income; dependent on a son earning a small weekly wage. Health very indifferent. Relieved six times, £66. Voted £12.

10. Widow, aged 56, of L.R.C.P.Lond., who practised in Wales. Income £13 a year, and receives a little help from a Masonic charity. Relieved twice, £10. Voted £5.

11. Widow, aged 62, of M.R.C.S., who practised in Liverpool. Earns a few shillings a week by giving music lessons. Relieved nine times, £77. Voted £5.

12. Daughter, aged 26, of late M.D., who practised in Middlesex. Physically and mentally unable to earn a living. Relieved twice, £15. Voted £5.

13. Daughter, aged 57, of late M.R.C.S., L.S.A., who practised in Hants. Income £15 a year, and receives a little help from brothers. Failing eyesight interferes with needlework, by which applicant had supplemented her small means. Relieved twice, £12. Voted £5.

14. Daughter, aged 37, of M.D., who practised in Gloucestershire. Has been a cripple for many years, and recently has been compelled to incur some extra and quite unavoidable expenses. Relieved twice, £12. Voted £5.

15. Daughter, aged 39, of late M.D.Edin., who practised in London. No income; is a governess, but finds increasing difficulty in obtaining posts. Relieved six times, £25. Voted £5.

16. Daughter, aged 37, of late L.F.P.S.Glasg., who was a Surgeon in the Royal Navy. Is a nurse, but has been incapacitated for nearly two years, and for several months will only be allowed slight and occasional occupation. Relieved once, £12. Voted £5.

17. Widow, aged 53, of M.B.Cantab. who practised in London. No income; endeavours to support herself by washing, needlework, etc. Slight help from children, three of whom are in service. Relieved four times, £53. Voted £12.

18. Daughter, aged 55, of late M.R.C.S., L.S.A., who practised in Buckinghamshire. Income £5 a year; does a little teaching, but earnings decrease each year. Relieved six times, £68. Voted £5.

19. Widow, aged 38, of M.R.C.S., L.R.C.P., who practised in London. No income; supports herself as a working house-

keeper, but earnings are insufficient to cover unavoidable expenses for herself and two children at institutions. Voted £5.

20. Widow, aged 57, of L.S.A. who practised in Yorkshire. No income; no children; unable to get work; health indifferent. Relieved once, £5. Voted £5.

21 Widow, aged 55, of L.R.C.P., L R.C.S Edin., who practised in Staffordshire. Income less than £10 a year; slight help from a brother-in-law. Two children, aged 16 and 12. Relieved twice, £20. Voted £10.

22 Widow, aged 76, of M.R.C.S., L.S.A., who practised in Buckinghamshire. Has a small income but insufficient for the maintenance of herself and four children, three of whom are deaf and dumb, and one epileptic also. Relieved five times £40. Voted £5.

23. Widow, aged 60, of L.F.P.S.Glasg., who practised in Glasgow. Only income £10 a year from a charity. No children; broken down in health. Relieved five times, £50. Voted £10.

24. Widow, aged 67, of M.D.Aberd., M.R.C.S., who practised in London. No income; slight help from children. Relieved six times, £78. Voted £12.

25. Widow, aged 61, of L.R.C.P., L F.P.S.Glasg., who practised in Sunderland. Only income a small annuity. Children unable to help. Relieved ten times, £106 Voted £10.

26. Widow, aged 63, of L.R.C.S., L.R C P.Edin., who practised in London. No income; dependent on earnings from needlework. Relieved once, £10. Voted £10.

27. Daughter, aged 61, of late L.S A., who practised in Sunderland. Has a small annuity and is obliged to help an invalid sister. Relieved eight times, £72. Voted £10.

28. Daughter, aged 63, of late L S.A., who practised in London. No income; receives a home in exchange for services and a small payment. Relieved once, £10. Voted £10.

29. Daughters, aged 70 and 66, of late L R C.P., L.S A.Edin., who practised in Clackmannan. Have maintained themselves for many years since father's death, but now dependent on small pensions amounting to £35 a year. Relieved once, £18. Voted £10.

30 Widow, aged 46, of L.R.C.P., L R.C.S Edin., who practised in Sheffield. No income: dependent on a son earning small wages as a labourer. Relieved eleven times, £121. Voted £10.

LITERARY NOTES.

The *Birmingham Daily Post* makes the tragic death of Sir Alfred Billson in the House of Commons the occasion for an enumeration of the medical men who are, or have in recent years been, members of the House of Commons. Our contemporary goes on to say: "But none among them are quite so famous in history as Addington (afterwards Lord Sidmouth), who was Prime Minister just over a century since, and whom Canning immortalized both in prose and verse attacks as 'the Doctor.'" This recalls the story of the Oxford undergraduate who, in a Divinity examination, having answered some questions relative to Saul with unexpected success, volunteered the further information that the King of Israel was also called "Paul"! Henry Addington, afterwards Viscount Sidmouth, the Prime Minister, was not a member of the medical profession. His father, Anthony Addington, was, however, a well-known London physician in the middle of the eighteenth century, and among other distinguished patients had the care of the health of Lord Chatham, with whom he was on terms of intimate friendship. Such was Chatham's confidence in his doctor that, during a severe illness which he suffered in 1767, he declined to accept a suggestion from George the Third that another physician should be called in to consult with Addington. The Opposition professed to see in this a proof that Chatham was insane! The son was nicknamed "The Doctor" by his political enemies in reference to his father's profession, and on one occasion, when a division in the Lords had gone against him, Sheridan caused great laughter by leaning over the table in the House of Commons and saying, with a slight alteration of the words of Macbeth, "Doctor, the thanes fly from thee!"

We learn from *Science* that a society has been formed in Boston, Massachusetts, and incorporated by the laws of the State, called the Scientific Temperance Federation. This society is a bureau for the collection of every pamphlet, book and paper relating to any possible phase of this question. These are to be put on file and tabulated so as to be available for students and writers. A trained specialist will be in charge to furnish abstracts and data, or copies of the papers on file. The society will charge a small membership fee, and will be endowed so that its work will be permanent. Already a nucleus has been made and the work begun. Dr. Crothers, of Hartford, Connecticut, who is well known as a writer on inebriety, is chairman of the Board of Directors. Miss C. F. Stoddard, 23, Trull Street, Boston, Massachusetts, is the secretary, to whom all inquiries should be addressed.

In her recently-published *Reminiscences*, Lady Dorothy Nevill tells a story which amusingly illustrates one of the difficulties of the doctor when he has to deal with an irritable patient. She says:

I well remember his [her father, Lord Orford—the third earl] one day declaring that he felt very ill, and must at once see the doctor; but the local practitioner, being a considerable time in making his appearance, found on arriving that his patient, to all intents and purposes, was in perfect health. "As far as I can see," said he, "there is nothing the matter with your lordship." "Of course there isn't now," snapped my father. "Why the deuce didn't you come directly I sent for you, when there was? that's when a doctor is wanted. However, you have come too late, as people of your profession always do."

Another of her stories exemplifies the mania for self-drugging which prevails among people not so "whimsical" as the second Duke of Wellington:

The duke (second Duke of Wellington) was a most whimsical and amusing man. I remember once telling him that I did not feel at all well; in fact that I had been having rather a dull time, but there was nothing the matter with me. He inquired what the symptoms might be, and, as I could only allege a vague feeling of malaise, said: "Ah! I know what you want—some mixed pills. They are wonderful!" I begged him to tell me exactly what this remedy was, and where I could get it. "The easiest thing in the world," he replied; "it is the idea of a friend of mine. Whenever he comes across pills the composition of which he does not know, he puts one or two in a special box, which he labels 'mixed pills,' and these he prescribes for his friends whenever they are ailing—that is, 'bored.' They never fail; sometimes, indeed, their effects are extraordinary."

Lady Dorothy seems to think that a good many people who fancy themselves ill would be all the better for an occasional dose of "mixed pills." It is at least equally possible that they might be all the worse. Whatever we may think of the system we have no doubt that its effects are "extraordinary."

It is generally believed that Dr. James Currie, of Liverpool, the biographer of Robert Burns, was the first to use the thermometer in clinical observation. In the *France Médicale* of June 25th, however, there is a communication from M. G. Rebière, which proves that it was used at least a century and a half before Currie flourished. M. Rebière cites the following passage from a letter written on January 1st, 1632, by Jean Rey, a medical practitioner of Bugue in Périgord, to Père Mersenne, Friar Minim, of Paris:

Il y a diuersité de thermoscopes ou thermomètres à ce que ie voy, ce que vous en dittes ne peut conuenir au mien, qui n'est rien plus qu'une petite phiole ronde ayant le col fort long et deslié. Pour m'en seruir ie la mets au soleil, et par fois à la main d'un fébricitant, l'ayant tout remplie d'eau fors le col, la chaleur dilatant l'eau fait qu'elle monte: le plus et le moins m'indiquent la chaleur grande ou petite: si ie sçauois la façon et usage de celui que parlés, ie crois que la difficulté serait aisée à souldre.

[There is a variety of thermoscopes or thermometers. As far as I can see, what you say cannot apply to mine, which is nothing more than a small round phial with a very long slender neck. To use it I expose it to the sun, and sometimes apply it to the hand of a feverish patient, having filled it full of water except the neck. The heat expanding the water causes it to rise, and the greater or less height indicates to me the greater or less degree of heat. If I knew the make and manner of use of that of which you speak, I think the difficulty would be easily overcome.]

Jean Rey was born about 1583 at Bugue, a small town of the Sarat arrondissement in the Dordogne Department. After getting the degree of Master of Arts at Montauban he went to Montpellier, where in 1607 he took the degree of Bachelor in Medicine, becoming Doctor in 1609. He returned to Bugue, where he practised till his death, which took place some time after 1645. He was a man considerably before his time in scientific knowledge. Brun, an apothecary of Bergerac, having observed that tin and lead increased in weight when calcined, wrote to Rey asking for an explanation of the phenomenon. To answer the question Rey "composed, under the title of *Essays*, a volume which is in many respects a masterpiece of form, and deserves to be known as one of the intellectual productions that do honour to our nation. Indeed, in this modest little book, poorly printed at Bazas in 1630, Rey anticipates one of the most famous demonstrations of Lavoisier, and in connexion therewith sets forth plainly

and simply the fundamental theory of the weight of the air." So says Dezeimeris, quoted by M. Petit, a pharmacist who has lately issued a new edition of Rey's *Essays* with commentaries. The work is published by Hermann of Paris.

It has more than once been suggested in this JOURNAL that the best solution of the linguistic difficulty at international congresses would be a return to Latin as the common language of science. Apart from other difficulties, however, there is the difference of pronunciation. However the ancient Romans may have pronounced their language, it is certain that it was in a manner very unlike that adopted by modern Englishmen. Our pronunciation of Latin has tended to isolate us from the learned in other countries for the last three centuries. In the recent discussion on the subject started by an article by the Honorary Secretary of the Classical Association Pronunciation Committee which appeared in the *Times*, the Public Orator of Cambridge told the well-known story of an Englishman who visited Leyden in 1608 and addressed Scaliger in Latin for a quarter of an hour, when the famous scholar brought the interview to a close by apologizing for his imperfect knowledge of English! By the way, it may be mentioned that a distinguished Hungarian physician not long ago addressed Lord Lister in an English speech which had been "revised" by a professional translator of the same nationality; Lord Lister in thanking him observed that unfortunately he did not understand the Hungarian language! We do not, of course, vouch for the truth of this story, which, however, we have on good authority. In the lately issued *Recollections and Impressions* by Mrs. Sellar, widow of a late distinguished Professor of Humanity in the University of Edinburgh, there are several references to the pronunciation of Latin. Thus she tells of Lord Manor (a Scottish judge), who prided himself on never having given in to what he thought the barbarous pronunciation of Latin in England, and stuck to this even during his career at Oxford. He thought he met his reward when, on one occasion, a very eminent Norwegian clergyman came to England on ecclesiastical business, and, having "no English," Latin was the only available means of communication. When he was introduced to Lord Manor he exclaimed, "You are the first person I have met in England whose Latin was not like an unknown tongue to me!" Elsewhere, speaking of Signor Minghetti, the well-known Italian politician, whose acquaintance she and her husband made in Italy, she says:

> He said he had spoken to many English scholars on classical subjects, but whenever they quoted in the original he was quite unable to follow them, and it was as if they spoke in a strange tongue with which he was unacquainted. My husband repeated some lines from *Virgil*, with the pronunciation given in Scotland, and Signor Minghetti said he could follow and understand them quite well, the sounds of the vowels being the same; but beyond that there was the subtle difference of sound belonging to each of the foreign accents through which the Latin was interpreted.

The "subtle difference of sound belonging to each of the foreign accents through which the Latin was interpreted" applies with at least equal force to Esperanto and similar artificial languages.

THE MORTALITY OF THE FRONTIER PROVINCES OF GERMANY FROM SMALL-POX AND OTHER CAUSES.

I.—SMALL-POX MORTALITY.

IT is well known that the interior towns of the German Empire have been quite free from small-pox epidemics for a long series of years, and that the few deaths from this cause in Germany occur chiefly on or near the frontiers, especially the Russian frontier. The object of the present article is to show that the frontier towns of Germany are not behind the rest of the empire as regards sanitary conditions generally, by an examination of the official statistics of deaths from all causes at various ages; at any rate, not so far behind as to show any notable difference in the mortality-rates from other diseases than small-pox. The following table shows clearly the proportion of frontier deaths from small-pox during the recent decade, 1895 1904:

Small-pox Deaths in Prussia and Near its Frontiers During Ten Years.

Year.	German Empire.	Under Two Years.	Prussia.	Prussian Frontiers.	German Towns.	French Towns.
1895	27	11	24	11	8	984
1896... ...	10	2	8	6	2	958
1897... ...	5	3	5	3	1	107
1898	15	5	12	8	5	57
1899... ...	28	14	25	20	4	600
1900	49	15	45	26	16	1,455
1901... ...	56	25	48	36	17	675
1902... ...	15	7	14	7	4	2,200
1903... ...	20	8	14	12	11	1,859
1904... ...	25	7	17	6*	10	516

* Ten more deaths were due to Russian workmen.

There is food for thought in this table, which deserves the careful study of all who are interested in vaccination.

To begin with, the population of the empire increased from 53,000,000 to 60,000,000 during the period, thus the small-pox mortality is less than 1 per million even in the years 1900 and 1901, while the average rate is less than 0.5; in other words, less than 1 in 2,000,000 living. Before vaccination was introduced this mortality in Prussia was estimated at 40,000 annually, as announced by King (Frederick) William III of Prussia, October 31st, 1803, in a State document.

Next, we find that a large proportion of the deaths occurred before the end of the legal age for vaccination in Germany; if these are deducted the average is considerably lowered.

In the next place, nearly all the deaths occurred in one kingdom of the empire—namely, Prussia, and of these a large proportion, 135 out of 212 (63 per cent.), took place near the frontiers. Prussia touches on Russia, Austria, France, Belgium, the Netherlands, Denmark, and the Baltic Sea. Dr. Pistor, a high German authority, uses the following words[1]: "Lower Silesia . . . exposed on all sides except the north to the introduction of all the indigenous infectious diseases of Europe, from Russia and Austria Hungary." Silesia projects itself between Russian Poland and Bohemia, and of Oppeln, its south-east corner, Dr. Pistor says: "Oppeln, the south part of which has constant intercourse with Russia and Austria-Hungary, through workmen constantly passing to and fro." Small-pox still prevails in Russia to a terrible extent; it caused during five years, 1893-7, by no means exceptional years, no less than 275,502 deaths in the Russian Empire, giving a rate of 463 per million living.

Lastly, only a third of the mortality shown in the table fell on the German large towns, nearly all Prussian, and as a contrast the small-pox mortality in French large towns is shown, ranging from 116 to 60 in number. This mortality is very high, and since the population of seventy-one towns is given as 8 millions, the small-pox mortality of the whole of France must be very great. There are no statistics available; the writer went once to the Ministry of the Interior in Paris to inquire about this very point, and was told that they had statistics of the towns only. The French Government has recently enacted a law making vaccination obligatory three times during early life, but public vaccinations are not yet properly organized; vaccination is left to the midwives in the rural districts. The adult population is fairly well vaccinated, but not the young.

It is very remarkable that the Royal Commission on Vaccination paid so little attention to the small-pox statistics of other countries, and of Germany in particular. Small-pox is not a disease confined to England, and, as to the practice of vaccination, we must go abroad to see its effects when carried out in a proper manner by the State.

II.—GENERAL MORTALITY.

But we must now examine the statistics of Germany, and of the east of Prussia in particular, as to the mortality

[1] *Trans. Epidem. Soc.*, vol. xxiii.

from all causes and from certain special causes, at various ages, to show that Germany is not exceptional in other respects, but only as regards the small-pox mortality, and that the east of Germany does not differ in any essential points from the German Empire as a whole.

As regards deaths from all causes, the German Empire stands about midway amongst the nations of Europe, the average death-rate per 1,000 living during the decade 1895-1904 being in Sweden 15 8, the Netherlands 17, England and Wales 17.2, Belgium 17.8, France 20 4, Prussia 20.5, German Empire 20.8, Italy 22.7, Austria-Hungary 26, Spain 27.8 Russia 33.

("West Prussia" is not in the west of Prussia, but in the east of that country and next to East Prussia.) In the next table East and West Prussia and Posen—all bordering on Russia—are compared with the German Empire as a whole during the two years 1902 and 1903.

Deaths at Various Ages from all Causes per 1,000 Living in 1902 and 1903.

		Under 1 Year.	1–15.	15–60.	Over 60.
East Prussia	1	232	13.2	8 7	72
	2	277	13 6	8.6	69
West Prussia	1	265	11 4	8 0	67
	2	286	10 6	7.7	65
Posen	1	224	9.7	7.6	65
	2	257	11 7	7.8	66
German Empire ...	1	222	8.7	8 5	70
	2	2.9	9.1	8.4	69

Thus, the East of Germany is not exceptional as regards "all causes" of death. The mortality from different causes will now be examined, but before doing so it may be remarked that coloured statistical charts of the empire[2] plainly show that the infantile mortality rate in East Germany is slightly lower than in the rest of the empire, but in the age class 1 to 15 years is a little higher. This rate for the empire as a whole has been steadily lowered since 1885, the averages of successive quinquennia being, in the large towns, 244, 231, 220, and 208, but it is still much higher than in this country. The figures for England and Wales in 1904 and 1905 are 146 and 128 respectively, and for the towns 154 and 132; but the comparison year by year since 1885 is made in the accompanying chart:

The infantile mortality rate is over 300 in some isolated districts of the south-west and west of Germany, and is 250 in some northern parts. In England also there is a great difference between the "urban" and the rural counties—for example, in the counties of Warwick, Glamorgan, Durham, Stafford, and Lancaster the rate in the first year of life ranges between 179 and 181, while the mean rate for England and Wales is under 130 for the year 1905.

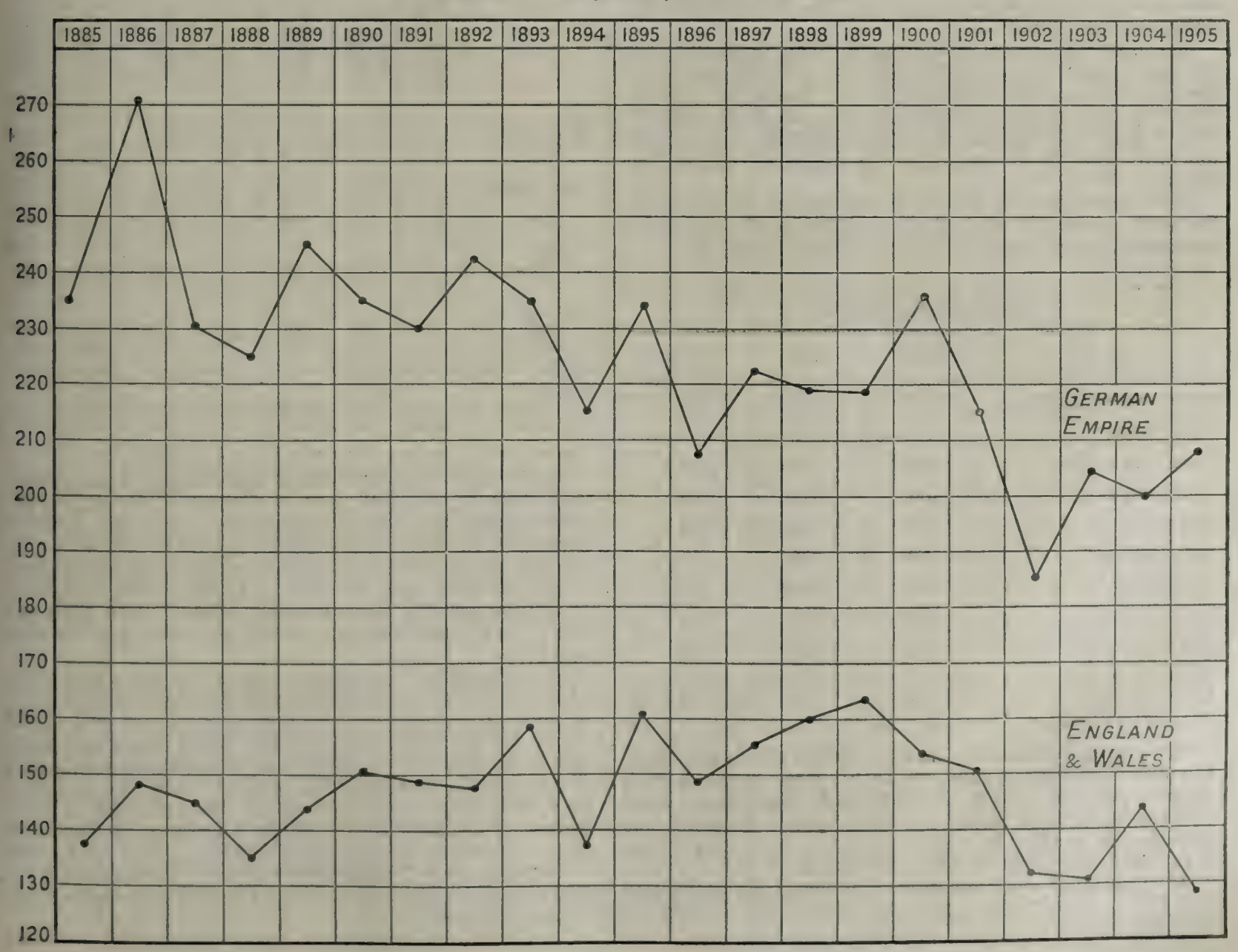
III.—Mortality from Various Causes.

Turning now to various causes of death, we begin with a table (page 272) of six large towns on the Russian frontier of Germany.

It should be stated that the enteric fever rate in England in the year 1904 was the lowest on record, and it was lower still in 1905; the average rate for the five years 1900-4 is 0 13; for the "urban" counties it is 0.15. This particular rate in the six Prussian towns mentioned compares very favourably with the English rate; it shows conclusively that they are not exceptional in this respect. Dr. Pistor, in his paper, read before the London Epidemiological

[2] Dr. Rahts, *Die Schwankungen der Saügling's-sterblichkeit*, Medizinal-statische Mittheilungen aus dem K. Gesundheitsamte, Band X, Heft 2 1906.

Chart showing the Infantile Mortality in the German Empire and in England and Wales (deaths under 1 Year of age to 1,000 Births) Year by Year from 1885 to 1905.



Vital Statistics of Six German Towns in East and West Prussia and Silesia close to the Russian Frontier, also of England and Wales, for the years 1904–5; Death-rates per 1,000 Population.

		Population.	Birth-rate.	Death-rate—all Causes.	Infantile Mortality (per 1,000 Births).	Death-rate from (a) Phthisis, (b) Tuberculosis, per 1,000 Population.	Death-rate from Enteric Fever	Diarrhoea and Gastric Catarrh Death-rate.
Breslau	1904	467,836	31.4	23.2	236	(a) 3.1	0 08	4.0
	1905	462,855	31.0	23.6	252	(b) 3.8	0 09	3.4
Königsberg	1904	201,440	29.0	21 5	197	(a) 2.0	0 57	0 8
	1905	213,704	29.3	23 0	247	(b) 1.8	0 07	3 8
Glatz	1904	15,481	25.6	20 3	222	(a) 7.2	—	0 3
	1905	15,957	25.3	19.2	226	(b) 2.9	—	3.0
Memel	1904	20,861	26.3	22.3	208	(a) 1.7	—	1 9
	1905	20,644	24.9	25.7	308	(b) 2.2	0.15	4.1
Ratibor	1904	33,078	29 1	26.8	239	(a) 3.6	0 03	2 0
	1905	32,529	30.8	23.5	241	(b) 4.6	0.03	3.4
Thorn	1904	29,162	28 6	19.3	169	(a) 1 8	0.21	0.9
	1905	31,737	25.1	19.6	217	(b) 1.9	0.06	3.4
						"Phthisis."	"Fever."	"Diarrhoea."
England and Wales	1904	33.763,434	27.9	16.2	146	1.24	0 09	0 86
	1905	34,152,977	27.2	15.2	128	—	0.09	0.59
142 Smaller Towns of England and Wales	1904	4,693,630	27.5	15.6	154	1 33*	0.10	0.90
141 Smaller Towns of England and Wales	1905	4,725,044	26 9	14.4	132	—	0 13	0.57

* Urban counties.

Society,[3] states that Lower Silesia, though so exposed to infection, stands under the average for Prussia as regards typhoid fever. The ten years average of Oppeln (in Silesia) "with its ill repute specially for the spread of infectious diseases" is only 0.11, which is not half the average of Treves (near France), and Arnsperg (in Westphalia). But its greater incidence in the latter places, and in the flat Danzig district, remains unexplained. Typhoid fever was much more prevalent formerly in Prussia, but the rate (per 1,000) has fallen during the years 1875–1897 from over 0.6 to under 0 2.

The tuberculosis-rate, including phthisis, is given, as an average of the ten years 1895–1904, for various countries of Europe in the annual summary of the Registrar-General. The rate of Germany is 2.02, for Prussia 2.04. This is higher than the English rate, 1 29, and the Italian 1.22, but lower than in Ireland, 2.15; in Austria, 3.46; and in Hungary, 3.73.

The expectation of life is as favourable in the east of Germany as in the rest of the empire, as shown by the following table.[4] Only a few of the States are selected.

Deaths in Age-class "60 Years and Upwards" per 1,000 of Deaths after Childhood.

	1899.	1898.	1897.
Mecklenburg-Schwerin	618	627	619
East Prussia	587	574	568
Posen	548	537	542
West Prussia	541	531	536
Schlesien	525	519	519
Württemberg	560	552	543
Hanover	552	541	539
Baden	521	520	517
Berlin	380	379	369
Mean of 21 States	526	519	518

The very serious fall in the expectation of life shown b the city of Berlin is common to all large cities, and is shared by the cities Bremen and Hamburg; West Prussia and Posen hold a middle place amongst the twenty-one States in this respect. The closer the population the lower is the expectation of life.

As to the chief acute infectious diseases of childhood, two tables will here be given together; one for the age-class "Under 1 year," the other for the age-class "1—15 years." Each of these tables embraces the two years 1902 and 1903, but only a few of the States of the Empire are dealt with.

Deaths from Certain Causes per 1,000 Births in Each Ye

	Age-class 0—1.			Age-class 1—15.			
	Diphtheria and Croup.	Scarlet Fever and Measles.	Whooping-cough.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping-cough.
East Prussia:							
1902	11 0	9.1	11 0	2.7	2 2	1.1	0.6
1903	12.6	5.6	11 0	3.7	1.5	0.5	0.6
West Prussia:							
1902	4.7	7 0	12.5	1 6	1.6	0 8	0 6
1903	3 9	6.8	9.5	1.3	1.3	0 8	0 4
Posen:							
1902	3 8	7.2	13 8	1.1	1 4	0 9	0.7
1903	4.2	8.8	11.8	1.4	2.7	0.6	0 5
Schlesien:							
1902	1 7	3 5	10.6	0 9	1 2	0 4	0 6
1903	1.8	4.3	10.6	1 0	1 7	0.6	0.6
Prussia:							
1902	2 1	3.6	6 9	0 9	0 8	0 6	0.4
1903	2.2	3.6	6.1	1.0	0 9	0 6	0.3

Here we see that acute infectious diseases take a rather high place in the first year of childhood during the two years given; but since, as we have seen, the infantile mortality in the Eastern States given is not above the average for Prussia, but somewhat below it, much stress cannot be laid upon this fact. If we except diphtheria (including croup), East Prussia suffered more than any other part of the Empire from this cause, both in 1902 and 1903.

It appears that "intestinal catarrh" is the chief cause of infantile mortality, accounting for very nearly a third of the total mortality in the first year of life, 30.7 of the whole in 1902, and 32.7 in 1903. This particular cause was most frequent, in the two years mentioned, in Reuss, Württemberg, and Bavaria; next to these came Saxony and Baden, but the cause was exceedingly rare in some States. Intestinal catarrh appears to have declined considerably during the decade 1892 1901. The next cause in importance is "congenital debility"; even during the first month of life it accounted for 16.7 per cent. of the infantile mortality.

This ends for the present our review of the infantile

[3] *Trans.* vol. xxiii.

[4] *Med. Statis. Mitteil. aus dem k. Gesundheitsamte*, vol. vii, p. 90.

mortality of the Eastern parts of Germany. In the first place, we see that though so exposed to infectious diseases generally and small-pox in particular, the great towns of Prussia are almost completely protected against small pox, a death from which is a rare event in any of the large towns of Germany. They are protected in a very different way from the protection conferred upon the English nation, for in Germany the operation of vaccination is repeated before the child leaves school under the Law of 1874; and this obligatory revaccination is very carefully and thoroughly enforced by the authorities, but without harshness. And secondly, the tables above given prove that the increased incidence of small-pox in the East of Prussia, as compared with the whole of Germany, is exceptional, and due to its proximity to Russia, because the general mortality and the mortalities from the chief separate causes are, if we leave out croup, not exceptional.

ADVANCES IN OBSTETRICS.

In a lecture delivered before the practitioners in Marburg, Professor E. Opitz[1] details some of the advances achieved in the practice of midwifery, and shows the results of these innovations.

From a theoretical point of view our knowledge of the mechanism of parturition has been advanced by the work of Sellheim, who has enlightened us on the subject of the rotation of the fetal head during a normal birth. In order to understand this it is necessary to regard the fetus as a cylinder, which is flexible to varying degrees in various directions. The neck, for instance, can be bent backwards quite easily, it is less easily bent laterally, and least easily of all forwards. The exact flexion tendency of the fetus in its various positions has been carefully studied. Sellheim distinguishes a "deflexion tendency" and a "flexion tendency." Now, if one places a cylinder which is more easily bent in one than in another direction into a tube, it will pass through without rotation so long as the tube is straight; but if the tube is bent, the rotation of the cylinder will take place until the surface which flexes most readily lies towards the concavity of the tube. This applies to the fetus in the parturient canal. Professor Opitz applies Sellheim's work to the complete mechanism of normal labour, and compiles an interesting page in obstetrics.

In discussing the protection of the lying-in patient against infection, Professor Opitz dealt first with the retained blood clot frequently deposited in the posterior portion of the vagina. Infection of this clot leads to a number of mild cases of fever, and it has been found that, by removing the clot, the percentage of febrile puerperal disturbances can be reduced by 5.6 per cent. Opitz, however, says that only if one is quite sure of asepsis is it worth while to remove the clot, for otherwise the procedure may be actually dangerous. Practically all the more severe forms of infection are caused by introducing bacteria into the genital canal from without, although it has been shown that a puerperal infection may be caused by the bacteria of the patient's genitals. The result of this in practice is that irrigations with aseptics before the partus are unnecessary. The bacteria in the genital canal are practically harmless, but those on the skin immediately outside the vulva are highly virulent. Everything, therefore, should be done to lessen the risk of introducing these organisms by thorough washing of the parts, and when possible removing the hair. But, even when this is done, the parts are not rendered aseptic, and it is therefore wise to examine as seldom as possible, and in introducing the finger to be careful not to touch the surrounding skin.

Disinfection of the hands forms a very important subject. Opitz believes that Ahlfeld's method of hot water-alcohol yields safe results provided that it is properly carried out. Gloves are not to be recommended for ordinary midwifery, but it is wise to carry a pair of sterile india-rubber gloves in the midwifery bag for use in urgent cases, when there is no time to disinfect thoroughly.

The treatment of contracted pelvis comes next. The chief advances in recent times depend on the safer uses of Caesarean section, symphysiotomy, and hebotomy. When the true conjugate is less than 6 cm. (2⅓ in.), the fetus, even after embryotomy, cannot be delivered, and therefore the only possible method is Caesarean section. Dealing with lesser degrees of contraction and only with the more common forms of contracted pelvis, he says that a great deal depends on whether the doctor discovers the pelvic deformity during the pregnancy or only when he is called to attend the birth. The only external measurements of value are the distances between the spines and the crests of the ilium. When the distance between the spines is equal or greater than between the crests, it is safe to conclude that marked rachitic changes in the pelvic bones are present. Then internal measurements must be made, and the ordinary practitioner will usually derive all the necessary knowledge from the measurement of the diagonal conjugate. The true conjugate will be about 1 in. less, but of course the thickness of the parts produce considerable variations. In lying-in hospitals and clinics pelvic measuring instruments render it possible to make very exact determinations. The size of the fetal head must be approximately gauged. When the true conjugate in primiparae is not below 7½ cm. (about 3 in) in simple flattened pelves, or 8 cm. (about 3⅛ in.) in generally-contracted pelves, he strongly advises no interference not specially called for by the course of the labour. In multiparae experience tells what that particular pelvis and that particular uterus can do. But at times one is surprised to find that a birth can be completed spontaneously after a large number of previous pregnancies have been terminated by operative deliveries of dead children. The next question to be decided is whether to advise the induction of premature labour or wait until term and then attempt to save the child and mother by means of some operation. Although the value of premature delivery is not certain, excellent results have been obtained by it. Opitz himself believes that for severe degrees of contraction, the induction of premature labour is not to be advised, and only when the true conjugate measures between 8 and 10 cm. will good be done by using it at times. The best period is the thirty-sixth week. The induction is carried out most safely and quickly by means of the dilator or Bossi's instruments, and when the practitioner cannot be with the patient the whole time, best by puncturing the membranes or by the bougie. He gives many practical details of all the methods. One warning is emphasized—never to attempt it unless one is quite sure of asepsis. If the labour has been induced by the bag, it is necessary to determine whether the head has engaged at the brim as soon as the instrument has been expressed. If not, and the child is quite lively, it is advisable to puncture the membranes, turn, and deliver at once. When the membranes rupture early, and the head engages well, good pains should be waited for, and experience shows that the delivery of a live child, perhaps with the help of forceps, will usually follow.

He then considers matters at full term. Here the choice is between prophylactic version, high forceps operation, perforation of the living child, division of the pelvis, and Caesarean section. He speaks strongly against prophylactic version, save in cases of general contraction of not high degree, when the cervix is fully dilated and the membranes are unruptured. Usually these favourable conditions are not present. If the head does not engage it is worth while attempting to press it into the pelvis, a manœuvre which not infrequently succeeds, especially when an anaesthetic is used. Failing this, a very cautious trial may be made with the high forceps operation, but only if the dangers of the procedure are realized and the operator has great skill. Axis traction is much to be preferred to ordinary traction. A free movable head must never be subjected to the forceps. Waiting is much to be advised, but one must not wait too long. After the head has entered the pelvis, there is usually urgency to proceed rapidly in the interests of the child, and when signs of asphyxia are present forceps should be used, and a free incision through the perineum in primiparae will materially shorten the period of pressure. Next, if the head will not engage, the condition of the mother may become endangered, and then the fetal head must be perforated. Opitz has never had to do this, but he realizes that occasionally it may be necessary. The remaining alternatives are division of the pelvis (symphysiotomy, hebotomy) or Caesarean section. These operations have very high mortalities when performed under these circumstances. The matter is different when the patient is admitted into

[1] *Deut. med. Woch.*, Nos. 32, 33, 34, 1905.

hospital before the beginning of labour. When the patient has already been examined per vaginam, and especially when the membranes have ruptured, Caesarean section means almost certain death for the mother. Hebotomy, that is, division of the pubes at the side of the symphysis, gives better results than symphysiotomy, and often allows of a safe delivery of the child. If this operation be selected, the child must be extracted rapidly when there is urgency by forceps or by version. Save under exceptional circumstances, the operation should not be undertaken by the practitioner in the patient's home. First, he will rarely have had sufficient practice to justify the operation; secondly, the want of skilled assistance, the want of good light, and so on, will render it more difficult than necessary.

When the soft parts offer a resistance to delivery, and there is urgency, it is justifiable to perform vaginal Caesarean section, to dilate by Bossi's method, and incise the perineum freely.

The urgency may be due to eclampsia. There is no doubt that the cause of this is a poison originating in the placenta. The sooner the fetus and placenta are got rid of the better for the mother. Bossi's dilators should only be used if the danger of the production of tears is appreciated and if they can easily be repaired should they occur. Vaginal Caesarean section is far to be preferred, but can only be carried out in hospital. Otherwise, the practitioner must rely on Champetier de Ribes's bag. Blood-letting and injections of saline solution beneath the skin should be employed after the child has been delivered. Narcotics, chloroform, and sudorifics should not be used.

Lastly, Opitz deals with placenta praevia. Combined version, bringing down a leg and leaving the matters to themselves, certainly saves many mothers, but is not free from dangers. The dilating bag has one great disadvantage—namely, that after the labour has set in and the bag has been expressed, haemorrhage may recur very violently, and end in the death of the mother. But either of these methods may be used, and the physician will have to watch matters closely, and be prepared to meet eventualities if they arise. Vaginal Caesarean section is said to offer very favourable results in placenta praevia. Finally, as soon as the fetus is delivered the placenta must be immediately expressed, which, as a rule, is quite easy. The risk of infection in these cases must never be forgotten.

THE INHERITANCE OF PULMONARY TUBERCULOSIS.

PROFESSOR KARL PEARSON'S new memoir on the inheritance of pulmonary consumption affords an instance of the value for medical statisticians of the biometric methods, to which we recently called attention.[1]

Few persons leading an active life can expect under ordinary urban conditions to escape the chance of infection, and it therefore becomes important to ascertain whether increased susceptibility to tuberculosis runs in families. As a general rule data bearing on this point are unreliable, since, although the number of a patient's relatives known to have suffered from tuberculous disease is usually given, no record of the total number of relatives in each generation is available.

Dr. W. C. Rivers, of Crossley Sanatorium, Frodsham, is heartily to be congratulated on the scientific zeal and public spirit which have led him to obtain and forward to Professor Pearson very full records of 383 stocks in which cases of pulmonary tuberculosis had occurred. In these returns the total number of brothers and sisters was recorded, the position of the subject in the family, and his or her age at the apparent onset of the disease. Particulars are also given as to parents, grandparents, uncles and aunts. The following are some results of Professor Pearson's analysis: The mean age of onset for men (167) was 29.1 years with a standard deviation of 9 8 years, for women (216) 25.3 years, standard deviation 8 6.

In determining the correlation between the occurrence of pulmonary tuberculosis in parents and offspring the data were arranged in a fourfold table, for example:

Male Parents.

Offspring.	Tuberculous.	Not Tuberculous.
Tuberculous ...	$49+y$	361
Not Tuberculous	$108-y$	x

y represents the correction necessitated by the fact that all the offspring had not passed the "danger zone" (roughly the 14th to the 40th year), and might develop the disease later. A value was obtained on the assumption, based on Dr. R. E. Thompson's statistics, that slightly more that half the children of tuberculous persons show the disease sooner or later. The x can be supplied if we know what percentage of the whole population is tuberculous, and was calculated on the hypothesis that 10 per cent. are so affected. With these assumptions the correlation worked out at 0.59 for male and 0.62 for female pedigrees If y was put $= 0$, giving a lower limit to the intensity of inheritance, r became 0.33 and 0.44 respectively. If 13 instead of 10 per cent. of the whole population are supposed to be tuberculous, the values are 0.55 and 0.58. It is accordingly concluded that "the diathesis of pulmonary tuberculosis is undoubtedly inherited, and that the intensity of this inheritance is comparable with that found for normal physical characters in man."

A study of fraternal correlation leads to the same result. That direct infection is relatively unimportant is suggested by the facts: (1) That the age of onset in persons one or more members of whose family are tuberculous is not significantly less than the mean age of onset in the general population. (2) In 383 cases of known family history the subjects' parents were both affected in only 6 instances, and even these are hardly attributable to direct infection, since, if 10 per cent. of the population is tuberculous, and 8 per cent. of such persons marry, then of every 100 persons suffering from tuberculosis who marry, 8, on the average, would have a tuberculous wife or husband. *Hérédité de terrain* is therefore the vital factor from an eugenic standpoint.

Another result of considerable interest is that "whether we deal with all tuberculous stocks or only with those having no parental history, the elder offspring, especially the first and second, appear subject to tuberculosis at a very much higher rate than the younger members." This, again, does not seem to be due to parental infection, since, in the material analysed, most of the parents had passed the danger zone before the onset in the offspring; further, many of the latter would have already left the home environment. A similar tendency to earlier inheritance has been noted in cancer and perhaps other diseases. The inference is that limitation of family in tuberculous stocks may be an aggravating factor in the national deterioration likely to follow on marriage of the unfit.

We have not space to touch upon many questions raised in this memoir, which deserves a wide publicity. It would not be easy to over-estimate the national importance of this kind of work—a type of investigation which receives from the Government neither assistance nor reward.

[1] *A First Study of the Statistics of Pulmonary Tuberculosis.* By Karl Pearson, F.R.S. (Drapers' Company Research Memoirs. Dulau and Co. 1907.)

PRESENTATION.—On July 26th Dr. T. Outterson Wood was presented with a handsome silver bowl by members of the Committee of Management and the medical staff of the West-End Hospital for Nervous Diseases, Welbeck Street, upon his retiring from the post of Senior Physician, which he had held for so many years, and his being appointed Consulting Physician to the hospital.

THE late Miss Emily Rebecca Leon, of Bayswater, bequeathed a sum of £1,300 to the Homoeopathic Hospital for the endowment of a bed in the female ward; £100 to the Convalescent Home of the same institution; £200 to the Hospital for Sick Children, Great Ormond Street, and £100 to its Convalescent Fund; £100 to St. Mary's Hospital, and a similar sum to its Convalescent Fund; and £100 each to the London Fever Hospital, and the Jews' Hospital, Lower Norwood.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The seventy-seventh annual meeting of the British Association for the Advancement of Science opened at Leicester on July 31st, under the presidency of Sir David Gill, K.C.B., LL.D., D.Sc., F.R.S., etc.

President's Address.

The President delivered an address, in which he said that on that night for the first time in its history the British Association met in the ancient city of Leicester. There, and last year in York, the Association had followed its usual custom of holding its annual meeting somewhere in the United Kingdom; but in 1905 the meeting was, as they knew, held in South Africa. Having himself only recently come from the Cape, he wished to take this opportunity of saying that this southern visit of the Association had, in his opinion, been productive of much good: wider interest in science had been created amongst colonists, juster estimates of the country and its problems had been formed on the part of the visitors, and personal friendships and interchange of ideas between thinking men in South Africa and at home had arisen which could not fail to have a beneficial influence on the social, political, and scientific relations between these colonies and the mother country. They might confidently look for like results from the proposed visit of the Association to Canada in 1909. One was tempted to take advantage of the wide publicity given to words from that chair to speak at large in the cause of science, to insist upon the necessity for its wider inclusion in the education of youth and the devotion of a larger measure of the public funds in aid of scientific research; to point to the supreme value of science as a means for the culture of those faculties which in man promoted that knowledge which is power; and to show how dependent was the progress of a nation upon its scientific attainment. But in recent years these truths had been prominently brought before the Association from that chair; they had been exhaustively demonstrated by Sir William Huggins from the Chair of the Royal Society, and now a special guild (the British Science Guild) existed for their enforcement upon the mind of the nation. These considerations appeared to warrant him in following the healthy custom of so many previous Presidents—namely, of confining their remarks mainly to those departments of science with which the labours of their lives had been chiefly associated. The President proceeded to deal with a number of questions interesting to astronomical specialists. The greater part of his address was too technical in character for our pages. A summary of his conclusions may, however, be given. He said that the ancient philosophers were confident in the adequacy of their intellectual powers alone to determine the laws of human thought and regulate the actions of their fellow-men, and they did not hesitate to employ the same unsupported means for the solution of the riddle of the universe. Every school of philosophy was agreed that some object which they could see was a fixed centre of the universe, and the battle was fought as to what that centre was. The absence of facts, their entire ignorance of methods of exact measurement, did not daunt them, and the question furnished them a subject of dispute and fruitless occupation for twenty-five centuries. But astronomers now recognized that Bradley's meridian observations at Greenwich, made only 150 years ago, had contributed more to the advancement of sidereal astronomy than all the speculations of preceding centuries. They had learned the lesson that human knowledge in the slowly-developing phenomena of sidereal astronomy must be content to progress by the accumulating labours of successive generations of men; that progress would be measured for generations yet to come more by the amount of honest, well-directed, and systematically discussed observation than by the most brilliant speculation; and that, in observation, concentrated systematic effort on a specially thoughtfully-selected problem would be of more avail than the most brilliant but disconnected work. By these means they would learn more and more of the wonders that surrounded them, and recognize their limitations when measurement and facts failed them. Huggins's spectroscope had shown that many nebulae were not stars at all; that many well condensed nebulae, as well as vast patches of nebulous light in the sky, were but inchoate masses of luminous gas. Evidence upon evidence had accumulated to show that such nebulae consisted of the matter out of which stars (that is, suns) had been and are being evolved. The different types of star spectra formed such a complete and gradual sequence (from simple spectra resembling those of nebulae onwards through types of gradually increasing complexity) as to suggest that they had before them, written in the cryptograms of these spectra, the complete story of the evolution of suns from the inchoate nebula onwards to the most active sun (like their own), and then downwards to the almost heatless and invisible ball. The period during which human life had existed on their globe was probably too short—even if their first parents had begun the work—to afford observational proof of such a cycle of change in any particular star; but the fact of such evolution, with the evidence before them, could hardly be doubted. He most fully believed that, when the modifications of terrestrial spectra under sufficiently varied conditions of temperature, pressure and environment had been further studied, that conclusion would be greatly strengthened. But in that study they must have regard also to the spectra of the stars themselves. The stars were the crucibles of the Creator. There they saw matter under conditions of temperature and pressure and environment, the variety of which they could not hope to emulate in the laboratories, and on a scale of magnitude beside which the proportion of their greatest experiment was less than that of the drop to the ocean. The spectroscopic astronomer had to thank the physicist and the chemist for the foundation of his science, but the time was coming—they almost saw it now—when the astronomer would repay the debt by wide reaching contributions to the very fundamenta of chemical science. By patient, long-continued labour in the minute sifting of numerical results, the grand discovery had been made that a great part of space, so far as they had visible knowledge of it, was occupied by two majestic streams of stars travelling in opposite direction. Accurate and minute measurements had given them some certain knowledge as to the distances of the stars within a certain limited portion of space, and in the cryptograms of their spectra had been deciphered the amazing truth that the stars of both streams are alike in design, alike in chemical constitution, and alike in process of development. Whence had come the two vast streams of matter out of which had been evolved these stars that now move through space in such majestic procession? The hundreds of millions of stars that comprised these streams, were they the sole ponderable occupants of space? However vast might be the system to which they belong, and that system itself was but a speck in illimitable space; might it not be but one of millions of such systems that pervade the infinite? They did not know. "Canst thou by searching find out God? canst thou find out the Almighty unto perfection?"

INDIAN SANITARY REPORTS.

City of Bombay.

The report for 1905, prepared by Dr. J. A. Turner, executive health officer, is elaborate and full of interest. It is illustrated by several excellent charts, but there is no map. All sanitary reports should have a good map of the area concerned. The table of contents, which is well drawn up, has different paging from the report itself; this is due, no doubt, to the latter having been part of the administration report of the municipality. The year was characterized by a deficient rainfall. The registered birth-rate was 24.66, a slight decline on 1904. The death-rate was 61.54, or, exclusive of plague, 43.25. The mortality among infants under 1 year of age was 557 per 1,000 births: the high rate is attributed to an unusual prevalence of small-pox and measles; 1 305 deaths were due to infantile convulsions. Stillbirths amounted to 2,073. The mortality among Jains was 139.59 per 1,000, and among "other classes" 111.11; no comment is made on these large figures. The city was visited by a severe epidemic of small-pox, the spread of which is attributed to the indifference of the people as to preventive measures. Vaccination and revaccination were pushed. Cholera was in abeyance, but the mortality caused by plague

was high, amounting to 18.29. There was a great abatement towards the close of the year. A strenuous campaign against rats was commenced, and some interesting work by Dr. C. J. Martin, chief of the Research Commission, is described. There was slight increase under the head of fever, which includes 60 deaths from enteric and 240 from relapsing fever. Deaths from phthisis numbered 2,558, a decrease of 2,339 on the quinquennial average. Full details are given of sanitary administration and work which indicate intelligent activity. The municipal corporation laboratory accomplished a large amount of useful work, and the hospitals and dispensaries, supported by the municipality, tendered valuable service to the community.

Madras.

The sanitary report for 1905 includes the reports of the Sanitary Board, of the Sanitary Commissioner (Lieutenant-Colonel H. Robinson), and of the Sanitary Engineer (Mr. W. Hutton), on which the Government records an appreciative resolution. Lieutenant-Colonel W. G. King, C.I.E., who has for so many years done such excellent work, was on August 31st transferred on promotion to Burmah. The rainfall of the year was short and unequally distributed, and the prices of food grains were high in consequence of a scanty harvest in 1904. There was a rise in the birth-rate (32.0) and a slight fall in the death-rate (21.4). Registration is still very imperfect, and unequally so. The extension of compulsory registration led to some improvement, but greater stringency is evidently necessary in respect to the recording agency, and those responsible for reporting births and deaths. The infantile death-rate in municipalities was 240.7, and in rural areas 172.9. There was a decrease in fever deaths which constitute about one-third of the total mortality. The rate (7.2) is far below that of northern provinces. Preventive measures are very rudimentary. There was a slight rise in bowel complaints, but the cholera mortality was low, and confined mostly to a few districts. Small-pox was three times as bad as in 1904. Infant vaccination is still very imperfect in rural areas where the aid of a compulsory law is wanting. There was a great abatement in plague, from which 5,788 deaths were registered, against 20,125 in the preceding year. Rat extermination is being vigorously conducted in the affected towns. Disinfecting machines and flaming lamps have been procured and issued for use in ports and municipalities. The record of sanitary work is satisfactory:

The Sanitary Board scrutinized the plans and estimates relating to 101 sanitary works estimated to cost 63½ lakhs of rupees. Of the 66 works finally approved by the Board, 21 were completed and 20 were in progress during the year, while 18 were deferred for want of funds.

Sanitary assistants were appointed to several districts, and the training and employment of the sanitary executive is being continued with success.

Burmah.

The office of Sanitary Commissioner was during 1905 held successively by Colonels Little, Macrae, and W. G. King. The report is written by Dr. King, who brings to bear on sanitary work in Burmah the knowledge and experience gained during a long and useful service in a similar capacity in Madras. Efforts are being made to improve registration, which is still very defective and unequally so. The people are neglectful, and the agency of registration ignorant and unreliable. This remark applies in varying degree to the whole of India. The year was an unhealthy one. The birth-rate was 34.37 and the death-rate 24.09, both in excess of those of 1904 but probably considerably short of the actual. The general infantile mortality was 196.60 per 1,000 of births, but in some towns the rate was much higher. Some steps are being taken to provide trained nurses and midwives for service in the province, and the question of educating a sanitary executive is under consideration. The Sanitary Commissioner proposes the establishment of milk dépôts "for the feeding of infants whose mothers are unable to suckle them." Fevers constitute a large proportion of the mortality of Burmah, and the most of them are of malarious origin. Preventive measures are in feeble inception. There was a considerable increase in the prevalence of cholera. Some interesting facts are recorded regarding the agency of water and milk in spreading the disease. Plague was discovered in Rangoon in February, and caused a severe outbreak there, spreading thence to many parts of the province. Rat killing has been largely carried out, and over 3½ lakhs of rupees were spent on preventive measures. There was a severe epidemic of small-pox in Rangoon and other parts of Lower Burmah. Municipalities and local bodies spent large sums of money on sanitary works, and the report of the sanitary engineer gives evidence of considerable sanitary activity. The Sanitary Board held two meetings. Its constitution and working have been recast.

HOSPITAL AND DISPENSARY MANAGEMENT.

A NEW LONDON COUNTY COUNCIL ASYLUM.

THE new Long Grove Asylum for metropolitan patients is now complete, and was thrown open to inspection on Saturday, June 15th. It is the sixth asylum erected by the London County Council, and in the general arrangement of its main building broadly resembles those at Bexley and Horton. There are, however, certain important differences in detail. The ward blocks are built on the pavilion principle and connected by main corridors, which are not enclosed passages, but covered ways open at the side. This is a great improvement, and is likely to make the building much more healthy and to decrease fire risks. Another good point is that there are arrangements which permit of the medical officers passing from ward to ward without returning to the main corridor; anyone who has been a resident in an asylum knows how much energy is commonly expended in the mere physical labour of traversing long corridors. The administrative block, which contains the quarters for the medical officers and officers, is in the centre, with the male and female wards on either side. The main asylum will hold 1,600 patients, 800 of either sex, but in addition there are eight detached blocks or villas accommodating 400 patients. Two of these, for 50 patients each, are designed as hospitals for the reception of new cases, in which these can be submitted to treatment, and, if with satisfactory results, be finally discharged without entering the main building, or be passed as a preliminary measure into one of the two convalescent homes provided; each accommodates 25 patients in such fashion that they will find themselves in surroundings closely approximating to those of ordinary domestic life. The reality of the cures will, therefore, be amply tested. Two other villas, each accommodating 65 working patients, have been erected at some distance from the asylum, one near the farm buildings for men, and the other near the laundry for women. Lastly, there are two one-story villas, each accommodating 60 patients, and intended for chronic but quiet cases. Some, if not the majority, of these belonging to the male side will probably work on the land, and will thus have their home in the country near the scene of their labours. A small isolation hospital for infectious cases completes the accommodation provided for patients. In addition to quarters for the staff on both sides of the main building, there is a detached block or home for female nurses. Each of these will have a separate sleeping room, and for all of them, as well as for the male attendants, comfortable mess, sitting, and club rooms have been provided. The residence for the Medical Superintendent is a detached building, erected away from the asylum at one end of the estate, and a chapel finds place at the other. The whole of the building will be lighted by electricity, drawn from a central station, which will thus supply three of the Council's asylums. The general arrangements include a water tower with a tank at the top, holding 80,000 gallons of water, which, besides supplying the establishment with water under pressure, will serve as a reservoir in case of fire. The whole of the buildings, including cooking and laundry plant, workshops, farm buildings, lighting, heating, and telephones, as also the cost of driving certain new roads, and of erecting gates and fencing, but not including the value of the ground or the expense of furnishing is estimated to have cost £490,000. This is equal to an average cost for each bed provided of £243.

CHELSEA HOSPITAL FOR WOMEN.

AT the thirty-sixth annual meeting of the Governors of the Chelsea Hospital for Women, on May 14th, it was stated that during the year 350 major and 377 minor operations had been performed, with a total death-rate of 1.42 per cent. The average weekly cost of each patient had been £2 2s., and an intention was indicated to appoint a committee to see whether this sum could be reduced without detriment to the work of the hospital and the comfort of the patients.

VICTORIA HOSPITAL FOR CHILDREN.

AT the annual court of the Victoria Hospital for Children on May 15th, it was stated that altogether £50 000 had been spent in the past five years on the now completed reconstruction and enlargement of the premises. At the beginning of 1906 the outstanding balance of the building debt was still £6,500, but since then had been reduced to £2,500. The ordinary income of the institution, some £8,000, was still 20 per cent. less than the average annual ordinary expenditure.

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THE EXETER MEETING.

Although at the time of writing the scientific and social argosies of the annual meeting at Exeter are only just getting under way, it requires no powers of prophecy to assert that it will prove to be one of the most successful and interesting in the history of the Association. The Annual Representative Meeting sat for two long days and a half day which extended into night, and got through an immense amount of business which it was just possible to conclude, with the exception of the confirmation of the minutes and other formal business, before the hour of 8 30 on Tuesday evening, when Dr. Henry Davy, the newly-elected President, after welcoming the foreign and Colonial delegates, gave his address before a crowded audience.

Dr. Davy was naturally led by the circumstance that it is sixty-five years since the Association met last in Exeter to look back upon the changes which have taken place during that eventful period, and he handled the subject with so much freshness and vigour that he held the attention of his audience from start to finish while he preached a doctrine very necessary for every medical man to weigh and consider.

He began by pointing out that as diseases vary with the environment and their treatment with the knowledge taught by the science of the day, the changes which have occurred in the conditions of natural life and in all departments of science must have affected the relation of medicine to the community. He took for his text the central points in the Darwinian theory: first, that the only way to maintain any organ or structure of the body in its proper condition of health and development is by proper and adequate use of it; and secondly that in the struggle for existence the fittest will survive. If it be true of the individual that to be fit he must be healthy, it must be equally true of nations; and since the most important function of the medical profession is the practical application of science to the health and life of the individual, and through him to the community, the great place which medicine should hold in the scheme of national existence and development must be obvious to any one who takes a philosophical view.

But Dr. Davy was not content merely to insist on the importance of the part which medicine can play in any complete scheme of national life; he went on to point out certain respects in which the profession was not doing enough to instruct public opinion, admitting at the same time that the difficulty of the task was greatly increased by the defects in the national system of education, which left the majority of the men and women of the nation in absolute ignorance of the very rudiments of science and hygiene. It was, he said, the duty of the profession to press on statesmen the need for making elementary physiology and hygiene a compulsory part of the education of all children, but he had to admit that at the outset they were met by the unfortunate fact that a man might go with credit and distinction through a public school and university education without gaining the most elementary acquaintance with science in general, or physiology and hygiene in particular. The truth of this must often have been impressed on those members of the Association who have attempted to place the views of the profession before statesmen, permanent officials of Government departments, or politicians. It is not only in dealing with the rulers of small municipalities that men trained in scientific methods find a difficulty in getting their point of view understood, and there is sometimes a temptation to think that the first task to which the Association ought to address itself is the reform of the antiquated system of education which still finds favour in English public schools and universities.

The subjects on which the President considers that the profession has a duty at this time to instruct the public are, shortly, practical dietetics; exercise, especially in its application to children at schools; and the prevention and hygienic treatment of tuberculosis. On the first and the last of these subjects the public appears to be ready to accept the advice of the profession if it can be presented in a form to be understanded by men and women whose education in physiology and hygiene is sadly to seek. As to the middle subject, Dr. Davy is undoubtedly right in saying that there is considerable danger that the public will take the matter into its own hands, or rather that it will follow certain guides who are not altogether fitted by their training to lead it into the right path The subject is well worthy of the serious attention of the profession, and the President has done good service to the Association by calling attention to it so prominently.

THE ADDRESS IN MEDICINE.

Speaking of Ranke the historian Lord Acton in his *Lectures on Modern History* says: "He would have felt "sympathy with the two famous London physicians of "our day, of whom it is told that they could not make "up their minds on a case and reported dubiously. "The head of the family insisted on a positive opinion. "They answered that they were unable to give one, but "he might easily find fifty "doctors who could." We do not know who the famous physicians were to whom Lord Acton refers, but one of them might have been Dr. Hale White or some one of like intellectual temper. At any rate, the story might furnish a text for the highly instructive Address in Medicine delivered by him at Exeter, which will be found at page 250. It is a discourse on the fear, or unwillingness, of doctors to confess ignorance when they are confronted by problems for which scientific investigation has as yet found no solution. It is too true, as he says, that we retard progress by being afraid to say we do not know. It is true also that we are too apt to content not only our patients but ourselves with otiose explanations of things which we understand imperfectly or not at all. The doctor, however, often finds himself in a difficult position—between a pathological riddle which he cannot answer, and a patient who insists on being told what is the matter with him. If the doctor says frankly that he does not know, he will not only lose the confidence of the sufferer who seeks counsel of him, but perhaps throw him into the toils of a less honest, but not more enlightened, adviser. In such circumstances it is not surprising that doctors are glad to have recourse to such blessed words as "cachexia" or "dyscrasia," to attribute obscure symptoms to "gout" or to make a scapegoat of that much maligned organ—the liver. We

may agree with Sir Dyce Duckworth, as quoted by Dr. Hale White, that "without doubt many morbid states "have often been flippantly or erroneously set down "to irregular gout which owned no such designation, "and thus a cloak for ignorance has always been at hand "to throw over careless observation, ignorance, or wilful "misinterpretation of symptoms"; and yet the most skilful and experienced navigators of the treacherous sea of medicine have been driven to take refuge in that haven of the distressed diagnostician. In Forster's *Life of Dickens* it is related that the novelist was much troubled by an affection of the foot. A London oracle pronounced it to be "gout," while another in Edinburgh, not less famous, seemed, as Dickens says, to take this diagnosis extremely ill, going so far as to state that the rival prophet had called the affection "gout" because he did not know what else to call it. For this the patient is at least as much to blame as the doctor, for he will not be satisfied unless he gets a name for the particular ill which vexes him.

As long as the practitioner does not allow himself to become the slave of the names which he uses, no great harm is done. The danger is that he may mistake names for things, and think that when he has found the right name for a disease, or one which will serve the immediate purpose, he has done all that is needed. The result is that the name is treated and not the disease, or, in the words of Falstaff, the party that owes it. Names are to a large extent the expressions of medical theories, and the history of medicine is a record of theories framed by one generation to be discarded by the next. This would not much matter if they were merely cobwebs of thought spun by the brain of the metaphysician, to be unwoven by other Penelopes of speculation. Unfortunately, medical theories are not confined to the study, but find practical application in the sick room; and of too many of them we may say, in the words of Moxon, quoted by Dr. Davy in his presidential address, that they were theories which "were then thought to be the pride of "medicine, but which we now consider as at any rate "the curse of the patients who were hurried into the "next world with the lancet or the brandy bottle "'on rational principles.'"

Dr. Hale White's address is a powerful plea for accuracy of thought in medicine, and every one will agree with him that this is the essential condition of progress. But, as Goethe said, thinking is not an easy thing, and it is still more difficult to think accurately. Even accuracy in observation is by no means easy. The light of human reason, which is all we have to guide us, is at best a flickering candle, easily blown out by the wind of false doctrine, and is too often a will o'-the wisp that lands us in the quagmire of error. Moreover, the road along which we grope our way, sheltering our dim light as best we can, is beset with pitfalls. It is not only our intellectual deficiencies, but the weaknesses inherent in human nature itself, that lead us astray. Most men are apt to form opinions on insufficient grounds, and to adhere to them as obstinately as Goldsmith when he insisted that he moved his upper jaw in mastication. Human passions, from which doctors are unfortunately not exempt, are serious hindrances to accuracy of thought. The true spirit of scientific inquiry and of medical observation is that expressed in the words of John Goodsir, when he was afraid that in an investigation he and his assistants might be led away into making facts square with theory: "Let us have God's own truth in the "measurements!" Every doctor must do his utmost to see things as they really are, and to see them with his own eyes, not through the spectacles of his teachers. Superstitious reverence for the ancients held medicine in leading strings for many centuries. On the other hand, there is a type of mind which is by nature rebellious, and which, like Cato, prefers the beaten to the victorious cause. This may lead to originality of thought, which is always to be welcomed; but if not held in check by some regard for legitimate authority, that is to say, for the opinion of men whose work has stood the test of criticism, it is likely to develop into the systematic opposition to all accepted teaching which is the mark of the "crank."

After all, much of medical practice must, as far as the majority of doctors are concerned, be built on authority. The range of medical science is now so vast that it is impossible for any one to make his own observation or experience the sole foundation of his practice. But the acceptance of authority must not be a mere blind acquiescence in the words of a master, however eminent. Everything must be put to the test of personal experience, which must be the final criterion of all our judgements. None of us can hope to attain to perfect accuracy of thought. The most we can do is, as far as possible, to avoid error. We strongly recommend to every doctor the advice of Samuel Johnson to Boswell, to clear his mind of cant. The lazy acceptance of gout, or liver derangement, or "want of tone," as the key to the enigmas of the disease with which we have to deal, is cant in its most pernicious form. It is cant in act, which is by so much worse than cant in thought or in speech that it leads to routine treatment which, like the common type of sermon described by Whately, "aims at nothing and hits it."

The scientific practitioner's constant aim must ever be not to mistake names for realities, and, above all, not to regard transient or accidental relief of symptoms as the cure of disease. As long as we are content with explanations of the kind given by the candidate in Molière, who, when asked *Quare opium facit dormire*, replied *Quia est in eo virtus dormitiva*, so long will medicine be open to the reproach that it is not a science. If surgery has to a considerable extent become an exact science, it is because in that domain of practice accuracy of thought has led to an accuracy of performance which was impossible when pus was considered to be "laudable," and the invisible world of infective microorganisms was derided as a mere flight of the scientific imagination. In medicine, too, greater accuracy of thought is beginning to prevail. This has led us to the knowledge of the fact that many diseases run a definite course and tend naturally to cure without any particular treatment. If we do not "cure" more, we kill less than our forerunners, whose method of dealing with disease was founded on the vestiges of the old belief that there was a devil to be expelled, and that this was to be done by methods embodied in the famous formula, *Seignare, ensuita purgare.* As accuracy of thought increases we shall get rid of the errors and fallacies of which Dr. Hale White gives examples in his excellent address, which we hope will be carefully studied and inwardly digested by all our readers.

THE ADDRESS IN SURGERY.

MR. BUTLIN'S Address in Surgery deals with an important subject which has not hitherto received as much attention as it deserves. From time to time alleged proofs have been brought forward that cancer is

communicable from one human being to another, but most of these are based upon evidence which fails to withstand the test of scientific scrutiny. Recent acquisitions to our knowledge of cancer, Mr. Butlin points out, have enabled us to formulate more precisely than was previously possible the conditions under which carcinoma is likely or unlikely to be accidentally communicated from man to man. Thus transplantation experiments with carcinomatous tissue removed from an animal and inserted into another of the same species have shown that when the inoculation is successful the growth in the latter is identical in character with the growth in the former. We may therefore reject without hesitation cases of reputed contagion of cancer in which the disease supposed to be transferred is not of the same variety. Experimental observations also indicate that unless there is evidence of the affected parts of the two individuals having been from time to time in contact the possibility of contagion cannot be accepted. And there is reason for regarding it as extremely improbable that a cancer which is covered by healthy tissue can be transmitted by contact, or that the disease can be inoculated by contact with a surface the continuity of which has not been broken. Another important fact which has been elucidated by experiment is that sepsis of the tumour or of the broken part which comes in contact with it is an almost absolute obstacle to successful implantation. From these considerations it is clear that the possibility of cancer being a contagious disease in man must be narrowed down to extremely small limits. "Indeed,' Mr. Butlin observes, "the conditions which generally "prevail are so unfavourable to accidental implantation "in human beings that the event might be regarded as "wellnigh impossible and scarcely worth the trouble "of investigation, were it not for the occasional recur- "rence of what appear to be examples of successful "implantation in different parts of the body of the "same individual."

This leads Mr. Butlin to the question of autoinoculation, to which the main part of his address is devoted. By attacking the subject in this way he shows a masterly insight into the logical bearings of the problem, which can best be explained in his own words:

"If autoinoculation can be proved on such evidence "as would be admitted in a court of law, there is a "prima facie case for contagion. And, if the proof "of autointoxication falls through from lack of suf "ficient evidence, whether in quality or quantity, it "is no longer worth while to pursue the study o- "contagion from individual to individual."

Here, again, extreme caution must be observed and the evidence for the reputed cases of autoinfection must be rigorously scrutinized before it can be accepted as valid. One indispensable verification is the test of microscopic examination. Serious errors have arisen of which Mr. Butlin quotes some instructive instances, through taking it for granted that contact growths actually were carcinomatous because they appeared to be so to the naked eye.

Mr. Butlin has made a valuable collection of cases in which autoinoculation seems to have occurred. In cancer of the vulva the transference of the disease from one labium to the other may undoubtedly take place but authorities differ widely in their opinion as to the frequency of such an occurrence. Mr. Butlin finds that out of 23 cases recorded in the wards of St Bartholomew's Hospital during the past ten years, there were 5 in which one labium was first affected, and subsequently the other labium. These cases do not include those in which the disease appears to have spread by direct extension. This is a significant proportion of positive instances, and lends support to the opinion of Dr. Dauber that contact cancer in this situation is common, though it does not corroborate his extreme view that cancer "infects the opposite side of the "vulva by direct contiguity as surely as a condy- "loma." In cases of laryngeal epithelioma, autoinoculation appears to be less common, though Mr. Butlin is able to record three cases in point, where one vocal cord has been infected by contact with disease on the opposite side. He also suggests that some of the cases in which there is advanced disease of the larynx on both sides, with continuity in front particularly, may really have been cases of autoinoculation, the first stages of which had not been observed for want of opportunity. By those who disbelieve in the possibility of autoinoculation the objection has been raised that, though the lower lip is commonly affected by cancer the upper lip, which is constantly in direct contact with it, is not infected by direct contamination. To this argument Mr. Butlin replies that at least one undoubted case of contact epithelioma of the lips does exist. In this instance Professor von Bergmann removed both tumours, and was able, on the evidence of microscopic examination, to state positively that they were both epitheliomata. It is admitted that such an occurrence is very rare, but there are several reasons which explain why autoinoculation is not more common in this situation. The upper lip is notoriously unfavourable to the development of primary carcinoma, and probably possesses a considerable power of resistance. The upper lip is not frequently excoriated or cracked, as is the lower lip in many persons; and the lips are so frequently wiped or washed in the course of the day that the cancer cells have very little chance of remaining sufficiently long on the upper lip to effect a permanent hold.

In another interesting case to which Mr. Butlin calls special attention there was cancer of the cervix uteri and an ulcer on the right posterior lateral wall of the vagina. Microscopical examination showed that the disease was the same in both places—cylindrical carcinoma. "The carcinoma of the vagina stood in the "midst of squamous epithelium and was quite cir- "cumscribed. The surrounding tissues were examined "and were found to be free from carcinoma, and the "lymphatic vessels did not contain carcinoma cells." This is a particularly convincing case of contact cancer, since the vagina, being lined with squamous epithelium, is subject to squamous and not to cylindrical carcinoma. Two other cases quoted by Mr. Butlin deserve special mention. Sir William Macewen removed an epithelioma from the lower lip of a man who was known to possess the rather curious habit of pressing his forefinger against the cancer, and then quickly rubbing the tip of his nose with the same finger. Twenty months later there was a large ulcerated patch on the tip of his nose; it was removed, and presented the same histological characters as the cancer on the lip. Dr. Kaufmann published in 1879 a somewhat similar case. An old woman had on the back of her right hand a cancer of about five years' standing; she had also a cancer on the conjunctiva of the right eye, which had been present about a year and a half. It was ascertained that she was continually in the habit of rubbing the eye with the back of the right hand. After death both lesions were examined, and proved to be typical specimens of squamous carcinoma.

Summing up the cases, of which we have quoted several examples, Mr. Butlin concludes that "they are

"too many and too constant in the circumstances of "their occurrence to be explained on the theory of "coincidence," and he claims, certainly on very strong grounds, that the case for autoinoculation has been conclusively proved. From these considerations there follows an important practical corollary, upon which Mr. Butlin lays just emphasis. If autoinoculation is possible, surgeons must be extremely careful to guard against the possibility of wound infection in operations for cancer. "Cancer should not be cut into unless for "diagnosis, and the wound should be tightly closed "before the actual operation is commenced. The "instruments which were used for the purpose of "diagnosis must not be used again until they have "been boiled. Exposed or ulcerated cancers should not "be pressed against or dragged across raw surfaces "made in the course of the operation, and care should "be taken that breaking-down cancers are not opened "during operation."

The study of autoinoculation is only preparatory to the much more difficult problems concerning the possible communicability of cancer from one human being to another, and upon this subject also Mr. Butlin throws out some thoughtful suggestions, as was to be expected from the keen interest which he is known to take in cancer problems. His address is of high value as a piece of independent research which combines the matured experience of the surgeon and the pathologist, and will prove an excellent stimulus to further inquiry.

THE ANNUAL MEETING.

RELIGIOUS SERVICES.

AT various places of worship in Exeter on Sunday the meeting of the British Medical Association was the subject of more or less direct reference. This was especially the case at the Cathedral, where the preachers both at the morning and evening services discussed the relations of science and religion. At the former the Bishop of Crediton dealt with the occurrence of miracles. As time went on and knowledge increased the limits of the supernatural or miraculous and of the natural were, he showed, inversely changing, the former decreasing, the latter growing. It was being slowly recognized, indeed, that the natural and the supernatural were in reality but one and the same, and that at the back of Nature there was a power which men of science did not ignore—the supreme reality. Man was an animal endowed with a capacity for acquiring knowledge, and was learning the laws of Nature. Even with the dim knowledge of these which he at present possessed Man was able to control many of the operations of Nature in ways which but a few years ago would have been deemed miraculous. It was by his full knowledge of the working of those laws that Christ performed His acts of healing, and everything that He did—the miracles which He performed—was done in accordance with them. Prebendary Dangar, D.D., in the course of a sermon of allied character at the evening service, made an interesting reference to Huxley. He had been one of his pupils and submitted to him one day a piece of his work, a dissection of part of the cerebro-spinal system of a rabbit. Huxley sat down beside him and, after inspection of the dissection in silence for a few moments, said half to himself, "Who but the Great "Creator could have devised all this?" The Prebendary also endeavoured to prove from the Gospel according to St. John, chap. v, verse 39, that the spirit underlying all research, whether in matters appertaining to the body or the soul, was equally to be esteemed; research, in short, was a holy avocation. Both preachers indicated that the progress of science was to be regarded by Christians with approval as being a further revelation of the mind of God, but study and prayer should go hand in hand, and especially must all pray for increase in the gift of healing.

At noon, on Tuesday, a special service took place at the Cathedral, the building being crowded in every part. A large proportion of the members present, including some lady graduates, wore academic costume, and went in procession from the chapter-house to the seats assigned them in the chancel, the processional hymn, 369 A. and M., "Thine arm, O Lord, in days of old," being meanwhile sung. The Dean officiated, and read the Lesson St. John, v, verses 1 to 9. The anthem was taken from Psalm xci, verses 1, 2, and 4. The sermon was preached by the Lord Bishop of the Diocese, who took for his text St. Mark ii, verse 17, "They that are whole have no need of a physician, "but they that are sick." In these words, he said, did our Saviour proclaim Himself the Healer of sick and suffering mankind, and in that character went straight to the heart and affection of us all, as we all have experience of disease and suffering, both bodily and spiritual. Human pity is often powerless to help, but divine pity reveals itself as willing and able to help, and sufferers turn to it with faith, hope, and love. In the text Christ was speaking of the disease of sin, "I "came not to call the righteous but sinners to "repentance." But He knew the subtle correlations of sin and of physical sickness, and was constantly the healer of the body, having the still diviner power to heal the soul. "That they who were "sick needed the physician" formed the great distinction between the Gospel and the older religions. They were for the whole. Christ, as Origen said, invited malefactors and outcasts "to bind up their wounds "with His teaching, and to pour into the soul oil and "wine, as the physician does into the wounds of the "body." Thus there has always been a close alliance between the work of the Christian minister and that of the healer of disease. Long before the time of Christ the medical profession was a recognized and honoured part of human society, and so continues to-day. The minister of Christ was an entirely new type, unlike anything that had appeared before; but having a close affinity and sympathy with the physician. One of the four evangelists was a physician, and his writings reveal his profession; in many other instances, too, of which mention was made by the preacher there were those who combined the practice of medicine with the office of bishop or presbyter, or with eminence in Christian studies. The reverse had also been the case; the distinction of body and soul had been emphasized to the point of hostility. "*Ubi tres medici ibi duo athei*" was a summary of university life of the Middle Ages. The Christian priest looking to authority, the physician to natural science, for the first principles of their art had embodied the inevitable tension between Faith and Science; yet the same God reveals Himself in His works and in His word, and all truth is the truth of God. But the Church has never given way to that exaggerated spirituality, often the handmaid and companion of imposture, which would reject the aid of medicine as an affront to faith, or would banish science in the name of religion. The Kingdom of God is very wide, and there is a place therein for all that is good and true, a place for science and the physician. The minister of Christ and the physician meet on common ground. The pastor deals with life, the temptations, difficulties, hopes, fears, consciences, duties, and heavenward aspirations of living men and women. The physician, too, upon each individual case which he treats, brings science, tempered by experience, to bear. Sympathy is needed, too, to secure thoroughness and fidelity. We have learned from Christ the

value of personality, and that every soul is of account in the eyes of Him in whose hands alone are the issues of death and life. In the practice of medicine, as in the work of the Church, knowledge and theory is the servant, not the master. In the personality of man the moral being is the point at which the visible universe comes into closer touch with God, the source and sustaining principle of all its being. There is the secret which science does not disclose, but which makes science possible and gives it all its meaning, which assures us that when we catch our glimpses of what is good or beautiful or true we are not merely experiencing casual evanescent sensations, as peculiar to man as its scent to the flower or its song to a bird, but are realizing the kinship of the human spirit with the underlying reality of all things—the holiness, wisdom, and perfection of the eternal God. After the sermon a collection was made on behalf of the British Medical Benevolent Fund and Epsom College; the amount collected was £42 16s. 6d. The Benediction was pronounced by the Bishop.

ANNUAL GENERAL MEETING.

Election of Treasurer.

At the adjourned General Meeting on July 30th Dr. Radcliffe Crocker resigned the office of Treasurer which he had held for two years. The meeting adopted a cordial vote of thanks to the retiring Treasurer, who was unanimously elected a Vice-President of the Association. The meeting then proceeded to choose a new Treasurer, and on a vote Dr. Edwin Rayner, of Stockport, was elected. Dr. Rayner, who became F.R.C.S.Eng. in 1869 and graduated M.D.Lond. in 1870, joined the British Medical Association in 1877, when the Annual Meeting was held in Manchester. Since then he has done much work for the Association in various capacities; he has been a member of Council, and of the Organization, Journal and Finance, and Premises Committees, and has been President of the Lancashire and Cheshire Branch.

The Civic Greeting.

The first formal event of a public nature took place on Monday afternoon at the Guildhall, when the Mayor of Exeter, accompanied by the Sheriff (Dr. Ransom Pickard), bade the Association welcome to Exeter on behalf of himself and the citizens. This event, in spite of the fact that just about the time of its commencement there was a heavy storm of rain, was so well attended that this ancient city building was thoroughly filled. On the Bench besides the Mayor and the Sheriff were the outgoing President of the Association (Dr. R. A. Reeve), his successor (Dr. Davy), Dr. J. A. Macdonald (Chairman of the Representative Meetings), the Vice-Chairman (Dr. H. A. Latimer), the President of the South-Western Branch (Dr. P. M. Deas), and the ex-President of the same Branch (Dr. E. J. Domville), and the Town Clerk of Exeter. The proceedings commenced by the presentation to his Worship the Mayor, by Dr. Domville, of the President and President-elect of the Association and the rest of the officers of the Association on the Bench. In the course of his remarks, Dr. Domville gave a sketch of the history of the Association, and made a happy allusion to the connexions, direct and indirect, with Exeter and the West of those whom he introduced. Speaking of the Association itself, he said that its members considered that they had combined in it everything that told for the true welfare of humanity. The Association was bound together to maintain the honour and dignity of the profession, but it was thought by the members that that honour and that dignity was indissolubly united with the welfare of the human race. As science progressed from year to year it would be recognized, the speaker claimed, that in neither the aims of the Association nor in its methods was there any selfishness. One by one were being driven away the diseases which were the dire foes of humanity. Under the banner of Lord Lister, fell diseases which formerly prevailed in hospitals had become merely matters of history, and the Association hoped that if it could get the support of lay members of the community in general, if it could persuade the public to adopt the disinterested advice which the medical profession offered it, small-pox would be another disease to which a final farewell would be said. On behalf of the profession he asked for the confidence of the public that the medical profession should be trusted in its desire to push vaccination as the one sure remedy against the spread of small-pox which was at present known. The Mayor then expressed, on behalf of the citizens of Exeter, the satisfaction felt at the visit of the Association. His medical townsfellows, he said, had been working hard for many months past to make the meeting a success, and the town at large was only too glad to second their efforts. The Mayor's welcome was briefly acknowledged, in turn, by Dr. Reeve, Dr. Davy, and Dr. Macdonald. Dr. Reeve mentioned that he had travelled 3,000 miles to take part in the proceedings, and observed that Canada, the country to which he belonged, owed much to the splendid young colonists which in early days the county of Devon had sent forth. Dr. Davy referred to some events on the last occasion, sixty-five years ago, that the Association had visited Exeter; that Association in the intervening years had greatly grown in numbers and importance, and was doing an amount of good which was hardly recognized. In the last twenty years it had spent some £20,000 in research work for the prevention of disease, for the protection of life. This was work which the Government ought to do; the public should insist on the endowment of research. On the conclusion of the speeches tea was served.

Entertainments.

On Monday evening, July 29th, Dr. Henry Davy entertained a large party at dinner at the New London Hotel, Exeter. Among his guests were the Lord-Lieutenant (Earl Fortescue) and the High Sheriff (Sir D. Duckworth King) of Devonshire, Dr. Reeve (President of the Association), Dr. J. A. Macdonald, the Sheriff (Dr. Ransom Pickard) and the Town Clerk of Exeter, Professor Osler, Dr. Tatham, Professor Salomonson, Dr. Landolt of Paris, Professor Onodi of Budapest, Dr. Starr, one of the Local Secretaries of the Toronto meeting, and many officers of the Exeter meeting. After dinner Dr. Davy gave a garden party in the grounds of his residence.

On Wednesday, after the morning session, in the various Sections, so much in the way of entertainments was going on that it is not now possible to make more than passing reference to the majority of these social events. They included a garden party in the grounds of the Manor House of Exmouth, given by the Chairman of the Exmouth District Council, Mr. J. E. Daw, and the members of the Reception Committee; a garden party given at Wonford House, Exeter, by Dr. P. Maury Deas, the President of the South-Western Branch; and an expedition to Budleigh Salterton, which included a tea-party in the beautiful grounds of Bicton, with the Right Hon. Lord Clinton as host. A further entertainment of the same general character was given by Dr. Samways, at Knowle, Clyst St. George. Hosts and guests alike were singularly fortunate in the weather, and the various parties all seemed to have enjoyed exceedingly pleasant afternoons. The day terminated in an evening fête given on Northernhay by

the President and members of the South-Western Branch, who are the genial hosts of the Association this year. The weather was again of the most fortunate description, and what between the agreeable temperature, an excellent band, a number of refreshment tents, an interchange of experiences, and the refighting between friends of a few of the battles commenced in the Sections in the morning, the very large company assembled completed the day's proceedings in the most satisfactory manner possible. Apart from these events the activity of Exeter had provided several other ways of interesting the members of the Association and the ladies who accompanied them. These included visits to the Cathedral, with Chancellor Edwards himself as guide, and a tour of the antiquities of the city under the leadership of Mr. Harbotin Reed, the President of the Devonshire Archaeological Association. Those who had the advantage of taking part in this tour are loud in expression of their appreciation of Mr. Harbotin Reed's interesting explanations of all that he showed them and of his extreme courtesy to the persons whom he guided. In turn were visited the ancient subterranean passage which traverses a large section of the town, the Castle, Rougemont House, and the remarkable ditch which protected the fortress, the North Wall, the Tuckin Hall, the singularly attractive Priory of St. Nicholas, now converted into dwelling-houses, and the Church of St. Mary of the Arches. The pilgrimage terminated at the Guildhall, where after a feast of another character in the shape of an excellent tea, Professor Truman, the Town Clerk, displayed the municipal treasures of the City of Exeter. This city, as most students of archaeology are aware, possesses a collection of municipal documents and regalia which is in many ways unique. The array of curious accounts and charters is singularly interesting, and Professor Truman brought home their import in a very happily-worded address. The Guildhall of Exeter is still used for its original purpose, and this fact alone makes an examination of its structure and its internal decorations and furniture of marked interest. To be seen also are several pictures of moment, notably two portraits by Sir Peter Lely.

The First Garden Party.

The Mayor and Mayoress of Exeter (Alderman and Mrs. W. H. Reid) led off the round of entertainments, which the proverbial hospitality of the Western Country has provided for the members of the Association, by a garden party in the grounds of Rougemont Castle on Tuesday afternoon. At the time of its commencement, the general meeting, for the installation of the new President and other business, was still in progress, so the guests of the Mayor and Mayoress, as represented by the Association, did not begin to appear until 4 o'clock. After that hour, and until nearly 6 o'clock, the pretty gardens of the Castle were the scene of much animation. Many members were still detained at the Representative Meeting, so the grounds were not so crowded as might otherwise have been the case, for the town, the surrounding country, and church dignitaries, as well as the medical profession, were well represented among the guests. Two large marquees had been erected, where refreshments were served, and between times there was much promenading to the strains of the band of the Royal Marine Light Infantry. The weather was excellent, and the party was a great success.

The number of members present at the meeting at the time of our going to press was 900. All the arrangements are working well, and the excursions are very popular.

ANNUAL REPRESENTATIVE MEETING.

The Seventy-fifth Annual General Meeting of the British Medical Association was opened in Exeter at 9 30 a.m. on Saturday, July 27th, at the Royal Public Rooms, and was immediately afterwards adjourned until the following Tuesday afternoon at 2 30 p.m. Very few members were present except Representatives, and the Representative Meeting was then at once proceeded with. The Standing Orders as amended, including the amended order as to the mode of election of committees so as to provide for regional representation of the three kingdoms, were adopted practically without discussion.

The consideration of the Annual Report of the Council was then commenced, and it was proposed that the first ten paragraphs, which consisted merely of a narrative of proceedings, should be approved; but Dr. Brassey Brierley intervened to reproach the Association with the smallness of the sum (£950) received from members of the Association for medical benevolent purposes. He received some support, but the Chairman pointed out that no resolution could be taken on the subject, since the Association was debarred fro n making any contribution for benevolent purposes. We may, however, join with the Chairman in expressing the hope that the attention directed to the subject may have a beneficial effect.

A short discussion took place on the financial paragraphs of the report of Council and the balance sheet, during the course of which the Chairman took the opportunity of congratulating the Manager of the Journal, Mr. Elliston, on the success which had attended the alteration in the style of the Journal. Although the rates charged for advertisements had been increased, the receipts had not diminished, and as a smaller number of advertisement pages had had to be printed the profit was increased.

The organization of the Medical Secretary's department led to a somewhat prolonged discussion on Saturday. The matter was raised at that stage on a resolution from the Stockport, Macclesfield, and East Cheshire Division, referring to a paragraph in the report of Council stating that the year 1906 had been a period of exceptionally heavy work for the whole of the staff at the central offices. The resolution instructed the Central Council, in view of the continuous increase of the work in the Medical Secretary's department and the delays that had occurred in dealing with matters of the utmost importance to members of the Association, to consider the urgent necessity of increasing the paid medical secretariat. The Chairman had announced that as the report of the Special Finance Inquiry Committee had only been in the hands of Representatives for a very short time, it would not be discussed until Monday, but the recommendations of that Committee were frequently referred to during the debate. The Committee had found that the Medical Secretary's department was undermanned and the Medical Secretary overworked, and recommended that an Assistant Medical Secretary be appointed at a salary not exceeding £600 a year, and that the staff of the department should be strengthened. The objections made to the proposed extension of the department mainly rested on the argument that the financial position of the Association did not warrant increased expenditure, and that to meet the admitted over-pressure the amount of work done should be reduced. This view did not find much favour with the meeting; and the general effect of the discussion, during the course of which many tributes were paid to the zeal and devotion which Mr. Smith Whitaker

brought to his work, was pithily summed up by Dr. Rayner, who said that the Association could not stand still, but must either go forward or go back, and he preferred to go forward. This view of the matter was endorsed by the meeting, the resolution being carried by 89 votes to 13.

The Chairman of the Ethical Committee, in moving the reception of its annual report, entered at some length into the history of the relation of the Committee to the General Medical Council. He showed that the Committee had relied upon a resolution adopted upon its recommendation of the Committee by the Annual Representative Meeting in London last year; this resolution was: "That it is absolutely necessary, in the in- "terests of the medical profession, that the Association "should take all cases of a penal nature before the "General Medical Council as complainants." Mr. Kinsey stated that the Committee had made the same recommendation to the Council at its meeting in July, 1906, when its consideration was postponed until October. In the interval the Representative Meeting embodied the recommendation in a resolution expressed in identical terms; and as the Council did not take a referendum on it, and did not discuss it in October, the contention that it had become a valid and operative decision of the Association appears to be beyond dispute. Whatever room for doubt there may have been before has now been removed by the action of the Representative Meeting this year, for a resolution approving the action of the Ethical Committee, and expressing the opinion that so long as such action is desirable, on other grounds it should not be discontinued only on the ground of the position of members of the General Medical Council, was carried by 91 votes to 2, while Dr. Hamilton's motion to rescind the resolution last year was rejected by an even larger majority. It would appear, therefore, that the price which the Association has to pay for taking up this work is the loss of those of its members who are members of the General Medical Council so long as they remain members of that Council.

The discussion on the report of the Ethical Committee on the ethical aspects of medical consultation, though brief, was sufficient to show that the matter requires further consideration; this was, indeed, very frankly recognized by the Chairman of the Committee. In his remarks introducing the report, he, in fact, asked the meeting to express its opinion upon the series of suggestions received from the Divisions, and also asked Representatives to express their individual views upon any or every part of the report. A short experiment, however, appeared to prove that this course was hardly feasible, and eventually all the suggestions from the Divisions, together with the report itself, were referred to the Committee, which will bring the matter up again at a future meeting. There seemed to be a general feeling that the subject is not yet sufficiently advanced, and has not yet been sufficiently considered in all its aspects, to warrant the promulgation of a set of rules. One difficulty is that so far the opinions of consultants and specialists has not found expression. The Council in its report had expressed regret that the report had been sent to the Divisions without having been submitted to some body representing consultants, but the Representative Meeting, on the motion of Sir Victor Horsley, disagreed with this paragraph on the ground that there is no body representing consultants with whom the Committee could have conferred. Incidentally, Sir Victor Horsley stated that the Marylebone Division is endeavouring to obtain the individual opinion of consultants in London, so many of whom reside within the area of that Division. Constitutionally, of course, this will not meet the difficulty, but practically it may go a long way towards solving it, especially if the example of Marylebone is followed in other great centres. The report of the Ethical Committee suggested the possibility of the recognition of a special class of consultants, meaning thereby practitioners who have adopted the rule of seeing those patients only who are referred to them by other practitioners already in attendance, and who do not themselves act as the regular attendants in any cases. If this suggestion could be carried out it would undoubtedly diminish the difficulties in the way of drawing up an effective code of rules, but only by diminishing the number of cases in which these questions arise. It would not do away with the necessity for rules drafted on a wider basis to meet the case of those who, while still engaged in general practice, are more or less frequently called to give a second opinion; nor would it, as was pointed out during the discussion, altogether meet the case of certain specialities. An excellent speech by Dr. Arnold H. Watkins, the Representative of the Griqualand West Branch, brought prominently to notice another point, which is that the customs of the profession differ to some extent in different localities. It appears that in South Africa, though it is considered contrary to medical etiquette that a medical man should attend in the patient's own house a person who is under the care of another practitioner, yet if the patient go to the doctor's consulting room or "office," the latter is not expected to make any inquiries as to what has gone before, but is held to be entitled to give his opinion and prescribe. Dr. Watkins illustrated his point by reference to a story which we regret to have forgotten of a certain Dutchman who went about with the "scalps" of thirteen medical men whom he had consulted in his belt. If, Dr. Watkins asked, a Dutchman chose to collect medical opinions on that scale, was the thirteenth man bound to hunt up the rest of the baker's dozen and talk the case over with them?

The report of the Hospitals Committee on hospital administration was brought up by the Chairman, Dr. Pope, who asked the meeting to express an opinion upon certain specific questions which had been submitted to the Divisions. The first proposition—that compulsory payment by patients to hospitals other than cottage hospitals should cease—was adopted after some discussion, which turned largely upon the new element which has been brought into the matter by the increased contributions of working men to hospital funds. At this point the meeting adjourned until Monday, on which day the first business after the confirmation of the minutes was the consideration of the second principle enunciated by the Hospitals Committee—that the production of subscribers' letters should cease to be compulsory. This was carried without discussion: but when the third principle—that inquiry into the patient's circumstances should invariably take place—was moved, it was objected that inquiry would not be made in the case of patients coming to the hospital from a distance. Dr. Macdonald suggested that the difficulty might be got over by addressing inquiries to a doctor residing in the locality, and the Chairman of the Committee added that inquiry could be made of the patient when he attended the hospital. The fourth question which had been addressed to the Divisions was whether a certificate should be required from the medical attendants of all patients attending out-patient departments. After a brief discussion, the Chairman of the Committee moved that the question should be recommitted for further consideration. The proposals as to the administration and management of hospitals

and kindred institutions, drafted by the Joint Committee of the British Medical Association and non-medical representatives of Boards of Management of hospitals, were then considered and various amendments were proposed. The report was adopted, and on the suggestion of the Chairman of the Committee the proposals of the Hospitals Committee, together with the suggestions made in the Representative Meeting, were referred back to the Committee which, on the motion of Mr. Kinsey, was also instructed to consider the operations of the League of Mercy with special reference to the field of work covered by the League which was understood to be confined to the metropolitan area.

THE discussion of the Report of the Special Finance Inquiry Committee occupied the Representative Meeting during part of the morning and the whole of the afternoon of the second day's session (Monday). The Committee had only been able to complete its Report at a late date, and it had not been possible to issue copies to the Chairmen, Secretaries, and Representatives of Divisions until a few days before the date of meeting. A minority report by one of the members of the Committee (Mr. Wolstenholme) was read by him, and copies were handed to Representatives during the course of the discussion. Dr. J. A. Macdonald, who had been Chairman of the Committee, vacated the chair in order to be in a position of greater freedom in moving the adoption of the Report and explaining its conclusions and recommendations, and his place was taken by the Deputy Chairman, Dr. H. A. Latimer, of Swansea. The conclusions and recommendations were arranged under two heads, (A) Finance and (B) Secretarial Departments. The first section was debated in open session, but the second was discussed *in camerâ*, reporters being excluded. The final resolution adopted by the meeting before it adjourned at 7.30 p.m. was: "That the Report "of the Special Finance Inquiry Committee, as "amended, be adopted." The report will, we understand, be published so soon as the amendments have been embodied in it, and it has therefore seemed advisable to postpone the publication of our report of the discussion on the first part of the report, inasmuch as it could not be made intelligible apart from the text of the Report of the Committee.

DURING the course of the morning session on the first day the Chairman announced that it would be convenient that nominations for the various Standing Committees should be handed in not later than one hour after the beginning of the first session on Monday, and added that in order to clear the ground he would take the election of chairman and deputy-chairman that day. Towards the close of the business of the afternoon session Mr. Armit, the Representative of the Hampstead Division, proposed that Dr. Macdonald should be re-elected Chairman; the proposition evoked loud applause, which was renewed when Dr. Latimer, in seconding the motion, said that in Dr. Macdonald the meeting had found a worthy successor to Sir Victor Horsley. After the Chairman had asked if there were other nominations, the motion was put to the meeting by Mr. Armit and carried by acclamation. Dr. Macdonald, in expressing his thanks, took occasion to say that he had endeavoured to hold the scales fairly, which he understood to be the particular duty of a chairman, and that it was nonsense to talk of the difficulty of ruling a meeting of that sort, because the members had come together to work. He added, however, that the difficulties he had encountered were sometimes in connexion with points of order, and arose to some extent from laxness in drafting and sending up resolutions before they were put to the meeting. Owing to the large amount of work to be got through it was important that the time of Representative Meetings should not be wasted, and attention to this matter of detail would undoubtedly save time. In conclusion, he stated that the Deputy Chairman, Dr. Latimer, was under the necessity of resigning his connexion with the Association so long as he was a member of the General Medical Council. Whereupon Mr. E. H. T. Nash proposed the election as Deputy Chairman of Mr. H. A. Ballance, of Norwich. By electing him the meeting, he said, would do honour to a man who had done an enormous amount of work, of which few outside the Representative Meeting knew anything. The motion was seconded by Dr. Alfred Cox, and, there being no other nomination, it was carried unanimously amidst general applause.

The report of the Medico-Political Committee was the last piece of business tackled by the Representative Meeting, and the chief interest in the discussion turned round the paragraph headed "Action in disputes" which in the report itself is little more than a bare table. It was suddenly invested with the most vivid vitality as one Representative after another went to the tribune, and told, briefly and with the eloquence which actuality gives even to the least practised speaker, the history of the local dispute in which he had played a part, often the leading part. Unfortunately, it is not at present possible, for obvious reasons, to publish these stories in full. Probably at some not distant date we shall have the opportunity of giving the gist of at least the majority of them. The successful general of these latter days does not look with too friendly an eye on the special correspondent, and sometimes it is the duty of the journalist to chronicle the incidents of a conflict after it is over and decided, and not during its progress. Let it suffice to say for the moment that most gratifying success has been achieved in some quarters of the field, and that these successes are of good omen for the result elsewhere.

THE Annual Representative Meeting had not concluded its business on Tuesday when the time came to make ready to attend the General Meeting, at which the President was to deliver his address; it accordingly adjourned until 9.45 p.m., and sat thereafter until nearly midnight. The penultimate business was the reading of the minutes and their confirmation after business. The meeting had already passed by acclamation a well-deserved vote of thanks to its Chairman, Dr. J. A. Macdonald of Taunton, who is the Representative of the West Somerset Branch, for his conduct in the chair, which has been characterized by a mingling of firmness and geniality. The last act of the meeting was to pass a vote of thanks to the Medical Secretary and his staff for the way in which the business had been prepared.

UNDER the will of the late Mr. Frederick Gutteres Henriques, of Hyde Park Square, W., each of the following institutions receives a legacy of £100: St. Mary's Hospital, the Brompton Consumption Hospital, and the Cancer Hospital, Fulham Road.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—The general meeting of the Special Appeal Committee of this hospital was held on July 24th, Captain H.S.H. Prince Alexander George of Teck, G.C.V.O., D.S.O., etc., being in the chair. His Serene Highness was supported by the Lord Armstrong and many other well-known people interested in the charity, the building debt of which has now been reduced from about £30,000 to less than £1,000 within the course of some four years. The total cost, including fittings and fixtures, has been £43,000.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

The character and scope of the work of the different Sections will appear from the following short summary of the proceedings. A full report of the discussions and of the various papers read in the Sections will be published in due course.

Wednesday, July 31st, 1907.

Section of Pathology.

Work in this Section was commenced for the week by a discussion on pernicious anaemia and allied conditions. This was opened by Dr. William Hunter, who thus celebrated the majority of his original conception of his haemolytic work, first described by him at the Glasgow meeting of the Association. He started with a schema of the many interpretations of this disease arranged in chronological order from the time of Coombe, who described it in 1822 as "a very peculiar disease." The whole question was shrouded in mystery until the application of the experimental results of haemolysis—pioneered by the speaker—placed the pathology on a firm scientific basis. The seat of the disease was now regarded by Dr. Hunter's school as in the gastro-intestinal tract, and not as, according to Ehrlich, essentially in the blood in the form of a megaloblastic degeneration, a conclusion based on false premisses. The haemolytic changes in the liver, kidney, and urine, and the infective lesions in the tongue, stomach, and intestines, were illustrated by lantern slides and naked-eye specimens in the museum. The *causa causans* was deficiency in blood-forming power and not a total failure in the process. The remarkable cases of recovery frequently observed clinically supported this view, the favourable results being due to an arrest of the inhibitory action of some toxin (probably alimentary) on the blood-forming tissues. Striking support was afforded by a case of seven years' duration, which improved under the action of antiseptic treatment, including antistreptococcal serum formed from a *Streptococcus longus* which was isolated from the tongue, etc., with sterile precautions. Dr. Hunter concluded by exhorting the members not to go to Germany for their views on the pathology of the bone marrow, etc. In the discussion that followed Dr. Melland showed some very beautiful and instructive coloured photomicrographs of blood films from various cases of anaemia, and emphasized the fact that megalocytosis is not absolutely diagnostic of pernicious anaemia. Dr. Gullan reported striking examples of personal cases rapidly recovering under the influence of a bone-marrow diet. Dr. Lorrain Smith, applying his carbon monoxide method of estimation, concluded that in pernicious anaemia there is a decrease in the total amount of haemoglobin in the body. Dr. Hutchison said pernicious anaemia did not occur frequently in children, although one would assume it would be likely to do so on account of the easy destructibility of infantile blood and the low margin for regenerative haematogenesis. Drs. Boycott and Ferguson discussed the anaemia of ankylostomiasis, and differentiated it from the pernicious type, and Dr. Walker Hall mentioned some tissue changes occurring in the same disease. Dr. Bushnell had treated several cases of anaemia with streptococcus and other bacterial vaccines, so far with inconclusive results. The Chairman concurred in the view that an abnormal blood destruction was an essential change, and in view of the pigment deposits in the organs and of comparative observations, the bone-marrow changes could not be regarded as primary. Dr. Walker Hall then described a rapid method of fat estimation in faeces which he regarded as producing good results as compared with the older methods. The morning's proceedings concluded with an interesting illustrated paper on some peculiar motile bodies in pathological cerebro-spinal fluids by Dr. Eve.

Section of Medicine.

After some opening remarks by the President of the Section, Dr. William Gordon, Dr. Risien Russell opened a discussion on the indications for operation in cases of intracranial tumour, commencing with a plea for early diagnosis in cases of cerebral tumour, and early operation in suitable cases. He mentioned conditions which might be mistaken for it—even hysteria—but particularly general paralysis, disseminated sclerosis, and certain cases of cerebral thrombosis. Given a fairly certain diagnosis, it was to be decided whether the object aimed at by operation in any case was to effect a cure or to merely relieve symptoms and prolong life. Before the former could be the aim, accurate localization was the first step, although great improvement might follow operation where localization was only approximate. With localization accurate, the position of the tumour had an important bearing on the question of operation; thus it should be negatived if deep in the hemispheres, if far forward in the middle cerebellum, or if in the mesencephalon. The nature of the growth was important, but difficult to arrive at clinically; if in a non-silent region, a long history was in favour of its simple nature; simple tumours were also more common in the cerebellum and lateral recess than in the hemispheres. As to syphilitic tumours, unless marked improvement from medicinal treatment was noticed in a few weeks, recourse should be had to operation. The probable effect of operation had to be taken into account, not only paralysis, but also risk to life from shock, haemorrhage, and sepsis. As to the method of operating in two stages, no rule could be laid down; the degree of shock was the guide. Death had, however, been known to occur from respiratory failure in the interval after the first stage. A degree of paralysis had to be accepted as part of the results of operation, but whether a permanent aphasia should be so accepted must be left to the patient to decide. The relief of symptoms might be obtained by merely opening the skull, but it was a question whether the removal of part of a tumour where the whole could not be removed might not prolong life by retarding the growth of the rest. No patient should be allowed to become blind from lack of operation. Lumbar puncture could be nothing more than a temporary measure of relieving intracranial pressure. Sir William Macewen said that operation should sometimes be performed even if the classical symptoms of brain tumour were lacking. Syphilitic tumours called for operation, especially if they were large, or caseation were believed to be present. Drug treatment should not, at least, extend to several months. The question of one or two stages had to be decided for the individual patient from the degree of shock following the earlier part of the operation. The paralysis following operation sometimes cleared away absolutely. Where aphasia or sphincter paralysis seemed inevitable he would not recommend operation. Dr. Michell Clarke referred to cases of so-called pseudo-tumour, the difficulty of distinguishing between direct and indirect symptoms due to oedema, cases of cerebellar tumour commencing with auditory symptoms, the value of tenderness of the scalp and percussion of the skull in localization. Mr. Marcus Gunn discussed the relation of optic neuritis to operation in regard to the saving of sight. For this purpose, opening the skull merely was as efficacious as removing the tumour. Dr. Newton Pitt doubted whether the cases of cerebral tumour suitable for operation were in large proportion. He discussed the question of pseudo-tumour, and thought that cerebral gummata could not be entirely removed by medicines. Mr. Donald Armour, in dealing with the surgical treatment of brain tumours, said he would describe such as operable which could be wholly or partly removed, with improvement of symptoms. The great difficulty was their infiltrating nature. Whether subcortical tumours should be removed depended on whether any important brain function would thereby be interfered with. Professor Osler held that the scepticism of the profession in regard to removal of brain tumours by the general surgeon was reasonable; very special training was requisite. He thought cerebral gummata could be

cured by drugs. The existing arterial changes had, however, to be taken into account. Dr. W. B. Lees alluded to the benefits of tapping the lateral ventricles in some cases of internal hydrocephalus. Dr. E. Bramwell appealed for the formation of a definite plan as between physician and surgeon before operations were attempted, particularly bearing on the question whether it was worth while to attempt to remove subcortical tumours. The President described cases illustrating the use of subtentorial trephining when supratentorial had failed. Dr. A. G. Robb then read a paper based on observation on the recent outbreak of cerebro-spinal meningitis in Belfast, which was discussed by Professor Osler, Dr. F. J. Poynton, and Dr. McKisack, who pointed out that recent research suggested a distinct micro-organism as the cause of epidemic cerebro-spinal meningitis differing in certain definite aspects from those of the posterior basic form; and Dr. Clive Riviere read one on the tuberculin treatment of tuberculosis in children.

SECTION OF DISEASES OF CHILDREN.

WORK in this Section, with Mr. A. H. Tubby in the chair, commenced with a discussion on diseases and displacements of the testicle, which was opened by Mr. D'Arcy Power. He doubted if tuberculous inflammation led to atrophy, as usually stated. He recommended complete extirpation when softening occurred. Syphilitic inflammation he did not consider to be the cause of the general want of development sometimes seen in congenital syphilis. He also discussed teratomata and malignant disease and imperfectly-descended testis. The latter, when unilateral, should, he thought, be removed. When both testicles were within the inguinal canal, they might be pushed back into the abdominal cavity, and if this were done early development might proceed normally, but if deferred, the patient was likely to prove impotent. Mr. Russell J. Howard, speaking of torsion of the testicle, considered it due to a congenital abnormality of the common urogenital mesentery. The mesentery, instead of being attached to the whole length of the epididymis, was only attached to the globus minor, so that the testicle was only attached by a stalk; at the same time, there was usually a voluminous condition of the tunica vaginalis. The treatment was to replace the testicle at once, if possible; otherwise there was no need to remove it, as atrophy was the usual result, and no further treatment was necessary. Professor W. E. Dixon spoke on the question of organotherapy. He stated there was no evidence to prove that injection of testicular extract had any effect which could not be obtained by injection of nucleo-albumen obtained from any other source; nor was the injection of spermine, so-called, likely to be attended by good results. He alluded to three universal secretions, namely, adrenalin, secretin, and thyroid secretion, which were the same in all vertebrate animals. He believed the testicle had a similar internal secretion which had not yet been discovered. It was probably obtained from the interstitial gland cells, and there was probably some connexion between these cells and the suprarenal glands. Mr. McAdam Eccles strongly supported Mr. Power's contention that bilaterally imperfectly-descended testes, when lying in the inguinal canal, should be replaced within the abdomen and fixed there. Mr. Lockhart Mummery considered the commonest enlargement of the testicle in infants was tuberculous. Mr. Russell Howard stated that out of 20,000 children admitted to the London Hospital there were only four cases of malignant disease of the testicle. Papers were also read by Mr. G. H. Edington, of Glasgow; Mr. H. T. Gray, Mr. C. H. R. Nitch, and Mr. Lockhart Mummery. Mr. Tyrrell Gray read a paper on some cases in which Meckel's diverticulum was present, producing intestinal obstruction or symptoms of peritonitis, etc.

SECTION OF PSYCHOLOGICAL MEDICINE.

DR. T. CLAYE SHAW, in an exceedingly able and eloquent Presidential Address, referred happily to these annual meetings as milestones in the path of progress. Compared with other departments of medicine, the progress had at times seemed slow and to have depended very largely on that made by other departments. Inasmuch as the confidence with which he regarded the future of medical psychology was based on our general knowledge, on the placing of mental diseases upon a biological foundation, the cohesion with other departments was necessary, but medical psychology had also its own special department, which it could not neglect. He then referred to the works of Hyslop, Stout, and Sir Oliver Lodge, and stated that whilst at no time—notwithstanding the strictures of a certain "*Times* Correspondent"—had more attention been given to bodily condition in insanity, other branches of study, such as hypnotism, suggestion, and telepathy, required consideration. He then referred to the great change which had occurred within recent years concerning views of what constituted insanity, and brought about in particular by the working of the wide field of bacteriology and the influences of a disordered metabolism or mentality. Old-established views had been unsettled and widely and long-held postulates had now to be rewritten in the light of bacteriological results. Passing on to practical matters, he instanced the pressing necessity of a more individual treatment of acute cases, the formation of hospitals rather than asylums for these cases and the establishment of mental clinics and out-patient departments, and, further, the need for legislation with regard to the treatment of incipient cases of insanity. In referring to recent results as the result of asylum work, he mentioned two which were of undoubted importance: First, the ascertained danger in the common prescription of narcotics and sedatives in early and acute cases, and, secondly, the elucidation of the alcohol question. Dr. Mott then read an exceedingly valuable paper on alcohol and insanity, containing the result of a comparative study of the effects of drunkenness on the patients at Charing Cross Hospital and those at Claybury Asylum. He had been frequently struck by the great rarity of cirrhosis of the liver in the asylum as compared with the hospital, and instituted an inquiry amongst the alcoholics of these two institutions. The main fact resulting from this was the conclusion that patients becoming insane as the result of alcohol were much smaller in number than could be gathered from official tables, and that when such cases did occur the patients were already the subjects of a *locus minoris resistentiae*, and in most cases other causes existed as exciting factors—for example, bacterial invasion or toxic disturbances other than alcoholic. His paper was illustrated by lantern slides giving the comparative incidence of the various causal factors in the cases, over 1,000 in each case, of the two institutions. Alcohol, *per se*, he concluded did not cause a permanent mental derangement justifiably entitled to the name of insanity, in the majority of cases. The paper contained a valuable account of the polyneuritic psychosis, and the great diagnostic and prognostic value of the symptoms and signs of the syndrome in so-called alcoholic insanity. The paper was the means of eliciting a long and interesting debate, in which, among others, Drs. Mercier, White, Macdonald, Shore, Heard, Peterson (New York), Professors Halliburton and Anderson, Drs. Robertson, Yellowlees, Davy, Menzies, Edridge-Green, Oswald and MacDowall took part. The majority of the speakers were in agreement with Dr. Mott as to the much overrated part attributed commonly to alcohol in the causation of insanity, Drs. Shore and Robertson, however, being of the contrary opinion.

SECTION OF ELECTRO-THERAPEUTICS.

DR. H. LEWIS JONES (President of the Section) opened the proceedings by introducing Professor Stéphane Leduc, of the Medical School of Nantes. The President said that no person had done so much as Professor Leduc to put medical electricity on a scientific basis and to advance its application into fresh fields. Professor Leduc, who was warmly received, made a graceful reference to the debt which workers in electricity the world over owed to British genius and invention. Thanks to the British discoveries, completed by the investigations made on the Continent, much had been learned about the action of electrical currents upon living beings. The

power to introduce electrolytic substances through the skin increased in large measure the resources of the therapeutist. The burning of the skin was the chief obstacle to electro-ionic medication, but it was to a large measure avoidable if the conditions under which it was produced were known. In most cases the burning was produced by caustic ions which took place at the surface of the metallic electrodes. In order to use high-current intensities in medicine it was necessary to prevent the caustic ions from reaching the skin. This was obtained by altering the character of the electrodes, using, instead of one layer of doeskin, some fifteen to twenty layers of absorbent tissue well soaked with the electrolytic solution. In conclusion, Professor Leduc said that electrolytic processes opened to medicine a new path which should be particularly followed in the country where electrolysis was discovered, received its laws, and yielded such splendid results. Mr. A. D. Reid (King's College Hospital) showed a new form of cryptoscope for use in operations for renal calculi. The cryptoscope consisted of an aluminium cup, at the bottom of which was placed a fluorescent screen. An aluminium cylinder is so arranged that the screen can be adjusted at a suitable distance from the eye of the operator. The kidney is exposed in the ordinary way, and brought out on to the loin. By means of a special retractor, also of aluminium, the tissues around the kidney are pressed down from the organ, and in the central portion of the retractor a hole is made of sufficient size to allow the kidney to pass through it. When the organ has been delivered the retractor is placed in position and the kidney examined directly by the cryptoscope. The smallest fragment of calculus can then be accurately localized, and it is a matter of comparative simplicity to make a small incision over each calculus and to remove it. Professor Wertheim Salomonson described the galvanometer invented some years ago by Einthoven of Leyden, and a modified form of the same instrument which he had had constructed for himself. It was said to be exceedingly useful in studying the current curves in the primaries of induction coils, and was also employed for recording the action currents which were caused by muscular contractions or heart-beats. The President followed with a paper on a similar subject, and showed a number of interesting oscillograph tracings of medical coil currents. He proved that the presence of an iron core in the medical induction coil increased the duration of the waves, and might increase them to such an extent that they would interfere one with another—the current at make might interfere with the current at break. Long waves were much more painful than short ones when applied to the human body. Dr. Lewis Jones suggested that in searching for a desirable current for medical work it would be well to have a spark gap in the secondary. He showed records of some beautiful discharges produced under such a condition. Drs. Hugh Walsham and Halls Dally read a joint paper on the orthodiagraph, and gave a demonstration with the instrument. In an orthographic examination of a patient what is known as the "normal incident ray"—the one ray in the divergent pencil of rays emitted from the anticathode which strikes the screen perpendicularly—is conducted round the entire circumference of the organ under investigation, and thus the exact size of the organ can be mapped out. The readers of the paper claimed that they were able to measure motionless objects to within the fraction of a millimetre, and moving objects with far greater approach to accuracy than can be attempted by any other means. The patient is placed against the canvas of the couch behind which is the lamp, and the paper on which the tracing is to be taken is fixed to the board at the back of the instrument so as to present a perfectly plane surface. The stylograph consists of a hollow reservoir filled with aniline dye, which is conducted along a small hollow tube by means of a cotton wick to the writing point. The time taken to make an orthodiagraphic tracing is about twenty minutes for each patient. The session concluded with a valuable paper from Dr. W. F. Somerville (Glasgow) on the influence of high-frequency currents on the urinary system. This influence, he said, was considerable, judging by his observations of many patients. In most cases the amount of urine excreted was largely increased, in others, when there was polyuria, there was a diminution. He gave a large number of analyses to show that high frequency currents had undoubtedly a very marked influence on improving the metabolism in the body. They were sometimes told that high-frequency currents had no influence, but he held strongly that irregular, and even abnormal, metabolism might in great measure be corrected or restricted. The proper and more proportionate excretion of the constituents in the urine meant that fewer toxins were retained within the body, and, therefore, patients undergoing high-frequency treatment would show signs of improved health and vitality.

Section of Tropical Diseases.

Mr. James Cantlie, the President of the Section, delivered a short introductory address, in which he pointed out that the protozoologist was supplanting the bacteriologist in recent years in connexion with the cause of disease in the tropics. Professor W. R. Simpson read a paper upon antimalarial sanitation, in which he discussed how recent discoveries have rendered antimalarial sanitation more precise and less costly. Professor Hans Ziemann, of the Cameroons, West Africa, spoke on the malaria prophylaxis in uncultivated districts. The following joined in the discussion: Major A. H. Nott, I.M.S., Dr. W. T. Prout, C.M.G., Dr. H. M. Fernando, Dr. Andrew Balfour, Dr. Louis Sambon, Major G. T. Birdwood, I.M.S., Sir Patrick Manson, K.C.M.G., and Lieutenant-Colonel J. C. Giles. The meeting then adjourned to an adjoining room, where Major Leonard Rogers, I.M.S., gave a lantern demonstration of various unclassified tropical fevers and to illustrate other fevers he has studied in India.

Section of Surgery.

The work of the Section was opened by Professor G. A. Wright, of Manchester, in a brief speech acknowledging the honour of being asked to preside. In the absence of Mr. H. P. Dean, his paper introducing a discussion on the relative value of inhalation and injection methods of inducing anaesthesia was read by the Secretary. It stated that the great claim of "lumbar anaesthesia" was that by its use "shock" was avoided. Notwithstanding the advance made in the administration of inhalation anaesthesia, it could not be disputed that "shock" obtained under chloroform and ether narcosis was not materially diminished; moreover, the deleterious influence of these drugs upon the respiratory membranes could not invariably be obviated; and further, whilst these drugs acted upon the central nervous system, "from above downwards," in lumbar anaesthesia, we had a means of preserving the higher centres from the access of pernicious peripheral stimuli in lumbar anaesthesia. As to the drug to be selected, cocaine had drawbacks which were insurmountable, but stovaine, though a vasodilator, had a stimulating action upon the heart, and was satisfactory. It had been used by the author in preference to either novocaine or alypin, and was not combined with adrenalin. Apart from cases in which the immediate and secondary effects of inhalation anaesthesia were so disastrous, and from those in which surgical shock was a grave danger, the choice of the lumbar method was of but little moment and hardly more than a matter of sentiment, but in such a condition as acute general peritonitis, for example, the value of this method could not be overrated. Opinions were invited as to the site of injection and whether or not cerebro-spinal fluid should be withdrawn; as to the management of the patient; the dose; reliability and protection from shock. Mr. Ward Cousins remarked that neither method was free from danger, but that the relative safety could only be determined by statistics, which were not available at present. He thought a state of complete insensibility was very often a great boon to both patient and surgeon. It would be undesirable to add to the responsibilities

which already bore hardly upon the operator that attendant upon the induction of spinal anaesthesia. Dr. Alexander Wilson, speaking from the point of view of the anaesthetist, admitted certain disadvantages of inhalation, and the superiority, where these could be anticipated, of the lumbar method. He submitted, however, that with proper administration both chloroform and ether were really very safe, and pointed out that the majority of abdominal operations were not really attended by much shock. Mr. Leedham-Green entered an energetic plea for spinal anaesthesia, which, he said, he now employed as a routine method for all major operations below the diaphragm. Tropacocaine undoubtedly gives the best results; it is safe, reliable, and free from undesirable after-effects. Dr. A. G. Levy defended the position of the general anaesthetist, maintaining that with correct technique (and he warmly advocated the open method of ether administration) all the disadvantages of the inhalation practice could be minimized. Mr. J. W. Struthers drew attention to the very large field for strictly "local" anaesthesia—namely, all those cases in which the whole area of operation or its nerve supply can be reached by the injecting needle. Since the risk to life of the injection was nil, it was incumbent upon surgeons to employ the method wherever possible. Mr. Canny Ryall detailed his results with the use of novocaine, and strongly urged the desirability of extending its employment in this country. Professor Rodman (Philadelphia) said that he preferred spinal anaesthesia in all cases of bronchitis, nephritis, alcoholism, and cardiac disease; he had never had occasion to regret its use; he considered it unsuitable for operations in the upper part of the abdomen, and contraindicated in children. Dr. Darling mentioned a case of very large ovarian tumour successfully removed under spinal anaesthesia, and the discussion was terminated by some remarks from Dr. Barton on the untoward effects occasionally encountered after spinal injection. Mr. Pardoe read a very careful paper dealing with the indications for prostatectomy, and the differential diagnosis of the various forms of enlargement of the organ. Mr. P. J. Freyer, in giving the statistical details of his latest series of prostatectomies, remarked upon the large number of cases of malignant disease he encountered, and indicated the criteria for diagnosis of cancerous cases in early and late stages. Mr. Ward Cousins described a case of composite odontoma; and Mr. C. P. Childe one of successful resection of 9½ ft. of small intestine for gangrene. The proceedings for the day then terminated.

SECTION OF OPHTHALMOLOGY.

THE President, Mr. L. H. Tosswill, made some opening remarks, in which he welcomed the Section and pointed out that the West of England Eye Infirmary at Exeter was founded only four years after Moorfields. Dr. E. Landolt (Paris) then opened a discussion on the construction and manipulation of the principal instruments used in eye surgery. He showed several instruments he had himself introduced, and pointed out that the balance of such instruments as knives was usually bad; the blades were too long, and the handles were too long and heavy. Ivory was still the best material for the handles, but aluminium was the next best, and it would stand the heat of sterilization better. Forceps and scissors were also discussed. The President, Lieutenant-Colonel Herbert, Dr. Reeve, and Mr. S. Snell all agreed with Dr. Landolt. Dr. Grossmann said he had found much difficulty in getting curved keratomes sharpened in England. Mr. Jessop thought that no one could sharpen knives better than Weiss. Dr. Landolt having briefly replied, Mr. Simeon Snell read a paper on an inquiry into the cause of blindness in 350 inmates of a blind school. Ophthalmia neonatorum caused more than a third of the cases; the other chief causes were optic atrophy, congenital cataract, and sympathetic ophthalmitis. Mr. Stephenson then proposed the following resolution:

> In the opinion of the Section of Ophthalmology the time has come for the British Medical Association to take action for the prevention of ophthalmia neonatorum.

Dr. Grossmann seconded this. Dr. Cecil Shaw suggested that the measures proposed should be stated. The original resolution was put and passed. Mr. Richardson Cross having discussed Mr. Snell's paper, Dr. Ernest Thomson raised the question of the comparative prevalence of ophthalmia neonatorum. Dr. Landolt said he had found that in Paris there were much fewer cases of ophthalmia neonatorum than formerly. Dr. John Hern (Darlington) said that the disease was increasing in his district, and that these cases nearly all occurred in patients treated by midwives. Dr. Trotter (Perth) hardly ever saw a case now. Mr. Snell replied, and said he found that ophthalmia neonatorum was not diminishing at all in Sheffield. Dr. Hinshelwood agreed with Mr. Cross that ophthalmic surgeons should take up more seriously the question of trephining for relief of intracranial pressure and optic neuritis. Dr. Fish (Chicago) then read a paper on the relation of disease of the nasal accessory sinuses to optic neuritis in which he showed that frequently the neuritis was due to sinus disease. Mr. Pickard and Mr. Bower (Gloucester) agreed with Dr. Fish on this point. Dr. Reber (Philadelphia) thought that ophthalmic surgeons too often neglected to send cases to the nasal surgeons. Most unilateral cases were due to sinus disease. Dr. Chichele Nourse also described some cases in point. Dr. Hill Griffith (Manchester) asked if these cases described by Dr. Fish had a central scotoma and were really retro-ocular neuritis; if so, they nearly got well without treatment. Dr. Fish in reply said that some of his cases were certainly retro-ocular in nature, but many were not. Dr. Karl Grossmann described a portable refractometer and astigmometer, and an improved form of artificial eye. Mr. Snell said there was much that was good in Dr. Grossmann's refraction instrument. He had described it many times, and had used it twelve or thirteen years, and even when he described it he borrowed the idea from Dr. Würdemann. Dr. Hill Griffith thought the idea was very old indeed. Dr. Grossmann asserted his claim to being the originator of the modifications in his instruments. The proceedings for the day then terminated.

SECTION OF LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

THE first meeting of this Section opened at 10 a.m., when there was a fair attendance, which was much increased later on. The President, Dr. R. McKenzie Johnston, of Edinburgh, gave his introductory address, in which he welcomed the members to Exeter, and thanked them for the honour conferred upon him in his election as President. He apologized for Professor Onodi, who had been recalled, and for Dr. Chevalier Jackson. There were two important topics he would like to emphasize—first, the importance of the study of diseases of the throat, nose, and ear, and the means to be adopted to advance these studies. While there was great improvement compared with ten years ago, there was still room for further education in this direction. However, he was not in favour of any compulsory study, as he believed from his past experience that students themselves desired to gain knowledge of diseases of these parts. Secondly, he would like to refer to the present status of his department in the world of medicine. He believed that now they were recognized as one of the foremost branches of medicine, due to the high standing of their leaders, and the good work that they had done. He then introduced Sir Felix Semon, who read an excellent paper upon the differential diagnosis between tuberculous, syphilitic, and malignant disease of the larynx. He stated that usually the diagnosis was easy, but in exceptional cases almost impossible. The merest tiro in laryngeal work could recognize typical laryngeal tubercle, typical tertiary syphilis and typical malignant disease, but difficulty began in those cases where the signs were ambiguous. The chief points of diagnosis he discussed were congestion of the vocal cords as an initial sign of tuberculous, syphilitic, and malignant disease. This congestion was of a catarrhal character, and therefore concomitant local and general symptoms must be investigated; but a unilateral congestion, unless traumatic, was a danger signal. He then spoke of

the difficulties of diagnosis between the three diseases, showing that tuberculous growths might occur when there was no demonstrable pulmonary lesion and no cough, and when the rounded, smooth tumour made it almost impossible to remove a part for microscopic examination. Pre-ulcerative gumma was difficult to distinguish between tubercle and syphilis, and here iodide of potassium was important. He referred to the possibility of tubercle in middle-aged and old people when at times the diagnosis might be for a long time doubtful. Again, iodide of potassium, examination of a portion of the growth and of the sputum and general symptoms were of the utmost importance. Finally, he referred to cases in which two of the three diseases were combined. It used to be considered that malignant disease and tubercle were mutually exclusive, but this was now proved to be false, and tentative antisyphilitic treatment should be applied in every case of the slightest doubt. Dr. Jobson Horne (London) opened the discussion by reading an interesting and instructive paper in which he stated that the eye trained to recognize changes in the larynx caused by tuberculosis would make very few errors indeed in the diagnosis of laryngeal disease. He divided the ambiguous cases under discussion into four stages—(1) congestion and impairment of vocal function, (2) tumefaction, (3) ulceration, (4) glandular enlargement. Starting from the standpoint of exclusion of tuberculosis, he elaborated a scheme of elimination. This was based upon histological facts and pathological data by which he demonstrated that the parts of the larynx vulnerable to tuberculosis were distinct from the sites of origin of epithelioma—the most frequent form of laryngeal cancer. He referred to the differences in the pain and hoarseness experienced in the three diseases, and after describing the technique to be followed in removing and examining a part of the suspected tissues, and the help afforded by transillumination of the larynx, he touched upon the value of the opsonic index, and concluded by emphasizing the all-importance of a laryngoscopic examination in the very earliest stages of the symptoms. Dr. Haring thanked the introducers of the discussion; he considered fixation of the cord an important sign of malignancy; fragments removed might lead to mistakes, because of the tumour itself not being touched. Drs. Tilley, Dundas Grant, Hill, Scanes Spicer, Burkitt, Syme, Bronner, Ball, and Watson Williams continued the discussion. The President summed up, and Sir Felix Semon and Dr. Horne replied. Mr. Stuart Low then read a paper on submucous turbinectomy which was really a filleting of the inferior turbinal, which could usually be done without a general anaesthetic; the middle turbinal could be somewhat similarly dealt with. He illustrated his paper by coloured diagrams. Mr. Hill, Dr. Horne, and Dr. Watson Williams took part in the discussion. Notes were then read by the Honorary Secretary of a case of Dr. Robert Fullerton's tumour of the tonsil.

Section of Dental Surgery.

Work in the Section of Dental Surgery was commenced by a few words of welcome from its President, J. McKno Ackland, M.R.C.S., of Exeter, and a discussion on the causes, effects, and treatment of dental disease in children was then initiated by Dr. G. F. Still, F.R.C.P. He touched more particularly on the abdominal symptoms of children referable to the action of carious teeth or inflamed gums, and then passed on to the swelling of glands in the cervical region. Habit spasm and the relation of early diet to dental disease were also considered by him. Mr. Edmund Owen, F.R.C.S., Consulting Surgeon, Great Ormond Street Hospital for Children, continued the discussion, and insisted on the extreme importance of the relation of rachitis to ill-developed teeth, and to the onset of that disease owing to the use of soft, pappy food, and of meat which was frozen and never fresh. He was followed by Mr. J. G. Turner, F.R.C.S, who dealt with the pathology of enamel malformations. The discussion was continued on general lines by Dr. E. Cautley, Dr. G. A. Sutherland, Mr. K. W. Goadby, Mr. R. Dawson Pedley, Mr. W. R. Ackland, Dr. Brown, and Mr. C. E. Wallace, and, finally, on the suggestion of the President, was adjourned until Thursday. Before the Section rose for the day a telegram of greeting was sent, on the motion of the President, to the Stomatological Association, which is holding its first meeting in Paris on Thursday, August 1st.

Section of Obstetrics and Gynaecology.

This Section met at 10 a.m. in the Board Room of the Devon and Exeter Hospital in Southernhay. The President, Dr. Hastings Tweedy, opened the proceedings with a short address, in which, after welcoming Professor Strassmann of Berlin and other distinguished visitors present, and congratulating the Section on the excellent arrangements made for their comfort, and the wealth of material provided for their consideration, he pointed out the great importance of the work done last year by the British Medical Association in connexion with the standardization of the conditions which should be considered as constituting morbidity in the puerperal state. He then called upon Dr. Robert Jardine, of Glasgow, to open the first discussion on the agenda, on the justification for artificial dilatation of the cervix to hasten delivery at full term, and on the most appropriate methods for procuring this dilatation. Dr. Jardine did this very thoroughly, describing the conditions which justified such artificial dilatation in the interests of the mother or of the child, and the various methods of effecting it. That artificial dilatation was justifiable in some cases he held to be as firmly established as that it was absolutely improper and the worst kind of meddlesome midwifery in others. He spoke of the bloodless methods, the vaginal plugs, the various forms of bags, and manual dilatation with due appreciation, and then described the method of forcible dilatation with metal instruments such as that of Bossi as not entirely to be condemned, but to be employed only by those having special experience and then only with great care and patience. He proceeded to describe the methods of multiple cervical incisions and vaginal Caesarean section of which Duehrssen has been the most prominent advocate, if not the inventor. He also described Duehrssen's method of enlarging the vaginal outlet by perineal incisions when this, as is sometimes the case, is necessary. The choice of the method must, however, depend not only upon the conditions of the case but upon the personal experience and predilection of the operator. Professor Strassmann followed, and concurred generally with what Dr. Jardine had said, and the discussion was continued by Dr. Galabin, Dr. Munro Kerr, Dr. Frederick Edge, Dr. Inglis Parsons, Dr. S. Cameron, Dr. R. J. Johnstone, Dr. Purslow, Dr. James A. Temple (Toronto), Dr. Wilson (Birmingham), Dr. Walter Swayne, Professor Dixon, and the President. The general trend of the discussion was against the use of dilators of the Bossi type, and stress was laid on the danger of incisions in the cervix, extending by tearing, even to laceration of the uterine arteries, and to the difficulty of vaginal Caesarean section at full term compared with its simplicity in the earlier months of pregnancy. Dr. Walter Swayne, who presented an interesting summary of the known facts and literature of chorion-epithelioma, reported two interesting cases which had been under his observation, and held that the existence of pulmonary symptoms or of metastases did not contraindicate radical operation. Professor Strassmann alluded to the recent discovery of chorion-epithelioma in tumours of the testicle, and suggested that further research might support an altered view as to its etiology. An interesting discussion ensued, in which Dr. Wilson, Dr. Munro Kerr, Dr. Edge, Dr. Cameron, Dr. F. J. McCann, Dr. Smallwood Savage, and the President took part. Dr. Swayne's paper will, it is hoped, be illustrated by a lantern demonstration of macroscopical and microscopical specimens from his cases.

Section of State Medicine.

The Section of State Medicine was held under the presidency of Dr. Arthur Newsholme, medical officer of health for Brighton, who, after a few words of welcome,

delivered an address on the need for co-ordination of the public medical services. After calling attention to the advances made by preventive medicine into the realm of diseases other than germborne or infectious, Dr. Newsholme pointed out that the question was now becoming of increasing importance to the community as well as to the individual. The vicious cycle of poverty and disease reacting upon each other called for some solution of the practical problem of preventing two things—poverty caused by disease and disease arising from poverty. The agencies by which disease was at present combated were shown to be disorganized, overlapping, and ineffective, and the combination of voluntary effort, as illustrated in hospitals and State-aided treatment under the Poor Law, failed entirely to produce an adequate result for the vast sums expended in this manner. Further than this, the unorganized conditions of private practice were most unsatisfactory. The late diagnosis of disease, the fear of expense, the waste of time to the patient, and the difficulty in obtaining medical consultations were all alluded to, and emphasis was laid upon the waste of much valuable information. Instances in which co-ordination had proved a success were quoted, notably the Brighton system of treating phthisis; as an instance of unco-ordinated work, Dr. Newsholme quoted the present condition of the examination of school children. In this case not only school inspection was needed, but home inspection and advice beyond the scope of the school doctor and the medical officer of health. The necessary corollary was the appointment of district municipal examiners to make house-to-house inspection of school children. The present state of medical service was described as transitional. The modern tendency in every direction of medical service was that it should be given at the expense of the community, and there should be no greater difficulty in providing free medical treatment than in giving free education. A co-ordinated system of State-paid and State-directed medical service would speedily justify itself from an economical standpoint, and must of necessity ally itself to preventive medicine. It would thus of necessity centre itself round the present public health medical service, which would then embrace every form of sickness, and every method, both medicinal and sanitary, of preventing it. The reading of the paper was followed by a very animated discussion, in which most of the members present took part, including Dr. Cooper Pattin, Mr. Denison Pedley of the Evelina Hospital, Mr. Garrett Horder of Cardiff, Dr. Tidswell of Torquay, Dr. Walker of Edinburgh, Surgeon-General Sir Charles Cuffe, Dr. Molson, Drs. Sinclair Holden, Herbert Jones (Hereford), Kenwood, Slade-King, Bygott, Noy Scott, and Dr. Browne (Ayr). The general trend of the discussion was absolutely in favour of the scheme enunciated by Dr. Newsholme, who pointed out in his reply that it was only an academic discussion or a "second reading," and that this was neither the time nor place for putting forward details. Dr. Gilchrist then read a paper "on the necessity of the degree of immunity against small-pox," in which he emphasized the necessity for presenting a high degree of personal protection in the face of the State relaxation of compulsory vaccination. He traced the history of small-pox epidemics and the various theories of its origin, and alluded at length to the relationship between small-pox and war, and further spoke of the contrast between England and other countries in compulsion, and of the growing ignorance of medical men on the subject of small-pox. Mr. Garrett Horder read a paper on the new Vaccination Order, pointing out at great length the hardships which would be entailed upon public vaccinators by the reduction of fees. Dr. Kenwood (who was now in the chair) made a few appropriate remarks on the two papers read. Dr. Coutts of Blackpool spoke briefly on the hardships which he knew would fall upon public vaccinators, and of the grave need for a higher standard of vaccination. Dr. Sack Noy Scott discussed the duties imposed upon public vaccinators; they pressed very heavily in rural districts. Dr. Garrett Horder then moved the following resolution:

That the Council of the Association be recommended to call the attention of the Local Government Board to the inadequacy of the minimum fee laid down in the Vaccination Order of the Board of 1907, and to the desirability of making all vaccination expenses chargeable to the Imperial exchequer.

This was carried unanimously.

NAVAL AND MILITARY SECTION.

ON July 31st the Naval and Military Section commenced the session with an introductory address by the President, Inspector-General J. Porter, R.N., who took as his subject preventive medicine in the navy and army. He observed that promotion by merit had been established through all ranks of the Army Medical Service, and its officers had been given a career by the sweeping away of the paralysing blight of seniority. The specialists of the Army Medical Corps were forging ahead. The detection by Colonel Bruce of the *Micrococcus melitensis* had led up to the crowning discovery of Major Horrocks that goats and their milk were the chief means by which Mediterranean fever was spread. A step of the first importance had been made by the Secretary of State for War when he ordered that the principles of sanitation and hygiene should become an integral part of the training and essential qualifications of all combatant officers. The recent conflict in the Far East had strikingly demonstrated both afloat and ashore the vital effect of the medical services upon the ultimate issue of war. The Russian *débâcle* was largely if not mainly attributable to preventable disease, brought about by the absence of properly-concerted methods of dealing with it. The success of the Japanese was due to years of careful study, judicious outlay, and patient practice; nothing was left to chance. The medical profession owed it to the sailors and soldiers of the country to strive after the standards of medical efficiency with which Japan had surprised civilization. A paper was then presented by Fleet Surgeon A. Gaskell, R.N., on the treatment of wounded in fleet actions. The author considered that all were practically agreed that a hospital ship should be built; that a new naval first-aid dressing should be devised; that first aid should be taught; that the haversacks should be distributed before action; that in peace time the first-aid dressing should frequently be used for instruction; and that the surgical apparatus should be protected during action. No general consensus of opinion had been arrived at in regard to the proper medical preparation for battle, nor in regard to the augmentation of the medical staff in war time. The Japanese believed in a much larger medical staff than they were accustomed to in the navy of Great Britain. The author suggested that, if possible, every one in the ship should, before going into action, receive a hot antiseptic bath, and should have served out to him a complete war clothing consisting of non-inflammable flannel impregnated with double cyanide salt, and as much as possible of the surface of the body covered even to the extent of wearing flannel masks with openings for mouth, nose, and eyes. The ideal station for the medical officers and the men told off to help them was an armoured-receiving room, well lighted, capable of holding 6 per cent. of the ship's company, and situated amidships above the protective deck—this was the ideal suggestion for ships about to be constructed. In ships already built, the author put forward the plan that a large, well-lighted, well-ventilated space be cleared away on a level with the magazines near the bottom of the ship, approached through one or more large armoured tube-like hatchways, capable of taking a lift or stretcher or sliding board. Referring to the question of moving the wounded, the author held that the details should be settled at the time by the principal medical officer. Lieutenant-Colonel A. M. Davies, R.A.M.C., then read a paper on the spread of enteric fever by personal infection and on preventive measures on active service. He said that the spread of enteric fever by personal infection (direct or semidirect contagion) was not at present generally recognized in the text-books as an important mode of propagation. He indicated certain preventive measures for the enteric patient while in hospital, on admission, and

during convalescence. He discussed the unrecognized and perhaps clinically unrecognizable cases in barrack or camp, and concluded by considering the subject under active service conditions. The Frequency of Aneurysms in the Royal Navy was the title of a paper read by Fleet Surgeon P. W. Bassett-Smith, R.N., who showed that alcohol and syphilis could not now be regarded so conclusively as the chief causative factors in aneurysm. The day's proceedings terminated with a paper by Staff Surgeon G. E. Duncan, R.N., on a form of oval filter for use in operating rooms.

THE IMPORTATION OF TRACHOMA.

Trachoma is one of those diseases which are always to be found more or less in our large centres of population, but while in England it has frequently been almost extinct among our own people, it is very prevalent in some Continental countries, and notably among the Jews and the poorer people in Russia. It is amenable to treatment, and it is easy to stamp it out if suitable precautions are taken, and especially if the supply of infected people is cut off. If the disease is left to itself the amount of suffering and impairment of vision, as well as of blindness, which it induces, is very great. The danger is so well realized, that even the daily press is taking it up, and a somewhat startling paragraph on the subject appeared in a contemporary a short time ago, in which it was said that "London is threatened "with a plague of one of the most terrible maladies "known to medical science. Trachoma, that fearful "disease of the eye, is spreading to an alarming extent, "and little or nothing is being done to check it." This statement is unfortunately too true, as every one must know who is connected with any of our large ophthalmic hospitals. The article goes on to say, "Alien immigrants "are bringing this disease into London every day. There "is a law to exclude persons suffering from it, but it is "slackly enforced, with the result that London is faced "with the extreme danger of being stricken from one "end to the other with an epidemic of this disease." Most of the patients suffering from trachoma are foreign Jews, and the greater number come from Russia, and owing to the troubles and persecution in that country, they do their best to get to America, but they land in England on their way. Americans, however, enforce stringent regulations which stop all persons infected with trachoma from landing in their territory. The result is that any shipping company bringing infected emigrants to America has to take them back again at its own expense; consequently the companies have the most searching medical examination made, which enables them to reject all those who have the least suspicion of granular lids, and such people are not allowed to embark at all. The result is that they are left stranded in such cities as London, Liverpool, etc. Most of these people are without the means for returning home, even if they had the desire to do so, which of course they have not, and so our alien population grows and spreads disease among those with whom they associate. The Aliens Bill passed by the late Government did something, but before it really had time to do much the present Government had modified it so much that much of its effect was lost, almost before it was felt, and thus England is practically acting as a filter bed for the trachoma of Europe. When the authorities will wake up to the realization of the immense amount of harm which is being done to our own people it is impossible to say, but it is quite certain that this horrible disease will continue to spread in our poorer quarters so long as the supply of infected aliens is kept up.

THE SCAPEGOAT IN THERAPEUTICS.

In the *Golden Bough* Mr. J. G. Frazer gives an interesting account of the practice which exists in India, China, and elsewhere, of freeing a community from disease by getting it carried away by an animal or scapegoat. Thus, in the Central Provinces of India chickens and goats, sometimes buffaloes, are used to carry away cholera. When the Aymara Indians were suffering from plague, he says, they loaded a llama with the clothes of the plague-stricken people and drove the animal into the mountains, hoping that it would take the plague away with it. Sometimes the scapegoat is a man. Some of the aboriginal tribes of China, we are told, as a protection against pestilence, select a man of great muscular strength to act the part of scapegoat. Having besmeared his face with paint, he performs many antics with the view of enticing all pestilential and noxious influences to attach themselves to him only. Finally, he is driven out of the town or village, hotly pursued by men and women beating gongs and tom-toms. A like belief would appear to exist among the devotees of spiritualism. In that organ of mystical lore, *Light*, of July 13th, the following wondrous tale is told by "An Ex-Hospital Nurse." Having scalded her foot, her mother at once wrapped it in carron oil bandages, but the doctor who was called in, "a very "prosperous local practitioner," removed these and ordered the foot to be dressed with boracic lint, and the foot to be supported at a much higher level than the pillow. The boracic lint stuck to the raw surface, and the pain, which had been mitigated by the carron oil treatment, became more and more violent. The foot, says the patient, was obviously festering, as could be seen by the matter oozing through the bandages. The doctor, who may have been a Christian Scientist in disguise, said the pain was nothing, and refused to sanction the removal of the boracic lint. The suffering, however, became so agonizing that the ex-nurse's mother carefully removed the lint with warm water, telling the doctor of what she had done. He then sent some ointment to be applied three times a day. Nevertheless, "the suppuration increased, the foot grew purple and "swollen out of all shape, and the leg became notice-"ably shorter than the other." The pain, like Macbeth, murdered sleep. The rest of the story must be told in the patient's own words: "My mother, then, as a last "resource, sent to a well-known clairvoyant, Mr. ——, "of London, simply asking for a sitting, without even "mentioning that he was wanted for a medical case. "Mr. —— was shown into the dining room, where I "was lying on the sofa, without a word of explanation "being given him. On entering, he immediately said "that he felt a very severe pain in his right foot. A "chair was handed to him, and he immediately went "under control. The spirit controlling him said that he "was suffering tortures in his right foot, and partially "removed his boot to ease the pain. The spirit then gave "orders that my foot was to be plunged into hot water, "as it had become numbed. This was immediately done, "without my experiencing any sensation from the "immersion; the spirit control said that, had that not "been done, I should have lost my foot. Mr. ——, still "under control, made magnetic passes over my foot for "several minutes, and I began to feel great relief. The "controlling spirit then told my mother to wrap my "foot up in lint soaked in tincture of myrrh, and that "in the morning the pain would be gone; afterwards "she was to apply myrrh thrice a day without bandages "and magnetize my foot as she had seen Mr. —— do. "This was attended to. The next morning, after "Mr. ——'s visit, his control's prediction was verified— "the pain had completely left my foot! My mother "carried out the instructions for a week; at the end of "three days I could feel the blood circulating in the

"foot once more; at the end of the week the suppura-"tion had entirely ceased, and I was able to put "my foot to the ground; at the end of three weeks "I was able to put my boot on and walk out of "doors." The "Ex-Hospital Nurse" sums up the case as follows: "I had suffered torture for six weeks "before Mr. —— was called in, and had gone from bad "to worse under the earth doctor's treatment, in spite "of his continued visits. I only received one visit from "the spirit doctor, and was relieved before he left the "house. The earth doctor's fees, it is interesting to "note, amounted to exactly five times the spirit "doctor's. Comment in such a case seems superflous; "it speaks for itself." We should like, however, to know what happened to the spirit doctor's foot. Did it swell "wisibly" like the ladies who alarmed the elder Weller at a tea party? Did it suppurate like the patient's? If so, how was he able to put on his boot after the spirit removed it? On the whole, it may be gathered from the "Ex-Hospital Nurse's" narrative that the lot of a spirit doctor is not a happy one. It must need a man of rare courage and self-sacrifice to practise a method in which he acts the part of a scapegoat for his patient's benefit. The "earth doctor" would shudder at the thought that he must pass through the pangs of appendicitis, neuralgia, cancer, to say nothing of more common ailments, perhaps several times a day, if he is to cure his patient. And all for a paltry fee! We are told that virtue is its own reward, but in the case of the "spirit doctor" it would seem to be its own punishment. If he says *Mea virtute me involvo*, we can only reply that we do not envy him his wrapping.

A DISTRICT OF WEST AFRICA.

As will have been observed from letters recently published in the BRITISH MEDICAL JOURNAL, officers of the West Africa Medical Service have serious grounds of complaint with regard to their status and emoluments. Included in the countries in which they are called upon to serve is Southern Nigeria, and if much of the country resembles Abo, life there cannot be very attractive. The district of Abo, now under European management, has recently been described in the *Empire Review* by Mr. H. F. Duncombe, a District Commissioner; it has an area of about 2,000 square miles, and is intersected by the Niger and its tributaries. During the wet season, which is of long duration, these rivers overflow, so that for about six months of the year the district is practically under water. The houses of Europeans and natives alike are built of mud and wattle, and not being raised on piles, their inhabitants can only keep their feet dry by moving about their rooms much after the fashion of fowls in a hen roost. By day the world goes about its duties or its pleasures in canoes, or by wading, and at night is lulled to sleep, not as in London by the love calls of the domestic cat, but by the groaning sounds emitted by crocodiles and other creatures of a decidedly undomesticated order. Probably, however, a more objectionable feature of life in this district is the constant liability to the attacks of creatures of a smaller kind. Among these is the jigger flea, which bores its way into the flesh of its victim; the immediate result is a certain amount of inflammation and very intense itching, but if this be borne with philosophy for a couple of days or so, or until the insect has laid its eggs, no further trouble, according to Mr. Duncombe, occurs, for the insect and its eggs can then be comfortably shelled out with the point of a penknife. On the other hand, early endeavour to remove the insect results in acute inflammation. The insect thus described is presumably identical with the *Pulex perstans*, which, Sir Patrick Manson states, was introduced into West Africa in 1872. Another occasional visitant is a species of ant, said to be capable of killing poultry; it also attacks human beings unprovoked, and inflicts a really severe bite. The countless winged insects of the district include two or more varieties of the *Anopheles* mosquito and the tsetse and mangrove flies; the latter gives a very severe sting. Money is hardly current, purchases being made by means of exchange and barter, gin and tobacco, cowries and cloth forming the chief currency. In this connexion it may be noted that the native method of expressing the fact that a man is drunk is to use words which mean literally "Gin is killing him." This, if somewhat of a sarcasm on the civilization which introduced that gin, is at any rate a testimony to the intelligence of the natives. They have no clear conception of an overruling Deity, but they believe that after death they will find themselves either in surroundings corresponding with those left on earth, or else in the Palm-kernel Country. The latter is a place in which the sinner has constantly to walk about, submitted to the unpleasantness of having his feet pierced by the sharp edges of the palm kernel. Mr. Duncombe describes the natives as being, as a rule, genial savages, timid rather than truculent, and usually honest and well-behaved. Their women usually marry at the age of 16 or 18 and are prolific; great numbers of their children, however, die in early life from malaria and other causes. They seem to have some slight knowledge of the therapeutic value of certain roots and trees, but palm oil and massage play the chief part in domestic treatment. The only indication that they possess any knowledge of general hygiene seems to be the fact that whereas they usually bury their dead close to their habitations, those who die from small-pox are taken into the forests. The common diseases of the place are malarial fever, dysentery, yaws, pneumonia, and blackwater fever. The latter fact seems to throw additional doubt upon the theory that the condition is produced by quinine.

THE MORTALITY FROM PUERPERAL FEVER.

PROFESSOR O. VON HERFF of Basel has recently discussed[1] the causes of the increasing puerperal fever mortality outside the lying-in hospitals, and has made a few practical suggestions. In Prussia there was a puerperal fever mortality of 0.15 per cent. during the years 1901 and 1904, among 1,850,000 confinements. In all probability the true death-rate was higher. The rate for 1901 was 0.143 per cent., and for 1904 it was 0.162 per cent. Professor v. Herff says that while it is easy to blame the midwife for this state of affairs, it has been shown that among the deaths mentioned above, only 9.6 per cent. can be laid to the account of midwives, and that only in 2 per cent. can it be proved that a midwife carried the infection from patient to patient. He therefore thinks that the greatest danger to the lying-in woman is to be found in being attended by the practitioner who is constantly called upon to handle infective material, and who is much more likely to carry a dangerous infection to his patient than is the midwife, who does not come into contact with infected wounds, *post-mortem* tissues, etc. The lesson which Herff draws from this is that greater care must be exercised in the disinfection of hands. Next he points out that modern obstetrics call for frequent operation, and infection may result from any instrumental interference. The doctor who does not operate readily is considered old-fashioned, and the result is that he is tempted to use his forceps, and to perform version, etc., much too often. Herff asserts that every obstetrician should limit his indications for operation as narrowly as possible, and becomes satirical when he says that the

[1] *Muench. med. Woch.*, May 21st, 1907.

so-called "harmless forceps" or the "prophylactic "forceps" are better described as "save-time forceps" or "better-fees forceps." Next he contends that the practitioner must avoid unnecessary examination, and he anticipates that if this, as well as the limitation of operating and careful disinfection of the hands, are all carried out conscientiously, a marked reduction in the puerperal mortality will result. He deals with the question of disinfection of the hands in detail. The method which is to be recommended must be absolutely simple and yet reliable. No pains are spared in instructing students and midwives in the disinfection of hands at the scientific midwifery schools, but as soon as they leave the schools even the doctors at times lapse into a careless and haphazard manner. Repetition courses for midwives have been instituted to overcome this evil, but the new lesson lasts less long than the former one. It is a question of conscientious carrying out of minute details, and it must be admitted that it is much more comfortable and easier to carry out what he calls a "make-believe asepsis," and to carry about a tabloid in the waistcoat pocket and wash casually in water into which the tabloid is thrown with soap and a nail brush. Three or four minutes spent like this gives the impression of disinfection, but it is absolutely useless. The statement that there is no satisfactory disinfection without alcohol is constantly repeated and insisted on. He discusses the advantages of using rubber gloves, and points out that these afford little safety unless a scrupulous disinfection of hands takes place beforehand. The glove often gives way, and, through the minutest hole, the dreaded microbe is sure to creep. He regards Fürbringer's method as the best for all purposes, inasmuch as it only requires three washings, two washhand basins, a nail brush, and a piece of gauze. Ahlfeld's method is also reliable. In any case, the method chosen must have been proved capable of reducing the bacteria of the skin of the hands to a minimum, be it by means of hot water and alcohol, or water, alcohol, and a disinfectant or antiseptic, or by a preliminary washing with soap spirit and subsequent alcohol and water disinfection. He shows by means of the statistics of his own hospital in Basle that Ahlfeld's hot water and alcohol method is satisfactory. Among 6,000 cases, not a single woman died of puerperal fever acquired within the hospital, and only 0.08 per cent. of the total number died of puerperal fever, the cases having been infected before admission; 81.8 per cent. of his cases showed a temperature chart without an elevation at all. He hopes that the domestic mortality may soon be as low as his own.

THE GYNAECOLOGICAL STOMACH.

Women of all classes, when subject to diseases of the genital tract, tend to be dyspeptic as well. The two conditions are often results of the same cause, whilst too often, possibly, treatment aggravates both. That nutrition is not independent of the influence of some compound or some nerve agency in the genital organs there can be no doubt, but what that compound or agency precisely may be science has not as yet revealed to us. Hence, gynaecologists are often taunted about their ill success in the treatment of dysmenorrhoea, chronic oöphoritis, anorexia nervosa, and allied disorders more or less intimately associated with dyspepsia as a more or less marked complication. On the other hand, surgery has triumphed where definite, objective lesions can be removed. It need hardly be said that we refer to ovariotomy and hysterectomy. Yet are there no objective lesions in any of the chronic cases, where stomach-aches, flatulence, vomiting, or anorexia are so marked as complications? Are these gastric lesions due purely to lutein, of which we know but little, to vaso-motor changes somewhere, or to our own mismanagement combined with the patient's stupidity and hypochondria? Experience shows that there may be very definite lesions, so definite indeed that they ought to be diagnosable. Over twenty years since, Howitz of Copenhagen pointed out that gastric pains and dyspepsia after abdominal sections and peritonitis are not rarely caused by adhesions, especially omental. Operators sometimes find the transverse colon so much dragged upon by omental adhesions as to assume the form of a letter V, the point coming close to the bladder. The stomach itself is occasionally dragged downwards in the same manner. Dr. Cerné of Rouen discussed the gynaecological stomach at the Congrès National de Gynécologie, held last April in Algiers.[1] He admitted that too much had been talked about dyspepsia in ladies with a metritic diathesis, curable by treatment at inland watering places. He insisted, however, that cases are to be met with where a genital lesion is the origin and direct cause of gastric troubles. In enteroptosis, and even in many cases where the parietes are normal, the stomach comes down very low when the patient stands up, but it can be pushed up to its natural level by the hand with the greatest ease. Cerné carefully examined two patients where the stomach could not be replaced, for it was fixed by an adhesion down to one iliac fossa. Both patients were subject to disease of the uterine appendages, and, in Cerné's opinion, the stomach, or, at least, the omentum, adhered to the diseased structures. Other gynaecologists have, we understand, met with adhesions of this kind. Hence, where there is a distinct history of old pelvic inflammation, verified by exploration of the genital tract, dyspepsia and other gastric disturbances may imply something more definable and more manageable than a pure neurosis.

THE VALUE OF ATOXYL IN SYPHILIS.

There has been a tendency to boom atoxyl lately in the treatment of syphilis, but it must not be forgotten that the employment of the so-called anilarsinate of sodium is still in an experimental stage in this disease and that it is early days to speak of this drug, as does an enthusiast, as a specific remedy. In Paris the lay press has taken up the matter, with the result that atoxyl is metaphorically speaking in every mouth if not yet under every skin. In the case of sleeping sickness, it has already been necessary to sound a warning note in the *Times* of June 4th last. As to syphilis, Dr. Lévy-Bing has recorded an instructive case.[2] The patient was a robust man of 42, who had had a syphilitic chancre in 1902, followed by a rash, mucous tubercles, and so forth. He had been treated in an irregular and half-hearted manner with pills, injections of perchloride, and potassium iodide. In the early part of 1907 the right eye became affected, and syphilitic optic atrophy was diagnosed. It was decided to inject atoxyl. A German brand was employed, and 5 injections of 0.50 cg. administered. This was followed by marked toxic symptoms—dizziness, vomiting, cephalalgia, fever (40°, 40.80°, 40°, 39°, 38.6° C.). The right eye grew quite blind and the left became affected, commencing optic atrophy being diagnosed. Weekly injections of grey oil (0.08 centigram of Hg.) were at once started, and the left eye recovered. The patient's general health, which had suffered a good deal, improved, the blood counts showing a steady increase in the erythrocytes, from 3,700,000 at the time of the first mercurial injection to 6,250,000 by the fifth, the quality

[1] Des rapports des affections gastro-intestinales avec les maladies de l'appareil génital de la femme. *Annales de Gynéc. et d'Obstét*, May, 1907, page 317.

[2] *Annales des Maladies Vénériennes*, July p. 52

of the corpuscles improving *pari passu*. Dr. Lévy-Bing concludes from this case that atoxyl is inefficacious in the course of a syphilitic complication in process of evolution, and, moreover, has no effect on the acute anaemia due to *Treponema pallidum* (*Spirochaeta pallida*). This case appears to show once more that it is not the mercury that acts prejudicially on the blood corpuscles but the parasites. Another case, under Professor Gaucher, is cited. A patient was treated for a syphilitic chancre and a macular rash. But the man left hospital before he had quite got rid of these symptoms. He attended another hospital where he received seven injections of atoxyl of 0.50 cg. each. A month after the last atoxyl injection he returned to Professor Gaucher's clinic with a recurrent roseola and erosive syphilides of the palate and tonsils. These cases show that caution in using atoxyl is necessary from various points of view. Atoxyl, although the drug may ultimately prove of some value for cases in which mercury cannot be employed, M. Fourneau,[1] so well known in connexion with stovaine, has pointed out that, notwithstanding what German manufacturers say, atoxyl is not the anilide of meta-arsenic acid ($C_6H_5NHAsO_2$), but a monosodic salt of the anilide of ortho-arsenic acid ($C_6H_5NH—AsO\begin{matrix}ONa\\OH\end{matrix}2H_2O$); that it does not contain 37.69 per cent. of arsenic, but only 29 per cent.; and that it is not a new product, but was discovered by the French chemist, Béchamp, in 1863, who obtained it by heating arseniate of aniline.[2]

FATAL INJURY TO PROLAPSED UTERUS.

MANY women of the labouring class are strangely careless about procidentia of the uterus and vagina; they will even neglect to apply the simplest kind of support when engaged in hard physical labour. Dr. Walther Hannes wonders that the prolapsed parts are not more frequently injured. He relates a case unique in his experience,[3] although he practises in Breslau where the Silesian peasantry in the neighbourhood work very hard in the fields. Indeed, he cannot find a similar case related in medical literature. His patient was a countrywoman, aged 56, subject for years to complete procidentia. She was driving a flock of geese, and apparently, in order to bring a stray bird back to the fold, ran up a high pile of potatoes. Her foot slipped, and she fell astride on the point of a reaping hook. A medical man applied a tampon, but failed to detect any serious haemorrhage. He ordered the woman to be sent to Breslau at once, but, owing to lack of proper conveyance, she did not reach the University hospital until twenty-four hours after the accident. On admission she showed signs of peritonitis, and was not thoroughly conscious. The injury was of a kind impossible to overlook, for there was a wide incised transverse wound in the posterior vaginal wall opening widely into the peritoneum. Through the vaginal wound a large red mass protruded; this was the fundus of the bulky retroverted uterus, which bore a deep wound transverse, in fact parallel, to the laceration of the vagina. Inflammatory exudation could be seen on the exposed peritoneum, the appendages were already covered with recent lymph. The peritoneum was free from blood. The removal of the damaged uterus and appendages proved free from difficulty, but there was clearly much septic mischief around the injured parts. The peritoneum was drained with gauze. The patient died on the fourteenth day of double pneumonia, a collection of pus having formed between coils of intestine above the drain. Hannes quotes several monographs on impaling injuries in the perineal region; it is remarkable that the uterus is rarely involved. The whole subject is of importance for medico-legal reasons. In this case, however, the injury was caused by a pure accident.

[1] *Jour. de Pharm. et de Chimie*, t. xxv, No. 7. April 1st, 1907, p. 332.

[2] At the recent conference on sleeping sickness in London a formal protest was made on behalf of Professor Ehrlich against the use of the term "atoxyl" in the official publication of the conference unless explained by the addition of the words "sodium salt of amido-phenyl arsenic acid."

[3] Verletzung des prolapsierten Uterus durch Unfall, *Zentralbl. f. Gynäk.*, No. 26, 1907, p. 810.

THE late Sir William Henry Broadbent left estate valued at £86,209 gross, with net personality £81,315.

THE Royal Commission on Vivisection held its twenty-ninth sitting on July 25th under the presidency of Lord Selby, and has now adjourned for the summer vacation.

THE Nettleship Medal, founded in 1902, to commemorate the work of Edward Nettleship and to encourage research in ophthalmology, was presented at the annual general meeting of the Ophthalmological Society, on July 12th, to Mr. J. Herbert Parsons for his monograph on the pathology of the eye.

THE Medical Section of the Royal Society of Medicine is now fully constituted, and is ready to receive papers for reading and discussion in the winter session. The Section will hold its first meeting on October 22nd, when Dr. Hector Mackenzie will open a discussion on the complications and sequelae of pneumonia and the treatment of pneumococcal infections by serum or vaccine.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

The Massacre of the Innocents.—Last Friday the Prime Minister made a statement to the House of Commons on the progress of business, and indicated that the session would probably end on August 24th. The Bills dropped of medical interest were the Poisons and Pharmacy Bill, the Lunacy (Ireland) Bill, and the Municipal Milk Dépôts Bill. He hoped the Companies Bill, which had passed the other House, would get on to the Statute Book, and also the Factory and Workshops Bill to amend the law as regards the inspection of laundries, and the two Scottish Bills, one assimilating the law of vaccination to the law in England, and the Scotch Public Health Bill, which is a departmental measure. These Bills can only be passed if practically non-contentious. In the list of Bills which the Government had decided to pass, some twenty in number, he named three of medical interest, namely, the Butter and Margarine Bill, the Public Health (Regulations as to Food) Bill, and the Vaccination Bill. In order to carry through this programme the 11 o'clock rule was suspended, and the House will sit every day till business is finished.

The Butter and Margarine Bill occupied the House till a late hour on Friday last, but finally passed the Report stage and was read a third time. In the course of the debate it was pointed out that the Bill allowed 24 per cent. of water in so-called "milk-blended" butter, while only 16 per cent. was allowed in butter. The Irish members contended that this 50 per cent. extra moisture allowed to an article which was not to be called butter at all in future would ruin the Irish butter industry. After a long debate the 24 per cent. was retained for milk-blended butter, on the understanding that no such term should in future be used, and that it should be called by a distinctive name authorized by the Board of Agriculture, with the percentage of water printed on the label or wrapper. There was much humorous discussion as to the name to be given to milk-blended butter. Sir E. Strachey, as representing the Board of Agriculture, indicated "perfecto" as the name. Mr. Healy, who protested against the use of this butter substitute as a fraud, called it "bosh" butter, "teetotal" butter, and finally said it ought to be called "Liberalismo," so as to link it with the Liberal party. After about six hours' debate the Bill was passed amid cheers.

The Milk Supply.—Last week Lord Kenyon raised the question of milk supply in the House of Lords by asking the intentions of the Government as to legislation on the subject. The model milk clauses framed in 1899 had not been made compulsory, and he hoped the Government would soon introduce a Bill to make them compulsory, and place the control of the production and sale of milk under a Government department. All cows giving tuberculous milk should be slaughtered and compensation paid out of Imperial funds. Lord Allendale, who replied in the absence of Earl Carrington, admitted that legislation on this subject was desirable. The model milk clauses had been inserted in a number of local Acts, but he agreed that they had not had the desired effect. As to the suggestion that cows even suspected of suffering from tuberculosis of the udder should be slaughtered and compensation paid out of Imperial funds, that was a matter on which the Treasury would probably have a good deal to say, and he was not prepared to follow the noble lord into that at present. The Royal Commission on Tuberculosis had reported that "a very considerable amount of disease and loss of life, especially among the young, must be attributed to the consumption of cows' milk containing tubercle bacilli." The Local Government Board had come to the conclusion that legislation at an early date should be undertaken by the Government on the subject of milk supply, and they proposed to give serious attention to the matter in consultation with the Board of Agriculture during the recess. The Government would wish, in framing their proposals, that whilst they should be such as to secure purity in the milk supply, they should not press unduly on the dairy industry.

Antityphoid Inoculation in the Army.—Sir William Collins asked last week as to the statistics of antityphoid inoculation of British troops in India and South Africa, and inquired if the Commander-in-Chief in India had issued an order on the subject. Mr. Secretary Haldane replied that a large number of returns relating to antityphoid inoculation had recently been received both from India and South Africa, and the work of compiling this information in statistical form was at present in progress, but some considerable time must necessarily elapse before the work was completed. Antityphoid inoculations were being largely carried out in India under the general direction of the Commander-in-Chief, but the War Office was not aware of the terms of the specific orders issued by him.

The Congress on School Hygiene.—Dr. Rutherford asked the Minister of Education last week whether he was aware that several foreign Governments could not see their way to send delegates to the Congress unless they received invitations from His Majesty's Government, and whether invitations could be issued. Mr. McKenna said he had received no authenticated official information that any foreign Governments had abstained from sending official representatives to the Congress for the reasons alleged. He had verified from official sources that at least one of the principal European Governments in respect of whom the allegations had been made was, in fact, sending official representatives to the Congress, having apparently felt no difficulty as to the invitation, so that in their case the allegation must be unfounded. He had heard no suggestion, except as part of the allegation above referred to, that any other Governments had felt differently in this respect.

Inoculation for Plague.—Mr. J. Robertson asked the Secretary of State for India whether, in view of the fact that inoculation for plague in the Punjab of late had been resorted to in increasing numbers of cases and that the death-rate from plague was there at the highest, he would take into consideration the expediency of abandoning the practice as dangerous. Mr. Morley said that the opinion of those who have had experience was that the health of the patients was unimpaired by inoculation, even when they were children of poor constitution, and that it conferred immunity for a period of from six to twelve months or more. Statistics in Bombay showed in the case of municipal labourers that, while the percentage of uninoculated who were attacked by plague was 6.7, that of inoculated was 0.19. So that he thought the case indicated was not sufficiently well made out. Mr. J. Robertson asked how the right hon. gentleman explained the fact that the death-rate was highest where inoculation was greatest. Mr. Morley replied that it was quite true that the death-rate in the Punjab was extremely high, but he was not sure that it was also true that the inoculation was practised over wide areas where the disease was prevalent.

Ringworm and Steatorrhoea.—Last week Mr. Cooper called attention to the case of two children excluded from the Rolls Road County Council School on the certificate of a nurse that they were suffering from ringworm, while subsequently at the London Hospital the condition was diagnosed as steatorrhoea, a non-infective disease. Mr. Cooper asked whether, in spite of a proper certificate, the children were still excluded, and whether the nurse who first certified had any medical qualification? Mr. M'Kenna answered that the Board of Education had no information as to the incidents referred to. In the event of an appeal being made to them on the ground that the children had been excluded from school on other than reasonable grounds, the circumstances would be carefully investigated before a decision was arrived at.

Public Health Administration.—In answer to Mr. Weir, Mr. John Burns stated last week that in 1906 seven cases of district councils in default under Section 299 of the Public Health Act, 1875, had been dealt with, as compared with five in the previous year. He also promised to consider the suggestion that a Local Government Board inspector should visit and report on the sanitary condition of the St. Asaph Rural District.

The Public Health Bill came before the Grand Committee after recommittal on Monday last, and was amended in a few relatively unimportant points. The Bill occupied nearly two hours of the Committee's time, and should now have a good chance of passing its remaining stages in the House of Commons. There is only one point of controversy likely to arise, and that is in connexion with the clause authorizing local authorities to provide refreshment rooms in connexion with recreation grounds. Some ardent temperance reformers see in this a danger of the establishment of places for drinking, and so may give some trouble ere the Bill passes.

The Death after Vaccination.—Mr. Lupton returned again to the case of the child who died at Croydon after vaccination, and asked the President of the Local Government Board on Tuesday last whether he was aware that the child only broke out into sores a week or ten days after vaccination, and that the bromide treatment was ordered to cure the sores. Mr. Burns said that he did not understand that the facts were as supposed by Mr. Lupton. He was informed that the child was unsuccessfully vaccinated on January 4th, and successfully on the 11th of that month. The sores seemed to have first appeared on January 24th, whilst the bromide was first administered on January 7th. It would be seen, therefore, that the administration of the bromide commenced before the sores made their appearance. He did not understand that it was prescribed in order to cure the sores. It seemed to have been suggested as a remedy for the fits from which the child suffered.

The Registrar-General's Report on Industrial Mortality.—Mr. Charles Roberts asked the President of the Local Government Board whether the Registrar-General of Births, Deaths, and Marriages intended to issue a report on the mortality experienced in certain occupations, in continuation of the Supplement to the Fifty-fifth Annual Report, Part II (Cd. 8503 of 1897); and, if so, when such report was likely to be issued. Mr. Burns answered that as stated in the Registrar-General's letter to him, which was prefixed to Part I of the Supplement to his Sixty-fifth Annual Report, Part II of that Supplement which will contain particulars of the mortality in certain occupations, was already in an advanced state of preparation. It was hoped that it would be issued about the end of the present year.

Ireland.

SIR JOHN BANKS, K.C.B.

LAST week Sir John Banks, K.C.B., entertained His Excellency the Lord Lieutenant at dinner at his residence, Merrion Square. Sir Antony MacDonnell, G.C.S.I., and several members of the medical profession were honoured by invitations.

NATIONAL HOSPITAL FOR CONSUMPTION.

His Excellency Lord Aberdeen and the Countess of Aberdeen paid a visit to the National Hospital for Consumption, Newcastle, co. Wicklow, on Saturday last, when they were received by members of the governing body, the resident staff. and by Dr. Coleman, C.M.G., one of the physicians. His Excellency addressed the patients, and expressed the best wishes of Lady Aberdeen and himself for the welfare and success of the institution. Mr. Orpen, Honorary Secretary, thanked their Excellencies for their gracious visit.

UNIVERSITY EDUCATION IN IRELAND.

The Senate of the Royal University has passed a resolution bringing under the notice of the Government "the serious injury to higher education in Ireland which will result from any further postponement of the settlement of a question so vitally bound up with the intellectual and material progress of the country." A deputation consisting of the following members was appointed to wait on the Chief Secretary: Right Hon. Lord Castletown, of Upper Ossory, C.M.G., Sir Christopher Nixon, Bart., M.D., LL.D., Rev. William Delany, LL.D., Rev. Thomas Hamilton, D.D., John R. Leebody, M.A., D.Sc., Alexander Anderson, M.A., LL.D., Right Hon. Lord Killanin, Bertram C. A. Windle, M.D., D.Sc., F.R.S., and the Right Rev. Monsignor Mannix, D.D. Mr. Birrell is to devote the autumn to the study of the university question, and he is therefore not likely to have a very restful holiday.

SURGEON-GENERAL KILKELLY.

We regret to report the death of Surgeon-General Charles E. Kilkelly, F.R.C.S.I., who died in Dublin on July 26th, in the 77th year of his age. He was educated at Trinity College and the Richmond Hospital, and in 1856 entered the East India Company's Medical Service. He almost immediately saw active service. In the great mutiny he barely escaped massacre at Delhi. With Lord Clyde's column he was present at the relief of Lucknow, and at many other actions during that time of terror. He was an excellent surgeon. When he retired several years ago he returned to his home at Drimcong, co. Galway. Here he became identified with all local interests, and he was regarded with the greatest affection by all in the district. In 1859 he married Isabel, daughter of Commissary-General Sir Randolph Routh, K.C.B., who served at Waterloo. His widow and his sons, Lieutenant-Colonel Kilkelly, C.M.G., Medical Superintendent at Osborne, and Major Kilkelly, I.M.S., survive him.

SPECIAL HEALTH COMMISSION IN BELFAST: FINAL SITTINGS.

The Health Commission resumed its sittings on July 22nd. Dr. Norman Barnett gave evidence as to the extent of alcoholism and its effect on the general health of the community. During the year ending April, 1906, the Society for the Prevention of Cruelty to Children investigated 1,196 cases, involving 3,578 children, for neglect and ill treatment. Of these, 75 per cent. were the direct result of drunkenness; these homes were insanitary and in many cases utterly unfit for habitation. In some the houses were good enough in themselves, but the filth rendered them injurious. In the majority of these poverty was not the cause; many of the families were in receipt of £1 to £2 a week. Infantile mortality was also raised, both directly and indirectly, by alcoholism—as in overlying, neglect, and the habit of giving alcohol and laudanum to infants. He urged exact returns as to the presence of alcoholism in cases of overlying, increased inspection of the sanitary authorities, the establishment of Government inebriate homes in which magistrates could order the prolonged retention of chronic inebriates.

Dr. McLiesh, Visiting Medical Officer to the Union Infirmary, gave evidence as to the amount of phthisis admitted. The admissions were about 132 per year. During the year 1906, out of 856 cases, 151, or 17.7 per cent., were flax workers, 42 of whom were males and 109 females.

Dr. Gardner Robb, Visiting Medical Officer to the Purdysburn Fever Hospital and to the Union Fever Hospital, said that in the latter they could treat 168 cases, but that he had seen 360 cases in at one time. He thought the accommodation was hardly sufficient for the town; they had sufficient ground at Purdysburn to double the building accommodation.

Drs. Milligan, Martin, and Munn, District Medical Officers, gave evidence as to the health and sanitary condition of their respective districts.

On July 23rd evidence was given on the control of lodging-houses on the markets, and on the model lodging-house.

Dr. H. C. Manley said that there had been much typhoid in the Whitehouse District, but it had diminished since a new water supply had been obtained; the sanitary condition of Greencastle was far from satisfactory. The seaweed nuisance at Lower Whitehouse was terrible: he had seen articles of silver turned black. People came in large numbers to collect cockles and mussels from the shore, a practice which should certainly be stopped.

On the final day of the inquiry (July 24th) Dr. Bailie, Medical Superintendent Officer of Health, gave some supplementary evidence.

Dr. King Kerr, Chairman of the Public Health Committee, also gave some supplementary evidence as regards various reforms that had been carried out, or had been proposed and were still under discussion by the Committee.

Mr. McGrath, K.C., addressed the Commission on behalf of the Corporation, showing that the actual number of deaths had fallen during the last nine years; in 1898 the number of deaths was 7,768, in 1906 it was 7,100, and the fall had been pretty regular. Referring to the question of the purification of sewage, he said that if the City Council had complied with the conditions imposed by the Act of 1898, and carried out the sewage purification before 1902, it would have been necessary to do the work all over again in 1903. He then referred to many of the efforts of the Corporation to improve the health of the town.

Dr. King Kerr and Mr. McGrath, on behalf of the Corporation, Sir John Byers, M.D., on behalf of the profession, and Mr. Godfrey Ferguson on behalf of the Citizens' Association, then expressed their high appreciation of the impartiality, thoroughness, patience, and ability of the Commissioners in the discharge of their onerous duties, and the dignity that characterized all their proceedings.

It may be mentioned that the Commissioners are Colonel Thomas W. Harding, ex-Lord Mayor of Leeds (Chairman); Dr. Ludovic W. D. Mair, medical inspector to the Local Government Board; Dr. A. K. Chalmers, medical officer of health, Glasgow; Mr. P. C. Cowan, chief engineering inspector, Local Government Board for Ireland; and Surgeon-Colonel Flinn, F.R.C.S.I., medical inspector to the Local Government Board, Ireland.

HOSPITALITY OF THE HIGH SHERIFF OF BELFAST.

The High Sheriff of Belfast, Dr. P. R. O'Connell, J.P., surgeon to the Mater Infirmorum Hospital, entertained a large company of the citizens in the banqueting room of the City Hall on the night of July 24th, to meet the going judges of assizes. About 300 received invitations, amongst whom there were a large number of the host's professional brethren. The usual toasts of "The King," "The Royal Family," and "The Lord Lieutenant of Ireland and Prosperity to Ireland" were gracefully and eloquently proposed by the High Sheriff; the last of these toasts was responded to by Lord Shaftesbury, present Lord Mayor of Belfast. Dr. O'Connell then gave the toast of the evening, "His Majesty's Going Judges of Assizes," which was responded to by Mr. Justice Dodds. "The City of Belfast" and "The High Sheriff" were finally given and received with great applause. Dr. O'Connell is to be congratulated on so maintaining the dignity of the profession and its reputation for hospitality, a tradition which in quite recent years was so generously preserved by another medical High Sheriff of the year, Dr. Henry O'Neill.

Wales.

THE DIFFICULTIES OF MEDICAL OFFICERS OF HEALTH.

ONE of the principal recommendations of Sir John Dickson Poynder's Housing Committee proposed to transfer the administration of the Public Health and Housing Acts from rural district councils either to the county councils or to some other authority. It was hardly to be expected that the district councils would take this serious reflection upon their methods of administration without protest, and many formal resolutions have been sent to the Local Government Board and to members of Parliament expressing the opinion that no body of persons could have a greater concern for the public health than rural district councils. Something more, however, than formal protest is required, and there is overwhelming evidence in the reports of the medical inspectors of the Local Government Board and elsewhere that the sanitation of rural districts has been wofully neglected by those who have been entrusted by the Legislature with the duty of carrying it out. One of the most glaring instances of the ineptitude of a rural district council is to be found in the dispute which is now going on between the St. Asaph Council and the medical officer of health for the district (Dr. Lloyd Roberts). In his last annual report Dr. Roberts again called the attention of the council to certain insanitary conditions which had not been remedied. The reiteration of advice previously given was not acceptable to the council, and the medical officer of health was asked to trim his report to the council's liking. This was a course which Dr. Roberts very properly refused to take, and he suggested that if the council doubted the facts he had stated, a request should be made to the Local Government Board to have the district inspected by one of the Board's inspectors. When the question was under discussion at the last meeting of the council, one member expressed astonishment at the medical officer of health sending a copy of his report to the Local Government Board, and was apparently amazed at his audacity in doing so, being evidently ignorant of the fact that a moiety of the salary of the medical officer of health is paid from the Exchequer grants conditional upon his sending copies of his reports to the county council and Local Government Board.

WEST WALES SANATORIUM.

At a meeting of the West Wales Branch of the National Association for the Prevention of Consumption held at Carmarthen Guildhall on July 18th, Sir James W. Drummond, Lord Lieutenant of the County, in the chair, some discussion took place with regard to the alleged impression that the management of the sanatorium at Alltymynydd was not sufficiently democratic. Mr. Wheldon, Treasurer of the Branch, said that the receipts for the sanatorium up to the present were £6,223 12s. 11d., and £1,000 borrowed from Sir James Drummond. On the other side they had paid £6,500 to the builders and £182 10s. to the architect, the total expenditure (including printing, etc., and secretary's sundries) being £6,811 15s. 7d. There was due £106 15s. to the architect, £168 10s. to the builder, and £1,000 to Sir James Drummond. That left a deficit of £863 7s. 8d. The Committee might, however, count on receiving another £300. Dr. Bowen Jones (Carmarthen), one of the honorary secretaries, said that the anticipated expense for furnishing was £750. It was pointed out that the sanatorium was for the poor exclusively, the idea of taking in paying patients having been abandoned. The gift of Mr. David Davies, Llandinam, meant that control should come from the county councils. Dr. Douglas Reid, of Tenby, said that if the county councils were to have the sanatorium, let them pay the £7,000 or £8,000 or £9,000 which the promoters had collected for it. On no other terms had they a right to it. It would be very discreditable to the promoters to say that having built that beautiful building at Altymynydd, they could not support it. To show the white feather after the battle would be unreasonable. Dr. Reid advocated a system of dividing the West Wales counties into districts and letting each district support a bed. The Chairman said that Carmarthenshire ought to be ashamed if it could not provide £500 a year, and surely each of the other counties could do likewise. Eventually it was decided to refer the further discussion of the question to the executive, who should then obtain all the information available from the supporters of the scheme.

Birmingham.

HEALTH OF THE CITY OF BIRMINGHAM.

THE report of the Medical Officer of Health on the health of the city of Birmingham for the year 1906 has just been published. There were 16,016 children born, making a birth-rate of 29.3 per 1,000, as compared with 29.2 in the previous year. The deaths numbered 9,172, which is equivalent to a death-rate of 16 8, as compared with 16.1 in 1905, the latter being the lowest recorded death-rate. The mean death-rate for the last five years is 17.5. The infant mortality-rate, based on the number of children born, was 168 per 1,000, as compared with 155 in the preceding year, and this higher infant mortality was largely owing to the long and warm summer, which indirectly induced epidemic diarrhoea. Deaths due to the seven principal zymotic diseases numbered 1,521, as compared with 1,051 during 1905. This is a large increase, but is still an improvement on the number for 1904, which was 1,845. The number of deaths due to scarlet fever, diphtheria, and typhoid fever was greatly below the average for the last ten years. There were 40 deaths from typhoid fever among 191 notified cases, which shows that although there was a reduction in the number of cases, yet the disease was of a more severe type than of late years. The number of cases of typhoid fever is the lowest on record, and the numbers have been rapidly diminishing since 1900, as shown by the following figures: 1900, 851 cases; 1901, 615; 1902, 544; 1903, 348; 1904, 248; 1905, 209; 1906, 191. The total number of deaths from tuberculosis of all forms was 884, as compared with 999 in the previous year, and 1,071 in 1904. Of these deaths, 672 were due to phthisis. Under the system of voluntary notification, 719 cases of phthisis were notified. The medical officer of health considers that this number represented about three-fourths of the notifiable cases. Each notified case was visited, and instructions given as to means of prevention. In 554 cases of death or removal the house was disinfected.

CORRESPONDENCE.

PROPORTIONAL VOTING.

SIR,—My attention has been directed to the note on proportional voting which appeared in the JOURNAL of July 27th, and, with your permission, I should like to make a few comments. It is stated that the result in the election of the vice-presidents of the Metropolitan Counties Branch was not very striking, inasmuch as the four candidates who obtained the largest number of votes were finally returned. In the method of voting previously in force, however, each elector had four votes, and it does not therefore follow that the same four candidates elected by the new method of voting would have been returned under the former rules. The result of the election shows that in this particular case the transfers made no difference in the result, and confirms previous experience that the transfers are a subsidiary feature of the single transferable vote. With the single vote, even when it is not transferable, each section numbering not less than a quota of votes is sure of returning a representative, and this is the method of voting used in Parliamentary elections in Japan. When the single vote is made transferable representation is made more strictly proportionate.

It is also stated in your note that "the scrutiny undoubtedly appears a formidable task," but it is so more in appearance than in reality. I should, however, like to point out that the Metropolitan Counties Branch election was conducted in accordance with the provisions of Lord Courtney's Municipal Representation Bill, and, as practical experience tends to show that the method in which the transfers are carried out is of subsidary importance, other Branches may prefer the simpler form of scrutiny adopted by several trades-unions in Canada. The practical advantages of proportional representation are secured by this method: it gives satisfaction, and the results in

nearly every case would be the same. In this method the votes are shuffled, and when any surplus is transferred, a number of papers equal to the surplus is taken from the top of the successful candidate's papers, and the votes so taken are distributed to the second preferences.

There is obviously in the trades union method of transfer a slight element of chance which, in the Municipal Representation Bill, is eliminated. Whenever a surplus arises this measure provides for the examination of all the votes of the successful candidate, and for the transfer to each second preference, after the necessary calculations, of his proportionate share of the surplus. This more exact method was adopted in the two Metropolitan Counties Branch elections, and yet, as you observe, all the operations were completed in two hours. With the trades-union method the scrutiny would have taken much less time, as all surpluses, instead of being transferred separately, could have been distributed in one operation.

I should like to add that if any Branch prefers the simpler form of scrutiny—a form which yields all the practical advantages of the more exact method—I shall only be too glad to draft the instructions necessary for the scrutineers, and in any case to send pamphlets explanatory of proportional representation.—I am, etc.,

JOHN H. HUMPHREYS,
Honorary Secretary, Proportional Representation Society.
107, Algernon Road, Lewisham, S.E., July 31st.

INTRAMEATAL TREATMENT OF SUPPURATIVE OTITIS.

SIR,—I have had several letters from Dr. William Hill, who is introducing the discussion on the intrameatal treatment of suppurative otitis at Exeter. He says: "There seems to be an impression that you have given the name 'otectomy' to the old operation of combined meatal ossiculectomy, myringectomy, and (meatal) atticotomy, which you have slightly modified in some details." Otectomy, however, was better defined by Dr. Hackworth Stuart at the Public Health Congress as "removal of the diseased tympanic remains and a detailed disinfection of the cavity." It literally means a cutting out from the ear, and may be properly applied to operations which may possibly not interfere with the ossicles, membrane, or attic wall. Dr. Hill points out, in a friendly manner, that several otologists have practised intrameatal operations, but have generally abandoned them. I am quite aware of that fact, and am not particularly concerned as to the question of originality. The man who succeeds in flying will probably have worked on the lines of others who have failed; but what I do believe is that the results of several years' work show that most cases of infected ears can be most safely and most satisfactorily treated without operations on the temporal bone. As I have been prevented from going to Exeter, I should be glad if I may make this statement.—I am, etc.,

Coventry, July 29th. F. FAULDER WHITE.

OPERATIONS FOR CHRONIC SUPPURATION OF THE MIDDLE EAR.

SIR,—Mr. Charles Heath in his paper in the JOURNAL for July 13th, p. 82, describes a case which has been relieved by "operation for attic disease without destruction of the drum," the first being a girl on whom Mr. Heath performed a similar operation in hospital last October.

Mr. Heath has evidently forgotten a case brought by me before the Otological Society on December 1st, 1902—a case of cholesteatoma of the attic and antrum, with a good result from operative opening of these parts with preservation of the ossicles, membrana tympani, and cholesteatoma matrix. The hearing before the operation was nearly but not quite as good as afterwards, and it was on account of the excellence of the hearing that I decided to preserve the ossicles and membrane. This process was even then not a new one, as will be seen from the proceedings of the German Otological Society at its meeting in Hamburg in May, 1899, where several speakers expressed themselves very strongly as to the desirability of preserving the membranes and ossicles.

The principle of preserving the membrane and ossicles as long as they are likely to be of any functional value is very important, but it need hardly be said that in those cases in which the so-called radical operation is performed by judicious operators these structures are usually already so obviously useless for functional purposes that their retention is not desirable.

All students of the history of otology will agree with Dr. William Hill in insisting on justice being rendered to Professor Küster, whose method was published in 1889. It is interesting to notice how Mr. Heath's studies have led him practically to revert to it.—I am, etc.,

London, W., July 29th. DUNDAS GRANT.

SWEATING OF THE MEDICAL PROFESSION BY PUBLIC BODIES.

SIR,—I fully endorse all that your correspondent Dr. W. Moore writes in the BRITISH MEDICAL JOURNAL of July 13th with regard to this subject.

We in Scotland, especially in the Lowlands, have a more serious complaint. The Local Government Board and the Commissioners in Lunacy for Scotland act in direct contravention of the rules signed by the Secretary for Scotland, and also the regulations laid down by the old Board of Supervision; and further, parish councils have no discretionary power whatever as to medical attendance, as laid down by the House of Lords in the case of Isdale *v.* Jack, February 12th, 1866, and all of which the Chairman of the Board says are stereotyped, and from which they are unable to depart.

The conditions of the medical relief grant are that no Poor law medical officer's salary can include cost of medical certificates, statutory quarterly visit, and sick visits to boarded-out lunatics, lunacy certificates (under the rules and regulations of the Lunacy Board) or boarded-out children.

Still there are a large number of parishes in Scotland that are allowed to compel their parish medical officers to do all these extra duties (for which he is entitled to payment of the usual fees) for his Poor-law salary only.

There are about 200 parishes that have given a return to the Departmental Committees Inquiry on Outdoor Medical Relief, showing that such duties are included by them in the salary paid, in direct violation of the regulations.

Some medical officers when they complain to the Local Government Board have got redress, and the defaulting parish has been compelled to pay the fees, others again have been refused any help whatever in their troubles.

The English Local Government Board as represented by the Right Hon. John Burns, has never to my knowledge been complained of for allowing any such breach of the conditions of the Local Government Board's medical relief grant such as this.

Why should such be allowed in Scotland, if Mr. Patten McDougal of the Local Government Board of Scotland says they have no power to alter the regulations laid down when they took over the control of parish councils from the Board of Supervision?

Why should the Local Government Board not be called in question for their laxity of management, seeing that Mr. Patten McDougal says the Board is a responsible body subject to the control of Parliament?

Is it not time that the medical profession in Scotland banded themselves together, and took measures that would ensure the straightforward carrying out of all the regulations? The officials of the Local Government Board in their departmental report ask that power be given them to vary the conditions of the medical relief grant and other rules.

I wonder what the parish medical officer will get for his work when that power is in the Board's hands, when we have such loose management now.

Let me give a concrete case, which is of far more value than any amount of abstract statement.

In Glasgow we have two parish councils (Govan and Glasgow, the largest in Scotland). Govan, in their return of salaries, gives so much under Lunacy, Poor-law, and Vaccination Acts, and also states that the pay for other parish lunacy certificates 21s., and statutory quarterly visits to boarded-out lunatics 5s., and these fees are paid to their medical officer. Glasgow, in their return of salaries, gives a similar return—but does their medical officer get these fees? No. They are charged against the other parishes, but the money is retained by the council, and they say that the medical officers cannot be paid because the inspector of poor tells them (the council)

that the money belongs to themselves and not to the medical officers; and yet, in giving evidence before the Select Committee to inquire into medical outdoor relief, the evidence of the inspector of Glasgow parish is that these fees are paid.

The profession in England will see from this statement of facts that in Scotland our position is much worse, and proves that there is urgent and pressing need for a combined All-British Poor-law and Vaccination Medical Officers' Association of Great Britain and Ireland.—I am, etc.,

Glasgow, July 29th. T. Russell.

HOLIDAY PRACTICE.

Sir,—May I endorse "Seaside Practitioner's" complaint *re* doctors treating patients of a struggling country practitioner when on their holiday? First aid is all very well, but give us a chance after.

But the chief offender is the consultant (so-called), whose family talk and advertise him, and he is called on to "wipe the eye" of the local man in some chronic neurotic case. The fact that they might offer to meet the local man and have a consultation never seems to enter their minds. Whether they charge or not is a matter of indifference to us. Personally, I think the man who does it for nothing is the worse of the two.—I am, etc.,

July 29th. Another Seaside Practitioner.

THE CANCER PROBLEM.

Sir—In the British Medical Journal of July 20th Dr. Charles Gordon Mackay reports an interesting case of retrogression of pronounced carcinomatous growths following extensive pleuritic effusion.

As such clinical observations may possibly some day prove useful, I crave space to put on record the following brief remarks:

Miss E. S., aged 57, noticed a swelling in her left breast in April, 1904. A complete operation was performed in October, 1904, and the tumour was found to be carcinomatous. In July, 1906, she came under my notice, suffering from extensive infiltration of both lungs, glandular enlargement in the supraclavicular fossae and marked cachexia and debility. Courses of *x* rays and trypsin, lasting for three months, proved fruitless. In February, 1907, left pleurisy with limited effusion supervened, and I considered the end at hand. In a month the effusion disappeared, leaving the patient very much better in all respects. For four months the progress of the disease was stayed. At present, however, signs of renewed growth are making their appearance. Should pleuritic effusion again occur it will be of interest to note the effect.—I am, etc.,

London, July 27th. David Sommerville, M.D., M.R.C.P.

POISONING BY BROMOFORM.

Sir,—I read with interest Dr. Benson's record of a case of poisoning by bromoform published in the British Medical Journal of July 27th, especially as I have been in the habit of using this drug pretty extensively in the treatment of whooping-cough. Perhaps I have been singularly fortunate, but I have not had any cases in which toxic symptoms supervened after the exhibition of the drug. My custom has been to prescribe it in a mixture such as this:

Bromoform	...	...	♏j
Sp. chloroform.	...	...	♏iij
Mucilage	...	...	q.s.
Aq. anethi	...	...	ad ℥j.

A teaspoonful of this mixture is given every four hours to a child 1 year old. For an infant 6 months old half-teaspoonful doses are given, and for children over 1 year of age the dose is increased according to age. My experience has been that no difficulty is met with in getting children to take this mixture. It is often advisable to add one minum of tincture of strophanthus to each dose, and if thought necessary some flavouring agent may be included.

The fact that bad effects often follow the administration of the last dose in the bottle indicates that the drug tends to settle at the bottom. The bottle should always be labelled "Shake the bottle," and if the importance of this is explained to the person in charge, and if the instructions are carefully and conscientiously carried out, then the risk of the child getting an overdose would be reduced to a minimum. In the prescription given above, the mucilage holds the drug in suspension, and that seems to me to be a scientific method of prescribing such a drug as this.

Another danger (which has to be specially guarded against amongst the poorer classes) is that the teaspoon used is generally of greater capacity than a medicinal teaspoon, and so perhaps the child may be getting double the quantity for a dose. It would be well in all doubtful cases either to see the spoon that is to be used, and write the "Signetur" accordingly, or to prescribe half a dose of the drug in each drachm of the mixture. Another practice that cannot be too strongly condemned is the reckless administration of the medicine when almost finished, the emptying into a glass of what is judged to be the last dose without measuring it. A greater quantity than desirable may thus be given, and cases have been from time to time recorded in which symptoms of a most alarming nature have followed such a practice.

In dealing with such a powerful drug it is essential that each dose should be accurately measured, and I would strongly urge the importance of the mixture being "well shaken before taken."—I am, etc.,

Kidderminster, June 27th. J. Allan.

GONOCOCCAL PYAEMIA.

Sir,—In reading the account of the very interesting case, reported by Dr. F. H. Jacob in the Journal of July 27th, I was sorry to find no reference to the treatment recorded by Dr. S. Fenwick and myself of rectal injections of polyvalent antistreptococcus serum. If that had been tried it is quite likely that the disease would not have proved fatal, as several cases almost identical with the one described have yielded promptly to this treatment. Though the disease is an uncommon one, it seems that the serum treatment should be more widely known, as its favourable action is prompt and certain. For the description of it I may refer to the *Transactions of the Medico-Chirurgical Society* for 1906.—I am, etc.,

London, W., July 28th. J. Porter Parkinson.

"AN AMATEUR IN DRUGS."

Sir,—I have read your article "An Amateur in Drugs" with much interest, because, even as an amateur, I am fully alive to the importance of much that you say; but I fail to see that your severe strictures apply to anything that I have said about sanatogen. If I have recommended it as a food because I have seen its undoubted good effects, I have only been guilty of following in the steps of several doctors whose pamphlets have been sent to me, and who have spoken so unhesitatingly of the benefits of sanatogen that I hardly think that I have, even as an amateur, committed any great enormity in bearing witness to the good results I have seen from using this preparation.

I refer you to the words of Dr. Andrew Wilson, F.R.S.E., formerly Lecturer of the Edinburgh Medical School, and Examiner, Faculty of Medicine, University of Glasgow; and to a pamphlet by Dr. C. A. Ewald, Medical Privy Councillor, and Director of the Kaiserin Augusta Hospital, Berlin.

If men of standing have thought well to recommend in print, over their own names, a food which they believe to be valuable in cases of sleeplessness and anaemia, in enteric fever, and for children suffering from rickets, and in other diseases which require that the patient should be properly nourished, I do not think that it is great heresy on my part to state that I, too, have seen wonderful benefits arising from the use of that which is, after all, nothing more than a valuable food.

It is quite true that my letter is dated from the Farm Colony at Duxhurst. Our medical officer would be the first to disclaim any intention on my part to usurp his prerogatives, but as the Duxhurst Farm Colony happens now to be my only residence, it is natural that I should date any letter that I write from there.

I can well understand that the medical profession is obliged to protect the public from the misleading advertisements of quacks and proprietors of patent remedies, but I think it is stretching the matter too far to say that

no one is justified in giving an opinion as to the results obtained from a wholesome nutrient which medical men have already publicly endorsed, and the contents of which are as easily ascertained as those of Benger's food or Oswego cornflour. The certificate of the analysis by Mr. Granville H. Sharpe, F.C.S., is sufficient testimony as to its useful properties.—I am, etc.,

ISABEL SOMERSET.

The Cottage, Industrial Farm Colony,
Duxhurst, Reigate, July 25th.

*** Lady Henry Somerset seems to have missed the point of our observations. She, like the rest of the British public, is of course entitled to give her opinion, for what it may be worth, as to the value of a food or a system of philosophy. What we venture to think objectionable is that she should speak as one having authority on the effects of a particular preparation in conditions of disease as to which there is no reason to believe that she has any real knowledge. Even were the opinion so confidently delivered of any value in itself, its publication in the form of an advertisement in a popular magazine is scarcely to be commended as a method of instructing the people.

CHRISTIAN SCIENCE.

SIR,—As a supplement to your leading article in last week's issue on the vagaries of this fashionable superstition, may I venture to assert that the strongest argument against Mrs. Eddy's views of toxicology has hitherto been neglected. Mrs. Eddy contends that the poisonous properties of certain drugs do not really inhere in the "matter" of which they are composed (for this, like all other "matter," is merely a delusion of "mortal mind"), but are due to the action of the "mortal mind" aforesaid, which, by investing these drugs with imaginary poisonous properties, converts them into actual poisons—*for the time being*. Ipecacuanha acts as an emetic, and castor oil as an aperient, because so "mortal mind" has come to believe, and this belief is now so firmly fixed in our minds that these results follow. But it would be interesting to know *why* these particular beliefs and no others have attached themselves to these particular drugs. Why, for instance, should not "mortal mind" have believed that the castor-oil bean was an agreeable tonic? Let us go back in thought to that far-distant day when the first savage (who, presumably, was not a Christian Scientist, and so had no beliefs one way or the other about the matter) devoured by mistake, or as an experiment, a handful of the seeds of what we now call *Ricinus communis*. No anticipation of the results so soon to follow was in his mind; no atmosphere of cathartic belief *ex hypothesi* invested the innocent-looking vegetable; but can Mrs. Eddy or Mr. Dixon deny that the consequences of that hasty meal would have been the same as those with which our childhood was sadly familiarized? Granted that *after* that painful experience a certain amount of mortal "belief" would surround this earliest addition to the neolithic pharmacopoeia in the mind of our rude forefather. This was natural enough, but on Mrs. Eddy's hypothesis the difficulty of its previous existence is not explained. Will Mr. Dixon explain it?

The same argument, of course, applies to the action of *unknown* poisons on animals, and, in fact, upon all living creatures who, while susceptible to them, are in entire ignorance of their effects.

Another thing. Mrs. Eddy and her followers are very fond of quoting the text, "If they drink any deadly thing it shall not hurt them." But the whole point of the argument in this verse (apart from the fact that it is contained in the confessedly spurious addition to St. Mark's Gospel) depends upon the admitted "deadliness" of the poison drunk, otherwise where would the "miracle" of the antidotal faith come in? But this is a very different thing to denying the existence of the poison; it is, in fact, the direct opposite.—I am, etc.,

July 28th. MONTAGU LOMAX.

SIR,—You might add to your extracts in the editorial of last week from *Science and Health*, by Mrs. Eddy, the following extraordinary paragraph. After proving to her own satisfaction in hundreds of pages that pain is a delusion and drugs another, and a shocking substitute for "Divine mind," on page 464, par. 21, in the last edition, she absolutely says in instruction to workers:

> If, from injury, a Christian Scientist has pain (*sic*) so that he cannot heal himself mentally, *he should call a surgeon for a hypodermic injection!* (The italics are mine.)

Comment is superfluous.—I am, etc.,

London, W., July 27th. A. T. SCHOFIELD, M.D.

SIR,—I am very far from anxious to involve myself in a controversy on any subject, but in the article in your last issue you ask me a definite question, and to that question I am perfectly willing to reply.

You ask whether I am prepared to undertake to blot out the epidemic of typhoid now raging at Peterhead? I answer, Certainly I am not. No Christian Scientist would undertake anything of the kind, any more than the Apostle Peter could be induced to undertake to give Simon Magus for money the power to heal. The Christian Scientist knows exactly what Peter knew, that the power to heal, as Jesus taught and healed, depends on the spiritual perception of the healer, and that whether or no that perception will be equal to any given attempt it is impossible to say. Any Christian Scientist, however, will undertake, if the requirements of Christian Science are fulfilled, to do his utmost to help any sick person who may apply to him, and to show such a person how he may begin to gain that spiritual perception which will enable him, through purity of thought and consecration to Truth, to some day obey the divine command to overcome "all manner of disease."

The only man in the world of whom it is recorded that He healed with unerring certainty is Jesus, and it is the contention of Christian Science that the only method by which such healing can ever be repeated is the method He taught and practised. That the disciples failed to heal on occasion we know, but that does not prove that as healers they were inferior to the Jewish physicians any more than if a Christian Scientist were to be found presumptuous enough to undertake to stop the epidemic at Peterhead, and fail, it would prove that Christian Science healing was inferior to that of the medical schools.

The whole argument of the article rests on the presumption that the theory of idealism in general and Christian Science idealism in particular is only a theory, whilst the premisses of materialism have been made good. It is all very well to quote Byron's epigram, but no one knows better than you, Sir, that the lines merely prove that Byron did not know what Berkeley meant, or that he was, in the words of the late Professor Huxley, simply one of the coxcombs who vanquished Berkeley with a grin.

It is no doubt perfectly true, as a general principle, to say as you do that "whether pain or disease is absolute or relative, it is absolutely real to the sufferer, and he wants to get rid of it," but the question is whether you are to proceed to overcome a condition which is absolute by the same methods as one which is relative. For instance, if pain is purely a condition of the human mind it must surely be met by a different treatment than would be employed if it is wholly independent of that mind.

In criticizing a book like *Science and Health*, in which Mrs. Eddy is endeavouring to place a new point of view before her hearers, it is even more than usually unsafe to dissociate particular passages from their context. Mrs. Eddy, for example, makes an absolute distinction between the divine Mind and mortal mind, and to grasp her meaning it is essential to maintain this. Unfortunately, in the transcripts in your article, this distinction has been lost, and the resulting confusion has caused you to accuse her of self-contradiction. Nor do I think that it is a sound deduction to label Christian Science "the gospel of dirt" from the passage you have begun to quote, and which continues as follows:

> I insist on bodily cleanliness within and without. I am not patient with a speck of dirt; but in caring for an infant one need not wash his little body all over each day in order to keep it sweet as the new-blown flower.

You ask, with regard to the taking of poisons, how "can Christian Science make deadly things harmless if the belief of the majority" (as Christian Science teaches) "overpowers that of the infinitesimal minority?" It is because, in the wonderful phrase of Douglas, "with God one is a majority;" because one person understanding the absolute law sufficiently to demonstrate it, can overcome the belief of thousands based on a mere relative sense of what constitutes law. It was the truth of this which enabled Jesus to say of those who believed in Him,

that is, understood His teaching. "If they drink any deadly thing, it shall not hurt them." Nor, again, has Mrs. Eddy ever said that her husband died of poison, but that there is no death. "To say," she has written, "that you and I, as mortals, will not enter this dark shadow of material sense called death, is to assert what we have not proved." But she does insist that death is not real, inasmuch as it is no part of divine law, no part of eternal life, "those," she says, "who reach this transition, called death, without having rightly improved the lessons of this primary school of mortal existence—and still believe in matter's reality, pleasure and pain—are not ready to understand Immortality. Hence they awake only to another sphere of experience." Jesus said, "Our friend Lazarus sleepeth; but I go that I may awake him out of sleep."

Finally, may I endeavour to explain the position taken up by Christian Science with regard to surgery? The philosophical idealist of the eighteenth century, Bishop Berkeley, declared emphatically that there was

> No substance of matter, but only a substance of mind, which he terms spirit; that there are two kinds of spiritual substance, the one eternal and uncreated, the substance of the Deity, the other created, and, once created, naturally eternal; that the universe, as known to created spirits, has no being in itself.

The philosophical idealist of the twentieth century, Professor Ostwald, declares

> Matter is only a thing imagined, which we have constructed for ourselves, very imperfectly to represent the constant element in the changing series of phenomena. Now we begin to understand that the actual—that is, that which acts upon us, is only energy, we have to ascertain by tests in what relation the two conceptions stand, and the result is without a doubt that of energy alone can reality be predicated.

It is perfectly clear from this that to the churchman and to the chemist matter represents only the hypothetical substance of what the one calls mind and the other energy. But, says Huxley, with relentless logic:

> If the hypothetical substance of mind is possessed of energy, I, for my part, am unable to see how it is to be discriminated from the hypothetical substance of matter.

As a fact, it cannot be, and that is why Mrs. Eddy wrote, forty years ago, "mortal mind and body combine as one." If this idealistic premiss is once granted, it is at once obvious that the drinking of tar water or any other drug is only a clumsy way of convincing the human mind, and it is equally obvious that, as Mrs. Eddy says, "the body manifests only what mortal mind admits, whether it be a broken bone, disease, or sin." Granting this, it follows that mental surgery is but another step forward in metaphysical healing. Already human thought is passing out of the childhood of philosophic idealism to the stature of manhood in Christ, as it begins to comprehend what Mrs. Eddy has described as "this warfare between the idea of divine power, which Jesus presented, and the mythological material intelligence called energy and opposed to Spirit." Between the mortal mind of philosophical idealism, and the divine Mind in Christian Science.

I have striven to set down here the teachings of Christian Science as I understand them without discourtesy to any one. To all striving towards the goal of eternal truth Christian Scientists would speak in the words which Abraham spake unto Lot, "Let there be no strife, I pray thee, between me and thee, and between my herdmen and thy herdmen; for we be brethren."—I am, etc.,

Christian Science Publication Committee, London, July 29th. FREDERICK DIXON.

*** We do not think Mr. Frederick Dixon has explained away any of the contradictions in Mrs. Eddy's teaching pointed out in the article to which he refers. As for idealism and materialism, our position is like that of Carlyle, who replied to some one who asked if he was a pantheist, "I am neither a pan-theist nor a pot-theist; for the rest never mind." We look for facts, and care nothing about "isms." We may remind Mr. Dixon that it was Christian Science as expounded and practised by the hero of Mr. Benson's novel which we ventured in the first instance to criticize, and it was more especially against the power to stop an epidemic of typhoid fever with which Mrs. Eddy's teaching is there credited that we wished to protest. If individuals choose to be treated for diseases, real or imaginary, by incantations, that is their own concern; but the notion that Christian Science can check an epidemic is a danger to the community. As far as we understand Mr. Dixon, he himself would scarcely dare to put the healing virtues of Christian Science to the touch in a struggle against an epidemic. As regards what we have called Mrs. Eddy's "gospel of dirt," the passage which Mr. Dixon implies that we omitted is not in the edition of *Science and Health* (Boston, 1898) from which we quoted. It looks as though in a later edition she had, possibly in deference to materialistic criticism, added another contradiction to those with which her book swarms. But it is to be noted that, even while asserting that she is not patient with a speck of dirt, she insists that an infant's body need not be washed all over each day. This is a case of what may be called compound self-contradiction. Mr. Dixon denies that Mrs. Eddy ever said her husband died of poison; this to the ordinary mind is not altogether the same thing as denying that she believed that Mr. Eddy's death was the result of arsenical poisoning mentally administered. To this alleged belief Mr. Dixon does not allude; nor does he deny that Mrs. Eddy says her first husband died of yellow fever. We quote her own account of the matter: "He was spared to me for only one brief year. He was in Wilmington, North Carolina, when the yellow fever raged in that city, and was suddenly attacked by this insidious disease, which in his case proved fatal." Here we have a plain admission that disease not only exists but may kill. We cannot follow Mr. Dixon through his metaphysical disquisition on "mental surgery." We will only say that it reminds us of Falstaff's discourse on honour. Adapting the Fat Knight's words a little, we ask: Can Christian Science set a leg? No. Or an arm? No. Or take away the grief of a wound? No. Christian Science hath no skill in surgery then? No. Therefore sensible persons will have none of it!

OBITUARY.

JOHN PIRIE, M.A., M.D., J.P.

THE intimation of the death of Dr. Pirie will be received with deep regret by a wide circle of friends throughout Scotland. Some years ago he retired from the practice of his profession in Glasgow, and about a year ago he went to reside at Courthill, Campbeltown, Argyllshire, where he died on July 24th, in his 81st year. Dr. Pirie was a native of Ross-shire, having been born at Kishorn, Lochcarron. He was educated at the Inverness Academy, whence he proceeded to King's College, Aberdeen, where after graduating M.A. he studied medicine at Marischal College, taking the M.B. degree in 1846 and the M.D. in 1851. In the latter year he was admitted a Licentiate of the Royal College of Surgeons, Edinburgh, and in 1868 he became a Fellow of the Faculty of Physicians and Surgeons of Glasgow, of which he was for many years the Examiner in Arts subjects. His first appointment was as House-Surgeon in the Aberdeen Royal Infirmary, and he afterwards practised for two and half years at Fort William. In the year 1853 he went to Campbeltown, where he remained till 1867, when he went to Glasgow, where the rest of his active professional life was spent. For upwards of thirty years he resided in Elmbank Crescent, his practice extending to all parts of the city. Dr. Pirie was a fine type of the physician—genial, kindly and generous, with a rich fund of wit and humour. By his professional brethren he was held in the highest respect. He had the confidence and warm affection of his patients, while he had the regard and esteem of all who had the privilege of his acquaintance. Dr. Pirie was a man of energy. He found time to do much useful work outside his purely professional duties. He was for several years medical officer in charge of the Argyll and Bute Artillery Militia; he was a magistrate of the Burgh of Campbeltown, a J.P. for Argyllshire, and an active member of several local societies having for their object the improvement of the condition of the poor. From the time he went to Glasgow—namely, in 1867—he continued his interest in the necessitous poor, and, along with Dr. W. L. Reid and a few kindred spirits, he founded the Glasgow Medical Mission, one of the most beneficent of the institutions of that city. A loyal and zealous Free

Churchman, he was for many years an office-bearer in Renfield United Free Church under the Rev. Dr. Marcus Dods and his successors. In all the work of the congregation he bore a prominent part for more than a generation, and as convener of the Mission Committee for many years he found a congenial sphere for his unwearying activity in the mission carried on in the district. He took a warm interest in everything connected with the Highland counties, and he was at different times President of the Kintyre Club, of the Ross and Cromarty Society, and of the Northern Highland Benevolent Society.

Dr. Pirie was in full sympathy with modern methods and achievements in general science as well as in medicine and surgery. He was an excellent classical scholar, and had a complete mastery of the Gaelic language. He had a fine literary taste, was a voracious reader, fond of poetry and history, broad and tolerant in his theological views. His memory was good, and to the very end of his life his interest was keen in all literary, political, and social questions. He was an enthusiastic yachtsman, spending a yearly holiday cruising about his beloved Western highlands and islands. Dr. Pirie was married to Jane Harvey, daughter of Dr. Robert Harvey, a well-known surgeon in Campbeltown, by whom he was predeceased. He is survived by four sons and a daughter. The remains were interred in Kilkerran Cemetery, Campbeltown.

We regret to record the death of Dr. Mark A. Brennan, which sad event took place on June 30th at his residence, Charlestown, co. Mayo. He qualified as L.R.C.P. and S.I. in 1881, took the F.R.C.S.I. in 1900, and practised for a few years in Kensington; returning then to Ireland, he was elected medical officer of the Lowpark district in Stornford Union, co. Mayo, which post he held till his death. As honorary secretary of the Mayo Branch of the Irish Medical Association he worked zealously to increase the membership and widen the influence of that Association in the western counties of Ireland. He also took a lively interest in the British Medical Association, and was remarkable for his almost regular attendance at its annual meetings. He was present at the meeting in Montreal in 1897, and it was a source of great regret to him that his state of health prevented his presence last year at the Toronto meeting. During the past few years his health has been failing from hepatic and pancreatic trouble, for which he underwent some serious operations, but nevertheless he stood to his post of duty till the last. Genial, kindly, and upright in all relations of life, and loyal to every professional interest, his death will be regretted by his professional brethren as well as by a wide circle of private friends.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF LONDON.

London School of Tropical Medicine.

The following are the results of the examination held at the end of the twenty-fourth session, May-July, 1907:

*Captain F. H. G Hutchinson, I.M.S., M.B., C.M Edin., 1892, D.P.H Camb., 1907; *Captain W S Willmore, I M.S, M R C S., L.R C.P., 1895: *Captain J N. Walker, I.M S., M.R.C.S, L.R.C.P, 1897; *A W. Balch Surgeon, U.S Navy, Ph.G Mass., 1894, M.D.Harvard, 1898; *C. A. Godson, I.M.S., M.R C.S., L.R.C P., 1904; *F Grenier (Colonial Service), M.B., C.M Edin., 1891; T. R. Beale Browne (Colonial Service), M.R C.S., L.R.C.P., 1901; J. C. C. Ford (Colonial Service), L.R.C.P and S., L.F.P.and S Glasg., 1900; G Wilkinson, M.B., B C.Camb, L.S.A., 1892; E. Weatherhead (Colonial Service), M.B Camb., 1903, M.R.C S., L.R.C.P., 1903; F. C. Hepburn (Colonial Service), M.R.C.S., L.R.C.P., 1904, B.A.Camb.; K. McMurtrie, M.B., Ch.B Edin., 1906.

* With distinction.

UNIVERSITY OF EDINBURGH.

First Professional Examination.—The following candidates have passed in Physics:

W. J. Adie, F. C. K. Austin, Ahmed Aziz, W. R. Bayne, D. Bell, A. B. T. C Britton, N. H. Bronnum, D. L. Brown, J. F. Chalmers, N. N. Chatterjee, A. E. Christie, F. A. E. Crew, Susanna H. Good, J. V. L. Grant, J. G. A. Groenewald, S. M. Hancox, J. F. C Haslam, T. Hayhurst, J. G. Hill, D. Kerr, N. L Lochrane, J. M'Caig, I. Macfarlane, W. H M'Granahan, A. M. Mackay, Jessie A. MacLaren, F De S. M'Menamin, Hamed Mahmud, J. W. Mathews, A. B. Mitchell, A. E. Moore, H. Morris, B.A., J. T. Morrison, J. D. Paterson, F. Radcliffe, M. R. G Richardson, J. Scott, E. Sharpe, A. W. S. Sichel, S. D. Stewart, S. W. H. Stuart, J. R. K. Sutton, M. Teitelmann, H. F. R. Tillstone, P. G. Tuohy, G. H. W. de Vos, H. W. Webb, H. W. Weir, J. B. Wilkie.

UNIVERSITY OF ABERDEEN.

Summer Graduation.

The Summer Graduation ceremony took place in the Mitchell Hall, on Thursday, July 25th. Most of the undergraduates being on holiday there were few students present, and the ceremony was not nearly so picturesque as usual. Principal Lang presided, and Professor Baillie presented the graduands in arts, Professor Trail those in science, and Professor Finlay those in medicine. Professor Lang then delivered the usual address to the graduates, reviewing the present situation in the University, and making particular reference to the operation of the Carnegie Trust. He also referred in fitting terms to the resignation of Professor Kennedy of the Law chair and to the appointment of Mr. J. M. Irvine as his successor.

The following degrees were conferred:

M.D.—W. C. Anderson, B.Sc., *R. Brown, *J. Clark, †F. W. Ellis, M. B. Johnson, †P. Macdonald, M.A., W. M. Smith.

Ch M.—A. Mitchell, M.A.

M.B., Ch.B.—‡§W. Dilling, ‡§D. Horn, B.A., ‡G. H. C. Lumsden, ‡§J. M. M'Queen, M.A., B.Sc., ‡§A. M'K. Niven, E. E. Allaway, J. W. Archibald, T. Clapperton, J. Ferries, W. I. Gordon, M.A., A. Horn, J. E. Kesson, B. Knowles, J. Leask, Margaret C. Macdonald, D. B. M'Grigor, W. I. Mackintosh, J. M. Mathieson, J. A. Milne, B. Mitchell, J. Mitchell, J. Murray, A. E. C. Myers, P. Nicol, A. Shepherd, §A. Stewart, W. L. Stewart, J. M'I. Wilson, M.A.

* Honours for Thesis. † Commendation for Thesis.
‡ Second Class Honours. § Passed Final Examination with Distinction.

The John Murray Medal and Scholarship for the most distinguished Graduate (M.B.) of 1907 was awarded to Mr. D. Horn, B.A., Queensland.

Professional Examinations.

The following candidates have completed the First Professional Examination for the degrees of M.B. and Ch.B.:

J. R. Ainslie, A. G. Baxter, C. C. Chance, *J. Davidson, J. Fettes, C. S Glass, J. Hunter, G. Leggat, A. Macintosh, J. M. Mitchell, J. R. Murray, H. J. Roe, P. Reid, A. Smith.

The following have passed the first part of the First Professional Examination:

J. Chalmers, H. T. Finlayson, W. E. Glover, W. Henderson, W. P. Hogg, W. W. Ingram, A. F. Legge, S. W. Lund, G. M. McGillvray, L. J. Moir, E. A. Pearson, C. M. Stephen.

The following have passed the Second Professional Examination:

D. W. Bruce, D. Craig, W. J. Cruickshank, A. H. Duckett, N. Dunn, J. Elder, A. M. Geddes, G. C. Evant, H. Hargreaves, J. MacPherson, R. J. Merson, A. D. Reid, F. W. Stuart, J. E. Thompson.

The following candidates have passed the first part of the Second Professional Examination:

R. W. Eddie, A. Mitchell.

The following have passed the Third Professional Examination:

R. W. Chalmers, J. G. Christie, J. B. Cruickshank, W. Y. Davidson, D S. Garder, J. B. Macallan, A. Macone, J. G. Muterer, J. J. A. Neil, G. E. Shand. A. J. Shinnie, A. C. L. Smith, A. J. W. Stephen, *R. Tindall, **J. Watt, J. H. Will.

A. G. Troup, M.B., Ch.B, has passed the examination for the Diploma in Public Health.

* With distinction. ** With much distinction.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES

MEDICAL OFFICERS' FEES FOR LECTURES TO NURSES NOW DISCONTINUED.

Volunteer writes: I was appointed medical officer of a workhouse a year ago, and was then asked if I would agree to give two lectures a week to probationary nurses. The Board has now done away with probationers, and has appointed assistant nurses. This means a loss to me of £13 a year, which was subject to a deduction for superannuation. Am I entitled to compensation if no further lectures are given?

*** We are not aware of any rule or regulation which would enable our correspondent to claim *compensation* for loss of fees for lectures. Nevertheless we consider he is entitled to a return of all his payments towards the superannuation fund which have been deducted from fees paid to him for this special duty.

The late Miss Elizabeth Wells, of Midhurst, Surrey, bequeathed £200 each to the South Staffordshire Hospital, Wolverhampton, and Guy's Hospital.

Under the will of the late Mrs. Martha Miller, of Fitzjohn's Avenue, Hampstead, Earlswood Asylum for Idiots receives a legacy of £1,000, a similar sum being left to Chichester Infirmary.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—

EDITOR,	GENERAL SECRETARY AND MANAGER,
2631, Gerrard.	2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

M.D. ABERDEEN writes: I have a young lady patient who perspires freely on any exercise or excitement, and the perspiration has an exceedingly offensive smell, which causes her much distress. I have tried all kinds of deodorizing lotions, dusting powders, and baths, with no effect. I should be glad if any reader could help me to relieve the young lady.

INTERNAL PILES would feel grateful to any reader who would kindly give him information touching an effective cure for internal piles. Has any British electrical specialist tried the Lille electrical treatment, which Doumer claims cures in a painless manner fissures and internal piles? Information *re* results obtained with hemisine, etc., would also oblige.

PUZZLED asks for assistance in the following case: A youth, aged 18, suffers from chronic diarrhœa, with pain preceding motion, of many years' duration and resisting treatment by diet and astringents, the latter including tannigen and starch enemata, which our correspondent has found useful in previous cases. Except for a compensated mitral regurgitation patient is quite well, but is unable to continue work as labourer owing to inconvenience of his complaint. Nothing abnormal can be felt per rectum. Motions contain no slime or blood.

PHLYCTENULAR OPHTHALMIA.

CRASSUS asks for advice in the treatment of a young woman, aged about 35 or 37, who has suffered for over twenty years from phlyctenular ophthalmia; latterly the attacks have been accompanied with iritis and much brow pain; usually only one eye is attacked at a time; she is very apt to have a particularly severe attack at the monthly period. She is strong and active, but has also had spots of psoriasis for even a longer time. She has been months at a time without the ophthalmia, and often, as latterly, has had an attack every ten days or fortnight for months.

THE APPOINTMENT OF POLICE SURGEONS.

ANXIOUS asks how a surgeon to the local police-station is appointed, and if any influence is used or necessary.

*** We are informed that in the Metropolitan Police District, to which our correspondent's questions seem to refer, the practice is that when a vacancy occurs a number of surgeons practising in the neighbourhood are asked to visit New Scotland Yard to be interviewed by the Chief Surgeon. On his recommendation, backed by that of the Commissioner of Police, the chosen one is appointed by the Home Office. It is not, perhaps, an ideal mode of selection, but we believe it works well on the whole. In places outside the metropolitan district the appointment rests with the Watch Committees or other bodies connected with the town councils who pay their own police.

ANSWERS.

STAFF SURGEON R.N.—Our correspondent should apply to the secretary of the National Association for the Prevention of Consumption and other Tuberculous Diseases, 20, Hanover Square, London, W.

LETTERS, NOTES, Etc.

VAGITUS UTERINUS.

A LOCUM TENENT writes: I was sent for recently to see a patient two miles or more distant whom the local nurse thought to be suffering from inflammation of the kidneys. The drive was through a country road, lonely, and the time between 10 and 11. It was a confinement, and I was soon returning. My coachman asked me whether there was much the matter, and I evaded a direct answer. In five or ten minutes' time, while my attention was fixed on the horse, the patter of its feet and noise of harness together vocalized to my ears, a yard in front of me, several times, "So the baby has come," "She has a baby," most distinctly. I am so familiar with similar manifestations, as a desultory student of psychology, that I beg to suggest that it is satisfactory when other ears than our own verify intra-abdominal cries.

TUBERCLE.

DR. J. REID, M.D. (London, E.C.) writes: At a *post mortem* examination in 1884 in a case of tubercle of the larynx and both lungs, I accidentally cut the back of the middle finger and little finger of the left hand with a scalpel which I used freely in the dissection. The latter wound refused to heal with simple water dressing, carbolic acid, and perchloride of mercury, but was finally cured by balsam of Peru. The former wound developed erysipelas and healed in a few days after ulcerating. Every endeavour was made to prevent friction in the case of both wounds. Since then I have had no lung trouble or sign of tuberculosis.

THE ORIGIN OF CIRCUMCISION.

DR. HARRY GREY (Bristol) writes: Dr. Dampier-Bennett instances a case of adherent prepuce as productive of epileptiform seizures, and hints at a conclusion to which I came long ago—namely, that as a source of peripheral irritation producing fits in children, irritation of the penis is by no means to be disregarded. I have now in preparation, and hope shortly to publish, a paper based on a long series of cases which I think afford conclusive proof that the tension of smegma confined round the corona of the glans by an adherent prepuce, is a more common cause of infantile convulsions than teething, worms, or any other peripheral irritation hitherto ascribed as a cause.

FORMATES IN RHEUMATISM.

DR. H. M. SUTTON (London, N.) writes: With reference to the letter of "A. M." in the JOURNAL of July 20th and the question of the use of the formates in rheumatism, I have met with what is practically a liniment of formic acid prepared from ants as a popular remedy for rheumatism in Germany. An open bottle containing brandy is placed in an ant hill. The ants swarm into the bottle, which is then removed, corked, shaken, and set aside for a time. This household remedy is called *Ameisenbrauntwein*, a name equivalent to spiritus formicarum. In the *Medical Annual* for 1906, p. 21, formic acid is referred to as "a marvellous remedy in rheumatic conditions."

THE PERILS OF STERILIZATION.

DR ALEXANDER DUKE (London, W.) writes: In a letter under this heading which appeared in the JOURNAL of July 27th, Dr. John F. Elliott (Natal) alludes to my suggestion—namely, that "perhaps *amputation of the cervix on a level with the vaginal roof* would prevent conception," and he reasons that because he has met with one case where the cervix had been torn off with forceps, my suggestion is of no value. Dr. Elliott neglected to state if the *entire* cervix had been thus removed, and, judging from his own description of the case, the patient was sterile for four years subsequent to this accident, though he states "In this case *amputation* did not mean sterilization." I maintain this accident was very different to amputation of the cervix surgically done, some of the cervix evidently being left, which, as we all know, grows in time unless cut off on the level of vaginal roof. It would be interesting to know what sort of cervix uteri his patient now possesses.

SHIP SURGEONS.

DR. WILLIAM MARTIN (Newcastle-on-Tyne) writes: In your issue of July 27th your correspondent, "Medicus," asks for the views and experience of men who have acted as ship surgeons regarding the status of the profession at sea. I, sir, have had such experience, and, unlike his informant, my recollections of the life are most agreeable. In the year 1895, after three years of somewhat close application as a house-surgeon in different hospitals, I joined a steamship line trading and carrying passengers to New Zealand, and served the company in the capacity of ship surgeon for about a year. From my own experience and from observation of

men serving similarly in other ships and other lines, I came to the conclusion that the most important factor in the whole question was the man's own individuality. If he displayed a reasonable amount of tact in his dealings with captain, officers, crew, and passengers, it was most unusual for any friction worth mentioning to occur. One thing which I always held to be of the highest importance was that the surgeon, of all men, "should speak no slander, no, nor listen to it." Only those who have travelled by sea can realize the amount of tittle-tattle, often of an unscrupulous kind, that will drift about these passenger ships when, during the long runs between the various ports of call, passengers have very little to occupy their time; and some of them use the too-abundant leisure by verifying afresh the well-known words, "Satan finds some mischief still for idle hands to do." As regards discipline the surgeon stands alone, and is answerable to no one save only the captain of the ship, whose authority quite properly is paramount. It must be remembered that the health of the ship is a matter of the greatest possible moment to the captain, and he must be treated with a good deal more confidence than the newly-qualified man might suppose. For instance, the captain has but scant sympathy for any member of the crew who signs on as fit for duty and subsequently develops some venereal trouble which interferes with his work. But if the surgeon, in confidence, puts his views plainly, courteously, and firmly before the captain, he will have no trouble in "laying off" any man he may judge unfit for work, whatever the cause. Of course, in a general way, the surgeon must be keenly on the alert to detect malingering and expose it ruthlessly, and he will not then be long at sea before firemen and deckhands alike will realize that they cannot "have" the doctor, and will respect him all the more for it. The most important diseases to be considered in relation to the ship's business are those of an infectious character, and a grave responsibility rests on the surgeon if any suspicious cases occur, as it becomes absolutely impossible to obtain pratique unless he can show a clean bill of health, and it is a very serious matter for a big ship to be laid up in quarantine, perhaps in some South American port, for an indefinite time. But the surgeon's duty is plain, even if sometimes disagreeable—he must declare what he finds. I do not think that the standing of the ship surgeon can be measured by the amount of pay he draws. The pay suffices to cover his reasonable expenses, and the net result in my own case was that without, as far as I am aware, neglecting in any way my duty to the ship, I was able to enjoy a most healthful experience, and at the same time obtain an interesting practical insight into the kind of life men lead "who go down to the sea in ships and occupy their business in great waters." A last word: I would recommend no man to regard this life as other than simply episodal. Let him limit it to twelve months, or, at the very outside, two years, and, if he desires to take up a seafaring life as a career, let him join the Royal Navy. In a brief letter it is possible only to speak quite generally; but if your correspondent is desirous of learning something further of the details of a ship surgeon's life, he cannot do better than read the quite admirable little book, written (1906) by Mr. A. V. Elder, and called *The Ship Surgeon's Handbook*.

HYDROGEN IN THE FREE STATE.

A RECENT number of the *World's Work* is devoted to Ireland, her people, her industries, and her education. The following amusing story is told in illustration of the old mockery of scientific teaching, now, happily, being replaced in Ireland by new and up-to-date technical instruction. It was in the time of the Boer war, and many young hopefuls had been plucked in the officers' examinations. It was decided to give some of them another chance. When the papers were read it was found that several candidates had furnished the remarkable information that "Hydrogen is not found in the Orange River Colony"! The mystified examiners thought the matter worth looking into, and consulted the lads' tutor. He was unable to throw any light on the matter for a moment, but suddenly inspiration came to him. "I have it," he said; "I felt sure you would ask the hydrogen question, and I impressed on the boys the fact that hydrogen was not found in the *free state*"!

A CONSUMPTION CATECHISM.

A CONSUMPTION catechism for school children has, we learn from the *Journal of Outdoor Life*, been printed by the Department of Health of the City of New York for distribution in the schools of the city. Through the help which has been promised by the Department of Education, it is expected to get this catechism into the hands of every one of the 600,000 and more children attending the public schools. The numerous children in parochial and private schools will also, it is hoped, be reached. The cards will bear the imprint: "Take this card home and show it to your family and friends"; and as the teachers are to be instructed to give the same advice to their pupils, this, it is hoped, will prove the most widespread and thorough distribution of printed instructions on the subject of consumption yet attempted in the United States. In a series of thirty-two questions and answers the catechism briefly and simply tells what consumption is, how it is conveyed from person to person, "how you can keep from getting it," "how you can keep others from giving it to you," and how it is cured. Added to the catechism is a list of the associated special tuberculosis dispensaries and a map of the city showing the district allotted to each one of these.

QUIET FOR HOSPITALS.

AT the instance of the Society for the Suppression of Unnecessary Noises, Alderman Sullivan of New York has, we learn from the *Medical Record*, introduced an ordinance providing that signs, reading "Hospital Street," be placed at the corners of all streets on which hospitals are situated. The areas bounded by these signs will be known as hospital zones, and within them drivers will be compelled to walk their horses; motormen must send their cars as slowly and quietly as possible, and refrain from clanging the gongs or suddenly applying the brakes, except in case of absolute necessity; hucksters will not be allowed to cry their wares, the hurdy-gurdy and the hand organ will be silenced, newsboys must refrain from calling their extras, and children and hoodlums will be kept away. The plan is approved by Police Commissioner Bingham, who will see that the law is enforced, and by Health Commissioner Darlington. Anyone making unnecessary noises within these areas of silence will be liable to a fine of 10 dollars.

THE PLAINT OF THE G. P.

It seems to me so very odd
  That all the folk one sees
Should know so much of medicine
  And how to treat disease.

I walked the hospitals for years
  And burned much midnight oil,
To learn the barest rudiments
  By unremitting toil.

Yet now I see, too late, alas,
  That all my energy
Was wasted, for each patient knows
  Far more than's clear to me.

No wonder they don't call me in
  To treat a simple cold,
When all the knowledge I can boast
  Is designated old.

Of throats and noses, chests and limbs,
  Or anything in short,
They know by intuition more
  Than ever I was taught.

And *grave* diseases they can treat:
  Consumption, cancer, gout,
Diabetes, typhoid fever,
  Neurasthenia, too, no doubt.

All knowledge comes alike to them,
  The many "favoured few";
At least that's how it seems to me,
  And doubtless to them too.

I really cannot understand,
  It plagues me more and more,
Why learning medicine did not teach
  Me all about the law.

The merchant-prince can set me right,
  Can prove me but a fool;
And yet I know that I should be
  Lost on an office stool.

The busy mill, with hum and clang,
  I find a mystery;
The owner pauses on his rounds
  To hand "tips" on to me.

What puzzles me so much is this:
  The obvious has been missed—
When everyone knows medicine, why
  Do doctors still exist?

J. HEPWORTH, Beaumaris.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

Eight lines and under	£0 4 0
Each additional line	0 0 6
A whole column	2 13 4
A page	8 0 0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 6, Catherine Street, Strand, London, not later than first post on Wednesday morning preceding publication; and if not paid for at the time, should be accompanied by a reference.

N.B.—It is against the rules of the Post Office to receive letters at *Poste Restantes* addressed either in initials or numbers.

An Address

ON THE

PROGRESS OF THE MEDICAL MAN.

Delivered before the Metropolitan Counties Branch.

By FREDERICK TAYLOR, M.D., F.R.C.P.,

consulting physician to guy's hospital; president of the branch.

After some preliminary observations, in the course of which he thanked the members for electing him to be President, Dr. Taylor said:

I may perhaps be allowed to reflect upon some features of the British Medical Association which strike me as calling for and justifying the support of the members of our profession in the United Kingdom and in our Colonies. The union of members of one profession or one trade for purposes of mutual support, advantage, or protection, is familiar to us in the form of the old guilds and companies, but perhaps there has seldom been anything quite so comprehensive and far-reaching as the British Medical Association — which now one might almost call the Imperial British Medical Association, in view of the numerous Colonial Branches which have been formed. Among the various companies, corporations, or unions in connexion with the medical profession, we may distinguish, in respect of their scope, first, the purely scientific societies, whose object is limited entirely to the improvement of medical knowledge in its various branches; secondly, Royal Colleges or Faculties of the Universities, in which the progress of medical knowledge is but a separate object. The functions of the latter are largely directed to the relations of the medical man to the State or the public in connexion with the recognition or hall-marking of individuals as qualified to be regarded as educated medical men, and to exercise their trained faculties in the treatment or prevention of disease. The British Medical Association has for its objects—

The promotion of medical and allied sciences, and the maintenance of the honour and the interests of the medical profession

by various means. The objects of the first kind are promoted by the institution of meetings for discussion, indeed, medical societies in every part of the kingdom, and by the grant of moneys for scientific research. The objects of the second kind are furthered by meetings for discussion of what may be called the business affairs of medical men, that is, their relations to the public, by the consideration of legal questions, and by the promotion of, or opposition to, Bills in Parliament affecting directly or indirectly the medical profession.

So far as the progress of medicine is concerned perhaps there is no great need for the British Medical Association—the work is certain to be done, and was being done by other associations, the various societies of medicine in its different branches; but in respect of its social advantages, and of its value as an organization for the promotion of the interests of the medical profession, it has no doubt performed and is performing a function which no other organization possibly could. In other words, the profession looks after itself, and constitutes a purely democratic association in which all members have equal rights, equal privileges, and equal duties.

Such an organization helps not so much towards the progress of medicine, as to the progress and development of the medical man.

Looking back to olden days, we have curious glimpses from time to time of the status of the profession, and of the esteem in which the medical man was held.

Alexander the Great had sufficient faith in his physician-in-ordinary, Philip, fearlessly to take the draught he had prepared for him, even though he had under his pillow at the time a letter in which he was informed that Philip had been bribed by Darius to poison him. Only after he had drunk the medicine did he show the accusing letter to Philip, watching his face keenly while he read it. The accusation was false. But the doctor who had charge of Hephaestion, a dear friend of Alexander, was less fortunate. Hephaestion had fever and died, and the King ordered the unfortunate doctor to be crucified for being too negligent in his treatment. For Alexander it may be said that he acted in the first instance from pride as much as from faith in his doctor, and in the second from sympathy for his friend and grief at his loss. But it is conceivable that, had there been any organization of the medical profession into a Macedonian Medical Association, Alexander would have expressed his sympathy in a more considerate and less murderous manner.

From later history and legend there comes an interesting story, which shows that even 1900 years ago the grievance which has recently formed the subject of debate and resolution at a special meeting of this Branch, and at a subsequent meeting of this Branch Council, had already been acutely felt by the medical profession. I mean the abuse of hospitals. The poet Vergil had a great reputation in the Middle Ages, and several wonderful things, besides the *Æneid*, were attributed to him. For instance, the Neapolitans credited him with having founded Naples and built its walls; and a certain bronze horse, a bronze fly, and a bronze statue of a man, possessed of miraculous powers, were also regarded as his work. To those supposed products of his genius were added the well-known baths of Puteoli.

Popular tradition had added to the actual facts the idea that the baths were due to Vergil, and were serviceable for every disease. The benefactor had wished especially to enable the poor by this means to dispense with the doctors, "who" (to quote the *Cronica di Partenope*), "in defiance of all feelings of charity, insist upon being paid." But the doctors, who, as the old French poem says, "ont fait maint mal, et maint bien," did not find this suit them, and the heads of the school at Salerno especially found their business diminish to such a degree that they went secretly to the baths and destroyed the inscriptions, so that the poor invalids no longer knew where to go for their cure.—*Vergil in the Middle Ages.* By D. Comparetti. London. 1895.

This was obviously not the constitutional way of dealing with the grievance, and certainly not the method which will be pursued in the present day. And note what followed, and what, however legendary, at least expresses the attitude of the writers of those days to their doctors.

But God punished them, adds the legend, so that on their return they were caught by so furious a tempest that they were all drowned between Capri and La Minerva except one who survived to tell the tale.

We may remark incidentally that though the doctors were beaten in the end, it was by the heads of a school, a college—that is, by a representative body, and by some kind of combination that their opinions were so forcibly, if so wrongly and uncharitably, expressed. I leave it to my hearers to draw what inferences they like from such points of resemblance or difference as they can perceive in the legendary events of nineteen centuries ago and the facts of the present day.

From a much later period of history, and in a region not so very remote from the last, we hear a story which shows that the position of the medical man must have been by no means an enviable one. And if there is a grain of truth in it, it seems to show that not only were there no associations, but not even any common fellowship between them.

I think there is a general impression that in the present day, even in the worst quarters of our large towns, the person and property of the doctor are respected by the lawless inhabitants, so long as they are known to them; but we have it from Humboldt that even as late as the thirteenth century the doctor was esteemed more for the quality of his flesh than for the value of his medical opinions. Humboldt says:

In the thirteenth century the detestable custom was rife in Egypt of eating human flesh in all classes of society, and that of doctors was especially preferred, and they were exposed to extraordinary snares. People who were hungry pretended to be ill, and summoned the doctors, not to consult them, but to eat them. A very trustworthy historian, Abd-Allatif, tells us how a custom which inspired horror and fear at first came to be regarded afterwards with the greatest indifference.—*Voyage to the Equinoctial Regions of the New World.* Book viii, chapter xxiii.

Coming to more recent times, we see that the doctor has had his full share of recognition in literature, but it can scarcely be said that he has been always fairly represented. Fiction naturally seizes upon what is obvious, and the foibles of any profession are open to caricature. Little

amusement can be obtained from a recitation of what is good in the life of the ordinary practitioner; while unimportant details in dress and manner may by exaggeration supply all the humour that is wanted. The layman is, as a rule, very imperfectly acquainted with the working either of his own body or of the physician's mind in respect to it, and he is accordingly unable to estimate with any degree of correctness the opinions that the professional man may form. He may give the latter credit for knowing everything, whether past, present, or future. On the other hand, he may think that he knows nothing at all.

The doctor has been satirized and caricatured by innumerable writers, and volumes could be filled by a diligent search through the works of authors and dramatists of the last four hundred years. It would be an interesting task to collect and analyse such "appreciations." I can only refer to a few. The foible—or shall we call it a harsher name?—for which the lash of the satirist is most freely applied is the assumption of the knowledge where no knowledge is, and the acquirement of the patient's confidence by means other than the possession of knowledge, skill, and judgement.

Such methods, when practised, are very properly reprobated; but it should not be assumed that these faults are committed by all, and it is earnestly to be hoped that the proportion of those who do commit them is dwindling to a minimum. But there may be errors on the other side, which, though neither excuses nor extenuating circumstances, may still be regarded as a partial explanation of this kind of evil.

I do not know whether such a description of the art of medicine as that given by Quevedo reflects more upon the doctor or on the public. If, the writer says, you wish to be a famous physician you must ride a pretty mule, wear an emerald ring on your thumb, thick gloves, a large mantle, and a broad taffeta hat; and if you have all this, even if you have never seen a book, you cure, and are a doctor. He then describes how the physician must enter the house, feel the pulse, prescribe injections, syrups, and purges, and bleed and cup; and, if the disease persists, he must continue until the illness, or the patient, is ended. He must ask for the urine, hold it up to the light, and make grimaces. Above all, he must wear a large beard—for clean-shaved doctors are not employed—and he will not earn a farthing unless he looks like a clothes-brush. He must rush through the streets, so that he may be thought to be summoned to a case in great danger; and he should get his friends to knock at his door from time to time and call out in a loud voice, "The duke wants you," or "the countess is dying," or "the bishop has had an accident." And with all this he will visit more houses than he wants, will find himself trusted, and will rule over the best in the world.

Mephistopheles, in Goethe's *Faust*, gives almost identical advice to the student who consults him:

> The trade of medicine's easiest of all.
> 'Tis but to study all things—everywhere—
> Nature and Man—the great world and the small—
> Then leave them at hap-hazard still to fare.
> It is, you see, plainly impossible
> That one man should be skilled in every science—
> Who learns the little that he can, does well:
> The secret of the art is self-reliance.
> A man can learn but what he can;
> Who hits the moment is the man.
> You are well made—have common sense—
> And do not want for impudence.
> Be fearless—others will confide no less
> When you are confident of your success—
> The only obstacle is indecision.

The satire is double edged, for if it laughs at or reproves the means by which some professors have succeeded, it equally reflects upon the ignorance and credulity of those who cannot see deeper than the emerald ring, the large hat, and the pretty mule, the air of wisdom or the dogmatic assertion of the representative of the healing art.

This want of knowledge on the part of our clients, useful enough to some who have perhaps formed the subjects of these unfavourable criticisms, is, at times, a serious stumbling-block in the practice of the profession. The layman often has not the faintest conception of the structure and workings of the human body in health, or how they may be damaged and upset in disease. We, on the other hand, can never rid ourselves of our general conceptions of anatomy and physiology (if readily of its details), and thus can never place ourselves in the position of our patient and his friends, or even get at the point of view from which they regard the matter under discussion.

If the workings of the body and the nature of disease were common knowledge instead of confined to a small percentage of the community, we cannot surely believe that the extraordinary cult of Christian Science could have spread as it has—a cult which, in regard to disease, proposes as a method of treatment the denial of the existence of the thing to be treated. How even ten people in the kingdom can be found to accept such a view, with all its logical consequences, passes one's comprehension.

The serious effects with which widespread ignorance of natural phenomena within the scope of medicine affects the medical profession may be observed on the occasion of any great epidemic.

The death of great men from comparatively rapid illness has constantly been falsely ascribed to poison, administered by their political opponents; when epidemics are rife, the medical profession is liable to fall under suspicion, in spite of all their devoted efforts to check the disease and cure the sufferers. In the cholera epidemic of 1867 in Italy, the deaths were attributed by the ignorant people to the malevolence of the doctors. The same thing exactly happened in the same country during the cholera epidemic of 1884; and even at the present day, within the last few weeks, we hear that among the native population in India, suffering from the almost unchecked spread of the plague with a mortality of many thousands per annum,* the belief has been entertained that the wells have been poisoned; though I am not aware here that the medical profession, any more than others, are regarded as the agents of this supposed malicious and purposeless proceeding.

But in spite of these prejudices, which can, it seems to me, only be prevented by the extension of knowledge amongst the population, by the confidence of governments in medical science, and by their adoption of methods of prevention and treatment in accordance with its teachings; in spite of the extraordinary confidence of the public generally in proprietary medicines, which, as has been abundantly shown, often contain simple remedies of one-hundredth of the value of the money paid for them—or contain only the same remedies as would in the cases be certainly used by a medical man consulted; in spite of the continuance of satire, more refined, no doubt, as witnessed in modern comedy; in spite of all this, I think that the medical profession is progressing towards a position of greater influence, by a steady devotion to work on scientific lines, by a remarkable eagerness—sometimes too much—to adopt and test any theory or practice which can plausibly be shown to be based on a knowledge of facts, by a determination to get at the bottom—if there is a bottom—of every obscure deviation from nature, and to find a method either of setting it right, or of preventing its occurrence.

One of the most noteworthy facts is the cosmopolitan position of science. Every civilized country is in touch with others with regard to the acquisition of new knowledge, and this is the case no less in medical science than in others, and the discoveries, when they occur, in one country are immediately available in all others. Whether they are promptly or more slowly adopted may depend on individual differences in the medical man or in the community. One doctor readily takes up the new remedy, another is more slowly convinced and likes to rely on his old friends; and he is not always wrong. Communities are, of course, more slow to move, and Professor Ray Lankester in his recent lectures (*The Kingdom of Man*), has pointed out how far behind some other countries is Great Britain in the provision of methods, at the expense of the State, for research into and prevention of various conditions of disease, with which it is impossible for the private medical man to deal.

In the furtherance of such aims, it is clear that the British Medical Association may from time to time do good work and has done good work. I remember myself that my entrance into the Association was determined

* There were 116,154 deaths from plague in the three weeks ending June 8th. See BRITISH MEDICAL JOURNAL, July 6th, 1907, p. 62.

very largely by a consideration of the steps which the Association took when legislation was pending with regard to the Act for regulating experiments on animals, commonly known as the Vivisection Act, 1876. Under its auspices a very numerous deputation was organized to interview the Home Secretary, and express the views of the medical profession on this very important question; similar action has been taken in other instances, and through the work of the Parliamentary Bills Committee and its successor, the Medico-Political Committee, the Association has the means of bringing facts of importance before the Ministers of the Government, which it is hoped may have their proper influence in the event of legislation being required.

The influence of the Association upon medical education is probably not at present very great; only indirectly through the representatives of the profession upon the General Medical Council can such an influence be exerted.

But medical education must be a large factor in the development of the medical man, and there is no doubt that the medical education of the present day is more thorough and more complete than it was in the past. When we remember that in the early part of the last century the Royal College of Surgeons gave its diploma after examinations in anatomy, physiology, and surgery alone, that many medical men had no other diploma, but practised the whole of their lives on that certificate, and that many more were satisfied with a medical diploma; when zoology was studied by none but university students, when there were no courses of histology or of practical physiology, when bacteriology was unknown, when, after a course of apprenticeship in which indeed an apprentice might learn much, but in which equally he might learn nothing more than a good bedside manner and how to make up a limited number of medicines; when after such a course, three years of study, including dissections, and the work of dresser and clinical clerk, sufficed to give him a diploma—when we remember all this, we can see what an enormous advance has been made in the education of the student. These observations imply no reflection upon the wisdom and judgement of our fathers, but they represent the increase of knowledge of medicine and of its allied sciences; the improvement in the methods and means of research; the much larger resources in instruments of precision, such as microscopes; and even still more in the various chemical and mechanical processes by which microscopic procedure has been facilitated. The student of the present day seems to be required to attain to a vastly higher level of knowledge before he qualifies than did his father or his grandfather; but he also seems to start at a higher level, and, perhaps because the subjects or materials he has to learn are, in proportion to their extent, better arranged or organized or systematized, he seems to gain the larger store of knowledge, in a period, if not quite the same as before, still one not so very much longer. Observe, also, that with this every student has to know something of many specialities, besides the broad facts of general medicine and surgery—that he must qualify in medicine, surgery, and midwifery, and cannot be content, as in the old days, with only a partial diploma.

It should be a matter of regret, I think, to all members of the Metropolitan Counties Branch that, so far as can be judged by the figures, the number of medical students in London is less than it was. London has an absolutely unrivalled field of clinical material, and its clinical teachers can compare favourably with those of any city or town in the world. The fall in students has been attributed to many causes. There is the general diminution in the numbers entering the profession generally. There is the competition of universities springing up in our large Midland and North Country towns, which no doubt retain some students who in past times would have come to London. Especially in regard to the early work, there is the advantage offered by the Cambridge University of giving the prestige of older university life and associations, *pari passu* with the continuance of work making for the medical degree. Financial considerations may also have their influence.

The London University has been charged—wrongly, as I think—with a large share of this diminished entry of London students as a result of an ill-arranged matriculation examination, and a high standard at the pass examinations. But the subject is too wide, too complex, to be dealt with on the present occasion; and I would only say that while I doubt if one cause alone can account for it, one cannot help reflecting that great calamities can rarely be met or averted by other than united action among those who are suffering, or are likely to suffer. I have no hesitation in expressing the belief that the student educated at the London medical schools becomes as good and as sound a physician or surgeon as any educated elsewhere, and it is for the London teachers, associated together as they now all are in the Faculty of the University of London, to find out what are the causes of this serious depression, and, by combined action, to remove them.

There is one aspect of medical education which I wish to take this opportunity of emphasizing, because I think that the public has never sufficiently realized it; and in respect of one particular phase of medicine, in which the public professes to take some interest, this observation has, I venture to think, considerable importance.

Dickens presented to the readers of two generations ago a picture of the medical student, which may have been faithful as far as a certain proportion of students were concerned. Few who have read it will forget it; and it must have caused some prejudice against the training and customs of the medical students in succeeding years. I think that in the present day the medical student has lived that down, and that he is no different from students of other professions or businesses, that he is as earnest and eager as any other to acquire a knowledge of his profession, and to spend his spare time in reasonable amusements.

But there still exists in some minds the idea that the training of the medical student is prejudicial to his moral character—that the practice of dissection and even of surgery blunts his finer feelings. Tennyson wrote:

> Fresh from the Surgery—Schools of France and of other lands—
> Harsh red hair, big voice, big chest, big merciless hands!
> Wonderful cures he had done, but they said, too, of him
> He was happier using the knife than in trying to save the limb.

In the present day it is the advocates of more restrictive legislation in regard to experiments on animals who assert that operations on living animals have a brutalizing effect of the most serious kind on those who witness them. Now, I do not know a particle of evidence in support of this; and, on the other hand, I wish to call attention to a fact which I am sure is not realized by the majority of our critics, and perhaps not by all of our friends. It is this—that all the training which the student receives in the clinical period of his curriculum is in the direction of cultivating sympathy with his patients. Even if we were to admit that the earlier studies of anatomy and physiology had taught him to control his emotions and subject his feelings to his intelligence and his will, directly he comes into contact with patients he is daily taught that their feelings have to be considered, that their comfort has to be promoted, and that their pains have to be allayed.

Many children are ignorantly and unconsciously cruel; boys often have a rough and tumble life at school, and are not allowed to grow up too "soft"; and it has been urged that it is undesirable that the asperities of this youthful period should be aggravated by a too early acquaintance with lethal weapons of precision.

But whatever tendencies may linger on at later periods of life, students of medicine soon learn by contact with the sick, and from the example of their seniors and others around them, what is really the lesson of their life's occupation—they learn that sympathy for which the sick entreat you, almost as much as they beg for the healing drugs or appliances.

Those of us who are familiar with student life in hospital wards know well with what kindly feelings the student helps the patients, with what pleasure the children look for the coming of the dresser or clinical clerk, and the many little acts of kindness that are done daily in the ordinary course of their duties.

I am sure you will all agree with me that this daily exercise of the sympathetic faculty is an important factor in the education of the medical student, and that this practice of sympathy must be continued into his later years, and necessarily constitutes an element of his professional life.

Gentlemen, we may be still very far from the realization of the position which some of us think we ought to occupy in relation with the public and with the State. But I believe we are moving towards that end; progress even if slow is still progress; and the objects we have in view, whether they be purely scientific, or ethical, or political, must, on the whole, be promoted by such an association as this, heartily supported by the members of the profession, and wisely directed by its elected officers.

I will conclude with one more quotation from Faust, but the speaker is not this time the arch-Fiend:

> Expression, graceful utterance, is the first
> And best acquirement of the orator.
> This do I feel, and feel my want of it.

An Address

ON THE

OCCURRENCE OF EPILEPTOID ATTACKS IN TACHYCARDIA AND BRADYCARDIA.

DELIVERED BEFORE THE BORDER COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

BY **FRED. HUGH CLARKE, M.B., C.M.,**

PHYSICIAN TO THE DUMFRIES AND GALLOWAY ROYAL INFIRMARY; PRESIDENT OF THE BRANCH.

[AFTER thanking the members present for the honour of appointing him President of the Branch for the year, Dr. Clarke said:]

The subject I have chosen for this address is one which, from an accidental circumstance, I have been deeply interested in since the date of my graduation, now some twenty-five years ago. Till quite recently literature on the subject practically did not exist; records of a few cases, more or less carefully reported, with some theories, more or less wild, generally more rather than less, being all there was. Within the past two or three years all this is changed; admirable work is being done every day, and there are few lines of research being more carefully investigated by clinicians, physiologists, and pathologists than arrhythmia, heart-block, tachycardia, bradycardia—call it what you will. It is to two of these conditions, apparently quite the opposites of each other, but in reality very closely allied—namely, tachycardia, or quick pulse, and bradycardia, or slow pulse, with certain nervous conditions common to both—that I would ask your attention for a short time this afternoon.

"Tachycardia," according to Clifford Allbutt in his *System of Medicine*, denotes not merely any case of quick heart, but

> an enormous quickening of the pulses of a heart not necessarily the seat of static disease, a quickening which attacks the patient suddenly, which does not persist indefinitely, but for a variable space, rounded off by an equally sudden reversion to the normal state, less certain phenomena of exhaustion.[1]

It is to "certain phenomena of exhaustion," as Clifford Allbutt puts it, specially connected with the nervous system that I would particularly refer.

In the three or four cases I have seen there was no ascertainable heart lesion. After repeated attacks signs of hypertrophy may be noted, and are not uncommon, but this undoubtedly is an effect and not the cause of the condition. A systolic bruit may be developed during an attack, but disappears when it is over, as may the hypertrophy also.

An attack of tachycardia may last for hours, days, or even, in extreme cases, for a week or more. After a variable interval the heart tends to become exhausted, and irregularity occurs—in short, heart-block takes place. Stops are felt in the radial pulse, and concurrently nervous symptoms arise, which vary from the slightest feelings of sparks flashing before the eyes or the waving of a sheet before the patient to severe epileptiform convulsions, with loss of consciousness. Yet such attacks are certainly *not* epileptic.

I will now give the summary of a typical case of tachycardia which I was able to watch carefully throughout its course. I had the further advantage of being associated in this case with Professor (afterwards Sir William) Gairdner and the late Dr. Finlayson of Glasgow, both of whom repeatedly saw the patient during attacks. This will be a guarantee that no point of importance was missed and of the accuracy of the observations.

Mrs. A., aged 63, mother of seven children. Her general health may be regarded as good and her organs free from disease. Heart normal, except for a somewhat diffuse apex beat, and, after her illness had continued for some weeks, a slight increase in the transverse cardiac dullness. No history of epilepsy or insanity in the family. In the summer of 1878, after a slight illness (influenza), she began to suffer from palpitation, or tumultuous action of the heart, described by her as "tumbling," and after a time irregularities in the beat. At the commencement had occasional feelings as of an electric wave passing from the heels to the head. No serious disturbance of health, however, occurred after this for two years, when on stooping to lift something she fell and cut her brow slightly. She seems to have been unconscious for a few seconds, and from this time for some three years her illness continued. At irregular intervals of a few days to one or two weeks, generally without obvious cause, the heart's action became very rapid and irregular. The irregularity continued, in the earlier stages of the illness, a few hours, later on two or three days. The longest attack was one week, during which time the heart was never regular for a minute.

As a rule, when the irregularity had continued for some hours, but sooner when very violent, pauses became noticeable in the radial pulse, some seconds elapsing before the next beat was felt. If the pause was not unduly prolonged, not more, say, than for four or five seconds, an expression of alarm on the patient's part was all that was noticeable. She said she felt as if "something were about to happen." If the interval were longer, say six to eight or nine seconds, the face became pale, the lips livid, there was a scream, the thumbs were drawn inwards, the head backwards, and there was convergent squint. In the milder attacks consciousness was not lost, and the patient was able to talk *immediately* afterwards about her sensations. In the more severe attacks—say, when the radial pulse disappeared for eight, ten, or twelve seconds—consciousness was lost, and the convulsive seizures were more severe. The abdominal pulsations, which were marked during the attacks of irregularity, went on after the radial pulse had ceased to be felt. So far as I could judge, slight contractions of the heart were present during the fit, but these were probably auricular only, and, if ventricular, very slight. The severity of each fit was proportional to the length of time the radial pulse was absent. At any stage of the fit a return of the pulse cut short the attack. The number of fits in each attack of irregularity varied from a few to many dozens, and were of all kinds of severity. As a rule, after a specially severe fit, the pulse within a few seconds, or after a few beats, became perfectly regular, and the patient was able to say that her heart had "settled," and that the attack was over. Unless from some exhaustion following, which was soon recovered from, the patient seemed little the worse, and would remain well till the next attack occurred—it might be days or a week or so after. This went on for three years with but little disturbance to the general health.

Three uric acid calculi were passed during these years, and from time to time some rheumatic or gouty symptoms developed in the smaller joints. Several of the attacks were attributed to fright, nervous anxiety, indigestion, etc., but as a rule no apparent cause could be found for them. Often she woke from a sleep with the heart beating violently. It seldom "settled" during a sleep.

The patient recovered perfectly, and enjoyed good health for three years, when a slight cerebral haemorrhage occurred. This was recovered from, but a second and larger took place after a year, which proved fatal. Her death occurred some six years after the first appearance of the nervous attacks. There was no *post-mortem* examination.

Another case of a somewhat similar kind I was able to watch for many years till her death early in the present year from cardiac failure following an attack of influenza.

The lady was unmarried, 65 or 66 when I first attended her, and, though neurotic, had mental powers far above the average. Following upon a prolonged and anxious illness of a near relative, there came at times marked turns of palpitation. The heart took what she described as "runs," when the beats seemed to merge into one another, and it became quite impossible to count the radial pulse. Such attacks lasted for a few hours or for a day or two, and came on at fairly regular intervals for nearly three years. The return to perfect regularity in the pulse was generally sudden. If she went to bed and stayed there during the attack nothing particular happened further than occasional sensations of waves of light passing before her eyes, and resulting exhaustion, more or less marked according to the violence of the palpitation and its duration. If she got up and moved about, however, a fit was almost certain to occur, precisely similar to an epileptic seizure. A former distinguished President of this Branch was dining at her house one evening when she fell on leaving the

dinner table. He attended to her, and told me afterwards that the attack was distinctly epileptic. Though she had many similar heart attacks for years after this, she never had another fit, as she was kept strictly in bed whenever the heart's action became irregular. She had no known heart disease, though signs of hypertrophy were noted in the later stages of the illness.

I have notes of several other cases of a somewhat similar kind, but the two already given illustrate sufficiently the special points it is wished to emphasize. Published reports of tachycardia are somewhat rare, but cases of bradycardia, from their greater frequency, now and then see the light. Though apparently the one condition is the extreme opposite of the other, yet the effects of tachycardia and bradycardia are often so exactly alike that you will perhaps allow me to describe one or two typical cases of slow pulse before offering an explanation of the phenomena noticed during its suspension.

The condition of bradycardia may be said to exist when the radial pulse is anything under 40 beats a minute. It may fall far below that number. Sometimes, beyond an abnormally slow pulse, there are practicaliy no symptoms other than perhaps breathlessness on exertion; at other times a condition is set up of the most alarming and gravest nature.

A gentleman, about 70, now under my care, thinks himself pretty well if his pulse-rate is 40 per minute. It often falls below this; and at such times if he exerts himself unduly either physically or mentally his wife tells me he is apt to become suddenly pale, and lose all sense of his surroundings for a few moments. Absolute rest in bed, with some cardiac stimulant, invariably puts him right again in a few days. Though there is no valve disease, I think there is some serious deterioration of the cardiac muscle in this case. His son, aged about 30, and always delicate, showed the same peculiarity of pulse, though in a less marked degree. A few years ago I was asked to see him as he seemed listless and not well. I could find nothing wrong with him beyond a markedly slow pulse. He was ordered to remain in bed for a few days, and when sitting up for breakfast a morning or two later he fell back on his pillows and died almost immediately. Such a sudden collapse is not at all unusual in bradycardia.

Dr. Alfred Webster[2] gives particulars of a case which is so admirably recorded, that it requires no apology from me to give a short summary of it.

A weaver, aged 48, had never had an illness till a fortnight before his admission to the Western Infirmary. When at work, on stretching over his loom to tie a thread, he had a sensation of faintness and a feeling as though he would fall. He remembered nothing after that for some seconds apparently, but on recovering felt his face flushed, and his heart beating forcibly. He was taken home, and remained in bed for two weeks, having many similar attacks in the meantime. Sometimes the attacks followed one another in rapid succession, sometimes a day or more would elapse without any. After his admission to hospital sphymographic tracings show that there were intervals of ten to fifteen seconds during which there was no appreciable pulse at the wrist (tracings shown). If the finger were kept on the pulse the following facts were noted: First, the pulse became suspended, and almost at the same moment the face became rapidly and extremely pale. If the stop were only of short duration, say for or five seconds, there was a gradual and crescendo return of the pulse, and a coincident flushing of the face. During these short pauses the patient appeared to be merely sleeping. Frequently, however, the pulse was suspended much longer—ten, fifteen, and twenty seconds elapsing between the beats. The pallor of the face became more and more marked, and the breathing very shallow. Later on, perhaps after fifteen seconds, spasmodic twitchings of the face were observed, going on if the pause were prolonged till the muscles of the neck, arms, and legs took part. Squint, either concomitant or conjugate deviation to either side, was observed, with widely-dilated pupils. When the convulsion was at its height respiration was noisy, with puffing out of the cheeks. The patient was quite unconscious during the greater part of the period. The return of consciousness was preceded by noisy breathing, and very marked flushing of the face. After the convulsion the patient appeared dazed, and as if just aroused from a deep sleep. The flushing of the face and return to consciousness were almost always simultaneous with the appearance of the radial pulse. Auscultation over the heart during the pauses discovered what appeared to be abortive beats of the heart, but these beats were not appreciable in the radial or superficial arteries. His radial pulse varied from 18 to 24 per minute.

This patient recovered to a great extect, had a relapse after a few months, and finally died at home about a year after his first seizure.

Napoleon Bonaparte was a sufferer from bradycardia, his normal pulse being 40 per minute. He undoubtedly had occasional epileptoid attacks in his later life, and some years ago an elaborate article was written by Lord Wolseley accounting for the failures towards the end of his career by the fact that he became an epileptic. From all I have been able to find in various works of his life, I have no doubt his seizures were due to prolonged cardiac systole, and that he was not an epileptic at all.

Having now considered the clinical aspects of these two conditions, the question arises whether or not we can give adequate reasons for their occurrence. Without doubt we can, so far, at least, as the convulsive seizures are concerned. Suddenly withheld nutrition of the brain is the cause, and that without reference to any sudden change of blood pressure which may take place in the cerebral vessels. Langendorff,[3] in 1878, published an article on *Epileptic Convulsions in Peripheral Stimulation of the Vagus*, which I may quote, as his results have been confirmed by many others but never disproved. He experimented with rabbits, previously narcotized with chloral hydrate, about 7 grains, sufficient to abolish all voluntary acts, reflex activity being completely retained. He says:

> Electrical stimulation of the peripheral end of the vagus causes a prolonged stoppage of the heart, with a very remarkable phenomenon, never hitherto observed so far as we know—a complete epileptic convulsion occurs ten or fifteen seconds after the diastolic pause. The eyes roll, the pupils at first contract then dilate, the muscles of the face twitch, the head is at first drawn back, then convulsively moved forwards. Violent convulsions of the fore and hind limbs next ensue, and often the abdominal muscles are tetanically contracted. Breathing, after a brief acceleration, stops, and in fact we have exactly the picture of convulsions from profuse haemorrhage, so thoroughly described by Kussmaul long ago. Distinct paleness of the fundus oculi makes it clear that we have to deal with the results of cerebral anaemia.
>
> Precisely similar convulsions are produced by compression of the thoracic aorta at a point nearer the heart than where the great vessels are given off to the head.
>
> The description of these convulsions as epileptic I can by no means accept. They are merely anaemic convulsions, and agree in their origin with convulsions from suffocation.

Rosenthal, also, in his experiments on cardiac poisons, found that continued diastole of the ventricle produced general convulsions.

When the ventricles cease to contract, or contract so slightly that circulation is arrested, anaemia of the brain results, the severity of the succeeding convulsion being proportional to the degree of anaemia present—that is, to the period of delay in the ventricular systole.

This part of the subject having now been cleared up, we come to consider whether we can account for the abnormal rapidity or slowness of the pulse in tachycardia and bradycardia, and the pauses so often noticed. Theories or surmises innumerable have been suggested to explain the former condition. The familiar and attractive weakened condition of the vagi, irritated accelerators, hysterical ganglia in the heart itself, and sudden variations of the blood pressure may only be mentioned. Sir William Broadbent, at Toronto last year, said that the small, scarcely perceptible pulse sometimes found in tachycardia, and the sense of faintness might be due, not to weakness of the systole, but to the diastole being so short that the ventricles had not time to fill. That may be so, but the ventricles having had ample time to fill, what causes the delay in their contraction?

From the fact that atropine affects the auricles only,[4] and from other experiments, we know that the ventricles are, to a very slight extent, if at all, under the control of the vagus. We also know that the cardiac ganglia are mainly concerned in controlling the blood vessels supplying the heart muscle.[5] We know, also, that very marked changes in the blood pressure cause no such effects as those we have been considering.

Gaskell, in 1883, from experimenting on the heart of the tortoise, came to the conclusion that there must be some muscular connexion between the auricles and ventricles, propagating stimuli to contract from the one to the other. The nature of this connexion neither he nor any one else knew for the following twenty years, till His the younger, in 1903, discovered the band connecting the two—now generally known as "the band of His." Since its discovery we have undoubtedly got beyond pure hypothesis to demonstrable fact as regards cardiac contractions. Of this peculiar fibro-muscular band and its functions I would remind you that it has been found in the heart of man and all animals examined. Structurally it is like nothing else found in the heart. It

begins at the anterior edge of the coronary vein, then passes forwards on the right side of the auricular septum, below the foramen ovale, lying close on the auriculo-ventricular septum, which passes obliquely from left above to right below. Just above the place of insertion of the median flap of the tricuspid valve the bundle forms a special knot-like thickening which sends processes down on either side of the ventricular septum under the endocardium, ramifying in the walls of both ventricles.[6] The band contains not only nerve fibres but nerve ganglia, so that conduction by muscle alone is as yet unproved.

Erlanger and others have found that pinching this bundle in dogs increases the ventricular pause. A greater tightening of the clamp lengthens the pause till three or four or more auricular contractions occur for every one in the ventricle. A cut through the bundle is followed by complete diastole of the ventricle, and no stimulus can be made to pass from the auricle to the ventricle. What interests us more as physicians is that all cases of true bradycardia which have come to an autopsy since the band of His was discovered have shown extensive degenerative lesions in its structure.[7]

I would suggest, then, that tachycardia is a pure neurosis, characterized by a great increase in auricular contractions from disturbed nervous influences. After a time, from over-exertion, fatigue in the conductivity of the band of His occurs; missed impulses result, causing longer or shorter delays in the ventricular contraction. When these delays are sufficiently prolonged, cerebral anaemia is caused, followed in due course by the nervous symptoms described. Tachycardia being a neurosis, it is, like other neuroses, commonly recovered from. The condition may persist for years, and recovery may be complete, or relapses may take place from time to time.

In bradycardia we cannot be so hopeful, the ventricular pauses being due to serious structural changes in the band of His. Sclerosis of the vessels, fatty degeneration of the fibres, and an abnormal increase of fibrous tissue in the bundle have all been found. The condition is never recovered from, and the chances of sudden death from prolonged cessation of the ventricular contraction should not be forgotten. Life in true bradycardia, according to Balfour, is rarely prolonged for more than three or four years.

As regards treatment, *rest*, both physical and mental, so far as possible, is of greatest importance. In my case, strict confinement to bed prevented convulsive attacks. In another recorded case the patient "dodged" these when threatening by getting up in bed on his hands and knees, and keeping his head down. The head should be kept low, and the foot of the bed raised. Any deviation from health, such as indigestion, constipation, gout, rheumatism, etc., should be attended to. Massage also may be employed if the conditions allow.

In tachycardia I have pushed bromides till bromidism was marked, without good results—rather the opposite. They certainly have no effect in controlling the fits. Nerve tonics, such as valerianate or oxide of zinc, seemed to do good. The glycero-phosphates or glycero-formates might be tried, but I have no experience of these in this connexion. Strychnine or nux vomica, atropine or belladonna, and alcohol are better avoided.

In bradycardia strychnine hypodermically, with heart tonics such as digitalis or strophanthus, seem to have been of use. Osler records a case of recovery after treatment with iodide of potassium.

With a better knowledge of the causes at work in producing both conditions, it is not too much to hope for more successful methods of treatment in the near future.

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THE fourth Congress of Climatotherapy and Urban Hygiene will be held at Biarritz in Easter week (April 20th to 25th), 1908, under the presidency of Professor Pitres, President of the Medical Faculty of Bordeaux. Information relative to the Congress may be obtained from the General Secretary, Dr. P. Gallard of Biarritz.

BILATERAL LESION OF THE AUDITORY CORTICAL CENTRE: COMPLETE DEAFNESS AND APHASIA.*

BY F. W. MOTT, M.D., F.R.C.P., F.R.S.

A FULL clinical account of this case is published in the *Archives of Neurology*, vol. iii, p. 401, but since then I have had the opportunity of making a more complete examination of the extent and limits of the lesion by means of serial sections through the right hemisphere in the region of the lesion and by a separation of the left hemisphere into two portions, so that the exact condition of the convolutions lying within the Sylvian fissure could be studied. Before proceeding to give a full description of the anatomical findings I will give a short account of the clinical notes of the case:

E. M. H., admitted to Claybury March 18th, 1897, married; age on first attack, 22; now aged 25.

Family History.—Father was a drunkard, and lived a fast life. Sister and brother were said to be hysterical. Some time prior to her marriage in 1894 she had an attack of hemiplegia and aphasia. The practitioner who attended her was communicated with and wrote as follows: I cannot remember the year I saw her, but I can the principal features of the case. When called to her she presented the ordinary symptoms of a hemiplegia with aphasia, but as I could not find any cause for the condition. I put it down to hysteria, and I think the subsequent course proved I was correct. If I remember rightly she had complete hemianaesthesia. The paralytic symptoms disappeared rapidly, but the aphasia remained complete for a week or more, and partial for something like a month. She completely recovered under tonics and valerian. She was married in July, 1894, and remained in good health, mentally and bodily, until the first miscarriage, February, 1895 (about six months fetus), in Beckenham Cottage Hospital, when she suddenly lost her hearing, and three or four days later developed paralysis in right leg and arm, had convulsions, and lapsed into unconsciousness. Later on she became a patient at the National Hospital, Queen Square. The following notes were sent from the National Hospital, Queen Square:

Notes from National Hospital, Queen Square.

E. H.—In November, 1894, had a fright followed by some family differences; seemed unnaturally worried. A fortnight later was vacant and absent-minded and stupid in the evening. Next morning, at 7 a.m., her husband found her quite helpless; had passed her water in the bed, could not understand what was said to her, but nodded appropriately in answer to written questions. During the day had another (?) fit, cried violently, but had no definite convulsions, but her husband noticed the bed shaking violently.

She was admitted to Beckenham Cottage Hospital completely paralysed on right side. After about a month began to recover her speech. The arm recovered rather rapidly and completely. On coming home the husband noticed she could not feel a prick or a pinch on the right leg (which was oedematous) but she could one on her arm. She was able to read throughout her illness. Her leg has rapidly recovered power; complains of pains in right shin. Memory unaffected, no alteration in disposition. Said not to be emotional.

Personal History.—Married in July, 1894. Had premature birth two months after onset of hemiplegia.

Family History.—No history of paralysis. One brother died of fright, aged 27; said not be insane.

In 1893 patient had a similar attack after a fright, supposed ghost; was *unconscious for three hours, lost her speech for two weeks, but there was no paralysis, and she rapidly recovered.*

On admission, May, 1895. Right leg weak. Can only say "Yes" and "No"; understands all written commands; cannot write spontaneously. Apparently has attacks of giddiness. Nystagmus. Jaw deviates to R. Left side of mouth acts better than right. Deaf. Slight anaesthesia in right leg. Left knee-jerk more than right.

Notes of an Examination shortly after Admission to Claybury Asylum by Myself.—She is quite unable to comprehend a single word spoken to her, and is apparently stone-deaf. I was unable to convince myself of this, although it is probable, for a tuning-fork applied to the skull on both sides did not attract the slightest attention; but she was then absorbed in watching her observers, therefore it may have been due to inattention. The patient can understand written or printed language, and this is the only means of communicating with her. She appears to understand simple sentences—for example, Question I: "How long have

* This paper was on the list of papers to be read at the Medical Section of the meeting of the British Medical Association at Exeter.

you been married?" was written down, then 1, 2, 3, 4, 5 years underneath; she expressed by gesture and sounds dissatisfaction; then 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 months was written down, she still expressed dissatisfaction; finally, two years and 1, 2, 3, 4, 5, 6 months was written down; as soon as six was reached she became very pleased and excited and spontaneously said "is that." The time was nearly correct.

Question II. "How many children have you had?" and the numerals 0, 1, 2, 3, 4 were written down, at which again she showed signs of dissatisfaction. I then wrote "miscarriages 2," at which she became very excited, and said "is that." She makes exaggerated attempts by vocal sounds to express simple emotions of pleasure or disgust, the former being much higher in pitch, *ee* equals pleasure with elevation of the head; *ah* uttered very gutturally associated with a lateral movement of the head downwards was an expression of displeasure. She was therefore able to understand the meaning of simple sentences and to exercise reason. There is only partial word-blindness, this manifesting itself by evidence of confusion, and signs of inability to understand the meaning of a sentence when fatigue has been produced by repeated experiments.

Writing from Copy.—She can write, but to a very limited extent; for example, she copied the word *pencil*, she copied her own name, but when asked to copy *chair* she tried to write "Now copy this chair," showing that she did not understand this simple sentence and the logical sequence it bore to the previous sentence.

Spontaneous Writing.—When requested by writing to write her age, she wrote down the numbers 2, 1, 1, 1, 1, 1, as if she were unable to recall the figure 5; asked to write her address and name, she began with a correct H, but was unable to proceed further. At another time she was able to write four letters of her surname correctly. She attempted to write her address, beginning with the correct letter, but became more confused as she proceeded, until the writing was quite incoherent; the same was observed when asked to write her husband's name. She recognizes all ordinary common objects by sight, and shows signs of satisfaction when the right name is written to designate the object, but she soon tires and gets confused when asked to select one from several objects. Not only is all spontaneous speech lost, but she is quite unable to repeat aloud what she has written, to count, to say the alphabet, or to repeat her own name, although once or twice she will get out the first letter or syllable of a word.

Fig. 1.—Photograph of the patient.

Taste and smell were tested, and it was concluded that she possessed these senses; when ammonia was placed near her nostrils, and at the same time the written question, Do you smell this? shown to her, she became very emotional and said "is that." There is some paresis of the lower part of the right side of the face. The grasp was good in both hands, wrist-tap and triceps jerk obtained both sides. She had apparently no loss of sensibility; when pricked or touched she showed signs of feeling on both sides. The right paralysed leg was especially tested and no defect was ascertained. The heart sounds appeared normal, there was no thrill. It was further noticed that when she used her right hand in writing she apparently had some difficulty in judgement of distance, as if there were lack of association of the hand and the eye in this co-ordinate movement. There was noticeable tremor in the left hand of a coarse character, which was not, however, increased in amplitude during effort. She was discharged from the asylum suffering from organic disease of the brain and admitted to Colney Hatch Asylum, June, 1898. The following notes were made:

Heart: First sound somewhat altered, being somewhat muffled and at times reduplicated. No murmur to be heard. Respiratory and abdominal organs healthy.

Mental Condition.—It is difficult to ascertain the patient's mental condition, as she is aphasic. She is word-deaf, being unable to understand spoken language. She is unable to express herself in spoken language, is able to understand written speech, but is unable to express herself in writing. She can point out objects correctly, and can also point out her age when shown figures. When she attempts to answer a question she becomes excited, makes inarticulate noises, and laughs childishly. She is able to look after herself, such as taking her food, washing, dressing her hair, but is unable to walk on account of paralysis of her right leg, which she can only move to a slight extent voluntarily.

In September, 1898, I found her in much the same state as she was when at Claybury, twelve months previously. She recognized me immediately although she had not seen me for twelve months, and expressed great satisfaction. The following note was made by Dr. Cole on June 30th, 1899: Absolutely aphasic and also word-deaf; vision considered impaired, but she recognizes persons fairly easily; can recognize some words, as cat, dog, pig, etc., if written in capitals; she accurately associates the names with pictures of these animals, correcting, sorting out, or selecting for each its proper name. Simple sentences she could not be made to understand. (There is, therefore, a difference in her condition to that exhibited when in Claybury a year before.) Such a sentence as "Does your head ache?" was tried without result. In attempting to read she screws and rubs her eyes, and varies the distance of the paper from the eyes, indicating either some visual defect or an inability to understand why she cannot grasp the meaning of the symbols. Her power of attention and concentration seems impaired; by her expression of face and the way in which she rubs her forehead, she seems to have sudden sharp pains in the head. Dr. Cole thus interpreted this: more probably it was an attempt by gesture to show her defect of speech through the brain disease, for the next moment she would be laughing.

The notes state that she rubs her right thigh occasionally as if painful; more probably again, this is to show that the paralysis of this limb prevented her walking. She cannot walk unsupported, but is wheeled about the grounds in a chair. There is no squint, no facial weakness; the pupils are of moderate size, equal, react to light and accommodation. She is absolutely deaf and takes no heed of any sound, except perhaps the loudest noises, as, for example, she apparently heard the fall of a curtain rail from near the ceiling. Frequently she utters extraordinary sounds, and occasionally a few articulate syllables, but these are never intelligible. There is marked rigidity of right leg in position of full extension and some rigidity of left leg. Both knee-jerks much exaggerated. Double ankle-clonus, best marked on left side. Plantar extensor reflexes present. If made to walk, walks on tip-toe and crosses one foot over the other (scissors gait); but walking is painful to right leg. Some rigidity of right arm (only voluntarily), no rigidity of left arm. Hand grasps good. Co-ordination of right hand good. Coarse intention tremor of left arm resembling that of disseminated sclerosis; steady with right hand, but spills with left. Supinator longus and triceps jerk present. There seems to be no defect of cutaneous sensation and none to pin pricks. No deformity of spine. Muscular development good. Often calls the attention of the nurses by crying out and pointing, if she sees other patients doing what they should not. *Her habits are clean.* Menstruation continues, but is somewhat infrequent. As to her mental state there is apparently some dementia, but it is difficult to determine its degree. General bodily health good.

I visited Colney Hatch Asylum, December 16th, 1901, and made the following notes: She recognized me when I entered the ward. When at Claybury she could write a few letters; she is now unable to do so. She can read simple sentences, and apparently understands the meaning. Thus: "Are you in Claybury? Yes or No?" Pointed to "No." "Are you in Colney Hatch? Yes or No?" Pointed to "Yes." "Which is Dr. Jones?" There were three doctors present and she recognized correctly

Dr. Jones. "Put your tongue out." Protrudes tongue, slightly deviating to the right. There appears to be a slight paresis of lower part of face on right side. She can imitate, showing her teeth and putting up two or more fingers. "Do you think you could use a typewriter? Yes or No?" Pointed to "No." "Do you hear a noise? Yes or No?" She now became emotional, and was apparently upset. A watch was placed on the side of her head, and shown to her. She shook her head, indicating that she did not hear it.

Physical Examination.—No heart murmur detected. Walks with great difficulty—crossed leg progression. Spastic condition of both legs, more marked in right. Foot drop, marked rigidity, exaggerated reflexes and ankle-clonus on both sides. Coarse tremor of left hand, none in right hand. She feels the prick of a pin or a hot spoon in both legs, but response is somewhat delayed. There is no loss of control over sphincters. The appetite is good. There is no difficulty in *swallowing or masticating her food;* she is also able to cut up her food. The attendant informs me that she gives no trouble, and that the menses are regular. She recognizes her friends immediately, and often by sounds she will indicate to the attendants that other patients are getting into mischief.

April 7th, 1902.—Signs of phthisis pulmonalis detected.

June 3rd, 1902.—Death.

Post-mortem Notes, June 6th, 1902.

The body is emaciated. *Post-mortem* staining on dependent parts. Small bed-sore on sacrum, and upon right great trochanter, and an eschar on right heel.

Skull.—Calvarium of normal thickness. Over the upper and posterior part of right parietal region on the inner surface of the dura mater is a thin, rusty coloured false membrane, the size of a crown piece, otherwise the dura is normal.

There is considerable excess of subdural and subarachnoid fluid, which is quite clear. The veins of the pia mater are engorged. The brain substance is softer than natural, and there are three large areas of old softening in the following situations:

1. Occupying the area of distribution of the anterior cerebral of the left hemisphere, and causing an atrophy of the middle portion of the mesial surface of the hemisphere involving the whole of the paracentral lobule in its mesial aspect, and the greater part of the gyrus fornicatus; in fact, the whole of the mesial surface above the corpus callosum. No doubt this lesion accounted for the paralysis and anaesthesia of the right leg. Following Dejerine, this lesion corresponds to the area irrigated by the middle and posterior branches of the anterior frontal.

If a portion of the superior operculum of the Sylvian fissure be cut away in a normal brain as shown in photograph (Fig. 2), the convolutions forming the island of Reil, as well as the convolutions (gyri transversales) forming the Sylvian surface of the temporal lobe, can be seen, together with the annectants these form with the inferior parietal lobe and the insula. It has been shown by Campbell that the structure of the posterior third of the first temporal convolution, the transverse gyri of Heschl, and the connexions of the same with the parietal lobe, together with the posterior gyri of the insula, have a totally different histological structure to the anterior main portion of the insula. This latter is probably olfactory in function, and the hinder portion has a structure like the temporal lobe, and probably therefore has a similar function. In the posterior third of the first temporal convolution and the adjacent portions of the transverse gyri of Heschl within the Sylvian fissure Campbell notes the existence of very large fibres and a cell-structure lamination which differentiates it from the rest of the temporal lobe; he therefore calls this the audito-sensory area.

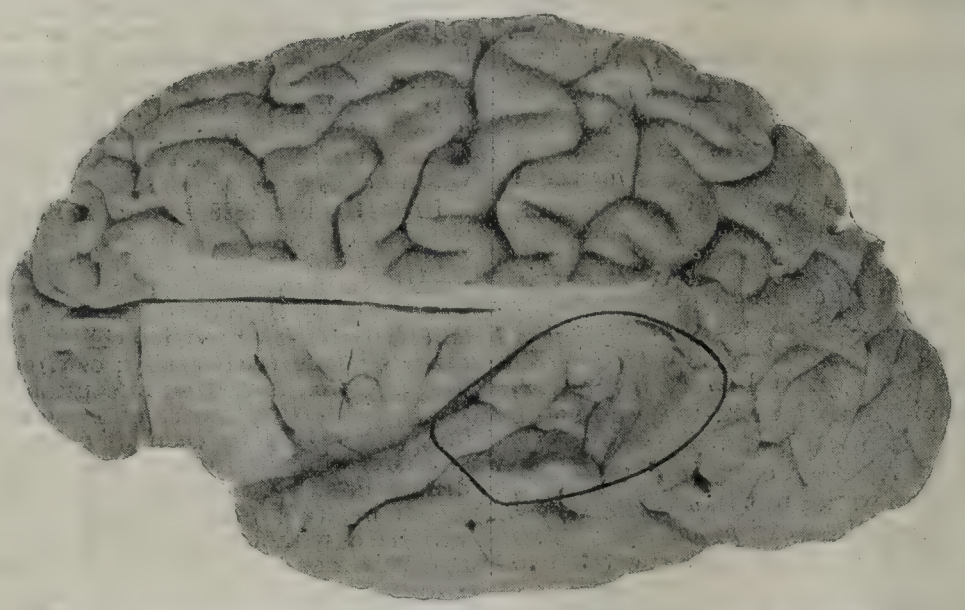


Fig. 2.—A normal cerebral hemisphere with a portion of the fronto-parietal operculum cut away so as to expose the island of Reil and the gyri transversales with their parietal annectants. The part enclosed in the dark line lying within the Sylvian fissure was completely destroyed on both sides.

Now this patient was stone deaf, and the complete examination of the brain by sections through the smaller lesion of the right hemisphere stained by Weigert-Pal method shows that the structures destroyed were as follows:

The Left Hemisphere (vide Fig. 3).—The posterior third of the first temporal and its connexion with the second, as well as a portion of the hinder part of the second, a large portion of the inferior parietal lobe, including the marginal and a portion of the angular. Besides this obvious convolutional destruction there was a very extensive destruction of the convolutions lying within the Sylvian fissure (vide Fig. 2). This destruction was ascertained by separating the hemisphere into two portions in such a way as to separate the temporal lobe by an antero-posterior cut through the lesion. It was then observed that the whole of the posterior portion of the Sylvian surface of the temporal lobe was destroyed, as well as the posterior portion of the insula and the annectants of the temporal lobe with the insula and the inferior parietal lobe.

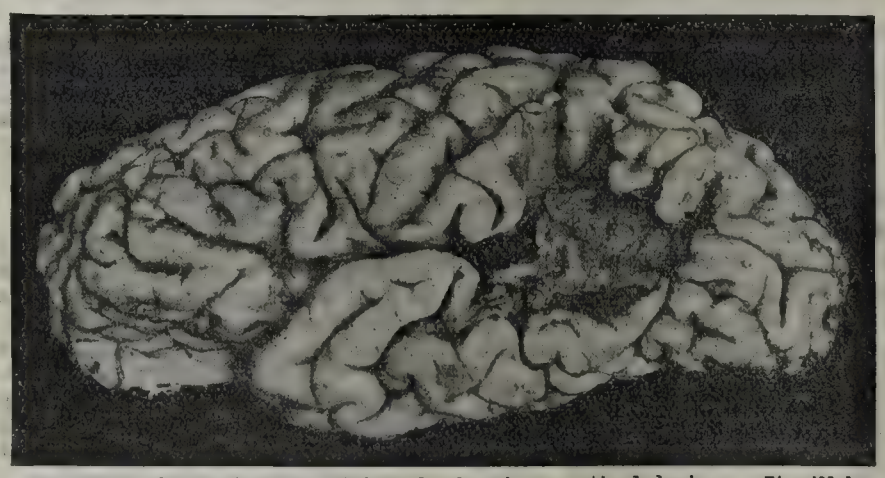


Fig. 3.—Left hemisphere stripped, showing cortical lesion. It will be observed that the whole hemisphere is shrunken from above downwards, and that the whole of the angular gyrus is not destroyed.

The Right Hemisphere (vide Fig. 4).—The lesion was rather less extensive, but involved practically the same area; the extent of destruction of the gyri transversales and their annectants with the inferior parietal lobe and the insula was determined by vertical sections through the lesion stained by Weigert Pal method. It was found to correspond with the area enclosed in the dark line in Fig. 2; it included the posterior third of the first temporal and its connexions with the posterior portion of the second temporal, a portion of the inferior parietal lobe, including a large portion of the marginal and some of the angular, the transverse gyri of Heschl and their annectants with the inferior parietal lobe. The extent of this lesion is shown in the four upper photographs in Fig. 5. Vertical sections were made through Broca's convolution of the left hemisphere, and stained by Weigert-Pal method, and I could find no evidence of subcortical softening. The sections were shown in the Museum of the British Medical Association meeting at Exeter.

The right hemisphere, after stripping, weighed only 429 grams, and the left hemisphere 328 grams. As the

convolutional pattern is complex and indicative of a good normal female brain before the lesions occurred, it follows that the loss of substance has been profound. The corpus callosum was observed to be very thin and wasted, and almost transparent in a region corresponding to the mesial softening. The splenium, which contains the commissural fibres connecting the two occipital lobes, is the part least affected.

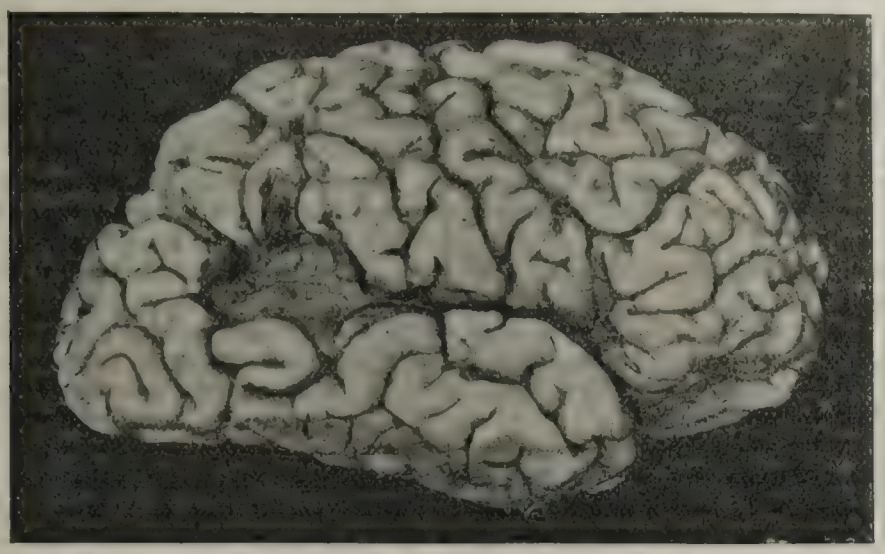


Fig. 4.—Right hemisphere stripped. It will be observed that the lesion is mainly confined to the auditory cortical area.

Thorax.—No effusion into pleural cavities, but adhesions at both apices. Both lungs riddled with tubercle with cavitation of the upper lobes, especially on the right side. Right 28½ oz., left 27½ oz. Heart, 7½ oz., contracted. Muscles firm, pale brown. Aortic valves competent. Mitral valve, old sclerotic vegetations on superior surface of orifice. No marked dilatation or signs of failure.

Liver 50 oz., congested, fatty. Kidneys, right 2¾ oz., left 3 oz.; capsule adherent, cortex diminished, surface uneven, probably the result of old infarctions. Spleen 5 oz., two opaque thickenings of capsule, result of old infarcts.

Cause of Death.—Pulmonary tuberculosis.

F. W. M.

Commentary.—In all cases of embolic softening it is extremely difficult to decide how far the symptoms manifested during life are due to destruction of the grey matter of the cortex cerebri in particular localities, and how far to recognizable and unrecognizable softening and destruction of the subcortical white matter, which consists not only of fibres proceeding to and from the area of cortical matter destroyed, but likewise of association systems uniting other and even remote apparently undamaged cortical areas. Where there have been a number of lesions produced by embolic occlusion, as in this case, it becomes extremely difficult to make any *positive assertions* in respect to correlation of function and destruction of definite cortical areas. With this reservation I will attempt, however, to correlate the lesions found *post mortem* with the symptoms manifested during life. The patient's illness may be divided into three stages, one before marriage and two after. At no time was the mitral stenosis, which caused the lesions, recognized by the existence of definite physical signs, although redupli-

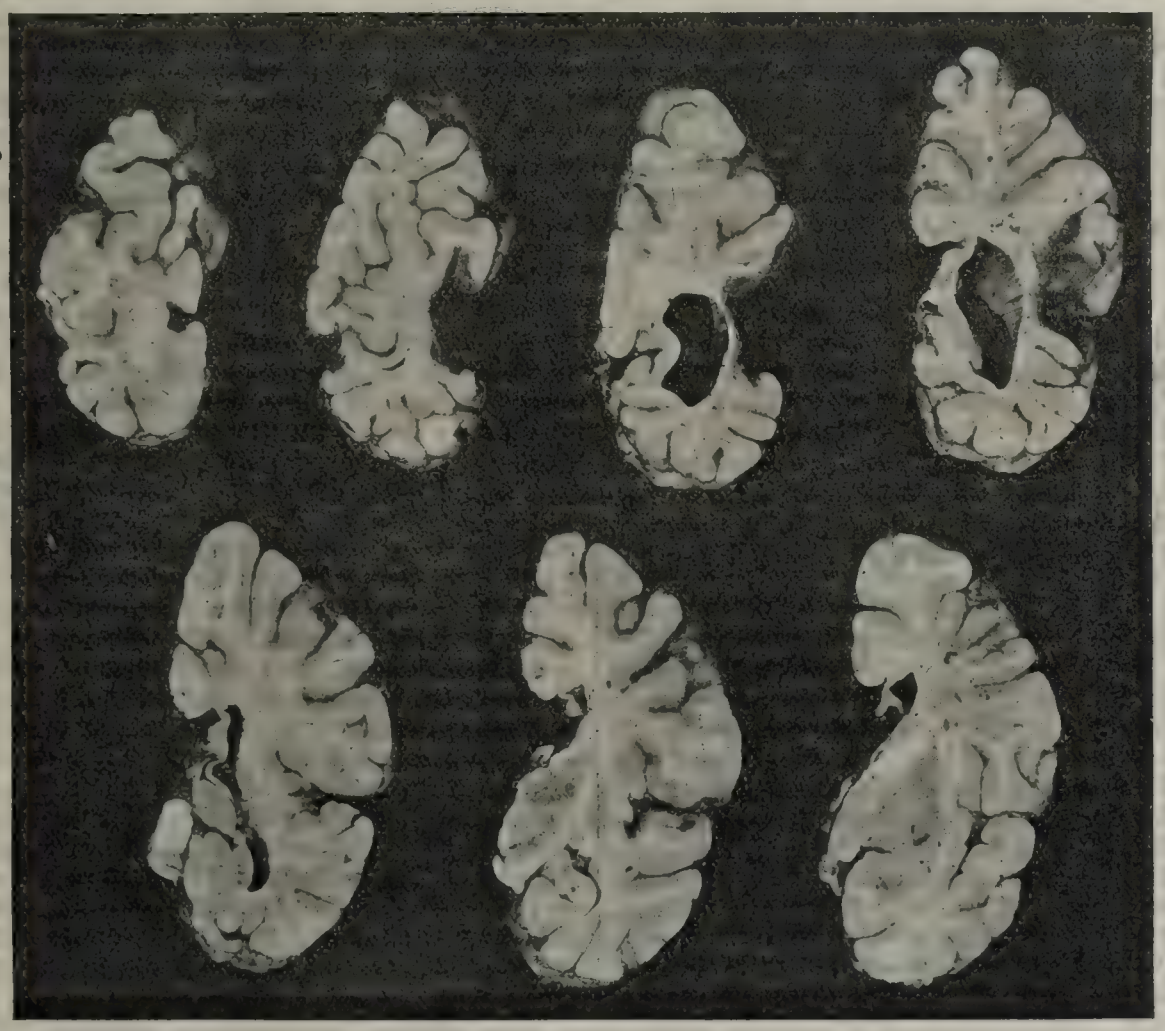


Fig. 5.—Vertical sections through the right hemisphere to show the portion of the temporal lobe and inferior parietal lobe which have been destroyed. The lower three sections are through the uninjured anterior two-thirds of the temporal lobe, and show that in this region the convolutions forming the boundaries of the Sylvian fissure are uninjured. The upper four sections are through the lesion, and the middle two show a complete destruction of the convolutions bounding the end of the Sylvian fissure. The sections have been reduced to one-third of the normal size. The area of destruction is represented in the area enclosed in Fig. 2.

cation of the first sound was noted. The symptoms were at first considered to be hysterical.

The notes obtained from the friends at the National Hospital, corroborated by a letter from Dr. Mack, show that at 20 years of age, and before her marriage, the patient (after a fright by a supposed ghost) had an attack of loss of consciousness which lasted three hours; the speech was lost for two weeks and impaired for a month, but there was *no paralysis*, and she rapidly recovered. There is no mention of her being deaf; presumably she was, because the attack was similar. The practitioner regarded this attack as hysterical in nature, but the *loss of consciousness for three hours* and the statement of the friends combined with the *post-mortem* findings, allow of a completely different interpretation.

It is probable that an embolon lodged in the posterior division of the left middle cerebral beyond the origin of the ascending parietal branch, and caused softening of the left auditory cortical centre. This would produce word deafness and a temporary sensory aphasia without any paralysis; this rapidly cleared up, and she became a normal individual as regards her speech and mental condition, for she was married in July, 1894. In the following November she had a fright, followed by some family differences; a fortnight later she had two fits. The first fit, according to the husband's statement, coincided with the development of *deafness* and *aphasia*, but ability to understand written questions. It may be considered that this was due to embolic occlusion of a posterior branch of the right middle cerebral artery. *The deafness was now absolute and permanent; it may be accounted for by the complete bilateral destruction of the auditory cortical centres.* The aphasia also was complete and permanent. The second attack, which occurred, according to the husband, the same day on which he noticed *the bed shaking violently*, was possibly associated with the blocking of the left anterior cerebral artery. These two attacks are difficult to separate, but it is probable that the shaking of the bed was the result of clonic spasms, indicating softening of the motor area of the leg.

After being in the Beckenham Cottage Hospital at the

end of January, 1898, we hear of her next at Queen Square Hospital, and the notes of Dr. C. Beevor conclusively prove that she was aphasic and her condition as regards speech defects about the same as when I saw her at Claybury. Her physical condition subsequently deteriorated, either from extension of thrombosis, fresh embolism in subcortical structures, or from contracture and disuse of the limbs.

I think it may be concluded that there was *absolute deafness*, and that this was due to destruction of the cortex on both sides corresponding to the region in which auditory sensory projection fibres terminate; namely, the posterior third of the first temporal, the transverse gyri of Heschl and their annectants with the inferior parietal lobe and insula, and the posterior part of the second temporal.

There certainly was not word-blindness, and the optic memory images were present, for she could associate correct words with pictures; moreover, although she was unable to write, she was able to understand the meaning of simple sentences, even shortly before her death, although she easily became fatigued.

The evidence of slight facial paresis observed cannot be explained by the obvious cortical lesion, and it was probably due to subcortical damage.

It is necessary to mention this, because M. Marie in an important paper contained in *La Semaine Médicale*, May 23rd, 1906, La Revision de la Question de l'Aphasie, rightly points out that the area of cortex destroyed is not a true index of the damage to the brain, and by assigning functions to areas of cortical destruction without considering the possibility of the loss of function being due to destruction of subcortical fibres belonging to other regions we have fallen into a great error. Whether in his desire to call attention to this fallacy, which undoubtedly so many people have fallen into, he has overstepped the mark in asserting that the third left frontal convolution does not play any special rôle in the function of language, and that the *sensorial aphasia of Wernicke* can no longer be accepted, subsequent careful observations will show. At any rate, a pronouncement by so distinguished a neurologist has come as an earthquake to our cherished beliefs in cerebral localization; yet he is right in asking all observers to look to the facts and not follow preconceived ideas based upon a scheme. As he states, very few cases are free from such fallacies if we consider them without prejudice.

Dejerine, in the *Presse Médicale*, July, 1906, has criticized in a masterly manner the above destructive pronouncement of Marie in a paper entitled L'Aphasie sensorielle et l'Aphasie motrice: Localization et Physiologie pathologique.

M. Marie lays great stress on the loss of intelligence which lesions of the zone of language occasion, but M. Dejerine points out that a general paralytic can speak and write, but the dementia is much more pronounced than in an aphasic individual. I quite agree with him, and I think this case shows that disturbances of speech and disturbances of intelligence are processes of essentially different nature. M. Marie states: "Si, pour ma part, j'avais à donner une definition de l'aphasie le fait que je m'efforcerais surtout de mettre en lumière serait la diminution de l'intelligence."

If we look at the photograph of this patient, if we consider her acts, her endeavours to make people understand her own wants, and her desire to help the attendants when the other patients were getting into mischief, also the fact that her habits were clean, that she recognized me after a year's interval—everything shows that she reasoned, and that the mental impairment, although undoubtedly great, was more apparent than real. She comprehended her surroundings, and reasoned and acted to the best of her ability in response to the stimuli arriving in her cerebral cortex by the sensory avenues of intelligence still open. Considering the enormous amount of cerebral destruction as shown by the loss of brain weight, her mental condition compared most favourably with the average asylum patients whose brains seldom lose anything approaching the amount of loss by this patient, which must have been quite one-fourth of the total brain weight.

In 1874 Wernicke published his important memoir entitled, Der aphasische Symtomencomplex, and in this paper he called attention to, and explained, word-deafness, and accurately determined the region at fault—namely, the posterior half of the first temporal convolution with perhaps a portion of the hinder extremity of the second. Word-deafness and word-blindness were, however, explained by Bastian as early as 1869, in a paper entitled, The Various Forms of Loss of Speech in Cerebral Disease.

Marie states, loc. cit., p. 3: "Rien, absolument rien, au point *de vue de la stricte observation clinique ne nous autorise actuellement à considerer la première circonvolution temporale comme étant le centre de l'audition* et Wernicke a commis une erreur manifeste quand il a pris la notion de ce centre auditif pour en faire la clef de voûte de sa doctrine de l'aphasie sensorielle."

Bastian, in his Lumleian lectures, Some Problems in connexion with Aphasia and other Speech Defects, *Lancet*, 1897, states that he only knows of four cases of double lesion of the superior temporal convolutions. The first case recorded was by Kahler and Pick, the second by Mills, the third by Friedlander and Wernicke, and the fourth, a case of great importance, by Pick.

In respect to defects resulting from destruction of the auditory and visual word centres in each hemisphere, there is only one case on record in which these combined lesions have existed in the two hemispheres; it was published by J. C. Shaw in the *Archives of Medicine*, New York; the notes, however, were from the King's County Lunatic Asylum, and are very meagre.

An extraordinary case has been recorded by Pick, which seems, moreover, quite incapable of being understood except by the supposition of the adequacy of the direct action of the visual word centre upon Broca's convolution even for the production of correct speech: A day labourer, aged 24, was completely word-deaf, and behaved like a deaf person, taking no notice of ordinary sounds near him. It was observed that he only noticed loud calls, clapping, or ringing of bells, and these not always readily. Yet if one shouted at him unexpectedly, he said angrily, "Don't shout at me!" and he often said spontaneously, "I can hear quite well, but I don't understand; I can hear a fly flying past me." His power of recognizing musical airs that he previously knew was quite lost. He spoke fluently, and only occasionally hesitated about the right word. He named objects shown to him correctly, but he was unable to repeat words and phrases.

The case I have reported, in my opinion, supports Bastian's views that the primary revival of spoken words during thought takes place in the great majority of persons by a subconscious process in the auditory centre, for word-deafness can alone explain the loss of speech in the first attack, and instantly that the patient became absolutely deaf from the second lesion, she again became dumb and remained so. The subconscious revival of word images precedes the correlated revival of the complementary kinaesthetic images, and these again successively incite the associated groups of neurons in the bulbar centres. It has been shown by many observers, commencing with Stricker, Galton, Ribot, and others, that different persons think in different ways, according to the predominance of the visualizing, auditory, kinaesthetic (or motor) faculties; a large proportion of individuals are, however, indifferents.

Bastian argues that "although the first stage in the revival of words seems to occur in the auditory centre, the molecular disturbance thus initiated is, however, immediately transmitted in a varying extent in two directions. It is transmitted to the visual word-centre, on the one side, and to the glosso-kinaesthetic on the other; to the latter strongly when the latter is to issue in speech, and to the former strongly when it is to issue in writing."

This patient was unable to revive in thought the words to enable her to write spontaneously, although she was able to copy a little.

The fact that she was unable spontaneously to initiate written speech, although her ability to read and to understand simple sentences (when I saw her) and to name correctly objects by means of printed or written letters and words, showed that her visual word centre was not entirely destroyed. This suggests to my mind the correctness of the hypothesis that the *primary* revival of the articulation of words in her case took place in the auditory centres, and I would agree with Bastian that in *motors*, *visuals*, *and indifferents*, the

primary revival of words takes place in that portion of the brain in which (in a child) speech first develops. In the child, words are first learnt by hearing certain sounds associated with certain objects, and simple thoughts connected therewith are acquired before the child has the power of articulating them. He sees an object before he can name it; he must revive those auditory impressions which he had previously heard associated with it, otherwise how can we explain the fact that a child in full possession of speech even as late as the fifth, sixth, or seventh year, if he becomes deaf will certainly become dumb, unless he is trained by lip reading, that is, unless the primary incitation to articulate speech be transferred from the auditory to the visual word centres? The facts related in this case do not accord with the statement of Bernard that the motor centre of speech may become independent of the sensorial centre which had presided over its education.

There are, however, certain exceptional persons (visualists) who, as it were, read rather than hear their thoughts and in whom [as Ballet says] the visual images of words acquire such an importance that they alone constitute the medium of their internal speech.

The general rule, however, is that auditory images constitute the most potent representations of words (even in the common class of indifferents), whilst visual images form the most potent representations of ordinary external objects.

In exceptional cases it seems that the ordinary functional coupling of the auditory with the glosso-kinaesthetic centre, and of the visual with the cheiro-kinaesthetic centre, is not adhered to. Thus the deaf-mute has to rely upon signs and gestures, or lip-language, and he thinks in the main with revived visual symbols; and it is from the organic seats of these that incitations pass to related parts of the glosso-kinaesthetic centre.

Again, in children who have been born blind, but have nevertheless ultimately learned to write, a direct association must have become established between the auditory and cheiro-kinaesthetic word centres. In the simplest process of thought we have no limitation of activity to any one area, but there are widespread processes of primary activity in all these speech centres and their associated tracts in both hemispheres—an activity which is not limited to concept or percept centres, but spreads to all parts of the cortex of both hemispheres. It is generally accepted that lesions of the glosso-kinaesthetic and cheiro-kinaesthetic centres (even when both are affected) do not produce failure to comprehend the meaning of words written or spoken, although the patients themselves are unable to speak or write (Bastian loc. cit.).

The degree of derangement from such lesions varies in different individuals, as one would expect, from relative potency inherited or acquired of the various centres. A more important and probable explanation is the variability of vascular supply and possibility of collateral circulation being established, and still more the escape or involvement of perforating arteries supplying subcortical structures.

The right facial paresis suggests the possibility of a subcortical lesion and the possibility of a small lesion in the anterior portion of the posterior half of the capsule, and although sections through the brain in the region of Broca's convolution and the zone of the lenticular nucleus showed no lesion, yet it is open to Marie to argue on this account that the aphasia was explicable by a condition of anarthria. I would submit, however, that the few times she uttered "Is that" her utterance was normal. This suggests a lack of sensory initiation.

Professor Budin's Successor.—Dr. Paul Bar was appointed on July 4th to succeed the late Professor Budin in the Chair of Obstetrics in the Medical Faculty of Paris. Born in Paris in 1853, he was *externe* of the hospitals in 1875, and gained the coveted post of *interne* in the following year. For a year he was under Tarnier at the Maternité. In 1881 he took his degree, and was awarded a silver medal for his thesis on the pathology of hydramnios. In 1883 he was appointed accoucheur to the hospitals, and in 1887 he won the rank of *professeur agrégé*. He took an active part in the foundation of the Société d'Obstétrique, of which he is now President. Professor Bar collaborated with Tarnier in his treatise on midwifery, and has written much on eclampsia and other obstetrical subjects. He has already established his reputation as a teacher.

THE PREVENTION OF VALVULAR DISEASE.

By RICHARD CATON, M.D., F.R.C.P., J.P.,
CONSULTING PHYSICIAN, LIVERPOOL ROYAL INFIRMARY.

As medicine becomes more scientific in methods of inquiry and less vague in theories of treatment, it naturally follows that definite and practical measures, such as the arrest of a pathological process in its early stage, are recognized as of great value. Much more may be done for the welfare of the patient by checking a disease of structure in its incipient stage than by any curative measures when the morbid change has become fully developed.

Though we have yet something to learn in regard to the diagnosis of valvular disease, the clinician can in the majority of cases not only detect a fully-developed regurgitation or stenosis, but he can also follow the advancing stages of such a valvular defect in the making. I fully admit that experience and close observation are needed for a diagnosis of the latter order, but it is quite within the powers of any well-trained physician.

In the case of the development of that too common ailment mitral regurgitation, the normal first sound at the apex is compounded of two elements, first of the less important muscle-sound, and secondly of the "crack" of the stretched valve cusps made "taut" by the sudden high pressure of the blood stream under the powerful squeeze of the ventricle. This "crack" is much like the sound produced by a sail which has been hanging slack when the wind suddenly fills and tightens it; this second factor, due to sudden valve tension, is much the more important of the twin causes which in conjunction make up the first of the two sounds, the "lubb-dupp" at the apex, with which we are all so familiar. Those of us who have watched with care the progressive changes of sound which lead up to the bruit of valvular disease know that the sharp clear "lubb" is gradually changed into a longer and duller sound, often somewhat muffled in quality. This change is due to a thickening and stiffening of the valve membrane from inflammatory change with effusion under the endothelia, and later to the formation of vegetations on the free surface of the membrane. Necessarily the cusp becomes less pliable and adapts itself less quickly to the movements of the blood-wave. In like manner, if we were to thicken and stiffen the mainsail of a yacht so as to render it less pliable, the sharp clear tone at the instant when a sudden wind-wave rendered it "taut" would not be produced. Then as we watch such a valve we note that its sound becomes more prolonged and assumes what may be termed a "whiffing" character, a sort of tuneless impure whistle, due I imagine to less perfect closure of valve cusps and partial escape of fluid between them.

Next this whiffing sound develops into a genuine regurgitant bruit as the amount of reflux increases. The thrombi and projecting vegetations which form on the edge of the cusp almost inevitably prevent exact closure, and the intraventricular pressure being great the reflux soon raises tension in the auricle and the pulmonary network, and causes augmented pressure in the pulmonary artery and sharper closure of the pulmonary valve.

Long years of experience in hospital and private practice have taught me the vast importance of watching these early stages and directing one's scheme of treatment in accordance with the indications they give.

In acute rheumatism the inflammatory changes which take place (*a*) in the joint tissues and (*b*) in the endocardium are like in kind. But the two structures are differently situated as regards functional activity. The joint tissues have secured for them the great advantage of physiological rest—a condition of the greatest aid to natural and artificial means of cure. The sensory nerves, whose function under normal conditions is dormant, wake up during the presence of inflammation to a phase of acute irritability, and absolutely forbid all movement. As it seems to be a law that functional activity and the repair of lesion cannot proceed in any living structure at the same time, the pain thus caused by movement has a great therapeutic function in the rheumatic joint in thus ensuring rest.

The heart is very differently circumstanced. For it complete rest is not possible, and doubtless the necessary

continuance of its activity is a chief reason for the fact that while joint structures recover in so large a proportion the disastrous results of valvulitis have been commonly of life-long duration.

It is to be remembered, however, that the work of the heart varies greatly at different times and under different circumstances, and that within limits its amount can be regulated. Posture, the measure of activity, the character of the food, the presence or absence of pain, the degree of mental tranquillity, the volume of blood to be moved, and the degree of contraction of the arterioles, all influence the tension in the vessels and in the cavities of the heart, and influence the force and speed with which the heart contracts, or, in other words, the sum of the mechanical work which the heart has to do.

If we want to place the great force-pump of the body in a position to recover from its inflammatory trouble without permanent crippling of that essential part of the mechanism, the valves, we must, in the first place, cut down the work demanded of this pump to a minimum. Sometimes we cannot do this. If extreme nervous irritability exists; if asthma or any lung disease involves the right side of the heart in extra labour; if the amount of the blood to be moved is very great; if the ventricle, to begin with, is feeble and dilated, our chance of giving the heart the needed rest is small.

Fortunately in a large proportion of cases these obstacles do not exist; in acute rheumatism and most of the pathological states in which valvulitis occurs we can secure a large measure of rest and of the conditions favourable to heart repair *if we take sufficient trouble.*

We lessen pain and fever by the use of adequate doses of some salicyl compound, if acute rheumatism be the cause, or if it be not, by other appropriate measures; we insist on the most absolute quiet and rest, alike of body and mind; a light diet is given; if there is not enough sleep, we give some gentle sedative. Fullish doses of sodium or potassium iodide are given three or four times daily, with two objects: (1) To aid absorption, and (2)—of much more importance—to lessen the volume of the blood and diminish blood pressure within the circulatory system, just as we give it in aneurysm.

Secondly, there are certain nerve channels through which, in all probability, we can directly influence and stimulate the trophic and vasomotor nerves of the heart without exciting the muscle fibres—namely, the first four dorsal nerves in their distribution between the clavicle and the nipple. It is well known from the researches of Head, Sherrington, and Gaskell that these nerves are closely associated with the heart; the phenomena of angina give further proof. Small discs of canthos, which blister almost painlessly in three or four hours, are applied here one by one.

The effect of the first group of measures is to slow the heart and diminish its amount of work as far as it can be done; we give the organ the greatest amount of rest that is practicable, and thus offer it the opportunity of self-cure. The second measure stimulates the curative activity of the part, just as in a rheumatic joint a small blister removes with great rapidity both pain and inflammation, or as in a case of a callous ulcer a blister applied to the margin of the ulcer leads to renewed activity of the healing process and promotes cicatrization. Of the two measures of treatment above named, the prolonged period of rest is by far the most important; without that the other is of small avail. The rest must continue for six or eight weeks, or even for a more extended period. This seems a long time, but when the alternatives are a crippled heart or a sound and vigorous one for the remainder of life, few people will hesitate to purchase the latter by even a more protracted time of rest than I have named. By degrees the bruit lessens, becomes intermittent, and at length vanishes. My own somewhat prolonged experience has been that if, after the rheumatism has disappeared, the patient with a mitral bruit is allowed to get up and to throw the full ordinary strain upon his weakened endocardium, in the vast majority of cases chronic mitral regurgitation or stenosis results, while if the above-named measures are taken, in the majority of instances the patient at length rises from his bed without any bruit, and has the immense blessing of a normal heart usually for the rest of his life. I have watched numbers of these cases for many years, and have witnessed the working man whose incipient heart lesion has been thus treated fulfilling year after year his full measure of hard work without dyspnoea and without discomfort.

The rest treatment must be commenced fairly early; if too great an amount of structural change has taken place it may not be recovered from, and though at first the patient may seem all right and the sounds present little or no bruit, slow contraction of the mitral orifice may ensue, leading to trouble in after years.

This method of treatment is so reasonable in theory and so satisfactory in its results that I cannot doubt that it will eventually be accepted generally by the profession, of whom a large number already are converts.

The great difficulty lies in the tax which the long rest imposes upon the patience alike of practitioner and patient. The convalescent from acute rheumatism with a recent cardiac bruit, if feeling well and comfortable, naturally does not appreciate the much heavier peril which may linger behind; and unless he be told the full truth, nothing will induce him to submit to a further weary period of quiescence and restriction from the indulgences of diet and activity to which he is tempted. The hospital patient also commonly chafes somewhat, as likewise the governing body of the hospital may, under this long rest period.

I can only say that personally I have almost always found such difficulties disappear when the problem has been clearly stated to the patient or to the hospital authority, while in the few cases in which the patient has refused to comply, he alone is responsible for the evil consequences, and one's own conscience is clear.

THEORY AND TECHNIQUE OF ORTHODIAGRAPHY:

A DEMONSTRATION.*

By PAUL C. FRANZE, M.D.,
BAD NAUHEIM.

I HAVE much pleasure in showing to you a method of clinical examination which is called orthodiagraphy, and which serves to determine with accuracy the outlines of the heart by *x* rays. The theory of this method is as follows: If a source of light casts a shadow of an object upon a plain surface which we may call the plane of projection, then we must distinguish two principally different kinds of projection.

In the first the rays are parallel; this, therefore, is the parallel projection; and such is only the case with sun rays.

In the parallel projection the size of the shadow is equal to that of the object.

The second is the central projection; here the rays are divergent, emanating from a centre of emission which is either a true mathematical point, as in the case of the true central projection, or at least a limited luminous body or plane, as in the case of the spurious central projection.

In the central projection the shadow is magnified, and the more so the nearer the body be situated to the centre of projection, and the less the further away it be from the latter and the nearer to the plane of projection.

Now, all terrestrial projections are either true or spurious central ones, and therefore the projection with *x* rays is a central one too, and approximately a true central projection, as the rays emanate approximately from the centre of the anticathode of the tube from whence they diverge into space exactly like the radii of a sphere. Therefore in ordinary radiographs the picture is magnified.

Now in the case of ordinary radiographs the magnification is practically unimportant, for they usually deal with parts of the skeleton, or with foreign bodies or calculi, in which a slight magnification does not interfere with the diagnostic value of the picture, and, moreover, these parts can generally be brought so near to the photographic plate, which is the plane of projection in this case, that the enlargement is very slight.

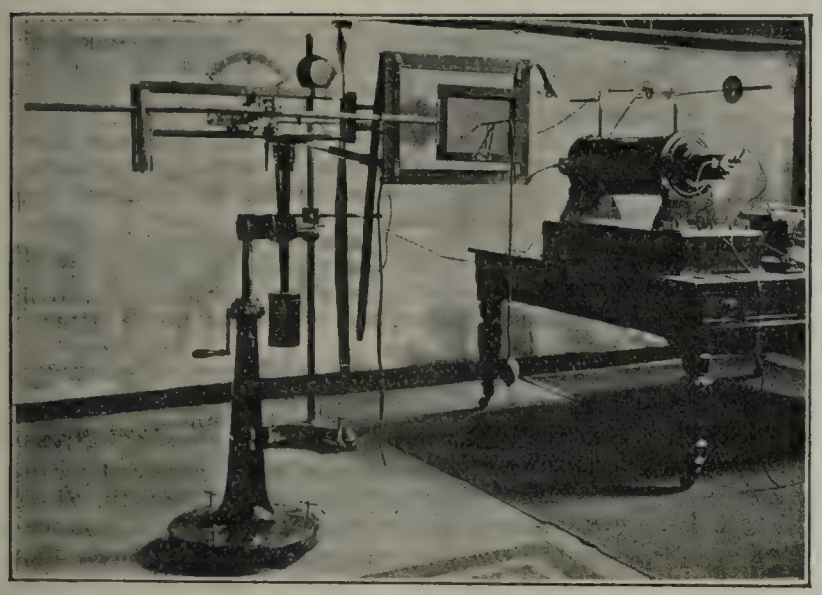
With the heart, however, the case is different, for radiological examinations of the heart are undertaken mainly in order to ascertain its exact outlines, and as its greatest circumference lies about 7 to 10 cm. away from the surface

* Given at a meeting of the Bath and Bristol Branch of the British Medical Association.

of the chest, a considerable enlargement of its shadow is present in an ordinary radiograph. Therefore the need was soon felt to obtain some means of imitating a parallel projection of *x* rays, and thus being in a position to measure the outlines of the heart with accuracy, and this was achieved by the invention of orthodiagraphy, the principle of which was first found by Dr. Levy-Dorn; but the method proper was invented and almost entirely developed by Professor Moritz.

Orthodiagraphy is based upon the following principles: Of all the rays emanating from the centre of the anticathode of a vacuum tube there is one which is perpendicular to the plane of projection, say the screen. If it were possible to select this one ray and to conduct it around the circumference of the heart, and if it were also possible to mark at any given moment the shadow projected by this ray alone, then it is clear that we should so obtain a parallel projection in succession and an accurate reproduction of the size of the organ. For, if a perpendicular is moved along a plane surface it remains parallel to itself. These postulates are truly realized by orthodiagraphy.

It certainly must be mentioned that the size of the shadow is only equal to that of the body in a parallel projection when the plane of the organ's greatest circumference and the plane of projection are parallel to each other, otherwise the tracing will be somewhat smaller than the original, and the more so the greater the deviation from parallelism of the two planes, and this does really constitute a possible source of error in the case of the heart.



Orthodiagraph after Dr. Levy-Dorn.

In the normal heart, or in the case of dilatation of its right side, practically no source of error is caused by this circumstance, but where the left side is much dilated the greatest diameter of the organ assumes a position which is not parallel to the frontal plane of the body, and in such cases, therefore, the orthodiagram is somewhat too small. But in spite of this source of error orthodiagraphy yet remains the most accurate method of measuring the cardiac outlines and the only objective one.

I shall now proceed to demonstrate the apparatus and its practical use on patients.* (See figure.)

The following are the principles which govern the construction of an apparatus of the kind required for carrying out these measurements: Three metal bars are joined so as to form an open rectangle or "U," and their relative positions are adjustable. The rear one carries the focus tube at its free end, and the front one carries a pencil in the corresponding position, so that it is fixed exactly opposite to the centre of the anticathode of the tube, the perpendicular ray from which, therefore, falls upon the pencil, the third bar connects the front and rear one, and constitutes an axis around which they are movable in planes parallel to each other and vertical to the perpendicular ray.

The whole apparatus can be moved upwards, downwards and to the right and left, the front and rear bars always maintaining their relative positions to each other.

The front bar holds an *x* ray screen, through the centre of which the point of the pencil projects; the patient is placed between rear and front bars, that is, between the tube and the pencil, with his back towards the tube. In working, the shadow of the heart is seen on the screen, and its outlines are marked by the pencil point which is followed in its movements by the *x*-ray tube, and thus one secures the projection of the image of the part examined by the perpendicular ray of the tube. The drawing may be traced either on the chest of the patient or on a sheet of paper spread over a special drawing board.

Now, there are some points of interest to which attention must be paid in orthodiagraphy. It is considered the right thing to take the orthodiagram during the middle phase of respiration and in diastole. Further, one should not endeavour to draw a continuous line around the whole circumference of the heart; for it is impossible to make such a line quite correct in all places, and one would risk making an inaccuracy just at a point of special interest; one should, therefore, rather make single dots which easily can be made accurately in all points.

Further, we require to know what anatomical structures of the mediastinum are concerned in forming the margins of the so-called "median shadow" of the thorax. The following remarks will make this clear: In transilluminating the chest of a person from back to front, one sees on the screen on both sides the transparent areas of the lungs divided in their entire height from above downwards by a vertical shadow meeting that of the diaphragm below. This is the "median shadow." The borders of the median shadow are made up from above downwards on the right side by the spine, the vena cava superior, and, succeeding this at an obtuse angle, by the right auricle, which joins the diaphragmatic shadow. On the left side the borders are made up by the spine, by a small curved, outwardly convex line due to the aortic arch and the first part of the descending aorta, by another similar convexity formed by the left pulmonary artery and part of the right ventricle (sometimes, too, by part of the left auricular appendix), and, lastly, by a larger convex line formed by the left ventricle, which below joins the shadow of the diaphragm. In great dilatation of the right ventricle this part of the heart may form the last-mentioned line, the left ventricle being pushed backwards.

The measurements to be carried out in an orthodiagram are as follows: Having performed the tracing in the manner already described, we draw upon it the middle line of the body, and on this we erect two perpendiculars, one from the point of greatest distance from it on each border of the orthodiagram. These are called the right and the left "median distance," the total of both being the "transverse dimension" of the heart. Further, a line from the apex to the spot where the straight border of the vena cava superior meets the convex outline of the right auricle may be termed the "longitudinal diameter" of the organ. We now add two perpendiculars to this latter line—one from the junction of the border of the right auricle with the diaphragm, or, more accurately, from the right inferior "angle" of the heart—that is, the point where its right margin meets its inferior one, which latter line is not represented in the orthodiagram, and therefore is assumed, and one from the junction of the second and third left convexities; the total of both these perpendiculars we call the "latitudinal diameter." According to Moritz, this diameter is equivalent to the breadth of the right ventricle, whilst the other lines do not correspond to anatomical parts. Albers-Schönberg, however, believes that the lines described above correspond approximately to the following parts of the heart: The left median distance to the diameter of the left ventricle, the right median distance to that of the right auricle, the longitudinal diameter to the entire length of the heart, and the latitudinal diameter, as already stated.

A further line may be drawn horizontally through the figure, and the angle which it forms with the longitudinal diameter may be measured; this, then, would be termed "the angle of inclination" of the heart, and it would help to define its position, being larger in a more vertical position of the organ, and small when the latter lies more horizontally.

It is most important to note that the orthodiagrams taken in the erect position of the body differ in size and shape with regard to the position of the heart from those taken in the recumbent posture. One must note these

*Dr. Franze then explained the apparatus and took the orthodiagrams of some patients.

differences because they show that it is not permissible to compare orthodiagrams taken in the different positions with each other. It is necessary always to adhere to one and the same position in working, and either to take *all* orthodiagrams in the erect or *all* in the recumbent position, at least all relating to the same patient. The following are the differences found in orthodiagrams of the same person in standing and lying.

1. In standing:

1. Frequently the longitudinal axis of the heart is more upright, the angle of inclination therefore greater.

2. Generally one or both median distances, and thus the transverse dimension, are shorter than in lying, the difference being from 0.4 to 2.5 cm.

3. In the majority of cases the latitudinal dimension is shorter too.

4. The longitudinal diameter is sometimes shorter and sometimes longer.

5. The heart is constantly found at a lower level of the thorax than in the horizontal posture.

Thus the cardiac diagram is *narrower in the erect* position.

2. In lying the conditions are the reverse of those mentioned. The causes for a diminution of the cardiac shadow in the upright position could be the following:

1. The more vertical position of the heart itself in standing causes a diminution of the transverse diameter.

2. The heart may rotate around a perpendicular axis defined by the aorta above, the vena cava inferior below, in such a manner as to present a smaller section in the frontal plane of the body.

3. The actual volume of the heart may decrease in standing.

Further, the phase of respiration makes differences which are analogous to those of posture. During deep inspiration an orthodiagram is obtained which is narrower and at a deeper level of the thorax than during expiration; the latter shows the figure broader and higher up. Thus inspiration is analogous to the standing and expiration to the lying position.

The last question to be answered is whether it is better to trace the cardiac outlines on the skin of the chest or upon a special drawing-board which is covered with a sheet of paper. The first is very satisfactory for clinical use, as one realizes at a glance the anatomical relations of the heart to the body; but in transferring the figure to paper inaccuracies always must occur in some degree or other, therefore it is the most exact method to draw on an independent drawing-board.

These are, very shortly stated, the theory and the technique of orthodiagraphy, and I only wish to emphasize once more the fact that orthodiagraphy itself is a method of absolute mathematical exactness. It is based upon exact mathematical and physical laws, and there is nothing inaccurate at all in the method itself. But in using orthodiagraphy practically certain sources of error may make themselves felt, and probably always do in a certain measure. These sources of error are due to the anatomical relations of the heart in the body, and further to the greater or less skill of the operator; for in all technical fields of work the best workman is the one who makes the fewest inaccuracies—the one who makes none, we may say, does not exist.

A CASE OF DEPRESSION OF PARIETAL BONE IN A NEWLY-BORN INFANT:

TREPHINING ON THE TWELFTH DAY: RECOVERY.

BY ISAAC NEWTON, M.R.C.S., ETC.,
JOINT MEDICAL OFFICER TO TONBRIDGE SCHOOL.

OWING to the softness of the bones of the skull of a newly-born infant, depressions caused by injury during parturition usually recover spontaneously or with the aid of gentle manipulation.

The following case seems worthy of record on account of the unusual persistence of this condition, and also because of the very early age at which trephining was undertaken.

I was summoned to attend Mrs. B., and on my arrival I found that the child, a female, was already born. The nurse informed me that it had been a breech presentation, and that both arms were extended over the head. She had managed to extract the right arm, but before she could bring down the left a strong pain suddenly expelled the arm and head together.

Upon making an examination of the child I found a large saucer-like depression over the left parietal bone, extending $1\frac{1}{2}$ in. from the coronal suture towards the occipital bone, $2\frac{3}{8}$ in. upwards from the squamous portion of the temporal bone, which was slightly involved in the hollow, and $\frac{3}{8}$ in. deep. The anterior fontanelle was nearly obliterated, entirely so in the left half, and the frontal bone at the coronal suture was almost overlapping the left parietal bone, the deepest portion of the depression being near that suture. No reduction could be effected by the gentle manipulations that were tried, but pain seemed to be caused by them.

During the next ten days no change took place in the shape of the head, so I decided to operate while the bones were still soft, in spite of the fact that the infant, though rather fretful, showed no sign of paralysis and was in other respects quite well.

On the twelfth day the child was admitted into the Tonbridge Cottage Hospital. Chloroform having been administered, I made a horseshoe-shaped incision round the depression (with the base towards the temporal bone) through the skin down to the periosteum, turning the flap downwards—then, at a point well behind the line of the anterior branch of the middle meningeal artery, a crucial incision through the periosteum, and reflected the four flaps thus made. With a $\frac{3}{4}$-in. trephine I cut completely through the bone, leaving a small bridge at the upper part, where the inner table was left. The disc of bone was then reflected as a flap, and the dura mater with a blood clot lying upon it was exposed. The clot was adherent to the dura mater, and as much of it as possible was removed. I then tried to elevate the depressed bone with a blunt, flat hook. This, however, was not altogether successful, as the bone sprang back into the depressed position. Judging that prolonged effort might do more harm than good, and that in all probability the continuous intracranial pressure would now be able itself to raise the bone, I turned back the disc of bone into position, drew the periosteal flaps together over the bone, with a purse-string suture, as well as their very thin condition would allow, and stitched up the skin flap.

As the infant was very collapsed, a warm saline injection was administered per rectum, and one hundredth of a grain of strychnine given hypodermically. In a few minutes she rallied. As the mother was suckling her, she was sent home after a lapse of a few hours.

On the fourth day, as the dressings had become displaced, I took them off and found the wound healed. The depression in the parietal bone had completely disappeared, and the anterior fontanelle was of normal size and shape.

On the eighth day, when the stitches were removed, callus had been thrown out over the disc, which felt quite firm. Since then the baby has made an uninterrupted recovery.

The mother during the latter part of the pregnancy had a fall, but in view of the fact that the left arm and head came somewhat forcibly into the world together, and that the position of the injury was just where the arm would probably press most against the head, the probabilities point strongly to the damage having been done during parturition, and not previous to that event.

The depression, which reminded one strongly of that so often seen in a punctured indiarubber ball, considering its size, shape and depth, and that no change had taken place in ten days, seemed unlikely to be reduced spontaneously. With the bones rapidly hardening, trephining as soon as possible appeared to be the only course to adopt, unless the parents were content that the condition should be permanent and risk of defective brain-growth or Jacksonian epilepsy be ignored.

The interest of the operation, in addition to the age of the patient, consists in the reflection of the bony disc as a flap, instead of its complete removal, this being rendered possible by its softness.

The risk of hernia cerebri is diminished by this procedure, the more so as the bone and skin-flaps are reflected in opposite directions.

THE eleventh French Congress of Urology will be held in Paris on October 10th, 11th, and 12th, under the presidency of Professor Guyon. The chief question proposed for discussion is non-tuberculous suppuration of the prostate; this will be introduced by a report by Dr. Oraison of Bordeaux. The General Secretary is Dr. E. Desnos, 59, Rue La Boétie, Paris.

UNDER the will of the late Mr. Charles Robert Fletcher Lutwidge, of Holm Rook Hall, Cumberland, and Tunbridge Wells, Whitehaven Infirmary receives a legacy of £100, and the General Infirmary at Tunbridge Wells £200.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

MALNUTRITION IN AN INFANT DUE TO EXCESSIVE PUTRESCENCE IN THE ALIMENTARY CANAL, SUCCESSFULLY TREATED BY LACTIC ACID BACILLI.

It is now some years since Metchnikoff championed the cause of soured milk. In *Quelques Remarques sur le lait aigri*, published subsequently to his original pronouncement contained in the *Revue Scientifique*, 1904, Metchnikoff ably states his case, and makes a strong plea for the systematic introduction of the lactic acid bacillus within the alimentary canal, both as a preserver of health and as a remedial agent in disease. Considering the simplicity of the treatment, it is surprising to find how tardily it has been adopted. Whether this is due to the difficulty of getting milk soured and yet free from other pathogenic organisms, or whether the statement by some writers that hyperchlorhydria is commonly caused by the lactic acid bacillus, the fact remains that the literature relating to the soured milk treatment is of small volume. The conclusion of Heitzman and Monti that rickets is due to the excessive absorption of lactic acid from fermentation processes within the alimentary canal, and the consequent pasteurization of milk with the object of destroying the lactic acid bacillus have doubtless deterred many from adopting the method in children's diseases; but the recent laboratory work of Tissler and the clinical experiences of Dunn, Block, Judson, and others, give strong support to the views of Metchnikoff, and suggest that in soured milk we have a valuable intestinal antiseptic. The following case amply bears this out, and warrants the adoption of sterilized or pasteurized milk treated by pure culture of the lactic acid bacillus in all cases of malnutrition in children where intestinal decomposition is found to be excessive.

Rose C., aged 4 months, had never thriven. Her two brothers during infancy had also suffered from malnutrition, though in a lesser degree, and both subsequently developed rickets. The younger in addition became for months the victim of severe eczema capitis. The child had been carefully dieted, and for some weeks had received nothing but pasteurized milk. The ingestion of food was followed by vomiting, and she was greatly emaciated. Patches of eczema were beginning to appear on the scalp. Citrate of soda was added to the milk, but there was no improvement. On February 26th, 1907, the contents of the stomach were removed by catheter shortly after the administration of a bottle of pasteurized milk. The vomit contained no free HCl but an extensive bacteriological flora. The *Bacillus coli communis* and the lactic acid bacillus were absent, but there were present large yellow colonies of slender rods of varying length and motile. They liquefied gelatine and curdled milk. In all 436 colonies were counted, and 9 per cent. of these were bacteria capable of producing putrefaction. The child was placed on condensed milk, and the mother thought that vomiting had diminished slightly on that diet. On March 14th a pure culture of the lactic acid bacillus was added to a pint of diluted condensed milk after boiling, and when the temperature of the milk had fallen to blood heat. After standing some hours the milk was ready for consumption. Within one week vomiting had ceased and there was evidently an increase in weight. Later cream was added to the soured milk. By May 5th recovery was complete, the infant being in much better condition than her brothers had been at the same period. The eczema had disappeared. It is noteworthy that the eczema seemed to be arrested by the soured milk, a fact noted by Lesnè. The little patient took the milk greedily even when soured and slightly curdled.

That an infant emaciated by reason of faulty digestive processes, set up in all probability by putrefactive bacteria, should be restored to health on a diet rich in another form of bacterium, raises far-reaching questions greatly beyond the scope of these notes; but it may be permitted to me to say, after some experience in other diseases, that in all probability every disease (and the list is a large one) dependent upon or accompanied by excessive intestinal putrescence is likely to be influenced by the administration of soured milk.

For the benefit of those not in touch with a bacteriological laboratory, I may say that a preparation known as anticolin, and sent out by Raimes, Clark and Co., Edinburgh, is a pure culture of the lactic acid bacillus, and was the means adopted by me for the preparation of the soured milk in the above case.

Edinburgh. A. Veitch, M.B.

A CASE OF INTUSSUSCEPTION.

The patient in the following case was a girl, aged 4 years, who appeared rather delicate and frail, but who previously had not been ill, except for occasional attacks of "biliousness."

On February 5th, 1907, the patient had indigestion, but attended school as usual. On February 6th at 8 a.m., she complained of acute abdominal pain, the bowels were moved freely, but the pain increased; she then vomited, and afterwards appeared more comfortable; the pain, however, recurred at intervals of half an hour, vomiting taking place during each paroxysm.

When seen at 12.30 the abdomen moved well on respiration. On palpation I thought I detected a "lump" just over the umbilicus. Per rectum nothing abnormal was found, and there was no blood or mucus on the finger when withdrawn. At 4.30, during an attack of pain, distinct peristaltic contractions passing towards the right iliac fossa were visible, and the tumour, a sausage-shaped swelling, became evident. At 6.30, under chloroform, by a mesial incision the abdomen was opened and the intussusception exposed. It extended up the ascending colon, and across the transverse colon as far as the splenic flexure. The first portion was easily reduced, but the last portion with great difficulty, owing to the oedema of the gut, which, however, appeared quite returnable. The intussusception was of the common variety—the ileo-caecal.

The abdomen was closed very imperfectly by three through-and-through silkworm-gut sutures. Patient had taken the anaesthetic extremely badly, and was so collapsed that more careful suturing was not justifiable,

During the night and the next day—that is 7th—vomiting was frequent and excessive. The bowels were moved on the 8th by means of a gruel and turpentine enema, and a great quantity of flatus was passed. On the 11th, the patient complained of pain, the wound was dressed and a hernia due to excessive straining was discovered; the abdomen was strapped. From this time onwards although the general condition rapidly improved, the temperature chart showed an evening rise, never beyond 99.8° and usually about 99.4°. Careful examination failed to reveal the cause, and tabes mesenterica was suspected. On April 4th $\frac{1}{2000}$ mg. of Koch's tuberculin R was injected hypodermically. On April 30th the injection was repeated, in this case $\frac{1}{500}$ mg. From the time of the first injection the temperature never rose above normal.

On May 15th the general condition of the patient had so improved that an operation was performed for cure of the ventral hernia.

Patient again took the anaesthetic extremely badly and almost expired on the table. The stitches were removed on the 24th, and the operation appeared to have been quite successful.

The case presents the following interesting features:

1. The age of the patient. Intussusception may occur at any age, and is quite common in infancy, but rare during any other period of life.

2. Absence of any definite cause. In infants, a dose of castor oil, gastro-enteritis are quite sufficient causes. In adults, malignant disease, or intestinal polypi, or any condition producing acute peristaltic contractions.

3. The nocturnal temperature, which became normal after the administration of tuberculin R.

4. The administration of tuberculin R, without estimation of the opsonic index.

5. The patient being such an extremely bad subject for an anaesthetic.

Northwich. R. Manwaring-White.

Dr. Edward R. Taylor, Dean of the University of California, who is a member both of the medical and the legal professions, has been elected Mayor of San Francisco.

REVIEWS.

HEART AND LUNGS.

THE literature of clinical medicine receives a notable addition in the series of practical lectures on diseases of the heart and lungs, published by Dr. LOUIS RÈNON, of the Hôpital de la Pitié in Paris.[1] He has brought together in a single volume a collection of thirty-one clinical discussions, ushered in by a lecture on the relation of the doctor to modern society. Maintaining a high standard of professional conduct, he points out the many difficulties and temptations to which the modern physician is liable in a state of society where medical matters are much too widely discussed, and urges upon his readers the necessity for aiming at the highest ideals. Impressed with the necessity for studying the part played by the chlorides, and especially by sodium chloride, in the varying processes of health and disease, he next proceeds to the examination of this question. The uniform amount present in the blood, which appears to remain fairly constant whether much or little fluid is taken, and the influence which it appears to exercise upon the osmotic powers of the plasma and upon its coagulability, are matters well worthy of closer study than has as yet been devoted to them. That the output of chlorides is markedly diminished in certain acute diseases, such as pneumonia, has always been recognized, but the part played by a greater or lesser output, and consequent retention, in chronic disease, and especially in disease of the kidney, requires further elucidation. A good deal has already been done in relation to chronic renal mischief, but Dr. Rènon points out the probability of early mischief due to this cause, unrecognized by ordinary means. He emphasizes the need for careful comparison between the intake and the output of chlorides and the correction of the dietary where the balance is disturbed. The first part of the book is for the most part devoted to disorders of the heart and circulatory apparatus and their relation to disease of other organs. Aneurysm is fully discussed, and its association with rheumatism and syphilis closely examined. Arrhythmia and its association with sclerosis of heart muscle comes in for very full consideration, but the Stokes-Adams syndrome is but lightly touched upon. The futility of drugs in altering the arrhythmia due to this cause is dwelt upon, although much may be done to relieve the attendant dyspnoea by regulation of diet. The effects of tobacco as a contributory cause of cardiac and vascular degeneration are fully discussed. The second part of the work presents a similar series of clinical lectures on special aspects of pulmonary disease, such as the relation of consumption to diabetes, syphilis, and pregnancy, the varying forms of pulmonary congestion, and many other aspects of lung disease. These lectures, at once scientific and practical, will recall to the older school of readers the delightful clinical lectures of Trousseau, and if presented to an English public in such form as the Sydenham Society gave to the latter in the year 1867, would doubtless obtain as warm a welcome. Short and pithy papers such as these are too little in fashion with home teachers, and the method adopted in the work before us might well serve as a model worthy of imitation.

Sir T. LAUDER BRUNTON has brought together in a single well-printed volume the papers recording the experimental work on circulation and respiration[2] done by himself, or by others working under his supervision, during the eighteen years intervening between 1865 and 1883. In so doing he has afforded an example, well worthy of imitation, to the many steadfast workers on kindred subjects who have added materially to the sum of medical knowledge, but whose writings are hopelessly scattered through reports, transactions, and journals. The collected works of poets and novelists are sent forth, the good and the bad together, and why not also those of the experimental physicians? A collection, such as that before us, of careful experimental observations, made accessible by a good index, should be of real value to all who aspire to follow on the same road, and would no doubt prevent much disappointment and wasted labour by the way. Prefaced by an autobiographical statement of the conditions under which these researches were carried on, an insight is given into the author's life and methods during the earlier periods of his career. The sketch incidentally illustrates the difficulties which beset the busy physician who desires to investigate as well as to practise, and the absolute necessity for deputing the actual work to skilled assistants. A single physiological point may take weeks or months to establish satisfactorily, but may occupy only a few lines in a textbook when it is established. The names of Sir Lauder Brunton's fellow-workers during the period in question have long since been recognized by the profession, and much of the work that they then carried out has found its permanent place in general estimation. Another series of papers dealing with clinical labours is promised for later publication, and when completed the two sets will be welcomed to the library of the physician, as faithfully recording not only the actual work done, but the train of thought leading up to each experiment and the influence exercised upon it by previous teaching and study in the same field. In the papers dealing with experimental investigation of the action of medicines, published in our columns thirty-six years ago, will be found a clear definition of the principles which must underlie all such investigations, and the whole paper is as worthy of careful perusal to day as it was in the early seventies, and may be especially commended to the younger generation of physicians whose minds are occupied with problems of "blood pressure" in disease.

Dr. E. VON CYON, distinguished as one of the discoverers of the accelerator nerve of the heart, has published a volume, entitled *Le Nerfs du Coeur*, containing an account of his researches on this subject. A translation of the work into German is now before us.[3] In the preface Cyon tells us that twenty-five years ago he suffered acutely from his heart, owing to overstrain, both mental and bodily, and for a time had to give up work completely. He went to Berlin to consult Frerichs and Senator, his old teachers. The latter reassured him, but, doubting still, he sought Frerichs. After ten minutes' examination Frerichs said, with a hearty laugh: "Your heart—there's nothing the matter with that; it's only the nerves you discovered revenging themselves for the rough handling you gave them in the laboratory. Be off, and have a bottle of champagne, and don't trouble about your heart any more." Acting upon this advice, Cyon found himself able to live and work without further discomfort. He now divides scientists into two classes—those who immediately recognize the truth and those who inevitably fall into error. The first class includes Cyon, but is very limited in size; the second class undoubtedly includes all those who have differed from the opinions of Cyon in any department of research, and particularly those who believe in the myogenic theory of the heart beat. Throughout the book Cyon employs his own name in place of "Y," and excuses the frequency of its occurrence by saying that this frequency will by no means make up for the habitual neglect of the myogenic theorists to mention his name in their papers. The book might have been perceptibly shortened by omitting the word "Cyon." In twenty pages taken at random we found it occurred fifty-three times—nine times being the record on one page. The book contains a full history of the subject and references to over 429 papers and is illustrated by twenty-nine tracings. It is not, however, a convincing work. We feel that Dr. Cyon is rather narrow and far too dogmatic in his outlook. The neurogenic and myogenic theories seem to us matters of secondary interest and importance, and the evidence which Cyon has collected does not justify his contemptuous dismissal of the myogenic origin of the heart beat. The figures which Tawara has recently published of the Purkinje fibres of the auriculo-ventricular bundle suggests that we are dealing with a tissue half muscle fibre and half ganglion cell in

[1] *Conférences Pratiques sur les Maladies du Coeur et des Poumons.* [Practical Consultations on Diseases of the Heart and Lungs.] By Dr. Louis Rènon, Physician to the Hôpital de la Pitié. Paris: Masson et Cie. 1906. (Demy 8vo, pp. 382. Fr.5.)

[2] *Collected Papers on Circulation and Respiration.* First Series, chiefly containing Laboratory Researches. By Sir T. L. Brunton, M.D., D.Sc., LL.D., F.R.S., F.R.C.P. London: Macmillan and Co. 1906. (Cr. 8vo, pp. 696. 7s. 6d.)

[3] *Die Nerven des Herzens, ihre Anatomie und Physiologie.* By Dr. E. von Cyon. Translated into German from the French by H. L. Heusner. Berlin: Julius Springer. 1907. (Roy. 8vo, pp. 348, 47 figures. M. 9.)

nature, and experiment seems to show that in this tissue lies the anatomical substratum of the heart beat. Perhaps both theories are half right. The chemical excitants of the beat, the influence of salt solutions, of oxygen, etc., the researches on the nutritive basis of the contractile tissue, initiated by the work of Ringer, and followed by Locke, Loeb, etc., these seem the most fruitful lines of research. Cyon develops his theories that the thyroid, adrenal, and pituitary are glands which have the special function of regulating the nerves of the heart. The proper action of the vagus is maintained, he says, by the secretion of iodothyrin, a substance which has only been separated from the thyroid by coarse laboratory methods. He asserts that a rise of intracranial pressure stimulates the vagus centre, not directly, but reflexly by way of the pituitary. The increased pressure in the pituitary is the cause of this reflex. We are not convinced of the truth of Dr. Cyon's conclusions, and do not find in his book those detailed scientific proofs which alone would make us accept them; so no doubt we shall be placed in the second of the classes into which he divides all scientists.

GLOMERULAR NEPHRITIS.

Dr. Loehlein, in his monograph, The Inflammatory Changes of the Glomeruli in Human Kidneys, and Their Significance in Nephritis,[4] contends that when acute nephritis is accompanied by dropsy there is always inflammation of the glomeruli. He thinks that acute nephritis may be divided into three groups. The first group, which is that depending upon infection, he divides into two, of which the first is the form of kidney disease seen in cholera, diphtheria, and in most cases of pregnancy, where the parenchyma is affected; this condition may and often does end in complete recovery owing to the capacity of the epithelium to be regenerated. The second division of this group is acute glomerular nephritis of which the post-scarlatinal form is typical. In it the parenchymatous changes are dependent upon those in the glomeruli. Acute interstitial nephritis is more rare. The second group is chronic parenchymatous nephritis, corresponding to the large white kidney, which is either an uncured acute glomerular nephritis or a septic glomerular nephritis of latent origin, such as is seen in phthisis and chronic suppurations. The third group is an acute nephritis which passes into contracting kidney, where there are always marked changes in the Malpighian bodies, and which can generally be traced to an original glomerular nephritis. Those cases of contracting kidney which become manifest after an interval of many years of good health following the original acute attack, are also to be attributed to glomerular nephritis. The monograph is illustrated by some excellent coloured drawings, and has a good bibliography.

PROPHYLAXIS AND TREATMENT.

We are glad to see that Dr. Forchheimer, in his work on *The Prophylaxis and Treatment of Internal Diseases*,[5] has carried out a plan which must commend itself to everybody, but which few men possessed of experience seem to have the energy or the desire to perform. He tells us that this book embodies the results of thirty years' experience in hospital and private practice, and is only a compilation in so far as it deals with matters in which his own experience has been lacking. The author may be congratulated on his book, which should be a valuable aid to young practitioners. We have read with care the articles on the principal diseases in which treatment is of importance, such as typhoid fever, pneumonia, diseases of the lungs and pleura, including asthma, diseases of the heart, and stomach disorders, and in all these we find the various therapeutic questions discussed in an enlightened manner, with a full knowledge of contemporary and recent contributions, and for the most part, the author's conclusions are those with which we feel cordially in agreement. He has evidently read widely and is quite familiar with German medical literature, but perhaps shows less familiarity with English work, and, on the whole, his method of treatment approximates closely to that which is followed in Germany. This is especially shown in his dietaries, where the excessive amount of fats and the fondness for ham and veal, which are so marked amongst our Teutonic neighbours, appear very prominently. We think it is hardly correct to ascribe the virtues of the Nauheim baths to the presence of carbonic acid gas, for, as is well known, this gas is not used in the earlier part of the course, and is often not used at all. We notice that he speaks favourably of the use of "papayotin," which is a term applied to the crude powder produced by drying the juice of the papaw; but, in our experience, it is a most uncertain substance—it seems rapidly to lose its digestive properties, and can in no way be relied upon. He says that he has never used erythrol-tetranitrate because he saw no advantage in it over nitro-glycerine, although one would suppose he could hardly say this if he knew that its action lasts for as many hours as that of nitro-glycerine for minutes. These are, however, small matters; few, if any, physicians could write a book on treatment on such a wide basis without wandering at times beyond the limits of their own personal experience; and there are few, we believe, who would have produced a more satisfactory handbook than this.

[4] *Uber die entzündlichen Veranderungen der Glomeruli der menschlichen Nieren und ihre Bedeutung für die Nephritis.* Von Dr. Med. M. Loehlein. Arbeiten aus dem pathologischen Institute zu Leipzig. Heft 4. Leipzig: S. Herzel 1907. (Roy. 8vo, pp. 98. 2 Tafeln. M. 4.)

[5] *The Prophylaxis and Treatment of Internal Diseases.* Designed for the Use of Practitioners and of Advanced Students of Medicine. By F. Forchheimer, M D. London: Sidney Appleton. 1906. (Demy 8vo, pp. 652. 21s.)

THE CRAGGS PRIZE ESSAY.

In the Craggs prize essay of the London School of Tropical Medicine for 1906,[6] on *The Serum Diagnosis of Mediterranean Fever and the Treatment of the Disease by Means of Vaccines*, Fleet Surgeon P. W. Bassett-Smith, R.N., discusses the value of the serum diagnosis of Malta fever and also the therapeutical treatment of the disease by vaccines. He points out the importance of placing beyond doubt the specific character of the agglutination of the *Micrococcus melitensis* when brought into contact with the blood serum of patients suffering from Malta fever. Most bacteriologists and others are quite convinced of this, but as this modern method of diagnosis has been decried by others the author has taken the trouble to test the blood of 150 people, suffering from different pathological conditions, to see what proportion, if any, gave this test. In all cases, with four exceptions, the results were uniformly negative; the four persons who gave positive results had either had Malta fever previously or had been in Malta. The author therefore concludes that when a 1 in 30 dilution is used (if the technique is properly carried out) a positive agglutination reaction may be considered conclusive evidence of Mediterranean fever past or present. The second part of the essay deals with the vaccine treatment of the disease, the effect being carefully checked by the opsonic index. Two series of cases are given; in the first lot (22 cases) marked improvement was registered in 15, in the second lot (23 cases) marked improvement was noted in 16. Apparently the treatment has no effect on acute cases, and though benefiting chronic cases, does not prevent relapses taking place, many of those appearing to be doing favourably suddenly developing another wave of pyrexia, not differing from those met with in cases otherwise treated. The author's conclusion is thus stated:

> In dealing with a systemic infective disease like Mediterranean fever, the addition of further quantities of artificially produced toxin to a patient in acute phases of the fever not only appears to me to hold out little likelihood of acting beneficially, but would act detrimentally. On the other hand, in chronic conditions, where one has only slight relapses or a mild see-saw temperature without marked hectic symptoms, then a slight addition of the toxic product just adds that quantum of stimulation which places the patient in a more favourable condition for combating the infective organism present in small quantities. It is to these latter cases that I now restrict its administration, and if, after the injections, one finds a rising index, there is bona fide reasonability in continuing the dosage with advantage to the patient.

[6] The London School of Tropical Medicine (University of London) Craggs Prize Essay, 1906. *The Therapeutical Treatment of Mediterranean Fever by Means of Vaccines, etc.* By Fleet Surgeon P. W. Bassett-Smith. Reprinted from the *Journal of Tropical Medicine and Hygiene.* London: John Bale, Sons and Danielsson, Limited, Oxford House, 83-91, Great Titchfield Street, Oxford Street, W. 1907.

A society, called the Anatomical and Anthropological Society, has recently been formed in connexion with the Medical Students' Society of the Melbourne University.

MEDICAL AND SURGICAL APPLIANCES.

The Invigro Body Brace.

THIS appliance was contrived to combine the essential features and advantages of a shoulder and an abdominal support. Straps with springs at the back serve as braces, whilst the abdomen is supported by a nickelled metal plate and straps, which cause no inconvenience nor chafing, as they are self-adjustable. The shoulder straps are constructed so as to give support with little pressure, whilst the portion of the appliance which is adjusted to the abdomen has none of the disadvantages of a binder, which weakens the parietes, and which is often so hot that the patient is liable to severe chill when it is left off. The brace tends to keep the shoulders erect and to overcome the effects of stooping. At the same time, it is devised to serve as a support to the abdomen in both man and woman where corpulence, pain, or any local trouble has shown that something is required to assist Nature in keeping the organs and figure in their natural positions. It affords comfort to subjects debilitated by child-bearing and overwork, and to strong women, such as able hospital nurses, suffering from physical fatigue induced by the duties of their vocation. The appliance is made by the Invigro Body Brace Company, 8, Bouverie Street, E.C.

MEDICAL NEWS.

OWING to pressure on space it has been necessary to defer any notes on entertainments at Exeter, other than those which appeared last week, for publication in a later issue.

THE authorities of King Edward's Hospital Fund for London have received notice from the Bank of England that a sum of £100,000 has been lodged to their credit by Mr. Andrew Carnegie. The gift is unconditional.

THE MEDICAL SCHOOL AT SAÏGON.—A military section has been added to the Medical School at Saïgon in Indo-China. It is intended for the training of native medical assistants, and it is hoped that ten will be turned out fit for service every year. The students will be chosen by competitive examination from among the native troops under instruction. Their medical studies will extend over four years.

THE annual summer meeting and luncheon of the Irish Medical Schools' and Graduates' Association was held at the Rougemont Hotel, Exeter, on Thursday, August 1st. After the formal business had been transacted, nearly fifty members and guests sat down to luncheon. Sir John W. Moore, the President, was in the chair, and amongst those present were Lady Moore, Sir Charles Cuffe, Dr. J. A. Macdonald, Dr. and Mrs. McManus, Lieutenant-Colonel Boileau, Professor Sinclair White, Professor Ernest White, Lieutenant-Colonel Smyth, Dr. Johnson Smyth, Dr. Smith Whitaker, Dr. and Mrs. Abraham, Dr. Crespi and ladies, Dr. J. J. Macan, Dr. J. Craig, Dr. Booth, Dr. and Mrs. Stokes, Dr. Wynne, Mr. Chas. Ryall, Mrs. Creasy, Dr. and Mrs. Lawless, Dr. and Mrs. Vlieland, and Dr. W. Douglas (Provincial Secretary). Owing to previous engagements, Dr. Davy, Dr. Deas, Mr. Russell Coombe, Dr. and Mrs. W. Gordon, and Mr. Domville were unable to be present.

INTERNATIONAL CONGRESS OF PHYSIOTHERAPY.—As already stated in the BRITISH MEDICAL JOURNAL, the second International Congress of Physiotherapy will be held in Rome from October 13th to 16th. The Italian Minister of Public Works has granted special travelling facilities to all members attending the Congress. The reduced fares apply to all lines, both on the mainland and on the islands. We are asked to state that the Organizing Committee is authorized to issue to each member or associate, duly enrolled, a book of railway coupons. Each coupon entitles the holder to a ticket at from 40 per cent. to 60 per cent. reduction on the ordinary fare. As the book contains twenty tickets, available for any journey in any part of Italy, it enables members to make an extended tour in the country at greatly reduced cost. The coupons are valid for forty-five days—from October 1st to November 15th, 1907. Ladies duly registered as associate members of the Congress and exhibitors may take advantage of the reduced fares. Applications for membership should be accompanied by the subscription of 20 francs for members, or 15 francs for associates, and should be sent to the general secretary, Professor Carlo Colombo, Via Plinio, Rome. The English secretary is W. Deane Butcher, M.R.C.S., Holyrood, Ealing.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

SECTION OF PATHOLOGY.

Thursday, August 1st, 1907.

THE chief attraction of the second meeting of this Section was an exhaustive discussion on phagocytosis and bactericidal action. Dr. Dean opened the proceedings with an account of the influence of serums on phagocytosis and the various substances found in the serums, and then summarized some of the work that has followed on Leishman's ingenious method of demonstrating phagocytosis. The phagocytic activity of the polymorphonuclear leucocytes appeared to him to be a variable factor under certain conditions, as instanced by experiments with blood from cases of leukaemia. Serum was found to act on organisms so that they tended to be drawn towards leucocytes that had been previously killed—an interesting sidelight on chemiotaxis. The virulence of the organism was an important factor in phagocytosis, many observers having shown that leucocytes often refused virulent cocci whilst they ingested less virulent ones. The author concluded by giving the results of his work on the effects of heating serums. The almost constant ratio of phagocytic index of heated to unheated serums remained normal when virulent germs were used, but he obtained a reverse ratio with avirulent bacteria; but this reversed ratio after a short time was seen to be again reversed. It is quite impossible to produce all Dr. Dean's interesting results in a short summary. Dr. Buxton of Cornell University then described some experiments on the phagocytic action of cells in the peritoneal cavity, from which he concluded that the increased resistance of an immunized animal is almost entirely due to an increased power of phagocytosis, and, further, that an immunized animal's serum is no more bacteriolytic than that of a normal animal, and finally that there was no difference in the behaviour of the macrophages towards solid inert particles or organisms. Dr. Charlton Briscoe thought that opsonins did not exist in the blood as such, but perhaps rather as opsinogens or such-like substances, and that immune substances were only liberated after inoculation, and, being of the nature of an excretion, were eliminated in the urine. Drs. Houston and Rankin produced some very careful and detailed work on the meningococcus isolated from the Belfast epidemic. They found an increased agglutination and phagocytic power in the affected cases. From the fact that cases of posterior basic meningitis did not react in the same way as the epidemic type they conclude that Still's disease is an entirely different variety of meningitis. Professor Beattie suggested that the mononucleated cells (endothelium of omentum) were the producers of certain antibacterial substances. Dr. Peel Ritchie contributed a paper on a method of recognizing the specific substances in blood serum influencing phagocytosis and its application in determining the existence and etiology of bacterial diseases, and Dr. Bushnell mentioned some observations on phagocytosis in myelocythemia. The Chairman having made a few concluding remarks, a most instructive discussion came to an end. Dr. Carl Browning contributed a paper on experimental chemotherapy in trypanosome infections, the result of prolonged and exhaustive research. Dr. Bayon dogmatically stated his views on peritheliomata and endotheliomata, withholding, however, much technical detail, which he thought might not be appreciated by the Pathological Section save by the most experienced.

Friday, August 2nd, 1907.

The last day's meeting was preceded by a demonstration on recent cancer research by Dr. Bashford, who illustrated his remarks with lantern slides, and by Dr. Clowes, of the Buffalo Cancer Research Department, who had worked at the chemical aspect of the question with some amount of success. He mentioned Beebe and Crile's cases of cure of lymphosarcoma of dogs by transfusion with the blood of normally immune and spontaneously recovered animals. There was no special subject for discussion, but numerous small papers were presented. Dr. Forsyth, in a paper on the relation between the thyroid and parathyroid glands, gave some further results of his very extensive work on the subject. He showed some beautiful pictures of vesicle and colloid formation in the parathyroid gland, and had evidently gone deeply into the comparative anatomy of the gland. He concluded that it was impossible to draw a distinction between the thyroid and parathyroid glands, which merely represented two stages of the same organ. In replying to Professor Muir's remarks, Dr. Forsyth questioned whether the severe symptoms following excision of the parathyroids were really due to aberration of the gland, and quoted Vincent and Jolly's views that they depend on associated injury to the thyroid. Dr. Bavon also made some authoritative remarks. Professor Ferguson (Egypt) then gave a most instructive lantern demonstration on bilharziosis of the genito-urinary and alimentary tract. His lifelike pictures, which deserve special notice, especially some showing the worms in the superficial veins of the ureter, etc., were further enhanced by his well-preserved specimens from the museum. Dr. A. McLennan gave an illustrated summary of the question concerning the relation of the *Spirochaeta pallida* to syphilis, together with the results of his own work. He quite refused to accept the silver spirochaete as anything but true silvered spirochaete, and showed slides illustrating what he considered developmental stages, but doubt was felt as to whether his interpretations of these appearances would be universally accepted in view of the strange and varied appearances of the numerous artefacts resulting from special methods of staining, etc. Dr. Bushnell read a paper on a case of mycosis fungoides and its relation to infection and malignant disease, and Dr. Carey Coombs discussed the myocardial lesions in rheumatism in the light of his work on a large number of cases. Dr. J. J. Lucas presented and described a specimen of pericardial calcification. The Honorary Secretary then read a paper from Ceylon by Dr. Aldo Castellani on yaws, which the writer considered to be a form of spirochaetosis due to a specific agent—the *Spirochaeta pertenuis;* and a second paper by the same author on a bacillus found in a case of gangrenous appendicitis. In the absence of Drs. Dimmock and Branson, the Secretary read their brief papers on a method of determining the presence of sugar in urine, and a second on the estimation of creatinin in the urine; the apparatus for this being on view in the annual exhibition. This brought the proceedings of the Section to an end, much credit being due to the Honorary Secretaries for having prepared so interesting and valuable a programme.

Section of Medicine.

Thursday, August 1st, 1907.

The second day's proceedings in this Section consisted principally of a discussion on the diagnosis of acute pancreatitis, which was opened by Professor Osler. He distinguished two types of acute pancreatitis—the one with swelling of the gland (which might be in part due to haemorrhage), and the other with its suppuration or necrosis. There were three main causes of acute pancreatitis: first, mechanical causes, as calculus, especially in the common bile duct, leading to bacterial invasion; secondly, chemical irritants, as bile, gastric juice, duodenal contents; and, thirdly, various types of pathogenic organisms existing in the intestine. Gall stones, lodged in the ampulla of Vater, were present in about half the cases, but a stone might be thus present for years without leading to suppuration, although occasioning periodic febrile attacks with slight jaundice and pain. Another large group of cases were those associated with gastro-intestinal disturbance, and principally seen in alcoholics. Other less common causes were mumps, typhoid fever, and other acute infections. There were two types of cases, the acute and the subacute. The acute cases afforded the severest forms of the "acute abdomen," having a sudden severe pain, vomiting, shock, lividity, tenderness over the upper abdomen, and sometimes a diffuse swelling there. Other conditions, as severe biliary colic and perforation of the stomach, might, however, give similar symptoms. The previous history was of the greatest importance in forming a diagnosis. In the suppurating form the initial symptoms were less severe, but there was often a tumour palpable, and the stools showed the changes characteristic of pancreatic disease. As to prognosis, about 90 per cent. of those not operated on died, and of those operated on about 50 per cent. recovered. Dr. P. J. Cammidge referred to a group of 50 cases he had collected from literature, in only 5 of which was a correct diagnosis made during life. He had examined the urine in 7 cases and found a considerable quantity of acetone and diacetic acid, many calcium oxalate crystals, with bile and urobilin present. Dr. Newton Pitt described 2 cases, one doubtful which recovered, and the other verified by operation. Dr. Craven Moore gave details of necropsies on 4 cases; in 3 there had been alcoholism and "bilious" attacks; the patients looked far more ill than those suffering from perforative peritonitis; 2 of the cases developed a maniacal delirium with dilated pupils. The possibility of recovery from the condition should be kept in mind. Dr. F. J. Poynton discussed the possible implication of the pancreas in coeliac disease, and described pancreatic changes in ulcerative endocarditis. Dr. H. Davy described a case of pancreatic disease with acute onset, developing later a large pancreatic cyst. Professor Northrup insisted on the importance of having the attention of the profession directed to this obscure subject. Dr. W. J. Tyson referred to 2 cases of embolism of the superior mesenteric artery simulating acute pancreatitis. Dr. Morrison and Dr. Nolan also joined in the discussion, and Professor Osler replied. Professor Northrup then read a paper on the treatment of pneumonia and other acute infectious diseases by open-air roof-wards in the New York hospitals. Dr. Michell Clarke reported a case of lymphadenoma treated with *x* rays. Dr. S. West read a paper on pericarditis, Dr. W. Hunter one on oral sepsis and antisepsis in scarlet fever, and Dr. W. J. Tyson one on the prevention of appendicitis.

Friday, August 2nd, 1907.

The third day of the meeting of this Section was entirely occupied with a discussion on rheumatoid arthritis and the morbid conditions that simulated it, with special reference to pathology and treatment, which was opened by Dr. A. P. Luff. He believed the condition to be really a clinical entity, a constitutional disease due to bacterial invasion. It might be distinguished from subacute rheumatism by not reacting to salicylates. The monarticular forms, so-called, he believed to be traumatic. Rheumatoid arthritis occurred in two forms, the acute and chronic, according to the degree of virulence of the infection. In the acute, the synovial membranes were mainly affected; in the chronic, the signs of cartilage destruction and osteophytic outgrowths became manifest. An injury or previous arthritis, or any debilitating condition might predispose. Uric acid had nothing to do with it. As to treatment, to be successful it should be early and prolonged. If the disease were treated early the disease was curable. The general health should be kept at the highest possible level; a generous dietary was essential. The drugs he had found most useful were guaiacol carbonate and potassium iodide. Later such measures as the use of superheated air massage, passive movements, and brine baths were of value. Dry heat was the desideratum in climate. Dr. Strangeways did not believe that there was any such thing as rheumatoid arthritis. He described a method of collective investigation of arthritic cases now being carried on at Cambridge. Dr. Davy also believed that under the name

of rheumatoid arthritis were grouped a large number of different kinds of arthritis. It was rare in the Exeter district of Devon. Dr. T. McCrae believed it was a definite disease with many varieties. It differed from rheumatism in leaving permanent joint changes, which rheumatism, he believed, did not. *X* rays were most useful in diagnosis and in gauging the amount of damage done. The treatment should, he believed, be on the lines of the hygienic treatment of tuberculosis. He trusted in the Bier hyperaemic method of treatment. Dr. W. R. Gore, in regard to treatment, said the digestion should be put in order and then spa treatment directed to checking intestinal fermentation be employed. Electric-light baths and massage he valued. Dr. W. J. Middleton believed the disease to be due to many different kinds of organisms and thought the effects to be immediately caused by a toxaemia. He advocated a method of counter-irritation of the spine. Dr. Tyson argued for the prevention of the disease by joint exercises, good ventilation, and dryness of dwelling houses. Dr. Preston King thought many cases allied to gout, and that many cases of gonorrhoeal rheumatism were clinically indistinguishable from it. Dr. J. O. Symes considered there were two distinct diseases—one affecting the fibrous membranes, and the other the joints, and not running into each other. He had found various cocci present, but nothing specific. In the fluid from a rheumatic joint there was a polymorphonuclear leucocyte count, from a rheumatoid arthritis joint a mononuclear. Dr. Michael Foster said that the warmer the climate within limits the better; drugs were useless, and the essentials of treatment were those of the open-air treatment of tuberculosis, except that he would give stout. Dr. W. B. Lees distinguished three types of the disease—that in young children with enlargement of the spleen and lymph glands, the acute and subacute cases in young women, and those with much bony deformity in middle-aged women. Dr. F. J. Poynton described the production of joint changes, like those of rheumatoid arthritis, in rabbits by injecting an organism obtained *post mortem* from a case. He believed the inherited gouty state provided a fitting soil for the infection. Dr. Sykes also upheld the idea of a gouty factor. Dr. Fox had found the disease very prevalent in the Plymouth district of Devon. Dr. Draper thought ground air an important cause. Mr. Greenyer advocated opening the joints surgically, and Dr. Thomas the breaking down of adhesions under ether. Dr. Odell had found ichthyol useful in the conditon. Dr. Gordon had found guaiacol carbonate of especial value.

Section of Diseases of Children.

Thursday, August 1st, 1907.

At the second meeting of this Section a discussion on acute nephritis and its results was opened by Dr. A. F. Voelcker, who discussed the etiology, especially of those varieties not due to acute specifics. He showed that it was more common in children than was usually supposed. The symptoms resembled those in the adult, oedema, headache, and eye symptoms being, however, less frequently seen. Chronic nephritis was considered to be uncommon, recovery being the usual termination at this age, though intermittent albuminuria may occur for a year or two in such cases. Dr. A. W. Sikes continued the discussion with a paper on the physiological and pathological aspects of nephritis in children. He alluded to the importance of maintaining a nitrogenous equilibrium in the chronic cases, and therefore advocated allowing a more nitrogenous diet than has been usually the custom. There was often, he said, an excess of nitrogen in the faeces as compared with that in the food. There was little evidence of abnormal proteid metabolism in nephritis. Chlorides tended to be insufficiently excreted, and hence, if taken in excess, were retained; and oedema sometimes occurred and increased in these cases It was unlikely that the kidneys could be washed out by giving excess of water, as in nephritis the molecular concentration of the urine could not be altered; hence an excess of fluid drunk remained in the tissues as oedema. Mr. Sydney Stephenson spoke on the ocular complications. The only change he had seen in acute nephritis was bilateral optic neuritis. Retinal haemorrhages and white patches were very uncommon. Uraemic blindness occurred temporarily in some cases. In chronic nephritis, fundus changes were found in 75 per cent. of interstitial cases, and in only 14 per cent. of the parenchymatous variety. The prognosis was as bad as regards life as when the disease occurred in adults. Dr. F. C. Eve (Hull) related a case due to poisoning by potassium chlorate. Dr. F. Langmead spoke of the relation of tonsillitis and purpura to acute nephritis. Mr. J. Herbert Parsons spoke of the frequency of white patches on the retina in cases of increased intracranial pressure, but they were very rare in nephritis. Dr. J. E. H. Sawyer having spoken, Dr. Lees alluded to cases in which after death, during or shortly after scarlet fever, interstitial nephritis was found at the necropsy, when there had been no clinical evidence during life. He mentioned the value of an icebag applied locally in acute nephritis. Dr. Porter Parkinson mentioned gastro enteritis as a cause of acute nephritis, and the value of dry-cupping. Dr. Cautley did not approve of the use of icebags in acute nephritis, but considered dry-cupping of great value. He believed in allowing carbohydrates as well as milk in cases of acute nephritis. Dr. F. Langmead read a paper on acetonaemic conditions in children, and Professor Halliburton spoke on the physiological aspect; Dr. G. A. Sutherland considered them cerebral in origin, as they occurred chiefly in neurotic children. Dr. H. R. Dean discussed the classification and diagnosis of the varieties of purpura occurring in children. The meeting concluded with a paper on retropharyngeal abscess by Dr. H. Irving Pinches, and on the care of tuberculous children by Dr. T. N. Kelynack.

Friday, August 2nd, 1907.

At the concluding meeting of this Section Dr. Farquhar Buzzard opened the discussion on lumbar puncture. He considered aspiration of the fluid was unnecessary and perhaps dangerous, and the quantity withdrawn should be limited. The pressure of the fluid was not of great value for diagnosis, neither was the chemical examination of the fluid for cholin, reducing agents, etc. He attached great value to the microscopic examination and estimation of the number and variety of cells present. Lymphocytosis might, perhaps, be at times present in the acute inflammations of the meninges at an early stage, and cytodiagnosis was of value in cases when, after operation for mastoid disease, nervous symptoms continued which might or might not be due to extension within the cranial cavity. Later on the bacteriological examination might be of great value if suitable vaccines be prepared. The speaker hoped that in uraemia, lumbar puncture might prove of real value, but for cerebral tumour, hydrocephalus, etc, its therapeutic effect was slight, and in meningitis its use was justifiable, and might be useful. Dr. F. E. Batten recorded the results of 42 cases in which he had performed the operation. He quoted a case showing that a negative examination of the fluid did not exclude meningitis as it might appear at a later stage. In anterior poliomyelitis he had found the fluid normal. Professor Halliburton discussed the physiology of the cerebro-spinal fluid and its physical and chemical characters. He spoke of the presence of cholin as definite evidence of organic disease Dr. F. C. Eve (Hull) suggested pressure on the veins of the neck in cases where the fluid did not flow easily. He believed in estimation of pressure of the fluid. Dr. Porter Parkinson mentioned that in tuberculous meningitis polymorphonuclear leucocytes might be in excess for a time, but later on lymphocytes became more numerous. Dr. Athole Ross mentioned a similar case, and considered that not enough of the cause of the various kinds of cells seen was yet known. Dr. Purves Stewart described a method of cytodiagnosis, and the gradual substitution of polymorphocytosis by lymphocytosis in septic cases recovering. Dr. Essex Wynter mentioned that he had performed the operation in 1889. He spoke of medication by intrathecal injections. Dr. T. Graham Forbes read a paper on the pathology of the fluid, and mentioned cases of tuberculous mening-

itis in which examination of the fluid was negative. Dr. Robb (Belfast) believed that anaesthetics should always be administered, and a large needle used for the puncture. Dr. R. Langdon Down then opened a discussion on precocious development. He considered some definite standard must be laid down as an average for a nation; inborn or external influences might cause undue rate of development. From the mental aspect genius and precocity were identical. Height and mental development appeared to go together; the mortality was somewhat higher at an early age than in other children. Dr. Leonard Guthrie discussed the physical aspect and its relation to the genital and other glands, such as the adrenals, thyroid and pituitary. The relation of puberty to the development or disease of the adrenal glands was mentioned. Also the influence of the thymus on bony development. He divided them into the obese, and the muscular or "Infant Hercules" types in children. They rarely lived for many years. Dr. G. A. Sutherland doubted that precocious children were exceptional in after-life. The relations of the ductless glands to development were only just beginning to be understood. Mr. Edred M. Corner related two successful cases of amputation of the forequarter for sarcoma of the shoulder. He especially spoke on the difficulty of diagnosis in certain cases, though the growth did not recur locally; internal growths caused death within two years.

Section of Psychological Medicine.

Thursday, August 1st, 1907.

The second morning's work at this Section was opened by a paper on three cases of periodic dementia by Dr. C. A. Mercier, who in his opening remarks stated that the term "dementia" was usually employed as connoting clinically a hopeless and deep state of insanity depending on permanent alterations in brain structure. Etymologically, however, the term strictly signified "deprivation of mind," and it was in this latter sense, as a condition covering every kind and degree of mental defect, deep or shallow, recoverable or irrecoverable, that he would employ it. He did so because this use of the word pointed to the fundamental fact that in all cases of insanity it was never the prominent and positive element which constituted the substantial factor, but always the defect, the deprivation, the dementia—that is, what was taken away—which was the root factor. He then described three cases, all young people, who suffered from periodic attacks characterized by a complete change from their normal behaviour and conduct, in one case with mental confusion and drowsiness, and in the other two with restlessness and excitability. In the two active cases the attacks were sudden, and, in the depressed and confused case, gradual in onset and disappearance. In all cases there appeared to be a double, or, more properly speaking, an alternating consciousness, and all were benefited by anti-epileptic treatment, suggesting that there was an affinity between epilepsy, double consciousness, and periodic attacks of (Mercerian) dementia. This short and incisive paper naturally evoked considerable adverse criticism. Dr. Yellowlees, who spoke first, affirmed that no one but Dr. Mercier, who was inspired by a spirit of paradox, would have called any of these cases of dementia, the first being obviously one of katatonic stupor, the second menstrual irritation, and the third periodic excitement occurring in an imbecile. He regarded with disapproval the remarkable extension Dr. Mercier had given to the term "dementia," and hoped that Dr. Mercier would not quarrel with others if they persisted in regarding dementia as connoting a permanent mental weakness depending on organic cerebral changes. Dr. Ernest White, Professor Hurd of Baltimore, and Dr. Robertson all joined in opposing Dr. Mercier's application of the term, his sole supporter being Dr. Macdonald. Dr. Mercier, in an amusing reply, strongly maintained that what he wished was to emphasize the fact that all the various features called stupor, mania, and so on, were an entire unessential, the only essential being the amount of mind removed and the rapidity of removal. The second paper was contributed by Dr. A. Peterson, of New York, and was entitled, The Galvanometer as a Measurer of the Emotions. After giving a historical sketch of its use in this relation, and a summary of the results which led him to make an investigation early this year of its value in analysing emotional phenomena, in the Psychophysical Laboratory at Zürich, he proceeded to an account of the results he had obtained amongst eight normal individuals and eleven insane. The instrument used was a Dupré d'Arsonval galvanometer, with 6.2 ohms and an oscillation of 2", the oscillations being recorded and magnified by a mirror throwing a beam of light on a scale 3 ft. distant. In normal cases, after a temporary oscillation, due probably to expectation, had subsided, a curve was obtained showing in response to questions or fright—for example, sudden and unexpected noises, etc.—first, a latent period of from 2 to 5 seconds; secondly, a deflection proportionate to the degree of emotion aroused; and, thirdly a weakening of response after repeated stimuli. A very interesting point brought out was that by the use of test words hidden associations and unconscious complexes can be brought to light. In Dr. Peterson's opinion the galvanometer furnished a valuable measure of emotional tone, which was entirely beyond the will of the subjects. The paper was illustrated by charts showing some of the curves obtained by the author in various psychoses, one, that of a case of stupor in which the record was a straight line, being of great interest as indicating a complete want of response, conscious or unconscious, to emotional stimuli. The paper was listened to with great attention, and was discussed by Drs. Menzies and Mott. The third subject under discussion was the question of a pathogenic organism in general paralysis. Two papers were read on this subject, the first by Dr. George M. Robertson, of Larbert, and the other, written by Dr. Candler, but read in his absence by Dr. Mott. Dr. Robertson stated as positive results obtained by him and his colleagues that they had been able to isolate an organism which was not the *B. paralyticans* of Ford Robertson from both the blood and cerebrospinal fluid. Dr. Candler, on the other hand, after carefully conducted attempts, had obtained only negative results. Both were lengthy papers, and were discussed shortly by the members.

Friday, August 2nd, 1907.

The last day's work commenced with a discussion on hypnotism, opened by Dr. J. F. Woods. His experience, he stated, dated from 1892, when he was acting as medical superintendent of Hoxton House Asylum. Since that time he had treated 2,076 patients, with the result that 1,578 had recovered, 293 improved, and in 205 there had been no apparent change. Of the total number 881 were mental cases, including in these cases of neurasthenia, hysteria, bad temper, most of which were "borderland" cases, and in which, Dr. Woods stated, this form of treatment was most efficacious. Outside these borderland cases he had treated 118 cases of melancholia with 80 recoveries, 44 cases of mania with 20 recoveries, 28 cases of "stage fright" with 23 recoveries, and many other cases. He then described his usual methods of procedure, and stated that he seldom had recourse to hypnotic sleep, as he found that in the great majority of cases simple suggestion sufficed. Proceeding to his results in non-mental cases, he had treated successfully 10 cases of writers' cramp with 6 recoveries, 65 cases of dyspepsia with 59 recoveries, 41 cases of "neuritis" with 27 recoveries, 10 cases of gout with 7 recoveries, and 140 cases of neuralgia with 114 recoveries. Dr. Claye Shaw, who first discussed Dr. Woods's paper, reminded his auditors of the suspicion with which hypnotism was regarded until quite recently, which, however, had now almost passed away. He regarded as the striking feature of the paper the great number and diversity of the cases in which good results had been obtained, and that amongst these Dr. Woods had found 12 out of 50 cases of epilepsy yield to suggestive treatment, and that 22 more were improved. He could not but regard this as a very remarkable result. In the light of these facts, given by Dr. Woods with a full sense of responsibility, it would appear that certain

cases in which there was undoubted organic change recovered under hypnotic measures. Other members present, including Drs. Pasmore, Schofield, Menzies, G. M. Robertson, and Yellowlees, joined in the discussion. The last named, whilst avowing his implicit belief in the honesty with which Dr. Woods's results were recorded, expressed some doubt both as to the nature of the cases and the reality and permanence of the recoveries. Nevertheless, he had himself observed favourable results in locomotor ataxia in the direction of relief of pain and improvement of sleep. Dr. Robertson, who gave a terse and illuminating analysis of the operation of hypnosis—or, as he preferred to call it, suggestion—gave an account of his experiences, extending over twenty years, in the application of suggestion to the insane. His enthusiasm had, he confessed, undergone a cooling process, though he was perfectly aware that suggestive treatment was an inseparable part of all treatment, and drew attention to the fact that in all organic diseases a mental factor was present which could be treated by suggestion. A paper was then read by Dr. A. Schofield on the teaching of psychology in medical schools, in the course of which he pleaded for such an alteration in medico-pedagogical methods that the study of important questions concerning life and death, health and disease should not be pushed out by minute attention to details in less important departments. In particular, the study of normal mental processes should be included in every curriculum, and should always precede the study of abnormal mentality. The subsequent speakers, including Drs. Pasmore and Edridge-Green, were all in agreement with Dr. Schofield, and the proceedings of the Section were brought to a close by Dr. E. S. Pasmore, who showed a valuable "flag diagram," which he had elaborated and found of great use as a simple, convenient, and easily comprehended record of the family-history of any patient.

SECTION OF ELECTRO-THERAPEUTICS.

Thursday, August 1st, 1907.

A DISCUSSION on the subject of *x* rays and sensitive plates was opened by Mr. J. Mackenzie Davidson of London. He gave it as his opinion that the readiest way to ascertain the so-called "focus" of the tube was to place a wire cross as close to the tube as possible, with one of the arms of the cross in a parallel plane to the anode, and then view this on the screen held about a foot away. If the *x* rays came from a point then the shadows of the two wires would be the same, but in proportion to the size of the *x*-ray surface of origin so would the horizontal wire have a shadow broadened into a band-like ribbon. The author also showed a number of prints representing various photographic plates on the market, and described the differences in their behaviour to the *x* rays. In concluding his paper, he insisted that the method of *x*-ray diagnosis should be entirely in the hands of members of the medical profession. Dr. Orton (Glasgow) sent a paper in which he said that the lower the tube, provided of course that *x* rays were given off, the more intense was the action on the plate. Professor Salomonson (Amsterdam) pointed out that electrons impinging upon the cathode did not lose their velocity all at once, but lost it gradually in the course of successive impingements, resulting possibly in a form of secondary radiation which ought to be taken into account. Mr. E. W. H. Shenton, M.R.C.S. (London), thought that it was not necessary to aim after great density in the negatives; negatives which would be considered poor from the photographic point of view were often most satisfactory from the point of view of the surgeon. Mr. E. H. Howlett, F.R.C.S. (Hull), suggested that it might be possible to manufacture an *x*-ray plate which could be handled in daylight if only some non-actinic material were incorporated in the emulsion. Dr. E. R. Morton (London) referred to the wonderful results gained by American workers by using low tubes and high currents. Dr. Ellis Pearson, F.R.C.S. (Bideford), read a paper on the uses of *x* rays from the point of view of the general practitioner. He dealt first with *x* rays as a diagnostic agent in fractures and dislocations, diseases of the bones and joints, in the chest and pelvic structures, and in the localization of foreign bodies. He then turned to the subject of *x* rays in therapeutics, mentioning their action in cases of lupus vulgaris, tuberculous lesions, carcinoma, and leukaemia. It had never been definitely stated by any responsible person that *x* rays were a cure for cancer, but there was no doubt that the treatment exerted a beneficial influence, even if only to a modified extent, on cancerous growth. Mr. Edward W. H. Shenton, read a paper on the examination of the hip-joint by means of *x* rays, and a discussion took place as to the value of stereoscopic investigation in such cases, Mr. Shenton holding that this method did not possess such great advantages as had been claimed for it. Dr. James R. Riddell (Glasgow) followed with a paper of a similar character, dealing with the measurement of pelvic diameters by the *x* rays. Of the various methods employed, he characterized as the most accurate that of Contremoulins, which consists in the application of stereo-radiography to the pelvic brim. Dr. J. Goodwin Tomkinson (Glasgow) showed a number of interesting cases of lupus vulgaris treated by *x* rays. In his use of *x* rays for facial lesions he had endeavoured to diminish the length of treatment, which was such a drawback to the use of photo-therapy, and by *x*-ray treatment combined with the cocaine and other solutions, he had found it possible to obtain in ulcerated and hypertrophic cases a relatively rapid response, culminating in a smooth and flexible cicatrix, free from the disfiguring keloidal tendency not infrequently following treatment by some of the older methods. Dr. Taylor mentioned a case of Paget's disease healed by *x* rays, and showed some microscopic specimens of the diseased tissues. Work for the day ended with a paper by Dr. Howard Pirie (London) dealing with the measurement of the reverse current in an *x*-ray tube. He described a new meter for estimating the dose of *x* rays which he had constructed.

Friday, August 2nd, 1907.

At its final meeting the Section unanimously adopted a recommendation to the British Medical Association expressing appreciation of the Association's action in providing an Electrical Section at the Annual Meeting, and the hope that a similar Section may be established at future meetings. A vote of thanks for their attendance was also passed to certain distinguished Continental visitors—Professors Leduc and Wertheim Salomonson and Dr. Bonnefoy. Dr. J. H. Sequeira then opened a discussion on *x*-ray dosage. He said that, of course, the most important part of the problem of dosage was the estimating of the output of *x* rays from the tube. In instancing various methods, he dealt in turn with the chromoradiometer of Holtzknecht, and the pastilles of Sabouraud and Noire. He suggested the likelihood of setting up in the patient a condition of *x*-ray dermatitis by the continued administration of small doses of *x* rays over long periods; at least the possibility of such a result occurring should be borne in mind. Dr. W. Ironside Bruce (London) said that in exposing leukaemia patients to *x* rays he had provided against any malignant effects by using a special filter in the shape of ordinary felt, such as is laid under carpets, to the thickness of four layers, or about a couple of inches. This he placed between the tube and the patient. Dr. A. H. Pirie (London) agreed with Dr. Sequeira as to the necessity of very exactly measuring the dosage when the requisite dose was given in a short time. Dr. Delpratt Harris (Exeter) thought that variation of the time of exposures and of the intervals between exposures might ensure success in long-continued cases. Dr. Shenton suggested that possibly large doses in malignant disease might make the degenerative process more active instead of less active. Dr. J. Goodwin Tomkinson (Glasgow) said that epitheliomata developing in tuberculous scar tissue was not necessarily of *x*-ray origin. Every one knew the tendency of lupus scar tissue towards epitheliomatous degeneration. Dr. D. Harris brought forward some statistics of *x*-ray therapeutics in rodent ulcer and carcinoma. He gave a list of 19 cases in his own

experience. Eight of the cases resulted in cures; in six others there was distinct benefit to the patient; only in one case was there no effect at all. Dr. Reginald Morton (London Hospital), in the course of a paper, advocated the use of alternating currents of low frequency. He said that a current slowly undulating and periodically reversing its direction of flow had always appealed to him as a therapeutic agent possessing great possibilities. He found that its value was specially great in the treatment of degeneration of muscular tissue. The current was very well borne by children—much better, indeed, than any produced by the ordinary form of interrupter. Dr. W. Ironside Bruce (London) read a paper on the value of systematic methods in radiography, and incidentally stated that in his opinion the practical value of stereoscopic views of bones was somewhat overrated, a point on which he was opposed by Mr. Mackenzie Davidson, who strongly advocated stereoscopy as an aid to diagnosis. Dr. Ironside Bruce said that, realizing the value of a knowledge of the normal appearance of any part before dealing with the abnormal, he had gone to the length of constructing an atlas containing radiographs of the normal bones and joints of the whole body, and by means of a specially constructed *x*-ray couch he was able to ensure that the views of the abnormal were identical with those of the normal, so far as the relation between the tube and the part was concerned. Professor Wertheim Salomonson (Amsterdam) read a paper on the electro-diagnosis of oculo-motor paralysis, and detailed the course of electrical symptoms in such cases. Dr. Howard Humphris (Honolulu) read a paper on static currents and their action. He described the action of these currents as being (1) mechanical, giving contractions not only to the skin and muscles, but also to the cells themselves; (2) electrical, by the polarization which produces cell activity; (3) chemical, by the evolution of nascent ozone and nitrous acid, which are fatal to certain bacteria; and (4) actinic, by reason of the germ-destroying effect of light. The meetings of the Section were brought to a close by a vote of thanks to the President, Dr. Lewis Jones.

Section of Tropical Diseases.

Thursday, August 1st, 1907.

At the second meeting of this Section a discussion on diabetes in the tropics was opened by Sir Richard Havelock Charles, K.C.V.O., Lieutenant-Colonel, I.M.S., who pointed out the increasing prevalence of diabetes in Calcutta, and amongst the better classes especially. Papers on diabetes in India were also communicated by Dr. Rai Koilas Chunder Bose, Bahadur, C.I.E., C. L. Bose, M.B., F.C.S., Dr. Rai Devendrauath Roy, Bahadur (Calcutta), and by Dr. Satasarah Chakravarti. Dr. F. M. Sandwith (London) gave an account of diabetes in Egypt. He stated that diabetes was one of the common diseases among Egyptians, who lived chiefly on bread and vegetables instead of meat, and were very fond of sugar in all forms. The following also joined in the discussion: Lieutenant-Colonel G. M. Giles, I.M.S., Drs. H. Marcus Fernando (Ceylon), and William H. de Silva (Ceylon), Major A. H. Nott, I.M.S., Sir Patrick Manson, Dr. Louis Sambon, Professor Hans Ziemann (Cameroons), Major G. T. Birdwood, I.M.S., Dr. Carnegie Brown (London), Dr. J. M. Mallick (Calcutta), Mr. J. Christopherson, F.R.C.S. (Khartoum), Dr. P. J. Cammidge, and Mr. James Cantlie.

Friday, August 2nd, 1907.

Professor E. A. Minchin read a paper on haemoflagellates and allied organisms. The following took part in the discussion on the haemoflagellates: Dr. Louis Sambon, Professor Hans Ziemann, Dr. Andrew Balfour (Khartoum), Sir Patrick Manson, K.C.M.G., and Lieutenant-Colonel G. M. Giles, I.M.S. Dr. Sambon's new classification of the haemoprotozoa was brought forward by Sir Patrick Manson. It was as follows:—I. Haemogregarinidae (1 genus): Haemogregarina. II. Plasmodidae (2 genera): (1) Plasmodium; (2) Laverania. III. Schaudinnidae (3 genera): (1) Leucocytozoon, (2) Schaudinnia, (3) Treponema. IV. Haemoproteidae: Subfamily A. Haemoproteinae (3 genera)—(1) Haemoproteus, (2) Babesia, (3) Leishmania; Subfamily B. Trypanosominae (2 genera)—(1) Trypanosoma, (2) Trypanosplasma. Dr. F. W. Mott (London) read a paper on further observations in cell changes in sleeping sickness and dourine. Captain S. R. Christophers, I.M.S., sent a paper upon the development of *Piroplasma canis* in the tick. Dr. G. A. Williamson (Cyprus) communicated a note on bilharzia in Cyprus; the notification of bilharzia occurring outside Africa is interesting. Dr. W. J. Prout, C.M.G. (Liverpool), read a paper on blackwater fever; he considers that malaria having established a certain condition of blood it is probable that the supervention of some exciting cause determines the onset of the disease, the nature of which is as yet undetermined. Dr. Andrew Balfour (Khartoum) read a paper on a peculiar blood condition probably parasitic in Sudanese fowls. Dr. Charles Begg (Bath) sent a paper on complications in chronic sprue. Dr. de Silva read a paper on the climate of Ceylon. Mr. James Cantlie gave an account of one hundred cases of liver abscesses upon which he had operated. Mr. Cantlie read a paper on the part played by the colo-sigmoid and the sigmo-rectal pylorus in intestinal troubles. During the three days on which the Section met the average daily attendance amounted to forty.

Section of Surgery.

Thursday, August 1st, 1907.

Introducing, at the second meeting of this Section, a discussion on the indications for cholecystectomy, Mr. Bland-Sutton stated that 75 per cent. of the cases calling for surgical interference in the biliary tract had their origin in the gall bladder, an organ for which no indispensable function had been demonstrated, and one which might be removed without serious consequences. He advocated cholecystectomy as a routine procedure in cases of injury, calculous cholecystitis, acute non-calculous cholecystitis, perforating ulcer, mucocele, chronic cholecystitis (empyema), biliary fistula, and malignant disease. He insisted, further, that where drainage was essential it could be effected more easily and more successfully after removal of the gall bladder than through its agency. In primary malignant disease it was, unhappily, rare to find diagnosis possible whilst the limitations of the growth still permitted of complete excision. Mr. Maylard took exception to the comparison of such dissimilar organs as the gall bladder and vermiform appendix. Whilst admitting that he performed more excisions than formerly, he thought there were objections to the routine performance of cholecystectomy, which, though undoubtedly effecting an immediate cure, did not necessarily ensure permanent immunity from disease in the tract. Mr. Charters Symonds gave statistics of his cholecystectomy and cholecystotomy cases for the past seven years. There were three deaths among 23 cases of excision, two fatalities amongst 16 of incision and drainage; the operation of excision is undoubtedly severe, and though the procedure of election in many conditions, yet for simple cholelithiasis, except in cases where such sequelae as fistula or suppuration could be anticipated from the local condition, cholecystostomy was open to no objection. The difficulty of cholecystectomy might be great, especially in men, but upon the whole, with certain reservations, he agreed that removal of the gall bladder should be adopted. Mr. Stanmore Bishop objected to any idea of cholecystectomy as a routine procedure; the gall bladder was certainly not without function, and in any case might be of great importance to the patient in view of future surgical contingencies. Drainage as an operation was expeditious, safe, and sure, and the untoward sequelae charged to its account were merely due to defects in technique. Mr. J. D. Malcolm, whilst admitting that removal was a better operation in many circumstances, strongly deprecated its employment for simple cholelithiasis. He believed that the risk of recurrence of stone formation after cholecystostomy was extremely remote. In acute cases it was better to do a two-stage operation, simple drainage with subsequent excision, as by this means

danger is materially diminished. Early diagnosis and prompt treatment were essentials. On this point of diagnosis, Mr. Ward Cousins remarked that precision was often impossible before the abdomen was opened. He was of opinion that in simple cases drainage was ample, but in his experience the more severe ones commonly eventuated in recurrence and an imperative cholecystectomy. Partial excision was occasionally successful. Mr. Sinclair White, speaking from an operative experience of 158 cases, stated that his routine procedure for cholelithiasis was cholecystotomy, and his experience of recurrence considerably less than 1 per cent. In not one of his cases, the great majority of which he had followed up, had cancer supervened. Dr. Cameron, of Montreal, recalled the fact that thirty years ago Lawson Tait assumed exactly the same position in this matter as was taken by Mr. Bland-Sutton to-day; it proved untenable then, and would do so again. In some cases of cholangitis not only was drainage desirable; it was, indeed, the only thing to be done, and could be effectual by the gall-bladder route alone. Professor Rodman, of Philadelphia, expressed his general agreement with the opener of the discussion, but thought "gangrene" might be added to the list of indications for excision. Mr. Newbolt contrasted the two operations as regards risk to life, pointing out that cholecystectomy had a mortality of 9 per cent., whilst cholecystotomy, a far easier and shorter operation, was perfectly safe. In his reply Mr. Bland-Sutton pointed out that he had endeavoured to make his remarks as controversial as possible. He was not so foolish as to contend that excision should be done in every case, since that was manifestly impossible; but he recognized a tendency amongst surgeons to adopt cholecystectomy much more frequently. What was really wanted was prompt judgement as to the feasibility of the better operation. Papers were also read by Mr. Mummery, upon lesions of the sigmoid flexure as a cause of chronic colitis, by Mr. W. Taylor upon intestinal obstruction, by Miss L. G. Anderson upon a case of sarcoma of the small intestine, and by Mr. Edington upon two cases of branchial fistula.

Friday, August 2nd, 1907.

Work began with a paper by Mr. A. E. Maylard on the relative merits of transverse or oblique and of vertical incisions in opening the abdominal cavity in the antero-lateral region. If it were conceded, he said, that the requisites for a good cicatrix were absence of tension, a good blood supply, and ready absorption of exudates by lymphatics, then it would only be necessary to study the anatomy of the abdominal wall to realize that the middle line would not fulfil them. In the lateral regions the lines of incision should follow those of the muscular fibres; in the case of the rectus this might be divided transversely without undue risk of tension, provided that the fibres of the sheath were split in their course, which is for the most part transverse. The author advocated a curvilinear incision dividing both recti, below the umbilicus, for operations on the pelvic organs, and contended that his results amply justified the procedure. Where a hernia had occurred through cicatrices, in his practice, it had been through the middle line and not through the lateral parts of the wounds. Mr. Stanmore Bishop described a new operation for mobile kidney, the *rationale* of which was based upon a suggestion of Longyear and Newman as to the attachments and action of the ligamentum suspensorium renis. Adopting the transperitoneal route, he said the kidney was exposed and the amount of displacement gauged from the direction of the renal vessels; the peritoneum was turned down and a flap of capsule reflected from the lower pole of the kidney; this was then secured by stitches traversing the entire thickness of the posterior abdominal wall and arranged round the lower curve of the organ. Mr. R. W. Murray made an important contribution to the question of the origin of herniae, adducing in support of the saccular theory the evidence of 200 *post-mortem* examinations made upon persons in whom there was no history or evidence of hernia. A potential hernia sac was found in 47 bodies, and in these 47 sixty-eight diverticula were present. Of the diverticula, 13 were inguinal, 52 femoral, and 3 umbilical; 30 males of average age 47 possessed 34 femoral, 11 inguinal, and 1 umbilical; 17 females presented 18 femoral, 2 inguinal, and 2 umbilical. Apart from the academic interest of this evidence as to the etiology of herniae, and more particularly of the femoral variety, the observation has some bearing on treatment, since if a preformed sac is a predominant factor in the production, the obliteration of the sac assumes much greater importance in the cure of herniae. Mr. Vernon described a new operation for haemorrhoids which really amounts to a method of performing Whitehead's excision in a simple, cleanly and bloodless manner.

SECTION OF OPHTHALMOLOGY.

Thursday, August 1st, 1907.

AT the second meeting Mr. Richardson Cross opened a discussion on irido-cyclitis, first giving an account of the anatomy and physiology of the ciliary body and then describing the pathological condition found. He then went into the etiology and treatment of the disease and insisted on the use of atropine, and, if necessary, paracentesis could be done; there was, however, no justification for the use of myotics even if the tension were high. Iridectomy was useful later on, and even if there was plus or minus tension it frequently did good in both conditions. Dr. Landolt had very rarely practised subconjunctival injections and thought that operations were not to be recommended in most cases of irido-cyclitis, as most subsequently did badly. Mr. Holmes Spicer said he had never seen any good result from subconjunctival injection. He had not seen much good result from iridectomy in these cases. Mr. Roper was not in favour of iridectomy in anything but very late cases. He thought that the sooner the patient was got under the influence of mercury the better, no matter what the cause. Iodopin he had found most useful. Mr. Parsons insisted that albuminous material in the aqueous was the chief cause of the increase of tension. He did not agree with paracentesis as a rule unless the tension were very high, and these cases were rare. Colonel Herbert thought that tapping the anterior chamber was most useful, but he considered that a subconjunctival puncture and counter-puncture had to be made if permanent diminution of tension was to be obtained. Mr. Devereux Marshall insisted on the local use of atropine, and if necessary paracentesis should be done. Dr. Reber laid stress on the general treatment of the disease, and thought that subconjunctival injections did more harm than good, except in quite the late stages. Dionine was of extreme value. Mr. Hern thought that but little good resulted as a rule from iridectomy. Mr. Richardson Cross replied Mr. Hinshelwood read notes on 4 cases of congenital word-blindness in the same family. These cases were exactly similar to others he had previously described. He emphasized the necessity of patience in training. Mr. Sydney Stephenson had seen several cases. He described the case of a girl who suffered from this condition. Mr. Elliott Square, Mr. Holmes Spicer, and Mr. Cyril Walker described cases. Mr Hinshelwood replied. Colonel Herbert read some clinical observations on spring catarrh, and specially insisted on the presence of eosinophiles. Some of the cases benefited by the use of salol. Dr. Carruthers and Mr. Parsons thought the disease very rare from their experience at Moorfields, so also did Mr. Pickard and Mr. Richardson Cross. Mr. Hill Griffith described one case, but he could not recall having seen another. Mr. Sydney Stephenson had seen it in conjunction with a recurrent skin affection. The most puzzling cases were those confined to one eye, when it closely resembled tubercle. Colonel Herbert replied, and said that in his experience the presence of eosinophiles was diagnostic in any case in which the diagnosis of spring catarrh was in any way possible; the evidence was in favour of the disease being of a local parasitic nature. Mr. Hill Griffith read notes of a fatal case of orbital thrombosis without apparent cause. The patient died on the seventh day, but no autopsy was possible. He referred to a case he had published in 1884, and had not seen another case during the interval. Mr. Richardson Cross had seen but one case. Mr. Stephenson asked if it were possible that it followed on facial erysipelas.

Mr. Parsons said that the observations of Mr. Percy Flemming were to the effect that the veins of the fundus were not dilated, but that the sixth nerve was first paralysed when the second eye became affected. Mr. R. J. Coulter read a paper on the treatment of alternating strabismus. He described 5 cases in which he got binocular and stereoscopic vision. He thought the amblioscope of Worth was most useful. Dr. Maxwell thought that plastograms were useful for tracing. Mr. Coulter having replied, the Section rose for the day.

Friday, August 2nd, 1907.

Mr. Holmes Spicer opened the discussion on vesicular affections of the cornea. He described the anatomy of the corneal epithelium, and pointed out how readily it could be detached from Bowman's membrane. He then recounted several characteristic cases, and pointed out the close connexion of herpes of the cornea and of the lips, evidently due to a neuropathic condition of the fifth nerve. He then described such conditions as filamentary keratitis and dendritic ulcers. The patients suffering from the latter condition were usually old or middle-aged, though he had once seen it in a child. As a rule it was sufficient to touch the ulcer with pure carbolic acid, though occasionally absolute alcohol or the actual cautery was required. Relapsing bullous keratitis usually followed a slight injury, and was far more frequent in females; but its treatment was not very successful. He recommended the use of dionine. Superficial punctate keratitis had a great tendency to recur; here also he had found dionine of great use. He showed several lantern slides. Dr. Reeve thought that some dendritic cases were associated with malaria. Dr. Cropper said that in the East it was often associated with trachoma, and he had known the cautery do great good. Dr. Pickard had seen a good many cases of bullous keratitis associated with great pain and produced by slight injury; he suggested that the recurrences might be due to included septic organisms in the epithelium. Dr. de Silva had seen them associated with malaria. Mr Spicer, in reply, said that he did not think they were due to malaria except so far as that disease lowered the general health. Mr. A. F. MacCallan read a paper on the ophthalmic hospitals in Egypt. He described the origin of the hospitals and the work done there. The hospitals were of the greatest benefit, and the amount of work done was enormous. Trichiasis due to trachoma was one of the most frequent conditions requiring relief. Snellen's modification of Streatfield's operation was the ordinary one done. Owing to the great ignorance of the natives he thought that it was impossible to stamp the disease out altogether. He showed some very interesting photographs of the hospitals and work done in Egypt. Mr. Richardson Cross congratulated Mr. MacCallan on his excellent work, which must have an excellent effect, not only on the suffering patients, but also from a political point of view. He asked what his treatment of trachoma was. In reply, Mr. MacCallan said his treatment was much the same as is common in this country. He had not had good results from the use of radium. Mr. de Silva described the condition of lepra ophthalmica in Ceylon. Dr. Thomson Henderson read a paper on the pathogenesis of primary glaucoma and the *rationale* of iridectomy. He explained his ideas as to the causation of glaucoma. He considered that the reason why iridectomy did good was because the iris, after it had been cut, never healed, and remained open and acted as a drain. Mr. Parsons said that he thought Dr. Henderson overexaggerated the action of the absorbing surface of the iris, but that all such ideas as had been enunciated were well worthy of consideration. Mr. Richardson Cross described the original case which first suggested Dr. Henderson's theory of glaucoma, as it occurred in a patient of his. The point of interest was that the angle of the anterior chamber was open. Dr. Henderson replied. Mr. A. C. Roper read a paper on prolapse of the iris in simple cataract extraction. He gave the result of Mr. Bankart's 150 consecutive cases of cataract extraction done at Exeter, and of 152 cases of his own. In his own he had 11 per cent. of prolapses. The incision he always placed within the cornea at the upper part. The early prolapses he excised at once, but he did not think it wise or necessary to excise small prolapses, especially if they took place after the first day or two; if a cystoid cicatrix developed he excised it later on. The President was strongly in favour of simple extraction in straightforward cases. Mr. Devereux Marshall spoke in favour of simple extraction in suitable cases, but he always did an iridectomy unless the iris went back quite easily. He always excised prolapses. Mr. Elliott Square thought that if for no other reason the cosmetic effect would strongly favour the simple operation. Mr. Brewerton would never leave a prolapse, as he thought it a most potent cause of sympathetic ophthalmitis. Mr. Roper replied.

Section of Laryngology, Otology, and Rhinology.

Thursday, August 1st, 1907.

The second meeting commenced with a paper by Dr. Watson Williams, who described his method of opening the sphenoidal sinus. He amplified his remarks by means of diagrams and specially devised instruments for the purpose. As a rule he did not attempt to enter the sinus by means of the natural ostium, because as a rule its high position placed it in the danger area. He showed a syringe to be used for washing out and examining the character of the discharge, and an instrument for perforating and subsequent enlargement of this opening in the anterior wall of the sinus. He also showed excellent stereoscopic views of the sinus containing probe, photographs of which were obtained by means of radiography from the living subject. Dr. Milligan next read his paper on the treatment of chronic suppuration of the middle ear without resort to the radical or complete mastoid operation. He gave an account of the various characters of the discharge, and of the action of leucocytes in the local defence of the part from the germ attack. He considered a decreasing number of living leucocytes in the discharge an indication of a more chronic process, also the more numerous the varieties of bacteria found, the more chronic the process generally. Microbes might be divided into septic and tuberculous, and of the former there were various types. With reference to treatment, he divided it into four headings. First, since it was essential to maintain a free drainage, small perforations should be enlarged and aspiration by Siegle or Sondermann's apparatus practised. Irrigation of the middle ear by the Eustachian catheter was very useful, but of course required skilled interference. Secondly, treatment of all pathological conditions of the neighbouring parts—the nose, naso-pharynx, and mouth—was necessary, for a vast proportion of cases of middle-ear disease were due to infection through the Eustachian tube. Thus adenoids, chronic nasal discharge, carious teeth, and septic conditions of the mouth and parts generally must be attended to and removed. Thirdly, he considered the value of an examination of the discharge, and based his local treatment upon this, which indicated the nature and extent of the inflammatory process. He described the methods he adopted in this examination and the various character of the germs found, with reference to their malignancy and treatment. He thought diplococci the most dangerous, because of their tendency to invade the cranial cavity. The next most dangerous was the *Streptococcus pyogenes*. He illustrated by diagrams the various cells found in the discharge in chronic and acute cases. If the discharge were profuse, a simple non-irritating lotion, as carbolic, and free washing out of the inflamed area; if the discharge were not profuse and good drainage existed, there was much to be said for the dry treatment with tampons and antiseptic powders. Antiseptic dressings should be also worn over the external ear. Fourthly, he dealt with the various operative measures, which he based to a great extent upon the character of the discharge. Local curetting through the meatus was inexact and risky, because the actual extent of the bony implication could rarely be known by inspection. Ossiculectomy had not been very satisfactory in his hands. He discussed the indications for the removal or otherwise of the membrana tympani and ossicles.

Dr. Hill then read his paper, which he amplified by charts showing the chronology of the various operations, with the names of the operators, upon the middle ear and mastoid process. He considered the various surgical measures, as incisions of the membrane and of adhesions, which he considered rarely of permanent utility. The same was true of curettage, snaring, removal of loose ossicles, etc., because of formation of adhesions and re-formation of membrane. If, however, there was good hearing, with chronic suppuration, some type of the post-aural operation was useful. In cases of cholesteatoma some form of Stacke's procedure was necessary. He did not agree with intrameatal atticotomy, which was more dangerous than the open radical operation. The discussion was continued by Mr. Cresswell Baber, who advocated less and less the performance of minor operative procedures, but preferred free operative treatment when operation was necessary. He did not think that sufficient knowledge had yet been gained to base treatment upon bacteriological diagnosis. Dr. Reeve of Toronto pointed out the importance of thorough examination of neighbouring organs, as nose, etc. Mr. Stuart Low had noticed that women were more difficult to cure than males, and attributed this to infection from their hair, and thus advocated thorough and frequent cleansing of the scalp. Dr. Syme laid stress upon the importance of exact diagnosis. Dr. Jackson advocated the use of peroxide of hydrogen, especially in out-patients. Drs. Smurthwaite and Bronner also took part in the discussion, the latter advocating the dry method of treatment, taking care, however, to use powders in small quantities, and of a character that did not cake. Dr. Dundas Grant thought there was occasional use for ossiculectomy where the ossicles were preventing free drainage, and he strongly supported a minimum of major surgical interference. Mr. Whitehead divided his cases into those where urgent symptoms demanded a radical operation and those in which conservative treatment should be tried. Of the residuum some showed offensive discharge and granulation and required radical treatment, the remainder being dealt with by milder measures. Mr. Logan Turner considered that each case should be judged upon its merits, and strongly advocated accurate differential diagnosis. Mr. Nourse thought the ear was frequently reinfected from the naso-pharynx. The President summed up; he was averse to too early operative treatment, and believed in free drainage. Drs. Milligan and Hill replied. Mr. Syme, of Glasgow, then read a paper on a case of acute suppuration of the middle ear, complicated by septic meningitis and brain abscess. The day's work concluded with a paper by Mr. Nourse dealing with frontal sinusitis, which was discussed by Dr. Tilley.

Friday, August 2nd, 1907.

There was a small attendance at the commencement of the concluding meeting, but it increased later on. Mr. T. Guthrie showed diagrams illustrating the development of the middle ear, showing that in the early months of fetal life the antrum was but a backward projection of the posterior portion of the middle-ear cleft, and that the aditus was formed later by an hourglass contraction, as it were, between the tympanum and that portion of the cleft which later became the antrum. Dr. Yonge read a paper on observations on the determining cause of the formation of nasal polypi. He pointed out that oedema of the nasal mucous membrane was a primary condition, and that the pedunculated condition was a secondary one. Some authorities considered that an inflammatory condition was a sufficient cause for the oedema, but the speaker considered that this was hardly a sufficient cause, as there were many inflammatory conditions of the polypoid area which were not followed by polypus formation. Therefore he considered that another factor was necessary, and this factor was probably some obstruction to the local circulation producing the oedema, which was an infiltration of the tissues resulting from obstruction of certain capillaries and veins. The excretory duct first became distended to perhaps twenty times its normal size, and the pressure thus exerted on the surrounding structures interfered with the flow of blood through the surrounding vessels. Dr. Watson Williams could not agree with Dr. Yonge's theory, but believed that the reflex neurosis was due to some pathological change which had preceded them; it was an infective process which obstructed certain vessels. Polypi were vascular in many cases, and the chief factor was a lymphatic obstruction; vascular supply continued much as before. Dr. Scanes Spicer thought that sneezing and lacrymation were merely of a temporary nature. Mr. Stuart Low considered that there was much in the hereditary theory. People had thin and thick mucous membranes, much as the skin differed in thickness. Those with thin membranes were most prone to suffer from this trouble. Cats got polypi, and their nasal mucosa was exceedingly thin; whereas dogs did not, and their mucosa was thicker and more velvety. Dr. Bronner thought that polypi began with inflammation of lymphatics or blood vessels, and that the formation of the nose and atmospheric pressure had much to do with it. Dr. Ball divided his classes into three clinical divisions—catarrhal, paroxysmal, and suppurative in accessory cavities. Dr. Milligan agreed with this clinical division, but thought that this did not explain its underlying pathological conditions. Dr. Whitehead did not think that one could accept all Dr. Yonge's theory; the heredity theory, as mentioned by Mr. Low, was an important factor. The President favoured Dr. Williams's opinion in many cases but not in all; the experiments recorded by the author were not completely satisfactory; he would like to know the clinical condition of cats during life as well as the pathological condition met with after death. Mr. Jackson then read a paper on the relative frequency of cancer of the superior and middle turbinate and ethmoid bones, including the importance of examining the nose in all cases with symptoms of deafness, giddiness and vertigo, and throat affections, with some remarks on the treatment thereof. He explained the meaning of the term "necrosing ethmoiditis" as used by Woakes, and went on to describe the conditions met with clinically. He had for years made a routine practice of examining the nose and post-nasal space in all cases of middle-ear disease, and found more than 50 per cent. had some ethmoidal disease, varying in intensity from small areas of bare bone to complete breaking down of ethmoidal cells. He next referred to the etiology of the disease. In some an acute inflammatory attack preceded the disease, in others it was not determinable. Dr. Spicer did not care for the name given by Dr. Woakes. Dr. Bronner thought that the data given by Dr. Woakes were not accurate in the light of more recent knowledge. Dr. Williams then gave a lantern demonstration upon frontal sinus operative treatment. He distinguished between the operation as carried out by Killian and the more extensive one by Delsaux, who removed the bridge and the ethmoidal cells back to the sphenoidal, thus giving the fullest expanse. He also exhibited diagrams showing his method of obtaining an osteoplastic flap, and thus getting the advantages of Delsaux's method and the lessened deformity produced by the bony bridge. Dr. Milligan then gave a similar demonstration upon the surgical treatment of labyrinthine suppuration, and showed some excellent pictures of his methods of operation. The next paper was one by Dr. Bronner, entitled, Notes on a Case of Thrombosis of the Lateral Sinus with Complete Obliteration of the Jugular Vein; and, finally, Dr. Arthur Haydon read one on Illustrations of the Effects produced by the Singing Voice in a Suitable Medium. He showed his instrument, the eidophone, and demonstrated its use. The proceedings closed with a vote of thanks to the President by Mr. Cresswell Baber, seconded by Dr. S. Spicer, and carried unanimously.

SECTION OF DENTAL SURGERY.

Thursday, August 1st, 1907.

THE discussion adjourned from Wednesday morning was resumed by Mr. Sidney Spokes (London), who deprecated the fact that physicians and surgeons still appeared to think that dental surgeons were adverse to removing temporary teeth; some of the earlier speakers did not seem to him to represent the general opinion of dental surgeons. Mr. Coleman stated that in the routine

treatment of children, about 90 per cent. of all children with carious temporary teeth showed swelling of the cervical glands, but he had no records of the numbers which ultimately developed tubercle of these glands. Dr. Gibb quoted some recent experiments of Professor Schäfer, who fed rats on two forms of diet—a pure meat diet and a control diet of milk and bread. Out of some 500 animals so experimented with, only 3 were found to have any malformation of the teeth, and in only one case was the condition of hypoplasia at all marked. Mr. F. J. Bennett, M.R.C.S. (London), had never seen, as far as he could remember, chemical or physical data for determining any difference of a quantitative nature between hypoplasic and normal enamel, and there was, therefore, some difficulty in allowing that dental caries was predisposed to by the malformation of the tooth, or that the incidence of dental caries was of greater frequency in persons with teeth possessing developmental defects. He was surprised at the sweeping suggestions as to treatment which had been made by Mr. J. F. Colyer, and he considered the higher dentistry to be the saving rather than the extraction of teeth. Mr. Lewin Payne, M.R.C.S. (Assistant Dental Surgeon, Guy's Hospital), regretted that the discussion had centred so much around the period of school age, and had rather left what was probably of equal if not greater importance—the first years of a child's life—more especially as the affection known as hypoplasia of the teeth, both in syphilitic and other manifestations due to arrest of development taking place in the early and late stages of calcification of the dental papilla. Mr. Russell Barrett, who followed, referred also to the question of treatment, and deprecated Mr. Colyer's sweeping suggestions, as, although frequently necessary, was in his opinion not quite so universal as Mr. Colyer would lead them to believe. Dr. Milligan (Barrow-in-Furness) desired to refer back the members of the Section to the fact that they were judging the mothers for not nursing the children, and forgetting that in many instances the mother was willing and even anxious to perform her full duty, but frequently was unable, so that artificial foods and feeding were essential. He thought fresh juice of fruit should always form part of the diet of a hand-fed infant, and that having regard to the frequent danger of the milk, sterilization should always be adopted. Mr. Peake (Cheltenham), Honorary Secretary of the Section, referred to an exceedingly interesting case of a family who adopted biscuits instead of bread as a regular part of their diet; all the family, with the exception of one boy who had spent most of his time from home, had very bad and continually recurring caries; the one boy had scarcely any caries at all. The President summed up the discussion, and after noting the chief points raised by the various speakers, called on Mr. J. G. Turner to reply, Mr. Edmund Owen and Dr. Still having been obliged to return to London. Mr. Turner, in his reply, said the question raised resolved itself into two main channels of discussion: First, the old question often stated, but without support of ascertained fact, that the fermentation of the stomach affected the teeth, but the onus of proof was upon those who made the statement, Was the effect wrought through the eructation of acid or alteration in leucocytosis, or through alteration of salivary and buccal secretions? But, if so, in what manner, and what was the change? The second division of the discussion was on treatment, and he saw no reason to depart from his formula. Any temporary tooth that it was impossible to render aseptic or to fill and render again functional painlessly must be removed. The President then announced that, with the consent of the Council, he would propose that Messrs. Spokes, Colyer, Underwood, Peake, Goadby, and Payne be deputed as delegates to the International Congress of Stomatology. The motion was agreed to with acclamation. Mr. W. A. Ackland (Bristol) read a paper on notes of some cases of neuralgia. The cases were grouped in three classes: (*a*) Pain in one tooth referred to another; (*b*) neuralgic and remote affections due to dental origin; (*c*) pain referred to the teeth from other parts. Some of the cases described had reflex eye symptoms. Mr. A. W. Baker, M.B., M.S., F.R.C.S.I., L.D.S.D., read a paper describing cases of difficult eruption of the third molar.

Friday, August 3rd, 1907.

Mr. F. J. Bennett, M.R.C.S.Eng., read a paper on some anatomical results of efficient mastication. Attrition of the teeth was a concomitant, he said, of efficient mastication, but was rarely seen in modern mouths, whereas it was common in most ancient races. Another common effect of efficient masticatory power was a broad and well-developed dental arch partially due to the obliquity of the lower molars, which produced a resultant force pressing outwards. The wearing away of the inner cusps of the teeth associated with attrition was confirmatory of this. The deposit of tartar was common in all secluded situations even in temporary teeth when efficient mastication kept the tooth-grinding surfaces clean, and might be regarded as Nature's preventive of dental caries of interstitial and cervical situation. The incisor teeth in ancient jaws and other modern jaws with well-developed muscular markings were never prominent, but tended rather to become opposed edge to edge. There was little indication in the teeth of any change which might be ascribed to acquired hereditary characters. In some races of men, however, some change in the shape of the teeth appeared to have taken place and the crowns to be broader and flatter and the fissures less marked. It was a point worthy of consideration in the development of a proper dental arch as to how far properly-devised exercises of the masticatory muscles would be valuable. The speaker then showed some slides of a curious fungoid growth affecting the denture of certain teeth in the jaws of a skull dug up in Ireland; the infection was *post mortem*. Mr. J. F. Colyer, M.R.C.S., L.D.S., Dean of the Royal Dental Hospital, followed with a paper on the irregularities of teeth in animals, illustrated by lantern slides. In his preliminary remarks he said he had studied the deformities of animals' jaws in the hope of finding some facts relating to the etiology of irregularities in man. Certain well-defined groups of irregularity were probable in animals, and among them he discussed: (*a*) Irregularities due to persistence of deciduous teeth, and irregularities due to crowding; (*b*) undue prominence of the superior teeth (maxillary); (*c*) displacement of teeth; (*d*) effects of rickets, the position of the teeth. Slides were shown exhibiting the various irregularities—those due to the persistence of temporary teeth were commonest in the ungulata, and in the maxilla rather than the mandible. Crowding due to want of room was common in the small carnivora in the incisor region, in the canidae in the premolar region. The latter group appeared to have some relation to the length of the muzzle as the teeth did not vary in size as did the length of the animal's jaw. In the ungulata, premolar irregularity due to crowding was rare, partially due, no doubt, to the fact that the premolars and molars underwent absorption at their points of mutual apposition. In 500 horses examined only 3 cases of premolar crowding were seen. Undue prominence of the superior incisors was fairly common in horses, and was known as parrot mouth. This condition of superior protrusion is not common in other animals, but a case of superior protrusion in a fox was shown. Complete displacement of teeth was shown in three monkeys, a wallaby, and a bear. The effect of rickets on the position of the teeth was well seen in lions and tigers. The incisors were generally displaced outwards. The bone was also thickened, as Mr. Bland-Sutton had shown, in the region of the tooth sacs. In conclusion, a hope was expressed that veterinary surgeons would give the question the attention it deserved, as much of the etiology of human dental irregularities might thereby be elucidated. In the absence of Mr. H. A. T. Fairbank, M.S., F.R.C.S., L.D.S.Lond., one of the Honorary Secretaries read his paper entitled Sarcoma of the Jaws. This contained an instructive analysis of 140 cases of sarcoma of different parts of the jaw; all the cases had been determined by means of the microscope. The ages of the patients ranged from 0–10 up to over 70 years of age, 20 cases having occurred in the first group and 2 in the last. Although in only 10 cases of the 140 was there any note of previous dental caries or pyorrhoea, the writer thought teeth were more frequently associated with this type of growth. All varieties of sarcoma were met with in the jaws,

the commonest being myeloid, or myeloma (giant celled), which variety at the same time was the least malignant. Over forty years of age the upper jaw appeared to be more frequently attacked. Myelomata were generally endosteal, and commonest in the jaws in the bicuspid and molar region. Round and spindle-celled were the most malignant, while those tending to undergo fibrosis held an intermediate position. Glandular infection was rare even when the neighbouring glands are enlarged and swollen, secondary deposits being very rare. Before operation the variety of the growth should be determined, but an exploratory incision was not advisable. Myelomata might as a rule be safely removed without making an extensive incision. With the exception of myeloid growths, operations for the removal of sarcomata from the jaws gave very unsatisfactory results. Of the myelomata noted, recurrence took place in 12 cases.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Thursday, August 1st, 1907.

THE entire second session was taken up by the discussion upon the measures to be recommended to secure the earlier recognition of uterine cancer, which was opened by Dr. Herbert Spencer. After reviewing the enormous mortality from this disease, he attributed the want of energy in attempting to cope with it to the pessimism of some distinguished operators whose results had been exceptionally unfortunate, so that many people believed that the most to be hoped from operation was the prolongation of life, recurrence of the disease being certain. This he held to be far from the truth. If a survival of five years without recurrence was accepted as a cure, at least one-third of all cases in which the disease was confined to the uterus were curable by vaginal operation. Much was claimed for the extended abdominal operation, on the absolute value of which it was too soon to decide, but its immediate mortality was about 20 per cent., and more was to be hoped from earlier diagnosis than from the most extensive extirpation of the disease. The obstacles in the way were the ignorance of the patients and their delay in seeking advice; neglect on the part of the practitioner to insist on promptly making an examination sufficient for diagnosis, or the refusal of the patient to submit to such examination, and, further, the difficulty in the diagnosis of some forms of malignant disease. The clinical features as well as microscopical methods had to be considered, but the only early symptoms were haemorrhage and discharge; pain seldom until late. Mrs. Scharlieb, M.D., said that even though recurrence was frequent, and occurred sometimes after many years, there was in cases not too far advanced the probability of prolonged good health and the possibility of a radical cure. The careful selection of cases for operation was, however, most important, as a fatal or unsuccessful operation deterred other sufferers from applying for relief. Dr. R. J. Johnstone, later in the discussion, pointed out that, on the other hand, the best missionary to suffering women was one of themselves who had been relieved by operation. Dr. Galabin suggested that when a medical man could not induce a woman to submit to a necessary examination he should refer her to one of the medical practitioners of her own sex. Professor Strassmann described the beneficial effects of Professor Winter's campaign against cancer, attaching particular importance to the instruction of midwives. After some remarks from Mr. Bowreman Jessett and Dr. W. W. H. Tate, Dr. F. J. McCann proposed:

> That a Committee of the Section should be formed to consider what steps may be taken to disseminate a knowledge of the early signs and symptoms of uterine cancer.

This was seconded by Dr. Inglis Parsons and supported by Mr. Charles Ryall. The discussion was continued by Dr. Thomas Wilson, Dr. Munro Kerr, Dr. Cuthbert Lockyer, Dr. Frederick Edge, Dr. S. Cameron, Dr. Marian Gilchrist, and Dr. George Rice. The President (Dr. Hastings Tweedy) did not think that the ignorance of public was so gross as had been supposed. Nurses and midwives were aware that haemorrhage and a foul discharge were symptomatic of cancer; indeed, any woman would, he believed, expect that if she had cancer of the womb it would cause these symptoms. Dr. Thomas Wilson moved as an amendment to Dr. McCann's motion:

> That the Council of the British Medical Association be requested to appoint a Committee to consider the best means of disseminating knowledge of the importance of the early recognition of uterine cancer;

and this, having been seconded by Dr. Herbert Spencer, was carried; and, when put as a substantive motion, was agreed to *nemine contradicente*.

Friday, August 2nd, 1907.

Dr. Cuthbert Lockyer read a paper on the operative treatment of cervix carcinoma in which on the ground of personal experience he advocated the radical abdominal operation by Wertheim's method as the only scientific operation because it minimized the risks of implantation by providing for the complete encapsulation of the diseased tissue prior to its removal. The operability of the cases coming to him had under this method been 70.59 per cent. compared with 18.5 per cent. by the vaginal way, He used no drainage. A lively discussion took place. After some remarks by Mrs. Stanley Boyd and Mr. Malcolm supporting Dr. Lockyer's views, Dr. Herbert Spencer alluded to the excellent results obtained by vaginal operations in cancer of the portio, and recommended the radical abdominal method for advanced cases only. Dr. Thomas Wilson, in advanced cases, had had a primary mortality from Wertheim's operation of more than 40 per cent. compared with 2 per cent. for vaginal hysterectomy. Dr. Munro Kerr deprecated the comparison of the mortality after the two methods, as they were done for different conditions. The President (Dr. Hastings Tweedy) pointed out that in cases advanced beyond the early stages it was not possible to follow all the details of Wertheim's technique in which he considered that the removal of the vagina was the best feature. In his reply, Dr. Lockyer expressing his sympathy with those who in operating on advanced cases, quite hopeless by the vaginal route, had had unfortunate results, said that his principle was to do the best possible for each individual patient, regardless of his own statistics. Professor Strassmann, of Berlin, then read a paper on the indications for operating upon uterine fibroids, and the methods of doing so. Among the classical indications he laid particular stress on the effect of fibroid growths in the uterus, upon the heart, and upon the complications by adnexal disease often much more important than the uterine tumours. He advocated vaginal operation, as hernia had been recorded even after the transverse suprapubic incision. Replying to Dr. Spencer, who attached great importance to the greater facility of controlling hæmorrhage by the abdominal route, the author said that there was no great difficulty in doing so in vaginal operations—two or three ligatures on each side were generally sufficient. When the uterus should be preserved, enucleation was, if possible, better than hysterectomy. The paper was illustrated by some twenty-five beautifully-mounted specimens, which had been shown in the pathological museum. Dr. Frederick Edge then read a paper on the technique of abdominal hysterectomy, and Dr. S. Cameron one upon fibroids and fibromyomatous tumours in unusual sites; and an interesting discussion followed, in which Dr. Tate, Dr. Inglis Parsons, Dr. Thomas Wilson, Dr. Munro Kerr, Dr. Walter Swayne and the President took part, and Professor Strassmann having replied, Dr. Munro Kerr reported a case of complete rupture of the uterus, with escape of the fetus into the peritoneal cavity, and Dr. Inglis Parsons, a series of 100 consecutive abdominal sections in hospital practice. On the motion of Dr. Inglis Parsons, seconded by Dr. Malcolm, a hearty vote of thanks was passed by acclamation to the President (Dr. Hastings Tweedy) for his conduct in the chair.

SECTION OF STATE MEDICINE.

Thursday, August 1st, 1907.

PROFESSOR H. KENWOOD, M.D., D.P.H., of University College, London, read a paper on the reduction of infant mortality by better management and control of the milk supply. He said that much mischief was

caused by feeding infants upon milk brought straight from the cow, but to judge from the recently published reports of municipal milk dépôts too much importance must not be attached to statistics; the factors of neglect, environment, etc., confused the true issue. What was needly chiefly was that the milk trade generally should become more keenly alive to the necessity of providing a pure supply, although perfection was probably unattainable. The milk must be pure at the source, and it was to be feared that the average dairy farmer had done very little to improve the nature of his surroundings. In this respect a lesson was to be learnt from Denmark. Pressure could be brought to bear upon the farmer by the distributor, and probably that would be the best line of action to take, as it seemed hopeless to expect much in the way of inspection from rural authorities. The establishment of municipal milk dépôts must be considered absolutely incomplete unless accompanied by infant consultations—indeed, he would advocate the latter in preference to the former. He also advocated the annual licensing of all places where milk was sold or stored, and the systematic inspection of milch cows by veterinary surgeons under the direction of the Board of Agriculture; it would thus be possible to segregate and to slaughter animals suffering from tuberculosis, coupled with suitable compensation. The dangers of sterilized milk had been exaggerated if the evidence of this and other countries was to be believed, and he considered England very backward in dealing with this question. Dr. E. W. Routley's paper on the home contamination of milk was read by Dr. Gibson of Aldershot. In it the writer pointed out that in Aldershot there were to be found two populations side by side, of 19,000 and 15,000 respectively, supplied with milk from the same sources. The infantile mortality was widely different, the difference being most obvious in the case of diarrhoeal diseases. He believed that this was almost entirely due to the superior sanitary surroundings of the camp population. In the town milk had been found to be stored in ill-ventilated rooms, some of which were overcrowded; free access was given to dust, dirt, and flies. A condition of milk supply was thus induced which must inevitably result in gastric and diarrhoeal disease. It might, he admitted, be necessary to inspect the sources of milk supply, but mainly with relation to tuberculosis, but, in his opinion, the main source of contamination occurred in the home. In the discussion which took place the following members took part: Dr. Herbert Jones (Hereford), Dr. Tidswell (Torquay), Dr. Helen MacMurchy (Toronto), Lieutenant-Colonel Davis (R.A.M.C.), Professor Starkey (Montreal), Dr. Sandwith (Cairo), Dr Wynne (Leigh), Dr. Coutts (Blackpool), Dr. Drury (Halifax), Dr. Sack Noy Scott, Dr. Barclay (Weymouth), Dr Nash (Beccles), Dr. Brown (Ayr), Dr. Parkinson (Wimborne), Dr. Bond, Dr. Drysdale (London), Dr. Gibson (Aldershot), and Dr. Straton (Salisbury). Dr. Newsholme thanked the readers and Dr. Kenwood briefly replied. Dr. Herbert Jones moved the following resolution:

That it is necessary for the efficient and operative inspection of rural milk supplies that such inspection should be made by officers not subject to periodical reappointment.

Friday, August 2nd, 1907.

Professor Starkey (McGill University, Montreal) read a paper on the economical treatment of sewage in rural communities. He commenced by alluding to the need for keeping a strict watch on the law relating to the subject; thus (1) no nuisance must be committed; (2) the water supply must be safeguarded; (3) where no sewers existed safe and proper cesspools must be constructed. There were several conditions which required notice—the single house, communities below 300 population, and larger but still rural communities. There were two kinds of rural sewage—the ordinary drainage free from excrement which was otherwise dealt with, and the mixed sewage where everything went together. But analyses showed plainly that practically the composition of the two forms was identical. Under these circumstances the speaker had always advised the mixed system as being the best, although many eminent authorities differed from him. Schemes put forward must be independent of climatic conditions, and applicable to all parts of the world if they were to be successful. In the past the cesspool had been the general rule, as giving least trouble and causing but little nuisance; but none could really be made satisfactory, they were always liable to set up infectious disease, and were incapable of being efficiently disinfected. The dry-earth closet was a simple and far superior method of dealing with human excreta. Sewage treatment was either land treatment, which gave the best results, or the artificial methods the results of which were excellent chemically but of small value bacteriologically. Land treatment was more economical, and could be of universal application; the largest rural plant of which he had had practical experience was 5,000 gallons in twenty-four hours. Broad irrigation, especial in warm weather, must inevitably be accompanied by excessive bacterial growth. The author then put forward the details of the method of tanks and distribution which he had been advocating for rural communities in Canada. A short discussion followed, in which Drs. Scott Tew (Tonbridge), Kenwood, Scott (Plymstock), and Tidswell (Torquay), took part. Professor Starkey briefly replied. Dr. Tidswell (Torquay) read a paper on the evils of smoking and chewing tobacco, laying special stress on the poisonous character of nicotine and the pernicious habit of juvenile cigarette smoking. The difficulty of giving up the habit was so great that it was obviously foolish to adopt it. The nation was certainly deteriorating from the enormous use of tobacco by every class of the community. Every boy and girl should be induced to sign a pledge never to smoke. He also alluded to the dangers produced in the individual, and to the diseases caused by smoking—notably cancer of the tongue and lip, and general paralysis. Dr. Drury (Halifax) did not feel that a case had been presented against the moderate use of tobacco, and alluded to Raleigh. Dr. McWalter (Dublin) considered that smoking might possibly be a preventive against tuberculosis. Dr. Wynne (Leigh) spoke briefly on the former, and Dr. Newsholme dealt with the relations between tobacco and tubercle. Dr. Slade-King, in a most humorous speech, opened a discussion on the isolation of the infectious sick in rural hospitals. He pointed out the difficulties which rural medical officers of health had to encounter in a typical case of diphtheria. To keep out the neighbours and their children was very difficult, and the best solution seemed to be to segregate the healthy children, and charge the cost under the head of disinfection. Dr. McWalter discussed the subject of *post-mortem* putrefaction, and condemned the present method of burial. After alluding to different systems, including cremation, he recommended a method of injecting dead bodies with formalin.

Naval and Military Section.

Thursday, August 1st, 1907.

The first paper read at the second meeting of this Section was by Surgeon C. H. Busche, R.N., who dealt with the treatment afloat of syphilis. He emphasized the necessity of keeping all cases of venereal sores and some cases of urethral discharge under regular observation, even after those conditions had disappeared, with a view to the detection of symptoms of constitutional syphilis. He urged the necessity for sending records of "venereal cases" with men wherever drafted away, so that the new medical officers might be informed of their condition, and the amount and nature of the treatment they had had. The term "syphilis" should be used only to mean constitutional syphilis. Particular attention should be paid to informing men of the nature of their disease, of the treatment necessary for its cure, and of its effect if uncured on themselves and others. Printed rules should be given to patients giving that information. The author insisted on the benefit of routine weekly inspection of all men suffering from syphilis and recommended the administration of mercury by the intramuscular injection as the most serviceable method. Local applications were necessary for active lesions, and solid copper sulphate was valuable for this purpose. The next paper was by Staff Surgeon H. L. Norris, R.N.,

on wireless telegraphy and hospital ships. These ships, regarded from a purely humanitarian point of view, were to be recommended, but in war time they would possess a certain strategical value, and therein lay a difficulty. The functions of a hospital ship were the treatment of sick and wounded under more favourable conditions than obtained in a warship, and the relieving of a ship of its wounded after an action, thus rendering it more efficient for further fighting. In that way the hospital ship acquired a strategical value. To perform her duties the ship must be on the scene with the minimum of delay after the battle, and some means of keeping in communication with the fleet was essential. A hospital ship within visual signalling distance of its fleet might by its very presence give information to an enemy of the probable whereabouts of the fleet itself, and this might be a great disadvantage when secrecy of movement was necessary. The Hague Conference laid down that belligerents had the right to control hospital ships. It was advisable that hospital ships should carry a wireless telegraphic installation. On the outbreak of war it was customary for belligerents to issue notice of what they would consider contraband, and it was possible that in future warfare wireless telegraphic installations might come under that heading; supposing, however, that such a method of communication was allowed on these ships on the understanding that it was to be used only for unwarlike purposes, nevertheless it was conceivable that trouble might arise. The necessity for hospital ships having been recognized their efficiency would be gravely lessened if the power of long-distance signalling was denied them in warfare, and although the international conference recently held on wireless telegraphy made no mention of hospital ships, it was to be hoped that such means of communication would be allowed them. Lieutenant-Colonel Caldwell, R.A.M.C., read a paper on enteric fever during active service. In the course of his remarks on the disposal of excremental matter, he urged the necessity of recognizing the importance of covering faecal matter, and commented on the results which might confidently be expected from some system of latrine accommodation which comprised the reception of such matter in a liquid medium. Such a system appeared to be realized in the latrine of the United States army. The advantages of that system would not find their limitation in the disposal of solid excreta, but would also go far to eliminate the danger—possibly more real, if less evident—of the spread of enteric by infected urine. In regard to the spread of disease by contact with the sick, the author concluded that the methods of prevention of the spread of the disease were summed up in the words—early detection, early isolation, and early removal. Surgeon-Colonel P. Broome Giles communicated a paper on the position of the volunteer stretcher-bearer. The author defended the retention of the present unit system of regimental stretcher bearers, stating that in war the actual fighting zone where the first line of medical assistance was immediately wanted was not protected by the rules of the Geneva Convention. Further, all the other lines of medical assistance were protected under the Geneva Convention, and there was the sentimental, but none the less true, idea that men fought better when they knew, and that, should they fall, they would be as speedily as possible succoured by their own comrades, and that comrades would at all risk help each other. In the opinion of the author the regimental stretcher-bearer must continue to exist; and if stretcher-bearers were used such as were contemplated to complete the war establishment of field ambulances, they could only be employed efficiently after the battle was over.

Friday, August 2nd, 1907.

At the concluding session of this Section, the first paper, read by Major N. Faichnie, R.A.M.C., dealt with water supply in camps, on the march, and in battle. The author observed that any form of analysis required time; it was impossible even for an expert to say merely by looking at it whether a water was good or bad. There were certain facts about water which every officer and every soldier must understand, the most important being that all water must be considered bad, and none that had not been purified should be used. The usual rules for protecting water must be strictly enforced, but in addition all water must be purified, not for drinking only but for washing up as well. Every time a water-bottle or water-cart was filled with unsafe water it became impure and remained unfit for use till sterilized. In the author's opinion the regulation water-bottle could not be properly cleansed inside, and because of this in hot climates it became offensive; the outer covering of felt of the bottle should be attached to the sling so that the bottle could be drawn out and put directly on the fire, thus providing an alternative method of purifying both water and bottle; further, the mouthpiece became coated with dust, which was removed by an unwashed hand or dirty handkerchief. These defects, the author contended, could be removed by the employment of the water-bottle that he had devised. A paper was then communicated by Major R. J. Blackham on the teaching of hygiene in the army, in which it was pointed out that the appearance of the new regulations for the instruction of officers and rank and file of the army in the elements of hygiene made the subject perhaps the leading medico-military question of the hour. The author suggested that the teaching of hygiene might be further extended in the public military service by the training of quartermasters in hygiene, and the institution of examinations in sanitation for officers of that class prior to promotion. The teaching of hygiene to soldiers in army schools was an essential subject for the various military certificates of education, and the adoption of hygiene as a compulsory subject for pupil schoolmasters at the Duke of York's School, and for all steps in the schoolmaster's promotion. The training of army schoolmistresses in infant hygiene at military families' hospitals, and the instruction of elder girls in army schools in the care of children, were also urged. Finally was advised the opening up of certain staff appointments involving executive sanitary duties to military medical officers, and the extension of the system of hygienic training adopted for regular troops to the voluntary or territorial forces, with the appointment of regimental medical officers as sanitary rather than surgical experts. Lieutenant-Colonel E. M. Wilson, R.A.M.C., read a paper in support of the need for a trained male *personnel* in the medical services, and concluded by referring to the scheme for the St. John Ambulance Brigade to take over the charge of military hospitals at home on mobilization when the R.A.M.C. officers and men were withdrawn for active service. That could not be done successfully unless the *personnel*, officers, and men were trained, and they could not be trained unless medical men resident in the locality would take an interest in the scheme and assist in the instruction. It was not too much, the author thought, to ask medical men to interest themselves in the local organization and to assist in the drill exercises and lectures for the men. By doing so every man would be performing a patriotic duty, and the reserve of trained men who might be called upon in time of need would be strengthened. A paper communicated by Surgeon P. T. Sutcliffe, on the treatment afloat of burns and scalds, contained criticisms on carron oil, which did not absorb discharges, required frequent change of dressing, was dirty with regard to linen, difficult to remove when other applications were chosen, and occupied considerable space in men-of-war. The advantages of lotions for the treatment of burns and scalds were also considered. Lotions were aseptic and antiseptic, absorbed discharges, required less frequent change, had stimulating properties, and the space occupied was inconsiderable. Picric acid was recommended as an application for the treatment afloat of burns and scalds. The work of the Section concluded with a paper on the choice of the field of practice, by Fleet Surgeon Home, M.D., R.N.

THE New York Board of Education has given its sanction to the establishment of a school for the deaf. It will have accommodation for 175 deaf pupils. It is intended to teach lip-reading and oral speech exclusively, and to make manual training and industrial work prominent features in the courses of instruction.

Scotland.

The Finlayson Memorial Lectureship.

It will be remembered that a fund was collected to institute a Lectureship to commemorate the life and work of the late Dr. James Finlayson. The committee have invited Dr. Norman Moore, of London, to deliver the first lecture. This invitation has been accepted, and the lecture will probably be given about the beginning of next February. By the terms of the Lectureship, the lecture must be upon some subject connected with medicine or cognate sciences.

Testimonial to Dr. Carswell.

At a meeting recently held at the invitation of the Lord Provost, it was decided to raise a fund to express in a tangible form the sympathy very generally felt for Dr. John Carswell, who was the victim of the recent shooting outrage. After some general discussion, the following resolution was adopted:—

> That this meeting, convened by the Lord Provost, expresses deep sympathy with Dr. John Carswell in the sufferings he has endured arising from the recent distressing incident, when he was shot at and seriously injured in one of the public streets of the city while in the discharge of his duty, hereby resolves to organize a subscription fund for presentation to him, as a token of the esteem in which he is held by the citizens.

The Lord Provost was appointed convener, with Dr. J. Crawford Renton sub-convener, and Mr. Nicol, the City Chamberlain, honorary treasurer.

Notification of Cerebro-Spinal Fever.

The Corporation of the City of Glasgow, as local authority under the Infectious Disease (Notification) Act, has decided to maintain in force for a further period of twelve months, that is until July 31st, 1908, the obligation at present existing to notify all cases of cerebro-spinal fever.

Cerebro-spinal Meningitis in Scotland.

During the week ending mid-day Saturday, July 27th, 2 cases were notified to the public health authorities of Edinburgh as suspicious cerebro-spinal meningitis. Of these, 1 was removed to the City Hospital, where two deaths have occurred during the week, and 10 cases remain under observation. The Registrar-General, for the same period, reports 11 deaths from this disease in eight principal towns of Scotland—7 in Glasgow, 3 in Edinburgh, and 1 in Leith. In the week ending August 3rd 2 cases were notified as suspicious in Edinburgh, 1 of which was removed to hospital. During the week 1 death occurred, and 11 cases remain under observation. The Registrar-General, for the same period, reports 14 deaths—9 in Glasgow, 2 in Leith, and 1 in each of these three towns —Edinburgh, Dundee, and Paisley.

Ireland.

Dispensary Medical Officers and their Substitutes.

Some of the dispensary medical officers in Cork and its district are at present being forced to forego their hard-earned holidays owing to the action of certain members of the Boards of Guardians under which they respectively work. Up to twelve months ago the Guardians granted an annual holiday without any stipulation, accepting the substitute whom, in accordance with the regulations of the Local Government Board, the medical officers nominated. At that time a certain number of guardians passed a resolution compelling medical officers to give a fortnight's notice of their holidays, with the result that when some of the medical officers applied for their holidays quite recently, and nominated their substitute as usual, a number of canvassed guardians attended and refused these doctors' nominations, appointing instead a protégé of their own, quite regardless of whether the substitute suited either the district or the private patients of the medical officer wishing for leave. The result has been that many of the dispensary doctors have preferred to forego their holidays entirely or else pay for their substitutes out of their own pocket. A case in point at the present time is that of Dr. Curran, of Killeagh, who, desirous of taking annual leave, gave due notice and nominated a neighbouring colleague, Dr. Orpin, to do his work in his absence, but the Youghal Board at their meeting nominated Dr. Twomey to do the work, and at the last meeting of the Board a letter was read from the Local Government Board asking the guardians to reconsider their action. After some discussion the two names were put to the poll, and Dr. Twomey got 11 votes, while Dr. Orpin got 9. Since then a stormy meeting of the Youghal Board of Guardians has taken place, and a telegram was read from Dr. Curran asking that his application for leave be withdrawn altogether, as he was determined to forego his holidays rather than not have the substitute he wished appointed. At the meeting above referred to notice of motion to rescind the resolution requiring the medical officers to give a fortnight's notice of their intention to take holidays was handed in, but the chairman refused to accept it, and a noisy meeting ensued, it being quite apparent that a vast majority of the members were for rescinding the resolution, but the chairman and his minority absolutely refused to give way or take the names of those in favour of putting the proposition. Eventually those in favour of putting the motion moved to one side of the room amid uproar, and the clerk counted 12 for the motion and 11, including the chairman, against. The majority appointed a chairman of their own, and proceeded with the business of the meeting. It was duly moved and seconded that the resolution demanding fourteen days' notice from the doctors be rescinded, and the application of Dr. Ronayne, who had also applied for leave, was granted unanimously, he naming his own substitute.

Dr. Walter Bernard.

A movement is on foot in Londonderry to present to Dr. Walter Bernard, of Londonderry and Buncrana, co. Donegal, some token of the esteem and regard which the many and valuable services rendered by him during his long professional life have won for him among all classes. The incident which has called forth this general expression of feeling at the present moment is an accident of which Dr. Bernard was the victim a short time ago, and which threatens to cloud seriously the remainder of his span of life. Dr. Bernard, who is a Fellow of the Royal College of Physicians of Ireland, received his first diploma in the year 1852, served as a volunteer surgeon throughout the Crimean war, and has for many years past been on the staff of most of the medical charities in Londonderry.

South Wales.

Ebbw Vale Doctors' Fund.

A mass meeting of the members of the Ebbw Vale Workmen's Doctors' Fund was held, under the auspices of the Ebbw Vale Trades and Labour Council, at the Drill Ground, Ebbw Vale, on the evening of July 27th. The meeting, which had been rather hurriedly convened, was held to consider the attitude of certain employees in withdrawing from the fund. Mr. W. Vyce, J.P., miners' agent, who occupied the chair, said that the meeting was called as the result of the action of certain workmen in the colliery department and one in the engineman's department in issuing summonses against the Ebbw Vale Company to prevent the company making any stoppages from their pay towards the doctors' fund. They all knew the result of the controversy that had arisen between the doctors and the workmen. Several meetings had been held between representatives of the workmen and the doctors, and at a later period Mr. Mills had acted as independent chairman of the meetings. Things were proceeding smoothly when, at the last moment, the doctors had withdrawn from the meeting and had refused to adopt the recommendations of Mr. Mills. Seeing that the game, as far as the doctors were concerned, had failed, certain of the workmen had lent themselves to the doctors, and the thin edge of the wedge had been applied to try and break up the old doctors' fund, which had, so he was informed, been in existence for ninety years. He had personal knowledge of the fund since 1868, and from that time on it had been customary for the workmen to have their contributions deducted from their pay.

A case had been heard at the last county court, before Judge Owen, and the question before the judge was whether the company was legally right in deducting the money after notice had been given. The contention of the payees to the fund was that the notice to discontinue the stoppages was insufficient without a month's notice to terminate the contract being given. When they got to the court they found that the company had been summoned by a man who had not signed No. 2 contract, and therefore it could not be looked upon as a test case. It was a very unpleasant business for all of them. When they were fighting the employers the workmen were in their right spheres, but it was very unfortunate when workmen fought workmen. There was no room for two classes of workmen in the Ebbw Vale collieries; it would have to be the whole of the agreement or nothing. "The workman," said Mr. Vyce, "who had the case in the county court can have his money from the company; but if that money is not paid over to the fund, I say there is no room for him with the other workmen." Concluding, Mr. Vyce said: "If this case goes on, we shall fight it even in court and out of court. It is either the workmen that pay to or those who do not pay to the funds who will work these collieries. I shall be very sorry that it should happen, but it will take place if they do not avoid it." Mr. Barrows proposed a resolution that only payers to the doctors' fund should be allowed to work at the Ebbw Vale collieries. This resolution was seconded by Mr. W. Garland and supported by Mr. Ll. Carter (representing the blast furnacemen) and Councillor George Davies. On being put to the meeting the resolution was carried, with only two dissentients. The meeting afterwards appointed a deputation to wait upon the management.

Sanitary Inspectors' Association.

The annual meeting of the South Wales and Monmouthshire centre of the Sanitary Inspectors' Association was held at the Victoria Institute, Port Talbot, on July 27th, when Dr. W. Williams, M.A., D.P.H., County Medical Officer, Glamorgan, presided. A resolution recommended by the Executive Council, and expressing the opinion that the time had arrived when the Sanitary Inspectors' Association should have direct representation in the House of Commons, was adopted. A resolution expressing regret at the resignation of Mr. James Harris Dean, General Secretary, and thanking him for his past services, was unanimously adopted. The Secretary submitted the annual report, and expressed disappointment with the membership since the Association's re-formation. The membership had now gone back to its original number of 32. Dr. Williams was re-elected President, and Mr. J. Towy Thomas (Pentre) was re-elected Secretary, and appointed as representative on the General Council Executive, as was also Mr. Orlidge (Panteg). Mr. D. J. Jones (Pontypridd) was appointed Chairman for the ensuing year, and Mr. J. Bowen (Newcastle Emlyn), Vice-Chairman. Mr. John Cox, surveyor to the Margam District Council, read a paper on the Margam Urban and Rural Water Supplies. He said that his Council had spent £30,000 on the water supply, and it was now, on account of the rapid developments of the district, considering the construction of another storage reservoir for 160 million gallons. After the meeting the whole of the members were driven round the docks and to the new Council offices, and thence to Margam Castle, where they were entertained to tea by the generosity of Miss Talbot, who was represented by Mr. Lipscomb, and afterwards inspected the old Margam Church, and ruins and gardens. A hearty vote of thanks was accorded to Miss Talbot and Mr. Lipscomb for their kindness.

Manchester and Salford.

Health of Salford and the Physical Standard of its Schoolboys.

From the annual report of the medical officer of health of Salford, we learn that the male population is estimated at 113,136 and the female 120,941. There were 7,059 births registered, equal to a birth-rate of 30.2 per 1,000 of the population, which is a reduction on the previous year of 0.4 per 1,000. The death-rate was 18 5 per 1,000. Amongst Lancashire towns, as to infantile mortality, Salford stands fourth, the order being Bolton 140, Oldham 146, Blackburn 156, Salford 162, Manchester 167, Liverpool 172, Preston 199, and Burnley 212. This is an increase on the previous year, but is under the average of the preceding five years. The death-rate amongst the 956 infants visited by the health visitors was only 119 2 per 1,000, as compared with 162 for the whole borough. The report states:

> Considering that the work is confined to the poorest districts of the town, this result of our efforts is most satisfactory. Further, the proportion of breast-fed infants has increased from 83.4 to 87.8—this showing one good influence of our health visitors. As usual, the effect of breast-feeding, even if only partial, is very clearly shown, the death-rate among children fed from the bottle alone being 480 per 1,000, as compared with 91 per 1,000 among the breast-fed.
>
> The death-rate for the year in the whole of England and Wales was 15.4 per 1,000, in the 76 great towns it averaged 15.9, and in Salford it was 18 per thousand.

There is an interesting report on the measurements of boys taken at three age-periods, 8, 10, and 13 years, in six elementary schools. One table shows measurements of schoolboys in Edinburgh and Glasgow, with boys in English artisan class.

The returns are:—Height: Boys, 8 years of age, Salford, 3 ft. 10.1 in.; Edinburgh, 3 ft. 9 8 in; Glasgow, 3 ft. 10.6 in.; English artisan, 3 ft. 11 in.; Anthropometric Committee standard average, 3 ft. 11 in. Ten years of age—Salford, 4 ft. 1.9 in.; Edinburgh, 4 ft. 2.7 in.; Glasgow, 4 ft. 3.7 in.; English artisan, 4 ft. 2.5 in.; public schoolboys, 4 ft. 5 in.; Committee average, 4 ft. 3 8 in. Thirteen years of age—Salford, 4 ft. 6 4 in.; Edinburgh, 4 ft. 7.8 in.; Glasgow, 4 ft. 7.6 in.; English artisan, 4 ft. 7.5 in.; public schoolboys, 4 ft. 10.5 in.; Committee average, 4 ft. 8 9 in.

Weight (8 years of age):—Salford, 44.6 lb.; Edinburgh, 45.3 lb.; Glasgow, 44.0 lb.; English artisan, 52.0 lb.; Committee average, 49 9 lb. Ten years of age—Salford, 53 3 lb.; Edinburgh, 55 6 lb.; Glasgow, 52.4 lb.; English artisan, 59 0 lb.; public schoolboys, 58 0 lb; Committee average, 62 5 lb. Thirteen years of age—Salford, 66.6 lb.; Edinburgh, 70 6 lb.; Glasgow, 70 0 lb.; English artisan, 71.0 lb.; public schoolboys, 79.0 lb.; Committee average, 77.6 lb. (Two pounds should be deducted from the weight of Salford boys.)

British Pharmaceutical Congress.

The forty-fourth annual conference of the British Pharmaceutical Society was held in Manchester on July 23rd and the following days and was attended by delegates from all parts of the kingdom. The President was Mr. Thomas Tyrer, of London, who in his address emphasized the fact that in the process of scientific research it is not a matter of guesswork, and he recalled some of the many triumphs of scientific technology—the direct result of research—such as the utilization of atmospheric nitrogen for fertilizing materials in anticipation of the shortage of Chilian saltpetre. Many papers were contributed on such subjects as the Testing of Drugs, by J. P. Gilmour; Pharmacy Notes from various parts of the World, by Dr. W. H. Martindale of London; the Bacteriology of Plasters and Protective Tissues, by G. Pinchbeck, who found that all plasters, unless sterilized, are septic, while the degree of sterility was diminished by atmospheric exposure; the bases of water-soluble plasters—isinglass, gum arabic, honey, or glycerine—were rich in bacteria, and formed an excellent culture medium for bacteria. In future improved formulae, on a rubber basis and properly sterilized, was suggested. Carrying plasters in the pocket greatly increased the number of colonies of bacteria found in the plasters. Mr. Martindale's paper was particularly interesting, and a full account is given in the *Pharmaceutical Journal* for July 27th. Professor R. B. Wild read an important paper on Artificial Calamines and their Use in Dermatological Practice; while Professor Weiss gave a most suggestive paper on Immunity to Disease amongst Plants. A large number of the delegates visited the pharmaceutical laboratories of the University.

Russian Universities.—In 1906 the number of universities in Russia was 10, with a total number of 25,000 students. These were distributed among the several universities as follows: Dorpat (founded in 1632), 1,908; Helsingfors, in Finland (founded in the same year), 2,640; Moscow (founded in 1755), 5,489; Kharkoff (founded in 1804), 1,380; Kasan (founded in the same year), 1,255; Kieff (1832), 3,000; St. Petersburg (1819), 4,508; Odessa (1865), 2,066; Warsaw in Poland (1869), 1,400; Tomsk, in Siberia (1888), 786.

ROYAL LEAMINGTON SPA.

Though the healing powers of baths and natural mineralized waters have been recognized from the remote ages, it is very curious how the virtues of both have fluctuated in public estimation, and how the balneological and meteorological excellencies of one country or of one spa have held the popular fancy for a time, to be replaced by those of another according as municipal enterprise or medical conviction has prompted the setting of the fashion of the day.

At the present moment it may be assumed that both these factors have been actively at work in the watering places of our Continental neighbours, and have given to them a notoriety which has attracted visitors to their pump-rooms and Kursaals from all parts of the world.

No health resort at home has hitherto accomplished a striking and lasting success such as has been achieved by, say, Carlsbad or Homburg, though Bath, Harrogate, Buxton, Strathpeffer, and other less important British towns whose reputation has been built upon the mineral springs with which Nature has endowed them have been no mean competitors.

Early History.

In the case of Leamington with which we are now specially concerned, there was a time in its history when it bade fair to rise into fame and occupy a permanent position of prosperity. So great was its popularity in the earlier decades of the nineteenth century that no fewer than 120 stage coaches arrived and departed from its various hotels every week. The town was crowded with visitors of all grades of society who came to seek at its springs the restoration of their health, and to derive from the natural beauties of its surroundings that peaceful and restful influence which, even in those days when the world went slow, seems to have been recognized as an antidote to wear and tear. From the beginning of the century its tide of patrons flowed without intermission, and the crowning glory of its popularity was reached in 1830, when the Duchess of Kent, accompanied by her daughter, the Princess Victoria, paid the town a visit, which has become historical. We are told that the future Queen of England, who is described as being then "a very interesting child between 11 and 12 years of age," was received by the inhabitants with unbounded enthusiasm. In 1838, shortly after her accession, Queen Victoria authorized Leamington to style itself "Royal," and in 1858 Her Majesty again honoured it with her presence. In 1875 the Privy Council granted the town a Charter, which directed that the Corporation should consist of a mayor, six aldermen, and eighteen councillors. On July 12th of that year Alderman Wackrill was chosen the first Mayor.

The Victoria Bridge.

Comparison with Foreign Spas.

It is not difficult to understand the reasons of Leamington's popularity if consideration be given to the many claims it possesses to public favour; the surprising fact is that its many attractions fail to draw the present generation of health seekers in anything like the same degree as their forefathers. One reason obviously is that the introduction of railways and other means of communication has brought within convenient reach health resorts abroad which in these earlier days were only to be thought of by those to whom time, money, and the fatigues of a long and trying journey, first by sea and then by land, were difficulties that could be comfortably overcome. But this fact is by no means comprehensive enough to be fully explanatory of the decadence which has taken place. Those in authority at foreign spas have risen to the necessities of the situation better than our municipalities and county councils at home. They have exhibited an enterprise in the development of their health resorts which must be imitated in this country if competition with them is to have a chance of being successful. The mere drinking of alkaline or sulphated waters is not the end-all and be-all of the cure at a spa. The chemical properties of its natural springs gives to each spa the cue to the class of disorders for which the waters may reasonably claim to be suitable, but the difference chemically between the waters of Leamington and those of, for instance, Carlsbad or Homburg is so small that it is safe to affirm that the effect of all of them on the human economy is practically identical. But in this country we have failed to recognize that if the waters of a spa are to command the worship of the sick and afflicted, they must be made the peg upon which to hang such a series of attractions, discipline, and amenities otherwise, as will make the place worthy of an annual visit because of the necessity which residence there compels to a certain routine of life, and because of the comfort and pleasurableness with which that routine can be submitted to. In order that full benefit may be achieved from the imbibition of natural waters, time is an essential condition, and experience in all health resorts has declared that not less than three or four weeks is required for the human body to yield the best response it is capable of to the therapeutic influence of baths and water-drinking. Is it possible for human nature, except in its most stoical exponents, to contend patiently with the tedium of such a course of treatment unless ample facilities for reducing the monotony to a minimum by providing suitable amusements, social attractions, and a well-ordered routine of meals, exercise, baths, and rest—in addition to the primary necessity of drinking at the springs—are furnished by those to whom the destinies of any spa are committed? We believe not, and we are convinced that until the methods which have

succeeded so conspicuously on the Continent are adopted in this country, the health resorts in these islands are more likely to languish than to prosper. If Royal Leamington Spa is seriously desirous of regaining its former pre-eminence and of becoming again both prosperous and fashionable, let its town councillors and medical practitioners lay their heads together and resolve to make a new start on more enlightened lines. Let them agree to sink minor differences of opinion and elect a conjoint committee to study the methods of their more successful compeers. Let them resolve that the interests of their town as a spa shall be supreme, and that whatever can be achieved by judicious and generous expenditure shall be carried out in order to command the success which Nature has put within their grasp by giving them an inexhaustible supply of curative waters which are admittedly valuable. If the inhabitants wish to make their town a spa of first-class importance, let them come to the assistance of those in authority by providing them with the capital, either voluntarily or by submission to a tax, which is essential to the proper elaboration of a scheme likely to achieve success. If the mode of life which is enforced in the successful foreign spa were initiated and strenuously maintained at Leamington, or any other health resort at home, the visitors who came to "do the cure" would readily acquiesce in the regulations laid down for their guidance, and the benefit to their health would be as great at home as abroad. The preservation of health is one of the strongest instincts implanted in humanity; those who seek the restoration of spent energies, the re-establishment of functional activities, or the cure of organic ailments willingly submit for a season to restrictions and self-denial—in that spirit they seek the advantages of health resorts and put themselves under the guidance of medical advisers—but they must be convinced that the lines of management along which they are asked to travel are conceived in a reasonable and scientific spirit, and they insist that they shall not be expected to follow these lines at their own sweet will and after the manner of their own choosing. On the contrary, they ask to be gently but insistently pushed along the path of physiological righteousness, and to this end the atmosphere of the place to which they go for cure must so inspire them with the necessity for obedience to rule and attention to detail that they cheerfully join the multitude and in unison act in the spirit as well as according to the law of the curative process. In matters of health, as of everything else, it is easy to go with the crowd, but extremely difficult to exercise individual austerity. The waters of Leamington are no different to-day from what they were a century ago, when the British world of letters and fashion was attracted to its salubrious springs, and, given the necessary conditions of medical supervision, social inducement, municipal enterprise, and aristocratic example, the spa would rapidly regain its pristine popularity, and might aspire to a world-wide reputation.

Interior of the Pump Room.

Situation.

The town occupies a most attractive position in the very heart of England. It is divided into two parts—the old and the new; the former is situated on the south side of the Leam, on the site of the original village of Leamington Priors, and the latter, which is entirely modern, stands on the north side of the river. Though it cannot compare in antiquity with its near neighbour, the county town of Warwick, it is referred to by one historian as "existing in the form of a quiet township in the gloaming of the seventh century"; it is also mentioned in the eleventh century in Doomsday Book under the title of "Lamingtone"; and in the seventeenth century accurate information concerning the hamlet and its inhabitants can be gathered from the returns of the hearth tax. According to "a duplicate of all the hearths and stoves returned att Michaelmas, 1663," Leamington then contained no more than forty-six cottages and other residences which came within the compass of this unpopular imposition. In the following century and a half the uneventful life of the obscure village on the Leam was undisturbed by any marked developments. The existence of a mineral spring was locally a matter of common knowledge, but it was not until Abbotts made his important discovery of a second spring that the possibility of the prosperity which might ensue upon the proper use of the gifts which the Gods had provided animated the ambitions of the inhabitants and encouraged them in the year 1806 to adopt a resolution that a new town should be established on the north banks of the river. It is placed on record in Mr. Dudley's *Complete History of Royal Leamington Spa*, that "George Stanley, mason, of Warwick, laid the first brick of the first house, erected at new Leamington, October 8th, 1808." The expectations and hopes of those who participated in the rejoicings which we may be sure accompanied this important event in the history of the small community, close upon a century ago, find their realization to-day in the existence of a well-planned and attractive town, which clusters round a wide central thoroughfare known as The Parade, where are to be found shops bearing favourable comparison with those of any provincial town in the kingdom. The churches and public buildings are of a varied and pleasing style of architecture, and at the lower end of the Parade stand the Royal Pump Rooms and Baths, which were originally erected in 1813 at a cost of £30 000, but which have since been repeatedly enlarged and improved, until they now form an imposing pile close to the Victoria Bridge which spans the River Leam.

Pump Rooms and Baths.

The building consists of a central block with two wings, having a frontage of 106 ft., with a broad stone colonnade supported by Doric columns. In the interior is a spacious and lofty hall measuring 104 ft. by 30 ft., which contains one of the wells from which the spa waters are drawn. Several portraits adorn the walls, and it is comfortably furnished with lounges for the convenience of those who come to drink the waters. The baths occupy that portion of the edifice which lies behind this central hall, and are unusually complete. There are two large swimming baths—one for gentlemen, measuring 110 ft. by 40 ft., and another for ladies, measuring 70 ft. by 30 ft. Each bath is floored with Minton tiles, has a depth varying from 3 ft. at one end to 7 ft. at the other, and is supplied with filtered river water, which is kept at a uniform temperature of 68° F. Closely adjoining the swimming ponds is a comfortable, well-arranged, and thoroughly-ventilated Turkish bath, consisting of three hot rooms and a cooling room, and looked after by male and female attendants, who are experienced rubbers. In addition, there is a large choice of baths, which are supplied according to medical directions; they comprise needle, pine, sulphur, and other medicated baths; reclining and immersion baths; douches and wave baths; electrical baths; Nauheim effervescing baths; vapour and shower baths, etc. Among the more recent increases to the equipment may be mentioned a room devoted to the douche system as practised at Vichy; another to the combined system of douche and massage for which Aix-les-Bains has become famous; another to the Dowsing system of treatment by electrically superheated air; and yet another for the application of d'Arsonval's high-frequency electrical methods, and of the Roentgen rays. The whole establishment is lighted by electricity, and is under the experienced management and personal supervision of Mr. Charles Ravenhill.

The Royal Pump Room and Baths.

Gardens.

Immediately adjoining the Pump Rooms are the gardens, of several acres, which belong to it, and which are open to all comers. These gardens constitute one of several public parks which form a delightful feature of the Royal Spa. A far-seeing and spirited policy carried out by successive corporations since the early days of Leamington's development has resulted in placing the present Town Council in the enviable position of owning over fifty acres of parks, pleasure gardens, and public walks. In addition to this, almost every street is lined with chestnuts, limes, or other varieties of trees, and, stretching out in all directions like the spokes of a wheel, from the Parade towards the suburbs of the town are stately avenues which afford grateful shade from the glare of the sun in summer, and form a succession of boulevards of equal beauty to those with which we are familiar in Paris, Brussels, Berlin, and other Continental cities.

Warneford Hospital.

The town is able to boast the possession of an excellent hospital. The original building was erected in 1832, and derives its name—the Warneford Hospital—from the Rev. Dr. Warneford, Rector of Bourton-on-the-Hill, Gloucestershire, who was its most generous patron in these early days, and who, in the course of his life, is said to have dispensed about a quarter of a million of money in support of various charities. Since its foundation the hospital has been more than doubled in size and it may be said safely that no provincial town of like size provides better for the needs of its sick poor. Of the earlier members of its medical staff, special mention may be made of Dr. Amos Middleton, who died in 1847, and who is regarded as the father of the medical profession at the Spa; and of Dr. Jephson, who died in 1878, and who, both by his striking individuality, strenuous professional ability, and generous liberality, did more than any other one man to gain for Leamington its popularity as a place of cure.

Dr. Jephson.

Dr. Middleton's portrait occupies a place beside that of the Rev. Dr. Warneford in the Committee Room of the Warneford Hospital, and an excellent likeness of Dr. Jephson is prominently placed in the Assembly Hall of the Pump Rooms. One of the largest gardens in the town is also named after this great and remarkable physician.

If the measure of greatness is worldly success, Dr. Jephson's career was conspicuously remarkable. On referring to the obituary notice concerning him which appeared in the British Medical Journal of May 25th, 1878, we find it stated that "The income he made is almost fabulous, and we have reason to know that for several years together it exceeded £20,000, and that it once reached £24,000 in one year." The writer may well describe such a princely income fabulous when it is remembered that it was earned, not from gigantic fees for surgical operations, nor in a crowded centre of population, but from the hard grind of constant duty as a physician in a small provincial town, from whose saline waters Dr. Jephson derived the inspiration which enabled his industry and acumen to amass a fortune which, even in these days of more lucrative professional emoluments, must excite the wonder—perhaps also the envy—of the most successful among us. No man in Leamington since Dr. Jephson has, we take it, succeeded in repeating his phenomenal achievement, but the town owes much to the excellence and energy of its medical practitioners. Many of them have served it well,

not only as physicians and surgeons, but also as philanthropic and patriotic citizens. Its municipal records bear witness to much public service willingly given to the development of its government and the extension of its resources by members of our profession actively engaged in busy practice; the most notable instance in its recent history being the successful occupancy of the mayoral chair over three successive terms of office by Dr. T. W. Thursfield.

THE WATERS OF THE SPA.

The mineral waters of the Spa are mostly derived, at the depth of from 30 to 40 ft., from the sandstone rock upon which the town is built. The first mention of the existence of a mineral spring was made by Camden in 1586, and this spring, under the title of the "Old Well," still exists.

In 1784 Abbotts discovered a second spring; and to William Abbotts and Benjamin Satchwell, two far-seeing men of humble origin, posterity has impartially awarded the honour of being the founders of the Spa.

In 1790 a third spring was discovered, a fourth in 1804, a fifth in 1806, a sixth in 1808, and a seventh in 1819. Several springs of minor importance have since then been opened up, the last being bored for in the Jephson Gardens as recently as 1901. Of all these springs only five are now in use, but their yield is practically unlimited. As to the chemical composition of the waters, the subjoined analysis by Dr. Bostock Hill may be accepted as trustworthy and up to date:

The Parade.

Sodium	52.530
Magnesium	3.310
Calcium	10.900
Chlorine	65.750
Sulphuric acid	22.810
Oxide of iron	0.005
Silica	a trace
Carbonic acid	a trace
	155.305 grains per pint.

Or by another method of computation, as set forth by Dr. Meymott Tidy:

Sulphate of sodium ...	35.07
Chloride of sodium ...	86.62
Chloride of calcium ...	20.79
Chloride of magnesium ...	11.86
Silica	0.12
Iron	0.11
	154.57 grains per pint.

The quantity of the water ordered to be drunk, in most instances, is from 10 to 20 oz., taken before breakfast, but considerable variations are found in the needs of different patients.

The action of the water is that of a mild and usually quite painless aperient, peristaltic action being gently stimulated. It would appear also to exercise some selective action on the kidneys, for an habitual effect is an increase in the urinary output.

It is of interest to reproduce the following collective pronouncement on the curative effects of the waters made by the medical staff of the Warneford Hospital so long ago as 1855:

Leamington Hospital,
12th December, 1855.

We, the Medical and Surgical Officers of the Warneford General Bathing Institution and Leamington Hospital, having been requested by the Committee to enumerate the principal maladies in which we find the Leamington Waters useful, beg to state that they are more particularly useful in the following maladies, whether used internally as a medicine, or externally in the form of baths, whether cold, hot, shower, or douche.

Most forms of dyspepsia and consumption; in derangements of the liver, especially in congestion of that organ, as also of the spleen and other abdominal viscera; in jaundice; in some forms of diseases of the central nervous system, especially in the sequel of acute attacks, such as paralysis, etc; in epilepsy (occasionally); in cholera, hysteria, neuralgia; in many forms of deranged kidney; in gout; in most forms of rheumatism, more especially the subacute and chronic; in many periosteal affections; in scrofula; in many cases incidental to females; in most subacute and in almost all chronic affections of the skin, especially eczema, herpes, lepra, psoriasis, etc.,

HENRY HOMER, M.D.,
SAML. J. JEAFFRESON, M.D, LL.M Cantab.
Fellow of the Royal College of Physicians
the Royal Medico-Chirurgical Society, etc.,
WILLIAM MIDDLETON, F.R.C.S.,
R. JONES, F.R.C.S.,
JOHN HITCHMAN.

To the Trustees of the Warneford Leamington Trust.

LITERATURE.

Among treatises which have been published on the waters, the two most important are by Dr. Amos Middleton in 1806 under the title of "A Chemical Analysis of the Leamington Waters, with a Practical Dissertation on their Medical Effects; Illustrated by Cases to Prove their Efficacy in the Cure of Scrofula and Scorbutic Tumours, to which are added Instructions for Cold and Warm Bathing"; and by Dr. Francis Smith in 1884 under the title of "The Saline Waters of Leamington, Chemically, Therapeutically, and Clinically Considered, with Observations on the Climate of Leamington."

Climate.

As regards climate, Leamington may fairly claim to be equable and salubrious. It stands 195 feet above the sea level, and, being surrounded by an open, undulating, well-wooded country, the air is fresh and healthful. In the hot months of summer it is somewhat relaxing, but at other times of the year it is invigorating, and is stated to have a more even temperature than that of most inland watering places in the country, while its rainfall is well below the average. Every precaution is taken by the Corporation to maintain the sanitation of the town in the most perfect state, and the success of their efforts is strikingly illustrated in the death-rate, which Dr. Sam. Browne, the medical officer of health, reports to have been only 14.3 per 1,000 of the estimated population for 1906. The average for the preceding ten years was 14.7. The water supply is derived from artesian wells, and is free from any suspicion of organic impurity. The sewage is taken some miles away for treatment, and the arrangements for dealing with it are excellent. Infectious cases are at once removed to an isolation hospital outside the town.

Since the beginning of last century, when the new town was brought into being, the stationary population has been a gradually growing one. In 1811 the inhabitants numbered 543; in 1851, 15,723; in 1891, 23,124; and in 1906, 27,140. No official record is kept of the number of visitors to the Spa—an omission which seems to us unfortunate—but the number of persons who make use of the baths reaches an annual total of somewhere between 15,000 and 20,000.

Provision for Amusements.

The authorities have not been altogether asleep in the provision of suitable amusements for their patrons. Music is supplied by two bands daily during the summer months, in one or other of the pleasure gardens or in the Assembly Hall at the Pump Rooms. Afternoon and evening vocal concerts are provided periodically, and there is a modern theatre, open all the year round, at which leading companies from London and elsewhere appear. Archery, lawn tennis, and croquet tournaments are features of each season's arrangements. One week is annually devoted to cricket and another to polo. There are three golf clubs, a polo club, two cricket clubs, three hockey clubs, and a tennis court club. There are two racecourses, one at Leamington and another at Warwick, where meetings are held periodically; and for those who love "the chase," there is a choice of no fewer than four packs of hounds easily accessible. The Bucks Otter Hounds visit the district from time to time, good sport being obtained both in the Avon and the Leam; and two coursing meetings are held each year at Wappenbury, a village distant about five miles from the Spa.

The town is well supplied with hotels and boarding houses, while private apartments in pleasant situations are numerous.

Places of Interest in the Neighbourhood.

This attractive health resort possesses yet another unique characteristic: it is situated in the heart of a country whose historical associations are replete with interest. Warwick, Stratford-on-Avon, Kenilworth, and Coventry are all within driving distance. Edge Hill, where Charles I fought his first battle with the Parliamentary forces, is fifteen miles distant by road; and George Eliot's country in the neighbourhood of Nuneaton is within nineteen miles by rail. Here, surely, is variety enough to satisfy the appetite of all who take pride in the history and literature of our land. Many eminent men have visited the locality and written of the beauty and interest of its environments. We venture on one quotation only from these numerous writers, but it is graphic enough to be worthy of recall. After Ruskin had stayed at Leamington as a patient of Dr. Jephson, he thus worded his impressions in *Praeterita*:

> The autumn weather was fine, the corn was ripe, and once out of sight of the Paddock, the Pump Room, and the Parade, the space of surrounding Warwickshire, within afternoon walk, was extremely impressive to me in its English way. Warwick tower in sight over the near tree top; Kenilworth within an afternoon walk; Stratford to be reached within an hour's drive with a trotting pony; and round them, as far as eye could reach, a space of perfect England, not hill and dale, that might be anywhere—but hill and flat, through which the streams linger, and where the canals wind without lock.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

A quarterly meeting of the Medico-Psychological Association was held on May 16th, Dr. Robert Jones (Claybury), President, being in the chair.

Drs. W. Ford Robertson and Douglas McRae read a paper, entitled, Further Bacteriological and Experimental Investigations into the Pathology of General Paralysis. They described the results obtained from the application of Gordon's litmus broth tests to a number of strains of diphtheroid bacilli, positive to Neisser's stain, and isolated from cases of general paralysis and tabes dorsalis. They had found that two types of diphtheroid bacillus were specially common—one having the broth reactions of the Klebs-Loeffler bacillus, that is to say, giving an acid reaction in glucose but not in saccharose; the other differing from this in giving a distinct acid reaction in saccharose as well as in glucose, seemed, in respect of its negative reactions to starch, salicin, lactose, and dextrin, to be different from any previously-described diphtheroid organism. Some strains of both of these types had been found to be virulent, in varying degrees, to inoculated mice but not to guinea-pigs. They then described the effects on rats of prolonged feeding with cultures of these particular bacilli. Reference was made to the results previously recorded by the observers themselves of a similar experiment with a bacillus of the first species, and they insisted that the symptoms and lesions produced in the animals closely resembled those of general paralysis. In their more recent experiments they had found that a bacillus of the second type was capable of causing an acute and chronic paralytic disease in rats, and that lesions similar to those of general paralysis were again produced. They propose to name these two species of diphtheroids respectively *Bacillus paralyticans longus* and *Bacillus paralyticans brevis* They believed it probable that there were other species of diphtheroids capable of exerting a similar pathogenic action. They also recorded observations showing the rise in the "intracorpuscular bacteriolytic index" of sheep during the process of immunization, and also other experiments showing the rapid destruction of these bacilli when injected into the immunized sheep. The latter observation, they contended, served to explain the difficulty of obtaining cultures from the blood of cases of general paralysis, although the bacilli were known to be present by a study of blood films. They next discussed the question of the infective focus in general paralysis and tabes. With regard to the latter disease, they upheld their opinion that the special point of invasion was the bladder, but they now would extend the possible area to the whole of the genito-urinary tract and the lower portion of the alimentary canal. On the ground of more recent observation they now drew a similar inference with regard to general paralysis, and maintained that the infective focus in this disease was chiefly in the buccal and naso-pharyngeal mucosae. In a series of cases they had obtained microscopical evidence of the actual invasion of the tissues in these regions by diphtheroid bacilli. As in previous papers, they insisted upon the fact that the diphtheroid group was composed of far more species than had been generally supposed, and that the bacillus of acute diphtheria is not the only one that is pathogenic to man. Mere presence of diphtheroid organisms upon mucous surfaces was of little significance. It was necessary to find evidence of tissue invasion; and the occurrence of such invasion could be demonstrated in cases of general paralysis. The rational therapeutic aim was the eradication of the infective focus. They had been endeavouring, with a certain degree of success, to effect this object by the use of specific bactericidal serums. They hoped to deal with this portion of their work at the annual meeting of the Association in July.

The President said the question seemed to be essentially one for the bacteriologist He had hoped that Dr. Mott would have been present at the meeting, but he was unavoidably prevented. He (the President) had helped Dr. Flashman, who was working at Claybury, to get cultures from the throats of subjects of various forms of insanity, and those were taken to Dr. Eyre for further investigation. Perhaps Dr. Eyre would describe the results of his investigations.

Dr. Eyre said that, in the first place, he wished it to be

clearly understood that wherever his opinions differed from those of Dr. Ford Robertson it was purely a difference of opinion, for his aim was the same as that of the author—to get at the ultimate truth. He had hoped to have had more time to look over some of the records of the Bacteriological Department of Guy's Hospital to find the number of clinical specimens in which one could detect micro-organisms morphologically comparable to those which Dr. Ford Robertson had introduced as being closely associated with the production of general paralysis of the insane. But he had only had time that day to run over the records of two or three months. But even in that time he had been able to pick out a lot of cases where organisms which, for purposes of statistics, he regarded as diphtheroids, had been isolated, and where he had considered they had not had any causal association with the condition under investigation, and he had merely made a few observations so as to see that they were not the true diphtheria bacillus—the Klebs-Loeffler—and had then discarded them and gone on to the other organisms present in the material under examination. He found, for instance, that there was a case of tuberculous meningitis, where cerebro-spinal fluid was drawn off during life, and the only organism which could be obtained in the cultures from that material was an organism which, morphologically, was almost identical with the Klebs-Loeffler, but it was non-virulent, and had certain other cultural peculiarities, which led him to call it, provisionally, the *Bacillus xerosis*. Some fluid from the pleura showed the same thing. Then there were two cultivations of the blood taken during life from cases of (?) infective endocarditis, and here, again, an organism was cultivated which was diphtheroid but not true diphtheria. In tuberculous cystitis, again, there was found the xerosis bacillus in company with the tubercle bacillus. In material from antral disease he had found the *Staphylococcus albus* and the *Bacillus xerosis*. He had not bothered about the film preparations of pus, etc., from chronic gleets, cases of gonorrhoea, and vaginal discharges, and so on, because, as was known to those who were accustomed to do much work on material supplied by general hospitals, the xerosis bacillus, or at any rate a diphtheroid bacillus, was the commonest organism found in that material. What he had said was based upon 500 or 600 ordinary bacteriological examinations, carried out during a period of about three months. That would go to show that diphtheroid organisms were quite common contaminations of clinical material; that diphtheroid organism was not the diphtheria bacillus, and very frequently it was undoubtedly one or other of the types of xerosis bacillus. His own impression was that many of the organisms which Dr. Ford Robertson had been working with were types of xerosis. With regard to the cultural characters, Dr. Robertson had given some of the results of his cultivations in sugar media and carbohydrate media generally. Those reactions for the diphtheria group were worked out first by Knapp, in America, and he showed that with the organisms he was testing he could make out a fairly constant and definite difference between the three main types, namely, Klebs-Loeffler bacillus, Hoffman's bacillus, and the xerosis bacillus. One of the peculiarities of His's medium was not only that it showed the production of acid, but also that the medium became semi-gelatinous, almost clotted, because it was prepared with serum-water. Again, Gordon had been able to distinguish those three or four types by sugar reactions. It seemed to the speaker that when one commenced to include very large numbers of types, and strains of each of those types, in one's sugar tests, one found that the reactions were not absolutely constant, but one found the Klebs-Loeffler bacillus fermenting, not only glucose, but many of the other sugars. And fermentation in dextrin or starch was fairly characteristic of the diphtheria bacillus; and if one took a large number of strains it would be found that the xerosis bacillus did not usually ferment glucose, though many of the strains would ferment glucose; and so on with all those organisms. In fact, the same thing happened with the diphtheria group of bacilli when tested as to sugar reactions as happened with streptococci. Streptococci and staphylococci were said to be capable of differentiation according to their sugar reactions, but when they had been tested at varying intervals, after isolation, it was found that their sugar reactions were not absolutely constant, but one group would run imperceptibly into another. Another point upon which Dr. Ford Robertson laid considerable stress was the reaction to Neisser's stain. Neisser's staining method was not a constant attribute restricted to the bacillus of diphtheria, to start with. Taking large numbers of diphtheria bacilli examined when first isolated from the body, it would be found that 70 per cent. or 80 per cent. gave a very definite and characteristic "Neisser" stain, but the remaining 20 per cent. or 30 per cent. did not give that reaction. The Hoffman bacillus differed very markedly, in morphological character, from the Klebs-Loeffler bacillus, so that it scarcely entered into consideration. But as a matter of fact about 40 per cent. of the strains of Hoffman's bacillus, when first isolated from the human body, would give a very typical Neisser reaction, in which metachromatic granules would be apparent. But they often varied rather from those presented by the diphtheria bacillus in their arrangement and size. Of the various types of xerosis bacillus, 70 per cent. gave a permanent Neisser reaction, with metachromatic granules which were indistinguishable from those presented by the bacillus of diphtheria. Therefore it seemed to him that the "Neisser" differentiation of those diphtheroid organisms which were responsible for the production of general paralysis of the insane was hardly sufficient to justify the statement that those were not xerosis bacilli on the one hand, or were not, occasionally, diphtheria bacilli on the other. Then, again, there seemed to be something lacking about the experimental work. For instance, the animals being fed on those micro-organisms for such a long period, yet did not show any marked symptoms for a long time, and then when they had been kept in captivity twenty or forty weeks, and when death occurred, the fact that the organisms were found in them did not necessarily support the suggestion that death was due to the organisms. A good deal might happen to animals kept in confinement so long.

Dr. FORD ROBERTSON: But the controls were not affected, though they were in the same room.

Dr. EYRE said he failed to catch what Dr. Ford Robertson's objection was, but probably the meeting would be told more by him. The only other point he wished to mention was, that the estimation of the bacteriolytic index of the sheep before and after immunization, depending on alterations in the bacilli, was surely open to a very big difference of interpretation, just in the same way as the identification of altered bacilli in the leucocytes of the patient was also open to a grave fallacy. He would be very glad to hear the exact method of estimating those alterations, and of the steps taken to render it absolutely certain that what were suggested to be "altered bacilli" in the leucocytes of the patient were really the remains of diphtheroid bacilli.

Dr. DAVID FERRIER said he feared that on most of the subjects brought forward in that paper he was not competent to express an opinion, because he was not a bacteriologist. But as he had ventured to comment on Dr. Ford Robertson's views in a spirit of scepticism, he would like, on the present occasion, to define his attitude exactly in regard to them. He had expressed the view, in harmony with Dr. Mott and others, that tabes and general paralysis of the insane were the same disease, and that in all cases not only was the prime origin for the most part syphilitic infection, hereditary or acquired, but the degeneration itself was not syphilitic, in so far as it did not yield appreciably to antisyphilitic remedies. He believed the evidence was in favour of there being a toxin circulating in the blood, which toxin must be generated continuously in order to cause the progressive deterioration which went on, and the definite degeneration in the spinal cord and cerebral cortex. The question was, What was that toxin? where was it produced? And the further question which now arose in relation to Dr. Ford Robertson's paper was, Had he discovered that toxin and its origin? That was a question which was essentially bacteriological, and he could not pretend to express an opinion upon it. The objections which he had urged against the author's views, at least as they were propounded in the Morisonian Lectures, were founded upon the investigations of other bacteriologists; and one of the chief was that the *Bacillus paralyticans* of Dr. Ford Robertson was not sufficiently

distinctive from other bacillary and diphtheroid organisms, and that those organisms were found both in health and disease, in almost every tissue. Dr. Eyre, in his remarks that day, had pointed out that those micro-organisms were always with us. He did not find, in his original investigations, that those diphtheroid organisms described by Dr. Ford Robertson were more common in general paralytics than among other forms of insanity, or even than among ordinary people. Certainly he (Dr. Ferrier) had never found the slightest trace of any organism in the cerebro-spinal fluid of patients suffering from tabes or general paralysis.

Dr. George Dean thought the position with regard to the question under discussion ought to be one of caution, both in regard to criticism and in reference to the acceptation of Dr. Ford Robertson's views. In the first place, one must realize the extraordinarily wide distribution of diphtheroid bacilli in Nature, and therefore the frequency with which they occurred. For example, they were frequently met, as Dr. Eyre had already indicated, in accidental association with a pathogenic organism definitely known to cause the particular morbid condition in which the associated organisms were found. In addition, diphtheroids had been found in many normal conditions. For example, they were frequently found in connexion with smegma, in both female and male, in the normal condition. They were frequently found in milk; and in the udders of a number of normal cows which he examined he found diphtheroids. That might have some relation to the frequency with which Dr. Robertson found those diphtheroids in the stomach. At any rate, diphtheroids in milk was a common find. The same organisms were also found frequently in urine examined under ordinary conditions without any relation to the particular question under discussion. Therefore great caution ought to be observed in accepting any diphtheroid as having a causal relation with general paralysis unless it had very well-marked characteristics, including pathogenic action on experimental animals. In regard to the sugar fermentations which had been mentioned, it must be remembered that only a very small number of the diphtheroids which had been isolated had been submitted to those tests. So that until a much wider application of those tests had been entered into, he thought no great weight should be placed on them. In regard to the results obtained by Dr. Robertson in the sheep, no matter whether the bacillus had any relation to tabes or not, the serum of the sheep would probably yield the results which the author has described. Taking almost any bacillus, one would expect to find an increase in the action of the serum after injection. So that in regard to the main issue, as to whether the bacillus in question was the cause of the disease, that observation could not weigh very heavily. In reading over Dr. Robertson's paper, a point which struck him (Dr. Dean) very strongly was the absence of mention in detail of controls in setting forth the cultural results obtained from other forms of disease. He thought it possible that Dr. Ford Robertson had made the controls, but there was an absence of statement in regard to them. Recently he and others had been examining brains and cerebro-spinal fluid. Dr. Arkwright, working in the Lister Institute, had examined the brains and the cerebro-spinal fluid of cases in which death was suspected to be due to cerebro-spinal meningitis. Out of 7 cases in which the brain and meninges were examined *post mortem* he twice found diphtheroids, and out of 23 cases in which he examined cerebro-spinal fluid he found diphtheroids on two occasions, and sometimes they were associated with other organisms, such as the meningococcus. That had been done in only the few months during which the matter had been worked at in the Lister Institute. So he thought if a large number of controls had been taken diphtheroids would have been found in many of them, and that naturally complicated the question very greatly.

Dr. Bevor said it seemed to him that if the bacillus was the cause of the disease, it ought always to be found in cases of general paralysis of the insane, and also in all cases of tabes. Yet they had heard from Dr. Ferrier that in the observations he had made it was not found. And if Dr. Robertson's view was correct the bacillus ought not to be found in healthy people, or in cases of other diseases, yet it was found in such circumstances. Moreover, if injected into animals it ought to produce the disease in them. But, as far as he could gather, the symptoms which had been caused by such injections were not those of general paralysis of the insane; neither, he believed, were the pathological changes resulting the same as those in that disease. He did not notice in the paper any reference to observations on the pupil. Fixation of the pupil was a symptom which was common to both general paralysis and locomotor ataxy; indeed, it was the most important symptom there was in the earlier stages of general paralysis. On the other hand, he did not gather that there were changes in the posterior columns of the cord. The anterior horns appeared to have been affected in some of the animals injected, but that was not an evidence of either locomotor ataxy or general paralysis of the insane. Of course, everyone would be delighted if what Dr. Robertson had set forth should prove to be one of the means of combating such a terrible scourge, but at present he did not think they could say they were on the high road towards that desirable end.

Dr. Candler said that, through the kindness of Dr. Jones, the President, he had been enabled to undertake an investigation with regard to the incidence of diphtheroid organisms in general paralysis, and in other forms of insanity, from cases in the wards of Claybury Asylum. The number of cases which he had examined in that way up to the present was not sufficient to be judged statistically. First of all, he took *post-mortem* material, and examined the blood, cerebro-spinal fluid, the intestinal tract, and the urinary tract of these cases. The number of *post-mortem* cases he had examined was 79, and of those 20 were general paralytics. In 3 of those 20, or 15 per cent., he was able to obtain diphtheroid organisms. In 1 case he isolated it in pure culture from the blood; it was isolated from the respiratory tract, where it was present in association with other organisms, and he could see it in the cerebro-spinal fluid, but he failed to isolate it on culture. Another case was from the stomach of a general paralytic, in which there were some erosions and catarrh. A third case came from the respiratory tract. Of the 59 cases occurring in insanities of other kinds than general paralysis, he was able to isolate the diphtheroid organism in 4; in 3 the organism came from the respiratory tract, and in the fourth from the urethra. He then turned his attention to the examination of the urine of patients in the wards of the asylum, and he was assisted in drawing off the urine by Dr. Barham. It was done by inserting a sterile catheter so as, as far as possible, to obtain the urine in a proper condition for examination. The centrifugal deposit was first subjected to microscopical examination, and then the material was grown. Out of 26 cases of general paralysis he obtained a diphtheroid bacillus in 2, an average of about 8 per cent. With regard to the urethras, he scraped the mucous membrane of the urethral canal by means of a platinum loop, after sterilizing the tip of the meatus. In general paralysis he examined about 30 cases in that way, and found a diphtheroid organism in 5, or about 16 per cent. In the urine of cases not associated with general paralysis he obtained the organism only once out of 28 cases, and in the urethras of such cases 6 times in 44 cases, or 13.6 per cent. The points he wished to bring before the meeting were: That he had not been able to isolate the diphtheroid organism in any large proportion of the cases which he had examined for it, and that therefore the researches he had made were more in conformity with Drs. Eyre and Flashman's work, which was undertaken one or two years previously. In regard to the urinary tract he found there was an organism resembling what he believed to be of the xerosis type, and that it was fairly prevalent. Recently, he believed, some reports had been published in foreign journals on the subject of the investigation of urethras in patients who were not the subjects of insanity, and that the percentage in which an organism of a diphtheroid type was found was commented upon as being fairly high. With regard to the circulating blood, he, like Dr. Robertson, had failed to obtain a diphtheroid organism, or at least in only one case did he find an organism which he suspected to be diphtheroid. But, though due care was taken to ensure sterilization, both of arm and instruments, before venous puncture was carried out, he had obtained in one or two instances what he believed to be organisms of the patho-

genic group. And, although he could not make confirmatory statements on the subject, he suggested that it might be possible, during the final stages of general paralysis, for organisms of different varieties to obtain entrance into the blood stream and help in bringing about the end of the case. He desired to ask Dr. Ford Robertson one question about his investigations, namely, Whether, during his examinations of blood from living patients, he had ever obtained other organisms as well as diphtheroid ones, or had he obtained nothing but diphtheroids in pure culture? He understood that Dr. Ford Robertson also examined the buccal mucous membrane by making scrapings of it and examining the stained specimens. Had he obtained pure cultures of the diphtheroid organism from that region? He asked those questions because the microscopic evidence in regard to particular organisms was often very deceptive, and could be confirmed only by isolation of them in pure culture.

Dr. Orr said that he felt reluctant to take part in the discussion, as the whole question seemed to centre round the bacteriological point of view; and unless one was an expert in bacteriology one could not take up either a positive or a negative position. Still, he would like to offer a few remarks on the extreme possibility that tabes and general paralysis of the insane were both the result either of a toxin or of a bacillary infection of the central nervous system. As to how that came about there were not very definite data available, or as to the focus at which those bacilli were situated. But there were absolute data as to there being an anatomical path leading up the peripheral nerves, both spinal and cranial, towards the central nervous system. It was well known that toxins readily ascended in the perineural sheaths, and recently Dr. Rows and he had had the opportunity of examining one case in which a rod-shaped bacillus, often assuming a thread-like form, such as Dr. Ford Robertson pointed out, but as to whose identity he (Dr. Orr) was not yet certain, had been traced all along the perineural lymph sheaths into the cord, by the anterior and posterior roots, into the central canal, and along the numerous septa leading into the white matter. Thus there was definite evidence of the fact. And Dr. Rows and he were of opinion that the infection in general paralysis did not come about through the blood stream, but along the lymph paths. Three gentlemen at that discussion had mentioned the occurrence of diphtheroid organisms in the blood stream. His own view was that it was not necessary for the blood stream to be infected in order to cause tabes or general paralysis; either could come about by infection of the lymph paths. He thought it probable that any invasion of the blood stream by the organism came late in the disease, or might be due to some accident.

Dr. Washington Williams (British Columbia) said it appeared to him that before one could accept as authoritative the controversion of the statements of Dr. Ford Robertson, it must be known that the organisms mentioned by those who criticized his observations were the same as the author spoke of—namely, those which consistently gave certain reactions and did not give others. That had not yet been stated, and until it had been, he, as a neurologist, would accept with great diffidence the criticisms directed against Dr. Ford Robertson's work.

Dr. Charles Mercier said he had the same qualifications, when intervening in the debate, which certain of the other speakers had, in that he was no bacteriologist. But if medical men applied to the question the ordinary canons of evidence and of causation, he thought that they would be obliged at present to return a verdict of "not proven." If they were to accept the doctrine that there was a certain bacterium which was the cause of general paralysis, then certain conditions must be satisfied—the organism must be identifiable. At present, as Dr. Williams had pointed out, it was not identifiable with certainty. In the second place, it must be found in every case of general paralysis; but he gathered that it was not yet found in every case of that disease. In the third place, it must not be found in any case which was not one of general paralysis, and he gathered that it was found in cases which were not general paralysis. Those were the ordinary canons of evidence and causation, and those canons, he thought, must be satisfied before one could admit the existence of a definite *Bacillus paralyticans*. It must be remembered that general paralysis was one of the most distinct of all diseases, and so also was tabes. It was very rarely that a difficulty arose in connexion with a case of general paralysis or tabes, except in the very early stages; and one would expect it to have a cause which was equally distinct. One would expect the cause to be such that it was recognizable in every case. It had also to be remembered that general paralysis was a disease which led to a very slow death. The patient died slowly, and as he was dying his tissues were all in a state of what might be metaphysically called very low vitality for weeks, months, and even years; and tissues in that state were, he supposed, a most favourable nidus for all kinds of different micro-organisms, and it would be very strange if, when a patient was in the later stages of general paralysis, many micro-organisms of many kinds were not found in the various tissues and fluids.

Dr. McRae said, with regard to the point which had been made as to the presence of the bacillus, the authors had said from the beginning that the mere presence of the organism was no proof that the bacillus was or was not the cause of the disease. Several of the bacteriological experts who criticized the paper laid great stress upon finding the bacillus everywhere. As a matter of fact, it was well known that the skin and genitals were commonly infested with diphtheroid bacilli. If one could show by various methods a specific reaction in animals and human beings to that bacillus, or, as they had done, to antiserums produced in animals by that organism—and he had been working for ten months with serums, and had clinical records which were being held over until the July meeting—surely they were getting very near to establishing at least a very strong suspicion that they were dealing with the cause of a certain specific disease. For fifty years the profession had been subjected to the tyranny of the belief that in general paralysis all the bacterial infections were secondary to the degenerative process. But he wished to point out that the authors were not dealing with terminal infections, but with cases which were going about and able to work, and blood-films taken from such patients showed those micro-organisms. With regard to this so-called secondary invasion of organisms, or, as Dr. Mott called it, terminal invasion, why should a specific disease like general paralysis allow itself to be subjected to a particular terminal form of invasion? Any form would be sufficient to cause the death of the patient if he was already suffering from a degenerating disease. It was customary to believe that general paralysis was a primary degeneration of the brain, but how did a degenerating disease have remissions? How was it that a man went into the asylum with the disease, in some instances practically moribund, but subsequently improved so that he could wheel barrows about? The toxic theory seemed the most reasonable; it enabled one to understand how the patient might form immune bodies which enabled him to get better for a time. With regard to a bacteriological point the authors were cognisant of the fact that there were many varieties, and Hamilton and Horton, of America, had found thirty-three varieties of the bacillus, eighteen of which had been proved to be virulent. The two species of bacillus dealt with had specific broth reactions, and when these tests were tried again after many months they gave the same reactions. These reactions were distinct from those hitherto described in the case of any other diphtheroid bacillus.

Dr. G. H. Savage, in response to the President, said he came entirely to learn. He had seen a great number of specimens by Dr. Ford Robertson when he was in Edinburgh, and he left him with a very open mind. He (Dr. Savage) felt very strongly that general paralysis had a toxic origin, and that the particular toxin would be found sooner or later. Such good work as Dr. Ford Robertson was doing was to be encouraged in every way, and it was recognized by the Society and by other medical societies in London. He was a botanist himself, and the more knowledge he acquired of the lower organisms the more impressed was he by the enormous differentiations between the varieties. He thanked Dr. Ford Robertson, in the name of the older men, who were too old to work along the lines which he was following out. They were grateful for what they had heard, and would be glad of more.

Dr. Urquhart said that, as one of the supporters of the

Scottish asylums laboratory, he felt very much indebted to Dr. Savage for the way he had spoken of the work done at that laboratory. He (Dr. Urquhart) did not wish to intervene between the meeting and Dr. Ford Robertson, because he fully expected that gentleman to say something about the possibility of mixed toxins, and especially about the numerous control experiments which had been made during the past six years.

The President said he would be glad to associate himself from the chair with both Dr. Savage and Dr. Urquhart. Dr. Ford Robertson had come down to have his opinions challenged, and they had been challenged from a special expert point of view. He confessed to having a marked sympathetic appreciation of Dr. Robertson's work, and was ready to try the treatment on some cases of general paralysis, and he did hope to do so. He (Dr. Jones) hoped to be able to try a special serum prepared from that organism, if such could be obtained, but at present he did not know how to obtain it Dr. McRae referred to one point which he (the President) regarded as very important, namely, remissions in general paralysis; and one was apt to draw conclusions as to the result of treatment from the ordinary remissions which did occur. He had two cases in his memory. On one, at Claybury, succinate of mercury was tried, and that patient went out very much improved. Another had a thorium hydroxide cap, which he wore for a time and got very much better, yet he was, so far as his (Dr. Jones's) diagnosis went, a typical case of general paralysis. He heard of him for nearly two years afterwards, and he was quite well. One was apt to draw conclusions from such cases that *post hoc* was *propter hoc*. The general opinion as to causation by a special bacillus seemed to be, as summarized by Dr. Mercier, not proven; but Dr. Ford Robertson's paper and his work had had the effect of causing work in others, and thus was a marked mental stimulus to that branch of the profession with which they were allied.

Dr. Ford Robertson, in replying on the discussion, said there were several points which he would like to meet. It seemed to him that all the examples that Dr. Eyre had given of diphtheroid bacilli being found in meningitis, infective endocarditis, etc., were strong presumptive evidence in favour of Dr. Benham's view that the further study of the diphtheroid group would probably lead to important advances in our knowledge of some obscure diseases; but he did not see any other bearing which those observations had upon this particular research. Dr. Eyre seemed to think that many of the types described in the paper were simply the *Bacillus xerosis;* he regarded as this bacillus many organisms which could be shown to produce a strong acid reaction in glucose and saccharose broths. In making such a contention, Dr. Eyre was differing from other bacteriologists. Dr Eyre and Dr. Flashman in their paper tried to classify the diphtheroid bacilli found into three species, but the investigations of others were proving that there were really very numerous separate species. Dr. Eyre said Dr. Gordon had followed Dr. Knapp in using the litmus broth tests, but he (Dr. Robertson) believed that Dr. Gordon preceded Dr. Knapp by a considerable time. Dr. Eyre said the reactions were not constant. That might be his experience, but as far as he (Dr. Robertson) could see from Dr. Eyre's paper, he had not studied those broth reactions to a very great extent. He knew that in the experience of others those broth reactions were remarkable in their constancy. Dr. McRae and the speaker had tested various strains again and again, at intervals of many months, and it was remarkable how the results had come out exactly the same. Whatever changes in virulence these organisms might undergo with the lapse of time, they underwent none in their broth reactions. It was simply a matter of Dr. Eyre's criteria of differentiating diphtheroid bacilli being different from those of other people. Dr. McRae and he did not attach very much importance to the presence or absence of metachromatic granules; that was largely a matter of the media on which the organisms were grown. Dr. Eyre had said that their method of estimating the intracorpuscular bacteriolytic index was open to grave fallacy. He (Dr. Robertson) supposed there was a margin of error in all such methods—as there certainly was, for example, in that of estimating the opsonic index. But Dr. Eyre had not worked with their method, and was therefore not in a position to say that it was fallacious. He also said he would like to read the account of the method, but it had been published in detail. It would conduce more to good feeling in these discussions if Dr. Eyre read their papers before criticizing them. He desired to make a protest against the action of Dr. Eyre and Dr. Flashman in republishing quite recently a paper which first appeared in the British Medical Journal in November, 1905. He protested at the time in a letter to the Editor of the British Medical Journal that it was a gross misrepresentation of the views of himself and his colleagues, and, notwithstanding that protest, the paper had been republished in the *Archives of Neurology* of 1907. Such a procedure led to the dissemination of grossly erroneous views of their work. As he said in his letter, the grounds upon which the contentions of his colleagues and himself rested were ignored, and the only reference made to the evidence adduced was an erroneous one. Dr. Ferrier had expressed his adherence to the view that syphilis was the cause of general paralysis and tabes. He (Dr. Robertson) would be glad to endorse that view if Dr. Ferrier could produce any experimental evidence in support of the thesis. So far nobody had produced any. He had listened to Dr. George Dean's remarks with very great interest. Dr. Beevor asked about the fixation of the pupil in the experiments on rats. It was very difficult to examine the pupils of rats. If they had brought the rats with them and shown them to the meeting, he did not think any one would have any doubt about their being general paralytic rats; the condition of the animals simulated that of general paralytics about as closely as was possible. The histological changes were such that both Dr. McRae and he were convinced that the lesions were those of early general paralysis. The rats died too soon for the complete picture of the disease to be developed. Accompanying periarteritis there were in some of the animals plasma cells, just as in the general paralytic. Dr. Candler's observations were of very great interest; they were careful and painstaking observations, and he looked forward with interest to their publication. With regard to finding the bacilli in other patients besides those suffering from general paralysis, it must be remembered not only that diphtheroid organisms were very common on mucous surfaces, but that those other patients were contacts. He had read the paper by Starziale, who found diphtheroid bacilli in the urinary tract in control cases and in patients in his skin clinic at Naples; but that observation did not disprove any of their contentions. They had themselves pointed out that diphtheroid bacilli could be isolated from this tract in some control cases. Such organisms might be devoid of virulence, and even if virulent they were not necessarily invading the patient. They did not attach importance to the mere presence of the organism. The remarks of Dr. Orr were very gratifying, because he and Dr. Rows had been in this country the pioneers in the experimental investigation of these lymphogenous bacterial invasions, and the work of Dr. McRae and himself was tending more and more to prove that in general paralysis there was such lymphogenous invasion. There was no man whom he (Dr. Robertson) had greater respect for than Dr. Mercier, and he was sorry to come into conflict with him. Dr. Mercier said the organism must be identifiable, and their reply was that it was so. They had obtained two varieties, which had special broth reactions and which produced paresis in rats, and until some one showed there were fallacies in them these observations must stand. He thought Dr. Mercier was in error in saying that the bacillus must be found in every case. Sometimes the organism was difficult to find, but if it were missed in one place it might be present in another. It was too much to ask that it must be found in every case. Dr. Mercier also said the organism must not be found in any case which was not one of general paralysis, but on that ground one would have to deny the specificity of the true diphtheria bacillus, because it was found in many healthy people. Importance was not attached to mere presence, but to invasion. He was much gratified by the remarks of Dr. Savage and Dr. Urquhart, and thanked the President for his sympathetic appreciation of their work. Many points in regard to their work were not included in the paper, but he thought that if some of those who had spoken had seen their charts showing

the specific reactions with antiserums, they would have hesitated to make some of their criticisms. But he was very glad the discussion had taken place; it had been very gratifying to both Dr. McRae and himself.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p. 275*)

In the Physiological Section at the meeting of the British Association for the Advancement of Science, at Leicester on August 1st, Dr. Augustus D. Waller, M.D., LL.D., F.R.S., President of the Section, delivered an address on

The Action of Anaesthetics.

He said the popular notion of an anaesthetic was that it was something that abolished sensibility and took away pain. How, then, could a plant be chloroformed? Did that mean that a plant was sensitive and could feel pain as we did? Probably not; nevertheless it was very certain that a plant could be anaethetized, and when they had properly appreciated what this meant, he thought they would admit that their notions of vital processes and of their anaesthesia by ether, or by chloroform, or by a host of other reagents had been considerably widened. They would then have realized that the state of a person or of an animal rendered insensitive of pain by an anaesthetic was a particular instance of the general principle that all protoplasm—vegetable as well as animal—was liable to be immobilized—put to sleep, more or less completely, temporarily or permanently—by the action of substances which we therefore designated as anaesthetics or narcotics. A volatile narcotic, like ether or chloroform, got to the living cells of a plant by direct diffusion; in the case of human beings and of the higher animals it got to the living cells by the channels of respiration and circulation. The molecule of chloroform (or of ether) was drawn into the lungs with the inspired air, passed from the pulmonary air to the pulmonary blood, combined with its corpuscles, was thus carried first to the heart and then distributed with the blood to all parts of the body; in the capillaries the molecule of chloroform parted company from haemoglobin, passed from the blood to the tissues and tissue fluids, and entered into combination with the living cells, which it immobilized more or less profoundly, temporarily or permanently. The various kinds of living cells that constituted our organs were unequally susceptible as regards the immobilizing effect of this general invasion of the system by the narcotizing molecules. Of all the cells of the body, the most labile, and therefore the first immobilized, were the master cells of the body—the cells of the grey matter of the brain, which were the seat of sensation and the organ of voluntary motion. The most stable, and therefore the last immobilized, were the executive cells of the body that constituted muscle and nerve. The order of lability from greatest to least was as follows: Brain, spinal bulb and cord, terminal nerve cells, cardiac muscle, skeletal muscle, nerve fibres. And, while all living cells and tissues of the body were subject to the immobilizing action of narcotic substances, their individual differences of susceptibility were such that, whereas 1 part of chloroform in 5,000 of blood was sufficient to immobilize cortical nerve cells, a nerve fibre required a more than tenfold effective mass of chloroform before exhibiting any falling-off of its normal excitability. Dr. Waller passed on to consider what happened when a patient was anaesthetized by, say, chloroform in the usual manner by inhalation of an unknown mass of vapour. The inhaled vapour, more or less diluted in air, diffused into and was distributed to the entire body by the circulating blood. The lymph bath that surrounded and permeated all the tissues and cells of the body became a weak solution of chloroform in water, and gradually within that weak chloroform atmosphere the most labile parts fell under the immobilizing effect of the anaesthetic, first the organ of conscious sensation and movement—the cortical grey matter of the brain; then the organ of unconscious reactions—the medullary grey matter of the spinal bulb and cord. So that the order in which the effects unfolded themselves were—after a brief stage of excitement or mobilization—first a suppression of sensation and voluntary movement, then a suppression of reflex and automatic movements, inclusive of the movements of respiration. Finally—and if this finally was reached the immobilization could no longer be recovered from—the heart stopped beating. The patient was dead.

Three Stages of Anaesthesia.

From life to death by the way of anaesthesia there were three principal finger-posts dividing the journey into three stages. Of these three finger-posts two were to be carefully watched for; the third should never be sighted. During the first stage of anaesthesia—commencing, it might be, by some amount of preliminary agitation—sensation and voluntary motion became suppressed, while reflex and automatic movements were preserved. The finger-post between this first stage and the next was quite clear—if when the conjunctiva was touched the eye winked the anaesthesia was light; if the eye did not wink the anaesthesia was "deep." During the second stage of anaesthesia not only *voluntary* but also *reflex* movements (of which the conjunctival reflex was the most convenient indicator) were wholly suppressed, while the *automatic* movements of respiration persisted. This was the degree of anaesthesia required for any major surgical operation, and was therefore frequently spoken of as surgical anaesthesia. The finger-posts to its boundaries were: On this side the conjunctival reflex, on that side the movements of respiration. The third and last finger-post—arrest of the heart's beat—should not be passed. Arrest of the pulse signified an almost hopeless state. The time of grace between arrest of respiration and arrest of the pulse from which recovery was almost hopeless was very brief indeed—hardly more than a minute. The doctrine of the Edinburgh school—*Watch the respiration, not the pulse*—was sound doctrine. Stoppage of respiration meant danger; stoppage of the pulse meant death. He thought this sketch, rough as it was, would be sufficient to bring before their minds a clear picture of the process of anaesthesia and of its principal danger—cardiac syncope. He would not enter into the question of primary cardiac syncope, nor call off attention to other symptoms such as the state of the pupil and the character of the pulse and the colour of the face. Nor would he at present lay any stress upon the fact that chloroform could be of variable quality, and that, like alcohol, it might act differently upon different people.

Dosage of Chloroform.

First and foremost, if they were to secure the safe administration of a powerful poison like chloroform, they required to know how much of the drug was required for the production of the desired physiological effects, how much was dangerous, how much was necessarily fatal. Considering the fact that chloroform had now been in common use for sixty years, and that the uniform experience of physiologists was to the effect that it was a dangerous drug as ordinarily used, it was astonishing that its administration should not rest upon any definite scientific basis. Occasional attempts had been made in the past—by Snow first of all, by the French school of physiologists, Paul Bert, Gréhant, Dubois, and others, more recently by committees of medical societies and of the British Medical Association—to determine what might be designated as the physiological arithmetic of chloroform; but partly by reason of the difficulty in the way of measuring percentages of chloroform in the air and in the blood, partly by reason of the facility with which chloroform could be administered without any reference to percentages, the results obtained produced very little impression upon clinical practice, and deaths that could not have occurred if the principles laid down by Snow and by Bert had been properly appreciated and acted upon, were, and still are, regarded by the medical profession and by the public as the normal incidents of medical practice, and attributed to any but their true cause—an overdose of chloroform.

Deaths under Anaesthetics.

He should not venture to guess at the number of avoidable deaths that had taken place from this cause, but he placed before them a diagram constructed from the annual returns of Somerset House, giving the number of deaths officially classified under the heading "Anaesthetics" during the last fifty years. He did not wish to use the diagram in an alarmist sense, so he hastened to call attention to the fact that the numbers were not percentages, but absolute figures, which might in their opinion be sufficiently accounted for by the fact that the

absolute number of cases had augmented in which anaesthetics had been employed, and that official returns of fatal cases might have become more complete. He did not himself base his judgement of the matter so much upon statistics, which were notoriously apt to be imperfect and misleading, as upon the common experience of most members of the medical profession and of many persons outside that profession; he had rarely met a well-informed person who was not personally acquainted with at least one accidental death by chloroform. Nevertheless he had presented the statistical diagram, because he considered that with due reservation this outcome of unprejudiced observation gave a by no means exaggerated picture of an actual fact, and because he believed it was an avoidable fact and would be diminished in future years by the wider knowledge of the physiology of anaesthesia. He asked them to follow him through a short arithmetical argument in order to convince them that accidental deaths by chloroform must of necessity be expected to occur in the ordinary way of administration if the administrator were not fully alive to the physical and physiological properties of chloroform, and to outline in their minds a definite picture of some very simple and important measurements. By ordinary methods of administration the percentage of chloroform vapour in the mixture of chloroform and air inhaled might be anything between 1 and 10 per cent.; let them say that it was 4 per cent—that is, that an inhalation of, say, 500 c.cm. carried 20 c.cm. of chloroform vapour into the lungs. Of this 20 c.cm., it was no exaggerated estimate to take one-half, or 10 c.cm., as absorbed by the pulmonary blood, the other half being expelled in the expired air. If the subject breathed twenty times per minute 500 c.cm. at each inspiration, his blood absorbed 200 c.cm. of chloroform vapour in one minute, that is, 1 gram of fluid chloroform. He might, of course, absorb less than 1 gram per minute; but he might also absorb more. Snow estimated that 17 minims of chloroform in the blood (that is, about 1 gram) was sufficient to produce anaesthesia, while double the amount was fatal. Gréhant found that after death by chloroform the blood contained half a gram of chloroform per litre of blood, that is, 5 litres of blood, which was the normal amount in an average man, would contain 2½ grams. Buckmaster and Gardner found from numerous experiments results that might be summarized as follows:

Quantity of chloroform (in grams) contained in 100 grams of blood:

	Min.	Mean.	Max.
Taken during deep anaesthesia ...	0 020	0.030	0 040
Taken after death by anaesthesia ...	0.040	0.050	0.060

These results signified in 5 litres of blood between 1 and 2 grams as the anaesthetic amount, between 2 and 3 grams as the lethal amount. Let them consider, then, what might happen if a patient were to absorb chloroform at anything like the rate of 1 gram per minute, and what might happen if by mischance he should absorb 2 or 3 grams in a fraction of a minute. This was a mischance that could occur in the ordinary method of inducing anaesthesia: a few deep gasps by a struggling patient, a few moments' inattention on the part of an administrator, and the blood almost might at once be fatally overloaded with chloroform. In the early days of chloroform anaesthesia it used to be considered admissible to administer chloroform vapour of 4 and 5 per cent. strength in air; but at that time the means of estimating percentage were very imperfect, and the figures quoted were little better than guesswork. The dictum of the Edinburgh school was "plenty of chloroform with plenty of air by continuous administration." Some ten years ago, at a meeting of the Society of Anaesthetists,[1] he pleaded for the continuous administration of chloroform vapour at a strength (in air) of not below 1 per cent. and not above 2 per cent., which amounted to a translation into figures of the Edinburgh dictum, with justification of the figures by quantitative observation. Perhaps he might briefly explain the method[2] by which the percentages of chloroform and air were obtained:

A litre, or 1,000 c.cm., of chloroform vapour weighed	5 333 grams.
A litre, or 1,000 c.cm., of air weighed ...	1.288 ,,
The litre weight difference was therefore	4.045 ,,

The weight difference of 1 c.cm. was approximately 4 mg.

So that a 100 c.cm. flask in which 1, 2, 3, etc., c.cm. of air were replaced by 1, 2, 3, etc., c.cm. of chloroform vapour was 4, 8, 12, etc., mg. heavier than the same flask filled with air

So that added weights of 4, 8, 12, etc., mg. indicated 1, 2, 3, etc., per cent. of chloroform vapour present.

Thus, by simply counterpoising a 100 c.cm. flask (or, preferably, a 250 c.cm. bulb, as to give weight increments of 10, 20, 30, etc., mg. as indications of 1, 2, 3, etc., per cent.) filled with air against a similar bulb filled with chloroform mixture, the percentage of the mixture was read directly by the number of centigrams required to counterpoise. For instance, a bulb full of mixture being, say, 18 mg. heavier than when it was full of air, the chloroform vapour percentage was known to be 1.8 per cent.

Evidently, with a ready means of estimating percentage, one was entitled to talk about the percentages that one considered from experiment to be necessary, and sufficient, and excessive.

The Safe Administration of Chloroform.

His argument up to this point comprised one or two tacit assumptions that ought to be briefly dealt with, or, at any rate, mentioned. In the first place, he had assumed that the great majority of accidents by anaesthetics were caused by chloroform. This was accounted for by the fact that chloroform was the most powerful, the most convenient, and the most extensively used of all anaesthetic vapours. That fact was an argument not so much for the substitution of other less dangerous anaesthetics as for the more careful administration of chloroform itself. In the second place, he had assumed that chloroform was a remarkably uniform and certain reagent, producing its physiological effects in strict conformity with the quantity of vapour administered, and by no means irregular in its action by reason of irregularities or impurities of manufacture. Pure chloroform was more powerful than impure chloroform. He did not dwell upon these two points now; nevertheless, he wished to say that these were not gratuitous assumptions, but, more properly speaking, results of observation and experiment, of which he could offer some evidence. He had tested purified chloroform against the concentrated residue of its impurities, and had found the former to be far more powerful than the latter; and he had compared with each other chloroform or trichlormethane, $CHCl_3$, dichlormethane, CH_2Cl_3, monochlormethane, CH_3Cl, tetrachlormethane, CCl_4, as well as many anaesthetics of the ether group, Et_2O, EtCl, EtBr, EtI, and several anaesthetics belonging to the series of chloroethanes, members of which had at various times been recommended as substitutes for chloroform—for example, ethylene chloride or "Dutch liquid," CH_2Cl-CH_2Cl, and ethyledene chloride, CH_3-CHCl_2. The conclusion he had drawn from that study was that of all these more or less powerful anaesthetics chloroform was the most powerful, the most certain, the most convenient, and the most trustworthy. But he repeated that the safe administration of chloroform consisted in its continuous administration at a strength of between 1 and 2 per cent.; and if anyone now objected that it might be safe to go up to 3 per cent., or sufficient to go down to ½ per cent., he was content to accept the objection as being possibly well founded, because it carried with it the all-important admission that the question of safe anaesthesia was in first instance a question of quantity, and in second instance a question of idiosyncrasy and of clinical conditions. Admitting, then, Dr. Waller proceeded, that the primary condition of the safe administration of chloroform consisted in the continuous administration of an atmosphere in which chloroform vapour was between the limits of 1 and 2 per cent., the question was how best to secure this essential condition. It could be secured by many methods. Given the requisite care, skill, and experience on the part of the administrator, anaesthesia might be properly carried out by any method, empirically or otherwise. But some methods demanded more skill and care than any other methods, and the task of the anaesthetist might be lightened (or it might be aggravated) by various mechanical appliances. A folded towel drenched with chloroform might be safely used by an anaesthetist whom previous experience had rendered fully alive to the extreme danger of two or three deep inspirations of a concentrated vapour, and whose attention was never distracted from the paramount necessity of "plenty of air" with the "plenty of chloroform." On the other hand, a person unmindful of the physiological elements of chloroform-

[1] British Medical Journal, April 23rd, 1898.
[2] Waller and Geets, Ibid., June 20th, 1903.

ization was a dangerous administrator if he was content with the empirical use of any apparatus, however faithfully he might carry out the instructions of his instrument maker. Methods and apparatus were legion, and it would be futile or invidious on his part to attempt to describe or criticize in detail any one method or apparatus. But he might usefully invite consideration of certain principles, and ask them to recognize that for their trial by experiment the chief necessity was a simple method, such as he had just described, enabling one to test percentages quickly. Thus, by the use of this method, Mr. Symes[1] had determined what were the usual percentages of chloroform vapour offered to inspiration by an ordinary Skinner's mask, and found them to range between the desirable limits of 1 and 2 per cent., with occasional fluctuations up to about 3 or 4 per cent. All apparatus designed for the delivery of chloroform vapour of definite and controllable percentage was based upon one or other of two principles. On the first or vaccum system, of which the best known examples were the apparatus of Snow and that of Harcourt, the patient inspired air through a vessel containing liquid chloroform by a broad inlet tube and a closely fitting facepiece. On the second or plenum system, of which the examples best known to him were the apparatus of Dubois and that to which he had given the name of the "wick vaporiser,"[2] the patient inspired from a freely open facepiece in which an excess of chloroform and air at required percentage was maintained by a pump. In Dr. Waller's opinion, if apparatus were to be adopted, the plenum was preferable to the vacuum principle, for in the latter case it was more difficult to secure uniformity of administration, which required a perfect fit of the facepiece, stillness of the chloroform over which the inspired current of air was drawn, and which caused of necessity a considerable added resistance to inspiration. By the plenum system there was a more uniform percentage of supply, and the patient breathed freely from an open loosely fitting facepiece, the cavity of which was kept filled to overflowing by an excess of mixture of controllable strength. Whichever of these two systems be followed, the choice was obviously one that could only be determined by experience, both clinical and of the laboratory. Equally obviously the so-called accurate percentages afforded by any method could only be approximately accurate under the sometimes difficult conditions of practical administration, and it was therefore of principal importance to ascertain by a simple and ready method of estimating percentages such as he had described what was the degree of accuracy, or, if one preferred to say so, the range of inaccuracy to which any method or apparatus was subject under the ordinary conditions of its application. They may indeed sometimes hear it said that the percentage could be judged of by the sense of smell, which therefore afforded the readiest means of estimating the strength of a mixture, to which he would like to add, Yes, certainly, provided the observer by previous experience of known percentages had formed some standard of comparison on which his opinion was based.

Vivisection.

In conclusion, Dr. Waller proceeded to say something about the conditions under which physiological inquiry was pursued in London. Physiology, in the technical and restricted sense commonly received in this country, had become so closely associated in the public mind with vivisection, and, as dealt with in the medical curriculum, was so narrowly reduced to what was strictly necessary and practicable, that its real scope and value as a general science had been altogether lost sight of. He did not propose on the present occasion to deal with the question of vivisection either on its ethical or on its utilitarian aspect. All he wished to do was to bring distinctly before their minds two considerations that might, he hoped, contribute to a broader and truer conception of the place of physiology among the sciences, though they assuredly would not justify the claim of Dubois-Reymond that physiology was the queen of the sciences. The first of these two considerations was that the province of vivisection, essential as it was, was a very narrow and restricted province indeed in the domain of physiology. In the ordinary routine of the physiological laboratory experiments involving vivisection were infinitely less numerous and infinitely less exacting than experiments that involved no vivisection. Vivisection was, in fact, an infinitesimal fraction of experimental physiology, whereas in the minds of many who should know better experimental physiology always meant vivisection; the two terms were taken as synonymous, and an odium that should not have been attached either to physiology or to vivisection had been directed through vivisection upon the whole of physiology. He did not for one moment surrender the claim that upon ethical and utilitarian grounds vivisection was lawful; he deprecated the perverted picture of vivisection presented to public opinion by sensational agitators and the perverted notion of physiology that was one of the evil results of the antivivisection crusade. But he did not desire to dwell on the vivisection question; he did not consider that it could be usefully considered by the general public without an intimate knowledge of the subject, itself possible only to the specialist. An ordinary normal person who should say he approved of vivisection would be, in his opinion, even more objectionable than an ordinary normal person who should express a detestation of vivisection, for the bare idea of vivisection was repugnant to every humane person. To bring dispassionate argument against such natural repugnance seemed to him hardly less mischievous than to fan repugnance into hatred by passionate appeals to the imagination. The surgeon to whom an ignorant crowd should impute cruelty would fail to serve the cause of humanity by the technical descriptions to it of the operations he was required to perform.

Imitation and Initiation.

There were two great principles involved in the welfare of any applied science—in the welfare, indeed, of any living thing—the conservative principle and the progressive principle. Any organized living mass—let it be an animal or an organized body of men—by virtue of the conservative principle of heredity, of repetition of like by like, of imitation of action that had proved to be successful, works more economically than it could have done if each individual mass had perforce to work out its own salvation, evolve for itself its own suitability to and temporary mastership of surrounding circumstances. But the child that could only imitate and repeat the actions of its ancestors brought no positive addition to the excellence of the race whose upward progress required to be fed by the costly process of initiative efforts, by the sports of talent and of genius, by the cumulative effect of innumerable hits among innumerable misses, of innumerable multitudes of individuals. This thought should be transferred to education—to medical education in particular. An educated person—a competent physician or surgeon—must in the first place learn at the feet of his masters, believe and learn what he was told, imitate what he saw done by his instructors, be the apprentice and follower of the experienced craftsman who showed him tried and approved ways of working. But the apprentice who was to contribute to the commonwealth of knowledge and power had to be something more than the faithful imitator of his teacher; he must initiate, and he must make a hit among, it might be, his many misses. He would then have contributed to the advancement of knowledge and power. In all provinces of human activity they might distinguish the result of the two complementary principles—imitation, the conservative principle; initiation, the progressive principle. But while in all provinces the conservative factor, being, so to speak, the means of wholesale economy, bulked the larger, the progressive factor, as the means of retail economy, was relatively insignificant. Between the two extremes—imitation on the one hand, initiation on the other—there was room for numberless variations; and, by reason of the vastness of area of even the minutest province of human activity, the aim of education, even the most technical, was perforce more and more directed to teach the pupil to use his own mind in presence of the task set him rather than to copy minutely and to reproduce perfectly the model facts shown or described to him by the master. But in every province, and in particular in that of education, the power of imitation was easier to exert and easier to develop than the power of initiation, which was a rare and costly ingredient, since at any given juncture the odds must be heavily in favour of the success of the time honoured fact

[1] Symes, *Lancet*, July 9th, 1904.
[2] Waller, *Proc. Physiol. Soc.*, August 19th, 1904.

or method as compared with its yet untried competitor. There were of necessity many misses and few hits among the novelties that come to trial.

Old Methods and New.

The genius of our nation was admittedly a practical genius that looked upon the conservative way as the better way, and made its changes by as small steps as could be from precedent to precedent. This was the safe and easy way, the way of Nature; and to this predominance of fact copied over fancy realized might fairly be ascribed our own prolonged constitutional prosperity. They had found by long experience that it was very long odds indeed against any dark horse without a good pedigree of precedents, so they preferred to back the field; old methods were the safe thing and the good thing. But one might have too much of a good thing, and in education he thought they had had too much of the old methods, in which the keynote was imitation and examination of copy, and too little of that expensive and dangerous ingredient—so dangerous that to some authorities it appeared in the light of a poison—initiative and originality of thought. He admitted all the danger; he granted to the old authorities that there was a good deal of trash current under the label of original research. But he did not think they could have wheat without chaff, and he was convinced that the adherents of original research, as against the *clientèle* of the examiner and of the crammer, brought to the educational commonwealth the scanty and much-needed ingredient of initiative. He wanted education still further urged in the direction of teaching the pupil to use his own mind upon unseen translation of new facts into effective conduct, and one of the best ways of obtaining that the teacher should guide his pupils to use their own minds was that he should himself use his own mind, and not suffer himself to drop into the jog-trot of routine. They wanted their teachers to be learned men, but they also wanted them to continue to be learning men; and that was why, in spite of its defects, he wanted to urge that greater encouragement be given to original research.

Physiology in the University of London.

An effort was now being made in the University of London to strengthen and organize that spirit of initiative which was, he was convinced, of capital importance in all teaching, the most elementary no less than the most advanced. They had formed themselves into a school of physiology, including every teacher of physiology in London, each of whom undertook to give at the head quarters of the university lectures upon those portions of the science with which his own previous study had rendered him specially conversant. The teaching offered was of an advanced character, and was addressed more especially to post-graduate and to honours students; and, in pursuance of the principle that such teaching was the immediate consequence of learning, the university had provided a research laboratory in which teachers and other post graduate students found the necessary facilities for work. They believed that the experience of the last five years had sufficiently proved that a "college of learning" thus constituted rendered valuable assistance to the teachers and students of the schools of London, and that it was helping to draw to a focus resources and efforts at present scattered and wasted among the several schools. He could not do better in this connexion than quote the words of the Chancellor of the University (Lord Rosebery):

> We hope to make this laboratory the central spot for medical research in London . . . an institute of studies ancillary to medicine, which may develop and complete the work of the University in that direction.

And he thought they would agree with him that any movement that contributed to the good health of the University of London contributed to the good health of every university in the Empire, and of every school whose teachers were animated by the university spirit—the love of learning for its own sake as well as for the sake of the mental and material power that was required of them.

Discussion.

In moving a vote of thanks to the President for his address, Sir Victor Horsley (as reported in the *Times*, to which we are also indebted for a report of the speakers who followed) said Dr. Waller had, by his initiative and his exact method, made the haphazard administration of chloroform a thing of the past. It had been shown that a 2 per cent. administration was nearly always safe and sufficient, and the public would have confidence in knowing that chloroform was given in known quantities. It could now be used to aid an operation and not merely to produce temporary unconsciousness, for its administration could be regulated so as to suppress or diminish the haemorrhage.

Dr. Frederic Hewitt, in seconding, said that within the last few years the practical man had been able to dovetail in, as it were, his experience with the scientific results emanating from physiological laboratories, and here Dr. Waller's work was of very great value, together with that of Professor Vernon Harcourt. Yet he could not close his eyes to the fact that it was impossible to apply the method of exact percentages of chloroform in many cases and equally impossible to instruct students wholly in that method. It was necessary to study other methods also, because they were absolutely essential in practice, as hardly any two patients could be treated alike. Certain persons required a higher percentage of chloroform than others, and individuality entered largely into the matter in practice. The public was not sufficiently aware of the great risk incurred, and something should be done to minimize the dangers attendant on the administration of anaesthetics. The medical and the public press were naturally averse from dwelling on the great number of deaths that occurred from this cause. The education of medical students was at fault in this respect. The first thing essential was to educate students properly before the present death-rate from this cause could be lowered permanently. And, secondly, it ought to be made certain by Government or medical inquiries that in all hospitals anaesthetics should be given only by men who were properly qualified. Dr. Waldo, one of the King's coroners in London, had in the last six years conducted inquests on 52 deaths from chloroform that had taken place at two large hospitals in London of about equal size, 34 resulting in one hospital as against 18 at the other, and had come to the conclusion that the disproportion of deaths was not to be explained in any other way than that in the hospital where the larger number of deaths occurred the anaesthetic was commonly administered by men who had held office for only a short time, and in two cases, indeed, by men who had no official connexion at all with the hospital. Dr. Hewitt asked if the remedy was to be found in the exact regulation of the percentage of chloroform administered, and answered the question in the negative. With the most perfect apparatus deaths would result; indeed, sometimes death would result just as much from an underdose as from an overdose of chloroform. Until students were properly taught and trained methods and regulations were only of secondary importance. He concluded with two points of criticism, the first being that in his experience stopping of the pulse did not always mean death, as Dr. Waller had seemed to think; and, secondly, that deaths from ether occurred generally after and not at the time of the operation itself. Of the two systems mentioned by Dr. Waller, he agreed that the plenum system was the better. By the percentage method, aided by the knowledge that came of practical experience, the administration of anaesthetics might be robbed of its terrors, and the whole community was under a deep debt of gratitude to Dr. Waller for his labours in this important field of work.

Professor Vernon Harcourt, in supporting the motion, deplored the fact that death from chloroform was often put down as death by misadventure. It was very important to put before the medical profession and the public alike and make them understand that the risk of excess in the amount administered was great. Ten per cent. of chloroform and 90 of air was often given, while 2 per cent., according to Dr. Waller, was the utmost that need be given. He had learnt a great deal from Dr. Waller's paper, and was, as he thought both the medical profession and the public ought to be, very grateful to its author.

Professor Schäfer thought that great advances had been made in recent years as to our knowledge of the proper and scientific way of administering anaesthetics. Dr. Waller had not dwelt upon the true cause of death—namely, from the effect upon the heart, and he (Professor

Schäfer) observed that by watching and carefully influencing the effect of the anaesthetic upon the heart, fatal results even from an overdose could be diminished. All men had not Dr. Hewitt's vast experience; and, of course, it was always difficult for scientific results to permeate medical practice until the lapse of some considerable time. One point he did not understand, and that was Dr. Hewitt's statement that an underdose could kill a patient.

Professor SCHÜSTER pointed out that the number of operations under chloroform and ether was far larger than formerly, and when that was taken into account, though the number of fatal results was still large, yet the ratio was far less than it used to be.

Professor GOTCH agreed that it was of the first importance that medical men should be highly and specially trained in the administration of anaesthetics as well as in other specific matters, and was glad that the universities of this country, including his own University of Oxford, were taking the matter up, and insisting upon special training of their students in this respect.

The PRESIDENT, in acknowledging the vote, pointed out that there was a vast difference between an experienced anaesthetist like Dr. Hewitt and the young medical man who often had to administer chloroform, and he considered that the man who had worked with apparatus, such as he had described, at home in this country was safer, say, in a foreign country or in distant colonies, where he had only a handkerchief or a towel to use and no apparatus at all, because he had been through the physiological arithmetic of chloroform; and even when he became an experienced anaesthetist, he would have become so more quickly than if he had never used apparatus at the beginning of his career.

In response to some requests that he would explain his statement as to an underdose of chloroform causing death, Dr. HEWITT said that chloroform produced certain effects upon both respiration and circulation, the latter being largely dependent upon the former. When a patient was deeply and properly under chloroform there was very little effect on respiration, the ingress and egress of air being only slightly affected. But at the beginning of an operation different effects were produced in respect of degrees of sensitiveness of different parts and organs, and a number of reflex effects were set up, among them being reflex effects on respiration, which, if not relieved in time, became of an obstructive character, resulting in complete suspension of breathing. This state of respiration disturbance, or reflex asphyxia, was brought about by imperfect anaesthesia, which was what he meant by an underdose, and this was, therefore, often more dangerous than deeper and perfect anaesthesia.

THE PHYSIOLOGICAL AND THERAPEUTICAL USE OF ALCOHOL.

A discussion on this subject was (according to the *Times*) opened by Professor CUSHNY, who said that though the exaggerations of anti-alcoholists had produced a reaction in the public mind, yet the uses of alcohol in medicine in the past had been entirely erroneous. There was an idea that alcohol both improved digestion and acted as a food. But a large number of investigations had not been able to confirm the idea of the improvement of the digestive processes as a whole, though sometimes they acted more quickly in individual cases. Alcohol might sometimes increase the taste for food, which was no doubt of great importance, and so improve gastric secretion; yet, in general, there was no greater amount of food absorbed in the day whether alcohol was or was not used, because the increased gastric juice was devoid of or poor in ferments. When moderation was departed from the whole of the digestive processes were disorganized. While the usefulness of alcohol in treating some digestive disorders might still be uncontroverted, Binz's dictum that the healthy stomach needed no stomachic, and therefore no alcohol, must be the standpoint of the physician to-day. But it might be asked, Might not wine be used to render food palatable and promote gastric secretion and digestion, just as other condiments, like mustard, were employed? The answer was that the objection to alcohol did not arise wholly from its effect on digestion, but from the tendency towards the habit being formed and from the specific action of alcohol on the brain. In respect to the food value of alcohol, experiments over many years had shown that over 95 per cent. ingested underwent combustion in the tissues and was utilized by them as a source of energy for muscular strength and body heat. Alcohol was therein strictly comparable to sugar, which was also an alcohol, though of a more complex nature. But the recognition that alcohol resembled sugars and fats in its fate in the tissues by no means implied that it was a suitable food in disease or in health. The same was true of vinegar or even of morphine under certain conditions. The question was, Could alcohol be taken without toxic effects on the tissues in general, quite apart from those on the brain and more specialized organs? On this point experiment had shown that alcohol appeared to behave like other nitrogen-free foods when substituted for other forms of food in persons not accustomed to its use, in that it sometimes failed to act as an equivalent for some days, during which the deficiency had to be made up by combustion of other available sources of energy, but that this effect was not proved to be toxic in its nature. But another series of investigations had shown that alcohol left the tissues in an impaired state, and that its abuse lessened the resistance to invasion by pathogenic organisms; the records of pneumonia in our hospitals and of cholera in the East indicated this beyond doubt. But they failed to show that it was beyond question that the habitual use of alcohol in small quantities or its therapeutic use had this effect, and the whole interest of the question at present lay in the dietetic use of alcohol as contrasted with the drunkard's abuse of it. The effects of alcohol on the central nervous system differed very considerably in different individuals. It was not sufficiently recognized how often alcohol acted in man as a pure depressant. The environment of social surroundings was largely responsible for the liveliness, physical excitement, and loquacity caused by drinking alcohol in company with others. In hospitals no such excitement or exhilaration generally appeared after the administration of alcohol. The effect of alcohol on the brain was capable of two explanations—namely, the view, at first sight appearing to be the more natural one, that it first stimulated the cerebral cells to greater activity and then depressed them, like strychnine; and the view, supported by the majority of experimental observers, that the stimulation of the brain was only apparent, and that the excitement was caused by a loss of the associations which ordinarily retarded the expression of mental activity. It was generally recognized that some of the highest functions of the brain were thrown out of action by alcohol administered in quantities which induced the phase of exhilaration. The further question was, What functions were actually increased in activity and how far was this increase dependent upon the reduced activity of the processes which were depressed by alcohol? Many valuable experiments had shown that those mental processes which were ordinarily performed readily were less retarded than those in which the subject was less practised and which required more effort—that was, the powers most recently acquired and most readily lost were those on which alcohol first acted, while those operations which had become habitual were less impaired. This was in complete accord with what was observed in the earlier stage of intoxication or exhilaration. *In vino veritas* was the conclusion to which the latest results of experimental science had come; in intoxication the natural man was exposed, stripped of the trammels of convention, and robbed of the fruits of experience and education. The results of these investigations on the mental state under alcohol, as well as many others, appeared to place the theory that alcohol acted as a narcotic upon a firm basis. But this would not preclude its chief use in therapeutics, for, like opium, its chief therapeutic use was not to induce but to repress cerebral activity and to produce a result of cerebral depression. In this respect alcohol was in many points not inferior to other narcotics as a medical remedy. The experimental results of the effects of alcohol on the circulation had been discussed by Dr. Dixon, who suggested that alcohol might support the heart by acting as a foodstuff, and that this might increase the blood pressure and improve the circulation. In addition to any direct action on the circulation, alcohol might prove of value in circulatory failure through its narcotic action in the same way as opium, over which it had the advantage of not inducing any embarrassment of the respiration.

But, though it might be useful in therapeutics, it must not be considered as indispensable, and its use must be curtailed to the utmost limit. In some conditions, such as old age and debility, it might be justifiable to neglect its drawbacks, but it ought to be advised only with eyes open to the risks run and with the recognition that a drug was being prescribed. The laity were justified in regarding alcohol, not as a drug, but as an article of diet so long as the physicians ordered it in the casual way familiar to all. They could hardly be blamed for ignoring the evidence of danger presented daily if their scientific mentors adopted the ambiguous position of physicians who allowed it, not believing that it would do any good, but assuming that it would do no harm, and not even hesitating to make that statement; and hence the medical profession could not complain if they were accused of indifference towards the greatest evil of their country and their age.

Dr. Waller urged that one should not take the raw data of the laboratory and put them before the public until there had been complete analysis and strict debate. There were many forms of alcohol, and their effects on the nervous tissues differed. He then described experiments with brandy diluted with water and the same spirit diluted with a 10 per cent. saline solution on isolated muscle, and showed that the latter facilitated muscular contraction; and he also mentioned other experiments with the dynamograph, showing that, while alcohol sometimes might have no effect on muscular contraction, it might have at the same time considerable effect on the dissipation of heat.

Dr. Rivers pointed out that there were two problems—first, the ascertainment of the effect, immediate or after two or three hours, of a single dose of alcohol; secondly, the question whether the continuous taking of alcohol as a habit had any effect on the muscular work capable of being done. In experiments he had made with the ergograph in respect of the first problem, there were disturbing factors to be eliminated. These were the questions of bias, and of interest, and pleasure of sensory stimulants, which always increased work done. These he had eliminated by means of control doses of prepared liquids, so that it was not known whether alcohol was being taken or not. The result of his experiments had been to show that there was absolutely no increase of muscular work done after small doses of alcohol of 5, 10, and 20 c.cm. But more experiments were needed; for, though the methods he had used were all adapted to bring out the most accurate results, yet the work could not be considered as wholly satisfactory. On the mental side there was a danger of disturbing psychological factors appearing.

Dr. Dixon drew attention to the statements as to alcohol being a poison based on the results of experiments on protoplasmic tissue. He could similarly prove that distilled water, beef-tea, and caffeine were poisons. It was possible to distil off ethyl-alcohol from the tissues of men and animals who had never had any alcohol; and alcohol was, therefore, an actual constituent of all forms of living matter. The most remarkable point about alcohol was its rapid absorption from the stomach, and during absorption it assisted in the absorption of other not easily absorbable substances, including ordinary articles of food. It was absorbed and oxidized exactly as starch and sugar, and these could be replaced by alcohol as an energy-producing substance. He had been engaged for three years in working at the action of ethyl-alcohol on the circulation, and he thought he had conclusively shown that the presence of small quantities of alcohol in the blood up to 0.2 per cent. increased the amount of work and the output of blood from the heart, especially when the heart was beating quickly or failing. This small quantity facilitated the work of the heart; but very curiously the type of action was changed entirely when the amount was increased to 0.5 per cent., when the work of the heart was not facilitated. The action of a small quantity of alcohol in giving the heart a readily assimilable form of food substances was exactly similar to that of sugar, which was normally oxidized to alcohol. It was very likely that ordinary sugar in the body was not burned off directly into carbonic acid gas and water, but that it passed through a series of ferment changes of which alcohol was one, and that that was one reason why alcohol was found in the brain, liver, and tissues of the body. The fact that alcohol depressed the mental functions constituted no reason why men should not take alcohol, for narcotics were wanted for hyperactive minds. Sugar in excess produced fatty degeneration of the tissues, as well as excess of alcohol, and cirrhosis of the liver was far rarer in Scotland than in England, while the consumption of alcohol was at least equal in proportion in the two countries. Alcohol had a special value as a food, for it was so easily absorbed. The objections to it were that it was an expensive type of food, and that it might lead to a continuous and undesirable habit. But it was a question whether this habit of taking small quantities was sufficient to justify us in completely stopping its use.

Sir Victor Horsley said that the scientific examination of alcohol should be an accurate determination of its so-called stimulating effects, and asked, if such really existed, how soon the paralyzing and narcotic stage began? Dr. Dixon's results could not be accepted until it was proved that the alcohol perfused through the tissue was actually used up. Further, the well-known effect of alcohol in increasing the diastolic relaxation of the walls of the heart could not be regarded as either a stimulation effect or an advantage to the circulation. With respect to the ergograph as a method of investigation, the majority of investigators using it decided against alcohol, but he thought it was not a sufficiently delicate or accurate method. In medicine, as Dr. Sturge and he had shown in a recently published book, alcohol was during the last thirty years being given up as a stimulant, owing to its inefficiency and its serious depressant after effects. This change of view on the part of the medical profession was a true scientific result based on many years' observation. As alcohol was thus found wanting, physiologically and therapeutically, its abolition ought to be considered from the point of view of social science. The Physical Deterioration Committee appointed by the House of Commons proved that the first greatest evil socially was defective housing, and that the second was alcohol. From patriotic reasons, therefore, total abstinence should be our ideal and practice. Yet the majority took alcohol for its so-called pleasurable effects, the only results of which were inefficiency, poverty, vice, disease, and crime.

Mr. C. J. Bond exhibited and explained a series of diagrammatic curves, showing that the consumption of alcohol had dropped gradually at different periods between 1845 and 1900, was intimately connected with rise and fall in the nation's commercial prosperity, and had a certain connexion with the accumulating scientific evidence as to the small value of alcohol as a food. The rise and fall in its consumption also had an effect upon the number of inmates in our asylums. From 1900 to the present day there had been a continuous decline in this nation's consumption per head of alcohol, which was a tendency that none ought to deplore.

Dr. Reid Hunt of Washington described a series of experiments on young guinea-pigs, to which small doses of a few cubic centimetres of 5 or 10 per cent. alcohol solution were daily given with their food. On four generations, over a period of two years, it was shown that they grew as quickly, reached maturity as soon, were just as fertile as were those to which alcohol was not given. There was never a symptom of intoxication, no loss of weight, and no pathological changes. The comparison was strictly analogous to human beings who were "moderate drinkers." Nobody seemed to have discussed deeply the question of the increased tolerance for alcohol in the bodies of animals or men who had become accustomed to its presence. There was an increased power produced on the part of the physical body to oxidize alcohol. In respect of the comparison of sugar and alcohol, however, he had found that, while sugar increased resistance to poison, alcohol lessened it. He had made experiments with guinea-pigs and acetonitril, and alcohol seemed to lessen the resistance to the formation of prussic acid from the acetonitril introduced into the body. Most probably the continued use of alcohol produced, he thought, definite physiological changes in the body processes, sometimes for good and sometimes for evil.

Dr. Waller, in winding up the discussion, expressed a hope that at the next meeting of the Association more positive answers could be given, and more definite arithmetic in respect of the at present doubtful questions raised. There ought to be more knowledge of what a moderate dose of alcohol was, though he had no concep-

tion as to what constituted an "extremely" moderate dose. He had learnt to-day that the amounts of alcohol that could be present in the blood as physiological and pathological standard amounts—namely, 0.2 and 0.5 respectively, as shown by Dr. Dixon—were strictly proportional to the amounts of 0.02 and 0.05 respectively for chloroform. He was conscious that the ethical side of the alcohol question had not been touched upon. In the present state of the matter it was the most desirable method of procedure, and was the best way by which to arrive at definite and disinterested scientific conclusions as to the results produced by alcohol upon the physical tissues of the body, and upon the heart, brain, and circulation.

ELECTION OF PRESIDENT.

At a meeting of the General Committee on August 2nd Mr. Francis Darwin was elected President of the next meeting, to be held at Dublin in 1908.

DATE OF NEXT MEETING.

On the recommendation of the Dublin Executive Committee, Wednesday, September 2nd, was fixed as the date of the inaugural meeting.

SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

THE second International Congress on School Hygiene, which was opened in the buildings of the University of London on August 5th, has brought together over 2,000 delegates and members, a considerable proportion being medical men and women.

OPENING CEREMONY.

The inaugural meeting on August 5th was presided over by the Earl of CREWE, who said that the King desired him to express His Majesty's interest in the subjects with which the Congress was concerned, his hopes for its success, and his regret that his enforced absence from London rendered it impossible for him to receive the members. Lord Crewe then, as a member of the Government, expressed for himself and his colleagues the hope that the Congress would be successful. It was not an official Congress; it was not organized on official lines, and was not subsidized by official money, but the Government took a keen interest in it, and hoped that the various Government departments concerned would learn much from its deliberations. The subject of school hygiene had two branches—the one was school buildings and their sanitation, the importance of which in this country was somewhat limited; the other was the maintenance of the health of the children, so that the instruction they received could be turned to the best advantage. Classification was the grammar of science, and in applying hygiene to school conditions it was necessary to classify the children. He would not discuss how medical inspection was to be carried out, but its necessity could not be doubted. In the matter of classification this country was backward. Something had been done with regard to children who were obviously defective—who were, for instance, blind or deaf—but classification must go much further and deal with children who had defective hearing or sight or teeth. He had already ventured to assert in another place that the misery caused by bad teeth was equal to that caused by an average war. The expenditure of money to preserve the health of school children was the rational way and the truest economy, but it was necessary to convince the payer of local and imperial taxes that the money already being spent was spent to the best advantage, to convince him that schools were not injuring the health of the children and producing cripples and paupers. It was the duty of the Congress to show how these evil effects could be avoided, and, going further, to show how healthy children might be bettered by suitable physical exercise, always remembering that physical training could not be given to defective or underfed children. Then there was the question how far it was advisable to teach military drill and exercises in elementary schools. He did not believe that such training would foster militarism, but he would be sorry to see games for small boys displaced by drill and rifle exercises. He hoped that the Congress would leave a permanent mark on the history of the subject.

Lord LONDONDERRY identified himself with Lord Crewe's hope, and associated the late Government with the present in expressing the deepest interest in the health of school children. He regarded medical inspection as absolutely essential, and was in favour of boys' brigades and cadet corps, which not only trained the body but were useful in inculcating habits of discipline.

Lord FITZMAURICE, Under Secretary for Foreign Affairs, also welcomed the members, and in the course of his speech observed that the Bill for Medical Inspection of School Children, which was about to be considered by the House of Lords, would make it necessary for every county council to appoint a full time medical officer.

Sir LAUDER BRUNTON, as President, then welcomed the members and delegates, and offered the thanks of the Congress to the King, who, by the interest he had displayed, had converted what threatened to be a fiasco into a great success For this not only the Congress, but the children of this and future generations, would owe him the deepest gratitude. Parental affection was a fundamental instinct, but the true meaning of education—the training of body and mind—had been forgotten and reduced to a mere cultivation of memory. Physical training and mental training might be overdone, and medical inspection was therefore necessary. It should not be confined merely to muscular development, but should include the condition of the heart and lungs. It was very good to teach crippled children a trade, but a far better thing was to prevent the manufacture of cripples. It must be recognized that physical training was a complex business, and in his opinion co-ordinated exercises, that is to say gymnastics, were necessary as well as games. He could see no objection to military drill, and believed that training in shooting induced habits of sobriety, obedience and accuracy. In conclusion, he spoke of the great loss which the study of school hygiene had sustained by the death of Dr. Schubert, Secretary-General of the last Congress, and of Professor Hermann Cohn, who had described to that Congress what ophthalmic surgeons had done and were doing for school hygiene.

Dr. GRIESBACH, President of the first Congress at Nüremberg, moved a vote of thanks to the President for his address. The first Congress had been attended by some 2,000 persons, and he was glad to know that the second Congress had the support and official recognition of all civilized countries. It had King Edward VII for Patron, and he was pleased to be able to announce that the German Emperor had shown his interest by permitting his son Prince Eitel Friedrich to accept the office of Vice-Patron. In conclusion, he presented the greetings of the German Association of School Hygiene.

The motion was seconded by Dr. LUTHER H. GULICK (America), who said the application of hygiene to schools was following the same course of development as medicine. At first it was concerned with cure, then it began to study prevention, and now it was beginning to be interested in the increase of vitality, which meant the cultivation of the faculties which make for progressive health.

The motion was supported by Sir ALEXANDER PEDLAR (India), who said that education based on modern principles was making progress in India. The problems there were large and varied; in Bengal, for instance, there were 1,800,000 pupils, but, large as this total was, it represented only 1 boy in 3, and 1 girl in 40.

The motion was carried by acclamation.

A vote of thanks to Lord Crewe was moved by Dr. ALBERT MATHIEU (France), who said that the Congress would produce emulation and collaboration between the nations, and encourage the authorities in the different countries to recognize the importance of the subject. The motion was seconded by Sir PHILIP JONES, M.D. (Sydney, N.S.W.), supported by Dr. LEO BURGENSTEIN (Austria), and carried by acclamation.

In the evening a reception was held, when Foreign and Colonial delegates were presented, and a representative of each country delivered a short address.

MEDICAL EXAMINATION OF SCHOOL CHILDREN.

The subject selected for discussion at the general meeting on August 6th was medical examination of school children. It was introduced by Dr. W. MACKENZIE,

Medical Member of the Local Government Board for Scotland, who discussed the methods for the first and subsequent medical examination of school children. The principle of medical inspection of school children having been already accepted, Dr. Mackenzie confined himself to the discussion of the practical methods to be followed in organizing it. The examination must be conducted at school, within school hours of work or recreation, and must be strictly practical, being limited to the health conditions that fit or unfit the child for school work. It ought not to include, except incidentally, such details of merely scientific interest as anthropometrical or anthropological observation. The examination must have regard to two primary factors, the sanitation of the environment, that is to say of the home and the school and the health of the individual. By the latter, much valuable light was thrown on the conditions of the home as well as on the condition of the organs of education (eye and ear), the vital organs (lungs and heart), the respiratory passages, the general muscular system, and the functional condition of the nervous system. The first examination should be made at school age, and this examination of children at their entrance to school had been proved to be practical. It was not an exhaustive examination, for it was not made for purposes of treatment, but to discover whether treatment or supervision were necessary. Each examination took ten minutes, but as the medical inspector gained experience, the time could be reduced to five minutes. The co-operation of the teachers was invaluable. The teacher was able to provide essential details as to age, occupation of parents, size of house, regularity of attendance, hours of rest and work. He could also record height and weight, make a first scrutiny of eyes and ears, and record with sufficient accuracy, for further examination, deformities and defects and obvious symptoms. It was easy to see that the teacher was at every stage of the child's school life an indispensable and reliable coadjutor in medical inspection. Above all, he was in constant touch with the parent, and the school, after all, was a specialized organ of the home, and school education a specialized function of the home. Experience in Scotland and all information Dr. Mackenzie had been able to attain at first hand, proved that the teachers had taken to the work with enthusiasm, and had been among the chief promoters of the movement. They found that the work was full of interest and that every observation enabled them to realize better how the minor defects and diseases hampered the true work of the school. These facts had been fully appreciated by the central and local educational authorities in Scotland. The provincial committees now in charge of the training of teachers had decided to include in the curriculum seventy hours of practical and theoretical instruction in personal and school hygiene. This was not with the intention of making the teachers into amateur doctors, but of placing them in the position to make a first scrutiny of all their children, and so economize the ultimate and necessary labour of medical inspection. Henceforward, as for the last two years, every teacher trained in Scotland would have as part of his regular training a carefully-planned and balanced course of school hygiene, including not merely the hygiene of the schoolroom, but also the personal hygiene of children. In all the training centres this information was conveyed by practical observation of actual children. At college and in the schools visited the students were made to examine children at work, as well as on special occasions. The object of the course was not to teach theoretical physiology, but the clinical physiology that would afterwards enable the teacher to suspect when a child was hindered in his growth and work by some abnormality or disease. The object of medical examinations after the first was to insure that, in the course of growth, no child had suffered from the work and stresses of school; but if the first examination were thorough, and if all those found defective had been rejected for the time, and all those found in need of medical supervision in their mental and physical training had had such supervision, the numbers remaining for systematic re-examination with the same care as at the beginning would be relatively small, and the re-examination less elaborate and more rapid. It should be directed chiefly to the eyes, ears, throat, heart, and lungs, and deformities. If the teachers were awake to the importance of not forcing a defective organ, they would always report a case even if not aggravated, and it was therefore not unreasonable to ask that at least twice in the subsequent course of school life the primary senses of eye and ear and the primary organs of the chest should be examined. Turning, then, to the administrative aspects of the question, Dr. Mackenzie enumerated as follows the arguments in favour of assigning medical inspection to the medical officer of health or to special school doctors acting independently of the medical officer of health:

In favour of assigning the duty to the medical officer of health:

1. He represents the preventive functions of the sanitary authority, and, as we have seen, the work of medical inspection is in the largest sense preventive.

2. He controls the sanitation of the child's environment—drainage, water, overcrowding, food, ventilation, housing, plans of building and the like.

3. He has access to the schools for the purpose of examining children for infection, and he has the control of all the apparatus for managing infectious diseases. This I put quite broadly. It may not be strictly true of all the sanitary authorities of England, but it is sufficiently exact for the argument.

4. He necessarily has a hygienic interest in the child before it begins to go to school, during its stay in school, and after its school days are over. At no stage can we say that the child ceases to be a matter of concern to the sanitary authority and its specific officers. The child cannot be divided up into abstractions—a home-child, a school-child, a street-child, a factory-child, a workshop-child, and so on. It is the same child right through all its hygienic relationships, and the medical officer may maintain that, as the school is the largest dépôt of children for the time being, he should have the administrative advantage that direct personal examination can give to the preventive functions of the sanitary authority.

5. He knows that the physical condition of the child is an index to the sanitary condition of the home, and he wishes to have this new line of entry to the home in order to improve the child's and the parent's environment.

In favour of assigning the direction of the work to a special medical officer of schools acting independently of the medical officer of health, but co-operating with him:

1. The medical officer of schools approaches the child for the purpose of fitting it and keeping it fit for education, of preventing injury from school conditions, of exploiting to the full such faculties as it may have.

2. He is not indifferent to the hygiene of the environment, which always affects the working capacity, and he can always secure the co-operation of the medical officer of health in improving the environment both at home and at school.

3. He finds that the most important problem in the school is the problem of fatigue, which is a function of many variables; not all of them directly hygienic, some of them being specifically educational. He maintains that, for the investigation of the conditions of fatigue, the present training and experience of medical officers of health is not of exceptional value.

4. Though concerned with the child's hygienic environment, he is not limited in his outlook to the grosser circumstances named roughly "drains" and "water." He works—not from the environment to the child, but—from the child to the environment. He maintains strongly that the personal and detailed examination thus made necessary is the proper sphere of a new specialism.

If the duty of directing the organization for medical inspection was to be assigned to the medical officer of health, he must escape from the current and traditional view that public health was concerned primarily and almost exclusively with the environment, and that the individual was secondary; he must expand the conception of preventive medicine to include all preventable diseases whatsoever. In England, where the same body was both sanitary and education authority, the expediency of maintaining two independent officers must depend on the amount of work to be done, but under the extended conception both officers would be medical officers of health. In towns it would be a misfortune if the supervision of the personal hygiene of school children should be considered in any way irrelevant to the personal hygiene of the community as a whole. In the rural areas the natural officer to assume the direction of medical inspection would be, he thought, the county medical officer of health. In Scotland it was possible that, although the school authorities were likely to remain independent, they would normally accept the direction and service of the medical officers of health as far as possible. But in this there was nothing to exclude the appointing of either whole-time specialists or local practitioners to do such parts of the work as required their special service. Dr. Mackenzie declined to dog-

matize on the course which the development of medical inspection should follow, but said:

One administrative mistake we should do everything possible to avoid—namely, the organizing of inspection in such a way that the local authorities will be tempted to offer illusory salaries to part-time officers already in practice, and neglect to appoint some central officer, whose duty it will be to organize and correlate the work. Of England I do not speak, because the details are not familiar to me. But of Scotland I can speak with knowledge. When the Public Health (Scotland) Act of 1867 was passed, the execution of it was placed in the hands of the parochial boards of the individual parishes. The result was that medical officers were appointed at salaries of £1 and £2 and £3, or other trifling sum, and retained merely as advisers. For twenty years the administration of public health in Scotland within the rural areas was a name and nothing more. In 1889, the parishes ceased to be the unit of administration for public health; the counties and county districts became the new areas; the county councils and district committees (or district councils) became the new authorities for public health. The result was the appointment of a large number of whole-time medical officers of health for the counties. The result of this in turn has been that, in seventeen years, the organization of public health in the Scottish counties has gone forward by leaps and bounds, and the amount of work actually accomplished to the satisfaction of all classes has been immeasurably greater than in the preceding fifty years. In Scotland, the lesson of this experience is not likely to be forgotten. It seems to me that, if we could preserve the continuity of growth when medical inspection, which is also preventive medicine, comes to be organized on the large scale, we shall save a generation of perfunctory work and illusory salaries. We shall, at the same time, preserve to the education authorities the widest freedom in the detailed execution of the medical examinations. For we must have regard to the fact that the education authority is to the school child in the place of the parent. We need not rigidly confine the school authority to using the public health service as it at present exists; but among the options this will probably be the first. If it should be, I have little doubt that, at least in Scotland, the authorities for public health and the authorities for education will amalgamate their medical services until it will be impossible to draw a line between the health service and the medical service of schools.

Turning finally to a consideration of the functions of the central authority, Dr. Mackenzie said that the English Bill did not indicate what part the Education Board would play either in the prescription of the nature and extent of the examination, or in its organization; by the Scottish Education Bill the local authorities would be under the obligation to carry out inspection when required by the Scottish Education Department, which would prescribe the nature and extent of the examination. The Local Government Board in Scotland, as the central authority for public health worked, in the closest relation with the Scottish Education Department, and Dr. Mackenzie expressed the confident belief that as time went on the public health organization and the organization for the medical inspection of schools would grow practically into a single system. He submitted for consideration a form of schedule for first and subsequent medical examinations.

Dr. H. MÉRY, Physician to the Paris Hospitals, discussed the methods which should be adopted in the medical examination of school children both on the first and on subsequent occasions. His paper was highly technical, and contained many details as to the method of making and interpreting anthropometrical observations. In concluding his remarks he urged that the primary examination should be made in accordance with a uniform system, and asked the Congress to express a definite opinion on this matter, and to indicate the points to which the examination at entry should be directed, and, as far as possible, the method that should be followed. He suggested that the examination should be divided into three parts:

1. An anthropometrical examination to ascertain weight, height, and chest measurement. The best chest measurement appeared to be the amplitude of respiration, by which was meant the comparison of the xipho-sternal circumference in maximum inspiration and expiration.
2. Examination of sight and hearing.
3. A medical examination of the general condition of the skin, the scalp, the teeth, the circulatory system, the lungs, and the vertebral column. In the examination of the lungs, a method comparable with and inspired by that of the late Professor Grancher[1] should be employed. Children presenting any abnormality should undergo further medical examination.

Half-yearly measurements of normal children should be made by the teachers under the supervision of the school doctor, and the relation of the teachers to the school doctor should be clearly defined. The duty of the teacher should be limited to taking the height and weight, and to obtaining information as to the previous health of children when they enter the school. The results of the examination should be entered on the child's health card, which should remain in the custody of the school doctor.

A brief discussion in which German members took the chief part followed; it turned mainly on the value of medical inspection for the prevention of infectious diseases, and on details of physical examination. Dr. PASCHEFF, Delegate of the Bulgarian Government, dwelt on the importance of a thorough examination of the eyes, referring especially to the discovery of early fundus changes, and the detection of the earliest stages of trachoma.

The work of the Sections, of which there are eleven, commenced on Wednesday morning.

Mind, Brain, and Education.

In Section 1, which is concerned with the physiology and psychology of educational methods and work, Sir JAMES CRICHTON-BROWNE, President, gave an address on mind, brain, and education. The Congress, he said, was an emphatic assertion of the claims of the body in relation to education and of health as the only safe foundation of good citizenship. It would collect information from many and diverse sources, and permit of comparative estimates. It would show how the efforts of different groups of workers might be co-ordinated, and it should help to establish a world-wide *entente cordiale*, uniting all civilized peoples by their love of little children in an endeavour so to order the education of the rising generation that they might be stronger, happier, and better than those who had gone before them. The connexion of physiology with school hygiene was obvious, and no teacher could be regarded as competent who was altogether ignorant of physiology or indifferent to it. Regular medical inspection of schools and school children either as a State institution or under local organization, had been established in France, Germany, Belgium, Austria, Norway, Switzerland, Russia, Servia, the United States, Japan, Egypt, the Argentine Republic and Chili, and would, it was to be hoped, be adopted before long in this dilatory country. Such inspection, thoroughly carried out, as it would be carried out without espionage or any interference with parental control would, if followed by effective measures, save untold suffering to countless little ones, would speedily reduce the pitable regiments of the maimed and stunted and defective that disgrace and burden our civilization, would yield improved educational result even in reading, writing and arithmetic, and would in a few years furnish a trustworthy picture of the physical and mental status of the population in urban and rural districts, and thus define with precision the wise course of social reform. It was necessary, however, to put in a plea for psychology, for it was said that the teacher's attitude towards the child should be concrete and ethical, and not abstract and analytical; the truth was that the connexion of psychology with education was so intimate, and the nature of the light it could throw on educational methods so urgent, that in the United States there had been a demand for the appointment of special psychologists and the foundation of special psycho-educational experimental laboratories in which problems might be investigated from the educational standpoint. In fact, as John Stuart Mill had said, "Psychology is the indispensable scientific basis of the science and art of teaching." The introduction of associative intercourse in the higher centres of the brain was, he said, mostly a very gradual process, but it was one that might be expedited or retarded in various ways. In order that it might proceed in a normal manner, the nutrition of the brain must be maintained, and portentous and deplorable were the losses, not only in infant mortality and in bodily infirmity and disease, but in mental debility and shortcomings, owing to the insufficient or improper feeding of the young at the time when the neurones were growing and socialising, and demanded liberal nourishment of the right sort. Antenatal maternal conditions, the occupation of the

[1] BRITISH MEDICAL JOURNAL, 1906, vol. ii, p. 1410.

mother, the infectious diseases from which she suffered, and the presence of toxins in her blood, powerfully affected the viability of the child, and it was obvious that there might be other conditions, the covert and far-reaching effects of which were not yet gauged. Of all the infants born in our large towns, some 20 to 30 per cent. were visibly damaged at the time of birth, and of the 70 or 80 per cent. that passed muster then some probably bore in their nervous system hidden marks of maternal privation that would come to the surface later on. It was being more and more realized that if the race was to be radically and permanently improved and its faults eliminated we must begin at the beginning. Excellent results in the reduction of infant mortality were being obtained in Paris and London by the feeding of mothers during the lactation period, and he would go still further back and see to their feeding during utero-gestation also. Physical education should really begin in utero, and among the hygiene leaflets that were now being carried into the homes of the people by health visitors there ought to be one entitled, "Precepts for Pregnancy." Next to nutrition came exercise in promoting the vigour and activity of the neurones of the association centres of the brain. Mental as well as muscular movements became energetic, easy, and precise by frequent and disciplined repetition, a result due to changes partly in the body of the cell and partly in its branches. The exercise of the cells ensured them better irrigation by the blood and the more rapid storage of fresh material in them. In this respect the structural element stood related to the nutrient lymph as did the entire organism to the food supply. A good appetite and vigorous digestion were indicative of a healthy body, and a keen curiosity and sound judgement of a healthy mind. After enumerating other ways in which psychology benefited school work and hygiene, Sir J. Crichton-Browne summarized his argument in the statement that its primary advantage, out of which the others grew, was that it led the teacher to a fuller and better comprehension of the child.

Medical and Hygienic Inspection.

Professor William Osler, F.R.S. (Oxford), in a presidential address to Section 1, dealt with medical and hygienic inspection in schools, which he said had not made much progress since the first congress in Neuremberg; the action taken had been haphazard, for every country, and almost every locality, had its own scheme of organization. So far as systematic methods of inspection were concerned, Great Britain was far behind most of the Continental nations, while Switzerland and Sweden were foremost in the work. The question admittedly bristled with difficulties, sociological and economic. As an example, he referred to the general neglect of the teeth, so that it was not surprising that among school children 50, 60, and in some places 70 per cent. had decayed teeth. It would take a good dentist many weeks to put the teeth of the children in one small elementary school in proper order, and there were scores of villages and small towns without a resident dentist within five miles. Another simple subject much neglected was proper breathing; there were more mouth-breathers to the acre in England than in any other country in the world, in Bradford 28 per cent. of the children were mouth-breathers, and it was rare for mouth-breathers to have much mental snap or energy. In many schools the temperature was kept too low in the winter, while dampness—a common condition in the houses of the poor — was a fruitful source of nasal catarrh. But, in spite of all the surroundings and existing difficulties, the ideal conditions were easily defined. In the first place, there should be a separate department at the Board of Education, which should supervise and co-ordinate the work throughout the country. Secondly, to each school should be attached an intelligent woman, preferably with a nurse's training, whose duty it would be to carry out observations at intervals, and to assist the doctor in all matters relating to the hygiene both of the school and the children; thirdly, the school dentist should make a quarterly inspection of the children's teeth; and lastly, there should be the school doctor, who should be the lieutenant to the medical officer of health, to whom he would be the greatest help, for the work of the two had so much in common.

LITERARY NOTES.

The Académie Française has awarded a part of the Archon-Despérouses prize to M. "Sylvain de Saulnay," author of a volume of poems, entitled *Ombres Colorées*. The poet so distinguished is Dr. Le Double, Professor of General Anatomy in the Medical Faculty of Lyons, who, apart from his scientific writings, is well known as a literary expounder of Rabelais.

In the *Bulletin of the Johns Hopkins Hospital* (Baltimore) for August, Dr. Augustus Grote Pohlman, Associate Professor of Anatomy in the Indiana University, gives an account of Pheneas Fletcher's curious poem, *The Purple Island*, which is a description of the human body. It was first published in 1633, again in 1784, and a third time in a limited edition in 1869. "Thirsil" (the poet himself) tells the "nymphs and shepherd boyes" of the wonders of the human frame. He describes it as formed of bone, cartilage, and ligament:

> It grounded lies upon a sure foundation,
> Compact, and hard; whose matter—cold and drie—
> To marble turns in strongest congelation;
> Fram'd of fat earth, which fires together tie;
> Through all the Isle, and every part extent,
> To give just form to every regiment;
> Imparting to each part due strength and stablishment.

Of the circulatory apparatus he says:

> Nor is there any part in all this land,
> But is a little Isle: for thousand brooks
> In azure chanels glide on silver sand;
> Their serpent windings and deceiving crooks
> Circling about, and wat'ring all the plain.
> Emptie themselves into th' all-drinking main;
> And creeping forward slide, but never turn again.

It might, says Dr. Pohlman, be that Fletcher knew of William Harvey's discovery which was made known to the world five years before the *Purple Island* was printed. This is not the case, however, and his silence in regard to the circulation is easily explained by the fact that he probably began the poem when he was a student at Cambridge, where he entered in 1600. The Island is divided into three "regiments," "by three Metropolies joyntly sway'd," namely, the abdomen, chest and head, with the liver, heart, and brain respectively as "chief cities." He describes the brain and its membranes as follows:

> The other two of matter thinne and light;
> And yet the first much harder than the other;
> Both cherish all the Citie: therefore right
> They call that th' hard, and this the tender mother.
> The first with divers crooks and turnings wries
> Cutting the town in foure quaternities;
> But both joyn to resist invading enemies.

The following is his account of the ear bones:

> The first an hammer is call'd, whose out-grown sides
> Lie on the drumme; but with his swelling end
> Fixt in the hollow stithe, there fast abides:
> The stithe's short foot doth on the drumme depend,
> His longer in the stirrup surely plac't;
> The stirrup's sharp side by the stithe embrac't,
> But his broad base ti'd to the little window fast.

The labyrinth was apparently well known, but was supposed to contain air. The process of audition is then described:

> As when a stone, troubling the quiet waters,
> Prints in the angry stream a wrinkle round,
> Which soon another and another scatters,
> Till all the lake with circles now is crown'd:
> All so the aire struck with some violence nigh,
> Begets a world of circles in the skie;
> All which infected move with sounding qualitie.
> These at Auditus' palace soon arriving,
> Enter the gate, and strike the warning drumme;
> To these three instruments fit motion giving,
> Which every voice discern: then that third room
> Sharpens each sound, and quick conveys it thence;
> Till by the flying poast 'tis hurri'd hence,
> And in an instant brought unto the judging sense.

It must be remembered, says Dr. Pohlman, that apart from the writings of the Greeks the only authorities accessible to Fletcher were Sylvius, Vesalius, Fallopius, and Fabricius. That he must have known of the works of these men is to be inferred from the credited discovery of the stapes by Ingrassias in 1548. It appears, however, quite extraordinary that the other ear ossicles—the labyrinth with its two windows—should have been known long before this time without the stapes being discovered.

British Medical Journal.

SATURDAY, AUGUST 10TH, 1907.

THE ANNUAL MEETING.

THE annual meeting of the British Medical Association this year, the seventy-fifth in its history, has been universally recognized by those who were privileged to take part in it as one of the most agreeable and instructive in the long list of such gatherings. In Dr. Davy the meeting had a President who, as was shown by his address published last week, was able to take a wide view of the responsibilities of the profession to the public, who gave time and energy unstintingly to make the meeting a success, and charmed all by his genial reception and lavish hospitality. In his efforts he was ably seconded by the Honorary Local Secretaries, Mr. Russell Coombe, Dr. Clapp, and Mr. Leonard Tosswill. To Mr. Russell Coombe the Association is very particularly indebted; unremitting in his attention to every detail of organization, always ready to overcome any and every difficulty he almost seemed to have solved the proverbial difficulty of being in several places at the same time. The organization of such a meeting throws a great deal of work on the Local Secretaries, and the best reward that these gentlemen can have is the knowledge that in all its aspects the meeting was an uninterrupted success.

The citizens of Exeter heartily supported the local Executive Committee and its officers. The Mayor took the earliest opportunity of formally receiving the Representatives of the Association in the ancient Guildhall of the city, and after the retiring President, the incoming President, the Chairman and the Deputy-Chairman of Representative Meetings, and the President of the South-Western Branch had been presented to him by one of his predecessors in the mayoral chair, Mr. E. J. Domville, Surgeon to the Devon and Exeter Hospital, he very cordially welcomed the Association to Exeter. The note thus struck was maintained to the end, and every member who attended the annual meeting must have felt the genuine warmth of the welcome which the citizens of Exeter joined with the medical profession in extending to him.

Never before, perhaps, has the proper relation of work to recreation been so nicely adjusted. Nothing, save only the brief ceremony at the Guildhall, was allowed to interpose between the Representative Meeting and the work to which it so strenuously set itself for two long days and a generous share of another. During the rest of the week the Sections were left to their morning's work undisturbed by any countervailing attractions. That this demanded some self-denial on the part of the hosts was plain to every student of the *Book of the South-West*, so admirably compiled, edited, and produced by a Committee under the Chairmanship of Dr. William Gordon, Physician to the Devon and Exeter Hospital. To members who attended the Annual Meeting this volume will be an enduring memento of the historic monuments of Exeter itself, of pleasant visits to Devonshire parks and mansions, and of agreeable expeditions to the ancient towns, the attractive seaside resorts, and the hills and moors of the South-West.

The work done in the Sections was of a high order of merit, as may be judged by the annotations published in this and the last issue of the JOURNAL. The full reports will be published at an early date, and will render the second volume of the JOURNAL for this year a valuable work of reference on topics of current interest.

The Pathological Museum, to the organization of which Drs. Solly and Hawker devoted much time and labour, was a most interesting collection, as those who did not see it may judge from the account published at page 127 of the SUPPLEMENT for this week. Among the series of specimens, reference may here be made to the beautiful preparations of trypanosomes exhibited by Mr. H. G. Plimmer, one of the Vice-Presidents of the Section of Pathology, and, at the other end of the scale of pathological processes, if, indeed, the condition is in the proper sense of the word pathological at all, to the curious cases of black pigmentation of the lips, apparently a family abnormality, of which Mr. Jonathan Hutchinson exhibited drawings.

To many members of the Association, not the least interesting feature of the Annual Meeting is the exhibition showing new surgical instruments, hospital appliances, new foods, and improved methods of drug administering. In these days of competing advertisements—and, what is still more important, of competition between manufacturers, who are all capable of producing, and who do, in fact, put on the market, articles showing a thorough comprehension of the needs of the surgeon and physician, and of most excellent workmanship—it is not easy for medical men living away from large centres to decide as to what of all that is offered them is really most suitable to their special needs. Nor, indeed, can even those resident in, or visiting, London itself usually be quite satisfied that they have found the best thing made for their purpose without inspecting in succession several establishments, and meantime keeping an open mind. This annual exhibition, therefore, is of decided value, for it affords an altogether exceptional opportunity of comparing the products of different firms, of examining instruments and useful appliances, surgical and pharmaceutical, the existence of which has hitherto perhaps hardly been realized; of choosing upon the spot and *de visu* things which are immediately desirable, and of making mental or other note of those which later on it may seem desirable to purchase. In the latter connexion it may be observed that the experience of past years seems to show that such notes are sometimes incomplete or mislaid, for it frequently happens that months after the annual meeting has ended inquiries reach the office of the JOURNAL containing more or less vague descriptions of something that has been seen at the exhibition, and asking for precise information as to where it can be obtained; and to such requests the information in the possession of the JOURNAL usually allows a satisfactory answer to be given forthwith. At Exeter the exhibition held was distinctly creditable to all those who took part in it, the selections of articles to be shown being for the most part excellent, and the exhibitors' agents being untiring in their readiness to give demonstrations to all and sundry of the utility of what was on view. It is satisfactory, too, to know that it was well attended, in spite of the fact that this year the hall in which it was held was not on the main line of progress from one part of the centres of activity in Exeter to another. As usual, by way of making a permanent record of some of the

principal novelties which were displayed, the publication of an account of the exhibition as a whole is commenced in the Supplement to this issue, and will be continued in the ensuing weeks.

HEALTH RESORTS AT HOME.

Elsewhere will be found an article, which has been specially written for this Journal, on Royal Leamington Spa. The account there given of this well-known town and of the medicinal value of its saline springs brings into prominence the fact that, from both points of view, Leamington compares favourably with Continental spas. Yet nowadays it fails to attract the crowds of anxious seekers after health who year after year fill to overflowing the hotels and lodging-houses and enrich the municipal and professional coffers of its more successful foreign rivals. It is obvious that the fault—if fault there be—does not lie in lack of belief in the inherent virtues of the mineral springs with which Dame Nature has favoured the attractive and salubrious Warwickshire Spa, because in the days of Jephson it achieved a distinction and boasted an annual influx of visitors of which it had ample reason to be proud. The skill and personality of Jephson had much to do with the high favour which, in his day, the springs of Leamington acquired, but this does not wholly explain why its popularity has since waned in such a marked degree. Towards the middle of last century, it is true that facilities for travel were so inadequate that only a comparatively small number of those who believed in the value of a water cure could afford the time or expense of a journey abroad. But, on the other hand, the difficulties of reaching a town situated in the heart of England, by coach or carriage, were even greater then than those which have to be encountered to-day in a journey by steamer and rail to France, Germany, or Austria.

Nor can it be admitted that Jephson has not had worthy successors to take up the mantle of his fame and carry on his methods of treatment with undiminished fervour and with at least equal skill. No doubt, in his day, his reputation spread far and wide throughout his own country, with the inevitable consequence that Leamington, through whose merits that reputation was established, shared in his triumphs. But we have not heard that, great though Jephson's fame became, it ever attracted, in any considerable number, other invalids than those of his own country to the seat of his labours. No foreign State found it profitable to provide *trains de luxe*—or whatever was the travelling equivalent of those days—in order that its ailing inhabitants might be conveyed luxuriously and expeditiously to this English Mecca of health and healing.

The chemical value of the waters at Leamington closely approximates to that of the waters at Kissingen and Homburg, and by those who are familiar with all three towns it will be admitted that, from the points of view of beauty of surroundings, historical interest, equability of climate, and comfort of accommodation, it compares favourably with both. It will, moreover, be granted that, as regards professional status, the medical profession is as adequately represented at Leamington as at any health resort in this or other country. Where, then, is the explanation to be sought for the preference which the public so distinctly manifests for the "Quellen" and "Sources" of foreign lands? The popular answer to this query is that unfailing scapegoat of our national failures—the weather. But can it be truly said that during "the cure" season—from May to September—the average meteorological conditions at home are either worse or more uncertain than abroad? May not even the opinion be hazarded that the green fields, the stately trees, the wealth of wild flowers, the shaded lanes, and the tempered breezes of a summer day such as we are familiar with in this country, are expressions of Nature's beauty and life-giving influence which are unsurpassed throughout the world?

Yet it must be confessed that, despite conditions which would seem to put us in a position to compete favourably with our spa competitors abroad, we have dismally failed to keep pace with them in the race for distinction and success.

Fashion has, and always will have, much to do with the trend of public opinion in this, as in every other, question pertaining to the events and procedures of social life, and if those in high position could be persuaded to show an example by resorting every autumn to Leamington, Bath, Buxton, or Harrogate, instead of to Homburg, Kissingen, Carlsbad, or Marienbad, the home spas would, in a surprisingly short time, attract the sick, the weary, and the worn from every quarter of the globe.

In order that so desirable a consummation may be attained, it is necessary that our spas in England should put forth greater effort to prove themselves attractive as social centres. The waters provided by Nature may be of the greatest medicinal excellence; the treatment carried out by the local medical practitioners may be conducted with the highest scientific accuracy; the natural beauties of the neighbourhood may be beyond dispute; and even the vagaries of the weather may be pardoned on the plea that they are not always so bad as they are portrayed. But unless the exigencies of social life are adequately provided for, and unless the régime of cure is firmly enforced, our watering places have little chance of justifying their existence or of proving to mankind how great is their potential capacity both as curative and as prophylactic agencies in suitable cases of disordered health. If Leamington—and the same remark applies to other British health resorts—is seriously desirous of developing its resources, it must take a leaf out of the Continental book and become more enterprising. Its municipal authorities must, by the many legitimate means within their power, bestir themselves to bring more prominently before the public the advantages of the spa whose destinies they control. Its practising physicians and surgeons must co-operate cordially among themselves, and place, not as a detail of their practice, but in the very forefront of their life-work, the balneological and therapeutic excellencies of their spa. They must, by careful study of the effect of the waters upon the human organism, acquire an intimate knowledge of their possibilities as well as of their limitations.

Finally, from the point of view of national self-interest, we may appeal to leaders of society in these islands as well as to the leaders of our profession, and ask them to assist by their personal influence such of our recognized health resorts as adopt the right means to meet the public requirements. The example of those in authority is worth more than the precepts of the press, and we urge upon them to consider, in these days of strenuous competition, whether spa treatment at home is not worthy of their patronage. It needs but better combined effort on the part of spa authorities and spa doctors, on the one hand, and a little more practical patriotism on the part of those who require and derive benefit from "drinking the

"waters," on the other, to ensure prosperity to the excellent medicinal springs which exist in our midst, and to remove from our national reputation the unpleasant imputation that we love our neighbours—not as well as, but even better than, ourselves.

THE PATHOGENESIS OF GENERAL PARALYSIS.

At a meeting of the Medico-Psychological Association, reported in another column, Drs. W. Ford Robertson and Douglas McRae described the results of their further investigations on a number of strains of diphtheroid bacilli which they have isolated from cases of general paralysis and tabes dorsalis. By applying the well-known tests with litmus broth to which one or other of various carbohydrates has been added, they have observed that two types of diphtheroid bacillus were specially common; one of these gave the same broth reactions as the Klebs-Loeffler bacillus, whereas the reactions of the other were markedly different. In the case of both strains they have found that prolonged feeding with cultures produces in rats lesions which they consider to be similar to those of general paralysis; and they think it is probable that there are other species of diphtheroids which are capable of exerting a similar pathogenic action. Concerning the presence of diphtheroid organisms in the human subject, they make it quite clear that they attach little significance to the mere presence of such bacteria upon mucous surfaces; it is necessary to find evidence of tissue invasion before further conclusions can be drawn; and it is the occurrence of such invasion in cases of general paralysis which they consider to be of especial importance. Being encouraged by their observations in the belief that the organisms which they have discovered are causal agents in the production of general paralysis and tabes dorsalis, the authors are endeavouring to apply their results to therapeutical purposes, and with this object are engaged in the preparation of specific bactericidal serums.

The paper was followed by a discussion in which diverse opinions and criticisms were offered. These were very cogently reviewed by the President, Dr. Robert Jones, of Claybury. The general opinion, he remarked, was that the causation of the diseases in question by a special bacillus of diphtheroid type was "not proven," but at the same time he considered that the authors' work was valuable, suggestive, and deserving of sympathetic consideration. He also expressed the hope that an opportunity would be given for testing the therapeutic value, for cases of general paralysis, of a serum prepared from the organism alleged to be specific. With these views of the President we think that most of our readers will find themselves in agreement; they will certainly appreciate the sagacity of the last remark. If Drs. Robertson and Douglas McRae can produce a serum which will cure general paralysis, there will be strong presumptive evidence in favour of the view that their diphtheroid bacilli are really specific.

In the interest of the human race it may devoutly be hoped that this end will ultimately be achieved. In the meantime it is interesting to consider what progress Drs. Robertson and McRae are making with their investigations. They still have a difficult task before them. An important section of the medical profession, prominent among whom is Dr. Mott, considers that the diseases in question are caused by syphilis, and is unwilling to abandon this view until the causal relationship of certain diphtheroid bacilli has been more clearly established. But those who hold this opinion are quite willing to admit that our knowledge about the degenerative processes in general paralysis and tabes dorsalis is still very imperfect, and they are by no means blind to the theoretical possibility that the toxic action which causes these processes may be of bacterial origin. As representative of this attitude, the remarks of Dr. Ferrier deserve quoting: "He had," he said, "expressed the view, in harmony with Dr. Mott and "others, that tabes and general paralysis of the insane "were the same disease, and that in all cases not only "was the prime origin for the most part syphilitic "infection, hereditary or acquired, but the degenera-"tion itself was not syphilitic, in so far as it did not "yield appreciably to antisyphilitic remedies." In Dr. Ferrier's view there must be a toxin which circulates in the blood and is being continuously generated in order to produce the progressive deterioration and the definite degeneration of the spinal cord and cerebral cortex. "The question was, What was that toxin? "Where was it produced? And the further ques-"tion which now arose in relation to Dr. Ford "Robertson's paper was, Had he discovered that "toxin and its origin?" The answers to these questions must depend on a consideration of bacteriological details. Into the discussion of these matters Dr. Ferrier did not enter very fully, but he made the important statement that in his own experience "he "had never found the slightest trace of any organism "in the cerebro-spinal fluid of patients suffering from "tabes or general paralysis."

The bacteriological aspect of the question was discussed by several of the speakers, and in many instances objections were raised, the gist of which was that diphtheroid organisms are widely distributed and are often found in diseases which have no relationship to general paralysis; caution is therefore necessary before it can be asserted that the presence of a diphtheroid bacillus can be regarded as proof that it is causative of the disease in association with which it is found. Dr. Eyre quoted a case of tuberculous meningitis where in the cerebro-spinal fluid, drawn off during life, and also in the pleural fluid, the only organism discoverable was a diphtheroid bacillus. He had cultivated a similar organism from the blood in two cases of supposed infective endocarditis, and had also found one of these types of bacillus, in company with the tubercle bacillus, in tuberculous cystitis. In fact, his general experience was that diphtheroid organisms were quite common contaminations of clinical material. Dr. George Dean supported this view, and stated that Dr. Arkwright, of the Lister Institute, had been investigating cases where death was supposed to be due to cerebro-spinal meningitis, and in some instances had found diphtheroid bacilli in the brain and meninges and in the cerebro-spinal fluid. Dr. Candler said that he had undertaken an investigation with regard to the incidence of diphtheroid organisms in general paralysis and in other forms of insanity, from cases in the wards of Claybury Asylum. He had examined *post mortem* the blood, the cerebro-spinal fluid, the intestinal tract, and the urinary tract in 79 cases, 20 of which were general paralytics. In only 3 of these 20 was he able to obtain diphtheroid organisms. In the remaining 59, belonging to forms of insanity other than general paralysis, he was able to isolate a diphtheroid bacillus in 4 instances. Diphtheroid organisms, therefore, seem to have been present in only a small proportion of Dr. Candler's cases, and it is of particular interest to note that these bacilli were not present in more than 15 per cent. of the general paralytics.

These are some of the arguments brought forward by the speakers who do not at present see their way to accept the theory advocated by Drs. Robertson and McRae. It is only right to add that Dr. Robertson made a vigorous reply to their criticisms, and intimated that he had not been able to provide the meeting with the whole of his evidence. Some of his work, particularly his charts showing the specific reactions with antiserums, would, he considered, have caused his critics to modify their opinions. It is clear, therefore, that the whole question is still very far from being settled; and, until Drs. Robertson and McRae have had time to complete their investigations, we have no desire to attempt to prejudge the matter by expressing an opinion either favourable or unfavourable to their claims.

A NEW PHASE IN THE DISPUTE AT EBBW VALE.

At the Annual Representative Meeting last week Dr. W. J. Greer (Monmouthshire) gave an account of the then position of the dispute in Ebbw Vale between the Workmen's Doctors' Fund Committee and the medical profession in South Wales and Monmouthshire. He reminded the meeting that a joint committee of the Association in South Wales and Monmouthshire was supporting a certain number of medical men; a Fund had been established, and subscriptions amounting to £1,500 had been received; though the medical men assisted by the Fund were not all members of the British Medical Association, they had been dismissed from their appointments on account of their loyalty to the Association. The conflict had now continued for eighteen months, and the profession in South Wales and Monmouthshire had encountered many difficulties in its endeavour to get those medical men reinstated; various meetings with the Workmen's Committee and with the employers in Ebbw Vale had been held, but so far no agreement had been reached. Recently, however, a movement had commenced among the workmen in one district which might have important results. About 1,500 of the men had decided to break away from the general body and start a fund of their own, because they wished to have a doctor of their own selection, Dr. Sullivan of Cwm, a member of the Association. A fresh difficulty had arisen at this stage because a large number of the workmen in the central Ebbw Vale had said that if the 1,500 workmen broke away from the Central Workmen's Fund they would strike, and would refuse to go down the pit with the colliers who were the supporters of Dr. Sullivan. With regard to the question of stoppage at the collieries of money out of wages for the Doctors' Fund, the 1,500 men were, on their own initiative, taking steps to get back the money that had been paid, and to secure that the money stopped should not be paid to any doctor but the doctor of their choice. So far, it had been decided by a court that, in the case of men who had not signed the pit-book authorizing the stoppage, the money could not legally be stopped. It had been discovered that a great number of men had not signed the book at all, and the county court judge had decided that those men had a right to have their money returned; the further question, whether the men who had signed the book could also have their money returned, would be decided shortly. We can now add that this test action was heard on August 6th before Judge Owen at Tredegar. It was all along contended on behalf of the men who objected to the deductions that the agreement signed by the workmen with regard to the Doctors' Fund was in itself bad, and not binding, it being only an authority by the workman to the company to deduct such sums as he might request them to make. The defendants accepted this view, but it was contended by their counsel that a custom had existed ever since the year 1879 that these deductions from wages should be made for the Doctors' Fund, and that a clause in the contract of employment signed by the workmen under the rules of the Conciliation Board, which provided that the workmen should be bound by all customs existing in 1879, was in effect an agreement to allow these deductions, and that such contract could therefore only be determined by a workman giving notice to terminate his employment. The judge, however, held that such a custom, having regard to the Truck Acts, was in itself illegal without a written contract, and that such a contract to be legal must be embodied in a distinct document setting out clearly the agreement intended. This, as will be seen, is a very important decision, which it is to be hoped and expected will have a far-reaching influence on the dispute, and probably make a great advance towards a final settlement.

POSTAL MEDICAL OFFICERS.

In a statement made by the Chairman to the Representative Meeting on the report of the Medico-Political Committee, a brief account of the difficulty which had arisen with regard to the Postal Medical Service was given. He reminded the meeting that "the "Postmaster-General had suddenly introduced new "regulations requiring all post-office medical officers to "retire at 70 years of age without appeal, and providing "that in the case of all medical officers between the "ages of 60 and 70 an annual report on their "capacity to carry on their work must be made. "The matter was brought to the notice of the "Medico-Political Committee in connexion with the "case of a medical officer who was dismissed, or had to "retire under those regulations; a member of the same "Division was appointed, but a protest was made and "the matter was considered by the Contract Practice "Subcommittee of the Medico-Political Committee; the "Division was advised to take action, with the result "that the member who had been appointed withdrew. "A deputation representing the Postal Medical Officers' "Association had an interview with the Postmaster-"General and very considerable concessions were ob-"tained. The Postal Medical Officers' Association has "expressed its gratitude to the British Medical Associa-"tion for the assistance given." We may add that the Postmaster-General promised to give his personal consideration to any case of individual hardship which might be brought to his notice. The Postal Medical Officers' Association submitted a statement of the case of Dr. Hooper May of Tottenham, and the representation was supported by a letter from the Tottenham Division stating the conviction of the medical profession in Tottenham as to Dr. Hooper May's efficiency, and expressing the hope that he might be reinstated. A letter was also addressed to the Postmaster-General by the Medico-Political Committee informing him of the interest which the medical profession generally took in the matter. We are now glad to announce that the Postmaster-General has reinstated Dr. Hooper May for a period of two years.

EUROPEAN TROOPS IN THE TROPICS.

Dr. Steuber has made a special study of the conditions of service of European troops in the colonies, and treats the subject from the standpoint of the hygienist.[1] He derives his lessons from the experience of the English colonial wars and colonial Government

[1] Reprint from the *Vierteljrsbr. f. Truppenführung u. Heereskunde*, vol. iv, Part 2. Berlin: E. S. Mittlera and Son.

regulations, and compares with these the development of the French colonies. He starts from the premiss—with which every one will agree—that "a suitable "hygiene is the whole secret of conducting warfare in "the tropics." Naturally the whole trend of his discussions is directed towards the policy which in his opinion Germany should follow in her colonies. But he places before the reader a clear picture of the methods adopted by the English and French in conducting their tropical warfare, and thus his essay forms not only interesting reading, but also supplies a convincing argument to be used against any sceptic who would challenge the wisdom of the policy acted on in the past by the Government of this country in respect of our colonies in the tropics. In the first place, Dr. Steuber shows why whites are required in the tropics rather than blacks. Black troops are not absolutely reliable, but experience teaches that the presence of a number of white troops lend such a sense of stability to the coloured troops, that any want of reliability soon disappears. The test of employing irregular coloured troops was made in the Ashanti war, where Captain Glover led an army of 19,000 blacks to assist the Government; but the experiment turned out a failure, and this was admitted by Lord Wolseley. It is therefore necessary to employ white troops in the tropical wars if possible. The next question raised is, what dangers must a country be prepared to meet if white troops are sent to the tropics, and how can these dangers best be met? This leads the author to discuss the hygiene of the tropics, with special reference to white men. Climate, endemic and epidemic diseases, and local peculiarities, render the employment of European troops in certain parts of the world a highly expensive undertaking. The French Government has to pay for every European colonial soldier from 2,127 to 2,540 francs a year, while the soldiers of the Soudan, of Senegal, and of Tonkin respectively cost only 1,189, 980, and 550 francs. Lord Roberts has stated that every British soldier cost his country £100 to send to India. The author goes on to consider the effect of tropical climate as such, including the risk of sunstroke and heat stroke and the dangers connected with the tropical rains. He also deals with the methods in force to minimize the risk arising from these factors. Next, with regard to tropical diseases, he derives much information from a comparison of the morbidity and mortality as affecting the European and coloured troops in the French colonies. For example, while 27.3 per cent. of the total strength of native troops were admitted into hospital, as many as 62.5 per cent. of the European troops were admitted. The difference in the mortality is not so striking, because a large number of home men are sent back invalided and discharged from the service, so that when some of these die later on their deaths cannot be included in the statistics, while the whole mortality appears in the native statistics. Analysing the causes of illness and death, he finds that malaria occupies by far the largest place. Dysentery, cholera, and blackwater fever come next, while enteric fever takes a less important place. As compared with the native soldier, the French soldier in the tropics ends his own life by suicide with terrible frequency. With regard to the prevention of malaria, he thinks that the only measure of practical importance to the soldier on active service is the administration of quinine. He also deals in some detail with relapsing fever and dysentery. A further class of difficulties to be met is found in the peculiarities of tropical countries. The question of equipment, uniform, and baggage are dealt with at length, and he points out that English soldiers in the tropics are not allowed to carry more than 20 lb., while the French soldiers on the Dahomey expedition carried as much as 30 lb. Dr. Steuber lays it down as an axiom that the white soldier should in no circumstances carry his own baggage in the tropics, even if it consist only of a light knapsack. The employment of natives to carry the necessaries for themselves and for the whites is discussed, as is also the utility of light carts and wagons drawn either by beasts or by natives. He then discusses the question of water, and dismisses filters with a warning. Water must be sterilized by some of the well-recognized means, and no soldier should be allowed to drink water from any brook or river. The transport of the sick and wounded also receives attention, descriptions of suitable ambulances being given. In the Dahomey expedition the French only provided carriers at the rate of 8.3 for every 100 white soldiers, but this number proved insufficient. Lord Wolseley placed the number at 12 for every 100 soldiers, and this number can be accepted as satisfactory. With regard to the question of alcohol, the author points out that Lord Roberts succeeded in reducing the drunkenness very materially in the Indian army, thereby effecting a very great gain in efficiency. In conclusion, he sketches the past experience of France and England in respect to wars in the tropics, and finds that the British War Office has long since recognized that the white soldier is far too precious and delicate an instrument to allow him to make long marches, to do heavy work, to carry heavy loads, and to submit to privations in the tropics. It therefore becomes necessary to nurse him carefully, so that he may arrive fresh and healthy on the field of battle. The accounts of the Ashanti campaign and of Kitchener's Soudan campaign illustrate how great must be the care of the white troops to effect an undisputed success. The whole monograph contains much that is of interest to the English reader, and Dr. Steuber is to be congratulated on having given the matter in such a concise form.

THE CAUSES AND PROPHYLAXIS OF MENTAL DISEASE.

His Majesty the King of Italy has graciously consented to be patron of the International Institute for the Study of the Causes of Mental Diseases and their Prophylaxis. The Italian Minister of Foreign Affairs intends to invite the various Governments to nominate official delegates. It is proposed that as many as possible of the members of the International Committee formed at the Milan Congress on the Care of the Insane in 1906 shall meet at Amsterdam between September 2nd and 7th during the meeting of the forthcoming International Congress of Psychiatry and Neurology, in order to arrange definitively the programme of work, and its partition among the members and the different nations represented on the Committee.

CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY.

Professor Osler, one of the Honorary Presidents, presided at the annual luncheon of the Society, which was held on Thursday, August 1st, at the New London Hotel, Exeter. The guests included Dr. Ward Cousins, Dr. Galabin, Dr. Newton Pitt, Fleet Surgeon Bassett-Smith, Professor Symmers (Belfast), Dr. Macrae (Johns Hopkins), Dr. Dawson Williams, Dr. Watson Williams, Mr. A. H. Tubby, Dr. Kelynack, Dr. Tilley, Dr. Cholmeley (of the *Lancet*), Dr. Douglas Simmers (New York), Dr. Pendlebury, Dr. Edwin Bramwell, Mr. Struthers, and Dr. Steele (Torquay). The following members of the Society were present: Drs. Sandwith, Bentley, and Madden (Cairo), Dr. Leigh-Canney (Assouan), Dr. Overton Hobson (Helouan), Drs. Gairdner and Hugh Gibbon (Naples), Dr. Samways (Mentone), Dr. Michael Foster (San Remo), Dr. E. A. Gates (Florence), Dr. Thomson (Brussels), Dr. Dowding (Algeciras), and Dr. Leonard Robinson (Paris). The Chairman, after proposing the toasts of the King and the

President of the United States, explained the usefulness of the Society, which could not be too widely known among the members of the medical profession, as it enabled them to recommend their patients travelling on the Continent of Europe and in Northern Africa to reliable doctors of their own nationality. Dr. Ward Cousins proposed the health and prosperity of the Society, to which Dr. Foster (San Remo) replied. Dr. Sandwith proposed the health of the guests, Dr. Newton Pitt and Dr. Macrae responding briefly for the British and American guests respectively. Dr. Samways proposed the health of the Chairman, thus bringing to a conclusion a very successful meeting.

SLOUGHING OF THE VAGINA IN SYPHILIS.

A remarkable instance of spontaneous gangrene of the vagina in a patient suffering from secondary syphilis is reported by Dr. Asch in a German serial.[1] A girl came into hospital in December, 1906, five months after infection, and she had been just one calendar month under specific treatment. The labia showed no morbid changes, the vagina was covered from the posterior commissure up to the cervix with a greasy, dirty-white deposit which could not be detached. The patient discharged herself, but was compelled to return within a month very much worse. The labia were red and swollen, the whole vaginal mucosa, separated from the vulval structures by a distinct line of demarkation, was black, sloughy, and as hard as a board. Parametritic infiltration was very marked; the rectal walls were not involved and moved freely against the vagina, which felt like a wooden tube. Within a few days the gangrene extended into the bowel and symptoms of cystitis developed, then peritonitis and evidence of general septicaemia; in fact, the patient was dying when her case was reported. The gangrene seemed due to acute and rapidly-diffused parametritic inflammation, cutting off all the vascular supply of the vaginal wall, a process quite different from slower changes not rare after lingering labours and fevers, where stenoses from cicatrization frequently develop.

CANCER OF BOTH KNEE-JOINTS SECONDARY TO UTERINE CANCER.

Carcinoma of the body of the uterus is more manageable than carcinoma of the cervix. Hysterectomy, when undertaken in time, is usually followed by satisfactory results. Dr. Schiller of Breslau has reported a case which, on the other hand, ended very badly.[2] About eight weeks after the operation the patient began to suffer from pains in the left knee-joint. The nature of the complication was misunderstood, and the patient was treated in a surgical ward of a hospital, apparently as a case of synovitis. At length she underwent amputation through the thigh. Cancer of the articular structures involving the surrounding bone was discovered. After recovery the right knee-joint became the seat of secondary cancer, and the patient died; the joint was found to be completely disorganized by secondary cancerous deposit. Dr. Schiller observed that secondary disease of the knee-joint after cancer of the body of the uterus seemed practically unknown until this case came under his observation. In discussing his report, Dr. Küstner insisted that cancer of the body should be treated by a complete abdominal operation of the type now in vogue, and Dr. Maiss was of the same opinion. In two cases where the latter gynaecologist preferred vaginal hysterectomy, recurrence followed within two and a half years, and therefore he thought that the more radical operation was preferable. The rapidity of the recurrence in Dr. Schiller's case, and the very unusual seat of the secondary deposit, completely misled the surgeons of a large hospital, a fact which medical literature should hold in remembrance.

[1] Fall von spontaner Gangrän der Scheide, *Monatsschr. f. Geb. u. Gyn.*, June, 1907, p. 954.
[2] Report of meeting of the Gynaecological Society of Breslau, *Monatsschr. f. Geb. u. Gyn.*, June, 1907, p. 953.

QUADRUPLETS.

A case of quadruplet labour has recently been reported by Dr. Frank H. Washburn, of Jefferson, Massachusetts,[1] It is mainly of interest because it was associated with hydramnion, albuminuria, and threatened eclampsia. The patient was a primipara aged 31. Symptoms of mild hysteria were noted at the commencement of gestation. Early in the fifth month oedema of the vulva developed very suddenly, and it was then ascertained that the lower extremities had been swollen for two weeks previously. Abdominal distension was extreme and the parietes were so oedematous that palpation proved difficult, yet twin pregnancy was suspected. The urine contained a trace of albumen. At the end of a fortnight, although the patient had been kept at rest on a milk diet, all the bad symptoms had greatly increased. An attack of burning pain in the epigastrium, a common forerunner of eclampsia, alarmed Dr. Washburn. His diagnosis was twin pregnancy with hydramnion. Within twenty-four hours after the onset of the pain the patient gave birth to three female children and one male. A flood of liquor amnii succeeded the rupture of the membranes, draining the amniotic sacs of the three female fetuses which were born first. Then the male was expelled, with membranes intact, followed by the combined placenta. All were vertex presentations, with the occiput anterior at least in the three females. The largest female child measured 13½ in., the others 13 in., whilst the male was only 12½ in. long. The three females were attached by separate cords to a common placenta, each being enclosed in its own amnion. The law that one-yelk twins are of the same sex seems to admit of no exception. The male child was connected by its funis with a distinct placenta. Thus, strictly speaking, the case was an instance of twin pregnancy, one ovum developing unisexual triplets, the other a single fetus of the other sex—a condition which has already been noted in quadruplet gestation. We may compare it with another reported by Dr. Lloyd Roberts at a meeting of the North of England Obstetrical and Gynaecological Society in 1902 where the quadruplets were all females attached by separate cords to a common placenta, whilst each fetus had a distinct amniotic cavity. In Nijhoff's celebrated case of quintuplets, three ova took a share in the pregnancy, one developing three females, the second another female, and the third a male. A fine drawing of the quintuplets and their placenta will be found in the sixth volume of the *Journal of Obstetrics and Gynaecology of the British Empire*. Dr. Washburn's patient seemed almost comatose for a few hours, but the oedema and albuminuria soon disappeared. There was no flooding, but at the end of two months she expelled a clot which seemed to be a perfect cast of the uterine cavity. Only two of the children lived so long as half an hour, whilst one was apparently dead when born.

[1] Report of a case of quadruplets, *Amer. Journ. Obstet.*, June, 1907, p. 751.

IDIOPATHIC MUSCULAR ATROPHY AND TYPHOID FEVER.

So little is known about the origin of cases of idiopathic muscular atrophy that a special interest attaches to a paper by Dr. Georges Guillain (*La Semaine Médicale*, 1907, p. 277), in which he draws attention to the form which follows typhoid fever, and describes a case

under his own care. The patient was a coachman, aged 45, with no antecedent history of disease or alcoholism, who in 1900 suffered from a severe attack of typhoid fever, for which he was six months in hospital. When discharged his lower limbs were weak, but he could walk without a stick; a few months later the diminution of muscular power had increased, so that he had great difficulty in going upstairs, but could still walk on the level ground. Up to 1906 he continued to follow his occupation of a cabman, but the weakness increased, affecting first the lower and then the upper extremities, while slowly and progressively the muscles wasted. During the whole of this time there was never any pain or disturbance of sensibility. He gave up his work in May, 1906, at which time walking had become extremely distressing; and he came under the care of Dr. Guillain in January, 1907, when the movements of the lower limbs were exceedingly feeble. He was unable to maintain himself in a sitting position in his bed, and the muscles of all the extremities were extremely atrophied, but none showed any trace of reaction of degeneration, galvanic and faradic excitability being simply diminished. Cases of pseudo-hypertrophic muscular paralysis following typhoid fever have been reported by Babinski, Friedlaender, and Josserand which undoubtedly should be regarded as belonging to the same class as Dr. Guillain's case; but the case is, so far as we are aware, unique, and opens up a new line for investigation.

The late Professor Grancher of Paris has bequeathed a sum of 20,000 francs to the society founded by him for the protection of children from tuberculosis.

The Austrian Chamber of Deputies has, on the motion of Dr. Sylvester, one of its members, decided to form a Sanitary Committee to consist of twenty-six members.

The Italian Minister of Finance has granted a sum of £1,800 to the Central Committee of the Red Cross, and one of £1,000 to the Palermo Subcommittee, in aid of the campaign against malaria.

The Fifth International Gynaecological Congress, which has already been postponed once, and which was to have been held in St. Petersburg this year, has again been put off "on account of numerous expressions as "to the inopportuneness of a Congress in Russia" that have been received.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

The Vaccination Bill was read a second time in the Lords on Thursday in last week on the motion of Lord Allendale, who explained that the Bill did not in any way alter the law of vaccination as it stood, but simply effected an alteration in the legal method of obtaining an exemption from penalties for neglecting to have a child vaccinated. The Bill provided that no parent or custodian of a child should be liable to any penalty for the non-vaccination of the child if within four months of the child's birth he made a statutory declaration that he conscientiously objected to vaccination and delivered it to the vaccination officer of the district. No serious opposition had been offered to the measure in the House of Commons.

The Vaccination (Scotland) Bill, which was considered before the English Bill, caused a somewhat lengthy discussion. Lord Hamilton of Dalzell moved the second reading, and pointed out that the Bill applied the principle of the English Bill of this year to Scotland. The only objection he had seen to the Bill was that there was not the same agitation against vaccination in Scotland as had prevailed in England. Lord Balfour moved the rejection of the Bill. There was no demand of any sort or kind for the Bill in Scotland. He had been a member of the Government which passed the English Act in favour of conscientious objectors in 1898. They did not pass it because they liked it; they passed it because circumstances had rendered it not only necessary but wise and judicious. So great was the discontent in England against compulsory vaccination at the time that large numbers of local authorities were practically in revolt, and accordingly, with the consent of both sides in Parliament, vaccination in England was made voluntary. But there had never been anything analogous to those circumstances in Scotland, where the statute law and administration differed very widely from the English law. The great majority of vaccinations in Scotland were performed by private medical practitioners, and the operation was carried out in all cases at the home of the person vaccinated. The method of proceeding against defaulters was also different. Up to the time he left the Scottish Office, for a series of years 97 per cent. of the children in Scotland had been successfully vaccinated within six months after birth, the 3 per cent. unvaccinated including all the children lost sight of and those "unsusceptible" to vaccination. During the whole of that time the agitation was going on in England, and everything was being done to stir up opposition to the law in Scotland, but not a single local authority in Scotland refused to perform its duty. As to the increasing number of prosecutions, the increase was not much more than in ratio to the increase of the population. The agitation, such as it was, was concentrated in one or two places, and over nearly the whole of Scotland he had never seen the slightest sign of discontent. In a matter of this kind it was important that the community should have the power to protect itself against one of the most malignant and loathsome diseases, and if they rendered it less possible for the community to protect itself they would do one of the worst things that House had ever been asked to do. He desired to give the utmost latitude to the conscientious objector, but he wanted to make sure that he was conscientious, and was not neglectful or a humbug. It was nonsense to speak, as some agitators did speak, about a man being treated as a common criminal if he were summoned before a police magistrate. Many noble lords were summoned to a police court and had to pay a fine of half a-crown for allowing a chimney to be on fire. The real object of many of those who were getting up the agitation against the Vaccination Acts arose not so much from the fact that they themselves were conscientious objectors as that they desired to see vaccination abolished for everybody. They had described the conscience clause as "an insult," and admitted that they wanted the repeal of the Acts for England, Scotland, and Ireland. But there was no analogy between England and Scotland. There was no agitation in Scotland against vaccination, and he challenged the Government to produce a single resolution of any public body for this present measure. Lord Tweedmouth supported the Bill on the ground that if a man who lived in England or Wales and went north across the Tweed, he should carry with him the same rights that he had in England. Considerable representations had been made to the Scottish Office in favour of the Bill. The Lord Chancellor said the Act of 1898 had fulfilled the prophecy of the Royal Commission that it would produce more vaccination. This Bill was also based on the recommendations of the Royal Commission, and if passed would prevent dissatisfaction and the development of opposition to vaccination. Lord St. Aldwyn also supported the second reading, which was carried without a division.

Public Health (Regulations as to Food) Bill.—When this Bill came on for second reading late on Friday last week Dr. Cooper moved that the Bill be read this day three months, because it made drastic changes, by transferring to the Local Government Board the whole control of the regulations dealing with food. There was no security that those regulations would be submitted to Parliament. It was the most anti-democratic Bill ever introduced, taking power from the representatives of the people and giving it to a Government official. Mr. Watt seconded the rejection of the Bill. Mr. Burns, in replying, said that the Bill proposed to make up deficiencies in the

existing law by giving the Local Government Board controlling powers over the condition, preparation, storage, and distribution of human food which was peculiarly liable to become unsound. Under the existing law a sanitary inspector could seize any food exposed for sale which he deemed unwholesome, and a magistrate could condemn such food and impose penalties on the person on whose premises it was found. But the defect of the existing law was that unwholesome food must be exposed for sale before it could be seized and destroyed. He quoted the instance of bad tinned foods sent home after the war, and said the Local Government Board had no power to seize the food. All they could do was to try to persuade the person who bought it not to put such stuff on the market, and that they had succeeded in doing, and the stuff was destroyed. He thought it would be admitted that the Local Government Board should be empowered to seize such food immediately that it arrived at the port. If the Local Government Board had this power, not only would the poor be protected from the consequences of eating such food, but small shopkeepers would be saved from the risk of having their reputations ruined through being prosecuted for exposing it for sale. Forty million pounds' worth of food was imported yearly into this country. Half of this food came from the United States, and the bulk of that half from a certain city in the States. Only two port sanitary authorities, those of London and Manchester, had the power to deal effectively with this food on landing, and the Bill proposed to put all port sanitary authorities in the same position of being able to inspect the food at the port, take samples of it, and destroy it if necessary. The regulation would also require satisfactory evidence as to the antecedents of the food. It would insist on knowing the conditions under which food was preserved, especially sausages, brawn, and other articles consumed mainly in the poor districts. It would insist upon the provision of clean and decent places where food had to be stored—as, for example, that ice-cream in process of preparation should not be kept under a bed or near a lavatory. Further, it would insist that in the course of distributing the food the receptacles, wagons, and other means of transport should be cleaner than they now were. By means of this regulation also many of the abominations that prevailed in all parts of the country would be stopped. Indeed, the conditions under which food was prepared and distributed would be so improved as to be an advantage to the food trade, while conferring a protection upon honest traders in the difficulties that now surrounded them. After quoting a number of reports dealing with the steps taken to destroy bad food and diseased meat, he concluded by asking the House to give the Local Government Board power to make regulations and let the regulations be communicated to every sanitary authority. The regulations would not be enforced for 28 days after issue, except in cases of emergency, so as to give all the interests affected time to make representations to the Board if they felt they would be prejudiced by them. During the twenty-eight days he would lose no opportunity of consulting with the trade. The resolutions would not inconvenience those who carried on a legitimate trade in either fresh or tinned foods, but in the interests of the consumers of the £40,000,000 worth of tinned foods that came into this country greater powers were needed to save them from the dangers resulting from food made under insanitary conditions or stored in filthy places. Sir Francis Powell supported the Bill, and Sir Walter Foster said he was sure that every one in the House was desirous to put a stop to the abominations described. A very big description of the bad conditions which had prevailed had been given, but the Bill did not contain adequate machinery to deal with this great evil. To carry out the necessary inspection would require hundreds of inspectors. Markets, shops, stores, and cold storage dépôts required much more efficient inspection to protect the public. It was a gigantic task—so gigantic that it required a large amount of consideration and a large staff to carry it out. Every port where these foods could enter would have to be provided with a proper special staff. But no power was given in the Bill to appoint inspectors. It was proposed to leave this matter to the local authorities, but already they had large powers in this direction, and so far they had not carried them out. A medical officer had recently pointed out that in 100 markets in this country these powers were being neglected. What was the good of the Local Government Board sending round regulations if they did not see they were put into force? If the task proposed by the Bill were accomplished it would be a great service to public health; but the matter must not be left solely to the local authorities, and it was absolutely necessary that regulations drawn up for such far-reaching purposes should be laid on the table of the House, and that the period for their consideration should be extended from 28 to 40 days. Mr. Cave, Mr. Bowles, Lord Balcarres, and Mr. Higham criticized the wide powers of the Bill, and Mr. Burns promised to lay the regulations on the table, and also to hold them in abeyance for 40 days. Dr. Cooper then withdrew his opposition, and the Bill was read a second time and referred to a Committee of the whole House.

The Public Health (Scotland) Amendment Bill was read a second time in the Lords last week on the motion of Lord Hamilton of Dalzell. He pointed out that it was to substitute precautionary for prohibitive provisions in regard to disease and infection in order to give medical officers more discretion under the Act of 1897. Lord Balfour supported the Bill, and said certain sections of the Public Health Act had in practice been interpreted far more stringently than Parliament had intended. For instance, no child was allowed to attend school from a house where there was a case of infectious disease, no attention being paid to whether the child had been isolated or not. If there were a case of measles or whooping-cough at one end of a big workhouse, a child living at the other end of the building, and who had not been near the infected quarter, had been stopped from going to school. The passage of this Bill would allow a more reasonable and sensible administration of the Act.

The Medical Inspection of School Children was the subject of some discussion at one of the late sittings last week, when the (Education Administrative Provisions) Bill came on for second reading. A desire that the proposals relating to medical inspection should be passed was expressed on both sides of the House, but Mr. Lupton objected to the compulsory character of the medical inspection in Clause 10, as he was afraid it might be used by a medical man to order children in school to be vaccinated! Much amusement was caused by the unexpected introduction of this subject, but in the end the second reading was passed.

Mr. Haffkine's Plague Prophylactic. — Sir William Collins asked the Secretary of State for India whether he proposed to institute any further inquiry into certain deaths from tetanus in the Punjab consequent on the employment of Mr. Haffkine's prophylactic against plague, or whether he accepted the conclusions of the Jenkins Commission and of the Lister Institute as final; what action he proposed to take in regard to the further use of Mr. Haffkine's prophylactic, and, if it was to be employed in the future, to which standard would it be required to conform; and whether Mr. Haffkine was to be reinstated or not. Mr. Secretary Morley replied that, after giving the case his careful attention, he was not prepared to institute another inquiry into a question which had been exhaustively examined by two impartial and independent bodies, and respecting which no conclusion could be arrived at with absolute certainty. The prophylactic continued to be manufactured at the Bombay plague laboratory. As was stated in the Government of India Press Notice, dated December 13th, 1904, the "Standard method" of preparing the fluid had been reverted to, the fluid being sterilized by methods approved by the Indian Plague Commission, and containing the requisite proportion of carbolic acid. The latest report of the laboratory stated that inoculation was now extensively employed without any untoward results, and he did not propose to take any action with regard to it. Mr. Haffkine's position was explained in the answer which he gave on March 19th, 1907. If he elected to return to India, he would be employed on research work at a salary equal to that of which he was in receipt when he left India.

The Belfast Health Commission.—Mr. Sloan asked questions last week respecting the absence of any one on

the Commission qualified to consider meat and dairy inspection, and the diseases of animals transmissible to man, and called attention to a statement by Sir Charles Cameron that the central authority should carry out or insist on local authorities carrying out more complete inspection of food and meat, and suggested the employment of trained veterinarians for the purpose as proposed by the Veterinary Medical Association. Mr. Birrell replied that it was the fact that no veterinary surgeon had been appointed to the Commission referred to, but the two Local Government Medical Inspectors and the Medical Officer of Health of Glasgow, who were on the Commission, appeared to be eminently fitted to deal with questions of milk and meat supply. Local authorities had power to appoint as inspectors veterinary surgeons to advise them upon these questions. He was not aware of any reason for transferring public health duties to the Department of Agriculture. Under the law as it stands the appointment of inspectors of food and meat rested with the local authorities, and they had full power to appoint veterinary surgeons in that capacity.

Defaulting Sanitary Authorities.—Mr. Weir asked the President of the Local Government Board last week to state the names of the twelve district councils against whom complaints were made during the years 1905 and 1906 in respect of default in the performance of their duty as required under Section 299 of the Public Health Act, 1875. Mr. John Burns answered that the names of the district councils whose cases were dealt with in the two years were as follows: In 1905: Dunmow Rural, Eastbourne Rural, Epsom Urban, Penybont Rural, South Darley Urban. In 1906: Bromley Rural, Cricklade and Wootton Bassett Rural, Dunmow Rural, Eastbourne Rural, Hebburn Urban, Lymington Rural, Rye Rural. The cases of the Dunmow and Eastbourne Rural District Councils, which were partially dealt with in 1905, were further dealt with in 1906.

The Carshalton Hospital.—Mr. Cooper asked the President of the Local Government Board what was the annual amount of the interest, sinking fund, and cost of maintenance of the hospital for convalescent fever patients erected by the Metropolitan Asylums Board at Carshalton; whether the consent of the Local Government Board had to be obtained before the hospital could be erected; if so, whether any inquiry was made by the Local Government Board into the necessity for such hospital, and also the suitability of the site; and whether, as the hospital was unused, and there was great want of asylum accommodation in the county of London for imbecile and harmless senile lunatics, he would consider the advisability of requiring the Metropolitan Asylums Board to use this hospital for such a purpose. Mr. John Burns replied that the annual charge in respect of the items referred to was in round sums as follows: Interest, £7,500; repayment of principal, £3,000; cost of maintenance (about), £2,000. The debt was repaid by equal annual instalments of principal, so that the charge for interest diminished each year. The consent of the Local Government Board had to be obtained to the erection of the hospital. Before any consent was given a public inquiry was held by inspectors of the Board, at which the need for the hospital and the suitability of the site were considered. As he stated on July 25th, the question of the use of the hospital for other purposes than that for which it was provided had not been lost sight of, either by the Board or the managers, and it would be again considered as soon as circumstances permitted, but until the existing prevalence of fever had abated it was thought desirable that the accommodation afforded by this hospital should be held in reserve. He had promised to continue to give attention to the matter, but meanwhile he was glad to learn that the demands on the managers in respect of imbeciles and harmless senile lunatics were not such as to point to any great want of accommodation for these classes at the present time.

Conscientious Objectors to Vaccination in 1906.—In answer to Mr. Lupton, Mr. Burns stated on Tuesday that the number of certificates of conscientious objection to vaccination received by vaccination officers in 1906 was 52,391.

CORRESPONDENCE.

THE EARLY NOTIFICATION OF BIRTHS BILL.

SIR,—I have been surprised to notice that there seems to be a certain amount of hostility to a measure which has been brought before Parliament for the purpose of making a first step towards lessening the present needlessly high infantile mortality rate. This measure is the Early Notification of Births Bill, introduced by Lord Robert Cecil, Mr. Sherwell, the Hon. A. Lyttelton, and others. It will probably be known to most of your readers what the purport of this Bill is, but its whole effect may be summed up in a sentence. The Bill provides for the notification to the health authority of a borough or district, of every birth within thirty-six hours of its occurrence, such notice to be given by the father, if resident in the house at the time, or, failing him, by any person in attendance on the mother. As amended in Committee of the House of Commons this is made an adoptive measure, applicable only at the request of a local authority, and subject to the local authority satisfying the Local Government Board that they are able to administer the measure in a satisfactory manner. There is no fee payable on either side. It may, perhaps, be interesting to note here that in France, where the registration has to be made within seventy-two hours, the father has to appear in person before the official and make a declaration in the presence of two witnesses, and moreover pays a fee of 2.50 francs for the privilege.

I learn with surprise that this measure has aroused the protest of certain members of the medical profession because of the possible inclusion of the members of the profession under the head of "person in attendance." It is exceedingly probable that the clause could not possibly apply to the profession in more than 30 per cent. of births, seeing that this is the outside percentage where a medical man is present. But even of this 30 per cent. it is not likely that the father would be freed from the liability to notify in more than a very small number of cases, so that the risk of the medical man being liable to notify as the "person in attendance" is really whittled down to an almost infinitesimal risk; probably not in more than 1 per cent. of the total number of births would any obligation fall upon the medical man. For such a very small risk it seems that the profession wishes to block the progress of this beneficial measure.

The early notification of births seems obviously the first step towards combating infantile mortality. Every authority on the subject is absolutely agreed upon this point. If you are to try to save the lives of infants it is necessary to know that they are in being. It is the first thing that the practical administrator of public health finds that he needs. It has been asserted that early notification is a fad. Nothing could possibly be further from the truth. It is the first necessary step, and all the really practical men are unanimous in favour of it; no faddist has ever come near it except to hint at dislike of anything so intensely practical.

For a layman and for a practical administrator of Public Health such as I claim to be it is quite impossible to understand what objection can possibly be taken to this measure by anyone. Who does it injure or threaten to injure? Whose work does it interfere with or take away? Whose emoluments does it affect? Whose status or dignity does it infringe upon? The only people that I can conceive of thinking that they are affected at all would be those connected with the Registrar-General's Department, but the heads of that department are in most complete sympathy with the Bill and its objects. But that medical men should object to such a measure seems to me a contradiction, an outrage upon the nature of things, and I cannot even come at a beginning of the clue to the objection to it. Yet it is the opposition of a medical man representing the opinion of medical men that has blocked this Bill and endangers its passing. I have no hesitation in saying quite bluntly that on the passing or not passing of this Bill depends the life and health of scores of little helpless babies. They are very small and helpless, but, after all, it is murder to kill them, and merely to let them die is not free from some blame. I know that we have saved life and promoted health in Huddersfield by our efforts, and the key of the whole position is the early notification of births to the health office.

I yield to no one in my profound respect and admiration for the medical profession. I owe my own life and health to its skill and care. It is the proudest of my possessions that I was akin to Sir William Broadbent, so that it is in no spirit of criticism or of fault-finding that I write, but simply because I am bewildered and perplexed by an attitude which seems to me to be opposed to all that I have learnt to admire in a great profession.

I trust you will at least pardon my presumption in venturing to address you at all.—I am, etc.,

Huddersfield, July 31st. BENJAMIN BROADBENT.

HEALTH VISITORS AS UNQUALIFIED ASSISTANTS.

SIR,—The unsympathetic and somewhat contemptuous attitude assumed by many medical officers of health towards their brother practitioners is a matter of grave importance to the profession, and thus also to the public. To say the least, it is evidence of that deplorable want of union among the medical men of this country which is gradually undermining the already small social and political influence possessed by the profession as a body, and which is slowly but surely damaging the status of the individual practitioner in his relations to the public.

As Dr. Charles J. Whitby states in his admirable letter published in the BRITISH MEDICAL JOURNAL for July 27th, the medical officer of health apparently holds in supreme contempt the opinions and actions of the "ordinary general practitioner."

It is a curious and instructive example of the expert's disregard for the amateur, and of the official's intolerance towards the layman.

Dressed in an official "lion's skin," the medical officer of health is perhaps apt to forget his humble origin and to assume more qualities than his living warrants, and he then naturally conducts himself after the manner of Aesop's ass.

Needless to say, this attitude of the medical officer of health is in the majority of cases most unjust. It has, however, the effect of inducing him to make use of his unqualified assistants in a manner totally unwarranted either by his own position or by their knowledge and training. In this district the "duties" delegated to the sanitary officers would seem often to be an infringement of the liberties of the subject, and are certainly a breach of the laws of common politeness and decency, and contrary to the spirit of medical ethics. For instance, these partially trained and quite unqualified men enter the bedrooms of men, women, and children to prosecute inquiries, the value and meaning of which they are not competent to estimate, and to deal with questions which it should be the province of the medical man alone to investigate.

Presuming on the little knowledge they possess and assuming an authority which is not theirs, they comment on the cases and suggest lines of treatment. Should any objection to their methods be raised, they shelter themselves under the aegis of the medical officer of health. No doubt in many cases they may exceed the orders issued by their chief. Still, these things occur so frequently that he cannot plead ignorance as an excuse; and indeed, ignorance in such a case does not remove his responsibility for the actions of his subordinates.

Surely the easiest, most natural, and proper means of obtaining all needful information is by direct communication between the medical officer of health and the private medical man. The sanitary visitor might still be the medium for collecting details, but his duties at the infected house should be strictly limited to the examination of the sanitary state of the premises. The medical attendant is necessarily cognizant of all matters connected with the medical aspects of the case; and is in the best position for giving a fuller and more reliable account than any which is likely to be gleaned by the often illiterate and ill-trained health officer. The use of a little common politeness and tact on the part of both professional men concerned is all that is needed to obtain the best results for the patient, the public, and the profession.

Common sense points to a closer connexion between medical officers of health and private doctors as a most fruitful means of dealing with public health questions of all kinds.

I could give many instances of improper action on the part of medical officers of health and their satellites, and believe that most practitioners could do the like.

Reform is needed; and I would suggest that the whole subject of the methods pursued by public medical officials (including those connected with the Health and Education Committees) in dealing with cases of illness under the care of general practitioners might be considered by the Divisions with a good prospect of obtaining profitable results.—I am, etc.,

J. SKARDON PROWSE, B.A., M.B., B.C. (Cantab.).

Manchester, August 1st.

SIR,—I trust Dr. Whitby's views (BRITISH MEDICAL JOURNAL, July 27th, p. 236) concerning medical officers of health and health visitors are not commonly held. I am one of those who believe that in the future medical attention will be chiefly devoted to the prevention of disease, but I do not think the days of the general practitioner of medicine are numbered, or that his emoluments will be reduced by the work undertaken by health visitors. Medical men have been so willing to sacrifice their own interests to the public good that their claim to proper remuneration has been overlooked, but low-water mark has probably been reached; there must be some limit to generosity, in justice to their own families and to the profession, and organized action is impending.

In any case the health visitor has come to stop, appointments have already been made in most great towns, and smaller communities must follow their example. Whether the visitor shall be under the control of a committee of irresponsible ladies or under the local authority, in the department of the medical officer of health, will depend very largely upon the attitude of the medical profession. In the one case she may be encouraged to give advice in simple cases of illness, but, where she acts under the direction of the medical officer of health she will be assigned her proper duties. The prescribing chemist and the vendor of patent medicines may have some cause to fear her influence, but the legitimate practitioner of medicine should certainly extend a welcome to a trained nurse visiting young mothers and trying to induce them to pay more attention to what they are inclined to regard as trivial ailments.—I am, etc.,

Guildhall, Bath, August 3rd. W. H. SYMONS.
Medical Officer of Health.

HOLIDAY PRACTICE.

SIR,—"Seaside Practitioner's" letter, which appeared in the JOURNAL on July 27th, reminds me of a most impudent instance of the grievance of which he justly complains. A few years ago a stranger called at my surgery, and introduced himself as Dr. X. of C., stating that he was spending his holiday here, and as he had indefinite pains in the lumbar region he would be glad if I would test a sample of his urine, which he produced, as he wished to bathe and was anxious to know if there were albuminuria. I relieved his mind on this point, and he left me. On the following morning I noticed that the bottle which he left behind bore my label, on which was the name of one of my patients who kept a restaurant. A few weeks later I had occasion to attend this patient for lumbago, when I elicited that she had been attended by Dr. X. of C., who was a lodger, and who partly paid his account by treating her during his holiday. This was, indeed, adding insult to injury.—I am, etc.,

July 30th. ANOTHER SEASIDE PRACTITIONER.

A HAND REFRACTOMETER AND ASTIGMOMETER.

SIR,—I see in to-day's issue of the BRITISH MEDICAL JOURNAL, on page 288, the short notice of my communication on a portable or hand refractometer and astigmometer. This notice completely fails even to hint at the strongly emphasized idea underlying the purpose of both instruments; and as it will be some time before the paper will appear in full in the JOURNAL, allow me to state, in correction, that my object was, and is, *to eliminate the tedious use of the spectacle trial case altogether*, not only for skiascopy but also for sight-testing. For this purpose I arranged the *complete* series of spherical glasses in the refractometer, and constructed the hand astigmometer containing all the cylinders of the spectacle case with rotating axes, *not a modification* but *a new instrument*. With these two portable instruments vision can be tested objectively and subjectively,

without the spectacle trial case and without any assistance, much more rapidly than before. For further information I must refer to my paper when it appears.—I am, etc.,

Liverpool, August 3rd. KARL GROSSMANN.

KÜSTER'S OPERATION OF POST-AURICULAR MEATAL ANTROTOMY AND MR. HEATH'S CLAIM.

SIR,—As one of those who practise Mr. Heath's mastoid operation largely, and who has also occasionally performed the Küster operation, I write for the benefit of any who may not know, that Mr. Heath's operation gives many advantages which are afforded by no other, and if they practise Küster's operation and expect the same results, they will be disappointed.

"Actions speak louder than words." Heath's operation must be seen to be understood. His instruments are of great assistance.—I am, etc.,

London, W., Aug. 3rd. FREDERICK SPICER,
Surgeon to the Metropolitan Ear, Throat and Nose Hospital.

OBITUARY.

THE LATE SIR WILLIAM T. GAIRDNER.

DR. QUINTIN MCLENNAN, Surgeon to the Glasgow Royal Infirmary, writes: I am one of the very, very many that passed through the hands of this beloved teacher, and wish to say, in the name of the many, that we were struck as much by the profound humility of the man as by his profound learning, and also by his kindly interest in every one of us, without the slightest ulterior motive. To be under his eye and influence for three sessions, and at the bedside with him for clinical instruction, never missing a single morning for a period of nine months, I had ample opportunities afforded me of coming to a conclusion in my own mind as to what kind of a man he was. He was none of the small-joke men who habitually do their little best to keep the broad grin on the face of the students, but a man who treated his subject with the greatest and most intense dignity, and, consequently, impressed us with the nobility of our profession to be, and wrote upon our hearts and brains for ever, that here and before us, and all unconsciously to himself, we had one true gentleman, and a specimen of humanity upon whom his Master had laid his finger, and written in large golden letters, "Behold a man." Personally, I was always deeply impressed with every word he uttered, and knew in my heart that from his large and varied stores of knowledge we had the very best matter selected and poured forth from the great mass of reading that had passed through the alembic of his own brain. Such a worshipper and devout student at the shrine of Truth I have never seen, and must confess I do not expect ever to meet his like again. "Let us therefore thank God, or let me thank Him for you, for having given us for a season such a man." To the west of Scotland in particular he was indeed a tower of strength, and in every part of the world to-day I know there are friends who will gladly and willingly say "Amen" to every word I have said. To have had the privilege of sitting at the feet of such a master was indeed a liberal education. I have just been reading a fine tribute to the worth and character of the late Sir William Broadbent by Mr. Edmund Owen, and I am struck with the many points of resemblance in these two great men. I had the fortune to travel once from Ayrshire, the calf country of the late Sir William Gairdner and the late Professor George Buchanan, when a very interesting discussion took place between them on the "devils in literature." I can never forget the zest with which the discussion went on, and that Sir William concluded the conversation by giving the palm to Burns's devil; and, after reciting to us with great gusto, he peered into the face of his friend, Dr. Buchanan, and said: Yes; if we look *deep enough* into our own hearts, we will find the devil there." In spite of this, I am much more inclined to believe that had we had the power to look into the depths of Sir William's heart, we would have found more of the saint. In fact, according to my view, he was a kind of medical Thomas à Kempis. I was never one of his "medal men," who have their day and cease to be, yet his many kindnesses to me I shall never forget. From time to time he had the goodness to leave books at my house for my perusal in which he thought I might be interested, and that would be useful to me. Think of it and know that in all his students he had always a deep personal interest. Many years ago the idea occurred to me that the University of Glasgow ought to have his portrait in oil. This idea I communicated to the late Professor Joseph Coats, who at once, with Dr. George Middleton and others, put the matter on a working basis. Money flowed in and from all quarters, and in due time we had it from the hands of Sir George Reid, with a replica for Lady Gairdner and family. This gave me more real pleasure than anything I ever did, and it is pleasing to know that in many doctors' houses an engraving of this painting adorns their walls, and gives them the daily satisfaction and pleasure of looking into the face of their beloved teacher. On the fly-leaf of his reply to the many congratulations he got from friends on the occasion of receiving his knighthood at the hands of her late Majesty Queen Victoria he printed the following characteristic quotation, which shows fully what was the true inner nature of the man:

It's no in titles nor in rank,
It's no in wealth like Lon'on bank,
To purchase peace and rest;
It's no in makin' muckle mair,
It's no in books, it's no in lear,
To make us truly blest.

If happiness hae not her seat
And centre in the breast,
We may be wise, or rich, or great,
But never can be blest.
Nae treasures nor pleasures
Could make us happy lang;
The heart's aye the part aye
That makes us right or wrang.

Medico-Legal.

MEDICAL WITNESSES' FEES.

NOLENS VOLENS writes: I was called in by the parent of a young woman to examine and attend for alleged rape. The same night the accused was arrested, and at 3 30 the following morning I was called by the police to examine him in the presence of another doctor. For this I obtained a written authority from the police. The case was tried by the magistrates at a place 8 miles from my home. I was detained at the court for six hours. I drove in my own conveyance to the court. The case was sent for trial at the next assizes. To what fees am I entitled for: 1. Examination at the police station in the early morning, 1 mile from my surgery? 2. Attendance at the magistrates' court—Will anything be allowed for driving in my own conveyance? 3. How much per day shall I be entitled to for attendance at the assizes (18 miles from here)?

*** Our correspondent is entitled to one guinea for examination at the police station, to two guineas for giving evidence at the magistrates' court, and 1s. a mile for expenses; and he may be allowed two guineas a day at assizes for each day that he is necessarily detained from home for four hours, and the return fare actually paid.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

THE INGENIOUS ADVERTISER.

A CORRESPONDENT has sent us a card issued by a registered dentist of Hampstead who has taken advantage of the Royal visit to that suburb to issue a card in which "In commemoration of the First Official Visit to Hampstead of Their Majesties our most Gracious King and Queen" he offers to "make and present free of any charge whatever ten sets or partial sets of artificial teeth to ten of the most deserving old persons (men and women) who require artificial teeth, but are not in the position to pay for same," and ten other sets at half the usual fees to the next ten on the list, while other "applicants whose name may be sent in will be attended to at a much reduced cost." "Patients wishing to avail themselves of this offer must bring a letter from a householder stating that theirs is a deserving case, and they must register their names not later than October 31st." Then follow the address of the advertiser and his hours of consultation. While

admiring the business instinct that seizes upon every occasion to attract public attention, we are inclined to think that the distribution of these cards transcends the limits of dental advertisement approved by the General Medical Council.

MEDICAL ETIQUETTE.

ARGUMENT.—It is much to be regretted that a newspaper should have printed a letter which was a public aspersion upon A 's character and likely to do him harm. Under these exceptional circumstances we think he was justified in sending to the newspaper any available evidence to clear his reputation.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

The Mastership of Downing.

THE Mastership of Downing College has been offered to Professor Howard Marsh, who has been Professor of Surgery in the University since 1903. It is stated that the offer has been favourably received by Professor Howard Marsh, but the election cannot take place until October.

Esperanto.

The Esperanto Language Congress will meet in Cambridge on August 10th, and a large gathering is expected.

VICTORIA UNIVERSITY OF MANCHESTER.

Faculty of Medicine.

THE following candidates have been approved at the examinations indicated :

FIRST M.B., CH B. (*Materia Medica and Pharmacy*).—L. T. Challenor, L. W. Howlett, N. Matthews, Jane C. Miller, L Moss, R. P. Stewart, W. Stirling, J S. B. Stopford, G. K. Thompson, W. Warburton, Charlotte E Warner.

SECOND M.B., C H.B. (*Anatomy and Physiology*).—Estelle I. E. Atkinson, G. M. Benton, C. G. Brentnall; S J. Clegg, J. F. Cocker, G. T. Cregan, H. A. Dunkerley, †Gertrude H. Geiler, S. A. Winstanley, F. G. Wrigley

SECOND M B , CH.B. (*Materia Medica and Pharmacy*).—A. E. Ainscow, R. Briercliffe, J. Cowan, V. S. Cox, E. R. Eatock, C. W. Fort, P. S. Green, E Grey, H. Harrison, H. Heathcote, R C. Hutchinson, R. B. Jackson, G. Lapage, J. Leach, J. D. Mercer, W. H. Parkinson, A. Porter, J. B. Scott, W. A. Sneath, J. P. Stallard, J. Walker, H. C. Wright.

THIRD M.B , CH.B.—R. J. Batty (*Hygiene*).—J. A. Bateman, T. B. Bolton, W. C. Denniston, Frances M. Huxley, E. K. Lomas, W. P. Marshall, J. Morley, M. C Skiller-Lawrence, J. Thompson, R. B. Thompson, B. W E. Trevor-Roper, W. W. Uttley, T. G. Williams, A. E. Woodall.

FINAL M.B., CH.B. (*Part I*)—N. Booth, C. H. Broomhead, Elsie Brown, G. Crawshaw, J. H. C. Green, E. Howe. *Part II.*—J. W. Bride, G. W. Bury, H. Coppock, D. I. Dakeyne, J. F. Dow, *J. A. Fairer, F. Hall, *F. Hartley, *R. Lakin, V. D. Madgavkar, P. Moran, W. Nightingale, Alice Oberdorfer, G. Rainford, R. Robertson, D. Rodger, Elsie M. Royle, V. Southwell, **T. W. Todd, G. B. Warburton, H. Whitehead, N. R. Williamson.

CH.M.—A. R. Thompson.

** First class honours.
* Second-class honours.
† Anatomy.

UNIVERSITY OF SHEFFIELD.

THE following appointments were made at the last meeting of the Council :

Demonstrator in Physiology.—D. H. de Souza, M.B , B.S., B.Sc Lond.
Assistant Lecturer and Demonstrator in Physics.—W. F. G. Swann, B.Sc.Lond.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary council was held on July 25th, Mr. Henry Morris, President, in the chair.

Issue of Diplomas.

Diplomas of Membership were issued to 112 candidates found qualified at the recent examination.

Diplomas in Public Health were issued to 13 candidates found qualified for this diploma.

Member of the Court of Examiners.

Mr. L. A. Dunn was appointed on the above Court in the vacancy occasioned by the retirement of Mr. Cuthbert Golding-Bird.

Mr. A. Pearce Gould and Mr. W. B. Paterson were re-elected on the Board of Examiners in Dental Surgery.

Catalogue of Osteological Specimens.

It was determined that the sale price of the revised edition of Part I (new) of the catalogue of osteological specimens in the museum be 10s. per copy.

CONJOINT BOARD IN ENGLAND.

THE Diplomas of M R C S. Eng. and L R C.P. Lond. were conferred on the following gentlemen on July 25th :

S. H. C. Air, N. G. Allin, M. D. Anklesaria, R. E. Apperly, J. Appleyard, F. W. Aris, H. P. Aubrey, F. J. F. Barrington, R. L. Barwick, J. W. B. Bean, T H. C. Benians, H. S. Berry, F. A. B. Bett, R. G. Bingham, J. W. Bintcliffe, F. R. Bray, A. Camacho, L. B. Cane, H. B. Caryll, R. G. Chase, R. N. Chopra, F. Clayton, M. Cohen, F. G. Collins, P. C. Conran, R. N. Coorlawala, J. E. Copland, E. M. Cowell, A. J. Crawford, L. Croft, G. W. M. Custance, H. G. Daft, D. W. Daniels, W. Deane, H. C. Devas, W. C. McN. Dickey, A. W. C. Drake, J. Duncan, J. E. Ellcome, T. Evans, E. G. Foote, C. L. Forde, S. R. Gleed, E. S. Goss, H. Granger, W. B. Griffin, J. Hadwen, A. Hanau, W. W. Hellyer, O. H. Hensler, T. S. Higgins, J. E. Hodson, G. Holroyde, A. E. Iles, W. A. M. Jack, W. J. Jago, A. G. Jenner, W. F. Jones, J. L. Joyce, C. G. Kemp, F. E. H Keogh, S. M Khambata, A. S. Khan, H. J. S. Kimbell, P. J. Kolaporewalla, C. F. L Leipoldt, J. F. Lessell, J. R Lloyd, J. J. Louwrens. L. G. J. Mackey, P. W. Mathew, J. E. Middlemiss, E. P. Minett, G. N. Montgomery, E. Morris, H. W. Nicholls, H. Nockolds, F. W. O'Connor, H. P. Orchard, E. V. Oulton, R. C. Paris, J. G. Phillips, B. J. Phillips-Jones. A H. Pollard, M. A. Rahman, J. Ramsay, A. B. Rooke, V. K. Sadler, B. Saul, G. H. Sedgwick, G. A. Simmons, G. M. Simpson, F. O. Spensley, S. F. St. J. Steadman, R. Y. Stones, E. Sutcliffe, R. S. Townsend, H. T. Treves. J. R. H. Turton, B. Varvill, H. F. Vellacott, W. G. H. M. Verdon, P. J. Verrall. S. Vosper, F. J. Waldmeier, G. H. Watson. J. N. Watson, R. J. Willan, I. S. Wilson, J. F. Windsor, G. E. Wood, W. H. Woodburn, L. H. Wootton, O. K. Wright.

Diploma in Public Health.

On the same date the following received the Diploma in Public Health :

I. McW. Bourke, E. Eckersley (Lt.-Col. R.A.M.C.), R. J. Ewart, M. H. G. Fell (Capt. R.A.M.C.), H. A. Foy, F. W. Lewis, W. G. Liston (Capt. I.M.S.), E. D. Parsons, W. F. Tyndale, C.M.G. (Capt. R.A.M.C.), B. Watts (Capt. R.A.M.C.), B. H. Wedd, J. E. Wilson, C. R. Wood.

The following candidates have been approved in the subjects indicated :

FIRST EXAMINATION (*Chemistry and Physics*).—†A. Abdel-Al, G. Aldridge, T. S. Allen, C. N. Atlee, *B. Barnett, S. I. Blairmann, C. G. Bunn, T. C. Butler, T. Clarke, C. J. W. Clayton, *A. S. Coalbank, C. G. Colyer, †F. C. Cowtan, †A. L. Davies, D. H. Davies, B. G. Derry, *J. B. G. Dotto, †M. Dwyer, †A. R. Esler, †M. S. Esler, A. G. T. Fisher, F. T. Fisher, *G. Garland, H. Gibson, H. M. Gilbertson, A. O. Gray. †A. P. Green, K. B. Greenwood, W. E. Hallinan, M. Z. Hanafy, E. R. Hart, J. R. Hayman, E. H. Heaton, J. E. Hepper, †A. Holmes, H. S. C. Hooper, F. M. S. Hulke, D. R. N. O'N. Humphrey-Davy, †S. Hutchinson, A. E. Huxtable, *A. E W. Idris, *W. L. Ingram, †G. B H Jones, C. Kennedy, G. W. King, A. B Kramer, A. W. Lewis, C. C. Ling, †H. B. Logan, †E. K. Lonstaff, A. Lowndes, R. H. Lucas, †H. Mahmud, *W. F. Mason, W. H. Matthews, W. F. Morgan, O. C. Morphy, *E. A J. Murphy, G. M. Oakden, J. F. O'Malley, *J. H. Paget, F. J. Palmer, G. H Piercy. J. Pinder, *W Piper, O. Pitt, †C. H. G. Pochin, A. G. Poock. R. F. Quinton, *M. H. Ratton, J. M. Redding, C. G. Reinhardt, *J. B. Robinson, *E. U. Russell, †E. H. S. Scarr, J. R C. Stephens, †C. H. Symons, *A. Tilbury, *K. Vamadeva, †I. L. Waddell, E. A. Weaver. J. D. Webb, C. G. Whorlow, M. A. K. Wood, W. Worger.

FIRST EXAMINATION (*Elementary Biology*).—T. S. Allen, W. Andrew, H. A. Arkill, H. F. Barge, B F. Beatson, J. S. Bhajiwalla, P. N. Button, F. W. Campbell, N. Cheune, A. Cory, A. L. Davies, E. P. Drabble, J H. Drinkall, A. R. Esler, R. S. Fawssett, P. C. C. Fenwick, F. T. Fisher, H Gibson, H. M. Gilbertson, A. O. Gray, E R. Hart, A. E. Huxtable, W. S. Hyde, A. B. Kramer, C. C. Ling, A. R. MacGillicuddy, W. H. Matthews, H. M. A. Menage, W. F. Morgan, J. Morrey, C. S. Owen, C. H. G. Penny, M. G. Pettigrew, J. M Redding, W. G. Reynolds, S. A. Riddett, G. F. Romer, W. E. Tanner, J. W. Thomas, C W. Treherne, A. G. Turner, I. L. Waddell, E. A. Weaver, C. G. Whorlow.

FIRST EXAMINATION (*Practical Pharmacy*).—S. D. Adam, C. V. Anderson, S V. Appleyard, N. W. Berry, H. S. Blackmore, T. R. H. Blake, O. H. Bowen, T. S Bradburn, G. N. Brandon, T. C Brentnall, R. O. Bridgman, H. H. Budd, J. H. Burdett. H. J. B. Cane, W. E. Carter, H. J. Clutterbuck, F. G. Collins, R. Crawford, A. E. Cullen, C. R. Dudgeon, P. A. S. Dyson, G. J. F. Elphick, C. L. Forde, A. J. S. Fuller, H. Gall, H. L. Gauntlett, T S. Gibson, B. Goldsmith, B. G. Goodwin, S. R. Harrison, J. E. Hepper, H. H. Hiley, G. A. Hodgson, J. B. Holmes, T. R. L. Jones, L. H. Khan, S. Lall, C. F. L. Leipoldt, M. Lindsey, T. P. Lloyd, W. E Lloyd. D. Macrae, H. L. Mann, E. H. Marshall, G. K. Maurice. M. M. Melrose, J. K. Milligan, J. Morrey, M. K. Nelson, B. N. Norman, M Nurick, W. G. Orchard, H. L Paddon, W. R. Parkinson, A. C. Paterson, P. V. G. Pedrick, A. S. Pern, A. Pimm, V. St. L. Pinnock, D'A. Power J. A. Prendergast, M. D. Price, J. S. Robertson, L L. Satow, H. L. H. Steele, A. M. Stuart, W. F. Sutcliffe, W. P. Tindal-Atkinson, H. J. A. Tootal, C. G. Waddington, G. F. Walker, W. Watts T. A. Weston, A. White, H. White.

* Passed in Chemistry only. † Passed in Physics only.
‡ Passed under Old Regulations.

CONJOINT BOARD IN SCOTLAND.

AT the examinations held in July in Glasgow of the Conjoint Board of the Royal Colleges of Physicians and Surgeons of Edinburgh and Faculty of Physicians and Surgeons of Glasgow, the following candidates passed their respective examinations, namely :

FIRST EXAMINATION (*Five Years' Course*).—*F. W. Grant, J. G. Morrin, *M. W. Rees, F. P. Quirk, J. D. Wright, W. Millerick, J. B. Michie.

SECOND EXAMINATION (*Five Years' Course*).—*S. K. Senn, Edith Huffton, *R. J. Helsby, H. H. Scott; (*Four Years' Course*) T. M. Jamieson.

THIRD EXAMINATION (*Five Years' Course*).—R. B. M. Sullivan, O. R. Belcher, T. S. Douglas, I. Flack, H. F. Collins, A. Baxendale, R. M'C. Blair.

FINAL EXAMINATION (*and admitted Licentiates of the Co-operating Bodies*).—J. D. Jones, J. F. Jefferies, †J. R. D. Holtby, H. C. de Souza, W. Riddell, I. Flack, G. E. Nash, W. E. Barrett, G. E. Aitken, R. K. Nisbet, D. W. Morison. C. R. Vevai, J. N. Rai. C. A. Langmaid, B. D. Khote, E. G. Hodgson, C. J. Tillekeratne.

* With distinction. † With honours.

UNDER the title of "Istituto Therapeutico Italiano," an institute has recently been established at Milan for the investigation of the action of new drugs, especially in regard to serumtherapy and hypodermic medication. Dr. Zanoni is the Director of the institute.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* **BRITISH MEDICAL JOURNAL** *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that **ALL** letters on the editorial business of the **JOURNAL** be addressed to the **Editor** at the Office of the **JOURNAL**, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the **JOURNAL**, etc., should be addressed to the **Manager**, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the **BRITISH MEDICAL JOURNAL** are requested to communicate with the **Manager**, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the **EDITOR** of the **BRITISH MEDICAL JOURNAL** is *Aitiology, London.* The telegraphic address of the **MANAGER** of the **BRITISH MEDICAL JOURNAL** is *Articulate, London.*

TELEPHONE (National):—

EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

M.D. (Northumberland) asks for information as to the advantages or otherwise of division of the tendo Achillis in a case of pseudo-hypertrophic paralysis, where contractions have occurred, producing talipes.

INEXPERIENCED writes: I should like to ask for comments as to the probable diagnosis and treatment of the following case; also if it is an unusual one. S. K., a fine healthy boy of 2 years, had measles three weeks ago from which he seemed to have completely recovered. On Wednesday night he went to bed, apparently perfectly well, but at 5 a.m. his parents woke to find him "fighting for his breath," and said he had a fit. I saw him at 5.15 in the following condition: Complete unconsciousness; breathing laboured and jerky; slight cyanosis. There were clonic spasms of the whole of the right side, about twenty to the minute. This included the facial muscles—the right eyelid blinking synchronously with the spasms of the limbs—the tongue, arm, side and leg. Lateral deviation of the eyes to the right, nystagmus, corneal reflex absent on right side, present on left. Pupils widely dilated, but the left slightly more than the right. The left side was quite flaccid and motionless. The reflexes could not be observed on the right side on account of the spasms, but were absent on the left. No evacuation of urine or faeces. Temperature, 99°. Pulse, 110. *Lungs*—A good deal of bubbling over the front, fairly free posteriorly. *Heart*—Sounds could not be heard at all from the noisy respiration. At 6 a.m. I saw him again. Cyanosis more marked, respiration shallow and rattling of mucus more marked. The spasms had now spread over to the other side, and both limbs (upper and lower) were being jerked about, not always at the same time. Pupils contracted and equal, eyes now deviated slightly to left, corneal reflex still present on left side. Temperature, 97.5°. Pulse, 120. I gave him chloroform to inhale. This reduced the frequency and force of the spasms, but did not stop them. I was afraid to push it on account of the respiratory embarrassment. Administered bromidia ℥ij per rectum, but it was not retained. 9.30 a.m., patient sleeping (?) quietly; no spasms, though he had had several attacks since I left him. Pulse very rapid and weak. 4 p.m, died. No necropsy was obtained. Family history good on both sides.

DOMESTIC DRAINAGE.

IN the JOURNAL of July 27th (page 243), in reply to a correspondent, it was stated that a soil pipe efficiently ventilated and connected with a main sewer without the intervention of any other trap than that of the w.c. pan was in accordance with present day ideas of good sanitation. Several correspondents have written protesting against this statement, and pointing out, quite correctly, that the model by-laws of the Local Government Board require that in every main drain of a building which directly communicates with a sewer there shall be provided a suitable trap at a point as distant as may be practicable from the building. The desirability of providing this intercepting trap has been a subject for controversy during many years past. At a sessional meeting of the Royal Sanitary Institute last year several speakers most emphatically condemned this requirement of the Local Government Board, and brought forward evidence in support of their condemnation, while others were equally emphatic in their support of the by-law.

SPA TREATMENT OF GOUTY NEURITIS.

S. E. W. inquires for a Continental spa at which a patient suffering from gouty neuritis could be treated with mud or peat baths during October, as he understands that the St. Amand baths are closed during the autumn and winter.

*** The "Fango" mud baths at Acqui, in North Italy, are open. Treatment could likewise be obtained at Baden-Baden and some other places.

MOTOR INSURANCE AND ITS COST.

B. N. writes: Would any member kindly advise a good company with reasonable rate for insurance. At present "B. N." is paying £11 17s. 6d. yearly for the following (car value £300):

	£
1. Accidental damage	75
2. Claims by the public	2,000
3. Fire or explosion	300
4. Accessories	30
5. Injury to chauffeur:	
£100 death.	
£50 total disablement for life.	
£1 per week for twenty-six consecutive weeks' total disablement.	

LETTERS, NOTES, Etc.

ANNUAL MEETING GOLF MATCH.

THE annual golf match that has always secured so much support was this year held at the Exeter Links on August 1st. In consequence of Ireland and Wales not being represented, the match resolved itself into a contest between England and Scotland, the result being a tie. The following are the scores:

England v. Scotland.

Langdon Down	0	K. W. Goadby	0
W. C. Bluck	0	G. R. Tadman	1
Boyd Joll	1	H. A. Latimer	0
H. Jefferies	1	A. Hill Griffith	0
L. E. Creasy	0	G. B. Batten	1
	2		2

SHIP SURGEONS.

MASTOID writes: In the JOURNAL of July 27th, "Medicus" asks for the views and experiences of readers who have acted as ship surgeons in regard to their status and treatment. My experience on three different voyages is to the effect that his status largely depends upon the individual, and that whether he is interfered with in his duties or not, is a question of polite firmness. During the last few years abuses have grown up in the shape of companies endeavouring to force their ship surgeons to vaccinate scores and even hundreds of immigrants without any extra pay, but by firmly withstanding this attempted imposition, these abuses have been removed or modified, in some cases at all events. Intending ship surgeons should carefully inquire before signing the ship's articles, whether extra work, apart from the health and sanitation of the ship itself, is expected of them, and also as regards extra work involved by the Employer's Liability Act being now applicable to seamen.

ECLAMPSIA IN THREE SISTERS.

M.B., CH.B. writes: Mrs. C., aged 29, had, a few days previous to my being called in, been delivered of her fourth child. A midwife was in attendance. When I saw her she complained of headache only; pulse and temperature were normal. She was given a few aspirin powders for the headache. The next day the headache was better, but her intellect did not seem very clear. This led to a closer examination. It was found that she was passing very little urine. She was then put on to a diuretic mixture, with the result that the quantity of urine passed was greatly increased. Examination of the urine revealed the presence of a large quantity of albumen. The patient remained dull and apathetic, and although the quantity of urine passed remained good, she subsequently developed symptoms of eclampsia. She was treated vigorously for the eclampsia, but without avail. She died after having nine fits. The interesting point in this case is that two sisters of the deceased had previously died from eclampsia, and in each case, as in this, after the delivery of the fourth child. The patient had only one other sister, and she is unmarried.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

Eight lines and under	£0 4 0
Each additional line	0 0 6
A whole column	2 13 4
A page	8 0 0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 6, Catherine Street, Strand, London, not later than first post on Wednesday morning preceding publication; and if not paid for at the time, should be accompanied by a reference.

N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

Remarks
ON
THE EFFECTS OF RESPIRATION ON THE CIRCULATION,
AND
THE PULSUS INSPIRATIONE INTERMITTENS VEL PULSUS PARADOXUS.

By PATRICK WATSON WILLIAMS, M.D.Lond.,
LECTURER ON DISEASES OF THE NOSE AND THROAT, UNIVERSITY COLLEGE, BRISTOL; LARYNGOLOGIST AND RHINOLOGIST, ROYAL INFIRMARY; AND AURAL SURGEON TO THE DEAF AND DUMB INSTITUTE;
VICE-PRESIDENT OF THE LARYNGOLOGICAL SOCIETY OF LONDON.

To the laryngologist the import of the pulsus paradoxus concerns mainly its occurrence in acute dyspnoea from laryngeal obstruction, but in general medicine the occurrence of the phenomenon has been noted in various conditions. It is a question whether these respiratory undulations are due to respiratory pump action acting on the heart and intrathoracic vessels, or to nervous impulses influencing the heart and vessels; in other words, Are they myogenetic or neurogenetic, or both?

My attention was aroused some years ago when, as Physician in charge of Clifton College, I had to examine every new boarder on entering the school, and I was astonished to find that respiratory undulations were so obvious as to be readily perceived by the finger on the radial artery in a large proportion of the most healthy specimens of English boys, particularly on their taking a deep inspiration. I soon learned that, so far from indicating an abnormal condition, well-marked respiratory undulations in the pulse implied, if anything, that the boy would make a good sportsman. At this school paper-chase runs are the chief form of exercise during the Easter term, and towards the end of the term they have what are known as the Long and Short Penpole Cup run—the former being a cross-country run of about nine miles and the latter seven miles. I may add incidentally that only those who are, after medical examination, pronounced fit for such runs are allowed to take part in them; and before starting in the cup runs each boy has to be examined medically and certified as fit. The Long Penpole, confined as it is to the elder boys, is especially a severe test of running power and physical fitness above the normal; but during the eight years I held the office as physician to the school not only was no boy whom I had passed even the worse for his competition, but no boy was even temporarily upset, or required being seen by me after the Long Penpole run. But in a large number of those pronounced fit for this cup run I found respiratory undulations (with deep inspirations) well marked. A good example is furnished by a boy aged about 17, who was first favourite for the cup run of the year, and who outran all competitors and came in very fit. His respiratory undulations were so well marked that prior to the run the pulse wave was obviously diminished during quiet respiration, and no pulse was felt following deep inspirations. The pulse tracing appended, which was taken forty-eight hours after the run, appeared to the finger indistinguishable in character from the pulse before the race.

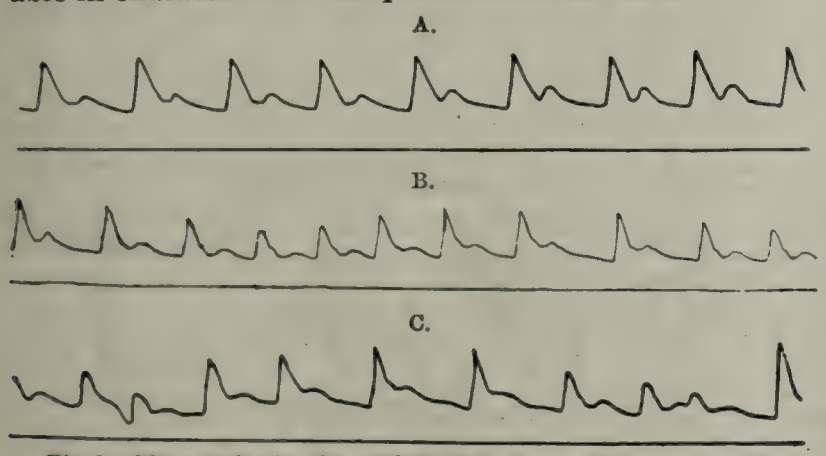


Fig. 1.—Three pulse tracings taken on the same day from a healthy lad. A, Quiet respiration, B, with full inspirations, and C, with deep inspirations. In B and C inspiration coincides with the smaller frequent upstrokes, and expiration with the larger upstrokes and prolonged diastole.

Such observations convinced me that the so-called "pulsus paradoxus" met with in laryngeal obstruction was merely a physiological phenomenon, or at any rate was a pathological exaggeration of a physiological condition. I regret that this pulse tracing, like those of Sir James Barr,[1] in his recent contribution on the effects of respiration on the circulation, loses value from the fact that no simultaneous record of the respiration curve was made. But it may be noted that, following the commencement of inspiration, the pulse frequency and the tension increased, while during expiration the converse obtained, the slowing of the pulse being due to prolongation of the diastole—that is, it is the youthful type of irregularity of Mackenzie. This author states[2] that he "had come to the conclusion that all children at some time or other present this form of irregularity," and that he has "often found it take on a respiratory rhythm, and no doubt some cases are due to respiration."

Oliphant Nicholson, who, like J. Mackenzie, extensively used the graphic method of recording pulse and respiration tracings, states that extensive employment of the sphygmograph in children leads him to the conclusion that this pulse variation is almost invariably met with in all conditions of laboured breathing, whether fast or slow.

Sir James Barr[3] has recently recapitulated some of the many views advanced from time to time, to account for the production of the pulsus paradoxus, or the effects of respiration on the pulse. Variations in the intrathoracic pressure resulting from inspirations and expirations influence the circulation, and Sir James Barr has adduced experimental and clinical evidence which at first sight seems to prove that such respiratory variations in intrathoracic pressure satisfactorily account for the pulsus paradoxus or pulsus inspiratione intermittens. That respiratory pump action is a potent factor in the production of the respiratory undulations in arterial tension and pulse rhythm is certain, but we may recall certain physiological factors that cannot be ignored, and which show that the subject is much too complicated to be covered by such a simple physical explanation alone.

That respiratory movements produce regular variations in the arterial pressure, which are known as respiratory pressure variations, or respiratory undulations, has been long recognized by physiologists; and that these variations or undulations are in part due to the fact that the heart and intrathoracic blood vessels are subject, like the lungs, to the pumping action of the respiratory movements, is beyond the region of controversy. The experimental and physiological proofs of these universally accepted facts are found in most modern textbooks of physiology.

During an inspiration the pressure around the heart and all intrathoracic vessels is considerably less than that of the atmosphere outside the chest. The negative pressure affects the thin-walled elastic veins, containing blood at relatively low pressure, more than the thick-walled arteries with their contained blood at relatively high pressure, hence the veins are dilated by the increased amount of blood driven into the chest from the systemic veins. But the same negative pressure aids the flow of blood to the right heart leading to a stronger ventricular contraction, or at least to a larger amount being ejected, and consequently more blood reaches the left ventricle, and more blood escapes by the aorta, so arterial tension rises. With obstructed inspirations a still greater but similar effect is produced, for the negative pressure which increases the capacity of the lung reservoir can only do so by dilating the vessels, thereby correspondingly facilitating the onward flow of the blood to the right heart, and from the right ventricle (though the negative pressure, even apart from any pericardial adhesions, etc., will have some tendency to interfere with contractions, and to aid the diastole of the cardiac cavities).

Thus an inspiration first widens the pulmonary vessels and increases the lung reservoir capacity; but, secondly, by lessening resistance, it increases the rate of flow through the pulmonary vessels. As Professor Michael Foster[4] points out, the first factor is a transient and passing one; the second factor is more lasting—and this applies not only to inspiration, but conversely to the effects of expiration. "These two factors produce opposite effects, and hence the total result of any particular kind of respiration will depend on their relative prominence.

With quickly repeated respiratory movements the first factor comes to the front; when the respiratory movements are more slowly repeated and more slowly carried out, the second factor is the more potent."

Hence we must inquire whether there is not another factor in producing the observed effects of respiration on the circulation, one which Sir James Barr disallows, he being apparently a pure myogenist.

First, it has been proved experimentally that the respiratory, cardio-inhibitory, and vaso-constrictor centres in the medulla oblongata act to a certain extent in unison, or, as Sir Michael Foster[5] puts it, "while the respiratory centre in the spinal bulb is at work, sending out rhythmic impulses of inspiration and expiration, the neighbouring cardio-inhibitory centre is, as it were by sympathy, thrown into an activity of such a kind that its influence over the heart waxes with each expiration, and wanes with each inspiration."

The proof of this is afforded by the effects of artificial respiration on an animal under curare, when, despite the fact that the mechanical conditions affecting the intra-thoracic viscera as regards atmosphere pressure during respiration are *reversed*, the respiratory undulations remain the same, in time and character, as during natural respiration; and perhaps still more conclusively by the rhythmical undulations, the so called Traube Hering curves which appear when, in an animal under curare, artificial *respiration is suspended*—rhythmical undulations which are similar to and seem to take the place of the respiration undulations under artificial or ordinary respiration. Still further evidence of the influence of the medullary centres on the pressure curve is afforded by the striking fact that, for example in the dog, the pulse rate is quickened during the rise of the respiration undulations and slowed during the fall (Foster, Landois and Stirling, etc.) The rise in pressure that occurs on cessation of artificial respiration is due to an increase in peripheral resistance resulting from widespread vaso constriction. The same influence is seen in the pulse tracings of man.

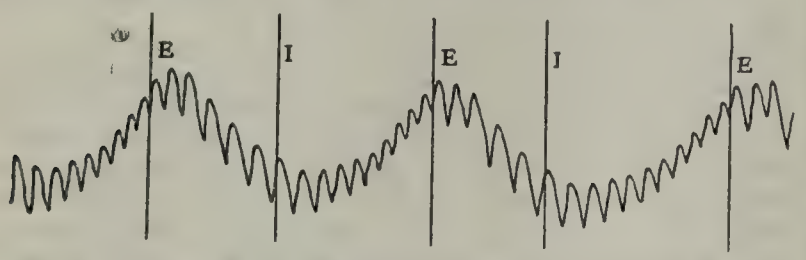


Fig. 2.—CAROTID BLOOD-PRESSURE TRACING OF A DOG (STIRLING).

I = commencement of inspiration. E = commencement of expiration. The respiratory undulations are due, in part at any rate, to a stimulation of the vasomotor centre, which runs parallel with the respiratory movements, and which causes the arteries to contract with consequent raising of the arterial pressure. The smaller number of pulse beats during the greater part of expiration is due to the activity of the cardio inhibitory centre in the medulla, this centre being comparatively inactive during inspiration

N.B.—Dog under anaesthesia, but without artificial respiration, and vagi not divided.

If we take no account of the medullary centres, and seek to explain this variation in pulse-rate and rise of pressure by respiratory pump action alone, we are confronted with the fact that section of both vagus nerves does away with this difference in the pulse, in inspiration and expiration, showing clearly that the cardio-inhibitory centre is one essential cause of the difference. At the same time it should be borne in mind that this is not, as Sir James Barr surmises, a reflex—he says, "the time element is against any such theory as a cause of the pulsus paradoxus"—but a stimulus from different bulbar centres, coincident with the inspiratory and expiratory impulses. It is noteworthy, too, that in the tracing from Landois and Stirling the influence does not correspond exactly with the commencement of inspiration and expiration, but is seen to be one or two heart beats later in modifying the pulse.

To return to the views advanced by Sir James Barr, which he illustrates by pulse tracings taken on a healthy young man of 22 the effect on the pulse produced by Müller's experiment. During the forced inspiratory movement on expanding the chest the lung reservoir is increased, and he states that "if there be a large lung reservoir to fill, the pulse may disappear in many of the superficial arteries for several beats. When the lung reservoir overflows the heart fills up the empty arteries, and the pulse again returns even while the chest is fully expanded. . . . Unlike the Valsalva experiment, *the heart at no time stops, and its active movements can be watched under the x rays*."* He gives two pulse tracings. In the first experiment, "after the first two normal pulse waves, the chest was fully expanded but no air admitted, and the pulse completely disappeared at the wrist for about thirty beats, and then when he relaxed the respiratory effort and opened his glottis the pulse immediately reappeared." The next "two tracings were taken in succession. In the first there are three normal pulse waves, and then the chest was expanded, with obliteration of the pulse; after a short period the second paper was inserted, and it shows a return of the pulse while the chest was still fully expanded. . . . These tracings show that the artery which was at first depleted *gradually filled up and exhibits a marked rise in blood pressure.** This is exactly what has been noticed in some cases of mediastinitis with the so-called pulsus parodoxus."

A difficulty in accepting Sir James Barr's views as an all-sufficient explanation at once presents itself—namely, that as the heart's active movements continue the whole time, and the pulse wave completely disappears at the wrist for about 30 beats, not only is it remarkable that the young man did not faint but was able to maintain (presumably in the erect posture) the great effort involved if his carotid and vertebral arteries, like the radial, remained empty for 30 heart beats; further, the lung reservoir would have to be extraordinarily large. With every systole of the normal heart about 172 c.cm. (180 grams) of blood are discharged into the aorta, and the same amount under normal conditions is discharged at each contraction of the right ventricle, and "the mean time required for the circulation is accomplished during 27 heart beats—for example, for man 32 2 seconds, supposing the heart to beat 72 times per minute."[6] But in Sir James Barr's case, the heart while continuing to beat failed to give a pulse for about 30 beats, notwithstanding the fact that the blood flow, at least towards the right heart, was actually facilitated by the conditions of the experiment. Why? Sir James says because the ventricle and the arteries were empty. But failure of the circulation could not be due to the right ventricle being overdistended, for, even while conditions favouring distension were continuing (and presumably aggravated by de oxygenated blood), the pulse reappeared, and reappeared with *increased tension.*

Yet Sir James Barr contends that during all the period of 30 heart beats the lung reservoir was being filled, and that, too, at the expense of all the systemic arteries and veins! As the relative quantities of blood normally distributed in the pulmonary and systemic circulations is about 1 to 4, the lung reservoir would require enormous reserve capacity to dispose of all this blood without showing any signs of "overflow" for 30 heart beats, and without any marked and continuous fall in blood pressure being indicated on the sphygmographic tracing. It is true his pulse tracing shows (if a sphygmographic base line by falling shows anything) an initial slight fall of pressure, but after a period corresponding to 5 pulse beats, the tracing No 1 shows a temporary rise in pressure, becoming slightly higher than it was before the inspiration was taken. His No 2 pulse tracing likewise shows, as he points out, that the pulse when it appears, "exhibits a marked rise in blood pressure"—that is, while the chest was still fully expanded and the inspiration effort continued. This tracing, however, shows other features of interest—namely, that the high-tension pulse during and towards the end of the inspiration period is more *frequent* than it was either before the inspiration (that is, with a low-tension pulse) or after the glottis was opened, and after respiration was resumed. Now, rise in blood pressure may be due either to increased amount of blood in the artery or to increased peripheral resistance, vascular constriction. But Sir James Barr has explained that the artery is empty, and though it is conceivable that after several rapid contractions of a well-filled ventricle the artery would be overfilled and blood pressure high, this could not occur if at first the ventricle was emptying itself into nearly empty arteries of low tension; the pulse tracing would be dicrotic at first, though it might show increased tension later.

There is another explanation, however—namely, that

* The italics are mine.—P. W. W.

during an inspiratory effort the vaso-constrictor centre in the medulla is active, raising peripheral resistance by increasing arterial tone, while during respiration it is less active, and so we get a more dicrotous pulse.

A further point is the increased frequency of the ventricular systole during the inspiratory phase and during the period of increased blood pressure, as compared with the frequency during the individual's normal blood-pressure period of ordinary respiration. I note that Sir James, referring to the Müller experiment, states that *with the inspiratory expansion* of the chest "the capacity of the lung reservoir is increased, so the immediate effect is a diminished supply to the left side of the heart, and *the systemic pulse becomes slower.*" His pulse tracings afford no evidence of this, but in tracings given by Stirling, Foster, Nicholson, and invariably in my cases showing respiratory undulations, the pulse becomes more frequent after the inspiratory impulse—that is, during the early phase of inspiration. Mackenzie[7] states that "when the pulse beat is evidently diminished in size through respiratory interference, its duration is likewise shortened. I think the explanation is that the cardio-inhibitory centre is inhibited during inspiration (that is, by inspiration impulses) and more active during expiration.

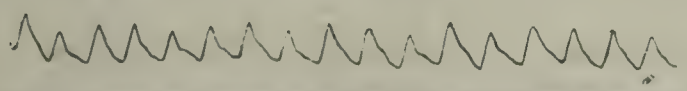


Fig. 3.—A type of irregularity due to respiration in an infant, aged 3 weeks. The smaller pulse-curves correspond to inspiration (normal breathing). (Oliphant Nicholson.)

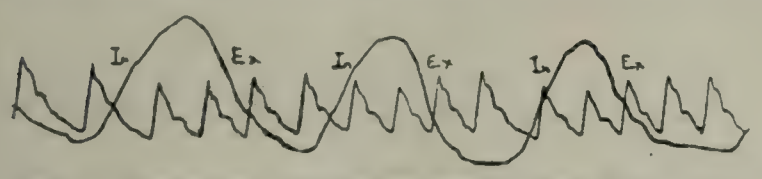


Fig. 4.—Respiratory irregularity where more than a single pulse wave is affected (really a pulsus paradoxus). (Oliphant Nicholson.)

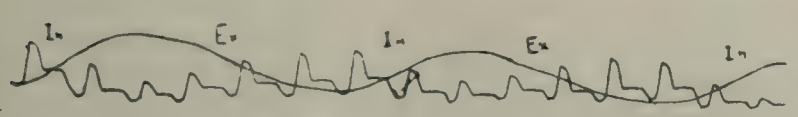


Fig. 5.—Inspiratory diminution of the pulse curves in a slight case of spasmodic asthma. (Identical in appearance with the true pulsus paradoxus of mediastino-pericarditis.) (Nicholson.)

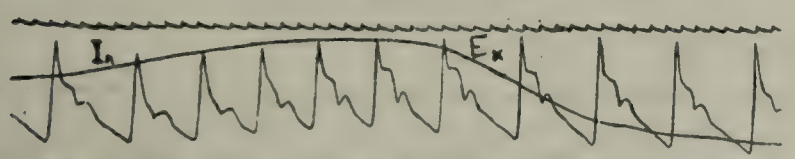


Fig 6.—Quickening of the pulse with deep inspiration (loss of vagus influence over heart), with slowing at expiration (vagus regaining its influence). The quicker beats are more dicrotic. (Oliphant Nicholson.)

Again, Sir James states that "it is impossible to produce a negative pressure within the thorax equal to the positive pressure within the aorta, and so there can be no aspirating effect interfering with the ordinary course of the circulation." He also assumes that the elastic tension of the lungs is = 10 mm. of mercury, but with the chest fully distended it is = 30 mm. of mercury, and this, added to the 80 mm. of negative pressure in his Johannes Müller experiment, gives 760 mm. − (80 + 30), that is 650 mm., as the atmospheric pressure on the extrapulmonary contents of the thorax—for example, the heart and large vessels—as compared with 760 mm, the atmospheric pressure on the vessels outside the chest. That is to say, 110 mm. of negative pressure is opposing the contraction of the auricles and ventricles, and equally assisting their diastole, "while the chest is fully expanded."

Taking the blood pressure in the aorta as 200 to 250 mm. of mercury, a sudden negative pressure of 110 mm. is quite enough to take into serious consideration. But Sir James assumes that the blood in the large arteries is rapidly* emptied into the capillaries and veins, and that, consequently, the arterial pressure falls and the pulse is obliterated at once. There must be some blood in the intrathoracic aorta, but as the extrathoracic arteries are—shall we say?—nearly empty, the arterial tension must be very low, and so, too, the aortic blood pressure. Then the intrathoracic aorta must be underfilled, especially if the 110 mm. head of pressure outside the chest (which is such a potent factor in driving blood into the chest from the veins) does not operate in a similar manner on the flaccid arteries. But if the aorta is flaccid—that is, not quite distended—then the negative pressure of 110 mm. of mercury certainly has full play, and it will tend to suck blood back into the chest. And I can further imagine that the diminished tension in the intrathoracic aorta will damp down any pulse wave started by the contracting ventricle, and this lessened pulse wave will be still further and rapidly damped down when it reaches the extravascular arteries, subjected as they are to higher atmospheric pressure, even if they be not in a state of active vascular constriction.

Before leaving Sir James Barr's thesis, I would refer to one other point that he touches on. He refers to Dr. Brockbank as having observed the pulsus paradoxus in a case of acute laryngitis, and later on reminds us that in cases of laryngeal diphtheria in elder children with firm chest walls we have a modified Müller's experiment. But, says he, "In very young children where there is almost complete obstruction of the larynx we do not get the pulsus paradoxus, because when the child attempts to expand its chest the atmospheric pressure drives in the soft, pliant cartilages behind which the heart and great blood vessels are situated, and thus the respiratory pump is thrown out of gear." Yet in reply I may quote from Brockbank's own article as follows:[8] "The extent to which the pulse disappears during inspiration varies directly with the severity of his affection (acute laryngitis); and as the recession of the lower half of his chest also varies according to the amount of obstruction to the entrance of the air into the chest, the former symptom may be taken as an indication of the presence of the latter. . . . The 9 cases to which I have referred above were children under 2 years of age. . . . In some cases—in children with a flexible sternum in whom the recession of the chest was extreme—one cannot help wondering whether direct pressure on the heart from the retracted sternum does not enter into the causation of the feeble beats."

I may further point out that in acute laryngeal obstruction there is as much (if not greater) obstruction to the exit as to the entrance of air; the expiratory *dyspnoea* is not so great for the reason that the expiratory force is always greater than the inspiratory. But Sir James, while demonstrating the effect on the pulse of forced obstructed inspiration (Müller's experiment), has also demonstrated the effect of forced obstructed expiration (Valsalva's experiment), and one may ask if the pulse is diminished or obliterated on inspiration, because "in laryngeal diphtheria in elder children with firm chest walls we have a modified Müller's experiment," why does the pulse not disappear because in expiration we have a modified Valsalva experiment? It may be said, of course, that for the obliteration of the pulse by Valsalva's experiment greater force is necessary, greater than is ever encountered in a diphtheritic child, but so, too, Müller's experiment is never carried out with the force or with the duration of the experiment; while the rapid alternation of the Valsalva and Müller experiment that the child with laryngeal diphtheria exhibits, completely alters the force of the argument of Sir James, inasmuch as the one counteracts the other.

Perhaps we make a mistake in attempting to explain the pulsus paradoxus in all and every case as being due to precisely similar causes. I have never met with a case of pulsus paradoxus in mediastinitis. The late Dr. Thomas Harris, cited by Dr. Nicholson[9] in his contributions on Indurative Mediastino-Pericarditis, quotes from Schreiber,

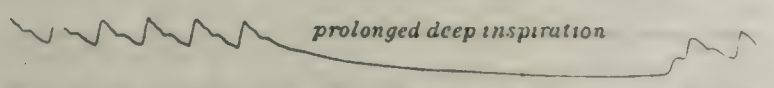


Fig. 7.—Disappearance of the radial pulse in taking a deep inspiration. (J. Mackenzie.)

who regarded as features characteristic of the true pulsus paradoxus that it "does not require for its development the inspiration to be deep." A typical pulse tracing in

* So rapidly that in his two pulse tracings, at any rate, the ventricle had not time to produce a single pulse wave after the chest was expanded, and this notwithstanding that its action was supposed to be slowed.

PULSE AND RESPIRATION TRACINGS OF HEALTHY MEN DURING QUIET AND DEEP RESPIRATION.

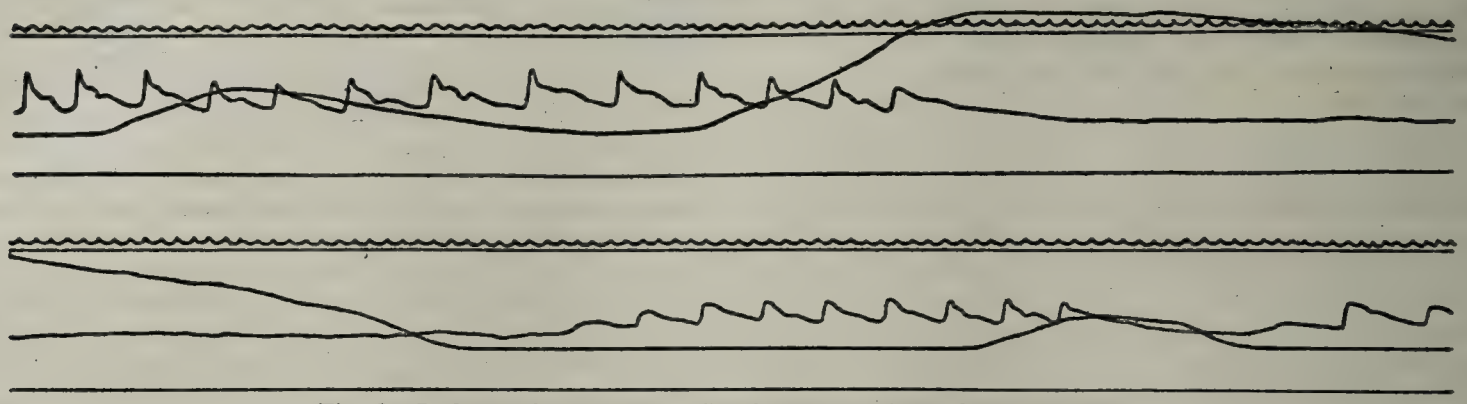


Fig. 9.—P., November 9th, 1906. Continuous portions of sphygmogram.

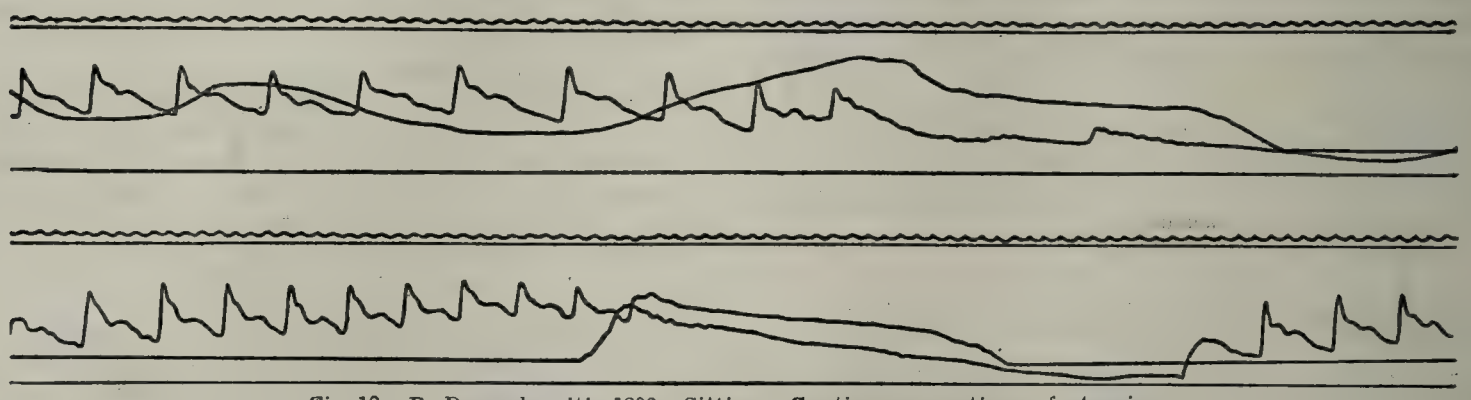


Fig. 10.—P., December 4th, 1906. Sitting. Continuous portions of a tracing.

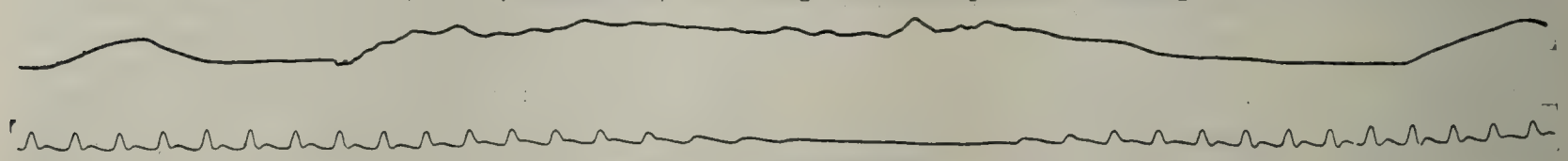


Fig. 11.—D., June 8th, 1907.

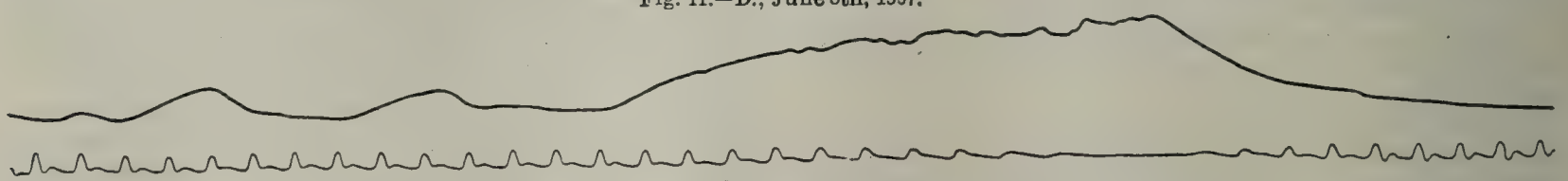


Fig. 12.—D., June 8th, 1907.

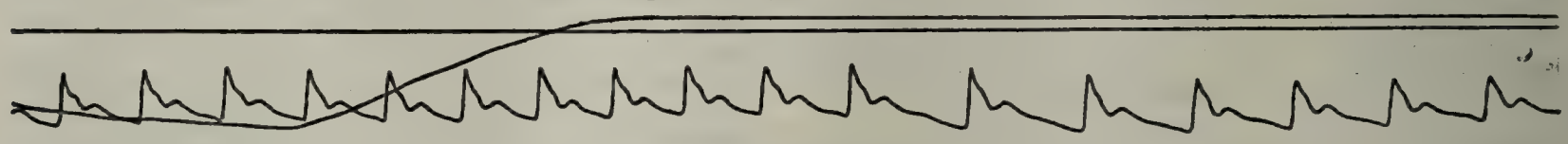


Fig. 13.—M., July 17th, 1906.

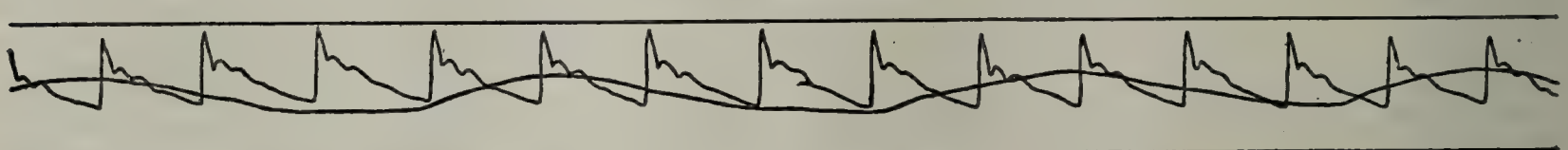


Fig. 14.—M., 2 p.m., July 17th, 1906.

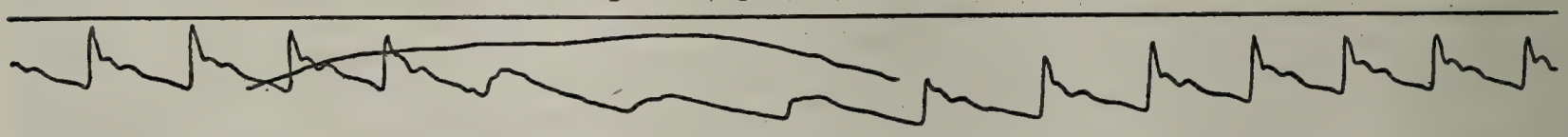


Fig. 15.—M., 2 p.m., July 17th, 1906.

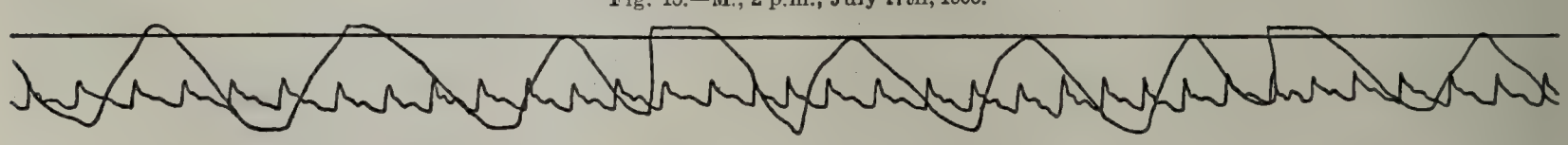


Fig. 16.—W., June 12th, 1906, 2 p m. Ordinary breathing.

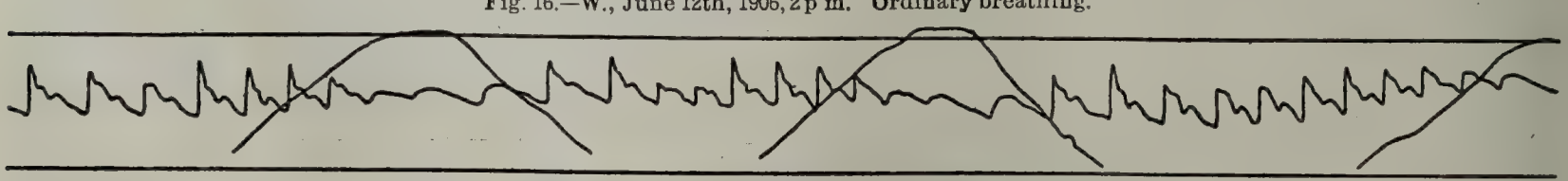


Fig. 17.—W., June 12th, 1906. Deep breathing.

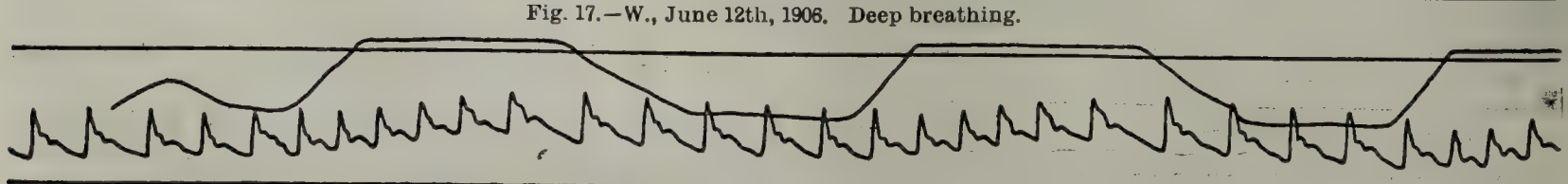


Fig. 18.—W., June 12th, 1906, 3.30 p.m.

point is the following (Fig. 8), which with others Dr. James Mackenzie kindly allows me to reproduce. It was taken from an apparently healthy youth, inspiration being deep, but unobstructed.

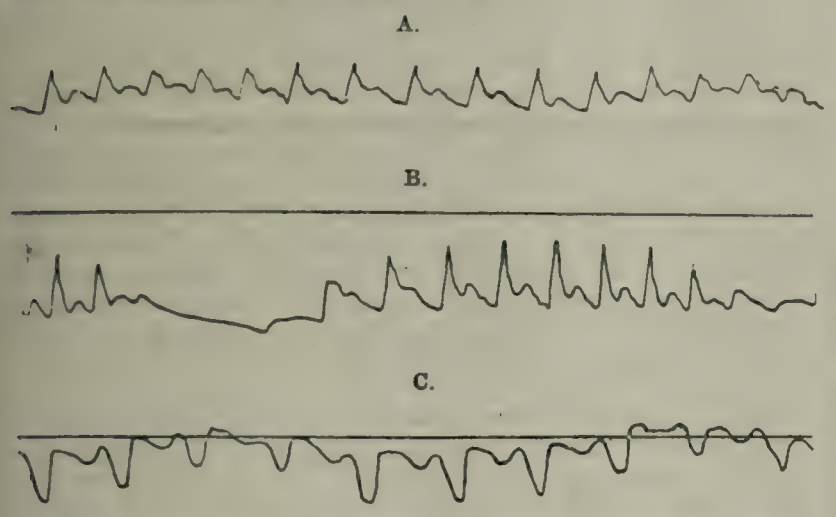


Fig 8.—Three tracings from a neurasthenic young man. A, During quiet respiration, B and C, with deep inspirations, in each case corresponding with diminished amplitude and increased frequency of the pulse wave. I regret that in this and in the previous figure, the precise moment of inspiration and expiration, which were indicated on the sphygmograms, have not been reproduced in the otherwise accurate reproduction.

Another tracing from a patient of my own in 1900, who was rather neurotic, and had an abnormally frequent pulse, but who had nothing else the matter with him, and who has since become a healthy architect, shows the effect of simple deep unobstructed inspiration on the pulse. The inspirations were through the open mouth, and the negative pressure could not have been more than a few millimetres of mercury over and above that resulting from the elastic tension of the lungs; nevertheless the obliteration of the pulse in this patient, as in Mackenzie's, was in this tracing complete.

In other tracings taken at the same time, and apparently with equally deep inspirations, the respiratory undulations were marked, but no obliteration of the pulse was shown by the tracing. I am strongly inclined to suspect that the *obliteration* of the pulse in this and in Sir James's and in Dr. Mackenzie's tracings are due to the instrument failing to receive pulsations from the smaller (constricted) radial artery. "It must always be borne in mind that a sphygmographic tracing is not the tracing of the pulsation of the artery, but of the tissues and liquids surrounding it."[10]

The effect of respiration on the pulse has been the subject of investigation by Lieutenant-Colonel Deane, R.A.M.C., and he has kindly allowed me to see a large number of his excellent pulse tracings from healthy men, some of which I am enabled to reproduce (Figs. 9 to 18). This observer has very frequently obtained the pulsus paradoxus in healthy men with only long easy breaths but with no effort or straining whatever. These tracings are to be read from right to left, the respiration phase being indicated by the respiratory curve in each case. In some the pulse obliteration appeared when straining after inspiration, in another the pulsus paradoxus continued through an inspiration and expiration, and then appeared at each ordinary quiet inspiration for a few times when the pulse resumed its ordinary characters. Again in others, when the breath is held after inspiring, the pulse is more frequent at first, then slows with prolongation of diastole, and then sometimes quickens. It looks as though the bulbar rhythmical impulses which alternate habitually with inspiration and expiration continue to influence pulse frequency even with the breath held and respiration suspended, exactly as it does in a curarized animal when artificial respiration is suspended (see Figs. 13 and 18). Moreover, it is curious that almost, though not quite, invariably the pulse-rate is quickened at the commencement of deep inspiration, that is, with the bulbar inspiratory impulse, even though it slows again with the chest expanded in respiration—that is, when the inspiratory bulbar impulse has passed off. There seems to be no exact relationship in Colonel Deane's tracings, and in my own, between the degree and force of inspiration and the amount of diminution in his pulse wave, and whereas at one time a fairly deep inspiration causes a slight respiratory undulation in the pulse tracing, another time, in the same individual, the tracing is a typical *pulsus paradoxus*.

In spasmodic asthma the dyspnoea is mainly expiratory, and the pulse tracing of slight spasmodic asthma recorded by Nicholson,[9] taken during the attack, is noteworthy (see Fig. 5).

The same author finds that the pulse and respiration tracings from children and adults show that the line of the tracing does *not* fall during deep inspiration, except in a very small proportion of cases, and when it does so fall he considers it might be due to slight movements of his arm which affected the tracings during inspiration. "These observations seem to show that inspiration very often simply leads to a *diminution* of the pulse curve without lowering the level of the tracing. On the contrary it sometimes happens that there is a *raising* of the level of the pulse curves during this."

It would seem as though the vagus influence in inhibiting the heart on inspiration having been lessened, with consequent acceleration of the pulse, "the reaction back to the normal rate was apt to be too extreme . . . and it does not immediately strike the proper balance with the accelerators," as Nicholson[8] puts it. This authority further reminds us that "it is not always the inspiratory act which leads to a temporary diminution of the vagus influence, and, therefore, a faster pulse."

During ordinary respiration the neuro-vascular system is in perfect co-ordination, working under conditions to which they become completely "accustomed," but with deep respirations and in various abnormal conditions the co-ordination is less complete. The extraordinary inspiratory impulse unduly inhibits the cardio-inhibitory centre, and this, followed by a reassertion of vagus control, often overshoots the mark. The trained runner or athlete quickly gets his "second wind"—that is, his spinal centres soon respond to the extra call on their activities. So, too, the medullary centres, always acting, as they must do, to ensure an equal pulse-wave despite the ever-varying intrathoracic pressure, declare their activity by respiratory undulations in the pulse wave when the respiratory medullary impulses are excessive.

Thus the effect of respiration on the circulation is exceedingly complex, resulting from mechanical factors introduced by the pump action of inspiration and expiration, and from impulses generated in the bulbar cardio-inhibitory and vasomotor centres coincident with the respiration impulses; and the effects vary according to the quickness or slowness of respiration, whether it be natural or deep and forced, obstructed or free; while the strength of the heart beat, arterial tension, the activity of the bulbar centres, and, we may add, the action of the abdominal muscles, the splanchnic area, and even the degree of oxygenation of the blood—all have varying influences in determining the final results. As the relative dominance of these different factors is so variable, the results as shown in pulse tracings are also inconstant.

In children, as compared with adults, the spinal centres are unstable and reflexes overactive. Hence in young individuals, although their chest walls are more pliable and less fitted to overcome atmospheric pressure on deep inspirations, the bulbar centres are very prone to obviously affect the frequency and force of the pulse; and when the larynx or main bronchi are obstructed the forcible inspiratory impulses very often result in the so-called pulsus paradoxus. That these effects on the pulse are *wholly* due to cardio-inhibitory or vaso-constrictor centres is hardly possible, but they are important, and I think the dominant factors.

References.

[1] British Medical Journal, April 20th, 1907, p. 913. [2] *The Study of the Pulse*, p. 87. [3] Loc. cit. *A Textbook of Physiology*, p. 652. [5] *Textbook of Physiology*, vol ii. p. 653, sixth edition. [6] *A Textbook of Physiology*, Landois and Stirling, fourth edition, vol. i, p. 154. [7] *The Study of the Pulse*, p. 164. [8] British Medical Journal, 1893, vol. i, pp. 1314–1315. [9] *Encyclopaedia Medica*, vol. x, p. 234. [10] *Textbook of Pathology*, D. J. Hamilton, vol. i, p. 696.

The late Mr. Henry Howard Paul, an actor and author, besides bequeathing £400 to the Hospital for Sick Children, Great Ormond Street, and £300 to the Royal Orthopaedic Hospital, directed that the residue of his estate, amounting, apparently, to some £50,000, should be divided between seven charitable institutions and funds, including Middlesex Hospital, University College Hospital, and Charing Cross Hospital.

Clinical Observations

ON

THE PRODROMAL PERIOD OF SOME OF THE ACUTE INFECTIOUS DISEASES.*

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MEDICAL SUPERINTENDENT OF THE EASTERN FEVER HOSPITAL, HOMERTON, LONDON.

IN this paper it is my intention to deal chiefly with cases in which the initial symptoms are either unusual or not in my opinion sufficiently emphasized in the ordinary textbooks. Except in a few instances, which I have mentioned, the cases with which these remarks are concerned have come under my own observation.

In writing an account of an infectious disease it is customary and also convenient to divide its course into several stages. There is first the "incubation period," then the "prodromal period," next the "eruptive period," and so on. The prodromal period is that with which I intend to deal this evening, the stage, that is, that intervenes between the first symptoms of illness, and the rash or some other characteristic sign. But I will pause for a moment to ask whether now and then there may not be symptoms even before the prodromal period, especially at the beginning of the incubation period, at or immediately after the time when the attacking micro-organism obtains an effective entrance into the patient's body. Such an occurrence could be well observed only in diseases with long incubation periods; in those with short, the symptoms of the entrance of infection would probably merge into those indicative of the general invasion.

In measles I have seen one or two cases like the following: A child, Louisa W., was admitted into a certain ward, in which there were some eighteen or nineteen children, at about half an hour after midnight on January 31st; thirty-five hours later, on February 1st, she was found to have measles and was removed. On February 14th, one child, and on February 16th another, Mary Ann H., failed with measles; also on February 16th, but about nine hours later, a third child, Elizabeth H., had pyrexia and was noticed to be frequently sneezing; in consequence she was thought to be sickening for measles and was removed to another ward with the two children just mentioned. But the febrile disturbance was slight and lasted for a few hours only. On February 22nd, however, the symptoms of an undoubted attack of measles showed themselves. Was Elizabeth H. infected with measles on February 16th by Mary Ann H., or was the slight febrile attack she had on February 16th a primary abortive attack of measles due to infection by Louisa W.? These cases occurred in the days before I was acquainted with Koplik's spots.

In typhoid fever I have seen what I may call the symptoms of infection in several cases. A nurse who was working in a typhoid ward had an attack of tonsillitis, and was kept in bed for a few days, after which she went away for four days' holiday. The day after she returned, eleven days from the commencement of the tonsillitis, the first symptoms of an attack of typhoid fever began. Again, another nurse, also engaged in a typhoid ward, suffered from headache and pains in the back on January 13th, her temperature being 99 8° F. The headache persisted and she was warded on January 15th. After January 16th she was free from headache, and on the 18th was allowed to get up. She remained well till January 24th, when the headache returned and the temperature, normal since January 13th, rose. These proved to be the initial symptoms of an attack of typhoid.

Such "illnesses of infection" are, however, uncommon, and in our present knowledge quite impossible to diagnose. In some instances, doubtless, the patient is simultaneously infected with two diseases, one with a short, the other with a long, incubation period. Thus some years ago, when typhoid fever was prevalent at Hamburg, owing to the drinking water being contaminated by sewage, some persons were attacked by choleraic diarrhoea almost immediately after drinking the water, while two or three weeks later they fell ill of typhoid fever.

* A paper read before a meeting of the Wandsworth Division of the British Medical Association.

SCARLET FEVER.

In a large majority of the cases of this disease the prodromal period is short; consequently there is not the same room for variation in the initial symptoms as there is in diseases the prodromal periods of which are long. In adults there is not infrequently a slight sore throat for two or three days before any pronounced symptoms of illness make their appearance. But usually the rash comes out within forty-eight hours of the onset, and very often it is discovered as soon as any other symptom. Occasionally, however, it is delayed till the third or fourth day, and even longer; thus in the case of a boy, aged 3 years, in whom an attack of scarlet fever began with repeated vomiting, a rise of temperature, and a frequent pulse on December 26th, the rash did not come out till December 30th. As a rule, when the appearance of the rash is delayed, the case is one in which the throat symptoms are marked (scarlatina anginosa); but it was not so in the case I have just mentioned. It will be seen from the chart (Chart 1) in his case that the temperature fell to normal on the morning of the third day, rising again later. This is an unusual circumstance in scarlet fever, for in this disease the temperature seldom falls before the rash comes out, so that you do not meet with remissions as in measles. If the temperature goes up, it remains up till the rash is well out.

The cases of scarlatina anginosa in which the rash is delayed are frequently diagnosed as diphtheria, and this error is the more likely to be made the later the rash is to appear; and it is most likely to be made in those cases where there is no rash at all. For it is to be remembered that the rash is occasionally wanting or very fleeting in very severe as well as in very mild cases of scarlet fever. The symptoms that serve to distinguish the disease from diphtheria are continued pyrexia, restlessness or delirium, acute and extensive faucial inflammation with much swelling; usually no definite false membrane, but patches of inspissated mucus, or cheesy excretion with abundant flow of muco-pus; the throat is very painful, which is not the rule in diphtheria; diphtheria antitoxin has no effect on this condition of the fauces; often the patient wastes rapidly.

Chart 2 is that of a case of this kind. The patient was a boy, aged 13 years, who was sent to hospital certified to have diphtheria. For the first few days the case looked very much like one of diphtheria so far as the fauces were concerned; but when the thick, membrane-like exudation had cleared off it was ascertained that the fauces were considerably ulcerated. There was a thick, purulent discharge from the nose. On admission to hospital a very slight rash, consisting of fine red papules, was noticed on the trunk; this had almost gone next day. Subsequently there was free general desquamation, and also left otitis media and pleurisy. The bacteriological examinations were negative as regards diphtheria bacilli. Three or four days after the admission of this patient his brother and sister were sent to hospital with well-marked attacks of scarlet fever. Continuous pyrexia for nearly three weeks, such as is shown by the temperature chart, is quite unusual in diphtheria.

Vomiting is a very common early symptom of scarlet fever; usually the patient vomits once or twice; very frequent and severe vomiting as a rule will usher in a severe attack; but I have on more than one occasion seen a quite mild attack in a young child commence with vomiting so violent and frequently repeated as quickly to induce a state of serious collapse, from which the patient emerged only when the vomiting ceased and a reaction set in.

Prodromal rashes are extremely rare, if they ever occur. In a woman, aged 23 years, who was convalescent from an attack of diphtheria for which she had been treated with antitoxin, I saw an attack of scarlet fever preceded for twenty-four hours by erythema nodosum of the legs; and in another case, a boy aged 3, also convalescent from diphtheria, the rash of scarlet fever was preceded by an erythema consisting of large, irregular blotches on the trunk, buttocks, and thighs. In both these cases, however, the question of an antitoxin rash had to be considered. But though there is no prodromal rash, you will often find that the punctate eruption is preceded by a diffused, simple, non punctate erythema, which I take it, is part of the rash of scarlet fever itself. For the rash in this disease is made up of two main elements, the one being a

simple erythema, the other consisting of minute spots or puncta. Usually these elements are present together and compose the rash as it is seen ordinarily; but one may be absent or show itself earlier than the other; and I have, over and over again, in adults as well as in children, observed the rash of scarlet fever begin as a simple, non-punctate erythema, equally diffused over a large area and not patchy. As a rule the rash begins about the trunk, especially the chest. But exceptionally it may commence on the extremities. In patients who have within a few days been injected with serum for diphtheria, the rash may begin at the site of injection. Usually the temperature rises with the first signs of the disease, but occasionally not till after the rash has come out.

The only sign of an attack of scarlet fever may be a punctate eruption.

Leonard C., aged 3, was admitted on July 29th, on the third day of an attack of diphtheria. His temperature was a little raised. He was treated with antitoxin. By the evening of July 30th the temperature was normal; it was subnormal during August 1st to 3rd, rose to normal on the evening of the 3rd, remained so on the 4th, and dropped to 96.8° on the 5th. On August 4th there was a scarlet punctate rash all over the trunk and thighs; no vomiting. On August 5th the rash was fading. I hesitated to diagnose scarlet fever. On August 12th to 14th there was a papular and blotchy erythema due to antitoxin, with a temperature of 101° on August 12th. On the 21st desquamation was observed on the trunk and hands. Scarlet fever was diagnosed, and the patient was removed to the ward that is set aside for cases of concurrent diphtheria and scarlet fever. On August 25th—that is, three weeks after the appearance of the scarlatiniform rash—acute nephritis set in. This I took to be fairly conclusive evidence that the boy had had a mild attack of scarlet fever. He was discharged well on October 11th.

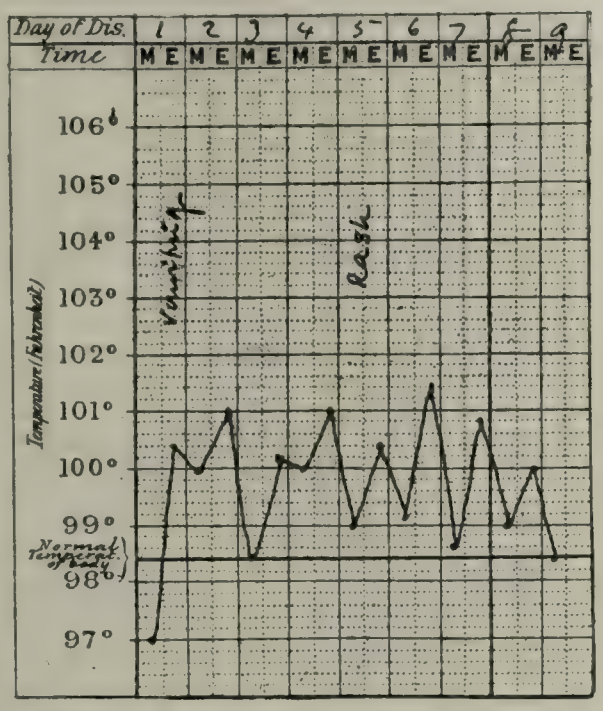

Chart 1.—Scarlet fever; late appearance of rash.

I have seen other cases of a similar nature, but none in which the diagnosis was cleared by the occurrence of nephritis at the end of the third week, an event which is characteristic of scarlet fever. In these cases of apyretic scarlet fever the pulse-rate is raised; this is a valuable sign when it is a question of the diagnosis of scarlet fever on the one hand, and German measles, an enema rash, or a prodromal chicken-pox rash on the other. But an increase of the pulse-rate out of proportion to the temperature is of no value in distinguishing from one another the early stages of scarlet fever, diphtheria, measles, typhoid fever, and, in short, of most of the serious infectious diseases of this country.

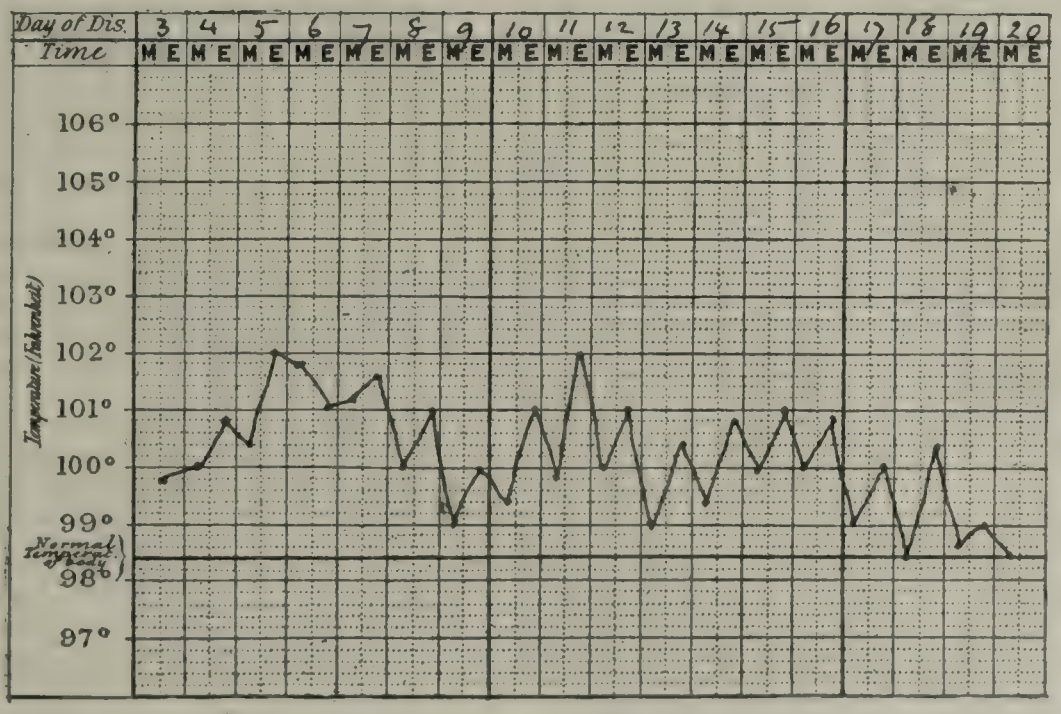

Chart 2.—Scarlet fever; rash very scanty and atypical; sent to hospital as diphtheria.

Diphtheria.

Of this disease I have but little to say except to emphasize the fact that it is so insidious in its onset, that it is often well advanced before it betrays any sign of its presence. I have on more than one occasion had a child presented to me as being recovered from scarlet fever, and fit to be discharged from the hospital, on whose tonsils I have found patches of diphtheritic membrane, and yet these children have declared that they did not feel ill and had no sore throat. I have seen a discharge from the nose, slight enlargement of the cervical lymph glands, and moderate pyrexia precede the formation of exudation on the tonsils. Rarely is vomiting an early symptom. Two or three times I have known the disease to begin with a rigor.

"Croup," by which term I mean the symptoms indicative of laryngeal obstruction, may be the first sign of diphtheria, even though the fauces have been affected slightly for two or three days.

Rubella (German Measles).

Of the prodromal period of this disease I have also very little to say. In the vast majority of cases the rash appears synchronously with any other symptom. But in a few cases I have known a moderate rise of temperature, sometimes with headache and giddiness, precede the rash by twenty-four hours. In 2 cases the cervical glands were enlarged the day before the rash came out, and in 1 case (an adult) all the superficial glands were enlarged.

Measles.

The initial symptoms of measles are notoriously variable, but there are four important events commonly to be met with during the prodromal period—events which it is very necessary to bear in mind. They are:

1. The prodromal rashes.
2. The remission.
3. Acute laryngitis.
4. The Koplik's spots.

1. *The Prodromal Rashes.*

These are common; the most frequent is a punctate erythema, which, though in some cases very vivid, is usually restricted to the trunk; rarely it spreads to the limbs; still more rarely is it confined to the limbs; it does not appear on the face; usually it is diffused equally all over the trunk, but it may occur in patches. In consequence of this rash cases of measles are often mistaken for scarlet fever. I have known experts to fall into this error.

The next most common early rash is an erythema consisting of very small discrete papules, with blotches and irregular patches of confluent papules. This rash affects chiefly the skin of the trunk, head, and face, but not infrequently of the extremities also. Its aspect is suggestive of the commencement of the proper rash of measles, but it often disappears completely before the proper rash comes out.

A third prodromal rash is urticaria. This is usually universal. Lastly, you may very occasionally see an ill-defined erythematous mottling, especially noticeable on the trunk.

Of 38 cases of prodromal rashes of which I have made

detailed notes, 18 were cases of scarlatiniform erythema, 12 were of the papular and blotchy rash, 6 were of urticaria, and 2 were of the mottled erythema. In 1 other case I saw an attack of measles commence with erythema nodosum and a rise of temperature, followed two days later by a scarlatiniform rash, and in another two days by the proper eruption of measles.

The prodromal rashes come out most often on the first day of illness, but they may come out on the second; not often are they delayed till the third. Usually they are accompanied by a rise of temperature, and often, though not always, by the catarrhal symptoms. As a rule they disappear before the proper rash comes out, but they may persist and become merged in it.

2. *The Remission.*

This is also fairly frequent. A patient presents all or many of the early signs of measles, which continue for twelve to twenty-four hours. Then, within another twenty-four hours, the temperature falls to normal, and the other symptoms, such as coughing and sneezing, lacrymation, and prodromal rash, entirely disappear, and the child seems to be quite well again. As the first signs of measles are often those of what is termed a "cold in the head," the practitioner may easily be deceived into thinking that after all the patient is not suffering from the more severe illness, and may allow the isolation he had in the first instance insisted upon to be relaxed, with disastrous results to any susceptible children with whom the patient may be brought into contact. I have on many occasions seen patients who during this stage appeared to all intents and purposes to be in normal health. I subjoin some charts which show this remission, so far as the temperature is concerned. In a few rare cases there may be more than one remission. The remission lasts from twelve hours to four days; when there are more than one, the remissions are short. At the end of the remission the constitutional symptoms recur and the rash comes out.

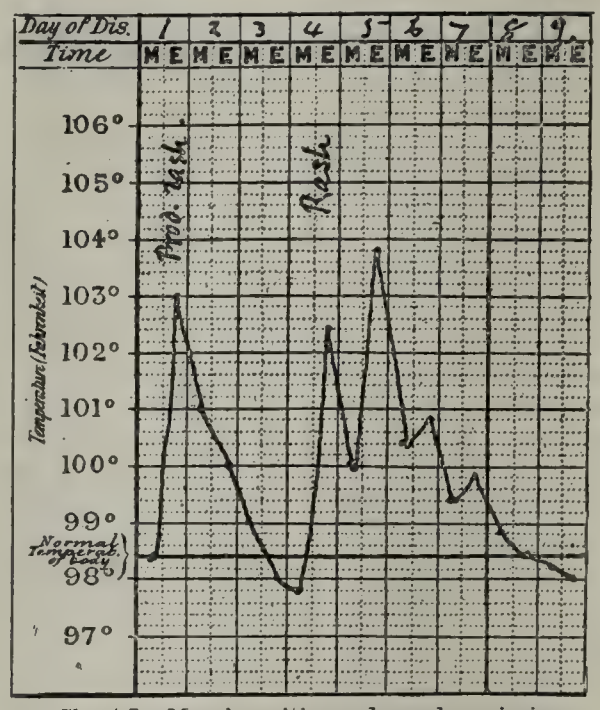

Chart 3.—Measles with prodromal remission.

Chart 3.

Albert N., 2½ years.

First day.—Prodromal scarlatiniform rash; lacrymation; pyrexia in evening.

Second day.—Rash gone; child fretful.

Third day.—No further signs; child appears quite well.

Fourth day.—Coughing and sneezing in the morning; eyes watery; measles rash coming out.

(Koplik's spots not looked for.)

Chart 4.

Annie I., 6 years.

First day.—Pyrexia, and a dull red, papular rash on extremities (prodromal).

No further sign till the fifth day, when a troublesome cough set in. The prodromal rash had disappeared. The proper rash of measles came out on the evening of the sixth day. (Koplik's spots not looked for.)

Chart 5.

Ethel B., 3 years.

First day.—Coughing; in the evening pyrexia, and a few small pink spots in groups on the chest. One Koplik's spot on left side of mouth.

Second day.—Still coughing; spots fading; eyes watery; more Koplik's spots. By the afternoon the rash had quite gone, and the child appeared to be quite well.

Third day.—Still Koplik's spots; some macules on the chest, which lasted a few hours only; coughing.

Fourth day.—More Koplik's spots; no other symptom.

Fifth day.—A number of Koplik's spots; no other symptoms in morning; pyrexia in evening.

Sixth day.—Measles rash out all over.

The Koplik's spots had disappeared on the eighth day.

Chart 6.

Mabel L., 2 years.

The attack began in this case with a rise of temperature; next day there was coryza, which persisted. The child was known to have been exposed to the infection of measles, and Koplik's spots were looked for daily. They did not appear till the tenth day, and the patient was then noticed to be very fretful. The rash did not come out till the twelfth day.

Chart 7.

George A., 3 years.

The disease began with pyrexia, coughing and sneezing, and malaise. The rash of measles did not come out till the sixth day. During the first four days measles was suspected. Every evening there were pyrexia, coughing and sneezing, and the child seemed ill; but next morning all these symptoms had disappeared, and the child seemed well again. (Koplik's spots not looked for.)

3. *The Laryngitis.*

An attack of measles may commence with catarrh of the upper part of the respiratory tract, the nose, pharynx, and larynx; and the laryngitis may be so intense as to give rise to obstruction, with all those symptoms that are conveniently grouped under the term "croup." I have known such a case to be sent to hospital as a case of diphtheria, in which the patient had been sent home from school on the morning of the previous day because of "croup." The temperature is nearly always raised, and usually there is coryza and lacrymation. The two latter signs may, however, be absent; but even when they are present the laryngitis is looked upon as a manifestation of diphtheria, and still more is this the case when "croup" and pyrexia are the only symptoms. The diagnosis is made accordingly. If the patient is admitted into a ward full of children, the results to some of them may be very serious. This early laryngitis is by no means uncommon. It usually passes off when the rash comes out. Rarely is it due to the diphtheria bacillus.

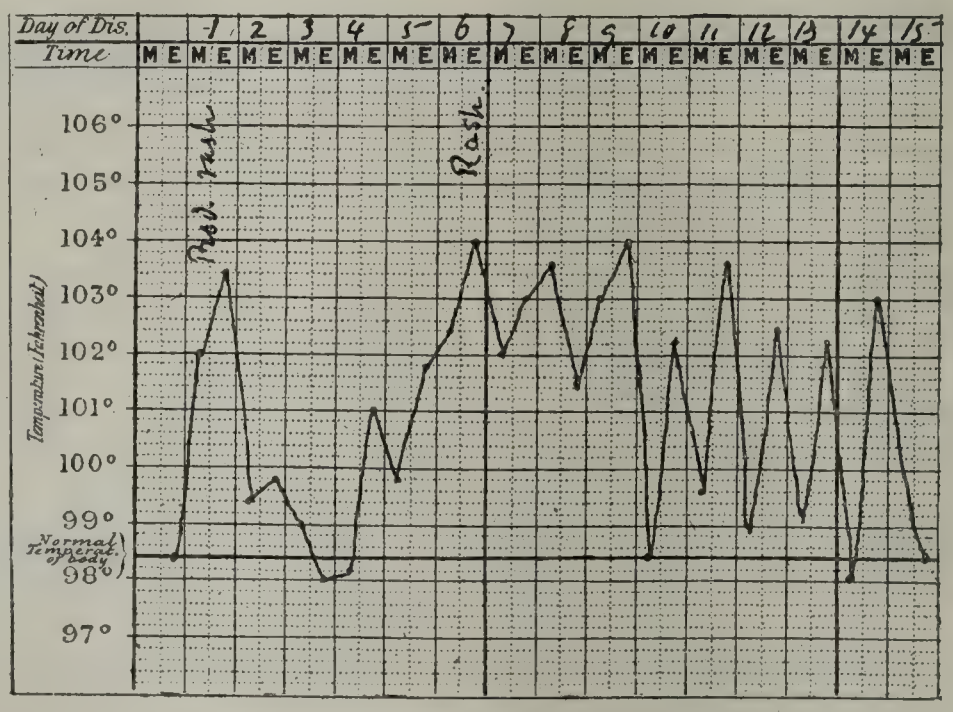

Chart 4.—Measles with prodromal remission.

4. *Koplik's Spots.*

I have left these to the last, but they are the most important of the early signs from the point of view of diagnosis. By the timely discovery of these spots the nature of the disease may be recognized at once, and the pitfalls set by the prodromal rashes, the remission, and the laryngitis, may be safely avoided. These spots are to be found on the buccal mucous membrane at about the

middle of the cheek. In size they are minute, in colour whitish. They vary in number considerably in different cases, and in the same case from day to day. There may be half a dozen or so, or there may be crowds. I have seen the whole of the buccal mucous membrane covered with them. When they are numerous on the inside of the cheeks, they are often found also on the mucous membrane of the lips, just where it is reflected to join the gums, especially on the lower lip. They may be, and often are, arranged in clusters, and occasionally in a streak or streaks opposite the edges of the upper molar teeth. When numerous they may become confluent. In a few instances they are surrounded by a narrow red zone, and I have seen their appearance preceded by small red spots, as described by Koplik. They are to be found in nearly all, but not quite all, cases of measles. They usually come out early, on the first or second day; sparse at first, they increase in numbers daily till the rash appears, when they rapidly vanish. But sometimes they do not appear till the third or fourth day, or even later. In such cases the rash is tardy. I have notes of one case which was under my own observation, in which they came out after the rash. On the other hand, in three cases I have seen them several hours, twelve to forty-eight, before the temperature rose, the only other signs of measles being slight coughing, sneezing, and lacrymation. The number of the spots does not depend upon the severity of the attack nor the vividness of the rash. They are stated to consist of minute collections of epithelial cells undergoing fatty degeneration; but whatever their nature, they may appear very rapidly. In one case under my observation they came out in considerable numbers within three to four hours.

So far as my experience goes these spots are not to be found in any other disease. In order to see them it is absolutely essential to examine the patient's mouth in a good light, bright daylight being the best. I have known air bubbles, minute fragments of food or inspissated mucus, the mucous glands of the mouth, and very small ulcers to be mistaken for them. The bubbles, food, and mucus can be easily moved, whereas the Koplik's spots cannot; indeed, it is with difficulty only that they are to be scraped off the mucous membrane. The smallest ulcers are larger than the spots, unless the latter are confluent; but even then discrete spots are always present as well. Occasionally in children you will see spots which appear to be mucous glands that have undergone some change. They are to be found low down on the buccal mucous membrane, opposite the posterior molar teeth; they are of a faint orange colour. The posterior ones are much larger than Koplik's spots; but the anterior are exceedingly like them. They remain unaltered from day to day.

From what I have said I think it will be clear that these spots are of the greatest value in diagnosis. They are pathognomonic, and it is their presence which enables us so confidently to pronounce the disease in cases where the prodromal rash, the remission, or the laryngitis are doing their best to lead us astray.

While these are the most important facts to be borne in mind concerning the early stage of measles, it is well to remember certain others. Doubtless an attack of measles usually begins with feverishness and catarrh of the upper respiratory tract, with occasionally vomiting; yet in many cases I have seen it ushered in with a rise of temperature alone. On the other hand, the patient may cough and sneeze and present Koplik's spots, and yet the temperature may not be raised the fraction of a degree. In a few mild cases of measles, indeed, the temperature remains normal all through the attack. Not infrequently the tonsils and palate are inflamed, as in mild scarlet fever. In one case, that of a girl aged 1 year, the disease began with pyrexia, followed two days later by inflammation of the left parotid gland and profuse rhinorrhoea. The rash came out on the sixth day.

The length of the prodromal period varies considerably. Most often the rash comes out on the third or fourth day, but it may appear on the first, or be delayed till the sixth or later. In the case from which Chart 6 was taken the rash did not appear till the twelfth day.

I think that sometimes measles aborts or is modified; at any rate, I have seen several cases where a child who has been exposed to the infection has been seized about fourteen days later with slight premonitory symptoms,

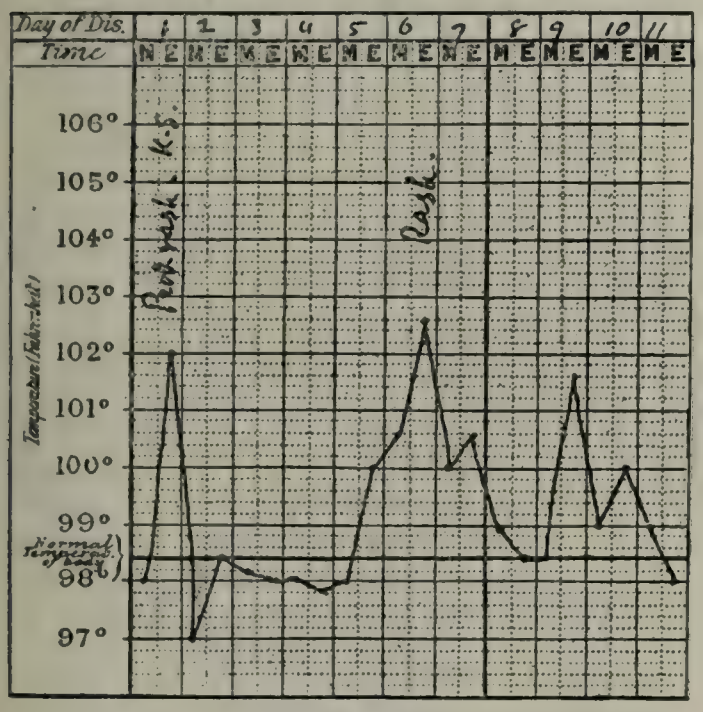

Chart 5.—Measles with prodromal remission.

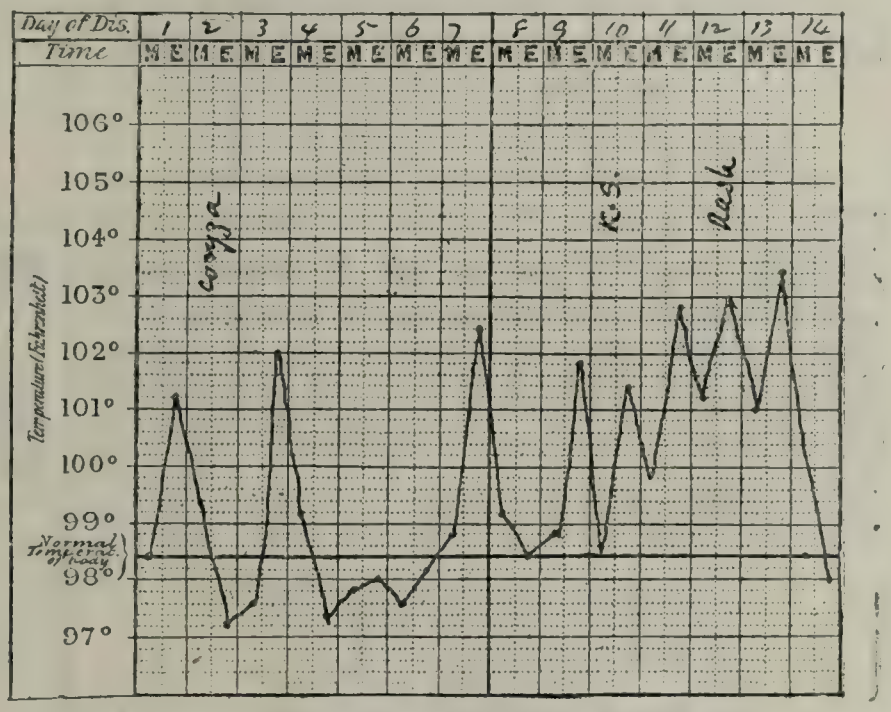

Chart 6.—Measles with prodromal remissions; Koplik's spots and rash very late.

including a presumably prodromal rash and Koplik's spots; but after two or three days these symptoms have disappeared, and the patient has quickly got well. The following are the notes of such a case:

Chart 8. The patient was a girl (Susan B.) 18 months old. Fifteen days after exposure to measles she vomited, had a temperature of 99.6°, and came out in a rash. This rash was on the whole papular, and affected the trunk and neck. The face was slightly mottled; the eyes were suffused, and there were a good many Koplik's spots in the mouth. The rash lasted till the end of the next day; there were no other symptoms. Another little girl and a wardmaid caught the disease from this patient, and the little girl died. The first symptoms in the case of the wardmaid were headache and pains in the limbs for forty-eight hours before any other signs arose. In the case of Susan B. I had diagnosed measles with a prodromal rash, and I believe that that is what the rash I saw was. It might, I think, be fairly argued that in all cases of measles in which the rash appears on the first day of illness, the rash is really prodromal, and that the case is either an abortive one, or an instance of measles without the proper eruption (*morbilli sine morbillis*). Susan B. had hardly any rise of temperature; but I have seen cases where what appeared to be the proper rash came out on the first day, and at the same time the temperature went up to 104°.

It is seldom, according to my experience, that the disease proves fatal within a week. I have never had the opportunity of seeing a patient die before the appearance of any rash. The following were very unusual cases. The temperatures are represented in Charts 9 and 10:

The first patient was a boy, aged 3 years, who was known to have been exposed to the infection of measles. The first

symptoms were drowsiness, lacrymation, a faint mottling of the back, and a slight rise of temperature, to 100.6° F. The same evening the temperature rose to 102.8°. Next day there was a slight measly rash on the forehead, back, and abdomen. Between 10 p.m. on the previous night and 10 a.m. the temperature had dropped to 98°, and the child was markedly collapsed and cyanosed. Vomiting and diarrhoea set in, and continued off and on till death, which occurred at 6 p.m. on the fourth day of the illness. On the fourth day the rash came out more fully. During the third and fourth days the

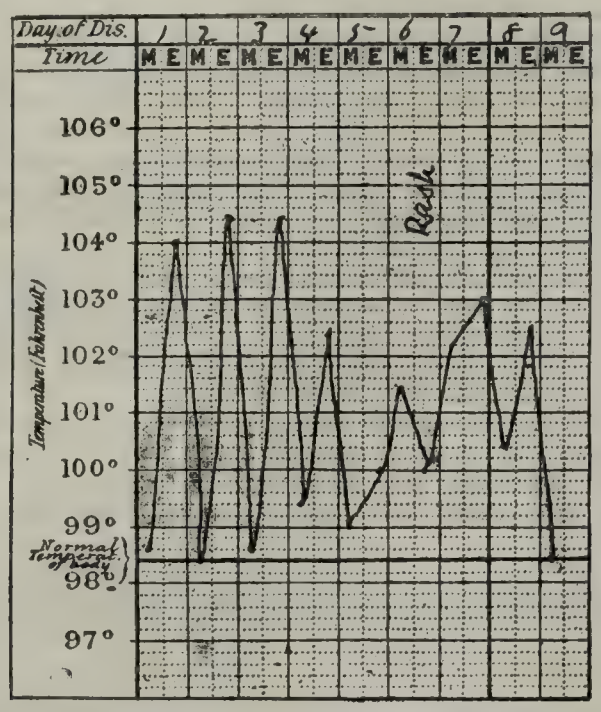

Chart 7.—Measles with four prodromal remissions.

patient was very restless. Two children caught the disease from him.

From the chart it will be seen that the temperature was very low during the last day. The case appeared to be one of malignant or toxic measles—a rare form of the malady.

The second patient was a boy 2½ years of age, who was convalescent from diphtheria, for which he had been admitted on November 9th. On the evening of December 12th his temperature ran up to 104°, and a general punctate scarlet rash was noticed. There was coryza and some discharge from

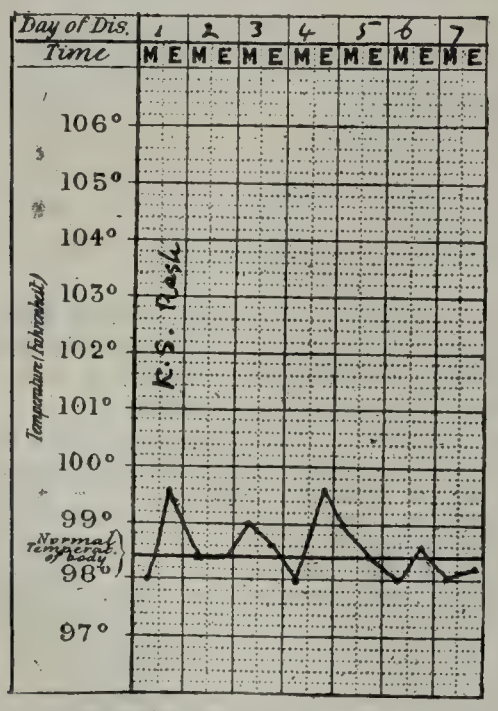

Chart 8.—Modified measles.

the right eye. The case was thought to be one of scarlet fever. The scarlatiniform rash was still present the next day on the trunk and thighs. The tonsils were swollen, but there was no faucial exudation. A general morbilliform eruption appeared at 1 a.m. on December 14th; both eyes were then discharging, and there was a frequent cough. On the morning of December 15th he was seized with convulsions, which lasted half an hour. The rash had become haemorrhagic in several places. The patient became cyanosed and died at 1.30 p.m., sixty-seven hours from the beginning of the illness. Several children caught measles from this case.

VARICELLA.

Usually there is no prodromal period, and the eruption is the first or among the first signs. But in a few cases I have observed a prodromal period of one to three days, during which the patient was out of sorts, the temperature being raised 1° to 4° above the normal. Chart 11 is from one such case.

The patient was a boy aged 2 years, who was known to have been exposed to the infection of chicken-pox. He did not appear to be at all ill while the temperature was up. The eruption came out on the afternoon of the fifth day, and was not abundant. The chart in this case is unusual; for the rule is for the temperature to rise, if it

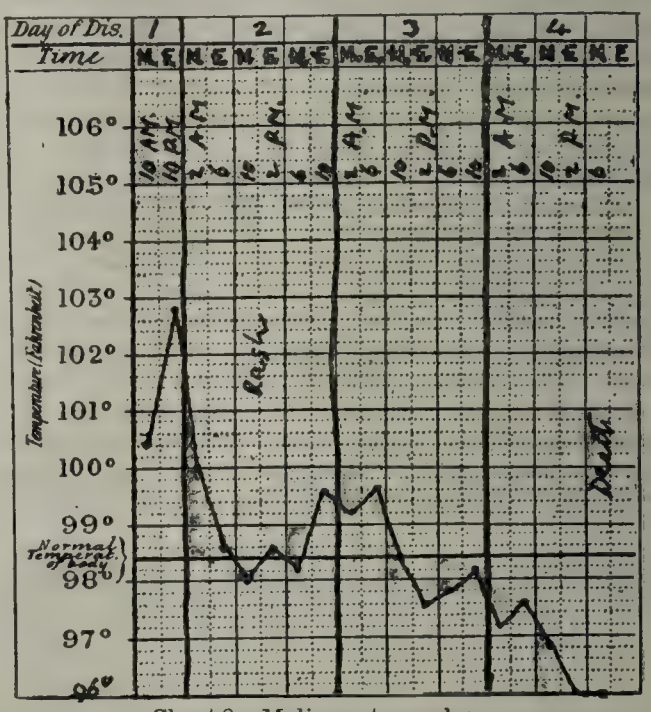

Chart 9.—Malignant measles.

rises at all, after the eruption has come out in chicken-pox; whereas in small-pox the temperature is raised before the eruption comes out, and falls more or less on its appearance.

I have also met with a prodromal rash one to five days before the proper eruption. This rash consists of a punctate, scarlatiniform erythema, affecting the trunk and limbs, but especially the trunk. It comes out very quickly and disappears within twenty-four hours. For-

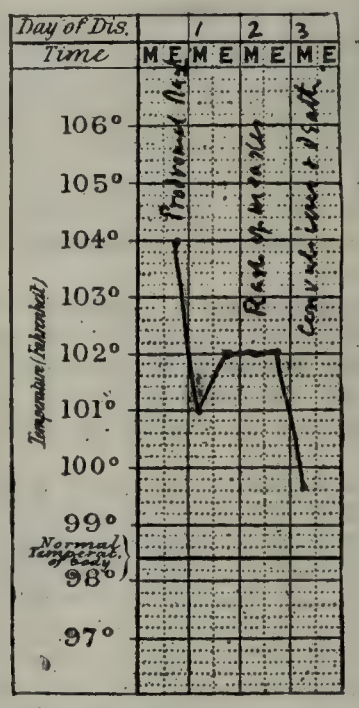

Chart 10.—Malignant measles.

tunately it is not common, nothing like so common as is the initial rash of measles; but it may be mistaken for scarlet fever. There may or may not be pyrexia with this rash.

Occasionally there are prodromal symptoms which suggest small-pox. This is especially the case in adults.

Thus a young man, aged 23, had pain in the lower part of his back and felt cold on a Thursday. These symptoms continued, but were slight, till the following Monday, when the backache became worse, and a plaster was applied to relieve the pain. On this day he also had headache. He kept about his work till mid-day on Wednesday, when he felt too ill to continue, and so went home. In the evening spots appeared on the arms and back, but not till the next morning did any appear on the face. The eruption continued to come out till Saturday, when

the temperature was 102°. I saw him on the Sunday, and he then showed a fairly copious eruption, characteristic of varicella in its features and distribution.

I have once seen a case of chicken-pox in which the attack began with a well-marked rigor twelve hours before the eruption.

Typhoid Fever.

Of all the acute infectious diseases, except, perhaps, influenza, this is the most protean in its modes of onset. I have in my mind and I intend to deal with those cases

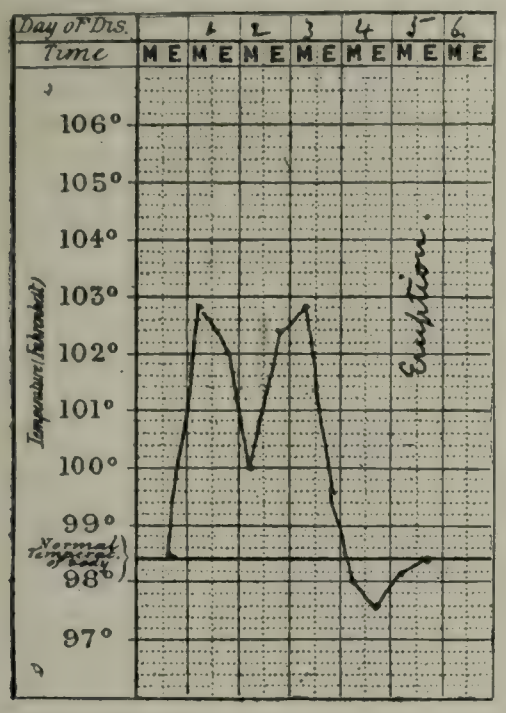

Chart 11.—Varicella, with prodromal pyrexia.

only in which the common intestinal lesions are present as proved by *post-mortem* examination, or presumably present as shown by clinical signs. The date of onset of the illness can nearly always be fixed to the day by most adult patients. The most common symptom is frontal headache, but it may be one of the following: Aching pains in the limbs, pain in the back, tonsillitis, shivering (which rarely amounts to a well-marked rigor), diarrhoea, lassitude, a rise of temperature. But any one of these symptoms is nearly always followed in a day or two by

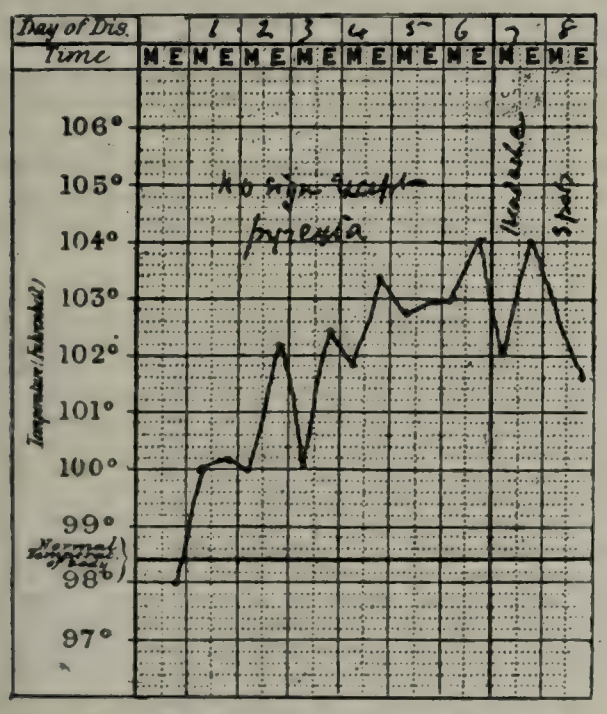

Chart 12.—Typhoid fever; gradual onset.

headache, so that it is exceptional to meet with a patient who has not been troubled with it during the early days of his illness. On the other hand, where headache has been the first sign, it is in most cases accompanied in a day or two by one of the symptoms just mentioned or by abdominal pain, nausea, or vomiting. Most patients will struggle on with their daily toil or pleasure for several days before seeking medical advice. They will then be found to have a furred tongue, a heavy, dull expression of countenance, a rise of temperature, and a soft, frequent, and sometimes dicrotic, pulse. The headache usually persists for a week or ten days, passing off as the disease becomes established. During the initial period slight bronchial catarrh is not at all uncommon; indeed, there may be well-marked bronchitis and, especially in children, bronchopneumonia.

I have stated above that while the date of onset is known to most patients, yet the symptoms are not as a rule severe for the first few days. This period of slight symptoms may be of considerable length, even two or three weeks. On the other hand, in a few cases the symptoms are severe from the commencement, the patient

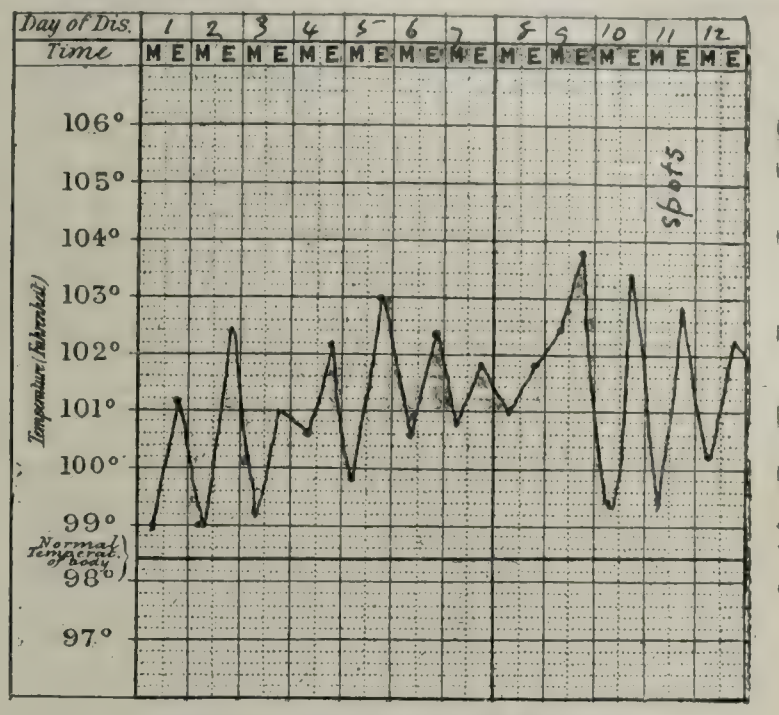

Chart 13.—Typhoid fever; gradual onset.

being compelled to take to his bed within a few hours of the onset. I have noticed this to be the case in several instances of the disease occurring in nurses and ward servants employed in the typhoid fever wards. Indeed, when I have had the opportunity of observing the disease from the beginning, as in members of the hospital staff, it has usually commenced much more abruptly than it is generally described as commencing; and seldom have I seen the initial temperature curve gradually ascend in the step-like manner described by Wunderlich. But I have

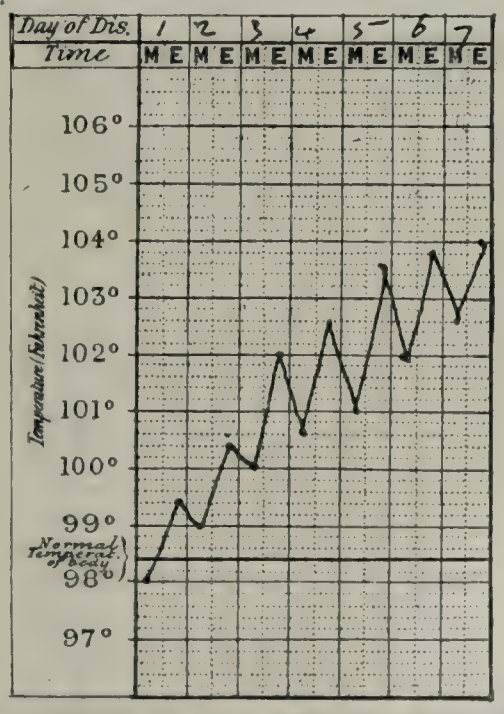

Chart 14.—Typhoid fever; step-like curve of onset (from a relapse).

several times seen a relapse begin in this way. Charts 12 to 17 are given as examples.

As I am dealing only with cases that are to be diagnosed clinically, I say nothing of those aberrant forms of the disease in which the temperature all through is very irregular and often low—cases in which the diagnosis is usually made by bacteriological examinations or serum reactions.

The date of the appearance of the characteristic spots varies extremely. I have seen them come out within twenty-four hours of the first symptom. They may be

delayed in appearance even for six weeks. Commonly they are first observed during the second week.

Some writers have described forms of typhoid fever in which at a very early stage the brunt of the disease falls on special organs—the lungs, the brain, or the kidneys; so that the diagnosis of pneumonia, meningitis, or nephritis is made, and the real nature of the disease is overlooked. At the Eastern Hospital such cases have not been common, doubtless because a definite certificate of illness is required before a patient is removed to a fever hospital, and few

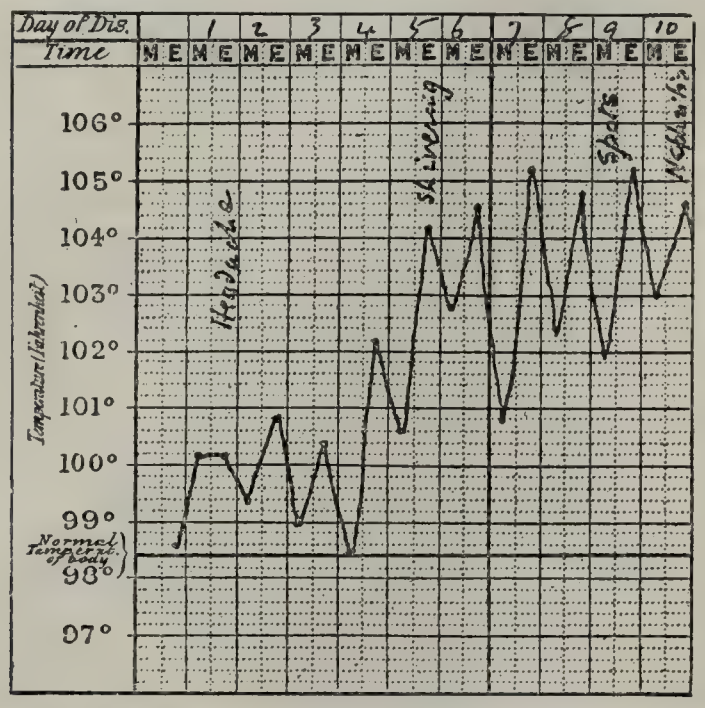

Chart 15.—Typhoid fever. Initial symptoms slight; sudden severe symptoms on fifth day.

practitioners will write such a certificate, unless the patient exhibits some of the common signs of typhoid. Cases of anomalous onset, therefore, will be met with in private practice, and in general hospitals and infirmaries rather than in fever hospitals. I have already mentioned that an early bronchopneumonia may mask the real nature of the disease; I have known such cases to be mistaken both for simple and tuberculous bronchopneumonia. Again, the abdominal symptoms may be of such a nature as to obscure the diagnosis. Thus, in a boy aged 10 years,

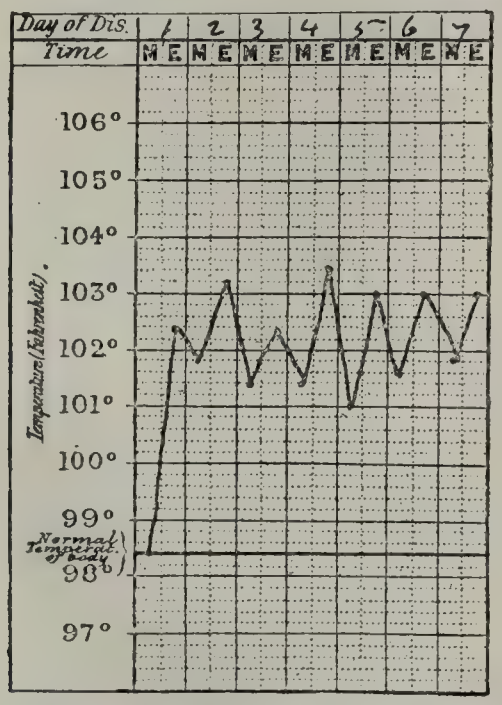

Chart 16.—Typhoid fever; sudden onset.

admitted on the third day of his illness, the abdomen was very distended and tympanitic, having been so for two days. The condition was more like that of tuberculous peritonitis than typhoid fever. In a case recorded by Mr. W. G. Spencer in the last volume of the *Clinical Society's Transactions*, of a boy, aged 12, the initial symptoms were acute pain in the abdomen, followed by vomiting and abdominal distension. On the third day of the illness there were signs of acute peritonitis with resistance and impaired resonance in the right iliac fossa. The case was thought to be one of peritonitis secondary to appendicitis, and laparotomy was performed. Peritonitis alone was found. The subsequent course of the case showed that the disease was typhoid.

The following are instances of departure from the usual mode of onset:

A young woman, 22 years of age, employed as a wardmaid in the hospital, having complained for a week of pains in the hands and arms, was admitted to a ward and found to have swelling of the right wrist, tonsillitis and pyrexia. Her temperature remained raised, though the other symptoms disap-

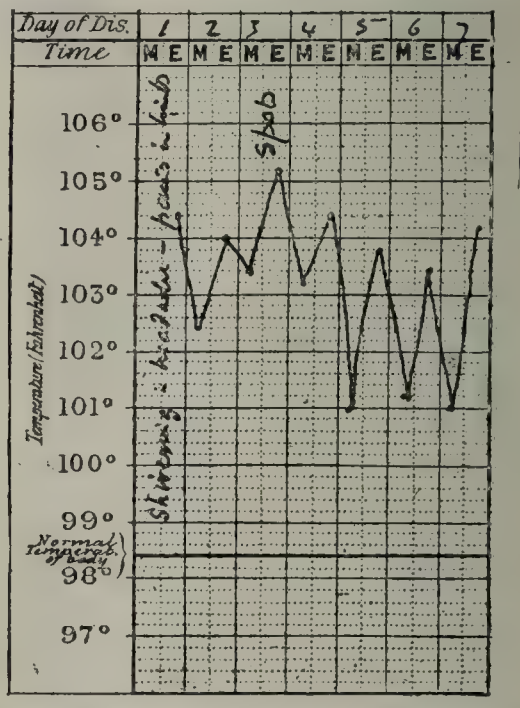

Chart 17.—Typhoid fever; very abrupt onset, with severe symptoms.

peared, and it was not till fourteen days after admission that the rose spots of typhoid came out. She died subsequently, and the usual lesions were found in the small intestine.

In a nurse, aged 26, the symptoms were those of purpura; bleeding from the gums, uterus and kidney, and cutaneous haemorrhages. The diagnosis was not cleared up till after her death a fortnight later.

A young man of 24, within four days of the onset of his illness had various delusions, that his food was poisoned, that he was going to be shot, and so forth. In a few days his mental condition became normal, and he passed through a well-marked attack of the fever with a relapse.

I have recently seen a similar case, a young man of 28, who in consequence of such ideas was trying to commit suicide, and had to be closely watched.

In another patient, a man about 30, the symptoms were those of meningitis from the beginning. He died after two to three weeks' illness of peritonitis following perforation.

For the notes of the two following cases I am indebted to my friend, Dr. W. J. Potts, of the Bethnal Green Infirmary, into which institution the patients were admitted.

A woman, aged 35, was in her usual health early on the morning of September 2nd, 1905. Later in the day her husband had to be called from his work because of his wife's curious behaviour. On September 3rd she was sent to the infirmary as a case of "mental debility." She was found to have the usual signs of fever; she was also in an apathetic state, had a pleased, though vacant, expression, and in answer to questions would say no more than "Yes" or "No." The urine was passed involuntarily. The knee-jerks were absent. She became worse; more apathetic; would not speak at all; had difficulty in swallowing, and groaned as if in pain; temperature rose every evening to 103°; there was much diarrhoea. There was also some retraction of the head. She died on September 6th. At the *post-mortem* examination typhoid ulcers in the sloughing stage were found in the small intestine; the spleen was enlarged; there were infarcts in the lungs; and there was an excess of fluid in the cavities of the brain and cord.

A boy, aged 13, was admitted to the infirmary on the sixth day of his illness. The first symptoms had been vomiting followed by pain in the chest and cough. On admission he was found to be suffering from right basal pneumonia, which daily became worse and proved fatal on the eleventh day of illness. The autopsy revealed, besides consolidation of the whole of the right lung, many ulcers, with sloughs, in the lower 2 ft. of the ileum, exactly like those which occur in typhoid fever. It was ascertained that this boy's brother was being treated in the London Hospital for typhoid.

Perhaps this was a case of double infection, in which the symptoms of pneumonia obscured those of typhoid fever.

In some cases during the first few days an erythematous rash occurs. The following are notes of such cases, so far as this rash is concerned:

Female, aged 12. On about the tenth day of illness there was a blotchy erythema on the face, forehead, and arms; patches of a scarlet colour, not raised, and not fading altogether on pressure. It lasted two to three days. The patient stated it itched very much.

Female, aged 18. A general eruption of which the appearance differed in different regions. It was present on almost the whole of the face, on the abdomen and chest, on the whole of upper and lower extremities. On the legs, hands, and feet it appeared as bright, red, slightly raised spots of small size, and slightly coalescent. On the forearms there was a confluent bright scarlet rash, slightly raised, fading on pressure. On the face and part of the abdomen it was confluent, of a dusky purple, and fading on pressure; but there was one large brownish patch, which did not fade. There was no marked rash on the back, only a faint mottling. This was about the eleventh day of illness. Next day the eruption had the appearance of erythema marginatum. The rash lasted six days; it itched very much.

In these two cases the proper spots of typhoid came out after the other rash had disappeared.

In a third case—a girl of 5—on the eighth day a papular and macular rash came out on the thighs and extensor surfaces of the knees and elbows; next day the rash was more extensive, though still confined to the extremities. The rash lasted four days altogether.

In the case of a man aged 45, a Russian Jew on his way to America, there was a rash consisting of faint pink macules, with a few petechiae, probably flea bites. The rash disappeared on pressure, and was most abundant on the back, being scanty on the limbs. There was none on the face. Rose spots were not seen. The patient died about the fourteenth day of his illness. From the account given he had evidently been infected before he left Russia. I strongly suspected typhus, in spite of a positive serum reaction (1 in 60), and especially because at the autopsy only slight swelling of one or two Peyer's patches were found. But shortly after his death his daughter and niece were admitted suffering from typhoid fever with all the common symptoms.

In none of these cases was the rash due to an enema or drugs.

ON BOTTLE-MAKERS' CATARACT.*

By WILLIAM ROBINSON, M.D., M.S., F.R.C.S.,
SURGEON TO THE GENERAL AND TO THE DURHAM COUNTY EYE INFIRMARY, SUNDERLAND.

In the British Medical Journal of January 24th, 1903, appeared a paper written by me on Bottle-finishers' Cataract, in which I described in some detail the process of making *ordinary* heavy-metal (but not flint) bottles (for example, wine, whisky, and beer bottles) and showed that cataract was very frequent in *ordinary* bottle finishers, was posterior cortical in its early stages, was due to the excessive heat to which the eyes of the bottle finisher were exposed whilst at work, and could be prevented by the men wearing goggles.

In December last I gave evidence on this subject in the House of Commons before a Departmental Committee of the Home Office entrusted to draw up a schedule of diseases due to certain occupations, in connexion with the Workmen's Compensation Act, 1906.

The statistics I drew up for this purpose I was about to publish, when, on January 5th of this year, a paper appeared in the Journal by Professor S. Snell, of Sheffield, in which he stated, as the result of some inquiries he made from certain flint and ordinary glass bottle-making firms, and of a visit to certain ordinary glass bottle works and flint bottle works, that "there is not sufficient evidence to show that they (that is, bottle makers) are liable to the affection (cataract) to such an extent as has been asserted."

I therefore extended the field of my inquiries, the results of which are given below and fully confirm my first statements. Here it is necessary to point out that, unlike Professor Snell, my investigations were restricted to ordinary bottle makers only—that is, those who made bottles of heavy metal, such as whisky and wine bottles—for an inquiry I made four years ago led me to believe that cataract is not specially frequent among flint bottle makers (who make medicine and other lighter and better-class bottles). Ordinary bottles are made at huge tanks which are heated with coal gas and are excessively hot (2,500° F.), and into the fierce heat of these tanks the "founder," the "gatherer," and the "finisher" (otherwise called the bottle maker) must look.

The "founder" feeds the tanks with metal and looks into them at infrequent intervals, and he is provided with a square of glass to look through; I have seen only one cataract in a founder, whom I operated upon, and he came from an ordinary glass works where sugar basins and tumblers were made.

The "gatherer" looks into the tank each time he "gathers" the metal for every bottle, and were it not that nearly all gatherers are apprentices or young men who are generally promoted to be "blowers" after a few years, they would undoubtedly develop cataract to the same extent as the finishers. Some of those who are not fortunate or skilful enough to be promoted do develop cataract (vide infra).

The "finishers," or bottle makers, are the men who suffer most, because they are the older men, having worked their way up through the grades of "taker-in," "wetter-off," "gatherer," and "blower," and because they look into the furnace each time they gather sufficient metal to form the neck of the bottle, which necessitates exposure of their eyes to the fierce heat for at least sixty-six minutes a day, or five and a half hours a week (see my previous paper).

The "blower" turns his back to the "hole" of the "tank" whilst at work, but as his eyes were exposed to the heat whilst he was a "gatherer," he, too, occasionally develops cataract.

In flint bottle works the mode of working is quite different, and the heat is not nearly so great, being generated by coal fires. "The flint bottle finisher sits, in many cases, ten yards away from the furnace, and works at a small 'glory hole,' into which he need never look." The bottle makers in flint bottle works, therefore, are not prone to cataract. In January last I operated upon a cataract in a finisher from an ordinary glass works, where he finished "sugars" (that is, sugar basins), as many as 800 a day; his was probably an ordinary senile cataract, as the men are not required to look into a hot furnace. In these works the metal is "gathered" from "pots"—little troughs by the side of the furnace—which is also the case in flint bottle works.

In my investigation I applied to the local secretaries of the men's societies to which the bottle makers belong, these officials having a more intimate knowledge of the men than the members of the various firms. There are three ordinary bottle works in this district, and I wished in the first instance to make a personal examination of all the men employed at the factory which I visited and described in my previous paper, and those who had been previously employed there and were now disabled, but a difficulty presented itself at the outset, for the men's officials could not induce the workmen to submit themselves for examination, because (1) they dreaded they might be told they were beginning to have cataract; and (2) if their sight was at all defective they did not wish their condition to become known, fearing loss of work.

It is the duty of the "finisher" to see that the bottle handed to him is without flaws and properly made, and when his sight begins to fail he has been known to trust to another man (a "gatherer") to tell him of defects. Should he overlook many defects he is liable to dismissal. Hence an inquiry among the men now working would be valueless unless it included them all, as those with defective vision were those most likely to avoid examination. This feeling on the men's part may partly explain Professor Snell's failure.

With the exception of the men now employed, some of whom I examined, I made a full examination of those men who are now disabled from working through cataract at this factory, with the help of Mr. P. Heptinstall, who has been Secretary of the North of England Glass Bottle Makers' Society for fifteen years, and who recently left the trade as a bottle finisher for fear he should develop cataract, as his uncle and father had done (see First Factory).

In addition to the factory referred to above, I made inquiries of the two local secretaries of the men's societies at the two other works which are situated in this district, and their figures are given below.

The result of my inquiries of the Yorkshire Bottle Makers' Society is also stated.

* A paper read in the University of Oxford at the Congress of Eye Surgeons, July 26th, 1907.

TABLE I.—*List of Men Superannuated—they all had Cataract and all were Bottle Finishers.*

No.	Age when Sight began to Fail.	Age when Disabled.	Number of Years a Finisher.	Condition of Lenses.		Examined by
				Right.	Left.	
1	53	53	27	Lens removed for cataract	Clear	The writer.
2	64	64	30	Cataract	Cataract	Dr. Brears.
3	55	55	21	Removed for cataract	One sector of senile cataract	The writer.
4	49	52	24	Cataract	A few radii of senile cataract	The writer.
5	62	62	32	Posterior cortical cataract	Posterior cortical cataract	Dr. Brears, Dr. D. Blair.
6	R. 50 L. 52	55	30	Mature cataract	Posterior cortical cataract and two radial sectors	Dr. D. Blair.
7	?	54	?	Removed for cataract	Removed for cataract	Dr. Call Weddell, and Dr. Cunningham.
8	52	53	30	Posterior cortical cataract	Cataract	The writer.

TABLE II.—*List of Workmen—all Bottle Finishers—who had become Disabled by Cataract, and who are Employed at Other Work, and all of whom have been Treated or Examined by the Writer.*

No.	Age when Sight began to Fail.	Age when Disabled.	No. of Years a Bottle Finisher.	Now Employed as	Condition of Lenses.	
					Right.	Left.
1	50	55	32	Hawker	Posterior cortical cataract	Removed for cataract (aged 55) by writer.
2	49	49	17	Labourer at light work	Posterior cortical cataract and one radial sector	Removed for cataract by writer.
3	36	46	23	Manager of factory	Removed for cataract (aged 41)	Posterior cortical cataract; some ringlike peripheral opacity.
4	47	53	18	Night manager of factory	Slight posterior cortical opacity	Slight posterior cortical opacity.
5	55	57	33	Labourer (four years)	Early cataract, radial sectors	Early cataract, radial sectors.
6	60	65	35	Lodgeman at factory	Removed for cataract	Removed for cataract by writer.

THE FREQUENCY OF CATARACT IN BOTTLE MAKERS.

First Factory.

This factory, described in my previous paper, employs at present about 130 hands (54 boys and 76 men)—namely, 24 takers-in (boys), 24 wetters-off (boys), 24 gatherers (6 boys and 18 adults), 24 blowers, 24 finishers, and 10 founders.

One gatherer was working with a cataract in one eye; he was 24 years of age, and had been "gathering" six and a half years. A year and a half ago he noticed the sight in the left eye beginning to fail. His left cheek (this being more exposed to the fire than the right) is inflamed and scorched, and he has a ripe cataract in the left eye. The media of the right eye are perfectly clear and the fundus is normal. There is no history of any injury. He was examined under homatropine.

A member of a bottle-makers' society who has reached *the age of 50* and is permanently disabled from working is entitled to superannuation. On inquiry I found that at this factory at the end of 1906 there were 8 members on the superannuation list, *every one of whom was disabled through cataract, and they had all been bottle finishers.* (See Table I.) From this and Table II it will be seen that there were 24 bottle finishers at work in this factory, and that no fewer than 14 were disabled from working as bottle finishers because of cataract—an enormous proportion.

All the above cases except 2 or 3 were examined by oblique illumination and the ophthalmoscope, and under a mydriatic when necessary. Cataract was not observed nor heard of amongst any other class of workmen except in the case of the one "gatherer" mentioned above.

The number of cases of incipient cataract among the men still working I could not ascertain.

Second Factory.

At present about 274 hands are employed at this factory, of whom 157 are men and the rest boys. There are 52 finishers, 52 blowers, etc. With Mr. Heptinstall's help I have been able to discover 17 men—16 finishers and 1 gatherer—who have cataract and who are or have been connected with these works, namely:

8 are superannuated members—namely, 7 finishers and 1 gatherer. The total number of superannuated members is 14.
5 are working at other work than finishing.
2 are still working as finishers (Nos. 7 and 8).
2 are disabled from working as finishers, but are not included in the above.

Of the above 17 cases, 7 cases are reported by Mr. Heptinstall, all of whom have been certified as suffering from cataract by various medical men, and I have personally examined the 10 cases recorded in Table III. Nos. 3, 4, and 5 in the list were operated upon by me, and No. 7 is the only man who is still working as a finisher and has had an operation for cataract.

Third Factory.

This factory employs at present about 296 hands, of whom about 168 are men and 128 boys. The number of finishers is 54, the blowers, gatherers, etc., having about the same number for each class of workman.

Six men (bottle finishers) are reported by the men's secretary to be totally incapacitated from working by cataract, and he adds—

> It is very difficult to get to know all the cases of cataract, as men don't care to give publicity to the same; if I had time, say a few months, I might get to know a great many cases by private inquiry. There are many young men who don't care to let it be known they have cataract.

Dr. Douglas Blair attended a meeting for me on March 2nd of the men at present working at this factory, and which had been called for another purpose, and examined the eyes of 32 men. The majority of the men were young or middle-aged, there being only three or four old men present.

He examined the men under difficulties and without a mydriatic, namely:

Twenty-one finishers, 1 of whom had cataract in the left eye only. He was 44 years of age and the sight had been failing for a year.

Seven gatherers, one of whom had cataract in both eyes. He was 45 years of age and his sight had been failing for two years. The left eye had advanced and the right eye early cataract. He had been a gatherer for twenty eight years.

Four blowers, none of whom had cataract.

That the proportion of cataracts reported amongst the men in the second and third factories is less than in the first factory is due simply to the circumstances that the

TABLE III.—*List of Men (all Finishers) who have Cataract and who have been Examined by the Writer.*

No.	Age when Sight began to Fail	Age when Disabled.	Conditions of Lenses. Right.	Conditions of Lenses. Left.	Remarks.
1	47	53	Posterior cortical cataract	Posterior cortical cataract	Was a finisher for 18 years, and is now a packer at the first factory; brother (a finisher) has cataract.
2	57	59	Posterior cortical cataract	Posterior cortical cataract	Was a finisher for 35 years; he left off work 4 years ago, when the eye condition was the same as now. Incapacitated from working.
3	R. 51 L. 48	—	Removed for cataract (aged 53)	Removed for cataract (aged 51)	Superannuated.
4	R. 46 L. 49	—	Removed for cataract (aged 59)	Removed for cataract (aged 59)	Not able to work as a finisher.
5	R. 55 L. 55	—	Removed for cataract (aged 58)	Removed for cataract (aged 58)	Not able to work as a finisher.
6	R. 51? L. 50	55 56	Posterior cortical cataract and a central congenital dot	Posterior cortical cataract and a central congenital dot	Superannuated.
7	R. 31 L. ?	At work	Removed for cataract (aged 36)	Slight posterior cortical cataract	Working as a finisher; with a + lens for right eye V. = 6.
8	R. 38 L. 38	At work	Posterior cortical cataract	Posterior cortical cataract	The notes of this case were taken four years ago.
9	R. 50 L. 55	56	Early cataract, posterior cortical (?)	Clear	Father had cataract; finisher for 31 years; superannuated; has also opacities in vitreous and disturbance of retinal pigment in both eyes.
10	R. 69 L. 43	43	Early posterior cortical cataract	Mature cataract	Doing light work for last 29 years; was a finisher for 23 years.

inquiry at the second and third factories is so much less complete. Still the numbers are sufficient to show how extremely common cataract is amongst bottle finishers.

SUMMARIES OF CASES OF CATARACT OBSERVED IN THE THREE FACTORIES IN THE SUNDERLAND DISTRICT.

At these three factories 400 men are employed, among whom there are 130 finishers, 130 blowers, etc. The gatherers also number about 130, but one-fourth of them are boys.

Number of Men known to have Cataract = 40.

	Founders.	Blowers	Gatherers	Finishers.
Men at work (report very incomplete)	0	0	2	3
Of 23 superannuated men (who must be over 50 years of age) ...	0	0	1	15
Doing other work owing to cataract	0	0	0	11
Others disabled by cataract	0	0	0	8
Totals	0	0	3	37

These figures prove the great frequency of cataract in bottle makers, especially in bottle finishers, and are, I imagine, unparalleled in any other trade.

In 25 of the cases of cataract the age at which the sight began to fail is stated, and it will be observed that—

The sight began to fail in 1 case between the ages of 21–30 years.
" " " 3 cases " " 31–40 "
" " " 13 " " " 41-50 "
" " " 6 " " " 51-60 "
" " " 2 " " " 61-65 "

In other words, in two-thirds of these cases the eyes began to suffer from cataract by the age of 50 years.

As the cataract nearly always begins close to the posterior pole of the lens which is near the nodal point, that is, the point through which all rays must pass which enter the eye without undergoing refraction (principal rays), the disturbance of vision is very great, though improvement in the sight may be effected by the use of atropine.

In 21 cases the age at which disablement from work occurred is known, namely:

1 man was disabled between the ages of 41 to 45 years.
3 men were " " 46 to 50 "
10 " " " 51 to 55 "
4 " " " 56 to 60 "
3 " " " 61 to 65 "

In 14 out of 20 cases, therefore, disablement through cataract was brought about by the age of 55.

In 17 cases the number of years the workman was a finisher before disablement occurred is known, namely:

Three men were finishers for from 15 to 20 years before being disabled.
Three men were finishers for from 21 to 25 years before being disabled.
Five men were finishers for from 26 to 30 years before being disabled.
Six men were finishers for from 31 to 35 years before being disabled.

The number of years varied between 17 and 35 years, the average being 27 years.

In 16 cases in the above lists in which the necessary figures are given it appears that the time between the sight beginning to fail and the occurrence of disablement from cataract varies from some months up to ten years, the average being about three years.

Both eyes are almost always affected, as will be seen by reference to the cases given above; and the disease often begins about the same time in both lenses, though there may be a difference of some years between them in this respect. In the Yorkshire cases given below both eyes were affected in 33 out of the 37 cases.

THE GLASS BOTTLE MAKERS OF THE YORKSHIRE UNITED TRADE PROTECTION SOCIETY.

The total number of members of the above society is 2,623; but of these only 1,341 were employed in December last, made up as follows:

	Men.	Apprentices.
Finishers (or makers) ...	447	... —
Blowers	430	... 17
Gatherers	245	... 202
	1,122	... 219

The large number of hands unemployed (1,282) is due to the fact that the trade is a decaying industry, owing to foreign competition. Among the unemployed, however, are 131 members incapacitated for work.

The area covered by the society includes the whole of Yorkshire, Blaydon-on-Tyne with 85 adult members, Newport in Monmouthshire with 91 members, and London with 29 members. In Yorkshire are included the works at Castleford, Swinton, Hunslet, Thornhill Lees, Knottingley, Wakefield, Barnsley, Conisbro', Masbro', Wombwell, Stairfoot, and Hull.

At my request, Mr. A. Greenwood, the Central Secretary, has prepared me a list of all the members who have been superannuated during the last nine years, numbering 114, and showing their ages and the diseases from which they

were suffering, and which caused their permanent inability to work. All these men were examined by Dr. G. B. Hillman of Castleford, who certified their condition. To be entitled to superannuation, these men must have attained the age of 50 years, and be permanently unable to work at their trade.

So far as my inquiry is concerned, these statistics are very incomplete, because there are no figures available to show:

1. The number of men who are working and who have cataract.
2. The number of men who are disabled by cataract and are under 50 years of age.
3. Men who have left the trade for various reasons (including failing sight) and who have now cataract.

Of the 114 superannuated members (all necessarily over the age of 50 years), 37, or 32.4 per cent., had cataract, and all but one of these were incapacitated for work through the eye condition. There were:

79 finishers,	29	of whom had	cataract, or	36.7	per cent.
26 blowers,	4	,,	,,	15.4	,,
9 gatherers,	4	,,	,,	44.4	,,
Total, 114 men,	37	,,	,,	32.4	,,

I know of no other class of disabled workmen with such an unwonted prevalence of cataract.

Of the 37 cataract cases:

11	were disabled	between the	ages of	50 and	54	years inclusive.
12	,,	,,	,,	55 ,,	59	,,
12	,,	,,	,,	60 ,,	64	,,
2	,,	,,	,,	65 ,,	70	,,

The average age of disablement was 57.3 years, but if those with cataract who are under 50 years of age were known and included, this average age would be reduced by some years.

In addition to the 37 with cataract, 11 others had other eye affections, making a total with eye diseases of 48 men, or 42 per cent. of the whole—namely:

2 had traumatic cataract (not included in the above).
1 had corneal ulcer.
3 had optic neuritis.
5 had other eye affections (hypermetropia, presbyopia, myopia, "failure of sight," and defective sight).

Form of the Cataract in its Earliest Stages.

A perusal of the cases detailed in the tables given above shows that in 16 cases the disease was seen in its early stages, and in 13 of these it is definitely stated that it was posterior cortical in form, and in only 3 was it beginning in one of the ordinary senile forms as peripheral radial sectors. It is true that in 2 of the posterior cortical cases there were radial sectors, namely, in one case one sector and in another two. In none of these early cases was a perinuclear development noticed.

When both lenses in a patient were seen in an early stage of the disease the form of the cataract was identical in both.

The posterior form of development is described in detail in my previous paper. Of course, an ordinary senile cataract may begin in the posterior cortex, but it is a rare form, the common forms being equatorial radial sectors and opaque layers forming around the sclerosed nucleus.

It was to be expected that some of the cases would begin in an ordinary senile form considering the age of the men, but the fact remains that the disease usually begins as a posterior cortical cataract, but it differs from the ordinary posterior cortical cataract as described in the textbooks in the following points:

1. Bottle-finishers' cataract is a primary cataract, there being no posterior mischief except sometimes disturbance of retinal pigment, and when it is successfully removed the sight is good, though the workman is rarely able to resume work as a finisher owing to the loss of the power of accommodation. At its commencement it is like a cobweb in structure (and best seen with a +10 or +12 lens by direct examination) and saucer-shaped, owing to the opacity being immediately within the posterior capsule. The outline is irregular, and not radial nor rosette shaped.

2. Ordinary posterior cortical cataract is one secondary to disease of the vitreous, choroid or retina, and consequently frequently occurs in the young, and after its removal the sight is bad. Moreover the form of this cataract is at first rosette-shaped or stellate, its centre corresponding to the posterior pole of the lens, while its rays are directed radially toward the periphery (Fuchs).

A posterior cortical must not be confounded with a posterior polar cataract, the former is a progressive disease of the lens substance, whilst the latter is a mere dot on the posterior surface of the lens capsule and represents the remains of the hyaloid artery when this vessel does not disappear completely; it is a congenital and stationary affection.

Etiology and Prevention.

It is interesting to observe that cataracts produced by the administration of naphthalene to animals and by the injection of saline or sugar solutions into their blood show an opacity first in the posterior cortical layers and near the equator of the lens next the capsule; and lenses removed from the eye and artificially dried show signs of opacity in the same regions first. Magnus affirms that 93 per cent. of all senile cataracts begin in the same way as napthalene cataract. This statement lacks confirmation so far as I am aware, unless my figures corroborate it. Case 3 in Table II showed the opacities both near the posterior pole and the equator.

These statements lend support to the belief that the excessive heat of the gas furnaces is the cause of the disease, an opinion borne out by the fact that the frequency of cataract in bottle makers is in proportion to the extent and length of exposure of the eyes of the different classes of workmen to the fierce glare of the tanks; hence the bottle finisher suffers by far the most, next comes the gatherer, who is succeeded by the blower, who is only seldom attacked, the rest of the workmen being affected not at all (vide supra). A shrinkage of the lens substance (drying) caused by the prolonged exposure to great heat may cause a slight separation of the lens fibres from the capsule first near the posterior pole, which would account for the opacity being first seen there and its peculiar saucer-like shape. The equatorial region being sheltered behind the iris, especially as the pupil is contracted by the bright light, escapes from the effect of the heat for a longer time than the cortex near the posterior pole.

Cataract does not appear to be common in iron and steel workers, because the eyes of the men are not exposed to the heat to anything like the extent a bottle finisher is, and in the Siemens-Martin process I am informed the men wear dark-blue protecting glasses. Investigation of the condition of the eyes of these and other workers whose eyes are exposed to great heat is desirable.

In my previous paper I recommended that the men should wear dark coloured spectacles or goggles whilst at work, because glass possesses the property of allowing only 30 per cent. of the heat rays to pass through it, and, if the glass be dark coloured, many of the light rays are intercepted also. This suggestion has been adopted by half the finishers at the first factory referred to, by about one-fourth at the second, but by one man only at the third, and I am informed that there is already a belief amongst the men that the glasses have done much good. At first there was considerable difficulty in wearing the goggles, owing to the condensation of the moisture from the excessive sweating of the men while at work, but by the use of "Lasin" pencils, made of a kind of soap, this drawback has been overcome. At one works the goggles are dark-blue and at the other dark-smoked.

I am told that at some works in Germany a square of framed glass hangs in front of the hole, through which the finisher looks into the furnace. The eyes of the gatherer, too, should also be protected.

Doubtless there are other ways—for example, by slight structural alterations of the holes at which the finishers and gatherers work—by which the men would be able to obtain the metal without their eyes being exposed to the glowing sea of glass.

Medico-legal Aspects.

Should bottle-finishers' cataract be put on the Schedule of Industrial Diseases appended to the Workmen's Compensation Act (1906), it is evident that preventive measures will be at once put in force by the employers. It will also most probably lead to the systematic examination by an expert of the eyes of all intending apprentices, and possibly to periodic examinations of the workmen. Should any defect be found, will the workman be allowed to continue to work at his trade? It is unfortunate that the Workmen's Compensation Act swells the number of the unemployed and the unemployable.

A CASE OF CONGENITAL OBLITERATION OF THE BILE DUCTS IN WHICH THERE WAS FIBROSIS OF THE PANCREAS AND OF THE SPLEEN.

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PHYSICIAN TO OUT-PATIENTS AT THE QUEEN'S AND AT THE CHILDREN'S HOSPITALS, BIRMINGHAM.

Names may cling though their significance may change with advance in knowledge. This is well exemplified by the title "congenital obliteration of the bile ducts." This term is used to describe a variety of conditions in which there is evidence that either at birth or shortly afterwards there is obliteration or complete absence of the bile ducts to a varying extent in different cases. Thus, in one case there may be obliteration of the duodenal end of the common bile duct, in another complete absence of the gall bladder, the cystic, hepatic, and common bile ducts, and between these extremes every degree of obliteration may occur. There is one feature, however, common to all these cases, namely, the liver is in a condition of cirrhosis, that variety of cirrhosis to which the term "biliary" or "monolobular" has been given, a form of cirrhosis similar to that which results from experimental ligature of the bile duct in dogs.

The view as to the association between the obliterated or absent ducts and the cirrhotic liver has undergone complete transformation. Thus, as Rolleston points out, John Thomson in his monograph, dated 1892, believed that the primary factor was a congenital malformation of the ducts, and that the biliary cirrhosis was secondary to this malformation. Later on, in his article in Clifford Allbutt's *System of Medicine* written in 1897, he regards the process as independent of any congenital malformation, and due to toxic bodies in the bile (like toluylendiamin) causing a descending cholangitis—that is, inflammation spreading from the fine to the main ducts. When, according to Thomson, the disease has gone on far enough to interfere with the free passage of bile from the liver, then biliary cirrhosis begins, as it does in the liver of animals whose common duct has been tied. On the other hand, Rolleston makes out a strong case for regarding the cirrhosis as the primary change and the obliteration of the ducts as one of the results of the cirrhosis.

The interest of the present case lies in the fact that not only were the bile ducts completely absent, the gall bladder altogether rudimentary in size and structure, and the liver in a state of typical biliary cirrhosis, but the spleen was fibrosed and the pancreas exhibited a cirrhosis in connexion with its ducts very similar to the cirrhosis in the liver, but with this difference—that whereas in the liver the process had gone on to obliteration of the ducts, in the pancreas the process had not advanced so far; the ducts were well formed and patent, and opened in the usual way into the duodenum.

I am not aware of any previous reference to a condition like this in the pancreas having been noted in connexion with these so-called cases of congenital obliteration of the bile ducts, and I regard the association as evidence in support of the view that the obliteration of the ducts is secondary to the cirrhosis, in contradiction to the theory that the cirrhosis results from the obliteration of the ducts.

Fig. 1.—Under surface of liver (natural size). (*a*) Rudimentary gall bladder, (*b*) rudimentary cystic duct, (*c*) rudimentary hepatic duct.

The *post mortem* appearance of the organs suggests that in intrauterine life, as a result of the circulation of some toxic body, there had been set up a fibrosis of certain organs—namely, the liver, the spleen, and the pancreas (and perhaps of others which, however, had escaped notice, not having been submitted to microscopic examination); that this fibrosis in the liver and pancreas had its seat of election round the hepatic and the pancreatic ducts; and that while in the liver it had progressed to such an extent as to cause obliteration of the ducts, in the pancreas it had not gone on so far, and here the ducts had remained patent. The brunt of the poisoning would be expected to fall upon the liver, for the poison must reach the fetus from the mother via the portal vein. Some of it, however, would pass by the ductus venosus into the general circulation, and of this some would again find its way back to the liver by the hepatic artery, whilst some would reach the spleen by the splenic artery and some the pancreas by the pancreatic artery. The liver, therefore, would receive a double dosage, the bulk by means of the portal vein and a smaller quantity by the hepatic

artery. On the other hand, the spleen and the pancreas would only receive a relatively small quantity through the splenic and pancreatic arteries respectively.

Rolleston and Hayne describe the cirrhosis of the liver in these cases of congenital obliteration of the bile ducts as of a mixed type, partly multilobular, that is—ordinary portal cirrhosis, the effect of the poison that enters by the portal vein—and partly monolobular or biliary cirrhosis, the effect of the poison that reaches the hepatic lobules by the branches of the hepatic artery.

In the present case we must assume that the poison came into action at a very early period of embryonic life, since in the case of the liver it not only led to cirrhosis and an obliterative cholangitis, but it also determined a faulty formation or rather a complete arrest of development of the large bile ducts outside the liver as well as a very faulty development of the gall bladder itself. In contrast to this condition of the hepatic ducts were the pancreatic ducts, for embedded in fibrous tissue as they were inside the pancreas, externally they opened on to well-formed papillae in the duodenum and apparently functionated during life satisfactorily. This contrast between the bile and the pancreatic ducts is well explained by the liver receiving a very much larger amount of the poison than the pancreas, as pointed out above.

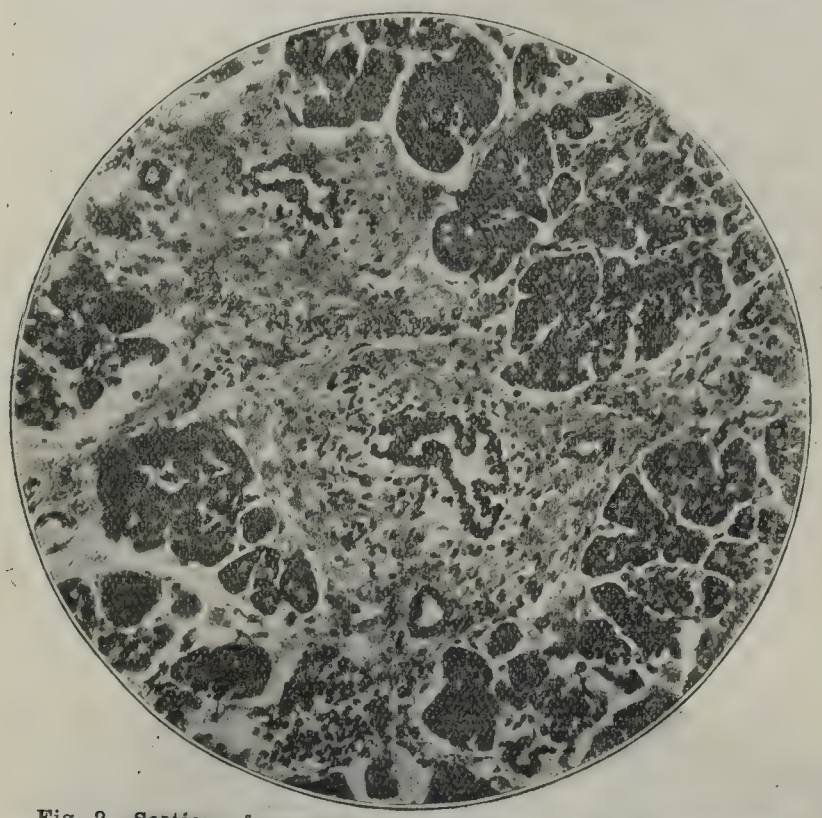

Fig. 2.—Section of pancreas (× 360 diameters). The ducts are well formed, lined by regular columnar-celled epithelium, and lie embedded in dense strands of fibrous tissue.

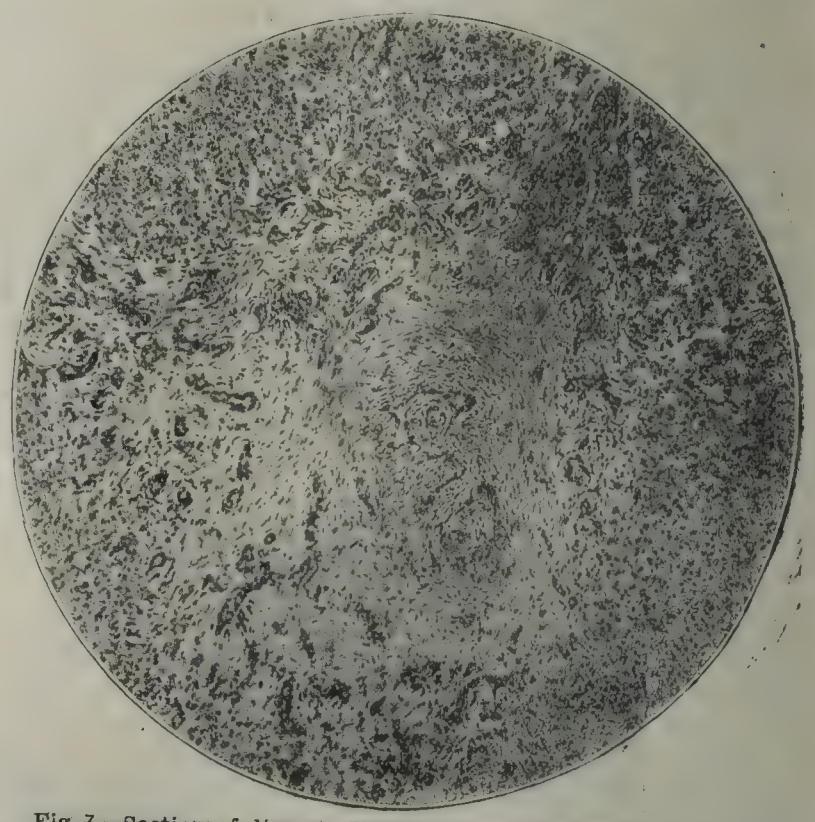

Fig. 3.—Section of liver (× 300 diameters). The bile ducts everywhere small and in places completely obliterated, lie obliterated in dense strands of fibrous tissue.

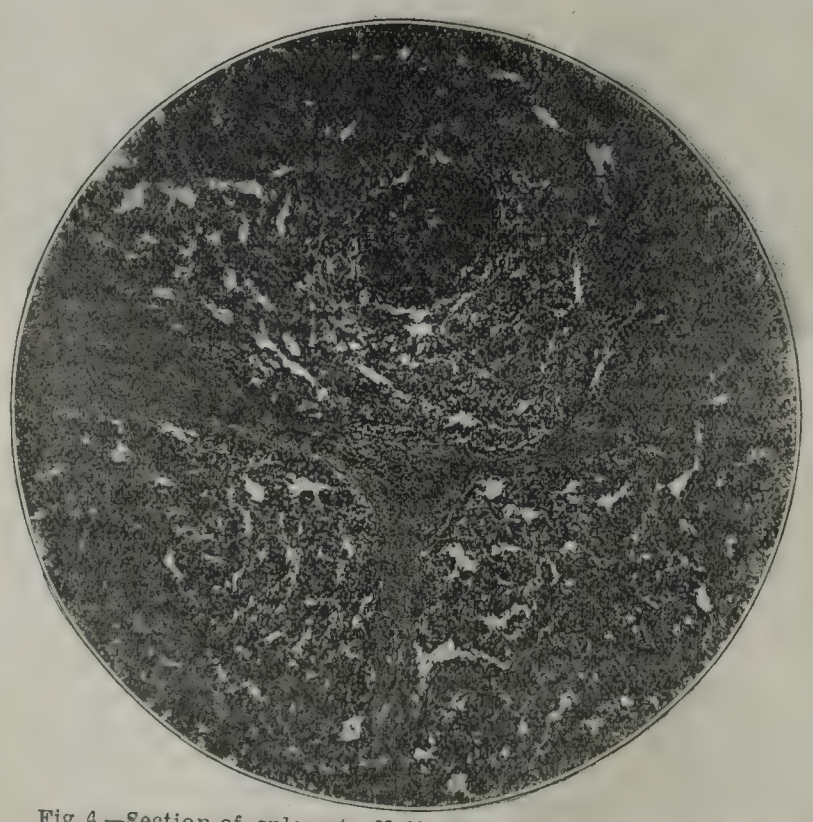

Fig. 4.—Section of spleen (× 60 diameters). The trabeculae are represented by thick strands of fibrous tissue.

The particulars of the case are briefly as follows:

A female infant, 10 weeks old, was admitted into the Hospital for Sick Children, Birmingham, under the care of Dr. G. W. Powell, on February 28th, 1905, for jaundice and diarrhoea. Both of these symptoms appeared on the fourth day of life, and had persisted ever since. The general development of the infant was good, but it was wasted, weighing only 9 lb., and it was deeply jaundiced. The anterior fontanelle was depressed. There were no external signs of congenital syphilis. The heart and the lungs were normal. The liver was palpable 1 in. below the costal margin in the right vertical nipple line, and the free edge was sharp and hard. The spleen was firm and palpable two fingerbreadths below the costal margin.

The child was born at full term and appeared healthy. It was breast-fed for the first fortnight, but since then had been fed on milk and barley water. There was no jaundice at birth, and normal meconium was passed. On the fourth day jaundice appeared, and at the same time the motions became "white like milk and very frequent," and from this time onwards the child became gradually thinner and more and more yellow. The father was healthy, but the mother did not look very strong, and said that she had always been somewhat delicate. She lost the sight of the left eye in infancy, and had had the eye excised when she was 8 years old. She had rheumatic fever at 14 years of age, and a second attack three years later. She was an only child, and was left an orphan at so early an age as to have no knowledge at all of her own parents. She had had eight pregnancies. Her two eldest children were alive and healthy, aged 7 and 6 years respectively. The third child died at 6 months of age of "wasting disease," the fourth at 8 months of age of "convulsions," and the fifth at 8 months of age of "broncho-pneumonia." These three children were all healthy at birth. The sixth pregnancy ended in a miscarriage at six months, and the infant the subject of this article was born next at full term, and since its birth there had been another miscarriage at two months. The mother showed no signs of syphilis, congenital or acquired, but her parentage and appearance suggested descent from a poor stock, and her child-bearing history is certainly suggestive, at all events, of some chronic toxaemic condition during the later years of her married life. This toxaemia was possibly (some would say probably) due to syphilis, but no further evidence in this direction was obtainable.

The mother was not aware of any similar case of infantile jaundice having occurred in any other member of her family. There is little more to record. The child, after its admission, gradually became weaker, and died from asthenia six weeks later—that is, four months after birth. The jaundice persisted to the end. On March 17th some urine drawn off by the catheter was found to contain bile pigment. There were two or three motions every day, and they were "white, like thick milk." The temperature was subnormal during the entire six weeks the child was under observation. At no time were there any haemorrhages. The weight at death was 8¼ lb. The child was treated with mercurial inunctions, but without the least improvement at any time.

Post-mortem Examination.—Body well developed, but markedly wasted. No signs of congenital syphilis. No enlargement of glands, no haemorrhages, no oedema. Marked jaundice of entire skin, conjunctivae, and all the internal organs. The pericardium was healthy The heart weighed ¾ oz., and was healthy. The pleurae were healthy. Each lung weighed 2¾ oz , and exhibited small areas of collapse along the posterior surface, but otherwise was crepitant throughout No ascites, no peritonitis, no enlargement of mesenteric glands, but a few enlarged dark coloured glands at the hilum of the liver The stomach and intestines presented nothing abnormal. The spleen weighed 1 oz , was firm and enlarged The kidneys each weighed ¾ oz , and with the suprarenals appeared normal. The ureters, bladder, uterus, and appendages were healthy. The pancreas appeared small, somewhat shrivelled, and tough. The liver weighed 7 oz. It was dark olive-green in colour, and its surface was roughly granular, like morocco leather. To section it was very tough, and obviously markedly cirrhotic. The gastro-hepatic omentum was dissected with the greatest care, and the hepatic artery and the portal vein were traced to both lobes of the liver, but no signs of a common bile duct could be found, not even a fibrous band passing from the gall bladder to the duodenum. The ductus venosus was traceable, connecting the portal vein and the round ligament. In the fissure of the gall bladder there lay a whitish wrinkled tube $\frac{3}{16}$ in. in diameter and ¾ in. in length. Its free end (the fundus) was somewhat bicornuate, and did not reach the anterior margin of the liver by ½ in. The opposite end was continuous with a dark-coloured ovoid swelling which lay in the transverse fissure. On splitting longitudinally the narrow whitish tube it was found to be divisible into two nearly equal lengths. The anterior half was smooth lined, the posterior half showed spiral foldings of the mucous membrane, and the suggestion forced upon one was that the former represented a rudimentary gall bladder, and the latter the cystic duct. The wall of this tube throughout its length was thick, and it contained clear, yellow-tinged, thin fluid. The dark-coloured ovoid swelling above mentioned lay in the transverse fissure, and appeared to be continuous with the whitish tube. It was ¾ in. long, and $\frac{7}{16}$ in. in width, ovoid in shape, and dark green in colour. Its wall was thin, and it was distended with a viscid green-coloured fluid quite different to the contents of the whitish tube. Its interior was smooth lined and was coated with a green slime. No communication existed between this ovoid swelling and the whitish tube. Its true inferior surface was free, its superior surface inseparably associated with the hepatic tissue in the transverse fissure. Possibly this may have represented a rudimentary hepatic duct which had failed to communicate with the gall bladder.

On opening the duodenum two well-marked papillae (a small and a large one) were present opposite to the head of the pancreas. Bristles could be passed into these for about an eighth of an inch towards the pancreas. They were the openings of the pancreatic duct into the duodenum.

The liver, spleen, and pancreas were sectioned, and examined microscopically. In all these organs the characteristic feature was the large amount of fibrous tissue present. There was, however, a great contrast between the condition of the bile ducts and that of the pancreatic ducts, and this contrast is well brought out by the excellent photomicrographs so kindly taken for me by Dr. John T. Hewetson.

The liver shows fibrous bands of enormous thickness permeating the entire organ. They are entirely interlobular, for nowhere do they extend into the lobules. The striking feature of these fibrous tissue strands is the enormous number of bile ducts they contain cut in every direction, some longitudinally, others transversely. For the most part the lumina of these ducts are conspicuously absent, but here and there they may be seen as spaces filled with inspissated bile readily distinguished by its bright green colour. The cells lining the lumina are low cubical in type, and show well-stained nuclei. There is, however, a great contrast between these cells and the cells corresponding to them in the pancreas. In the pancreas they are columnar in shape, regular in their distribution, and enclose a widely-open lumen, while in the liver they are more or less cubical in shape, more irregularly disposed around a lumen which is everywhere narrow and in many places obliterated.

Sections of the pancreas show healthy acini, well-marked islands of Langerhans, and well-developed ducts. These ducts are lined by columnar epithelium with well-staining nuclei. They are, however, seen to be embedded in conspicuous strands of fibrous tissue which is moderately cellular in structure. The lumina of the ducts are large and patent, and appear quite normal.

In the spleen the trabeculae are represented by dense fibrous strands. The pulp and the Malpighian bodies appear quite normal.

In concluding my account of this case, I wish to acknowledge my thanks to Dr. G. W. Powell for his permission to publish it, to Dr. A. E. R. Weaver for his excellent drawing of the liver, and to Dr. John T. Hewetson for the photomicrographs of the microscopic sections.

The bibliography on this subject will be found at the end of John Thomson's article in Allbutt's *System of Medicine*, vol. iv, p. 257; and further references will be seen in a paper by Rolleston and Hayne in the British Medical Journal, vol. i, 1901, p. 758; and in Rolleston's *Diseases of the Liver*, p. 639.

THE RINGWORM QUESTION IN ELEMENTARY SCHOOLS.*

By PHINEAS S. ABRAHAM, M.A., M.D., B.Sc., F.R.C.S.I.,

SURGEON FOR DISEASES OF THE SKIN, AND LECTURER ON DERMATOLOGY, POST-GRADUATE COLLEGE, WEST LONDON HOSPITAL; AND SURGEON TO THE HOSPITAL FOR DISEASES OF THE SKIN.

Since January this year some 195 cases of ringworm in children have come under my care at the West London Hospital, Hammersmith, and 69 at the Hospital for Diseases of the Skin, Blackfriars, making a total of 264; 89 of these had not recently been attending school, some being under school age, while others had been kept away from school for a considerable time before coming under my notice. In a few cases, no doubt by inadvertence, no note was taken in the hospital casebook in reference to the school attendance.

The schools which the children had attended up to the time of coming to the hospital, or up to a short time before, were noted in 175 cases—125 at the West London Hospital, and the rest at the Hospital for Diseases of the Skin. Each of the hospitals serves a wide area; the cases at Hammersmith come from 49 county council and other elementary schools, and those at Blackfriars from 41. Several of the individual schools have furnished within the period more than one case—for example, Brackenbury Road School no less than 8, St. John's, Hammersmith 7, St. Dunstan's 6, Fulham Palace Road 6, the British School, Brentford, 6, and William Street, Queensmill Road, and Sacred Heart, 5 each; but the majority of the schools in my list are each responsible for only one or two of my cases.

It is, of course, obvious that the cases of ringworm from these ninety schools, which have come under my personal notice within the period of six months, represent but a small proportion of the total number of the school children with ringworm; many of these, no doubt, go to other hospitals and dispensaries, and many of them to the general practitioners of the neighbourhood.

The figures which I am able to bring forward from my individual experience are, however, in themselves enough to show (1) how widely spread the disease still is among the metropolitan school children, and (2) what a large number of elementary schools now are, or have recently been, contaminated by ringworm. I may here state that many of the patients at the time of coming under my care were really bad cases, the disease having existed and remained undetected by the school teachers and nurses for a considerable time.

It may perhaps be asked by those who are satisfied with the existing state of affairs what proof there is that these children acquired the ringworm at the schools. I freely admit that some of them may have contracted it elsewhere, but there is no getting away from the fact that all of them had been attending at the schools, often for weeks or even months, without detection; and every one conversant with the disease and with the usual conditions of school life will admit that they must all of them have been sources of infection for the other children. I have no doubt myself that in the large majority of the cases the mothers were quite right in saying that the ringworm had been "caught at school."

Many years ago, and again in 1905, in a paper read before the Royal Institute of Public Health, I pointed out the inadequacy of the measures adopted by the authorities against the spread of ringworm and other contagious diseases of the skin in the elementary schools, but as far as I can judge from the cases that are still coming under my notice at the two hospitals, there does not seem to have been much improvemont since then, in spite of the fact that the Education Department of the London County Council has to a certain extent increased its medical staff. I further venture to say that it is not likely that we shall see much improvement until the medical inspection of school children becomes a reality,

* Read at the International Congress of School Hygiene, London August, 1907.

until periodical and frequent examinations of the children are carried out by specially-trained medical men—not by semi educated nurses—and until all suspicious and doubtful cases are at once submitted to competent experts. It may be easy enough for a nurse, or any one else who has seen a few cases, to "spot" an ordinary case of ringworm, with its patches of stumps or broken hairs, but every dermatologist knows how frequently old-standing cases come before him which have been wrongly diagnosed—even by medical men—and mistaken for eczema, seborrhoea, etc., or are supposed to be "cured," because there is hair all over and only a little scurf to be seen; cases, indeed, the true nature of which can only be made certain by skilled microscopical or cultural investigation. Not only do I contend it to be the duty of the authorities to adopt efficient measures, which is a matter quite feasible, for preventing, to a great extent at least, the contamination of healthy children who are forced to attend the elementary schools, but I further submit that the responsibility of the treatment of an unfortunate child who has presumably contracted a contagious skin disease at a Government school should also be undertaken by the State. It is, in my opinion, a cruel thing to force a child to go to a school where ringworm is known to exist, and then to saddle the poor parents with the expense and trouble of the subsequent treatment of the disease contracted at that school. It may be said that such children might be taken to the neighbouring hospitals for treatment, and so many of them are, but this also means trouble and expense, loss of time and wages for the family, as well as trouble and expense to the hospitals, to whose funds I am not aware that the county councils ever contribute.

It is, no doubt, mainly a question of expense. A few years ago, perhaps, ignorance, supineness, and penury in such matters might all have been laid to the charge of the School Board; but at the present day, and considering the enlightened interest the officers of the Education Department are taking in this International Congress, it is to be hoped that the lay authorities will come to realize the importance of the subject and to see that economy ought to be practised in less essential matters than the prevention of disease.

A great deal that I have said in reference to ringworm in schools may equally be said in regard to pediculosis and some other objectionable and preventable contagious diseases of the skin. I once, in conjunction with Dr. Alder-Smith, examined the heads of a large number of children in two London Board Schools; we found that only 2 per cent. of the girls' heads were free from pediculi or their ova. I do not think that this appalling proportion of infected heads is at the present time quite so great; but I am sure that a very large number of the children now attending the metropolitan elementary schools are so infected, and that there is still strong probability of any clean child attending these schools soon becoming in a similar condition. Not only do they contract the pediculi by close association in the class rooms, passages, and play grounds, but also through their hats, which are hung in the anterooms one over the other and closely together.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

TRANSPLANTATION OF THE URETERS.

ANOTHER operation of extraperitoneal transplantation of the ureters into the rectum for extroversion of bladder, performed in an exactly similar fashion to that in the case reported by me in your columns on June 22nd, p. 1481, was performed in this hospital on a boy of 13 years of age on April 15th of this year.

The patient made a good recovery, and was discharged from the hospital on the 15th of the following June.

For three weeks before the date of discharge from the hospital he was able to retain urine in his rectum from three and a half to four hours during the waking hours, that is, from 5 a.m. to 9 p.m. During the sleeping hours he was able to retain urine in his rectum from 9 p.m. to 5 a.m.

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DIURETIC ACTION OF THEOSINE SODIUM ACETATE.

A DRUG which seems likely to take a prominent place among useful remedies is theosine sodium acetate. Its effect in the first case in which I employed it was striking, not to say dramatic.

The patient—a girl aged 13—was admitted into hospital with advanced aortic and mitral disease. She had been an in-patient of mine on three previous occasions, and, with the help of rest and digitalis, had each time been enabled to leave the hospital comparatively well. On her fourth admission she was so bad that I had little hope of her recovery. Dyspnoea was urgent: the heart was beating tumultuously, and the apex could be felt almost as far outwards as the axillary line; there was marked pulsation of the liver, the lower extremities and abdominal walls were anasarcous, and considerable ascites was present.

The patient was put on digitalis, but this drug by itself did not seem to do any good. As the abdomen continued tense and there was considerable impediment to the descent of the diaphragm, paracentesis was resorted to, and 140 oz. of fluid were drawn off. A fortnight later the same amount was again removed, and the operation was repeated on ten other occasions—that is, twelve times in all—at intervals of a fortnight, the average amount of fluid removed each time being 140 oz.

When the thirteenth operation was done, the patient was almost moribund, and she begged that she might be tapped again, in the hope of getting relief from the distressing dyspnoea. It was then that the house physician, Mr. Hayes, conceived the idea of trying the effect of theosine sodium acetate. He accordingly ordered 5 grains to be taken every four hours. The first dose was given at seven o'clock in the evening. The effect was magical. During the night enormous quantities of water were passed, and by the next morning the whole of the anasarca had disappeared from the lower extremities, while not a trace of ascites remained. The patient could now breathe quite comfortably, and scarcely recognized her own anatomy, making display of the fact that she could easily put both her legs into a stocking which the day before could with difficulty be drawn on one leg.

During her stay in the hospital she had been taking digitalis on and off, and at the time of administering the theosine salt she was having five drops of the tincture thrice daily. I therefore tried the effect of leaving off the digitalis and keeping her on the salt alone. Directly this was done the fluid began to reaccumulate, and the same thing happened when the salt was left off and the digitalis given alone. Hence it was obvious that the copious diuresis and concomitant subsidence of the dropsy were due to the combined action of the two drugs. Theosine salt, to be effective, needs to be given with a cardiac tonic, such as digitalis. This has been my experience in all the cases in which I have given it. The patient soon after beginning this new treatment was able to walk about the ward, and in a few weeks to leave the hospital. Under the influence of digitalis, with the occasional addition of theosine, she remained for several months in better health than she had enjoyed for some time. She was then readmitted into hospital with pericarditis, to which she succumbed; but it was remarkable that throughout the whole of the illness she remained entirely free from dropsy.

I have now employed the theosine-digitalis treatment in several cases of cardiac dropsy, both in hospital patients and in others seen in consultation, and each time with the same result, although it has not always been so striking as in the above instance. I therefore feel some confidence in recommending this treatment in all cases of genuine cardiac dropsy. When, however, there is primary blockage in the lungs, as in chronic bronchitis with extreme emphysema, it is less efficacious. In the dropsy of parenchymatous nephritis the theosine salt has in my hands proved useless, but in the cardiac dropsy attending the final stage of granular kidney its diuretic action is eminently satisfactory. On the ascites occurring secondarily to primary portal obstruction the salt appears to have no effect.

A word as to the administering of the drug. It is a white powder, and may be given in cachets in doses of from 3 to 8 grains every four hours. Its effects should be carefully watched, as it is apt to irritate the stomach. This is, indeed, its chief drawback as at present administered.

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ACQUIRED SYPHILIS IN AN INFANT, WITH TRANSMISSION TO THE MOTHER.

Although suspicion is from time to time aroused that so-called congenital syphilis in babies has been acquired since birth, it is but rarely that the proof is forthcoming. I have recently had an interesting example, in which it has been possible to ascertain that the infection was in no sense "congenital," either conceptional or post-conceptional.

The infant was a girl, aged 12 months, who about six weeks ago developed a cutaneous eruption, for which her mother sought advice. The child was well formed, plump, had cut several teeth, and had not suffered from "snuffles," or any previous skin eruptions; but now the whole trunk, the face and limbs were covered with a uniform yellow eruption, looking like wet "chamois leather," not raised, nor scaly, but having a greasy moist appearance without exudation; the rash was patchy on the scalp, while on the limbs and face irregular areas of normal skin persisted; on the vulva and round the anus were numerous condylomata; the throat was red and sore.

On inquiry, the mother submitted her opinion that the whole affair was attributable to the nefarious practice of vaccination (indeed, I have little doubt but that the case will come to the ears of, and be largely quoted by, the champions of the rights of small-pox). There was no evidence, historical or visible, that a chancre had developed at the site of vaccination, which operation had been performed when the child was 3 months old. On the other hand, there was a clear history that when she was about 8 months old a single troublesome sore had developed on the lower lip towards the left side, which had slowly disappeared in a month or six weeks, leaving a scar which after three or four months was sufficiently obvious. Two months after the appearance of the sore came the rash which, at the end of another two months, was as described above.

So in itself the case seemed to be of rather later development than an ordinary congenital case of syphilis, but the mother provided the proof. She was a well-developed, robust young woman with two older children (aged 8 and 4 years) quite healthy. She had had three miscarriages shortly after marriage, and none other since. Two months ago she attended the Bristol Royal Infirmary for a sore on the right breast, which apparently was not diagnosed, but aroused some interest and discussion. This healed in a few weeks, being dusted only with zinc oxide, and left a circular superficial thin scar on the right side of the right nipple, corresponding, so it proved, with the position of the scar in the baby's lip when placed at the breast.

The mother had a faint brown macular eruption all over the trunk, a sore throat with characteristic exudate on the tonsils, and complained of nocturnal headache and bone pains.

There seemed no doubt that she, too, had acquired syphilis, and that the breast had been the site of the chancre, which was derived from a similar and earlier lesion on the child's lip; the origin of the latter remains unexplained.

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REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

HERTS COUNTY ASYLUM, HILL END, ST. ALBANS.

A CASE OF SEVERE HEAD INJURY IN A PSYCHASTHENIC.

(By Bernard Hart, M.B., M.R.C.S., Assistant Medical Officer.)

The patient in the following case, a male, aged 40, was admitted on November 6th, 1906, suffering from a compound fracture of the skull and other head injuries. The following history was obtained: In the family, so far as was known, no cases of insanity, intemperance, or phthisis had occurred. The paternal grandfather died of "brain fever," his father suffered from squint, and had fits in childhood. The patient himself had always been a temperate, steady man, but of a reserved and unsocial nature, making but few friends. He was brought up as a baker, and worked in his father's shop until the latter failed in business. He then obtained employment as a shunter on the railway, a position which he retained till August, 1906. In 1894 he was run over by a railway truck, sustaining a compound fracture of both bones of the left leg. This injury was treated in Guy's Hospital; no noteworthy mental effect was observed. In August, 1906, he purchased a baker's business in a country village with some money inherited by his wife. The business, however, did not come up to expectations, and he was unable to make it pay. He worried considerably, and brooded a good deal, though he readily discussed the subject with his wife. On one occasion he remarked, "This place will turn my brain." For two or three weeks he has slept badly, and has been restless at night.

On the morning of November 6th, after his customary morning round, he went into the bakehouse, asking his wife to call for him at tea time. When she did so, she found him lying in a pool of blood, holding a billhook (a kind of hatchet used for chopping wood) in his hand. A broken hammer, blood stained, was found near by. When spoken to he did not answer at first, and seemed stunned, but a few minutes later he said that he wanted to "finish himself," and asked for a razor. He then quieted down, talked quite rationally, and asked when the doctor was to be expected. He was able to stand and to walk, and, on the arrival of the doctor, he assisted the latter intelligently in the dressing of the wound. He was then removed to the asylum, which he reached about five hours after the infliction of the injuries. On alighting from the carriage he staggered slightly, as if intoxicated, but was able to walk down to the ward.

State on Admission.—The patient is a strongly-built, well-nourished man. The ears have adherent lobules, but otherwise no stigmata of degeneration are present. Old healed fracture of both bones of left leg, with imperfect apposition and shortening of the limb. Temperature 98.2°, respirations 20, pulse 90—full, regular, of moderate tension. A considerable degree of arteric-sclerosis is present, and there is some tortuosity of both radial and brachial arteries. Tongue furred, but not tremulous, breath offensive. No abormality can be detected in the thorax or abdomen. Knee-jerk present on left, almost imperceptible on right. Plantar flexion on both sides. Superficial reflexes active. Pupils of moderate size, equal, react to both light and accommodation. No disturbance in sensation can be made out—the grips are equal and of fair strength—and the movements of the facial muscles are unaffected. Numerous incised wounds of the scalp are present. They have a general antero-posterior direction, and are of varying length and depth. Situated in the median line, and running from a point 1 in. above the glabella to the mid-point between glabella and occipital protuberance, is an irregular cavity fringed with half-severed strips of scalp. Over this area a large part of the scalp has disappeared, together with the outer table of the calvarium. The inner table, broken into several distinct pieces, which move up and down with the brain pulsation, is still present. In the apertures between these pieces small portions of the underlying dura mater can be seen. The latter is, apparently, uninjured. Haemorrhage has ceased. The facial expression is dull and despondent—the angles of the mouth are depressed, the inner ends of the eyebrows are drawn together, and the remaining facial muscles lack tone. The patient lies quite still, and does not speak unless addressed, but occasionally he sighs, and seems as if on the verge of tears. He is clear and collected, and gives a complete account of recent events, but gets somewhat irritable with prolonged questioning. He states that his business troubles preyed upon his mind, so that he hardly knew how to act. The idea of committing suicide never really occurred to him, but to-day the misery of everything seemed suddenly to overcome him, and he hit himself with the chopper without really knowing what he was doing. He thinks that he then lost consciousness, but is not certain. He remembers his wife coming in to call him to tea; it was only then that he realized what he had done. Still, he is tired of it all, and hopes that he will die soon. He emphatically denies having used a hammer in addition to the chopper. All this is related in a low, tired voice, with frequent sighs. He is docile, and willingly assists in the various manœuvres necessary for his treatment.

Progress.—The patient was kept in bed on a milk diet. The head was shaved, some of the ragged portions of scalp removed, and antiseptic dressings applied. November 7th, 1906: He had no sleep during the night, but lay quiet and motionless. Temperature this evening rose to 100°. Urine rather high coloured, faintly acid; no albumen or sugar; specific gravity, 1030. November 8th: Slept one hour during night. Temperature 98.6°. Pulse harder. Ophthalmoscope shows some engorgement of retinal veins. Patient complains of slight headache and of severe localized pain in the neighbourhood

of the wound on coughing. At 9 p.m. chloroform was administered, the bruised edges of the wound, which were showing signs of necrosis, were cut away, and the margin of bone trimmed up. The detached fragments of inner table were then removed. During this process the longitudinal sinus was unavoidably opened, and some difficulty was experienced in arresting the bleeding. The patient struggled violently during the administration of the anaesthetic, and after the conclusion of the operation. Morphine, gr. ½, was subsequently given hypodermically. November 9th: Slept seven hours during night. Temperature, 8 a.m., 98.2°; 8 p.m., 100.4°. The patient is more comfortable, and no longer complains of headache. November 10th: He is progressing favourably; temperature normal. Mentally he is quite clear and less irritable, but still somewhat depressed. Takes an intelligent interest in the dressing of his wound, frequently asking questions concerning its progress. Does not seem quite certain whether he would like to get better or not, but is convinced that he could not bear to go back to the business—"he would rather go to the union." January 6th, 1907: From the date of the last note the course of the case was uninterruptedly favourable. The wound rapidly granulated, a moderate amount of pus being formed. The patient is now fairly cheerful and anxious to return to work again. Occasional fits of depression, however, still occur, during which he worries over his home affairs, and thinks it would be "better not to be alive." February 6th: The wound has now healed completely, but a considerable antero-posterior depression remains, which the patient is endeavouring to conceal as far as possible by growing his hair long. He has gained considerably in weight since admission, and is employed in the garden. His work is satisfactory, but in the ward he is solitary and unsocial in his habits and fond of indulging in day dreams. He is anxious to get away, but makes no effort to obtain his discharge, leaving all arrangements regarding his future career to his wife. His intellectual capacity has been carefully tested at intervals during his residence in the asylum. Attention, memory, reasoning, and power of calculation have improved to a slight extent, though they were at no time seriously affected.

REMARKS.—The case presents several features of interest, both forensic and psychological. As regards the former, the chief points are: The severe nature of the injury, which, except for convincing evidence to the contrary, might arouse a suspicion of homicide; the comparatively slight disturbance of the general physical condition and of the mental faculties; and the subsequent uninterrupted recovery. No one of these points is, however, unique. Numerous cases of self-inflicted head injuries have been reported, and in several of these choppers of various kinds have been employed. F. J. Smith[1] mentions the case of a man who, after attempting to destroy himself by running his head against a wall, struck his forehead repeatedly with a cleaver. "Had he not been seen, the nature of the wound was such as to excite suspicion of homicide." Staples[2] described several analogous cases, amongst which may be noticed that of a man who drove two stone chisels into his head by means of a wooden mallet. The first entered at one temporal region, and protruded from the corresponding point on the opposite side. The second passed through the frontal bone and penetrated 1½ in. into the brain. With the chisels still in his head he walked a considerable distance and was able to talk. He died five hours later. Other cases have been reported by Smith[3] M'Eldowney and Ward Cousins[4] have recently described a case in which severe head injuries implicating the brain were self-inflicted with a poker. Complete recovery without mental lesion ensued. Prognosis in cases of head injury is notoriously uncertain. "The slightest contusion may be attended with fatal consequences, while fractures, accompanied by great depression of bone and an absolute loss of the substance of the brain, are often followed by perfect recovery."[5] Whether, and to what extent, symptoms of concussion followed the infliction of the injury cannot be definitely decided. None were present on admission. Signs of cerebral irritation existed for a few days, but the course of the case was otherwise entirely uneventful. The psychological features are of peculiar interest. The patient's former history, together with observations made in the asylum, point conclusively to the existence of psychasthenia. His reserved and solitary nature, the presence of social timidity, the tendency to reverie and day-dreaming, the inability to come to any decision concerning his future career, and the leaving of these details to his wife—all contribute to this clinical picture. He was perfectly competent to live his life in a subordinate position, where all his actions were directed by others, but broke down entirely when required to act upon his own responsibility. Here we have that failure to grapple with novel conditions, to grasp and to act upon the reality of things, and the accompanying subjective sense of mental insufficiency which form the essential basis of psychasthenia. It would in no sense of the word be correct to designate the condition as melancholia. Most people become depressed if their business is failing, and, if the constitutional mental infirmities mentioned above are taken into account, the emotional reaction in this case cannot be regarded as more than adequate to the external conditions. Melancholia, moreover, might from a superficial point of view, explain the attempted suicide, but the concept of psychasthenia enables us to understand why the patient failed in business—a far more fundamental consideration. It is more difficult to determine the precise significance to be attached to the actual suicidal attempt. Obsessions and impulses of various kinds are, of course, common in psychasthenia, but their most essential characteristic is that they rarely lead to any definite action. Suicidal obsessions are of frequent occurrence, actual suicide is extremely rare. Janet,[6] however, considers that certain patients of this type do actually kill themselves, not as a result of any obsession or irresistible impulse, but deliberately, because they have no hope that their illness will ever be cured. But our present case can certainly not be brought under this head. Here there was a wild unreasoning violence, which reminds one more of certain phases of dementia praecox and epilepsy. There is no other evidence, however, pointing to the presence of either of these latter diseases. Nevertheless, this resemblance is of interest in the light of the close relationship between psychasthenia and epilepsy, which has been emphasized by numerous authors.[7] The solution of the difficulty is, I think, to be found in the fact that the word "suicide" is, in reality, absolutely inapplicable. So far as can be ascertained, the idea of killing himself never occurred to the patient. Had it done so, he would probably have selected some more certain and less painful method. The act was performed in a state of anguish or frenzy, during which "he hardly knew what he was doing." There seems to be little doubt that he did actually make use of the hammer which was afterwards found by his side. The fact that there was no subsequent recollection of having done so casts a significant light upon the mental condition existing at the time the injuries were inflicted. Now, states of anguish of this kind are common in psychasthenia, and are analogous to the well known phobias. During these crises various movements, sometimes violent but usually more or less aimless and inco-ordinated, may occur, often to such an extent that the attack may simulate a hysterical fit. According to Janet, these states are due to a lowering of the "mental level," that is to say, a lowering of the synthetizing power of the mind, and their exciting cause is often to be found in some mental or physical stress. Such a cause would be furnished in our present case by the emotional reaction due to the failure in business. On the whole, therefore, it seems probable that the pseudo attempt at suicide is to be best explained as the result of an attack of this kind.

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[1] Taylor's *Principles and Practice of Medical Jurisprudence*, p. 461. [2] *Journ. Am. Med. Assoc.*, 1887, quoted in Dixon Mann's *Forensic Medicine*. [3] *Med. Times and Gazette*, 1878. [4] BRITISH MEDICAL JOURNAL, May 4th, 1907. [5] Taylor's *Principles*, p. 497. [6] *Les obsessions et la psychasthénie*, p. 80. [7] Ibid., p. 502; Haskovec, *Contrib à la connaissance des idées obsédantes*; Raymond, *Leçons cliniques sur les maladies du système nerveux*, 1901, p. 115.

THE third Italian congress on diseases of occupation will be held at Palermo in October.

FRENCH CONGRESS OF MEDICINE.—The French Congress of Medicine will be held in Paris under the presidency of Professor Debove. The opening meeting will take place on Monday, October 14th, and will be continued on the 15th and 16th. Reports will be presented by MM. Linossier and Castaigne on the treatment of simple ulcer of the stomach; by MM. Gilbert Ballet and Delhelm and M. Sainton on the pathogeny and treatment of exophthalmic goître; and by MM. Carrière and Marcel Labbé on haemophilia. Among the subjects proposed for discussion are the surgical treatment of simple ulcer of the stomach; is pulmonary tuberculosis of aërial or intestinal origin? acid-resistant bacilli; the therapeutic action of radium; ionic medication; the use of collargol; the therapeutic value of tuberculin; the serumtherapy of dysentery and cutaneous sporotrichoses.

REVIEWS.

THE COMPARATIVE ANATOMY OF THE LABYRINTH.

A large amount of work upon the anatomy of the internal ear has been done by Claudius, Hyrtl, Danker, Alexander, and Retzius, but Dr. Gray's research upon the macrosopic anatomy of that important sense organ[1] is by far the most elaborate and complete which has yet been undertaken. The work has occupied a period of seven years, and, as the title indicates, it includes in its scope all classes of vertebrates except fishes. The first volume, however, deals only with certain groups of mammals, including primates, cheiroptera, carnivora, ungulata, edentata, and rodentia. The general conclusions which Dr. Gray deduces from his observations are that as all animals, whatever their habitat, are subject to the influence of sound waves, it may reasonably be expected that the cochlea will show little or no evidence of retrograde changes, and investigation supports this assumption. Further, Dr. Gray believes that in the case of two animals of a given order it may be assumed that the one with the greater number of turns in its cochlea is the further removed from the original common ancestor; and in association with this assumption it is interesting to note that amongst the primates, whilst the usual number of turns is 2¾, as in man, the lemur's cochlea has only 2¼ turns, and the cochlea of the yellow faced baboon makes 3¼ turns. No great objection can be made to Dr. Gray's suggestions regarding the cochlea, but his remarks regarding the semicircular canal seem less surely based. He accepts the belief that the canals have nothing to do with sound, but serve to give the animal a sense "of the direction in which it is moving or being moved," and he is of the opinion that this sense reaches its highest development in birds and fishes. On the other hand, he admits that the canals are poorly developed in the porpoise, and he attributes this to the fact that the movements of the animal are more vigorous than delicate, more particularly as regards the movements of the head on the trunk; by this admission it would appear that he weakens his position with regard to the reason why the canals are so well developed in fishes. It would, however, be unfair to urge any criticism at present regarding conclusions, whilst the whole of the evidence is not before us; and for the success of his method and his beautiful illustrations we have nothing but congratulations to offer to the author. We would, however, point out that it would have been a great advantage for the reader, for purposes of comparison, if the various labyrinths had been photographed from the same point of view.

NEUROLOGY.

The *Nervous System of Vertebrates*[2] by Dr. J. B. Johnstone, is one of the most interesting and instructive books that it has been our fortune to read recently. It is a most lucid exposition of the gradual evolution of the nervous system of vertebrates, so far as it is at present known and understood. The author makes no secret of the fact that our knowledge of the comparative anatomy and functions of the nervous system is still very incomplete; nor does he make any attempt to suggest that the conclusions he has formed and which he expresses in this volume may not be modified or added to by the results of further and more exhaustive investigations. On the contrary, he throws out several suggestions which are well worthy of the attention of would-be investigators who are seeking an object on which they may direct their energies. Commencing with a general survey of the morphology of the nervous system, Dr. Johnstone next considers the main points associated with its development, and afterwards deals *seriatim* with the evolution of the various functional divisions the somatic and visceral afferent divisions, the somatic and visceral efferent divisions, and the sympathetic system. He then proceeds to discuss the centres of correlation and their gradual specialization, the cerebellum, the mid brain, the diencephalon, and ends his volume with a delightfully clear exposition of the main features of evolution of the cerebral hemispheres. Amongst the many good things contained in the volume, perhaps one of the best is the account of the gradual evolution and specialization of the cerebellum and the discussion upon its possible functions. Dr. Johnstone holds that the cerebellum "is not shown to be a necessary link in the nervous mechanisms which control muscular action, but it seems to add something to the voluntary movement." One of the most important points which Dr. Johnstone brings clearly into view is the apparently proved fact of the transference of function from one to another part of the nervous system during the course of phylogenetic development. The book teems with interest, and will be useful and suggestive to the busy practitioner as well as to students of medicine and science.

Dr. S. A. K. Wilson, Resident Medical Officer of the National Hospital for the Paralysed and Epileptic, Queen Square, has ably translated MM. Henry Meige and E. Feindel's monograph on *Tics and their Treatment*,[3] a work which represents the high-water mark of medical knowledge on this difficult and hitherto somewhat obscure subject. The volume not only stands for the observations of the authors continued over a series of years, but it also contains the views and teaching of Professor Brissaud, who contributes a preface in which he practically associates himself with all, or nearly all, that these his collaborators have expressed. The word "tic"—an unfortunate name no doubt—has a quite definite meaning according to the higher neurology, but it has been confounded almost universally outside neurological spheres with such spasms as spasmodic wryneck to say nothing of its application to certain forms of paroxysmal pain. Tics proper are purposeless quasi-involuntary habitual movements of cortical or psychical origin, as blinking of the eyelids without any object of protection, frequently repeated, and possibly unconscious—it is a psycho-neurosis. The authors discuss the pathogeny, varieties, relation, diagnosis, and prognosis of tics. They also make a vigorous stand against the view of their irremediable nature, and develop in a valuable way the treatment by re-education—an important contribution to the scheme for the development of the habit of correcting bad habits, so important in many and wide fields of mental and bodily hygiene. Dr. Wilson has been able to combine with this translation the views and definitions of the authors contained in their later-published work. He has also revised and largely supplemented their bibliography, bringing it, in fact, up to date, and has added a critical appendix. We know of no work on the subject likely to be so useful to English readers as this.

ANATOMICAL, PHYSIOLOGICAL, AND PHYSICAL DATA.

Dr. Hermann Vierordt's collection of anatomical, physiological and physical data and tables[4] is a compendium of knowledge of human anatomy and physiology and of those facts of physics which are important to medical men so far as such knowledge can be compressed into numbers and percentages. In the anatomical part the absolute and relative weights and sizes of all parts of the body at all ages are given. Data are given with regard to the influence of the mother on the weight of her children, and formulae are provided for discovering the surface area of the body, the weight being known. The length and thickness of nerves and the number of fibres seen in their cross sections are all noted and even the sizes of the bony nuclei in ossifying bones at various periods are grouped in tabular forms. The physiological section consists of tables showing the composition of every part of the body, of all its secretions and excretions and of the foods and drinks necessary for its sustenance. Its temperature, its working capabilities, the elasticity and cohesion of its nerves, their conducting powers, and its nerve reaction times are all set forth in figures; the periods of menstruation, the length of pregnancy, and the physiological alterations it produces in the mother are duly recorded and comparison is instituted

[1] *The Labyrinth of Animals, including Mammals, Birds, Reptiles, and Amphibians* By Albert A. Gray, M.D Glas., F.R.S.E. Vol. i. 1907. London: J. and A. Churchill. (Crown 4to, pp. 208, 2 figs., and 31 stereoscopic photographs. 21s.)

[2] *The Nervous System of Vertebrates.* By J. B. Johnstone, Ph.D. London: John Murray. 1907. (Med. 8vo, pp. 370, 180 illustrations. 15s.)

[3] *Tics and their Treatment* By Henry Meige and E Feindel. With a preface by Professor Brissaud Translated and edited by S. A. K. Wilson, M.A., M.B., B.Sc. London: Sidney Appleton. 1907. (Demy 8vo, pp 407. 9s.)

[4] *Anatomische, physiologische, und physikalische Daten und Tabellen.* Von Dr. Hermann Vierordt. Jena: Gustav Fischer. 1906. (Royal 8vo, pp. 615. M. 17 50.)

between the maternal and the fetal blood. The physical part deals with thermometric scales, atmospheric pressure, the density and volumes of water at certain temperatures, the specific weight and the temperature of certain well-known bodies, and electrical measures and units. In an addendum of practical medical analects information is provided concerning the heights of certain well-known health resorts, the best temperature for foods and drinks, the proper period for sleep at various ages, the incubation periods of various infectious diseases, maximal and lethal doses, the strength of bones and joints, electrical excitability and resistance, and the comparative weight and height of the body at different ages. Authorities are quoted for the various data given, and the conclusions of different observers are set side by side for comparison wherever such a course seems advisable. The labour of collection and arrangement must have been very great, and the author may be congratulated that its usefulness is demonstrated by the fact that his book has attained a third edition.

PULMONARY SYPHILIS.

DR. BÉRIEL,[5] of Lyon, has produced a very complete account of the effects of syphilis in the lung. Syphilitic lesions of the lungs are at present comparatively rarely recognized during life, and the pathological changes in these organs which may properly be attributed to syphilis are still only incompletely understood. Recent researches, and the discovery of the spirochaete, have opened the way to a more precise study of the part played by syphilis in various disease conditions. In a short historical review of the advance of knowledge of syphilis the author divides the course of progress into a legendary period, which did not close until the beginning of the nineteenth century, a period of doubt or hesitancy occupying the first half of this century, followed by the documentary period which at length furnished exact knowledge. The earlier chapters of the book are concerned with the various pathological changes which occur in the lung as the result of syphilis, in the newborn, in older children, and in the adult. This section is carefully done and well illustrated with numerous plates showing the histological appearances. Following this comes the consideration of the clinical varieties of syphilis of the lung in the newborn, in children (in whom syphilitic manifestations in the lungs appear to be uncommon), and in the adult. In the adult, syphilis may produce acute affections of the lungs, such as bronchopneumonia; the chronic pulmonary lesions comprise chronic interstitial pneumonia, fibrosis, and gummata of the lung. A marked feature of the syphilitic diseases of the lung is the tendency to the production of bronchiectasis. The subject of syphilis and tuberculosis of the lung is dismissed very briefly. Cases of syphilis of the lung have been mistaken for tuberculosis, and vice versa, and we should have welcomed some discussion as to the differential diagnosis. It is well recognized that pulmonary tuberculosis not infrequently occurs in persons who are or have been the subjects of syphilis, and it is possible for tuberculosis and syphilitic disease of the lung to be present together. The author quotes a case in which this association was found, and apparently the tuberculosis was mistaken during life for syphilis, but he gives little assistance towards preventing such an error. Treatment is discussed in the concluding chapters, and it is pointed out that, though cases of the more acute and early manifestations of syphilis of the lung may be cured by appropriate medication, when the stage of pseudo-tuberculosis with cavitation has been reached, and in the sclerosis which results from syphilis, treatment is of little effect and cure is not to be expected. Altogether the book is a valuable contribution to the study of syphilis of the lung, though the author's interests are apparently more associated with the pathological than with the clinical aspects of the subject.

[5] *Syphilis du Poumon chez l'Enfant et chez l'Adulte.* Par le Dr. Bériel. Paris: G. Steinheil. 1906. (Cr. 8vo, pp. 346; 22 figs. Fr.4).

THE FALLOPIAN TUBE.

So much has recently been written by German pathologists about diseases of the Fallopian tube, that some of their countrymen have wisely taken into consideration the normal histology of that important structure. Opitz demonstrated about two years since that the limits of the peritoneum at the ostium form a kind of ring, like a hem around a buttonhole, efficient in maintaining its patency in health. In this pamphlet, *Ueber der Bau der Tuben*,[6] the author, Dr. KROEMER, devotes himself to a subject already discussed by Hoehne. In order to obtain a thoroughly correct idea of the arrangement of the folds of the tubal mucosa he employed Born's method of "reconstruction models." A very large number of sections, over 4,000, in fact, were made through a Fallopian tube at three points, one in the tubo-uterine, one in the isthmic, and one in the ampullary portion. The sections were modelled on thin slips of wax which were afterwards carefully placed together in due order. Pressure of a warm spatula was sufficient to weld the plates together. Thus, a wax model was obtained, and the precise nature of apparent or true diverticula made clear. The diagrams and their explanation, in Dr. Kroemer's pamphlet, will interest the anatomist, but it is also highly important that the pathologist should study them, especially when he is engaged in the investigation of salpingitis and the precise nature of tubal pregnancy. As was to be expected, many appearances once held to be signs of disease are shown by Dr. Kroemer to be present in perfectly normal and healthy tubes. This is the case with the fusion of the free ends of plicae as well as with diverticula, which are extremely common. The fusion does not imply old inflammatory changes. A diverticulum is not a trap for ova. As long as the cilia of the tubal epithelium are sound they will waft the ovum well over these perilous recesses. When the ciliary movement is interrupted any ovum that passes along the tubal canal will be in danger. Such is Dr. Kroemer's opinion. It stands somewhat in opposition to Couvelaire's theory that inflammatory changes such as that observer noted in his preparations made from early tubal sacs, appear as though secondary to the abnormal implantation of the ovum, and not as its cause.

[6] *Untersuchungen ueber den Bau der menschlichen Tube: zur Klärung der Divertikelfrage mittels Modell-Rekonstruktion nach Born.* [Researches respecting the Structure of the Human Fallopian Tube for an Explanation of the Diverticulum Question, after Born's Method of Reconstruction Models.] Von Dr. Paul Kroemer, Privatdozent für Geburtshilfe und Gynäkologie an der Universität Giessen. Mit 26 Abbildungen in Text. Leipzig: S. Hirzel. 1906. (Roy. 8vo, pp. 31, 26 illustrations. M. 2)

PHONETIC CONVERSATION.

THE difficulties met with when the doctor and nurse are incapable of understanding and speaking the language spoken by a patient has led to the publication by PAUL BLASCHKE of a *Dictionary of Medical Conversation*,[7] consisting of three parts; the first, a medical translator, in which the author, with the assistance of collaborators, has attempted to arrange sentences, words, and questions under the heading of the principal word, which are translated into German, with a phonetic pronunciation according to the English tongue. In this part, prayers, model letters, and a short index of German words are also given, while in the introduction a scheme of the method of pronunciation is appended. In the second volume the same is given in German, with English translations and pronunciation. The third volume consists of a dictionary of medical terms in French, German, and English intermixed. The value of these volumes depends, first, on the practicability of the scheme, and, secondly, on the accuracy of the translations and pronunciations given. With regard to the first point, we may admit that, theoretically, an understanding might be arrived at between two persons who do not possess any knowledge of each other's language by means of such a book. Having submitted it to the test of actual practice, we found that in some experiments the elaborate method of phonetic spelling employed led to confusion and unintelligible jargon. On the other hand, even when the sentences read by a person without any knowledge of German, could be understood, the rate of progress was so painfully slow that it seemed as if a real patient would be in danger of dying before the medical man could discover where his pain lay or what he was complaining of. In the next place, the knowledge displayed by the author or his colleagues of our own tongue

[7] *Dolmetscher am Krankenbette.* [The Medical Translator] By Paul Blaschke (with assistance of various collaborators). 1907. Berlin and Leipzig: W. Rothschild; Paris: Boyveau and Chevillet; and London: Churchill and Co. (8vo, 3 volumes—pp. 211, 224, and 450. Part I and Part II, 3s. each; Part III, 7s.)

does not inspire us with confidence. The practice of calling "typhoid fever" "gastric nervous fever" or of "having a congestion of blood to the head" is unusual, to say the least of it. Misspelt words abound throughout the work, while in not a few cases the translation of words given is actually incorrect. A few examples may be cited: "Feld-lazarett" for "Field ambulance" instead of "field hospital"; "Ich kann nicht einschlafen" is translated as "I cannot sleep" instead of "I cannot go to sleep"; "Reinigen Sie mir die Zähne" is rendered as "Clean me my theeths." The word "blister" does not occur in the sense of blistering plaster, but the German physician is told to say "apply a Spanish fly behind your ear." The odd look of the phonetic transliterations may be partly gathered from the equivalent given for the English of "machend Sie abwechselnd heisse und kalte Kompressen"—*mehk bai törns hott änd kohlt kätäplasms;* this is a poor specimen, for our fount of type does not contain all the queer letters and signs employed in these volumes. It is unnecessary to deal further with the work. If the authors are interested in obtaining a trial for the system, it would be well to have the whole series revised by some one who understands both German and English well; but seriously, is the game worth the candle?

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

VI.—BURGESS'S LION OINTMENT.

In consequence of some inquiries as to the composition of Burgess's Lion Ointment made by a correspondent, it appeared to be of interest to submit this proprietary article to examination. It is supplied by E. Burgess, 59, Gray's Inn Road, London, W.C., in boxes at 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and jars at 22s.; the 1s. 1½d. box contains 1 oz., and the next size 3 oz.

A circular wrapped round the box is headed "Amputation avoided—the knife superseded," and continues:

E. Burgess' Lion Ointment and Pills Have deservedly become the popular remedies for curing all diseases of the Skin, Old Wounds, Ulcers, Abscesses (including Tuberculous), Tumours, Polypuses, Piles, Fistulas, Shingles, Venereal Sores, Whitlows. Broken Breasts, Bad Legs, Boils, Scurvy, Scrofula (*King's Evil*), Scorbutic Eruptions, Poisoned Wounds *of all kinds*, Stings, Venomous Bites, Scurf, Ringworm, Itch, Corns, Chilblains, Chapped Hands, Cracked Lips, Cuts, Burns, Scalds, Gatherings in the Ear, Toothache, Earache, Neuralgia, Rheumatism, Gout, Sciatica, Quinsey, Bronchitis, Asthma, Deafness, etc.; also Ulcerous Affections of the Womb, for the treatment of which apply to the Proprietor, personally, or by letter, *in all cases free.* These invaluable medicines have not been introduced as remedies for any of the above complaints, or diseases, until they have in each case PRACTICALLY proved EFFECTUAL. To those who are suffering from diseases *apparently* rendering amputation necessary, they are especially recommended, as they entirely do away with the necessity for the same by drawing all the cause of the disease from the affected part, cleansing the blood, and restoring the system to a sound, healthy, condition.

They are vegetable preparations, and the Ointment can be applied with perfect confidence to the most tender skin. It is entirely free from all poisonous ingredients, a great recommendation for the nursery—for which it is invaluable.

Directions for use. In *every case where practicable* the Ointment should be applied as a *plaister* spread on a piece of soft linen large enough to cover not only the wound (if any) but all inflamed parts. This rule applies from the worst cases of ulcers to a simple cut. Bathe the part affected with warm water for a few minutes when changing the plaister, which should be done night and morning, or oftener if there is much discharge.

More detailed directions are also given for its use in particular cases.

In spite of the ointment being a "vegetable preparation," analysis showed the principal ingredient to be lead oleate (lead plaster); this is blended with resin, wax, and fatty ingredients; vegetable extracts and active principles were found to be absent. It is not possible to separate the ingredients of an ointment like this sharply one from another; and, since the ingredients are not themselves simple bodies but mixtures liable to rather wide variations, they can only be approximately determined, and, as regards the lard and oil, even identification cannot be placed beyond doubt, nor can small quantities of some other fats be certainly stated to be absent. These, however, are matters of minor importance. The composition arrived at has been checked by varying the analytical methods, as well as by comparison of various ointments prepared according to formulae suggested by analysis. As a result of the investigation, the following formula was arrived at, which gives an ointment similar to the "Lion" ointment:

Lead plaster	13 parts.
Beeswax	20 ,,
Resin	11 ,,
Olive oil	12 ,,
Water	6 ,,
Lard, to	100 ,,

Estimated cost of the ingredients, about 10d. per lb. of ointment.

*Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL: 1904, vol. ii, p. 1585; 1906, vol. ii, pp. 27, 1645; 1907, vol. i, p. 213; vol. ii, pp. 24, 150, 209.

THE INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

ANNUAL MEETING OF THE COMMITTEE.

THE Committee of the International Association of the Medical Press met this year in London. Its first sitting was held on August 3rd at the house of the London Medical Society in Chandos Street. The President of the Association, Professor POSNER, of Berlin, was in the chair, and the first business consisted of the reports of the delegates present concerning the progress accomplished in their respective countries. Dr. BLONDEL, speaking as general secretary and as a French representative, pointed out that the Association had proved its usefulness at Lisbon, where it had obtained for all its members special privileges and press facilities when the Fifteenth International Congress of Medicine met in that town. In France they had not yet succeeded in finding a formula that defined what constituted gratuitous journals. Some of these papers, though issued by commercial firms and in the main distributed gratuitously, did pretend to have a few subscribers.

Dr. DOLÉRIS, another representative of France, dealing with this subject, pointed out that such papers often paid their contributors very well, and published articles of real scientific value, yet the whole thing was done merely to advertise a manufacturer's goods. These papers competed disastrously with genuine medical journals.

Dr. BLONDEL gave various reasons to account for the absence of representatives of the Dutch, the Italian, the Russian, and certain other nationalities. The Committee on this occasion consisted of representatives of the Austro-German Association of the Medical Press and the Associations of the Medical Press of Belgium, France, Great Britain, and Norway.

The most encouraging note was given by Professor POSNER when reporting for Germany. Practically speaking, all the medical papers published in the German language had joined the Press Association; thus they had become a genuine power. Therefore they were able to bring pressure to bear on the manufacturers of chemical products and the drug trust. They had, however, to their surprise and gratification, been met half-way by the manufacturers, who seemed equally desirous of combating dishonourable journalism. With this aid they were able to draw up a black list of more than forty medical men, not all of them Germans, for some came from other countries to offer their services to German manufacturers. The German Association of the Medical Press had determined never to publish anything these persons wrote. Medical practitioners had been known to describe cases supposed to be in their own practice where so many patients had been cured by the use of a particular medicament. If the manufacturer of that medicament refused to buy their article, they simply changed the name of the drug and offered the same article to the manufacturer of another somewhat similar medicine. Now it was quite determined to put an end to such dishonourable practices, and Professor Posner was pleased to say that the manufacturers themselves were helping in the matter.

Dr. DAWSON WILLIAMS, as International Treasurer, presented the accounts of the Association, which were approved: a part of the money will be devoted to a

publication describing the various national branches of the international organization of the medical press.

When the morning sitting was terminated the Committee and some members of the British Association of the Medical Press were entertained to lunch by Mr. Bland-Sutton in his Persian Hall, which is an exact reproduction, on a smaller scale, of a portion of the palace built by Artaxerxes Mnemon.

When the time came for toasts Mr. ADOLPHE SMITH spoke in French on behalf of the British section. He did not fail to make some happy allusions to the beautiful surrounding decorations and their symbolic meaning.

Mr. BLAND-SUTTON, in responding, was pleased to find that the meaning as well as the beauty of the Persian Hall was fully appreciated.

After lunch the Committee resumed business. The questions arising out of the German report were taken first. Dr. DÉJACE thought that the Germans, by their prophylactic action, had set an example which would bear fruit; but in Belgium the law was very severe against anything like black lists and boycotting.

Professor POSNER pointed out how difficult it was to judge what was printed in other countries and in an unfamiliar language. Even at home we were sometimes deceived and failed to recognise the "puff." Therefore he urged that nations should exchange notes and warnings.

Dr. BLONDEL explained what was often done in France; how manufacturers reimbursed very liberally the cost of genuine experiments, and how some medical men claimed they had as much right to put matters in their most favourable light as a barrister pleading for a criminal in the dock. It was very difficult to know where to draw the line. However, as the Germans had succeeded in establishing a censorship in such matters, no journals affiliated to the Association should publish any German matter that was not approved by the German Branch. This was the beginning of really effective action, and if it continued, the power to do much good would soon be acquired. It was very fortunate that the good manufacturers of Germany had joined with the good journals to prevent dishonourable proceedings. After a lengthy discussion, the following resolution was adopted:

> The International Association of the Medical Press, taking into consideration the articles written by medical men in favour of medicinal products, urges the national associations to exchange with one another information on the character of these articles and of their authors.

The Committee then considered the question of refusing to publish certain advertisements, agreeing that these should be refused by all the papers or by none. Unanimity had been attained in Germany, but it must be extended to all the countries represented, and therefore the ensuing resolution was carried:

> The International Association of the Medical Press urges all the national associations of the medical press to come to an agreement in regard to the medical advertisements that should be refused.

This concluded the business arising out of the German report, and no resolutions were proposed in respect to the French report. The British representative had but little to say, except to explain how matters stood in England, and that some of the desires expressed by the Committee were already realized in this country.

In the evening the Committee was entertained to dinner by Mr. and Mrs. Arbuthnot Lane at their house in Cavendish Square. Here more speeches were made and much cordiality prevailed.

Next morning, August 4th, the Committee met again in the Persian Hall of Mr. Bland Sutton's house, and considered the utter confusion which prevailed in respect to international congresses; in regard to the great international congress of medicine in particular there was no consecutiveness. Every congress was organized anew, and no account taken of the experience acquired at previous congresses. The same blunders were repeated over and over again. It was strongly felt that there should be a permanent organization to prevent the clashing of congresses with one another and to limit their number.

Sir FELIX SEMON gave an account of the manner in which the laryngologists had been buffeted from pillar to post by the different congresses, with the result that they had arranged a special International Laryngological Congress, and, after having been eight years without attending any congress whatsoever, they would have to attend two congresses in two years.

The Committee, in view of these facts, adopted the following resolution:

> The International Association of the Medical Press considers that it is necessary to establish a continuity between the international congresses, and expresses the desire that a permanent bureau be created. This bureau should consist of the presidents and general secretaries of national committees of former congresses, and the bureau of the forthcoming congress, together with the general secretaries of the former congresses of medicine and the general secretary and president of the International Association of the Medical Press.

Professor POSNER announced that at the forthcoming International Congress of Hygiene and Demography, which meets at Berlin at the end of September, arrangements had been made for special privileges to be given to the members of the International Association of the Medical Press but not to other press representatives. At his invitation, the Committee of the International Association of the Medical Press decided to meet at Berlin next year.

Then, and after a few words of explanation, Dr DAWSON WILLIAMS moved the following resolution, which was at once carried:

> The Committee of the International Association of the Medical Press, taking into consideration the question of the rights of authors, is of opinion that the author of an article published in a medical journal has not the right to authorize commercial firms to reproduce his article without having previously obtained the sanction of the editor or publisher.

This concluded the business, and the Committee adjourned to Oddenino's Restaurant, where they were entertained to lunch by the President of the British Association of the Medical Press, Mr. Thomas Wakley. At dessert time the health of the host was proposed by Professor POSNER and Dr. BLONDEL, who expressed their admiration and gratitude for the manner the *Lancet*, under Mr. Wakley's editorship, had helped to maintain the honour of the medical profession

Dr. DAWSON WILLIAMS proposed the health of Professor Posner, who as President of the International Association of the Medical Press, had conducted the business in a most able and fruitful manner. Though the questions handled were extremely difficult and delicate, he thought the resolutions adopted would be approved by the profession in all countries.

Dr. DÉJACE and Dr. DOLÉRIS then drank to the health of the Secretary of the British Association of the Medical Press, Mr. L. Eliot Creasy, who had been the principal organizer of the present meeting and receptions. Thus, after mutual congratulations and with the hearty exchange of friendly sentiments, the Committee finally separated, well satisfied with the work it had done.

INTERNATIONAL SANITARY CONVENTION IN MEXICO.—The third International Sanitary Convention is to be held in the City of Mexico, December 2nd to 7th, this year. The previous conferences were held respectively in Mexico in 1902 and in Rio de Janeiro in 1906. It is expected that each delegate will bring a paper relating to the nation which he represents, with a report on the existence of any transmissible diseases—especially bubonic plague, yellow fever, cholera, malaria, beri-beri, and trachoma—that may prevail within its boundaries. Among the questions to be discussed are the transmission of yellow fever, the means to be used in combating the *Stegomyia fasciata*, tuberculosis, and various administrative measures. Surgeon-General Walter Wyman is Chairman of the International Sanitary Bureau.

ITALIAN MEDICO-LEGAL SOCIETY.—An Italian Medico-Legal Society has lately been founded. Its head quarters are in Rome. Professor Lombroso is honorary president, the actual President being Professor S. Ottolenghi. The aims of the Society are the devolopment of "a true and healthy medico-social conscience," the furtherance of scientific researches on medico-legal subjects, and the enlightenment of public opinion on such questions. The first problem with which the Society proposes to grapple is the necessity of establishing intermediate institutions for the reception of offenders who can neither be imprisoned nor admitted into a lunatic asylum.

SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

(Continued from page 355.)

Medical Supervision of Secondary Schools.

A discussion on the medical supervision of secondary schools was held in Section II.

Dr. Gottfrid Jörnell, Medical Inspector of Schools at Hernösand, Sweden, contributed a paper on the existing system in that country. Medical inspectors of State schools existed as far back as the fourth decade of the last century; in 1863 their duties were prescribed by an ordinance, and by 1868 probably every public school in Sweden had its medical officer. Their duties were extended and further defined in School Codes issued in 1878, 1892, and 1905. At the present time the duties of medical inspectors of elementary schools are embodied in a special set of "Instructions to School Medical Officers" forming part of the Code of 1905. They are:

1. To examine the scholars medically, in order to find out the state of health of each.
2. To adopt preventive measures against the spread of infectious complaints.
3. To superintend the school premises as regards their sanitary condition.
4. To provide against the scholars being overburdened with lessons, etc., and thereby becoming overworked.
5. To attend indigent children, in case of illness, free of charge.
6. To draw up statements upon any problem that may arise regarding school hygiene, and to hand in periodical reports of the work that it has fallen to their lot to discharge.

The secondary schools are under the control of a State Secondary Schools Supervisory Board which has the services of an expert in hygiene. On the staff of every such school there is a medical officer, appointed and paid by the State; candidates for these appointments are not required to go through a special course in school hygiene, as hygiene forms part of the curriculum for a degree in medicine. Before admission to a State secondary school a pupil must produce certificates of vaccination and of freedom from any illness or defect unfitting him or her to take part in school work, or likely to have a deleterious influence on other pupils. The duties of a medical inspector of secondary schools are:

1. To examine candidates for entrance to the school free of charge, if they are in indigent circumstances.

[Formerly there was a rule requiring him to attend children free of charge, but this article is no longer in force for secondary schools, though retained for primary schools.]

2. At the beginning of every term, in the presence of the teacher of gymnastics, to carry out a careful investigation of each one of the pupils, and to hand in to the headmaster or the class superintendent a report upon the result of such investigation. The pupils' sight and hearing are to be tested once every year.
3. To conduct a medical examination of any pupil, either at the suggestion of the headmaster or otherwise, whenever his or her state of health seems to require it.
4. To afford the headmaster any advice that may be necessary or expedient in case of an outbreak in the school of any infectious complaint, and to take measures to prevent the spread of the infection. A definite period of absence from school in the case of pupils having caught some infectious complaint, varying with the nature of the disease, is not prescribed by the school Code. In no case, however, is it permissible for a pupil who has had any such illness to return to school until the school medical officer shall have pronounced him or her free from infection, and have drawn up a certificate to that effect.
5. To inspect all the school buildings thoroughly, and to be present at the teaching of gymnastics at least once a month. In regard to the latter duty, attention should be particularly directed to seeing that the pupils are not set to execute movements or do exercises which are unsuited to their physical powers.
6. To spend at least one hour per week on the school premises, for the purpose of affording advice, if such be needed, to the headmaster, the other masters or the pupils. This hour of attendance is to be employed partly for the reception of any member of the school community who desires to consult a medical man, and partly for the inspection of the conditions under which the pupils do their work; how they are seated as regards light and air, etc., how they sit at their desks, the posture of their bodies, etc., and what degree of mental alertness they display at their lessons, etc., etc
7. To supervise the curriculum of work. The chief point for the medical officer to observe here is whether work and leisure are suitably apportioned in the curriculum, so as to avoid the occurrence of overstrain among the pupils. If the medical officer finds cause to disapprove of the curriculum in any particular he should bring the fact to the notice of the headmaster.
8. To hand in annual reports upon duties performed by virtue of office.
9. When new buildings are being erected or old ones altered or repaired, to make sure, provided no other specialist in hygienic matters is called in, that the requirements of hygiene are being duly and adequately fulfilled in the building work as it proceeds.
10. To be present at any meetings of the staff of the school where questions pertaining to the health of the pupils or the sanitary arrangements on the school premises are being debated and to take an active part on such occasions not only in the discussion but likewise in the voting or drawing up of the resolution of the meeting.

Thus so far as hygienic matters are concerned the school medical officer is an actual member of the staff with full powers, and not merely an advisory officer; it is also his particular province to see that the State regulations with regard to physical education and the sanitary state of the school buildings are carried out. Dr. Jörnell summarized these regulations as follows:

(*a*) The schoolhouse should be in a healthy situation, with plenty of space near it for outdoor games; a play-shed for resting, sheltering, or hanging clothes in should be erected on the outskirts of the playground.

(*b*) The rooms intended for teaching in, etc., are to be constructed in accordance with regulations issued specially in regard to them.

(*c*) The gymnasium must be provided with a changing-room, a douche and a bath-room conveniently near at hand.

(*d*) Opportunities should be provided during the summer for the pupils to receive instruction in swimming.

(*e*) With reference to the heating, ventilating, lighting, and cleaning of the various rooms, lobbies, etc., in the school-buildings, the headmaster shall draw up, in consultation with the school medical officer, a detailed plan of procedure, to be scrupulously followed out by those whom it concerns. A copy of that plan of procedure should be affixed to the wall in some suitable place in the school building.

(*f*) To each pupil there should be allotted about 6 cubic metres of space and 1½ square metres of floor area. The pupils' desks should vary in size to accommodate scholars of different heights. Short-sighted and deaf pupils are to have suitable places assigned to them by the school medical officer.

(*g*) Textbooks, etc., are to be printed in a type which is sufficiently large and clear to preclude any danger of the sight of the pupils being injured by the use of them.

The school medical officer is not required, under the code now in force, to do any teaching.

Dr. Janet Campbell, L.C.C. Medical Staff (Education), gave some account of the system of medical supervision of the secondary schools of the London County Council, a duty only recently undertaken. As most of the pupils intended to become teachers, systematic inspection was necessary to maintain the standard of health at the highest possible level, and to eliminate at an early stage those pupils who through physical defects were unfit to become teachers. Every child was examined, soon after admission, as to vision, hearing, teeth, general physique, and the condition of heart, lungs, and spine, and measurements of height, weight, and girth were recorded. The parents were notified as to defects, of which anaemia (with associated headaches), lateral curvature of the spine, and round shoulders were the commonest in the girls' schools. Much might be done to improve the physique by remedial exercises, and the co-operation of the drill mistress in these special classes was essential. It was important to guard against overstrain in the case of delicate children. Games such as hockey, tennis, and cricket formed an important part of the curriculum, but even in regard to them medical supervision was very necessary.

Mrs. Coghill Hawkes contributed a paper on medical and physical examination in polytechnics and secondary and primary schools for girls. Such examinations were at present usually voluntary, and therefore not a good test of the general health of the school. Remedial exercises were left to the gymnastic mistress without supervision by the medical inspector, whose duties were confined to notifying the parents and the head mistress of defects in the children's condition. In Sweden, medical inspection was compulsory in private, high, and elementary schools. In Denmark it was compulsory in elementary schools only. Each school had its own medical inspector, who visited the school in autumn when new students joined, and at stated intervals; pupils suffering from special diseases or deformities were referred to specialists, to private clinics, or to those attached to medical gymnastic

training schools, the cost in the poorer schools being defrayed by the Government. Mrs. Coghill Hawkes said that as medical inspector of the Central Foundation Schools for Girls, Bishopsgate, an endowed secondary school with a large percentage of Russian, German, and Polish children, she had adopted Scandinavian methods; there was a clinic for medical remedial treatment under the charge of a gymnast trained in Swedish who worked under the medical inspector's supervision. The medical inspector visited the school weekly, examined all the children at the beginning of every term, and weakly or undeveloped children were given a special course of remedial exercises lasting 12 to 14 weeks, for which a fee of 5s. was charged. Children with marked curvature, rickets, or other defects were treated daily for half an hour, the fee being 1s. a week. Both courses were self-supporting. The educational gymnast or health mistress undertook all the gymnastic classes, and was responsible for games and swimming. During 1904 5, 47.4 per cent. of the children were referred for special treatment. The general physique of the children at the school was not good; there was a want of stamina among the older girls, narrow chests were common, the teeth were in bad condition, causing anaemia and headache; many girls had eye defects, and spinal deformity and ear disease were met with, but there was a singular absence of lung disease and of valvular disease of the heart. The paper concluded by a recommendation that a clinic should be established in connexion with each group of schools under the Education Committee, to which defective children could be referred for treatment, the time so spent being recognized as part of the time devoted to educational work.

Dr. C. PASCHEFF (Delegate of the Bulgarian Government) stated that the principle of appointing a school doctor to each secondary school had been in force in that country since 1903-4; they were appointed by the Ministry of Public Instruction and were paid about 3 000 francs a year by that Ministry; they worked under the orders of a general medical inspector of secondary schools. There was a consulting room in each school, at which the school doctor attended every morning for the examination of pupils, who were also permitted to consult him if they felt ill. The principal duties of the school doctor as laid down in the Ministerial regulations were: (1) To exercise continuous supervision over the sanitary condition of the schools and their equipment. (2) To examine the pupils regularly, to safeguard their health, and to take all measures necessary against infectious and epidemic diseases. (3) To make and record anthropometric observations. (4) To give lectures to the teachers on school hygiene, first aid, and popular medicine. (5) To give elementary instruction to the pupils on anthropology, physiology, and general and school hygiene. (6) To make an annual report. The supervision of elementary schools was at present in force only in the capital, Sofia; in the country districts such work was entrusted to the departmental and district medical officers. In Sofia the employment of specialists for diseases of the eye, of the ear nose and throat, and of the teeth, had been introduced into one secondary school and the system was being extended. Indigent pupils also received medical treatment. For feeble and delicate children summer colonies were organized during the summer vacation; a benevolent society of ladies in Sofia was erecting suitable buildings, and one of these, in a charming situation at Pantcherevo not far from Sofia, was already completed. It was hoped that the system would be extended so that poorer pupils should have the advantage of pure air and good nourishment during the holidays.

Mrs. WATT SMYTH said she had just returned from Bulgaria, where, through the courtesy of the Government, she had been allowed to make a study of the school systems prevailing in the different parts of the country. She had been particularly struck by the excellence of the system of medical inspection of secondary schools introduced by Dr. Schichmanof, Minister of Public Instruction. It had been actually in force for four years, and might be copied with advantage in England. The history of Bulgaria made this particularly interesting, inasmuch as a generation had not yet passed since that country had achieved its independence. Education was made compulsory in 1879, and under the enlightened influence of Prince Ferdinand had been rapidly developed on broad lines. It was significant that whereas twenty-five years ago, of the recruits of the Bulgarian army only 10 or 12 per cent. could read or write, now 97 per cent. could both read and write, the 3 per cent. being of other nationalities. Mrs. Watt Smyth wished to make it quite clear that in all the secondary schools a doctor—who, in the case of girls' schools, was a lady—attended every day for as many hours as was necessary. A well-equipped consulting-room was provided in each school building with all the appliances necessary for the examination of scholars. A separate health notebook was kept by the doctor in the office for each child during its school life. On first admission the scholar was examined undressed and entries made of weight, height, chest measurement (at rest and in full inspiration), vital coefficient, muscular force, and physical defects. The sight and hearing were tested and the teeth examined, the general condition considered, and the health of the parents, and the diseases from which the child had suffered entered. A medical certificate giving the history as to measles was required. The examination was repeated twice a year in the upper and three or four times a year in the lower classes. If at this examination a child was found to be sickly, ill-developed, or suffering from definite disease, the parents were communicated with, and the child given leave of absence for treatment by the family doctor. The school doctor visited the class rooms, and if a child was ill for more than one day it was sent home, and not again admitted without a certificate signed by its family doctor and countersigned by the school doctor. The latter kept a special list of scholars suffering from any serious disorders, such as heart disease, and watched them carefully. The doctor had the power of dispensing pupils from gymnastics, or from any classes considered injurious to their health. At the same school at Sofia, out of a total of 950, 100 had been dispensed from certain classes during the last term. It was interesting to note that during the past three years in the girls' secondary schools at Sofia no case of infectious disease from among the day scholars had got further than the doctor's consulting room, and there had been no cases among the boarders. All children predisposed to, or suffering from, tuberculosis were rigorously excluded; those in whom the disease could be definitely diagnosed were sent to sanatoriums, and those who were considered to be predisposed were sent for rest and an open-air life to a Colonie Scolaire. With reference to what Dr. Pascheff had said about benevolent effort, in Sofia a benevolent society had obtained a house 10 kilometres from Sofia, and it was being furnished to serve as a prophylactic home for children who were failing in health. The school doctor was responsible for the hygienic condition of the school and equipment; for the health of the scholars, especially with regard to checking infectious diseases; for the anthropometrical records; he gave lectures to the teachers on personal and school hygiene, first aid, and popular medicine, and to the scholars instruction in the rudiments of anthropometry, physiology, and general and school hygiene. This was particularly important in view of their intelligent co-operation in the future medical examination of elementary school children and the checking of infectious diseases. He made an annual report on the work accomplished; he was also consulted with regard to lessons and the framing of the time-table and with regard to punishments. He advised as to revaccination. Very poor children, except in cases of infectious disease, were treated at school or at home by the school doctor, and food and medicine supplied to them from the funds of the school bank. The school doctor entered in a register, signed once a month by the school director, all general notes with regard to the health of scholars, defects in the school building, infectious outbreaks, etc. At intervals the school doctors held meetings and other doctors were invited to take part in the discussions at these meetings. This appeared to the speaker a very complete scheme, inasmuch as it insured a supply of healthy teachers, who, being trained in hygiene, would be fitted to apply its principles in the schools to which in due course they would be appointed.

Dr. BEATTIE (Newcastle-on-Tyne) observed that in England the medical inspection of secondary schools, even those receiving resident pupils, was not compulsory. He considered that every school receiving a grant from Government ought to be subjected to such inspection.

Dr. J. J. Cronin (Assistant Chief Medical Inspector, New York City) questioned whether the Swedish system was not defective in not requiring school medical officers to undergo a special course of training in their duties, and instanced the requirements as to the type used in text-books as one point on which the ordinary course of medical training provided no information.

Medical Inspection of School Children.

The First Congress at Nuremberg appointed a committee consisting of Dr. Cuntz of Wiesbaden and Dr. Oebbecke of Breslau, to draw up a uniform scheme defining the duties of school doctors. The former undertook the general part or method, the latter the details.

Dr. Cuntz presented to Section II a schedule of the general duties of a school doctor, which included the recognition and prevention of disease in school children and the supervision of the measures to be taken at the school, including temporary remission of study, but not including treatment. Among the general duties of the school doctor was the examination of each child, preferably during the second or third month after its first entrance into the school. He should pay professional visits to the school, make periodical inspections of the children, and advise as to the hygiene of the buildings and the school courses. He should report annually on his work in the school and on the investigations he had made, and should make suggestions for the improvement of defective health conditions.

Dr. F. Oebbecke (Breslau) said that school hygiene comprised the hygiene of the building, of the method of instruction, and of the pupils. The school doctor should not treat, but supervise only. Every pupil, whether normal or abnormal, ought to be provided with a health card or notebook in which the observations of the school doctor, of the teacher, and of the parents should be entered. This should follow the pupil throughout the whole school career. For the previous history of the child a special form should be supplied, to contain the information supplied by the parents. There should also be a form on which to report to parents. It was necessary also to keep two class lists—one for the purposes of the school superintendent, and the other to contain the records of weight and height.

Dr. Janele, School Physician to the City of Prague, presented a paper, written in conjunction with Dr. Moucka. The examination of children in the schools of Prague was conducted on the ordinary lines of a clinical examination modified to suit school conditions. The various physiological systems were explored by the usual means. The condition of the oral and nasal cavities, of the teeth, of vision, and of hearing to the whispered voice were all registered carefully. The classification of the general health was difficult, and anthropometrical measurements only useful if systematic.

Dr. Thiersch stated that in Leipzig school children were examined systematically at the beginning of the second term after admission. A preliminary examination of sight and hearing was made by the teachers under medical supervision. A detailed examination was made by the school doctor a little later, and was willingly attended by parents. The doctor began by delivering a short preliminary lecture on personal hygiene, then in the presence of mother and teacher each child was completely examined, the teacher taking notes for the health card which belonged to each child, and passed with it from class to class. If defects were found, the parents were directed to seek treatment. Subsequent examinations were made at least biennially, and more often if defects were found.

Dr. H. Meredith Richards (M.O.H. and M.O. to the Education Committee, Croydon) said that the system in force at Croydon had ultimately in view the examination of every school child. The medical officer was assisted by health visitors, who attended at the schools and visited the homes to give advice and to obtain information. Procedure in schools dealt with infectious diseases, verminous conditions, ringworm, and routine medical examination. The first routine examination took place when the child entered school, and was usually a superficial examination, except in selected cases. The subsequent routine examination, which was more searching, took place when the child entered a higher school; abnormalities were discovered, and, if treatment was required, the health visitor went to the home and suggested that the child should be under medical treatment, and herself gave advice on matters of domestic hygiene. Special supervision was carried out every six months, and supplementary examinations were held from time to time as to mentally and physically defective children. The medical officer held a conference with the health visitors and superintendent of attendance officers twice a week. The system was adapted to local conditions, and variations would be necessary in order to adapt it to the requirements of counties and of rural and smaller urban districts. As, however, 80 per cent. of school children lived in towns, the problem was mainly an urban one. Treatment of diseases affecting school life must ultimately be undertaken by the State.

Dr. A. Greenwood (M.O.H. Blackburn) narrated the beginning of medical inspection in Blackburn schools, and expressed the opinion that the school doctor must be well versed in the physiology and psychology of educational methods, the relations between medicine and child study, and fully alive to the problems which arose in connexion with mental deficiency, defective eyesight, etc.

Dr. César Roux, Medical Inspector of the Schools of Nice, described the system of medical inspection of the children in the communal schools of that city instituted in October, 1905. He attributed its success to the health notebook (*livret scolaire de santé*) with which each child was provided. The staff of medical inspectors consisted of a medical inspector for general medicine and surgery, a specialist for diseases of the eyes, another for diseases of the ears, throat and nose, a dermatologist, and a surgeon-dentist. The result of the medical examination was entered in a register in the custody of the medical inspector. From this register certain particulars were entered into a small notebook given to the child; this notebook was kept up to date, and was a history of the child's health throughout its school career. Without it no child was admitted into the school. The book contained the general rules with regard to the admission of new pupils, to the exclusion of children suspected to be suffering from an infectious disease, and their readmission after recovery. The name, age, and residence of the child was entered, together with particulars as to the weight, height, thoracic circumference, and condition as to vaccination. In the same book the head master or mistress recorded the date and cause of exclusion on every occasion, and the medical inspector recorded his permission for the child again to attend school. The last page of the book contained a brief statement of the main principles of personal hygiene, with special reference to school life.

Another discussion on a closely-related subject was that on the co-operation of teacher and doctor in education. Dr. John A. Hayward, Medical Officer to the Wimbledon Education Authority, said that school inspection could only be satisfactory when doctor, teachers, and nurse worked harmoniously towards the same object—the well-being of the children. Work should be so mapped out that each had a definite share of responsibility. Lectures on school hygiene should form a part of every teacher's education. The nurse should visit the homes and so get into kindly relations with the parents of school children.

Mr. T. P. Sykes, M.A., ex-President of the National Union of Teachers, condemned the system of half-time child labour in factories, and asserted that the system of certifying factory surgeons failed to check its abuses. Out of 4,000 children who had passed as half timers from his school in the last twenty years, not one had been rejected; even children with very defective sight had been allowed to go to work. This was one reason why teachers in elementary schools wanted the help of the doctor. He should be a reasonable man, with power to do things and order things to be done. He should remember that the school was not so much a place for enabling the maximum number of children to write and spell, but rather a centre of civilizing and refining influences; the teacher wanted his help in getting an eye upon the individual child as to physical, mental, and moral development. In Bradford, so far, the doctor had not been able to accomplish much, his hands had been tied, but the doctors could do infinitely better work than they were allowed to do.

Dr. Duncan Forbes, M.O.H., gave an account of the system in Cambridge, where a school nurse was appointed in October, 1906, at a salary of £95 a year. The teachers were provided with printed instructions as to symptoms,

etc., and supplied lists of cases of known or suspected infectious diseases. The nurse verified the diagnosis; the medical officer of health took action on her reports, and when there was doubt visited cases himself. The nurse visited cases weekly, and in some ringworm cases applied ointments as treatment. Before issuing a return certificate the nurse visited the child, and, if necessary, took material for examination at the Public Health Office. In certain schools children with ringworm were allowed to return to school under conditions for which the nurse was responsible. She also tested vision, colour vision, hearing, and carried out the routine work of medical inspection, thereby economizing the time of the medical officer of health enormously.

Dr. MARION HUNTER, Medical Officer, L.C.C. (Education), said that organized medical inspection should be compulsory and universal, and the medical inspector should never take anything for granted, but should see all and test all. Mothers were educated through medical inspection of infant schools and many conditions were at that age in a remediable stage, notably tuberculous disease of bones.

Mme. GESTE (Caudebec) discussed the proper organization of infants' schools. It was necessary to give instruction in hygiene to the mothers in order to insure co-operation between parents and teachers, and it was a good plan to arrange meetings in the afternoon at which simple lectures on air, exercises, feeding, sleep, and clothing could be given. Parts of the system of medical inspection should be a health diary kept by the head mistress, a register kept by the school doctor, and a dispensary at which urgent cases and slight indispositions could be treated. In another communication the speaker said that the head mistress weighed and measured the children, reported to the school doctor and pointed out to him any child who had been ill or had not made good progress since the last examination. Medical supervision should be begun in the infant school to prevent serious diseases and deformities which often had their origin in the first stage of school life, from 2 to 7 years of age.

In a paper on the relation of medicine to the teaching profession, M. FRIEDEL, of the Pedagogic Museum at the Ministry of Public Instruction in Paris, expressed the opinion that public kindergartens were a hygienic necessity in any rational elementary school system. Medical supervision of the children should begin there, as it was easier and more likely to prove successful. Compulsory elementary schools should be common for all children; the hygienic conditions of the schools would be improved thereby, and the systematic selection of the children as to general health, hygienic habits, and educational attainments would be an important result. The instruction in elementary and secondary schools should be co-ordinated, and there should be greater correlation in the teaching of all subjects; this would render it possible to adopt rational and comprehensive time tables and programmes without the danger of overworking pupils or teachers. Methods of public instruction must be modified in order to harmonize with modern ideas of physical, mental, and moral development, the outcome of co-operation between school teachers and school physicians.

Mdlle. J JOTEYKO described the working of the pedological laboratories of Mons for women and Charleroi for men preparing to become elementary school teachers. Practical instruction was given in the methods of studying the physical, psychical and moral constitution of normal and abnormal children; of estimating muscular and cerebral fatigue, and of recognizing the strength, the tendencies, and the aptitudes of children. The speaker stated further that persons already engaged in teaching were admitted to the courses in laboratories.

In Section IV (Instruction in Hygiene for Teachers and Scholars), Sir Victor Horsley had given notice of the following resolution:

> That this Section is of opinion that the principles and practice of personal hygiene and of domestic science should form part of the education of every citizen and should be taught in all schools and universities.

When it came up, Mr. WHITE WALLIS, one of the Honorary General Secretaries, moved on behalf of the Executive Committee of the Congress to omit the words after "citizen," and to insert:

> The qualification of every teacher and the curriculum of all training colleges and universities.

A protest was made on the ground that the amendment had not appeared on the programme of the day, and that as it dealt with a different question it was not really an amendment, but ought to be the subject of a separate resolution. Mrs. WATT SMYTH was prepared with such a resolution, and the matter was deferred until the following day.

When the proceedings were resumed there was a very large attendance, and the amendment of the Executive Committee to Sir Victor Horsley's resolution was immediately rejected, but when the resolution was put, Dr. GULICK (New York) and others objected to the inclusion of domestic science, the contention being that these words might and would be interpreted as limiting the resolution to girls. Eventually the resolution was unanimously adopted in the following form:

> That this Section is of opinion that the principles and practice of hygiene should form part of the education of every citizen.

Mrs. WATT SMYTH then moved the following resolution:

> That practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades.

The principle embodied in this resolution was evidently in accord with the general sense of the meeting, and it was at once carried unanimously. Both resolutions were subsequently reported to the closing general meeting, and were again carried unanimously. The following resolution was also adopted at the instance of the American School Hygiene Association:

> That all schools having courses for the training of teachers should give instruction in (*a*) personal and school hygiene, (*b*) the principles and practice of physical training, and that to each of these subjects should be given as much time as the major subjects in the course.

The following resolution, likewise drafted by the American School Hygiene Association, was adopted in Section II:

> That in every city and town adequate provision should be made both for sanitary inspection of schools and for medical inspection of school children, the latter to include not only inspection for contagious diseases, but also of eyes, ears, teeth, throat and nose, and of general physical condition.

In Section X, Hygiene of Residential Schools, the following resolution was adopted, at the instance of Dr. T. D. ACLAND:

> That, in the opinion of this meeting it is desirable that all secondary schools, including public schools, should be subjected to inspection in matters relating to hygiene and sanitation, and that a copy of this resolution should be forwarded to the President of the Board of Education, praying him to take such steps as he may consider necessary to carry such inspection into effect.

All these resolutions also were unanimously adopted at the closing general meeting.

TREATMENT AT SCHOOL IN ITS SOCIAL, ECONOMIC, AND PROFESSIONAL ASPECTS.

A discussion on this subject also was held in Section II. Dr. CRONIN (New York) stated that in the three months ending December 3rd, 1902, 24 000 children were excluded from the schools of the city of New York on account of pediculosis, trachoma, ringworm, conjunctivitis, favus, mollusca, and impetigo, before treatment in school was adopted. Since treatment had been adopted they had all been allowed to attend under the care of a competent school nurse. The communicability of these diseases was reduced to a minimum. Of the total number of children, 30 per cent. were from one to two years behind the proper class for age; 95 per cent. of these backward children showed some defect of eyes, nose, throat, nutrition, etc; 150 were especially treated in school, fitted with glasses, adenoids removed, etc., then sent to summer resort. Evidence was given of extraordinary benefit derived. "A report on seventy-six of these children six months subsequent to operation showed that, without exception, all had improved in conduct, effort, and school efficiency as measured by their warranted promotion to a higher class." Many were able to advance two terms. Great economic waste in adult life was traced also to the neglect of children at school. Dr. Cronin did not advocate treatment in school for other than minor complaints, such as a nurse

can deal with, but said that it was imperative for the State to insist on treatment being undertaken where necessary, free where circumstances demanded it. Where parents are able to provide treatment, but neglectful, the State must step in and insist.

The Rev. Henry Iselin, M.A. (London) deprecated any form of treatment at school at all as lessening family responsibility. The disadvantages of lessening this far outweighed any direct good done to the physical or mental condition of the child. The school must discover the educable, and education had nothing whatever to do with remedying defects; this must be left entirely to other agencies.

Dr. A. C. E. Gray (London) read a paper on medical treatment at school, and its relation to the family doctor. He deprecated establishment of any treatment at school, which had a great tendency to lower the prestige of the family doctor; he was of much greater value than the so-called specialist. He often had himself to blame by not rising to the occasion; he must thoroughly equip himself. In the case of parents too poor to pay, the children should be referred not to dispensaries, but to the family doctor, who for these cases should be paid by the State. Many now could quite well pay, but had become pauperized by the hospitals and dispensaries.

Dr. Friedrich Stocker (Lucerne) read a paper in which he contended that the establishment of a system of treatment at school (polyclinic) was necessary from the point of view of the child, the school, and the State. The necessity was largely due to the incapacity or indifference of the parent to care for the child. Treatment must be free and carefully guarded against misuse. Parasitic skin disease must in all cases be dealt with, irrespective of the wish of the parent, if not at once attended to at home. The general polyclinic would deal with skin diseases, simple cases of ear and eye troubles, minor surgery and such conditions as anaemia, scrofula and rickets. There should be a separate dental polyclinic. The school polyclinic did not clash with the general practitioner, but as a matter of fact led parents to be more careful about the health of their children, and attention to the very poor raised the health standard among the others and indirectly reacted to the advantage of the practitioner.

In the discussion which followed the reading of these four papers, Dr. Buchan (St. Helens) said that he saw no difference in theory, so far as parental responsibility was concerned, between medical inspection by the State and medical treatment. The great necessity was that the work of medical practitioners should be co ordinated with that of the school authority. School hygiene was much too great a part of preventive medicine to be carried out by a few medical officials only.

Dr. Lewin spoke of the necessity for some health society or similar organization to work in close touch with the education authority and with the public health authority, to whom all necessitous cases would be referred. This would lead to a personal friendly visit to the home, as already practised in some places, and help would be given where required, and, where necessary, the child actually taken to a doctor or hospital—such an arrangement was better than treatment in school.

Dr. E. H. T. Nash (Beccles) objected to all treatment in school with the exception of the granting of spectacles in necessitous cases. He insisted on most careful discrimination.

Dr. Marion Thornett said that in London glasses were now so very cheap that it was hardly ever necessary to give them free in school.

Dr. Cuntz (Wiesbaden) said that there were so many polyclinics that a school polyclinic was superfluous. When treatment was not availed of pressure could be brought to bear on parents in Germany.

Dr. Cronin, in reply, said that necessitous children must not be neglected for any theory: if proper provision were made for this generation there would be increasingly less likelihood of similar conditions existing in subsequent ones. Simply to exclude children unattended, as some advocated, was absurd. He emphasized Dr. Stocker's point that the more attention paid to the necessitous cases in school the more, through imitation, would other children be attended to; the practitioner had nothing to fear, but more conjoint action was necessary.

Definition, Causes, and Prevention of Blindness.

Dr. Adolph Bronner (Bradford) communicated a valuable paper on the definition of blindness in children, its causes, and prevention, to Section IX (Special Schools for Blind, Deaf, and Dumb Children). He said that taking the definition of blindness generally accepted, which was that the vision of both eyes was so bad that the patient could not see well enough to find his way about in daytime or count his fingers at 12 in., there were in 1901 no less than 25,317 blind people in England and Wales, or 771 to every 1,000,000 of the population. These figures were not very accurate, as a large number of blind persons would not acknowledge that they were blind, and, on the other hand, a fair number who were blind, but whose vision could be improved by operation or treatment. Of children under 15 years of age 423 out of every 1,000,000 were blind. But in addition, in dealing with the question from the educational point of view, all children who suffered from defective eyesight—at any rate, those who did not see well enough to read ordinary school books—should be included. He suggested that some universal standard of defining the various degrees of weak sight be adopted for all countries, so that statistics might be uniform. Vision of $\frac{6}{9}$ to $\frac{6}{12}$ to be called "fair sight," $\frac{6}{18}$ to $\frac{6}{24}$ "weak sight," $\frac{6}{36}$ to $\frac{1}{60}$ "bad sight," and less than $\frac{1}{60}$ "blind." It would then be easy to divide the children into different classes for teaching purposes. At present there were generally only two classes, for the normal-sighted and for the blind. There ought to be at least one intermediate class for those children who were not completely blind. In time some of these could be drafted into the first class, and some into the third, or blind class. About 80 per cent. of all cases of blindness in children were due to disease. Magnus examined 3206 blind children, and found that in 17 per cent. the blindness was due to congenital disease or malformation of the eyes, mostly hereditary, or due to congenital syphilis; in 33 per cent. to diseases of the eye, including 23·5 per cent. which were caused by purulent ophthalmia; in 8 per cent. to trauma, while in 33 per cent it was the result of some general disease which had affected the eyes; in 7·5 per cent. to small-pox. Roughly speaking, 8 to 10 per cent. were due to congenital syphilis. Trachoma, or granular lids, was very rare in this country; Harman could only find 5 cases in 70,000 English children. For many years, 1859 to 1900, contagious conjunctivitis was very prevalent in the Hanwell schools, and caused many cases of blindness. This was, however, stamped out by the untiring energy of Mr. Sydney Stephenson. These statistics only included children who were quite blind, and not with defective eyesight, or blind in one eye only. Thus cases of progressive short sight, so often met with in school children, cases of ulceration and disease of the cornea, which are so very common and cause defective eyesight, and many others, were not included. There are 25,317 blind people in England, and in about 40 per cent. the blindness could have been prevented, so that there were some 12,000 blind people in England whose blindness might have been prevented. There were at least half a million with defective eyesight, in tens of thousands of whom the sight ought to have been perfect. Congenital blindness could, to a great extent, be avoided, if persons suffering from hereditary diseases of the eye, chiefly cataract, optic atrophy, and retinitis pigmentosa, were not allowed to marry. When both parents are born blind, often all the children and their offspring become blind. In Bradford there is a family of blind parents with five blind children, all of whom are in the workhouse. A large number of cases of congenital blindness are due to syphilis, and many cases of blindness which occur in early childhood are caused by the same disease. These could, to some extent, be avoided, if every case of syphilis were treated for two years, and not allowed to marry during that time. Infantile purulent ophthalmia (due to the gonococcus of Neisser) was a common cause of blindness; according to Magnus, it accounted for 72 per cent. of all cases under 1 year, and for 23·5 per cent. among children of all ages. Formerly 30 to 50 per cent. of all infants, at least in the lying-in hospitals, became affected, but the percentage had been reduced to between 0·25 and 0.1 per cent.; formerly of those attacked 40 to 50 per cent. became blind, now only about 4 per cent. lose their sight, and 15 to 18 per cent. had defective vision. The best methods of treatment were as soon as

the eye became red, or there was the slightest discharge, to inject 2 per cent. silver nitrate between the opened lids three times a day, or, better still, 10 to 20 per cent. protargol or argyrol every one or two hours, or peroxide of hydrogen, or to insufflate airol powder, and, in some severe cases, to paint the everted lids with 10 per cent. silver nitrate, also wash out the eyes with 1 in 3,000 to 5,000 perchloride of mercury lotion (warm), and with a glass irrigator, and not with a dirty sponge, as was so often done. It was often difficult to get the applications within the lids without the help of a skilled nurse, and if a patient could not be adequately treated at home, it should be admitted to hospital. Most cases occurred in the private practice of midwives; the Midwives Act ought to lead to improvement, for according to the rules of the Central Midwives Board

every midwife must decline to attend alone, and must advise that a registered medical practitioner be sent for, whenever there is inflammation to even the slightest degree of the eyes and eyelids.

They, however, very frequently did not do so. Dr. Bronner said that last year at the Bradford Royal Eye and Ear Hospital he had seen no less than five cases of purulent ophthalmia, in which the midwife had treated the eyes for several days and not sent for a doctor. Three of these children were hopelessly blind. The rule should be made much more stringent, and the midwife should be obliged to send for a doctor within twelve hours, and if she neglected to do so, should be most severely punished. In America, in some States at least, they were fined up to 100 dollars, and got up to six months' hard labour. Why could not the same be done in England? Some years ago the Committee of the Bradford Royal Eye and Ear Hospital communicated with the Registrar-General, drawing his attention to the prevalence and danger of purulent ophthalmia, and suggesting that every registrar should be requested to give a printed card with the following instructions to every person who registered a birth:

Instructions Regarding New born Infants.

If the child's eyelids become red and swollen, or begin to run with matter within a few days after birth, it is to be taken to a doctor immediately. The disease is very dangerous, and if not at once treated may destroy the sight of both eyes.

The reply received was, said Dr. Bronner, very characteristic:

A similar request has been made three years ago by the Ophthalmological Society, but it is impossible to adopt the suggestion, because the registrars are not salaried officers, but are paid by fees for the registration of each birth, and cannot be asked to undertake a duty—the distribution of such cards—unless they are offered some additional fee.

The Committee of the hospital now sent cards to every midwife in Bradford, and also special instructions for her own guidance. Cards for distribution could be obtained from the Committee of Gardner's Trust for the Blind, 53, Victoria Street, Westminster, through its secretary, Mr. Wilson. Diseases of the cornea (a fruitful cause of defective vision) and blindness, which could not be properly treated in the homes of the poor, where careful nursing was often impossible, ought to be admitted to hospital; but, unfortunately, the number of beds was totally inadequate. In the West Riding of Yorkshire, for instance, with three million inhabitants, there were only two hundred beds for eye patients, and nearly all of them were filled with operation cases. According to Magnus, 7.49 per cent. of the cases of blindness were due to small-pox. Before the days of vaccination 30 to 40 per cent. of all cases of blindness were caused by small-pox. In 1901 no less than 980 cases of small-pox in children of 5 to 13 years were recorded. Of the 230 children who had been vaccinated (some probably most inefficiently) only 3 died, whereas of the 750 who had not been vaccinated, no less than 141 died. In spite of these and many other equally convincing figures, the Government was affording still further facilities for non-vaccination. With regard to the vision of school children, Dr. Bronner urged that as soon as a child could read large letters its sight should be tested by the teachers; if it were less than $\frac{6}{9}$, the child should be referred to the medical officer, who should inform the parents of the result of his examination. If the parents refused to send their children to a doctor or to provide glasses, they should be compelled to do so if able to afford it; if too poor, as the local authorities refused to supply glasses, the work must be taken up by voluntary associations. In London such an association found it possible to supply ordinary glasses at 10d. a pair. It was absurd that medical men should examine the eyes of the poor at the hospitals gratuitously, and that these patients then often fall into the hands of unscrupulous opticians who make a larger profit on the glasses than the consultation fee of an ordinary medical man would have been. A large number of school children and others fell into the clutches of advertising quacks, who not only robbed them of their money but ruined their eyesight by supplying wrong glasses. The best method of dealing with the children of the very poor would be that they should be examined at the schools by specially qualified medical men at the expense of the local authorities, who should also supply glasses free of charge when the parents could not afford to pay for them. All children with defective eyesight should be examined at least once a year, and a record of each case kept. This was specially important in myopia. Often the vision became rapidly worse, and special attention should be paid to these children to see that they were supplied with proper glasses, and did not bend their heads when reading and writing. In conclusion Dr. Bronner urged—

That all midwives should be obliged to notify every case of purulent ophthalmia to a doctor within twelve hours. Should she fail to do so, her licence should be withdrawn, and she be fined not less than five pounds.

That greater facilities should be afforded for the practical and theoretical teaching of ophthalmology at our medical schools, and practical and written examinations should be made compulsory.

That every case of reported blindness should be examined by a medical man, to see if nothing could be done to improve the vision.

That people suffering from hereditary blindness should not be allowed to marry. No person who has had syphilis should marry for at least two years after he has contracted the disease.

Classification of Children in Blind Schools.

Mr. N. Bishop Harman, F.R.C.S., Oculist, London County Council Blind Schools, contributed a paper to the same Section on the mental characteristics associated with blindness of varying causation and their relation to training. He classified the causes of blindness observed among the children in the L.C.C. blind schools under four heads:

Group I. *Blindness due to causes in their nature accidental* constituted 44 per cent. Of this group, 84 per cent. (37 per cent. of the total number of blind) owed their loss of sight to infantile purulent ophthalmia, 7 per cent. to purulent ophthalmia at later ages, 7 per cent. to accidental injury and sympathetic ophthalmia resulting therefrom, and 2 per cent. to small-pox. The great decline in the proportion of the blind in which the blindness was due to the purulent ophthalmia of infancy was a striking testimony to the efficacy of modern medicine. Small-pox was formerly more notorious as a blinder of the eyes of the young, but now the tale of those thus blinded had shrunk to insignificant proportions; none of the children on his list so affected had been vaccinated. Accidental injuries to the eyes and the disastrous sympathetic ophthalmia which must follow therefrom was not so common amongst children as amongst adults. Adults ran greater risks by reason of their occupations, and children would run fewer risks than they did were the atrocious game known as "tip-cat" less popular in its season. The blind children in this class were normal but for their blindness, and formed the most hopeful group, not only because the number in it was actually diminishing, but because they afforded the best material to the teacher. They varied in intelligence like normal children, and the present mode of educating the blind in reading, writing, and ciphering by the cleverly-arranged embossed types, in numerous manual employments, in typewriting, in printing, in music, and so forth, seemed admirably adapted to this large group. It was right in its principles, but its details would vary with local circumstances and the possibilities of remunerative employment in after-life.

Group II. *Blindness due to syphilis* formed from 20 to 30 per cent. of the total number of blind children. In the worst cases they were imbecile, more often mentally defective and void of the power of imitation; from this the cases shaded off until it was recognizable only by

experts or not at all until some failure of general health brought out the disease; the best of them might at any time fail in health and degenerate. With such a graduation in condition, and such risk of degeneration, it was impossible to graduate the scheme of training, and it was best to keep to the simplest and most elementary work, the most automatic manual labour, so as to give them the possibility of earning a livelihood. To push on a child in this class because he showed a little ordinary sharpness was no kindness.

Group III. *Blindness due to congenital deformity* included about 20 per cent. and contained children who fell into two sections: (*a*) Those of ordinary or nearly ordinary intelligence with no other obvious defect or deformity than malformation of the eyes; (*b*) those in whom the growth of the eyes had ceased at an early stage, so that they were very defective; in many cases there was a bad family history of blindness. Among them dull wits and incapable brains were the rule, but children in this class should be taught as much as they could be made to understand.

Group IV. *Blindness due to disease of the eye alone* comprised the high myopes, the relatively rare cases of optic atrophy, a few cases of relapsing inflammation of strumous type, and a single case in which both eyes had been removed for malignant disease. The high myopes were not really blind, but the error of refraction was so great that for the purposes of ordinary school work they were blind, and were sent to the blind schools lest their condition should become worse by ill-judged use of the eyes. They must be taught the scheduled curriculum and learn to read and write Braille type; they were usually intelligent and learned it with ease, but when the teacher's back was turned they bowed their heads to see what the regulations required them to learn to read by touch. On examining the children in these schools, Mr. Harman found 30 per cent. totally blind, 40 per cent. with some degree of perception of light, and 30 per cent. who could distinguish printed letters (of any size and at any distance). Of these last, a fair number could read and write a little, and could get about easily without any assistance. They could not be taught, however, in any other place than some school specially provided for them, such as these blind schools. The point was that these children, when they went away from school, would not consider themselves blind, but only "weak-sighted." When they could see print they would not restrict themselves to the limited library of Braille works or write Braille type. The way in which myopes of extreme degree succeeded in their sphere of life, even without the aid of glasses, made it certain that those who learnt in the schools with much care and diligence the practice of Braille rarely continued the usage, but read and wrote like other folk to the best of their powers of vision. If this view was correct, then the schedule that compelled a useless labour to these children was wanting in wisdom. In teaching these children their future ought always to be kept in view. As their sight was defective, they must be taught to work with their hands, but if they had some useful vision, and their condition was such that the surgeon in charge not only did not inhibit the use of the eyes, but permitted it, then these children should be taught to read and write by sight. Books, pens, ink, and paper should not be allowed; but scrolls of large type, with letters 4 in. square which could be read at a distance of a yard, should be used instead of lesson books; and writing should be learnt with blackboard and chalk, free-arm fashion, at full stretch, in large and plain characters. By this means the partially blind would gain all the acquaintance with "letters" that would be well for them, for the most of their work should be manual labour and not literary. In conclusion, Mr. Harman suggested the following classification as useful in school work and helpful to teachers; it corresponded fairly with the group enumerated above:

1. Those children from whom the best results of training might be hoped.
2. Those children whose training should be elementary only, and who, whether they showed capacity or not, should not be permitted difficult work.
3. Those who were likely to benefit but little by mental labour.
4. Those who should be taught sighted script under given conditions.

Dr. H. Wright Thomson (Oculist to the School Board of Glasgow), in a paper communicated to Section II, stated that amongst 52,493 children in 67 schools in Glasgow, the teachers found 35 per cent. to have defective vision. Of these, 14 per cent. were functionally defective only. There was evidence that this functional defect was due to want of training and want of opportunity, and was a mental rather than an ocular deficiency. A portion of it was due to malnutrition. Some of it could be neutralized by modifications of the infant school curriculum—notably by the abolition of sewing and the institution of suitable visual exercise games. The effect of malnutrition might be eliminated by proper feeding.

In the course of a report on the result of an examination of the physical and mental condition of 1,014 children from the first to the eighth year of school life in Rumburg, Bohemia, Dr. Quirsfeld said that the majority of short-sighted children were of weakly constitution, and added that the amount of myopia among girls during the last two years of school life was remarkable.

The Congress Dinner.

A public dinner was held on August 8th at the Hotel Great Central. Sir Lauder Brunton, President of the Congress, who was in the chair, proposed the toasts of "The King" and of "The Queen, Prince and Princess of Wales, and other Members of the Royal Family," which were enthusiastically received. He then gave that of "The Vice-Patrons and Honorary Presidents," and in the course of his remarks mentioned that amongst the Vice-Patrons were Prince Eitel Friedrich of Germany, M. Loubet, and Prince Ludwig Ferdinand of Bavaria. Surgeon-General Evatt, in proposing "The Delegates and Members from other Countries," said that while the Peace Conference was sitting at the Hague the Congress in London was preparing to wage war against ignorance, inhumanity, and all causes that tended to the deterioration of the health of the people. Professor Kirchner, in reply, said all had learnt a great deal at the Congress, and M. Georges Lamy, Inspector-Général de l'Instruction Publique, expressed the opinion that such congresses had a great value in bringing together people who did not use the same language but were united in the effort to secure healthier conditions for future generations by establishing a more intelligent solidarity between men of different nationalities and different Governments. Sir Shirley Murphy gave the toast of the "Permanent International Committee," which was acknowledged by Dr. Mathieu, who referred to the success that had attended the efforts of the Alliance d'Hygiène Sociale in uniting in one common aim the work of kindred societies in France. Sir James Crichton-Browne, in proposing "The Officers of the Congress," said that one great principle had been evolved from the deliberations of the Congress, and that was that from henceforth schools must be more than ever under medical supervision and guidance. Twenty-five years ago he had suggested, in a report to the Government, that school teachers should take certain elementary measurements of their scholars, but the proposal was received with derision and laughed to scorn; in fact, it was described as a farrago of nonsense. At the present time the utility of those measurements was accepted as practical wisdom. Dr. James Kerr, one of the honorary general secretaries, in the course of his reply, warmly acknowledged the work of the Ladies' Reception Committee; and Mr. E. White Wallis, the other honorary general secretary, mentioned the assistance rendered by the Royal Sanitary Institute and its staff. The toast of "The Chairman" was given by Dr. H. Griesbach and briefly acknowledged by Sir Lauder Brunton.

An International Council of School Hygiene.

Sir,—As a slightly incorrect statement was published, it would be as well to explain in some detail the important new move in the matter of school hygiene which was taken at the closing meeting of the recent International Congress.

The permanent International Committee, consisting of about sixty members selected from almost every country, has hitherto only met during Congresses. Arising out of the question of whether it would not be a proper thing to establish a bureau, with a permanent staff, library and museum, and so on, in some central but neutral spot, such as a Swiss or Dutch town, it was decided, as explained

by Drs. Mathieu, Burgerstein, and Kerr, that it would probably lead to greater progress if such bureau was not localized, but if each country had its own centre for the diffusion of knowledge, and to act as a clearing house in the matter of school hygiene, statistics, laws, and regulations. Finally, to supervise in scientific matters, and generally to do all that is possible at all times or places to forward the human interests which are bound up in the special lines of knowledge included in school hygiene, the International Committee has formed a small council.

This Council has all the powers of an ordinary committee. It can form subcommittees of experts on special inquiries. The usual committee procedure is to sit round a table and discuss matters, but this Council will deal with the various subjects that arise, submitting the different topics by correspondence, collating the answers, and finally making pronouncements in urgent matters after a meeting of the Council.

It is obvious that for efficiency such Council should be small and yet have in it elements to secure permanence, and at the same time possibilities of slow but constant change. This has been done by deciding that it shall consist of the President of the past Congress, the President of the Congress which has just been held, and the President of the next Congress. Nine other members are to be elected, of whom three are to be from the country where the Congress was last held, and three from the country where it will be held next, three being selected from other lands. Certain matters, for instance, will almost at once come under the consideration of this Council. Such might be quoted as:

The question of how medical inspection of schools can best be carried out with the maximum of efficiency and minimum of cost.

The question of how far the laws of health can best be imparted to the coming generation, so that later they will know how to care for themselves and those dependent on them.

The best systems or methods of physical training for both sexes at various ages.

The feeding of children requiring proper nutrition, so that it shall be done without developing pauperism, and with regard to those upon whom the cost falls.

These four matters are being dealt with practically in a great variety of ways, and this Council should be able to collect and analyse known facts to show which methods are best for any town or State.

It is obvious that information thus digested will have a very great value, politically as well as educationally, and this Council may in time come to be officially regarded as quite analogous, in matters of school hygiene, to that other Congress of Peace now in session at the Hague.—We are, etc.,

LAUDER BRUNTON,
President.
JAMES KERR,
E. WHITE WALLIS,
Honorary General Secretaries.

August 14th.

MEDICAL NEWS.

THE Central Midwives Board has notified that 243 candidates presented themselves for the examination for the certificate in midwifery held on August 1st last; 200 passed, and the percentage of failures was 17.7. The list showed that of the 200 successful candidates, 150 were trained by hospitals or nursing societies, and 50 by private teachers.

MR. HARCOURT COATES, Consulting Surgeon to the Salisbury Infirmary, and formerly President of the Southern Branch of the British Medical Association, who died on June 16th at the age of 54, has left the residue of his estate upon trust to build a wing or surgical ward to be known as the "Harcourt and Maud Coates Ward." The estate has been valued at £41,486 gross, with net personality £34,136. The Infirmary will probably benefit to the extent of about £20,000.

MORE than fourteen hundred persons have already notified their intention to take part in the Fourteenth International Congress of Hygiene and Demography to be held in Berlin from September 23rd to 29th. Among them are delegates of all the chief countries. The secretary of the English Committee is Professor G. H. F. Nuttall, 3, Cranmer Road, Cambridge; the secretary-general of the Congress is Dr. Nietner, Eichhornstrasse, 9, Berlin, W.C. The fee for membership has been fixed at £1. Relatives of members and college or university students may be admitted to the meetings of the Congress on payment of 10s.

WE learn from the *Poor-law Officers' Journal* that a movement is on foot with a view to presenting Dr. Milson Rhodes of Manchester with a testimonial. Beginning in the Chorlton Union, with which Dr. Rhodes has been so long associated, it has since spread much further afield, and even at this stage a considerable sum has been collected. Dr. Rhodes's connexion with Poor-law work is well known by readers of this JOURNAL; he has written a good many useful works dealing with the administration of workhouses and their annexes, and has always been prominent as an advocate of the claims of those who come within the sphere of the Poor Law, whether as poor and infirm or sick mentally or bodily, or as lay or professional officers. It is satisfactory to know that his energetic labours and the advantage accruing to the persons indicated have not been overlooked by those directly or indirectly connected with Poor-law administration. Subscriptions may be sent to the Editor of *The Poor-law Officers' Journal* at 18 and 19, Whitefriars Street, London, E.C.

SPEECH Day at the Heritage Invalid Craft Schools, Chailey, on August 8th, was attended by a good many of the foreign and other delegates to the International Congress on School Hygiene. These schools are carried on in connexion with the Guild of Brave Poor Things, which has its head quarters in Bermondsey, and branches in various parts of England. These particular schools are intended to enable crippled children to obtain a training in some trade or art which eventually will render them partially, if not wholly, self-supporting. As regards the boys, when their training in the school has made sufficient progress, they are drafted into a trade workshop, carried on in the village, and while there are treated as real craftsmen; they lodge in the village, go to work daily, and receive wages, the workshop being run on business lines. Another craft school for girls is in course of erection in the same village.

CALEDONIAN MEDICAL SOCIETY.—The twenty-seventh annual meeting of the Caledonian Medical Society was held in the Royal Eye Hospital, Bradford, on July 25th. Dr. Andrew Little, Surgeon to the Hospital, presided over a large representative gathering of members from both sides of the border. He took as the subject of his presidential address The Life and Work of the late Dr. John Henry Bell, of Bradford. Dr. Keay, Physician-Superintendent of the Edinburgh District Asylum, Bangour, was elected President for the ensuing year. The annual dinner was held at the Midland Hotel, Bradford, the same evening, when between 30 and 40 members and guests were present. The toast of the Society was proposed by Dr. Swanson, of York, and responded to by the President and Secretary; the Scottish Universities by Dr. Gordon Little, of Blundellsands, and acknowledged by Professor H. J. Campbell, of Leeds University. "Caledonia" was proposed by Dr. Rabagliati, of Bradford, and responded to by Dr. Cameron Gillies, of London.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 6, Catherine Street, Strand, London, W.C., on July 26th. The chair was taken by Dr. J. Brindley James, and there were also present Dr. St. Clair B. Shadwell, Dr. Frederick S. Palmer, Dr. M. G. Biggs, Mr. F. S. Edwards, Mr. J. F. Colyer, Dr. F. J. Allan, Dr. J. W. Hunt, Mr. Edward Bartlett, and Dr. J. B. Ball. The accounts presented gave the records of the business of the Society for the first six months of the current year, and were very satisfactory. The amount paid away in sickness claims is the largest yet disbursed in any half year since the Society started in 1884, but as the number of members has steadily grown, and the average age of the members has also become greater, a regular increase in the amount of the sickness pay necessarily results. This was expected and fully provided for when the table of contributions was constructed. The annuity and life assurance branches of the Society are now stationary, as no new business has been done in them for many years. In the sickness branch, however, notwithstanding the large sums, now amounting to over £100,000, which have been paid away in claims, the funds are still rapidly growing, and the final accounts for the year will show a satisfactory addition to the reserves of the Society. A substantial portion of these reserves has at each valuation of the business been treated as a special security for the due payment of the annuities, usually £109 4s., paid to those members who are permanently incapacitated from professional work. There are now over two dozen members drawing these annuities, which are payable until the limiting age of membership, 65 years. Prospectuses and all further information from Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

British Medical Journal.

SATURDAY, AUGUST 17th, 1907.

THE INTERNATIONAL CONGRESS OF SCHOOL HYGIENE.

The International Congress of School Hygiene is over. The most noteworthy point in connexion with it, as compared with the preliminary conference held in the same building two and a half years ago, has been not so much the quality of the papers read, as the intelligent interest with which they were listened to and afterwards discussed by large and understanding audiences. It would seem as if the sanitary conscience had at last been aroused. This is a very healthy symptom and points to the fact that the time is fast approaching when this country will apply the principle of medical inspection in every school. Another point which could not fail to be marked was that whereas the business of the sections went briskly and the discussions in most of them were very interesting, the general meetings were characterized by emptiness and extreme dullness, with one or two striking exceptions, one of them being that in which Dr. Leslie Mackenzie discussed the medical inspection of schools with full knowledge and statesmanlike impartiality, and was able to state that the Provincial Committees in Scotland had already resolved to begin by introducing hygiene as a subject in institutions for the training of the teachers of elementary schools, this being the one practical advance which Great Britain had to announce to the Congress. There was yet another striking contrast between the sections and the general meeting. In the former the many ladies who have made a serious study of the subjects with which the Congress was concerned, took an active and in some instances indeed the most important part; at the latter they were almost totally ignored. The general addresses were all delivered by men, the platform was bedecked by males, and even at the Congress dinner, though ladies were present, they found no spokeswoman. This is a blunder which the hosts of the next Congress, being French, are not likely to repeat. It was pointed out more than once during the Congress that the school is really an annexe of the home, where woman reigns supreme. The majority of the teachers in elementary schools are women; in the history of education women have played a great part, and they have taken their share or more than their share in the propagation of the new ideas which are rejuvenating school methods; a serious mistake is committed when the opportunity is not seized to recognize on ceremonial occasions the work they have done and are doing.

The question of medical inspection of schools and the teaching of hygiene were the chief subjects of interest in the different sections, many suggestions being made which, if disjointed, were nevertheless useful, having been put into practice locally or brought forward as likely to help the movement; this they certainly will, when the time comes for details of a practical scheme to be considered seriously.

Sir Victor Horsley, whose unceasing efforts have done much to press the importance of the teaching of hygiene in schools, proposed an excellent resolution, which was carried in a modified form at the sectional and general meetings, to the effect that the principles and practice of hygiene should form part of the education of every citizen. This resolution may be likened to the band which binds together the sheaf, for it completed the ideas put forward by the various speakers. Sir Victor Horsley is before his time, but he knows that the English mind is slow to digest, and wishes the cud of sweet and bitter reflection to be thoroughly well chewed, and the British public to realize in good time that there is such a thing as action as well as words.

The point upon which the whole movement turns was contained in a resolution put forward by Mrs. Watt Smyth, and carried, to the effect that practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades. Four years ago Mrs. Watt Smyth pointed out in our columns that the country was not then prepared for "medical "inspection of schools," her point being that teachers must be trained themselves before they could be competent to teach matters concerning health in their schools. To support her theory she published a textbook of hygiene based on physiology for teachers, her aim being to assist teachers to co-operate with the doctors, when the time came, in the work of medical inspection in schools, to supply them with the knowledge required to manage their school-rooms hygienically, and to enable them to teach personal and domestic hygiene to the scholars.

In the history of every country one is constantly reminded of the French proverb, "*tout vient à qui sait "attendre.*" The view just stated was first advocated in our columns. Later it began to receive support in the lay press, as was, for example, shown by an article on the teaching of hygiene in the *Pall Mall Gazette* of October 30th, 1905. In this article we read: "There has been lately published by Mrs. Watt Smyth "a *Textbook of Hygiene based on Physiology for School "Teachers.* It is a striking comment on the educa- "tional enlightenment of these islands that this book "should have at the moment no rival. So far as I am "aware, it is the first book of the kind published in "this country." Like Sir Victor Horsley, Mrs. Watt Smyth was before her time; but happily with the spread of knowledge, the resolution, which is terse and straightforward, regarding the teaching of hygiene in training colleges, can now, with the backing of such an enlightened body as that which was constituted by the 1,600 members and delegates who attended the Congress, come into force to-morrow if necessary.

The Bill for the medical inspection of schools has already passed through the House of Commons, and the unanimous support of the body of thinking men and women of all nationalities who attended the Congress must assist to ensure its cordial acceptance in the House of Lords. The reply of the Board of Education to the request for the teaching of hygiene in elementary schools has invariably been, "Produce teachers trained to teach "hygiene and to co-operate intelligently in the "work of medical inspection." This reply has been not unreasonable. We may be sure that no one is more anxious that this great need should be supplied, and no one more clear as to the advantage to the nation of citizens morally and physically healthy than Mr. McKenna himself. The progress of the movement has been retarded by the unreasonableness and shortsightedness of some of the critics of

the Board of Education. Now we have a thoroughly logical and reasonable request and we may feel perfectly sure that when the prayer that the teaching of personal and school hygiene be put into the curricula of all training colleges for teachers is made, it will not meet with a refusal. It is for those interested not to allow a reaction to set in, for too much time has already gone by, although, looking at the advance the subject has made in the mind of the public, it cannot be said to have been lost.

The question that will next present itself will be, Which is the wisest way to carry out this matter? And this requires such careful consideration, that only the broadest outline can at first be presented. It is pretty evident that all those whose opinion is worth having are quite clear that the guidance of doctors both in the training of teachers and in the carrying out of medical inspection of schools is indispensable. In this matter we do not want the teaching of this all-important branch of education to fall into the hands of half-educated "specialists" in hygiene with axes of their own to grind, who will narrow the subject down to the sciences of physiology and hygiene pure and simple. The possibilities are vast and for the work we want the best type of doctors, who as the future pioneers of medical inspection of schools, will take good care, if only for their own credit, to turn out teachers, healthy in themselves from having had medical supervision in the colleges in which they were trained, capable of taking their part in this great civilizing movement.

The fact that the Bill making medical inspection of schools compulsory will almost certainly become law this session makes the creation of an adequately staffed and properly organized medical department in the Board of Education for England and Wales an urgent necessity of the present situation. The local education authorities throughout the country will shortly have to consider the way in which their new duty is to be carried out; it is important that just as the teaching given in the elementary schools throughout the country is uniform in its principles under the control and guidance of a central authority, so also medical inspection should be conducted on a uniform plan under the control and guidance of the central authority. Public opinion has been convinced that this reform is an absolute necessity; in fact, such complete unanimity is seldom seen in political affairs, but experience of public health administration unfortunately proves that a reform carried through Parliament on a wave of popular enthusiasm may be rendered absolutely illusory through the supineness or the passive opposition of local authorities. The Board of Education ought to be in a position at the beginning to urge local authorities to act, and to advise them how to act; it ought, in fact, at once to set about preparing a memorandum embodying the main principles; later on it will have to advise education authorities as to the adaptation of these principles to special local conditions, for many minor practical difficulties are certain to arise; lastly, it will have not only to exercise continuous supervision over local authorities, co-ordinating their action, but also to collect information as to the working of the system, collating the reports of the various authorities, and analysing the anthropometrical statistics, so that the experience of each may be available for the guidance of all. In addition there is the large subject of the medical and hygienic supervision of secondary schools—a matter, as Dr. Acland pointed out, almost entirely neglected in this country, although the work has long been done in Sweden, while a most complete and excellent system has recently been established in Bulgaria, where it is working exceedingly well. The Board of Education has now a great opportunity, especially in the elementary schools. Practically, it has a clean slate. The whole subject ought to be properly gripped from the commencement, and this will be impossible without a well-organized central medical department.

INJECTIONS OF BLOOD IN MALIGNANT TUMOURS.

Professor Bier, whose work on the production of active and passive hyperaemia has led to a modification of the views held on inflammatory lesions, found when studying the artificial production of fever and inflammation that the injection of the blood of an animal of another species, either into the veins or into the tissues of the human subject, produced a marked inflammatory reaction.[1] These experiments showed too that fever and inflammation, when produced by chemical agents, have a definite relation to one another. A substance which calls forth fever when introduced into the body produces inflammation locally when applied locally, and vice versa. Seven years ago he discovered that if lamb's blood was injected into the tissue in the neighbourhood of a malignant growth in the human subject the growth underwent marked changes. This was well illustrated in a case of extensive sarcomatosis of the intestines of a child. Although the injections did not save the child's life, the sarcomata certainly became considerably smaller. Recently Bier took up the experiments again, and, in the hope of obtaining a strong action, employed pig's blood chiefly. If 10 to 20 c.cm of pig's blood, collected with all aseptic precautions and freed from fibrin with care, is injected into the subcutaneous tissue of a normal individual, inflammation appears after a few hours, increases gradually until it reaches its maximum of intensity after from one to three days, and then gradually subsides. Accompanying this local reaction there is generally a slight rise of temperature, often preceded by a rigor. The reaction is more intense when the injection is repeated, as the human serum has become capable of haemolysing the foreign blood corpuscles. It is quite easy under these conditions to graduate the reaction at will by using smaller or larger quantities of blood. Although numerous experiments were performed, no harmful results were observed in any case.

Bier points out that all inflammatory processes are accompanied by a breaking down of cells and their solution, but that this is especially marked in this form of artificial inflammation; not only the blood cells of the injected blood, but to a certain extent the blood cells of the host also undergo solution. Bier regards the blood as a carrier and producer of ferments. Naturally, if only defibrinated blood be used, no leucocytes are injected, but this is of small importance, since the leucocytes are supplied by the host. When instead of repeating the injection with the same kind of blood various different species of animals were used, the inflammation induced was less intense and was not attended by much general disturbance (fever, etc.). Bier found that the injections did not affect the normal tissues, but profound changes were produced in pathological tissue. In nearly every case of ulcerating carcinoma a check to the discharge and to the sloughing was noted. The pain was not always lessened

[1] *Deut. med. Woch.*, July 18th, 1907.

but he believes that this depended on the implication of nerves in the growth. The effect on the growths themselves varied considerably. In some instances there was little change, in others there was an extensive necrosis, while in others again the growth gradually diminished. Sometimes, indeed, he almost thought that he had succeeded in curing the disease. After the injections of pig's blood in some advanced cases of cancer, the growth underwent a dry necrosis, and practically all the carcinomatous elements disappeared without sloughing or ulceration. In the other cases the cancerous structure gradually disappeared, being replaced by inflammatory infiltration and connective tissue. Bier is doubtful whether it will be possible to effect a cure by this means, or even to improve the patient's condition, and warns clinicians not to employ the injections in the treatment of cancer until further experiment has cleared up much that is still obscure and has enabled a method of treatment to be worked out. He states in conclusion that he has employed the injections of blood in benign tumours (hypertrophy of the prostate), and believes that his results are very encouraging.

Bier has published his results earlier than he had intended, owing to the appearance of the article by von Leyden and Bergell to which attention was directed in the JOURNAL of July 20th, p. 161, in which the action of body ferments on carcinomatous tissue was discussed No harm can result from the early appearances of these two preliminary communications provided a false impression that a cure of cancer has been found is not produced in the lay mind. Both Bier's and Bergell's investigations are important as stones for the edifice of the pathology of cancer, and when there have been collected and fitted together all the various fragments which have been, or it may be hoped will shortly be, discovered by experiment, it may confidently be anticipated that the knowledge of the pathology of the disease will be very greatly advanced. But it seems certain that at present these fragments are of little or no clinical importance when taken alone. It is difficult to believe that a hopeful treatment of cancer will be found by the empirical way. Purely empirical cures for some diseases have, it is true, been found; but it is surely a vain hope to believe that the direst of all diseases will yield to treatment before its pathology has been clearly ascertained. Viewed as a contribution to the effect of artificially-produced inflammation, Bier's new work, like his other contributions on this subject—and, indeed, like his other contributions on a number of subjects—must claim serious attention. His observations hitherto have been those of a careful worker, and we are therefore justified in looking forward to further developments of this work by him and a confirmation of the data by other workers.

INTERNATIONAL CONGRESSES.

As will be seen from a report published at p. 394, the subject of the organization of international medical congresses and the want of continuity between one congress and another, which has frequently led to confusion, was discussed by the International Committee of the Medical Press at its meeting in London on August 3rd. Sir Felix Semon made an interesting statement, the main facts of which have already on various occasions appeared in this JOURNAL, illustrating his remarks by reference to the Odyssey of the laryngologists. The imperfections in the present system probably affect none more than those who are responsible for the conduct of the principal medical journals in various countries, and not much discussion was necessary to induce the meeting to adopt a resolution expressing the desire that a permanent bureau should be created to establish continuity in the interval between the congresses, and to co-operate with the local committee of the next congress in outlining the general plan of the arrangements. The Committee recommended that this bureau should consist of the presidents and general secretaries of national committees of former congresses and of the bureau of the forthcoming congress, together with the general secretaries of former congresses of medicine, and the general secretary and president of the International Association of the Medical Press. A similar course was adopted at the International Congress of School Hygiene in London last week, when an international standing committee was appointed to carry out the instructions of the Congress and to co-operate with the French Committee in arranging the next Congress, which is to be held in Paris in 1910. The Committee in question consists of the following members: Great Britain: Professor Osler, Dr. Kerr, Mr. White Wallis, and Mr. Cloudesley Brereton. British Colonies: Sir John Cockburn, K.C.M.G. Switzerland: Dr. F. Zollinger (Zurich). France: M. Sigalas (Bordeaux), Professor Lefevre (Lille), and Professor Chabot (Lyons). Belgium: Dr. Decroby. Russia: Professor Chlopine. Portugal: Professors Saccadura and Curry Cabral. United States of America: Dr. Walcott, Dr. Gulick, Professor Da Costa. We are not aware whether this Committee has the power to add to its numbers, but it is to be hoped that this is the case, since at present it is far from being completely representative of all the countries concerned. The Council described by Sir Lauder Brunton and the secretaries of the Congress in a letter published elsewhere appears to be a distinct body.

THE SEVENTH INTERNATIONAL PHYSIOLOGICAL CONGRESS.

THIS Congress meets every three years. On the last occasion Brussels gave it a welcome and a temporary home. This year the University of Heidelberg, the famous *Ruperto-Carola*, "the cradle of Science in South "Germany," through Professor Kossel, the President of the Congress, welcomed its members to pursue their labours and interchange ideas in one of the oldest universities of Germany. It is second only in the date of its foundation to the Universities of Prague and Vienna, for its history reaches back to 1386, the date of its foundation by Elector Rupert I. The first social meeting took place in the new Stadthalle, which is pleasantly situated on the Neckar, where the members to the number of about 300 assembled in the spacious hall at 8.30 p.m. on August 11th. Professor Kossel—so well known for his researches on physiological chemistry and as the successor of Professor W. Kühne—in a graceful and appropriate speech welcomed those who had come from far and near. He spoke of Heidelberg as the home of spectrum analysis, and as the seat of the University in which Gegenbauer, Viktor Meyer, Helmholtz, and Kühne had by their researches added new knowledge and extended the bounds of physiological investigation. The number of members present is about 300, and over 200 communications are promised. Indeed, the number of communications is so large that the Congress will meet in four Sections in the Physiological, Anatomical, Mineralogical, and Chemical Institutes, which are adjacent to one another. The Congress will last until Saturday, when an excursion will be made to Baden-Baden. Physiologists are like other folks, they mingle relaxation with work—the day consisting of six hours for work (9 to 12 and 2 to 5)—two hours for

the midday meal, and the evening for dining and subsequent entertainment. On Tuesday evening there was a reunion at the famous Schloss or Castle. On Wednesday evening an excursion to the Mannheim Exhibition was arranged, and on Thursday evening a reception at Ziegelhausen and an excursion on the Neckar; on the latter occasion the Schloss was to be illuminated in honour of the Congress. Finally on Friday, after the Sectional meetings, the usual dinner will be held. The opening meeting was held on Monday, August 12th, at 9 a.m., in the old Aula of the University, when the Minister of State Von Dusch, by order of the Grand Duke of Baden, welcomed the Congress. The Pro-Rector Professor Tröltsch, Professor Gottlied, Dean of the Medical Faculty, and the Burgomaster, each in an appropriate speech, expressed warm welcome and sympathy. After these proceedings, Professor Kronecker paid a glowing and evidently heartfelt tribute to the late Sir M. Foster. Professor Dastre of Paris, gave a short biography of the late Sir J. Burdon-Sanderson, while Professor Sherrington spoke of the loss sustained by the Congress through the deaths of Professor Erera of Brussels, and Professor A. Herzen of Lausanne. The work of the sections began with academic punctuality, but as they met in four different lecture rooms, even Sir Boyle Roche's bird could not have visited all of them. We hope to give a short account in our next issue of such communications as may be of interest to readers. This is the first occasion on which the Congress has met on German soil. The welcome and reception were both alike worthy of the town and the Fatherland. By order of Grand Duke Friedrich of Baden each member of the Congress was given a bronze medal in memory of the meeting. The medal is an exquisite piece of art and bears on one side a splendid impress of "Helmholtz—" MDCCCLVIII–MDCCCLXXI."

THE SLEEPING SICKNESS CONFERENCE.

WE have been invited to correct certain alleged inaccuracies in the article under this title published on June 29th, 1907, p. 1556. The first point as to which an inaccuracy is alleged is that certain sentences in the article contain the implication that the chief representative of Germany alone had insisted that the members of the Conference were simply delegates and had no diplomatic authority to make binding propositions, whereas, in point of fact, such a declaration had been made by all the delegates. If the sentences referred to are read with attention it will be seen that it was not asserted, or even suggested, that the chief representative of Germany was alone in recognizing that the members of the Conference were delegates without diplomatic authority. It was only asserted that the chief representative of Germany had insisted upon this point. The second point has reference to a proposal made by Sir Patrick Manson, and as this is a matter of more importance we may state precisely what occurred, and this statement will have the effect of correcting any previous inaccuracies. It will be remembered that the Conference appointed two Subcommittees, administrative and medical respectively. At the meeting of the Medical Subcommittee on June 18th Dr. Laveran read a report on the prophylactic measures and the researches which it was possible and necessary to undertake with regard to the etiology and prevention of sleeping sickness. He submitted a programme of researches. At the conclusion of his observations, Sir Patrick Manson proposed that in order to render the work of future conferences—which ought to meet every year—more fruitful and more precise it was desirable to divide the task in such a way that the various questions bearing on the study of sleeping sickness should be confided to different reporters (*rapporteurs*), and suggested the following division of labour: Professor R. Blanchard (France) the zoological and biological study of the *Glossinas* and other insects and animals capable of transmitting the disease; Professor Ehrlich (Germany) experimental therapeutics; Dr. Ayres Kopke (Portugal) applied therapeutics; Professor Laveran (France) the biology of the trypanosome, its existence in man and in animals. The proposal included the study of the epidemiology and the destruction of biting flies in Senegambia, the Egyptian Soudan, the French Soudan, the German and Portuguese colonies, and in the Congo Independent State, and further suggested that the various Governments concerned should confide the study to special missions or local commissions. The proposal was approved by the Medical Subcommittee, which contained representatives of Germany, the Independent Congo State, France, Great Britain, Portugal, and the Egyptian Soudan. At the plenary session of the Conference on June 19th, Sir Patrick Manson proposed that the Conference should approve the resolution of the Medical Subcommittee to confide from time to time to States and persons indicated in advance inquiries (*enquêtes*) into certain special points concerning sleeping sickness. M. H. de Jacobs, Doctor of Laws and Member of the Imperial German Colonial Department, objected to this proposal on the ground that in his opinion it would compromise the liberty of science. Dr. Laveran, in reply, stated that he could not see how the resolution could interfere with the liberty of research; it merely proposed to appoint reporters (*rapporteurs*), and not to reserve to certain persons or certain countries the monopoly of certain researches, and Sir Patrick Manson added that he had not any intention of restraining scientific initiative, but merely desired to organize the researches so as to avoid loss of time and energy. After discussion, the President put the proposition to the vote, but as the duty of selecting the States or persons to whom the suggested inquiries (*enquêtes*) should be confided was considered to be within the competence of the Bureau Central, unanimity was not obtained, and the proposition was rejected. The inaccuracy of which we are accused appears to turn upon the distinction between *enquêtes* and *rapports*. The point is not quite clear, but so far as we understand it, it is that while the German Government is ready to agree to the proposal that reports upon the researches made under the auspices of the various countries and States concerned should be made to the next Conference, it objects to particular countries or States being asked to undertake particular branches of the inquiry—objects, that is to say, to the kind of organization of international inquiry suggested by Sir Patrick Manson. We may point out that such a suggestion is not a novelty. It has been applied to other departments of scientific investigation, and has reached a high state of development in astronomy.

INCOME TAX ON EARNED INCOME.

THE Finance Bill has now become law, and forms for claiming the relief granted to earned income, where the total income does not exceed £2,000, are being circulated. In order to obtain this relief it is necessary to lodge a claim with the surveyor of taxes before September 30th. In answer to questions in the House of Commons, however, the Chancellor of the Exchequer has made it clear that persons who have already furnished a satisfactory statement of their total income for the purpose of claiming one of the abatements applicable to incomes not exceeding £700, or otherwise in anticipation of the passing of the Finance Act, will not be required to make a fresh claim, but the statement originally sent in will be dealt with as a claim to relief. All other persons entitled to relief, who do

not receive a form of claim before the end of the present month, are advised to apply to the local surveyor, who will remedy the omission. It should be noted that the taxing authorities are not bound to seek out taxpayers in order to serve them with these forms, and the fact that an individual has not received a form will not be deemed a sufficient reason for granting relief after September 30th. It therefore behoves every practitioner entitled to relief to see that he obtains a form and sends in his claim in due time. For the convenience of our readers, we reproduce the definition of earned income as finally inserted in the Finance Act:

. . . the expression "earned income" means:
(*a*) Any income arising in respect of any remuneration from any office or employment of profit held by the individual, or in respect of any pension, superannuation, or other allowance, deferred pay, or compensation for loss of office given in respect of the past services of the individual or of the husband or parent of the individual in any office or employment of profit, whether the individual or husband or parent of the individual shall have contributed to such pension, superannuation allowance, or deferred pay or not; and
(*b*) Any income from any property which is attached to, or forms part of, the emoluments of any office or employment of profit held by the individual; and
(*c*) Any income which is charged under Schedules B or D in the Income-Tax Act, 1853, or the rules prescribed by Schedule D in the Income-Tax Act, 1842, and is immediately derived by the individual from the carrying on or exercise by him of his profession, trade, or vocation, either as an individual, or, in the case of a partnership, as a partner personally acting therein.

Paragraph (*b*) has reference mainly to the emoluments of a clergyman in the shape of tithe rentcharge, occupation of vicarage, etc. Paragraph (*a*) covers salaries, fees, and pensions from public appointments. Paragraph (*c*) includes income from a medical practice.

THE STATUS OF LADY DOCTORS

The dispute which has recently been satisfactorily terminated at Halifax has several points of more than local interest and importance. As pointed out by the Chairman of the Representative Meeting at Exeter, in this case for the first time the principle had been laid down by the Public Health Committee and the Council of the British Medical Association that no difference as regards remuneration should be made on the ground of sex. This principle was affirmed unanimously by the Representative Meeting. Briefly stated, the dispute began by the issue of an advertisement last November by the Halifax Board of Guardians for a resident lady medical officer at the Halifax Union Hospital at a salary of £100 per annum. Previously the appointment had been made at £140 per annum following an advertisement without any restriction as to sex. The guardians obtained the services of a lady doctor at the reduced salary last November. The matter was at once promptly taken up by the London School of Medicine for Women, which communicated with the local Division of the British Medical Association, and as the result of the inquiries made it was concluded that the guardians were under the impression that they could obtain the services of a resident medical woman for less than a resident medical man. A warning notice quickly appeared in the British Medical Journal, and at once the lady appointed to the post resigned, before entering upon the duties. In July the guardians appointed another lady to the post, which had in the meantime been held by the previous applicant on *locum tenens* terms. This second lady was not aware of the dispute, but on seeing an annotation in this Journal expressing regret at the appointment under the circumstances, sought information regarding the dispute, and at once communicated to the guardians her desire to be released from the appointment and the bond which she had signed requiring her to forfeit £50 if she did not remain for twelve months. The firm stand taken by these two lady doctors and their loyalty to the Association appears to have induced the guardians to seek to effect a compromise, and as a result of communications between them and the local Division of the Association, the dispute has been quite amicably settled. The principle is now established that no distinction should be made on the ground of sex as regards the amount of the emoluments to be paid to lady practitioners. The final action of the Halifax Board of Guardians, and their treatment of both the ladies who withdrew from the appointments, suggests that they themselves really acknowledge the justice and equity of this principle, and no attempt whatever has been made to victimize either of these ladies on account of their attitude of unflinching firmness in this dispute. This should stand as a splendid object lesson to medical men who are concerned in disputes, and it would be difficult to find a better example of the advantages of organized and associated action. The Representative Meeting resolved that the ladies concerned in the Halifax dispute should be congratulated upon their action in the matter, and also "that the "London School of Medicine for Women be informed "of the Representative Meeting's appreciation of its "action to secure proper conditions of employment for "medical women." The Halifax Board of Guardians may also be congratulated on the settlement of the dispute, and the removal of any misapprehension which may have existed as to the willingness of medical women to accept appointments for less remuneration than would be expected by medical men. The Divisions of the Association should also be stimulated into well-directed activity, and encouraged to persevere in all efforts to seek and promote better conditions of official appointments.

THE LORD MAYOR'S CRIPPLE FUND.

In a recent issue the *Liverpool Courier* published some correspondence which took place in June between Sir William Treloar and some gentlemen connected with Liverpool on the subject of the Lord Mayor's Cripple Fund. It only deals with a side issue of the general question, but is nevertheless not without interest. The correspondence commences with a letter in which Mr. Montgomery, the Chairman of the Liverpool Country Hospital, draws the attention of Sir William Treloar to a misstatement in the opening paragraph of a letter circulated by him on May 31st. This was to the effect that no establishment specially devoted to the treatment of children suffering from chronic tuberculosis existed in England. Mr. Montgomery pointed out that the Liverpool Country Hospital was established precisely for this purpose ten years ago, and had recently provided itself with new quarters at Heswall on the Dee. To this the Lord Mayor replied that so far as he was informed no institution existed which dealt systematically with tuberculosis in children at an early age, and afforded such children at once curative and educational treatment, and that since making the statement he had been confirmed in his belief by some of the greatest authorities on tuberculosis. In return surprise was expressed by Mr. Montgomery that the statement should be repeated in the face of the assurance given and of the report of the institution forwarded, and Sir William Treloar was asked to take note that such an institution did, as a matter of fact, exist in the shape of the Liverpool Country Hospital, which had carried on combined curative and educational work with great success for eight years. A further letter was, by request, forwarded to Sir William Treloar by the medical staff describing the work of the institution, and showing that it was well known at home and abroad, and had been visited by the Society for the Study of Disease in Children. This brought a reply from Sir William Treloar to the effect

that though the institution was doubtless doing good work it was not doing quite the work which he himself hoped to undertake. After this the correspondence dropped. It may possibly be the case that the two schemes are not identical, but nevertheless it is a little peculiar that the Lord Mayor should have repeated publicly a week or two later his original tale, to the effect that his scheme was the first attempt in England to deal with surgical tuberculosis and other chronic disease in children in a systematic way. The Liverpool Country Hospital is an institution certainly well known to those who take an interest in sick children, and the fact that the Lord Mayor's "authorities" should have been unaware of its existence, when added to some previous incidents, indicates clearly that he cannot have been altogether happy in his choice of advisers. The correspondence, moreover, throws still further doubt upon the question of what the Lord Mayor's scheme in detail really is. At least one public body, thoroughly representative of those who take an interest in children, has endeavoured to obtain information on the point, but, as we understand, entirely without success. Upon the whole, it seems not improbable that Sir William Treloar is himself no better informed.

HYSTERIA AND DISABILITY.

E. MEYER says that the number of persons who have received compensation on account of disability due to hysteria from the German compulsory insurance system has hitherto been comparatively small.[1] The majority of the cases have been referred to experts by the Court of Arbitration, and on the strength of his experience in dealing with cases of this kind, Dr. Meyer deals with the subject. In many medical reports the term "hysteria" is loosely used; not infrequently the condition is confused with malingering. Some consider that hysteria is not a disease in itself, but is a disposition to appear ill. Dr. Meyer cites the case of a woman, aged 44, who claimed compensation under the disability insurance, on the ground that she found working too hard. The report stated that the heart's action was accelerated, that she had a feeling of numbness in the right arm and leg, presumably resulting from a fright, that she was impressionable and disposed to exaggerate. She was regarded as being weak nerved, but capable of being benefited by treatment. She refused to go into hospital because she would be placed among syphilitics; this, it might be said, was untrue. Her claim was refused on the ground that she was an untruthful person, and probably mentally affected. She was then persuaded to go into hospital, where she manifested various symptoms, including paralysis of the right side of the body, head, and stomach, pain in the heart, and giddiness. The objective symptoms were acceleration of cardiac action and a single attack of vomiting. On being discharged from the hospital as cured, she lay down in bed, and the next day showed some vomit containing a drop of bright blood, and said that she should not leave the hospital until she was granted her full claim. The Court refused the application, but later referred the case to Dr. Meyer. Admitted into his clinic, he found contraction of the visual field with inversion of colours. The senses of taste and smell were almost absent. The faucial and palate reflexes were abolished. There was weakness of right leg and arm, and tremor, hypalgesia of the whole anterior surface of the body, ovarian tenderness, and dermography. Psychically, she was depressed, showed want of energy and will, and also slow movements, was very easily upset and irritable. The official report given was that she was suffering from hysteria, which at that time had reached such a degree that she must be regarded as invalid within the meaning of the Act. This is cited as a typical case, about which no difficulty should arise. In speaking of the exaggerations of this class of patient, Dr. Meyer says that when a person is hysterical, the exaggeration must be ascribed to the hysteria. One should be very careful not to come to the conclusion that the patient is simulating on the strength of a single examination. He cites a second case, in which the diagnosis of hysteria was based to a certain extent on the appearance of severe nervous disturbance of respiration, which rendered manual work almost impossible. The claim is justified when the nervous symptoms produce exhaustion and subjective symptoms. He also quotes two cases of hystero-neurasthenia, in which the general weakness played a prominent part. Without wishing to include the real hysterical psychoses, he states that the disease must be regarded as a psychical disturbance, and that it is primarily necessary to investigate the mental symptoms and not to give too much importance to the bodily signs. In all doubtful cases it becomes essential to keep the patient under observation in hospital for a time. This is especially important in cases of young persons claiming compensation, inasmuch as the proper treatment should be carried out with as little delay as possible, both in the interests of the individual and of the insuring body.

[1] *Deut. med. Woch.*, February 7th, 19 7.

GARDEN CITIES.

THE International Housing Congress, one of the many which has been in progress recently, concluded its proceedings by a tour to various parts of England in which housing reform schemes have been taken up actively. In the course of these it visited Bournville, where the Congress was entertained by Mr. Cadbury, and had some of the results obtained summarized for its benefit by him. He observed that sixty years ago practically 75 per cent. of the population of Great Britain was rural and only 25 per cent. urban, while at the present date the proportions were precisely reversed. As an excuse for towns it had sometimes been said that the working classes loved to live in back streets, but experience at Bournville gave no colour to this creed; there were so many applicants that all the houses built there could be let twenty or thirty times over. During the past six years the general death-rate had been only 7.5 per 1000, while in Birmingham, of which Bournville nominally formed a part, it was 17.9 per 1,000. The results as regards infant mortality were equally striking. At Bournville the infant mortality was only 78.8 per 1,000 registered births, as against more than twice that rate in Birmingham. Nor were the benefits confined to early life, for the boys attending Bournville school averaged 4 in. more in height and 3 in. more in chest circumference than those of a corresponding age attending Birmingham schools. The suburbs of all great towns should, he urged, be built, like Port Sunlight and Bournville, in the interests of the people, and not of a land speculator. The amount of ground which would be required in the aggregate if this were done was really much less than was often represented. The provision for each householder of all large towns of a garden of the size of those at Bournville would not absorb more than the 80th part of the land of the United Kingdom. As regards economic results, the Bournville gardens each returned an average of 1s. 9½d. a week in food value, and if every garden city obtained an equivalent result, there would be a greater return from the million acres absorbed by garden cities than from twelve times that acreage when used as at present for pasture land. One or two of the foreign delegates were interviewed on the completion of the tour by a representative of the *Morning Post*, and some remarks made by them were not without interest. Thus M. Ferrand, who has played a large part

in urging on housing reforms in France, was far from satisfied with what he had seen at Liverpool. He admired the comprehensive scheme which the Liverpool Corporation has inaugurated, but criticized the inhabitants of the new buildings. His remarks were to the effect that he could understand people being dirty and getting drunk when they lived in slums where the sun could never penetrate, but this ought not to be the case when people were taken from slums and housed in bright habitations. The people he had seen in the new buildings at Liverpool were not as clean as they ought to be, and the municipal inspections of their dwellings should be more serious and more exacting; punishment for dirt and disorder should be inflicted. The housing problem in England was, he thought, much more difficult than in France, for in that country there were proportionately so many more artisans and so many fewer unskilled labourers. Dr. Fuchs, Professor of Political Economy at Freiburg, expressed opinions to the same effect; in the whole of Germany, he said, there was no class like the Irish unskilled labourers of Liverpool.

THE AUSTRALASIAN MEDICAL CONGRESS, 1908.

The eighth session of the Australasian Medical Congress will be held in Melbourne from October 19th to October 24th, 1908. The president is Professor H. B. Allen, M.D.; the treasurer Mr. G. A. Syme, M.B., F.R.C.S.; and the general secretary Dr. H. C. Maudsley, F.R.C.P. The vice-presidents include many leading members of the profession in South Australia, New South Wales, Western Australia, Tasmania, and New Zealand, and there is a secretary in each of the States of the Australian Commonwealth, and in the North and South islands of New Zealand. The Council of the University of Melbourne has granted the use of its buildings, and the Government of Victoria has undertaken to print the transactions of the Congress. Addresses will be given at the plenary sessions of the Congress by the Presidents of the Sections of Medicine (Dr. G. E. Rennie, of Sydney), Surgery (Dr. B. Poulton, of Adelaide), Pathology and Bacteriology (Dr. F. Tidswell, of Sydney), and Public Health (Dr. J. C. Mason, of Wellington, New Zealand). Special meetings will be devoted to the discussion of (*a*) the relations of the medical profession to hospitals, and (*b*) syphilis. There will be eleven sections, the total being completed by the sections of Obstetrics and Gynaecology; Anatomy and Physiology, with Experimental Pharmacology; Diseases of the Eye, Ear and Throat; Neurology and Psychiatry; Diseases of Children; Naval and Military Medicine and Surgery; Diseases of the Skin, Radiotherapy, and Radiography. The railway departments of Australasia will issue concession tickets to members (with wife, or one lady relative accompanying the member) for the return journey at the usual special rates, on presentation of certificates on the prescribed form, signed by the State secretaries of the Congress. During the Congress a museum will be open consisting of three departments, (1) pathological and bacteriological specimens, (2) surgical instruments and pharmaceutical preparations, (3) foods, etc.

We regret to have to announce the death, on August 11th, of Mr. Charles Williams, F.R.C.S., Senior Surgeon to the Norfolk and Norwich Hospital. We hope to publish some fuller account of his career in a future issue.

Mr. Herbert Samuel, M.P., promised a deputation of the Poor-law Association of England and Wales, which waited upon him on August 15th, that he would introduce, at an early date next year, a Bill to amend and consolidate the law with regard to infant life protection and the prevention of cruelty to children.

The President of the Section of Electrotherapeutics at the annual meeting of the British Medical Association at Exeter (Dr. Lewis Jones) has received a telegram from the President of the Section of Medical Electricity of the French Association for the Advancement of Science (Dr. Guilloz), dated from Reims expressing to the Section of the British Medical Association the sympathy of the French section and its best wishes for the future.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

The Public Health Bill came on for second reading in the Lords last week, and Lord Allendale explained that it contained a number of provisions which in recent years had been inserted by the Police and Sanitary Committee in private Bills. The Bill enabled local authorities to adopt the clauses without being obliged to promote private Bills. Lord Onslow generally approved of the Bill but regretted the omission of some clauses, and desired that it should be referred to a select committee. Lord Lansdowne supported the reference on the ground of the remarkable history of the Bill. He was informed that the Bill was referred to a Standing Committee of the other House on July 1st. It then had 142 clauses, was disposed of in one sitting, and the alterations made covered sixty-five pages. During half the time the business of the Committee was carried on without a quorum, and upon this irregularity being called attention to in the House of Commons it was admitted, and the Bill was recommitted. It came back to the House on July 29th with nine pages of alterations, and was not reprinted until after the report stage had been taken at half-past 3 in the morning. Lord Fitzmaurice described how the Bill had grown out of the useful labours of the Police and Sanitary Committee, and said it had been "starred" by the Government to show that it was not neglecting humble legislation which helped the homes of the people. The Bill was read a second time, and referred to a Select Committee, consisting of the Duke of Northumberland, the Earl of Onslow, the Earl of Donoughmore, Lord Fitzmaurice, and Lord Allendale.

The Education (Administrative Provisions) Bill, which deals with the medical inspection of school children in its thirteenth clause, was considered in committee last week, came on for its report stage in the House of Commons on Monday night. Sir Philip Magnus moved an amendment to give local authorities power to institute a system of periodic measurement of the children which would afford definite information as to their physical condition and development. A report had just been issued with regard to the physical condition of school children in Glasgow. This report was made by Dr. McKenzie and Captain Foster, and showed conclusively that the weight, height, and physical condition of children depended absolutely on the condition of their homes. After some discussion the amendment was rejected and the report stage concluded. The Bill was then read a third time.

The Vaccination Bill was considered in Committee in the Lords, and Clause I was amended on the motion of Lord Balfour, so as to restore the Bill to its original shape by placing on the father alone the obligation of making the required statutory declaration of conscientious objection. In the Committee in the Commons the Bill had been altered so as to allow either parent to make the declaration. Lord Allendale, on behalf of the Government, declined to accept the alteration, Lord St. Aldwyn supported it. Lord Crewe said it was a small matter, but the liberty for either parent to make the declaration was for the public convenience. On a division the amendment was carried by 30 to 25, and, the remaining clauses having been agreed to, the Bill as amended was reported to the House.

The Vaccination (Scotland) Bill was amended in Committee in the Lords last week by the addition of a subsection as follows: "A registrar shall at any reasonable time allow searches to be made in such record of statutory declarations, and shall upon demand give a copy under his hand of any entry therein on payment of a fee of 6d. for each search, and 3d. for each copy." The amendment was not opposed by the Government, and the Bill was reported without further alteration.

The Butter and Margarine Bill was amended in several particulars in Committee in the Lords last week. Lord Carrington added a new clause embodying regulations as to the use of preservatives, and Lord Camperdown carried an amendment against the Government, exempting the Administrative County of London from Clause XI. The Bill then passed through Committee. It was read a third time and passed as amended in the Lords on Monday night. It will now go down to the Commons for the consideration of the Lords' amendments and most probably become law.

Insanitary Houses at Kilrush.—In answer to a question put by Mr. Halpin respecting the insanitary state of houses at Kilrush, which had been condemned by the Sanitary Inspector and the Engineer, Mr. Birrell said that the officers named had made reports as to the insanitary condition of some houses in the Kilrush Urban district, but the Local Government Board had no information as to the ownership of these houses, and that it rested with the local authority to take action in the matter under the powers conferred upon them for the purpose by the Housing of the Working Classes Acts and the Public Health Acts.

The Irish Poor-law Medical Service.—Mr. Halpin asked the Chief Secretary last week if his attention had been called to the suggestions of Mr. O'Carroll with reference to the Poor-law medical service and the feasibility of their adoption. The Irish Attorney-General replied that his right hon. friend's attention had been called to Mr. O'Carroll's suggestions. The Viceregal Commission on Poor-law Reform had concluded its inquiry, and presented its report, and he regretted to say that it would now be impossible to submit further suggestions to the Commission.

Life Saving in Colliery Explosions.—Mr. Chiozza Money last week called the Home Secretary's attention to the fact that the French Minister of Public Works had recently signed a decree ordering that every coal mine employing 100 men underground at the same time must be provided with a portable respiratory apparatus, ready for immediate use and enabling a miner to remain at least one hour in an irrespirable atmosphere, and that the number of such appliances must be not less than two for each pit, placed in charge of an engineer or inspector familiar with their working, and provided with ten picked men trained in the use of the apparatus and ready to be sent to the seat of danger immediately the necessity arises, and asked whether he could see his way to insist upon similar precautions being observed in British coal mines. Mr. Secretary Gladstone replied that this matter was referred some time ago to the Royal Commission on Mines, which was now sitting. As the hon. member was doubtless aware, a report had already been presented by the Royal Commission on the question of the use of respiratory apparatus. The Commission did not feel justified in recommending that the provision of respiratory apparatus should at the present time be made compulsory. They made, however, certain proposals for the establishment of central rescue stations, etc. He was communicating with the owners with a view to their taking action.

Typhoid Fever at Bulford Camp.—In answer to Mr. Long, the Secretary of State for War last week said that since 1900 there had been 16 cases of enteric fever among the regular troops at Bulford—2 in 1903, 3 in 1904, 3 in 1905, and 8 in June, 1907. None of these cases were fatal. As regards the auxiliary forces, of whom 45,000 were encamped at Bulford in 1906, there were 9 cases in the Honourable Artillery Company, of which it is understood 2 proved fatal. Full investigations were carried out by specialist sanitary officers in the outbreaks of 1904, 1906, and 1907, and though no definite cause for the origin of the disease could be traced, in each instance the available evidence pointed to the introduction of the infection from without, and not to any sanitary defects in the camp area. The medical and sanitary arrangements of the camp were supervised by the Principal Medical Officer of the Southern Command and the Administrative Medical Officer of the Tidworth District, who have the assistance of a specially qualified sanitary officer in dealing with the prevention of infectious diseases among the troops.

The Registration of Deaths at Lisburn.—Mr. McVeagh inquired last week as to the registration of deaths in the City Fever Hospital at Lisburn, which fell on the registrar at Lisburn, and referred to a resolution of the Lisburn guardians suggesting the appointment of a second assistant registrar for the Ballylesson district, and asked whether as an alternative the hospital could not be constituted a special district in order to save the ratepayers of Lisburn from payments for an outside institution. The Attorney-General for Ireland replied that the Registrar General's attention had been called to the facts stated in the first part of the question. The Registrar-General had received the resolution of the Lisburn Board of Guardians, but was unable to comply with their request, seeing that the statute empowers the employment of one assistant registrar only in each district. The Registrar General regretted that he could not accede to the proposal that the hospital should be made a separate registrar's district. It would be entirely without precedent to constitute a public institution situate in a certain union into a separate district to form part of another union.

The Ballinagh Dispensary Medical Officer.—Mr Vincent Kennedy asked the Chief Secretary to the Lord Lieutenant of Ireland, if he would state why the Local Government Board refused to sanction the appointment of Dr. Clarke as temporary medical officer for the Ballinagh dispensary district; how near to this district did Dr. Clarke reside; had Dr. Clarke at present any dispensary; who had been in charge of this district for the past three months, and what appointments did he hold, distinguishing those which were temporary from the permanent appointments; and would this matter have special attention in the interest of the sick poor of the district. The reply was that the appointment of Dr. Clarke as a temporary medical officer for Ballinagh dispensary district was objected to on the ground that his residence was outside the dispensary district and was inconvenient to the sick poor. The nearest part of the dispensary district was about three miles and the most remote nine miles from Cavan, where Dr. Clarke resided. The Local Government Board had not sanctioned the appointment of Dr. Clarke as the medical officer for any dispensary district. Dr. Clarke had been acting as temporary medical officer for the Ballinagh district since June 18th last without the sanction of the Board. He had also been appointed as temporary medical officer of the Kilnalick and Stradone districts, but the Board had had to object to these appointments on the same grounds. The guardians, by their action in continuing to employ Dr. Clarke, might render themselves liable to surcharges for any payments they might make for his salary. Dr. Clarke had further been appointed as temporary medical officer of Cavan Workhouse from the 7th inst. to the 4th prox., and to this the Board had given its sanction.

AT a recent sitting of the Austrian House of Lords the Minister President promised that Bills providing for the reform of the public health and lunacy laws would shortly be introduced by the Government.

As the Argentine Government has recently instituted a system of inspection of imported meat foods, the Local Government Board has now issued a series of regulations with which meat food packers in England and Wales who export their products to Argentina must employ if they wish to obtain from officials of the Board an attestation as to the precautions taken by them to secure wholesomeness of the foods in question.

Manchester and Salford.

Grants in Aid, and the Manchester University.

In a Blue Book recently issued on the Grants in Aid to the University Colleges of Great Britain, it is stated that the grant of £12,000 to the Victoria University of Manchester has been reduced to £10,000. Such, at any rate, is the recommendation of the Committee appointed to advise the Education Department as to the allocation of the money provided by Parliament. The Committee says:

> While we regret this reduction, we think that the grounds for the establishment of a maximum are so strong that the diminution is justified, and we are confident that the reasons which have led us to advise it will not be misunderstood. We certainly do not mean to imply that we regard the pre-eminence of the Victoria University among the colleges as less marked than it has hitherto been.

The Committee advise that £10,000 should be the maximum grant to any College except where grants are made for special purposes. There is also a report in the Blue Book on the work done by the University, which bears tribute to the remarkable progress made by the University since Owens College became merged in it. Especially is it pointed out how well the University has during recent years adapted itself to local conditions and needs. It is shown how the alliance with other educational institutions which the University has been able to make has increased its activities and its teaching strength. In face of the high praise bestowed, Manchester men entirely fail to see any justification for the reduction in the grant. A reduction of £2,000 a year in the income of the University will seriously hamper it in the new spheres of activity already entered upon, and will almost forbid any fresh undertakings which are imminently needful. No satisfactory reason for the reduction is given in the Blue Book, and to fix arbitrarily as a general maximum a sum below what has previously been given is a curious way of furnishing an argument for a special reduction.

Medical Assistance for the Poor.

At the last meeting of the Chorlton Union Board of Guardians a letter from the Local Government Board was read informing the guardians that they were empowered if they thought proper

> to pay for any medical or other assistance which shall be rendered to any poor person on the happening of any accident, bodily casualty, or sudden illness, although no order shall have been given for the same by them, or any of their officers, or by the overseers.

The guardians were also informed that it was competent for them under this enactment to pay the fee of any medical man called in on the advice of a midwife to attend upon a poor person in case of difficulty. The letter further suggested that the guardians should inform medical men and certified midwives practising in their district that, provided the guardians were satisfied that the woman attended was too poor to pay the medical fee, they were prepared to exercise their powers and pay a reasonable remuneration to the medical man who attended. Dr. Rhodes pointed out that at present the supervision of midwives was in the hands of the Corporation. It might have been added that the Midwives' Supervising Committee of the Manchester Corporation has already fixed a wage limit, and is paying medical fees in such cases when the income of the family is below a certain amount. That being so, it is somewhat difficult to understand the letter, since the Local Government Board must be fully cognisant of these facts. Is it the intention of the Board that all those women who accept medical aid on the advice of the midwife, unless they pay the fees themselves, shall be regarded as paupers? Are the guardians intended to supersede the Corporation in this department? To whom must the medical man apply for his fee, the guardians or the Corporation? At any rate, if it be to the guardians, it is to be hoped that the very irksome certificates, in which over a score questions, some of them most elaborate, have to be answered by the medical man, will be either abolished or much simplified.

Milk-blended Butter.

A large meeting of grocers and provision dealers of Manchester and the neighbouring towns was held recently in the Memorial Hall, Manchester, to protest against the proposal of the Butter and Margarine Bill to allow milk-blended butter to be sold containing up to 24 per cent. of water. Both wholesale and retail provision dealers were represented at the conference, which was presided over by Mr. James Duckworth, M.P. The following resolution was carried unanimously:

> That this meeting is of opinion (1) that milk-blended butter, under whatever names it may be called, should not contain more moisture than either butter or margarine; (2) that the introduction of this article, containing as it does 50 per cent additional moisture, will be harmful to the producing and distributing interests, and is really more or less a deception on the consuming public; and (3) that the wilful addition of water to butter should be prohibited.

It was pointed out that, though poor people might readily buy such a cheap article, they would do so under the mistaken idea that they were buying a genuine article at a cheap price, just as they would buy watered milk if it were sold cheap, and they did not know it was watered. The importance of butter with the full percentage of fat as an article of diet in tuberculosis ought to prevent the introduction of cheap watered substitutes, however plainly they might be labelled.

Lead in Soda Water.

The Manchester Public Analyst has recently examined eighteen samples taken from soda-water fountains, owing to statements made that these waters contained lead. He found that only three samples actually contained lead, and two of these only in very small quantities. One sample, however, contained an exceedingly large quantity, though an explanation could be given. The inspector on first visiting the shop was informed that no liquid was allowed to remain in the machine overnight. He requested the shopkeeper, however, to allow it to remain in all night, and in the morning he took a sample, which he found to contain 3 grains of lead per gallon. This, of course, is far more than would be found in the ordinary course of business, but it showed the great danger that would exist if such machines were in the hands of careless persons. In the case in question simple lead piping had been used, and the analyst deems it absolutely necessary that only tin-lined piping should be used.

The National Society for the Prevention of Cruelty to Children.

At the annual meeting of the Manchester and District Branch of the National Society for the Prevention of Cruelty to Children, held at the Town Hall, Manchester, on July 23rd, some interesting statistics were given. During the year 1,540 cases, involving the welfare of 4,723 children, had been investigated. Of these, 1,982 were known to be insured for over £11,000. Of the 1,540 cases inquired into, 1,480 were for neglect, 40 for other forms of ill-treatment, and 10 for exposure for begging purposes. Warnings were given in 1,334 cases, 101 persons were sent to prison, 10 bound over, 7 reprimanded, 2 dismissed, and 1 case was withdrawn. The Lord Mayor, who presided, in moving the adoption of the report, said that he was informed that 95 per cent. of the cases of neglect investigated by the Society were due to intemperance. Mr. R. J. Parr, in seconding the resolution, said that the Society was doing an educative as well as a preventive work, and he believed that most of the cases of death arose from ignorance on the part of parents. In the first few years of the Society's existence 45 per cent. of the cases dealt with by the Society were for brutality, but last year the proportion of cases of gross brutality was only 8 per cent., and he claimed that much of this improvement was due to the Society's methods.

West Yorkshire.

The Bradford Police Surgeonships.

It was stated in the British Medical Journal for July 27th that there was every prospect of an early settlement of the dispute in regard to these appointments. We are now glad to be able to confirm this statement. The Bradford Division called a meeting of the whole of the medical practitioners in its area on July 24th to consider the proposals for a settlement. At this meeting it was unanimously decided to accept these, and the Watch

Committee has now readvertised the appointments on the new conditions. The essential alterations in the revised conditions is in the method of remuneration. The medical profession took strong exception to an inclusive salary for all the work connected with the posts. It was felt that a large amount of unnecessary work would be given to the police surgeons if they were to be at the beck and call of every policeman in their division for trivial matters. This danger is safeguarded by the new arrangement. There is to be a slight reduction in the salaries paid to the chief and the three divisional surgeons, but extra work is to be paid for. The chief police surgeon is to receive £105 per annum; to receive all court and *post-mortem* fees, and to be paid for all cases attended other than at the police station, the fee being 5s. between 9 a.m. and 9 p.m., and 10s. between 9 p.m. and 9 a.m. The three divisional surgeons are to be paid £45 per annum, and fees at the same rate as the chief police surgeon for attendances both at the police station and in any part of their division. The four subdivisional surgeons are to receive 10s. per man for the members of the force in their area as originally proposed, but this is not now to include all extra calls. For these they will be paid at the same rate as the chief and the divisional surgeons for attendances either at the station or any other place. All the minor suggestions for alterations in the rules made by the medical profession have also been accepted by the Watch Committee.

The result of the controversy shows the importance of organization and the value of unanimity for the medical profession. Up to the point at which nearly fifty applicants for the posts withdrew their applications, the Watch Committee had determined to ignore all suggestions for amended pecuniary conditions made on behalf of the medical profession. It was only the active intervention of the Bradford Division and the publicity which it was possible to give to the matter in the BRITISH MEDICAL JOURNAL that turned the scale. It is only right to acknowledge the great personal courtesy of the Chairman of the Watch Committee, but that body evidently did not believe, until it was so forcibly demonstrated to it, that the medical profession could act with such unanimity in defence of its own interests. It is apparent that a great deal of unnecessary friction can be avoided in similar cases in the future by a conference with the profession before laying down rules and regulations in regard to public appointments. This dispute will have been the means of putting matters such as these on a better basis in Bradford for many years to come.

APPOINTMENTS AT THE BRADFORD ROYAL INFIRMARY.

Dr. Eurich, until recently Honorary Assistant Physician, has been appointed Physician and Dr. William Wrangham has been appointed Honorary Assistant Physician in place of Dr. Eurich.

BRALFORD ANTHRAX INVESTIGATION BOARD.

As a result of various experiments made by Dr. Eurich and others this Board has passed a resolution declaring that in its opinion three germicidal disinfectants—cyllin, formic-aldehyde, and Leach's (woolcombers') fluid—will effectually destroy anthrax bacilli and spores under the following conditions, when the material can be steeped in a loose state so as to afford thorough penetration prior to washing: (1) Cyllin, 1 per cent. by volume after steeping for one hour; (2) formic aldehyde (at a strength of 37 per cent. weight, or 40 per cent. by volume), 2½ per cent. by volume after two hours' steeping, subject to absence of ammonia; and (3) Leach's fluid, 2 per cent. by volume after steeping for one hour.

Birmingham.

THE WORCESTER AND WARWICK INFANTRY BRIGADE BEARER COMPANY (R.A.M.C. VOLS.).

ON the application of Surgeon-Colonel W. P. Whitcombe, commanding the Worcester and Warwick Brigade Bearer Company, the authorities of the Birmingham General Hospital recently granted permission to the members of the company to attend at the hospital on Sunday mornings for the purpose of gaining practical experience in the care and handling of patients. For the past few months, about a dozen members of the Bearer Company have attended at the hospital each Sunday morning at 7, and, under the supervision of Surgeon-Colonel Whitcombe and of Surgeon-Lieutenant Barling of the 1st Royal Warwick, who is a member of the staff of the hospital, the men have gained most useful and practical instruction. Surgeon Colonel Whitcombe is to be congratulated upon the success of his scheme for increasing the efficiency of the men under his command. It was in the practical knowledge of nursing that the men who went out to assist the R.A.M.C. in South Africa were found to be wanting, and it is only by attending in the wards of a hospital that this department of a medical orderly's duties can be learned. Some years ago the London Companies R.A.M.C. Vols. were able to obtain permission for some of their members to attend at one of the London general hospitals, and similar facilities could no doubt easily be obtained in all districts in which a general hospital is situated.

South Wales.

VACCINATION FEES.

THE Cardiff Guardians on July 27th discussed the question of fees charged by their medical officers for vaccination. The Chairman explained that the Local Government Board had issued an order reducing the minimum fee from 5s. to 2s. 6d. in the Cardiff district, and from 5s. to 3s. 6d. in the country districts. A subcommittee had considered the matter, and the Board had the recommendation of the Committee before them. In the case of Penarth, Barry, and Gabalfa the Committee recommended that the fee be reduced to 3s. 6d. the minimum, but the visit fee of 1s. in addition should remain as formerly. In the cases of Bonvilstone, Pentyrch, Llanishen, and Rudry the Committee recommended the fees be reduced to 4s. These recommendations were approved.

In regard to the Cardiff districts there was a discussion. The minimum was 2s. 6d., but the Committee recommended that 3s. be paid instead of 5s. as formerly. Replying to a question, the Chairman said the reason the fee at Barry (3s. 6d.) was higher than at Cardiff was that 3s. 6d. was the minimum that could be paid at Barry, as Barry had a population of less than 50,000. A member moved an amendment to the Committee's recommendation, proposing that the fee at Cardiff be the minimum 2s. 6d., instead of 3s. as proposed. Another member seconded this, and said that in 1898 the medical officer at Cardiff vaccinated 1,334 persons, and got £101 6s. for doing so. Under the new régime he only vaccinated 1,166, and got £385 19s.; 3s. seemed to him to be an exorbitant amount. If the medical officer got 2s. 6d., together with 1s. per visit, his fees would be about £204, which was a big improvement on 1898. A member, while supporting the Committee's recommendation, asked the members how they would like their incomes reduced by half at a single stroke. Instead of going down 2s. 6d. at once, let them reduce the fees by easy stages. Another member said the fees went up at a bound from 1s. 6d. to 5s., and he did not think it unjust to bring them down as rapidly. The amendment was carried by an overwhelming majority.

Ireland.

LOCAL GOVERNMENT BOARD INQUIRIES.

FOR some weeks a Local Government Board inquiry has been dragging along at Limerick which for farcical incidents equals a comic opera. Some months ago a death vacancy occurred in the resident medical officership of the Limerick Union Workhouse. An election to fill the vacancy took place in the usual course, and soon after suggestions of bribery and corruption began to be spread broadcast. Eventually, at a large meeting of the Board of Guardians, it was proposed, seconded, and carried *nem. con.* that the Local Government Board be called upon to hold a sworn inquiry. Since the passing of the Local Government Act of 1898 we have more than once called attention to the frivolous charges upon which these inquiries are held, and to the gross disregard of the common laws of evidence permitted at them. At Limerick,

two inspectors were detailed to hold the inquiry—one a medical inspector, who as usual was to act as judge and jury, and the other the lay inspector of the district, who assumed the parts of private inquiry agent and public prosecutor. Summonses were issued broadcast to guardians, medical candidates and their relatives, bank managers, and publicans By the witnesses the whole affair seemed to be treated as a huge joke. Most of them swore that some one told them that money could be had for votes, but each individual swore also that he had not himself received any. It emphasizes the manner in which local politics have been conducted since 1898 that most of the negotiations were alleged to have been carried on in public-houses. Worse than all, the lay inspector was openly charged with having tried to obtain evidence by very doubtful methods. This he denied, and we have no reason to doubt his word, but we dissent strongly from a system which placed him in a position where such charges were possible. The finishing touch was given when the prosecutor called two bank managers to produce the accounts of their clients to ascertain if by such means they could be incriminated! Some witnesses very properly refused to give evidence, and we admire their courage. That bribery and corruption exists, and has existed, at Irish Poor-law elections, both wholesale and retail, is no new allegation, but, so far as we know, it has never attained the publicity of similar charges in Poplar or West Ham. Given, however, a system where, as in Ireland, men of standing in the community are practically excluded from local politics, such things are very apt to occur, but we entirely dissent from the system of the Local Government Board holding quasi legal inquiries, which only bring it into contempt. If there is evidence of bribery sufficient to go before a jury, the Public Prosecutor is the proper person to undertake the conduct of a criminal charge, and not an official of the Local Government Board untrained in legal procedure. Had this course been adopted at Limerick, either the prosecution of one or more persons would have been conducted before a judicial tribunal, or, what would perhaps have been more to the credit of the authors of the Act of 1893, the affair would have been allowed to die a natural death.

In Skibbereen a similar inquiry has been held under similar circumstances, and in our opinion the methods adopted to obtain incriminating evidence there also were not in accord with the British law of evidence, which, imperfect as some may think it, is probably the best for the people who live under it. The adoption of Continental methods under any guise whatsoever should be resisted to the utmost. The sufferers by the Irish Local Government inquiries are for the most part the unfortunate Poor-law officials, who, upon the most trumpery charges, are put upon their trial; they are compelled to undertake their defence out of their miserable salaries, and the costs do not even follow the event. Not infrequently they are convicted and turned out on evidence that would not be listened to for a moment in a court of law. We have before us the particulars of a case in which a medical witness was examined in the Continental manner by the inspector trying a charge against him. We hope to refer to it more fully in another issue, and meanwhile would only ask whether there is any other public service in these islands where such things would be tolerated.

Belfast: The Rioting on the Nights of August 11th and 12th.

Once again Belfast has been visited with an epidemic of rioting; these seem to break out every twenty years; there were severe disturbances in 1864, again in 1886, and now in 1907; a new generation has sprung up who have forgotten the long array of wounded, the compound comminuted fractures of bones that would not heal, and the wearisome and fateful assize, with its long list of prisoners. On Sunday night, August 11th, the storm burst; policemen were taking two prisoners when they were attacked; the military were called out, and the cavalry charged up and down the streets; the air was thick with stones, bottles and other missiles. The same events were repeated on the next evening, but things got to such a climax that the military had to fire. In the Royal Victoria Hospital there is a compound gunshot wound of femur, another of knee, and a gunshot wound of forearm, all in men. One girl, aged 22, was admitted to the Mater Infirmorum Hospital shot through the upper part of liver and died two minutes after admission; in the same hospital is a man with compound fracture of thigh and another man with gunshot wound through liver. In both hospitals there have been an unusually large number of scalp wounds and the usual concomitants of bâton charges. Many of the military and police have been severely injured.

Scotland.

Royal Society of Edinburgh.

The Keith Prize (a gold medal and £50) for the biennial period 1903–1905 has been awarded by the Council of the Royal Society of Edinburgh to Thomas H. Bryce, M.A., M.D., for his two papers on The Histology of the Blood of the Larvae of *Lepidosiren paradoxa*, published in the *Transactions* of the Society within the period.

Cerebro-spinal Meningitis in Scotland.

In the week ending mid-day, August 10th, 2 cases were notified in the City of Edinburgh as suspicious cerebro-spinal meningitis, of which 1 was removed to the City Hospital at Colinton Mains. Two deaths occurred during the week, and 9 cases remain under observation. For the same period the Registrar-General for Scotland reports that 10 deaths in eight principal towns of Scotland were due to cerebro-spinal meningitis; of these 4 occurred in Glasgow, 2 in Edinburgh, 2 in Leith, and 1 each in Greenock and Perth.

India.

The Health Officer of Calcutta.

The Calcutta Municipality at a recent meeting selected Dr. Pearse as its health officer in place of the present incumbent. A majority of the members of the Municipality has therefore practically dismissed the present health officer in spite of the fact that he is a man of more than ordinary ability, who has done excellent work in a very trying position for the past five or six years, and in spite of the fact that a Special Committee of the municipality, by the casting vote of the Chairman, decided to send up his name alone to the general meeting, presumably because the Committee considered his claims pre-eminent among those of the candidates who had applied for the post. At any rate, this action of the Committee makes it clear that he has been dismissed neither for misconduct nor for incompetence, as the Chairman is an Indian civilian appointed by Government, and is thus to some extent responsible to Government for the efficiency of the health department. Judging by the speech of an Indian member of the Corporation, who is a medical man and who was the proposer of Dr. Pearse, there could not be a strong case against the present health officer, as the chief arguments against him appeared to be that he had failed to grapple with the problems presented by the cases of dyspepsia and headache which are so prevalent in the native parts of the city! Perhaps the new officer will turn his attention to these questions, and so gain the gratitude of the Calcutta public. Dr. Pearse is a man of considerable ability and experience, and we must recognize the right of any corporation to make its own selection; but it is well that health officers at home who may be tempted by the salaries offered in places like Calcutta should know to what extent they may count on security of tenure in such posts. A case like this raises the important question whether, in a place of the magnitude of Calcutta, the health officer should not be appointed by Government, as are the chairman and vice-chairman of the municipality; he would then be able to do his duty without having before his eyes the risk of losing his position by recommending some measure which might offend an influential member.

Special Plague Department of Calcutta.

The Calcutta Corporation recently decided to amalgamate the Special Plague Department with the general Health Department. This action is in some ways regret-

table in itself, as it puts an end to the special research work which has been done in the slack season by the special plague officers; but if the corporation had at the same time strengthened the Health Department by appointing specially-qualified men to charge of the districts of the city, no serious fault could have been found with its decision, but it appears that it has decided to sacrifice efficiency to economy, and to dispense with the services of the highly-qualified men who were on the special plague staff, without strengthening the health officer's staff.

Australasia.

MEDICAL INSPECTION OF SCHOOL CHILDREN IN SOUTH AUSTRALIA.

WE learn from the *Australasian Medical Gazette* that the Government of South Australia is falling into line with the Governments of some of the other Australian States in recognizing the value of healthy children as an asset to the State. The Minister for Education, the Hon. T. Price, speaking at Unley recently, declared his intention of seeking parliamentary assistance in his crusade against defective eyesight amongst school children. He wishes to have a doctor appointed to examine the eyesight of every child in the schools. Then a certificate will be given stating if the child's sight is defective, and in what way, and this will secure the necessary attention to the defects discovered. The hearing is also to be tested, and that will incidentally, of course, reveal the presence of adenoids, which we know are also associated with defective development generally. Mr. Price recognizes that this procedure will consume money, but, as he says, they want to keep "the best asset the State can have—good healthy children, and thereafter healthy citizens."

CORRESPONDENCE.

THE EARLY NOTIFICATION OF BIRTHS BILL.

SIR,—In his letter to the BRITISH MEDICAL JOURNAL of August 10th, Mr. Benjamin Broadbent, whose services to public health every member of the medical profession must warmly appreciate, expresses surprise that objections should emanate from that profession to the Notification of Births Bill. Medical practitioners are, on their part, surprised that the public should not expect them to object. It seems clear that Mr. Broadbent and others specially interested in the Bill have failed to realize what must be the practical working of their own proposals.

As a member of the deputation, representing the Parliamentary Subcommittee which waited upon the President of the Local Government Board with respect to the Bill, may I endeavour, briefly, to remove this misconception?

Mr. Broadbent speaks of the "*possible* inclusion" of members of the medical profession under the head, specified in the Bill, of "persons in attendance" at the time of birth, as though the presence of a medical practitioner on such an occasion were merely casual and accidental. The fact is that under the Bill, if enacted, the term "person in attendance" would mean always in practice medical practitioner or midwife, those, that is to say, who are "in attendance" in a professional capacity. Upon these (failing notification by the father) must fall the responsibility of giving the notice required, under penalty, by the Bill; and, judging from experience of the Notification of Infectious Disease Act, it is from them alone that any legal penalties for default may be expected to be exacted, since it is inconceivable that any person present in a merely friendly or other casual capacity would be so penalized.

This matter, in fact, as affecting medical practitioners and midwives, is not one of general philanthropy, but of the State demanding a service specially devolving upon members of these special professions. The medical profession considers that the State should provide adequate remuneration from public funds in recognition of such services, just as much in this case as in all cases of a similar character affecting other professions.

The French law quoted by Mr. Broadbent appears to affect parents only, and therefore not to be analogous to the Bill under consideration.

The medical profession does not oppose notification in principle; on the contrary, it knows well its value, especially when carried out by qualified persons.

To conclude, the attitude of the medical profession is that succinctly stated in the following resolution adopted on July 30th last by the Annual Representative Meeting of the British Medical Association:

> Resolved: That this Representative Meeting of the British Medical Association, while cordially welcoming any legislation which shall provide for an early and accurate notification of births, is of the opinion that no public work can justly be demanded under penalty from the medical profession, unless the principle that service so rendered by the profession to the State should be remunerated, is fully recognized and provided for.

—I am, etc.,

Worstead, Norfolk, Aug. 14th. VICTOR HORSLEY.

BIOMETRICS AND THE DRAPERS' COMPANY.

SIR,—Your friendly notice of my memoir on Tuberculosis concludes with a statement which is correct in itself, but which might lead the reader to overlook an important element in the work at present going on in my statistical laboratory. The statement runs:

> It would not be easy to overestimate the national importance of this kind of work—a type of investigation which receives from the Government neither assistance nor reward.

I think the writer had in mind the great value that the establishment by the State of a statistical bureau to investigate problems of the inheritance of health, disease, and ability would be to the nation, and how little our Government does to aid work in this direction. But in the case of my own department of applied mathematics at University College an annual grant in aid of research has been made for some years past by the Worshipful Company of Drapers; and although this grant has to cover a rather wide field, the assistance provided by it for statistical and biometric work has been of incalculable value. I may draw attention to the fact that while seven out of the thirteen Drapers' Company Research Memoirs deal with biometric topics, this only represents a portion of the biometric work which has been directly assisted by this grant, and which has found other places of publication.

I am sadly conscious that personally I should do more and, what would be of greater value, better work could I afford to devote my whole time and energy to that branch of science which seems to me most capable of providing results of the highest social value. But because the world is not yet convinced that it is worth while allowing men to do the work they are best fitted for, nor ready to admit that a mathematician is of value in the borderland of medicine and sociology, still we must not overlook the noteworthy manner in which the great City Company to which I have referred has for four years past aided my work, and, what is still more unusual, allowed me practically a free hand to devote their grant to the researches which appeared to me likely to be of most scientific and social value—I am, etc.,

KARL PEARSON.

August 12th. Biometric Laboratory, University College, London.

THE INHERITANCE OF PULMONARY TUBERCULOSIS.

SIR,—Let me, while thanking you for remarks made under this heading, disclaim much of the credit of furnishing the data on which Professor Pearson's memoir is founded. This material, indeed, consists largely of an excerpt from the Crossley Sanatorium records. There are therefore to be thanked the three or four others besides myself who contributed to these, and in particular whoever first thought of making the patient's ordinal position in fraternity an item of the case sheets, for, on looking these over, I was soon struck by a feature which did not appear to have been observed, the large proportion, namely, of eldest-born children. It was then only a few hours' work to pick out from these careful records the indubitable cases of pulmonary tuberculosis, and to add, mainly from a neighbouring source, a few more. The credit due to me

then, is no more than that of being aware that Professor Pearson's mathematical genius would be likely to be interested in morbidity statistics, and of making the first stage of an induction, that consumption bears heavily on the eldest born, a hypothesis which Professor Pearson's verification expanded to elder born.

It seems to me a striking illustration of the predominantly clinical and therapeutic trend of study which perhaps the conditions of its practice enforces on our profession, that this simple point regarding a common and world-wide disease should not hitherto, so far as I am aware—though it is just possibly deducible by comparison of certain conclusions reached by Ricochon, Paddock, and Matthews Duncan—have been formally made, at any rate, with such authority as to secure its admission to the textbooks. Now that we have a dozen or more large sanatoriums, it seems a pity that they do not record family particulars on a generous scale and a uniform plan, since apparently there exists a laboratory where biometrical experts are only too glad to deal with such data. In a year's time we might then reach some quite startling results—results which, by the way, could tend only to increase the importance and the authority of our profession.—I am, etc.,

London, August 3rd. W. C. Rivers.

THE INTERNATIONAL CONGRESS OF SCHOOL HYGIENE.

Sir,—Now that the International Congress of School Hygiene is over and the interchange of expert knowledge upon educational methods has aroused and interested public opinion and has convinced it that radical changes in the administration of our schools are absolutely necessary, it remains for those especially interested in this most important subject, and who realize its bearings upon the formation and growth of character and the improvement of the national health, to take immediate steps to culminate the work of the Congress into some definite scheme for action, or to procure definite means to remedy the grave defects of our educational system, which for so long has culpably neglected to note that education has also a bodily aspect.

Upon no question among the many and varied subjects before the Congress was there so much unanimity as that the systematic medical inspection of school children was a matter of primary and of far-reaching importance, indeed, of vital necessity. In most of the countries represented at the Congress—namely, France, many provinces of Germany, Switzerland, Sweden, Norway, Austria, Hungary, Servia, Roumania, Japan, Russia, and the Argentine Republic—medical inspection of schools is either a State institution or it is enforced by magisterial decree or by legal enactment. The effect of such inspection modifies the spread of tuberculosis, it lessens the possibility of contagious diseases, and raises the standard of health in the community by special attention to the teeth, eyes, ears, throats, and bodies of the children. It detects and prevents deformities and favours growth along normal lines; it assists moral control and encourages self respect and thrift, aspects of paramount importance in any community of whatever country, and whether urban or rural.

The present Government has favourably considered the suggestion of medical inspection of schools, but it is only by the strong concerted pressure of public and expert opinion that action on the part of the Government is possible. It appears to me mandatory that this subject—pre-eminently one for the whole of our Association—should be taken up by its members at the various Divisions, and also, through the powerful help of the British Medical Journal, should bring such effective pressure that the recommendations of the Congress should not evaporate into pious sentiments, but should crystallize into definite and practical results. It is frequently regretted that the medical profession in this country is incapable, or is too divided, to lead public opinion upon the questions it is capable of pronouncing *ex cathedra*, but on such a question as the medical inspection of school children the medical profession is unanimous.

Is it too much to suggest that the resolution put to the Congress upon this subject by the President, Sir Lauder Brunton, passed at the various sections and affirmed by the general meeting, should be separately proposed at every Divisional meeting of the British Medical Association in the United Kingdom during the coming autumn, and that copies of the same be forwarded to the Cabinet Minister responsible for the control of the Board of Education, and also, if thought fit, to the members of Parliament representing the areas of the various Divisions?

It is not an overstatement to declare that such a resolution is of educational importance as well as one capable of affecting for good the whole future of the people, and it is therefore an imperative national necessity. The influence of the British Medical Association, if thus exercised, will, I venture to assert without hesitation, strengthen Parliamentary inclination, and galvanize it into such progressive action as shall not leave this country any longer behind less significant European States.—I am, etc.,

Robert Jones, M.D., F.R.C.P.Lond.,
Claybury, Aug. 14th. Joint Secretary of Section I of the Congress dealing with the Psychology and Physiology of Educational Methods.

SYSTEMATIZED MUSCULAR EXERCISES IN THE TREATMENT OF CLONIC SPASM.

Sir,—For many years, quite seven or eight, I have been in the habit of treating various kinds of irregular muscular spasm by systematized muscular exercises of the affected and associated muscles, and I was therefore very glad to see Dr. T. S. Wilson's confirmation of the value of these principles in the Journal of July 20th, p. 133. A letter arrived this morning from a case of incipient spasmodic torticollis treated by active systematized movements six years ago, in which she says: "The three months' treatment has permanently cured the twitchings." My method was to make her stand before a glass and move her head *slowly* upwards, downwards, then horizontally to right and left, then diagonally in four directions, and to do this for half an hour four times daily. The passive or resisted movements advocated by Dr. Wilson I have not found necessary in cases of spasm, but calisthenic exercises like those of Sandow have often been useful.

One point I should like to emphasize is the great value of slow respiratory exercises in the treatment of tics, habit spasms, and other such cases. This has been particularly noticeable in two cases of generalized spasmodic tic now attending as out-patients at the West End Hospital for Nervous Diseases. They were both cases of great severity, and had been affected for eight and twelve years respectively, and have been in many hospitals. The boy, aged 17, who had to be isolated in one London hospital, where he had been in-patient, on account of the loudness of his barking and snorting, has now so far recovered that he can follow his occupation—that of a light porter. The girl, aged 20, has suffered a still longer time, and her movements are even more severe; she has therefore not made so much, though still considerable, improvement.

Physical exercises of all kinds might be brought into use in the treatment of clonic spasm more than they are, and I am glad Dr. Wilson has called attention to the matter in his able contribution.—I am, etc.,

London, W. July, 30th. Thos. D. Savill.

EARLY LOCAL TREATMENT OF SYPHILIS.

Sir,—Dr. Arthur Thomas's query in the British Medical Journal of July 27th, whether primary syphilis can be aborted by the local action of quinine on the spirochaete, raises two questions: (1) Can syphilis be aborted by any treatment whatever applied locally to the primary sore? (2) has quinine any action on the spirochaete, in a similar way to its action on the malarial parasite? The first question is an old one, and attempts to abort syphilis by local applications to the primary sore, by excision of the sore in its earliest stages, or even by excision of the point of inoculation before the chancre developed, have nearly always resulted in failure. Any positive result is rendered doubtful for two reasons: (1) The sore might not have been syphilitic (it is true that nowadays diagnosis may be confirmed by the presence of the *Spirochaeta pallida*); (2) syphilis may possibly in some cases undergo spontaneous abortion. Some years ago the late Professor Kaposi maintained that syphilis might be limited to the primary stage, and this idea received the support of Professor Adami of Montreal. More recently Dr. R. W. Taylor of New York has published some cases of primary syphilis which apparently were spontaneously

cured.[1] It is, therefore, impossible to prove in any given case that syphilis was aborted by any local treatment of the initial lesion.

With regard to the second point, whether quinine has any action on the *Spirochaeta pallida*, I am not aware of any experiments having been tried from this point of view especially, but quinine has often been used as an auxiliary medication in cases of syphilis. Some time ago Dr. William Murray of Newcastle strongly advocated quinine in syphilitic cachexia, and I have myself used it for some years in cases of rebellious syphilis, or in syphilitic cachexia and anaemia, with apparent benefit. Assuming the *Spirochaeta pallida* to be a protozoon, which has not yet been absolutely proved (owing partly to the lamented death of Fritz Schaudinn), it is, of course, possible that the action of quinine might be analogous to its action on the malarial parasite, but I do not know whether any cases of syphilis have yet been treated by quinine alone. However, arsenic, in the form of atoxyl, has recently been tried from a similar point of view, based on the apparent success of its action on the protozoon parasite of sleeping sickness.

The curative action of atoxyl in syphilis, although somewhat vaunted by Hallopeau of Paris, does not appear to have been confirmed; but arsenic is a useful auxiliary medication in cases of syphilis in the same way as quinine.—I am, etc.,

London, W., July 28th. C. F. MARSHALL.

INTESTINAL SAND.

SIR,—I regret that in a paper on abnormal fat assimilation appearing in the BRITISH MEDICAL JOURNAL of July 27th I quoted Duckworth and Garrod as concluding that intestinal sand was formed in the duodenum, instead of, as they suggest, the upper part of the colon.

The granules occurring in the case I quoted were found in the duodenum, and thus of interest in relation to the above authors' work on the site of formation of intestinal sand.—I am, etc.,

Liverpool, July 28th. OWEN T. WILLIAMS.

OBITUARY.

ROBERT SAMUELS ARCHER, A.B., M.D., M.CH.DUB., LIVERPOOL.

WE regret to record the death, at the age of 58, of this well-known practitioner. He was the eldest son of the late Rev. Arthur Ellis Archer, sometime Rector of Donard, co. Wicklow. He took his arts degree in 1870, and entered the School of Physic of the University of Dublin, graduating M.B., B.Ch. in 1872. He became L.M. of the Royal College of Physicians of Ireland in 1881, and M.D. of his University in 1887. He settled in Liverpool over thirty years ago. He held several appointments, having been Visiting Physician to the City Hospital, Priory Road; and for six years Physician to the Netherfield Road Fever Hospital. He was also for many years Medical Officer to the Post Office.

In the earlier days of his professional career he was an industrious writer, especially on fever, and was General Secretary and afterwards Vice-President of the Medical Institution. He had a large experience of small-pox. He had personally attended over 2,000 cases, and gave valuable evidence on the subject before the Royal Commission on Vaccination. He always maintained a warm interest in his University, and came to be looked upon as the leader of the graduates of Dublin University in the Liverpool district. He was particularly active in organizing the annual dinner of the graduates in Lancashire.

For some years he had suffered from diabetes mellitus which, however, did not incapacitate him from work, and on Sunday, August 4th, he was present at the thanksgiving service at St. George's Hall, looking in his usual health. His death, early on Thursday the 8th, was due to diabetic coma. He was attended in his last illness by Dr. Owen Bowen and by his old friend, Sir James Barr. He leaves a widow and one son. The funeral took place at Anfield Cemetery on August 10th.

He was a man much beloved by his friends and his patients, quiet and unassuming, and devoted to his professional work.

[1] *American Journal of Surgery*, November, 1906.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

THE appointment of a University Lecturer in Botany will be made early in the Michaelmas term. The annual stipend is £100. Application should be made to the Vice-Chancellor before October 11th.

The Examination in Sanitary Science will commence Part I on October 2nd and Part II on October 7th.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on July 24th.

Recognition of Teachers.

The following were recognized as teachers of the University in the subjects and places indicated:

University College.—Dr. Herbert Tilley (Laryngology and Aural Surgery).

King's College.—Dr. Arthur Whitfield (Dermatology).

London Hospital.—Dr. Harold Theodore Thompson (Clinical Medicine).

Guy's Hospital.—Dr. Arthur F. Hertz (Medicine).

St. Mary's Hospital.—Mr. Sidney Maynard Smith (Surgery).

Charing Cross Hospital.—Dr. J. M. H. Macleod (Dermatology).

Westminster Hospital.—Dr. Robert Jones (Mental Diseases).

London School of Tropical Medicine.—Dr. F. M. Sandwith (Tropical Medicine).

Advanced Lectures in Physiology.

The following scheme of advanced lectures in physiology for the session 1907-8 was approved.

The University (Physiological Laboratory).—(1) J. B. Leathes, M.B., B.Ch.: Animal Metabolism. Tuesdays, 5 p.m.; October to December, eight lectures. (2) H. M. Vernon, M.D., B.Ch.: Phenomena of Autolysis. Tuesdays, 5 p.m.; January to March, eight lectures. (3) J. A. Gardner, M.A., F.I.C.: Cholesterin and Allied Bodies. Tuesdays, 5 p.m.; May to July, eight lectures. (4) E. I. Spriggs, M.D., F.R.C.P.: The Construction of Diets in Health. Fridays, 5 p.m.; November, four lectures.

University College.—(5) W. M. Bayliss, M.A., D.Sc., F.R.S.: Physiological Problems Common to Animals and Plants. Wednesdays, 5 p.m.; October to December, eight lectures. (6) R. H. A. Plimmer, D.Sc.: The Chemistry of Certain Groups of Proteins. Wednesdays, 5 p.m.; January to March, eight lectures. (7) S. B. Schryver, D.Sc., Ph.D: Dietetics and Metabolism. Fridays, 5 p.m.; January to March, eight lectures. (8) W. Page May, M.D., F.R.C.P.: Tracts of the Central Nervous System. Wednesdays, 5 p.m.; May to July, eight lectures.

King's College.—(9) O. Rosenheim, Ph.D.: The Borderland of Animal and Vegetable Chemistry. Mondays, 4.30 p.m.; November, three lectures. (10) T. G. Brodie, M.D., F.R.S.: Tissue Respiration. Mondays, 4.30 p.m.; January, four lectures. (11) F. W. Mott, M.D., F.R.S.: The Physiology of the Emotions. Mondays, 4.30 p.m.: February, two lectures. (12) W. D. Halliburton, M.D., F.R.S.: Degeneration and Regeneration of Nerves. Mondays, 4.30 p.m. March, two lectures. (13) C. S. Myers, M.D.: The Special Senses. Fridays, 4.30 p.m.; May to July, eight lectures.

Guy's Hospital.—(14) A. P. Beddard, M.D.: Secretion of Urine. Thursdays, 4 p.m.; November, four lectures. (15) A. F. Hertz, M.D., B.Ch. The Passage of Food down the Alimentary Canal. Thursdays, 4 p.m.; October, four lectures. (16) M. S. Pembrey, M.D., B.Ch. Physiology of Muscular Work. Thursdays, 4 p.m.; January to March, eight lectures. (17) J. S. Haldane, M.D., F.R.S. Some Applications of Physiology to Industrial Hygiene. Thursdays, 4 p.m.; May, four lectures. (18) F. G. Hopkins, M.B., D.Sc. Chemical Physiology of Muscle. Thursdays, 4 p.m.; June to July, four lectures.

London Hospital Medical College.—(19) J. Craw. Filtration as a Mechanism in Physiology and Pathology. Wednesdays, 4.30 p.m.; October and November, four lectures. (20) W. Bulloch, M.D.; G. P. Mudge, M.R.C.S.; M. Greenwood, M.R.C.S.; and A. Bacot, F.E.S. Inheritance in its Physiological and Pathological Aspects. Wednesdays, 4.30 p.m.; May and June, eight lectures. (21) L. Hill, M.B., F.R.S.; and M. Flack, B.A. Some Aspects of the Physiology of the Heart. Wednesdays, 4.30 p.m.; May and June, eight lectures. Courses numbered 1, 2, 3, 5, 6, 7, 8, 13, 16, and 21 of the scheme were recognized as advanced lectures which a candidate at the B.Sc. (Honours) examination in physiology may name for part of his practical examination.

Panel of Lecturers in Physiology.—The name of Dr. E. I. Spriggs has been added to the panel of lecturers in physiology.

Report of Physiological Laboratory Committee.

The report presented by the Physiological Laboratory Committee on the five years' work of the laboratory stated that twenty-five courses of lectures on general physiology, electrophysiology, vegetable physiology, cytology, and experimental psychology had been delivered, and that the average attendance

at the different courses was from twenty to thirty. In accordance with the scheme prescribed by the Senate, the following courses of lectures had been published for the University by Mr. John Murray: (1) *The Signs of Life*, by Dr. A. D Waller; (2) *The Biochemistry of Muscles and Nerves*, by Professor W. D. Halliburton; (3) *Animal Metabolism*, by Dr. J. B. Leathes; (4) *The Morphology of Normal and Pathological Blood*, by Dr. G. A. Buckmaster. Sir T. Lauder Brunton's course on circulation is in the press.

Post-graduate research had been conducted during the five years by twenty-six teachers and students and the results published. The number of papers communicated from the laboratory to scientific journals was fifty-six down to June, 1907.

The aggregate income of the laboratory during 1902-6 inclusive had been £6,260 8s. 9d. (of which £4,200 was obtained by voluntary contributions), and the expenditure for the same period amounted to £4,986 0s. 6d.

Bust of Dr. E. A. Parkes.

The Senate resolved that the bust of Dr. E. A. Parkes presented to University College in commemoration of his service as a physician and clinical teacher in connexion with University College Hospital should be presented to the Medical School of the hospital.

Appointments.

Dr. F. C. Shrubsall has been added to the panel of University extension lecturers.

Dr. T. D. Griffiths has been elected one of the governors of the University College of South Wales, Aberystwyth.

Dr. S. Russell Wells has been elected Vice-Chairman of the Council for External Students for the year 1907-8.

Admission to the Faculty of Medicine.

Professor Arthur Whitfield, M.D., has been admitted to the Faculty of Medicine.

EXAMINATIONS.

The following candidates have been approved:

INTERMEDIATE EXAMINATION IN MEDICINE.—A. R. S. Alexander, R. W. Annison, W. R. W. Asplen, Ethel M. Baker, R. P. Ballard, A. D. E. Bayliss, J. D. Benjafield, Barbara Broster, H. L. Burton, R. H. Candy, H. W. Catto, †Nina G. Cotton, †‡A. N. Cox, Hazel H. Cuthbert, W. C. Dale, W. A. Daley, B.Sc., V. G. Desai, G. Dunderdale, I. B. Dunning, E. M. A. Duvivier, G. F. E. Dyke, §‡Florence M. Edmonds, R. B. Edwards, J. P. Elias, A. O. English, H. Gardiner, §†D. Green, T. Hare, W. L. Hibbert, G. R. Hind, ‡J. S. Hopwood, †S. Hoyte, M. L. C. Irvine, §*G. Jefferson, E. H. Jones, H. G. Kilner, E. C. Lindsay, †A. G. H. Lovell, G. G. Lyttle, Emily C. Macirone, G. Maxted, §*B. C. Maybury, J. H. Meers, D. A. Mitchell, Stella Myers, A. G. W. Owen, Mary M. Patterson, W. L. Pink, †‡H. Platt, N. L. M. Reader, ‡E. E. A. T. Rigg, †A. L. Robinson, C. J. Rogerson, Mary Schofield, Mary C. Scott, §*†‡C. E. Shattock, C. W. Shepherd, F. C. Shone, B. S. Simmonds, *†T. D. M. Stout, J. B. Tackaberry, H. H. Tanner, N. Tattersall, †G. Taylor, G. O. Teichmann, ‡W. R. Thomas, H. A. Treadgold, T. A. F. Tyrrell, P. J. Veale, T. H. Whittington, J. C. Woods.

* Distinguished in Anatomy. † Distinguished in Physiology.
‡ Distinguished in Pharmacology. § Bracketed for a Scholarship.

UNIVERSITY OF EDINBURGH.

GRADUATION CEREMONIAL.

THE summer graduation ceremonial took place in the McEwan Hall on Friday, July 26th, the Vice-Chancellor Principal Sir William Turner presiding, when the honorary degree of LL.D. was conferred *in absentia* on William Bayard, M.D. (Edinburgh, 1837), St. John, New Brunswick. In requesting the Vice-Chancellor to confer this degree *in absentia*, the Dean of the Faculty of Law (Sir Ludovic Grant) said: Before the candidates for medical degrees are presented, I shall ask you to confer the honorary degree of Doctor of Laws, *in absentia*, upon one who himself graduated as Doctor of Medicine in this University on August 1st, 1837—nearly three-quarters of a century ago. The venerable alumnus whom the Senatus Academicus desires to honour to-day is Dr. William Bayard, of St. John, New Brunswick, who next month will attain to the great age of 93 years, but who is, I rejoice to be able to say, in vigorous health himself, and still actively engaged in administering to the health of others. Dr. Bayard's long career forms a most interesting link between the new academic order and the old, for its commencement takes us back to the era when the University was still the town's College, when graduation in medicine was regulated, not by Ordinances, but by *Statuta Solennia*, and when the last of the Monros was still in office. So far as I am aware, there is no one who can challenge Dr. Bayard's title to be regarded as the patriarch of the whole vast tribe of Edinburgh graduates throughout the world. But, Sir, it is not because of his longevity alone that Dr. Bayard has been deemed worthy of academic recognition—yet higher grounds are furnished by the rare wisdom, the probity, the dignity, and nobility of character which he has ever displayed in the practice of his profession, and in social intercourse. He has long exercised, by virtue of these qualities, a salutary and ennobling influence amongst his medical brethren in New Brunswick, while by the entire community there he is greatly honoured and greatly beloved. The motto "*sans reproche*" was brought into close connexion with the name of Bayard more than four centuries ago, but I question if it applied more fitly and justly to the gallant chevalier than it does to the venerable doctor upon whom his Alma Mater now rejoices to bestow her highest honour.

The following degrees were then conferred:

M.D.—†E. Archer-Brown, †J. H. M. Bell, †G. J. Blackmore, †T. C. Blackwell, †R. A. Blake, D. W. Boswell, *O. C. Bradley, A. Brown, H. M. Brown, *H. J. M. Browne, †A. E. Burroughs, †Katherine J. S. Clark, Paula T. Copeland, †R. W. Craig, †J. Crawford, B.Sc., P. Crerar, J. E. T. Davies, †D. Ewart, F. E. Field, S. B. Figgis, G. H. L. Fitzwilliams, J. Fortune, †L. Gifford, †N. Glegg, J. L. Green, J. A. Gunn, M.A., B.Sc., †W. Hamilton, †P. A. Harry, W. Hume, †H. Kerr, L. Laurie, C. G. S. Leeds, W. Leslie, J. Lochhead, M.A., B.Sc., S. M'Donald, †W. C. W. M'Dowell, B.A., Robina Harlin, *née* M'Gregor, *N. M'Vicar, A. M. Malcolmson, *W. J. Maloney, W. Miller, †H. P. Milligan, †R. U. Moffat, †R. C. Monnington, H. Mowat, †H. L. Munro, *J. H. H. Pirie, B.Sc., †C. F. Ponder, A. F. H. Rabagliati, H. S. Reid, *L. C. P. Ritchie, †T. R. Smith, W. A. W. Smith, †R. S. Stephenson, *H. J. Stewart, H. A. Stewart, †A. C. Strain, †J. P. Sturrock, M.A., †W. D. Sutherland, J. Thomarson, E. F. Valenzia S. M. Varis, *R. M'L. Veitch, H. Wade, H. C. Weber, J. H. D. Webster, W. E. C. Williams, G. W. Young.

* Highly Commended for their Theses. † Commended for their Theses.

CH.M.—†S. Evans (India) M.B., C.M., 1893; *D. C. L. Fitzwilliams (Wales) M.B., Ch.B., 1902.

M.B., CH.M.—S. Rowland (England).

M.B., CH.B.—G. J. Adams, †J. B. Alexander, M.A., J. L. Annan, A. Arthur, †J. C. Ashton, R. G. A. Bagnall, D. M. Barcroft, A. C. Barker, C. B. Baxter, †A. E. Bennee, Mary F. Bignold, H. W. Binks, F. G. H. R. Black, J. A. Brand, A. Bremner, J. Brennan, H. F. Briggs, D. S. Buist, T. Burrell, P. D. Cameron, R. J. Chapman, W. D. Coghill, C. E. A. Coldicutt, C. H. Corbett, T. Craig, F. W. M. Cunningham, C. H. Derksen, T. Derrick, P. Donald, M. Douglas, M.A., G. L. Duncan, †P. A. Euvrard, V. L. Evans, Josephine L. D. Fairfield, S. B. Faulkner, W. P. Ferguson, M.A., B.Sc., Mary S. Finlayson, W. S. Forbes, †J. Fraser, O. M. Gericke, J. B. Gibson, M.A., R. M. Glover, I. M. Grant, D. G. Gray, A. R. Gunn, †D. J. Guthrie, *G. Henderson, Nettie D. Hendrie, W. S. Heron, A. F. Hewat, A. M. Hewat, M. Heyns, J. R. Hill, J. K. A. Hofmeyr, B.A., †J. H. Horne, A. Hunter, J. A. Jamieson, *R. H. Jamieson, W. W. Johns, R. F. Johnson, Blanche M. Z. Johnston, M. J. Johnston, *T. A. Johnston, W. D. S. Johnston, D. Johnstone, M.A., G. G. Jolly, S. W. Joubert, J. H. Lamb, J. H. Lechler, A. F. Lee, D. Lees, M.A., C. W. L. Luethgeff, W. S. M'Cune, A. Macdonald, W. K. Macdonald, A. T. Mackenzie, M.A., †R. F. M'Laren, Helen M. M'Millan, J. A. Manifold, L. R. H. P. Marshall, Ada E. Miller, Margaret M. Miller, C. I. Milne, C. J. Milne, A. P. Mitchell, J. A. Morris, J. Morrison, J. Muckhart, *J. J. H. Nelson, *C. F. Pattie, †W. J. Porteous, D. E. C. Pottinger, N. H. Prior, †D. H. Rai, M.A., C. Robertson, B.A., †D. Robertson, W. S. I. Robertson, W. A. Scobie, J. Scott, R. L. Scott, Alice C. Sharp, W. J. Simpson, E. D. Smith, F. F. S. Smith, Dorothy W. Stevenson, L. H. F. Thatcher, *C. A. Thelander, C. P. Theron, B.A., *D. Thomson, W. Thomson, W. W. Thomson, A. L. Thornley, F. J. G. Tocher, Lydia K. Towers, Martha B. Webb, J. C. B. Williams, D. J. Williamson, †J. L. Wilson, J. L. M. Wood.

* First-class honours. † Second-class honours.

B.SC. IN PUBLIC HEALTH.—M. B. Buxton, M.B., C.M.

On the same occasion the Diploma in Tropical Medicine and Hygiene was conferred on A. G. H. Smart, M.B., Ch.B.

Gold Medals.

The following gentlemen then received gold medals for their M.D. Theses:

L. N. H. Biggs, J. A. Gunn, J. Lochhead, S. M'Donald, H. A. Stewart, H. Wade.

The following Fellowships and Prizes were then handed to the successful candidates:

The Goodsir Memorial Fellowship.—James Lochhead, M.A., B.Sc., M.D., Ch.B.

The Syme Surgical Fellowship.—James Walker Dawson, M.B., C.M. (*In absentia*)

The Milner Fothergill Medal in Therapeutics.—James A. Gunn, M.A., B.Sc., M.D., Ch.B.

The Gunning Victoria Jubilee Prize in Anatomy.—Alexander Ninian Bruce, B.Sc.

The Gunning Victoria Jubilee Prize in Chemistry.—Alexander Thomas Cameron, M.A., B.Sc.

The Ellis Prize in Physiology.—William Cramer, Ph.D., D.Sc.

The Ettles Scholarship (the highest award for graduands as Bachelors of Medicine).—Robert Hillhouse Jamieson, M.B., Ch.B.

The Allan Fellowship in Clinical Medicine and Clinical Surgery.—John Fraser, M.B., Ch.B.

The Freeland Barbour Fellowship.—Robert Hillhouse Jamieson, M.B., Ch.B.

The Buchanan Scholarship in Gynaecology.—Albert Edward Bennee, M.B., Ch.B.

The James Scott Scholarship in Midwifery.—David Lees, M.A., M.B., Ch.B.

The Mouat Scholarship in Practice of Physic.—Dewan Hakumat Rai, M.A., M.B., Ch.B.

The Murchison Memorial Scholarship in Clinical Medicine.—James Sutherland Edwards, M.B., Ch.B.

The M'Cosh Graduates and Medical Bursaries.—Douglas James Guthrie, M.R., Ch.B., and John Howard Horne, M.B., Ch.B.—equal.

The Beaney Prize in Anatomy and Surgery.—John Howard Horne, M.B., Ch.B.

The Conan Doyle Prize.—Albert Edward Bennee, M.B., Ch.B.

The Dorothy Gilfillan Memorial Prize.—Helen Meldrum M'Millan, M.B., Ch.B.

The Wightman Prize in Clinical Medicine.—Alexander Gibson, M.A.

The Anderson Henry Prize in Botany.—John William Bews, M.A., B.Sc.

The Gray Scholarship (for distinction in the final examination for B.Sc., spring and summer, 1907).—David Gibb, M.A., B.Sc.

The Promoter, Professor Sir Halliday Croom, then addressed the graduates. He spoke of the high traditions of medicine in Edinburgh, told the graduates they were the lineal descendants of Goodsir, Simpson, Lister, Christison, Laycock, Syme, and Bennett. He urged them to continued work and progress

in their calling, spoke of their relation to patients and fellow-practitioners, of jealousy, and of unsolved problems.

A luncheon in the University Union followed. At this Sir Donald Currie intimated his intention to pay the remaining balance of cost of extension of the Union.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary quarterly comitia was held at the College on Thursday, July 25th, the President, Sir R. Douglas Powell, in the chair.

Lectures.

The President announced that the Bradshaw Lecture On Pleural Effusions and their Treatment would be delivered by Sir James Barr on November 5th, and the FitzPatrick Lectures On the History of Medicine by Dr. Pye-Smith on November 7th and 12th.

It was announced that for the year 1908 Dr. Herbert French had been appointed Goulstonian Lecturer; Sir James Sawyer, Lumleian Lecturer; Dr. Pye-Smith, FitzPatrick Lecturer; Professor Schäfer, Oliver-Sharpey Lecturer, and Dr. Dudgeon, Horace Dobell Lecturer. Dr. Lazarus Barlow was appointed Croonian Lecturer for 1909.

Fellowship.

A. Shadwell, M.A., M.D. Oxon., and T. McCrae, M.D. Toronto, who were elected on April 25th, were admitted Fellows of the College.

Membership.

A. W. Falconer, M.D. Aberd., V. S. Hodson, M.B. Oxon., B. Hudson, M.A., M.B Cantab., L.R.C.P., H. C. C. Mann, M.D Lond., L.R.C.P., R. H. Miller, M.B. Lond., L.R.C.P., H. Pritchard, M.D. Lond., L.R.C.P., E. A. Ross, M.D. Cantab., G. MacI. C. Smith, M.A., M.B. Aberd., F. E. Tylecote, M.D. Vict., S. A. K. Wilson, M.A., M.B Edin., were admitted Members of the College.

Licence.

The Licence of the College was granted to 114 gentlemen.

Diplomas in Public Health.

In conjunction with the College of Surgeons, Diplomas in Public Health were granted to 13 gentlemen.

Communications.

The following communications were received:

1. From the Committee of the International Congress on Psychiatry, Neurology, etc., to be held in Amsterdam, September 2nd to 7th next, inviting the College to send delegates. It was left to the President to nominate some Fellow to represent the College.

2. From Sir Dyce Duckworth and Dr. Heron, who represented the College at the funerals of Sir Joseph Fayrer and Dr. Robert Barnes respectively.

3. From Dr. James Ramsay, of York, offering the College an autotype copy of an engraved portrait of James Atkinson, 1759—1839, author of *Medical Bibliography*, Letters A—B. The gift was accepted, and thanks returned to Dr. Ramsay.

4. From the Registrar of the General Medical Council, communicating the revised recommendations of the Council with regard to the instructions of students in practical midwifery. This was referred to the Committee of Management.

5. From the Secretary of the Royal College of Surgeons reporting proceedings of their Council on May 9th, June 13th, and July 11th.

6. From the Clerk to the London County Council thanking the College for advice regarding the connexion of cases of posterior basic meningitis with those of cerebro-spinal fever, and for recommendations as to registration of the two complaints, which the Council resolved to adopt.

College Officers.

On the nomination of the President and Council, the censors, examiners, and other college officers were elected.

Baly Medal.

On the recommendation of the Council, the Baly medal was awarded to Ernest H. Starling, M.D., F.R.C.P., F.R.S., Jodrell Professor of Physiology, University College, London, as having pre-eminently distinguished himself in the Science of Physiology.

Reports.

The following reports were received:

1. From the Representative of the College on the General Medical Council on the proceedings of the Council during its Session in May last.

2. From the Committee of Management (3) dated May 13th, June 3rd, and June 25th, recommending that Dr. H. H. Tooth and Mr. A. G. R. Foulerton be appointed Assessors to the Examinations of the London School of Tropical Medicine for the year ending June, 1908, and that the Municipal Technical School, Birmingham, Aldenham School, Elstree, and Alleyn's School, Dulwich, be added to the list of institutions recognized by the Examining Board in England for instruction in chemistry and physics. The recommendations were adopted.

The quarterly report of the Finance Committee, the annual report of the Library Committee, the annual report of the Curators of the Museum, and the quarterly report of the Examiners for the Licence on the results of the examinations in April last were received.

Books and other publications presented to the library during the past quarter were received, and thanks returned to the donors.

The newly-elected officers, examiners, and members of standing committees gave their faith to the College.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL ARMY MEDICAL CORPS.

THE following candidates were successful at the May examination for promotion of Majors of the Royal Army Medical Corps in technical subjects:

Major J. Girvin, Sanitation and Epidemiology.[1]
Major C. C. Fleming, D.S.O., M.B., Technical Subjects.[2]
Major G. S. Crawford, Technical Subjects.[2]
Major S. F. St. D. Green, M.B., (*d*) ii.[3]
Major H. E. Staddon, (*a*) ii.[4]
Lieutenant W. Byam, (*d*) ii, and in (*h*) ii and iii.[5]
Lieutenant H. C. Winckworth, (*d*) ii, and in (*h*) ii and iii.[6]
Lieutenant J. St. A. Maughan, (*h*) ii and iii.[7]
Lieutenant C. P. Thomson, M.D., (*d*) ii and iii, and in (*h*) ii and iii.[6]
Lieutenant G. W. Heron, (*d*) ii, and in (*h*) ii and iii.[8]
Lieutenant R. J. B. Buchanan, (*h*) iii.[9]
Lieutenant G. S. Wallace, M.B., (*d*) ii, and in (*h*) ii and iii.[10]
Lieutenant T. H. Gibbon, M.D., (*d*) ii, and in (*h*) ii and iii.[6]
Lieutenant R. J. C. Thompson, (*d*) ii, and in (*h*) ii and iii.[6]
Lieutenant H. H. A. Emerson, M.B., (*d*) ii and in (*h*) ii and iii.[6]
Lieutenant A. M. Rose, M.B., (*d*) ii, and in (*h*) ii and iii.[6]
Lieutenant E. T. Potts, M.D., (*d*) ii, and in (*h*) ii and iii.[6]
Lieutenant W. M'Conaghy, M.B., (*d*) ii, and in (*h*) ii and iii.[8]

[1] Already passed in (*d*) ii, and in Army Medical Organization in Peace and War, in Selected Subjects, and in Laws and Customs of War.
[2] Already passed in (*d*) ii.
[3] Has yet to pass in Technical Subjects.
[4] 0.75. Has yet to pass in Technical subjects.
[5] 0.75 in (*d*) ii. Already passed in (*h*) ii.
[6] 0.75 in (*d*) ii. Already passed in (*h*) i.
[7] Already passed in (*d*) ii and in (*h*) i.
[8] Already passed in (*h*) i.
[9] Already passed in (*d*) ii and iii, and in (*h*) ii; has yet to pass in (*h*) i.
[10] 0.75 in (*d*) ii; has yet to pass in (*h*) i.

The following is the list of successful candidates for commissions in the Royal Army Medical Corps at the recent examination in London, for which fifty-nine candidates entered:

	Marks.
T. McC. Phillips, B.A., M.B., B.Ch., R.U.I.	605
H. S. Dickson, B.A. Camb., M.R.C.S. Eng., L.R.C.P. Lond.	591
G. F. Dawson, M.A., M.B., B.Ch. Aberd.	586
H. V. B. Byatt, M.R.C.S. Eng., L.R.C.P. Lond.	573
R. E. Todd, M.B., B.S Lond., M.R.C.S. Eng., L.R.C.P. Lond.	561
T. F. Lumb, M.R.C.S. Eng., L.R.C.P. Lond.	546
H. Gibson, M.R.C.S. Eng., L.R.C.P. Lond.	544
C. P. O'Brien Butler, L.R.C.P. & S. Irel.	518
G. Petit, L.R.C.P. & S. Irel.	514
J. B. Hanafin, L.R.C.P. & S. Irel.	512
J. A. Renshaw, M.R.C.S. Eng., L.R.C.P. Lond.	510
R. F. O. T. Dickinson, L.R.C.P. & S. Irel.	496
W. R. O'Farrell, L.R.C.P. & S. Irel.	494
R. De V. King, M.R.C.S. Eng., L.R.C.P. Lond.	493
D. B. McGrigor, M.B., B.Ch. Aberd.	490
C. T. Conyngham, B.A., M.B., B.Ch., B.A.O. Dub.	489
H. McC. Hanschell, M.R.C.S. Eng., L.R.C.P. Lond.	487
J. R. Lloyd, M.R.C.S. Eng., L.R.C.P. Lond.	486
H. W. Carson, M.B., B.Ch., B.A.O. R.U.I.	482
R. G. S. Gregg, B.A., M.B., B.Ch., B.A.O. Dub.	481
H. T. Treves, M.R.C.S. Eng., L.R.C.P. Lond.	474
F. T. Dowling, M.B., B.Ch., B.A.O., B.A.R.U.I.	471
J. C. L. Hingston, M.R.C.S. Eng., L.R.C.P. Lond.	462
F. J. Stuart, M.B., B.Ch. Aberd.	457
B. A. Odlum, L.R.C.P. and S. Irel.	455
W. R. Spong, B.A., M.B., B.Ch., B.A.O. Dub.	448
J. F. Grant, M.B., B.Ch. Aberd.	447
P. H. Hart, B.A., M.B., B.Ch., B.A.O. Dub.	441
A. E. B. Jones M.D., M.B., B.Ch. Dub.	440
A. Hendry, M.B., B.Ch. Aberd.	430

INDIAN MEDICAL SERVICE.

THE result of the July examination was announced on the July 27th. There were 36 candidates, of whom 34 ultimately entered for the examination. Of these 27 qualified, the first 14 being admitted as lieutenants on probation, while one candidate withdrew during the examination.

The names of the successful candidates, with their degrees, and a list of the marks obtained by them out of a possible total of 5,100 are given below:

	Marks.
1. H. W. Acton, M.R.C.S., L.R.C.P.	4,120
2. V. B. Green-Armytage, M.R.C.S., L.R.C.P.	3,834
3. A. N. Dickson, M.B. Cantab., M.R.C.S., L.R.C.P. ...	3,589
4. A. B. Zorab, M.B., B.S Lond., M.R.C.S., L.R.C.P. ...	3,561
5. A. G. Coullie, M.B., Ch. Edin.	3,549
6. R. E. Wright, M.B., B.Ch Dub.	3,540
7. W. H. Riddell, M.B., Ch.B. Edin.	3,510
8. A. J. H. Russell, M.B., Ch.B. St Andrews	3,464
9. D. H. Rai, M.B., Ch.B. Edin.	3,455
10. F. S. Smith, B.C. Cantab., M.R.C.S., L.R.C.P.	3,410
11. A. T. Densham, B.C. Cantab., M.R.C.S., L.R.C.P. ...	3,403
12. A. W. Howlett, M.B., Ch.B Man.	3,349
13. F. A. Barker B.C. Cantab.	3,316
14. A. N. Thomas, M.R.C.S., L.R.C.P.	3,283

SPECIALIST PAY.

The following are the rules for the grant of specialist pay to officers of the Royal Army Medical Corps and the Indian Medical Service: Specialist pay is allowed to officers below the rank of lieutenant-colonel for special sanitary, surgical, or medical work done for the State which it is not in the power of an ordinary medical officer to perform with the same efficiency as the specialist. It will not be a personal allowance, but will be granted only to incumbents of certain specified appointments when actually in a position to perform the duties connected therewith.

Indian Medical Service Officers in Civil Employment as Specialists.—The services of specialists are absolutely at the disposal of Government in any way they may direct without further claim for remuneration. The duties of all specialist appointments must be carried out in addition to the ordinary hospital work. No officer shall hold more than one specialist appointment at the same time.

Appointments.—There will be 105 specialist appointments in India, each carrying pay at 60 rupees a month, the special subjects for which allowances are granted and the number of each class being shown in the subjoined table. Of these, 55 will be allotted to the Royal Army Medical Corps and 50 to the Indian Medical Service in military employment.

Selections for appointments and distribution throughout the several divisions and brigades will be made under the orders of the Commander-in-Chief. The guiding principle, however, will be that the officers will be located in those stations where their services are likely to be of greatest utility to the army.

Specialist Appointments.—(*a*) Prevention of disease (including parasitology, bacteriology, and preventive inoculation), 40.

(*b*) Dermatology (including the prophylaxis, treatment of, and instructional measures in connexion with venereal diseases), 10.

(*c*) Advanced operative surgery, 20.

(*d*) Ophthalmology, 10

(*e*) Electrical science (including skiagraphy), 10.

(*f*) Mental science, 2.

(*g*) Otology, laryngology, and rhinology, 3.

(*h*) Midwifery and diseases of women and children, 10.

Qualifications.—Officers of the Royal Army Medical Corps in India will be eligible for appointment as specialists under the qualifications laid down by the Army Council. Should, however, there not be a sufficient number of these officers holding the above qualifications in (*b*), (*c*), and (*e*) available in this country [India], the Principal Medical Officer of His Majesty's Forces in India will decide as to the eligibility of any officer being appointed a specialist in India in these subjects, his decision being based on the certificates of a recognized institution or the reports of the administrative medical officers, which should be based on personal knowledge of the individual recommended.

Similarly the Principal Medical Officer of His Majesty's Forces in India will decide as to the advisability of any officer being appointed a specialist in the prevention of disease for preventive inoculation work only. Such qualifications will only be recognized as long as the officer is on the Indian establishment. On the occurrence of vacancies in any of the cases provided for in rule (8), the claims of fresh arrivals in India holding qualifications referred to in (7) will receive the first consideration. The eligibility of an officer of the Indian Medical Service as a specialist will be decided by the Director-General of the Indian Medical Service, whose conclusions will be based on the certificates of a recognized institution or by the examination of the candidate. All officers before being appointed specialists in (I) will be required to go through a course of skiagraphy at the Dehra Dun School, to enable them to become thoroughly acquainted with the apparatus used in India and its working under field service conditions.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Inspection of the Maidstone Companies.

Sir Alfred Keogh, K.C.B., Director-General Army Medical Service, recently inspected the Maidstone Companies R.A.M.C. (Volunteers) under the command of Major C. Pye Oliver, M.D. The parade state showed 203 of all ranks, the largest muster which the Maidstone companies had ever had for inspection. This number included detatchments from Canterbury (Lieutenant A. R. Henchley), Margate (Lieutenant P. C. Burgess), and Snodland The other officers with the corps were Captain J. M. Rogers-Tillstone, Lieutenants J. Aldington Gibb, M.B. (Acting Adjutant), J. Ward, and the Quartermasters B. D Hobson and Barford, together with the Chaplains (the Revs. C. G. Duffield, M.A., Maidstone, E D. Finch-Smith, B.A., Snodland, and J. Le Mare Shallis, Canterbury). After a minute inspection of the companies the men were ordered to form a field ambulance. The wounded were attended to on the field and sent in wagons to the dressing station. The Director-General expressed his satisfaction with the appearance and efficiency of the companies He referred to the history of the Maidstone Companies, which were amongst the earliest companies of the R.A.M.C. (Volunteers), and regretted that the founder, Surgeon-Lieutenant-Colonel Monckton, V D., had not lived to be present on this occasion, which marked the twenty-first year of the existence of these companies. He referred to the recent step in army reform, which, he said, would undoubtedly affect the R.A.M.C. (Volunteers) He entirely sympathized with the desire of the Maidstone Companies for an increase of establishment, and would do all he could to assist them in this matter. The Director-General and staff, together with the Mayor (Mr. E. Vaughan), were afterwards entertained to dinner at the Royal Star Hotel by the officers of the corps.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

MULTIPLE DOOR-PLATES

Secretary.—The opinion has been repeatedly expressed in this column that except in widely-spread country districts where it may be necessary to indicate places at which messages may be left for them, medical practitioners should not fix name-plates upon houses where they have no tenancy; it is even then undesirable to choose a chemist's shop. A complaint might be made to the Ethical Committee of the local Division of the Association.

Medico-Legal.

A PERFUNCTORY INQUIRY.

An inquest was held recently at Timperley, the ostensible object of which was to discover the cause of death of a woman, aged 56, who died after a short illness characterized by symptoms of indigestion and vomiting. The deceased was said to have had an objection to doctors, and a medical man sent for by a friend at the last moment did not see the woman alive, and was unable to give a certificate. According to the report before us, the coroner, Mr. H. C. Yates, having extracted from this friend the information that the deceased had seen a doctor four or five years ago—for what complaint the witness did not know—told the jury that there was no alternative but to order a *post-moriem* examination "when there was nothing to guide them as to the probable cause of death," but he had, he said, a strong objection to *post mortem* examinations unless they were absolutely necessary. In this case he thought the jury would agree with him that a *post mortem* examination was not absolutely necessary, as the deceased had seen a doctor four or five years ago for heart trouble, and the jury "knew perfectly well that if they once had heart trouble it very rarely healed." The jury agreed with the coroner and returned a verdict of "died from syncope due to natural causes." How the coroner and his jury arrived at this conclusion is not very apparent. The medical man asked to see the woman on the day she died, and who did not arrive in time to see her alive, told the policeman the coroner sent to him to make inquiries that he knew no more than Adam what was the cause of death, and it would seem that that expressive colloquialism states the true result of the inquiry more accurately than the jury's verdict.

MEDICAL WITNESS'S FEE IN CIVIL CASES.

Medical Practitioner's experience shows the necessity of an understanding being come to with a solicitor previously unknown to the doctor as to the payment of fees, etc. He should send in his account as follows:

Report	£1	1	0
Two days' attendance at court	2	2	0
	£3	3	0
Less fee paid with *sub-poena*	1	1	0
	£2	2	0

And if any further difficulty is made about payment let him threaten a county court action, and, if necessary, carry out his threat.

At a general meeting of the Independent Order of Rechabites which was in progress during the second week of August there was a long discussion on the subject of smoking by boys and immature youths. Finally it was determined to urge the Government to pass a Bill suppressing the sale of tobacco to children. An Australian delegate in the course of the discussion stated that in Victoria cigarette smoking among boys had long been a crying evil, but that since the passing of an Act dealing with the matter, the practice had materially diminished.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication or understood to be offered to the* **BRITISH MEDICAL JOURNAL** *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

TELEPHONE (National):—

EDITOR, 2831, Gerrard. **GENERAL SECRETARY AND MANAGER. 2630, Gerrard.**

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

"PUZZLED" asks for information as to the treatment of chronic and painful thickening of the skin of the ball of the toes, sometimes accompanied by blisters, of the feet of a young man whose occupation of keeper necessitates constant walking.

D.P.H. asks for advice as to a manual on the etiology of disease suitable for reading for Part II of the Diploma in Public Health (Leeds).

*** Our correspondent would, we believe, find what he wants in the section on the etiology of disease in Hamer's *Manual of Public Health.* (London: J. and A. Churchill. 12s. 6d.)

LOCUM has a lady patient whose eyebrows have become white, and insists on having them dyed dark brown or black. He asks for advice.

*** The best thing is to darken the parts referred to with one of the many fatty preparations on the market applied with a dry brush, tint to suit patient, but actual dyeing is not recommended.

ANSWERS.

"ONLOOKER" is reminded that no notice can be taken of anonymous communications.

HIPPOCRATES.—The best known editions of the works of Hippocrates are those of E. Littré (Oeuvres Complètes d'Hippocrate, traduction nouvelle, avec le texte Grec en regard, etc.) in ten volumes (Paris, 1839–61), and of F. Z. Emerins (Hippocrates et aliorum medicorum veterum reliquiae), three volumes (Utrecht, 1859–64). Daremberg published an edition of selected works of Hippocrates (Paris, 1855). The Sydenham Society published a translation of the genuine works of Hippocrates by Francis Adams.

OFFENSIVE PERSPIRATION.

DR. ARTHUR W. THOMAS (Boscombe) writes in answer to "M.D. Aberdeen" (BRITISH MEDICAL JOURNAL, August 3rd, p. 303), to recommend the administration of guaiacol cinnamic acid (styracol), dose about 0.5 gram three or four times a day. This antiseptic seems to be eliminated largely by the skin.

Dr. P. SHEEHY (Totteridge, N.) writes: I would suggest trials of pilocarpine, picrotoxine, or nitrite of amyl, and especially the latter. Personally I have no experience of pilocarpine, but picrotoxine I have frequently found successful in the sweating of phthisis when other remedies have failed. Burning sensations followed by profuse perspirations as a sequela of influenza were promptly arrested by nitrite of amyl $\frac{1}{30}$ of a minim dissolved in spirits of wine given on sugar every four hours. Ringer, in his *Therapeutics*, narrates cases of perspiration, not following influenza, in which nitrite of amyl proved useful.

TREATMENT OF GOUTY NEURITIS.

DR. JOHN J. EYRE (London, N.W.) writes: In reply to "S. E. W.'s" inquiry, I write to state that the baths of Salsomaggiore, North Italy, are open in October. The "cure" includes "Fangi," and is very beneficial in gouty neuritis. The hotel accommodation at least is far superior to that of Acqui.

MR. JOHN HATTON, manager of the Baths and Wells Department, Buxton, writes to state that moor baths have been established there this year, and are fitted in the most approved manner. The peat, which is obtained from extensive moorlands contiguous to the town, contains a large proportion of iron and organic acids, and after preparation is mixed with the mineral water of the chalybeate spring. Cleansing baths are given in chalybeate water, thermal water, or plain spring water as desired. Local applications of the moor mud are also given. The fango mud treatment, combined with douches of the thermal water, can also be obtained. The baths are open throughout the year, and the corridors and rooms are heated during the winter. He adds that during October the weather is often very pleasant, and that he will willingly give further information in response to applications made to him.

PROFESSOR CHITTENDEN'S DIETS.

R. W. M.—Full details of the diets used by Professor Chittenden, giving the quantities and stating how the various articles of food were cooked (for example, mashed potatoes, apple fritters, egg omelette, fried bacon, roast turkey), can be found in his book on *Physiological Economy in Nutrition* (London: William Heinemann. 1905. 14s.), or in his later work, *The Nutrition of Man* (same publisher, 1907), in less detail.

LETTERS, NOTES, Etc.

SHIP SURGEONS.

MR. T. W. MOORE, Secretary of the Merchant Service Guild (Liverpool), writes: My attention has been drawn to certain remarks appearing in the BRITISH MEDICAL JOURNAL of July 27th, page 244, from a correspondent signing himself "Medicus," who asks for the views and experiences of readers who have acted as ship surgeons regarding the status of the profession at sea, and also the surgeon's position relative to that of the other officers. Your correspondent infers that surgeons on board ship are subjected to surveillance, espionage, and impertinent interference. I do not know what your correspondent's personal experience may have been, but it is unfortunate that such remarks should be made use of, for they are only calculated to destroy that friendly feeling and good fellowship which almost invariably exists between the executive officers and the surgeon of the ship. I have a large number of personal friends acting in the latter capacity, and from constant personal observation find that both officers and surgeons work together harmoniously and without the slightest friction obtaining. You may take it from me that, though authority must be maintained on board ship, there is certainly no desire to treat ship surgeons otherwise than what is due to them from the professional status they hold, and we would regret that anything should appear in print which, rather than doing good, might effect a great deal of harm. This organization comprises some 13,000 captains and officers of the British Merchant Service, and we can assure your readers of our desire to work with the medical profession and to co-operate with them in every way possible.

ERYTHEMA NODOSUM.

MR. JOHN S. CLARKE (Caldicot, near Newport, Mon.) writes: *Re* Dr. J. O. Symes's article on erythema nodosum in the BRITISH MEDICAL JOURNAL of July 27th, he states that there is some evidence that this disease occurs in epidemic form. In support of this I would mention that, after spending four years in this neighbourhood without seeing a case of erythema nodosum, I had 7 cases this spring of the disease, 5 occurring in females and 2 in males, ages 4 to 28 years. In only one case was there any history of rheumatism in the family, and none of the patients gave any definite history of rheumatism or chorea or growing pains. Three of the patients complained of joint pains. The child, in whose family there is a marked rheumatic history, suffered severely from arthritis, the knees being both swollen and the temperature raised for several days. On her salicylates had no effect, nor did large doses of alkalies. She rapidly convalesced on tonics. In the remaining 6 cases salicylates were first exhibited, whether they had joint pains or no, only one child failing to make a rapid recovery.

ERRATUM.—In the account given of the Pathological Museum at Exeter, at page 128 of the SUPPLEMENT to the issue of the JOURNAL for August 10th, the name of the firm which was good enough to lend the numerous microscopes used on the occasion was not accurately rendered. Its correct style is Ernst Leitz, of Wetzlar, the English branch of the firm being at 9 Oxford Street, W.

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An Address

ON

THE UNBORN CHILD: ITS CARE AND ITS RIGHTS.

Delivered at the Annual Meeting of the Lancashire and Cheshire Branch, Manchester, June 20th, 1907.

By T. ARTHUR HELME, M.D., M.R.C.P., F.R.S.E.,

President; Honorary Physician to the Northern Hospital for Women, Manchester.

Of recent times much has been heard of the deterioration of our race, the falling birth-rate and the rising death-rate amongst the newborn. There is no need to day to belabour statistics; these are accepted facts; the annual number of births is on the downward grade, and with this the type of the children born is lower both physically and mentally.

In the last fifteen years the fall of the birth-rate has been so great as to lead to a deficiency of a quarter of a million of children in the year.

The death-rate amongst children in the first year of life is but slightly less than it was fifty years ago, whilst the mortality in the first three months of life has actually increased.

On this subject Sir John Gorst writes: "I am assured by doctors who are in actual practice in our cities that . . . they know of streets in which more than half the children born alive perish under a year old," and many members in this room will affirm the truth of that remark.

One is forced to ask: Why has the infantile mortality not shared in the improvement shown by the general death-rate? The betterment of sanitary affairs and general hygiene, the improvement in conditions of work and pay, the increase in the general comforts of life, and the efforts of authorities and societies to check the waste, must have influenced the conditions which led to many of the infantile deaths fifty years ago.

There must be fewer deaths from some causes, and to keep up the average there must be a compensatory *increase from other causes;* this is shown by the facts that whilst the general death-rate under 1 year has remained about the same, the mortality from the 3rd to the 12th month has steadily dropped, whilst that in the first three months of life has actually increased. Why is this? Two explanations suggest themselves:

1. The agencies which, by their attack on the post natal causes of death—that is, by attention to the care of the child after birth—are producing the reduction of the deaths in the *latter* months of the first year of infant life *do not get to work early enough.* At present it is not necessary to register a birth till the child is 6 weeks old, and frequently the birth is not registered until the child is dead! If registration were made compulsory within twenty-four hours of birth, all the present agencies could get to work at once, with a prospect of an immediate fall in the early infantile mortality. It is to be hoped that Lord Robert Cecil's Bill may speedily become law—so amended, of course, as to provide for the payment of a registration fee to the medical practitioner.

2. But there is a second explanation, to which I would specially allude—namely, the increase in the ante-natal causes of post-natal death. We must look to these *ante-natal* causes as being to no small extent responsible for the maintenance of the high infantile death-rate and its increase in the first three months.

Ballantyne has said:

> The question why more babies die in the very earliest days of life has not one but many answers . . . it has always seemed to me that they die also because they should have been dead already, because they were only waiting, as it were, for birth in order to die.

Much valuable work is now being done by those agencies whose object is to promote the proper care of infants. It is no desire of mine to belittle the importance of this work, still I do think that, if we wish to increase the number and enhance the quality of the future population, we must turn our attention to these *ante natal causes* of post-natal death and debility. It has always seemed to me that the measures taken, if I may so say, to bolster up the lives of unhealthy children after birth are somewhat akin to the propping up, by buttresses, of houses whose foundations are insecure. We must not allow our attention to be diverted from the paramount importance of the foundation, that is, the proper care of the child during its intrauterine existence; and, further, we must beware lest by providing these props we encourage the jerry builder to neglect his foundations and the quality of his materials.

Although, as a matter of fact, the deepest foundations are laid long before conception, the future health and constitution of the child are intimately bound up with the processes which go on during its intrauterine existence. During these nine months influences are at work which profoundly affect the viability and ultimate vitality of the child; indeed, this period has crowded into it more potent influences than any subsequent period of similar duration.

It is needless to remind an assembly of this character of the paramount influences of heredity and of the health of the parents. The origin of the fetus dates back to the origin of our species, and the child at its conception has impressed into it the influences of past generations which take a chief part in the determination of its physical and mental characters, its form and structure, its possibilities and its limitations.

Of these things I do not intend to speak, except to note the fact that by recognizing their truth and directing our observations accordingly, we shall help to strengthen the links of that vast chain with which we are concerned.

Coming nearer to the immediate subject of to day, we observe that as naturally the infant depends for its chance of health upon the germ plasm of its immediate parents, this *must* be a matter of concern to us. The subject of germinal therapeutics involves the consideration of matters of grave public concern. Not only does it include the treatment of the parents, but it includes the pressing question of the limitation of marriage to the fit. Whether this shall be by the evolution of a healthy public opinion or by legislation is still open to discussion, for the problems of heredity are great, and our information is as yet but slight. It is evident, however, that our present customs are unsatisfactory, and are leading to a state of affairs that can only end in disaster. I fear that public opinion cannot be successfully educated to cope efficiently with the evil, while the question of legislation raises the spectre of the segregation of the unfit, a costly procedure, and one which frightens by its magnitude; on the other hand, the only alternative advanced is one which demands most careful thought, that is, the proposed sterilization of degenerates.

Time will not allow me to do more than allude to this portion of my subject, and I must press on, contenting myself merely by begging you to take these matters into your serious consideration, so that we as a profession may be ready to speak authoritatively and with no uncertain voice on matters of such vital public concern when the time arrives.

Whilst the essential characters are ineffaceably stamped upon the fetus at the moment of its conception, there is no doubt that its future chances are profoundly affected during the period of its intrauterine life. Let us then consider this portion of our subject—*the care of the unborn child.*

This matter has not received the attention which its importance demands, and public opinion upon it is decidedly wrong, as evidenced by what one sees daily in the press. For example, only a few weeks ago the following words appeared in the *Manchester Evening Chronicle:* "Nature no more goes to the trouble of producing children to die in the first few months than she goes to the trouble of producing plants that fade before they blossom"—a striking misstatement of the facts! The same writer was more correct when he wrote: "It is not natural that children should die any more than that kittens and puppies should die in the first days of existence." Nevertheless they do! Unfortunately, under present social conditions, Nature does go to the trouble of producing children for whom "Birth is but the Gate of Death." If, then, any words of mine, by virtue of the honourable position in which you have placed me to-day—for the time being President of this important Branch of our Association—may lead us to take a more serious

view of our responsibilities as a profession and lead to greater activities, it will be a gratifying and sufficient reward for any work I may have done on your behalf.

Fetal Mortality and Morbidity.

It is an accepted fact that fetal mortality, *i.e.*, the mortality of the child before birth, *exceeds* that of any other period of life. Probably, too, fetal morbidity occupies a similar position relative to that of any other period of life, and leads to much of that post-natal or "postponed" infantile mortality which is now so much a matter of public concern; and, short of actual post natal death, the same ante-natal causes which make for this diminished viability do leave their permanent marks upon the individuals born in the form of diminished vitality or "congenital debility." They may not be sufficiently powerful to lead to death, but they may so lower the vitality of the child that it falls an easy prey to the causes of death to which a child of normal health would not succumb, or they may render it a less useful member of society by reason of its "congenital debility."

As John Burns tersely puts it, "the causes which carry so many away leave so many behind unfitted for the life before them." I am convinced that just as the fetal death-rate is a growing rate, so is there amongst the children born alive a steadily increasing *diminution of vitality due to ante-natal causes.*

In support of this, we find that the average number of infants dying from the accidents of birth, congenital defects, atelectasis, and premature birth, shows a steady upward movement, whilst there is also a steady increase in still-births and abortions. Dr. J. R. Kaye, Medical Officer to the West Riding of Yorkshire County Council, says:

> The influences which are responsible for an increasing number of this type—that is, the children who are but born to die—are also responsible for a greatly diminished number of the desirable type; the same influences are increasing the proportion of children who arrive unfitted for life's struggle, with the result that the problem of reducing our infant mortality is being rendered more and more difficult. It is a very important point to observe that the death-rate from "premature birth" did not begin to increase until the general birth-rate began to decline, and since then the two movements have been *inversely proportional.*

England and Wales.

Decade.	Average Annual Birth-rate per 1,000 living.	Ratio of Deaths under 1 Year per 1,000 Births.	
		(*a*) From all Causes.	(*b*) From Premature Birth.
1855 to 1864 ...	34.6	154	11 0
1865 to 1874 ...	35.4	155	11.9
1875 to 1884 ...	34.7	144	13.7
1885 to 1894 ...	31 2	145	16.8
1895 to 1904 ...	29.0	150	19.8

The great diminution of the birth-rate demands attention. The fall is not entirely due to increased fetal mortality, however; other factors are at work.

Time will not allow me to speak of them at length, though the increasing relative sterility of marriage, whether voluntary or unintentional, is a matter of concern, for I am convinced of the harmfulness of the modern acceptance of Malthusian doctrines and I am equally convinced that the practice of criminal abortion is a growing one.

The Value of Fetal Life.

The public do not, even now, place a proper estimate upon the life of the unborn child. Amongst uncivilized peoples even of recent times, and probably equally amongst the primitive races of prehistoric times, a very low estimate was placed upon the value of the life of the unborn child; the right of a child to live was dependent upon the available food supply. One writer[1] says, "Our ancestors did not admit a newborn infant had a right to existence. The mother had let it fall to the ground; there it must remain until the head of the family either picked it up himself or permitted others to do so. Before he gave the sign, the object counted as little more than a clod; it was as yet but so much organic clay"; and, further, "When a woman found herself to be pregnant and saw that there was no probability that the infant would be a welcome addition to the family circle, she in many cases had recourse to the production of abortion."

This practice undoubtedly is common amongst primitive peoples. When we look into the history of the civilized nations we find evidence that the practice similarly prevailed. In the oldest medical work in existence, that is, the Eyptian papyrus of Ebers, B.C. 1550, we find directions for the production of abortion, a receipt being given "to detach or disperse the fetus in the womb"; and even before this the practice must have existed, for it was forbidden by Zoroaster, and in later times was again forbidden in the Hippocratic Oath (B C. 468).

From the earliest times, then, among civilized nations we may take it that the right of the fetus to live has always been recognized, and the right of the parents to take away that life has never been allowed; nevertheless the practice of procuring abortion prevailed.

We are to day not much more advanced; the right of the fetus to live is recognized by the State, but what do we see in practice? There is no doubt that an important cause of fetal mortality to-day is the artificial induction of abortion.

There is equally no doubt that the public do not, even now, place a proper estimate upon the life of the unborn child, and ignorance of the fact that the child in the womb from the day of its conception is as much a living being, with its individual rights, as at any future period of its existence, is doubtless responsible for much of the destruction of intrauterine life that is happening to-day.

From the economic standpoint, the value of the life of the child *in utero* is enhanced by the present fall in the birth-rate; since fewer children are being born, it follows that the life of the child *in utero* is becoming of higher value, and that it is becoming of greater importance that that life shall be preserved, and that it shall come to fruition.

Hence our responsibilities as practitioners of medicine. We must recognize the appreciation in value of fetal life and the inalienable right of the unborn child to its life. Therapeutic feticide requires to be placed on a modern basis, in view of the advances in the surgery of to-day.

Diminution of Birth-rate.

To some extent this is due to the—

I. Relative sterility of marriages, whether voluntary or unintentional.

(*a*) *Voluntary.*—The artificial prevention of conception is a growing practice, and materially contributes. If this procedure were due to motives of thrift, something might be said in its favour, but I fear a greater incentive is the love of ease and the modern rush for pleasure, for which the responsibilities of motherhood are being shirked; and as a gynaecologist I would utter a word of warning, for my experience teaches me that this cannot be carried out without in many cases causing permanent damage to the individual.

In a pamphlet issued by a society of midwives, I once read an article which had a striking headline: "Tired Ovaries and Hungry Womb"; but the mischief does not stop there; it goes further still, and carries deeper evils in its train.

Another aspect of this question has been forced upon me, for not infrequently have I been consulted by sterile women anxious and almost obsessed by their anxiety for a child; an investigation shows that, while physically there is no evident condition which precludes the capacity for giving birth to a healthy child, in the earlier years of married life means were taken to prevent conception, with this result: that the individual has destroyed her chance, has sterilized herself by her wilful acts, has been the source of her own undoing, and now has degenerated into a neurasthenic hopeless wreck—hope given in exchange for a ghastly memory.

As medical men it is our duty to set our face against such things, and to advise before it is too late.

(*b*) *Unintentional Sterility.*—Other sources of the diminished birth-rate are—

1. The lateness of marriages to-day.

2. The relative sterility due to disease, frequently the result of improperly-treated gonorrhoeal and syphilitic infection in the male, and only too frequently the result of induced abortion.

3. Alcohol drinking and modern overeating, of which I shall speak again.

II. Abortion. Another cause which cannot be passed over—a very serious cause, and, I am convinced, a growing cause—of the fall of the birth-rate is the increase in the custom of artificial and criminal abortion—a return to the practice of the primitive races. It is not limited to any class or grade in society; it occurs among the more intellectual as well as among the more uneducated and depraved. Many women who would consider it a crime to use instrumental means, resort to such measures as violent horse exercise or drugs, as I have not infrequently found. Only recently several cases have come under my care in which the patient has herself passed a crochet hook into her uterus, having been instructed in the art by a midwife or a nurse.

Surely it is our duty, as members of a profession among whose highest aims is the saving of life, to raise our voice against the conditions that prevail.

On May 15th last, in a leader which appeared in the *Manchester Evening Chronicle* (from which I have already quoted), headed "Race Murder," the writer, after reference to the diminishing birth-rate and the high infantile mortality, says: "The problem—and it is a serious problem for those who really care what is to become of our race—is not how to encourage people to have children, but how to keep children and bring them up to be clean and healthy men and women." Herein lurks an important fallacy; we see again the recognition of the importance of the proper care of the *newborn*, but an utter disregard for the proper care of the *unborn* child. The writer is to some extent right when he says "the problem is not how to encourage people to have children," but he would have been much more nearly correct had he written "the problem is how to encourage people to have *healthy* children"—a problem embracing the whole question of *the care of the unborn child*, which resolves itself into the care of the expectant mother in relation to the interests of the child and its rights.

Just as the proper feeding and suitable environment of the newborn child, still in process of growth and development, are relatively of more importance than in the case of the adult, so the proper nourishment and environment of the unborn child is of more vital importance still, for slight departures from what is beneficial may have much more far-reaching effects.

In considering this matter, it is well to keep before us a picture of what is going on inside the uterus after conception has occurred.

The time of intrauterine existence may be divided into three periods:

1. The germinal—that part which concerns the union of the male and female cells and the first beginnings of the embryo.

2. The embryonic—specially concerned with the formation of the organs (organo-genesis).

3. The fetal—more especially concerned with growth; but the last two stages are not abruptly separate and distinct, for part of the organo-genesis continues into the third or fetal period, and even into the period of life after birth.

Each of these periods has its own pathological tendencies. The first has to do with hereditary tendencies and irregular growths of the ovum; in the second are produced malformations and monstrosities; while the third evolves diseases similar to those of the child after birth; just as at birth there is a critical time for the child, which must now adapt itself to new conditions—including the loss of the placental function—its capacity for independent existence being put to the test, so there is during intrauterine life a corresponding time of risk—namely, the transition from the embryonic to the fetal stage, when the placental function is established, a time at which we know the risks of pregnancy coming to an untimely end are great.

Now, all this time the child *in utero* derives its food—its whole food and its only food—from the mother's blood and tissues. The state of the mother's health and of her blood must profoundly affect the child within her womb. If these are good, it will be well for the child; if these are bad, whether as the result of poverty, starvation, and overwork, or as the result of injudicious food, excess, or irregularity of life, it will be bad. It is an established physiological observation that the healthy development of the child depends upon the healthy performance of its mother's functions; but one not infrequently hears it said, in a most comfortable sort of way, that the child always thrives even at its mother's cost. Though sometimes this would seem to be the case, it is not always so; I could instance many a case where the future ill-health of the child has had its origin and its cause in the ill-health of its mother during pregnancy.

Surely, then, we must recognize the *right of the unborn child to conditions which shall make for the safeguarding of its health.* Although the human embryo is placed under such favourable conditions, still it is possible for its surroundings to be injuriously affected, and for injury to reach the child. We know very little about this as yet, but experimental work has shown that very slight change of surroundings can harmfully affect a growing embryo.

1. It is only necessary to recall the classical experiments of Dareste on the development of the embryo in the hen's egg. He has shown that by altering the environment malformations and monstrosities may be artificially produced. By raising or lowering the temperature of the surrounding air, by covering the shell of the egg with varnish, by placing the eggs vertically, etc., he succeeded in so disturbing the healthy development of the embryo—for example, by the arrest of development of blood vessels—as to lead to the production of monstrosity and disease.

2. Féré, by injecting alcohols and aldehydes into hen's eggs during incubation, was able to cause arrest of development and malformations in the chick, showing that the local action of alcohol is to arrest development.

3. Prochownik some years ago found that by feeding women on a nitrogenous diet during pregnancy a smaller child was produced, and he advocated this treatment in the case of women with small pelves.

4. Interesting speculations are raised by some recent work done in the University of Edinburgh showing the result of feeding rats on a non-physiological diet. In the *Proceedings of the Royal Society of Edinburgh* for 1905 Chalmers Watson described the clinical results obtained in an experimental investigation on the influence of an excessive meat diet on the growth and nutrition of rats. It was there shown *that the progeny of meat-fed rats are unusually poorly developed and show a high mortality in early life.*

In a later communication (October, 1906) he describes the influence of an excessive meat diet on the osseous system, profound skeletal changes being produced. In the same volume Dr. Watson shows that (*a*) a meat diet is prejudicial to the occurrence of pregnancy in rats; (*b*) in rats fed on a meat diet the mammary development of nursing mothers is less than in rats fed on bread and milk.

5. Palazzi[2] had already shown that by the daily hypodermic injection of doses of alcohol in rabbits he was able to induce sterility in about 50 per cent.

6. It is a matter of common observation that the children of drunken women are ill-nourished and degenerate.

Our knowledge of the influence of diet and surroundings on the pregnant uterus and the embryo is as yet limited and inexact, but there is reason to believe that this influence is of far-reaching effect, and that the care of the expectant mother is a matter of the highest physiological importance. We have in the past approached these and other matters too much from the standpoint of their influence upon the mother. A radical change would seem desirable, and I would urge the paramount necessity of regarding them from the standpoint of their influence on the unborn child.

Time will only permit a glance at one or two of the more important matters.

1. *Food.*

The regulation of the mother's food is worth careful thought both as to its quality and its quantity.

(*a*) *Quality*.—It is our everyday experience to be consulted by women suffering from all manner of ills, the results of auto-intoxication from improper and unsuitable food, sickness and constipation, itchings, depression, sleeplessness and headache, neuralgia, and abnormal desires! And if these harmful effects are seen in the health of the mother, how much more powerful must the influence on the fetus be! I have alluded to the effect of improper dieting of animals: if, then, a pregnant woman persists in indulgence and high living, it is probable that

she is laying up for her offspring troubles which will show themselves in the lapse of time—not improbably is she depriving her child of its power of procreation and laying the seeds of much ill-health and future misery.

(*b*) *Quantity.*—It is a popular impression that as there are now "two mouths to fill," as it were, the expectant mother must eat, perhaps, twice her usual amount! But there is no greater and, perhaps, no more harmful fallacy. It is necessary only to think of the amount of food required by the newborn child to form an adequate idea as to how much additional food the expectant mother needs for the proper nourishment of her unborn child.

Even after birth, when the child is doing much more work—for example, by the exercise of its respiratory muscles and its digestive and excretory organs and by the maintenance of its own body temperature, even with these additional demands, the newborn child requires only *half a pint of milk a day.*

The majority of pregnant women eat far too much, and this intemperance in food is a matter which we as a profession should set our influence against.

But whilst overfeeding is injurious to the child, on the other hand, without the necessary amount of food a woman cannot produce a healthy child, and, as I hold that an unborn child has a right to conditions which make for the safeguarding of its health, I equally hold that it is the duty of the State to provide a sufficiency of food for every necessitous woman in her pregnancy.

2. *Drugs and Drink.*

The increasing tendency of pregnant women to make use of all sorts of drugs—antipyrin, phenacetin, chloral, sulphonal, and cocaine—must be mentioned only to be condemned; it is one of the features of this neurasthenic age; the discomforts of pregnancy, due largely to the intemperate dietary, must be counteracted by the exhibition of drugs. It is needless to point out that all these drugs are active poisons, and I have no doubt that many abortions are produced and many "degenerates" born as the result of their indiscriminate and common use. But of all drugs alcohol is perhaps the most commonly used and abused; its deleterious effects on pregnancy are so pronounced and so evident that perhaps I may be allowed to allude to this matter at rather greater length.

Alcohol.

My experience in gynaecology and obstetrics is simply this—that *indulgence in alcohol is almost invariably harmful in its effects upon the woman who is the subject of gynaecological disease, and upon the child of the woman who is pregnant; but as the matter is one of national importance,* I will rather give the opinions of others.

In a very instructive article on Alcoholism in Relation to Infantile Mortality, Professor Sims Woodhead refers to the well-known action of alcohol in "slowing down the metabolic processes of the body, and its influence in paralysing or lowering the activity of the cells as regards their power of taking up nutriment." He points out with how much greater effect this pharmacological action must tell upon the delicate growing tissues of the child.

He says: "I believe that every medical man who has attended a large number of confinements in districts in which drink is—if one may put it in that way—endemic, will be able to call to mind evidence that the children of a drunken mother have almost without exception been poor wretched little weaklings, that bring into the world with them little chance of living the allotted span of life."

Now, the physiology of the placenta, its filtering action, is a very difficult subject; and though I think it has been experimentally proved that alcohol does pass from the maternal blood directly into the blood and tissues of the fetus, and, if so, must have a directly deleterious effect, yet it is not essential to insist upon this; it is enough that alcohol does, according to its amount, paralyse, or inhibit, or impair the nutrition of the mother, and thus indirectly must affect her child.

Matthews Duncan, who was one of the keenest of clinical observers, in an article On Alcoholism in Gynaecology and Obstetrics, shows from his own experience that the continued indulgence in alcohol exercises a harmful influence upon the whole reproductive processes in women, producing sterility, abortion, premature labour, stillbirths, and the birth of weakly offspring.

Striking statistics have been published on this subject—for example, those of Dr. Sullivan, who investigated the reproductive history of chronic female drunkards in the Liverpool prison. He found:

1. That of 120 female inebriates there were born 600 children, of whom *55 8* per cent. were deadborn, or died under two years; in the case of sober mothers the rate was only *23.9* per cent.

2 That there was a progressively augmenting character of the influence of the mother's alcoholism shown by the progressively increasing death-rate in the alcoholic family; the rate of stillbirths showing almost as marked a tendency to regular increase as did the death-rate among the children born alive, amongst those later born as compared with the firstborn children.

3. That there was a higher death-rate among the children of the mothers whose inebriety developed at an early period—for example, of 31 women who began to drink at least two years before their first pregnancy, 118 children were born, of whom *62 7* per cent. were deadborn or died in infancy.

4. Further, that residence in prison with abstention from alcohol often enabled an inebriate woman to give birth to a living and surviving child.

Professor Sims Woodhead draws attention to another important matter—that is, the action of alcohol in rendering an individual more susceptible to various diseases, and says, "The child of an alcoholic mother must come into the world with an enormously diminished immunity to disease."

There can be little doubt that alcoholism is the direct cause of disease and death before the child is born, and short of this it is the cause of such ante-natal disease and deformity as to lead to much infantile mortality.

3. *Mode of Life.*

The mental state of the pregnant woman is a subject of great importance. There is a popular idea as to maternal impressions, for which as yet there is no scientific support; but there can be no doubt as to the fact that the life of the fetus can be affected by mental states of the mother; it is no unusual event in our experience to see instances where abortion follows a state of mental excitement or shock; the exact pathology is not yet understood, though most probably the damage is induced by the excitation of uterine movements which harmfully affect the uterine contents. If this is possible, why should not similar influences, acting to a lesser degree, produce effects upon the health or vitality of the child which will have far-reaching effects? Hence the importance of insisting upon the proper surroundings and mode of life of the expectant woman. It is her duty to her child, and the child has the right to claim that she shall so order her life as to favour the proper development of her child.

4. *Work.*

Overwork and excessive exercise leading to physical fatigue are just as harmful, both to the mother and her child, as laziness and want of exercise and the semi-invalidism into which so many pregnant women resign themselves.

Unrestricted factory work is not only injurious to the pregnant woman, as subjecting her to the risks of premature confinement and prejudicing her health so as to render her less fitted to undergo the strain of pregnancy and suckling, but there can be no doubt that it equally affects the unborn child, both by causing its premature birth and injuriously affecting its vitality.

This, I think, is universally admitted, but the most striking evidence I have come across is that of Dr. Reid, the Medical Officer of Health for Staffordshire. In that county the artisan population is grouped together, Dr. Reid tells us, in two large centres, north and south, the intervening area being rural in character. While the health conditions of the two groups are almost identical, *in the north* a very large number of women are engaged in factory labour, *in the south* there is practically no trade employment for women. Dr. Reid shows that abnormalities and stillbirths occur in these two districts in the following proportions:

	Abnormalities.	Stillbirths.
North	... 150 ...	... 9 4
South	... 6 0 ...	... 3.2

That is, amongst the factory workers stillbirths are *three times as frequent.*

Dr. Reid further points out that "the damage done cannot be entirely measured by mortality figures, for

these take no account of the impaired vitality of the infants who manage to survive to swell the ranks of the degenerate."

The only remedy is for the State to make abstention from work by pregnant women compulsory and to provide food in cases of necessity; the latter is, indeed, now possible under our present methods of Poor-law administration, and it is improbable that Boards of Guardians would refuse relief. The important thing would be to prohibit pregnant women from going to work at all, and, as I have pointed out before, it is as important from the standpoint of the child that this prohibition should include the early as the later months of pregnancy. Until that comes about we, as medical practitioners, can assist by educating the public opinion to the point that it is a disgrace for any man to allow his wife to go out to work during pregnancy.

5. *The Provision of Natural Food for the Newborn Child—that is, the Care of the Breasts.*

The care of the unborn child would be incomplete without providing for it, when born, its natural food. Those conditions which go to the building up of a healthy child go also to the providing of the mother's milk. It is admitted on all hands that there is no real substitute for breast-feeding, and it seems to me that every child born has the *right to its mother's milk*, that no woman has any moral right to bear a child who is not prepared (if able) to suckle her child. Any woman, indeed, who, for the sake of her own selfish pleasure or convenience, wilfully deprives her child of its right to have what Nature intended for it is guilty of a mean and cruel theft, the meaner that it is a theft from one without the power to protect itself, and the crueller in that the evil consequences cannot be foretold. Such a woman is a degenerate, and, if ever it should come to be recognized that sterilization of degenerates is right, then such a woman ought to be amongst the first to be sterilized!

Unfortunately, it is not always a matter of choice, for the incapacity to suckle is increasing rapidly. One of our members, Dr. Martin, the Medical Officer of Health for Gorton, whose power of graphic diction is well known to us, in his annual report has said:

> So complete is the female wreck of the rising generation that the young man of to-day, on taking to himself a wife, actually marries but part of a woman, the other part being exhibited in the chemist's shop window in the shape of a glass feeding-bottle!

I allude to this matter now because much can be done to prevent this state of affairs by proper care and regulation of life during pregnancy; but there is one factor to which attention must be especially drawn: the increasing incapacity of the woman of to-day to suckle her child is to no small extent the result of alcoholism.

There is no doubt that the immoderate use of alcohol by pregnant women does inhibit the development of the mammary glands and produce incapacity to suckle her child; but beyond this evidence is accumulating to show that this incapacity is handed on to succeeding generations. A most striking observation is recorded by Bunge, "that the immoderate use of alcohol on the part of the father appears to interfere very seriously with the development and function of some of the most active glands of the daughter," and that "where the father is a drinker the daughter loses the power of suckling her child; moreover, this power is lost for coming generations." These facts, if true, are sufficiently important to make us pause and, as medical men, to discourage the use of alcohol in any form during pregnancy.

We may summarize these matters in terms of the *rights of the unborn child* and the necessary sequences of their recognition.

In these days, when almost every class is loudly clamouring for its rights, it may be wellnigh impossible to gain official hearing for the rights of a class which cannot make itself heard. Nevertheless, with the recognition of these rights is largely bound up the future of our race and of our country, and we must press their claims. We must recognize the *right of the unborn child:*

1. To life.
2. To protection from the hereditary taint of degeneracy.
3. To health—that is, to conditions conducive to the safeguarding of its health.
4. To its natural food when born—that is, its mother's milk.
5. To its natural protection when born—that is, its mother's care.

The recognition of these rights involves the recognition of certain duties on the part of the parents and the State, to which I have drawn attention in the substance of my remarks, the most pressing being:

1. The question of abstention from alcohol.
2. The provision of food for the pregnant and nursing mother by the State.
3. Legislation in connexion with the prohibition of women's work, and the registration of births, stillbirths, and fetal death.

These are doubtless big demands, but they deal with a big question, namely, the numerical diminution of our population and the degeneration of its quality.

The proper care of the unborn child and the recognition of its rights, as I have endeavoured to show, are among the most important means of combating the tendencies of the day, for the outstanding fact is that

> Diminishing vitality of the child and
> Increasing incapacity for breast-feeding on the part of the mother

are the two great causes of that infantile mortality and morbidity which are leading to the deterioration and depletion of our race. May I end this address by quoting the words of John Burns, who states the same thing in another way?

> I believe at the bottom of infant mortality, high or low, is good or bad motherhood. Give us good motherhood and good prenatal conditions, and I have no despair for the future of this or any other country. I believe what the prenatal condition of the mother is, so her offspring will be.
>
> First concentrate on the mother. What the mother is, the children are. The stream is no purer than the source Let us glorify, dignify, and purify motherhood by every means in our power.

APPENDIX.

The Rights of the Unborn Child.

We must recognize the rights of the unborn child—

1. To life.
2. To protection from the hereditary taint of degeneracy.
3. To health—that is to conditions conducive to the safeguarding of its health.
4. To Nature's food (when born)—that is, its mother's milk.
5. To its natural protection (when born)—that is, its mother's care.

The recognition of these rights demands the recognition of the following duties on the part of the parents, the profession, and the State—

1. On the part of the parents:
   A clean and normal life before and after conception.
2. On the part of the mother:
   - *a.* The consistent regulation of her mode of life.
   - *b.* The abstention from alcohol.
   - *c.* The feeding of the child by the breast.
   - *d.* The care of the child after birth.
3. On the part of the medical profession:
   - *a.* The restriction of therapeutic feticide.
   - *b.* The education of a healthy public opinion.
4. On the part of the State:
   - *a* Restriction of procreation to the fit—
     - i. By the regulation and restriction of marriage to the fit either by education or legislation.
     - ii. By the prevention of procreation by the unfit—whether by segregation of the unfit, or sterilization of degenerates, or the evolution of a healthy public opinion.
   - *b.* Regulation of the life of the pregnant woman:
     - i. By State provision of food for the necessitous.
     - ii. By provision of hospitals for the reception of women during pregnancy.
     - iii. By State prohibition of woman's work and employment during pregnancy.
   - *c.* Immediate registration of (*a*) stillbirths, (*b*) premature labours, (*c*) abortions, and if practicable I would add pregnancy.
   - *d.* Registration of birth within twenty-four hours.
   - *e.* Regulation of the life of the woman who has given birth to a child:
     - i. By State provision of food for the necessitous.
     - ii. By State prohibition of woman's work for at least six months after confinement.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Ernest Hastings Tweedy, F.R.C.P.Ire., President.

PRESIDENT'S INTRODUCTORY REMARKS.

PUERPERAL MORBIDITY.

Ladies and Gentlemen,—By a wise enactment of our Association, presidents of sectional meetings are not permitted to occupy the valuable time of the Section by the delivery of a formal or lengthy address. I cannot say how heartily I subscribe to the wisdom of this rule, and under cover of this time limit I shall claim your indulgence for shortcomings.

My first duty is to offer you my warmest appreciation for the honour you have conferred on me in asking me to become your President. It is particularly pleasing to me that my year of office should coincide with the Association's assembly in this ancient and interesting city of Exeter, a city which has shown by the splendour of its hospitality and the excellence of its arrangements that it still upholds the highest traditions of Englishmen.

We are fortunate in being able to place before you for consideration a wealth of material by contributors of the very highest standing in their profession.

We welcome with no niggardly cordiality the eminent men who honour us with their presence, and more especially we welcome in our midst Professor Strassmann, of Berlin, whose ability as an operator and as an original thinker is only rivalled by his unfailing courtesy and cordiality to those who have been privileged to attend his clinic. He has honoured us not alone by his presence, but also by the promise of a communication, and a loan of several interesting and beautifully mounted specimens for our pathological museum.

For the few minutes still at my disposal I desire to direct your attention to the great importance of the work undertaken by the British Medical Association last year in connexion with the standardization of the conditions which should be considered as constituting morbidity in the puerperal state.

It had long been recognized that statistics of morbidity were practically non-existent. Mortality in childbirth was no doubt tabulated, and the deaths due to sepsis differentiated, but scant attention was given to the recording of cases in which acute or protracted illness was not followed by a fatal issue. The practitioner probably congratulated himself and his patient that the inflammatory action, for which no one was held to blame, had passed off without taking life, and even in hospital case-books all was well that ended without adding to the mortality returns.

It would be a surprise to many who judged of results merely by the fewness of deaths if they were to analyse the temperature records of any considerable number of cases—up to quite a recent period—even in an institution that claimed to be hygienic, and during a normally healthy period.

In a paper read before the Section of Obstetrics and Gynaecology of the British Medical Association at the annual meeting held two years ago in Leicester, I dealt with this subject, showing that twenty-five years ago out of ninety-nine cases, of which careful clinical records were kept, forty-eight showed a morbid state of temperature, while in ten more the notes disclosed an unsatisfactory condition of affairs although the temperature did not call attention to their real seriousness.

In most hospitals at least there has been a marked improvement, but still throughout the country at large numberless women who are written off as "recoveries" have become permanent invalids or have had important organs irreparably damaged as the result of septic disease even in a mild form.

Just as hygiene is the essential foundation of the health of the people at large, that particular form of it which we call asepsis is the indispensable preliminary for the safety of women during the entire function of parturition.

Parturition must be made as closely as possible a cycle of physiological change, and not a process from which as often as not a protracted delicacy is the result. I have purposely used the word "delicacy," as the evil results are often vague, ranging from a constitutional dyscrasia to a local ailment, and as the causal connexion may be obscured by the absence of acute symptoms.

To estimate our progress towards the ideal immunity from sepsis, and to provide a criterion which will demonstrate the failure or the success of our technique, we welcome a standard index of morbidity which can be universally available, can be easily applied, and which can have its practical lessons interpreted by every one.

Never before in the history of obstetrics has an endeavour been made by so influential a body as the British Medical Association to fix the conditions to be noted and to lay down precise rules for the standardization of morbidity.

The index of morbidity which they have determined has the advantage of great simplicity, and is equally well adapted for the practice of midwives and of private practitioners as for those who have to deal with figures collected from the largest maternities. It is not claimed that this index is a perfect one—the processes are too complex for perfect definition—but the doctor who subjects his patients to this test and can show the smallest percentage of morbidity by this scale will furnish a strong and demonstrable proof of the soundness of his methods. It with certainty ensures that all cases of serious puerperal disease will be recorded, and will show with a large degree of accuracy the amount of success obtained by diverse obstetrical methods.

While the work will be promulgated not merely with the authority of the Association but as their creation, the profession will be expected loyally to do their part. It would be deplorable if these efforts should prove fruitless through apathy or any other cause.

Our generation has a great opportunity offered to it to gain the prestige and the benefit of the movement. We know its importance. So far we are the first in the field, the first to make a beginning; but if we do not unitedly co-operate we shall ultimately be obliged to adopt a standard of others' devising, for we may rest assured that the country which first combines to furnish aggregate figures will lead the world in this respect and force into universal adoption their special morbidity index.

A DISCUSSION ON THE JUSTIFICATION FOR ARTIFICIAL DILATATION OF THE CERVIX TO HASTEN DELIVERY AT FULL TIME,

AND THE MOST APPROPRIATE METHOD OF PROCURING THIS DILATATION.

OPENING PAPER

Robert Jardine, M.D., F.F.P., and S.G., F.R.S.E.,
Professor of Midwifery in St. Mungo's College, Glasgow; Senior Physician to the Glasgow Maternity Hospital.

I desire to thank the officials of the Obstetrical Section of this Association for the great honour they have done me in asking me to open this discussion. The subject is one of much practical interest, not only to specialists in midwifery, but also to general practitioners, and, after all, the latter are responsible for the bulk of midwifery work.

As the time at my disposal is very limited, I shall not attempt to give you a historical review of the subject, but shall deal with it in a practical way, in the light of my own personal experience.

The first part of the subject, namely, "the justification for artificial dilatation of the cervix to hasten delivery at

full time," need not occupy us long. The operation has been in use for such a very long time that one might maintain that it is justified by use and wont. No justification, however, is required for an operation that enables one to save life. In obstetrical work we generally have two lives to consider. The mother's claims are paramount, but those of the unborn child should not be disregarded. In the great majority of labours there is no occasion to interfere with the natural process, but in a few cases conditions do arise which, either in the interests of the mother or of the child, or of both, render a quick delivery necessary, before the cervical canal has become dilated. In such cases, if delivery has to be effected through the natural passages, dilatation of the cervical canal is absolutely necessary. Take, for instance, a case of unavoidable haemorrhage. Here, the haemorrhage must be controlled to save the patient's life, and the best method to control that haemorrhage is to hasten dilatation, and empty the uterus. In such a case, the operation is justified chiefly in the interests of the mother. Again, in the case of eclampsia, some obstetricians hold that the proper obstetrical treatment of all cases which occur in pregnancy or labour, is to empty the uterus as quickly as possible, preferably through the natural passages. I do not agree with this, but, in the case of those who hold this view, the operation is perfectly justifiable.

As an example of the operation done in the interests of the child, take a case of prolapse of the cord early in labour. It may be possible to replace the cord and keep it up while the labour goes on naturally, but in many cases this cannot be done, so that, if the child is to be saved, it becomes necessary to hasten delivery, and to do this the cervical canal must be dilated artificially. I shall not weary you by enumeration of other conditions such as rigidity of the cervix, early rupture of the membranes, occlusion of the os, etc., where artificial dilatation of the cervix is perfectly justifiable either in the interests of the mother or of the child.

It has been estimated that if a labour is prolonged beyond twenty-four hours the danger is increased fourfold, and if the prolongation is beyond thirty hours the risk is increased twelvefold. It is, therefore, clearly one's duty not to allow a labour to be too prolonged, and in at least some cases of lingering labour artificial dilatation of the cervical canal is necessary, and ought to be done.

In short, the operation is perfectly justifiable under certain conditions, but, on the other hand, it is undoubtedly done sometimes when there is no just reason for its use. For instance, I once heard a man at a medical meeting say that, in all cases, his practice was to dilate the cervix forcibly, as soon as the os would admit a couple of fingers, and then to deliver with forceps. It would be difficult to find a worse instance of meddlesome midwifery. I feel it my duty to enter a protest against the use of the operation, except in cases where it is called for, in the interests either of the mother or of the child. If it is undertaken merely to save the time of the obstetrician, then I say it is absolutely unjustifiable.

The Most Appropriate Methods of Procuring Dilatation.

To procure dilatation Nature employs a fluid bag, which is forced downwards by the uterine contractions. This is a slow method, but it is sure, provided that the uterine contractions are strong. When it fails we can imitate the natural process by the introduction of hydrostatic bags. Of these various kinds are in use, such as the rubber bags of Barnes, and the more rigid and larger bag of Champetier de Ribes.

The rubber bags are too soft and are liable to balloon out, and they may be expelled without having caused much dilatation. The larger and more rigid bags, which should be made of silk, are more useful as dilators. A certain amount of traction can be made upon them. A drawback to their use is that the presenting part is very liable to be displaced. In most cases, however, this is of very little importance. As a rule, the membranes should be ruptured before the introduction of one of these large bags, otherwise the intrauterine pressure may be increased to a dangerous extent. These bags are particularly useful when the membranes have ruptured early, more especially when there is an abnormal presentation, such as a transverse one. By their means complete draining away of the liquor amnii is prevented, and the child is thus saved from injurious pressure during the time of dilatation. We need not dwell upon the importance of preventing the retraction of the uterus round the child in transverse presentations, or, indeed, in any case where version is necessary. In cases of placenta praevia the large bags are most useful, as the pressure is exerted against the bleeding sinuses.

The vaginal plug is another method of dilatation. This is a slow method, but it is of use in certain cases—for example, *ante-partum* haemorrhage—notably in cases of unavoidable haemorrhage, where the os is not sufficiently opened to allow of the performance of bipolar version. If the plug is properly inserted it will not only control the bleeding, but it will stimulate the uterine contractions and insure dilatation.

In the recently published fourth edition of Herman's *First Lines in Midwifery*, he states that "As a means of checking haemorrhage it" (the vaginal plug) "is quite useless." With this dictum I entirely disagree. I have used the plug in scores of cases, and have never known it to fail when it was properly inserted, but I have seen many cases in which it did more harm than good, simply because it had not been properly inserted. Plugging must be done thoroughly, otherwise it is worse than useless.

In cases of accidental haemorrhage the plug is most useful, provided the uterus has sufficient tone in it to respond to the stimulus.

The bags and the vaginal plug act chiefly by stimulating uterine contractions. The other methods of dilatation, which I am about to describe, are more rapid, and are directly applied to opening up the canal, either by forcible stretching or by incision, without bringing into play the uterine action. In these methods, especially where incisions are employed, we are departing from Nature's ways—a proceeding never to be undertaken rashly.

Manual Dilatation.—This is a very old method, and one which has probably been in use ever since accoucheurs began their work. It consists in the passing of one finger through the os, then two fingers, or one finger and a thumb, and so on until the four fingers and thumb are within the os. Then, by the gradual opening of the hand the cervix is stretched, until complete dilatation is obtained. It is a very effectual method when the cervix is soft and yielding, but if the cervix is rigid the hand quickly becomes cramped and almost paralysed, and, in cases of great rigidity, one may fail entirely. If a hot lysol douche be allowed to play on the cervix during the operation, it softens the tissues, and materially assists the process. The douche also lessens the risk of septic infection. Manual dilatation is most useful when the cervix is taken up and the os is slightly open. Whenever it becomes necessary to deliver before the os is fully dilated, this method of dilatation is the one most usually adopted. If the hand is rendered aseptic, as it should be in midwifery work, it makes a very perfect instrument, and one which possesses this advantage over metal instruments, that it lets you know at once if the parts are tearing instead of stretching.

Bi-manual Method.—When the cervix can be brought low enough to hook one or two fingers of each hand into the os, forcible stretching can easily be done.

Expanding Dilators.—Within recent years dilatation by means of expanding metal dilators of the Bossi type has come very much into vogue. The expanding arms act in the same way as the fingers, in the manual method, but, unlike the fingers, the arms are not sensitive, and can give no indication when tearing, instead of stretching, is occurring. These powerful instruments must therefore be used with extreme caution, and the expansion must be very slowly accomplished. As soon as there is any strain on the tissues, not more than half a turn of the screw should be given at a time, and about half an hour should be occupied in the dilatation. When the cervix is not taken up, extreme caution must be used, otherwise extensive lacerations may be caused. When the cervix is partly or entirely taken up, the risk of tearing is not so great, but even then the operator must work slowly, and must never forget that he is using a powerful instrument, with which it is possible to burst the cervix in various directions. Some obstetricians condemn the use of these powerful screw instruments, while others are loud in their praise. I do not think they are now being so much used as they were a few years ago. In fact, they are coming to

occupy their proper place in the obstetrical armamentarium. In the hands of a man who knows what he is about such an instrument is most useful, but in the hands of a rash man it may become a veritable engine of destruction.

CUTTING METHODS.

Multiple Incisions of the Cervix.—Dührssen's name is usually associated with this operation. He deserves the credit of having brought the operation prominently before the profession and of having perfected its technique, but it did not originate with him. A very essential condition of the employment of this operation is that the cervix should be entirely taken up. It has also been maintained that the presenting part should be engaged before the incisions are made. In the great majority of cases the operation only becomes necessary after engagement has occurred, but I do not think this condition essential.

The number of incisions varies. In some cases two may be sufficient, in others three, while as many as six or seven may be required. Two lateral, one anterior, and one posterior are often employed. If the lateral incisions are extended by tearing, the uterine arteries may be torn through. The risk of injuring the uterine arteries can be lessened, if not entirely obviated, by making the incisions so that the lateral ones are not made exactly at the side of the cervix. To make my meaning clear, suppose we liken the os to the face of a compass. You see at once that the dangerous incisions lie east and west. If we make four in the ordinary way, they lie north, south, east, and west. The north and south ones are not dangerous, as there are no vessels to be injuried, even if they extend by tearing. With the east and west ones it is different, as an extension of them may mean injury to the uterine arteries. If we are making four incisions, the result as regards dilatation will be just as good if we make them north-west, north-east, south-east, and south-west, and if any of these incisions extend by tearing no large vessels will be involved. Whatever the number of incisions may be, the east and west positions should be avoided.

The incisions should be made with angled scissors or with a blunt-pointed bistoury, and should be carried out to the vaginal juncture. The child should be immediately extracted, preferably by forceps. If there is no haemorrhage, one should wait for the natural expulsion of the placenta, but if there is bleeding the placenta should at once be removed manually. As soon as the placenta is away the cervix should be drawn down for careful inspection. If there is bleeding from the incisions, stitching will be necessary to control it, but if there is no bleeding it is not absolutely necessary to stitch.

Vaginal Caesarean Section.

With this operation also Dührssen's name is associated. He suggested it in a paper published on April 1st, 1905, but his first operation was performed on April 24th of the following year. In the meantime an Italian, Acconci, had performed a similar operation in July, 1905, on a woman seven months pregnant, who was suffering from cancer of the cervix. Whoever was the first to perform the operation, however, the honour of having brought it before the profession undoubtedly belongs to Dührssen.

Effacement of the cervix is necessary for the operation of multiple incision, but it is not necessary for vaginal Caesarean section. The section may, therefore, be done any time during pregnancy, and before labour has commenced. It is preferable that the presenting part should not have engaged, as version is the method of delivery usually employed. There is one very essential condition, and that is mobility of the uterus. If the uterus should be fixed so that the cervix and lower uterine segment cannot be drawn down, it will be very difficult to make the incision, and the subsequent repair will also be difficult.

When the vagina is narrow and rigid, as in primiparous cases, it will be necessary to enlarge it. Dührssen does this by a perineo-vaginal incision. He makes a vaginal incision between 4 and 7 cm. in length in the right lateral sulcus of the vagina. The upper end of the incision is near the ischial spine, and the lower end below the gland of Bartholini. An external incision is then made downwards towards the right, terminating in the line of the anus and the ischial tuberosity. In the majority of cases these incisions are not necessary, as the vagina can be easily dilated manually.

The cervix is caught with volsella forceps on either side and is drawn down. If there is to be both an anterior and a posterior incision of the cervix, a transverse incision of not more than 4 cm. in length should be made at the postero-vaginal juncture, and a similar incision at the corresponding anterior position. If the vagina is narrow, it is useful to make a longitudinal incision—the so-called T incision—from the centre of the transverse anterior incision towards the meatus. The peritoneum is now separated from the lower uterine segment, and the bladder is pushed well up out of the way. In most cases incision of the anterior portion of the cervix and lower uterine segments is all that is necessary, but in a few cases both portions must be incised. When the incision or incisions are completed, the child is usually delivered by version. If there is no bleeding one may wait for the normal separation of the placenta; but, as the operation is only called for in desperate cases, one must generally express the placenta, or remove it manually so as to shorten the operation as much as possible. As soon as the placenta is away, the cervical and vaginal incisions must be closed with catgut sutures, and the perineal incision with silkworm gut. Many operators have found it necessary to tampon the uterus to control haemorrhage on account of atony.

It is sometimes maintained that vaginal Caesarean section is an easy operation, and that it is devoid of risk. Even the expert, however, will occasionally find it a difficult operation to perform, and the not inconsiderable death-rate of the published cases proves that it is not devoid of risk. If we had records of all the cases operated on, I venture to think the death-rate would be higher still.

The risks of the operation are: First, infection, which is common to all operations, but is less in vaginal than in ordinary abdominal ones. To guard against this danger the strictest asepsis must be practised. Secondly, injuries to mother or child. Extension of the incision may rupture the uterus, and on several occasions the bladder has been injured. In a number of cases the child has been born dead, and men have even had to resort to craniotomy. Thirdly, haemorrhage. This is fairly common, as the uterus is usually in an atonic state. It is necessary always to be fully prepared to tampon.

It has been asserted that vaginal Caesarean section is the great surgical achievement of the nineteenth century. Undoubtedly it is a great achievement, but it is an operation for experts only, and must be caviare to the general.

In deciding on the best operation to perform in any case, the obstetrician must be guided not only by the condition of the cervix, but also by the amount of his experience. If he is an adept in vaginal surgery, he will probably prefer vaginal Caesarean section in all cases in which there is likely to be any difficulty in dilatation; but if he is not an expert, he had better select one of the other methods. If the cervix is soft and the os partially dilated, the manual method is usually the best one to adopt. Champetier de Ribes's bag or a screw dilator may be used, but instruments are not always to be had when required, while one's hands are always available. In a case of *ante-partum* haemorrhage, especially when due to placenta praevia, if the os is not sufficiently dilated for bipolar version, the vaginal plug or Champetier be Ribes's bag should be adopted. The screw dilators are not very useful for these cases, as the cervix may be easily torn. At present vaginal Caesarean section is strongly advocated as the proper method of treatment in cases of placenta praevia, just as abdominal Caesarean section has been advocated for the same condition, but in my opinion Caesarean section by either route is quite uncalled for in such cases. Better results can be got by the methods just indicated, and these methods have the advantage of requiring no special skill.

In cases other than *ante-partum* haemorrhage, where the cervix is rigid and the os only admits a finger, manual dilatation will probably be impossible, Bossi's dilator may succeed, but it must be used with very great caution. If the cervix is taken up, the best method is that of multiple incisions; but if the cervix is uneffaced, undoubtedly vaginal Caesarean section is the operation of election. I have already said that the amount of the medical

attendant's experience must be an important factor in deciding what course to take. If he feels that he himself is not qualified to perform the more critical operation, he should send for skilled assistance or transfer his patient to hospital.

DISCUSSION.

Professor Strassmann (Berlin) concurred generally with Dr. Jardine; it was, however, important in each case to consider whether the dilatation should be slow or rapid. If haste was not imperative, the metreurynter or Champetier de Ribes's bag was to be recommended, especially for the practitioner. Bossi's instrument, though in use in some clinics, seemed to be too dangerous, and in Berlin it was found that the instrument was not used by practitioners with large midwifery experience, and at autopsies several cases of laceration of the uterus by this instrument had been observed. In the earlier months of pregnancy, the best method of dilating the cervix was by the introduction of four fingers, the way having been prepared by three or four numbers of the metal dilators (for example, Hegar's). For rapid dilatation deep cervical incisions and vaginal Caesarean section were to be considered a real advance in obstetrics. For the proper performance of the deep incisions an operator must be sure of the indications and have a complete knowledge of the anatomical form and development of the portio and cervix in multiparae and primiparae in every stage of labour, otherwise the incisions might do more harm than good, and were by no means so safe as manual dilatation. Vaginal Caesarean section was not a simple operation, and should not be attempted except in a clinic with adequate assistance for narcosis and for the operation. Though in former times eclampsia was not by any means invariably fatal, its dangers were now very properly esteemed so great that the uterus should be promptly emptied, as the death-rate was much reduced by accepting the principle of hastening delivery and emptying the uterus as soon as possible. Vaginal Caesarean section was most useful in cases in which the uterus was carcinomatous and was to be removed directly after delivery of the child. It was also a most valuable resource in cases of oedema of the lungs or serious disease of the heart, as it was the most rapid means of relieving the woman. In pregnancy complicated by cancer some operators would no doubt prefer abdominal Caesarean section.

Dr. A. L. Galabin (London) regretted that he had to speak at a disadvantage, having heard only the latter part of Dr. Jardine's opening address. He considered that the oldest method, that of digital dilatation, was still the best in very many cases, especially in those of no extreme urgency in which the first stage of labour was delayed by premature rupture of the membranes coupled with extreme rigidity of the cervix. The scope of digital dilatation was increased by the bimanual method, the flexor surfaces of the fingers of two hands exercising much greater power. He had sometimes found that some instrument, such as a uterine dilating sound, was required for the commencement. In one case a patient had been in labour for a week, and the os was still so small that not even a catheter could be inserted through it; yet after the use of a very small sound digital dilatation proved easy and labour was completed spontaneously within twelve hours. The uterus, however, had been stirred up to such violent action by resistance that the child was stillborn from pressure, though alive when the manual dilatation was performed. With digital dilatation it was often advisable to combine separation of the membranes around the os, since their adhesion often delayed the first stage of labour by preventing the bulging of the membranes through the os to form an efficient dilator. The cervix could be hooked down and two joints of the index finger introduced above the upper limit of the cervical canal. Labour could even be started in this way, which might be adopted with advantage if a patient had gone over full term, especially if the fetus was growing so large as to be likely to cause difficulty in labour. A patient was not generally aware that more than an ordinary digital examination was being made. Champetier de Ribes's bag was in most respects a great improvement on Barnes's bag. Its special advantages were that the dilatation was mainly effected by uterine pains, and so the uterine polarity was utilized and physiological relaxation of the cervix was associated with contractions of the body, and, also, that the bag could not be expelled from the cervix till the os was dilated enough for the passage of the head. Its introduction, however, required an os wide enough to admit two fingers. With a very small os he still found useful a special form of Barnes's bag, with a central canal, by which it was mounted upon a uterine sound, the upper corners being turned in. This could be introduced when the os admitted the tip of the index finger. He also used a smaller pattern of Champetier de Ribes's bag, which could generally be passed when the cervix admitted one finger. Stimulation of uterine pains by plugging the vagina and external pressure, according to the method of the Dublin school, was an effective means of dilating the cervix in accidental haemorrhage. Opinions had changed remarkably as to this treatment, which was now generally accepted as sound in severe accidental haemorrhage with an undilated os and no pains. He had mentioned plugging of the vagina as a treatment for such cases in the first edition of his *Midwifery*; but had to withdraw this in the second because students found that the suggestion of it was apt to lead to their rejection by the Conjoint Board in London. Bossi's dilator should only be used in cases of great urgency, such as eclampsia. The danger of the instrument arose from the fact that it was irresistible and, therefore, the cervix, if it did not dilate must tear. It might be shown by mechanics that in hydrostatic dilatation the effect of the pressure in stretching the os was proportional to the diameter of the os, and therefore became more effective as dilatation progressed. With Bossi's dilator this did not occur, but as the edge of the os became extended it became more liable to tear. It was comparatively safe to use Bossi's dilator only up to a very moderate dilatation, and then introduce a Champetier de Ribes's bag. Vaginal Caesarean section he considered unsuitable, except for experienced operators, and generally for hospital practice. It was most indicated in very urgent cases of eclampsia or accidental haemorrhage. He did not, however, think that very rapid delivery was generally necessary in eclampsia, but had mostly found that Champetier de Ribes's bag, with traction or a weight upon the bag, the patient being kept under chloroform, was sufficient to meet the case. But with the general increase of surgical skill and the multiplication of village hospitals he anticipated that vaginal Caesarean section would eventually have its scope extended.

Dr. Munro Kerr (Glasgow) said: It is a common practice, in speaking of the indications for any obstetric operation, to divide these indications into: (*a*) Fetal, (*b*) maternal, and this classification is quite suitable in speaking of *accouchement forcé*. As regards the child, one may group these under the conditions threatening its life, such as rigidity of cervix, placenta praevia, and eclampsia. In these conditions, if the child is to be saved, one of the rapid methods of dilatation must be employed. As this usually involves great danger to the mother, *accouchement forcé* should be had recourse to as seldom as possible. As regards the indications for the operation in the interest of the mother, such conditions may be mentioned as accidental haemorrhage, placenta praevia, eclampsia, and cardiac disease. All the speakers in the Obstetric Section at the annual meeting at Oxford agreed that *accouchement forcé* was attended with most disastrous results in the case of accidental haemorrhage. As regards placenta praevia, the metreurynter is the only safe method of forcible dilatation if *accouchement forcé* is deemed necessary. As regards eclampsia, it is not proved that *accouchement forcé* gives better results than medicinal treatment. The methods of performing *accouchement forcé* have been fully detailed. It is a question, however, if the vaginal or cervical plug can be included under the term *accouchement forcé*. The speaker had upon many occasions employed different forms of metal dilators, and, except when the cervix had been taken up—cases, indeed, which could quite as well be treated by manual dilatation—he believed there was considerable danger of tearing the cervix. Vaginal Caesarean section in the early months of pregnancy was an easy operation, but in the later months was very difficult. Consequently he preferred the abdominal to the vaginal route when pregnancy had advanced to the later months.

Dr. FREDERICK EDGE (Birmingham) said: As regards the justification of artificial dilatation of the cervix to hasten delivery at full time, I do not intend to say much after the full and thoughtful treatment it has received by Dr. Jardine and others, but I may be allowed to say, with regard to Bossi's dilator, that although I have found it very effective in suitable cases, I must give my opinion against its use unless under great urgency, because of the deep and dangerous lacerations of the cervix which it causes. Dilatation in various sections of surgery is rather to be designated multiple rupture, and should any of these ruptures be specially deep and long there may ensue grave injury and trouble from sepsis or bleeding. I have known the uterine arteries torn through owing to the use of Bossi's dilator in a case in which cellulitis had previously occurred. No doubt improvements in these instruments and their combination with other methods may remove any reason for just complaint. Practically the method of hastening of delivery by dilatation depends upon the environment of the patient. In a hospital any method may be used suitable to the indications of the case. In private practice the general practitioner will naturally always prefer the so-called bloodless methods, and I may suggest that a strong rubber glove will give much help, and render the avoidance of sepsis much more certain. The essence of plugging is in many cases the reformation of the bag of waters, and thus a small well-fitting cervical plug will often work better than a huge ill-directed bundle of plugs in the vagina. My colleague, Professor J. W. Taylor, has invented an instrument fulfilling the necessary conditions, and has used it in his practice for fifteen years or longer. It consists of a soft rubber bag fixed upon an india-rubber tube, with a metal stylet inside the tube and bag, and a syringe for inflating it, and a clip on the tube; it is, in fact, a simpler and more easily inserted dilating bag than either Barnes's or Champetier de Ribes's, and differing from the latter by having the internal stylet. It can be introduced through a small cervix, and, as the collapsed thin bag clings closely to the stylet, there is no risk of pushing the stylet through the bag. It is distended after its introduction, and the tube is then clamped, the stylet being left inside or removed at will. It is made by Ash of Birmingham. The great advantages claimed for it are that it can be introduced easily, painlessly, and without previous dilatation; it is useful for inducing the rapid onset of premature labour when the bougie has failed, or is too slow. It is called an artificial amnion, and the internal stylet or sound gives it an advantage over those of Champneys and Horrocks.

Mr. J. INGLIS PARSONS (London) thought dilatation was much safer if done gradually, and he quite agreed with the method laid down by Dr. Galabin, namely, manual dilatation first, increased by the Bossi dilator, and continued by the Champetier de Ribes's bags. In those cases where Caesarean section was required he had no doubt of the advantages of the abdominal route over the vaginal at full term.

Dr. S. CAMERON (Glasgow) said that he was of opinion that the degree of damage done by Bossi's dilator varied in different cases. Thus in an eclamptic case, in which 55 minutes were devoted to cervical dilatation, deep laceration was found to have occurred, whereas in another instance, where complete dilatation was gained in twenty minutes, the cervix was found to be unharmed. The amount of injury occurring seemed to depend on the consistency and rigidity of the cervix. He would much like to learn from some of the senior members present, whether it was possible for a woman to bleed to death into her uterus in a case of accidental haemorrhage, as on this depended the line of treatment. If she could not, then the proper treatment was thorough vaginal packing, and surgical interference was unnecessary. His experience was that Bossi's dilator was not indicated in cases of accidental haemorrhage. He could not agree that lateral cervical incisions were always attended by risks from haemorrhage, as the uterine artery usually branches dichotomously, and clinically lateral cervical tears were seldom attended by severe bleeding, so he attributed the haemorrhage in Dr. Edge's case to the artery being bound to the uterus as a result of pelvic inflammation, and consequently it could not escape injury.

Mr. R. J. JOHNSTONE (Belfast) said: The question of the means to be adopted for rapid dilatation of the cervix depends not only on the indications for the operation, but also on the question of whether the obstetrician has to act single-handed or has assistance at hand. In the former case the most suitable means will be in order of their application—the hydrostatic bag, manual dilatation, cervical incisions. In the latter case any method may be adopted at the will of the operator. Bossi's dilator is not to be so absolutely condemned as has been done. It is very useful to commence dilatation in cases of undilated os, which may be afterwards completed manually. Tears are not peculiar to Bossi's dilator; they may, and often do, occur both with manual dilatation and even during natural delivery, and with ordinary asepsis are unlikely to cause any trouble. If very extensive a catgut suture will be required. A finger inside the vagina and, after dilatation has commenced, inside the cervix allows one to guard against tears, or, at least, to be warned of them.

Dr. C. E. PURSLOW (Birmingham) thought that dilatation by fingers was very useful in certain cases, especially those in which the cervical canal was taken up and the os would admit the finger, and it was particularly efficient if it could be performed bimanually, one or two fingers being introduced with their backs towards one another, and the stretching done slowly and carefully. The great danger of this method was sepsis, and this, he thought, would be practically eliminated by the use of thin rubber operating gloves.

Dr. J. A. TEMPLE (Toronto) said: In the large majority of cases, I think that too radical measures are too frequently advocated and practised; that time, chloroform, and manual dilatation will, in the large number of cases, save the woman the more dangerous operations of vaginal Caesarean section or splitting of the cervix by multiple incisions. If the operation of vaginal Caesarean section is to be performed, the patient ought to be taken to a hospital where all the modern appliances are within reach. A frequent cause of non-dilatation of the cervix in a young woman in my experience is due to the adherence of the membranes to the cervix, and simple separation by the finger will favour dilatation without any serious operation being necessary. The cases are few that call for the drastic operations advocated for simple rigidity of the cervix.

Dr. THOMAS WILSON (Birmingham) reminded the Section that laminaria tents were of great and effective service in starting cervical dilatation for induction of labour. In placenta praevia the best method appeared still to consist in bringing down a leg by Braxton Hicks's method of bipolar version as soon as two fingers could be passed through the cervix. Champetier de Ribes's bag presented the advantage over Bossi's dilators and even over methods of digital and manual dilatation, that it exerted pressure uniformly all round its circumference, and did not merely cause bruising or tearing pressure at discrete points. Vaginal Caesarean section at term had not proved a difficult operation in his hands. In two cases of early malignant disease of the cervix the immediate results were excellent, but both patients died within a year, one of local and the other apparently of remote recurrence. In eclampsia there was by no means general agreement on the advisability of immediately emptying the uterus. Where this method of treatment was decided upon in cases where the cervix was only slightly or not at all dilated, vaginal Caesarean section presented advantages over multiple incisions, Bossi's dilator, or manual dilatation.

Dr. WALTER SWAYNE (Bristol) said: In the discussion on this subject at the meeting of this Section in 1894, practically every speaker, following the lead of Dr. Robert Barnes, condemned the use of *accouchement forcé* in cases of haemorrhage, in placenta praevia on account of the tendency to laceration, and in accidental haemorrhage on account of the tendency to increase shock already present. As to the present discussion it does not appear that any hard and fast line of treatment can be laid down for these cases. The method used must be adapted to the necessities of the case and of the moment. The choice of method depends on the rapidity called for by the condition of the mother and child. In the use of Bossi's dilator, for example, in some cases the results in my hands have been good and in some

the reverse. Its use in preparation for and as a preliminary to manual dilatation has always given me satisfaction; but, on the other hand, the cases in which it has been used to produce full dilatation have often been attended by severe lacerations. I have found that I can dilate as fully and as rapidly with the hand and with far greater safety. One speaker has asked whether a patient has been known to bleed to death into her uterine cavity. I have had the misfortune to meet with such a case. In cases of pathological rigidity of the cervix I consider the use of Bossi's dilator will probably produce lacerations the extent of which no one can foresee.

Professor Dixon (London) spoke of experiments which he had conducted with Dr. Frank E. Taylor on the action of placental extract. They were able to obtain from the placenta a chemical substance, soluble in alcohol and water, which was able powerfully to contract the uterus, to constrict blood vessels, and to raise blood pressure. He suggested that the development of this substance in the placenta was the cause of labour.

The President, in closing the discussion, congratulated the Section on its success, a success due in no small degree to the admirable manner in which Dr. Jardine had laid the most important points before them in his opening statement. There was a general agreement amongst them that under certain rare conditions—such as impending death, no matter from what cause arising—rapid delivery was justifiable, and that in many of these cases rapid dilatation of the os was the most appropriate procedure. For conditions such as *ante-partum* haemorrhage, eclampsia, and rigidity of the os, other forms of treatment were applicable, and he thought no one during this discussion had brought proof forward that *accouchement forcé* offered any advantages that would place it above all other methods. On the other hand, many speakers had emphasized the dangers associated with rapid dilatation of the os, and it could not be denied that many lives had been sacrificed by this operation. He doubted if rigidity of the os ever constituted by itself an indication for artificial dilatation. The case alluded to by Dr. Galabin, where a woman in marked labour for a week had at the expiration of that time an os so small that the tip of a catheter could not be passed through, was so extraordinary that it could hardly be said to affect the present discussion. The description of this case almost made one wonder whether labour had actually begun. Natural efforts would either suffice sooner or later to dilate a rigid cervix, or, failing this, the cervix would tear, and for his part he preferred that these tears should be brought about naturally rather than that the obstetrician should be responsible for them.

Reply.

Dr. Robert Jardine, in his reply on the discussion, said that he had very little to add. He quite agreed with the President that forcible dilatation was an operation which was not lightly to be undertaken. It was only justifiable when the mother or the child or both were in danger. Many speakers had condemned Bossi's dilator. Personally he had used it a good deal, and he was bound to say he had never had the bad results spoken about. The worst tears of the cervix he had ever seen were after natural delivery. If Bossi's dilator had been used in these cases the instrument would have been blamed. It was an instrument which could only be used with great care, and it had its place. He kept his finger on the cervix during the dilatation. Dr. Munro Kerr had said that the cervix usually contracted after the instrument was withdrawn, and one found it was not fully dilated. That was quite true, and that explained many of the cases of tearing of the cervix, as delivery was usually quickly done by version, and the cervix was torn by the after-coming head. Before delivering the child one should make sure that the os was fully dilated. Immediate delivery in cases of eclampsia had been advised, but he did not agree with that. For some time he had treated the eclampsia and left the uterus alone, and his results had been better than when he had done *accouchement forcé*. In reference to vaginal Caesarean section, he quite agreed that it was an easy operation in the early months of pregnancy, but it might be a very difficult one at full time. In all cases where Caesarean section was called for, he preferred the abdominal method.

A DISCUSSION ON MEASURES TO BE RECOMMENDED TO SECURE THE EARLIER RECOGNITION OF UTERINE CANCER.

OPENING PAPER.

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More women die of cancer of the uterus than of cancer of any other part of the body. This is shown in the sixty-eighth Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, 1907, where the statistics of deaths in the years 1901-1905 are as follows:

19,645	females	died	from	malignant	disease	of the uterus.
14,308	,,	,,	,,	,,	,,	breast.
12,048	,,	,,	,,	,,	,,	stomach.
11,681	,,	,,	,,	,,	,,	liver and gall bladder.
5,870	,,	,,	,,	,,	,,	intestine.
5,086	,,	,,	,,	,,	,,	rectum.
1,626	,,	,,	,,	,,	,,	ovary.
1,523	,,	,,	,,	,,	,,	abdomen.
1,401	,,	,,	,,	,,	,,	peritoneum.

In no other part of the body did malignant disease cause 1,000 deaths in females.

Of these 19,645 deaths from malignant disease of the uterus, 30 only occurred in females under 25 years of age; the highest mortality occurred between the ages of 45 and 55. We have, then, in cancer of the uterus a disease which carries off annually in England and Wales nearly 4,000 adult women, the great majority of them mothers—usually mothers of large families.

These 4,000 deaths are due to the fact that the patients come to the gynaecologists too late; in the early stages of the disease cancer of the uterus is curable in a large proportion of cases by means of vaginal operation (high amputation of the cervix and vaginal hysterectomy) with a very small immediate risk to life. In more advanced stages it may still be cured by the extended abdominal operation, which, however, has a higher immediate mortality than the vaginal operations.

The desirable object is to get cases of uterine cancer to come for treatment and to be operated on at an early stage of the disease, whatever be the operation employed, whether high amputation with the galvano-cautery (for cancer of the portio), vaginal hysterectomy, or abdominal hysterectomy.

One of the greatest difficulties in attaining this object is the pessimism with which some distinguished gynaecologists are afflicted on the subject of the cure of cancer of the uterus by operation.

In the valuable work of Grimoud, *La Lutte Contre le Cancer de l'Utérus*, 1904, letters are published from various leading gynaecologists giving the views of the writers on the utility and methods of operating. Many of the letters are very vague and indefinite, but some exhibit a very decided and despondent attitude of mind towards the question of operating. Thus Baldy of Philadelphia says his results are terrible in cancer of the cervix (he always operates by the abdomen, never having done vaginal hysterectomy for cancer). P. Burger "has as little to do with cancer of the uterus as possible"; "the only results of some duration that he has obtained have been by high amputation of the cervix in the case of very limited cancers." Kufferath of Brussels says his results have been deplorable; he has never had a single case of cure either by abdominal or vaginal hysterectomy. He, however, had 2 cases which survived for ten or fifteen years after amputation of the cervix for epithelioma. Polk gives it as his opinion that cancer of the cervix cannot be cured by any intervention.

Pozzi, in his *Gynécologie*, 1905, vol. i, p. 560, says that definitive cure of uterine cancer has not yet been proved, since recurrence has been known to take place after six, seven, and even eight years of apparent cure. "Even in the most favourable cases," says he, "one can only speak of prolonged survivals." He further states that of

204 hospital patients operated on for cancer he has only had 2 cases of prolonged survival, 1 which lasted for six years without recurrence, the other (still living) without recurrence after nearly twelve years.

Jacobs, out of 177 operations for cancer of the cervix (82 vaginal, 95 abdominal hysterectomy) with 7 deaths, had only 1 patient who survived without recurrence for five years.

Morisani, of 25 vaginal hysterectomies for cancer of the cervix, and Halliday Croom, of 14 cases, had no patient free from recurrence after a year.

Pinard considers a pregnant woman affected with cancer of the cervix as doomed, and that only the interests of the child should therefore be consulted, notwithstanding the strongest evidence that cases of this kind are curable by operation.

Pessimistic views on the subject might be multiplied; but I have quoted sufficient to show that they are held by some of the leading gynaecologists of the day. They do much harm by inducing in the minds of the public and of the profession an entirely erroneous view that cancer is incurable, and lead to delay in seeking medical advice, which would be of little consequence were it true that cancer is incurable, but which is of the utmost importance with a disease of such rapid progress and such terrible course as cancer, when the life of the patient depends on the early recognition of the disease.

It is difficult to explain the unfortunate final results of the operators whose views I have quoted, especially Jacobs's, whose immediate results were so brilliant; but whether they were due to the advanced stage, to the specially virulent nature of the disease, to neglect of precautions against local inoculation, or to some other cause, they cannot refute the results of other operators all over the world, which show that about one-third of the cases operated on may be cured by vaginal operations (high amputation of the cervix and vaginal hysterectomy) if the operation be done only in cases in which the disease appears to be limited to the uterus.

The difficulty of obtaining the after-history of every case of a long series for five years (before the lapse of which period of time it is idle to speak of cure) is very great. It has been done, however, by Flaischlen, who has published 48 cases operated on through the vagina by C. Ruge and himself; of these 48 cases, 17 remained free from recurrence for from seven to eighteen and a half years—that is, 35 per cent.—and 9 of these 17 cases were cancer of the cervix.

Lewers, of 61 patients operated on by the vagina for cancer of the cervix, had at least 10 (16 per cent.) well after five years. Thomas Wilson had 2 patients, of 14 operated on, who remained free from recurrence after five years, and perhaps more than 2, as 6 of the cases could not be traced; his results show at least 14.3 per cent. of cures.

Of the first 25 cases of cancer of the cervix I operated on at University College Hospital by high amputation (19 cases) and vaginal hysterectomy (6 cases) all recovered from the operation, and there remained free from recurrence for five years 6 patients, and perhaps more than 6, as several of the patients could not be traced for five years after operation. The percentage of cures in this series is at least 24, one of them, however, recurred after six years and died eight years after vaginal hysterectomy; the other 5 cases remain well, 3 of them after eleven years.

Of W. H. Baker's 10 cases of amputation of the cervix for cancer, 4 remained free from recurrence after twenty years.

A considerable number of cases have now been published of cancer of the cervix which remained well twenty years after operation; we are, therefore, I think justified in speaking of the cases as cured, and not merely as "surviving to a distant period"; for if a patient cannot be considered to be cured after twenty years' freedom from recurrence neither can she after fifty years; in this respect we must count no woman happy till she is dead.

It is universally known that cancer of the body is much less virulent than cancer of the cervix; some gynaecologists claim from 66 to 100 per cent. of five-year cures—figures which I believe give too favourable an impression of the results of operation. The fact is that no one operator can have a large experience of operations on cancer of the body of the uterus, which is, in comparison with cervical cancer, an uncommon disease. In support of this I may add that the 100 per cent. five years' cure rate is in one instance based on 3 cases.

If we may take it that about one-third of the cases of cancer in which operation is performed while the disease appears to be limited to the uterus are "cured," there still remains the great bulk of the cases which come under the notice of the gynaecologists at a stage of the disease when radical operation is either of doubtful utility or is entirely out of the question. An immense literature exists on the subject of the operability percentage in cases of cancer of the cervix; I have found it vary amongst different authors from 6 to 92.9 per cent. Any one who cares to believe that 92.9 represents fairly the percentage of operable cases is in this free country (from which the statistics are not derived) at liberty to do so. I will only remark that any one can make his operability percentage as large as he likes by operating on cases in which there is no chance of cure, or as small as he likes by operating only on the very early cases; and that it is practically impossible for any one to state accurately what his percentage of operability is, for such an exact statement would mean that he kept accurate and available records of every case of cancer he had ever seen, sent to him for his opinion during his visit to his hospital wards, seen in the hospital wards of his colleagues, or in private practice. If this be borne in mind, it is in my opinion a liberal allowance if one supposes one-fourth of the cases of cancer of the cervix seen in this country to be in a condition which offers a reasonable chance of cure by the ordinary vaginal operations. Three-fourths of them at least have come too late to be operated on; two-thirds of those in which an operation may be done are too late to be cured.

The operability of cases of cancer of the cervix has been increased by the auxiliary paravaginal incision, and especially by the extended abdominal operation, which enabled Wertheim to operate on no less than 45 to 48 per cent. of the cases seen during a period of three years. The extended abdominal operation permits of a wider removal of the growth, in accordance with the tenets of surgery for malignant disease, than any vaginal operation; it also permits removal of affected glands or ureters, which is impossible by the vagina. It is therefore a valuable advance in gynaecological surgery, but is attended by a very high rate of mortality (20 per cent. in Wertheim's hands). This rate of mortality is being gradually lowered; but I think it must of necessity have a higher mortality than the vaginal operation, while it is by no means certain that this increased mortality will be compensated by the increased number of cures. A table is published of Wertheim's results which shows that the percentage of absolute cures—that is, of cases seen—after five years is less after Wertheim's operation (11 per cent.) than after vaginal hysterectomy by Olshausen (about 14.3 per cent.).

Notwithstanding its high mortality-rate, no one who has performed the operation can doubt that it has come to stay. The cases published by Thring, where the uterus, together with cancerous glands, were removed from 8 patients, who remained well after five years, and the case published by Döderlein, where the uterus, ureter, and kidney were removed for cancer involving the wall of the ureter, with freedom from recurrence after three and a half years, are sufficient to prove its value in somewhat advanced cases of cancer of the cervix, to which class it should in my opinion be limited. An unfortunate effect of the operation has been to direct the attention of the profession rather towards extensive operations than towards early diagnosis.

Any one who carefully studies a series of cases of cancer of the cervix treated by vaginal operation will be struck with the fact that the cases cured are the early cases, with a few remarkable exceptions, of which I have myself seen two. One, a very early case of cancer of the portio of which I confidently anticipated a permanent cure, was rapidly followed by general dissemination of cancer through the glands of the body; in the other a very extensive cervical growth, about the entire removal of which by vaginal hysterectomy I had some doubt after the operation, and in which I looked forward to an early recurrence, was followed by a permanent cure. Similar cases have been published by other

gynaecologists. In studying such a series it will also be found that the cases cured have usually a short history.

If a third of the cases now operated on are curable—and only exceptionally is a very early case not curable—it follows that if we could get the cases in the very early stage the great majority of the cases would be curable by vaginal operations having a very small mortality, without resorting to the dangerous extended abdominal operation except in special cases. In expressing this opinion, I am aware that cancer is sometimes found in the glands when the parametrium is free; glandular infection, however, at a very early stage of cancer of the cervix is, as far as I know, very rare.

Experience in this country shows that but a small proportion of patients present themselves to gynaecologists at the beginning of the disease. If we look for the reasons for this unfortunate state of things we find them in:

1. The patient's ignorance of the early symptoms of the disease.
2. The practitioner's delay in examining the patient who has the early symptoms of the disease (abnormal haemorrhage and discharge).
3. The patient's disinclination or refusal to submit to examination.
4. The occasional difficulty in distinguishing between benign and malignant tumours, especially in the body of the uterus.

Patients are ignorant of the main features of the disease—namely, that it may occur in comparatively young women (with rare exceptions over 25 years of age); that the main symptoms are abnormal haemorrhage and discharge; that it is not as a rule attended by pain in its early stages, and that it is then curable by operation involving little risk to life. They regard haemorrhage and discharge occurring at the menopause as of little consequence, whereas every such case requires immediate examination, though the symptoms will not necessarily be due to morbid growth. They do not know that any haemorrhage occurring from the uterus after the menopause is in the great bulk of cases due to cancer, and should lead the patient to consult a doctor without a day's delay. They do not know that it is impossible to say whether a woman is suffering from cancer or not without making a vaginal examination. From modesty and dread they shrink from examination, or even refuse to submit to it. In some cases, especially in widows, the disease may exist for a considerable time without giving rise to symptoms.

On the other hand, the general practitioner is not always free from blame in the matter. It is not common nowadays to find a doctor who is not acquainted with the main features of the disease just alluded to; but experience shows that it is a very common thing indeed to find that medicines and lotions have been ordered for haemorrhage or discharge without any examination being made for weeks or months after the first symptoms have appeared. The reason for this unfortunate practice may be a fear to offend the patient, the time consumed by a gynaecological examination, and the difficulty which sometimes exists in making a diagnosis. But it is clearly the practitioner's duty to advise an examination, a course not less indicated by a regard for his patient's interests than for his own; for as a court of law has condemned—in my opinion wrongly condemned—a general practitioner for not making an intrauterine examination in the early stage of a doubtfully septic puerperium, so it is possible that an action at law would lie against him for neglecting to make an examination which is the only means of diagnosing cancer of the uterus, and so depriving the patient of the chance of cure by operation.

The first remedy which suggests itself is the diffusion amongst women over 25 years of age of knowledge of the early symptoms and general features of the disease and of the facts that diagnosis can only be made by means of physical examination, and cure can be effected by operation and by operation alone. While this course is ideally desirable, many difficulties present themselves in its practical application. In Germany the lay press has been used for carrying on the campaign against cancer of the uterus; but I do not think that public or professional opinion in this country would countenance such a line of conduct. By means of this appeal to the public Winter increased the percentage of women who applied for advice within three months of the appearance of symptoms from 33 to 57 per cent.

Much might be done by doctors, nurses, and midwives in producing a gradual diffusion amongst women of knowledge of the main features of the disease. It would be well if the attention of all nurses and midwives were called to the importance of the early symptoms of cancer, either by lecture or otherwise. Dr. Lewers five years ago suggested the issue of a short leaflet by the Cancer Commission. But nothing has been done in this direction. It is clear that there are many difficulties in the way. I hope that the discussion to-day will point out ways in which they may be overcome. Perhaps the Royal Society of Medicine would be the fittest body to carry out this propaganda. I do not think that this terrible disease can ever be adequately treated until women are by some means informed of its early symptoms and of the urgent necessity of their seeking medical advice without delay.

Whatever difficulties there may be in bringing this knowledge to the minds of women, there can be none in appealing to all general practitioners to examine by finger, speculum, and, if necessary, by removal of growth for microscopic examination, all cases of bleeding and discharge which may be due to cancer, and not to prescribe for such patients without making or advising examination. The use of the speculum is of the greatest importance in the diagnosis of cancer of the cervix at an early stage, the friability of the growth or ulcer and bleeding on examination being its most important features. If doubt exists, a small wedge of tissue, including the healthy tissue, should be cut from the cervix and a microscopic section should be made. At the present time abundant facilities for the preparation of these sections exist in the pathological institutes of the country. It is to be borne in mind, however, that the rare adenoma malignum of the cervix closely resembles the normal glands under the microscope. Regard should be had to the clinical features as well as to the microscopic appearances.

In cases of cancer of the body of the uterus the cervix should be dilated by a laminaria tent, followed by Hegar's dilators, till the finger can be introduced. Soft growth, of a whitish colour, removed from the body of the uterus is almost always malignant, as is also friable growth in mass and an irregular ulcerated cavity. The curette may be lightly used if but little growth is found with the finger. The diagnosis in these cases from inflamed hypertrophied endometrium is sometimes difficult unless a portion of the muscular wall be removed with the curette. It is usually a case for a pathological expert, whose opinion, however, should be considered in connexion with the clinical features of the case, which in doubtful cases are not less valuable than the microscopic appearances as an aid to diagnosis. These cases of cancer of the body are comparatively rare. The common cases of cancer of the cervix should rarely present difficulties in diagnosis to the general practitioner if he will examine the case with the speculum and look for friability of tissue and bleeding on pressure with a sound. Unfortunately the important subject of gynaecology does not receive as much attention from students and examining bodies as it deserves. Recently a little advance has been made in making attendance in the gynaecological wards or out-patient room compulsory on all students. Every student thus has an opportunity of familiarizing himself with methods of examination by finger and speculum. Regarding the speculum as most important in the early diagnosis of cancer of the cervix by the general practitioner, I allow the students in my ward to pass the speculum in all cases requiring it; they thus not only become familiar with various appearances in the cervix, but are able to expose the cervix with certainty, a matter sometimes presenting a little difficulty in the absence of practical experience. There is reason to believe that the younger generation of general practitioners is becoming alive to the importance of early diagnosis and the necessity of local examination before prescribing. As an instance of the service which the family doctor may render his patient I may mention a case where I figured in the less important rôle of operator. Over eight years ago a widow lady, aged 63, was being attended by a medical friend for an attack of influenza, when she casually remarked that she had a slight vaginal discharge. The

doctor at once suggested an examination, to which the patient slightly demurred, but consented on the doctor's explaining its importance. He found a growth on the cervix which he feared was malignant, and asked me to see the case with him, when I was able to confirm his diagnosis. The cervix was removed by the high amputation with the Pacquelin cautery, and the growth proved to be a squamous carcinoma. The patient has had no trouble since, and is in perfect health at the present time. This patient undoubtedly owes her life to that general practitioner, and I think no words are necessary to urge his practice as an example to be followed. I therefore close my remarks by an appeal to the general practitioners of this great Association to examine their patients at the earliest opportunity, while there is yet time for them to be cured.

DISCUSSION.

Mrs. Scharlieb heartily endorsed everything that Dr. Herbert Spencer had said. It was a lamentable fact that in the great majority of cases cancer of the uterus was not detected until the time favourable for operation had passed. She attributed this partly to the unwillingness of the patient to mention her condition owing to a dread of her fears being confirmed and also from reasons of modesty. A large percentage of doctors did not examine sufficiently early because (*a*) in dispensary and out-patient practice there were many difficulties, such as want of time and want of space; (*b*) they did not like to press examination on an unwilling patient; (*c*) many men of the older generation had not been trained in the methods of vaginal examination, and doubted how far the examination even when made would throw light upon the case. It was common knowledge that women frequently consulted nurses rather than medical practitioners, and that the ignorance of the nurses of the early signs and symptoms of cancer was only equalled by that of the public. In consequence of the slight and misleading nature of the earlier symptoms of cancer of the uterus it was difficult to persuade the public that so much significance ought to be attached to haemorrhage, and little advance would be made in controlling this disease until doctors, nurses, and the public realized the supreme importance of haemorrhage if it was abnormal either in amount or in time. She dwelt on the additional difficulty of diagnosis in early cases of malignant disease of the endometrium, cases in which the uterus was scarcely enlarged, and where the os and cervix appeared to be perfectly normal. She fully agreed with Dr. Spencer that if abnormal haemorrhage occurred it was the practitioner's duty to dilate the cervix uteri, to examine with the finger, to curette, and to submit the curettage to microscopic examination, always remembering that it was not possible for the microscope to prove a negative. The positive finding of malignant characters in the curettage meant much, the failure to find it meant nothing except that the curette had not touched a portion of endometrium which was undergoing carcinomatous change.

Dr. A. L. Galabin (London) said that, of the two lines in which improvement might be hoped for, that which depended upon medical practitioners and that which depended upon the patients, he thought that nothing could be more effective for the former than the publication of Dr. Spencer's admirable address, in which he found absolutely nothing to criticize. Though the early symptoms of cancer ought to be well known to doctors, doubtful symptoms were still sometimes treated without either a consultation or microscopical investigation. In the last case of uterine cancer on which he had operated, irregular haemorrhage supposed to be due to an erosion had been treated for more than two years, after which the patient had gone to a new doctor, who at once sent her for consultation. Dr. Galabin operated by the abdomen, and was able to remove the uterus with extensive metastases, but the patient's chance of escaping a recurrence was naturally a poor one. He thought it of great importance to investigate suspicious cases of erosion, laceration, and inflammation of cervix; and, in the absence of cancer, in many instances to perform a plastic operation as a prophylactic. The reluctance of patients to submit to a local examination ought not now to be insuperable, since, if they could not otherwise be persuaded, they might be sent for consultation to a lady doctor. In cancer of the cervix there was rarely any difficulty in deciding the diagnosis by the microscope. In cancer of the fundus the result was occasionally doubtful. If symptoms recurred, he considered it of great importance not to be satisfied with a single negative result; and even, if haemorrhage after the menopause continued to recur, to remove the uterus for the sake of security. Persistent pain was sometimes a significant symptom of early cancer of the fundus, though in that of the cervix it meant a stage too late for cure. In patients who had passed the menopause he had found it prove to indicate cancer in cases in which the small size of the uterus had led experts to think that disease impossible, or even in which microscopic investigation had given a negative result. Among the delusions of women which led them to postpone coming for advice the most common and important was to attribute to the change of life, not merely the occurrence of a more profuse period than usual after an increasing interval, but excessive losses without any increase of the interval, and all kinds of irregular haemorrhage. It was advisable also to diffuse the knowledge that cancer of the uterus occurred earlier in life than other forms of cancer; that it was not uncommon after 30, and occurred even between 25 and 30. He had met with sarcoma of the cervix at as early an age as 17. It should be generally known also that leucorrhoea coming on after the menopause, or watery or semi-purulent leucorrhoea at any age, was a suspicious symptom, since many cases of cancer caused no bleeding at all till the disease was beyond cure, though irregular haemorrhage, and haemorrhage after the menopause, were, of course, the most significant symptoms of all. He agreed with Dr. Spencer in deprecating undue pessimism as to the prospects of permanent cure after operation. Now that he was getting older he received occasionally letters from practitioners reporting that patients of whom he had lost sight were remaining well fifteen, twenty, or more years after operation, which in those days was generally supravaginal amputation of cervix. He had even had one case of apparent cure for over eight years (by repeated applications of pure formalin) of cancer recurrent in the vaginal cicatrix after hysterectomy. He thought that the very different results obtained by different surgeons might depend upon infection in the course of operation; and he was accustomed to swab out with formalin solution at the end of the operation in the hope of averting this. For the purpose of diffusing knowledge, he was in favour of leaflets explaining not only the early symptoms but the curability of cancer, being distributed to all nurses and midwives, and perhaps also to patients attending gynaecological out-patient departments. Doubtless this might lead to many persons imagining that they had cancer when they had not, but this was a less evil than their neglecting early symptoms till it was too late for cure.

Professor Strassmann (Berlin) said: It is indubitable that the best way of increasing the number of recoveries from uterine cancer will be by its earlier recognition. In Germany there are records of about 22,000 sufferers from that disease; among them only 1,500 or 2,000 are saved. The operability varies from 30 per cent. when cases are so treated only in the early stages, to 76 per cent. when even advanced cases are dealt with. The number of cases surviving for five years without recurrence is from 30 to 45 per cent. of the cases operated on. Every patient should be asked when the first symptom appeared, not merely for clinical purposes, but to determine the reason they delayed seeking advice. Winter's investigations showed that only about one one-half the sufferers applied in the first instance to a doctor, and that even these were not all at once examined and treated in the right way, but were given ergot, hydrastis or hot injections, and in some instances improved for a few weeks. I therefore think it necessary to make an appeal to all general practitioners on the necessity of an early diagnosis; and now, in nearly all parts of Germany, similar appeals have been sent to the medical profession by the scientific societies. I venture to lay before the Section such an appeal which the Berlin Society of Obstetrics and Gynaecology issued to all the practitioners in that city and the neighbouring province asking for their help in the campaign against cancer. It contains a brief statement of the symptoms of the disease, and of the reasons why such symptoms are overlooked or neglected. It recommends that in every case in which malignant disease of the cervix is at all suspected, a portion of the suspected

tissue should be obtained by exclsion or curettement, and sent to a member of the Society, who will examine it microscopically and make a diagnosis. The family doctor who secures an early diagnosis of uterine cancer merits as much commendation as the operator who removes it successfully. But in Germany a very large percentage of the sufferers from this disease in the first instance seek advice from midwives, by whom in that country nine-tenths of all confinements are attended. It was therefore considered necessary to issue an appeal to the midwives also, and I lay on the table a paper sent to each of them, which gives a short account of the symptoms which are the earliest to appear in suspicious cases—bleeding, especially bleeding after coitus, and discharge—and in which we point out very earnestly that it is not within the province of a midwife to treat these symptoms; that their duty is to refer such cases to a medical man for immediate examination, and that by urging submission to such examination at once they will greatly benefit and perhaps save the lives of their patients. We also draw special attention to the fact that the onset of cancer is not attended by pain, and that the absence of pain is not evidence that cancer does not exist. But some patients do not consult either a physician or a midwife, and Winter, therefore, in order to bring the early symptoms of cancer of the uterus to their knowledge, caused articles on the subject to appear in the newspapers. An epidemic of carcinomaphobia arose, but on the other hand there was a large increase in the number of cases in the early stages of cancer which sought advice at his clinic. I believe that great benefit would arise from the instruction of women of the labouring classes on this matter, and that popular lectures on the subject, illustrated by the demonstration of specimens of the uterus when healthy, when slightly affected, and when destroyed by the disease, would make them understand the advantages to be derived from medical advice. It is well known that in some families many, if not the majority, of the women die from cancer of the stomach, ovaries, uterus, or other organs. If, after the death of one member of such a family, other relations demand what can be done to prevent them becoming affected in a similar way, I am in the habit of saying that the disease is not infectious, but that they will do well, as a kind of insurance, to present themselves for examination every three or six months. It is our duty to speak frankly to our patients; if a woman with certain symptoms refuses to submit to examination, we must say that a cancer may exist. If one is found in a case in which there has been no such refusal and the patient consents to operation, it would be cruel and unnecessary to disclose to her the diagnosis. If an operation is refused, we must explain that there is no other means of cure, and, if necessary, the real situation must be explained. Only an experienced operator can form an opinion as to a case being beyond treatment, and in such cases the sufferer herself need not be informed, but the truth should be told to her husband or some member of her family. I entirely agree that abdominal operation at present is a dangerous one—Wertheim's mortality, even as improved, is 20 per cent.—in fact, the more extensive the operation, the higher is the primary mortality. The course adopted by the operator depends upon his personal character. One whose heart is full of pity for the patient suffering from a terrible disease, inevitably fatal, and in the meantime not only painful, but entailing the loss of the affection of her family from its offensive nature and from fear of infection, will operate, even though life may be shortened by immediate death; another thinks it better to let the patient live a few more months, even if in pain and distress. It is, perhaps, best to explain the situation fully, and to act, according to the patient's own wishes if it has been explained to her, or otherwise, according to those of her family. At all events, we who are aware of the importance of the recognition of cancer of the uterus in its early stages are under an obligation to extend that knowledge to others, sure of a fruitful result of seed thus sown. [Professor Strassmann then described the specimens contributed by him to the Pathological Museum.]

Mr. Bowreman Jessett (London) said: That uterine cancer when seen at an early stage of its growth is curable there can be no doubt. This I have proved over and over again. Within the last few weeks I have seen patients on whom I have operated —some as long ago as 1884, and others at somewhat shorter periods, either by high amputation of the cervix or by vaginal hysterectomy—who are perfectly well and have never had any recurrence of the disease since the operation. If, then, patients can be freed from their disease by such minor operations as high amputation of the cervix or vaginal hysterectomy when such disease is discovered in its early stage, it will at once be recognized how important it must be to educate women to recognize the significance of symptoms which may point to any abnormal condition connected with the uterine functions. The onus of this must undoubtedly fall to the lot of medical men, for it is to them that patients of necessity apply in the first instance. I would urge upon these gentlemen that they should in all cases of abnormal haemorrhage or discharge insist upon an examination—at first digital, afterwards, if necessary, with the speculum. Even by these means it is often impossible to diagnose with certainty the nature of the trouble, if any exist. In early cancer of the vaginal portion of the uterus, if any doubt exist a small piece should be removed for microscopic examination. In early cancer of the fundus or body it is quite impossible to make an accurate diagnosis unless the patient is placed under an anaesthetic and the uterine canal dilated and curetted. In cases, however, of excessive haemorrhage occurring in patients over 35 or 40 years, when the os and cervix are found on examination to be healthy but on introducing a sound into the cavity bleeding occurs, malignant disease of the body may as a rule be suspected. This should be confirmed by curetting and the débris examined by a competent pathologist. In all cases in which the cavity is dilated digital exploration should be made first, as it must not be forgotten that uterine haemorrhage is frequently caused by uterine polyps or submucous fibroids, which if recognized may be readily removed and the patient cured. The one great difficulty which has to be contended with is undoubtedly the ignorance of women in understanding the significance of abnormal discharge or pain, and it is a difficult problem to know how to educate them in the matter. I am convinced that many women shirk consulting their medical man from natural but ill-timed modesty, fearing he may wish for an examination; secondly, because they believe the haemorrhage or discharge they suffer from is due to natural causes or change of life; and, lastly, they dread the verdict, for unfortunately the lay press of late years has lent itself so much to the discussion of cancer, and the various nostrums which have been reported as cures, that the laity are apt to think from the perusal of these that they are possible victims of this terrible disease. What is required is to encourage patients to apply early when suffering from any abnormal symptoms; to impress upon them that in the early stages the disease is curable. This can only be accomplished, in my opinion, by the family medical attendant; it is to him the mother of a family applies in all cases of trouble, and it can be only by the confidence existing between the medical attendant and patient that we can hope to accomplish this very desirable end. With respect to treatment there can only be one end to be aimed at, namely, total extirpation of the diseased part. This can be accomplished in very early cases, in which the disease is limited to the vaginal portion of the organ, as has been proved by Sir John Williams and other eminent gynaecologists and confirmed by my own practice, by high amputation of the cervix. I have, however, discarded this operation for many years in favour of total extirpation of the uterus by the vaginal route, as by the high operation it is impossible to be sure you have got free of the disease. By vaginal hysterectomy I have the satisfaction of knowing that a large number of my patients have been free from any recurrence for a number of years. Undoubtedly in some cases it is wiser to remove the diseased organ by the abdominal route, and it is claimed for this operation that the glands can be removed and any disease which may implicate the ureters be dissected out, but surely if the disease has extended so far, recurrence at an early date is certain. The pendulum has, in the present age, swung much too far over, tending to very extensive operations when often lesser ones may answer equally as good a purpose, and if correct statistics of operations carried out by these very radical methods could be obtained, I am strongly of

opinion that gynaecologists would be content to allow the pendulum to swing back to more conservative measures. In 1896 I read a paper upon this subject at the British Gynaecological Society, and drew attention to the difficulty attending early diagnosis of uterine cancer, and gave particulars of 70 cases in which I had then performed vaginal hysterectomy for its treatment. Since then I have performed over 200 such operations. In that paper I tried to draw some conclusions as to the symptoms which may lead one to suspect early cancer of the uterus. These symptoms, although varying considerably, are nearly always present in one form or another. *Age* is undoubtedly an important factor; the majority of those I have seen occurred between the ages of 45 and 55, or just about the menopause. *Pain* in many cases is the earliest symptom, not acute, but more a sense of fullness and weight accompanied by slight pain of a forcing or neuralgic character at the lower part of the back or abdomen. The pain is seldom such as to cause patients to seek advice, as after a night's rest or keeping in a recumbent position they are often relieved. In many cases there is a complete absence of pain; when present, however, it is an important factor, and must not be overlooked. Discharge is always present, but often attracts little attention, it being considered to be an ordinary leucorrhoeal discharge, and of no importance. But when one is consulted in respect to this, care should be taken to ascertain the character of the discharge, whether purulent or bloodstained, or serous and badly-smelling. Should any of these conditions be present, examination should be insisted upon, when the true nature of the disease will be revealed. *Haemorrhage* is an important symptom, and in many cases in which the disease is limited to the fundus or body of the uterus is the first and may be the only symptom. In persons past the climacteric, bleeding must be looked upon with the greatest suspicion, and if accompanied by purulent or serous discharge, and sense of weight and dull aching pain, I believe it to be absolutely diagnostic of cancer of the body of the uterus. In younger women there are many causes of menorrhagia and metrorrhagia, that is, polyps or submucous fibroids, endometritis, etc.; but in all cases where haemorrhage is present a most careful and searching examination should be made. These, then, are briefly some of the symptoms of early cancer of the uterus. But early examination must be the keynote to my observations; without this a definite and correct diagnosis cannot be arrived at. This is the more important as it is only by this means that the extent of the disease and its situation can be ascertained, and without this it would be impossible to advise as to the treatment to be adopted, whether the case is operable or not, whether an abdominal or vaginal operation should be recommended. My experience leads me to the conclusion that in a large majority of cases, if an operation is to be advised, the uterus can be removed by vaginal hysterectomy quite as readily as by abdominal, with less risk to life and with considerably less shock to the patient. Notwithstanding these advantages, however, I am quite ready to admit there are cases in which it is advisable to recommend the abdominal route; and the cases I would select for this operation are those in which the disease has commenced and is present in the cervical portion of the uterus, as it is in these cases that the glandular mischief is mostly present and the disease has extended into the cellular tissue implicating the ureters. It may be possible to remove these affected glands and diseased tissue, but if the disease has proceeded thus far I am afraid the operation would not be successful in eradicating the disease and that speedy recurrence would ensue.

Dr. WALTER TATE (London) said that he entirely agreed with the opinions expressed by Dr. Spencer in his admirable paper. The importance of examination in all cases of haemorrhagic discharge could not be overestimated, and it was necessary that this examination should be complete. To illustrate his meaning he referred to a case of fibroid tumour occurring in an unmarried woman of 35, who had suffered from haemorrhage for some years, which had been more severe during the past few months. The nature of the tumour was recognized by abdominal examination, but no vaginal examination was made. When this was done after her admission to the hospital, extensive cancer of the cervix was discovered. In other cases of irregular haemorrhagic discharge a mucous polyp of the cervix might be present, and it might be thought that this was the cause of the symptoms. On further examination malignant disease of the body was found in one case, malignant disease of the cervix in another, and malignant disease of the ovaries in a third. The mucous polyp had probably been present for years, and was not in any way responsible for the symptom. With regard to the means to be adopted to secure the early recognition of cancer, he hoped that some recommendation would be drawn up by the meeting, first, with a view to sending an appeal to all the medical practitioners of the country to do their utmost to help in this endeavour; and, secondly, to give information by means of midwives or maternity nurses to women, which should enable them to recognize suspicious symptoms when they arrived, and to seek the advice of their medical attendant.

Dr. F. J. MCCANN (London) said: We are gathered together not to discuss successful cases but to decide what measures should be recommended to secure the early recognition of uterine cancer. We must ask ourselves the question, Why is uterine cancer not recognized in its initial stages? and the answer is, because it is at first a painless disease which does not interfere with the general nutrition. Much time has been occupied in the discussion of this subject, and many suggestions have been submitted; it is now necessary to proceed to action. Dr. Spencer has suggested that the Royal Society of Medicine should take up this matter, but in my opinion the British Medical Association is most fitted for the purpose. As our Association includes in its members not only medical men in the British Isles but also in the Colonies, any opinions expressed would be backed up by the weight of authority. I am strongly opposed to the suggestion that leaflets should be scattered broadcast amongst the general public, as this would only tend to produce "carcinomaphobia," and add one more to the numerous ills which suffering woman has to bear. Much good could be done by distributing leaflets to midwives and district nurses whereon are enumerated the early signs and symptoms of cancer of the womb. As the disease is so prevalent amongst the poor, and as poor women frequently consult nurses and midwives concerning their uterine troubles, such leaflets would enable the nurses and midwives to advise their patients to submit to a pelvic examination by a qualified medical practitioner. I have frequently seen examples of advanced uterine cancer in nurses and midwives due to the fact that they were entirely ignorant of the initial signs of this disease. I would therefore suggest that a committee of this Section be formed to frame leaflets enumerating the signs and symptoms caused by uterine cancer, and that these leaflets should be sent to midwives, district nurses, and perhaps to medical practitioners. In conclusion, let me add my tribute of admiration for the able manner in which Dr. Spencer has presented the subject to us.

Dr. J. INGLIS PARSONS (London) said the question was this—Did the results of operation in early cases justify taking measures to educate the public in the symptoms of this disease, so that they might come early for treatment? In his opinion they did. Very few patients came early enough; in his experience not more than 10 to 15 per cent. The medical profession quite understood the importance of an early diagnosis in this disease, but that was no good if the public failed to come, so that a diagnosis could be made. He had no hesitation whatever in saying that they must educate the public about the symptoms of the disease, in spite of the many objections that could be raised to this measure. As to the results of operation, recurrence took place much sooner in young women, probably because, the resistance being less, they were attacked earlier. But the number of cases occurring under 30 was very small.

Mr. CHARLES RYALL (London) said: I am fully in sympathy with the objects of this discussion, and, indeed, with any measure that will help the earlier recognition of uterine carcinoma. It is deplorable to think that 4,000 lives are lost annually in this country from this form of disease alone. We know that cancer of the uterus in its early stage is amenable to surgical measures, and that highly satisfactory results follow radical treatment. Yet, in spite of all this and the encouraging results of operation, the majority of

patients afflicted with uterine carcinoma still delay seeking relief until the disease has reached a stage when it is too far advanced to give hope of cure by any surgical measures. The anatomical position of the uterine cervix and the free communication between its fundus and the vagina make carcinoma of this organ almost an external growth, and therefore one that ought to present symptoms of a more or less definite nature. Such definite symptoms do show themselves, and generally appear quite early in the disease. Nevertheless, thousands of lives continue to be sacrificed annually where one would expect that so much could be done. The surgeon sees the majority of cases present themselves for treatment only when the disease is far advanced and any radical operation quite out of the question. One may well ask what is the explanation for this? Surely something can be done to bring these cases earlier under treatment. One must first consider the cause of this appalling state of affairs before suggesting any remedial measures. Recently I have gone through the notes of the last hundred cases of uterine carcinoma that came under my care in the Cancer Hospital. Out of the whole total I was only able to attempt to remove the disease in 24 cases, in spite of an extensive abdominal operation being carried out in almost every instance. This is a disappointing percentage of attempted radical cures in a disease which generally manifests itself early and occurs in an organ that can readily be removed. For the remaining 76 cases the disease was hopelessly extensive, and it was quite impossible to attempt any radical operation. These latter patients were therefore condemned as incurable, and only palliative measures could be resorted to for their relief as long as they were alive. Many of these were young women and young mothers whose lives would be useful if they could then have been saved. They had allowed the disease to spread in spite of warning symptoms until it was too far advanced for any hope of cure. As to the duration of the symptoms in the operable cases, I find that they varied from haemorrhage of one month's duration in 1 case to warning symptoms extending over three years in 2 other cases, the latter having passed the menopause several years previously. It was not only the inoperable 76 cases who had neglected their symptoms, but also the 24 in whom operation had been carried out. Symptoms were present and disregarded for quite an unreasonable time before medical advice was resorted to. Amongst the 24 operation cases, 15 had symptoms for six months or less—10 of these being for three months or under—while 6 had symptoms from one to three years, all of the last class being in women who had passed the menopause. These figures show the varying duration of symptoms amongst different individuals, even amongst operable cases, before they seek medical advice. Nevertheless, delay in any of these cases not only minimized the prospect of cure, but placed the patients in peril of allowing the disease to get beyond the operable stage. The cause of delay in seeking treatment was in most cases nothing more or less than ignorance. The public know very little about cancer, except that it is in many cases an incurable disease, and that it entails a good deal of suffering. In other words, that pain is a very prominent symptom is always uppermost in their minds. Again and again patients have explained to me that they never regarded their symptoms as being serious owing to the absence of pain, and yet those who have any knowledge of uterine carcinoma well know how frequently the disease passes into the inoperable stage without any evidence of pain. Moreover, women generally regard vaginal discharges in a very casual way, whether they be watery, blood-stained, or haemorrhagic, though they attach some importance to any discharge with an offensive smell. Likewise tradition and the talk of nurses of a bygone age are chiefly responsible for the fallacy being handed down from generation to generation that many of the ills to which females are heir, are due to the so-called "change of life." It is therefore a question of ignorance on the patients' part or their inability to understand or appreciate the possible gravity of their symptoms which is mainly accountable for the delay in seeking medical advice, and thus allowing the disease to drift into the incurable stage. There is also another class of case, happily a very small one, where the disease is present and even so for some considerable time without giving rise to any marked symptoms. Unfortunately this small class must always remain exposed to the risks entailed by such an uncommon form of cancer. Ignorance or carelessness on the part of the patient, though in a large measure the cause of so many incurable cases being met with, yet there is another important cause. Sometimes the medical practitioner is at fault. In several cases which have come under my observation, and where symptoms have been present, no proper examination has been made immediately. The practitioner has procrastinated until compelled to make an examination owing to persistence of the symptoms; or else the patient has consulted someone else. I have also come across other cases where in spite of an examination on the part of the doctor, he has failed to recognize the disease. We can thus understand that there are several reasons why the early recognition of uterine cancer is in such a backward state at the present date, with its consequent distressing results. As a remedy for this indeed terrible state of affairs I would suggest: (1) Improvement in the teaching of the student; (2) education of the public in relation to the symptoms of cancer. As to the student, a great deal can be done by careful education. Most textbooks on gynaecology fail to attach sufficient importance to the subject of cancer, though they deal extensively with minor matters. Now, of all chronic affections of the uterus cancer is far and away the most important, as any delay in recognizing it may be fatal to the patient. The early recognition of any other uterine neoplasm or chronic disorder may be deferred some months with comparative safety to the patient, but any delay in recognizing carcinoma may be followed by the gravest consequences. These facts cannot be too strongly brought home to the student. Again, the early symptoms of uterine cancer are not taught as they might be. Most textbooks lay most importance on teaching the student how to diagnose cancer once it is fully developed, and this really means how to recognize the disease in an advanced state. Such teaching is insufficient. The student should be taught not only how to recognize the disease, but that it is of the utmost importance to recognize or be suspicious of its presence as early as possible. He should also be informed as to the present unfortunate failure to recognize carcinoma in its early stages and the consequent evil results that follow. In my opinion no extra care in the instruction of the student is likely to bear fruit for some considerable time to come unless the public also be instructed. It is the unfortunate women who are likely to become victims to the disease who should be informed of the symptomatology of cancer and the significance of symptoms that may arise. Instruction of the student will help matters, as will also instruction of nurses and midwives; but these measures cannot be compared to what is certain to follow the instruction and the education of women. The Cancer Hospital authorities have for a long time been fully alive to the question—namely, the ignorance of the public as a cause of so many cancers being incurable. This fact is seen daily in the great number of hopeless cases that come to the hospital for treatment—cases where a little knowledge beforehand might have been of the greatest benefit when the first symptom of the disease manifested itself. The authorities therefore issued instructions with the view of hoping to educate the patients in matters relating to cancer and disseminating the knowledge amongst the public. These instructions consist of hygienic measures to be adopted by those afflicted with the disease, and also a warning notice that the onset of cancer is very insidious and early treatment an absolute necessity. It is thus hoped that patients may be induced to seek treatment as soon as possible. I cannot do better than quote a warning issued to females, and I am convinced that if some such warning were distributed widely throughout the country it would be fraught with much benefit in the immediate future.

Warning to Women.

Cancer is a very prevalent disease.

It may occur at any age but is most frequent between the ages of 30 and 60.

In spite of its serious nature successful results can be obtained if patients will only seek early treatment.

Once the disease appears it is absolutely necessary that it should be treated without loss of time.

Any delay may be followed by the gravest consequences, as the disease tends to spread and become too far advanced for any hope of cure.

Cancer may appear without any pain or impairment of

health, and may even reach the incurable stage without causing much discomfort.

Cancer of the womb is generally associated with some discharge or bleeding.

The discharge varies in character and may be thick, watery, blood-stained or offensive.

The bleeding may be small in quantity or excessive, and may occur at or between the monthly periods.

Any bleeding, no matter how small, which occurs at an unusual time requires investigation.

Unfortunately women afflicted with serious symptoms frequently think that the latter are due to the "change of life," and therefore they consider them of little importance, and delay seeking early treatment.

This delay is one of the causes of so many cases being incurable.

ADVICE.

If you have any suspicious symptoms seek immediate medical advice.

The disease must be treated as early as possible. Do not delay as the consequences may be serious.

When in doubt consult your own doctor.

The education of the public is, in my opinion, the most necessary measure to adopt, and some organized method of disseminating information should be started. Professor Winter, who tried such a plan in East Prussia some years ago, found that it bore fruit. Something of the same kind might be adopted in this country, as anything which helps to educate the public in matters relating to cancer is certain to be followed by good results.

Dr. THOMAS WILSON (Birmingham) said that from 5 to 10 per cent. of the total number of cases of uterine cancer were capable of being cured by operation. Diagnosis could be made by suitable means even in the earliest stages. In a large proportion of the cases applying to medical men an immediate and adequate examination was not made. In lectures to nurses and midwives he had for several years introduced an account of the symptoms of uterine cancer, and of the duties of nurses in connexion with it. Two winters ago he read a paper at the Birmingham Branch on the necessity for immediate diagnosis of these cases. Previous to the appearance of that paper the operable ratio of his cases had gradually increased from 14 to 18 per cent.; since then 64 cases had been seen, of which 19, or nearly 30 per cent., had been operable. A part of that increase was probably due to the effects of the paper. The best means of endeavouring to secure an increased number of early cases appeared to consist in spreading knowledge of the subject among the profession and among midwives and nurses, and this could be best carried out by some such body as the Obstetrical Section of the Royal Society of Medicine, or the British Medical Association. Obvious objections to the dissemination of warning pamphlets among the general public more than counterbalanced any advantage to be expected from such a method.

Dr. MUNRO KERR (Glasgow) agreed that the crusade against carcinoma of the cervix could be helped forwards by impressing upon the medical profession the importance of making a thorough examination in every case where there was the slightest suspicion of malignant disease, and educating midwives and the public. As regards the medical profession he regretted that from his experience, either through lack of knowledge or carelessness, a considerable number of cases were not thoroughly examined as early as they might be. The importance of the midwife had been impressed upon him by the fact that amongst cases of carcinoma in the pregnant and parturient the proportion of operable cases was much greater than amongst the non-pregnant. This was readily explained. The pregnant woman, if she had haemorrhage, was probably examined during pregnancy, and the parturient was usually examined once or twice during labour. As regards educating the public, that appeared to be a matter of great difficulty. Women were so afraid of cancer that they delayed consulting their medical attendant. He supported all that had been said in support of the idea that some definite steps should be taken to have a committee appointed to inquire how best carcinoma of the uterus could be combated.

Dr. CUTHBERT LOCKYER (London) said that until about twenty-five years ago cancer of the uterus was a uniformly fatal disease, the diagnosis of which was equivalent to consigning the patient to a most agonizing death. That state of affairs was now modified to a considerable degree, but there was still room for vast improvement. The one and only chance of recovery from carcinoma of the uterus could be summed up in three words—an early diagnosis. When the disease was recognized at an early stage there was every hope of complete cure by operation. Dr. Lockyer's late colleague at the Samaritan Hospital, Mr. J. Knowsley Thornton, spoke very strongly upon this subject in his address at the annual meeting of this Association in 1895. His words were worth recalling at the present time. He said:

> How is an early diagnosis to be made? Clearly by neglecting no menstrual departure from the normal, however trivial it may at first sight appear, but at once to encourage the patient to accurately describe symptoms, and, above all, to insist in the most determined manner on a local examination. Here it will be apparent that I, as a consultant, appeal for help to the great body of those who are now listening to my remarks—to my professional brethren engaged in general practice. I, in common with those situated as I am, too seldom have an opportunity of diagnosing early, because the majority of the patients come to us too late, when the disease has already advanced nearly, or quite, beyond the limits of surgical aid. Let me, then, appeal to all engaged in family practice who listen to me here, and to that larger body who may read my words when reproduced in the medical journals, to sternly cast aside that too great modesty, or that tendency to treat as trivial small symptoms, and to at once take alarm about, and carefully investigate, every case in which there is brought to their notice an abnormality in menstruation, or a vaginal discharge of any kind, however trifling. A very grave responsibility lies at the doors of the medical profession for the small progress made in the early diagnosis of uterine cancer and its successful treatment. How constantly is the consultant told, "I mentioned it to my doctor weeks or months ago, but he said, 'Oh, it is nothing; I will send you a little medicine or a little injection,' and never even suggested an internal examination, so I did not like to trouble him again till the pain became so bad or the discharge so troublesome, and then he examined me and said I must have special advice at once"? Invaluable weeks or months gone, and then the verdict of the consultant, "It is not a case for operation," which really means, "You have come too late," but cannot be so candidly expressed, because he must guard the reputation of his professional brother. I admit that the false modesty of the patient, especially in some classes of society, makes the position a difficult one, especially for the young family doctor; but let me implore you all to awake to what is at stake, and to be firm in your demand for an examination, and if you have any doubt after such an examination, to urge that the patient should at once seek the advice of some one who has larger opportunities than yourself of forming a sound opinion. I will go one step further, and ask you, if there should be any to whom such a temptation comes, never to go on treating a case in which there is a shadow of doubt either because you doubt or because you want practice. If the case is susceptible of treatment at all, it is only surgical treatment which can avail, and that of so severe a kind that it requires the knowledge of the specialist if ever any disease did or does require special knowledge or special skill in operative treatment.

These words were uttered in London twelve years ago, and from them we see that Thornton put all the blame of failure upon the medical practitioner. This was manifestly unfair. As it leaves the most important factor in the causation of failure of treatment out of consideration altogether—namely, the patient's ignorance of the early symptoms of uterine cancer. Dr. Lockyer believed that this was the first occasion that the question of educating the British public had been seriously discussed by a responsible and thoroughly representative body of gynaecologists in England, and he was glad to find that Dr. Spencer put this subject first among the headings of the cause for the present lamentable state of affairs. As soon as Winter published his paper on the strife against uterine cancer in East Prussia in 1902, Dr. Lockyer translated the article for an English journal. At the Leicester meeting in 1905 the idea of educating women in the early signs and symptoms of cancer was ridiculed, one speaker going so far as to say that this plan would be enough to give women cancer from fright. Dr. Lockyer would like to see some responsible body undertake this important work, as it was obvious that Winter's personal efforts could not be adopted by any one English individual. With reference to the disinclination of women to submit to examination, he thought that education would overcome this also. Women naturally objected to submit to the ordeal of examination for what appeared to them as trivial ailments, and generally waited until they suffered pain before growing alarmed; but if they were taught the significance of irregular haemorrhage, the disinclination to examination would disappear. The question of the better education of

medical students in practical gynaecology was important, and many of the students themselves recognized this want, and to supply it they took clinical assistantships at special hospitals after they were qualified.

Mr. R. J. Johnstone (Belfast) said: In discussing the earlier diagnosis of uterine cancer, important points to be fixed are, "what is the length of time during which cancer may be latent?" and "what are the first symptoms of cancer?" Discharge and haemorrhage are really signs of necrosis and ulceration, and therefore late symptoms, often only appearing when extension or metastasis have already made the case inoperable. Still, many cases suffer from so-called "early symptoms" of cancer far too long before seeking advice. To remedy this, three classes may be educated and alarmed: (1) General practitioners—not necessary in most cases; (2) midwives and district nurses—very necessary; (3) lady sanitary inspectors. Our best missionary is a cured patient, and the greatest deterrent is a high operation mortality. This should make us careful as to the cases in which we recommend operation. The hopeless attitude of the public in regard to cancer should be corrected.

Dr. Frederick Edge (Wolverhampton) said: As regards women's ignorance of the earlier symptoms of the disease, it will require some experience before we can formulate the knowledge of the early symptoms of the disease in such a way that the laity will easily grasp it. Particularly does it strike me that red blood discharge is becoming the fright signal to the lay mind, whereas a woman should know that every discharge has a distinct cause, and that blood discharge is a too-late signal in cancer. The presence in each district of a woman doctor is very necessary, both to satisfy scruples and because it facilitates the general subjection to physical examination, which is often put off more from fear of ridicule than from modesty. The better education of medical students in gynaecology is very desirable, but I find the profession generally is very keen, and well up in seeking and finding uterine cancer. After all, the essential thing is to get the public to grasp that an examination under an anaesthetic with dilatation and perhaps curetting is the only means of making sure and certain whether there is cancer or not in the uterus, as Mr. Johnstone illustrated by instances. And it cannot be too widely diffused that it is not unnecessary and wasteful of life and time and money to undergo this minor operation, but rather that it is necessary and careful and provident to submit to this precautionary thorough uterine examination whenever there is any sign of abnormal discharge which is not easily and distinctly to be accounted for, and that, apart from diagnosis, this curretting cures minor conditions. As regards operation upon late cases, I would like to express my strong condemnation of the practice, and to say that my experience has been that the duration of life is distinctly shortened by recurrence after operation as compared with palliative treatment. Dr. McCann and Dr. Wilson put their finger on a weak point in our defence against cancer—that is, the nurses and midwives. I should like to move that the Central Midwives Board insist that "a midwife should be able to recognize the cervix, and should have an elementary acquaintance with the signs of cancer of the cervix." This should apply to nurses also, as Dr. McCann's evidence shows that they themselves often come too late when suffering from cancer.

Dr. S. Cameron (Glasgow) thought that one of the chief reasons for patients failing to seek advice was the fact that pain was looked upon as an essential accompaniment of the disease. This symptom, in the majority of cases of carcinoma cervicis, indicated that involvement of the uterine ligaments had taken place, and thus very frequently the cases were beyond radical treatment. He would recommend the more thorough instruction of students in practical gynaecology. He would advise the instruction of all nurses and midwives in the symptoms of the disease, but would object to their making examinations on the patient. He thought that the total blame could not be placed on the practitioner. It was a desirable thing that special laboratories or one great central laboratory be established so that curettages could be sent by practitioners for examination by skilled cancer pathologists. As regards the statements which had been made there, that only the removal of cancerous uteri which might return high statistics and induce the public to come more readily for operation should be attempted, he entered a protest, and hoped the day was far distant when he would operate to please the public and neglect his duty to his patient. He maintained that there were two classes of cases for operation: (1) Cases which might result in a cure; (2) cases in which operation was undertaken in the hope of relieving the patient from her distressing symptoms even although her life might not be prolonged. Such cases as a rule passed through the late stages of the disease with a much greater degree of comfort than those which had not been operated on. He did not think that pamphlets should be distributed to women throughout the kingdom.

Mr. A. W. Gilchrist (Nice) said: In the abstract furnished by Dr. H. Spencer to the British Medical Journal of the remarks he proposed to make to-day, I found no allusion to the utility of physiological investigation in the early stages of cancer in general. Perhaps the researches of the investigators of the Cancer Research Fund may encourage the adoption of some such method. In this respect the fifth annual report of the Fund is interesting. This report tells us "that the cancer cell, growing in a previously normal mouse, induced an increase in the amount of physiologically active hydrochloric acid during digestion. Although this observation can scarcely be said to favour the hypothesis of the malignancy of the tumours which were under investigation, it is interesting, since it shows that abnormal growths in the organism may produce general metabolic changes. Why should not this be the case in uterine cancer also, and why should not these nutritive changes be perceptible to biochemical analysis? Many years ago Rommelaere pointed out that the excretion of urea was very much diminished in cases of cancer. Later, many chemists have pointed out other urological signs of malignant infection. This order of investigation is worthy of further attention.

Dr. G. Rice (Derby) was of opinion that midwives should be instructed in the early symptoms of cancer of the uterus, as there was an increasing tendency for women of the lower classes to employ midwives Lectures on gynaecology should be included in the future teaching of midwives.

The President remarked that he did not think that many women were ignorant of the symptoms of cancer of the uterus. Every nurse and most women, if asked, would be able to say that bleeding and fetid discharge accompanied this disease. Women with early signs of cancer were often afraid to consult a doctor lest their fears should be confirmed. When driven to take advice they frequently went to a physician known to prefer medicine rather than operative procedures, and who treated symptoms without endeavouring to discover their underlying cause. Many practitioners shrank from examining a woman because they doubted their own ability to make a correct diagnosis, even were they to undertake such an examination. This was entirely the result of the lamentable inadequacy of the student's training. Many qualified men had passed through the portals of their profession with no greater experience than that furnished by a fortnight's attendance at a maternity hospital, and so long as this state of affairs continued it could not be hoped that an early recognition of cancer would be obtained.

Reply.

Dr. Herbert Spencer, in replying on the discussion, said he was glad there was practical unanimity on the main points of the discussion, which had elicited many valuable suggestions from various speakers. Mrs. Scharlieb had rightly called attention to the harm done by operating in practically hopeless cases. Dr. Galabin's and Dr. Tate's suggestion that information should be distributed amongst gynaecological and obstetrical out-patients he should bear in mind. It was certain that an enormous number of the poor could thus be informed in the outdoor maternities of London, and the information could thus be conveyed to the chief class which suffered from the disease. The suggestion that leaflets should be distributed to doctors, nurses, and midwives had been made by several speakers, and would, no doubt, commend itself to the Committee. He was obliged to Dr. Strassmann for kindly giving them copies of the circular letter sent to doctors and midwives in Berlin and Brandenburg. He had no

doubt the Association would print a translation of the letters for the information of the members. The interesting points raised by Mr. Johnstone and Mr. Gilchrist did not concern them immediately as practical men. They would have made an enormous advance if they could get women to come and doctors to examine them as soon as they had any abnormal haemorrhage or discharge. He was not in favour of the use of the speculum by midwives, but thought the symptoms and signs of the disease should be brought to their knowledge. He hoped much good would result from the discussion and from the Committee to be appointed by the Council, which would carry greater weight than a Committee appointed by the Section.

RESOLUTION.

After some discussion of its precise terms, the following resolution, proposed by Dr. F. J. MCCANN, seconded by Mr. INGLIS PARSONS, was then adopted *nem. con.:*

That the Council of the British Medical Association be requested to appoint a Committee to consider the best means of disseminating knowledge of the importance of the early recognition of uterine cancer.

CHORION-EPITHELIOMA.

By WALTER C. SWAYNE, M.D., B.S.,
Professor of Midwifery, University College, Bristol;
Obstetric Physician, Bristol Royal Infirmary.

THIS disease was first described by Sänger[1] in 1889, and was named by him deciduoma malignum; other early names were sarcoma deciduo-cellulare, and decidual carcinoma.

In 1895 Marchand,[2] in a paper on hydatid mole, stated that all the forms of cells described as large nuclear decidual cells, large sarcoma cells with nuclear giant cells derived from connective tissue, proliferating endothelial cells and transition of unstriped muscle elements into sarcoma cells, could be recognized without difficulty in the epithelial migratory cells of the hydatid mole, and similar forms to these can be found in the tissue elements of chorion-epithelioma.

Of 26 cases reported by Sänger,[3] the majority occurred as secondary to hydatid mole, while its association with other conditions connected with conception was noted by Sänger,[3] Whitridge Williams,[4] Marchand,[5] Schmorl,[6] Pfeiffer,[7] Fränkel,[8] Bacon,[9] Menge,[10] Löhlein,[11] Klein,[12] Nové-Josserand and La Croix,[13] Tannen,[14] Kuppenheim.[15]

It is important to note the semi-malignant characteristics of hydatid mole as evidenced by its powers of perforating the uterine wall; Pestalozza[16] has found pulmonary thrombi composed of myxomatous chorionic villi in a case of death from this affection; Schmorl[17] has also given instances of the occurrence of thrombi in pulmonary vessels composed of placental giant cells, without any tumour of uterus or placenta.

Here should be noted:

1. That placental cells have been found in the lungs in the absence of any growth in the uterus.
2. That degenerate chorionic cells have been found in the lungs in hydatid mole.
3. That the majority of cases of chorion-epithelioma up to 1896 had occurred in a percentage of about 40 after hydatid mole.
4. That the tissue-elements found in hydatid mole resemble those of chorion-epithelioma.
5. That chorion-epithelioma rapidly forms metastatic deposits through blood vessels, and notably, as would be expected, in the lungs.

Up to 1896 this disease was considered by many British pathologists to be sarcomatous, and whether sarcomatous or not, to be not definitely proved to be connected with conception, but to be most probably coincident with it accidentally.

The important researches of Siegenbeck, Van Heukelom, and Hubert Peters, which showed that the whole of the chorionic epithelium is fetal epiblast, and that the cells of Langhans's layer become modified into syncytium when in contact with maternal blood, probably supplied the key to the pathological entity of chorion-epithelioma as a side-issue. Hubrecht had already demonstrated a change of this nature in the ovum of the hedgehog, showing the development of the "trophoblast" by proliferation and thickening of the outer layer of the primitive epiblast, with, around the trophoblast, coincident destruction of maternal tissues, which latter was of a temporary nature only, equilibrium between the edacious properties of the trophoblast and the resistance of the maternal tissues being eventually obtained; the Peters ovum exhibited similar processes.

Teacher[18] showed that the syncytium, instead of being as previously supposed a maternal structure, was developed out of the individual cells of the trophoblast, which are obviously epiblastic, and that the maternal

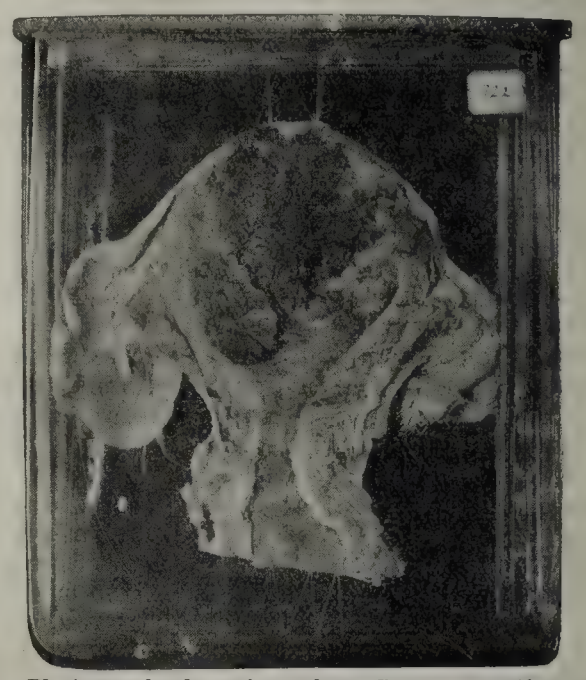

Fig. 1.—Photograph of specimen from Case II. Section of uterus with appendages attached; at fundus growth has penetrated peritoneal coat; canal of cervix and lower segment not affected by growth, which is confined to fundus.

tissues so far from showing proliferation when in contact with syncytium, show degeneration. He again impresses upon us the edacious properties of the trophoblast, which, even in normal conception, manifests up to a certain point of the development of the ovum characteristics simulating those of malignant growth, which are lost when the resistance of the maternal tissues is able to overpower the edacious properties of the trophoblast, except possibly so far as the production of pulmonary metastasis is concerned.

Now it seems obvious that any perversion of the edacious power of the trophoblast, or failure of the

Fig. 2.—A portion of growth penetrating uterine wall. (*a*) Muscular layer of uterine wall; (*b*) growth. (Low power.)

resistance of the maternal tissues and consequent failure of equilibrium, may result in perverted nutrition, leading either to (*a*) simple, (*b*) malignant mole, (*c*) tumours composed of syncytium and individual cells with a few villi either normal as to their mesoblastic cores or hydatidiform; (*d*) chorion-epithelioma proper, with no trace of fetal mesoblast.

Teacher's proposition seems not only logical, but supported by the strongest evidence, and it seems impossible to avoid agreeing with him as to the pathological entity of the disease, or that it should be classed among the epiblastic carcinomata, rather than the mesoblastic

sarcomata, which latter proposition has been strongly maintained by Veit.[19]

Growths apparently identical have been met with, not only in cases in which pregnancy has not occurred—as in virgins—but also in males.

Ritchie[20] has described a case of embryoma removed from the anterior mediastinum of a young man with metastases in the liver and spleen. Part of the tumour proved to be a dermoid cyst, and part to have the structure of chorion-epithelioma, as also had the metastases.

F. W. Andrewes[21] also described cases of endosteal sarcoma of the femur, in which syncytial masses were present.

Schlagenhaufer[22] reports two cases occurring in males,

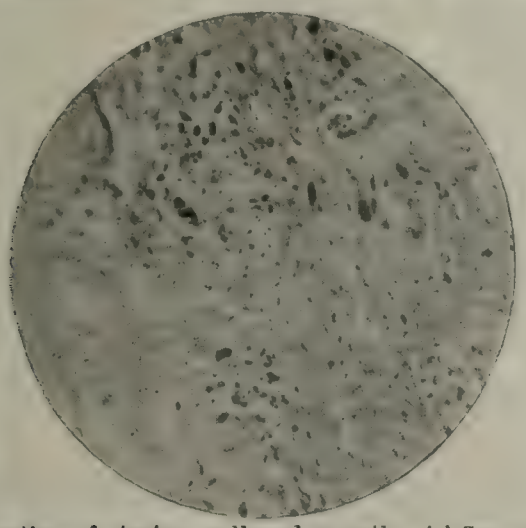

Fig. 3.—Section of uterine wall and growth. (*a*) Syncytial mass; (*b*) decidual cells. (High power.)

in one of which the patient died of sarcoma of testicle with secondary deposits in the lung, thyroid gland and kidney, the tumours having the structure of chorion-epithelioma; while in the other, not only were cells found which correspond to the epithelial cells of the chorionic villi, but mesoblastic tissues as well—in fact, whole villi in a state of hydatidiform degeneration.

Risel[23] derives these chorion-epitheliomatous proliferations from fetal ectoderm, and considers them equivalent to the other ectodermal structures of teratoma.

Pick[24] is of opinion that they arise almost invariably from chorionic epithelium the product of conception, as originally stated by Marchand, but does not deny their possible origin from fetal ectodermic material, displaced

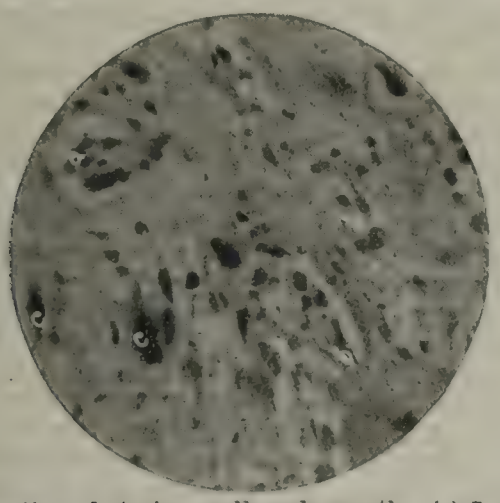

Fig. 4.—Section of uterine wall and growth. (*a*) Syncytial cell mass; (*b*) decidual cells; (*c*) large mononucleate cells. (High power.)

in the system of the patient. Schmauch[25] has met with a case in which no uterine growth was found, although syncytial metastases were present in the vagina, lung, kidney, spleen, and brain.

The length of time elapsing after pregnancy also varies; thus, eleven years after, Russell Andrews[26]; nine years after, McCann[27]; three weeks, Malcolm and Bell.[28]

In the first of the two cases hereafter reported, the last pregnancy at full time occurred two years before the growth; but ten months before, a two months' amenorrhoea was followed by severe haemorrhage and passage of clots. This was probably an abortion.

In the other case the symptoms occurred 17 months after the last full-time pregnancy, but only ten weeks after a doubtful abortion.

Cuthbert Lockyer has, in his paper on lutein cysts of the ovary, drawn attention to the coexistence of this condition with chorion-epithelioma. He suggests that these two conditions have a definite connexion, and that the perverted ovarian activity which leads to the formation of lutein cysts, has a definite reactive tendency on the ovum and uterus in preventing the normal resistant influences which tend to modify the penetrating powers of the trophoblast and, under normal conditions, produce equilibrium between the structure and the maternal tissues. Several cases of chorion-epithelioma have been lately reported by Griffith and Williamson, H. T. Hicks, J. B. Hellier, and R. V. Solly.

Case I.

F. P., 36, 8-para, presented herself at the Bristol Royal Infirmary in March, 1904, on account of haemorrhage from the vagina. She stated that the last full-term child was born in

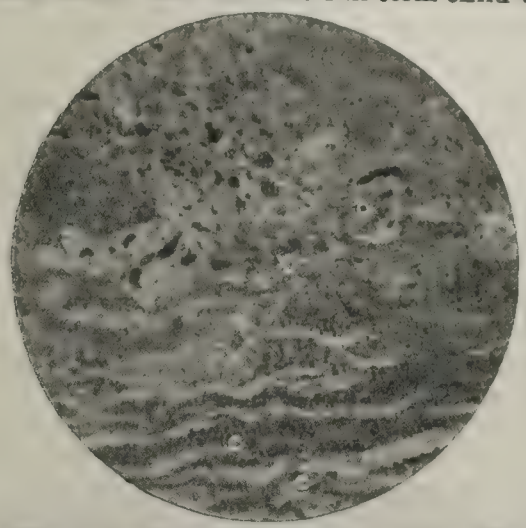

Fig. 5.—Section of metastasis in lung. (*a*) Syncytial cell mass; (*b*) decidual cells; (*c*) fibrous tissue. (High power.)

December, 1902 (two years and three months previously). She had been from this date quite regular until April, 1903, when she missed two periods (April and May). Early in June she had an attack of severe haemorrhage with the passage of large clots, with but little pain, and thought that she had miscarried. For three weeks she lost continuously in considerable quantity and passed clots at intervals; this ceased, and for six weeks she had no haemorrhage; but from about the end of August, 1903, she suffered from a more or less continuous loss, increasing at times, until she applied for treatment. The uterus was found to be enlarged and flabby, approaching the size of a two months pregnancy; the sound was not passed.

Under treatment she improved, but as the loss did not cease, and on April 10th became excessive, she was admitted and curetted on April 20th, the curette bringing away large

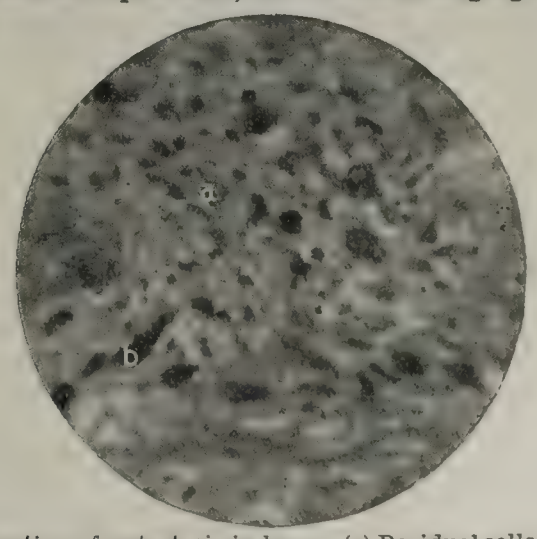

Fig. 6.—Section of metastasis in lung. (*a*) Decidual cells; (*b*) large mononuclear cells. (High power.)

masses of soft tissue, which showed the microscopic characters of chorion-epithelioma.

Following this she had a succession of febrile attacks, her temperature at one time reaching 105° and her pulse 120. The uterus was removed by vaginal hysterectomy in May, and she made a satisfactory recovery.

Case II.

A. F., multipara, aged 36. Admitted February 8th, 1906, on account of persistent uterine discharge following a flooding. Menstrual history unimportant. Children, full time, 4; miscarriages, 2. Last pregnancy, August 2nd, 1905. Miscarriage after missing one period. Last full-time pregnancy about August, 1904.

After missing one period, as mentioned above, she had a flooding which she attributed to catching cold; this was succeeded by haemorrhage which lasted six weeks and kept her in bed during that time. Following this she suffered from

a thick yellow discharge, which has for the last fortnight been of a muddy brown colour and at times somewhat offensive. She does not consider that she is now pregnant.

On admission, uterus enlarged nearly to the size of a three months pregnancy. Mobility somewhat impaired, hard, not fluctuating, regular in outline. Anaemia marked, systolic bruit, pulse 100, temperature 99°, pulse very weak. Urine normal. Temperature rose on third day to 102°, pulse 120; and next day, temperature 105°, pulse 130, temperature after this ranging between 99° and 104°, and pulse from 110 to 120.

Curetted February 14th, 1906. Polypoid mass resembling part of fetus felt at internal os proved to be a mass of soft, malignant-looking growth, friable and bleeding freely. The operation caused much shock and collapse; haemorrhage was free. On the next day (February 15th) she had a rigor, and her temperature rose to 103°. The rigor and rise of temperature was repeated at intervals of a few days. (The curetted material was reported by the pathologist to be (?) sarcoma.)

Her condition was such that no radical operation seemed possible—in fact, her condition during and after the curetting, which was done as rapidly as possible, was most alarming, and, in addition, marked signs of pulmonary mischief were present, namely, haemorrhagic sputum and râles; her temperature was high and her pulse rapid and weak (? septic pneumonia). She was again curetted on February 27th, 1906. This, as before, was followed by a rigor, and temperature 104°. On March 3rd, pleuritic rub was heard below the left scapula. Symptoms gradually grew worse, and she died on March 20th, 1906.

Abstract of Autopsy.—Chorion-epithelioma of uterus, with metastases in both lungs, but none elsewhere.

These two cases illustrate one or two important points in connexion with chorion-epithelioma.

The first point we need not labour here. It is the vital necessity of exploring the uterus in all cases in which,

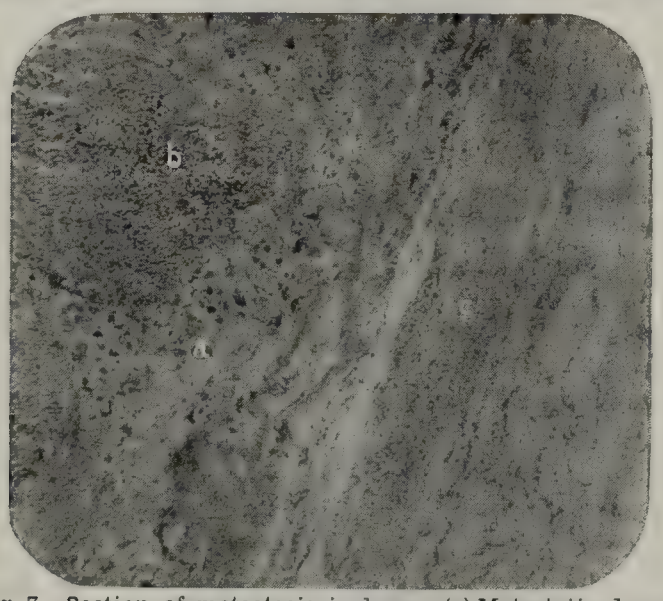

Fig. 7.—Section of metastasis in lung. (*a*) Metastatic deposit; (*b*) blood extravasated in tissue; (*c*) lung tissue. (Low power.)

after pregnancy terminated by abortion or ordinary parturition, and, whether molar or not, haemorrhage of an intractable type occurs, even if this is not severe.

The second point is that both these cases showed marked pulmonary symptoms. In the first of the two cases they cleared up and disappeared a short time after the removal of the uterus; in the second they increased until death occurred. Probably in both cases, and certainly in the second, these symptoms were due to pulmonary metastases.

Any one who has seen Dr. Teacher's photograph of retrograding metastases in the Pathological Museum in Barnfield Hall will agree that pulmonary metastases do not contraindicate radical operative treatment, and the rapid improvement in my first case after hysterectomy tends rather to confirm the idea that metastases were present rather than ordinary or septic pneumonia, which latter would not probably have cleared up so rapidly, even if it had been influenced by the operation. The pulmonary symptoms suggested pneumonia on superficial examination, but characteristic physical signs were not present.

In the second case it was not the pulmonary condition which weighed with me in deciding against operation; but her general weakness, rapid and weak pulse, and the marked collapse that occurred after the curetting made it seem extremely probable that she would die on the table.

I must here express my indebtedness to Professor Walker Hall, who was kind enough to undertake the preparation of the lantern slides and microscopical sections.

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Professor STRASSMANN (Berlin) said: Patients who have expelled a hydatidiform mole should be kept under observation and periodically examined for some years, in the same way as those who have undergone an operation for cancer, for it cannot in any case be affirmed that they will not develop chorion epithelioma. In Kauffmann's case the uterus enlarged soon after the birth of a mole, and when total extirpation was performed the new growth was found to have extended through the uterine walls into the veins of the broad ligament. Two cases authenticated by autopsy have been recorded by German authors of chorion-epithelioma affecting men and situated in tumours of the testicle. Metastases were found in the lungs, liver, and other organs, resembling the metastases of fatal chorion-epithelioma in women. It may be that a new view of the etiology of these tumours will be discovered.

Mr. SMALLWOOD SAVAGE (Birmingham) mentioned that he had had 1 case of chorion-epithelioma which followed hydatidiform mole; the specimen was shown three years ago at the Oxford Annual Meeting. This patient was now in good health, vaginal hysterectomy having been performed. He mentioned that great differences existed in the degree of malignancy, and this accounted in great measure for the variable results of operation.

Dr. CAMERON said that he had operated on two cases of chorion-epithelioma. In one case pulmonary symptoms were so prominent that the case was transferred to a medical ward, and when there acute uterine symptoms appeared, and abdominal hysterectomy was performed. At the operation the omentum was found attached to the fundus of the uterus, and when this was liberated a portion of the growth was detected projecting through the uterine wall. At the *post-mortem* examination pulmonary deposits, undergoing retrograde changes, were found. Copious haemorrhage had taken place around the growth in the lung.

Dr. F. J. MCCANN said: I have always believed that the rarity of the cases of chorion-epithelioma has been exaggerated, for I have had under my own care five examples of this disease. I still, however, prefer to retain the term "deciduoma malignum," as it includes not only those examples whose etiology is proved, but also those in which the proof is not complete. The results in regard to recurrence after operation are reported to be bad, but, as a matter of fact, in the majority of the reported cases operation has been undertaken for advanced disease. If the disease is removed in the early stages, the results are not worse than those obtained after operation for uterine cancer. One of my patients remains

well, three and a half years after operation; a full report of the case is given, together with an illustration of the disease removed, in my book on *Cancer of the Womb*. Another patient also is well who was operated on nearly twelve months ago. It is important, then, to operate in the early stages of the disease. Patients are known to have recovered after operation, although metastatic growths existed in the vagina when the primary disease in the uterus was eradicated; it is therefore conceivable that complete recovery may follow even when metastases exist in the lungs. Each case must be considered on its own merits, but secondary deposits, unless they are widespread, should not be a contraindication to operative treatment. Curetting the growth should as far as possible be avoided. The curette may be used to obtain a small portion of the growth for microscopical examination, but any free use of this instrument lacerates the growth and favours dissemination, whilst repeated curettage may, unless great care be taken, lead to septic infection. Such growths in the uterus are peculiarly liable to septic infection, evidenced clinically by profuse foul discharge, rigors, high temperature and pulse-rate, and profound constitutional disturbance. As soon as a diagnosis is made immediate operation is imperative, as repeated curetting or uterine exploration will only do harm. In the advanced stages of this disease the patients suffer from extreme anaemia far more profound than that observed as the result of profuse bleeding due to a uterine myoma.

Dr. Edge said he had had the misfortune about five years ago to watch a case of chorion-epithelioma until it was too late to operate. The vaginal walls and one labium became infected, and, according to his experience, the spread of chorion-epithelioma was often along the vaginal walls. Hence the vaginal walls should be removed with the uterus and pelvic tissues if the whole disease was to be extirpated.

THE OPERATIVE TREATMENT OF CARCINOMA OF THE CERVIX.

By Cuthbert Lockyer, M.D., F.R.C.S.,

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From whatever point of view we regard the important question of the treatment of cervix carcinoma, we are driven to admit that up to the present all our results are eminently unsatisfactory. The all-important topic of early recognition, which was introduced by Dr. Herbert Spencer in the discussion at the second meeting of this Section of Gynaecology, which has been acted upon by Winter in East Prussia, deserves the co-operation of every gynaecologist. No single or united effort to educate the British public in the early symptoms of carcinoma has as yet been made, and for this reason alone, if for no other, we shall for many years to come have to face the other important problem, What is to be done with advanced cases of cancer of the cervix? In a paper read before the Obstetrical Society of London in 1902 on a case of rapidly growing epithelioma of the cervix, I expressed my doubts as to the validity of vaginal hysterectomy as a radical operation in cases of this disease. I had become keenly alive to the risks of implantation of cancer cells on freshly-cut surfaces, and invariably scraped and burnt out the growth as thoroughly as possible before removing the uterus by the vagina. This mode of treatment I pursued from 1901 to 1905, and then published my results at the Leicester meeting of this Association.

As 4 of the 17 cases then recorded refer to cancer of the corpus uteri, I exclude them from all reference upon the present occasion, but the fate of the remaining 13 cases of cancer of the cervix is interesting. At the time of publication two years ago, there were 7 cases of recurrence and 6 in which no return of the disease had appeared. Since that date a further case of death from recurrence has to be mentioned, and one patient has been lost sight of. This leaves only 4 cases out of the 13 in which, up to date, I can prove that no return of cancer has occurred; 2 of these were operated upon in 1903 and 2 in 1904. Since publishing these cases in July, 1905, I have only once performed vaginal hysterectomy for cancer of the cervix. The operation was performed in October, 1905, and the patient died of recurrence after colotomy in December, 1906. To sum up my vaginal hysterectomies for carcinoma cervicis uteri: Out of 14 cases, ranging over a period 1901-5, only 4 can be traced as free from disease, and the last of these 4 was operated upon in June, 1905—that is, two years and one month ago—whilst 1 case has been lost sight of, the patient having left her husband and eloped with the hospital porter.

It is a euphemism merely to say that I was dissatisfied with these results. As already stated, I have had little or no respect for vaginal hysterectomy for cervix carcinoma for the last five years, even when the growth is scraped and cauterized before operation; consequently, after Professor Wertheim kindly consented to operate upon a case of mine, with my assistance, at St. Mary's Hospital for Women and Children, which he did a few days prior to the meeting of this Association at Leicester, I decided to adopt his technique in all my cases for the future.

A full and illustrated description of Wertheim's operation will be found in the British Medical Journal for September, 1905, pp. 689 to 695, so that I need not dwell upon the technique in detail; but I should like to mention what I consider to be the most important feature of the operation. This method of Wertheim is *the* operation of the future, and is the only scientific operation for carcinoma cervicis at the present time. It enables the growth to be removed without its ever appearing in the operation area from first to last. Its claim to being truly scientific rests upon the fact that the cancer is hermetically sealed up in a capsule composed of the dissected vaginal tube at the time of removal. Upon a free vaginal dissection, which alone enables the special clamps to be applied before the vagina is amputated beyond them, I lay the greatest possible stress.

Another notable feature in the technique is, of course, the dissection, and displacement, of the ureters sufficient to allow of a wide removal of the parametric cellular bed in which they lie. This, to my mind, is of relatively secondary importance when compared with the encapsulation of the cervix by a dissected vaginal collar. The reason I do not hope for great things from free removal of the parametrium is that experience has taught me that when this is extensively involved the human eye cannot limit its extent of cancerous invasion, nor can we hope to denude the ureters entirely of the cancer cells which surround them. Then comes the question of removal of cancerous glands. This, as a rule, is not difficult to perform; but Wertheim's own statistics show that when he has had to remove lymphatic metastases he has never saved a case for longer than three years.

In the cases where I have removed glands the patients have unfortunately died, so that I have had no chance to compare my results with Wertheim's; but it is obvious to any one who has read his statistics that if the operation he advocates rested solely for its merits upon the fact that it gave the operator a chance of dealing with cancerous glands, it would soon fall into disuse. No! the operation either as it stands or with trifling modifications will, in my opinion, become more and more popular as time goes on, merely from the fact that it minimizes the risks of implantation of cancer cells on fresh surfaces, and it does this by providing for the complete encapsulation of the cancerous cervix and vagina prior to removal. I feel it necessary to harp upon this particular string because I have had proof that it is not at all appreciated. To give chapter and verse for what I mean, a case was shown at the Obstetrical Society of London by Dr. Vincent Dickinson of uterus and iliac glands removed by abdominal hysterectomy for cancer of the cervix. The author stated: "On October 7th, 1905, my colleague, Mr. Lenthal Cheatle, operated by the abdominal route following the method of Wertheim." Now, I examined that specimen with great care, as it was published only three months after Professor Wertheim taught me how to perform his operation. The point which arrested my immediate attention was the fact that the whole of the growth was exposed. This was due to the vagina having been amputated above the lower limit of the cervical cancer. In fact, so far as could be judged from the specimen no attempt had been made to dissect the vagina at all, and, as I elicited from the author of the paper, no vaginal clamps were used, for the very obvious reason that there was no dissected vagina to clamp. No attempt had been made to prevent the greatest

risk of recurrence—namely, from implantation. The glands had been dissected, and hence "the method of Wertheim" had been followed! Hence, my reason, therefore, for endeavouring to drive home the most important point of all in Wertheim's technique.

To come to my own experience as regards this procedure so carefully elaborated and evolved by Wertheim. I will say at once that an enthusiastic temerity led me in the first ten months after Wertheim left this country to attempt impossible feats. I failed at first to appreciate the fact that even this operation had its limitations. It does not widen the field of operation so extensively as at first I thought it would do. I started by operating upon every case I saw, upon cases which had been in other hospitals for six weeks and were then sent out as hopeless with nothing done. Three gynaecologists had refused to operate upon cases which are included in my list of specimens shown to-day, and in each instance the patient either died in hospital or of recurrence within a year. In one instance I removed a large portion of the bladder, including the whole trigone; this ended in disaster. In two other cases of advanced carcinoma I divided the ureters; one case died of secondary haemorrhage when she first got out of bed at the end of three weeks; to the other the accident made no difference to convalescence.

Since I began to employ Wertheim's method of operating for cancer of the cervix in July, 1905, I have seen 1,600 new cases in my polyclinics. Only 17 of these women were afflicted with cancer of the cervix, and of these I have operated upon 12; that is to say, I have utilized 70.59 per cent. of all the cases seen. Of these 12, 6 are totally free from recurrence at the present time, 4 died in hospital, and 2 died of recurrence. My 3 last cases are amongst the successful ones, and it is only fair to myself to state that one of the 6 deaths was due to advanced phthisis pulmonalis, leaving 3 deaths due to operation and 2 to recurrence.

Of the 12 cases operated upon only 2 could have promised any measure of success by vaginal operation, and when I compare the percentage operability since I employed Wertheim's method with that whilst I did vaginal hysterectomy for the same disease I find that it reaches as stated 70.59 per cent. in the former as compared with 18.5 per cent. in the latter. This means that I have been operating upon four times as many of all cases seen as I used to do when employing the vaginal route.

With vaginal hysterectomy I had no primary mortality in 13 cases, with abdominal hysterectomy (Wertheim) I had 4 primary deaths. One being from advanced phthisis pulmonalis.

With vaginal hysterectomy I have had 7 recurrences in 13 cases. With Wertheim's operation 2 recurrences in 12 operations.

The great drawback to Wertheim's operation lies therefore in the primary risks: these over, the secondary risk from recurrence is reduced more than threefold. I wish to add a word on the question of primary mortality. Formerly, for the sake of economizing my beds, these cases were operated upon within a day or so of admission. I now keep patients in hospital for a fortnight, giving them strychnine by the mouth, cauterizing the growth and cleansing the vagina by weak formalin solution a week before operation; this makes a great difference in the results. Another point I lay stress upon is the abandonment of the gauze drain used by Wertheim. This omission was first suggested to me by my friend Dr. Carlton Oldfield of Leeds, whom I assisted with his first case. I noticed he used no drain whatever, his patient had no loss of blood and no discharge, and did remarkably well. This was a year ago, and since then I have never used any gauze, either as a drain or for pressure, and the cases do better. Wertheim complains that his cases suffer from inability to void urine until they get up on the sixteenth or eighteenth day. I have only noticed this in one instance.

Wertheim has published his statistics in the *Wiener med. Wochenschrift*, 1904, No. 28, p. 784. In his first 30 cases he had a primary mortality of 12, which is about the same percentage as my own. In his second 30 cases the primary mortality was reduced to 5, in his third series to 3. These results of extended experience are therefore encouraging, and my faith in the operation is not in the least shaken by a bad start. I am, moreover, convinced that early cases can be safely dealt with by Wertheim's plan, since without complication the operation can be performed in an hour, and the haemorrhage under favourable conditions is no more excessive by this method than by any other. I repeat my belief that this is *the* operation of the future for carcinoma cervicis uteri, and it is not my intention to use the vaginal route for removal of carcinoma of the cervix in the future.

Mrs. BOYD, M.D. (London) supported Dr. Lockyer's advocacy of the abdominal route. Were the recurrences referred to by Dr. Lockyer recurrences in the glands, or in the scar and connective tissue? She had seen recurrences in the glands, and had operated a second time, hoping to remove them fifteen months after the first operation, and had then found them softening, and adherent to the iliac vein and irremovable, whereas they would have been easily removable at an earlier stage. She had frequently seen cystitis and inability to void urine, but she drained by iodoform gauze, and she would like to know whether other experience supported that of Dr. Lockyer—that it was undesirable to drain in this way.

Mr. EDGE (Wolverhampton) said he would like to ask Dr. Lockyer if he had views on the way in which uterine cancer spread. It was known that in cancer of the breast the spread was partially in the fascial interspaces and connective tissues, and that mere enucleation of lymph glands was useless. It was therefore a question whether removal of glands without their surrounding cellular tissue would tend to any permanent result in preventing recurrence.

Mr. J. D. MALCOLM (London) supported the views expressed by Dr. Lockyer, assuming that when cancerous glands were present the operation was comparatively of little value. Picking cancerous glands out of their capsules and leaving the tissues through which the cancer cells had passed seemed comparable to enucleating glands from the axilla and leaving the surrounding fat. In early cases without infection of glands the excision of the uterus by Wertheim's method enabled the surgeon to remove the disease more freely than in any other way, and, as Dr. Lockyer had said, it could be removed without seeing the disease, which was a very important point. The operation in simple cases should have a very low mortality. The speaker had for some years done a panhysterectomy whenever he removed the uterus for fibroids, and he was surprised to find how easy Wertheim's operation was; in fact, he thought he felt more comfortable in avoiding the exposed ureters than in excising the cervix without seeing the ureter. The most scientific method was to get these cases early and to remove the parts as widely as possible, as was done in other parts of the body.

Dr. HERBERT SPENCER (London) agreed with Dr. Lockyer in valuing Wertheim's operation for somewhat advanced cases, but did not go so far as him in recommending it for all cases. The history of gynaecology showed exceedingly good results for cancer of the portio. His own results with Wertheim's operation had shown a high mortality, but he had only used it in advanced cases. He had not used gauze drainage in total hysterectomy for fibroids for the past seven years, and had not had trouble with the bladder. Bumm had also pointed out the disadvantage of gauze drainage. He called attention to the fact that Werder, who was one of the first to operate by the extended abdominal operation, had given it up in favour of the Byrne operation with the galvanocautery.

Dr. THOMAS WILSON (Birmingham) had employed Wertheim's method only in advanced cases, and his primary mortality amounted to more than 40 per cent. as against 2 per cent. for vaginal hysterectomy for uterine cancer. If it were found that the remote results were greatly better after the former operation, it would be necessary to make it the routine operation, in which case the immediate mortality could be at once reduced to 10 per cent. or even less. He called particular attention to the scientific necessity, when discussing the results of operations for uterine cancer, of discriminating between the different varieties, since these showed marked differences in the tendency to recur after removal.

Dr. MUNRO KERR (Glasgow) favoured the abdominal

route for operating upon all cases of carcinoma of the cervix when that was at all possible. Undoubtedly the Wertheim operation was attended with a high mortality, but it must be admitted by all that the operation was reserved by many for the very advanced cases only, the vaginal method being employed for the early cases. The results of the two methods, therefore, could not be compared.

The President (Dr. Hastings Tweedy, Dublin) remarked that Wertheim's operation if followed in its exact details was only applicable to comparatively early stages of cancerous uterus, for to perform it in its exact details the uterus must be sufficiently movable to be pulled upwards and forwards, and the ureters should not be lifted out of their beds. In many of his cases the disease had advanced to a stage that made such technique impossible. The abdominal operation as now performed permitted of free removal of the vagina, and this in his opinion was a great advance on older operations, and was the essentially good feature of Wertheim's operation.

Dr. Lockyer, in reply, thanked the President and other speakers for their kindly remarks on his paper. He was glad to find that many of them were in accord with him as to the great advantages obtained by employing the method of Wertheim in dealing with cancer of the cervix. With those speakers (Dr. Hastings Tweedy and Dr. Wilson) who had met with bad results in operating upon hopeless cases he was in entire sympathy. This was only a repetition of Wertheim's own experience. It was difficult at first to fix the limitations of the operation, and when the operator was dealing with material quite hopeless from a vaginal point of view a higher mortality must be expected. The principle he himself acted on was to do the very best for each individual patient regardless of statistics.

A CASE OF COMPLETE RUPTURE OF THE UTERUS, WITH ESCAPE OF THE FETUS INTO THE PERITONEAL CAVITY: PANHYSTERECTOMY: RECOVERY.

WITH REFERENCE TO 13 OTHER CASES.

By J. M. Munro Kerr, M.B., C.M.Glasg.,

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The patient in the following case, aged 24, a 2-para, was admitted to the Glasgow Maternity Hospital on March 18th of this year, at 6.30 a.m. Four and a half years ago she had been delivered in the Glasgow Maternity Hospital of twins (craniotomy and version). Her present and second labour began on March 15th, but the uterine contractions did not become severe until the afternoon of the 17th. At 5 a.m., on the day of admission, she was seen by a doctor, who attempted to deliver with forceps, but found the pelvis too contracted, and desisted from further interference, and sent the patient into hospital.

State on Admission.

On her arrival at the Maternity Hospital she was in an exhausted condition, pulse was feeble and rapid, and the uterus was tetanically contracted. Her body showed marked evidences of rickets. The interspinous diameter was 10 in., the intercristal 9¾ in., and the external conjugate 6 in. On abdominal palpation nothing abnormal was detected as regards the shape of the uterus. The fetal head was freely movable above the brim. On vaginal examination the oblique conjugate was found to measure 3 in. The fetal head was freely movable. I was immediately informed of the condition, and went along to the hospital.

Progress.

On reaching the hospital I found that the conditions had very much changed. I could feel the fetus readily through the abdominal wall, but on vaginal examination could only feel what appeared to be the placenta. On passing my fingers further into the vagina I detected an extensive tear on the right side of the vaginal vault and uterus. The condition was, therefore, evidently one of complete rupture of the uterus, with escape of the child into the peritoneal cavity. The tear must have occurred after the patient's admission to hospital. There had been no sudden pain or collapse of the patient, although the house-surgeon thought that she was rather worse than when she was admitted. The pulse was about 140 when I saw her, and was small and thready. The patient was therefore quickly prepared for laparotomy, the skin being scrubbed with soap and water and alcohol, and a 1 in 30 carbonic compress applied for twenty minutes.

Operation.

The abdomen was opened in the middle line, when the child was found to be lying free in the cavity, which also contained meconium, vernix caseosa, liquor amnii, and a little blood. The haemorrhage, however, had evidently been very slight. The child was at once removed, when the rupture on the right side of the uterus became apparent. It had extended vertically through the right lateral wall of the lower uterine segment, and transverely in front, so that the anterior wall and part of the uterus was separated from the bladder, leaving a small part of the cervix still attached to the latter. Having clamped the uterine and ovarian arteries, I removed the uterus, and then clipped off the ragged remainder of the cervix, and ligated the vessels. I then stitched over the upper part of the vagina with interrupted sutures, leaving only a small opening, through which I pushed a piece of iodoform gauze down into the vagina. The other end of the gauze I packed loosely into the lower part of the ragged broad ligament. During the operation a pint of fluid was introduced into each breast. The abdominal wound was closed as quickly as possible by a single layer of interrupted silkworm sutures. The operation was performed with all speed, and took rather less than twenty-five minutes. During it the pulse was very poor, and $\frac{1}{60}$ grain of strychnine had to be given twice.

Result.

The patient got over the shock of the operation surprisingly quickly. The gauze was removed in twenty-four hours and the vagina was loosely repacked. The patient's temperature after the operation hardly rose above normal, indeed, it was only on the eighth and ninth days that it was slightly febrile when it registered 100·6° and 100·8° on the respective evenings. The stitches were removed on the tenth day, when the wound was found to have healed by first intention, except at the upper part where the edges had not been quite accurately approximated. The patient left the hospital at the end of the month perfectly well.

Remarks.

As regards the symptoms which follow rupture, it is a very striking fact that in a large number of cases the rupture has not been recognized until after the birth of the child. The classical symptoms of a sudden feeling of something giving way, of a cessation of the uterine contractions, of alteration in the shape of the abdominal swelling, of haemorrhage and collapse, are very frequently absent, nor is this to be wondered at, considering that in many cases the child's head is already well engaged in the pelvis, and the rupture so often takes place during the delivery. Let us consider the symptoms seriatim.

In very few indeed of my cases or those reported by Ivanoff and others has the symptom of a sudden feeling of something having given way been present, and naturally it cannot be expected to be appreciated in the cases of violent rupture, for the patient is then, usually, under the influence of the anaesthetic. When it does occur it is usual that the laceration is extensive and the child, in whole or in part, has escaped from the uterine cavity, either into the abdominal cavity or into the cellular tissue underneath the peritoneum.

The same remarks apply to cessation of the uterine contractions. This symptom is again most marked where the child has escaped into the abdominal cavity. It must not, of course, be confused with the uterine inertia which follows exhaustion of the uterine muscle—the latter is gradual in its onset.

It is hardly necessary to say that an alteration in the shape of the abdominal swelling can only occur if the child passes in whole or in part outside the uterus. When this alteration occurs two abdominal swellings become apparent, the one representing the part of the child that has escaped and the other the retracted uterus. Naturally it is most distinct when the child and uterus lie side by side, for if the retracted uterus is placed behind—as in one of my cases—or in front, it may not be easy to distinguish the two swellings. When present, it is, of course, a symptom of great importance, especially if beforehand the accoucheur has actually observed the uterine outline. Occasionally other conditions simulate this change in outline.

Quite recently, in hospital, I saw a case of dystocia from pelvic deformity in a patient who had a bipartite uterus. The double swelling of the uterus and the collapse of the patient led one, on seeing the case for the first time, to think of rupture of the organ. Similarly, in cases of plural pregnancy, the uterine outline

being often irregular and double, a suspicion of rupture of the uterus may arise if the patient shows any evidence of collapse during labour. Again, in cases where there is a coexisting tumour, either ovarian or uterine, a differential diagnosis has occasionally to be made between such conditions and rupture of the uterus. But a difficulty in differential diagnosis may occur in a much simpler and more common condition—namely, in an impacted oblique presentation—for then one has the two swellings and the sulcus between. Very frequently when such cases are brought into hospital we have great difficulty in deciding if rupture has occurred or not. Indeed, often it is only possible to decide by internal examination under anaesthesia.

In addition to alteration in outline of the uterus, the fetal parts become much more easily palpated after the child has escaped into the peritoneal cavity. One must not, however, attach too much importance to this, for sometimes the uterine wall is so soft and thin that one imagines one feels the fetal members underneath the thin abdominal parietes. In advanced extrauterine pregnancy the child can also be very easily palpated, as in a case recently seen.

The amount of haemorrhage which occurs as a result of rupture of the uterus varies very greatly. Amongst my 13 cases I have only had three in which it was extremely severe. Ivanoff, in his long series of 124 collected cases, found 53 in which the haemorrhage proved fatal, and in half of them not until many hours after the accident.

One may be deceived in respect to the actual quantity of blood lost by a considerable amount escaping into the peritoneal cavity, or into the cellular tissue around the uterus; there may be very little indeed from the vagina. But, even allowing for that fact, the bleeding is very gradual; nor is this to be wondered at, seeing that the tear is often blocked up by a portion of the child, and only the smaller vessels are ruptured. Very often after the child is extracted a more profuse discharge of blood occurs, and this, if rupture has not been expected, may be erroneously attributed to the ordinary bleeding that occurs after the child's birth. Although the haemorrhage may not be profuse, it generally continues, and steadily and slowly, but surely, the patient becomes more and more blanched and more and more collapsed.

The situation of the tear as regards the larger vessels is of great importance. In the last case of rupture upon which I operated the tear was along the side of the large uterine trunk, which could be seen pulsating, but only the smaller veins were torn. I have already quoted Ivanoff's experience and my own, which agrees with it. In the most recent paper on the subject, that of Eversmann,[1] this writer states that only in some 12 to 15 per cent. of cases does the blood come from the ruptured uterine vessels. It is a very erroneous idea, therefore, but one generally expressed by those with little experience of this complication, that rupture of the uterus is followed immediately by profuse bleeding. Infinitely more common is a slow but steady haemorrhage. The pulse-rate in such cases slowly rises, and uneasiness and general abdominal pain and the ordinary symptoms of collapse become more pronounced.

These symptoms only gradually develop. The case already recorded is an illustration of this, as was also one some little time ago brought to me from the country—a patient who, although driven many miles, had absolutely no symptoms of collapse and a pulse of not more than 80. She was found to have a complete rupture of her uterus.

The diagnosis between complete and incomplete rupture can only be arrived at by vaginal examination, except in those cases where the child is quite evidently free in the peritoneal cavity. When the rupture is complete one feels the intestines distinctly, when it is incomplete that is not possible. In theory that is simple enough, but once or twice I have had a little difficulty in deciding, for the peritoneum is very thin, and if the tear is not very extensive only the fingers can be pushed through. Some time ago I performed hysterectomy upon a case of rupture sent into the hospital by a *confrère*, who has had great obstetric experience; he had packed the rent and told me it was complete, as he had felt the intestines. When I opened the abdomen there was no laceration of the peritoneum.

As regards treatment, the following are my results. I hope in the near future to give fuller details of my cases; for the moment the following table will suffice:

Nature of Operation.	No. of Cases.	Maternal Deaths.
Died unoperated upon	2	2
Plugging (all incomplete) ...	3	0
Hysterectomy with extraperitoneal treatment of stump ...	1	1
Hysterectomy with retroperitoneal treatment of stump ...	5	3
Panhysterectomy	3	2

I have therefore had in the 9 cases in which I performed hysterectomy three recoveries (33 per cent.), while in the 3 cases in which I employed plugging I have had three recoveries (100 per cent.) It must be clearly understood, however, that in all, except 1 of the cases of hysterectomy, the rupture was complete, while in all the cases where plugging was had recourse to the rupture was incomplete. At the present time plugging is the safest treatment for the practitioner, provided collapse is not extreme; and this is a matter of satisfaction, seeing that it is the simplest treatment to carry out.

REFERENCE
[1] *Archiv für Gyn.*, lxvii, p. 601.

THE INDICATIONS FOR OPERATIONS ON UTERINE FIBROIDS AND THE METHODS OF PERFORMING THEM.

By Professor PAUL STRASSMANN,
Berlin.

(Abstract.)

THE question of operating on uterine fibroids is still a vexed one; the general practitioner is inclined to think that too many operations are performed, the consultant that operations are unduly delayed. But some agreement has been arrived at as to the indications; it is admitted that a bleeding polypus, a giant tumour of rapid growth, or a tumour which by pressure seriously interferes with the function of neighbouring organs such as the bladder, or causes insupportable pain, demands surgical interference. I must also insist that cardiac troubles, especially in young patients with fibromyoma, are indications, not against, but for operation. In such subjects progressive myocarditis due to loss of blood, pain, increasing obesity following want of exercise, and sometimes idiopathic degeneration of the heart and blood vessels, exaggerates the dangers of shock, thrombosis, and embolism, which experience teaches us are far more serious after myomectomy than after other operations. I wish, however, to-day to draw your attention to the complications of fibromyomata of the uterus by other diseases of the genital organs which necessarily modify the indications in favour of operation. It is not always easy to recognize the fact that an ascertained tumour of the uterus is not of primary and chief importance, that other more serious disease, either directly due to the tumour or merely coexistent with it, is present, and yet, owing to the enlargement of the womb, difficult of exact diagnosis.

Carcinoma and Fibromyoma.—Cancer of the body of the womb seems preferably to affect uteri which have long, perhaps without apparent harm, been affected by tumours projecting into the cavity. While no operative interference should be attempted after the 50th year of life without the most pressing necessity, if suspicious symptoms occur—bleedings and beef tea-coloured discharge in climacteric women, contracting pains, especially in the afternoon, when, owing to moving about, more discharge has collected in the narrow senile cavity—one should not hesitate to perform a diagnostic curettage, and, if microscopical examination reveals cancer, total extirpation, which offers the best chance of permanent recovery. The doctor in attendance on a case of fibromyoma should always remember the possibility of coexisting cancer. It is well known that cancer may occur in the stump after supravaginal amputation, and patients require more observant control after that operation than after total hysterectomy. I need not insist upon the sarcomatous degeneration of fibroids, and on the coexistence of cervical

cancer with uterine fibromyoma; but another important relation of malignant disease to these tumours is their complication by carcinoma of the ovaries. Amenorrhoea in the case of bilateral tumours is always a ground for suspecting complete destruction of the function of ovulation. It is to be remembered that fibromyoma is characteristic of the menstruating uterus, and never begins after the menopause. In elderly women an ovary that can be felt is suspicious, as is tenderness of the appendages without fever but with symptoms of pressure on the pelvic organs. In such cases, or if the tumour is growing, do not be content to diagnose fibromyoma, but operate on the possibility of cancer. That in the specimens obtained from operations for uterine fibromyoma the appendages are so often found to have undergone morbid changes is certainly not merely accidental; enlargement, small cystic degeneration, and, more rarely, atheroma of the ovaries, elongation and thickening of the Fallopian tubes, are certainly connected with hyperaemia and the retention of lymphatic fluids in the neighbourhood of the uterus, and I am certain that more serious alterations in the tubes may be caused by fibromata of the uterus, such as:

Hydrosalpinx and Pyosalpinx.—Endometritis, the prolonged menstruation, and interference with the flow from the tubes to the uterus owing to pressure, lead to hydrosalpinx; the immigration of infective germs is favoured by adhesions between the tubes and intestine when it does not take place by direct wandering from the blood. I show you here a hydrosalpinx formed under a calcified fibromyoma, and also a pyosalpinx due to a similar condition from a woman of 56 who had long ceased to menstruate, and in whose case gonorrhoeal, puerperal, or instrumental infection could be excluded. Also a case of pyosalpinx, developed underneath a fibroid as large as a child's head, which had existed for twenty years, and of which the pressure caused rupture of the sac and fatal peritonitis. The complication of fibroma by pyosalpinx is most disastrous; the patients are bedridden and miserable; cure by rest, plugging, and hydrotherapy is not to be expected, perforation into the peritoneal cavity or intestine is to be feared. The prognosis of operation is doubtful; the operation is a long one, the tubal sacs are prone to rupture and infect the peritoneum, and even the freest drainage through the abdominal wall and vagina may not save the patient.

Pediculated subserous tumours, when large and nodulated, demand special consideration, for even if they cause no alarming symptoms of haemorrhage, the patient is exposed to the extremely serious dangers of torsion of the pedicle. Moreover, the size and hard consistence of these tumours and the inadequate development of blood vessels in the pedicle lead more readily than in ovarian tumours to gangrene and peritonitis. I would not accept the responsibility of expectant treatment when a diagnosis of pedicled fibromyoma had been established, though generally in pregnancy it would be right to wait as long as possible.

The Obstetric Importance of Fibromyomata.—The enucleation of tumours from the pregnant uterus is a most dangerous proceeding, and, if interference is absolutely necessary, it is better to perform total extirpation. The prognosis of Caesarean section followed by hysterectomy is less favourable when done for fibromyoma than for contracted pelvis. The induction of abortion for fibroids of the pregnant uterus is inadvisable, as it is difficult to carry out, and the patient is left the subject of tumours which may undergo serious changes. In the puerperium necrotic changes may affect not only the badly-nourished polypoid or subserous tumours, but even interstitial growths.

Displacements.—Fibroids are sometimes overlooked in uteri which have been for a long time under treatment for chronic metritis with or without retroflexion; the real condition is disclosed by vaginal operation, as in the specimen shown, containing a solitary nodule in the fundus, which I had to remove for haemorrhage. In another case the patient had led a miserable existence under a diagnosis of fixed retroflexion, but the displacement was retroposition owing to a fibroid developing beneath the plica vesico-uterina. Prolapsus may not merely accompany, but be due to, a fibroid.

Operations.

The questions suggested for discussion are: (1) Is vaginal or abdominal section to be preferred? and (2) Should the tumours be enucleated, or should the uterus be extirpated or amputated? I am myself strongly in favour of the vaginal way; though it is sometimes the more difficult, its advantages must be obvious to every unbiassed observer: recovery is quicker; the arrest of haemorrhage and the dissections can be carried out within view at least as well as when in abdominal section one has to drag upwards a tumour situated deeply in the pelvis; the Trendelenburg position is not required; the exposure and chilling of the intestines is avoided; and there is less shock. In doubtful cases it is well to begin by opening the pouch of Douglas for exploratory purposes, and the possible presence of inflammatory or malignant tumours of the appendages, or tubal gestation sacs is an additional reason for choosing this route. Posterior colpotomy will suffice for the enucleation of tumours of the posterior wall, but anterior colpotomy gives a better view and is preferable in most cases; the tongue-shaped incision, a bow-shaped cut extending from the insertion of the fornix on the portio down to within about $\frac{2}{3}$ in. of the hymen and up to the fornix on the other side offers the best and largest approach. [Professor Strassmann then described the details of his technique in vaginal extirpation and enucleation, in regard to the latter laying great stress on the importance of keeping the wound in the uterus entirely extraperitoneal, and of securing drainage. He showed two sets of 27 and 21 fibroids respectively removed from young married women with sterility and dysmenorrhoea, both of whom recovered and had painless periods after the operation.]

While a pronounced advocate of vaginal operation, I recognize that the choice of route depends upon the size, position, and number of the tumours; and I do not hesitate in the least to open the abdomen for colossal tumours, for subserous pedunculated growths, or solitary interstitial growths larger than a child's head and beyond obstetric possibility. When the mass consists of numerous nodules, which can only be determined under narcosis immediately before the operation, one may begin boldly by the vagina. Enucleation is undoubtedly more difficult and has a mortality higher than total hysterectomy. Recurrence is possible but rare, and pregnancy after enucleation is also rare, though I have had one case in a patient of 36. As long as the cavity of the uterus is not invaded, or not so to a serious extent, the chances of enucleation are good. For all patients over 40 I prefer total extirpation, unless the case is one of a simple polypus, or of tumours to be removed without opening the plica. Enucleation is not to be done on the pregnant womb. In abdominal operations the choice of enucleation or total extirpation depends on the same conditions as in vaginal methods. Total hysterectomy avoids all trouble, cancerous or otherwise, with the cervical stump.

A NOTE ON THE TECHNIQUE OF ABDOMINAL HYSTERECTOMY FOR FIBROIDS.

By Frederick Edge, M.D., B.S.Lond., F.R.C.S.Eng.,
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It is very often the case that a myomatous uterus is so situated and fixed that no set method of removal can be carried out, but the uterus has to be got away by ligature and division of the most accessible parts of the ligaments and tissue.

Although I had a preference for Doyen's method of operating, I have not often met with cases where the cervix was sufficiently free to render this method easily applicable. Like the majority of operators, I have come to use the supravaginal method more and more, although this method leaves the cervix unexplored, and perhaps the seat of cancer or fibroid nodules which may cause trouble later on. But experience has convinced me that by whatever method the uterus is removed the most important steps are those of rendering the field of operation as clean as possible, and of allowing free drainage afterwards.

These aims can only be attained by the operator carefully cleaning the vagina and cervix himself, and by splitting the cervix. This enables the cervical canal to be cleaned out and gives free drainage afterwards, while by not including the peritoneum at this stage there is no unnecessary opening of the peritoneal cavity in case the abdominal operation should not necessitate drainage.

However, this division of the peritoneum is of little consequence, and is a question dependent upon diagnosis.

One of the first questions to be answered when it is decided to remove a myomatous uterus is whether the operation can be done per vaginam or not. The size and fixation of the uterus and the position of the myoma will be factors in this decision. But in many cases it is only on the operation table when the uterus can be seized with volsella that the safe solution can be obtained. For this reason alone it is advisable to begin the operation per vaginam.

Then it is not rare to have difficulties in diagnosis, and these are often made clear by dilatation or posterior division of the cervix.

Sepsis is the great danger in all uterine operations, and the surest way of preventing this is by removing all possible sources of contamination. The vagina and the cervical canal should be carefully cleaned in every case, and posterior division of the cervix renders this easy. A plug of cotton-wool or other material soaked in antiseptic lotion may be put in to prevent any uterine fluid escaping and soiling the wound. Drainage is the only safeguard whenever the wound has been infected, and unless the infection is specially virulent the free drainage carries the germs away before any reaction can occur. The drainage through the cervical canal is insufficient, and may be blocked entirely. Splitting of the cervix leaves a wide free outlet, and removes any possibility of tension in the wound.

Should secondary haemorrhage occur it renders itself evident at once, and long before its constitutional effects and signs would have attracted attention, thus allowing the necessary interference to be undertaken early, and while there is yet life and strength in the patient. A patient will stand repeated operations, but not secondary operation upon the top of bleeding to collapse or syncope after the primary operation.

I have performed twenty-four hysterectomies for myoma by this method of abdominal hysterectomy with a preliminary vaginal stage in the last two years, and have been very satisfied with the after-courses of the cases. Not one has given me any anxiety, and the absence of any abdominal or peritoneal symptoms has been striking, and at the same time only what one would expect when the peritoneal cavity is taking no part in the wounds, excepting at the two continuous lines of silk sutures—one in abdominal incision and the other in the pelvis.

In several cases where I thought abdominal section necessary I have found that the uterus could after all be removed per vaginam without opening the abdomen from above.

In 1895 a death from streptococcal infection and another death from secondary haemorrhage, where the abdomen was reopened and vessel secured again, were the inciting causes of my change in procedure. It struck me that had there been free and open drainage, as in a case of amputation of the breast, the infection might have been washed away, or at any rate not have gained such a hold, and that the secondary haemorrhage would have been seen at once and long before the constitutional signs of haemorrhage attracted attention. The source of the streptococcal infection was found to be imperfect sterilization of infected materials.

The procedure is as follows:

The patient is placed in the lithotomy position and the vagina disinfected. The cervix is seized with volsella and disinfected. It is split posteriorly up to but not including the peritoneum. The cervical canal is disinfected and it is possible in many cases to wipe out the uterine cavity. If necessary the uterine cavity may be packed or plugged with antiseptic wool or gauze. A sterile swab is left in the vagina. The patient is placed in position for abdominal section. The surgeon changes his gloves.

The abdomen is opened and the myomatous uterus drawn out if possible.

The ovarian and round ligament pedicles are ligatured, always leaving plenty of peritoneum. The anterior peritoneal flap is carried well up the anterior uterine wall so as to get plenty of covering.

The posterior flap runs from one ovarian pedicle to the other and is dissected down before the uterine arteries are tied, as sometimes the peritoneum is caught by the ligatures.

[This posterior flap is not always a success and may be perforated or button-holed. This is not of importance if the anterior flap be free and large as the pelvic floor is then well covered.]

The uterine arteries are then tied and a second ligature on each side takes up branches to the cervix and vagina.

The cervix is amputated, and the posterior divided walls gape. The vaginal swab assists in finding the parts easily. The cervical stump can now be excised, or its endometrium cut out or burnt out or cauterized.

The peritoneal flaps are now sutured continuously, and should the posterior flap have been perforated there is no real danger. The anterior flap will cover it, or a short antero-posterior continuous suture will fold the posterior flap on itself.

The abdomen is closed.

The wound is thus shut off from the peritoneal cavity, and it is freely drained. Any secondary haemorrhage will show at once, as in vaginal hysterectomy, and any secretion or pus will have free exit.

This method has some advantages:

1. In case of mistaken diagnosis the surgeon is given every opportunity for assuring his diagnosis before opening the abdomen.

2. In many cases the surgeon finds that the uterus can be removed vaginally, although before the patient was anaesthetized the opinion had been formed that it was impossible to remove it by this way, owing to its fixity and size or other reason.

3. The vagina and cervical canal are disinfected by this procedure thoroughly and openly. No cleansing by swabs inserted by a nurse, however thoroughly done, is efficient, as can always be seen when the ball speculum is passed and the cervix drawn down by volsella.

4. The uterine cavity can be disinfected or at least shut off from the field of operation by plugging.

5. The cervical stump is thoroughly exposed, and no nodule of myoma or cancer is likely to escape the surgeon.

6. In septic, sloughing, or complicated cases, the drainage is better made by incising from the vagina, and less cellular tissue is opened up than when the vagina is opened from above.

7. Secondary haemorrhage is at once evident, and can be checked before the blood vessels are emptied.

8. If any infection of the wound occurs, there is free outlet for pus and secretions.

9. The utero-sacral ligaments and pelvic floor need not be divided unless the cervical stump has to be removed.

Objections may be raised on the score of:

(*a*) *Time.*—There is no real loss of time, as the vaginal operation consists merely of a few snips with scissors after disinfection; in difficult cases, it saves time by enabling the operator to get his bearings, and it does away with the disadvantage of having to enter the vagina in the middle of an abdominal operation.

(*b*) *Asepsis.*—There was some objection, before the general use of gloves, to the fouling of the hands by the vaginal manipulation, but this is now obviated by simply changing gloves, so that no infection of the abdominal wound is produced.

(*c*) *Superfluity*, that is, that normal supravaginal hysterectomy is quite efficient. Experiences of cellulitis about the stump, of sloughing of the cervical stump, of secondary haemorrhage, of peritonitis, and of recurrent nodules of myoma, or of undiscovered cancer of the cervical canal will be the deciding arbitrators.

FIBROIDS AND FIBRO-MYOMATOUS TUMOURS IN UNUSUAL SITES.

By S. J. CAMERON, M.B., Ch.B.Glasg,

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IN this communication I have endeavoured in as brief a manner as possible to place on record a few examples of fibroid and fibro-myomatous tumours which have originated in the less common structures affected by these tumours. I have thought it advisable to include ovarian fibroids under this heading, as they are by no means frequently met with, and when one has a series of nine cases it is possible that they may be of value in extending our knowledge, and at least the literature, on these growths.

Tumours of the ovary have at all times been of considerable interest to the gynaecologist and pathologist. The bulk of literature describing such growths deals with the signs, symptoms, and pathology of the cystic

varieties, whereas but scanty reference in comparison can be found describing solid ovarian tumours, probably owing to their rarity and the difficulties formerly met with in placing them in their proper categories. Fairbairn's valuable contribution made to the Obstetrical Society of London in 1902 has increased very considerably our knowledge of these growths.

The term "fibroid" is in the majority of cases much more applicable to these growths than to the so-called uterine fibroids, because, as a rule, the preponderance of fibrous tissue over muscular elements is well marked—in fact, in some tumours no muscular tissue can be demonstrated. Generally, when one of these tumours is divided no whorling is observed, unlike uterine fibro-myomata, which characteristically present a definite whorled appearance. Thus, in histological detail they differ from uterine "fibroids," which, as a rule, contain muscular tissue in abundance. Not only do they differ from the uterine tumour in structure, but they may possess a life-history altogether foreign to it; that is to say, uterine fibroids arise during the sexual period of a woman's life, whereas an ovarian fibroid may originate after the menopause. The specimens I have examined have been removed from patients whose ages ranged from the 23rd to the 72nd year.

Again, ascites has been described as being frequently present with ovarian fibroids, but only in rarer cases is such a condition found when the abdomen is opened for the removal of uterine "fibroids," unless the tumour has undergone some degenerative change. I am satisfied, however, that in ovarian fibroids the quantity of free fluid in the peritoneal cavity is much less than one is led to believe by consulting the literature on these tumours. It occurred in 4 out of 9 cases, but the amount of fluid present was small; so little was there, indeed, that the usual clinical signs of ascites were absent, and in one of these cases an ovarian fibroid and an adeno-carcinoma were present in the same ovary, so that the presence of the fluid was more probably due to the latter growth than the former. Like uterine "fibroids," they exhibit but slight tendencies to form adhesions, thus differing from the ovarian adeno-cystomata, the removal of which is frequently a matter of considerable difficulty, owing to the existence of dense peritoneal adhesions. Nevertheless, I have seen an ovarian fibroid which was tightly bound down in the pouch of Douglas by adhesions, and in the specimen in which a part of the ovarian tissue had become carcinomatous many adhesions existed between the tumour and the parietal peritoneum. In eight out of the nine specimens the ovary was only partly occupied by the fibroid, and in the ninth the entire ovary was monopolized by the tumour. In only one instance did bilateral tumours exist and then they were of unequal size. My experience has been that carcinomatous tumours of the ovary are more commonly bilateral than fibroid tumours. When only a part of the ovary is occupied by the fibroid growth the shape is frequently oval and the sides of the growth may be convex, but frequently it is flattened antero-posteriorly and may be concave. The surface may be smooth, but in the specimen in which no part of normal ovarian tissue remained, sessile nodules projected from the surface, and it is probable, as Fairbairn states, that the non-pedunculated fibroids originate in the tunica albuginea of the ovary. It is unlikely that an organ like the ovary is capable of secondarily extruding these tumours from its substance in the way that a muscular and contractile uterus could. The covering of the tumour is the tunica albuginea which has become thickened. It can be most easily observed when the tumour is divided longitudinally, as it descends from the unimplicated portion of ovary to surround the fibroid tissue.

It is thicker, as a rule, in the proximity of the ovary, and at this part it is not so intimately connected with the fibroid tissue, as at the part most distant from the ovary. In the first situation the albuginea can be stripped fairly easily from the surface of the growth, but in the latter site considerable difficulty may be experienced in doing so.

Fig. 1 is a drawing of a large ovarian fibroid, the pedicle of which had undergone acute torsion. The Fallopian tube with an accessory ostium is seen above, and immediately below it the unimplicated portion of ovary is seen resting on the surface of a large fibroid. Between the tube and ovary the mesosalpinx can be seen to maintain its normal shape and relationship to these two structures.

In the majority of the specimens, on examining the cut surface, a small amount of connective tissue will be found separating the lower part of the unimplicated portion of ovary from the upper part of the fibroid, and here the separation of the two structures is easy. In one specimen this connective tissue was absent, so that the fibroid tissue of the tumour was in direct continuity with the ovarian stroma.

Ovarian fibroids are peculiarly dense, and one cannot but notice when a specimen is lifted that it is particularly heavy, considering its size. In one case I observed that the tumour, which was of large size and oval in shape, in the process of growth from a pelvic to an abdominal tumour was so placed that its largest diameter occupied the greatest diameter of the pelvic inlet, that is, the transverse. An indentation situated on the posterior surface indicated the position of the sacral promontory, and such a surface marking may sometimes be found in uterine "fibroids." In these 9 specimens of ovarian fibroids the mesosalpinx of each was found to remain unopened.

In Cases 1 to 6 only a portion of the ovary was occupied by the tumour, and the ovarian remnant had not undergone any marked pathological change, but rested more or less spread out on the tumour surface.

In some instances dilated follicles up to the size of a cherry were noted, and in two of the specimens in which acute torsion of the pedicle had taken place the spaces were found full of blood. In cases Nos. 7 and 8 the portion of the ovary which was not implicated in the fibroid formation had undergone definite pathological change. One specimen (No. 7) weighed 4½ lb., and consisted for the most part of fibro-myomatous tissue, the amount of muscle present being rather small in proportion to the fibrous tissue. In addition a part exhibited the typical structure of a multilocular colloid ovarian cyst. It occupied about a fifth of the entire bulk, and was attached to the main mass by a narrow neck of fibro-myomatous tissue rendered hard as stone by a dense calcareous infiltration. This is in contrast to the statement made by Griffiths, writing on those tumours in Allbutt and Playfair's *System of Gynæcology*, that "proliferating or papillomatous

cysts have not, I believe, been met with in the same ovary."

In the eighth specimen the tumour consisted of a solid part which had the structure of a fibroma, but in addition there was a cystic portion of simple character, and moreover, in a part of a tumour which was adherent to the parietal peritoneum, there was present a carcinoma of glandular type. This specimen was included by Miss McIlroy, M.D., in her communication to the Obstetrical Society of London on carcinoma of the ovary in 1906. Therefore, not only may the unimplicated portion of ovary proliferate, but it may in exceptional instances become a malignant tumour. In the ninth case the whole ovary was monopolized by a tumour the cut surface of which had a pale, glistening colour, and on microscopical examination it proved to be a fibroma. In no less than three out of the nine cases acute torsion of the pedicle had taken place. In two of the specimens examination of the unimplicated portion of ovary showed that blood clot occupied the small cystic spaces. The third example occurred in the tumour a part of which was constituted by a multilocular colloid cystoma. Thus these tumours would seem to have a very decided tendency to produce torsion of their pedicle, unlike uterine fibro myomata, which very rarely indeed are complicated by such an occurrence. In two cases torsion had occurred in the direction of the hands of a clock, but in the third case torsion was in the opposite direction. These three examples occurred in the practices of Comyns Berkeley, Murdoch Cameron, and T. K. Dalziel. The pedicle corresponds to that of an ordinary multilocular cyst. On microscopical examination ovarian fibroids are found to consist chiefly of fibrous tissue, the bundles of which run in all directions. In two specimens the total structure of the tumour was made up of fibrous tissue. The connective tissue fibres are elongated and run in wavy bundles, and between them nuclei are found, varying in number in different fields. The nuclei stain well as a rule, have a spindle shape, and lie in direct contact with the fibrous elements. Sometimes the arrangement of the bundles resembles the strands in a wicker basket, the fields examined having a retiform aspect.

Fig. 2.—Photograph of an ovarian fibroid divided longitudinally to show the relationship of the ovary to the fibroid. A match has been inserted to show where connective tissue frequently exists between the fibroid and the unimplicated portion of the ovary. A, Cut surface of fibroid; B, tunica albuginea; C, ovary; D, tube.

In not a single specimen was the structure that of a pure myoma. The vessels in the tumour, as a rule, have thin walls, and are lined by an attenuated endothelium; and where a vessel exists there is frequently present a considerable amount of interlacing of the fibrous bundles around it. In some instances the vessels are seen to have a fairly muscular wall, but frequently there is a tendency for the wall to merge imperceptibly into the surrounding stroma. In only one instance did I detect a few scattered ovarian follicles among the tissue elements. The more unusual features of these 9 cases are the frequency of torsion of the pedicle, and in 2 instances the unusual activity of the ovarian tissue not monopolized by the tumour.

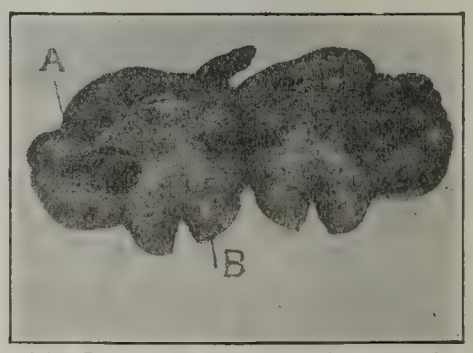

Fig. 3 is a photograph of an ovarian fibroid in which the tissues of the unimplicated portion of the ovary and the fibroid come into direct contact. There is no intervening connective tissue. A longitudinal section has been made into the tumour. A, Ovary; B, fibroid.

FIBROID TUMOURS OF THE ABDOMINAL WALL.

It is only occasionally that fibroid tumours are observed in this situation, and in stout patients considerable difficulty may be experienced until operation in excluding the presence of an intra-abdominal growth. They occur most frequently in multiparae, and are more often situated below than above the level of the umbilicus. The greatest number occur in patients between the ages of 25 and 30 years, and are equally common on the right and left sides. They may arise from any layer of fascia in the abdominal wall, but most commonly the primary nodule is in the sheath of the rectus muscle. They have a somewhat oval shape, their long axis corresponding to the direction of the muscle fibres. They may lie in a bed of loose connective tissue, thus rendering their removal comparatively simple, but in other cases they have been found infiltrating the adjacent structures, so it is probable that some tumours in this region are really sarcomata. In a few cases a pedicle has been noted. They do not, as a rule, attain great dimensions, and the only specimen which came under my observation was the size of a turkey's egg and had an oval shape. The tumour was very dense and the cut surface had a whitish-yellow appearance, and on microscopical examination it was found to be a fibroma. The patient was 29 years of age, and had had a child thirteen months previously. We were quite unable to diagnose the exact nature of the tumour before operation, but we thought it was probably a sarcoma of pelvic origin. It was situated to the right side of the middle line, and seemed to originate in the fascia covering the ileum. The growth shelled out easily, and the patient has had no recurrence. Occasionally one may find a large fibroid polyp growing from the integument of the abdominal wall. The skin at the tip of the growth is thrown into folds. The apex of the growth is thick and the pedicle attenuated. These tumours are fibro-lipomas.

VESICAL MYOMA.

Myomatous tumours originating in the bladder are somewhat rare. The leiomyomata occur for the most part in adult males, and are usually solitary. They are frequently of small size but may occupy the greater part of the bladder cavity, and be present as stalked or sessile growths. The only specimen in my possession I removed from a multipara many years over the menopause. Haemorrhage, for the most part intermittent, caused the patient much anxiety, and this, together with the constant desire to micturate and the constitutional disturbance attendant on cystitis, forced her to seek relief. The tumour, which was about the size of a Tangerine orange, was situated on the posterior wall, and was partly pedunculated. The surface was somewhat necrotic, and was coated with concretions originating from the precipitation of salts by the ammoniacal reaction of the urine. The tumour felt fairly hard, but it could be torn in pieces without much force. It had a pale fleshy appearance when divided, and on microscopic examination the great bulk of the tumour was found to consist of long spindle cells of unstriped muscular tissue.

One thing noticeable in the section is that a few of the cells have more than one nucleus, but, despite the presence of these, one must consider the growth as a myoma. The vessels vary in size throughout the structure. In some of the smaller vessels the endothelial lining constitutes the greater part of the wall, but at other parts the walls are seen to be well defined, and in all there is a very sharp demarcation between the vessels and the surrounding

tissue.] [There are some fibrous elements in some portions of the tumour, and at parts of the epithelial covering necrotic changes are seen. The patient (an obstetrical nurse) has remained in perfect health since the operation, which was performed two years ago. Uterine fibroids springing from the anterior wall below the peritoneum may clinically resemble vesical myomata by growing forward, and bulging the posterior wall of the bladder into the cavity. In some cases vesical myomata originate from the bladder wall and grow towards the

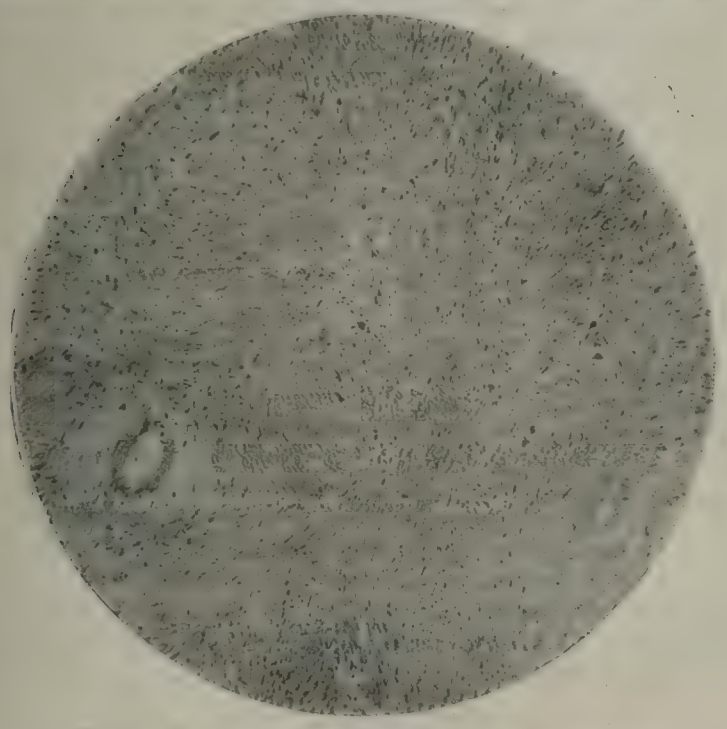

Fig. 4.—Photomicrograph of the tumour substance.

uterus. Rhabdomyomata are exceedingly rare bladder tumours.

Fibro-myomata of the Fallopian Tube.

Doran has remarked, "It is hard to find authentic cases of myoma of the Fallopian tube," and there is little doubt that they are pathological rarities. Most of the recorded cases have been found on investigation to originate in the broad ligament, so that it may be advisable to give a detailed description of the fibro-myoma shown in Fig. 6.

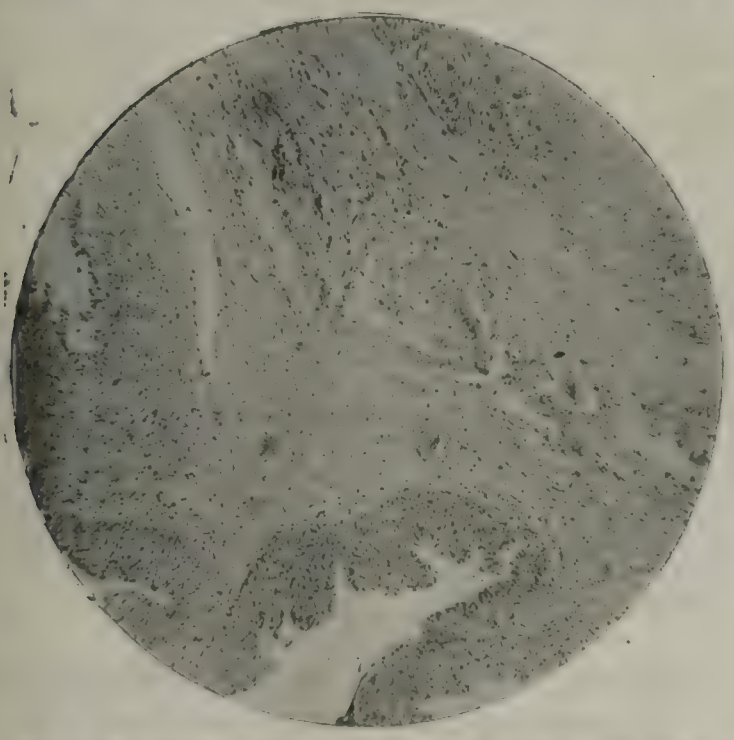

Fig. 5.—Photomicrograph of the vesical mucous membrane on the surface of the tumour.

On examination of the specimen, it is noted that the tube on the affected side is much longer than the free tube, their measurements being 5½ in. and 3½ in. The tumour is situated ¾ in. from the uterine border, and it has an oval shape. The long axis of the growth corresponds to that of the tube, and its measurements are 2 in. long, 1¼ in. antero-posteriorly, and the greatest depth is 1½ in. It arises from the tube on the upper and posterior surface and tends to become pedunculated, but a very intimate connexion exists between it and the tube for ½ in., so that if the tumour is dragged upon a kinking of tube forms at the point of attachment. It would be impossible to remove the tumour and leave the tube intact. The ovarian ligament on this side is quite free, but is 1½ in. long, while the corresponding structure on the unaffected side consists merely of the projection of

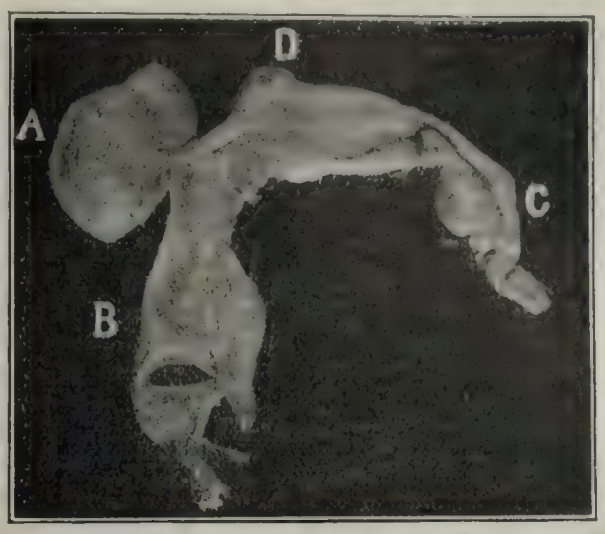

Fig. 6.—A, Fibro myoma; B, greatly elongated tube; C, tube and ovary; D, uterus.

the edge of the ovary on to the uterine border. A section of the tumour surface, as will be seen from Fig. 7, shows very well the characteristic whorled appearance of a myomatous tumour. The uterus contains a small fibroid nodule immediately above the termination of the tube.

In the Ovarian Ligament.—This ligament, which connects the uterus and angle of the ovary, contains a

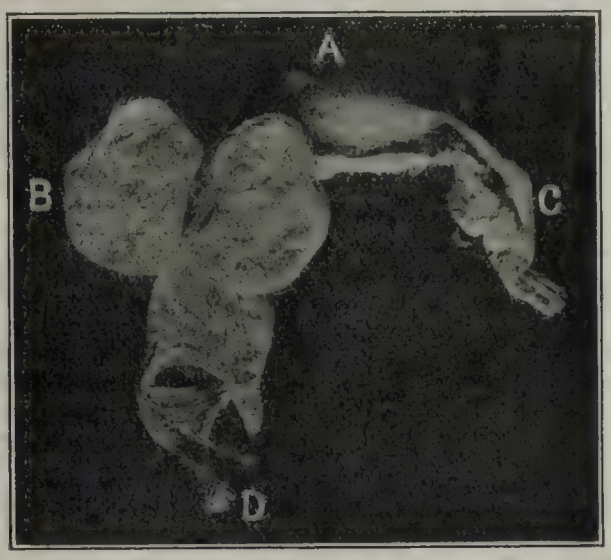

Fig. 7.—A, Uterus; B, tumour divided to show fibro-myomatous whorling; C, tube and ovary; D, fimbria of tube.

prolongation of fibro-muscular tissue continuous with that in the uterus, and thus a tumour of similar structure may originate in this position. Small fibro-myomatous nodules may be found in this ligament when fibro-myomas exist in the uterus, but tumours of the ovarian ligament alone are rare. The tumours may be bilateral and pedunculated, but in the only specimen which I

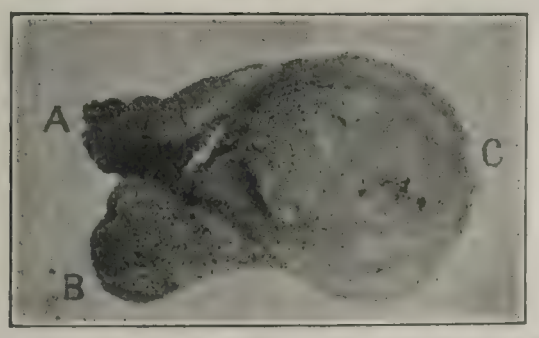

Fig. 8.—A, Fimbriated extremity of the tube which is spread on the surface of the tumour; B, ovary; C, tumour springing from the ovarian ligament.

possess the tumour is situated directly in the substance of the ligament, a small portion of the ovarian ligament remaining between the ovary and the tumour.

The other end of the ligament was ligatured and divided during the operation, and left in continuity with the uterus. The measurements of the growth are 2¼ in. long, 2 in. wide, and 1¼ in. antero-posteriorly. The chief

symptom in this case was severe ovarian pain, which is probably accounted for by the close proximity of the tumour to the ovary. The tube towards the uterine end is greatly thinned, being stretched over the surface of the tumour. The uterus and the right ovary and tube were normal. The tumour is a fibro myoma.

In the Vagina.—Fibro-myomata in the vagina are only occasionally met with, and my experience of them is limited to two cases. In both cases the tumours were situated on the anterior wall, and had the size and shape of a Brazil nut, one extremity pointing towards the cervix, the other towards the urethral orifice. Both tumours were sessile and one was in an oedematous condition, and in this case a vaginal cyst was diagnosed. The ages of the patients were 35 and 62 years. Each tumour had a fibro-myomatous structure, and the fibrous tissue predominated. One case sought advice owing to irregular haemorrhage and disturbance of micturition. The other patient complained of vaginal discharge which was at times stained with blood. These tumours may be in the vagina while fibroids are present in the uterus, but usually the uterus is found to be normal. The tumour is as a rule solitary, but Olenin records a case in which sixteen tumours were removed from the vaginal walls at different times. In a few cases the tumours may be found to be pedunculated, and although small as a rule, they may attain such dimensions that they form a serious obstruction to the passage of the child during labour. They are most commonly situated on the anterior wall, but they may be present in rare instances on the posterior or lateral walls. The structure of the tumour may be that of a myoma, fibroid, or fibro-myoma, and in exceptional cases an adeno-myoma may be present. The last-named tumour has its origin in the Wolffian duct, and this microscopical section of a tumour given me by Mr. Riddell shows this distinctly. Vaginal tumours are the seat of the commoner degenerations affecting uterine fibroids, and I think it is quite possible that in some few cases malignant growths of the vagina may originate in the tumour substance.

DISCUSSION.

DR. HERBERT SPENCER (London) expressed his thanks to Professor Strassmann for the admirable paper he had read, and for the beautiful specimens he had been at the trouble and expense of bringing over from Germany. He had never seen specimens more beautiful than those exhibited, and the method of preserving uteri in watch-glasses was new to him. He agreed with Professor Strassmann's recommendation of vaginal enucleation; but with regard to vaginal hysterectomy for large uteri, he thought there was considerable difficulty in completely controlling haemorrhage, the only satisfactory method of doing so being by means of von Ott's table. He was glad to see that Professor Strassmann advocated total abdominal hysterectomy in preference to supravaginal amputation. He had brought this subject before the Association five years ago, and had not performed the supravaginal operation for about seven years. He had performed the operation of total abdominal hysterectomy for fibroids in 85 cases with 2 deaths, both from embolism. He always closed the peritoneum by a purse-string suture and left the vagina open.

Dr. W. W. H. TATE (London) quite agreed with Professor Strassmann on the importance of suspecting carcinoma as a complication of uterine fibroids in cases where severe and irregular haemorrhage persisted after the age of 50. He himself had seen a large number of cases of severe inflammation of the Fallopian tubes and of blood cysts of the ovary complicating fibroids. In his experience the greater number of these complications occurred in the case of fibroid tumours which were impacted in the pelvis. In some of these the inflammation of the uterine appendages might have been due to puerperal or gonorrhoeal infection, but some of the cases seemed to be a direct result of the presence of the fibroid. He entirely agreed with Dr. Strassmann that when pregnancy coexisted with fibroids abortion should not be recommended under any circumstances.

Mr. INGLIS PARSONS (London) did not agree with Dr. Strassmann in removing the uterus per vaginam for fibroid tumours unless they were very small. By abdominal section one clean cut was made and the tumour removed without any bruising of the bladder or pelvic floor. The incision nearly always healed by first intention, and produced more satisfactory results.

Dr. WALTER C. SWAYNE (Bristol), discussing the relative advantages of panhysterectomy and supravaginal amputation, mentioned a case in which half of a large fibroid removed by Doyen's panhysterectomy was proved to be sarcomatous. This condition, although malignant disease or degeneration was suspected during life, could not have been diagnosed with certainty until after the removal of the tumour. In another case secondary haemorrhage occurred in a case of supravaginal hysterectomy in a patient who was a haemophilic, the haemorrhage being due to oozing from the stump. The main vessels had been secured properly, so the anastomotic vessels from the vaginal arteries were responsible for this, and if panhysterectomy had been done it could not have occurred. With regard to Dr. Cameron's paper on unusual situations of myomatous tumours, he related a case in which, after a supravaginal amputation, a pedunculated fibroid about the size of the fist was found to be growing from the peritoneal surface of the rectum. There was no difficulty in removing it.

Mr. J. D. MALCOLM (London) agreed with those who advocated the abdominal method of removing fibroid tumours of the uterus. He had found the convalescence so much more smooth and satisfactory, and he attributed the improvement mainly to the free drainage. The speaker wished to express his agreement with Dr. Wilson when he threw doubt on the necessity for leaving one ovary in removing the uterus. He had seen cases in which he had been forced to remove both ovaries, and the after-histories were not complicated by unusually distressing symptoms, and more frequently they had an exceedingly satisfactory recovery.

REPLY.

Professor STRASSMANN, in reply, after thanking the members of the Section for their remarks, said: I myself for many years performed abdominal section for fibroids, and with results similar to yours, losing only a few cases after enucleation, or when there was torsion or suppuration. The death-rate of abdominal operations, therefore, is not appreciably higher than that of vaginal ones in these cases, but the patients esteem it a great advantage not to have the abdominal wall opened, and hernia does occur, though after the transverse suprapubic incision very rarely. The control of the haemorrhage after total vaginal hysterectomy must be most carefully carried out, both by eye and speculum, before closing the wound. I have never found it necessary to open the abdomen in order to arrest the bleeding, and, as a rule, two or three ligatures on each side are sufficient to do so. Drainage is always advisable after enucleation. In one case in which only a polypus could be extracted, total extirpation of a uterus was performed, as there were several subserous fibroids, and as the patient was more than 40 years old, and in poor circumstances, it was undesirable for her to have to return to hospital for further treatment. I have adopted the tongue-shaped incision as the most suitable, because, while it keeps the bladder better covered, it gives most room, and the best survey of the field of operation. While I accept the usual views on the etiology of pyosalpinx, I agree with Dr. Tate that pressure may lead to inflammation and the formation of adhesions with the intestines, and to hyperaemia, and so to conditions favouring the immigration of infective germs. I must again thank you for the discussion, which has to me been both interesting and instructive.

NOTES ON A SERIES OF 100 CONSECUTIVE ABDOMINAL SECTIONS IN HOSPITAL PRACTICE.

By J. INGLIS PARSONS, M.D., M.R.C.P., M.R.C.S.,
Surgeon to the Chelsea Hospital for Women.

THE conditions for which these patients were operated on may be tabulated as follows:

Ovarian cysts	23
Fibro-myomata	15
Ectopic gestation	4
Diseased appendages, including hydrosalpinx, chronic salpingitis, sclerosis of the tubes, chronic ovaritis	26
Pyosalpinx and tubo-ovarian abscess ...	7

Adhesions from former peritonitis, with displacement...	6
Chronic retroflexion	12
Adenoma of the uterus	1
Intestinal obstruction	1
Ventral hernia	1
Encysted peritonitis	1
Fibrosis of the uterus	1

All the patients recovered from their operations. One, No. 55 on the list, died from pneumonia seven weeks after the operation, when she had been up and was about to leave the hospital. She had a bilateral pyosalpinx and a large abscess in the left ovary with extensive adhesions, and had been laid up for over twelve months before coming into the hospital. This had no doubt weakened her resisting power.

I am inclined to think that success in abdominal surgery depends more on perfect aseptic arrangements than anything else. Probably our forefathers were just as skilful as we are, but they failed to realize the importance of keeping out pathogenic organisms.

The aseptic arrangements were as follows:

Pads of gauze were used instead of sponges. All instruments, ligatures, and gauze pads were boiled and sterilized in the usual way. The assistants and nurses wore sterilized gowns and also indiarubber gloves. The latter precaution appears to me to be of great value. I do not as a rule use gloves myself, because I find they interfere with the delicacy of touch necessary in difficult cases. The care of the operator's hands is most important. In the mornings, when I am seeing private patients, I make a point of washing my hands in an antiseptic solution, lysol for choice. This is supplemented at the hospital by a good scrubbing with the nail-brush and soap. The hands are then soaked in a 1 in 1,000 solution of perchloride of mercury in equal parts of alcohol and water for five minutes. I also use an antiseptic mouth wash every morning, and take a perchloride bath once a week. When, as sometimes happens, one may have to see a septic case, I avoid operating for four days, and during the following week wear gloves. After the silk ligatures have been boiled, they are placed in a 1 in 40 carbolic solution. Just before the operation they are taken out and washed in sterilized water.

The patients were prepared in the usual way. An aperient was given overnight followed by an enema in the morning. The skin of the abdomen was prepared by washing first with soap and water, then with ether, finally a compress soaked in perchloride of mercury 1 in 2,000 was left on for twenty-four hours before the operation.

The abdomen was closed in three layers—the peritoneum with a continuous fine silk suture, the aponeurosis with silkworm gut, and the skin with a continuous silk suture. After uniting the aponeurosis the wound was washed with 1 in 6,000 solution of perchloride of mercury.

Two cases of stitch abscess occurred, one in a tuberculous patient and the other in a case of tubo-ovarian abscess, when the pus probably contaminated the wound.

I have every reason to be satisfied with this method of closing the abdomen; none of my patients so far as I am aware have ever come back with a ventral hernia.

One patient, No. 28, came back with symptoms of intestinal obstruction. I had performed a supravaginal hysterectomy for fibroids two months before. She was a very fat woman, with a layer of subperitoneal fat about 2 in. thick. On opening the abdomen I found that a large knuckle of small intestine had pushed its way through this layer and had become attached to the under surface of the aponeurosis. This latter being firmly held together by the silkworm gut had effectually stopped its further progress. The acute bend in the small intestine and the partial compression by the subperitoneal fat gave rise to the symptoms. It was interesting to find, on examining the stump of the uterus and the line of union of the peritoneum across the pelvis left by the hysterectomy, that it was perfectly united and that there were no adhesions of intestines.

Since this case occurred I have made a point in fat women of using stouter silk for the union of the peritoneum and subperitoneal fat.

The one case of ventral hernia (No. 92) had been operated on at another hospital twenty-five years before for ovarian cyst. The sac of the hernia, formed by skin and peritoneum, consisted of two pouches, one leading into the other. The great omentum filled the second pouch, and was densely adherent. The main cavity of the sac contained small intestine, and omentum also firmly adherent. Although I was obliged to remove a large portion of the great omentum and the two sacs, the patient, aged 64, made a good recovery.

Of the 15 cases with fibroids, 2 had single subperitoneal tumours, which were removed by myomectomy. Panhysterectomy was done in one case on account of the tumours involving the cervix. The supravaginal operation was done in the other 12 cases.

Of these, one was a huge fibromyoma of the broad ligament, filling the pelvis and extending up to the umbilicus. The specimen was shown at the British Gynaecological Society. A very interesting point in this case was the separation of the uterus from the bladder. The latter remained in position, and then became firmly attached to the front of the tumour, while the uterus was pushed over and jammed against the left side of the pelvis. In removing the tumour a piece of the bladder was taken away. The rent was sewn up in two layers with fine silk sutures. The peritoneum was very adherent to the tumour, so that sufficient could only be detached to cover two-thirds of the pelvic floor. The enormous bed of oozing surface left under the peritoneum after removal was treated by hot sponges and partially laced together with fine silk. The patient suffered from shock, and was transfused. She passed a good deal of blood from the bladder, but otherwise made a good recovery. A self-retaining catheter was kept in for two weeks. Dr. Cowen sent her up to see me three months after she left, and she was then in excellent health.

Of the 4 cases of ectopic gestation, rupture had taken place in 3. They presented the usual signs of collapse, and on opening the abdomen a large quantity of blood was found free in the peritoneum, with rupture of the enlarged tube forming the sac. The specimens were examined by the pathologist, Dr. F. E. Taylor, and the diagnosis confirmed. The fourth case presented points of great interest:

On opening the abdomen, the tumour, about the size of a hen's egg and presenting the usual appearance, was found to project from the posterior surface of the ovary on the left side, while the tube was practically normal in size and appearance.

Thinking I had at last found a typical example of ovarian gestation, I removed the ovary. It was then found that the mole was only glued to the posterior surface of the ovary, and was easily separated. Dr. Victor Bonney made a most careful examination of the specimen, and pronounced it to be an undoubted gestation with typical chorionic villi.

Another point was that, beyond the clot forming part of the tumour, there was no blood to be found in the peritoneum. Apparently the embryo must have died somewhat early in its existence and then been extruded by the tube without rupture, forming a typical case of tubal abortion without haemorrhage.

The corresponding tube was very carefully examined also by Dr. Bonney, but he was unable to find any traces of the site of the gestation in the muscular walls. The condition of the mole showed that it was not recent, so there may have been a considerable interval of some weeks between the tubal abortion and the operation. During this time the tube could quite possibly become completely regenerated.

Although the cases of diseased appendages included some of great difficulty, it was not found necessary even in the worst cases of pelvic suppuration to remove the uterus. The method of dealing with these cases is suggested by a consideration of what appears to take place when infection creeps up the uterus and passes along one or both tubes. The inflammatory reaction set up in the tube increases its weight, and its natural tendency is to fall backwards, where it becomes adherent to the posterior wall of the broad ligament. In many cases the ovary goes down at the same time, and is partially or entirely covered over by the prolapsed tube. If the inflammation proceeds further the uterus is dragged backwards by the contraction of the adhesions round the tube and ovary. This may be followed in the worst cases by further adhesions fixing the uterus to the floor of the pelvis. At the same time the efforts of Nature to shut off the infection from the general peritoneal cavity lead to extensive adhesions of small intestines above the uterus and appendages, thus roofing in the entire pelvis.

In dealing with severe cases of this type the adhesions of the small intestine were first separated or divided. Then passing the left hand down behind the uterus, efforts were made to find the line of cleavage between the inflamed tube and the broad ligament. The ovary is

A Series of 100 Consecutive Cases of Abdominal Section in Hospital Practice.

No.	Sent by	Name.	Age.	Disease.	Operation.	Result.	Remarks.
1	Hospital	S. F.	40	Large fibro-cystic tumour reaching to the umbilicus and involving the cervix	Panhysterectomy	R.	Part of the rectum and sigmoid flexure were attached to the posterior wall of the tumour.
2	Dr. Cowen	M. P.	35	Large fibro-myoma of the right broad ligament, extending to the umbilicus and filling the pelvis	Hysterectomy	R.	The uterus was separated from the bladder and jammed against the lateral wall of the pelvis, while the bladder was adherent to the tumour.
3	Hospital	E. R.	31	Multiple fibromata, size of a 5 months pregnancy	Hysterectomy	R.	Right ovary left.
4	,,	A. F.	39	Large multilocular ovarian cyst with many adhesions, left side	Ovariotomy	R.	Fifteen pints of fluid removed; some oedema of left leg fourteen days after operation.
5	Dr. Thynne	B. C.	25	Right ovary enlarged and cystic, and retroversion of uterus	Salpingo - oöphorectomy, and ventrosuspension	R	Also removed a fibroma from the right breast.
6	Dr. Lauchlan	E. D.	32	Large dermoid cyst (right) impacted in pelvis; left ovary bound down by adhesions	Ovariotomy and separation of adhesions	R.	Cysts in left ovary were punctured.
7	Dr. Jago	F. B.	43	Large adenoma of the uterus, causing persistent menorrhagia	Hysterectomy	R.	Curetting brought away large masses of growth like a malignant tumour; as it failed to stop the loss the uterus was removed.
8	Dr. Parker	C. M.	39	Ruptured tubal gestation	Removal of tube and sac	—	Last child 7 years old; since then had been in good health until onset of typical symptoms.
9	Hospital	J. E.	32	Double ovarian cysts, one suppurating, sigmoid flexure adherent, chronic salpingitis	Double ovariotomy	R.	Some effusion occurred in the pelvis, but was absorbed in three weeks.
10	,,	S. S.	37	Small ovarian cyst, size of an orange, left side	Ovariotomy	R.	—
11	,,	M. M.	41	Ovarian cyst and retroflexion	Ovariotomy and ventrosuspension	R	—
12	,,	E. L.	30	Ovarian cyst, right side	Ovariotomy	R.	Adhesions round left ovary separated and freed.
13	,,	A. W.	25	Prolapsed cystic ovary, right	Oöphorectomy	R.	Cysts in left ovary punctured and adhesions separated.
14	,,	L. P.	21	Pyosalpinx bound down by adhesions right side	Salpingo-oöphorectomy	R.	Left ovary freed from adhesions.
15	Dr. Orr	M. S.	41	Large hydrosalpinx and extensive adhesions	Salpingo-oöphorectomy	R.	Omentum and intestines adherent.
16	Dr. McIlraith	A. B	21	Tuberculous peritonitis, matting of omentum and bowel	Separation of adhesions	R.	Peritoneum flushed with sterilized water. Quite well now.
17	Hospital	C. P.	30	Hydrosalpinx and retroflexion	Salpingo-oöphorectomy	R.	Ventrosuspension.
18	,,	J. K.	25	Pyosalpinx and hydrosalpinx	Salpingo-oöphorectomy	R.	—
19	Dr. Fry	M. B.	35	Bilateral pyosalpinx	Salpingo-oöphorectomy	R.	Both removed without rupture.
20	Hospital	R. W.	40	Multiple fibromata	Hysterectomy	R.	Right ovary healthy; left ovary removed for disease.
21	,,	E. P.	31	Hydrosalpinx and retroflexion	Salpingo - oöphorectomy and ventrosuspension	R.	—
22	,,	A. S.	29	Cystic ovary and retroflexion	Salpingo - oöphorectomy and ventrosuspension	R.	—
23	Dr. Watts	L. S	40	Fibroma of uterus	Myomectomy	R.	Subperitoneal and single.
24	Hospital	A. R	43	Ovarian cyst	Ovariotomy	R	—
25	Dr. Mickle	A. W.	32	Large multilocular ovarian cyst and smaller cyst on left side	Ovariotomy	R.	—
26	Dr. Vickers	M. S.	44	Ovarian cyst	Ovariotomy	R.	Very adherent to the pelvis.
27	Dr. Lauchlan	A. L.	35	Ovarian cyst	Ovariotomy	R.	—
28	Hospital	R. N.	40	Intestinal obstruction	Coeliotomy	R	Knuckle of bowel adherent to old scar with omentum; freed.
29	,,	B. W.	29	Tubo - ovarian cyst and chronic salpingitis	Salpingo-oöphorectomy	R.	Small intestine, colon, and omentum matted and adherent to tumour.
30	Dr. Craig	A. J.	31	Retroflexion and prolapsed and diseased ovary	Salpingo - oöphorectomy and ventrosuspension	R.	—
31	Hospital	E. L.	31	Encysted peritonitis	Separation of adhesions	R.	—
32	Dr. Burt	E. I.	49	Chronic retroflexion	Ventrosuspension	R	Pessaries failed.
33	Hospital	L. H.	27	Diseased appendages and adhesions	Salpingo-oöphorectomy	R.	—
34	Dr. Orr	C. F. H	41	Multiple fibromata	Hysterectomy	R.	One ovary left *in situ*.
35	Hospital	E. P.	30	Chronic salpingitis and ovaritis	Salpingo-oöphorectomy	R.	Right ovary and tube left.
36	,,	M. M.	40	Chronic retroflexion	Ventrosuspension	R.	Pessaries failed.
37	,,	E. C.	29	Chronic retroflexion	Ventrosuspension	R.	Pessaries failed.
38	,,	A. C.	29	Two subperitoneal fibromata	Myomectomy	R.	Adhesions round tubes and ovaries.

A Series of 100 Consecutive Cases of Abdominal Section in Hospital Practice (continued).

No.	Sent by	Name	Age.	Disease.	Operation.	Result	Remarks.
39	Hospital	F. W.	26	Myoma and pregnancy	Exploratory incision	R	—
40	,,	S. C.	40	Diseased appendage	Salpingo-oöphorectomy	R.	—
41	,,	E. S.	28	Ovarian cyst	Ovariotomy	R.	—
42	,,	E. B.	39	Ovarian cyst	Ovariotomy	R.	Followed phlegmasia dolens.
43	Dr. Harrison	A. C.	49	Multiple fibromata	Hysterectomy	R.	Right ovary left.
44	Hospital	J. H.	34	Chronic retroflexion	Ventrosuspension	R.	—
45	,,	S. R.	30	Large fibro-myoma filling pelvis and reaching to umbilicus	Hysterectomy	R.	Left ovary not removed.
46	Dr. Cadell	E. M.	33	Prolapsed and enlarged cystic ovary	Removed	R.	—
47	Hospital	H. M.	31	Chronic salpingitis and adhesions	Both tubes removed and one ovary (right)	R.	—
48	Dr. Aikman	E. B.	25	Chronic retroflexion	Ventrosuspension	R.	Pessaries of no avail.
49	Dr. McMahon	C. C.	25	Chronic retroflexion	Ventrosuspension	R.	Pessaries of no avail.
50	Dr. Lauchlan	A. V.	58	Ovarian cyst, right side	Ovariotomy	R	Many adhesions; left ovary and tube freed from adhesions.
51	Hospital	L. W.	28	Chronic retroflexion with adhesions	Ventrosuspension; adhesions separated	R.	—
52	,,	M. H.	22	Chronic retroflexion with adhesions	Ventrosuspension; adhesions separated	R	—
53	,,	M. G.	28	Fibro-myoma and chronic salpingitis	Myomectomy and left salpingo-oöphorectomy	R.	—
54	,,	E. G.	27	Retroflexion	Ventrosuspension	R.	—
55	Dr. S. Kent	E. S.	33	Double pyosalpinx; abscess in left ovary, with old and extensive adhesions	Salpingo-oöphorectomy	D.	Recovered from operation, but died of pneumonia eight weeks after operation.
56	Hospital	M. S.	30	Large right hydrosalpinx	Salpingectomy	R.	—
57	,,	M. D.	21	Old peritonitis, uterus and appendages bound down; intestines adherent	Separation of adhesions and ventrosuspension	R.	—
58	,,	A. C.	26	Extrauterine gestation; left tube ruptured; haemorrhage	Removed the sac	R.	Large quantity of blood in peritoneal cavity.
59	,,	M. R.	30	Salpingitis and cystic ovary bound down by adhesions on right	Salpingo-oöphorectomy on the right; adhesions separated	R.	—
60	,,	E. F.	27	Cystic enlarged ovary and prolapse	Ovariotomy; ventrosuspension	R.	—
61	,,	K. P.	21	Chronic salpingo-oöphoritis, left side	Salpingo-oöphorectomy	R.	—
62	,,	M. H.	27	Bilateral salpingitis; bound down and adherent to bowel	Salpingo-oöphorectomy; part of left ovary left	R	—
63	,,	E. D.	23	Large tubo-ovarian abscess; roofed over with matted intestines	Complete excision	R.	Pus sterile.
64	,,	A. H.	33	Bilateral ovarian cysts	Ovariotomy	—	—
65	,,	E. R.	29	Retroflexion with adhesions	Ventrosuspension	—	Pessaries no good.
66	,,	E. G.	37	Retroflexion with diseased ovary	Oöphorectomy and ventrosuspension	—	—
67	,,	N. P.	25	Ovarian cyst	Ovariotomy	—	—
68	,,	M. T.	36	Bilateral salpingo-oöphoritis; bound down by adhesion and retroflexion	Salpingo-oöphorectomy and ventrosuspension	R.	—
69	,,	E. B.	29	Parovarian cyst	Ovariotomy	R	—
70	,,	M. E.	38	Extrauterine gestation: tubal abortion	Excision	R.	Tubal mole found adherent to ovary.
71	,,	E. B.	34	Fibromyomata of uterus	Hysterectomy; one ovary left	R.	—
72	Dr. Bonney	H. S.	39	Chronic retroflexion	Ventrosuspension	R.	—
73	Hospital	A. N.	29	Chronic retroflexion with adhesions	Ventrosuspension	R.	—
74	,,	M. H.	52	Left ovary enlarged, tender, and prolapsed, and fixed	Oöphorectomy	R.	—
75	,,	A. H.	27	Right ovary cystic; enlarged	Ovariotomy	R.	—
76	Dr. Owen	E. W.	26	Retroflexion	Ventrosuspension	R.	Pessaries failed.
77	Hospital	A. W.	27	Retroflexion	Ventrosuspension	R.	Pessaries failed.
78	,,	A. S.	26	Extensive adhesions binding down uterus	Separation of adhesions and ventrosuspension	R.	—
79	,,	M. F.	29	Multiple fibromata and ovarian cyst	Hysterectomy and ovariotomy	R.	—
80	,,	E. P.	26	Ovarian cystoma, with multiple adhesions	Ovariotomy	R.	—

A Series of 100 Consecutive Cases of Abdominal Section in Hospital Practice (continued).

No.	Sent by	Name.	Age.	Disease.	Operation.	Result.	Remarks.
81	Hospital	M. B.	38	Retroflexion	Ventrosuspension	R.	Pessaries failed.
82	,,	J. P.	30	Ovarian cystoma, inflamed and adherent; left side	Ovariotomy	R.	—
83	,,	A. G.	35	Retroflexion	Ventrosuspension	R.	Posterior layer of broad ligament contracted.
84	,,	C. N.	39	Retroflexion	Ventrosuspension	R.	Pessaries tried without avail.
85	,,	M. S.	35	Right and left ovaries enlarged by cysts, and hydrosalpinx on left	Salpingo-oöphorectomy	R.	—
86	Dr. Taylor of York	J. D.	29	Persistent menorrhagia	Hysterectomy	R.	Had been curetted by three different surgeons
87	Hospital	A. J.	28	Tuberculous peritonitis and also left appendage, matted with intestines and omentum	Salpingo-oöphorectomy and separation of adhesions	R.	Peritoneum washed out.
88	Dr. Lauchlan	C D.	35	Multiple fibromata	Hysterectomy	R.	Both ovaries left.
89	Dr. Bligh	M. L.	35	Ovarian cyst on right	Ovariotomy	R	—
90	Dr. Paul	A. P.	39	Hydrosalpinx adherent	Salpingectomy	R.	—
91	Hospital	E. W.	29	Uterus bound down by adhesions	Ventrosuspension	R.	—
92	Dr. Fitzgerald	E. B.	64	Ventral hernia, with adherent intestines and omentum	Radical cure by excision of sac	R.	Hernia followed ovariotomy done twenty years ago.
93	Hospital	E. E.	24	Retroflexion	Ventrosuspension	R.	—
94	,,	A. D.	38	Multiple fibromata	Hysterectomy	R	—
95	,,	M. C.	43	Retroflexion, with adhesions	Ventrosuspension	R.	—
96	Dr. Kirby	L. W.	28	Pyosalpinx (left); right appendage freed from adhesions	Salpingo-oöphorectomy	R.	Right tube was found closed by adhesions, and was made patent with a probe. Partial pulmonary embolism.
97	Dr. Robinson	E. H.	34	Papillomatous ovarian tumour	Ovariotomy	R.	—
98	Hospital	M. P.	35	Extrauterine gestation, unruptured, right side; left tube enlarged with blood clot; ovary atrophied	Removal of both tubes and one ovary	R.	Diagnosis confirmed by microscope.
99	Dr. Macnamara	N. L.	23	Multilocular ovarian cyst, left side	Ovariotomy	R.	—
100	Dr. Lauchlan	A H.	42	Tubo-ovarian abscess, left side	Excision	R.	A little pus escaped, and was mopped up. No rise of temperature.

next dealt with in the same way, and then the adhesions holding the uterus down. It is then possible in some cases to remove the diseased appendage with an interlocking ligature, leaving a single stump each side.

When there is double pyosalpinx and perhaps an ovarian abscess as well, the contraction and thickening of all the tissues make this method of removal impossible, although the tubes are freed from adhesions. The method I follow is to tie the ovarian artery on the pelvic side beyond the end of the tube, and also close to the uterine end. Between these two points a horizontal incision is carried along the front upper margin of the healthy peritoneum of the broad ligament. When this flap is turned forward it is comparatively easy to cut out the tube almost intact, and if necessary the ovary as well. The broad stump thus left does not as a rule bleed at all, but if it does a few mattress sutures of fine silk easily stop it. The flap of peritoneum is then turned back over the stump and united to the posterior layer or what remains of it.

The operation of ventrosuspension was done for the 12 cases of chronic retroflexion. In all of these, pessaries had a fair trial without success. There is more justification for this operation now, because the risk, with proper aseptic precautions, is very slight. There are many working women whose usefulness in life is greatly impaired by this condition, while their circumstances prevent them from carrying out the rest and other hygienic measures necessary for a possible cure without operation. The method recommended by Howard Kelly was adopted of passing two silk sutures through the peritoneum and subperitoneal fat, and in most cases the aponeurosis, one suture taking the highest point in the fundus, and the other being placed behind on the posterior surface of the uterus. The effect of this is to tilt the uterus forwards, as it should be in its normal position. I quite agree with Howard Kelly that the operation is most satisfactory. Several of my cases have had children without difficulty, and without the uterus getting out of place again.

No. 7 was a case of adenoma of the uterus. The patient's symptoms were those of cancer of the body, but I decided to dilate the uterus first and curette. Large pieces of growth came away exactly resembling a malignant growth. Dr. F. E. Taylor made a careful examination, and decided it was adenoma. The patient went home. Although the loss diminished it still continued without intermission, and finally I removed the uterus, and found recurrence of the adenoma, but not so much growth as was found when the curetting took place. The patient has remained quite well since. If the growth had not been examined under the microscope, one might easily have considered it to be a case of cancer successfully stopped. I can quite understand from this case that some men who are quite honest in their beliefs are mistaken when they state they have cured cases of cancer without having examined the growth under the microscope. The clinical features of the former case were exactly similar to those of No. 86, but in the latter the cause of the persistent menorrhagia was fibrosis of the walls of the uterus, while the endometrium was somewhat scanty. Before coming to me she had been twice curetted. I decided to do so a third time. After each curetting she showed some improvement for a few months and then relapsed. As the continued haemorrhage was undermining her health, I removed the uterus and left the ovaries. She is now very well.

The case of encysted peritonitis (No. 31) had been operated on previously by a friend for extensive disease of the appendages with adhesions of the intestines. The numerous raw surfaces necessarily left by the first operation had led to a glueing together of the intestines and pelvic wall, forming a cavity without any definite cyst wall. The patient suffered a good deal of pain, so the abdomen was opened and the adhesions separated. Since then her symptoms have been much ameliorated.

With aseptic surroundings the after-treatment is much simplified. I find it is quite the exception for any signs of peritonitis or even distension to appear. After the patient has gone back to bed an injection of strychnine is given in bad cases about two hours after the operation. Only one case (already described) has suffered from shock. She was given an intravenous transfusion of saline fluid. If the patient has much sickness from the anaesthetic she is given bicarbonate of soda in warm water with a few drops of peppermint. The anaesthetic given was in almost all cases ether preceded by gas. Thirst is met by giving sips of hot water, or by an enema of hot water. Twelve hours after the operation a nutrient enema of beef-tea and brandy is administered. Eighteen hours after the operation a cup of weak tea is allowed. This is followed by small doses of barley water and later milk diluted with barley water. A soap-and-water enema to clear out the bowel is given on the third day, or earlier if there are any signs of distension or discomfort. A turpentine enema is often more effective for this purpose. During the first day or two the rectal tube is passed every four to six hours. This is a great help to most patients, because it allows the passage of flatus without any effort on their part. On the fourth day the patients begin to take solid food. During the first ten days in bed, if constipation gave much trouble, small doses of calomel (1 grain) repeated every six hours, until the bowels acted, seemed to give the best results.

One patient, No. 98, a case of pyosalpinx, on the third day after the operation, had what appears to have been an embolism of a branch of the pulmonary artery on the right side.

The attack came on just before my usual visit. She was suddenly seized with breathlessness and a feeling of faintness. Her face went quite pale. The respiration ran up to 40, the pulse to 120, and the temperature shot up to 102 3.° A hypodermic injection of strychnine was given, and in a few hours she was much better. Next day the pulse, respirations, and temperature were normal. This was followed by dullness and absence of air-sounds over the middle third of the right lung in front.

I had a similar case to this some years ago, also after operation, for double pyosalpinx, and coming on exactly the same time on the third day, with the same symptoms and ending in recovery.

Anaemic and fat patients usually have a higher pulse-rate after operation than others, reaching occasionally to 110 or 120. It means very little beyond an effort of the heart to cope with abnormal conditions.

All the patients were kept in bed for fourteen days. When the operations were severe or the patient very weak, this was extended to seventeen or even twenty days. Many of them were able to leave the hospital on the twenty-first day, but the severe cases were often kept in longer.

In conclusion, I wish to thank my assistants, house-surgeons, and the nursing staff for their devoted care and skill in helping to carry out the operations and treatment.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

PRELIMINARY NOTE UPON TICKS INFESTING RATS SUFFERING FROM PLAGUE.

The North-West Frontier Province of India has until this year escaped the visitations of plague from which this country has now for some years been suffering. But for some months past cases have been occurring at Peshawar and in the surrounding district, and reports of cases having occurred have been received from villages near Nowshera. It became evident, therefore, that the disease might be expected within this cantonment.

On July 12th it was reported to me that a native man had died in the Sudder Bazaar two days previously under circumstances which aroused the suspicion that the cause of his death was plague. This man had no house. He appears to have passed his time on a table in a shop-verandah in the Sudder Bazaar at Nowshera. At about the date of his death rats were observed deserting the house next to this verandah, and also another house behind the next-door house. I at once visited these dwellings. The one last referred to had not been occupied for some time; the one next to the verandah had been vacated by the occupier directly he observed the rats deserting. In this house I placed a healthy rat in a cage. In the house behind a trap was set.

The following morning I visited these places and removed the healthy rat. This rat has not developed any signs of disease. At the same time, the trap in the other dwelling was found to contain a rat with a very prominent tumour on the left side of the neck. This rat, which was quite vigorous, I removed for examination. The rat was a female *Mus rattus*, dark grey in colour, with a supernumerary nipple on the right breast. Besides the tumour in the neck, which was enlarged submaxillary lymph-gland tissue, the lymphatic glands in the left inguinal region were markedly enlarged, while those in both axillae and in the right groin and femoral region were less markedly enlarged. After drowning the rat I examined the submaxillary gland mass, which was found to be caseous but to contain a little pus in the posterior portion. The rat carried a considerable number of fleas, and many ticks (32), of a species at present common upon rats, about the body and in the right ear. In the left ear was a gorged tick of another species firmly fixed in the skin. This tick was apparently the only one of its species upon the rat.

Smears made on July 13th from the broken-down gland showed cocci; those made from the left inguinal and right femoral glands showed cocci with a few bipolar bacilli. Smears from the spleen, peritoneum, heart blood, and lung did not show any bacteria. An agar-agar culture from the broken-down gland showed in twenty-two hours circular dirty-grey colonies, which contained chiefly cocci and some long bacilli, and a few bipolar bacilli. These last were Gram-positive. A hanging drop showed motile bacilli of two kinds, one long the other short. Cultures subsequently made from the spleen furnished plague bacilli.

My custom when removing ticks from rats is to place them as soon as detached in watch-glasses containing a little distilled water. This prevents the ticks escaping. A certain amount of sediment collects in the water during the stay therein of the ticks. In this case I examined the sediment after fining (by heat) on a slide, and staining with Loeffler's methylene blue, and found in the sediment from the single tick well-marked bipolar bacilli, and less numerous but similar bacilli in the sediment from the ticks of other species (these being in a separate glass). Not having on that date any more agar, I was unfortunately not able to culture from these sediments. The ticks have been sent to England for identification by a specialist.

Here, then, was a rat having what appeared to be bubonic plague, from which it was convalescent. But in some only of the internal structures were present bacilli which subsequent investigations showed to have been plague bacilli. In the left ear of this rat was a gorged tick firmly embedded in the skin, while the lymphatic glands in connexion with this ear were broken down, and had clearly been the first to become infected with the disease which had subsequently affected the other glands. In the water in which this tick had floated were numerous bipolar bacilli.

At present I am unable to go further than to record these facts as bearing upon the views set forth by myself in the British Medical Journal in August and December, 1905. Although I have been collecting rats and ticks in India for the last three months, this rat was the first that presented any symptoms of buboes. It is to be hoped, therefore, in view of the suggestive nature of the facts recorded above, that others who are more intimately connected with plague work in India may be induced to pay some attention to the tick guests of rats affected with plague.

A suggestion emerges from the above, namely, that when rats are flying from a house it would be well not to waste time on them, but to endeavour to catch the rats which have not fled, and which probably furnish the reason for the exodus of the others.

Nowshera, July 17th. B. Skinner, Lieutenant-Colonel, R.A.M.C.

The late Mr. William Brindle, of St. Anne's-on-the-Sea, left £300 each to the Devonshire Hospital, Buxton, and the Victoria Hospital, Blackpool.

REVIEWS.

OBSTETRICS.

THE essay on uterine involution which Dr. MARTIN CAMACHO of Paris has published is a careful and creditable piece of work.[1] He has taken trouble in reading books and observing cases, and in drawing conclusions he keeps close to his facts, and therefore he does not take us very far. His knowledge of English, or rather his use of English literature, is imperfect, for the only English authors he refers to are those quoted (often by copying from earlier compilations) in French textbooks. The most considerable paper on subinvolution viewed from a clinical point of view that has yet appeared is that by Sir John Williams, published in this JOURNAL in 1882; and Dr. Camacho has not seen this, for he does not include it in his bibliography. The best account of uterine involution from a histological point of view is that by Dr. Helme, published in the *Transactions of the Royal Society of Edinburgh*, vol. xxxv, and this piece of work is also unknown to Dr. Camacho. We need not quote Dr. Camacho's conclusions (twenty-eight in number), because those of our readers who may be interested in the subject will learn as much and more about it from Sir John Williams's paper of 1882 than from Dr. Camacho's thesis of 1906 But Dr. Camacho's industry, and the clear and orderly way in which he has set forth his knowledge, deserve commendation.

In noticing former editions of Dr. W. E. FOTHERGILL'S *Manual of Midwifery*[2] we have drawn attention to its merits. It is clear, original, and, as a rule, sound. We hope the author will not think us unfriendly if we criticize one or two points. At p. 348 he recommends plugging the vagina for placenta praevia, or, as an alternative, putting a large-sized Barnes's bag in the vagina; but the largest-size Barnes's bag that is sold would not, when put in the vagina, compress the cervix At p. 350 he speaks of separation of the praevial portion of the placenta as a modification, advocated by Barnes, of "the older treatment by separation of the whole placenta advised by Sir J. Y. Simpson." This separation of the whole placenta was only an idea flung out from the fertile brain of Sir J. Y. Simpson. It was never a "treatment," for he had never put it into practice. Barnes showed that it was impossible, because the fingers would not reach far enough. Barnes's advice is hardly adequately described as a modification of a treatment which was impracticable. At p. 27 the author gives a number of important generalizations taken from a paper by Sir A. R. Simpson, but these generalizations rest on the authority of Matthews Duncan, and were first demonstrated to be facts by him. It is strange that an old Edinburgh student should not be acquainted with the works of a man whose masculine sense eminently helped to make the reputation of the Edinburgh School of Midwifery. At p. 444 the author talks of decapitating by a piece of stout string passed through a Fergusson's speculum. He tells us not how many hours this method takes, and therefore we are sure he has never used it. Dr. Fothergill has evidently never practised decapitation by different instruments. If he had, he would know that Ramsbotham's sharp hook in dividing the neck takes a time measurable by seconds, not hours as with string, and that the serration of the hook is not an improvement; it merely puts the sharp hook in the condition of one damaged and broken by much usage.

The fifth edition of Dr. HIRST'S *Textbook of Obstetrics*,[3] a systematic work by an experienced teacher, calls for little more notice than an announcement of its appearance. It is a big book, and has cost its author much labour. But we cannot tell the English student that it is in advance of the English textbooks. At p. 751 we have a picture of a woman's abdomen, in which an exploratory incision has first been made, and then a parametric abscess opened by an incision parallel with Poupart's ligament. We have for so many years known parametric abscesses diagnosed and successfully treated in at least some London hospitals without a preliminary exploratory incision into the peritoneal cavity that we cannot accept Dr. Hirst as a capable guide in this class of case, and we cannot agree with him that in the case depicted abdominal section was "required." He has not grasped the great pathological fact, so strongly insisted on by Matthews Duncan, that the sole importance of retroversion of the gravid uterus is that it is a cause of retention of urine, and that if this is relieved all that is necessary has been done. He says that "spontaneous reposition occurs in the majority of cases, though it should not be awaited in practice." Why not, if the bladder is kept empty? In a footnote the author says: "Even with firm adhesions of long standing binding the uterus firmly backward I have seen spontaneous reposition take place." Of course, we accept Dr. Hirst's statement as a fact, but if we ourselves observed such a case we should conclude that our diagnosis of the firm adhesions had been wrong. The book is abundantly illustrated, and in many things (for instance, ectopic pregnancy) is up to date.

Dr. WALLICH has one invaluable qualification for writing a textbook,[4] namely, a remarkably clear, even epigrammatic, and occasionally witty style. Thus, in describing the application of forceps, he tells the student that the blade first to be introduced is inserted on the *left* side of the pelvis, applied to the *left* side of the head, and guided by the *left* hand of the operator. "Tout est gauche, sauf l'opérateur." The book is not an encyclopedia; it is essentially a personal book. The author says in his preface that it is "the fruit of daily clinical observation." It is, he says, "a new-born which has reached term, and which Professor Pinard will not deny." Five hundred and fifty-five pages consist of letterpress, 18 are given to the index, and the rest to illustrations, which are put by themselves at the end of the book. We think it a better plan to put each picture as near as possible to the text which it illustrates. As we have said, the charm of this book is its style. The author tells the reader what he knows in a most attractive manner. But there is a great deal that he does not know. He knows no way of accurately measuring the true conjugate. He knows not how to decapitate, and describes very tedious and difficult ways of doing this operation. He says the forceps was invented by Chamberlen, an English "*barber*"—surely an inadequate description of Chamberlen. Dr. Wallich has been a pupil of Pinard; he reverences his master, and he has not travelled far beyond his master's teaching. We are glad to note that he has considerable common sense. He recognizes the impossibility of sterilizing the accoucheur's hands; but he does not on that account lay it down that every accoucheur ought to wear india-rubber gloves. Nor does he advise that the patient should have a bath during labour, nor say anything about shaving the labia. We should predict for the book wide popularity in France and French-speaking countries. It exhibits in a concise form the best qualities of the French school of medicine. But the author's acquaintance with what is taught outside France is too limited to make his book one of universal value. The illustrations are wood engravings, and not remarkable either for novelty or excellence.

There are two things which militate against the scientific study of midwifery in America. One is the prevalence of "office practice"—that is, that a famous teacher of obstetrics and gynaecology carries on his practice at a place which is not his residence, and thus secures for himself exemption from nocturnal disturbance and also from experience of obstetrical emergencies. The other is the development of abdominal surgery, which produces in the gynaecological operator the tendency to regard Caesarean section as the means of cutting the Gordian knot in every midwifery difficulty. Hence results the writing of books on midwifery by men who have had

[1] *Recherches sur l'Involution Utérine.* [Researches upon Uterine Involution] Par le Docteur Martin Camacho, de la Faculté de Paris, ancien externe des Hôpitaux de Paris, etc. Paris: G. Steinheil. 1906. (Demy 8vo, pp. 191)

[2] *Manual of Midwifery.* By W. E. Fothergill, M.A., B.Sc., M.D., Lecturer in Obstetrics, the Victoria University of Manchester, etc. Fourth edition. Edinburgh and London: William Green and Sons. 1907. (Cr. 8vo, pp. 508; with double coloured plate, 103 illustrations in the text.)

[3] *A Textbook of Obstetrics.* By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania, etc. Fifth edition. Revised and enlarged. Philadelphia and London: W. B. Saunders Company. 1906. (Demy 8vo, pp. 915, with 767 illustrations, 40 of them in colours. 21s.)

[4] *Eléments d'Obstétrique* [Elements of Obstetrics] Par le Dr. V. Wallich, Professeur Agrégé à la Faculté de Médecine de Paris. Paris: G. Steinheil. 1907. (Cr. 8vo, pp 600. Fr 8.)

very little experience in the extraction of children by the natural passage. Among these is Dr. Garrigues,[5] an able and well-informed gynaecologist. He has not practised decapitation, either in actual cases of neglected transverse presentation or with the dead fetus in the laboratory. He mentions Ramsbotham's hook, which he says is "too dangerous for the mother's genitals and the accoucheur's fingers"; Braun's "*Schlüsselhaken*," strong blunt scissors, the chain or wire of an écraseur, Gigli's wire saw, which he says is a mighty rival to Braun's key hook. If he had ever used these things, he would know that Ramsbotham's sharp hook will divide the neck with a celerity that none of the other clumsy instruments mentioned can approach, and that it is extremely difficult with it to injure either the maternal soft parts or, without deliberate intention, the accoucheur's fingers. Dr. Garrigues takes a gloomy view of American midwifery practice. He says of American "physicians" that, "outside of the small number who have received their training in lying-in hospitals, it is to be feared that they either do not use any preventives" (of septic infection) "at all, or use them in such a happy-go-lucky way that little benefit is derived from them. . . . In private practice the mortality is *two or three times as large as in well-conducted hospitals*." (The italics are our author's.) Dr. Garrigues is very comprehensive in the choice of weapons he gives the reader wherewith to combat septic infection. He describes the intravenous injection of collargol, and mentions the intravenous injection of formalin and the ligature and excision of thrombosed veins, not, however, with commendation. Several methods of symphysiotomy are described, but with the simplest of all, the subcutaneous method, Dr. Garrigues is not acquainted. The book contains a great deal of information and much ingenious therapeutic suggestion. It is liberally illustrated.

THE ALCOHOLIC HABIT.

Dr. Kelynack, the editor of the *British Journal of Inebriety*, has done further service to the cause of temperance by editing *The Drink Problem in its Medico-Sociological Aspects*.[6] It consists of essays by fourteen members of the medical profession, and that the standard set is high is shown by a glance at its contents. For example, Professor Sims Woodhead writes on the pathology of alcoholism; Dr. Harry Campbell on the evolution of the alcoholic; Dr. Arthur Newsholme on alcohol and public health; Mr. McAdam Eccles on alcohol and life assurance; Dr. Mary Scharlieb on alcoholism in relation to women and children, and the editor on the arrest of alcoholism. The different essays are interesting and well worth close study. The editor does not hold himself responsible for all the opinions expressed and each author writes independently of the others. It is impossible to dwell upon each essay, and it would be invidious to make comparisons as to their matter or style. A few words about the most important will be all. Professor Sims Woodhead's essay is typical of the author—clearly written, easy to read, and full of the most accurate and painstaking investigations into the pathology of alcoholism. Every doctor who uses alcohol as a drug ought to read it, and every doctor who is concerned for the future well-being of the race should read Dr. Scharlieb's essay on alcoholism in relation to women and children. She speaks as one with authority, and in a quiet convincing manner impresses upon her readers that to conceive and rear healthy children the mothers must be free from the taint of alcohol. To the general public the statistics of the life assurance societies have now for some years proved that abstainers as a class live several years longer than non-abstainers, and this subject is well dealt with in a short essay by Mr. McAdam Eccles. In recent years the medical profession has taken steps to impress upon the Board of Education the necessity of teaching every child in the country the elementary laws of health and temperance. Dr. Claude Taylor has been an active worker in this movement, and it is most appropriate that he, with his knowledge and his zeal, should write upon the teaching of temperance. Can we hope that those in authority in matters of education, in matters military or naval, and in matters sanitary, will read Dr. Robert Jones's article on national deterioration? We can at any rate advise them to do so.

Dr. Campbell's article on the evolution of the alcoholic is very interesting. He quotes, and apparently believes, Dr. Archdall Reid in his view that the liking for drink causes an elimination of those who are naturally most disposed and a survival of those least disposed to it; in other words, the prevalence of drunkenness in a community for several successive generations tends to make that community innately more sober. We do not believe this for one minute. It ignores altogether the fact that for one person who is actually killed by alcoholism there are many who are maimed and living below par. Alcohol does not kill off all its votaries; it kills some and lowers the vitality of many, who in their turn have children of a vitality lower than is theirs by right. Dr. Reid cites the Jews as a race who have had their alcoholic period and the fittest have survived. We are not aware of any evidence that the race as a whole was ever alcoholic. From the Prophets we understand that certain people were worthy of denunciation, but nothing more. With the book as a whole we are in hearty accord, and trust that it will be widely read.

EPILEPTIC AND DEFECTIVE CHILDREN IN FRANCE.

The new volume of clinical and therapeutical researches on epilepsy, hysteria, and idiocy, by Dr. Bourneville and his assistants[7] gives an account of the work done at the Bicêtre and Fondation Vallée during 1904. In addition, there are some interesting facts and statistics by Dr. Bourneville, and seven articles written by himself and his assistants. On January 1st, 1904, there were 428 inmates in the Bicêtre; during the year 103 were admitted, 87 were discharged or transferred to other institutions, and 23 died. Lessons were given to all these children. The lowest class was taught to be clean in their habits, to dress themselves, and various other exercises, and the highest class were given lessons in reading, writing, and arithmetic, history, singing, drawing, and dancing; many learnt trades. In the Fondation Vallée, where only girls are received, the teaching is of the same character as at the Bicêtre, but the number of children who reside there is less, being only from 230 to 236.

A commission, on which Dr. Bourneville served, was appointed to inquire into the teaching of abnormal children, and a report was drawn up and presented by him to the Chamber of Deputies. Dr. Bourneville has for a long time advocated the creation of special schools for feeble-minded children in France, but without success; we hope, however, that his labours will be eventually successful. Reports were furnished to him by the directors of institutions in various parts of France, and it was found that very little was done for the mentally defectives in these places, with the exception of the Department of the Seine, where, including Dr. Bourneville's two institutions, 1,070 are treated and educated, being 3·03 per cent. for every 10,000 inhabitants. Statistics are given by Dr. Bourneville as to the part consanguinity plays in the etiology of epilepsy, hysteria, idiocy, and imbecility; on the action of alcohol in the production of idiocy and epilepsy; on the number of hemiplegic patients in the Bicêtre during 1904; on synostosis of the cranium in idiots and epileptics; on the presence or absence of the thymus gland in abnormal children; and on the weight of these two glands in these children. Of the articles written by Dr. Bourneville and his assistants the most important, from a mental point of view, are a contribution to the study of epileptic dementia; two cases of meningo-encephalitis of the base of the brain, with blindness; asphyxia during and reports of cases of an attack of epilepsy; and of traumatic idiocy in which there was a history of epileptic heredity. From the appendix it appears that Dr. Manheimer-Gonés sees nervous and backward-minded patients at a dispensary every

[5] *A Textbook of the Science and Art of Obstetrics.* By Henry J. Garrigues, A.M., M.D., Professor of Obstetrics in the Post-graduate School and Hospital (resigned), New York, etc. Second edition, thoroughly revised. Philadelphia and London: J. B. Lippincott Company. (Roy. 8vo, pp. 750, with 525 illustrations. 25s.)

[6] *The Drink Problem in its Medico-Sociological Aspects.* By Fourteen Medical Authorities. Edited by T. N. Kelynack, M.D., M.R.C.P. London: Methuen and Co. 1907. (Demy 8vo, pp. 308. 7s. 6d.)

[7] *Recherches Cliniques et Thérapeutiques sur l'Epilepsie, l'Hystérie, et l'Idiotie.* [Clinical and Therapeutical Researches on Epilepsy, Hysteria, and Idiocy.] By Bourneville, with the co-operation of Durand, Friedel, and Perrin, his clinical assistants. Vol. xxv. Paris: *Progrès Médical* et F. Alcan. 1905. (Demy 8vo, pp. 167. Fr. 5.)

Thursday from 8 to 9 p m. The book shows that Dr. Bourneville is still doing good work at the Bicêtre; it will be read with interest by all those who are concerned with the treatment of feeble-minded children.

CANCER THEORIES.

In their biological study of the nature of malignant tumours[8] Professor von Dungern and Dr. Werner express their dissatisfaction with the theories advocated by many other authorities on the subject, and propound an elaborate and somewhat unconvincing hypothesis of their own. Von Hansemann's doctrine of anaplasia, they consider, is inadequate to explain the unlimited capacity for proliferation which is the most important characteristic of malignant growth; the mitotic phenomena of cancer cells, they hold, are far too irregular to justify the analogy drawn by Farmer, Moore, and Walker between the propagation of cancer and the development of the fertilized ovum; the tissue tension theory of Ribbert is, they consider, disproved by the failure to produce cancer in experiments which fulfil the postulates of this theory; finally, they contend that theories of cancer must for one reason or another be relegated to the category of "not proven." As everybody recognizes that the solution of the cancer problem has not yet been attained, it must be admitted that Professor von Dungern and Dr. Werner have some justification for criticizing adversely the results of other workers in the field of cancer research. At the same time it is difficult to see that they have made any distinct advance on the efforts of other pathologists to throw light on this profoundly obscure problem. They find that the most important condition which regulates normal growth is "the normal capacity of cells for reaction to external stimuli." Owing to the specialized capacities of different cells to react against various stimuli, "the organism can in a wonderful way harmonize all its parts without occasioning any prolonged antagonism between different individual tissues." But in malignancy this normal equilibrium or capacity for readjustment is profoundly deranged, and the authors consider that by elucidating the conditions under which such disturbances might take place some guidance might be afforded towards attaining a knowledge of the causation of cancer. They have carefully worked out this line of thought, and quote experiments in support of their views. Though it is at present doubtful whether their ideas will lead to new discoveries of a fruitful nature, their arguments are certainly entitled to patient consideration

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NOTES ON BOOKS.

The second edition of Dr. Grayson's work on the *Diseases of the Nose, Throat,*[9] *and Ear*, has followed sufficiently closely on the first to show that it supplied a want felt even in the midst of the outpouring of books covering more or less the same ground. We indicated some of its more attractive features when commenting on the first edition, and find them still as conspicuous while many of the shortcomings have been most effectually rectified. Thus the sinuses of the nose are accorded thirty-four pages as against the inadequate eight given them in the first edition. The account of their diseases is very clear and complete and has some good illustrations, of which several are borrowed from Beaman Douglas and from Laurens. The paragraphs on the operative treatment of carcinoma of the larynx have also been brought up to date, though the diagnosis of the disease is worthy of more extended discussion. There is also room for a clearer exposition of the nature of what is now identified as sclerosis of the middle ear as distinguished from chronic catarrh. The work, as it now stands, will be found to be very readable and most useful to those who wish the three departments united in one volume.

The Practical Medicine Series, comprising ten volumes on the year's progress in medicine and surgery, is intended primarily for the general practitioner, but it is considered that at the same time the arrangement in several volumes will enable those interested in special subjects to acquire, if they wish, only those parts devoted to those subjects. The earlier three volumes for 1907,[10] now before us, treat respectively of general medicine (a second volume will appear later), general surgery, and diseases of the eye, ear, nose, and throat. The first is edited by Dr. F. Billings and Dr. J. H. Salisbury; the second by Professor J. B. Murphy; and the third by Dr. Casey Wood, Dr. A. H. Andrews, and the General Editor (Dr. G. P. Head). These names are sufficient guarantee of skill in selection of papers to be noticed in their respective volumes, and of care in abstracting them.

Under the title of the *Office of Midwife*,[11] Mr. Stanley B. Atkinson has published a small handbook of some 125 pages dealing with this important subject. It cannot be said that works of this kind are unnecessary, as it would puzzle most people to say exactly what the office of a certified midwife is. Mr. Atkinson first gives an interesting account of the early history of the midwife in this country, and tells who first licensed her, and how the man-midwife gradually came on the scene and appropriated to himself the more elegant title of "accoucheur." He then deals with midwifery in the nineteenth century, and describes the various attempts made to improve the knowledge and status of women practising midwifery. In chapter ii the author deals with the prospects and present position of midwives, with the growth of the science and art of midwifery during the Victorian era, and with the Act of 1902 under which the Central Midwives Board was formed. In part 2 the Act is carefully analysed, and part 3 contains a synopsis of the rules based on the Act. Part 4 is an interesting "literary appendix," giving examples of the "oaths" administered in olden times to midwives on being licensed, with full directions as to the baptizing of infants when the assistance of the Church was not forthcoming.

The *Lectures to Midwives and Maternity Nurses*,[12] by Dr. W. E. Fothergill, are clear and interesting; and, having been written by a well-informed man, they are on the whole correct. But when a man lectures to an audience not competent to criticize, the effect of such an audience often is to make him speak without thinking. Thus, for instance, he says (p. 7), that midwives and nurses should take hot baths "very frequently." Why? The essential thing in a midwife or nurse is that her hands should be clean, and next that her clothes should be clean, because clean hands may easily and unwittingly be infected by contact with dirty clothes. If the nurse's hands and clothes are clean, what does the date of her last hot bath matter? It may be said that, even if unnecessary, the taking of frequent hot baths is a good and cleanly thing, and should be encouraged. This is very well in a doctor's house, where there is a bathroom with hot water laid on; but in the houses of the poor women who have to live by their earnings as midwives or monthly nurses "very frequent" hot baths mean a great deal of trouble, and a great deal (to them) of expense. Insistence on unnecessary things tends to divert attention from what is really important. We find what we think a hasty statement at p. 120: "Many a patient is infected with dirt from her own feet." We should have thought it the rarest possible thing for dirt to be conveyed from the patient's feet to her vulva. When a midwife is called to a patient in labour, we should like her to attend to her own hands, and let the patient's feet alone. Dr. Fothergill explains very well the difference between uterine inertia and obstructed labour, and emphatically cautions the midwife against emptying the uterus when it is in a tired condition. He strongly advocates compression of the aorta in *post-partum* haemorrhage. The book is one which midwives, nurses and medical students may be safely advised to read and study.

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[8] *Das Wesen der bösartigen Geschwülste. Eine biologische Studie.* Von Dr. Emil Frh. von Dungern und Dr. Richard Werner. Leipzig: Akademische Verlagsgesellschaft. 1907. (Cr. 4to, pp. 167.)

[9] *The Diseases of the Nose, Throat, and Ear.* By Charles Prevost Grayson, A.M., M.D. Clinical Professor of Laryngology in the Medical Department of the University of Pennsylvania, etc. Second edition, revised and enlarged, illustrated with 152 engravings and 15 plates in colours and monochrome. London: Henry Kimpton. 1907. (Demy 8vo, pp. 532. Price 21s. net.)

[10] *The Practical Medicine Series.* Edited by G. P. Head, M.D. Vols. i, ii, and iii. Chicago: The Year-Book Publishers; Glasgow: C. Gillies and Co. 1907. (Cr. 8vo, vol. i, pp. 354, 5s.; vol. ii, pp. 608, 8s.; vol. iii, pp. 353, 6s.)

[11] *The Office of Midwife (in England and Wales) Under the Midwives Act 1902 (2 Edw. VII, cap. 17).* By Stanley B. Atkinson, M.A., LL.B. Camb., M.B., B.Sc. Lond., Barrister-at-Law Inner Temple. London: Baillière, Tindall and Cox. 1907. (Cr. 8vo, pp. 136. 2s. 6d.)

[12] *A Course of Lectures to Midwives and Maternity Nurses.* By W. E. Fothergill, M.A., B.Sc., M.D., Lecturer in Obstetrics, Victoria University of Manchester, etc. Edinburgh and London: William Green and Sons. 1907. (Demy 8vo, pp. 270, with 67 illustrations in the text. 4s. 6d.)

THE PLAGUE.

INDIA.

DURING the weeks ended July 6th, 13th, and 20th the deaths from plague in India numbered 5,492, 4,899, and 2,760. At the chief centres of plague the returns were: Bombay Presidency, 527, 713, and 804 deaths; Punjab, 3,999, 3,692, and 1,429; Burma, 149, 146, and 185; Mysore, 98, 102, and 157. It will be observed that plague mortality increased during the weeks in question in Bombay Presidency, Burma, and Mysore; this has also been the case in the Frontier Province, Madras Presidency, Kashmir, and in the Central Provinces. In the Punjab, the United Provinces, Bengal, and Rajputana a decrease continues. In the Punjab, where resolute steps for plague eradication are being inaugurated, it is probable the Government will adopt all known methods of prophylaxis—namely, disinfection, rat destruction, evacuation, and inoculation, as well as medical treatment.

AUSTRALIA.

Brisbane.—Since the week ended June 8th no case of plague has been recorded during the four succeeding weeks ended July 6th. The plague hospital was closed on June 22nd. The last infected rat was discovered on June 26th.

HONG KONG.

During the weeks ended July 20th and 27th and August 3rd the fresh cases of plague in Hong Kong numbered 14, 12, and 10, and the deaths from the disease 13, 12, and 11 respectively.

SOUTH AFRICA.

King Williamstown.—During the weeks ended June 29th, July 6th, 13th, and 20th the fresh cases of plague numbered 0, 2, 0, 0; no deaths recorded. On July 20th 3 patients remained under treatment in hospital, one being a European male.

MAURITIUS.

During the weeks ended August 1st and 8th the fresh cases of plague numbered 1 and 0, and the deaths from the disease 1 and 0 respectively.

CONTRACT PRACTICE.

FEES PAID TO CLUB SURGEONS.

"COLLIERY SURGEON" sends us the following extract from the report of a large friendly society:

Management Fund Account.—You will be pleased to notice that the amount paid for surgeon's fees again shows a decrease on the half-year, £571 5s. 8d. having been paid. The amount shown for the corresponding period of last year was £687 5s. 4½d., thus showing a decrease during the last twelve months of £115 19s. 8½d. The balance in the Treasurer's hands is £359 1s. 11½d.

He adds that the early part of the report boasts of an increase in members and a very large increase in sick pay. He concludes, therefore, that the surgeons have done more work for less money, since their fees must have been cut down, for had they stood at the old figure a larger amount would have been paid.

The fact is well worth noting, and we should be interested to receive similar information in regard to other friendly societies.

MEDICINAL AND DIETETIC PREPARATIONS.

Liquid Somatose.

WE have received samples of liquid somatose from the BAYER CO. (19, St. Dunstan's Hill, E.C.). This meat preparation is well known in the form of powder, and it is now presented in an alternative form, in which it will be more readily taken by many persons. Liquid somatose is supplied both sweetened and unsweetened, the former being calculated to prove attractive to children, while the latter is flavoured with herbs and is suited to the palates of those who prefer savoury to sweet preparations. Analysis showed amounts of nitrogen to be present corresponding to 16 3 parts of proteid in 100 fluid parts of the sweetened, and to 18.1 parts in 100 fluid parts of the unsweetened. No alcohol is present.

Compressed Tablets.

The name of the BAYER CO., of Elberfeld, and 19, St. Dunstan's Hill, London, E.C., is associated with a large number of synthetic products which have become firmly established in daily use in medicine. In addition to manufacturing and supplying their preparations in the form of powder in bulk, this firm has now commenced to issue them as compressed tablets, and we have received samples of their tablets of aspirin 5 grains, helmitol 5 grains, heroin hydrochloride $\frac{1}{24}$ grain, trional 5 grains, tannigen 5 grains, and veronal 5 grains. Examination shows them to be well-made tablets, the disintegration of which in water leaves nothing to be desired, and for the most part varying but very little in weight. The aspirin tablets are embossed with the name of the drug, a practice that cannot be commended, as the patient is thus inevitably acquainted with what he is taking, which is, of course, not always desirable.

INCOME-TAX DEDUCTIONS.

A REQUEST has been received for an opinion as to what deductions, if any, should be made by a medical practitioner in arriving at his net income for income-tax purposes in respect of a number of items of expenditure. The answers have been forwarded to the inquirer, but are published here as they may interest others. Before dealing with the list in detail, we would point out that the principle to be borne in mind is that expenditure incurred wholly and exclusively for the purposes of the practice, unless of the nature of capital expenditure, is in general allowable as a deduction, but expenditure for domestic or private purposes is not. The list sent to us contains the following items, which, for convenience, we have rearranged and classified:

1. Proportion of rent—consulting, dispensary, and waiting rooms—how much?
2. Proportion of repairs on doctor's property—that is, house, stable, etc.
3. Proportion of gas, water, burgh, county, school, and poor rates.
4. Firing and servants' wages and upkeep.
5. Man-servant wages.
6. Licences for servant, carriage, or motor.
7. Stable rent and rates.
8. Expenses connected with upkeep of horses, such as fodder, harness, shoeing, etc., and carriage and motor repairs.
9. Rent of telephone.

All these expenses are allowable to the extent to which they are incurred for professional purposes. With regard to rent, repairs, and rates, as the practitioner uses his house partly for the purposes of his practice and partly as a residence, he may deduct such a proportion (not exceeding two-thirds) of the total cost as the value of the premises used for professional purposes bears to their total value. Similarly with servants' wages and keep, gas, and firing, charges for domestic purposes must be eliminated, charges for professional purposes may be deducted. A fair proportion should be claimed, preferably by agreement with the surveyor of taxes.

10. Rail, cab, and car fares in making visits.
11. Drugs and chemicals used in practice.
12. Stationery and postages used in collection of accounts.
13. Other expenses of collection, such as commission, etc.
14. Dispenser's and book-keeper's salaries.

With the possible exception of (13), these expenses would all be allowable on the principle stated above. The question as to the allowance of expenses of collection of debts would turn on whether such expenses were necessarily incurred or not.

15. Original expense of horses, carriage, and motors. How should this be divided—over several years or such expense deducted when incurred?
16. Depreciation in values. How calculated?

The *original* cost of horses, carriage, etc., is to be regarded as capital outlay, and therefore not admissible as a deduction. The cost of *replacements* is, however, allowed in the year in which it is actually incurred. Strictly speaking, depreciation cannot be allowed to a professional man, the only allowance provided for in the Act being for "wear and tear of machinery and plant" used for the purposes of "any trade, manufacture, adventure, or concern in the nature of trade." An allowance is, however, occasionally made for wear and tear of motor or carriage by a percentage on the original cost, but in this event the cost of replacements would not be allowed as well.

17. Instruments and surgical appliances of whatever kind.
18. Fitting up any new appliance in consulting-room or operating room, such as new electrical apparatus, special light for medical purposes, etc.

Allowable, unless of such a character as to fall under the head of capital expenditure. A claim would be dealt with on its merits, but ordinary expenditure under these heads would be allowed.

19. Medical and surgical books and literature.
20. Subscriptions to British Medical Association and medical societies.

Books are not allowable, the cost being in a sense part of the cost of the practitioner's education for his profession, and therefore capital outlay. A reasonable charge for books might, however, be passed, as also might subscriptions, although these cannot legally be claimed.

21. Proportion of fire insurance on house and whole insurance on stable, carriage-house, etc.

The cost of insuring the building would be borne by the landlord, not by the practitioner. With regard to the contents, the observations made in respect to items (1) to (9) apply.

22. Insurance premiums (life).

These are not allowable as an expense in arriving at the amount of profit to be returned for assessment, but the amount paid may be claimed by being inserted in the space specially provided for the purpose on the income-tax form. It will then be allowed on production of the premium receipts.

23. Income tax always to be calculated over three years' drawings average.

This is an error. Income tax is charged on the *profits* of the practice, calculated on a three years' average. Clearly the drawings may be either more or less than the profits. The profits are arrived at by deducting from gross bookings (*a*) the expenses incurred in earning the gross sums booked, and (*b*) debts proved to be bad.

THE SEVENTH INTERNATIONAL PHYSIOLOGICAL CONGRESS.

As was briefly mentioned in our last issue, the Seventh International Physiological Congress was opened in Heidelberg on Monday, August 12th. The work of the four Sections began on the following day, and continued until Friday, August 16th, inclusive. It cannot be said that many pregnant and new facts or theories were in evidence. Rather was there a recitation of work already done and published. Still, the meeting served one purpose at least—that of making physiologists acquainted with one another by personal contact under pleasant conditions. Some of the polemical attacks now and again published in physiological journals would perhaps never have appeared had the writers been personally acquainted with one another. With four Sections going full blast from 9 to 12 and from 2 to 5 daily, an extraordinary number of demonstrations were given, and it was difficult—in fact, impossible—to do more than, butterfly fashion, sip here and there from the very varied matter presented in the four official languages of the Congress—English, French, German, and Italian. Abstracts of most of the papers were available. With German assiduity and characteristic hospitality, the evenings were also fully occupied with festivities. For those who had not previously visited Heidelberg perhaps the most impressive event was the illumination of the Castle on Thursday evening as the members of the Society and their friends floated gently along the Neckar in two barges dedecked with Chinese lanterns from Ziegelhauschen to the Stadthalle. Unfortunately, the moon was not in evidence, and rain helped to diminish the charm for the physiological pilgrims. On Friday evening the Congress terminated after refreshing itself with a dinner. The next meeting, on the invitation of Professor S. Exner, will be held in Vienna.

NERVOUS SYSTEM AND THE ACTION OF SOME DRUGS.

The following papers serve to show how increased knowledge of the functional aspects of the nervous system may be obtained by pharmacological methods. Professor LANGLEY made some observations with regard to the non-specific nature of motor nerve endings and the existence of "receptive" radicles in muscle. His contention is that motor nerve endings are not specific end organs, but resemble the axis cylinders from which they arise; that substances such as nicotine, curare, and adrenaline, which are usually said to act on nerve endings, act upon a constituent (receptive substance) in the motor cell, and that in general the effect produced by a motor cell depends upon the nature of the receptive substance or substances formed by the cell in the region of the nerve ending. A dilute solution of nicotine applied to a pig's muscle causes twitching and a slow and prolonged contraction, lasting according to the muscle used from two to thirty minutes. The same effects are obtained after the nerve endings have disappeared, hence Langley concludes they are produced by an action on the muscle substance. Curare prevents the nicotine twitchings and finally prevents the slow contraction set up by nicotine in the region of the nerve endings. There is a mutual antagonism between curare and nicotine. Langley concludes that in the region of the nerve ending in the muscle there are at least two "receptive substances," and perhaps there are other receptive radicles in muscle, for example, for veratrin. The antagonistic actions of nicotine and curare, it is contended by Professor R. Magnus, cannot be used for the localization of physiological processes, and he does not accept Langley's view that the normal seat of the action of curare is peripheral to the nerve endings in special receptive radicles in the muscle. By using curare and physostigmin, which are also mutually antagonistic, Magnus comes to the exactly opposite conclusion. After section and degeneration of the sciatic nerve, physostigmin no longer causes fibrillar and clonic contractions in a rabbit.

Sherrington has shown that in the case of reflexes involving contraction of particular groups of voluntary muscles there is normally a simultaneous inhibition of tonic contraction of central origin of the antagonist muscles. Strychnine in moderate doses converts this inhibition into an excitation, so that there is now simultaneous contraction of antagonistic muscles. This was demonstrated by Sherrington in the vasto-crureus muscle of a decerebrated cat. It was inferred that strychnine converts the normal central inhibition into central excitation. Bayliss finds that strychnine converts the inhibition of vaso-constrictor tone effected by excitation of the central end of the depressor nerve into an increase of this tone, so that after strychnine, on stimulating the central end of the depressor nerve in the rabbit, instead of getting a fall of blood pressure there is a rise. The rise of blood pressure from stimulation of ordinary sensory nerves is in some cases accompanied by an inhibition of vaso dilator tone. Strychnine may convert this inhibition into an excitation of vaso-dilators. Chloroform has an opposite effect to strychnine, converting excitation into inhibition. In this way the fall of blood pressure obtained under chloroform from sensory nerves in animals sensitive to this drug (rabbits) can be explained.

VASCULAR TONUS.

We are accustomed to refer vascular tonus to continuous vasomotor activity. Straub in the case of the earthworm and Winckler in the stomach of the frog have shown that smooth muscle, when suddenly stretched, responds by an active contraction. Bayliss finds that the same obtained in the arterioles of mammals. If the vaso-constrictors to a limb be divided and the limb placed in a plethysmograph, on raising the arterial blood pressure there is first a passive distension of the limb, followed in a short time by a diminution of volume. The normal tone of arterioles is in part due to this response to the internal pressure. A general fall of blood pressure might therefore be expected to produce a relaxation of arterial tone, and this experiment confirms. These reactions play a considerable part in the regulation of blood supply to various organs, especially to the brain. It is, however, overruled by the central nervous system.

Dr. E. Weber of Berlin finds that the external parts of the head, as regards vasomotor response, behave differently from the other parts of the body surface. Stimulation of the cerebral motor area causes general rise of blood pressure, accompanied by an increase in the volume of all four limbs and a diminution in the volume of the abdominal viscera. By the displacement of blood outward the muscular work during movement is facilitated, as there is a more rapid supply of the used-up material. In man the execution of powerful local movements produces these effects, but the same may be obtained by exerting a lively mental motor impression, which is best done during hypnotic suggestion; while the blood vessels of other parts of the surface of the body are dilated, those of the outer surface of the head are constricted, and, as measured in the ear, the volume is diminished. Dr. Weber showed in a resting subject rendered hypnotic the opposite variation of the volume of the arm and ear effected by "suggestion" of the idea of executing certain muscular movements of the forearm enclosed in a plethysmograph.

The Stepping Reflex

We are accustomed to regard the impressions from the plantar cutaneous surfaces as of great importance in guiding us in walking, or what is called the "stepping reflex." Sherrington showed a cat "denervated" in all four feet by division of all their nerves. The animal was still able to walk fairly well and accurately, and even to jump without accident from a height. This suggests that an important source of stimulus for the stepping reflex is in the proximal part of the limbs. If a "spinal dog" be held up off the ground, the dog executes with its hind limbs a series of treading movements—the so-called "stepping reflex." If the thigh of one limb is gently lifted and supported the reflex immediately ceases in both limbs. On allowing the limb to hang again the reflex immediately recommences with the same activity as before. Goltz showed that pressure on the tail stops the reflex. In this case the reflex, when it returns again after the inhibitory stimulus to the tail has ceased, recommences with greater activity than before.

Nature's Physiological Experiments on the Nervous System.

A suggestive paper by Professor Edinger was illustrated by means of enlarged models of the brain, indicating how comparative anatomy may be utilized for the study of nervous activity. The lowest vertebrates, myxine and petromyzon, have no cerebral pallium or cortex. Indeed, it is scarcely present in osseous fishes. These animals are specially adapted to yield information as to the arrangements of the olfactory apparatus and of the isolated corpus striatum, because both parts do not require to be laid bare by experiment. It is easy on the enlarged model of the brain of Chimaera (shark) to show the progressive development of the cerebral pallium up to mammals. The connexions between thalamus and cerebellum are nowhere so greatly developed as in teleostean fishes; the end apparatus in the thalamus is enormously developed. Specially suggestive are the connexions of the cerebellum. Myxine and proteus have no cerebellum; some have a minimum, as amphibia and most reptiles. Indeed, it can be shown that the cerebellum is better developed the greater the requirements for the stature and musculature of the animal. The powerful swimming fish and many teleostei have an enormous cerebellum; it is smaller in the rays and flat fishes.

Visual Acuity and Retinal Stimulation.

Professor Exner gave an account of some investigations on visual acuity in animals. In man the visual acuity of the fovea centralis corresponds with the diameter of its cones, and this being so, we may take the latter as one factor conditioning the former. We know that two parallel lines are just recognized as two lines when at least one row of unexcited cones lies between their images formed on the retinal cones. The second factor is the size of the retinal image of any given object, which, of course, is largely determined by the size of the eye. The visual acuity (S), therefore, of an animal is approximately given by the formula $S = K\frac{B}{D'}$, where K is constant, B the size of the retinal image in linear measurement, and D the diameter of an element of the retina. In most animals the size of the image was measured directly, while D was measured microscopically. The results show enormous differences in different animals and classes of animals. There are far greater variations in the diameter of the eyes than in that of the retinal rods and cones. On the whole, the visual acuity diminishes with the size of the eyeball, because apparently Nature must not exceed a certain minimum in the size of the retinal elements. The following is the order of visual acuity in mammals—ox, sheep, pig, calf, cat, goat, rabbit, hare, dolphin, dog, small apes, guinea-pig, rat, hedgehog, bat. The visual acuity of the ox is 35 times that of the bat. Man stands between ox and sheep. Amongst birds, the order is the owl, buzzard, fowl, goose; fishes—trout and carp. The bull frog has more acute vision than the water frog, while in the tortoise it is very small. The well-known shape of the eye of the owl gives a relatively large retinal image at the expense of the size of the visual field, and it is obvious that in night vision the size of the retinal image plays a most important part. Hunters in twilight use a telescope, although the brightness of the retinal image is diminished by its use. A new proof that the rods and cones are the elements of the retina affected by light was given by Professor Kreidl and M. Ishihara. They determined when photo-electrical variations first occur in the embryonic eyes of guinea-pigs, rabbits, kittens, and rats. In the guinea-pig the eye is fully developed during intrauterine life, in the others in extrauterine life. In the embryo of the guinea-pig the earliest indication of electrical variation due to the influence of light occurred in an embryo of eight weeks, in the rabbit three to four days after birth, in the kitten on the fourth to fifth day, and in the rat on the thirteenth to fourteenth day after birth. The photo-electrical reaction corresponds in time with the formation of the rods and cones, and their presence is absolutely necessary for the photo-electrical variation.

That changes in the shape of the cones of the retinae take place under the influence of light—so-called "photo-mechanical" processes—has long been known. Professor S. Garten of Leipzig showed a beautiful series of retinal preparations to demonstrate the meaning or significance of these changes. He concludes that in vertebrates there is from the outer limb of the cones (owing to the large ellipsoid in the cones of fishes, the highly refractive oil globules in many amphibia, reptiles, and birds) a large radiation or exit of light in all directions, which would cause an excitation of the neighbouring rods and cones, were it not for the fact that the pigment here present causes an optical isolation. In the small narrow rods the total reflexion is sufficient to counteract the scattering of the light. In the rays with only rods in their retina there is no pigment in the "pigment cells." On the other hand, in animals that possess only cones with strong refractive oil globules—for example, chameleon—the pigment travels forwards both in the light and in the dark. The elongation of the cones in darkness or in very slight illumination is, in many of the lower animals, accompanied by contraction of the inner segment of the rods; there is for slight illumination just outside the external limiting membrane, a cone-free layer containing only rods, which does not require pigment. With increased illumination, the resulting contraction of the cones, accompanied by elongation of the rods, is accompanied by a forward movement of the pigment, which surrounds the outer segments of the cones. The almost complete absence of photo-mechanical changes in the higher mammals corresponds with the morphological and functional approximation of the cones to the rods which in the fovea of man and apes reach their highest development. The pigment in this situation plays an insignificant part. It seems to absorb a part of the light that has traversed the whole layer of rods and cones.

Gastric Digestion.

By means of a duodenal fistula, Professor O. Cohnheim showed that raw meat placed in the stomach of a dog was completely peptonized; meat cut into coarse pieces remains longer in the stomach and is more thoroughly digested than fine minced meat. For 50 grams of flesh 300 grams of gastric and pancreatic juice are secreted. Bread is freely digested, but much solid passes into the intestine. For 21 grams, 200 grams of digestive fluids were secreted with more pancreatic juice and bile. If water be drunk on a full stomach it passes rapidly through the pylorus without mixing with the acid gastric contents. If the dog be tired, or if there is a pathological condition of the intestine, the stomach may not be emptied for hours. On the other hand, in disordered conditions of the stomach an acid secretion may be absent without the digestion, as a whole, being markedly disturbed.

Pancreatic Digestion.

Several papers were presented on the pancreatic juice. Delezenne finds that if a soluble salt of calcium be added to inactive pancreatic juice and heated it acquires at a given moment the power of digesting coagulated egg-albumen. This juice may be deprived, by dialysis, of its lime salts, and still retain its new properties. The actions of calcium are specific, and are but little shown by the other bivalent metals. Calcium salts also cause inactive juice to coagulate milk. Camus and Gley find that pancreatic juice secreted under the influence of secretin is not always inactive; that secreted by the injection of Witte's peptone or pilocarpin is always active, digesting completely ovo-albumen in thirty-six to forty hours; with pilocarpin

the juice, during a period of secretion, is alternately more or less proteolytically active.

Otto v. Fürth finds that pancreas steapsin preparations undergo activation by cholic acid, but he found no evidence of a steapsin activating kinase in the mucous membrane of the intestine.

Barbéra has examined the fetuses of dogs in various stages of intrauterine life, and finds that the intestine and pancreas form, as in extrauterine life, the one erepsin and enterokinase, the other a proteolytic proferment; and that this function bears a relation to the extent of development of these organs.

Absorption of Alcohol.

Coronedi and Delitala made, after the manner of Pawlow, gastric and oesophageal fistulae in a dog, and found that digestion goes on normally, the gastric secretion being normal. The direct introduction into the stomach of water and bitter substances, one hour before a fixed meal causes no changes in the secretion of gastric juice. Alcoholic beverages—cognac, and above all absinthe—given in the same way, even in relatively large doses, cause for several days augmented sensibility of the secretory activity of the gastric glands.

Nemser of St. Petersburg made intestinal fistulae in dogs at different positions in the intestine. On giving 20 per cent. alcohol in a certain amount (100 to 200 c.cm.), with or without food, and collecting the outflow fluid from the fistulae, he finds that alcohol is absorbed in large amount in the stomach. This absorption is continued in the duodenum, and reaches its maximum in the jejunum. The discharge from a fistula made at the lower end of the ileum contained no alcohol. Only a minimum of wine is absorbed in the mouth under normal conditions.

A specially instructive microscopic demonstration of the granules in secreting cells, and the changes they undergo in secretion, was given by Professor Metzner of Bale.

Transplantation of Ovaries.

F. A. Marshall and W. A. Jolly removed the ovaries from rats and grafted them on to the peritoneum or into the kidneys of other rats. Only a small proportion of the grafts survived, and these were chiefly transplantations into animals belonging to the same litter. Ovulation occurred in the successfully transplanted ovaries during the breeding season, and corpora lutea were formed. After removal of the ovaries the uterus showed marked signs of atrophy; the degeneration was arrested by a successful ovarian graft, notwithstanding that the ovaries were in an abnormal position, with all their nervous connexions severed.

C. C. Guthrie secured selected strains of white and black fowls which bred true as regards colour. The ovaries of one pullet (sister of the white controls) was transplanted to a black pullet (sister of the black controls) and vice versa. Later, each of these hens was successfully mated to the rooster of its own colour and the rooster of the other colour. Fertile eggs were obtained and hatched. The results were: (1) Black hen carrying "white" ovary bred to black rooster gave in about equal numbers black chicks and black chicks with white legs; (2) black hen carrying "white" ovary bred to white rooster gave about equal numbers of white and spotted chicks; (3) white hen carrying "black" ovary mated to white rooster gave mostly spotted chicks, some pure white chicks, and some pure black chicks; (4) white hen carrying "black" ovary mated to black rooster gave uniformly spotted chicks. The author concludes that the colour characters of the resulting offspring seem to have been influenced by the foster mother.

Maturation of Ova in the Herring.

The changes that occur in the genitalia in salmon during the breeding season were carefully described by Professor Miescher, of Bale, and he pointed out the close interdependence of the growth of the genitalia and the muscles. The salmon does not feed during this period, and the reproductive organs are largely developed at the expense of the muscles. Professor T. H. Milroy has investigated the chemical changes in the muscles of the herring during reproductive activity. Making allowance for the difference in the structure and habits of the herring, it presents phenomena similar to those observed in the salmon. During (1) the maturation period (six to seven months) the genitals grow and attain maturity. The fish gradually feeds less, and ceases to do so about a month before full maturity. During (2) the spawning period (one to two months) feeding ceases. In (3) the restitution period (three to four months), after spawning has ceased, the fish feeds and stores fat in its muscles. The fat shows the greatest variations. In a fully-spent fish it may fall to 1 per cent. When feeding begins it rises slowly, and at the commencement of the growth of the genitalia it is about 5 per cent.; and with the growth of the reproductive organs it may be 12 to 14 per cent. For a month before full maturity it begins to fall. The greatest decrease takes place when spawning is in progress. The water percentage is at its highest in fully-spent fish. The coagulable proteids are smallest in percentage in spent fish, and largest in those which are about one or two months short of full maturity. There is a great storage of arginin in the testes. The chief difference between the salmon and herring at the breeding period depends on the fact that the herring continues feeding during the larger part of the time when the genitalia are enlarging, and only during a short period of starvation does the herring make use of its own muscles for the material for the growth of its reproductive organs.

Extracts of Organs and their Effects.

The literature dealing with the effects of injecting extracts of organs or viscera into the circulation is already large. Some of the effects observed have found a useful application in practical medicine. W. E. Dixon and F. E. Taylor find that an alcoholic extract of the fresh human placenta, when dried, dissolved in normal saline, and injected into a vein, causes a great rise of blood pressure, which corresponds in its character to that caused by adrenalin, and it also causes characteristic contractions of the uterus. The chemical nature of the substance extracted from the placenta is not yet fully investigated. In this connexion it is interesting to find that the hypobranchial gland of the mollusc *Purpura lapellus*, extracted with acidified boiling water yields a substance which H. E. Roaf and M. Nierstein find to give some of the chemical reactions for extracts of the suprarenal capsules. When injected or perfused it causes constriction in the blood vessels of a frog and a rise of blood pressure in rabbits. The authors suppose that in the "purple" gland there is a substance allied chemically and physiologically to adrenalin.

Professor Starling showed preparations of mammary glands of virgin rabbits, demonstrating the effects on these glands of repeated injections of extracts of fetal organs.

Gaseous Exchanges.

A considerable number of experiments on gaseous exchanges of organs were demonstrated by Drs. Brodie, Halliburton, Barford, Miss Cullis, and others. Most of the facts are already familiar to English readers.

Professor Bohr, of Copenhagen, narrated experiments in support of his view that in many cases the tension of CO_2 in the blood is lower than in the alveolar air, and that in the excretion of CO_2 by the lung a specific activity of the lung epithelium must be assumed.

Professor Warren P. Lombard showed a model of a balance, with suitable recording apparatus, whereby a graphic record of the rate at which a man loses weight from minute to minute can be obtained. Under certain conditions the loss from the skin can be measured, and that from the air passages can be calculated. The rate of loss of weight from the air passages changes quickly and frequently, because it is influenced by whatever alters the depth and rate of the respiration; it reflects, therefore, alterations in the mental and physical condition. The experiments were made on man clothed. The loss of weight is chiefly due to evaporation of water from the air passages and skin. It is least in sleep, increases on waking, is more by excitement, and is markedly increased by muscular work. It is more after than before a meal, and rises with a rising external temperature. The rate of loss from the lungs per kilo of body weight is less in very large and in very small men. In large men there is relatively more bone and fat, inactive tissue, and so the heat production is relatively less. In small men there is a relatively larger surface, and so relatively more heat is lost by radiation.

Survival Phenomena in Severed Head of Fish.

Several papers were communicated and experiments shown on the heart, including the much-discussed question as to the physiological significance of His's bundle in the heart, for the question of myogenic or neurogenic conduction of impulses from auricle to ventricle in the mammalian heart. Professor A. Kulabko of Tomsk, well-known for his researches on the resuscitation of the heart long after its apparent death, showed a simple method of perfusing Locke's fluid through the "surviving head" of a fish, separated from the body and freely exposed to air. The brain of the fish seems to require a fair exchange of gases. The activity of the intracranial centres can be maintained for many hours, and indeed by this method can be restored after complete extinction.

Nature of Rigor Mortis.

H. Winterstein presented some interesting observations on the physiological nature of rigor mortis. The excised muscle of a mammal may be kept in Ringer's fluid at a temperature of 36° to 31° C. under an oxygen pressure of 2 to 4 atmospheres, and it will remain excitable for 20 to 27 hours. Rigor mortis is regarded as an asphyxial phenomenon in consequence of insufficiency of oxygen. With a sufficient supply of oxygen no rigor occurs; rigor mortis developing in a muscle can be arrested by oxygen. In an atmosphere of oxygen, a muscle which has lost its excitability when asphyxia occurs, no longer passes into rigor. Oxygen is without influence on rigor that is already complete. A muscle not placed in Ringer's fluid, but under oxygen pressure loses its excitability in a few hours, but if placed in Ringer's fluid it regains its excitability in 10 to 15 minutes, but this is not the case in an isotonic solution of sugar. This seems to show that the ions of the solution, especially those of sodium, participate in the metabolism of muscle.

Traction of the Tongue: A Caution.

Professor M. d'Halluin (Lille) finds that in dogs under the influence of anaesthetics rhythmical traction on the tongue, instead of stimulating respiration and circulation, hastens death. This result is the more remarkable as this method is used clinically as a means of restoring animation.

Section of the Vagi Nerves.

Professor Nicolaides (Athens) showed rabbits in which he had excluded the action of the vagi in the following way: The action of the right pulmonary vagus was excluded by excising the right lung. The left vagus was divided some weeks afterwards. The rabbits survived the operations. The type of respiration, which was like that of double simultaneous vagotomy after section of the left vagus, gradually returned towards normal, in spite of the cutting off of the supposed self-regulating centripetal influences from the lungs. The animals operated on kept healthy, and it would be difficult to say on looking at them that they had lost such important parts of their body.

Action of Phosphorus on Bone Growth.

Rabbits which have been repeatedly injected subcutaneously with 1 per cent. phosphorous oil, show remarkable changes in the inorganic constituents of their tissues, for example, the lime salts of muscles, liver, heart, and bones. In the latter there is an increase of phosphate of lime, with simultaneous rise in the iron and sodium; the increase of lime salts may be due to active changes in the bone-forming periosteum and marrow in conjunction with hyperaemia. Phosphorus seems to act as a "formative" stimulus both to growing and adult bones. Kochman from these observations suggests the use of phosphorus in anomalies of new bone formation.

The usual course of lectures and demonstrations for sanitary officers arranged by the Sanitary Institute will commence this autumn on September 16th, and terminate on November 22nd. Further particulars can be obtained on application to the Secretary, Parkes Museum, Margaret Street, Regent Street, W.

The late Mr. Charles John Dickins, of Putney Hill, who died on July 14th, left £350 to Bolingbroke Hospital, Wandsworth Common, and £100 each to the Royal Hospital for Incurables, Putney, and King Edward's Hospital Fund.

SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

(Continued from page 402.)

Physical Development of Public School Boys.

Dr. Clement Dukes, Physician to Rugby School, read to Section X, Hygiene of Residential Schools, of which he was President, a paper on the results of the physical examination of 1,000 boys at their entrance on public school life between the ages of 13 and 15 years. They might, he said, be regarded as a special class; strong and healthy, well-bred, well-fed, and reared mainly in the country, for even where, in some instances, their infancy and childhood had been passed in towns and cities, the period of life from the age of 9 to 13 was usually spent in the country at admirable preparatory schools. The record was entirely free from selection. The examinations were made as the boys severally entered the school, and were solely intended to serve as a basis for regulating each boy's physical welfare during his secondary school life, by detailing minutely his exact physical state, and thereby affording a sure guide to the masters in the appropriate course of education; and for determining the physical exercise and games suitable to each boy's constitution and vigour. The observations were recorded on a uniform system in schedule, which had been very carefully prepared to ensure completeness; in addition to spaces for (i) name and residence, (ii) age, height, weight, and chest measurement this schedule contained general headings with many subdivisions for (iii) general appearance, to include colour, physique, and a record of any deformity, (iv) nervous system, to include the intellectual standard and special senses, (v) digestive system, (vi) respiratory system, (vii) circulatory system, and (viii) genito-urinary system. There were also spaces for (ix) previous important illnesses, and (x) important illnesses at school. The last part of the schedule was concerned with school games; it contained a list of games and exercises, and on it the medical officer indicated for the information of the schoolmasters either that in his opinion the boy need be subjected to no restriction, or what games and exercises he should or should not be allowed to play, and what he should be made to play. Dr. Dukes had commenced his record on January 21st, 1899, and had completed 1,000 entries on May 6th, 1907.

Height, Weight, and Chest Measurement.

He expressed regret that he was not able to record the annual rate of growth in height, weight, and chest measurements, inasmuch as boys vary greatly in this respect; some grew slowly before puberty, but made up at the age of puberty, or even postponed this increase until the ages of 17 or 18, when they grew enormously. In fact, many boys who developed very gradually at first, both mentally and bodily, outstripped their schoolfellows in both respects towards the end of school life—some growing in height at the expense of weight, and vice versa. For the purposes of comparison he had used the table prepared by Mr. Charles Roberts, showing the average and mean height and weight, and the annual rate of increase, of 7,709 boys and men between the ages of 10 and 30 years, of the most favoured classes of the English population—public school boys, naval and military cadets, medical and university students. The record of the height, weight, and girth was of inestimable value to the master who, possessing this chart, on which was also prescribed the suitable physical training and games for every "new boy" admitted, was thus enabled intelligently and efficiently to provide for his appropriate individual rearing during the period of education. The circumference of the chest, measured on the bare skin at the nipple line, expressed the capacity of the lungs on deep inspiration and expiration. This, the respiratory capacity, had a wide range, varying from 1 in. to 5 in. The numbers given are all in relation to the standard of 1,000:

Height	Above normal...	522
	Average...	113
	Below normal...	365
Weight	Above normal...	472
	Average...	57
	Below normal...	471
Chest measurement	Above normal...	445
	Average...	132
	Below normal...	423

Deformities.

Slight defects were not registered, but only such as were of sufficient practical importance to the sufferer to need special attention at the hands of the drill-sergeant or the gymnasium instructor. It was, Dr. Dukes said, somewhat depressing to register in the twentieth century the large number of acquired preventable deformities (not momentous, it was true, but still indicative of inferior systems of nurture and education) presented by the most favoured class of boys in Great Britain—deformities occurring between the time of nursery life and the completion of education in the preparatory school at the age of 13. Some of these infirmities arose from faults in nutrition during infancy, which entailed rickets. These defects in nutrition tended at the present day to involve the children of the rich even more than those of the poor in their sequent physical evils, for a preponderating proportion of mothers in the higher social rank either could not or would not nurse their children; moreover, they substituted for the naturally-appointed breast-milk boiled cow's milk, which, in the process of boiling, was deprived of some elements in its nutritive value which tended to the advent of rickets, or infantile scurvy. They resorted also to various artificial foods, equally insufficient for the adequate nourishment of infants in their earliest months of life. In some instances the deformities observed resulted from the debilitating effects of infantile maladies; while the remainder were incidental to unnatural school methods, and the disfiguring effect produced by faulty postures, permitted or practically compelled, during school life, so that the supple bones became moulded imperceptibly, but surely, into abnormal forms.

Congenital Deformities	Malformation of the ear	2
	Malformation of the little toe	1
	Hammer toes	5
	Undescended testicles	9
Acquired Deformities	Antero-posterior curvature of spine	1
	Lateral curvature of spine	445
	Pigeon-breast	126
	Bow legs	64
	Knock-knees	526
	Flat feet	329

Nervous System.

The number of instances of abnormality of the nervous system and organs of special sense observed were:

Nervous Peculiarities.

Stammering	70
Lisping	3
Nervous twitching	8

Defective Hearing.

Eustachian deafness	13
Aural deafness	19
Aural discharge	2

Defective Sight.

Hypermetropia	40
Myopia	128
Astigmatism (considerable)	27
Colour blindness	12
Congenital cataract	1

Teeth.

In several instances no decayed tooth was to be observed. In the large proportion of cases the teeth, where decayed, had been carefully attended to by the dentist:

Teeth	Well-cared for	943
	Neglected	57

Respiration.

In the large proportion of observations the respiration was nasal, and in many instances operations had already been performed for post-nasal growths. The respiration, where oral, was generally attributable to a very short upper lip, which prevented the mouth from being closed, or to the presence of adenoids.

Respiration	Nasal	888
	Oral	112

Heart Disease.

The cases of heart disease were as follows:

Heart disease	Mitral	8
	Aortic	1
	Irregular action of heart	1

Chilblains.

These varied greatly, some being of a trivial character, while others entailed much suffering when they reached the stage of "broken chilblains." The chief sufferers were those of a florid complexion, which usually signified atony of the vasomotor system, and a still larger proportion suffered from the albuminuria of adolescents.

Sufferers from chilblains	437

Hernia and Varicocele.

The number of cases presenting hernia or varicocele were:

Hernia.

Hernia	Inguinal congenital	7
	Umbilical	1

Varicocele.

Varicocele	Right	4
	Left	92

Urinary System.

The number of instances of albuminuria would be somewhat startling to those who had not devoted special attention to the subject; but this functional disturbance was not of serious importance. Amongst those who were known to have this ailment during school life, Dr. Dukes had never once found the condition existent at maturity. While the malady was largely dependent upon the state of the vasomotor system, it was also subject to some condition of the blood, inasmuch as Sir A. E. Wright had shown incontestably that it was at once removed by supplying the blood with lime salts, either in the form of an abundance of milk (which contained a large amount of lime), or by the administration of lactate of lime. Dr. Dukes, therefore, urged the importance in the interests of the growth, development, and happiness of boys at school of not placing lads exhibiting this condition upon a restricted diet, and as was so frequently and needlessly done, prohibiting games within reason, since experience proved that these regulations were not consistent with their welfare.

Incontinence of urine	Diurnal	2
	Nocturnal	26
Albuminuria		157
Sugar (a trace)		3

Puberty.

Occasionally a boy had entered the school as young as the age of 12.75, and once a boy came as late as 16.75; but in all other cases the age at entrance was between 13 and 15 years. Between these years 317 had already attained the stage of puberty; while, however, many had reached puberty at 13, its advent, in a few cases, was deferred to the age of 15.

MILK SUPPLY OF RESIDENTIAL SCHOOLS.

Dr. EDWIN H. T. NASH (Ashman's Hall, Beccles), in a paper on the milk supply of boarding schools, drew attention to the fact that many of the higher-class boarding schools advertised as one of their attractions that they had their own milk supply, giving the idea that thereby special purity was ensured, whereas on inquiry in a great number of cases the opposite was found; in fact, in the words of one of the chief authorities on milk provided often sent by anxious parents to inspect the milk provided at the school to which they purposed sending their son, "he had not seen one cowhouse that he would have put a pig in." The obvious reason for this is that these dairies were not inspected under the Dairies, Cowsheds, and Milkshops Order, and that the owners were free to do what they pleased in the matter of air space, lighting, ventilation, and drainage. Dr. Nash contended that a schoolmaster who provided the milk for his pupils as part of the board for which he was paid should not come under the exception in Clause 6 of the Order by which registration was avoided, but that every school which had its own dairy should be registered and inspected as coming into the category of a purveyor of milk. No school supplying its own milk should fall below the standards laid down in the Order. On the contrary, if a special feature was made of the milk supply it should rather exceed the standard. The cowhouse he had himself erected was built like an operating theatre with rounded corners, the floor and walls up to 5 ft. being faced with smooth cement. The mangers were of glazed earthenware and made continuous with the walls by rounded corners with a bottom drain so that they could be flushed out and kept quite sweet. The

fresh air inlets were 5 ft. from the floor and there was a large regulating outlet in the roof. He suggested the use of a shield or apron such as he had devised to fasten round the udder and over the cow's back, so that it surrounded the udder and the milking pail, the milker being able to put his hands through a flap at the side; in this way any hair and fragments of dried excreta, which were two of the great causes of bacterial infection of milk, were excluded.

A School Diary.

Dr. Albert Mathieu, President of the French League for School Hygiene, presented a model school diary for use in residential schools. He insisted on the necessity of recording in a separate diary for each pupil the principal incidents of the period of growth. He described the way in which he proposed that the diary should be kept, and recommended that it should be preserved by the family, as a collection of such diaries would eventually afford a complete health history of the family. The diary he had devised was economical: the first part contained a history of the pupil before entering the school, the second the history of growth and health during school life, and a succinct record of his educational progress. Any weak point in the constitution of the pupil should be recorded in the diary so that the school doctor might give special supervision.

The Health Training of Teachers.

Sir John Byers, M.D. (Belfast), President of Section V, Physical Education and Training in Personal Hygiene, in the course of an opening address, said that it would be difficult to estimate the debt which the British nation owed to two men, Sydenham and Locke, who lived about the same period, who were intimate friends, and who each in a very marked way influenced the other in regard to all that was involved in the promotion of health of body and soundness of mind. Thomas Sydenham, the "Prince of English Physicians," first correctly taught that medicine, as a practical science, depended upon close and accurate observation, and always advocated as a fundamental principle in its study an appeal to experience, and achieved such a reputation, that the great Dutch physician Boerhaave was accustomed to take his hat off whenever he mentioned his name, and to style him "*Angliæ lumen, artis Phœbum, veram Hippocratici viri speciem.*" His friend, John Locke, owing largely to his sound judgement, exercised a great influence over Sydenham and taught him the supreme value to a physician of that priceless gift—common sense. It was in no small degree owing to the personal sway of these brilliant men that, towards the end of the seventeenth century, there gradually took place a change in English thought in the direction of scientific research and the philosophy of common sense. In his very interesting treatise, *Some Thoughts concerning Education*, published in 1693, Locke wrote:

> A sound mind in a sound body is a short but full description of a happy state in this world. He that hath these two has little more to wish for, and he that wants either of them will be but little the better for anything else.

Though more than two centuries had passed since this most suggestive essay of Locke appeared, yet nothing had ever been written which brought out more clearly what should be the aim of physical education than the words just quoted, written by the man who was the founder of school hygiene in England. The truth of the axiom that there cannot be health without health of both body and mind was never more apparent than in the existing condition of society, and the public was at last beginning to understand that there was a close relationship between medical science and the instruction of the young. Public opinion was no longer content that a teacher of the youth of a nation should be one who simply heard lessons in a catechetical way, guiding his pupils in the ordinary routine of school studies; it expected that those who instructed children should have themselves passed through a training school or college where they learned not merely the theory of education in all its branches, but acquired a knowledge of the common principles of bodily health, and also of the methods of placing this information before children, and had been taught to observe and recognize those physical defects and mental weaknesses in their pupils which required special care and attention. Teachers should also have a knowledge of the various systems of physical culture, and be able to show some prowess in games, while, from the point of view of the pupil, modern opinion demanded that the health of the children should in no way suffer while at school—nay, more, that the children should be instructed while there in the fundamental laws of elementary hygiene, which, if acted upon, would help to make them useful and healthy citizens of the State.

The relation between the school and medical science had gone through an interesting process of evolution. The first steps were taken with the object of preventing schools becoming centres of infectious or contagious disease then followed the effort to supply to the children while in school a hygienic environment, schoolrooms properly seated, lighted, heated, and ventilated, and with no overcrowding. This was succeeded by a demand for medical inspection of children, both on their entrance to the schools and during their subsequent school career, in order to ascertain whether they were fit to go to school, whether their physical condition was compatible with their being benefited by the instruction given, and if so, whether their sojourn in school was causing or increasing certain diseases, such as curvature of the spine, rickets, tuberculosis, anaemia, etc., and whether their apparent dullness, short-sightedness, deafness, or headaches might not depend on preventable causes (eye, ear, and throat). A further advantage of medical inspection was that it permitted accurate scientific records to be kept of height, weight, chest capacity, etc., which when collected would provide approximate anthropometric standards. The latest stage in the evolutionary process was marked by the attention now being given to the promotion of physical health and development. Sir John Byers dealt with this part of his subject under three heads in the following words:

1. The children—while at school—should be taught both by example and by precept the simplest rules of how to live, the necessity for fresh air, and for pure water, and for healthy homes, and the relative nutritive value of the various kinds of food which are ordinarily used. They should be instructed in the simple and ordinary laws of health and temperance, and in the importance of such matters of personal hygiene as cleanliness, the care of the skin, including the hair and nails, and of the mouth and teeth (not more than 3 per cent. of all children of school age have sound teeth), how to deal with sudden emergencies, and how much can be done to prevent the onset and spread of infectious disease. There is no doubt that in schools with gymnasia, personal hygiene can be best taught, as it can be practically demonstrated there that attention to the care of the body brings about that most desirable condition which is called "feeling fit." Girls should be taught the elements of cooking at school by practical lessons, as well as the principles of housekeeping; and, seeing we now compel them to attend school, and in this way deprive them, to a large extent, of that home experience and personal contact with infants which was more the rule formerly, it is surely incumbent to see that they are taught those elementary truths as to the care of infants that all girls from 10 to 13 years of age might know. I am fully convinced that the time has arrived when, if we are to put a stop to those conditions which bring about physical degeneration—especially in our large towns—and if we are to solve fully many pressing public health problems, such as the terrible wastage of infants as well as the survival of numbers of them with a poor physique and a weak constitution, and the preventable deaths caused by consumption, children in the primary schools should be instructed in hygiene and temperance. In order that this shall be carried out properly, facilities should be afforded to the teachers for special training in these subjects, and, finally, hygiene and temperance should be not only included in the curriculum of studies, but they should be reported upon by the inspectors of the schools. I trust that, as a result of what will be brought before us at this great Congress by experts from all parts of the world, England will—in the language of the Prince of Wales—"wake up" to her duty towards her school children.

2. The children should be made to do exercises both in the school and in the adjacent gymnasium if there is one attached to the school. Nothing is more valuable for children, who so often are kept for long periods in a cramped position, than what are called the deep-breathing exercises (which stimulate the circulation through the internal organs) combined with those movements which bring into play the muscles which move the spine backwards. When such exercises are engaged in by the pupils for a period varying from three to five minutes at the end of each hour, or even at the termination of every two hours in the schoolrooms (the windows of which are open), they are of enormous value in quickening the circulation, in using up more oxygen, and in counteracting the deleterious effects of the school desk, and of a too long rest in one position or attitude.

3. Lastly, the children must be instructed in physical education, and have time for games and athletic exercises. We want our children to be so trained physically that each

faculty of the body may be fully developed, and this can be done:

(*a*) By those methods employed in Swedish schools, which consist mainly of movements without the use of any apparatus or musical accompaniment;
(*b*) By gymnastic exercises and musical drill at the schools;
(*c*) By games in the open air, either in school playgrounds—and no school should be now constructed without them—or athletic fields;
(*d*) By swimming when baths are available. In cities where there are public baths these might be utilized; and I am pleased to say that in my own city, Belfast, the Corporation—through their Baths and Lodging-house Committee—recently made arrangements to admit schoolboys under 12 years of age, when accompanied by a teacher, free to the swimming ponds one day in each week; and they have requested the Commissioners of National Education in Ireland to empower the principals of the primary schools in Belfast to arrange that children attending these schools can avail themselves of these facilities during school hours.

He believed that a combination of these four plans adapted to the types of pupils and climatic conditions would give the best results. It was well to make young people understand that physical exercises would prepare them for efficiency in games and athletics. Though games did not sufficiently train all the muscles of the body and perhaps did not give the same amount of strength as exercises, yet they did something more than increase bone and muscle and strength; as Mr. Alfred Lyttelton had pointed out in his recent address at Dulwich College, this enabled youth to gain a command over temper, and, when played in the true spirit, tended to develop such desirable qualities as courtesy and generosity to opponents. There had been an outcry against athletics, Sir John Byers added, but it was not the athletics that did the mischief but the publicity and noise, and professionalism with its attendant evils. "If," he said in conclusion, school children "were instructed in hygiene and temperance, and if they were trained by a judicious combination of exercises and games, such deplorable exhibitions of athletics as we see in so many of our great cities every week would in time cease to exist, and I am confident that our young people—like the boys and girls in the primary schools of Japan, who are taught every day the important lesson of civic duties—would learn from being educated together in the principles of hygiene and temperance, and in the various methods of physical culture—apart and in addition to their intellectual and mental development—what in later years and in changed circumstances will be of the utmost value—namely, what is the true aim and the proper object of corporate life; and that they will realize that the best kind of education is that which develops all the faculties of mind and body, which cultivates individuality, and brings about self-reliance, and which makes them feel that the highest type of civilization is reached by that community in which they can point out the greatest number of examples of men and women who try in every way in their power to better the condition of their less favourably placed fellow-beings."

SCHOOL DANCING FOR GIRLS.

Dr. L. H. GULICK, Director of Physical Training in the Public Schools of New York City, said that folk-dancing, as one of the elements in the physical training schedule in the elementary and high schools, had been taken up first to meet a practical difficulty, but it could be defended on sound theoretical grounds. The practical difficulty was that experience proved that formal gymnastics lacked some elements of interest which would make teacher and taught do physical exercises not merely because they were compulsory, but because they were liked, and induce the taught to go on with exercises after the end of school life by establishing habits of exercise. In the case of boys the difficulty was met by the system of so-called "class athletics," which did not throw the chief emphasis on those already most expert by giving them further training, but was chiefly an incentive to those of average, or even less than average, attainments—a scheme by which the average of an entire grade in running or in jumping was pitted against the average of a like grade in another school. So it seemed that for the boys there were being developed, through these athletics, exercises which could be maintained to a greater or less extent in subsequent years, and this great interest in athletics had had a marked effect in rousing interest in the formal gymnastics. It was not, however, considered wise to apply the same system to girls, as it was believed that the biological history of the sexes was sufficiently divergent to make it improbable that athletics, which, in their origin, involved movements and instinct-feelings of the combative and hunting type, should be adaptable to the feminine physiological, psychological, social, or aesthetic needs. Experiments with many different forms of exercise—play, games, and the like—gradually developed the conviction that among the folk-dances were to be found some that, to a large extent, met the needed conditions. Many had to be rejected because they required too much space; because they involved little muscular effort; because the dancing was done in rotation, each child being still most of the time; because they were morally objectionable; or because they were too difficult to learn. The dances selected involved many contractions of the large muscular masses of the body, and had therefore a great effect on respiration, circulation, and nutrition. Such movements, moreover, when done as dances could be carried on three or four times as long without producing fatigue as formal gymnastics. The movements themselves, however, the co-ordinated movements of the legs, the swaying of the body so that its centre of gravity was in constant relation to the point of support, the movements of the arms, as well as those of the head—followed long-inherited tendencies toward neuro-muscular co-ordinations which arose under the strain of survival. Many folk-dances were imitative, sowing and reaping dance, dances expressing trade movements (the shoemaker's dance), others illustrating attack and defence or the pursuit of game. Such neuro-muscular movements were racially old and fitted in with man's expressive life, and if it were accepted that the folk-dances really expressed an epitome of man's neuro-muscular history, as distinguished from mere permutation of movements, the folk-dance combinations should be preferred on these biological grounds to the unselected, or even the physiologically selected. From the aesthetic point of view the sense of beauty as shown in dancing was far commoner than the power to sing, paint, or model. The dances found best suited to the purpose were:

Third year, Danish Greeting, English Harvesters, Vineyard Dance. "Lott ist Todt"; fourth year, Tantoli, Baby Polka, Kull Dance, Negarpolska; fifth year, Swedish Klappdans, Finnish Reel, Bleking, Shoemaker's Dance; sixth year, Frykdal Polka, Norwegian Mt. March, Highland Schottische, German Hopping Dance; seventh year, Swedish Ring, "Hop Mother Annika," Irish Lilt, Ace Diamonds; eighth year, Highland fling, Oxdans.

TUBERCULOSIS IN SCHOOLS.

In Section VII.—Contagious Diseases, Ill-health, and other Conditions Affecting Attendance—a discussion took place on tuberculosis in schools.

Dr. J. E. SQUIRE and Miss A. GOWDEY (Medical Staff, London County Council) contributed a joint paper on the incidence of tuberculosis in elementary schools in West London. A preliminary inquiry was made as to the number of children attending elementary schools who were supposed by their teachers or parents to be suffering from tuberculosis. Returns of 58,934 children gave 0.55 as supposed to be suffering from pulmonary, and 0.44 from other varieties of tuberculous disease. These returns were found to be quite unreliable. In one special district the returns were extended to find the number of children out of school with these causes assigned; they were for 5,679 children 6 per cent. pulmonary and 13 per cent. other varieties of tuberculous disease. On examining all the 1,670 children of two schools, 0.47 per cent. showed signs of what might be described as tuberculous, 0.83 very doubtful, and 2.8 non-tuberculous disease of the chest. The tuberculosis was quite unsuspected in most cases.

Dr. WM. OLDRIGHT, Professor of Hygiene in the University of Toronto, read a paper on the schoolroom as a factor in tuberculosis. He said that an excessive death-rate from tuberculosis among teachers was shown by the mortality returns of the Registrar-General of Ontario. The ratio of deaths from consumption in 100 deaths from all causes in 1883 was for teachers of both sexes 29.0; for male teachers 28.5, but for female teachers 57. The ratio for servants was 28.5, for seamstresses 40.6, for doctors 18.5, for lawyers 25.0, and for clergymen 28.5. The only callings which had a higher ratio than female school teachers were printers (60.8) and stone-cutters (65.0). The combined statistics for six of the

principal towns of the United States showed a higher death-ratio among female school teachers (396 per 1,000 deaths) than in any other occupation except printers and pressmen (398). For the whole of the United States in 1900 the ratio of deaths from consumption in 1,000 deaths was for all females in all occupations 215, for female teachers 256. Professor Oldright attributed this excessive mortality to excessive vitiation of school air from respiration and defective ventilation, to the lamentably small cubic space and low rate of change of air, and also, perhaps, to chalk dust.

Dr. H. C. Lecky (Resident Medical Officer, Borough Sanatorium), and Dr. W. Claude Horton (Resident Medical Officer, Children's Hospital, Brighton), contributed a note on revealed tuberculosis in children. Out of 806 children—591 in an elementary school, 74 in workhouse and infirmary, and 241 in the parochial industrial school—no evidence of tuberculosis was obtained in 571. Three cases had phthisis, 40 other lung signs, 7 tuberculous glands, 6 probably tuberculous, and 169 enlarged; 7 had bone or joint tubercle, and 3 tuberculous; 3 skin disorders. These results were compared with English and Scottish examinations and confirmatory evidence adduced to show that there was very little revealed tuberculosis in elementary schools.

Dr. Louis Gourichon (ex-President of the Society of Medical Inspectors of Schools, Paris) said that the most potent causes of tuberculosis among teachers in the elementary schools of Paris and the Department of the Seine were (1) contact with cases of tuberculosis, (2) the unhealthiness and infection of school buildings and of the teachers' lodging and overwork. Tuberculosis was, however, rare among elementary school teachers, and could be traced to conditions outside the school. A health register of teachers ought to be kept, and the schools ought to be subjected to regular and careful medical inspection.

Dr. C. C. Jessen, Physician to the Public Schools, President of the Society of Physicians, Copenhagen, said that the new Tuberculosis Act in Denmark was of the highest importance as a prophylactic measure. In the Nineties, although diminishing, yet tuberculosis caused 14 per cent. and actual phthisis 10 per cent. of the Danish mortality. There was in his opinion no great danger of child-to-child infection, but teacher-to-child infection might be serious. The tuberculous mortality of insured teachers was double that of the insured general population. Each teacher must at every opportunity be certified free from tubercle of lungs and larynx. Each teacher dismissed for tuberculous disease was entitled to a pension equal to two-thirds of the pay. For tuberculous children separate education was provided—one-fourth at the cost of the parish and three-fourths at that of the State.

To a general meeting for the discussion of the school in relation to tuberculosis, Dr. Newsholme (Brighton) contributed a paper, in the course of which, after quoting statistics from Brighton, Dundee, Edinburgh, Dunfermline, Aberdeen, and Blackburn, he put forward the estimate that not more than 1 in 300 children in schools showed revealed or diagnosable tuberculosis. He did not believe that these children were an important source of infection, but thought that teachers and caretakers might be. Pulmonary tuberculosis was somewhat more prevalent among school teachers than in the general community, and, judging from his own experience, he believed that it was more often laryngeal than in the average of consumptives. Notwithstanding the small amount of revealed tuberculosis among school children, such children if they died of other disease, showed in very high percentage evidence of tuberculosis, especially in the bronchial glands. Naegeli, at Zurich, found at autopsies of children aged 1 to 5 years, 17 per cent., and aged 5 to 14 years, 33 per cent., had tuberculous lesions. Since the figures showed a heavy incidence before as well as during school life, he believed that the true interpretation was that tuberculous infection in children was nearly all domestic and not scholastic in origin. He thought that the following were the principle measures needed for the prevention of tuberculosis, and that the school might be made a most important centre for their promotion.

1. The medical examination of all children on admission to school and periodically afterwards, supplemented, as it must be to attain its full value, by information systematically acquired in regard to the health conditions of their homes and all living in them.
2. The exclusion of children found to have open or revealed tuberculosis.
3. Special care as to the feeding and general hygiene of children from tuberculous families, including avoidance of fatigue.
4. The frequent wet cleansing of schools.
5. The reduction of overcrowding.
6. The improvement of arrangements for the ventilation and warming of schools.
7. Careful attention to the personal hygiene of all scholars, especially in relation to the removal of adenoids and of carious teeth.
8. The periodical examination of caretakers and teachers, and the avoidance of excessive strain on the voice of the latter or overfatigue in general.

Dr. Pascheff (delegate of the Bulgarian Government) said that in that country measures to exclude tuberculosis from the schools had been adopted and were very thoroughly carried out, especially in the secondary schools. The most important was the institution of a system of school doctors, organized in 1903, which had proved very efficient. The school doctors examined the pupils regularly and notified the existence of all infectious diseases, including tuberculosis, to both teacher and pupil, and gave advice as to the precautions to be taken. Another measure taken for the prevention of tuberculosis was the organization of summer colonies, mainly with the object of strengthening weak and delicate pupils, and thus diminishing any existing predisposition to tuberculosis. Special buildings had been erected by a benevolent society of ladies for this purpose. Further, the Bulgarian sanitary department had established two sanatoriums for scrofulous and tuberculous children on the Black Sea, one at Varna and the other at Burgas. A sanatorium for tuberculous adults existed at Trojan, and a fund had been formed to build a special sanatorium for tuberculous teachers.

A Correction.

In the report of Mr. N. Bishop Harman's paper on the classification of children in blind schools (British Medical Journal, August 17th, p. 400, col. 2) there is an error which should be corrected. It was inadvertently stated that Mr. Harman had spoken of "the great decline in the proportion of the blind in which the blindness was due to the purulent ophthalmia of infancy." Unfortunately, there is no great decline in this blindness; these cases still form more than one-third of all the blind in London County Council schools. The decline has taken place in the total number of cases in which blindness is due to purulent inflammations in the later years of life.

MEDICAL NEWS.

We are glad to learn that the accident to Dr. Nicolson, C.B., Lord Chancellor's Visitor in Lunacy, was not so serious as has been represented. He was driving in a hansom to make an official visit to the Hull City Asylum on August 17th, when the horse bolted and threw the driver. Dr. Nicolson jumped out, but, falling to the ground, sustained a downward dislocation of the left shoulder. This was successfully reduced by Dr. Close, and the patient, who sustained no other injuries, is making a satisfactory recovery.

The following are the names of the three medical men who have accepted appointments to the medical staff of the Coventry Dispensary: Jno. Inman Langley, M.R.C.S., L.R.C.P., M.D.Brux., Alfred Pytches Blanchard Ellis, L.S.A., Andrew St. Lawrance Burke, L.R.C.P.Ire., L.R.C.S.Ire. The following, who were previously members of the staff of the dispensary, have retained their appointments: Denis Ignatius McVeagh, M.R.C.P.Ire., L.F.P.S.Glas., John Alfred Loudon, M.B., C.M.Edin.

It may interest those of our members who own motors to know that a co-operative society for the supply of everything the motorist can want has been formed. It already has a large membership, and is able to offer very considerable discounts upon tyres and other expensive parts of the motorist's equipment; it also undertakes repairs, gives advice to its members as to the best articles, and has large showrooms, where novelties can be inspected. Membership involves the taking of one or more £1 shares and payment of an annual subscription of 10s.; and as no member can hold more than £200 shares, the co-operative nature of the Association is fully secured. The address of the Society is the Automobile Co-operative Association, 1a, Albermarle Street, Piccadilly.

British Medical Journal.

SATURDAY, AUGUST 24TH, 1907.

TUBERCULOSIS AND SCHOOLS.

OF the general meetings of the International Congress of School Hygiene the most sparsely attended and perhaps the dullest was that at which the question of the school in relation to tuberculosis was set down as the subject for discussion. This lack of interest was due not to any defect in the papers by which the subject was introduced, but to the fact that so little is certainly known and so few investigations have been made in England into the question of the relation of the school to tuberculosis. Lack of interest was therefore inevitable; but if the discussion fell flat it will nevertheless have done a certain amount of good. For several years we have maintained that the amount of tuberculosis, whether declared or latent, in elementary and secondary schools has been generally under-estimated, and have urged that the fact should be realized. It is satisfactory to find that a subject which was absent from the reports of the Medical Officer to the London Education Committee for the years 1904 and 1905 should find a place among the diseases of school children discussed in that officer's report for 1906. It is satisfactory, too, to observe that whereas at the preliminary conference of school hygiene held two and a half years ago the subject was ignored, at this last congress not only was one general meeting devoted to a set discussion on the school in relation to tuberculosis, but on the same day all the papers with one exception in Section VII dealt with the question.

Dr. Newsholme, who contributed the opening paper at the general meeting, expressed the opinion that not more than 1 in 300 children in schools show revealed or diagnosable pulmonary tuberculosis. This word *revealed* it is that is misleading. Dr. Newsholme admits that "notwithstanding the small amount of revealed tuber-"culosis among school children, such children, if they "die of other diseases, show, in a very high percentage, "evidence of tuberculosis, especially in the bronchial "glands. Thus Naegeli, at Zurich, found in autopsies "of children aged 1 to 5 that 17 per cent., and of "children aged 5 to 14 that 33 per cent. had tuberculous "lesions." Dr. Newsholme goes on to say, "Such latent "lesions are undoubtedly very frequent in children. I "cannot doubt that the true interpretation of these "figures, showing as they do heavy incidence of tuber-"culosis before as well as during school life, is that "tuberculous infection in children is nearly all domestic "and not scholastic in origin."

The Director of the Children's Hospital at Bucharest informed us recently that of the children who died of other diseases in that hospital 90 per cent. were found after death to have suffered from tuberculous infection of some sort. As the results of medical inspection of the Berlin municipal schools, 225,337 children came under medical examination. Of these, 3,056 were "put "back"—that is, not allowed to come to school for a certain period of time. Of the children admitted, 7,335, or 22 per cent., required continuous supervision, because of their eyes or ears, or general weakness, or slight tuberculosis. Tuberculosis, though found in many cases, was rarely in a stage so advanced as to keep the child from school.

Now the fact must not be lost sight of that a single child affected with pulmonary consumption may infect many others, and that the infection may settle on glands, bones, lungs, or brain, according to the special susceptibility of the individual child thus exposed to infection.

Very little is really known about the percentage of children with phthisis in schools; we have to judge by fragmentary evidence collected here and there; thus Dr. Newsholme believes that one child out of 300 shows revealed or diagnosable pulmonary tuberculosis; at Dundee Dr. A. P. Low found no pulmonary tuberculosis in 517 children; at Dunfermline Dr. Ash had a similar result in examining 1,371 children; Dr. Mackenzie, in Edinburgh, found 14 cases in 600 children; Professor Hay, in Aberdeen, 3 cases in 600 children; the Charity Organization Society report on Edinburgh (Canongate Schools) gives 19 cases in 1,318 children. Dr. Greenwood at Blackburn found 6.7 per cent. in 1,028. The fitness of these last children for school was already in question, and represented, according Dr. Newsholme, a selected sick population. It is impossible to believe that these varying results can have been due to the greater or less care with which the children were examined; therefore, it might be fair to attribute them to heredity—and in that case the different occupations in which the parents were engaged would have to be considered—to locality, or to insanitary homes and general neglect. The records of the Tuberculosis Dispensary in Edinburgh show the special occurrence of the disease in certain houses and streets and the frequency of tuberculous disease in children and in housewives. The statistics quoted are on far too small a scale to permit a judgement to be formed on a problem which concerns such vast numbers of children. Those mentioned above are among a fortunate handful who have been medically examined and will, it is hoped, receive some treatment. But what about the thousands of scholars who have not yet been examined and whose only chance of being singled out is that some intelligent and kindly teacher may hear a child cough, or thinking that it looks ill, send it home, the very worst place he can send it to, if Dr. Newsholme's theory that the disease is nearly always domestic and not scholastic in its origin be correct? In order to do this, too, the teacher must be most conscientious, for it may mean his losing the school attendance grant. According to Dr. Newsholme, in the children of adult consumptives lesions are present to a preponderant extent—a fact which supplies a valuable indication for preventive treatment. This view is possibly sound, although there is at present only the most fragmentary evidence in support of it. But, to be strictly practical, unless a life history of each parent is forthcoming, how is the condition of a child who may have latent foci to be determined? A child may be seriously affected by phthisis and yet, even to an experienced eye, arouse no suspicion as to its condition. Nearly every child has a cough from time to time, and consumptive children cough very much like those with ordinary bronchitis or coryza. What the eye of an experienced teacher can detect is the feverish flush, the quickened breathing, and the unnatural brightness of the eyes, and these make him suspect that mischief is going on. If with this there is a cough and loss of weight, then the child must be held to be under grave suspicion of tuberculosis of the lungs until the contrary is proved by medical examination. But when the symptoms

have become so marked that they can be detected by an ordinary intelligent teacher interested enough to care, the child is, unfortunately, in a bad way so far as recovery is concerned. The teacher will possibly now inquire into the family history, and in passing we may ask what of the neighbours in whose houses the child may really have picked up the tubercle bacillus? He may find out that there is consumption in the home, the medical officer will be communicated with, and he may succeed in getting the child removed from school either temporarily or permanently.

Dr. Newsholme proposes two measures: The first is the removal of the children from their homes, either temporarily or permanently, to homes or schools at the seaside or in the country. This suggestion is admirable, but unfortunately at present quite impracticable, because there is no provision worth mentioning for such cases, and we must face the position in a practical spirit if possible. Dr. Ménard, of Berck, whose great experience enables him to speak with authority, considers that a period of three years' systematic treatment by good food and fresh air is necessary for the cure of a case of tuberculosis, and that every large city with slums, such as exist in London, ought to have at the seaside a thousand beds for every million of population for tuberculous disease of the joints, and a similar proportion of beds in country sanatoriums for cases showing predisposition to or phthisis in its early stages.

The second suggestion, which Dr. Newsholme considers must always occupy a supreme position, is the removal of the patient himself, rather than measures for removing the children, from the infected domestic circle. Now, we venture to contend that both measures are necessary simultaneously, for in this way, while using prophylactic measures for the young, we should safeguard the community by isolating the dangerously infectious. But here, again, there is the additional complication—a most common one—that several people in the one home may be suffering from the disease in different stages. How is that difficulty going to be met? Certainly not by removing the family and putting the child in an empty house. The infection of the domestic circle in England, under prevailing conditions in schools, is of far less importance for the child than its removal to healthy surroundings. Before the presence of tuberculosis in it is realized the child is so bad that it cannot be made worse by other members of the household suffering from the same disease. What is important for the amelioration of its condition is abundance of fresh air, good nourishing food, sleep, and avoidance of fatigue; these it can only obtain by going away to healthier conditions.

Let us now turn to the facts and opinions given last autumn to the Académie de Médecine by the late Professor Grancher. They were the results of an inquiry he had been conducting with a band of collaborators into the frequency of glandular and pulmonary tubercle among children attending the primary schools in Paris. The examinations of the children began on November 23rd, 1903, and were continued until the end of June, 1906. In all 4,226 children (2,318 boys and 1,908 girls) were examined; but it is needless to enter into the details, which were published in our issue of November 17th, 1906. The chief point which concerns us here, and which, coming as it does from a physician of the authority and insight of Professor Grancher, must be listened to, is that he believed tubercle of the glands and lungs in children to be curable, provided measures were taken to insure its recognition at the very start by systematic examination which allows the three stages preceding the classical first stage of Laënnec to be recognized. When prolonged expiration, and especially crepitations, appear all the signs of the first stage of Laënnec are present; but it is already very late to treat pulmonary tubercle for the elimination of bacilli, the evidence of lung necrosis is almost contemporaneous with this so-called first stage. Although the result of Professor Grancher's examination was that 15 per cent. of the 4,226 children examined were tuberculous, yet only three had bacilli in the sputum. Thanks to his system of making a diagnosis before the disease had got too strongly established to be combated, there would be good hope of the recovery of children with slight tuberculosis without expectoration by placing them in families in the country, paying a sufficient sum to give them proper hygienic surroundings, constant fresh air, and good food. The child would attend the village school and be watched by the local doctor, the only objection to this plan being the possibility of the tubercle becoming open and the child infecting the family where it lodged or its school companions. For this reason and to secure better treatment, Professor Grancher advised that for a few years an experiment should be made by placing the children recognized as affected in a sanatorium school, where they would continue their studies under the supervision of a doctor who would regulate not only the air cure and necessary dietary, but also the hours of work, gymnasium exercise, recreation, etc. Two or three of these schools in the suburbs, one for girls and one for boys, would, he thought, be sufficient, and in two or three years it would be possible to judge of their value from the results obtained.

This advice is sound, and under a complete scheme of medical inspection of schools may in time prevail. But the fact must not be lost sight of that the early diagnosis of tuberculosis, even in the first stage of Laënnec, is one of the most difficult tasks even when the physician has experience and training. This is why too often tuberculosis is mistaken for bronchitis in children. To make such minute observations as enabled Professor Grancher to recognize three distinct stages before the first stage of Laënnec requires special training in the recognition and interpretation of the slight physical signs which alone are present in these early stages.

We would go even a step nearer the root of the matter than Professor Grancher: we would apply prophylaxis pure and simple. We would single out all the cases of children suffering from malnutrition—pale, thin, anaemic, and narrow-chested—who cannot derive proper benefit from the school lessons. We would inquire into the life-history. If the family was healthy we would merely knock off some of the child's lessons; we would recommend its doing breathing exercises three or four times a day before an open window; we would give it a course of cod-liver oil and recommend the parents to feed it up and to allow it a great deal of sleep. If this plan did not answer we would send it to the country as Professer Grancher suggests. If, on the other hand, there was phthisis in the family, the child should at once be sent away. We have very few places to send them to at present. There are great drawbacks to sending them into families in the country, and it is time we had regular sanatoriums or sanatorium schools in Great Britain for children predisposed to or in the very early stages of tuberculosis of the lungs. This would add, for instance, very materially to the effectiveness of Dr. Philip's valuable scheme in

Edinburgh, where the dispensary for tuberculosis plays such an important part, but where the only thing which appears best to be done with regard to school children is that a volunteer samaritan committee of ladies pay attention to the case of school children affected with the disease, so as to have their education supervised on more physiological lines. We should like to see in the plan of Dr. Philip's scheme, which appeared in our issue of December 1st, 1906, three more circles marked "colony "for children," one of these to be for cases of predisposition or of latent tnberculosis, with a school attached; one for cases in the early stages, where the children would merely have a health cure with no lessons, and one for very bad cases. We should also like to see a circle marked "office of the medical officer of health," with communication from it to the dispensary and to the school colonies, for that officer should be closely associated with any scheme for the eradication of tuberculosis. An aspect of the case which does not seem as yet to have presented itself is that the medical officer of health, who is notified of cases of phthisis in households, might send a list of the names and addresses of such people, say once a month, to every school in his district. In glancing over it the head teacher would know if children from these houses attended his school, and, if so, immediately communicate with the medical officer of health for advice; or, in visiting the house where a case had been reported to the medical officer of health, that officer could inquire if there were children of school age in the house, and, if so, the name of the school they attended, and at once take the proper steps.

Tuberculosis in teachers is another problem which will play an important part in this question, but will be better discussed in another article.

These are some of the aspects of this difficult problem, which, in view of future medical inspection of schools, cannot be thought out too soon or too thoroughly. There have been a number of admirable partial schemes, but up to the present none which embraces the question as a whole.

PLAGUE IN INDIA.

The letter which the King has addressed to the Viceroy marks a new spirit in the attitude of the public mind toward the appalling prevalence of plague in India. It expresses His Majesty's sympathy and his high concern when he thinks of "the misery that has been borne "with such silent patience in all these stricken homes." But the King knows, nobody better, as his life has shown, that sympathy is not enough; it is a beautiful thing, it helps to mend broken hearts, but it does not prevent the breaking of more hearts. Therefore the King goes on to express the earnest hope and prayer that the further measures now being prepared by the Viceroy "in consultation with zealous and able officers "may be crowned with merciful success."

What these measures will be does not appear to have been finally settled, but something as to their probable nature may be gathered from the correspondence between the Secretary of State and the Government of India noticed at p. 482 of this issue. Meanwhile, it will not be unprofitable to sketch in very rough outline the history of plague in India, and of the measures taken for its prevention. The disease appeared in Bombay in July, 1896, and was officially recognized on September 23rd in that year. The last epidemic in the plains of India had occurred in 1836, but it never attained anything like the proportions of the visitation which began eleven years ago and still continues. How the infection reached Bombay is not certain: it may have come from Hong Kong, or it may have come from some endemic focus in Persia or Arabia. From the city of Bombay plague spread to the Presidency, and thence to other parts of India, the Punjab having been severely affected in recent years. Mr. Morley told the House of Commons in his budget speech last June that from 92,000 deaths in 1890, the figures went up to 1,100,000 in 1904, and were over 1,000,000 in 1905; in 1906 there was a gleam of hope, the mortality sinking to under half a million, but the disease again flared up this year, and for the first four months the deaths numbered 642,000, a record exceeding that for the same period in any past year. Altogether from the first outbreak in 1896 down to April, 1907, over 5¼ million people have died of it. It is true that the population of India is some 300 millions, but the disease does not involve the whole of India, being in the main limited to Bombay, the United Provinces, and the Punjab. Mr. Morley asserted—and no one who is acquainted with the history of the last ten years will dispute the assertion—that the Government of India has given most serious, constant, unflagging, zealous, and energetic attention to the concerting of measures for the extermination, or, if that be deemed impossible, the mitigation of the epidemic.

But the Government of India did not at the beginning take the proper measures, by way of scientific experiment and research, to discover the true pathology and etiology of the disease, and in no department of human activity is it more true than in preventive medicine that knowledge is power. This initial mistake has now been remedied; empirical methods have been or are to be abandoned, and the administrative problems, though they have been rendered enormously more difficult of solution by the delay, can now be faced with greater hope of success. In must, in fairness to the Government of India, be said that it did endeavour to act upon the advice of the Special Plague Commission appointed in 1898, with Sir Thomas R. Fraser as president. That Commission carried out a prolonged inquiry in India, and presented a voluminous report, in which every aspect of the matter was very fully considered in the light of the evidence taken. The measures recommended to be enforced in large places were disinfection, inoculation, isolation of the sick, and evacuation of specially-infected quarters. In villages and small places the chief measure recommended was evacuation, and it was pointed out that in some parts of India the natives already evacuated their villages spontaneously on the appearance of plague or the discovery of dead rats. The publication of this report led to the issue by the Government of India of a long memorandum generally accepting the recommendations of the Commission, but it is now seen that the scheme thus evolved calls for modification.

It must also be placed to the credit of the Government of India that it early appreciated the value of Mr. Haffkine's discovery in 1897 of a method of inoculation against plague with a fluid prepared from the sterilized virus. It is very much to be regretted that the relations of Mr. Haffkine with the Government after many years of most valuable and highly-appreciated service should have been clouded by a misunderstanding which ought to be brought speedily to an end, so that his great knowledge and scientific acumen may again be available for the benefit of the suffering millions of India.

Without attempting to trace the spread of the disease in India, we may pass on to January, 1905, when, at the suggestion of the Lister Institute, the Secretary of State

for India entrusted to an advisory committee, consisting of representatives of the India Office, the Royal Society, and the Lister Institute, the duty of making further investigations into some of the problems concerning plague. The work was organized by Dr. C. J. Martin, the Director of the Institute, and ever since a scientific commission has been at work in India, with head quarters at Bombay. Its attention has been for the most part directed to the study of the epizootic spread of plague among rats, to the precise relationship of the epizootic to the epidemic, and to the modes by which the disease may be communicated from the rat to man. Two reports have been published,[1] both dealing with the results of observations and experiments made in the laboratory. It was known that the rat was susceptible to plague, and that the epizootic prevalence of plague among rats commonly preceded and accompanied an epidemic of the disease. The main results of the laboratory experiments have been, first, to establish beyond peradventure that the bacillus is carried from infected rats by rat fleas, and that the rat flea feeds readily on man; and, secondly, that the infection does not long survive in floors or walls, even when these are grossly contaminated. The truth of the theory that the rat was the main agent in the conveyance of the disease to man—long ago advanced on epidemiological grounds in this JOURNAL, and steadily maintained in the face of rather vehement criticism—was thus vindicated, and an important step taken towards the formulation of a definite and practical scheme of prophylaxis.

In July, 1905, the Royal College of Physicians of London presented to the Secretary of State for India a memorandum drawing attention to the grave danger, not only to India but to all parts of the Empire, which arose from an epidemic of such vast proportions and prolonged duration as that which had prevailed in India since 1896. The memorandum went on to express the opinion that, besides the bacteriological study of the disease instituted at the instance of the Lister Institute, there were many other subjects which required to be investigated, and that even the bacteriological features needed a larger staff of observers. In view of the inadequacy of the sanitary service of India to meet the exceptional conditions of so great a calamity, the College recommended the establishment of a special sanitary service, and submitted a scheme for its organization in three sections—intelligence, administration, and bacteriology (diagnosis and research). Finally, it pointed out that this organization might become of permanent use to the sanitation of India after the termination of the plague epidemic.

Mr. Morley's dispatch of July 26th, 1907, the final paragraphs of which we reproduce elsewhere, is a State document of momentous importance. Couched in terms of the most courteous deference, it is yet informed by a delicate irony whose shafts cannot fail to penetrate. "Your prolonged experience"—it is the Indian bureaucracy Mr. Morley is addressing through the Governor-General—"your prolonged experience in "dealing with the disease, and your acquaintance with "the habits and sentiments of the people, enable you to "say with unrivalled authority what is the best form of "sanitary organization, what measures are expedient "and can be enforced with good results, and at what "point intervention becomes mischievous and dan-"gerous. But the fact that plague has been fatally "active in India over eleven years, that the number of "victims exceeds five and a quarter millions, that its "virulence is unabated and its progress uncontrolled "necessarily give rise to doubt as to whether everything "that can be done has been done by the responsible "authorities, and whether the last word of medical "science and administrative skill has really been said." In these words Mr. Morley has given forcible expression to an opinion long held by the medical profession, and now very generally entertained by the British people, who are beginning to feel a keen sense of disappointment and dissatisfaction with the small amount of success which has rewarded the efforts of the Government of India, and more than a suspicion that the failure has been due to these efforts being ill-directed.

[1] They were analysed in the BRITISH MEDICAL JOURNAL, 1906, vol. ii, p. 1045, and 1907, vol. ii, p. 155.

THE UNBORN INFANT.

"THE childhood shows the man, As morning shows "the day," sang Milton, and Wordsworth echoed the thought in the well-known line, "The child is father of "the man"; but that was long ago, and the importance of the hygiene of the infant and the child is now a commonplace of the medical man, the educationalist, and the publicist. From the moment of his birth, or rather of his breathing (for the stillborns yet await registration!), the infant is recognized as the child of the home, the schoolboy of the near future, and the father of the next generation, and he has much done for him to fit him for his coming duties, private and public. *From his birth*—true; but before it? What is done for him then? What precautions are taken that his life is not brought to an untimely end during the first three months of antenatal existence, what restriction is laid upon the conduct of his mother during the nine months when she carries him in her womb, what means are taken to prevent her supplying him with the alcohol which is proving a poison to her tissues and is not likely to be less toxic to his, what preparations is she making to have ready for him a full and pure supply of milk to satisfy his hunger after he is born, what is she doing to make herself a mother to him in reality as well as in name? "The child is father of the "man" we moralize, beginning with his birth; but we are beginning too late, we are at least beginning so late as to imperil the chances the child has of starting the race of life with healthy tissues and normal organs. We must not overlook the fact that whilst the child is father to the man, so also the unborn infant of yesterday is the newborn babe of to-day.

That the antenatal aspect of the great question of prevention of disease and degeneracy is at last beginning to receive a certain measure of attention is manifest from a survey of the pages of the medical journals of the time. This week we publish an Address on the Unborn Child: its Care and its Rights, by Dr. T. Arthur Helme of Manchester, and this is not the first time these columns have contained articles dealing with antenatal pathology and antenatal hygiene; three weeks ago the *Journal of the American Medical Association* contained an address by Dr. J. Ross Snyder on the status of the child, including an estimate of the rights of the unborn infant; a few months ago the President of the Edinburgh Obstetrical Society chose as the subject of his inaugural address the falling birth-rate and the means of checking it; and last year a considerable part of the proceedings of the National Conference on Infantile Mortality held in London was occupied with the antenatal causes of that mortality. The medical profession is becoming alive to the prenatal problems involved in the building up of a nation of strong and healthy men and women; but the general public, and even the thinking men and women of the day, have their eyes still nearly closed to

the dangers of antenatal evil influences, as is shown by a quotation Dr. Helme makes from an evening paper, and which reads thus: "Nature no more goes to the "trouble of producing children to die in the first few "months than she goes to the trouble of producing plants "that fade before they blossom." Nature is constantly forming ova in the ovaries which are never fertilized at all, she is constantly growing fetuses in the uterus which die before they are born, and she is too often bringing infants to the birth only to see them perish in a few days or weeks from congenital debility or the morbid causes which are grouped under this name. That Nature is to blame for these generative failures is not maintained, but that she is powerless to prevent them by any *vis medicatrix* inherent in herself is quite evident and obvious. The infant in too many cases does not start with a clean sheet at birth, and the weaknesses and maladies which handicap him throughout life are often to be traced to the habits of his parents and to the hygienic errors of his mother during the months when he exists in her uterus or during the years when he lies as an unfertilized cell in her ovaries.

Closely associated with this tragedy of antenatal disease and death is the alarming spectacle of the progressively-falling birth-rate in this country and in nearly all the civilized Western nations. It would seem as if an epidemic of Malthusianism were sweeping over the most intelligent part of the human race, and the most disturbing feature in it to us who are watching it is that we have no assurance that we have yet reached the crest of the wave. This Malthusianism, we must regretfully own, is based on selfish motives in too many instances, and Dr. Ross Snyder raises a corner of the veil which covers the hidden causes of the falling birth-rate when he says: "A countless number of our young "women, even before marriage, are entertaining ideas, "notions rather, regarding the hardships and taxations "incident to child rearing. . . . A certain kind of "instruction is given which, since its purpose is to "prevent motherhood, precludes any education that "would fit these young women for that motherhood. "I know of nothing more nerve-wasting, nothing more "cruel, than the way newly-married girls are beset with "older married women, bringing ghosts of child-bed "and bugaboos of child-care with which to haunt the "bridal chamber."

Dr. Helme's address contains several suggestions which are practical and well worth stating, even if they are not in every case novel. The compulsory registration of a birth within twenty-four hours of its occurrence is a step in the right direction, unless, indeed, the carrying of it out is to be laid as an additional burden upon the medical attendant without the payment of a fee. The education of the public to a knowledge of the dangers of the marriages of the unfit, of the risks of abortions, of the necessity of medical advice in abnormal pregnancies, and of the influence that *ante-partum* conditions have upon such functions as lactation, is most desirable, and may possibly be gradually carried out by means of the army of health visitors and certificated midwives that is now slowly but surely invading all the towns and villages of England and taking the place of the untrained women of the past. The public ought also to be taught the risks to the unborn child of habitual inebriety of the mother, and the dangers which attend the continuance of factory work and the like by women about to become mothers. It must, however, be admitted that when we begin to try to frame compulsory measures to ensure the carrying out of improvements in the hygiene of the unborn infant, we find ourselves in the midst of great practical difficulties. In what way, for example, can the registration of all pregnancies be carried out? Is it likely that a public which contains conscientious objectors to the vaccination of babies against small-pox would lightly agree to the restriction of the marriages of such as were regarded as unfit for the procreation of children, and upon what data can we go in fixing the degrees of unfitness? Dr. Helme approves of the idea of the provision of hospitals for the reception and care of women during pregnancy, and theoretically the idea is admirable; but it has already been for some time before the profession, without being acted upon save in the most occasional way. At the same time we must not be pessimistic, and everyone will wish all success to any effort which may make for the diminution of infantile disease and death and for the procreation of healthy offspring to carry on the great traditions of a world-wide empire. Although the writers to whom we have referred deal specially with the antenatal means of checking infantile mortality, it must not for a moment be thought that they discourage the methods of saving life after birth by means of proper feeding and good hygiene; they recognize all the good that is being done by these agencies, but they strive to point out that much of the work that is going on will fail if the infants are brought into the world already diseased and already predisposed to the onslaughts of morbid germs. There is one matter upon which there seems to be an absolute consensus of opinion, and that is that we must "concentrate upon the mother" if we would see improvement in the health of the child. As Napoleon is reported to have said, "The future destiny of the "child is always the work of the mother."

AN APPEAL FROM GYNAECOLOGISTS.

WITH this issue begins the publication *in extenso* of the proceedings of the thirteen Sections among which the technical work at the Annual Meeting of the British Medical Association was this year distributed. As will be seen, the scientific interest of the papers read and discussions held in the Section of Obstetrics and Gynaecology is quite up to the average of past years. Some of them received immediate criticism from those present and led to interesting debates, but a great part of the second day's session was devoted to what may perhaps best be described as a consultation on a subject of general public importance. In the course of it, indeed, several of the eminent gynaecologists present gave accounts of their experiences of the early and post-operative history of uterine cancer, but the immediate subject of the consultation was the measures which should be recommended with a view to securing earlier recognition of cancer of the uterus. Various suggestions were thrown out, but in the end no final decision was reached, the task of forming one being, by unanimous vote, deputed to a special committee *ad hoc*, which it was resolved to ask the Central Council of the British Medical Association to appoint. This being the case, further consideration of this part of the topic may conveniently be deferred.

The immediate interest of the matter lies, therefore, in the genesis of the consultation, or, to speak more accurately, in the way in which it has come about that gynaecologists see the need for some active step towards taking their professional brethren and the public at large into their confidence as to the need existing for co-operation in such a question as the early recognition of cancer of the uterus. This was plainly indicated by Dr. Herbert Spencer in the very able address by which

he introduced the question. He first showed that cancer of the uterus accounts for far more deaths amongst women than malignant disease in any other situation, and then frankly admitted that the attempts made by operating gynaecologists to lessen this mortality are at present so exceedingly unsatisfactory, so signally fail to save lives, or to prevent recurrences, that many of the leading gynaecologists of the day regard the whole subject with a feeling approaching despair. On the other hand, he did not consider that these pessimistic views were justified, or that the discouraging results obtained by the operators to whose views he had referred, could be held to refute the results of other operators all over the world. These, he indicated, justify a belief that cancer of the uterus is at least as curable as cancer anywhere else; the reason, in short, why efforts to stem uterine cancer mortality are not at present as successful as they should be is that so few cases appear upon the operation table in a really operable condition, or at so early a stage of the disease that comparatively simple operations, such as high amputation of the cervix and vaginal hysterectomy, which entail very small immediate risk but are nevertheless effective in their results, can properly be performed. What constitutes an operable case of cancer is a matter upon which opinions necessarily differ greatly, some surgeons being ready to regard as operable any case in which the cancerous growth can be removed with a fair likelihood of the patient being out of their hands for at least some time, whilst others look to final results only, and shun any but cases in quite an early stage. Dr. Spencer, however, was probably right when he estimated that at most only a fourth of all the cases of uterine cancer in this country reach the gynaecologist's hands at a time when there is a reasonable chance of cure by operations of small initial risk. Nevertheless, he was able to show that the percentage of cures effected even under present circumstances, is not inconsiderable, so that his belief that much better results would be obtained if operations were performed more promptly, would seem fully justified even if early recognition and early treatment of malignant growths were not a recognized need, whatever part of the body is in question. Hence the desirability of an earlier recognition of uterine cancer than at present obtains is obvious. What steps should be taken in the matter it is not necessary now to consider, the point being one which may be left for settlement by the Committee, for the appointment of which the Section decided to apply to the Central Council; so far as the general body of medical practitioners is concerned the mere fact that the need for assistance has been expressed by a body of men such as those who took part in this consultation, will go far towards stimulating interest in the matter, if increase in this direction be really needed.

As to the correctness with which the case had been presented by Dr. Spencer, there was entire agreement on the part of the members present, and the speeches which followed were all to the same general effect. Such differences of opinion, indeed, as came to the surface practically only concerned the exact degree of importance to be attached to the different factors indicated by Dr. Spencer as together responsible for the late arrival of the subject of uterine cancer in the gynaecologist's hands. This is a matter of importance, for on the view taken as to the main influences which have to be counteracted must depend the decision as to the steps which should be taken.

For the general nature of these factors readers may be referred to the discussions; here it need merely be noted that since it is a well-recognized amiable weakness of gynaecologists as a body to regard general practitioners as exceedingly slack persons, no one need be surprised to find that some were disposed to throw the blame for the late discovery of uterine cancer mainly on the family medical man. Even, however, if a true bill could really be brought against general practitioners in this respect, the gynaecologists would still have to take some portion of the blame to themselves; their zeal for early diagnosis is comparatively new, and the majority of textbooks deal far more fully with the appearances and treatment of well-developed malignant growths than with their recognition at a very early stage. It is also not improbable that some of the pessimism on the subject which admittedly has seized a certain number of gynaecologists may have spread amongst general practitioners likewise; while a further consideration which cannot be entirely overlooked is that gynaecology as a separate branch of medicine is not yet very old, and that in the history of its tempestuous youth there have been some swings of the pendulum so violent as to affect, though very unjustly, its reputation at the present time. Hence it may have come about that a certain number of medical men are less ready to overcome the scruples of their patients and insist upon exhaustive examinations than they would be if they felt assured that by getting the case into the hands of the gynaecologist good would certainly result. In connexion, however, with any case in which uterine cancer is in any degree to be suspected such a feeling is entirely out of place, for, given a cancerous growth all are agreed that its immediate removal, if possible, is a necessity beyond dispute.

One final point which remains to be noted is the fact that during the discussion the occurrence of an irregular discharge seems to have been generally accepted as the first symptom which should awaken suspicion. Such a symptom, however, when caused by a malignant growth, would appear necessarily to connote considerable development, if not ulceration, so it is to be hoped that as time goes on gynaecology will be able to aim higher than the discovery of cancer at this comparatively late stage. As this is not at present possible, it would certainly be a great advance and lead to immense improvement in results if all cases of cancer were brought under the observation of an operator as soon as abnormal discharge occurs. This, therefore, is the consummation towards the achievement of which all now should combine to work.

THE CENTRAL EMERGENCY FUND.

We would again invite the attention of all members of the British Medical Association to the objects of the Central Emergency Fund, an account of which is given at page 149 of the Supplement. To ensure its success nothing more is required than that those who see the notice should be persons who recognize the justice of not allowing men who suffer in the common cause, in the interests of the whole profession alike, to pay a heavier penalty than circumstances render inevitable. These are days when medical practitioners of all classes have constantly to deal with public bodies, some purely official, others mere collections of private individuals, but all possessing the common characteristic of being well organized and desirous of exacting from the medical profession the greatest possible amount of work for the least possible return in the shape of pay. For years past the tendency on the part of such bodies has been to assess the commercial value of medical services at rates sometimes actually lower than formerly, sometimes relatively lower in view of the increased expense

of life. The dealings of a certain proportion of medical men with such bodies are too infrequent, too intermittent for them fully to realize the difference, or to experience perhaps more than a passing feeling of annoyance and resentment, but there are others who practically depend for their livelihood upon their employment by the public and semi-public bodies in question, and the way they are treated by them is a matter of primary importance. Too often the soundest advice which can be given them under present circumstances is that they should refrain from kicking against the pricks, but there are times when in the general interest even more than their own it is well that they should cease to suffer in silence, that, on the contrary, they should express their discontent to their employers politely but firmly, and join with others in like situation in asking for better terms, and in default declining to do the work any longer. Occasions such as these have of late years arisen with increasing frequency, and at times when no impartial person who examined the circumstances would deny that it was a duty to take the action indicated in the general interest of the medical profession. In most cases the results have been good, and always must be good when what is asked is perfectly reasonable, and so long as medical men exhibit a reasonable amount of *esprit de corps*. Hitherto there have been a few occasions in which the men whose future is directly imperilled have not shown themselves ready in the end to join hands with their fellows in the general interest; this being the case, it is all the more incumbent on medical men more happily situated elsewhere to see that the financial loss experienced by an actual combatant is minimized as much as it may be. This is the primary object for which the fund to which we draw attention has been established, though, as will be seen on reference to its regulations, that power has been reserved to apply contributions, not specially earmarked, to the general purpose if need be of assisting in the settlement of disputes between organized bodies and individual members of the medical profession. By contributing to it, readers will not only be, in common parlance, playing the game, but furthering their own direct interests, for if these contests are fought to a finish, the end must be a general increase in the public estimate of the pecuniary value of medical services.

SOME PUBLIC HEALTH APPOINTMENTS.

THE Montgomery County Council proposes to appoint a medical officer of health, and has drawn up a list of the duties which he will be expected to discharge. These include, in addition to those prescribed by Act of Parliament or by special order of the county council, the duty of collating and reporting upon the periodical and special reports of medical officers of health of all the local sanitary authorities in the county. He must also make himself acquainted with the sanitary condition of each district in the county, and pay special visits from time to time to ascertain whether the Acts relating to public health are enforced in each district, or whether there are matters affecting public health which require to be dealt with, so that the sanitary committee may be able to advise the county council. He will also be required to consider the reports of the inspectors under the Sale of Food and Drugs Acts and to report thereon, and to make suggestions to the inspectors; he must also perform the duties and accept the liabilities imposed by the Housing of the Working Classes Acts on a county medical officer, and advise the sanitary committee on any Bills introduced into Parliament, and as to the sanitary condition of any buildings belonging to the council. He will be required to attend all meetings of the council and of the sanitary committee, and if unable from accident or illness to attend to his duties for one calendar month, he must undertake to provide a substitute approved by the sanitary committee at his own expense. He is to hold office subject to six months' notice on either side, and is not entitled to compensation, pension, or superannuation allowance. The advertisement does not contain a statement as to the remuneration, but the clerk to the county council has issued a printed slip stating that the salary offered is twenty-five guineas per annum. When the list of duties is compared with the remuneration it will occur to most readers that there is a certain disparity. The county council may have correctly gauged the estimate which the medical men who aspire to engage in the public health service are disposed to put upon their services, but a suspicion must arise that the long list of duties drawn up by the county council is really intended to throw dust in the eyes of importunate persons suspected of desiring public health administration in the county of Montgomery to be put on a proper footing. The county has an area of nearly 600,000 acres, and a population at the last census of 64,000, its rateable value is nearly half a million, and the county council offers a fraction over 10s. a week to the expert medical officer who is to advise it in public health matters. But the enterprising borough of Blackpool, with a population of about 50,000, has hit upon another way of getting public health work done even more cheaply; it is advertising for a fully qualified medical man to act as resident medical officer at the infectious diseases hospital and assistant medical officer of health, in return for board, lodging and washing, without any salary. How it is hoped to catch applicants is ingenuously shown in the second paragraph of the advertisement, which suggests that a candidate for the diploma in public health would find this a good opportunity for taking the required six months' work with a medical officer of health. Blackpool therefore proposes to appoint an assistant medical officer of health who has not the qualification for the office of medical officer of health, and who is therefore ineligible to be appointed, for the Public Health Acts do not recognize assistant medical officers of health who do not hold the diploma in public health. The proposed appointment therefore is illegal, and the auditor would be entitled to surcharge the cost of board, lodging, and washing upon the members of the sanitary committee. We protest against these examples of trifling with public health administration.

PURITY OF MILK SUPPLIES (SCOTLAND) BILL.

A BILL entitled "The Purity of Milk Supplies (Scotland) Bill" has been introduced into the House of Commons by one of the members for Glasgow. The primary purpose of the Bill—the protection of the milk supplies of large towns against contamination—is most praiseworthy, but the Bill is crude in conception, amateurish in draughtmanship, and if passed into law—of which there is little chance—would be found unworkable in practice. The genesis of the Bill may be conjectured from the fact that it proposes to create a new official, "the veterinary officer of health," endowed with extraordinary powers, and, in the case of a large city, with a roving commission to supervise dairying operations over the length and breadth of the land. Under the Bill the local authority in town or country would abdicate its functions, which would be assumed by the "veterinary officer of health" and the "clerk to the local authority," acting in conjunction, the privilege of paying compensation for any errors of the veterinary officer, however, being reserved to the local authority. As illustrating the crudity of the measure, it may be noted that while the "veterinary officer of health" is referred to in the definition clause, and indeed in

almost every clause of the Bill, no powers are taken for the appointment of such an officer. Further, although the Bill would establish a new code of dairy regulations entirely at variance with the existing Dairies Orders, it does not repeal the existing provisions of the law. The Bill provides for penalties for consigning or selling the milk of any cow which is suffering from chronic wasting disease, disease of the udder, or ulceration of the teats. It provides that every one having in his possession a cow in milk which comes within any of these categories shall forthwith give notice of the fact to the clerk to the local authority of the district to which his milk is consigned, and shall not sell the milk of the cow without the permission in writing of the "veterinary officer of health" for the district. Powers are taken for the framing of regulations for dairies by the Local Government Board. Cowsheds if in accordance with these regulations are to be licensed, the licence being renewable annually. The Bill would require every dairyman who consigns milk to another district to be registered by the local authority of that district, and no dairyman could consign milk to any district until the local authority of that district was satisfied that the conditions under which it had been produced conformed to the Act, and to any regulations made under the Act. No machinery, however, is provided for enforcing this requirement. Under Clause 12 the clerk of the local authority in which milk is produced would be in the unfortunate position of being liable to a penalty of £10 if he did not convey to the clerk of the local authority of the district to which the milk was consigned certain information, as to cases of infectious disease, diseases amongst cows, and the sanitary condition of dairies, which he would not possess, but which might be in the possession of the medical officer of health, "veterinary officer of health," or sanitary inspector, over whom he would have no control. The same unfortunate official, labouring under the same disability, would, whenever requested by the clerk to the second local authority, be required to furnish him with reports as to the health of persons employed at dairies, the health of the cows, and the sanitary condition of dairies. The dairyman would be required to give every facility to the officers of the second local authority, *or to anyone authorized by them*, for the examination of persons, cows, or dairy premises; but the sphere of the medical officer of health would be expressly restricted to the examination of persons, the inquest into "sanitary arrangements and conditions" being specifically reserved to the sanitary inspector. The clerk to the local authority into whose district milk was sent might, without any authorization from the local authority, institute legal proceedings against a dairyman for any alleged failure to comply with any of the requirements of the Act. The "veterinary officer of "health" of the district to which milk was consigned would be entrusted with full powers as to the disposal of cows suffering from chronic wasting disease, disease of the udder, or ulceration of the teats, and might, subject to compensation, order the slaughter of cows in certain cases; but no such powers would be conferred upon the "veterinary officer of health" of the district in which the dairy was situated. The time is fully ripe for legislation dealing with the conditions under which the milk supply of the country is produced, but the matter should be taken up by the Government and dealt with in a broad and statesmanlike manner, and not according to the crude methods of this Bill.

THE COVENTRY DISPUTE.

The Representative of the Coventry Division in a report to the Annual Representative Meeting on the present position of the long dispute between the profession in Coventry and the managing committee of the provident dispensary, stated that the Coventry Division asked for the assistance of the Association and the support of all its members. The management of the Coventry Provident Dispensary had been condemned, he said, for many years by the profession in Coventry, and eventually four members of the medical staff had resigned, sacrificing their emoluments to keep themselves in line with the requirements of the Association as regards contract practice. In the opinion of the Coventry Division, these gentlemen ought to be supported in every possible way. The Division had condemned the action of the medical men who had taken or retained the appointment of medical officers to the provident dispensary, and desired that the Association should approve that action. The medical men who had accepted these posts had done so in spite of warning notices in the Journal, in spite of letters written to them on behalf of the Association, and in spite of other means taken to acquaint them with the facts. There were five medical men at present on the staff of the dispensary: three of them were men who had come into Coventry from other districts to accept the appointments rendered vacant by the resignation of the old medical officers, and two of them had formerly been upon the staff of the dispensary, and had retained their appointments. During the discussion which followed much indignation was expressed at the conduct of the medical men referred to, and there was a unanimous feeling that the Coventry Division should have the full support of the Association. Eventually the following resolution was adopted: "That, having regard to the circumstances in "which posts of medical officers to the Coventry Provi- "dent Dispensary became vacant, this meeting condemns "the acceptance of such posts by members of the "profession."

INFANT LIFE PROTECTION.

It was briefly stated last week that a deputation from the Poor-law Unions Association had been received at the Home Office by Mr. Samuel, the Parliamentary Under Secretary, and that in answer to an earnest appeal for help in amending the Infant Life Protection Act, Mr. Samuel had promised to bring in a Bill to consolidate and amend the laws for the protection of children, and that infant life protection would form part of the Bill. The principal objections the deputation raised to the present law appear to be that (1) Where a baby farmer takes charge of one child only she is not subject to inspection under the Act. (2) That where a sum of upwards of £20 is paid for adoption the person so adopting child is exempt from inspection by the authorities. It is strange that the strongest advocates of these provisions should have been certain philanthropic societies, but the consequence of their opposition has been, as all men of common sense foresaw, that the Act has been practically useless. One of the members of the deputation stated that since the last deputation had waited upon the Home Office not two years ago no less than three women had been hanged for the offences which the Poor-law Unions Association was seeking to prevent. As the average annual number of females sentenced to death is only 3.2, this fact by itself shows the necessity there is for an immediate improvement of the law. That a considerable number of child murders escape punishment is proved by the fact that whereas the last judicial statistics give the numbers of cases of murders of infants under 1 year as 45, only 17 apprehensions were made in connexion with them. The reply given at the Home Office to a prominent M.P. who presented a third petition the other day praying for the reprieve of Mrs. Leslie James was, it is said, "Baby farming is increasing so alarm- "ingly that a reprieve is out of the question." The legitimate births number about 907,000 per annum, the

illegitimate 37,000, or about 4 per cent.; that the mortality of illegitimate children is more than double that of legitimate every one is aware, but the figures in the latest issue of the Judicial Statistics of England and Wales give cause for very serious doubt whether the deaths of these illegitimate children are always due to natural causes. In 1905 the number of coroners' inquests on infants under 1 year of age numbered 6,264; of these, 5,187 were upon legitimate children, and 1,077, or 17 per cent.—more than four times the rate among legitimate children—upon "illegitimate or unknown." As the coroner has discretionary power as to holding an inquest on boarded-out children, it is evident that reform is required. In regard to the exemption of those cases in which £20 or upwards is paid for adoption from inspection under the Act, the wonder is how such a preposterous clause was ever inserted; that it caused a vast amount of lying there is little doubt, and every one who knows anything about the question is agreed that this provision must be omitted altogether. The Poor-law Unions Association is asking the Government (1) to give the authorities power to inspect in all cases of infants taken for gain, with the right to exempt certain cases after proper inquiries if they think fit. This does not go so far as the French law, which directs "that every child less than two years of "age taken for gain to wet nurse, wean, or nurse outside "the house of his parents shall be under the inspection "of the public authorities." (2) To abolish the £20 limit, as many of the cases of infanticide have occurred in consequence of this provision, and will continue to occur so long as it remains on the statute book. It is very satisfactory to have Mr. Samuel's assurance that the Government has resolved to bring in a Bill to make these much-needed reforms. It ought to be treated as a non-contentious matter.

PHYSICAL FITNESS OF TRAMWAY DRIVERS.

The London County Council appears to be meeting with considerable difficulties in its endeavour to ascertain the physical condition of the men placed in charge of electric tramways, for last week considerable bodies of these men refused altogether to attend for medical inspection. In some cases, and especially amongst the younger hands, the opposition appears to arise mainly from the general readiness of the working man of to-day to regard every new regulation made by his employers as an invasion of the sacred rights of labour, while the older hands are probably influenced by what may not be in all cases an ill-grounded fear that a medical examination may result in a decision that it is not desirable any longer to employ them. The past history of the London County Council also makes it possible to believe that, as has been freely asserted, the difficulties arise largely from lack of tact in the fashion in which the new regulation has been introduced. It would, of course, have been much better if the London County Council when it first acquired control of the electric tramway system had made physical fitness, as proved by medical examination, an essential to employment in the capacity as driver, and that it is right in endeavouring to introduce such an examination now there can be no doubt. The speed at which these electric trams travel is often great, and seeing that the difficulties of driving are often complicated by passage through crowded streets and over lines incessantly traversed by foot passengers it is essential that the men should have good eyesight and hearing and suffer from no physical defect of any kind likely to interfere with the performance of their duty with entire efficiency, or to render it unlikely that they will be able to deal promptly and wisely with emergencies demanding instant decision and action. It may, however, be remarked that if the whole object of the inspection is to gain assurance that the men employed are likely to be safe drivers, as we understand to be the case, the examination imposed would appear to be somewhat more inquisitorial than is really necessary. From statements which have been made on behalf of the men it would seem that the examination is conducted much as if they were candidates for life insurance. Anything, however, of such a nature must surely be superfluous, for the only point at issue being the man's actual physical fitness for his position, general questions relating to his family history must be superfluous.

THE MELBOURNE CONGRESS.

Some particulars were published last week with regard to the arrangements for the Australasian Medical Congress which is to be held in Melbourne from October 19th to October 24th, 1908, under the presidency of Dr. H. B. Allen, Professor of Pathology in the University of Melbourne. The general secretary, Dr. Henry Maudsley, informs us that the executive of the congress, while it scarcely expects many medical men to attend the congress from the British Isles, will yet be prepared to give a hearty welcome to any who may be accredited by any medical college, university, or medical society of the United Kingdom. This will be the eighth of the series of Australasian medical congresses; these assemblies have steadily grown in importance, and there is every reason to believe that the coming congress, which will comprise eleven sections, will be not less successful than any of its predecessors.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

Medical Inspection of School Children.—Sir P. Magnus asked the President of the Board of Education on Monday, whether, having regard to the fact that Clause 10 of the Education (Administrative Provisions) Act would enable local authorities to institute a system of periodical measurement of the children in attendance at public elementary schools, he would arrange, with a view to securing uniformity of method among local authorities desirous to availing themselves of the powers conferred by the Act, that instructions should be issued by the Board as to the best means of taking such measurements; and whether he would arrange that the data obtained should be duly tabulated at the offices of the medical bureau of the Board for information and reference. Mr. McKenna said one of the duties to be undertaken by the Board of Education in connexion with Clause 10 of the Bill referred to, when it had become an Act, would be the careful collating, tabulating, summarizing, and publishing of the most important results obtained from the medical inspection carried out by local authorities in the public elementary schools in their respective areas. He was considering in what way this duty might most effectively be carried out; but he thought it would be highly inadvisable to make any decision in regard to it until he had had the advantage of the medical advice which it would be necessary for the Board to become possessed of, when the Bill had become law.

Plague Statistics.—Mr. Rees asked the Secretary of State for India whether the deaths from plague in June last amounted to more than 0.2349 per mille; and whether the like figure for the six months ended June amounted to more than 3 6 per mille of the population of India; what were the losses from cholera and fever and other chief epidemics for the same period; and whether the like figures were available in respect of other parts of Asia of more or less similar climatic conditions. Mr. Morley replied that the hon. member had correctly stated the mortality from plague in India as a whole during June last and the six months ended June respectively. He was unable to give the corresponding figures for other epidemic

diseases, as the mortality from them was not reported month by month. In 1905, the latest year for which complete figures for British India were available, the mortality rates for cholera, small-pox, and fevers were 1.97, 0.32, and 19.74 per mille respectively. He had no information that would enable him to reply to the last part of the question.

Revised Notices of Conscientious Objection to Vaccination.—Sir William Collins asked the President of the Local Government Board whether, in the event of the Vaccination Bill, 1907, passing into law, he would at once direct that revised notices to be given by registrars of births to persons registering the births of children containing the form of statutory declaration set out in the schedule to the Bill should be supplied to registrars of births in the month of September, so as to enable persons desirous of taking advantage of the Act in January, 1908, to be provided with the necessary forms in respect of children born within four months of the passing of the Act. Mr. John Burns said that he was aware that a new form of notice by registrars to persons registering the birth of children would be necessary in the event of the passing of the Bill. He was considering how far it might be practicable to meet the point suggested.

The Public Health (Regulations as to Food) Bill came before a Committee of the whole House late on Thursday in last week. Mr. Burns said it was proposed that the regulations should be laid before Parliament and issued to the public forty days before they came into force. The effect of that would be that any apprehended hardship could be brought to the attention of the Local Government Board. Very wide powers were necessary, but he was quite sure they could be trusted to the Board. Mr. W. H. Forster continued the debate, but after some discussion the Bill passed through Committee after amendment as above described. When the Bill came up for consideration on Friday, Mr. Burns said, in reply to Lord Balcarres, that the regulations could not be embodied specifically in the Bill. The regulations were necessary, and would be carefully drawn, and would protect this country from any laxity in other countries. The Bill was then read a third time.

An Insanitary School in Essex.—In answer to Mr. Whitehead, Mr. McKenna said last week that his attention had been called to the exclusion of certain children from the Hawkwell parish school with a view to the reorganization of that school as one for younger children only. He was also aware that certain parents had objected to send their children so excluded to the Hockley council school on the ground of distance and of the insanitary condition of the school. In consequence of these representations the Board wrote to the local education authority asking for further information, and intimating that in any case the change in the organization should not be carried out until the Hockley school had been made sanitary. In reply the local education authority had stated that it saw no reason for changing its decision. Under those circumstances, he proposed to inform the local education authority that the Board was unable to regard the exclusion of those children as reasonable under Article 53 of the Code, and to point out that the grant to the school was liable to forfeiture in consequence.

Typhoid Fever on the "Persic."—Mr. Whitehead called attention to the case of a passenger suffering from typhoid fever who had been landed at Plymouth instead of Tilbury, and so exposed to risk and expense; and asked whether the case was notified, and whether the landing at Plymouth enabled the ship to be discharged earlier in the port of London. Mr. John Burns replied that the passengers referred to left the ship at Plymouth under the advice of the ship's medical officer, but he did not understand that they were forced to do so. The medical officer appeared not to have regarded the case as one of typhoid fever, but as extremely suspicious. He stated that he reported the case at Plymouth to the pilot, giving him the principal symptoms as a guide for those ashore, and that the pilot assured him the case would be looked to. He was informed that the discharge of the vessel was not in any way expedited by the landing of the passengers at Plymouth. The Local Government Board had informed the steamship company that, in its opinion, the ship's medical officer should either have sent an intimation in writing to the port medical officer of health respecting the case, or should have mentioned it on the certificate given by him with regard to the health of the passengers and crew. The Board had suggested to the company that it should be made clear to the surgeons of their ships that, in all cases where suspicion existed of infectious disease on ships arriving in any port, information of the facts should be sent in writing by the surgeon to the port medical officer of health. The company had given an assurance that in future this will be done.

Lunatics and Imbeciles in London Workhouses.—In answer to a question put by Dr. Cooper, Mr. Burns stated that the number of the insane in the London workhouses on January 1st last was 322, of whom 159 were men, 149 men, and 14 children. The nature of the lunacy from which these persons were suffering was not specified in the returns. The rule that children under 5 years of age should not be admitted into the institutions of the Metropolitan Asylums Board for imbecile children was made because it was felt that a trustworthy judgement could not be formed as to the intellectual condition of very young children. The Local Government Board had, however, intimated to the managers that they would favour arrangements for the reception of children of the kind in question in such a way that they might be carefully observed by an expert before being finally drafted into an asylum.

The Chief Medical Officer of the Post Office.—Mr. Hunt asked the Postmaster-General whether his attention had been called to the report of the Select Committee on Post Office Wages, paragraphs 43 to 47; whether the officer of the post office thus mentioned had since giving his evidence before the Select Committee been given a considerable increase to his salary; whether he would state the reasons leading to the additional emoluments being paid to this official after tendering such evidence; and, in view of the report, what steps were to be taken to ensure efficient service in the Post Office Medical Department. Mr. Sydney Buxton replied that he had read the paragraphs referred to. As the honourable member was informed, in reply to a question asked in this House on April 29th last, the increase in the salary of the chief medical officer was authorized, before he gave evidence before the Committee, on the ground that the salary was not considered to afford adequate remuneration for the duties of the post. The recommendations of the Select Committee would receive the most careful consideration.

The Liverpool School of Tropical Medicine—Colonel Seeley asked last week whether, considering the work already accomplished by the Liverpool School of Tropical Medicine, an increased grant could be made in order that the work might be further extended. Mr. Churchill replied that a further grant would be made and that the amount would be specified after consultation with the Treasury.

The Butter and Margarine Bill.—The Lords' amendments to this Bill were considered in the Commons on Friday in last week and agreed to. The Bill will now only await the Royal assent to become law.

Vaccination (Scotland) Bill.—This Bill was read a second time in the Commons on Wednesday, and referred to a Committee of the whole House, after Mr. Sinclair had stated that its object was to put the conscientious objector in Scotland in the same position as the conscientious objector in England.

The Appropriation Bill, which marks the close of the session, was read a second time last week, but the debate, which is an opportunity for airing grievances, produced no references of medical interest. The third reading was taken on Monday last, and was at first occupied with a discussion on the condition of Piershill Barracks and the accommodation at Tidworth Barracks for cavalry soldiers. The sanitary aspects of the subject were not, however, specially considered. After the Appropriation Bill, the proceedings of the remainder of the session will necessarily be confined to the consideration of minor measures and the amendments of the Lords to other Government Bills. These should all be disposed of in time for the prorogation early next week at latest.

Manchester and Salford.

SIXPENNY DOCTORS.

SOME sharp criticism has been passed on the recent resolutions of the three Manchester medical societies about sixpenny doctors. As stated in the JOURNAL for July 13th, the Medical Guild, the Medico-Ethical Association, and the Broughton Medical Union passed resolutions to the effect that sixpenny doctors ought not to be recognized professionally nor met in consultation. It was also stated that the increase in the number of sixpenny doctors has been favoured by the fact that so many hospitals accept small donations of about sixpence from patients or make a small charge for medicine, so that patients, thinking that they are paying full value for what they receive, cannot see why they should pay a private doctor any more. In this connexion we have received the following letter:

Sir,—Though admitting that the existence of the sixpenny doctor is due in great measure to "the fact that so many of the hospitals, with only a pretence of an inquiry into patients' circumstances, accept small donations of about sixpence, or make a small charge for medicine," the Manchester Medical Guild, Medico-Ethical Association, and Medical Union have recently passed resolutions (BRITISH MEDICAL JOURNAL, July 13th) to the effect "that sixpenny doctors ought not to be recognized professionally nor be met in consultation." Excellent! These societies doubtless number among their members most of the hospital men in Manchester, and, not content with reducing by their own unfair competition their professional brother, often as well qualified as themselves, to beggarly fees, they propose to carry their selfishness a step further by trying to brand him as unprofessional. Now, looked at fair and square, the disgrace attaches not to the man who accepts the small fee, but to those who thrust him down to that level.

From a commercial point of view the sixpenny fee can find many justifications; on the patient's side he probably receives better value in proportion than the patient who pays his guinea to a hospital consultant; on the doctor's side, the sixpenny fee must often be better remuneration than a good deal of contract work. Few medical men keep a systematic record of their club work, or they would find, as I have, that the ordinary 4s. a year club rate or the guardians' allowance for pauper attendance, often works out at less than 6d. a surgery attendance and medicine (BRITISH MEDICAL JOURNAL, October 24th, 1903, p. 1095. The parish medical officer's *visit* works out at 13d.).

So much for the commercial view. On the other hand, professionally it is deplorable. But again, who is to blame? Many a man of good qualifications and fair ability starts in life with most of his capital sunk in his education; never having received even a hint as to how to obtain a recompense for his services, with no helping hand from his seniors in the profession, and not having enough money either to live as a philanthropist or to invest "contrary to medical etiquette and general morality" (Berlin Correspondence, JOURNAL, July 6th) in a "good" practice, he is forced in the present state of competition, where the general practitioner is fair game for all organized bodies, both public and private, to sweat, and for the rest of the public to defraud—he is forced to take what he can get, and perhaps finds that the 6d. cash is better than the 1s. 6d. or 2s. 6d. booked. His lot is not a particularly happy one, nor can it be supposed that he elected to sell his services more cheaply than he is forced to; but the great outstanding fact is that there are millions of the population on whom even this small fee presses, and who would not pay more while they could receive treatment, practically free though under ignominious conditions, at the hospitals.

To my mind, there is absolutely no need of an out-patient hospital at all except for purposes of consultation. Shut them all up, and the sixpenny doctor, freed from this most unfair form of competition, will have a chance to raise his fee.—I am, etc.,

FAIR PLAY.

The writer's conclusion that "the disgrace attaches, not to the man who accepts the small fee, but to those who thrust him down to that level," depends on a misconception of the facts; for the consultants are not directly responsible for either the unfair competition of hospitals or for the resolutions referred to. The resolutions originated with the general practitioners, who regard the sixpenny doctors as unfair competitors with themselves. The consultants of Manchester, we regret to say, take little active part in medico-ethical discussions. Moreover, the societies all recognize that the hospital staffs are almost helpless to prevent the hospitals accepting small donations from patients. Until there is some combination among the hospitals it is almost useless for any one hospital to attempt reform, for patients not pleased would simply take their donations to another hospital, and the total abuse would not be lessened. It is not the staffs that are to blame so much as the general boards, which, being in urgent need of money, do not appreciate the reasons for refusing any donations from patients, however small they may be. At the same time, there can be no doubt that a vigorous protest on the part of the staffs ought to be made as soon as a combination of all the hospitals makes it possible for such a protest to be effective. In the meantime we refuse to be led into an attack on the medical staffs, many members of which we know deplore what at present they are powerless to remedy. Neither do we admit that the unfair competition of hospitals can justify, though it is used as an excuse for, the existence of the sixpenny doctor.

Again, it is stated in opposition to the resolution of the three societies, that sixpence cash is often better than two shillings booked. It is pointed out that it is common in Lancashire towns to charge 1s. a visit, or 2s. 6d. for visit and medicine; this is booked, and a collector is sent round, who, it is asserted, in nine cases out of ten, gets only 6d. or 3d. a week, or sometimes nothing at all. It is, of course, quite true that the collector system is almost the rule in Manchester, and the fees named are common, though below the average. Collectors are paid about 12 per cent. on what they actually receive, and the doctor has no further trouble. Omitting immediate cash payments in the surgery, less than one half of the bills are put in the hands of collectors, most patients preferring to pay personally, even if it be by instalments, while the proportion of bad debts in the bills entrusted to collectors is not so high as has been represented. In fact, to compare commercially the sixpenny practice with the ordinary practice with a collector is somewhat absurd to one who knows anything of Manchester. Further, it is not correct to say that all sixpenny practices are cash practices. We know of many cases where big bills have been allowed to accumulate by sixpences. But the important point is that the collector system is generally recognized as on the whole fair to both patient and doctor, whereas the sixpenny practice is exceptional, and absolutely sets at naught the recognized professional custom. The sixpenny practice is an attempt, by underselling, to obtain patients who cannot be obtained by merit. It is generally started by a newcomer in a district as a means of alienating patients from older practitioners. A connexion is thus rapidly worked up in a year or two, and then, either the fees are raised or the practice is sold for an absurdly high amount to some incautious beginner. We know of half a dozen instances of this in a small district outside Manchester.

It has also been objected that the sixpenny practice is quite as good commercially as much of the club practice, and yet the one is banned and the other allowed. Now it cannot be said that the Manchester practitioners are enamoured of club practice even at its best, the only thing in its favour being the certainty of a fixed though small income. The Medical Guild has done some good work in this connexion; years ago it saw that, in spite of some grave objections, it was impossible to get rid of the club system, and after careful inquiry it decided that it was impossible to do justice to patients at a lower rate than 4s. a year for adult males. Its "club pledge," which was numerously signed, was an undertaking not to accept any clubs at a lower rate than 4s. for adult males and not to oppose any doctor who then had clubs below 4s. if he applied for an increase. This, of course, only applied to the Manchester districts; another rate might be advisable in other districts. A statement has appeared in the *Lancashire Daily Post* to the effect that Preston practitioners are willing to accept 3s. 6d. a year for women and even less for children, and that even this, which is an increase over the past, is likely to be resisted strongly. We can hardly understand how such a rate can pay even if midwifery be excluded; much less can it be understood why women should be taken at lower rates than men, from whom 4s. is demanded, for the amount of attendance required by women is certainly much greater. Local conditions must of course be taken into account, and it may be impossible after the low rates of the past to obtain unanimity all at once for a satisfactory increase at Preston; but clubs for women at 3s. 6d. would be strongly condemned at Manchester, and the Preston practitioners would have all the support that Manchester can give if they were to

demand 5s. for women's clubs. The present attitude of Manchester men is that clubs at any rates are an unavoidable evil, though of course as long as they exist they will be sought after, and provided they are only taken at rates generally agreed on as consistent with proper treatment of patients, it would be folly to ban those who hold them. But none of these half-excuses can apply to the sixpenny doctor. We deny the necessity for such practice in Manchester districts; we are confident that the collector system described, and even the objectionable 4s. club system for adult males, are both more remunerative and more consistent with proper treatment of patients than the sixpenny practice, and, what is not the least important thing, they are free from the taint of underselling and unfair competition which unavoidably attaches to the sixpenny doctor in Manchester.

South Wales.

Dairy Farms and the Milk Standard.

At the quarterly meeting of the Carmarthenshire Chamber of Agriculture at Carmarthen Professor C. Bryner Jones, the newly-appointed Professor in Agriculture at the University College of Wales, Aberystwith, initiated a debate on Some Problems relating to Milk Production. He commented on the regulations of the Board of Agriculture, which declared that milk sold as such must contain 3 per cent. of butter fat and 8.5 per cent. of solids other than butter fat, and attempted to show that circumstances sometimes arose which had a considerable influence on the natural constitution of milk. It was of equal importance to dairy farmers and local authorities to know what those circumstances were. In the law courts occasionally milk producers had been prosecuted when, if an investigation had been made into the cases, probably this would not have taken place. Reference was made to the various causes affecting the quantity and quality of milk—amongst others, the breed of the cattle, the time of the year, the time of calving, feeding, the weather, and some other causes. He then dealt with some experiments carried out under his supervision at the Armstrong College, Newcastle-on-Tyne (where he was previously engaged as lecturer), on the feeding of dairy cows. It was found that increasing the ration of concentrated food did not increase the milk on the whole, except temporarily; neither did it improve its quality. The use of concentrated food on grass was not to be recommended, except towards the end of the season, when the grass was becoming stale. Brewers' grains were found to increase the yield of milk considerably, and there were certain indications that they somewhat decreased the quality at first. It was shown that when the intervals between milking were equal the morning milk of the herd was of much better quality than when the intervals were unequal.

Mr. Walter Jones, Bangor, urged farmers to make the most of the experimental farm of the college at Aberystwith, and not to look upon such institutions with suspicion.

The Chairman said the farmers would have a great deal of trouble with the local authorities in respect of their milk. Unquestionably a great deal had been said in error by inspectors. One of them recently stated that 30 per cent. of cows that were milked, and whose milk was consumed in towns, suffered from tuberculosis. Sweeping assertions like that did farmers a good deal of harm. A dairy association for the county, if worked like the Farmers' Co-operative Society, would be successful. Thirty milk churns, where there used to be one fifteen years ago, now daily travelled up and down the line; therefore, it ought to be possible to co-operate effectively.

Professor Jones, in his reply, said that the statement as to tuberculosis referred to the country generally, and strongly urged dairy farmers to co-operate as the Chairman had suggested. The Board of Agriculture had now in its possession a very considerable amount of evidence in regard to milk, and in consequence of representations from Newcastle-on-Tyne and elsewhere the Board had issued an order that authorities should not prosecute in any case without making a very careful inquiry into the circumstances under which the milk was produced.

Ireland.

The Judicial Proceedings of the Irish Local Government Board.

We referred recently to the objectionable Continental system adopted at inquiries by certain inspectors of the Irish Local Government Board, and we now propose to give some further examples.

An inquiry upon oath was held on July 11th, at the Dunshaughlan Workhouse, regarding the death of a labourer named Lynch in that institution from pneumonia. The inquiry was called for by the guardians. Dr. Dickinson was acting as temporary medical officer of the workhouse, and we presume of the dispensary district as well. He was called to see this man on May 11th. The person who came for him had no ticket, but, as is usual in Ireland, the dispensary doctor did not send him for one, but attended at once. Some days later, as the friends said the man was delirious and unmanageable, he advised them to send the patient into the workhouse infirmary, and said he would make arrangements with the nurse to have a bed ready for him.

The family, having the usual horror of the workhouse hospital, objected, and the doctor seems to have taken no further steps, but after his departure they sent the patient on an outside car accompanied by three other men to the workhouse some five miles distant.

On his arrival there without any official order for admission, his conduct was so extraordinary that the master regarded him as a lunatic whose friends wanted to be rid of the trouble of him, and he refused to admit him. The man remained outside for three hours until the arrival of a Mr. Duffy, who knew the circumstances, and he was then admitted, but died two days later.

What we complain of is that at the inquiry the inspector tried to fasten upon Dr. Dickinson the responsibility for not having ordered the workhouse master to send out the ambulance, and put a series of questions to him just such as a French examining magistrate would put to a prisoner to induce him to incriminate himself. Dr. Dickinson may not have known, but the inspector ought to have known, that patients can only be admitted to an Irish workhouse infirmary in one or other of two ways, either on an order from the relieving officer, or, if a case of sudden and urgent necessity, by the master upon his own responsibility—a responsibility which workhouse masters are not fond of assuming.

Absurd as it may seem, no medical officer of the union, not even the medical officer of the workhouse, can direct a patient to be admitted. The most he can do is, if he think fit, to send a note to the relieving officer stating that such a person is a case for hospital treatment and is fit for removal; but woe betide him if that patient should die on the way or soon after his admission, he will then have to stand a sworn inquiry conducted in the usual manner, yet he has no authority to order the workhouse master or any one else to send out the ambulance. We hold that it is most unconstitutional for an inspector to try to fasten blame upon a medical officer for not doing what he has no legal power to do.

According to the press report, the inspector also heckled the master into admitting that he had committed an error of judgement in not taking the man in at once. Here again we join issue. We regard the master's action as justified, or at least excused, by the fact that the man was brought on an outside car with three men to control him, and could not only walk, but run and smoke his pipe.

It must not be forgotten that these courts have the power to deprive the accused of his means of livelihood without right of appeal; there is, therefore, all the more reason why the proceedings should be conducted on the principle of British law, which presumes a man to be innocent until he is found guilty by his peers. We are also of opinion, from what we have seen of these inquiries, that many an Irish Poor-law official has been found guilty and punished upon evidence which no judge would admit or jury convict upon.

A few months ago the porter of a certain workhouse was charged with neglect of duty. The charges were investigated at a meeting of the guardians, at which an inspector of the Local Government Board was present. Having heard the evidence, the inspector is reported to have

advised the guardians to dismiss the man on the spot, which they accordingly did. Subsequently, the Local Government Board informed the guardians that they had no power to dismiss the porter, that power resting with the Local Government Board alone. The Board ordered an inquiry on oath. The same inspector who had already condemned the man was sent down to hold it, with the natural consequence that the man was dismissed by sealed order. Being only a workhouse porter, with a salary of £10 or £12 a year and a large family, how could he dispute the autocratic illegality of the proceedings which deprived him of his living on evidence, largely hearsay, which the British law properly rejects. Our advice to any member who happens to have one of these inquiries held upon him is to employ a solicitor to defend him who will not allow him to answer illegal questions or questions tending to incriminate him, and will see that he gets some show of ordinary justice.

Scotland.

POST-GRADUATE CLASSES, GLASGOW ROYAL INFIRMARY. DURING this year two terms—one in January, a second in May and June—have already been held, and have proved most successful. The experience of last year showed that the medical men who attended the winter and spring courses were drawn mostly from the city and surrounding districts, whereas those who selected the autumn course not only included a large number of country practitioners from the west of Scotland, but also graduates from abroad, or from considerable distances. In making arrangements for the autumn session beginning on Tuesday, September 3rd, the staff has tried to meet the requirements of the latter by concentrating the courses within the period of one month, and, as far as possible, filling up each day, while at the same time the time table has been carefully arranged so as to avoid the hours of meeting interfering with one another. The post-graduate demonstrations at the Glasgow Royal Infirmary have been much appreciated by practitioners in the neighbourhood of Glasgow, and the staff is to be congratulated in having made the classes thoroughly practical. They take the form of demonstrations rather than "clinical" lectures, and everything has been done to keep them well abreast of the times. The hospital, owing to the crowd of patients seeking relief within its walls, and the abundant opportunities the wards afford of studying disease in all its phases, is specially well adapted for the carrying on of post-graduate medical classes. The Managers deserve every encouragement in their desire to establish a method of further utilizing the experience of their staff and the clinical field at their disposal. Their endeavour is undoubtedly to the advantage of the medical profession in the first instance, but ultimately to the profit of the public, who quickly appreciate the services of men who are ambitious to keep themselves in the front rank of medical knowledge. Particulars of the course will be found in our advertising columns; but it may be said here that the syllabus will include—

1. Opening lecture by Sir Almroth E. Wright, M.D., F.R.S.
2. Clinical Medicine: (*a*) T. K. Monro, M.D. (*b*) J. M. Cowan, M.D.
3. Clinical Surgery: (*a*) John Barlow, F.R.C.S. (*b*) Mr. Rutherfurd. (*c*) A. N. McGregor, M.D., F.F.P.S.G.
4. Haematology: Walter K. Hunter, M.D., D.Sc.
5. Surgical Diseases of the Urinary Organs: David Newman, M.D.
6. Clinical Examination of the Urine: John Henderson, M.D.
7. Diseases of the Ear: J. Kerr Love, M.D.
8. Demonstrations on Diseases and Injuries of the Eye: A. M. Ramsay, M.D.
9. Diseases of the Throat and Nose: Robert Fullerton, M.D.
10. Anaesthetics: J. King Patrick, M.D.
11. Gynaecological Pathology: W. D. Macfarlane, M.B., C.M.
12. Electro-Therapeutics: James R. Riddell, L.R.C.P., etc.
13. Gynaecology: Balfour Marshall, M.D.
14. Operative Surgery: Peter Paterson, M.B., C.M.
15. Bacteriology: David M'Crorie, L.R.C.P., etc.

The Lord Provost will take the chair at the opening lecture. It will facilitate arrangements if those desirous of attending any of the classes will apply to Dr. J. Moxton Thom, the Superintendent of the Infirmary, who will enrol members, supply copies of the syllabus, and give any further information desired. Some of the classes must necessarily be limited in number; it is therefore to be noted that enrolment to these will be made in the order of application.

PHYSICAL CONDITION OF CHILDREN IN GLASGOW BOARD SCHOOLS.

A report by Dr. Leslie Mackenzie and Captain A. Foster on a collection of statistics as to the physical condition of children attending the public schools of the School Board for Glasgow has just been issued. It contains a number of tables and diagrams, in which are shown the weights and heights of 72,857 children, aged from 5 to 18, in relation to the size of the house they come from, and their average weight and height as compared to the Anthropometric Committee's standard for each age. The results of this inquiry should prove interesting as showing the effects of overcrowding on the physique of children, and it will be dealt with more fully in a subsequent issue.

India.

MOIR MEMORIAL FUND.

THE following gentlemen have, at the invitation of the Council of the Medical College, Calcutta, agreed to serve as members of a Committee, with power to add to their number, for the purpose of raising a memorial to the late Major D. M. Moir, I.M.S., Professor of Anatomy at the Medical College, Calcutta, who died of septicaemia contracted in the execution of his public duties, as related in the BRITISH MEDICAL JOURNAL on June 29th last, p. 1567. Subscriptions are invited from his friends and admirers, and may be sent to the Treasurer. It is hoped that sufficient money will be received to found a prize or to endow a bed, after providing for a tablet and portrait in the College Hospital.

Lieutenant-Colonel F. J. Drury, I.M.S., *President.*
Major F. J. Maynard, I.M.S.
" R. Bird, I.M.S., C.I.E.
" C. R. Stevens, I.M.S.
" W. J. Buchanan, I.M.S.
Rai Bahadur Dr. Koylash Chandra Bose, C.I.E.
Rai Bahadur Dr. Devendra Nath Roy.
Dr. Suresh P. Sarbadhicary, *Treasurer*, 79/1, Ahmerst Street.
Dr. Dwijendra Nath Moitra.
Assistant-Surgeon Jotish Ch. Mustafi.
Captain F. P. Connor, I.M.S. } *Honorary Secretaries,*
Rai Bahadur Dr. Hira Lal Basu } *Medical College.*

PLAGUE.

The following letter, addressed by His Majesty the King to the Governor-General of India, was published simultaneously in Simla and in London.

Buckingham Palace,
August 13th, 1907.

My dear Viceroy,—I have followed with anxious interest the later course of that epidemic of plague by which India has for eleven years past been so sorely afflicted.

The welfare of my Indian subjects must ever be to me an object of high concern, and I am deeply moved when I think of the misery that has been borne with such silent patience in all those stricken homes.

I am well aware how unremitting have been the efforts of your Excellency's predecessors and yourself to make out the causes of the pestilence and to mitigate its effects.

It is my earnest hope and prayer that the further measures now being prepared by your Excellency, in consultation with zealous and able officers, may be crowned with merciful success.

I desire you to communicate this expression of my heartfelt sympathy to my Indian subjects.

Believe me, my dear Viceroy, sincerely yours,
(Signed) EDWARD R. AND I.

The nature of the further measures to which His Majesty refers are partly explained in the *Correspondence regarding Measures for the Prevention of Plague*,[1] issued as a parliamentary paper this week, and partly, as it would appear by certain letters published by the Viceroy and Government of India, of which only abstracts telegraphed by Reuter are at present available in this country.

[1] Cd. 3516. Price 5½d.

The correspondence between the Secretary of State and the Governor-General of India had its origin in the following memorandum presented to the Secretary by the Royal College of Physicians of London in July, 1905.

MEMORANDUM OF THE ROYAL COLLEGE OF PHYSICIANS (July, 1905).

1. The College is aware that the Government is closely following the increasing mortality from plague in India. The College, nevertheless, ventures to draw attention to the grave danger, not only to India but to all parts of the Empire, which arises from an epidemic of such vast proportions and prolonged duration.

2. The total number of recorded deaths from plague in India during 1896, the first year of the present epidemic, was 30,000. In many weeks of last year, 1904, the mortality amounted to over 30,000 a week, and the total mortality from the disease for that year was 1,040,000. This year, 687,705 deaths from plague were recorded for the first four months. The fact that the major portion of this appalling mortality is at present confined to the Punjab, the North-West Provinces, and the Bombay Presidency increases the gravity of the outlook. The Punjab, as is well known, has a population of less than 27 millions, out of which it lost last year 350,000, so that one person in every 77 died of plague. The intensity of the plague epidemic in the Punjab will perhaps be better realized if it is stated that the same proportionate mortality in the British Isles would mean a loss of more than half a million people from plague in the year. The most severe epidemic of Asiatic cholera in England (1848–49) caused a mortality of 54 000 in the year, a number thought appalling at the time.

The mortality from plague in India has become greater in each successive year for nine years, the year 1900 excepted; and since 1896 nearly four million persons have died of the disease. The history of epidemics of plague shows that the disease may continue prevalent for an indefinite time, so that we cannot at present look forward to an early cessation of this epidemic. The calamity in the proportions it has already attained is comparable to the most terrible pestilences recorded in history—such as the plague of 1348 (often called the Black Death), which completely altered the social conditions of England and of other parts of Europe; or to the epidemic of the time of Justinian, which lasted 52 years.

3. Since 1348 no equally destructive outbreak of plague has been recorded—at all events in Western literature. If an opinion may be formed from the history of former great epidemics, that now in progress is not likely to remain confined to the districts in which it at present prevails or even to India. The continuance of the plague constitutes, therefore, a danger to the rest of the Empire and to other countries.

4. Besides the bacteriological study of the disease which is now in progress, there are many other parts of the subject which require to be investigated, and even the bacteriolcgy needs a larger staff of observers

5. In view of the exceptional conditions of this great calamity, and the inadequacy of the sanitary service of India as at present organized to meet them, we submit that a special sanitary service might be instituted, consisting of trained persons who should be able to carry out those measures which have elsewhere been found useful in coping with the disease. A service of this kind would be a most important addition to the present sanitary system. Some time would elapse before it could be fully at work, but if begun at once it is probable that it would soon become an efficient means of checking the present epidemic and of preventing any new one from attaining similar proportions.

6. The cost of an efficient organization would necessarily be great, but it would be small compared with the losses now incurred. The pecuniary loss to the country of the industrial productiveness of a million persons can hardly be estimated, but must be very large. Grave economical conditions are apparently already arising in the worst infected provinces. Accounts are given of the increasing scarcity of labourers for agricultural purposes, the difficulty in obtaining workpeople for the mills, the general rise in the price of unskilled labour in consequence of its scarcity, and last—but not least—the unfavourable effect which the epidemic is producing on recruiting. As the epidemic continues, the social and economical disorganization which followed former great epidemics of plague is likely to occur.

7. We beg leave to submit that some such scheme as the following might be instituted. In the first instance, four or five administrative centres might be organized in places which have been yearly attacked with plague. A medical department should be formed, the officers of which should be familiar with the language and customs of the people. This department should consist of officers of the medical services in India, as well as the physicians sent out for special plague duty. These should direct and supervise a numerous corps of native medical persons, male and female.

This Medical Department should be subdivided into three Sections, A, B, and C.

Section A.—The duties of the medical officers of this Section would be:

(1) To obtain information as early as possible of cases of plague or suspected plague in human beings and in animals.

(2) To inquire into and report on the circumstances under which every plague case has occurred and the method by which the house becomes infected or maintains its infection.

(3) To record the information obtained.

This section would be in each place the Intelligence Department of the Local Plague Organization, and would gather most valuable epidemiological facts which could be made use of at the time or afterwards.

Section B.—The duties of the medical officers of this Section would be:

(1) To disinfect the house or hut, when death or recovery has taken place, with an approved fumigating apparatus, such as would be capable of destroying rats, bugs, fleas, and all insects in the house, and, at the same time, the plague microbe. The fumigating operation should be capable of being carried out without the removal from the house of any clothes or furniture, and of being effected in the course of six or eight hours, so that the inmates should not be kept out of their houses for more than a day at the most. Houses in which plague-infected rats are found should be treated as infected with plague.

(2) To destroy rats generally by regular and systematic methods.

(3) To carry out general administrative and prophylactic measures.

Section C.—The duties of the medical officers of this Section would be to carry out laboratory work in close association with Sections A and B, namely:

(1) Diagnosis of doubful cases.

(2) Bacteriological examination of rats to ascertain if plague infected.

(3) Such bacteriological work as may be suggested from head quarters or by local circumstances.

To each of these administrative centres, when in full working order, might be drafted a number of European and native medical officers to study and learn the system, so that the organization would be gradually created, developed, and extended to localities most in need of it, in order to cope with the disease without offending the susceptibilities of the natives. The centres, though acting independently, according to local requirements, should be under the direction of a special plague department at head quarters to co-ordinate the whole and secure continuous and effective action.

8. It may be pointed out that this organization might become of permanent use to the sanitation of India after the termination of the plague epidemic.

9. The publication of a monthly circular giving full information of the prevalence and general statistics of plague in all the regions where it is reported to exist would be valuable, since the checking of epidemic diseases is promoted by full information about them. The Colonial Office already publishes statistics as to plague in the public press of this country—a precedent that might well be followed by the India Office.

10. The College further begs to express its willingness to assist the Government by co-operating in the work of the Advisory Committee which has been constituted, or in any other manner.

RICHARD DOUGLAS POWELL, President.
J. F. PAYNE.
NORMAN MOORE.
PATRICK MANSON.
JOHN ANDERSON.
W. J. R. SIMPSON.
EDWARD LIVEING, Registrar.

July 21st, 1905.

This memorandum was transmitted by the Secretary of State to the Government of India on August 18th, 1905, and the reply of the Government is dated Simla, May 2nd, 1907. The reply criticized the memorandum unfavourably, but explained that the delay in reply was due to the necessity for awaiting the replies of local governments to a reference which had already been made by the Government of India. That Government had, however, on January 17th, 1906, issued a memorandum clearly stating that all measures against plague depended for their success upon the hearty co-operation of the people, indicating the limitations of disinfection, and that reliance must be placed upon the improved sanitation in the towns, the evacuation of houses in villages, and the systematic destruction of rats. In May, 1906, the Government of India consulted the local governments as to the suggestions of the Royal College of Physicians regarding the organization of a special sanitary service to cope with plague. The local governments were practically unanimous in condemning a special organization, pointing out that suitable organizations for coping with the epidemic already existed, and that, although the executive might need strengthening in many cases, it was not desirable to import physicians

from England. Most of the local governments, however, agreed that the general sanitary service in India required development, and that the needs of the time could be met by the employment of natives of India. The Sanitary Commissioner with the Government of India had, it was added, submitted proposals for the expansion of the existing sanitary service on these lines, and contemplating the employment of natives of India with European qualifications as medical officers of health in the larger towns, of specially qualified native assistant surgeons in the smaller towns, and of native sanitary inspectors throughout the country. The scheme was under consideration at the time the dispatch was written. The Government of India expressed the hope that it would shortly be able to arrive at a practicable and satisfactory solution of the difficulties which had to be contended with, and summarized its conclusions in the following words: "In the administration of plague we must rely, at any rate for the present, upon improved sanitation in towns, and upon the co-operation of the people in the evacuation of villages, the destruction of rats and such other measures as our further investigations may suggest."

A resolution of the Government of India dated Calcutta, January 17th, 1906, laying down the general principles upon which sanitary measures with a view to the prevention of plague could be undertaken, was annexed to this dispatch. These measures may be briefly summarized as follows:

1. *Destruction of Rats.*—Experience recently acquired in India warranted the belief that the systematic destruction of rats promised to be one of the most effective measures for preventing the spread of plague.
2. *Housing improvements*, especially the demolition of insanitary quarters, the widening of and improved paving of streets, the enforcement of simple building rules, and better systems of drainage and conservancy.
3. *Disinfection.*—Though in theory the disinfection of both houses and clothing took a high place among preventive measures, and in cases of pneumonic plague must be regarded as imperative, its full utility was seen only in towns where the disease had not established itself. In villages the disinfection of houses was seldom of much use, while in towns where plague had become indigenous the difficulty of completely excluding rats led to constant reinfection.
4. *Evacuation.*—Of the various measures hitherto adopted for arresting an outbreak of plague none had proved so efficacious as the prompt evacuation of the affected locality; in villages, if accompanied by systematic destruction of rats, it was probably the only means of effectually combating the disease; it was, however, essential that it should be thorough, for if a portion of the inhabitants remained the disease continued to spread.
5. *Inspection of Travellers.*—Though the inspection of travellers by railway, road, and steamship was often successful, it was of most value in protecting limited areas. The mere inspection of persons arriving by steamer was of little use unless the rats on board the vessel were destroyed or prevented from reaching the shore. A segregation camp for the detention of the sick was a necessary adjunct to every inspection station, but persons not actually suffering from the disease should not be detained.
6. *Quarantine.*—Though experience proved that the spread of plague by human beings might be prevented by quarantine, that measure could seldom be applied, except by the people themselves in villages; it was not applicable to towns.
7. *Segregation of the Sick.*—The first few cases imported into a plague-free town should be segregated, and cases of pneumonic plague which was directly infectious from man to man ought always to be segregated, but in the bubonic form the necessity might be avoided provided the surroundings of the patient could be kept clean and free from rats.
8. *Segregation of Contacts.*—Where the segregation of persons who have been in contact with a patient suffering from bubonic plague could be carried out with the good will of the people, it was useful, but where coercion had to be employed more harm than good was likely to result.
9. *Inoculation.*—Inoculation with the prophylactic fluid made at the Parel laboratory was of value not merely as a protective against plague, but also as a mitigator of the violence of an attack. The extent to which inoculation could be carried out depended upon the strength of the popular sentiment in its favour or against it.

On July 26th, 1907, the Secretary of State replied to the Government of India's letter of May 2nd, 1907, by a dispatch which begins by reciting the chief topics mentioned above, and then proceeds to comment on certain points.

With regard to the sanitary service, Mr. Morley points out that the reports of the local governments "frankly recognize that the general sanitary service requires development, and that the needs of the times can be met by the employment of natives of the country."

With reference to the suggestion of the Royal College of Physicians that the bacteriology of plague requires a larger staff of observers, and to the Government of India's statement that it has met promptly every demand made by the Plague Research Committee for more workers in this field of research, Mr. Morley says: "The work done by the Committee has been eminently fruitful in scientific results, and bears out your opinion that investigations of the kind, to be successful, require to be conducted by experts working in properly-equipped laboratories. Measures have been taken, with my concurrence, to improve and strengthen, at considerable cost, the research laboratories of the country."

Mr. Morley then goes on as follows:

"I desire to record my sense of the service which the Royal College of Physicians have rendered, and of the obligation which rests on the responsible authorities to exhaust every possible means of combating plague. The particular suggestions offered by them may, as you point out, have been anticipated by measures already in force in India, or else may be unsuited to local circumstances. Your prolonged experience in dealing with the disease and your acquaintance with the habits and sentiments of the people, enable you to say with unrivalled authority what is the best form of sanitary organization, what measures are expedient and can be enforced with good results, and at what point intervention becomes mischievous and dangerous. But the fact that plague has been fatally active in India over eleven years, that the number of victims exceeds 5¼ millions, that its virulence is unabated, and its progress uncontrolled, necessarily give rise to doubt as to whether everything that can be done has been done by the responsible authorities, and whether the last word of medical science and administrative skill has really been said. I wish with you that your efforts were attended with a greater measure of success. The conclusion expressed in the resolution of January, 1906, that 'in the last resort all preventive measures depend for their success upon the hearty co-operation of the people themselves,' while it defines the conditions of success, does not affect the obligations resting upon the governing powers of the country to endeavour to improve the quality of these measures, and win acceptance for them by skilled and considerate adminstration. I desire that no effort should be spared to arrest the spread of the disease by means acceptable to the people and give aid to the sufferers. I shall be glad to receive at an early date the proposals which are under your consideration for extending the general sanitary service by the increased employment of qualified natives of the country as medical officers of health and sanitary inspectors. Within reasonable limits of cost, any proposals of the kind which you may submit will have my cordial support."

SPECIAL CORRESPONDENCE.

VIENNA.

Suppression of Venereal Diseases.—Mountaineering and Alcohol.—New University Institutes.

WITH a view to the prevention of venereal diseases doctors and schoolmasters have for some time endeavoured to impress on the public, especially on the younger members of the community, the importance of the functional and constitutional harm done by gonorrhoea and syphilis. Prostitutes have been placed under the control of the police, and are subjected to a medical examination twice a week. This measure is only partly approved, because infection may take place shortly after the examination. On the other hand, it is impossible to detain the prostitutes, as there is as yet no place for the purpose. The number of prostitutes under supervision in Vienna is upwards of 25,000, and, according to the statistics of the police doctors, each of these is infected at least three times a year. They must produce a ticket of health if requested to do so, and this is valid only for four days. Moreover, lectures on personal hygiene and the dangers of sexual intercourse are delivered before the students leaving the gymnasium for the university, and the workingmen's clubs have instituted regular courses of lectures on the same subject delivered by physicians. Another very

important step has been taken in the same direction since the friendly societies and sick clubs have come to recognize venereal disease as entitling the member not only to free medical help, but also to sick pay. Hitherto this was not the case. The social importance of this measure can be easily understood, as formerly such patients resorted to quacks instead of procuring competent advice. As yet, the effect of these measures cannot be seen in the statistics. On the contrary, more cases than formerly are reported from hospitals; but it is very likely that only increased knowledge of the dangerous nature of the disease brings the patients there.

A series of 1,200 mountain climbers has been examined by Dr. Schneider with a view of ascertaining the effect of alcohol on their climbing capacity, and a series of questions has been put to many others. The main points of the inquiry were: Do you habitually consume alcohol? Do you drink any of it on your mountain tours? When and how much do you take? Do you drink it to quench the thirst or to gain strength? What were its effects on strength, body temperature, and psychical conditions? The conclusions arrived at by Dr. Schneider are that it is advisable to consume no alcohol on the eve of and at the beginning of a climbing tour. As long as continuous efforts and difficulties are to be expected no alcohol should be used. Only for a special effort of mind and body (for instance, to overcoming a final obstacle) may a dose of alcohol be advisable. In accidents, when a stimulant is required in mountain disease, shock from a fall, alcohol is useful. In descending, when all difficulties are overcome, and when only automatic movements are necessary, many mountaineers find a small dose of brandy a good restorative. The action on the body temperature is to lower it, and on no account should alcohol be used to relieve thirst. The sensation of fatigue after a prolonged tour is best combated by taking a small quantity of good cognac or whisky at the first meal after a short rest. The best beverage during the tour has been pronounced by the majority to be cold coffee and sugar.

A magnificent building has just been completed which will serve as part of the new institutes devoted to the researches required by the extension of modern science. At a distance of a few minutes' walk from the general hospital, a four-floor building with three large fronts has been erected. Therein will be situated the hygienic institute, with Professor Schattenfroh's lecture hall, the institute for the history of pathology with a large museum, the serum therapeutic institute (under Professor Paltauf), and the institute for examination of foodstuffs. In the centre block are two large lecture halls, each accommodating 250 students. In the courtyards and also on the top floors, and under the roofs of the house, stables for the animals used for experiments have been erected. The arrangements are the result of very extensive studies of similar institutions made during the last five years. The cost amounts to upwards of £150,000. During this autumn and winter only a few of the buildings will be used, but next spring all the institutes will be ready for use and they will then be formally opened.

CORRESPONDENCE.

THE TRAINING OF SCHOOL TEACHERS IN HYGIENE.

Sir,—At a crowded meeting in Section IV, and also at the general meeting of the International Congress of School Hygiene, a resolution to the following effect was put forward by me and carried unanimously:

> That practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades.

Greatly fearing that my resolution may have the fate of other resolutions and be relegated to the pigeonholes—on this occasion of the Sanitary Institute—I venture to hope that it will be considered by all the Divisions of the British Medical Association; for there is no doubt that if an authoritative pronouncement is made by the medical profession, which has already done so much to forward the movement, and whose members will eventually play such an important part in the medical inspection of training colleges and afterwards of elementary schools, in support of this resolution, we shall at once get what we ask for from the Board of Education.

I feel strongly that if the teaching of hygiene is introduced into training colleges—and this would naturally be included in the medical inspection of the students—medical inspection of elementary schools will, when its turn comes, be carried out on the very best lines, because we shall have healthy teachers capable of assisting the doctors intelligently.

I also feel strongly that in order to induce the Board of Education to give its consent it is very urgent that this resolution should be presented alone. Successive Ministers have promised that hygiene shall be taught in the elementary schools, provided we assure them that we have teachers qualified to teach it. We are asking for the means to carry out this condition, which is after all quite reasonable.—I am, etc.,

August 20th. Aimée Watt Smyth.

THE INTERNATIONAL CONGRESS OF SCHOOL HYGIENE.

Sir,—It is interesting and profitable to consider the fundamental significance of this and other recent health congresses. They indicate one of the great movements of the times. You call it well, the awakening of the sanitary conscience of the nation. Dr. Jones of Claybury has surely struck a note which will arouse the members of our Association to take their obvious part in it.

The industrialism of the last century, while making the British people rich and numerous, has also made them deteriorate physically. Their rural physique has largely become an urban one.

This deterioration has reached a stage when a few, but fortunately a rapidly increasing number of, thoughtful persons are becoming unhappy and restless about it. This for two reasons—(1) the humanitarian one, that there is much life-shortening disease and much suffering which they feel could be prevented if their own knowledge were utilized and spread; (2) the patriotic or geographical one, that in a few generations more Britain may not be able to hold her own in the ever-pressing, ever-changing struggle of the nations.

The remedy for our deterioration is not exactly to remove the cause, for that might be taken to mean deserting manufactures and getting back to the land. We may see a few thousands being induced back to agriculture, but our millions must continue to work industrially. The remedy, therefore, is to make our industrial life as nearly as possible as healthy as an open-air country life, and it is up to this ideal that we are called upon to educate the people.—I am, etc.,

London, Aug. 21st. B. Dunlop.

THE EARLY NOTIFICATION OF BIRTHS BILL.

Sir,—While all your readers will doubtless be ready to receive with great respect any opinion expressed by the Annual Representative Meeting and endorsed by Sir Victor Horsley, the claim of these authorities to expound the mind of the medical profession in reference to the Early Notification of Births Bill is surely somewhat excessive. So far as I am aware, this Bill has not been considered by the Divisions of the Association, and therefore the Representatives—at least, in their capacity as delegates—had no title to deal with the question. Hence, however important may be their finding as an expression of personal opinion, it can hardly pretend to be the voice of the Association, much less of the "medical profession." In any event, it is to be hoped that the profession will not accept the Representatives' view that the sole objection to the Bill is the absence of any provision for the payment of fees to those on whom the duty of notification is to be imposed. What the Bill proposes to do is to convert, for a particular purpose, the private medical adviser of the patient into a public or State official, bound under penalty to carry information in reference to his patient's affairs to certain public authorities. In doing this it necessarily invades the confidential relationship which exists, and which it is in the public interest should continue to exist, between patients and their medical advisers. Surely in the maintenance of this relationship is a principle which the profession desires to affirm not less emphatically than the justice of State payments for public services. The early compulsory notification of births may be a policy of the greatest value and importance. But

when it is proposed to carry out this policy by compelling the confidential adviser of the patient to hasten from his patient's bedside to proclaim to certain officials what has transpired in the sick-room, both the traditions and true responsibilities of the profession would appear to be disregarded. To such a demand the profession may well object, and, at least in my judgement, it is this objection, rather than the "principle" of the Representatives' resolution, that should be put in the forefront.—I am, etc.,

London, W., August 21st. C. O. HAWTHORNE.

SIR,—In the report of the International Congress on School Hygiene appearing in the current number of the BRITISH MEDICAL JOURNAL there occurs, on page 400, a very interesting passage.

The Registrar-General could not allow registrars of births to distribute cards containing instructions with regard to ophthalmia neonatorum to persons registering births, on the ground that some additional fee would be necessary. The cards would have been sent to the registrar, and all the work necessary would have been for him to hand one over along with the vaccination paper; yet this "work" would have necessitated an additional fee.

Compare this with the attitude of Mr. John Burns and the Government towards the medical profession in the Early Notification of Births Bill. We are to be compelled, under a penalty of 20s., to write out a certificate and post it to the registrar in every case of birth we attend. The Bill, of course, says, "failing notification by the father." This means, either that we must notify every case or else take the trouble of satisfying ourselves that the father has done his duty; and as the former course would be least trouble it would end in our adopting it. And for this we are to receive no remuneration. We have to do it for the honour and glory of the thing.

The public are very ready to admit we are a noble profession; in fact, on occasion they rather like insisting on it and laying great stress on it. We, on the other hand, are very fond of hearing it, and apparently so well satisfied with hearing that the public have got into the habit of acting as though cash remuneration is about the last thing we think of. And so it comes about that the poor Irishwoman in the slums thinks her medical attendant is well repaid for his services with a "God bless you" and a "Lord love you"; that hospital Boards expect the most devoted attention to the sufferers for whom they provide; that Mr. Benjamin Broadbent holds up his hands in shocked surprise (see JOURNAL of August 10th) when we protest against being compelled to perform some one else's duty without remuneration; and Mr. John Burns actually proposes to inflict a penalty on us for failing to do it. The Local Government Board already have us certifying deaths for nothing, now they want us to register births on the same terms.

This is essentially a general practitioner's question, and it is incumbent on every Division to discuss this Bill seriously and protest against it. And, lastly, if it should pass into law in its present form, we must if we have any regard for our interests, combine in absolutely refusing to carry out this provision.—I am, etc.,

Ashton-under-Lyne, Aug. 18th. SAMUEL CRAWSHAW.

SIR,—I find it difficult to understand how Sir Victor Horsley can so completely miss the point in dispute between the medical profession and the promoters of the Early Notification of Births Bill.

If the medical profession were called upon to render *professional services* by this Bill, they would be fully entitled to claim remuneration, but a moment's consideration shows that they are not called upon to render *professional* services. Obviously it does not require medical skill to state the fact that an infant has been born.

This point is so simple and plain in the minds of members of Parliament with whom I have conversed on the subject, that any attempt to avoid it or to minimize its significance must be futile.—I am, etc.,

S. G. MOORE, M.D.,
Huddersfield, Aug. 21st. Medical Officer of Health.

LIVERPOOL HOUSING.

SIR,—If M. Ferrand really told the *Morning Post* reporter that "he was far from satisfied with what he saw in Liverpool"—of which I have doubts—the remark is not in accord with his statements when the Congress visited Liverpool. He and others expressed the highest approval of our system of rehousing the poorest and the most needy, and of the moral and hygienic results thus far attained. It is not true that the drunkenness and dirt which occur in the slums exist equally in our Corporation dwellings; such a statement is the reverse of the truth. Whatever the *Morning Post* reporter may say, the fact is that any of these tenants who are drunken, disorderly, or dirty, after due warning, are required to leave.

M. Ferrand saw no one drunken or disorderly, nor did he see filth or uncleanliness in any of our Corporation dwellings. It is true that, alas! many of the dirty children and other occupants of adjacent slums crowded round our visitors; but these remaining slums and their inhabitants we hope to deal with as speedily as expenditure and the Local Government Board will allow us.—I am, etc.,

RICHARD CATON, M.D., F.R.C.P.,
Liverpool, Aug. 19th. Chairman Housing Committee.

ASSISTANT HEALTH OFFICERSHIPS, BOMBAY.

SIR,—I see in the BRITISH MEDICAL JOURNAL for August 17th an advertisement from the Bombay Municipality for two assistant health officers, one to be paid Rs. 750 rising to Rs. 1,000 per mensem, and the other Rs. 600 rising to Rs. 750.

The advertisement says nothing about length of service, leave to be granted, or notice of termination of services. Are these assistant health officers to be liable to dismissal at a moment's notice? Intending candidates unacquainted with the East would do well to make inquiries concerning cost of living in Bombay. The place has a name for exorbitant house-rents, probably no decent house can be got for less than Rs. 200 a month. Sharing a house with one or more men, even if one is a bachelor, has its disadvantages. Cost of servants must be considered—bearer, cook, syce, waterman, sweeper are all necessary. A pony and trap are an absolute necessity, not a luxury. Pony, trap, and harness, even if bought second-hand, will cost at least Rs. 500 to Rs. 600. It would be well to take out some English harness. "Country" leather is untrustworthy. Clothes had better be bought in Bombay. Money spent on an "outfit" at home is money wasted to a great extent. A couple of flannel suits and some pairs of brown boots would be useful, however. A new arrival should be prepared to spend from Rs. 200 to Rs. 400 on clothes for a start.

Income tax is always deducted from pay—5 pice in the rupee—so one receives Rs. 584 as 6 instead of Rs. 600. The advertisement, moreover, does not state the amount and frequency of increase of pay from Rs. 600 upwards. Is there an annual rise of Rs. 50 per month?

One *may* be able to live with care on Rs. 600 per month (£480 per annum) in Bombay, but personally I consider one is better off at home on £250 a year.—I am, etc.,

Brockley, S.E., Aug. 17th. W. K. BREWER,
Late Health Officer, Mandalay Municipality.

THE OLDEST EDINBURGH MEDICAL GRADUATE.

SIR,—In your issue of August 17th I see that at the graduation ceremonial in Edinburgh Sir Ludovic Grant stated that Dr. William Bayard, of St. John's, New Brunswick, had reached the age of 93 years this month, and thus, as far as he knew, there was no one who could challenge his title to being regarded as the patriarch of the whole vast tribe of the Edinburgh graduate throughout the world.

Whilst congratulating Dr. Bayard on his longevity and good health, I dispute his right to this title.

I also graduated on August 1st, 1837, but was born in December, 1813, and am therefore eight months older than Dr. Bayard.

I may also state that I am writing this without the aid of glasses and in full possession of all my faculties.—I am, etc.,

Exeter, Aug. 21st. WILLIAM DASHWOOD KINGDON.

DR. WALLER'S ADDRESS ON THE ACTION OF ANAESTHETICS.

Sir,—Dr. Waller's admissions in his address before the British Association, published in the British Medical Journal of the 10th instant, mark a distinct advance in the history of anaesthesia. On the physiological side, Dr. Waller says the order in which the effects of chloroform unfold themselves is, first, a suppression of sensation and voluntary movement; then, a suppression of reflex automatic movements, inclusive of the movements of respiration; finally, the heart stops beating. That is to say, in death from chloroform, the heart is the last organ in the body to die. On the clinical side he says, "The doctrine of the Edinburgh school—*watch the respiration, not the pulse*—was sound doctrine. Stoppage of the breathing meant danger, stoppage of the pulse meant death." Obviously, then, to "watch the pulse" under chloroform means death—in exact proportion to the watchfulness.

The doctrine of the Edinburgh school, which is worth quoting in full, if only to allay possible misapprehension regarding Dr. Waller's purely imaginary "folded towel drenched with chloroform," was put forward by the late Professor Syme in the following terms:

The points we consider of the greatest importance in the administration of chloroform are, first, a free admixture of air with the vapour of chloroform, to insure which a soft porous material, such as a folded towel or handkerchief, is employed; secondly, if this is attended to, the more rapidly the chloroform is given the better till the effect is produced, and hence we do not stint the quantity of the chloroform. Then—and this is a most important point—we are guided as to the effect not by the circulation, but entirely by the respiration; you never see any body here with his finger on the pulse while chloroform is given. We use no apparatus whatever, and *never continue beyond the point where the patient is fully under the influence of the anaesthetic.*

The Hyderabad Commission, for which I still hope His Highness the Nizam will receive the credit which is his due, was formed for the express purpose of determining the reason why the doctrine of the old Edinburgh school, as set forth by Syme, was sound and meant safety. The net result of the experiments which were performed in Hyderabad, in Philadelphia, in Edinburgh, and in Cambridge—all, without exception, paid for by the Nizam—proved the reason to be that chloroform, when given by inhalation, has no direct action upon the heart; and now Dr. Waller quotes the interesting experiments and observations of Snow, Gréhant, and Buckmaster and Gardner, which show that if Syme's rules are obeyed, and the anaesthetic is not pushed beyond the point where anaesthesia is complete, the percentage of chloroform in the blood is never more than "the anaesthetic amount," that is, it is well within the limits of safety.

Can anyone assert with truth that Syme's principles are not established upon a definite scientific basis? Whether this be conceded or not, the fact remains that if chloroform is given on these principles, brought to perfection as they have been by the brilliant work of Sir Lauder Brunton and Surgeon-General Bomford on the Hyderabad Commission, danger and death are alike impossible.—I am, etc.,

London, W., Aug. 12th. E. Lawrie.

THE INFLUENCE OF TOBACCO-SMOKING ON HEALTH.

Sir,—I consider that the reports in the lay press on the paper which I read in the State Medicine Section at Exeter on this subject convey a wrong impression. They imply that all the members present agreed with Dr. Drury and the two other critics that I am "an extremist." Anyhow the President of the Section did not oppose my statements, and the fact that two members confessed their partiality for tobacco cannot be considered a justification of the habit on scientific grounds. The argument of one of my critics that beef is also a poison, and that horses and donkeys like tobacco smoke, is childish; he then declined further argument till after his death.

Dr. McWalter's suggestion that tobacco smoke might be a protection against tubercle bacilli was pronounced by Dr. Newsholme to be fallacious, and likely to do harm if believed in by the public.

Dr. Drury charged me with starting a new theory, that Satan was "the inventor of smoking." I certainly believe that Satan is the author of sin, but I dare not say that smoking is a sin, because I am not called upon to be a judge of morals, but I believe and know that tobacco-smoking often arrests and destroys "physiological righteousness" of mind and body. *Hinc illae lachrymae.*

I do not wish the public or the profession to think that the State Medicine Section, which was so ably presided over by Dr. Newsholme, gave vent to laughter (as was reported) over the painful subject of the injuries to health caused by smoking. The laughter was provoked by Dr. Drury's mistake, of which the reporters made so much. Such a severe condemnation of smoking, coming from a medical practitioner of experience, is certain to make people think; and they will not rest until the medical profession takes them into their confidence and speaks the truth without fear or favour.

I think the wisest course, in the interests of all parties, would be to hold a conference of eminent professors of medicine and general practitioners as early as possible in London, Edinburgh, Dublin, and Cardiff. This question should be settled before the various medical schools are opened, so that new students might be taught the essentials of hygiene and physiological righteousness. The public has a right to know the arguments for and against the use of tobacco.

I would urge all members of the Association to refer to the *Year Book* for 1906, page 33, where it is stated that the objects of the Association are (1) the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession. Should the Association not use its vast powers to guide public opinion with a view of promoting a higher standard of hygiene and physical efficiency?—I am, etc,

Torquay, August 7th. H. H. Tidswell.

*** We have received another letter from Dr. Tidswell in which he says that in the report of his speech in the issue of the British Medical Journal on August 10th there was an inaccuracy. He did not say that "the difficulty of giving up the habit (of smoking) was so great that it was obviously foolish to adopt it." Those were not, he says, his words, nor do they represent his opinions; he has come across a great number of men who have abandoned the habit at the voice of conscience, and others by the advice of physicians. His motto with regard to all moral and physical evils is *nil desperandum.*

GONOCOCCAL PYAEMIA.

Sir,—In reply to Dr. Parkinson's letter, which appeared in the British Medical Journal of August 3rd, will you allow me to state that among the various methods of treatment adopted was the hypodermic injection of polyvalent antistreptococcus serum—at first 10 c.cm. doses and later 20 c.cm.?—I am, etc.,

Nottingham, August 7th. F. H. Jacob.

HOSPITAL AND DISPENSARY MANAGEMENT.

SWANSEA HOSPITAL.

At a special meeting of the Board of Management of Swansea Hospital on July 15th the draft of the ninetieth annual report was submitted. It showed that the number of patients treated in all departments last year was 8,106; although the number of indoor patients was 1,688 as compared with 1,722 last year, the resources of the hospital had been taxed to a greater extent than at any time in its history, as was evidenced by the fact that the daily average number of beds in occupation had advanced from 114.12 to 121.56. The average cost of each bed occupied, after allowing 1s. 6d. per head for out-patients, was £68 9s. 3½d., and of each patient £4 18s. 7d., as compared with £68 1s. 8d. and £4 10s. 2d. in the previous year. The ordinary income was £8,819 19s. 8d., an increase of £938, and the extraordinary income, £1,180 7s.—total, £10,000 6s. 8d. The total expenditure (ordinary) was £8 804, and the extraordinary expenditure £285 18s. 11d. The amount of subscriptions received during the year was £2,876, workmen's contributions £3,799 8s. 1d., collections at places of worship £414 3s. 4d., house-to-house collections £499 2s. 4d.; investments realized £1,032 18s. 6d., while bequests amounted to £1,180 7s. The amount due to the treasurer on current account is £2,455 16s. 11d. The report was adopted for submission at the annual meeting. The Committee received an application from the Swansea Board of Guardians for increased representation on the Board of Management, but it was decided that it was impossible to comply with the request.

The King has been pleased to appoint Lieutenant-Colonel James Will, M.B., R.A.M.C. (Principal Medical Officer), to be an Official Member of the Legislative Council of the East Africa Protectorate.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF EDINBURGH.

THE following candidates have been approved at the examinations indicated:

FIRST M.B., CH.B.—G. M. Adam, W J. Adie, J. R. Aeria, R. Aitken, J. E. Allan, W. R. Bayne, H. Bedingfield, D. Bell, A. J. Bennee, A. G. Biggam, H. F. Blacklee, J. P. Blockley, A. Bloom, *N. H. Bolton, T. C. Britton, N. H. Brönnum, D. L. Brown, W. Bruce, C. Burnham, A. B. Cheves, J. D. M. Claassens, Effie M. D. Craig, P. L. Davies, C. G. Deane, R C. Dickson, J. M. Drew, B.A., Helen C. Dykes, A. Eprile, J. Geoghegan, J. M. Gillespie, R. Govan, M.A., J. V. L. Grant, W. C. M Grant, J. Gray, J. W. Gray, M.A., A. Groenewald, S M. Hancox, K. G. Hearne, A. M. V. Hesterlow, S. Hodgson, J. Elise Hoffmann, *A. F. Holmden, Gwendolyn G. Hunter, W. H. Inch, R. C. Irvine, W. H. Johnston, B A., B. B. Kapila, E. W. Lawrence; G. L. Leggat, L. Levy, W. E. Lewis, N L. Lochrane, H. R. Longstaff, A. H Louw, F. R. Luke, G. M'Connell, I. Macfarlane, A. M Mackay, Jessie A. MacLaren F. de S. M'Menamin, L. B. C. Marksman, S Marshall, J. S. S. Martin, V. H. Mason, H. M. Mills, A. B. Mitchell, J. S. Monro, A. E Moore, H. Morris, B.A., *J. T. Morrison, R. C. Moses, T. P. Noble, P. F. Nolan, R. Park, H. H. Proudfoot, N. Purcell, M. Ramsay, Mary D. Rankine, S. D Reid, G. Richardson, J. S. Robertson, J. Scott, P. M'L Shiels, B. M. Smith, C. E. H. Smith, J. J. Stander, R. S. Stevenson, S. D. Stewart, S. W. H. Stuart, Tehl Singh, D. L. Theron, A. H. Towers, P. G. Tuohy, P. Vieyra, G. H. W. de Vos, C. D. Walker, C. C. Wang, H. W. Webb, J. B. Wilkie, D M'D Wilson, G. Wilson, W. Q. Wood.

SECOND M.B., CH.B.—F. Armstrong, Janet Armstrong, A E. C. Beausoleil, J. H. Bell, R. A. Bell. J. G. Boal, W. G. Brand, P. de Bruyn, O S. Bulloch, A. D. Child. J. Davie, W. N. Davies, A. E. Drynan, W. Duulop, A. H. Elmslie, H. G. Feltham, G. F. Fismer, M. Gavin, F. P. Gibson, W. E. Goss, W. T. Graham, R. Hamilton, T. E. Harwood B.A., E. B. Hoffmann, J. H. Jones, R. R. Kerr, C. G. Kurien, Lina Kurz, Janet Leiper, L. Leslie, J. S Levack, W. H. Lowe, D. C. Macaskill, M.A, Margaret M'Cahon, P. M'Cool, J. M'Kail, M.A., J. M'C. M'Keand, N. M'Leod, Mary M'Millan, H. D. MacPhail, M.A, A. J. Macvie, C. G. Marais, A. F. W. Millar, G. M. Miller, A. M'K. Minford, W. Morrison, Rhoda May Murdoch, W. J. Nisbet, J. E. R. Orchard, H. R. A. Philp, J. A. Pienaar, B.A., Ella F. Pringle, F. W. Rayment, C. S. Sandeman. J. M'G. Scott, J. D. Skinner. W. Stevenson, A. E. Tait, R. H. Tait, L. W. O. Taylor, S. Williams, Margaret C. Young.

THIRD M.B, CH.B.—A. H. T. Andrew, W Bainbridge, A. R. Bearn, H. Burns, E. Cansfield, J. A. R. Cargill, H. G Carter, L. L. Cassidy, P. H. Chauvin, A. C. Court J. C. Craig, M.A., J. Crocket, J. M. Dalrymple, Margaret E. Davidson, P. Davies, F. Dillon, Helen Forbes, W. T Gardiner, A B Gordon, W. B. Grant, J. O. Hamilton, J. Hewat, K R. K Iyengar, W. P. S. Johnson, J. Langwill, R. D Laurie, A. R. Leggate, C. L. Louw, A. B. MacCallum, D. M'Carrol, R. MacDonald, G M Mackay, M.A., W. J. M'Keand, D. L. MacKenna, J. C. Mackenzie, A. K. Maclachlan, A. G. MacLeod, Ada J. Macmillan, Eva Meredith, Flora Morrison, Anna L Muncaster, K. Nehru N. S. Neill, J. G. Nicholson, M.A., Hilda M. Northcroft, P. G. Palmer, A. A. W. Petrie, B. B. Phillips, A. R. Price. D. Ross, Marguerite C. Ross, H. M. Spoor, N. G. Thornley, Mary M. M'C. Turpie, D. R. P. Walther, G. S. Williamson, G. Wilson.

* With distinction.

ROYAL UNIVERSITY OF IRELAND.

THE following candidates have been approved at the examinations indicated:

FIRST M.B., CH.B.—C. Barragry, D. J. Barrett, J. L. Brown, P. A. Clearkin, M. J. Cogan, *gca* E. Colgan, P. J Corcoran, J. F. Craig, T. P. Davy, J. C. Denvir, B. Doyle, B.A., G. Fitzgerald, T F. S. Fulton, M. J. Gallagher, J. Gorman, M.A., T. D. Graham, G. P. Harvey, J. Hill, *fb* J O Hodnett, N. L. Joynt, F. J. Keane, *gcea* J. J. Keirans, J. L. Kilbride J Lafferty, H T. S. M'Clintock, R. J. M'Connell, L. J. J M'Grath, *b* M. M'Guire, *g* A. D. MacMahon, R. C. M'Millan, D M'Sparron, C. Martin, W. Megaw, W. M. Millar, A. G. Mitchell, *db* J. J. H Mitchell, H. H Mulholland, H. J. V. Mullane, D. O'Brien, J. P. O'Brien. J. O'Connor, T. F. O'Donoghue, W. M. O'Farrell. J. A O'Flynn, P. J. O'Grady, O. J. O. O'Hanlon, *g* H. O'Neill, J. Patrick, *a* J. Porter, J. H. Porter, J. M. Rishworth, W. N. Rishworth, M. J. Roche, J. M. Rowe, H. A. Skillen, T. Smyth, F. J. D. Twigg, W. Wilson.

a First Class Honours in Botany, *b* Second Class Honours in Botany, *c* First Class Honours in Zoology, *d* Second Class Honours in Zoology, *e* Second Class Honours in Chemistry, *f* First Class Honours in Experimental Physics, *g* Second Class Honours in Experimental Physics.

Exhibitions have been awarded to J. J. Keirans (First Class, £20) and to J. O. Hodnett (Second Class, £10).

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE censors elected at the quarterly comitia on July 25th were Drs. David Ferrier, J. Mitchell Bruce, T. Clifford Allbutt, and J. F. Goodhart.

The following is the list of examiners elected on the same occasion:

Chemistry.—John Millar Thomson, F.R.S., and George Senter, Ph.D., B Sc.

Physics.—Dawson F. D. Turner, M.D., and Alfred W. Porter, B.Sc.

Materia Medica and Pharmacy.—Cyril Ogle, M.B., Joseph John Perkins, M.B., Robert Arthur Young, M D., James Purves Stewart, M.D, and Otto Fritz Frankau Grünbaum, M D.

Physiology.—William Dobinson Halliburton, M.D., and Ernest Henry Starling, M.D.

Anatomy.—Peter Thompson, M.D.

Medical Anatomy and Principles and Practice of Medicine.—Joseph Arderne Ormerod, M.D, Sidney Harris Cox Martin, M.D., William Collier, M.D., Hubert Montague Murray, M.D., Norman Dalton, M.D., Humphry Davy Rolleston, M.D., Sir Edwin Cooper Perry, M.D., Frederick John Smith, M.D., Arthur Pearson Luff, M.D., and Walter Essex Wynter, M.D.

Midwifery and Diseases peculiar to Women.—John Phillips, M.D., Herbert Ritchie Spencer, M.D., William John Gow, M.D., Thomas Watts Eden, M.D., and George H. Drummond Robinson, M.D.

Public Health.—Part I. William Henry Willcox, M.D., B.Sc.; Part II, Alexander Grant Russell Foulerton, F.R.C.S.

Murchison Scholarship.—Seymour John Sharkey, M.D., and William Hale White, M.D.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FIRST PROFESSIONAL EXAMINATION.—J. C. Atridge, P. W. Black, D. Burns, *W. H. Condell, A. H. Croly, P. V. Crowe, T. Dowzer, C. E. Drennan, *J. T. Duncan, R. M. Erskine, J. Fitzgerald, M. Garry, J. Geraty, M. Golding, H. C. Gilmore, P. B. Kelly, N. T. B. Kelly, H. N. K. Kevin, R. P. Landy, H. L. L'Estrange, M. P. Leonard, G. G. MacDowell, P. H. M'Donough, P. M'Grath, W. G. M'Guire, W. O'Brien, P. J. O'Connell, *T. F. O'Donnell, J. C. O'Farrell, Kingsley L. O'Sullivan, C. Petit, *S. Punch, M. Quinlan, J. B. Reddy, L. W. Roberts, V. Wallace.

SECOND PROFESSIONAL EXAMINATION.—J. Alston, H. G. P. Armitage, *Miss M. M. S. Coghlan, O. G. Connell, C. P. Corbett, W. Crymble, M. Drummond, *A. Foley, G. J. Fraser, J. Gormley, W. V. Johnston, F. R. Jones, F. M. Kirwan, C. Lapper, A. M. Lanphier, J. Mitchell, H. M. Montgomery, C. M'Donnell, H. M. E. H. McAdoo, R. O'Connor, P. T. O'Farrell, M. F. O'Hea, J. H. O'Neill, *J. S. Pegum, J. D. Power, T. P. Seymour, T. Sheedy, *W. A. Swan, R. P. Thomson, H. R. Tighe, *R. White, *R. H. Weir, H. Q. O. Wheeler, T. J. Williams.

THIRD PROFESSIONAL EXAMINATION.—R. Adams, B. G. Belas, Miss I. M. Clarke, J. F. Gibbons, W. Hederman, H. S. Johnston, K. A. Murray, *H. S. Meade, J. T. M'Kee, Miss A. F. Nash, J. M. J. Rhatigan, H. N. Ritchie, G. W. Stanley, G. C. Sneid, J. M. Smyth, R. H. Taaffe, Miss C. F. Williamson, O. W. J. Wynne.

FINAL EXAMINATION.—D. Adams, C. W. N. Anderson, Miss H. O'D. M. Beamish, J. J. Clarke, C. J. A. Corby, M. E. Cussen, J. H. E. Davis, P. G. M. Elvery, S. A. Furlong, D. J. Hanafin, J. B. Hanafin, F. M. Hewson, W. E. M. Hitchins, P. M. Keane, L. F. Kelly, J. A. Molyneux, J. B. MacClancy, P. J. M'Kevett, W. R. O'Farrell, H. J. Raverty, C. Sheahan, T. Sheehy, J. A. Smullen, L. D. Woods.

* With honours.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

MEDICAL MEN AND DRUG COMPANIES.

YOUNGSTER asks "Whether there is any objection, ethical or otherwise, to a general medical practitioner holding shares in a wholesale drug company from which he purchases drugs, etc."

*** There is an obvious ethical objection to any member of the medical profession being interested in the sale of anything which it may be his professional duty to recommend to his patients. If the company in question sells only such goods and in such a way that he and not the patient will be the direct purchaser, this objection would not apply, but certain companies interested in the sale of particular proprietary articles have offered shares to the medical profession in the hope that those taking them will do their best to promote by their recommendations the sale of these articles; the position of these medical shareholders is obviously not in accordance with sound ethical principles.

Medico-Legal.

DOCTOR AND MAGISTRATE.

IN commenting early in this year (BRITISH MEDICAL JOURNAL, January 5th) on some remarks by the Chatham stipendiary magistrate on Dr. Godfrey Taunton's having refused to attend the police court without a *subpoena* being served upon him, we pointed out that Dr. Taunton was strictly within his legal rights in so doing, and that the magistrate's remarks were not worthy of the representative of law and order. While we are still of the same opinion, as we find from a local journal that recently there has been a repetition of the annoyance, we think it is worth Dr. Taunton's consideration whether he cares to continue to be made a target for magisterial wit, or would prefer to bow to local custom, and attend on the request of the police alone, as is, we understand, the universal practice among divisional surgeons in the metropolitan district. If at any time a difficulty arose about payment of his fees, he could then at once revert to his strictly legal course.

OBITUARY.

CHARLES WILLIAMS, F.R.C.S.Edin., M.R.C.S.Eng., L.S.A.,

CONSULTING SURGEON, NORFOLK AND NORWICH HOSPITAL.

As briefly announced in the British Medical Journal of last week, the death of Mr. Charles Williams occurred at his home in Norwich on the afternoon of Sunday, August 11th.

About two months ago he contracted what was thought at first to be an attack of influenza, and although most of the other symptoms passed off, he was left with persistent hoarseness, and it was not until about a fortnight before his death that the cause of this was found to be a mediastinal tumour pressing upon the recurrent laryngeal nerve. Towards the end he suffered great distress from dyspnoea, and death came to him as a happy release.

Mr. Williams was born at Gloucester in the year 1829, and was the second son of Dr. Herbert Read Williams, who for many years practised in that city, and grandson of Mr. Edmund Williams, of Aberystwith. He was educated at the Crypt Grammar School, Gloucester, and subsequently became a pupil of Mr. John William Wilton, the then Senior Surgeon at the Gloucester Infirmary. After three years at this hospital he was elected Assistant House-Surgeon at the Bradford Infirmary, where he remained for two years. He then entered at Charing Cross Hospital, where, as a student, he had a distinguished career, obtaining several medals. In 1857 he took the diploma of M.R.C.S.Eng., in the following year the L.S.A., and in 1869 the F.R.C.S. of Edinburgh. In 1858 he was House-Surgeon to the Royal Westminster Ophthalmic Hospital, and later in the same year was appointed House-Surgeon to the Norfolk and Norwich Hospital, which post he held for six years. At that time the House-Surgeon was the only resident medical officer in this hospital, and, in addition to his ordinary duties, he was made responsible for the general administrative work of the hospital. Mr. Williams entered upon his new duties with great zeal and energy, and was the means of effecting many much-needed reforms in the management of the hospital, in acknowledgement of which the Board of Management passed a special vote of thanks to him on his resignation of the post. He then started to make a practice for himself in Norwich, and in a short time met with considerable and deserved success. For many years he enjoyed a very extensive practice in Norwich and the district, and obtained a considerable reputation as an operator. In 1869 he was appointed Assistant Surgeon to the Norfolk and Norwich Hospital. At that time the honorary staff was not elected by a representative Committee of the Governors as now, but every individual governor had a vote, which could be exercised by proxy, so that an election entailed not only an enormous amount of trouble to the candidates, but also involved them in considerable expense. In 1878 Mr. Williams was elected full Surgeon to the hospital, in succession to Mr. Firth, who died in that year. This position he held until last year, when he resigned, and was appointed Consulting Surgeon.

He was one of the original members of the Norwich Medico-Chirurgical Society, and held the offices of Honorary Secretary from 1876 9; Honorary Treasurer, 1885 8; and President, 1881 2. It was during the term of his presidency that he issued a valuable printed index to the manuscript catalogue of the Society's library. He was also a member of the Norfolk and Norwich Archaeological Society, and occasionally contributed to its *Transactions*.

Mr. Williams was a zealous, and indeed enthusiastic, collector of all possible information relating to Sir Thomas Browne, his works and his family, and was one of the greatest living authorities on these subjects. Amongst his publications may be mentioned *The Portraits of Sir Thomas Browne*, wherein is given a detailed account of the only three existing portraits—the Bodleian, the London, and the Norwich portraits. He wrote also *The Pedigree of Sir Thomas Browne*, and in connexion with this it was his intention, had he lived, to have gone to Scotland this autumn to gather any further possible information from the living descendants of Sir Thomas. He published *The Will of Sir Thomas Browne and of his Father* and *The Bibliography of the Religio Medici*, a second and revised edition of which appeared only a month before his death. On the occasion of the unveiling of Sir Thomas Browne's statue in Norwich, on October 19th, 1905, Mr. Williams exhibited no less than eighty editions of the *Religio Medici* and other works by Sir Thomas Browne; and to further celebrate the occasion he presented to each guest present at the luncheon in the Blackfriars Hall a *Souvenir of Sir Thomas Browne*, containing twelve large fine illustrations with letterpress notes.

Charles Williams, F.R.C.S.Edin., M.R.C.S.Eng., L.S.A.

Mr. Williams was also a collector of portraits of past medical men of Norwich, and in the year 1871, the centenary of the Norfolk and Norwich Hospital, he conceived the idea that the "best method of commemorating the event would be by his collecting, as far as was possible, the likenesses of those who had been connected with the hospital in an honorary capacity." In this year he presented forty portraits to the hospital, and subsequently added some forty more, and in 1890 he published a short account of many of the medical men in this list.

Anything of an antiquarian nature, especially if bearing upon his own profession, had a great fascination for Mr. Williams, and thus we are not surprised to find, among his other publications, papers on "The Barber-Surgeons of Norwich," "The Ordinances of the Guild of Barber-Surgeons of Norwich," and "The Treatment of the Sick in Norwich during the Seventeenth Century."

He married Miss Wellingham, of Thorpe Hamlet, who survives him, and he leaves two sons and two daughters. He was buried at Eccles in Norfolk.

HARRY FREDERICK WHITCHURCH, V.C.,

MAJOR, I.M.S.

A telegram from India announces the death, on August 17th at Dharmsala, of Major H. F. Whitchurch, who won the Victoria Cross at Chitral. He was born in September, 1866, received his medical education at St. Bartholomew's Hospital, and entered the Indian Medical Service in March, 1888. He took part in the Lushai expedition in 1890, including the relief of Changail and Argal, for which he had the medal with clasp, and in the Chitral expedition in 1895, including the defence of the fort during its investment in March and April.

The deed of gallantry for which he received the Victoria Cross was performed on March 3rd. Captain Baird was wounded on the heights at a distance of a mile and a half from the fort. Whitchurch went to the rescue, but the enemy in great strength had broken through the fighting line, darkness had set in, and Baird, Whitchurch, and the Gurkhas with him were completely isolated from assistance. The wounded man was at first carried by the Gurkhas on a dhooly, but when three of them had been killed and one wounded, Whitchurch took Baird on his back. The little party kept diminishing in numbers, being fired at the whole way. On one or two occasions Whitchurch was obliged to charge walls, from behind which the enemy kept up an incessant fire. At one place particularly the whole party was in imminent danger of being cut up, having been surrounded by the enemy. Whitchurch gallantly rushed the position, and eventually succeeded in getting Baird and the sepoys into the fort. Nearly all the party were wounded, Captain Baird receiving two additional wounds before reaching the fort.

Major Whitchurch was also engaged in the campaign on the North-West Frontier of India in 1897-8, taking part in the defence of Malakand, the relief of Chakdara, the action at Landakai, and the operations in Bajaur and in the Mamund country, being again mentioned in dispatches and receiving two clasps. He also participated in the operations in China in 1900, being present at the relief of Peking and the actions at Peitsang and Yangtoun; he was a third time mentioned in dispatches, and was awarded the medal with clasp.

MAJOR FULLERTON, M.B., F.R.C.S.I., I.M.S.

WE regret to announce the death of Major Thomas A. Fullerton, which took place at Cawnpore on the 15th inst. The cause of death was septicaemia, contracted while performing an operation, in the course of which he pricked his finger.

Major Fullerton was the son of the Rev. Alexander Fullerton, of Lucan, co. Dublin, and received his medical education at the old Carmichael School of Medicine and at the Royal College of Surgeons. During his career as a student he gained the Mayne and Carmichael Scholarships, besides other prizes and medals. He graduated at the Royal University in 1890, and in 1892 he entered the Indian Medical Service, taking a high place at the competitive examination. He has been stationed chiefly in the United Provinces, where he greatly distinguished himself in plague work. His name appeared in the list of Coronation honours as the recipient of the Kaisar-i-Hind gold medal for public service in India. In the campaigns on the North-West Frontier he twice took part—against the Waziris in 1894-5 and in the Malakand affair in 1897-8. In each case he received the medal and clasp.

He was specially successful as a surgeon, and to qualify himself still more for his surgical work he took, only a few weeks ago when home on furlough, the Fellowship of the Royal College of Surgeons in Ireland.

Major Fullerton was a man of charming personality, and was a general favourite with every one with whom he came in contact. He died at the post of duty in the zenith of his manhood, leaving a widow and two sons to mourn his loss.

WE much regret to announce the death, at the comparatively early age of 53 years, of Dr. W. JAMES SPENCE, at his residence, Pemberley Lodge, Bedford, from meningitis and heart disease after a short illness. The announcement came as a great shock to all who knew him, as Dr. Spence only a few days prior to his death was actively engaged in attending to the many and varied offices with which he was intimately connected in the town of Bedford. He received his medical education in Edinburgh, and took the diplomas of L.R.C.P. and L.R.C.S.Edin. in 1881. He was for seventeen years a most busy and successful practitioner at Syston, Leicestershire, where by his conscientious devotion to his work he gained the affection and esteem of all those with whom he was acquainted; and owing to the keen interest and zeal in dealing with the management of many important affairs in the parish, endeared himself to the hearts of all. On retiring from practice at Syston four years ago, he took up his residence in Bedford, where he quickly gained a large number of friends, and was ever ready with acts of kindness and generosity whenever an opportunity occurred. He was a member of the British Medical Association, and one of the representatives of the Bedford and Herts Division on the Council of the South Midland Branch. He took a keen interest in Church affairs and in all matters connected with the parish; he was an active member of the Burial Board, one of the managers of the Bedford Savings Bank, a member of the Committee of the Grammar School Chapel, and Surgeon-Lieutenant of the 1st Bedfordshire Royal Engineers (Vols.). Amongst the many activities which characterized his life we note the various appointments held by him: for five years Senior House-Surgeon, House-Physician, and Dispensary Surgeon to the Bradford Royal Infirmary; Honorary Life Member of St. John Ambulance Association; Honorary Medical Officer, St. Anne's Home for Friendless Girls, Syston; Medical Attendant, Ratcliffe College, Leicester. He also contributed various articles to the BRITISH MEDICAL JOURNAL, *Medical Times*, and *Edinburgh Medical Journal*.

THE death has recently occurred of Mr. Francis James Pearse, of Warwick Square, S.W., who for many years past had carried on in Westminster what was probably one of the oldest practices in the kingdom. Mr. Pearse, who at the time of his death was in his 60th year, received his general education at Westminster School and pursued his professional studies at the hospital of the same name in the Broad Sanctuary, his work at this period including a prosectorship at the Royal College of Surgeons, and an Assistant House-Surgeoncy at his hospital. In 1869 he became L.S.A., and in the following year M.R.C.S.Eng.; he then joined his father in practice, and in the course of time was appointed Surgeon to the A Division of the Metropolitan Police, and to the Western Dispensary, Westminster. The latter appointment he gave up after some years' service, but the former, as well as the medical officership to the United Westminster Almshouses, and several others of the same general nature, he retained until the end. Mr. Pearse was an early member of the British Medical Association. He took a very keen interest in the work of the auxiliary forces. He joined the volunteers when quite young, and at the time of his death was on the roll of officers in the Army Medical Reserve, and held a commission as Surgeon-Colonel to the Victoria and St. George's Rifle Volunteers. Mr. Pearse's death was the outcome of an attack of influenza, his last illness really commencing as far back as the beginning of this year. He saw what was to be the end quite clearly, but faced it with unflinching courage and refused to give up work until shortly before his death. He was a man of strong character, and if his somewhat retiring disposition limited in some degree his circle of professional acquaintances, those who had the advantage of his friendship valued it highly and were as warmly attached to him as he to them. He also had a faculty, not too common, of gaining the absolute confidence of the majority of the patients with whom he was brought into contact. By many of these he was looked upon as a personal friend, and his death will leave a gap in their lives which will be hard to fill. For some of the particulars here given we are indebted to Drs. Frederick Palmer and Proctor Sims, the latter of whom has also been good enough to relate the history of this practice, which, as conducted by succeeding generations of one family, comes to an end with the death of Mr. Pearse. It was founded in the reign of George III by a Dr. Grindley, who had previously been in the army, but finally settled down in Marsham Street, then one of the most fashionable quarters of Westminster. He handed it on to his son-in-law, the first of the name of Pearse to hold it. This Mr. Pearse had also been in H.M. service, having served as surgeon on board one of Nelson's ships, the *San Josef*. He was succeeded by his son, Mr. George Pearse, who died, at the age of 80, in 1891, having by that time taken into partnership Mr. Francis Pearse, the grandchild of the original founder of the practice, and the person with whom this obituary notice is more directly concerned. It will be seen that this practice was carried on for practically four generations of the same family and in the same locality, and for about twelve decades.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries

who have lately died are Dr. W. Koster, formerly Professor of Anatomy in the University of Utrecht; Dr. William Le Grange Ralph, of Washington, aged 56, who for reasons of health gave up medicine for natural history and made a valuable collection of birds' eggs and nests; these he presented to the National Museum in Washington, of the ornithological section of which he had been curator since 1897; Dr. P. Berthod, formerly President of the Medical Syndicate of the Seine Department, founder of *La Médecine Sociale*, and a prominent advocate of the interests of the profession, aged 47; Dr. Edmund Hansen Grut, sometime Professor of Ophthalmology in the University of Copenhagen, aged 76; Dr. H. Hoyer, formerly Professor of Physiology and Histology in the University of Warsaw; Dr. Berthold Bosse, Chief Physician of the Lucina Lying-in Hospital, Vienna, aged 43; Professor Alexander Geh, of the University of Kasan, well-known by his researches on syphilis, aged 66; and Dr. Albert Weiss, formerly of Cassel, well known in Germany, not only as a writer on medical subjects, but as an original poet and a translator of Slav poems, aged 76.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

INDIAN MEDICAL SERVICE.

More Work for More Pay writes: The letter of "I.M.S" in your issue of June 8th has the laudable object of a rise of pay, and I hesitate to criticize it; but I wonder if the writer has looked on the question from the point of view of an employer of labour. Heaven forbid that I should liken the Government of India to a business concern, but has "I.M.S." considered what work the Government gets out of us in military employ? Given a year or so in the country to understand the language and customs of its people and to get into the routine of clerical work, I maintain a young officer is just as efficient as a senior one for the work which Government allots him to do.

That is my point. In the Indian Civil Service, Forest Service, Indian army, and police, the officer's work in scope importance and responsibility increases *pari passu* with his promotion and rise of pay. In the Indian Medical Service this is not so, and it is pitiful waste and loss to Government to have an expensive and highly-qualified officer made no use of, but condemned to routine work which a native hospital assistant could efficiently perform.

Provided, then, that candidates of any sort are forthcoming, why should Government hold out inducements to attract the best men only to get such a poor return?

The whole system requires a radical change, and the institution of a station hospital system should be the first. Then equip these hospitals up to a modern standard, and let the young officers be encouraged to combine their energies in scientific and research work. I would like to see a greater choice given to the senior officer, and I think a freer interchange between the military and civil branches would keep up the interest in, and efficiency of, the service.

My scheme of employment would be as follows, always supposing station hospitals introduced.

Up to 5 years.—In a station hospital under the Senior Medical Officer, I.M.S. Each young officer to be attached to a regiment and live in regimental mess and with the officers of the regiment, and have the regiment under his especial care, but all medical work to be done as ordered by Senior Medical Officer. He would in this time learn the language and hospital administration, and would do work in the laboratory and also, if qualified, be a specialist in any one subject.

5 to 6½ years.—To go on furlough one year, and study leave six months.

6½ to 11 years.—In civil, as second class civil surgeon, on plague duty, deputy sanitary commissioner, or assistant to a first class civil surgeon, superintendent of gaol.

11 to 12 years.—Furlough.

12 to 17 years.—Command of a station hospital, deputy sanitary commissioner, junior professor at medical college, superintending plague officer.

17 to 18 years.—Furlough.

18 to 25 years.—First class civil surgeon, professor at medical college, command of a large station hospital.

25 to 30 years.—Civil surgeon, first class; inspector-general, professor and principal of medical college, principal medical officer of a brigade and division.

I believe that this scheme if worked with a certain amount of elasticity would be very popular. The civil side would avoid the ten to fifteen weary years in second class civil surgeoncies, and the military the lack of status as a lieutenant-colonel in being still a regimental doctor commanded by a combatant officer, possibly his junior.

A certain amount of combined leave to be fitted in, and the pay altered so as to make no difference between military and civil, and then we should have a splendid and popular service.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* British Medical Journal *alone unless the contrary be stated.*

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any Circumstances be Returned.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal, and not at his private house.

Communications respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the Journal, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

Telegraphic Address.—The telegraphic address of the EDITOR of the British Medical Journal is *Aitiology, London.* The telegraphic address of the MANAGER of the British Medical Journal is *Articulate, London.*

Telephone (National):—

EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Dr. Herbert V. Rake (Fordingbride, Salisbury) asks whether it would be possible for a qualified chemist to get a voyage on an emigrant or other ship as dispenser in the same way as a qualified medical man gets a post as ship's surgeon.

Milk and Tuberculosis.

Lactis asks for information on the following points: (*a*) What quantity (in quarts) of cow's milk is supplied each year to the United Kingdom? (*b*) In what proportion is this total quantity divided between England, Ireland, Scotland? (*c*) What proportion of the milk is calculated to be tuberculous? (*d*) What percentage of dairy cattle suffer from tuberculosis of the udder?

Treatment of Leukoplakia.

Rusticus asks for suggestions for treatment in the following case: An inch-long patch of leucoplakia (a mere white streak) in the toothless alveolus of a gentleman, aged 57. He is a non-smoker, but had syphilis thirty years ago. There is no pain nor inconvenience, but the patient is nervous of the possibility of cancerous development in such a patch, and wants it removed. Short of excision, is there any mouth-wash or application that can be recommended? What about acid nitrate of mercury or chromic acid solution as a caustic? Is hydrogen peroxide likely to be of any service?

ANSWERS.

Treatment of Alopecia Areata.

Dr. L. Leon-James, (Methven, New Zealand) writes in reply to "Brooke" (British Medical Journal of May 18th): After trying every remedy I could find in print, I was successful on three occasions in curing the disease with the following ointment rubbed well into the patches night and morning:

℞ Chrysarobin 3ij
Hazeline cream (B. W. and Co.) 3j
Mix. Heat to 300° F, till dissolved, and stir till cold.

I tried this ointment much weaker at first, but met with no success until I gave it in this strong form.

The Manufacture of Condensed Milk.

J. H.—There is not, so far as we know or have been able to discover, any book devoted to the preparation of condensed milk, but it is dealt with among other matters in several books. There is a short but very good description of the methods of manufacture in the article on milk in Thorpe's *Dictionary of Applied Chemistry.* It is dealt with at rather greater length in *English Dairy Farming*, by J. Long (Chapman and Hall), which, however, is rather old; also in *Les Industries du Lait* (1904), by R. Lezé (Firmin-Didot et Cie., Paris), and in *Die Magermilch Verwertung* (1903), by C. Knoch (M. Heinsius Nachfolger, Leipzig).

Treatment of Chronic Diarrhoea.

E. B. F. writes to suggest to "Puzzled" (British Medical Journal, August 3 d) to prescribe a strictly vegetarian diet, to be enforced for some months, combined at first with pil. plumbi cum opio, 5 grains once or twice daily.

Climate of Hong Kong.

X. Y. Z.—The climate of Hong Kong is trying during seven months of the year; for the other months (October to March) it is delightful; one can live in the town, on the Peak, or on the mainland. The Peak is the best place to live in, being about 10 degrees cooler in summer than the town. The climate suits Europeans very well, the winter making up for the hot and damp summer. Malaria and dysentery are the two chief diseases. The former has been much lessened by drainage, and with care neither are dangerous. The mainland (Kowloon) is better to live in than the town. Children from 5 to 18 should not live in Hong Kong. Get all clothes, boots, etc., there.

The Preservation of Rubber Instruments.

We have again received an inquiry with regard to the best method of preserving rubber instruments. A question on this subject published about three years ago led to a few replies the purport of which we may reproduce, while at the same time asking correspondents who have found other methods suitable to send us their experience. Lieutenant-Colonel J. A. Nunn, Army Veterinary Department, stated that he had kept rubber instruments in the plains of India throughout the hot weather in an air-tight tin box, with a small quantity of kerosene oil in a gallipot; as the oil evaporates it must be renewed from time to time. Dr. M. Aston Key, Southsea, recommended swabbing five or six times a year with a saturated solution of turpentine dissolved in methylated spirit. The spirit evaporates leaving a very fine coat of turpentine which is quickly absorbed by the rubber; he added that when the turpentine was applied the instruments ought to be manipulated, and that all that can be hung up are best kept in that manner and not coiled.

LETTERS, NOTES, Etc.

The "American Medical Directory."

We are asked to state that the *American Medical Directory*, to which attention was drawn in this Journal on July 6th, 1907, was compiled and officially published by the American Medical Association, and that the W. B. Saunders Company, of London and Philadelphia, are merely the agents for its sale in this country and not its publishers.

Vaginal Haemorrhage in Young Infants.

Dr. T. Houghton Mitchell (Ambleside) writes: Six years ago I attended the wife of a coachman in this neighbourhood, whom I delivered of a female child. Within a week of its birth the nurse drew my attention to the oozing of blood from its vagina. The same patient was attended by me in her confinement on August 2nd of this year. When a second female child was born on August 8th, the nurse—a different one from the former—was much alarmed by an oozing of blood from the babe's vagina. In neither of these cases did inspection reveal any abrasion or vascular growth to account for the anomaly. Were they both rare cases of infantile menstruation?

The Perils of Sterilization.

Dr. H. Compton Parsons (Torrington) writes: I have noticed some letters on Dr. Duke's suggestion of removing the cervix in order to produce sterility. I attended a case in New Zealand in which I had very considerable trouble owing to the difficulty of delivering through the cicatrix of a completely amputated cervix. The case was well known to me, as my colleague and I had sent her into Christchurch Hospital some months before with a growth involving almost the whole cervix, and at the time we supposed her safeguarded against another conception. Two or three years later she wrote to me from the North Island asking me to communicate with the local medical practitioner as she was again pregnant. I remember spending a very anxious day, having been called at 7 a.m., and delivering her with much difficulty at 1.30 the next morning. I think it was her seventh confinement.

Medical Attendance in Cases of Sudden Illness

Dr. A. Withers Green (London) writes: I would wish to know the views of my fellow-practitioners on the following matter: If I were taken suddenly ill I should hope and expect that I should be seen by a medical man on the spot. If I were away from civilization I should be content with first aid by any one. Surely it is a serious matter in some sicknesses to be moved at all, as well as serious if the wrong line of action be taken. Is it not right that all should share in the benefits of medical advice instead of that of any first-aid association. When the doctor has given his advice and practice, then the conveying by a smooth-running, quick travelling ambulance is good. I have heard that in Leeds and other large towns a medical man accompanies the ambulance van. Why not in London and in every town? In letters that I have read this most important item seems not to have been brought forward.

Vagitus Uterinus.

Dr. F. W. E. Burnham (Winnepeg, Canada) writes: The editorial reference to vagitus uterinus in a recent issue of the British Medical Journal reminded me of my intention to report a case which occurred in my practice in 1900. A multipara residing 15 miles from town had been in labour some hours, but on my arrival pains were weak and infrequent. On examination the os was found well dilated, the membranes had ruptured, and the head was above brim. The vigorous pains which marked the first stage were succeeded by secondary uterine inertia. After waiting a reasonable time without apparent improvement, the patient consented to instrumental delivery. Chloroform was administered and the hand introduced into uterus to decide between version and forceps. After the withdrawal of my hand there was heard by my assistants and myself a vigorous muffled cry lasting several seconds, and which could be heard some distance. The cry is well described as weird, and the effect upon those around was decidedly uncanny. Podalic version was quickly performed and a healthy child delivered without difficulty. The fetal cry in this instance followed the entrance of air which occurred during manual exploration of a relaxing uterus when the pelvis was unavoidably elevated.

A Special Laboratory for the Examination of Stools, etc.

A novel undertaking has recently been started by Dr. Thalwitzer in Dresden. In association with a chemist especially experienced in the chemistry of foodstuffs, a histologist, and a botanist, he has founded a laboratory where modern methods of examination of stools are carried out, including microscopical, qualitative, quantitative, chemical, and bacteriological investigations. The urine is also examined and reported upon. According to the prospectus, the material must be sent through a medical man, and the results are communicated only to him. Only certain objective results are communicated to the patients. Medical practitioners can receive the necessary paraphernalia, with instructions, etc., and also a tariff of charges, on writing for the same. Any out-of-pocket expenses to which the medical practitioner may be put in connexion with the laboratory will be refunded to him. The charges for a complete macroscopical, microscopical, and chemical stool analysis is 30s., but this does not include a certain number of substances, among which nitrogen by Kjeldahl's method may be mentioned. For such analyses extra charges, varying from 3s. to 12s., are made. Complete urine analysis is conducted for 20s. The sender has to pay for the vessels in which the material is sent, save when the examination fee is over 7s. 6d., and in all cases has to pay the postage. The scheme of enabling practitioners to apply modern diagnostic methods in private cases of disturbances of the gastro-intestinal apparatus is an excellent one, even if it does not seem to be quite as novel as Dr. Thalwitzer wishes one to think; but in England, at least, great exception would be taken to the statement that "only objective finds are communicated directly to the patients." That everything which is found in a laboratory examination may only be communicated to the practitioner in charge of the case is an ethical rule, from which there is no departure. It is also not quite clear what out-of-pocket expenses are to be refunded, and if this be a delicate way of suggesting a commission, as far as England is concerned, the recent Corruption Act would effectively debar any practitioner from being a party to any such arrangement. It will be interesting to watch the progress of this special laboratory, regarded as a new departure (as opposed to our existing institutions for clinical research), and, provided that the suspicions on the points mentioned are not founded on fact, we wish Dr. Thalwitzer success and many imitators.

A Correction.—In the twenty-first line of the letter from Dr. J. Skardon Prowse, entitled "Health Visitors as Unqualified Assistants," published in the Journal of August 10th, p. 365, for the word "living" read "livery."

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An Address
ON
CLINICAL PATHOLOGY IN ITS RELATION TO DIAGNOSIS AND TREATMENT.

Delivered at a Meeting of the South Midland Branch of the British Medical Association at Bedford.

By C. B LOCKWOOD, F.R.C.S.,
SURGEON AT ST. BARTHOLOMEW'S HOSPITAL.

At the present time I see proceeding in my wards and around me many things which are of great interest. Of late years clinical pathology has grown and evolved until it has become almost a dominant factor in the diagnosis of medical and surgical cases. I can remember that when I first began to work at that most important branch of clinical pathology, bacteriology, I used to use infusions of cucumber; then I became a pupil of Dr. Klein, to whom I always feel a deep debt of gratitude; and he taught me potato cultures, broth, and solid culture material, and initiated me into the mysteries of anthrax. Afterwards I can remember that in conjunction with my late colleague, Dr. Vincent D. Harris, we instituted a class for the teaching of bacteriology, and I also remember the very firm resistance with which my proposals were received. Now the evolution has so far proceeded that at my hospital we have a very strong pathological department, with my friend and colleague, Dr. Andrewes, at its head; Dr. Thursfield as Senior Demonstrator; Mr. Rose, a Bedford man, is just giving up the post as Demonstrator, and I cannot say how much I am indebted to them for the care and trouble which they invariably take in performing investigations which are so often of the most laborious kind. This indispensable work, done for me by the pathological department and by others, places at my disposal a mass of material which is certainly interesting to myself; and, perhaps, some of it may prove interesting to you. This material I had to classify, and I take a step which is rather unusual, for I am going to classify the material not according to the diseases, but according to the organisms which were separated from the patients.

Bacillus of Diphtheria.

The bacillus of diphtheria is, of course, very familiar to every one. I suppose there is no one now who, if he is called to a suspicious inflammation of the throat, that would not have a culture made and have that culture examined. And if he found that the bacillus of diphtheria was present, he would then proceed to treat that case with therapeutic serum. But my point is not the discovery of the diphtheria bacillus in the human throat, but the fact that by the systematic use of culture methods we have found the diphtheria bacillus so often under conditions where we did not expect to see it

Mr. Burfield, my late house-surgeon, has described a small group of cases in the *St. Bartholomew's Hospital Reports*, mainly from the clinical and bacteriological point of view. But they have for me an additional psychological interest, because I remember very well, when I first saw a child with inflammation and suppuration of its scalp, inquiring what was the matter with it. I was told that it was suffering from cellulitis of the scalp. I am certain that to every one the fact of having applied a name to the condition sufficed. Names are not diseases. I requested them to give me within a short time the kind of information about that inflammation of the scalp that every one here would require to have concerning an inflamed and suspicious throat. The report came back that the pus had in it a micrococcus which doubtless came from the hair follicles, a streptococcus, and the diphtheria bacillus. The child was treated afterwards with therapeutic serum and recovered, after having had paralysis of various groups of muscles. Shortly after that another child was brought to my notice. When I inquired what was the matter with it, I was told that it had suffered from vulvitis, a name which was supposed to signify a disease. Here again the pathological department reported to us that this child had diphtheria of the vulva. So it was treated with therapeutic serum and ultimately recovered.

A rather interesting thing happened after that case. One of the nursing staff had had an open sore for many months, and had had many kinds of treatment applied to it. Cultures again brought the diphtheria bacillus to light. I can recollect the diphtheria bacillus being found under other circumstances. A man under my care had an empyema opened, and it was clear that the case, instead of progressing, was going from bad to worse. The first step, of course, was to discover what the infection in the empyema cavity was. I remember that we had three or four pathologists to work at that case. At last, I think it was my friend, Dr. Horder, who succeeded in separating the bacillus of diphtheria from the pus. I regret to say that case was not fortunate, because the man died. His original infection was actinomycotic.

Anybody would say, I think, that an ordinary abscess and inflammation of the breast was reasonably straightforward, and was not likely to reveal any hidden mysteries. But when the pathological department begins systematically to work at the pus from even such a simple matter as an abscess of the breast, curious things come to light, and I observe amongst my notes that one of the patients who had abscess of the breast had the diphtheria bacillus in the pus. So that if you cease to think that you can diagnose these infective conditions on clinical evidence, and if you begin systematically to investigate them by modern scientific methods, I am sure you will find that most curious things come to light.

Streptococcus Pyogenes.

I will now refer to some of the cases in which the *Streptococcus pyogenes* has been brought to light. A rather lamentable fatality has recently happened. A patient came in who was supposed to have a disease of the stomach. I suppose that her stomach was thought to be at fault because she was continuously vomiting. In the right side of the abdomen, not far from the region of the pylorus, a movable tumour could be felt, which of course helped, in a slight degree, to corroborate the possibility of a growth having closed the pylorus. She had no marked urinary symptoms. The notes merely say that the urine contained a trace of albumin and a few pus cells. The usual steps were taken to endeavour to make a diagnosis, because, although I have not said so, I am saturated with the belief that the most difficult step in any case is the preliminary diagnosis. When the preliminary diagnosis is made—perhaps it may be a clinical one, or a clinical one plus a scientific one, or the two combined—when that is obtained the treatment is easy. In this instance the stomach contents were examined and skiagrams made, but ultimately an exploratory operation had to be performed, and it was found that the tumour on the right side of the abdomen was an inflamed kidney with a quantity of pus in its pelvis. It was removed and the patient recovered from that operation, but not completely. However, she was sufficiently well to depart to the country. When she left she had a small sinus in the right iliac fossa, due to haematoma along the course of the ureter. Cultures inoculated from the sinus were sterile, and she left us fairly well, but with this sinus in her iliac fossa. After a few weeks she returned exceedingly ill. Her temperature was 104°, pulse 112, respirations 28. Both her legs were oedematous, and the left knee was swollen and inflamed. After she had been kept under observation for a few days, she seemed to improve and we thought the fever had subsided. However, she had a relapse, and her temperature and pulse again rose, and she was exceedingly ill. Then a culture was made from her blood. Of late the pathological department has been infinitely more successful than I can ever remember to have been myself in obtaining growths in cases of acute streptococcus poisoning, influenza poisoning, and pneumococcus poisoning. They reported that she had streptococci in her blood; she was treated with serums without avail, and she died. Now comes an interesting point in this case. I requested them to ascertain where she got her streptococcus poisoning from, because she had none when she left us. We knew that, because we had taken cultures. It was then ascertained that she had slept in the next room to a patient who had died of puerperal septicaemia and had been attended by the same nurse.

Another very unfortunate circumstance happened about the time that woman died. I had operated upon a man

and removed his prostate. He did quite well after the operation, and I should have felt sure that at the end of three weeks he was going to recover; but one day his temperature suddenly rose to 103.2° F. At the same time he had a rigor; his temperature remained high; he had another rigor, and on the third day the pathological department reported that he had got streptococcus infection; and although he was treated with serum, I regret to say he died of streptococcus poisoning. When I thought he was convalescent, his pulse was 80; when the attack began it went up to 96, next day to 104, and even to 124, and then varied from 120 to 125. He improved for a while after therapeutic serum, and his pulse became 116, but afterwards accelerated to 134, and then he died. One of the most ominous signs in septic poisoning is that acceleration of the pulse.

I will not tell you of any more cases of streptococcus poisoning, except of one which is very interesting because it occurred in the case of a colleague of mine. On the Thursday he performed a *post-mortem* examination on a case of septic peritonitis, and made cultures from it. He pricked his finger at the *post-mortem* examination. On Friday he had a rigor, fainted, and became exceedingly ill. He knew what he had got, because he had been looking at the cultures that morning and had seen *Streptococcus pyogenes* growing in them. He knew he had a virulent form of the poison. He at once got anti-streptococcic serum and was dosed with it, and took an anaesthetic and had the finger attended to. He had a most perilous illness, and I think he would have died if he had not made such a prompt scientific diagnosis of his own case.

Pneumococcus.

I remember very well being requested to see a child who six weeks before had been seized with a sudden and violent fever. The temperature had run up to an extreme height, as also the pulse. Then it became clear that pus had formed in the right side of the chest, and a surgeon was called in. He opened an empyema on the right side of the chest, but it did not seem to be improved very much by this proceeding, and, next, it became clear that pus had formed on the left side, and an empyema was opened there. However, the child, at the end of six weeks, was as ill as ever—temperature and pulse were very high, respirations rapid, and it was clearly desperately ill. At that stage I saw it with a view of trying to diagnose the condition. My chain of reasoning—being somewhat of a disciple of Hobbes, I try always to have a chain of reasoning, though I think the great Hobbes calls it a chain of thought—in this particular instance was, first, when this child became ill it had got a severe form of infection. The next step in the reasoning was that this was an infection of the blood. Two considerations pointed to that. How could anything else but an infection of the blood infect first of all the right pleura and then the left? A further reason was that the child had an endocardial murmur. Further, it seemed likely that it was suffering with the infection of the blood with which it began, and I guessed that the organism was either a pneumococcus or a streptococcus. The next step was to ask a pathologist to make a culture from the blood. Afterwards Dr. Horder informed me that he had separated the pneumococcus from the blood. That child had been going on six weeks. If in any case of septic poisoning serum is not given until after the bacterium is lodged in every crevice of the body, it is of no avail. Such remedies ought to be given at the earliest possible moment.

Staphylococcus Pyogenes Aureus.

Staphylococcus pyogenes aureus is met with frequently. In my wards, with sixty or seventy patients under my care, I am sure to see three or four women with suppuration in the mammary gland. I get weary of seeing these unfortunate people week after week in the hospital, and continually having fresh abscesses opened. You can readily believe that I am heartily glad to seize upon any possible chance of cutting short their stay in the hospital. It must obviously be bad to have in the hospital people who are pouring out *Staphylococcus aureus* capable of infecting everything within their radius. Here is an ordinary case of a young woman of 22. It is a gruesome history. On February 7th, after the birth of a child, her nipples were cracked. Immediately afterwards there was an abscess which burst in three places. A month later another abscess was opened in the surgery. Three weeks later the abscess was reopened, and two tubes put in. On April 6th, a week later, the abscess opened again. A fortnight later another incision was made, and she was injected with a vaccine of *Staphylococcus aureus*. That is the point I am coming to. I have been much struck with the fact that when an abscess of the breast is bacteriologically diagnosed, and found to contain *Staphylococcus aureus*—a severe form of infection—the disease is certainly shortened by vaccinating. I am not an enthusiast for vaccination, but I have been struck with the fact that the duration of these cases is materially shortened by vaccination with *Staphylococcus aureus*. The method is simple: probably you are more familiar with it than I, but I will just say that the usual routine is for the abscess to be opened; the culture, as a matter of routine, is taken, and the infection is diagnosed, say, to be *Staphylococcus aureus*. That is grown in broth for twenty-four hours. The broth culture is then sterilized by heat, and we inject into the arm or some cellular tissue, usually two-thirds of a cubic centimetre of that culture. That quantity is chosen because it is found by experience to be a safe and proper dose. It is said by Mr. Blakeway, to whom I am infinitely obliged, to contain 600 millions of cocci. Others have observed that the vaccinated cases get better sooner and quicker than those not vaccinated. Side by side with one of my patients was another who had not been vaccinated, and the difference in the result was so obvious that they are now going to vaccinate the other patient.

I could give other cases of *Staphylococcus aureus* infection of the breast, but I trust I have said enough to make clear what I think about that method of treatment. I, also, have a case under observation of a man who had an abscess of the thigh. It was opened and cultures were made. It was proved to be due to *Staphylococcus aureus*. The abscess was very slow in getting well, and the man is at the present moment in the hospital with a sinus, but we are convinced that he did not make satisfactory progress towards recovery until he was vaccinated with the cultures of *Staphylococcus pyogenes aureus*. The immediate results of these vaccinations are very striking. After the vaccination the temperature may undergo very considerable rises, and likewise the pulse; in this man's particular case it produced a marked leucocytosis. Mr. Ball has been working with great zest at this man's opsonic index, which is raised in a remarkable manner after the vaccination.

There are many who think that the diagnosis of an abscess of the breast is an easy matter, but not if you are going to diagnose the kind of infection. Here are notes of a case of acutely inflamed breast sent up from the country. The inflamed breast fluctuated and might have been taken for an ordinary mammary abscess. But when the pus was let out, a portion of the indurated tissue was excised and found to be tuberculous. We have been steadily working at the treatment of tubercle by Sir A. E. Wright's method of vaccination. Tubercle generally comes to the surgeon after it has reached a certain stage of its progress. The inflammation of the tuberculous gland of the neck, for example, has proceeded as far as caseation, and perhaps as far as suppuration. It is incomprehensible to me that any method of vaccination could remove caseous glands from the human neck. I can believe that it may prevent the spread of the tubercle from one gland to another, or prevent it from spreading in the synovial membrane of the knee-joint. On the whole, the treatment of tubercle by vaccination has been from my point of view disappointing, probably for the reason I have given.

Colon Bacillus.

Now I will proceed to another bacterium which our pathological department is continually discovering, the colon bacillus. I have learnt to look upon it as one of the most dreadful scourges of the human being. Cases of colon bacillus cystitis are detected when they are looked for, but it is a curious and deceptive disease, and is, I am sure, often overlooked. For instance, a gentleman had a small operation performed, and came afterwards with a very acute orchitis on one side. On inquiry it was quite clear that he had been exceedingly ill, he had had a rigor, high temperature, accelerated pulse, and was passing water frequently day and night. When the urine was looked at it contained flakes of lymph and pus. The pathologist

reported that it was teeming with colon bacillus. That was supposed to be an attack of influenza, the bladder symptoms being caused by influenza or by the inflammation of the testicle. How easy it is, when you come to think about it, in such a case as that to confuse the cause and effect. Not long ago a man had increased frequency of micturition. I observed that his bladder was tender on pressure. On rectal examination the prostate and the neck of the bladder were exceedingly tender. When asked to pass urine into a glass I was almost deceived, for the urine was perfectly clear and betrayed no signs of inflammation of the genito-urinary tract. But it was sent for bacteriological examination, and the report came back that it was teeming with colon bacillus.

Acute colon bacillus cystitis is a dangerous disease. I have seen a man with a pulse of 110, delirious, with violent pain in the lower part of the abdomen and the neck of bladder, passing water with great frequency. It is an infection that may spread up the ureters and cause ascending pyonephritis. Colon bacillus cystitis, unless properly treated by means of urinary antiseptics and perhaps by vaccination, may go on indefinitely. I have notes of a patient who was under my care in the year 1893. She was treated for a very long time—two years off and on—for cystitis. Five years afterwards the right kidney was explored to see if it contained a stone. She again came under my care at the end of last year, and we found the colon bacillus in the urine. We managed, I think, to make that patient a great deal better. It is very difficult to draw any conclusions from the clinical evidence. It does not follow that because a particular kind of treatment makes a patient better, therefore the patient got better because of the treatment. Still I cannot keep thinking that that patient made an improvement such as she never made before, after she had been vaccinated with colon bacillus.

The Early Diagnosis of Cancer by Immediate Histological Sections.

I will not trouble you any more with bacteriology and the curious groups of bacteria we have met with, but I would like to mention one other direction in which the pathologists have been of most essential service to surgeons. It is now my habit, whenever I remove tumours, to have a pathologist present with a freezing microtome, and have a section made there and then as I proceed. The most extraordinary things have been brought to light. I am quite sceptical that anybody can diagnose early carcinoma of the breast from a small adenoma or little cyst. These tumours can at once be diagnosed, if you remove the tumour and have it there and then examined microscopically. I saw a patient a little while ago who had had carcinoma of the left breast removed. Two years afterwards a small lump appeared on the inner side of the right breast. She naturally thought her old enemy had returned. The tumour was felt, and if I had been asked to guess what it was I should have said it was a cyst, but I knew that she had a carcinoma removed on the opposite side, and I was cautious. The tumour was cut out and it was a cyst, but a piece of it put under the microscope showed that the wall of the cyst contained carcinoma. After removal the mammary gland was examined, and other patches of carcinoma were found in it 2 in. beyond the original growth. We cannot diagnose tumours with the naked eye. Here is an illustration of that essential fact. A lady had an operation performed for the removal of a tumour of the left breast. It was supposed to be a chronic mammary tumour. The major portion of the mammary gland was removed, and possibly some of the axillary glands. Then the tumour was examined and found to be a carcinoma. But if you come to think, a breast which has one piece of carcinoma may have others; and if one lymphatic gland has cancer in it, there may be a great deal more. Six months after a tumour appeared in the right breast, and the same surgeon who had operated for the supposed chronic mammary tumour performed a sweeping operation. It seems so natural to assume that if a person has had carcinoma in the left breast, the tumour which appeared in the other side was of the same description. After the sweeping operation, it was found that the tumour was a chronic mammary tumour. Had these tumours been microscopically examined there and then such errors would not have been fallen into.

Clinical Remarks
ON
THE OPEN-AIR TREATMENT OF ACUTE PNEUMONIA.

By GEORGE E. RENNIE, M.D., F.R.C.P.Lond.,
PHYSICIAN TO THE ROYAL PRINCE ALFRED HOSPITAL, SYDNEY, N.S.W.

There is no doubt that great gain has been secured in recent years by the recognition of the fact that acute pneumonia is not a true respiratory disease, but an acute infection, the pulmonary signs being merely a manifestation of the local reaction of the tissues of the body to the invading organism. The principle which must underlie the treatment of all diseases of this class, in the absence of a specific remedy or serum, must be the strengthening of the defensive mechanisms of the body against the invasion of the disease, so that the invading organism may be defeated on its own ground. This principle has now for a long time been recognized in the treatment of acute pneumonia. We have so far no reliable remedy which can be considered curative, and the maintenance of the heart's action against the depressing effects of the toxins of the organism is recognized as one of the cardinal points in the treatment of this malady. The imperfect aëration of the blood, as manifested by the marked cyanosis in some cases, is another indication for treatment, and the use of oxygen has come to be regarded as an important aid in the treatment of cases of this disease associated with much cyanosis and profound toxaemia. I believe that these two indications for treatment are most effectively met by the adoption of the open air method.

My attention was first drawn to this method of treatment of acute pneumonia by a paper by Northrup in the New York *Medical Record* last year on the subject of fresh air and respiratory diseases, and I at once decided to follow out this treatment in my hospital practice. In a paper on fresh-air treatment in hospital wards in the New York *Medical Record* of February 9th of this year, Gilman Thompson refers to a large number of cases of acute pneumonia treated by being placed in isolation rooms close to open windows.

Of 128 patients with pneumonia, 36.7 per cent. made complete recovery in the usual time, without any medication, and for the most part with their heads lying close to open windows in midwinter weather.

I have not been able to find any other published record of experience of this method of treatment, though it is, of course, possible that it has been more widely adopted than would appear from the literature at my hands at present. In the last issue of the *Medical Annual* no reference is made to it, and in a recent discussion at the Edinburgh Medico-Chirurgical Society on the prognosis and treatment of lobar pneumonia, introduced by Dr. Affleck, the only reference to this method of treatment was made by Dr. Byrom Bramwell, who is reported to have said that "he would wish to treat such patients by the open-air method," from which I infer he had not done so previously. It is true that Sir James Barr, in some of his recent letters in the British Medical Journal on the treatment of pneumonia, advocates doing away with the oxygen cylinder and giving the patients plenty of fresh air, but, so far as I can gather, he does not frankly advise the adoption of the open-air method of treatment.

It is for this reason that I venture to give some preliminary account of my experience of this method of treatment, which I have adopted in every case of acute pneumonia admitted under my care in the Royal Prince Alfred Hospital in Sydney during the last ten months. I admit that my cases thus treated are not very numerous. We all know that in different seasons and epidemics the virulence of the infection, as in other infective conditions, varies considerably, and possibly I have been favoured in this respect by having what some might say was a series of mild cases. It is also possible that the type of the disease as we see it in this country is not so severe, generally speaking, as in Great Britain and America. Certainly, so far as my experience goes, the mortality from acute pneumonia in hospital in Sydney is not so great as it was in London. In my days as House-Physician at University College Hospital, London, the mortality from

acute pneumonia was something like 40 or 50 per cent., and the late Dr. Wilson Fox used to impress upon us students the fact that pneumonia was a very fatal disease. I am well aware of the fact that other physicians have recorded a very low rate of mortality under certain lines of treatment in this disease. Hence I consider that statistics of the results of any special method of treatment of acute pneumonia are not reliable unless based on a very large number of cases extending over a number of years, and the mortality-rate compared with that of cases under other conditions of treatment during the same period of time and in the same epidemics.

My routine treatment of this disease consists in at once placing the patient on the balcony or verandah of the hospital, where they are kept night and day. A screen is placed round the head of the bed to keep the cold winds from blowing directly on the patient. Of the cases thus treated, in all about twenty in number, only one has proved fatal, and that was an old man over 60 years of age, who was admitted practically moribund, with extensive consolidation, much cyanosis, and a very feeble pulse. He died within a very few hours after admission. Contrast with this the case of a young girl of 12 years who was admitted under my care some few weeks ago. She had a history of an attack of acute pneumonia some three years earlier, and ever since of having had a cough. I found her propped up in bed, with marked dyspnoea and cyanosis, a temperature of nearly 104°, a rapid weak pulse, and an extensive outbreak of labial herpes. On examination of the chest, it was found that she had signs of pneumonic consolidation at both bases. Previous to my seeing her she had had a little oxygen administered, and had also had a hypodermic injection of strychnine, as her pulse and general condition were considered so bad. She was inclined to be delirious, and had had no sleep for the previous two nights. I ordered her to be taken out of the ward at once, and placed in the open air on the balcony with a screen round the head of her bed. With the exception of a mixture of carbonate of ammonia and cinchona she had no other treatment. The first night she slept well, and the improvement in her condition was most marked. She had her crisis in about thirty-six hours after being placed outside, and rapidly convalesced. I feel sure, from previous experience, that if this patient had been kept in the ward, it would have been necessary to administer oxygen as well as repeated hypodermic injections of strychnine to bring her safely through her illness.

At first I was disposed to hesitate to adopt this method of treatment in the presence of complications, such as bronchitis; but in one of my cases last year, in a woman of about 30 years of age, I followed the treatment with equally satisfactory results.

As regards the effect of the treatment generally, I can say that no unfavourable symptoms of any kind have appeared in any patient thus treated. One cannot, of course, argue *post hoc propter hoc*, but in my experience the open-air treatment appears to have a distinctly beneficial effect on all the symptoms. The temperature has never risen above 103·8°, and no antipyretic treatment has been necessary. In most of the cases the temperature drops, and the crisis occurs in two to three days. In no case so far has the crisis occurred later than one week from the onset of the disease as estimated by the initial rigor. I should not wish to be understood to claim that this line of treatment has any special effect in shortening the duration of the disease; I merely state what has been my experience. An investigation of a much larger number of cases treated by various methods would be necessary to enable one to decide whether the disease is really shortened or not by open-air treatment.

As regards the pulse, an almost immediate effect is noted in the way of improvement, and in only a very few instances was any cardiac stimulant, such as strychnine or digitalis, needed. No alcohol has been given. The tongue begins to get moist and to clean rapidly, and the appetite is much improved; the patients are always ready for their milk. Sedatives have not been required except in one or two instances where there was some delirium at first, but not more than one dose has been requisite. As a rule sleep becomes at once quiet and refreshing. Cyanosis also rapidly disappears.

I have questioned some of the older and more experienced nurses at the hospital as to their impressions of the results of this treatment. They are unanimous and enthusiastic about the immense improvement in the condition of patients thus treated as compared with those treated on the old lines in former years. They speak of the improvement in the appetite, the patient being so much more ready to take nourishment. They are also satisfied that convalescence is more rapid and satisfactory.

So convinced am I of the superiority of this procedure in the treatment of acute pneumonia, that I have no hesitation in recommending its general adoption. I have yet to learn whether any unfavourable effects can be attributed to it. Probably our more severe climate may have conduced to the success thus far attained, but considering the immense benefits which are well known to accrue from this method of treatment when applied to pulmonary tuberculosis, even in the Old Country, I feel sure that its adoption in cases of acute pneumonia would result in a considerable reduction in the mortality.

I hope, subsequently, to be able to publish my results in a larger series of cases, and merely now record my preliminary experience, that others who may not have used this method may be induced to give it a trial.

THE NEED FOR THE INSPECTION OF ALL RESIDENTIAL SECONDARY SCHOOLS IN MATTERS RELATING TO SANITATION AND HYGIENE.*

BY THEODORE DYKE ACLAND, M.A., M.D.OXON., F.R.C.P.,
MEMBER OF THE MEDICAL OFFICERS OF SCHOOLS' ASSOCIATION.

No congress on school hygiene would be complete which did not take into consideration the hygienic and sanitary conditions which exist in our great secondary schools—those schools I mean which, in England, we class under the name of "public schools."

1. The subject of school hygiene, in its relation to our great residential schools, is one of the highest importance, for two main reasons.

(*a*) The place of our country amongst the nations of the world must, in the near future, depend largely upon the physical efficiency of the next generation, and a considerable proportion of those to whom the country will have to look for its workers in every department of life must be drawn from amongst the boys who are now being educated in our public schools.

These boys, therefore, form a valuable part of the nation's assets, and it is plainly our duty to do all that we can to secure for them such conditions as will best fit them to play their part efficiently, whether it be great or small, in upholding the empire which it will be their duty to serve.

(*b*) It is, as we all know, easy to sap the foundations of physical development in the young, and none know better than my audience that injuries inflicted during the impressionable period of childhood are seldom without more or less lasting ill results, and not infrequently prove to be irremediable.

There cannot, I think, be any doubt that preventable injuries are inflicted upon growing boys at many of our public schools through want of proper consideration of the varied conditions that make for health.

We none of us question the fact that it is possible largely to affect for good or evil the physical development of all living things by the environment in which they are placed and the conditions to which they are subjected.

If you go round a rich man's training stable or dairy farm, you will, if he takes any interest in the matter, find that no pains have been spared to make the conditions under which his creatures live as healthy and orderly as science can make them or the most solicitous care suggest. Can we with any confidence say that the conditions under which boys live at their public schools always give evidence of the same thoughtful care?

(*c*) I have often been told that it is unreasonable to expect masters to devote much attention to the details which, as *we* know, affect the health of growing boys, since, it is argued, our public schools are a system for the "survival of the fittest."

* A paper read at the Second International Congress on School Hygiene, Section X.

This may sound very Spartan and practical, but unfortunately there is a serious fallacy in such a theory, for we cannot (if we would) kill off the weaklings only. The process which accomplishes this will infallibly reduce those who are neither weaklings nor yet giants of strength—and do not these constitute the majority?—to a less good condition of health than would have been the case had they been placed under more favourable conditions during their years of growth and development, with the result that they will be turned out into the world less efficient in body, and possibly in mind also, and less fitted for their work in life.

2. Many of our public schools are defective in matters of hygiene.

(*a*) In saying this I know that I am making a grave indictment, and though I say it, I yield to none in my admiration for them, and I gratefully acknowledge the debt which we owe them for the generally beneficent effect which they have had upon our national character, yet in many ways they are behind the times.

I recognize the splendid work that they do, and know what splendid men they turn out, but I cannot believe that they would be less efficient, or their results less good, if they were conducted more in accordance with modern ideas of sanitation and hygiene.

(*b*) Much has been done by the medical officers of our great schools to improve their health conditions, and there are some masters who do not neglect anything that can conduce to the health and well-being of their boys; but medical officers are not always allowed a free hand, and there *are* masters who are ignorant or indifferent. It is not long ago that I was talking to the head master of a well-known school as to the amount and kind of food which was best for growing boys. I asked him whethor any accurate observations had been made on these points. To this he replied, "I should think that nobody knows anything about it, except possibly the Japanese, and, by the way, would you tell me what exactly you mean by 'nitrogenous food'?"

Perhaps some of my audience may remember a letter from a public school master, which appeared in the *Times* not very long ago, complaining that teachers are "so fretted and harassed" about questions of physical well-being, that they are "driven to neglect their proper work," and speaking of those things upon which the health and welfare for life of those committed to their charge depend as "trivialities," "poor subjects," to which "masters already give their attention far too largely."

It may well be asked whether all matters relating to the health of boys at school should not be regulated by some expert authority, but, as long as the masters assume the responsibility for the health regulations of the school, there cannot be any doubt that it is their duty to make themselves acquainted with the essential laws of hygiene and physiology, or to defer in such matters to the judgement of their medical officer or other expert.

I believe the time will come when it will be thought incredible that the care of our children in health matters should ever have been entrusted to those who may have no special training.

We should all agree that a parent in sending his boy to a public school should have reasonable assurance that he is placing him under sound health conditions, and that these matters should not depend upon the individual master, or even upon the particular school, but upon certain well-known principles based upon up-to-date knowledge, and applied to all residential schools alike.

(*c*) We are not in ignorance of the essential laws of health, although it was recently said by a speaker on this subject that but little is at present known about hygiene as a science, and that we are merely on the threshold of our investigations. In some ways doubtless this is true, but, whilst not in any way underestimating the importance of further investigations, which may lead to wider knowledge, I would urge that the first step in a sound system of hygiene must be to insist that those broad lines of health which have already been laid down should be efficiently carried out.

The fundamental laws of growth and development have been carefully studied, and are well understood. Hygiene and sanitation have long since justified their claim to a foremost place in the prevention of disease, and the maintenance of health. In these matters, therefore, there can be no excuse for ignorance. The main questions of health are not shrouded in mystery.

It is well known that good food, and plenty of it, is necessary for the growing child, and experts do not differ largely as to the quantity and quality of the food required.

Equally it is insisted upon, by those who know, that plenty of rest and sleep are necessary for the right development of the brain and nervous system, and physiologists and physicians are practically in agreement as to the amount of sleep that is necessary.

It is known that good exercise of muscle and brain are needful for their proper development, and that undue strain of either must retard and possibly altogether hinder full development.

Further, it is known that an abundance of light and fresh air are essential to keep growing children in health. It is well known that undue cold is injurious, and is more felt by children than by older people. We are not ignorant of these and of many other facts relating to school hygiene.

What we need is not so much elementary knowledge on such elementary matters, but the will to put that knowledge into effect.

Our Chairman, who presides over this section of the Congress on School Hygiene, has spent a lifetime in the study of schoolboys under many different aspects. His writings have had a wide influence on many problems of school hygiene, but no one knows better than himself the difficulties with which the school doctor is often met if he is too insistent.

At present in many schools the work of the medical officer seems for the most part to be limited to the attendance on the sick; preventive medicine—that most important branch of our work—forms but a small part of his duty. If a boy ails he sees him at once, and I suppose is expected to make him well; but with those arrangements of the school upon which, in the first instance, the boys' health so largely depends, he has often but little to do, and if he shows too much zeal in these matters, there seems to be a tendency to look upon him as a "crank."

He may appeal in vain for reforms—consistent with modern views of hygiene—which, if adopted, might prevent sickness, and promote the better development of the boys committed to his care.

In some public schools that I know of, boys are not infrequently badly fed—the food badly selected, badly cooked, and ill served. In a large number no substantial meal is provided by the school after the mid-day dinner.

As regards sleep, a question in which I personally have been much interested, it is unanimously agreed by those who have paid special attention to the subject, that a minimum of nine to nine and a half hours is a physiological necessity for the average boy during his years of growth, if the body and central nervous system are to be maintained at their maximum efficiency; yet (although several public schools have modified their hours of sleep) there are still many in which the hours fall far short of this, and in one school with which I am acquainted, small boys of 13 may be placed in dormitories where it is impossible for them to obtain (except for a few weeks in the year) more than seven and three-quarters to eight hours of quiet.

The increasing hurry, stress, and competition of life make it all the more necessary that the children of the present day should not be pressed before they arrive at maturity, but in some schools boys may have to do eight or nine or even more hours of work a day, play hard, and, of necessity—as there are only twenty-four hours in the round of the clock—get altogether insufficient rest.

I am myself a firm believer in the advantages of hard work and hard play, but in moderation. I know that one cannot compensate for the other, and I know that to drive growing boys in this way is bad for them. Even a trainer does not overpress a young horse. If he wants to make the most of it he takes good care not to overwork it before it has reached maturity; and those who wish to win a long race do not force the pace at the beginning.

There must be many amongst my audience who, like myself, frequently see boys who have broken down under the stress either of work or play in their public school life; and this is not always, as is sometimes suggested, owing to lack of ordinary stamina in the boy.

With regard to those matters which come more strictly

under sanitation—light, warmth, fresh air, ventilation, etc.—do we not all know of small, dark studies, cold, ill-ventilated class-rooms, and other such evils?

A friend of mine, himself a head master (for I have several friends amongst head masters), writes: "There is at present no expert who examines drains, shape of desks to suit growing boys, and all those things which are necessary to physical salvation. If there were our historic schools would not take first prize."

Amongst the many instances of disregard of ordinary principles of hygiene which have come under my own notice I may mention the following:

At a school well known and justly celebrated, there were two dormitories, one above the other. They had windows, but the dormitory below ventilated into the one above. A parent of one of the boys there offered, at his own expense, to reorganize this obviously defective system of ventilation, but his offer was refused.

Again, I know a school where, until recently, in one house there were four so-called studies with no direct communication with the outer air. I have seen small school studies, whose cubic capacity was less than that of a standard prison cell, occupied by two boys, and lighted by unventilated incandescent gas.

In a well-known school I have also seen kitchens that for dirt and disorder would have been a disgrace to any house, however poor.

Again, I am acquainted with a school where, until a few years ago, there was no sanatorium. After it was built I had occasion to visit a boy professionally who was put into it. He was suffering from an infectious disease, and had a temperature of 104°; he had to be laid on the floor until his bedding was fetched from his house. This condition of things, I need hardly say, has been altered, but it shows how very elementary were the views of hygiene held until recently in that particular school.

At another school where boys, even with infectious diseases, are commonly nursed in their rooms, a boy, who was acutely ill, was, as a matter of precaution, locked in his study, without any communication with the outer world, as there was no bell in it.

In another, during a severe epidemic of measles, the nurse in charge of the boys habitually went to daily chapel.

I do not of course mean to imply that such conditions are frequently to be found at our great schools, but such facts show that it is possible for such incredible conditions to exist.

3. There is no doubt that our public schools are, in various ways, behind the times. The reasons for this, I venture to think, are not far to seek.

(*a*) In the first place, they are practically free from competition. It is useless for a parent to complain. If he does not like the arrangements of the school, he is told that he can remove his boy, for every vacancy is filled for many years to come.

With the preparatory schools it is different. They have the benefit of active competition, with a result that as a whole they are far in advance of the public schools in these matters. If they were not they would cease to exist.

(*b*) Again, these schools are not subjected to independent expert inspection in matters of hygiene.

The Board schools throughout the country are not only designed by experts, and much attention devoted to all the sanitary and hygienic details, but the health arrangements are also subject to supervision.

Many of our private residential primary schools have voluntarily submitted themselves to inspection in sanitary matters, but I should like to ask how many of our most honoured secondary schools would safely pass the ordeal if inspected on the lines required for public elementary schools, as far as the buildings alone are concerned.

> "The premises of the school must be healthy, safe in case of fire, must have suitable and sufficient sanitary . . . accommodation for the scholars in attendance, must be adequately lighted, warmed, ventilated, cleaned, and drained, must be kept in proper repair, and must be sufficient, convenient, and suitably arranged for the instruction of the children in attendance. . . ."

(*c*) As far as I can ascertain, the endowed schools, with the exception of two, are *liable* to inspection, although the inspection has not been carried out. Two or three secondary endowed schools have, however, voluntarily applied for inspection, and another is to be reported on this year.

Doubtless there are secondary residential schools (I know, at any rate, of one) in which it has not been thought a waste of time or money to pay attention to those details which make for the health of the boys.

These are hopeful signs, and may encourage us to do all in our power to secure that all residential schools shall alike be subjected to independent criticism and report, and, further, that they shall be required to publish annually what I may call a "health audit."

The year before last a great deal of discussion took place at the Head Masters' Conference, relating to the inspection of schools, but the only inspection contemplated had regard to the instruction given.

Surely, if it is desirable that the teaching in public schools should be inspected, it is at least of equal importance that all matters relating to the physical well-being of the boys should be inquired into by trained observers.

Is it not an anomaly that inspection should be invited and carried out in those matters in which the masters are themselves experts, but that in the important matters of health, of which so few have expert knowledge, no inspection should be sought or desired?

4. Systematic inspection from outside appears to be the most effectual remedy for the present defective conditions.

This inspection should include all matters relating to health, cleanliness, cubic space, ventilation, lighting, warming, feeding, sanitary arrangements, water supply, and sanatoriums for infectious diseases.

Not long ago Dr. Dukes wrote:

> "Nothing short of a Government inspection of our high-grade schools will ever make them approximate to an ideal condition; and even this plan will be insufficient without an annual publication of all cases of infectious illness occurring at school, so that the public may protect themselves and their children. At the bare suggestion of such an annual return I seem to see this and that great school attending to its sanitary arrangements long before the first return requires to be furnished—rectifying all defects that could produce illness, or even deteriorate general health—in order to obtain the cleanest possible bill of health."[1]

Machinery already exists for the inspection of secondary schools. There is reason to believe that this inspection will include all matters relating to hygiene and sanitation, though not dealing exclusively with them. As set forth in the regulations for secondary residential schools, which came into force on August 1st of this year, the Board of Education will publish a list of schools recognized by them after inspection to be efficient. The difficulty will be to induce those in authority to submit their schools to this test. It is to be hoped that the time is not far distant when parents will refuse to consider any school as efficient which has not this or some such guarantee.

I am encouraged by this great gathering of those interested in school hygiene to hope that attention may be more generally drawn to these and similar questions affecting the health conditions of our public schools, so that by degrees an enlightened public opinion may be formed, which will not tolerate conditions known to be opposed to the best development of the young. As Dr. Clouston writes, we need to cultivate "a health conscience," so that we may "not be able to . . . . rest" without making some definite and systematic attempt to remedy the defects which now exist.

REFERENCE.

[1] *Health at School.* Fourth Edition, p. 451.

NOTE.—A resolution bearing on the points raised in the above paper was carried unanimously in Section X of the Congress, which dealt with the hygiene of residential school, and at the final general meeting the following motion was carried without a dissentient voice: "That, in the opinion of this meeting, it is desirable that all secondary schools, including public schools, should be subjected to inspection in matters relating to hygiene and sanitation, and that a copy of this resolution should be forwarded to the President of the Board of Education, praying him to take such steps as he may consider necessary to carry such inspection into effect."

THE University of Giessen has conferred the degree of M.D. (*honoris causa*) on Geheimrat Dr. Louis Merck.

An Address

ON

THE TRANSFORMATION OF THE BRITISH MEDICAL ASSOCIATION.

Delivered at the Annual Meeting of the North of England Branch.

By ALFRED COX, M.B., B.S.Durh.,

PRESIDENT.

[After thanking the Branch for electing him to the office of President, and a few preliminary observations, Dr. Cox said:] Ten years ago it required a good deal of courage to broach a medico-political subject in this Branch. The way of the innovator was hard, acting as he did in the teeth of the traditions and prejudices of a body which was jogging along very nicely in a pleasant groove. The Branch held its three meetings a year, occupied its time almost exclusively in purely scientific discussions, and followed the meetings with a pleasant little dinner. Naturally it resented the introduction of subjects which were certain to lead to friction, and did not interest most of the regular attendants. Many of our older members have never liked the new state of things, and show by non-attendance that they disapprove of our more strenuous life. But the fact was nobody who had formed any conception of what could be done and ought to be done by a real working association of men bound together by the same interests could be satisfied with Branch life ten years ago. That the condition of things was not satisfactory is shown by the fact that in 1896, in the days when members of the Association could either be attached to a Branch or remain unattached, only 230 out of 431 were members of the Branch. Out of that 230 only a few ever attended a meeting, and there were then no Divisions to remind the member of the existence of the Association at his very door. Who in those days dreamed of looking to the Branch in time of trouble? What bond was there between the members of the same Branch or between one Branch and another? To bring the point home, was it to the Branch that men looked when it was resolved that the general standard of the local colliery practitioner must be raised? Ten years ago the idea of medical union, of solidarity, had hardly crept into the Association, for what I have said of our own Branch applied practically all through the Association. It is true that one or two Branches, notably the Lancashire and Cheshire, had never entirely forgotten that one of the chief objects of the Association was "the maintenance of the honour and interests of the medical profession."

The Association then was a loose organization of Branches co-ordinated roughly by a Council elected then, as now, from the Branches, but containing at that time a large number of life vice-presidents, since dropped. When our chief business, practically the only business, was thought to be the publishing of a Journal and the holding of an annual meeting, the Council did its work very well. We must always feel grateful that, long before we began to realize that we were responsible for the general professional well-being of our members, we had a Council which built up a Journal which is one of the leading medical papers in the world, and encouraged the formation of Branches all over the Empire. These assets are invaluable.

Any medico-political work which was done was done through the Parliamentary Bills Committee, on which the various Branches were represented. I do not wish to belittle the former work of the Association, nor do I want you to believe that it did nothing to represent the profession in public affairs. What I wish to make plain is that up to about 1900 it had a different conception of its duties and responsibilities to that which prevails now—that when it was desired to voice the opinions of its members it was not so constituted as to get that opinion, nor, if it did get it, was it in a position to press those opinions with the force of a democratic body. The Council was then, and is still, chosen chiefly as a business directorate, only then it was expected to speak, on occasion, as a representative body also, in default of any other in the profession. As its contact with its constituents was of the meagrest kind, its representative force was small. If Branch meetings were called, only a fraction of the members could, or at any rate did, attend; and half the members of the Association were not members of Branches at all, and therefore took no part in the election of the Council. The only way of reaching the whole of the members was by a postal vote, a method obviously only to be used on rare occasions. The Annual Meeting of members, which had to be held to satisfy company law requirements, was even less of a representative body; in fact looked at in that light it was simply a joke. I blush to say that a deficient sense of humour prevented me from seeing the joke in the days when I made one of that little band of self-constituted martyrs who managed to delude ourselves that we spoke for the Association at large. Of course we spoke for nobody but ourselves. We consisted generally of from thirty to forty enthusiasts whose general attitude was that of being "agin' the government." Every year we spent one or two turbulent but happy half-days cross-questioning the Chairman of Council, heckling the Treasurer, or baiting the Editor. We passed violent resolutions of censure on the Council, and in a general way tried to make them feel that the eye of the Association was on them. The Council sat in genial indifference on the platform, only rousing itself when the meeting began to take itself too seriously to assure us that they had it on the best legal authority that our resolutions could be either acted on or ignored just as they, the Council, thought fit. It was a really humorous situation—to look back on.

No better example could be given of the ineffectiveness of the Association on the political side than was afforded by the registration of midwives question. For years this was discussed by Branches, Council, and Annual Meeting. The Parliamentary Bills Committee considered it *ad nauseam*, condemned other people's Bills, and framed one of its own which met with a very mixed reception at the hands of the Association, which was supposed to be its sponsor. At the end of it all nobody really knew what the profession wanted, and Parliament showed its indifference to such an unbusiness-like set of people by practically ignoring us in its final decision.

Another striking proof of our impotence was afforded by the attitude of the Association to what was known as "the Battle of the Clubs." From 1895 to 1900 we had frequent references in the Journal to the contract practice difficulties which kept cropping up all over the country. Letters appeared from despairing members, and platitudes were freely uttered on the wickedness of sweating the poor club doctor, just as if it were not the most obvious thing in the world that the unorganized are always exploited. Mild encouragement was given to the formation of local societies for the purpose of resisting this tyranny. It was discussed several times at Ethical Sections of the Annual Meeting. But nothing was *done*. No attempt was made to formulate an Association policy on the subject, and that for the very good reason that the machinery for such a task did not exist.

To sum up the situation: Seven years ago we had an Association divided into Branches to which only half the members were attached; a Central Council in the election of which only the most languid interest was taken, and which tried to combine executive and representative functions, failing miserably in the latter; no means of ascertaining its members' opinions except through a postal vote; an Annual Meeting of members, in the very nature of things non-representative and impotent. The whole constitution was an anachronism in democratic times.

But these repeated exhibitions of our helplessness, especially the midwives fiasco, ended by causing exasperation and finally a revolt. The credit for the first practical move must be given to the Manchester Medical Guild. In a letter in the Journal of September 16th, 1899, signed by Dr. Crawshaw of Ashton-under-Lyne, they called a conference of the various local societies which had been springing up, and extended the invitation to any Branches of the Association which cared to be represented. I am glad to say our Branch was one of the few which responded, and in the matter of local society representation the north of England was well represented. At that conference there was a strong feeling in favour of setting up a new society for medico-political and organizing purposes only, leaving the social and scientific side to the British

Medical Association. Those of us who still thought the Association could be made use of were regarded as incorrigible optimists, but in the end our views prevailed.

I will not take up time by recounting the history of the struggle which took place. Suffice it to say that in 1901 the Association at Cheltenham received and approved the report of a Committee which, among other things, laid down these two main principles: (1) That we should devote our attention much more vigorously to the bread-and-butter side of medical questions and to the relations between the profession and the public; and (2) that the machinery of the Association should be so altered that we should be able easily to obtain the opinions of our members, and having ascertained them, make them effective.

The transformation dates from 1902, when the new Constitution based on these principles was adopted. Let us glance at the situation now existing as the result of barely five years' experience of the new principles and the new machinery. Our own Branch has greatly increased in size—from 431 in 1897 to 672 now. Its scientific value has not diminished, though it is far from what it should be. In passing, I wish to make a special appeal to our consultants, and members with hospital appointments, to take this matter seriously in hand. The placing of the scientific work of the district by means of the Branch, on a higher plane, is a service they, and they only, can render. I can well understand that to many of them our political and organizing activities are a matter of indifference, but they cannot tell us that this is not in their line. There is no reason why our Branch scientific meetings should not be the most attractive and useful meetings of their kind in the district. However, thanks to the efforts made by some of our Divisions—Cleveland, Sunderland, South Shields, and Tyneside, for example—and especially to the annual all-day scientific meeting of the Newcastle Division, the sum total of the strictly professional work done in the Branch is much greater than it ever was before. The social side is not neglected, as those who have had the pleasure of being at any of our annual meetings, or at meetings like our last at Blyth, can testify. But the organizing, medico-political, and defence work undertaken by the Branch, and which was not even thought of six years ago, is strongly *in* evidence now. In addition to ordinary Branch organization, we have taken over and provided a permanent basis for the two county medical unions, which did excellent work, but would probably have died of inanition (and lack of funds) once the special needs which called them into existence were satisfied. Our two county committees are doing splendidly, mainly in the direction of that eternal vigilance which is the price of liberty in contract practice affairs as in others.

The Divisions are entirely new. They render it easy for every member to take his share in the deliberations and government of the Association. It is with peculiar pleasure that one notes the success of some of our Divisions in scattered country districts, where men who formerly had to spend a whole day in attending a Branch meeting (and consequently did not do so) now meet in a friendly way and feel that they are no longer outsiders. Every Division might be, and many are, local centres of every kind of professional activity; but, however short they come of their possibilities, there is no getting away from the fact that their aggregate attendance far exceeds anything that could be got together at a Branch meeting. They exercise all the functions of a merely local society, with the additional and enormous advantage that they feel themselves part of a great whole. In looking over our own Branch one regrets to find that, side by side with prosperous Divisions which are a credit to us, we have others which for all practical purposes are dead. Some through lack of a good energetic secretary, some through petty local jealousies, are neglecting opportunities of organization which they will need badly some day when trouble comes. However, the Divisions are young yet; the machinery is there, and I, at any rate, have abundant confidence in the future.

Our Branch Council, too, instead of being as formerly a small and purely business executive, is now a large, active and representative body, specially useful in co-ordinating the work of our Divisions.

Turning now to the Association as a whole we find a change equally great, one not only of machinery but of spirit and of ideals. The outstanding change is to be seen at the Annual Meeting. Instead of the fortuitous gathering of medical atoms which constituted the old annual meeting of members, we have in the Annual Representative Meeting a body elected by the Divisions, speaking for the Divisions, and responsible to the Divisions. I am afraid that some Divisions of this Branch do not realize sufficiently the great importance of this meeting and its influence on our future. There are one or two in the Branch who are actually obliged to confess that they have not a member public spirited enough to represent them. However, it is only a matter of time before we shall have keen competition for the honour. If every Division did its duty each member of the Representative Meeting would be chosen with care, and as carefully instructed in the views of his constituents, on matters of principle at any rate. It seems to me the poorest kind of compliment for a Division to ask a colleague to put himself to the trouble and expense inseparable from the office of Representative and yet be too lazy to make him a Representative in fact as well as in name by indicating its opinions. There is no need to tie him down on every little point of detail, but the man who goes to the meeting with what is called a "free hand" and no instructions, is placed in a position of inferiority in relation to his colleagues who can speak and vote with the confidence born of explicit instructions. It seems to me that the Division which attempts to conceal indolence under the cloak of confidence in its Representative is only adding insult to injury, because every year there are many points raised which open up great principles and which ought to be carefully discussed and settled in the Divisions.

Attempts are constantly being made to belittle the importance of the Representative Meeting on the ground of the small attendance at the Division meetings. From personal and painful experience I am compelled to admit that attendances are not what they should be, although in Gateshead I believe we do fairly well with an average attendance of one-quarter of our members. It is, however, an extraordinary fact that the men whom one meets in the street grumbling at the slackness of work are nearly always busy on Division meeting nights, and from information received I should imagine that both birth and death rate must go up on these occasions. As a medical man I rejoice to hear of these sudden spurts of work; as an individual I think I have a grievance, inasmuch as they never come my way; and as Division Secretary I could wish they came at more suitable times. But it is necessary to point out that all organizations—at any rate all that I have any knowledge of—are worked by a small proportion, often by a very small minority, of their members. From inquiries I have made I find that friendly societies, trade unions, political organizations, and the like all tell the same story. It is unusual, I am told by the secretary of a trade union, to have an attendance of more than 10 to 15 per cent. of their members at an ordinary meeting, and even on the occasion of summoned meetings, when every absentee without good reason is fined, an attendance of 30 to 40 per cent. is considered good. Considering the special difficulties surrounding the doctor's leisure, I believe the attendance at the meetings of well-managed Divisions will stand comparison with similar organizations, and it is disingenuous to belittle the Representative Meeting, as is constantly done, on the ground that only a minority attend to elect and instruct the Representative.

With all its faults, and in spite of—or perhaps on account of—its youth, a meeting of the Representative Body is an inspiring sight to a believer in the future of the British Medical Association. A visit to one of its sessions would do good even to the most pessimistic of our members. There you would find some 120 men from all parts of the kingdom, and probably two or three from the Colonies, comprising all ranks of the profession, from consulting surgeon and physician to the struggling young practitioner. It takes itself very seriously, and not only is it earnest and keen, it is very businesslike. The time-limit for speeches is short, yet on very few occasions has it been necessary to remind a speaker of its existence. When I think of the devotion to work of the members of the meeting, of the sacrifice of time and money entailed on every man present, of the high average of the debating, and the enthusiastic spirit which pervades the meeting, I have no fears for our future. The fact that the Associa-

tion in its new form is able to command such devotion and inspire such enthusiasm is a proof to me at any rate that we are on the right line. I must confess that I cannot claim to speak as an unprejudiced observer. I took an active part in the agitation which brought the Representative Meeting into being; I have been a member of it on every occasion, and I am very proud of my connexion with what is virtually the parliament of the profession.

The Representatives coming together only once a year, in an ordinary way, must depute their executive work to other bodies. It is undertaken partly by the Council, partly by standing and other committees which meet throughout the year. Thus we have Ethical, Science, Medico-Political, Journal and Finance, Organization, Naval and Military, Colonial, and other committees all doing excellent work.

Probably the greatest non-material change in the Association is in its attitude to what is called "trade-unionism." Ten years ago, in a discussion in the Dublin Branch, a distinguished member said that the adoption of medical defence, which was then under discussion, would reduce the Association to the position of a railway servants' association or a tramway-men's union. Many similar contemporary opinions can be found in the Journal. Even now a Division can be found which is so little in touch with the new spirit of the Association as to pass a resolution, in reference to a speech made by Sir Victor Horsley, that they "entirely and emphatically object to the use of the word 'trade,' or anything which savours of its methods, in connexion with our medical profession." Now, I yield to no man in my admiration for the profession of medicine, nor have I a modest conception of its importance to the State; but having for years upheld the view that the British Medical Association must be organized on trade-union lines if it is to be of any real use to us, I take this opportunity of saying a few words in defence of that position. Consulting the *Standard Dictionary*, I find that a trade union is "an organized association of workmen skilled in any trade or industrial occupation, formed for the protection and promotion of their common interests." A profession, according to the same authority, "involves a liberal education or its equivalent, and mental, rather than manual, labour." What is the British Medical Association if not "an organized association of men skilled in a 'profession' formed for the protection and promotion of their common interests"? If you prefer the name "professional union," I have no objection; but the fact stands out that our objects are practically the same as those of any trade union of them all. I know many medical men associate all sorts of dreadful things with the word "trade-unionism," such as rioting, picketing, "peaceful persuasion," boycotting, etc.; but if they will only spare for the working man's organizations a little of the sympathy they so readily extend to him as an individual and as a patient, they will realize that he has been doing pioneer work in order that we, and such as we, may benefit. He has built up his great protective organizations in the teeth of great economic and legal obstacles. That in doing so he has used methods not always defensible is merely to say that he is only human. We have benefited by his example; we shall take warning from his mistakes. We are banded together for the promotion of our common interests, which happen in our case to include the advancement of medical science. But they include no less the making of a living under fair conditions, and the maintenance of an honourable independence in our relations with our employers. When I hear the members of an Association which is so tardily beginning to look after the interests of its members talk with scorn of trade unions, I ask, When did we earn the right to look down on the trade unionist? When did the British Medical Association levy itself for the maintenance of members fighting against unfair conditions of work? When did we commence to succour the unfortunate and sick? When did we begin to help the widow and orphan? When will we be as willing as the trade unionist to pay for what we want doing? Consider our experience in this Branch. By the exertions of the organized profession of this district our colliery members have had their incomes raised 50 per cent. To meet the expense of doing this work, which could not be done on ordinary Branch income, we raised a special Branch Defence Fund. The history of that fund is too recent and too scandalous to need repetition here. But it must be said that it is a history that any decent trade unionist would be ashamed of. Many of the members whose income has been increased from £100 to £200 and more a year have never contributed one penny to this fund; and, as you have seen in the annual report to-day, unless a great change comes over it, it will be dead in another year.

I have been making inquiries into the amounts paid into various trade unions for organization and protective purposes alone, quite distinct from sick and benevolent benefits. Out of six about which I have information, I find the amount varies from one-fiftieth to one-eightieth of the workman's total income. Now, let the member of the British Medical Association divide his income by 50, or even 80, and compare the quotient with the 25s. he pays to the Association, and let him not forget that only a small part of that is spent on union work, and that he gets a journal which would alone cost him 27*s.* if it were not for the advertiser; that is to say, that for any money we spend on organization we depend on the druggist, publisher, etc., while the trade unionist puts his hand in his own pocket. When we and the trade unionist come to compare notes, it is not he who needs to blush. The member who objects to our assimilating the tried and successful methods of the unionist is simply unable to read the signs of the times. Each of us is quite able to deal with the private patient taken individually; but when we come to deal with the State, or public bodies, or collections of workmen, we are bound, like workmen, to combine.

For years we have spent our money and energies on objects which were quite as much for the public benefit as for our own. In fact, in worrying Governments to pass sanitary Acts and Acts for the notification of infectious diseases, we have been guided by a spirit of pure altruism. Our record is one which will justify us in any reasonable demand we may make of the public, and clears us of any possible charge of mere selfishness. The average practitioner demands that we shall do something now to render the struggle for life a little less intense—something which will at the same time enable him to be a more efficient public servant. Since the first Representative Meeting we have not been idle, and, in fact, we have been overwhelmed in arrears. First of all, it was essential to constitute a professional department at head quarters in contradistinction to the business department, which was already splendidly organized. It had to be built up entirely *de novo*, and we were most fortunate in securing the services of a medical man of great organizing ability and enthusiasm and a capacity for work which is simply phenomenal. The future of the Association will show how lucky we were to find such an instrument to hand as our Medical Secretary has proved. The department is still in process of evolution—it is still trying to overtake arrears of work which should have been done years ago, but very shortly we hope to see it an established and recognized centre to which every member in professional difficulty will turn with the certainty of obtaining help—a centre which will be able at any time to divert the full resources of the Association to any Division or Branch where aid is needed.

I must content myself with a mere mention of one or two of the outstanding achievements of our new organizing department. Take first the work done on the contract practice question. There are members (generally belonging to the class who will not stir a finger to help even themselves) who think the Association should have settled this matter straight away and given them better fees, a wage limit, and other luxuries. Such members have a vague idea that the Association is a sort of automatic omnipotent machine which works away up in London attended by the permanent officials and a few committeemen, and which can do everything except the grumbling which is their perquisite. The Medico-Political Committee knew very well that great questions are not settled in five minutes, and that before we could even begin the fight we must collect all the facts and all our arguments. I think that the Report on Contract Practice, compiled after enormous labour, is as good a piece of work as was ever done by the Association. It contains all the information we need, and is already the authority on the question. It is ready now to the hand of any Division feeling itself sufficiently strong to tackle its own difficulties with the Association behind it.

For as many years as I have read a medical paper the subject of hospital abuse has been a standing dish, and many spasmodic attempts have been made to deal with it. Dr. Garrett Horder's name at once rises to one's mind as that of the man who for years and almost single-handed tried to get the profession to deal with the subject scientifically. During the last three years our Hospitals Committee has begun the fight with a well-laid plan. It called a conference of persons representative of the various Hospital Boards throughout the country. This was well attended, and a discussion took place which did not end in mere pious opinion. The conference appointed twelve non-medical representatives to form a Joint Committee along with our Hospitals Committee, and this Joint Committee formulated and submitted a scheme which has gained wide adherence. I think it was an exceedingly good stroke of business to obtain the co-operation at the beginning of laymen with influence. It shows that the Hospitals Committee is not unaware of the fact that in our dealings with the public we must first show that what we want is what they ought to want.

A very striking innovation has been instituted by order of the Representative Meeting, acting on a resolution which, I am proud to say, came from the Gateshead Division. I refer to the Warning Notices in the JOURNAL. In all cases where a Branch or Division asks for it, an advertisement is placed in the JOURNAL warning medical men that the terms of some appointment do not meet with the approval of the profession in that district, and asking intending applicants to apply first of all to an Association official in the district. This has been found very useful, and has prevented many a man finding himself quite innocently in the position of what, for want of a worse term, I will call a "blackleg." The Ethical Committee obtained the generous support of the *Lancet*, which also publishes the warnings, and refers any doubtful-looking advertisement offered to them to our Medical Secretary. In addition, all the medical agents have agreed not to have anything to do with appointments objected to by the British Medical Association. I call this an excellent piece of work, though I am afraid it not unremotely suggests trade-unionism.

Now, let me give you three instances of the working of the new spirit in the Divisions. In 1905 Dr. Wynne reported to the Representative Meeting that a new infirmary was shortly to be opened at Leigh, and that its Committee intended to have an out-patient department. The members of the Leigh Division, knowing the abuse of which the out-patient department is capable, and feeling that prevention would be better than cure, resolved that none of them would have anything to do with the institution if the Committee persisted with the obnoxious department. They were quite willing that all accidents and emergencies should be attended, but they held that in Leigh there was no need for a department whose chief function, judging from the experience of other places, was the promotion of hospital abuse. The Infirmary Committee retorted that they intended to have their department, and if the local men would not do the work, they would soon get men who would. The Representative Meeting listened, sympathized, and passed a resolution assuring the Leigh Division that the British Medical Association would do all in its power to help them. Week after week the warning notice appeared, and the Leigh men had a very stiff fight. Greatly to our satisfaction, Dr. Wynne was able to come to the Representative Meeting last year and tell us of a complete victory. Not only is there no out-patient department, but the Infirmary Committee has unanimously agreed that the Division shall have the right to nominate the first infirmary staff, and to recommend candidates in future vacancies.

A splendid example of the best kind of unionism was given at Bradford quite recently. The Watch Committee of that city advertised eight police-surgeon vacancies. The local Division, calling all non-members into conference, met, considered the particulars, objected to many of the conditions of the appointments, and sent a deputation to the Watch Committee. In the meantime they agreed that no applications should be made until the deputation had reported. The report being unfavourable, the next meeting agreed that nobody present should accept the appointments in their present objectionable condition, left the matter to a small committee in case of future negotiations, and the appointments are still vacant.

Finally, there is the gallant struggle being carried on by the South Wales Branch in Ebbw Vale. The fight is on behalf of the colliery surgeons who are resisting unfair conditions of work. During the last year the members of the Branch have subscribed over £1,100, which has been spent in supporting the members who are losing heavily through their loyal maintenance of the policy laid down by the Branch. At the Special Representative Meeting in May an appeal was made to those present, and £50 was at once subscribed, the members of the meeting being asked to bring the situation before their constituents. The ordinary trade unionist would never let the whole cost of a struggle like that fall on the few men on the spot.

I take it that the demand of the bulk of our members is for more unionism and not less. To that end we must hasten as much as we can the coming of the Royal Charter, so essential if we intend to develop the Association along the lines we seem to favour. Under our present system we are continually being pulled up by the lawyers, who tell us we really cannot do this, that, or the other. Under the Charter, so emphatically approved by the Special Representative Meeting, we are taking powers to do everything the Association seems likely to desire—not necessarily to do it all now, or all at once, but as we wish and as we can afford.

I hope I have convinced you that we are committed to a great development of the unionist side of our work—not at the expense of the social or scientific branches, but in addition. If you agree, a plain duty lies before us as loyal British Medical Association members. Our Branch meetings must be rendered as useful and interesting as possible, so as to give the men not interested specially in the union side of our work no excuse for desertion. Above all, our Divisions must be developed to their fullest extent, and this can only be done by each of us doing his little share and not leaving the attendance to be done by the "other men." It is not fair to put all the work on to a few shoulders, and I can assure you it has a most discouraging effect on the owners of those shoulders. We must learn to "mind our own business," and the work of the British Medical Association is our business. See that your Division selects a really good man as Representative, and let him feel that if you are doing him an honour in electing him, he is doing the Division a service in going to represent it.

Our Medical Secretary once defined the ideal British Medical Association as "an Association dedicated to the proposition that medical men should help one another," and I think the phrase aptly indicates the new spirit which inspires the active and earnest members of the Association. If any of you think the results of the new Constitution scanty, or the pace slow, put it to your conscience: "What am *I* doing to help?"

RAMSEY COTTAGE HOSPITAL.—Ramsey, in the Isle of Man, is now happy in the possession of a cottage hospital which in the excellence of its arrangements and fittings appears to be comparable to a large general hospital. The institution consists of two blocks connected by a short corridor, the one being a single-storied building for patients, and the other a two-storied administrative block. In the patients' building are four wards, two of which are each designed to accommodate four adults and two child patients, and the remainder single patients. This block also contains a nurse's room, a linen store, two bathrooms, and lavatories. The flooring of the wards is of polished teak, terrazzo being used in the passages and elsewhe throughout the building. The administrative building has on its ground floor a room so fitted and built that it may be used either as a surgery or an operating theatre. There is also on this floor a sitting-room for the matron and a good kitchen and its annexes. On the upper floor are four bedrooms for the staff, and linen stores, baths, and other conveniences. The hospital has its own laundry, which is connected with the kitchen by a covered way, and also a detached mortuary. Both buildings are well lighted and well ventilated, all approved modern ideas having been adopted in their construction. The site, too, is excellent, as the hospital stands on high open ground with a pleasant view in all directions, and yet in a convenient situation for access by patients. Ramsey owes its possession of this hospital to the trustees of the estate of the late Mr. Henry Bloom Noble.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

NAVAL AND MILITARY SECTION.

Inspector-General J. Porter, R.N., President.

PRESIDENT'S INTRODUCTORY REMARKS.

PREVENTIVE MEDICINE IN THE NAVY AND ARMY.

Gentlemen,—My first duty here to-day is to thank the Council of the Association for the honour conferred on the Naval Medical Service in nominating one of its members to preside over this Section. But, let me confess it at once, I have misgivings as to the wisdom of the individual choice. This is my first appearance at these meetings. It is hardly necessary to tell you I am a novice—you will discover that soon enough for yourselves—but I know you will help me out, for we are all animated by the same spirit of devotion and determination to do our utmost to gain more light, and, if possible, to advance that which is the life's work of most of us, and which we all have very much at heart.

I feel I cannot let this occasion pass without warmly congratulating the Army Medical Service on the vast, the revolutionary, strides it has made in recent years towards complete efficiency. This appears to have been rendered possible by a happy combination of many fortunate circumstances. Fifty years ago a great War Minister, Sidney, Lord Herbert of Lea, planned, and strove with all his might for, most of the reforms which have only now been introduced. He fought a brave fight, but the forces arrayed against him prevailed. His biographer tells us how the Treasury, the bureaucracy of his own department, soldiers and doctors hidebound in tradition and seniority, obstructed in their several ways, and hastened this noble statesman's end. The service rolled on in the old grooves undisturbed till 1882, when our little wars in Egypt began. History repeated itself; a medical breakdown led to an outcry in the country. The usual official inquiry was held, and with the old result. No one was to blame, except a few medical small fry who failed to show initiative, or to take responsibility under a system which had given them no authority over, or training in, war duties during peace. Once more things went to sleep, and so it came about that South Africa told practically the same sad medical tale. But at last the hour had come, and with it the men who were to translate Sidney Herbert's work, and much besides, into reality.

Conspicuously to two War Ministers (Mr. Brodrick and Mr. Haldane), to Earl Roberts, and to Sir Frederick Treves the country and the army owe the medical position of to-day. Promotion by merit has been established through all ranks of the Army Medical Service. Its officers have been given a career. The paralysing blight of seniority has been swept away, and healthy development has been assured. There is no room for the idle the ignorant, the incompetent—the man now exists for the office, and not the office for the man. Already, in all around, the strenuous life is in evidence. To take two examples:

The monthly *Journal of the Royal Army Medical Corps* is a publication of which any body of professional men might be justly proud. The corps specialists, too, are forging ahead. The detection by Colonel Bruce of the *Micrococcus melitensis* has, to quote a recent newspaper article, led up to the crowning discovery of Major Horrocks "that goats and their milk are the chief means by which Mediterranean fever is spread." Thanks to the magic effect of this revelation, Malta and the Mediterranean, for long our deadliest foreign stations, are becoming exceedingly healthy.

A few months ago, the Secretary of State for War took a step of the first importance when he ordered that the principles of sanitation and hygiene should become an integral part of the training and essential qualifications of all combatant officers.

We thus see that, for the first time in our history, secure provision has been made that the military doctor shall be an expert adviser, not in name only, but in reality, and that the combatant officer in authority shall be able to assess the value of the advice given, and assign its proper relative weight in military situations as they arise. In the future we are likely to hear less of military necessity having to override medical requirements, and, if avoidable medical disasters occur, we shall at least know "whose beard to pull." It is now a fine service, the Royal Army Medical Corps. It has been given much, and of it much will be required, and will be forthcoming.

In the medical service of the Royal Navy many improvements have been made during the past decade. New hospitals have been built, and old ones extensively reconstructed. Modern fittings and equipment have been supplied afloat and ashore. Dental surgeons have been attached to the great hospitals at our principal home ports, and, what is of the highest value, medical officers in steadily-increasing numbers are being given courses of study at civil hospitals.

The recent conflict in the Far East has once more strikingly demonstrated, both afloat and ashore, the vital effect of the medical services upon the ultimate issue of war. On the side of the Russians was the old system Doctors were concerned only with attendance on sick ani. wounded. All the accessory services—food, transport, sand tation, ambulance—were in various other hands. Peace-establishments were not expansive, and improvised make-shifts were costly and inefficient. Divided authority was, as always, followed by deadly results. We do not yet know the actual figures, it is doubtful if we ever shall; but this much all are agreed upon, the Russian *débâcle* was largely, if not mainly, attributable to preventable disease, brought about by the absence of properly-concerted methods of dealing with it.

Captain Semenoff, of the Imperial Russian Navy, has given us a lurid picture of what happened afloat on board the *Suvaroff* at Tsushima: "A man fell wounded, and if unable to walk or crawl, he lay where he was. An hour after the action had begun the mess deck was full of wounded. They were standing, sitting, lying, some on mattresses put ready beforehand, some on hastily spread tarpaulins, some on stretchers, some just anyhow. The air was close, damp, sour, and disgustingly sickly." The moral effect of the terrible scene told swiftly on the gunners, and shooting became wild.

Let us turn from this to the other side, and we see what years of careful study, judicious outlay, and patient practice accomplished for Japan. The lucid articles of Surgeon-General Suzuki, Admiral Togo's Principal Medical Officer, are a perfect gold mine of information. Nothing was left to chance. Did time permit they contain much one would love to dwell upon. They will repay all naval officers, executive or medical, who may study them. Tsushima was won by our allies at the small cost of 113 killed and 424 wounded, many due to burns.

At the recent Red Cross Congress in London, Dr. Nagas Ariga stated that the Japanese in their late war had to deal with 220,812 wounded and 334,073 sick soldiers, exclusive of 77,809 Russian prisoners—that is, roughly, for every 3 sick there were 2 wounded, a very different ratio compared with anything we have ever known. To quote an example within my own experience, in 1884–5 I was for a year in the field on active service with a battalion of Marine infantry. It was maintained at a strength of about 500 officers and men, and during the year approximately 1,500 joined. The enemy accounted for less than 100 in killed and wounded, the remaining 900 were accounted for by deaths and invalidings. Thus the force was really renewed twice within the year. No country could for long stand that on any great scale. Sir Frederick Treves graphically stated, or rather understated, the case for us when he said, "British troops entered into a war with many determinations, one was to have 10 per cent. sick. It was what they were accustomed to, and they got it. Now the Japanese were quite content with 1 per cent. sick, and they got it."

Gentlemen, we owe it to our sailors and our soldiers, it is our duty to our country, to strive with all our might after the standards of medical efficiency with which our

gallant allies have surprised civilization. My brother officers, I know, realize that we cannot afford to, we simply must not, have medical blundering in our next war. South Africa showed us that to some extent the soldier can be replaced by the Empire in arms, but with the sea service it is otherwise. Press-gang, conscription, merchant service, which filled the gaps a century ago, are now of no avail. A simple man-of-war's man in the making costs the country hundreds of pounds and years of laborious training. Even humble lower deck ratings rise in value with startling rapidity. The skilled marksman is an asset who any day may be priceless to his country. Once lost, he cannot be replaced while a modern war is in progress. How he is put out of action—whether by the enemy or by disease—matters not; he is gone all the same. Our bluejackets are our heart's blood. When it must flow, it is surely our sacred duty to see to it that we at least shall not be responsible for wastage.

TREATMENT OF WOUNDED IN FLEET ACTIONS.

By Fleet Surgeon A. Gaskell, R.N.

This subject has often been discussed and much has been written about it. The majority of the literature is distinctly disappointing. Vague, verbose, and theoretical, they leave one's mind unsettled and bewildered. I shall attempt to make this paper as terse and practical as possible.

Our present state of knowledge may be classified under two main headings:

1. Details on which we are practically all agreed.
2. Details on which we are as yet undecided.

I trust that the public discussion of the subject of "The Treatment of Wounded in Fleet Actions" will lead to the speedy adoption of the details of the first heading and the settlement, in a practical manner, of the details of the second heading.

Let us begin with the former.

(*a*) We are all agreed that we should build a hospital ship, so that during peace time we can experiment with her and train our *personnel* to use her. Of this point I have been convinced for years, and I have heard one of our greatest medical officers express the opinion that this fact recurs to him with convincing monotony when he has tried to solve various problems connected with the medical department of the navy. Admiral Rixey, the Medical Director-General of the United States Navy, told me that year after year he applied in the estimates for a hospital ship, but that Congress would not pass it until we had set the example in the British navy. The Japanese Red Cross Society built two ships as hospital ships, but they were spoilt through being built with a view to converting them into merchant steamers after the war was over. Probably two types will be required—an ocean-going one and a coasting-service one.

(*b*) We must decide on a first aid dressing for use in the navy. We are all agreed that the present one is not good enough. The injuries received in a naval action are mostly burns from ignition of ammunition, and wounds caused by shell splinters. A dry antiseptic large dressing is required for naval first aid. I would suggest that an equal number of burn dressings and wound dressings be served out, and that they be distinguished by the colour of their envelope. The wound dressing would consist of a pad of modified Gamgee tissue (9 in. square), a 4 in. roller bandage made of Lister's carbolic gauze (this has the advantage of being too weak to be applied too tightly, and of being slightly sticky so that it adheres to the skin and hair, and the layers adhere to one another. It has always been a difficulty to discover a light and non-clumsy bandage which will not slip, and yet cannot be so tightly applied that it arrests the circulation; the triangular bandage slips and is clumsy, the calico or domette roller bandage may be applied too tightly or slip (strapping, etc., would be all stuck together when wanted, and would be dirty and difficult to apply), a large strong safety pin, and the whole wrapped up in a calico envelope. The material for this envelope is open to discussion. Inspector-General Porter, with his large experience in South Africa, is convinced that the envelope should be watertight, and he suggested to me that some sort of tarred paper would be suitable. A disadvantage to this is the impossibility of driving circulating steam into it for sterilizing purposes. I have brought with me a sample of the first-aid wound dressing that I would propose. These dressings should be packed in fifties in tin boxes, sterilized and then sealed up, and the tins only opened when going into action.

(*c*) The Admiralty has issued the following circular letter, No. 184, dated October 19th, 1903, respecting lectures on first aid.

It directs (1) that the medical officers of His Majesty's ships are to instruct the following officers and men of the ship's complement in the principles of first aid to the injured, in order that they may be qualified to render assistance when required, namely: All officers of the civil branch, midshipmen, naval cadets, master-at-arms and ship's police, light quick-firing and machine guns crews not utilized in a ship action, coxswains and bowmen of boats, markers of companies and field guns, non-commissioned officers of the Royal Marines not stationed at guns, writers, ship's stewards, cooks, domestics, and all other daymen, including band ratings; a proportion of engine-room artificers and leading stokers, who are to be given special instruction in the treatment of burns and scalds, and the removal of wounded from the bunkers, stokeholds, and engine-room.

2. That officers and men detailed to assist the medical staff in action and afterwards should, in addition to first aid, be given instruction in some of the simple nursing rules.

3. Officers qualified in first aid are to be given a certificate, and in the case of men the fact is to be noted on their parchment certificates; and adds that

4. The commander-in-chief at annual inspections will report on the arrangements made for the treatment of the sick and wounded in action, the number of officers and men qualified in first aid, and the instruction and efficiency in ambulance work; that

5. A supply of diagrams, books, triangular bandages, and first-aid dressings will be issued to the medical officer for instructional purposes; and that

6. The necessary alterations in the King's Regulations and Admiralty Instructions have been approved by their Lordships, and will be included in the Addenda of 1904.

I have devoted much time and attention to these lectures, and have come to the conclusion that it would prevent heterodoxy in instruction if four definite lectures were prepared and printed in official form. Each lecture should be of forty-five minutes' duration (thirty minutes' lecture and fifteen minutes' examination). That everybody on board, especially officers and other valuable individuals, should attend these lectures, so that all would be competent to self administer first aid. One lecture should be entirely devoted to describing the first-aid haversack, its situation, and the use of its contents; also the medical arrangements for preparation for battle. A copy of these lectures could be served out to every officer and man in the navy.

(*d*) The ordinary brown haversack of the gunners' stores is very suitable for the purpose. One of these haversacks should be hung on a hook intended for the purpose behind each gun. One or more should be placed in convenient places in the engine rooms, stokeholds, conning tower, fighting tops, chart-house, and bridges; and one should be with each stretcher party. The contents of the haversacks should be as simple as possible, and should consist of six wound dressings, six burn dressings, a large castor containing some non-poisonous antiseptic powder, such as boric acid, or boro-salicylic acid (3 to 1, as used by the Japanese), or biniodide of bismuth, and one Foulis tourniquet. In peace time dummy dressing packets might be put in to save wastage, but I am not sure this would be wise (vide paragraph *e*). The dusting powder is dusted straight into the wound to form an aseptic scab when the blood dries. The Foulis tourniquet should be frequently tested and replaced when the rubber becomes perished.

(*e*) During general quarters in peace time the crew, and especially the stretcher parties, should all be exercised in using the contents of the haversack and in moving the wounded by stretcher or hand.

(*f*) The surgical apparatus, dressings, etc., should be stowed below in the best-protected part of the ship, and not brought out or rigged till after the action. This therefore does not come within the scope of the present paper.

Now for the details under the second heading—namely, those on which we are as yet undecided:

(*g*) Preparation for battle. The exact medical preparations have never been quite definitely decided upon. The medical staff and their stretcher party will be mustered by the principal medical officer and told off to their

stations and duties. The haversacks will be filled and distributed. The surgical apparatus, drugs, etc., and as much of the contents of the sick bay as possible will be struck down below into a prearranged well-protected store.

(*h*) The medical staff will be augmented in war time. The Japanese believe in a much larger number of this staff than we have been accustomed to. Spare numbers of doctors and nurses will be carried in the hospital ships, but these cannot be very confidently depended on, as the sea may be too rough to lower boats to fetch them, or the hospital ship may be absent.

(*i*) To my mind, one of the most important preparations is that of the men who may be wounded. I would suggest that, if time would allow, every one in the ship should receive a hot antiseptic bath, and should have served out to him a complete war clothing, consisting of non-inflammable flannel impregnated with double cyanide salt, and as much as possible of their surface should be covered, even to the extent of wearing flannel masks with openings for mouth, nose, and eyes. This war clothing could be sterilized and packed in tightly-compressed bales and stowed in a magazine until war should be declared. It is only necessary to read Suzuki's splendid book on the Chino Japanese war, and learn of the awful septicity produced in the wounds by the carrying in of pieces of clothing by the irregular pieces of shell, to see that this precaution would save numberless lives and prevent much suffering, etc., in the wounded. The Japanese themselves benefited by this experience, and in their last war they actually did order the men to bathe and to wear clean clothing before going into action. I was convinced of this long before the Russo-Japanese war, and it was gratifying to see what excellent results followed its adoption. A comparison of the course of the wounds in the Chino-Japanese and Russo-Japanese wars is very instructive.

(*j*) The proper station for the medical officers and the officers and men told off to help them. Here we have a fruitful source of argument. I think the ideal station should be an armoured receiving room, well lighted and with rounded corners, etc., so as to be easily cleaned, capable of holding 6 per cent. of the ship's company and situated amidships above the protective deck, so as to be easily reached either from forward or aft, so that escape is easy in case of the ship sinking, while easy of access to wounded men trying to find their way there unaided, and so well ventilated that the danger of suffocation from gases is minimized. In this receiving room I should place all the medical staff, and they would be supplied with a large spare stock of material for replenishing haversacks, also morphine and many hypodermic syringes, also hot Bovril, brandy, and other restoratives, also stretchers, splints, and a few special dressings. Of course, such a receiving room, if considered necessary, would have to be thought of during the time of constructing and planning the ship, and I think medical advice for this purpose and for many others (such as general hygiene of peace time) should be available to the constructors when a man-of-war is about to be planned. On the other hand, if such a receiving room be considered unnecessary, or the old time-honoured statement be made that one dressing station may be shot away and therefore you should divide your medical staff, then we enter the same old useless field of makeshifts, etc. Of course, anything may do under some circumstances and nothing may do under others, but I feel that simplicity, uniformity, and real utility are best served by having some such casemated armoured receiving room amidships taking the place in modern ships of the cockpit in our old wooden ships.

So much for the ideal in ships about to be constructed. But we still have to deal with ships already built.

Here I would suggest that a large, well-lighted, well-ventilated space be cleared away near the bottom of the ship on a level with the magazines, and approached through one or more large armoured tubelike hatchways capable of taking a lift or stretcher or sliding board, and going vertically down from the upper deck with openings into it from both gun decks. This receiving room could also be approached from the magazines, the ammunition hoists in the casemates being enlarged so as to allow of a stretcher being lowered down them for conveying men from the casemates to the magazines and thence to the receiving room.

All the medical officers and most of their staff would be stationed in this receiving room, and the stretcher parties would be stationed in casemates or other armoured places on the gun decks, one group forward and one group aft.

(*k*) The details of moving the wounded have been much discussed, and one conclusion seems fairly universal—namely, that during a fierce action the wounded should not be moved. They should lie where they fall. Attempts at moving them in the Russo-Japanese war practically always led to the wounded man and his bearers being killed. But all actions are not so fierce. Therefore I should recommend that the details of moving the wounded should be settled at the time by the principal medical officer, he being guided by whether the firing be long range and desultory or short range and fierce; whether it be a victorious action or the reverse; and whether the doctors and stretcher parties, if killed, can be easily replaced.

(*l*) The treatment of the wounded after the action practically consists of pure surgery and ability to improvise, and is not part of the present subject. Much will be learnt on the subject of transporting wounded in heavy seas when we have an experimental hospital ship with experimental ambulance boats.

(*m*) The best authority on the subject appears to be Suzuki's splendid book on the Chino-Japanese war. After this, Braisted's "Report on the Japanese Naval, Medical, and Sanitary Features of the Russo-Japanese War to the Surgeon-General U.S. Navy"; Auffret's "Secours aux Blessés des Guerres Maritimes," read at the Lisbon Convention, and printed in the *Archives de Médecine Navale* of June, 1906; Wise's "Consideration of Recent Views on the Work of the Medical Department in Naval Warfare," printed in the *Military Surgeon* of April, 1907.

There are many other papers on the subject in various medical and military journals, but most of them are out of date and of but little practical value.

DISCUSSION.

Fleet Surgeon P. W. Bassett-Smith, R.N., said that the first-aid dressing deteriorated by keeping and required frequent inspection. He considered that the dressing proposed by Fleet Surgeon Gaskell was too large. He did not think that the ideal ship suggested would be practical for action. The movement of wounded was impossible in ships of the *Dreadnought* type, because the different parts of the vessel were shut off by compartments.

Staff Surgeon G. E. Duncan, R.N., said that during the recent Russo-Japanese war numbers of the sick were transported in fleet actions by means of canvas aprons similar to those in which a Japanese or Chinese mother carried her child, that is, on her back.

ENTERIC FEVER: ITS SPREAD BY PERSONAL INFECTION, AND PREVENTIVE MEASURES ON ACTIVE SERVICE.

By Lieutenant-Colonel A. M. Davies, R.A.M.C.

The orthodox textbook teaching as to the causation of enteric fever lays little stress on its communicability by direct contagion—that is, by personal infection. Murchison, in his classical treatise, stated that, "although enteric fever is communicable, my experience is entirely opposed to the view that it is contagious in the strict sense of the term." W. Cayley (1884) considered that, "although it may not be safe to affirm that enteric fever is incapable of being communicated by direct contagion, it is quite certain that this plays a very small part in the dissemination of the disease, and that widespread epidemics are never due to this cause." Fagge and Pye-Smith, F. Taylor, and Sir W. Broadbent expressed the same opinion. Dreschfeld, in Clifford Allbutt's *System of Medicine* (1896), summed up by saying that "the facts ascertained . . . are, briefly, that in very few cases is there any evidence of direct contagion from the sick to the healthy." In the 1905 edition this opinion is modified, and it is stated, referring to a severe epidemic of 5,000 cases in Belfast, that "typhoid fever has not a marked tendency to spread to other members of the same household." The only authoritative and widely-circulated textbook on the other side is that of Osler, who admits that "the possibility of direct transmission through air from one person to another must be acknowledged" (1903).

I.

1. The most extensive prevalence of enteric fever on record is probably that among the United States troops assembled during the Spanish-American War of 1898, at vast camps on selected sites in Virginia, Florida, Georgia, and Pennsylvania: during the five months from May to September, no fewer than 20,738 officers and men (nearly one-fifth of the force) were infected, of whom 1,580 died. This epidemic was inquired into by a Board of three medical officers (Reed, Vaughan, and Shakespeare), and an abstract of their report was published in 1900. All the circumstances were carefully investigated; infected water was excluded; a minute investigation was made into 1,608 individual cases, and the following conclusion arrived at: "Typhoid fever, as it developed in the regimental organizations, was characterized by a series of company epidemics, each one having more or less perfectly its own individual characteristics. . . . . In 1,608 cases which we have been able accurately to locate in the particular tents in which they occurred, together with the date of the commencement of the attack, the results may be summarized as follows:

		Per cent.
Directly connectable attacks (in same tent)...	563 or	35.01
Indirectly connectable attacks (in next tent)	447 or	27.79
Total connectable attacks	1,010 or	62.80

Certain tents were badly infected, and the majority of their inmates developed the disease, while other tents wholly escaped." Dr. Christopher Childs[1] summarized the very voluminous evidence, and considered that there was "a very strong case for the verdict of the Commission that the direct and indirect infection in tents were most important factors in the spread of the epidemics."

It is well known that since 1901 Koch has vigorously advocated the view that it is the human body, either actually suffering from typhoid fever, or convalescent after it, or that has been in contact with a typhoid patient, which is the starting point of all typhoid infection. He looks on the enteric bacillus as an "obligatory human" bacillus—obligatory to the sick man, or the healthy man, or the associates of the patient. His method of prevention, his campaign against enteric, would take the shape of an attack on the specific poison—that is, the infective germ—while in its original home, namely, the body of the enteric patient, or in the persons of those who had come in contact with him. Thus destroyed at its origin, the infective germ would no longer be able to contaminate water or food, or propagate itself indefinitely and produce epidemics. The main points in this method of prevention are early recognition and notification of the disease, isolation of the patient, and disinfection. As recently stated by Kutscher (1906), the principles of successful prophylaxis must be the same as for cholera: the enteric bacilli-carriers should be excluded from such occupations as are liable to spread infection.

2. The principal evidence in favour of the spread by direct or semi-direct contagion within recent years in this country has been afforded by the medical officers of the various infectious hospitals of the Metropolitan Asylums Board, especially by Dr. Alexander Collie (1879-1880), and Dr. E. W. Goodall (1900). A study of the cases narrated by these observers can hardly fail to lead to the conviction that, however infrequent this mode of propagation may have been in former years, it is not by any means to be neglected as a possible, and probable, mode of spread at the present time. Some experienced medical officers of health have given their opinion in this sense: thus, Dr. Alfred Hill, of Birmingham, considered that in 1898, out of 600 cases, 14 per cent. were due to direct infection. Dr. Niven, in the same year, also considered that 14 per cent. of the cases in Manchester were similarly attributable. Dr. John Robertson, out of 2,000 cases, considered 10 per cent. to be probably due to this cause. Dr. Herbert Peck, out of 206 cases in West Lancashire (1899), put down 13.5 per cent. to "sick-room infection." Dr. H. Wilkinson, of Dudley, stated, in 1905, that:

> Previous to the establishment of compulsory notification, frequently 7 or 8 cases occurred in one house, pointing to the infectivity of the disease; since it has become the practice to remove the first case to hospital, it is rare to receive a second notification from the same house.

On the other hand, from the statistics of 638 epidemics, relating to a total of 35,647 cases, inquired into by Schuder (1901), only 1,179, or 3.3 per cent., appeared to be due to direct infection. In the investigation by Lorrain Smith into typhoid fever in Belfast (1904), it was found that in fully 85 per cent. of the houses in which typhoid occurred there was no second case; also, during three years, the returns per street showed that in about 50 per cent. of the streets in which typhoid broke out there was only 1 case. The experience of Belfast is therefore, it must be admitted, against the spread of infection by conveyance of the virus from one individual to another.

Two crucial instances that were recorded some years ago deserve, I think, to be mentioned as demonstrating this transmission by direct contagion. One was related by Dr. W. Thomson, of Peterborough, in 1879:

> A young lady attending school fell ill of the disease. She was visited by her mother from a distance, who only stayed with her for half an hour, neither ate nor drank anything in the sick room, and washed her hands on leaving. The mother returned home, and in ten days fell ill with enteric. There were no cases in the neighbourhood.

The other was recorded by Dr. Horton Smith in 1903 in a series of 9 cases.

> The first case, at Haggerston, a girl of 15, was not recognized, and no precautions were taken; she died October 15th. (2) Her sister, who had slept with her during part of her illness, sickened on October 16th. (3) Her mother sickened about the same time. (4) Her brother on October 19th. (5) Her aunt stayed at the same house during the first week in October, was out of sorts next week, and gave a positive Widal reaction (1 in 30 in ten minutes) on November 6th. (6) Her father sickened on November 2nd. (7) Another brother left the house on October 20th and went to Croydon, was slightly ailing on the 23rd, and on November 21st gave "fairly complete agglutination" 1 in 20, "slight" 1 in 50; probably an exceedingly mild case infecting the next two. (8) A boy, living in same house as No. 7, sickened November 12th. (9) An infant sister of No. 1 left the house on October 28th for Croydon, was suddenly taken ill on November 17th with shivering, vomiting, diarrhoea and fever, afterwards bronchitis; no characteristic symptoms and Widal reaction negative until 28th, when it was positive, 1 in 30 in ten minutes; death on December 10th, but no *post-mortem* examination allowed. No enteric fever was prevalent either at Haggerston or at Croydon.

The diagnosis seems to be clear, and the only probable cause of the cases after the first was direct contagion.

3. In regard to military experience in our army, there is no very precise information. During the eleven years, 1893-1903 inclusive, there were 1,410 admissions for enteric fever in military hospitals at home, of which 19 are recorded as having been probably contracted from another patient in hospital, while 37 cases occurred amongst nursing attendants, either men of the Royal Army Medical Corps or special regimental orderlies; the two groups taken together show a percentage of 4 on the total number. During the years 1897-1900 the present writer investigated the causation of twelve outbreaks of enteric fever in India, the total number of cases aggregating 898; of these 19 could be affirmed with tolerable certainty to have contracted the infection while patients in hospital, and 6 others while acting as nursing orderlies over enteric patients, these 25 cases forming 2.8 per cent. of the total number.

An outbreak occurred at Portland in 1901, investigated by the writer, which appeared to be due to barrack-room infection.

> Between December 20th, 1900, and September 17th, 1901, there were 18 admissions for enteric fever, the first 10 of which occurred between December 20th and March 10th, the last 8 between July 20th and September 17th. Between March 10th and July 20th there were no cases; neither had there been any at this station for five years previously. In the first group of 10 cases, all except 1 were admitted from the south-east range of casemates, although the occupants numbered only about half those in the south-west range; the exceptional case was a hospital orderly who had been nursing enteric patients. Inquiry failed to discover any probable source of infection in the water or food supplies, or from any local insanitary condition in the barracks or surrounding neighbourhood. The man first attacked had been twenty-seven days in the station before being taken ill, and had hardly been outside the citadel during the whole of that time. The only possible, or at least probable, origin seemed to be importation by convalescents returned rom South Africa. It appears that the barracks were first occupied by invalids returned from South Africa on December 4th, 1900; in No. 13 room was 1 enteric convalescent, and in the adjoining room, No. 12, there were 9 others; the men of rooms 12 and 13 messed together. In these two barrack rooms, accommodating 20 men in each,

there were 10 enteric convalescents, brought into most intimate association with the remaining 30 inhabitants as regards their living, sleeping, and eating, and in the use of the same latrine and urinal. Five cases of enteric occurred among these men (1 of them in the person of a returned convalescent).

As to the exact mode of conveyance of the poison, it is impossible to prove anything; but there were certain conditions which would aid in its propagation, supposing it were present in the bodies of any of the convalescents. I do not think there would be much danger in messing in the same room, that is, in eating at the same table, supposing the men were ordinarily clean in their habits. But as regards sleeping in the same room and habitually breathing the same air, the risk of infection (supposing the convalescents to be infective) would be considerable. All the rooms were casemates, and consequently very badly ventilated at the best. They were not, according to regulation, overcrowded, and the air space and floor space were up to the allowance; but the distance between beds was little more (sometimes less) than 2 ft., and in the absence of any means for changing the air rapidly, there is no doubt that any infective exhalations or emanations from one occupant might easily be breathed or swallowed by another on either side. Moreover, it was the fact that occasionally men would commit a nuisance in the back corridor into which the barrack rooms opened, either being unable, or more likely not taking the trouble, to get so far as the latrine and urinal outside. Therefore, if any of these returned convalescents had any infective property in their bodies or excretions, it is not at all unlikely that the infection might have spread, on account of the air of the rooms, or of the corridor, becoming charged with infective matter, which might then be breathed or swallowed by the other occupants.

A second group of eight cases occurred between July 20th and September 17th.

Fourteen days elapsed between the admissions of the first and second, and again fourteen days between the second and third cases; the rest came in at short intervals. The first, and probably the second, were infected while in camp, away from Portland. On return to the station they occupied rooms in the south-east casemates; on the admission of the second case these were again vacated; 6 cases were admitted after this, of which 3 had become infected in the south-east range, and a fourth had slept in the next bed to one of the others.

The same mode of propagation must be held to have been the most probable one in this series as in the former; the general sanitary conditions as regards water, food, etc., were unchanged.

The total number of cases of enteric fever in South Africa during the war was, in round numbers, 31,000, of whom 6,000 died; of those who recovered, numbering about 25,000, the majority must have come to England for a time or permanently. They were scattered in garrisons and regimental dépôts all over the country; nevertheless, careful inquiry failed to detect any outbreak that could be traced to infection derived from these convalescents, with the one exception just related; a single case at the Curragh in 1900, and three cases at Dover in 1902, were attributed to such infection.

In India a localization of incidence—that is, a marked inequality of incidence on some particular group of men—has frequently been noticed. Thus, at Dagshai, in 1897, out of 66 cases occurring in a battalion in three months, 25 were derived from two companies; at Quetta, in 1893, some bungalows were affected most severely (16 cases out of 128 occupants), while others escaped altogether. There are records of several such instances, pointing to some strictly localized condition as the principal source or means of infection. It seems that the German observers would refer such instances of localization to contact infection; but in India it has been thought that spread by means of an infected latrine offers a likely explanation of many of the localized outbreaks that have been investigated; such a mode of infection is very probable, but cannot be correctly called spread by direct or semidirect contagion. This term should be confined to cases contracted through close asssociation with a pre-existing case; such as sleeping in an adjoining bed, eating in close proximity, possibly wearing the same clothes, or using the same bedding.

Lieutenant-Colonel Wardrop, R.A.M.C., has recently (1907) related a good instance of direct infection from a hospital patient:

> The man was transferred from a troopship, suffering from a severe attack of enteric with delirium and diarrhoea. He was attended by four nurses and three orderlies. Of these, one nurse and one orderly had previously suffered from enteric, and may therefore be regarded as immune; of the remaining five persons, three contracted the disease—namely, two nurses and one orderly, and this in spite of great care and attention to all the detailed instructions laid down to prevent conveyance of infection.

There can be little doubt that cases do occur from which the infection will spread in spite of all precautions.

It has been thought that the natives of India suffer from enteric in a mild and unrecognized form, and that the disease being, therefore, unsuspected, spread of infection may occur to Europeans through cooks and other servants. No precise facts appear to have been recorded (though a similar mode of infection in regard to cholera is matter of common knowledge). In South Africa it has been recently stated[2] that spread through personal contact and soil pollution is principally associated with the Kaffirs, who are largely employed as servants, etc. That they are subject to the disease is undoubted, and that they may be suffering from it in an advanced stage, and yet be going about their work, to all appearances little affected, has been shown by examinations *post mortem*, death having been due to injury or accident.

It is to be regretted that no very definite evidence can be obtained from the experiences of the South African war. The conditions of active service render precise observations, and still more the precise records of observations, exceedingly difficult; even if such are made they are very likely lost. Dr. Howard Tooth has related[3] that—

> At Bloemfontein, where many officers were ill with enteric, many were attended (to some extent) by their soldier servants, owing to the heavy work falling on the regular nursing staff. These men had not much to do with the direct nursing but nevertheless a large number of them contracted the disease. On the other hand, only nine of the regular nursing orderlies took the disease during the whole period of seven months (at that hospital), though in constant attendance on bad cases; this may have been due to protective inoculation, and also to their being alive to the necessity of taking precautions.

Mr. Bowlby,[4] also referring to Bloemfontein, stated that it was his opinion, and he thought the opinion of his colleagues also, that the greater amount of enteric fever then epidemic was the result of infection from man to man, and of infection from contaminated camps; the relative proportions of these two modes of infection were not, however, estimated in his evidence before the Commission.

Lieutenant-Colonel R. Caldwell, R.A.M.C., from his experience of the charge of troops employed on blockhouse duty for long periods, who, while so engaged consumed nothing in the way of liquid but tea or coffee, considered that—

> Enteric infection occurred owing to the cramped conditions under which the men lived; the blockhouse floors were of earth, absorbent, and impossible to keep clean; the space was extremely limited, the men's habits as regards sanitary matters not all that might be desired.

Now it is known that under the perfect sanitary conditions that obtain in the splendidly equipped and managed London hospitals it does occasionally happen that enteric spreads from one patient to another in the same ward; the occurrence is rare, but it is not unknown. Also, it does happen that nursing attendants contract the infection from patients. If, then, this event is possible in such institutions under the best conditions that can well be imagined, is it not possible, is it not indeed highly probable, that similar propagation would occur (*a*) in a barrack room, or tent, where the occupants are in intimate association, and where the sanitary conditions are, of course, not to be compared with those obtaining in a London hospital, assuming that one of the occupants is suffering from the disease? And, if this be granted, is it not much more probable that similar direct propagation would occur (*b*) in a tent, or hut, under the conditions of active service, when cleanliness as regards the person, the clothing, and the food is very difficult of attainment, overcrowding almost certain to occur, and the existence of a slight or ambulatory case of the disease among the occupants by no means an unlikely event?

If this assumption be granted, it will be found to explain a large proportion of the incidence of enteric fever under active service conditions, and (up to recently) in India. If a proposition is reasonable in itself, and affords

a reasonable explanation of observed phenomena, it is justifiable to use it as a working hypothesis, and take action accordingly. This is what is now being done in India, and what (it is to be hoped) will be done during our next campaign, whenever or wherever it may occur.

II.

The recognition of the infectivity of the patient and the knowledge that this continues during convalescence will indicate some of the measures to be taken in order to prevent spread. The stools and urine are the obvious channels of infection, and to these excreta the chief care in regard to disinfection and disposal will be directed. But the date of commencement of infectivity is not known with certainty in the case of either urine or stools, neither is it known precisely when they cease to be infective. So to deal with a convalescent as to ensure that his stools and urine are not a danger to others may be tedious, but is not very difficult; but to deal effectively with an undeveloped, undiagnosed, and possibly for the time being unrecognizable case, so as to make sure that his excreta do not spread infection, is, it is to be feared, a matter of very great difficulty indeed. The recognition of the difficulty is, however—next to the comprehension of the necessity for action—the most important part of the business. As the French courtier remarked: "Madame, if this thing *can* be done, it *is* done; if it cannot be done, it *shall* be done."

1. To take first the case of the enteric patient in hospital. The preventive or protective measures should consist of: (1) Segregation from patients suffering from other diseases; (2) provision of special clothing and bedding, distinctively marked and kept separate; (3) also special feeding cups and other utensils for food; special bedpans and urinals, and spit cups; special clinical thermometers, and enema apparatus; all these articles to be distinctively marked. (4) The nursing attendants should be specially detailed, and should be fed and housed apart from the main body of the nursing *personnel*; though not absolutely isolated, they should perform their ablutions and change their clothing before associating with the rest of the staff. (5) Strict disinfection of all excreta of the patients, also of sputa, bath water and ablution water. (6) Disinfection of all utensils, whether used for food or for receiving excreta of any kind. (7) Destruction by fire of all remains of food that has been supplied to the patients and not been consumed. (8) Everything that enters the enteric ward should be considered to have become infective, and should be treated accordingly; for example, books, pictures, newspapers; also soda-water bottles and the like. (9) The patient's hospital clothing and bedding will be disinfected in accordance with the authorized special sanitary rules. Care is to be taken in regard to conveyance of clothing, etc., from the enteric ward to the place where disinfection is carried out, so that there be no chance of the infected clothing coming in contact with clothing from any other source; covered receptacles should be used, and the infected clothing, etc., kept moist.

On admission to hospital of an enteric patient, or a patient suspected to be suffering from the disease, (*a*) all his regimental clothing, his kit and necessaries, and (*b*) his barrack bedding, sheets, and blankets should be disinfected by the means appropriate to each article, as laid down in the sanitary rules; (*c*) his barrack bedcot should be washed with saponified cresol solution, also his accoutrement shelf and the floor round about his bedcot. If the patient has been admitted from a tent, as much disinfection will be carried out as is appropriate to the case; the bedcot and mattress, the tent body, and the ground inside the tent will be disinfected as thoroughly as practicable. If he is known to have been using any particular latrine or urinal, these should be disinfected in accordance with general principles and common sense.

Any case admitted to hospital with illness of an uncertain nature, but presumably, or doubtfully, enteric fever, should be received in an observation ward, the same precautions being taken in every particular as in the enteric ward.

It is laid down (Army Medical Regulations, para. 152) that disinfection of bedding, clothing, and other articles which may have been exposed to infection will be carried out in connexion with *every case* of infectious disease (including, of course, enteric fever). It is to be feared that this has not always been the case in regard to the regimental clothing and barrack bedding of men admitted to hospital suffering from enteric. The difficulty (or impossibility) of diagnosis in many cases, which difficulty may continue for many days, is partly responsible for this. As, however, every one should now be alive to the danger of spread of infection, all doubtful cases should be considered as infective, and full disinfection of clothing and bedding carried out as a necessary precaution. It has been stated that in South Africa cases of enteric have occurred amongst men who had slept in the beds, or used the blankets, of men who had been admitted to hospital with enteric fever, the disease not having been recognized at the time. The only way to guard against such occurrences is to consider the bed, bedding, and clothing of all doubtful cases as infectious, and to disinfect freely. It is a matter of some difficulty to secure the separation of such blankets, bedding, and clothing from the blankets, bedding, and clothing of other men of the same regiment and company admitted to hospital about the same time. The accommodation provided for their custody and storage in regimental and company stores is not large enough, nor has it been designed to secure such a complete separation of these things as would prevent one set from infecting another. It would be, perhaps, a counsel of perfection to disinfect the clothing, bedding, etc., of *all* men admitted to hospital; but, failing this, great care and watchfulness are required under the present cramped conditions as regards storage of these articles by regimental authorities.

On recovery, the enteric convalescent is still to be regarded as infective. Wherever possible a convalescent ward should be provided in which the same precautions will be observed in every detail as in the enteric ward itself. The use of urotropine is recommended; and periodical bacteriological examinations of the urine and faeces for the detection of the specific organism. No period can be definitely laid down for the duration of stay in the convalescent ward: medical officers must use their own discretion, relying on the clinical and bacteriological phenomena. Strict attention to the disinfection of all excreta is, no doubt, absolutely necessary for a more or less prolonged period.

When well advanced in convalescence the patient may be transferred to a convalescent camp or detachment; here he may resume his ordinary duties, but his housing and feeding, and more especially the disposal of all excreta, will be under careful supervision. The housing and feeding need not be of any special character, segregation from the main body of troops, until all danger of infectivity has passed away, being all that is required. But disinfection of all excreta, and of all ablution and bath water, must be continued until there are sufficient grounds for the belief that danger of spreading infection has passed away. The practice in the German army is to maintain segregation until three successive bacteriological examinations of the stools for *B. typhosus* have proved negative. In India the procedure has varied. At Rawal Pindi no man was discharged from hospital until he had been free from bacilluria for a month. At Cherat it was considered that enteric was spread (in 1904) by convalescents, who, after a six weeks' course of urotropine at Peshawar, and a further two weeks' course at Cherat, being then discharged from hospital, urinated at large contrary to instructions, and so brought about a prevalence of the disease in the station.

The earliest appearance of the bacilli in the urine seems to be towards the end of the second week of the illness; but generally it is later than this, during the third or fourth week. They continue to be discharged for several weeks, or even many months.

2. Next, to take the case of the man suffering but slightly, or not at all, not reporting himself sick, and yet possibly capable of spreading infection.

The correct procedure would seem to be: (1) The recognition of the possibility, and in some countries, or at certain seasons, the probability, of such mild, but dangerous, cases being present in any body of troops that may come under observation; therefore (2) the institution of a systematic inspection of all arrivals at a station, in order that such slight enteric cases may be detected; and (3) the provision of a quarantine or segregation camp where these arrivals may be accommodated until the

necessary examination has been carried out and a positive or negative diagnosis has been made.

It is a practice of long standing in India and elsewhere to make an inspection of the troops in order to detect the presence of venereal disease just before arrival at a fresh station; the timely detection of enteric is of at least equal importance.

To be of practical use there must be a fairly rapid means of diagnosis. The information afforded by the Drigalski-Conradi, or malachite green, or other similar cultivation methods, in combination with the agglutination test with typhoid serum, enables the observer to arrive at an opinion in twenty-four or forty-eight hours. It is neither an impossibility nor even a matter of great difficulty to carry out such a procedure in the case of all troops arriving at a station for permanent residence; segregation accommodation would be required. This, under ordinary circumstances, would be provided under canvas, the length of sojourn being not more than two or three days, except in cases of special doubt or difficulty.

In the Army Medical Department report for 1904, in the section referring to enteric fever in India, two instances are related (Nowshera and Rawal Pindi) in which enteric was introduced into the station by the arrival of drafts; another instance is noted of importation into a station (Agra) owing to infection contracted on the line of march. Similar occurrences have been noted in past years, due to infection of camping grounds (for example, Chakrata and Kailana, Cherat, etc.). Prompt detection of the disease *before* the troops actually enter into the station, followed by segregation of the sick and of suspects, also of contacts, would, without doubt, lessen its spread. The practice that has within the last few years been followed in India must have the most beneficial and far-reaching effects in limiting the spread of the disease. This consists, not in absolutely isolating or quarantining the new arrivals, but in a partial segregation from the rest of the corps to which they belong in a special bungalow or in tents; the use of a special latrine and urinal; and, if possible, of a special kitchen and washhouse. Their military duties or instruction are not interfered with. The segregation continues for twenty-eight days. For the first week they are inspected by a medical officer daily, and not less than thrice weekly for the rest of the time, any man showing fever or digestive disturbance being at once placed under special observation. The medical officer keeps careful watch on the men's bungalows or tents, latrines, urinals, cookhouses, etc., and gives them advice on sanitary matters. The dry-earth system is carried out, but on the occurrence of an enteric case disinfectants are used as directed in Regulations; also, on the occurrence of a case, the tent or room is disinfected, including the floor or ground. The rules apply to detachments over ten in number, coming from a station where enteric is prevalent, to be attached to a corps which is free from it, officers in charge of station hospitals always being informed in advance of the arrival of the party. For smaller parties modifications in the rules are made as necessary. At Sialkot and Ambala segregation of all arrivals has been practised in each unit, and with the greatest success. In the case of large parties of enteric convalescents proceeding to the Hills it is probably most convenient to detain the men in hospital under observation, but of course they are segregated.

It is obvious that if the rapid means of diagnosis afforded by one of the methods previously mentioned could be carried out the period of segregation could be lessened. This is much to be desired for practical reasons, as it will always be far easier to get segregation sanctioned and efficiently carried out for a few days than for a period of some weeks, which may entail administrative difficulties. During the whole incubation period of the disease (which may be taken as three weeks) all arrivals at a station should be under careful observation; every man should be medically inspected every day for the first week, and three times a week for the two or three weeks following.

The quickest way to make the diagnosis is by examination of the blood for detection of the typhoid bacillus. If 10 c.cm. are drawn from the median basilic vein, diluted in 500 c.cm. broth (in ten flasks with 50 c.cm. in each), and incubated at 37° C., the bacillus will show its presence in from twenty-four to seventy-two hours. The growth thus obtained can be tested for agglutination with typhoid serum, and a provisional diagnosis arrived at on the same day. Plating out in malachite green or other special medium will afford a pure growth on the following day, which may then be subcultured in the various special media and a diagnosis arrived at twenty-four to forty-eight hours later. Coleman and Buxton (*American Journal of Medical Sciences*, June, 1907) recommend Conradi's method with ox bile in place of broth: ox bile 90 c.cm., glycerin 10 c.cm., peptone 2 grams, are mixed and distributed in small flasks, 20 c.cm. in each; three of these are used for each examination, about 3 c.cm. of blood being run into each flask. After twenty-four hours' incubation a stroke culture is made from each flask on to litmus lactose agar plates. If micro-organisms are present, a growth may appear after five or six hours' incubation. If this growth does not redden the medium, and is found to be a bacillus resembling the typhoid organism, it is tested for the Widal reaction with immune serum. A diagnosis may be arrived at on the day following that on which the blood was drawn.

Coleman and Buxton tabulate 1 602 reported cases of blood examination for the typhoid bacillus. Of 224 examinations in the first week of the illness, 89 per cent. were positive; the earliest positive result was on the second day of illness (Widal). The proportion of positive results diminished to 73, 60, and 38 per cent. in the second, third, and fourth weeks respectively.

3. Under active service conditions it is obvious that the difficulties in carrying out the principle of segregation are much increased; it is equally obvious that the importance of preventing the spread of infection is also much greater than in peace time. The fundamental necessity is the recognition of the infectivity of the person suffering from enteric fever; if this is fully comprehended, then every one will allow—on the principle that prevention is better than cure—that labour and expenditure are more usefully employed in searching for and isolating *the first cases that occur*, than in providing for the care and treatment of the army of sick men that experience has shown will have to be accommodated subsequently. In the American camps of 1898 this sick army amounted to nearly 21,000 officers and men; in the Russian campaign in Manchuria (1904 5) it numbered more than 10,000. In no disease, not even in cholera, is there greater need for carrying out Ovid's advice—*Principiis obsta.* This has already been recognized in the greatly increased prominence that is now given to sanitation in the field, the importance of which is now appreciated not only by medical but also by combatant officers. This is not the place to enter into details of field medical organization as applied to this particular case. The necessity for early recognition of the disease will be allowed as a matter of course; and, following on this, (1) measures for the systematic inspection of troops to discover such cases at the earliest possible moment; and (2) segregation both of (*a*) enteric cases and (*b*) doubtful or suspicious cases. It should be the duty of medical officers in charge of troops to make rigorous inspections of their men, keeping constantly in mind the earliest symptoms (including, at the least, digestive disturbance accompanied by fever). These inspections are particularly important: (1) On disembarkation of troops in the country where operations are being carried on, and (2) on arrival at any large camp of concentration. The segregation of cases and of suspects is undoubtedly difficult, but all trouble and expense will undoubtedly be amply repaid if the stitch is taken in time. It will be universally admitted that enteric cases should not be treated in field or other hospitals along with other cases of sickness or injury; special wards, attendants, and equipment, with special means of disinfection, etc., are necessary. The question then arises, Is it practicable to carry out the necessary measures, with any approach to completeness, in a field hospital—that is, "at the front"? Can isolation, disinfection, etc., be satisfactorily carried out under "at the front" conditions? If this cannot be done, it follows that the right course will be to get rid of all the cases that can be regarded as infective, and transport them to a hospital, fully equipped and staffed, that is capable of dealing with them promptly and thoroughly, so as to obviate the possibility of infection being spread. If it be granted that this ought to be done, then, to be logical, the sooner it is done the better; and if a presumably infective case cannot be properly cared for, so as to prevent the infection spreading, in a field hospital, *a fortiori* no presumably infective case should be allowed to remain for a single hour with his unit, associated with the healthy under camp conditions—that is, living, feeding, and sleeping with others in the same tent, using

the same latrine or urinal; or, if under the stress of active service none such are provided, spreading infection by defaecating or urinating at large.

The conclusion, therefore, is that no enteric case, and no man suspected to be suffering from enteric, should remain in camp, that is, under "at the front" conditions (even in field hospitals), if enteric epidemics are to be stopped at their commencement. To be constantly on the look-out for a suspicious case; immediately to segregate all such cases; to come to a diagnosis as quickly as possible with the modern methods now at our disposal; and to remove all diagnosed cases, and also all suspicious cases, to an environment where thorough treatment, such as will prevent their being a source of infection to others, can be carried out—these appear to be the special lines on which rational enteric prophylaxis should now be carried out on active service. It is not, of course, intended that there should be any relaxation of the means at present acknowledged to be necessary for safeguarding or purifying water and food supplies, or keeping the camp clean.

REFERENCES.
[1] BRITISH MEDICAL JOURNAL, July 26th, 1902; and *Trans. Epidem. Soc.*, 1905-6. [2] A. M. D. Report for 1905. [3] BRITISH MEDICAL JOURNAL, March 11th, 1901. [4] Evidence before S. A. Hospitals Commission.

DISCUSSION.

Fleet Surgeon P. W. BASSETT-SMITH, R.N., said that there was a necessity of longer residence in hospital after convalescence had set in, and there should be regular administration of urotropin. Also there was a necessity before discharging cases from hospital of proving bacteriologically that the urine was free from the *Bacillus typhosus*.

Dr. LEIGH CANNEY (London) said that in view of the very able paper by Lieutenant-Colonel Davies they would seem to be face to face with two contrary opinions on the spread of enteric fever. Lieutenant-Colonel Davies had rightly laid great stress on the absolute necessity for immediate and thorough isolation of the enteric-infected soldier at the front, even the doubtful case. The need for that was imperative, and if reasonable care were taken on the lines proposed he thought they could certainly state that great mischief would be avoided. Lieutenant-Colonel Davies stated that Professor Koch had taken the view of the comparative unimportance of the water and liquid avenues of enteric compared to those of personal infection. The established evidence was, however, against that view, and he trusted that Lieutenant-Colonel Davies would correct the impression his remarks on that point might have on the army, for undoubtedly, as he (Dr. Canney) had definitely shown elsewhere, they might take it as proved that if all the liquid avenues to an army be protected efficiently there would be no epidemic, only isolated and sporadic cases. Those cases undoubtedly must be isolated with the extreme care and precision indicated by Lieutenant-Colonel Davies, and should, contrary to the German view, take no further part in the war. Major Faichnie had shown, and produced strong evidence in support of his conclusions, that the avenues of infection by personal contact were easily controlled, and that it was of infinitely greater importance to devote the greatest energy to providing protection from fluid infection; that view was, in fact, the correct one, but did not negative the pressing need for action on the lines Lieutenant-Colonel Davies had stated.

The PRESIDENT said that prevention, as outlined by Lieutenant-Colonel Davies should be followed by stringent measures to catch and isolate the first cases. The example of the Japanese should be followed, and the drinking of forbidden water by the men made a punishable offence.

Lieutenant-Colonel A. M. DAVIES, in reply, said he had dealt in the paper only with the spread of enteric by direct or semidirect infection, because he thought that mode of propagation was not yet sufficiently recognized. He was far from supposing that it was a principal mode of spread under ordinary conditions, but spread by water, infected articles of food, by the agency of flies, etc., was now fully acknowledged, and needed no insistence at the present day. It had been stated that there were no cases at Norval's Pont nor in the camps in the Northern Command, the water supplies being pure; that was quite satisfactory; but there were many instances recorded of enteric prevalence in India during recent years where the water supply had been either naturally pure or most carefully purified, but nevertheless the enteric outbreaks had occurred. On the other hand, there had been a most marked improvement since segregation methods had been carried out. Granting that water was the chief cause for extensive epidemics under ordinary circumstances, if a case were introduced into a body of troops under "at the front" conditions, he considered that personal infection was of the greatest importance. He was very glad to find that Dr. Leigh Canney agreed with that view.

THE FREQUENCY OF ANEURYSMS IN THE ROYAL NAVY.

By Fleet Surgeon P. W. BASSETT-SMITH, R.N.

DURING the past seven years I have been much impressed by the frequency of aneurysms, chiefly thoracic, which have been observed in the wards and in the *post-mortem* room at Haslar. This has led me to make a critical examination of the cases recorded, and also to verify the large number which before this period have found their way into the pathological section of the museum. The frequency with which the disease has been present, and has been undiagnosed during life, or in which the patient has been admitted for some other condition, generally secondary to the tumour, is very noteworthy, exemplifying the difficulty so well recognized in coming to a correct diagnosis in some of these cases.

During the seven years there have been at Haslar Hospital alone no less than 47 cases of aneurysms.

Bearing on the causation of the disease, the relative proportion found in the different duties performed by the men is interesting, and is shown in the following table:

Able Seamen.	Petty Officers.	Warrant Officers.	Engine-room Staff.	Signalmen.	Carpenters.	Marines.	Sick-Berth Staff.	Labourers.
6	9	5	14	2	4	4	1	2

The greatest frequency by far is found in the stoker ratings, next the petty officers, who, by their more advanced age and strenuous life lived in attaining their positions, are most predisposed. If we add to their number those cases found in the able seamen and warrant officers, the seamen class will be seen to suffer very heavily, though the number of carpenters is high.

If we take an analysis of the ages, the following table sets forth clearly the frequency of the condition between the ages of 30 and 40:

Ages	20–25	26–30	31–35	36–40	40—	
Cases	4	9	13	15	6	=47

If we now differentiate these 47 cases in accordance with the site of the tumour, we find

Thoracic aneurysms 37:
- First part of arch 4
- First and second part of arch 3
- Second part of arch 22
- Third part of the arch and thoracic aorta 8

Abdominal aneurysms 10

Of these 37 thoracic aneurysms, 19 were verified in the *post-mortem* room; of the 10 abdominal aneurysms, 2 died, and were examined *post mortem*.

Out of the 47 cases there were 21 deaths, 23 of the remainder were invalided out of the service, a great number of them in advanced conditions of the disease.

In 17 of the 21 fatal cases the actual cause of death was due to the rupture of the sac walls.

Cases.	Site of Aneurysm.	No. Ruptured.	Site of Rupture.
4	First part of arch	3	2 pericardium, 1 left pleura.
3	First and second part of arch	2	1 trachea, 1 root of neck.
22	Second part of the arch	3	1 pericardium, 2 trachea.
8	Third part and thoracic aorta	7	1 left bronchus, 3 left pleura, 2 right pleura, 1 post-mediastinum.
10	Abdominal aorta	2	2 post-peritoneally.

The occurrence of deeply-congested patches of the trachea in the positions where the aneurysmal sac had caused pressure was frequently seen, though no perforation had actually taken place, and clinically the appearance of slightly stained sanguineous sputum was often the precursor of rupture—a sign, therefore, of very great importance.

In the great majority of cases where death occurred from the rupture of a thoracic aneurysm, the blood was rapidly poured out, and fatal syncope quickly carried off the patient. In some, however, many hours took place between the actual rupture and death. In one case the aneurysm was situated just above the diaphragm, between the pillars; a small rupture occurred, the blood passing underneath the pleura, stripping this up some distance; finally, when the membrane gave way, the blood escaped in quantity into the pleural cavity.

Of the two aneurysms of the abdominal aorta which ended fatally while in hospital, death occurred some days after the rupture of the sac. One case was very interesting and instructive, being diagnosed as "hepatic abscess." He had persistent slight fever, increased dullness with pain in the hepatic region, and some pulsation in the epigastric region which was thought to be conducted; he also complained of shoulder pain, irregular diarrhoea, and had lately returned from the East Indies. Had it not been for a low leucocyte count, an operation would have been performed. Later the epigastric pulsation increased and became expansile. About a week before death acute pain in the left side was felt, shooting down to the testicle and left leg; abdominal distension, collapse, and death followed. *Post mortem*, a large sacculated aneurysm in the position of the coeliac axis had ruptured behind the peritoneum, a mass of clot filling the loin from the spleen to the iliac crest. The liver was normal.

The second case terminated in a similar manner, the man having been admitted for rheumatism.

That syphilis and alcoholism are common predisposing causes is generally held; but in this series of cases, from the histories I have been unable to bring any definite proof of the constant occurrence of either one or the other. In many a history of syphilis was totally denied, and I think the fact that so many were found in petty officers tends to prove that drunkenness as a cause was extremely unlikely.

In the majority of cases arterial disease was present, as shown by the atheromatous condition of the aorta surrounding the aneurysmal sac, but that this atheroma is due to syphilis there is little evidence.

In 3 cases more than one aneurysm was present:

1. A thoracic aneurysm with a previously-cured popliteal.
2. A thoracic aneurysm with a previously-cured left popliteal.
3. A thoracic aneurysm with a previously-cured left popliteal.

Aneurysms previously Collected in the Museum.

Excluding the before-mentioned, there are 51 examples of aneurysms in the Pathological Museum at Haslar; these have been acquired mostly from this hospital by the different curators since 1829. These are summarized in the following table:

Thoracic aorta, first part	9	2 ruptured externally.
,, ,, first and second part	4	—
,, ,, second part	9	4 ruptured into trachea.
,, ,, second and third part	2	1 ruptured into right and into left bronchus.
,, ,, third part and thoracic portion	15	1 ruptured into the pericardium, 1 pleura, 2 into oesophagus.
Innominate	1	—
Subclavian left	1	—
Abdominal aorta	5	1 ruptured into jejunum.
Femoral	1	—
Popliteal	5	—

Out of 92 thoracic and abdominal aneurysms, death was due to rupture of the sac in 30; and of the 47 clinically recorded, 36 per cent. ruptured while in hospital.

The commonest seat of rupture in aneurysms of the first part of the arch was into the pericardium, of the second part into the trachea and bronchi, of the third and thoracic portions into the pleura.

Erosion of the vertebrae was found in 8 cases of aneurysms of the thoracic aorta, and in 3 of the abdominal aorta.

Erosion and fracture of ribs was present in 1 case of the disease affecting the first part of the arch, and erosion of the under surface of the sternum in 2 cases where the sac rose from the second part of the arch.

It is evident from the above facts that the conditions of life under which our men work favour very markedly the development of aneurysmal tumours at the present time, and it is to be hoped that the system of developing the body by means of the Swedish drill now in vogue under medical supervision may have a beneficial effect.

THE TREATMENT OF SYPHILIS AFLOAT.

By Surgeon C. K. Bushe, R.N.

In this article I propose to describe a system for the treatment of syphilis which I have introduced into the Royal Naval Barracks at Devonport, and which, I think, is suitable for the service afloat.

In the majority of cases of recent venereal sores it is not possible to make a definite diagnosis of constitutional syphilis, and we have to await the appearance of further signs before we can arrive at a diagnosis. In these cases I have adopted the following routine. The patient is placed on the sick list, and the sore is treated with a non-specific local application, usually iodoform. He receives no specific internally. If the sore heals up without constitutional manifestations appearing, the patient is discharged to duty, but continues under weekly observation for three months, his name being entered on the syphilis observation list. Men on this list have to present themselves on a certain day in each week for examination by the medical officer, who inspects the mouth, skin, and site of the original sore.

Men on this observation list who are drafted elsewhere are followed up by a reference sheet, addressed to their commanding officer, with the request that the men may be brought to the notice of the medical officer, and a few particulars of the cases are also furnished. The entry on the medical history sheet is in these cases, "Chancroid (under observation for syphilis)."

By this observation system a great number of cases of constitutional syphilis are from time to time detected at early stages of the disease, and the men are at once made to commence a course of continuous treatment.

It is admitted by most of the leading syphilographers that this plan of waiting for secondary symptoms to appear does not influence detrimentally the subsequent course of the disease, or detract from the chances of a cure being effected.

All men who are placed on the syphilis observation list are made thoroughly acquainted with the reason of their being kept under observation, and are warned that symptoms of syphilis may show themselves long after the original sore has healed.

When there is sufficient evidence to warrant a diagnosis of constitutional syphilis the man is put on the sick list under specific treatment, and on an unstinted diet, until all active signs of the disease have disappeared. By active signs I mean unhealed chancres, buboes, mucous patches, and ulcerations of the mouth or on the lips, condylomata, iritis, and certain forms of rash. When active signs of the disease have disappeared the patients are discharged to duty, but they continue on the syphilis treatment list, and a note is entered on the margin of their medical history sheets briefly detailing the facts of the case and the treatment already carried out.

This plan of using the margins of the medical history sheets is in place of the syphilis case sheets which have been so successfully adopted in the army.

An important point in the routine is the particular attention paid to making the men familiar with the nature of the disease they suffer from, its consequences both to themselves and to others, and the necessity for continuous treatment over a long period. For this purpose I have drawn up the following rules, which each man is made to read.

Directions for Patients Suffering from Syphilis.

1. The disease from which you are suffering is not merely a disease of your penis, throat, or skin, but is a disease of your whole body and blood.

2. Very serious consequences may result to your health if you neglect to carry out the treatment prescribed for you.

3. You cannot be cured under two years' treatment at the very least.

4. Remember that for at least one year from the date you contracted the disease you are capable of infecting others. It is criminal for you to have connexion with any woman during that period, and, in any case, as long as you have a sore throat, ulcers in the mouth, a sore on the penis, or spots or sores on the skin.

5 Remember you can infect healthy people by kissing them. Never lend others your spoons, forks, cups, or tobacco pipes.

6. Because you may seem healthy, and free from spots, ulcers, etc., that is no reason for you to neglect your treatment.

7. Take pains to clean your teeth at least twice a day. This is very important if you are taking mercury by the mouth or by injections.

8. Always report to the doctor any unusual symptoms you may notice about yourself, particularly such symptoms as diarrhoea, soreness of the gums, formation of too much spittle in the mouth.

9. When you take mercury you must regulate your diet, and avoid green vegetables and fruit. Alcohol in excess is extremely bad for you, but you need not become a total abstainer.

10. Should you get married before getting permission from the doctor attending you to do so, your wife will probably contract the disease from you, and your children will certainly inherit the disease which, to young persons in particular, is extremely fatal and disfiguring.

Men on the treatment list who are drafted away, even temporarily, are followed up by reference sheets which contain a brief description of the treatment the men have had, their weight and general condition, and the date of the primary infection. By this means the medical officer of the ship they go to is able to judge what further treatment is necessary, and for how long one should persevere with such treatment. By this routine of sending a short history with each man wherever he goes, and thus ensuring his case being brought to the medical officer's notice, the men can be kept under continuous observation and treatment, and the number of days lost to duty through syphilis ought to be markedly decreased. The average patient properly treated from the commencement of the disease need, with rare exceptions, spend more than a few days on the sick list beyond what may be considered necessary to keep him from communicating the disease to others.

This brings me to the subject of granting liberty to men suffering from syphilis. My rule is to allow all men their full liberty, provided that they present no active lesions such as I shall mention later on. These men are all inspected once a week and their leave is stopped if their condition makes it necessary. Men failing to appear for treatment or for examination have their leave stopped also.

I make a rule of examining the medical history sheets of all men joining the dépôt, and any case of syphilis occurring within the last two years is made to continue antisyphilitic treatment. All my patients receive mercury by means of the intramuscular injection. I have never yet met a man who has refused this treatment after its advantages have been pointed out to him. When I give iodide of potassium I give it by the mouth with ammonia, and largely diluted, and in conjunction with the mercurial injections. The manner in which I carry out the intramuscular injections is as follows:

I use the cream supplied by the service, which contains:

Mercury	2 parts by weight
Lanoline	14 ,, ,,
Paraffin molle. alb. carbol. 2 per cent.	20 parts by fl. weight

10♏ corresponds to 1 grain of metallic mercury.

This cream requires some heating to make it liquid enough for injection. The syringes are all glass, and are boiled before each series of injections. The needles are dropped into boiling oil before each injection, they are then removed by forceps, and dropped into a 1 in 40 solution of carbolic acid to cool them. The cream has to be kept constantly stirred, as the mercury tends to fall to the bottom. The needles should be wiped clean of any oil or cream with bits of gauze, or sterilized linen; nothing fluffy should be used for this purpose. Before injection each man is weighed, and a special book is kept to record the condition and treatment of each case. Each man is prepared for injection separately, and in the following way: The site for injection that I choose is the upper and inner part of the buttock, which experience proves to be the best, as the part is very free from blood vessels and nerves, and is high enough to prevent the needle puncture being pressed upon or rubbed during ordinary movements. The site of the injection is washed with soap and water, then rubbed with a swab soaked in rectified spirit; and, lastly, a pad wrung out of carbolic lotion is retained over the spot until the man is injected. The injection is given with one thrust of the needle at right angles to the skin surface, and the material is not injected until the needle is actually in the muscle substance. Cases of painful induration are always due to neglect of this precaution. Each man presenting himself for injection carries a spatula with him, and the surgeon, before he injects him, examines his mouth and skin and inquires his weight; by these means the man's progress and the amount to be injected can be estimated. A pad of gauze is cemented on with collodion over the puncture after the needle has been withdrawn. It is possible to examine each man, sterilize the instruments, and perform 30 injections in an hour with only one assistant. I have, in nine months, given over 1,500 injections, and have never had a case of abscess or seen a man incapacitated from his duty as the result of the injections. I have never had a case of embolism or salivation, or any of the other evils that one hears of. I use solid copper sulphate to cauterize all active ulcers and sores. Its effects are wonderful; in fact, it is almost a specific in itself. Let me sum up in a few words what I have said:

Let every medical officer treat a case of syphilis as he would treat himself if he had the disease.

Let every man be acquainted with the nature of the disease he suffers from and the necessity for its proper treatment.

Let all syphilitic men be examined once a week, and their leave stopped if they present any active symptoms of the disease.

Combine local treatment with constitutional treatment; this particularly applies to lesions of the mouth.

Above all, follow up every man, wherever he goes, with reference sheets to ensure his continuous treatment and medical supervision.

DISCUSSION.

The PRESIDENT said that in his experience proper antisyphilitic treatment ought to be commenced immediately the diagnosis was established, and not delayed as proposed for six weeks or two months till the secondary effects had appeared. Treatment by intramuscular injections had been successfully carried out at Haslar, and on board the ships at Portsmouth for a considerable time. Every credit was due to Colonel Lambkin, R.A.M.C., for having initiated that valuable system, and to Surgeon Bushe for having put the matter so clearly and succinctly.

Surgeon C. K. BUSHE, in reply, said the type of syphilis invalided was of course the collection of the worst cases, but at the same time syphilis was responsible in the army and navy for as much or more invaliding than any three other constitutional diseases. Teaching men about their disease and its contagiousness might do something towards checking the prevalence of syphilis. The dosage was usually 15♏ of cream (that is, 1½ grain of metallic mercury) each week for the first six weeks; then regulated intermissions. At the same time the men were always inspected every week, whether they received injection or not.

WIRELESS TELEGRAPHY AND HOSPITAL SHIPS.

By Staff Surgeon H. L. NORRIS, R.N.

THE importance and value of hospital ships for naval purposes in war time has long been recognized by all nations, and although little has apparently been done by different Powers in providing themselves with these vessels during peace time, they can be fitted out so rapidly when occasion arises, that without doubt the

belligerents in the next naval war will find themselves well provided for in this respect. Recognizing this, the Hague Conference held in 1899 clearly laid down the status of such vessels. Regarded from a purely humanitarian point of view, the hospital ship at once recommends itself, but it also in war time possesses a certain strategical value, and therein lies a difficulty, a loophole for misunderstanding, possibly abuse.

The functions of a hospital ship are, of course, the treatment of sick and wounded under more favourable conditions than obtain in a warship, and also, by relieving a ship of its wounded after an action, to render the vessel so relieved more efficient for further fighting should the necessity immediately arise. This latter function at once indicates in what way the hospital ship obtains a strategic value.

To perform her duties thoroughly and efficeintly it is necessary that she should be on the scene with the minimum of delay after the battle, and consequently some means of keeping in communication with the fleet is essential. A hospital ship within visual signalling distance of its fleet might by its very presence give information to an enemy of the probable whereabouts of the fleet itself, which conceivably might be of great disadvantage where secrecy of movement is necessary.

The Hague Conference laid down that belligerents have the right to control and visit hospital ships, to order them off, to put a commissioner on board, to make them steer a certain course, or even detain them if important circumstances require it. Thus a hospital ship, being met by a warship of the opposite side, may be compelled to steer away from her own fleet or a prearranged rendezvous, and take such a course that, without some means of long-distance communication, she might be considerably delayed in picking up her fleet again. This consideration suggests the advisability of hospital ships carrying a wireless telegraphy installation.

If a hospital ship carried contraband of war other than stores absolutely necessary for the sick and wounded, she would, of course, be liable to capture or detention, and probably, if known to give important information to her own fleet, she might, on again falling in with the enemy, be arrested. On the outbreak of war, it has been customary for belligerents to issue notice of what they will consider contraband, and it is possible that in future warfare a wireless telegraphy installation might come under this heading. But even supposing hospital ships were allowed to carry it on the understanding that such means of communication were to be used only for purposes not warlike, it is conceivable that trouble might arise.

Take a supposititious case. A hospital ship falls in with a cruiser of her own side that has been in action, and has had her wireless apparatus destroyed by shell fire. The captain of the cruiser wishes to find where the fleet is in order to join up with them. The officer in command of the hospital ship may not use his "wireless" to get the desired information, the cruiser captain considers it his duty to join the fleet, and forces the hospital ship to allow the signalling apparatus to be used. The commander of the non-combatant has protested, has had to yield, and must be exonerated from blame. Would the cruiser's captain be also to blame? His duty to the State is to join up with his fleet where he may be of use as a fighting unit; and a chance having put in his way a speedy method of discovering their whereabouts and so attaining his object, is he not right in availing himself of the opportunity?

On shore a regiment can move, and in most cases leave, its wounded behind, but a ship must, unless relieved speedily by a hospital ship, be very seriously hampered by carrying a number of men who as wounded not only take up space, but require attention from the already depleted number of fighting men, and who may seriously affect the *morale* of those uninjured by their obvious sufferings.

The necessity for hospital ships having been recognized, their efficiency would be gravely lessened if the power of long-distance signalling is denied them in warfare; and although the international conference recently held on wireless telegraphy made no mention of hospital ships, it is to be hoped that such means of communication will be allowed them should the necessity for their use in naval warfare arise.

ON ENTERIC FEVER DURING ACTIVE SERVICE.

By Lieutenant-Colonel R. Caldwell, R.A.M.C.

Whatever views we may hold regarding the means which originally brought the germ of enteric fever into existence, we are probably agreed that the causation of epidemics of this disease is closely connected with the faulty disposal of excremental matter. There is, doubtless, a further consensus of opinion that the developed disease finds means of spread in water, flies, dust, and personal contact between the sick and those in their immediate neighbourhood. Under conditions of peace and civilization the above agencies are more or less completely eliminated by the sanitary measures which form part of the administration of the country; the general methods adopted are familiar to us all, and need not therefore be dwelt on at present, except to observe that, in accordance with the provisions of certain well-known Acts of Parliament, enteric fever is scheduled as a compulsorily notifiable disease, that disinfection is likewise compulsory, and that ready means of isolation are provided by rate-supported hospitals.

During war, on the other hand, our efforts at prevention in regard to the agencies referred to are so far modified by surrounding circumstances as to be often hopelessly inadequate for the attainment of the desired object; owing to the absence of water carriage or other satisfactory mode of disposal, faecal refuse is left exposed in trenches or latrine buckets; water is constantly drunk without purification; food is open to deadly contamination by flies and dust; the soil, in spite of all possible care, is fouled with excremental and other forms of filth; and, lastly, efficient isolation and disinfection are wanting at the very time when we are most likely to need them.

Let us now see how we can best adapt the measures carried out during peace to the exigencies of active service in the field; and here I feel myself called upon to observe that it would be an act of presumption on my part to endeavour to impress an audience such as I have the honour to address with the necessity of camp conservancy and a pure water supply, my only intention being to set forth certain suggestions which should, I believe, be carried into practical effect whenever circumstances admit, and which are partly gathered from the recorded opinions of others and partly the result of my own experience. It may be well to consider *seriatim* the determining factors in regard to enteric fever, which have been named above,

1. The Faulty Disposal of Excremental Matter.

The usual methods of disposal which have hitherto obtained consist either of latrine trenches dug several feet deep and finally covered in, when the contents are close to the surface, or latrine buckets in which dry earth is supposed to be used as a covering for the excreta. As the men show little or no care in the use of earth, the trenches simply become reeking abominations, emitting odours utterly beyond description, and acting as fetid foci for the development and spread of disease. The buckets are in some respects preferable to the trenches, as the contents can be removed at frequent intervals; but, as in the former case, the excreta are commonly uncovered, and the ground in the immediate neighbourhood is almost invariably fouled by urine; and the danger resulting from the last-named form of pollution is, of course, well known. The mixture of faeces, urine, and earth results in a sticky and singularly disgusting mass, which as it adheres to the sides of the receptacles prevents the latter from being properly emptied, and which is a fertile source of attraction for flies. Remedies for the above defects can, I think, be to some extent found in the following measures, bearing in mind, of course, that sanitation can only be carried out as far as is permitted by the exigencies of local conditions.

Latrines should be dug shallow and narrow instead of broad and deep, 1 ft. in depth and 1 ft. in breadth should generally prove reasonable measurements: and men should be instructed to straddle across the trenches when defaecating in order to avoid fouling of the edges. In the case of a deep and broad trench, when seats are not used, men keep away from the edge for the very good reason that they are afraid of falling in; faecal matter

drops outside the trench, and the men naturally keep further and further away until the place becomes absolutely unapproachable. I ought to explain that I have never seen what I may call the straddling method adopted. It was suggested to me by Lieutenant-Colonel Cottell, R.A.M.C., who had it carried out in his charge in South Africa, and he told me that it answered well. A shallow trench also necessitates frequent filling in, besides which evident advantage the excreta are, under certain conditions, subjected to the influence of the nitrifying organisms found in the upper layers of the soil, and are thus converted by the agencies of Nature into harmless inorganic matter. If buckets are used, they should fit close under the seats, and liquid of some kind should be substituted for dry earth; the use of a liquid facilitates complete emptying of the buckets and also, in a manner to be mentioned later, acts as an effective preventive of flies.

Admitting that the prevalence or otherwise of enteric fever is closely related to the mode of disposal of the excreta, it appears likely that a device adopted in the United States army constitutes a singularly important advance in military sanitation. The device in question consists in a portable latrine trough of galvanized iron; this trough is partly filled with milk of lime, solution of carbolic acid, or other liquid of like nature, and emptied when required into an air-tight cart by means of a suction pump. As regards this form of latrine, it is stated on page 665 of the official report, compiled by a Board of United States officers, on the Origin and Spread of Typhoid Fever during the Spanish War of 1898, that "We are aware of the fact that this method of disposing of faecal matter will be attended by increased cost, but we are confident that it will greatly lessen the number of cases of typhoid fever." It is in this connexion a fact of the highest significance, as emphasizing the necessity for the effectual disposal of excremental refuse, that infections by *B. coli* and by organisms which occupy an intermediate position between it and *B. typhosus* are known to occur; cases commonly known as simple continued fever are often doubtless of such a nature, and the occurrence of these cases on service should act as a warning of the early result of a more serious condition, and as an undoubted indication of defective sanitary arrangements. Whether *B. typhosus* can be developed by a process of progressive infectiveness is a matter too lengthy for present discussion; certain it is, however, that enteric fever has repeatedly made its appearance in camps and other localities under conditions which preclude any reasonable possibility of importation.

2. WATER.

The effect of water on the spread of enteric fever is a matter well known and fully admitted, but at the same time it has a tendency to occupy an excessive share of attention as compared with other factors tending to the same result. If, for example, the incidence of enteric fever in South Africa was a just indication of the nature of the water of the country, it would be difficult to account for the existence of a healthy and rapidly increasing population. On the other hand, it is well, as a general rule, to regard all water on service as dangerous, and to take precautions accordingly; for it is without question unjustifiable to attempt to form an opinion as to the safety of a supply on the results of such tests as could be commonly carried out in the field.

It would be quite impossible to attempt any account of the various apparatus designed for water purification. The service water-cart fitted with Brownlow filters should have a wide field of future utility; while I think it may be doubted whether any apparatus, no matter how ingenious, which depends on purification by heat would ever become generally applicable outside the limits of standing camps; as in the case of mobile troops, the factors of time, fuel, and necessity for clarification are objections which at once present themselves, and which on many occasions would render any such apparatus absolutely ineffectual, and a mere impediment to the transport. Purification of water by the addition of chemicals has had many advocates, but the additional work thrown on transport and administration, the unwillingness or carelessness of the men, and the uncertain effects that the added material may in some cases exercise on the animal economy, render such measures generally undesirable.

An especially interesting illustration of chemical methods of purification is found in the application of ozonized air to the water; the results attained appear to be excellent, but unfortunately the method is not at present applicable to troops on service.

I think we must admit that the cleanliness or otherwise of water-carts sometimes escapes the attention which its importance undoubtedly demands; as an example of this fact I have known a supply of exceptional purity at its source to give evidence of serious contamination when drawn for consumption; as far as it is possible to do so, water-carts should be scalded out, when considered necessary, with boiling water; and this procedure might with advantage be put into force at the time they are issued from store. It is, also, of course plain that water originally of excellent quality or which has been purified by artificial means may become dangerous through defective storage. Tanks without covers or taps leave the water open to serious pollution, and as the supplies from such receptacles are obtained by dipping, the possibilities in the way of infection from dirty fingers need not be dwelt upon, the danger being particularly great in view of the revolting uncleanliness which is so frequently an unavoidable accompaniment of active service in the field. It follows that storage tanks should invariably be covered and provided with taps.

3. FLIES.

It is a matter of common observation that flies swarm in the latrine trenches; and, quoting again from the above-mentioned report on the Spanish-American War, we find on page 666 "that in some instances, where lime had recently been sprinkled over the contents of the pits, flies with their feet whitened with lime were seen walking over the food." Those of us who were in South Africa will probably remember the horrible bottle-green fly that seemed equally at home in the latrine trench and in our plates. The measures necessary for the prevention of flies are indicated by certain facts in connexion with their method of breeding and development. In general terms and simply stated these facts are as follows: The eggs are deposited in faecal matter, and if the latter is buried at not too great a depth the larval and pupal stages are passed through in the soil, and the fully-developed fly makes its way to the surface. It is stated that during the monsoon the process does not take place in the shallow trenches of India; and as bearing on this very important question of the effect of moisture there is a communication in the *Journal of the Royal Army Medical Corps* for February of this year which will well repay careful perusal. This communication is entitled The Prevention of Enteric Fever in India, and is by Captain C. H. Straton, R.A.M.C.

Captain Straton states as follows:

> Last winter at Meerut we had an outbreak of enteric fever in the 17th Lancers, then just arrived from home. On the advice of Lieutenant-Colonel Aldridge, the Sanitary Officer, Eastern Command, India, the dry-earth system was discontinued in the regimental lines, and a 2 per cent. solution of crude carbolic acid was substituted, a supply being put into each pan to receive the faeces. As a result of this the flies at once disappeared from the latrines, although a neighbouring native latrine where dry earth was still used contained as many as ever. With the disappearance of the flies from the latrines the larvae disappeared from the trenches.

In this case no eggs appear to have been laid in the latrines; but even if actually laid, the presence of moisture would prevent further development, as during the monsoon the process of destruction must take place not in the latrines, but in the trenches. I would here state that I have never seen the developed fly hatch out in night-soil which had been saturated with water.

Bearing the above facts in mind, we can appreciate one reason at least for the extreme importance of covering faecal matter, and we can at the same time realize the results which might confidently be expected from some system of latrine accommodation which comprises the reception of such matter in a liquid medium. The realization of such a system would appear to be found in the latrine of the United States army, to which reference has already been made. It is evident that the advantages of this system would not find their limitation in the disposal of solid excreta, but would also go far to eliminate the danger, possibly more real if less evident, of the spread of enteric by infected urine.

4. Dust.

While we may be prepared to accept the general doctrine of the spread of enteric fever by dust, we have no absolutely reliable information as to what may be termed the zone of danger, and of course it goes without saying that the latter must present considerable variation.

As throwing light on this question the history of an epidemic among four infantry regiments at St. Bernard, near Antwerp, is singularly interesting:

"For three years there had been no case of enteric fever at St. Bernard, but a severe epidemic occurred in 1892 between August 22nd and October 20th. During the summer the neighbouring river, the Rupel, overflowed its banks, and the receding water left a deposit of mud contaminated by the sewage of Mechlin and Brussels over several thousands of acres of land. From August the 12th to October the 10th the direction of the wind was from the drying deposit and towards the barracks, but before and after these dates the wind blew in the opposite direction.

Supposing that the wind carried the germ of the disease, the distance travelled must have been 1,800 metres. The water supply did not come under suspicion, and consequently was not changed as a result of the epidemic.

We may be unable to prevent the formation of dust, but by careful conservancy we may prevent dust from becoming a medium for the dissemination of disease. The necessity for protecting food supplies from dust is of course self-evident.

5. Spread by Contact with the Sick.

The difficulties of prevention as regards this means of spread need no prolonged comment; apart from the impossibility of early diagnosis, we find that there is evidence in the history of the late Spanish-American war that slight cases of fever and slight cases of diarrhoea, probably occurring often in combination, appear to confer a certain degree of immunity against undoubted enteric, and as, judging from the published report, it seems impossible to regard this circumstance as being of a fortuitous nature, the cases in question may be accepted as ambulatory forms of the disease. We thus find ourselves confronted by the possibility that men who attend for treatment, or who are excused duty, or who are detained for a few days, or who, lastly, may never come sick at all, may be acting at the time as wholesale disseminators of epidemic disease; and when we consider the intimate association of men living under canvas, we can appreciate how readily infection may be conveyed by blankets, boots, clothing, dirty hands, eating and drinking utensils, or other means.

An illustration of the spread of this disease by such agencies is to be found in the company epidemics, which form a striking feature in the report referred to. The problem of prevention is indeed a difficult one, but not altogether insoluble. Frequent inspections of the men will lead to the detection of cases which might otherwise escape recognition; many men, from the best of motives, will not go sick until forced to do so, and it is quite likely that they may thus be the unconscious cause of widely spread mischief; and medical inspections are the readiest means for eliminating danger of this kind.

Suspicious cases should be kept apart from other men until they can be removed to the lines of communication; a few tents bearing a distinguishing mark would serve for isolation, and such tents might be furnished with special equipment, which should never be used for ordinary sick. Removal of the cases in question from the fighting line should be effected without delay, and for this purpose certain administrative changes in regard to transport would become necessary.

In short, the methods of prevention of the spread of the disease by personal contact among troops at the front is summed up in "early detection, early isolation, and early removal."

As regards the latter, I feel tolerably sure that the prevention of enteric fever in the field largely resolves itself into the reorganization of the sick transport of the army, together with the assumption of corresponding responsibilities on the part of the medical department.

What constitutes a suspicious case must be left to the judgement of the medical officer; my own views are probably of a drastic nature, and during certain stages of the late war I had an opportunity of putting these views into effect by sending to the nearest stationary hospital nearly every case of fever or diarrhoea occurring among the troops of which I had charge. I had fortunately the necessary transport under my own control, so that the men were transferred with exceptional promptitude. Of course a good many men were well in a few days, and it may be objected to my line of action that these men would have got well anywhere. I am quite prepared to admit this fact, but I had no means of knowing it for certain at the time, and I think that we ought to accept the broad principle that a sick man in the fighting line is worse than useless, and that an illness which may be trivial to the individual may be far from trivial to the State.

There are other points, notably soil pollution, spread of infection by "carriers," and results of antityphoid inoculation, which I should like to have discussed, but time forbids, and I have therefore nothing further to add, except to thank you for your kind attention, and to express a hope that my paper, although containing no particular novelty, may nevertheless be productive of useful discussion.

DISCUSSION.

Surgeon-General Sir Charles Cuffe, K.C.B., said he should like to have some reliable information on the question of infectivity as to the result of the inoculations of Wright's antityphoid vaccine. Seeing that almost all the sanitary precautions which had been taken in regard to the disposal of excreta appeared to have failed to check the disease in the field, possibly there might have been some shortcomings in carrying out orders. Regarding the many modes of infection of typhoid through excreta, even during convalescence, also through clothing, contact, and many other ways, it seemed to be necessary to make further careful investigations of the question of inoculations, and, if it was found that it was really an efficient prophylactic, of introducing its use for troops going on active service as a precautionary measure in the same way as revaccination against small-pox.

Dr. Leigh Canney (London) said it would certainly be of great advantage to the army if, as a result of the papers of Lieutenant-Colonel Caldwell and Lieutenant-Colonel Davies, careful means, capable of expansion, were taken to provide for the rapid isolation and removal from the field of operations of the man infected with enteric or dysentery. It was to be regretted that doubt was so often expressed as to whether instructions in details of sanitary technique would be carried out, and reports from the Medical Department of the army for India and elsewhere pointed out the continuous neglect of those details. So long as such neglect was allowed the control of enteric was impossible. It was for that reason that recently he made it part of the scheme he proposed for the suppression of enteric that the whole of the officers in the army should be involved in the responsibility for the carrying out of those details prescribed in their respective units. That view had now been taken by the Army Council, and every officer in the army would, after the coming year, have to pass an examination in sanitation, and presumably in sanitary detail and methods, with a view to the supervision of those methods in their units. Lieutenant-Colonel Caldwell was rather indefinite as to the precise method of provision of sterile water or drinks, but it was important to hear that he accepted the view that all water was to be regarded as infected in war and must be sterilized. It was strongly to be desired that the Royal Army Medical Corps would see their way to the adoption throughout the army in the field of sterilization by heat.

The President remarked that while every endeavour should continually be made for the thorough carrying out of the hygienic measures so clearly set forth by Lieutenant-Colonel Caldwell, they must also now look to the great work of Sir Almroth Wright to free them in the near future from the deadly peril of enteric. The recent striking report by the medical officer of the 21st Lancers on the outbreak of enteric fever in that regiment appeared to conclusively prove the case for inoculation and reinoculation.

Lieutenant-Colonel Caldwell, R.A.M.C., in replying, said he had made no personal investigations in regard to antityphoid inoculation, but, judging by the reports published, he was convinced of its value. Antityphoid inoculation was sometimes unjustly justified by its failures and not its successes. It was of particular importance in India, as it was impossible to legislate for the sanitation

of the native; only the future could tell what the effect would be of the present scheme of sanitation in the army.

THE POSITION OF THE VOLUNTEER STRETCHER-BEARER.

By Surgeon-Colonel P. Broome Giles, V.D.

In all the branches of the volunteer forces at present, as in the past, the only organization for medical assistance in the "first line" is that which each unit possesses in its regimental stretcher-bearers under the regimental medical officer.

If there are to be any changes—and I trust there will be great reformation under Mr. Haldane's army schemes—I most earnestly hope that all volunteer or auxiliary medical organization will be identical with, and co-ordinate to, that of the Royal Army Medical Corps. Then naturally the question of the regimental stretcher-bearer will follow that adopted by the regular army.

In the regular army the system of units rendering first aid is not yet settled; whether the regimental stretcher-bearer shall be abolished or continued is at present a vexed question. There are those, on one hand, who would do away with all unit assistance, and have the first line of medical assistance supplied as the unit medical officers are on active service, by the Royal Army Medical Corps.

As against this proposal you have the opinion of most medical officers who have had charge of units during war time in favour of retaining the regimental stretcher-bearer.

A third opinion is that on active service the band of the unit trained as stretcher-bearers, and fortified by a man from the Royal Army Medical Corps to each stretcher squad, shall be the solution of the question.

I have heard all three questions discussed, and have had certain experience in militia camps; as a volunteer medical officer both as a regimental medical officer and as the senior medical officer of a volunteer brigade with a most excellent bearer company; and recently six years as senior medical officer of field army brigades, where all the medical department had to be worked by means of regimental stretcher-bearers, and will endeavour to put the question before you from all sides.

The chief reasons for the abolition of the regimental stretcher-bearers are these:

1. That in furnishing a section of regimental stretcher-bearers the unit is denuded of a proportion of its fighting strength. If that is so, then certainly that in the future it would have to furnish six men instead of, as hitherto, four to each squad is a sound argument against it.

2. That the Royal Army Medical Corps exists for the purpose of attending to the sick and wounded; that its *personnel* are better trained to that end, and would be also under their own corps officer.

I will endeavour to defend the retention of the present unit system of regimental stretcher-bearers in this way.

1. In war the actual fighting zone where the first line of medical assistance is immediately wanted is not protected by the rules of the Geneva Convention. The exhibition of the honoured Red Cross flag is not respected under fire; if it were so, the temptation of temporarily exhibiting it upon strategical positions would be irresistible.

2. All the other lines of medical assistance are protected under the Geneva Convention.

You cannot have the Royal Army Medical Corps protected one moment, and liable to be fired upon the next.

3. There are the sentimental, but not the less true, ideas:

(*a*) That men fight better when they know that should they fall they will be as speedily as possible succoured by their own comrades.

(*b*) That comrades will at all risk help each other.

The author of *How Soldiers Fight* writes:

> The man on Scipio's right throws up his hands with a howl, and plumps on his face. It is Metellus his old schoolfellow, brother of blue-eyed Fabia, whom Scipio loves and who has confided Metellus to him. Scipio forgets alike his danger, and his duty, and turns aside, only to be swung back into line by the colour-sergeant, who with his left hand on his collar and his rifle butt against the small of his back, bellows in his ear—Business first.

4. Recent wars, especially those in South Africa and Manchuria, have amply proved:

(*a*) That the frontal area of our attack has enormously extended, and at the commencement of an action the ranks are not so crowded as formerly; but that the persistent fire is far more effective, each ridge of ground being bullet-riven for hours.

(*b*) That often in battle hours—even days and nights—may elapse before either the fight passes by or is ended.

Mr. Archibald Forbes, who realized better than most, wrote:

> Soldiers wounded in the fighting line must lie on the field unattended till the fight is over. To order a bearer party to perform their functions on any part of the field where the enemy is sowing his leaden seed would be to condemn them to death.

How true this is every medical officer who has had charge of a unit in action knows; first aid therefore can only be given under such conditions by men in the fighting line, and then often only in most cramped and trying positions. A vital point is the *previous training* of those who should do this work.

Let us contrast the training of the "regimental stretcher-bearer" with that of a man of the Royal Army Medical Corps in regard to what is required in the attack:

1. The regimental stretcher-bearer is taught day in and day out that he must take advantage of any and all cover he can; under modern rifle fire he may be hit as well when lying down as standing; that it is little use covering his head, and leaving his body, legs, and arms exposed; and though under fire in one position even a very little rise in the land contour will render him comparatively safe. This teaching he does not forget when learning his first aid.

2. The men in the Royal Army Medical Corps are taught on the parade ground to do their work thoroughly, and without the precaution or necessity of taking cover. In fact, one often sees men going out to treat cases at the double, regardless of the splendid target which a squad of six men with a stretcher presents. In fact, it is rarely until men are trained to administer first aid efficiently that they are taught the vital importance of taking all cover when approaching the wounded. Again, a stretcher squad of the Royal Army Medical Corps has only one trained man of the Royal Army Medical Corps; the remaining five are men who will be specially enlisted to bring the field ambulance up to its war establishment, so that all those men would be inferior to the regimental stretcher-bearer in the art of taking cover, and all but the Royal Army Medical Corps man below their standard in first aid, they being *ipso facto* carriers of stretchers, not what we understand by "stretcher-bearers," that is, trained soldiers who have obtained Army Form E. 596; useful in their proper place to evacuate the wounded under supervision after a battle, such as Surgeon-General Sir Thomas Gallwey utilized them during the relief of Ladysmith.

To use trained men of the Royal Army Medical Corps as regimental stretcher-bearers would be waste of material; they are too valuable to be expended in the fighting line. Modern war, if you exclude the Japanese reports, is less deadly than of old in the actual battle, but is more fatal in disease in the field, and the Royal Army Medical Corps are trained in a great measure to do more than administer first aid, and, brutal as it may sound, it is far better that half a dozen men should die in the fighting line even unaided, than that a score should die by inches whilst the places of the Royal Army Medical Corps killed in the fire zone can be replaced.

No doubt in the future men of the Royal Army Medical Corps will be attached to units for sanitary duties. We do not use them to apply first aid in action, simply because directly after an action, perhaps even during the battle, they will be more than ever wanted to see that the water for the tired troops is safe to drink.

It is my opinion the "regimental stretcher-bearer" must continue to exist, and if you use stretcher-bearers such as are contemplated to complete the war establishment of field ambulances, they can only be employed efficiently after the battle is over.

DISCUSSION.

Surgeon-Colonel Raglan Thomas said that, speaking only as a sanitary medical officer of volunteers, he had always found more or less difficulty in getting regimental

stretcher-bearers at all. That had become more and more emphasized since they had formed a brigade bearer company, so that now there were practically no regimental stretcher-bearers forthcoming when a parade of them was ordered in camps. Also there seemed to be more disinclination than ever on the part of combatant officers to produce them. He hoped the question would soon be settled definitely by the regular army, so that volunteers might have a definite ideal to work for.

Surgeon-Lieutenant-Colonel D. Curme said he did not know whether the duties of regimental stretcher-bearers were such as required training or whether every man in a battalion could not receive sufficient instruction to enable him to act as regimental stretcher-bearer instead of having a special body of men.

Lieutenant-Colonel M. Dundon, R.A.M.C., said that the regimental stretcher-bearer was provided by each unit and was trained to apply a first field dressing and carry a stretcher. It was an open question whether it would not be wiser to leave a wounded man where he lay than advance a stretcher party to his aid. That would vary according to circumstances appropriate to each case. It must be borne in mind that each man in the fighting line was provided with a first field dressing and taught how to apply it. So widely distributed were the units in the fighting line that it was at times difficult to provide aid for casualties. It must be borne in mind that these regimental stretcher-bearers were very liable to casualties and required to be replaced at short notice.

The President said his experience was that all fighting men should have a sound working knowledge of first aid, but that all ambulance and stretcher-bearer work should be undertaken by the Royal Army Medical Corps. It was bad business to mix up the work of fighting and ambulance men.

THE DISPOSAL OF EXCRETA IN CAMP AND UPON THE LINE OF MARCH.

By Surgeon-Colonel P. Broome Giles, V.D.

This question is not a difficult one to solve, but has hardly received the proper practical attention its importance merits. The present scheme for attaching a sanitary detail to units will bring about a better state of affairs. The present unsatisfactory condition of sanitation in the field is due to the old fixed idea that army medical officers were required to attend the sick and wounded, and that in other matters, even if their advice was asked, it was more or less of a perfunctory compliment, to be acted upon in proportion to the ideas of the officer commanding and the engineer officer.

Even under the establishment of the Royal Army Medical Corps it has taken some years to outlive these prejudices, as successive officers commanding were imbued with the idea that the medical officers were doctors, and looked to the engineers as the arbiters of all executive sanitation.

This has lasted longest in the field; even to-day, for all practical purposes the engineer corporal is the "arbiter elegantiarum" of camp latrines, and the quartermaster or sergeant of pioneers for those required upon the march.

Both of these authorities are the abject slaves of custom, and have no ideas beyond those of a deep, narrow trench, supplemented by chloride of lime or carbolic powder.

How hard old abuses die is well exemplified when we realize how long it has taken to adopt the advice of men like Parkes, Notter, and Caldwell. Now the narrow, deep trench for the final disposal of excreta, either in camp or upon the march, had the following serious defects:

1. It was generally so deep that it reached the water-bearing strata, and so became an active source of water pollution. In wet weather this danger was intensified.

2. The excreta when eventually covered was buried so deep that it lost all the sun's power, and so remained a source of danger for years.

3. The trenches were narrow and the seating (if any) so uncomfortable that the men voided over the surrounding ground, which speedily became charged with faeces and urine, and was taken on the men's boots throughout the camp.

Luckily camping in England only takes place when the sun has its greatest power, and its rays to a great extent minimize the mischief. The more a locality is used for camping purposes the greater the care which should be taken in the construction of latrines. In such localities, or where more than one night has to be provided for, trenches must be avoided and the bucket system adopted.

1. Well-roofed sheds with seats so placed that the men may defaecate straight into the bucket.
2. Separate tubs for urinating into,
   (*a*) So that as little urine as possible is passed into the faeces bucket.
   (*b*) To prevent the common practice of passing water upon the ground or against the latrine walls or screens.
3. That sawdust (particularly the sawdust of fir trees) be used freely in the buckets and the urine tubs.
4. That a pioneer be kept constantly upon duty to apply the sawdust. If this is done thoroughly there will be very little smell, with a minimum of urine in the faeces buckets, and a common centre for urinating. When the buckets and tubs are emptied their contents should be burned. If too moist a little paraffin added will ensure a speedy destruction by fire. I know in England with very little supervision this is practicable.

On the march for one night wide, shallow trenches, 3 ft. wide by 1 ft. deep, should be dug and lined with dry grass, twigs, or straw, which can be set on fire, and finally covered in by the loose earth removed in excavation. The trenches should not be dug in the most secluded, covered spots, but where the sun's influence is felt. We have two mottoes to guide us:

1. "Want of decency is want of sense." Hence the secluded spot.
2. "Duty before decency"—that is, we must remember that, unless certain precautions are taken, the latrine is a source of public danger. So avoid excessive cover. We have also the specific instructions of the great sanitary authority, Moses, to go into the field and only lightly cover with earth.

WATER SUPPLY IN CAMPS, ON THE LINE OF MARCH, AND IN BATTLE.

By Major N. Faichnie, R.A.M.C.

In discussing this subject, the first point to be considered is, For what purposes is it essential that pure water shall be supplied? Water has to be used for drinking, and for cleansing vessels used for eating and drinking, also for bathing and cooking purposes. There can be no harm in bathing in impure water so long as none is swallowed. With regard to cooking, water is sterilized by heat during the process; but when boiling water is not available for washing up, plates, knives, forks, drinking vessels, and dusters may all become infected by the use of unsafe water, and the poison may remain active some days. When experimenting with water polluted by an emulsion of *B. coli*, I have found canteens remain infected for three days, and dusters for six days. The soldier eats his food from the various parts of his canteen, and, if there is no boiling water at hand, grease is removed by the use of soil and cold water, and the canteen is dried by any rag he may lay hands on, but most frequently is left wet. Unquestionably the most important purpose for which pure water is required is for drinking; but I think that epidemics of typhoid fever caused by water show that boiling for drinking alone is not sufficient to check the occurrence of the disease. Thus, at Lincoln, in 1905, by January 20th, orders were given that all water for drinking taken from the taps should be boiled, yet the epidemic continued till the end of April, while during all that time it must be remembered that *B. coli* was continuously found in a percentage of samples taken for examination from the taps. At the same time in the barracks at Lincoln typhoid fever occurred as it did outside, but it stopped by the middle of February—that is to say, two and a half months before it ceased in the city—and this I attribute to the fact that arrangements were made for boiled water to be used, not for drinking only but also for washing-up purposes. At Beverley in Yorkshire the same result was obtained in 1906, when similar precautions were taken in barracks at a time when the water supply was known to

be polluted. No cases occurred amongst the troops, but there were several in the town amongst the people using the infected water.

In several stations in India where there is an impure water supply typhoid fever still occurs in a severe form amongst troops who boil their drinking water. In South Africa in 1904 the attack-rate of enteric fever amongst British troops in Pretoria, Standerton, and Harrismith was 71.3, 33.7, and 86.5 per 1,000 respectively. In all these stations *B. coli* had been found in the water that was boiled for drinking. Now these barracks all had water-closets and a water-carriage system, so that infection could not have been caused by its transmission by flies from the latrines; it thus seems probable that a part of the infection, at any rate, was due to the poisoning of kitchen dusters and utensils by impure water. On the other hand, when pure water is supplied for all purposes, as in the garrisons of the Presidency towns of India, experience shows that the average rate of enteric fever is very small indeed. I am strongly of opinion, then, that to prevent the occurrence of typhoid fever it is necessary to have a pure water supply for at least two objects, that is, for drinking and for washing up.

Another point here to be considered is a fact in connexion with the storage of water. If water is allowed to remain in a vessel for a short time a gelatinous film soon forms on the sides and bottom of the vessel and adheres firmly—an important point to know, as to this film bacteria become attached, and a severe amount of washing is necessary for their removal. To prove this, I have separated *B. coli* from several water-bottles that have not been used for months previously. I have also sterilized water-bottles, and after filling them with pure water I have corked them up and left them standing for some time, only to find them on subsequent examination still pure; while to other sterile bottles water known to contain organisms giving an acid and gas reaction with bile salt broth was added, and left in contact for various periods of time; these bottles took a great deal of washing with pure water before that used for rinsing them was found to be free from these organisms. One bottle was washed out fifteen times, yet it still gave an acid and gas reaction two months after the original impure water was first thrown away. Working with an emulsion of typhoid bacilli in boiled tap water, I washed out a bottle twelve times with pure water, yet from the twelfth washing I recovered the typhoid bacillus. From these facts we may conclude that every time a water-bottle or water-cart is filled with impure water it must be sterilized in some way before it is again fit for the storage of pure water.

Waters are classified as wholesome, suspicious, and dangerous. The last named include those from surface wells, streams and ponds, and unfortunately these as a rule are the only ones available in camps or on the line of march. Water from such sources is specially dangerous in countries like India and Africa, where natives deposit their excreta on the surface of the ground, and also wash in water which is frequently also used for drinking.

The water in shallow wells comes from the subsoil, and when trench latrines are used, as is almost invariably the case in camp life, it is very liable to pollution, especially when the trenches are more than 3 ft. deep, and the excreta are thus buried outside the area of active bacterial action; and, further, as the direction of the flow of the subsoil water may be in an opposite direction to that of the slope of the surface of the ground, it is often impossible so to place the latrines as not to affect the wells. The question of a water supply, then, is beset with many difficulties, and the methods of dealing with it vary greatly according to circumstances.

In English camps water can generally be obtained through pipes laid on from a pure source, but in addition to this water from springs and surface wells can also be used without purification, if it is inspected and examined beforehand.

In the camps of the Northern Command no water was purified in any way for the last two years, and no cases of enteric fever have been contracted as the result of camp life. To make certain of this, I have written to the medical officers of health of several large towns, and I have invariably received the reply that they could trace no notifications to military camps.

Considering that some of these camps are occupied continuously for months by young militiamen and volunteers, that they are very crowded, and that the methods of conservancy are by no means perfect, the effect of pure water in the prevention of typhoid fever is very striking. Now that the methods of analysis of water have been so much improved, I think a great deal more might be done abroad in making examinations of water for manœuvres and standing camps, and along well-known lines of march. For this purpose, however, portable bacteriological cabinets would be absolutely necessary in order that samples might be frequently examined on the spot. To make this possible, I have devised portable cases containing all the equipment of a small laboratory, which can be carried by train, by country cart, or by mules, and which also might be taken anywhere for the purpose of investigating outbreaks of typhoid fever in out-stations.

Apart, then, from camps laid out near water whose condition is known beforehand, it must be remembered that water may, probably does, come from a dangerous source. As methods of analysis require time and are quite impracticable in camps and on the line of march, and as it is impossible even for an expert to say, merely by looking at it, whether a water is good or bad—there are certain facts about water which every officer and every soldier must understand.

1. All water must be considered bad, and none that has not be purified may be used. The usual rules for protecting water must be strictly enforced, but in addition all water must be purified, not for drinking only, but for washing up as well.

2. Every time a water-bottle or water-cart is filled with unsafe water it becomes impure and remains unfit for use till sterilized.

How, then, can all these precautions be accomplished with certainty and with the minimum of transport?

For the main source of supply of pure water, nothing seems to be better than the new pattern army water-cart, which is fitted with sponges to stop sediment and with candles to stop microbes, and which can supply 210 gallons of water per hour. This cart requires less transport and supplies more water than any other apparatus hitherto brought forward for army use. It has yet to be tried on active service. In mountain warfare, or where there is difficulty in using carriage transport for water-carts, the mule filters worked on the same principles, recently described by Lieutenant-Colonel Firth, should be used. I have timed one of these mule filters, and I have seen it produce three gallons of clear water in three minutes from a barrel of muddy water. An objection to them is that they are filters only, not water carriers, and, therefore, where it has to be carried the water skins commonly in use in the East will be required. These skins in charge of untrained men have undoubtedly in the past been perfect typhoid traps, but under the supervision of trained orderlies supplied with suitable means of chemical sterilization they would be quite safe, and would often be of great use.

Finally, when away from transport, the soldier must be supplied with means of readily getting pure water, and of sterilizing his water-bottle if it has become impure. For the former he must have some form of chemical tablet, and I know of none better than the red, white, and blue ones of Vaillard. By mixing the red and blue with the water iodine is liberated, and on the addition of the white tablet, also dissolved, the water is rendered colourless and tasteless. The results I have obtained with these tablets on very impure waters have been most satisfactory, and I consider them most reliable. An objection to them is that they deliquesce if exposed to moist air, but when the tubes are corked they have stood very severe tests and have remained intact, so I do not consider that an insuperable objection to their use. Another drawback to them is that they must be mixed and dissolved before being added to the water. This difficulty can be easily got over by the substitution of a different form of cork to the regulation water-bottle, which has other defects from an up-to-date point of view:

1. It cannot be properly cleansed inside, and because of this, in hot climates it becomes offensive.

2. The outer covering of felt should be attached to the sling, so that the bottle can be drawn out and put directly on the fire, thus providing an alternative method of purifying both water and bottle.

3. The mouthpiece becomes coated with dust, which is removed by an unwashed hand or dirty handkerchief.

These three defects would, I think, be removed by the employment of this water-bottle I show, one of my own devising. It is made of aluminium, and the lid containing the neck lifts off completely, so that the inside can be thoroughly cleansed by the hand when necessary; it can be put on the fire, and the chemical tablets can be dissolved in the cap surrounding the cork. This bottle has been refused by the War Office as unsuitable, but I am still of opinion that the existing regulation water-bottle could be improved by the adoption of all or any of its advantages.

These are very briefly the main principles to be carried out in supplying pure water in camps, on the march, and in battle. The subject is engaging the earnest attention of the War Office, and it is hoped that a scheme will very shortly be fixed on That pure water is a necessity is a fact on which all are agreed, so that the provision of the necessary equipment is a matter of urgent necessity for training and instruction.

DISCUSSION.

Surgeon-Lieutenant-Colonel Curme asked if the men would take the trouble to use the tablets. The company officer was responsible for the health of the men, and if cases of preventable disease occurred the officer should be called to book. He also asked whether chemical sterilization had any effect on digestion or on the material of the water bottle.

Lieutenant Colonel A. M. Davies, R.A.M.C., said he thought Major Faichnie's bottle was an improvement on any that had actually been in use so far. Being entirely of metal it could be sterilized by heat with ease, the large lid allowed the interior to be well seen, and there were fewer corners than hitherto. But the lid might be larger still, and the whole made of drawn metal rounded internally. The supply of water on service was a matter of great difficulty; heat, filtration, and chemicals all had their place; heat was probably the most safe (as the German army had decided); but, as fuel was not always obtainable, filtration must be provided as well. Lieutenant-Colonel Davies thought that the present filter water-cart was far in advance of any hitherto employed. Chemicals might require to be used as a third line of defence. There were many difficulties, however, in the way. To leave the sterilization to the individual men left many loopholes; to sterilize in bulk was very difficult on account of the difficulty of securing adequate mixture of the chemicals throughout the volume of water. Those difficulties might probably be overcome by sufficient training of the *personnel* concerned.

Lieutenant-Colonel E. M. Wilson, R.A.M.C., spoke to the value of the Elwall and Brownlow filter cart as exemplified in a camp of the St. John Ambulance Brigade at Kenilworth. He thought the water-bottle designed by Major Faichnie was the best he had ever seen, only noting the fact that aluminium was liable to get very hot in a tropical climate and the contents therefore unpleasant. As to thermal sterilization he was doubtful of its practicability on a large scale, remarking that it was tried in the Nile campaign of 1898 and failed. The important thing would be to put it under the control of the company officer or the colour-sergeant, who should be trained.

Colonel G. D. Bourke, C.B., R.A.M.C., said the cost was most important, as a large supply of water bottles would cost a large sum. In regard to the question of trouble, after a long day's march the simplest water-bottle must be the best, as with the most complicated bottle there was less chance of the bottle being properly sterilized.

Fleet Surgeon W. E. Home, R.N., said much gratitude was due to Major Faichnie for his enterprise in making the water-bottle and bringing his information before the Section. He was sorry to hear some officers express doubt whether men would take the precautions ordered. They would. There had been no difficulty in East Africa nor in China, and the men did not drink unfiltered water. And the greatest help they could get in providing good water they would get from the self-education and self-denial of officers, who should by example and by precept show their men that by practice one could manage to get through the day on far less water than one thought; they would only then have to sterilize less than half the quantity now required.

Dr. Leigh Canney (London) said it was greatly to the credit of the Royal Army Medical Corps to find such able papers had been presented by officers to the meeting on the various aspects of the prevention of enteric fever in war. The able paper of Major Faichnie had brought before them for discussion again the question of the means of sterilization of drinking water in war. There could be no doubt that the simpler the means provided the better they would be carried out, and the higher the results which would be obtained, provided that the most certain methods of destruction of the bacilli were adopted. In regard to the methods of sterilization, it was extremely satisfactory to hear, in the first place, that all officers who had taken part in those discussions on enteric fever prevention had adopted the view which he had insisted upon for the past seven years, that all water and all fluids liable to be consumed in war were to be regarded as infected, and must be sterilized. As to the methods, Colonel Davies had told them that the German army were probably abandoning filtration or chemical methods in favour of heat sterilization. He was glad to hear that, as after serious consideration, in conjunction with the opinions of bacteriologists, he came to the conclusion some years ago that it would be impossible for the army to rely upon sterilization by filtration or chemical means, owing to the too elaborate detail required by either of those means to render them reliable in war; and it was to be hoped that steps would be taken to bring heat sterilization actually up to the very front during war, as well as adopting that means in fixed camps. With regard to the question of fuel, he had shown elsewhere that three-fifths of an ounce of petroleum was all that was required to be transported for providing all the sterile fluid required for each man daily, and the apparatus for that purpose was easily transportable by means of mules, and therefore possessed greater mobility in most countries than water-carts, and would be constantly ready with the men. The amount produced by those heat sterilizers per hour was quite up to that produced by the filtration water-carts. Major Faichnie's observations on water-bottles and their need for very careful sterilization by heat were of the greatest value, and he presumed that would actually be carried out by the water section men or by the men themselves under the direct supervision of the trained water section men.

Surgeon-General Sir Charles Cuffe, K.C.B., said the solution of the question of purification of water was connected with the intelligent adoption by combatant officers and men of the advice and principles of hygiene recommended by the Army Medical Corps officers. The rising civil population were about to be educated in hygiene and the proper methods of taking care of their health, and even now soldiers asked medical officers very intelligent questions upon the subject of drinking water. In his experience officers and men took much interest in most sanitary matters, and after a little judicious explanation of the necessity of skilled advice being adopted, endeavoured faithfully to carry them out. The teaching of hygiene in elementary schools would certainly ensure that the naval and army recruit of the future would make progress in carrying out principles of preservation of health and careful avoidance of everything which was thought to cause deterioration.

Inspector-General J. Porter, R.N., said it was within his experience that a considerable proportion of men, when suffering from raging thirst on the march and their water-bottles were empty, would drink water from any puddle, no matter how much they had been warned to the contrary. They poisoned themselves, and in due course spread disease to others. Those cases would lessen as knowledge of hygiene increased, but when they did occur the offender should be severely dealt with. All men should clearly understand that punishment must follow wilful disregard of important orders on matters of health.

Lieutenant-Colonel Davies said, in regard to the last speaker's remarks, that the soldier and the officer required to be educated as to the necessity for exercising self-restraint in satisfying his thirst, and that that self-restraint needed to be practised in peace time during manœuvres. Without training during peace they could not expect that self-restraint to be practised during war. That process of education was now being carried out, and it was reasonable to hope that it would bear fruit in the near future.

Major FAICHNIE, in replying, said that the use of pure water for washing-up purposes should be insisted on, as, unless that was done, enteric fever would not stop, and measures taken would be discredited and possibly considered useless. As soon as the necessary equipment was provided the teaching of the men to always use pure water would be very much simplified.

THE NECESSITY FOR TRAINED MALE PERSONNEL IN THE MEDICAL SERVICES ON MOBILIZATION FOR WAR.

By Lieutenant-Colonel E. M. WILSON, R.A.M.C.

THE power of an army depends on the number of trained men which it can bring into the field. This, of course, appears to be an obvious truism, but I venture to submit that the full application of it is not by any means universally understood.

To the general public an army means practically the fighting part—horse, foot, and artillery. They think very little, or only at rare intervals, of the Army Service Corps which feed the army; the Ordnance which clothes it; the Pay Department which pays it; the Engineers who build its roads, railways, and bridges; and, lastly, of the Medical Corps which attends to its sick and wounded, and, above all, which *removes* them from the front.

Yet these services are important, and in the absence of trained *personnel* in our own corps the enterprising journalist is soon provided with an abundance of cheap copy, "Another breakdown of the Medical Department—Doctors to blame as usual."

In the few remarks which follow I propose to bring to your notice some facts regarding the various *duties* of the subordinate medical *personnel*, and also of the proportion required, and first regarding transport; for do not think me inhuman if I say that of all things the most important to a general is to get his fighting line cleared of sick and wounded. They must be removed, otherwise he is paralysed in his advance. Now, how are they removed?

In the Nile campaign of 1884-5 there was, of course, a constant stream of non-effectives down the river, and for part of the time I was in charge of sick convoys from the Third to the Second Cataract—about 200 miles. My *personnel* consisted of Arabs, Nubians, Egyptian cavalry who were employed as boatmen, a Turkish captain in charge, and a Syrian interpreter, who you may suppose was useful. Krooboys from the West Coast of Africa, and Canadian Voyageurs. The attendants on the sick were convalescent soldiers of all branches of the army, and one man, because there were no more to spare, of the Medical Staff Corps (as it then was), who was employed as cook, and very well he did his work.

Well, you will say the circumstances were exceptional, and, anyhow, it is a long time ago—ancient history!

Let us take a later instance. On the march to Coomassie in 1895 a soldier of the West India Regiment, being dissatisfied with the punishment awarded him by his commanding officer, shot the sergeant who had given evidence against him, and the bullet, passing through, struck an inoffensive carrier outside the hut.

The medical officer, hearing the noise, ran in, bandaged both wounded men, put them into hammocks, and himself into a third, and started for the base. All night they travelled for thirty miles, and came into my hospital at daybreak next morning; but they had twelve men to each hammock—four carrying and two reliefs; thirty-six bearers for two wounded men and a doctor. Multiply the wounded by a hundred, and you see how difficult the question of transport becomes. After the victory at the Atbara in 1898, Lord Kitchener told off an Egyptian *Brigade* to carry the wounded back to the Nile. But supposing the victory had been a defeat, when every fighting man was wanted in the firing line, how would you move your sick and wounded then?

I mention these few instances as showing how important the question of transport is, and would only add that it is essential that the *personnel* should be *trained*, as a trained team will carry a patient twice the distance with less fatigue and less suffering to the injured man.

"All this is savage warfare," you will say. Well, let us take the late war in South Africa. In Natal alone it was found necessary to enlist 1,400 bearers, irreverently called "body-snatchers," and the wounded from Spion Kop were carried for several miles on stretchers owing to the stony nature of the ground—12 men to a stretcher, to allow of rest and change.

Enough about transport. Let us suppose our sick and wounded conveyed to the hospital, and by "hospital" I mean a real hospital, equipped with beds, not a field hospital, which, combined with a bearer company, is now more properly styled a "field ambulance."

Here I am sure that there still is a prevailing impression that the services of male subordinate *personnel* are not required, because the nursing can be done more efficiently by Sisters.

Yes, the nursing staff and all medical officers will gratefully bear witness to the splendid work performed by Sisters and nurses in military hospitals in peace and in war, at home and abroad. But there are other duties which must be performed in all hospitals if the administration is to be satisfactory. Compounders, of course, you must have; cutlers to repair surgical instruments; skiagraphists for the *x* ray apparatus; stewards for the provisions and extras; cooks, most important in a hospital; men in charge of the various stores and the clothing and equipment of patients admitted; laboratory attendants for microscopic and pathological work. To these must be added a considerable number, according to the size of the hospital, for general and sanitary duties, messengers, orderlies, picquets, police, and men to keep the place clean. If you will imagine a hospital ranging from 200 to 1,700 beds—and some of those in South Africa exceeded the latter number—spread about in tents or temporary buildings, you will realize that the daily sanitary work requires a large staff. The clerical duties also of a large hospital are, I think, not properly understood. Apart from the medical and statistical work, which must be accurately compiled, commanding officers and friends at home demand, and rightly so, to be kept informed of the progress and result of cases admitted.

In a large hospital with sick and wounded constantly streaming through, the labour of keeping an accurate record and replying to inquiries is exceedingly onerous.

Another duty imposed upon the officer in charge on active service is that of reclothing patients, convalescent or fit to return to duty. In many cases it is obvious that the clothing worn by a patient admitted to hospital is not fit for reissue, and when he is discharged or transferred it is necessary to fit him out again entirely.

One other point, and I have done with this branch of the subject. An order may come for the hospital to be removed. The *stationary* hospitals in South Africa were naturally constantly on the move, and even the large general hospitals were on several occasions shifted.

If you will think of the hospital in this city being suddenly moved to Taunton or Penzance, with all its patients, equipment, stores, and appliances, and tents for wards, you will allow that there is ample employment for male *personnel*. "Yes," you will say, "but why medical *personnel*? This is fatigue work. Tell off a regiment of infantry." So the fighting force of the army is diverted from its proper duties, and the colonel bitterly exclaims, "Why don't you doctors do your own work?"

The time allotted for these papers is short, and I pass over the intermediate stages, the *personnel* required for hospital trains, dépôts for convalescents, medical stores, etc., and for the hospital ships which bring the invalids to this country; but I think enough has been said to show the necessity of special male *personnel* for the medical services, the duties of which are mainly technical, and which even when not technical can only be performed, if not undertaken by the medical department, by withdrawing large bodies of fighting men from their proper duties.

Assuming, then, that the necessity for subordinate male *personnel* in military hospitals is recognized, the question may be asked, in the words of Mr. Mantalini, "What is the demnition total?" This is best expressed in terms of the force employed, and I think that for all duties the male medical *personnel* should not be less than 7 per cent. of the entire army.

This is based on the precept that prevention is better than cure. If we can place a sufficient number of trained men in the field to assist in maintaining the sanitary efficiency of the army, to aid in restoring slight cases to their duty in the ranks, and rapidly to transport severe cases to the real hospitals on the lines of communication

and the base, we shall largely reduce the mortality and invaliding and leave the man with the gun for his proper duties.

These are the lines on which it is hoped that the medical services may be organized in future expeditions, namely, (1) to place a sufficient number of N.C.O.'s and men with the units in the field trained in the first principles of sanitation and with some knowledge of the means and appliances for the purification of water and thus to prevent disease, and (2) to increase the number of bearers with ambulances and thus more rapidly to remove non-effectives from the front.

In this way it is believed that the percentage of sick will be decreased and the numbers of real hospitals required proportionally diminished—more men in the field, and less on the lines of communication and at the base.

The provision of these trained medical subordinates, of course, is a question for the War Office, but I think medical men in all parts of the United Kingdom may do something to assist.

It is quite certain that no Government will maintain in times of peace a large number of R.A.M.C. surplus to the peace requirements of the military hospitals at home and abroad in view of the possibility of a general mobilization. Whenever the call may come, the corps and its reserves must be supplemented from other sources. Wherever a member of the medical profession is practising in the United Kingdom he will find near him a centre of this potential reserve—a company of the R.A.M.C. militia, a corps of the R.A.M.C. volunteers, a division of the St. John Ambulance Brigade or Association, or in Scotland a branch of the St. Andrew's Ambulance Association.

As Colonel Bourke can tell you, there is a company of the R.A.M.C. militia with head quarters at Devonport, and a bearer company for the Devon Volunteer Infantry Brigade at Plymouth under Captain Ransom Pickard. There is also a division of the St. John Ambulance Brigade in this city, and Dr. Pereira or Mr. Bowden will be delighted to give any information about it. Surely these institutions and corps deserve to be supported?

You have, I daresay, heard that a scheme is under consideration for the St. John Ambulance Brigade to take over the charge of military hospitals at home on mobilization when the R.A.M.C. officers and men are withdrawn for active service. This cannot be done successfully unless the *personnel*, officers and men, are trained, and they cannot be trained unless medical men resident in the locality will take an interest in the scheme and insist in the instruction.

I think I may say from my own experience that they will find the men keen enough to learn, and to give up their time to attend camp and drills. Is it too much to ask that they should interest themselves in the local organization? To assist as far as is in their power in the instruction of the men, their drills, exercises, and lectures? By doing so every man is performing a patriotic duty, and strengthening the reserve of trained men who may be called upon in time of need.

DISCUSSION

Colonel G. D. Bourke, R.A.M.C., said he quite agreed with Lieutenant-Colonel Wilson that it was very unsatisfactory to both officers commanding and medical officers to get fighting men to attend the sick—the fighting man was trained to fight, and not to nurse the sick, and he quite sympathized with the officers commanding, and thought that stretcher-bearers should be specially enlisted for the service.

Fleet Surgeon W. E. Home said that for stretcher-bearers men of good physique with a small knowledge of drill and discipline, say volunteers from the volunteers, would be quite useful to perform the duties of a coolie corps.

THE TEACHING OF HYGIENE IN THE ARMY.

By Major R. J. Blackham, R.A.M.C.

The appearance of the new regulations for the instruction of not only officers but the rank and file of the army in the elements of hygiene makes this subject perhaps the leading medico-military question of the hour, and shows, I think, that the authorities are determined that some knowledge of the principles of this all-important subject shall form a portion of the education of every soldier. It may therefore be interesting to ask you in this Section of the British Medical Association to discuss lines along which the teaching of hygiene might be further extended in the public services.

Such extension might be considered, I think, under five headings:

1. The training of quartermasters in hygiene and the institution of examinations for officers of this class prior to promotion.
2. The teaching of hygiene to soldiers in army schools as an *essential* subject for the various military certificates of education and the adoption of hygiene as a compulsory subject for army schoolmasters at the Duke of York's School, and for all steps in the schoolmaster's promotion.
3. The training of army schoolmistresses in infant hygiene at military families' hospitals and the instruction of elder girls in army schools in the care of children.
4. The opening up of certain staff appointments involving *executive* sanitary duties to medical officers.
5. The extension of the system of hygienic training, adopted for regular troops, to the voluntary or territorial forces, and the appointment of regimental medical officers as sanitary rather than surgical experts.

Let us take these sections *seriatim*.

1. We find in the first place that, at present, no provision for the instruction of quartermasters in hygiene and the care of barrack exists, yet these officers fulfil in a regiment to a large extent the office performed by a sanitary inspector in civil life.

Moreover, quartermasters almost alone amongst the ranks of the army pass from honorary lieutenant to honorary captain and major without examination.

I suggest that they should pass an examination in sanitation similar to those conducted by the Royal Sanitary Institute before promotion to the rank of captain, and a similar examination, of a more advanced character, before they receive honorary field rank.

Such requirements would, apart from my suggestions below, inspire an interest in matters of hygiene amongst senior non-commissioned officers, as, if a colour sergeant or quartermaster-sergeant realized that his future promotion would depend on his practical knowledge of hygiene, he would be bound to interest himself in the subject far more keenly than can otherwise be the case.

2. Under our second heading we note that the new regulations state that "Officers of companies, squadrons, etc., will give instruction to their N.C.O.'s and men in sanitation," and make provision for the instruction of special classes at the School of Army Sanitation at Aldershot

The only drawback to the first portion of this admirable regulation is that teaching of all kinds is highly specialized and skilled labour, and that it is not given to every regimental officer to have the knack of imparting instruction in a scientific subject; and I would suggest that in addition to the lectures in hygiene by company officers, the subject should be taught by army schoolmasters as an *essential* subject for all military certificates of education.

Unfortunately, army schoolmasters are not at present themselves specially skilled in elementary hygiene; and, although a small book known as *The Laws of Health* has been adopted as a textbook for children in army schools, and a handbook on school hygiene was issued in May last, the subject is not taught to pupil schoolmasters at the Duke of York's School, nor does it yet form a subject of any of their examinations for promotion.

The army schoolmaster has a great and powerful influence in military life, but I would extend it; I would make him more than a mere pedagogue; I would appoint him a preacher of the Gospel of Hygiene to the soldier and the soldiers' children.

To qualify him for this duty a teacher of hygiene should be appointed at the Duke of York's School, and the elements of military and general hygiene taught to the embryo schoolmaster as systematically as mathematics and geography.

Hygiene might, moreover, form a subject for each step in his promotion, and inspectors of army schools might be required to pass the same tests for advancement as quartermasters.

As it is possible for the schoolmaster to train the raw recruit to see the importance of writing a legible hand and understanding the rules of grammar, surely it is but one step to teach him the equal importance of keeping his

teeth clean, his saliva for its legitimate uses, and his various appetites within reasonable bounds.

The laws of health should, I think, form part of the soldier's regular school training, not merely a thing apart, taught only by his officers, like signalling and range finding.

That great general, Moses, fully recognized the importance of hygienic laws, and constituted his sanitary regulations into the religious ceremonial of the people under his command. In this particular Christianity has much to learn from the Jewish faith.

3. Under our third heading we observe that there is another direction in which the army schools might be utilized to improve the general health of the nation.

It is generally held that infant mortality in the army is much less than that in civil life, but separate tables of infant mortality, as Colonel Caldwell has shown, are not available in the Army Medical Department reports to prove the general impression.

The attached table may be of use in this relation. It shows the *approximate* infant mortality amongst the married families of H.M. troops at Devonport as compared with the mortality amongst the civil population during 1897-1906.

Year.	Births recorded at Families' Hospital.	Deaths under 1 year recorded at Families' Hospital. In- and Out-Patients.	Approximate Infant Mortality-rate per 1 000 Births. Military.	Infantile Mortality per 1 000 Births, Civil Population, Devonport.
1897	45	1	22.20	149.2
1898	34	0	*Nil*	140.7
1899	52	6	118.03	163.2
1900	38	6	157.90	165.6
1901	44	0	*Nil*	146.2
1902	41	0	*Nil*	122.4
1903	70	2	28 50	73.0
1904	80	3	37.50	115 2
1905	90	2	22 20	135.9
1906	112	5	44.60	111 4
			Average for Decennium, 43.09	Average for Decennium, 134.6

The table speaks well for the hygienic conditions under which our married soldiers live and the great advantage of prompt and skilled medical advice, which is always at the disposal of the soldier's wife; but it is in spite of, rather than on account of, any attempt to train the soldier's wife or children in the newest and one of the most important branches of State medicine—I mean infant hygiene.

I have elsewhere[1] preached the importance of teaching elder girls the elements of this important subject, and have ventured to disagree with the President of the Local Government Board's opinion that to check infant mortality we must "first concentrate on the mother."

I think if we wait till the girl has become a mother she will have developed "ideas" on the subject of infant rearing, and our efforts will go for nothing; but if we concentrate on the elder girls and instil sound notions of infant rearing during school life we may hope for better bills of mortality in the years to come.

Herbert Spencer has written so appositely that I beg leave to quote his remarks as singularly à propos:

> If by some strange chance not a vestige of us descended to the remote future save a pile of our school books or some college examination papers, we may imagine how puzzled an antiquary of the period would be on finding in them no sign that the learners were ever likely to become parents. "This must be the curriculum for the celibates," we may fancy him concluding. "I perceive here an elaborate preparation for many things, especially for reading the books of extinct nations and of co-existing nations (from which it seems clear that these people had very little worthy reading in their own tongue), but I find no reference whatever to the bringing-up of children. They could not have been so absurd as to omit all training for this gravest of responsibilities. Evidently this was the school course of one of their monastic orders."

This is surely a matter in which the army should show the way to dilatory municipal bodies.

What is possible in Manchester can surely be achieved by the authorities who enjoy the distinction of being the first to found a chair of hygiene in this country and to have placed in that chair our illustrious brother officer who was unquestionably the creator of the science of public health as we now understand it.

I recently had an opportunity of seeing the papers for the qualifying examination for army schoolmistresses, and was surprised to find that, although a high standard of literary education was demanded, there was not a single question on elementary physiology, hygiene, or any cognate subject.

Surely it was more important for a schoolmistress, or schoolmaster, to understand the principles of ventilation or the elements of physiological processes than the rules of counterpoint or chromatic scales.

I suggest that army schoolmistresses should go through a practical, I had almost said a clinical, course of training at one of our military families' hospitals on the care of infants and young children, and that a paper on this subject should form an essential portion of their entrance examination.

They should hold classes on the subject for all elder girls, and questions on infant hygiene should be compulsory for girl pupils in all army school examinations.

Dr. Niven informs me that the classes of this nature held under the Manchester education authority are productive of much good, so that this form of instruction has been carried beyond the field of mere experiment in civil life.

4. Passing to my fourth heading, I suggest *in primis* that as a preliminary, or in conjunction with any scheme for reform in military education in hygiene, future adjutant-generals for army schools might be selected from the Royal Army Medical Corps.

The duties of the appointment could be very efficiently performed by a medical officer specially interested in school hygiene and medical and physical education.

A medical officer would be able to settle at first hand questions on hygienic matters which must be constantly cropping up with reference to school life, whereas a combatant officer must refer these points.

The suggestion that the superintendentships of army gymnasia might be held by medical officers which has recently been made by writers in the British Medical Journal seems to have an important bearing on the teaching of hygiene in the army.

It appears to me that the work of physical training is a medical question, and that the work of superintending it is clearly a duty for the medical officer.

I commend to your attention Colonel Westcott's article in the *Journal of the Royal Army Medical Corps* for April, in which he points out the manner in which medical supervision is or was carried out in the Northern Command.

I personally think that the gymnasium and the army schools are two places where hygienic principles may be taught with great advantage, and surely this can be done best under the supervision of a sanitary expert.

There is another variety of staff appointments which has a very important relation to preventive medicine—namely, cantonment magistracies in India.

In discussing the limitation of communicable diseases in peace time, Colonel Caldwell, in his work on *Military Hygiene*, points out that the execution of many sanitary measures in India is dependent almost entirely on the action of cantonment magistrates.

Yet under the existing scheme of military education there is no reason to suppose that the cantonment magistrate possesses that knowledge of hygiene which is so essential to the intelligent execution of measures suggested for the prevention of disease. The Senior Medical Officer and his sanitary assistant, the officer in charge of the cantonment general hospital, *advise* on sanitary matters, but they have no executive functions, as the *Kutcheri Sahib* represents the sanitary committee, borough surveyor, and town clerk of home sanitary administration.

Obviously here is a field for either the teaching of hygiene to a large and very important body of officers, or, if the special education of the cantonment magistrates is not considered within the sphere of practical politics, Colonel Caldwell's suggestion that cantonment magistracies

should be conferred on medical officers might be considered.

If this innovation were introduced, many proposals affecting health could be dealt with on the initiative of their originators instead of being left to the decision of officials who cannot be expected, in the absence of professional training, to invariably grasp to the full importance of such matters.[2]

This suggestion, with those I have made above, raise a question of wide-reaching importance, as it involves the placing of the medical service on a somewhat different plan in the army, and providing an outlet for individual ability in spheres which are not *absolutely* of a medical character. This outlet has long existed in the Indian army, and the results have, I think, been satisfactory not merely to the individuals concerned, but to the great Government which employs them.

Special training in elementary hygiene appears still to be practically confined to the regular military forces of the Crown. I understand that systematic instruction in hygiene is not carried out on all of His Majesty's ships, and that elementary hygiene is not taught in naval schools. Naval schoolmasters are, I am informed by the Flag Lieutenant of the Naval Commander-in Chief at Devonport, taught and examined in elementary hygiene, in which respect they have an advantage over their military colleagues; but the subject does not form a portion of the examination for promotion of any other class of petty officer or officer other than surgeons. Even sick-berth ratings, who are taught the subject on joining, are not examined in it.

At first sight hygiene may seem of less interest to those who spend most of their lives under strict sanitary discipline of ship life than "first aid to the injured," but it must be remembered that naval brigades have formed a portion of the fighting force in some great and many small wars, and that therefore it is just as essential that the bluejackets and marines of landing parties should be familiar with the elements of disease prevention as for the soldier who serves continuously on land.

5. Let us now pass to my final heading, and consider the education in hygiene of the auxiliary forces of the Crown:

A friend who is a local volunteer officer informs me that, so far as the volunteers in this part of the country are concerned, the teaching of elementary hygiene is non-existent, and that, realizing the want of instruction in the subject, he prepared a syllabus of a course of lectures on the disease prevention, for delivery to the troops under his care, but, from lack of sympathetic support, the men were unable to attend the course and the lectures fell through.

I suggest that it is quite as important for the yeoman or volunteer to understand the principles of this subject as it is for the regular soldier, and that the volunteer medical officer, who has some advantage which we in the regular army do not possess, should realize that his primary object with his regiment is not merely to render first aid to the wounded, but to teach the men under his care how to avoid those purely preventable diseases which, as he well knows, account for many more casualties than the bullets or sabres of the enemy.

This is the lesson which we have now thoroughly learnt in the regulars, and we should aim at passing it on to the so-called auxiliary forces.

Cure of the sick has so long been the sole object of the doctor in the past that some find it difficult to realize the idea that prevention of disease must be his chief aim in the future.

Preventive medicine is now no longer a matter of sewers and drains, microscopes and test tubes and a speciality practised by the few. We have advanced beyond the hygiene of mere environment to the hygiene of the individual, and modern military medicine concerns itself as much with the personal cleanliness and habits of the individual soldier as with the drainage of barracks and the water supply of camps.

In future wars it should be the pride of the regimental medical officer, in every branch of the service, not merely that he attended the wounded under the heaviest rifle fire and tied arteries where shells fell thickest, but that *his* regiment contributed fewest cases of enteric and dysentery to the field ambulances, and that the camps occupied by *his* battalion were the most sanitary in the brigade.

References.

[1] *Journal of the Royal Sanitary Institute*, August, 1907. [2] *Military Hygiene*, p. 246.

Discussion.

Colonel Fourke thanked Major Blackham for his very excellent paper, every word of which was true, and deserved the attention of all ranks.

Fleet Surgeon Home said great thanks were due to Major Blackham for the thorough investigation of conditions of education in hygiene in the army and navy. Now that the defects were made plain to them it would be easier for them to know exactly where they could apply their efforts to make their education more satisfactory.

Major Blackham, in reply, said he was very far from desiring to multiply the examinations of the officer and soldier; he merely suggested that for military efficiency a knowledge of hygiene was all-important to the soldier, and that as a subject for military certificates of education it was at least as important as such subjects as geography. Officers who had served in India all knew that the cantonment magistrate was supreme in all matters of sanitation in an Indian cantonment, and what he suggested was that medical officers might be appointed to cantonment magistracies in some large Indian cantonments. By that means the executive sanitary control of the cantonment would be placed in the hands of a sanitary expert, and all sanitary measures would therefore receive the consideration they deserved. He was glad to have the support of such an experienced and distinguished officer as Colonel Wilson in his advocacy of the training of quartermasters in hygiene, as on that point he had not found himself in agreement with the last report of the Inspector-General of the Forces. As a matter of actual practice medical officers all knew that the quartermaster had to take the place of the civilian sanitary inspector in regimental lines, and until the complete sanitary care of barracks was handed over to the Royal Army Medical Corps, that condition of things must continue. If that were so, some knowledge of hygiene must, therefore, be an essential to these officers, and he would welcome the adoption of Colonel Wilson's suggestion that an examination in hygiene should be instituted prior to their first appointment.

TREATMENT OF BURNS AND SCALDS AFLOAT.

By Staff Surgeon P. T. Sutcliffe, R.N.

In introducing the discussion on the treatment of burns and scalds afloat, I do not propose to deal with those minor cases when the injury is limited in area and the patient is treated on board until fit for duty; as, for instance, cases of burns of the hand or foot. In these minor cases I think each medical officer may be allowed to carry out whatever treatment he prefers.

In the major cases, however—that is, cases in which the greater part of the superficial tissues have been injured—I do not think that the treatment should be left to individual opinion; for these cases are sent to the nearest hospital on the earliest opportunity, and therefore, as medical officers afloat, we should remember that after the first dressing the case will pass from our hands into those of others. The treatment of constitutional symptoms may be omitted from this paper, as there is little difference of opinion on that point. The choice of dressing, however, is one which will no doubt give rise to considerable controversy. I will, therefore, at once pass to the discussion of this question.

In searching various authorities I have found so many different dressings advised that enumeration would only be a waste of time, so I have divided them into three groups: 1. Powders. 2. Oils. 3. Lotions.

Powders.—Those suggested are boric acid and zinc oxide with starch, and these for superficial burns may be used with advantage, though I prefer other dressings myself, and consider them quite unsuited for deeper burns, where, with the discharges from the injured tissues, they form rough and irritating scabs. Under these scabs septic material collects, and constitutional symptoms will in all probability be severe.

Oils.—These have been a favourite form of dressing for generations, and there are still many who advocate their use. The oil most in use in the service is carron oil—that mixture of linseed oil and lime water first introduced at the Carron Works—and this application is certainly soothing, and if freely applied on lint or gauze, the second dressing is somewhat less painful to the patient than is the case when the other drugs are used—beyond this I know of nothing in its favour.

There are, on the other hand, many disadvantages to oily dressings as a whole and this one in particular.

1. The oil is not sterile and has no antiseptic properties. Even if sterilized shortly before use organisms are found to gain access to the dressings, and the oil forms a very suitable medium for their growth.

2. An oily dressing will not absorb any of the discharges. Now these, in severe burns and scalds, are free and must be so from the nature of the injury, and any dressing which keeps these discharges in contact with the absorbing surface of granulations invites the onset of severe constitutional symptoms.

3. The oily dressing must be changed in twenty-four hours, for by then it will be foul and septic.

In these cases of severe burns and scalds the shock caused by the first dressing is always a serious consideration and may be fatal. Therefore, the longer we can postpone the first dressing the better for the patient, to whom every hour is of advantage in his recovery from the preliminary shock of injury, and this delay may be obtained by the use of lotions, of which more later.

4. The oil is a dirty dressing from the point of view of the nurses and medical officers, etc. Sheets and linen become saturated with the oil and everything about the patient has a sickly offensive smell, which is very trying after inhaling for three or four hours, and which clings to the hands and nostrils for the remainder of the twenty-four hours, so that one is never free from the smell so long as the case is under treatment.

5. The parts, having been once bathed in oil, it is well-nigh impossible to cleanse them and apply other dressings. One has to wait patiently till little by little the oil is removed and the parts are rendered clean and in a condition to respond to treatment.

6. The space occupied by a sufficient quantity of oil to meet all emergencies is considerable, and in a modern man-of-war, where every department clamours for more room for the stowage of gear, the medical officer is thrown back on the sick bay, which tends to be overcrowded with the various chests, etc., carried.

This may be a comparatively small matter, but if we can reduce with advantage the bulk of stores carried it will be a gain to the comfort and working of the sick bay, and should, therefore, be done.

7. Carron oil has no healing property *per se*, and sooner or later it must be changed if we are to obtain a rapid or satisfactory result—rapidity of cure should certainly be one of our first thoughts.

Lotions.—Here, to my mind, we have the most rational form of dressing for cases of burns and scalds; I will give my arguments in their favour in the same order as I gave the disadvantages of the oils.

1. The water used in making the lotions is easily sterilized, and the lotions being antiseptic, organisms will not grow on such a dressing, even though they gain access to the part.

2. The inevitable discharges are absorbed by the dressing, and the active principle of the lotion prevents the growth of organisms, the dangers of constitutional symptoms being thereby averted.

3. A dressing moistened by a suitable lotion may be left *in situ* for at least forty-eight hours, and this I consider a most important—I may almost say the most important—point in favour of the use of lotions. Take, for example, the case of a burst tube in the engine room, or explosion of a cartridge whilst firing is in progress. The patients are scalded or burnt from head to foot, and the shock is very severe. The first dressing is applied, and the men are forthwith landed and taken to the nearest hospital.

The unavoidable movement and discomfort entailed in transit does not tend to improve the general condition, but once in a hospital bed, in comfort and quiet, the patient has more chance of combating the shock. Therefore the forty-eight hours' rest before the second dressing is invaluable, and the same remarks (modified) apply if the patients cannot be landed but have to be treated on board their ship.

4. Lotions are clean, not only surgically but also from the point of view of nurses and with regard to linen, etc. Certainly one important dressing, namely, picric acid, will stain the sheets a yellow colour, but this is preferable to oil, and is by comparison clean.

5. The lotion clinging to the parts from the dressing is easily removed should any subsequent treatment be adopted.

6. The space occupied by any drug from which we make our lotions may be neglected, so small is it compared with that taken up by more bulky oils.

7. Lotions have healing properties *per se*.

I now come to the choice of lotion. Those in most common use are perchloride of mercury, boric acid, and picric acid.

1. *Perchloride of Mercury.*—The risk of absorption of this drug from the large granulating surface of wounds such as we are dealing with is too great to admit of the free use of this lotion. If used it must be so diluted that its antiseptic properties are greatly impaired.

Boric Acid.—In boric acid we have a most useful drug; it is antiseptic, stimulating to the new tissue, does not cause irritation, and is free from any risk of causing poisonous symptoms.

The chief drawback is that it has no anaesthetic effect, and this drawback is especially felt when the choice of the first dressing arises, for at this time anaesthesia helps to diminish the degree of shock. In the deeper burns, where the nerve endings are destroyed, this disadvantage disappears, and the drug may then be chosen.

Picric Acid.—I suppose a dressing of picric acid has been more used than any other during the last ten years. The drug has all the advantages of boric acid plus that most important one of relieving pain in cases of superficial burns, so that it is especially useful as a first dressing, as it may, in addition, be left for forty-eight hours before being changed.

This application fulfils all the advantages mentioned in favour of lotions: (1) It is sterile and antiseptic; (2) the discharges are absorbed; (3) it may be left for forty-eight hours; (4) it occupies small space; (5) it is stimulating to the new tissues.

With regard to No. 4 of the above list, I may mention that a 5 per cent. solution is the strength required, so that 1 oz. of the salt will make over 10 pints of the lotion.

Cases of poisoning have been reported as the result of the use of this acid; personally I have used it in many cases. I have seen it used in many others without any symptoms appearing, so that this possibility does not seem of sufficient importance to condemn its use. One property, however, it does possess which has prevented it from being brought into use afloat—that is, the explosive nature of the dry crystals.

According to V. B. Lewes, F.T.C., F.C.S, in service chemistry, picric acid is a pale yellow crystalline body, having the form of plates or prisms, little soluble in cold water, readily in alcohol.

On heating the crystals to 122° C., they fuse with partial sublimation, and explode at a slightly higher temperature. From a treatise on service explosives I gather that the crystals melt at 125.5° C. (252.5° F.) to a yellow liquid, which may be distilled by carefully heating without decomposition. Heated briskly to 300° C. (572° F.) in the open it burns rapidly; if confined it explodes.

From this it would appear that there is little danger in the careful use and storage of this acid, and the fact that it is used in the large hospitals of London and the provinces without special precautions as to storage enhances this view.

Nevertheless, so far as I have been able to ascertain, this acid is not used in the merchant service, and it comes under the head of explosives so far as shipment is concerned.

I have discussed the subject with several gunnery officers, who all agree that, kept in the cool and unconfined, there is no danger in picric acid. Even granting that the acid is not perfectly safe, I think a few ounces might with safety be carried in men-of-war, where there are always experts on matters of explosives to give advice as to storage. I am myself such a firm believer in this acid that I am loth to exclude it even though some risk be run.

In war time burns and scalds will be numerous, and the medical officers of the navy will have a tremendous strain put upon them and every hour of the day will be fully occupied. Daily dressing will be therefore almost an impossibility, so some form of lotion must be used in the place of the oils.

Before concluding I wish to refer shortly to the scalds seen in the service as the result of bursting of steam pipes.

At an ordinary working pressure the temperature is about 400° F. Tubes burst owing to blocking and increase of pressure, so that it is impossible to tell the actual temperature of the steam at the time of the accident. The effects, however, are seen in the instantaneous death of such exposed parts as the hands and forearms, feet and legs, the whole of the albumen of the tissues being coagulated and the circulation being arrested.

In these cases our one object is to keep the parts as aseptic as possible, and a lotion of perchloride of mercury is perhaps the most suitable, as no absorption of the lotion can take place from the dead parts, and the antiseptic properties of this drug are well known. Should the patient recover sufficiently from shock, an early amputation is the only rational treatment. In the cases I have seen this has been impossible, and the patients have never recovered from the preliminary shock. To sum up: Use lotions in the treatment of burns and scalds, for they are sterile, discharges are absorbed, and the dressings may be left forty-eight hours. Do not use oils, as they keep in the discharges, must be changed every twelve hours, and are not aseptic.

I regret that this paper has had to be written in haste and under difficult circumstances, and I have been unable to consult authorities as I could have wished. With reference to the recent war between Japan and Russia, I can find no literature dealing with this subject, and I am informed that nothing has yet been published. I can only hope that I have made enough remarks to lead to a profitable discussion on the subject.

DISCUSSION.

Inspector-General Porter considered it clear that the use of all oily substances as dressings for burns should be abandoned. They impeded the subsequent application of antiseptics which must be used if they were to keep clear of septicaemia.

Fleet Surgeon Home said the treatment of burns was one of cleanliness, and it made little difference whether the antiseptic were carbolic acid or picric acid. Cleanliness was the chief need.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

TRYPSIN TREATMENT IN MALIGNANT DISEASE.

While the value of trypsin in the treatment of malignant disease is still uncertain, it is well to record any cases in which it has had any decided effect, whether for good or evil; I therefore publish the details of the following case:

A gentleman, aged 65, of good physique, and hitherto robust health, came to me in January last with a rapidly growing abdominal tumour—a globular swelling about the size of the fetal head, feeling like a cyst and, I hoped, a hydatid. He complained of pain, loss of appetite and strength, and said he was also losing flesh. He went to Mr. L. A. Dunn, of Guy's Hospital, who opened the abdomen and found a cystic growth, which he tapped, but was unable completely to remove; it was attached apparently to the pancreas, and Mr. Dunn had no doubt of its malignant character; moreover, he found secondary growths in the wall of the stomach and elsewhere.

The patient returned home in March, and very rapidly lost ground; the growth immediately began to increase in size, and by the end of April the whole epigastrium appeared to be full of solid tumour. He was, besides, wasting rapidly, and had become extremely weak, suffered a great deal of pain, especially in the back; had nausea and vomiting, pain after food, and sleepless nights. At the end of April he was seen again by Mr. Dunn, who said that nothing further could be done for him surgically. On May 1st I began hypodermic injections of trypsin and amylopsin, as recommended and introduced by Dr. Beard, and very soon improvement set in, and continued steadily.

First the vomiting, nausea, and flatulence disappeared, and the appetite improved, and then gradually the pain lessened, and the swelling also steadily diminished, while the weight, which was recorded weekly, regularly increased. The injections were continued daily for three months, and at the end of that time the man was practically well, the only symptom left being some abdominal discomfort and occasionally pain.

He eats and sleeps well, and attends to his business regularly; his weight is only a few pounds less than it has been for many years, and the only thing to be felt in the abdomen is some hardness in the line of the incision and a little to the left of it—the remains I suppose of the cyst which was left stitched to the abdominal wall.

I do not say that he is cured, but no one who has seen him can doubt the immense improvement that has taken place, and considering how rapidly he was deteriorating before treatment commenced, and how promptly and steadily the improvement took place after the treatment began, it is extremely difficult to believe that the trypsin was not the cause of that improvement.

Arthur Cutfield, B.A.Camb., B.Sc.Lond.,
M.R.C.S., L.S.A.
Ross.

TWO UNUSUAL FRACTURES.*

The following case presents features of interest, for the injuries recorded are not of common occurrence, nor at all those which might have been expected to result from the accident. Their accurate diagnosis would have been impossible without the use of *x* rays.

An able seaman, H.M.S. *Roxburgh*, on April 16th fell from beneath the fore bridge on to the glacis deck—a distance of about 15 ft. This deck is of steel and, where the man fell, bare of any ringbolts or other fittings. Eyewitnesses say that he fell almost flat on the deck, and rather on his left side. In addition to severe shock, contusion of his chest and shoulders, skin wounds of scalp, etc., he sustained the following injuries, which have induced me to report his case.

Fracture of the Scaphoid Bone of the Left Wrist.

On examination two small circular wounds were found on the flexor surface—a little above the lower end of the radius; blood and clear fluid exuded from them and there was great effusion into the joint. As these wounds healed in a few days, they were no doubt almost superficial. At his first examination the medical officer of his ship did not detect crepitus in the wrist, nor did I, and the bones of the forearm and wrist appeared to be quite normal when examined by *x* rays, but this does not now surprise me, when the rare nature of the injury is taken into account. After a few days, the swelling around the joint having somewhat subsided, crepitus of a peculiar type was noticed, and this steadily increased in intensity in inverse ratio to the amount of local swelling. Whilst this crepitus did not suggest bone rubbing against bone, it was too harsh to have been caused by inflamed cartilages or sheaths of tendons. Skiagrams of the wrist of the patient and of a normal wrist were then taken. They show a transverse fracture of the scaphoid bone, and the fractured surface of the outer fragment appears to be in contact with the styloid process of radius, and the peculiar crepitus resulted therefrom. On ulnar flexion it entirely disappeared.

As regards treatment, the wrist was immobilized until the case was diagnosed, and since then a firm wrist bandage has been applied and the patient encouraged to use his wrist and fingers. I do not think that bony union is to be expected; suture of bone appears to be hardly feasible, and removal of either fragment would be injudicious. A loose false joint should be the result to be aimed at, and no doubt in time he will have perfect use of the joint.

Compound Comminuted Fracture of Distal Phalanx of the Left Great Toe.

Both "wings" of the expanded proximal end were detached. There was a wound on the inner side opposite to the joint, and one fragment protruded, whilst the other was seen by *x* rays lying loose on the other side of the joint. They were both removed through the enlarged inner opening, and every motion of the joint appears to be as before the injury.

It is very hard to understand the mechanism of either of these fractures, while as regards the accident which produced them, one lesson to be learnt is that

* Forwarded by the Director-General, Medical Department, Royal Navy. Skiagrams were enclosed which it was not thought necessary to reproduce.

extreme caution should be exercised by a medical witness when testifying as to the causation of any injury.

RICHARD MILLER,
Fleet Surgeon.

Royal Naval Hospital, Bermuda.

LACTIC ACID AND DIGESTIVE DISORDERS.

THE claims of lactic acid in the treatment of catarrhal conditions of the stomach and bowels due to fermentative changes in undigested food are no more urgent than those of other intestinal antiseptics—salol, β naphthol, salicylic compounds, and the like—nor must it be forgotten that these drugs are but auxiliary aids in our attacks on these diseases.

Our first aim in such a case as that described by Dr. Veitch[1] is to rid the bowel of putrefying débris; our next to starve and clear out the remaining noxious organisms and restore the tone of the mucous membrane. Milk in some form was apparently given to this infant throughout, and I venture to say that had fermentable food been withheld for a few days there would have been no need to solicit the help of lactic acid bacilli.

In every fresh case of severe gastric and intestinal trouble brought to me, I invariably stop milk and farinaceous food, and for two days give albumen water frequently and in small quantities, with 5 to 10 drops of castor oil every three or four hours. This, with breast-fed children, is usually sufficient. To those fed by hand I give chicken, veal, or mutton broth, until convinced by careful inspection of the motions that the bowel is free from curds, and, by decrease in the amount of mucus passed, that the catarrh is diminishing. Milk in a weak form, with perhaps Benger's or other prepared food, is then administered, and gradually increased in strength until the proportion proper to age, size, and digestive power is reached. In very severe cases the administration of sterilized whey (made under my own direction), with increasing additions of cream, milk sugar, and milk, anticipates the return to ordinary diet.

Given a child not too near death's door, this simple treatment is always successful, and in briefly setting it forth without claim to originality my excuse is the fear that in adopting new remedies we may lose sight of those which have been well proven.

I gave an extensive trial to the lactic acid treatment of epidemic diarrhoea in 1900, and again in 1902, but found it of less value than salol and β naphthol, and its claims were not worth consideration when compared with those of castor oil.

In spite of the teachings of the expert, there are many who do not realize the importance of the first dicta in therapeutics—"remove the cause," "give rest to the affected part."

T. BLANCHARD SELLORS.

Westcliff-on-Sea.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

LEDBURY COTTAGE HOSPITAL.

A CASE OF RUPTURED BLADDER.

(Reported by J. McK. HARRISON, M.B., Ch.B., R.U.I.)

T. M., aged 33, a servant of the Ledbury Hunt, was admitted on the evening of April 10th, 1907. When returning from point-to-point races his horse reared and fell back on him.

State on Admission.—I saw him soon after admission, and found him in a collapsed condition. He complained of great pain in abdomen; his skin was cold and clammy; pulse, 130; breathing rapid and shallow. The fifth rib on the left side was fractured. As his condition appeared to be critical he had some strychnine hypodermically. There were no external marks of bruising on abdomen, and the site of greatest pain was over the epigastric region. A catheter was passed, and 1 oz. of bloody urine came away. Six ounces of boracic lotion were then injected into the bladder through the catheter, and it did not return. A silver catheter was then passed, but only a few teaspoonfuls of bloody fluid came away.

Operation.—A diagnosis of ruptured bladder was therefore made, and immediate operation decided on. The hypodermic of strychnine was repeated. My partner, Mr. Wood, gave the anaesthetic (ether), and I had the assistance of Dr. G. B. McKean during the operation. A further injection of boracic lotion was made through the silver catheter and failed to return. The skin having been shaved and disinfected, the abdomen was opened suprapubically, when a large quantity of urinous fluid escaped. On passing a finger into the abdomen the end of the silver catheter was found free in the abdominal cavity, and on tracing it backwards the rent in the bladder was found and its extent explored. The rent was fully 3 in. long, and easily admitted four fingers. It was slightly oblique, and extended backwards to the right from the superior surface to the base. The rupture was stitched with a single row of interrupted catgut sutures, including only the peritoneal and muscular coats. The condition of the patient did not warrant a second row, and a further hypodermic of strychnine had to be given. A long needle-holder was required for deepest sutures. The abdomen was washed with boracic lotion and afterwards with saline solution, of which the peritoneal cavity was left full. Two long strips of iodoform gauze were passed from abdominal openings to base of bladder, and a large rubber drainage tube in each flank, and the abdominal wound partially closed; a soft rubber catheter was tied into bladder. The operation lasted a little over an hour.

Progress.—The patient had a restless night, and about 3 oz. of urine passed through catheter. There was a free discharge of fluid from abdominal wound with no urinous odour. Pulse 120 and respirations 28. He complained of little pain. Calomel gr. v was given in the evening, and the following morning 1 drachm of mag. sulph., followed shortly by a soap and water enema. The bowels were well moved. Temperature at 6 p.m., 99°, pulse 100. Bladder draining well through catheter. The temperature rose on the sixth day to 100·6°, which was the highest during illness. Both gauze plugs were shortened on the fourth and removed on the fifth day, and both tubes were shortened daily, and finally removed on the seventeenth day.

Result.—Temperature remained normal after May 3rd, and on the 8th the abdominal wound was firmly closed. The patient left the hospital on the 15th with an abdominal belt and in good health.

[1] BRITISH MEDICAL JOURNAL, August 10th, 1907.

MEDICAL AND SURGICAL APPLIANCES.

Vest Pocket Inhaler.

MESSRS. PARKE, DAVIS AND CO. have devised a very convenient little apparatus for the inhalation of volatile oils and similar substances. It is made of vulcanite, and is 3 in. long and less than 1 in. in diameter, so that it can easily be carried in the waistcoat pocket. It contains thin wood shavings, on which the inhalant is dropped. By screwing down both ends it can be tightly closed for carrying, and on partly releasing the screws and putting the mouthpiece between the lips air is drawn through the absorbent medium and becomes charged with the inhalant.

Sterilized Lubricant for Catheters.

We have received samples of the small collapsible tubes of sterilized lubricant supplied by Messrs. MAW, SON, AND SONS. Each tube holds about 50 grains, which is taken as a suitable quantity for a surgeon's use at a single examination or for a patient's use on a catheter for one day, assuming the instrument to be used three times a day. Examination showed the lubricant to consist of a very soft colourless petroleum jelly containing no antiseptic; the mouth of the tube has a deep transverse groove, which allows of a catheter being readily lubricated without being touched by the fingers.

VACCINATION AGAINST HYDROPHOBIA IN PARIS.—During the year 1906, 773 persons received preventive inoculations against hydrophobia at the Pasteur Institute in Paris (*Ann. de l'Inst. Pasteur*, June, 1907). Two of the patients succumbed to the disease, but one of these cases may be excluded for statistical purposes, since hydrophobia manifested itself in less than a fortnight after the conclusion of the treatment. The results, therefore, show the very low mortality of 0.13 per cent. In 173 cases, one of which succumbed, the presence of rabies in the animal which inflicted the bite was confirmed by the development of the disease in other animals which were bitten or were inoculated with a portion of the medulla. In 396 instances the existence of rabies is merely recorded as being "confirmed by veterinary examination," and in the remaining 203 cases rabies was only "suspected." All but 25 of the persons treated were of French nationality, and of the foreigners 22 came from Holland and 1 from England. The person who died in less than fifteen days after treatment had received a severe penetrating wound on the face; the other fatal case had been severely bitten on the nose on August 3rd, was treated at the Institute from August 5th to the 26th, and died from hydrophobia on October 12th.

REVIEWS.

PRACTICAL DIETETICS.

Dr. Wiley's manual on *Foods and their Adulteration*[1] is, he tells us, intended to give an account of the various food products in common use in their natural and manufactured conditions, with the usual adulterations which have been found therein, in order to afford the physician and sanitarian knowledge of the value of foods, their proper use and mode of inspection, and to provide the chemist with information to guide him in his work of detecting impurities. The volume deals only with solid foods, but a second is promised on beverages. The first part deals with animal foods, and the second with vegetable foods, divided under various headings, such as cereals, vegetables, fruits, vegetable oils and fats, nuts, fungi, sugar, honey, and infants' and invalids' foods. In an appendix are given the standard regulations and decisions respecting various articles of food of the United States Department of Agriculture, which, if not of equal value to sanitarians in this country, yet afford useful information, and may be consulted with advantage by those who are concerned in imperial or municipal legislation. Dr. Wiley is, as we might expect, a sound advocate of pure food and an enemy to adulteration and misdescription, but so much has been published lately to the disadvantage of the reputation of the American meat trade and of American officials concerned with it, that the reader may consider Dr. Wiley to be somewhat of an optimist, and a greater believer in the value of State Government inspection than the system deserves. He seems disposed to slur over some serious questions, such as the alleged prevalence of trichinosis among American pigs, which led the German Government to prohibit the importation of hams from the United States. On the other hand, it is difficult to follow him in his denunciation of preservatives, and his distinction between "natural" and "artificial" methods of preservation, for these, after all, seem merely the old and the new; that is to say, "natural" methods are the application of substances which have been in long use, such as salt, smoke, and vinegar, in salting, smoking, and pickling; while the "artificial" methods are attempts to apply the knowledge of recently acquired preservatives to the same ends. The plans hitherto adopted for employing these modern means may be objectionable, but the use of preservatives ought not to be sweepingly condemned as belonging to another category of procedures than that in which salt or vinegar or wood smoke are employed, but it is right that new methods should not be sanctioned by law until proved to be harmless, and the onus of proof should rest upon those who desire to use them. In speaking of dried and powdered meats, Dr. Wiley refers to somatose, which consists chiefly of albumoses, and points out that in health it cannot possibly present any advantage over fresh meat, while for theoretical and practical reasons it is less valuable, and we may add that albumose and peptones, when given in any quantity, have been shown to produce diarrhoea. He refers to the adulteration of meat extracts with extracts of yeast; there is a preparation manufactured from yeast to a considerable extent in this country which rarely reaches the public under its own name, but is said to be sold mainly to the makers of meat extracts! Dr. Wiley emphasizes the small nutritive value of meat extracts and the high cost of the nutriment they supply; some contain no creatin, and so must be wholly artificial; all contain large quantities of common salt, in some cases as much as 30 per cent., so that, as the author says—

> When common salt can be sold at the rate of a dollar per pound, the profit on the transaction is one which ought to make the business exceedingly attractive.

Some responsibility rests with the medical profession for favouring the employment of expensive and comparatively worthless preparations in the place of what could be, and ought to be, prepared at a tenth of their cost in the kitchen. Medical men should know the truth about them, though we admit that their widespread use is greatly aided by nurses who find them convenient. The lucrative manipulation of butter by rechurning it with milk does not seem to have been brought to the author's notice, or at least he does not mention it. The section on vegetables and fruits includes many that are not met with in our markets and others that are little used; it is not only in the United States that olive oil is largely adulterated with oil expressed from cotton seed, worth about a fifth of the price, but we were not aware that even occasionally the one was altogether replaced by the other. The chapter on invalids' food is short, and not complimentary; for, while admitting that many are unobjectionable in their composition, the price asked for them is held to be out of all proportion to the actual cost of the raw materials or their nutritive value. The book is well printed, and a word of praise may be given to the numerous illustrations, although they vary considerably in merit.

[1] *Foods and their Adulteration.* By Harvey W. Wiley, M.D., Ph.D. London: J. and A. Churchill. 1907. (Royal 8vo, pp. 637; 11 coloured plates and 86 illustrations. 21s.)

Dr. Langworthy, in his essay on the *Use of Fruit as Food*,[2] dwells upon the immense commercial importance of fruit in the United States, the total value in 1899 being, in round figures, 131,000,000 dols. Fruit seems to be used more largely by American families than by us in England; in California there are people who live on fruit alone, and seem to be able to maintain themselves in health and in fair working condition upon this diet. Although it may be advisable, as Professor Jaffe has pointed out, to wait until more data have been obtained before making definite statements regarding the digestibility of fruits and nuts, enough has been done to show that they are almost completely digested, and have a higher nutritive value than is popularly attributed to them. The essay contains a valuable table giving the chemical composition of various fruits in protein, fat, and carbohydrates, their price per pound, and their calorific value as compared with other foods in common use; from this it may be seen that, while they compare favourably with meat, they are much more expensive than cereals and potatoes.

Dr. Wait's *Studies on the Digestibility and Nutritive Value of Legumes*[3] tend to show that much depends upon the way in which they are cooked or prepared, but that when properly cooked and not eaten in excessive quantities the coefficient of digestibility is high. Cooking in hard water impairs their digestibility. On the other hand, Japanese methods of cooking give the best results; for example, *tofu*, a soy bean preparation, consisting chiefly of bean protein precipitated in combination with magnesium and calcium salts, has a coefficient of digestibility for protein of 96 per cent., fat 97 per cent., carbohydrates 88 per cent.; the result of this and other experiments is to indicate that the digestibility of the protein of special preparations of legumes is decidedly greater than when merely cooked in their natural condition. The author undertook a number of experiments to determine the digestibility of certain leguminous vegetables grown in the Southern States, known generally under the name of "clay peas," with the result that he found these peas, especially the variety called "lady peas," to possess a relatively high coefficient of digestibility. As they have a pleasing flavour and can be prepared for the table in many appetizing ways, they compare favourably with other legumes, and deserve to be more generally known and used, both for their high food value and for the additional variety in diet which may be secured by their help.

THE FORM AND POSITION OF THE STOMACH.

The essay of Dr. M. Simmonds on the form and position of the stomach under normal and abnormal conditions[4] is a most valuable contribution to our knowledge of the anatomical position of the organ, for he has reproduced forty-eight photographs of the position of the viscera in as many cases, contrasting the position of the normal stomach in a man in the prime of life with the variations met with in youth, in old age, in the other sex, in diseases and deformities of the stomach, such as hourglass contraction

[2] *Use of Fruit as Food.* By C. F. Langworthy, Ph.D. Washington: Government Printing Offices. 1907.

[3] *Studies on the Digestibility and Nutritive Value of Legumes.* By Charles E. Wait, Ph.D., F.C.S. Washington: Government Printing Offices. 1907.

[4] *Ueber Form und Lage des Magens unter Normalen und Abnormen Bedingungen.* Von Dr. M. Simmonds. Jena: Gustav Fischer. 1907. (Super roy. 8vo, pp. 54. M. 3.)

or congenital stenosis of the pylorus, in diseases of the liver, the vertebral column, or the bowel.

Dr. Simmonds, who is pathological prosector at the Hamburg General Hospital, has endeavoured by means of photography to supply clinicians with more trustworthy data than they had possessed on the position of the abdominal organs, and with this object in view has photographed hundreds of dead bodies. But the position in the opened dead body is admittedly not that occupied during life, as there is no longer the resistance of the anterior abdominal wall, the muscular action of the coats of the stomach and intestine, or the play of the diaphragm. The photographs were taken by laying the body on the floor and directing the camera vertically downwards over it; no comparison, therefore, is fairly to be made between such photographs and those obtained by Roentgen rays from subjects in a sitting position. The work of Doyen, Luschka, Meinert, and Rosenfeld has proved that the normal position of the stomach is vertical, with the smaller curvature running at first from right to left and then from left to right, but Rieder's results showed that there is often a bulging of the *pars pylorica* so that a part of the greater curvature lies deeper than the pylorus. According to Holzknecht the normal stomach is a narrow tube like a cow's horn with the pylorus at the lowest point when the patient is erect, but he admits that it is exceptional to meet with this form. The disadvantage of frozen or formalin sections is that as they are made only in a small number of subjects, it may happen that they present one or other of the anomalies frequently encountered. The disadvantage of the Roentgen-ray method is that it only shows the projection of the stomach outline in the front view, and where the great curvature and the lower stomach limit do not coincide it cannot show the actual shape of the organ.

The results of the numerous examinations made by Simmonds are so interesting and important that we may briefly allude to some of them. First, with regard to the shape of the stomach, he believes that there is not one normal shape, but that several different shapes occur in perfectly sound and healthy persons; and that, while the funnel-shaped stomach with the pylorus at the lower extremity may be the most suitable, the hook-shaped stomach is the more common. In the second place, he concludes that the position of the pylorus and small curvature varies within wide limits, although the former may be said usually to be opposite the first lumbar vertebra or a little to the right of it, yet it may be as high as the twelfth dorsal or as low as the second lumbar. The most important landmark is that the pylorus is covered normally by the right lobe of the normal liver; if it is uncovered it is displaced. Taking this position of the pylorus as his standard, he finds gastroptosis less frequent than has been often asserted. In males between 15 and 50 years of age he met with it in only 3 per cent., but in women between the same ages in 50 per cent.; in children he saw it scarcely ever, but in older people of both sexes it is more frequent decade by decade as life advances.

The position of the diaphragm is not fixed, and if it sinks the cardia sinks with it, but the diaphragm does not always sink in gastroptosis. Gastroptosis is usually combined with ectasy, which varies greatly in degree, but sometimes the stomach is not dilated, and may be abnormally narrow; ectasy does not cause ptosis, as men, who suffer more from ectasy than women, suffer less from ptosis, but on the other hand ptosis may cause or favour ectasy by kinking the duodenum; dilatation of the duodenum is not uncommon in marked gastroptosis from kinking, which takes place at the junction of the superior transverse and the vertical part.

Enteroptosis is, as a rule, neither the cause nor the result of displacement of the stomach, but follows from the same conditions; when it occurs alone it is due to tight-lacing and constipation; but if the bowel be adherent to the pelvis it may pull on the stomach and cause ptosis; or tumours of the mesentery may drag first upon the bowel and afterwards upon the stomach. Curious displacements of the stomach may occur from irregularities in the colon. For example, the colon sometimes gets behind the stomach and pushes it to the right, and may even force itself between the diaphragm and stomach so as to lie above the latter, or may cover it up so that the stomach is not visible from the front; or the caecum may be dislocated to the left and lie above the bladder.

True hourglass stomach is always due to the cicatrization of an ulcer, but there is a *pseudo* form, of which a good photograph is given, which is the consequence of irregular muscular action.

Congenital stenosis of the pylorus in infants is held to be the result of persistent spasm of the muscles of the pylorus and antrum, to which the muscular hypertrophy is secondary. The antrum is frequently reduced to a narrow canal with greatly thickened walls.

Dr. Simmonds has produced a book of value in no way proportional to its slender size and small cost. It should be studied by all who are interested in the diagnosis and treatment of diseases of the stomach.

PLASTIC SURGERY.

OPERATIONS for the restoration of lost parts, such as the lip and the nose, have been known to surgeons for hundreds or even thousands of years, but their results were formerly very uncertain owing to the frequent occurrence of suppuration. The better knowledge of the conditions necessary for primary union which has followed the introduction of antiseptic and aseptic methods has enabled such operations to be now undertaken with great confidence as to the immediate result. As a consequence the scope of plastic surgery has enormously increased during the last thirty years, so that now DRS. NÉLATON and OMBREDANNE, in their book, *Les Autoplasties*,[5] describing the plastic operations performed on the lips, cheeks, ears, trunk, and limbs, find nearly 200 large octavo pages none too many for the description and discussion of the subject. Rhinoplasty and the treatment of harelip and webbed fingers are not included. For each defect, all the operations of importance are carefully described, but the authors very properly state in each case which of them has given the best results in their practice, and should, in their opinion, be the operation of choice. The numerous diagrams are very clear, and admirably serve their purpose.

Cheiloplasty, or the restoration of the lips after their destruction by accidental injury and surgical operation, is a proceeding of great antiquity. It is not only desirable for cosmetic reasons, but also on account of the salivary incontinence and other evils which result from this defect, especially when it affects the lower lip, as is so often the case. It is now generally admitted that after the removal of a malignant growth involving the lip, immediate reconstruction should be attempted; although so late as 1889 Dupuytren, following more ancient authorities, was opposed to it. Of the three methods of autoplasty of the lower lip, the French plan of flap sliding offers the advantage of exposing the submaxillary lymph glands, and facilitates their removal. Although cheiloplasty occupies half the book, the remaining subjects are adequately dealt with. The authors' open method of dressing Thiersch's grafts is worthy of an extended trial; in the one case in which we have seen it used, the result was very good. This book, like too many of those which issue from the French press, has no index.

PHYSIOLOGICAL CHEMISTRY.

IN his sixth edition of *The Essentials of Chemical Physiology*,[6] Professor HALLIBURTON has again subjected the book to a thorough revision. He has found it necessary to rewrite a good many parts of the text, especially in relation to increased knowledge of the proteins and of the way they are utilized in the body. The sections relating to blood coagulation and to respiration have been much enlarged, to include the results of recent research. Professor Halliburton has great powers of lucid exposition, and this is nowhere better evidenced than in the new and admirable account he gives of a subject generally found difficult by the student—the tension of gases in fluids. Discussing Chittenden's assertion that most of us eat too much proteid by half, he says: "In diamond mining a large quantity of earth must be crushed to obtain the precious stones. It may be that among the many cleavage products of protein the majority may be compared to this

[5] *Les Autoplasties: Levres, joues, oreilles, tronc, membres.* Par Ch. Nélaton et L. Ombredanne. (Traité de Médecine Opératoire et de Thérapeutique Chirurgicale, Publié sous la direction de P. Berger et H. Hartmann.) Paris: G. Steinheil. 1907. (Imp. 8vo, pp. 200; 291 figures dans le texte. Fr. 10.)

[6] *The Essentials of Chemical Physiology.* By W. D. Halliburton, M.D., LL.D., F.R.S. Sixth edition. London: Longmans, Green, and Co. 1907. (Demy 8vo, pp. 270. 4s. 6d.)

waste earth, and we get rid of them as quickly as possible in the excretions, but some few may be unusually precious for protein synthesis in the body." This is the kind of teaching that fastens on to the student mind.

Professor Milroy and Dr. J. A. Milroy have published a second edition of their *Practical Physiological Chemistry*.[7] This is a very well-arranged book. The practical exercises are well chosen, and the details of the methods carefully thought out and clearly described. The authors recognize the extreme difficulty of giving in such a book no more and no less than can be carried out by a class of students. They have in this edition placed within brackets such methods as appear more suitable for an advanced class or for demonstration. Excellent tables are given in the appendix for the examination of unknown substances, together with some useful tables of solutions, weights and measures, etc, and plates of crystals and spectra.

We fancy that the medical student will fight shy of a volume of over 400 pages dealing with physiological chemistry, which after all is only one branch of one of the numerous subjects he has to become acquainted with. The bulkiness of the volume[8] is, however, mainly due to the large type selected. There are many smaller books which contain almost as much information. Indeed, it is difficult to see that the book supplies a want, considering how numerous and excellent are the books we already possess dealing with the same subject. The only claim to originality that Dr. Hawk makes is in the order in which the various subjects are taken. Every teacher has his own views on such minor matters. The treatment of the subject is excellent; the text is lucidly written, the illustrations as a rule are admirably selected, and the matter is fully up to date, although in the account given of blood-coagulation we find no mention of thrombo-kinase. We note that the author still prefers the term "proteid" to "protein," in spite of the recent attempt made to secure uniformity of nomenclature by the adoption of the latter name for albuminous substances. At the present day the chemistry of albumin and its allies is a subject that naturally excites attention, and we find it treated with special care. The book aims at being a practical as well as a theoretical guide; but the practical exercises are mixed up with the theoretical matter in a haphazard way which students will find rather confusing.

BILHARZIOSIS.

As stated in the preface, Mr. Madden's monograph[9] upon *Bilharziosis* gives a summary of the knowledge derived from recent work in Cairo, and he acknowledges his great indebtedness to his colleagues at the Cairo Medical School, on whose work and experience he has largely drawn. A sketch of the natural history of the *Schistosomum haematobium* is condensed from Professor Looss's well-known descriptions, mostly in German textbooks, and the author adopts the views of the latter in supposing that the miracidium probably enters the human host directly by the skin instead of by the mouth, inside a mollusc, as was once believed by the analogy of some other trematodes. Again, it is suggested, in spite of Dr. Sambon's belief to the contrary, that both the terminal-spined and the lateral-spined eggs of the worm belong to only one genus, the difference in shape being due to the fact that the eggs with the lateral spines are laid by immature worms, in unusual sites of the body, such as the liver, before they have learned the art of producing the normal, terminal-spined eggs. The clinical manifestations of the disease, which are mostly surgical in character, are partly reproduced from the writings of Mr. F. R. S. Milton, and partly from the author's own experience. The changes in morbid anatomy, including the well-known "sandy patches" due to a deposit of eggs, fibrosis, and papillomata, are chiefly taken from the work lately done by Professor Symmers and Dr. A. R. Ferguson. The papillomata, which are best seen in the rectum and descending colon, but which may also occur in the bladder, are directly continuous with the submucous tissue, in which, at the extreme base of the papilloma, a coupled pair of worms may sometimes be found.

> The core itself is infiltrated with leucocytes, in which lymphocytes predominate, and numbers of ova are scattered irregularly throughout it. It will be noticed that in certain places the ova come right up to the epithelial covering of the papilloma.

The ordinary changes in the kidney due to this disease—hydronephrosis and pyonephrosis—are, of course, mentioned; but Mr. Madden states, in addition, that a variety of interstitial nephritis of bilharzial origin has been described. We also note that, in the author's opinion, renal colic is comparatively uncommon in Egypt; but if this is the case, we are surprised that special remedies for this symptom are to-day in use among the Egyptians, and have apparently been regularly employed by them since the days of Rhazes. The twenty-four excellent photographs from the hospital and school collection greatly enhance the value of this work, which will be found extremely useful to students and others in Egypt, and to all those in any country who wish for an easy introduction to a most complex subject. One of the vexed questions which is not yet settled is how far cancer occurs as an occasional complication of bilharzial disease of the bladder. Clinically and histologically, the dense fibrous growths, sometimes of stony hardness, in and around the bladder, suggest nothing but cancer, yet doubt not unnaturally exists in the minds of those who find no secondary deposit in the neighbouring glands, nor in other organs of the body, at an autopsy. The treatment recommended is that of previous authors, except that an exploratory laparotomy is recommended in certain cases where the disease has infected the intestinal tract. Mr. Madden, by a simple enterotomy over the site of the mass in the bowel, has removed some papillomata with satisfactory results. The paragraphs and photographs relating to this disease in the female generative organs are a complete answer to those who still wonder whether bilharziosis ever affects girls and women.

[7] *Practical Physiological Chemistry.* By Dr. J. A. Milroy and Professor T. H. Milroy. Second edition. Edinburgh and London: W. Green and Sons. (Demy 8vo, pp. 211; 8 plates. 5s.)

[8] *Practical Physiological Chemistry.* By Philip B. Hawk, Demonstrator of Physiological Chemistry, University of Pennsylvania. London: J. and A. Churchill. 1907. (Roy. 8vo, pp. 430; 6 coloured plates, 126 figures in the text, of which 12 are coloured. 16s.)

[9] *Bilharziosis.* By Frank Cole Madden, M.D.Melb., F.R.C.S.Eng., Professor of Surgery, Egyptian Government School of Medicine, Senior Surgeon Kasr-el-Ainy Hospital, Cairo. London, etc.: Cassell and Co. 1907. (Pp. 78, illustrated. 3s. 6d. net.)

NOTES ON BOOKS.

Mr. Harold Burrows has written a short manual on abdominal surgery for the use of nurses.[1] He gives a clear and simple account of the symptoms met with in abdominal disease, and then proceeds to describe the commoner affections of the abdominal organs which are submitted to surgical treatment. The book aims at enabling a nurse to obtain an intelligent grasp of the course of events in her "abdominal cases" and an understanding of the treatment. One important chapter, that on preparation for abdominal section, might well be amplified: it is too sketchy to be of much value. With this exception the book is well suited to its purpose and is a useful addition to the list of nurses' manuals.

The second edition of Dr. Herman's *First Lines in Midwifery*[2] brings this useful little work quite up to date. Only slight alterations have been required in the text, but there is an additional chapter giving the rules of the Central Midwives Board, with explanatory notes. This will be found very useful by the midwives, for whom and for junior students the book is intended. The book is a model of what an elementary handbook on a complex subject should be; necessarily dogmatic, it is always clear and concise, and it does not attempt to give any half-knowledge of matters which the student will have to study exhaustively later on. It is, however, disappointing to find no mention of compression of the abdominal aorta, elevation of the limbs, etc., in the account of the treatment of *post-partum* haemorrhage, as in the hands of a student or midwife these measures are more likely to prove effectual, and are far less fraught with danger, than the

[1] *A Manual for Nurses on Abdominal Surgery.* By Harold Burrows M.B., F.R.C.S. London: The Scientific Press, Limited. 1907. (Crown 8vo, pp. 142. Figs. 14. 2s. 6d.)

[2] *First Lines in Midwifery.* By G. Ernest Herman, M.B., F.R.C.P. New edition. London: Cassell and Co, Limited. 1907. (Fcap. 8vo, pp. 234.)

introduction of the hand into the uterus and bimanual pressure.

Dr. HADLEY'S book on *Nursing*[3] is already so well and favourably known that the second edition had but to be announced to receive a hearty welcome. Dr. Hadley manages to tell just what is needful, while avoiding the dangers of "a little learning" with the assured touch of the true artist. The book is full of apparently small details, which will well repay the study not only of nurses, but of the many young men who find themselves suddenly faced with the conditions of general practice with nothing but a hospital training behind them. The appendix on sick-room cookery is hardly full enough to be of much practical use, and might be expanded with advantage in a future edition; the labelling of the bones in the frontispiece, which represents the human skeleton, requires revision. It may be pedantic to object to the mandible being labelled "maxilla," but the young probationer who consults this cut might well be puzzled as to the relationship of the pelvis to its component parts. With these exceptions the book is clearness itself, and makes interesting and attractive reading throughout.

Dr. LUTHER GULICK'S work on *The Efficient Life*[4] is addressed to the lay public, and though it can hardly be expected to inform the average medical man, the latter may confidently recommend it to his patients. There is, in fact, nothing in the book to which the most captious could take exception; but even 195 pages of the obvious is apt to produce a sense of surfeit in the reader. This feeling is certainly relieved by the vigorous Americanisms which are scattered about the pages. For instance, it is illuminating to learn that people take to drugs and stimulants because they "seem to give Nature a boost." On the whole the best thing in the book is the author's definition of "worry" as "nothing but a diluted, dribbling fear, long drawn out."

The volume of *Transactions of the American Climatological Association for the Year 1906*[5] contains a great number of short articles, many of them relating as much to medicine in general as to climatotherapy in particular. In regard to tuberculosis, Dr. C. L. MINOR writes on the apical outline as an aid to diagnosis, Dr. F. M. POTTENGER alludes to small round bodies in the sputum ("splitter"), which he regards as developmental forms of the tubercle bacillus; Dr. R. A. CLEEMAN deals with the State segregation of consumptives; Dr. J. H. ELLIOTT investigates the mortality from tuberculosis in the neighbourhood of sanatoriums; and Dr. W. C. GLASGOW refers to the patient's temperament as a factor in choosing the place for treatment. In regard to climatology and hydrology, papers on St. Moritz, the Irish Riviera, and the waters of Fiuggi show that the American are not the only health resorts considered by the Association.

The sixth edition of Mr. GADD'S *Synopsis of the British Pharmacopoeia*[6] contains a condensed statement of the poison laws of Great Britain and Ireland, in addition to the tabular summary of the *Pharmacopoeia* and its appendices given in previous editions. It is a useful little book for the pocket, especially for students.

The tenth annual edition, *Paton's List of Schools and Tutors*,[7] seems to be a good deal stouter than previous issues. It contains particulars, more or less in the form of advertisements, of many schools for boys and girls, a separate list of physical training colleges, and several classified indices. Altogether it is a convenient volume but not complete.

[3] *Nursing: General, Medical, and Surgical.* With Appendix on Sick-room Cookery and Dictionary of Medical Terms. By Wilfrid J. Hadley, M.D., F.R.C.P., etc. Second edition. London: J. and A. Churchill. 1907. (Cr. 8vo, pp. 384. 3s. 6d.)

[4] *The Efficient Life.* By Luther H. Gulick, M.D. London: Wm. Heinemann. 1907. (Post 8vo, pp. 211. 3s. 6d.)

[5] *Transactions of the American Climatological Association.* Volume xxii. Philadelphia: Printed for the Association. 1906. (Med. 8vo, pp. 323; with general index to the first twenty-one volumes, pp. 60.)

[6] *A Synopsis of the British Pharmacopoeia, 1898.* By H. Wippell Gadd, F.C.S. Sixth edition. London: Baillière, Tindall, and Cox. (Demy 32mo, pp. 227. 1s.)

[7] London: J. and J. Paton, Educational Advertising Agents. 1s. 6d.

MESSRS. R. AND J. BECK, LTD., 68, Cornhill, London, E.C., have issued an illustrated catalogue of microscopes and microscopical apparatus, including appliances for photomicrography. Appended to the catalogue are some hints on the use of microscopic apparatus more especially with regard to illumination.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

VII.—BLOOD PURIFIERS.

IT is, of course, easy to connect a great variety of diseases with the condition of the blood, though it must be admitted that as a rule the makers of any kind of quack medicine find no difficulty in showing that almost any disease that can be named takes its rise in the organs or system which their own particular nostrum is professed to benefit. The claims made for some of the following naturally do not fail in comprehensiveness; among other complaints, ringworm and itch appear to be regarded as disorders of the blood.

CLARKE'S WORLD-FAMED BLOOD MIXTURE.

Prepared only by the Lincoln and Midland Counties Drug Company, Lincoln, England. Price 2s. 9d. per bottle, containing 8¼ fluid ounces.

The following passages are quoted from a pamphlet enclosed with the bottle:

No matter what the symptoms may be, the real cause of a large proportion of all diseases is bad blood. Clarke's World-famed Blood Mixture is not recommended to cure every disease; on the contrary, there are many that it will not cure; but it is a guaranteed cure for all blood diseases. . . . It never fails to cure Scrofula, Scurvy, Scrofulous Sores, Glandular Swellings and Sores, Cancerous Ulcers, Bad Legs, Secondary Symptoms, Syphilis, Piles, Rheumatism, Gout, Dropsy, Black-heads or Pimples on the Face, Sore Eyes, Eruptions of the Skin and Blood, and Skin Diseases of every description.

On the label it is stated:

The Mixture is pleasant to the taste, and warranted free from anything injurious to the most delicate constitution of either sex, which all Pills and most Medicines sold for the above diseases contain.

Directions: The mixture must be taken about half-an-hour after meals, in the following doses:—

For Adult Males.—One table-spoonful four times a day.
,, *Adult Females.*—One tablespoonful three times a day.
,, *Children over 12 years of age.*—Two tea-spoonfuls three times a day.
,, *Under 12 years.*—From half to one tea-spoonful, according to age, mixed with a little water and sugar.

Analysis showed the mixture to contain 1.5 per cent. of potassium iodide, 1.2 per cent. of sugar (partly inverted), 1.6 per cent. by volume of alcohol, and traces of chloroform and ammonia, a brown colour being given by a small quantity of what was evidently burnt sugar. The composition of 8 oz. is thus:

Potassium iodide	52.5 gr.
Spirit of sal volatile	10 minims
Spirit of chloroform	67 ,,
Simple syrup	50 ,,
Burnt sugar	q.s.
Water to...	8 fluid oz.

Estimated cost of ingredients, 1⅓d.

OLD DR. JACOB TOWNSEND'S AMERICAN SARSAPARILLA.

Supplied by Dean, Steel, and Co., London, sole proprietors. Price 2s. 6d. per bottle, holding a little under 9 fluid ounces.

On the wrapper it is stated:

This Sarsaparilla is the great purifier of the blood and general juices of the system, it effects the most salutary changes in disease; cures scrofula, salt rheum, all scorbutic disorders, chronic sore eyes, rheumatism, piles, liver complaints, erysipelas, all blotches and eruptions of the skin; in short, it removes every impurity of the blood, and all humours and morbid collections of the body.

The directions given on the label are:

Take half a wine-glassful three or four times a day, an hour before or after meals. Persons very weak and debilitated may begin with a table-spoonful and increase the dose as the patient recovers health and strength. It is better to take it without the addition of water.

Analysis showed 100 fluid parts of the liquid to contain 18.2 parts of solids, of which 5.5 parts were sugar (partly inverted) and 2.5 ash, the remainder being of the nature of a vegetable extract. The mineral constituents were only those common to the ash of most drugs, and no metallic salts were found in medicinal doses; nothing of alkaloidal nature was present. The mixture contained 8.1 per cent. by volume of alcohol. A vegetable preparation of this kind, containing no definite active principle that

* Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL: 1904, vol. ii, p. 1585; 1906, vol ii, pp. 27, 1645; 1907, vol. 1, p. 213; vol. ii, pp. 24, 150, 209, 393.

can be identified, is of course not capable of being referred with certainty to the various drugs from which it may have been prepared; a study of its general properties, and a series of careful comparisons, pointed to the present mixture being of similar nature to the official liquor sarsae compositus concentratus, but without liquorice, and with the addition of sugar: the drugs in the official preparation (besides liquorice) are sarsaparilla, sassafras, guaiacum wood, and mezereon. A liquor prepared in this manner, with the alcohol reduced to the amount found in the mixture under examination and the aroma slightly increased by adding a little additional oil of sassafras, agreed fairly well both in general properties and the results of examination with the medicine under consideration.

Munyon's Blood Cure.

Supplied by Munyon's Homoeopathic Home Remedy Co., Regent House, Regent Street, London, W. Price 1s. per bottle. The label bears the words "Manufactured in U.S. of America." On the outer package it is stated:

It eradicates all Impurities from the Blood, and cures Scrofulitic Eruptions, Rash on the Scalp, Scald Head, Itching and Burning, and any form of Unhealthy, Blotchy, Pimply, or Scaly Skin;

and similar claims are put forward on the label and in a circular enclosed with the bottle.

The bottle contained about 200 pellets or pilules, of average weight of ½ grain. These consisted of sugar; careful search was made for small quantities of medicament, but no other ingredient could be detected. Quantitative determination of the sugar showed just 100 per cent.

Estimated cost of the pilules, one thirtieth of a penny.

Harvey's Blood Pills.

Sole Proprietors: Harvey's Blood Pill Company, Llanelly, S. Wales. Price 1s. 1½d. a bottle, containing twenty pills.

The label and the enclosed circular bear the picture of a man's head, with the words, "Harvey. Discoverer of the circulation of the blood"; with the evident implication that the Harvey who discovered the circulation of the blood also discovered or invented these blood pills.

The modest claims made in the circular include the following:

Harvey's Blood Pills for Skin Diseases. An Unfailing Remedy For Scurvy Sores! Harvey's Blood Pills For Scrofulous Sores. A Certain Remedy For Ulcerated Legs! Harvey's Blood Pills For Sluggish Liver. The Surest Remedy For Ringworm! Harvey's Blood Pills for Erysipelas. The Quickest Remedy For Itch! Harvey's Blood Pills for Boils. An Effective Remedy for Eruptions! Harvey's Blood Pills for Rheumatism. The Safest Remedy for Piles!

Harvey's Blood Pills are purely Vegetable, and contain the best properties of Sarsaparilla, Dandelion, Burdock, and Quinine. They are Warranted Free From Mercury.

Harvey's Blood Pills fortify the feeble, restore the invalid to health, and do good in all cases. All sufferers should immediately have recourse to these celebrated Pills.

Harvey's Blood Pills are "specially" suitable for Females. They remove all impurities.

Somewhat lengthy directions are given for diet, etc., as well as for taking the pills, in various cases; from which it appears that the usual dose is:

For a male adult, one Pill three times a day; a female adult, one Pill, twice a day; children one Pill at bed-time.

The pills are coated with French chalk, coloured red externally; when deprived of their coating, the average weight was 2.76 grains. Analysis showed them to contain quinine equivalent to 17.3 per cent. of the crystalline sulphate, 21.7 per cent. of potassium iodide, small proportions of powdered rhubarb and liquorice, and vegetable extract or extracts. A mass prepared from the following formula agreed closely with the pills in general properties and in results on analysis in various ways.

Quinine sulphate	17 grains
Potassium iodide	22 ,,
Powdered rhubarb	16 ,,
Powdered liquorice	8 ,,
Extract of sarsaparilla...	12 ,,
Extract of burdock	12 ,,
Extract of taraxacum	12 ,,

Divided into 36 pills.

Estimated cost of ingredients for twenty pills, three farthings.

Professor O. Phelps Brown's Blood Purifier.

Prepared by Professor O. Phelps Brown, 60, Chandos Street, Covent Garden, London. Price 2s. 9d. a bottle, containing six fluid ounces.

The following paragraph appears on the label:

This medicine is a concentrated preparation of Rock Rose and Stillingia, combined with other plants, well known for their specified action on the blood, which makes a compound medicine, that has never been equalled, and will be hard to surpass in the scientific future. It is impossible to give a full account of its virtues and cleansing capacities on this label, and the Prof. must, therefore, be content with briefly stating that it is an infallible remedy for All Diseases of the Blood, be they Constitutional, Hereditary, or of Recent Contraction. Nearly every ailment known to the medical faculty is in a greater or lesser degree dependent for its appearance and its virulence upon a *Disease of the Blood*. Ulcers, Tumours, Scrofula Bunches, Fistula, Piles, Painful Eruptions, indeed all afflictions manifested upon the outer surface of the body are the consequences of diseased blood. Many terrible maladies, which take the shape of Internal Inflammation, Sores, etc., and appear in the form of Fevers, Aches, Swellings, Glandular Disturbances, Mental Derangement, and General Debility, also proceed from the same cause. It is an admitted fact that, with Pure Blood and Regular Bowels, no individual ever can be permanently, seriously, or dangerously ill, if ill at all.

Dose.—For Adults, one table-spoonful three times a day before eating. For Children, the dose must be reduced to a tea-spoonful.

Analysis showed 100 fluid parts of the liquid to contain 19.7 parts of solids, of which 15.5 parts were sugar (partly inverted); a good deal of mucilage was present, but no alkaloid and no mineral substance except the small quantity of ash always present in vegetable extracts; alcohol was present to the extent of 23 per cent. by volume. Evidence was obtained of the *probable* presence of a preparation of stillingia, but this drug does not contain any active principle by which it can be certainly identified. Rock rose (*Cistus canadensis*) has been used to some slight extent medicinally, but no particular virtues appear to have been assigned to it; it is, however, described as bitter and astringent. The 3 or 4 per cent. of extractive matter present in the mixture under consideration showed neither bitterness, astringency, or any other property by which it could be identified, or which would indicate any medicinal quality.

Hood's Compound Extract of Sarsaparilla.

Supplied by C. I. Hood and Co., Limited, 34, Snow Hill, London, E.C. Made in America by C. I. Hood Co., Lowell, Mass., U.S.A. Price 1s. 1½d. per bottle, containing 2¼ fluid ounces.

The following paragraph appears on the covering of the bottle:

A trial bottle will convince the most skeptical of the real merit of Hood's Sarsaparilla, and will enable everybody to test its wonderful power in restoring and invigorating the whole system, in renovating and enriching the blood, in giving an appetite and a tone to the stomach, in eradicating and curing Scrofula, Scrofulous Humors, Scald Head, Syphilitic Affections, Cancerous Humors, Ringworms, Salt Rheum, Boils, Pimples and Humors on the Face, Catarrh, Headache, Dizziness, Faintness at the Stomach, Constipation, Pains in the Back, Female Weakness, General Debility, Costiveness, Biliousness, and all diseases arising from an impure state or low condition of the blood. Hood's Sarsaparilla is designed to act upon the blood, and through that upon all the organs and tissues of the body. It has a specific action also upon the *secretions* and *excretions*, and assists nature to expel from the system all humors, *impure particles and effete matter* through the lungs, the liver, the kidneys, and the skin. It effectually aids *weak, impaired, and debilitated organs*, invigorates the *nervous system*, tones and strengthens the *digestive organs*, and imparts new life and energy to all the functions of the body. The peculiar point of this medicine is that it strengthens and builds up the system while it eradicates disease.

In a pamphlet enclosed with the bottle it is stated:

It is carefully prepared from Sarsaparilla, Dandelion, Mandrake, Dock, Pipsissewa, Juniper Berries, and other valuable vegetable remedies, in such a peculiar manner as to retain the full curative value of each ingredient used.

The dose is given as,

Adult, ½ to 2 teaspoonfuls; usual dose 1 teaspoonful three times a day; children, less, according to age.

Analysis showed it to contain, in 100 parts by measure, potassium iodide 1.7 parts (7½ grains in 1 fluid oz.), and sugars (partly inverted) 9.1 parts; the total solids

amounted to 12.8 parts, thus leaving 2.0 parts of vegetable extract per 100 fluid parts. Liquor sarsae compositus concentratus of the *B.P.* contains about 21 parts of solids in 100 fluid parts, so that it may be concluded that the amounts of extracts of "Sarsaparilla, Dandelion, Mandrake, Dock, Pipsissewa, Juniper Berries, and other valuable vegetable remedies" in this mixture are not large. The liquid has a somewhat aromatic odour and taste, in which oil of juniper could not be detected, nor was it recognizable on distillation; none of the other ingredients mentioned is capable of being identified in such a mixture. No alkaloid was present, and careful search for other likely ingredients gave only negative results. The mixture contained 19.6 per cent. by volume of alcohol.

Hughes's Blood Pills.

Maker: Jacob Hughes, Penarth, Cardiff. Price 1s. 1½d. per box containing thirty pills.

These are described on the label as "For all Blood, Skin, and Nerve Diseases." In a circular enclosed with the box there is a dissertation on the functions and composition of the blood, from which the following extracts are taken:

The Blood being therefore the Life of the living Body, it stands to reason that if it is poisoned, you poison the whole system, and eventually destroy the life of the man. When the blood is chilled, or distempered through breathing impure air, unhealthy food, etc., it at once gets disturbed, and breeds disease in some form or other. This is the cause of Blast, Scurvy, Piles, Boils, King's Evil, Swollen Glands, Inflammation of the Eyes and Lids, Pains in the Sides, Back, and Kidneys, Cough, Bronchitis, Pleurisy, Rheumatism, Wounds in the Legs and Different Parts of the Body, all Scorbutic Affections, Cancer, Pimples on the Face, Neck, etc., and all Skin Eruptions, Chilliness, Headache, Indigestion, Fullness after Meals, Dyspepsia, Vomiting, Loss of Appetite, Consumption, Toothache, Neuralgia, Fits, St. Vitus's Dance, all Liver Complaints, Costiveness, Yellow Jaundice, Depression of Spirits, Stitches in the Sides, Fevers, Epidemics, Plagues, Gout, Nerve Diseases, Lumbago, Erysipelas, all kinds of Inflammation, and most Chest Diseases.

The noted Pills, "Hughes's Blood Pills," act directly upon the Blood and Juices of all parts of the system, which they Strengthen and Purify. By so doing the Liver, Kidneys, Heart, Lungs, Stomach, Bowels, Brain and Nerves are renewed and toned to such a degree that their functions are perfectly performed, securing to the man healthy days.

Very lengthy directions are giving for taking the pills for a variety of complaints, from which it appears that the usual dose is one or two pills at night, or one three times a day.

The pills had a thin loose coating of French chalk; after removing this the average weight was 2 grains. Analysis showed the presence of no inorganic salts, except the usual small quantities of phosphate, sulphate, etc., found in the ash of most drugs. The pill contained a trace of oil of cloves and consisted of powdered drugs to the extent of about half its weight; ginger and cinchona were identified in this portion; a trace of alkaloid was extracted, showing the properties of the alkaloids of cinchona. A portion of the tissue, which appeared to be derived chiefly from a seed, could not be recognized, and a lengthy series of comparisons failed to identify it with any known drug. The remainder of the pill was separated into two substances, which appeared to be aloes and jalap resin, but from such a mixture as this pill presents, the identity of these substances cannot be established with complete certainty. The proportions of the ingredients, also, can only be ascertained approximately; the following formula was indicated:

Aloes	0.7 grain
Jalap resin	0.2 ,,
Powdered cinchona bark	0.3 ,,
Powdered ginger	0 2 ,,
Oil of cloves	Trace ,,

In one pill.

Members of the International Congress for Hygiene and Demography have been invited to visit the hygienic institutions of Hamburg. The city will publish a special volume to serve as a guide to the institutions and as a memorial of the visit. The party will be received officially at the Hamburg Town Hall, and a local committee, which is making the arrangements, will procure lodgings for visitors on application to the Tourist Office of the Hamburg-Amerika Linie, 8, Unter den Linden, Berlin, W. 64.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p. 352.*)

Sections of Educational Science and Anthropology.

Anthropometry in Schools.

In a combined meeting of these two Sections Dr. Gray read a paper in which he said that sound national physique was more important than sound national finance, and to obtain this some system of periodical stocktaking must be employed. In carrying out such a system of measurement it was of primary importance that one uniform method should be adopted. All measurements in school should be made in accordance with the scheme of the Anthropometric Committee of the British Association, and the data obtained should be entered on the card schedules recommended by the committee. These data would supply material for ascertaining with the greatest possible accuracy the nature of the human machine and how it was controlled by changing the environment. The effect of any change of environment on any class of society could be predicted with some certainty by a complete anthropometrical survey. In this connexion it was important to observe that whatever was done to the poor should be also done to the rich. The authorities of Eton College had just resolved to establish a complete system of anthropometry, and it was to be hoped that their example would stir up the Government to establish a complete system of anthropometrical observation in all schools.

Dr. F. C. Shrubsall described the aims and functions of anthropometry in relation to the school. He illustrated his paper by a number of magic lantern charts, showing that the stature varied in different districts of a large town, such as Paris, and was greater in the better districts, and that the range of variation in different countries differed considerably, it being very large in Scotland, somewhat less in England, and very small in Sardinia, where the average stature of the people was much lower. Comparing the stature and height of boys in schools of different classes, it was found that at the age of 12 the children in the better schools were as large as children of 13 in the poorer schools; but there was less deterioration in the case of girls. It was necessary not only to measure height and breadth, but to take into account the difference of race. Apart from the racial question, environmental factors were of great importance. The condition of the teeth and the condition of nutrition ran in nearly parallel lines. There was also some definite relation between the degree of nutrition and the degree of intelligence.

Sir Victor Horsley, in opening the discussion, said that the British Medical Association had already approached the British Association on the question of anthropometry, and had taken an active interest in physical deterioration. The Physical Deterioration Committee stated plainly in their report that there were no scientific data as to whether the people of this nation were deteriorating or not. They, however, proved that there were various causes of deterioration, that there were means of improvement, and that this matter could be dealt with by the Government. The British Association had been working to get a system of anthropometry introduced into schools, quite apart from the question of physical deterioration, and they had more means than school teachers of carrying it through. Inasmuch as the Board of Education had accepted compulsory medical inspection in schools, it seemed to the British Medical Association that anthropometry might be introduced at the same time. Under these circumstances, they approached Mr. McKenna, who had promised that there should be a medical bureau in the Education Department. Sir Victor Horsley proposed a resolution urging upon the Government the pressing necessity of undertaking, in connexion with the medical inspection of school children, a system of periodic measurement, which would provide definite information on their physical condition and development.

Mr. J. Ramsay Macdonald, M.P., announced that the second reading of the Bill requiring a medical examination of children was passed at 1.30 that morning (August 1st). He hoped that the work of anthropometry would be undertaken by the Board of Education, and not by the Local Government Board. If medical inspection were to be of any good, it must be made from

the point of view of education. He, personally, was chiefly interested in the subject from the point of view of physical deterioration. The case for the existence of physical deterioration was not made out; but a case had been made out that certain sections of the community were dangerously subject to certain influences which would ultimately result in physical deterioration. There was no doubt that the only safe and sound way to approach this question was through the schools; there only were precisely the same circumstances found prevailing throughout.

A paper by Mr. Meyrick (Marlborough College) on the practical difficulties of obtaining accurate measurements of growth in schoolboys, was read by Professor Sadler. Statistics taken at Marlborough showed a satisfactory improvement in the physique in the boys of the present time as compared with those of twenty years ago. Professor Sadler thought it was essential to include every type of school in the kingdom. The danger of the public school system was that the masters were bound to take the students in the mass, and he thought that taking these measurements would lead to a greater individualization. Further, uniformity of measurement was essential, and the central authority must give supervision, guidance, and financial aid. In his opinion, the Board of Education should have the chief control, and there should be co-operation with other Departments of State, the Local Government Board and the Home Office.

Mr. Cecil Hawkins (Haileybury) said that in his opinion it was not so important whether boys of the present time differed more or less from those of 40 years ago as it was that there should be a real improvement in the boys of the future. What the schoolmaster wanted was something to show him whether any innovation he might make was having good results, and to sound a clear warning if anything were going wrong.

Miss St. John Wileman referred to the enormous increase of defectively-developed children, both mentally and physically, in Glasgow and London, and she thought that a system of measurement in the cities and rural districts would shorten the great wastage of child life now so prevalent.

Baron Kikuchi (President of Tokio University) gave an account of experiments in anthropometry in Japan, and of the benefit that had been derived from introducing gymnastics and athletic sports. He said that absolute accuracy of measurements all over the country was found to be impossible, but that general statistics had given the Government a very good idea of the health of about a million children throughout Japan.

Sir Philip Magnus, M.P., in closing the debate, regretted that more had not been said on the very important subject of how the measurements could best be taken.

Section of Zoology.

The Physical Basis of Inheritance.

Mr. Sydney J. Hickson read a paper in which he said the theory that the chromosomes of the ovum and spermatozoon constituted the physical basis of hereditary characters appeared to be accepted by many biologists, and there was a danger that it would become incorporated among the dogmas of science unless opportunities were taken for ample discussion of the known facts of cytology that told both against and in favour of the theory. The principal piece of evidence quoted in favour of the hypothesis was the experiment of Boveri (1889), which demonstrated that an enucleate ovum of one species fertilized by a spermatozoon of another species produced a larva with purely paternal characters. As confirmatory evidence of the theory there had been quoted (1) the constancy in the number of the chromosomes in the somatic cells, (2) the reduction to one-half of the normal number of chromosomes in the sexual cells, (3) the presence of similar heterogeneous chromosomes in the sexual cells of certain arthropods and their mutual relationships. If the theory were true, it appeared to be necessary to believe in the individuality of the chromosomes—that is to say, that the chromosomes seen at the poles of the spindle at the close of mitosis were individually the same chromosomes as those seen on the equator of the spindle at the next mitosis. If the theory were true, it followed that the cytoplasm of the ovum and spermatozoon played no part in the transmission of hereditary characters. The principal difficulties at present in the way of accepting the theory were briefly as follows: Experiments in merogony had shown that an enucleate egg fertilized by a spermatozoon of another species of animal did not always give rise to a larva with purely paternal characters. The evidence that in some animals the individuality of the chromosomes was not maintained, particularly in certain rhizopoda and infusoria among protozoa and certain coelentera, was convincing. In the tissues of most animals and plants there was no direct evidence that the individuality of the chromosomes is maintained between successive mitoses. If it were true that the cytoplasm of conjugating cells was not concerned with the transmission of hereditary characters, it was difficult to account for (*a*) the long duration of the period of conjugation in infusoria (*Heterokaryota*); and (*b*) the cases of fertilized enucleate eggs that produce larvae with maternal characters. The evidence derived from the development of parthenogetic eggs was contradictory, but did not, on the whole, support the theory that the chromosomes were the only physical bases of hereditary characters.

The Thickness of the Skull in Mammals.

Professor Richard J. Anderson, M.D., read a paper on this subject, of which the following is an abstract: Light shines through the orbital roofs in the young chimpanzee. The coronal and sagittal regions are opaque. The occipital fossae and roof and sides of the skull are translucent in the ox. The kangaroo and camel have each translucent roof and sides of skull (except in region of horns), so has the seal. The parietal in part is translucent in both manattee and dugong. The upper surface of the skull in dogs is not so translucent as the sides. The dolphin's skull is opaque above and translucent behind, and at the central part of sides. The proliferation of the bone cells along muscle attached appears to coexist with the diminution of the bone under brain and muscle pressure. The bone cells, like leucocytes, desire to avoid the centres of turbulent activity. The skull of the porcupine is translucent over the frontal and parietal; the capybara has a skull that is translucent on each side of the middle line in front of the roof, and also at the posterior part of the roof, where the translucency is strictly limited to the upper surface. It is sometimes stated that the portions of the skull covered by muscle (or "protected") are thin. The suggestion is that the skull is strengthened where most exposed. It seems better to refer the thinning to the pressure of the muscle mass, brain, or organ. The ridges are due to the accumulation of bone-forming tissue at the points of origin and insertion of the muscles in question. The skull does not appear to lose, but to gain, in strength by the groining (J. Hunter and Holden). The osteoblasts, like leucocytes, seem to avoid the places where thrills or shocks are most common. The former have greatest freedom outside the active centres, as the latter in the least disturbed nooks contribute to the formation of fibrin.

Section of Botany.

Professor J. B. Farmer, F.R.S., President of the Section, in his address reviewed the present state of botanical science, and touched, from the botanical side, upon certain problems with which medical science has to deal. After showing that a single sexual cell which had undergone reduction in the number of its chromosomes retained, in so far as its architectural configuration was concerned, the capacity of giving rise to a plant possessed of the full complement of characters belonging to the species, Professor Farmer went on to say that this, after all, was only what the facts of heredity might have led them to anticipate. For, whilst they were ignorant of the fundamental *significance* of the sexual fusion of the gametes, one of its most obvious *results* consisted in the duplication of the primordia of the specific characters in the cells of the individual thus produced. This statement was not only in accord with results of experiments in breeding, but it was also in harmony with the essential features of the heterotype mitosis; and no other satisfactory interpretation of the latter series of phenomena had yet been found. Furthermore, the facts of Mendelian dominance clearly showed that each parent, through the gametes to which it gave rise, contributed an independent organization re-

sponsible for at least some of its own distinctive characters, as well as those which distinguished the species. Consequently, when two gametes fused, the embryo would be provided with a duplicate stock of agents or primordia which determined the appearance of its own specific and individual characters. These would not always be similar in the two parents, and when this was the case it often happened that the offspring resembled one parent only in respect of a particular feature. Nevertheless the results of further breeding showed that the corresponding, but apparently lost, character only was latent, for it reappeared in a proportion—and often a fixed proportion—of the individuals of the succeeding generations. In such an example, where both agents or primordia were present, one of them lay dormant, whilst the dominant one alone influenced the course of metabolic processes, and thus brought about the appearance of the character itself. The dormant primordium could be transmitted as such through many generations, betraying its existence in each by the occurrence of individuals in which it found its perfect expression. This happened when the opposite dominant agent or primordium had been removed from some of the gametes by the sorting-out process during the heterotype mitosis to which allusion had been made. The particulate character of inheritance seemed, as many writers had pointed out, to demand a structural organization for its basis; and the units or primordia of which the latter was composed must be relatively permanent, inasmuch as heredity itself was so stable. The agents or primordia themselves probably acted by definitely influencing the course of chemical reactions that proceeded within the living protoplasm, somewhat after the fashion of the ferments. But whether this influence on the course of metabolism was to be attributed more directly to the chemical or the physical aspect of the organization must, of course, remain an open question, though Professor Farmer inclined to the latter alternative. The processes of the higher metabolism offered suggestive analogies with those reactions for which the ferments were responsible. In contemplating them, one could hardly fail to be struck by the orderly way in which ferment succeeded ferment on an appropriate medium. Each one produced its own special change, which it was unable to carry further itself, but it thereby provided a substratum suitable for its successor. Starting, for example, with a complex substance like cane sugar, they saw it acted on by a series of ferments, each the result of protoplasmic differentiation, and each one carrying the process of disintegration a little further, but strictly limited in its power to act, and only able to take the change on to a definite stage. Every one who had experimented with plants with the view of inducing the formation of some structure foreign to the species or individual by artificial means must have become impressed by the great difficulty of getting into touch, so to speak, with the higher metabolism at all. It was often easy enough to divert the life-history into either the vegetative or the reproductive channel, as every gardener was more or less consciously aware, and as Klebs had conclusively shown in his carefully-conducted experiments. But even here it was sometimes difficult to exactly hit off the conditions requisite to ensure the production of one or other of the various phases of the life-history. He took it they would agree that the properties of structure and form were to be interpreted as the necessary result of the action of particular substances on the protoplasm, and that these caused it to assume those definite attributes which they termed specific on account of their constancy through a larger or smaller range of individuals. But this constancy of form must then be the result of a corresponding definiteness in the series of changes undergone by the raw materials supplied as food in their upward transformations; each stage in the process limited the possible range of those that followed, as in the case of the ferments to which he had alluded; and thus it became increasingly difficult to modify the final result. In this way they might see, perhaps, an explanation of the circumstance that in amphibious plants the particular structure, whether adapted for land or water, that would arise in conformity with the environment was irrevocably determined long before the organs themselves were sufficiently developed to be exposed to the direct influence of the conditions to which they were supposed to be specially adapted. Now, it was a matter of common knowledge that the formative processes could be, and sometimes were, disturbed with the most surprising results. He might again refer to the fungal or insect galls as examples familiar to every one. It appeared to him that these exceptional developments were of extraordinary importance in relation to any endeavour to probe the mysteries of organization. The very difficulty experienced in imitating the effect of the insect's secretion strongly emphasized the specialized nature of the particular substance which was able to modify the "normal" reactions of the plant. The latter were dependent on the way in which the organic apparatus determined the fashion of the molecular presentations, so that the course of the reactions themselves became increasingly limited in their range. As regarded the manner in which the secretion of the insect operated, it seemed clear that it could produce no permanent change in the organizing apparatus of the protoplasm, since the growth was at once arrested on the removal or death of the insect. But whether the influence was one that more directly affected the physical state of the apparatus for the time being, or whether it acted more directly by introducing new substances into the final chemical reactions, were questions which were plainly worth investigation, but at present certainly did not admit of an answer. Another example of interference with the developmental processes was afforded by the well-known "lithium larva," which was discovered by Herbst to arise when the eggs of some species of sea-urchins were allowed to segment in sea-water that had been altered by the addition of lithium salts. The monstrosity produced under these conditions was just as constant and specific in character as were the different galls which could be induced to develop on an oak leaf by the corresponding species of insect. Extending these considerations a little further, one saw that what they called disease also fell into the same category. For disease represented the necessary outcome of a disturbance, however introduced, into the course of metabolism which diverted it from the "normal" channels. Pathology had long recognized that the explanation and the consequent control of disease lay, ultimately, in the correct appreciation of the cellular reactions as the result of their experimental study. They could not pride themselves on the advances that had been made in the study of plant pathology as yet. Their remedies were commonly of the crudest kind, and they had only recently begun to take serious count of the facts of organization in the scientific attempt to breed races of plants immune from the attack of certain diseases. The results that had already been obtained, both abroad and by Biffen and others in this country, were full of hope at the present time. The study of the causes of immunity along scientific lines ought assuredly to form a fruitful field of investigation in the near future. From what they already knew it seemed clear that the proximate causes of immunity might be diverse in character, and might consist in very different reactions in different cases It might be that the response became expressed in a modification of the carbohydrate metabolism, leading to the formation in some trees of an excluding layer of periderm; or it might lie in the direction of those substances, as yet so little understood, the antitoxins; or, again, it might be due to still other and even less apparent causes. But whatever the true nature of the response, it would have to be investigated for individual cases, and its secrets would only be unlocked when the chemical and physical processes involved in its operation were understood. Progress was only to be made by trying to penetrate further than they could at present see, and he believed they had gained enough insight into the chemistry and physics of the living processes to warrant them in hoping that they should penetrate a good deal deeper still. But if they were to ever unravel the tangle, it could only be by applying such methods as had been successful in dealing with material things elsewhere. For the problems that rose up before them were seen, as as they became able to get at close quarters with them, to resolve themselves more and more into questions of chemistry and physics. He believed that it was only by the help of those elder branches of science that the accurate formulation, to say nothing of the final solution, of the problems would be achieved. A recent writer had suggested that life was not the cause of the reactions underlying the phenomena of life. Nevertheless the reactions that went on in the living body were obviously

guided as to the particular directions they took by the apparatus or mechanism of the individual organism. When the conditions for the manifestation of life, and all that it implied, were satisfied, what would be produced depended partly on the structure of the apparatus itself (that is, on the hereditary organization), partly on the nature of the substances fed into the apparatus, and, finally, on the physical conditions under which it was working. It was probably along the last two lines that investigation would continue to be pursued with more immediate profit; but the goal would not be finally reached till they had solved the problem as to the nature of organization itself.

Section of Physiology.

Nervous Impulse.

Professor J. S. Macdonald said the nervous impulse travelled at a rate of 30 metes per second, or about the rate of an express train. There were two stationary conditions, the condition of injury and the condition found at the cathode through which a polarizing current was led out of the nerve. And in both these conditions the same leading features could be identified. The colloid materials of the fibre were precipitated, and a new material made its appearance, which, in greater part at least, could be identified by appropriate tests, as potassium chloride. It was therefore suggested that the nervous impulse was a physical process in which a change in the size of colloid particles led to the liberation and subsequent free movement of salt solutions condensed upon their surface. This free movement of new salt solutions was capable of effecting all the phenomena characteristic of the nervous impulse.

Spinal Reflexes.

Professor C. S. Sherrington read a paper on spinal reflexes. The records of spinal reflexes prepared and shown by him illustrated the grading of intensity of the reflex movements in accordance with grading of intensity of the electrical stimulus used. This was demonstrated to be the case when the reflex contraction of a single muscle among those responding was taken for examination as well as when the movement of the whole limb was used for recording. It was also the case when the stimulus used was a single break shock applied either to the skin or to an exposed afferent nerve. Examples of the staircase effect were also shown from the action of reflex centres. It was reported, too, that the change produced by strychnine in the inhibition part of the flexion reflex could be traced to occur through the early supervention of what was usually an after-rebound of excitation. The change from inhibition to excitation produced by strychnine was easily temporarily reconverted to inhibition by even a small dose of chloroform.

TREASURY GRANTS TO UNIVERSITY COLLEGES.

A permanent Advisory Committee was appoined by the Treasury in January, 1906, to advise as to the distribution of the Grants in Aid of Colleges furnishing education of a university standard. The Committee consisted of the Rev. H. G. Woods, Master of the Temple (Chairman), the Right Hon. Sir Francis Mowatt (formerly Permanent Secretary of the Treasury), Sir W. J. Collins, M.P., Mr. F. G. Ogilvie (Principal Assistant Secretary to the Board of Education), Dr. Henry Jackson (Professor of Greek at Cambridge), and Professor W. S. McCormick (Secretary to the Carnegie Trust for the Universities of Scotland).

The first report of the Committee has just been issued as a Parliamentary paper.[1] The Committee obtained the services of Sir Thomas Raleigh, K.C.S.I., and Dr. Alex Hill to act as inspectors. These gentlemen visited the twelve colleges already in receipt of grants, and four others from which applications for grants had been received. The result of their inspections is contained in an appendix to the Committee's report, and forms a most valuable survey of the arrangements for university education, outside Oxford and Cambridge, existing at the present day in England. Each college is dealt with separately, and the several sections are so full of detail that they do not readily lend themselves to summary. We must content ourselves by picking out a few points here and there which more particularly affect the interests of medical education.

[1] 267. Eyre and Spottiswoode, East Harding Street, E.C. 1s. 2d.

In a general introduction the inspectors state that, though an ideal organization of higher teaching has not yet been effected, notable advances towards unification and co-operation mark the period of five years (1902-6) which they were instructed to review. In the case of every college previously inspected there has been progress, in no department of any college has there been retrogression, and reviewing the general position they state that there has been a remarkable advance all along the line. In part this progress cannot be shown by statistics, but the inspectors give the following summary of the progress which can be measured in this way.

> The 13 colleges which participate in the Treasury grant have during the past five years received benefactions from private donors to the amount of upwards of £1,200 000; the annual grants made to them by municipal authorities, county councils, and other public bodies have been very considerably increased, the amount contributed directly out of the rates having risen by upwards of £30,000 a year; they have spent on new buildings £719 000. The annual expenditure on their teaching staffs, due in part to the creation of new posts and in part to the better remuneration assigned to those already in existence, has increased by no less a sum than £75,000

The inspectors consider that a comparison of the total number of students attending the colleges during the five years would not, without many explanations, give a fair impression of the growth of the colleges, and believe that a fairer test of the increase of work of a university character is afforded by the number of graduates; they find that in the last quinquennium 2 959 students obtained a degree, as compared with 1,864 in 1896–1901. This test is not available in the case of medical students, as so large a proportion do not take a degree. We have therefore taken out the annual average number of medical students in the three quinquennia given by the inspectors and no doubt supplied to them by the college authorities

Annual Average Number of Medical Students in Three Quinquennia.

	1891-6.	1896-1901.	1901-6.
Victoria University, Manchester	345	356	307
University of Liverpool	146	173	200
University of Leeds	202	181	162
University of Sheffield	—	44	51
University of Birmingham	185	192	187
University College, London...	353	284	263
King's College, London*	336	301	331
Armstrong College, Newcastle	—	65	56
University College, Bristol	95	93	81

* Including 48 men from Westminster and St. George's Hospitals who in 1905-6 were obtaining their training in science at King's College.

In a paragraph dealing generally with the work of university colleges the inspectors praise the zeal and devotion which animate the members of their staffs, which appear all the more admirable when the class of students received is taken into consideration, for with encouraging and even brilliant exceptions, the large majority never get beyond the mere elementary stages. The Commissioners, in discussing the question of standard in the colleges, say:

> A university course should presuppose the completion of a good secondary education. This fact is recognized in practice by those universities which require a student desiring to take a degree to pass a matriculation examination intended to guarantee the adequacy of the secondary education which he has received.
>
> It appears to us that of possible tests of the standard of teaching at any college the quality of the previous education of the students is among the most trustworthy. It is impossible for the most efficient teaching staff, with all the advantages of a lavish equipment, to give education of a university standard to students with a defective preliminary training.

In introducing their recommendations as to the amount of the grants to be made to the several colleges, the Commissioners observe that the Treasury minute of 1897 fixed a maximum grant of £3,000, but when the total grant was increased this rule was abandoned. They now recommend that a new maximum should be fixed, and

suggest £10,000 as a suitable sum. The adoption of this recommendation has involved the reduction of the grant to the Victoria University of Manchester from £12,000 to £10,000, a reduction which, as our Manchester correspondent has already stated, has caused a good deal of dissatisfaction in that city. The Commissioners are careful to say that the reduction must not be taken to imply that they "regard the pre eminence of the Victoria University among the colleges as less marked than it has hitherto been." This is high praise, but Manchester would no doubt have preferred solid pudding.

With reference to Sheffield, the Commissioners say:

> So far as the provision of every facility for carrying on university work is concerned, the growth of the University of Sheffield has been very marked. Local effort was stimulated on the occasion of the creation of the university in 1905 with most substantial and remarkable results. While, however, the staff and equipment have been liberally provided, there has not been, so far, a corresponding increase in the entries of new students.

The Commissioners recommend that for the period now in view the grant should be raised to £5,000, an increase of £400. In reporting on the special departments of the University of Sheffield the inspectors state that the physiological laboratory is exceptionally well equipped, that the pathological department is well housed and well equipped, and possesses a laboratory admirably adapted for research.

The following is a list of the grants to university colleges concerned in medical education:

College.	Grant, 1906 7.	Proposed Grant.
	£	£
Victoria University of Manchester	12 000	10,000
University of Liverpool	10,000	10,000
University College, London ...	10,000	10,000
University of Birmingham ...	9 000	9,000
University of Leeds	8 000	8,000
King's College, London	7,800	7,800
Armstrong College, University of Durham	6,000	6 000
University of Sheffield	4,600	5,000
University College, Bristol ...	4,000	4,000

THE MINERAL SPRINGS OF BULGARIA.

BULGARIA is rich in mineral and thermal springs. Forty-three are found on the southern side of the Balkans, and three only on the northern side; they are nearly all thermal alkaline or sulphated. The waters with the highest temperature are the springs of Bania near Doubnitza, in the department of Kustendil, 81° C., and the lowest is 48° C. at Sofia. The mineral springs on the north of the Balkans are with one exception, Vrshetz, near Berkovitza, cold. Many of the springs are used, as during Roman and Turkish times, for their valuable therapeutic qualities—cures of rheumatism, digestive troubles, and nervous disorders being attributed to them. They have, however, remained in their original primitive state, with one or two exceptions, notably Sliven. The bath house generally consists of a hut containing a fair-sized piscine like a swimming bath for women, a public dressing room being attached, and a similar department for men. These are generally crowded; soldiers are obliged to bathe twice a week, and they are allowed to use the men's baths, where all classes bathe, from grandees to the lowest grade of society. The springs are usually situated in the midst of most wild, delightful, mountain scenery. In the department of Sofia there are twenty-three springs, the hottest of these being Dolna Bania (61° C.). In the town of Sofia itself there are good slightly alkaline waters, with a temperature of 48° C. Happily, new buildings are in course of construction to replace the primitive bath now used by all the townspeople. The Bulgarians are waking up to the fact that a fortune lies in these natural waters. Some of the springs are managed by the State other are handed over temporarily or permanently to the communes by whom they are managed, whilst others are left in their virgin state. A charming country road leads to the thermal springs of Banki, situated right in the heart of the mountains about eight or ten miles from Sofia. As Banki is within easy carriage drive of Sofia, it has been pitched upon as a likely place to attact visitors who wish to spend some of the summer months in the country among the mountains, or others who might prefer to drive out from Sofia every day after their business. Forty thousand pounds is being expended on the new baths, and £12,000 on a road to Sofia. Plantations of pine trees have been made on the hill sides, and sites for country houses are being bought and planted with trees along the road by people who realize that when Banki becomes a fashionable watering-place the value of land in the neighbourhood will increase. There are already thirty private villas and thirty villas for letting there; there are also good lodgings, and one hotel with forty beds. The baths will be arranged on the very latest plan, and the swimming bath will have an area of 1,300 square metres, with a constant supply of running water from the spring. It is expected that the new bathing establishment will be completed in two years; it will have two plunge baths and a number of private bath-rooms. The present piscine will be kept for the free use of the poor. Already an average of 200 families visit Banki in June, 300 in July (which is the height of the season), and a smaller number in August. Formerly the supply was 600 litres a minute; recently the way of collecting the waters has been improved, and under the new system the quantity has been increased to 1,300 litres a minute. The waters which are feebly alkaline are useful in the treatment of gastric disorders, nervousness, and irritable heart and the baths have a great reputation in the treatment of rheumatism. The water is palatable and is indeed used, after cooling, as the supply of the village. At present the communication between Banki and Sofia is by private carriage, or by omnibuses which work daily, but there is a project to start an electric tramway. Nine kilometres from the centre of Sofia are the springs of Knisjevo. The following is the analysis of the waters, which, as will be seen, are alkaline with a low total mineralization. The analysis is typical of the thermal waters of Bulgaria, the differences between the various springs being trifling. We know of no other district where so many mineral springs of such uniform character are to be found:

Sodium bicarbonate	0.564
Sodium sulphate	0 103
Calcium sulphate	0 106
Magnesium sulphate ...	0 017
Sodium chloride	0 072
Potassium chloride ...	0 039
Silicum	0.294
Free carbonic acid... ...	0 015

These waters are said to be beneficial in women's diseases, renal disorders, debility and rheumatism. The buildings are not yet remarkable but they are much frequented, and here also there is a project to erect improved baths.

In the department of Bourgas are the famous baths of Sliven, up to date and well equipped. In the department of Philipopolis there are forty springs, the best known being Hissar, noted since the days of the Romans and frequented by the peoples of the near East, and those of Tchépino in the Rhodope mountains.

The spring likely to become the most popular and to prove the most lucrative in the whole country is that of Meritchléri, resembling in a remarkable degree the waters of Karlsbad. The following is the analysis compared with the waters of Karlsbad, Bertrich, Marienbad, and Franzenbad:

—	Sodium Sulphate.	Sodium Bicarbonate.	Magnesium Carbonate.	Sodium Chloride.	Total Mineralization.	Free Carbonic Acid.
Meritchléri	2.25_7	2.2358	0 0519	1.1256	5.7980	0 2578
Karlsbad ..	2.4083	1.8364	0.2537	1.0418	6 2924	0.1798
Bestrich ...	0 8860	0.7283	0 1522	0 2177	2.2467	0 0759
Marienbad.	4.7300	1 919	0 7065	1.8074	10.2480	3 1793
Franzensbad	3.1901	0 954	0.1329	1 2018	5.9352	2 7854

It will be seen that this country possesses an exceptional number of mineral springs and that a fortune lies therein if they are developed on the right lines. Bulgaria will not be rich enough to do all this herself, but even if the financiers of other countries can assist in the enter-

prise the nation itself will reap rich benefits through the attraction such health resorts will exercise on foreigners, who might not visit the country merely as tourists. Another point which requires to be thought out is the utilization of certain of the springs as table waters; some of them are most palatable and might easily become rivals of Vichy or Perrier.

LITERARY NOTES.

The *St. Bartholomew's Hospital Journal* for August is a special number, devoted to a description of the new buildings and of their opening by the Prince and Princess of Wales. It is illustrated by a plan, and by numerous photographs both of the buildings and of the ceremony.

Quite recently, after repeated applications, the *Transactions* of the Fourteenth International Medical Congress held in Madrid in 1903 have been received, and the sixteen volumes in which its proceedings are recorded have now been added to the Association Library. For this we are indebted to the courtesy of Professor Calleja, Dean of the Faculty of Medicine of the University of Madrid, who was President of the Congress. His kind offices on our behalf, however—for which we here tender him our heartiest thanks—were at the last moment almost rendered unavailing by the "red tape" which seems to swathe the British Embassy at Madrid in the tightest of bonds. Professor Calleja had the *Transactions* of the Congress sent to the Embassy with a polite request that the volumes should be transmitted to the Association. The reply was that the Embassy could not undertake this without express instructions from the British Government! The difficulty was finally overcome with the assistance of a business firm having commercial relations with Madrid. It may be stated here that the library of the Association now possesses a complete series of the *Transactions* of the International Medical Congresses from that of Paris in 1867 to that of Lisbon in 1906.

Writing in the *Boston Medical and Surgical Journal* of July 11th, in reference to a statement recently made by Professor Osler that the physicians of the Arabian School made no solid contributions to anatomy or physiology, Dr. Edward T. Williams, while admitting that this is true, points out that they made valuable contributions to science. Thus in the eighth century Geber discovered arsenious acid and corrosive sublimate. In the twelfth century Albucasis discovered alcohol and the art of distillation. In the eleventh century, Alhazan, of Cairo, wrote a valuable treatise on optics, and described the properties of lenses. They must also be credited with some valuable contributions to medicine and therapeutics. Thus in the tenth century Rhazes, of Bagdad, gave the first accurate description of small-pox; Avicenna, in the eleventh century, described malignant pustule; Avenzoar, of Seville, in the twelfth century, gave an account of the itch. We owe, says Dr. Williams, to the Arabians the methodic use of opium as a remedy, which, though used by Dioscorides and some of the Grecians to a certain extent, was apparently unknown to the Galenists. They also used mercury, which was first made known to the Europeans as a medicine by the Moors and Saracens, was adopted by Guy de Chauliac and Paracelsus, and formed the chief ingredient of the prescription sold by Barbarossa, the corsair of Mitylene, to Francis I. to cure his pocks.

M. del Gaizo (Naples), in the July number of *Janus*, gives an account of a volume by Giovanni Carbonelli, entitled *Il "De Sanctatis Custodia" di Maestro Giacomo Albini da Moncalieri*, with other documents on the history of medicine in Savoy in the fourteenth and fifteenth centuries (Pinerolo, 1906). The treatise, *De Sanitatis Custodia*, is a hitherto unpublished manuscript, which formerly belonged to the Convent of St. Francis at Pignerol, but which is now in the National Library at Turin, in the catalogue of which it was entered in 1749. The author is Master Giacomo Albini de Moncalieri, Physician to Prince James of Acaia. The Princes of Acaia were then distinct from the other Princes of Savoy, who later absorbed their territory. Dr. Carbonelli has traced the career of this physician from 1324 to 1349. Master Giacomo accompanied the Princes, in whose employment he was, in visits to Paris, Montpellier, and Avignon. The doctor appears to have gathered wealth in their service and to have held several public offices. He wrote the treatise for the guidance of the Prince of Acaia, who lost his parents and his young wife a few days after marriage. He married again, and had a son; and Giacomo's instructions are intended to safeguard the health of the new family. The treatise is divided into three sections. The first deals, as its title, "De regimine pregnantes et conservatione embrionis et nutricione infantis tempore lactationis et ultra usque ad annos XIIII vol. circa," shows, with the hygiene of pregnancy and childhood. The second part treats of the hygiene of the individual in general, with special reference to the air he breathes, the food he eats, the beverages he drinks, and that of the several parts of the body, particularly the organs of special sense. There is also a good deal about the hygiene of journeys by land and sea and the health of armies. The third part deals with the hygiene of old age. According to Dr. Carbonelli, Master Giacomo's teaching, especially in regard to therapeutics, is mostly based on that of the Arabian physicians. In an appendix there are documents relating to an epidemic of Saint Anthony's fire, to the astrological indications for bleeding, and to forensic medicine. One of them is the inventory of a druggist's shop in Pignerol in the year 1308.

MEDICAL NEWS.

His Highness Prince Henry zu Schönaich-Carolhat has consented to act as President of the Fourteenth International Congress for Hygiene and Demography. Dr. Rubner, Privy Councillor of Medicine, Professor of Hygiene at the Royal University of Berlin, and Professor Dr. von Mayr, Under Secretary of State, Munich, will be Vice-Presidents.

Dr. J. Wilson Hamill, Manchester, desires to thank the many members of the Association who rendered assistance or made sympathetic inquiries with regard to the accident to his wife. Mrs. Hamill slipped from the step ladder of a brake when attending the garden party at Bicton, and sustained a fracture of the tibia near the ankle. Lord Clinton, on hearing of the accident, sent Mrs. Hamill to Exeter in his motor car, and she was subsequently admitted to the Royal Devon and Exeter Hospital, where we are glad to learn that she is making satisfactory progress.

Professor T. D. A. Cockerell of the University of Colorado, in a communication to *Nature*, makes the interesting announcement that among the fossils recently found in the miocene shales of Florissant is a large biting fly with a long and strong proboscis, which he identifies as a *Glossina* (tsetse fly). The specimen is practically complete and shows the mouth parts. Professor Cockerell adds that it is an obvious suggestion that the existence of such flies may have had something to do with the extinction of some of the tertiary mammalia of America.

Under the will of the late Miss Ellen Rutt, of Upper Clapton, the Victoria Park Hospital for Diseases of the Chest and the Royal Hospital for Incurables, Putney, each receives a sum of £300. Under the will of the late Mr. John Cyril Philips, of Manchester, Salford Royal Hospital and Manchester Royal Infirmary each receive a sum of £1,000.

The Roads Improvement Association, a body which came into existence a year or more ago, held this spring some trials on certain roads in Middlesex and Berkshire, the object being to test the value of certain methods of road treatment purporting to lessen the formation of dust under motor and other heavy traffic. The durability of effect was, of course, an important point, so immediate decision was impossible. Sufficient time having now elapsed the results have been published. The Association seems to have limited its investigation on this occasion to tar methods, and has awarded a first prize to the Aitkens Patent Pneumatic Tar Spreader and a second prize to the Tarspra Company. Another first prize was also awarded for "Clare's Patent Tar Compo." The prizes in each case were of considerable amount, two of them being of the value of 100 guineas in addition to a gold medal. Apart, therefore, from the commercial results of success at the trials, the money values of the prizes are sufficient to stimulate the inventor. It is to be hoped that trials of this sort will continue to be held, for though it may be true that motor cars do not create dust but merely render its existence evident, the dust evil has materially increased since motor driving came into vogue, and in more or less insidious fashion must be acting in a way detrimental to the public health.

British Medical Journal.

SATURDAY, AUGUST 31st, 1907.

THE INSECURE TENURE OF PUBLIC HEALTH APPOINTMENTS.

The cause of reform is often most effectively promoted by adducing not arguments based upon general principles, but facts which clearly exemplify the abuses to be remedied. The Town Council of Southend-on-Sea has thought proper to afford the world a striking illustration of the evils attending the system of appointing medical officers of health for fixed short periods. Advocates, both within and without the medical profession, of such reform as will give reasonable security of tenure to these officers must recognize the obligation under which the Southend Town Council has placed them.

This object lesson is of sufficient value to merit a somewhat full statement of the facts as reported in the local press. The Medical Officer of Health of Southend (Dr. J. T. C. Nash) has held the post for six years. He was last reappointed, at a salary of £600 per annum, for a period of three years, which expired on August 20th, 1907. No provision was made for any notice on either side to terminate or continue the engagement, which accordingly, in the absence of any previous act of re-engagement, expired automatically on the date mentioned. Technically, the Corporation of Southend and Dr. Nash ceased at that moment to have any official relation, apart from an indirect connexion through the Education Committee, under which he held a small independent appointment.

On August 21st the question of the reappointment of the medical officer of health came before a meeting of the Town Council, on a recommendation of the Health Committee that Dr. Nash should be appointed for a further period of three years at the same salary as previously. It deserves notice, in passing, that this system of appointment for a limited period only, instead of permanently, subject, of course, to a reasonable notice on either side, was, the Chairman of the Health Committee stated, imposed on the Corporation by the requirements of the Local Government Board, which paid a moiety of the salary. To the recommendation of the Health Committee an amendment was moved and carried that the appointment be for one year at a salary of £500. The Chairman of the Health Committee thereupon pointed out that the town was at that moment without a medical officer of health, and, if Dr. Nash refused to accept reappointment at the reduced salary, would remain without such an officer until a fresh appointment could be made. The state of mind of the mover of the amendment is shown by his rejoinder that Dr. Nash had "not "yet resigned." When at last it was brought home to the Council that Dr. Nash was not at that moment their officer, and would not be their officer unless he chose to accept the new terms, he was asked, and promptly declined, to accept them. Eventually, after some members of the Council had further illustrated their incapacity for grasping the true nature of the appointment by such suggestions as that the duties could be discharged by a *locum tenens* at £10, it was decided to advertise the vacancy, and in the meantime to request Dr. Nash to continue to discharge the duties of his former office on the old terms. This, on the persuasion of the Chairman of the Health Committee, he consented to do rather than place the town in a difficulty. We are glad to note that the loyalty he thus displayed, and the justice with which he could have declined to assist the Corporation in the difficulty created by its own act, received due mention in the Council.

To put these curious proceedings in their true light, it is necessary to add that in the apparently full reports of the proceedings before us there is no suggestion from beginning to end of any charge against Dr. Nash of inefficiency or neglect of duty. It was, in fact, plainly stated by the Chairman of the Health Committee and other opponents of the reduction of salary that Dr. Nash was a most able, zealous, active, and valuable public servant, and no attempt was made to controvert the statement. No attempt was indeed made by the mover and supporters of the amendment to justify their action beyond a vague reference to "the "interests of the ratepayers." When challenged they could not state specifically in what way their action could advance those interests. The only clue, in fact, to the motives animating them is afforded by statements freely made in the Council by opponents of the amendment that individuals of the majority were personally hostile to Dr. Nash because his zealous discharge of his public duties had been prejudicial to their private interests; one, for example, being a public caterer, who, it was stated, had resented Dr. Nash's insistence upon inspecting his premises. Those interested in public health are aware of Dr. Nash's valuable work upon epidemic diarrhoea, the disposal of sewage, and especially upon the conveyance of typhoid infection by shellfish, a subject on which his bacteriological knowledge and administrative experience combine to qualify him to speak with authority. It is easy to imagine that this work may have brought him into conflict with persons concerned in the trade. It is possible, therefore, that the real grounds for the sudden attack on Dr. Nash could only be fully revealed by information as to the occupation and private interests generally of individual members of the Town Council. In the absence of such information, all that can be said is that, at all events, no definite grounds of public interest were assigned in justification of the action of the Town Council.

The opinion of the medical profession in and around Southend has already been expressed in most emphatic terms. The Executive Committee of the South-East Essex Division summoned a meeting as soon as the action of the Town Council was known; this meeting, which was held on August 27th, was largely attended, and letters were read from twelve medical men unable to be present, expressing their complete assent to the resolution which it had been announced would be proposed. The resolution, which was carried unanimously, expressed to the Town Council the complete approval of the medical profession of the very great services rendered to the town of Southend during the whole of his tenure of office as medical officer of health by Dr. Nash, who had worked unceasingly in the best interests of the town, and had effected a vast improvement. The resolution went on to protest most strongly against the action of the Town Council in virtually dismissing him without notice.

One of the chief impediments to social progress is the impracticability of devising crucial experiments such as, in the physical laboratory for example, sub-

serve the attainment of positive knowledge. The Town Council has spontaneously decided that Southend is a suitable subject upon which to demonstrate by experiment the dangers of the system of appointment of medical officers of health for fixed short periods. Let us hope that the demonstration will suffice to satisfy those who are not yet convinced of the necessity of the reform which the British Medical Association has so long urged upon the Government—that such appointments should be made without reference to time.

We have entered into the details of the Southend incident not because it is an isolated instance of the treatment to which medical officers of health are liable, but because it is the latest of a long list of similar incidents. Only a few weeks ago the Southwell Rural District Council re-elected Dr. Charles Wills, who had been medical officer of health for twenty-three years, at a salary reduced to one-half of that which he had previously received, and although better counsels subsequently prevailed, he was eventually appointed at a very much reduced salary. In recent years, Dr. Wyndham Randall of Maesteg, Dr. D. A. MacGregor of Shepley, Dr. Sandell of Eaton Bray have been deprived of office for no substantial reason, and many other instances of similar injustice have been published, and are well known to the permanent officials at Whitehall.

The part played by the Local Government Board in the Southend case merits consideration. Successive Presidents of that Board have paid at all events lip service to the doctrine of security of tenure for health officers, which also received the emphatic approval of the Physical Deterioration Committee and the Select Committee on the Housing of the Working Classes. When urged by the Association to exercise the powers conferred by the Public Health Act to give such security by Administrative Order, the Local Government Board has stated that such action would be unconstitutional. If the Board cannot insist upon all appointments, in cases in which it pays a moiety of the salary, being made without reference to time, it might at any rate reconsider its regulation insisting that such appointments shall be made for limited periods only. The Board is aware of the treatment which former medical officers of health have received at the hands of the Southend Corporation; four were appointed between 1890 and 1895, and when Dr. Bruce Low reported to the Board in 1896, he wrote: "Locally, "it was suggested that as each health officer had "become unpopular in turn with his authority through "pressing forward needed improvements, he, as a result "failed to secure his re-election." We are glad to learn' that the Board has now asked for an explanation of this new incident.

METABOLISM IN MENTAL WORK.

In 1884 Dr. Mairet, Professor of Mental and Nervous Diseases in the University of Montpellier, published a series of researches into the elimination of urea and phosphoric acid among the sane, the insane, the epileptic, and hysterical. They led him to form a view that under the influence of intellectual work the general nutritive processes were diminished, whilst those of the brain were increased, the brain during activity retaining phosphoric acid in combination with alkalies, and releasing basic phosphates. These investigations, however, were found to be imperfect, owing to defects in chemical methods adopted, and also because the urinary output was correlated neither to the food ingested nor the faecal elimination. Now, after the lapse of some years, Professor Mairet and his collaborator, Dr. Florence, have published the results of a series of interesting observations made under rigorous experimental conditions.[1]

A review of the work of others upon the somatic accompaniments of mental work, including cerebral and general cardio-vascular changes, on thermal alterations, and on the comparative analysis of the renal and alimentary excreta during alternate periods of rest and intellectual labour under test conditions, reveals a general agreement in the evidence, proving that during intellectual work of all kinds there is an augmentation of the volume of the cerebral blood supply, an increased cerebral thermogenesis, and a diminution of the general, and an increase in the cerebral metabolism. The recent investigations of Mairet and Florence were directed more particularly to the elimination of nitrogen and phosphoric acid. The subjects experimented on—men of 24 to 27 years of age, in good bodily and mental health—were submitted to alternate periods of mental work and mental rest, the experiments covering many weeks. Possible external or internal disturbing causes were excluded, as far as possible, by equalizing the amounts of muscular expenditure, the hours of sleep, external temperature, and, of course, the liquid and solid foods ingested. The only varying factor was the duration of the mental work, which was really of a fatiguing nature, and was pushed as far as failure of voluntary attention. The total excreta for every twenty-four hours were carefully analysed, particularly as regards the elimination of nitrogen and sulphur compounds. The amounts of these bodies in the foods—an unvarying regimen—being known quantities, the authors subtracted from these the amounts contained in the faecal dejecta, and, following Rübner, the difference was accepted as giving the amounts of the bodies absorbed by the intestine into the system. Repeated experimentation showed that during intellectual labour the amounts of nitrogen and phosphoric acid absorbed from the alimentary canal were diminished as compared either with the period of repose preceding, or that following, the period of work, the average co-efficients of utilization for nitrogen being—for the first period of repose 88.6 per cent., for the working period 83 5 per cent., and for the second period of repose 89.9 per cent., and for phosphoric acid for the first period of repose 73 9 per cent., for the working period 58.7 per cent., and for the second period of repose 75.2 per cent. The results further showed that during the second period of repose there was a certain compensatory effect, the increased absorption of this period making up for the loss during the working hours.

Turning to the urinary analysis, it was found that three times out of four more nitrogen was eliminated by the urine than had been absorbed, and that also three times out of four, during the second period of repose, more nitrogen was absorbed than was eliminated by the urine. With regard to phosphoric acid, however, in every case more was eliminated during mental work than was absorbed, the increase varying between 0.122 and 0.278 mg., and also in every case during the second period of repose more phosphoric acid was absorbed than was eliminated, the increase ranging from 0.175 to 0.307 mg. These results were confirmed by two other methods, first by an interesting series of cryoscopic investigations, from which it appeared that during the periods of mental work the lowering of the freezing point of the urine was less than that during either period of rest, indicating thus a less

[1] *Le Travail Intellectuel et les Fonctions de l'Organisme.* Par Professor A. Mairet et Dr. J. E. Florence, Univ. Montpellier. Travaux et Mémoires de Montpellier. Série Scientifique 1. Montpellier: Coulet et Fils. Paris: Masson et Cie. 1907. (Demy 8vo, pp. 128. Fr. 3.)

degree of molecular fragmentation; and, secondly, by urotoxic experiments made upon rabbits, which showed a considerably heightened toxicity of the urine secreted during intellectual work.

NATIONAL PHYSIQUE IN BULGARIA.

A GREAT deal will be written this week on the subject of Bulgaria, where the twentieth year of Prince Ferdinand's reign, and the twenty-ninth year of the independence of the country, was celebrated on August 28th. It is possible that in the columns justly filled with eulogies of Prince Ferdinand questions of the health of his people may find no place; this, we protest, would be a grievous omission, for without good physique and a high standard of health no nation could accomplish any great work. The extraordinary prowess of the Japanese, the marvellous feats of courage and endurance displayed by that nation in the late war with Russia, their humanity and kindness, have been justly attributed to perfect health of body and mind. Bulgaria has lately very often been called the Japan of Europe, and the title is certainly appropriate. The ordinary native of the country is sturdily built, with broad shoulders, well-developed chest, and muscular limbs. He holds himself well, probably owing to the military training he has undergone, for military service for three years is compulsory, and the discipline and regularity of the life led improves the health of the conscripts. At the military school for officers the cadets after each hour's class work have an hour's practical work—for example, gardening, carpentry, gymnastics on the Swedish system, riding, jumping, etc. There are good baths and douches, and swimming is taught. The anthropometric records of the school show, when compared with those of young men of the same class in other countries, that the Bulgarian cadets in the first year are inferior in physical development to those of Russia, France, Germany, and to Cambridge undergraduates; in the second year they surpass the Russian cadets; in the third those of France, and in the fourth year they are inferior in physique to Cambridge undergraduates only. As was prominently brought forward at the International Congress on School Hygiene the other day, a very perfect system of medical inspection by medical men of the pupils in secondary schools, and their instruction in hygiene, first aid, and domestic medicine, has been worked for the past four years with satisfactory results. The same system is about to be introduced into the elementary schools, for there are already through this system teachers fitted to teach the laws of health to the children in these schools. Tuberculosis is firmly dealt with, pupils being at once sent for treatment to sanatoriums and school colonies, and the milk consumed in these establishments comes from model dairy farms. The teachers have not been forgotten, and there is a special sanatorium for them, so that there is every hope that even with the migration from country to town, which is inevitable owing to the growing ambition of the peasantry, this disease can be held in check, and even perhaps eradicated.

The Bulgarian peasants eat moderately and drink little alcohol; their food consists mainly of maize flour, coarse brown bread, and milk curds. The women are fine and strapping, tall, and well set up, with masses of hair generally worn in two plaits. Their features are regular and striking, and their bronzed sunburnt skin gives them the appearance of perfect health. They are fond of bathing, and keep their houses clean and neat. On Sundays on every village green is danced the *choro* to the music of the bagpipe and drum. The lads and girls dance for hours, doing the steps with skill and spirit, thus proving and improving their physical condition. Quite remarkable is their carriage, and it is no exaggeration to say that a slouching man or a woman is never seen. The system of peasant proprietorship encourages every farmer to make the best use of his land, and the women help willingly with work in the fields, harvesting, and other outdoor labour. During the winter they spin and knit. They look after their homes and children well, and infants are as a rule, to which there are few exceptions, brought up at the breast. Nevertheless, infant mortality is high, especially among the peasant class, owing to various causes. The unhealthy babies seldom survive, and it would seem that it is in great measure owing to this that the race in general is so robust, healthy, and long-lived; in 1893 it was recorded that there were 3,372 persons of 100 years old and upwards. The average age of marriage is 25 for the youths and 18 or 19 for the girls. The standard of morality is high, and the annual average of illegitimate births is only 0.12 per cent. An unfaithful wife is an object of public contempt, and was formerly punished by death.

Bulgaria is a very democratic country, a constitutional monarchy with a single Chamber and without an aristocracy; its people have had the wisdom to perceive that national prosperity can be attained only through a combination of intellectual and physical education, and to recognize the importance of the scientific care of the health of the rising generation. Their example may be commended to the democracy of this country.

EARLY NOTIFICATION OF BIRTHS ACT.

THE Early Notification of Births Bill passed both Houses of Parliament without any amendment of importance, and received the Royal assent on Wednesday immediately before the prorogation.

The Act is an adoptive measure, that is to say it will not be in force in any district until adopted by the local authority—the Council of a borough (including the metropolitan boroughs) or the Council of an urban or rural district. By an amendment carried at the last moment the Council of a county other than the County of London may adopt the Act either for the whole of a county or for a district therein. The Act applies to Scotland and Ireland, and the Local Government Board of any of the three kingdoms has power by Order to declare that it shall be in force in the area of any local authority which has not adopted the Act, if the Board think it expedient.

When the Act has been adopted in any area it will be the duty of the father, if he is actually residing in the house where the birth of his child takes place at the time of its occurrence, or of any person in attendance on the mother at the time or within six hours after the birth, to give notice in writing to the medical officer of health of the district in which the child is born. The notice must be posted within thirty-six hours after the birth, and the local authority must supply addressed and stamped postcards free to any medical practitioner or midwife residing or practising in the area who may apply for them. A person who fails to give notice of a birth in accordance with the provisions of the Act will be liable to a penalty not exceeding twenty shillings, unless the accused person can satisfy the Court that he

or she had reasonable grounds to believe that notice had been duly given by some other person.

The Act therefore imposes on every medical man a new obligation, and any failure to meet this obligation within thirty-six hours will expose him to the risk of suffering the indignity of being summoned to the police-court, and fined anything up to 20s. The same obligation with the same penalty is imposed on midwives. The provision with its penalty was defended on the ground that the duty imposed is a civic and not a professional duty. The flimsiness of this excuse was exposed by Sir Victor Horsley both at the Representative Meeting and in a letter published in this JOURNAL a fortnight ago. The doctor or midwife is present at the birth of the child not in a civic capacity, as a member of the general public, but in a professional capacity to render professional services to the woman and the child. The Bill specifically mentioned medical practitioners and midwives as the persons who are to fill up the form of notification. To talk about this new obligation as a civic duty is therefore nonsense, and the promoters of the Bill practically allowed that it was nonsense; they therefore shifted their ground, and, admitting that the provision imposed a professional obligation, appealed to the well-known public spirit and philanthropy of the profession to accept this fresh obligation; but the British Medical Association, speaking for the profession objected, very reasonably, we submit, to accepting the obligation under penalty; if there was to be penalty there should be remuneration.

Again, the promoters of the Bill practically acknowledged the justice of the contention, and agreed with medical members of Parliament to amend the Bill by omitting medical men from its provisions, but the House of Commons, with the amiable air of the man who slaps you on the back and picks your pocket, would have none of the amendment, rejecting it by 87 votes to 19. It passed through the House of Lords in a few minutes without discussion, and it is now open to any county council, borough council, or any local authority to adopt it. As to the way in which the amendment came to be rejected in the House of Commons, it must be confessed that it looks very like a breach of faith on the part of the Government, but we prefer to adopt Sir John Batty Tuke's word and to say that the representatives of the medical profession in the House of Commons were outmanœuvred. Dr. Cooper, who has worked indefatigably in the defence of professional interests in this matter, finally in despair asked the promoters of the Bill to drop the amendment, understanding, as we have no doubt, that the feeling of the House was strongly against it; but it was persevered in, with the result that this feeling of the House was crystallized into a majority of more than four to one.

It is a very unsatisfactory ending, and we fear exemplifies only too well the unsympathetic attitude which the House of Commons is ready to assume towards the medical profession. The average member probably believes that the State has endowed the profession with many important and lucrative privileges; he does not realize how little practical value attaches to the privileges which the Medical Acts appear to confer; he probably does not know that his predecessors at Westminster never intended to safeguard the interests of the profession. They intended to safeguard the interests of the public, and were so jealous of the medical profession, and made so many loopholes for impostors, that they failed even to achieve their frankly selfish and wofully short-sighted object.

A CANCER EXHIBITION.

In connexion with the general meeting of the International Surgical Society in Brussels in September, 1908, at which a discussion on cancer will take place, it is proposed to arrange a cancer exhibition, and a circular has been issued inviting contributions not only from members of the society, but also from others. All objects connected with cancerous disease will be received, but the following classes are enumerated: (1) Macroscopic or microscopic specimens, either instructive from a surgical standpoint or of special interest on account of their localization or method of dissemination; (2) topographical anatomical specimens or drawings illustrating individual operations for cancer; (3) topographical anatomical preparations of the lymphatic vessels and glands of particular regions; (4) statistical wall charts illustrating the duration of the treatment of cancerous diseases; (5) statistical wall charts illustrating the frequency of primary cancer and its metastases in particular organs, based upon clinical or pathological experience; (6) statistical charts dealing with the spread of cancer in different countries, exact plans of so-called cancer foci, and family trees of families in which cancer has existed for several generations; plans of cancer institutions and hospitals, their reports of work done, and financial statements; (8) reports of movements to encourage the early treatment of cancerous diseases, appeals to the public, and proposals as to the means by which a knowledge of the importance of the early diagnosis of cancer may be brought home to the public without exciting panic. Communications should be addressed to Professor A. Depage, 75, Avenue Louise, Brussels, who will take charge of the specimens, arrange them for exhibition, and return them at the close of the meeting. Exhibitors will have an opportunity of demonstrating their specimens to members during the meeting.

HOSPITAL EXTENSIONS.

A MEETING of the Council of the Metropolitan Hospital Sunday Fund was held on August 1st for the purpose of receiving the report of the Distribution Committee. From this it would appear that the total sum received this year by the Fund was £74,165, but that of this amount only about £41,000 was collected on Hospital Sunday; the balance was made up by payments made to the Fund on account of various large legacies which it has recently had the good fortune to inherit. It was determined to make a distribution of £68,134 among 159 hospitals, 57 dispensaries, and 27 nursing associations; the sums allotted to hospitals varied from £6,000 to less than £50. At the same meeting a resolution of considerable importance and general application was brought forward. Its admitted design was that of putting a severe check upon an indefinite extension of existing hospital accommodation, by compelling any institution which is on the list of those habitually receiving contributions from this Fund to obtain its consent before undertaking fresh building operations or analogous work calculated to increase the eventual expense of maintaining the institution. In this connexion it was pointed out that at the time of the meeting there were no less than 1,000 beds unoccupied in the various hospitals of London, independently of those set aside and kept for special purposes. At the same time, the accounts presented showed that on the first day of this year the hospitals had a balance against them of at least £150,000 in unpaid tradesmen's bills and bank overdrafts. Meantime three hospitals had come forward with proposals to increase their accommodation; two of these were schemes which would not hold water, and the other originated in an institution which was already exceeding its income. In view of these facts it was urged that although the Fund might desire to remain merely

a collecting and distributing machine, and to abstain from interfering with the internal management of hospitals, its authorities could not rightly continue tacitly to approve of more and more beds being provided at a time when not only did the existing aggregate cost of maintenance exceed the sum which could be obtained from the public, but when the number of beds vacant showed that there were already more than were really required. The final upshot of the discussion was the adoption of a resolution of the same general tenor as that which had been first moved, but somewhat less stringent in its terms; it took the form of a request to the authorities of all institutions which receive grants from the Fund to consult its Council before incurring further maintenance expenditure by adding to their accommodation for patients.

THE INFLUENCE OF DRUGS ON GLYCOSURIA.

PAST experience does not encourage hopefulness with respect to any proposal for the treatment of diabetes by drugs, yet it would be neither right nor reasonable to refuse to consider fresh suggestions. We therefore draw attention to the work of J. Baer and L. Blum[1] in the hope that clinicians who have the opportunity will test their conclusions therapeutically. The method pursued by these investigators has been to study the influence of different substances upon acidosis and glycosuria under equal and known conditions. The animals experimented upon were dogs rendered diabetic by subcutaneous injections of phloridzin; but the results were controlled by experiments upon dogs from which the pancreas had been removed. They found that many bodies, such as glycocol, glutamic acid, lactic, glycolic, proprionic and succinic acids, slightly diminished acidosis, but had no effect on glycosuria, and as most of these have been shown capable of supplying sugar to depancreatized dogs, it is possible that their influence upon acidosis is thereby explained, as the ingestion of sugar always diminishes the elimination of the acetone group; but in the course of their experiments they came across a substance which has the power at once of influencing glycosuria, acidosis, and the elimination of nitrogen. This is glutaric acid, $C_5H_8O_4$, one of the series of dicarboxylic acids; it is isomeric with pyrotartaric ethylmalonic and dimethylmalonic acids, but has not, so far as we know, hitherto been used in therapeutics. When injected into dogs rendered diabetic by large doses of phloridzin, the glycosuria and acidosis disappeared nearly or altogether, while the excretion of nitrogen was greatly diminished. This effect varied in proportion to the gravity of the diabetes, and was not observed in slight glycosuria unaccompanied by acidosis; that it is not the result of any action on the phloridzin is proved by a like result being obtained with depancreatized dogs. The conclusions arrived at by the authors is that glutaric acid acts by influencing the intermediate processes which give rise to grave diabetes; that is to say, it prevents the breaking up of the albuminous bodies from which sugar is derived in the more severe forms of the disease. Thus they found that dogs deprived of their glycogen by work eliminated after injection of phloridzin sugar which must have had its source otherwise than in preformed carbohydrates; the glycosuria so caused, even when slight, disappeared after the injection of glutaric acid, although this had no influence upon the glycosuria of equal degree produced by similar means in the same dogs when they were rich in glycogen. They believe that acidosis only occurs when there is elimination of sugar derived from other sources than preformed carbohydrates, and that if there be combustion of sugar so derived the formation of acetone bodies does not take place. They think that these experiments throw light also upon the question whether in diabetes there is incapacity to burn up sugar formed under normal conditions, or whether there is an abnormal production of sugar. As phloridzin acts upon the kidneys it would be incomprehensible that glutaric acid could hinder the elimination of sugar if it had been formed, especially as the action does not occur when the glycosuria is slight, but only when it is marked. They therefore conclude that glutaric acid influences the formation of sugar, and that in this way the diminished secretion of nitrogen is also to be explained; that is to say, glutaric acid appears to them to act by preventing the splitting up of the albumen of the tissues or food into sugar and urea.

[1] *Beitr. z. chem. Phys. u. Path.*, 1907, vol. x, pp. 1-3.

THE RINDFLEISCH "FESTSCHRIFT."

THE German custom of preparing a series of essays written by colleagues and friends, and making them into a book called a "*Festschrift*"[1] for presentation to some esteemed teacher on his jubilee as a member of the profession, or, as often happens, on his seventieth birthday, is one for which much may be said. Such an offering is esteemed by the recipient as a high honour and an affectionate tribute; moreover, really good work is often prepared by really good men for the construction of a "*Festschrift*." Hence the offering, unlike presentation plate, is of use to all whom it may concern, instead of being a mere ornament—an objective compliment pleasing to the recipient alone. We must all admire the zeal with which von Rindfleisch's friends have prepared articles of much value for the *Festschrift* recently presented to him on his seventieth birthday. Among the contributors are Dr. Carl and Dr. Georg Rindfleisch; while the list of authors bearing other names includes several well known beyond the frontiers of the German and Austro-Hungarian Empires, such as Von Franqué, Marchand, and Ponfick. The subjects exhibit as much variety as the authors, and in that respect medical literature is hardly benefited by the *Festschrift* system, which may lead too often to overlooking good papers. There are articles on gastric ulcer, retroflexion of the uterus, rare cases, infective haemoglobinuria, tuberculosis, etc.; the longest contribution, taking up over 200 pages, is on the alleged antiquity of syphilis—a treatise, we must admit, of high value, written by von Notthafft of Würzburg. We trust that British and American index-makers will take note of this volume, lest its valuable contents be practically lost to Anglo-Saxondom, and we congratulate Professor von Rindfleisch, as heartily as do his contributors, on his seventieth birthday. We too give testimonials to honoured and beloved celebrities, but we fear we are lazier than German colleagues of great men. To subscribe a few guineas towards a silver claret-jug is less troublesome than to prepare a paper which shall be worthy of presentation to a master.

INSANITY IN PALESTINE.

THOSE who have spent any considerable time in Syria and the near East, or who have visited it with their mental eyes open even for a short time, must have been struck by the paucity and often entire absence of suitable arrangements for the care of the mentally sick—for the treatment of those possessed with devils. They will all the more welcome, therefore, the success of the Lebanon Hospital for the Insane as evidenced in its latest report.

[1] *Festschrift fur Georg Eduard von Rindfleisch.* Unter Mitwirkung chemaliger und jetziger Assistenten. Studiengenossen, befreundeter Fachkollegen und Verwandter Rindfleichs. [Commemorative Work in Honour of George Edward von Rindfleisch. Prepared by the collaboration of former and present Assistants, Fellow Students, Colleagues, and Relatives.] Herausgegeben von Dr. Max Borst, Professor an der Universität Würzburg. Mit 21 Tafeln und 38 Abbildungen in Text. Leipzig: Wilhelm Engelmann. 1907. (Royal 8vo, pp. 619.)

It is a charitable institution started some eight or nine years ago, which now receives a good deal of support alike from Great Britain, Switzerland, Holland, and America, and has in each country a committee, including amongst its members a considerable number of medical men of special experience in connexion with the treatment of mental disorders. The hospital, with accommodation for 124 patients, is in an excellent situation at Asfuriyeh, on the Damascus Road, not far from Beyrout. Its several buildings are constructed and administered on thoroughly modern lines. That the work done by it is appreciated seems to be shown by the fact that in order to avoid its disturbance the local authorities diverted a public road which ran through the estate of the institution. The chief interest, however, of the report lies in the general remarks made by the medical superintendent, Dr. H. Thwaites. As to the types of insanity prevalent, there would seem to be no form peculiar to Syria, but possibly an abnormal proportion of cases of mental degeneration; for this the emigration of healthy stock and intermarriage amongst the residue is ascribed as one among other causes. Hysterical states are also very prevalent, a fact which is regarded as explicable by the prevailing social conditions. Education is being pushed on by missionary and other bodies in the larger towns, and though the results of progressive notions and higher civilization may be expected ultimately to be good, the immediate outcome is a process of elimination among the mentally unfit. The tendency to hysteria noted seems, in short, to be an expression in mental terms of the conflict between internal and external conditions in the individual concerned. Another interesting feature of the meeting of the East and West is the proportion in which returned emigrants figure among applicants for admission to the asylum. It is suggested that these include many who might have escaped active mental disease, but for the fact that in countries where life is more complex than in Syria they were exposed to a mental strain which they could not bear. Cases of acute mania appear to be relatively uncommon, which is possibly due to the fact that the general life of the people is of an unexciting and primitive nature. The attitude of the inhabitants towards the insane seems to be usually kind and sympathetic, though naturally in the long run a mental invalid suffers severely from his incapacity to contribute his quota to the general means.

DRESS REFORM.

Judging from some of the daily newspapers, those who are anxious to change completely the general system upon which women dress themselves are once more renewing their activities. As usual, the sins of the corset are insisted on, but it is not clear whether the real object in view is abolition of this particular part of the machinery of a woman's dressing arrangements, or whether its evils, real and imaginary, are merely a stalking horse. In any case the dress reformers seem in some danger of endangering their cause by overstatement. A few years ago the case against corsets was no doubt a very strong one, but the modern hockey girl and her analogues, the young women of active habits if not athletic tastes, have of their own accord done much to abolish its old-time evils. We have never seen more than a decade of this class of young woman, and as she has grown up, dressmakers and corset makers together have been obliged to provide her with the sort of attire which she is prepared to wear. The old-fashioned stay was a real evil; it compressed the sides of the chest, made room for itself at the expense of the liver, and was altogether a most unhealthy contrivance. But though there are, of course, a certain number of foolish women, young and old, who still make themselves miserable, especially post-prandially, by wearing their things too tight, the average woman, at any rate of the well-to-do classes, is sensible on the subject. It may be doubted, too, whether those who argue that all clothes should be suspended from the shoulders really have science on their side. When thus hung, the weight to be supported is transmitted to the ground, from a position nearly at the top of a long and flexible column made up of a great number of small bones, imposed one upon the other and kept erect mainly by the action of muscles. If the weight could be so arranged as to exercise its pull from the shoulders backwards, there might be little to say against it, for it would then assist the muscles in keeping the spine erect. But all shoulder dress-hanging arrangements pull as much forward as backwards, and thus tend, unless the back muscles are kept constantly in action, to throw the pectoral muscles out of action, and to contract the chest, by rendering full inspirations impossible. The heaviest part of a woman's dress is her skirt, and, when hung from her hips and sacrum, its weight is transmitted straight through the hip-joints, knees, and ankles to the ground, instead of through those same joints *plus* some sixteen others. Much less muscle action is, therefore, called for to support a skirt thus hung. It is true that men usually suspend their nether garments from their shoulders, but the first thing a man naturally does when about to take active exercise is to take off his braces and replace them by a real or improvised belt. A further disadvantage which would attend the adoption by women of a form of dress which depended entirely upon shoulder suspension would be that it would almost certainly put an end to the popularity of the blouse. This would be a pity, for the blouse is, from the hygienic point of view, a particularly desirable form of garment. Even persons who are not well-off can supply themselves with several and change them as often as soiled. The same desirable frequency of change would be difficult in dresses made on the dress reformer's plan.

THE SEVEN STAGES OF DRUNKENNESS.

Dr. R. T. Williams gave evidence lately at Marylebone Police Court in a case in which a woman charged with being drunk and incapable denied the insinuation. Dr. Williams said that he found her in a "mellow, com-"fortable state of drunkenness, recovering from "irritation," and in reply to an inquiry from the magistrate, said that he distinguished practically seven stages of drunkenness: Irritable, mellow, pugnacious, affectionate, lachrymose, followed, if the total doses were large enough, by collapse and death. Mr. Plowden seemed much pleased with the classification, and said that it was a most instructive lesson of which his court sometimes stood much in need. Magnan, who was one of the first to begin the scientific study of the physiological action of alcohol, distinguished five stages: First, slight excitement and a feeling of well-being, in which speech and gestures became more animated; in the second stage ideas became crowded together and confused, the mood being, without any very obvious reason for the difference, gay, or sad, or full of tender emotion; in the third stage the confusion of ideas was greater, and accompanied by incoherence, perversion of taste and smell, illusions, thick speech, vacant countenance, and staggering gait; the fourth stage was coma, and the fifth death. Magnan's second stage has been graphically described by Claye Shaw as "a loss of the sense of awareness of surroundings." As Triboulet has well said, it is the psychic func-

tions, which develop last in the child, that disappear earliest when the individual is coming under the influence of alcohol; the curb which fear of public opinion puts on the free expression of emotions and ideas, or, to change the metaphor, the veil which hides the real moral disposition, is removed, whence the justification for the saying *in vino veritas*. There is, so to say, at first a paralysis of the inhibitory apparatus—the irritable, loquacious stage; then later an interference with the processes of thought, when, again to quote Triboulet, ideas succeed each other so rapidly that there is no time to arrange them in orderly sequence—the pugnacious stage; next the individual passes from a "state of watchfulness "to a state of dream"—the affectionate and lachrymose stage, while simultaneously there is a loss of muscular co-ordination, a function developed later in the process of growth than mere movement, and therefore going earlier when the nervous centres are poisoned. These stages have of course been observed and described with more or less accuracy for generations; what is new is that even small doses of alcohol retard both mental and nervous processes, not improbably through an action on the higher cerebral functions diminishing the faculty of attention. As Kraepelin has shown, the more automatic the process tested the less obvious is the effect of a dose of alcohol, until in a highly automatic process, such as reading aloud, there might even be some acceleration, though accompanied by diminished accuracy. A further consideration of this aspect of the subject would take us too far, but it is well treated by Sir Victor Horsley and Dr. Mary Sturge in their recent book on *Alcohol and the Human Body*.[1]

THE AWAKENING OF CHINA.

WE learn from a correspondent in Nanking that a modern hospital—the Chung Si Hospital—with a capacity of forty-eight beds, has recently been established in that city. The building is constructed in the pavilion style, with due regard to climate and ventilation. There is a separate building for the reception of out-patients, who number over 300 daily, and for the quarters of the staff. The equipment, which has been supplied by a well-known London firm, includes an *x*-ray and high-frequency outfit. The staff is entirely Chinese, with the exception of one foreigner, at present a Britisher, but soon to be replaced by a German. A Chinese lady—a graduate of Toronto University—has charge of the female department. It is hoped before long to establish a medical school in connexion with the institution. The originator of the scheme was the last Viceroy, His Excellency Chou Fu, who takes a keen interest in foreign medical work—an attitude not assumed by his successor, His Excellency Tuan Fang. It would appear that China is gradually "awakening" to the benefits of rational medicine. It is a good sign that Chinese women are commencing to study the science. Although very few in number, they are doing remarkably good work, which is more than can be said of their brother compatriots in medicine, who, after a year or two, are apt to degenerate into prescribers of patent medicines. Perhaps China will be saved by her women after all.

THE NEW SYDENHAM SOCIETY.

IN spite of its title the New Sydenham Society must seem a very old one to most members of the medical profession now in active practice, and it has done so much for medical literature that even to those who have never been admitted to its membership it will come as a shock to learn that its existence is imperilled. It promises, indeed, to come to an end with the attainment of its jubilee, or the fiftieth year since its foundation in 1858, for the report which its Council submitted at the annual meeting, held during the progress of the meeting of the British Medical Association at Exeter, concluded with a recommendation to that effect. There appears, however, some possibility that the Society may still be carried on if the members so will, and if certain suggestions which have been made are adopted. These were voiced at the meeting by Mr. Jonathan Hutchinson, who, from the beginning has been the life and soul of the Society. The remarks which he made in response to a call from the Chairman, Professor Osler, were to the effect that though he had himself written the report adopted by the Council, he was not wholly in accord with the recommendation that the Society should wind up its affairs. There were still nearly 900 members, and he would prefer to see the Society continue its work with certain modifications. His proposal was that it should publish every year a volume of clinical lectures, short monographs, or papers, translated from foreign sources as promptly as possible after their original issue. The work of abstract-making which the Society's *Year Book* used to accomplish was, he said, now exceedingly well done in the medical journals, but not a few of the papers with which medical literature now teemed were well worthy of reproduction in full, and a valuable and attractive annual volume might be constructed out of them. The publication of the *Atlas* should be continued, but the plates reduced in size and less letterpress introduced. It should copy nothing and produce only original illustrations of new subjects. It might suitably treat the subjects comprised in the volume of translated monographs, and also undertake to reproduce selected drawings from among those exhibited at the annual meetings of the British Medical Association; for this it might perhaps venture to ask for a subsidy. It might also come to an arrangement with the Royal Society of Medicine to publish some of the plates accompanying the papers read before it, thus giving them a wider circulation and at the same time enriching the *Atlas*. While thus remodelling the Society an endeavour might perhaps be made to render it more international in character, and to bring it into closer relation with all English-speaking communities. These suggestions and the affairs of the Society in general having been discussed, it was decided to send out a circular stating what the two propositions were, and asking each member to state which he favoured. Meantime it may be pointed out that the accounts show that the Society is still solvent, and that, except for the possibility of shrinkage in membership, there would seem to be no reason for modification of the original lines of work.

NOTIFICATION OF CEREBRO-SPINAL FEVER IN LONDON.

THE London County Council has made an order requiring, for a further period of eighteen months as from and including September 13th, 1907, the notification of cases of cerebro-spinal fever (epidemic cerebro-spinal meningitis) in the Administrative County of London. The Council has considered whether the term "cerebro-spinal fever" includes, for the purposes of notification, cases of posterior basal meningitis, and, on the advice of a Committee appointed by the President of the Royal College of Physicians, has decided that, for notification purposes, the disease at present known as posterior basal meningitis is included in the term "cerebro-spinal fever." That term, however, is not to be interpreted to include cases of meningitis due to tuberculosis, syphilis, middle-ear disease, or injury. The services of Dr. Wanklyn, the Assistant Medical Officer of Health, Public Health Department, 8, St. Martin's Place, W.C., will be available with a view to the investigation of cases in association with medical practitioners, should they so desire.

[1] London: Macmillan and Co. 5s.

THE TREATMENT OF LEPROSY.

In the notes from Sydney published this week our correspondent gives some interesting particulars from the report of Dr. Ashburton Thompson and Dr. D. Wallace in the case of an English-born patient who, under the use of very large doses of chaulmoogra oil, so far recovered that his discharge from the leper lazaret was considered justified. It may be pointed out—and, indeed, insisted on—that leprosy varies from individual to individual, and, given care, suitable climate, and treatment, together with good powers of resistance, a relative cure may be, and has been, attained. If we cannot speak of these cases as cures in strict therapeutic sense, in fact they are such, the disease having flickered out, though, of course, mutilations and so forth remain, just as scars after variola, for instance. This case, which has been exhaustively dealt with by Dr. Thompson in this and other reports, is an important one to place on record. The surveys in the report of other old cases can be recommended to those working at leprosy.

In the obituary notice of Major Whitchurch, V.C., published last week, we inadvertently omitted to state that for the same act of gallantry as gained him the V.C., he was awarded the gold medal for distinguished merit of the British Medical Association. The medal was presented to him by Dr. Henry Barnes, President of the Association, on July 30th, 1893, during the annual meeting at Carlisle. The reception which he received on that occasion was memorable, the whole meeting rising and cheering him most enthusiastically, and at the Association dinner on the same evening he had a most hearty reception.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

The Early Notification of Births Bill came on for consideration as amended by the Standing Committee on Friday, and led to a long debate. Mr. Bertram first moved an amendment to free the midwife from the duty of notifying the birth to the medical officer of health. Dr. Macnamara pointed out the objections to this alteration, and quoted the fact that midwives already notified births under the Midwives Act. Mr. Burns expressed a hope that the amendment would not be pressed, as it would destroy the usefulness of the Bill, which he called a humanitarian experiment. The amendment was negatived.

Lord Robert Cecil then moved an amendment to relieve medical practitioners from the obligation to notify under this Bill. He regretted that it was necessary to move this amendment. The case which the medical profession made was that this Bill would impose a new professional duty upon them without payment. He was advised that it would risk the success of the measure if they permitted a fee to be paid, and he felt that they would be obliged to consent to this amendment. He hoped hon. members would remember that the doctors had withdrawn their opposition to the Bill on the terms that this amendment was passed. Colonel Seeley seconded the amendment, and

Mr. Burns said the Government reluctantly accepted it. Personally it was a matter to him of extreme regret that a great and honourable profession, which had signalized its earnest interest in this movement at its commencement, should at practically the last hour have dissociated itself from it. He believed the best of the doctors would deplore it, and that a large number of them would refuse to dissociate themselves from the rest of mankind in the working of this experimental measure. He believed the doctors were greater than their trade-union. Mr. Radford, Mr. Bertram, and Mr. Lupton opposed the amendment.

Dr. Cooper denied that the non-payment of a fee was the ground of the medical practitioners' opposition. It was the penalty to which they objected. [Mr. Burns: No.] He submitted that when a deputation waited upon the right hon. gentleman, Sir Victor Horsley put it plainly and distinctly that it was the penalty to which they objected. [Lord R. Cecil: The hon. member must surely forget some conversations we have had.] Dr. Cooper continuing said the medical profession felt that notification was the duty of the parent; that it was a civic duty pure and simple. This Bill was based on the Notification of Diseases Act. There was a penalty under that Act, but there was a fee also. But in this matter he insisted that the ground of their opposition was not the fee, but the penalty proposed to be put on the doctor in a matter which concerned the duty of the parent.

Mr. Sherwell thought it was desirable that medical men should be included in the Bill, but he preferred to accept the amendment rather than jeopardize its passage. After speeches in opposition to the amendment from several members,

Dr. Macnamara said the medical profession would hardly be grateful to their advocates, who had succeeded in making it appear that they declined to carry out a professional act because they were not to be paid a fee of one shilling. That was not the case. The medical profession objected to being subjected to a penalty in respect of what was a civil and not a professional obligation. But they put their objection on a higher ground than that. Their function in the birth chamber was a professional one, and it was not for them to scattter broadcast notifications of births. He thought they might have undertaken this duty. He did not say the Government would drop the Bill if this amendment was rejected. But he had been informed that if the doctors were included there would be such a powerful opposition to the Bill in another place as would endanger the progress of the Bill at this stage of the session. He thought the Bill would be worth a great deal even if the medical profession was excluded from its provisions.

Lord R. Cecil said if any intimation regarding another place had reached the Government it had not come through him. He had no reason to suppose the other House would take any particular view about this amendment one way or the other. He was told that unless the medical opposition to the Bill was withdrawn the Government could not see its way to "star" the Bill. He therefore approached the Government and asked it whether it would assent to any amendment of this kind. He then went to the representatives of the medical profession in the House, and they agreed to withdraw their opposition if he moved such an amendment as this, and it was accepted by the Government. If, therefore, this amendment was rejected, he should feel bound to do his best to prevent this Bill from going further. He thought the Government were also bound by that understanding. They could not have gone on with the Bill without the consent of the doctors, and if this amendment was rejected they were honourably bound to abandon the Bill.

Dr. Cooper said the noble lord had approached him, and he withdrew his opposition to the Bill on the understanding that the Government would agree to the insertion of these words.

Mr. Burns said the noble lord had accurately stated the arrangement made between himself and the medical profession. It was true, as the noble lord had said, that there would have been little chance of this Bill being passed this session but for some understanding on the noble lord's part and on his own with the doctors as to the conditions under which this Bill should be passed. But they could not by an understanding or bargain between themselves withdraw the Bill from the purview of the House when perhaps there might be a chance of getting the Bill through. Personally he declined to accept the attitude in which the hon. member for Bermondsey wished to place him. It was all very well to say the doctors now did not want the fee. Had his hon. friend told the noble lord and himself that before the necessity for a bargain of the kind referred to would not have been necessary. It seemed to him that if he had to choose whether this Bill should be lost and a million children in the next year placed under the disability that was imposed upon them by the hon. member for Bermondsey, who he did not believe represented the medical profession in this matter, or leave it to the House, he appealed to the noble lord to exonerate him from any breach of agreement, and to leave the matter to the good sense of the House.

Lord R. Cecil said that as far as he was concerned he felt absolutely bound by the obligation he had come under.

Dr. Cooper asked the noble lord to give way on this point, and he for his part would raise no objection to the House passing the Bill in its present form. When he withdrew his amendment it was on the distinct understanding that the Government would adopt the Bill as a Government measure and "star" it. If he had not withdrawn his amendment it would not have been "starred." Therefore the onus rested entirely with the President of the Local Government Board. Mr. Burns thanked the hon. member for releasing both the noble lord and himself from any supposed understanding.

Lord R. Cecil reminded the House that other hon. members besides himself had come under a similar obligation, and Sir Henry Craik declared that he had no wish to stand between the House and the Bill. If the hon. member opposite, speaking for the medical profession, was prepared to give this relief, he (Sir H. Craik), although with hesitation and without having time to communicate with his constituents, would not place himself in the way of the Bill. The House then divided, and the amendment was rejected by 87 to 19. The minority consisted of Lord Balcarres, Mr. G. S. Bowles, Sir W. J. Bull, Mr. George Cave, Dr. G. J. Cooper, Mr. C. H. Corbett, Sir Henry Craik, Mr. Arthur Fell, Mr. H. W. Forster, Mr. F. L. Harris, Mr. E. J. Hornıman, Mr. Norman Lamont, Mr. T. B. Napier, Mr. Patrick O'Brien, Mr. John O'Connor, Mr. A. Rolland Rainey, Mr. A. J. Sherwell, Hon. Lyulph Stanley, and Viscount Valentia. Dr. T. J. Macnamara and most of the members of the Government present, as well as the Labour members, voted with the majority. Mr. John Burns did not vote.

On Clause 2, Mr. Adkins carried an amendment empowering "the council of a county, other than the county of London, may adopt the Act either for the whole of the county or for a district therein." Dr. Cooper moved to add the words, "In London the medical officer of health of every metropolitan borough (including the City of London) in which this Act is in force for the time being, shall send weekly to the London County Council, in a form prescribed by the Local Government Board, a list of all notices of birth received by him under this Act during the past week." The amendment was agreed to, and then Mr. Whiteley moved that the Bill be read a third time. Dr. Cooper regretted that in Committee this Bill had been deprived of its compulsory character. The rate of infant mortality was higher in the rural districts than it was in London. The main cause of infant mortality was not ignorance. Contributory causes were an impure milk supply and drink; but the real cause was that 60 per cent. of the fathers were not in receipt of a living wage and could not provide for their children properly, and therefore the mothers were compelled to go out to work. Mr. Lupton opposed the Bill, because it was based on compulsion. Lord R. Cecil and Mr. Adkins spoke in support of the third reading. Mr. Burns disagreed with the view that poverty was the great cause of infantile mortality. This was proved by the fact that in the rural districts 5,000 out of every 100,000 children born died in the first three months; in mining districts, where the wages were twice as high, 8,000 out of 100,000 died; and in the textile districts, where wages were higher still, 9,126 out of 100,000 died. Married women, in his judgement, ought not work in factories; their province was at home. The sooner the working classes recognized that fact the better for the home comforts of the men, the better for the children, and the better for the State. The Bill then passed its third reading. When the second reading was moved by Lord Allendale in the House of Lords on Saturday, the Marquis of Lansdowne protested against the House being asked to pass a Bill which it had not even seen. The debate was adjourned until Monday, when the Bill was read a second time without discussion; its remaining stages being taken by consent, it was passed, and received the Royal assent on Wednesday.

The Vaccination Bill, which does not touch Scotland, was before the Commons on Thursday last week for the purpose of considering the amendment made in the Lords which confirmed the right to make a declaration of conscientious objection to the father or single parent having charge of the child instead of "either parent." Dr. Macnamara expressed regret at the amendment, but said there was no prospect of resisting the Lords' amendment without endangering the Bill, and he therefore advised its acceptance. Mr. Lupton said that the provision was particularly hard on the people in the country districts who lived many miles from the magistrates. If the Bill were lost there were many who would not regret it. These peddling attempts to mitigate a great injustice were of doubtful benefit. The more the stream was dammed the greater would be the breach. This amendment was a special hardship, which the House of Lords need not have inflicted on poor suffering people. Sir W. Collins followed, and said that he regretted that the point had been surrendered. The Lords had shown a disregard of public convenience. Though he should have been glad to see Bill go further, he accepted it as an advance in the direction of the abolition of compulsion. Mr. Lehmann protested against the way in which this decision had been forced on the House by the action of the Lords. It was after mature consideration that the Standing Committee extended the power to apply to the mother. Mr. Cave said that it was hardly fair to present this as a case of the House of Lords overruling the will of the House of Commons. The Bill as introduced was in the form approved by the Lords; and this amendment relating to the mother was only inserted in Grand Committee by a majority of two, against the wish of the President of the Local Government Board. Mr. Burns wound up the debate, and said that the hon. member for Sleaford exaggerated the difficulty of making a statutory declaration. Under the old procedure the certificate of exemption could only be obtained from a magistrate in court. Under the Bill, even with the Lords' amendment, the facilities provided for making a statutory declaration by an objector to vaccination, and the accessibility of those before whom that declaration could be made, were an improvement beyond all comparison with the conditions which at present existed. He believed that the statutory declaration deprived the father of nearly all the complaint he had now on the ground of loss of time. On the merits of the question, his own view was that the liability and responsibility should be put upon the father and not the mother. The Lords' amendment was agreed to, and the Bill received the Royal Assent on Wednesday.

The Vaccination (Scotland) Bill was read a second time in the Commons last week. The Secretary for Scotland, in moving the second reading, said the Bill put the conscientious objector in Scotland on the same footing as in England. Under this system there had been an increase of vaccination in England, and there was every reason to believe that the same beneficial result would follow in Scotland. At present there was no indulgence shown to the conscientious objector in Scotland. The Bill removed the inequality and was in strict accordance with the recommendations of the Royal Commission. On the motion of Lord Balfour in the other House, an alteration had been made in the Bill with reference to the registration of the conscientious objection. The Government accepted this. The Bill was referred to a Committee of the whole House. It was considered on Thursday night, and passed with two drafting amendments, and was read a third time on Friday night. The Bill finally passed the House of Lords on Saturday and received the Royal Assent on Wednesday.

The Expiring Laws Continuance Bill came before the Committee of the House last week, and Mr. Lupton moved the omission of the Vaccination Act of 1898 from the schedule. The Bill, he said, defined the kind of lymph which the Local Government Board thought was good, and not what medical men thought was good. The Local Government Board went to Germany to buy its calf lymph, with the result that small-pox and other diseases, notably cancer, which caused over 5,000 deaths a year, were spread by this poisonous lymph. The substitution of calf lymph for humanized lymph caused thousands of deaths yearly, and thousands of other people were condemned to miserable lives by its use. The President of the Local Government Board, in reply, said that if the hon. member had his way, certificates of exemption would no longer be possible, and as an antivaccinator he would be considerably worse off. The Local Government Board

got the best calf lymph it was possible to obtain. The amendment was withdrawn, the Bill reported without amendment, and read a third time.

Sources of Calf Lymph.—Mr. Weir asked the President of the Local Government Board, in view of the fact that before the lymph obtained from any calf was used the animal was slaughtered for the purpose of ascertaining the condition of its health, would he state how many of the 505 calves hired last year were found on examination to be in perfect health; and, seeing that the hire of a four months' old calf for a fortnight costs the Board on an average 34s., would he say whether, in making arrangements for the supply of calves, the Board called for tenders, and for what period were contracts made. Mr. John Burns replied that of the 505 calves hired last year 444 were, after slaughter, examined by the veterinary surgeon and 442 were certified as perfectly healthy. The contracts were not made for any definite period. The Board had from time to time made inquiries with a view to obtaining tenders from different contractors, but they had not found persons willing to tender under the conditions which they found it necessary to impose.

The Public Health (Scotland) Act Amendment Bill was read a second time in the House of Commons on Wednesday last week. The Secretary for Scotland explained briefly that the object of the measure was to amend three clauses in the Public Health (Scotland) Act referring to infectious diseases which local authorities had found to be too restrictive in their operation. When the Bill passed it was hoped that steps would be taken to bring consumption within the range of notification. The public health medical authorities in Scotland desired the Bill to pass. After the second reading the Bill was referred to a Committee of the whole House. The Bill passed through Committee on Thursday night without amendment, and was read a third time.

Education (Administrative Provisions) Bill.—When this Bill came before the Lords for second reading last week, Lord Crewe explained the objects of the measure, and dealt particularly with the clause relating to medical inspection and attendance. He said it was the only point on which differences had arisen. An amendment had been moved in the Commons providing that parents who were able should be made to pay for medical attention on the lines of the Provision of Meals Act of last year. The President of the Board of Education had carefully considered the question, and had come to the conclusion that it was impracticable. If parents had to pay they might refuse to allow the doctor or the nurse to enter their homes, and so the great object of the Bill would be nullified. The charge would not be a serious one, and it was proposed to make a considerable addition to the grants to elementary schools generally, but not for this specific purpose. This fact should be taken into consideration in considering any extra cost involved. The Archbishop of Canterbury warmly supported the second reading, as did Lord Londonderry and the Bishop of Hereford. The second reading was carried without a division. The Bill was read a third time last week on Friday night, and received the Royal Assent on August 28th.

Parents and Medical Inspection of School Children.—Sir William Collins asked the President of the Board of Education whether under the Education (Administrative Provisions) Bill there was any obligation on parents to submit children attending public elementary schools to medical inspection, as well as an obligation upon local education authorities to provide for such medical inspection. Mr. McKenna replied that in the view of the Board the obligation placed by the Bill upon the authority to provide for inspection did not of itself compel a parent to submit his child to inspection.

Diphtheria Antitoxin.—Mr. Ashley asked the President of the Local Government Board whether he was in a position to make any statement with reference to the supply of diphtheria antitoxin on the part of local authorities for the treatment of those who were not in a position to buy it themselves; and whether he would draw the attention of the local authorities to the power given them under Section 133 of the Public Health Act, 1875 (38 and 39 Vict., c. 55), which enabled them to provide medicine and medicinal assistance to the poor of their districts. Mr. Burns said he was advised that the enactment referred to, and a similar enactment in the Public Health (London) Act, 1891, enabled sanitary authorities, with the sanction of the Local Government Board, to provide a temporary supply of diphtheria antitoxin for the poorer inhabitants of their districts, and medical assistance in connexion therewith. He proposed to issue a general order giving sanction to such provision by sanitary authorities, subject to suitable conditions. The order was in preparation.

The Poor-law Commission and Irish Lunatics.—Mr. Field asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state what the Government proposed to do respecting the Viceregal Report upon the Poor-law administration and treatment of lunatics in Ireland; and whether he was aware that both those questions were regarded as extremely urgent by the majority of Irish county councils, who favoured efficiency, economy, and reform. Mr. Birrell replied that the great majority of the recommendations of the Viceregal Commission would require legislation to give effect to them. The question of legislation would receive full consideration, but it was one of considerable magnitude and complexity, and he could not at present make any statement as to when it might be possible to introduce legislation on the subject. He had already stated that if the local authorities concerned should desire that effect might be given to any particular recommendations which could be carried out under the existing law, the Local Government Board would give prompt and favourable consideration to the matter.

Plague Mortality Figures.—Mr. Rees asked the Secretary of State for India whether he would consider the advisability of giving, in official publications and answers, together with the actual figures relating to plague mortality, the figures per mille of the population of India, in order that comparison might not be made with a population approximating to that of the United Kingdom. Mr. Secretary Morley said he would bear in mind the suggestion in cases in which the additional information would be pertinent and correct, and might prevent misleading comparisons. When, as frequently happened, plague was practically confined to a province, a per mille ratio to the population of India would itself be misleading.

The Embassy Medical Officer at Tokio.—Sir William Collins asked the Secretary of State for Foreign Affairs last week whether the medical officer to the British Embassy at Tokio was a legally qualified medical practitioner in accordance with the requirements of the Medical Act, 1858. Secretary Sir Edward Grey answered that he must remind the honourable member that on 4th June last, in reply to a similar question, he informed him that he was not prepared to make any statement involving an interpretation of any part of the Medical Acts. He must adhere to what he then said.

The Mortality in the Transvaal Mines.—In reply to Sir Gilbert Parker, Mr. Churchill said for the first three months of the year the average rate of mortality per 1,000 per annum was: Kaffirs, 31.6; Chinese, 16.3. The figure for whites was 20.0. Official figures for a later period were not available for Kaffirs. The average mortality for Chinese for the first six months of this year was 15.6, but in comparing the mortality returns of Chinese with Kaffirs, some regard must be paid to the fact that a certain number of Chinese were repatriated as physically incapable. He noticed that in the report of the Superintendent of Foreign Labour for 1905-6, it was stated that for that year those repatriated as physically incapable were 1,840, as compared with a total number of deaths, 935.

Public Health Bills.—The Public Health Bill, the Public Health (Scotland) Bill, and the Public Health (regulations as to Food) Bill were all passed through their final stages; they received the Royal Assent on the day of the prorogation (August 28th).

New South Wales.

LEPROSY IN NEW SOUTH WALES.

THE Annual Report of the Board of Health on Leprosy in New South Wales for the year 1906 has been presented to Parliament. On January 1st, 1906, there were 18 cases of the disease under detention in the lazaret at Little Bay. During the year 9 persons were reported as suffering from leprosy under the Public Health Act, 1902, Part III, and of these 6 were ultimately admitted on warrants issued by the Board after careful inquiry; 4 patients were discharged, 3 Chinese returned to China, and 1 European, admitted during 1904, was considered to have recovered at least sufficiently to be discharged from the lazaret by order of the Board. The number of cases at present under detention is 20; of these 6 are natives of New South Wales of European descent, 1 a native of Fiji of European descent, 1 a native of England, 1 a native of Ireland, and 1 a native of the United States of America. Of the coloured lepers 1 is a Javanese, and 9 natives of the South Sea Islands. The annual average expenditure per inmate amounted to £79 14s. 10d. Special interest attaches to the report on the case of the Englishman who was discharged as "recovered." This patient was an exceptionally intelligent man, who was determined to do all in his power to get well if possible, and he accordingly co-operated most readily with the medical officers in his treatment. He was at first treated with gurjun oil, and took up to 240 minims a day, this course of treatment being only interrupted by digestive disturbances. No appreciable effect was produced, although the treatment was continued for five months. He then began taking chaulmoogra oil; of this he was able to take for a short time as much as 315 minims a day, but was obliged to reduce it owing to general pains and malaise. He continued to take the oil up to the time of his discharge. During the last seven months he also took from one-sixtieth to one-thirtieth of a grain of strychnine. When the question of this man's discharge came before Dr. Ashburton Thompson, the President of the Board of Health, he decided to submit him to Danielssen's test, and accordingly he was given 10 grains of potassium iodide three times a day for fifteen days. As no effect was produced, he was released on September 20th, 1906. Dr. Thompson comments on this case very fully:

> For all practical purposes—that is to say, as regards possible dissemination of infection—this patient had recovered, and could no longer be detained in the lazaret. But recovery from tuberous leprosy is so uncommon that this man's condition needs some discussion. At the date of his discharge his right ulnar nerve was still so far enlarged as to be just traceable for three or four inches above the elbow-joint; both peroneal nerves were enlarged, and of unequal size; the skin of the left elbow and of the posterior aspect of the left forearm and hand were hardly normal in appearance, though possibly only slightly congested; he exhibited the remains of a macula (then devoid of characteristics) on the right buttock, and the sweat function had not become completely restored over the malar prominence. It may be hoped that convalescence will progress until complete recovery has taken place; but as yet it can hardly be said that the disease has entered on a stage of assured quiescence The invasion of the peroneal nerves during the last year is evidence on this point.

Dr. Thompson refers to two important methods of examination of cases of suspected leprosy, which, to judge from the many clinical records of cases, are not generally employed systematically. The first is the systematic examination of the peripheral nerve trunks. Such alterations as have been noted in the case under consideration in the peroneal nerve trunks suffice by themselves to suggest a diagnosis of leprosy when they are seen in a patient who otherwise is in apparent good health. These alterations in nerve trunks are probably the earliest sign of infection. The second means is the subcutaneous injection of a salt of pilocarpine. The appearance under the influence of this drug of more or less dry areas of skin, intermingled with areas over which sweating occurs in normal degree, always affords strong grounds for suspecting leprosy, while dryness of wrists and hands and of ankles and feet, when it occurs under that influence, is decisive.

As regards the effect of the treatment on the disease in this patient, Dr. Thompson states that although chaulmoogra oil always appears to do some good, it has not, in his experience, done in any other case as much good as was observed in this patient; but, on the other hand, no other patient has pushed the dose to the same extent; and in conclusion he remarks that:

> Whatever the value of chaulmoogra oil as a remedy for lepra may be, on the whole I feel obliged to express the opinion that it would not have produced the favourable results recorded in this case unless the patient had possessed an unusual inherent power of combating the infection.

Attached to this report are full histories of all the new cases of the disease admitted during the year, and some excellent photographs.

SANATORIUM TREATMENT IN NEW SOUTH WALES.

The medical report on the work done at the King's Tableland Sanatorium, Wentworth Falls, states that during the year 1906, 101 cases were admitted and 100 discharged. Of the 100 who were discharged, 97 were in residence in the sanatorium for at least three months; of these, 29 were "early," 62 were "intermediate," and 6 were "advanced." The classification is the same as adopted in previous reports. "Early" cases correspond with those included in Stage 1 of Turban; Stage 3 includes cases having physical signs of cavity in the lung, or with tuberculous ulceration of the larynx; Stage 2 includes all cases intermediate between Stages 1 and 3. Of the 97 cases treated, 55 showed complete arrest of the disease. By arrest is meant complete disappearance of all signs of active disease, registration of normal temperature, weight, pulse, and respiration, disappearance of tubercle bacilli, from the sputum (if any), and a capacity for exertion approaching that of an ordinary individual; 22 cases were much improved, 8 improved, 8 were unimproved, and 4 died. Of the 97 cases treated, then, only 12 failed to improve during their stay, 72 were able to return to full working conditions or to selected light occupation. The treatment adopted in all cases was the open-air or sanatorium system. In addition a large number of patients were treated—at first tentatively and later more freely—with various specific products of the turbercle bacillus, and an endeavour made to assess their value as adjuncts to treatment. Dr. McIntyre Sinclair, the Resident Medical Superintendent, now makes it a rule to offer the patient the benefit of the combined treatment in all cases in which no contraindication exists, and hygienic-dietetic methods alone have failed to bring about improvement within a reasonable period. Wright's method of calculating the opsonic index has been accepted, and the value of the process in its application to pulmonary tuberculosis is now being investigated. The average residence of 55 cases which proceeded to complete arrest of the disease was 147½ days, and the average increase in their weight was 16¼ lb. Tubercle bacilli were detected in the sputum in 85 of the 97 cases. In the remaining 12 the diagnosis was confirmed in 3 cases by physical signs plus haemoptysis and evening pyrexia, and in 9 by physical signs plus a positive reaction to tuberculin. As regards the effects of the altitude (2,800 feet) on haemoptysis, Dr. Sinclair remarks that of the many cases admitted during the past four years with a history of haemoptysis, not a single one had haemorrhage on the day of admission or during the week following admission to the institution. Of the 44 haemorrhage cases treated in 1906, 29 made an apparently complete recovery, and this is much in accord with the percentage of previous years. The presence of haemoptysis does not constitute any contraindication to treatment at a moderate altitude; on the contrary the evidence goes to show that a mountain climate is particularly favourable to the treatment of this complication.

THE PLAGUE OUTBREAK.

Although plague rats have been found from time to time recently, no case of the disease in man has been reported for some considerable time, and the outbreak of 1907 may be considered practically at an end. During the week ended July 6th, 1,454 rats and mice were destroyed, and among them only one rat and one mouse were found to be plague-infected.

IMPORTATION OF SACCHARINE.

Under Federal proclamation, the importation of saccharine into the Commonwealth, except for scientific or medicinal purposes, is prohibited. As this substance is used by manufacturers of temperance drinks, and its use

in restricted quantities is permitted by the State Public Health Act, an anomalous position is created. Effect was first given to the Federal proclamation in March last, but the subject has only now reached an acute stage through the stocks of saccharine formerly held approaching exhaustion. As this is of importance to manufacturers of non-intoxicating drinks, a deputation is to wait on the Minister of Customs to draw his attention to the matter.

Food Adulteration.

Although adulteration of food still goes on to a considerable extent, so that the introduction of a Pure Foods Bill is necessary, much has been accomplished during the past few years in securing a purer food supply. Thus, in 1901, the first year in which the law was put in force, a total of 228 samples of food was taken in the metropolis. Of that number, 138 were found to be adulterated, or equal to over 60 per cent. of the total. Last year over 1,700 samples were taken, and only 244 were found to be adulterated—equal to 14 per cent. In 1901, 70 per cent. of the samples of milk tested were found to be adulterated, while last year only 6 per cent. of the milk was found to be mixed with a slight addition of water. Out of 1,074 samples of milk taken in the whole of the metropolis only 9 per cent. were impure. Butter is now found to be free from margarine, water, and other ingredients which were commonly found in it five years ago. Jam and bread are also now practically pure. A crusade is being carried on against manufacturers of oatmeal, who are in the habit of mixing wheaten meal with it, which, though not injurious, is much cheaper. Olive oil is sometimes adulterated with various inferior and cheaper oils. During the past year or two there have also been withdrawn from the market quantities of condiments and starchy foods containing excessive amounts of preservatives. The adulteration of sausages with boric acid is now apparently a thing of the past. Wines and spirits are frequently found to be below the requirements of the Act, owing to the large addition of water. Under the new Bill to be introduced, standards of quality of foods will be enforced, and the officials will have power in directions in which they are now powerless.

Scotland.

Notification of Glanders, Anthrax, and Hydrophobia

The Scottish Local Government Board having been approached by the Board of Agriculture and Fisheries as to the desirability of making arrangements for the notification of cases of glanders, anthrax, and hydrophobia in man, where the facts pointed to the possibility of infection to the human subject from an animal or its carcass, or where inquiry under the Diseases of Animals Acts seems to the medical men concerned to be prima facie desirable, have issued a circular to medical officers of health stating that the Board is satisfied as to the advantage of such an arrangement with a view to checking the spread of these diseases. The Board accordingly requests medical officers of health to be good enough to intimate in future to the clerk of the town or county, as clerk to the local authority under the Diseases of Animals Acts, such cases or suspected cases of glanders, anthrax, and hydrophobia in man as may come to their knowledge.

The Govan Cottage Nurses' Training Home.

We have received the following letter the publication of which has been delayed owing to the greater pressure on our space during the last few weeks:

149, West George Street,
Glasgow, July 26th, 1907.

The Cottage Nurses' Training Home, Govan.

Dear Sir,

A letter referring to the nurses of the above Training Home was published in your Journal of the 15th June. Owing to the absence of our President, Her Grace the Duchess of Montrose, a reply could not be sent until now.

The letter has been fully considered by the Committee of the Training Home, and I have been instructed to write to you saying that the Committee regret very much there should be any difficulty with the medical men in the district. They desire to work in harmony with them and there is not the slightest wish on their part to do anything which would injure the interests of the medical men in Govan and elsewhere. Unfortunately, some difficulties have arisen which have led to a considerable amount of correspondence in the last year or eighteen months. From time to time the Committee did what they thought was possible to meet the views of the medical men, and finally, on the 12th January last, I addressed a letter, by the instructions of the Committee, to Dr. Forbes Brown asking him if he would kindly formulate what he considered the requests of the Govan Medical Association so that the Committee might have these pointedly before them at their next meeting.

Dr. Forbes Brown replied on 14th January, and thereafter a Committee Meeting was held when everything possible was done to fall in with the proposals of the Govan Medical Association, as embodied in their reply of 14th January and thus to bring about harmonious working between the two bodies. Perhaps the simplest way, now that the matter has found its way into your columns, would be for Dr. Forbes Brown to send you a copy of my letter of 12th January and all the subsequent correspondence. You and your readers will in this way get to understand what is the position of our Committee and will be able better to judge of their anxious desire to meet the Govan Medical Association.

In the same number of the British Medical Journal there is a note written by way of comment upon Dr. Forbes Brown's letter. The first part of the note, bearing upon the necessity for enacting and enforcing strict rules for the guidance of the matron and nurses and for the training of the nurses, is quite correct, and when you read the correspondence you will see that the Committee hold exactly the same view. The nurses should only be trained, as the note says, and in our Home are only trained, for country districts where the pecuniary resources and scanty population make it impossible for the people to obtain and pay for expensive, highly-trained nurses.

The most serious part of the note, however, is that where it is stated that "If the Govan Cottage Nurses' Training Home is turning out women after six months' teaching of the kind described, and allowing them to be looked upon as trained nurses, the Committee of Management is accepting a very serious responsibility, and we trust that the matter will be reconsidered after consultation with the medical profession through its recognized organizations" This allegation has no foundation whatsoever. The nurses sent out by the Govan Home were never intended to be anything but cottage nurses trained according to the Holt-Ockley system, to nurse the working classes and the poor, and no member of the Committee would countenance the idea expressed in the note.

In considering the questions which have been raised in connexion with the Cottage Nurses' Training Home at Govan much confusion will arise unless two things are kept separate: there are midwifery nurses and there are also general nurses. Now, with regard to maternity work done in Govan, no nurse is allowed to attend a case of childbirth unless she possesses a qualifying certificate, such as that of the Glasgow Maternity Hospital or the C.M.B. Of course, when a nurse is being trained for this particular work—as the nurses are excellently trained in the Govan Home—she has to go with the qualified nurse to get the number of cases to qualify, but she goes as a pupil and not in charge of the case. Again, when a nurse leaves our Home to go to a country district she cannot undertake midwifery cases unless she has taken a qualification. It may be noted that a great many of our nurses do take a qualifying certificate, so that when they leave the Home they have not only this but a training in general nursing as well, and are therefore better equipped for their work than the ordinary midwife.

Coming to the second department, there is the training in general nursing in Govan. The nurses are most carefully trained by an excellent and experienced matron, who has had many years' hospital training and holds the L.O.S. and C.M.B., for not less than six months, and in many cases, eight or ten months. The Committee insist upon the nurses being carefully instructed never to take upon themselves the duties of the medical man. The same instruction is conveyed to the country committee or association which is going to employ the nurse after she leaves.

But while the nurses are being trained in Govan the rules are particularly stringent. Thus no nurse is allowed to go to a general case unless where there is a doctor in attendance. If, therefore, the nurse obtained from the Home be not suitable, the medical man has the remedy in his own hands, because he can call in another nurse or send the case to the hospital. When nurses who have been trained for general nursing only leave Govan to go to country districts they receive no certificate from our Committee. Before any certificate is granted the nurse must have been at work for three years subsequent to her training, and even then a certificate is only granted if the reports from the Committee and the medical men in the district are satisfactory.

The Committee in no way admit that the nurses they send out are unfit for the work to be undertaken by them. They are aware that the training which their nurses receive is not so extensive nor of such a kind as that which is received in any of our large hospitals. The training is, however, of a special nature to meet special requirements, as the nurses not only attend the sick but assist in housework, and do many

other duties which the highly-trained nurses would not undertake. The great justification of the Holt-Ockley system is contained in the statement just made, because by this means nurses are got by the poor of a class suited for the special work just indicated, and the system brings to them invaluable aid where no nurse at all could be otherwise obtained.

It is interesting to note that, considering the large number of nurses now employed in country districts who have been trained in the Govan Cottage Nurses' Training Home, not one single complaint has been received bearing upon inadequate training. On the contrary, we have received reports from the country associations throughout England and Scotland (some from the Highlands and some from the Hebrides) giving excellent accounts and abundant testimony of the good work that is being done.

The Committee would not for a moment admit that the poor should not be as well nursed as the rich, but they maintain that in the special work for which our nurses are intended, it is a boon to place within the reach of the poor the services of women with such training. Further, the Committee fully recognize that it is their duty to make the training as long and extensive as possible, and it will be their constant aim to improve the training, especially now that the Elder Cottage Hospital in Govan is at their command. The means, however, are limited, and until some one suggests a way out of the difficulty by way of obtaining the necessary resources to do more, the Committee are justified in sending out nurses trained under the Holt-Ockley system to minister to a class of the community who would, in many cases, have no nursing help at all, or at best the assistance of friends without training of any kind.

I am, dear Sir,
Yours truly,
ARCHIBALD CRAIG,
Honorary Secretary.

THE HEALTH OF ABERDEEN.

In his report on the health of Aberdeen for the month of July Dr. Matthew Hay states: The death-rate from all causes during the month (10.59 per 1,000 per annum) was considerably under the rate (14.22) for the preceding month, and also under the rate (12.60) for the corresponding month last year. The rate was one of the lowest monthly rates on record. The mean age of all persons dying during the month was 39.6 years as against 34.2 in the preceding month, and 36.2 in the corresponding month last year. The death-rate at every age-period was under the average, the rate at "adolescent" period being remarkably low, and only about one-sixth of the average. The rate among children under 1 year of age was also considerably under the average. As compared with the corresponding month in the preceding ten years, the past month exhibited a death-rate from all causes which was under the average by 24 per cent. The death-rate from each of the following groups of diseases was also under the average — namely, miasmatic (by 48 per cent.), tuberculous (by 36 per cent.), digestive (by 49 per cent.), respiratory (by 7 per cent.), circulatory (by 25 per cent.), nervous (by 3 per cent.), and developmental (by 14 per cent.). In only one group was the rate above the average, namely, urinary (by 18 per cent.). In regard to deaths among infants under 1 year, the chief causes were, in order of their importance: prematurity, convulsions, and pneumonia. The most prevalent zymotic disease during the month was scarlet fever—producing 24 cases, against 18 in the preceding month; there had previously been no deaths from scarlet fever since February. Diphtheria exhibited a considerable increase during the month, 13 cases, with 1 death, having been notified, as against 4 cases and no deaths in the preceding month. The number of cases of typhoid fever reported during the month was 6, with 1 death. The source of the infection was traceable in 5 cases to a visit to Peterhead. Erysipelas showed a slight increase during the month, 13 cases having been notified, as against 11 during the preceding month. There was 1 death from puerperal fever, and 1 case—the first since March—of epidemic cerebro-spinal meningitis was reported.

Ireland.

IRISH POOR-LAW DOCTORS' HOLIDAYS.

WHEN the Irish Local Government Board consented to allow every Poor-law medical officer an annual holiday of four weeks there was considerable difficulty in getting Boards of Guardians to grant the holiday, although the Local Government Board allowed half the expenses of the *locum tenens*.

These difficulties had, however, been overcome to a great extent, and matters were working smoothly, when the Local Government Board threw in an apple of discord. They issued a recommendation to Boards of Guardians that they should select *locum tenens* who would reside in the district, and also the rather contrary advice that guardians should appoint the practitioner nominated by the doctor seeking a holiday.

Now, as regards the bulk of the rural dispensary districts, the former suggestion is impracticable. Local practitioners who are not in the Poor-law service are conspicuous by their absence; and where there are such, few of them would be willing to leave the towns to reside in a remote country district for four guineas a week—the maximum allowed by the Local Government Board for such services. Neither would young men be willing to come from the cities, pay their railway fares, support themselves, and pay their car hire on these terms.

But this recommendation, which is constantly reiterated when a medical officer applies for leave, affords a certain class of guardian the wished-for opportunity of working a job, so that in many unions, when the dispensary doctor has applied for leave and recommended the medical officer of an adjoining district as his substitute, a pitched battle has ensued, one party supporting the nominee of the medical officer, and the other some friend of their own. Not infrequently the latter carry the day, with the result that the doctor, rather than leave his private practice at the mercy of an unfriendly neighbour, declines to take any holiday or decides to pay his *locum tenens* out of his own pocket—a course which the jobbers are not even willing to agree to.

It seems to us that the system is at fault, and that the only remedy is to pay the Poor-law medical officer a reasonable salary and let him, as in England, provide his own substitute, who would reside in his house, and have the use of his vehicles, and do all his work. Were this done, it would provide employment for newly-qualified men as *locum tenens*, though it is true that their experiences in rural dispensaries would curtail the supply of applicants for such appointments. But the crux of the situation is the starvation wages of the Irish dispensary hack, as he is called.

Some half a hundred Boards of Guardians have adopted graded scales of salaries for their medical officers, commencing at from £100 to £120 a year, and rising to a maximum of £160 to £180 after thirty years' service. Some have made these terms retrospective, and others have not, and all have given them grudgingly.

These terms are utterly inadequate, and are only accepted by the Poor-law service as an instalment of the reasonable remuneration they are entitled to in a country where every man, pauper or non-pauper, can demand his services. As yet not even a third of the Irish unions have granted any increase, and so the war goes merrily on, as in Castlerea, to the discredit of all those responsible for the care of the sick amongst the people. A State service—and a State service alone—is the remedy; and it will come to that, even if so many of the recommendations of the Viceregal Commissioners are "highly contentious" and, in the view of certain persons, "impracticable."

CONSUMPTION IN IRELAND.

The annual report of the Local Government Board for Ireland, which has recently made its appearance, fully bears out all that was said by the Registrar-General on the widespread existence of tuberculosis in Ireland. The words of the Local Government Board are these:

> The present prevalence of pulmonary tuberculosis in Ireland cannot be contemplated without grave concern, and any endeavour which may be made towards improvement will have our sympathy and such assistance as is in our power to offer.
>
> The medical department of the Board is of opinion that the prevention of consumption should be dealt with on a systematic plan consisting of the following four elements;
>
> 1. Advanced cases should be accommodated apart in hospitals, the mere segregation of highly infectious cases from healthy persons being in itself a great safeguard against the spread of the disease.
>
> 2. Where the disease is in an incipient stage, and is capable of being cured or arrested, sanatoriums should be provided where persons affected should be sent for proper treatment.
>
> 3. In large centres of population dispensaries where advice can be obtained, and where the latest methods of treatment

can be tried, have proved very successful in other countries, especially in France, and might be established in Ireland with advantage.

4. Lastly, local committees appointed by sanitary authorities to deal with the question of consumption would be very beneficial. The functions of such committees would be educative. They should endeavour to personally convey information to sufferers, and also circulate leaflets and literature relating to this disease. Much might be done by active committees, who would advise their neighbours on the advantage of simple sanitary precautions in their homes.

The Board is also of opinion that compulsory notification should be carried out by special legislation, and that safeguards should be provided to ensure that no unnecessary restraint is placed on the liberty of consumptive patients. Notification ought to be used merely for the purpose of gaining information as to the locality of the disease, and helping the sufferer by giving assistance and advice which would be useful in protecting other members of his family from contracting it.

Proposed Tuberculosis Exhibition in Ireland.

The tuberculosis exhibition, which the Women's National Health Association of Ireland is organizing, will be arranged on the lines of those held in Germany and the United States. Those members of the British Medical Association who attended the Annual Meeting last year will remember the exhibition held in Toronto. Her Excellency the Countess of Aberdeen is the President and prime mover in the Irish enterprise, and has issued invitations to various public bodies to send delegates to represent them on a consultative committee. The exhibition will first be held in the Village Hall of the Home Industries Section of the Exhibition at present in Dublin; it will then become itinerant, and will visit most places in Ireland. Its first stopping place will be Belfast. It is rather unaccountable that the Public Health Committee of Belfast did not see its way to appoint delegates, giving as its reason that it was informed that their expenses could not be paid. The Ulster Medical Society has appointed their President (Dr. McCaw) and an ex-President (Dr. Calwell) to represent that body. Belfast teems with consumption, and it is curious that this Committee of the elected representatives of the people should not join in the crusade, and still more curious that such a reason brought them to such a decision.

The Rotunda Hospital.

On Tuesday last Her Excellency the Countess of Aberdeen opened a new wing of the Rotunda Hospital, Dublin. This addition has been made at a cost of £8,000, and comprises six new wards, nurses' and lady students' rooms, and a disinfecting chamber. The Master (Dr. Hastings Tweedy), in the course of his address, mentioned that a new pathological department, fully equipped, had been provided by the late Master, Dr. Purefoy. Lady Aberdeen, in declaring the new wing open, said that in the 167 years which had elapsed since the foundation of the hospital no poor woman in her hour of need had been turned away from the doors. This special hospital held the foremost place among schools of its kind all over the world for medical students, midwives, and nurses, and medical men from distant parts came to attend its post-graduate courses. The expression of Her Majesty's wish that a way might be found whereby patients might be retained longer than eight days, if desired, had brought about the building of the wing, and the Queen, she was sure, would be glad to hear of its inauguration. The work of the hospital appealed to the deepest part of their humanity. The Lord-Lieutenant also spoke in response to a vote of thanks, and expressed his earnest good wishes to all concerned in the good work.

A Variable Board.

It seems rather an anomaly for a Committee of Management to pass a resolution increasing the salary of its resident medical officer at one meeting and rescind it at the next. Yet this has been done recently in connexion with the salary of Dr. Oakshott, Resident Medical Superintendent of the Waterford District Asylum. It appears that at the last meeting but one of the Asylum Committee an increase of £50 a year was voted, and subsequently sanctioned by the Lord Lieutenant. A notice of motion to rescind the resolution granting the increase was handed in, and at the last meeting of the Committee this motion was carried. This, however, is not a complete story of the vagaries of the Committee. In the first instance an increase of £100 a year was carried; this was rescinded at the next meeting, but was again carried, only to be again rescinded; then an increase of £50 a year was carried, and now this has been rescinded. Dr. Oakshott is entitled to this increase for good service, and is the only Resident Medical Superintendent in Ireland whose good service has not been recognized. It is trying enough for Dr. Oakshott to have the proposed increase cut down from £100 to £50, but still more so when finally adjudged no increase at all owing to some friction amongst the members of the Committee of Management of the asylum.

Notification of Deaths in Belfast.

During the sittings of the Health Commission in Belfast recommendations were several times made to the effect that the health authorities of the city should be promptly made acquainted with the deaths that occur in the city, the causes, and the addresses. This proposal received practically unanimous support and the Health Committee approached the Local Government Board. That Board replied that it had been advised that the Corporation had no power to make payments for the immediate intimation of the death from the local registrars; the Board at the same time referred them to the Registrar-General. The Registrar-General has now written a letter to the City Clerk, dated August 14th, in which the advice is given that if the Corporation desire to have immediate information of cause, address, etc., "the proper course for them is to pay the local registrars for furnishing the information, as is done in England and Scotland," and if this cannot be done, to obtain statutory powers. Such information has been asked for annually by the ex-Medical Superintendent Officer of Health for some ten to fifteen years; the present officer holds the same view; the Health Committee, profession, and public are also in accord. It will be interesting to note how long it will take before the reform is carried out.

Birmingham.

Infant Mortality.

The infant mortality-rate in Birmingham for 1906 was 168 per 1,000 births, as compared with 155 in the preceding year. In the report of the medical officer of health important information is given upon this subject. The average infant mortality-rate was:

1872 to 1876	176
1877 to 1881	162
1882 to 1886	166
1887 to 1891	172
1892 to 1896	181
1897 to 1901	197
1902 to 1906	167

One cause of this high mortality-rate is that during the past ten or fifteen years the proportion of that class of the community amongst which infant mortality is usually highest has been increasing. This is due to the fact that a larger proportion of the richer classes now live in the suburbs, so that about two-fifths of the healthiest of the population have overflowed into the adjoining districts. The infant mortality-rate for Birmingham and suburbs is 13 per 1,000 less than that for Birmingham alone. The mortality-rate varies considerably in the different wards of the city, and ranges from 117 in the ward where the wealthiest class lives to 268 in the ward which consists chiefly of the poorest class. There were 2,686 deaths in 1906 in infants under the age of 1 year, and of these diarrhoea in all forms caused 667, debility and marasmus 453, bronchitis, pneumonia, and pleurisy 356, premature birth 321, and enteritis 151. The chief cause was, therefore, diarrhoea. Notwithstanding the fact that in 1906 the duration and intensity of the summer heat was very great and almost the worst on record, yet many previous summers have given rise to much higher death-rates from diarrhoea, and it is believed that this satisfactory result was due to the special precautions taken. Deaths due to prematurity, debility, and marasmus (mainly pre-natal conditions) numbered 774, or 28.8 per cent.

An inquiry has been made by the health visitors in Birmingham with regard to the association of infant mortality and the employment of married women. Out of 679 deaths inquired into, the mother went out to work

In 39 instances only. With regard to 771 women going out to work and whose infants were under 1 year of age, 657 were married women whose husbands lived at home, 80 were single women, 14 were widows, and 20 were living apart from their husbands. Poverty, arising mainly from the smallness of the husband's weekly wage, is the main reason why married women go out to work. The arrangements made for looking after the infants were: 51 per cent. were cared for by a neighbour living near; 13 per cent. by a relative in a neighbouring house; 35 per cent. were looked after in their own homes by an adult, often the grandmother or another relative; in seven instances the baby was looked after by a child under 14 years; and in only one instance was the baby taken care of at a day nursery. In consequence, many of the mothers were precluded from feeding their children entirely at the breast. Out of 771, 48 were entirely breast-fed, the baby being taken to the place of work; 445 women contrived to feed their children partly on the breast, while the rest of the women did not attempt to suckle their infants at all. When the mothers went out to work the homes of 48 per cent. were found to be dirty and neglected. No less than 437 of these mothers worked for fifty or more hours a week. With regard to the relation between infant mortality and the milk supply, it is argued that the milk supply cannot be at fault so far as deaths from diarrhoea were concerned, because nearly all the deaths occurred among one-half of the population, while the other half was practically immune, and yet very much the same milk supply is received by both. For the prevention of epidemic diarrhoea the medical officer of health has issued the following instructions to parents and guardians during the warm season:

1. Breast-fed infants should not be weaned during this period.
2. Bottle-fed infants should only have milk which has been bought in a fresh condition, boiled, and stored in a clean and cool place.
3. The jugs and feeding-bottles used for the milk should be kept scrupulously clean by scalding.
4. Infants should not be allowed to crawl on the floor or courtyard, where they can pick up dirt. Their clothing, etc., should be kept very clean, so as to prevent their sucking anything dirty.
5. Diarrhoea is so rapidly fatal in young infants that whenever it commences medical advice should be sought at once, and valuable time not lost.
6. By using common sense in keeping the house, yard, and everything in connexion with young children in a clean condition, it is certain that a large number of deaths can be prevented, and it will be greatly to the advantage of the citizens if a special effort is made during the short period the warm weather lasts.

Inquiries have been made into the deaths from epidemic diarrhoea of 913 children under 6 months of age, as to how they had been fed. Only 79, or 8.6 per cent., were breast-fed, the remaining 91.4 per cent. received food other than breast milk.

The registered midwives have distributed 10,000 booklets to the mothers they attend, setting out the important points in baby management. It is hoped that in this way the best methods of rearing the children are being given at the best times and by the chief person on whom the mother relies.

Manchester and Salford.

The Hospital Collections.

At a joint meeting of the Committees for the Hospital Saturday and Sunday Funds, held on August 13th, it was announced that the annual collections in Manchester on behalf of medical charities this year produced a total of £7,500. To this amount the Hospital Sunday Fund contributed £3,300, and the Hospital Saturday and Convalescent Homes Fund £4,200. The money has been apportioned as follows: The Royal Infirmary, £1,088; Children's Hospital, £1,174; St. Mary's Hospital, £993; Sick Poor and Private Nursing Institution, £737; Consumption Hospital, £559; Ancoats Hospital, £545; Salford Hospital, £519; Hospital for Incurables, £507; Northern Hospital, 382; Royal Eye Hospital, 332; Skin Hospital, £214; Jewish Hospital, £124; Ear Hospital, £96; Dental Hospital, £55; Christie Hospital, £50; Hulme Dispensary, £37; Greengate Dispensary, £30; Chorlton-on-Medlock Dispensary, £26; Lock Hospital, £21; and the Homoeopathic Institution, £2. It was stated that the amount thus contributed to the hospitals showed no diminution this year, notwithstanding the great outlay on the recent establishment of the Convalescent Homes at Arnside and Penmaenmawr.

Infant Schools.

A good deal of discussion has recently been taking place in the *Manchester Guardian* on the question, Should infants of 3 to 5 years of age be sent to school? It originated in a letter by Dr. Ashby containing some criticism on the remarks of Dr. Arthur Newsholme at the International Congress of School Hygiene. Dr. Newsholme had stated that the attendance at school of children under 5 years of age involved unnecessary risk to health, was educationally worthless, and was contrary to the interests of public economy. Dr. Ashby strongly controverted these statements, believing that infant schools fulfil a useful and necessary place in our educational system. He definitely denied that children between the ages of 3 and 5 got no intellectual advantage from school instruction, holding, on the contrary, that there was much to be said on the social and moral side for bringing such children under a skilled and sympathetic teacher. It was often urged that the epidemics of measles that occur periodically are largely spread by infant schools, but Dr. Ashby contended that, as the medical inspection of school children will almost certainly come into force before long, there will be a distinct advantage in having the inspection so early as the age of 3, as there will be a better chance of dealing with disease or bad home conditions, bad feeding, and so on, the earlier they are detected. He stated that as a matter of fact the period of life when measles was most fatal was under 2 years or 2½ years, and that it was the wasted and rickety children of tender age who died from measles-pneumonia, so that it was hardly fair to thrust the responsibility for the epidemics on infants' schools. He added:

I am far from believing that no blemishes could be found in our infants' schools as they exist to-day in the matter of buildings, ventilation, overcrowding, and perhaps the lack of medical inspection, but I cannot join in the systematic attempts that are being made by those high in authority to decry the education of the young child as being detrimental to the interests of society and itself.

West Yorkshire.

The Bradford Open-air Sanatorium.

During the three and a-half years elapsed since the Bradford Guardians' Sanatorium for Consumptives at Eastby was opened 228 patients have been admitted and 200 discharged. These figures by themselves are too small to be of much value in drawing any reliable conclusions as to the utility of a Poor-law sanatorium, but they illustrate very clearly certain facts which have been established by statistics derived from more extended observations. In the first place, the value of early diagnosis and prompt treatment is illustrated by the fact that 60 per cent. of the early cases were discharged without any signs of active disease of the lungs, as against 6 per cent. of the moderately-advanced cases and none at all of the advanced cases. One-third of all the patients discharged up to six months previous to the date of the report are known to be in good health and in full work. It says much for Dr. Holroyd Slater's energy and interest in his work that he succeeded in tracing over 84 per cent. of the patients who had been discharged since the sanatorium was first opened. The early cases not only showed the most satisfactory results, but this improvement was obtained with shorter residence in the institution than was found necessary for more advanced cases, whose condition on discharge, even after the longer treatment, was far less satisfactory. The average stay of the early cases was 15½ weeks, as against 25½ weeks for the moderately advanced cases. Thus the economic advantage of early admission is obvious. The Bradford Board of Guardians has wisely allowed patients to be admitted to the sanatorium direct from their homes as well as from the wards of the Union Hospital. This has been justified by the notable improvement in the general character of the

patients, as well as in the admission of cases in an earlier stage of the disease, which has been observed since this policy was inaugurated. In illustration of the latter point Dr. Slater remarks:

Out of 227 patients sent to me during the last eighteen months by medical men in the town, 87, or 38 per cent., were sent to the sanatorium, whilst only 13 of the past year's 176 admissions to the male phthisical wards, or about 7 per cent., came up to the arbitrary standard required.

Apart from the curative work of such institutions, their educational value is considerable. That patients from such poor environment as those admitted to Eastby should carry back to their homes some knowledge of hygienic requirements, and some wish to continue, so far as they are able, the mode of life they have found so beneficial, is in itself almost enough to justify the establishment of Poor-law sanatoriums. At the present time, when so many boards of guardians throughout the country are much exercised by the question of the advisability of building sanatoriums for the consumptive poor, such reports as this excellent one from Eastby cannot fail to be of value.

Refuse Destruction in Bradford.

The Report of the Ashpit Cleansing and Destructor Department of the Bradford Corporation recently issued is of interest as showing the enormous amount of work necessary to be done in this line to maintain the public health in a large modern city. Domestic refuse has had to be destroyed equal to 5 66 cwt. per head of the population; and large quantities of intended foodstuffs, such as 2,739 rabbits, 94 beasts, 37 calves, 39 sheep, and numerous other animals had to be similarly treated. All this work tends to show the alertness of the sanitary authorities in looking after the quality of the food supplied to the public.

CORRESPONDENCE.

THE EARLY NOTIFICATION OF BIRTHS BILL.

Sir,—A distinct understanding was come to more than a fortnight ago between Lord Robert Cecil, Sir Henry Craik, Dr. Cooper, and myself on the one hand, and the President of the Local Government Board on the other, to the effect that medical men were exempted from compulsory notification of births, and from all penalties under the Notification of Births Bill.

Acting on this assurance, Sir Henry Craik, Dr. Cooper, and I withdrew the motion of which we had given notice.

I hold that when Mr. John Burns found that he could not carry his amendment, he was bound in honour to withdraw the Bill.

Those who pressed for exemption of the medical profession from pains and penalties have, to say the least, been outmanœuvred.—I am, etc.,

Edinburgh, Aug. 26th. John Batty Tuke.

Sir,—Dr. Moore's urbanity deserves acknowledgement. I have not missed the point he raises, nor, as far as I know, did any member of the Representative Meeting.

If the medical practitioner attendant on a woman in labour is only there as a man in the street, then there was no necessity to include him in the Bill and punish him in the police-court if he did not give his services to the State as a matter of charity. It is because the medical practitioner is there "professionally" that the State seeks to demand from him, without remuneration and under penalty, a service for which any other profession than ours would be paid as a matter of course. This is the point at issue and fully stated in the resolution of the Representative Meeting. Possibly Dr. Moore, in his future conversations with members of Parliament, will kindly read to them the opinion of his colleagues who would be called upon to do work without pay but which Dr. Moore himself would never be asked to perform.—I am, etc.,

Westwick, Worstead, Aug. 27th. Victor Horsley.

Sir,—Surely Dr. C. O. Hawthorne has overlooked the fact that under the terms of the Infectious Diseases Notification Act, the law has already invaded the sacred precincts of the "confidential relationship which exists . . . . between patients and the medical advisers" for some years past and results prove that in the public interest this infraction of professional tradition has been amply justified. Therefore, it would have been futile, nay puerile, for the Representative Meeting to have opposed the Bill on this ground. As practical men the Representative Meeting adopted the only sensible course in contending for the incorporation of a principle already conceded.—I am, etc.,

Eastbourne, August 26th. William Muir Smith.

Sir,—It seems to me that Dr. Moore, and not Sir Victor Horsley, misses the point in this dispute.

I am quite at a loss to see where the professional service comes in in the notifying of infectious diseases. The State pays the doctor a fee for sending to the medical officer of health information that certain infectious diseases have occurred in his practice. The attendance on the patient and diagnosis of the disease is not paid for by the State, but by the patient; and further, the friends of the latter are equally bound by law to notify the disease, and are therefore under the same obligation as the doctor.

Dr. Moore may be able to draw a distinction between the legal obligation of sending information in writing to the medical officer of health of the fact that an infectious disease has occurred in his practice, and giving similar information as to the fact of a birth, but many of his professional brethren are not blessed with so fine a sense of distinction. It is true that the latter obligation is a far more unwarrantable interference with the confidential relationship that should always exist between a doctor and his patient.—I am, etc.,

Major Greenwood, M.D., D.P.H.,
London, N.E., Aug. 24th. Barrister-at-Law.

Sir,—The notification of births within a shorter period than now obtains is desirable, but the method proposed is in accordance with the usual slimness of Governmental authorities in dealing with our profession. Those who support this method are not general practitioners. The Education Department requires the parent to satisfy the school committee that a child is not fit to attend school. The parent must pay the doctor for a certificate, or the doctor, to oblige a patient, may give it free of charge. We are compelled to supply death certificates free. We must fill up vaccination certificates free; our patients pay us for the vaccination, not for the certificate. Now we are to be saddled with the duty of notifying births, also free. Failure to comply involves a penalty.

There can be no question that the onus of carrying out this Act will fall on us. What father, amongst most classes at any rate, will trouble to notify when he knows that the attendant will be held responsible? In case of non-notification, to whom will our authorities look first? The father, often too poor to pay our fee, may have to sacrifice a day's work, which he will avoid if possible. The nurse is too poor. Of course, it will be the midwife or the doctor. In any case, as Dr. Crawshaw says, "we must satisfy ourselves that the father has done his duty." Besides that, we understand Government officials sufficiently well to know that they will go for the penalty where they are most likely to get it.

No amount of specious reasoning can get over these considerations.

Why should we be held responsible when it is only a matter of shortening the time allowed for notification? Note the universal propensity to shift burdens on to other shoulders. We have sufficient anxieties and responsibilities in our daily work without having another penalty hanging over our heads. Plenty of penalties but no recognition of our services—it is an indignity. Are lawyers treated like this?

We are not State officials, nor is it our good fortune to work such short time as they do. Dr. Moore says that we are not "called upon to render professional services." Quite true; but we are to be assistant clerks to the registrar of births, and we shall have the privilege of paying the penalty—nothing more certain.

Medical men are not opposed to the Bill, as Mr. Broadbent suggests, but to the method of putting it into practice.—I am, etc.,

West Gorton, Aug. 27th. J. D. Willis.

MEDICAL TREATMENT OF SCHOOL CHILDREN.

SIR,—It is now decided that school children shall be medically inspected; the next question is, Shall those found defective be treated by the State? The answer will depend in great part on whether the present system is satisfactory or not. In considering this we will take the case of London and commence with vision. There are in the London elementary schools 750,000 children, 10 per cent. of whom have errors of refraction sufficiently severe to require glasses; the present system is that the whole school is tested as to vision by the teachers, the defective cases are submitted to the medical officer, who does not prescribe for them, but gives the children cards stating that their sight requires attention. These cards are taken home to the parents, who take or send the children to a doctor, or to an optician, or to a hospital, or nowhere. In a month's time, no doubt, some of the children have the right glasses, some the wrong, and some none—in what proportion no one knows, but it would be easy to find out. All that is necessary is for the Education Committee to appoint one or more oculists to re-examine 1,000 of the young card-bearers. With respect to deafness, something of this kind has been done; it was found that among 1,000 children nearly a third had defects of hearing. If these children had recently been tested by the teachers and sent home with cards, the present system must be pronounced unsatisfactory as regards hearing in East London.

The objections to State treatment are many and serious. One of them is the cost to the ratepayers. The pecuniary aspect of the matter is as follows: The children in the public schools are 96 per cent. of the whole, therefore there are 31,250 in private schools; 10 per cent. of these require glasses. Of the 3,125 it may be assumed that 125 are the children of doctors, who will be treated free; the remaining 3,000 will pay one or two guineas each—say, an average of 30s. The profession will then receive from the parents of these children £4,500.

As to the 75,000 card-bearers from the public schools, we will first assume that they all go to hospitals; there they will be seen and tested by the refraction assistants. These are paid about £40 a year for three mornings or afternoons a week. If these work for four hours at a sitting, spend twenty minutes on an average over each case, and have seven weeks and four days' holiday and sick leave a year, they will receive 6d. for each case—together £1,875; this, added to the £4,500 from the private schools, will give the profession an average of 1s. 7d. for each refraction case—a year, that is, for the refraction varies, and each case requires to be seen about once a year.

If we assume that only one-quarter of the public school children are taken to hospitals, the remaining three-quarters being taken to past refractionists or present refractionists in their own time, and that the parents of these children pay, either directly or through an insurance fund, an average of 5s. a case, then the profession will receive from the hospitals £469, and from parents £18,562—total, £19,031, an average on all cases of 4s. 10d.

As to spectacles, three out of four cases require spherical glasses, costing 2s. 6d., and the fourth cylinders, costing 4s. 6d. a pair, the average being 3s. a pair, and cost for all children £11,718, the total cost for sight testing and spectacles being £30,749. If the children are to be properly treated, this cost will have to be borne by somebody—by the parents, by the rich paying for the poor, by the ratepayers, or by doctors and opticians working for nothing. If it is borne by the ratepayers, since in London a 1d. rate yields £180,000, the rate would be $\frac{1}{6}$d., less if doctors and opticians work for less. Another $\frac{1}{6}$d. may be put down for the treatment of ear disease. For throat affections another $\frac{1}{6}$d.—and here it must be remembered that the State already treats scarlet fever and diphtheria. As to joint and bone diseases, many of these cases require to be treated at the seaside for one, two or three years, at a cost of £50 a year each. As to their number, all the hospitals know is that they are more than they can deal with, and that "funds are urgently needed"; if we put them down as 1 in each 1,000 children, the cost will be £37,500 a year, or $\frac{1}{5}$d. on the rates. The cost of dentistry would be considerable, making up perhaps the whole penny.

There is another side to the account: Diseases of the ear are generally secondary to those of the throat, and if the latter were better treated there would be less of the former to treat. Further, there are special schools for the deaf, in which the cost is higher than in ordinary schools; if there were fewer deaf children a saving would be effected. It seems, then, clear that the cost of State treatment need not be prohibitive; it might be limited to a rate of 1d. or 2d.

That being so we are face to face with the question whether State treatment would be a good or bad thing. It means more money, but also more lay control and more officialism. Would the pecuniary gain be outweighed by a lowering of the tone of the profession, a decline in the quality of treatment, and a retarding of the progress of medicine? Whatever may be the answer, State treatment may come. If it does it is desirable that (1) that department be placed under those who have made their mark in curative (as distinct from preventive) medicine; (2) that the duties be so subdivided that the appointments may be competed for by both specialists and generalists; (3) that the whole work should be done by, or be under the immediate control of, doctors; teachers should not test vision or hearing, school nurses should not treat ringworm; (4) that parents should still be free to employ doctors privately, and that attendance on them be recognized as school attendance: now, if a child visits a doctor or a hospital he is marked as absent; this brings down the percentage attendance of the school and tells against it: the child, too, may be disqualified for a medal.—I am, etc.,

London, W., Aug. 22. J. S.

"AN APPEAL FROM GYNAECOLOGISTS."

SIR,—Your final remark in the article on this subject of to-day's date leads me to narrate the following case, which, occurring recently in my practice, has been a lesson to me on the importance of vaginal examination in the circumstances I am about to relate—a lesson which may be useful to others also.

I was called to see a single woman of over 40, highly neurotic, who had been suffering for some time from uncontrollable vomiting, with gastric pain at times. She had been under the care of another practitioner, who had been driven finally to resort to rectal alimentation. The symptoms when I first saw her pointed to gastric hyperacidity rather than ulceration. But when the hyperacidity was corrected the vomiting continued. There was not a single symptom that indicated examination of the pelvic region. Menstruation was perfectly normal, and there was no abnormal discharge. A little pain on passing water was, indeed, complained of at first, but was ascribed to the rectal alimentation, and disappeared in a few days, never to return. After a week or two small tender lumps appeared in the pyloric region, and with the absence of free HCl and presence of lactic and butyric acids in the vomit suggested carcinoma of that region, but first the tenderness, then the lumps themselves, disappeared. Pain and flatulence then began to be occasionally located in the bowels, the vomiting continuing at intervals as before, but it was not till the abdomen was noticed to be steadily enlarging that it seemed necessary or even useful to make vaginal and rectal examinations. These at once disclosed far-advanced carcinoma of the cervix and body of the uterus, which, when, in three more weeks, the patient at last consented to operation hitherto refused, was, at the Hampstead General Hospital, found to be inoperable.

By this time mental symptoms had supervened, and, tempted to homicide and suicide, the poor woman begged to be sent to an asylum, which was done, so that the later history of the case I am unable to give.

The lesson I learnt was, in cases of apparently neurotic vomiting, to examine the uterus, whether there are other uterine symptoms or not. This case accentuates your contention that to wait for abnormal discharges is, too often, to wait too late.—I am, etc.,

Hendon, August 24th. HENRY BAZETT.

OPERATIVE TREATMENT OF CARCINOMA OF THE CERVIX.

SIR,—In an article, entitled The Operative Treatment of Carcinoma of the Cervix, which appeared in last week's issue of the BRITISH MEDICAL JOURNAL, Dr. Cuthbert Lockyer criticizes Dr. Vincent Dickinson's report of a case made at a meeting of the Obstetrical Society. As I

operated upon the case, I regret I was not present at that meeting. There are one or two inaccuracies connected with Dr. Lockyer's account of the operation, which arise solely through my absence from this meeting, and for these Dr. Lockyer must be held guiltless; but I think it necessary to contradict the following statement, for which Dr. Lockyer's own powers of observation and the manner in which he uses them are responsible. He says:

> Now, I examined that specimen with great care. . . . The point which arrested my immediate attention was the fact that the whole of the growth was exposed. This was due to the vagina having been amputated above the lower limit of the cervical cancer.

Now, Sir, the microscopical sections I made of the vagina at the seat of amputation did not contain cancer; had it done so, as a forlorn hope, I would have removed more vaginal wall. And since reading Dr. Lockyer's account of his examination of the specimen I have cut and examined sections of the whole of a fresh complete circle of the vagina at the distal extremity of the part removed. There is no cancer in these sections. Further, I have examined the patient to-day; she is quite well, and I cannot find any signs of growth in the remaining part of the vagina or elsewhere. The operation took place on October 7th, 1905. I do not say that the absence of growth in the vaginal wall after nearly two years is conclusive that none remained, but it is of very hopeful significance. However, I did not, as a preliminary, cauterize the cervix, I did not use Wertheim's clamps, nor did I dissect away enough of the vagina to allow their employment. I dissected away what I considered enough vagina to remove the growth.

To report the operation as Wertheim's and not to state these facts was wrong. On the other hand, all the remaining stages of the operation depended entirely upon what I had learnt from Wertheim in Vienna and elsewhere. Hence it appears to me that Dr. Dickinson would have been unjust had he not given Wertheim the chief credit for establishing those methods to the adoption of which the patient's present fortunate condition is due.—I am, etc.,

London, W., Aug. 26th. G. Lenthal Cheatle.

THE INHERITANCE OF PULMONARY TUBERCULOSIS.

Sir,—Professor Pearson's *First Study of the Statistics of Pulmonary Tuberculosis*, which was reviewed in your issue of August 3rd, raises several very important questions the statistical study of which has been in progress here for the past three years.

It is not, however, proposed now to discuss the paper as a whole, but merely the methods employed in constructing the random sample of the population.

A correction is applied to the number of tuberculous offspring of tuberculous parents to allow for those who will subsequently become affected. Should not a similar correction be applied to the number of tuberculous offspring of non-tuberculous parents?

Is it not incorrect to assume that the proportion of the tuberculous and non-tuberculous offspring of tuberculous parents can be obtained from histories of families in all of which one child at least was tuberculous?

Are not these two assumptions responsible for the very curious state of affairs which is found in the completed table of the random sample (p. 12)? Here we find 1 in 10 of the total offspring to be tuberculous, but only 1 in 21 of the parents (weighted with their offspring). Amongst the married and widowed population, according to the census returns, the proportion of deaths due to tuberculosis is greater than among the total population.

Again, the proportion of tuberculous parents (weighted with their offspring) of non-tuberculous offspring seems very much too small. Several unpublished series give a proportion about one-half to one-fourth that of tuberculous parents of tuberculous offspring, and inquiries like that of Burckhardt and others confirm this for Germany.

Whether the incorrectness of the two assumptions discussed above accounts for the peculiar results or not, it seems impossible to consider the table as even a rough approximation to a random sample of the general population.

These remarks are made with considerable diffidence owing to the pre-eminent position of Professor Pearson in regard to modern statistical theory, and with a deep sense of the enormous debt which is owing to him by all who have to consider medical statistics.—We are, etc.,

Saranac Lake, N.Y., Aug. 17th. Lawrason Brown, E. G. Pope.

BOTTLE-MAKERS' CATARACT.

Sir,—On reading Dr. Robertson's article in the Journal of August 17th, I was struck by his remark that cataract was not common in steel and iron workers. That may perhaps be true of the present generation, but when I began work in South Wales twenty years ago, a very considerable proportion of my cataract cases were "puddlers," or those who had formerly followed that occupation. They were exposed to intense heat for prolonged periods and were very subject to cataract. With the coming of the Bessemer and Siemens-Martin processes the "puddler's" occupation was gone, and though the steel workers under the new conditions are often exposed to intense glare, there is not so much exposure to heat. I not very long ago operated on both eyes of a man of about 50, whose work had been the removal of white hot ingots of steel from furnaces by means of a mechanical hydraulic pincers; in his case the opacities were first visible near the posterior pole.

The makers of Venetian glass at Murano suffer much from the effects of the extreme heat and, it is stated, rarely reach middle age without loss of sight from cataract or optic atrophy. It would be interesting to know if any accurate information concerning them has been published.—I am, etc.,

Cardiff, Aug. 21st. J. Tatham Thompson.

DR. WALLER'S ADDRESS ON THE ACTION OF ANAESTHETICS.

Sir,—I beg leave to add a few words to my letter of August 24th, and to call the attention of the profession to a further very important point in Dr. Waller's address.

If cardiac syncope were, as Dr. Waller asserts it is, the principal danger of anaesthesia, it would be imperative to watch the pulse while chloroform is given. But he has shown that watching the pulse means death under chloroform, because stoppage of the heart is its final effect. Cardiac syncope from chloroform, therefore, can only be the final sign of fatal overdosing.

Dr. Waller deserves our gratitude for having had the courage to admit that it is wrong to watch the pulse for the effects of chloroform, but he failed to add that this dangerous method is founded entirely upon the erroneous teaching of physiologists that chloroform directly affects the heart. Will Dr. Waller now lay the profession under a deeper obligation and allow, finally, that physiology has for once made a mistake? Dr. Waller is far too clever and distinguished a scientist not to see, on mature consideration, that since the research of the Glasgow Committee of the British Medical Association the only true scientific experiments with chloroform have been those of the Hyderabad Commission, since in these experiments alone was chloroform administered to the animals experimented upon in the ordinary way by inhalation.

The net result of the work of the Hyderabad Commission has been to establish the proof that chloroform has no direct action upon the heart. Once the scientific accuracy of this principle is acknowledged by the profession, the kind of inhaler that is employed in the administration of chloroform becomes a question of no importance. All inhalers are equally safe in the hands of a chloroformist who knows how to look after the breathing properly, and the simplest must necessarily be the most useful.—I am, etc.,

London, W., Aug. 26th. E. Lawrie.

THE USE OF COCAINE IN THE MORPHINE HABIT: A WARNING.

Sir,—During the past six months I have had under my care several persons addicted to morphine who, on the advice of medical men, have taken cocaine with a view to curing themselves of the morphine habit.

If cannot be too widely recognized that it is not only useless but in the highest degree dangerous to prescribe cocaine in these cases: it is true that cocaine does to a certain extent neutralize the effect of morphine, but this in point of fact is a disadvantage rather than a gain, as it

merely tempts the patient to take larger doses of morphine and then balance the excess with a heavy dose of cocaine.

But the principal danger lies in the fact that such treatment inevitably produces the cocaine habit, by the side of which the morphine habit is comparatively insignificant: uncomplicated chronic morphinism is usually curable, but, when patients begin to take cocaine also the difficulties of the situation are increased a hundredfold: not only is their immediate condition rendered worse by the advent of delusions and hallucinations, but their chance of ultimate cure is very much lessened, and relapses are much more common than in cases of simple morphinism.

The sudden withdrawal of cocaine leads to no actual distress or reflex disturbances such as occur in the case of morphine, and, when once patients know this, they are very apt to return to the cocaine, reassuring themselves meanwhile with the idea that they can break it off at any time without acute suffering.

In a fairly large experience of morphine cases I have never seen a single cure expedited by the use of cocaine, and its dangers are so great as to make its recommendation quite unjustifiable.—I am, etc.,

London, W., Aug. 26th. J. HENRY CHALDECOTT.

THE CENTRAL EMERGENCY FUND.

SIR,—The appearance on the front page of the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of August 24th of a description of the objects of the Medico-Political Committee in asking contributions to the Central Emergency Fund brings forcibly to the front this phase of undesirable medical activity.

It is a salvation that under the present constitution of the Association its funds cannot be applied to further the aims of medical trade-unionists. Methods which in their inception, history, and use are so bound up with less considered callings cannot have much to recommend them to a learned profession. I am not willing to allow that even the main principle of trade-unionism is right. The methods of trade-unionism are derogatory and detestable to me and, I venture to think, to a very large section of medical men—how large it would be interesting to discover.

I wonder if the Library of the British Medical Association contains a copy of Mr. Brudenell Carter's book, *Doctors and their Work?* If not, I shall be willing to supply the deficiency by parting with my own copy. It is not a book of the class called "written to order." The author in the evening of his life has felt a call to guide a younger generation by the light of a long and wide experience.

I have recently heard it prophesied that the British Medical Association will "wreck itself upon the rock of trade-unionism." Surely no one of us has a desire to see a fulfilment of this prophecy. Nevertheless, it cannot but be obvious to all who have interested themselves in this question and have watched the progress of events, that the policy, if pursued, will end in a separation of those to whom medicine is a profession from those to whom medicine is a trade.

I am glad to see a letter this week from Dr. Hawthorne emphasizing the importance of the traditions and the true responsibilities of the profession, and giving them a place above mere monetary considerations.

If the policy of trade-unionism be the outcome of the private opinions of the individuals composing the Medico-Political Committee, as seems not unlikely—for, as far as my knowledge goes, they have the support of only two of my medical acquaintances out of a large number—this policy has as much title to be called the voice of the Association as that with which Dr. Hawthorne deals in his letter.—I am, etc.,

London, N.W., Aug. 24th. W. B. PARSONS.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF GLASGOW.

Examination for M.D. Degree.

IN the Glasgow University *Calender* it was stated that this year the last day for handing in the names of those going up for the M.D. degree was June 1st, but as many intending candidates failed to observe the alteration of date it has been agreed to continue the old arrangement for this year, so that candidates can still enter their names up to October 1st.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—†H. W. B. Danaher, *†C. L. Driscoll, †B. S. Matthews.
MEDICINE.—*† T. T. Apsimon, *E. V. Counellan, †M. F. Emrys-Jones, †B. S. Matthews, *A. F. Reardon, E. E. Wilbe.
FORENSIC MEDICINE.—T. T. Apsimon, M. F. Emrys-Jones, B. S. Matthews, H. W. Phillips, M. Rathbone, E. E. Wilbe, G. F. Wilson.
MIDWIFERY.—J. A. Byrne, C. L. Driscoll, G. W. Hassall, E. E. Wilbe.

† Section I. * Section II.

The diploma of the Society has been granted to Messrs. C. L. Driscoll and E. E. Wilbe.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

INDIAN MEDICAL SERVICE.

GOVERNMENT RESTRICTIONS ON MEDICAL FEES.

ON April 26th, 1904, the Government of India issued an order superseding previous orders regulating the remuneration which might be accepted by officers of the Indian Medical Service "for attendance on native chiefs and nobles and native gentlemen of high position in a native State." The operative part of the order was as follows:

The native chief or gentleman may offer any medical officer of the Government attending him such fee as he thinks fit to make, and it will be reported by the medical officer to the political agent or other officer of the Government exercising political functions in the State of which the said chief, noble, or gentleman is a resident, for the consideration of the local government within whose jurisdiction the native State is situated. This report will state the period during which he was in attendance, and the number of visits paid. The medical officer will at the same time submit to the administrative medical officer or inspector-general of hospitals, to whom he is subordinate, a full medical statement of the case, showing the nature and extent of the relief afforded, the importance of the case from a professional point of view, and the circumstances in which he attended the patient. The local government is required to satisfy itself that the fee proposed is not out of proportion to the relief afforded and to the circumstances of the case, and has authority to sanction the acceptance of a fee not exceeding Rs. 2,000. In considering these questions it will, if necessary, refer to the administrative medical officer or inspector-general of civil hospitals, as the case may be. If the proposed fee exceeds this sum, the matter will be submitted with a full report by the local government for consideration and orders of the Government of India. The reports prescribed in the preceding paragraphs will not be required from a medical officer when the fee does not exceed Rs. 50 a visit, or Rs. 1,000 in the aggregate, for repeated visits in the course of a year.

The *Gazette of India* on July 6th, 1907, contained the following new Order:

HOME DEPARTMENT.
NOTIFICATION.
MEDICAL.
Simla, the 1st July, 1907.

No. 607.—In supersession of the notifications of this Department, No. 437, dated the 26th July, 1893, No. 1930, dated the 8th October 1900, No. 852, dated the 12th June 1901, and No. 395, dated the 26th April, 1904, and of all existing orders on the subject, the Governor-General in Council is pleased to make the following rule regarding the receipt by medical officers of Government of fees for professional services rendered to ruling chiefs and their families or dependents, Indian gentlemen of high position in a native state, or Indian gentlemen of high position in British India.

2. A medical officer of Government, before demanding or accepting from any Indian gentleman of the status defined above any fee for professional services rendered, shall obtain, by a confidential application made through the local administrative medical officer, the permission of the Director-General, Indian Medical Service. Such permission will not be required in the case of fees calculated on the scale of Rs. 16 a visit or in certain cases Rs. 32 according to recognized custom, unless the total amount thus paid for attendance on a patient or his family during any one month exceeds Rs. 160.

H. A. STUART,
Offg. Secretary to the Government of India.

It will be seen that the new Order rescinds the provision which required the medical officer to submit a full medical statement of the case at the time when he applied for permission to accept a fee. This provision produced a very unfavourable impression in the mind of the medical profession not only in this country but on the Continent, where the issue by a Government of such a regulation is inconceivable.

In the new Order, however, the Government of India,

while receding in this respect from an untenable position with regard to the medical reports, has extended the restrictions as to fees, which formerly applied only to native chiefs and nobles and native gentlemen of high position in native states to include Indian gentlemen of high position in British India. By this addition the rule is made to apply practically to every well-to-do native gentleman in India in a good social position. The ordinary fee in India is, we believe, Rs.16 (£1 1s. 4d.). The new rule limits to Rs.160, equal to £10 13s. 4d., or say 10 guineas, the total amount to be taken for professional services rendered during any one month without special sanction of Government in the person of the Director-General. "Services rendered" would of course include operations, surgical or obstetric, for which the maximum fee without special sanction, laid down as above, might be totally inadequate. The rule also takes no cognizance of visits at a distance from the medical officer's place of residence. The rates charged by doctors in India for journeys are lower than the English rate of 10 guineas for every 15 miles. The usual rate for a consultant is Rs. 500 (equal to £33 6s. 8d.) for a journey possibly of some 100 miles out and back, taking up twenty-four hours, and proportionately less for half a day or less. Civil Surgeons up-country usually take less. Mileage is not charged, or the fees would frequently be considerably in excess of European rates.

Under these new rules no consulting surgeon or physician at any of the Presidency towns and no Civil Surgeons up-country could accept, without permission of the Director-General, even their ordinary fees for prolonged attendance in serious cases, for operations, or for distant visits involving a journey by rail or by road, if such fees exceeded Rs. 160.

The Government of India has also taken the decision as to the amount of any fee offered or claimed for services rendered out of the hands of non-medical civilian officers, and has placed it in those of the administrative medical officers and the Director-General of the Indian Medical sevice. If it be granted that such control is necessary—a point on which we reserve our opinion—this control should mainly be in the hands of *medical* administrative officers, and has rightly been so placed by the new order.

But the interference which will result in the ordinary work of many medical officers in civil employ by the extension of the rule to native gentlemen resident in British India, and by the very low maximum fixed for the amount of a fee or fees which can be accepted without special permission of the Director-General, will cause much trouble and widespread irritation to all concerned. Who, for instance, is to decide whether a native patient who calls in a Government medical officer is of "high position" or not? There is in India no native upper middle class as the term is understood in Europe. Further, has the Director-General so much leisure that he can spare time for the new duty of considering and deciding all cases of fees of over 10 guineas (Rs. 160) sent up to him from all parts of India under the new rule, and who will replace him or the administrative medical officer as arbiters during their frequent and prolonged tours of inspection? Delays will be inevitable, and will result in the frequent loss by the medical officers of the fees earned. When a fee is not paid at once, it is frequently in practice not paid at all.

The right to take or accept fees, gratuities or rewards in the way of their profession was specially reserved to medical officers by Art. 25 of the Regulating Act of 1772 (13 George III, c. 63) and we are not aware that this Act has ever been repealed. It is, no doubt, within the competence of the Government of India to rule that medical officers accepting and holding certain definite posts shall not practise their profession, but the new order affects the rank and file of the Indian Medical Service and imposes an uncalled-for restriction on their ordinary practice throughout the whole of India.

It is to be feared that a service, where such restrictions on ordinary medical and surgical work are imposed or may at any time be arbitrarily imposed by those in power for the time being, will lose its old and well-deserved popularity, and will cease to attract the best men from the English, Scottish and Irish schools.

This appears to be the fourth order on the subject issued during the last six or seven years, and each one has contained some provision dealing a blow at the self-respect of an honourable and distinguished service. Is such tinkering politic, and would not the Government of India be wiser to try to undo more fully the harm done, trusting its medical officers more fully, while dealing severely with cases where officers have acted improperly?

HONORARY PHYSICIAN TO THE KING.

Surgeon-General Sir Alfred Keogh, K.C.B., M.D., Director-General, Army Medical Service, is appointed an Honorary Physician to the King, vice Surgeon-General A. F. Preston, M.B., July 24th.

STAFF OFFICERS FOR MEDICAL MOBILIZATION IN INDIA.

In connexion with the army reorganization scheme in India, the following officers have been appointed Staff Officers for Medical Mobilization Stores *pro tem.*: 1st Division, Major W. H. Ogilvie, M.B., I.M.S.; 2nd Division, Major L. P. More, M.B., R.A.M.C.; 3rd Division, Lieutenant-Colonel M. A. Ker, I.M.S.; 4th Division, Major H. F. Whitchurch, V.C., I.M.S. (since deceased); 6th Division, Captain J. F. Martin, M.B., R.A.M.C.; 8th Division, Major F. W. Gee, M.B., I.M.S.; 9th Division, Major A. E. Milner, R.A.M.C. Officers will be detailed for the 5th and 7th Divisions at a later date.

OBITUARY.

Many readers will have seen with great regret the announcement of the death of Surgeon General Alexander Francis Preston, who was well known both at Montreux and on the Riviera. He was only in his 65th year, but he had seen much service. He was a son of the late Rev. D. W. Preston, Rector of Killinkere and Rural Dean, his mother being a daughter of General Armstrong, R.A. His grandfather was a judge of appeal, and his grandmother was daughter and co-heiress of the fifth Baron Carbery. Having graduated B.A. and M.B. at Trinity College, Dublin, he entered the Army Medical Service in 1863. He served in India, Afghanistan, and China; was in medical charge of the 66th Regiment in Afghanistan in 1880, and was severely wounded in two places at Maiwand. He was all through the siege of Khandahar, being mentioned in dispatches, and promoted to Lieutenant-Colonel. His commissions were thus dated: Assistant-Surgeon, September 30th, 1863; Surgeon, March 1st, 1873; Surgeon-Major, April 28th, 1876; Brigade-Surgeon, November 30th, 1886; Surgeon-Colonel, March 28th, 1892; Surgeon General, July 6th, 1896. He retired from the service, May 23rd, 1902. In 1901 he was appointed Honorary Physician to Queen Victoria, the appointment being continued by King Edward. He acted for a time Deputy Director-General of the Army Medical Department, and his staff appointments included those of P.M.O. Belfast, China and Hong Kong, and Ireland (1896 to 1902). He held a Distinguished Service Pension of £100 a year. His great abilities were hidden by his geniality. He was a zealous whist and bridge player, and fond of golf, travel, and sport, being well known at Ranelagh and the Royal Irish Yacht Club.

Many old students of the medical schools of University College and the London Hospital will learn with much regret that Mr. Frederic J. M. Page, B.Sc., F.I.C., died at Weymouth on August 16th. Mr. Page, who was 59 years of age, was some thirty years ago a member of the staff of the Physiological Department of University College, and was subsequently appointed Lecturer on Chemistry to the London Hospital Medical College. He was Examiner in Chemistry and Physics to the Society of Apothecaries, and was associated with Dr Luff in the production of the well known *Manual of Chemistry, Inorganic and Organic*, for the third edition of which he alone was responsible. Mr. Page was a man whose native modesty probably prevented the adequate recognition of his high merits as a teacher and man of science, which were known only to his pupils, in whom his gentle and genial character inspired also feelings of warm affection.

A character of singular beauty, a life of bright promise, a young Christian gentleman who wielded an influence for good far beyond his years has been lost to the medical profession by the death of Lewis Mackay at the age of 23 at Edinburgh. He was a brilliant student who had gained the esteem and affection of his teachers. In April last he was said to be "run down," and was advised to abandon his intention to go up for the Final this summer. Towards the end of July it was obvious that he was suffering from a malign lympho-sarcoma. He died on Wednesday, August 21st. The deepest sympathy, both in the medical profession and outside it, will be given to his

father and mother, Dr. and Mrs. Mackay, in their great sorrow. The very large funeral, on Friday, August 23rd, was eloquent testimony to this, as well as to the sterling worth of the young lost life. "Whom the gods love die young."

Dr. WILLOUGHBY DAYTON MILLER, who was Professor of Operative Dentistry in the University of Berlin until last year, when he accepted a similar post in the Ann Arbor University, Michigan, died recently at Ann Arbor. He was an American by birth, but had practised in Berlin for over thirty years. His best-known work was a volume, published in German and afterwards translated into English, on the micro-organisms of the mouth and the local and general diseases produced by them.

SURGEON-COLONEL EDMUND GRESWELL M'DOWELL, C.B., died at Portland on July 26th at the age of 75. He entered the service as an Assistant Surgeon on November 6th, 1855. He was promoted to be Surgeon, September 3rd, 1870; Surgeon-Major, March 1st, 1873; Brigade Surgeon, August 4th, 1881; and Deputy Surgeon-General, March 4th, 1886, retiring as a Surgeon-Colonel, November 30th, 1891. He served with the 44th Regiment in the campaign of 1860 in North China, including the action of Sin-ho and the storming and capture of the Taku forts (medal with clasp), and in the Egyptian war of 1882 (medal, Third Class of the Medjidieh, and Khedive's star). He also served in the Soudan expedition in 1884 as Principal Medical Officer, and was present in the engagements of El Teb and Tamai (twice mentioned in dispatches, C.B., and two clasps).

Lieutenant-Colonel ROBERT DICKIE DONALDSON, M.D., Royal Army Medical Corps (retired), died on July 15th. He joined the Army Medical Department as Surgeon, March 6th, 1880; was promoted to be Surgeon-Major, March 6th, 1892, and Lieutenant-Colonel twelve years thereafter. He had no war record in the Army Lists.

Medico-Legal.

CONVICTION UNDER THE MEDICAL ACTS.

ON August 22nd, at Brixham, South Devon, John Fee, who described himself as a machinist, of Torquay, was brought forward in custody charged that on July 22nd last, not being a registered medical practitioner within the meaning of the Medical Acts of 1858 and 1886 and the Acts amending the same, and not being a person recognized by law as a physician, surgeon, or licentiate in medicine and surgery, practitioner in medicine, or an apothecary, he did unlawfully, wilfully, and falsely pretend to be, and take and use the name, title, address, and description of "Doctor Maclaren," thereby implying that he was registered under the said Medical Acts, or recognized by law as a physician, surgeon, or licentiate in medicine and surgery, practitioner in medicine, or an apothecary. The prisoner pleaded guilty.

Mr. W. L. Parsons, solicitor, Brixham, appeared to prosecute on behalf of Messrs. Hempson, solicitors to the Medical Defence Union.

Thomas Williams said that on July 22nd last prisoner came to Mrs. Knowles's house, and said, "I am a specialist, Dr. Maclaren, sent by Dr. Quicke." Prisoner repeated this twice. He had a leather bag in his hand. His (witness's) granddaughter showed him upstairs to see his daughter, Mrs. Knowles, who was ill in bed. He came in Dr. Quicke's name, and that was the reason why he was admitted on stating he was a specialist.

The Bench said it was a serious offence, and fined prisoner £10 or the alternative of two months' imprisonment. The prisoner handed in a long written defence, attributing the offence to his intoxicated condition. He failed to know how he obtained the doctor's and the woman's names, as he was a stranger. No man would do such a mean and contemptible thing, and when he thought of it it made his blood run cold. He took to drink about four years ago, and that brought about his downfall from a good position in London.

ANOTHER FUTILE INQUEST.

A STOCKPORT paper reports that an inquiry was recently held there by the district coroner, touching the death of a 4-month-old child, whose mother stated that the child had been vaccinated on the Friday previous to its death, and that on Sunday morning she found it dying in her arms in bed. In answer to the coroner, the mother stated that she, her husband, a son aged 7, a daughter aged 4, and the deceased child—five in all—occupied one bed, the eldest child sleeping at the foot. The coroner observed that the vaccination of the child might have caused some irritation, which would bring on convulsions. The jury agreed, and a verdict of "Natural causes" was returned. This is one of the most recent instances of the futility of holding inquests without calling medical evidence as to the cause of death. No fact was elicited at the inquest that was not perfectly well known before. The coroner's remarks were not only useless, but mischievous, as tending to create a prejudice against vaccination in the popular mind. The annual waste of public money caused by holding useless inquests like this, forms one of the strongest arguments in favour of carrying out the recommendations of a Committee of the House of Commons presided over by Sir Walter Foster, for the reform of the present system of death certification in England.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

THE INSECURITY OF TENURE OF PUBLIC HEALTH APPOINTMENTS.

DR. J. T. C. NASH was appointed medical officer of health of the borough of Southend-on-Sea, Essex, in 1901, for a period of three years, and he was reappointed in 1904. At the meeting of the Town Council on August 20th last the Chairman of the Public Health Committee stated that he had been authorized by that Committee to move that Dr. Nash should be reappointed for a further period of three years at the same salary. His salary as medical officer of health was £520, and as Superintendent of the sanatorium £80, making a total of £600 a year, and in addition he received £50 as medical officer of the Education Committee. An amendment was moved, apparently without notice, that Dr. Nash should be reappointed at a salary of £500 a year, and that the appointment should be for one year. This amendment was carried by twelve votes to six. When the amendment was proposed as a substantive motion several members protested, pointing out that Dr. Nash was a zealous and efficient officer, and that no reason had been given for reducing the salary; it was further pointed out that as the term for which Dr. Nash had been appointed had expired, the town would be without a medical officer unless he were reappointed. The amendment reducing the salary was eventually carried as a substantive motion by eight votes to six. During the discussion it was suggested that the reason for the action taken by the majority of the council was that Dr. Nash, in the exercise of his duties, had given offence to certain members of the council engaged in trades concerned with the sale of food.

On the decision of the council being communicated to Dr. Nash he declined to accept the reduced salary, and the Chairman of the Public Health Committee said that the town was in a serious position, and would be the laughing stock of the country. He eventually obtained authority to approach Dr. Nash with the request that he would continue to discharge the duties of the office for three months; this Dr. Nash eventually consented to do.

The town clerk subsequently addressed a communication to the Local Government Board stating the nature of the action taken by the majority of the Town Council, and asking for the Board's approval, under the circumstances, of the temporary appointment of Dr. Nash as medical officer of health for a period of three months at his former salary. The Local Government Board has replied giving consent, but asking for a full statement of the reasons for the alterations in the terms of the appointment proposed by the Town Council, whether the council has been dissatisfied with the manner in which Dr. Nash has performed his duties, and whether it considers that the appointment of a new medical officer of health is likely to promote the best interests of such an increasingly important town as Southend.

As soon as the course taken by the Town Council became known, Dr. W. Cardy Bluck, of Southend, Honorary Secretary to the South Essex Division of the British Medical Association, called a special meeting of the Executive Committee of the Division, and the Committee resolved to summon a meeting of all members of the medical profession, whether members of the Association or not, resident in Southend and the immediate neighbourhood. In the notice convening the meeting it was stated that a resolution would be moved expressing confidence in Dr. Nash

and protesting against the action of the Town Council in virtually dismissing him without notice, and requesting the council to reconsider the matter. The meeting, which was held on August 27th, was attended by seventeen medical men, and the Honorary Secretary reported that he had received letters from twelve medical men unable to be present, expressing their complete concurrence with the resolution. The following resolution was unanimously adopted, and will be presented to the Town Council in the form of a memorial:

To the Mayor and Town Council of Southend-on-Sea.

We, the undersigned registered medical practitioners engaged in practice in the borough of Southend-on-Sea and surrounding districts, desire to place before the Town Council our complete approval of the very great services to the town of Dr. J. T. C. Nash during the whole of his tenure of the office of Medical Officer of Health. We claim that, of all the burgesses, we are best able to estimate those services at their true value, and that he has worked unceasingly, without fear or favour, in the best interests of the town, and has effected a vast improvement in its welfare. We would most strongly protest against the action of the Town Council, not only in virtually dismissing him without notice, but also without assigning any reason, thus casting a wholly undeserved slur upon one who stands second to none in faithfulness of service. We would therefore ask the Town Council to reconsider their decision.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ended July 27th and August 3rd the deaths from plague in India amounted to 3,335 and 1,959. During the same periods the seizures were returned as 3,995 and 2,548 respectively. The mortality returns for the week ended July 27th are 500 in excess of those for the week ended July 20th.

The principal figures for the weeks in question are: Bombay Presidency, deaths from plague, 1,129 and 988; Bengal, 33 and 29; United Provinces, 11 and 17; Punjab, 372 and 1 870; Central Provinces, 13 and 12; Madras Presidency, 11 and 36; Burma, 123 and 131.

Australia.

Queensland, Brisbane.—During the week ended Saturday, July 13th, one fatal case of plague reported. No infected rats were found in the premises where the patient resided, but infected rats (2) have been found in the town.

Hong Kong.

During the weeks ended August 10th, 17th, and 24th, the fresh cases of plague in Hong Kong numbered 4, 6, and 4, and the deaths from the disease 4, 6, and 4 respectively.

South Africa.

King Williamstown.—During the weeks ending July 27th and August 3rd no cases of plague reported in this town, but at Izeli and at Dubus locations, 12 and 7 miles off respectively, outbreaks were reported. A native left King Williamstown June 23rd, and died July 5th; of persons in contact with him, 5 became infected and died on July 13th, 20th, 25th, and 26th and August 2nd respectively. One of the female Izeli patients went to Dubus and seems to have infected a male, who was admitted to hospital on July 30th and died August 1st. For the weeks in question therefore there occurred in King Williamstown and neighbourhood 6 cases and 6 deaths. Two patients remained in the plague hospital on August 3rd. Rats and mice are found to be infected.

Mauritius

During the weeks ending August 15th and 22nd the fresh cases of plague numbered 2 and 2, and the deaths from the disease 1 and 2 respectively.

HOSPITAL AND DISPENSARY MANAGEMENT.

BROMPTON HOSPITAL.

At the annual Court of Governors of the Brompton Hospital, on May 24th, it was reported that out of the 1,762 patients treated during the year, 217 had been transferred to the sanatorium at Frimley, and that a clinical laboratory in which the determination of the opsonic index and other work might be undertaken had been established. Owing to trouble in connexion with the water supply at Frimley, it is intended to build a reservoir capable of holding at least 500 000 gallons. It is estimated that this work, which is already in hand, will not cost more than £1,500, since the greater part of the excavation and of the erection of the concrete walls will be done by the patients themselves.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—

EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DR. J. S. SERGEANT (Horton Grange Road, Bradford) asks if any member could inform him where (in Southport or district) the Fränkel system of treatment for locomotor ataxia may be obtained.

M. inquires as to the probability of a nurse with a fair general but no classical education being able to get up the subjects for the assistant dispenser's examination whilst working in the surgery of a general practitioner and without going to a training college. Also, are there any books written for the assistance of candidates for this examination?

*** It is possible to prepare for and pass the dispenser's examination of the Apothecaries' Hall in the circumstances named. If no chemistry at all has been studied previously, it is likely to present a difficulty, but not such as cannot be overcome with fair determination. If any class in elementary chemistry is available, it would probably be a considerable assistance. There are no textbooks written specially for those preparing for this examination; the following are suitable, and more than cover what is wanted: Attfield's *Chemistry* (Gurney and Jackson), Southall's *Organic Materia Medica* (Churchill), *British Pharmacopoeia* (Spottiswoode), *The Art of Dispensing* (*The Chemist and Druggist* (42, Cannon Street, E.C.), Bennett's *Medical and Pharmaceutical Latin* (Churchill).

ANSWERS.

X.—We understand that qualified midwives paid by the hospital are placed by Queen Charlotte Hospital in various districts (there are six in all). Their duty is to superintend the work in the districts, which is conducted by them and by the midwife pupils. The latter have already completed five of their six months' training in the hospital, and spend one month in the districts. The midwife herself has to sign a bond not to set up in practice within the area of the district, but the pupil can return to the district and act privately after having received her certificate from the Central Midwives Board.

Treatment of Leucoplakia.

W. B. H. writes to recommend "Rusticus" to try the application (daily) of Christy's benzonol in his case of leucoplakia.

Offensive Perspiration.

M.D. BRUX. writes in answer to "M.D. Aberdeen" (BRITISH MEDICAL JOURNAL August 3rd) that she has found bathing the part once or twice a day with a solution of formaldehyde, a drachm to a quart, cures the trouble as long as it is used.

The Preservation of Rubber Instruments.

DR. JAMES MACMUNN (London, E.C.) writes: I have tried various plans, and have long discarded all chemical aids. I find keeping these instruments in thick layers of cotton-wool the most effectual plan. They should, if at all old, be occasionally plunged in hot water, well dried, wrapped in the wool, and if possible placed in air-tight cases. All oily lubricants should be discarded for rubber catheters at least. A modification of Gouley's mucilaginous lubricant is best.

THEOCIN-SODIUM ACETATE.

S. M. C.—Dr Harry Campbell informs us that theocin-sodium acetate is a compound of theocin (that is, the alkaloid theophylline, theocin being the registered trade-mark) with sodium acetate (see *Extra Pharmacopoeia XII*, p 693). The alkaloid in question is dimethyl-xanthine, and is therefore closely allied to theobromine, that is, trimethyl-xanthine. The drug consists of a soluble powder, and may be administered in tea or other liquid in doses of 3 to 5 grs. after meals three or four times daily. Dr. Campbell adds: Mr. Henning of the Bayer Company has forwarded me a paper on the clinical use of the drug by Dr. Rudolf Meyer of Stuttgart. This physician finds, as I have, that the action of the drug is enhanced by digitalis. He says that nausea and vomiting may be prevented by administering a solution of menthol before giving the drug, for example, menthol 1½ grams, tinct. aurat. 3¾ drachms, fifteen drops of this solution being given in a spoonful of water.

LETTERS, NOTES, Etc.

OYEZ, OYEZ!

IN order to remove any misapprehension which may have been caused by the wording of a circular issued by the newly constituted Royal Society of Medicine, we beg to to notify all whom it may concern that the British Medical Association has not ceased to exist and that the BRITISH MEDICAL JOURNAL will continue to be published with customary regularity.

WEST AFRICAN MEDICAL SERVICE.

ANOTHER W.A.M.S. writes: I have read with much interest the correspondence going on in your valuable columns regarding reform in the West African Medical Staff, and I sincerely hope you may be as successful in bringing about a change for the better in this service as you were in the case of the R.A.M.C. The remarks and opinions of your previous correspondents represent, I think, the feeling of all members of the W.A.M.S., and the suggestions put forward are worthy of careful consideration. The first thing to be done, in my opinion, is to appoint a Director-General and small staff, who should be drawn exclusively from W.A.M.S officers. The service would then be represented officially and sympathetically at the Colonial Office, and many of the evils enumerated by your correspondents be very soon remedied. I would suggest also that one member of the head quarters staff should spend some part of his time inspecting the various colonies in West Africa, in very much the same way that the Inspector-General of the West African Frontier Force does. In addition to the formation of a head quarter staff there is need for reform in the following directions:

1 *Pay*.—The total emoluments of medical officers vary considerably according to the Protectorate in which the medical officer is serving, with the consequence that there is a rush towards the better-paying colonies, and the Protectorates which offer poorer prospects remain chronically undermanned. Moreover, in one Protectorate, owing to the reduction in local allowances, etc, medical officers of 6 or 7 years' standing will find themselves no better off financially than when they first joined the service.

2. *Pension*.—Eighteen years' service in West Africa—should he survive—unfits a medical man physically and professionally for general practice at home. A generous pension might be given after fifteen years' service, with more advantage to all concerned.

3. *Study Leave*.—Every encouragement should be given to medical officers who wish to go in for post-graduate work during their leave, and opportunities for acquiring diplomas in Public Health or Tropical Medicine should be granted as often as possible.

4. *Reliefs*.—A medical officer cannot leave his station until he is relieved by another medical officer—and how seldom does the "relief" appear up to time! Other officials in the station may come and go, but the medical officers—to their lasting credit—never desert their posts, though they may be long overdue for home and quite "played out." The reason for this state of things is obvious; the medical service is terribly understaffed, and no allowance seems to be made for medical officers falling sick or remaining home on extended leave.

5 *Military Service*.—Although civilian officers of the W.A.M.S. in most colonies in West Africa spend quite 50 per cent. of their time in attending to the military and on active service, they are ineligible for any of the rewards or promotions that fall to the lot of the military officials, though they are often equally deserving of such.

6 *General*.—Anything that tends to promote *esprit de corps* and cohesion in the service should be carefully considered, and the inaugural W.A.M.S. dinner in July last was certainly a step in the right direction. A corps crest and motto might be designed. If special kit is to be worn by medical officers in West Africa, surely it should be uniform for all medical officers of the service, whatever their colony. To wear a sort of policeman's garb in one protectorate, plain clothes in another, or khaki with a piece of grey flannel on the sleeve in a third seems ridiculous. Khaki and black (that is, black tie, black puggaree, etc.) is a neat and distinctive combination; white and black combine equally well, and where mess kit is worn medical officers might be effectively distinguished if they wore narrow corded black shoulder "straps" and black cumberbands.

In conclusion, I believe the Colonial Office to be sympathetically inclined to all real grievances, and it behoves all members of the W.A.M.S. to act together for the common good.

CELEBRATED IN ADVERTISMENT.

FROM an advertisement in the *Dundalk Herald* of August 17th, that town would seem to blessed, whether permanently or temporarily we do not know, with the presence of a Dr. Maguire, who says that he can cure "all cancer diseases, all chronic cases of rheumatics, eczema, and joint diseases, and convulsion fits." Toothache is cured "guaranteed never to come back. Bottle 6d.," but rather inconsistently 1s. is charged for extraction. "Dr. Maguire will explain all patients' diseases without asking a question of his patient"; no wonder Patk. Kerr, stud groom, is able, regardless of grammar, to testify that "Dr. Maguire's name and fame is now well established." The advertisement is headed "The celebrated Dr. Maguire, surgeon, L.R.C.S (I.) 1882; L.M., 1885; L.A.H., 1883; L.D.S., 1878; L.R.C.P., 1898." He refrains from mentioning his christian name, and we have failed to identify him in the *Medical Register*.

BURSTING OF A GOLF BALL.

DR. H. C. BARRACLOUGH (Lowestoft) writes: I think the following case may be of interest to your readers, especially those who play golf. On Tuesday evening, August 20th, a caddie was bouncing a golf ball in his home, when it suddenly burst and a quantity of gelatinous fluid flew into his face and eyes, causing acute pain. He was brought to see me about an hour later; the eyelids, nose, lips, and whole face were considerably swollen, and the conjunctivae much inflamed. Under treatment the swelling of the face had almost disappeared by August 22nd; by August 24th the left eye was well, and he was able to resume work on August 26 h. He states that there was no crack in the ball before it burst On examination of the interior of the ball the core seems to have liquefied and burst through the rubber wound round it and also the outer cover.

SHIP SURGEONS.

DR GEORGE METCALFE-SHARPE, late surgeon Peninsular and Oriental and Cunard Steamship Companies, writes from Angram Hospital, Middlesmoor, Leeds, to state that he has undertaken, *pro tem.*, the combined position of Honorary Secretary and Treasurer of the British Ship Surgeons' Association, which is being formed to improve the status of medical officers on ships. It is proposed to form a committee and to fix the subscription at 10s 6d. to include a monthly ship surgeon's gazette. Whether the course proposed is the wisest that could be followed seems open to doubt. If ship surgeons are members of the British Medical Association, they are entitled to ask for its support, which we have no doubt would be given after careful study of the grievances and disabilities alleged.

A PLEA FOR UNIFORMITY IN THE NOMENCLATURE OF ALKALOIDS AND THEIR DERIVATIVES.

DR GORDON SHARP (Leeds) writes: Some years ago it was the custom in Britain to make all alkaloids end in *ine*, while glucosides, resins, and principles not alkaloidal in nature were made to end in *in*. Now all is hopelessly mixed up just in the same way as one finds in German literature. If the Germans send us over a new derivative of an old alkaloid, editors, physiologists and pharmacologists (not to speak of the poor despised clinician) seem to think it should be written as our Teuton friends decide upon. To take a few examples. In the same sentence I find eucaine and cocain (both alkaloids), and heroin and dionine (two morphine derivatives) which came to us from Stockman and Dott, but neglected till an enterprising German firm took them up. To continue. The more or less pure ergot alkaloids are written carnutin-Keller, carnutine-Kobert, chrysotoxin, secalintoxin, sphacelotoxin, ergotoxine, hydroergotinin. I could go on multiplying examples of our inconsistency, but it is needless It would be simpler if investigators paid attention to the old rule, so that when one came across a new name ending in *ine* we might reasonably conclude the substance was alkaloidal in nature.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

Eight lines and under	£0 4 0
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An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

EDUCATIONAL NUMBER.

SESSIONS 1907-1908.

THE PROFESSION OF MEDICINE.

The choice of a profession is the most momentous step in a man's life, for a mistake in regard to this matter can seldom be wholly rectified; and even if it does not wreck his career, it will prevent the complete fulfilment of the possibilities of achievement, for himself as well as for others, that lie in him. There is no profession for which a special vocation is more necessary—if the pursuit of it is to be anything better than a dreary, possibly a hateful, task—than medicine.

The Question of Personal Fitness.

In the first place it may be said in general terms that the strain of professional life is so great that only an exceptionally sound constitution can bear it without giving way. The consulting physician or surgeon in busy practice leads a life of almost unremitting labour, made more burdensome by the anxiety inseparable from heavy responsibility. For the most part, however, he is able to renew his stock of energy by a fairly adequate holiday. On the other hand, the general practitioner, except for two or three weeks in the year when he perhaps leaves his practice in the hands of a *locum tenens* of whom he knows little or nothing, is never off duty, but has to hold himself in readiness by night as well as by day, on Sundays as on weekdays, for any emergency. He must have the "two o'clock in the morning courage" by which Napoleon set such store; that is, he must be in possession of all his faculties, and be prepared to deal promptly and effectively with a case of bleeding from injury, impending asphyxia from diphtheria, or a difficult delivery, in the middle of the night, often without assistance, not infrequently with an imperfect instrumental outfit and an almost total want of necessary appliances. Even the strongest must in time break down when he has to hold himself ever in readiness to fight single-handed against all the powers of disease. In addition to all this he has to run a constant risk, for himself and his family, of infection to which of course he is much more exposed than other people. He bears no charmed life, as the public would fain believe, and he has often to meet the danger when—owing to want of food, fatigue or cold, or all three combined—he is least able to withstand attack.

In considering the fitness of a young man or woman for the medical profession, therefore, the bodily constitution must be taken into account. The medical curriculum of the present day makes very serious demands on the physical stamina of the student. A vast number of things have to be learnt in a short time, the work of the dissecting room and hospital ward has often to be done under depressing conditions, and the spectre of examination follows the student everywhere like a shadow. When to this is added that opportunities for exercise are generally few, and the time that can be given to amusement or relaxation of any kind is scanty, it will be seen that a somewhat exceptional physique is required to carry the candidate for admission to the medical profession through the strenuous work and manifold worries of the modern student's life.

In regard to intellectual endowment, any man of average abilities can, with industry and adequate opportunities, gain admission to the medical profession. Without entering on the vexed question of the relative advantages of a classical and a "modern" education as a preliminary study, it may be stated generally that the broader and sounder the intellectual training a man brings to the study of medicine, the stronger will be his grasp of its principles, and the more free at once from "bookish theorick" and from rule of thumb will be his practice. The advantage to a medical practitioner of the mental culture that comes from a wide knowledge, not only of books but of men, cannot be overestimated. As Letamendi said, the doctor who knows only medicine does not even know that; to reverse a famous saying, he may know his trade but cannot know his art.

Last, but very far from least, come the moral qualities. It was well said by Nothnagel that only a good man can be a good physician. Carlyle, who had no love for the profession, yet called it a priesthood; and, indeed, its duties are little less sacred than those of the ministers to the spiritual needs of mankind. No walk of life offers greater scope than medicine for the highest development of moral character. The readiness to render assistance, irrespectively of any other consideration than the need of him who asks for it; the alleviation of sorrow as well as the relief of physical suffering; the courage which never shrinks from meeting infection or from incurring necessary responsibility in the endeavour to ward off death or ease pain; the determination which refuses to yield to the enemy until the struggle is over; the generosity, discretion, cheerfulness, patience, and sympathy which characterize practitioners worthy of the name, go far to redeem human nature from the reproaches of cynics. The sympathy of medical practitioners is not so much an emotion as a motive; it is not, indeed, a sentiment expressing itself in sighs and tears, but a feeling manifesting itself in active effort for the relief of the sufferer who is in need of help.

Commercial Aspect of Medicine.

The profession of medicine is a path to fortune only for the few. This fact should be clearly recognized by all who think of adopting it as a career. It may be true that no practitioner who is willing and able to work need starve, but few, indeed, there are who become what a business man would consider even moderately rich by the exercise of their profession. The average income of the British practitioner has been variously estimated at £200 to £400 a year; a fairly successful man will earn from £500 to £1,000, but he has heavy expenses. In taking stock of the pecuniary disadvantages of medicine as a profes-

sion, the long and costly period of trainings and the more or less prolonged time of waiting after qualification before the practitioner can count upon anything like an adequate income must be remembered. Then the working expenses—including house, carriage, and what may be called professional equipment—are so heavy in proportion to the gross income of a man in active practice that the chances of being able to save even to the extent of the return of the capital expended in his education are in a large proportion of cases slight; while reasonable provision for old age, after family expenses are met, is difficult and too often impossible.

INTELLECTUAL SOCIAL ASPECTS.

That which distinguishes a liberal profession from a trade is that it is not a mere means of livelihood, but affords the fullest scope for the exercise of the highest intellectual powers. From this side there is no career which affords larger opportunities of intellectual achievement or greater pleasure in work for its own sake than the profession of medicine. The training that must now be gone through is in itself one of the best means of exercising and developing the highest faculties of the mind. Of all men doctors should be the farthest removed from superstition and bigotry. The grim realities of practice tend to make them indifferent to the futilities and ineptitudes which occupy so large a space in minds destitute of scientific culture. They are concerned with things, not words; their aim is, in the words of Matthew Arnold, to see things as they really are, and they are in the happy position that their profession makes it necessary that they should aim at absolute truth undisturbed by prejudice or false sentiment. All through the active life of practice the mind is kept healthy and vigorous by the exercise of the powers of observation, analysis, and judgement.

The doctor's work is of so intimate a nature that the cultivation of extra-professional relations with his patients is apt to be embarrassing to both. This to a certain extent tends to deprive him of the social status which is his due. On the other hand, his general influence is probably wider than that of any other profession, and although he has not yet gained any appreciable political influence, his special knowledge and trained faculty of dealing with facts have already given him a certain indirect power in the State, and must give him increasing importance as civilization advances. The rise of the profession in social position during the last half-century has been very great. This is due to the enormous advances in medicine and surgery that have been made during that period, and to the increasing appreciation by statesmen and by the public of the part which sanitary science plays in the prosperity of the nation and the development of the Empire. Another factor in raising the status of the profession has been the great improvement that has taken place in the education, general as well as professional, of medical practitioners.

CONCLUSION.

To sum up: The medical profession affords a fairly certain means of livelihood with unrivalled opportunities for that all-round development of the faculties which makes the cultured man, while opening to him a field for the exercise of those faculties in which he will have the sense of doing good with greater certainty, perhaps, than in any other. Medicine, if practised in the right spirit, whether or not it brings wealth or dignity, cannot fail to give that highest earthly good—the sense of a life spent in the service of one's fellow men.

THE PORTALS OF THE PROFESSION.

IN the foregoing lines, certain features of medicine as a profession have been reviewed. Next must be considered in detail the steps which the man who wishes to enter it must take; the degrees and diplomas which it is open to him to acquire; the institutions at which he may study; the special diplomas which he must possess if he wishes to engage in certain classes of practice or hopes to obtain an appointment in certain services; and finally some of the more specialized careers that are open to him.

In the first place, however, there are one or two initial special questions which demand consideration. As will be seen from a study of the articles which follow, there are a great many different ways of gaining admission to the *Medical Register*. They are all alike in general type, and the curriculum in all is a minimum of five years, but they differ considerably in the expenditure of labour and money entailed, and practically though not theoretically in the length of time which must be spent *in statu pupillari*. This arises from the fact that each licensing body, provided it fulfils the requirements of the General Medical Council, can within rather wide limits make the passage of its own portals more or less easy as compared with those of others. In the course of time its practice in this respect becomes fairly well known, and the esteem in which its degrees or diplomas are held in the profession, if not among the public, varies inversely as a rule with the greater or less difficulty of attainment. The view on this point of some friend already in the profession may well be sought by the prospective student, and *altiora peto* should usually be taken as a motto. Another fundamental question the student will have to decide is whether he will aim at a degree giving him a legal right to the title of Doctor or at the diploma or licence of some corporation. As a general rule, he will be well advised to follow the former course, for though in either case his patients will choose for themselves whether they will call him "Mr." or "Dr.," there is a certain moral satisfaction in being able to sign M.D., and the degree, if not essential, is very desirable to the man who aims at an appointment on the medical side of a hospital in a large town, or at practising as a consulting physician. Even to a man who practises surgery only a university degree is in many ways useful, though the student who anticipates a career of this sort should put the Fellowship of one of the Royal Colleges of Surgeons in the forefront of his ambitions.

For the student who intends to enter the medical branch of one of the Services of the Crown this particular question has a different aspect. It is for various reasons his interest to enter his chosen Service at as early a date as possible. Seniority is still an important factor in promotion, and the operation of age clauses may lead to a man who has been ambitious in respect of his legal qualification having to retire on a comparatively low pension. The Service candidate, therefore, will probably be wise to choose the portal deemed by his adviser likely to be cheapest in time and money, so that he may secure his legal status as a medical man as rapidly as possible, and then devote himself to preparing for the competitive examination for the Service he wishes to enter, or, if there be no competition, to taking any

steps that may be necessary to enter it as young as possible.

The question of the choice of a portal may be regarded as conditioned by one other factor. If the student expects to practise in or near some centre of medical education, it may be distinctly to his advantage to receive his degree at the hands of the university with which it is connected. This consideration will to some extent help to decide the third great question before the prospective student—the choice of a place of study. The man who aims at the diploma or licence of a corporation can do his work practically in any medical school in the three kingdoms, but the Universities for the most part require the student to pass a longer or shorter time within their own precincts. Hence if the student desires to receive a degree at the hands of one of the great provincial universities, such as Manchester, Liverpool, Birmingham, Leeds, and Sheffield, he will do well to commence his career in the school of its medical faculty. The same consideration applies to students aiming at the degrees of the Universities of Edinburgh, Glasgow, Aberdeen, and St. Andrews, and of Dublin and Ireland; and with somewhat lesser force to candidates to the medical degrees of Durham University. Apart from the foregoing consideration, and that of relative cost, it may be said to be almost a matter of indifference what place of study the student selects, though there is, perhaps, a certain advantage, and still greater pleasure, in after-life in having been a student of a great and celebrated school.

To the student who has an absolutely free choice, London, with its inimitable clinical and other resources, may always safely be commended.[1] In that case he will have three courses open to him. First, he may seek a degree from the University, in which case it is essential that he should have passed the matriculation examination, and very desirable that he should also have passed the Preliminary Scientific Examination before entering at a London medical school. Secondly, he may seek a degree from Oxford or Cambridge, in which case he will spend three years at one of those seats of learning and then join a London medical school for clinical study in medicine, surgery, and obstetrics. Thirdly, abandoning the idea of taking a university degree, he may enter a medical school with the object of taking the diplomas of the Royal Colleges of Physicians and Surgeons, which are granted after examinations conducted by a Conjoint Board of those Colleges, or he may content himself with the diploma granted by the Society of Apothecaries.

Cost of Medical Education.

To make any general estimate of the expense of the education of a medical student from the time he starts his special studies to the time that he obtains his first legal qualification to practise is practically impossible. The fees charged by universities, colleges, and medical schools are not identical, though the variations are not very great, and the cost of life in the town in which his medical school is situated, the student's personal tastes and fashion of living, and his success in passing all his examinations at the proper time, are more important elements in the total expenditure. The total factors to be considered are the cost of tuition, the fees paid for examinations, for diplomas, books and instruments, and the cost of living for not less than five complete years. School fees vary between £100 and £150, and perhaps the whole expenditure entailed may be put down roughly at between £700 and £1,000. Against the outlay may be set off, of course, in individual cases the fact that at nearly all medical schools entrance scholarships of considerable value, and numerous awards in money for success at school examinations, may be obtained by students who are alike talented, industrious, and fortunate.

The Waiting Time.

Even, however, when the student has obtained a legal qualification to practise he is still likely to require a certain amount of pecuniary assistance if he is to make a start on anything like advantageous terms. It is not necessary that every student should have enough money at his command to buy a practice, but apart from the fact that it is of inestimable value to him to be able to enlarge and consolidate his knowledge in positions such as that of a house-surgeon and the like, he should always have enough to enable him to look round quietly for an opportunity to commence a satisfactory career.

In the alternative, he may be forced to take the first paid work that is offered him, however little suited to his taste or particular talents, and he may even be tempted to allow himself to be farmed by combinations among workmen, formed for the express purpose of obtaining medical services at the lowest terms—terms often so low as to deprive the medical man of a living wage, and to compromise his independence. The friendly societies, though formed for the promotion of thrift and independence among the working classes, too often act towards their medical officers in a manner often unfair and sometimes tyrannous. The subject has been carefully studied by the British Medical Association, which published a report on Contract Practice,[2] which we would commend to the perusal not only of newly-qualified medical men, but also to fathers who may contemplate sending their sons into the medical profession. Finally, it may be remarked that *esprit de corps* is a not less valuable quality in the medical profession than elsewhere; it should be sedulously cultivated by the student in his school career, and when he is starting his life he should associate himself with his fellow-workers as closely as possible and obtain election to the British Medical Association.

MEDICAL EDUCATION.

GENERAL MEDICAL COUNCIL.

The profession of medicine, including for the moment in that term the practice of dentistry, is ruled as a whole by the General Medical Council, which holds its sessions at its head quarters in London (299, Oxford Street, London, W.), and has branch offices in Scotland (54, George Square, Edinburgh) and in Ireland (35, Dawson Street, Dublin).

Besides supervising generally the practice of medicine, surgery, and dentistry, it guards the portals of admission to the profession by deciding the terms upon which aspirants shall be recognized as medical students, the education which they must receive, the minimum number of years for which it must be carried on, and the general nature of the examinations by which its proficiency shall finally be tested by the universities and corporations which have authority to issue degrees and diplomas and licences entitling the holder legally to practise as a medical man or as a dentist.

Regulations in respect of these matters have been compiled, and a summary of those which have more particular application to the intending medical student follows, and should be carefully studied. The primarily important things to note about them are that they entail (1) the production of proof of a certain degree of pro-

[1] See also page 579.

[2] *An Investigation into the Economic Conditions of Contract Medical Practice in the United Kingdom.* London: Office of the British Medical Association, 6, Catherine Street, Strand, W.C. 6d.

ficiency in matters of preliminary or general education; (2) application for registration as a medical student either at the head-quarter office in London or at one of the branch offices in Edinburgh and Dublin.

PRELIMINARY EDUCATION.

The subjects, of which proof of efficient knowledge must be produced by applicants for registration as medical students, are as follows:

(1) *English:* Grammar; paraphrasing; composition; questions on English history and geography.

(2) *Latin:* Grammar: translation into English from unprescribed Latin books; translation into Latin of a continuous English passage, and of short idiomatic English sentences. In the case of natives of India or other Oriental countries, whose vernacular is other than English, a classical Oriental language may be accepted as equivalent to Latin.

(3) *Mathematics:* Arithmetic; algebra, including easy quadratic equations; geometry, including the subject matter of Euclid, Books i, ii, iii, and simple deductions.

(4) One of the following subjects:

(α) *Greek:* Grammar; translation into English from unprescribed Greek books; translation into Greek of short idiomatic English sentences; or

(β) *A modern language:* Grammar; translation into English from unprescribed books; translation of a continuous English passage, and of short idiomatic English sentences.

The Council considers it a sufficient testimonial of proficiency in these subjects if the applicant can show that he has passed one or other of the following tests:

I.—UNIVERSITY EXAMINATIONS HELD IN THE UNITED KINGDOM.

A.

Final Examination for a Degree in Arts or Science of any University in the United Kingdom.

B.

University of Oxford.—Junior Local Examinations.[1] Senior Local Examinations.[1] Higher Local Examinations.[2] Responsions.[3] Moderations.[2]

University of Cambridge.—Junior Local Examinations.[1] Senior Local Examinations.[1] Higher Local Examinations.[2] Previous Examination.[2] General Examination.[2]

Oxford and Cambridge Schools' Examination Board.—Lower Certificate Examinations.[4] Higher Certificate Examinations.[2] Leaving Certificate.[3]

University of Durham.—Examination for Certificate of Proficiency.[3] Matriculation Examination of the Faculties of Science, Letters and Music.[3] Senior Local Examinations.[2]

University of London.—Matriculation Examination.[2]

Victoria University of Manchester, University of Liverpool, and University of Leeds.—Matriculation Examination.[4]

University of Birmingham.—Matriculation Examination.[2]

University of Wales.—Matriculation Examination.[3]

Universities of Scotland.—Preliminary Examination of the Joint Board for Graduation in Medicine and Surgery.[4] Preliminary Examination of the Joint Board for Graduation in Arts or Science.[2]

University of St. Andrews.—Final Examination for the Diploma of LL.A.

University of Dublin.—Principal Public Entrance Examinations.[3] Examinations for the First, Second, Third, or Fourth Year in Arts.[1]

Royal University of Ireland.—Matriculation Examination.[2]

II.—GOVERNMENT EXAMINATIONS HELD IN THE UNITED KINGDOM.

Scottish Education Department.—Leaving Certificate Examinations: passes in Lower Grade.[4] Leaving Certificate Examinations: passes in Higher Grade or Honours.[2]

Intermediate Education Board of Ireland.—Middle Grade Examination.[3] Senior Grade Examination.[2]

Central Welsh Board.—Senior Certificate Examinations.[2]

III.—EXAMINATIONS BY CHARTERED BODIES HELD IN THE UNITED KINGDOM.

College of Perceptors.—Examinations for First-class Certificates.[4] Preliminary Examination for Medical Students.[3]

Educational Institute of Scotland.—Preliminary Medical Examination.[3]

Royal Colleges of Physicians and Surgeons in Ireland.—Preliminary Examination.[3]

Certain examinations held by authorities not within the United Kingdom also suffice—namely:

The Matriculation Examinations of the Universities of Malta, Bombay, McGill (Montreal), Manitoba, New Brunswick, Halifax (Nova Scotia), Melbourne, Sydney, and Cape of Good Hope; the First Examination in Arts at the Universities of Calcutta, Madras, and Sydney; the Intermediate Examination in Arts at the University of Allahabad and Punjab University; the Preliminary Examination of the Ceylon Medical College; the Preliminary Medical Examination of the University of Otago, of the University of New Zealand, of the Medical Boards of Nova Scotia, Newfoundland, and of the Colleges of Physicians and Surgeons of the Province of Quebec and of New Brunswick; the Senior Public Examinations of the Universities of Adelaide, Sydney, and Tasmania: the Arts Matriculation in the Province of Ontario. Other Examinations which are sufficient are the German Arbiturienten-Examen of the Gymnasia and Realggymnasia; Examinations entitling to the French Diplomas of Bachelier ès Lettres and Bachelier ès Sciences, and other corresponding Entrance Examinations to the Universities in Europe; and, finally, Examination for the Secondary Education Certificate held by the Egyptian Government. It should be noted, however, that no Certificate from the Indian and Colonial Bodies in the foregoing statement is accepted unless it shows that the Examination has been conducted by or under the authority of the Body granting it, includes all the subjects required by the General Medical Council, and states that all the subjects of examination have been passed at one time; and copies of the form of the required Certificate are supplied by the Registrar of the Council for the purpose.

[1] Certificate to be endorsed as fulfilling the Council's requirements.
[2] Certificate to include the required subjects.
[3] The required subjects to be passed at one time.
[4] The required subjects to be passed at not more than two examinations.

REGISTRATION OF MEDICAL STUDENTS.

In addition to showing that he has passed one of these examinations, any person applying for registration as a medical student must (1) produce satisfactory evidence that he has attained the age of 16 years; (2) show that he has commenced medical study at a university or school of medicine or at a scientific institution recognized by one of the licensing bodies and approved by the Council. The commencement of professional study will not be reckoned as dating earlier than fifteen days before the date of registration.

Application for registration should be addressed to the Registrar for the division of the United Kingdom in which the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained on application at the offices either of the Medical Council itself, or of one of the various licensing bodies and medical schools, and when forwarded it should be accompanied by the certificates as to age and general education.

The regulations with regard to registration apply equally to medical and dental students, with the exception that in the case of the latter pupilage with a registered dental practitioner may be regarded as a commencement of professional study.

PROFESSIONAL EDUCATION.

It is only from the date which appears against his name in the *Students' Register* that the medical student's career officially begins; thereafter five years must pass before he can present himself for the final examination for any diploma which entitles its lawful possessor to registration as a qualified medical practitioner under the Medical Acts.

There are, however, certain important exceptions to this rule: thus (1) to meet the circumstances brought about by the dates at which sessions of the medical schools commence and end, the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration. (2) The Council will also recognize as the first of the five years one passed at certain approved universities and scientific institutions, a list of which is hereafter given, where the subjects of physics, chemistry, and biology are taught. (3) Those also are deemed to have completed the first of their five years who are graduates in arts or science of any university recognized by the Medical Council, and who, having spent a year in the study of physics, chemistry, and biology, have passed an examination in these subjects for the degrees in question. In any case the period of five years must be one of bona fide study, and during its course education in the following subjects must be pursued and examinations passed:

(i) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity.
(ii) Chemistry, including the principles of the science, and the details which bear on the study of Medicine.
(iii) Elementary Biology.
(iv) Anatomy.
(v) Physiology.
(vi) Materia Medica and Pharmacy.
(vii) Pathology.
(viii) Therapeutics.
(ix) Medicine, including Medical Anatomy and Clinical Medicine.
(x) Surgery, including Surgical Anatomy and Clinical Surgery.
(xi) Midwifery, including Diseases peculiar to Women and to newborn Children.
(xii) Theory and Practice of Vaccination.
(xiii) Forensic Medicine.
(xiv) Hygiene.
(xv) Mental Disease.

As regards these subjects, it should be noted that the Council has recently decided that the practical study of Subject (xi) shall not commence until the student has held the offices of Clinical Clerk and Surgical Dresser, and it has defined the way in which the work is to be done. It also now recommends licensing bodies to require of candidates at their final examinations evidence of instruction in the administration of anaesthetics, and of sedulous attention in hospital wards, out-patient departments, and *post-mortem* rooms, as clerks and the like.

The study of these subjects may be commenced and the first year passed at any of the following universities, colleges, and schools:

I.

The Universities of *Oxford*, *Cambridge*, *Durham*, *London* (including all its constituent Medical Schools and Colleges, and also Bedford College, Royal Holloway College, and the Royal College of Science), *Manchester*, *Wales*, *Birmingham*, *Liverpool*, *Leeds*, *Sheffield*, *Aberdeen*, *St. Andrews*, *Edinburgh*, *Glasgow*, *Dublin*, *Royal University of Ireland*.

II.

Bristol: University College.
Edinburgh: School of Medicine of the Royal Colleges, Surgeons' Hall School, Medical College for Women.
Glasgow: Anderson's College, St. Mungo's College, Western Medical School.
Dublin: Catholic University Medical School, Royal College of Surgeons' Schools of Surgery.

III.

Bradford; Technical College.
Brighton: Technical Day College.
Bristol: Merchant Venturers' Technical College.
Cheltenham: Ladies' University College.
Derby: Technical College.
Dublin: Royal College of Science for Ireland.
Exeter: Royal Albert Memorial College.
Halifax: Municipal Technical School (Day Classes).
Huddersfield: Huddersfield Technical College (Day Classes).
Hull: Municipal Technical School (Day Classes).
Leicester: Municipal Technical and Art School (Day Classes).
London: Birkbeck Institute, East London Technical College, Central Technical College, Westfield College, Polytechnic Institute, Battersea (Day Classes).
Nottingham: University College.
Plymouth: Municipal School of Science (Advanced Day Classes).
Preston: Harris Institute.
Reading: Reading College.
Southampton: Hartley College.
Swansea: The Swansea Technical College (Day Classes).

Capetown: South African College.

In addition to these places it may be noted that there are a number of ordinary schools which certain of the licensing bodies recognize as providing efficient education in chemistry, biology, and physics; they therefore admit persons who have attended courses at such schools to their own examinations in these subjects without demanding further proof of study. The time, however, which these students thus spend is not allowed to count as part of their five years' professional education unless they have previously passed an approved examination in general education, and in no case is more than six months allowed to count.

Wherever the first of the five years is spent, the next three must be passed at one of the schools of medicine recognized by any of the licensing bodies enumerated in the Schedule to the Medical Act of 1858. The final or fifth year the Council recommends should be devoted to clinical work, and it may be passed at any public hospital or dispensary at home or abroad which is recognized by any of the licensing bodies; moreover, six months of it may be passed as a pupil of a registered practitioner who satisfies any of the said authorities that he has opportunities of imparting practical knowledge.

Special Considerations.

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in sufficient detail, but before leaving this part of the subject the steps which the aspirant should take may finally be rehearsed in their due order:

(1) Pass an examination in arts;
(2) Enter himself at a medical school or other scientific institution recognized by the Council;
(3) Get himself registered as a medical student;
(4) Study for a minimum of five years certain prescribed subjects;
(5) Meanwhile pass sundry intermediate examinations, and, finally, at the end of the fifth year one which will entitle him to receive at the hands of a licensing body a legal authority to practise.

The Arts Certificate.—There are, however, other important considerations; thus, it is not a matter of indifference what certificate of proficiency in general education, or arts, the student obtains. The General Medical Council, it is true, will accept any of those which have been mentioned at page 564, and this, too, is the case with practically all the college corporations in England, Scotland, and Ireland. But all the licensing bodies are not equally accommodating; some of the universities require that their own ordinary matriculation should be passed, others have special matriculation examinations for those wishing to join their medical faculty, and a third and larger number will accept any arts degree and certain matriculation examinations, as well as several other of the tests entered in the Council's list.

The first thing, therefore, the future medical student should, if possible, decide is at what degrees or diplomas he intends to aim, and then find out what arts certificate will be required. The points he will take into consideration in this connexion have already been discussed at page 562. If he cannot decide this question in advance, the best course probably would be to matriculate at London University. It is a troublesome examination, but, as now rearranged, gives a wide choice of subjects, and has the advantage of being accepted as ample testimony to general education by a much larger number of bodies than in any other matriculation examination.

The Minimum Period.—Another point to remember is that the period of five years mentioned is a minimum; a good deal more may be required even by the man of good abilities and reasonable industry. Besides these qualities, a student to obtain a registrable qualification in the minimum period of five years, or fifty-seven months, must have a certain amount of good luck; in other words, he must keep in good health through every term, and never fail at a single examination. Otherwise it is almost inevitable that his career as a student should be prolonged for a greater or smaller number of months beyond the possible minimum. Thus, for instance, a student before presenting himself for any examination has to get what is called "signed up" for the subjects covered by that examination; this means that his teachers have to certify that he has attended the required number of lectures or classes in the subjects in question. If, however, the student happens to be ill during the term when such lectures or classes are taking place, he may miss a sufficient number of them to make it impossible for him to be "signed up."

Then, again, should a student fail to satisfy the examiners at some examination, he cannot present himself again for re-examination for at least three months. This fact generally entails further consequences because, apart from the student's success at the next stage in his career being imperilled by his having to give up some time to restudying the subjects in which he has failed, the majority of Examining Boards insist upon a definite interval elapsing between a student passing one examination and his presenting himself for that which should follow it. For instance, the Conjoint Board of England demands that at least twelve months must pass between success at the examination in chemistry, physics, and biology, and that in anatomy and physiology. Then, again, many Boards refuse to recognize lectures and classes which have been attended at a date anterior to that at which the student has passed the requisite examination in earlier subjects. Failure at an examination may thus not only mean deferment of the date of examinations, but deferment of the commencement of the student's study of certain subjects. It is thus exceedingly easy for a student to fail to qualify in five years, and, as a matter of fact, probably the majority of students take longer than that period. Nevertheless, every student should start his career in the belief that he will complete his work in the minimum period and with the determination to do so.

Furthermore, in speaking of the minimum period, it is to be remembered that that time is only sufficient to gain a registrable qualification, such as a Bachelorship of Medicine and Surgery or a diploma of one of the Royal Colleges. These are quite sufficient for the purposes of general practice or for entering the Services, etc., but those who wish to take a higher qualification, for instance, the F.R.C.S.Eng., must prolong their work for another year or more. So, too, must they who desire to convert their Bachelorship into an M.D., if doing so entails further formal examination. This is not always the case, for at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age and has practised his profession for a certain number of years. However, a student's career proper may be considered, perhaps, to have ended at the time he obtains his first registrable qualification, for while preparing himself for any further tests he can, and usually does, hold some junior appointment which, more or less, covers his expenses.

The Normal Course.—In conclusion it may be convenient to sketch the general fashion in which the student will

pass his five years or more, but discussion of this need not be prolonged, because once a student has entered at a school, and decided at what degrees or diplomas he wishes to aim, the dean of the school will guide his steps in every particular.

Whatever the precise final goal, the path thereto is in all cases identical in broad outline. Practically it is divided into three stages, the conclusion of each being marked by an appropriate examination. In the first stage the student acquires a more or less extensive knowledge of the preliminary sciences, chemistry, physics, and biology; in the second he studies anatomy and physiology; and the third he devotes to the real work of his future life, medicine and surgery and their branches. During each of these stages the student must attend not less than the prescribed number of lectures and classes to ensure getting "signed up" in the subjects of the stage, and do a certain amount of practical work. As for the examinations at the end of the stages, these are known by different titles by different examining bodies, but "preliminary science," "intermediate," and "final" are in common use. Some bodies demand that the student should pass in all the subjects of one stage at one time; others allow the candidate to present himself in each of the subjects separately, thus multiplying the actual number of examinations but limiting their scope. There are also differences in the requirements of the different licensing bodies as to the length of each stage, but practically all demand that the second shall be longer than the first, and the third than the second. By the length of the allotted stage the candidate may gauge the comparative importance the licensing body attaches to the subjects within it, and the difficulty of the tests it will impose, and he may feel certain that the time allotted is none too much.

In any case it should be the aim of the student to get through his first two stages as quickly as his abilities and the regulations will allow; and, as a rule, he should have completed the first stage by the end of his first year, and the second stage not later than the end of his third year. He will then have two years in which to prepare for his final examination, and it will prove a very crowded period, for he has to get into it not only medicine and surgery proper, but many other allied subjects, such as midwifery, pathology and bacteriology, forensic medicine, gynaecology, therapeutics, and many others. In the first of the final two years he should complete his formal lectures, and thus have the fifth year at his disposal for entirely practical work and private study; during these two years, too, he will really take part in the work of his hospitals by holding clerkships and dresserships in the wards and out-patient department for the periods laid down by the licensing bodies. Then at length, after perhaps a few weeks of special coaching, he will be ready to present himself for his final examination, which the regulations of most bodies will allow him to divide into two or more parts. The final examination passed in its entirety, he will be able to claim registration as a qualified medical practitioner at the hands of the General Medical Council and become an independent personage. There is still room for him to continue a student's career if he will, for, apart from the higher qualifications to which reference has been made, it may seem to him worth while to devote time to acquiring greater knowledge of some particular branch of medicine, such as ophthalmology or laryngology, or to undergo the courses of study necessary to obtain a diploma of special proficiency in questions of public health or in tropical medicine, accounts of which are given on pages 606 and 607 of this issue. Points such as these, however, the student will be fully capable of deciding for himself when he has reached the stage to which our account has now brought him.

The next matters to be considered, therefore, are the requirements in detail of the different licensing bodies, and what they offer in the way of degrees and diplomas.

THE ENGLISH UNIVERSITIES.

UNIVERSITY OF OXFORD.

The professional degrees conferred by this University are those of Bachelor of Medicine (B.M.), Bachelor of Surgery (B.Ch.), Doctor of Medicine (D.M.), and Master of Surgery (M.Ch.). It also grants a diploma in State Medicine.[1] On receiving the B.M. the candidate is entitled to registration by the General Medical Council. Under favourable circumstances it and the B.Ch. may be obtained in six or seven years from matriculation. Before receiving either, however, the candidate must have taken a degree in Arts (B.A.), for which three years' residence within the University is necessary. This, however, does not necessarily mean deferment of professional study for that period; for some of the subjects chosen for the final stage of the Arts course may be the same as those in which examinations would in any case have to be passed for the medical degrees.

The B.A. Degree.

A candidate may obtain the B.A. degree in either of the following ways:

(*a*) By passing Responsions (or one of the Examinations which are accepted as equivalent); Moderations, a Scripture Examination, or in the event of a candidate objecting, an examination in some substituted book; and the Final Pass School in three subjects, two of which may be the same as two in the Preliminary Examinations in Natural Science.[2]

(*b*) By passing Responsions; an additional subject in Responsions, the Scripture Examination; some of the Preliminary Examinations in the Natural Science School,[2] or the Preliminary Examination and the School of Jurisprudence, or the Honour School of Mathematics in the First Public Examination; and one of the Final Honour Examinations.

Responsions and the additional subject may be passed before a candidate is a member of the University;[3] Moderations and Scripture can be passed in or after the second term; the Final Pass School may be taken any time after Moderations; a Final Honour School may be taken at the end of the third or within the fourth academical year—that is, twelve or sixteen terms respectively; the Preliminary Examinations of the Natural Science School may be taken as soon as Responsions have been passed.

Professional Degrees.

To obtain the B.M., B.Ch. degrees the candidate must first pass in four of the subjects of the Preliminary Examination of the Natural Science School, namely, Physics, Chemistry, Zoology, and Botany.

He then has two further examinations to pass, the First B.M. and the Final Examination. These take place twice a year on the Thursday of the eighth week of Michaelmas and Trinity terms. A candidate at the First M.B. is examined in Human Anatomy, Materia Medica, and Pharmacy, and also Physiology and Organic Chemistry, unless he has previously taken a first or second class in these subjects. Once passed this examination he can, on production of certain certificates, be examined as soon as he pleases in Pathology, Forensic Medicine, and Hygiene (subjects of the final examination), but cannot present himself for the remaining subjects—Medicine, Surgery, and Midwifery—until the twenty-fourth term from the date of his matriculation, and he must take all the three subjects at one and the same time.

D.M. and M.Ch. Degrees.

A Bachelor of Medicine who wishes to proceed to the M.D. must have entered his thirty-ninth term and present a dissertation for approval by the appointed examiners. If a candidate for the M.Ch., he must have entered his twenty-seventh term and pass an examination which is held in June.

Teaching.

The several Colleges provide their undergraduate members with tutors for all examinations up to the B.A. degree. In addition, the University provides certain courses of instruction, including lectures, demonstrations, and practical work which cover all the subjects of the Preliminary Examination and First M.B., and in part those of the Final Examination.

Scholarships.

The several Colleges grant scholarships of £80 a year, tenable for four years, in Natural Science, Chemistry, Physics, and Biology.

[1] See page 607.

[2] The four subjects of the Medical Preliminary Examinations are four of the subjects in the Natural Science Preliminary, and can be commenced directly after passing Responsions.

[3] Membership is constituted by Matriculation, and by becoming a member of a College or Hall, or a non-collegiate student.

Exhibitions of varying value are also awarded in these subjects. Particulars can be obtained on application to the College tutors. A Radcliffe Travelling Fellowship of £200 a year, tenable for three years, is conferred annually; candidates must have taken the B.M. degree. A Philip Walker Studentship in Pathology of £200 a year, tenable for two years, is awarded biennially for the encouragement of research in Pathology, as also the Rolleston Memorial Prize, of the value of £70, for research in Natural Science (including Pathology).

Fees.—An annual fee of £2 is paid to the University for the first four years, being reduced to £1 when the B.A. has been taken. For the degrees the fees are the B.A., £7 10s.; the B.M. and B.Ch., £14; the D.M., £25; the M.Ch., £12. College fees varying in amount are paid for the first four years of membership and in taking degrees. Tuition fees run from £21 to £30. The minimum annual cost of living during the four University terms may be regarded as not less than £120.

UNIVERSITY OF CAMBRIDGE.

The professional degrees given by this University are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.C.), which entitle the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants diplomas in State Medicine and Tropical Medicine to persons who are registered medical practitioners but not necessarily graduates of the University.[1] A candidate for the M.B., Ch.B. degrees need not possess a degree in Arts; it is sufficient if he has passed the *Previous Examination* or some other examination accepted by the University as its equivalent.

Professional Examinations.

To obtain the M.B., the candidate must pass three examinations, which take place twice a year, in Michaelmas and Easter terms; those who are finally successful receive the B.C. degree without further examination.

First M.B.—This comprises (1) Chemistry and Physics, (2) Elementary Biology. The two parts may be taken together or separately. In either case the candidate before admission to examination must have satisfied the requirements in respect of the *Previous Examination* and be duly "signed up" as regards chemistry; that is, present certificates showing that he has pursued certain prescribed courses of instruction on the subject.

Second M.B.—This examination, which cannot be passed until the first examination has been completed, deals with Human Anatomy and Physiology. The candidate must be signed up in both subjects and have dissected for six months.

Third M.B.—This is divided into two parts, to neither of which is the candidate admitted until he has passed the examinations previously mentioned. A candidate for the first part, which deals with pharmacology and general pathology, must be signed up in these subjects and have attended the practice of a recognized hospital for six months.

Before admission to the second part the candidate must have completed five years of medical study and be duly signed up in all subjects. He must also possess certificates showing that he has fulfilled all the recommendations as well as the requirements of the General Medical Council respecting vaccination, midwifery, *post-mortem* examinations, and practical hospital work, etc. He may present himself for examination in all three sections together, namely, (1) the Principles and Practice of Surgery, (2) Midwifery and Diseases of Women, (3) the Principles and Practice of Physic, or take any two first and the third later.

Act for the M.B.—Before receiving his degree, a candidate who has been successful at the Final M.B. has to write a thesis. This he reads in public on an assigned day, and is then questioned concerning it and other subjects of medicine by the Regius Professor of Medicine. If approved at this test he is then certified as having "kept the Act" satisfactorily, and in due course receives his degree.

The Higher Degrees.

The M.D. degree may be taken by an M.B. of three years' standing after keeping a further Act and writing a short extemporary essay, in which he may deal at his choice with either Medicine, Physiology, Pathology, or State Medicine. The M.C. degree may be granted to a candidate who has qualified for the B.C. at least three years previously; he is then examined in Pathology, Surgery, Surgical Anatomy, and Surgical Operations, or submits books or writings of his own which constitute original and meritorious contributions to the science and art of surgery.

Fees.

In addition to college fees, tutorial fees, and the expenses of living, the following examination fees are payable:—First M.B., £2 2s.; Second M.B., £2 2s.; Third M.B., £3 3s. A student who has passed in two of the subjects of the second part of the Third M.B. only pays £2 2s. on admission or readmission to the examination in the third subject. For schedules referring to the examinations, lists of schools recognized by the University, and other information, application should be made to the University Registrar.

[1] See pages 607 and 604.

UNIVERSITY OF LONDON.

Under the regulations of the University of London, as now constituted, the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Surgery, Master of Surgery, and Doctor of Medicine in six different branches.

All students of the University, it is to be remembered, are divided into two classes, Internal students and External students. An internal student is one who, having matriculated at the University, or otherwise obtained registration as an undergraduate, is pursuing a course of study approved by the University in a School or Schools, or under one or more of the Teachers, of the University. An external student is an undergraduate who is pursuing his education in some other way.

The standard of education required from those who present themselves for degrees, whether as internal or external students, is, as far as possible, the same; but the regulations which affect them differ to some extent. The information which hereinafter follows applies to those who propose to proceed to medical degrees as internal students, and who have not yet commenced their work. Those who propose to study elsewhere than at one of the constituent schools of the Faculty of Medicine of the University should obtain the regulations which apply to them from the External Registrar. There are a few conditions under which exemption may be obtained from examination in certain subjects, or the intervals between examination abbreviated, but to the vast majority of students they have no application.

It may be stated here that under no circumstances whatever can a degree after examination be granted to any one in less than three years after the date at which he passed the matriculation examination or obtained registration in some other way, and that External students of the Faculty of Medicine must pass not less than five years in professional study subsequent to matriculation, unless they are registered medical practitioners of a certain age and standing. Four of those years must be passed after the Preliminary Scientific Examination, Part I, at one or more of the medical institutions or schools at home and abroad recognized by the University for the purpose; and one year at least of those years must be passed at one of the schools situated within the United Kingdom.

The normal course of an Internal student of medicine is as follows: After matriculation he pursues approved courses of instruction in Chemistry, Physics, and Biology, and then at the end of his first year goes up for the Preliminary Scientific Examination (Part I). This passed, he goes up at the end of six months for the Examination in Organic Chemistry, known as the Preliminary Scientific Examination, Part II. The rest of the second and third years he spends on approved courses of Anatomy, Physiology, and Pharmacology, including Materia Medica and Pharmacy, and then at the end of his third year as a medical student, presents himself for the Intermediate Examination. The next two years he devotes to approved courses of Instruction in Medicine, Surgery, Midwifery, and Diseases of Women, Pathology, Forensic Medicine, and Hygiene, and at the end of his fifth year he is eligible to present himself for the final examination for the M.B., B.S. degree, success in which will entitle him to registration as a qualified practitioner. This five years' course, however, is liable to be prolonged by failure at any stage, as there is a minimum

space of time fixed between passing one examination and attempting the next.

The Matriculation Examination (see Note p. 569) takes place three times in each year—namely, in the months of January, June (or July), and September. Application for admission to it must be made on a special form about six weeks beforehand, and must be accompanied by a certificate showing that the candidate will have completed his sixteenth year at the date on which the examination commences. It is a written examination, but the examiners are not precluded from putting viva voce questions to candidates if they should think fit. To pass the examination candidates must show a competent knowledge of five subjects, of which one must be English (one paper of three hours), another Elementary Mathematics (two papers of three hours each), and a third either Latin or Elementary Mechanics or Elementary Physics (Heat, Light, and Sound), or Elementary Chemistry or Elementary Botany. The other two may be selected from any of those in the following list, except, of course, those in which the candidate may have already been examined. Unless Latin has already been taken, one of them must be a language—Latin, Greek, French, German, Arabic,* Sanscrit,* Spanish,* Portuguese,* Italian,* Hebrew,* Chinese, Ancient History, Logic, Modern History, Physical and General Geography, History and Geography (which cannot be taken as well as either of the two preceding), Geometrical and Mechanical Drawing, Mathematics (more advanced than in the compulsory examination), Elementary Mechanics, Elementary Chemistry, Elementary Biology (Botany), Elementary Biology (Zoology),* Elementary Physics (Heat, Light, and Sound, or Electricity and Magnetism). Candidates who desire to be examined in the subject against which an asterisk is affixed must give at least two months' notice. The names of the successful candidates are published in two lists, a first division and a second division. Communications concerning this examination must be addressed to the Principal of the University.

The Preliminary Scientific Examination, Part I, takes place twice in each year, commencing on the third Monday in January and on the second Monday in July. It consists of two papers in Inorganic Chemistry, two in Biology, and two in Physics, and there are practical examinations in Inorganic Chemistry, Physics, Botany, and Zoology, not exceeding three hours in any one subject; examiners are also at liberty to test candidates viva voce. A student must present himself for examination, either in all of the three subjects together, or in Physics and Chemistry together, or in Biology alone. It is a pass examination only, and the list of successful candidates is published in the alphabetical order of their names.

The Preliminary Scientific Examination, Part II, takes place twice a year, namely, in January and July. It should be passed not later than the end of the second year of study, but cannot be passed within six months of the passing of Part I of the same examination. It is a pass examination, and consists of a three hours' paper in Organic Chemistry, and three hours' practical work, the examiners being at liberty also to test any candidate by viva voce questions.

The Intermediate Examination in Medicine takes place twice a year, commencing on the third Monday in January and the first Monday in July. Candidates must have passed Part I of the Preliminary Scientific Examination at least two years and Part II at least one year previously. The subjects of examination are Anatomy, Physiology, and Pharmacology. In Anatomy there will be two papers, dissection, and an oral examination. In Physiology, two papers and a practical examination not exceeding six hours in length, which will include the preparation and identification of histological specimens, and the performance of simple experiments illustrating points in physiology and elementary physiological chemistry. In Pharmacology there will be one paper and an oral examination, which may include recognition of the more important substances in the *British Pharmacopoeia*. It is a pass examination, and the names of the successful candidates will be published in alphabetical order, but any subjects in which a candidate may have distinguished himself will be appended to his name if he has passed in all the subjects at one time. Candidates who have failed in one subject only at this examination may offer themselves for re-examination in that subject, if permitted to do so by the examiners. Three scholarships, one of the value of £40 in Anatomy, another of the same amount in Physiology, and one of £30 in Pharmacology, may be awarded by the examiners to any candidate who, having passed the whole of the examination at one time, has been awarded marks of distinction in one or more subjects; as a rule, no candidate will be allowed to receive the income of more than one scholarship at the same time.

The Final M.B., B.S. Examination takes place twice a year, commencing on the last Monday in October and on the first Monday in May. No candidate will be admitted to this examination unless he has completed the course of study prescribed in the schedule or within two academic years from the date of passing the Intermediate Examination in anatomy and physiology.

The subjects of the examination are Medicine (including Therapeutics and Mental Diseases), Pathology, Forensic Medicine and Hygiene, Surgery, and Midwifery and Diseases of Women. The subjects may be divided into two groups, one of which shall comprise Medicine, Pathology, Forensic Medicine and Hygiene; and the other Surgery and Midwifery and Diseases of Women. Either group may be taken first at the option of the candidate, or the groups may be taken together. The examination in Medicine will consist of (*a*) two papers each of three hours' duration, (*b*) a viva voce examination on cases, (*c*) an examination of a patient with a written report on the case, and (*d*) an oral examination on the whole subject. In Pathology there will be a paper, a viva voce, and a practical examination in clinical laboratory work, while in Forensic Medicine and Hygiene there will be a paper and an oral examination.

In Surgery there are (*a*) two papers, each of three hours' duration, one on Surgery and the other on Surgical Anatomy and Pathology, (*b*) a clinical examination on cases, and (*c*) an oral examination on Surgical Pathology, (*d*) another on Surgical Appliances and Surface Marking. In Midwifery and Diseases of Women there will be one paper and a viva voce. Only candidates who show a competent knowledge of all the subjects comprising a group will be passed. There will be no separate examination held for honours, but in the list of successful candidates the names will be divided into an honours list and a pass list, in each of which the names will be placed in alphabetical order. Only those, however, who have passed the whole examination at one time will be entitled to a place in the honours list. In this list the subjects in which they have distinguished themselves will be appended to the names of the successful candidates. The examiners will be empowered to recommend the award of a University Medal to the candidate who has most distinguished himself in the whole examination.

A diploma under the seal of the University, constituting a licence to practise, will be delivered to each candidate when he has passed in both groups of the examination.

DOCTOR OF MEDICINE.

The examination for the degree of Doctor of Medicine is held twice in each year, commencing on the first Mondays in December and July. Every candidate must have passed the examination for the M.B., B.S. of this University unless he became M.B. before May, 1904. Candidates may present themselves for examination in any one of the following branches: (1) Medicine, (2) Pathology, (3) Mental Diseases, (4) Midwifery and Diseases of Women, (5) State Medicine, (6) Tropical Medicine; and, if they wish, may pass also in another branch at a subsequent examination. Candidates for Branches 1 to 4 who have taken honours at the M.B., B.S. Examination in the subject in which they present themselves for the M.D. degree, or who, subsequently to taking the M.B., B.S., have conducted a piece of original work approved for the purpose by the University, or have had such exceptional experience in the branch in which they present themselves as may be approved by the University, may present themselves for the M.D. examination one year after taking their Bachelor's degree. Other candidates must show that they have taken the degree of M.B., B.S. not less than two years previously; and as regards candidates in Branches 1 to 4 either that they have held for at least six months a resident or non-resident medical appointment at a hospital approved for this purpose, or that they have been in qualified practice for not less than five years, or that as regards Branches 2 and 3 they

have held in the one case a pathological and in the other an asylum appointment in an institution approved by the University. In each examination for the M.D. in Branches 1 to 4 there will be (1) two papers on the special subject of the branch; (2) a Clinical Examination; (3) an essay to be written on one of two given subjects connected with the branch. In Branch 1 there will also be a paper on Pathology, and in Branches 2, 3, and 4 a paper in Medicine, while in Branch 2 a Laboratory Examination will be substituted for the Clinical Examination held in the other branches.

The regulations concerning candidates in Branch 5 (State Medicine) and Branch 6 (Tropical Medicine) will be found in their appropriate places in the articles devoted to these subjects (page 607 and page 604).

Master of Surgery.

The examination for the degree of Master in Surgery will take place twice in each year, commencing on the same dates as the foregoing, and the general regulations already quoted with regard to the M.D. will practically apply to it, surgery being substituted for medicine. In addition, the candidate must produce evidence that he has held a surgical appointment at an approved institution for at least six months. The examination will consist of (1) two papers on Surgery (one of which may be a case for commentary); (2) an essay to be written on one of two subjects which may be selected from any branch of surgery; (3) two papers on Surgical Pathology and Surgical Anatomy; (4) a Clinical examination; (5) operations on the dead body; (6) an oral examination at the discretion of the examiners. Competent knowledge in every subject of the examination must be shown in order to pass.

For the M.S. degree and all branches of the M.D. a candidate is at liberty to forward a thesis or copies of published works embodying the result of independent research in the subject in which he presents himself for a degree and also any printed contributions to the advancement of professional knowledge published either separate or conjointly. If the examiners consider such thesis or works of sufficient merit they are empowered to exempt a candidate both from the practical and written part of the examination in the case of candidates for the M.D. in Pathology, but from the written examination only in the case of other candidates. They also have power to award a University medal to the candidate who at the examination in any branch passes with most distinction.

Fees.

For Matriculation.—£2 for each entry.

Preliminary Scientific Examination.—Part I: £5 for each entry to the whole examination, and £2 for each subject when less than the whole examination is taken at one time. Part II: No fee for first entry, £2 for each subsequent one.

Intermediate Examination.—£10 for each entry to the whole examination, and £5 for re-examination in one subject.

M.B., B.S. Examination.—£10 for each entry to the whole examination, and £5 for examination or re-examination in either group.

M.D. and M.S. Examinations.—£20, and £10 on re-examination.

Note.—There are a certain number of high standard examinations held by various authorities at home and abroad, which the Senate regards as the equivalent of its own matriculation examination, and those who can show that they have passed them are admitted to registration as internal or external students on payment of the matriculation fee of £2. Appendix II to the Matriculation Regulations should be consulted on this point.

UNIVERSITY OF DURHAM.

To its own graduates, who may be of either sex, this University grants the degrees of Bachelor and Doctor of Medicine (M.B. and M.D.) and Bachelor and Master of Surgery (B.S. and M.S.); it also grants special degrees and diplomas in State Medicine.[1] To become a graduate, however, at the University it is not necessary to pass the major portion of the five years' curriculum within its precincts, or even to commence that period by matriculation. It is sufficient if before he presents himself for his final examination the candidate has passed at least one year in study at the University of Durham College of Medicine, including the practice of the Royal Victoria Infirmary in the same city. The earlier examinations may be passed while a student elsewhere, but not less than a year must elapse between the time that the student satisfies the requirements of the University as regards matriculation and his presenting himself for the Final M.B., B.S. Examination.

Matriculation.

The University has its own matriculation examination, but accepts the following as an equivalent:

A degree in Arts of any university in the British Empire.

The Examination for Responsions of the University of Oxford.

The Previous Examination of the University of Cambridge.

The Matriculation Examination or the School Leaving Examination of the University of London.

The Preliminary Examination of the Joint Board of the Scottish Universities.

The Joint Matriculation Examination of the Victoria University of Manchester, the University of Liverpool, the University of Leeds, and the University of Sheffield.

The Matriculation Examination of the University of Wales.

The Preliminary Examination of the University of Birmingham.

The Senior Local Examination of the University of Durham, provided the subjects required by the University are included.

The Senior Local Examination, with Honours, of the University of Oxford, provided the subjects required by the University are included.

In addition, those who have satisfied the requirements of the General Medical Council, as regards general education, by some test other than one of the above, will be exempted from matriculation, provided that they satisfy the Durham examiners in any three of the subjects set the Durham Matriculation Examination, and providedt one of these at least is a language other than English.

Professional Examinations.

There are four professional examinations for the M.B., B.S. degree. They are held twice a year, in March and July. The first deals with elementary anatomy and biology, chemistry, and physics; the second with anatomy, physiology, therapeutics, and pharmacology; the third with pathology, medical jurisprudence, public health, and elementary bacteriology. At the final M.B., B.S. the candidate is examined in medicine and clinical and psychological medicine; surgery and clinical surgery; midwifery, and diseases of women and children.

M.D.—A Bachelor of Medicine who wishes to proceed to this higher degree must be of at least two years' standing, and satisfy the University that he knows either Greek or German. He then submits a typewritten thesis dealing with original work or observation of his own, and is examined in its subject. If the candidate is not an M.B. of the University, he must be a practitioner of fifteen years' standing and submit to special tests.[2]

B.S.—A candidate for this degree must have passed the examination for the M.B. of the University, and have attended courses on operative surgery and regional anatomy. He must then perform operations on the dead body before the examiners.

M.S.—Candidates for this degree must, like those for the M.D., satisfy the authorities as to their knowledge of Greek or German, and must have been engaged in practice for at least two years subsequent to becoming B.S.Durham. They are submitted to an examination which covers the whole range of surgical knowledge.

Fees.

The following fees are payable: Matriculation, or its equivalent, £1 10s.: First, Second, and Third M.B. Examinations, each £5; Final M.B., £10; M.D., B.S., and M.S., £5 for each examination and £6 6s. for each degree. Further information respecting the examinations and degrees may be obtained from Professor Howden, at the University of Durham College of Medicine, Newcastle-on-Tyne.

VICTORIA UNIVERSITY OF MANCHESTER.

This University grants the four ordinary degrees in Medicine and Surgery, M.B. and M.D. and Ch.B. and Ch.M.; a Diploma and Degrees in State Medicine (B.Sc.

[1] See page 607.

[2] See page 600.

and Public Health),[1] and Degrees in Dental Surgery.[2] Candidates must pass the special Matriculation Examination prescribed by the Faculty of Medicine, and study at the University itself for at least two years of the five years' curriculum one such year being subsequent to success at the First M.B. Examination. The Matriculation Examination deals with (1) Latin, (2) Mathematics, (3) the English Language, its literature and history; (4) two subjects at choice, one of which must be a language, Greek, French, German, some other modern language approved by the Joint Board, Elementary Mechanics, Chemistry, Geography, or Natural History. It is held in July and September.

PROFESSIONAL EXAMINATION.

M.B., Ch.B.—There are four examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly signed up in the subjects involved. At all Examinations the subjects, or groups of subjects prescribed, can be taken separately or together, as the candidate pleases. The First M.B. is divided into (1) Chemistry and Physics; (2) Biology—including Animal and Vegetable Morphology, Physiology and Laboratory work; (3) Materia Medica and Practical Pharmacy. The three parts may be taken together if desired. At the Second M.B. the candidate is examined in Anatomy and Physiology; at the Third in Pathology, Hygiene, and Pharmacology and Therapeutics. The final examination includes Medicine, systematic and clinical (separate papers being given on mental diseases) and Diseases of Children, Surgery (systematic, clinical, and practical), Obstetrics and Gynaecology, and Forensic Medicine, and Toxicology.

M.D.—A candidate for this degree must be an M.B. of at least one year's standing. He has a choice between presenting original thesis or undergoing a written and practical examination in Medicine, Pathology, and one other subject.

Ch.M.—A candidate must have held, since becoming Ch.B., and for not less than six months, an appointment in a public institution affording opportunity for the study of practical surgery, and produce certificates as to having attended certain courses of study. He then passes an examination which covers the general field of surgery, including Ophthalmology and Bacteriology.

FEES.

The following fees are payable. Matriculation, £2; on readmission, £1 10s. Each M.B. Examination, £5; on readmission after failure, £2. M.D., £10. Ch.M., £5 each for the examination and degree. Application for further information should be addressed to the Dean of the Medical Faculty.

UNIVERSITY OF BIRMINGHAM.

THIS University confers the ordinary medical and surgical degrees—M.B., Ch.B., M.D., and Ch.M.—and also diplomas and degrees in State Medicine and Dentistry. It has a plan, too, by which, extending his study to six instead of five years, the M.B., Ch.B. candidate may become a Bachelor in Science as well. For the M.B., Ch.B. degree work done before registration as a medical student by the General Medical Council is not recognized. Of the five years' curriculum, the first four must be spent, as a rule, at the University itself, the fifth being passed at any approved school or schools. Occasionally, however, the Senate will reduce the period of enforced residence to three years and exempt from the First M.B. those who have passed elsewhere an examination considered to be its equivalent.

All students in the medical faculty must (1) either matriculate in Mathematics, in Chemistry or Experimental Mechanics, in the English Language and Literature and History, and in Latin and one other foreign language; or (2) show that they have passed an examination deemed an equivalent elsewhere. Subject to certain provisos, the following are at present thus regarded:

(*a*) The Previous Examination of the University of Cambridge. (*b*) Responsions of the University of Oxford. (*c*) The Matriculation Examination of any other University in the United Kingdom. (*d*) The leaving Certificate (Higher) of the Oxford and Cambridge Boards. (*e*) The Oxford or Cambridge Junior Local Examinations (First or Second Class Honours). (*f*) The Oxford or Cambridge Senior Local Examination (Honours).

PROFESSIONAL EXAMINATION.

The candidate for the M.B., Ch.B. degrees has five examinations to pass. They must all be taken in due order, and in consideration of the results some importance is attached to the general nature of the students' class and their work, information as to which is supplied to the examiner. In the second and fourth and final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again.

First M.B.—This deals with Chemistry, Physics, and Elementary Biology; it may be passed before the student commences residence at the University, provided the regulations as to matriculation and registration as a medical student have been met.

Second M.B.—This deals with Anatomy and Physiology, and the student must pass in both simultaneously.

Third M.B.—This deals with Pathology and Bacteriology, Materia Medica, and Practical Pharmacy.

Fourth M.B.—This takes place at the end of the fourth year, the subjects being Forensic Medicine, Toxicology, and Public Health.

Final M.B.—This comprises Medicine, Surgery, Midwifery, Gynaecology, Therapeutics, Ophthalmology, and Mental Diseases. The candidate, in addition to more ordinary certificates, must be prepared with a certificate showing that he has personally taken notes of not less than six cases of fever, and of having acted as a *post-mortem* clerk for three months, and received special instruction in anaesthetics and clinical instruction in diseases peculiar to women, asylum ward work, and ophthalmology. The latter must show that he has learned refraction work. He also has to present to the examiners reports drawn up by himself on six gynaecological cases, and certificates filled up by himself regarding four actual cases of lunacy, and notes respecting two others.

M.D.—An ordinary candidate for this degree must be an M.B., Ch.B. of not less than one year's standing. He presents an original thesis for approval, and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch.M. are of the same general character. Subject to certain requirements as regards special research or other post-graduate study, the graduates of other universities may obtain the M.D. and Ch.M. in the same way as the holders of the Birmingham M.B., Ch.B.

FEES.

The fee for matriculation is £2, and that for each of the five professional examinations the same amount. M.B., Ch.B. degree fee, £6; M.D. and Ch.M. examination, £10 each. For further particulars application should be made to the Dean of the Medical Faculty.

UNIVERSITY OF LEEDS.

THE degrees granted in the Medical Faculty of this University are Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M). It also gives a Diploma in Public Health and two Degrees in Dental Surgery.

Candidates for the M.B. must have attended courses of instruction approved by the University for not less than five years, two at least of such years having been passed in the University subsequently to the date of passing the First Examination. They must also have matriculated by satisfying the examiners in (1) English (language and literature) and English history; (2) Mathematics; (3) Latin; (4) two of the following, one of which must be a language: (*a*) Greek, (*b*) French, (*c*) German, (*d*) some other modern language approved by the Board, (*e*) Elementary Mechanics; (*f*) Chemistry; (*g*) Geography or Natural History. Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination.

PROFESSIONAL EXAMINATIONS.

The examinations for the M.B., Ch.M. number three. The first deals with (1) Physics and Chemistry, (2) Biology. In each subject laboratory work is included, but the two parts can be taken separately. For neither can the candi-

[1] See p. 607. [2] See p. 618.

date present himself until after matriculation and at least a year's approved work in the subjects indicated.

Second M.B.—This may be taken in two parts (*a*) Anatomy and Physiology, including practical work; (*b*) Materia Medica and Pharmacy, including actual compounding of drugs. The candidate's certificates must show, among other things, that he has dissected during at least five terms.

Final M.B.—This, too, may be divided into two parts, but for neither can the candidate present himself until he has completed eleven terms of study. If divided, he must first take Pathology and Bacteriology, Forensic Medicine and Toxicology, and Public Health, and must pass in these before proceeding to the second division. The latter cannot be taken before the end of the fifth year, and before being admitted to the examination in its subjects the candidate, in addition to ordinary certificates, must produce proof that he has received clinical instruction in gynaecology and in eye, skin, oral, and laryngeal diseases. This division covers all branches of surgery, medicine (including mental diseases and diseases of children) and obstetrics and gynaecology. First and Second Class Honours may be obtained in this division.

M.D.—A candidate for this degree must be an M.B., B.Ch. of at least one year's standing. He presents a dissertation embodying the results of personal observation or original research, and, if this is approved, passes an examination which consists in the writing of an extemporary essay, and questions on the history of medicine and the subject of the dissertation.

Ch.M.—The candidate for this degree must have been admitted to the M.B., Ch.B. not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery. In addition he must have attended certain special courses, including one on ophthalmology and one on bacteriology; he is then examined in the subject of surgery in all its branches.

Fees.

The Matriculation fee is £2, and on readmission £1. For each of the other examinations £5, and £2 on readmission. On conferment of the degree of Ch.M. £5 is payable, the same remark applying to the M.D. degree.

UNIVERSITY OF LIVERPOOL.

This University, besides granting degrees in Medicine (M.B. and M.D.), and in Surgery (Ch.B. and Ch.M.) gives a degree in Dental Surgery[1] and also diplomas in the same subject, as well as in Tropical Medicine,[2] Public Health, and some other minor subjects. For the degrees no study is recognized anterior to matriculation and registration as a medical student.

Matriculation.

As regards Matriculation the University has its own examination, but accepts the tests of several other bodies as its equivalent. These include the Final Examination for Graduation in Arts of any University in the United Kingdom, the Matriculation of London University, the Senior Local Examination of Oxford and Cambridge, and the higher certificate of the Joint Oxford and Cambridge Board. Of the five years' curriculum, not less than two must be passed in the University itself, one such year being subsequent to the date of passing the First M.B. examination.

Professional Examinations.

Candidates for the M.B., Ch.B. degrees have three examinations to pass, the first including (1) Chemistry, Inorganic and Organic; (2) Biology, including Zoology and Botany; (4) Physics. Sections 1 and 3 may be taken together or passed in conjunction with Section 2.

Second M.B.—This test covers (1) Anatomy and Physiology, including Physiological Chemistry and Histology, and (2) Materia Medica and Pharmacy; these two sections may be taken separately.

Final M.B.—This examination deals with six subjects, which may be taken all together or divided into two parts, the first including (1) Pharmacology and Therapeutics, (2) Pathology and Morbid Anatomy, (3) Forensic Medicine and Toxicology and Public Health, (4) Obstetrics and Diseases of Women, (5) Surgery, (6) Medicine, including Mental Diseases and Diseases of Children. Candidates cannot take any part of this examination earlier than the fourth winter of medical study.

M.D. and Ch.M.—Candidates for these degrees must have received the B.M. and Ch.B. at least a year previously. The M.D. candidate submits an approved dissertation covering original work, the M.Ch. candidate undergoing an examination in all subjects of Surgery, including Ophthalmology. Other information concerning the diplomas of this University and its Medical School will be found on pages 586.]

UNIVERSITY OF SHEFFIELD.

The degrees of this University (M.B., Ch.B., and M.D. and Ch.M.) are open to candidates of either sex. The matriculation examination must be passed, and included in it must be the subjects required by the General Medical Council; the University accepts a certain number of other tests as the equivalent of its own matriculation.

Professional Examinations.

A candidate for the degrees of M.B., Ch.B., must produce certificates that he will have attained the age of 21 years on the day of graduation; that he has pursued the courses of study required by the University regulations during a period of not less than five years subsequently to the date of his registration as a medical student by the General Medical Council, three of such years at least having been passed in the University and one year at least having been passed in the University subsequently to the date of passing the first examination. He or she has eventually to pass the following examinations in due order:

First Examination.—The subjects are Chemistry, Physics, and Biology. The examination is divided into two parts: (*a*) Chemistry and Physics and (*b*) Biology, and candidates may pass in each part separately. The Intermediate B.Sc. Examination of the University in these subjects will, on payment of the required additional fee, be accepted instead of this examination, but the candidate, after matriculation and registration as a medical student, must have attended courses of instruction (lectures and laboratory work) in Chemistry, Physics, and Biology, for one year each.

Second Examination.—The subjects are Anatomy, Physiology, Materia Medica, and Pharmacy. The examination is divided into two parts, (*a*) Anatomy and Physiology, and (*b*) Materia Medica and Pharmacy, and candidates may pass in either part separately. The candidate must have completed the third Winter Session of professional study, must have passed the First Examination, and must have attended (1) lectures on Anatomy and dissections during two Winter Sessions, and one Summer Session; (2) lectures on Physiology during two Winter Sessions, Practical Physiology during two Winter Sessions, and Histology during one Summer Session; and (3) Materia Medica and Pharmacy for three months.

Final Examination.—The subjects are divided into two parts—namely (A) Forensic Medicine and Toxicology, Public Health, and Pathology and Morbid Anatomy; and (B) Medicine, including Pharmacology and Therapeutics, Mental Diseases, and Diseases of Children, Surgery, Obstetrics, and Gynaecology. Candidates may present themselves for examination in both parts on the same occasion or separately, but Part A may not be passed before the completion of the fourth year of study. Candidates for the whole examination, or for Part B, must have completed the fifth year of study.

M.D.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch.B., at least one year previously, must present a thesis embodying observations in some subject approved by the Professor of Medicine, and must pass an examination in the Principles and Practice of Medicine.

Ch.M.—Candidates for the degree of Master of Surgery must have passed the examination for the degrees of M.B., Ch.B., at least one year previously, and must, since taking the degrees of M.B., Ch.B., have held for not less than six months a surgical appointment in a public hospital or other public institution, affording full opportunity for the study of Practical Surgery. The subjects of examination are Systematic, Clinical, and Operative Surgery, Surgical Anatomy, Surgical Pathology, and Bacteriology.

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[1] See page 618. [2] See page 605.

Other information concerning this University will be found in the section devoted to Provincial Medical Schools.

ENGLISH MEDICAL CORPORATIONS.

THERE are three medical corporations in England, the Royal College of Physicians, Royal College of Surgeons, Royal Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the "Conjoint Board." Details concerning this body, its component colleges, and the third licensing body follow.

THE CONJOINT BOARD.

This body deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London, and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who satisfy it for the Licence and diploma of Membership respectively. The successful candidate is then entitled to admission to the *Medical Register* as an M.R.C.S.Eng., L.R.C.P.Lond. It performs the same task in connexion with a diploma in State Medicine jointly issued by the two Colleges in question. It obliges all candidates to pass one of a large number of examinations which it considers satisfactory tests of general education, and thereafter to pass five years in professional study at a recognized medical school, allowing, however, six months to be spent at any institution which may be recognized by the Board as giving efficient education in chemistry and physics. A list of such institutions, as also of the tests accepted in regard to general education, can be obtained from the Secretary of the Board at Examination Hall, Victoria Embankment.

PROFESSIONAL EXAMINATIONS.

There are three examinations for the Conjoint diploma, or M.R.C.S., L.R.C.P., which are commonly known as First College, Second College, and Final.

First College.—This examination is in four parts: (1) Chemistry, (2) Physics, (3) Elementary Biology, (4) Practical Pharmacy.

A candidate must present himself for examination in Parts I and II together until he has reached the required standard to pass in both, or in one of these parts, but he will not be allowed to pass in one part unless he obtains at the same time half the number of marks required to pass in the other part. A candidate may take Parts III and IV separately, or he may present himself for the whole examination at one time.

Before admission to either part the candidate must show that he has undergone certain courses of theoretical and practical instruction, but these courses need not be completed within one year, nor need they run concurrently, and they may be commenced or attended before the candidate passes the required preliminary examination in general education. A candidate referred in any part or parts will not be admitted to re-examination for three months. If referred in Chemistry, Physics, or Biology he must produce evidence of further instruction.

Those who are already graduates in medicine, or who have passed in the same subjects before a university board, may obtain exemption from re-examination in the same subjects at this examination.

Second College.—This examination deals with Anatomy and Physiology, and both subjects must be passed at the same time. A candidate must have attended during two winter sessions and one summer session (or fifteen months during the ordinary sessions) at a recognized medical school lectures on Anatomy, Physiology, and a course of Practical Physiology and Histology, and have dissected for twelve months during the ordinary sessions. The study of Anatomy and Physiology before passing in two of the first three parts of the First Examination is not recognized. If rejected, a candidate, before being admitted to re-examination, must continue his studies at a recognized medical school for not less than three months.

Final College.—This examination consists of three parts: Part I, Medicine, including Medical Anatomy, Pathology, Practical Pharmacy,[1] Therapeutics, Forensic Medicine, and Public Health; Part II, Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances; Part III, Midwifery and Gynaecology.[2] The examination may be passed at one time or in each part separately. Evidence of attendance at courses of instruction in the subjects of the three parts must be produced, and also of attendance on twenty labours. The candidate must have passed the Second Examination two years previously, and have spent five years in professional study subsequent to passing the required Preliminary Examination. A rejected candidate must produce evidence of further instruction during three months.

NOTE.—A person holding a Colonial, Indian, or foreign qualification which entitles him to practise in the country where such qualification has been obtained is, after a course of study and examination equivalent to those required by the Regulations of the two Royal Colleges, admissible to the Second and Third or Final Examinations, without any interval. Members of an English, Scottish, or Irish University are under certain conditions eligible for admission to the Third or Final Examination two years after passing at their University the subjects included in the First and Second Examinations of the Board.

A Doctor or Bachelor of Medicine or Surgery of an Indian, Colonial, or foreign University recognized for the purpose, who shall have passed at his University in the subjects of the First and Second Examinations will be eligible for admission to the Third or Final Examination two years after passing in the said subjects.

FEES, DATES, ETC.

First Examination, £10 10s. Re-examination, Parts I and II, £3 3s.; Parts III and IV, each £2 2s. *Second Examination*, £10 10s. Re-examination, £6 6s. *Third Examination*, £21. Re-examination, Part I, Medicine, £5 5s. Practical Pharmacy, £2 2s. Part II, Surgery, £5 5s. Part III, Midwifery and Diseases of Women, £3 3s. Members of an English, Scottish, or Irish University, £5 5s.; for the diplomas, £36 15s.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THIS College has three grades—its Licentiates, its Members, and its Fellows. The licence is only issued through the Conjoint Board, as already stated, unless the candidate already holds a registrable qualification issued by some other body. Its Membership is only granted to persons who are already registered, or who have passed the final examinations for the Licence; otherwise they must be Graduates in Medicine of a recognized University; in any case they must be persons over 25 years of age, who do not practise in partnership, dispense medicines, or engage in trade. Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce. Those under 40 are also examined in Latin, and either Greek, French, or German. The examination fee is £6 6s., the Membership fee being £42, or the difference between that sum and what the candidate has already paid if a Licentiate. The body of Fellows is maintained by election from among the Members.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THIS College has two grades—Members and Fellows. The members are admitted as stated in the section dealing with the Conjoint Board unless they already hold a registrable qualification from some other body. The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations—the first in Anatomy and Physiology, which may be passed after the third winter session; the second, chiefly directed to Surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of Graduates in Medicine and Surgery of not less than four years' standing, of universities recognized by the College for the purpose, who are required to attend for one year the Surgical Practice of a general hospital recognized by the College, after obtaining their degrees. The College also issues a Diploma in Dentistry.[3]

[1] Candidates who have previously passed in Practical Pharmacy will not be re-examined in that subject at the Third Examination.

[2] Candidates may present themselves for examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study at a medical school, and not less than one year after the passing of the Second Examination, on production of the required certificates.

[3] See p. 616.

Fees.—At First Examination: £5 5s. At Second Examination: £12 12s. Diploma fee: Members, £3 3s.; non-members, £13 13s.

SOCIETY OF APOTHECARIES OF LONDON.

THIS body confers a registrable diploma, which is at present known as the Licence of the Society of Apothecaries, or L.S.A. This title, however, is about to be changed for some other one which shall better indicate that the holder is entitled to practise medicine, surgery, and midwifery. There are nominally only two examinations, but both are subdivided.

Primary Examination.—Part I includes Elementary Biology, Chemistry, Chemical Physics, Practical Chemistry, Pharmacy, and before passing it the candidate should have been registered as a medical student, and undergone certain courses of tuition. All subjects must be taken together, and if the candidate does not succeed in passing in all, he is credited with the subject in which he has succeeded, and re-examined at a later date in the others. Part II includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy, with demonstrations. These subjects cannot be taken separately except in the event of the candidate having previously passed in one. Candidates will be excused any or all the subjects of the Primary Examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society. Candidates referred in Anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination.

Final Examination.—This is divided into two sections, the first section being again subdivided into three parts. The first part includes the Principles and Practice of Surgery, Surgical Pathology, Operative Manipulation, Surgical Anatomy, Instruments and Appliances. Part II includes: (*a*) The Principles and Practice of Medicine (including Therapeutics, Pharmacology, and Prescriptions), Pathology, and Morbid Histology; (*b*) Forensic Medicine, Hygiene, Theory and Practice of Vaccination, and Mental Diseases. Part III: Midwifery, Gynaecology, and Diseases of Newborn Children, Obstetric Instruments and Appliances. A candidate cannot present himself for this section before the expiration of forty-five months after registration as a medical student, during which time not less than three winter sessions and two summer sessions must have been passed at one more of the medical schools connected with a general hospital recognized by the Society. Section 2 consists of Clinical Surgery and Clinical Medicine and Medical Anatomy, and a candidate before appearing at it must have completed five years of medical study.

FEES.

Primary Examination, £5 5s.; Final, £15 15s. Further information may be obtained from the Secretary, Board of Examiners, Apothecaries' Hall, Blackfriars, E.C.

THE SCOTTISH UNIVERSITIES.

IT will be convenient to give the regulations for Edinburgh in detail, and then briefly to indicate points of difference as regards the other three Universities.

UNIVERSITY OF EDINBURGH.

Four degrees in Medicine and Surgery are conferred—namely, Bachelor of Medicine, Bachelor of Surgery, Doctor of Medicine, and Master of Surgery. The degree of M.B. is not conferred separately from Ch.B., and vice versa, but M.D. and Ch.M. are separable.

PRELIMINARY EXAMINATION.

This must be passed before beginning medical study; the subjects are: (1) English;[1] (2) Latin, Translation and Parsing, Prose Composition, Grammar and Sentences; (3) Elementary Mathematics, Arithmetic,[2] Algebra, and Geometry, Euclid, Books i, ii, and iii (or their equivalents with easy deductions); (4) Greek (Translation, Sentences, and Grammar), or French, or German. [One paper will be set in French and one in German.[3] The papers will be of a lower standard than those set in these subjects in the Arts and Science Preliminaries. The time allowed for each paper will be three hours. The papers will comprise questions in grammar, translations, a piece of English for translation, and some short sentences.]

Excellence in one or more subjects will in some measure compensate for deficiency in others. The examination is conducted by a joint Board of the four Universities, and will be held from September 27th to October 3rd, 1907, and from March 27th to April 3rd, 1908, and these dates apply to all the Scottish Universities. The standard of examination corresponds pretty nearly to the certificate of the Scotch Education Department, or the Lower Certificate of the Oxford and Cambridge Schools. Candidates are required to pass in all the necessary subjects at one or not more than two examinations. The examinations of a large number of bodies are taken as equivalents to the preliminary; these will be found on pages 539-541 of the *University Calendar* (Regulations of the Joint Board of Examiners). The fee is 10s. 6d. each time, and is to be sent with the schedule to Mr. James Dowie, the University Clerk, not later than September 20th, 1907, and March 2nd, 1908. The schedules can be had on and after September 6th, 1907, and February 14th, 1908.

REGISTRATION.

The student must register within fifteen days after the commencement of medical study. There is no fee. Forms and information may be had from Mr. James Robertson, 54, George Square, Edinburgh, or at the office of the Faculty of Medicine. Candidates for registration must produce evidence that they have attained 16 years of age.

PROFESSIONAL EDUCATION.

The course extends over five years. During the first four the student must attend Elementary Botany, Elementary Zoology, Physics, Practical Chemistry, Practical Physiology, Practical Pathology, and Medical Jurisprudence, during courses of not less than 2½ months each, a course of Public Health of 30 lectures; Practical Anatomy during two courses of not less than 5 months each; Chemistry, Anatomy, Physiology, Pathology, Surgery, Materia Medica and Therapeutics, Medicine, and Midwifery, and the Diseases of Women and Infants, during courses of not less than 5 months each. During the fifth or final year he must be engaged in clinical study for at least 9 months, and must attend a 9 months' course in Clinical Medicine and Clinical Surgery. In all, before graduation he must have attended, for at least three years, a hospital which accommodates not fewer than 80 patients, and possesses a distinct staff of physicians and surgeons, and he must have acted as clerk in the medical and dresser in the surgical wards of such a hospital. He must have had approved opportunities of studying at a hospital *Post-mortem* Examinations, Fevers, and Ophthalmology. He must have had a course of Operative Surgery. Every candidate must attend one of the three following courses: (1) A six weeks' course of clinical instruction in the Diseases of Children; (2) a course of instruction, of at least 18 meetings, in diseases of the Larynx, Ear, and Nose; (3) a course of clinical instruction in diseases of the skin, of not less than 20 meetings. He must have attended a course of 25 meetings on Practical Pharmacy, a course on Mental Diseases, been properly instructed in Vaccination by a certificated public vaccinator, have attended 12 cases of labour, or had 3 months'

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[1] In English no set books are prescribed, nor is a general knowledge of the life and works of the greater authors expected of candidates, but one or two questions may be set, giving an opportunity to candidates to show a knowledge of famous literary works. The historical questions will not be confined to any period, but will cover the whole of British History, and will be set in such a way as to give an opportunity to candidates who have confined their studies to a single period to show their knowledge. A single three hours' paper will be set, containing an Essay, a Paraphrase, two questions on History, two on Geography, four on Grammar (including correction of sentences, parsing, analysis of sentences, and derivations), two of a literary and general kind. Eight answers will be required. The Essay, the Paraphrase, one answer on History, and one on Geography, will be compulsory.

[2] *Arithmetic* (including Vulgar and Decimal Fractions, Proportion, Percentage, Square Root, Simple Interest); *Algebra* (including Fractions, Factors, Square Root, Equations of the First Degree, Simultaneous Equations of the First Degree, Easy Quadratics, and problems leading to the above Equations).

[3] A student whose native language is not English may substitute his own language for either French or German, and may substitute any other classical language for Latin or Greek.

attendance at a lying-in hospital, and have personally conducted 6 cases. Certificates for these various courses must attest regular attendance and due performance of the work of the class. The fees vary from 1 to 4 guineas for each class, and the total minimum cost in class, examination, and other fees for the M.B. and Ch.B. may be set down as £150. Two of the five years' course must be taken in the University of Edinburgh. For students beginning their course in winter on and after October 1st, 1907, and so far as is possible for those students who decide to change from the present to the New Regulations, there may be given the following minimum curriculum for the degrees of M.B. and Ch.B., with suggested order of study and examination:

FIRST YEAR.—First half of the Winter Session: Chemistry, Practical Chemistry, Anatomy, Physics. *Examination in Physics.* Second half of the Winter Session: Chemistry (continued), Practical Chemistry (continued), Practical Anatomy. *Examination in Chemistry.* Summer Session: Botany, Practical Botany, Zoology, Practical Zoology, Practical Anatomy. *Examination in Botany and Zoology.*

SECOND YEAR.—First half of the Winter Session: Anatomical Demonstrations, Practical Anatomy, Physiology, Experimental Physiology. Second half of the Winter Session: Anatomy (Senior), Practical Anatomy, Anatomical Demonstrations, Physiology (continued), Chemical Physiology. Summer Session: Practical Anatomy, Histology. *Examination in Physiology.*

THIRD YEAR.—First half of the Winter Session: Surgery, Pathology, *Practical Pathology, Practical Anatomy, Surgical Out-patients. *Examination in Anatomy.* Second half of the Winter Session: Surgery (continued), Pathology (continued), Clinical Surgery, *Materia Medica (Practical), *Post-mortem* examinations, Vaccination. *Examination in Practical Materia Medica* (if not taken previously). Summer Session: Practical Pathology (if not taken in winter), Clinical Surgery, *Post-mortem* examinations. *Examination in Pathology.*

FOURTH YEAR.—First half of the Winter Session: Medicine, Materia Medica, Midwifery (including System. Gynaecol.), Clinical Medicine, Dispensary, Fevers. Second half of the Winter Session: Medicine (continued), Materia Medica (continued), Midwifery (continued), Clinical Medicine, Medical Out-Patients, Dispensary, Fevers. *Examination in Materia Medica.* Summer Session: Operative Surgery (for fourth year students) (a class for fifth year students will commence on April 7th), Public Health, Forensic Medicine, Mental Diseases, Clinical Medicine, Medical Out-Patients, Maternity Clinics, †(*a*) Ophthalmology, and Larynx, Ear, and Nose, †(*b*) Clinical Gynecology and Diseases of the Skin, †(*c*) Diseases of Children. *Examination in Forensic Medicine and Public Health.*

FIFTH YEAR.—First half of the Winter Session: Clinical Surgery. *Examination in Midwifery.* Second half of the Winter Session: Clinical Medicine, Surgical Out-Patients. *Examination in Systematic Medicine and Surgery.* Summer Session: Clinical Medicine or Clinical Surgery. *Examination in Clinical Medicine, Clinical Surgery, and Clinical Gynaecology.*

PROFESSIONAL EXAMINATIONS.

These are four in number, and the mode in which they may be taken in sections is indicated above. Failure in one subject does not involve failure in the other subjects of that division. Candidates must be 21 years of age before admission to the degrees of M.B., Ch.B.

Fees for Professional Examinations.

	£	s.	d.
Preliminary	0	10	6
First Professional	6	6	0
Second Professional (Anatomy and Physiology) ...	5	5	0
Third Professional (Physiology and Materia Medica)...	4	4	0
Final Examination	7	7	0

NOTE.—Students who enter their Fifth Year on October 1st, 1907, should note that all arrangements already made for the Final Examination (of which details may be seen in the current *Calendar*) will hold good, with this exception, that those who have taken out qualifying courses in Forensic Medicine, Public Health, and Midwifery may, should they so desire it, enter for examination in these subjects in December.

DEGREE OF M.D.

The candidate must be M.B. and Ch.B. of Edinburgh, must have been engaged for one year in the medical wards of a hospital, or at scientific work at a recognized research laboratory, or in the military or naval medical services, or for at least two years in general practice, and must be 24 years of age. He must write a thesis on a subject not exclusively surgical, and he will be examined in Medicine, and in some of its special departments. The fee is £10 10s., and the re-entry fee £5 5s.

DEGREE OF CH.M.

The candidate must be M.B. and Ch.B. of Edinburgh, have worked one year in the surgical wards of a hospital, or been engaged in scientific work, or in the military and naval medical services, or for at least two years in practice not confined to medicine. He must be 24, must submit a thesis on a subject not exclusively medical, will be examined on Surgical Anatomy, Operations on the Dead Body, Clinical Surgery, and some of its special departments. The fee is £10 10s.

For further details the student is referred to the *University Calendar* (published by Mr. Thin, South Bridge, Edinburgh, price 3s., post free 3s. 4d., or the *Medical Programme*, price 2d., also published by Mr. Thin, or to the Dean of the Faculty of Medicine, University of Edinburgh).

REGULATIONS FOR GRADUATION OF WOMEN.

When granting recognition to medical schools or teachers for the medical instruction of women, the University Court requires that the classes shall not be mixed classes, except on special cause shown.

The University Court has recognized the Medical College for Women, 20, Chambers Street, Edinburgh, as a medical school whose course of instruction qualifies for graduation in Medicine. Every candidate must produce evidence of having satisfied the conditions with respect to the preliminary examination and registration as medical students, and will be examined in all the subjects necessary for graduation by the Examiners of the University in which she takes her degree. All students not matriculated students of the University attending this school for purposes of graduation must, at the commencement of each year of such attendance, enter their names in a book to be kept in the University for that purpose, paying a fee of the same amount as the matriculation fee paid by students of the University, and having, in respect of such payment, a right to the use of the library of the University.

UNIVERSITY OF GLASGOW.

THE regulations are essentially the same as those given above for Edinburgh.

PRELIMINARY EXAMINATION.

The dates of the next two Examinations are the same as those given under Edinburgh. Fees, 10s. 6d. each time. Names to be given in and fees paid by September 9th, 1907, and March 6th, 1908, to the Assistant Clerk, Matriculation Office. The extent of the Examination will be found under Edinburgh.

REGISTRATION.

Printed form of application may be had from the Assistant Clerk at the Matriculation Office, and this must be transmitted to Mr. James Robertson, Scottish Branch Registrar, 54, George Square, Edinburgh.

PROFESSIONAL EDUCATION.

The minimum cost is about £148, and the course is the same as at Edinburgh.

FEES, ETC.

The total examination fees for M.B., Ch.B., are the same as for Edinburgh, but are differently distributed. The fee for the First and Second is £6 6s., and for the Third and Fourth £5 5s. each. In the event of a candidate being rejected in any of these he may be admitted once to re-examination without payment of further fee, but for a second and for each subsequent re examination a fee of £2 2s. may be charged.

The regulations at length may be had post free on application to the Assistant Clerk, Matriculation Office, or will be found in the *Glasgow University Calendar* for 1907-8, published by James Maclehose and Sons, 61, St. Vincent Street, Glasgow, price 3s., post free 3s. 6d.

Queen Margaret College, which provides a course of instruction for women, is now an integral part of the University.

* May be taken in Summer following.

† May be taken in fifth year. These subjects should be taken according to the above grouping, and only one of the groups (*a*), (*b*), or (*c*) should be taken at a time.

UNIVERSITY OF ABERDEEN.

The regulations are essentially the same as for Edinburgh.

Preliminary Examination.

The next Preliminary Examination will be held on precisely the same dates as are given under Edinburgh, and the subjects are the same. Names must be intimated, and the fee (10s. 6d.) paid ten days previously, to the Secretary of the Medical Faculty, Marischal College.

Professional Education.

The candidate before admission to his Final Examination must produce certificates to the effect that he has attended for at least three years the medical and surgical practice of a general hospital; attended courses in clinical medicine and clinical surgery of not less than nine months each; attended courses in mental diseases and in practical pharmacy; and the out-practice of a hospital, or the practice of a dispensary; that he has acted for a period equal to a winter session both as a Clinical Clerk and Surgical Dresser; that he has attended no fewer than twenty-five necropsies and taken part in some; that he has attended for not less than three months a fever hospital of at least forty patients, and has had a three months' course on Disease in Children, and the same in Ophthalmology. The total usual cost for M.B. and Ch.B. is about £150.

The fees for Professional Examinations are: First, Second, and Third, each £5 5s.; Final, £7 7s.

Further information will be given by the Secretary of the Medical Faculty, or will be got in the *University Calendar* for 1907-8, published by the University Press, Limited, Aberdeen; price 3s. 6d., or post free 3s. 10d.

UNIVERSITY OF ST. ANDREWS.

United College, St. Andrews; University College, Dundee.

Preliminary Examination.

The dates of the next two examinations are September 27th to October 4th, 1907, and March 27th to April 3rd, 1908. Fees, 10s. 6d. each time.

Registration.

Printed forms may be obtained from the Secretary, and must be sent to the Scottish Branch Registrar.

Professional Education.

The United College, St. Andrews, offers classes in the subjects of the first two years of the medical curriculum; University College, Dundee, for the full period of five years.

Bursaries and Scholarships.

United College, St. Andrews.

A list of Bursaries and Scholarships open to competition during session 1907-8 may be obtained on application to the Secretary of the University.

The Bursaries are allocated in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Medical Examination, and who are prepared to take two *anni medici* at the United College, St. Andrews.

University College, Dundee.

A list of Bursaries and Scholarships open to competition at this College during Session 1907-8 may be had by applying to the Secretary of the College.

Fees, etc.

The total fees for M.B. and Ch.B. are the same as for Edinburgh (22 guineas). The fee for the First Division is £6 6s., and is payable in two instalments of £3 3s. The fee for the Second, Third, and Fourth Divisions of the Professional Examinations are respectively £6 6s., £4 4s., and £6 6s., and are payable in instalments at the rate of £2 2s. for each subject. A fee of 10s. 6d. is charged to all candidates who, having been previously registered, present themselves for re-examination in any one subject.

Degrees of M.D. and Ch.M.

The regulations and fees for these will be found under Edinburgh.

THE SCOTTISH CORPORATIONS.

The three medical corporate Colleges in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons in Glasgow—now co-operate to hold a series of examinations, after passing which the student is presented with the diplomas of all three Colleges. Each College grants its single qualification only to persons who already possess another and opposite qualification (see below).

CONJOINT EXAMINING BOARD IN SCOTLAND.

A candidate who passes this series of examinations is granted the diploma of each of the co-operating bodies, and is entitled to register the three diplomas under the Medical Acts, and to write after his name—L.R.C.P.Edin., L.R.C.S.Edin., and L.F.P.S.Glasg.—qualifications which are recognized by the army, navy, and other public services.

Preliminary Examination.

The Educational Institute of Scotland conducts special preliminary examinations in Edinburgh and Glasgow for the Colleges. The next examination will be held on September 5th, 6th, and 7th, 1907, and names must be in and fees paid by September 2nd. Full particulars may be obtained from Mr. S. M. Murray, 34, North Bridge Street, Edinburgh, Secretary of the Institute. The entire examination must be passed at one period. A cheque on a private account will not be received in payment of fees. The Preliminary Examination may be passed before any of the Boards recognized by the General Medical Council. A list is given on pp. 60 to 64 of the *Calendar* of the School of Medicine of the Royal Colleges, or in the printed Fasciculus of Regulations.

Professional Curriculum.

The course of study after registration as a medical student must occupy not less than five years and comprise five winter and five summer sessions; but graduates in Arts or Science of any recognized University who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an examination in these subjects for the degrees in question, shall be held to have completed the first of the five years of medical study. Professional studies commenced before registration will not be recognized, except in the case of Physics, Elementary Biology, Chemistry, and Practical Chemistry. The fifth year must be devoted to practical clinical work, and six months of this year may be spent as a pupil of a registered practitioner.

The following order of study is recommended as conforming generally to the sequence of examinations, but is not imperative:

First Summer: Physics, Elementary Biology. First Winter: Chemistry, Practical Chemistry, Junior Anatomy, Dissections. Second Summer: Histology, Dissections. Second Winter: Anatomy, Dissections, Physiology. Third Summer: Pathology, Materia Medica, and Hospital Practice. Third Winter: Pathology, Surgery, Hospital Practice, with Clinical Surgery. Fourth Summer: Midwifery and Gynaecology, Medical Jurisprudence, and Public Health, Hospital Practice, with Clinical Surgery. Fourth Winter: Medicine, Hospital Practice, with Clinical Medicine. Fifth Summer: Hospital Practice, with Clinical Medicine, Insanity, Practical Midwifery, Eye Diseases. Fifth Winter: Hospital Practice, Dispensary, Fevers, Vaccination.

Students are also recommended to study in the fifth year the following subjects: Operative Surgery, Diseases of Children, Ear and Throat, Skin.

Professional Examination.

During the five years of the professional curriculum the student has to pass four examinations. Each examination is held six times in each year, four times in Edinburgh and twice at Glasgow, and a candidate may present himself at either place. An interval of not less than three months must elapse between the passing of any two successive examinations. Candidates may enter for all the subjects of an examination at one period, or may enter for any division of subjects. If the latter, a higher percentage is exacted. Schedules showing the course of study followed must be submitted before the examinations to one or other of the Inspectors of Certificates: In Edinburgh Mr. James Robertson, solicitor, 54, George Square; in Glasgow, Mr. Alexander Duncan, B.A., LL.D., Faculty Hall,

242, St. Vincent Street, to whom all inquiries as to professional examinations should be addressed.

First Examination.—This examination may be passed at any time after registration as a medical student by any candidate who has attended the obligatory courses. The examination consists of three parts: (1) Physics, (2) Chemistry, (3) Elementary Biology, and each division may be taken separately.

Second Examination.—This examination may be passed at any time after the end of the second year by a student who has attended courses of Anatomy, Physiology, and Dissection for six months each. The subjects of the examination are: (1) Anatomy and (2) Physiology, including Histology. A candidate may pass in one subject while failing in the other.

Third Examination.—The student must have attended a course of Pathology and of Materia Medica before presenting himself for this examination, the subjects of which are (1) Pathology, (2) Materia Medica and Pharmacy, which must be entered for together.

Final Examination.—The student must be 21, and may not pass this examination till the end of the fifth year. The subjects are: (1) Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; (2) Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; (3) Midwifery and Diseases of Women and of Newborn Children; (4) Medical Jurisprudence and Hygiene. Candidates may also be examined on Diseases of Children, Diseases of the Ear and Throat, Insanity, Vaccination, etc. Candidates may obtain exemption from one or more subjects though failing in the others.

TABLE SHOWING THE FEES FOR THE CONJOINT EXAMINATIONS IN SCOTLAND.

The Figures signify Pounds Sterling.

	Whole Examination.	Re-entry for all Divisions.	Re-entry in one or two Divisions.	Entry for one Division.	Re-entry for one Division.
Preliminary	1	½	—	—	—
Professional First ..	5	3	2½	2½	2
,, Second ..	5	3	2	—	—
,, Third ..	5	3	2	—	—
,, Final ...	15	5	—	—	—

The total minimum cost for Lectures and Examination Fees for the Conjoint Examinations is about £152.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

Licence.—The Licence is only granted as a separate qualification (in Medicine) to persons (of either sex) who already possess a qualification in Surgery recognized by the College for the purposes of the examination. A candidate, who must not have been rejected within three months by any Licensing Board, is subjected to written and oral examination in Medicine, Clinical Medicine, Materia Medica, Midwifery, Medical Jurisprudence, and Public Health. The fee for the examination is £15 15s.; it is held on the first Wednesday and succeeding days of each month, except September and October. A special examination can be obtained on showing cause and paying £5 5s. extra. Eight days' notice must be given by all candidates to the Secretary of the College, from whom further particulars can be obtained.

Membership.—The candidate, who must be a Licentiate of a College of Physicians, or Graduate of a British or Irish University, and 24 years of age, is examined in (1) Medicine and Therapeutics, and in (2) one of the following subjects chosen by him: (*a*) One or more departments of Medicine specially professed; (*b*) Psychological Medicine; (*c*) General Pathology and Morbid Anatomy; (*d*) Medical Jurisprudence; (*e*) Public Health; (*f*) Midwifery; (*g*) Diseases of Women; (*h*) Diseases of Children; (*i*) Tropical Medicine. Further particulars as to other formalities can be obtained from the Secretary. A candidate 40 years of age and ten years in practice *may be excused* any part of or all the examination by the Council. The fee paid by a Licentiate of the College is £21. Fee for others. £36 15s. The examination is held quarterly (October, January, April, and July), and application must be made a month previous to the date of examination.

Fellow.—A member, aged 25, and of at least three years' standing, may be elected a Fellow; he pays £64 18s. (including stamp duty). Women are not yet admitted to the Membership or Fellowship. Under certain exceptional circumstances a practitioner of standing has been and may be elected to the Fellowship of the College without examination.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

Licence.—The Licence is only granted as a separate qualification (in Surgery) to persons (of either sex) who already possess a recognized British, Irish, Colonial, or Indian qualification in Medicine. A candidate, who must not have been rejected by any other Licensing Board in Surgery within three months, is examined on one day by written papers, and on a subsequent day orally, on specimens in the wards of a surgical hospital, and may be required to operate on the dead body. The fee is £15 15s., of which £10 10s. will be returned to unsuccessful candidates, and is payable to Mr. James Robertson, Clerk to the College, 54, George Square, Edinburgh, from whom further particulars may be obtained, and to whom eight days' notice must be given. A special examination can be obtained on showing cause. The fee is £20, of which £10 will be returned to candidates remitted on examination.

Fellowship.—A candidate must have the diploma of the Royal College of Surgeons of Edinburgh, England, or Ireland, or of the Faculty of Physicians and Surgeons in Glasgow, or the Surgical degree of one of the universities of Great Britain and Ireland, the Licence in Medicine, Surgery, and Midwifery of the Society of Apothecaries of London and the Apothecaries' Hall, Dublin, registered under the Medical Act, 1886; the Surgical degrees of the following Universities: Sydney, Melbourne, Adelaide, New Zealand, Calcutta, Bombay, Madras, Punjab, Canada; must be 25 years of age, and must have been engaged in practice for two subsequent years at least. All candidates are examined in Surgery, Surgical Anatomy, including Clinical and Operative Surgery, and one optional subject. The optional subjects recognized by the College are (1) Ophthalmic Surgery, (2) Aural, Nasal, and Laryngeal Surgery, (3) Dental Surgery, (4) Midwifery, (5) Gynaecology, (6) Surgical Pathology and Operative Surgery, (7) Advanced Anatomy, (8) Advanced Physiology, (9) Pathology and Bacteriology, (10) Medical Jurisprudence, (11) Public Health. The examinations are written, oral, and practical. Three weeks' notice must be given to Mr. James Robertson as above, from whom full particulars may be obtained. A petition signed by two Fellows of the College, one of whom must reside in Edinburgh, must be presented. Failing this, an application to the President's Council, with testimonials, to be allowed to appear for examination, must be made. The fee is £30 to those who hold the Diploma of Licentiate of the College, and £45 to others (no stamp duty is payable on the diploma). Registered practitioners, aged not less than 40, and who have been in practice for not less than twenty years, and who have specially distinguished themselves in their profession, may under certain circumstances be elected without examination. Women are not admitted to the Fellowship.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

Licence.—The Licence is only granted as a separate qualification to candidates who already possess a recognized British, Irish, Colonial, or Indian qualification in Medicine. Candidates are examined in Surgery (including Clinical Surgery) and Surgical Anatomy. The fee is £15 15s. The examination is held quarterly. Further particulars can be obtained on application to Alexander Duncan, B.A., LL.D., Faculty Hall, St. Vincent Street, Glasgow.

Fellowship.—Every candidate must be qualified for two years, and aged 24. The ordinary mode of admission to the Fellowship is by examination and subsequent election. The subjects of examination are either (*a*) Medicine (including Clinical Medicine, Medical Pathology, and Therapeutics); or (*b*) Surgery (including Clinical Surgery, Operative Surgery, Surgical Anatomy, and Surgical Pathology); and one of the following at the option of the candidate: (1) Anatomy, (2) Physiology, (3) Pathology,

(4) Bacteriology, (5) Midwifery, (6) Diseases of Women, (7) Medical Jurisprudence; Surgery, in one of its following branches, (8) Ophthalmic Surgery, (9) Aural, Laryngeal, and Nasal Surgery, (10) Dental Surgery; Medicine, in one of its following branches, (11) State Medicine, (12) Psychological Medicine, (13) Dermatology. Four examinations are held annually (January, April, July, October). Fourteen days' notice must be given. The fee is £30 unless the candidate desires to qualify to hold office, when it is £50. In the case of a Licentiate of the Faculty, £25 and £15 respectively.

Four Fellows may be elected in each year "in virtue of distinction," and without examination. They must not be less than 40 years of age, and ten years qualified.

THE IRISH UNIVERSITIES.

UNIVERSITY OF DUBLIN.

This University, equally well known, perhaps, as Trinity College, Dublin, grants two degrees in Medicine (M.B. and M.D.), two in Surgery (B.Ch. and M.Ch.), two in Midwifery (B.A.O. and M.A.O.), and diplomas in the same subjects and in State Medicine.[1] It also confers a degree and diploma in Dentistry. The degrees it only grants to those who, besides having passed the Professional Examination, have graduated in Arts.

Professional Examinations.

A candidate for the Final Examination for the M.B., B.Ch., and B.A.O. degrees must be a matriculated student of at least five years' standing, and though he need not have taken his degree in Arts before admission to the Professional Examination, he cannot take his Medical degrees until he has been admitted a B.A. As a rule, at least three years of his medical study must be pursued at the University, but the Board has power to accept one year at a recognized London or Edinburgh hospital as the equivalent of one year's attendance at a recognized Dublin hospital, or two years at a recognized country or colonial hospital as one year of metropolitan work. The examinations which he has to pass are the Preliminary Scientific, Intermediate Medical, and the Final, and of course before admission to any of them he must be duly signed up as regards study in the subjects involved.

Preliminary Scientific.—This covers (*a*) Chemistry and Physics, (*b*) Botany and Zoology; the two divisions may be taken together or at different times.

Intermediate Medical.—This is divided into two parts: (*a*) Anatomy, Physiology, and Histology, (*b*) Applied Anatomy and Applied Physiology. The two parts may be taken separately, but in each part all subjects must be passed at one time.

Final Examination.—Part I: Hygiene and Medical Jurisprudence, Pathology, Materia Medica, and Therapeutics. *Part II:* (*a*) Midwifery, Gynaecology, (*b*) Medicine, Clinical Medicine, and Mental Diseases; (*c*) Surgery in all branches, including Clinical Ophthalmology. The three sections of Part II may be divided, any two being taken at one examination, and the third later. In either case, the full curriculum must have been completed, nor can the final subject be taken until at least the end of the fifth year.

Degree of M.D.—The candidate must have passed all the qualifying examinations in Medicine, Surgery, and Midwifery, and have taken, or have been qualified to take, the degree of B.A. three years previously. He must read a thesis before the Regius Professor of Physic.

Degree of M.Ch.—The candidate must be a B.Ch. of not less than three years' standing, and have been engaged in practice for two years. Graduates of ten years' standing may be given a special examination.

Degree of M.A.O.—The candidate must have passed the qualifying examination in Medicine, Surgery, and Midwifery. The examination is specially directed to Obstetrics and Practical Gynaecology.

For the University diplomas mentioned the candidate must have completed two years in Arts and five in Medical studies. The examination and courses required are almost the same as for the degrees.

[1] See page 608.

Fees.

Matriculation, 5s.; M.B., B.Ch., B.A.O., £17; M.D., £13; M.Ch., £11; M.A.O., £5; L.M., L.Ch., L.A.O., £11. Further information may be obtained from the Registrar of the School of Physic, University of Dublin.

ROYAL UNIVERSITY OF IRELAND.

The Professional degrees conferred by this University are those of Bachelor and Doctor of Medicine (M.B., M.D.), Bachelor and Master of Surgery (B.Ch., M.Ch.), Bachelor and Master of Obstetrics (B.A.O., M.A.O.). It also grants diplomas in State Medicine, and in Mental Diseases. The candidates must matriculate, and then pass in due succession four professional tests. Not less than a year is allowed as a rule to elapse between the passage of one examination and admission to the next: but, provided that three years have elapsed since success at the second examination, the third and final tests may be passed in the same examination period.

Professional Examinations.

First M.B.—This may be taken a year after the matriculation, provided the candidate has completed his first year of medical work, and passed the First University Examination. It deals with Natural Philosophy, Chemistry, Botany, and Zoology, and, except in Chemistry, includes in each subject a practical examination to which special importance is attached.

Second M.B.—At this are taken Anatomy, Physiology, and Practical Chemistry. The second year's studies must have been completed.

Third M.B.—This deals with Anatomy and Physiology again, and with Materia Medica, Pharmacology, and Therapeutics.

Final Examination.—No part of this can be taken until the whole medical curriculum is complete. It consists of the following parts: (*a*) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology; (*b*) Surgery, Theoretical, Clinical, and Operative, including the use of instruments and appliances; Surgical Anatomy, Ophthalmology, and Otology (candidates at this examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope), Surgical Pathology; (*c*) Midwifery and Diseases of Women and Children. A candidate must enter for and go through the entire examination, but is credited with any subject in which he satisfies the examiners and passes in the remainder subsequently. Special Examinations for honours are held in connexion with these examinations.

M.D. Degree.—A candidate for this must be an M.B., B.Ch., B.A.O. of three years' standing, unless he holds a degree in Arts, in which case two years suffice. He undergoes a written, practical, and oral examination in the general subjects of Medicine and Pathology.

M.Ch. Degree.—The same general rules as the foregoing apply to candidates for this degree, Surgery taking the place of Medicine, and Ophthalmology and Otology being included.

M.A.O. Degree.—Besides being of the same standing as candidates for the M.B. and M.Ch. degrees, candidates for the M.A.O. must produce evidence of a special study and experience in Midwifery and Obstetrics, and then undergo a written, oral, and clinical examination in these subjects.

Scholarships.

The following Scholarships and Exhibitions may be awarded annually by the Senate: At the First Examination in Medicine, two First-class of £20 each and two Second-class of £10 each. At the Second Examination in Medicine, two First-class of £25 each, and two Second-class of £15 each. At the Third Examination in Medicine, two First-class of £30 each and two Second-class of £20 each. An Examination for a Travelling Scholarship in the Faculty of Medicine, value £100, is held in October. The subjects are, in rotation, (1) Anatomy and Histology, and (2) Physiology and Pathology. Candidates who have obtained the M.B., B.Ch., B.A.O. Degrees, either in the year of the Scholarship Examination or in the year immediately preceding, are alone eligible. Dr. Henry Hutchinson Stewart Medical Scholarships are awarded as follows: (1) One Scholarship of the annual value of £10, tenable for three years, for competition in the subjects of the Second Examination in Medicine. (2) One Scholarship is of the annual value of £50, tenable for three years, for competition among medical graduates of not more than three years' standing, for proficiency in the knowledge of Mental Diseases. There is also a Medical Studentship, tenable for two consecutive years, of the annual value of £200.

FEES.

The fees are, for Matriculation and the three subsequent professional examinations, £1 each. Final Examination, £2; M.B., B.Ch., and B.A.O. degrees, £10; the other degrees, £5 each.

THE IRISH CORPORATIONS.

THERE are in Ireland, as in London, three licensing bodies other than the Medical Faculties of Universities, and just as in London, there are two Royal Colleges of Physicians and Surgeons and an Apothecaries' Hall. The similarity is still more complete, for in Ireland also the two colleges have formed a Conjoint Board, as in London, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall gives its licence separately. The Conjoint Board also holds examinations for a Diploma in State Medicine granted by the two Colleges.

THE CONJOINT BOARD IN IRELAND.

THIS body requires of candidates the passage either of its own preliminary examination in the subject of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council.

PROFESSIONAL EXAMINATIONS.

There are four professional examinations, the first of which cannot be passed earlier than the end of the first winter session, nor the fourth before the conclusion of full five years of medical study, and before being admitted to any of them the candidate must show that he has studied the different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The First and Second Examinations deal respectively with (*a*) Chemistry and Physics and (*b*) Biology; and (*a*) Anatomy, and (*b*) Physiology and Histology. All parts of these examinations, as also of the following one, which deals with (*a*) Pathology, (*b*) Materia Medica, Pharmacy, and Therapeutics, (*c*) Public Health and Forensic Medicine, may be taken separately.

Final Examination.—This is divided into three divisions which cannot be completed until at least four years have passed in medical studies other than those for the first examination, and five years, at least, since the beginning of the curriculum. The divisions are (*a*) Medicine, including Fevers, Mental Diseases, and Diseases of Children; (*b*) Surgery, including Ophthalmic and Operative Surgery; (*c*) Midwifery, including Diseases of Women and Newborn Children, and the Theory and Practice of Vaccination. Candidates are recommended to present themselves in all the subjects of the Final Examination at one time, but a candidate at or after the end of the fourth year may present himself in any one of the Divisions (*a*), (*b*), or (*c*), provided he has completed his curriculum as far as concerns the division in which he presents himself.

Fees.—Preliminary Examination, £2 2s., except in the case of matriculated pupils of the Royal College of Surgeons, who pay £1 1s.; re-examination, £1 1s. First Professional Examination, £15 15s.; Second, £10 10s; Third, £9 9s.; Final, £6 6s.; Re-examination fee is £2 2s. for each division.

Further information can be obtained from the Secretary of the Committee of Management, 6, Kildare Street, Dublin.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THOSE whose names already appear on the *Medical Register* can obtain the separate Licence in Medicine of this College, and its Licence in Midwifery. In either case an examination has to be passed in the subjects indicated, questions on midwifery, hygiene, and jurisprudence being included in the examination for the licence in medicine. For the Licence in Midwifery practitioners of over five years' standing are exempted from examination by printed questions. The other grades of the College are Members and Fellows. The former are admitted after an examination which is open to all university graduates in medicine and licentiates in medicine of Royal Colleges of Physicians, and deals with the general subjects of medicine. Fellows are selected, by vote, from among the Members.

Fees.—For the Licence in Medicine, 15 guineas; for the Licence in Midwifery, 5 guineas; or 16 guineas for both if they are taken within an interval of a month. Special examinations cost in each case 5 guineas extra. For the Membership, 20 guineas to a Licentiate of the College; 35 guineas to others; a special examination costing 5 guineas extra. The Fellowship £35, in addition to stamp duty £25. Information as to special examinations and other points can be obtained from the Registrar, the Royal College of Physicians, Kildare Street, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THIS body, besides its licence in surgery, grants a diploma in midwifery, and under certain conditions admits those possessed of registrable qualifications to its Fellowship. Its licence is usually granted conjointly with that of the College of Physicians, but it is given separately to holders of a registrable qualification, provided that the College is satisfied that adequate courses of study have been pursued and that its own examination is passed. Similar conditions attach to the diploma in midwifery.

The Fellowship.—Candidates for admission as Fellows must lodge a petition supported by evidence as to study and testimonials as to character. Should these be approved, the candidate is permitted to attend for examination. If he is a Licentiate or Graduate in Surgery of less than ten years' standing he has to pass two examinations, one covering Anatomy, Physiology, and Histology, and the other Surgery (Systematic, Clinical, and Operative) and Surgical Pathology.

Candidates of over ten years' standing pass one examination only, its subjects being the same as the second of the foregoing, with the addition of Surgical Anatomy. The Primary Fellowship can be passed at the end of the third winter of the ordinary curriculum.

Fees.—The Licence Examination, £26 5s., £5 5s. being retained if the candidate does not pass; for a Special Examination, £31 10s. For the Midwifery Examination, £15 15s., of which £5 5s. are retained if the candidate does not pass. For the Fellowships, those already Licentiates pay £15 15s. for the Primary Examination, £10 10s. for the Final. Licentiates in Surgery of other bodies: Primary, 25 guineas; Final, 15 guineas. Those who enter as students pay £5 5s. for the Primary Examination, 20 guineas for the Final. Licentiates of the College of over ten years' standing pay 25 guineas, and others 40 guineas. A Special Examination costs 10 guineas extra. In case of rejection, 10 guineas in addition to the special fee, if such has been paid, are retained. Other information can be obtained from the Registrar of the College, Stephen's Green West, Dublin.

APOTHECARIES' HALL OF IRELAND.

A DIPLOMA is granted by this Hall which entitles the holder to be registered as a practitioner of Medicine, Surgery, and Midwifery, and confers also the privileges of an Apothecary. Candidates must tender evidence of having complied with the requirements of the General Medical Council as regards preliminary and professional education, certificates in respect of such studies being accepted from all recognized authorities. Two periods of Dissection, each not less than six months, must be included, and twenty-seven months of Hospital attendance, or its equivalent. Four professional examinations have to be passed, the first three of which are held quarterly, and the final twice a year, in January and July. The first examination deals with Biology, Physics, and Chemistry, Practical and Theoretical; the second examination is in Practical Anatomy and Materia Medica and Therapeutics, Physiology, and Histology; the third, Pathology, Pharmacy, Forensic Medicine, and Hygiene. A candidate who has passed tests in any of the subjects of these examinations before another Licensing Body is exempt from further examination in such subjects. The final examination deals with Medicine, Surgery, Ophthalmology, Midwifery, and Gynaecology. The Hall's own examination in all these subjects must be passed, except in the case of candidates who have already been admitted to the *Register*. These are only examined in subjects not covered by their previous qualification. Women candidates are eligible.

Fees.

For each of the first three examinations, £5 5s.; for the final, £6 6s. If the third and final, or final alone, are passed before the Hall, the other examinations having been passed elsewhere, the fee is £15 15s. Application for other information should be made to the Registrar, 40, Mary Street, Dublin.

NOTES ON MEDICAL SCHOOLS AND COLLEGES.

LONDON.

As has already been pointed out (p. 563), the student who selects a London medical school has three courses open to him, and it is very important that what this means should be clearly understood at the very outset, as a mistake may be the source of lifelong regret.

1. The natural course would seem to be to take the medical degree of the University of London. All the medical schools in London are now constituent colleges of that university, University and King's Colleges in all faculties, and the other medical schools in the medical faculty, and all undertake to prepare students for its medical degrees. Unfortunately the University has not yet taken down the antiquated barbed-wire fence called the Matriculation Examination. Unless the would-be student has cut his way through this on leaving school he must look elsewhere for a degree. If he has got through this obstruction there ought to be no more difficulty in going on to a degree than in taking the third course. There is, however, another examination to be passed before entering on medical studies proper; this is the Preliminary Scientific, which has its equivalent in the two other courses. The examination at the University of London is held in two parts, and it should be noted that the student may prepare for it at any one of a long list of schools and colleges scattered over the length and breadth of the United Kingdom, and, indeed, of the Empire. There are many advantages about this course if the student has once started on the road.

2. If he have not, and if he desire to take a university degree, he should study the regulations of the Universities of Oxford and Cambridge (pp. 566 and 567). By joining one or the other he will be in the way to obtain an admirable education in the earlier subjects of the medical curriculum, while looking forward to enjoying the great opportunities which the London hospitals are able to provide in the matter of clinical instruction and practical training in medicine, surgery, and obstetrics. He will find his road very plainly marked. He will spend three years at the University in the study of chemistry, biology, anatomy, and physiology, and when that stage is passed will find any medical school in London ready to receive him with open arms, and even offering him inducements in the shape of scholarships. There are many advantages in this second course also.

3. The student may make up his mind not to seek a university degree, in which case he will enter at any one of the medical schools as a full student and end by taking the diploma of the Royal Colleges of Physicians and Surgeons, granted after a series of examinations conducted by the Conjoint Board of the Colleges (p 572) or the Licence in Medicine and Surgery granted by the Society of Apothecaries of London (p 573). If the would-be student is going to enter the Royal Navy Medical Service, the Royal Army Medical Corps, or the Indian Medical Service, he cannot do better than follow this course, inasmuch as a university degree will be no particular advantage to him in these services, and to have entered as young as possible will often make a good deal of difference, preventing him from being counted out on a small pension under the age rules. Again, if he is quite sure that he is going to be a great operating surgeon, he may follow this third course, at the same time making sure of passing the first examination for the Fellowship of the Royal College of Surgeons of England. If he does not he is dished; and accidents will happen even to the diligent and conscientious. We apprehend that the only sound general advice that can be given to a young man who contemplates entering the medical profession by way of London is to lay himself out to take a degree at one of the three universities mentioned.

Choice of a School.

Little guidance can be given in these columns as to choice of one school rather than another, for such choice must depend largely on personal factors. In a general way, however, it may be said that while to the student of to-day it may perhaps be almost a matter of indifference to what school he belongs, there is often in after-life a certain advantage in having been an alumnus at one of the more celebrated schools. On the other hand, there are, perhaps, more opportunities in some respects, especially for obtaining the coveted posts of house-physician and house-surgeon, at the smaller schools.

Information as to the fees at the different schools and the scholarships, prizes, and junior appointments which they offer will be found in the following pages, and should be carefully studied by those who have no personal reason for preferring one to the other. The courses which they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the Conjoint Board or the Apothecaries' Society not less than of those who have London or other university degrees in view. At all, too, as has been said, special facilities are offered to men who have commenced their professional education at the older universities, Oxford and Cambridge. Apart from these facts, the only point to which attention can usefully be directed is that on personal inquiry and investigation reason may perhaps be found for regarding the teaching accommodation and general arrangements for students at some schools as superior to those at others.

St. Bartholomew's.

This institution fills one side of Smithfield and Giltspur Street, sharing with the new Post Office buildings a large island of ground separated practically from all other buildings; it is on the edge of the City, and easily reached from all parts of London. The hospital contains 744 beds, the whole structure being in process of slow rebuilding. Some new buildings opened this year by the Prince of Wales occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the place as one of medical study. The library and the physical science and bacteriological laboratories have now at their side a very large building which includes club rooms for the Students' Union, a writing room, and luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom. Within the precincts of the hospital also there is a residential college for a large number of students. The Students' Union owns, moreover, grounds of some 10 acres in extent for recreative purposes at Winchmore Hill, which is easily accessible from the hospital.

Special classes are held for students preparing for the Preliminary Scientific and other Examinations for the M.B., M.D. of the Universities of London, Oxford, and Cambridge, and for the higher surgical degrees at the same Universities, including the M.S.Lond., First and Second F.R.C.S., M.Ch.Oxon., and M.C.Cantab. Special laboratory instruction for the D.P.H. of Cambridge, Oxford, Durham, and London is also given.

Appointments.—Clinical Clerks to the Physicians and to the Physician-Accoucheur, and Dressers to the Surgeons and in the Casualty Department are chosen from the Students; Clerks and Dressers are also selected from the students to attend in the out-patient rooms, in the special departments (Ophthalmic, Orthopaedic, Gynaecological, Laryngological, Aural, Dermatological, Electrical, and Dental) and in the *post-mortem* room. Chief Assistants and Clinical Assistants are selected from qualified men and appointed yearly to help in the special departments just named. Ten House-Physicians and ten House-Surgeons are appointed annually. During their first six months of office they act as "Junior" House-Physicians and House-Surgeons, and receive a salary of £25 a year. During their second six months they become "Senior" House-Physicians and House-Surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident Midwifery Assistant and an Ophthalmic House-Surgeon are appointed every six months, and are provided with rooms and receive a salary of £80 a year.

Two Assistant Anaesthetists are appointed annually, and receive salaries of £120 and £100 a year respectively. An Extern Midwifery Assistant is appointed every three months, and receives a salary of £80 a year.

Scholarships.—Five Entrance Scholarships will be awarded after an Examination to be held on September 23rd, 1907, and following days. The subjects of examination and conditions of eligibility for these Scholarships are: (1) Two Scholarships, value £75 each, in no fewer than two nor more than three of the following subjects—Chemistry, Physics, Botany, Zoology, Physiology, and Anatomy, limited to students under 25 years of age who have not entered on the medical or surgical practice of any London medical school. (2) One Scholarship, value £150, in not fewer than three of the following subjects—Chemistry, Physics, Botany, Zoology, and Physiology, limited to students under 21 years of age who have not entered on the medical or surgical practice of any London Medical School. (3) The Preliminary Scientific Exhibition of £50 will be given for the second best examination in the same subjects and under the same conditions as (2). (4) The Jeaffreson Exhibition in Mathematics, Latin, and one other language—Greek, French, or German—and of the value of £20. The value of the Scholarships and Prizes is nearly £900 annually.

Further information and a prospectus can be obtained on application to the Dean of the Medical School, St. Bartholomew's Hospital.

CHARING CROSS.

THIS school, with its hospital, is situated in the very centre of London, and easily accessible from all parts. It is within three minutes' walk of the Royal Dental Hospital of London, and gives instruction in all subjects of the medical and dental curriculum. The Lectures are given at hours to suit both General and Dental Students. The Hospital, with its Convalescent Home at Limpsfield, contains 287 beds. Over 2,000 cases pass through its wards each year, and some 22,000 out-patients and casualties are treated. There are Special Departments for Mental Diseases, Midwifery, Diseases of Women, of Children, of the Skin, Eye, Ear, Throat, Nose, and Teeth, for Orthopaedic Cases, *X*-Ray work, and for Electrical Examination and Treatment. Biological and Physics Laboratories have been established in the school, and the Pathological Laboratory has been considerably enlarged.

Appointments.—In the Medical School Demonstratorships and Assistant Demonstratorships (when they fall vacant) are open to students of the school and carry honoraria. The Curator and Pathologist is appointed annually, and receives £100 a year. Medical, Surgical, and Obstetric Registrars to the Hospital are appointed annually, the two former of whom receive £40 a year each, with luncheon in the Hospital. Six House-Physicians, six House-Surgeons, and two Resident Obstetrical Officers are appointed each year on the recommendation of the Medical Committee, after competitive examination. They are provided with board and residence in the Hospital. Assistants to the Roentgen-ray and to the Electrical Departments are appointed every six months. They receive an honorarium of 12 guineas, with luncheon at the Hospital. Clinical Clerks and Dressers are appointed in all the general and special departments of the Hospital. Arrangements can be made for students who have not entered for the entire medical curriculum to hold the posts of Clerk and Dresser. Every student holds in turn the appointment of Pathological Assistant, and assists at the necropsies. The above appointments are open without any additional fee.

Scholarships.—There are five Entrance Scholarships, of the respective value of 100, 60, 55, 40, and 30 guineas. The first, second, and fourth are open to all candidates ready to join the school for the whole curriculum; the third is reserved for the sons of medical men, and the fifth for Dental students. They are awarded at the beginning of each winter session after a competitive examination in (1) English, including Language, History and Geography; (2) Latin, and any one of the following three languages—Greek, French, and German; (3) Mathematics, including Arithmetic, Algebra, and Geometry; and Mechanics, including Statics and Dynamics; (4) Inorganic Chemistry and Experimental Physics, including Acoustics, Heat, Magnetism, Electricity, and Optics; and (5) Animal and Vegetable Biology. No candidate may offer himself for examination in more than three of the above groups of subjects, the selection of the groups being left to the candidate, each group being worth 1,000 marks. Students who join in the summer session have the same privileges as regards scholarships, medals, and prizes as those who join in October of the same year. Candidates must be under 25 years of age on the first day of the examination, and must give notice to the Librarian of their intention to compete, and of the groups in which they offer themselves for examination before 10 a.m., September 21st, 1907. The examination commences the following Monday, September 23rd, at 9 a.m.

One Epsom Scholarship, giving a free education, is, each winter session, placed at the disposal of the Head Master of Epsom College, to be competed for by foundation scholars who have passed the Preliminary Scientific M.B. Examination in the University of London.

Two University Scholarships, of the value of 72 guineas each, are open to students from the University of Oxford who have passed the first M.B. Examination, to students of the University of Cambridge who have passed the second M.B. Examination, and to students of the University of London who have passed the Intermediate Examination in Medicine, and who have not entered at any London Medical School. Subjects: Anatomy and Physiology, including Histology. The examination for these Scholarships, which will be partly practical, will be held at the school on September 23rd and 24th. Candidates must give notice to the Librarian of their intention to compete on or before Saturday (at 10 a.m.), September 21st, 1907. The successful candidates will be required to enter forthwith at the Hospital for the completion of their curriculum.

Fees.—These may be paid in one sum as a composition fee of 115 guineas for general students; 55 guineas for dental students; and 74 guineas for university students, or for general students by sessional payments of 15 guineas every winter session and 10 guineas every summer session as long as the student remains in the school, with an entrance fee of 10 guineas; and for dental students, 31 guineas on entry and 30 guineas at the end of the first twelve months.

Further information may be had of the Dean, Charing Cross Hospital Medical School, Chandos Street, Strand, London, W.C.

ST. GEORGE'S.

THIS school is at Hyde Park Corner, and carried on in connexion with St. George's Hospital, an institution with 348 beds. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centres of London University established at King's College and University College. The school at Hyde Park Coroner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of University and all other examinations receive careful attention, and special test examinations and classes are held for all examinations.

The school possesses an Amalgamation Club, with well-fitted reading, smoking, and luncheon rooms, on the hospital premises. Students have the advantage of a well-filled library of medical and scientific books, which is kept thoroughly up to date. A register of accredited appartments, and a list of medical men and others willing to receive St. George's men as boarders, may be seen on application to the Secretary.

Appointments. — Dresserships to the Surgeons and Clinical Clerkships to the Physicians are open without fee to all students of the Hospital. There are a large number of House Office Appointments, which may be held for six, twelve, or eighteen months, and are open without fee to every perpetual student of the Hospital, and are made strictly in accordance with the merits of the candidates. Besides this, after the student has held a House Office, the following paid appointments are, amongst others, open to him: Medical Registrarship at £200 per annum; Surgical Registrarship at £200 per annum; Curatorship of the Museum at £200 per annum; Assistant Curatorship at £100 per annum; Obstetric Assistantship, Resident, at £50 per annum; the post of Senior Anaesthetist at £50 per annum; the posts (2) of Junior Anaesthetists, each at £30 per annum.

Scholarships.—Entrance Scholarships in Anatomy and Physiology (70 guineas and £50) are awarded at the commencement of each winter session. The William Brown Exhibition of the value of £100 per annum (tenable for two years) is awarded by examination to a perpetual pupil of the hospital every second year. The William Brown Exhibition of £40 (tenable for three years) is awarded

by examination to a perpetual pupil of the Hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the Hospital.

Fees.—First year (Preliminary Science or First Conjoint) £26 5s., or £21, according to course. Second and third years, £57 15s. in one sum, or £63 in two equal instalments. Fourth and subsequent years, annual composition fee, £31 10s. Entrance fee for students, £10 10s.

Further information may be obtained from the Dean of the Medical School.

Guy's.

The Hospital contains 602 beds in constant occupation; an additional 50 beds have been opened on the medical side of the Hospital. Thirty-one beds are set apart for diseases of the eye, and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. There is a special ward of 32 beds for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the Throat and Ear Departments.

It has a College fronting the east gate of the Hospital, providing accommodation for 60 resident students. This contains a dining hall, reading rooms, library of general literature, and gymnasium for the use of the residents and of the members of the Clubs' Union. The athletic ground at Honor Oak Park is reached from the Hospital in twenty minutes.

The new Gordon Museum of Pathology, the Wills Library, and the school buildings in general afford unrivalled opportunities for a liberal education and for research.

Special classes are held for the Preliminary Scientific and Intermediate M.B. Examinations of the University of London and for the First F.R.C.S.Eng.

Special teaching is provided to meet the requirements of the Universities of London, Oxford, and Cambridge in General Pathology and Pharmacology.

Appointments.—All appointments are given to students without extra payment, and according to the merits of the candidates, as determined by a committee of the medical staff. Eight Assistant House-Physicians, 8 House-Physicians, 24 Assistant House-Surgeons, 8 House-Surgeons, and 2 Ophthalmic House-Surgeons are appointed annually. The House-Physicians and House-Surgeons hold office for six months each, and receive free board and lodging in the college, as also do the Resident Obstetric Assistants, of whom 8 are appointed annually, each holding office for six months. Every student is provided with rooms and commons in the hospital during the period of his "take in" as Dresser. In addition to the Clerkships and Dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, dermatology, otology, electricity, anaesthetics, and dentistry. More than 150 additional appointments have been added to the list of those annually open to students of the hospital, the majority of them being in the special departments.

Scholarships, Prizes, etc.—There are two Entrance Scholarships in Arts: One of the value of £100 open to candidates under 20 years of age, and one of £50 open to candidates under 25. Subjects: English, Latin, Arithmetic, Algebra, Euclid, and either Greek, French, or German. Three Open Scholarships in Science: One of £150 and one of £60, open to candidates under 25, and one of £50 to University students who have completed their study of Anatomy and Physiology. Subjects: Anatomy, Physiology, Chemistry, Practical Chemistry, Biology, and Physics. These examinations begin on September 23rd; names must be sent in on or before September 14th. Junior prizes for general efficiency, £20, £15, £10; Hilton prize for Dissection, £5; Michael Harris prize for Anatomy, £10; Sands Cox Scholarship for Physiology, £15 for three years; Wooldridge Memorial prize for Physiology, £10; Beaney prize for Pathology, £34; Treasurer's gold medal in medicine, Treasurer's gold medal in surgery, and the Golding-Bird gold medal and scholarship for Bacteriology (£20) are awarded annually after competitive examination. The Gull Studentship in Pathology and the Beaney Scholarship in Materia Medica, of the annual value of £150 and £31 10s. respectively, are awarded without examination to enable research to be carried on in these subjects. An Arthur Durham Travelling Scholarship of £100 is awarded triennially.

Fees.—There is a system by which composition fees are paid, information as to which should be sought from the Dean of the School.

King's College.

The curriculum at King's College Medical School is now divided into two parts: (1) For Preliminary and Intermediate subjects of study; (2) Advanced or Final studies. The subjects under the first head are taught in the class-rooms and laboratories at King's College; those under the second at its hospital.

There are special classes for the primary and final examinations of the Royal College of Surgeons.

A special class for the Matriculation Examination will commence on September 27th. Classes for the science subjects are held by the Professors of the Science Faculty of King's College, and students avail themselves of their laboratories.

All students are entitled to the full privileges of the athletic club, which manages the large recreation ground of the College at Wormwood Scrubs.

The Hospital contains 220 beds in daily use.

Appointments.—Resident Medical Officers, Clerks, and Dressers are chosen from the students, and the former have rooms and commons free. Two Sambrooke Registrarships, Medicine and Surgery, of the annual value of £50 each, are open to students who have held resident posts in the hospital. There are also Senior Medical, Surgical, and Gynaecological tutors. Clinical assistants are appointed in the Ophthalmic, Ear, Throat, Skin, and Dental Departments.

Scholarships.—The Entrance Scholarships are: 1. Two Warneford Scholarships, each £100 value; subjects—Mathematics, Classics, Divinity. 2. One Sambrooke Exhibition, of £100, open; subjects of examination—Mathematics, Elementary Physics, Inorganic Chemistry, Botany, and Biology. 3. Rabbeth Scholarship, value £20, in July, for best evidence of early scientific training. 4. Two Scientific Exhibitions, open, given annually, in October, by the Clothworkers' Company, value £60 and £40, for proficiency in any four of the following subjects: Mathematics, Mechanics, Physics, Chemistry, Botany, Geology, Mineralogy, and Zoology, will be open to all candidates who are under the age of 19. 5. Medical Entrance Scholarship, of £50, instituted for students who propose to take their degree at Oxford, Cambridge, or other British University, having already passed the examination of that University in Biology, Chemistry, and Physics. During the curriculum Scholarships and Prizes of the value of £300 are open to students.

Fees.—The fees for the two parts mentioned are paid separately. Information as to the first should be sought from the Dean of the Faculty of Science at the College; and as to the second, of advanced studies, from the Dean of the Hospital. They attend daily, except Saturday, for the purpose of receiving students and their friends.

For conditions of scholarships and subjects of examinations apply to the Deans, or the Secretary, King's College, who will send a full prospectus post free. Examinations commence September 20th.

The London.

This hospital (which contains 914 beds) and its Medical School are in Mile End Road, Whitechapel. All the arrangements are very complete and modern. The new departments of Bacteriology, Public Health, Chemistry, and Biology, the new Pathological Institute at the Hospital, and a new Out-patient and Special Departments have been added within the last few years. New Students' Rooms have been added, and a Garden and Fives Court opened for the use of the members of the London Hospital Clubs Union.

A special course for the D.P.H. will commence at the beginning of the winter session.

Special classes for the Preliminary Scientific and Intermediate M.B.Lond., the Primary and Final Fellowship, and other examinations are held. Those for the Final and Primary F.R.C.S. commence early in September.

Appointments.—The salaried appointments open to students are those of Medical Registrars (2), Surgical Registrars (2), Medical, Surgical, and Obstetric Tutors; Senior Dressers to Out-patients; Clinical Assistants in the Medical, Surgical, Ophthalmic, Aural, Light and Skin, Orthopaedic, and Electrical Departments. There are also 5 Resident House-Physicians and 7 Resident House-Surgeons, 2 Accoucheurs, 6 Receiving-room Officers, 2 Emergency Officers, and 3 Pathological Assistants. Also paid and unpaid Clinical Assistantships in the various special departments. In addition there are numerous Assistantships and Clerkships, and Dresserships in the various departments.

Scholarships and Prizes. — The following is a list of Scholarships and Prizes: *At Entrance:* Price Scholarships in Science, £120; in Anatomy and Physiology, £60; Entrance Scholarships in Science, £60 and £35; Epsom Scholarship, £126; Buxton Scholarships in Arts, £30 and £20. *After Entrance:* Anatomy and Biology Scholarships, £20; Anatomy and Physiology Scholarship, £25; Letheby Prizes, £30; Scholarships in Clinical Medicine, Surgery, and Obstetrics, £20 each; Duckworth Nelson Prize, £10; Hutchinson Prize, £40; Sutton Prize, £20; Sir Andrew Clark Prize, £26; Anderson Prizes, £9; Out-patient Dressers' Prizes, £60; Practical Anatomy Prizes, £10; Douro Hoare Prize, £5; Wynne Baxter Prize, £5 5s.

Fees.—The composition is 120 guineas. A reduction of 15 guineas is made to sons of medical men.

Other information may be obtained from the Warden, Mr. Munro Scott, at the London Hospital Medical College, Mile End, E.

ST. MARY'S.

THIS school and its hospital is situated in Praed Street, in the neighbourhood of the residential districts of Paddington, Bayswater, and North Kensington, and is thus especially convenient to students who wish to reside in the immediate vicinity. A register of approved lodgings is kept in the office of the Medical School.

The Athletic Ground (eight acres) is situated at North Kensington, and is easy of access from the Hospital.

The latter at present contains 281 beds, but when the new wing, the ground-floor of which, comprising the new out-patient department, was opened in 1898, has been furnished and opened, the total number of beds will be 341, and there will be additional Operating Theatres, a new Clinical Laboratory and Clinical Theatre. A new *X* ray Department has been established in the Out-patient Department of the Hospital.

The Physiological Department comprises a Lecture Room specially constructed for practical demonstrations, and a series of five laboratories for practical classes and research, including a photomicrographic department.

During the past year, as a result of the increasing scope of the Department for therapeutic inoculation under Sir Almroth Wright, F.R.S., a block of consulting rooms, waiting rooms, and laboratories has been equipped in the new wing of the hospital, and is now in use.

In addition to systematic courses of Lectures and Demonstrations, special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London, and for the Primary and Final F.R.C.S.

A complete course of instruction in Chemistry, Physics, and Biology, recognized by the University of London as an approved course for Internal Students, is held throughout the year, and students may join in October, January, or April.

All clinical appointments in the Hospital are free to students of the Medical School, the term of office in each case being of four months' duration, and the Resident Medical officers are chosen by competitive examination. Six House-Physicians, six House-Surgeons, four Obstetric Officers, and two Resident Anaesthetists are appointed each year, and receive board and residence in the Hospital.

Scholarships.—There are Entrance Scholarships in Natural Science. One of £145, one of £78 15s., two of £52 10s., and two of £63 (open to students of any British University) awarded annually by competitive examination in September.

Fees.—The composition fee for students is £140 if paid in one sum, or £145 if paid in four instalments. University students who have completed their examinations in Anatomy and Physiology are admitted on payment of a composition fee of 60 guineas (£63) paid in one sum, or 65 guineas (£68 5s.) if paid in two annual instalments. University students, prior to completing their examination in Anatomy and Physiology, pay an annual fee of 25 guineas (£26 5s.). Separate courses of Lectures, Laboratory Work, or Hospital Practice may be taken.

The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

THE MIDDLESEX.

THIS school and its hospital are in Mortimer Street, W., and close to Oxford Street and Portland Place. It possesses a resident college for a limited number of students which overlooks the hospital garden. The hospital contains 340 beds. A wing containing 40 beds and special research laboratories is entirely devoted to patients suffering from cancer. It offers unrivalled opportunities for the study of this disease, both in its clinical and pathological aspects.

In addition to the arrangements for teaching ordinary students all subjects of the medical curriculum, a bacteriological and public health laboratory has been added for the purpose of providing instruction for women medical practitioners preparing for the examinations for the diploma in Public Health and for the M.D. in State Medicine of the University of London, and of affording facilities to them and other women students desirous of carrying out research work in Public Health, Bacteriology, and General Pathology.

Appointments, etc.—Eighteen Resident appointments are open annually to competition among pupils of the Hospital. The officers reside and board in the Residential College free of expense. There are two Casualty Medical and two Casualty Surgical Officers appointed annually. Six House-Surgeons are appointed every year at intervals of two months, after examination; the six House-Physicians are also appointed annually at similar intervals; they must have a legal qualification, or hold a Broderip Scholarship. An Obstetric House-Physician (qualified to practise) is appointed every six months. Non-resident Physicians' Assistants are appointed in the various out-patient departments. In the out-patient department the appointments are: Dresser to the Assistant Surgeon and to the Dental Surgeon, Clerk to the Assistant Physician, Dresser to the Ophthalmic Surgeon, Clerk in the Department for Diseases of the Skin, Clerk in the Department for Diseases of Women, and Dresser to the Throat and Ear Department. There are also Extern Midwifery Clerks and *Post-mortem* Clerks. The appointments are so arranged that every student may during his course hold all the Out-patient and In-patient Clerkships and Dresserships. Each student must have held an out-patient clerkship and dresserships before being eligible to hold in-patient clerkships or dresserships. No student can be appointed to any office until he has passed the Second Examination of the Examining Board in England or its equivalent. Clinical Assistants are appointed in the Children's, Ophthalmic, Skin, and Throat and Ear Departments.

Scholarships.—Two Entrance Scholarships, value £100 and £75 respectively, are open to students commencing their medical studies in May or October, 1907. An annual Entrance Scholarship, of the value of £50, is open to students of the Universities of Oxford and Cambridge who have completed the curriculum for or passed the examinations in Anatomy and Physiology. Subjects: Anatomy and Physiology, including Histology. The examination for these and the foregoing takes place on September 23rd ond 24th. Application for admission must be made on or before September 14th. Students joining the school in the previous May are eligible. *The Freer Lucas Scholarship* is annually awarded on the nomination of the head master to a pupil of the Epsom College who has passed the Preliminary Scientific M.B. Examination.

Fees.—The composition fee is 145 guineas for London University students. For students who have passed the Preliminary Scientific (London University), 120 guineas. For students taking the Conjoint diploma, 135 guineas. For members of universities and others who have completed their anatomical and physiological studies, 70 guineas; dental students, 54 guineas.

Further information may be obtained on application to the Dean.

ST. THOMAS'S.

THIS school, and the hospital in connexion with which it works, is situated in Lambeth, the joint buildings on the Thames, facing the Houses of Parliament, and forming one of the well-known architectural features of London.

The School Buildings, which are separated from the Hospital by a quadrangle containing a lawn-tennis court for the use of the residents, comprise numerous theatres, laboratories, and class rooms, and are well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A large library and reading room and a very complete museum are open to all students from 9 a.m. to 5 p.m.; Saturdays, 2 p.m. The

club premises contain a dining room and smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. A cloak-room with lockers, and a lavatory with bathrooms are in the main school building. Students are thus able to spend the whole day at school, all meals being obtainable at a moderate tariff, and they are further provided with facilities for exercise and recreation. A ground of more than nine acres in extent is provided at Chiswick. It can be reached in forty minutes from the hospital; it is admirably adapted for football, cricket, lawn tennis, and athletic sports. It is provided with a pavilion, where refreshments can be obtained.

The Hospital contains 605 beds, and in addition to the ordinary provisions of a great hospital has connected with its out-patient department two large well-ventilated Clinical Theatres provided with ample sitting accommodation, so that large numbers of students are enabled to follow closely the practice and teaching of the out-patient staff. There is another Clinical Theatre, centrally situated, so as to facilitate the illustration of lectures by patients from the wards and out-patient rooms; it is arranged also or lantern demonstrations.

Appointments.—All Hospital appointments are open to students without charge. A Resident Assistant Physician and a Resident Assistant Surgeon are appointed annually at a salary of £100 each, with board and lodging. Two Hospital Registrars, at an annual salary of £100 each, are appointed yearly. The tenure of these offices may be renewed for a term not exceeding two years. Two Resident Casualty Officers are appointed half-yearly at a salary of £100 per annum. An Obstetric Tutor and Registrar is appointed each year at an annual salary of £50. Four House-Physicians, two House-Physicians to Out-patients, four House-Surgeons, four House-Surgeons to Out-patients, two Obstetric House-Physicians, two Ophthalmic House Surgeons, and eight Clinical Assistants in the special departments are appointed every three months, and hold office for six months if recommended for re-election. Clinical Clerkships and Dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

Scholarships.—There are three entrance Scholarships offered: One of £150 and one of £60, in Chemistry, Physics, and Biology, for students who have not received instruction in Anatomy or Physiology; one of £50 in any two of the following subjects: Anatomy, Physiology, or Chemistry for students who have completed their examinations in Anatomy and Physiology, for a medical degree in any of the Universities of the United Kingdom, and have not entered as students in any London medical school. Numerous scholarships, prizes, and medals are open for competition throughout the whole career of a student, including a Fellowship of £100 given by the Salters' Company for research in Pharmacology, and the Louis Jenner Research Scholarship of the annual value of £60 for Pathological research.

Fees.—The Entrance Fee for First or Second Year's Students is 20 guineas; for Third Year's Students 10 guineas. The annual Composition Fee is 30 guineas. For Preliminary Scientific Students the fee is 16 guineas. Extra charges are made for materials required in practical courses. Special courses of instruction are given for various examinations, and a register of lodgings kept at the School. A list of medical practitioners, clergymen, and others who receive students is also available. Further information may be obtained from the Secretary of the School, St. Thomas's Hospital, Albert Embankment, S.E.

University College.

This school provides for the tuition of its students in the preliminary sciences, and anatomy, physiology, and pharmacology, in the Faculty of Medical Science of University College, now one of the common teaching centres for the constituent schools of the medical faculty of the University of London. Their final studies, whatever the diploma or degree at which they are aiming, are conducted in the medical school itself. The hospital in which the clinical work is done is opposite University College, at the bottom of Gower Street, in a new building built by the late Sir Blundell Maple. The medical school is likewise a new building, provided by Sir Donald Currie, and is to be declared open in the approaching October session. It provides excellent accommodation for all the departments of the school, meeting equally well the needs of undergraduate study and advanced research.

Scholarships.—The following scholarships at University College are of interest to prospective medical students. The *Bucknill Scholarship* of 135 guineas, won by open competition in chemistry, physics, botany, and zoology; the successful student must pass on to the University College Hospital Medical School. Two *Entrance Exhibitions* in the foregoing subjects, each of the value of 55 guineas; the successful students must join the College, but not necessarily the Medical School. The *Cuff Memorial Prize* of £15 for proficiency in anatomy, chemistry, and physiology. The *Schäfer Prize* in physiology, value £18. The *Sharpey Scholarship* of £105 for proficiency in biological sciences. The *Morris Bursary* of £16 for two years, available by nomination to sons of deceased professional men.

At the Medical School the following are open to competition: Two *Entrance Exhibitions* of 80 guineas each, awarded after a competitive examination in anatomy and physiology; the *Atkinson Morley Scholarship* of £15 a year for two years, awarded after examination in the theory and practice of surgery; the *Atchison Scholarship* of £55 a year for two years; the *Filliter Exhibition* in pathology of £30; four *Fellowes Medals* in clinical surgery; the *Bruce Medal* in pathology and surgery; two *Tuke Medals* in pathology, and the *Erichsen Prize* for practical surgery of ten guineas.

Appointments.—Eight House-Physicians, eight House-Surgeons, four Senior and four Junior Obstetric Assistants, and two Ophthalmic Assistants are selected annually by examination from among the senior students who have a medical qualification. The House-Physicians and House-Surgeons reside in the Hospital for a period of six months, and the Senior Obstetric Assistants for three months, receiving free board and lodging.

Fees.—The composition fees payable for the work done at University College are as follows: (*a*) For the courses required by candidates for the M.B., Ch.B.Lond. (1) 26 guineas for the Preliminary Scientific Course, entitling to one attendance; (2) 57 guineas for the Preliminary Scientific, Part II, and the Intermediate course. This fee covers Anatomy and Physiology courses during three years, and one attendance on Organic Chemistry, Pharmacology, and Materia Medica. Students preparing for the examinations of the Conjoint Board and the Society of Apothecaries pay altogether 78 guineas for the courses required for the first and second examinations of these bodies. All the fees mentioned cover the privileges of the Union Society.

At the Medical School the composition fee is 80 guineas for all the work required, except vaccination and attendance at a fever hospital. The course of instruction provided is suitable for the M.B. examinations at London University, Oxford, Cambridge, and Durham. Students aiming at the diplomas given by the Conjoint Board likewise have suitable courses provided for them, and pay the same amount. In either case, a student who obtains a medical qualification within three years of the time of commencing his final studies at the medical school is not required to pay an additional fee for any further attendance.

A register of boarding residences is kept in the offices of the Medical School for the convenience of students, but such residences are not under the control of the school authorities.

Further information about the Faculty of Medical Sciences at University College may be obtained from the Provost of University College, Gower Street, W.C.; and about University College Hospital Medical School from the Dean of the Medical School, University Street, Gower Street, W.C.

Westminster.

This school with its hospital, situated in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the medical curriculum at the teaching centre of the University of London, established at King's College. The rest of the work is done in the school buildings near the hospital, which contains upwards of 200 beds, and affords most ample facilities for instruction in all branches of Medicine and Surgery.

Appointments.—A Medical and a Surgical Registrar are appointed annually, each with a salary of £50. Two House Physicians, three House-Surgeons, one Assistant House-Physician, one Assistant House-Surgeon, and a Resident Obstetric Assistant are appointed after examina-

tion and are provided with rooms and commons, except the Assistant House-Physician and the Assistant House-Surgeon, who are provided with commons only. The Assistant House-Physician after three months' service becomes House-Physician for a further period of six months, and the Assistant House-Surgeon, after two months' service, becomes House-Surgeon for a further period of six months. Clinical Assistants to the Assistant Physicians and Assistant Surgeons, and to the officers in charge of special attendants, are appointed from among qualified students. Every student must perform the duties of Out-patient Dresser for four months, and afterwards hold the office of In-patient Dresser for four months. He is also required to serve two terms of four months each as Clinical Clerk to In-patient Physician. Two Pathological Clerks are appointed every four months to assist in the *Post-mortem* room. No student is eligible as an In-patient Dresser or Clinical Clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and Dressers in the Special Departments of Hospital Practice are periodically appointed. So far as vacancies permit students of other hospitals are admitted to In-patients' Dresserships or Clerkships.

Scholarships.—The following Scholarships are offered for competition during the year 1907-8: *In September, 1907:* Three Scholarships in Arts, £60, £40, and £30; Scholarship in Arts for Dental Students, £20; two University Scholarships in Anatomy and Physiology, £60 and £40; two Natural Science Scholarships, £60 and £40; Free Presentation, open to pupils of Epsom Medical College. *In April, 1908:* two Scholarships in Arts, £60 and £40; one University Scholarship in Anatomy and Physiology, £60; two Natural Science Scholarships, £60 and £40.

Fees.—The composition fee is 120 guineas for the course required by the Conjoint Examining Board, and 130 guineas for that of the University of London.

Further information can be obtained on application to the Dean at the Westminster Hospital Medical School, Caxton Street, Westminster, S.W.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

THIS school is carried on in the Gray's Inn Road in connexion with the Royal Free Hospital, and it is like all the other London schools which have so far been mentioned, one of the constituent schools of the medical faculty of London University. The entire school has in late years been entirely rebuilt and greatly enlarged. The laboratories are large and well-lighted, and are fully equipped for the Preliminary Scientific and Intermediate M.B. work required by the University of London. There are also a large Library and Common Room for the use of the students, and sets of chambers to accommodate seventeen students.

The Hospital has 165 beds, all of which are available for clinical instruction. There are also separate departments for Gynaecology and Obstetrics, and Diseases of the Eye, Ear, and Skin. Instruction is given in Anaesthetics, Bacteriology, etc., in addition to the ordinary Clinical Lectures and Demonstrations and Tutorial Classes. Students also attend the practice of one of the Fever Hospitals of the Metropolitan Asylums Board, and receive special instruction in Lunacy at one of the hospitals under the Asylums Board of the London County Council; they are also admitted to the practice of a number of special hospitals.

The work of the School includes preparation for the M.B.Lond. and the degrees of the Royal University of Ireland and the diplomas of the Conjoint Boards of Scotland and Ireland, and the Society of Apothecaries, London; also for the greater part of the course required by the University of Durham and the other Universities of England which admit women to their degrees, and the University of Glasgow. Special classes are held in preparation for the Preliminary Scientific examinations of the Universities of London and Durham.

Appointments.—Qualified students of the school have thrown open to them appointments as House-Physician and Surgeon, Surgical and Medical Registrars, Anaesthetists, Medical Electrician, Radiographer, Curators of the School and Hospital Museums, and Clinical Assistants and Demonstrators in various subjects.

Scholarships.—An Entrance Scholarship value £30, and the St. Dunstan's Medical Exhibition value £60 a year for three years, extensible to five years, are offered for competition at the end of September in each year. The Bostock Scholarship, value £60 a year for two or four years, is awarded by the Reid Trustees on the result of an examination held in May by the University of London. The holder of the Scholarship must enter the London School of Medicine for Women. The John Byron Bursary of £20 a year for two years, the Helen Prideaux Prize of £40, the Mabel Webb Research Scholarship of £30 for two years, the Fanny Butler Scholarship of £14 10s. a year for four years, together with many other scholarships and prizes, are offered on sundry conditions. Various Missionary Societies also offer scholarships on certain conditions, and assist ladies who wish to go to India as medical missionaries.

Fees.—University of London, Preliminary Science Course, £25; course for Intermediate and Final M.B., £135; course after Intermediate M.B., £86. Composition Fee for course of study for other qualifications, £140.

Full particulars as to Curriculum and Scholarships can be obtained from the Secretary, Miss Douie, M.B., 8, Hunter Street, W.C.

COOKE'S SCHOOL.

THIS school is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its curriculum work it does not receive more than half a dozen students in the course of the year; these have special advantages both as regards anatomy and physiology. The fees, we are informed, are but slightly in excess of current charges.

The operations of surgery are performed on the dead body. Such courses are recognized for army promotion, for the Indian Medical Service, etc.

The School, which is open all the year round, possesses a good collection of anatomical models, physiological and chemical apparatus, and gentlemen preparing for the higher examinations (F.R.C.S.Eng., M.B.Cambridge, Oxford, London, etc.) receive special instruction in the more difficult subjects.

THE PROVINCES.

THERE are in England, not counting London, nine medical schools, each of them with two exceptions forming part of the Medical Faculty of one or other of the English Universities already described, and each, with one exception, supplying instruction in the full medical curriculum. Accounts of them here follow, these being placed more or less roughly in the order of their foundation.

OXFORD AND CAMBRIDGE.

The medical schools of these ancient seats of learning have of late years played an increasingly important part in medical education, and the school at Cambridge in particular now attracts large numbers of students. At both of them the opportunities for obtaining a good knowledge of the Preliminary Sciences and of Anatomy and Physiology are unsurpassed elsewhere, and the same might be said with equal, if not greater truth, in respect of Pathology. All the laboratories are very completely equipped, and the teaching staffs most distinguished. Each of these schools provides a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them, but this is not commonly done. The hospitals are comparatively small, so the authorities encourage the students, so soon as they have completed the earlier examinations, to join some London school and thus spend the time of their preparation for the final examination in a city where the opportunities for gaining clinical knowledge are great and varied. Most of the London schools make special arrangements for such students, information as to which can be obtained from the respective Deans.

In several cases some information is appended to the accounts given of the Medical Schools concerning other hospitals than those more directly connected with the School in question, but which, officially or unofficially, play a part in the education which the students of the School receive, and in any case are useful as places of additional or post-graduate study.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

This, the Medical School of the Faculty of Medicine of the University of Durham, is in the neighbouring city, Newcastle-on-Tyne. Its classes and lectures are arranged

to meet the requirements of the University in all the degrees which the latter grants, and also those of some other bodies. The students do their work in the preliminary sciences at Armstrong College, also part of the University, and then carry on their studies in the new Royal Victoria Infirmary, an institution with 600 beds opened last year by the King. It has special accommodation for the benefit of students, while to the general buildings of the school has been added in late years a new wing for the departments of Physiology and Anatomy. This also contains the students' gymnasium, and a set of rooms for the use of the Students' Union.

Appointments.—Assistant Demonstrators of Anatomy and Prosectors for the Professor of Anatomy, Assistant Physiologists, Pathological Assistants, Assistants to the Dental Surgeon, and Assistants in the Eye Department, Throat and Ear Department, and Department for Skin Diseases are elected annually. Four times in the year Clinical Clerks and Dressers are appointed for three months.

Scholarships.—A University of Durham Scholarship, value £100, for proficiency in Arts, open annually at the beginning of the winter session to intending students. The Pears Scholarship, value £150, for proficiency in Arts (when vacant). The Masonic Scholarship, value £45, for proficiency in Arts (when vacant). The Dickinson Memorial Scholarship, interest £400, with a gold medal, for Medicine, Surgery, Midwifery, and Pathology, open to perpetual students in their fifth year. The Tulloch Scholarship, interest of £400 annually, for Anatomy, Physiology, and Chemistry for students at the end of their second year. The Charlton Memorial Scholarship, interest of £700 annually, open to full students entered for the class of Medicine, at the end of their fourth or fifth winter. The Gibb Scholarship, interest of £500 annually, for Pathology, at end of summer session. The Goyder Memorial Scholarship, proceeds of £325; subjects: Clinical Medicine and Clinical Surgery. Luke Armstrong Memorial Scholarship, proceeds of £680, for best essay on some subject in Comparative Pathology. The Scholarship is open to all graduates in Medicine or Hygiene, and candidates for these degrees who have spent at least six months at the University of Durham, and whose age does not exceed 30 years. The Stephen Scott Scholarship in Surgery, interest on £1,000 annually. The Heath Scholarship. The late George Y. Heath, M.D., M.B., D.C.L., F.R.C.S., President of the University of Durham College of Medicine, bequeathed the sum of £4,000 to found a scholarship in surgery, the interest to be awarded every second year. First award in 1896. The Gibson Prize in Midwifery and Diseases of Women and Children, interest on £225. The Turnbull Prize and Medal for Surface Anatomy.

Fees.—The composition fee for the University course is 72 guineas. Other information should be sought from the Secretary of the School at Newcastle.

Other Hospitals.—(1) In the *Hospital for Sick Children* there are 70 beds, besides an isolated block for infectious and doubtful cases. There is a large out-patient department. The practice of the hospital is open free to all students or qualified practitioners. The number of in-patients in 1906 was 779. The out-patient department is carried on in buildings recently erected in the central part of the city, which are being at present extended at an outlay of £10,000. The number of out-patients in 1906 was 16,415, with 30,821 attendances. (2) At the *Infirmary for Diseases of the Eye* there are 20 beds. Its out-patients number 6,600 annually. Clinical instruction is given daily from 11 a.m. to 1 p.m.

Birmingham.

The Medical School in this city is carried on by the Medical Faculty of the University of Birmingham, its students having an adequate number of good laboratories, class-rooms, and other necessaries devoted to their use by the University. The clinical work is done at the General and Queen's Hospitals, which are amalgamated for this purpose. Together they have upwards of 450 beds for medical, surgical, and special cases, together with an array of special departments of all kinds, including a large maternity department. Clinical instruction is given in the wards and out-patient and special departments daily and formal clinical lectures delivered weekly throughout the winter and summer sessions. Special tutorial classes are also held alike for the degrees of Birmingham and some other universities and for the diplomas of Corporations.

Appointments.—The large number of appointments open to past or other students include the following: At the General Hospital: One Resident Medical Officer, salary £70 a year. One Resident Surgical Officer, salary £100 a year. One Resident Pathologist, salary £50 a year. Two non-resident Casualty Assistant Physicians, salary £50 a year. Two non-resident Casualty Assistant Surgeons, salary £50 a year. Two non-resident Anaesthetists, salary £50 a year. Five House-Surgeons, office tenable for six months, £50 a year. Two Assistant House-Surgeons, salary at the rate of £40 a year. Three House-Physicians, post tenable for six months, £50 a year. One Resident Medical Officer at the Jaffray Branch Hospital, salary £150 a year. One Resident Assistant at the Jaffray Branch Hospital, tenable for three months. At the Queen's Hospital: Three House-Physicians (posts vacant in January and April). Three House-Surgeons (posts vacant in January and April). One Obstetric and Ophthalmic House-Surgeon (post vacant in April and October). These appointments are tenable for six months. Salaries at the rate of £50 per annum, with board, lodgings, and washing. One Resident Dresser, tenable for three months; candidates must previously have attended all their lectures, etc., and need not be qualified. At the City Workhouse and Workhouse Infirmary: Five Resident Medical Officers. At the Birmingham General and Branch Dispensaries: Eight Resident Surgeons. At the Birmingham Lunatic Asylums: Five Assistant Medical Officers. At the City Fever Hospitals: Three Assistant Medical Officers. At the Children's Hospital: One Resident Surgical Officer, one Resident Medical Officer. At the Birmingham and Midland Eye Hospital: Three Resident Surgeons. At the Orthopaedic and Spinal Hospital: Four Clinical Assistants (non-resident). At the Ear and Throat Hospital: One House-Surgeon, four Clinical Assistants (non-resident). There are also four non-resident Poor-law appointments in the gift of the Board of Guardians.

Scholarships.—There are numerous money and other awards for Students of sufficient merit, among them being the following: The *Walter Myers Travelling Studentship* of £150; the *Sands-Cox Scholarship* of £42 (an Entrance Scholarship in the Faculty of Medicine, awarded on Matriculation marks); four *Queen Scholarships* of £10 10s. each, awarded annually at the second, third, fourth, and final University examinations respectively; one or more *Sydenham Scholarships*, allotted on entrance to Students who are the sons of deceased medical men. The *Ingleby Scholarship* of £10 for proficiency in Midwifery and Gynaecology. There is also an Entrance Scholarship of £37 10s. for students proceeding to a degree in Dental Surgery, besides prizes in money for successful class work by senior and junior students.

Fees.—The composition fee is £82. This covers all the work required for the degrees of Birmingham and some other universities and for the ordinary qualifications of licensing corporations, but not the additional courses required for the Fellowship of the Royal College of Surgeons of England, the diploma and degrees of the University in State Medicine and some other special work. Other information should be sought from the Dean of the Medical Faculty.

Other Hospitals.—The practice of the *Birmingham and Midland Hospital for Skin and Urinary Diseases* is open to medical students who have passed their anatomical and physiological examinations, and to registered medical practitioners. The fee for a course of three months is 5 guineas. Further particulars may be obtained from the Secretary at the hospital.

Manchester.

The Medical School in this city forms part of the University, its staff constituting the medical faculty, and all the arrangements for the instruction of students, both in their earlier and their later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains about 292 beds, and has associated with it a very large convalescent home and the Royal Lunatic Asylum at Cheadle.

Appointments.—The following are among the appointments preserved for past and present students of this school in connexion with its arrangements for clinical tuition: A Surgical Registrar, at £80 per annum, with an additional £30 when acting as Surgical Tutor; a Pathological Registrar, at £100 per annum; a Medical Registrar, at £70 per annum; a Director and Assistant Director of the

Clinical Laboratory, at £200 per annum, and £50 per annum respectively; Assistant Medical Officer and an Assistant Surgical Officer, each at £50 per annum; an Anaesthetist, at £50 per annum; two Assistant Anaesthetists, at £50 per annum; an Accident House-Surgeon is appointed for three months at 20 guineas; Resident Medical Officer, one year, £150 per annum; ditto, at Cheadle, one year, £150 per annum; Resident Surgical Officer, one year, £150 per annum; an Assistant Medical Officer at the Convalescent Hospital at Cheadle, appointed every six months, at a salary of £80 per annum; two House-Surgeons and two House-Physicians, appointed every three months for a term of six months. Four or more Clinical Clerks are attached to each Physician and Assistant Physician, and to the Obstetric Physician, and four or more Dressers to each Surgeon and Assistant Surgeon, and to the Ophthalmic Surgeon, and four or more Clerks to the Pathological Registrar, two Clerks to the Director of the Clinical Laboratory, and a number of Clerks, not exceeding six, is appointed to assist the Medical Officer for Home Patients. Accident Room Dressers are appointed every three months. Additional Clinical Clerks are appointed to assist in the departments for the Diseases of the Eye, Ear, and Throat.

Entrance Scholarships.—The following are among the Scholarships obtainable by students of the School: *Rogers and Seaton* Scholarships in Arts (in alternate years), £40 per annum, tenable for two years. Two *Dalton* (entrance) Scholarships in Mathematics, tenable for two years, value £40, one being awarded annually, except in such years as a Cartwright Scholarship is awarded. *Cartwright Scholarship*, £35 per annum, tenable for three years. Three *Hulme*, of £35, tenable for three years, one being awarded annually for proficiency in subjects of general education, one annually, tenable for three years. Two *James Gaskill Scholarships* of £35, tenable for two years, one being awarded annually for proficiency in the branches Mechanics and Chemistry. A *Dora Muir Scholarship*, £25 per annum, tenable for three years, and open to the competition of Women students only. This is awarded triennially. Next competition in May, 1908. *Sir J. P. Kay-Shuttleworth Scholarship*, £30 per annum, tenable for three years, open to the competition of scholars from Sedbergh School, Giggleswick School, and Burnley Grammar School. Next competition in May, 1909. Subjects: Mathematics, Chemistry, and Mechanics. A *Theodore Modern Languages Exhibition*, £15, awarded annually. Two *Dauntesey Medical Scholarships*, value £35, tenable for one year, for candidates who have not attended lectures in a medical school. Subjects: Zoology, Botany, and Chemistry. A Matriculation Entrance Scholarship, value £30 per annum, tenable for three years. Two *Entrance Scholarships in Medicine*, value £100, awarded annually for proficiency in Arts and Science respectively. Two *Robert Platt Physiological Scholarships* of £50 tenable for two years. A *Robert Platt Zoological and Botanical Scholarship*, £50. A *Leech Fellowship* of £100 for proficiency shown at the Second or Final M.B. Examination. A *Graduate Scholarship in Medicine*: One of £25 to £50, tenable for one year, awarded annually for proficiency shown at Second M.B. Examination. The *Tom Jones Memorial Surgical Scholarship*: Value £100, tenable for one year, awarded usually triennially; next award in September, 1910. The *Turner Medical Scholarship*: Value £20, awarded annually for proficiency in certain subjects of the Final M.B., Ch.B. Examination. The *John Henry Agnew Scholarship* of £30, awarded annually for proficiency in the Diseases of Children. The *Bradley Memorial Scholarship* in Clinical Surgery of £20.

This does not complete the whole list of monetary and other awards, which at this school are particularly numerous, but it is sufficient to give some idea of their character.

Fees.—The composition fee for the University courses in Medicine is £70, payable in three instalments, but this sum does not include the work required for the first M.B. examination. This is £35, payable in one sum. A prospectus and further information about the school and scholarships may be obtained on application to the Registrar.

Other Hospitals.

1. The *Royal Eye Hospital* contains 110 beds. Clinical instruction is given daily to students. Further particulars can be obtained from the Secretary, Mr. W. S. Prophet.

2. The *Manchester Northern Hospital for Women and Children*, situated in Cheetham Hill Road, near the centre of the town, contains 67 beds. Out-patients are seen daily at 8.30, and the wards are visited at 9 a.m. Secretary, Mr. Hubert Teague, Barton Arcade, Manchester.

3. The well-known *Hospital for Children* at Pendlebury, near Manchester, contains 163 beds, and 24 beds at the Convalescent Home, St. Anne's-on-the-Sea. The visiting staff see out-patients daily at the Out-patient Department, Gartside Street, Manchester, at 9.30 a.m., and visit the hospital daily. The practice of the hospital and out-patient department is free to students accompanying the visiting medical and surgical staff.—Secretary, H. J. Eason, F.C.I.S.

4. *St. Mary's Hospitals for Diseases of Women and Children, Whitworth Street West Branch.*—This has 100 beds, including 20 for the reception of lying-in cases, especially those attended with difficulty or danger. The new hospital in Oxford Road is rapidly approaching completion. When this is opened a large number of additional beds will be available for maternity cases. In the out-patient departments students are taught the various methods of examination and diagnosis, and the use of gynaecological apparatus, while in the wards they have an opportunity of becoming familiar with the diagnosis and treatment of graver cases, and of witnessing more important gynaecological and obstetrical operations. The number of maternity cases attended annually is over 4,000. The hospital possesses a library, presented by the late Dr. Radford, consisting of nearly 5,000 volumes, chiefly on subjects connected with obstetrics and gynaecology. There is also a museum, containing a large number of pathological specimens, and a valuable collection of deformed pelves, casts, obstetric instruments, and anatomical models. The gynaecological practice of the hospital is free to fourth and fifth years' students. The fees for the midwifery practice are as follows: During terms, per month—first month, £8 8s.; second month, £7 7s.; third month, £6 6s.; per term of eleven or twelve weeks, £18 18s. During holidays—minimum period of three weeks, £8 8s.; extra week, £2 12s. 6d. Only eight students are received at one time, thus allowing each one ample opportunity of attending the number of cases of labour required by the examining bodies. Application must be made to the Secretary at the hospital.

LIVERPOOL.

The Medical School of this city is part of the University, and, owing to the enlightened liberality of several men of wealth, is particularly well provided with special laboratories, as well as with ordinary spacious and well-equipped class-rooms and laboratories for the instruction of students proceeding to medical degrees and diplomas in special and ordinary subjects. All the laboratories and other rooms are situated close to one another and intercommunicate, together forming four large blocks of buildings. The anatomical department is very complete, and includes a large and well-stocked museum and a well-lighted dissecting room on the upper floor measuring 70 ft. by 40 ft. The departments of Physiology are accommodated in the block provided by the generosity of the late Rev. Thompson Yates. Comparatively recent additions are the Johnston laboratories for Experimental Medicine, Biochemistry, and Comparative Pathology, and the building for Surgery, Toxicology, and Dental Subjects. The work of the students at the later periods of their study is arranged upon equally satisfactory lines, the hospitals, of which an account is given below, having amalgamated to form the Clinical School of the University.

Appointments.—The nature of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming its clinical department.

Scholarships.—The awards made each year to successful students total over £1,000. They include the following: Two whole Fellowships of £100, one in Pathology and Surgery, the other in Physiology; a *Robert Gee Fellowship* in Anatomy, value £100; an *Alexander Fellowship* for Research in Pathology; a *Johnston Colonial Fellowship* in Pathology and Bacteriology; a *John W. Garrett International Fellowship* in Physiology and Pathology, value £100 and renewable; an *Ethel Boyce Fellowship* in Gynaecological Pathology, a *Stopford Taylor Fellowship* in Dermatological Pathology, and a *Thelwall Thomas Fellowship* in Surgical Pathology, all of the value of £100 and all renewable; two *Lyon Jones Scholarships*, of the value of £21 each for two years, one for junior and the other for senior students; the *Derby Exhibition* of £15 in Clinical Medicine and Surgery alternately; the *Torr Gold Medal* in Anatomy; the *George Holt Medal* in Physiology; the *Kanthack Medal* in Pathology; the *Robert Gee Prize;* two *Robert Gee Entrance Scholarships*, value £25 per annum for two years.

Fees.—Information as to the fees paid for the courses of instruction provided by the school, should be sought from the Dean of the Medical Faculty.

Clinical Hospitals.

1. The *Royal Infirmary* contains altogether some 295 beds, and is quite close to the University; it covers in its work all branches of clinical study. The wards are arranged in separate clinics, with a physician or surgeon, and a resident medical or surgical officer attached in each; each clinic having a "clinical room," in which to interview patients, and conduct microscopical and chemical tests. The assistant physicians and assistant surgeons conduct the medical and surgical out-patient department, and take charge of the wards in the absence of the physicians and surgeons. There are four theatres for surgical operations, and one for clinical lectures, and there is a theatre and a laboratory for Morbid Anatomy. There are two electrical rooms, with three Roentgen Ray installations and a high-frequency apparatus, and there are provisions for the employment of various kinds of baths. There is also a room for the Medical and Surgical Registrars, and for the records kept by them. There is a special laboratory for the investigation of morbid products, and another for the investigation of cancer. Separate cloak-room accommodation is provided for women students. The eight resident medical and surgical officers have each their own bedroom and private sitting-room, in addition to common rooms for meals and recreation. Two senior students are appointed resident casualty officers. They attend to accident cases brought to the hospital, accompany the ambulance, and help in the clinical work. A large waiting-room is set apart for the use of students, for whom there is, besides, ample cloak-room and lavatory accommodation.

2. *The David Lewis Northern Hospital*, rebuilt five years ago, and possessing 246 beds, is situated in Great Howard Street. There are three Surgical and two Medical Clinics and a large Out-patient Department with suitable rooms for examination and an operation theatre. A fully-equipped clinical laboratory provides means for clinical investigation and research, in addition to those afforded in the clinical rooms of the various wards. Among the other departments is one for Electro-Therapeutics and X-Ray Examination, and one for Orthopaedic exercise and gymnastics. Excellent accommodation is available for students, including a common room and cloak-room. In the common room a bookcase contains works of reference on Medicine and Surgery, for the use of the students.

The five Resident Medical Officers receive salaries at the rate of £60 per annum; they each possess a separate bedroom and sitting room, in addition to a common room for meals.

3. The *Royal Southern Hospital* contains over 200 beds, and is fully equipped for clinical instruction. There are three medical and three surgical clinics. Various changes have been carried out lately, in particular the opening of a new clinical laboratory for chemical and bacteriological work close to the site of the pathological laboratory. The electrical department has been reorganized, and a new and complete installation for *x*-ray work and light treatment has been made. A Resident Pathologist has recently been appointed to conduct investigation in connexion with the hospital work and to instruct the students. The hospital is easily accessible from all parts of the city.

4. The *Stanley Hospital* contains 106 beds, divided into two medical and two surgical clinics. There are two modern operating theatres. A clinical room and gynaecological ward are in course of construction. The Resident House-Surgeons are appointed periodically at salaries ranging from £60 to £90 per annum. There is a large out-patient clinic in each of the special departments for Ophthalmology and Laryngology. The large Medical and Surgical Out-patients' Departments provide a considerable amount of clinical material. There is a complete *x* ray installation.

5. *The Infirmary for Children* has one wing of its new hospital, consisting of 60 beds, now open and occupied. The other wing is nearly completed, and will bring the number of beds up to 100. The new out-patient department is complete and in daily use. Students are admitted to the practice of the hospital for periods of three months; such practice including attendance both in the wards and the out-patient clinics. Students are invited to become out-patient clerks for a period of three months during the fifth year, and to attend two afternoons each week at 2.30.

6. *The Hospital for Women* contains 55 beds. Students who take their course of Clinical Gynaecology in the hospital receive instruction in the wards and out-patient department. The Honorary Surgeons attend daily at 1 p.m.

7. *The Eye and Ear Infirmary* contains 65 beds. Evening courses of Lectures on Refraction and Ophthalmoscopy and Diseases of the Ear are delivered during the winter months by the honorary medical staff. Students who take out their course of Clinical Ophthalmology receive clinical instruction in the out-patient department. The Surgeons attend daily at 1 30.

8. *St. Paul's Eye and Ear Hospital* contains 46 beds. The Surgeons attend daily at 1.30. Complete arrangements are made for instruction in clinical ophthalmology to students for periods of three months.

9. *St. George's Hospital for Diseases of the Skin* has a large dermatological out-patient clinic. Demonstrations ara given by the Honorary Medical Staff on Mondays, Tuesdays, and Wednesdays, at 12.30.

LEEDS.

The Medical School in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary where students sufficiently advanced receive their clinical instruction. The buildings were opened in 1894, and contain excellent dissecting rooms, several well-arranged laboratories for Physiology, Pathology, and Bacteriology, three lecture theatres, and several smaller class-rooms. In addition there are a library and reading-room and two museums, one being devoted to Pathology and the other to Anatomy. The comfort of the students is secured by a common-room and a refectory in which they can take meals. It is estimated by the authorities that the approximate cost of medical education to a student in this University is £188, plus, of course, the expenses of living during the five years covered by the curriculum. The General Infirmary has over 482 beds in constant use, and includes gynaecological and ophthalmic wards and a large new out-patient department. The Ida Semi-convalescent Hospital and Robert Arthington Hospital, Cookridge, attached to the Infirmary, has over 40 beds. The West Riding Lunatic Asylum at Wakefield is also open for the study of Mental Diseases. Students can, in addition, attend the practice of the Leeds Public Dispensary (where the practical instruction in dental subjects is also given), the City Fever Hospitals (100 beds), the Hospital for Women and Children, and the Leeds Maternity Home.

Appointments.—Senior Anaesthetist, £50. Five Anaesthetists, £25 each. Medical Registrar and Surgical Registrar, at £25 each per annum. The Resident Medical and Surgical Officers, each at £150 per annum. The Casualty Officer, at £125 per annum. The Resident Ophthalmic Officer at £100 per annum. A Resident Obstetric Officer at £50 is attached to the Gynaecological Ward and an extensive external maternity department. A Resident Medical Officer is appointed every six months for the Ida Semi-convalescent Hospital (honorarium, £30). Six House-Physicians, each holding office for six months, and seven House-Surgeons holding office for six months. Physicians' Clerks and Surgeons' Dressers are appointed for six months; Ophthalmic and Aural Dressers, Gynaecological Ward Clerks, Gynaecological Out-patient Clerks, Maternity Clerks, Assistant Physicians' Clerks, Laryngological Clerks, and Assistant Surgeons' Dressers, Assistant Ophthalmic Surgeons' Dressers, Dressers in the Casualty Room, *Post-mortem* Clerks, and Laboratory Assistants for three months. A Clinical Pathologist (£200 per annum) has charge of the new pathological laboratory. Appointments are also open to students at the Leeds Public Dispensary (three Resident Medical Officers, with salaries commencing at £30), at the Hospital for Women (House-Surgeon, honorarium £120, and Anaesthetist £25), and at the West Riding Asylums.

Scholarships.—The University awards annually a Scholarship on the results of the July Matriculation Examination in the form of a free admission to the lectures and classes covered by the composition fee. The Infirmary also awards a Scholarship on the results of the First Examination, of the value of 40 guineas, in the form of a free admission to the clinical teaching of the Infirmary.

Fees.—The composition fee for the University courses is £73 2s. 6d. (for students who have passed the Second

Examination £48 16s. 6d.), and for the clinical work at the Infirmary £42.

Further information can be obtained from the Dean, School of Medicine, Leeds, or from the Secretary of the Faculty, General Infirmary, Leeds.

Sheffield.

In this city the medical school is one of the departments of the University, being conducted and controlled by its Medical Faculty, and occupying the entire north wing of the quadrangle of the University buildings overlooking Weston Park. The Laboratories and Lecture Rooms connected with the subjects of the First and Second Examinations, namely, Chemistry, Physics, Biology, Anatomy, and Physiology, are, both as regards structural arrangements and scientific equipment, on the most modern and complete lines. No expense has been spared in the matter of apparatus for teaching or research work, and the facilities for practical study in these subjects are as excellent as all the other arrangements of the school.

For students of Pathology and Bacteriology there are laboratories replete with everything necessary for the most advanced work and a large Pathological Museum which is open daily. In addition there is a museum devoted to Materia Medica specimens and a large library and reading room. There are a number of Recreation, Athletic and other Societies, all under the management of an annually elected Students' Representative Council, and large and comfortable Common rooms both for ordinary and women students.

In the University buildings there is a refectory open to all students of the school, in which luncheon, dinner, and other meals may be obtained at extremely moderate prices. A university journal, *Floreamus*, edited by a joint committee of the staff and students, is published each term. The ordinary clinical work of the school is done at the Royal Infirmary and Royal Hospital, which have amalgamated for the purpose of clinical instruction. Between them they provide 420 beds for the treatment of medical, surgical, and special cases, each having both an in-patient and out-patient department for diseases of the eye.

In addition, the Royal Infirmary has special departments for the treatment of Diseases of the Skin and Ear, with beds assigned to them, whilst at the Royal Hospital there are special Out-patient Departments for Diseases of the Throat, Ear, Skin, Orthopaedics, and Mental Diseases. During the last year over 6,000 patients passed through the wards of the two institutions, while those attending as out-patients numbered over 45,000. The Medical and Surgical Staffs attend daily, and give clinical instruction in the wards and out-patient rooms. Clinical Lectures in Medicine and Surgery are given weekly. Instruction in the practical administration of Anaesthetics is given at either institution by the anaesthetists, and the *post-mortem* examinations at both institutions are in charge of the Professor of Pathology, and afford ample material for study of this subject. In addition, the students have the advantage of being able to attend the practice of the *Jessop Hospital for Diseases of Women*, an institution which takes in yearly some 500 gynaecological patients and about 250 cases of confinement, and has as well large out-patient clinics for both classes of patient, the extern maternity work numbering about 250 cases a year. Special courses on Fever are given at the City Fever Hospital, and on Mental Disease at the South Yorkshire Asylum (1,610 beds).

Appointments.—The following appointments are open to all students who have passed their examinations in Anatomy and Physiology: (1) Casualty Dresserships, (2) Surgical Dresserships, (3) Medical Clerkships, (4) Pathological Clerkships, (5) Ophthalmic Clerkships, (6) Clerk to the Skin Department, etc. Except in the case of Casualty Dressers, these appointments are made for three months, commencing on the first days of October, January, April, and July. The Casualty Dresserships last two months, beginning on the first of any month. All students are required to hold them before being eligible for any of the other appointments.

Scholarships.—*Medical Scholarship*, value £100, open to women only. *Entrance Medical Scholarship*, value £116, open to both sexes. Two *Staff Medical Scholarships*, value £50, open to both sexes. One *Town Trustees' Scholarship*, value £50, tenable for three years, for girls under the age of 19 years, having had a two years' residence in Sheffield immediately prior to becoming scholars or educated in a Sheffield school. Two *Town Trustees' Scholarships*, value £60, for boys or girls under 19 years of age, on conditions similar to the last-mentioned scholarship. *Town Trustees' Fellowship*, value £75, tenable for one year. *Mechanics' Institute Scholarship*, value £50, tenable for one year and renewable for a second year. The *Frederick Clifford Scholarship*, value £50, tenable for two years. *Kaye Scholarship*, for proficiency in Anatomy and Physiology, value £22 10s. Gold and other medals are also awarded for proficiency in various subjects.

Fees.—The composition fee of £80, payable in three instalments, covers attendance on all the courses of Lectures and practical classes, except Pharmacy, Vaccination, and instruction in Anaesthetics, required for a Degree Course in the University, or for the ordinary qualifications in Medicine and Surgery of the Examining Boards. It does not include clinical work or practical instruction in Mental Diseases, Diseases of Women, and Infectious Diseases. The fee for the full course of clinical work is £36 15s. in one sum. For a general prospectus and other information as regards the school, application should be made to the Dean of the Medical Faculty of the University.

Bristol.

The school in this city is carried on by the Faculty of Arts and Science of University College, Bristol. Its courses are arranged to meet the requirements of the University of London, and the needs of those seeking the diplomas of the Conjoint Board of England and of the Apothecaries' Society of London. The clinical work of the school is carried on in the Royal Infirmary and General Hospital conjointly, arrangements having been made by which women students can take advantage of this work, and therefore complete their whole curriculum at the school. The two institutions mentioned have between them 470 beds and very extensive out-patient departments, besides special clinics for diseases of women and children, and those of the eye, throat, and ear, in addition to arrangements for dental work, and large outdoor maternity departments. The students of the school also have the advantage of attending the practice of the Royal Hospital for Sick Children and Women, containing 104 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is therefore 614. Very exceptional facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each student has the opportunity of personally studying a large number of cases and of acquiring practical skill in diagnosis and treatment.

Appointments.—The posts opened to past and other students of the school are those of House-Physician, House-Surgeon, Junior House-Physician, and Junior House-Surgeon at the Royal Infirmary; Clinical Clerks and Dressers, also Ophthalmic, Obstetric, and Pathological Clerks being appointed. At the General Hospital House-Surgeon, Assistant House-Surgeon; Assistant House-Physician, and Casualty House-Surgeon, and Clinical Clerks, Dressers, and Obstetric, Ophthalmic, and Pathological Clerks are appointed. In each case the Dressers reside in the Hospital in rotation free of expense.

Scholarships.—The following are among the Scholarships and other awards open to students of the school: *Medical Entrance Scholarships* of £75 in Arts; two *Martin Memorial Pathological Scholarships* of £10 each; the *Tibbits Memorial Prize*, value 9 guineas, for proficiency in Practical Surgery; the Committee's Gold and Silver Medals for fifth-year Students for general proficiency; the *Augustin Prichard Prize*, value 7 guineas, for proficiency in Anatomy; the *Henry Clark Prize* value 11 guineas, for general proficiency; the *Crosby Leonard Prize*, value 7 guineas, for proficiency in Surgery; the *Suple Surgical Prize*, a Gold Medal and 7 guineas; the *Suple Medical Prize*, a Gold Medal and 7 guineas; the *Henry Marshall Prize*, value £12, for Dressers; the *H. M. Clarke Scholarship*, value £15, for proficiency in Surgery; the *Sanders Scholarship*, value £22 10s., for general proficiency.

Fees.—The composition fee for all the courses required for the medical curriculum, including hospital practice, is 133 guineas. A prospectus and other information can be obtained on application to the Dean of the Medical Faculty, University of Bristol.

Cardiff.

The school in this city is carried on by the University College of South Wales and Monmouthshire, and devotes itself principally to training students during the first three years of the medical curriculum, all classes being open to women students. The courses of instruction

given are recognized as qualifying for the examinations of practically all the licensing bodies in Great Britain, and after passing the tests corresponding to the first three years of the curriculum, the student can complete his course, for whatever degree he is aiming at, in London or elsewhere; besides this, there is an arrangement with the Managing Committee of the Infirmary by which students at the school can take advantage of the opportunities for acquiring experience afforded in the wards of this large, well-ordered hospital. Hence, many students, especially from Wales and Monmouthshire, find it convenient to avail themselves of the advantages of being able to pursue the earlier part of their medical curriculum near home. They can also obtain instruction in the administration of anaesthetics, and with a little additional work can qualify for the B.Sc. Degree of the University of Wales. There is also a Department of Public Health, in which all the work for Diplomas in State Medicine can be done.

Scholarships.—There are a considerable number of scholarships connected with the College, and open to students of the School of Medicine, information as to which can be obtained on application.

Fees.—The composition fee for the courses required as students proceeding to the degrees of the University of London is £57 10s.; that for students proceeding to a diploma of the licensing corporations being £41 10s. Further information may be obtained on application to the Dean of the Faculty of Medicine.

SCOTLAND.

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very great, whether the student be proceeding to a University degree or to a diploma. To the descriptions of its different medical centres is in some cases added an account of hospitals which either play an official part in the education given to students as yet unqualified or offer valuable opportunities for post-graduation work.

Aberdeen.

The school is conducted by the Faculty of Medicine. This comprises twelve chairs, from which instruction is given in all the main branches of medical science, namely, Botany, Zoology, Physics, Chemistry, Anatomy, Physiology, Materia Medica, Pathology, Forensic Medicine, Surgery, Medicine, and Midwifery. Special opportunities for practical instruction are afforded in the laboratories and museums attached to these departments. Clinical instruction is obtained in the Royal Infirmary (accommodating 200 patients), the Royal Lunatic Asylum (700 patients), the Sick Children's Hospital (75 patients), the City Fever Hospital (100 patients), the General Dispensary, etc. (10,000 out patients annually), and the Ophthalmic Institution (1,600 patients annually). Courses of practical instruction are given in Diseases of Children at the Sick Children's Hospital; in Fevers at the City Fever Hospital; in Insanity at the Royal Asylum; in Diseases of the Ear and Larynx at the Dispensary; in Diseases of the Eye at the Infirmary and Eye Institution; in Diseases of the Skin at the Royal Infirmary. The fee for each University course is, as a general rule, £4 4s.; and for a second attendance, £3 3s. Matriculation Fee, both sessions, £1 1s.; summer session alone, 10s. 6d.; Royal Infirmary, Perpetual Fee, £6; or, first year, £3 10s.; second year, £3. The winter session begins on October 15th, 1907. Bursaries, Scholarships, and Fellowships, to the number of fifty, and of the annual value of £1,180, may be held by students of medicine in this University. They range from £8 to £100 per annum, and are tenable in most cases for two or three years.

Edinburgh.

There are three Schools of Medicine: the School of the University, the School of Medicine of the Royal Colleges, Edinburgh, and a Medical College for Women.

The University School.—The following means are afforded for practical instruction: Royal Botanic Garden, Herbarium, and Museum; Zoological Laboratory and Museum of Science and Art; Physical Laboratory; Chemical Laboratories; Dissecting Room, Bone Room, and Anatomical Museum; Physiological Laboratory, Medical Jurisprudence Laboratories; John Usher Institute of Public Health; Materia Medica Museum and Laboratory; *Post-mortem* Department of the Royal Infirmary and University Pathological and Bacteriological Laboratory; Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery, Surgery, and Midwifery; and the practice of the hospitals, of which some account is given on the next page.

Fees.

The Sessional Fee for Zoology, Botany (Garden Fee, 5s.), Chemistry, Anatomy Lectures, Physiology, Pathology, Materia Medica, Medical Jurisprudence, Surgery, Medicine, Midwifery and Gynaecology, Clinical Surgery (Winter), Clinical Medicine (Winter), is £4 4s. each. Second Course, £3 3s. Third Free. A perpetual ticket taken at the beginning of the first year is £6 6s. Physics, Practical Chemistry, Advanced Practical Physiology, Practical Pathology, Clinical Surgery (Summer), Clinical Medicine (Summer), Practical Anatomy (Winter), Operative Surgery, Obstetric Operations, Practical Materia Medica, including Pharmacy, Pathological Bacteriology, Experimental Pharmacology, Vertebrate Morphology and Comparative Embryology are £3 3s. Practical Botany (besides Garden Fee of 5s.), Elementary Practical Zoology (besides charge of 10s. for Laboratory expenses), Practical Physiology (Experimental), Practical Physiology (Histological), Practical Botany (Advanced), Practical Zoology (Advanced), Practical Anatomy (Summer), Anthropology, Anatomy Demonstrations, Diseases of Children, Diseases of the Eye, Diseases of the Larynx, Ear, and Nose, Diseases of Tropical Climates, Clinical Instruction on Diseases of the Skin, Regional Anatomy, Physiological Chemistry, Invertebrate Zoology, Organic Chemistry, Mental Diseases, £2 2s. Applied Anatomy (Medical and Surgical), £1 1s. Vaccination, £1 1s. Matriculation Fee, £1 1s. for each year, or 10s. 6d. for a Summer Session. Library opens from 10 to 4; Saturdays, 10 to 1.

Scholarships and Bursaries.

The following are the awards open to competition in 1907-8: Fellowships: 1. *The Leckie-Mactier Fellowship* of about £74 per annum, tenable for three years, open to M.B.'s of not more than three years' standing. Examination in November, 1907. Names to be entered before October 15th. 2. *The Allan Fellowship in Clinical Medicine and Clinical Surgery*, of about £52, awarded annually, after competitive examination of the six candidates who obtained the highest marks in the subjects named in the Final Examination. Funds for Research: 1. *The William Dickson Travelling Fund*, of the annual value of £90, usually divided into grants of varying amounts. 2. *The Earl of Moray Fund for the Promotion of Original Research.*—The annual income is about £630, available for payment of the actual expenses of original research. 3. *Carnegie Post-graduate Scholarships* (£100), *Fellowships* (£150), *and Grants in Aid for Research in Medicine.*—Application forms from the Secretary to the Trust, 14, Hanover Street, Edinburgh. These to be returned by May 1st. 4. *Four M'Cann Medical Research Scholarships*, each of £100 for one year, but may be renewed for a second year, open to all graduates of not more than two years' standing, after examination in Therapeutics, Public Health, Physiology, and Physiological Chemistry. Nomination necessary. Forms and particulars can be obtained from M'Innes, M'Kenzie, and Lockhead, 7, Gilmour Street, Paisley. Scholarships: 1. There are *Three Vans Dunlop Scholarships*, of £100, tenable for three years, to the candidate who at the Medical Preliminary Examination obtains the highest number of marks, one at the end of the first winter, and one at the end of second winter. 2. *Sibbald Medical Scholarship* of £40, tenable for three years, for highest marks in Chemistry, Botany, Zoology, and Physics. 3. *Two Crichton Scholarships for Research*, each of the value of £100, with an allowance not exceeding £25 for expenses of research, tenable for one year, with power of reappointment, one in Anatomy, and one in Physiology. 4. *The Mount Scholarship in Practice of Physic*, of about £57 (partly in money and partly in the form of a bronze medallion) for the highest marks in the class of Medicine, and in that subject in the Final. 5. *The Murchison Memorial Scholarship*, annually. Proceeds of £1,000 for proficiency in Clinical Medicine. Examination in London in 1908. 6. *The Buchanan Scholarship*, £40 annually, for proficiency in Midwifery and Gynaecology. 7. *The James Scott Scholarship*, about £34 annually, for proficiency in Midwifery. 8. *The Ettles Scholarship in Medicine*, £32 annually, to the most distinguished graduate. 9. *Two Hope Prize Scholarships*, each £30, for one year, for excellence in Chemistry. 10. *The Houldsworth Scholarship*, £49 annually, tenable for one year, with power of re-election, for promotion of research in Pharmacology in that department in the University. 11. *The Grocers' Company of London* offers Scholarships of £300 a year, with an allowance to meet cost of apparatus and other expenses in connexion with Research Work, tenable for one year, but renewable for a second or third year. Apply to the Clerk to the Grocers' Company, Grocers' Hall, London, E.C. Bursaries: 1. *Town Council Bursaries.* A number are vacant. Apply City Clerk, Council Chambers, Edinburgh. 2 *The M'Cosh Graduate's Bursary*, of about £172, and *M'Cosh Medical Bursary*, of about £12 7s. 10d. Tenable for one year. Both for research. 3 *Two Sibbald Bursaries*, of £30 a year, tenable for three years. 4. *Two Thomson Bursaries*, £25 each, tenable for four years. 5. *Five Grierson Bursaries.* Three of £20 and two of £10. Preferential in the first place. 6. *Two Mackie Bursaries*, each of about £29, tenable for one year, awarded at end of first, and end of second *annus medicus*. 7. *Two John Aitken Carlyle Bursaries*, each £29, tenable for one year. 8. *Four Mackenzie Bursaries*, each of £8, awarded annually in Practical Anatomy. 9. *Renton Bursary*, £20, tenable for one year, with restrictions. 10. *Two Crichton Bursaries*, £50 each, tenable for four years, for Scottish

students. 11. *Wood Bursary*, £60 per annum, tenable for three years, for high proficiency in Latin, Greek, Mathematics, and English. Examination in Royal College of Physicians, October 23rd and 24th, 1907. PRIZES: 1. *The Medical Faculty Gold Medals*, given to M.D.'s whose theses are deemed worthy. 2. *The Neill Arnott Prize*, £39 annually. 3. *The Beaney Prize*, for highest awards in Anatomy, Surgery, and Clinical Surgery in the Professionals, £32 annually. 4. *The Cameron Prize*, £80, awarded annually for "any highly important and valuable addition to Practical Therapeutics" in the course of the five years preceding the award. 5. *Two Gunning Victoria Jubilee Prizes*, one in Practice in Physic, and one in Physiology and Public Health, each of the value of £50, awarded at graduation in July, 1908. 6. *The Conan Doyle Prize*, of about £32, awarded annually to the most distinguished graduate of the year from South Africa. 7. *The Wightman Prize in Clinical Medicine*, £15 annually. 8. *The Pattison Prize in Clinical Surgery*, £11 annually. 9. *The Robert Wilson Memorial Prize in Chemistry*. Silver medal and about £7 annually. 10. *The Dorothy Gilfillan Memorial Prize* of about £11 annually to the most distinguished woman student in the Final M.B., Ch.B. 11. *Gray Prize Essay Fund*. Subject, number, and amount of prizes will be posted at the University gate in March. 12. *The Lord Rector's Prize*, £26 5s.

Full particulars on all subjects will be found in the University *Calendar* for 1907-8, price 3s. net, or in the *Medical Programme*, price 2d., to be had from Mr. Thin, 55, South Bridge, Edinburgh.

THE SCHOOL OF MEDICINE.—The teaching is similar to that of the Scottish Universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the School.

This School of Medicine is composed of Lecturers licensed by the Royal Colleges of Physicians and Surgeons, and also recognized by the University through their *licentia docendi*, who, for the sake of convenience, lecture in separate buildings near at hand to the Royal Infirmary. The Lecturers form one body, are all subject to the same rules and regulations, and enjoy the same privileges. A new constitution and set of regulations have recently been drawn up, in virtue of which a medical corporation has been formed, recognized by both Royal Colleges; the government of the School is placed in the hands of a Governing Board consisting of five members elected by the Royal College of Physicians, of five members elected by the Royal College of Surgeons, and of five members elected by the Lecturers in the School. This Board, with the assistance of the Standing Committees of the School, supervises the whole management, and specially the maintenance of the efficiency and discipline of the School. The different buildings at present utilized for the purposes of lecturing are the following: (1) Surgeons' Hall, Nicolson Street; (2) Minto House, Chambers Street; (3) Nicholson Square; (4) Marshall Street; and other places.

THE COLLEGE FOR WOMEN.—Clinical instruction in the Royal Infirmary qualifies for graduation in the Universities, and precisely the same facilities for medical study are given as to male students in the School of Medicine, Edinburgh. Arrangements, fees, and regulations are similar. All the teachers are qualified lecturers of the School, and their courses admit to the various qualifying bodies for women. The lecturers are also recognized by the University of Edinburgh as giving courses admitting to the degrees of M.B., Ch.B. In the case of those proceeding to such degrees, the same fees as those in the University must be paid. The classes, with the exception of those in the Royal Infirmary, are open to all ladies, whether taking a full medical curriculum or not. Prospectus and all information from the Secretary, 20, Chambers Street (Minto House).

Clinical Hospitals.

1. *Edinburgh Royal Infirmary.*—There are over 900 beds and 100 at the Convalescent House at Corstorphine. For last year the in-patients numbered 11,216, and the out-patients 37,235. Instruction is given in all the special departments of medicine and surgery, in gynaecology, eye, ear, throat, and nose affections, diseases of skin, dental work (extraction, stopping, and artificial cases), the administration of anaesthetics, electro-therapeutics, hydro-therapeutics, and *x* ray work, etc. Women are admitted and receive special and separate tuition on both the medical and surgical sides. Nine resident physicians and ten resident surgeons (three of whom are entirely set apart for the out-patient department) are appointed every six months. They live in the hospital free of charge, save for laundry. They must be registered. Thirty non-resident clinical assistants are also appointed for six months in the various departments. The Physicians and Surgeons appoint their own clerks and dressers, and assistants in the Pathological Department are appointed by the Pathologist. Fees: Six months, £4 4s.; one year, £6 6s.; perpetual ticket, £12 if paid in one sum, or £12 12s. if by separate payments.

2. *Royal Victoria Hospital for Consumptives.*—Excellent opportunity is afforded for the clinical study of Diseases of the Chest. Special clinics by the staff are arranged from time to time, both in the hospital itself, which contains over 50 beds, and in the extensive outdoor department, which has its head quarters at the Royal Victoria Dispensary for Consumption, 26, Lauriston Place, close to the University. The number in attendance at these clinics is limited. The fee is £2 2s. for a few weeks' course. Application for places has to be made some time in advance. Two medical appointments in connexion with the hospital are vacant every six months: (1) Resident Physician; (2) Non-resident Clinical Assistant for the outdoor department. The vacancies occur usually in April and October.

3. *Royal Edinburgh Hospital for Sick Children.*—The hospital stands in Sciennes Road, about seven minutes' walk from the Medical School and Royal Infirmary, contains over 120 available beds, and is fitted with modern improvements. There are some 1 950 in-patients and 27,000 out-patient attendances yearly. No cases of infectious disease are admitted. The out-patient department (medical and surgical) is conducted in a building adjoining the hospital, and is well equipped. Systematic clinical courses of instruction, at a fee of £2 2s., which qualify for the University and other examinations, are given at various times throughout the year by the ordinary physicians and surgeons. Students may enter at any time. Four resident appointments are made half-yearly. The Registrar of the hospital, Dr. James Burnet, will supply particulars.

4. *Edinburgh Eye, Ear, and Throat Infirmary.*—Open daily at 6, Cambridge Street, at 1 p.m., for Eye Diseases; on Monday, Thursday, and Saturday at 12 for Ear Diseases; on Tuesday and Friday at 4 for Throat Diseases. There is a small infirmary of six beds in male and female wards. In-patients, 160; out-patients, 3,650.

5. *Edinburgh Royal Maternity and Simpson Memorial Hospital* has 40 beds, about 400 in-patients and 520 out-patients yearly. Daily clinics are given by the physicians and assistant physicians. Two House-Surgeons are appointed for each quarter. The Milne Murray Home in connexion with the hospital is a residence for students taking their midwifery practice. *Fees:* The hospital fee is £4 4s. per month, and the residency fee 25s. per week. There is meanwhile accommodation for twelve students. The intern and extern practice of the hospital is reserved for the students in residence.

6. *Edinburgh City Hospital for Infectious Diseases* at Colinton Mains contains 600 beds, a large number of which are available for teaching purposes. Qualifying courses of instruction are given by the Consulting Physician and the Medical Superintendent during the winter and summer sessions. The fee is £1 1s.; 2,600 patients.

7. *Royal Asylum, Morningside, Edinburgh.*—There is a clinical field of 500 beds, comprising all the wards except those for private patients. Students have the opportunity of personally coming in contact with and examining the cases, so as to learn the modes of dealing with patients suffering from mental disease; they are exercised in diagnosis and the drawing up of certificates, the aim being to enable them to recognize its early stages, to distinguish its varieties, to adopt suitable treatment, and to advise the relatives as to sending the patient to an asylum. The course extends through the last month of the winter session and most of the following summer session, and the fee is £2 2s.

Glasgow.

There are four medical schools in this city; the two schools of the University, one of which (Queen Margaret College) is for women students; St. Mungo's College (the school of the Royal Infirmary), and Anderson's College.

The University School for Men.—The whole course of study required for graduation at the University of Glasgow can be passed here. Besides work of a practical and clinical kind in the hospitals, practical courses are conducted in the laboratories of the following departments: Surgery, Pathology, Public Health. Pharmacy, Physiology, Anatomy, Chemistry, Zoology, Physics, and Botany, the Botanic Garden and the Hunterian Museum being also open to students. New buildings and equipments have recently been provided for Botany at a cost of £20,000, for Practical Anatomy at £14,000, for Operative Surgery at £9,900, as well as for Pathology, while very large additions, costing nearly £12,000, have been made to the Chemistry Laboratory, rendering it probably the most extensive in Scotland. New class-rooms and laboratories have been erected for the departments of Physiology, Materia Medica, and Medical Jurisprudence and Public Health, to cost with equipment upwards of £60,000. The University has of late been making efforts to extend and improve the accommodation, especially the laboratories, of the medical departments, to strengthen the teaching staff, and to encourage post-graduate and research work. Three very extensive General Hospitals in the City afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (416 beds), near the University, and attended by the bulk of the men students; the Royal Infirmary (588 beds); and the Victoria Infirmary (260 beds); while the Royal Asylum (460 beds), the Royal Hospital for Sick Children (74 beds), the Maternity Hospital (34 beds), the Glasgow Eye Infirmary (100 beds), the Fever Hospitals at Belvidere (680 beds), and Ruchill (540 beds), and other institutions, afford facilities for the practical study of special branches.

Bursaries.—Bursaries confined to the Medical Faculty amount in annual value to about £950, while bursaries in any Faculty, amounting to about the same annual sum, may be held by students of medicine, a number of both sets being open to women. Several valuable scholarships may be held by medical students who have graduated in Arts. Some of the buraries are described below.

Fees.—The matriculation fee for each year is £1 1s. In most cases the fee for each University Class is £4 4s., but in some cases it is £3 3s. For hospital attendance students pay an entrance fee of £10 10s. at the Western Infirmary, with an additional fee of £3 3s. for each winter and £2 2s. for each summer clinical course; while at the Royal Infirmary the fees for the first year are £10 10s. and the total fees £21. The University fee for the four professional examinations is £23 2s. (£6 6s. for each of the first and second examinations, and £5 5s. for each of the third and fourth). For the whole curriculum, the fees for matriculation, class attendance, hospital attendance, and professional examinations, amount to about £150.

For further information apply to the Secretary, the Matriculation Office, Glasgow University.

Queen Margaret College.—In this, the school of the University for Women, the course of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with class-rooms, reading room, library, etc., and are mainly taught in classes apart from male students, but have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards containing 148 beds are reserved for their exclusive use, and in its dispensaries; also in the Royal Hospital for Sick Children; the Glasgow Ear Hospital; the Hospital for Skin Diseases; the Royal Asylum, Gartnavel; the City of Glasgow Fever Hospitals, Belvidere and Ruchill; and the Glasgow Maternity Hospitals.

Scholarships.—The Arthur Scholarship, annual value £20, tenable for three years. Open to competition by medical students of first year at the First Professional Examination in October, 1907. This Scholarship is the gift of Mrs. Arthur, of Barshaw, and is restricted to women medical students.

Class and Examination Fees.—The class and hospital fees for the subjects enjoined by Ordinance as constituting a five years' course of study and clinical work amount to about £113 8s. To this must be added £5 5s. for matriculation fees (£1 1s. for each of five years), £23 2s. for examination fees, and £5 1s. for registration as a medical practitioner.

Board for Students.—A House of Residence for women students, Queen Margaret Hall, is situated near the College. The cost of board and residence is from 17s. to 25s. per week, according to accommodation. Full information can be obtained from Miss Galloway, Queen Margaret College, or from the Lady Warden, Queen Margaret Hall, Bute Gardens, Glasgow.

Bursaries.—The following Bursaries are open to undergraduates of both sexes: The Dr. Thomas Gibson Bursary, annual value £36, tenable for four years. This is open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland and will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. One Logan Bursary, annual value £17, tenable for four years; appointment by the Senate. Next vacancy, 1909. The Mackintosh Mental Science Bursary in Medicine, of the value of £31, is awarded annually to the student (of either sex) attending the class of Insanity, who stands first in an examination in that subject, to be held in June—the Bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The William Gardiner Bursary, annual value £14, tenable for two years, will be awarded after the autumn professional examination to the candidate who has passed in Physiology at the Second Professional Examination, and whose aggregate of marks in that subject and in Chemistry and Physics of the First Professional Examination is the highest. It is open this year. The following are tenable in any Faculty: Two Pratt Bursaries (each £20 and tenable for four years), both open in 1907, and two Taylor Bursaries (each £7, tenable for four years), one open in 1909 and the other in 1910. Three Armagh Bursaries (£48 each), one open in 1907 to students taking honours in Classics in the Final Examination for the degree of M.A., tenable for one year; and also one for honours in Mathematics and Natural Philosophy, tenable for three years. Five Andrew and Bethia Stewart Bursaries (£50 each, tenable for three years, in Medicine or Law); one is vacant in 1907; candidates must have taken the M A. degree of Glasgow. There is a special Examination. Nine Glasgow Highland Society's Bursaries, for students of Highland descent, of the annual value of £25, and tenable for five years; two are vacant in 1907. The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the University ordinary class fees of students of Scottish birth or extraction, under conditions given in the College prospectus. The Dobbie Smith Gold Medal is awarded annually for the best essay on a prescribed subject within the Science of Botany. The Brunton Memorial Prize of £10 is awarded annually to the most distinguished graduate in Medicine of the year. The University Commissioners issued an Ordinance to make regulations for the admission of women to certain other Bursaries, Scholarships, and Fellowships. Scholarships and Fellowships are offered by the Carnegie Trust in Science and Medicine for post-graduate study. There are also four McCunn Medical Research Scholarships (£100 for one year) for graduates who have taken the degrees of M.B., Ch.B. within the previous two years.

St Mungo's College.—This is the Medical School of the Royal Infirmary, which is the largest in Glasgow; it is situated in Cathedral Square, Castle Street, and has car communication with every part of the city. St. Mungo's College is in the Infirmary grounds.

The Infirmary has, including the Ophthalmic Department, over 620 beds, the average number occupied in 1905 being 600. When the reconstruction of the Infirmary, already for some time in progress, is completed, it will have about 700 beds. There are special beds and wards for Diseases of Women, of the Throat, Nose and Ear, Venereal Diseases, Burns, and Septic Cases.

Wards are set apart for the teaching of women students.

At the Outdoor Department the attendances in 1905 numbered over 62 000. In addition to the large Medical and Surgical Departments, there are Departments for

Special Diseases—namely, Diseases of Women, of the Throat and Nose, of the Ear, of the Eye, of the Skin, and of the Teeth.

Five House-Physicians and nine House-Surgeons, having a legal qualification in Medicine and Surgery, who board in the Hospital free of charge, are appointed every six months.

Clerks and Dressers are appointed by the Physicians and Surgeons. As a large number of cases of Acute Diseases and Accidents of a varied character are received, these appointments are very valuable and desirable.

A fully-equipped Electrical Pavilion was opened a few years ago, and year by year the latest and most approved apparatus for diagnosis and treatment has been added.

The fees for hospital attendance, including Clinical Lectures and Tutorial Instruction, attendance at the Out-door Department, at the Pathological Department, *Post-mortem* Examinations, and the use of the Museum, which has not long since been rearranged and catalogued, are as follows: For one year, £10 10s.; for six months, £6 6s.; for three months, £4 4s.

Students who have paid fees to the amount of £21 to the Glasgow Royal Infirmary are permitted to attend, in any subsequent year or years, one Winter and one Summer Course of Instruction in the Infirmary without further payment; and Students who have paid to any other Hospital in the United Kingdom fees, being not less than £21, in virtue of which they are entitled to attend without further payment, shall be admitted as Students of the Royal Infirmary on payment of £3 3s. for six months, or £1 11s. 6d. for three months.

ANDERSON'S COLLEGE.—Classes are conducted in all the subjects of the five years' curriculum. Hospital Practice and Clinical Lectures in Western or Royal Infirmary; Pathology in Western or Royal Infirmary; Vaccination and Dispensary Practice in Western or Royal Infirmary Dispensary. These classes qualify for all the Licensing Boards in the United Kingdom. They are also recognized by the Universities of London, Durham, Ireland, Glasgow, and Edinburgh (the latter two under certain conditions which are stated in the School *Calendar*). The courses (Lectures and Laboratory) in Public Health are also recognized by the Scottish Licensing Board, the Irish Colleges, and the University of Cambridge.

The new buildings are situated in Dumbarton Road, immediately to the west of the entrance to the Western Infirmary, within two minutes' walk of that institution, and four minutes' walk of the University.

The Carnegie Trust pays the fees of students at Anderson's College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

Class Fees.—For each Course of Lectures (Anatomy, Ophthalmic Medicine, and Surgery, Aural Surgery, Diseases of Throat and Nose, and Mental Diseases excepted), first session, £2 2s.; second session (in Anderson's College), £1 1s.; afterwards free. For Practical Classes, in Chemistry, Botany, Zoology, Physiology, Pharmacy, first session, £2 2s.; second session, £2 2s. Reduced joint fees in Zoology and in Botany, for Lectures and Practical Class when taken in same summer session, £3 3s.; for either course separately, £2 2s. Anatomy Class Fees.—Winter: First session (including Practical Anatomy), £4 4s.; second session (including Practical Anatomy), £4 4s.; third session, £2 2s.; Summer: Lectures and Practical Anatomy, £2 12s. 6d.; Lectures alone, £1 11s. 6d.; Practical Anatomy alone, £1 11s. 6d.; Osteology and Practical Anatomy, £2 12s. 6d.; Osteology alone, £1 11s. 6d. Operative Surgery, £2 12s. 6d.; second course, £2 2s.; joint fee for classes of Systematic and Operative Surgery, £3 13s. 6d. Public Health Laboratory, £11 11s., or with Lectures, £12 12s. Ophthalmic Medicine and Surgery (including Hospital Practice).—Aural Surgery, Diseases of Throat and Nose, and Mental Diseases, £1 1s. Matriculation Fee.—For the year, 10s.; for one class alone in winter session, 5s., and for the summer session alone, 5s. Western Infirmary.—Fees: For Hospital Attendance, £10 10s.; for Clinical Instruction, winter session, £3 3s.; summer session, £2 2s. Students who have completed their Clinical course elsewhere are permitted to enter for a six months' course of the Hospital only on payment of a fee of £2 2s. Pathology, £4 4s. Practical Pathology, £3 3s. Pathology Demonstrations only, £1 1s. Vaccination fee, £1 1s. Royal Infirmary.—Fees: Hospital Practice and Clinical Instruction, first year, £10 10s.; second year, £10 10s.; afterwards free. Six months, £6 6s.; three months, £4 4s. Pathology, both courses, £4 4s. Vaccination fee, £1 1s. Attendance at the dispensaries of the Western and Royal Infirmaries is included in the hospital fee. Eye Infirmary.—Fee: Hospital Practice and Clinical Instruction, including Lectures at the College, six months, £1 1s. The session opens on Thursday, October 17th, 1907.

A *Calendar* containing full particulars of the School may be obtained from the Secretary to the Medical Faculty, Anderson's College, Dumbarton Road, Partick, Glasgow.

Clinical Hospitals.

1. *The Royal Infirmary.*—Some notes respecting this institution have been given in connexion with its medical school.

2. *Glasgow Western Infirmary.*—This hospital adjoins the University of Glasgow. Number of beds, 416. The Clinical Courses are given by the Physicians and Surgeons, each of whom conducts a separate class, and students may attend whichever they select at the beginning of the session. Special instruction is given to junior students by tutors or assistants, and Clinical Clerks and Dressers are selected from the members of the class. Special wards are set apart for Diseases of Women and for Diseases of the Skin. In the Out-Patient Departments there are special clinics for Diseases of Women and for diseases of the Throat, Ear, and Teeth. All the courses of clinical instruction are recognized at the University of Glasgow and other Boards in the kingdom. Nine Resident Assistants are appointed annually without fee from those who have completed their course. *Fees.*—(1) Every Student must pay a fee of £10 10s. for hospital attendance, and this is kept quite apart from the fees for clinical instruction. (2) Every Student pays £2 2s. for each summer, and £3 3s. for each winter session of clinical instruction, or such other fees as may be fixed from time to time by the managers in conjunction with the University Court. (3) Students who have completed their clinical couse elsewhere are permitted to enter for a six months' course of the hospital only, on payment of a fee of £2 2s. In-patients, 6,179; out-patients, 24,577.

3. *Glasgow Eye Infirmary.*—This infirmary is situated at 174, Berkeley Street, and 80, Charlotte Street, and has 100 beds. Dispensaries open daily at 1 p.m. Operations performed on Monday and Wednesday at 10 a.m. and 2 p.m., and Friday at 9 a.m. and 2 p.m. Fees for six months, 1 guinea. In-patients, 1,659; out-patients, 25,232.

4. *Royal Hospital for Sick Children.*—This hospital, containing over 100 beds (26 of which are at the country branch at Drumchapel) for the non-infectious diseases of children, is open for clinical instruction, as is the dispensary or out-patient department. Students, by paying the fee of £1 1s., are entitled to the practice of the hospital and dispensary for twelve months from the term of entry. In-patients, 1,200; out-patients, 44,462. Further particulars may be had by applying to the Resident Medical Officer, 45, Scott Street, Garnethill. The Dispensary is at 11, West Graham Street (within three minutes' walk of the hospital).

DUNDEE.

The medical education carried on in this city is provided at UNIVERSITY COLLEGE, some information as to which will be found under the head of University of St. Andrews (see page 575).

The new medical buildings, containing laboratories and work-rooms for Anatomy, Physiology, Materia Medica, Pathology, Ophthalmology, Public Health, Medicine, Surgery, and Gynaecology are now open. Its clinical work is facilitated by the institutions below described.

Fees.—The fee in the case of most of the classes is 4 guineas for systematic and 3 guineas for practical classes. The hospital ticket is 3 guineas a year or 2 guineas a session. The total fees for the five years' curriculum amount to about 100 guineas.

Dundee Royal Infirmary.—The Infirmary contains 300 beds, with a special ward for the treatment of diseases of

children. Four Resident Qualified Assistants are appointed annually. Clinical Clerks and Dressers are attached to the physicians and surgeons, and students are appointed to assist in the *post-mortem* room. Out-patients are seen daily at 9 a.m. There is an Intern and Extern Maternity Department connected with the Infirmary. The instruction given at the Infirmary is recognized for purposes of graduation by all the Scottish Universities, the University of London, the University of Cambridge, the Royal University of Ireland, and by the Royal Colleges of England and Scotland. Further information on application to the Medical Superintendent.

Dundee District Asylum.—The appointments include two qualified Resident Assistants and two Resident Clinical Clerks. Clinical instruction is given.

IRELAND.

There is a choice of six Schools for those who desire to prosecute their medical studies in Ireland, and for clinical instruction the choice is equally satisfactory and varied, though the hospitals themselves are comparatively small. In deciding at which of them to do the greater part of his later work, the student will best be guided by the advice of the teachers of the school he has first joined. It should also be noted that there is a school specially intended for post-graduation students who are candidates for admission to either the Royal Navy, the Army, or the Indian Medical Service. Some account of these Schools follows:

The School of Physic.

This school is in Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians in Ireland; the King's Professors of Institutes of Medicine, Practice of Medicine, Materia Medica, and Midwifery being appointed by the latter.

Clinical instruction is given at Sir Patrick Dun's Hospital, and some twelve other metropolitan hospitals, infirmaries, and asylums are recognized by the Board.

Catholic University Medical School.

This school, situated in Cecilia Street, Dublin, provides lectures and teaching covering the whole curriculum of the medical student, the total cost for school fees and hospital attendance being £160, which is payable by instalments as the courses are taken, each in turn. Those who think of joining the school should procure a very useful *Guide for Medical Students*, written by the Registrar, who will also provide a general prospectus of the school.

The Schools of Surgery.

These are schools carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons. They are formed of the College's own school, combined with two famous old medical schools—Carmichael and Ledwich; they are attached to the College by Charter. The buildings contain spacious dissecting-rooms, one set apart for lady students, and special Pathological, Bacteriological, Public Health, Chemical, and Pharmaceutical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the College. There is a refreshment room on the premises for the benefit of students.

Prizes.—Among the prizes annually awarded are: The Barker Anatomical Prize (£31 10s.); the Carmichael Scholarship (£15); the Mayne Scholarship (£8); the Gold Medal in Surgery, and the Stoney Memorial Gold Medal in Anatomy; Class Prizes of £2 and £1, accompanied by silver medals, will also be given in each subject.

The next session begins early in October, terminating in March, while summer lectures and classes commence on April 1st, and are carried on until the end of June.

Prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

Queen's College, Belfast.

This College provides courses of instruction to meet the requirements of the Royal University of Ireland and other Examining Bodies. The College contains laboratories in connexion with the departments of Biology, Chemistry, Physiology, Pathology, Anatomy, Physics and Materia Medica. In connexion, too, is a Students' Union which gives students the advantage of dining-rooms, reading-rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 300 beds. Other hospitals open to the students of the College are: The Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Union and Fever Hospital, and the District Lunatic Asylum.

Scholarships.—(1) Ten medical scholarships each year, value £20 each; (2) two Dunville studentships (one each alternate year), value £145 each; (3) one Andrews studentship each alternate year, value £145; (4) numerous sessional prizes. A Mackay Wilson travelling medical scholarship, value £100, will be awarded in 1909.

Fees.—The cost of the curriculum intended for students proceeding to the degrees of the Royal University of Ireland is £95. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital, but not the fees for the special hospitals. The course for the Conjoint Board costs about the same. Application for further information should be made to the Registrar, Queen's College, Belfast.

Queen's College, Cork.

The arrangements in the School of the Faculty of Medicine are made chiefly with reference to the requirements of the Royal University of Ireland, but students proceeding for the examinations of the Conjoint Boards of England, Scotland, or Ireland, the Society of Apothecaries of London, or the Apothecaries' Hall of Ireland, can arrange the courses of Lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the College courses are also accepted by the University of Cambridge.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students can also attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglington Lunatic Asylum. The session extends from October to April inclusive, but arrangements have been made for the delivery of some of the three months' courses of lectures during the months of April, May, and June. The Hospitals are open to students in May, June, and July also.

The College contains Laboratories in the Departments of Biology, Chemistry, Physiology, Pathology, and Materia Medica and Pharmacy, and there are a Botanic Garden and Plant Houses in the grounds.

Scholarships.—Eight Medical Scholarships, two in each of the first four years, of the value of £25 each, and in the fifth year the Blaney Scholarship of the value of £32, and a Senior Exhibition, value £30. Three Exhibitions, one in Practical Medicine, one in Practical Surgery, and one in Practical Midwifery, each of the value of £15.

Fees.—The fees for the lectures and hospital attendances required in the Royal University of Ireland course come to about £85.

Further information can be found in the College Regulations, or obtained on application to the Registrar, Queen's College, Cork.

Queen's College, Galway.

The Lectures of the Professors in the Medical School of Queen's College, Galway, and the Clinical Instruction in the Galway Hospitals, are recognized as qualifying for the Diplomas of the Royal Colleges of Physicians and Surgeons of Ireland, England, and Scotland, and for the Medical Degrees of the University of London and the Royal University of Ireland.

Clinical teaching is carried on in the Galway Hospital.

In addition to this, the Galway Fever Hospital is open to students of the Clinical Class. Here opportunities are afforded for studying the various forms of Fever and Zymotic Disease admitted during the College Session. The Medical Faculty has also made arrangements with the medical officers for the admission of students to the Galway Union Hospital. This Hospital affords an extensive field for the study of all classes of disease, acute and chronic. A special ward is set apart for the diseases of children, in which students have an opportunity of studying this important class of cases. Opportunities for outdoor practice and vaccination are afforded at Galway Dispensary, No. 1. Students whose names are on the

Clinical Roll of the Galway Hospital may attend any of the above-named intitutions without further charge.

For further information as to the arrangements for clinical teaching which are liable to alteration applications should be made to the Honorary Secretary of the Medical Staff of Galway Hospital.

POST-GRADUATE SCHOOL FOR SERVICE CANDIDATES.

This school, carried on in Dublin with the sanction and support of the Board of Trinity College, is designed to enable Irish medical students who desire to enter the Royal Navy, the Army, or Indian Medical Service to prepare themselves in Ireland. The large number of the class each session is a proof that this object has been attained. The classes, which are largely practical, include instruction in Clinical Medicine and Surgery, Pathology, Theoretical Medicine and Surgery, Midwifery, Operative Surgery (on the cadaver), Anatomy and Physiology. The practical classes meet in the various departments of the Medical School, Trinity College, where the lectures are also given. Clinical instruction in connexion with the course is given at one of the Dublin hospitals. The classes are held twice each year. Further particulars and a prospectus of the course may be obtained by application to Dr. C. A. K. Ball, Honorary Secretary, 22, Lower Fitzwilliam Street, Dublin.

OTHER EDUCATIONAL FACILITIES.

SOME account may also be given of the many hospitals in and around Dublin which, officially or unofficially, take a share in the educational work of this centre of medical study, and also afford opportunities to post-graduate students.

SIR PATRICK DUN'S HOSPITAL.

This hospital, situated in Grand Canal Street, is connected with the School of Physic of the University of Dublin, but its practice is open to students of medicine attending other schools, and its certificates are recognized by the Royal University in Ireland and the Royal Colleges of Surgeons of England, Scotland, and Ireland. Clinical instruction is given daily by the physicians and surgeons, and special classes for students commencing their studies are held during October, November, and December. They embrace the elements of Medicine and Surgery, including note-taking. The operating theatre is thoroughly in accord with the requirements of modern surgery. Clinical teaching on the Diseases of Women is given twice a week, and in the special wing devoted to fever cases regular clinical instruction is given throughout the winter and summer sessions. Pathological and Bacteriological Demonstrations are given on Fridays during the winter and summer sessions in the new Pathological Laboratory. A new department for the treatment of Throat, Nose, and Ear diseases affords instruction in these subjects, and in the use of the Laryngoscope and Otoscope. In the *x*-ray department opportunities are given the members of the Hospital Class of seeing the various applications of the *x* rays to the diagnosis and treatment of injury and disease. The out-patient departments are similarly useful. Special demonstrations are given upon Diseases of the Skin.

Appointments.—A Resident Surgeon, with salary, is appointed annually, and four Resident Pupils, and six Surgical Dressers, and six Clinical Clerks each half-year.

Prizes.—The Haughton Clinical Medals and Prizes in Medicine and Surgery are awarded annually, other candidates who show sufficient merit being given special certificates.

Fees.—The fees are: Winter and Summer Session, together, £12 12s. Winter Session only (six months), £8 8s. Summer Session only (three months), £5 5s. Other information can be obtained from the Honorary Secretary to the Medical Staff of the Hospital.

RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS.

These hospitals contain 312 beds, and have also special clinics for diseases of the eye, ear, throat and nose, and diseases of women.

The Richmond Lunatic Asylum, containing over 1,200 patients, is close by, and affords facility for the study of mental diseases.

Appointments.—A Resident Surgeon and a Resident Physician are appointed every year, receive a salary, and hold office for one year. Twelve Resident Clinical Clerks are appointed four times a year, and provided with furnished apartments, fuel, etc. These appointments are open not only to students of the hospitals, but also to qualified and unqualified students of other hospitals.

Further information can be obtained from the Honorary Secretary, or the Treasurer, Sir William Thomson, C.B., 54, St. Stephen's Green East, Dublin.

ADELAIDE MEDICAL AND SURGICAL HOSPITALS.

The hospitals contain 140 beds. A House-Surgeon and Physician, resident and salaried, is appointed yearly, and three resident pupils are selected half-yearly.

Further particulars may be obtained from Mr. F. T. Heuston, 15, St. Stephen's Green North, Dublin, or any of the members of the medical staff.

ROYAL CITY OF DUBLIN HOSPITAL.

This hospital, in addition to the general Medical and Surgical Wards, contains special wards for Ophthalmic and Aural cases, Diseases of Women, and Diseases of Children. There is also an isolated building for the reception of infectious cases. An entirely new operation theatre has been constructed in accordance with the most modern surgical requirements. Roentgen-ray and Lupus Lamp Departments have been installed.

Appointments.—Clinical Clerks to the Physicians and Dressers to the Surgeons are appointed from the most deserving of the class, and certificates awarded for the faithful performance of their duties. Medical and Surgical Resident Pupils are appointed, and special certificates awarded if merited. A Resident Medical Officer is appointed annually.

For further particulars application should be made to the Honorary Secretary of the Medical Board at the Hospital.

JERVIS STREET HOSPITAL.

This Hospital, from its close proximity to the docks, quays, and large factories of Dublin, receives a large number of urgent cases and accidents, and consequently the facilities for clinical instruction are very great. About 120 beds are available. There is a largely-attended General Dispensary, besides special Dispensaries for Gynaecology, Eye, Ear, and Throat, etc. Clinical instruction is given daily both in the wards and dispensaries. Systematic courses of Lectures are given, and illustrated by cases in every branch of Surgery and Medicine. The students attending this hospital can attend free lectures on Diseases of Infancy and Childhood, and on Orthopaedic Surgery and appliances, at the Children's Hospital, Temple Street, which contains 85 beds. This facility for acquiring a knowledge of children's diseases is not afforded to the students of any other clinical hospital in Dublin. Two Resident Surgeons and twelve Resident Pupils are appointed annually. Clinical Clerks and Dressers are also appointed periodically.

Scholarships.—Two scholarships of £12 12s. each, for Senior and Junior Students respectively, are open for competition at the beginning of the session to all students. Entries can be made up to and including November 13th, which is the last day for entering.

A Gold Medal in Clinical Medicine and Gold Medal in Clinical Surgery are open for competition to Senior Students, and a prize value £3 3s. to Junior Students of the Hospital at the end of the Session.

For other information application should be made to the Honorary Secretary to the Medical Board at the Hospital.

MATER MISERICORDIAE HOSPITAL.

This Hospital, established in 1861, now contains 345 beds. In addition, there is a Convalescent Home at Beaumont, Drumcondra. There are special departments for Gynaecology, Ophthalmic Surgery, Diseases of the Throat and Nose, Diseases of Skin, Medical Electricity, Dentistry, and Pathology. Two House-Physicians, six House-Surgeons, and sixteen Resident Pupils are elected annually.

A prospectus containing in detail the arrangements for clinical instruction, prizes, etc., may be obtained from the Secretary of the Medical Board at the Hospital.

MERCER'S HOSPITAL.

This is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of

Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork Street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution, and become eligible for the posts of Resident Pupils, etc. There is a large Out-Patient Department, and a special department for Diseases Peculiar to Women. There are also special wards for the treatment and study of children's diseases. During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

Appointments.—A House-Surgeon is appointed annually. Five Resident Pupils, each for six months, and Clinical Clerks and Dressers are appointed monthly from amongst the most deserving members of the class.

Fees.—Winter, six months, £8 8s.; summer, three months, £5 5s.; nine months, £12 12s.

Further particulars can be obtained from the Honorary Secretary of the Medical Board.

Dr. Steevens's Hospital.

This hospital, situated at Kingsbridge and containing over 200 beds, affords exceptional advantages for clinical instruction. Owing to its position amongst manufactories and railway works a large number of casualties are always under treatment, while there are to be found occupying its beds at all times numerous cases of acute and chronic medical and surgical disease. There is a ward entirely devoted to venereal diseases, and a detached building for fever cases, and a newly-built extensive general out-patient department, with separate clinics for diseases of the eye and ear, skin, throat, teeth, and diseases of women, daily opportunity being afforded to students to become thoroughly familiar with the modern appliances used in diagnosis and treatment of disease. A new and well-appointed receiving room for accidents has recently been added. There is also a fully-equipped *X* Ray Department and a fully-furnished Pathological Laboratory. General operations are performed on Tuesday, Thursday, and Saturday, and Gynaecological operations on Wednesday. The hospital accommodates four medical, six surgical, and two specialist (Gynaecology and Ophthalmology) resident pupils, who are provided with separate furnished rooms, with coal and gas. There is a comfortable common sitting-room for meals, which can be obtained at a reasonable rate.

Fees.—Hospital practice, nine months, 12 guineas; six months, 8 guineas; three months, 5 guineas; Residence: Each three months, 10 guineas, which includes fee for hospital practice and certificate.

A prospectus may be obtained from the Resident Surgeon, or the Honorary Secretary to the Medical Staff.

St. Vincent Hospital.

The hospital, containing 165 beds, has attached to it a crowded dispensary and three special dispensaries. The whole practice of the hospital is available for clinical instruction, which is carried on during the session in a most systematic manner, from 9 to 12 o'clock in the forenoon. Two successive classes, and a special class for junior students, visit the wards each morning under the guidance of the physician and surgeon on duty, by whom instruction at the bedside is given in various details of diagnosis and treatment, and every facility is thus given to students for learning the practical part of their profession. They attend the lectures delivered on special subjects and the operations performed in the theatre. *Post-mortem* examinations are made in the pathological theatre by the pathologist and frequent opportunities given for the examination of morbid specimens. A special day is devoted to lectures on pathology. There is a museum in connexion with this department. Instruction is also given daily in the dispensaries, from 10 to 12 o'clock, on a great variety of cases, the treatment of such diseases as are there met with forming a most important part of every practising physician's daily work. There is also an *x*-ray department in charge of a specialist. Eight resident medical officers and 16 resident pupils are appointed annually from amongst the most deserving members of the class. The fees for clinical attendance are the same as at the other Dublin hopitals. Special arrangements have been made with the Fever Hospital, Cork Street, and with other hospitals for providing senior students with clinical instruction in infective fevers, as required by the Licensing Bodies, without extra charge. Further particulars can be obtained on application to the Honorary Secretary of the Medical Board.

Meath Hospital and Co. Dublin Infirmary.

This Hospital was founded in 1753, and now contains 160 beds available for clinical teaching. A building containing 40 beds for the isolated treatment of fevers is attached to the hospital. The Certificates of this Hospital are recognized by all the universities and licensing bodies of the United Kingdom. Six Medical Clinical Clerks and twelve Surgical Resident Pupils and Dressers are appointed every six months, and a House-Surgeon and two Clinical Assistants are elected annually. The session opens on October 1st.

A prospectus giving the complete arrangements for the Medical and Surgical Classes for the coming session may be obtained from the Honorary Secretary of the Medical Board at the Hospital.

The Rotunda Hospital.

This institution consists of two distinct hospitals, and is the largest Maternity as well as Gynaecological Hospital in the British Empire.

Over 2,000 patients are admitted annually to the maternity wards, and a similar number of cases of confinement are attended at the patients' own homes, whilst over 14 000 patients are attended in the out-patient department.

A new Pathological Laboratory has become an important feature of the hospital.

The clinical instruction given includes daily lectures and practical demonstrations in Midwifery, Gynaecology, and Cystoscopy.

A diploma is granted to pupils on their passing an examination after a period of six months' attendance on the practice of the hospital.

Paid clinical clerks are selected (by examination) from amongst qualified men who have obtained the hospital diploma.

The new residential quarters have recently undergone complete renovation, and now afford comfortable accommodation. The grounds of the hospital contain asphalt and grass courts for lawn tennis and croquet.

Pupils can enter at any time for a period of one month or longer. The hospital offers exceptional opportunities for qualified practitioners of any nationality who desire to take out a course of post-graduate instruction.

Fees.—Intern pupils: Six months, £21; three months, £12 12s.; two months, £9 9s.; one month, £6 6s. Extern pupils: Six months, £10 10s.

Royal Victoria Eye and Ear Hospital, Adelaide Road, Dublin.

This hospital is an amalgamation of two institutions which formerly gave special instruction in ophthalmology separately—namely, St. Mark's Ophthalmic Hospital and the National Eye and Ear Infirmary. The combined institution, which was opened in February, 1904, contains 82 beds. Clinical instruction in diseases of the eye, including the use of the ophthalmoscope, is given daily, and students attend the operations, which are performed as occasion requires. Instruction in aural surgery is also given. Special classes for practical instruction in the use of the ophthalmoscope, etc., and for the demonstration of cases, are formed from time to time.

CLINICAL HOSPITALS IN ENGLAND.

There are a great many hospitals in the United Kingdom which, though not connected with any medical school, open their doors either to those who have yet to become qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience is very great, and these should not be overlooked by the student of either class mentioned. Their honorary staffs commonly make a point of giving what instruction opportunity offers; and at those which are situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, resident appointments in the way of resident medical officerships, house-physicianships, and house-surgeoncies. These are usually paid appointments, which may be held

for periods varying from six months to a year. Notices of the vacancies as they occur appear in our columns, and there is never any lack of candidates, since the holder is in a particularly favourable position for gaining either general or special experience. An account of some which are situated in London and the provinces here follows, reference to those in large medical centres other than London being made in the accounts given of the Medical Schools in Scotland, Ireland, and the provinces respectively.

LONDON.

GENERAL HOSPITALS.

Great Northern Central Hospital, Holloway Road, N.—This hospital is recognized by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. The hospital contains 162 beds, all of which are at present occupied. The large rectangular and circular wards, each of which contains 20 beds and 4 cots, the operation theatre, and an additional out-patient department, general and special, and the pathological departments, have all been erected since 1887. A second operation theatre and a new surgery block containing two observation wards, patients' waiting hall, examining rooms, and surgery proper, were opened in 1906. An electrical department and children's ward are now being arranged for. Medical practitioners are invited to attend the general and special practice of the hospital. Clinical Assistants (qualified), Clinical Clerks, and Pathological Clerks are appointed in the general and special departments, and may receive certificates at the end of their terms of office. There are five Resident Medical Officers, one Senior and two Junior House-Surgeons, Senior and Junior House-Physicians, also Pathologist, Registrar, Casualty Officer, and four Anaesthetists. Full particulars of and rules for these appointments can be obtained from the Honorary Secretary of the Medical Committee.

London Temperance Hospital.—The Hospital contains 100 beds. The medical and surgical practice is open to students and practitioners. Appointments (vacancies for which are advertised in the medical journals): Surgical and Medical Registrars, Resident Medical Officer, one Assistant Resident Medical Officer and Assistant House-Surgeon. For particulars as to hospital practice and classes apply at the hospital.

Seamen's Hospital Society.—Dreadnought Hospital, Greenwich, 250 beds. Branch Hospital, Royal Victoria and Albert Docks, 50 beds. Dispensary in the East India Dock Road, and at Gravesend. Reference to the opportunities which these institutions afford for general clinical study and for obtaining special instruction in the diseases of tropical climates will be found at pages 604 and 605 respectively.

West London Hospital.—This hospital possesses some 160 beds, and, besides having a large out-patient department, the work of which is subdivided among the different special branches of medicine and surgery, it treats annually between two and three thousand in-patients. The excellent opportunity it affords for clinical study will be found fully described at page 602 in the article on post-graduate work.

North-West London Hospital, Kentish Town Road.—This hospital, which was established in 1878, provides 50 beds. It is a general hospital. There are two spacious wards for men and women respectively. The children's wards contain 15 cots; a yearly average of 44,000 attendance of out-patients. The special departments include: (1) Diseases of women; (2) diseases of the eye; (3) diseases of the skin; (4) dental. There are two resident officers; an honorarium at the rate of £50 per annum attaches to each post. Operation day, Thursday at 2.30 o'clock. Further particulars from the Secretary at the hospital.

Tottenham Hospital.—Full information as to the attractions of this hospital as a place for clinical study, and as to the manner in which its valuable resources are utilized, will be found at page 603 in the article on post-graduate work. The district in which the hospital is situated has been growing rapidly of late years, and attendance in its various departments annually increases.

CHILDREN'S HOSPITALS.

The Hospital for Sick Children, Great Ormond Street, W.C. (Medical School recognized by the University of London for the study of Children's Diseases), contains 222 beds, divided into 87 medical, 97 surgical, and 38 for special and infectious cases, besides 38 beds at the Convalescent Branch, Highgate. The hospital having been recognized by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need, and is open to students who have completed four years of medical study, and also to qualified medical men. Appointments are made every three months to six Medical Clerkships and six Surgical Clerkships, which are open to students at the hospital. Lectures or Demonstrations, given one or twice every week during both winter and summer sessions, are open, free of charge, to medical practitioners. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, three months, 3 guineas; perpetual ticket, 5 guineas. Certificates of attendance granted. Prospectuses and further information will be forwarded on application to the Dean, at the hospital.

Paddington Green Children's Hospital.—Number of beds, 46; average number of beds daily occupied, 36; average number of in-patients, 742; average number of out-patients, 17,420. Daily attendance of the Medical and Surgical Staff. There are two Clinical Assistants. There is a Convalescent Home attached to the Hospital at Fair View, Slough, with accommodation for 16 children in the winter and 24 in the summer months.

East London Hospital for Children, Shadwell.—The hospital contains 120 cots. Two House-Surgeons and two House-Physicians (holding office for six months) are appointed annually. This hospital is recognized by the Conjoint Board for England as a place of instruction for students, at which six months of their fifth year under the new regulations may be spent in clinical work. The following opportunities for the study of the diseases of childhood are offered to gentlemen who have completed four years of medical study, and to those who are already qualified: The practice of the hospital (in the out-patients' department) is open to students every day (except Saturdays), at such hours as the physicians or surgeons for the day are attending. The in-patient practice is open to students holding clerkships or dresserships in the hospital, and to students not holding appointments during the attendance of the physicians and surgeons. A certain number of Clinical Clerks and Dressers are appointed every three months to each physician and surgeon. Gentlemen who wish to hold these appointments must have completed their fourth year of medical study. They are eligible for reappointment at the end of three months. Practitioners and students are admitted to the practice of the hospital in both the wards and out-patient department, and clerkships and dresserships can be obtained. Any additional information desired may be obtained on applying to Mr. W. M. Wilcox, the Secretary, at the hospital.

North-Eastern Hospital for Children, Hackney Road, Bethnal Green.—Established 1867. The hospital now contains 125 beds. Patients in 1906: In-patients, 1,712 (625 under 2 years of age); out-patients, 29,864; new cases, 76,247 attendances. There are special Dental, Eye, Skin, and Roentgen-Ray Departments. Particulars of facilities for attending Medical and Surgical practice can be obtained on application to the Secretary.

The Belgrave Hospital for Children.—The Hospital has accommodation for 40 children and a very extensive out-patient service. A very large number of infants under 12 months old are admitted. Medical and Surgical Out-patients are seen at 9 a.m. on Mondays, Tuesdays, Thursdays, and Fridays. Clinical Assistants to the Out-patient Staff are appointed from time to time.

LYING-IN HOSPITALS AND HOSPITALS FOR WOMEN.

Queen Charlotte's Lying-in Hospital and Midwifery Training School.—This hospital receives over 1,700 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing Obstetric complications and Operative Midwifery, on account of the very large number of primiparous cases—upwards of three-fourths of the total admissions. Clinical instruction is given. Certificates of attendance at this hospital are

recognized by all Universities, Colleges, and Licensing Bodies. Pupil Midwives and Monthly Nurses are received and specially trained. *Fees.*—Medical Pupils, £8 8s. for four weeks, exclusive of board and lodging; Pupil Midwives, £35 for five months; Trained Nurses also, £28 for four months. Pupil Nurses, £24 for sixteen weeks, inclusive of board and lodging. The new residence for Medical Pupils opposite, and in telephonic communication with, the hospital is now open. *Terms.*—Full board and residence. £1 15s. per week.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—The Samaritan Hospital treats diseases peculiar to women only. It has 51 beds. It receives qualified practitioners as Clinical Assistants in both in-patient and out-patient departments; fee £3 3s. per quarter.

Hospital for Women, Soho.—In connexion with the Out-patient Department there has been for some years a well-organized Clinical Department. To meet the want increasingly felt by medical men of a more accurate knowledge of the diseases peculiar to women and of more extended opportunities for examining gynaecological cases, gentlemen are appointed to act as Clinical Assistants to the Gynaecologists to out patients. The appointments are open to qualified medical men. The Hospital contains 60 beds. In the Out-patient Department there were over 4,000 new cases during the past year, the total number of out-patient attendances being 16,338. This large number affords exceptional opportunities for examining and studying most of the varieties of the diseases of women. Clinical Assistants are entitled to receive notice of all operations performed within the Hospital, and every facility is afforded them by the Gynaecologists in the Out-patient Department of obtaining experience in diagnosis and treatment and the practical use of instruments. Fee for one month, 3 guineas; for each subsequent month, 2½ guineas. A certificate is given at the end of a three-months' course. Any further information can be obtained by writing to the Dean at the Hospital.

Ophthalmic Hospitals.

Royal London Ophthalmic Hospital (Moorfields Eye Hospital), City Road, E.C.—The hospital was founded in 1804 in Charterhouse Square; in 1821 it was moved to a larger building in Blomfield Street, where the work was carried on until 1899; in 1899 the present building in City Road was opened. It contains 138 beds for in-patients, which were occupied during last year by 2,071 persons; twenty beds were closed for want of funds; in the same year the out-patients were 45,638, and the attendances 123,355. Operations are performed daily from 10 a.m. to 1 p.m., and four surgeons attend on each day. Students are admitted to the practice of the hospital. *Fees*, for six months, £3 3s.; perpetual, £5 5s. Courses of instruction in the following subjects are given at the hospital periodically: (1) The use of the Ophthalmoscope; (2) Errors of Refraction; (3) External Diseases of the Eye; (4) Surgical Anatomy of the Eye; (5) Pathology of the Eye; (6) Motor Anomalies; (7) Examination of the Eye; (8) Operative Surgery; (9) X-Ray work; (10) Clinical Lectures. A composition fee of £10 10s. will entitle students of the Hospital to a perpetual ticket and will admit them once to all the above Lectures and Demonstrations except the classes in Operative Surgery and X-Ray work. Students of the Hospital are eligible for the offices of House-Surgeon, Refraction Assistants, or Clinical and Junior Assistants. Junior Assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary.

Royal Westminster Ophthalmic Hospital, King William Street, West Strand.—The hospital has been recently modernized throughout; it contains 40 beds and an out-patient department. The practice is open to practitioners and students from 1 to 4 p.m. daily. Special instruction is given in the Diagnosis, Pathology, and Treatment of Eye Affections, including the Operations on the Eye, the Treatment of Errors of Refraction, and the Use of the Ophthalmoscope. *Fee:* Six months, £3 3s.; perpetual, £5 5s. For particulars apply to the Secretary at the hospital.

Royal Eye Hospital, Southwark.—This hospital contains 40 beds and 2 cots. The new patients in the out-patient department number over 25,000 yearly. Operations are performed and patients seen daily at 9 a.m. and 2 p.m. Qualified practitioners and students are admitted to the practice of the hospital. Courses of instruction in Ophthalmology are given at the Hospital during the Summer and Winter Sessions. Fee for each course, £2 2s; including three months' Hospital Practice, £3 3s. Qualified students of the hospital are eligible for the offices of Registrar and House-Surgeon, may also be appointed Clinical Assistants for six months, and are eligible for re-election. Further particulars may be obtained from Mr. Edwin Easton, Acting Secretary, at the hospital, Southwark, S.E.

Central London Ophthalmic Hospital, Gray's Inn Road, W.C.—This hospital has 26 beds, and possesses facilities for clinical teaching daily. Last year there were 355 In-patients and 12,910 Out-patients (entailing 31,230 attendances). Classes of Instruction in the various branches of Ophthalmology are held during the winter session commencing in October. The Out-patient work begins at 1 o'clock, and operations are performed daily between 1 and 4 o'clock.

Fever and Small-pox Hospitals.

Students are admitted to study at the Fever and Small-pox Hospitals of the Metropolitan Asylums Board after they have completed the third year of medical education, provided they have held the offices of clinical clerk and dresser, and have obtained the sanction of the authorities of the medical school to which they belong. The minimum duration of the course of study at the fever hospitals is two months, and the ordinary course of study at the small-pox hospitals consists of twelve demonstrations. At the fever hospitals the student may attend three days and must attend two days a week (a register of students and the number of attendances of each individual being duly kept at the asylums to which they are told off); at the small-pox hospitals the dates and times of demonstrations are notified to students who have entered for a course. They must abide by the rules laid down as to disinfection and other matters, and must satisfy the Board of Management that they are sufficiently protected against small-pox by vaccination or otherwise. A certificate signed by the medical superintendent of the hospital at which attendance is made, and countersigned by the Clerk to the Board, is granted to a student when he has satisfactorily completed the course of study. Qualified medical men are admitted under similar terms and conditions, except that the sanction of the authorities of the medical school is not required in their case.

Courses of instruction in the treatment of fevers are usually held three times a year, beginning in January, May, and October respectively; and information as to the classes is furnished to each of the recognized medical schools in the metropolis.

Courses in connexion with small-pox are held from time to time as circumstances permit.

Fees.—Fever hospitals, two months, £3 3s., and £1 1s. for every additional month; small-pox hospitals, £4 4s. for the course of 12 demonstrations, or (for qualified medical men only) £1 1s. per demonstration, or £2 2s. per course of three demonstrations.

Miscellaneous Special Hospitals.

Bethlem Royal Hospital.—Two Resident House-Physicians are appointed twice a year for six months from recently-qualified medical students. Students of general hospitals and qualified medical men are allowed to attend for clinical instruction for three months on payment of a fee. Post-graduate courses are given from time to time.

Hospital for Consumption and Diseases of the Chest, Brompton.—The hospital has been recognized by the Conjoint Board for England as a place where, under the present curriculum, six months of the fifth year may be spent in clinical work. There are 318 beds in the two buildings constituting the hospital, and a special throat department. Pupils are admitted to the in-patient and out-patient practice of the hospital. Courses of lectures and demonstrations will be given during the year. Clinical Assistants are appointed to the Assistant Physicians in the out-patient department, and Clinical Clerks are appointed to the Physicians in the wards. These appointments are tenable from three to six months. The

fee for the practice of the hospital is £1 1s. for each month, or £2 2s. for each period of three months, or a perpetual fee of £5 5s.

City of London Hospital for Diseases of the Chest, Victoria Park.—There are 176 beds. The practice of the hospital, both as regards in-patients and out-patients, is open to students and medical practitioners. Certificates of attendance in the medical practice of this hospital are recognized by the London University and London medical examining Boards. Information as to medical instruction can be obtained on application to the Secretary to the Medical Committee at the hospital.

National Hospital for the Paralysed and Epileptic, Incorporated by Royal Charter, Queen Square, Bloomsbury (University of London).—This Hospital, with the Finchley branch, contains 200 beds and cots. The out-patient practice and lectures are free to students and practitioners. Ladies are admitted to the lectures. Lectures and demonstrations are given on Tuesdays and Fridays, at 3.30, in three courses—spring, summer, and winter—and the physicians for out-patients attend every Monday, Tuesday, Wednesday, and Friday, at 2. Surgical operations are performed on Tuesdays and Fridays at 9. The hospital is a school of the University of London, and has been recognized by the Conjoint Board for England as one of the places where part of the fifth year of study may be spent. The Physicians for in-patients attend at 2.30 on Monday, Tuesday, Wednesday, and Friday. Clinical Clerks are appointed to them for three months. All communications regarding clinical clerkships, lectures, and hospital practice should be addressed to the Secretary at the hospital.

Hospital for Diseases of the Throat, Golden Square, London, W.—The hospital contains 40 beds for in-patients. There is an annual out-patient attendance of nearly 50,000. Operations are performed every morning (except on Mondays). Practitioners and medical students are admitted to the practice of the hospital at a fee of 5 guineas for three months, 7 guineas for six months, or 10 guineas for perpetual studentship. Each course may commence at any date. Special terms are granted to medical men in actual practice who can only attend the hospital once or twice weekly. Clinical Instruction in the Diagnosis and Treatment of Disease is given daily in the Out-patient Department from 2.30 to 5 p.m., on Tuesdays and Fridays from 6.30 to 9 p.m., and on Mondays at 9 30 a.m. Systematic courses of lectures, with Clinical and Pathological Demonstrations, are given in the Winter Session, and are free to students of the hospital. From amongst the students Junior Clinical Assistants are selected, whose duty it is to assist the member of the staff to whom they are appointed. Students are also eligible for the Senior Clinical Assistants (four), on whom considerable responsibility falls.

Central London Throat and Ear Hospital, Gray's Inn Road.—The hospital contains accommodation for 22 in-patients, and, in addition to new operating theatres, has a very extensive out-patient department (over 50,000 attendances yearly), which is open daily to all medical practitioners and students for the purpose of Clinical Demonstration and Instruction. Fee, for three months' attendance, 3 guineas; for six months, 5 guineas. Courses of practical demonstrations on the special diseases treated at this hospital are held during both the winter and summer months by members of the staff. The dates of these demonstrations are announced in the medical journals prior to their commencement. They are open to qualified practitioners and advanced students of medicine on payment of 2 guineas for each course of lectures, with attendance at the hospital clinic during the period of six weeks. Operations on in-patients and on out-patients are performed on Tuesdays, Wednesdays, Thursdays, and Fridays at 2 p.m. In the newly-equipped laboratory, considerable attention is given to scientific work, particularly with regard to the pathology and bacteriology of the diseases of the ear and upper respiratory passages. Full particulars will be supplied on application to the Dean at the hospital.

Metropolitan Ear, Nose, and Throat Hospital.—The hospital was founded in 1838, and is situated in Grafton Street, Tottenham Court Road. The out-patient department is open daily at 2.30 p.m. to practitioners and students for acquiring clinical instruction and technical knowledge. Operations are performed on in-patients on Tuesdays, Wednesdays, and Thursdays at 9 30 a.m. Fee for one month's attendance at the hospital £1 1s., and for three months £2 2s. During the forthcoming session demonstrations will be given by members of the staff on the pathology and treatment of diseases of the ear and respiratory passages. Short practical classes will also be held in clinical pathology and surgical anatomy. Weekly clinical lectures are given by the staff on the special diseases treated at the hospital; the date, time, and subject of these lectures are previously announced in the medical journals. The lectures are free to all medical practitioners and students.

Royal Ear Hospital, Dean Street, Soho, W.—Courses in Diseases of the Ear and Nose are given by members of the staff throughout the teaching year. The teaching is of a practical character, and the number of students is limited. Clinical Assistants are also appointed. The new building is now open, and eight clinics are held every week. The operation days are Tuesdays, Wednesdays, and Thursdays. The surgeons visit the wards daily. For full particulars address the Honorary Secretary of the Medical Board, 60, Harley Street, W.

St. Peter's Hospital for Stone and Urinary Diseases (Henrietta Street, Covent Garden).—Qualified medical men and students are admitted free to the practice of this hospital, which contains 32 beds and has a large out-patient attendance (40,867 for 1906). New cases, 3,921. Operations are performed and consultations held on Wednesdays and Fridays at 2. Clinical instruction is given regularly by members of the staff. In-patients admitted in 1906, 450.

The Hospital for Diseases of the Skin (52, Stamford Street, Blackfriars, S.E.)—This hospital was founded in 1841 as a special school for the study of diseases of the skin, and for improvements in their treatment. Its practice is free to practitioners and students. It is open daily for out-patients at 2 p.m. Last year, 7,590 new cases were seen, and 18,655 attendances made. Practical courses of cutaneous histopathology and on the diagnosis and treatment of diseases of the skin and syphilis are held at frequent intervals. Each course may commence at any time. There are fully-equipped pathological and light departments. Clinical assistants are appointed from time to time.

St. John's Hospital for Diseases of the Skin (Incorporated).—The Out-patient Practice (at 49, Leicester Square, W.C.) is open free to the medical profession every week-day from 2 to 4 p.m., on presentation of their cards to the Medical Officer in attendance. The *X*-ray Department is in operation every day except Saturday from 1.30 to 4. Chesterfield Lectures are given free, October to May, on Thursdays, at 6 o'clock. In connexion with these Lectures, a practical course is given in the Laboratory, comprising Microscopic Examination of Sections, Hair Examination, Staining, etc., during the summer. The Chesterfield Silver Medal is competed for annually in the month of June. The In-patient Department, with 45 beds, is at 262, Uxbridge Road, W. Further particulars may be obtained from the Secretary-Superintendent, 49, Leicester Square, W.C.

THE PROVINCES.

It is the practice at a great many of the larger county and other hospitals in the provinces to offer facilities for the instruction in their wards to medical students who are usually treated as the pupils of either the resident officers or of the honorary medical staff. In some cases they pay fees, in others they receive an honorarium for the service they render as dressers, and like capacities. A list of these and some allied institutions follows:

Bath.

Royal United Hospital.—The hospital contains 130 beds, and is recognized by the Royal Colleges of Physicians and Surgeons as a medical school. It contains a library and an excellent museum, in which are a large number of interesting specimens, both in Pathology and Comparative Anatomy. Fees for attendance: Twelve months, £10 10s.; six months, £5 5s. (Temporary pupils can also, by permission of the honorary staff, attend the practice of the hospital by the payment of £1 1s. for each month.) Instruction in Practical Pharmacy for three months, £3 3s. For further particulars apply to the Secretary, Mr. J. M. Sheppard, F.C.I.S.

Bradford.

Bradford Royal Infirmary.—The hospital contains 220 beds. Non-resident pupils are received, and have every opportunity of acquiring a practical knowledge of their profession under the superintendence of a Resident Surgical Officer, two House-Surgeons, and a House-Physician. One year's attendance is recognized by the Examining Boards. *Fee:* Perpetual, £10 10s.

Brighton.

Sussex County Hospital.—The hospital contains 192 beds (132 surgical, 60 medical), with separate ward for children and separate blocks for diseases of women and for cases requiring isolation; and the Out-patient Department is attended by 1,100 to 1,300 patients weekly. It is recognized by the College of Surgeons and by the Conjoint Board as a hospital where part of a course of Dispensing may be taken. Pupils are admitted to the clinical teaching at a fee to be agreed upon. Further information may be obtained from the House-Surgeon.

Canterbury.

Kent and Canterbury Hospital.—The hospital contains 104 beds. Over 700 in-patients and 1,200 out-patients attend every year. Lectures are delivered weekly during term time to the students of St. Augustine's Missionary College on Practical Medicine by Dr. Harold Wacher, and on Surgery by Mr. T. W. Reid.

Derby.

Derbyshire Royal Infirmary.—The Infirmary will accommodate 229 patients. Pupils are admitted to the practice of the Infirmary at £10 10s. a year.

Devonport.

Royal Albert Hospital.—The hospital contains 52 beds, and 10 additional for emergency cases only. A course of Practical Pharmacy is given by the Dispenser on payment of a fee of £5 5s.; pupils of the medical staff can attend this course on payment of £2 2s. The number of in-patients treated during the twelve months ended September 30th, 1906, was 771. In the Casualty Department first aid was given to 2,366 persons, to 1,060 of whom further treatment was afforded. The out-patients treated in the Ophthalmic Department numbered 924.

Exeter.

Royal Devon and Exeter Hospital.—The hospital contains 200 beds, including a Special Children's Ward. There are a Library, Museum, and *Post-mortem* Rooms. A new Operating Theatre was opened in 1906, and an Electrical Treatment Department in 1907. Attendance on the practice at this hospital qualifies for all the Examining Boards. Arrangements may be made by which students can attend Midwifery. For further particulars apply to the House-Surgeon or Secretary.

West of England Eye Infirmary.—This infirmary contains 64 beds. Arrangements can be made for students at the Exeter Hospital to attend the practice of the Eye Infirmary.

Gloucester.

General Infirmary and Gloucestershire Eye Institution.—The hospital contains 140 beds. Resident and non-resident pupils are admitted by the General Committee on the recommendation of a member of the Medical Board. Each pupil pays in advance £10 for the first half-year and £5 for every subsequent quarter, or portion of a quarter, of a year. Each resident pupil has board and lodging in the house, for which he pays in advance 26 guineas for the first half-year, and 13 guineas for every subsequent quarter, or portion of a quarter, of a year. Each pupil pays in advance to the House-Surgeon a fee of £5 5s. for instruction, and a further fee of £3 3s. for every subsequent year or portion of a year. One year spent at this hospital, after passing a preliminary examination, is recognized by the Royal College of Surgeons.

Leicester Infirmary.

In this infirmary there are 200 beds, of which some 191 are in constant use. Of these beds, 42 are in a special annexe known as the Children's Hospital. There are five resident medical officers, and in addition two resident clinical assistants are appointed every six months, an honorarium of £10 10s. being given at the end of their term of office, in addition to board and lodging. The work of the hospital, especially on the surgical side, is very extensive, four operating theatres being in use. There is also a large out-patient department; it is fitted with rooms for the accommodation of the members of the staff in charge of the various special departments, and is one of the most complete and best equipped out-patients' departments in the kingdom. A new south-east wing is now being erected, at a cost of £20,000. It will contain three wards, each 141 ft. 6 in. in length, each accommodating thirty patients. In addition there will be side wards to each floor (a two-bed and a one-bed ward) for observation or special operation cases, clinical laboratories, etc. An electric lift will convey patients from top to bottom. The new wing will, when completed, eventually accommodate ninety-nine additional patients. This wing H.R.H. the Princess Louise, Duchess of Argyll, has kindly consented to open on Tuesday, November 5th next. To meet the demand which will be made upon it, the Hospital Laundry is to be enlarged and improved, at a cost of £2,000. A new self contained and replete Nurses' Home, containing 120 separate bed rooms, is also in course of erection, at a cost of £20,000. The foundation-stone will be laid towards the close of the present year.

Lincoln.

County Hospital.—The hospital contains 125 beds and 5 isolation beds. The House-Surgeon is allowed to take two pupils, on terms arranged between the Weekly Board, himself, and the pupils. A fee of not less than £10 10s. is paid by every pupil to the hospital. The House-Surgeon is responsible for the conduct of his pupils. The pupils remain in the hospital only when occupied in performing or observing the actual work of the hospital.

Northampton.

General Hospital.—There are 166 beds and a large out-patient department. Out-pupils are received, and have every opportunity of acquiring a practical knowledge of their profession. Instruction is also given in Anatomy, Materia Medica, and Pharmacy. Non-resident pupils are taken at a fee of £10 10s. annually.

Norwich.

Norfolk and Norwich Hospital.—The hospital contains 220 beds. Students (non-resident) are admitted according to the following scale: For three months, £3 3s.; for six months, £5 5s.; as permanent students, £8 8s. The resident officers are a House-Physician, House-Surgeon, Assistant House-Surgeon, and Second Assistant House-Surgeon.

Nottingham.

General Hospital.—The hospital contains 241 beds. The Honorary Staff introduce pupils to witness the practice of the hospital on payment of £10 10s. annually in advance. The pupils receive instruction from the Resident Medical Officers.

Portsmouth.

Royal Portsmouth Hospital.—132 beds. One year's attendance is recognized by the Examining Boards. For particulars as to fees apply to B. Wagstaff, the Secretary of the Committee of Management.

Southampton.

Royal South Hants and Southampton Hospital.—This institution was established in 1838. The out-patients' building was erected in 1887. The number of beds is 130. The in-patients number about 1,700 a year, the out-patients about 7,500. Large additions to buildings, including new isolation wards, new operating room, a new ward block, and a steam laundry, and new night casualty receiving room and nurses' homes for 44 nurses have been completed. The hospital has been registered by the Royal Colleges of Physicians and Surgeons as a "Medical School."

Staffordshire.

Staffordshire General Infirmary.—There are 75 beds. The pupils of medical practitioners resident in the county of Stafford are allowed to witness the medical and surgical practice of the infirmary, and to be present at operations. The pupils of the officers of the institution are admitted to these privileges gratuitously, those of other practitioners on the payment of £10 10s. with each pupil.

North Staffordshire Infirmary and Eye Hospital.—The Infirmary has accommodation for 216 patients, including children's wards, eye department, and special ovarian

wards, electrical and *x*-ray departments. The attendance of pupils at this infirmary is recognized by all the Examining Boards. Particulars as to fees, etc., may be obtained from the Secretary of the Infirmary, Hartshill, Stoke-on-Trent.

WINCHESTER.

Royal Hants County Hospital.—The hospital contains 108 beds. The Physicians and Surgeons are allowed to introduce a certain number of pupils; the Resident Medical Officers may also receive a pupil, for whose maintenance a certain sum, to be fixed by the Committee, is payable annually in advance. Pupils of medical men not on the staff of the hospital may, with the consent of the Committee, become out-pupils and see the practice of the hospital, under the direction of the Resident Medical Officer, on the payment of £10 10s. for one year, or £21 for unlimited attendance.

WOLVERHAMPTON.

Wolverhampton and Staffordshire General Hospital.—There are 200 beds. It is recognized by the University of London, the Royal Colleges of Physicians and Surgeons, and other Examining Boards. The in-patients number 2,440 and out-patients 19,665. The operating theatre, pathological laboratory, and *post-mortem* room are new and well equipped. Special departments for children, gynaecology, ear, throat, and nose diseases, electro-therapeutic and *x*-ray departments. There is an excellent library. The resident officers are a house-physician, house-surgeon, assistant house-physician, and assistant house-surgeon. Pupils are allowed to witness the whole of the practice of the hospital and to be present at operations, and have every opportunity of acquiring a practical knowledge of their profession. Fees: £3 3s. a quarter, £10 10s. the first year, and £5 5s. subsequent years. A course of practical pharmacy is given by the dispenser. Fees: £3 3s. for three months. Application should be made to the Secretary of the Medical Committee Staff.

YORK.

York County Hospital.—The hospital contains 150 beds, including children's ward, eye department, and *x*-ray apparatus. Non-resident pupils may be introduced by the Honorary Medical and Surgical Officers, or by the Resident Staff (which consists of a House Physician and a House-Surgeon) on terms to be arranged with the Honorary Staff. Pupils visit the wards with the members of the Honorary Staff (the House-Physician and House-Surgeon are present at the operations and necropsies), and are instructed in the elements of minor surgery by the House-Surgeon in the casualty department. The in-patients number about 1,400 annually, and the out-patients 11,000, who make 44,000 attendances. Further particulars may be obtained from the Senior Resident Officer.

MEDICAL EDUCATION OF WOMEN.

YEAR by year the number of women who adopt a medical career increases, and, at any rate so far as the passing of examinations is concerned, the success of women medical students as a body is unquestionable. As a rule they are ambitious in the qualifications they seek, and in the lists of successful candidates at the examinations for London degrees there are usually several women to be found well placed.

Their choice of qualifications is, however, no longer limited, for there are now few licensing bodies which refuse to receive them. They are, of course, subject to the ordinary regulations of the General Medical Council (see page 563) as regards their education, and can pursue the latter either at certain schools only open to women, or at ordinary schools where they do their work more or less in common with the men students.

The schools which admit women only are the London (Royal Free Hospital) School of Medicine for Women, which is one of the constituent schools of the Medical Faculty of the University of London; the Edinburgh Medical College for Women (see page 574), and Queen Margaret College, Glasgow (see page 591). Women are also admitted to the Schools of Medicine conducted in connexion with the Universities of Dublin, Durham, Liverpool, Manchester, Birmingham, Leeds, Sheffield, and Aberdeen; the Catholic University, Dublin, Bristol University College, and also to special classes at the School of Medicine of the Royal Colleges, Edinburgh; the Schools of Surgery of the Royal College of Surgeons in Ireland, and of the Queen's Colleges of Belfast, Cork, and Galway. Two years of the medical curriculum can be taken by women students at the United College, St. Andrews, and the remaining three at University College, Dundee, where the whole five years can be passed if desired. Women can also attend classes for the first three years of the medical curriculum at University College, Cardiff.

There are a good many medical charities in London which are now staffed partly or entirely by women practitioners, and at a good many infirmaries, fever hospitals, and asylums women are eligible for appointment.

As regards the London School of Medicine for Women, particulars will be found at page 584 in the article on London Medical Schools. Its prospectus contains an article worth reading by any woman who thinks of becoming a medical student, whether she proposes to join this or any other school.

DEGREES FOR PRACTITIONERS.

AT one time it was almost the universal custom for medical students educated in London not to seek a university degree, and as that custom still prevails to a considerable extent, a very large proportion of medical men in actual practice in England possess diplomas to practise but not degrees in medicine. The question whether a medical man not known to be a pure surgeon should be addressed as "Doctor" or "Mr." is one which the general public has settled, as it settles most things, for itself and according to its own view of the proprieties; but, nevertheless, those who have not taken a degree often regret their inability to sign themselves "M.D.," and that they have no legal title to the term "Doctor." Hence, some universities have issued special regulations under which the degree of M.D. is granted to practitioners of a certain standing under special conditions. The regulations of these universities are stated briefly in the following paragraphs. The University of Brussels also grants the degree of M.D. to practitioners after examination, without restriction as to residence or curriculum; but this degree is not registrable on the *Medical Register* if obtained subsequently to June, 1886.

UNIVERSITY OF LONDON.

Registered medical practitioners of not less than three years' standing, and not less than 25 years of age, who pass, or have already passed, the Matriculation Examination, or who are entitled to claim registration as students of the University without examination in virtue of any of the conditions described in the note on page 567, and who pass, or who have already passed, the Preliminary Scientific Examination, Parts I and II, may proceed to the Intermediate and M.B., B.S. Examinations without the intervals prescribed by the regulations on producing certificates that they have gone through the courses of prescribed study at any time previously; subject to the proviso that no degree of the University can under any circumstances be granted by examination to any one in less than three years after passing the Matriculation Examination or after admission by the University of the candidate's right to exemption therefrom.

UNIVERSITY OF DURHAM.

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period, upon the following conditions without residence: The candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. Should he not have passed previously to the professional examination in virtue of which his name was placed on the *Register* an examination in Arts, he is examined in Classics and Mathematics; if otherwise, he is required to translate into English passages from any one of the following Latin authors: Caesar, *De Bello Gallico* (first three books), Virgil, *Æneid* (first three books), or Celsus (first three books).

Professional Examination.—The candidate must pass an examination in the following subjects: i. Principles and Practice of Medicine, including Psychological Medicine,

Hygiene, and Therapeutics; ii. Principles and Practice of Surgery; iii. Midwifery and Diseases of Women and Children; iv. Pathology, Medical and Surgical; v. Anatomy, Medical and Surgical; vi. Medical Jurisprudence and Toxicology. The examination is conducted by means of printed papers, clinically and viva voce, at the College of Medicine, Northumberland Road, Newcastle, and in the Royal Infirmary, Newcastle. The classical portion of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

Foreign and Colonial Practitioners.—Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

Fees.—The inclusive fee is 50 guineas; if a candidate fail to pass, 20 guineas are retained, but if he present himself again, 40 guineas only are required.

Dates, etc.—The examinations are held twice a year, towards the end of April and of September. *N.B.—In and after 1908 these Examinations will be held in March and July.* Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

University of Brussels.

British practitioners of medicine holding medical and surgical qualifications are, in common with legally-qualified practitioners in other countries, admissible without further curriculum to the examination for the degree of M.D. of the University of Brussels.

Examination.—The examination is divided into three parts. The "First Doctorate" includes Medicine, Pathology (with microscopical examination[1]), Therapeutics, Mental Diseases, and Diseases of Women and Children. The "Second Doctorate" comprises Surgery, Midwifery, Hygiene, and Medical Jurisprudence. The "Third Doctorate" consists of clinical examination in Medicine and Surgery, examination in Midwifery with the *mannequin*, Ophthalmology, Operative Surgery (amputation, ligature of arteries in the dead subject), and Regional Anatomy with Dissections. Special importance is attached to practical knowledge. The examination is conducted in French through an official interpreter, but most of the examiners, it is stated, speak English fluently. The examination is viva voce, but a written examination may be obtained on paying a special fee of £1 for each part.

Dates.—The examinations take place on the first Tuesday in November, December, February, May, and June. It is desirable that the candidate should arrive in Brussels on the previous Saturday before 2 p.m. at latest. The whole examination (First, Second, and Third Doctorate) may be got through in about a week, and seldom exceeds eight to ten days.

Fees.—Candidates are required to leave their diplomas with the Registrar of the University prior to the examination. The fees are: For inscription of name, £8 12s.; for examination, £13; for legalization of diploma, 8s.; total, £22. If a candidate fail in the first part of the examination, the fees for the second and third are returned to him; if in the second, the fees for the third. A rejected candidate may present himself again in three months on paying the examination fees, provided his second appearance be in the same academic year (October 1st to June 30th); otherwise the matriculation fee must be renewed—that is, the fee for inscription of name.

Further particulars may be obtained on application to the Secretary of the University, Brussels. There is an Association of British Graduates of the Brussels University, and the Honorary Secretary, Dr. F. H. Edwards, of Camberwell House, Camberwell, S.E., will be pleased to give information or receive applications for membership.

POST-GRADUATION STUDY.

The value, and in some circumstances even the necessity, of post-graduation study is now so generally recognized that there is no occasion to dilate upon it here. It will suffice to draw attention to some of the arrangements in existence for such work, adding that in most medical centres it is now exceptional for one or more courses for qualified men not to be held once or more often during the year; that most of the institutions mentioned in the section on Clinical Hospitals make special arrangements for the benefit of qualified men desirous of studying work of the kind undertaken within those wards; and that valuable adjuncts to post-graduation study exist in the shape of the Library of the British Medical Association—one specially rich in recent works—of the libraries of the several universities, and in those of the Royal College of Surgeons of England and of the Royal Colleges of Physicians in London and in Edinburgh.

[1] More microscopic work is now required than formerly.

London Post Graduate Association.

The wealth of London in material for clinical study is of course enormous, and the object with which the London Post-Graduate Association was started, now many years ago, was to throw open to the general body of medical practitioners all that is most useful and attractive in it.

To fulfil this purpose it entered into arrangements with the principal medical schools of London and with the administrators of the leading special hospitals of such a nature that it is now able to issue a ticket which admits the holder to all the clinical instruction provided in these institutions. Armed with this ticket, a medical man can enter freely any of the institutions concerned, becoming to all intents and purposes one of their students, and having as much right to visit their wards and attend in their out-patient departments as if he were once more in his salad days and back within the familiar walls of his old school. He can thus get as much clinical instruction in the wards and in the special and general out-patient departments as he pleases, and the operating theatres and the *post-mortem* rooms are equally open to him.

The fact that one ticket admits him to so many hospitals is a decided advantage, for if interested in one particular branch of work he can follow that up throughout the day in different institutions, instead of having to limit his study of it to one or two days a week. A further useful point in the system is that it affords practitioners an opportunity of becoming acquainted with the different methods of a large number of specialists, and of noting the different ways in which men all equally eminent in their particular line deal with cases much of the same type; there could be no better way, indeed, of getting abreast with the results of modern research and into touch with current thought in medicine and surgery than by attending various hospitals with the help of a ticket from this Association.

The institutions thrown open are, among general hospitals, Charing Cross, Guy's, King's College Hospital, St. Mary's, St. Thomas's, and University College and Westminster. Among special hospitals, the Brompton Hospital for Diseases of the Chest, the Hospital for Sick Children (Great Ormond Street), the National Hospital for the Paralysed and Epileptic, the Royal London Ophthalmic Hospital, and the London School of Tropical Medicine. The fee for a ticket lasting three months is 10 guineas, while for 15 guineas one for six months is issued.

Further particulars about this Association can be obtained from the Secretary, London Post-Graduate Association, Examination Hall, Victoria Embankment, London, W.C.; if application is made in person, the visit should be paid between the hours of 11.30 a.m. and 1 p.m., or between 2 p.m. and 3 p.m.

London Medical Graduates' College and Polyclinic.

This institution, familiarly known as the Polyclinic, opened its doors some eight years ago, its work being executed on quite original lines. Their soundness became very early apparent, and large numbers of practitioners now attend its classes, and avail themselves of the various forms of instruction which the College offers.

The work is carried on in a building in central London, which is well arranged and readily accessible from all quarters. It stands at the corner of Chenies and Ridgmount Streets, its postal address being 22, Chenies Street, W.C. This street, it will be remembered, runs at right angles to Tottenham Court Road, crossing Gower Street.

The building is everywhere fitted with electric light, and there is a lift to all floors. The ground floor is given

up to the class-rooms, which are furnished with blackboards and various other appliances for clinical instruction. In one of them is a large and powerful Roentgen-ray apparatus, which is frequently requisitioned in the diagnosis of fractures and deformities. When occasion requires, the divided partitions of the rooms can be removed, and a class-room of fine proportions thus provided.

On the first floor is a library, a reading room, and the consultation theatre, and on the upper floor is found an excellent laboratory for bacteriology and clinical pathology, each table being provided with its own set of reagents and test tubes, and its Bunsen burner. Besides these rooms there is in the basement an important annexe in the shape of a dark room. Against the walls of this are placed twelve seats, each separated from the adjoining one by a partition, and each having its own electric light that can be used in varying strength, naked or shaded. In this room twelve patients can be examined simultaneously, but separately from each other, with the ophthalmoscope, laryngoscope, or other instrument of precision, and their indications demonstrated. An adjoining room is fitted with appliances for instruction in ophthalmic cases, such as type tests, working models of eyes, stereoscopes, lenses, etc.

Another important part of the College is the Museum, situated at the side of the building, and devoted to clinical illustrations. Portraits and models of diseased conditions find their place there, and the newest medical and surgical instruments and appliances of all kinds, which can be examined at any time, form a marked feature of this department of the College. The museum has been enriched by a uniqe collection of valuable pictures of disease, especially skin disease, most of which are painted from life, together with many other specimens of rare clinical value, which have been placed at the service of the Polyclinic by Mr. Jonathan Hutchinson, F.R.S., and the museum has been appropriately named after him the Hutchinson Museum.

Perhaps, however, the most characteristic feature of the school is the system of consultations. These take place every afternoon, and patients attend them either at the invitation of the management, or may be brought by practitioners who are members of the school. Besides the excellent opportunities for teaching which these consultations afford, they provide occasion for discussing cases and studying exceptional forms of disease by the most recent methods of diagnosis. Notes are taken of the cases, and are supplemented on occasion by photographs or other portraits of the rarer morbid conditions.

On Mondays, Tuesdays, Wednesdays, and Thursdays of each session, at 5.15 p.m., formal lectures are delivered on medicine, surgery, and their branches. Of practical classes there are four sessions in the year, each lasting six weeks, while a vacation course takes place every September.

Short courses of lecture-demonstrations in such special subjects as Haematology, Cyto-diagnosis, Opsonins and Bacterial Vaccines, Ophthalmoscopy and Retinoscopy, etc, have recently been instituted, and are given at short intervals during the year.

Provision is also made for those who are reading for the higher qualifications, special tutorial classes being conducted. Full particulars of all the work done may be obtained on application to the Resident Superintendent, 22, Chenies Street, W.C.

West London Post-Graduate College.

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The College started in a small way in 1895, but soon broadened its basis. In a few years' time it was seen that it was going to be a great success, and that a building specially designed for the work would be required. Thus the present building was opened in 1901, and is provided with lecture halls, reading and writing rooms, and accommodation of all sorts for the convenience of post-graduate students. The success of the enterprise called others into existence, but they have in no wise checked its success, but merely stimulated the authorities to further efforts, the net result being that during the last five years the number of medical men who have yearly entered their names on its books has averaged over 200

The College and Hospital are in the Hammersmith Road, about two minutes' walk from the Hammersmith Stations of the Metropolitan, District, Great Northern, Brompton and Piccadilly, and South-Western Railways, while Kensington (Addison Road) Station can be reached by a ten-minute walk or omnibus; Shepherd's Bush, the terminus of the Central London tube, is very little farther away. Omnibuses from all parts of London pass the doors, and close by run the electric cars from Hampton Court, Twickenham, Hounslow, Uxbridge, and Ealing.

As for ward work, the students accompany the senior staff on their visits to the wards at 2.30 p.m. daily, and also go round with the resident medical officers in the morning. Out-patient work begins at 2.15 p.m. This department is large, and affords ample facilities for post-graduates to see and examine patients. The out-patient work is subdivided into various special departments dealing with diseases of the eye, ear, throat, nose, skin, orthopaedics, *x*-ray work, electro-therapeutics, gynaecology, and medical diseases of children. Clinical assistants are appointed from among the post-graduates, and practical classes are formed as required. The size of the latter is limited so as to ensure that each student shall have full opportunities of gaining experience in methods of examination and treatment.

Special classes are also held in medicine, general practical surgery, intestinal surgery, surface anatomy, and blood and urine analysis, cystoscopy, venereal disease, tropical diseases, ophthalmic surgery, and finally in operative surgery. For the latter the College holds a special licence, and classes in this subject are arranged as often as material is available, each consisting of four members.

Operations take place at 2.30 p.m. daily, the surgeons often availing themselves of the assistance of the post-graduates, and in any case making arrangements so that they can see what is going on perfectly. The Anaesthetists give instruction in the administration of different anaesthetics on the operating days, students being allowed to administer them under supervision, while special classes are held in each session.

Post-mortem examinations are performed at noon, separate demonstrations of recent specimens being given at the same hour on Monday during each session. The pathological laboratory is in charge of a pathologist who attends during the whole day. In bacteriology and microscopy special instruction is given on three mornings a week, the students working at other times under the general guidance of the pathologist.

Lectures of a practical kind are given daily (except Saturday and Sunday) at 5 p.m. The series include courses on Public Health and Insanity by specialists not otherwise connected with the Hospital. In the latter subject instruction is also given at certain asylums.

The arrangements of the College may be said to be equally suited to those who are preparing themselves for examination for the higher degrees and diplomas, to the needs of officers in the different Services on study leave, who attend in large numbers, and to those medical men in ordinary practice who desire to get themselves up to date in general medicine and surgery, or to make a special study of some particular branch of work. The College, it may be noted, is in a residential quarter, and there are plenty of good lodgings in its neighbourhood. Practitioners working within its walls can receive telephonic messages, take tea in the afternoon, and may smoke in its reading and writing rooms.

The fees are as follows: Hospital practice, including all ordinary demonstrations and lectures, £1 1s. for one week, £2 2s. for one month, £3 3s. for six weeks, £5 5s. for three months, £8 8s. for six months, £12 12s. for one year, and £25 for a life ticket. Those who cannot attend the whole of any particular course can attend any ten lectures or demonstrations given during the session for a fee of £1 1s. Every year in August there is a special vacation class lasting four weeks, for which the fee is £2 2s. Three months' instruction in the administration of anaesthetics costs £2 2s. Subscriptions for any course can be taken out from any date.

All communications concerning the school should be addressed to the Dean, Post-Graduate College, West

London Hospital, Hammersmith, W., from whom also a full prospectus can be obtained by any person holding a medical qualification.

The London School of Clinical Medicine.

The School Buildings, Lecture Rooms, Pathological Laboratories (two), Museum, Operative Surgery Class-rooms, etc., are in the Dreadnought Hospital at Greenwich, and the whole hospital of 250 beds, with its Out-Patient Departments, is open to students from 10 a.m. till 5 p.m.

Medical, Surgical, and Special Department In-Patient Clinics are held every afternoon except Saturday, by the senior members of the staff, and operations are performed daily, whilst out-patients in the Medical, Surgical, and Special Departments are demonstrated by the Assistant Physicians and Assistant Surgeons daily in the forenoon.

Practical Classes are arranged three times a year in the following subjects: The Practice of Medicine, the Practice of Surgery, Diseases of the Eye, Diseases of the Throat, Nose, and Ear, Diseases of the Skin, Diseases of the Nervous System, Operative Surgery, Clinical Pathology, Microscopy, and Bacteriology, Mental Diseases, Radiography, Dental Surgery, the Administration of Anaesthetics, Hygiene and Public Health, Gynaecology, Surgical Diseases of Women, Surgical Diseases of Children, Medical Diseases of Women, Medical Diseases of Children, Applied Anatomy, Midwifery.

Three sessions, of ten weeks' duration, are held in each year, beginning on January 15th, May 1st, and October 1st.

Every variety of disease may be studied in the wards and out-patient rooms of the Hospital, at the Dispensaries, and at the affiliated hospitals.

Male patients only are received as in-patients by the Seamen's Society, but arrangements have been entered into with the Royal Waterloo Hospital for the reception of Graduates who desire instruction in diseases of women and children; with the Bethlem Hospital for those who require tuition in mental disease; and with the General Lying-in Hospital (York Road) for the prosecution of study in midwifery.

These Hospitals are situated on the south side of the river, are directly linked to the Dreadnought by both railway and tramway, and are affiliated to the London School of Clinical Medicine.

The Certificates of the School are recognized by the Admiralty, the War Office, and the University of London (for the higher degrees).

The supply of material affords exceptional facilities for practical instruction in operative surgery and in pathology on the cadaver. The hospital also offers a wide field for the study of venereal diseases, and there is a special department with open air wards for the treatment of tuberculosis.

Appointments.—There are two House-Physicians and two House-Surgeons at the Dreadnought Hospital, Greenwich, and a Senior House-Surgeon and House-Surgeon at the Branch Hospital. The pay of these offices varies from £50 to £100.

The Prospectuses, Syllabuses, and other particulars can be obtained on application to the Secretary, Seamen's Hospital, Greenwich, S.E., or from the Medical Superintendent, at the School.

North-East London Post-Graduate College.

The head quarters of this post-graduate school are situated at the Prince of Wales's General Hospital, one situated in the midst of what is now a densely-populated neighbourhood containing about a quarter of a million inhabitants. It contains 125 beds, and its precise situation is South Tottenham, N., where it is within a few minutes' walk of South Tottenham Station on the Midland Railway, Seven Sisters Station on the Great Eastern Railway, and Tottenham Hale on the Great Eastern main line. It is also readily accessible from Finsbury Park and Hackney, by electric tram, and by corresponding means may be reached easily from Dalston, Edmonton, Hackney, and other parts of North London.

The College is recognized by the India Office for the purposes of study leave, and by the University of London as a place for advanced study for the M.D. and M.S. degree, and the arrangements for the convenience of men who are thus working, or who are general practitioners desirous of getting themselves into touch with modern methods, are good. There is provided for their use a reading and writing room, and they can obtain afternoon tea and receive telephonic messages; similarly there is a reference and lending library for their benefit, and a museum and pathological laboratory in which they can work. The hospital as a whole certainly affords excellent facilities to qualified medical practitioners who wish to take part for a time in the work of an active general hospital, or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye, ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, and the administration of anaesthetics. Throughout the sessions into which the year's work is divided, clinics, lectures, and demonstrations are given by members of the teaching staff in the lecture room, in the wards, in the various out-patient departments, and in certain affiliated institutions. Operations are performed every afternoon of the week, except Saturday. Special classes are arranged in Gynaecology, the Surgical Diseases of Children, including Orthopaedic Surgery; Diseases of the Throat, Nose, and Ear; Diagnosis of Diseases of the Chest, Diagnosis of Diseases of the Nervous System, Ophthalmoscopy and Refraction, Analysis of Gastric Contents, Clinical Examination of the Blood, Diseases of the Skin, Abdominal Surgery, Radiography, Anaesthetics, Bacteriology, and Medical Electricity. In all these classes the numbers are carefully limited, so as to give every member full opportunity for work.

As for fees, these are as follows: One guinea for a three months' course of study in any one department, which may be begun at any time; a fee of 3 guineas admits to the whole practice of the hospital for a similar term (one month, 2 guineas), and a perpetual ticket for the practice of the hospital may, for the present, be obtained on payment of a fee of 5 guineas. Medical practitioners who have attended a three months' course in any department are eligible for appointment as Clinical Assistants in those departments. A certificate, signed by the staff, may be obtained at the end of three months' hospital attendance.

A vacation course is held in September.

The opening lecture of the Winter Session will be given on October 3rd.

Additional information about the College and its work can be obtained on application to the Dean of the Post-Graduate College, 142, Harley Street, London, W., who will also supply a prospectus and a syllabus of the lectures and demonstrations to be given during the next formal session.

University College, London.

Courses in practical Pathological Chemistry intended for the advantage of qualified practitioners and advanced students are held by the Professor of this College in this subject, each including the analysis of the saliva, stomach contents, faeces, urine, calculi, and pathological fluids. The laboratory is open from 9 a.m. to 5 p.m., so that the practical work can be done at the hours most convenient to those attending the class. The next class commences in October. The fee, including apparatus and material, is £5 5s. A department is also fitted up for research work, and is open to all researchers at the fee of £1 1s. a month.

Charing Cross Hospital.

Special series of clinical lectures and practical demonstrations, exclusively arranged for the convenience of practitioners and post-graduate students, are given at the hospital throughout the sessions of the medical school. Each consists of ten meetings, and lasts ten weeks. Two of these courses are held during the winter and one during the summer. The fee for ten lectures is 1 guinea. The first of the two winter courses of the ensuing academical year commences in October. Application for further information should be made to the Honorary Secretary of the Post-Graduate Course at the hospital.

Cambridge.

Arrangements are in force at this University by which graduates of other universities are admitted to the various colleges and put on much the same footing as those who have taken a first degree in the University itself. The

University affords them excellent opportunities of prosecuting advanced studies or research under the direction of the University teachers, and under certain conditions they are allowed eventually to proceed to degrees. Exceptionally the University admits as research students those who have not graduated elsewhere.

EDINBURGH.

There are plenty of opportunities afforded in Edinburgh for qualified men to get themselves up to date or acquire totally fresh knowledge, and in September a vacation course of a most elaborate and complete kind is held. It is carried on throughout two consecutive fortnights (the first began on September 2nd), and arrangements are made by which those attending the courses can obtain board and lodging at the University Hall at an inclusive charge of 30s. a week. Nearly all the principal teachers of the Medical Faculty of the University and the staffs of the leading hospital assist in the courses, the latter including work on every subject in which a practitioner of any branch of medicine or surgery in search of fresh practical knowledge is likely to be interested. The fee for either fortnight is 3 guineas, or 5 guineas for the two if both be taken. Applications for admission to the course should be made to the Honorary Secretary of the Executive Committee, 23, Drumsheugh Gardens, Edinburgh.

GLASGOW.

The facilities for post-graduate study in this city are great, and in order to enable practitioners to turn them to the best advantage it has become the custom to hold regular post-graduate courses at intervals; the periods hitherto chosen have been January, the end of May and June, and the early autumn. The work done is all of a very practical and useful character. Application for information concerning these courses should be addressed to the Superintendent of the Royal Infirmary.

TRINITY COLLEGE, DUBLIN.

During the summer session a three weeks' post-graduate course is given at the School of Physic. It includes instruction in Clinical Surgery and Medicine, Ophthalmology, Diseases of the Throat, the Nose, and Ear, Diseases of the Skin, Operative Surgery, *X* Rays, Anatomy, Pathology, Gynaecology, and Cystoscopy. The fee is £5 5s., and arrangements are made by means of which a limited number of the class can live in College rooms and dine in Hall at a charge of £1 per week. Application for admission to the courses should be made to the Honorary Secretary of the Post-Graduate Course.

TROPICAL MEDICINE.

SCHOOLS of tropical medicine have been established in London and Liverpool, and several examining bodies have instituted diplomas in the subject. The importance now attached to this branch of medicine has been further punctuated by the University of London making it one of the six optional subjects in which a degree of M.D. can be obtained. Finally, it should be noted that the Colonial Office now expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and that there is a tendency among commercial firms engaged in tropical enterprise to demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees follows.

DIPLOMAS AND DEGREES.

LONDON UNIVERSITY.—Candidates for an M.D. degree in Tropical Medicine must have taken the M.B., B.S. degrees not less than two years previously, unless subsequently to that event they have either conducted a piece of original work approved for the purpose by the University or have had such special experience as may be similarly approved; in either of these two cases the interval may be diminished to one year. All candidates alike must either have attended for not less than one academic year a complete theoretical and practical course on Tropical Medicine at a school approved for that purpose or have been engaged for not less than two years subsequently to taking their degrees in hospital, official, or private practice, in regions where tropical diseases prevail. The examination eventually to be passed consists of a paper on General Medicine, one on Tropical Medicine, one on Tropical Pathology and Hygiene, the writing of an essay, and clinical and laboratory tests. The Schools of Tropical Medicine approved by the University are the London School of Medicine and the Liverpool Tropical School.

UNIVERSITY OF EDINBURGH.—This University grants a diploma in Tropical Medicine and Hygiene after an examination which is usually held twice a year. It is, however, only open to those who are graduates of the University in Medicine and Surgery. In addition to this the candidates must show that they have attended approved courses of instruction in Practical Bacteriology (including the pathogenic micro-organisms of tropical diseases), in Diseases of Tropical Climates (including the zoological characters and life-history of disease-carrying insects), in Tropical Hygiene, and in clinical study of Tropical Diseases. They must possess, too, certificates of efficiency in the conduct of *post-mortem* examinations. The examination is in the four subjects indicated, the fee for each part being £1 1s.

UNIVERSITY OF LIVERPOOL.—A diploma in Tropical Medicine is given by this University to students who have been through the courses provided by the Liverpool School of Tropical Medicine, and have passed the examination held at the end of each term by the University examiners. The examination lasts three days, and consists (1) of three papers dealing with Tropical Medicine, Tropical Pathology, and Tropical Sanitation and Entomology respectively; (2) of a Clinical Examination; and (3) of an Oral Examination. The results are declared as soon as possible afterwards. The fee is 5 guineas. Further information about this diploma can be obtained from the Dean of the Faculty of Medicine, University of Liverpool.

UNIVERSITY OF CAMBRIDGE.—This University grants a diploma in Tropical Medicine and Hygiene to any person whose name has been on the *Medical Register* for not less than a year, provided that he passes the examination of the University in this subject. Previous to admission to the examination, however, he must produce approved evidence that he has studied Pathology (including Parasitology and Bacteriology in relation to Tropical Diseases), Clinical Medicine and Surgery at a hospital for tropical diseases, and Hygiene and methods of sanitation applicable to tropical climates.

As evidence of study and attainments a candidate may present to the Syndicate (1) any dissertation, memoir, or other record of work carried out by himself on a subject connected with Tropical Medicine or Hygiene, (2) any certificate or diploma in Public Health or Sanitary Science he may have obtained from a recognized examining body. Such evidence will be considered by the Syndicate in determining whether he is qualified for admission to the Examination, and by the Examiners in determining whether, if admitted, he shall be included in the list of successful candidates.

The Examination, which is written, oral, and clinical, deals with the following subjects:

1. The methods of pathological and bacteriological investigation. The examination of the blood. The characters, diagnosis, and life-history of animal and vegetable parasites. The examination, chemical and microscopic, of poisonous or contaminated foods and waters.
2. The origin, pathology, propagation, distribution, prevention, symptoms, diagnosis, and treatment of the epidemic, endemic, and other diseases of Tropical climates, including Malaria; Blackwater Fever; Trypanosomiasis; Relapsing Fever; Dengue; Yellow Fever; Plague; Tetanus; Beri-beri; Dysentery and Hepatic Abscess, Cholera, Enteric Fever, Malta Fever, and Specific Diarrhoeal Affections of the Tropics; Diseases due to Cestode and other Worms; Filariasis; Bilharzial Disease; Specific Boils, Sores, and other Cutaneous Affections; Mycetoma; Ophthalmic Affections of the Tropics; Affections caused by Poisonous Plants and Animals, and by Poisoned Weapons; Sunstroke.
3. The general effects on health in the Tropics of seasons and climate, soil, water, and food. Personal hygiene, acclimatization. Principles of general hygiene, with special reference to food supplies and water supplies, sites, dwellings, drainage, and the disposal of refuse. The sanitation of native quarters, camps, plantations, factories, hospitals, asylums, gaols, pilgrim and coolie ships. Principles and methods of disinfection.

Examinations are held in January and August each year, and last four days.

Fees.—The fee for the examination and diploma is nine guineas on admission or readmission. Application for further information should be made to Mr. G. H. F. Nuttall, F.R.S., 3, Cranmer Road, Cambridge.

Schools.

London School of Tropical Medicine.—This school is under the auspices of the Seamen's Hospital Society. Its buildings, Laboratories, Museum, Library, etc., are within the grounds of the Branch Hospital, Royal Victoria and Albert Dock; Station, Connaught Road, Great Eastern Railway, and excellent opportunities are afforded to students and others who may be desirous of studying diseases incidental to Tropical climates before entering the services or going abroad. In the hospitals of the Society are to be found cases of Tropical disease such as may be met with in actual practice in the tropics. There are three courses in the year, each lasting three months, beginning October 1st, January 15th, and May 1st respectively. The Laboratory, Museum, Library, are open all day, and clinical instruction is given daily in the wards of the hospitals. Certificates are granted after examination to those who complete a full course. Resident chambers are available for students, who must be qualified or in the fifth year of their medical studies. The Craggs Prize of £50 is awarded yearly by the School. Prospectus, syllabus, and other information can be obtained on application to the Secretary, Seamen's Hospital, Greenwich, or to the Medical Superintendent at the School.

Liverpool School of Tropical Medicine.—This School is affiliated with the University of Liverpool and the Royal Southern Hospital of Liverpool. Three courses of instruction are given every year, commencing on January 14th, May 1st, and October 1st, and lasting for the academical term of about ten weeks. Each course consists:

(1) Of a systematic series of lectures on Tropical Medicine and Sanitation delivered by the Professor of Tropical Medicine at the University; (2) of additional lectures on Cytology, Special African Diseases, and Special Indian Diseases, delivered at the University; (3) of systematic lectures and demonstrations on Tropical Pathology, Parasitology and Bacteriology by the Walter Myers Lecturer, at the University; (4) of similar instruction on Medical Entomology by the Lecturer on Economic Entomology, at the University; and (5) of clinical lectures and demonstrations delivered at the Royal Southern Hospital by the Physician in charge of the Tropical Ward, the Professor, and the Walter Myers Lecturer.

The instruction given occupies six hours a day for five days a week during the term. Teaching under headings (3) and (4) above is delivered in the laboratory of the school at the University, which contains accommodation for thirty students with all necessary appurtenances, including a well-equipped Museum, a Class Library, and access to the general Departmental Library. Teaching under heading (5) is given in the Tropical Ward and the attached Clinical Laboratories of the Royal Southern Hospital on two or three afternoons a week. There is a Hall of Residence for a limited number of students, the terms of which may be had on application to the Warden, 44, Upper Parliament Street. For research students there is most excellent accommodation at the laboratories of the School in the University, and also in the research laboratories at the school at Runcorn, 16 miles distant from the city.

Scholarships.—Two University scholarships of £100 a year each are open to students of the School amongst others. The Mary Kingsley Medal is awarded by the School for distinguished work in connexion with Tropical Medicine, and has been given to Colonel Bruce, Professor Koch, Dr. Laveran, and Sir Patrick Manson.

Since it was instituted nine years ago the School has employed twenty-five different investigators paid out of its funds, and has despatched to the tropics seventeen scientific expeditions, many of the workers having been taken from among its students. The work done by them has been published in twenty-one special memoirs with many plates and figures, besides textbooks and numerous articles in the scientific press. From the beginning of this year, however, the Memoirs have been succeeded by the *Annals of Tropical Medicine and Parasitology*. These are published by the Committee for the School, and its pages are open to outside contributors.

Students of the school who do not care to undertake the examination held by the University at the end of each term for its diplomas in Tropical Medicine are given a certificate of attendance if the latter has been satisfactory.

Fees.—The fee for the full course of instruction is £10 10s., with an extra charge of 10s. for the use of a microscope if required. A prospectus and further information about the school may be obtained on application to the Secretary, 10A, Exchange Buildings, Liverpool.

PSYCHOLOGICAL MEDICINE.

The treatment of mental disease, or psychological medicine, gives employment to a large number of medical men, and forms a distinct career of a kind which is attractive to many. It cannot as yet be regarded as a "service," as those who at present follow it, if not occupied in private asylums, are in the employ of various independent county and other councils. The formation of a general service, so far as the public asylums are concerned, may yet come, and the attractions of the work as a career may then be increased. Pensions are granted under certain conditions and after a certain length of service.

The study of mental diseases has long been a compulsory subject in the medical curriculum, lectures and attendances at a recognized asylum being necessary before a diploma or a qualification from a university can be granted; but the method in which the instruction is given has of late years greatly improved, and the facilities which exist for its pursuit are now very considerable.

Moreover, in London and some of the larger university towns instruction in pure psychology, as apart from the therapeutic study of mental disease, is now to be obtained. Impetus has been given to the whole subject by the adoption by the University of London of mental diseases as one of the branches of medicine in which an M.D. can be obtained, while the Royal University of Ireland grants a diploma for proficiency in the same subject to such of its graduates in medicine as satisfy the examiners at a special examination held for the purpose.

Reference may also be made to the Medico-Psychological Association of Great Britain and Ireland, which grants a certificate to candidates who have gone through a prescribed course of instruction, and pass an examination—held periodically in London, Scotland, or Ireland—which is designed to test the candidate's knowledge of mental disease and his ability to undertake the care and treatment of an insane person. The Association considers that all practitioners should have a competent knowledge of the subject, and that the holding of such a certificate is of particular advantage to those who hope to obtain appointments in the Prison, the Poor-law, and other services. Only registered medical practitioners are eligible for the certificate, but it is not necessary that candidates should be registered, or even qualified, before presenting themselves for examination. They may take the examination before graduation, but they will not receive the certificate until they possess a registrable qualification. The examinations qualify for the Gaskell Prize, value £30, and £10 10s. and a bronze medal are offered by the same Association to asylum assistant medical officers for the best dissertation on any clinical or pathological subject relating to insanity. The Hack Tuke Memorial Prize is also awarded for an essay upon a subject connected with insanity.

The financial and allied attractions of the pursuit of Psychological Medicine are, as compared with those of other "services" and other branches of medicine, on the whole, not inconsiderable. The emoluments are generally fair, and in the senior posts distinctly good. In private asylum practice large sums are made, though to procure these returns a correspondingly large sum must usually be invested. As a rule, a man recently qualified takes an appointment as a junior assistant medical officer in a county asylum or lunatic hospital, and for this he gets from £100 to £150 a year, with all extras besides. If he is fortunate, he becomes in time the Senior Assistant, and his income rises to about £300 a year (in good counties), besides apartments, living, and washing. At this point he is likely to stay some time. When the opportunity occurs, he becomes a candidate for a medical superintendentship, and his yearly income may then, if he is successful, be anything from £500 to £1,500 a year. Pensions, moreover, when granted—and after sufficiently long service they usually are—compare somewhat favourably with those obtainable in allied services, and, with the amounts which the average medical man can save. Not every man, however, is suited to asylum

practice. The life is one of responsibility, and as much of the work done is directly subject to the exigencies of lay committees and Government officials, it is, especially in the higher grades, often of a worrying character. For men of certain types of character in the junior grades there is, too, a danger that they may allow themselves to be beguiled too much by the amenities of asylum life, and fall also into the habit of devoting insufficient time to the scientific aspects of their work, however much attention they pay to its routine. Such a man may easily let valuable opportunities slip away, and become a "chronic A.M.O.," unfit for the duties of any other position either in or outside an asylum. There is, too, a certain amount of luck in obtaining the higher positions in lunacy work, but the possession of first class qualifications, a reputation for loyalty and straightness, and a real capacity and liking for the work, both in its scientific and practical aspects, are all factors which go to spell success.

PREVENTIVE MEDICINE.

THE division of medicine known as Sanitary Science, or State Public Health or Preventive Medicine, has been increasing in scope and importance for many years past, and now offers a career to men to whom any other path in the profession of medicine might prove distasteful. Strictly speaking, the terms indicated mean the work of a medical officer of health, and they are used more particularly in connexion with the special diplomas in Sanitary Science, State Medicine, or Public Health, one or other of which a Medical Officer of Health for a district of any importance must now possess.

More recently, however, another kind of work has arisen which might equally be classed under the general heading of Preventive Medicine. It is the outcome of a general recognition that the conditions of modern life in highly advanced States are intrinsically inimical to the physical well-being of those who are subjected to them, and of a belief that the dangers which arise, particularly from educational pressure on the young, demand special measures for their avoidance. This work has not yet reached the stage of precise definition, still less that of demanding special training or diplomas, and its nature will be sufficiently indicated by a reference to the Educational Committees of the country. Many of these already offer appointments of considerable value to medical men in connexion with the public schools, and their number is likely to increase.

Reverting once more to State Medicine or Public Health in the conventional sense of the term, it should be said that the position of medical officers of health as a whole cannot be considered a satisfactory one, inasmuch as that a large number of those holding the smaller appointments or a combination of small districts are only appointed year by year and are liable to be dismissed if they do not please those who form or can influence local authorities. This must often be the case, for if a medical officer of health does his duty it must often be impossible to avoid treading severely on the toes of landlords, manufacturers, and other persons of local importance.

The value of the work of a medical officer of health when well done is, however, now becoming so generally recognized that there is some prospect that the Legislature will soon step in and make it impossible for any medical officer of health to be dismissed except with the approval of the Local Government Board.

In the meantime there are many appointments in connexion with the larger towns and under the county councils which are permanent, well paid as compared with many other forms of medical work, and in other respects of an attractive character to many men. It should be added, too, that the Local Government Board itself has a staff of medical inspectors, whose initial salary is £500 a year.

Public Health work, of course, is of quite a special character, and it is desirable that any one who wishes to adopt it as a career should turn to it comparatively early, though not before he has obtained some experience of the work of a general practitioner. In any case, it is essential he should obtain a diploma in Public Health, and the choice of diplomas now open is considerable. Having done this, the next best step for a man who looks to public health as a career is to try to obtain an assistantship to an officer in charge of a large borough or district.

In their general nature the examinations of all the bodies which grant diplomas in Public Health are the same, though they differ somewhat in their reputed difficulty. All of them aim at excluding any candidate who does not appear to have a thorough knowledge of his work in theory and in practice, for the regulations of the General Medical Council demand that the granting of a diploma in Sanitary Science, State Medicine, or Public Health shall be proof of the "possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health." The tests, in short, are supposed to constitute an Honour and a Pass Examination. As regards the special tuition required, it is now easy to obtain this in practically every centre of medical education, and almost at every important medical school. It is of importance to note in this connexion that the chemical and bacteriological examinations for many of the health diplomas are so practical, and the time allowed so short, that unless a candidate—even though familiar with the duties of a M.O.H.—has a considerable amount of that manipulative dexterity only to be acquired by ample work in a laboratory, he would not be likely to satisfy the examiners.

The requirements of the General Medical Council as regards the special education and examination of candidates for registrable diplomas and degrees in State Medicine have been couched by it as follows, the statement being preceded by the general declaration which has been already quoted.

Rule 1.—A period of not less than twelve months shall have elapsed between the attainment of a registrable qualification in medicine, surgery, and midwifery, and the admission of the candidate to any examination, or any part thereof, for a Diploma in Sanitary Science, Public Health, or State Medicine.

Rule 2.—Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has during six months received practical instruction in a laboratory or laboratories, British or foreign, approved by the Licensing Body granting the diploma, in which Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man are taught.

Rule 3.—Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under Rule 2) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of—

(*a*) In England and Wales, the Medical Officer of Health of a county or of a single sanitary district having a population of not less than 50,000 or a Medical Officer of Health devoting his whole time to Public Health work; or

(*b*) In Scotland, a Medical Officer of Health of a county or counties, or of one or more sanitary districts having a population of not less than 30,000; or

(*c*) In Ireland, a Medical Superintendent Officer of Health of a district or districts having a population of not less than 30,000: or

(*d*) In the British Dominions outside the United Kingdom, a Medical Officer of Health of a sanitary district having a population of not less than 30,000, who himself holds a registrable diploma in Public Health; or

(*e*) A Medical Officer of Health who is also a teacher in the department of Public Health of a recognized medical school; or

(*f*) A Sanitary Staff Officer of the Royal Army Medical Corps having charge of an army corps, district, or command, recognized for this purpose by the General Medical Council.

Note (1). The certificate of an Assistant Medical Officer of Health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence under Rule 3, provided the Medical Officer of Health of the county or district in question permits the assistant officer to give the necessary instructions and to issue certificates.

Note (2). Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction required under Rule 2), in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary

law, sanitary engineering, vital statistics, and other subjects bearing on Public Health Administration, given by a teacher or teachers in the Department of Public Health of a recognized medical school.

Note (3). A candidate who shall have produced evidence that he has himself held for a period of not less than three years an appointment as Medical Officer of Health of a sanitary district within the British Dominions, and having a population of not less than 15,000, may be exempted from the requirement of Rule 3.

Rule 4.—Every candidate shall have produced evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration.

Note (1). Methods of administration shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the medical superintendence of the hospital generally.

Note (2). In the case of a Medical Officer of the Royal Army Medical Corps a certificate from a Principal Medical Officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to infectious diseases, may be accepted as evidence under Rule 4.

Rule 5.—The examination shall have been conducted by examiners specially qualified; it shall have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a Medical Officer of Health.

The Rules 2, 3, 4, as to study, shall not apply to medical practitioners registered or entitled to be registered on or before January 1st, 1890.

The subjects in which a candidate must qualify himself for examination, the courses of study he must follow, whatever the State Medicine diploma in view, are sufficiently indicated by the foregoing rules; all the examining bodies necessarily insist upon compliance with them on the part of their candidates. The steps, moreover, which they take to ascertain the candidate's fitness for a diploma are in all cases much the same, though the order in which the subjects are taken is not always identical. Practically all of them divide the examination subjects into two parts, which are usually taken by candidates at more or less widely-separated dates. Most of the bodies also have an age clause not allowing the candidate to complete the examinations until he is two or three years older than the average newly-qualified man. The general rule is to place in the First Examination such subjects as chemistry and physics (in relation to the air, water, food), ventilation, the sanitation of houses, principles of architecture, of sanitary engineering, Geology in relation to the same, Bacteriology in all its relations, and the pathology of human and epizootic diseases. Two or more papers are devoted to such subjects, this being followed by a corresponding number of practical examinations in the laboratory, at one of which the candidates will have to complete an analysis of a specimen of water, discover the impurity in some specimens of air, identify the adulteration in some food specimens, and the like. The other laboratory examination will probably be given up to the preparation of bacteriological specimens, the identification of cultures and parasites, and other tests of practical knowledge of bacteriology: as a rule a viva voce on the work done, follows. In the second part are commonly included two or more papers dealing with sanitary law, epidemiology, vital statistics, and all other general questions which affect the public health. The practical examination in this part commonly consists in drawing up a report on the sanitary construction and condition of some actual building or habitation, the whole being followed perhaps by a clinical examination in a fever hospital, and nearly always by a viva voce test in which the candidate is called upon to explain the use of apparatus shown him, express an opinion on specimens of food, and answer offhand queries concerning the established practice concerning various points of sanitary administration. As has been stated, however, there are variations among the examining bodies, which, though possibly not great in themselves, may be quite enough materially to increase or diminish the difficulty of passing examinations which many Boards seriously endeavour to make a proof of really high proficiency. Every candidate, therefore, should, when he has settled what diploma or degree in State Medicine he wishes to obtain, seek the schedule relating to it from the authority concerned. The following is a list of the bodies from which diplomas and degrees in State Medicine are obtainable.

Conjoint Board in England.—This Body holds an examination on behalf of the Royal College of Physicians and the Royal College of Surgeons. It usually takes place in January and July each year, a fee of 6 guineas being payable for each of its two parts. Candidates before admission to Part II must be aged at least 24 years.

University of Oxford.—The diploma given by this Body is open to all persons after possessing a medical qualification. The fee for each two parts of the examination is £5.

University of Cambridge.—This University also gives its diplomas to all persons whose names are on the *Medical Register*. The fee for each of the two parts is 6 guineas. Special courses of instruction are given at Cambridge for these examinations, though the work done at other institutions is accepted. Inquiries about the diploma should be addressed to Dr. Anningson Secretary to the State Medicine Syndicate, Walt-ham-Sal, Cambridge.

London University.—Graduates of London University can obtain a registrable Public Health qualification by passing Branch 5 (State Medicine) of the six branches of medicine out of which candidates for the M.D. degree of this University can select their special subject. They must show that they have taken the degrees M.B., B.S. not less than two years previously, and that subsequently to taking those degrees they have had (1) six months' practical instruction in an approved laboratory; (2) six months' practical instruction from a medical officer of health, of which three must not coincide with the laboratory work, and three months' practice at a hospital for infectious diseases. The interval between passing the M.B., B.S. and proceeding to the M.D. State Medicine may be reduced to one year, subject to conditions corresponding to those affecting Branches 1, 2, 3, and 4. The examination will consist of two papers in State Medicine (including Hygiene and Forensic Medicine), one paper in Medicine, an essay to be written on one of two subjects of State Medicine, and a practical examination extending over two days, one of which will be devoted to laboratory work and the other to practical examination in, and reporting on, subjects which fall within the outdoor duties of a medical officer of health; a viva voce is also possible.

University of Durham.—Both a diploma in Public Health and two degrees in the same subject (Bachelor of Hygiene, B.Hy., and Doctor of Hygiene, D.Hy.). The conditions applying to candidates of the diploma and for the B.Hy. are practically identical, except that the degree candidate must be a graduate in medicine of a recognized university and have performed his three months' work at comparative pathology and bacteriology and his three months' work at chemistry at Newcastle-on-Tyne. The fee for each part of the examination is 5 guineas. A B.Hy. who wishes to proceed to the doctorship must have been in practice as a medical officer of health for two years subsequent to the date of his acquirement of the former, and submit a thesis on some subject on hygiene for approval.

Victoria University of Manchester.—Both a degree and diploma are granted by this University, the former being known as the B.Sc. in Public Health. The diploma is open to all candidates possessing a registrable qualification in Medicine, the fee being 5 guineas for each of the two parts of the Examination. They can obtain their instruction in the public health laboratories of the University. Candidates for the B.Sc. must be graduates in Medicine of Manchester, or some other University recognized for the purpose. They must have studied certain approved subjects in the University for not less than two years after graduation, and devote a third year to work in two of its scientific departments. They also have to pass the D.P.H. examination, attaining a special standard in it.

University of Birmingham.—A diploma may be obtained from this University by all persons registered under the Medical Act, the fees being £2 for each part of the examination, and £6 for the diploma. They must, how-

ever, unless old students of Birmingham, receive their instruction in the necessary subjects at the hands of the University itself. Candidates for the B.Sc. in public health must be graduates in medicine of the University, must attend a course of geology and pass an examination of a higher standard than that for the University's diploma.

University of Leeds.—A diploma is given by this University, and special courses of instruction are provided, which are available for candidates for any diploma in State Medicine. The fees for such instruction are 10 guineas for the practical work in sanitation under the medical officer of health of the city; 5 guineas for the laboratory course, and to those who have not before been students of the University, a fee of 1 guinea for registration.

University of Edinburgh.—Two degrees in Science in the Department of Public Health—B.Sc. and D.Sc.—are here given. Candidates must be graduates in medicine of this or some other university. Those proceeding to the higher degree must have held the B.Sc. in the same subject for at least five years, and submit an approved thesis, and must pass an examination. The fee for the B.Sc. examination is £3 3s. for each part. The examinations are held in March and July. Six months must elapse between the first part and the second.

University of Aberdeen.—A diploma is granted by this University to graduates in Medicine, the regulations entailing six months' attendance at an infectious hospital containing not less than 50 beds, and special instruction in the drawing and interpretation of plans. Those who are graduates of some other university than Aberdeen must attend some of the courses on the subject of Public Health provided by the University. The fee for each of the two parts of the examination is 5 guineas.

University of St. Andrews.—A diploma is granted by this University to its own medical graduates and those of other Universities. There are two examinations, the fee for each being 5 guineas.

University of Glasgow.—Two degrees in science, as applied to State Medicine, are granted by the Faculty of Science of this University—the B.Sc. Public Health and the D.Sc. Public Health. Candidates must be graduates in medicine, and, if they have not already done so, must matriculate at Glasgow for the year in which they appear for examination. They have to follow certain courses of study, some of which must necessarily be taken out in the public health laboratory of Glasgow University. A candidate for the D.Sc. Public Health must have held the B.Sc. Public Health.

Conjoint Board in Scotland.—This body examines candidates for a diploma in Public Health, granted by the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow conjointly. The examination takes place in Glasgow or Edinburgh, and is held twice a year, in October and May. The fee for each of its two parts is £6 6s. It is open to all candidates holding a registrable qualification. Applications for examination in Edinburgh should be sent to Mr. James Robertson, 54, George Square, Edinburgh; and in Glasgow to Mr. Alexander Duncan, B.A., LL.D., 242, St. Vincent Street, Glasgow, not later than fourteen days before the examination day. The regulations and synopses of subjects may be had on application to either of these gentlemen, or may be found in the *Calendar of the School of Medicine of the Royal Colleges, Edinburgh*, issued by the Secretary, R. N. Ramsay, Solicitor, 27, Forrest Road, Edinburgh.

University of Dublin.—Candidates for the diploma in Public Health of this University must be graduates in Medicine and Surgery, of Dublin, Oxford, or Cambridge. Examinations are held in December, March, and June, a full syllabus concerning them being obtainable from the Registrar of the School of Physic, Dublin.

Royal University of Ireland.—A diploma in Public Health is granted to those who have graduated in its Medical Faculty not less than twelve months previously. The fee is £2, a further sum of £3 being payable on the granting of the diploma. Applications for admission to this examination must be made on a printed form, which can be obtained from the Secretary of the University.

Conjoint Board in Ireland.—This body holds an examination on behalf of the two Royal Colleges of Physicians and Surgeons, which together grant a Diploma in State Medicine. The fee for examination is £10 10s. a special examination being obtainable for an extra fee of £15 15s. Information respecting the examination may be obtained from the Secretary of the Committee of Management under the Conjoint Scheme, 6, Kildare Street, Dublin. Candidates have to supply a testimonial as to character from a Fellow of one of the Royal Colleges in Dublin, London, or Edinburgh.

THE PUBLIC SERVICES.

THE ROYAL NAVY AND ARMY AND THE INDIAN MEDICAL SERVICES.

General Regulations.

The following are the general rules governing admission to these services:

All candidates must be between the ages of 21 and 28 years, must possess registrable qualifications to practise medicine and surgery in Great Britain and Ireland, and must be adjudged by the Medical Board appointed for the purpose to be physically fit for service, must submit to an examination by a Medical Board into their physical fitness before being admitted to the entrance examination. This examination takes place before permission is accorded to competitors at the entrance examinations. Special attention is given to the candidate's power of vision. A moderate degree of myopia is not considered a disqualification, provided that it can be corrected by glasses during operations, and that no organic disease of the eye exists.

Testimony has also to be furnished, or is sought by the authority concerned, with regard to the candidate's moral and general character, and the Secretary of State in each service reserves the right to refuse permission to compete to any candidate.

As the prospect of a medical officer in one of these services attaining to the highest administrative grades depends to a large extent upon the regulations with regard to compulsory retirement at the age of 55, if below a certain grade at that age, there is a distinct advantage in entering the service at as early an age as possible.

The attractions of the Royal Army Medical Corps and of the Indian Medical Service have of late years been materially increased owing to the introduction of reforms advocated by the British Medical Journal, and, in addition to improvements in pay, both services now offer considerable scope for the work of a man who has special ability in some one or other branch of medicine or surgery. The fact, too, that both from the Royal Navy and the Royal Army Medical Corps it is possible for an officer to retire with a gratuity of £1,000 while still under 30 is calculated to meet the needs of men who initially have not sufficient capital with which to establish themselves in practice.

THE ROYAL NAVY MEDICAL SERVICE.

The regulations for admission of candidates to this Service, beyond those indicated in the foregoing paragraph, require the production of proof that the candidate is of pure European descent, the son either of natural-born British subjects or of parents naturalized in the United Kingdom, and the filling-in by the candidate of certain declaration forms as to his health, previous appointments, and readiness to serve; the documents concerned have to be transmitted to the Director-General, the Medical Department, the Admiralty, 18, Victoria Street, London, S.W., and if approved the candidate is permitted to compete for a vacancy.

The examination is in two parts, (*a*) compulsory subjects, (*b*) voluntary subjects; the admission of candidates, being determined solely by the number of marks gained in the former. The position of a successful candidate on the list is determined by the number of marks gained in the voluntary subjects plus those in the compulsory subjects; but no marks less than one-third of the total obtainable in each voluntary subject are allowed to count. The compulsory subjects are (1) Medicine (including Materia Medica), Therapeutics and General Hygiene, (2) Surgery and Surgical Anatomy (including Operative Surgery), 1,200 marks being allotted to each division. The voluntary subjects are (*a*) French and German, (*b*) Zoology, Botany, Chemistry, Physiology, and Geology and Physical Geography combined. Only two subjects in

division (*b*) can be taken, the total obtainable marks in each division being 600. Schedules showing the exact scope of the examination in each subject can be obtained.

The Admiralty also has power to admit annually without competition:

(*a*) Two candidates, proposed by the governing bodies of Schools of Medicine in the United Kingdom, who have satisfactorily filled the office of house-surgeon in a large civil hospital for at least six months.

(*b*) Six candidates specially recommended by the governing bodies of certain Colonial universities.

In either case the candidates have to pass an examination as to physical soundness.

The candidates successful at the competitions receive commissions as Surgeons in the Royal Navy forthwith, and then undergo a course of practical instruction at Haslar in Naval Hygiene, Bacteriology, Tropical Diseases, Naval Surgery, and Radiography. On the conclusion of this course they pass another examination; the marks gained at this are added to those gained at the Entrance Examination, and the two together determine each candidate's seniority in the new batch of surgeons. Those admitted without competition take seniority next after the last surgeon who entered by competition.

Promotion.

In the ordinary course an officer reaches the rank of Staff Surgeon in eight years from the date of his first commission, but before promotion he must pass the Qualifying Examination. Earlier promotion may be given in acknowledgement of distinguished service or conspicuous professional merit. Earlier promotion may also be granted to surgeons who, before joining the service, have held a resident appointment in a civil hospital of not less than 100 beds. It is customary to allow those who, when candidates for the Navy, hold or are about to hold such posts, to complete their service in them, provided it does not exceed twelve months, and such time reckons as service in the Navy though the individual does not receive pay from Naval funds.

A Staff Surgeon in the ordinary course is promoted to the rank of Fleet Surgeon eight years after the date of his attainment of the lower rank. Promotion to the higher rank of Deputy Inspector-General of Hospitals and Fleets is by selection from among the Fleet Surgeons. Similarly an Inspector-General of Hospitals and Fleets is selected from among those Deputy Inspectors-General who have three years' full-pay service in that rank to their credit. Special promotion from the rank of Staff Surgeon to Fleet Surgeon may be granted exceptionally for distinguished service or conspicuous professional merit.

Pay, Full Pay, and Allowances.

The following are the rates of full pay and allowances in the different ranks:

	£ s. d.		£ s. d.
Surgeon:			
On entry	0 14 0	.....	255 10 0
After 4 years' full-pay service	0 17 0	.....	310 5 0
Staff Surgeon:			
On promotion	1 0 0	.....	365 0 0
After 4 years' full-pay service in rank...	1 4 0	.....	438 0 0
Fleet Surgeon:			
On promotion	1 7 0	.....	402 15 0
After 4 years' full-pay service in rank ..	1 10 0	.....	547 10 0
,, 8 ,, ,, ,, ...	1 13 0	.....	602 5 0
,, 12 ,, ,, ,, ...	1 16 0	.....	657 0 0
Deputy Inspector-General	2 2 0	.....	766 10 0
Inspector-General	—	.....	1,300 0 0 (Consolidated.)

Other Allowances.

The Inspectors-General at Haslar, Chatham, and Plymouth Hospitals are granted an allowance of 10s. a day as charge pay. Deputy inspector-generals, fleet surgeons, and staff surgeons in charge of certain hospitals receive charge pay of 7s. 6d., 5s., and 2s. 6d. a day respectively. The senior medical officer—fleet or staff surgeon—of ships bearing the flags of flag officers commanding foreign stations and the Channel and Atlantic fleets receive an allowance of 5s. a day. An allowance of 2s. 6d. a day may be granted to the senior medical officer of ships bearing the flag of flag officers not commanding stations or fleets and to ships flying the broad pennant of commodores. Medical officers conducting the course of instruction at Haslar Hospital are entitled to receive the following allowances: The two senior officers employed upon this duty £150 a year each; the junior officer assisting, £50 a year; the junior officer instructing the sick-berth staff, £50 a year; the officer instructing the sick-berth staff at Plymouth, £50 a year. The following charge allowances may be granted to medical officers in charge of hospital ships: If above the rank of fleet surgeons, 5s. a day; if of the rank of fleet surgeon or junior, 3s. 6d. a day. The fleet and staff surgeons serving at the Admiralty and at the Marine Rendezvous are granted hospital allowance of £53 a year in addition to the usual lodging money. Hospital allowances for naval medical officers at home and abroad, in lieu of provisions for themselves and servants, and for fuel and lights, are as follows: Deputy inspector-generals, at home, £67; abroad, £112; fleet or staff surgeons, at home, £53; abroad, £112; surgeons at home, £39; abroad, £108. Medical officers employed elsewhere than at a hospital, and not victualled in kind, receive an allowance of 1s. 6d. a day in lieu of above.

Half Pay.

Surgeons under 2 years' full-pay service receive when on half pay 6s. per diem; after 2 years' full-pay service, 7s. per diem; after 4 years, 8s.; after 6 years, 9s.; after 8 years, or on promotion to staff surgeons, after 12 years, 12s.; after 14 years, 13s.; after 16 years, and on promotion to fleet surgeon, 14s.; after 18 years, 15s.; after 20 years, 17s.; after 22 years, 18s.; and after 24 years, 20s. Deputy inspector-general on promotion, 25s.; after 2 years' full-pay service in rank, 27s.; after 4 years, 29s. Inspector-general, 38s.

Retirement.

After four years' full-pay service a surgeon may retire and join the Reserve of Naval Medical Officers. On doing so he receives a gratuity of £500, retains his rank and uniform, and if he agrees to remain in the Reserve for four years, receives a retaining fee of £25 per annum. At the end of this period he can re-engage for a further four years on the same terms, but after that he is retired altogether. While in the Reserve he is liable to be called up for service in times of war or emergency, and then receives the ordinary pay and allowances of his rank. He may also in the first instance enter the Reserve with power to resign on six months' notice, but in this case he receives no retaining fee.

Voluntary retirement is also permitted, if the Lords of the Admiralty approve, to officers after eight, twelve, and sixteen years' full-pay service, the retiring officer receiving a gratuity. An officer of twenty years' service may similarly retire, and then receives either a gratuity or retired pay, as he selects. It is to be noted, however, that the Lords of the Admiralty do not invariably consent forthwith to these voluntary retirements, and that loss of full-pay service, from sickness or inability to obtain service from no default of the officer, may delay the completion of the periods of full-pay service mentioned.

Retirement is compulsory in the case of ordinary officers at 55, or at any age, if the officer has not been on full-pay service for three years; and in the case of Inspectors and Deputy Inspectors-General at the age of 60, with the same qualification. In the case of an Inspector-General, retirement under the age clause may be deferred by the Admiralty, if it pleases, until the age of 62.

The following are the amounts paid on retirement:

Rank.	Gratuities.	Daily.	Yearly.
	£ s. d	£ s. d.	£ s. d.
Surgeon, Staff Surgeon, and Fleet Surgeon:			
After 4 years' full-pay service	500 0 0	—	—
,, 8 ,, ,,	1,000 0 0	—	—
,, 12 ,, ,,	1,500 0 0	—	—
,, 16 ,, ,,	2,250 0 0	—	—
Fleet Surgeon:			
After 20 years' service	—	*1 0 0	365 0 0
,, 24 ,, ...	—	*1 2 6	410 12 6
,, 27 ,, ...	—	*1 5 0	456 5 0
,, 30 ,, ...	—	*†1 10 0	547 10 0
Deputy Inspector-General	—	1 15 0	638 15 0
Inspector-General	—	2 0 0	730 0 0

* To obtain this rate an officer must hold the Commission of Fleet Surgeon.

† Or on compulsory retirement at the age of 55.

An officer who retires with less than 20 years' service on account of disability contracted in and attributable to the service receives the half-pay of his rank or with the consent of their Lordships a gratuity on the scales previously given, but

such an officer is not entitled to receive any special compensation for the disability in addition to the gratuity as above, unless he has received a wound in action or has been injured in duty, when extra gratuity or pension may be awarded.

An officer retired with less than twenty years' service on account of disability, contracted in but not attributable to the service, receive:

(*a*) If he has over eight years' full-pay service, either a gratuity on the scale given in paragraph above, or half-pay, according as their Lordships think fit.

(*b*) If he has less than eight years' full-pay service, such gratuity as their Lordships think fit, not exceeding the rate of £125 for each year of full-pay service.

Under circumstances other than those specified, and other than misconduct, neglect of duty, etc., an officer retired with less than twenty years' service will not be allowed half-pay or retired pay, but will receive a gratuity on the scale laid down above, if he has eight years' full-pay service; should his full-pay service not amount to eight years, a gratuity at the discretion of the Admiralty.

The power vested in their Lordships of granting reduced rates of half-pay and retired pay in cases of misconduct is extended to the award of gratuities on retirement, and the gratuity awarded will be reduced to such an amount as is thought fit.

An officer retiring after twenty years' full-pay service is eligible, if recommended by the Medical Director-General for distinguished or meritorious service, to receive a step of honorary rank, such step being awarded at their Lordships' discretion, and not conferring any claim to increase of retired pay or of widow's pension.

All retired officers are liable, till the age of 55, to serve in time of declared national emergency, in a rank not lower than that held on retirement, even if only honorary rank.

This liability does not exist in cases of withdrawal on the conditions previously specified under voluntary retirement.

Retired officers receive special consideration as regards appointments on shore connected with the Admiralty.

If an officer retires or withdraws on a gratuity, his widow and children lose the claim to a pension or compassionate allowance which they would otherwise possess.

Once in eight years every medical officer is required to undergo a post-graduate course of three months' duration at a metropolitan hospital. During this period he is borne on the ship's books on full pay, and is granted lodging and provision allowance and travelling expenses, and a sum not exceeding £25 for the expenses of the course, such sum being paid against vouchers produced. The medical officer is required to produce at the end of the course a certificate of attendance to the following:

I. The Medical and Surgical Practice of the Hospital.
II. A course of Operative Surgery on the Dead Body.
III. A course of Bacteriology.
IV. A course of Ophthalmic Surgery, particular attention being paid to the Diagnosis of Errors of Refraction.
V. A practical course of Skiagraphy.

Finally, it should be noted that regulations have been drawn up whereby in cases of need medical men can be engaged for temporary service.

ROYAL ARMY MEDICAL CORPS.

A CANDIDATE qualified as stated in the paragraph on page 608 must fill up a form of application and declaration, which can be obtained on application to the Director-General, Army Medical Service, War Office, London, S.W., and submit it to the Director General in sufficient time to permit of reference to the medical school in which the candidate completed his course as a medical student.

The Dean, or other responsible authority, of such school will be requested by the Director-General to render a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the Corps, and to this report special importance will be attached. After the form of application and the confidential report above alluded to have been received, the Director-General will decide if the candidate may be allowed to compete for a commission in the Royal Army Medical Corps. If approved, he will then be examined as to his physical fitness by a Board of Medical Officers, in accordance with regulations which can also be obtained from the Director-General. The entrance examinations are held twice in the year, usually in January and July. The Secretary of State reserves the right of rejecting any candidate who may show a deficiency in his general education.

An entrance fee of £1 is required from each candidate admitted to the examination, and is payable at the conclusion of his physical examination, if pronounced fit.

A candidate successful at the entrance examination is at once appointed a lieutenant on probation, and then required to pass through such courses of instruction as the Secretary of State shall decide, and, after passing the examinations in the subjects taught, and satisfying the Director-General that he possesses the necessary skill, knowledge, and character for permanent appointment to the Royal Army Medical Corps, his commission as lieutenant will be confirmed. The commission given him bears the date of his appointment as lieutenant on probation.

ENTRANCE EXAMINATIONS.

All the competitors are examined by the Examining Board in medicine and surgery; the tests in these subjects will be of a clinical and practical character, partly written and partly oral, and marks being allotted under the following scheme:

	Maximum Marks.
Medicine (written).	
A. Examination and report upon a medical case in the wards of a hospital	125
B. Commentary upon a case in medicine ...	100
(Three hours allowed for A and B together.)	
Medicine (oral).	
A. Clinical cases; clinical pathology	100
B. Morbid anatomy and morbid histology ...	75
(One-quarter of an hour allowed for each table.)	
Surgery (written).	
A. Examination and report upon a surgical case in the wards of a hospital	100
B. Commentary upon a case in surgery ...	125
(Three hours allowed for A and B together.)	
Surgery (oral).	
A. Clinical cases, including diseases of the eye; surgical instruments and appliances...	75
(One-quarter of an hour allowed for this table.)	
B. Operative surgery and surgical anatomy ...	100
Total marks...	800

The reports indicated on patients must include, besides the details ordinarily included in case-taking, a commentary on the features of the case as a whole, a prognosis, and a plan of treatment. The commentary on the reports on cases submitted to the candidate must discuss in detail all their various points.

The examinations are held in London, and occupy about four days.

Having gained a place at this entrance examination, the successful candidates proceed to the Royal Army Medical College for instruction in recruiting duties, at the termination of which they will join the Royal Army Medical Corps School of Instruction at Aldershot for a two months' course in the technical duties of the corps, and at the end of the course will be examined in the subjects taught. The maximum number of marks obtainable at this examination are 100.

On completion of the above course the lieutenants on probation rejoin the Royal Army Medical College to undergo two months' instruction in Hygiene, Pathology, Tropical Medicine, Military Surgery, and Military Medical Administration, after which they will be examined in these subjects. The maximum number of marks obtainable at this examination will be 700.

PROMOTION.

An officer finally accepted is eligible for promotion to the rank of Captain after three and a half years' service, and to that of Major after twelve years' service, in both cases a Promotion Examination having to be passed. Promotion to the rank of Major may be accelerated by obtaining special distinction at the Qualifying Examination for that rank. Above the rank of Major promotion is by selection, Majors who desire promotion to the rank

of Lieutenant-Colonel having to pass another Qualifying Examination. Lieutenants and Captains who fail to pass their Promotion Examinations within the allotted period are placed on a special list, with pay equal to half-pay until the date of the next Promotion Examination; under certain circumstances eventual failure to pass the examination may entail retirement from the service. Special promotions are made for meritorious or distinguished service, distinction in original investigation or research coming within these terms.

Examinations for Promotion.

Lieutenants before Promotion to Captain.

This examination may be taken at any time after completing 18 months' service, and will be held in the military district in which the officer is serving. The subjects are: (1) Regimental duties. (2) Drill. (3) Military law. (4) Duties and accounts connected with military hospitals and their supplies. (5) Other duties of executive medical officers.

Captains before Promotion to Major.

This examination, which may be taken at any time after completing five years' service, is held in London on the termination of a period of special study. It consists of written papers, essays, oral and practical examinations on:

(1) Medicine, including specific fevers. (2) Surgery, including skiagraphy. (3) Hygiene. (4) Bacteriology and tropical diseases. (5) One special subject from the subjoined list, to which additions may from time to time be made: (*a*) Bacteriology, including the preparation of antitoxins; (*b*) Dental surgery; (*c*) Dermatology, including venereal diseases; (*d*) Otology, including laryngology and rhinology; (*e*) Midwifery and gynaecology; (*f*) Operative surgery, advanced; (*g*) Ophthalmology; (*h*) Psychological medicine; (*i*) State Medicine.

Majors before Promotion to Lieutenant-Colonel.

This examination, which may be taken at any time after three years in the rank of major, is held in the military districts in which the officer is serving at times duly notified. The subjects are:

(1) Military law. (2) Army medical organization in peace and war. (3) Sanitation of towns, camps, transports, and all places likely to be occupied by troops in peace or war; epidemiology and management of epidemics. (4) (*a*) Medical history of the more important campaigns, and the lessons to be learnt therefrom; (*b*) a knowledge of the Army Medical Services of the more important Powers; (*c*) the laws and customs of war so far as they relate to the sick and wounded.

Pay, Additional Pay, and Charge Pay.

The following are the rates of pay, additional pay, charge pay, and extra duty pay:

Ordinary Pay.

—	Inclusive of all Allowances except Field and Travelling Allowances.
Army Medical Service.	
At Head Quarters.	Yearly. £
Director-General	2,000
Deputy Director-General	1,500
Assistant Director-General	850
Deputy Assistant Director-General	750
—	Exclusive of Allowances.
At Other Stations.	Daily. £ s. d.
Surgeon-General	3 0 0
Colonel	2 5 0
Lieutenant-Colonel	1 10 0
Lieutenant-Colonel promoted to the rank, on or after January 9th, 1907, after 3 years as such	1 15 0
Major	1 3 6
After 3 years' service as such	1 6 0
Captain	0 15 6
After 7 years' total full-pay service	0 17 0
After 10 years' total full-pay service	1 1 0
Lieutenant on probation and Lieutenant	0 14 0
Adjutant of the Royal Army Medical Corps (Volunteers)	The pay of his rank.

Additional Pay.

Officer not serving on the head quarters staff appointed a member of the Advisory Board	£150 a year.
	Daily. s. d.
Officer under the rank of lieutenant-colonel holding an appointment as specialist	2 6

Charge Pay.

(*a*) Officer in charge of a general or other hospital; or of a division of a general hospital:

	Daily. s. d.
If in charge of at least 50 beds	2 6
,, ,, 100 ,,	5 0
,, ,, 200 ,,	7 6
,, ,, 300 ,,	10 0
(*b*) Senior Medical Officer, Royal Arsenal, not exceeding	10 0
(*c*) Officer in command of the dépôt, Royal Army Medical Corps	5 0

The senior officer of the Army Medical Service with an army in the field—

A rate to be fixed by the Secretary of State according to the magnitude of the charge.

(*d*) The officer, if under the substantive rank of colonel, holding the appointment of senior medical officer in a command abroad, or of an administrative medical officer, if the number of soldiers is 1,500 or upwards | 5 0

Household Troops.

The rates of pay of medical officers of the Household Troops are as follows:

	£ s. d.
Brigade-surgeon-lieutenant-colonel	1 15 0
Surgeon-lieutenant-colonel	1 10 0
Surgeon-major	1 3 6
After 3 years' service as such	1 6 0

Extra-Duty Pay.

An officer of the Royal Army Medical Corps, appointed to act as adjutant or quartermaster of the Royal Army Medical Corps (Militia) during preliminary drill or training, shall receive extra-duty pay at the following daily rates:

	s. d.
Acting Adjutant	2 6
Acting Quartermaster	2 0

Retirement.

On the completion of three years' service, but not more than six, an officer of the Royal Army Medical Corps may be permitted by the Secretary of State to become an Army Reserve officer for a period of seven years, and while so serving he will receive pay at the rate of £25 a year.

With the sanction of the Army Council such officer may be allowed to return to the active list, and if the period he has been in the Reserve of Officers amounts to at least one year, and not more than three years, he will be allowed to reckon one-third of such period towards promotion, gratuity, and pension.

The ordinary rules as to retirement are as follows:

Any officer may be retired after thirty years' service. Retirement is also compulsory on the ground of age, in the case of surgeon-generals at 60, of colonels at 57, and officers below that rank at 55; the director-general retires on completion of his term of office in that appointment. A major is retired on completion of twenty-five years' service if he has been superseded for promotion, or if, after twenty years' service, he has failed to qualify for promotion. An officer placed on the half-pay list on account of medical unfitness is, if not previously retired from the army at the expiration of five years from the date on which he was placed on the half-pay list, or if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by the Army Council.

An officer, whether on full or half pay, who, to the satisfaction of the regulated medical authority, has been pronounced insane, must be retired from the army, with the retired pay to which he would be entitled if reported by the regulated medical authority to be permanently unfit for duty. If his disability was not caused by military service, and he is not entitled to permanent retired pay by length of service, he will receive temporary retired pay equivalent to the half pay, and temporary retired pay, if any, which he would have received if his disability had been other than insanity.

Retired Pay.

An officer who retires after holding the appointment of Director-General for three years, and with thirty years' service to his credit, receives a pension of £1,125 a year. In other ranks the rates are as follows:

	Daily. £ s. d.
Colonel promoted on, or after, January 9th, 1907:	
Under 4 years' service as such, but with 30 years' total service	1 10 0
After 4 years' service as such	1 15 0
If not qualified as above	the rate for a Lieutenant-colonel.

Surgeon-lieutenant-colonel of the Household Troops:	£ s. d.
After 20 years' service	1 0 0
After 25 ,, ...	1 2 6
After 30 ,, ...	1 5 0

	Daily. £ s. d.
Lieutenant-Colonel, promoted on, or after, January 9th, 1907:	
After 20 years' service	1 0 0
After 25 ,, ...	1 2 6
After 28 ,, ...	1 7 6
Major, or Surgeon-Major of the Household Troops:	
After 20 years' service	1 0 0

	Gratuity. £
Major, or Captain, or Surgeon-Captain of Household Cavalry:	
After 5 years' service in the rank of captain ...	1,000
After 3 years' service in the rank of major ...	1,800
After 6 years' service in the rank of major ...	2,500
Surgeon-Lieutenant-Colonel or Surgeon-Major of the Household Troops:	
After 15 years' service	1,800
After 18 years' service	2,500

Except in the case of a colonel promoted after January 9th, 1907, or a lieutenant-colonel, an officer of the Army Medical Service, who, on voluntary retirement, has served for less than three years in the rank from which he retires, shall be entitled only to the gratuity or retired pay assigned to the next lower rank.

Army Medical Reserve.

Information as to this Service may be obtained on application to the Secretary, War Office, London. It is intended for ordinary medical men who, while still engaged in private occupations, are prepared to qualify and continue to keep themselves qualified for seven years, for service in the Army Medical Department at home or abroad, if required. Such persons on appointment must be under 30 years of age, and receive commissions as lieutenants; as such they receive during their initial training pay at the same rate as a lieutenant in the Army Medical Corps. Afterwards they are paid at the rate of £20 a year, in addition to pay allowances for days of actual service. On promotion to the rank of captain the pay is increased to £25.

INDIAN MEDICAL SERVICE.

A candidate for this service must be a natural-born subject of His Majesty, of European or East Indian descent, and the general rules mentioned in the paragraph on page 608 apply to him; he must make his application for permission to compete for a commission on a prescribed form. If allowed to compete, he pays a fee of £1, and is then examined in the following subjects:

	Marks.
1. Medicine, including Therapeutics	1,200
2. Surgery, including Diseases of the Eye ...	1,200
3. Applied Anatomy and Physiology	600
4. Pathology and Bacteriology	900
5. Midwifery and Diseases of Women and Children ...	600
6. Materia Medica, Pharmacology, and Toxicology ...	600

The examinations in Medicine and Surgery are in part practical, and include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. As regards Pharmacology and Toxicology no syllabus is issued, the questions put being such as to test the candidate's general knowledge of them.

No candidate is considered eligible who does not obtain at least one-third of the marks obtainable in each of the above subjects, and one-half of the aggregate marks for all the subjects.

Examinations usually take place in January and July each year. Copies of examination questions are not issued, and no candidate is permitted to compete more than three times.

If successful the candidates are granted about a month's leave, and then required to attend two successive courses of two months each at Aldershot and at the Royal Army Medical College, Millbank.

The course at Aldershot includes instruction in Internal Economy, Indian Military Law, Hospital Administration, Stretcher and Ambulance Drill, Equitation, Map Reading.

The course at the Royal Army Medical College is in: (1) Hygiene, (2) Military and Tropical Medicine, (3) Military Surgery, (4) Pathology of Diseases and Injuries incidental to Military and Tropical Service.

During this period of instruction each candidate receives an allowance of 14s. per diem, with quarters, or when quarters are not provided, with the usual allowances of a subaltern in lieu thereof, to cover all costs of maintenance; he is required to provide himself with the regulation undress uniform and mess dress of a lieutenant of the Indian Medical Service.

Should he be granted sick leave before the completion of his course of instruction and final admission to the service he receives furlough pay at the rate of 10s. 6d. a day for the period of his sick leave.

At the conclusion of the course candidates have to pass an examination in its subjects, and are then confirmed in the rank of lieutenant.

A lieutenant who within a reasonable period before the date at which he would otherwise sail for India furnishes proof of his election to a resident appointment at a recognized civil hospital may be seconded for a period not exceeding one year from the date on which he takes up such appointment, provided that he joins it within three months of passing his final examination, and that he holds himself in readiness to sail for India within fourteen days of the termination of the appointment. While seconded he receives no pay from Indian funds, but his service towards promotion, increase of pay, and pension will reckon from the date borne on his commission.

All officers on appointment are placed on one list, their position on it being determined by the combined results of the Preliminary and Final Examinations. They are liable for military employment in any part of India, but with a view to future transfers to civil employment each stands posted to one of the following civil areas: Madras and Burmah: Bombay with Aden; Upper Provinces (United Provinces, Punjab and Central Provinces); Lower Provinces (Bengal, Eastern Bengal, and Assam). The allocation of officers to these areas of employment is determined upon a consideration of all the circumstances, including, as far as possible, the candidate's own wishes. An officer transferred to civil employment, though ordinarily employed within the area of his choice, remains liable to employment elsewhere if the exigencies of the service require it.

Officers on appointment are sent to India by troopship when possible; otherwise, by private steamer at the public cost. Until they arrive in India, when they begin to receive the ordinary pay of their rank, they receive 14s. a day. If an officer, after receiving his commission, falls ill, he is paid at the rate of £250 a year until the date at which he should have sailed, and after that 14s. a day.

Promotion.

A lieutenant's commission dates from the day on which the result of the examination at which he is admitted is announced. He may be promoted to captain on completion of three years' full-pay[1] service from date of first commission, but after completing eighteen months' service and before promotion to the rank of captain he will be required to pass an examination in military law and military medical organization. A captain is promoted to major on completion of twelve years' full-pay[1] service, but this promotion is accelerated by six months in the case of officers who fulfil certain specified conditions. A major is promoted to lieutenant-colonel on completion of eight years' full-pay[1] service in the rank of major. All promotions from the rank of lieutenant-colonel to that of

[1] Time (not exceeding one year) passed on temporary half-pay reckons as service for promotion and pension in the case of officers placed on half-pay on account of ill health contracted in the performance of military duty.

olonel, and from the rank of colonel to that of surgeon-eneral, are by selection for ability and merit. In all anks distinguished service in the field may be rewarded y accelerated promotion.

Tenure of Office in Administrative Grades.

The tenure of office of surgeons-general and colonels is imited to five years. Colonels, if not disqualified by age, re eligible either for employment for a second tour or uty in the same grade, or for employment in the higher rade of surgeon-general by promotion thereto. Absence n leave in excess of eight months during a five years' our of duty involves forfeiture of appointment.

Pay and Allowance.[1]

The following are the monthly rates of Indian pay drawn by officers of the Indian Medical Service from the late of their arrival in India:

Rank.	Unemployed Pay.	Grade Pay.	Staff Pay.	In Officiating Medical Charge of a Regiment.	In Permanent Medical Charge of a Regiment.
	Rs	Rs.	Rs.	Rs.	Rs.
Lieutenant	420	350	150	425	500
Captain	475	400	150	475	550
,, after 5 years' service	475	450	150	525	600
,, after 7 years' service	—	500	150	575	650
,, after 10 years' service	—	550	150	625	700
Major	—	650	150	725	800
,, after 15 years' service	—	750	150	825	900
Lieutenant-Colonel	—	900	350	1,075	1,250
,, ,, after 25 years' service	—	900	400	1,100	1,300
,, ,, specially selected for increased pay ...	—	1,000	400	1,200	1,400

Notes.—(*a*) Unemployed pay is drawn by officers of less than 7 years' service who are not holding officiating or substantive charge of native regiments. Officers of more than 7 years' service draw grade pay alone when unemployed. Staff pay is the pay of a command, and is drawn in addition to grade pay. (*b*) Horse allowance is granted to officers in substantive charge of cavalry regiments at the rate of Rs.90 a month to lieutenant-colonels and majors, and Rs.60 a month to captains and lieutenants.

The principal administrative appointments are held by colonels and surgeons-general on the following consolidated salaries:

Colonel, from Rs. 1,800 to Rs. 2,500 per mensem.		
Surgeon-General	2 @ Rs. 2,200	,,
,,	2 @ Rs. 2,500	,,
,,	1 @ Rs. 3,000	,,

Specialist pay at the rate of Rs. 60 a month is granted to officers below the rank of lieutenant-colonel who may be appointed to certain posts.

The salaries of other substantive medical appointments in the civil and military departments are consolidated, and vary from Rs. 450 to Rs. 2,000 per mensem.

Qualified officers of the Medical Service are also eligible for appointments in the Assay Department. The salaries of these appointments are from Rs. 600 to Rs. 2,250 per mensem.

Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment.

Except in the administrative grades and in certain special appointments, medical officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

No officer, however employed, can receive any staff allowance in addition to his unemployed or grade pay unless he has passed the examination in Hindustani known as the "Lower Standard." The passing of this examination does not of itself bring any increase of pay to an officer, unless appointed to a substantive or officiating charge; but failure to pass disqualifies an officer, even when holding such substantive or officiating charge, from receiving any portion of the staff allowances of the appointment.

[1] Under present arrangements officers of the Indian Medical Service who are not statutory natives of India receive exchange compensation allowance to compensate them for the fall of the value of the rupee. The allowance consists of an addition to their salaries (subject to certain limitations) equal to half the difference between their salaries converted at (1) 1s. 6d. the rupee, and (2) the average market rate for each quarter.

Surgeons-general and colonels, on vacating office at the expiration of the five years' tour of duty, are permitted to draw in India an unemployed salary of Rs. 1,350 per mensem in the former, and Rs. 1,000 in the latter case, for a period of six months from the date of their vacating office, after which they are placed while unemployed on the following scale of pay:

	Surgeon-General, Per diem.	Colonel, Per diem.
	£ s. d.	£ s. d.
After 30 years' service on full pay...	2 5 0	1 14 0
,, 25 ,, ,,	2 5 0	1 10 0
,, 20 ,, ,, or on promotion, should this period of service not be completed ...	2 0 0	1 8 0

Leave Rules.

(The paragraphs in small type apply only to officers in military employ.)

Officers below the rank of colonel may be granted:

1. Privilege leave under such regulations as may from time to time be in force.

2. Leave out of India, for no longer period than one year, capable of extension to two years' absence from duty, on the following pay:

On first appointment	£250 a year.
After the commencement of the 10th year's service for pension	300
Ditto, ditto, 15th ditto	450
Ditto, ditto, 20th ditto	600
Ditto, ditto, 25th ditto	700

3. Leave in India but for the period of one year only, on full military pay and half the staff salary of appointment.

No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted except on specially urgent grounds and without pay.

An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence (unless, as under the foregoing paragraph, he is specially granted an extension of leave without pay) is placed on temporary half-pay or the retired list, as the circumstances of the case may require. An officer is also liable to be placed on half-pay or the retired list should his health require an undue amount of leave, whether in or out of India.

Leave may be granted at any time, but solely at the discretion of the civil or military authorities in India under whom an officer may be serving.

An officer on leave, whether in India or out of India, is required to rejoin at once on being recalled to duty, unless certified by a Medical Board as unfit to do so.

Officers of the Administrative Grades may be granted one period of leave not exceeding eight months during their tenure of appointment.

Extra furlough may be granted to officers desirous of pursuing special courses of study at the rate of one month's furlough for each year's service up to 12 months in all.

Honours and Rewards.

All officers are eligible for the military distinction of the Order of the Bath and for other Orders, British and Indian, and for good service pensions. Six of the most meritorious are named Honorary Physicians, and six Honorary Surgeons to His Majesty.

Retiring Pensions and Half-Pay.

The following are the ordinary rates of pension:

	Per Annum.
	£
After 30 years' service...	700
,, 25 ,, ...	500
,, 20 ,, ...	400
,, 17 ,, ...	300

Service for pension reckons from date of first commission, and includes all leave taken under the rules quoted. (See also Note 1 on p. 612.)

A surgeon-general, after three years' active employment in that appointment, is entitled to retire upon a pension of £350 per annum, in addition to that to which he may be entitled under the above scale.

A colonel is entitled, after three years' active employment in that appointment, to retire upon a pension of £125 per annum, in addition to the pension to which he may be entitled under the above scale, and after five years of such employment on an additional pension of £250 in all.

In each of the cases stated in the two foregoing paragraphs eight months' absence on leave is allowed to count towards actual service in those grades.

A surgeon-general or colonel who has completed his

term of service and has reverted to British pay may reside in Europe, at the same time qualifying for higher pension.

All officers of the rank of lieutenant-colonel and major are placed on the Retired List on attaining the age of 55 years; the Director-General, when he has attained the age of 62 years, and all other surgeons-general and colonels when they have attained the age of 60 years. But a lieutenant-colonel, who has been specially selected for increased pay, if he attains the age of 55 years before he becomes entitled to the pension for 30 years' service, may be retained until completion of such service; and in any special case where it would appear to be for the good of the service that an officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

Officers placed on half-pay on account of ill health as described in the paragraphs concerning leave receive: Under five years' service, 6s. a day, or £109 10s. a year; after five years' service, 8s. a day, or £146 a year; after ten years' service, 10s. a day, or £182 10s. a year; after fifteen years' service, 13s. 6d. a day, or £246 7s. 6d. a year.

An officer of less than three years' service, although he may be transferred to the half-pay list under the general conditions of transfer, will not be granted any half-pay unless his unfitness has been caused by service.

INVALID PENSIONS.

An officer who has become incapacitated for further service in India on account of unfitness caused by duty may, after he has been two years on temporary half-pay, be granted an invalid pension. Such pensions begin at £192 a year after twelve years' service, and rise by £20 for each additional years' service up to £272.

As already stated in the footnote on page 612, time not exceeding one year passed on temporary half pay reckons as service for promotion and pension in the case of an officer placed on half-pay on account of ill health in the performance of military duty.

Additional pensions for wounds and injuries received in action or in the performance of military duty are awarded to officers of the Indian Medical Service on the same terms as to combatant officers of the Indian Army.

FAMILY PENSIONS.

The claims to pensions of widows and families of officers are treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being.

The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, for the benefits of which all officers must, as a condition of their appointment, subscribe from the date of their arrival in India.

PRISON MEDICAL SERVICE.

THE prison department consists of two branches—the convict service and the local prison service. These are now practically amalgamated, and the officers of each branch are freely interchangeable. In the case of the smaller prisons the medical officer is usually a local practitioner, but in the case of the larger prisons the medical officers are appointed by the Convict Prison Board or the Prison Commission, and form practically a special service. The Chairman of the Board is Sir Evelyn Ruggles-Brise, K.C.B. Application for employment may be made to the Board on a special form, which, we understand, can be obtained from the Secretary, Major E. G. Clayton, Prison Commission, Home Office, London, S.W.

The number of vacancies is not large, and the prospects of promotion are bad. This is due in part to the fact that the rate of pay of the higher appointments depends upon the number of prisoners in the particular prison, and that the total number of prisoners in the country is not increasing in proportion to population.

Convict Service.—Five deputy medical officers at £250, rising to £300; four medical officers at incomes ranging from £300 to £550.

Local Prison Service.—Ten deputy medical officers at £250, rising to £300; twenty-three medical officers at £200; twenty-two medical officers at £250; four medical officers at £300, rising to £390; eight medical officers at £400, rising to £550. Quarters, or an allowance in lieu, are granted to those who give their whole time to the service.

APPOINTMENTS IN THE COLONIES.

MEDICAL appointments are from time to time filled up by the Colonial Office in the following Colonies and Protectorates: British Guiana, Jamaica, Trinidad, Windward Islands, Leeward Islands, British Honduras, Fiji, Sierra Leone, Gambia, Gold Coast, Lagos, Northern and Southern Nigeria, East Africa and Uganda Protectorates, British Central Africa, Somaliland, Ceylon, Straits Settlements, the Federated Malay States, Hong Kong, Mauritius, Seychelles, Cyprus, Gibraltar, St. Helena, and the Falkland Islands. In Ceylon, Jamaica, and Mauritius, vacancies are almost always filled locally by the appointment of qualified native candidates. As a rule officers are required on appointment to undergo a three months' course of instruction at the London or Liverpool School of Tropical Medicine, and to obtain a certificate of proficiency before taking up their appointment. It is for the West Indies and the East and West African Colonies and Protectorates that medical officers are more frequently required, special conditions of service applying to the latter.

The majority of the West Indian appointments involve medical charge of a district, including, as a rule, the care of a hospital, poorhouse, asylum, or other institution, and free attendance on the aged and children.

Passage money on first appointment, and leave of absence on half-pay (in addition to the ordinary annual vacation on full-pay, not exceeding three months in two years), are granted only in the cases specified in the Colonial Regulations. Leave on half-pay is not granted before the completion of six years' service, except on the ground of illness or urgent private affairs. With regard to pension, medical officers are usually on the same footing as other Government servants; but in cases where private practice is allowed the general rule is that they are not usually entitled to pension.

As a general rule all applicants for medical employment in the Colonies must be between the ages of 23 and 35, and must be doubly qualified; preference is given to those who have held hospital appointments as house-physicians and house-surgeons; certificates of moral character and of sobriety are required, and every officer before being appointed has to be medically examined by one of the consulting physicians of the Colonial Office.

In addition to the ordinary medical appointments in these Colonies, vacancies also occasionally, though very rarely, occur for which specialists are required.

Applications should be addressed to the Assistant Private Secretary, Colonial Office, Downing Street, S.W. Out of the total number so applying a list of candidates is made, and this is considered as vacancies occur, but no promise whatever is held out that candidates, even if they are placed on the list, will eventually receive an appointment. It is not possible to forecast either the number or the nature of the vacancies which will arise in the course of any given year, and it is not expected that candidates should hold themselves in readiness by refraining from other employment, as usually, when selected for an appointment, they can be allowed sufficient time to make their preparations and to terminate their existing employment. The Colonial Office has a printed form supplying information as to the general nature of the medical appointments in each colony, and a copy of this can be obtained on application, and should be sought by those thinking of a colonial career.

BRITISH PRACTITIONERS ABROAD.

THE following notes give some indication of the conditions under which medical men possessing British degrees or diplomas are at liberty to carry on regular practice outside Great Britain and Ireland.

FOREIGN STATES.

Austria.—It is necessary to pass the State examination, or to obtain a University Degree in Medicine, a necessary preliminary to which is naturalization as an Austrian subject. Recognition of foreign diplomas may be obtained on passing certain examinations.

Belgium.—Permission to practise must be obtained by foreign practitioners through a duly appointed Medical Board. To obtain it is a matter of extreme difficulty.

Bulgaria.—Foreign medical graduates must pass a viva voce examination conducted in the Bulgarian language.

Denmark.—Foreigners are allowed no privilege in respect of exemption from examination.

Egypt.—Permission to practise is accorded by the Director-General of the Sanitary Department to registered British practitioners upon proof of identity and a certificate of good character from the British Consul-General.

France.—The degree of M.D. must be obtained by examination before a French faculty (Paris, Montpelier, Nancy, Bordeaux, Lyons, Lille, or Toulouse). This regulation applies to Algiers also. The degree, moreover, confers the right to practise only if it has been obtained on precisely the same conditions as those to which French students are subject.

Germany.—Any person may practise medicine in this country, but does so at his own peril unless he has passed the Staats-Examen. The latter alone confers recognition as a legal medical practitioner, and must be passed even by those who are already graduates of German Universities. It takes place every year in November, and can be held by a Medical Board of Examiners at any German University. The application of a candidate for admission to the examination must be accompanied by certificates of admission to the University from a German Public School, and of at least nine half-yearly terms of medical study at a German University. The Government reserves to itself the right to exempt from this examination men of medical distinction under certain conditions, but the latter have no application to foreign medical men. Very occasionally also certificates of study at other than German universities and medical schools are accepted in lieu of some of the courses imposed on candidates.

Greece.—A State examination must be passed, but graduates of foreign schools may take their examination in French or German.

Holland.—Foreigners are required to pass the State examination, but registered English medical men are entitled to exemption from part of it.

Hungary.—An English diploma does not entitle its holder to practise, but recognition of British qualifications may sometimes be obtained.

Italy.—A foreigner who desires to practise only among foreigners is at liberty to do so, but otherwise he must obtain an authority from one of the Royal Universities of Italy.

Monaco.—The following British qualifications are, for the purposes of medical practice in the Principality of Monaco, considered equivalent to the French Diploma of Medicine; the degree of Doctor of Medicine of the University of "the United Kingdom of Great Britain," and the diplomas of Fellows of the Royal Colleges of Surgeons and Physicians of London, Edinburgh, Dublin, and of the Faculty of Physicians and Surgeons of Glasgow. Every application for leave to practise must be accompanied by the diplomas of the applicant or by copies of those documents certified as correct either by a Consul of the Principality or by the Mayor of Monaco. The applicants must enter into an undertaking to live in the Principality and to practise their profession during the whole or part of the months of May, June, July, August, September, and October, agreeably to Article 1 of the Ordinance of May 29th, 1894.

Portugal.—The State examination must be passed.

Norway.—The State examination must be passed. The Government may, however, grant permission in individual cases to persons who produce satisfactory evidence that they possess the requisite knowledge.

Roumania.—The State examination must be passed (viva voce).

Russia.—Foreign medical men must pass a comprehensive examination at the Medical Academy of St. Petersburg or one of the universities of Russia, and must know Russian. Those who have not a B.A. degree must pass an examination in general education, and in Greek and Latin.

Servia.—No permission to practise can be obtained by any one other than a Servian subject irrespective of examinations.

South America.—All the foreign States in the South American continent require a medical man who seeks permission to practise to pass an examination conducted in Spanish, irrespective of any degrees or diplomas which he may hold.

Spain.—The regulations in this country have varied a good deal, the present position being that foreign medical men must qualify in the same way as Spaniards, the time necessary to do so being accorded to those already established in practice.

Sweden.—The State examination must be passed. Some reduction in curriculum may be granted.

Switzerland.—A qualified English practitioner desiring to practise in Switzerland, even if he practise only among his own countrymen, is required to pass the Federal examination in that country. The degree of Doctor of Medicine does not give the right to practise. The Federal examination may be passed at Basle, Zürich, or Berne in German, and at Geneva or Lausanne in French. The applicant is advised to obtain from one of his teachers in this country an introduction to a professor at the university at which he proposes to pass the examination. His proper course would be to call upon the Rector of the University. We are informed that every information would be afforded, and that no difficulties are placed in the way of candidates.

The United States.—Each of the States has its own laws and regulations; some of them will admit any man to the Register who holds a diploma or degree wherever obtained; the majority require the candidate for registration to submit to an examination. An attempt to bring about reciprocity between the States is now proceeding. Changes are frequent, and any one proposing to practise in America should address special inquiries to the Medical Board of the State in which he desires to settle for information as to the regulations in force.

Turkey.—An examination in the chief branches of medicine and surgery must be passed at Constantinople (fee, £4 10s.). Before being admitted to the examination the candidate must present a diploma from a medical school recognized by the Government of the country in which it is situated.

BRITISH COLONIES AND DEPENDENCIES.

AUSTRALASIA.

South Australia, New South Wales, Queensland, Western Australia.—Medical men holding British medical degrees or diplomas entitling them to registration in the United Kingdom under the Medical Act of 1858 can obtain admission to the Register in these Colonies upon furnishing proof of identity with the right holders of the qualifications produced, and upon payment of any fees that may be for the time being in force.

New Zealand, Tasmania.—A Register is maintained by the Colonial Medical Council, and admission thereto can be obtained upon equivalent terms to those indicated in the foregoing paragraph.

AFRICA.

Cape Colony, Natal.—Application for permission to practise must be addressed to the Colonial Secretary of either Colony, who will grant it upon the recommendation of the Colonial Medical Council concerned. The recommendation is always made in the case of medical men who produce proof that they are the rightful owners of degrees or diplomas entitling them to registration in Great Britain and Ireland under the Medical Act of 1858. The fee for registration in Cape Colony is £5 and in Natal £1.

Transvaal, Orange River Colony.—The regulations are of a corresponding character to those indicated above.

Rhodesia.—A licence to practise costs £5, and is accorded to the legal holders of degrees and diplomas entitling them to admission to the *Register* in Great Britain or Ireland upon application to the Administrator of Rhodesia.

NORTH AMERICA.

The following paragraphs give a general indication of the rules governing the admission of medical men, holding only degrees and licences from authorities in Great Britain and Ireland, to the Medical Registers of the different provinces of Canada. Each of these has its own State Medical Board in its principal city, and in some provinces the regulations are in a state of transition. Every medical man purposing to proceed to a province of Canada with a view to practise there should ascertain beforehand from the Board of the province in question what requirements he will have to fulfil.

Nova Scotia.—This province admits to its Register any person in lawful possession of a certificate of registration by the General Medical Council of Great Britain.

Prince Edward's Island.—All persons duly registered by the General Medical Council of Great Britain and Ireland can obtain registration in this province.

British Columbia.—The College of Physicians and Surgeons of British Columbia, which is the licensing body of this province, admits to its Register all persons who were on the *Register* of the General Medical Council in Great Britain prior to June 30th, 1887, and who have not lost the benefit of such registration by any misconduct or otherwise; others must pass an examination.

Manitoba and the *North-West Territories*, it is understood, at present admit to their Registers all practitioners whose names are entitled to appear on the *Register* in the United Kingdom.

Ontario.—Practitioners who have been on the *Register* of the General Medical Council for five years may be registered in this colony on payment of the fees and on passing the Intermediate and Final Examinations. Those who have not been five years in practice must pass all the examinations.

Quebec.—The College of Physicians and Surgeons at Quebec is the licensing authority for this province, and is prepared to admit to its Register persons who are already registered in Great Britain, provided that the possession of a diploma granted in the province of Quebec privileges its holder to registration in the United Kingdom. At present this is not the case; so, before admission to the Register in this province, a British registered practitioner must pass sundry professional examinations, and in addition may be subjected to an examination in the subjects of General Education.

CROWN COLONIES.

In the Crown Colonies, including Ceylon, the Straits Settlements, Mauritius, British Guiana, and the West Indian Islands, and many other of the smaller British possessions

scattered throughout the world, no difficulty is raised to the practice of medicine and admission to the *Register* if one is kept, in the case of any medical man who is in a position to prove his qualification to registration under the Medical Act of 1858.

DENTAL SURGERY.

THE regulations of the General Medical Council require candidates for registrable qualifications in Dental Surgery to produce certificates of having been engaged during four years in professional studies, and of having received three years' instruction in Mechanical Dentistry from a registered practitioner, or at some dental hospital where instruction is given in this subject. One year's bona-fide apprenticeship with a registered dental practitioner, or one year's instruction at a dental hospital, after being registered as a dental student, may be counted one of the four years of professional study. The three years of instruction in Mechanical Dentistry, or any part of them, may be taken by the medical student, either before or after his registration as a student; but no year of such mechanical instruction will be counted as one of the four years of professional study unless taken after registration. As regards preliminary examination and registration, dental students are subject to the same regulations as medical students, but professional study may commence by pupilage with a registered dental practitioner.

As regards registrable qualifications, they can obtain either diplomas or degrees at the hands of a large number of bodies, some account of which follows, while they have an even larger choice in the matter of places of technical education. The following is a list of some of them:

In London:
(1) The Dental Hospital of London, Leicester Square.
(2) The National Dental Hospital and College, Great Portland Street, W.
(3) The Dental School of Guy's Hospital.

In the Provinces, at schools connected with:
(1) The University of Sheffield.
(2) The Victoria University of Manchester.
(3) The University of Liverpool.
(4) The University of Leeds.
(5) The Devon and Exeter Dental Hospital.

In Scotland at the:
(1) Incorporated Edinburgh Dental Hospital and School.
(2) St. Mungo's College, Glasgow.
(3) Anderson's College, Glasgow.

In Ireland at the:
(1) Dental Hospital of Dublin.
(2) Trinity College, Dublin.

DIPLOMAS AND DEGREES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THIS body grants a diploma to Candidates who pass three successive examinations to which they are admitted on production of the following certificates:

Before the First Examination.—Of having received instruction at an institution recognized for the purpose in Chemistry, Physics, and Practical Chemistry.

Before the Second.—Of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of Mechanical Dentistry.

Of registration as a dental student.

Of having attended at a recognized dental hospital and school—(*a*) A course of lectures on Dental Metallurgy. (*b*) A course of Practical Dental Metallurgy. (*c*) A course of lectures on Dental Mechanics. (*d*) A course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns.

Before the Third.—Of having been engaged during four years in the acquirement of professional knowledge subsequent to the date of registration as a dental student.

Of having attended at a recognized dental hospital and school (*a*) a course of Dental Anatomy and Physiology, (*b*) a separate course of Dental Histology, including the preparation of Microscopical Sections, (*c*) a course of Dental Surgery, (*d*) a separate course of Practical Dental Surgery, (*e*) a course of not less than five lectures on the Surgery of the Mouth, (*f*) a course of Dental Bacteriology, (*g*) a course of Dental Materia Medica.

Of having attended at a recognized dental hospital, or in the dental department of a recognized general hospital, the practice of Dental Surgery during two years.

Of having attended at a recognized medical school (*a*) a course of lectures on Anatomy, (*b*) a course of lectures on Physiology, (*c*) a separate Practical Course of Physiology, (*d*) a course of lectures on Surgery, (*e*) a course of lectures on Medicine.

Of having performed dissections at a recognized medical school during not less than twelve months.

Of having attended at a recognized hospital or hospitals the Practice of Surgery and Clinical Lectures on Surgery during two winter sessions.

Of being 21 years of age.

The first examination is identical with Parts I and II of the First Examination of the Conjoint Board for medical students, and exemption from it may be obtained under corresponding circumstances.

The second examination deals with Mechanical Dentistry and Dental Metallurgy. Candidates who have passed the previous examination may present themselves for this Licence on production of the certificates already specified. A great deal of practical work is included in this examination.

The third examination covers (1) General Anatomy and Physiology, General Pathology and Surgery; (2) Dental Anatomy and Physiology, Dental Pathology and Surgery, and Practical Dental Surgery. This examination is partly written, partly practical, and partly oral, and in Section II candidates may be examined practically:

(*a*) On the treatment of Dental Caries, and may be required to prepare and fill cavities with Gold or Plastic filling or material, or to do any other operation in Dental Surgery.

(*b*) On the Mechanical and Surgical Treatment of the various irregularities of Children's Teeth.

Candidates who have passed the Second Examination at least six months previously may present themselves for the two parts separately, or they may take the whole examination at one time.

Candidates who have passed the Second Examination of the Examining Board in England, or produce evidence of having passed the Examination in Anatomy and Physiology required for a Degree or other qualification in Medicine or Surgery registrable under the Medical Act of 1886 are exempted from re-examination in those subjects in Section I.

Candidates who are Members of the College, or who have passed the examination in Surgery of the Examining Board in England, or who produce evidence of having passed the Examination in Surgery for a Degree or other qualification in Medicine or Surgery, registrable under the Medical Act of 1886, are exempted from examination in Surgery and Pathology in Section I.

The holders of certain degrees or Licences in Dental Surgery recognized by the College are admitted to the second and third examinations together, without passing the Preliminary Science Examination, provided they produce evidence (*a*) of having passed a satisfactory Preliminary Examination in general education, (*b*) of having completed the curriculum of professional study required by the Regulations, (*c*) of having passed the required Professional Examinations for their Degree or Licence in Dental Surgery. The following are the Degrees and Licence at present thus recognized: D.D.S. University of Harvard, D.D.S. University of Pennsylvania, D.D.S. University of Michigan, Licence of the Dental Board of Victoria. Special regulations apply to holders of registered diplomas in the Colonies.

Fees.—The fee for the diploma in Dental Surgery is 20 guineas, payable in certain instalments.

Further information may be obtained from the Secretary of the Examining Board in England, Examination Hall, Victoria Embankment, London, W.C.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

Candidates for the Licence in Dental Surgery of this body are required to pass an examination in general education and two professional examinations.

Primary Examination.—Every candidate is required, before admission to the Primary Dental Examination, to produce evidence:

1. Of having passed a recognized Preliminary Examination, and of having been registered as a medical or dental student by the General Medical Council.

2. Of having, subsequently to registration as a dental or medical student, attended at a recognized medical school

(*a*) one course (six months) lectures on Practical Anatomy, including Dental Anatomy; (*b*) two courses (six months each) Demonstrations and Dissections; the certificate must include a statement that the candidate has dissected the head and neck at least three times; (*c*) one course (six months) lectures on Chemistry; (*d*) one course (six months) lectures on Physiology, including Dental Physiology; (*e*) one course (three months) lectures on Materia Medica; (*f*) one course (six months) lectures on Surgery; (*g*) one course (six months) lectures on Medicine; (*h*) one course (three months) Practical Chemistry, including Metallurgy; (*i*) one course (three months) Practical Physiology and Histology, including Dental Physiology and Histology, human and comparative.

3. Of having attended Clinical Instruction at a recognized general hospital for one year.

The subjects of the examination are the Elements of (1) Physics, (2) Chemistry, (3) Anatomy, (4) Physiology and Histology, and (5) Surgery, including the use of anaesthetics. Those who have passed the Second Professional Examination of the Irish Conjoint Board for Medical Students are exempted from all subjects of the Primary Dental Examination except Surgery.

Final Examination.—Candidates must produce evidence of having passed the Primary Dental Examination, or an examination recognized by the College as an equivalent, and produce certificates of having attended subsequent to registration as a dental or medical student.

1. Courses of lectures recognized by the College in Dental Surgery, Pathology (two courses), and Dental Mechanics (two courses). 2. For two years the practice of a dental hospital recognized by the College, or of the dental department of a general hospital so recognized. 3. Of having been engaged during four years in Professional Studies. 4. Of having received two years' instruction in Mechanical Dentistry from a registered dentist.

Candidates holding a diploma in Surgery will be admissible to the Final Dental Examination on producing certificates of having attended:

1. One course of lectures on Dental Surgery and Pathology. 2. One course of lectures on Dental Mechanics. 3. For one year the practice of a dental hospital recognized by the College, or the dental department of a general hospital so recognized, where such attendance has been subsequent to the date of diploma. 4. Of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a registered dentist.

The subjects of the Examination are: Dental Surgery—Theoretical (including Dental Pathology), Clinical, and Operative. Dental Mechanics—Theoretical, Clinical, and Practical (including the Metallurgy of the workshop). Candidates must pass in all the subjects at the same time.

Fees.—Primary Examination, £10 10s., and £5 5s. on re-examination. Fee for candidates exempted from this examination in all subjects but Surgery, £2 2s. The fee for the Final Examination is the same as that for the first, supposing this to have been passed by the candidate, or that he is L.R.C.S.I., otherwise he pays £26 5s. A Special Examination costs £5 5s. extra. The Council of the College has power to admit to its examinations persons *sine curriculo* whose names appear in the *Dentists' Register*.

University of Birmingham.

Degrees in Dentistry—namely, Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.) and a diploma in Dental Surgery (L.D.S.)—are granted by the University of Birmingham. All candidates for the degrees must pass the same Matriculation Examination as that required from candidates for medical degrees. The Degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained the Licence in Dental Surgery of the University or from some body legally entitled to confer such qualification. The candidate is not eligible for the degree until a period of twelve months has elapsed from the passing of his examination for the Licence in Dental Surgery. Of this period at least six months must be spent in the dental department of a general hospital approved by the University. In addition to the Licence in Dental Surgery, the candidate must produce evidence—

1. That he has attended the courses required by medical students of the University in the following subjects, and passed the examinations held in the same for medical and surgical degrees: (*a*) Chemistry and Practical Chemistry, (*b*) Physics and Practical Physics, (*c*) Elementary Biology, (*d*) Anatomy and Practical Anatomy, (*e*) Physiology and Practical Physiology.

2. That he has attended the following courses: (*f*) One Special Course of Lectures on Medicine, (*g*) One Special Course of Lectures on Surgery, (*h*) Pathology and Bacteriology; and has passed the examinations for candidates for Dental degrees held in each of these subjects.

3. That he has attended courses in: (*k*) Dental Histology and Patho-Histology; (*l*) Comparative Dental Anatomy; (*m*) Dental Surgery and Prosthetic Dentistry.

4. That he has received instruction in the Clinical Examination of living cases at the dental department of a general hospital for a period of not less than six months.

The Final Examination will deal with the subjects in Classes 3 and 4. On the expiration of twelve months from the date of passing the examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. For this degree he will be required to submit a thesis containing original work and investigations in some subject connected with Dentistry, which thesis shall be submitted to examiners to be nominated by the Advisory Board. The degree will be awarded or withheld according to the report of these examiners.

A candidate for the Diploma is required to pass four examinations, and before admission to each of them furnish certain certificates.

First Examination.—Candidates are required to furnish (i) a certificate of registration as a dental student by the General Medical Council, and (ii) certificates of having satisfactorily attended courses in the prescribed subjects for the First Examination—namely, (*a*) Chemistry, Lectures and Laboratory work (six months); (*b*) Physics, Lectures and Laboratory work (six months). Attendance upon these courses may be made at any Institution recognized for this purpose by the University.

Second Examination.—Candidates must have passed the First Examination, and furnish certificates of having served for a period of not less than two years' pupilage in mechanical dentistry, either with a registered dentist or in the mechanical laboratory of a dental hospital recognized for this purpose by the University, and of having attended in the University the following courses in the subjects of the Second Examination: (*a*) Dental Mechanics Lectures (three months); (*b*) Dental Metallurgy Lectures and Practical (six months); (*c*) Dental Materia Medica Lectures (three months).

Third Examination.—Candidates must have passed the Second Examination, and present certificates of having attended in the University the following courses in the subjects of the Third Examination, namely: (*a*) Anatomy, Lectures (six months); (*b*) Anatomy, Practical (twelve months); (*c*) Physiology, Lectures (six months); (*d*) Physiology, Practical Histology (three months); (*e*) Human and Comparative Dental Anatomy, Lectures (six months); (*f*) Dental Histology, Practical (three months).

Final Examination.—Candidates must have attained the age of 21 years, have been engaged in professional study for at least four years subsequent to registration as a dental student, have passed the Third Examination, and furnish certificates of having attended in the University, or in a Hospital recognized for the purpose by the University, courses of instruction in the subjects prescribed for the Final Examination, namely: (*a*) Medicine Lectures for Dental Students (six months); (*b*) General Surgery Lectures for Dental Students (six months); (*c*) Dental Surgery, Lectures (six months); (*d*) Dental Pathology and Bacteriology, Lectures (three months); (*e*) Dental Pathology and Bacteriology, Practical (three months); (*f*) Clinical Dental Surgery (six months); (*g*) Clinical Medicine and Surgery (at a recognized General Hospital for twelve months); (*h*) the practice of a Dental Hospital or the Dental Department of a General Hospital recognized by the University for a period of two years.

University of Leeds.

The degrees of Bachelor of Dental Surgery (B.Ch.D.) and Master of Dental Surgery (M.Ch.D) are granted by this University, and also a diploma. Candidates for the degree of Bachelor of Dental Surgery must have passed the Matriculation Examination and have pursued thereafter approved courses of study for not less than five academic years, two of such years at least having been passed in the University subsequently to the date of passing Parts I and II of the first examination, and such period of pupilage or hospital attendance, or both, as may be prescribed by the Regulations of the University. No candidate is admitted to the degree who has not attained the age of

21 years on the day of graduation. Three examinations, First, Second, and Final, must be passed. The First Examination, which is held twice a year, covers (1) Physics, Chemistry; (2) Biology; (3) Dental Mechanics and Dental Metallurgy. Candidates are allowed to take each part separately.

Candidates who have passed the Intermediate Examination for the degree of Bachelor of Science, and have in that examination satisfied the Examiners in Chemistry, in Physics, or in Biology, are, on payment of the difference between the fees required for the two examinations, regarded as having satisfied the requirements of Parts I and II of the First Examination for the degree of Bachelor of Dental Surgery in those subjects in which they have passed. The subjects of the Second examination, which is held twice a year, are: Anatomy, Physiology, Dental Anatomy and Physiology, Dental Materia Medica. The subjects of the Final examination, which is held twice a year are: Dental Surgery, Dental Pathology and Bacteriology, Operative Dental Surgery, Medicine and Surgery. Candidates are required, before presenting themselves for the Final examination, to have passed the first Examination not less than two years previously, to have passed the Second Examination not less than six months previously, and to have attended courses of instruction in accordance with the Regulations of the University.

Candidates for the diploma are required to present certificates showing that they have attained the age of 21 years, have passed an approved examination in general education, have attended courses of instruction approved by the University extending over not less than four years, and have completed a pupilage of three years. They have to pass three examinations besides that in general education, the first being one in chemistry and physics. For the next they cannot present themselves until the third year of their pupilage; it deals with Dental Metallurgy and Dental Mechanics. The Final examination consists of two parts; Part I: Anatomy, Physiology, Dental Anatomy and Physiology, Dental Materia Medica. Part II: Surgery, Dental Surgery, Pathology and Bacteriology, Operative Dental Surgery (Practical). Candidates must pass in Part I before being examined in Part II, and may pass the two parts separately. Part I cannot be taken until at least a year since the passage of the previous examination, and the candidate must be signed up in the following subjects:

Anatomy lectures, two terms; Practical Anatomy, three terms; Physiology lectures, two terms; Practical Physiology, one term; Dental Anatomy and Physiology lectures, one term; Practical Dental Histology, one term; Surgery lectures, two terms; Special Surgery of the mouth, six lectures.

Candidates, before presenting themselves for examination in Part II, must have passed in Part I, and must produce evidence of having

(1) Completed four years from the beginning of their pupilage; (2) spent three years in pupilage; (3) completed two years' Medical and Surgical practice at hospitals recognized by the University; (4) completed two years' Dental Hospital practice; (5) attended courses of instruction recognized by the University, as follows: Medicine, one term; Dental Surgery and Pathology lectures, one term; Dental Bacteriology lectures, one term; Operative Dental Surgery lectures, one term; Six Special Anaesthetic demonstrations; Dental Materia Medica, one term.

The certificates of Medical and Surgical practice must show that practical instruction has been received in Medicine and Surgery, and in the administration of Anaesthetics.

Fees.—The composition fee for the requisite courses for the B.Ch.D. is £65; and for the L.D.S., £60. A prospectus containing full information may be obtained on application to the Dean of the Faculty of Medicine.

Victoria University of Manchester.

The degrees of Bachelor of Dental Surgery (B.D.S.) and Master of Dental Surgery (M.D.S.) are granted by this University, and also a diploma. Candidates are required to matriculate in the Faculty of Medicine and pass four examinations, each of which must be taken in its proper turn.

First Examination.—Before admission to this candidates must produce evidence that they have attended at least one year's course in each of the subjects of the examination: (*a*) Chemistry, Inorganic and Organic; (*b*) Physics; (*c*) Zoology. They may be passed separately.

Second Examination.—Candidates for this must show that they have attended the Prosthetic Laboratory work of an approved Dental Hospital for at least two years and attended courses in each of the subjects of the examinations, which are (*a*) Dental Mechanics; (*b*) Dental Metallurgy.

Third Examination.—Candidates before admission must be duly signed up in each of its subjects: (*a*) Anatomy; (*b*) Physiology and Histology; (*c*) Dental Anatomy (Human and Comparative), and Dental Histology.

Final Examination.—This test covers (*a*) Surgery and Pathology; (*b*) Dental Surgery and Pathology, and Dental Materia Medica; (*c*) Dental Prosthetics and Orthodontia; (*d*) Operative Dentistry, and admission to it, of course, depends on the candidate being duly signed up in its subjects.

The courses and examination for the diploma are of the same general nature and arranged in much the same fashion, but for the two years' Prosthetic Laboratory work apprenticeship to a regular dentist may be substituted; while from the final examination Orthodontia and Dental Pathology and Materia Medica are omitted. The authorities permit those who before October 1st, 1905, obtained a registered dental qualification either after study, either at Owens College, Manchester, or the University, or at a recognized dental hospital, to proceed to the B.D.S. without passing the two first examinations. To proceed to the higher Degree of Master of Dental Surgery the candidate must be of not less than one year's standing as a Bachelor, and either present an approved thesis, or pass an examination in some group of dental subjects.

University of Dublin.

This University grants both a degree and a diploma, the former being conferred only on candidates who have taken a degree in Arts. Candidates for the licence must pass the entrance examination of Trinity College, a Junior Freshman's term, and then two examinations, each preceded by its appropriate courses of study. The first examination covers (1) Anatomy, Physiology, and Histology; (2) Physics, Chemistry, and Metallurgy; and (3) Materia Medica. All these subjects may be passed together or each group separately.

The work required for this examination includes Dissection, students being also advised to attend clinical instruction in a general hospital. The examination is usually taken at the end of the second complete year. Before admission to final examination students must produce certificates of having received three years' instruction in Dental Mechanics, and of satisfactory attendance on the Lectures in the following subjects: (1) Dental Surgery and Pathology (two courses); (2) Dental Mechanics (two courses); (3) Orthodontia; and (4) Dental Anatomy. Certificates of regular attendance (twelve months) at a hospital recognized for Clinical Instruction, and of satisfactory attendance during two years at the Dental Hospital, are also required. They must, of course, have passed the earlier examination in all its parts. At this Final Examination the subjects are Medicine, Surgery, Dental Anatomy, Dental Surgery and Pathology, Dental Mechanics, and Orthodontia. The course of study for the degree is the same as that for the licence, with the addition of lectures on Pathology and study of Practical Pathology and Bacteriology. The candidate must have been a dental student for not less than five years, and have passed the examination for the B.A. degree, and be signed up in all the subjects indicated. The examination itself deals with Medicine, Surgery, Pathology, Bacteriology, Dental Anatomy, Human and Comparative; Dental Microscopy, Dental Surgery and Pathology, Dental Mechanics, and Orthodontia.

Fees.—The total fees for all the courses necessary to obtain the diploma, including the entrance fee at Trinity College, work at a general hospital for one year and at a dental hospital for two years, and for examination, is £200 17s. The University considers applications, on the part of qualified practitioners and others, for recognition of courses taken previous to the establishment of the Degree and Licence, in case they proceed to complete the course.

University of Liverpool.

This University grants a diploma in Dental Surgery and two degrees in the same subject, the management of the curriculum being in the hands of the Board of Dental Studies.

OBITUARY.

WALTER CLAPHAM HIRST, M.B.Lond.,

LEEDS.

We much regret to record the death of Mr. Walter C. Hirst, of Chapeltown, Leeds, which occurred under tragic circumstances on Saturday morning, August 31st. For about a week or ten days Mr. Hirst had had under his care a middle-aged man who was suffering from pains of a rheumatic character, and whose mental condition had led Mr. Hirst to advise his relations that he required looking after, though he was not in a position to certify him as insane.

On August 31st, about 6 a.m., the patient came to Mr. Hirst's surgery entrance, and, after awakening him, explained through the speaking-tube that his pains were worse, and that he required something done. Mr. Hirst went downstairs and let the man in. In a few minutes Mrs. Hirst—who had begged her husband not to go down, as she had a presentiment of evil—heard three or four shots fired in rapid succession, and going downstairs found her husband and his assailant both dead, the former shot in the chest and the latter through the brain. From letters which the man had written, and which were produced at the inquest, it appears that he suffered from the delusion that Mr. Hirst was trying to kill him, and he seems to have attributed to what was manifestly the routine proceeding for eliciting the knee-jerk a deliberate attempt on Mr. Hirst's part to injure him and cause epilepsy.

Mr. Hirst was educated at the Dewsbury Parish Church School and at the Wheelwright Grammar School. He then entered as a student at the University of Leeds, at that time the Yorkshire College. The latter part of his student career was spent at St. Bartholomew's Hospital, and he graduated M.B.Lond. in 1899. He then filled several resident posts, including that of Resident Medical Officer of the Leeds Public Dispensary and Fever Hospital, and House-Physician at the Bradford Infirmary. Some three or four years ago he commenced practice at Chapeltown, where he was meeting with a considerable amount of success, and was, in the opinion of all who knew him well, clearly marked out as a man who was bound to take a high and honoured position as a practitioner. Mr. Hirst was a hard-working and successful student, a good athlete, and a man of singularly quiet and unassuming manner. His death will be much felt by a large circle of friends, and their sympathy will go out in very full measure to his young wife, who, after a short married life of two months, is thus left a widow.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF EDINBURGH.

The second section of the post-graduate course arranged between the authorities of the University and those of the Royal Colleges in that city begins on September 16th. The first section has been attended by over sixty practitioners; each section is complete in itself.

UNIVERSITY OF LONDON.

University College.

A new course on school hygiene, including lectures, demonstrations, and practical work, has been arranged to begin on October 16th at University College. It is designed to meet the requirements of school teachers, school lecturers, and those qualifying for school inspectorships and for school medical officers.

QUEEN'S COLLEGE, CORK.

The report of the President of Queen's College, Cork, issued recently, states that the number of students attending the college during the session 1906-7 was 251, as against 246 during the session 1905-6. It is more than twenty years since the college had so many students in attendance. Of the 261 students, 255 were matriculated and 6 non-matriculated. The number of new students was 77. Of these, 65 came from the Royal University and 7 from another college and universities, and 5 were non-matriculated. A number of past-students of Queen's College, Cork, occupy distinguished positions in the public service. It appears from the statistics of the Royal Army Medical Corps, which have recently been made public, that no fewer that 50 officers of that corps have been students of the College. That is a greater number than has come from any other Irish school except Trinity College, Dublin, and is only exceeded by that institution, by the University of Edinburgh, and two of the London schools. Queen's College, Cork, comes fifth on the list amongst all the medical schools of the three kingdoms in regard to the number of officers in the R.A.M.C.

The President, Dr. Windle, again this year draws attention to the unsatisfactory relations that exist between the College and the district which it is intended to serve. He refers to the resolutions of the County Councils and other public bodies in Munster in reference to the subject, and also to the great meeting in the Cork City Hall and Mr. William O'Brien's offer of financial assistance for the foundation of a local university or autonomous college. "There can be no doubt," Dr. Windle says, "that this most generous offer will have great weight with those whose duty it is to consider the proposals which will be made for the modification and improvement of university education in this country. It has long been recognized that the encouragement of local sympathy, especially when that sympathy finds expression in pecuniary gifts, is a matter of the utmost importance to institutions like this, which must always look to the locality in which they are placed for their main support, and it has also been recognized that any coldness or hesitation in the reception of such offers is likely to check the natural enthusiasm which they elicit, and thus to exercise a very damaging effect upon the future of the institution concerned." The President also emphasizes his opinion by the following conclusions.

1. That the relations of the College to the district which it is intended to serve have never been satisfactory, and still remain in an unsatisfactory condition.

2. That until these relations are placed on a satisfactory footing the College cannot expect to have the number of students which under normal conditions it would undoubtedly attract, and that, as a result, many bright and talented boys will have to go without the education to which they are entitled, with a consequent loss to themselves and to their country.

3. That such alterations in the constitution of the College as would place it on a satisfactory footing might be made, without any difficulty and without any danger to its academic position, by alterations in the charter and without direct legislation, should the Government be disposed to make the necessary alterations in the charter.

4. That there is a great and general desire throughout the whole of Munster that the College should be made available for the people of the province, and a conviction that if so made available it would become the great and genuine success which it has never yet been.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

GUARDIANS AND INSANITY.

It is probably not often that a Board of Guardians has brought home to it as directly as the Stonehouse Board recently the folly of disregarding a medical certificate of insanity. The case was that of a poor woman who, having been found by Dr. Sandford to be suffering from symptoms of suicidal mania in January last, was certified by him as of unsound mind and requiring to be put under restraint. The guardians, however, not only ignored the recommendation and made insulting remarks about the doctor and his certificate, but actually discharged the poor woman from the workhouse, to which she had been brought as a matter of safety, and in which it was the legal duty of the guardians to have kept her until she was certified sane. In July the poor creature made a determined attempt at suicide by cutting her throat, severing the windpipe and rendering it necessary to remove her to hospital, where she remained several weeks, and was in the end sent to the asylum at Exminster, being once more certified as insane. Even when these facts were reported to the guardians in a temperate letter by Dr. Sandford, the Board does not seem to have recognized that it was due to their neglect of their proper duties as guardians that this poor woman had such a narrow escape from death. We certainly think that, in the interest of other sufferers, the action of these guardians should be reported to the Local Government Board.

DANGEROUS INFECTIOUS DISORDERS.

W. H. D.—A "dangerous infectious disorder," for the purpose of prosecution under Section 126 of the Public Health Act, 1875, has not, so far as we are aware, been defined. It is usually a question of fact for the justices before whom the case is tried to decide. As a rule they hold that those diseases which are compulsorily notifiable are "dangerous." A sanitary authority may prosecute parents for allowing their children to frequent public places within three weeks of having measles, but a conviction will depend upon the ability of the authority to make out a strong case.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—

EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

G. P., who smokes a pipe after breakfast and does not wish to give the habit up, asks for hints as to the best way of concealing the fact of his indulgence in tobacco from his patients.

OXONIENSIS asks for suggestions for a suitable and agreeable drink for a diabetic patient, alcohol being banned in any appreciable quantity.

CONTINUOUS RECORD OF BODY TEMPERATURE.

DR. W. SÖRENSEN (Officier van Gerondheid, Poerock Tjahoe, Borneo, Nederlandsch Indie) asks for information as to where he could get a thermometer giving a continuous record of the temperature in a case of fever for the twenty-four hours on the Celsius scale. "If such instruments," our correspondent continues, "are not made—and I must confess that I have never seen one—I should be thankful for the address of an instrument-maker's firm that could be relied upon to make one as good as possible on my suggestions and for a reasonable price. Having got to live in a country abundant in fevers of different kinds, I think that such a recording thermometer should be of use to me in many cases."

*** A few physiologists have worked with instruments for recording continuous temperatures, the majority of which are constructed after the principle of Callendar's thermo-electric apparatus. Major R. Ross states (*Lancet*, February 27th, 1904) that he obtained his platinum thermometer from the Cambridge Scientific Instrument Company (Carlyle Road, Cambridge). The resistance coil is enclosed in a tube of about the size of an ordinary thermometer, and is connected by long flexible wires to the recorder. A style loaded with ink inscribes the temperature of the rectum on the chart fixed to the recording drum, which revolves once in 24 hours. Benedict and Snell (Benedict and Snell, *Arch. f. d. ges. Physiol.* Bnd. 88, s. 492, 1901: idem., Bnd. 90, s. 33, 1902. *Amer. Journ. of Physiol.*, Vol. 11, p. 145, 1904) worked with a modification of Callendar's apparatus, specially constructed by the mechanic of the Wesleyan University, Middletown, Connecticut—Mr. O. S. Blakeslee. This instrument consists of a copper wire resistance coil, composed of 6.75 metres of 0.08 mm. copper wire, doubly covered with silk. The coil measures 22 mm. in length and 4 mm. in width. This coil is enclosed in a silver tube, 30 mm. long and 5 mm. wide, having walls of 0.3 mm. thickness. The coil is imbedded in shellac inside the tube. The free ends of the wire are soldered to isolated conducting wires, the junction being placed in the bore of a rubber cork fitting in the neck of the silver tube. Special precautions are taken to avoid short-circuiting and moistening of the coil. The conducting wire consists of 25 strands of fine copper wire, insulated with rubber, cotton, and silk. The free ends are soldered to a brass connexion, which in its turn is connected to a Wheatstone's bridge by means of a small mercury bath. The electric current is derived from dry cells. Since it was found that measurable heat was developed in the tightly rolled coil by the passage of a weak current (about 0.04 ampères), which altered the resistance appreciably, the authors preferred to measure the current by passing it through a d'Arsonval's galvanometer, instead of reading off the resistance directly. The variations of the current could be determined exactly, as the scale indicated deflections down to ½ mm., which corresponded to 0.01° C. The calibration of the instrument was carried out by means of the melting point of sodium sulphate ($Na_2SO_4,10H_2O$), which is 32.484° C. A Beckmann thermometer having a range of 6° C. covers a sufficiently wide range for body variations. This can be calibrated with the copper thermometer, differences of 0.001° being readable on the Beckmann thermometer. They found that after the thermometer had been in the rectum for five minutes, the person was able to walk, sit, lie down, sleep, and ride a stationary bicycle without any discomfort all day, the thermometer only being removed when the bowels acted. By means of this instrument, Benedict and Snell have made various observations on night workers and others in health, for physiological purposes.

ANSWERS.

THICKENING OF THE SKIN OF THE SOLE.

MR. GEORGE BUTTERS, M.B. (Kempston, Bedford), writes: In answer to "Puzzled" (BRITISH MEDICAL JOURNAL, August 17th) I would suggest the application of resorcin and glycerine, 1 drachm to the ounce. If the thickening of the skin is very great, a preliminary application of resorcin and salicylic acid plaster may be necessary.

LETTERS, NOTES, Etc.

THEOCIN SODIUM ACETATE.

MR. W. H. MARTINDALE (London, W.) writes with reference to Dr. Harry Campbell's note published on August 31st, page 560: There is a slight slip in the chemistry which I think should be corrected. "Theocine" is the registered trade mark for the alkaloid theophylline. This alkaloid (dimethyl-xanthine) is isomeric with theobromine—that is, also a dimethyl-xanthine—and is closely allied to caffeine (tri-methyl-xanthine). In a letter to Dr. Harry Campbell I perpetrated the slip of stating theobromine to be trimethyl-xanthine. The relationship between the alkaloids is correctly described in the *Extra Pharmacopoeia*, pages 188-9 and 692-3.

HINTS TO INTENDING SHIP SURGEONS.

BITTEN writes: In September the emigration season to South America commences, and several of the Governments there have passed stringent vaccination laws for immigrants. Extra work without any extra pay has often been demanded from ship surgeons under these laws, and therefore careful inquiries should be made of the shipping companies before signing an engagement. The Employers' Liability Act has been applied to seamen since July 1st, and it is advisable to inquire about this also.

ANALYSIS OF FAECES.

WITH reference to a note published on August 24th (p. 492) stating that Dr. Thalwitzer of Dresden had established a laboratory for the examination and complete analysis of faeces, which undertaking is referred to as "novel," Mr. J. P. Lord (New Malden, Bacteriologist to Dorking, Epsom, and other Councils) writes to state that for the last two years he has had such a laboratory in active operation. He adds that inasmuch as it is of the highest importance that as little time as possible shall elapse between dejection and analysis and bacteriological examination of stools, the advantage of having such a laboratory within half-an-hour's rail from London should be apparent. No reliance can be placed on bacteriological examination of stools more than twenty-four hours old, while even then merely quantitative work can be done.

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An Address

ON THE

EMPIRICAL AND EXPERIMENTAL METHODS IN MEDICINE.

Delivered before the Birmingham and Midland Counties Branch.

By ROBERT M. SIMON, M.D., F.R.C.P.,

physician to the birmingham general hospital, president of the branch.

The Presidency of this Branch of the British Medical Association carries with it the responsibility of delivering an annual address. The custom has grown up, wisely as I think, that this address should not be technical in its nature, but should deal with matters of interest or importance to the profession either on its historical or its political side. With this object in view I have essayed very briefly to compare the empirical methods of the past with the modern tendency to experiment in the practice and science of medicine, and have endeavoured to combat the tendency of the older physicians to overestimate the value and position of temperament in its relation to disease.

I do not propose to review the science of medicine from the days of Æsculapius and Hippocrates, when, lacking instruments of precision, without anatomical exactitude, and with no physiological knowledge, the physician had to rely on his powers of observation and cultivate these to enable him to fulfil the duties of his profession. Nor do I propose to contrast his limited equipment with that of the physician of to-day, who has at his disposal the resources of laboratories and the labour of men specially trained in microscopic research and bacteriological investigation; but I cannot help asking myself if there is not a danger of losing those qualities which made Sydenham and the great men of his period exemplars of which medicine must always be so justly proud. Their powers of observation have never been surpassed, and there is danger that they may never be equalled. The laboratory will never take the place of the ward, and the cultivation of the senses of touch, of sight, and even of smell, should never be subordinated to the investigations of the laboratory worker. That the danger of this is no vain or imaginary one is, I think, beyond question. The favour with which the work of Wright and his school has been received is the best proof of this. There is a grave tendency to believe that a patient's condition can be diagnosed and his fate determined by some one who may never have seen the case, but who has been able to make a more or less correct estimate of the power of his blood to deal with poison circulating in it. The estimation of the opsonic index is undoubtedly one of the greatest, if not indeed the most important, of the additions that have been made in the last century to our means of forming a correct estimate of the condition of our patients, but its employment must be subservient to the clinical work of the physician and not substituted for it. Were this the case one could picture to oneself a huge laboratory where the blood of every patient would be tested for its capacity to deal with tubercle or the toxic product of countless bacteria. From this workshop instructions would be issued for a dose of this or an injection of that, and the brains of the laboratory would control the hands of the wards. The practice of medicine would inevitably deteriorate, and that most undying truth that we have to treat not a disease but a diseased person would come to be forgotten. To remember this, the greatest clinical fact, has been a difficulty from the beginning, and is to each one of us a never-ceasing difficulty in our daily life. The practice of medicine is not an exact science and never can be. It deals with the infinite variety of human beings, differing from one another in racial characteristics, in temperament, in habits, in idiosyncrasies, and in character. This fact has, I think, never been better stated than by Professor Rutherford, the first clinical teacher in the University of Edinburgh in 1748, when he remarked:

> It is evident the same diseases in different persons will produce or be manifested by different effects and symptoms, and require different methods of cure. An empiric undertakes the cure of diseases in a much easier manner. He despises all learning and practises by routine, and does not adapt the remedies to the nature of the disorder. He takes all his intelligence from their names, barely asking whether 'tis a fever, colic, etc., and without considering the constitution of the patient and other circumstances, he gives medicine which he only imagines to be good in such and such disorders. Thus he goes on until his patient either dies or recovers, paying no heed to the different constitutions and diversity of shapes which disorders put on, whence arise so many indications and contraindications.

Great as is the truth of Dr. Rutherford's proposition, there are yet pitfalls which it behoves the careful observer to avoid lest he too fall in error: in the words of the proverb, "They that go down into the pit cannot hope for the truth," and though the study of physiognomy, of temperament, etc., is in every sense admirable and advisable, it has very curiously led to generalizations, usually very unscientific, and more often than not exploited by quacks.

It led to the theories of Lavater about physiognomy, and it led Gall and the phrenologists to the belief that they could discover a man's character and tendencies by the form of his skull as well as by his corporeal characteristics in general. Cheiromancy followed phrenology, and graphology, or the determination of a man's character by his handwriting, followed cheiromancy.

All these pseudo-scientific methods had in view the determination of temperament, the study of which from the days of Hippocrates has been the *ignis fatuus* of philosopher and physician. It has been felt that if one could determine the temperament of the individual it would be possible to surmise the kind of disease to which he would be liable, and to some extent the degree to which disease would be modified by the individual temperament. Such a consideration of temperament would fall within the scope of the physician, but, inasmuch as character and conduct are also without doubt influenced by temperamental varieties, it is not surprising that to the philosopher also its study should have been of surpassing interest. Jonathan Hutchinson, in his very interesting lectures on the pedigree of disease, defines the term "temperament" as applicable to the sum of the physical peculiarities of an individual, exclusive of all definite tendencies to disease. Different temperaments are to be assumed to be likely to give some degree of peculiarity to morbid processes when such have been induced by other causes, but they do not in themselves involve any special proclivity.

This physical definition is more restricted than the one generally accepted, though doubtless temperaments were originally regarded as only physical distinctions. One would prefer to define the term as denoting a certain combination of physical and mental characteristics the resultant of disease, of race, and of heredity.

For centuries temperaments were classified as sanguine, nervous, bilious, and lymphatic; but Dr. Laycock, in the *Medical Times and Gazette* of 1861, divides these four still further into six, namely:

1. Persons nervously active from predominant innervation.
2. Those with predominant sanguinification and activity of the vascular and muscular systems.
3. Those in whom both innervation and muscular activity are predominant, and this existing also with predominant carbon depositor excretion—the fibrous or bilious temperament.
4. When the muscular system is well developed, but neither sanguinification nor innervation predominant, and there is a decided tendency to the deposit of fat—the phlegmatic temperament.
5. Those who are defective as regards innervation, sanguinification, and muscular and vascular activity—the lymphatic temperament.
6. Those in whom, with defective innervation, sanguinification, and vascular activity, there is a combined tendency to carbon deposits—the melancholic temperament.

To unusual industry and sedulously cultivated powers of observation, such as were possessed by Dr. Laycock, these divisions were undoubtedly of the greatest value. He was able to classify his patients in various groups, and to study their needs and prospects with a precision and accuracy not, I am afraid, dependent upon the correctness of his classification, but upon his most careful and educated powers of observation. The great value of Dr. Laycock's work was that it made him a great physician, able to diagnose disease, and able so to classify his patients

that not the exact treatment, but the kind of treatment which was likely to benefit them, would be employed by him.

To him, doubtless, the value of his work was enormous on account of his trained faculty of observation, but I fear his generalizations would prove an untrustworthy guide to the bulk of those who try to follow in his footsteps without that ordered habit of mind, the result of incessant personal work, which was peculiar to himself, and not dependent upon the correctness of his generalizations. It is important to recognize that temperament and tendency towards a particular kind of disease are not synonymous. Every temperamental quality is compatible with health, and no disease is peculiar to any kind of temperament. For my part, I am strongly convinced of the truth of this conclusion, and am of opinion that the tendency to particular disease or modifications of disease is not due to a particular temperament, but rather think that temperament is the result either of disease itself or of a combination of inherited tendencies to suffer in a particular way. Either from family proclivities or from early acquired disease or environment when the developmental processes of childhood or early adolescence are active, every man's appearance and his powers of resistance to diseases become peculiar to himself, and label him as belonging to this or that kind of diathesis, which Hutchinson defines as any condition of prolonged peculiarity of health giving proclivity to definite forms of disease.

Nearly all the considerations which influenced Laycock and his school in the differentiations of temperament may be regarded as evidences of disease or of heredity; for example, among the most important criteria of temperaments was the complexion, which was thought to be a guide to the diagnosis of temperament, such as the sanguine or the bilious, but it is less an evidence of a particular kind of temperament than a matter of inheritance or of race. I do not doubt the value of generalizations or the influence of observations as to colour, form, etc., in guiding us in our estimate of patients, but they are dangerous and fallacious unless critically examined and carefully applied. That dark people tolerate mercury better than fair ones, that red-headed patients are more liable to suffer—and to suffer worse—from rheumatism than dark-complexioned people, that brunettes suffering from anaemia do not tolerate iron as well as blondes until constipation has been relieved and digestion improved, are, I believe, empirical generalizations, but they are nothing more, and are not to be used as scientific laws. If, then, one assumes that temperamental qualities are due to diathesis and to disease, it is to these that our attention should be directed, but time fails me to do more than indicate the line of thought, fascinating though such study would be. I would wish further, did time permit, to consider idiosyncrasy, that quality which differentiates individuals in a class, and makes the work of a physician so incomparably interesting, and enables one to apply to medicine the vulgar truism that what is "one man's meat is another man's poison." If I might paraphrase this, it would be to say that the physiology of one man may be the pathology of another; the quick pulse of Graves's disease may exceed but little the normal rate of pulse of a healthy man, and many men may in the midst of perfect health have a pulse so slow as to excite suspicion of serious pathological conditions.

> Great wits are sure to madness near allied;
> And thin partitions do their bounds divide—

is a truth that has very perfect analogy in the physical life, where physiological perfection ends and pathological failure begins without obvious dividing line. If one may, as for my part I do, accept the truth of the proposition that predisposition to disease does not depend on temperament but that temperament is influenced and determined by morbid conditions, one must bear in mind that the term denotes the sum of not only the physical but also of the mental characteristics. It is not quite so easy to determine how far temperament is modified by conduct and by character as it is to see how very materially disease and environment and heredity affect it, and yet it should not be difficult to believe that hereditary mental tendencies, inherited dispositions to certain lines of conduct and peculiarities of character, must affect that sum of psychical characteristics which make up the temperamental qualities other than those induced by disease or by the transmission of hereditary physical peculiarities. Physiologically as in the radical difference between the sexes, and pathologically also as illustrated by several diseases, the mental and emotional part of temperament stands exactly in the same position as the physical part. Like it, it is the resultant of hereditary tendencies, and of centuries of racial peculiarities, and like it it is profoundly modified by functional and organic changes. Under the head of functional causes and results I refer to the mental and emotional changes induced by all diseases making demands upon the fortitude of patients. Such diseases are cancer, with its burden of pain, and tuberculous disease of all kinds, with its alternations of hope and despair. Into these conditions I do not propose to enter, nor to do more than refer to the emotional changes induced by the discomfort of prolonged dyspepsia, or to the mental enfeeblement associated with epilepsy and its treatment. Insanity, with its profound modifications of character and its still too vague pathology, I have neither time nor knowledge to discuss, but I should like to refer briefly to those most interesting changes of character and perversions of conduct which are known to be associated with definite structural changes in the composition of certain organs.

In the Huxley Lecture of 1903, Karl Pearson expresses himself as follows:

> I cannot free myself from the conception that, underlying every psychical state, there is a physical state, and from that conception follows at once the conclusion that there must be a close association between the succession or the recurrence of certain psychical states, which is what we judge mental and moral characteristics by, and an underlying physical confirmation, be it of brain or liver.

The liver is a much maligned organ—from the earliest time it has been held responsible for many defects of character; bad temper, irritability, and like qualities have been condoned because of a man having a liver whose vagaries have been assumed to be beyond his control. Two temperaments—the bilious and the melancholic—have derived their names from supposed qualities existing in the bile or the liver, but there is not the slightest basis for the assumption. Even the complexion is supposed to be a key to the state of the liver; but *nimium ne crede colori*, the pale, sallow complexion of the livery Englishman is almost the normal of the healthy Spaniard or Italian. Some time ago Dr. Frederick Taylor read a paper in Birmingham on the sufferings of the spleen; had he written similarly about the liver he would have more easily aroused our sympathies, for that unhappy organ may be hypertrophic, it may be atrophic, its capsule may be thickened by peritonitis or invaded by gummata and new growths, it may become fatty in phthisis, or waxy in lardaceous disease, and yet, so far as the character or conduct of its owner is concerned, not a vestige of evidence can be brought against it for any responsibility in the moral delinquencies it is supposed to produce. The association of organic tissue changes and alteration of character is really a very close one, but the liver has nothing to do with it. So far as present knowledge has advanced, the two organs responsible for character are the brain and, as I believe, the thyroid gland. The study of character and its relation to bodily organs is a fairly old one, but in this country, at least, it received an impetus to activity first in 1881, when Professor Bain published his book on the study of character. It was probably written as a counterblast to the phantasies of the phrenologists, and is not a very satisfying effort. In an article entitled, Can there be a Science of Character? by W. L. Courtney, in the *National Review* of 1890, the subject matter of the book is reviewed and the question answered as follows:

> Only in a rather vague fashion, making use of the larger psychological divisions, and filling in the wide outline by concrete experience and careful and methodic observation.

Since 1890, however, our knowledge has been extended by the work of Ferrier and others on the functions of the brain, and, above all, by the careful observations of physiologists and physicians in cases of cretinism and myxoedema on the one hand and cases of exophthalmic goître on the other. If one finds that changes in the brain and the thyroid do produce changes in character and conduct, it is a reasonable assumption that Courtney's question, "Can there be a science of character?" may be answered in the affirmative. If, moreover, disease produces changes of character, it becomes a reasonable matter

for discussion whether or no the combination of lines of conduct and evidence of emotion, which are the expressions of what we call character, have their origin in definite portions of the brain or thyroid. Both by experiment and by pathological evidence of disease in man it has been shown that if the frontal lobes of the brain be extensively destroyed there results marked intellectual deficiency and instability of character. The lateral movements of the head and eyes are impaired, so that only objects which fall directly within the field of vision are observed. According to Ferrier, with this defect goes a loss of the faculty of attention, which in its turn is followed by mental degradation. This, doubtless, may be the case; but ophthalmoplegia from other causes may occur without mental or moral change, and tumours or injury to the frontal lobes have often been shown to be associated with psychical changes without limitation of the movements of the eyes. It is interesting to note that the frontal lobes reach their highest development in man, and that, according to Wagner, in his work on the morphology and physiology of the human brain as the organ of the mind (1860-2), the average male brain is more highly convoluted and developed in the frontal region than is the case with the average woman.

Numerous cases have been recorded in which no mental or bodily symptoms have followed lesions of the prefrontal area—such evidence would appear to be destructive of any attempt to localize moral or mental control in this region—but as many cases can be cited in which what appears to be similar damage has been followed by moral and mental deterioration. No such symptoms are associated with disease or injury in any other portion of the brain, so that it is surely permissible to speculate and even to conclude that there is a distinct influence on character possessed by this portion of the brain. Ferrier in the Goulstonian lectures quotes a number of most interesting cases illustrative of character changes from damage to the frontal lobes, of which the best known is the American crowbar case. A pointed iron bar entered the patient's skull at the left angle of his upper jaw, passed clean through the prefrontal lobe of his brain, and emerged near the sagittal suture in the frontal region, and was picked up at some distance covered with blood and brains. He lived for over twelve years after the accident and was physically as well as he had been before it, but Dr. Harlow's report on his mental condition shows a great change.

> His contractors, who regarded him as the most efficient and capable foreman in their employ previous to his injury, considered the change in his mind so marked that they could not give him his place again. The equilibrium or balance, so to speak, between his intellectual faculties and animal propensities seemed to have been destroyed. He is fitful, irreverent, indulging at times in the grossest profanity (which was not previously his custom), manifesting but little deference for his fellows, impatient of restraint or advice when it conflicts with his desires, at times pertinaciously obstinate, yet capricious and vacillating, devising many plans of future operations which are no sooner arranged than they are abandoned in turn for others appearing more feasible. A child in his intellectual capacity and manifestations, he has the animal passions of a strong man. Previous to the injury, though untrained in the schools, he possessed a well-balanced mind, and was looked upon by those who knew him as a shrewd, smart business man, very energetic and persistent in executing all his plans of operation. In this regard his mind was radically changed, so decidedly that his friends and acquaintances said he was "no longer Gage."

With an experience necessarily much more limited than that of Ferrier I have seen several cases in which damage to the frontal lobes has been associated with great mental and moral deterioration. I saw one lady of most refined habits who became quite indifferent to the ordinary niceties of life long before her other mental processes were affected, and have seen more than one case in which injury in this region was followed by the most senseless and obvious kleptomania while ordinary mental processes appeared to be normal and the physical vigour was unimpaired. To generalize from my own few cases would be an absurdity; but the wide experience of neurologists has made it certain that damage to the prefrontal region is in a large number of cases accompanied by moral perversion and alteration of character. That the thyroid body is concerned in the manifestations of intellect and of character the evidence is overwhelming. Cretinism, in which it may be absent congenitally or very small; myxoedema, in which the secreting structure of the gland is atrophic; cachexia strumipriva, the condition supervening on removal of the gland for experimental or therapeutic reasons; and exophthalmic goître—each and all present definite and characteristic mental and moral symptoms and, except cretinism, deviations from the normal attributes of the affected person. So very marked and remarkable are the changes in character associated with organic affections of the thyroid that it is at least one's duty to inquire why this should be the case, and why the colloid secretion plays so important a rôle. Cretinism occurs either as a congenital condition or as one beginning before the age of 15. In congenital cases the thyroid is either undeveloped or has undergone complete atrophy. If the child lives, mental development is very slow, and severe cretinism comes on later owing to the progressive degeneration of the thyroid. Speaking of cases in which symptoms begin in the first five years of life, Murray in the *Twentieth Century Practice of Medicine* says: "By the time the child is 12 or 15 years old the expression is dull and apathetic, being entirely wanting in the bright interestedness of the healthy child; the mental condition is one of dull placidity with contentment. The mental capacity varies considerably in different cases, as some are quite helpless idiots, while others can feed themselves and appear to be as intelligent as most children of 3 or 4 years.

In such cases, according to Horsley, the convolutions of the brain are ill-defined and its blood vessels small. In myxoedema the thyroid gland is nearly always much smaller than in health; the glandular structure is notably diminished and the fibrous tissue increased, this increase being especially marked in cases in which the gland is normal or enlarged in size. The alveoli are much diminished in number and contain little or no colloid material. Murray sums up the nervous and mental symptoms as follows: "All the functions of the nervous system are characterized by slowness and dullness. Patients have difficulty in comprehending any new subject; the memory becomes deficient and the temper placid and equable, though occasionally there may be marked irritability. Cachexia strumipriva, the condition following upon removal of the whole thyroid gland, presents symptoms very like those observed in a case of myxoedema, as shown by the following quotations from Murray (*Diseases of the Thyroid Gland*):

> In one case eighteen years after operation it is noted that the patient cannot do work requiring delicacy and skill. He is incapable of learning any trade, and a remarkable impairment of intelligence has occurred. Before operation he was one of the best pupils in his school; now his mental faculties are less than those of a boy of 10. His reasoning powers are extremely weak and slow. In another case we find that intellectual actions are very slow. If a question be asked the correct answer to it will be given, but not at once; it will come slowly. It seems as if the patient had to make some effort to collect his ideas. Speech is slow, and very commonly the memory is affected.

In exophthalmic goître we have a clinical picture the reverse of that which we find in atrophy or absence of the thyroid gland. Quoting Murray again:

> In almost all cases there is a peculiar mental condition which is so constant that it may be considered as one of the primary symptoms of the disease. The change from the previous normal condition may be only slight, but it is generally quite sufficiently well marked to attract the attention of the friends of the patient. Most commonly there is a condition of general nervousness in which very trivial circumstances are sufficient to make the patient excited and apprehensive.
>
> There is often restlessness of body and irritability of temper or intolerance of contradiction.
>
> Trifles are unduly considered, but there is a great want of true application, so that no single occupation is followed for any length of time. Hope alternates with depression; occasionally the moral nature appears to be changed and the patient becomes morose, quarrelsome, and untruthful. The memory becomes defective. With these symptoms is associated enlargement of the thyroid gland due to increased vascularity, and a great increase in the amount of actively secreting gland tissue. From this follows an excessive formation and absorption of thyroid secretion, which may be normal or abnormal in character.

Mental symptoms like those of Graves's disease, but of a more fleeting and generally less severe character, are often associated with ordinary menstruation, and during this period there is commonly a temporary enlargement of the thyroid gland.

So marked is this association with menstruation that Clifford Allbutt with great sagacity and epigrammatic terseness has said that "Every woman stands often at the gate of Graves's disease."

This functional and transient enlargement of the thyroid at the menstrual period was well known to the ancients, one of whom (Catullus) wrote, when speaking of the change in a girl's physique at the commencement of her menstrual life:

> Non illam nutrix orienti luce revisens
> Hesterno collum poterit circumdare filo.

M. Leopold Levi and M. Henri de Rothschild recently read a very interesting paper on the influence exercised by the thyroid body on the temperament of a person. They said that they had seen the temperament of a girl, aged 17 years, change completely in consequence of the administration of 175 cachets of thyroid substance. She became slightly thinner, and her figure assumed an appearance of lightness, her features became sharper, and her eyes showed more brilliancy and expression. A great mental change simultaneously manifested itself. Formerly she spoke little, was rather low spirited, and was always tired, drowsy, and inattentive to her work; but now she showed a kind of joyous excitement, attended by bursts of merriment and sometimes foolish laughter. She also talked a great deal, took an unwonted interest in her work, and was no longer anxious to go to bed. They remarked on the changes of temperament due to the thyroid body as seen during pregnancy and menstruation and at the menopause. It would be trespassing on very delicate ground if I ventured to suggest that this recurring thyroid enlargement during the most active functional part of her life must leave its mark on the character and the mental attributes of a woman. Taken in conjunction with the different and lesser degree of convolution in the prefrontal lobes of the average woman as compared with the average man, it would seem to suggest that the periodic interference with normal mental stability and equanimity would furnish a strong argument to those who hold that a woman's duty and functions in life cannot ever exactly resemble those of man.

Many conjectures have been advanced to account for the effects following removal of the thyroid gland; not one of these has been accepted as conclusive or proved correct. The two most favourably considered are those which regard the symptoms as due to the deficiency of the colloid secretion. By some writers the function of this secretion is supposed to be its ability to render innocuous one or more toxic substances which tend to accumulate in the blood, by others it is thought to be necessary to metabolism generally, and especially to that of the central nervous system. This hypothesis is based mainly on clinical grounds such as I have stated, and if correct would relegate the thyroid gland to a subsidiary position, and would regard its functions as ancillary to those of the brain.

Whether this view be correct or not, it is quite certain that the thyroid plays a very important part in the mental and moral processes which constitute the basis of character, and that, if there is to be, as I firmly believe, a science of character, the further study of the thyroid and its functions must assume a still greater importance.

Before concluding, I should like briefly to recapitulate the main lines of my argument. I have endeavoured to show that while, on the one hand, the knowledge obtained from modern laboratory work can never take the place of clinical experience, and of the study of individual temperament in its relation to disease, we have, on the other hand, to avoid the mistakes into which our forerunners fell in their generalizations and classification of temperaments and the diseases associated therewith. We must, however, recognize in their generalizations an appreciation of the close connexion which undoubtedly exists between disease and temperament.

My own experience and the study of the work of others have led me to the conclusion that, so far as we can trace the connexion between temperament and disease, and between temperament and functional disorder, we must regard the disease or the disorder as the cause of temperament, and not as its effect.

That this is so is, I think, clearly evidenced by the cases I have specified, showing the permanent changes of character which are associated with diseases of the thyroid gland, and the frontal area of the brain, and the temporary modifications of emotion and conduct which accompany functional disturbance and physiological changes.

To differ from the conclusions of Laycock is not to disparage his work, or to abate one jot the admiration for his powers which has become almost a tradition; nor would I seek to minimize the value of the industry and ingenuity of Wright and the experimental school of which he is so brilliant a leader, but I would urge in the spirit of Bacon that the wise man is he who unites to the enthusiasm of experiment the teachings of experience.

THE TREATMENT OF SLEEPING SICKNESS AND OTHER TRYPANOSOMIASES BY THE ATOXYL AND MERCURY METHOD.

BY SIR RUBERT BOYCE, F.R.S.,
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THE researches conducted by various investigators connected with the Liverpool School of Tropical Medicine upon the treatment of sleeping sickness and other forms of trypanosomiasis have now reached such an interesting stage that it appears appropriate that some connected account should be given of these important studies in experimental therapeutics.

The first use of arsenic as a remedial agent against trypanosomes is due to the great explorer Livingstone, who found it to possess a beneficial action on animals infected with *nagana*, or tsetse-fly disease.

Later observers, including Bruce, Lingard, Laveran and Mesnil, Thomas and Breinl, and others, found that arsenic administered in various inorganic forms possessed a marked influence upon trypanosomes of different species in the blood stream of infected animals. All these observers noticed, however, that as a general rule the protective effect of inorganic forms of arsenic was only temporary, and that, in the end, the parasites reappeared in spite of steadily-increasing doses of the drug. Finally, the animals died either of the disease or through arsenical poisoning due to pushing the drug.

Thomas and Breinl[1] then instituted a search amongst arsenical compounds for a drug which would still retain its effect upon trypanosomes, but would not be so toxic to the animal under treatment. After a number of preparations had been tested with negative results, the body known commercially as atoxyl was found to possess marked toxic action on trypanosomes, with much diminished effect on mammals.

A long series of experiments were then carried out at the Runcorn Laboratories on animals experimentally infected by various trypanosomes, and it was found that when animals very severely infected were thoroughly and persistently treated with atoxyl a very marked improvement immediately followed. The parasites underwent degeneration, and entirely disappeared from the blood in a few hours. The animals gained in weight, lost their symptoms, and appeared to be healthy. In some of them these effects were permanent; in others—and these the majority—if the treatment were stopped, the parasites reappeared in the peripheral circulation after a varying period, or even if the drug were given continuously the parasites eventually reappeared after a longer interval of freedom, and increased in numbers until the animal died. Thomas and Breinl were much impressed by the favourable results obtained with atoxyl, and advised that the drug should be given in as high doses and as continuously as possible in cases of human trypanosomiasis.

As a result of the work of these observers, the Liverpool School of Tropical Medicine has ever since consistently advised that this drug should be given a most careful trial in the treatment of sleeping sickness, and to this end has sent out, free of charge, large quantities of this hitherto somewhat expensive drug to medical men and missionaries in West Africa, who have signified their desire to give the remedy a trial.

Since the introduction of atoxyl for the treatment of trypanosomiasis a large number of observers have tested it, and all are now united in giving it the premier position as a trypanocide.

The results of most observers upon the treatment of sleeping sickness by atoxyl alone completely confirm the results stated above as having been obtained by Thomas and Breinl in the experimental trypanosomiasis of animals. Thus, cases have been described which were apparently permanently benefited and might be described as cured, but in a great many of them recurrences were observed, and finally the infection became persistent, the trypanosomes becoming atoxyl-fast and being apparently no longer affected by the drug.

Quite recently a second distinct advance has been made in the experimental therapeutics of trypanosomiases, and again by workers of the Liverpool School. This consists in treating infected animals, from which the trypanosomes have primarily been driven out of the blood by the use of atoxyl, by a second drug, so as to prevent the recurrences which so often follow atoxyl treatment alone.

The general principle underlying the combined method of treatment by two successive and quite different drugs is that when an infective organism, such as a protozoon, shows two distinct phases in its life-history, then these two phases ought to be attacked by separate drugs, and it is not only possible but probable that a drug which affects the first will not affect the second, and vice versa.

The application of this bio-chemical principle, which has led to success in the prevention of recurrences in trypanosomiases, may be very wide in experimental therapeutics, especially in protozoon diseases where different phases in the life-history occur in nearly all cases. The two drugs necessary to attack two successive stages of the parasite will certainly not always be found to be an arsenical compound and a mercurial compound; but it is established as a principle that given a parasite has two successive phases, A and B, then the problem of experimental therapeutics is to find two remedial agents, *a* and *b*, of which *a* kills phase A and *b* kills phase B, and then to apply the remedies *a* and *b* in succession, killing off phase A as completely as possible with remedy *a*, and then attacking phase B with remedy *b*, and continuing this rotation until the animal is free of infection.

The research on the combined treatment was commenced in the Bio chemical Laboratory of the University of Liverpool by B. Moore, Nierenstein, and Todd in October, 1906, and a preliminary report published in March, 1907,[2] followed by a fuller account in May, 1907;[3] the work is now being continued on large animals in the Runcorn Laboratory, and, as far as cases are available, upon human trypanosomiasis.

At the time of the commencement of this research, a second phase in the life cycle of the trypanosome was not known with certainty to exist, but since then the life-history has been more completely investigated by J. E. Salvin-Moore and Breinl, and these observers have clearly shown the existence of such a phase.

The existence of this other phase was suspected by Moore, Nierenstein, and Todd, from the regular way in which, after the trypanosomes had been completely driven out of the peripheral blood by atoxyl, recurrence again took place, although the investigation of organs and tissues other than the blood had failed to demonstrate anywhere a storage of the ordinary phase of trypanosome.

On these grounds, these observers determined to first drive out the parasite from the peripheral blood by atoxyl, and then when the blood was free to treat by other drugs, paying no attention to whether these drugs had any effect upon the usual phase of the trypanosome or not.

Accordingly a series of experiments was commenced, in which rats infected experimentally with *Trypanosoma brucei* were used on account of the rapidity of action of this type of trypanosome. After driving out the trypanosome with atoxyl, the salts of the different heavy metals were given; salts of silver, lead, copper, and antimony respectively were employed without any marked results, but when mercury was used in the form of the bichloride a distinct beneficial result was at once obtained. While the entire series of controlled rats treated with atoxyl alone succumbed, nearly 70 per cent. of the rats given the double treatment survived, never showing any recurrence of trypanosomes, and of the remaining 30 per cent. only 8 per cent. showed recurrences of trypanosomes.

It may be emphasized that the mercury salt alone has not the slightest effect upon the ordinary phase of the trypanosome as seen in the peripheral circulation. This appears to demonstrate clearly that the two drugs act upon two quite distinct phases.

Similar results are at present being obtained with other classes of animals, and indications of like results with the more slowly acting *Trypanosoma gambiense* of sleeping sickness.

The two drugs are likewise being employed in the treatment of sleeping sickness in man, and the results so far obtained are distinctly encouraging.

In their longer paper,[4] Moore, Nierenstein and Todd also devote a section to the chemical and physical properties of atoxyl, and show that this is not, as it was originally described, an anilide of metarsenious acid, but is an exceedingly stable chemical substance with the arsenical radicle directly attached to the benzene ring. It was shown that the aqueous solution is strongly dissociated electrolytically, giving in consequence an apparently low molecular weight by the freezing-point method, and possessing a high electrical conductivity. Except on standing in aqueous solution, it is a most stable compound, and neither aniline nor arsenic are easily detachable from its molecule by chemical means.

Its toxic properties are neither those of arsenic nor of aniline even when pushed to excess, and its therapeutic action is rapid; from this and its high conductivity, showing high dissociation, the conclusion was drawn that its activity must be ascribed, not to free inorganic ions or to free aniline, but to a complex organic ion containing both the arsenical and aniline radicles.

Ehrlich,[5] in a paper published a few weeks earlier, stated that atoxyl was the sodium salt of p-amido-phenyl-arsenic acid, with four molecules of water crystallization; the analyses of Moore, Nierenstein and Todd yield the formula $(NH_2)(C_6H_4)AsO, ONaOH,3H_2O$, and they had independently come to the conclusion that the arsenic radicle was united directly to the ring. Since then Ehrlich and Betheim[6] have published the details of their chemical work, showing that the arsenic radicle is in the para position to the NH_2 group.

To Fourneau[7] is due the credit of showing that, chemically, atoxyl is not a new preparation, having been synthetized as long ago as 1863 by Bechamp[8] in the early days of synthesis of aniline colour, fuchsin being produced in abundance at the same time. Bechamp supposed that he had in hand an anilide of ortho-arsenic acid. Fourneau supports this view, and the body is described as an anilide, but this from the evidence given by Moore, Nierenstein and Todd, and by Ehrlich and Betheim, is probably an error.

The importance of these new discoveries in the treatment of trypanosomiasis, especially for tropical climates, can scarcely be over-estimated. They may result not only in the saving of millions of human lives, but may make vast tracts of country, now uninhabitable by civilized man on account of the ravages of animal pests, inhabitable and capable of cultivation. India alone loses over a million pounds annually through cattle lost by *surra*, and the loss of horses in the late South African war from tsetse-fly disease is within the recollection of every one.

But the new principle underlying the combined method, that where an invading organism shows more than one phase, then treatment should be studied and adopted to each stage in order to effect complete destruction of the parasite, is an advance in experimental therapeutics which may soon find application in diseases nearer home.

Here there is an illustration of the value of experimental therapeutics which ought to stimulate the study of that subject, and induce us to foster its growth by the establishment of research positions and research laboratories in the subject.

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THE late Mr. John Venables, of Birkenhead, who died on May 25th, left £200 each to Birkenhead Borough Hospital, and the Birkenhead and Wirral Children's Hospital.

TWO CASES OF POISONING BY WEED-KILLER.

BY WILFRID A. ALDRED, M.R.C.S., L.R.C.P.

ON June 22nd I was called at 8 a.m. to see two men who, I was told, had taken poison. Upon my arrival about half an hour later I elicited the following history.

The two men, C. A., aged 63, and R. N., aged 42, who were gamekeepers, had been up all night watching the young pheasants. At about 6.15 a.m., being thirsty, the patient C. A. tasted some liquid which was in a beer bottle, and which he had been plainly told was poison! He took "one mouthful and spat it out again," and handed the bottle to R. N. "to taste," as it was "rum stuff." His companion took two gulps. They were found shortly afterwards lying on the ground, vomiting and complaining of burning pains in the stomach.

Both men were evidently very ill, vomiting small quantities of yellowish-brown material at frequent intervals. The skin was cold and clammy, and the pulse small and feeble. They were both quite conscious, and complained of the cold, the elder man walking about at intervals to get warm. There was no blistering of the lips or tongue, nor were there any "cramps."

Arsenical poisoning was diagnosed, and this was confirmed later by a telegram from the makers of the weed-killer. An emetic of warm salt and water was administered and repeated, and a dose of castor oil was given. They were ordered lime water and a solution of the sesquioxide of iron.

At midday there was no improvement; the bowels in each case had been opened. The elder man complained that he had a severe pain over the "shin" of the left leg, and that he could not see clearly.

R. N., when seen at 6 p.m., was much worse. During the afternoon he had expressed himself as feeling much better and "able to eat a square meal." He was drowsy, clammy, slightly cyanosed, and collapsed. He had vomited several times, and had passed several cholera-like motions. A hot saline enema with brandy ℥j was ordered, and he was given brandy and albumen water by the mouth. At 9 p.m. he was more unconscious and cyanosed. His condition, in spite of injections of strychnine, champagne by the mouth, and another saline and brandy enema, became rapidly worse, and he died at about midnight.

Post-mortem Examination.

Much hypostatic staining. Slight blistering of the lips. The stomach contained about three-quarters of a pint of dark, greenish-black fluid, evidently altered blood and bile. The mucosa, covered with slimy mucus, presented patches of injection ("crimson plush") at lower end of oesophagus, at cardiac end of stomach, and to a less extent in the duodenum.

The other patient, C. A., passed a restless night owing to the pain in his left leg. On June 23rd he had marked external strabismus of the left eye with diplopia. Towards night he passed into much the same condition, only to a less degree, as the other man. The pulse, 130, was feeble and irregular. He was ordered inject. strych. $\frac{1}{60}$ grain every four hours, and a mixture of digitalis and ammonia. On June 24th it was noted that he had had three or four such attacks. The pulse was 120, of low tension and irregular. By June 26th he had improved, but the squint was very marked. He had pain in the left leg and foot, and over the middle of the peroneal area of the left leg there was a bright red patch the size of the palm of the hand. The toes were blue and cold, especially the left little toe. Left "foot-drop" was present, and an area of anaesthesia corresponding to the anterior tibial nerve could be mapped out. He improved steadily, and on July 7th the pulse was stronger and more regular. There was complete foot-drop in the left leg, and slight in the right. The little toe on the left foot had been cold, blue, and very painful for several days, and was now evidently becoming gangrenous. On July 12th (three weeks after taking the poison) the squint was less marked. The area of anaesthesia was the same. The little toe of the left foot was affected with dry gangrene. By August 4th the squint had quite disappeared, but he was quite unable to stand alone, and even with help could only just do so. There was marked wasting of all the muscles of both legs, and of the thighs. He was unable to extend the toes of the left foot, and foot-drop was complete, but he could slightly flex the toes. Right foot-drop was present, but not complete. The knee-jerks were absent. The gangrene was confined to the little toe of the left foot. The general condition was good.

The interesting points in the two cases, to my mind, are as follows:

(*a*) The small dose of weed-killer taken. The effects were certainly increased owing to its having been taken on an empty stomach.

(*b*) The early effect on the nervous system. I take it that the heart symptoms in both cases were due to the action of the arsenic on the cardiac nerves. The rapid onset of the paralysis of the left internal rectus is remarkable. The same day that C. A. took the poison he complained that he could not see clearly, and, although no squint was noticed, it probably was present to a slight extent; anyhow it was very marked on the following morning.

(*c*) The occurrence of gangrene. This was very puzzling to me at first. On June 26th (three days after taking the poison) he had pain in the toes of the left foot; they were blue and cold, especially the little toe; the others gradually regained their normal condition, but the little toe became worse, and definitely became gangrenous about July 4th. It was too early for any "trophic" change due to paralysis of the nerves, but I think it can be accounted for by the very low blood pressure due to the enfeebled action of the heart.

The weed-killer was a mixture of caustic soda and arsenic.

A CASE OF MYELOPATHIC ALBUMOSURIA.

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OF late years a good deal of attention has been attracted in this country to the subject of multiple myelomata associated with albumosuria, chiefly by the writings of Bradshaw and Parkes Weber. Cases of this disease are still sufficiently rare to merit recording, even though in the present instance a *post-mortem* examination most unfortunately could not be obtained. But the Bence-Jones proteid was separated from the urine, which Bradshaw[7] regards as "one of the most significant clinical observations which it can fall to the lot of the physician to make," since "its presence is one of the few signs of disease which can strictly be called pathognomonic."

Clinical History.

A Jew, aged 50, was admitted to the Metropolitan Hospital under my care on June 4th, 1907, with the history that he had been ailing for about a year. In February he had been obliged to keep to his bed for three weeks with pain in the hands and legs. Prior to admission he had again been confined to his bed for nearly a fortnight with pains all over. He stated that he had lost flesh. There was no history of any other important illness.

The man was anaemic; he looked ill and in pain, groaning whenever he was moved. No swelling of any bone or joint could be made out, though the ribs were very tender to even light percussion. The chest was emphysematous, and there were signs of bronchitis. The sputa was occasionally blood-stained. The area of cardiac dullness was diminished, and the heart-sounds were normal. His blood pressure was 120 mm., the pulse was small and regular. The urine passed in the day amounted to 53 oz., had a specific gravity of 1010, was reported to contain a "doubtful trace" of albumen, and showed granular and hyaline casts. Measured by Esbach's method, the amount of albumen speedily increased from a trace to 0.5 per 1,000 and then to 2 per 1,000. On June 10th the urine, which had previously been acid, became alkaline and turbid, almost milky. Microscopically many crystals of triple phosphates were found embedded in an amorphous deposit. A few pus corpuscles were also seen. A rectal examination revealed nothing.

Shortly after this Mr. Coventon, the house-physician, reported that although the albuminometer recorded 2 parts per 1,000, there was hardly any coagulum on boiling. As I found that excess of strong acetic acid had been used to acidulate with, I thought at first that this had led to the formation of some acid albumen on prolonged heating. But on reflection, the presence of the Bence-Jones albumose appeared a more likely explanation. By the procedure described below, this suspicion was speedily confirmed.

The man gradually got worse, and on July 1st hard nodules could be felt on the second right rib in the mid-clavicular line, the seventh right rib in the mid-axillary line, and on the eighth left rib in the anterior axillary line. They were firmly fixed to the ribs, and the skin over them was freely movable. It is noteworthy that the first of these swellings appeared in a spot where the pain and tenderness had for some time been particularly well marked. Hard movable glands were felt in the right axilla. The percussion note was impaired over the apex of the left lung behind, but only moist sounds could be heard on auscultation. An examination of the sputa, which was now very blood-stained, revealed many pneumococci but no tubercle bacilli. A blood count showed 7,000 leucocytes.

It was proposed to take a skiagram, but the man rapidly became so much worse that this was out of the question. On July 3rd a severe attack of diarrhoea began, and rapidly exhausted him. Two days later the dullness had extended to the base of the left lung. He was now passing very little

urine, but the albumose was again detected in it. The diarrhœa stopped, but the patient sank and died in the early morning of July 6th. The relatives refused to allow any *post-mortem* examination, declining to permit even the removal of one of the affected ribs.

Examination of the Urine.

On the day of this examination (July 2nd) the amount of urine passed was 70oz., and the albuminometer registered 2 parts per 1,000. In reaction it was distinctly alkaline, and in appearance very turbid. On standing a heavy white deposit settled, which on microscopic examination showed abundance of triple phosphates, like the earlier specimen, embedded in a putty-like material.

To identify the Bence-Jones albumose I proceeded as follows: 8oz. of the urine were filtered to remove the phosphatic deposit. The filtrate, which was still turbid, was carefully neutralized and heated. A dense, sticky white precipitate rapidly appeared, which floated to the top; on further heating this largely disappeared. To separate any coagulable proteid this solution was now filtered *while boiling*. This second filtrate was allowed to cool, and then treated with nitric acid. An immediate precipitate occurred at the line of junction of the acid with the urine, which *disappeared on heating and reappeared on cooling*. In this it corresponds to the reaction of proto-albumose (or, as it is usually called now, primary proteose). After removal of this, nitric acid with sodium chloride produced a further precipitate, which also disappeared on heating and reappeared on cooling. This corresponds to the reaction of secondary proteose.

Millon's reagent gave a white precipitate with this filtrate, which became reddish-brown on boiling.

To separate the Bence-Jones body some of the albumen-free solution was saturated with crystals of ammonium sulphate. The resulting precipitate was filtered off and redissolved by the addition of water. With the biuret test it gave a violet colour. This substance therefore corresponded in all respects to the Bence-Jones body, for it possessed the solubilities of proteoses while giving a violet colour with the biuret test instead of a rose colour like ordinary proteoses. To this difference of colour Bradshaw[7] attaches no importance. My observation corresponds, however, to that made by Hutchison in Parkes Weber's case. I am constantly engaged in working with the various proteids, and I feel confident that that body behaves like an ordinary proteid and unlike a proteose to the biuret test.

There is one slight difference between the behaviour of this substance and that of primary or secondary proteoses to heat. The former is precipitated at about 60° C., redissolving on further heating, while the latter are soluble at all temperatures. Moffatt, however, states that pure Bence-Jones proteose dissolved in water is also entirely unaffected by heat. He thinks that the effect of heat upon it, when dissolved in urine, is probably due to the presence of uric acid.

Remarks.

It will be seen that this case agrees in all important particulars with the condition first described by Bence-Jones in 1848, and now known as Kahler's disease, or myelopathic albumosuria. My attention was drawn to the condition as long ago as 1892 by Dr. Sheridan Lea, who had worked under Kühne. It may be remembered that Kühne described the second recorded case, and recalled the almost-forgotten observations of Bence-Jones.

The disease usually occurs in men in later middle life, and there is often a period of great weakness and diffuse pains, like those of chronic rheumatism, before the tumours can be detected. There is also marked tenderness on pressure over certain points. In all the points my case is typical. The sudden appearance of the tumours was probably due to bursting of the growth in the marrow through the compact tissue of the bone, as has been observed by Moffatt.

As in Bradshaw's first case, the urine became milky, partly through spontaneous deposit of the proteose, but also, no doubt, in part through the abundant phosphatic deposit. Unfortunately, a quantitative estimation of the phosphates was not made, and in its absence it cannot be definitely stated that there was an excess of earthy phosphates in the urine, though the large amount of deposit was very suggestive. Excess of earthy phosphates has, however, been noted by Hutchison, and is no doubt the result of the destruction of the bone. An increase of the earthy phosphates in proportion to the phosphates of the alkalies occurs, however, in many wasting diseases, the normal ratio of 1 to 2 becoming as high as 5 to 2 (von Noorden).

As to the significance of the albumosuria, we may conclude with Moffatt[20] that, "save for a few rare and perhaps doubtful cases, Bence-Jones albumosuria is always associated with disease of the bone marrow." The view that the albumose is alimentary in origin (Magnus-Levy) appears to me to be untenable, for the following reasons:

1. We know now that proteolysis normally proceeds far beyond this stage, the end-products being hexone bases and amino acids.
2. The Bence-Jones albumose is not identical in its reactions with the digestive albumoses.
3. Parkes Weber found that a considerable alteration of the diet had no effect on the amount of proteid excreted, and this I was able to confirm in the present case.
4. The alimentary view fails to explain why marked and persistent albumosuria should only occur in this particular form of malignant disease.

The view advanced by Parkes Weber that the albumose is produced by the changes going on in the bone marrow has more to recommend it. Hutchison and Macleod were able to extract a proteid, giving very similar reactions to the Bence Jones body, from the vertebrae and femur of Parkes Weber's second case, but not from the blood and organs.

In the present case the coexistence of a true albuminuria with hyaline and granular casts obscured the diagnosis for a time. But with a blood pressure of only 120 mm. it was not possible to explain even the earlier symptoms by reference to chronic interstitial nephritis, and this led to a more careful inquiry.

Death apparently resulted from a terminal pneumococcal infection, to which the patient totally failed to react, as shown by the leucopenia and absence of fever. As Parkes Weber stated in his first paper on the subject, pneumonia seems to be the most usual cause of death.

Even though no *post-mortem* examination could be obtained, the diagnosis seems fairly certain in this case, for no other explanation will account for all the facts, nor is there anything in the case inconsistent with such an explanation.

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THE EYESIGHT OF THE POORER CITY CHILDREN.*

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It is a well-recognized fact that, apart from short-sightedness or other forms of optical defect, the power of observation, as distinguished from mere seeing, is developed to an exceedingly variable degree in different individuals and classes. Also, it is obvious that in determining such variation the influence of training is very considerable. The detective officer going into a room notices much more than the ordinary individual. They both have the same pictures formed in their eyes, but only the one has a brain

* Read at the Second International Congress on School Hygiene, London, August, 1907.

capable of taking in all, or nearly all, the details of the picture in a very short time. The different impressions which two such people leave the room with may be compared to a photograph and a sketch, the one exact to the smallest detail, the other showing only the general effect.

Examples of such differences in trained powers of observation might be multiplied indefinitely, but mention need only be made of the sailor's superiority over the landsman in detecting distant ships or lights, and the countryman's sharpness in picking out from afar off individual persons or animals.

In speaking of such visual qualifications it is usual to refer to them as the result of training the eye, and for ordinary purposes this may be enough. It must be remembered, however, that the eye does not perceive. Pictures are formed in it, but they are interpreted by the brain, and the difference as regards power of observation between two persons each of whom has normal eyes is due not to difference in sharpness of eyesight, but sharpness of brain power to interpret what is seen equally well by both.

When we think of the adult's visual perspicuity and its apparent relation to training and environment, an important field of inquiry, it seems to me, is suggested for the educationalist. First, can it be shown that children vary in acuteness of visual power according to their environment? Secondly, if they do, can anything be done for them at school?

In attempting to answer these questions I wish to bring forward evidence obtained in my work as oculist to the School Board of Glasgow. During one session I investigated the eyesight of the children above the infant department stage in all the Board's schools. The number of children examined was 52,493, attending 67 schools, situated mostly in working-class districts in all stages of prosperity. It is not necessary here to detail the method of examination adopted further than to state that the first examination was made by the teachers, and that those children whom they found to have defective vision were referred to me for further investigation. Further, I may add that by making control observations I was able to satisfy myself that in dealing with such large numbers one might quite ignore the personal equation of the teachers as affecting the results.

The result of this testing by the teachers was that 35 per cent. of the children were shown to have defective vision in one or both eyes. I examined these children, and found that many of them, although unable to see well, had nothing apparently wrong with their eyes. They had neither evidences of ocular disease, nor were their eyes longsighted, shortsighted, or astigmatic. Moreover, in the cases which I saw subsequently at hospital, their vision could not be improved by the use of glasses. It seemed as though their visual difficulty was entirely functional, and, while the acuteness of vision was in most cases moderately near the normal standard ($\frac{6}{12}$ or $\frac{6}{18}$), in not a few the depreciation was extreme ($\frac{6}{36}$ or $\frac{6}{60}$). The proportion of the total number of children who were thus functionally defective was 14 per cent., but as different schools had widely different percentages, I made an analysis of the results with a view to finding any suggestive circumstances associated with their distribution. I constructed a chart* in which the individual schools were arranged according to the percentage of defectives found by the teachers, and in which, also, were indicated by a second line the percentages found defective by me. The space between these two lines gave for any school the percentage of functional defectives—that is, those whom the teachers found to have defective sight, yet whose eyes I found to be normal. Now, the teachers' line began very high (53 per cent.), and gradually fell to 20 per cent. My line, with a few exceptions, moved within the limits of 16 and 28 per cent. To put it in another way, the proportion of children whose defective vision could be improved by the wearing of spectacles was nearly the same in all the schools, but the proportion of those who had defective sight, yet did not required spectacles, varied within wide limits. It was a striking fact that the school at the high end of the chart line, with 25 per cent. of its numbers thus functionally defective was situated in a poor district in the middle of the city, while the school at the other end with but 3 per cent. functionally defective was right on the city's edge within sight of the open country. And that this was no mere coincidence was indicated by the fact that most of the city schools were at the upper end of the chart line, and the schools of the outskirts at the other. I next arranged the schools in city districts, and compared the aggregate results. The result was the same—the nearer the district to the open country, the smaller the proportion of its children who were functionally defective. Further, I examined the children of two country schools, the one in a village many of whose adult inhabitants are city bred and city employed; the other in a purely agricultural village. Both were much superior visually to the best of the city schools, and of the two, the agricultural school had the smaller number of children functionally defective. There thus seemed to be clearly indicated a definite relationship between district of residence and visual acuteness, apart from optical defect.

Why should a child who has perfectly good eyes see so much worse if he stays in a street in the middle of the city than if he were a country child, or even a suburban child? It would be very difficult to make a complete reply to this question, because there must be many causal factors, but some of these are demonstrable. The social status is undoubtedly one cause, for the visual standard in slum districts is the lowest, and it is highest in the best-class schools. But the best-class schools are those nearest the edge of the city, and, inasmuch as country school children see best of all, the comparative openness of the best-class school districts probably has something to do with their superior vision. That it is not the whole cause, however, is shown by comparison of city districts equally remote from open country, but of different degrees of prosperity, which shows a decided visual advantage in favour of the better-off children. It may therefore be safely asserted that the poorer a city child's circumstances are, and the more closely built his district is, the less likely is he to have sharp distant vision; but to attempt to apportion to these two conditions their relative causal values is hardly possible in the present state of our knowledge. It is true I have found that the poorest country children have excellent distant vision, but it would not be fair to say that that is entirely due to their being accustomed to look long distances, because even the poorest country child is physically very superior to his brother of the slums. His food is usually wholesome, his surroundings more healthful, and his general nutrition is much more satisfactory, and, of course, his eyes and brain share in the general wellbeing.

Again, working-class children who live near the city's edge see better than those who seem to be equally well off, yet stay in densely built parts; but the very proximity to the country must have some influence on the general health, so we are not entitled to say that the visual superiority is entirely due to the greater scope for practising distant vision. We must, therefore, leave these two causal factors linked together in our affirmative answer to the question, Can it be shown that children vary in acuteness of visual power according to their environment?

Passing now to the second question suggested in this paper, Can anything be done at school to improve the poorer city child's vision? I think an affirmative answer may again be given. First, attention ought to be paid to the fact that these children are habituated to a short range of vision. They live in closely congested districts; their playground is the street or a small backyard. They rarely have occasion to look any considerable distance, yet up to the age of 7 or 8 a child's eyes are structurally better adapted for distant than for near vision; indeed, peering at close objects involves the eye in an amount of accommodative strain which is apt to produce permanent bad effects.

Now, it is well recognized that children in general should not be called upon to use their eyes much for near objects while at the infant department age. Surely, then, in the case of the poorer city children it is not only imperative that they be not made to strain their eyes poring over minute work, but an effort should be made to train their sharpness of vision for distant objects. Focussing for near objects means the exercise of muscles in and round the eye. Looking at distant objects—provided the eyes be normal, or, if abnormal, fitted with glasses—demands little, if any,

* For this and other details see report published by the School Board of Glasgow, 1906.

muscular exercise. The former produces exhaustion and possible permanent harm; the latter may weary the child mentally if continued too long; but the symptoms of this are obvious to the teacher, and no permanent damage is done. Sewing should certainly be abolished as an item of the infant curriculum. Most of the teaching should be done by means of objects, figures, and letters which are large in size, and placed at a distance from the pupils. All writing and drawing by the pupils should be on a large scale, and consequently any ruled paper which is used should be as widely spaced as possible. Further, I would deprecate the use of small multi-coloured squares of cardboard, with which I have seen children building up patterns, to merely look at which caused discomfort in the eyes. I am confident that good might be done by the institution of competitive games, which would involve the use of the eyes for distances of 20 ft. and over. Objects or pictures could be momentarily displayed to a class, then descriptions asked of what was seen. The complexity of the picture or object would vary according to the ages and progress of the children, also the time of exposure. On such a principle a great variety of games might be arranged and an improvement in two most important attributes—namely, sharpness of distant vision and quickness of observation—would result, which would amply justify the trouble involved.

So much for trying to counteract the visual disability of poorer city children in so far as it results from their habitual limited range of vision. The other causal factor which is suggested by my observations is the general nutrition of the child. This must be largely dependent on the atmosphere in which the child lives and the nature of the food which he receives. Most teachers of experience are decided in the opinion that it is not the amount of food received by the children of the poor which is so much at fault as the nature of it. The same money might be spent so much more judiciously.

I do not wish to deal with the administrative question of how to feed the necessitous poor school children, but I would like to record an observation of the apparent effect of feeding on vision.

There are two kinds of industrial schools in Glasgow. The one is the day industrial school, which is situated in a central part of the city and to which the children go in the mornings from their own homes, and remain till the evenings, receiving their three meals in school. The other is the residential industrial school, which is situated in the country. All these industrial school children are well and amply fed, and they are drawn from the poorest social stratum. I examined them in the same way as I did the Board School children, and compared the results. I found that while defective eyesight due to physical causes was very common, defective eyesight for which no physical cause could be found—that which I have referred to as functional defect, and which I have found so markedly associated with residence in crowded and poor districts—was much less common in the industrial than in the poorer city schools. This result is all the more striking in that every industrial school child has come from a poverty-stricken home, but in even the poorest Board school there is a proportion of well-fed children. Surely it cannot be doubted that the good feeding of the industrial school child and his visual superiority over his social brother fed at home stand in the relationship of cause and effect.

In conclusion, let me recapitulate. The poorer city school children are liable to have functionally defective eyesight—that is, a defect of sight which is not due to any physical abnormality of the eyes, but seems to be due partly to want of training and partly to malnutrition. The effect of the want of training might be, to some extent at least, neutralized by certain modifications of the infant department curriculum at school, notably by abolishing sewing and all forms of work which require close poring over, and by instituting suitable visual exercise games. The effect of malnutrition might be combated by proper feeding during school life, as I have found it to be in the industrial schools which I investigated.

The French Minister of Public Instruction has accorded to Miss Alice H. Brunton, the daughter of Sir Lauder Brunton, the diploma of Officier de l'Instruction Publique, in recognition of her services to the recent Second International Congress on Hygiene.

SYNERGIC MOVEMENTS OF THE EYELIDS AND MOUTH.

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The accompanying illustration shows the ordinary appearance of a case of congenital ptosis with epicanthus. The breadth between the inner canthi of the two eyes is very marked, and the flattening of the bridge of the nose is conspicuous. The child is 9 months old, and when the photograph was taken her attention was attracted by some means. In trying to raise her eyelids her mouth is opened, and it shuts again as soon as she gives up attempting to use the eyes.

Such cases of mouth and eyes acting in unison are very common, especially in children who have some difficulty in opening the eyes, either from congenital disease or from acquired conditions, such as photophobia. Some years ago I recorded a similar case,[1] and other allied ones show that under certain circumstances there are associated movements of the ocular and oral muscles. This association is no mere pathological curiosity of rare occurrence, for it is to be seen in the ordinary expression of the emotion of surprise by gaping, although it is not, I think, associated with yawning.*

But associated action of eyes and mouth are not confined to the expression of surprise alone, for any

exaggerated attempt to open the eyes would seem to be accompanied by an opening of the mouth. This is frequently observed by surgeons in children suffering from photophobia, who commonly open their mouths in straining to open the eyes. The tendency of mouth and eyes to open together may be readily tested by putting a finger between one's own teeth and gripping it firmly. If the eyes are now widely opened a relaxation of the grip will be experienced. Or if the mouth be slightly opened and then the eyelids are opened to their widest extent, we shall see if we look in a mirror that there is an inclination for the mouth to open still wider.

This association of eyelids and mouth is recognized in the post-operative treatment of cataract, when it is usual for some days not to allow patients food which requires biting.

The tendency for mouth and eyes to act together may be tested conversely to find out whether closing the eyes is associated with closing the mouth. Again, on putting the

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* The distinction between gaping and yawning would seem to be that the latter is accompanied by a deep inspiration, and is usually a sign of fatigue, either mental or physical. The dropping jaw of fright is probably a form of temporary paresis akin to relaxation of the sphincters under similar circumstances. A gape is defined in Murray's dictionary as an "open-mouthed stare"; and to gape is to "stare at with open mouth, to gaze upon in curiosity or wonder." Dryden has the same idea in "Cymon and Iphigenia":

> "The fool of Nature stood with stupid eyes,
> And gaping mouth that testified surprise."

Darwin, in the *Expression of Emotions* (p. 278, 1872 edition), says: "Attention is shown by the eyebrows being slightly raised; and as this state increases into surprise they are raised to a much greater extent, with the eyes and mouth widely open. The raising of the eyebrows is necessary in order that the eyes should be opened quickly and widely; and this movement produces transverse wrinkles across the forehead."

finger between the teeth, or partially opening the mouth' we find, I think, a decided tendency in the direction of closure of the mouth when the eyes are firmly shut. If, again, the eyes are tightly closed when the fingers are placed over the masseters we shall feel these muscles contract, and there is at the same time a tendency for the angles of the mouth to rise. If the eyes are kept closely shut by placing the fingers firmly on the lids, and then an attempt is made to open them against the resistance, we shall find that there is a tendency in the direction of relaxation of the closing muscles of the mouth.

The muscles of expression would seem to be the ones which are most easily put into action, and associated movements of them are common in other directions, especially in the young and in the inexperienced, who have not yet gained full control (and perhaps never may) of their muscles. The grimaces of the novice at billiards, less frequently seen in the professional player; the working of her face in unison with her scissors by the apprentice, seldom seen in the deft action of the dressmaker; the extruded tongue of the schoolboy learning to write; the facial contortions of the page-boy attempting to insert a corkscrew, or to draw a cork, are cases in point. Ordinarily, as the neophyte gets more experienced and reaches a higher stage of development he gains more control over his muscles and uses them more purposefully.

The developmental side of the question is gone into in a very able paper in the *Transactions of the Ophthalmological Society*, p. 356, vol. xxiii, by Mr. Bishop Harman, and the clinical appearances lend support to his theories.

In children we should expect to find atavistic evidences of ancestral habits more commonly than in adults, and we have Darwin's authority for saying that the young show less signs of modification, and that they more resemble ancestral types than adults.[2] It is probable that the grimaces which are so characteristic of the quadrumana and of the lower races of bimana are the result of a less highly developed specialization of muscular action.

In the majority of cases of associated movements of the eyes and mouth which have been published, the patients have been children or young people. What becomes of them in later life? In Sinclair's cases the ages were 18, 17, "a child," 3, 7, 34, and 22; Eales's 19, Browning's 46, Phillips's 3 and 7, Pflüger's 18, Parkes's 9, Nettleship's (two) 6, MacLehose's 10 and 4, Bull's 16, Hubbell's 7. Friedenwald's 11 and 17, Fuchs's 29 and 45, Snell's 17, Gunn's 15, and Miller's 9. That is, of 26 cases only 4 were over 22 years of age, and one of these (Fuchs's), a syphilitic man, aged 45, was cured by treatment, and probably does not belong to the class we are considering. The juvenility would seem to suggest that associated movements tend to disappear as development progresses. This is to be expected, for, as Darwin tells us,[3] "the embryo in the course of development generally rises in organization."

If in these cases there were an abnormal innervation we should expect that innervation to be lifelong, and the consequent associated movements lifelong. In one of Kraus's patients[4] who was watched for several years, the movements of the eyelids became less vigorous, and in another patient they ceased altogether; but Blok records a case in which the symptoms became more marked.

In my first case an operation for the ptosis cured the mouth-opening, but in none of the levator palpebrae and pterygoid group, which are probably not on all-fours, does an operation for the drooping lid appear to have been done.

We do not find that the same muscles are associated in all these anomalous movements of the eyelids and mouth. In some the openers of the eyes act with the openers of the mouth; in others the levator of the lid acts with the external pterygoid in lateral movements of the jaw in grinding, or the same muscle may be associated with the act of swallowing. Gunn, to whom we are indebted for first calling attention to these curious anomalies, records[5] a case in which the eyelid nearly went up out of sight when the child sucked, and in Blok's case quoted by Sinclair,[6] when the cheeks were blown out—that is, almost the opposite action—the same effect on the lid was produced.

In other cases associated actions of the eyes alone have been observed, such as movement of the eye inwards, with contraction of the orbicularis and retraction of the globe; and, to go further afield, in Debove's case,[7] in which the patient suffered from paralysis of the facial nerve as the result of a kick, he could only speak by shutting the eyes, and the angles of the mouth rose when the eyes were energetically closed.

The association of winking with movements of the cheek, the angle of the mouth, and the wing of the nose has been referred to by Mr. Bishop Harman.[8]

The intimate connexion of the oculo-facial muscles with the elevators and depressors of the mouth has been noticed by anatomists, and the fact that there are exceptionally associated actions in muscles that do not normally act together is not surprising. Exceptions and variations from the standard may be either the starting-point for new developments in the evolution of the species, or they may be vestigial reminders of an ancestral function long since lost in the upward struggle; and whether we accept Mendel's view that the frontalis and the orbicularis palpebrarum are "eye muscles" and supplied from the oculo-motor nucleus, or whether we reject it, seems of little importance in the elucidation of abnormal associated actions. Whatever the nerve supply of the ocular and facial muscles, their fibres and their functions are so blended that exceptional co-ordination and association are to be expected. And when we have a ptosis as a starting-point it is not surprising to find that the excessive synergy, developed in trying to raise the lid, overflows in the direction of muscles which possibly in the early days of the species acted in association. Cases of associated movement have been cured by an operation to relieve the ptosis. It is not clear how this cure is effected, if we accept Mendel's hypothesis, but if the explanation of the associated movements is that it is due to an excess of impulsion, it is probable that when the excess is no longer called for there will be no overflow to cause an abnormal action. The ordinary normal associated movements of the eyes one with the other are regulated by the centres for associated movements in the cerebral cortex, and it may be that the associated movements of the eyes and mouth, which are now occasionally met with, but which in ancestral days may have been essential, were likewise governed in a similar way. In primaeval types the animal probably watched its prey intently previous to springing upon it with open mouth. Palgrave says, "I gape as a beest dothe that intendeth to byte, which holdeth his mouthe open afore."

It is not easy, even if it be possible, for a person to shut the eyes energetically without some tendency to raise the angles of the mouth, although the facial movements vary very much with personal idiosyncrasies, and most facial movements when excessive are assisted by other muscles temporarily acting as accessories. Occasionally, too, we meet with people who have the faculty of moving the scalp, and less frequently others who have the faculty of moving the ears—both are vestigial reminders of our simian brotherhood, atavistic evidences of a musculature once useful but now out of date.

Although it is difficult to understand why, for instance, movements of the upper lids should be associated with movements of the horizontal recti muscles of the eyes in an apparently purposeless partnership, yet the conclusion I would draw is that associated movements of the eyes with the mouth are normal. And if from any congenital or pathological condition, such as ptosis, an increased stimulation is called for, there is a tendency, especially in children, to generate an excess of nervous energy in order to open the eyes. The discharge, owing to the lessened insulating power of childhood, overflows in the direction of muscles which in bygone ages were commonly associated; that is, into channels (nerves) which subserve the purpose of producing the epiphenomenon of opening the mouth.

These freak-like and apparently purposeless associated movements of all sorts are reminders of our antique, though humble, ancestry; mere echoes ringing down the files of time.

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[1] *Lancet*, 1893, vol. i. [2] *Origin of Species*, 1876 edition, p. 386. [3] Ibid., p. 389. [4] *Ophthalmic Review*, vol. xiii, p. 309. [5] *Trans. Ophth. Soc.*, vol. iii, p. 283. [6] *Ophthalmic Review*, vol. xiv, p. 308 [7] *Arch. of Ophth.*, vol. xxi, p. 577. [8] *Trans. Ophth. Soc*, vol. xxiv, p. 319.

A BRONZE replica of the marble bust of the late Mr. Henry Lee, F.R.C.S., executed by Mr. Thomas Brock, R.A., has been presented by his widow to St. George's Hospital, with which institution Mr. Lee was for many years intimately connected.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF ELECTRO-THERAPEUTICS.

Hy. Lewis Jones, M A., M.D.Cantab., F.R.C.P.Lond., President.

The work of this Section was initiated by Dr. Lewis Jones, who introduced Professor Leduc of Nantes in the following terms: "All who have followed the subject of medical electricity are aware that there is probably no person who has done so much to put it on a scientific basis and to advance it into fresh fields as Professor Leduc. I regard my first meeting with him some eight or nine years ago on the Continent as one of the most fortunate things that has ever happened to me. By carefully reading and following his work, I have derived not only great advantage but also considerable pleasure. The study of ionic medication—the subject of Professor Leduc's paper—has been in many respects the most fruitful of modern times. But there remains a great deal of patient, slow, sometimes tedious work to do before we arrive at any final results. Our thanks are due to Professor Leduc." The latter then delivered the address which follows. In preparing the report of the proceedings of the Section for publication, the various papers and remarks upon them have been classified, so that the order in which they now appear is not in all cases that in which they were read.

IONIC MEDICATION.

By Professor Stéphane Leduc,
Professor of Medical Physics in the Medical School of Nantes.

Where did electricity take birth? Electricity took birth in England, from the genius of a medical man, Dr. Gilbert, and the first manifestation of electricity in the world was English.

Electro-biology is a branch of electro-chemistry; electro-chemistry took birth in England, with a discovery which is perhaps the most important of all for the future of humanity. The first electro-chemical reaction was the oxidation of azote by means of the electrical discharge obtained by Dr. Priestley.

All living beings, including man, are composed of electrolytic solutions. Every application of electricity to man is accompanied by an electrolytic process. Where did electrolysis take birth? In England, with the discovery of the decomposability of water by Nicholson and Carlisle.

Where has electrolysis been more successfully applied to scientific investigations than in the work of Sir Humphry Davy?

Your great Michael Faraday gave to the world the laws of electrolysis which will guide us for ever in our medical applications.

To the same talented individual we owe the induced current, the representation of the fields of force, and innumerable correlated discoveries.

It is from England that we have learned the electrical nature of light; in England were born the electrons, and from England we received radiant matter.

Contemplating those manifestations of English genius in only one direction, I consider the invitation of the British Medical Association to deliver the inaugural address of this new Section of medical electricity as one of the greatest honours of my life.

Every electric action upon living beings is an action upon electrolytic solutions; nevertheless we know very little about those actions, which involve the most important biological phenomena.

Electricity is the best excitative of nerves and muscles, and this excitation is an electrolytic process, and when we know all the particulars of those electrolytic actions we shall thoroughly understand the nature of neuro-muscular excitation.

Thanks to the English discoveries, completed by the investigations made on the Continent, we have learned much about the actions of currents upon living beings. We know at present that the electric current provokes between two different electrolytes, between two different living cells, an exchange of their constituents, the cathions going down the stream and the anions going up. The same takes place at the surface, between the skin and the electrodes, so that under the anode the cathions of the electrode penetrate through the skin, while the anions penetrate under the cathode. This effect is quite regular, and many electrolytic substances that without current do not penetrate at all are easily introduced under the impulse of electric force. The coagulation of the plasma is no obstacle for the electrolytic introduction of ions.

This faculty of introducing innumerable electrolytic substances through the skin, or through a wound, increases, indeed, in a large measure the resources of the therapeutist and the power of medicine. This possibility being new, we must learn to know the effects of every ion at every dose, and the influence of exchange of ions between the different cells. Many results have already been obtained, and your distinguished President, Dr. Lewis Jones, has brought to the subject some most interesting contributions.

When using very active substances high intensities of current are not necessary, but in many cases, both for superficial and for deep action, it is necessary to use very strong intensities and densities of current, for they alone allow us to attain certain therapeutical results. If the technique of application is defective, the proper intensity cannot be reached, the skin being burnt. This burning of the skin is the main obstacle to electro-ionic medication; but it is in a large measure avoidable, if we know well the conditions under which it is produced. In most cases the burning is produced by caustic ions which take birth at the surface of the metallic electrodes. Consider, for instance, electrodes made of a solution of sodium chloride with unattackable metallic plates: sodium goes to the cathode, there, with water, it gives hydrogen, the ion Na^+ and the anion OH^-; the latter is very caustic, in a short time it reaches the skin, enters into it, and produces burning. At the anode, a part of the chlorine, with water, gives oxygen, the ions CL^- and H^+, and the latter goes quickly into the tissues and destroys them.

In almost all the cases the tissues are destroyed by the ions produced at the metallic electrodes.

The ions move through the electrodes with a much greater speed than we could foresee. Take one electrode made of twenty layers of absorbent tissue soaked with a solution of sodium sulphide at a strength of one in five hundred of water, lay it down upon a metallic cathode, and put on it a small leaden plate, four centimetres square, in connexion with the positive pole; let a current of fifty milliampères go through during an hour, and you will then find that the greater part of your layers under the leaden plate will have become quite black from the formation of lead sulphide, the lead ion will have penetrated eight, ten, or even twelve layers of the absorbent tissue, whereas without current no coloration is produced, as there is no movement through of the lead ion. And yet in this case we are dealing with a slow moving ion, driven only by the electromotive force applied to it. The ions H^+ and OH^-, which take birth at the surface of unattackable metallic plates, move much faster, as may be easily seen by impregnating a cathode of absorbent wool with salt water and phenolphthalein, for the solution becomes quickly reddened where the ion CH^- is present; and by reversing the current the red colour disappears again where the ion H^+ is present. Those ions have in our electrodes a speed much greater than that which is attributed to them, because they are driven not only by the electromotive force, but also by a high osmotic pressure; they take birth at the surface of the plates by a continuous process which raises and maintains the osmotic pressure, by which they are rapidly diffused away towards the skin.

To use high-current intensities in medicine it is, then, necessary to prevent the caustic ions from reaching the skin. This is obtained by the reform of the electrodes. The old electrodes of chamois leather upon a piece of carbon or a metal plate used for repeated applications, must entirely disappear; the caustic ions stay in, and washing is not sufficient to take them out, the layers are too thin, and the caustic ions go immediately through them.

Instead of one layer of doeskin one should use fifteen to twenty layers of absorbent tissue, well soaked with the electrolytic solution, then during one sitting the caustic ions will not have time to go through and reach the skin, and after every sitting the fabrics must be thoroughly washed to render the application perfectly clean.

The caustic actions of the ions do not depend only on their nature, but on their number in one place or their density. If the electrodes are loosely applied the current passes only in some points, and there its density is so high that the skin becomes damaged or destroyed. This accident may be prevented by a good adaptation of the electrodes to the surface of the skin, which requires a firm and uniform pressure; the tissues covering the electrode must be properly stretched, without any folds, the metallic plate must be soft and flexible, and the whole must be tied with an elastic band, so as to produce all over the electrode a gentle and uniform pressure.

For the solutions it is quite necessary to use very pure distilled water, as without this precaution one may introduce one ion quite different from the one required.

With these precautions, if the skin under the electrodes is intact, or the excoriations well covered with collodion, the subject will support the maximum intensity, density, and time of application, and one will introduce the chosen ion only.

It will then be possible to obtain a number of satisfactory results when all the ordinary resources of medicine have failed; for instance, that will be the case in scoliosis, ankyloses, and in old neuralgias. With this method thoracic diseases come within the reach of medical electricity. The introduction of iodine ions over the whole surface of one side of the thorax gives very good results in chronic pleuritis, even of the suppurative form. After the passage of a current of 60 to 100 milliampères, with a cathode of a solution of potassium or sodium iodide, iodine appears in abundance in the saliva in ten to fifteen minutes, but if the iodide solution is applied at the anode only, no iodine will be found in the saliva, even with the strongest current and the longest sitting.

The iodine can best be detected by electrolyzing the saliva upon a strip of starch paper, between two platinum needles.

The enumeration of the cases favourably treated by this method would be too long.

Electrolytic processes open to medicine a new path which ought to be specially followed in the country where electrolysis was discovered, received its laws, and yielded such splendid results.

The creation of this new Section of medical electricity will be an impulse in this direction. I dare say that the creation of this Section is a moral conquest for English electro-therapeutic practitioners, who have already accomplished much work of so dignified and so high a medical value.

By choosing, to inaugurate the presidency of this Section, my dear friend Dr. Lewis Jones, a man for whom I conceive the highest esteem and the greatest sympathy, I shall say a thing that nobody can deny—that you have put the right man in the right place.

PAPERS DEALING WITH *X* RAYS IN DIAGNOSIS.

I.—J. MACKENZIE DAVIDSON, M.B.,
Medical Officer in Charge, Roentgen Ray Department, Royal London Ophthalmic Hospital; Consulting Surgeon to *X*-ray Department, Charing Cross Hospital.

X RAYS AND SENSITIVE PLATES.

AFTER speaking of the wide range of his subject, and the number of factors which entered into the production of a successful *x*-ray negative, Mr. Mackenzie Davidson said that the subject naturally divided itself into two main divisions:

(*a*) *The x-ray tube*—the quality and quantity of *x* rays it produces.

(*b*) *The character of the photographic plate* which will give the best negative with the shortest exposure.

Mr. Davidson said:

We will take the *x*-ray tube first, and discuss the main essential qualities it ought to possess.

(*a*) *The Focus, so-called, of the Tube.*—The *x* rays ought to originate from the smallest possible point on the surface of the anode. Such a tube is not (or is very rarely) found in the market. The difficulty is that if the tube is made precisely with the correct focus, unless correctly worked, the anode has a hole pierced in it and the tube is destroyed. That is the reason why makers do not place the anode surface precisely at the narrowest part of the cathodal stream.

Some years ago I placed a piece of pure osmium in the anode, and it was all that could be desired in its resistance to fusion and gave a most rich output of *x* rays. But unfortunately it seems to possess the undesirable quality of rendering the electrical resistance of the tube most unstable.

The "focus" of a tube should be ascertained. The readiest way is to place a wire cross as close to the tube as possible, with one of the arms of the cross in a parallel plane to the anode, and then view this on the screen held about a foot away. If the *x* rays come from a *point*, then the shadows of the two wires will be the same, but in proportion to the size of the *x*-ray surface of origin, will the horizontal wire have a shadow, broadened into a band-like ribbon.

Another plan is to place a sheet of thick lead with a small pinhole in it in front of the *x*-ray tube. The distance of the centre of the pinhole from the anode should be measured, and, if a photographic plate be placed the other side of the lead, so that the distance be the same, a few seconds' exposure will give an image which on development will be found to be the *actual* size of the "*x*-ray-producing surface."

X Rays from the Glass of the Tube.—In using a tube some details are often overlooked to which attention may be directed. Some years ago I investigated this subject, and obtained a negative produced by an *x*-ray tube in the following manner: Some discs of lead, about ½ in. in total thickness and about the size of a shilling, were fixed on the glass surface of a tube in front of the anode. No direct rays could reach the plate placed beneath the tube, through the lead discs, and so they totally eclipsed the primary rays. A coin was placed on the plate (protected by opaque envelopes in the usual way) in the centre of the shadow cast by the lead discs, and another coin similar to the first was placed just without this shadow.

The shadow of the two coins could be seen on the negative—one, the sharper shadow, produced by the primary rays, the other by secondary rays coming from the glass. That these are secondary rays can easily be proved. A narrow band of thick lead was placed on an *x*-ray tube so as to divide it into two halves. A knitting needle was placed about ¼ in. above the photographic plate in the shadow of the band. The two shadows of the needle could then be observed. In further proof, by fixing another lead band at right angles to the first, four surfaces of the glass were separated by the lead bands. On placing a small metallic object a little above the plate in the centre of the shadow of that cross four shadows were produced, although blurred, of course, on account of the large surfaces of the glass casting ill-defined shadows.

It follows from this that when using uncovered tubes, while we are producing a well-defined shadow of an object by means of the primary *x* rays, we are also producing a very blurred shadow of it from secondary rays from the glass and fogging the plate. We should always, therefore, work with a tube completely enclosed except for a small part opposite to the anode, so as to cut off as far as possible all *x* rays that come from the large glass surface of the tube.

A box lined with some suitable material opaque to *x* rays is now commonly used for this purpose, and it has the additional advantage of protecting the surgeon and his assistant from the injurious effects of the rays.

Some years ago I described to the Roentgen Society the result of burying an *x*-ray tube in a large box full of red

lead. It required a layer of about an inch in thickness completely to obstruct the rays directly opposite to the anode. I use red lead and white lead of the shops (the latter usually sold like putty), mix these into a thick paste, and a wooden box is coated with thick layers. It hardens well in time, and does not peel off.

It is too wide a subject to deal with various kinds of tubes in the market. If a tube has a correct focus, or preserves a fairly steady electrical resistance, has its glass surface well covered, and has a good means of reducing its electrical resistance if it becomes too high, then good work can be done with such a tube.

Now, a word about scattered rays.

The following experiment was made. A lead box was taken, its size being 7½ in. long, 6 in. broad, and 1¼ in. deep. The lid and bottom of the box were ½ in. thick, and the sides were $\frac{5}{16}$ in. thick. A ¼-plate Lumière in the usual two envelopes was placed inside the box, and upon it was laid a small disc of lead ½ in. thick, and then the lid was put on the box. It was placed close to an *x*-ray tube, an exposure of about a minute was given, and the negative developed for seven minutes. Next, the box was removed, but the lid was supported in exactly the same position by four little pieces of wood placed at the corners, like a four-legged table. At precisely the same distance from the lower side of the lid was placed another Lumière ¼-plate, and on it the same lead disc, and the same exposure given. A faint but unmistakable shadow was cast by the lead disc, although no direct rays, either from the anode or any part of the tube, could reach the plate. The ½ in. thick lead completely screened the plate, so that the rays that did reach the plate must have got round the sides of the lead by scattered reflection. The two plates were mounted on opal glass, and the difference between them could be observed.

We now pass on to the sensitive plate.

(*b*) The practical question is, What kind of plate will yield the best *x*-ray negative in the shortest time? It was soon observed by workers that a high-speed plate to ordinary light was not necessarily a high-speed *x*-ray plate. The most striking difference in the behaviour of a gelatine plate to light and to *x* rays is the extraordinary transparency to *x* rays of the bromide emulsion. Here are examples of this: Twelve films were placed—superimposed flat, like a pack of cards—inside the usual two opaque envelopes, and treated as if they were a single plate. Each film was numbered, and the object was placed on the envelope in the usual way. An exposure was given to *x* rays that would be correct for the single film. Yet on development very little difference was observed between No. 1 and No. 12, or any of the intervening ones. Obviously from this—given the same quality of emulsion—the thicker the coating, the speedier the plate to *x* rays. With a thickly-coated plate there is a great latitude of exposure, provided that the duration of development be varied proportionately. It would be interesting to try and discover some modifications of the emulsion which would increase its rapidity to *x* rays.

Strips from negatives of fourteen different kind of plates were shown mounted side by side for comparison, all having received the same exposure to *x* rays and the same development.

The relation between the action of light and *x* rays, apart from the great difference of penetrative power, seems to have other differences. For example, if exactly the same exposure be made of a plate to *x* rays and then to light, the plate on being developed will give a different result according as to whether the plate was first exposed to *x* rays and then to light, or vice versa. An *x*-ray negative can be produced reversed, carrying out exposure and development in white light.

Another point of very great practical importance is to ascertain what the electrical resistance of a tube should be to give the best contrasts in photographs of the human body, and as to whether a high tube or a low tube should be used in a given case. It will be instructive to know the experience of members of the Section on this point.

A tube with 2.5 cm. alternative spark resistance has the maximum actinic effect, two aluminium balls 1 cm. in diameter being on the terminals of the coil. A negative produced by a high tube always has a greyish colour compared with the velvety black of a negative produced by a low tube with 2 to 3 cm. spark-gap resistance.

I have touched upon these few points in the hope that other members may continue this discussion to give us the result of their investigations and experience, and so help us all to produce the best possible *x*-ray negatives, to facilitate surgical and medical diagnosis.

This method of diagnosis is in its infancy, but is daily gaining recognition by the public and the profession. *It should be entirely in the hands of members of the medical profession.* It therefore behoves medical men working in this great field to help each other, and so obtain the best possible results.

DISCUSSION.

The President said: The first important practical question brought out in Mr. Mackenzie Davidson's paper is as to whether we have not all been working with tubes that are too high. Very low tubes will take better photographs than we have been accustomed to think possible. We have used the appearance on the fluorescent screen as a guide to what will happen to the photograph, but it is very possible that this effect is not parallel with the influence of *x* rays on the sensitive plate. A question also of practical importance is the desirability or otherwise of choosing some particular line of plate manufacture to be supported by us. But until we ourselves know what are the essentials for a good *x*-ray plate it is obvious that we cannot instruct the plate-makers. Possibly this discussion will throw a little further light on the matter.

Mr. G. H. Orton (St. Bartholomew's Hospital) sent a communication in which he said: I will confine my statements to what I have observed regarding the action of the *x* rays on a photographic plate, without at present offering any explanation. (1) A very low tube will produce an intense blackening of a plate. (2) The lower the tube, provided of course that *x* rays are given off, the more intense seems to be the action on a plate. (3) A tube so low that the bones of the hand cannot be seen on the screen when a current of 1 milliampère is passing can be made to give a good skiagram of a hand when 8 milliampères are passed through it; but in such a tube the spark-gap increases within certain limits with the amount of current passed through the tube, although at the end of the exposure the tube becomes lower through breaking. In other words, a low tube appears to become higher when a heavy current is passed through it, or possibly the increased spark is due to an overflow of current, so to speak, which the tube is unable to pass through it, and the low rays are made more penetrative—that is, can be forced by the greater current through a greater thickness of material. (4) At the Roentgen Society a short time ago the question was discussed as to whether a plate could be over-exposed when acted on by an *x*-ray tube, and I think I am right in saying that no definite conclusion was come to. It is certainly possible to over-expose with a low tube and heavy current. In such cases if development be carried far the image appears as a positive on the back of the plate before fixing. On fixing such a plate it is found that practically nothing can be seen through it in strong daylight, but the image is distinctly seen on the back of the plate as a positive. (5) A high tube never produces the intense blackening of a plate just mentioned, the result even after prolonged exposure and development being a dirty grey, neither can the same density be obtained even by very prolonged development. (6) Since being convinced of the greater action of low rays on a photographic plate I have quite discarded using high tubes for skiagraphy, and with marked improvement in results. I never work with a spark-gap of more than 3½ to 4 in., even for the thickest of abdomens, and I am certain that excellent results could be obtained in the thicker parts of the body with tubes lower than this, if only one could get a tube that would stand the current, and not "run away to nothing" during the exposure. (7) Plates exposed to *x* rays are not all sensitive to daylight. These remarks all apply to Lumière *x*-ray plates. I have not at present found any other make to equal them for the purpose.

Professor Wertheim Salomonson (Amsterdam) made some remarks on the question of the "focus" of the tube. The latest researches, he said, showed that it was not one single impulse given out that was stopped. When the electrons, which passed at a speed very nearly equalling the speed of light, impinged upon the cathode they did not lose their velocity all at once, but they lost it from

one successive molecule to the next in the course of a series of four or five impingements. A certain quantity of energy was transformed into an *x*-ray wave, and after three, four, or five waves one impulse was entirely stopped. This gave rise to what he would like to call secondary Roentgen rays from the anticathode—rays which were not so penetrative as the primary rays. Thus in the gamut of rays emitted from the tube there were rays of different penetrative properties. When the electrons parted from the anticathode its potential was lowered, and the consequence of this effect was that during the time of the discharge not one electron flew away, but perhaps twenty or thirty, with great velocity, and, what was most important to remember, with different velocity. As soon as the vacuum of a tube went up the band of cathode rays became very much more narrow. This meant that if the tube in question were photographed with a pinhole a very narrow point was obtained. It was well to remember that the higher the focus the better the photograph, and possibly a tube might be first used for therapeutics and afterwards for photography.

Mr. E. W. H. SHENTON (Guy's Hospital) said: My own experiments, although not carried out so systematically as those of Mr. Mackenzie Davidson, lead me to agree entirely with his remarks in regard to the ordinary commercial plate. I found that the Lumière plate came out first, the Sanger Shepherd second, and the rest nowhere. I question whether great density is really wanted in negatives from the surgeon's point of view. I have some radiographs taken with high tubes, and the negatives are of the washy character familiar to all *x*-ray workers, yet I find it possible to correct them in the printing process, and from a comparatively poor negative to get a brilliant print showing many details which are very important for diagnostic purposes. In my opinion low tubes, in order to give these high densities, are not needed. We can do quite well with the tubes we have got. Mr. Mackenzie Davidson has spoken of a wet emulsion that could be exposed to daylight, and would yet be affected by the *x* rays. The daylight, however, could not get into the emulsion; it could only just fog the outside of the emulsion, and in the case instanced by Mr. Mackenzie Davidson I think it was merely a question of the emulsion itself being opaque to light and transparent to the *x* rays.

Dr. E. H. HOWLETT (Hull) said: We are all agreed that the present *x*-ray plate is not exactly what it should be. Some time ago I wrote a letter to the Roentgen Society opening up the question as to whether it was possible to over-expose an *x*-ray plate. I have come to the conclusion that it is not possible. The exposure can be prolonged indefinitely, and development will still give a good result. My opinion is that exposure cannot be too prolonged under ordinary conditions. Is it not possible to manufacture a plate useful for *x* ray work which can be handled in daylight, and so do away with the dark room? It might be done by incorporating in the emulsion of the plate some non-actinic material. But the practical man who makes the emulsion has not yet taken up the matter.

Dr. E. R. MORTON (London Hospital) referred to a recent visit paid to America, and the superior excellence of the radiographs taken by American workers. They are obtained, he said, by low tubes and high currents, and as high a current as 15 to 20 milliampères is passed through the tube. The results are most excellent, but I have failed to do likewise. As soon as I got up to a certain point the anode began to melt and the current to go down. I am, however, perfectly sure about all the facts I related before a recent meeting of the British Electro-Therapeutic Society. In several of the radiographs shown at the annual meeting of the American Roentgen Ray Society last year the outline of the kidney could be seen with the greatest distinctness.

Professor LEDUC (Nantes), referring to what Professor Salomonson had said about the spark gap, thought that changes due to the ionization of the air needed to be taken into account.

Dr. D. J. MACKINTOSH (Glasgow) suggested that by interrupting the coil about three times it might be possible to get a better result, for the condition of the tube varied even in seconds.

Mr. C. R. C. LYSTER (Middlesex Hospital) said: My experience coincides with that of other speakers with regard to the value of using lower tubes, but I think nevertheless that, respecting Mr. Shenton's suggestion, it should be a worker's ambition to get good negatives, not to make the best of bad ones.

Mr. SHENTON: My negatives were only bad photographically; from the point of view of the surgeon they were good.

Dr. DELPRATT HARRIS (Exeter) said: The different degrees of penetration possessed by different tubes should be taken into consideration. There are tubes which are more suitable for therapeutic and others for photographic results.

Dr. DAVID ARTHUR (West London Hospital) said: I have been using softer and softer tubes, and I find that the contrast in the negative is much more marked when the tubes are soft. In the electrical department of the West London Hospital the tubes are run down as low as possible. I am fully satisfied that in a case of renal calculi a hard tube would go right through the stone. I never use a higher tube than one of 3 in. spark-gap for kidney cases, and with that I do not think that any stones have been missed.

Dr. G. B. BATTEN (London) said: With regard to Mr. Mackenzie Davidson's experiment of burying a tube in red lead, I might point out that for therapeutic purposes the condenser effect of that lead would have some influence upon the vacuum, and so alter the condition of the tube.

Mr. MACKENZIE DAVIDSON, replying to Professor Salomonson, described his early work with pinhole photographs. He used a piece of metal curved round the tube in such a way that the anode from which the *x* rays came was at the centre, and said that the curious thing was that when he got the anode into that position, and when the focus was at the very smallest possible point, he not only got the sharpest image but the best photographic effect. He questioned the superior excellence of American work, and said that excellent work, quite up to the American standard though possibly not beyond it, had been done in England. The ribbing of certain plates, to which allusion had been made, was evidently due to the coating machine. Fortunately, it dried out. He knew that with a tube enveloped in lead a condenser effect was produced. He simply placed a piece of tinfoil around the cathode and earthed it. With regard to the lowness of tubes, there was the initial difficulty of getting the tube to such a vacuum as had been mentioned, and the further difficulty of keeping it there. He did not think that one tube was good for everything, and the worker must first decide what contrast he wanted, and then get a tube with the capacity for giving him that contrast. The lower the tube the more rays there were absorbed.

II.—EDWARD W. H. SHENTON, M.R.C.S., L.R.C.P.,
Senior Surgical Radiographer, Guy's Hospital.

THE EXAMINATION OF THE HIP-JOINT.

FOR many years past I have given much thought to the subject of how best to examine the hip-joint with the *x* rays. There are many initial difficulties, such as the extreme opacity of the part, owing to the thickness of surrounding tissues and the impossibility of obtaining any but an antero-posterior view. The principle of all *x*-ray examination lies in the expression, "relative densities." The heart shows, because of its greater relative density to the lung; but if the heart were in the abdomen we should not distinguish it from the equally dense surrounding organs.

In the hip region the relative densities of bone and soft tissues approach one another very nearly, and it is this reason which prevents an *x*-ray photograph of a hip-joint from showing the pretty internal structure of the bone.

Our success, depending as it does upon relative density, is much enhanced where from some cause the muscular tissue is less in bulk. Normally, this is the case with children and ill-developed adults. Abnormally, from wasting of thigh and gluteal muscles. It is possible to increase the contrast by pressure, and this is best done in a natural manner by allowing the patient to be in a supine position, when his own weight will compress, and therefore lessen, the thickness of the gluteal muscles. This pressure also tends to force away the blood from the part, and blood is a very opaque medium to *x* rays.

With the patient in the supine position, two methods of securing an *x*-ray image will present themselves: one in which the course of *x* rays is above and another in which it is below.

One is yet lost in wonder that the first method should still survive—a method where the patient lies upon a glass photographic plate and the operator adjusts an *x*-ray tube over some prearranged anatomical spot, or thinks he does so. Sometimes he will avail himself of a plumb-line, and will talk about getting his tube centred, though little is said of levelling the plate; and what use a plumb-line is without a levelled surface it is difficult to understand. One always feels some slight irritation at any attempt to apply geometrical exactness to the human frame. There is no straight line or level surface anatomically, and, though in the animal kingdom there is a wonderful similarity in the average relation of parts, there is yet infinite trifling variation, which renders mathematical accuracy impossible.

There are those who will localize a foreign body and give the result in millimetres; but consider what becomes of millimetres when the skin is cut and a wound gapes or the part swells, or one of many physiological changes takes place.

These remarks do not apply to the eye, for in this region the conditions are so different that general principles do not often apply, and the accuracy of measurement which Mr. Mackenzie Davidson has brought to bear upon the subject has been of the very greatest value.

How does the operator screen the part? Does he crawl under the couch? The reply is a significant one—"He does not screen." Now this method condemns itself if it does not allow of screen examination, and the medical man who does not screen the part about which he is endeavouring to ascertain the condition, is not only not doing the best for his patient, but is throwing away his medical training which he might bring to bear upon the subject. He is further using his faculties—fortunately without complete success—to render his own presence unnecessary. He is bent upon self-extinction by means of a plummet and a book of rules as to where to place the tube. And yet what could be more attractive than to look up the injury in a book and find a method of taking an *x*-ray photograph given in detail opposite? Similarly you look up a disease in a dictionary of treatment, and everything is found that is possible in the *way* of treatment. Now that such books are to be had, why do we waste thought and observation on cases under our care? Clearly we do this as a form of intellectual recreation, and it is a little unfair to expect that we shall be paid for this by the public. But—a happy thought—in this last instance we must know just what the disease is, and here we have an opportunity of making ourselves useful by what we call diagnosis. Is it going too far to say that when the radiographer places his tube in a certain fixed position to the part examined he has formed a preconceived idea of the injury? He is a biassed man, and therefore has not the first requirement of a diagnostician—an open mind.

The normal arch (bisected by the ischium).

You may consider this is hard criticism, but when one looks back upon the work of the last ten years one has to gratefully acknowledge that whatever success one has had has been due to the open mind, while a large percentage of failures are attributable to the impossibility of avoiding bias caused by suggestion in some form. Shutting one's eyes to external appearance and one's ears to suggestion, and repeating to oneself, "What is there about this bone that makes it unlike the mental image I have formed of the perfect normal one?" is the only way to carry out a radiographic diagnosis worthy of the name. By one of the greatest discoveries the world has ever known we have been given a means of seeing the interior of the human body in its active physiological state, and of forming an absolutely isolated opinion. We are not called upon to measure a limb, to hunt for mobility, crepitus or what not to bolster up any opinion we form; and if with this gift before us we are to make our own fetters by inventing certain positions in which a tube must be put when examining a certain part, one ventures to predict we are handing our calling to the medically unqualified but skilled photographer. Let me put it to you in this way: Given a set of rules, is there anything as regards the actual arrangement of part and tube that the layman cannot do up to the time when the finished photograph is forthcoming?

Is the layman, then, to deal direct with the patient, and is the medical radiographer to be allowed to interpret his skiagrams?

The idea is repulsive, no doubt, but it is a common-sense corollary if you admit the proposition.

But we must not accept the proposition, we must use our eyes and search upon the screen for a clue to the cause of trouble. We must bring the light to bear upon any part of the bony structure that does not conform to our mental idea of normality, and finding this, and being uncertain as to the cause, we must catch this actual image upon a photographic plate for further examination later on to prove or disprove our suspicions. This is the legitimate use of photography in connexion with *x* rays—additional help to seeing and the confirmation or allaying of suspicions. There are times when the radiographer is called to the bedside, and from one cause or another he cannot screen; there are times when a physician cannot make a complete examination, and must act quickly upon the little data that he can gather otherwise. These are no arguments for adopting such methods in routine work.

I have dwelt rather long upon the subject of the tube above, and the consequent absence of screening, because I feel that this should be recognized as the method of the layman only. With the exception of such as dental cases, I should say that every part of the body should be screened prior to being photographed.

With the tube beneath your patient and the screen above you can easily tell where your tube is; but, for my own part, I do not inquire, as what interests me most is where the injury is to be found. You must, of course, get your tube into such a position that the injury shows best, and that consequently the radiogram is the best possible to

help your subsequent investigations. Having obtained this position, there is no harm in ascertaining by plummet or otherwise the exact anatomical spot under which your tube is situate; if it serves no other useful purpose it will certainly surprise you, and prove that there are more ways than one of examining a hip-joint. Do not worry if your tube is so placed as not to conform with mathematics, if by avoiding them it is showing you what is the matter with your patient.

I have a couch which enables the operator quickly and easily to move the tube into any position while he watches the changes upon the screen. It is, furthermore, safe to handle. The tube is enclosed in an *x*-ray proof box and the rays confined by a diaphragm. For hip examination a diaphragm is an absolute necessity. Only one hip at a time should be examined; any attempt to get two on the plate will waste the centre of the light, which is, of course, the most valuable.

It may be of interest here to mention that an easy way to make an *x*-ray-proof box is to line it with commercial white-lead putty, which is enormously opaque to the rays and an excellent dielectric. The instrument maker likes to use rubber, chiefly because of its expense and greater transparency. Pieces of lead with various apertures laid upon the opening in the tube-box make excellent diaphragms.

At first a size that includes the great trochanter and the symphysis pubis should be used, and this replaced by a smaller size whenever a suspicious appearance in the bony outline is detected.

Let me here refer to a fact which tends to prove the advantage of storing in one's mind the image of the normal bone. If we wish to ascertain whether one coin is identical in outline with another, we lay one on the other and note any differences. This is exactly what should be done with this normal image; it should be laid upon the abnormal, and the discrepancies of the latter will become apparent. It was in this manner that I found a line, the broken continuity of which shows infallibly some serious lesion in the hip region. I have often referred to this before, but I have no doubt that many of my hearers will not have met with it.

The broken arch (from a case of dislocation).

In a normal hip there is an arch formed by the outline of the upper margin of the obturator foramen and the inner margin of the femoral neck. You cannot miss this, however bad the skiagram, and I need not remind you how bad hip skiagrams usually are. I need not detail all the conditions that may disturb this line, for you will easily make these out for yourselves. It holds good for all positions in which it is possible to examine the hip joint, but is best seen, perhaps, when the heels are together and the legs straight.

In some examples of hip trouble you will note how often this line is disturbed. In taking these skiagrams I have not exceeded thirty seconds' exposure. I have very excellent reasons for this, but they would take too long to go into now; suffice it to say that by so doing I get what you would, I am sure, consider a thin miserable negative, but one in which there is all I want for diagnosis without the risk of obliterating any delicate portion. The subsequent printing is a matter of great difficulty, but when successfully managed the prints are many times more brilliant than the negatives.

You will, I am sure, say that a better title to this paper would have been "Don't," for more has been said of what *should not* be than what *should* be done when examining the hip-joint.

I will therefore conclude with two "do's," which if you can keep them in mind will help you not only in hip radiography, but in most other kinds of work with *x* rays:

1. *Do* form a mental picture of the normal to fit over the abnormal.

2. *Do* keep an open mind when making a radiographic diagnosis. If you follow this advice it goes without saying that you will examine your patients with the screen.

DISCUSSION.

Mr. Mackenzie Davidson, after complimenting Mr. Shenton on his excellent radiograms, regretted that he should take up the attitude he did with regard to mathematical accuracy in radiographic examination. Most of the scientific advances of the age had been due to a compliance with mathematical laws, and Mr. Shenton himself applied mathematical principles to the examination of the eye. He was sorry that Mr. Shenton did not employ the stereoscopic method in dealing with the hip-joint. By that method the surgeon was able to see the whole skeleton before him as it existed in the patient. Possessed with monocular vision and familiar with a moderate amount of mathematics, the surgeon, who was very often not a skilled reader of the ordinary *x*-ray photograph, had everything made plain to him by stereoscopy. We lived and saw in three dimensions; why not, as radiographers, work in three dimensions? Stereoscopic methods gave the most realistic pictures and made diagnosis easy.

Mr. Shenton, in reply, said that the chief objection to stereoscopic work was its expense, which was considerable enough to make hospital authorities hesitate, as well as the increased work involved, without in his opinion adding at all to the accuracy of the diagnosis. A stereoscopic picture was often of little assistance in estimating the depth of a foreign body—say the extent to which a bullet had penetrated into the tissues.

III.—James R. Riddell, L.R.C.S.Edin.,
Medical Electrician, Glasgow Royal Infirmary.

MEASUREMENT OF PELVIC DIAMETERS BY THE ROENTGEN RAYS.

The accurate measurement of the brim of the pelvis by means of the Roentgen ray has been attempted by several radiographers, such as Pinard, Varnier, Chappuis, and others. The main difficulties lie in the facts that:

1. The picture is made by a shadow of the object.

2. The plane of the pelvic brim and the surface of the plate on which the shadow is cast are not parallel, but lie at a certain angle to each other.
3. The plate cannot be got close to the brim, nor can it be always placed at the same distance from it.

Of the various methods employed, that of Contremoulins is undoubtedly the most accurate. It consists in the application of stereo-radiography to the pelvic brim. A radiograph is made, the tube being a little to one side of the centre of the inlet. A second radiograph is made, the second plate being placed exactly in the same position as the first was, and the tube moved a little to the other side of the centre of the inlet. These two radiograms are placed exactly on each other. As each picture was taken by rays emanating from different points, their outlines will not coincide. That taken with the tube to the left will lie to the right of its fellow, and vice versa. Round the edge of the shadow of each brim are attached a number of threads; these threads being drawn up are made to converge and meet at the point from which the rays producing the picture emanated. It is obvious that they will exactly represent the cones of light which produced the pictures, and at the points where the cones intersect an exact reproduction of the object casting the shadows will be made by the threads.

The author of the method states that in his hands the whole operation requires less than two hours. Inasmuch as it is impossible to secure that the normal ray falls perpendicularly to the plane of the inlet, this method cannot be said to be absolutely accurate.

Dr. Morin of Nantes describes a method which he considers satisfactory. The patient is radiographed in the dorsal decubitus, the photographic plate being placed under the back. A metal point is fixed on the skin behind, at the level of the promontory, and a metal rod, 10 cm. in length, is placed on the symphysis pubis transversely across the body. In the radiogram this 10 cm. rod is represented enlarged. He now drops a perpendicular from the point to the centre of the rod and draws a line parallel to the rod passing through the point. This line he divides into centimetres. The shadow of the rod he divides into ten equal parts. As the rod was exactly 10 cm. long, each of these divisions represents 1 cm. He now joins these divisional points with the corresponding points on the line behind. The spaces between the lines are taken to represent 1 cm. each. We consider this method quite inaccurate, as the shadow of the posterior aspect of the brim appears more or less superimposed upon the centimetre line, while in reality it is quite a distance from it.

The method employed by us is much simpler and fairly accurate—namely, to make a radiogram of the inlet under certain definite conditions and eliminate the error by calculation. In applying it, the following facts have to be borne in mind:

1. A plate can always be so placed as to rest on the most posterior part of the sacrum and on the tuber ischii at the same time.
2. The plane of this plate will be at a certain angle with that of the pelvic inlet, and this angle will be nearly the same in all cases.
3. The distance between the plate so placed and the centre of the plane of the pelvic brim is about 3¾ in., and never would exceed 4½ in.

Technique.

Place the patient face downwards on a canvas-topped couch, with the tube underneath it in a movable carrier. Place a small air bladder between the abdomen and the couch, just above the symphysis pubis. Place the screen on the patient's back, darken the room, and excite the tube; the outline of the pelvic brim will now be visible, and the tube can be moved into such a position that the normal ray is falling perpendicularly on the plane of the inlet. That the tube is in the correct position is judged by the appearance on the screen, and, more exactly, by arranging that the normal ray falls practically vertically on the plate when placed in position. The tube is brought to a point 24 in. distant from the screen; a plate in its dark bag is now placed on the patient's back, resting on the tuber ischii and sacrum, and a skiagram is made.

To find the correct position and direction of the tube easily we have a flat piece of wood, measuring about 6 in. by 4 in.; from the centre of the longer edge of this a rod juts out just long enough to be free of the couch when the piece of wood is placed on the plate (about 14 in.). To the free end of this a second rod, exactly 24 in. in length, is attached at right angles to it, and vertical to the plane of the piece of wood. The end of this second rod is in line with the spot at which the anticathode must be, and the rod points the direction of the normal ray.

Dr. Macintyre recommends the following method for securing that the normal ray falls perpendicularly to the plate, and that it passes through the centre of the pelvic inlet. A small metal rod, ⅛ in. in diameter, and 1½ in. long, is attached vertically to a thin disc of vulcanite. The disc is ½ in. in diameter. It is attached with sticking plaster to the glass of the tube opposite the anticathode, so that the length of the rod lies in the normal ray. A small metal disc is attached by sticking plaster to the patient's back in the middle line half an inch from the tip of the coccyx, this being the spot found to correspond with the centre of the inlet. The patient is now examined, and the metal rod is seen as a round spot when the tube is properly directed, otherwise it appears more or less elongated. The position of the tube is proper when the spot representing the metal rod is covered with the shadow made by the disc on the patient's back.

The radiogram thus obtained differs from the actual pelvis in two ways: It is enlarged generally on account of the rays producing it being divergent, and the antero-posterior diameter is slightly distorted because the plate and the plane of the pelvic brim were not parallel. As the angle between them is small the distortion may be discounted.

The error due to enlargement is to be corrected by multiplying the diameter of the shadow of the pelvis by 0.84 and adding 0.16 in. This formula is arrived at by experiment.

A dried pelvis, perhaps slightly larger than the average, was taken and a radiogram made under the conditions given above—namely, the plate was made to rest on the most posterior part of the sacrum and on the tuber ischii, allowance being made for the thickness of the gluteal muscles. The tube was placed 24 in. distant, the normal ray falling through the pelvis vertically on the plate. The brim was found to lie practically parallel with the plate and 3.75 in. distant from it. The antero-posterior diameter of the actual pelvis was 4.37 in., while that on the skiagram was 5.18 in.; thus, $5.18 \times 0.84 = 4.35$ in. This is practically exact where the shadow happens to measure 5.18 in. and the object casting it is 3.75 in. from the plate. Unfortunately the distance between the plane of the pelvic inlet and the plate varies and cannot be accurately determined. When it is less than the standard given above the application of the rule will give something less than the true diameter. It is therefore necessary to suppose an extreme case and calculate the error produced.

Taking as an extreme case one in which the distance between the plane of the inlet and the plate measures 2.75 in., we find that on applying the rule the diameter obtained is 0.33 in. less than it should be. If, therefore, we take half that distance—namely, 0.16 in.—and add it to the result in every case, we shall *overstate* the true length by that distance (0.16 in.) in cases where the pelvis is actually as large as the standard, and *understate* it where it is as small as the extreme case supposed. *The error in all cases between these extremes will be something less than 0.16 in.*

By the courtesy of Dr. Workman, Pathologist to the Glasgow Royal Infirmary, we have been able to demonstrate the accuracy of the method on the dead subject.

Dr. Mary Hanney, Assistant Pathologist, kindly measured the antero-posterior diameter of the brim of the pelvis during a *post-mortem* examination. This subject we then radiographed according to the method described, after which the actual pelvis was again measured, this time by ourselves.

The actual measurements obtained were as follows:

By Dr. Mary Hanney	3.37 in.
By ourselves	3.43 in.

The measurement on the radiogram was 4 in., so that when we apply the rule we find $(4 \times 0.84) + 0.16 = 3.42$. We thus see that the error, according to Dr. Hanney's measurement, only amounts to 0.05 in., and the error, according to our own measurement, to 0.01 in.

This method has in its favour its great simplicity, and the objections to it can be equally urged against the other methods; they are:

1. The inability exactly to fix the distance between the centre of the plane of the inlet and the plate.
2. The uncertainty as to the exact angle between these.
3. The inability to secure that the normal ray falls quite perpendicularly on the plane of the inlet.

IV.—W. IRONSIDE BRUCE, M.D., D.P.H.,

Physician, *X*-Ray and Electrical Departments, Charing Cross Hospital; Radiographer, Hospital for Sick Children, Great Ormond Street, and Hospital of St. John and St. Elizabeth, Grove End Road.

A SYSTEM OF RADIOGRAPHY.

THE difficulties that beset the radiographer are many—not by any means the least is the necessity of demonstrating to the medical man the presence of any abnormality in a radiogram.

Even with the most perfect and fresh knowledge of anatomy it is difficult, it will be acknowledged, to translate *x*-ray shadows. So far there is nothing to guide us except experience.

In cases of injury to the bones or joints, there never really ought to be two opinions, once a good radiogram is produced.

The radiographer, having given his opinion on a case, is often confronted by powerful arguments by individuals whose knowledge of anatomy entitles them to speak with authority, and to such arguments he can only answer that he knows he is right.

One way out of the difficulty has been to produce stereoscopic views of the bones.

I do not wish to say that stereoscopic views are not of any value, but I should like to point out that, though theoretically their utility is great, yet their usefulness depends on being able to view the bones, really as they appear to the naked eye, in the dry state. Granted that the views secured are perfect, and that the stereoscope is perfect, and the observer is skilled, it is possible that the bones are to be seen as they actually would be seen in the dry state. I think, however, that it cannot honestly be said that the views to be got at the present time of any part of the body in every subject are perfect, and that the stereoscope as now constructed is a perfect machine.

Supposing such were the case, there still remains the personal equation in the skilled user of the stereoscope.

Although one can see beautifully with the stereoscope certain features of a case, it is often impossible to demonstrate the same to an individual not accustomed to the use of this instrument.

This fact leaves the radiographer where he was before as regards the necessity of proving his opinion of a case to be the correct one.

There is, however, a further difficulty in the use of the stereoscope to which I should like to refer, and that is the amount of labour, time, and expense examinations by stereoscopic views entail, more especially in hospital work.

For one or other of the above reasons the hospital stereoscope is often not in use.

I have attempted during the last three or four years to devise some scheme by which the difficulty to which I have referred can be to some extent overcome.

The usual practice in securing a radiogram of a given part of the body is to place the subject in a position which is calculated to give the best results, and roughly to place the tube in some really unknown relation to the part. The resultant shadow is often valueless from a diagnostic point of view. For example, in a radiogram of an ankle-joint, taken without reference to the relation between the anode of the tube and the part to be examined, you will easily appreciate the loss there is in value, not for any other reason than the lack of symmetry.

Of late, however, there has been a tendency, by means of various mechanical contrivances, to place the tube accurately in relation to the part to be examined. The advantage of this method is that one soon learns the relation between the tube and the part which gives the best and most useful view for diagnostic purposes. It follows, having discovered this relation, that it is noted and is always used, and, further, it is possible in this way to gain a perfect knowledge of the normal appearance of any part.

If one had at one's disposal a record of the normal appearance presented by a given part, it would not only be exceedingly helpful, especially towards acquiring a working knowledge of the appearance presented by the normal, but also it would afford a means of enabling the radiographer to support his opinion, and to convince the medical man who has asked for it, that it is the correct one.

Having realized the value of a knowledge of the normal, I set about constructing an atlas containing radiograms of the normal bones and joints of the whole body. In order, however, that an atlas such as this should be of any value the following conditions are necessary:

First, that the normal radiograms it contains should be produced in such a way that, in investigating a case, the views procured of the abnormal would be identical with the normal so far as the relation between the tube and the part was concerned. In order to make this possible I arranged the *x*-ray couch* in such a manner that it carries out all that is required to produce without trouble exactly similar views of any part of the body. This object is accomplished by placing the anode of the tube in accurate relation to some easily-found anatomical point. This arrangement I do not wish to claim as anything personal; it has no doubt been used by others long before I thought of it.

Secondly, it is necessary in reproducing a useful collection of normal radiograms for comparison with the abnormal *that the position of the patient be defined.* This is very easily and accurately accomplished by means of ordinary photographs and a few words of explanation.

Thirdly, to be sufficient, the normal views must be taken at different ages to allow for the epiphyses. I selected the ages 5, 15, and 25 years as being most suitable.

The system of radiography which I wish to bring to your notice consists essentially of a collection, in the form of an atlas, of normal radiograms of all parts of the body, taken in what I term *fixed positions* at three ages—5, 15, and 25 years.

In making an examination of any part a fixed position is selected and a view secured of the part with the tube in the relation defined. An opportunity is thus afforded of comparing normal with abnormal, and a ready means of convincing even the most sceptical is in the hand of the radiographer.

I need not say that no little amount of labour is necessary to prepare such a collection as this. Having made one for myself, I thought it might be useful to others, and I determined to have my collection reproduced in printed form. Having come to this conclusion, I found myself confronted with the most heartrending difficulties in the way of reproduction, with which I need not trouble you. They were eventually to a great extent overcome. Among them there is one, not by any means the least, which I should like to mention. The process block—which of necessity had to be used—unless very carefully managed, is conducive to a great loss of detail. This difficulty is usually made up for by liberal touching up.

Now a collection of normal radiograms, if retouched at all, becomes of no value. If, on the other hand, no touching up is done, the radiograms of the thicker parts, when printed, lack much of the detail present in the original. The decision that was come to was that no touching up or engineering of the normal radiogram was allowed from start to finish, and the resultant printed collection of normal radiograms, though suffering to some extent from reproduction, is available to every one.

I venture to hope it will be as great a help to others as it has been to myself.

DISCUSSION.

Mr. MACKENZIE DAVIDSON said that the only thing which was needed in order to make Dr. Ironside Bruce's arrangement perfect was the adoption of stereoscopic photography. Stereoscopy only meant the cost of one more plate and very little more trouble. He narrated particulars of a case in which two fragments of needle had been embedded in the foot. Incisions were made to

* Dr. Bruce demonstrated the use of the couch which had a movable upright marked with a centimetre scale, so that by adjusting the tube, and placing the anode in accurate relation to some anatomical point, the same view of each part can be ensured under all conditions.

no purpose. On the case being referred to him he took a stereoscopic p'cture, and found that the two fragments were embeddied right in the centre of the first metatarsal bone. He had frankly to admit that he had never seen needles in such a position. But the surgeons opened up, he himself put the probe into the bone, and the needles were extracted. As to whether an incision should have been made in the first case, or whether it should have been touched at all, was not as a rule a matter on which the radiographer was allowed to say much.

Dr. Ironside Bruce, in reply, said that with regard to stereoscopic work, it was with him a question of cost and of cost alone. Not so much, perhaps, in the examination of a patient, but in the making of an atlas such as the one he had described stereoscopy would be practically impossible. With regard to the couch, he acknowledged his indebtedness for some ideas in its designing to Dr. Williams of New York.

PAPERS DEALING WITH
THE USE OF X RAYS IN TREATMENT.

I.—J. H. Sequeira, M.D., F.R.C.P.Lond., F.R.C.S Eng.,
Physician in Charge of the Skin and Phototherapy Departments, and Lecturer on Dermatology at the London Hospital.

ON X RAY DOSAGE.

[After expressing his thanks for the honour done him in asking him to open the discussion, Dr. Sequeira said:] It is perhaps too much to say that we are near the solution of the problem of accurately measuring the dosage of *x* rays, but we have advanced very much in the last three years. In September, 1905, I inaugurated a system of measurement in every case treated in the Skin Department of the London Hospital by the *x* rays, and since that date more than 16,000 exposures have been made, and in each instance the dose has been measured. If it had not been for this system we should have been unable to cope with the work without a great increase in the staff, for under previous conditions many patients had three sittings a week, whereas with measured doses we are able to reduce the number of exposures to two a month or even less. It is gratifying to be able to record, as an evidence of the reliability of the measures adopted, that there has been no case of dermatitis with the large doses of *x* rays given.

It is my pleasant privilege to acknowledge here the generosity of the House Committee of the London Hospital in providing a very complete installation, and for giving me the opportunity of testing various forms of apparatus. The splendid support which is afforded us by the governing bodies of our great charities in the endeavours which are being made to render this and other branches of therapeutics more accurate, and therefore more generally useful, cannot be too warmly recognized by the profession.

Progress in radiotherapy has been very rapid. Freund, in 1897, was the first to use the *x* rays as a therapeutic agent, and in the ten years which have elapsed since his first experiment their use has become almost universal. For a long time empiricism reigned supreme, and reference to the voluminous literature shows how very variable were the conditions which were said by different observers to give the best results. For a long time we were in the habit of applying the rays at frequent intervals—two or three times a week or even daily—until some kind of reaction, such as an erythema, resulted. A pause was then made until the reaction passed off, and then, if necessary, the treatment was resumed. As a rule this was satisfactory; but from time to time a very severe reaction was set up, which occasionally resulted in the formation of intractable ulcerative lesions. We gave small doses, and the untoward results were often the result of cumulative effect of these repeated small doses.

I am not prepared to agree with Kienböck that there is no such thing as idiosyncrasy to the *x* rays. But improvements in technique have almost eliminated the *x*-ray burn. Certain skins are undoubtedly more sensitive than others, and as a rule diseased tissues are more easily influenced than a normal integument.

It is especially important to realize that there is a period of latency between the application of the rays to an area of skin and the appearance of the reaction. An evanescent erythema frequently appears a few hours after the exposure. From the time of its development it seems probable that it is due to the actinic rays which are developed in the *x*-ray tube, though it may also be caused by electrical waves. This erythema disappears in three or four days. It may be accompanied by slight itching. The true *x*-ray reaction occurs after this has subsided. A moderate dose of *x* rays—one, for instance, sufficient to cause epilation of the scalp without producing erythema—begins about the fourteenth day after the irradiation. This is the time when the hair begins to fall out. Epilation of the exposed area is complete at the end of the third week. A larger dose of *x* rays is followed by an earlier reaction, and a very severe irradiation may reduce the latent interval to seven or eight days.

Kienböck's classification of the degrees of reaction is a useful one, and I may with advantage reproduce it here:

First degree: Latent period three weeks; no visible inflammation; temporary shedding of hair; diminution of lupus nodules.

Second degree: Latent period of two weeks: swelling and redness of the skin lasting one or two weeks; shedding of hair.

Third degree: Latency of ten days; redness, vesication, superficial erosion and exudation; the parts are restored to their natural condition in from three to four weeks.

Fourth degree: Latent period of a week or less; necrosis with ulceration, healing sometimes after six weeks or longer.

In all conditions except the first, there may be telangiectases in the scar. They are almost inevitable after an inflammation of the third degree. Such telangiectases may not appear for six to eighteen months after the exposure.

It is, of course, impossible to draw a hard-and-fast line between the various degrees of reaction, but with the facts enumerated in mind it is obvious that we have a large range of effects, some of which are of the highest therapeutic value. We must vary the dose according to the effect which we desire to produce, and it should be our endeavour to apply to the diseased area just the quantity of rays which will produce the desired result. To approach this ideal, we must be able to measure the various factors which we have to use. Accurate measurement alone can give us accurate dosage. I must therefore trouble you with the consideration of certain instruments of precision which enable us to approach the suggested ideal.

We are enabled by the voltmeter and the ampèremeter in the primary circuit to measure exactly the current which we are using. We can regulate the frequency of the interruptions. I prefer an interrupter which is independent of the current to the coil. On my switchboard I have a resistance for the motor which works the interrupter and another resistance governing the current to the coil. With large coils (say, with a spark of 16 in.), I prefer an interruption of about 800 per minute. I have tried some very fast interrupters, but I think the results are not so good. It is convenient to be able to enumerate the interruptions, and I always do this now instead of using the watch. Mr. A. E. Dean has constructed an ingenious counter, which can be attached to a motor interrupter, and to the apparatus which we are using at the London Hospital he has added an automatic cut-out, by means of which we are able to set the apparatus to run a certain number of interruptions and no more.

A very important factor in the question before us is the regulation of the vacuum in the tube. Upon this depends its resistance, and to a great extent its therapeutic value. In this country, so far back as 1901, we estimated the resistance by the alternative spark gap, and this is still one of the most important points to observe. We now use an accurate measure in the spintermeter, and are able to read the spark gap to fractions of an inch or in centimetres. The resistance is also estimated by the milliampèremeter in the secondary circuit. By the introduction of regulating tubes the resistance can be altered—within certain limits—with some approach to accuracy. But the tubes of even the best makers vary very much, and in no part of the work is more experience required than in the observation and control of the resistance in the tube. We find that most new tubes require working up to the conditions which give the best results. Those which appear to be most satisfactory are found in a tube with an alternative spark gap of 10 to 12 centimetres, and with the milliampèremeter registering one.

The penetration of the tube is measured by Benoist's

apparatus. This can be attached to the tube holder as in Dr. Macleod's apparatus, or a small hand instrument can be used. For radiotherapy a penetration equivalent to No. 6 or No. 7 on Benoist's scale is, in my experience, the most useful. By the alteration of the resistance this factor can be regulated.

To estimate the output of *x* rays from the tube is naturally the most important part of the problem of dosage. The earliest and most complete apparatus devised for this is the chromoradiometer of Holtzknecht. It consists of two parts: a series of reagents and a graduated scale of colours for purposes of comparison. The reagent is enclosed in a capsule, which is placed near the part of skin to be irradiated. The graduated scale consists of a series of colours arranged so that the tint gradually increases in intensity. Each has a number indicating the colour change produced in the reagent by the absorption of a certain quantity of rays. The numbers correspond to a scale devised by the inventor and called the Holtzknecht units. The colours range from three to twenty-four Holtzknecht units. The patient is exposed until the reagent reaches the tint desired, and this may be effected in one sitting or in several, provided that the reagent is kept from exposure to the light in the interval. The difficulty in obtaining the chromoradiometer and its expense has prevented its coming into general use, but it has been of the highest value in the estimation of dosage, and in enabling different workers to compare results.

The introduction of the pastilles of Sabouraud and Noiré for the treatment of ringworm has been of more general utility, and these workers have provided us with a means of estimating dosage, which, if properly used, is quite reliable. The little discs are made of platino-cyanide of barium in an emulsion of collodion and acetate of starch. The green tint of the salt is changed under the influence of the *x* rays to a yellow, and this deepens with a longer exposure to an orange colour. With the sheet of discs is supplied a standard tint, labelled B. The pastille is placed midway between the anode and the skin, and the exposure to the rays is continued until the desired colour is reached. I have fixed to my apparatus a small pastille holder with two circular openings. One holds the pastille and the other a disc of the B tint in water colour. The pastille holder has an insulated handle, and it can be withdrawn during the application of the rays for examination. It is important to get the pastilles from a reliable firm. Drault, of Paris, is the original maker, and the pastilles supplied by him have given every satisfaction. Care must be taken, for instance, in using the *x* rays for epilation in ringworm, that the B tint is not exceeded. In some sheets of pastilles which have been in use the tint of the control has been made too dark, and this fact has led observers to give too long an exposure. Care must be taken also that the pastille is not exposed to a too strong light, as the tint fades very soon. When working with an artificial illuminant with a preponderance of yellow rays, a piece of pale blue glass is useful in comparing the tint of the pastille with that of the control.

The tint B of Sabouraud and Noiré's pastille is equivalent to a dose of 5 Holtzknecht units. This dose cannot be exceeded without producing an erythema.

In my clinic I work on the following lines. In every case the area to which the rays are to be applied is marked with a blue skin pencil. The dose to be given is ordered in terms of the Sabouraud pastille. For instance, for a case of ringworm or sycosis, a pastille dose is ordered. The patient is exposed to the rays until the requisite change in tint is produced. The time required —that is, the number of interruptions—varies with the conditions of the tube, etc. In some cases we have obtained the B tint in five minutes, in other conditions of the tube it takes ten minutes or more. With a large 16-in. coil and a large-sized tube, a shorter exposure is required than with a smaller coil and smaller tube. With a 12-in. coil, I have frequently had to give an exposure of twenty minutes to get the required change. I do not think that there is an advantage in getting the B tint in a very short time. The tubes are soon worked out if this is done; and again, when the exposure is very short, an extra half-minute or another 500 interruptions makes a very appreciable difference in the quantity of rays falling on the irradiated surface.

In the treatment of rodent ulcer by the *x* rays, I follow similar lines. The area to be treated is marked. An exposure equivalent to the B dose is given, and no further application of the rays is made until the period of reaction has passed. This may be three weeks, and is never less than a fortnight. In some cases where there is much infiltration, and the patient will not submit to a preliminary paring away of the edge, a much larger dose may be required, a dose, for instance, which may be equivalent to double the pastille dose. This may be given in one or more sittings. By the use of the counter and the regulation of the tubes in the manner described, we can gauge the dose with some approach to accuracy. Where there is a large area to be treated, the exposures may have to be more frequent, but the same spot is not irradiated a second time until the period of reaction has passed. By this means we can prevent the effect of cumulative doses. In some cases one or two sittings suffice.

The same procedure is carried out in the treatment of certain forms of lupus vulgaris. For an ulcerated surface I usually begin with a small dose, not exceeding the pastille B tint, and repeat at the end of a fortnight if required. It may be necessary to produce a slight erythema, and then a dose slightly in excess of the B tint is given.

In the treatment of malignant tumours of the skin—for instance, in mycosis fungoides and in sarcoma and epithelioma—massive doses at long intervals are given.

A point of some importance with regard to the frequent repetition of small doses must be mentioned before I conclude. It is this: Is it not likely that, by continuing the administration of small doses of *x* rays over long periods (I have myself seen cases in which it has been continued for years), that we may set up a condition similar to or identical with that seen in *x*-ray workers? This condition of chronic *x*-ray dermatitis is, we know, liable to pass on to epithelioma. The question was raised in connexion with the *x*-ray treatment of lupus vulgaris by Dr. Norman Walker some time back. I have seen 13 cases of epithelioma on lupus vulgaris, and in one instance only have I had reason to believe that the malignant growth may possibly have developed as the result of prolonged *x*-ray treatment. This was the case of a young man who had had several hundred exposures to the *x* rays for lupus of the nose. It was a very active and rapidly fatal case. In the other instances there had been little or no *x*-ray treatment. I think the possibility should be borne in mind, and I look upon it as an additional argument in favour of definite measured doses of *x* rays at intervals.

In conclusion, I must ask your indulgence if I have dealt largely with matters which are doubtless of common knowledge to most of you, but in opening this discussion I felt that it would be best to give my own experience, so that it might be compared and contrasted with that of other workers who may approach the subject from the electro-therapeutical rather than the dermatological aspect.

DISCUSSION.

Dr. W. IRONSIDE BRUCE (London) said: In his paper Dr. Sequeira suggested that *x*-ray dermatitis passing on to epithelioma might result from continued *x*-ray treatment. I have been impressed with the possibility of preventing dermatitis in the treatment of certain diseases. Is it not possible that the nature of the effects of the *x* rays in a disease like lupus may be due, not to the inflammation of the skin which results from exposure to the *x* rays, but to the *x* rays themselves? I have for some time past been exposing leukaemia patients to the *x* rays, and no ulceration or any ill-effect whatever has followed, although in some cases the treatment has extended over a period of two years. I avoid all such effects by using a filter of a kind which, I understand, is being largely used in America, where big doses of *x* rays are given. I do not know whether lupus would be beneficially affected by this method or not. Certainly one gets rid of all the trouble of dosage by using this filter, and excludes the dermatitic action altogether. My filter used in the treatment of leukaemia is composed of felt—the ordinary material used under carpets. It is of four layers', or about a couple of inches', thickness. This I always place between the tube and the patient. As evidence that the filter does not prevent the beneficial action of the rays, I can only point to the effect in my leukaemia cases. There was a fall in the leucocytes in accordance with the treatment given, and in some cases the red blood corpuscles appeared to

increase immediately at the beginning of the treatment. The effect upon the blood was evidently entirely due to the *x* rays.

Dr. A. H. Pirie (London) said: I agree with Dr. Sequeira as to the necessity of very exact measurements when the requisite dose is given in a short time. I have been causing epilation in three minutes by means of my water-meter for estimating the dose of *x* rays, and in carrying out that work I saw the necessity for such exactness.

Dr. Delpratt Harris (Exeter) said: A case of rodent ulcer of the nose in which epithelioma had developed came under my notice. On recasting the treatment, however, and giving the whole Sabouraud, the case again did well. In some cases of long-continued treatment the good effect produced when first the tissues are exposed to the *x* rays is afterwards lost. I think that in cases which are not successful the plan of varying the time of exposures, and also the intervals between exposures, might still ensure success.

Mr. E. W. H. Shenton (London) said: In connexion with this question of short exposures extending over a long period I might mention several cases of malignant disease, such as scirrhus of the breast, which have come under my notice. Four cases of which I am thinking had been under treatment for two years. I used no filter, and there was no sign of reaction. The cases are now slightly better than when they first came to me, but they are not cured. In two other cases treatment was stopped owing to the patients going away to the country. After leaving me larger doses were given, the disease rapidly increased, and both cases died within six weeks. My point is whether a large dose in malignant disease may not make the process more, instead of less, active.

Dr. G. B. Batten (London) agreed with Mr. Shenton, and instanced cases out of his own experience. He asked Dr. Sequeira whether he considered that in *x*-ray dosage for epilation in ringworm the rule one held usually with regard to radiant energy, that the amount of the doses diminished by the square of the distance, was right. He (Dr. Batten) was inclined to think that it was not.

The President said: The meeting has been pleased to hear some valuable evidence from Dr. Ironside Bruce. Various things have been recommended for filtration purposes. At one time a piece of leather was suggested, as not only representing the required density, but as also being the skin of an animal. I have felt suspicious as to whether the filtration of the rays through the leather might not at the same time destroy all the beneficial effects of the treatment. Therefore, the results which Dr. Bruce has brought before us with regard to the fall of the leucocytes and the increase of the blood-counts are very satisfactory. In the study of reagents, no one in this country seems to have published experiments with a solution of mercuric chloride. It might be worth while to study the action of this precipitate with regard to *x* rays. Various applications have been made in Germany but none in England, so far as I am aware.

Dr. J. Goodwin Tomkinson (Glasgow) said: As an old student of Sabouraud I am very pleased to have a further proof of the high value of his treatment regulated by his pastille. As Sabouraud himself says, "C'est vraiment parfait quand on l'applique parfaitement." I wish to point out that epithelioma developing in tuberculous scar tissue is not necessarily of *x*-ray origin. Every one knows the tendency of lupus scar tissue towards epitheliomatous degeneration. It is well to keep an open mind with respect to the bactericidal action of *x*-rays upon *B. tuberculosis*. Many experiments have been conducted *in vitro*, but it is well to remember that in radiotherapy we are dealing with the bacillus located in the living organism—perhaps something more than mere vascular response.

Dr. Sequeira, in reply, said: I am very much obliged for the kind reception you have given to my remarks. I am interested particularly in the question of filtration which has been brought forward by Dr. Ironside Bruce. At the London Hospital I have tried filters for a long time. The first case in which we used filtration was one of leukaemia, and later on with a special solution a filter was used for *x*-ray treatment in carcinoma, epithelioma, and in one case of sarcoma. Very large doses of *x* rays were given, without producing dermatitis. I am not certain, however, that a filter does not cut out a great deal. Of course, in skin diseases, we want to use the rays which act upon the epidermis and its appendages, and in the treatment of rodent ulcer and lupus vulgaris we do not want to go very deep. Some recent experimentation seems to show that the radiations producing effect in these cases are comparatively slight. It is an open question whether, in the whole gamut of rays from the tube, there may not be some which go deeper, and the filter will leave these and weed out those which affect the surface tissues. In the treatment of skin diseases we want to conserve those rays which affect the superficial areas. A question was asked about the variation in the resistance of the tube. A low tube with a short spark gap has not the penetrative power of a high tube with a long spark gap. The penetrating power of the tube, however, is increased by increasing the spark gap within certain limits only. The condition of the tissues, which have been more or less influenced by the frequent application of the *x* rays, and of the epidermis, which is more pigmented, need to be taken into account. I was particularly interested in Mr. Shenton's suggestion that enlarged doses in certain cases gave a more rapid dissemination of carcinoma. I cannot say that I have seen an instance of this in my own experience, but I do not advise going on day by day with big doses. I do not aim at breaking down the tissues. Dr. Lewis Jones has mentioned the effect of *x* rays upon a solution of mercuric chloride. The Sabouraud pastille is excellent, but if we could get something that we could always easily read—if we could get definite precipitation up to a certain point—it would overcome the difficulty arising out of the unreliability of platino-cyanide discs.

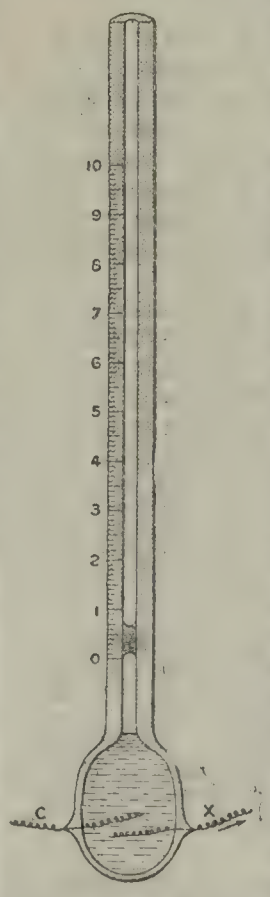
II.—A. Howard Pirie, M.D., B.Sc.Edin.,
Physician in Charge of the Electrical Department, Prince of Wales's Hospital, Tottenham.

A NEW METER FOR MEASURING THE DOSE OF X RAYS.

[*Abridged.*]

After describing how he estimated, by means of electrolysis, the reverse current passing through an *x*-ray tube, Dr. Pirie said:

The meter is constructed as follows. I took a 1 c.cm. pipette about a foot long, divided into one hundred parts. I melted one end in a Bunsen and blew a bulb on it about the size of a pigeon's egg. Through the glass of the bulb I sealed two platinum wires so that their free ends projected inside the bulb and did not touch. I then filled the bulb with water and left a small drop of water in the lumen of the capillary tube opposite the markings of the pipette. The instrument was then ready for use.



The current flows through the water from one terminal to the other, and liberates oxygen and hydrogen. These gases collect and cause the indicator drop to rise. The quantity of gas which collects is thus measured by the divisions that the indicator drop rises. By a simple arrangement, when the indicator drop reaches the top of the meter it automatically returns to a pre-arranged spot and is ready for the next reading. The quantity of the gas liberated is a measure of the current passing through the *x*-ray tube.

What use does this meter serve? The ordinary milliampèremeter is condemned, and rightly, as a practical means of measuring the output of *x* rays from a tube. But why? Because its reading constantly varies with the resistance of the *x*-ray tube and that of the interrupter. If the *x*-ray tube and the interrupter had a constant resistance the milliampèremeter would register a constant reading. But the resistance of an *x*-ray tube is constantly changing. This water-meter, however, estimates not the quantity of electricity flowing at any particular moment, but the quantity of electricity that has flowed for a certain time; and this under certain

conditions is a measure of the output of x rays. Some precautions must be observed in using it.

First, you must suppress the reverse current, otherwise this will be measured. A valve tube or adjustable spark gap will do this.

Secondly, you must not pass a current through the meter which does not produce x rays, such as the current used to soften the tube in a Müller's tube. There must not only be no sparks passing through the softening apparatus, but there must also be no leak to earth between the meter and the x-ray tube.

I have been using this meter for the last five months, and I have found it equally reliable for use at 15 cm. and 7 cm. By its use one can produce epilation in a quarter of the time required by Sabouraud's methods.

Its disadvantages are:

1. Different x-ray tubes give out different quantities of x rays for the same quantity of electricity. From my experience of four installations, however, I have found this meter correct for practical purposes in them all.

2. Temperature has a slight effect on the volume of gas collected in the meter, but for practical purposes this may be neglected.

3. Barometric pressure may also be neglected.

I now come to the use of this meter. In order not to be biassed by Sabouraud's pastilles, I worked out the dose required for epilation with the meter experimentally, and did not use the pastilles; and after many failures to cause epilation, I gradually increased the dose until I came to the conclusion that at 14 cm. distance 10 divisions must be registered by this meter, and at 7 cm., 3 divisions to 3.5, and not 2.5 as I had expected. If 10 divisions are required at 14 cm. to produce epilation, the following table should be correct, and I found it so in practice:

To produce epilation at		15 cm.	from the source of x rays the meter must register	11.4 divisions
,,	,,	14 c.m.	10 0	,,
,,	,,	13 ,,	8 6	,,
,,	,,	12 ,,	7.3	,,
,,	,,	11 ,,	6.17	,,
,,	,,	10 ,,	5.1	,,
,,	,,	9 ,,	4.13	,,
,,	,,	8 ,,	3 26	,,
,,	,,	7 ,,	2.5	,,

III.—J. Goodwin Tomkinson, M.D.,
Assistant Medical Electrician, Glasgow Western Infirmary; Consulting Dermatologist to the Glasgow Hospital for Diseases of the Ear, Nose, and Throat.

A METHOD OF TREATING LUPUS VULGARIS.

As a member of the Paris Congress on Tuberculosis I had the pleasure of hearing, amongst other papers of dermatological interest, several communications dealing with the value of the newer methods, phototherapy and radiotherapy, employed in the treatment of the various forms tof lupus, as compared with that of the classic ones of multiple scarification, physical and chemical cauterization, etc.

The statements made by my friend and master, Professor Gaucher, in collaboration with M. Gastou, based upon the results of 633 cases treated at the great hospital of St. Louis by the newer methods, were eminently in heir favour. After advocating surgical intervention in tnon-ulcerated cases of limited dimensions, and commending the thermo-cautery in small ulcerated and non-ulcerated lesions, and the employment of chemical caustics—especially according to Billet's method—in ulcerated lupus, Professor Gaucher delivered himself as follows:

> Phototherapy gives very good results in the two varieties of lupus. It has the merit of giving in general beautiful cicatrices, but it is a long and costly process, not within the reach of everybody, and is not applicable to every region, in particular to cavities and mucous membranes. The Finsen method remains at present the best. Radiotherapy has an analogous action, but more intense than phototherapy, upon tuberculous lupus. It is more difficult to control. Its principal indication is in lupus erythematosus.

Permit me here to say that it is not my intention to deal with lupus erythematosus in the short paper which I have the honour of submitting to this Section of the Association, but to refer only to lupus of generally admitted tuberculous nature.

The paper of De Beurrman and Degrais, based upon the treatment of 231 cases of lupus vulgaris and 27 cases of lupus erythematosus by the Finsen light, was distinctly eulogistic of that method.

The older methods of treatment found amongst other defenders two doughty champions in the distinguished dermatologists, M. Brocq and M. Hallopeau, not only on account of the results obtained from their exhibition, but on account of the costliness of the newer methods. At the same time, M. Brocq advised phototherapy in lupus of certain regions of the face. The grave complications following x-ray treatment—persistent nutritional disturbance, epitheliomata, etc.—alluded to by M. Hallopeau are, perhaps, in some instances due to prolonged treatment, but in other instances, I am inclined to think, are altogether independent of that treatment. The statement of M. François of Antwerp that all x-ray cicatrices are ugly is the very reverse of my own experience, in which I have found them to be smooth and flexible, with no marked tendency to contract; in other words, of high aesthetic value. I will not prolong this review of the various communications beyond remarking that the consensus of opinion of those who had had practical experience of the newer methods was that the Finsen method gave the best results. The adverse opinion of that method was largely determined by its costliness and the prolonged treatment involved.

Opinions with respect to the x rays were in the main only in favour of their exhibition as an adjuvant to phototherapy.

Any one at all experienced in phototherapy must admit that the great length of time involved in the treatment of extensive lesions is a great drawback to its value; in fact, in hospital practice a large proportion of cases are of such dimensions that phototherapy would be an almost interminable process, and in many instances an almost impracticable one from the social position of the patient, who, unless accommodated in hospital, would be unable to attend until a cure was effected.

About a year and a half ago I began to use the x rays more frequently for the treatment of lupus vulgaris, with a view to diminishing the length of treatment, and found that it was possible to obtain in ulcerated and hypertrophic cases a relatively rapid response, culminating in a smooth and flexible cicatrix, free from the disfiguring keloidal tendency not infrequently following treatment by some of the older methods. Keeping in view two objects—relative shortness of treatment and aesthetic effects—I have been employing for facial lesions a combined method of treatment which so far has given very encouraging results. Briefly described, the method is as follows:

If any crusts exist, they are removed by the application of a salicylated ointment. A tentative x-ray exposure of three to five minutes is made upon a small area of the lesion. In a few days the x rays are employed for about five minutes daily upon a somewhat wider area of the lesion, unless contraindicated, until the whole lesion has been gone over some three or four times. It is then plastered with Unna's 50 per cent. salicylic acid and creosote *Pflastermulle*, which is renewed daily. If its application be badly borne, the part is previously swabbed with 10 to 20 per cent. solution of cocaine. In a variable number of days—approximately about ten, and determined by the individual case—it is found that much of the tuberculous tissue has come away. The lesion is then swabbed with cocaine solution, then dried, and afterwards painted with the following preparation:

℞ Acid. carbolici	...	... 50 per cent.
Acid. lactici ...	...	... 15 per cent.
Acid. salicylici	...	... 15 per cent.
Alcohol absolut.	...	... 20 per cent.

(well agitated before application, as there is a considerable sediment). A few minutes afterwards the lesion is painted with the following solution:

℞ Acid. carbolici	...	... 80 per cent.
Alcohol absolut.	...	... 20 per cent. (Billet)

(The formula employed in Billet's phenol treatment.)

In very extensive cases a part only of the lesion is cauterized, the remainder being cauterized on one or more subsequent occasions. However, a whole cheek may be done at one time. More than once I have cauterized both cheeks and nose at one and the same time. I do not, however, recommend such extensive cauterization, on account of the associated oedema, which it is well to avoid. After cauterization the part is dressed for a day or

two with sterilized lint and carbolic oil (1 in 30), and thereafter with 20 per cent. aqueous solution of ichthyol until healing—usually relatively rapid—has taken place; or in some instances the application of the ichthyol solution is deferred until the lesion has been replastered and recauterized perhaps three or four times. After healing in the manner just described—which may be accelerated by bathing the part at the time of dressing with a little of the ichthyol solution, to which 25 per cent. to 50 per cent. of methylated spirit has been added (cocaine swabbing is indicated)—*x*-ray treatment is recommenced, short exposures of three to five minutes—rarely longer—being made.

At the end of three or four months the treatment is

After about three months' treatment. After about fourteen days' treatment.

discontinued for a considerable time, during which the patient occasionally returns for inspection. At the end of this interval—usually of some months—the patient is submitted to a second course of treatment, which is repeated after another interval if necessary.

It should be added that during the cessation of the more vigorous treatment the patient is sometimes instructed to use a mercurial ointment or lotion; also that it is usual, prior to the dressing of the lesion, to clean it up with solution of perchloride of mercury (1 in 500).

With reference to the *x*-ray apparatus, a 10-in. coil is used. The diseased area is exposed at a distance of about 7½ in. from the anticathode of a medium to soft tube, while the parts not under treatment are protected by a

After about three months' treatment. After about fourteen days' treatment.

lead glass diaphragm, to which funnels of various sizes, allowing egress to the rays, are attached.

Whenever indicated, local treatment is supplemented by the exhibition of haematinics, ol. morrhuae and saline aperients, and a generous diet and residence amidst hygienic surroundings are enjoined.

Latterly I have been submitting patients to the *x* rays during the period of plastering and cauterization, with, I think, better results; obviously this modification calls for the exercise of great caution.

It will be noted that the individual *x* ray exposures are short and the periods during which they are exhibited not over-prolonged. It is, I venture to think, by small dosage and lengthy intervals of rest, and so attempting to prevent the onset of cutaneous *x*-ray intolerance, that the best therapeutic action of the *x* rays in lupus vulgaris will be obtained.

The caustic element in this treatment is little calculated to produce vicious cicatrices. Indeed, in cases where cicatricial hypertrophy—primary or the result of previous treatment—existed, marked diminution in the scar tissue has been recorded, doubtless due, however, in a large degree to the influence of the *x* rays, the tendency of which to reduce keloidal tissue I have observed in dermatitis papillaris capillitii, the acné cheloïdienne of French authors.

The cicatrices resulting from this method of treatment are smooth and flexible—a point not to be forgotten when deciding upon the treatment to adopt in lupus affecting the various orifices—very occasionally I have observed in them trifling telangiectases, and in one case I noted a few pigmented spots.

Lupus secondary to tuberculous adenitis has responded well to this treatment, largely due, no doubt, to the beneficial effects of the *x* rays upon the underlying primary affection.

In conclusion, it should be said that cases of lupus exedens are the most amenable to this form of treatment; but to cite individual cases in detail would be to trespass too far upon the time of this meeting. Suffice it to say that cases of markedly rebellious character which had "dragged their weary length along" for years under various treatments have yielded so well to this combined method that, without being unduly optimistic, one might reasonably expect in some instances eventual complete eradication of the tuberculous mischief.

DISCUSSION.

The President said that he had had an opportunity of seeing some of Dr. Tomkinson's cases in Glasgow, and to his mind the method employed was most systematic and the results successful. He hoped that some one would bring forward an ionic method of treating lupus. If any disease was amenable to such treatment a superficial thing like lupus ought to be.

Dr. D. J. Mackintosh, corroborated the good results in these cases.

IV.—James Taylor, M.R.C.S., L.S.A.,
Medical Officer in Charge of *X*-Ray Department, Bristol Royal Infirmary.

A CASE OF PAGET'S DISEASE TREATED BY *X* RAYS.

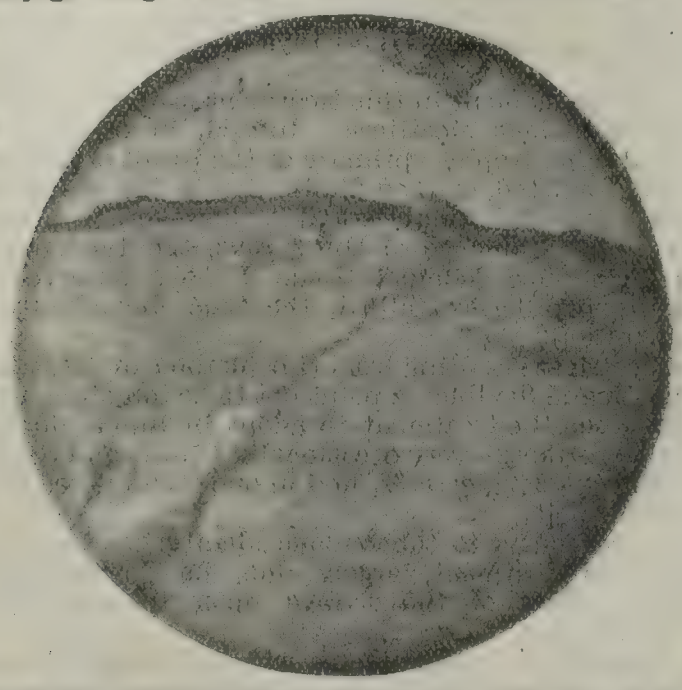
As it is not every day that one gets the chance of examining tissues that have been subjected to the action of the *x* rays, I thought it might be of interest to show microscopic sections from a case of Paget's disease that healed under their influence.

The clinical history of the case is as follows: The patient had discharge from the nipple in 1902. In 1905 slight ulceration with formation of a scab occurred. The patient did not present herself for examination again till 1907, when there was definite Paget's disease. The patient, when she was sent to me, had an ulcer surrounding the nipple, some 2 in. by 1½ in. in size, flat, red looking, with copious discharge, the nipple being buried in a mass of what looked like granulation tissue. There was no trace of tumour to be felt in the breast. After a few applications of the rays, patches of new skin began to grow in from the edges, and finally after fifteen applications, extending over a period from the end of January to the beginning of April, the ulcer had completely cicatrized over.

But, whilst this healing process was going on, unfortunately a tumour made its appearance in the substance of the breast. This enlarged somewhat rapidly, and the breast was amputated.

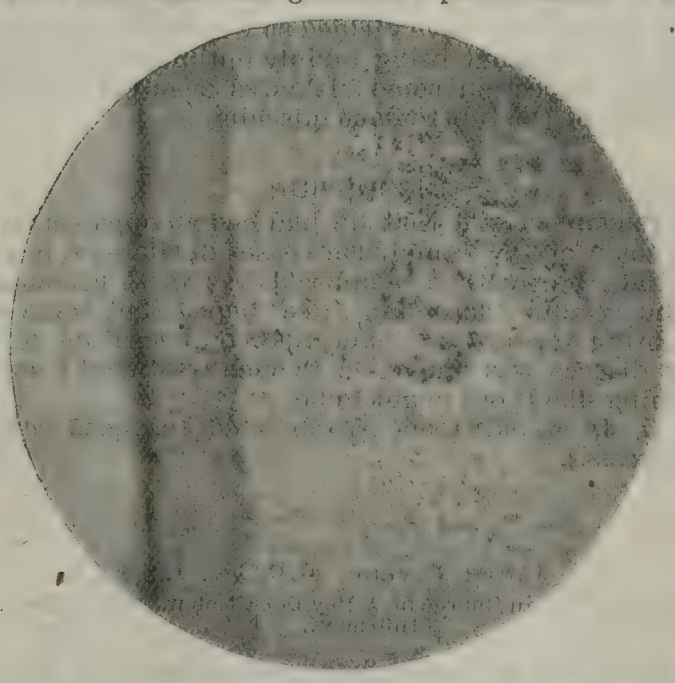
The sections, for which I am indebted to Professor Walker Hall, show that there is a continuous line of epidermis over the whole area where the ulcer was, looking like normal skin. Just beneath the epidermis there is a small duct or two, and these are filled with cancer cells. There is an increase of fibrous tissue formation—fibrosis

—and deeper down in the breast the ducts are filled with rapidly-growing cancer cells.

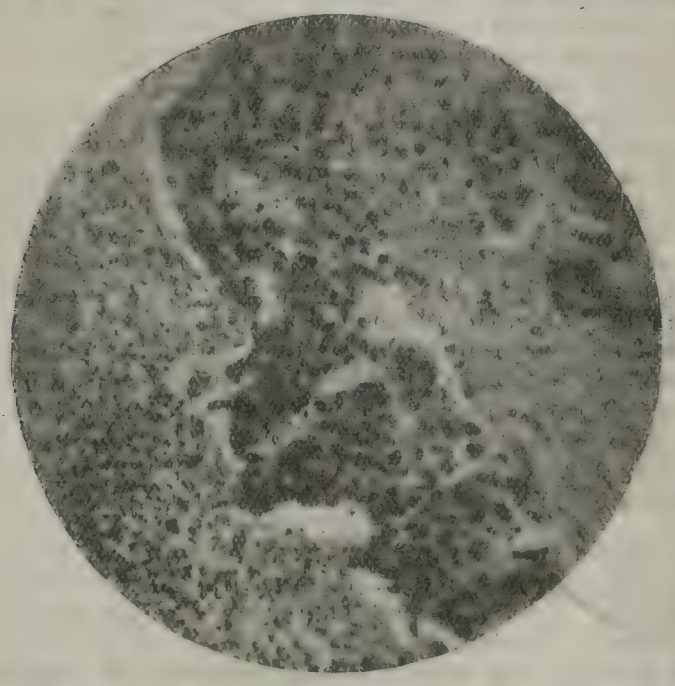


In the description of this disease in Allbutt's *System* it is stated:

That it consists essentially of a dermatitis of the deeper layers of the skin with great cell proliferation. Various



authors have described the disease as originating in cell proliferation of the sebaceous glands, of the sweat glands, or of the deeper layers of the skin. In the breast there are many



recorded cases to show that the disease begins in the galactophorous ducts.

I should think that in this case the origin of the disease must have been in the milk ducts, as there was a discharge from the nipple for some four years before the disease declared itself. It looks as if the *x* rays have a strong stimulating effect on epithelial growth as shown by the complete healing of the ulcer on the surface, and the question in my mind is whether the stimulating action of the *x* rays on the growth of the epithelium set up the malignant action in the deeper parts of the breast.

It certainly was a disappointment to me to find that whilst the rays had such a markedly beneficial effect on the superficial disease, yet the deeper disease went on absolutely unaffected by them, and perhaps was stimulated to greater activity by their agency. It might only have been coincidence, but in this case it certainly looked as if the rays had something to do with starting the active mischief in the breast substance.

V.—J. DELPRATT HARRIS, M.D., M.R.C.S., L.S.A.,
Senior Surgeon, Royal Devon and Exeter Hospital.

SOME STATISTICS OF X RAY TREATMENT IN RODENT ULCER AND CARCINOMA.

I HAVE but a short list of cases to offer, but, as a therapeutic agent, *x* rays are still new, and even so short a list may be of some use. In Exeter, until a few weeks ago there was little opportunity for the poor folk to obtain relief from their ailments by any form of electricity, hence my cases are taken from private sources only. In the early cases I found great difficulty with the *x*-ray tubes, using first the original Jackson small tube, but later the larger tubes made by L. Miller, H. Cox, A. E. Dean, and others. At first all the cases were treated for ten minutes only, but more lately the time has been extended to twenty or thirty minutes. The coil used has throughout been a 12-in. Apps induction coil, actuated at first by a 12-volt supply from accumulators, and afterwards by a 35 volt dynamo.

CASE I was one of a small tuberculous ulcer of face. The girl had been previously treated by acid nitrate of mercury. She had but four sittings when it was excised. She has had no return in six years.

CASE II.—Lupus erythematosus. Had ten sittings when the patient ceased attending, her friends saying she was cured. Entered as benefited.

CASE III.—Recurrent scirrhus of breast; ceased attending after four sittings. Improvement was commencing, the discharge greatly lessening.

CASE IV.—Aged gentleman with cancer inside the cheek, and enlarged glands around the jaw. He had sixteen sittings, but there was no manifest result. He died shortly afterwards rather suddenly, from septicaemia apparently.

CASE V.—Epithelioma of scrotum and keloid of buttock. Had eight sittings when he gave up the treatment, and was operated on, in fact flayed. There has been no return in two years.

CASE VI.—Rodent ulcer on the side of the nose in elderly gentleman. Healed after eighteen sittings, but broke down in two months. Healed again under *x* rays and remained so for six months. After this it broke down and healed much more slowly under *x* rays. Finally ions of zinc were used five times only, when the ulcer healed and has remained so up to now—a period of about two months.

CASE VII.—Dry cancer of the breast with a large superficial but shallow wound. The wound threw bridges of skin across and partially healed, but the patient became too weak to attend and the treatment was abandoned.

CASE VIII.—Recurrent cancer of the breast. When first seen the skin and intercostal muscles were so infiltrated that operation seemed impossible. After seven sittings the oedema so far cleared that by operation I removed all skin and intercostal muscles that were involved. Seven sittings were given directly following the operation. The lady is not entirely free from nodules in the skin, but they seem encapsuled. She is still undergoing treatment, and is bodily well. It is two years since last operation.

CASE IX.—Case of horny projection from inflamed ulcer on nose. Forty-nine applications followed by application of formalin. Result, cured.

CASE X.—Lupus erythematosus. Much benefited locally, but the patient's health broke up, symptoms of acute tuberculosis occurred, and she died.

CASE XI.—Inoperable scirrhus of breast. Had eight applications and gave up treatment.

CASE XII.—Ulcerating papilloma of eyelid. Had fifty sittings and gave up treatment. Greatly benefited.

CASE XIII.—Dry, scaly rodent ulcer of nose. Cured after thirty-four sittings.

CASE XIV.—Large epithelioma of face. Undergoing healing with two years' treatment.

CASE XV.—Lupus of foot healing under *x* rays and ultra-violet rays.

CASE XVI.—Ringworm. Cured by twenty-first day, all affected hair being shed.

Case xvii.—Dry, scaly rodent ulcer. Same case as above, again treated by x rays only, and completely healed.

Case xviii.—Dry, scaly rodent ulcer. Cured with x rays only. No recurrence in two years.

Case xix.—Rodent ulcer of nose. Cured with x rays only. No return for two years.

Of these 19 cases, 8 were cured, 6 benefited, in 1 case there was no effect, and in the 4 remaining cases attendance was discontinued.

PAPERS DEALING WITH ELECTRO-THERAPEUTICS AND THE ACTION OF ELECTRIC CURRENTS.

I.—Professor K. A. Wertheim Salomonson,
Amsterdam.

EINTHOVEN'S GALVANOMETER.

[*Abridged.*]

Some years ago Einthoven of Leiden invented a marvellous galvanometer of great simplicity. A thin wire through which passes a galvanic current is stretched in a strong magnetic field. As soon as the current is switched on, the wire sags in a direction perpendicular to the magnetic lines of force. This displacement may conveniently be observed by means of a microscope. The sensitivity obtained may be varied within very wide limits by varying the tension of the stretched wire.

The instrument possesses some qualities which render it exceedingly interesting. One of these peculiarities is that it can be arranged to show correctly the instantaneous value of any current as little as $\frac{1}{100}$ micro-ampère even if the changes of the current are as frequent as one hundred times a second. If the sensitivity be reduced about ten times, current changes of $\frac{1}{1000}$ second may be observed. The movements of the wire can easily be photographed. Einthoven's instrument is somewhat comparable with Abraham's, Blondel's and Duddell's oscillographs, but it is from one to ten thousand times more sensitive.

The instrument I have had constructed for myself differs somewhat from Einthoven's model. He uses a single electro-magnet with perforated pole-pieces. I use two electro-magnets in the form of a nearly-closed ring. The quartz fibre is placed in the two gaps; its tension may be varied by a suitable micrometer mechanism. The microscope is placed between the two magnets, which are fixed together by means of four copper bars, leaving a narrow slit for the fibre. The image of the string is enlarged several hundred times and projected on a screen or on the slit in front of the photographic plate.

The Einthoven galvanometer has proved to be an exceedingly useful instrument for the study of current curves in the primary of induction coils. The most interesting use is in the production of the electrocardiogram. In the case of muscular contraction, each contraction causes a so-called action current. The heart also gives an action current with every beat. These currents may be detected either by means of a capillary lectrometer, as Waller has discovered, or better by an Einthoven galvanometer. Either both hands or one hand and one foot are connected to the terminals of the galvanometer by means of unpolarizable electrodes of special construction. Generally a small current of rest has to be compensated in order to bring the enlarged image of the quartz fibre into the middle of the field of vision. We thus obtain oscillations of the spot synchronous with the heart beat. We may now adjust the sensitivity of the galvanometer so as to give a deflection of 10 mm. for every millivolt; we adjust the velocity of the plate to 25 mm. a second, and thus we are able to record the electrocardiogram.

DISCUSSION.

The President said that Professor Salomonson's paper went to show that, however thoroughly a subject might be thought to be understood, it could always be depended on to yield fresh information when new methods of investigation were applied to it. Existing knowledge of many things which appeared to be uniform and complete was really extremely defective, and was always capable of extension and broadening. The short paper he was himself to read might be regarded as supplementary to that of Professor Salomonson.

II.—Hy. Lewis Jones, M.A., M.D.Cantab., F.R.C.P.Lond.,
Medical Officer in Charge of Electrical Department, St. Bartholomew's Hospital.

SOME OSCILLOGRAPH TRACINGS OF MEDICAL COIL CURRENTS.

In 1904, at the meeting of the British Medical Association at Oxford, I showed some slides of the discharges of medical coils as taken by means of Duddell's oscillograph, and pointed out that the duration of the discharges varied a good deal in different makes of medical coil, and that the presence of much iron in the core or of long windings in the primary and secondary coils increased the duration of the current waves. The main practical interest of the observations lay in the fact that the longer waves were also the more painful. Since that time I have taken other tracings in the same way, and have obtained some further additional results.

The current waves of the secondary winding of a medical induction coil may have a duration of $\frac{1}{100}$ second or even more, or they may be less than $\frac{1}{2000}$ second. Thus the waves may vary enormously in point of duration, as may be well seen in the slides which have been shown to-day.

I have examined the effect upon the secondary current of a condenser in the primary circuit, arranged as is usual with large spark coils, and the tracings obtained with a condenser show in a beautiful manner that the secondary under these conditions is the seat of an oscillatory discharge. I have not found any particular advantage for testing purposes to follow the use of a condenser in small coils, and for practical purposes we may conclude that very good current waves can be got from a simple form of coil with a slender iron core and a short secondary working with its own simple interrupter. The oscillograph tracings taken show a remarkable regularity with some forms of interrupter, although many of the older interrupters give horribly irregular interruptions. Perhaps a further improvement in the character of the discharge may be obtained in the following way—namely, by using a secondary coil capable of giving a minute spark in air and by interposing a gap in the circuit. Under these conditions a unidirectional oscillatory discharge is obtained which causes singularly little effect upon sensory nerves, though retaining its effect upon striped muscle, and the duration of the discharges can be reduced by this means to $\frac{1}{4000}$ second. It is, therefore, possible that the use of a secondary coil with a minute spark gap arranged in circuit with the patient may yet prove to yield the most advantageous form of current for electrodiagnostic uses.

DISCUSSION.

Professor Salomonson asked whether the waves represented in the tracings were the same when the human body was in circuit.

Dr. Lewis Jones, in reply, said that although the curves showed approximately well the waves of electro-motive force, they were not precisely the same as they were when the human body was in circuit. He added that he had great hopes that a galvanometer less sensitive than that used by Professor Salomonson, and more so than the one he had made use of, might be introduced, and by that means they might be able to get the discharges of medical coils recorded even more exactly than had been the case hitherto.

III.—E. Reginald Morton, M.D.Toronto, F.R.C.S.Edin., etc.,
Medical Officer in Charge of the Electrical Department, London Hospital.

THE THERAPEUTIC VALUE OF ALTERNATING CURRENTS OF LOW FREQUENCY.

It is now some months since I made my first communication on low-frequency alternating currents,[1] since when I have continued to make use of such currents largely in both hospital and private practice. A current slowly undulating and periodically reversing its direction of flow has always appealed to me as a therapeutic agent possessing great possibilities; but so long as the recent high-frequency wave was sweeping the electro-medical world before it, there seemed to be little use trying to get a hearing for any other form of electrical application. Since high-frequency currents, with their thousands or millions

of reversals per second, are now settling down to a more normal place, and no longer monopolizing the attention of workers in this field of research, we may, I think, with advantage turn our attention to the other end of the scale, where the reversals take place at the rate of from one to four or six per second.

Probably the commonest of the conditions we are called upon to treat electrically are those due to atony or degeneration of muscular tissue.

If we test the electrical reactions of muscle so affected, we usually find, as you are well aware, that there is a prolonged latent period, a prolonged period of contraction, and we may also find a prolonged period of relaxation which may not be complete until the current is cut off. It will be also remembered that normally we have a longer latent period and a longer period of contraction in unstriped involuntary muscle than is found in healthy voluntary muscular tissue.

In treating cases where these conditions are present it has always seemed to me that to get the best results we should employ something more stimulating than the constant current, but that if we elect to use a variable or undulating current we should select one in which the successive waves should not follow one another too rapidly. If we take the sum of the latent period, the period of contraction, and the period of relaxation to constitute what we may term for convenience the periodic time of the muscle, then I would say that the interval between the corresponding points of any two successive waves of the current should be not less than this, and, within reasonable limits, the longer this interval, or in other words the lower the frequency of the current, the better.

In this manner we obtain all the stimulating effects on nutrition possessed by the constant current, while the muscle is induced to contract slowly and gently through the employment of a current which varies its magnitude and direction with only just sufficient rapidity—the method constituting a true electrical and physiological massage. If one considers for a moment, it will be seen that, consciously or unconsciously, we employ very much the same kind of current in many of the cases we are called upon to treat by the most simple apparatus. Take, for instance, a simple case of facial paralysis. When electrical treatment is ordered, probably the commonest procedure is to use the constant current, during the application of which one pole, usually the cathode, is moved about over the affected side for the prescribed time. So far as any particular muscle is concerned, the current is undulating, being at its maximum when the electrode is immediately over it, and dying down to the minimum when the electrode is farthest away. Probably no form of electrical application has, up to the present, been more successful in treating this class of cases, but, excellent as it is, it has distinct disadvantages.

In the first place, the current, though fluctuating in magnitude, is always flowing in one direction, and as a consequence the current density must be kept low, to prevent irritation from accumulation of electrolytic products; and the amount of stimulation is very limited—sufficient perhaps for some cases, but not for all. Another disadvantage is the difficulty of being sure that all parts receive equal treatment, especially if the electrode is manipulated by the patients themselves.

It is also necessary in the great majority of cases to have a nurse or some other suitable person to make the application.

With the use of the low-frequency sinusoidal current we lose none of the advantages of the constant-current application just described, and it will be found that all the disadvantages of the latter disappear. The fact that the current is an alternating one effectually removes any possible source of trouble from electrolytic products, and if we use an electrode large enough completely to cover the part under treatment, the difficulty of ensuring adequate treatment to every portion of the area, as well as the necessity for an attendant, are removed at one and the same time.

The production of such a current as I am treating of presents no serious difficulty, and I do not think it worth our while to go into details regarding apparatus which belongs to the sphere of the instrument maker rather than of the medical man. I will merely say this, that I am coming to the conclusion that the best way will be found to use the ordinary direct current passed through an instrument such as Ewing's rhythmic reverser. For some reason which I have not had time to investigate as yet, when the direct current is passed through the armature of a motor dynamo which has been specially arranged to run sufficiently slowly, the resulting current is at times very uneven and occasionally uncomfortable to the patient.

I now come to what is, after all, the most important question—namely, what is this current good for? My answer to this is, as may be gathered from what I have already said, that it will be found of the greatest value in the treatment of atony or degeneration of muscular tissue.

In the London Hospital I have arrangements by which a constant current, a sinusoidal current of about fifteen cycles per second and another of one or two cycles per second, are instantly and at all times available, and as time goes on I find myself using the last one more and more. In fact, it has become the rule of the department for this class of cases.

While in dealing with such chronic cases as one gets in the electrical department of a large hospital it is difficult to obtain satisfactory figures; there is no doubt that since the use of this slow sinusoidal current began to be general my cases as a whole have done better. It is, if anything, more marked in the less chronic cases, such as facial paralysis—Bell's type. This current seems peculiarly applicable in this disease—one reason for the good results obtained being probably the efficiency with which the application is made.

I find also that this current is very well borne by children, much better than any produced by any ordinary form of interrupter. Another class of cases where it is very useful is in atonic conditions of unstriped muscle, among which are included the atonic dyspepsias and constipation due to atony of the colon.

I do not for a moment pretend that this form of electricity is a certain cure for all such cases, but in those that can be favourably influenced by electricity at all, I believe that if it is applied in this form, the benefit will be more frequently and easily obtained than from any other. I am sure it will well repay any time and trouble spent in investigating its capabilities; and if I can induce others to assist in this, I shall feel well repaid for any time I have devoted to it.

I may say, in conclusion, that in bringing this particular form of electricity to your notice, I am not suffering from the delusion that I am offering you anything really original. Did time permit, I might have drawn largely on the writings of d'Arsonval and others who have given attention to this subject. My chief object is to give a greater prominence to a current which for some reason has not received the attention it deserves.

REFERENCE.
[1] *Archives of the Roentgen Ray*, March, 1907.

DISCUSSION.

The PRESIDENT said that he himself was only able to speak about these currents on therapeutic grounds, and he reproached himself for having been in the past somewhat indifferent to them.

IV.—F. HOWARD HUMPHRIS, M.D.Brux., F.R.C.P.Edin.,
Honorary Physician, Queen's Hospital, Honolulu.

THE RATIONALE OF STATIC CURRENTS.

[*Abridged.*]

AFTER contending that the fortunate results which have in many instances followed treatment by static electricity cannot be entirely or mainly put down to "psychic" influence, Dr. Humphris said:

Perhaps the most important attribute of static currents is their mechanical action. They cause tissue contraction, not only the contraction of the skin and muscle, which can be seen, but also contraction of the protoplasm within. It has been asserted that these currents do not go through the body at all, but merely travel over the surface, and on that account they have been called "skin currents." While it is true that with metallic conductors the current has a tendency to become localized near the surface, because that surface is a good conductor, it is not true as to the human body. Even as it is necessary for all electrical currents to have a conductor, so they will always

choose the best conductor, that is, the line of least resistance. The skin is a hundred times worse a conductor than the tissues beneath it. These tissues are practically a homogeneous salt solution, one of the best possible conductors. The best physicists of the day are now agreed that these currents do traverse the body, that is, in straight lines along the path of least resistance; in fact, it would be impossible to account for the nutritional changes which take place in the body during the administration of these currents, unless they do actually pass through that body.

To return to the mechanical action of these currents. Certain contractions can be produced by the constant, the induced, and the sinusoidal currents, but they are not so capable of diffusion, nor are the contractions produced as painless as those from the static machine. The enormously high potential of this last form of electricity accounts for these two valuable points of superiority.

Given, then, currents which produce contractions varying from the coarser muscle contractions to the finest cellular and protoplasmic contraction, it is not difficult to understand why they should improve conditions of faulty metabolism and lessen or remove the stasis upon which all non-infective conditions depend, and which is the usual concomitant of infective inflammations as well. The removal of stasis has always been emphasized by Snow as the chief fundamental principle of the manner in which static currents accomplish their work.

That the current is constitutional as well as local is evidenced by the increase of the elimination of urea and other extractives, the production of perspiration, the alteration in arterial tension, the increase of carbon dioxide, and the general of *bien être* which can easily be converted into fatigue and lassitude when an overdose has been administered.

Another way in which static currents work is due to their electrical effects, which produce in the tissues an active metabolism. Electrolysis, such as we know it in the constant current, is here so small as to be a negligible quantity, the ampèrage is too low and the diffusion too great to allow of it.

The electrical effects are partly due to polarization of the cells through which the current passes and partly again to mechanical action. The current may be compared to a breeze blowing through a field of corn, and in its passage it produces cell activity upon which active metabolism is based.

Remembering Thompson's resolution of hydrogen into more than 800 negative electrons, and Lodge's remark that they seem to be "the substance of which matter is made," it is quite possible that these static currents are actually matter which surges through the tissues in a finely divided state. This would produce mechanical effects of a powerful nature, and, properly controlled, of valuable therapeutic effect.

There is undoubtedly some chemical action in the disruptive and convecto-disruptive currents. Ozone and nitrous acid are liberated, and in the case of superficial infected areas are of value, though they do not appear to be much used.

The actinic effects of high potential currents when administered from glass vacuum electrodes contribute in no small measure to the utility of static currents. Like other forms of light, the discharges from glass vacuum tubes have the power of destroying some of the bacteria. The light acts as a stimulus to the animal functions; it also stimulates the action of unstriped muscular fibre.

Freund says: "The haemoglobin gives off its oxygen more quickly in the light than in the dark, hence it increases the oxidizing power of the blood, and correspondingly the process of oxidation in the human body." It may be that this may account for the fact that certain toxins decrease in virulence after exposure to high-frequency currents.* It would certainly account (together with the action on unstriped muscular fibre, already noted) for the fact that a vacuum tube, properly excited, should relieve the trouble caused by a subinvoluted uterus and many other pelvic conditions.

Summary and Argument.

Static currents act:

1. Mechanically by giving contractions.
2. Electrically by the polarization which produces cell activity.
3. Chemically by the evolution of nascent ozone and nitrous acid, fatal to certain bacteria.
4. Actinically by the germ-destroying effect of light, by the possible diminution of certain toxins, and by the increasing of the oxidation processes.

Just as almost all pain is due to pressure, so almost all disease is due to, or is accompanied during its course by, congestion or stasis. The static current, by its mechanical action, contracts the tissues around the stasis, and the very cell elements of the stasis itself; by its electrical power produces that cell activity during which it is impossible to conceive the existence of stasis; and by its chemical and actinic effects destroys any germ process which may complicate the stasis, at the same time further stimulating the tissue activity. The relief of the stasis brought about by the current brings relief from the disease, of which the stasis was either the cause or the complicating concomitant.

* Diphtheria, streptococci, and cobra venom (Guilleminot).

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INFLUENCE OF HIGH-FREQUENCY CURRENTS ON THE URINARY SYSTEM.

From my own observations of many patients I have ample cause to be sure that the influence of high-frequency currents on urinary excretions is considerable. It is a common experience to be told by male patients that, while undergoing high-frequency treatment, the amount of urine excreted in the twenty-four hours has become more abundant as compared with the ordinary daily amount. On the other hand, when there is polyuria, there is a notable diminution in the amount of urine excreted. One case in the other sex I may quote: A lady about 55 years of age, who came to me for treatment on account of a well-marked psoriasis, was in the habit of passing about 150 oz. of urine in the twenty-four hours, free from albumen or sugar. During the course of treatment the quantity of urine voided in twenty-four hours gradually fell, until only 50 oz. were passed in the twenty-four hours. Again, in a case of exophthalmic goître in a man, the analysis of whose urine will be shown later, the amount of urine passed in twenty-four hours before treatment was 116½ oz. Here, too, the amount of urine gradually decreased, until a month after the first analysis was made the amount passed had decreased to 64 oz. I have had no opportunity of dealing with a case of diabetes mellitus; but d'Arsonval and Chisholm Williams have noticed that in this disease patients undergoing treatment find a lessened quantity of urine voided.

The following notes of analyses, made at my request by Dr. Carstairs Douglas, of the West of Scotland Clinical Research Laboratory, of the urine of a few patients undergoing high-frequency treatment at my hands give evidence of the marked influence of these currents on the elimination of urea and uric acid:

Case I. (Dr. A.).

Before Treatment.—Quantity in twenty-four hours, 35 oz. Specific gravity, 1025. Deposit "cayenne pepper" of uric acid. Very faint trace of albumen, no sugar. Urea, 2·7 per cent.=11·8 grains per oz=418 grains in twenty-four hours. Uric acid, 0.026 per cent.=0.113 grain per oz=3.95 grains in twenty-four hours. Ratio of uric acid to urea, 1 to 103. (Normal ratio, 1 to 33.)

Twelve Days after Treatment Commenced.—Quantity in twenty-four hours, 36 oz. Specific gravity, 1022. No albumen, sugar or deposit. Urea, 2.7 per cent=11.8 grains per oz.=424 grains in twenty-four hours. Uric acid, 0.075 per cent.=0·323 grain per oz.=11.8 grains in twenty-four hours. Ratio of uric acid to urea, 1 to 36.

Dr. A. was an elderly medical friend who visited me daily for treatment. He was suffering from a paresis of the right arm, the result, I believe, of a cerebral embolism. In addition to high-frequency currents, which were given chiefly to improve his peripheral circulation, he had the continuous current applied for the lack of power in the arm. No special diet had been prescribed, and while undergoing treatment at my hands no change was made in his mode of living. You will observe that though a "cayenne-pepper" deposit of uric acid was detected by the naked eye, the amount of uric acid passed in twenty-four hours was below normal, being 3.95 grains instead of

about 10 to 12 grains. Owing to the small amount of uric acid excreted, the normal ratio between uric acid and urea was considerably disturbed, being 1 to 103, whereas the normal ratio is about 1 to 33. We see by the second analysis, made twelve days after high-frequency treatment had been begun, how this abnormal ratio was almost overcome. The amount of uric acid rose from 3.95 grains in twenty-four hours to 11.8 grains, a normal amount. The ratio, therefore, between uric acid and urea approached the normal—namely, 1 to 36, instead of being, as at first, 1 to 103.

Though only 1 oz. more urine was voided, yet in the second analysis the specific gravity fell from 1025 to 1022. There was no appearance of uric acid crystals in the second specimen of urine, although the amount of uric acid excreted was considerably increased.

Case II. (Mrs. W.).

Before Treatment.—Quantity in twenty-four hours, 40 oz. Specific gravity, 1011.5. No albumen or sugar. Urea, 1 per cent.=4.375 grains per oz.=175 grains in twenty-four hours. Uric acid, 0.0618 per cent.=0.27 grain per oz.=10. grains in twenty-four hours. Ratio, 1 to 16.

Thirteen Days after Treatment Commenced.—Quantity in twenty-four hours, 23 oz. Specific gravity, 1020. Most minute trace of albumen, no sugar. Urea, 2.4 per cent.= 10.5 grains per oz. = 241.5 grains in twenty-four hours. Uric acid, 0.73 per cent.=0.32 grain per oz.=7.36 grains in twenty-four hours. Ratio, 1 to 32.

The two analyses of this case, a woman of about 50 years of age, a patient in my "Home," show how high-frequency currents applied daily for thirteen days produced a marked percentage increase of both urea and uric acid. Although in the second specimen the amount of urine excreted in twenty-four hours had fallen from 40 oz. to 23 oz., the percentage of urea rose from 1 per cent. to 2.4 per cent., the normal percentage being about 2.2 per cent. There was thus a gratifying increase in the total amount of urea, from 175 grains to 241.5. This improve- was no doubt in part due to more generous feeding in the "Home."

The percentage of uric acid also showed an increase, namely, from 0.0618 to 0.73, the normal percentage being about 0.045.

Owing to the decrease in the amount of urine voided in twenty-four hours, the total amount of uric acid excreted was below normal, but you will notice that the normal ratio between uric acid and urea was attained, namely, 1 in 32.

Case III. (Dr. B.).

Before Treatment.—Quantity in twenty-four hours, 52 oz. Specific gravity, 1018. No albumen or sugar. Urea, 2.8 per cent. = 7.87 grains per oz. = 409 grains in twenty-four hours. Uric acid, 0.037 per cent. = 0.164 grain per oz. = 8 5 grains in twenty-four hours. Ratio, 1 to 47.

Fifteen Days after Treatment Commenced.—Quantity in twenty-four hours, 51.5 oz. Specific gravity, 1016. Urea, 1.45 per cent. = 7.4 grains per oz. = 393 grains in twenty-four hours. Uric acid, 0.04 per cent. = 0.175 grain per oz. = 9 grains in twenty-four hours. Ratio, 1 to 43.

This patient was a medical friend, who for a short time previous to electrical treatment had been placed by his own doctor on a "uric acid-free" diet. While undergoing high-frequency treatment as an outdoor patient, he was still on similar but less rigid special diet.

There is nothing particularly noteworthy about these two analyses, except that as a result of treatment there is a better ratio between uric acid and urea.

Case IV. (Mr. D.).

Before Treatment.—Quantity in twenty-four hours, 116½ oz. Specific gravity, 1016. No albumen or sugar. Urea, 1.1 per cent. = 4.81 grains per oz. = 558.3 grains in twenty-four hours. Uric acid, 0.071 per cent. = 0 31 grain per oz. = 36.1 grains in 24 hours. Ratio, 1 to 15½.

One Month after Treatment Commenced.—Quantity in twenty-four hours, 60.4 oz. Specific gravity, 1020.5. No albumen or sugar. Urea, 1.7 per cent. = 7.43 grains per oz. = 448.7 grain in 24 hours. Uric acid, 0.065 per cent. = 0.284 grain per oz. = 17.1 grains in twenty-four hours. Ratio, 1 to 26.

Mr. D. was an indoor patient who, in addition to the ordinary treatment for exophthalmic goître, was subjected twice daily to high-frequency currents with a milliampèrage commencing at 350 and rising gradually to 700.

I have already in this paper referred to this case to illustrate how in a condition of polyuria the amount of urine voided in twenty-four hours may be diminished. Here we have a decrease from 116½ oz. to 60.4 oz., with an accompanying rise of specific gravity. The percentage of urea is increased, but the total amount is decreased—namely, from 558.3 grains to 448.7, though at the same time the patient was being "overfed."

When we look at the note referring to uric acid we find that in the first analysis no less than 36.1 grains were excreted in twenty-four hours, the normal amount being 10 to 12 grains.

In the second analysis, while the percentage of uric acid is little altered, we see that there is considerable decrease in the total amount—namely, 17.1 grains as opposed to 36.1. The ratio, therefore, between uric acid and urea has been improved—namely, 1 in 26 instead of 1 in 15½.

Case V. (Mrs. H.).

Before Treatment.—Quantity in twenty-four hours, 60 oz. Specific gravity, 1018. No albumen or sugar. Urea, 1 6 per cent. = 7.0 grains per oz. = 424.6 grains in twenty-four hours. Uric acid, 0.0765 per cent. = 0.336 grain per oz. = 20.2 grains in twenty-four hours. Ratio, 1 to 20.8.

After a Week's Treatment by "Morton's Waves."—Quantity in twenty-four hours, 46 oz. Specific gravity, 1021. Urea, 2.45 per cent. = 10 72 grains per oz. = 493.0 grains in twenty-four hours. Uric acid, 0.07125 per cent. = 0.3117 grain per oz. = 15 35 grains in twenty-four hours. Ratio, 1 to 32.1.

After One Week's Treatment by High-frequency Currents.—Quantity in twenty-four hours, 46 oz. Specific gravity, 1019. Urea, 2.1 per cent. = 9.18 grains per oz. = 422.6 grains in twenty-four hours. Uric acid, 0.078 per cent. = 0 341 grains per oz. = 15.69 grains in twenty-four hours. Ratio, 1 to 26.9.

After Two Weeks' Treatment by High-frequency Currents.—Quantity in twenty-four hours, 46 oz. Specific gravity, 1024. No albumen or sugar. Urea, 2.4 per cent. = 10.5 grains per oz. = 483 0 grains in twenty-four hours. Uric acid, 0.076 per cent. = 0.338 grain per oz. = 15 54 grains in twenty-four hours. Ratio, 1 to 31.

The electrical treatment in this case varied somewhat from that of the others. You will observe, as before, that, according to the first analysis, there was a want of ratio between the uric acid and urea before treatment was commenced, namely, 1 in 20.8 instead of 1 in 33. Instead of giving Mrs. H. "high-frequency" treatment, I submitted her for a week to what are termed "Morton's waves," or the static wave current. This current may be applied conveniently when Gaiffe's apparatus is employed. Here the patient, standing or sitting on an insulated platform and holding an electrode in both hands, is connected with the spiral aluminium end of one of Villard's valve tubes. The patient is thus charged positively. The other pole is earthed—that is, connected by a wire to a gas pipe. The spark gap, to the terminals of which balls are affixed, should at first measure half an inch, and the current be gradually turned on. "Sparking" occurs across the gap, and the effects on the patient may be increased by passing more current and by lengthening the gap. Two distinct processes occur: First, there is a unipolar high voltage discharge, which flows to the patient until the tension is so great that an oscillatory discharge occurs across the spark gap; secondly, the patient plays the part of one armature of a Leyden jar, the walls of the room compare with the other armature, while the air represents the dielectric. The patient is first charged as if from a static machine, and then follows the oscillating discharge, which may be regarded as a high-frequency current, but of one polarity. The effects may be graduated from that of a succession of pleasing sensations to the production of severe muscular spasm or tetanus. There is no doubt that by this method of treatment the patient is fully charged throughout, and that currents of high potential, by means of electrodes suitably placed, can be directed to the deeply-lying structures.

On glancing at the analysis it will be seen that the static wave current produced similar effects to those caused by high-frequency currents. The ratio between uric acid and urea became practically normal. Discontinuing "Morton's waves," I subjected the patient to a week of high-frequency currents, when the ratio was slightly disturbed; but on the conclusion of two weeks more of high-frequency currents the ratio returned practically to the normal.

The patient was a neurasthenic lady of about 32 years of age, who lived in my "Home" while undergoing treatment. She was on no special diet.

Case vi. (Mrs. C.).

Before Treatment.—Quantity in twenty-four hours, 26 oz. Specific gravity, 1025. No albumen or sugar. Urea, 2.65 per cent. = 11.6 grains per oz. = 301.0 grains in twenty-four hours. Uric acid, 0 077 per cent. = 0.28 grain per oz. = 7.28 grains in twenty-four hours. Ratio, 1 to 41.

Ten Days after Treatment.—Quantity in twenty-four hours, 40 oz. Specific gravity, 1022. No albumen or sugar. Urea, 2.4 per cent. = 10.5 grains per oz. = 420.0 grains in twenty-four hours. Uric acid, 0.067 per cent. = 0.293 grain per oz. = 11.7 grains in twenty-four hours. Ratio, 1 to 36.

In the analysis of Mrs. C.'s urine it will be noticed there was a deficient excretion both of urea and uric acid, namely, 301 grains and 7.28 grains in twenty-four hours respectively. The excretion of uric acid, however, was proportionately lower than that of the urea, giving rise to a disturbed ratio, namely, 1 to 41. Ten days after treatment commenced, during which time the patient was confined to bed and properly fed and nursed, there was an increase of 119 grains of urea in twenty-four hours, giving a total of 420 grains, and of 4.4 grains of uric acid to a total of 11.7, both being fairly normal in amount. You will notice that the ratio between these two constituents almost reaches the normal.

The amount of urine, too, was increased from 26 oz. in twenty-four hours to 40 oz.

Case vii. (Miss Y.).

Before Treatment.—Quantity in twenty-four hours, 54 oz. Specific gravity, 1020. No albumen or sugar. Urea, 1.6 per cent.=7 grains per oz. = 378 grains in twenty-four hours. Uric acid, 0.08 per cent. = 0.35 grain per oz. = 18.9 grains in twenty-four hours. Ratio, 1 to 20.

After a Fortnight of High-frequency Currents.—Quantity in twenty-four hours, 38 oz. Specific gravity, 1019. No albumen or sugar. Urea, 2 per cent.=8 75 grains per oz.= 332.5 grains in twenty-four hours. Uric acid, 0.069 per cent.= 0.301 grains per oz.=11.4 grains in twenty-four hours. Ratio, 1 to 30.

Six Weeks after Treatment Began —Quantity in twenty-four hours, 46 oz. Specific gravity, 1017.5. Urea, 1.7 per cent. =7.43 grains per oz.=341 grains in twenty-four hours. Uric acid, 0.06 per cent.=0.26 grain per oz.=11.9 grains in twenty-four hours. Ratio, 1 to 29.

Almost Nine Weeks after Treatment Commenced.—Quantity in twenty-four hours, 50 oz. Specific gravity, 1020. No albumen or sugar. Urea, 2.1 per cent.= 9.2 grains per oz. = 460 grains in twenty-four hours. Uric acid, 0.032 per cent. = 0.14 grain per oz. = 7 grains in twenty-four hours. Ratio, 1 to 65.

In this case the analyses present interesting features. The patient was an overworked, highly-intellectual lady, revealing many of the symptoms of neurasthenia. She came to my "Home" impressed with the fact that she was suffering more or less from uric acid poisoning. The first analysis, made before treatment, certainly gives evidence of a large excretion of uric acid—namely, 18.9 grains. As the urea was a little deficient, the ratio between uric acid and it was a little abnormal. After a fortnight it was found that while the urea had slightly decreased in amount, the uric acid was proportionately less abundant—namely, 11.4 grains in twenty-four hours, thus causing the ratio of uric acid to urea to become almost normal. Six weeks after treatment had been commenced another analysis was made, with the results tabulated on the diagram shown; and, finally, the analysis made after more than eight weeks' treatment had been administered shows that, while the urea had very considerably increased in amount, the uric acid was actually subnormal, thus considerably disturbing the ratio. Dr. Carstairs Douglas, in his note, says that the "extremely low output of uric acid to-day may be possibly due to the fact that fuller oxidation of nitrogenous food is taking place, leaving less to be excreted as purin compounds."

Case viii. (Mr. M.).

Before Treatment. — Quantity in twenty-four hours, 60 oz. Colour, clear amber. Reaction, moderately acid. Specific gravity, 1018.5. Deposit, scanty, mucoid. No albumen or sugar. Creatinin, moderate. No bile pigments, pus, blood, urobilin or haematoporphyrin; while the spectroscope revealed nothing abnormal. Urea, 1.9 per cent.=8.3 grains per oz.=498 grains in twenty-four hours. Uric acid, 0.0375 per cent.=0.164 grain per oz. = 9.84 grains in twenty-four hours. Phosphoric acid, 0.19 per cent.=0.83 grain per oz.=49.8 grains in twenty-four hours. Ratio of uric acid to urea, 1 to 50. By means of the microscope, only a few very minute octahedral crystals of calcium oxalate were detected. Acidity in terms of oxalic acid=0.08 per cent.=21.4 grains, total. Nitrogen, 240 grains.

After Eleven Visits for High-frequency Treatment.—Quantity in twenty-four hours, 40 oz. Colour, opaque, turbid, light yellow. Reaction, highly acid. Specific gravity, 1020. Deposit, copious uratic. No evidence of abnormal constituents as before. Urea, 2 6 per cent.=10.3 grains per oz.=412 grains in twenty-four hours. Uric acid, 0.105 per cent.=0.485 grain per oz.=18 3 grains in twenty-four hours. Phosphoric acid, 0 28 per cent.=1.22 grains per oz.=48 grains in twenty four hours. Ratio of uric acid to urea, 1 to 23. Microscope examination, copious deposit of amorphous urates. Acidity in terms of oxalic acid, 0.214 per cent.=43.4 grains total. Nitrogen, 230 grains.

Mr. M. was a country gentleman who came daily for treatment. He also was fully impressed with the fact that he was suffering from uric acid poisoning. The analysis made on October 30th, 1906, demonstrate the condition of matters before treatment. The amount of urea is fairly normal, practically 500 grains in twenty-four hours. The uric acid excretion, on the other hand, is subnormal in amount, thus disturbing the ratio, and giving as a result 1 to 50. The phosphoric acid is just correct. The acidity of the urine was estimated in terms of oxalic acid, and amounted to an equivalent of 0.08 per cent., or 21.4 grains of oxalic acid for the total, which is below normal. Special investigation carried out for urinary nitrogen showed a total of 240 grains, being above normal (which is 232 grains). In the second analysis, of date November 12th, 1906, after eleven visits for high-frequency treatment, it was found that the urea was lessened, the uric acid greatly increased, up to 18.3 grains, the phosphoric acid fairly stationary, while the acidity was much increased, indeed more than doubled, being 0.214 per cent., or equal to a total of 43 4 grains of oxalic acid. Nitrogen by calculation amounted to 230 grains, or a decrease in the total output to practically normal. The increase of the acidity here is somewhat remarkable. It will be noticed, however, that, as in previous analyses, after treatment the ratio between the excretion of uric acid and urea approaches more nearly the normal.

Case ix. (Mr. T. G.).

Before Treatment.—Quantity, an evening and morning mixed sample. Reaction, markedly acid. Specific gravity, 1023.5. No albumen or sugar. Urea, 2.35 per cent. = 10.9 grains per oz. Uric acid, 0.045 per cent. = 0.196 grain per oz. Ratio. 1 to 55. Acidity, high, at rate of 0.25 gram oxalic acid per 100 c.cm. urine; this is nearly double the normal.

After Seven Applications of High frequency Currents.—Quantity, an evening and morning mixed sample. Reaction, acid. Specific gravity, 1017. No albumen or sugar. Urea, 1.65 per cent. = 7.2 grains per oz. Uric acid, 0.058 per cent.= 0.25 grain per oz. Ratio, 1 to 28. Acidity still high, though less than before—0.226 grams oxalic acid per 100 c.cm.

Occasionally I am told that the improvement in the urinary analysis is due to the nursing, rest, and careful feeding in my "Home," but in this last case, as also in those of Mr. M., Dr. A., and Dr. B., already shown recovered, the patient came daily for treatment.

Mr. T. G., the analyses of whose urine have just been stated, is a hard-working business gentleman, who enjoys life thoroughly.

Here a twenty-four hours' collection of urine was not obtainable. The analyses were made from a sample of evening and morning urine mixed together. The patient volunteered the statement that he was passing more water since electrical treatment had been begun. The decrease in the specific gravity as shown in the second analysis tends to corroborate this statement. Again, it may be noticed that a better ratio between uric acid and urea was obtained. In the case of Mr. M., the previous case, the amount of acidity was more than doubled; here it has been slightly decreased.

Conclusions.

From all these analyses—and I could adduce many more—it may be concluded that high-frequency currents have undoubtedly a very marked influence on improving the metabolism in the body. We are sometimes told that high-frequency currents have little or no influence, and that their benefit is purely imaginary, so that it is gratifying to ascertain for ourselves, and to be in a position to demonstrate to others from chemical analysis, that irregular and even abnormal metabolism may, in great measure, be corrected or restricted. With this proper and more proportionate excretion of the constituents in the urine, we are compelled to judge that fewer toxins are retained within the body, and therefore we may reasonably expect that patients undergoing high-frequency treatment will show signs of improved health and vitality.

VI.—Professor K. A. Wertheim Salomonson,
Amsterdam.

ELECTRO-DIAGNOSIS OF OCULO-MOTOR PARALYSIS.

In January, 1898, I published a note on the electro-diagnosis of oculo-motor paralysis. In various works on medical electricity of that time it is stated that the human eye-muscles do not contract when electrically stimulated. In Ziemssen's handbook I find it stated that the sphincter iridis contracts on applying the faradic current, at least it does so in animals. I do not know of this fact having been used in human diagnosis.

Eulenburg after cocainization of the conjunctiva applied a current of 0.5 milliampère to the insertion of the ocular muscles, without obtaining any movement of the eyeball. As Duchenne had reported a case in which the retina was seriously damaged by a very small current, Eulenburg did not continue his experiments with stronger currents. In healthy subjects, therefore, it is not possible to test the ocular muscles electrically. In certain pathological cases, however, one of the ocular muscles may be stimulated so as to react by contractions, namely, the levator palpebrae superioris.

In normal persons this muscle cannot be stimulated effectually either with the galvanic or with the faradic current. In cases of peripheral facial paralysis even, when the orbicularis palpebraris does not react to the faradic current, and in cases of longer duration, where the galvanic excitability is completely abolished, we cannot cause a contraction of the levator palpebrae superioris either with the galvanic or the faradic current.

In some cases of paralytic ptosis, however, the levator palpebrae may be effectually stimulated, but only with the galvanic current, and not in all cases. The motor point is situated a few millimetres beneath the centre of the eyebrow. The current strength may vary from one to three milliampères. The electrode should be a small brass button or knob of about 5 millimetres in diameter, well covered with moistened cloth. One should be careful not to shift the electrode whilst closing or opening the circuit. The effect consists in a slight lifting of the upper eyelid, to the extent of a few millimetres at the utmost.

These facts can easily be explained.

When a nerve is divided the well-known symptom of reaction of degeneration speedily appears. The faradic excitability disappears, and in about three weeks a strong galvanic hyperexcitability of the muscle will be found. At the same time the motor point is displaced in the direction of the tendon. The same phenomena take place with the oculo-motor nerve and its muscles. The galvanic excitability of the levator palpebrae is enormously increased. Its motor point is shifted, from the point of entrance of the nerve into the muscle far back in the orbit, to the membraneous expansion of the fibrous tarsus in the upper eyelid. This we can reach with the electrode. An additional alteration to be noted is that the contraction has become slow and vermiform.

In cases of complete oculo-motor paralysis the first contraction may generally be observed about the twelfth to the fourteenth day after the onset of the paralysis. From the fourteenth day the necessary current strength diminishes rapidly till about the twenty-fifth or thirtieth day. At that time I have occasionally been able to produce a contraction with only 0.03 milliampère, and with an electromotive force of only 4 volts.

As a rule, we get first a kathodal closure contraction. In at least 5 instances, however, I have found an anodal closure contraction as the first. In 1 case the anodal opening contraction was the earliest phenomenon obtainable.

The course of the electrical symptoms is also different in different cases, and depends largely on the nature and severity of the lesions as well as on the intensity of the degeneration and the rapidity of the regeneration. In 1 case, which terminated fatally, I could still obtain contractions after an interval of eight months.

The contractions are decidedly slow, but not so slow as we should expect. If the current is slightly increased, we nearly always get a closure tetanus, which disappears at the breaking of the circuit, with or without a break contraction.

As the displacement of the motor point and the galvanic hyperexcitability only occur when there is reaction of degeneration, we should only expect it in peripheral and nuclear paralysis of the oculo-motor nerves. In supranuclear lesions, no contractions can be obtained.

The diagnostic value of this symptom consists, first, in the possibility of distinguishing between supranuclear and peripheral lesions.

It also affords us the means of diagnosing severe, intermediate and slight cases.

Its prognostic value is enhanced by the fact that it shows us when regeneration of the nerve is beginning, as this is always accompanied by a rapidly decreasing excitability.

After my first communication in 1898, in which I described 4 cases, Bregman published 2 cases and Huet 2 cases, and myself 8 new cases. Oppenheim has also seen a few without describing them in detail. Since 1903 I have seen 6 new cases. It is of interest to note that the symptom was not found in the following cases:

One patient with Graves's disease and paralysis of the rectus superior and levator palpebrae, 1 case of periodic oculo-motor paralysis, 3 cases of Weber disease, 3 cases of peripheral paralysis of very short duration, and 14 cases of tabetic chronic incomplete levator paralysis.

THE USE OF THE CRYPTOSCOPE IN OPERATIONS FOR RENAL CALCULI.

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Since the advent of radiography, nephrolithotomy has been performed much earlier in the history of the case than previously, as it is possible to demonstrate the existence of the stone by this method with absolute certainty, although clinical symptoms may be equivocal. While it is comparatively easy to localize by palpation a large calculus in the kidney which has been delivered on the loin, it is often a matter of great difficulty to feel a small calculus in the depths of a calyx or in the substance of the kidney. The kidney has almost always to be split from end to end to extract a calculus that cannot be palpated. This is inevitable in the case of a large calculus, and when the stone is small it is often necessary to mutilate the kidney even more severely before it can be found. The remedy is found in screening the kidney after it is delivered. Operations have been performed previously with the aid of the fluorescent screen, but there has hitherto been a risk of the introduction of sepsis in this procedure, and there has been the added disadvantage of the necessity of having the operating theatre darkened. The method suggested is free from both these objections.

The cryptoscope used consists of an aluminium cup, 3½ in. in diameter, at the bottom of which is placed the fluorescent screen, which is kept in position by a wire spring. The bottom of the cup being of aluminium is quite transparent to the rays. Over this cup a cylinder of aluminium slides with some friction. This bears at its upper end two tubular eye-pieces, and the arrangement of the cup and cylinder is such that the screen can be adjusted at a suitable distance from the eye of the individual operator. The screen is completely embedded in celluloid, and the whole apparatus consists of three pieces, all of which can be completely sterilized.

The kidney is exposed in the ordinary way, and brought out on to the loin. The tissues around the kidney are then pressed down from the organ by means of a special retractor, which is also made of aluminium. This consists of a tapered plate of aluminium, the centre of which is bent into the form of a semicircle. In the central portion of it a hole is made of sufficient size to allow the kidney to pass through it, and the retraction is made by an assistant pressing down the extremities. Before the operation is commenced, the tube is adjusted, so that it can readily be brought opposite the exposed kidney. When the organ has been delivered, the retractor is placed in position and the kidney examined directly by the cryptoscope. It is then possible to see the smallest fragment of calculus in the kidney and accurately to localize its position, and it is a matter of comparative simplicity to make a small incision over each calculus and to remove it.

While there is no doubt that calculi can be re-formed, it is equally certain that the greater number of so-called recurrences are due to the fact that a fragment has been left behind and has formed a nucleus for a new calculus. Although it may be impossible, even by this method to see the very small fragments, it is easy to see all but these.

The cases in which this method is particularly advantageous are those where a small single calculus is present, as it is only necessary to make a small incision to remove it instead of splitting the kidney from end to end, which has been the usual practice.

If a second operation has to be undertaken on a kidney for stone, it is usually necessary to decorticate the kidney in order to extract it. If only a small incision has been made, it is probable that the organ will be less matted into the tissues and delivery will be easier.

THE ORTHODIAGRAPH.

JOINT PAPER BY

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THE APPARATUS AND THEORY OF WORKING.

IT has been said, and we think well said, that "Science is measurement." True as this is when applied to things scientific, we venture to think it especially true in the application of the *x* rays to the determination of physiological and pathological intrathoracic conditions.

The instrument which we have the honour to bring to your notice is called the orthodiagraph, and we believe that we have been the earliest workers with this instrument in England.

In order to find out its precise value and to make our work as systematic as possible, we have first devoted ourselves to the study of conditions in health before proceeding to those which are pathological.

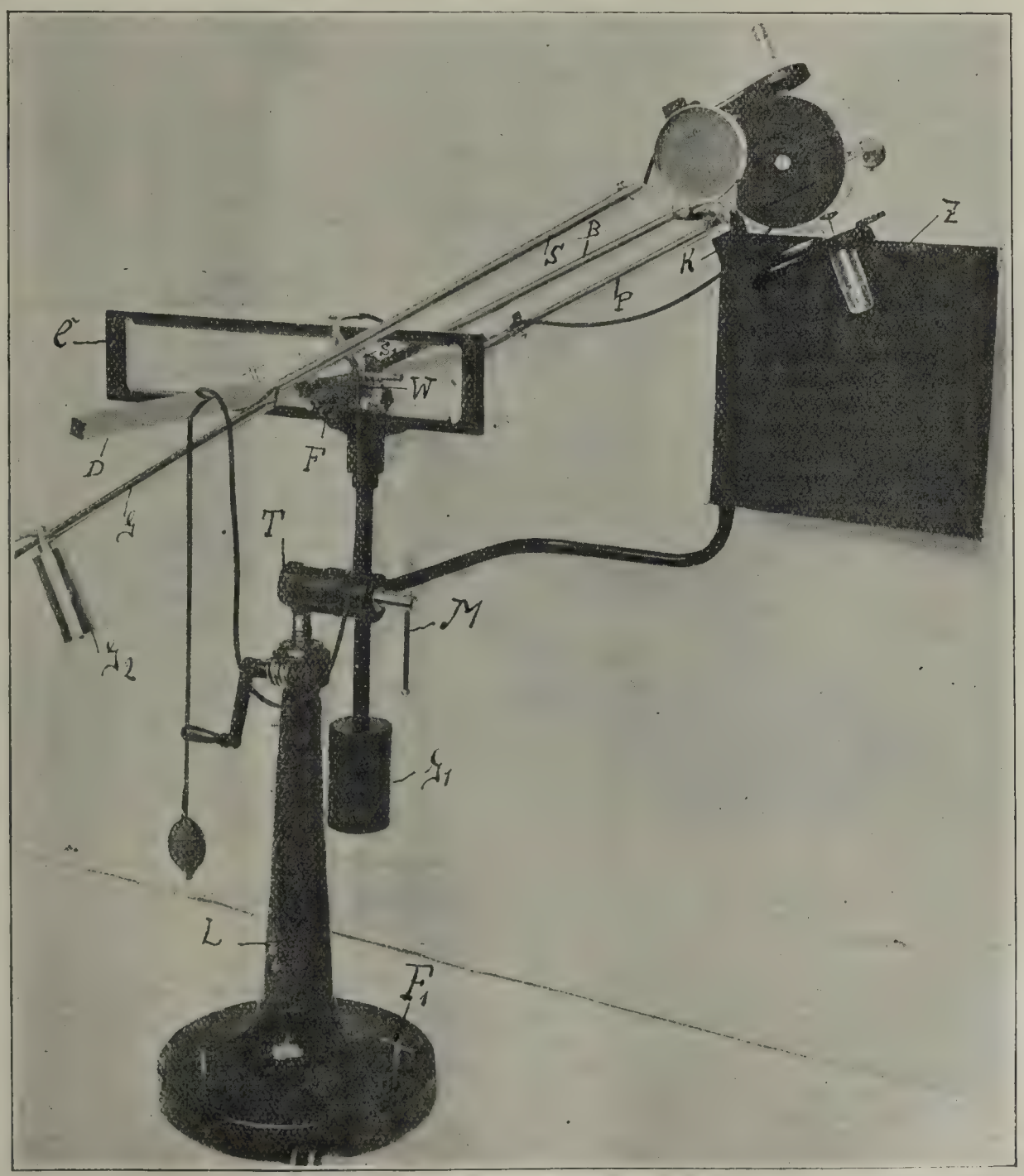

Fig. 1.—Orthodiagraph arranged vertically.

The orthodiagraph (Fig. 1) consists of a heavy iron column which can be accurately levelled by the levelling screws (F 1), and the plumb-line and upright which are seen at L. By a rack adjustment and handle, the rest of the instrument can be raised or lowered to the required height. At T there is a joint which allows the instrument to be turned into the horizontal position (Fig. 2); G 1 is the counterweight, and M is the clamping lever for this joint. At the top of the arm bearing the counterweight (G 1) is fixed an oblong frame with steel rails, on which the bar D runs backwards and forwards on ball bearings. On this bar D three other bars (S, B, and P) are clamped, at right angles to it and parallel to each other. These bars carry the screen, tube-holder, and diaphragm (K) and writing pencil (H) respectively; Z is the board on which the paper is fastened to take the tracing. The bar G is merely for the counterweight (G 2) to slide on in order to counterbalance the bars S, B, and P. The india-rubber ball and tube are attached to the writing bar. Thus it will be seen that the small metal dot in the middle of the screen, the centre of the aperture in the metal diaphragm, the middle of the anticathode, and the writing point are all in a mathematically straight line, and all move together in this line.

The theory of the working of the apparatus is as follows: When a source of light casts a shadow of an object on a plane surface distinction has to be made between central and parallel projection. The rays of the sun are a good instance of the latter, and the *x* rays as usually produced are included in the former category. In this case the image necessarily must be larger than the object. The heart shadow, for instance, in ordinary examination is somewhat exaggerated, and the further the object is from the tube the greater will be the magnification. Now, in the divergent pencil of rays emitted from the anticathode, there is one which strikes the screen perpendicularly. This is termed the "normal incident ray." In orthodiagraphic examination this normal ray is conducted round the entire circumference of the organ under investigation, and thus the exact size of the organ can be mapped out. A very legitimate question will be, What is your limit of accuracy, or how near can you get to the exact size of the object you wish to measure? This really depends (1) upon the absolute immobility of the patient during the time of examination, (2) upon the stationary or moving condition of the viscus, and (3) upon the construction of the apparatus with especial reference

to its rigidity. We have tested the accuracy of our measurements by various exact methods into which we do not propose now to enter. Suffice it to say that we are able to measure motionless objects to within the fraction of a millimetre, and moving objects with far greater approach to accuracy than can be attempted by any other means. This form of machine has a further advantage as regards accurate measurement in that the personal equation of the observer is to a large extent eliminated, since he does not draw on a screen attached to the patient's chest, which method is for many reasons unsatisfactory, but the record is made on a plane behind the tube which the investigator is unable to see.

Methods of Working and Results.

Before beginning to describe the orthodiagrams it may be well to say a few words as to how they are produced.

The first necessity is a perfectly dark room, conveniently warmed to a temperature of not less than 65° F., in order that shivering on the part of the individual under investigation may be avoided, since we find by experience that the least tendency to shivering induces changes of posture which spoil accurate results. The patient with chest uncovered is placed in the required position, either standing, sitting, or lying with his back resting against the canvas of the couch. Lateral movement is prevented by a vertical pad on each side, the upper edge of which touches the axilla, and which is then clamped to the framework of the couch. Care must be taken that the patient's muscles are not held stiffly, and that both shoulders are upon the same level. The centimetre-squared paper on which the tracing is to be taken is fixed to the board at the back of the instrument, so as to present a perfectly plane surface. The stylograph (Fig. 3) consists of a hollow reservoir filled with aniline dye, which is conducted along a small hollow tube by means of a cotton wick to the writing point. By pressing a pneumatic ball the point is caused to move forwards and make a small circular dot on the paper.

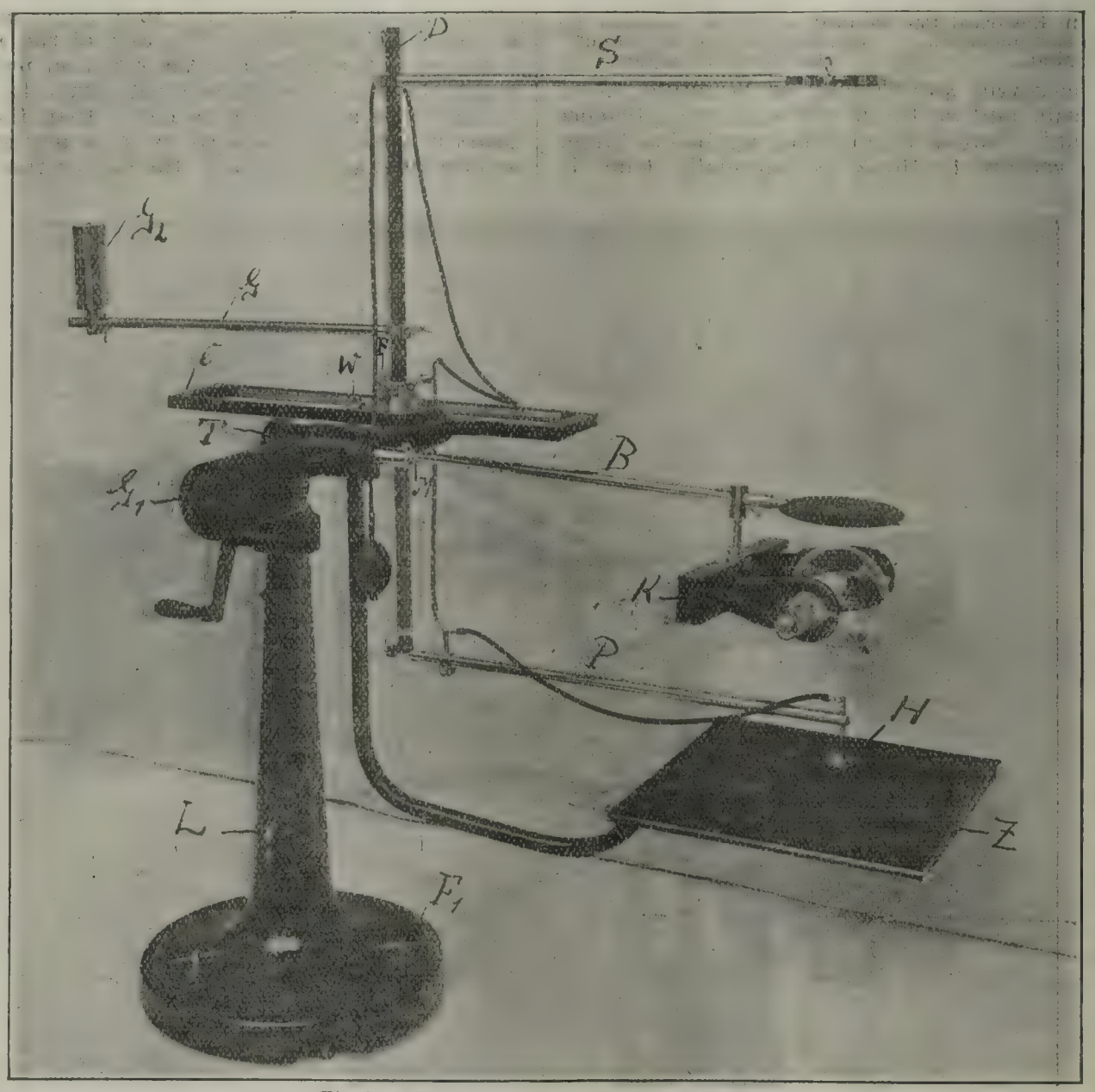

Fig. 2.—Orthodiagraph arranged horizontally.

The couch is so constructed that the patient can be swung without relative change of position to tube and screen from the vertical into the horizontal attitude. The time taken to make an orthodiagraphic tracing is about twenty minutes for each patient, by the end of which period a complete record can be obtained of cardiac and respiratory movements and the various changes in outline which the body and intrathoracic viscera present. Since, through the use of the metal indicator (Fig. 4) in mapping out landmarks on the surface and margins of the body, it is not necessary to fluoresce the tube for more than a portion of this time, great advantage is thereby experienced by patient and operator alike.

Turning next to the method of procedure, the first thing to do is to apply the metal indicator to certain points on the surface of the body which serve as landmarks on the orthodiagram. The chief landmarks which it is desirable to record are in order as follow: The mid-point of the suprasternal notch, the sterno-xiphoid articulation, the inner and outer ends of each clavicle, the infracostal angle in inspiration and expiration if desired, and the position of each nipple. After this the outline of the trunk is recorded.

[The paper was illustrated by many orthodiagrams, but unfortunately the centimetre squares on the paper were ruled in an orange-brown ink, which photographs black, rendering the tracings totally unsuitable for reproduction. One of the orthodiagrams showed the appearances presented by the heart and diaphragm in health; the movement of the diaphragm was seen in its four phases of ordinary and deep inspiration, and ordinary and deep expiration. The other represented a case of very early pulmonary tuberculosis affecting the left apex, and showing clearly two points which the authors considered of diagnostic importance.]

The first consists in the limitation of diaphragmatic movement on the affected side, the second in the diminution in the infracostal angle on the same side. Dr. Francis Williams of Boston, U.S.A., was the first to call the attention of the profession to the limitation of diaphragmatic movement which he had noticed in cases of early pulmonary tuberculosis. Allusion was also made to this point by one of us (H. Walsham) at the British Congress of Tuberculosis in 1901, but no detailed measurements were taken in this country till 1903, when one of us (J. F. H. Dally) published the results of a prolonged investigation[1] based on careful measurement of a large number of cases at the City of London Chest Hospital, which confirmed the observations of Williams, and in our belief established the fact, since restated by

many others, that "unilateral limitation of diaphragmatic movement is often the earliest sign of pulmonary tuberculosis." In the absence of pleurisy, and possibly of some

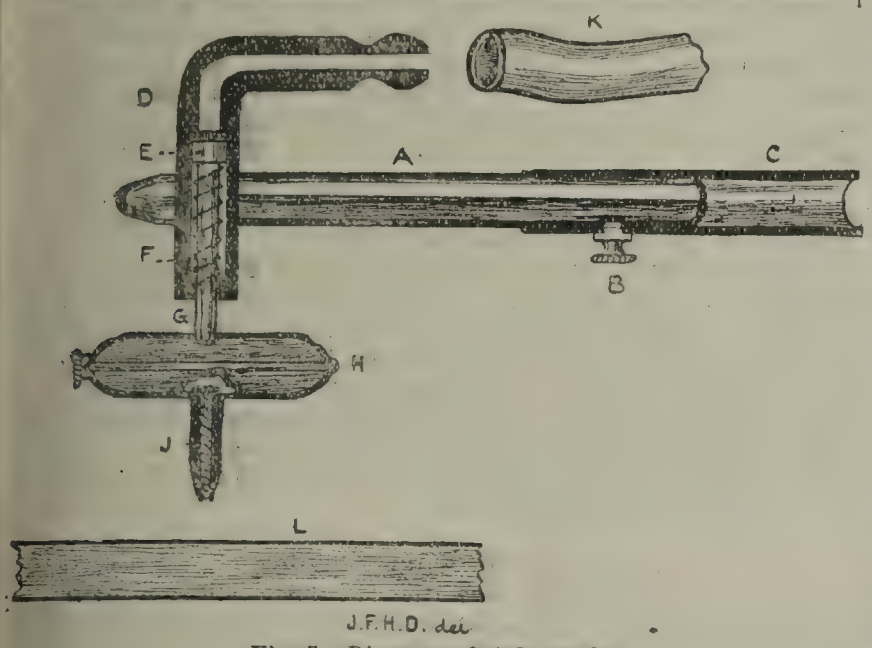

Fig. 3.—Diagram of stylograph.

compensatory lessening of diaphragmatic movement, which appears temporarily to take place in correspondence with increased upper costal respiration on the same side

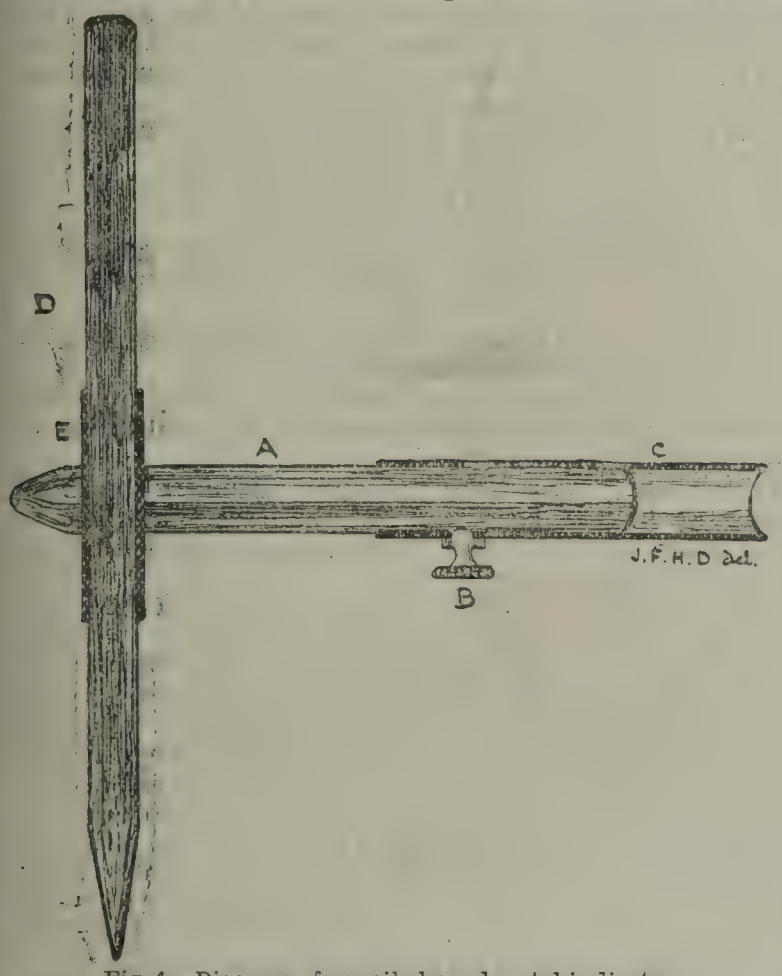

Fig. 4.—Diagram of pencil-shaped metal indicator.

in healthy people, a point which we are now investigating, the presence of this diaphragm sign arouses grave suspicions that the tuberculous process is already active.

The President said that there was no doubt that the orthodiagrah was coming into widespread use, and that it would not be very long before physicians would insist on its employment in the hospitals. Therefore the management of the apparatus was a thing they all had to learn in order to show physicians exactly what they wished to be shown in connexion with dilatation and other troubles of the heart.

Reference.
1 *Lancet*, June 27th, 1903.

THE USE OF X RAYS, FROM THE POINT OF VIEW OF THE GENERAL PRACTITIONER.

By Ellis Pearson, F.R.C.S.Edin.,
Honorary Surgeon, Bideford Infirmary.

The history of medical science has ever been one of continued progress and improvement, and in no period of its history has more advance been made than in the last fifty years, which have seen the introduction as common practice of chloroform and ether, serumtherapy, sanatorium treatment of consumption, and antiseptic surgery, and it is not astonishing that with this continual advance in every branch of his profession the practitioner of the present day finds that, above all things, he must be up-to-date in all that is going on in the progress of medicine, and that, if he cannot be a specialist in every medical subject, he must at least know who is and what the latest methods of treatment are. I suppose that there could not be found at the present moment any medical man who did not practise aseptic surgery or who does not know its principles, and it is just as important that he should make himself as conversant with all that is good in electro-therapeutics as he has done in the other departments of medicine and surgery. The treatment of disease by electricity is, of course, by no means new, but the progress and advancement that has been made in this department of medical science, and which began with Professor Roentgen's famous discovery in 1895, has been almost on a level with that of surgery; and that both the specialist and the general practitioner of to-day have had their interest not only mildly but keenly aroused in the subject is shown, I think, by the fact that at this, the seventy-fifth annual meeting of the British Medical Association, we are holding a Section entirely devoted to electrical subjects.

There is, however, with the majority of the profession at the present time no very accurate knowledge of the many uses to which *x* rays may be applied, and while some, no doubt, may fail to appreciate the limitations of their use, the majority at present quite under-estimate their value. Medical men are still very much in the dark as to the progress that has been made in this department of electro-therapeutics, and their knowledge would seem to be confined to the idea that *x* rays may be of use in locating a foreign body, or in diagnosing a fracture, and that therapeutically they have occasionally been found of use in treating lupus and rodent ulcer. That such a meagre opinion of its uses should exist at the present time is due to more than one cause. It is due, in the first place, to a certain diffidence that has always existed in the medical mind towards electricity in general, and this is accentuated by the failure of the majority to keep themselves abreast of the times in this particular subject. The second cause is no doubt due to the fact that a certain amount of bad repute has become attached to this department of medicine, and for this reason, that medical men have not gone to the right source for their information as to the various uses of the more modern methods of electrical treatment.

Nothing lends itself more to the hand of the charlatan and the quack than electricity, and the public, through ignorance, are still more susceptible to beguilement in this method of treatment than in any other, and as a consequence the use of *x* rays, both as a therapeutic and a diagnostic agent, has been exploited to an enormous extent. It is to the credit of the British Electro-Therapeutic Society that it has done much to keep this abuse in check, and has helped to prove the legitimate uses to which *x* rays may be put.

(*a*) X Rays as a Diagnostic Agent.

1. *Fractures and Dislocations.*—I believe at the present day it is necessary for every medical man to bring a fair and reasonable amount of skill and knowledge to bear in dealing with and treating his patient. The general public have been somehow or other educated to the idea that the diagnosis and setting of a fracture or dislocation is a very simple matter, and that if by any chance a crooked limb or an immovable or partially immovable joint results, the blame is without doubt to be attached to the surgeon, and by no means to the injury they received in the first place, and as a consequence of this idea the surgeon who sets a limb or reduces a dislocation and gets excellent results receives no credit, but if the results are not eminently satisfactory he does not fail to receive the blame. With such a certain method of improving, or at least confirming, our diagnosis as to the nature of a fracture or dislocation as we have in *x* rays, it would appear that if it is available, we will be well advised to at least offer its use in all but the most simple of these injuries, so that at any future date, if the result of our treatment be found unsatis-

factory, it can still be said of us that we brought not only the best of our skill to bear on the case, but also called to our aid the very latest and most modern diagnostic agent we at present possess.

The taking of a skiagram correctly in these cases, so that the parts may be viewed accurately and not distorted, is by no means as simple a matter as some men would seem to suppose, and the surgeon who wishes to get accurate knowledge of the lesion in question must employ some one whose knowledge of anatomy, and knowledge of the displacements that occur in fractures and dislocations, is equal to his own, and if the taking of a skiagram under these circumstances is not easy, it is simple in comparison with the correct reading of the shadows shown. This reading, to be correct, also entails accurate knowledge of the anatomy of the parts in question, and much of the blame that has been laid to *x* rays has been due to the fact that the negative was produced by an operator totally ignorant of anatomy, and the shadows interpreted by one equally unskilled in the art of reading them.

2. *In diseases of bones and joints* *x* rays have as great a field of usefulness as in cases of fracture and dislocation, and their aid in this branch of surgery will do much to render diagnosis more exact, and treatment in consequence more successful. The differential diagnosis between tuberculous osteitis, periostitis, sarcoma, and exostosis of bone is often very difficult, and the use of *x* rays here becomes almost a necessity, so great is the importance of an early and correct diagnosis. The contrast between the dense shadow, with a well-defined border, thrown by an exostosis, with the shadow, with irregularities of light and shade, thrown by an endosteal sarcoma, is very marked, and no difficulty is experienced in at once making a correct diagnosis between the two conditions. In periostitis *x* rays at once point out that the enlargement springs from the periosteum; pus, if present, may be detected, being less opaque to the rays; it throws a lighter shadow between the thickened periosteum on the one side and the dark outline of the bone itself on the other. The same is true of tuberculous osteitis; abscess, if present, is easily detected, and if there be necrosed bone the irregular areas of lesser density corresponding to the same may be readily noted. It is not too much to say that if we are in doubt of our diagnosis in any disease of either bones or joints, we are certain to receive very material assistance if we use *x* rays.

3. *The differential diagnosis* also between gout and rheumatoid arthritis is often very difficult, and the resultant treatment must be bad if one be mistaken for the other. In gout the deposit of uric acid salts in the articular cartilages and ligaments of the joints (especially those salts having the urates of calcium and magnesium in their combination) throw a shadow of considerable density on the plate, a shadow which is characteristic of the disease. In rheumatoid arthritis the changes seen in the articular surfaces of the joints are entirely different from those seen in gout: the heads of the phalangeal and metacarpal bones have often been considerably eroded, the outlines of the bone, which normally would be clear and distinct, are now blurred and more translucent, and the erosions show up as a punched-out cavity, in direct contradistinction to the deposit shown on the joint in gout.

4. *In the chest* the employment of *x* rays as a diagnostic agent is most promising. We have in the chest three structures each less opaque to the rays than the other; the bones throw their usual dense shadow; the heart less dense than the bone, but more dense than the lung, throwing a well-defined shadow between the two. Valuable skiagrams can now be taken of the heart and any changes in size noted and measured by means of the orthodiagraph; aneurysm of the aorta can be easily detected. In the lung, consolidations, pneumonic or phthisical, and effusions, serous or purulent, are easily recognizable, the greater density of a consolidation or the lesser density of a cavity making it possible to differentiate between the two. The detection of small areas of consolidation in the apex of a lung, combined with restricted movements of the diaphragm on the same side when viewed with the fluorescent screen, make it possible to diagnose early phthisis before the stethoscope or percussion note convey that impression to us.

5. *In the abdomen* the use of *x* rays is chiefly confined to the diagnosis of stone in the urinary tract, and I think it may safely be claimed here that if an exhaustive *x*-ray examination failed to detect a stone, it would be an unwise surgeon who insisted on operating for that complaint. A good skiagram will show the number, size, and position of stones if they exist, but the patient must be properly prepared, and the whole of the urinary tract on both sides examined, and a control skiagram must also be taken at an interval of two or three days, in order that scybalous masses in the bowels should not cast shadows on the plate, and that calcified mesenteric glands and appendicular concretions may be eliminated.

6. *Foreign Bodies*.—It is hardly necessary to mention these, the use of *x* rays in this respect being so well known by all, but it may not be so generally known that not only can the shadows cast by the foreign bodies be seen, but the position of the body itself can now be very accurately located. It is interesting to note that these cases in which *x* rays have demonstrated their usefulness are all cases in which a diagnosis by the ordinary methods at our disposal has been difficult and uncertain.

(*b*) *X* RAYS IN THERAPEUTICS.

A general idea seems to exist that the use of *x* rays as a therapeutic agent is entirely empirical, and that practically we have no definite indications for its use. This charge is entirely erroneous; many experiments of the clinical effects of *x* rays have been made, and microscopic observations of tissues under their influence have been studied, and have furnished us with many definite indications for their use. Practically all cases in which they have been used successfully have been in keeping with our present knowledge of these effects on various tissues.

1. *X* rays cause atrophy of the appendages of the skin.
2. They stimulate the metabolism of tissues.
3. They destroy certain pathological tissues.
4. They possess marked anodyne effects.
5. The possibility of their possessing some action on controlling or altering an opsonic index remains yet to be proved.
6. Generally it is held that they possess no very definite action in destroying micro organisms.

A therapeutic agent which offers so many important indications for its use must possess great possibilities of application.

Tuberculous diseases have perhaps responded the most favourably to *x* rays, in spite of the fact that there is no evidence to show that they possess any action in destroying tubercle bacilli.

Lupus vulgaris is without doubt the lesion in the treatment of which *x* rays have had their most brilliant results, and it is interesting to note that lupus was probably the first cutaneous disease for which *x* rays were used as a therapeutic agent, their use as such following very quickly on the notable successes obtained by the late Professor Finsen. The result of *x*-ray treatment in this disease is now well established. Not only do cases of lupus respond most favourably to *x* rays, but the resultant cosmetic effects are excellent and incomparably better than those succeeding treatment by scraping or caustics. Recurrence is not so common and is easily cured when it does occur, and there is no pain from the treatment.

Tuberculous glands respond most favourably to this method of treatment; masses of glands matted together tend to become free and discrete, and to diminish in size, until in many cases nothing but small fibrous nodules remain. Glands which have broken down, and old sinuses which seem to defy treatment, often respond most readily to *x* rays.

Tuberculous joints also respond favourably; effusions have disappeared, pain has been relieved, and without joint movement being interfered with, and although many cases have apparently not improved, it would seem advisable—so often do these cases defy all methods—at least to give our patient the opportunity of trying a treatment which can have no bad effect, and which is free from discomfort and pain.

Phthisis.—The action of *x* rays on tuberculous lesions in general has been so marked, that it is disappointing to find that its results in the treatment of pulmonary tuberculosis are at present not too satisfactory; there are, however, cases on record in which it has been tried, and which have been improved by its use, the sputum being diminished in quantity, weight being gained, and the

general condition improved. It is certainly to be hoped that this method of treatment in combination with others may yet do much to relieve those suffering from this distressing malady.

X rays, in consequence of their action in producing atrophy of the appendages of the skin, and in stimulating the metabolism of the tissues, have been found most useful in a variety of skin diseases, and especially in those obstinate and intractable to treatment—psoriasis, chronic eczema, acne, sycosis, and tinea tonsurans being those which respond most favourably. In ringworm especially are x rays most valuable, and it is possible at the present time, so accurate is our instrumentation, entirely to remove the hair from any patch at one sitting, and this without the risk of a permanent alopecia resulting, or of the skin being burnt.

Carcinoma.—It has never been definitely stated that x rays were "a cure for cancer"; and I think that those interested in this method of treatment are to be congratulated on the very guarded opinion they have always expressed as to its use in this disease.

Any treatment that exerts a beneficial influence, no matter how slight, on a cancerous growth is well worth our best consideration. Much has been hoped for from the treatment of cancer by x rays, and very much has been achieved. The greatest successes that have been recorded by their use have been in the cutaneous carcinoma, and there is no doubt that many cases of epithelioma and rodent ulcer (if we may class that disease with cutaneous cancer) have not only been symptomatically cured, but have remained so for several years. The resultant cosmetic effects by this method of treatment are excellent, and incomparably better than those by operation. The results of treatment of cancer other than cutaneous have not been so successful, and, although cures have apparently resulted from their use, recurrence has without doubt occurred in a number of cases. At the present day I believe that all cases of carcinoma are best treated by early and thorough operation. Much benefit will result, however, and less likelihood of recurrence be possible if removal be followed by a course of x rays from time to time. In all inoperable cases much benefit will result from their use, and even in the worst cases patients may be relieved from distressing ulceration and foul discharges, and in practically all cases from pain. I know of no treatment at the present time, save that by operation, that holds out so much prospect of relief and lengthening of days as that by x rays, and the two combined are, I think, the most sound treatment at present available.

Exophthalmic Goître.—Many cases of Graves's disease have been treated by x rays, and in the majority of cases with permanent benefit to the patient. The radiation appears to exert an influence by which a lesion of the glandular epithelium takes place, and which produces some alteration in either the quantity or quality of the internal secretion. The tachycardia and the nervous symptoms are the first to respond, and the pulse rate is often reduced from 160 to 80 or 90 after but few radiations. The nervous symptoms considerably abate. The gland itself is diminished in size, and a marked improvement is noticed, as a rule, in the exophthalmos.

Leukaemia.—In this disease x rays have a very decided action. The method of treatment has been to apply the rays to the region of the spleen and to the spine and joints, those places where red marrow is most abundant. The white cells at first slightly increase in number, and a pyrexial condition is observed, but this is soon followed by a fall in the leucocytes, which in many instances have been reduced from three or four hundred thousand to ten thousand. This is accompanied by an increase in the red blood corpuscles even to the extent of one-third of the number present. The spleen becomes more normal in size, albuminuria and oedema disappear, the appetite improves, the body weight is increased, and a feeling of well-being is established. Relapses have not been infrequent, but leukaemia so often defies all our efforts that we are justified in giving a treatment that invariably tends to relieve and improve this condition.

My object in this paper has simply been to place before those who so far have not considered the subject some idea of the help that may be derived both in diagnosis and therapeutics from the use of x rays. I have but mentioned the more common cases in which they have demonstrated their usefulness, but the list, though far from complete, is, I think, a fairly comprehensive one. The greatest value of this method of treatment lies in the fact that it is applicable more especially to certain classes of disease which hitherto have been the most obstinate we have had to deal with, and which in fact have frequently defied all known methods of treatment. So accurate at the present day is the x-ray apparatus, and so much improved our knowledge of its power, that the risks of burns or ill results from its use are practically non-existent, and the treatment itself being painless and producing excellent cosmetic effects, helps to place it in a permanent position as one of our most necessary aids to diagnosis and one of our most useful therapeutic agents.

DEMONSTRATIONS.

During the course of the session several lantern exhibitions were given. They included a demonstration by the President of some radiographic slides. One of these represented the lumbar region in which a shadow simulated the appearance of renal calculi. A small wart-like growth was found on the skin of the patient's back, and in order to exclude the possibility of interference a piece of lead wire was wrapped round this growth. The subsequent radiograph proved that the supposed stone was nothing more than the shadow of the wart, and, of course, had nothing to do with the kidney. It showed that a small superficial growth of soft tissue in contact with the plate might give a shadow out of all proportion to its density, and so serve as a pitfall in the diagnosis of renal calculi. A case of collapsed lung treated by Dr. Fawcett, of Guy's Hospital, was shown by Mr. Shenton. Mr. C. R. C. Lyster showed two slides of encysted calculi in each kidney, the remarkable thing about them being their high position in the lumbar region.

RESOLUTION.

The work concluded with the passage of some resolutions, one of which was a warmly-worded vote of thanks to Dr. Lewis Jones, and the other an acknowledgement of the courtesy of the British Medical Association in having constituted an Electrical Section. This ran as follows:

> The members attending the Electrical Section have greatly appreciated the action of the British Medical Association in providing an Electrical Section at the annual meeting. They believe that the Electrical Section has been the means of advancing the knowledge of electro-therapeutics, and express the hope that a Section of Electricity may be established at future annual meetings of the British Medical Association.

Fat Assimilation and Mucous Colitis.—In a recent communication (*Bio-Chemical Journal*, vol. ii, No. 9, page 395) Dr. Owen T. Williams, of Liverpool, has recorded the results of some interesting observations on the nature of intestinal sand, which he finds commonly to consist of calcium salts; he attributes their formation to the presence of inorganic salts, such as those of iron calcium and phosphoric acid excreted by the intestinal mucous membrane, which enter into combination with the saturated fatty acids of the food to form insoluble compounds absorbed with difficulty. If these concretions are formed in the appendix they may set up local inflammation—appendicitis—or in the colon they may cause catarrh with colicky pains and discharges of mucus. The presence of the sand is not always obvious, but can be demonstrated by washing the stools with running water in a muslin bag. The fatty acids present in these circumstances, such as palmitic and stearic, are saturated, and it is well known that these fats, when given alone, are only absorbed in small quantities; but when mixed with unsaturated fatty acids, such as oleic, they are absorbed in a higher degree. This suggests that the administration of olive oil might be of value in aiding the absorption of these insoluble compounds of the saturated fatty acids.

The Department of Health of the city of Chicago has put into effect this term a more efficient system of medical inspection of public schools. The city has been divided into eleven districts, each with a medical inspector in charge and each with nine subdivisions under the direction of a school medical inspector. Each district medical inspector will direct the work of nine school medical inspectors, and will be held responsible for the work in his district. The hundred school medical inspectors will visit practically every school in the city, public and parochial, every school day throughout the year, and must do any and all things calculated to safeguard the health of the pupils and incidentally the other members of the family at home.

SECTION OF STATE MEDICINE.

ARTHUR NEWSHOLME, M.D., M.O.H. Brighton, President.

A DISCUSSION ON THE CO-ORDINATION OF THE PUBLIC MEDICAL SERVICES.

OPENING PAPER.

ARTHUR NEWSHOLME, M.D., F.R.C.P.Lond.,
President of the Section, and Medical Officer of Health, Brighton; late Examiner in State Medicine, University of London, and in Preventive Medicine, University of Oxford.

THE chief triumphs of medicine have been in the prevention of disease. In pure medicine this is pre-eminently true; and the brilliant successes of surgery would have been impracticable had not the discoveries of Pasteur and Lister given the means of controlling septic infection. I have no wish to minimize the importance and value of rational therapeutics and of regimen adapted to each individual illness, or of the possibilities of alleviating suffering and of postponing or evading the more serious consequences of pathological conditions; but, during the last fifty years, medical men have found their most successful sphere of utility in diminishing the need for their services in the cure and palliation of disease.

It is unnecessary to quote instances. Every germborne disease is a disease which, possibly at least, is entirely preventable. Some such diseases have been prevented or even extinguished by hygienic measures or by vaccination. If other diseases, having a similar origin, have not been controlled with success, it is either because our knowledge of the life-history of the specific microbe is imperfect or because we are not able or prepared to carry out consistently and fully the measures needed to prevent the spread of infection.

THE SCOPE OF PREVENTIVE MEDICINE

each year becomes wider. In this country it has already concerned itself not only with the prevention of infection, but also with the removal of the conditions favouring infection, with the soil as well as with the seed. I know of no ground, in either reason or expediency, why preventive medicine should be restricted, as it is in the main at present, to the recognized infective diseases. Its proper, and, as I believe, its ultimate scope must include any disease or stage of a disease which can be prevented.

The line between preventable and non-preventable diseases cannot be drawn between diseases known to be and not known to be caused by specific contagia. This would exclude improperly from the category of preventable diseases the results of accident and alcoholism, the whole range of diseases due to dietetic errors, many industrial diseases, a large part of infant mortality, and of disease in children under 5 years of age, and a large number of other diseases. It would partially exclude dental diseases, which are probably responsible for a large number of digestive and other diseases.

Nor can the line between preventable and non-preventable diseases be drawn between diseases of known and of unknown causation. We have, for instance, little knowledge of the causation of arterio-sclerosis and of chronic renal disease; but the working efficiency of patients thus suffering may be prolonged indefinitely by suitable treatment. Again, although the causation of cancer is still wrapt in mystery, treatment by the early removal of diseased parts entirely prevents or retards the later stages of the disease. These two illustrations might be supplemented by quoting the obvious advantages arising from prompt and intelligent treatment in diseases of the digestive and respiratory organs. So far as the common non-infectious diseases are concerned, it may be taken as a general rule that their severity varies commonly according to the delay which occurs before they are treated, and the extent to which treatment is insufficient. Thus for practical purposes a non-infectious disease in its early stage must often be regarded as the cause of a more severe later stage, preventable by the prompt treatment of the early stage. The seriousness of a disease, the fact that palliation so often has to take the place of cure, and the consequent invalidity and expense to the patient, his family, and the community, are often due to the failure to secure efficient medical aid at an early stage of disease as a preventive measure. Rickets and convulsions in children, errors of dentition, conditions leading to appendicitis, bronchitis, and mental diseases are among the many instances that might be adduced of neglected early treatment followed by invalidity.

It is clear, therefore, that preventive medicine embraces in its true scope not only all the acute and chronic infective diseases, and the many non-infective diseases which can be prevented by personal hygiene, but also the early and systematic treatment of many diseases the early treatment of which prevents more serious and obstinate after-conditions. And it is clear, moreover, that if sickness is to be diminished, and the health of the community improved to the fullest extent, it must be by the application of the principles of preventive medicine on the wider basis laid down in the preceding remarks.

I have attempted a rough classification of the proportional mortality caused in England and Wales in 1905 by each of the chief groups of diseases:

Out of 100 Total Deaths from all Causes:

Caused by:	Per Cent.
Acute notifiable infectious diseases ...	2.39
Acute non-notifiable infectious diseases, including pneumonia and rheumatic fever	18.58
Chronic infective diseases, including tuberculosis	11.21
Accident	2.99
Preventable non-infective diseases* ...	3.31
Partially preventable non-infective diseases†	17.63
All other diseases	43.89
	100.00

* Including scurvy, alcoholism, drug diseases, industrial lead, etc., poisoning, rickets, teething, general paralysis of the insane, otitis and mastoid disease, laryngitis, cirrhosis of the liver, caries and necrosis, fibroid disease of the lungs, hernia.

† Including bronchitis, cancer, convulsions, chronic Bright's disease.

There can be little doubt that the list of preventable diseases will receive extension rapidly, and that a much larger proportion of total diseases than is indicated above would be prevented by early and efficient treatment.

The community as well as the individual patient is interested in this wider application of the principles of preventive medicine. This is obviously so in the case of infective diseases, and the community may be said to have accepted responsibility for them in theory. That in practice it has not done so completely is indicated sufficiently by the meagre total of the effort hitherto devoted to direct measures against tuberculosis, and by the almost complete neglect of measures against the devastating effects of venereal diseases. It may be stated with certainty that phthisis causes not less than one-fourth of the total loss of lives, and not less than one-third of the total loss of time due to all diseases occurring in the thirty most vigorous years of working life, from 15 to 45; and although the persistent racial pollution and disease due to syphilis cannot be stated statistically with any approach to accuracy, there can be no doubt that it is one of the most relentless agents of destruction in our midst. The medical profession, to its honour, in season and out of season, has taught the means of preventing non-infective as well as infective diseases by personal hygiene; but the community has, speaking generally, accepted little or no responsibility for the prevention of the former. This is the more notable because there is no dispute as to the fact that in money, as well as in the moral loss implied in the neglect to prevent avoidable suffering, the community has to pay the bill for inefficiency and invalidity, whether caused by infective or non-infective disease, or by evil conditions unassociated with recognizable disease.

I am, in fact, in no degree asserting a new or a doubtful doctrine when I assume that the community has a direct interest in diminishing and preventing disease of all kinds. It has, doubtless, a special interest in preventing communicable diseases, of which one case may breed many; but it has no less certainly a great interest in preventing disease which may not be communicable, but which will increase the common burden. It is unnecessary to argue here the vexed question as to the relation between poverty and disease. Beyond doubt each may,

in any practical sense of the word, cause the other, but I record my own opinion that disease much oftener causes poverty than poverty disease. Poverty causes less disease through actual privation than it causes through uncleanliness and crowding, through ignorance of the ways and means that are available even to the poverty-stricken, and often through alcoholism. It is, of course, immensely more difficult for the poor than for the comfortably circumstanced to avoid these evils. That poverty and disease work on each other in a vicious circle is obvious. But this circle has the quality of its defect, for the circle can be broken at any point; and the practical problem to which I wish specially to direct your consideration is that of the means by which it might be possible to stop people from becoming poor by preventing them from becoming sick. I do not say that this is the only way in which the problem of poverty can and ought to be attacked. I submit, however, that it is a way which has not received the attention that it deserves, and that this method will yield a higher and a quicker return for the energy and money required than others which at present are more in the public eye.

In saying this I do not lose sight of the fear entertained by some that more prompt and improved medical aid would increase the total amount of invalidity in the community. This fear is based on insufficient recognition of the large number of non-fatal cases which occur to every fatal case. Even under existent conditions no common disease has a fatality of 100 per cent. The net result of providing earlier and more efficient medical treatment would be to promote every class in the community that is affected by these measures to a higher platform of health conditions. It is true that those who under a less efficient system of medical aid would die may now survive, in some cases as invalids. It is, however, equally established by medical experience that, so far as a large mass of sickness is concerned, its gravity increases geometrically, and not in a simple ratio with the time allowed to lapse before treatment, and the insufficiency of the treatment when it is administered. It follows that the numerically larger class of invalids surviving under present conditions must by timely and efficient treatment be promoted to a preponderant extent from the class of invalids to that of efficient citizens.

What is being Done Officially?

Some light is thrown on possible developments by what the community has already done, partly by official and partly by voluntary agencies. It may be convenient here to recite some of the chief elements of the mechanism for medical treatment. There is in the first instance the entire army of private practitioners; and although an increasing amount of medical practice is passing from their hands, they remain collectively the most numerous branch of the medical services at the disposal of the community. To their activities the community as such contributes nothing. Among the agencies which wholly or in part are provided by the community, or by sections of it other than individual patients, the following may be named:

1. Each local authority provides accommodation and treatment for some at least of the acute infectious diseases, including disinfection, the medical inspection of contacts, etc.

2. In a large proportion of districts the medical officer of health, in addition to inspecting "contacts," gives his services as a gratuitous consultant in infectious diseases.

3. Many local authorities provide antitoxin for the prophylaxis and for the treatment of cases of diphtheria at home.

4. Some local authorities possess and exercise the power to send out municipal nurses to nurse cases of any infectious disease at home.

5. Several local authorities have undertaken the municipal training and treatment of cases of pulmonary tuberculosis; and a larger number provide spit-bottles and handkerchiefs and give instructions to patients.

6. A large proportion of the total local authorities provide gratuitous facilities for the bacteriological diagnosis of certain infectious diseases, including pulmonary tuberculosis.

7. The Midwives Act has rendered necessary the payment of medical men sent for by midwives, and many local authorities already have accepted this responsibility, and pay the fees of doctors thus called in by midwives.

8. Under the Cleansing of Persons Act, every local authority is empowered to disinfect and cleanse the persons and apparel of any one infested with vermin; no implication of pauperization being involved.

9. In at least one town, Barry, a general hospital is supported out of the rates.

10. The State, through the Boards of Guardians, provides gratuitous vaccination for all willing to have it.

11. Medical relief is given to the poor by Boards of Guardians without in theory implying that the recipient becomes a pauper. In actual practice such relief is difficult to obtain and is often dreaded by the poor.

12. Workhouse infirmaries are steadily becoming more and more the hospitals of the State for all chronic, protracted, and septic cases, which are not suitable for treatment in general and special voluntary hospitals.

13. School doctors are now being employed by Education Committees, and in certain branches of medical work they have given complete medical attendance, excepting the supply of drugs and appliances. There can be little doubt that in some conditions, for example, eye defects and ringworm, the means of treatment will also need to be provided in certain cases, as has already been done in Croydon for ringworm.

14. School nurses find in their attention to cases, for instance of ringworm and impetigo, among scholars, that instructions are often not carried out intelligently unless the nurse actually helps in applying the remedies, and this is commonly done.

15. Municipal milk dépôts, when most efficient, have attached to them free medical consultations, and it may be hoped that an extension of such consultations will go far towards obviating the necessity for

16. The giving of diarrhoea mixtures to all applicants, which is one of the oldest forms of municipal medical aid.

The preceding list probably does not exhaust the varieties of medical aid given under the aegis of our local authorities; but it suffices to indicate how far we have travelled in providing medical aid, in large measure irrespective of any test of poverty.

It is noteworthy that the distinction between prevention and treatment has never been maintained. A sanitary authority having provided hospital accommodation does not content itself with segregating the patients, but provides for their efficient treatment. Treatment and prevention are inseparable not only in the case of acute infectious diseases like enteric fever, small-pox, and diphtheria, but also in chronic infective diseases like phthisis and syphilis. Efficient nursing in enteric fever, for instance, is not only the best means of aiding the patient's recovery, but of preventing the spread of infection. In phthisis the same conditions arise; and more or less this is true of all diseases. In non-communicable diseases the treatment of early symptoms prevents more serious later symptoms. In a word, in most instances prevention and treatment are essentially complementary.

Putting together the municipal, parochial, and the voluntary agencies for the treatment of disease, it may be said safely that, while valuable preventive and curative work is done by every medical practitioner, statistics demonstrate that an increasing proportion of total sickness is being treated in voluntary and in State or rate-supported institutions. The change in this respect which has occurred during the last thirty-five years is shown, among other ways, by the altered proportion of the total deaths from all causes now occurring in public hospitals:

Percentage of Total Deaths in Public Institutions.

	England and Wales.		London.	
	1866-70.	1901-03.	1866-70.	1901-04.
Workhouses and Workhouse Infirmaries ...	5.7	8.5	9.1	17.7
M.A.B. Hospitals, London	—	—	—	2.2
Other Hospitals ...	1.9	5.9	6.7	12.2
Lunatic Asylums ...	0.7	1.8	0.5	2.8
Total Institutions ...	8.3	16.2	16.3	34.9

One out of six persons in the entire country and one out of three in London dies in a public institution. Probably the proportion of cases treated may not be precisely the same, but it is evident that at the present time a large proportion of the total sickness in the country is treated by medical officials as distinguished from private medical practitioners. It will be noted that in London over one-third of the hospital deaths occur in voluntary hospitals.

In 1877[1] it is stated that 1 in 4 of the population of London received free medical relief. In 1894 the proportion had become 1 in 2.5, and in 1904 it was 1 in 2.1.[2] The proportion in other towns varied from 1 in 1.3 in Dublin, 1 in 1.8 in Newcastle, and 1 in 2.7 in Edinburgh, to 1 in 4.9 in Glasgow, 1 in 7.3 in Cardiff, and 1 in 14.3 in Portsmouth. These figures must mean much confusion between patients and attendances, but however great allowance be made for such confusion, the picture of institutional and semi-official treatment of sickness still revealed is very striking. There can be little wonder that private practitioners are demanding hospital reform, and are casting about for practicable schemes for securing it.

It is, therefore, unquestionable that patients are being provided with medical treatment to a rapidly increasing extent at the expense of the State, the rates, or some other non-personal organization, and it becomes important to consider whether the expense which is being transferred or incurred in this way gives a satisfactory return. The exacting but necessary test of what is satisfactory is that the return should be the maximum possible. The means that are at the disposal of the medical services are strictly limited, and it is of direct importance to their efficiency that no part of them shall be wasted or spent to less than the utmost effect producible by it. Judged by this standard, and whether viewed from the standpoint of patients, of the medical practitioner, or of the public health, the present state of medical service must be condemned as inefficient. Unhappily a far less exacting standard would exhibit its insufficiency and its extravagance.

Doctors have never been doing so much and such good work on behalf of the public as at present; but this work is being done under conditions involving the petty worries of fee-collecting, the stress of competitive commercialism, the strain of work which for most doctors is excessive in order to secure a "living wage," and the "sweating" of the medical profession by hospitals, friendly societies, and similar organizations. The doctor earning his livelihood among the artisan and labouring classes not only has to do excessive work under harassing conditions without leisure, but he is in a large measure cut off from consultation with doctors having special knowledge in the very considerable proportion of complicated cases which come under his care. To the patient in the same classes the conditions are equally unsatisfactory. However willing he may be to pay the doctor's fee—which may be as low as 1s. 6d., or even 6d. —his limited means necessitate delay in obtaining medical aid until compelled by urgent symptoms, and necessitate dispensing with this aid at the earliest possible moment. He realizes also the absence of skilled consultation in difficult cases, and that by attending at a hospital to which his employer has subscribed, or to which he in his workshop has given his penny a week, he may have an additional chance of being thoroughly overhauled, and of securing special skill. Even if the patient is a member of a club or provident dispensary, similar reflections apply under the present unco-ordinated conditions, in which facilities for skilled special consultations are not organized. Thus, in a large proportion of the total mass of sickness, the medical welfare of the public is not secured, partly because the rates of remuneration of club doctors and of doctors attending the poor are so scanty that only doctors of exceptional mental and physical capacity can afford time or energy to examine each patient thoroughly, and partly because medical consultations cannot be secured in difficult cases.

It would be easy to give instances in great detail of the frequent breakdown of the present medical service; but for the present purpose it is preferable to cite some of the principal respects in which failure occurs.

1. *Diagnosis is belated.* This is inevitable for the largest proportion of the population under circumstances which involve payment of a fee or seeking for a hospital letter, and then waiting several hours in an out-patient department. The dangers of delaying diagnosis are too well known to need detailed consideration. In respect of infectious diseases, this delay results in reducing considerably the benefit of the measures taken by the public health service, notably of isolation hospitals. The accommodation which they provide is devoted in substantial part to clearing up the leakage of infection in connexion with missed or late notified cases instead of being devoted wholly to the treatment of cases notified as soon as the disease is recognizable. Probably more cases of epidemic disease occur through delay in diagnosis than through any other single cause. It was the appreciation of this defect in our preventive measures that led me at the Portsmouth meeting of the British Medical Association in 1899[3] to advocate free diagnosis and treatment for all cases of children's ailments in their early stages.

In chronic infectious diseases, including phthisis and syphilis, the difficulty of obtaining early diagnosis is nearly as great as with acute infectious diseases, and in non-infectious diseases the normal condition among the masses of population, especially those who do not belong to clubs, is to shirk medical advice until it becomes relatively ineffective.

2. *Treatment is curtailed* and its efficiency diminished by similar considerations of expense.

3. When patients are treated under present circumstances in dispensaries and in out-patient departments the *waste of time* involves a serious economic loss to the community.

4. There are no co-ordinated arrangements for *medical consultations* in all difficult cases.

5. *Valuable information as to the incidence of disease* is wasted under the present conditions of medical service. In December, 1895,[4] I urged the importance of a more general notification of all sickness attended at the public expense, in hospitals and dispensaries, in connexion with friendly societies and in the great industries, thus enabling the incidence of disease to be studied in the light of accurate data, and giving invaluable guidance in the removal of conditions causing its continuance. Such a system of notification of sickness could at once be realized were the medical services organized and co-ordinated.

6. There is *a great waste of information as to the existence of conditions conducing to disease* which might promptly be removed under more systematized conditions of medical attendance. At the present time sanitary inspectors and health visitors are busily engaged in inspecing houses, without medical knowledge and with only haphazard and very occasional information of the conditions in the households of the poor, which the Poor-law medical officer, the dispensary doctor, and the "6d. doctor" know to be aiding the continuance of disease and preventing its banishment. The one set of officials, unless indefinitely multiplied, cannot properly locate the foci of mischief; while Poor-law and dispensary doctors and the doctors generally among the poor are in possession of information of urgent importance to the public health, which, under present conditions of inco-ordination, is almost entirely lost. Overcrowding and dampness of the house occupied by a bronchitic or consumptive patient, the uncleanly and careless nursing of children, the numerous minor cases of food poisoning, are examples of conditions of direct

[1] *Burdett's Hospitals and Charities*, 1907, p. 69.

[2] The *Lancet* Hospital Sunday Fund Supplement (June 1st, 1907, pp. 1544-1550) gives valuable statistics for London, which may be used as a check on the above proportions. In the year 1903, the number of in-patients treated in the general hospitals of London was 70,088, in special hospitals 37,900. The number of visits paid by out patients in the same year was 2,936,234 to general hospitals, 1,684,272 to special hospitals, and 1,087,878 to dispensaries. Furthermore, 731,313 visits were made in connexion with nursing associations, and a large number of patients were treated at convalescent homes and cottage hospitals. Confining our attention to general and special hospitals and dispensaries, the total number of in-patients was 142,245, and the total number of visits made by out-patients was 5,708,384. If we assume that each out-patient makes five visits and that all the in-patients have previously been out-patients, and if we assume, furthermore, that no patient obtains a hospital or dispensary letter more than once in the twelve months, then on this basis 1 in 4 of the population of the metropolis receives free medical aid in the year. This does not include the free medical aid given in fever hospitals, and in asylums, and under the Poor Law (over one-sixth of all the deaths in London occur in workhouse infirmaries).

[3] On the Means of Preventing the Spread of Infection in Elementary Schools, BRITISH MEDICAL JOURNAL, September 2nd, 1899, p. 589.

[4] A National System of Notification and Registration of Sickness, *Journal Royal Statistical Society*, vol. lix, Part I.

importance to the public health; and the present system must be regarded as both extravagant and inefficient, inasmuch as it fails to bring all available information concerning such conditions systematically and punctually to the knowledge of a properly organized system of preventive medicine. My meaning will be made clearer by giving two practical instances in further detail, one of co-ordination, and one of inco-ordination. It must be noted that the co ordination required in the interests of the public health is not solely that between all medical practitioners, preventive and curative, but also between them and such officials as sanitary inspectors, health visitors, and nurses; and the efficiency of co-ordination may be measured by the extent to which steps taken for the control of a single disease are applied without cost to the direct control of general sanitary conditions.

An Instance of Co ordination.

The experience of Brighton in the notification of pulmonary tuberculosis is an instance of successful co-ordination of measures for the treatment and prevention of this disease with the entire public health control of the town. The Public Health Department of the town is the focus of all the measures—prophylactic, curative, and sanitary—which are taken in the treatment and the prevention of this disease. The officer who visits the notified case obtains full particulars of the sanitary condition of the patient's home and secures the necessary disinfection and sanitary improvements. He obtains information as to the health of other occupants of the house, and directs them into the avenues of medical relief, supplying hospital letters when a private doctor cannot be afforded. He arranges the removal of the patient to the sanatorium if the doctor considers this desirable, and there the patient is trained and treated, so that when discharged there is little risk of his continuing to infect others. It will be seen that under such an arrangement—an arrangement which would be improved under a system in which the doctor himself would to a large extent take the place of the inspector—one visit serves several ends, and automatically, and without expense, the information which it affords is distributed to the departments really concerned. By this co-ordinated arrangement an economy of time, energy, and money is secured, which would be impracticable if separate authorities administered the departments concerned.

An Instance of Inco-ordination.

The medical inspection of schools by doctors unrelated to the medical officer of health illustrates well the evils of inco ordination. Such doctors have many duties: First, they are concerned with the prevention of the spread of infectious diseases in school and among the scholars; and, secondly, aided by school nurses, they are concerned with the prevention of the spread of such diseases as pediculosis, ringworm, and scabies; thirdly, they must supervise and regulate the sanitary conditions of schools, including their means for ventilation, cleansing, and warming. Additional duties will be undertaken by them, including the supervision of anthropometrical records, the medico-psychological problems of school life, of rest and play, and of school curricula, the detection of defects of eyesight and hearing, of adenoids, and of conditions like underfeeding and consequent malnutrition, which render children unfit to profit from their school work. The first three of these duties already come within the scope of the medical officer of health's work, and cannot be efficiently carried out without his special information and his co-operation in the school, and still more in the homes of the children. Paradoxical as it may appear, much of the medical inspection of school and scholars, if it is to be efficient, must take place in the homes of the children. A doctor has no magical power of diagnosing whooping-cough and scarlet fever in a class-room of forty to seventy scholars, much less in an entire school. Successful action must proceed from the known to the unknown, from cases notified to the medical officer of health to "contacts" with these; and a large share of this work must be done in the children's homes. So likewise with the chronic contagious diseases and with the control of children who come dirty to school. The home is the point at which these conditions must be primarily controlled, and parents cannot be expected to tolerate a dual system of medical inspection. Neither the medical officer of health nor the school doctor, nor both of them together—whether both posts be held by one official or by two officials in active daily relationship to each other—suffice for the needs of the case, which will only be met when the doctors in every district are co-ordinated with the mechanism of preventive medicine, and thus secure the early diagnosis and treatment of all disease, and by this means prevent its introduction into the school. The school doctor, under present and under frequently proposed arrangements, is apparently expected to detect all such cases in school. Even given occasional success on his part, he only discovers the enemy within the gates instead of before he has gained an entrance. If the principle of co-ordination of the entire medical service be realized in practice, evidently many of the other functions of the school doctor enumerated above will merge in those of the district doctors, aided by skilled consultants for all difficult cases. In large districts the need for special school doctors will doubtless remain, but their possibilities of utility will be realized only very partially unless and until they are merged in a general co-ordinated system of preventive medicine.

The Process of Transition.

The state of medical service revealed in the preceding sketch is evidently transitional. Neither agitation against "hospital abuse" and "undercutting" practice, nor attempts at reform by the establishment of provident dispensaries and similar institutions have been able to hinder the steady tendency towards the treatment of disease at the municipal or voluntary expense of the community.

It does not appear possible to arrest this trend. Hospital reform, as a measure by itself, would not cure either the grievances of the public or of the medical profession. Even were all free dispensaries and all out-patient departments of hospitals abolished, the willingness and competence of patients to pay sufficient fees would not thereby be increased, nor would the ability of the general practitioner to do excessive work for insufficient pay.

Yet at the present time the coexistent but uncoordinated systems have failed lamentably to provide what the health of the community requires—means for ensuring effectively the early recognition and proper treatment of all disease. I hope and believe that what has been done already towards securing this end is merely a phase in the evolution of the system which will attain it ultimately. The total expense under a co-ordinated system, worked with due economy, might or might not be greater than that entailed under the present inefficient and unco-ordinated system; and it may be asked whether the increased cost can be justified economically. The economical justification will, as I have already indicated, be found in the decrease of sickness which must follow, with the corresponding decrease of poverty and inefficiency and invalidity; in other words, the economical, like the medical, justification and commendation of a complete medical service consists in its being a branch of a general service of preventive medicine.

I see no reason to expect that such a medical service, where partial or general, would tend to deprave any part of the community morally, any more than the system of free (that is rate-paid) education has tended to pauperize the parents of the children who benefit by it. There would be, I think, no difficulty in proving that each additional form of medical aid officially given up to the present time, so far from undermining self-help, has imposed new duties and responsibilities on the recipients of such help; while in the aggregate these measures have been largely instrumental in securing the immense improvement in the public health already realized.

My remarks have been at such length, and have already introduced so much matter on which there are likely to be grave differences of opinion, that it would be inopportune to develop in any detail the sort of medical service to which I look forward.[5] Some essential features which this service must possess will be obvious from my previous observations. At present we have medical officers

[5] In such a medical service the administrative head, co-ordinating as he would the several branches of the service—curative and prophylactic, domiciliary, scholastic, and institutional—will be a physician who may have been originally engaged in the administration of any one branch, but who has practical knowledge of each of the other branches, and is best fitted for the work of co-ordinating them.

of health dealing with sanitation and the prevention of infection, Poor-law medical officers dealing with sickness under the most adverse home circumstances, school doctors and nurses knowing nothing or next to nothing of the home conditions which baffle their work, factory surgeons out of touch with local public health administration, and a large body of private practitioners daily in touch with environmental evils that they cannot remove. The picture which this mere enumeration calls up of work which overlaps in some directions and leaves serious gaps in other directions, and which in both instances means an enormous waste of knowledge of enormous value to the public health, shows that systematic co-ordination is indispensable to medical as well as to economical efficiency. The considerations previously advanced indicate that on all grounds the extended medical service must be primarily a preventive service. It must be a medical service for the general community and not merely for its sick members, and must call into activity every individual and collective means for the preservation of health as for the cure of disease. Information of preventive value must no longer be allowed to run as at present in culs-de-sac and there be lost, but must be utilized to the full extent for the public welfare, and this can only be effected when preventive medicine is regarded as a whole, and the many fragmentary portions of it—now unconnected and relatively inefficient—are no longer allowed to continue relatively impotent; and when every branch of curative medicine is included in its scope.

Whatever differences of opinion—and they must be great—are evoked by the plea for the organization of medicine on the basis of preventive medicine, I am confident that we all appreciate that the utility of the medical profession as a means of promoting the common health and welfare has not hitherto been fully realized. We are the freer to say this, because in the last fifty years the progress of public health has been in large measure the result of self-denying efforts of members of our profession; and measures to secure this progress have been advocated chiefly by them.

DISCUSSION.

Dr. H. COOPER PATTIN (M.O.H., Norwich) assumed that there would be general agreement as to the need for, and the desirability of, a real co-ordination of the various sections of what they for their purposes understood as the public medical services. He assumed, too, that the purport both of the paper and of the discussion was to promote this co-ordination with the aim of improving and developing these services, so as more effectively to organize the resources and enlarge the scope of preventive medicine. He was in favour of separating utterly from medical aid, which theoretically the State now provided for the whole community, the clogging influence of the need to prove the destitution of the patient before State medical aid was available. He would make medical aid like elementary education, free to everybody, peer and pauper alike, provided that it was afforded under precisely the same conditions. To-day, if he chose, the duke could send his child to the elementary school as well as the sweep, but as a matter of practice he did not do so, preferring to provide a different education at his own charge—so under the conditions here suggested the duke would doubtless elect to be treated by the doctor whom he selected and paid accordingly. To bring about the co-ordination desired among all connected with public medical services it seemed to him that the local sanitary authority would provide the appropriate connecting bond and co-ordinating mechanism; with this as nexus they might hope more effectually to combat the most deadly disease medical aid had to meet—delay. They would aim at, and in time would ensure, the seeking out of disease; early diagnosis and prompt treatment would ensue. And whereas they knew that inco-ordination was productive of grave racial evils, they would get the co-ordination of home and hospital treatment with efficient consultations. Finally they could hope to make the preventive work of State medicine more effectual by securing the systematic teaching of hygiene in all State-supported and rate-supported schools.

Mr. R. DENISON PEDLEY (Dental Surgeon, Evelina Hospital for Children) said: Looking at the public welfare as the ultimate object of all treatment, there can be no doubt whatever that the prevention of the most prevalent of all forms of disease, namely, the dental diseases, can only be secured by the cordial co-operation of the medical officer of health. Dr. Newsholme strikes the keynote when he states that much of the medical inspection, if it is to be efficient, must take place in the homes of the children. How true that is when we consider that the co-ordination and harmony of the human body is such that there is a very close alliance between the diseases which affect it. Infantile mortality is largely due to improper feeding, and to the same cause is to be attributed the weakness in dental tissue which renders our teeth incapable of standing wear. He concluded by pointing out the need for zealous co-operation by all the medical forces able to assist in promoting public health.

Dr. GARRETT HORDER (Cardiff) briefly emphasized the part which could be played by the public vaccinator from his close knowledge of the home life of the poor.

Dr. TIDSWELL (Torquay) spoke as a general practitioner on behalf of the children in the elementary schools who, he said, were martyrs needing the championship of the medical profession. He felt that too little was done for those children who were compelled by the State to attend school wet or fine, and who sat through the morning in wet boots and wet clothes. The State should make some provision against children being exposed to such conditions. The medical profession must not allow medical inspection to be carried out by the unqualified school mistress instead of by a medical man; and thus much might be done for early cases of dilated heart and similar diseases difficult of unskilled detection.

Surgeon-General Sir CHARLES CUFFE, K.C.B., said: The necessity for co-ordination has been observed by me in my experience as a member of a borough council, a Board of Guardians, and the Board of Management of a hospital; it is well known to the Hospitals Committee that large numbers of persons apply for treatment who are quite well able to pay the general practitioner; as regards the Poor-law infirmaries, these are rendered attractive by the superior dietary given therein, and also by the fact that no disfranchisement ensues upon the receipt of medical relief in the infirmary. The large number of charitable institutions without efficient control or organization such as exists in France is a distinct cause of pauperism, and medical relief should be given in the same way as in France by the *Assistance Publique*, which is so supported by a trivial tax upon amusements, etc., that it is not felt to be a burden upon the taxpayer. The necessity of co-ordination of medical services is amply proved by the want of system in the inspection of school children, the prevention of infant mortality, and the failure to control racial degeneration.

Dr. SINCLAIR HOLDEN, J.P. (Sudbury, Suffolk), spoke of the great assistance rendered to the general practitioner by district nurses, especially in rural districts. He regarded these women as one of the greatest possible factors in the education of the poor in matters of hygiene.

Dr. HERBERT JONES (Hereford) pointed out that a large part of the sittings of the Representative Meeting had been taken up with the questions of ethics and disputes between members of the profession. If the President's scheme could be carried into operation, these disputes would disappear, and with them would vanish the questions arising out of hospital abuse, the payment for services rendered to midwives, the problem of schools inspection, and, finally—the latest attempt to exploit the medical practitioner—the fee which it was only fair should be paid for the notification of births. As a medical officer of health he fully appreciated the value of early and accurate diagnosis, and found much time was lost in picking up the thread of "missed cases," which were but too often the foci of an epidemic. With a State medical service much of this would be saved.

Professor KENWOOD (London) asked if Dr. Newsholme would go further into detail.

Dr. MOLSON (Worthing) admitted that he had been convinced reluctantly of the truth contained in the President's paper. He was at first inclined to regard Dr. Newsholme's proposals as rank socialism, and he had a great horror of the general trend in that direction. In France they did very well, and he had much admiration for the results produced in England by voluntary efforts, but he was not sure that the competition between one hospital and another was provocative of good, and the expenditure entailed was excessive.

Dr. Herbert Manley (M.O.H., West Bromwich), most strenuously supported the system advocated by the President. Some one, he said, had asked for details, but to his mind the details of the scheme were obvious. It would no doubt be a long and tedious process of evolution, but when they had the working classes better educated under the influence of a socialist propaganda, they would find that the working man would assess charity at its true value and would have none of it as charity, but either what it did would be his as a right or he would have learned to pay for it or go without. The details were simple; the question of bringing the administration of the Poor Law into line with the administration of the local authority was already in sight and was a matter of practical politics; the municipalization of hospitals, so well advocated years ago by Havelock Ellis, was inevitable, although there were great vested interests to be overcome, like the Hospitals Fund instituted by the King. District nurses and health visitors had become a part of the sanitary and preventive organization, and should not be allowed to remain under private control. He certainly looked forward to the day, though he might not live to see it, when destitution would no longer be the passport to medical aid, but the existence of disease would be all-sufficient to ensure free treatment, when medical advice would be as free as education, and when it would have become apparent to all that the health of the community was inseparable from the health of the individual, and he would welcome the day when these things became real.

Dr. E. J. Slade-King (Ilfracombe) pointed out that, after all, the greatest difficulty they had in the country districts was to get their people efficiently nursed. There were signs of democracy in the air, and the Royal Commission, which had gone about its work in such a genuine and kindly fashion, would result in good being done. The county councils were proceeding on the wrong lines; they sent round lecturers on gardening and bee-keeping and poultry-feeding, but they made no effort to teach the women of the country how to behave as mothers and how to wash and feed a baby, which were matters of far greater importance. The storage of milk in the cottages was deplorable; it came to them pure, and they put it on the shelf over the pigwash, which of course turned it sour. They fed their children too little, too often, and too badly, and needed a woman to come and teach them, for it was only a woman who could get at a woman.

Dr. A. H. Bygott (Birmingham) said: No subject which has been introduced by the profession for many years is so pregnant with consequences as that which has been brought forward by Dr. Newsholme to-day; if it becomes an accomplished fact it means great changes in our system, which would render it almost unrecognizable, but with most great changes the so-called revolution is but a process in an evolution which has been progressing unperceived for many years, and I venture to suggest that Dr. Newsholme's proposals partake of this character. It is not a rash and unconsidered scheme, but the conscious phase in an evolution. I want to examine it from the point of view of a general practitioner, and as a parish doctor I have had good opportunities for looking at the matter from these points of view. I was for seven years in large general practice in the centre of Birmingham, and for six years have been public vaccinator and district medical officer (whole time) for a district of Birmingham with a population of 120,000. My object in practice was to do the very best I could for my patients. My house was arranged so that there was abundance of room for making proper examinations; all the scopes were available, and it was just as easy to deal with cases and examine them thoroughly as in the out-patient department of a hospital. I co-operated with the parish and charities, and with anything or any one likely to help me. The work was very interesting, but at times very disheartening. I used to find that many of my patients came to me too late; some had had no treatment at all; others had, without examination, been treated solely with bottles of medicine. In some cases I felt, in taking fees, it was, perhaps, the last shilling. If the case was a long one, the friends were driven to accept aid from a charity—never the parish, except for indoor treatment—and I had to reduce my fees from 5s. a week to 5s. a fortnight, then to 1s. 6d. for a week's supply of medicine, and then to nothing. I had to keep a qualified assistant, dispenser, horse and trap, and in busy times have visited at home between seventy and eighty patients a day, and discovered that the pecuniary reward was insufficient, and that the bulk of it came from my better-class patients. If I wanted a patient admitting to an institution, there was the difficulty of getting tickets or running the gauntlet of a young hospital resident, so much so that I was on many occasions reduced to performing, at their homes or in my own house, important surgical operations. The convalescent homes were not open to my patients except by making substantial payments or getting tickets, and I used frequently to feel that I could not finish my work, and that no adequate means existed to completely restore a patient to health without going down on my knees to beg for tickets. Since typhoid and diphtheria have been treated in municipal hospitals the burden is somewhat lifted. As the result of that and my present experience, I am sure that the most economical way to treat the poor when sick with dangerous illnesses is in a proper hospital. If you want to make money out of such a practice, so far as I can see, it is only possible as a medicine seller, who reduces his expenses to a minimum, and then it is very hard work. Later on I entered the Poor-law service. I find that I no longer treat the respectable poor, except the aged; destitution is the open sesame to my department, not sickness. I cannot treat my bad cases at home, and am practically reduced to be an examiner for the relieving officer; the only useful treatment nowadays for me is making the aged a little more comfortable. This service is most unsatisfactory; it is administered by guardians, and has grown out of a system started for the relief of the destitute, which keeps from it most of the cases to which it might be most useful. The man who has a little is often of more value to the community than he who has nothing. The boards of guardians are for the most part small tradesmen with limited ideas, who think in halfpennies and in a panic at times waste thousands. The whole service is an anachronism. The outdoor department is most unattractive. I went into it largely on account of the substantial vaccination fees. The indoor service needs many reforms. When we consider that Poor-law infirmaries are the last line of defence, they ought to take all cases that general hospitals cannot find room for; it is criminal that the medical and surgical work should be done by a general practitioner assisted by one or two recently qualified men, who is full of the cares of the management of a big institution and in his spare time is physician, surgeon, obstetrician, oculist, aurist, chief of electrical department, etc. Is it a wonder that his contribution to medical literature is practically *nil*? We have recently been told by certain busybodies that daylight should be let into our convents. I am certain that there is much more reason for the illuminating rays to permeate our Poor-law infirmaries; no news is not always good news, and it is only because in the Poor Law service we publish nothing that such a system can be tolerated; it is just as ridiculous as expecting the head master of a large grammar school to teach everything, and it would be interfering as little with the medical superintendent's dignity to appoint specialists to Poor Law infirmaries as the appointment of a French or drawing master is in a grammar school. I have taken a great interest in the question of hospital abuse and the formation of provident medical aid societies, and in the short time I was waiting before I took up my present work I acted as house-physician for about two months in a large hospital. I am quite sure that all who are said to abuse the charity do not go to defraud doctors or because it is cheap. As for making people join clubs—well, we are not a provident nation, and the little that can be given to a sick club patient is so little as to render it a somewhat doubtful boon. I heartily support Dr. Newsholme's project, because, as a practitioner, I am sure that it is wanted; because, as a Poor law officer, I feel that that service is past praying for. What is required is a unification of the work of treating the sick by public authorities under one central authority. This question must be settled, and it will be greatly to our advantage if we assist in the settlement, so that the work in that direction be not done outside the profession—"United we stand, divided we fall." This thought is all the more necessary, as we are to face the question of a third service, namely, the education doctor.

Dr. SACK NOY SCOTT (M.O H. Plymstock), while assenting to the principle of the scheme, was unable to see how the general practitioner was to be compelled to come in; nor did he think that it would commend itself to the average Englishman, who would wish to select his own doctor and to dismiss him as he chose. With regard to the seeking out of disease, he feared that it could only be done by a power of entry which none of them could tolerate, and by methods which would resemble those of the Inquisition. If such a service were instituted he trusted that promotion would bear some relation to merit, and that the salaries paid would be adequate.

Dr. WALTER BROWN (M.O.H. Ayr) said: An extended and co-ordinated public service is a necessity in obtaining a more complete and accurate control of disease; while doing anything to promote this we must in our capacity of medical officers of health not overlook the general practitioner who is being exploited in all these developments. He should be well paid for all services demanded of him by the State, and if this is done the opposition which is aroused by such Bills as the Notification of Births Bill will be lessened, and better working will be ensured. I am strongly of opinion that whenever it is proposed to exploit the medical profession it is only just that its members should be consulted, and due weight given to their opinion.

REPLY.

Dr. NEWSHOLME, in reply, said that they would find many of his views in detail when they had before them the evidence given before the Royal Commission; that day they had had what might be described as a debate on a second reading of a Bill; and it amply established the principle which he advocated, thus achieving the object he had in view.

ON THE NECESSITY OF INCREASING THE DEGREE OF IMMUNITY AGAINST SMALL-POX.

By A. W. GILCHRIST, B.A., B Sc., M.D.Paris,
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Nice.
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THE plan according to which this paper was originally conceived included the following abstract which it is customary on these occasions to prepare:

1. The further relaxation of the law of compulsory vaccination in England entails the necessity, upon the intelligent sections of the community, of increasing individual immunity against small-pox by repeated vaccinations.

2. Epidemic and infectious diseases can be shown to obey general sociological laws in their evolution and incidence. The Crusades caused the widespread prevalence of leprosy and plague, the circumstances attending the taking of Constantinople and the discovery of America induced the appearance or the diffusion of syphilis, and the Mohammedan invasion of Asia brought as its sequel the definitely epidemic form of small-pox. The recent recrudescence of this last disease in the West is thus attributable in great part to such events as (*a*) the three late wars, the Spanish-American, South African, and Russo-Japanese; minor or subsidiary causes being (*b*) the failing or defective activity of our vaccines;* (*c*) the increasing virulence of the more rapidly imported disease; and (*d*) the growing number of the unprotected.

3. Most civilized countries, in contrast to England, are assuming a more decided attitude of defence against the disease. Thus France has promulgated a new Sanitary or Public Health Law, more complete even in its provisions than the enactments of the Germans. It may be added that this law partakes to a certain extent of a military character, the French, remembering that in the war of 1870 their losses from small-pox were equivalent to the strength of a "corps d'armée," while those of the Germans were insignificant.†

4. The actual conditions demand a more thorough knowledge of small-pox on the part of medical men. The disease undergoes modifications of type and "epidémies frustes,"‡ often conferring unsuspected vaccination, and immunity* have been described. Here, again, England compares unfavourably with some foreign States. In a recent prosecution an English medical man, pleading ignorance of a case of haemorrhagic small-pox, was acquitted. In a similar case some years ago in Silesia† the physician was condemned.

When, however, I proceeded to develop my plan, I was confronted by not a few disconcerting circumstances and numerous and unanticipated difficulties. I will enumerate the chief amongst them as they presented themselves. I found in the first place that a Cabinet Minister, the chief authority in the country on hygiene, the President of the Local Government Board,‡ was an avowed and consistent antivaccinationist; that my philosophical and medical acquaintance, Sir William Collins, the member for West St. Pancras and a member also of the Royal Commission on Vaccination, was a strenuous opponent of compulsion; that the author of the article on Vaccination in that important and standard book of reference, the *Encyclopaedia Britannica*, was a pathologist rather than a vaccinologist familiar with parasitology and bacteriology; and that, lastly, the fundamental question of the identity of the virus of vaccinia and small-pox was still almost as much a matter of controversy as the unity or duality of tuberculosis.§

I had almost resolved to abandon my attempt, or leave it in its undeveloped stage, when the nature of an event, to which I will presently allude, induced me to hesitate, and finally to decide that I could logically confine myself for the moment to some general statements, and leave the complete treatment of my plan to some future occasion. I remembered the words of a great man:

> On sait que toute science doit avoir sa philosophie et que ce n'est que par cette voie qu'elle fait des progrès réels; ‖

I reflected that my subject, vast as is its literature, could not yet be said to possess its philosophy, and that my project in its contracted though more ambitious form could still succeed. But what is this philosophy of vaccinology, you will ask, and which is the path by which this science is to progress? I also will ask a question. Why is it that the moment selected by the English to virtually repeal their law of compulsory vaccination should be that selected on the contrary by the French to institute the obligation and religion of the Act?¶ Will it be thought too transcendental to state that this coincidence is traceable to the conflicting influences of two great biologists. I have already referred to one—I mean Lamarck. The second is Darwin. The French have

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* Dr. Chaumier, of Tours, tells me that his vaccines require frequent regeneration. "I was thus able to perceive that the vaccine used in Marseilles had no longer any action, and some years after it was found at the Academy of Medicine that the vaccinal virulence had been lost. It became necessary to apply to the Institute of Saigon, which sent buffalo vaccine ('vaccin de buffle')."—Dr. F. Regnault, Hôtel Dieu, Marseilles, Congress of Pau, 1893.

† The losses respectively were 23,400 and 134, while the morbidity included 95 cases of complete or partial blindness.—Chenu and Dr. André Cayrel, *Médecin Stagiaire au Val-de-Grâce.*

‡ Like the latent scarlatinas of Graves and Trousseau and ambulating small-pox (Richard). Des Formes Frustes de quelques Maladies infectieuses, Leur importance epidemiologique. C. Delahousse, Inaug. Thesis, Lyon, 1905; and Jurgens, *Deut. med. Woch*, No. 45, 1904.

* This is probably the case in Leicester and other antivaccinist centres, which have formerly suffered severely from epidemic small-pox.

† Although the Germans boast that they must go to the frontier States, including France, to gain an acquaintance with the disease.

‡ Like the President of the Swiss Confederation. England shares with certain cantons of Switzerland the unenviable honour of diminishing the efficacy of its vaccination law.

§ Dr. Aboviantz, *Thèse de Lausanne*, 1900, deplores that this point of doctrine should actually have assumed an international aspect, France, conspicuously represented by Professor Chauveau, holding the dualistic view, while Germany, through Voigt, Fischer, and many others, contending for unicity. It was partly to obtain fresh material for the solution of this question that Dr. Kelsch, the distinguished military surgeon and epidemiologist, was recently deputed to visit and study the principal vaccinogenic institutes in Europe. His report to the Academy of Medicine favours the theory of the identity of vaccinia and small-pox This is the place to point out a palpable misconception which has been unfortunately disseminated under the auspices, I notice, of the National Liberal Club Presiding over the discussion of a recent paper, entitled Vaccination and the State, read by Mr Arnold Lupton, Dr. Creighton implied that when Dr. Kelsch referred to the use of small-pox matter being legalized, this author referred to legalization in England Dr. Kelsch could have made no such statement, nor can his words bear any such construction. His remarks are: "Mais à l'étranger, d'ou je viens, en Angleterre, en Suisse, et *surtant en Allemagne*, la doctrine opposée, celle de leur identité, est accepté sans conteste; elle y est enseigné dans les chaires universitaires, et developpée dans les traités classiques; elle est même ecrite dans la loi; celle-ci autorise les directeurs d'Institut à renouveler leur semence avec la variole-vaccine. . . ." Dr. Kelsch was writing of the countries he had visited; it was only in this incidental sense that England was mentioned. His reference to the law obviously concerns the prescriptions of the German Bundesrath, a law dating from June 18th, 1885. (See Dr. Aboviantz, loc cit., p. 24.) I may here add that Dr. Creighton, in this "authoritative" address, as it has been called, makes another misleading statement. He says: "This fidelity of the Belgian experts to cow-pox is the more noteworthy that it was from Brussels the first calf-lymph came some thirty years ago." Dr. Creighton should have said that animal vaccine was first produced in Naples, and from there introduced by Dr. Lanoix into Paris. "De la France cette méthode s'implante en Belgique; puis elle passe en Allemagne, en Angleterre . . . en Amérique . . . " (Dr. Aboviantz, loc. cit., p. 49, quoting from Professor Galli-Valerio, of Lausanne)

‖ Lamarck, *Philosophie Zoologique.*

¶ La vaccination et revaccination s'imposent comme un devoir à tout bon citoyen . . . C'est de commettre un crime de lèse-humanité que de ne pas les appliquer franchement.—M. Aboviantz, loc. cit. p. 7.

adopted vaccination because they are Lamarckian in instinct; the English are hesitating and infirm of purpose because their tendencies are Darwinistic.*

It was essentially a Lamarckian principle that guided Jenner in his immortal discovery—let us here remember that this year of 1907 is a great Jennerian anniversary, and that 1909 is the centenary of Lamarck—and a Lamarckian principle, again, that presided over the triumphs of Pasteur. By recognizing the change of environment of small-pox Jenner recreated vaccinia in a sense, just as Pasteur by changing the environment of rabies created the vaccine of hydrophobia. Man accomplishes in a short space of time, says Lamarck,† what Nature demands many centuries to perform, and Jenner and Pasteur confirmed the justice of the thought by showing the superiority of artificial over natural selection.

But there is a Mendelian principle, many will say, a continual tendency to reversion and regressive evolution (de Vries). True, and this law of the good Abbot of Brunn is often as necessary to remember in pathology as the principles of selection and environment; and not any less necessary in the subject we are discussing, since small-pox is presumably and admittedly a hybrid or‡ "complex aggregate," subject to dissociation according to the nature of its soil. Selection, environment, and dissociation must ever be present to the medical mind if the two great conquests over the dominion of Nature that biology has gained are to shed lustre on the annals of our art.

Dr. Creighton, reflecting probably on the frequency with which malignant small-pox was introduced by negro slavery into the two continents of America, looks upon Africa as the birthplace of the disease. This view receives some support from the fact recalled by Dr. Monckton Copeman, that small-pox as an epizootic prevails amongst the simian race in its native haunts. But Dr. Creighton's sources of information are wrong when they lead him to say that small-pox made its sensible appearance for the first time in Europe as late as the sixteenth century. Not only history disproves this assumption; there is presumptive and legendary evidence against such a view, both of a singularly interesting nature and both illustrative of our subject, as we shall see. The presumptive evidence is that vaccinia as a disease was known many years ago in India, a country necessarily in frequent communication with the east of our Continent. This is what Dr. Aboviantz writes (p. 10):

> It appears that "vaccin" was known in India. Dhawantari, who lived a thousand years before Hippocrates, wrote on this subject: "The disease produced in man by the fluid collected from the udders of the cow is of the same nature as small-pox, but it need inspire no fear nor demand any care."

The legendary evidence is still more definite, and not divested of the fascination of romance. This is how it is advanced in the able paper I have already quoted (Félix, p. 425): "The relations of coincidence of appearances of epidemics of small-pox and cases of cow-pox are sufficiently demonstrated to obviate the necessity of my establishing them here. I will venture, however, to mention this fresh proof, if such it can be claimed to be, that, hitherto, has found no place in the literature of vaccination.

The number of the month of May, 1903, of the *Gazette Médicale du Centre* published a letter that deserves to be here reproduced *in extenso:*

> My dear Confrère,
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> The great interest that you take in everything concerning small-pox or "vaccin" authorises me to bring under your notice a passage I have read in vol. iii, p. 249, of the *Moines d'Occident* (The Monks of the West) of Montalembert. It is as follows:
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> "Saint Columba (521-597), the apostle of Caledonia, concerned himself especially with the cure of contagious diseases which threatened the lives or ravaged the cattle of the farmers of his country. Seated one day on a hill of his island of Iona, he said to the monk who was keeping him company, and who was a descendant of the Dravidian Colony, 'See that thick and rainy cloud that comes from the north; it contains the germs of a deadly malady; it will fall on a large district on our Ireland and will give rise to ulcers and pustules on the body of men and on the udders of the cows; we must have pity on their woes. Quick, let us descend, and to-morrow without delay thou wilt embark to go to their help." (*Life of Saint Columba*, by Adamnan II, 71.)
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> The idea or rather the certitude of the identity of variola and "vaccin" would therefore have been much anterior to the discovery of vaccine by Jenner.

And now, are the Scotch going to be faithful to their Highland saint? Are they going to save England, as their priest and physician saved Ireland centuries ago? Alas! I see that a Bill extending the action of the conscientious objector exemption to Scotland has just been read a first time in the House of Lords. I had thought that the Scotch were too cultured, too Imperial-spirited, too brave a race to accept what I am sure Lord Lister will consider a dubious if not a sinister gift.* For the philosophy of vaccinology, unfamiliar as the sentiment may sound, includes the quality of bravery. De Lamarck, by-the-by—to be irrelevant—was a brave soldier. Brave races have none of the fears and degrading superstitions of the antivaccinator. The aggressive principles of their Nietzschian philosophy make the Germans proverbial vaccinators. Our gallant and invincible friends, the Japanese, not only make vaccination an obligation of hygiene, but are compulsory revaccinators. Lady Wortley Montagu—the old English aristocracy had both patriotism and courage—was, presumably, inoculated herself at Constantinople, and then secured the same protection for her children. She laughed over it, doubtlessly, with her noble and witty friend, the French Ambassador. The instincts of these people were right. I dedicate these sentiments to Mrs. Garrett Anderson and the Imperial Vaccination League!

I have already reminded you that the year 1909 is the anniversary of de Lamarck's publication of his book *La Philosophie Zoologique*. I cannot help hoping, if not thinking, that before that date the specific germ of small-pox, and therefore of vaccine, will have been demonstrated. The completion of my task will then be easy.

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* Or shall we say, because the French are more Lamarckian than Darwinian and the English more Darwinian than Lamarckian? Wallace, it will be remembered, has shown himself a militant and disdainful antivaccinationist, disdainful towards medical men whom he accuses not only of defective knowledge of the subject of vaccination and small-pox, but of actually misleading those less sagacious and astute than himself and his antivaccinationist disciples and of deliberately disseminating disease. Those who are fond of analogies will reflect that the French never accepted to any extent the principles of the Reformation, that Calvinism with predestination flourished especially as a foreign production. This view may have suggested itself to Dr. Bond when he found that the agitation of the Antivaccination League arose largely from religious bigotry. He may have remembered that Calvin burned Servetus. May I add here, à propos of Dr. Bond's allusion in the same connexion to the average Englishman's hatred of compulsion in any shape, Dr. Arnould's comment on one form of this characteristic: "As if the liberty of those who do not wish to contract small-pox is not at least as respectable as the liberty of those who do not wish to contract vaccine."—*Eléments d'Hygiène.*

† Loc. cit.

‡ The still hypothetical specific germ associated with a streptococcus (Le Dantec), with a staphylococcus (Chaumier and Boureau of Tours). See Félix, *Identité de la Variole et la Vaccine*, Lausanne.

THE NEW VACCINATION ORDER.

By T. Garrett Horder, M.R.C.S.Eng.,
Public Vaccinator, Cardiff.

Whatever our opinion may be with respect to the administration of the Vaccination Acts, I venture to say that every practitioner will agree with me when I say that the profession generally must feel humbled when the Local Government Board proposes that the *minimum* fee for that operation should be half a crown.

Boards of Guardians are naturally anxious that their expenses should be reduced. There is, and not without reason, a strong and growing opinion that rates are too high. One can, as a ratepayer, sympathize with this feeling, because medical practitioners suffer as much, if not more, than most people from high rating. But I would desire that the question of vaccination fees should be considered from a national point of view, and that the various Boards of Guardians should endeavour to see that the public vaccinators should not suffer unduly because it had pleased the "powers that be" to order that certain work shall be performed in a certain way and at a certain price. May I say at the outset that the public vaccinators

* This country (England) is exposed to a gradual increase of small-pox mortality and to a growing prevalence of epidemics. Already that of London in 1902 included 3,000 notified cases, without counting the undeclared cases and the foci of infection extended to the provinces. We should ask ourselves, before the ever-threatening aspect of these epidemics, whether we should not see in these facts a true international danger. Where in our day communications are so easy, when France is continually traversed by thousands of Englishmen, if we are not perfectly immunized, we run serious risks of seeing the fire break out in our own house.—Dr. Cayrel, loc. cit., p. 71.

are not in any shape or form responsible for the Vaccination Act of 1898, nor for the Local Government Board Order in connexion therewith? Perhaps it would be egotistic to say that if some of the "old hands" had been consulted before that Act was passed, the result would have been different. It is unfortunate, but it is nevertheless true, that in the matter of vaccination Governments, of whatever colour they may happen to be, are proverbially weak. One would naturally have thought, after the Report of the Royal Commission, and more especially after the reports of epidemics of small-pox that have occurred in London, Gloucester, Sheffield, and other places, that the Government of the country would have considered the expenses connected with the administration of the Vaccination Acts to be a national question, and not one to be left to the idiosyncrasies of Boards of Guardians of the country. But the health and well-being of the people are not always the chief aim of the Government; votes seem to be of more account than lives, and the opinion of a select number of faddists seem to have had more weight than the testimony of experienced professional men.

We are bound to believe that the Local Government Board Order of 1898 was not issued without due consideration by the authorities at the head office. It seems perfectly manifest that the intention was to make the operation of vaccination a perfectly successful one; that there should be little or no risk of untoward results in the shape of bad arms, and that the parents of the children should be convinced that every possible precaution should be taken to prevent their infants suffering unduly. The Order imposed duties on the public vaccinator which necessitated a great deal of time being spent on them. In large urban districts it was found necessary by many public vaccinators to give up the whole of their time to vaccination work; in a great many other cases ordinary private practice was found to interfere with the due performance of vaccination work and was therefore not encouraged.

I mention these facts because it is quite as well that you realize, and realize fully, what the effect of reducing a *minimum* fee of 5s. to one of half a crown will be on the income of the public vaccinator. It may be said that Boards of Guardians will not necessarily adopt the *minimum* fee proposed by the Local Government Board, but when you remember that it was entirely owing to the representations made by Boards of Guardians that the question of a reduction of cost of vaccination was entertained by the Local Government Board, you will see that it is more than probable that the lead given by the Local Government Board will be eagerly followed by the Boards of Guardians.

In September, 1903, the President of the Local Government Board, having received many representations from Boards of Guardians with respect to the cost of vaccination in their several unions, appointed a Departmental Committee to inquire and report with regard to

1. The payments at present made under the Vaccination Order, 1898, in respect of the remuneration costs and expenses of public vaccinators and vaccination officers, and
2. Whether any, and, if so, what alterations should be made in relation to the remuneration costs and expenses of those officers.

This Departmental Committee held many sittings and examined a good many witnesses. In April, 1904, it made its report and its conclusions were as follows:

From the evidence which we have received and from the returns placed before us by the Local Government Board, we find that, apart from the great increase in the number of operations performed since 1898, the principal factor in the increased cost of public vaccination has been the increase in the fees payable to the public vaccinators. But some increase in the remuneration of the public vaccinator was inevitable in view of the additional duties which were imposed upon them by the provisions of the Vaccination Act and of the Vaccination Order of 1898. These provisions were the outcome of the recommendations made by the Royal Commission on Vaccination, after a prolonged and exhaustive investigation of the questions submitted to them.

In paragraph 532 of their final report the Royal Commission say:

> The change which we propose in our vaccination system would no doubt render it more costly, but the difference would not be very great, and, in our judgement, no consideration of cost ought to be allowed to stand in the way of any improvement which would render the operation less burdensome or diminish its risk. It is only fair to demand this if vaccination is to remain compulsory.

Having regard to the work which, under the Vaccination Acts and Regulations, public vaccinators are required to perform, we think their remuneration for primary vaccination since the Act of 1898 came into operation has in many cases not been excessive, particularly in country districts.

At the same time, we believe that the fees paid for primary vaccination might be reduced, without any diminution in the efficiency which has been attained under the present system and without any injustice to the public vaccinator, if the provisions of the Vaccination Order were made more elastic, so as to facilitate the adoption of special arrangements such as we indicate, and to admit of certain modifications in the duties and status of the public vaccinators.

The extent of a parent's power to require the attendance at his home of a public vaccinator to vaccinate his child at the cost of the rates may, without hardship to the parent, be considerably curtailed. At present public vaccinators are said to visit the child's home from two to four times on an average for each successful vaccination.

We think that if a parent does not call in the public vaccinator (as he may do) before the child is 4 months of age, and does not have the child vaccinated when the public vaccinator makes, after notice, his statutory visit to the child's home to offer to vaccinate the child, the parent should not be entitled thereafter to have the child vaccinated at his home free of cost, unless the operation has been postponed by the public vaccinator. But if he afterwards desires to have his child vaccinated at the public expense he should be required to take the child to the public vaccinator's surgery or other appointed place.

The objection to the use of stations and surgeries for the primary vaccination of infants, stated by the Royal Commission on Vaccination, does not arise in the case of the revaccination of adults and young persons, and can scarcely apply even in the case of the primary vaccination of children over 1 year old.

We therefore think that the primary vaccination of the child over the age of 1 year should not be obligatory at the home of such child; and that such lower minimum fee as may be prescribed in respect of vaccination elsewhere than at the home should be payable.

Evidence has been given to us that public vaccinators are obliged to pay a large number of statutory visits in which they do not and cannot secure the vaccination of any child. We think that an effort should be made to modify the work of the public vaccinator so as to reduce, as far as practicable, the number of statutory visits.

The evidence shows that under existing regulations public vaccinators have to do a great deal of clerical work. We think it would be well to consider whether the amount of this work cannot be simplified.

Upon a careful consideration of the evidence which has been placed before us, and having regard to the several recommendations contained in this report, we are of opinion that the minimum fees payable to public vaccinators may be fairly and reasonably fixed at the following amounts:

2s. 6d. for every case of successful primary vaccination performed elsewhere than at the home of the child or person vaccinated.

3s. for every case of successful primary vaccination performed at the home of the child within one mile from the public vaccinator's residence.

4s. for every case of successful primary vaccination performed at the home of the child over one mile and under two miles from the public vaccinator's residence; and

5s. for every case of successful primary vaccination performed at the home of the child over two miles from such residence.

Where journeys of over three miles have to be made a special fee should be arranged between the parties.

In each case we suggest that the distance should be measured by the nearest public carriage road.

We do not propose any alteration in the fee payable under Article 3 (1) (*a*) of the Vaccination Order, 1898.

In suggesting these figures we wish it to be clearly understood that we do not regard them as affording sufficient remuneration in every case. The circumstances of different districts vary considerably.

In urban districts, where a considerable population lives in a small area, the public vaccinator can afford to vaccinate for a lower fee than in a rural district, where the inhabitants are scattered over a wide area. Only those who are conversant with all the circumstances of a district can determine what fees in that district will afford the public vaccinator remuneration for his work. In advising what should be minimum fees, we have in view the average district where no unusual difficulties are likely to arise to prevent the public vaccinator from carrying out his duties, and no opposition exists on the part of parents to allow their children to be vaccinated in accordance with the requirements of the law. In districts where these conditions do not prevail, we think these minimum fees would not afford sufficient remuneration for the work to be done, and in such districts we feel satisfied that the Boards of Guardians will in the future be willing to pay higher fees, as they have already done in the past, even where the existin minimum fees have been payable.

The above recommendation is made on the understanding that the fee system of payment which has hitherto been adopted is to be continued.

We think, however, that a change in the system of payment might in many districts be made with advantage to the ratepayers and with satisfaction to the public vaccinators.

In some districts there is sufficient public vaccination to occupy the whole time of a medical man. Where this is the case, we think the guardians should be empowered to appoint a whole-time permanent public vaccinator to the district at a salary to be agreed upon between him and them with the approval of the Local Government Board.

The Local Government Board should in such a case be empowered to increase the salary if, in their opinion, the amount offered by the guardians is insufficient.

In other districts it might be possible to associate the work with that of district medical officer or medical officer of health at an agreed salary.

We suggest that the law should be amended so that every public vaccinator may become an "officer" within the meaning of Article 187 of the General Consolidated, and Section 19 of the Poor-law Officers' Superannuation Act, 1896, and that, so long as he strictly complies with the terms of his appointment and with the instructions to public vaccinators for the time being in force, he should have fixity of tenure with the same rights, privileges, and liabilities as a district medical officer.

We believe that public vaccinators generally would welcome such an alteration in their status, and would regard the change as some compensation for the reduction which we propose should be made in their fees.

We are further of opinion that where a public vaccinator is under contract for vaccination at the time when any new Act or order affecting the amount of the fee or fees payable to him comes into force, he should have the option of remaining a contractor instead of becoming an "officer," in which case no reduction below the minimum fee payable under Article 3 (1) (b) of the Vaccination Order 1898, so far as its applies to the primary vaccination of infants under 12 months of age, should be made, and such contract should only be determinable with the consent of the Local Government Board or upon the acceptance by the public vaccinator of the revised terms and conditions prescribed by any new Act or order.

We do not favour the suggestion that every medical man should be paid by the vaccination authority for vaccinations performed by him, but we think there would be advantage if successful vaccination were defined by statute and every medical man were required to conform to the statutory standard.

In this extract from the report of the Departmental Committee I have purposely left out the recommendations of a minor character which do not affect the question of fees. My contention is—and it is one that will not bear contradiction—that the Local Government Board Order of 1898 laid down specific duties for public vaccination which entailed work of such an onerous character that many public vaccinators felt it absolutely necessary, in order to carry out these duties in a fit and proper manner, to give up all private practice. By the issue of the Order of 1907 of the Local Government Board the work of public vaccinators has not been in any shape or form lessened, but it is suggested by the Board that the fee for primary vaccination should be 2s. 6d. instead of 5s., that is, should be reduced by one-half. Moreover, the Local Government Board has not adopted the recommendations of the Departmental Committee with regard to the position of public vaccinators—that is, that they should become officials, and should have the benefit of the Poor-law Officers' Superannuation Act and should have fixity of tenure. Under the circumstances one cannot help feeling that in a matter of such importance Parliament should have had an opportunity of expressing its opinion before such an Order became law. I am afraid that with the multiplicity of business that has to be transacted by Parliament there will be hardly any opportunity of bringing the subject before the House of Commons. I can only throw out the suggestion to the members of Parliament who feel an interest in the subject that an occasion might arise when the salary of the President of the Local Government Board is before the House, that attention should be called to what I may term without exaggeration a gross injustice to many worthy subjects of the country.

In the meantime I venture to suggest that the Section should ask the Council of the Association to send a memorial to the Local Government Board asking it to reconsider the terms of the Order recently issued, and also to suggest that the whole of the vaccination expenses of the country should be borne by the Imperial Exchequer.

DISCUSSION.

Professor H. R. KENWOOD (presiding during the latter part of the meeting) said they were all agreed that the Government was weak. The Government was absolutely satisfied that vaccination was an important matter, that it was highly desirable that everybody should be vaccinated, but it had not the courage of its convictions, and therefore it allowed a very big loophole of escape. They would all feel glad if they could strengthen the hands of the public vaccinators.

Dr. COUTTS (Blackpool) said as medical officers they all felt the importance of vaccination being thoroughly carried out. It was a remarkable thing that a Government department should have the power to reduce the income of medical men by one-half. If the fees were reduced, it was bound to lessen the interest of the medical practitioner in his duties, and he was not likely to take extra trouble to secure vaccination.

Dr. S. NOY SCOTT (Plymstock) said they ought to let the people know that personally they did not care whether people were vaccinated or not. If they liked to run the risk of small-pox, let them do so, but they of the medical profession would take care that they and their families would protect themselves in the way they knew to be absolutely safe; and, further, in advising the general public to be vaccinated, they were following an altruistic path. One case of small-pox would bring him as much in fees as one whole year's vaccination fees. The general public did not realize that; they thought in urging vaccination they were putting fees into their own pockets. They did not look upon it in that light. They did say that for work honestly done they should be fairly paid. The fee laid down was too little. He thought where they had to take illnesses after treatment they ought always to be paid a fee of 5s., plus the capitation grant of 2s. 6d. It was because they were stupid enough to say they would take less that they were offered less.

Dr. GARRETT HORDER then moved:

> That it be a recommendation to the Central Council that the attention of the Local Government Board be called to the inadequacy of the minimum fee laid down in the Vaccination Order of 1907; moreover, that it is desirable that all expenses connected with the carrying out of the Vaccination Acts should be borne by the Imperial Exchequer.

This was seconded by Dr. COUTTS, and carried unanimously.

A DISCUSSION ON INFANT MORTALITY AND THE MILK SUPPLY.

OPENING PAPERS.

I.—HENRY KENWOOD, M.B.Edin., D.P.H.Lond.,
Professor of Hygiene and Public Health, University College, London; M.O.H., Metropolitan Borough of Stoke Newington.

A VERY large percentage of infant deaths from zymotic diarrhoea have been attributed to artificial feeding, and condensed milk has been held to be much more dangerous than raw cow's milk.

These conclusions have been arrived at from a statistical comparison of the infant deaths from zymotic diarrhoea on the basis of the method of feeding prior to death. Incontrovertible as these facts are as statistical statements, they do not, of course, afford a true quantitative expression of the extent to which milk *alone* is the determining factor of the higher mortality among those who have been artificially fed, because other important factors capable of variation in the two classes compared are ignored.

Any mere statistical comparison, on the basis above referred to, may be equally misleading when it is used to demonstrate the extent of the value of municipal milk dépôts as agencies in the reduction of infantile mortality, for our experience in Stoke Newington points clearly to the fact that the hand-fed infants, as compared with the breast-fed, are generally more handicapped by other circumstances that largely determine the matter of the survival of the infant. I refer to a lesser degree of maternal care (and, by consequence, a greater neglect), and to those circumstances associated with extreme poverty (including insufficient food, neglect to seek and obtain medical advice, insanitary environment, etc.).

It is therefore extremely difficult to gauge the true proportion of those deaths that are due to hand-feeding *per se*, but there can be no doubt the number is very

considerable, and that it constitutes an appalling annual toll exacted by maternal ignorance and dirty milk.

But despite all our efforts to foster breast-feeding, a large proportion of infants will continue to be artificially fed, and public health interests demand a guarantee of healthy cows, a sufficient standard of cleanliness of milk, and the discontinuance of the very general practice in summer months of drugging it with chemical preservatives.

The milk trade does not realize to the full that theirs is unique amongst trades, inasmuch as it deals with a necessary article of food which forms the almost exclusive diet of a large proportion of the most susceptible units of the population (the infants and invalids), and that milk is unique as an article of food in its powers of collecting and fostering micro-organisms which are injurious to health, and may be fatal to the infant consumer. It is an extremely responsible trade, and it is an exceptionally difficult one to conduct. But the public, enlightened and stimulated by those who guard their health interests, are demanding, with increasing concern, that those engaged in the milk trade shall do more to protect them. It is not an unreasonable demand, and those who fail to respond to it not only neglect an obvious duty which they owe to the community, but it is inevitable in the near future that they shall suffer from the consequences of their neglect; it is the fit alone who will survive, for the milk trade will have to be raised to a much higher standard of ideal and accomplishment. It is, moreover, greatly in the interest of the trade that the milk supply should satisfy a legitimate demand for the greatest possible purity, and that it should cease to be regarded as a not infrequent danger to infant health and life.

The greatest difficulty which has to be confronted is the ignorance at the fountain head—the average country dairy farm. The majority of dairy farmers have made little educational advance during recent years in their appreciation of the necessity of greater care and better provision for guarding the cleanliness of milk, and the actual milkers have rather deteriorated than improved with the greater difficulty experienced in obtaining that class of labour. During a recent visit to Denmark I was struck with the greater intelligence and the better supervision exercised over the milkers by the Danish dairy farmers compared with what has been my general experience in this country. The more backward British dairy farmer will, like the Dane, improve under the stimulus of a sufficient supervision and inspection, and by the insistence among those whom he supplies of a higher standard of cleanliness of the milk.

It would be a good thing if a simple limit of dirt could be fixed, which when exceeded would warrant the condemnation of the milk as dangerous for use; the consignee would return any milk which did not reach the standard, and the farmer would then soon learn the lesson of the necessity for greater cleanliness, and where neither he nor any member of his family assisted in the milking operation he would find it in his interest to at least exercise the necessary supervision over those who did the work. To put it mildly, too often only the most rudimentary precautions are taken at the fountain head, and the slovenly methods of the past must make way for more cleanly ones, which involve the minute attention to detail which comes with an educated cleanliness. The state of filters and separators after use is eloquent testimony to the need for reforms. The London County Council has decided to apply to Parliament for powers which would make subject to a penalty the sale of milk which is found after examination to be so contaminated as to be dangerous to health, and the suggestion for a dirt standard—based on pus or blood cells and the volume of dirt that can be separated—has met with a wide approval, and is one of the possibilities of the near future. Excessive bacteria generally imply excessive dirt, and dirt is as bad as adulteration, if not worse.

I realize that under no conceivable conditions can we hope in general practice to collect milk which is not planted with many hundreds of micro organisms to the cubic centimetre; but the fact remains that by greater efforts to reduce the number of extraneous organisms which now get into the milk at the time of collection, and by preventing those from unduly multiplying in the interval of collection and distribution to the public, we should achieve a valuable and vital improvement in the purity of the milk. It is this improvement at the source which is so much demanded, for the excessive contamination *there* either handicaps or nullifies all the subsequent precautions which may be taken.

It is to the dicta of their trade organization that the country dairymen and dairy farmers will turn the most willing ear. The better class dairymen have done much to educate their own farmers, and would not the Dairy Association do valuable work by publishing detailed dairy rules, somewhat of the nature of those issued by the United States Department of Agriculture, 1900, and founded on the advice offered in the published leaflets of our own Board of Agriculture?

It has often impressed me as a most discreditable circumstance in our sanitary administration, that the legal powers which it is competent for any rural sanitary authority to execute, have either been so ignored or badly administered that in the rural districts, where the bulk of our milk comes from, there exists practically nothing worthy of the name of a sanitary supervision of dairy farms. By consequence, the larger milk dealers have had to step into the breach, and in order to protect themselves and their customers from the consequences of the neglect of the proper authorities, have taken upon themselves these duties; and it is no exaggeration to state that the requirements and conditions imposed by up-to-date milk vendors under their contracts with the farmers, and the sanitary and veterinary inspections provided by them, furnish an object lesson of what can and ought to be done, to the best organized and most advanced rural sanitary authority in this country. But this is an unfair tax upon the milk trade, and if rural sanitary authorities did their duty it would be unnecessary. From information obtained in 1903 by the BRITISH MEDICAL JOURNAL from medical officers of health of counties and of combined sanitary districts, it appeared that in England and Wales as a whole some 30 per cent. of the sanitary authorities had made no regulations under the Dairy and Cowsheds and Milkshops Order, 1885; that very few of those who made regulations had provided efficient means for the supervision which is necessary to ensure that they are carried out; and that under the Order of 1889 (for dealing with tuberculosis of the udder) only four had arranged for any measure of veterinary inspection of milch-cows.

This year Mr. Burns made a statement in the House of Commons to the effect that there are at present some 20 per cent. of authorities without the regulations empowered in 1885—twenty years ago!

All local authorities should be compelled to adopt and enforce suitable and sufficient regulations, and if the Local Government Board will not appoint inspectors to see that these are enforced, a Bill should be drawn up for the purpose of empowering the county councils to supervise the execution of the regulations, and to take over and execute the powers of defaulting authorities, and to charge the expenses to defaulting districts.

It is clear that the fundamental difficulty in obtaining these most necessary reforms is that the sanitary authority who administers the law in rural districts generally consists of those who have the least interest in making it effective, and who often deliberately make it lax because the adoption and proper enforcement of the existing powers at their disposal would affect their pockets. It is this circumstance which gives great weight to the plea for making the responsibility for the necessary control and inspection of the milk industry a central and national one; and a further argument is the circumstance that otherwise the conditions imposed will vary in their stringency in different districts, and thus affect the trade unequally and unfairly. In default of such a national control, the county councils and county boroughs must be charged with special powers and duties in this connexion—an alternative which, while presenting advantages over existing conditions, is immeasurably inferior to a central control for the whole country. Why, in any event, should not the execution of the above-mentioned powers be subject to more supervision by a Government department? They transcend in their importance to the public health the legislation dealing with the sale of food and drugs, yet in this matter the central authority keeps in close touch with all local authorities, frequently making representations with reference to the administration of the Acts, and giving advice

upon the difficulties encountered, but our milk supply is comparatively neglected by them.

You will agree with me that another very necessary reform is the annual licensing of all premises where milk is either sold or collected or prepared for the purpose of sale. This has already received legal sanction in the Liverpool Improvement Act, which dates as far back as 1867. The conditions of the initial grant of the licence must be the suitability of the premises and the sufficiency of the general arrangements for the important purpose to which they are put, and the annual renewal must be conditional upon the maintenance of these at a satisfactory sanitary standard. There is another precedent for this in the annual licensing of slaughterhouses; and none will dispute the greater claims which may be urged in favour of licensing dairies and shops where milk is sold. The provision would of course apply to dairy farm premises, and under its operations it is to be hoped that milk will no longer be sold in shops fully exposed to dust and flies, and more particularly in such places as chandlers' shops.

Such a requirement would not hit any one who was conducting the business with due regard to the bare necessities of the case, but it would eliminate a few from the trade who should not be allowed to continue to carry it on to the public danger. It is not necessary that the premises licensed should be structurally elaborate—elaborate cleanliness is what is wanted, and the means for securing this, and the evidence of a conscientious and intelligent effort to maintain it, should determine the granting and renewal of such licences.

The arguments in support of the frequent veterinary inspection of cows the milk of which is used for human consumption (whether as milk, cream, or butter) is overwhelming.

I believe that you will agree that such an inspection cannot be provided by the rural and small urban sanitary authorities, for many reasons; and it certainly would not be fair to saddle all the expenses involved upon the dairy districts. Failing these authorities, the duties would devolve upon the county councils, and, failing them, upon the Local Government Board or the Board of Agriculture. Personally, I should favour a system of quarterly inspection under one of the latter Boards; but it might be undertaken by the county councils and the county boroughs, and I would give them power to act quite independently of the local sanitary authorities. But some fair measure of compensation should be provided (as under the London County Council (General Powers) Act, 1904) when animals infected with tuberculosis have to be removed from the herd and slaughtered. I am out of sympathy with the antagonism evinced in many quarters against a fair measure of compensation in such a scheme. The cost, having regard to the important issues at stake, and to the fact that it would remove the formidable barrier which trade opposition can erect against legislative action, is small, and would tend to grow smaller year by year; and without it the scheme of veterinary inspection will be under a great disability. Under most milk contracts with farmers the farmer is exempted from any loss which might result from his giving prompt information of the existence of infectious disease in any one connected with the cows and the milk. This is found to be a valuable concession as guaranteeing that the necessary information will not be withheld; it is for a similar reason that I advocate compensation for the compulsory slaughter of the milch-cows, and my advocacy is strengthened by the circumstance that the clinical diagnosis of tuberculosis is often very difficult. I would not advocate a full measure of compensation, for some loss upon a tuberculous animal will serve as a stimulus to many farmers to be more careful what they buy, and to do more (especially in the matter of the ventilation of the sheds) to keep cows free from this disease. To further the ends of this necessary veterinary inspection, the Board of Agriculture should make tuberculosis in milch-cows a notifiable disease; and it is not too much to require that farmers should be compelled, under a penalty, to notify any udder diseases in a milch-cow, and to refrain temporarily from selling the milk of cows so affected, pending the veterinary inspection. The scope which at present exists for reduction of tuberculosis in bovines, without seriously interfering with the conduction of the trade or increasing the cost of the milk to the public, is demonstrated by the operation of the London County Council and Manchester Milk Clauses—the latter Act having led to a reduction of the number of tuberculous samples sold by over 40 per cent.

But all along the line there is need for reform and for many reforms which the trade itself should do more to promote. Time, however, demands that I should conclude my opening remarks within a few minutes, and those I propose to devote to a very important issue of the milk question. Although I am confident of great advances in the near future, I do not expect to see such a measure of improvement as would lead me to recommend the feeding of infants with raw milk in the summer months, when pasteurization appeals to me as a measure of enormous public health value, as much preventable disease would thereby be prevented, and we should have no more drugging of milk with chemical preservatives. And as the contamination of the milk in the home is a circumstance which is responsible for much of the evil consequences of the consumption of raw milk in the summer months, I am confident that before long all milk will be sold in bottles. This represents an important advance in the right direction, when the proper means are provided for thoroughly cleansing the bottles by steam under pressure, and for filling them at head quarters. The bottle protects against the access of dust, and flies before and after the milk reaches the home, and it is almost a guarantee of unwatered milk and of full measure.

I believe that in no other civilized community is raw milk consumed in such proportion as in our own country, and yet practically all leading authorities in this and other countries inveigh against its use, especially in the summer months. Is it not clear, then, that in the interests of preventive medicine we should make the dangers of artificial feeding the argument for obtaining breast-feeding whenever possible; but, failing that, we should discourage the employment of raw milk for infant rearing until we attain to (if it is attainable in general practice) an absolutely pure milk supply? But, although we shall certainly much reduce the dirt in milk, it is inconceivable that we shall ever do away with it entirely. Even with a much-vaunted supply in Copenhagen, I was astonished to see the large amount of dirt present in the milk arriving at the dépôt. Now the alternative to raw milk is to heat it—to a temperature which represents pasteurization or to the far higher temperature of sterilization.

With regard to the prolonged use of sterilized milk, it is conceded that some danger exists, but there is a tendency to a great exaggeration of the danger in this country. This is the view of many competent authorities with whom I have discussed the subject; and the following facts support the view.

What is the experience in this country? There are each year many thousands of infants, up and down the country, who are fed upon sterilized milk, and there has been for some years a large market for such milk; the use of (sterilized) condensed milk for infant feeding is also a very extensive one; yet the testimony to evil effects is trifling. Much of the milk supplied at institutions to infants in this country is either sterilized or pasteurized, and wherever sterilized milk has been given out in infant milk dépôts there has been no mention of infantile scurvy. But the Registrar-General's reports afford, perhaps, the best justification for the pronouncement in favour of the harmlessness of sterilized milk; for, despite the extent to which it is used at the present day in this country, we find that only 10 deaths occurred from scurvy among infants under 1 year of age in the vast community of London during the three years 1903, 1904, and 1905, whereas for every such death about 600 deaths were certified from diarrhoea (stated to be due to food), epidemic diarrhoea and infantile enteritis, and diarrhoea (not otherwise defined).

What is the experience abroad? In America, Denmark, and France, each with an extensive experience extending over many years, the verdict is favourable to sterilized milk. Dr. Variot, whose experience is unique—since his feeding experiments at the "Goutte de Lait" at Belleville relate to over *3,000 healthy as well as unhealthy children who were closely observed by him for many months*—has seen nothing of infantile scurvy resulting from the use of sterilized milk. The facts collected from the experience of

other such institutions abroad, and from the Consultations des Nourissons in France, are further testimony to the almost absolute harmlessness of sterilized milk. On all sides the general experience is that extremely little scurvy results from the use of such milk, and the late Professor Budin, whose "Consultations" are now established all over France, and were first started in 1892 with the object of advising and helping French mothers in the healthy rearing of children, wrote to me under date April 6th, 1906, that as the outcome of his wide experience he had not seen a single case of infantile scurvy resulting from the use of sterilized milk.

This is not the place to discuss the etiological relationship of the prolonged use of sterilized milk to scurvy in the infant, but the absence of that unknown quantity, "the antiscorbutic principle," can only at most affect those patients with a very rare idiosyncrasy. But although it is granted that the use of sterilized and boiled milk *occasionally* harms a child (for this is testified to by those whose findings are authoritative and beyond dispute), it cannot be in the public interest to discourage its use in face of the overwhelmingly greater dangers of raw milk. If one sets the danger of sterilized and boiled milk against that of the raw article, the former danger sinks into insignificance by the side of the latter. Those who rail against the use of sterilized milk say, in effect, that rather than one child should suffer from scurvy, some hundreds may be left to die of zymotic diarrhoea, etc. There is, however, *practically no evidence that pasteurized milk has caused infantile scurvy*, and it possesses the additional advantages over sterilized milk that its taste is unaltered, the physical changes brought about by pasteurization are practically *nil*, and the digestibility is not impaired; and, furthermore, pasteurized milk is consumed in a fresher condition than sterilized milk.

As to the provision of municipal milk dépôts I am not, I must confess, enthusiastic. That they are valuable object lessons to the community (including the trade) I have no doubt, but I believe that educationally and sociologically the provision of infant Consultations, as inaugurated by the late Professor Budin, are to be preferred. Such provision was made a little more than a year ago at the St. Marylebone General Dispensary, London, and the results appear to be (so far as one can judge from statistics) at least as good as those obtained from the metropolitan municipal milk dépôts. Through the efforts of Dr. Sykes, a "Mothers' and Babies' Welcome," with similar aims to those of the infant Consultations, has recently been established in St. Pancras, London, and is doing excellent work. I am of opinion that the mothers should be left to obtain the milk through the ordinary commercial channels, and that those milk vendors should be recommended who are willing to conform to the conditions imposed by the directors of the Consultation.

In conclusion, I know that there is among medical men a general agreement with my main contentions, and yet in this, as in other matters, we muddle along and delay the day when the full beneficent results of our knowledge will be reaped.

The President of the Local Government Board has stated that he proposes to make legislative proposals on his own account next year. At the risk of being judged presumptuous, I would suggest that what is wanted more particularly is *stringent* legislation, embracing, above all, a scheme of *efficient inspection* of dairy farms and milch-cows; and, with reference to certain matters that do not lend themselves to effective legislation, an authoritative pronouncement by the Local Government Board. As to the matters referred to in the latter category, let me remind him that in other countries neither the public nor the trade is left in doubt that what is the correct thing to do is to avoid the use of raw milk, at least in the summer months, and pasteurization and sterilization is encouraged. Those responsible for the public health in New York and some other American States have made no secret of their preference for pasteurized milk. The consequence is that the trade has responded, and a considerable reduction in infantile mortality is claimed as the result of its very general use. In France they have made up their minds on the subject, and the French Minister of Public Instruction has advocated the use of pasteurized, boiled, or sterilized milk as a precaution against disease. The central authorities in Denmark and Germany have also given advice on the subject. But in this country no such lead is given. If the public were informed by a Government department what it is they ought to demand, the trade (at present distracted by all sorts of conflicting views and statements) would the sooner fall into line.

II.—E. W. ROUTLEY, M.D.Brux., D.P.H.Camb.,
Medical Officer of Health, Aldershot.

THE causes of infantile deaths in this country are broadly classified under seven headings, which are as follows in order of frequency: (1) Wasting diseases, (2) diarrhoeal diseases, (3) lung diseases—pneumonia, bronchitis, etc., (4) meningitis and convulsions, (5) infectious diseases—measles and whooping-cough, (6) tuberculous disease, and (7) other causes, such as accidents, suffocation, etc., which account for a small number yearly.

All are agreed that infantile mortality is greatly in excess of what it should be; in other words, a large proportion of the deaths that take place every year are preventable, and ought to be prevented.

It is difficult, however, to determine with definiteness those causes which may fairly be looked upon as preventable. Certainly most of the deaths from diarrhoeal diseases should be included under this term, and probably a considerable number of those deaths which are placed under the heading of "wasting diseases," and described indefinitely on death certificates as due to marasmus, debility, wasting, convulsions, etc., ought to be regarded as preventable, if the evils arising from poverty, overcrowding, and unhealthy surroundings could be removed.

It is well known that the greatest part of the loss of infant life occurs in July, August, and September, generally from diarrhoeal diseases, and is especially marked when a continued high temperature is associated with a deficient rainfall.

It is therefore of the mortality from such diseases that I propose briefly to treat in this paper, being convinced that, with proper application of the laws of hygiene to the homes of the people, such deaths ought rarely to occur.

The urban district of Aldershot is divided into two parts, military and civil, separated from each other by a well-defined line of demarcation. The population is, roughly, 15,000 and 19,000 respectively, but owing to there being a greater number of young married persons in the camp population as compared with the town, the number of births in the camp is nearly equal to that in the town. The actual class of population is similar in both cases, the inhabitants of the town belonging mainly to the working classes, from which the great part of the army strength is drawn. Indeed, a large number of soldiers married "on" and "off" the strength (generally the latter) live in lodgings in the town, usually in houses occupied by more than one family.

The town affords accommodation also to ex-soldiers, pensioners, camp followers, camp labourers, and artisans in great numbers.

I have carefully gone through the statistics for the past five years, and have collected the number of infantile deaths due to diarrhoeal diseases for each district and each year from 1902 to 1906. They are shown in the following table:

Year.	Town.	Camp.
1902	4	1
1903	7	2
1904	11	0
1905	10	1
1906	30	13
	62	17

I have also collected the whole of the deaths from the same diseases occurring in children under the age of 5 years for the same period—

Year.	Town.	Camp.
1902	5	1
1903	8	4
1904	19	2
1905	11	2
1906	33	14
	76	23

making a total of 76 such deaths in the town, and 23, or less than one-third of the number, in the camp.

The births in these two districts for the five years were in the proportion of 4 to 3, namely, 2,800 in the town and 2,092 in the camp.

The meteorological and telluric conditions, it goes without saying, are the same in both districts.

The original source of the milk supply (and this is important) is common to both districts, the milk vendors in the town supplying both districts in their entirety. I may state, too, that there can be little question of possible contamination at the milk shops, conducted as they are, for the most part, with care and cleanliness in the distribution, owing probably to the comparative smallness of the area and the consequent better surveillance by the authorities of the trade conditions.

Nine-tenths of the milk supplied to the whole district comes in some cases long distances by rail, and in others from farms in the outlying districts. So that if one believes that epidemic diarrhoea is mainly the result of infected milk (and everything points to such a conclusion), and if at the same time one lays great stress on the probability of contamination at the original source of the milk—namely, the cowsheds and farmyards—one would not unnaturally expect that the infantile mortality in two districts lying side by side, composed of a population equally careless and equally ignorant in matters of hygiene, would present a very close similarity. On the contrary, however, the mortality results show a marked contrast. With almost the same number of births, with a history of artificial feeding in the same proportion (namely, 85 per cent.) of fatal cases, with the same class of population, the number of infant deaths from diarrhoeal diseases in 1906 was more than twice as great in the civilian as in the military population. One must take into account the fact that the figures are small, and that therefore too much weight should not be attached to one isolated year, but the previous years show, though with smaller figures for each district, the large excess in one district over another. The year 1906, owing to the excessive heat and low rainfall during the summer months, was a particularly bad year for infant life.

If one takes the total infantile mortality in these districts during the last five years, the sum shows that the number of infant deaths was almost four times as great in the town as it was amongst the military population; and if one takes the mortality from diarrhoea in children under 5 years of age, the civilian total shows the same marked preponderance.

In what, then, it will be asked, lies the distinction between the two classes of population? And how does one account for the remarkable difference in the incidence and fatality of epidemic diarrhoea? It is well known that in the hot weather the various bacteria which are responsible for infection are under the optimum conditions for rapid growth and multiplication, and the question is constantly discussed as to the actual source of the contaminating micro-organisms.

Is it at the farms? Is it during transit, or on the milksellers' premises? Or does it largely occur in the home itself? Or, again, is it a combination of these factors, any one of which may, in certain places or under certain conditions in the same place, be the most powerful?

I think I have shown that, so far as regards the original source of the milk and the intervening period between the time of milking and of delivery, the bad effects (if any) of either or both must bear equally on both districts. The distinction must, therefore, be sought in the household, and it unquestionably can be found there. In the military camps cleanliness is compulsory, and is generally conspicuous in the rooms of the married quarters. The apartments are comfortable and periodically cleansed; overcrowding is entirely absent. The soldier who is married "on" the strength, being in full pay, and having certain allowances for wife and children, does not feel the pinch of poverty, and is not thereby tempted to allow his family to drift into insanitary conditions, and, if he were, he would be restrained from doing so. Indeed, it may be conceded that the army sanitation is kept at as lofty a level as is conceivably possible under the circumstances. On the other hand, the soldier who is married "off" the strength has to support his family on a very small allowance in the town district, and frequently inhabits a single room, or at the most two rooms, and the same may be said in the case of those living on small pensions, of the general body of camp followers, many of whom seek a precarious living by casual labour in the camp, returning at night to their town lodgings.

Inquiries into the fatal cases which occurred in the town showed, in a very large number of instances, the presence of marked proverty, accompanied, as it so commonly is in urban districts, with insanitary household conditions. Uncleanliness, and the deliberate dislike of open windows, favour the presence of the common housefly in swarms, and point out an easy source of infection of milk. This article of food is commonly fetched in dirty vessels, allowed to stand without cover for the whole day in close and dirty rooms, the air and dust of which must be reeking with micro-organisms. The process of milk poisoning is thus self-evident.

So far as epidemic diarrhoea is concerned, I think that the supposed evils of the farmyard are frequently much exaggerated, and the more thorough supervision, which it is hoped may be strengthened by new legislation, should be exercised mainly in the direction of attention to the health or otherwise of the cows, for it must now be accepted as certain that tuberculosis in children is nearly always contracted from the milk supply, and it is chiefly in this direction that sanitary energies should be devoted.

But with regard to the prevalence of diarrhoeal diseases in infants and young children, I am very strongly impressed with the belief that the farm contamination of milk has little or nothing to do with its causation, and that it is in the home, and the home only, that the milk is infected with the disease-producing micro-organisms.

And the comparison which I have attempted, as briefly as I can, to draw between two sections of population, which are similar in all particulars, except in this important point of home hygiene, seems to me to show with sufficient clearness that this is the most important factor in the health of our young children.

DISCUSSION.

Dr. HERBERT JONES (Hereford), in criticizing the statistics put forward by Dr. Routley and appreciating their value as an experiment of great importance, thought that he had rather overlooked one factor in the superior chances of the camp children, namely, the fact that they were provided with early and gratuitous medical treatment. This, in itself, was an additional argument in favour of a State medical service, as advocated by Dr. Newsholme. The real and crying need in the case of the milk supply was universal and efficient milk inspection from the source of supply to the consumer. He could not agree in the importance attached to pasteurization, unless it was associated with a complete control of the supply at the dairy farm, as otherwise the farmer would rely upon the process for cleaning his milk, and would not be at the trouble to send it out clean. The county councils had shown themselves utterly unfit to be trusted with the administration of such important measures, as only one-third of them had even appointed a medical officer of health. It was necessary that the individual upon whom this inspection devolved should be in a position independent of those among whom he had to work, as at present he was liable to be thrown out of office without notice or compensation if he offended the dairy farmer, and, as they said, "harassed the trade," that is, if he did his duty. One of the points also which must not be overlooked on dairy farms was the origin and condition of the water supply, which was often polluted.

Dr. TIDSWELL (Torquay) recalled a visit to the municipal dairies of Liverpool, in which not only were the floors paved and the walls tiled, but the cows were groomed at least twice daily. He felt that a daily veterinary inspection of milch-cows was wanted, so that bovine diseases of all kinds might be detected. Many infantile diseases besides infantile diarrhoea and tuberculosis were attributable to milk, among which he instanced mumps, of which there had recently been an outbreak in Torquay. In his opinion the best thing for children who could not get breast milk was the condensed milk, with which he had seen excellent results. This seemed to him more easy of accomplishment than an attempt to carry out a system of sterilization or pasteurization.

Professor T. A. STARKEY (Montreal) spoke of two points on which stress had been laid—the prevalence of epidemic diarrhoea during hot, dry weather, and the opinion that the insanitary condition of cowsheds and dairies was not

wholly answerable for the exacerbation of such cases. He had shown in Montreal some seasons ago that while it was true that the largest number of cases occurred during high temperatures, there were certain other conditions requisite, the chief of which was the insanitary condition of the ground and subsoil immediately surrounding the house. High temperature alone was not the cause of epidemic diarrhoea unless accompanied by the necessary facilities for bacterial growth; these facilities consisted largely in a polluted soil of moist character, which in dry weather became powdered and permitted a fine dust full of germs to be disseminated over any foodstuffs in its vicinity. During wet summers, even though accompanied by high temperatures, epidemic diarrhoea was very slight, thus proving his contention. A striking proof of the fact that the insanitary condition of the ground surrounding houses was a powerful factor occurred in an insanitary area within his experience, wherein the disease had been particularly rife and which had undergone a thorough cleaning up process. The houses and their inmates remained much the same as before, but the polluted soil and surroundings had been removed; the result was an immediate drop in the return of cases, and the area had risen to the level of the rest of the city (Montreal). The fact that it was not wholly the fault of the milk (not that he asserted the perfection of Canadian dairy farms) was borne out by his experience that the milk supply maintained a fairly level standard of quality, whereas, when the insanitary conditions above mentioned were prevalent, they got epidemic diarrhoea well marked. If this were due to milk causes it would be annual and widespread; but the contrary was the case, and the only factors which corresponded were those he had mentioned.

Dr. HELEN MACMURCHY (Toronto) admitted that much remained to be done for the supply of milk in Ontario, but progress was being made. It was clean milk, and not cooked milk, which the people wanted. In her opinion, in Canada it was more the source contamination than the home contamination which they had to fight; but, above all, they needed behind them an enlightened public opinion. In Canada they were particular in summer about refrigeration, and milk was distributed in vessels; but she wished for a vessel, say, of paper, which could be thrown away after it had been used.

Dr. WYNNE (Leigh) spoke as a member of a local authority, and emphasized the necessity of having the inspection of dairy farms carried out by a separate and responsible individual. No good would come from inspection until the inspector had a free hand.

Lieutenant Colonel A. M. DAVIES, R.A.M.C., desired to express his agreement with two of the points raised by Professor Kenwood. He had said that the conditions required by an up-to-date milk had shown the farmer what could be done to send out clean milk. In his own experience in India, and even in such an unpromising place as Aden, he had seen cowsheds with animals and milk vessels as clean and satisfactory as any one had a right to demand. Cleanliness was not a theoretical or visionary ideal. It was capable of being an established fact if one would spare the necessary attention and money. The other point related to the pasteurization of milk. He feared that, in estimating the production of scurvy from the use of such milk, medical men had not looked at the question with a due sense of proportion. Milk was the entire food of the infant. It was the principal factor in the diet of children up to 7 or 8 years of age, or it ought to be. He failed to see that the danger was as great as had been stated. No one could deny that the consumption of raw milk was a great factor in the production of zymotic disease. He therefore saw no objection to the use of milk sterilized or pasteurized for so long as they failed to get a proper state of conditions prevailing at the source of the supply, believing that the cases of scurvy were so few that they could be overcome by watchful treatment.

Dr. F. M. SANDWITH (London), after allusion to the inevitable need of feeding a certain proportion of children on artificial food, and to the extremely unsatisfactory condition of the milk supply either for children, invalids, or ordinary consumption, said he wished to remind the Section of what had been done for some years in the United States to improve the purity of milk imported into large cities; he failed to see why something of a similar kind should not be done here. The recent action in Philadelphia was a concrete case. For more than seven years a Milk Commission had been sitting in that city, appointed by the Philadelphia Pediatric Society; the plan had worked very well, and the amount of milk delivered was increasing. The whole theory of the plan was to have a commission of medical men who first established high standards of excellence and then threw their certificates open to any reputable dairyman who would live up to such standards. The Commission consisted of five medical men, who examined milk from any dairies desiring this examination and then certified to the good quality of the milk which came up to the standards fixed by them. They selected a bacteriologist, a chemist, and a veterinary inspector, whose fees were paid by the dairyman at the time of examination, regardless as to whether the report was favourable or unfavourable. The bacteriologist examined a specimen of milk from the dairy, or preferably from delivery carts, at intervals of one month or less, without previous notice being given to the dairy. Milk free from pus and injurious germs, and having less than 10,000 germs of any kind per cubic centimetre, was considered up to the standard of purity. The chemist in a similar way examined the milk for the percentages of proteids, fat, sugar, mineral matter and water. He also tested its chemical reaction and specific gravity and examined it for the presence of foreign or other matters, or of chemicals added as preservatives. Neither milk nor cream might be subjected to heat before the examination was made, nor at any time unless so announced to the consumer. It was sometimes found possible to reduce this chemical examination from monthly to quarterly. The veterinary inspector similarly inspected the cleanliness of the dairy, the care and cleanliness observed in milking, the care of the various utensils employed, the nature and quality of the food used, and all other matters of a hygienic nature bearing upon the health of the cows and the cleanliness of the milk, including also, as far as possible, the inquiry into the health of the employees on the farm. He also saw that the cows were free from tuberculosis or other disease. Any dairy found up to the prescribed standard received a certificate from the Commission which stated that it was only good for a limited period, after which another examination must be made. The milk thus certified must be furnished to consumers in hermetically sealed glass bottles, together with a certificate slip stating that the milk had been satisfactorily examined within the past month. At least four large dairies in Philadelphia had submitted to the required tests and were certified. They now sold their milk at 6d. or 7d. a quart, ordinary milk in that city costing 4d. to 5d. a quart. Certified pure milk was thus rendered more expensive than ordinary milk, but there were many people who would willingly pay a little extra for better milk, as they now did in London for the bottles called "nursery milk." Any reformation in the milk supply, though at first only benefiting the well-to-do classes, would eventually tend to the improvement of the general purity of all milk, and one of the potent causes of infantile mortality would thus be diminished.

Dr. COUTTS (M.O.H. Blackpool) said that it was a pity that no representatives of dairy farms were present that morning to put forward their side of the question, and to support Dr. Routley's theory that home contamination was worse than dairy contamination. The average dairy farmer declined to believe in milk-borne diarrhoea, and more children were said to die of want of milk than of milk diseases. There could be no doubt that milk was frequently dangerous in the condition in which it left the farm, as bacteriological and other experiments had shown. He was unable to agree in the comparison put forward by Dr. Routley, as the conditions of the two populations were so widely different, especially as regarded access to early medical treatment. He agreed that in summer the use of raw milk, even if clean, was not wholesome, but there were friendly germs as well as hostile bacilli, and he did not like the principle of pasteurization. It was unfair that under the present law the onus fell upon the occupier and not on the owner, and he thought an alteration in this respect would be very desirable, as the farmer or dairyman might be only a yearly tenant. He called attention to a statement of Dr. Laffan, of Waterford, that the children in Ireland were unable to procure milk at all, as it was all taken for butter making, and to the

need of legislation to compel the farmer to supply milk to the cottagers.

Dr. Drury (Halifax), speaking as a district medical officer and public vaccinator, said that unless something were done to educate people how to store milk when they had got it into their houses it was useless to expend large sums of money on inspection at the source.

Dr. S. N. Scott (M.O.H. Plymstock) had found no difficulty in inducing the farmers in his scattered district to listen to the steady persistent advice which he had always endeavoured to give them; the question as between landlord and tenant had not given him much trouble, as he had found the larger the farmer the easier to get structural alterations, and in many cases the landlords were no richer than the tenants. He found that there had been some considerable decline in infantile mortality in his district, though he would not put it down wholly to an improved milk supply. It was a matter of surprise that Devon, which had such a reputation for milk and cream, did not appoint a county medical officer, and take more steps in this matter.

Dr. W. B. Barclay (Weymouth), as a predecessor of Dr. Routley at Aldershot, found himself unable to assent to the propositions laid down in the paper, and could not in any way endorse the conclusions arrived at by him.

Dr. Nash (Beccles) spoke at some length on the infantile mortality in the East of London, and gave his experience of the treatment of milk in the Walker Gordon laboratories. He had found this to be the most wholesome milk in his acquaintance. It was impossible, in considering this question, to overlook the possible production of scurvy and its existence in children; he would therefore condemn sterilized milk, and was opposed to the habitual use of pasteurized milk, but occasionally sanctioned the employment of condensed milk.

Dr. Drysdale expressed his opinion, founded upon that of Metchnikoff, that all natural products should be cooked before use; milk and water should be boiled and raw vegetables cooked, all fruit should be made into jam. What had been said about the inspection and treatment of milk was very true, but the Government of this country was not strong enough to carry out a system like that of Philadelphia.

Dr. W. F. Brown (Ayr), Dr. Watts Parkinson (Wimborne), and Dr. W. A. Bond (Holborn) also spoke.

Finally it was proposed that the following resolution should be submitted by the Section for the consideration of the Council of the Association:

> It is necessary for the efficient and operative inspection of rural milk supplies that such inspection should be made by officers not subject to periodical reappointment.

This was carried unanimously.

THE ECONOMICAL PURIFICATION OF SEWAGE IN RURAL DISTRICTS.

By T. A. Starkey, M.B.Lond., D.P.H., etc.,
Professor of Hygiene, McGill University, Montreal; Fellow Royal Sanitary Institute.

By the provisions of the Public Health Act, 1875, and by-laws founded thereon, certain conditions or requirements have to be fulfilled relating to the disposal of sewage in rural districts.

Curiously enough, the legislation on this matter is particularly meagre, and would excite wonder in the minds of those who had to deal with these problems were it not for the knowledge that the framers of legislation are perfectly aware that the last word has by no means been said with reference to the proper solution of the difficulty of sewage solution, and therefore they feel it would be premature to lay down any hard-and-fast rules for the guidance of those confronted with this problem.

What legal machinery we have, therefore, relating to the disposal of sewage simply lays down three conditions to be observed:

1. Safeguarding water supplies used for drinking purposes (Sect. 17, Public Health Act, and Model By-laws).
2. In those cases where public sewers do not exist (more especially in rural districts) that "a cesspool or other receptacle be provided, sanctioned by the local authority" (Sect. 23, Public Health Act, 1875).
3. Avoidance of a nuisance in the disposal of sewage (Sect. 91, para. 2, Public Health Act, 1875).

Although these legal provisions are so short and general in their scope, still they serve a very useful purpose, and open the doors of the law to a very considerable extent, if not quite enough, so that the sanitary authorities have practically all the power they want to safeguard the public health.

In rural districts, then, we may classify the conditions as to the disposal of sewage under three heads:

1. Those where the sewage from each house has to be disposed of within its own boundaries, that is, on its own land.
2. In the case of a few houses (containing about 300 people) so placed as to be convenient to treat the sewage as a whole.
3. Those rural communities above the number specified in para. (2).

This classification has been adopted for the reason that Classes 1 and 2 offer facilities for the disposal of sewage under conditions which are economical, not only from the financial point of view, but also from that of the utilization of the nitrogenous material contained in the sewage itself.

Class 3 approaches more closely to the state of affairs existing in urban communities, where, by reason of the volume of sewage derived from the houses, some form of mechanical sewage disposal works must perforce be employed.

Still reserving individual consideration as applicable to these different classes until a later stage, let us consider briefly what can be done with sewage in a general way, always of course keeping before us, for guidance, the question of economy. In rural districts the disposal of liquid refuse, including excremental matter, involves one of two systems of sewerage:

1. That dealing with house slops only, the faecal matter being disposed of by the dry-earth or by the cesspool systems.
2. That dealing with the house slops and excremental matter combined, but excluding rain or storm water unless particularly desired.

These two systems of sewerage are, I think, quite the rule in rural districts situated in all climates.

This question of disposal of sewage has a particular interest for me, as I hope it has for you also, for it is one which has confronted me many times during my career, under all climatic conditions, not only in our own England but under the torrid heat of India, and the extremes of heat and cold which we have in Canada; and I shall therefore strive to so couch my remarks that whatever points they may contain worthy of consideration, these same points may have universal application.

I take it that in disposing of sewage of all kinds—that is, whether they be house slops only or house slops combined with excremental matter, we have our choice of either the natural or artificial methods; by natural I mean land treatment and by artificial those methods involving the use of sewage beds, etc.

I am purposely leaving out of account those cases where sewage can be directly run into the sea, or an estuary, without danger, for these, it seems to me, need no discussion.

Now, whatever method of ultimate disposal we may adopt, it is necessary at this point to consider for a moment the composition of the sewage with which we have to deal. You are perfectly familiar with the fact that sewage from a house or collection of houses differs very little in its composition whether it contains excremental matter or not.

The following figures, quoted from English works, give you a very fair idea of the average composition of sewage from houses:

	House Slops and Rain Water only.	House Slops, Rain Water, with Excremental Matter in Addition.
	Parts per 100,000.	Parts per 100,000.
Total solids in solution	82.4	72.4
Total solids in suspension ...	39.11	44.69
(*a*) Mineral	17.81	24.18
(*b*) Organic	21.3	20.51
Organic carbon	4.181	4.696
,, nitrogen	1.975	2.205
Free ammonia	5.435	6.703
Total combined nitrogen ...	6.451	7.728
Chlorine	11.54	10.66

Composition of Sutton Sewage (Dibdin).

	Average.	Minimum.
	Parts per 100,000.	Parts per 100,000.
Suspended matter	87.7	21.5
Free ammonia	12 53	3.8
Albuminoid ammonia	1 13	0.37
Nitrogen as nitrites	0.1214	0.031
,, ,, nitrates	0 000	0.000
Oxygen absorbed in 4 hours ...	6.47	2.73
Chlorine	12.8	9.00

Of course, these analyses are understood to be but averages; however, they are sufficiently near for our purposes, and give a good idea of the differences between the two kinds of sewage.

Now I am perfectly well aware that in most countries, and more especially the English-speaking ones, the common method of refuse disposal, for generations past, is to dispose of the faecal matter either by cesspool or earth closet, and to allow the house slops to run on the ground without much care.

The reasons are perfectly obvious. These methods involved the minimum amount of trouble in cleaning operations; and, moreover, what nowadays would be considered an offensive nuisance, appears to have been quite tolerable to our forefathers, and they were not haunted by the thoughts of polluting water supplies.

Having reminded you of the slight differences existing between the two kinds of sewage, it is scarcely requisite for me to add that any process of disposal which may be recommended would of necessity deal with the combined form of sewage. I personally never deem it advisable to treat the excremental matter apart from the house slops, unless it is impossible to procure a water supply for a water-closet, which is fortunately rare.

There are certain grave objections to the use of cesspools. Leaving out of consideration the common old-fashioned leaky cesspool—a thing to be condemned in any form—the best made watertight cement cesspool naturally involves cleansing at frequent intervals; this may be a means of unnecessarily exposing material, possibly of an infectious nature, and so lead to further infection.

In those instances where open communication exists between the cesspool and the closet apartment, infection is all the more possible. And, lastly, disinfection is rendered doubly difficult where cesspools are in vogue, to say nothing of the danger arising out of the disposal of infectious excrementa in cases of sickness.

Referring to those few places where waterclosets are not practicable owing to an absence of water, I may here dispose of them at once by saying that in my experience there is nothing so satisfactory as a well-ordered earth closet.

Cesspools and privy pits are, it is true, more convenient as regards cleaning operations, but are by no means so safe in respect of the difficulty of disinfection, etc. In the rural districts of Canada these cesspools and privy pits are very common indeed, and I assure you they have been the means, in several instances of bad typhoid epidemics with which I have had to deal, of spreading the infection galore.

Earth closets, on the other hand, can more easily be kept clean and disinfected, especially when they have received infectious matter, owing to their small capacity, which prevents a large accumulation of faecal matter at any one time; and finally, with earth closets there is not the same liability to subsoil infection as with cesspools and privy pits, which subsoil infection may be the direct means of polluting well waters.

We have thus, up to this point, got matters narrowed down as to the kind of sewage with which in general we shall have to deal, namely, house slops, plus the contents of waterclosets with or without rain water; drainage from stables and outbuildings generally included.

Road washings must be dealt with separately. We have also an idea from the tables already presented as to what the composition of such a sewage would be, but I may add another fact to be borne in mind: In those instances where rain water, say from roofs and yards, is admitted to the general house sewage, at such times the sewage will be much more dilute, and therefore in a broad way more amenable to treatment.

Coming now to the more immediate question of the actual treatment of the sewage—that is, its purification—we are bound to turn out an effluent which shall be chemically stable and bacteriologically sound, or as near to the latter as we can make it. The liquefaction of nearly all of the solid matter in suspension in sewage is another obligation recognized by all, to obviate that bugbear—sludge.

A short while ago Professor Bostock Hill summed up the problem of sewage disposal very tersely in these words:

> Some form of resolution in a tank, followed by oxidation in a filter bed, is the method which has most claims for adoption at the present time.

I think most sanitarians will agree with this dictum.

This, however, applies chiefly to the chemical side of the problem, but as regards treatment of contact beds, etc., the bacteriological purification is small. When we come to land treatment we can happily claim a distinct and marked bacteriological purification, the perfection of which depends to a large extent upon the details of carrying out the operation. The application of land treatment is, to my mind, quite feasible in all rural districts where the volume of sewage varies between that coming from one house and the amount derived from a small community of about 300 souls or more.

Perhaps it would be better, and convey much more accurate information, if I put it in terms of gallons of sewage.

The largest amount of sewage which I have disposed of by land treatment (presently to be described) is about 5,000 gallons in the twenty-four hours, but I do not offer this as a limit by any means.

Another point for your notice is this: The amount of sewage per capita in a rural community is always less than that per head in a town. Of course this is due to the absence of street washings, and the amount of water used for municipal and trade purposes, all of which goes to swell the volume of sewage from a town to a considerable extent.

From my own observations I find that ten to fifteen gallons per head per day is a very liberal allowance, even in Canada, where water is nearly always utilized in a "luxus consumption" fashion.

The different forms of land treatment in practice at the present day are the broad irrigation and the intermittent downward filtration.

The broad irrigation plan has not met with a very great deal of favour, although in a temperate climate good results can be obtained by its use. In climates, however, where you get marked extremes of heat and cold it does not work well. A high temperature seems to be the cause of unusual bacterial activity which is productive of noxious odours, whereas with a very cold temperature the trouble of freezing is ever present.

Even in temperate latitudes a certain amount of labour is requisite in the management of the sewage farm, for all broad irrigation works are essentially sewage farms.

Apart from the drawbacks above mentioned, broad irrigation is undoubtedly economical where suitable land is easily procurable. The effluent produced is very good indeed both chemically and bacteriologically.

Turning to the intermittent downward filtration method, the plan usually adopted is one in which an area of suitable land is specially prepared and underdrained, in order that a larger quantity of sewage can be applied to a given area as compared with the former plan of broad irrigation.

The manner in which the sewage is applied is commonly one of carriers, which are open sluices or channels, occasionally by means of small perforated tile drain pipes.

With a very dilute sewage—that is, one containing very little solid matter—the results obtained are fairly satisfactory, but with a heavier sewage they are not so good; either a blockage of the filtering material takes place or a much less dose of sewage must be applied, which means additional land for treatment.

On the other hand, intermittent downward filtration gives excellent results with an effluent from some of the artificial processes—for example, septic tank or the chemical precipitation tank. At this stage it may be asked, Why introduce the land treatment following that

of the complete septic-tank process (Cameron's) or the chemical precipitation—that is, with their contact beds, etc.?

The reason which I advance is this: Although either of the artificial methods above referred to will give you a very good effluent chemically, nevertheless, from the bacteriological side, it is by no means satisfactory, as you all know. Now, where a suitable soil is used in the land treatment—that is, a soil which is porous and still finely particulate—you will obtain a considerable amount of bacteriological purification, in addition to the chemical, by means of the filtering action of the fine soil. Surely this is a point worth striving for. I now come to the method of sewage disposal which I recommend for rural districts, and which I have put into practice many times with great success.

It is a combination of a simple septic tank, with intermittent downward filtration worked on the subsoil irrigation plan. I construct a concrete or cement-lined brick tank, covered in, capable of holding the sewage flowing during a period of twenty-four or thirty-six hours. The sewage, after passing through this tank, is then sent off in given quantities at stated intervals by means of an automatic flushing arrangement, something after the pattern of a Roger Field flush tank, into a series of agricultural tile drains, laid almost on the level, and not deeper than 6 in. or so beneath the surface of the ground. A few details may here be permitted.

The septic tank is made accessible, of course, and, in the larger forms, special cleaning arrangements are attached; in all other respects it is a plain, simple, covered tank. It is in this chamber that the liquefaction of the solid particles takes place, and the effluent from it is always particularly clear, containing only a small quantity of suspended matter in a very fine state of division indeed.

If the sewage scheme takes in a fair amount of rain water which prevents a sojourn in the septic tank for a period of twenty-four or thirty-six hours, it does not matter in the least; for, as Dr. Rideal has pointed out in his book dealing with the effluent from the Cameron Septic Tank, the liquid coming from the tank after a rain storm will contain less material in a given volume, both in suspension and in solution, than the effluent during dry weather.

A moment's consideration shows that this must be so; after rain a large addition of pure water will cause dilution of the ordinary sewage, and although the dilute sewage under these conditions cannot remain in the tank as long as it would under dry weather conditions, and therefore have time to liquefy the solid matters, still the tank is always so large that the rate of flow through is so slow as not to interfere with the sedimentation of the solid particles, which can undergo liquefaction at their own leisure, so to speak, at some future date after the rain storm has all passed over. I find that the effluent from this septic tank is peculiarly adapted to the next stage of oxidation which is carried out in the upper layers of the soil.

From the septic tank the effluent is conducted to the flush chamber, wherein provision is made for the thorough aëration of the liquid before it is discharged along the tile drain. As to the laying of these tile drains, they are common agricultural tile, 2 in. or 4 in. in diameter, according to the size of the works, laid nearly level, with the joints left open about ½ in. I have them to branch off a main carrier at intervals of from 6 ft. to 15 ft., according to what use is being made of the land.

Underdraining may or may not be required, according to the nature of the subsoil, and also as to the trend of the underground water; you may wish to prevent it soaking in a particular direction.

However, the underdrains are usually placed at a depth of from 3 ft. 6 in. to 5 ft. The amount of land required is governed by the length of distributing pipes necessary; in fact, I always like to express it in these terms, for I first of all see how much piping is required, and then ascertain where I can run it most conveniently in the ground which I have selected for the purpose.

The old-fashioned formula of "so much" land for the sewage derived from "so many" people is absolutely useless for practical guidance. I ascertain the total amount of sewage during twenty-four or thirty-six hours, and divide this into eight or twelve charges or flushes. The length of agricultural drain pipe necessary is that which will accommodate the amount of one of these flushes when each drain pipe is supposed to be full. In this way the ground receives a dose of well-aërated tank effluent at three-hourly intervals.

The kind of land suitable is grass land, orchard, or garden, the last two requiring a little care in the distribution of the pipes so that their alignment may not be interfered with by the vegetation. The cultivator of such lands also knows where the pipes are laid, and takes care accordingly.

This simple system is suitable to all climates; the whole being underground, the extremes of heat and cold have no effect upon it. I have installed many such plants during the past few years, in India, England, and Canada; thus, I think, giving it a very fair test so far as climate goes. I have had the advantage also of comparing its performance with that of other systems suitable to the disposal of sewage in rural districts.

The ultimate results, too, are exceedingly good, for not only is the final effluent good on chemical analysis, but a very high standard of bacteriological purification is also attainable.

DISCUSSION.

Dr. Scott Tew (West Kent) remarked that his experience of similar conditions to those described by Professor Starkey had not been wholly satisfactory. If rain water was to be admitted to the septic tank he was of opinion that a detritus tank was an absolute necessity.

Professor Kenwood (London) considered that in fixing his tank capacity at a thirty-six hours' load Professor Starkey was attempting too much, as there would be a great danger of the sewage becoming over-septicized and then a deposit of colloid matter would take place which would be very difficult to remove.

Dr. Scott (Plymstock) found that in his district the whole question resolved itself into the difficulty of procuring sufficient land per house on which to treat the sewage. The separation of house slops from faecal matter was of no importance at all, although it was difficult to persuade people that the former could readily become as offensive as the latter. No doubt if every house possessed sufficient land for the treatment of its own sewage the problem would be much simplified, and he thought not less than a quarter of an acre should be allowed by statute. At present it was difficult for rural district councils to obtain land, and further compulsory powers were required.

THE PREVENTION OF POST-MORTEM PUTREFACTION.

By J. C. McWalter, M.A.R.U.I., M.D.Brux.,
Examiner in Pharmacology, Apothecaries' Hall, Ireland.

There is one distinct department in which sanitary science is now in as bad a condition as ever it was, and that is in the disposal of the dead. Not merely are our methods as bad as those of our ancestors—they are dangerously worse. When the population increases to an enormous extent every year, and when the cities become more and more congested, the danger to the living of having hundreds of thousands of putrefying corpses a few feet under the ground, and a few yards from where people are trying to earn a living, becomes more and more pressing.

Our ordinary method of coffin burial is not merely bad, but is the worst conceivable. It would be simply impossible to invent any means—invested with an apparent reverence—which could render the grave more revolting or the remains more offensive to every instinct of human nature. This is, happily, hidden from the majority of people, and only occasionally thrust on those whose awful duty it is to perform a *post-mortem* examination on the bodies of persons deceased for some time.

In a somewhat recent instance Sir Thomas Stevenson was directed by the Home Office to examine the remains, which had been in the grave for two years, and he has left us a lurid description of the overwhelming stench and still active putrefaction which remained after that time. As in London alone some 90,000 persons die per annum, we may assume decomposition goes on for three years, and that at least 270,000 putrefying corpses are tainting the

water supply, which must, in spite of all care, be derived from the adjacent soil.

Not on the high ground of public health alone must we consider this question, but as not one of us would willingly see a person dear to us reduced to that horrible state of stagnant fetor which is their inevitable fate under the conditions we impose on them, it becomes a sacred duty to reform our present methods.

The practice of cremation at once suggests itself, but I do not propose to deal with it, partly because it has so often been treated by abler hands and partly because I wish to meet the opinions of those who are opposed to cremation on account of religious or other prejudices.

Methods of embalming the dead are becoming increasingly common, and already there are several firms who make a speciality of it, and who charge comparatively moderate fees for the process. For those who can afford it it appears to offer a more decent and reverential means of treating the dead than our present customs, but it must remain largely a luxury of the rich on account of the cost.

The method which I suggest for the prevention of *post-mortem* putrefaction in human bodies is simply that of the injection with formalin, practically the method of the dissecting room. It is cleanly, cheap, and effective, and may be introduced merely by syringing into the aorta by the ordinary injectional method. Sufficient proficiency to do this neatly can be acquired by a little practice, and there need be none of that mutilation which is so abhorrent to the relatives of the deceased.

It is unnecessary to detail the advantages of formalin over any of the disinfectants or antiseptics hitherto used for preserving anatomical preparations. It has been abundantly tested in every medical school in the world. It hardens the tissues, preserves their natural conformation, and does not introduce poison into the system. Hence the drawback of using such substances as arsenic, corrosive sublimate, or carbolic acid, which would interfere with the examination of the body in case of suspected poisoning, is overcome.

It is, of course, arguable that it is much better not to attempt to use a preservative of any kind; that the object of earth burial should be to reduce the body to its primary elements as quickly as possible, and any effort to delay that consummation should be considered objectionable. Such an objection might well prevail if it were the custom to place bodies uncoffined into the earth and allow the ordinary processes of nature to operate, or if they were merely interred in a perishable coffin. But what we have to deal with is the present custom, whereby the remains are placed in a strong wooden coffin which will not perish for many years, whilst a sufficiency of air is enclosed in the coffin to promote the growth of saprophytic organisms, and the oxidizing agency of the earth is prevented from operating for a considerable time. Whilst these conditions prevail, and whilst the considerable amount of prejudice against cremation persists, the problem remains to convert the cadaver, as Sir Henry Thompson said, into ammonia, ashes, and carbonic acid. The rôle of formalin is merely to ensure that this may be done without the production of offensive by-products harmful to the public health by poisoning the water supply, and the purport of this paper is merely to stimulate a discussion as to whether there is any better means of doing this.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

CASE OF ANGIO-NEUROTIC OEDEMA.

Miss X., aged 32, had been under my treatment for about three weeks suffering from colic and pain over the area of the appendix; no swelling or tenderness on pressure, no high temperature or other symptoms of appendicitis could be found. After a week's rest in bed, with milk diet, castor oil, and bismuth mixture with tinct. opii ♏v, all symptoms subsided, and on August 31st I told her she might live her usual country life, gardening, walking, etc. On the same afternoon she went for a two-mile walk, and felt very tired, and the pain came on again. She went to bed early and slept well until 3 a.m. September 1st, when she woke up feeling her lips very swollen, and sent for me (3½ miles). On arrival at 4.30 a.m. I found her in a very nervous hysterical condition, with well-marked oedema of both lips and both eyes. She said she had also had a "tight feeling and choking sensation" in the throat, and was afraid she was going to be suffocated; but this was getting better when I saw her, and I could see no oedema of the larynx and nothing but congested fauces. The pulse was 140, slowing down to 80 in twenty minutes; no murmur was to be heard, but only an accentuated second sound; the urine, specific gravity 1015, was very acid, but contained no albumen or sugar, and there was no deposit. I gave her a mixture containing liq. strych. ♏iv and sp. aetheris co. ʒss every four hours—four doses. At noon the same day the oedema was diminishing, and at 11 a.m. on September 2nd oedema had practically vanished, and there was no colic.

Her father and mother are both dead; she had only one brother, who is alive and healthy, and there is no hereditary history of the disease to be obtained. She states that she had it once before, two years ago, and put this former attack down to fatigue through overwork as a hospital nurse.

Is this purely a vasomotor change owing to suddenly increased permeability of the serum through the capillaries (and, if so, what is the cause of this change?), or is there a possibility of its being a result of cardiac weakness brought on by fatigue? And what connexion (if any) has it with the preceding attack of colic?

Chillington, S. Devon. L. H. D. HALE.

DIAGNOSIS OF GAS IN THE PERITONEAL CAVITY.

On July 12th, 1907, I was called at 2 a.m. to a girl, whose general symptoms were compatible with either an acute attack of appendicitis, with the appendix lying alongside the ascending colon, or a perforation of the stomach or duodenum.

The area of liver dullness was not diminished, but on laying the bottom of a match-box over the stomach, scraping it lightly with the finger nail, and auscultating all over the abdomen I heard the conducted sound everywhere almost as plainly as in the stomach area. I sent her to Liverpool by the first train, and she was successfully operated on by Mr. Rushton Parker ten hours after the first symptoms. Mr. Parker, who has kindly given me permission to publish his letter, described the ulcer as "near the cardiac end in front, there was no extravasation of contents, the hole quite minute, and covered with lymph alone."

But for this method of determining the presence of free gas in the abdominal cavity, I should have been in some doubt as to the diagnosis, and valuable time might have been lost.

I am indebted to Dr. Stacey Wilson's paper on alterations in the level of the diaphragm,[1] advising this method of measuring the size of a dilated stomach, for a sign of free gas, which I have not seen described, and which was, to my mind, conclusive evidence of the nature of the accident.

Llandudno. EDWARD GOODDY, F.R.C.S.Eng.

NOTE ON THE RATE OF FORMATION OF VESICAL CALCULI.

PROSTATECTOMY was performed upon an elderly man on January 29th, 1907. The bladder contained no calculus. During the middle week in February the bladder was examined through the suprapubic wound and was quite clear.

He was readmitted into Christchurch Hospital complaining of leakage of urine through the wound in July, 1907. The bladder was reopened by my colleague, Dr. Acland, and two phosphatic calculi were removed. The calculi were of the size of monkey nuts, and weighed 20 and 28 grains respectively. Almost exactly five months had elapsed between the digital examination of the bladder and the removal of the calculi.

CLENNELL FENWICK, M.B.Lond., F.R.C.S.Edin.,
Honorary Surgeon to Christchurch Hospital, New Zealand.

[1] BRITISH MEDICAL JOURNAL, 1907, vol. i, p. 978.

REVIEWS.

OPHTHALMIA NEONATORUM.

Whether regarded as a book of reference on an important ophthalmic disease, or as a volume of high practical utility, Mr. Sydney Stephenson's essay on *Ophthalmia Neonatorum*,[1] for which he received the Middlemore Prize of the British Medical Association at the annual meeting this year, must be regarded as excellent. The amount of information which Mr. Sydney Stephenson has placed before the ophthalmic world in this interesting monograph is very great, and the whole work is a creditable addition to British ophthalmological literature. The sections on etiology and prevention are particularly good. In the former the author begins with an historical sketch showing that the recognition of the connexion between the maternal condition and that of the infant dates back so far as 1750. Then follows a full discussion as to the percentage of cases in which the gonococcus has been proved to be the determining cause. As was to be expected, the figures vary considerably, but the average works out at about 67 per cent. The author's own figures give a percentage of about 66. A word of caution, however, is necessary in drawing conclusions from such tables, namely, that it is only within the last twenty to thirty years that accurate diagnosis by biological methods has been possible. As a matter of fact the gonococcus was not discovered by Neisser till 1879, and therefore all statistics obtained before that date are, perhaps, not very reliable. In some clinics even now conjunctival bacteriology does not receive the attention which its importance deserves. It would be interesting to know, for example, what methods of diagnosis were employed in the tables given on page 20. Mr. Stephenson fully discusses those forms of conjunctival disease in which the parasite is not the gonococcus but some other micro-organism, and in which the symptoms are scarcely distinguishable from those of the inflammation due to the specific organism. The subject of *ante-partum* ophthalmia is one of great interest. Mr. Stephenson is able to include in this volume no fewer than 19 cases which he has personally observed. In more than one-half of them the gonococcus was found. The chapter on prevention is also excellent. It is full of valuable statistics, and the various methods of preventive treatment are adequately discussed. All ophthalmologists will not agree with Mr. Stephenson as to the value of such preparations as a 1 per cent. silver nitrate and 1 to 4,000 corrosive sublimate. Such solutions probably have not any definite bactericidal action, and it is within our knowledge that some practitioners who irrigate the conjunctival sacs of newly-born children with nothing but sterilized water never see the disease at all. With all possible respect to Mr. Stephenson's authority, we cannot help thinking it a pity that his book may tend to induce practitioners to place reliance on the remedy which the lotion contains, whereas the important point is the manner in which the lotion is applied. We entirely agree that solutions of argyrol are much better than strong solutions of nitrate of silver. This arises from the fact that they are practically inert, and therefore do not injure the protecting epithelium of the conjunctiva. We are quite aware that this is a view which at present does not meet with much acceptance, except with those who have carefully experimented on the bactericidal properties of the newer remedies, but just as a modern surgeon washes out a septic abdomen with sterilized water or sterilized normal saline, so do we wash out a septic conjunctival sac. Mr. Stephenson's book is one of great and painstaking research. He has amassed a great amount of information, which is orderly and well arranged. Of greater value still, it gives to the reader the benefit of his own experiences and observations, which cannot fail to be of great use.

PUBLIC HEALTH.

A new and enlarged edition of Mr. W. J. Dibdin's pamphlet on *Recent Improvements in Methods for the Biological Treatment of Sewage*[2] has just been published. The first edition, which was issued in 1904, was reviewed in the Journal of October 29th of that year. Mr. Dibdin states in the preface to this edition that the intention is to give an account of modern methods of purifying sewage and of improvements effected by the author, and to show how the sludge difficulty may be overcome. This pamphlet in fact, like the former, is chiefly interesting in that it sets out the author's patented method of constructing contact beds by means of slates or similar material, and gives the results of the working of beds constructed at Devizes and other places. The conclusions drawn by the author that "the slate bed treatment is not only effective but superior to any other known method for dealing with the sludge problem" is certainly not one that will be generally accepted, and may be set down to the enthusiasm of a patentee who believes strongly in the efficacy of his method. The evidence he adduces, although quite inadequate to bear out any such assertion, does seem sufficient to warrant a careful consideration of his method in suitable cases—where, for example, the materials he advocates are cheap and abundant. There are additions to the former pamphlet, besides the pages giving results of further experience of the slate beds, dealing with the decomposition of cellulose, the nature and amount of suspended matter in sewage effluents, the dangers of sludge heaps, and the presence of *Bacillus coli communis* in potable water; but these subjects, except the last, are only briefly touched upon. Illustrations and tables of analyses are also given, but, as is so often the case, the analyses are not very convincing, because the samples of untreated and treated sewages obviously do not always correspond. The pamphlet is, however, one which must be read by every one who desires to keep in touch with the various biological methods of sewage treatment.

The scamping of drainage and other sanitary work has often been attributed to the fact that a great deal of it is hidden away either in covered trenches or behind plastered walls, or in inaccessible parts of a house. It is certain that the ordinary British workman is less careful about this particular class of work than he is with that which cannot be so easily concealed. Accurate inspection of the completed work is thus doubly necessary, and Mr. Jenson has very carefully explained the principles that should be followed by the person to whom this inspection is entrusted.[3] He gives in some detail, assisted by numerous drawings, the methods that should be employed in testing drains, and he describes with accuracy those forms of drain traps which may be used with safety, and distinguishes those which should be avoided. The information given is accurate, and may safely be followed by those engaged in sanitary work.

The value of Mr. Cash's translation of Heiss's description of the public abattoirs in Germany has been distinctly enhanced by the account which he has himself written of the slaughterhouse system in this country.[4] Although there are an increasing number of English towns in which public slaughterhouses are being provided, there are very few in which there are no private slaughterhouses as is the rule in Germany. Many German abattoirs are very comprehensive buildings, or rather groups of buildings, for they contain, besides the slaughterhouse proper and the cold store, an ice-making plant, a sausage factory, a *Friebank*, or certified cooked-meat shop, a laboratory, a pickling room, even sometimes a soup kitchen, a dogs' home, a restaurant, and a public swimming-bath. In the earlier pages of this work, in which Mr. Cash deals with the English system of slaughtering, he makes out a very good case in favour of the abolition of the private slaughterhouse, and by quotations, both verbal and pictorial, from the reports of medical officers of health he shows the real need for reform. He states the objections of the butchers to the compulsory use of abattoirs very fairly, though it does not appear to have occurred to him that the objection that with a system of public slaughtering the butchers' business is no longer private may be met by the provision of a series of small public slaughterhouses after the plan adopted in several English towns.

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[1] *Ophthalmia Neonatorum.* By Sydney Stephenson, M.B., C.M. London: G. Pulman and Sons, Ltd. 1907. (Roy. 8vo, pp. 253.)

[2] *Recent Improvements in Methods for the Biological Treatment of Sewage.* By W. J. Dibdin. F.I.C., F.C.S. Second edition. London: Sanitary Publishing Co. 1907. (Demy 8vo, pp. 68. 1s.)

[3] *Modern Drainage Inspection and Sanitary Surveys.* By C. J. G. Jenson, C.E. Second edition. London: The Sanitary Publishing Co. 1907. (Cr. 8vo, pp. 131. 2s. 6d.)

[4] *Our Slaughterhouse System: A Plea for Reform.* By C. Cash, B.A.; and *The German Abattoir.* By Hugo Heiss. London: George Bell and Sons. 1907. (Royal 8vo, pp. 224.)

One very strong argument in favour of the universal establishment of public slaughterhouses is the fact that in those towns where abattoirs are provided and meat inspection is rigidly enforced, the unprincipled butchers carry on their slaughtering just outside the town boundaries, and are subject to little or no inspection. We believe we are right in saying that Mr. Cash is not connected officially with the public health service; indeed, there are many indications in his book that he has approached his subject in the first instance as a humanitarian and with a view to securing the adoption of more merciful methods of slaughtering cattle than those at present in vogue. He has displayed a great deal of industry in getting together a large number of facts concerning slaughterhouses in the United Kingdom, and he has placed before his readers not only the need for reform, but the manner in which reform may be carried out.

These two bulky volumes, the third edition of the manual for public health officers in Italy, edited by Professor CELLI of Rome, represent the latest work on hygiene, and are brought thoroughly up to date.[5] The illustrations are numerous (over 700 in the two volumes), and give the impression of having been drawn with the express object of elucidating the text, and not reproductions of more or less ancient woodcuts copied in a traditional manner from previous works on the subject. As an example, the capital drawings on p. 1101 illustrating the various larvae of the different kinds of meat-fly may be cited. Though, perhaps, not of great value as works of art, they really do help to an understanding of the text, which, after all, is their main object. The large space given to physics and chemistry as applied to hygiene is very fully occupied by Dr. Scala, who discusses with considerable minuteness the various apparatus, methods, and practices associated with this department. Professor Celli himself takes the section of epidemiology, and, although he includes such a condition as arterio-sclerosis, it is rather surprising that no mention is made of roetheln, for, although the disease may not be serious in itself, it often leads to considerable difficulties as to diagnosis and prevention when it occurs in large communities—in schools, for example. In the discussion on small-pox, frequent reference is made to English experience, and the legal aspects of the various vaccination laws as exemplified in recent parliamentary discussions and commissions on the question. Like other writers, Professor Celli draws attention to the grave economic loss to the nation that ensues from sickness, and, as a corollary, the importance of enforcing all those preventive measures which the experience of medical men and sanitary officials may suggest. There are undoubtedly diseases, for example, syphilis, which could be stamped out in time if complete isolation could be enforced, but seeing that such drastic measures are in most cases practically impossible, it is possible to do only the next best, and in all such cases the experience of various nations is carefully weighed and discussed. In spite of the encyclopaedic way in which each subject is treated, there is very little overlapping in the various sections. The chapter on the legal and police aspects of public health work is remarkably detailed, and must have involved a large amount of labour. With the ever-increasing amount of work that falls to the lot of the public health officer, it becomes wellnigh impossible for one man to write adequately of the whole, so that some such system as that of Professor Celli's, whereby the work is separated into several sections, each under the charge of a specially-qualified writer, becomes a necessity, if it is to be done with any real thoroughness. That this end is admirably achieved in the work before us becomes very clear as one turns over the pages. It is likely to be the standard work on the subject in Italy for some years to come, and may with advantage be consulted by any one especially interested in those questions of public hygiene which are so rapidly becoming not merely of medical but of national and international importance.

ELECTRICITY AND RADIOGRAPHY.

DR. JELLINEK has been taken to task by a critic in the German medical press for plagiarism. He has been accused of borrowing not only facts but phrases for his work on medical applications of electricity,[6] which constitutes vol. iii of an electro-technical encyclopaedia. As a matter of fact, we have seldom come across a book of this encyclopaedic character in which more care was displayed to credit multitudinous authorities with their own. The author writes in a singularly lucid style; his brevity does not imply a sacrifice of intelligibility, and he ranges the whole field of applied electricity. The book is, therefore, extremely useful for ready reference, whilst an excellent bibliography permits of easy access to extended accounts of particular instruments or manipulations. The first 160 pages, dealing with apparatus both for the production of electrical energy in its various forms and for the practical application to diagnosis and therapeutics, are well illustrated not only by elevation pictures but also by plan diagrams, which are much more valuable. Section VI deals with electro-physiology satisfactorily, but does not pretend to do more than recapitulate existing accounts; the same may be said of the chapter on diagnosis. The author's review of the general principles of electro-therapeutics and of special applications is couched in far more moderate terms than most of those recently published; indeed this latter section is the only one in which there are any serious omissions; errors of omission, moreover, are lightly overlooked where many successful applications are but now emerging from the experimental stage. The last section of the book is devoted to Roentgentherapy, and records briefly well-established results. The book may be heartily recommended to all those interested in medical electricity. There is a good index.

In the preface to the fourth edition of his book, *The Röntgen Rays in Medical Work*,[7] Dr. DAVID WALSH apologizes for some injustice done by delay to the work of his co-author, Dr. LEWIS JONES. He pleads in excuse "the rapid increase of *x*-ray literature," which has entailed some difficulty in keeping his own section of the book abreast of the times. The "injustice" is of so little moment that we venture to think it might have been rectified by allowing Dr. Lewis Jones's name to appear upon the cover. The whole of the first 120 pages are from his pen; they deal with apparatus and technique, are well illustrated, clearly written, and as complete as the limited space permits. Dr. Walsh's own contribution certainly betrays industry, but is little more than a compendium of other people's achievements. In this section the name of Mr. Robert Jones meets the eye upon almost every other page, and the author is indebted to him for many beautiful illustrations, which have enabled this edition to escape the reproach of earlier issues in the matter of plates. The book will be read with interest by those who wish to have an intelligent understanding of *x*-ray methods and a knowledge of their diagnostic and therapeutic possibilities, but in these days of complete technical manuals it will hardly suffice for the needs of the practising radiographer.

THE NEW PHYSICS.

The New Physics and Its Evolution,[8] by LUCIEN POINCARÉ, as it appears in an English edition by Mr. F. LEGGE, is well worthy of the place assigned it in the International Scientific Series. The object of the author, as stated in his preface, is to show the general results arrived at by the physicists of to-day, and to give a brief exposition of the intermediate stages which link them up with the theories of the past. The comprehensiveness of the author's work renders it of value, for it presents with admirable clearness the main broad lines of physical development, and affords a most useful and much-needed clue to the apparent intricacies of modern research. After calling attention to the revival of metaphysical speculation, and to the ever-growing influence of Descartes, M. Poincaré deals with the continuous advance of metrology in all its branches, discusses such fundamental physical concepts as the conservation of energy, the indestructibility of mass, and the

[5] *Manuale dell' Igienista.* Per cura del Prof. A. Celli. Terza edizione, vol. ii, Part 2. [Handbook for Medical Officers of Public Health. Edited by Prof. Celli. Third edition, vol. ii, Part 2.] Milan, Rome, and Naples: Unione Tipografico-Editrice Torinese. (Roy. 8vo, pp. 1200; 700 illustrations. 40 lire.)

[6] *Medizinische Anwendungen der Elektrizität.* Von Dr. S. Jellinek. Munich and Berlin: R. Oldenbourg. 1906. (Cr. 8vo, pp. 468. M. 10.)

[7] *The Röntgen Rays in Medical Work.* By David Walsh, M.D.Edin. Fourth edition. London: Baillière, Tindall, and Cox. 1907. (Demy 8vo, pp. 451; 172 illustrations. 15s.)

[8] *The New Physics and Its Evolution.* Authorized translation of *La Physique moderne son evolution* by L. Poincaré. International Scientific Series, edited by F. Legge. London: Kegan Paul, Trench, Trübner and Co. 1907. (Cr. 8vo, pp. 389. 5s.)

laws of thermodynamics, and refers to the recent work which has been done on the constitution of the various states of matter. While the work on solutions, on electrolytic dissociation, and on the conductivity of gases are adequately treated, the most interesting chapters are unquestionably those which deal with the modern conceptions of the ether and with the recent researches undertaken on the radio-active bodies. The author, in close sympathy with M. Gustave le Bon, regards the atom as being in all probability a "sort of solar system in which electrons in considerable numbers gravitate round the sun formed by the positive ion," and confesses that "many experiments render it probable that in radio-active bodies we find ourselves witnessing veritable transformations of matter." In the two chapters relating to the ether, the author traces the development of Descartes's idea in the minds of Fresnel and later investigators, and shows how it has tended to expand its original bounds and enters into close relations with electrical and other radiations, and even with the theory of gravitation. The author discusses the theory of Lorentz at considerable length, but states that according to the more modern views, the ether is probably in its objective reality something much simpler than matter, and therefore indefinable by material properties, and knowable only in so far as exact knowledge can be attained by experiment. In the concluding chapter on the future of physics the attempt of physicists to conquer a supreme principle, which should command the whole of physics, is characterized as being intensely beneficial, even if erroneous, on the ground that it leads to great and important co-ordinations, and the author points to the electron hypothesis as being that which at present best suffices for the grouping of known facts. The future of the science is one of infinite promise, but progress in the past has always been in proportion to the material resources of our laboratories, and it is to be hoped that the present evolution may not be retarded by any short-sighted parsimony. The book has, on the whole, been rendered into good and idiomatic English, but there are occasional lapses, such as the annoying use of the English "so" to translate the French "si," and a quite inexcusable number of "split" infinitives. There are also occasional misprints, which will doubtless be corrected in a future edition.

NOTES ON BOOKS.

There has long been felt a want of a suitable guide for newly-appointed police surgeons, to whom many of the duties of their office come as a surprise, being totally different to any they have had experience of in private practice. Though Dr. C. Graham Grant, the author of a *Police Surgeons' Emergency Guide*,[1] has had the assistance of Sir Edward Henry, Mr. Clinton Dent, and others, we cannot say that the work is wholly satisfactory. On the vexed question of drunk or sober, for instance, the author, at p. 13, tells the young police surgeon to remember that he is not called to decide if the person is drunk at the time he sees him, but if he was drunk at the time of his arrest. This is, we think, a very dangerous position to take up, and one which might subject the police surgeon acting upon it to severe cross-examination by defending counsel. The author's "time test," again, given on p. 14, has never, we believe, been generally accepted by metropolitan police surgeons, and has, indeed, been variously described, as Mr. Graham Grant acknowledges, as "worse than useless," "quite superfluous," and "invaluable." The tables given at the end of the book from Mr. Jackson Clarke's *Post-mortem Examinations* add greatly to its value.

Mr. John Murray has added to his series of popular editions[2] of standard works St. John's *Wild Sports and Natural History of the Highlands* and Gleig's *Life of Robert, First Lord Clive*. St. John's book used to be known to every sportsman, and, though many of the birds and beasts common in his day have become rare, this rather tends to increase the value of the book to the modern naturalist, while the author's style will charm the reader who has no claim to that title. This new edition is a reprint of the eighth, with the author's notes and the original illustrations. Gleig wrote his life of Clive sixty years ago, and this is the fifth time the book has been reprinted; at the present moment, when there is a movement on foot to commemorate Clive's memory both in England and in India, it will doubtless attract many readers. The volumes in this series, though very cheap, are printed in good type and plainly but neatly bound.

[1] *Police Surgeons' Emergency Guide*. By C. Graham Grant, L.R.C.P. and S.Edin., Divisional Surgeon, H and Thames Divisions Metropolitan Police, etc. London: H. K. Lewis.

[2] Murray's Popular Editions. London: John Murray. (2s. 6d. each volume.) *The Wild Sports and Natural History of the Highlands*. By Charles St. John. *The Life of Robert, First Lord Clive*. By the Rev. G. R. Gleig, M.A.

SECRET REMEDIES AND PROPRIETARY ARTICLES.

(Continued from vol. i, 1907, page 1550.)

In the ninth article of the series Dr. F. Zernik continues his reports on new drugs, secret remedies, and proprietary articles (*Deut. med. Woch.*, June 27th, 1907).

Vinopyrin in doses of from 0.75 to 1.25 gram is recommended for headache, and in doses of 1 gram three or four times a day for neuralgia. It is said to be a tartaric acid combination of p. phenetidin. It proved to be a simple tartrate of phenetidin, thus being chemically related to citrophen, which is a citrate of phenetidin. The disadvantage of this composition is that it thus contains a high percentage of phenetidin (about 48 per cent.), and therefore shows marked phenetidin action, in contrast to preparations in which the acid "rest" is introduced as a substituting constituent—for example, the acetic acid "rest" in phenacetin or the lactic acid "rest" in lactophenin. It is therefore necessary to be careful in using this preparation. Zernik further calls attention to the fact that the *vinopyrin* tablets containing 0.75 gram are very easily disintegrated and are not readily dissolved, both of which properties must be regarded as disadvantages.

Dr. Schäfer's Antisanguin is described as a haemostatic and wound antiseptic. It is suggested to replace lysol and carbolic acid, etc., on the ground of its freedom from all odour. Each bottle contains 30 c.cm. and costs 1 mark. It contains 30 grams of sulphate of aluminium, 0.25 gram of salicylic acid, and 69.75 grams of water.

Epilepsy pills cost 12 marks for 90 pills in a box. The pills contain nothing beyond inactive powdered leaves and roots.

Lamma powder is another epilepsy remedy. This contains equal parts of the bromide of sodium and bromide of ammonium.

Fascol ointment is said to have the power of checking decomposition, of drying up surfaces and of limiting the secretion of wounds. It is recommended for skin diseases and for gynaecological practice. It is supposed to consist chiefly of the bituminous mineral fascol; 50 grams cost 3s.

Fascol piles capsules contain the same ointment in gelatine capsules. Twenty-three of these, each containing 1.25 gram of ointment, are put up in boxes for 2s. 6d. The ointment contains 33 per cent. of wool fat, about 6 per cent. of dermatol, about 2 per cent. of powdered leaves, as well as some resorcin and a substance in granular condition, chiefly containing calcium carbonate. The content of bitumen soluble in benzol is extremely minute. The capsules contain approximately a similar substance, only it has a softer consistence.

Goître cure is a Cincinnati preparation. The treatment consists of (*a*) 2-gram powders, made up of sodium bicarbonate lightly tinted red, which are supposed to dispel the flatus; (*b*) 0.3-gram tablets, covered with chocolate, consisting of sodium bicarbonate, oil of carroway, and aloes, supposed to regulate the bowels; (*c*) an ointment consisting of a sodium soap and vaseline, which is to be rubbed into the skin over the goître for from ten to twenty minutes every evening; and (*d*) some tablets, each of which contains 0.12 gram of extract of *Hydrastis canadensis*. One tablet is to be taken three times a day before food, while children are to take a third of this dose.

Lytrol is described as a non-poisonous disinfectant, possessing all the good qualities of poisonous lysol. It is a solution of potassium soap in alcohol, containing about 20 per cent. of β naphthol.

Liqueur du Dr. Laville is a well-known antigout remedy, which is popular in France, in spite of its high price and its secret composition. Each bottle contains 75 grams of the fluid, and costs 8s. The chief constituents are colchicin (about 0.08 per cent.) and quinine in alcoholic solution. The *pilules du Dr. Laville* are sold as preventive remedies against gout. They contain extract of winter cherry, *Physalis alkekengi*, one of the Solanaceae (? capsicum), guaiacum resin, powdered leaves and root of the marsh mallow, and silicate of sodium.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

The sixty-sixth annual meeting of the Association was held at the Medical Society's Rooms on July 25th and 26th.

Induction of New President.

The early part of the meeting was under the presidency of Dr. Robert Jones, who later on inducted to the chair the new President, Dr. P. W. MacDonald, of the County Asylum, Dorchester.

The first morning was devoted to the internal business of the Association. On reassembling, the new President delivered his address.

Presidential Address.

The President chose as the title of his address, I Look into my Glass. Having expressed his appreciation of the honour implied in his election to the presidency of the Association, he made sympathetic reference to the recent loss of distinguished Fellows, including Dr. Oscar Woods (Cork), Dr. F. H. Craddock (Gloucester), Dr. John Greig MacDowall (Menston), Dr. R. S. Stewart (Glamorgan), Dr. Charles Angus (Kingseat), Dr. Dixon (Buxton), Dr. Lloyd Andriezen, Dr. A. L. Graham. Three honorary members had also been removed by death: Dr. A. E. MacDonald (New York), Dr. Charles Féré (Paris), and Sir W. T. Gairdner (Glasgow). Sir Charles Bagot also was no longer with them; he had been one of the best friends of the Association.

The burden of his address consisted of an examination of the question of the social aspect of insanity in a purely rural district untouched by the influence of large communities. His inquiry extended over half a century of the history of the county of Dorset, during one-half of which time he had supervised the administration of the County Asylum. At the commencement of the fifty years there was a ratio of 1 insane and defective person to every 307 of the population. In the Fifties there were in the county scores of feeble-minded persons of all ages living free and simple existences in the villages, unknown to Blue Book statistics and lunacy laws. But since the Seventies the weak and defective persons had been gathered into the institutions of the country, until the public had become alarmed at the cost of keeping these hordes of persons. In his inquiry every foreign element had been excluded, leaving only the home-bred cases to be dealt with. Twenty-five years ago the first admissions were in the ratio of 1 to 307 of the population; to-day the rate was 1 to 200. But in making the comparison it was essential to look at the social conditions as represented by the birth-rate and the important question of migration. Since 1851 the birth-rate of the county had fallen from 30 to 23 per 1,000, which, when corrected according to present-day methods, amounted to a decline of 30 per cent. This and the flow of migration had resulted in a net loss in that county of 82,000 persons, and the stationary proportion of enumerated natives was less than 65 per cent. During the decade ending 1881 the excess of births over deaths was 22,564; yet at the end of that period there was a fall of 4,028 in the population, showing a net loss to the county of 2,500 persons per annum. Village depopulation had gone on until the backbone of the country was threatened, but for the depletion by migration the ratio of first admissions to population would stand at 1 to 282, as compared with 1 to 307 in the Seventies, or a fractional difference of 25 per cent. During the fifty years there had been a possible increase of 25 per cent. in the ratio of first admissions to population, which was not surprising in view of the destruction worked by the process of migration and the enfeebled and tainted nature of many of the residue. The Blue Book for 1906 showed Dorset to have the third highest ratio—namely, 3 6 of insane to 1,000 of the population; but there was no mention of the conditions which had resulted in that high proportion, nor of the contributory changes of a national character. The accumulation of the chronic insane in the asylums was out of all proportion to the population, and he thought the real cause for that was the unbounded confidence of the ratepayer of this country in the administration of our public asylums, and while that was so, the trained and experienced asylum physician need not trouble to warn either the neurologist, the visiting physician, or the Poor-law official off his preserves. There was also the apparent reluctance on the part of the home circle to care for their insane relative. That was not unreasonable, because the relatives themselves had a greater struggle for existence, and therefore were not in such a good position to play the rôle of mental sick nurse. He warned his hearers against beginning at the wrong end.

In considering whether the character of the cases of mental disease had changed in the last fifty years, he said there was some difficulty in bringing into line the experience of fifty years ago with the more ripe experience of the present day; but it was not a great difficulty, because Pinel, Shae, Tuke, and Bucknill were as competent to diagnose true mania, melancholia, and other dementias as the present-day Goliath, and the registers of fifty years ago were as carefully compiled as the present ones.

The types of insanity shown by first admissions exhibited no startling change, yet the change which did occur was significant of what had been happening in the county. The group under the heading of Mania had varied very little, and this was the only group which showed no ominous change in the two periods. It was the experience that that type was less often associated with the wholly hopeless and incurable than with either of the other forms. In the agricultural boom of the Seventies the percentage of manias among the admissions was as high as 65. In melancholia there was an advance from 18 per cent. in the Fifties to 25 per cent. in the Nineties; and the increase had been much more pronounced in the decades ending 1896 and 1906 than formerly; and in this he believed that intoxicating causes had played a conspicuous rôle, if only by rendering the individual hypersusceptible to every extraneous influence. But the really important point was the close association between the type of melancholia as met with in Dorset and the all-absorbing question of heredity. The dementias were not so easily dealt with, for ideas had changed and the whole aspect of things had altered in regard to the early dementias. He did not think the only reason for the high proportion of senile cases of dementia in rural communities was the lack of brain activity in those districts. The proportion in that type had risen from 5.8 in the Fifties to 8.8 at the present time. That was not an alarming increase, but what about the residuum? He believed it was due to causes other than lack of brain activity. The Poor-law authorities in the country districts failed to make provision within their walls for the aged mentally sick, and by a process of devolution the Lord Chancellor, through the Lunacy Acts, ordained that those people should be gathered into homes. The aged were interesting both because of the lessons which could be learned from them and the reverence which should be addressed to them. But in the early dement a different condition of things was met with. The dementia praecox school ridiculed the homely terms "primary or early dementia," and some used "adolescent insanity" in preference to either. He wished to make his position clear on the matter, as he had experienced some difficulty owing to the accepted views of decades ago, and because the question of primary dementia bristled with the deepest interest in any attempt to study the phases of mental disease as exhibited by the admissions from the districts under consideration. Possibly in the Fifties that particular type of patient was not so thoroughly sifted from the others as at present; still, a study of the old textbooks would lay bare their presence in no inconsiderable number. In Dorset that class of case had advanced from 1 per cent. to 3 per cent. of the first admissions during the period under review. That was an alarming increase of the most hopeless type of mental disease. Probably educational pressure, unhealthy environment, and passionate indulgence in various directions were important side issues; but the increase was really grafted on to an instability associated with the scourge of heredity.

It was necessary to look through the glass at two types of a wholly degenerative nature—namely, general paralysis and epilepsy associated with insanity. There had been an increase of 2 per cent. in the former, but it was not one of the common types in rural districts. The author thought that if Dr. Mott could devote a few months' study to general paralysis as met with in such districts his impregnable fortress of "no syphilis, no general paralysis" would shake still more. There was a falling off in female

epileptics, and an advance of 1 per cent. in the male. But the cases of epilepsy with congenital defect gave one pause. He had considered the whole class of congenitals under one head. The proportion per cent. of that class among the admissions had risen from 4.7 to 8 per cent. during the fifty years, and that was one of the problems to be solved in any attempts to grapple with the question of race degeneracy. He had been in the highways and byways, the homes, and the village schools for the facts which he founded his opinions upon. For the increase of congenitals the social life of depopulated villages was answerable; unwise marriages, no variation, and an unholy attachment to the native, had landed them on the brink of ruin and degeneracy. Summed up, it meant that melancholia, early dementia, and congenital defect—especially the last—had increased beyond comparison with any increase in the admissions; and the gravamen of those charges lay deeply buried in the social life of the people, and help or relief must come from the root.

In reference to the connexion between occupation and insanity, he showed the close relationship existing between various forms of mental disease. During the fifty years the class from which the bulk of the cases were drawn—namely, labourers, mainly agricultural—had increased by some 5 per cent., calculated on the annual admissions, which was not surprising, because the more intelligent labourer had gone elsewhere. The professions and artisans never showed a high percentage, but they had also decreased; and the increase had been in the group "no occupation," which had advanced from 6 per cent. to 12 per cent. In his figures he had not included cases in regard to which no information was forthcoming; all doubtful factors had been excluded. With regard to the question of occupation in relation to female admissions, cases among the wives of labourers and artisans had decreased, though there was an increase of 7 per cent. among the class of servants and other unmarried workers. The main increase had been, as in the case of the males, in those of "no occupation," the proportion rising from 11 per cent. to 34 per cent., revealing a very high proportion of mental defectives. But his inquiry had established no clear connexion between certain occupations and special types of insanity. Still, there was an interesting state of things in reference to occupation and melancholia. The lack of interest and of direct stimulus to thought in large numbers of the peasant homes in Dorset had resulted in a state of gloom and despondency likely to be followed by melancholia, especially in people badly nourished. The relationship resulted from enforced displacement, not because the labourer was not worthy of his hire. Whereas formerly the unmarried woman was engaged in laundry and dairy work, much of that was now carried on in factories, and the simple peasant was therefore driven to eke out an existence in a variety of ways, many of which were not conducive to health. If the field of inquiry were narrowed it could be dug deeply, so that it might reach the richest stores of wealth and find use for all the appliances of scientific thought.

As to causation, if it were necessary to carefully correct birth-rates, it was more so in regard to causation, as more errors were likely to creep into that than into the whole domain of psychological medicine. In Dorset the factors at work were different from those in cities. It was usual to speak of causes in one district as equivalent to causes in another, but that was not always right.

With regard to intemperance, he included in that term far more than the abuse of alcohol, and suggested that the total abstinence school should greatly enlarge their list, so as to include black tea and the pocket phial. He did not regard alcohol as even one of the greatest causes of insanity; the facts available had taught him a different lesson. Intemperance in alcohol could not be proved to account for more than 3 per cent. to 5 per cent. of all cases of insanity in the county of Dorset; yet the Dorset peasant was as fond of his cider or ale as was the Lancashire miner or the Shoreditch docker. Dorset had one of the highest county rates in insanity, but one of the lowest in regard to alcohol as a factor. The stolid character of the peasant in contrast with the more highly-strung temperament of the urban dweller did not suffice to explain the difference. The Chancellor of the Exchequer solemnly prayed for further assistance from his declining excise, while the ratepayer grew sleepless under the increasing burden of insanity. The number of alcoholics was greater among readmissions than among first admissions; thus it was necessary to guard against tabulating as a cause what was clearly a symptom of loss of control. In regard to other substances, it was a fallacy to suppose that the poor people in the country could always obtain milk; that was not so, largely owing to the iniquitous system of tied dairies, both small and large. Moreover, the quality was of the poorest. Again, labourers often consumed two or three quarts of black tea per day; tea being made and the poisonous leaves having water added many times during the day. English people consumed six times as much tea as did the inhabitants of any other European country, and that diet must lead to impaired nutrition of the nervous system. He had found 15 per cent. of non-educable children in village schools, and the percentage of dull and backward as high as 35.

Dealing next with heredity, he said that in the sixtieth report of the English Lunacy Commission Dorsetshire was credited with the highest percentage of heredity as a factor in the production of insanity. Dr. Mott had said that the large majority of the insane were hereditarily predisposed. His fifty years' inquiry led him to say that heredity was the main predisposing cause, and that had been increasingly so, so that it was now between 50 per cent. and 60 per cent. He had been careful to exclude all cross-currents. Since predisposition had been traced in over 50 per cent. of first admissions, it might be asked whether there was any possibility or probability of accounting for that high percentage of heredity among the insane of Dorset. The truth could only be sought out by a due regard for the correlation of facts. During the fifty years there had been a steady decline in the birth-rate, but not greater in urban than in agricultural districts. In Dorset the corrected birth-rate showed the alarming decline of 30 per cent., and that was of enhanced significance when linked with the migration factor. It meant that the weak, the insane, the diseased were left behind—not a happy or robust combination to continue the propagation of the species. The attachment of the sexes among certain groups of allied neuroses might be explained by natural selection, but not with the view to the survival of the fittest. In some parishes in the county the conservative principles of matrimonial unions were so notorious that the choice of a partner in wedlock was ordained, and whoever broke the law might pack his goods and depart as one excommunicated. That custom had continued for many generations. When the weak and feeble married, the output was appalling. Neither science nor the Legislature would materially affect the question of insanity until the lay public had awakened to the fact that there was still reason to believe in the wisdom of the adage, "prevention is better than cure." As in the cause of mental disease, so in the means to be provided for its treatment, districts differed, solely because the numbers to be dealt with varied. He referred with satisfaction to the excellent work done by Poor-law infirmaries in many of the large centres. Dr. Toogood had stated that in 1905, 7,322 cases of supposed insanity passed through his hands; and that of those he discharged 2,877 as cured, and sent 3,583 to the asylums. The speaker wished to know how many of the 2,877 were certifiable, and what proportion of the total number sent to the infirmary should have been classed as of unsound mind. Until that was known it was impossible to draw conclusions; the stigma of being sent to the workhouse was as much to be resented as the certification bogey. From some of the expressions used in print, one would think there existed at the present time a law against the treatment of early symptoms, but he knew of nothing of the kind. The opportunities for such treatment should be equal for all. It was to be regretted that the members of the profession should continue to harp upon the stigma of certification; and he feared that the proposed notification might be surrounded by similar sentimental objections. Notification in this country would not reduce the ratio of insane to population, or raise the recovery-rate. He recalled with approval Professor Clifford Allbutt's words, that the stigma, if such there were, lay in the misfortune itself, and not in the red-tape of the proceedings. He regretted that the inauguration of out-patient departments in connexion with our asylums had proved a failure. The proposal that the general hospitals should establish mental departments was not new. It had been

done in St. Thomas's and Charing Cross among London hospitals, and at the Glasgow Western Infirmary; and if it were extended so as to be general, no member of the Association would raise a dissentient voice. But as the general hospitals were supported by voluntary contributions, were not the difficulties insuperable? What was possible in large cities ended in dreamland in country districts. He suggested that if city, county, and cottage hospitals were to open their doors, and if it were proved that thereby a number of cases would be helped towards recovery, county and other central authorities should have the power to contribute a like amount to the hospitals for the cases treated there, as they did to the existing institutions. The question of receiving-houses for the care of cases previous to certification was being taken up in various parts of the country, and in large centres should prove a valuable one; though probably the same could not be said of sparsely-populated districts. But, he asked, would not such receiving-houses be surrounded by the same atmosphere of suspicion? Surely it would be simpler to ask the Legislature to free the institutions of this country from oppressive laws and the stigma of lunacy, and allow them to open their doors to all, incipient or certified, as in the case of ordinary hospitals. The two phrases, "administrative duties" and "certification," had always been regarded with suspicion and disfavour. He protested against the sweeping references of an anonymous correspondent of the *Times* as unworthy and unjust. All would welcome a school of experimental research for the study and treatment of mental diseases; but its establishment would be no answer to the crying question of the day, as it would cover but a limited field. He concluded by eloquently urging the universal dissemination of a knowledge of those laws and facts which were the basis of personal well-being, and expressing his high appreciation of the institutions for the insane in the United Kingdom.

The address was received with much enthusiasm by a crowded audience.

Dr. SAVAGE proposed, and Dr. CLOUSTON seconded, a hearty vote of thanks to the President for his address, which was duly acknowledged.

THE SANATORIUM TREATMENT OF INSANITY.

Dr. C. EASTERBROOK (Ayr Asylum) read an elaborate contribution, illustrated by photographs, on the sanatorium treatment of active insanity by rest in bed in the open air. He discussed the advantages and disadvantages of the outdoor exercise treatment of active insanity, and those of the indoor rest treatment of it. He advocated an initial period of rest in bed for newly admitted patients of asylums. He had had much success from the outdoor rest treatment of active insanity in all newly admitted patients, and in resident patients during relapses or phases of active insanity, including the difficult and dangerous cases. At Ayr there were both isolation verandahs and association verandahs. He contended that the open-air rest treatment of active insanity secured the advantages, without the disadvantages, of the outdoor exercise and indoor rest systems combined. The idea had originated from the open-air treatment of the tuberculous insane; and it not only quickly improved the general condition and appearance, but the regularity of the bowels, so that laxatives were but little needed.

The paper was very fully discussed by the PRESIDENT, Dr. YELLOWLEES, Dr. MACKEOWN, Dr. WILSON, Dr. THOMPSON, Dr. CLOUSTON, Dr. GOODALL, Dr. STODDART, and Dr. HUBERT BOND; and Dr. EASTERBROOK replied.

DINNER.

In the evening the members and guests dined in the Whitehall Rooms, Hotel Métropole, under the presidency of Dr. MacDonald, when there was a large and distinguished company. Among the guests were Lord Digby, the Bishop of Salisbury, the Ven. Leslie Dundas, Sir James Crichton-Browne, F.R.S., Dr. Nicolson, C.B., Sir Victor Horsley, F.R.S., Sir John B. Tuke, Sir Henry Craik, M.P., Sir R. Douglas Powell, K.C.V.O., Sir Patrick Manson, K.C.M.G., Mr. Thomas Hardy, Professor Clifford Allbutt, F.R.S., Professor Ferrier, F.R.S., Colonel Mount Batten, C.B., Dr. John Macpherson, Mr. Bland-Sutton, Dr. S. W. Hurd (U.S.A.), and Lieutenant-Colonel Symes, M.V.O.

After the usual loyal toasts had been warmly pledged, Dr. CLOUSTON proposed "The Houses of Parliament," and pleaded for a system of pensions for asylum medical officers, as in the case of other Civil servants.

The toast was responded to by Lord DIGBY and Colonel WILLIAMS, M.P.

"The Medico-Psychological Association" was proposed by Sir VICTOR HORSLEY, who, in paying a high tribute to the pioneer work done by the Association, referred to the recent occasion on which he acted as spokesman of a medical deputation to a Minister, when he was told that his request was tendered in a peremptory manner. He justified his action, and contended that such was shown to be necessary by the history of similar efforts.

The PRESIDENT replied.

"Science and Sister Societies" had an eloquent apologist in Sir JAMES CRICHTON-BROWNE. He said the Association might well do honour to science, for during his forty-five years' membership it had advanced in usefulness just in proportion as it had become scientific. Indeed, in the inmates of asylums one could sometimes see the lurid reflex of great and glowing orbs of science, and the hallucinatory images kept pace with science itself. He concluded by playfully twitting the company on the fact that while many of those present advocated total abstinence, inquiry showed that under 6 per cent. of the gathering abstained on that occasion from intoxicating drink.

Professor CLIFFORD ALLBUTT replied, and after a graceful tribute to the work being accomplished by the Association, he lamented the fact that there was no Ministry of Public Health, despite the enormous importance of the subject to the community. He pleaded for a proper correlation of the various agencies of this kind, to be concentrated in a definite Government department.

"The Visitors" was proposed by Dr. URQUHART, and responded to by Sir RICHARD DOUGLAS POWELL, Dr. JOHN MACPHERSON, and Dr. HURD (Baltimore), the latter gentleman acknowledging the indebtedness which American psychologists were under to the members of that Association.

"The President" was proposed in highly eulogistic terms by Dr. NICOLSON, C.B.; and Dr. MACDONALD replied.

PSYCHIATRY AS A PART OF PUBLIC MEDICINE.

The meeting was resumed on Friday, when Dr. CLOUSTON introduced a discussion on psychiatry as a part of public medicine. He urged that preventive psychiatry should be made a part of general hygiene, and suggested that the Local Government Board should extend its sphere to include that, the speech constituting a strong plea for co-operation for the good of the community. The discussion revealed a unanimity of view as to the importance of the subject, but differences as to the remedying of the defect.

THE PSYCHOLOGY OF CRIME.

At the afternoon sitting Dr. ALBERT WILSON gave a clinical demonstration on the psychology of crime. He brought in and exhibited a number of notorious criminals who, under the agency of the Salvation Army, had become reformed. He traced their histories and achievements, and dealt with the whole subject in a very thorough manner.

After a few words of appreciation from the PRESIDENT, Dr. SAVAGE, and Dr. CLOUSTON, the discussion was, by agreement, deferred until the November meeting of the Association.

THE ETIOLOGY OF GENERAL PARALYSIS.

Dr. FORD ROBERTSON and Dr. DOUGLAS MCRAE read a paper entitled Observations on the Treatment of General Paralysis and Tabes Dorsalis by Vaccines and Anti-serums.

The contribution, which was illustrated with microscopic slides, was discussed by the PRESIDENT, and Drs. CLOUSTON, MICKLE, GOODALL, DIXON, ROWS, ORR, MERCIER, and Drs. MCRAE and ROBERTSON replied.

In closing the meeting, the PRESIDENT said the importance of the last communication was equal to that of any contribution which had ever been brought before the Association.

LITERARY NOTES.

Messrs. Archibald Constable and Co. will publish shortly a book on sewage disposal works by Hugh P. Raikes, A.M.I.C.E., who has had fifteen years' experience in the designing and construction of such work.

Dr. S. D. Clippingdale sends us the following extract from a recent issue of *Notes and Queries*, which seems to show that the Admiralty in the time of Queen Anne were of an economical turn of mind in the matter of surgical dressings. The note is dated September 14th, 1702:

> The Commn. for Sick and Wounded having desired of us that the Chyrurgions Employed by them at the Severall ports may be Supplied with Old Colours for the Use of the Sick and Wounded Seamen as may happen to be Sent on Shore, Wee direct you therefore to give us an acct. what Old Colours are in Store at Woolwich unfitt for any Use in the Navy.
>
> To the Storekeeper and Clerk of the Survey, Woolwich.

The gentleman (Mr. I. Eliot Hodgkin) who has unearthed this letter has the temerity to observe that "weather-worn bunting can hardly have formed ideal material for the use of the chyrurgions." But perhaps the old colours were intended for the decoration of the sick-bay, and not to be torn into bandages?

Messrs. Thacker, Spink and Co., of Calcutta, announce that they will publish shortly a *Manual of Ophthalmic Operations*, by Major F. P. Maynard, M.B., F.R.C.S., Professor of Ophthalmic Surgery in the Calcutta University. The volume will be illustrated by stereoscopic and other photographs of operations.

Considering the large amount of work that has been done recently in the tropics on the diseases of animals, it is fitting that there should be some publication on such an important subject. This want has been recently met by the appearance of the *Journal of Tropical Veterinary Science*, issued quarterly and published in Calcutta. Volume I appeared in 1906, and now the first part of Volume II is to hand. It contains some very interesting papers, written by some good authorities; and if such a standard is maintained, and there is no reason why it should not, the publication will succeed and have a large circulation.

The A. Stubers Verlag (Curl Kabitzsch) of Würzburg has recently published an account of the medical manuscripts in the Royal University Library of Würzburg, with historical and literary annotations by Dr. Ignaz Schwarz. Among these are some fragments of unpublished treatises by Ricardus Anglicus on prognostic signs; glosses on Johannitius or Honïen ben Ishak, an Arabian physician of the ninth century, who wrote a commentary on the *Ars Parva* of Galen; critical notes on the treatise *De Pulsibus* of Philaretus, a writer whose date cannot be more approximately fixed than the period A.D. 600 to 900; and notes on the aphorisms of Hippocrates, on Aegidius's treatise on the urine, on the works of Ysaac (Abu Jakub Ishak ben Soleiman), a Jewish physician of the tenth century. Of the life of Ricardus Anglicus little is known. According to Sprengel his family name was Wendmere or Wendover; he was born at Oxford, was physician to Pope Gregory IX between 1227 and 1241, was afterwards granted the revenues of a canonical stall in St. Paul's, London, and died in Paris in 1252. A facsimile of a passage of his commentary on Johannitius is given. In an appendix are published the Latin text of Copho's Anatomy (eleventh century), and that of the Anatomy of Richard of Salerno (twelfth century). Dr. Schwarz's work is of considerable value from an historical point of view, and bears evidence on every page of the learning and research of the author.

MEDICAL NEWS.

The personal estate of the late Sir William Gairdner, K.C.B., has been proved of the value of £11,255 13s. 1d.

Dr. J. E. O'Sullivan has been added to the Commission of the Peace for Liverpool by the Chancellor of the Duchy of Lancaster.

The late Mr. Edwin Boxall, of Brighton, who died on July 30th, left 50 guineas each to the Sussex County Hospital, the Children's Hospital, Brighton, and the Ear and Throat Dispensary, Brighton.

Arrangements for an exhibition of foods, drugs, chemists' sundries, and the like, are again being made by the *British and Colonial Druggist*. It is to be held in the Royal Horticultural Hall, Vincent Square, during the second week in October.

As will be seen from the advertisement pages, the annual medical service of the Guild of St. Luke will be held at St. Paul's Cathedral on October 22nd at 7.30 p.m. Those members of the profession who propose to attend are requested to communicate their intention without delay to the Registrar, Mr. Claude St. Aubyn-Farrer, 7, Westbourne Park Road, London, W.

A course of lectures on hygiene in its bearing on school life has been arranged by the Royal Sanitary Institute, and will be held at the Parkes Museum, Margaret Street, Regent Street, commencing on Monday, September 30th, and continuing until Friday, November 1st. In addition to the lectures there will be demonstrations. Full particulars can be obtained from the Secretary of the Royal Sanitary Institute, Margaret Street, London, W.

We learn from Mr. Reginald Harrison and Mr. John Pardoe that a representative Committee of the French Association of Urology, consisting of Professors Guyon, Achard, Albarran, Carlier, Chauffard, and Poussen, with M. Desnos, Paris, as Secretary, proposes the formation of an International Society of Urology upon the same lines as the International Society of Surgery. It is suggested that the first Congress shall be held in the autumn of 1908 in Paris. With this object a preliminary meeting, at which various eastern and western nations will be represented, will be held at the Necker Hospital in Paris on October 8th next, for the purpose of making necessary arrangements. Further information can, we understand, be obtained from Mr. J. Pardoe, F.R.C.S., 77, Wimpole Street, London, W.

The Colonial Office Report for the Northern Territories of the Gold Coast shows that the health of the European residents in 1906 had been less good than in previous years, a great deal of sickness having prevailed during the latter part of the year. From the medical returns for the six districts it appears that of a total strength of 232 units there was a total average sick of 100. Yeji and Kintampo were the two worst stations, an average of half of the strength in the former and two-thirds of the latter being on the sick-list. In March and April of last year a serious epidemic of cerebro-spinal meningitis, or some closely-allied disease, broke out in the Lobi-Dagarti country, and great numbers of natives succumbed to it. It ceased with the rains, but returned this spring with increased virulence, and the Chief Commissioner reports that thousands were dying of it. The disease is being specially investigated by three of the medical staff.

The Granules in Leucocytes.—In a paper recently read before the Royal Society, Mr. C. E. Walker, Assistant Director of the Cancer Research Laboratories in the University of Liverpool, states that in the bone marrow, where leucocytes containing granules are often extremely numerous, a section of suitably prepared material will show that the granules in a large proportion of these cells are arranged in a more or less definite manner. The granules are usually oval in shape and lie in sequence close to each other, so that a line drawn through their long axes would appear as a thread coiled up irregularly in the cytoplasm of the cell. In some cells the granules are continuous, whilst in others they are discrete and appear to be joined by a thick thread; in other cells, again, there are no granules but only a thick thread coiled up around the nucleus. Intermediate conditions are also observable. The author suggests that the thread, to which he calls particular attention, arises in the archoplasm. During the whole of its existence the thread stains very deeply, and always with a preference for basic rather than acid stains, the best dyes for demonstrating it being saffranin and basic fuchsin. When it has entirely broken up, the granules formed from it still stain in the same manner, but when they begin to lose their regular arrangement they seem at the same time to lose their affinity for the basic stain. In some of the granular cells, when the staining reaction changes from basic to acid, it is suggested that this alteration may be hastened or retarded by influences external to the cell whilst it is still in the body. It has also been ascertained that when cells removed from the body are heated and dried the proportion of acid to basic staining granules is increased. The main conclusion derived from these researches, which have been chiefly devoted to material obtained from the guinea-pig and the rat, is as follows: "The presence of varying proportions of cells containing the so-called acidophile and basophile granules in different diseases is just what one would expect, and is no argument against a common origin of both from the thread here described as occurring in some of the cells in the bone marrow."

British Medical Journal.

SATURDAY, SEPTEMBER 14TH, 1907.

THE MEDICAL ASPECTS OF THE PARLIAMENTARY SESSION.

EVERY session of Parliament has its surprises, and the session just closed is no exception to the rule. It began with little promise of legislation for the public health. The King's Speech at the opening of Parliament made no mention of any measure directly affecting medical interests, and yet at the prorogation no fewer than eight Acts bearing on medical and health matters had been passed, and others having an indirect influence in the same quarter had also been added to the Statute Book. The explanation is to be found, we fear, not in any special enthusiasm for this kind of work, but in the fact that the original scheme of legislation shadowed forth in the Speech from the Throne largely miscarried, and the failure of more ambitious Bills—such as Licensing, Irish Government, and Housing—left an opportunity for the passage of less showy if not less useful proposals.

The Territorial and Reserve Forces Act, which is the principal product of the session, occupied, like the abortive Education Bill of last year, a very large share of parliamentary time. It used up much of the energy of the Commons in the earlier months of the session, and in this way acted somewhat prejudicially on the detailed consideration and criticism of subsequent Bills. It is not easy to say how far the difficulties of army reorganization will have been solved by the Act, but there is hope that under wise guidance it may mean great administrative reform.

The budget of the year, embodied in the Finance Act, closely affects the profession, by recognizing the difference between earned and unearned incomes. Income tax in future will be charged at a lesser rate on income earned than on income from investments. The latter will pay 1s. in the £, while the former, on all incomes totalling under £2,000 a year, will be charged at the rate of 9d. This is an act of just discrimination, for which the medical profession will be grateful in common with all hard-working and poorly-paid callings. In the course of the passage of the Act a further concession was made as regards pensions, and these will now be treated as earned incomes and charged at the lower rate of 9d. in the £. A high income tax punishes professional men seriously, but this differentiation, so wisely introduced, renders the burden more tolerable.

The Small Holdings and Allotments Act, from a sociological point of view, is perhaps the most important measure of the year. If it succeeds in restoring the prosperity and population of the rural districts by establishing in suitable localities small holdings with intensive cultivation, there can be little doubt that it will most favourably affect the physical well-being of the race. No nation can continue strong and powerful if it has not a large agricultural population as the base and source of its physical strength. The Act, for which many have agitated for a quarter of a century, comes late, but not too late to solve under strict economic conditions the great problem of rural depopulation, and to lead to the improvement of national strength and haracter. It is full time that the organizations of the State began to grapple with the various problems of physical deterioration, and as part of the work, and by no means the least important, we welcome the passing of the Education (Administrative Provisions) Act. One of its clauses makes it the duty of the local authority to provide for the medical inspection and for attending to the health and physical condition of the children educated in public elementary schools. Last year we regretted that this excellent provision was lost when the Education Bill was dropped, and we urged that medical inspection was recognized by all parties as a necessity. Both sides of both Houses joined in making it law this year. In bringing into the very beginning of school life a system of caring for health, and of studying the physical conditions of child life, we hold that a most far-reaching step has been taken to promote national physical improvement. The cost is not likely to be large, but whatever it may be, it will be repaid a hundredfold in the prevention of disease and suffering and in developing the efficiency of coming generations. The Board of Education is to be advised at head quarters by a medical bureau, and the best-qualified and the wisest men should be chosen for this highest national duty.

The two measures passed with regard to vaccination do not call for much comment. The English Act was fully discussed in the Commons and the Lords, and considered carefully in Committee. It makes the task of the conscientious objector less difficult, and enables him to get his exemption certificate without undertaking the often impossible task of satisfying the mind of the magistrate as to the state of mind of the objector to vaccination. As the Bill left the Commons the privilege of making the necessary declaration for obtaining exemption was given to either parent; in the Lords the mother was struck out. Those who have always held that grievances are the food on which anti-vaccinators flourish think this was a short-sighted policy on the part of the Peers. The Act will, however, make the law work more easily; and, as vaccination has increased since the conscientious objector was recognized, we may hope that the concessions made this year will still further increase the vaccinated population. The most that can be said for the Scotch Bill is that by making the law the same as in England it creates a uniformity of practice which may prevent any development of the antivaccination movement in the northern part of the kingdom.

Three Public Health Acts remain to be considered. They all came on late in the session, and all would have been the better for more detailed criticism and consideration. There has grown up of late years a bad habit of pushing minor measures through rapidly at the end of the session. The result very often is that the legislation thus carried is found ineffective, and an amending Bill has to be brought in later on. In any case measures so passed are necessarily less minutely criticized even in Grand Committees than they ought to be. The Public Health Act, originally a private member's Bill, is a striking instance in point. When the Government decided to help it, it was sent up to a Grand Committee, and the President of the Local Government Board hustled the 142 clauses through in a single sitting, at which it turned out afterwards that there had not been a quorum continuously. The House in consequence ordered the Bill back for reconsideration, it was then amended and several clauses omitted, and when it came on for consideration on report at 3 a.m. it had not even been reprinted! When it reached the Lords this history naturally excited suspicion, and the Bill was referred to a Select Committee, who sent

it back to the Commons with seven pages of amendments, where it was passed on the last day of the session. It ought to be impossible that any Act of Parliament should have such a history. The Public Health Amendment Act for Scotland is a second health measure passed late in the session, while the third is the Public Health (Regulations as to Food) Act, a measure of much more importance. This Bill, too, was passed under conditions which do not make for efficient legislation. It was one of the measures introduced by the Government very early in the session. The second reading was nevertheless not taken till August 2nd, and, in spite of criticism, the Bill did not have the advantage of consideration by a Grand Committee, but was referred to a Committee of the whole House, which in the last days of the session is almost prohibitive of detailed consideration. The Act gives the Local Government Board very wide powers for passing regulations controlling the condition, preparation, storage, and distribution of human food. The regulations will, no doubt, be excellent; but the question arises, Will local authorities carry them out? Powers already exist as regards the condemnation of diseased cattle, which are largely inoperative because local bodies will not support their officials in carrying out the law. In some places it will be the same with the regulations framed under the new Act, but we hope it will convince the Local Government Board at last that the first step to secure effective administration is to give the medical officers of health and the sanitary and other inspectors concerned, security of tenure in their offices, so that they may discharge their functions without the fear of dismissal.

Lastly comes the Early Notification of Births Act, also passed hurriedly at the end of the session. Originally a private member's Bill, it was adopted by the Government with the very laudable desire of doing something to lessen infantile mortality. Judging from the experience of Huddersfield, where the experiment has been carefully tried, we think the Act will prove very useful wherever it is adopted and earnestly administered. All through it has had much medical sympathy behind it, as was natural, considering that the profession has been agitating for many years to check the enormous and unnecessary waste of infant life. The measure, which, after all, should have been made a part of a new Registration of Births and Deaths Bill, makes it a duty of the medical attendant, among others, to notify a birth at which he is present, under a penalty. It is easy to conceive circumstances under which it would be a most difficult and delicate matter for the doctor to notify, but unless some one else present will do it, he will have no choice under the Act. The objection raised on behalf of the profession was that it was not just to subject the doctor to a penalty in respect to what was a professional and not an ordinary civil obligation. In the debate, of which a full report was given in the JOURNAL of August 31st, it was made abundantly clear that it was not a question of fees. In spite of this, the amendment to omit the medical attendant was rejected by a great majority, although it was an acknowledged agreement on the part of the promotors of the Bill and the Government that the omission should be made. The one medical member present did his best to represent the medical view, but, unfortunately, the President of the Local Government Board in his speeches rather stimulated than checked the feeling against the doctors, and so, after a division, the clause imposing the duty on the medical attendant was retained. The object of the measure has the sympathy of the medical profession, but we could have wished that the Commons of England had shown more generosity in their criticism of a profession which has always been foremost in self-sacrifice for the public good. The debate with its taunts to the profession about trades unionism and sneers about fees was not worthy of the Mother of Parliaments.

THE RADICAL TREATMENT OF MAMMARY CANCER.

A SERIES of papers in the July number of the *Annals of Surgery*, dealing with the modern treatment of carcinoma of the breast, is headed by a contribution from Dr. Halsted on the results of radical operations for the cure of this disease. He begins by pointing out that a determination of the results of modern radical methods is by no means a simple matter, as so many factors have to be considered. It is necessary to tabulate the cases from many points of view, and to take note of such complex influences as the variety of the cancer, the time elapsed since its appearance, the degree of outlying involvement, the functional activity of the gland, and the thoroughness of the operation.

In dealing with the last factor difficulty arises in defining what is and what is not a "complete" procedure. Dr. Halsted, who, as is well known, is an advocate of thorough measures, gives a rather lengthy list of indications for supraclavicular dissection, and states that during the past two years he has found himself performing the neck operation in most cases. Moreover, he believes that in certain cases a part of the chest wall should be excised, and insists also on the occasional necessity of stripping the sheaths from the upper part of the rectus and the serratus magnus, with other muscles attached to the shoulder girdle. Dr. Pilcher also holds that operations for the removal of cancer originating in the breast must often be incomplete if the base of the neck be not cleared of its glands. On the other hand, it is stated in another paper of the series that, in the opinion of a majority of the surgeons to the Massachusetts General Hospital, the requisites of a complete operation do not include complete removal of the pectoralis major. There is, however, a general approval of free excision of the contents of the axilla, although Dr. Cabot believes that recurrence depends more on the character of the growth and the degree of involvement of the lymphatic system than on the thoroughness of removal. Dr. Ransohoff even goes so far as to assert that it is fallacious to ascribe the improved results of modern surgical treatment altogether to its thoroughness.

The tables published by Dr. Halsted include only the cases in which nothing less than the complete subclavicular operation was done, and only those operated upon three or more years prior to the last news heard of the patients. Of 232 patients whose cases are thus considered, 4 died from shock and wound infection, 18 could not be traced, and 75 are regarded as cured. The percentage of recoveries on the whole number of cases is 32.3, but, if the untraced cases and those fatal at the time of operation be subtracted, it is 35.6. These statistics, it is stated, afford unmistakable proof that the slightest delay is dangerous, and that, other things being equal, the prognosis is quite good in the early stage of breast cancer, two in three being cured; and bad, three in four succumbing, when the axillary glands are demonstrably involved. Some of the other returns of final results published in this

series are almost as good as those given by Dr. Halsted, but the statistics on which they are based are not so full nor so carefully arranged. Although the concluding statement in Dr. Oliver's paper, that the operative treatment of cancer of the breast, even with the extensive removals practised at the present time, is far from being an ideal method, can hardly be questioned, yet it must be acknowledged that a really great advance has been made during the last quarter of a century, and that this advance has been steadily progressive.

The importance of education of the public on this question is suggested by a remark in Dr. Halsted's paper, that "women are now presenting themselves "more promptly for examination, realizing that a cure "of breast cancer is not only possible, but, if the opera- "tion be performed early, quite probable." The facts in an important paper on late recurrences after operation for carcinoma of the breast by Dr. Ransohoff do not really invalidate this conclusion. He states that in his experience the average of patients who pass Volkmann's three-year limit after radical operation is only a little under 30 per cent., but that of these 20 per cent. succumb later to recurrence *in loco* or to metastases. The expectation that the prospects of assured immunity might be made good by extending the limit to five or six years has not, Dr. Ransohoff shows, been fulfilled. Although recurrences are unusual after the third year, and as time goes on become less and less frequent, many clear cases have been recorded of return of the disease either locally or in remote organs after long intervals. Ransohoff states that he has collected from 44 of his colleagues no less than 37 cases of recurrence after six years. These reports, it is acknowledged, fall far short of scientific accuracy. Reference, however, is made to several instances recorded by well-known surgeons of recurrences after intervals varying in the different cases from seven to seventeen years, and an original case is published of local recurrence twenty-one years after the removal of the right breast for cancer.

The authors of these papers testify without exception to the striking fact that radical procedures for the cure of mammary cancer are, notwithstanding their length, the extent of the wound, and, in many instances, the enfeebled condition of the patient, almost quite free from serious risk. Dr. Ransohoff states that "the "mortality of even very extensive breast operations "has been steadily reduced until now they can hardly "be classed with the major operations." The rate of operative mortality is represented by Dr. Halsted's percentage of one and seven-tenths.

THE FINANCIAL POSITION OF THE GENERAL PRACTITIONER.

IN a letter addressed to us by a correspondent, who claims that he has experienced the average fate of the general practitioner in an industrial centre, it is suggested that it would be wise to deal with the subject of the prospect of the student from a financial point of view before the commencement of the new session. Our correspondent details his own experience. He states that after having been in practice for ten years, he has secured for himself a fair connexion in point of numbers. His average receipts work out at £220 per annum, out of which he has to defray the expenses of his surgery and practice before he can claim anything for his home. Of his earnings, 31.6 per cent. were paid at his surgery, 37 per cent. were paid in weekly instalments to the collector (two-thirds of the accounts being paid at a rate of over 3d. a week and one-third at less than 3d. a week), 12 per cent. had to be regarded as bad debts, and the balance, 20 per cent., is being recovered under pressure through the county court.[1]

It has been estimated that the average income of the medical man in this country works out at something between £220 and £250; and if the more fortunate practitioners whose return occupies four figures are paired off with those who have either not yet begun to earn an income or who have no need to earn one, it becomes apparent that a very large number of practitioners must be contenting themselves with such a return as our correspondent states his to be. The reason of this inadequate return for all the skill, patience, and labour of the medical practitioner is not to be found in the overcrowding of the profession alone. To a certain extent practitioners themselves are to blame, inasmuch as in the past they have, through the want of unity and through the effect of rivalry in the struggle for existence, consented to accept fees which are not only unworthy of the work done, but too low when regarded in the light of the means of those who have to pay them. If the doctors in each district would agree on a minimum fee, below which no one would go, much benefit to the individual members of the profession would accrue.

That this country is not worse off than others in this respect is shown by an article published by Dr. G. Pick,[2] in which a detailed account of the conditions in Austria is given. The person whose income from all sources, after deducting the working expenses, exceeds 1,200 crowns (about £50), has to pay an income tax on a sliding scale. This ranges between 0.6 per cent. and 5 per cent., while the average works out at 1.9 per cent. In other words, the average person pays 4½d. in the £ income tax, while the person whose returnable income is £50 has to pay 1.44d. in the £, or 6s. as income tax. Of the 9,204 men on the Austrian medical register only 6,388 pay any income tax—that is, one-third of them are clearing less than £50 per annum; 555 medical men earn from £300 to £500 per annum, and only 300 have an income of over £500 per annum. The conditions are best in Vienna and worst in Bohemia. The average income of the private general practitioner works out at £208 per annum, and that of the medical man holding official appointments at £143 per annum. Dr. Pick points out that lawyers in Austria are much better off. Practically all the lawyers in private practice pay income tax, while about 1,500 out of 2,000 officials are also in receipt of a net income of over £50 per annum. Returning to the condition of the medical practitioner, he finds that only 60 per cent. of the income total, on which income tax is paid by medical men, is earned, the remaining 40 per cent. being derived from other sources. It has been stated that in Austria a married man of the professional classes needs an income of from £175 to £210 per annum to keep up his position. Of the medical men in Austria only 23 per cent. of those between 25 and 30 years of age, only 63 per cent. of those between 30 and 40 years of age, and only 77 per cent. of those over 40 years of age, possess such an income. In reviewing the whole problem, he alleges that it may with truth be said that the medical man's earning life begins at 30 years of age and commences to fall off at 50. The profession is increasing in numbers rapidly,

[1] The cash receipts year by year were: 1897, £81 15s. 5d.; 1898, £230 12s. 8d.; 1899, £204 10s. 5d.; 1900, £213 18s. 9d.; 1901, £207 6s. 4d.; 1902, £179 4s. 5d.; 1903, £261 1s. 9d.; 1904, £220 19s. 1d.; 1905, £282 3s. 3d.; 1906, £318 18s. 3d.

[2] *Medizinische Blätter*, Nos. 31 and 32, 1907.

the last seven years bringing an increase of 27 per cent. But he does not think that the overcrowding is responsible for the sad insufficiency of income. There is enough work for all, only the rate of remuneration renders it practically impossible for the country practitioner in the majority of instances to make a livelihood.

In England there is one disadvantage which stands in the way of the practitioner, as compared with Austria and Germany. In this country, when the patient does not wish to pay, the law is almost impotent to enforce a payment. County court summonses may suffice to induce a certain number of persons to pay up, but a not inconsiderable proportion take advantage of the fact that there is little risk if the debt be still ignored. The practitioner rarely finds it worth his while to distrain, as the cost of doing so is generally too great for the smaller debts. In Germany the practitioner, when he has a patient who does not pay his account after a reasonable time, places it in the hands of the official collector (*Gerichtsvollzieher*), who makes an application for payment, and if this is ignored after a given time (about fourteen days) he distrains without any further proceedings. He receives quite a small commission for his trouble, and few people fail to pay within the specified time.

THE PROFESSION IN NATAL.

We would invite the attention of readers, more especially the younger members of the profession, to the report of some recent proceedings of the Natal Branch, published in the Supplement for this week, p. 173. It will be observed that the Branch has found it necessary to fix a minimum rate below which it is judged improper to accept club appointments, and as will be seen from the entry in the warning notice in our advertisement columns, the Honorary Secretary, Dr. D. Campbell Watt, will afford further explanations and information to inquirers. The other matter mentioned in the report of the Branch shows that the medical profession in Natal is at the present time threatened with in creaed special taxation; the State has for some years required general practitioners to take out an annual licence to practise, and it is now proposed to double the fee for the annual licence, raising it to the very high amount of £10, and to put a further tax of £2 10s. upon all medical men who dispense their own prescriptions. As was pointed out to the Government by the deputation of the Branch, there is no precedent for such onerous taxation, and the idea of discriminating between practitioners who do and do not dispense their own medicines is entirely new and must, we should conceive, be particularly unreasonable in a country many districts of which are still sparsely settled.

THE TREATMENT OF TRYPANOSOMIASIS.

In spite of the optimistic view attributed to Dr. Robert Koch, articles in our pages have unfortunately afforded conclusive evidence that the treatment by atoxyl, an aniline derivative containing 37.6 per cent. of metallic arsenic in combination, of disease in animals due to infection by trypanosomes does not give results which are permanently satisfactory. It was found that if animals even severely infected were adequately treated with atoxyl the parasites degenerated and quickly disappeared from the blood, this disappearance being attended by great improvement in the symptoms. If the drug were stopped, however, the parasites returned quickly, and even if it were administered continuously they returned after a somewhat longer interval; in either case the animal died. The paper by Sir Rubert Boyce, published at page 624, chronicles a further development. The new combined treatment which he there describes is founded on the view that there are two phases in the life cycle of the trypanosome. Experiments on rats carried out by the workers in the Liverpool School of Tropical Medicine showed that if, after driving out the trypanosome from the blood with atoxyl, mercury bichloride were given, a large proportion of the infected rats permanently recovered. Sir Rubert Boyce believes that this happy result is due to the lethal action of the mercurial salt on the second phase of the parasite. It appears that similar results are being obtained with other classes of animals, and that some indications of a like result have been observed in the treatment of sleeping sickness in man. The further progress of these researches will be watched with much interest; meanwhile we may note that Mr. James Brand, F.R.C.V.S., who was sent by the Colonial Office to make a veterinary survey of Northern Nigeria last March, has written to the *Times* to state that he has had positive results, in horses suffering from trypanosomiasis, by the intravenous injection of a mixture of methylene blue and corrosive sublimate; the mixture he recommends is a 1 per cent. watery solution of methylene blue made from a saturated alcoholic solution of the dye with an equal quantity of 1 in 500 watery solution of corrosive sublimate. The dose given has been 10 c.cm., and the intravenous injections have been repeated daily for ten days. In 1891 the fact that methylene blue so readily stains the malarial organisms led Ehrlich and Guttmann to suggest that it might be of use in the treatment of the disease, and it has been employed with considerable success, H. C. Wood, jun., for instance, reporting 85 per cent. recoveries; Iwanoff states that it acts especially upon the adult forms, and in the new edition of *The Dispensatory of the United States of America*, of which Dr. Wood is one of the assistant editors, it is suggested that the best treatment of chronic malaria might prove to be the administration of full doses of quinine at intervals of seven days, while at the same time the patient takes methylene blue continuously. The drug is eliminated chiefly by the kidneys and colours the urine blue, but it appears to have no action upon the kidneys, and it is stated to be specially valuable in those forms of malaria accompanied by haematuria—so-called blackwater fever.

CRIMINAL RESPONSIBILITY.

At the recent Congress of French Alienist Physicians a resolution was passed to the effect that the question of the responsibility of a delinquent is not one which a physician ought to be called upon to determine; it is enough for him to say whether the accused person was mentally disordered or not at the time when he committed the offence. According to Article LXIV of the French Penal Code, if the accused's mind was disordered at the time when the act was committed there is neither crime nor offence; it is not necessary that the mental disorder should last indefinitely or be complete, that is to say, affecting all forms of psychical activity. While it neither excuses nor attenuates crime, it is an absolute bar to a conviction. A case in point has been recently tried,[1] where a man was condemned to imprisonment for six months for stealing a handbag. At the trial he was examined by several expert physicians and regarded as responsible by some and irresponsible by others. On appeal the Court ordered three expert physicians to examine him again, and of these two reported that he showed real mental disorder, but left to the Court to pronounce on the question of responsibility. The counsel for the appellant asked for the acquittal of his client on the ground that the disorder recognized amounted to mental alienation that would

[1] *La Semaine Méd.*, 1907, No. 34.

exclude all responsibility, or throw a serious doubt upon the state of his mind by which he had the right to benefit. The Court accepted this view and reversed the conviction on the ground that the experts found that the accused was in a state of dementia (*démence*) when he committed the offence. This view is infinitely more simple than that usually taken in this country of the duty of the medical expert, who is generally expected and often takes upon himself the duty of attempting to decide whether the accused person was responsible for the act committed. Our judges, moreover, have laid down the principle that responsibility is determined by the capacity of an admittedly insane person to appreciate the character of the act in its true relations, and in consequence insane persons may be punished, or even submitted to the extreme penalty of the law, if the judge is not satisfied that the admitted mental disorder prevented the accused person from recognizing the nature and quality of the act committed.

THE PULSE AND BLOOD PRESSURE IN FAINTING FITS.

IN the *Wiener klinische Rundschau* for August 11th, 1907, Dr. Hornung describes some observations he has made on this subject under exceptionally favourable circumstances. In one case he was actually taking a pulse tracing when the patient fainted, and in another instance he had just taken a blood pressure curve when the same thing happened. On both occasions the instruments were in position on the arm, and the patients could be maintained in the sitting posture when the fainting fit occurred; the curves taken before and during the swoon could therefore be guaranteed as available for exact comparison and contrast. The first patient was suffering from myocarditis, and, as the earlier tracing shows, had an irregular pulse with well-marked intermissions. The tracing taken during the faint shows a marked diminution in the rise and fall of the curves, a slowing of the pulse-rate from 72 to 66, and a complete disappearance of the arrhythmia. It is the last of these features which Dr. Hornung regards as of particular interest. He explains the condition revealed by his tracings as due to a lowering of blood pressure, and refers to his second case as affording a direct proof that the blood pressure is lowered in a fainting fit. His second patient was a man with marked hypertrophy of the heart, arterio-sclerosis, and high blood pressure. As he complained greatly of headache, Dr. Hornung proposed to remove some blood from a vein. Before doing so, he took the blood pressure curve and left the instrument in its place, so that after the operation he could ascertain what change had been brought about by the venesection. But this intention was frustrated; alarmed at the prospect of venesection, the man fainted. Consequently Dr. Hornung postponed his operation, and observed instead the change of pressure caused by fainting. He found that there was a diminution amounting to about 100 mm. of mercury.

THE PROPHYLAXIS OF PLAGUE BY IMMUNIZATION.

DR. STRONG has contributed an interesting article on his studies in plague immunity to the *Philippine Journal of Science* for June, 1907.[1] Before discussing his own experimental work he reviews the various prophylactics which have been already used in human beings, giving a short account of their preparation and the immunizing powers which they possess. He quotes the experiments of Kolle and Otto, who found that guinea-pigs cannot, except in rare instances, be immunized against plague infection by the use of Haffkine's prophylactic, and argues that if large and repeated doses of the killed plague bacilli fail to immunize such small animals as guinea-pigs, it seems unreasonable to expect very favourable results in man from such a method, particularly since the amount of the bacteria inoculated in human beings is so much smaller in proportion to the body weight. Such theoretical considerations should not be allowed to outweigh the practical results obtained in India until some more effective method has been discovered, but this Dr. Strong believes he has found. He relates a series of inoculations of animals with living attenuated cultures (vaccination), and concludes that, "in spite of variations in the results of immunization sometimes obtained in the different series by the same method of inoculation, nevertheless, an examination of the experiments demonstrates conclusively and beyond any doubt the great value of vaccination (living attenuated cultures) against plague infection and its evident superiority to the other methods of immunization." During the year dealt with, nearly 200 such vaccinations were performed on human beings in the Philippines. Dr. Strong observed no unfavourable results in the inoculated, and believes that the cultures with which he worked proved themselves to be entirely safe for human beings. He quotes Douglas and Bulloch's criticism on his work in Allbutt and Rolleston's *System of Medicine*: "Naturally very great care would be necessary in recommending a method like this on a big scale in plague-stricken communities, as from unforeseen circumstances the virulence might increase and plague be induced," and meets it by pointing out that there is no evidence to support this statement, his cultures, which for nearly two years have been used at intervals in human beings, being as safe for use in man to-day as they were at the time of his first inoculations. We feel inclined to agree with Douglas and Bulloch in their words of warning; true there may be no direct evidence to justify it as yet, but nevertheless the indiscriminate use of living cultures on a large scale might furnish this only too quickly. If the new method should prove of great protective value to man, then, of course, the risk of any such unfortunate accidents would have to be faced. All that can be said for the present is that it is to be hoped that such a procedure in the hands of others will always prove as safe as it has in the hands of Dr. Strong.

[1] *The Philippine Journal of Science.* B—Medical Sciences. Vol. ii. June, 1907. No. 3, Studies in Plague Immunity. By Richard P. Strong. (From the Biological Laboratory, Bureau of Science.)

PLASTERED WINES.

THE plastering of wine consists in sprinkling the grapes with sulphate of lime either before or after they are put into the vat. The custom has been followed from time immemorial in the wine districts of Southern France and in Spain. The advantages claimed for it are that it facilitates vinification, hastens clearing after fermentation, and gives a wine which keeps better and has a more stable and agreeable colour. Authorities differ a good deal as to the exact chemical effect; it is agreed that there is an exchange of bases between the calcium sulphate and the potassium bitartrate of the grapes, but some chemists have held that one product of the reaction is acid potassium sulphate, while others have asserted that neutral potassium sulphate is alone present. Roos and Vires advance good reasons for accepting the latter opinion, and conclude that neutral sulphate is present in wines of "normal maturity," but no acid sulphate. Some years ago Professor Lancereaux published a series of experiments from which he deduced the conclusion that cirrhosis of the liver was due not to alcohol, but to the salts of potash—especially the acid sulphate—present in wines. To any one acquainted with the facts about the etiology of cirrhosis in this country the conclusion was of course absurd, and M. Lancereaux's arguments have now been

re-examined by Roos and Vires,[1] who have shown that even his own facts will not bear the interpretation he put upon them. There is no room to doubt that the cause of atrophic cirrhosis of the liver is the drinking of alcohol. The only point as to which there is any room for doubt is whether the effect is produced directly by the action of absorbed alcohol on the liver, or indirectly by the retarding effect of alcohol on the digestive processes permitting the production of certain intestinal toxins, which when taken into the portal circulation determine cirrhosis.

THE TOXICOLOGY OF NICKEL CARBONYL.

An interesting and valuable contribution to the toxicology of nickel carbonyl has been made by Mr. H. W. Armit in the *Journal of Hygiene* for July, 1907, and a description of the chemical means employed for estimating small quantities of nickel in organic substances appears in the *Proceedings of the Royal Society*, B. vol. lxxvii, as the joint production of Mr. Armit and A. Harden, D.Sc. Space will not permit of a description of the delicate means employed by these scientific workers to detect such small quantities as a few milligrams of nickel in animal tissues. Within recent years some labourers who had been employed at a large nickel works in Wales died rather suddenly, and as the cause of death was obscure a coroner's inquiry was held. Two of the men died from what appeared to be an atypical form of pneumonia, but in at least one other instance death was so rapid as to suggest acute poisoning, the nature and cause of which were obscure. At the autopsy small haemorrhages were found in the brain. Since similar haemorrhages are met with in the cerebrum in carbon monoxide poisoning, it was suggested that the nickel carbonyl in all probability combined with the haemoglobin of the blood in virtue of its carbon monoxide groups. From their writings it would seem as if this view had appealed to such investigators as Drs. F. W. Mott and Thomas Oliver, but there has always been a doubt as to whether under these circumstances death was really due to carbon monoxide poisoning. Six years ago E. Vahlen approached the subject from the experimental standpoint, and came to the conclusion that the toxicity of nickel carbonyl could not be explained by its contained carbon monoxide, but that the nickel was also responsible. Armit set himself the task of clearing up the mystery. Nickel carbonyl is a clear, volatile liquid, extremely poisonous when inhaled. Armit describes the symptoms of nickel carbonyl poisoning in men—giddiness, dyspnoea, and vomiting—symptoms which pass off when the patients are brought into the fresh air, but which return twelve to thirty-six hours later in an aggravated form, attended by a rise of temperature and cough with blood-stained sputa, followed by delirium and death. At the autopsy haemorrhages with oedema are found in the lungs, also haemorrhages in the brain. Since similar results are met with in animals after inhalation of nickel carbonyl, and there is found in the blood carbon monoxide haemoglobin, Henriot and Richet conclude that carbon monoxide is the toxic factor, while Vahlen, on the other hand, maintains that the symptoms of poisoning are caused by nickel carbonyl as such and not by carbon monoxide. Drs. McKendrick and Snodgrass ascribe the poisonous action to nickel. Armit has carried out a series of experiments which seem to prove that carbon monoxide is not the poisonous agent in operation when nickel carbonyl has been inhaled. Preliminary inhalation of carbon monoxide by animals does not increase the toxic effect of nickel carbonyl, provided that not more than 32 per cent. of the haemoglobin of the blood is saturated. Considerable attention has been given to the study of the dissociation of nickel carbonyl and the solubility in serum of the dissociated product, which is probably a hydrated basic carbonate of nickel. The results of several experiments carefully devised and equally carefully carried out by Mr. Armit lead him to conclude that the poisonous effects of nickel carbonyl are due to the nickel of the compound and are not the result of carbon monoxide. Mr. Armit's investigations mark an important step in the history and toxicology of nickel carbonyl.

[1] *Revue d'Hygiène*, August, 1907, p. 662.

THE LONGEVITY OF MOSQUITOS.

The April Report of the Board of Health for Cuba is of interest as showing the perfection of the system now employed in combating yellow fever on the island, and the possibility of the survival of infected mosquitos for a lengthened period under special circumstances. Dr. Finlay reports that a new case developed on March 31st, and was transferred to hospital on April 4th. The patient was attacked in the same house as the last recorded case, which was as long ago as December 18th last. This seems a long interval for an infected *Stegomyia* to have lived and to be able at the end of that time to inoculate a new subject, but, as Dr. Finlay points out, it is perfectly compatible with our knowledge of the habits of the insect. Experiments have shown that when an infected mosquito is not allowed to bite and get its due nourishment of warm blood it is prevented from laying its normal complement of eggs, and may live as long as four or five months. In the present instance, during the eighty-four days between December 18th and March 12th, there was only one day in which the daily mean temperature in Havana was as high as 73° F., the lowest limit at which *Stegomyia* bites and sucks blood. An infected mosquito which happened to have escaped the fumigations of December might, therefore, very easily have survived till March and inoculated the patient who was attacked on the 31st of that month. Immediately on the discovery of the case very active measures were taken, a special service being organized and a large force of trained men employed in fumigating and destroying mosquito larvae in the neighbourhood of the infected locality. These operations required six weeks' work, but up to the end of June only two further cases occurred, and it is hoped that the outbreak has been mastered.

TUBERCULOSIS AND SCHOOLS.

We publish elsewhere in this issue a letter calling in question some of the conclusions advanced in a leading article on tuberculosis and schools, published on August 24th. We are not surprised that the article should arouse criticism, for it dealt boldly with a novel aspect of the fight against tuberculosis. Before referring to our correspondent's arguments, we must remove a misconception; the statistics as to the percentage of children found to be suffering from pulmonary tuberculosis in various towns were not taken from the unpublished paper by Drs. Lecky and Horton, which we had not seen, but from Dr. Newsholme's paper communicated to the International Congress of School Hygiene. Printed copies of the full text of Dr. Newsholme's paper were distributed at the Congress, and the statistics were taken from it. This might, we think, have been gathered from the context, and was clearly implied in the report of the paper published at page 469 (British Medical Journal, August 24th). We still think that the use of the term "revealed" as synonymous with "diagnosable" is unfortunate; it is too great a sacrifice of clearness to euphony. That such a condition as pulmonary tuberculosis, which is latent but yet diagnosable, occurs in children may, perhaps, be justified by theoretical considerations, but

is dangerous doctrine if it is to be allowed to influence treatment. Clinical experience and pathological observation alike teach that latent tuberculosis may at any moment become active. "Latent or inactive diagnosable tuberculosis" calls for treatment just as much as "active diagnosable closed tuberculosis," and the treatment is very much the same in both cases. Dr. Lecky begs the question when he asserts that to attempt to recognise stages before the first stage of Laënnec is ludicrous, and assumes that the majority of practitioners will be unable to recognise a stage or stages earlier than Laënnec's first. The following is a rather literal, and therefore inelegant, translation of Grancher's own description, taken from his paper in the *Bulletin de l'Academie de Médecine* (T. LVI, p. 381): "The first sign which precedes all others, and is "sufficient to characterize the first stage, is an alteration of the inspiration. This alteration—localized to "one apex—warrants us, when it is fixed and permanent, in affirming the existence of a lesion. Further, "if we study the child presenting this anomaly, we "recognize that its general health is affected, and that "it presents indications revealing tuberculosis in addition to its pulmonary lesion. It is generally paler "than its comrades, it is thin, coughs a little, easily "gets out of breath, etc. Almost always enlarged "glands (*adénopathies*) in the neck, the axillae, and "the groins accompany this disorder of inspiration. "If this anomaly, which is most often feeble inspiration, affects the whole of one lung—the right "lung, for example—in front and behind, we interpret "it as a sign of an enlargement of the intra-"pulmonary glands. The compression of the vessels, "the nerves, and the bronchi appear to us to be the "cause of this general perturbation of the function of a "lung, and that, further, the persistence of this symptom "is evidence in favour of tuberculosis of the glands. "The second stage has two physical signs: the same "inspiratory disturbance of which I have just spoken "and a little bronchophony; for the exaggeration of "the vocal vibrations is the second sign. The third "stage has three physical signs: abnormal inspiration, "bronchophony, and slight dullness. These signs, due "to the same causes as the bronchophony, are only "perceived later when the disease has already made "some progress. This is the reason why, in our eyes, "it characterizes the third stage. . . . I think I ought "to insist on the point that neither my collaborators "nor I have ever taken account of doubtful signs. For "example, a child has not been classed among the "tuberculous of the first stage unless the disturbance "of pulmonary inspiration was very distinct (*très net*) "and perceived by all the doctors without any hesitation; if not, the examination of the child was deferred "to a later date." The signs of Grancher's third stage would, we believe, be acknowledged by most medical men to afford presumptive evidence of tuberculosis so strong that the onus of proving that they indicated some other lesion rested on those who disputed the diagnosis. As to the second stage, we believe that most would agree that the signs raise a strong suspicion of tuberculosis and justify the treatment of the child in the same way as though proved to be tuberculous. With regard to the inspiratory abnormality recognized by Grancher as the physical sign of the first stage, it should be noted that its existence was only accepted after it had been observed on more than one occasion and by several observers.

MUGGY AND BRACING DAYS.

MR. W. F. TYLER, F.R.Met.Soc., some years ago invented a new word, "hyther," to indicate the joint effect on man of the temperature and the humidity of the atmospheric air. At Shanghai in 1902 he requested twelve persons of normal condition and regular habits to estimate by their own sensations every day at noon the degree of "hyther" on a scale of 0 to 10, the highest figure (10) representing the "muggiest" day (hot, damp and enervating) which the observer had experienced, the other end of the scale (0) representing an ideal summer's day, warm but bright, brisk and bracing. Mr. Tyler has further investigated the influence of the "weather" and climate on the subjective condition of man, in an essay on *The Psycho-Physical Aspect of Climate*.[1] Amongst other conclusions he reaches are that the wet-bulb readings and his degrees of "hyther" form the best available means for comparing climates; and that (except for very dry conditions of the atmosphere) the readings of the wet-bulb thermometer indicate very closely the degree of discomfort resulting from temperature and humidity. He also finds that Forbes's specification for bath temperature appears to conform to some extent to a true sensation scale; but that with a stricter application of the principles of sensation scales a greatly improved graduation could be arrived at.

THE ROYAL SOCIETY OF MEDICINE.

THE meetings of the Clinical Section of the Royal Society of Medicine will during the coming session be conducted on lines somewhat modified from those of its predecessor, the Clinical Society of London. It is proposed that during the first half of each meeting medical and surgical cases shall be exhibited, and that the remainder of the meeting be devoted to the reading of papers. The latter will deal exclusively with the records of cases and clinical methods. The number of meetings during the session has been reduced to eight, and the first meeting will be held on Friday, October 11th.

ANAPHYLAXIS.

IN the July number of the *Annales de l'Institut Pasteur*, M. Charles Richet discusses the phenomenon known as anaphylaxis. By this is meant the curious property which certain toxins possess of increasing instead of diminishing the susceptibility of an organism to their action, the consequence being that after an animal has received the first dose with impunity the administration of a second dose, no larger in amount, produces severe intoxication. This effect, it has been ascertained, is due to a specific increase of susceptibility and cannot be explained as an ordinary example of cumulative action. M. Richet quotes the experience of several observers on this subject. Knorr, in attempting to immunize guinea-pigs against tetanus toxin by repeated injections, found that sometimes a condition of increased susceptibility was induced which compelled him to abandon his scheme; Battelli has shown that extract of dog's corpuscles, which is innocuous for normal rabbits, becomes toxic for rabbits which have previously been treated with intraperitoneal injections of the corpuscles; Theobald Smith has discovered that guinea-pigs become highly sensitive to the injection of equine serum after they have received, ten or twelve days previously, test inoculations of antidiphtherial serum derived from horses; M. Richet himself, as long ago as 1898, observed that dogs inoculated with eel serum bore a second injection very badly; and quite recently Besredka and Steinhardt have obtained anti-anaphylactic substances by inoculations made during the period which precedes the anaphylaxis. M. Richet's latest contribution to the subject is a study of anaphylaxis in dogs inoculated with a toxic substance, prepared from mussels, which he terms "mytilo-"congestine." This preparation acts as an emetic when inoculated in an adequate dose. The author's experi-

[1] *The Psycho-Physical Aspect of Climate, with a Theory concerning Intensities of Sensation.* By W. F. Tyler, F.R.Met.Soc. London: J. Bale, Sons and Danielsson. 1907. (Roy. 8vo, pp. 46; with 26 figures.)

ments show that for a period of thirty days immediately subsequent to the first inoculation vomiting is produced by the administration of a dose which is only one-fifth of the minimum amount necessary to produce this effect in the first instance. After the thirtieth day the degree of anaphylaxis gradually diminishes, and by the fiftieth day has almost disappeared. Another interesting fact, which was clearly shown in one of his experiments, is that the serum of dogs in a condition of anaphylaxis contains a substance which produces anaphylaxis. The period of anaphylaxis is succeeded by a period of relative immunity or prophylaxis, an observation which leads M. Richet to formulate the general proposition that "anaphylaxis is the first stage "of prophylaxis." In natural infections with bacteria, M. Richet suggests, anaphylaxis serves the useful purpose of stimulating the body to a rapid and effective resistance, particularly against small doses, since the increased susceptibility of the organism is accompanied by increased activity in the formation of antitoxins.

A FULL statement as to the legal and other considerations involved in the payment of fees for evidence at inquests by medical officers of Poor-law institutions will be found in the SUPPLEMENT to this issue. We would suggest its preservation as not unlikely to be useful with coroners.

THE order of the Government of India regulating the remuneration which may be accepted by officers of the Indian Medical Service for professional services rendered to ruling chiefs and their families or dependants, Indian gentlemen of high position in a native State, or Indian gentlemen of high position in British India (BRITISH MEDICAL JOURNAL, August 31st, 1907, p. 556), is engaging the attention of the British Medical Association, and the Naval and Military Committee will, we believe, be ready to receive communications, and at the proper time to take such action as may be deemed advisable.

Medical Notes in Parliament.

The Session of 1907.

WHEN Parliament opened on February 12th the King's Speech gave promise of a laborious session, for no less than thirteen measures were mentioned as likely to engage the attention of the two Houses. It was remarked at the time that this list was too long, and that the number 13 was proverbially unlucky! The event has proved the justness of the criticism, for of the thirteen promised measures only five have passed both Houses, four have never even been introduced, three have been lost, and one was introduced so late in the session that it had no chance of becoming law.

The five new Acts are those dealing with Army Reorganization, Criminal Appeal, Patent Law Amendment, Small Holdings in England and Wales, and the Qualification of Women to serve on Borough and County Councils. The four Bills not even introduced were those dealing with Licensing Reform, Housing, Irish University Education, and Valuation in England and Wales. This group remains to be dealt with hereafter, and as it includes problems of far-reaching social importance, it can easily be understood that there was no time after an arduous and long autumn session to elaborate and perfect the necessary proposals. It would have been better, under the circumstances, not to have promised them in the Speech from the Throne. Of the three lost Bills, two failed to satisfy the Lords, namely, the Scotch Small Holdings and Valuation Bills, while the Irish Council Bill was dropped after its introduction, because it failed to satisfy the Irish National Convention. The Miners Eight Hours Bill, the last on the list, was introduced only in fulfilment of a pledge, at the end of the session.

This record of promise and performance, however, represents but a small portion of the work of Parliament even as regards proposals formulated for legislation. The total number of Bills introduced amounted to 238; of these 64 were brought in by the Government, and the remainder by private members. The Government passed, including departmental measures, 47 of their Bills, and adopted 6 others, while the private members passed 14 (including the 6 adopted) out of the 174 Bills introduced. Thus the total number of Acts added to the Statute Book was 61. Last year private members succeeded in passing only 3 Bills and 5 others taken up by the Government, so the record this year should be encouraging to private enterprise in the legislative direction.

When the results of the session are considered more closely, many matters of social and sanitary importance are found to have been dealt with. To go no further than the King's Speech on which Parliament was prorogued on August 28th, there are eighteen enactments mentioned to the credit of the Government. It is true that most of the Government output consists of small Bills; indeed, it has been essentially a session of little measures. The Territorial and Reserve Forces Act, which is the great achievement of the year, is an ambitious attempt at army reorganization, but no one quite knows what will come out of it, or how far it will solve a problem that has baffled many Ministers. The second great measure—the Small Holdings and Allotments Act—promises to be of the first social importance. Many people think it has come many years too late to restore the rural population to their old proportions on the land, but it is certainly a wise and bold attempt to retain and increase the agricultural workers by giving to the labourer a chance of a career as a cultivator of the soil. So far as it succeeds, it will strengthen the nation by increasing the peasantry and improve the race by checking the deterioration consequent on overcrowding in urban areas.

The other chief enactments have little importance from a public health point of view, but when we come to second class Acts we find many of great medical interest. The King's Speech referred to the Education (Administrative Provisions) Act, which provides for the medical inspection of children in public elementary schools, and which, wisely and liberally administered, will become the basis of a great national health movement of far-reaching benefit.

Then there were two Vaccination Acts mentioned and the Public Health (Regulations as to Foods) Act. The English Vaccination Act extends the rights of the conscientious objector, while that for Scotland assimilates the law in that country with the English system. Uniformity in health administration is always desirable, but in this instance many thought there was no need to alter the Scottish law, as the antivaccination difficulty had not seriously arisen north of the Tweed.

The measure enabling the Local Government Board to make regulations as to the preparation and storage of food and foodstuffs met with some criticism in the Commons, on the ground that the enforcement of any regulations would require a more efficient administration than local authorities in some instances are likely to provide. The Adulteration Acts emphasize this lesson by their relatively defective enforcement, but it is to be hoped the new Act will prove more generally popular, and be administered in a more vigorous and earnest fashion.

The Early Notification of Births Act was originally a private Bill introduced with a view of checking excessive infant mortality by the methods so successfully adopted at Huddersfield. There was a great deal of medical sympathy for the measure, but both in the Grand Committee and afterwards in the House many felt that there was no need to include the medical attendant at the birth as one of the persons bound under a penalty to notify. The plan of the existing Acts relating to the notification of infectious diseases should, it was thought, have been followed, especially as those Acts, in spite of some opposition at the outset, had worked so admirably. With this view a compromise was arranged to omit the doctor, but the House rejected the necessary amendment. The Act is not compulsory, but one to be adopted by localities, and where earnestly taken up will no doubt be useful in checking infant mortality by the assistance given to mothers by trained and skilled visitors under the superintendence of the medical officer of health.

Next in the Government list comes the Butter and

Margarine Act, which is intended to protect consumers from fraudulent forms of butter. The subject has engaged the attention of two Parliaments and many committees, and, now an Act has been passed, it may be expected that the question has been satisfactorily settled. This makes six measures dealing with public health questions, but two others also became law—namely, the Public Health Act and the Public Health (Scotland) Amendment Act. The former was the outcome of the work of the Police and Sanitary Committee. It embodies the decisions of the Committee as regards municipal Acts, and enables local authorities to adopt certain provisions regarding health administration without incurring the expense of obtaining a private Act of Parliament. The Public Health Amendment Act passed for Scotland simplifies and improves administration as regards disease and infection. The passage of these eight enactments renders the Session an unusually fruitful one in this particular domain of legislation. There were more than a dozen other Bills bearing on medical and health questions, which, however, failed to pass. They were mostly private members' Bills, and bore the following titles: Infant Life Protection, Nurses' Registration (two), Housing (two), Dogs' Protection (Antivivisection), Public Health Water Rights, Pharmacy and Pharmacy and Poisons, Municipal Milk Dépôts (a Government measure), Purity of Milk Supply (Scotland), Sale of Food and Drugs Acts Amendment (Scotland), Lunacy (Ireland) (a Government measure), and the Public Health Officers, and the Prohibition of Medical Practice by Companies. The last two would have been most acceptable to the medical profession if passed, and would have done much good—the first, by giving to health officers that security of tenure which is absolutely essential to a thorough and efficient performance of duty, and the second by safeguarding the public from persons who, under the protection of a registered company, undertake the treatment of diseases, and so set at nought the provisions of the Medical Acts.

The Act passed by the Government for the better regulation of the hours and conditions of labour of women and girls employed in laundries deserves mention as likely to add to the health and well-being of a class of workers too long neglected. A large number of provisional order Bills have also been passed, and over 120 private Bills, among which we recognize two of special medical interest—namely, King Edward's Hospital Fund for London Act and the Society of Apothecaries of London Act. The former excited some controversy in the Commons, but by tactful management and wise concession was finally passed without a division. The enactment obtained by the Society of Apothecaries was introduced to enable the Society to give its licentiates the title of "Licentiates in Medicine and Surgery," and to register the same in the *Medical Register*. Power is also given to enable names struck off the list of licentiates to be restored under proper conditions.

These additions to the law, full of interest as they are, still represent only a small portion of the work of the session more or less connected with medical and sanitary topics. Debates from time to time crop up on the Address, on the Estimates, and on resolutions moved on private members' days, which bear on health questions. Soon after Parliament opened there was a brisk debate on a motion to repeal the penal clauses of the Vaccination Acts, moved as an amendment to the Address. It was withdrawn, and nothing came of it. There was again a discussion on the provision of meals for school children in Scotland, which contained matter of interest; and on the same afternoon a useful consideration of medical inspection of schools. In the House of Lords one day, Lord Onslow raised the question of extending and amending the Public Health Acts, 1875 to 1890, and incidentally the need for a consolidation of the Acts. On the Education Estimates there was a short conversation of much interest on the teaching of hygiene in schools, and the Education Minister recognized with wisdom that the essential first step is to get the teachers taught themselves. Then on one private members' night an informing debate took place on shop hours, and a resolution was passed demanding more drastic regulation of shop hours, and the work of shop assistants. There were, of course, discussions of importance on the Vaccination Acts in both Houses, and in the Commons the medical members distinguished themselves by their speeches. On the second reading of the Small Holdings and Allotments Bill, the question of race deterioration was raised, and treated with some originality by the leader of the Opposition. Industrial diseases received, as was natural in a House containing so many working-class members, more consideration than ever before, and on the Home Office vote, the speeches occupied most of the sitting, but vivisection was discussed later, mainly with respect to the system of inspection. The plague in India came in for special mention by the Secretary of State for India on the Indian Budget, and on the Scottish estimates there was considerable comment on the administration of public health in Scotland.

These references give some idea of the many occasions on which matters of public health and social well-being have occupied the attention of the Houses of Parliament, but besides the formal debates there are the opportunities of questions, and the columns of the BRITISH MEDICAL JOURNAL for the past seven months testify to the use made of this method of calling attention to medical matters. No session has in this respect done better service, both by the importance of the subjects and the pertinence of the inquiries. It would be impossible in the short space of this article to enumerate all the questions asked and answered. Some of the more important have referred to: Vaccination, its cost and mode of administration, smallpox in Germany and in some places in the United Kingdom, Poor-law children and their treatment in workhouses, separate homes, or by boarding out, lunatics and imbeciles in workhouses, vital statistics and lunacy in the United Kingdom, the Irish Poor-law medical officers, the Report of the Irish Poor-law Commission, cancer in India and the appointment of a Royal Commission on Cancer, borax as a food preservative, the Medical Bureau at the Board of Education, the training of medical officers of health, the registration of nurses, the prevalence of plague in India and inoculation for plague, the R.A.M.C. and Indian allowances, the notification of tuberculosis, insanitary barracks, frozen meat for the army, defaulting sanitary authorities, the Royal College of Surgeons and its relation to the members, the Government grant for health and sanitary officers, the Liverpool School of Tropical Medicine, diphtheria antitoxin, the mortality in Transvaal mines, blood poisoning in calico-making, parish midwives, the Lunacy Commissioners, the treatment of inebriates, the cost of municipal milk dépôts, lead poisoning, phosphorus necrosis, bovine tuberculosis, the prevalence of anthrax, infant mortality and Poor Law, cerebro-spinal fever, salaries of medical officers of health, security of tenure of Scottish parochial officers, tinned foods from South Africa, death certification, the mortality from snake poison in India, and very many others. On some of these subjects a number of questions were put. Vaccination held the first position this session, as last, as the favourite topic for questioning Ministers. Vivisection used to be a good second, but this year the subject has been much less prominent, a condition of things probably due to the sitting of the Royal Commission.

The first session of the second Parliament of King Edward VII was characterized by a healthy attention to matters connected with the health of the people, and this second session has followed the same good example. The record is one of growing interest in all matters affecting the social and sanitary progress of the working classes, and on this account must be satisfactory, so far as it goes, to the medical profession.

TELEGRAMS from Russia announce the existence of an epidemic of cholera in various districts in the eastern and central parts of Russia in Europe, and also in Astrakhan. The extension of the disease, however, appears to be considerably greater than might have been gathered from the telegrams. Our Berlin correspondent, as will be seen, informs us that the Russian Government has appointed a commissioner in connexion with the occurrence of cases along the river Bug, a tributary of the Vistula, near the Prussian frontier. Whether the epidemic is really moving westward, as is asserted by the telegrams, or not, it is impossible to say without more precise information as to the dates on which the disease occurred in the various districts.

Scotland.

Sanitary Association of Scotland.

The thirty-third Congress of the Incorporated Sanitary Association of Scotland was opened at Aberdeen on September 5th, the Lord Provost, Sir Alexander Lyon, in the chair. In welcoming the delegates, the Lord Provost said that if there was one thing more than another on which they prided themselves in Aberdeen, it was on their sanitary affairs. They had a very up-to-date department, and they were splendidly served by Dr. Hay and Mr. Cameron.

Presidential Address.

Dr. J. T. Wilson, County Medical Officer, Lanarkshire, President of the Congress, took for the subject of his presidential address Disease and Infection. He said that all functions exercised by public health authorities might be divided into two groups—those which aimed at promoting healthier conditions of living, and those which related to the health of the individual, including administration of hospitals, notification of disease, and official inspection and inquiry as to its causation. During the last fifteen years public health authorities had been very active, and the public health service had been better equipped; but there was still much preventable disease. Preventive measures came into operation only after an infectious illness had been recognized. The difficulties connected with the recognition of disease and infection presented the greatest obstacles to successful prevention. These difficulties were medical, personal, and legal. To meet some of them there was no doubt much room for medical research, and it was a question for consideration how far local authorities should undertake such work. He believed bacteriological investigations could be well done in connexion with public health departments. Diphtheria could now be recognized at the very onset. By the use of antitoxin, fatal symptoms could be averted, while those exposed to infection could be protected. There might be some amendment of the Notification Act whereby a medical man or householder would be entitled to notify when the symptoms presented suspicion of an infectious ailment. Then, could not something further be done to assist the medical profession who laboured among the poor to make an early diagnosis, helping them to take specimens for bacteriological examination? While it was quite true that it was the duty of the medical man to utilize these aids to diagnosis, yet they involved time and labour, which his remuneration might not enable him to give. Take, for example, a case of typhoid fever: when such occurred among the well-to-do, the medical attendant might consider it necessary to make at least two visits a day for some time, and, if he was in doubt, he would call in a consultant. The poor had no such advantages, and therefore local authorities might consider how far it was desirable to render medical aid. The full value of hospital isolation had not yet been attained, owing to the late stage of the illness when many patients were admitted, and the inability to make sure in all cases that a patient about to be discharged was free from infection. Notwithstanding this, the immense benefits of hospital isolation and treatment were apparent. With regard to disinfection, there was good reason to believe that personal disinfection was of equal, perhaps greater, importance with the disinfection of dwellings, but it was much more difficult to attain. In connexion with epidemic cerebro-spinal meningitis, "contacts" were being dealt with in this way. Consumption was seldom recognized until the disease was well advanced. The dissemination of infection from human sources was believed to be both direct and indirect. To what extent the disease was spread from the cow by the milk had not yet been ascertained, but all were agreed that the public should not be allowed to run any danger of infection in that way. Sanitation was of the utmost importance in maintaining and developing immunity. Dingy, damp, dirty dwellings, badly-ventilated workshops, poor or improper feeding, and alcoholic indulgences were all important factors in developing susceptibility to infection.

Cerebro-spinal Fever.

Dr. A. K. Chalmers, M.O.H. Glasgow, said that cerebro-spinal fever was associated with and was believed to be due to an organism which had been identified. It was but little amenable to present methods of treatment, and was fatal in nearly 3 out of 4 cases. Recovery was usually protracted, and was occasionally imperfect, permanent defects sometimes remaining—always, he thought, associated with the nervous system, and mostly in the form of impaired hearing or absolute deafness. The excessive fatality suggested that their knowledge of its clinical types was defective, for to conform to the laws of infective processes generally there should be gradations in severity of attack. In what direction they were to look for these milder varieties might be matter of speculation. Some forms of influenza were, he thought, under suspicion, and probably also some ill-defined pneumonias. The tendency was to regard the disease as being less influenced by sanitary conditions than others; but while this was true in a general sense it was not true when attention was directed to the most important of all insanitary conditions, namely, that arising from defective ventilation or air impurity. The occurrence of the disease in sucklings and the preponderance of single cases in families seemed to exclude food altogether as a vehicle of contagion.

After Dr. Buchanan, Bacteriologist to the Corporation of Glasgow, had read a paper on the examination of cerebro-spinal fever "contacts," Dr. W. Leslie Mackenzie, Local Government Board, Edinburgh, in opening the discussion, said it was obvious that the disease was only beginning to be studied as far as Scotland was concerned. As the result of a circular issued by the Local Government Board, 1,611 cases had been reported during the last six months, Glasgow contributing 963. Those who suffered most were children from 1 to 5 years of age. The death-rate was about 70 to 80 per cent. of the cases. The problem lay in how to deal with the "contacts."

Professor Glaister (Glasgow) said that if anything was to be done to cope with the disease, the elementary principles of sanitation, clean water, clean food, and clean air must be observed.

Dr. Robb (Paisley) said the disease was not new, but was becoming more prevalent. Notification of cases should be made permanent.

Dr. G. Arbuckle Brown, M.O.H. Partick, said the epidemic was encouraged by room density and ill-ventilated spaces. Every "contact" should be examined bacteriologically.

After some remarks from Dr. Barras (Govan), Dr. Matthew Hay said that in Aberdeen there had only been one case of cerebro-spinal fever.

The Chairman emphasized the good work which Dr. Buchanan had been doing in connexion with the disease, and insisted that more bacteriological work ought to be done.

The Preservation of Infants.

Dr. Mary T. Gallagher, Public Health Department, Glasgow, contributed a paper on the preservation of infants and the earlier notification of births. She said that physical deterioration and infant mortality to all intents and purposes were the same thing, with but a difference of years. Each was the outcome of overcrowding, bad feeding, defective sanitation, and the numerous sequelae of such conditions of existence. The State had at its immediate disposal an aid of paramount importance in the compulsory notification of births within forty-eight hours. Almost one-fourth of the deaths of infants under 1 year occurred before the law took any cognizance of their existence. Out of 127 deaths occurring in a certain district of Glasgow last year, 53 had taken place before the birth was registered. In her own experience of the same district she found that, out of 360 births notified since the end of April, there were 12 deaths registered; of these 12, 8 were dead before the birth was registered—that is, birth and death were registered together. With one exception, the cause of death in each of these 8 cases was returned as malnutrition, birth debility, or marasmus.

The Inspection of Meat.

In a paper on Meat Inspection read by Mr. J. M'Lauchlan Young, Lecturer on Veterinary Hygiene in the University of Aberdeen, he insisted that the inspection of animals destined for man's food, their slaughter, and the examination of the flesh, required suitable accommodation, and this could be obtained only in one

central establishment. Private slaughterhouses should be abolished and replaced by public abattoirs, where the inspector became part of the establishment, and not, as at present, a detective journeying from place to place.

The Inspection and Distribution of Fish.

Dr. Matthew Hay, in a paper on this subject, said that with the development of trawling in recent years the use of fish as a food had enormously increased. The amount of fish consumed throughout the country might be put at four to five times as much as it was, say, thirty to forty years ago. Discussing the conditions which rendered fish unfit for human food, he said that in almost every case decay or putridity was the sole cause. He thought they might lay it down that when the fish was found to be soft and readily separable from the bone, when a diffuse red line showed itself along the under-side of the spine (except, perhaps, in herrings), when the odour of the flesh was stale, although not necessarily putrid, and, still more, when greenness was observed in any part of the body, the fish should be condemned. A somewhat collapsed condition of the eyeball, and slimy, greyish appearance of the gills, with, in the case of ungutted fish, well-marked congestion of the abdominal wall, might serve as additional indications. But decay was not the only cause which might render fish unfit for human consumption. Fish, in common with all kinds of animals, were subject to bacterial and especially to parasitic diseases. Fortunately, as fish were cold-blooded animals, and the bacteria and parasites which grew in them flourished best only at a low temperature, these bacteria and parasites were, with a few exceptions, not readily conveyable to man. It was well known that fish of the salmon kind, as also other forms of fish, especially those frequenting fresh water, were liable to a fungous disease, which showed itself in the form of greyish, felty patches on the surface of the body. In salmon the fungus was now believed to be secondary to the growth of a bacillus, which had recently been described by Mr. Hume Patterson, of Glasgow. Fish affected by such disease quickly suffered in their vitality, and might die. It was scarcely necessary to say that fish affected to any material extent by such disease should not be used for human food, although there was no proof that the disease was itself communicable in any form to man. The use of fish in a large fishing town like Aberdeen must be very great, and yet he had not heard of a single case of parasitic disease in man attributable to fish. In view of the rapidly growing dimensions of the fish trade in Aberdeen, the time had, he thought, come, or was fast approaching, when the Corporation might appoint an inspector solely for fish, who would daily make a round of all the fish-curing works, as well as of the Fish Market. In other large towns fish inspection was usually undertaken by the inspector of meat or the sanitary inspector. This was the case even in Grimsby, which was the largest fishing port in the kingdom. In Hull, however, which was also an important fishing port, there was a special fish inspector. Glasgow had also an inspector solely devoted to this work. In London the so-called fish meter, of the Fishmongers' Company, had charge of the inspection of fish at Billingsgate. He believed he was justified in saying, at any rate so far as Aberdeen was concerned, that no chemical preservative was used, excepting common salt. Fish dealers and curers would no doubt welcome the advent of a preservative that would enable them to keep their fish fresh for a longer time, and many experiments had been made in this direction, but the general trend of opinion at the present time was against the use of preservatives in food.

Supervision of Milk Supplies.

Mr. A. M. Trotter, City Veterinary Surgeon, Glasgow, read a paper on the supervision of milk supplies, in which he said that a comparison of the number of cows in Scotland with the number of cows examined under the Order showed that, whilst a few authorities were doing their utmost to prevent the sale of milk drawn from animals infected with tuberculosis of the udder, there were a great many other authorities who were doing absolutely nothing, as would be seen from the subjoined figures:

	1902.	1903.	1904.	1905.
Total cows	438,890	437,418	439,358	437,138
Examined	26,382	29,870	29,305	38,309
Not examined	412,508	407,548	410,053	398,829

Presuming that the proportion of infected cows among those not examined was in the same ratio as among those examined in 1900, when inspection commenced, then it followed that there were in

1900.	1901.	1902.	1903.	1904.	1905.
1,110	1,102	1,105	1,092	1,098	1,068

cows which, though affected with tuberculosis of the udder, escaped detection owing to not having been examined by a veterinary surgeon, and were consequently permitted to yield milk for human consumption and to disseminate broadcast disease and death. Local authorities under the powers contained in the amended Order of 1899 were merely empowered to prevent the milk of a cow suffering from such disease being sold or used for the food of man, or, unless boiled, for the food of swine and other animals. They had no power to slaughter the affected animal. This was a grave defect. There were three methods by which a more effective control over the milk supply might be attained: (1) Control by central authority; (2) control by the consuming authority; and (3) control by the local authority of the district in which the milk was produced.

Dr. A. J. Macgregor, Medical Officer of Health, Dunfermline, said it was absolutely necessary that the medium through which the milk had to come should be perfectly healthy. The milker must also be taken care of. His hands must be carefully cleansed. If householders could be educated to a proper care of their milk vessels and milk, the risk would be diminished. With regard to legislation, he would urge that there should be loyal co-operation between the sanitary inspectors, veterinary surgeons, and the medical officers of health.

Councillor Young (Stranraer) said that a milking machine which seemed to do its work better than the human hands had been introduced into Wigtownshire, and he anticipated that within a few years the great majority of the cows in that county at least would be milked mechanically, and under conditions which might be described as absolutely perfect from a sanitary point of view. His view was that a veterinary inspector ought to be appointed to every county, or such area as would occupy his whole time.

Training of Inspectors of Meat and Other Foods.

Dr. J. T. Wilson said that inspection of meat could best be carried out at the place of preparation. In large cities there was no difficulty in arranging for specially-trained officers as inspectors of foodstuffs, but in the smaller burghs and county districts they must still depend, in some measure, upon a combination of duties. He suggested that those specially requiring training were superintendents of slaughterhouses, sanitary inspectors, and other officers specially concerned with the inspection of meat and other foods.

Dr. Matthew Hay pointed out that what was most defective for the moment was not so much the qualification of the inspectors as the methods of inspection.

Councillor W. F. Anderson (Glasgow) said after meat was inspected and passed by the inspector, it ought to bear, as in France, a stamp to show that it had been passed.

RESOLUTIONS.

The following resolutions were unanimously agreed to:

Legislation on Milk Supply.

Councillor Young (Stranraer) moved:

That this Congress of the Incorporated Sanitary Association of Scotland is of opinion that there is necessity for further legislation with the object of securing the purity and wholesomeness of our milk supplies, and requests the Council of the Association to consider ways and means of promoting said legislation.

Training of Inspectors.

Professor Glaister moved:

That this Congress endorses the proposal of the Council of the Association to institute an efficient examination under approved conditions of training and tuition in the inspection of meat and other foods, and to grant certificates of competency to successful candidates.

Dinner.

At the annual dinner Dr. Wilson was in the chair, the croupiers being Councillor Anderson, of Glasgow, and Dr. Charles Templeman. After the customary loyal toasts Professor Glaister, in proposing "The University of Aberdeen," said the city to which he had the honour to belong gave the University of Aberdeen its present Principal, and Professor Matthew Hay—whose name was coupled with the toast—began life with him (the speaker) as a student. Dr. Matthew Hay, in replying, said the members must have been impressed with the beauty and substantiality of the Marischal College buildings. With the most cordial assistance they had been able to raise a sum only a few thousand pounds short of one-quarter of a million. He expressed regret that the University was still without a Chair of Public Health, which was a very great reproach. Other toasts were "The Sanitary Association of Scotland," "The Local Authorities of Scotland," "The Chairman and Croupiers," and "Bon Accord."

THE GOVAN COTTAGE NURSES' TRAINING HOME.

We have received the following letter for publication:

SIR,—I have been instructed by the Govan Medical Association to reply to the letter of Archibald Craig, Esq., which appeared in your JOURNAL of August 31st, anent the Govan Cottage Nurses' Training Home. That letter bristles with inaccuracies and misstatements, and is a very plausible attempt to throw dust in the eyes of your readers.

In the first place I would take exception to Mr. Craig's assertion that his Executive Committee have from time to time done what they thought was possible to meet the views of the medical men. On the contrary, every obstacle was placed in the way of the medical men getting their views considered by the Executive Committee, and when at last they did get them considered they were met by the answer that no reform in the Home was necessary, and that the Executive Committee could not meet their views. No doubt from time to time several protestations have been made by Mr. Craig of his Committee's desire to work in harmony with the medical men, but in the circumstances, the harmony could only be of the wolf and lamb variety. The correspondence between the Medical Association and the Executive Committee of the Home began in December, 1905, and after a conference between representatives of the two bodies, the medical men were finally requested on January 12th last to formulate their views, which was done. A list of fourteen suggestions was sent by the Medical Association on January 14th, and a code of rules was drawn up by the Executive Committee, in which only a few concessions on minor points were made, while the suggestions on all the important and vital points were rejected in their entirety. On a former occasion I sent you a copy of the suggestions made on January 14th by the Medical Association and all the subsequent correspondence for publication, but on account of the voluminous nature of the correspondence you were not able to do so. However, as Mr. Craig is desirous for the publication of the correspondence, you might now be persuaded to allow the necessary space in the JOURNAL, and so enable your readers to judge between the medical men and the Executive Committee of the Home. At any rate, you have the correspondence before you and can form an opinion, and if the correspondence cannot be published I have no doubt your readers will be willing to abide by your judgement thereon.

I need not reiterate what I said in my former letter concerning the training and management of the Home, but I am instructed by the Medical Association to state that the assertions made in that letter with reference to

1. The shortness, looseness, and deficiency of training received by the nurses;
2. The competition with, and the cutting out of, fully trained nurses by the partially trained nurses of the Home; and
3. The competition of the midwife and her pupil nurses with medical men, and the undertaking and attempting to perform work in general surgery and medicine by the nurses, which by right belongs to the province of the doctor,

are perfectly true, and can in every instance be supported by well-authenticated hard facts.

I. *With reference to training*, the practical training is supervised solely by the matron; but, considering her onerous duties inside the Home, and with a score or so of pupils, each with several patients scattered over the wide area in which they work, how is it possible for the supervision to be anything but of the scantiest and most perfunctory nature? The lectures by the medical men and the theoretical instruction in nursing by the matron inside the Home may be excellent; but in nursing it is the practical training which counts, and in this instance, with the exception of the month or two spent by some of them in the Elder Cottage Hospital, that is practically *nil*. No doubt the system of working the pupil nurses in pairs allows the one with any little superior knowledge to impart it to her fellow, but that can hardly be reckoned practical training. Years of such training, let alone only months, can never be considered "adequate" or "excellent" for even a cottage nurse of the kind described by Mr. Craig.

II. *With reference to competition with fully-trained nurses*, we are told that these cottage nurses perform menial duties and even sleep in their patients' houses, which a highly-trained nurse would not undertake to do. When we consider the nature of the dwellings of the people, say, in the Outer Hebrides, among whom these cottage nurses are intended to work, is it not degrading and humiliating, not to speak of the questionable morality of the practice, to ask any self-respecting young woman to undertake such duties? If the nurse is to descend to the mode of life of these unfortunate people and to live in family with them, how is it possible for her to receive from them that respect and deference which she ought to receive, not only as a nurse but as a cultured woman? Apart from this, the duties of these cottage nurses do not materially differ from the duties performed by the Jubilee Nurses, who are all fully trained. When they go to their districts, however, their services are not confined to the poor. District nursing associations are formed with graduated subscriptions and fees to be paid for their services—for example, according to the Vale of Girvan Benefit Nursing Association which employs them, these cottage nurses' services are given for differentiated fees to the labourer, the artisan, the farmer, and the professional and non-professional gentleman, the poor professional gentleman getting off with half the fee payable by his non-professional brother. Eighty such cottage nurses, we are told, have already been sent to districts. This means that eighty situations which ought to be held by fully-trained nurses have been filled up to their exclusion by these partially trained "cottage nurses" at domestic servants' wages—£18, rising to £22 per annum. If that is not competition with and cutting out of fully trained nurses, what is it? By all means, if women can be found willing to hire themselves thus for such work, let them do so, but do not call them "nurses," not even qualified by the word "cottage." Give them some other title which will indicate what they really are, and thereby prevent the people among whom they work from being deceived.

III. *With reference to competition with medical men*, in the annual report of the work of the Home for 1906 it is stated that 319 cases of midwifery were attended by the midwife and her pupils during the year. For the midwife's services a minimum fee of 8s. 6d. (not 7s. 6d.) partly payable in advance is charged. Before the establishment of the Home the majority of these people used to engage and were able to pay a doctor. No discrimination as to class is made on taking on these patients. After remonstrance by the medical men a rule was framed restricting the midwife's services to patients where the householder's weekly wage does not exceed 30s., no account of any other source of income to the family being taken into consideration. But even this rule, unsatisfactory though it is, is not adhered to; patients are still taken on without inquiry into their circumstances, the only difference being that on the engagement card which is given to the patient it is stated that the services of the midwife are restricted to those earning less than 30s. per week, and numerous cases are known where the patients, upon reading this notice, have been surprised themselves at having been taken on without inquiry, as they would have been disqualified if that were done. So also in general work the pupil nurses are sent to attend and treat surgical cases without a doctor being in attendance. These could hardly be called emergency cases, which is the excuse urged by the authorities of the Home for doing so, for some of the cases of such attendance have extended to weeks, and were only discovered by the medical men through the nurses' treatment failing, and the patient being forced to seek medical aid. Mr. Craig is, therefore, not speaking in accordance with fact when he asserts that "No nurse is allowed to go to a general case unless where there is a doctor in attendance." After going to their districts also the nurses are made to perform work which properly belongs to the doctor, and are encouraged not only to act independently of the doctor, but to take upon themselves the responsibility of advising the people as to the necessity for calling in one or not; for example, see Rule X of the Vale of Girvan Benefit Nursing Association, which reads as follows: "Where no doctor is in attendance the nurse must use her discretion in advising the people to call one in." These facts, I think, distinctly bear out the Medical Association's contention that the nurses are taught to, and actually do, compete with medical men in their work, both during their training in Govan and in their districts, no matter what Mr. Craig may say to the contrary.

Mr. Craig's division of the nurses turned out from the Home into two classes of (1) midwifery nurses and (2) general nurses, also requires a little explanation to make the true state of affairs clear. It is quite true that no nurse sent to districts in England can practise midwifery unless she has a qualification such as the C.M.B. certificate, but no such qualification is necessary for midwifery practice in Scotland. Now, although all the nurses sent out from the Home do not qualify as midwives, they, nevertheless, all receive midwifery instruction during their short period in the Home, so that those who do not take the C.M.B. certificate must have only the certificate

of the Home to cover their midwifery work as well as general nursing work. What is there, therefore, to prevent these nurses after they have received their certificates and gone beyond the jurisdiction of the Home from practising in Scotland as midwives certificated by the Govan Cottage Nurses' Training Home?

One other point in Mr. Craig's letter demands attention. He says that "before any certificate is granted, the nurse must work for three years subsequent to her training, and even then a certificate is only granted if the reports from the Committee and the medical men in the district are satisfactory." In the country districts the leading members of the Committees are usually the gentry of the place and the ministers' wives, and it is very often not good policy for the local doctors to run counter to the wishes and opinions of these, so that the absence of any publicly expressed dissatisfaction from that quarter may be discounted. This three years' retention of jurisdiction must, however, surely be something new, for at the conference, when we endeavoured to introduce the question of the friction between the cottage nurses and the medical men in the Vale of Girvan, we were stopped and called to order by the chairman, Dr. Beatson, on the ground that the Home had no control or jurisdiction over the nurses' conduct after going to their districts. So also, when the medical men of the Vale of Girvan wrote to the Home complaining of the nurses, they were met by the same answer of no jurisdiction. But even supposing the certificate is withheld for three years, how can that compensate for the shortness and deficiency of training in the Home? In the rules of some of the nursing associations we find that the nurse is bound over to remain in the district and work for three years under the penalty, if she fails to do so, of forfeiture of part of her salary, which is retained and paid to her as a bonus on the completion of that term. Probably the certificate is held up in the same way for three years for the same coercive reason, so that we have here Mr. Craig trying to make a virtue out of what is really an act of coercion.

There is much else in Mr. Craig's letter open to criticism, but I have already run to greater length than I first intended. Enough, however, has been said to justify your remarks about the very serious responsibility the Committee of Management is accepting in running such an institution, but before closing, let me reply to Mr. Craig's reiterated wish for harmony and co-operation between the Home and the local medical men by again stating that there can be no such co-operation until the affairs of the Home have been put in order, and the reforms suggested by the medical men adopted by the Executive Committee of the Home and made effective. It is not with Mr. Craig and the philanthropists who originated the Home, but rather with the medical men who have allowed themselves to be associated with the Home regardless of the interests, not only of the nursing profession but also of their professional brethren, that we have now got to deal, and I have been instructed to state that the members of the Govan Medical Association are prepared to submit the facts of the case to the local Branch of the British Medical Association to judge between them and the medical men connected with the Home, and are willing to abide by the judgement of that body.—I am, etc.,

FORBES BROWN.

Govan Medical Association, Sept., 1907.

THE NEW HOSPITAL AT AYR ASYLUM.

The account of the new hospital at the Ayr Asylum by its designer, Dr. C. C. Easterbrook, published in the *Journal of Mental Science* of July last has been reprinted,[1] and will be of interest to medical superintendents of asylums which may require extension. Like many others, the main wards of this asylum had become largely filled with patients requiring hospital treatment. The erection of a properly equipped separate hospital having been determined upon, Dr. Easterbrook, boldly discarding the usual method of making a specification of the accommodation required and then leaving the matter to architects, himself made plans to scale of the proposed hospital down to the minutest essential detail and submitted copies of these to the competing architects. In drawing these plans Dr. Easterbrook had an eye first and mainly to facilitating structually the work of the nurse, especially in regard to supervision by the staff, day and night; secondly, to the proper classification of the patients; thirdly, to the principle of the treatment of active insanity by rest in bed in the open air, isolation, and other special measures, and lastly, financial economy by the elimination from the designs of all superfluous provision and accommodation. These important desiderata he has succeeded in obtaining by providing at the comparatively small outlay of £100 a bed, a comfortable, easily worked, and, from the medical point of view, admirably constructed hospital.

There is no central hospital kitchen; food is prepared in the main asylum and conveyed in closed hand vans. It is warmed, if necessary, in the small ward kitchens. There is no dining-room and no central day-room, each mental ward, like an ordinary hospital ward, serving as dormitory, day-room, and dining-room for its inmates, thus effecting a saving on the prime cost and in the number of staff required. The new hospital contains 154 beds, and serves as reception house and sanatorium for all newly-admitted patients, as sick room and infirmary, and as a sanatorium for the isolation of cases with pulmonary tuberculosis and other infectious diseases, except the graver infectious diseases treated in the separate isolation hospital.

The hospital is a one-story building of pleasing appearance, facing south-west, composed of two symmetrical halves, having at their junction the assistant matron's quarters, and each half consisting from within outwards of a double infirmary ward, a conservatory with a large verandah, a reception ward, and an annexe ward for tuberculous cases, with a small verandah. Each reception ward is shaped like a dagger pointing south, the rounded end of the blade giving the parlour space, the body of the blade and the north wing, or grip of the dagger, forming the body of the ward, and the cross-piece or guard forming the junction with the conservatory on the one side and the annexe ward on the other, and containing observation rooms. The infirmary wards follow the same plan, but are double-bladed daggers, the two blades forming one large ward separated by a partition, its upper half being of glass and wood. This design is an original feature of the hospital, and as the kitchen, bath-rooms, observation rooms, and cabinet are grouped at the north end or handle, it is evident that by aggregating at this end the patients who require most attention the work of supervision is facilitated, and the ward can be managed by a relatively small staff. An interesting feature of this ward is that on the male side a female staff is employed with good results.

The whole hospital is thoroughly equipped, every need having been carefully thought out and arranged for by Dr. Easterbrook. The lighting is by electricity, and the heating by radiators and hot water at low pressure on the Reck circulation system, which has been found to be both satisfactory in working and economical. The hospital reflects great credit upon its designer, who is to be congratulated on its excellence from both the medical and economical standpoints. With regard to this latter point, we may mention that in addition to the initial saving on its construction, it has been found so easily worked that during the eight months it had been in occupation at the time Dr. Easterbrook wrote his report, notwithstanding a reduction of 6d. a week in the rate of board for asylum patients during the last six months of that period, the credit balance under the maintenance account of the institution had been increased by £600.

[1] *The New Hospital, Ayr Asylum.* By C. C. Easterbrook, M.A., M.D., F.R.C.P.Edin. (London: Adlard and Son. 1907. Pp. 21.)

Ireland.

POST-GRADUATE COURSE, DUBLIN.

THE next post-graduate course at the Royal College of Surgeons in Ireland will commence on September 23rd and terminate on October 15th. The object of the course is to render available the whole of the clinical material in the city of Dublin for the post-graduate student, so that he may see as much as possible during the time at his disposal. The hospitals which will take part in this next course are: For surgery and medicine, Mater Misericordiae, Meath, Mercer's, Royal City of Dublin, Sir Patrick Dun's, Richmond, Jervis Street, Adelaide, St. Vincent's, Dr. Steevens's; for skin, Adelaide; eye and ear, Royal Victoria Eye and Ear Hospital; throat and nose, Mater Misericordiae, Adelaide, Sir Patrick Dun's; gynaecology, Rotunda, Coombe, National Maternity; *x*-ray and light therapeutics, Mater Misericordiae, St. Vincent's, Mercer's; pathology and bacteriology, Mater Misericordiae, Richmond Whitworth and Hardwicke, Meath or Royal College of Surgeons; children's hospital, Temple Street (St. Joseph's), orthopaedic, Upper Merrion Street; lunacy, Richmond District Lunatic Asylum. Courses of operations on the cadaver will be given by the Professors of Surgery at the school; in anaesthetics at the Dental Hospital; in anatomy by the Professor of Anatomy at the school; and in sanitary science by the Professor of

Hygiene at the Royal College of Surgeons. Those conducting courses will be careful to make them as practical and helpful to the varying needs of the practitioner as possible, and the tickets of membership will admit to the ordinary clinics of all the hospitals as well as to the special work of the course. An inclusive fee of 5 guineas is charged. Further particulars, together with a list of apartments and certain hotels where accommodation is provided at modified rates, can be obtained on application to Dr. A. Fraser, Professor of Anatomy, Royal College of Surgeons in Ireland, Dublin.

Irish Poor-Law Association.

The annual meeting of the Poor-Law Association of Ireland was held in the Royal College of Surgeons, Dublin, on August 28th, under the presidency of Dr. T. H. Moorhead, of Cootehill, co. Cavan. This association includes lay as well as medical officers of the service, and there was a very large attendance of delegates.

The President delivered an address, in the course of which he stated that the Viceregal Commissioners' report on the Irish Poor-law system met with perhaps the most remarkable consensus of approval from all branches of the service, and from all public bodies in Ireland, of any proposed scheme of remedial legislation on record in the country. What, then, was their surprise to find that no steps were to be taken to reform the wretched Irish Poor Law on the lines laid down by the Commissioners. Was history going to repeat itself? Were they going to allow those who never had and never would understand the peculiar wants of the Irish people to decide, as in 1837, that what suited England and Scotland would be good enough for Ireland? The English Poor-law system forced upon them in 1837, in direct opposition to the wishes and feelings of the Irish people, was the greatest curse ever inflicted upon them by the predominant partner, and he anticipated with grave distrust legislation on this subject influenced by persons who were obviously hostile to their wishes. He could understand opposition from the Treasury if they were asking for a big grant. No extra grant was demanded, but merely a rearrangement of existing conditions suitable to their poverty and the needs and feelings of the sensitive Irish people. The Association had decided to introduce their Superannuation Bill at the first opportunity.

In the course of a discussion on the proposal to proceed with the Superannuation Bill as drafted, Dr. Wybrants Olpherts objected to the provision requiring officials to contribute to the pension scheme. They should not offer to contribute.

The motion was passed without a division.

Insanity in Ireland.

Dr. Graham, the Medical Superintendent of the Belfast Lunatic Asylum, reports a total of 1,108 inmates. The admissions, which were 296 in 1905, were 241 last year, owing to diminished admissions from the workhouse. The net cost a head was £21 1s. 8d. a year.

Dr. Graham points out that heredity is given as the cause in 62 admissions, but that it is really a quality or characteristic of the disease, not a creative or originating force; this is important from a practical point of view. If heredity were a real cause, Dr. Graham argues, Nature would soon annihilate the breed; but insanity is increasing, and the reason is that the real causes, namely, bad early training, alcohol, drugging, dissipation, are as powerful as ever, if not more powerful, in their deteriorating effect on the race. Dr. Graham agrees in the statement that if we could destroy alcohol and luetic disease, we should abolish 50 per cent. of insanity. He refers in strong, but not too strong, terms to the duty of the statesman, the teacher, and the scientist, to tackle the problem of the increase of insanity not only in Ireland, but also amongst the Irish in America, and regrets, what is unhappily a fact, that because these desperate figures and revelations are submerged in a Blue Book, little notice is taken of them, either by those in authority or in opposition. "If we are becoming a nation of lunatics," he pertinently remarks, "it does not seem to matter who governs us, or how much land the peasant possesses." Why is it that the downtrodden Pole, the hunted Armenian, whose life in Europe was a misery compared to that of the Irish peasant, do not fill the asylums in America in the same proportions as the latter? Dr. Graham evidently regards the Irish peasant as bright and keen, but suited for an agricultural life, not that of huge towns like New York and Chicago. Fifteen cases of general paralysis occurred during the year, a disease not long ago practically unknown in the district.

Wales.

A Satisfactory Ending.

In the British Medical Journal of July 13th (pages 108 and 112) reference was made to the attempt of a committee of miners of Brynkinalt Colliery to dismiss from the post of medical officer Surgeon-Colonel J. D. Lloyd, V.D., of Chirk, notice having been given to him on June 28th to terminate the appointment which he had held for many years. We were able then to state that the circumstances were being investigated by the Denbigh and Flint Division of the Association, and in the meantime practitioners who might think of applying for the vacant post were requested to communicate with the Medical Secretary. We now have the pleasure of reporting that at a general meeting of the miners, held on September 11th, the action of the Committee in dismissing Surgeon-Colonel J. D. Lloyd, V.D., was repudiated, and he was reinstated in his appointment by a direct vote of the general meeting. The miners themselves, no less than Dr. Lloyd and the Denbigh and Flint Division, are to be congratulated on the outcome of the matter.

Proposed Combination of Sanitary Districts.

At a meeting of the Maesteg Urban District Council held on August 13th, a letter was read from the Local Government Board stating that the Board agreed to the reappointment of Dr. W. Kirkby as medical officer of health for one year, in view of a proposal for the combination of Maesteg and neighbouring districts for the purpose of the appointment of a medical officer, and asked to be informed as to the exact nature of the proposal for a combined district. The chairman said that a movement was on foot by the County Council to combine several districts, and to appoint one whole-time medical officer. He doubted whether Maesteg was a place which could conveniently be included in such a proposal. A member remarked that it was contended in support of the proposal that the medical officers, being local men, were to a certain extent under the thumb of the district councils. This, he considered, was an unjust statement to make, because it meant that the district councils were using their power to influence the medical officers, and that the medical officers had not the moral courage to do their duty. This certainly was not the case at Maesteg. He proposed that the Council should not approve of any proposal of the kind. An amendment to defer the consideration of the matter was carried. It was reported that there was a serious outbreak of measles at Caerau and Nantyfyllon, and on the recommendation of the medical officer it was decided to appeal for the closing of all the Sunday schools in that part of the district.

Miners and Hospitals.

For a considerable time past there have been differences between the colliers employed at the Cyfarthfa collieries and the Board of Management of the Merthyr General Hospital. These differences reached a crisis when the Hospital Board resolved to exclude the Cyfarthfa colliers from the benefits of the institution in consequence of the men's alleged refusal to carry out an undertaking given by them to increase their contributions to the hospital funds. Mr. John Plews, Chairman of the Board of Management, has informed a press representative that some time ago there was a complaint that the accommodation at the hospital was insufficient to deal with the accidents occuring at the various local works, and Sir William Thomas Lewis undertook to bear the expense of enlarging the female ward if by public subscription money were found to pay for enlarging the male ward. There had been an agitation among the workmen about increasing the number of the medical staff, and by agreement with the representatives of the men at each of the works, the executive Board agreed that when the wards were ready for the accommodation of an increased number of patients the medical staff should be increased. This agreement was made upon the condition that the workmen at each of the works would increase their subscriptions so as to cover the increased cost incurred by the treatment of the increased number of patients. All the workmen's representatives

accepted the condition; the additional accommodation was furnished, and three members were added to the medical staff. The workmen at all the works, excepting the Cyfarthfa colliers, carried out their compact. The executive Board resolved that until the Cyfarthfa colliers put themselves on the same footing as the workmen at the other works they should not have the benefits of the hospital. Some of the Cyfarthfa colliers subsequently agreed to pay the additional subscriptions, but there are some who will stand out. Those who have agreed to pay will now get the benefits of the hospital; the others will not. On the other hand, a prominent official on the men's side has stated that the men were unwilling to contribute towards the hospital unless they had a larger and more real share in the control of the institution, and unless all medical men, finding it necessary or advisable to order the removal of their patients to the hospital, were allowed to follow them there and continue the treatment they had commenced outside.

Manchester and Salford.

The Notification of Births Act.

On every hand in Manchester medical circles the non-withdrawal of the Notification of Births Bill after the rejection of Lord Cecil's amendment is regarded as a breach of faith. Manchester men are accustomed to call a spade a spade, and to talk of the profession having been out-manœuvred is looked on as only a euphemism, and no small amount of ridicule has been expended on the childlike simplicity of those who supported the amendment in trusting for one moment men who actually spoke against the amendment which they had promised to support. If the Act is adopted in Manchester, it is difficult to say what the result will be. If we may judge by the present temper of the general practitioners, something like passive resistance is not at all unlikely to occur. The very idea of penalizing an honourable profession for not performing someone else's duty has aroused a feeling of bitter resentment which augurs very badly for the success of the Act, so far as it depends on medical men. No profession has done more gratuitously for the good of humanity, but there is a vast difference between doing good spontaneously and being forced to do a doubtful good under threat of legal penalties. On every hand we hear sentiments to this effect; there is no desire to pose as martyrs, but it is asserted that a considerable number of Manchester practitioners will simply refuse to notify births occurring in their practices, whatever the consequence. In the great majority of cases early notification of birth is of absolutely no use except to help medical officers of health to compile statistics, and the infants will be well tended without the assistance or advice of lady health visitors, while in many cases, for various reasons, early notification will be much resented. Cases like the following are not at all uncommon: An unmarried daughter in a respectable family has been betrayed under promise of marriage; a married sister agrees to nurse the baby when it arrives, and, though the family desire to conceal their shame, the infant is certain to be well looked after. We need not discuss the ethics of such concealment, but the point that concerns us is, if the medical attendant, in accordance with the Act of Parliament, immediately notifies such a birth, he need never expect to be called in to attend any member of that family again, and most persons would scorn the doctor who notified such a case without the consent of the family concerned. A schoolboy would call him a sneak, and yet the Act subjects him to a fine if he refuses to violate professional secrecy. No satisfactory reason can be given for imposing all this odium of a breach of professional confidence on medical men. At the Annual Representative Meeting the South Manchester Division tried to lay stress on this argument, but the Chairman stated that if once the Bill were passed there could be no breach of confidence. That statement, though legally correct, is not accepted as the whole truth in Manchester. No Act of Parliament can remove the imperative moral sanctions of professional confidence, which should be as inviolable as the confessional. It is not even as though the notification were a confidential document sent to the registrar; it is nothing of the sort, for the immediate result of the notification would be in most cases a visit of a lady health visitor and the practical publication of the birth to the whole neighbourhood, and practitioners are saying very plainly that they will refuse to be Government spies, either with a fee or without a fee. To expect a medical man to divulge always and under all circumstances a fact which he learns only professionally is an insult to the profession, and the absence of any provision for a fee for performing such an odious task is only adding a small injury to a big insult. Nevertheless, even here there is a principle involved, in face of the tendency to exploit the profession which is so self-evident. Death certificates and vaccination certificates have already to be given without a fee. The Midwives Act practically, though not theoretically, imposes duties without any provision for a fee, and though in Manchester a fee is paid for attending certain midwives' cases, it is made conditional on the filling up of a most elaborate certificate, again without a fee. And now, to crown all, a fresh task, more odious than any ever yet imposed on any profession—the task of breaking professional confidence—is saddled on the profession, also without a fee. Surely it is high time to make a stand against this constant imposition of gratuitous services, even when they are honourable services, much more so when they are most distinctly dishonourable. Add to all this the fact that the Bill with its obnoxious clause was carried in the House of Commons by a trick of what is euphemistically called "manœuvring," which reflects no credit on any one concerned in it, and there can be no wonder at the resentment felt, and no surprise need be expressed if practical Manchester men, though they acknowledge the value of the Act in some respects, should refuse to do, without a fee, what they would scorn to do in some circumstances with a fee.

Advances in Surgery in Manchester.

On Saturday last, at a garden party held at the Ashton-under-Lyne District Infirmary to celebrate the completion of the recent alterations and extensions to that institution, Mr. W. Thorburn, Honorary Surgeon to the Manchester Royal Infirmary, made some interesting comparisons showing the advances made in surgery during the last twenty-five years, as exemplified by the results obtained at the Manchester Infirmary. He said that twenty-five years ago, in a given time, a certain surgeon did 55 operations, 12 of which were followed by death. To-day the number of operations in the same length of time was 205, with still only 12 deaths. This reduction of the death-rate from 22 per cent. to less than 6 per cent. of course points to a great improvement in results, but we are not clear that Mr. Thorburn meant to imply that the average death-rate twenty-five years ago was 22 per cent. on all operations performed at the Royal Infirmary. He is reported to have stated also that twenty-five years ago 5 operations were performed in six months for diseases of the internal organs; of these 5 cases 2 died, giving a mortality of 40 per cent. To-day, in the same length of time, 73 similar operations were done, with only 6 deaths—that is, a mortality of 8 per cent. But some further explanation seems to be needed; twenty-five years ago the operations of this class were only performed as a last resort in cases otherwise hopeless, while to-day the same operations are done in a state of good health, really as a prophylactic against future attacks of illness. That is so, at any rate, to a great extent in cases of appendicitis and gastric ulcer, and if these are the sort of cases referred to, the comparison is not quite convincing. Mr. Thorburn showed very well the great value of the conservative treatment rather than amputation of limbs. He said that twenty-five years ago a much larger proportion of the total number of operations consisted of amputations, as many as 16 amputations being performed out of the comparatively small number of operations, and of these cases 8 were followed by death, that is, 50 per cent. mortality, while at the present time, out of a far larger number of operations, there had only been 8 amputations, with no deaths at all. All these figures are, of course, very remarkable, and, as Mr. Thorburn said, they represent the gradual outcome of a steady and persistent study of disease, its nature, the means of recognizing it, and its precise localization. Not the least important factor contributing to these results was the fact that in these twenty-five years they had trained everybody—every nurse, even every charwoman—who had to deal with the wards to do their duty in the most thorough manner.

Leeds.

The Work of the Pure Milk Association.

A meeting of the Committee of the Pure Milk Association was recently held under the presidency of Dr. Hawkyard to receive a report from Dr. J. Spottiswoode Cameron, Medical Officer of Health, on his investigation into the mortality of infants who had received the milk provided by the Association during the experimental year. The Sanitary Committee of the Leeds Corporation had advised the Council to establish a dépôt for the supply of pure milk, but it was found that to do so was beyond the powers possessed by the Corporation. A subscription was raised and a committee formed to try the experiment for a complete year. As a matter of fact, the experiment ran a few weeks longer than the complete year, but at the suggestion of the Medical Officer of Health it was determined to deal only with the figures for the period between October 1st, 1905, and September 29th, 1906, thus giving a complete annual cycle and not duplicating any period of the year when the mortality might from seasonal causes be in excess or otherwise. The experiment was not only confined to a single and complete year, but it was confined to a particular district, the district in which the mortality for ten years had stood at the rate of 214 per 1,000 children born. In order to be able to compare the mortality amongst the children in this district who were using the Association milk with the mortality among those in the same district not so fed, Dr. Cameron thought it necessary to divide the babies living in the district under the age of 1, into four groups of children aged respectively under 3 months, 3 to 6 months, 6 to 9 months, and 9 to 12 months. He calculated the population at each of these ages in the whole district by subtracting from the number of births in the whole year the number of deaths that had occurred before the middle of the age period under consideration. In this way it was found that in the district during this year there were an average number of 1,174 children under 3 months of age, 1,100 between 3 and 6 months, 1,051 between 6 and 9 months, 1,006 between 9 and 12 months, the average number living under 1 year being 1,101. The death-rate in the district at these respective ages was 79.2, 50.9, 39, and 49.7 per 1,000 living, making for the whole year a rate of 218 deaths per average 1,000 children living in the district under the age of 12 months.

The actual births during the experimental year were 1,221, and the deaths under 1 year of age 240. The death-rate of 218 was, of course, counted on the average population; but calculated upon the number of births the number would be 196, a considerably more favourable one than the 214 which had prevailed from 1894 to 1903. Dividing the number of children in the district into two categories, consisting of 990 babies in the district not using the dépôt milk, and 111, the average number taking the milk, the proportionate death-rates were 225 in the former, 153 in the latter group, a saving of 72 deaths per 1,000 living, and an improvement in the death-rate amongst those using the provided milk of 32 per cent., or very nearly one-third.

Dr. Cameron, however, pointed out that this method of counting the whole of the deaths was unfair to the computation of those dying in the earlier period. Something like 17 per cent. of the infantile mortality in Leeds occurred in the first week of life, and should not, in most cases, be attributed to any error in the diet. These children might, many of them, be said to be born moribund. He therefore proposed to assign very little importance to the comparative death-rates in children under 3 months of age. The figures for that period were 80.4 per 1,000 in those not taking the dépôt milk, and 55.6 in those using it.

During the period from 3 to 6 months, however, he had less hesitation in trusting to the figures. During that period the children who were using the dépôt milk were practically all children who were weaned, and who ought not to have been weaned; whereas the remaining 971 children not using the dépôt milk contained a proportion of from 50 to 70 per cent. of children who were actually suckled by the mother, and, of course, much more favourably situated on that account than those taking even the purest milk the Association could provide. The death-rate amongst this mixed group aged from 3 to 6 months was 51.5, amongst those taking the dépôt milk it was 46.66.

Similarly, in the next period, 6 to 9 months, the death-rate in the non-dépôt babies was 39.5, amongst the dépôt babies 35.7; whilst in the last period of the year, 9 to 12 months, the numbers were 53.1 and 24.8. Dr. Cameron considered, therefore, that after making due allowance for the moribund babies in the first group, there was a saving of life equal to at least 25 per cent. amongst the children using the Association milk, as compared with those living in the same district at the same ages and during the same seasons of the year who were fed in various manners. The experiment, of course, was on a small scale, but so far as it went it was entirely successful, more successful than he could have at all anticipated. It was an experiment also that was carried out in a district with an excessively high rate.

After hearing Dr. Cameron's report, the Committee passed the following resolution:

> That the attention of the Sanitary Committee of the City Council be drawn to the experiment which has been carried on by this Committee for a twelvemonth under approximately test conditions, and to the very successful results obtained; that this Committee is very strongly of opinion that as soon as Mr. Burns's Bill becomes law the Corporation should undertake the provision of a supply of pure milk for the benefit of infants requiring to be artificially fed.

West Yorkshire.

Dr. Dolan of Halifax.

Dr. Dolan, who resigned the appointment of Medical Officer to the Halifax Union Workhouse a short time ago, after thirty-eight years' service, was recently presented by the officers and staff of the Union with a silver rose bowl accompanied by the following address:

> To Thomas Michael Dolan, Esq., M.D., J.P.
>
> We, the undersigned, being officers of the Poor-law Union of Halifax, desire to express to you our great sympathy in the illness from which you have been suffering; we rejoice that you are steadily recovering, and hope that you will soon be restored to a state of complete health.
>
> We beg you to accept this illuminated address, and this silver plate which accompanies it, as a small acknowledgement of the efficient manner in which we recognize you have at all times performed your duties, and of the unvarying courtesy you have invariably shown to the officers of the Halifax Union during the thirty-eight years you have been Medical Officer at the Workhouse of the Union.
>
> We sincerely hope and pray that many years of happiness and usefulness may be spared you, and that we and others may long have the benefit of your friendly counsel and experience. (Signatures follow.)

Mr. A. T. Longbotham, Clerk to the guardians, who made the presentation, spoke in the highest terms of the value of Dr. Dolan's services, and congratulated him on his restoration to health, and Drs. Peck and Wellburn endorsed all that the Clerk had said. Dr. Dolan, in acknowledging the presentation, said that it was peculiarly gratifying to him to find attached to the address the signatures of so many of his brother medical officers as well as those of other officials and nurses. When he was appointed the workhouse consisted of the front where the able-bodied now were, though there were a few lunacy wards at the back. The medical officer then had a salary of £100 per year, out of which he had to find all medicines and surgical appliances. There were no nurses. The medical profession, however, banded themselves together and promulgated what was the Magna Charta of the poor people of England. A proclamation was issued by several of the leading medical men of the day that the poor in the workhouse infirmaries were entitled to the same advantages of skilled nursing, efficient medical attendance, proper wards, and proper medical appliances as were supplied to the voluntary hospitals. He was glad to say that the Halifax Board of Guardians were the first in England to fall in with the new proclamation, because immediately afterwards they set themselves to work and built a new infirmary at the back of the workhouse, which, in its time, stood in the forefront of the medical Poor-law institutions, just as much as Salterhebble did at the present day. It was a great stride in advance, and it was followed very quickly by the guardians revolutionizing the whole of the workhouse system. When he was appointed there was not a single medical appliance of any kind

in connexion with the institution, but the guardians deserved credit for so soon falling into line with the new ideas, and making their infirmary a model for Yorkshire. He was caught up by the spirit of the times, and he did everything in his power to try and keep alive and impress on the Board the spirit of his profession, which was that everything should be done for the benefit of the sick poor which was done at the voluntary hospitals; so much so that the guardians, immediately on his application, relieved him from the responsibility of finding drugs and appliances, and increased his salary from £100 to £150. The history since then had been one of continued progress. After many years the guardians introduced a new and complete system of nursing, and obtained the services of one of the finest superintendents whom it had ever been his fortune to meet—Miss Wilkie. They now had a staff of nurses of which any Union might be proud.

SPECIAL CORRESPONDENCE.

BERLIN.

Cholera in Western Russia.—The Charité Hospital.—A Medical Tour.

SIX cases of Asiatic cholera were registered last week in Russia along the Bug, a tributary of the river Vistula, close to where it flows into Prussian territory. In accordance with an agreement entered into between the Governments of Russia and Prussia, giving both these States at times, when there is cholera near the frontier, the right of appointing special commissioners to watch the course of the disease, and the precautionary methods employed for preventing its spread, the "Oberpräsident" (Provincial Governor) of the Prussian province has been appointed Special State Commissioner.

The thirty-second yearbook of the Berlin Charité Hospital has just appeared, and gives statistics from April 1st, 1905, to March 31st, 1906. During this period, which was one of transition, as one by one old buildings had to be discarded and new ones taken into use, 16,208 in-patients were treated for 441,151 days, giving an average of 27.2 days for each patient. Of these days, 274,156 were at the cost of the Berlin Municipality, 157,363 were paid for by sick clubs or similar institutions or private persons, and 9,632 were given gratis. The average daily number of patients was 1,209, the highest number on any one day 1,401, and the lowest 1,067. There were 1,532 deaths and 2,409 births during the year. The in-patients were treated in eleven departments or clinics. Of out-patients, tens of thousands received treatment in ten poli· clinics or out-patients' departments, and in the special bureaux for tuberculous and cancerous patients. During the year refrigerating rooms, in which a temperature of 15° C. below freezing point can be kept up, were added to the Pathological Institute, completing that department. The surgical clinic was provided with a pavilion for septic cases, and new wards were added to the in-patients' and to the out-patients' departments for skin and venereal diseases; the new building for women's diseases was completed, a large central bath establishment was added to the nerve disease out-patients' department, and special tuberculosis pavilions were built and opened. Great difficulties were encountered in the selection of suitable male nurses. It is hoped that the new regulations, far more stringent as to tests and examinations before engagement than those hitherto in force, will help to raise the standard of applicants, especially as the Charité training school has been approved by the Government.

The German medical men who are joining this year's expedition to health resorts, sanatoriums, etc., met on September 1st in the large hall of the Kaiserin-Friedrich house, previous to the start on the following day. Geheimrath Kirchner, of the Medical Department in the Prussian Cultus-ministerium, greeted the assembly, and in a short speech pointed out that a new feature of this year's tour was the visiting of places outside Germany. He said that only a few weeks ago, at the International Congress of School Hygiene in London, he was able to convince himself how quickly mistaken notions were corrected when leading spirits of different nations meet on common ground. All details of the tour have been most carefully worked out by a special committee, and the comfort of the medical travellers assured beforehand. Sea-bathing places on the Baltic are first to be visited: Heiligendamur, Warnemünde, the island of Ruegen, Swinemünde, Ahlbeck, Heringsdorf, Misdroy, the island of Bornholm, Wisby-on-Gotland (Sweden), then Stockholm, Copenhagen, whence the party will return to Kolberg and Stettin. A special steamer has been chartered for the tour. In Stockholm and Copenhagen a stay of several days will be made, so that the justly-celebrated hygienic arrangements and sanatoriums of these towns may be studied at leisure.

VIENNA.

An Outbreak of Small-pox.—Health of Labourers.—A Union of Medical Students.

IN Vienna, where small-pox has for many years past been practically unknown, an outbreak of the disease has now occurred. It has caused considerable alarm because there is deemed to be a possibility of a rapid spread of the disease among the poorer classes. Among these a successful antivaccination campaign has been in progress for two or three years past, with the result that the amount of vaccination performed during that period has considerably diminished. Among the cases which have so far occurred the majority have been children, while out of the first 64 persons attacked 57 had never been vaccinated or had not been vaccinated during the previous twenty years. The authorities have taken stringent measures to circumscribe the epidemic, and their task has been rendered the easier because, owing to small-pox being an unfamiliar disease, the populace with the enemy actually at the gates has proved amenable to reason. A special emergency hospital has been thrown open to receive all the cases, and the isolation wards of all other hospitals are ready for use. All persons suspected of having been in contact with infected persons, and all physicians and nurses engaged in the treatment of the patients, are isolated and cannot come in touch with the remainder of the world. Volunteers for the emergency work are drawn from the hospital staff at a good rate of payment, and an ample supply of cow's lymph for vaccinating purposes is ready at hand for the municipal and the private physicians. In spite of the warm summer weather hundreds of applicants of all ages fill the public vaccinating offices, and the majority of the outlying districts, as well as the health resorts in the vicinity of the capital, have postponed the opening of the schools until the epidemic will have subsided. Meanwhile, the nurses and all the medical staff of all our hospitals, as well as all other persons employed in them, about 3,000 persons altogether, as also a large number of the in-patients, have been vaccinated, so that there is little danger of infection for these people.

Much attention is paid by the Government now to the health of the labouring classes of the population, and regular inspection of all factories, together with careful application of the rules laid down for the protection of the workers from the risks of their occupation, is beginning to tell in the reports to the department of commerce. The last report contains some interesting reading. Thus we find that child work is prohibited in numerous branches of industry, whilst night work for persons under 14 years is not allowed at all. As regards the dwelling and its influence on the general health, it is rather curious to note that the town dweller is better off than the country dweller, at least amongst the hard-working iron and machine hands. These people show generally the best health, and they are better off in regard to pay and standard of life than any other class of the same general standing. The worst conditions as regards health are found amongst the yarnspinners, masons, and tailors. Tuberculosis is rife amongst them, and their average age 35 years. The more prevalent diseases are catarrhs of the respiratory tracts, heart disease, and digestive disorders. Arthritic mischief and rheumatism are also very common. As regards the dangers involved by occupation, the electrical industries, the iron and stone works, and the railways furnish the highest statistics as regards accidental injury, whilst the chemical workers are prone to chronic disablement without injuries. Special care is now paid to prevent the action of the known causative agents, like phosphorus in the match trade, H_2SO_3 in the metal trade, and camphorated air in the celluloid factories. Female inspectors are appointed for certain trades where

female labour is common, such as confectionery, tailoring, and spinning. As a rule, the health of the factory girls is not unsatisfactory.

The medical students of Vienna have at last organized themselves, and formed a "*Mediziner Verband*," a union for the attainment of practical aims for the students, especially in all questions of social standing, teaching, and employment during the time of study. The eligibility of ladies was at first opposed, but finally accepted. The main object is to ensure for the newcomer proper information as to prospects in a medical career. Perhaps this association will be able to prove to the medical profession the value of unanimous action in all questions touching its interests.

CORRESPONDENCE.

THE MAINTENANCE OF THE HONOUR AND INTERESTS OF THE MEDICAL PROFESSION.

THE objects for which the Association is established are the promotion of medical and the allied sciences, and the maintenance of the honour and interests of the medical profession.—*Memorandum of Association of the British Medical Association.*

We do hereby declare the objects of the Association to be the promotion of the medical and allied sciences, the maintenance of the honour and interests of the medical profession and of the members thereof collectively and individually, and the co-operation of the members of the Association for their mutual assistance and support in all matters affecting them in their professional capacity, including the encouragement, promotion, or provision of means for protecting members and their families against the exigencies of age, sickness, death, or misfortune.—*Draft Charter.*

SIR,—Dr. W. B. Parsons, in the JOURNAL of August 31st, page 556, under the heading Central Emergency Fund, enters upon a long tirade against the trade-union tendencies that are becoming more or less evident in the profession. Further, he goes so far as to disallow that the "main principle of trade-unionism is right." So far as I understand trade-unionism—and I have given it a fair amount of consideration—the main principle appears to be the co-operation of those occupied in any particular calling to secure for themselves better remuneration for their labours, better conditions to work under, and greater ability to resist attempts to depreciate their position in these respects. The result is that the highest wages are paid and the shortest hours are worked in just those trades that have adopted this principle most completely.

What is there in this principle that is derogatory to any body of men whether learned or unlearned? Are the members of the South Wales Branch of the Association demeaned by the fact that they have contributed considerably over £1,000 in helping a few of their number to fight against the unfair conditions of work the colliers attempted to impose upon them? Yet they are only applying the "main principle of trade-unionism." So far from being demeaned, they are to be highly honoured for the noble spirit they have displayed.

I wonder what men like Dr. Parsons imagine the vast majority of us are in practice for. If he will take the trouble to inquire, he will find that our object is to make money, exactly the same that the butcher has in view in keeping open his shop, or the seamstress has in working her life away for the merest pittance. Conceal it as you will, that is the bedrock fact, and it is just as well to recognize it, and not be mesmerized with such words as nobility, dignity, learned, etc. We have to make money to educate our children, to provide the necessaries of life for them and ourselves, and to have some reserve against the rainy day that comes to so many of us, and the old age that comes to so few.

The majority of us have not married heiresses, or been left large fortunes by wealthy parents, nor have we such abilities as will secure us world-wide reputations and bring us large fees from every part of the globe. The result is that "mere monetary considerations" loom very largely in our outlook on life, and this Association will be falling short of its duty and purpose if it neglects to take any measure, so long as it is an honest and straightforward measure, calculated to improve our material circumstances.

I have no fear that trade-unionism will wreck the Association; such an idea is made of such stuff as dreams are. On the contrary, I am sure that want of it will. If it is to continue it must have some more substantial object than publishing a scientific journal and holding an annual picnic, and convince the members that they cannot afford to be without it.—I am, etc.,

Ashton-under-Lyne, Sept. 1st. SAMUEL CRAWSHAW.

SIR,—I am pleased to see that the *other* voice of the Association is wakening up. With Mr. Parsons's letter I am in perfect sympathy. We are forgetting in these days, I am afraid, when we refer to our many grievances (although genuine enough many of them are), that we have high and honourable traditions to conserve, and it is distinctly refreshing to see the high-toned spirit which breathes through those letters of Dr. Hawthorne and Mr. Parsons—letters which, although written on different texts, practically preach the same sermon to us. What a comparison between the spirit of these letters and that of Dr. Cox's address on the "Transformation of the Association." If the methods as depicted in that address are really those of the Association, which I earnestly hope not, I fear evil days are awaiting us. As an honoured profession we have hitherto been held, and justly held, in high respect by the public, but the voices of the trade-union-policy men are even now sufficiently loud that evidences are not wanting that the public are already beginning to lose that respect for us. Witness what happened in Parliament when the Notification of Births Bill was passed. Look at the sneers we were subjected to because the Government were apparently led to understand that our whole opposition was because the miserable pittance of a shilling fee was not attached to the duty imposed on us. If we as a body had opposed that Bill from the point of view of Dr. Hawthorne's letter, without any reference to fee or penalty, I venture to think the result would have been different. Unquestionably Parliament has no right to impose further obligations on us without paying us for it, but in this particular instance our duty I held all along was not to oppose the clause because of no fee being attached to a penalty, but because the *duty* itself was against the highest traditions of our profession. The responsibility for such a severe slap to the profession I have no hesitation in saying falls on the shoulders of the Representative Body at its recent meeting, headed in this instance by Sir Victor Horsley. Surely a rebuke like this should make these democrats pause before they bring more ridicule not only on themselves but the profession generally.

The Association at the present time is at a most critical stage of its existence—practically swinging on the balance—but I trust before many months pass the real and genuine voice of the *whole* of the members will be heard, and if it should so happen that that voice is on a line with those who think like Sir Victor Horsley, Dr. Cox, and others, then I fear we may write "Ichabod" over the door of the new premises.

Glasgow, Sept. 2nd. JAMES HAMILTON.

SIR,—Dr. Cox has stated the case for trade-unionism, and he cannot have been unexpectant of opposition.

That I have recorded my objection to his policy in the same issue of the BRITISH MEDICAL JOURNAL in which his address is printed is an accident which I trust will not debar me from addressing you on the same subject to-day.

Dr. Cox's defence amounts to a statement that the British Medical Association is essentially a trade-union comparing very unfavourably with the trade-unions of labouring men, and, being a trade-union, it is justified in using those methods which have been found useful in other trade-unions.

The conclusion is hardly justified by the premiss.

It is not the unionism which is at fault, it is not the objects for the attainment of which that unionism has been brought about that are unworthy, but it is the method which dishonours us.

Dr. Cox insists, as do all with his opinions, that these methods are the only effectual ones. They are tired of expostulations and expressed pious opinions, and our brethren cry out for help and make the method necessary. Is the end to justify the means?

Alternative and honourable means have been suggested.

It is neither honest nor honourable to withhold from fellow-creatures that cure or relief which in their time of need only we can give them.

As in the past, so also in the present and future must we be guided by a spirit of altruism. It is improper to make our honourable record an excuse for departing from those principles which constitute the record.

Our material interests demand that we should exert ourselves to maintain or better them. They are directly measurable by the estimate, mental and moral, which the public has of us. If we increase this estimate we will increase our wage, but let no one delude himself into believing that an increased fee wrung from unwilling hands by the creation of artificial conditions will be more than a temporary advantage.

The warning notices of the JOURNAL are a degradation, the support of the *Lancet* is incomprehensible, the agreement of the medical agents is but necessary to their means of living, and of this "excellent piece of work" Dr. Cox says, "I am afraid it not unremotely suggests trade-unionism."

Ay, do you fear it?
Then must I think you would not have it so.

—I am, etc.,

London, N.W., Aug. 31st. W. B. PARSONS.

SIR,—I have read the letter on the Central Emergency Fund in the BRITISH MEDICAL JOURNAL of August 31st with regret.

I have worked in London and in country villages in Sussex, Somersetshire, and Northamptonshire, and I am firmly convinced that the fund is required. Country boards of guardians and other public institutions, as well as some private individuals, cut medical men down as low as possible, and I regret to say that it is not always that a country doctor can rely either on his neighbouring brethren or on those further away. Under such conditions it is impossible for a man without large capital to fight for his rights. Theoretically no doubt Dr. Parsons, and those who think with him, take a very noble view of our profession, but it is regrettable that the cold world is practical only.

In my opinion the Fund meets a long-felt want, and will tend to bring the country practitioner in touch with their brothers of the towns in a way that has never been before. It has my entire sympathy.—I am, etc.,

Paignton, Aug. 31st. GRIFFITH C. WILKIN.

SIR,—The commencement of the educational year brings forth as usual the Education Number of the JOURNAL, and as this publication is likely to be received as an authoritative statement by parents seeking an opening in life for their sons, I think it of the utmost importance that the opinions set forth should be most carefully scanned from year to year in order to adjust them to the actual facts, and I submit that the general tone of this year's article, which differs but little from that of many previous issues, gives no impression of the serious condition in which medical practice, in a commercial sense, now stands.

In particular, the optimistic statements (p. 562) that "the medical profession affords a fairly certain means of livelihood," and again (p. 462, September 1st, 1906), "it has the great advantage, however, that no practitioner who is able and willing to work need starve," seem hardly tenable at the present day.

For the last few years the chief interest in the Association has been the progress of its reconstruction, and at the present moment we are actually working to obtain a charter which will admit of our adopting some of the methods of a trade union. Now, what is the real significance of this? Is it not that many of our profession find that they *cannot* make a decent living in the present state of competition?

There is an outcry against hospital abuse, against club practice, against Poor-law service, public health appointments, assistance-to-midwife fees, against sixpenny surgeries, etc., etc., but what is the real reason of all this sweating being rife? Is it not the state of the labour market, the supply of doctors being far in excess of the demand for them?

To remedy these grievances it is proposed to have a trade union; but are not all political economists agreed that trade unions are inherently vicious, and *cannot* actually raise the *real* rate of wages? Have not Mill, Jevons, Greg, and many others shown that the only means of raising wages is to curtail the supply of labour? This curtailment of supply is already, it appears from a study of the statistics of men entering the profession, taking place in a slight degree, no doubt because some knowledge of the "terms of contract" is beginning to diffuse, and it is becoming evident that medicine does *not* offer at the present time anything like an adequate return for the capital and brains put into it, leaving out of count the arduous labour it entails, and I am convinced that the ultimate emancipation of the profession from its present derogatory position will lie within its own ranks when it obtains the power to dictate its terms of service. This power, with hundreds of men struggling for a bare existence, is just now dormant; but let these facts be known, and young men will think twice before making "a choice brief and yet endless," which dooms them to a life of, as Greg puts it, "ceaseless struggle from marriage to the grave to preserve comfort and respectability on inadequate resources."

It is not too much to say that 25 per cent. of medical men in busy practice make less than £200 a year net, an income quite inadequate to enable them to live in the comfort of their station, or to educate their children and make a suitable provision for old age or premature death. Any one who doubts the truth of this picture has but to glance at a monthly statement of the Medical Benevolent Fund, or consider seriously the *raison d'être* of sixpenny surgeries or Irish dispensaries.

One point more—is any one the better of this state of things? The general practitioner assuredly is not, but does the public reap any benefit from cheap medical advice? I think not; the practice of medicine requires essentially a strong brain, unlimited patience, and an equable temper. All these may possibly be retained in the face of a sordid struggle for existence by a man who, in the spirit of the monks of old, has devoted himself singly to the healing art, but the present-day practitioner who, lured not only by his inclination and abounding hope but by the popular prejudice in favour of the married doctor, has given hostages to fortune, must inevitably have his mind harassed by pecuniary embarrassment and be unable to give to his work that undivided and intense concentration of thought necessary for a successful treatment of disease.

In conclusion, let me repeat that our emancipation lies not in the remedies of trade-union methods but in the natural operation of the economic law of supply and demand, which is never held in abeyance but by ignorance of the state of the market, an ignorance which it is our paramount interest to dispel.—I am, etc.,

September 7th. PRO BONO PUBLICO.

SIR,—A consecutive perusal of Dr. Parsons's letter on the above and your account of the treatment of Dr. Nash at Southend is a complete education in itself.

I have not the pleasure of Dr. Parsons's acquaintance, but I should judge from the terms of his letter that he is not overburdened with the worries of life. Becky Sharp, in *Vanity Fair*, remarked how easy it was to be good if one possessed £5,000 a year. It is, perhaps, still easier to be dignified.

The adoption of the principle of trades-unionism is necessary for our salvation as a profession and for the very existence and maintenance of many of us individually. This adoption need not make us less gentlemanly than we are now. We can still do unto others as we would be done by; the idea is to induce others to treat us as we would desire and deserve to be treated.

The pedestal of dignity, philanthropy, and altruism on which the medical profession has placed itself has allowed it to become a convenient target for mischievous bodies—corporate and individual—to fling stones and dirt at.

Dr. Parsons need not fear. There is no likelihood of the medical profession adopting the principles of trades-unionism for a long time to come, for the simple reason that we are not united, and, worse still, are not even desirous of becoming so. *Hinc illae lacrimae.*—I am, etc.,

Southampton, Sept. 2nd. JAMES C. HOYLE, M.B.

THE EARLY NOTIFICATION OF BIRTHS BILL.

SIR,—Will you permit me to assure Dr. W. Muir Smith that, when writing the letter published on August 24th, I had by no means forgotten the existence of the Notification of Infectious Disease Act. Whether the operation of this Act has or has not been in the public interest is not at present the question, and I do not propose further to allude to the issue which Dr. Smith raises on this point. But I cannot assent to his argument that because the private and confidential relations existing between practitioner and patient have already been invaded at one point, the profession is debarred from resisting further and different invasions. If Dr. Muir Smith's contention is well founded, there is now no demand by public authority for the betrayal of professional secrecy against which it is open to the profession to protest, provided only that the transaction is accompanied by the offer of a fee to the practitioner concerned. From such a conclusion, I am sure, Dr. Muir Smith would himself promptly shrink, yet it is the inevitable outcome of the position which he presents in his letter.

On the general question the issue is now closed, so far, at least, as this individual Bill is concerned. The view of the Representative Meeting, whatever it may be worth, was duly argued in the House of Commons, and there succeeded in securing the scorn and contempt of the great majority of those who took part in the debate. In view of this and of the argument of Dr. Muir Smith's letter, it seems more than ever important to take note of Sir Victor Horsley's claim that the Representative Meeting, even on questions in regard to which its members have received no mandate from their constituents, has warrant and title to define the attitude of the medical profession. This claim has yet to be made good. In the meantime, it will be remembered that the policy associated with it has succeeded in presenting the profession to the public as concerned rather to gain a fee and to avoid a penalty than to defend the sanctity of professional confidences, while, as a matter of achievement, it has failed absolutely in every one of these respects.—I am, etc.,

London, W., Sept. 9th. C. O. HAWTHORNE.

SIR,—I certainly do not agree with Dr. Moore that because the notifying a birth is not exactly a professional matter it should not be paid for. The mistake has been in putting the *onus probandi* on the medical attendant or nurse, and not on the parent. When a penalty attaches a fee should be paid. I admit that, from a medical officer's point of view, the matter is of sufficient importance to overcome all scruples and objections, but we cannot live on air. Some years ago I persuaded the local registrar when entering a birth to hand on to the parent a printed copy of regulations explaining the proper method of feeding a baby. He did this without fee; but I notice from the President of the Local Government Board the reason why this method cannot be universal is on account of the expense. No such objection is raised where medical men are concerned. The sanitary authority pays the local registrar 2d. a name for the monthly list of births and deaths, and this suggests an important point—namely, in future these births will be notified to the medical officer of health and not to the registrar, with the result that the information will come direct. It only needs the same method in regard to deaths.—I am, etc.,

Darwen, Sept. 2nd. F. G. HAWORTH.

THE INHERITANCE OF PULMONARY TUBERCULOSIS.

SIR,—Messrs. Brown and Pope, of the Saranac Sanatorium, attribute to me two assumptions which they assert are incorrect. I am painfully aware of the pitfalls which lie in the way of every statistician, but I do not think their objections are valid, or that they have realized the meaning of the categories in my table. They say first:

> A correction is applied to the number of tuberculous offspring of tuberculous parents to allow for those who will subsequently be affected. Should not a similar correction be applied to the number of tuberculous offspring of non-tuberculous parents?

The answer is, No. The number of tuberculous offspring is obtained from tuberculous patients who are parents, and their families have not wholly passed through the danger zone. The number of tuberculous offspring of non-tuberculous parents is obtained from the tuberculous offspring who are themselves patients, and whose parents are, in the great bulk of cases, through the danger zone, or possibly dead. I directly point out that this correction has comparatively little significance on p. 11 of my memoir, and this paragraph appears to have escaped the notice of Messrs. Brown and Pope.

Their second point is involved in the question:

> Is it not incorrect to assume that the proportion of the tuberculous to the non-tuberculous offspring of tuberculous parents can be obtained from the histories of families in all of which one child at least was tuberculous?

Presumably it would be if it had been done, but what has actually been done is to consider the offspring of tuberculous parents who may or may not have had any tuberculous offspring.

It is perfectly open to Messrs. Brown and Pope to contest the percentage of tuberculous offspring who result from tuberculous parents—the Crossley Sanatorium records show 1 in 3. They are incomplete as to family history. Dr. Thompson on eighty complete family histories found 1 in 2. Until further complete family histories of the offspring of tuberculous persons are forthcoming I prefer to take the data I have, and to term my paper a *first* study.

Messrs. Brown and Pope state that:

> Amongst the married and widowed population, according to the census returns, the proportion of deaths due to tuberculosis is greater than among the total population.

This does not appear very surprising, considering that the married and widowed population excludes all mortality below 20 years of age, a period during which there is extremely small mortality from pulmonary tuberculosis. My tables represent—of course, only with rough approximation—random samples of the *adult* population. I have not here the data at hand, but I should be surprised to learn (1) that the death-rate from pulmonary tuberculosis is higher among the married and widowed than among adults who are single; or (2) that the prevalence of tuberculosis among married persons who have children is as great as its prevalence among married people who do not have children, and among adults of an age which renders them liable to tuberculosis, but who are not married.

Now (2) is the state of affairs we are dealing with, not even (1). For our parents are, of course, those who live to have children, otherwise no treatment of inheritance would be possible, and, being *weighted* with their children, the longer lived and those less likely to die of tuberculosis will appear oftener in the list. On the other hand, the offspring include all those who die of tuberculosis without marriage, or are sterile in marriage, as well as the married offspring, who, again, are not weighted. It appears, therefore, *a priori* reasonable to expect a considerably lower rate of tuberculosis among the class "parents" than among the class "adult offspring." This fact has been confirmed by a like result obtained by Mr. Heron for the case of insanity, and I have little doubt that data for the death-rates among married and single adults will be found to confirm it.

In a rather obscure paragraph my critics write:

> The proportion of tuberculous parents—weighted with their offspring—of non-tuberculous offspring seems very much too small. Several unpublished series give a proportion about one-half to one-fourth that of tuberculous parents of tuberculous offspring.

Now, the number of tuberculous parents of non-tuberculous offspring in my *incomplete* table is 108, and of tuberculous parents of tuberculous offspring 49; the latter is half the former amount. But if we are to take the above paragraph in its literal meaning, it ought to be 2 to 4; or, instead of Dr. Thompson's 50 per cent., we are to have 70 to 80 per cent. of tuberculous offspring as a product of tuberculous parents! If Messrs. Brown and Pope have turned their ratios upside down, my one-half agrees fairly well with their one-half to one-fourth, the latter being probably based on very "incomplete" histories.

My memoir is admittedly a first discussion of the subject, and is open to modification and correction when fuller statistics are available. No one will welcome them more heartily than I shall. My object was to show that on several points information has hitherto failed, and without it no real test of the inheritance of the tuberculous

diathesis could be forthcoming. The paper has undoubtedly defects, but I venture to think not those which have been asserted to exist by my American critics.—I am, etc.,

KARL PEARSON,
September 9th. Biometric Laboratory, University College.

ON THE EFFECTS OF RESPIRATION ON THE CIRCULATION.

SIR,—Dr. P. Watson Williams, in his interesting article on the above subject in your issue of August 17th, quotes so freely from my contribution that I must claim space for a short reply. I have dealt so very fully with the subject in your pages of late that I shall now be very brief, but I hope not so brief as to appear discourteous to my friend, Dr. Williams, and I shall leave your readers to choose which views they wish to accept.

My own position in the matter may be well expressed in the language of Mr. Chamberlain: "What I have said, I have said. I withdraw nothing, I qualify nothing, I defend nothing." Facts defend themselves, and should require no explanation. "Facts are chiels that winna ding, and downa be disputed." What, therefore, can I say of a man who twists my facts out of recognition and seems afraid to look his own facts straight in the face, preferring to give some antiquated and exploded ideas from Michael Foster? In the Seventies I showed that inspiration, *per se*, lowers arterial tension, and I think most modern physiologists hold the same opinion, and Dr. Watson Williams's tracings show it; but in spite of these facts he quotes Michael Foster as evidence that inspiration raises the blood pressure, and the normal left ventricle ejects 6 oz. of blood into the aorta at each stroke. I sincerely trust that Dr. Williams does not keep such a bullock's heart within his chest. Just fancy the two ventricles throwing out 12 oz. of blood seventy or eighty times in the minute. I would almost as soon have a donkey engine in my interior.

Experiments with the chest laid open and artificial respiration have no bearing whatever on normal conditions. The youthful type of irregularity of Mackenzie to which Dr. Williams refers is simply a statement of fact, and is evidence that the heart of the child—especially the right side—is more sensitive than that of the adult; just as the heart of a kitten is more sensitive than that of the aged cat, but still many adults preserve this healthy type of irregularity.

The case of the athlete which I published, where under Müller's experiment the pulse disappeared at the wrist for 30 beats, seems to puzzle him, and not much wonder when we consider the number of conundrums of his own which he has added. He finally concludes that the obliteration of the pulse was "due to the instrument failing to receive pulsations from the smaller (constricted) radial artery." I can assure him that there was no failure either in the instrument—as the tracings should plainly show him—or in my tactile sensibility. He did not faint, nor show any signs of doing so; he was lying perfectly flat on his back, and not "presumably in the erect posture," though so far as his cerebral circulation was concerned I don't suppose that it would have made any difference. I did not pass any remarks on his carotid and vertebral arteries; his lung capacity was very good and his heart normal, but I never said or imagined that his lungs could hold 30×172 c.cm. $= 5160$ c.cm. of blood, and I hope neither of his ventricles will ever attain the capacity of 172 c.cm. I never said that there was no overflow, or that the left ventricle and all his arteries were at any time empty. I would seriously commend to Dr. Williams a careful study of the pressure gradient which he utterly ignores. If he has got, say, half a dozen taps in the main water-pipe of his house, let him turn them all fully on and then consider the cause why the water does not flow through some of them. Dr. William Russell's *schema* of the circulation will help him in this study.

He objects to my statement that in Müller's experiment the capacity of the lung reservoir is increased, so the immediate effect is a diminished supply to the left side of the heart and the systemic pulse becomes slower, but yet in his own tracings on the same page the first pulse curve during inspiration is longer than those which succeed; he has thus furnished me with the evidence to prove my statement.

Dr. Williams can scarcely have read my replies to Dr. Lewis, or surely he would have tried some other evidence to support his contention that the negative pressure within the chest sucks the blood back into the aorta. He puts down the pressure in the aorta at 200 to 250 mm. of mercury. Personally, I am content with a much lower pressure, and I would like to point out to Dr. Williams that in these cases of very high pressure the inspiration has very little effect on the pulse, but it is presumably in those cases that the nerve impulse is travelling regularly and forcibly.

I look upon the tracings of Lieutenant-Colonel Deane as strongly corroborative of my views, but surely Dr. Williams has fallen into error when he says that they "are to be read from right to left." No one, at least no one that I know, denies the influence of the nervous system on the circulation and respiration, but such influence is quite unnecessary to explain the simple mechanical phenomena which are effected by the respiration on the circulation. The respiration is well under voluntary control, and so are its mechanical effects, but nerve impulses travelling from the respiratory and vasomotor centres are not, and such impulses must be more or less rhythmic, however the will may control the respiration. I can say that at a given second, say a week hence at 35 seconds past 1, I can obliterate the pulse at my wrist, but I have got no such control over my cardio-inhibitory centre.

When the nerve centres are in a high state of efficiency, such as occurs in cases with high-tension pulses, you do not get the *pulsus paradoxus*, no matter how deep the inspiration. According to Macdonald, nerve impulses travel at the rate of 30 metres a second, which, after all, is not very rapid when compared with electricity, or light, or even sound, and in many cases of neurasthenia, where even Dr. Williams says you get the *pulsus paradoxus*, the rate must be much slower. Witness in many cases of cardio-splanchnic paresis and in Addison's disease the time it takes the vasomotor centre to adjust the balance of the circulation when the patient assumes the erect posture.

As I have again and again pointed out, the effects of respiration on the circulation are simple mechanical effects which require no recondite or imaginary assumptions for their explanation, and, personally, I am quite content with the dictum of Sir Isaac Newton, that we are to admit no more causes of natural phenomena than such as are both true and sufficient to explain their appearance.—I am, etc.,

Liverpool, Aug. 28th. JAMES BARR.

THE INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.

SIR,—The average elector, convinced by long experience of the political expediency of social questions before Parliament, and the difficulty of passing necessary reforms into law, more often entertains contempt than regard for the Legislature of his country.

In consequence of this difficulty, it had been anticipated in some quarters that matters such as the medical inspection of school children—relating closely as they do to the welfare of the community and acknowledged on both sides of the House to be essential measures—would not emerge unmassacred unless publicly and especially enforced. The Mother of Parliaments has, however, in the throes of the dog days, and in the last week of the Session, secured the possibility for such inspection in the Education (Administrative Provisions) Bill, which received the Royal Assent on August 28th last.

The second International Congress on School Hygiene, under the Presidency of Sir Lauder Brunton, clearly and emphatically urged this upon the President of the Board of Education, and the necessity for an "autumn campaign" by medical men recently advocated in a letter under the above heading is now spared.

All who have the healthy developement and social improvement of the people before their eyes must be grateful for the untiring efforts of members of the British Medical Association and those of many distinguished men and women who have made this matter their earnest recommendation, who, also, in spite of repulses have brought pressure upon the Government to obtain the passage of such a Bill into law. It is hoped that this may be only an

initial instalment of further much-needed reforms to ensure an improved national physique.—I am, etc.,

Claybury, Sept. 2nd. Robert Jones, M.D.

TUBERCULOSIS AND SCHOOLS.

Sir,—In a leading article of your issue of August 24th the subject of tuberculosis and schools was discussed. In fairness to some of the few workers who have already attacked this difficult and important subject, I hope you will allow me space to make some remarks on certain controversial points in this article.

In the first place the article says: "For several years we have maintained that the amount of tuberculosis, whether declared or latent, in elementary and secondary schools has been generally underestimated, and have urged that the fact should be recognized." This statement is presumably based on the well-known pathological fact that *post-mortem* records show a very high proportion of latent tuberculosis, both in children and in adults. The point at issue really is how far this knowledge is applicable to children at school, and whether the amount of declared or revealed tuberculosis, "open" or "closed," is large or small among them. This can only be settled by the direct examination of large numbers of school children by competent doctors. A relatively small number of such examinations have been made, and the article, without giving any reference to the source of information, has published a list which is identical with a list in a paper hitherto unpublished, and read by Dr. Horton and myself at the International Congress of School Hygiene this year. The results of these examinations vary from 2.3 per cent. (Edinburgh) to 0.37 per cent. (Brighton). The leading article says, "It is impossible to believe that these varying results can have been due to the greater or less care with which the children were examined; therefore it might be fair to attribute them to heredity . . . to locality, or to insanitary homes and general neglect." In our paper, to which I have referred, we have pointed out that this view is untenable, and that some of the figures are so much higher than the others as to require further investigation; and we have adduced evidence supporting the very low percentages obtained by most observers when examining school children for tuberculosis. At the discussion at Section VII of the above Congress, the great importance of each observer stating the criteria on which he based his diagnosis of early phthisis was urged, and until this is done the varying results of such examinations must be regarded as due to the greater or less care with which the tests are made.

Next with regard to the word "revealed" applied to tuberculosis. The article says: "Dr. Newsholme, who contributed the opening paper at the general meeting, expressed the opinion that not more than 1 in 300 children in schools show revealed or diagnosable pulmonary tuberculosis. This word *revealed* it is that is misleading." There is nothing whatever misleading in this word. The following scheme shows the different conditions under which tuberculosis exists in the human body, and all observers when speaking of tuberculosis must be referring to one of these. Confusion can only arise when terms are used inaccurately or are misunderstood.

Tuberculosis may be:

A. Inactive { (*a*) not diagnosable (latent); (*b*) diagnosable } revealed

B. Active { (*c*) diagnosable and closed; (*d*) diagnosable and open } revealed (*b*) (*c*) (*d*); (*e*) not diagnosable (latent)

Dr. Horton and I used the word "revealed" as equivalent to diagnosable, preferring it for the sake of euphony. As shown in the above scheme, the word "revealed" covers all the cases of tuberculosis discoverable when children are carefully examined.

Thirdly, in criticizing the two chief measures proposed against tuberculosis, the article says: "Dr. Newsholme proposes two measures: the first is the removal of the children from their homes, either temporarily or permanently, to homes or schools at the seaside or in the country. This suggestion is admirable, but unfortunately at present quite impracticable, because there is no provision worth mentioning for such cases, and we must face the position in a practical spirit if possible." Apart from the fact that it would be hard to find any one more intensely practical than Dr. Newsholme, the following remark, which embodies Dr. Newsholme's "impractical" first measure, is added a little later in the article; "What is important for the amelioration of its (the child's) condition is abundance of fresh air, good nourishing food, sleep, and avoidance of fatigue; these it can only obtain by going away to healthier conditions."

Fourthly, is it seriously believed that three stages, definite and recognizable by competent doctors, usually precede the classical first stage of Laënnec? It is simply ludicrous to suggest it. In the hands of Professor Grancher and other specialists these early signs, when they are present, are of value; but it is not practical to assume that the majority of practitioners will be able to utilize them. Before any such suggestion can be entertained these three early stages must receive the general endorsement of the heads of the medical profession. It is true that the article points out that special training is required to enable these early stages to be recognized. But that means turning the general practitioner into a specialist, and converting all the specialists to Professor Grancher's views. Professor Grancher's percentages are so high that even after allowance is made for the high tuberculosis death-rate in Paris, his results cannot be compared with any British results.

Lastly, lack of knowledge of practical administration in relation to tuberculosis is shown in the following extract:

> An aspect of the case which does not seem as yet to have presented itself is that the medical officer of health who is notified of cases of phthisis in households might send a list of the names and addresses of such people—say, once a month—to every school in his district. In glancing over it, the head teacher would know if children from these houses attended his school, and, if so, immediately communicate with the medical officer of health for his advice; or in visiting the house where a case has been reported to the medical officer of health, that officer could inquire if there were children of school age in the house, and, if so, the name of the school they attended, and at once take the proper steps.

This is no new aspect of the case. If the notification of phthisis is worked efficiently, all such facts are already known and acted upon so far as is hitherto practicable. But in view of the limitations implied by questions of practicability, including expense, the most important measures should, as Dr. Newsholme urged in his paper, be taken first. The consumptives themselves must be prevented from continuing to communicate infection to their children. All other measures will follow in the order of their importance.

Had your leading article appeared in a lay newspaper I should not have attempted to criticize it; but, appearing as it does in the leading medical journal, and not receiving at more competent hands any further attention at this holiday time, I trust you will be able to find room for the above remarks.—I am, etc.,

H. C. Lecky, M.A., B.M., D.P.H.Oxon.,

Brighton, Sept. 7th.

THE OPERATIVE TREATMENT OF CARCINOMA OF THE CERVIX.

Sir,—In the British Medical Journal of August 31st, p. 555, Mr. G. Lenthal Cheatle comments upon my paper read before the Obstetric Section of the British Medical Association at Exeter last month. In that paper I pointed out that the most important feature in Wertheim's operation for cancer of the cervix uteri had not been fully appreciated, and had in fact been overlooked. I refer to the encapsulation of the cancerous cervix by a collar of vaginal tissue. To emphasize my point I quoted Dr. Vincent Dickinson as having shown a case purporting to illustrate Wertheim's technique in which the cervix was not enclosed in a vaginal capsule. I never questioned the entire removal of the growth; indeed, if asked, I should have said that in my opinion the growth had been totally removed. Your printed report of my paper lies before me at the present moment, and from it I cannot conceive how Mr. G. Lenthal Cheatle got the idea that I was under the impression that he had left any of the cervical growth behind. Mr. Cheatle's "own powers" of grasping the context, "and the manner in which he uses them are alone responsible" for the misconception. The growth was not enclosed in a vaginal capsule, and was therefore, to repeat my former words, "exposed." This being so, Dr. Dickinson was wrong in saying Wertheim's technique had been followed, and my only object in referring to the case was to draw attention to an

error which attributed to Wertheim a technique for which Kelly and not Wertheim is responsible. If Mr. Cheatle's case had been called a Kelly's operation I should not have had occasion to mention it in my paper on Wertheim's operation.

Let us call a spade a spade, rendering unto Kelly the things that are Kelly's, likewise unto Wertheim the things that are Wertheim's.—I am, etc.,

London, W., Sept. 3rd. CUTHBERT LOCKYER.

THE EARLIER RECOGNITION OF CANCER.

SIR,—I have read with great interest and the most cordial sympathy the report, in the JOURNAL for August 24th, of the discussion in the Obstetric Section at Exeter on the earlier recognition of uterine cancer, and am exceedingly glad that the Section agreed to request the Council of the Association to appoint a committee to consider the best means of securing such recognition. It is high time that this country bestirred itself on this question. Already measures have been adopted, not only by Germany, but by a number of other European nations, an account of which was published, at my instigation, in the *Journal of Obstetrics and Gynaecology of the British Empire* for January of the present year, in the form of a critical review by Dr. W. A. Milligan.

I regret that none of the speakers at Exeter appears to have made any reference to Dr. Milligan's article, or to the three leaflets issued by the Obstetrical Society of Switzerland, the full text of each of which was appended to that article, and which the proposed committee would certainly find most useful and suggestive.—I am, etc.,

London, W., Aug. 29th. CHARLES J. CULLINGWORTH.

AN APPEAL FROM GYNAECOLOGISTS.

SIR,—I submit that a large section of general practitioners have good reason to resent, as unfounded, the slur cast upon them by the statement that "the failure to diagnose malignant disease in sufficient time to operate with reasonable chance of success lies with the general practitioner."

In my experience the blame must be cast in three directions:

1. The patients themselves; for it is a matter of common knowledge that most women resent the suggestion of a vaginal examination, especially while any menorrhagia exists.

2. The hospital men, that is, the gynaecologists themselves, who fail to give adequate practical instruction to students in this most important and responsible branch of their future work as general practitioners.

3. The general practitioners themselves, a large section of whom, alas! after a hard day's work in a poor, badly-paid district have not the heart nor the energy to give a couple of hours at night to the study of the more up-to-date methods of diagnosis and treatment. But on this point I must add a protest against the enormously increased and practically prohibitive prices, as regards the poorer paid general practitioner, of almost all recent medical publications.

Gynaecologists themselves are not without blame sometimes, as the following instance shows:

A married woman, aged 27, consulted me in August, 1901, suffering from profuse menorrhagia, which the usual recognized treatment failed to stop. I then expressed to her husband my wish for a consultation, and took her to a well-known specialist desired by the family, who ridiculed my suggestion of the symptoms pointing to the inception of malignant disease. He advised curetting, as all that was needed, which he accordingly did. All went well for two or three months, when he saw her again, but was of the same opinion still, and ordered large doses of ergot and rest, and said I was too anxious about my patient when I suggested the propriety of operating. He saw her a third time, but still would not hear of it being malignant disease. The case went on, a while better, and a while worse, till April, 1903, when I plainly told the husband that I entirely disagreed with the specialist's opinion, and advised that another should see her, who confirmed my original diagnosis, and said the operation should have been done long before. Paravaginal section was performed on April 11th, 1903, and microscopic examination proved the true nature of the case. The patient improved wonderfully in health and spirits, but a recrudescence took place, and on March 13th, 1903, a second paravaginal section was done. The case went on well for eighteen months, when a recurrent growth formed in the recto-vaginal septum, which, as a last resource, was destroyed by the thermo-cautery. A few months' comfort resulted, when constitutional cachexia rapidly set in, accompanied by extensive malignant deposits in the pelvis, and the patient died, after many months of suffering, in October, 1906.

Had the general practitioner's diagnosis not been ignored in the first instance by a too-cocksure specialist and the suggested operation performed eighteen months earlier, that woman would in all human probability have been alive and well to-day.

For obvious reasons I give neither name nor address for publication, but sign myself

September 4th. ONLY A G.P.

OBITUARY.

TIMOTHY HOLMES, M.A., M.C.CANTAB., F.R.C.S.ENG.,

CONSULTING SURGEON, ST. GEORGE'S HOSPITAL.

MR. TIMOTHY HOLMES, for so many years surgeon to St. George's Hospital, died at his residence in Sussex Place on September 8th. He had been in failing health for some years, and his death was not unexpected, but the announcement will cause a pang of regret to old students of St. George's Hospital, and to many others who remember the medical profession during the last quarter of the nineteenth century. Mr. Holmes had attained the patriarchal age of 82, but he retained his physical vigour undiminished, and his mental faculties undimmed, to within a few years of his death. Of what those faculties were in his prime it is difficult to speak in terms which may not seem to savour of exaggeration, but it is no exaggeration to say that Timothy Holmes was a man of quite exceptional learning and mental power, in whom the critical faculty, in its best form, attained its highest development. His love of justice and hatred of shams, combined with independence of judgement and absolute fearlessness to make him a great power in the counsels of the medical world.

Mr. Holmes graduated B.A.Cantab. in 1847, and M.A. in 1850. In 1900 he received the honorary degree of M.C. from his old university, and was made an Honorary Fellow of Pembroke College. He pursued his medical studies at St. George's Hospital, and became a Member and Fellow of the Royal College of Surgeons on the same day, May 12th, 1853. In 1861, after holding various junior appointments, he was elected Assistant Surgeon to St. George's Hospital. Among the surgeons to the hospital at that time were Sir Prescott Hewitt and Mr. George Pollock, and Mr. Henry Lee was appointed Assistant Surgeon on the same day as Mr. Holmes. The latter became full Surgeon in 1867, and retained that office until 1887, when he retired from the active staff, and was appointed Consulting Surgeon. In 1894 he became Treasurer to the hospital, having in succession as his colleagues the Duke of Westminster and the Duke of Richmond and Gordon; he was most assiduous in the discharge of the duties of this office until his resignation in 1904, when he was appointed Vice-President.

He was elected Assistant Surgeon to the Hospital for Sick Children, Great Ormond Street, in May, 1859, and promoted full Surgeon in September, 1861; he resigned this office in 1868. For a good many years Mr. Holmes held the office of Chief Surgeon to the Metropolitan Police.

In 1873 Mr. Holmes was elected a member of the Court of Examiners at the Royal College of Surgeons of England. Whilst holding that appointment the Board of Examiners in Anatomy and Physiology was instituted, and he was put on the new Board as an anatomical teacher of long experience. As an examiner he was severe and searching, but very just and judicious in his estimate of the merits of the candidates allotted to him. Mainly on that account he was made in 1880 a Surgical Examiner on the Board of Examiners in Dental Surgery, as great stress had recently been laid by several dentists of repute on the importance of a fair knowledge of the anatomy of the head and neck and on the general principles of surgery for all who undertook dental surgery.

In 1877 Mr. Timothy Holmes presented himself as a candidate for one of the three vacancies on the Council of the Royal College of Surgeons of England caused by the death of Sir William Fergusson and by the retirement in rotation of Mr. Erichsen and Mr. Gay, who offered them-

selves for re-election. Mr. Adams and Sir William (then Mr.) Savory were, with Mr. Holmes, the new candidates for that year; Erichsen, Savory, and Holmes were elected. At the expiration of the full term of eight years only Savory sought re-election. There was much friction at that time amongst the members of Council as to the attitude which they ought to assume towards Fellows and Members who were agitating outside the Council for reforms, and for better representation. Holmes joined the reformers, who, in part through his energetic action, gained some of the privileges which they sought. A year later, at a meeting of Fellows and Members held at the College, Savory, as President, being in the chair, Holmes gracefully thanked him for having discouraged all factious opposition to those members of Council who had consistently urged reforms, and congratulated him on one good change which had stopped the undignified practice, as he termed it, of mechanical yearly election of presidents in rotation. He was delighted to see that a change had been made in that routine, and that in the first instance the choice of re-election to the presidency had fallen on Savory, a most worthy representative of British surgery. Holmes was Hunterian Professor in 1872-74, and had also held the office of Vice-President of the College.

Mr. Holmes was for many years a member of the British Medical Association, and was Vice-President of the Section of Surgery at the annual meeting at Newcastle-on-Tyne in 1870; at the annual meeting at Cambridge in 1880 he delivered the Address in Surgery, taking for his subject the influence of Sir William Fergusson on conservative surgery, as illustrated by the operations for excision of the knee and hip. It was characteristic of Holmes that he introduced into this address a protest against the ineffectual nature of the treatment of hip-joint disease under ordinary hospital conditions, a protest which, we regret to say, would have almost if not quite as much justification to-day as when it was uttered more than a quarter of a century ago. Mr. Holmes's protest was thus summarized in a contemporary editorial article commenting on his address:

> "The operation (excision of the hip), it is held, ought to be very rarely required if the disease were treated properly at its commencement; and a graphic comparison is drawn between the results attained in an institution where hip-joint disease can be carefully and systematically treated from beginning to end, and those which follow a necessarily intermittent and irregular course of treatment at a large hospital."

Mr. Holmes was a voluminous writer, and in the books which he wrote or edited, and in his numerous contributions to the periodical press, he had full scope to show both his wide reading and critical powers. He was the editor of a *System of Surgery, Theoretical and Practical*, the first edition of which appeared in four volumes from 1860 to 1864, and the second in five volumes, from 1869 to 1871. To this work he himself contributed articles on burns and scalds, on dislocation, on aneurysm, on diseases of bone, on excision of bones and joints, on the surgical diseases of childhood, and on surgical diagnosis and regional surgery. Later he issued a smaller work from his own pen, entitled, *A Treatise on Surgery, its Principles and Practice*, and brought out a new edition of Gray's *Anatomy*. His connexion with the Hospital for Sick Children gave him wide experience in the treatment of surgical diseases in children, and led to the publication of a *Treatise on the Surgical Treatment of the Diseases of Infancy and Childhood* (1868).

Mr. Holmes during the course of his long life did a great deal of public work. Not the least important was the earliest—the prolonged inquiry into hospital administration, conducted in conjunction with Dr. Bristowe, which resulted in the publication of a report on hospitals as an appendix to the sixth annual report of the medical officer to the Privy Council. Mr. Holmes maintained his interest in questions of hospital administration, and at one time was a frequent and valued contributor to our columns on such subjects. The continuance of his interest was proved by his acceptance of the office of Treasurer of St. George's Hospital after he had ceased to be a member of the active staff. He gave much time to the promotion of provident dispensaries, and in their expansion saw the remedy for many of the most pressing hospital abuses. For many years he took an active share in the work of the Metropolitan Provident Medical Association, and was always ready to defend its objects by voice and pen. He also took great interest in the work of the Invalid Children's Aid Association, and served upon its council for a good many years.

Timothy Holmes made many friends, and, it must be confessed, some enemies. He was a trenchant critic, and the bite of his criticism was only increased by the extreme courtesy of manner and speech with which they were uttered. He was at one time, when medical societies counted for more in the life of medical London than they do to-day, a very regular attendant at the meetings of the Royal Medical and Chirurgical, the Pathological, and the Clinical Societies. It was often with somewhat mixed feelings that the reader of a paper saw Holmes rise to speak upon it. He might feel pretty sure that any flaw in it would be unmasked, but he might be equally confident that good sound work would receive generous commendation.

Mr. Holmes took a particular interest in the Royal Medical and Chirurgical Society, and was Chairman of the Building Committee which arranged the removal of the Society from its old quarters in Berners Street to the house in Hanover Square; this took place in 1899, and in the following year he was elected President of the Society. He had previously held the offices of Honorary Librarian from 1873 to 1877, of Honorary Secretary from 1878 to 1880, of Vice-President from 1881 to 1882, and of Treasurer from 1885 to 1887. He joined the Pathological Society of London in 1854, served upon its Council as Honorary Secretary 1864-67, and as Vice-President. He was an original member of the Clinical Society of London, and was a Vice-President from 1873 to 1875.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

SUPERSESSION BY A FORMER CONSULTANT.

OTTER VALE asks whether there is any objection to a general practitioner attending a member of a family of which two years previously he had attended another member in consultation.

*** In country districts where no specialist consultants are available, it does not seem fair to those general practitioners who may from time to time be asked to consult with their neighbouring colleagues, that they should be for ever debarred from attending patients whom they may have previously seen in consultation, and still more that they should be forbidden ever to see any member of the same family. A positive opinion on the case submitted could not be expressed without much fuller information and without a statement from the other practitioner concerned.

SUBSTITUTE SERVICE.

J. T. sends us the following case and asks for an expression of opinion on its ethical aspects: A. is engaged to attend Mrs. B. in her confinement. While he is away on his holiday Mrs. B. is taken ill prematurely and sends for him. She declines to see his *locum tenens* and sends for C., who delivers her. A. returns the same evening, whereupon C. calls and tells him what has happened, and proposes that they should go together to Mrs. B. and that A. should thereafter have charge of her. When they arrive, Mrs. B.'s husband says his wife does not feel able to see two doctors, and wishes C. to attend her. C. does so. Neither A. nor C. had previously attended Mrs. B., who is a newcomer in the town.

*** Our correspondent does not indicate the special points upon which he desires our opinion, and nothing in the incident as related above strikes us as calling for comment. C. must continue in attendance, but should consider himself as the substitute for A. and share the fees with him.

M.B.M.Assoc.—It seems clear that C. was acting as substitute for S.; in that case he can only continue in attendance in the capacity of S.'s substitute, and because the patient insists upon his seeing the case to the end.

FEES FOR REVACCINATION.

G. J. B. wishes to know if it is customary to charge a second fee for revaccination in cases in which the first operation is unsuccessful. Is it usual to reduce the fee for the second and other attempts?

*** The usual practice is to charge a single fee, but the patient might be told that the amount would vary according to the number of attempts that had to be made. As a rule, there would be a reduction.

Medico-Legal.

FEES TO MEDICAL WITNESSES.

IT may be convenient to members of the medical profession who are expecting to be called as witnesses at the autumn assizes to reproduce here the text of those parts of the regulations made by the Secretary of State on June 14th, 1904, which affect medical witnesses:

1. *Witnesses giving Professional Evidence.*

There may be allowed to practising members of the legal and medical professions, for attending to give professional evidence, but not otherwise, allowance not exceeding the sums stated in the following scale:

For attending to give evidence in the town or place where the witness resides or practises:

If the witness attends to give evidence in one case only, not more than one guinea per diem;

If the witness gives evidence on the same day in two or more separate and distinct cases, not more than two guineas;

For attending to give evidence elsewhere than in any town or place where the witness resides or practises, whether in one or more cases, not more than two guineas per diem.

In this Regulation "town" means municipal borough or urban district; and "place" means within a radius of three miles from the court at which the witness attends to give evidence.

7. *General Regulation.*

No full day allowance under Regulations 1, 3, and 5 shall be paid unless the witness is necessarily detained away from his home, or place of business or employment, for at least four hours for the purpose of giving evidence

If the time during which the witness is necessarily detained away from his home, or place of business or employment, be less than four hours, he shall receive not more than one-half of the allowance which he would have received had he been detained for the full day.

8. *Travelling Allowances.*

For attending Court from a distance of over two miles there may be allowed:

1. To witnesses travelling by railway or other public conveyance the fare actually paid. Railway fares, except for special reasons allowed by the Court, shall be 3rd class; and if return tickets are available, only return rates shall be allowed. In the case of police witnesses the reduced rates under the Cheap Trains Act, 1883, shall not be exceeded, except where the single fare is less than 1s., or for special reasons allowed by the Court.
2. Where no railway or other public conveyance is available, and one or more witnesses necessarily travel by a hired vehicle, the sum actually paid for the hire of such vehicle, not exceeding 1s. a mile each way; provided that, where two or more witnesses attend from the same place, the total allowance shall not exceed 1s. a mile each way, unless the Court is satisfied that it was reasonably necessary to hire more than one vehicle.
3. To each witness travelling on foot or by a private conveyance, where no railway or other public conveyance is available, a sum not to exceed 2d. a mile each way.

Allowances made under (2) and (3) shall be made separately as mileage.

As the officials of some of the courts do not appear to be familiar with the regulations, medical witnesses may be well advised to provide themselves with an official copy, which can be obtained through Messrs. Eyre and Spottiswoode, East Harding Street, Fetter Lane, London, E.C., post free 1½d. The regulations may be ordered under the following title: "Regulations, Secretary of State, June 14th, 1904, Allowances to Prosecutors and Witnesses in Criminal Prosecutions, No. 1219/L9."

In Scotland the official "Exchequer" scale of fees provides for a fee of £1 1s. in the case of a medical man giving evidence in a circuit court in the town in which he resides, and a fee of £2 2s. outside of the town in which he resides, with first-class railway fares.

INCOME TAX.

PARTNERSHIP RETURNS.

B. W. G. inquires as to the usual method for two practitioners in partnership to make their income-tax return. He asks whether one return should be made for the firm, seeing that expenses of locomotion, instruments, etc., are borne by each partner separately.

*** The Finance Act, 1907, has repealed the provisions of the Income Tax Act of 1842, which allowed partners to make separate returns in certain circumstances. It is, therefore, now compulsory for the return to be made in one sum for the whole of the partnership profits, the whole of the expenses incurred in earning those profits allowable under the rules of the Income Tax Acts being first deducted. The tax is also payable in one sum, and, when payment has been made, the partners can settle among themselves the proportion to be borne by each, having regard to the expenses for which each is responsible.

CONTRACTS NOT TO PRACTISE.

EDINBURG. writes that he purchased a practice ten years ago, and that the vendor bound himself not to practise within three miles, but without stating any definite time. The vendor now expresses an intention of practising in the district, and affirms that his agreement was only binding for seven or ten years. Can he, we are asked, legally practise in this district?

*** If no time was mentioned in the agreement, the presumption would be that the restriction was for life. Much would depend on the exact wording of the agreement, and our correspondent would act wisely in consulting his solicitor.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

SANITARY OFFICERS IN RURAL DISTRICTS.

A RETURN, which was called for at the instance of Sir John Dickson-Poynder, has been issued by the Local Government Board, of the medical officers of health and inspectors of nuisances in the rural districts of England and Wales. In addition to the names of these officers, information is given with regard to the salaries they receive, whether a moiety of their salaries is paid out of the Exchequer grants, and whether they hold any other public appointments or are engaged in other occupations. The area and population at the last census of each sanitary district is also included in the return. In 1901 there were 666 rural sanitary districts in England and Wales, and at the date of the return there were 659. Some of the districts—notably in Durham and in the Welsh counties—are divided for the purpose of the appointment of officers, so that there are 682 appointments of medical officers of health for the 659 districts. On the other hand, in numerous instances one officer is appointed for several districts. There are 30 formal combinations under the Public Health Act, 1875, for the appointment by sanitary authorities of a joint medical officer of health, and there are, in addition, 34 instances in which a medical officer of health holds one or more independent appointments. These 64 medical officers act for 237 rural districts. It would appear, therefore, that there are 486 officers acting for the 659 rural districts. In the memorandum accompanying the return it is stated that

where the qualification, appointment, salary, and tenure of office of a medical officer of health . . . are in accordance with the regulations of the Local Government Board, the county council are required to pay to the district council out of the county fund one-half of the officer's salary.

Repayment has been allowed in respect of 94.5 per cent. of the appointments of medical officers of health, but a careful perusal of the return fails to disclose any apparent system upon which the amount of salary sanctioned by the Board is based. For example, the salary in one district with a population of 13,000 persons and an area of 80,000 acres is £80 per annum, while in another with the same population and a smaller area it is £143. There are many other instances of disparity all pointing to the necessity for a reorganization of the public health service. While acknowledging the value of the return, we cannot help regretting that it does not state the length of time for which each officer has been elected.

MEAT OF TUBERCULOUS CATTLE.

THE Local Government Board in England has issued to local authorities, both urban and rural, a circular dated September 10th, stating that the Board has had under consideration various representations with respect to the sale for human food of diseased cattle, and especially of cows suffering from tuberculosis or other wasting disease. The circular continues as follows:

The Board understand that it is the practice of some dealers, though aware of the diseased condition of animals coming into their hands, so to dispose of them or of their carcasses, that there is risk that they will be used as food for the poorer classes in London and other large towns.

The Board have reason to believe that the practice in question obtains to a considerable extent; and accordingly they are desirous of drawing the attention of local authorities to the matter, in order that they may as far as possible exercise supervision over the cattle in their districts with a view to anticipating, and so averting, possible or intended infringement of the law.

With this object, the local authority should instruct such of their officers as are engaged in administering the provisions of the Dairies, Cowsheds, and Milkshops Orders, to observe particularly the condition of the cows which come under their notice, and, where any animal is clearly diseased and presumably unfit for food, to take such steps as are practicable to ensure that, in the event of the animal being slaughtered, the carcase is disposed of properly.

The Board would also suggest that the sanitary or other suitable officers of the local authority should be instructed to watch closely the cattle markets, slaughterhouses, and knackers' yards in the district, with the view of satisfying themselves that no animal, the condition of which appears to render it unfit for human consumption, is disposed of in such a manner that it is likely to be used for this purpose.

THE INTERNATIONAL SANITARY CONVENTION OF PARIS.

New Regulations.

The International Sanitary Convention was signed at Paris on December 3rd, 1903, and ratifications were deposited at Paris on April 6th, 1907. The document was presented to both Houses of Parliament last month, and the Convention is now in force.[1]

The Local Government Board in England has this week issued circulars to port and other sanitary authorities stating that, in view of questions arising out of the Convention, it has been deemed desirable to rescind the existing regulations as to cholera, yellow fever, and plague, and to issue new regulations for ships arriving in or leaving British or Welsh ports and for coasting ships.

Ships Arriving from Foreign Ports.

The order as to ships from foreign ports does not apply to the port sanitary districts of Bristol and Gloucester, Harwich and Ipswich, and Liverpool and Manchester. The majority of the provisions contained in the regulations hitherto in force are reproduced in the new regulations, and the additions and alterations have been introduced generally for the purpose of securing the observance of principles embodied in the Paris Convention of 1903.

The main particulars of the regulations hitherto in force have been that a report with regard to infected vessels arriving from foreign ports should be made by the officers of customs to the sanitary authority of the place of arrival; that infected vessels should be temporarily detained pending visitation by the medical officer of health of the place; and that, after visitation by the medical officer of health of such vessels, or of any other vessels to which suspicion of infection attaches, the measures indicated by the regulations should be taken. Such measures have included, according to circumstances, the further detention of the vessel, the removal of persons suffering or suspected to be suffering from plague, cholera, or yellow fever, the adoption of steps to free the vessel from causes of infection, and such other action as is expedient for the purpose of tracing the further movements of persons allowed to leave the vessel.

Some modifications of the regulations have now been made in regard to most of the matters above mentioned. In relation to vessels arriving from foreign ports a new classification is adopted. The term "infected ship" is limited to a ship on which there is actually on board at the time of arrival a case of cholera, yellow fever, or plague, or on which there has been a case of cholera or plague within seven days before arrival or a case of yellow fever within eighteen days before arrival. At the same time the term "suspected ship" is used as applying to a ship on which there has been a case of cholera or plague more than seven days before the arrival of the ship or a case of yellow fever more than eighteen days before arrival, whether the case has occurred in the port of departure or in another port in the course of the voyage, or at any time during the voyage, and on which no fresh case of cholera or plague has occurred within the seven days or of yellow fever within the eighteen days.

The action of the officer of customs is to extend in the first instance to both infected and suspected ships, and the officer must give notice of the cause of the temporary detention of any ship to the sanitary authority under the new regulation. A ship may be detained if the officer of customs, although not satisfied that a ship is "infected" or "suspected," has reason to suppose that the ship has come from, or has during the voyage called at, a port infected with cholera, yellow fever, or plague.

In this connexion the Board would point out that, in order to secure efficiency in applying the last-mentioned provision and to avoid unnecessary interference with shipping, it is important that the medical officer of health of the sanitary authority should keep himself informed as to the ports that may be infected, and should advise the local officers of customs as to the ports from which it is anticipated that ships liable to detention by those officers might come, or at which they might have called.

If a ship be certified to be infected, the regulations prohibit the landing of any passenger unless he satisfy the medical officer of health as to his name and intended place of destination, and these regulations may be put into force in respect to a suspected ship if the medical officer of health deem it expedient. New provisions have been made prescribing the procedure to be followed with a view to preventing the transmission of plague by rats, and the escape from the ship to shore of rats which may be infected with plague. If the ship is infected the rats must be destroyed; if suspected, or if it have come from or has touched at a port infected with plague, the medical officer of health may order destruction of rats if he deem it expedient.

Outward-bound Ships.

The order affecting outward-bound ships provides for the taking of certain measures with the view of preventing the transmission to foreign countries of cholera or plague, whether through the medium of infected persons or things, or of rats in the case of plague, or of drinking water in the case of cholera, in the event of a district or part of a district in England or Wales becoming affected with one of those diseases.

Coasting Ships.

The order as to coasting ships is generally similar to that as to outward-bound ships.

[1] Treaty Series. No. 27. International Sanitary Convention (Cd. 3730). Price 6d.

COURT FEES OF MEDICAL OFFICERS OF HEALTH.

Doubtful.—In a communication addressed to a local authority a few years ago the Local Government Board stated that it was not aware of any rule of law which specially provides for the expenses of a medical officer of health as a witness in a court of law in proceedings at the instance of the district council by whom he is employed. Where a medical officer of health is not required by the terms of his appointment to devote his whole time to the work of his office, the attendance at the courts and the giving of evidence in such proceedings do not devolve upon him as duties of that office prescribed by the Board's regulations. The Board thinks that such a medical officer is in the same position as any medical witness would be having no official relationship with the district council. If he attend voluntarily he can make his own agreement with the council requiring his attendance, and if he is summoned to attend he can require a reasonable sum to be paid for his costs and expenses according to the 11 and 12 Vict., c. 43, s. 7. In either case the court may, if they award costs against the defendant, include such a sum as, in their discretion, they may consider just and reasonable for the medical officer.

VACCINATION OF CHILDREN IN POOR-LAW SCHOOLS.

S. G. L.—The managers of a Poor-law school would have the same powers as a Board of Guardians has in the conduct of a workhouse, and can insist on the vaccination of all the children at the school, whether they come from the unions combining to maintain the school or are children received as an accommodation from areas outside those unions. In the former case, the contributing Boards of Guardians would probably be represented on the management, and might oppose the vaccination. The managers of training ships maintained by private subscriptions (such as the *Warspite*) insist strictly on vaccination.

HOSPITAL AND DISPENSARY MANAGEMENT.

BRITISH HOSPITAL FOR DISEASES OF THE SKIN.

A scheme has been prepared by the Charity Commission for the administration of the funds of the British Hospital for Diseases of the Skin, Euston Road, London. The invested capital amounts to a little more than £10,000, yielding an income of £254 a year. The scheme proposes that the endowments of the charity shall be divided into three equal parts, and constitute the endowments of three separate charities, to be called respectively the Charing Cross Hospital Special (Skin Diseases) Fund, the Guy's Hospital Special (Skin Diseases) Fund, the Westminster Hospital Special (Skin Diseases) Fund, the fund in each case to be administered by the general committee of the hospital. The yearly income is to be devoted to the relief of persons affected with skin disease by the maintenance of beds allotted for skin patients only; by the provision and maintenance of medicinal baths to be used by skin patients only; by the provision of disinfecting apparatus for skin patients only; and by the provision and maintenance of apparatus for the cure of skin disease. No part of the funds of income of the charity must be applied to: (1) Defraying the cost of buildings; (2) discharging debts incurred before the date of the scheme; (3) any purpose directly or remotely connected with vivisection or experiments upon animals; (4) pathological investigation; (5) making drawings of skin patients; (6) the study of skin disease by means of a laboratory or otherwise. The restrictions are rather curious, but they seem to be explained on the assumption that the Charity Commissioners felt themselves bound by the terms of the older trusts; at the same time, whereas the provisions requiring the exclusion of pathological investigations and the study of skin disease by means of a laboratory may be possible of fulfilment, the addition of the words "or otherwise" makes the last proviso appear absurd, since it is practically impossible to treat skin disease without studying it at least clinically.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* **BRITISH MEDICAL JOURNAL** *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that **ALL** letters on the editorial business of the **JOURNAL** be addressed to the **Editor** at the Office of the **JOURNAL**, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the **JOURNAL**, etc., should be addressed to the **Manager**, at the Office, 6, Catherine Street, Strand, London, W.C.

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TELEGRAPHIC ADDRESS.—The telegraphic address of the **EDITOR** of the **BRITISH MEDICAL JOURNAL** is *Aitiology, London.* The telegraphic address of the **MANAGER** of the **BRITISH MEDICAL JOURNAL** is *Articulate, London.*

TELEPHONE (National):—

EDITOR, 2831, Gerrard. **GENERAL SECRETARY AND MANAGER,** 2830, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

CAMDEN would like to know the best treatment for gonorrhoeal rheumatism. Is aspirin better than sodii salicylas?

DR. JAMES ADAMS (Hamilton, N B) asks for reference to such cases as death from shock caused by injury to the ulnar nerve, and to such death being delayed till twelve hours after the injury.

CANCER CHARTS.

C. W L. asks whether a cancer chart is extant for Europe and the British Isles, showing the proportional numbers in various localities.

ANSWERS.

R A.M.C.—Army medical examiners are no doubt quite aware that some men have difficulty in micturating when watched by strangers. The disability is not uncommon, and we do not think any candidate need fear rejection on account of it.

HYPNOTISM AS A THERAPEUTIC AGENT.

M.B. asks for references to the literature on the treatment of the drug and drink habits by suggestion and hypnotism.

*** The subject is discussed by Dr. Milne Bramwell in his work, *Hypnotism, its History, Practice, and Theory* (London: Grant Richards and Co. 1903. 18s.). Dr. C. Lloyd Tuckey's book on *Treatment by Hypnotism and Suggestion* (London: Baillière, Tindall, and Cox. 1900. 7s. 6d.) might also be consulted. Dr. J. F. Woods, in the paper with which he opened the discussion on hypnotism in the Section of Psychology at the annual meeting of the British Medical Association at Exeter, makes reference to the subject of the treatment of chronic alcoholism and morphine and drug habit by hypnotism; the full text of the paper will be published shortly.

COCAINE AND EUCAINE IN NASAL OPERATIONS.

F. P. A.—The suffering attributed to the after-effects of cocaine in nasal operations may be counteracted by the use of a relatively weaker solution of cocaine in a 1 in 1,000 solution of adrenalin. In cases in which cocaine is contra-indicated, eucaine may be used as a substitute, and its anaesthetic property may be intensified by being dissolved in a 1 in 1 000 solution of adrenalin. (Two papers on the use of eucaine in the surgery of the throat, nose, and ear, by Jobson Horne and Macleod Yearsley, appeared in the BRITISH MEDICAL JOURNAL, 1897, vol. i, p. 134.) Speaking generally, before attributing the subsequent discomfort entirely to the use of cocaine, it is as well to bear in mind that there are many little details in the technique of intra-nasal operations and of their after-treatment which together tend to minimize the amount of discomfort. Into these it is not possible here to enter, but not the least amongst them is the use of the minimum amount of cocaine of the minimum strength consistent with the operation to be performed, but applied in the most effective manner.

POST-GRADUATE CLASSES IN VIENNA.

W. D.—Our Vienna Correspondent informs us that during the month of October several courses on abdominal surgery will be held in the General Hospital of Vienna by the assistants of the two surgical clinics. If a sufficient number apply for it, lectures will also be delivered in the English language. Otherwise "W. D." might arrange with one of the assistants to obtain what is termed a "privatissimum," or lecture for himself, which of course costs much more.

LETTERS, NOTES, Etc.

THE TREATMENT OF TRYPANOSOMIASIS.

REFERENCE is made elsewhere to a letter from Mr. James Brand, F.R.C.V.S., published in the *Times* of August 28th. Mr. Brand recommends for intravenous injection a mixture consisting of equal parts "of a 1 in 100 watery solution of methylene blue, made from a saturated alcoholic solution of the dye, and a 1 in 500 watery solution of corrosive sublimate." It is not quite clear what Mr. Brand means with regard to the methylene blue; he may mean that the methylene blue solution should contain 1 per cent. of the drug, or he may mean a watery solution containing 1 per cent. of a saturated alcoholic solution of methylene blue. Mr. Martindale has been good enough to make up both prescriptions for us. The great difference of the proportion of the methylene blue present is obvious to the eye. So far as dispensing goes there is no reason why alcohol should be used, as the methylene blue is sufficiently soluble in water. The mixture with the corrosive sublimate yields a dark-blue solution of the colour of ink.

THE WEST AFRICAN MEDICAL SERVICE.

Two members of this service at present in Africa write as follows: We have read with great interest the letter *re* West African Medical Service in your issue of June 29th, and, while thoroughly agreeing with all your correspondent has said, we wish to emphasize certain details of more moment to junior men like ourselves. In addition to his points, there is the important fact that an excessive number of men retire from the service within two or three years of joining, or even earlier. This is almost entirely due to their rapid disillusionment after coming out to West Africa. On this subject we would like to give our own experience. Attracted by the glowing accounts circulated of the comparative salubrity of the climate and the prospects in the service, we joined the West African Medical Service. We find, to put it mildly, that it is the exception for an officer to complete a tour without illness, and even if he escapes actual illness it takes the whole of the leave allowed to recover anything like ordinary vigour. As regards the prospects of senior rank and increased pay, they sound very attractive to a man living in England; but here, where disease is rife, the chances of attaining any substantial rank or pay, or of earning a gratuity, before being permanently incapacitated are entirely incommensurate with the risks run. Another inducement held out to men on joining is "private practice." Except for a few stations, which naturally are held by senior men, there is no private practice worth speaking of in the country. The general management of the service, as a body, is chaotic. Why cannot we have a medical head on the lines of the other Government medical services, and make this appointment the goal of every man in the service? Then at least we should have hopes of our grievances being considered, if not remedied.

PICRIC ACID.

DR WM WYNN WESTCOTT writes, with reference to Staff Surgeon Sutcliffe's paper published on August 31st, page 523, that picric acid is only soluble in water in the proportion of 1 to 95 and that a 5 per cent. solution, therefore, cannot be prepared. The author probably intended to write 0.5 per cent. The lotion used at St Thomas's Hospital is said to be 1 per cent., by which no doubt a saturated solution is intended.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

Clinical Remarks

ON

MEDICAL CASES DEMONSTRATED IN THE MEATH HOSPITAL, DUBLIN,

TO THE POST-GRADUATE CLASS OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

By JAMES CRAIG, M.D.,

FELLOW AND REGISTRAR, R.C.P.I.; PHYSICIAN TO THE MEATH HOSPITAL.

THE first case is an example of the occurrence of apoplectiform attacks in association with cardiac disease—the so-called Stokes-Adams syndrome.

CASE I.—*The Stokes-Adams Syndrome.*

This patient, who is 65 years of age, was a brass-finisher by occupation, but gave up work five years ago owing to a dispute with his employer. He enjoyed good health until October, 1905, when walking across St. Stephen's Green he experienced a pricking sensation in his head. Immediately afterwards he fell to the ground in an unconscious state, spraining his ankle in the fall. In a short time he recovered consciousness, and was able to walk on without the slightest signs of paralysis.

Six months later, while walking in the street, he had a second attack of unconsciousness, and fell against the iron railings, cutting his head severely by the fall. On recovering consciousness he felt weak in his legs, but this was no doubt due to the shock and injury to his head.

In the last eighteen months he has had two more of these apoplectiform seizures, the last occurring about six weeks ago while he was walking to church. He is in addition subject to frequent attacks of giddiness on exertion. I have not seen him during any of the seizures, but he has been attending the out-patient department for the past twelve months, during which his condition has not materially changed. He has been treated with digitalis and strychnine.

An examination of his circulatory system reveals the following points:

Heart.—The impulse can neither be seen nor felt. The superficial and deep areas of cardiac dullness are not enlarged. In the mitral area the first sound can scarcely be heard. In the aortic area the first sound is replaced by a faint systolic murmur which is not constant, and the second sound is clear and accentuated. In the pulmonary area there is also a systolic murmur and a clear second sound.

There is visible pulsation in the arteries of the neck.

The pulse is infrequent—40 per minute—with frequent intermissions, but there is no evidence of arterio-sclerosis further than would be expected in a man of his age.

He has no dropsy; his urine is free from albumen.

We have here, then, (1) signs of myocardial degeneration, (2) apoplectiform seizures without subsequent paralysis, and (3) bradycardia—a group of symptoms which taken together form the Stokes-Adams syndrome. Of late years much attention has been directed to the condition known as "heart-block," in which, owing to degeneration of the cardiac muscle, the rhythmic contractions of the auricles are not followed in regular sequence by the ventricles. In other words, while the auricles may contract at anything like the normal rate, the ventricles may fail to contract more frequently than twenty or thirty times in the minute, and so a condition of bradycardia results. Stokes observed this phenomenon of want of sequence in the auriculo-ventricular contractions in some of the cases he has recorded. Gibson of Edinburgh found a syphilitic gumma in the auriculo-ventricular space in one of his cases of "heart-block"; but as other causes there may be a fatty or fibroid degeneration of the heart, particularly in the connecting band of muscle fibres between the auricles and ventricles.

These cases of pseudo-apoplectic seizures due to myocardial degeneration are not of common occurrence. I failed entirely to associate the first and well-marked case of this condition which I saw with the Stokes-Adams syndrome. The case was so puzzling when I saw the gentleman between attacks that I was sent for on one occasion by his doctor during the attack. The patient, aged 70, was then lying in a large easy chair quite unconscious, with stertorous breathing, congested face, full veins, pupils equal and dilated, and pulse-rate 30. I thought he was dying, but in a few hours he recovered consciousness, and was out again the following day without a vestige of paralysis. As there was a definite history of syphilis I had regarded the condition as one of syphilitic endarteritis of the brain.

CASE II.—*Tertiary Syphilis of the Brain—Crossed Paralysis from a Gumma on the Right Side of the Pons.*

This man, aged 43, contracted syphilis in 1878 at the age of 15 years. He had then a hard chancre. Soon afterwards he had a tonsil removed for throat trouble. Later he had a corneal ulcer. Nine years ago he had epistaxis, which lasted for five days. Five years ago he remained at home from his work on a particular day owing to pains in his left foot. On the following morning, on trying to get out of bed, he found his left arm and leg were paralysed. He was admitted to the Meath Hospital under the care of my colleague, Sir John Moore. I also saw him at that time. He had then right facial paralysis, deafness in the right ear, and left hemiplegia. A diagnosis was made of syphilitic gumma on the right side of the pons. He was treated with 15 grain doses of KI thrice daily. He left hospital in three weeks, so far recovered as to be able to use his arm and leg. Twelve months later he was seized with headache, vomiting, noises in the ear, weakness of the muscles on the right side of the face, and a dead numbness in the left arm and leg. He came under my care on that occasion, when I found he had right facial paralysis and left hemiplegia with optic neuritis. He was again treated with KI, and recovered rapidly, so as to be able to return to his work in a few weeks. Since then he has taken iodide of potassium for several months at a time, but when he feels well he ceases dosing himself.

A month ago he fell in the street from pain in the back of his head and noises in his left ear. On getting up he found his left arm and leg numb and weak. A few days' rest in bed were sufficient to set him right again.

Examination at the present time reveals some difficulty in closing tightly his right eye and a trifling weakness in the movements of the remaining muscles supplied by the right facial nerve; he is completely deaf in his right ear; he can use his left arm and leg almost as well as he does those on the right side; there is nothing of the usual hemiplegic gait to be observed; his deep reflexes are exaggerated on the left side; the plantar reflex on the left side is not of the extensor type, nor can ankle clonus be developed in the left leg; his sensation is good. He is doing his work every day, and thinks that he is cured.

I have called your attention to this patient in order to have an opportunity of dwelling for a few moments on the more usual changes that occur in the brain during the tertiary stage of syphilis. These changes are (1) an obliterative endarteritis, (2) the formation of a gumma or gummata, (3) a gummatous meningitis, (4) a diffuse gummatous meningo-encephalitis.

The obliterating endarteritis is represented by a cellular proliferation which occurs in the tunica intima of the arteries and arterioles, and in this way the lumen of the vessels is diminished until it may be difficult for the blood to find a passage through them. Partial occlusion by thrombosis readily occurs, so that apoplectic seizures are not uncommon. The basilar, vertebral, middle cerebral and its branches are the vessels most commonly affected.

The gumma is a firm granulomatous tumour, varying in size from what can barely be seen by the naked eye up to growths 2 in. in diameter. The gummatous tumours are found most commonly on the cortex of the brain, but may also be found at the base, along the walls of the arteries, in the substance of the brain, or on the cranial nerves.

The gummatous meningitis is usually found at the base of the brain, involving some of the cranial nerves and producing paralysis of them. The commonest nerve to be thus affected is the third.

The diffuse gummatous meningo-encephalitis is often associated with an obliterating endarteritis, and produces mental and paralytic symptoms to which the name "syphilitic dementia" has been given. It is extremely difficult to separate such cases from those of general paralysis, which latter is spoken of as a para-syphilitic affection.

Let us consider briefly the clinical manifestations that arise in connexion with the obliterative endarteritis and the formation of a gumma.

When thrombosis occurs in arteries which have undergone obliterative endarteritis, the most common clinical results are hemiplegia and aphasia. The hemiplegia in these cases is characterized by several features which point to a syphilitic origin: 1. There is rarely loss of consciousness. 2. There are generally premonitory symptoms. 3. The paralysis is quickly recovered from.

Now, the onset of hemiplegia in the case before us was characterized by the above phenomena, and had it not been for the occurrence of facial paralysis at the same time a diagnosis of a thrombotic cause of the hemiplegia would have been decided upon at once, but simultaneous involvement of the seventh and eighth cranial nerves on the right side, producing a crossed paralysis, left no doubt on our minds as to the gummatous nature of the

attacks, and also that the tumour involved the lower portion of the pons on the right side.

But the partial occlusion of vessels narrowed in their lumen by obliterative endarteritis may be followed by more transient effects than were exhibited in this case; for instance, I have seen a gentleman the subject of tertiary syphilis who, after a ride of forty miles on his bicycle, found himself the next morning so aphasic and muddled that he was unable to ask for a newspaper which he wished to read; a day's rest in bed, however, was sufficient to set him right again. On a subsequent occasion this gentleman was found lying on the roadside beside his motor bicycle, and a sudden loss of consciousness while on the machine was the only explanation that could be offered to account for his fall. I may say parenthetically that later on this gentleman developed either a gummatous tumour or a thrombosis in the lower portion of his spinal cord which produced motor and sensory lesions that eventually yielded to treatment by 1-drachm doses thrice daily of iodide of potassium.

When a gumma is formed in the Rolandic area, if small it is attended by the clinical features of Jacksonian epilepsy; but, indeed, in any position of the brain there is little to distinguish the symptoms produced by a gumma from those of other brain tumours.

As regards the treatment of these cases, while I rarely omit the administration of mercury in some form or other, I do not attach much importance to its use. I rely infinitely more upon the effects of iodide of potassium, and there can be no doubt that marvellous results follow the administration of quantities up to 2, 3, and 4 drachms per day. It is astonishing how well this quantity is borne by the great majority of syphilitic patients, particularly those who have a good digestion and can consume three good meals a day.

CASE III.—*Aneurysm of the Transverse Portion of the Arch of the Aorta.*

I am anxious to bring this patient under your notice, because (1) it is our experience in this country that aneurysm is not nearly of as frequent occurrence as it was a quarter of a century ago; (2) in the early stages of thoracic aneurysm a correct diagnosis without the assistance of the *x* rays is difficult to make. In fact, I may go further and state that in the case of an aneurysm of the descending portion of the arch or of the thoracic aorta farther on, a large aneurysm may exist without any suspicion of its presence having occurred to the physician until rupture of the sac brings the patient's life to a sudden end. Such a case I have recorded in vol. xxiii of the *Transactions of the Royal Academy of Medicine in Ireland*, as the sequence to an innominate aneurysm previously reported to have been cured.

The patient before us is a labourer, 46 years of age, who contracted syphilis twenty-two years ago. He is a strong, healthy-looking man, and enjoyed good health up to three months ago. He then became hoarse, and, as is so often the case, attributed it to a wetting. He also experienced some pain in the chest, more particularly at the base of his left shoulder-blade. About ten days ago he went to the Adelaide Hospital and there saw Dr. Peacocke, who confirmed his suspicions of the existence of an aneurysm by taking an *x*-ray photograph. This settled the diagnosis, and he asked me last week to admit him to the Meath Hospital under my care.

When we come to examine the case we find that his symptoms are confined to the hoarseness and pain already alluded to, plus a numbness which extends to the fingers of the left hand on the ulnar side. The physical signs, however, afford us more assistance.

On inspection there is a very slight bulging, with appreciable expansion to the left of the sternum just beneath the inner fourth of the clavicle.

On palpation over this area a diastolic shock is felt; there is no thrill, but pulsation can be detected in the suprasternal notch.

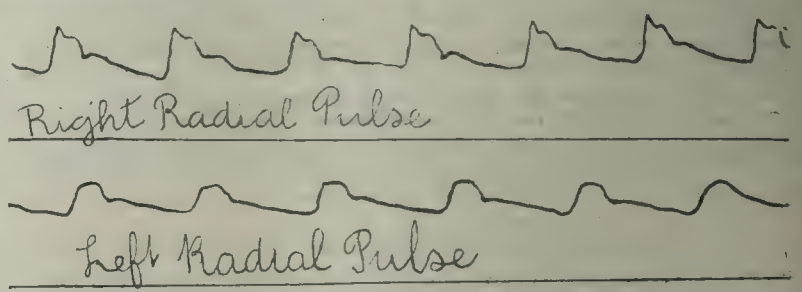
On percussion there is a dull note elicited over an area 1½ in. in diameter to the left of the sternum and above from the sterno-clavicular articulation to the same extent downwards.

On auscultation over the area of dullness the heart-sounds are readily heard. There is no murmur, but the second sound is clanging in character and accentuated. This ringing second sound, heard over an area of dullness, is a diagnostic sign of aneurysm, upon which Osler lays particular emphasis.

There are no ocular signs to indicate irritation or pressure on the sympathetic.

There is no tracheal tugging. There is paralysis of the left vocal cord. There is no evidence of venous compression.

There is no appreciable difference to the finger in the two radial pulses, but a sphygmographic tracing shows a flattening of the primary wave on the left side, so as to make the primary and tidal waves to correspond in height.



This alteration in the pulse wave can only occur when the aneurysm involves the origin of the left subclavian artery or is situated on the proximal side of its origin. Paralysis of the left vocal cord from pressure on the left recurrent laryngeal nerve, associated with the position of the tumour and with the alteration in the left pulse, leaves us no alternative but to place the situation of the tumour on the left of the transverse portion of the arch, and therefore probably including the origin of the left subclavian artery. The *x*-ray photograph demonstrates its position in this situation. I have alluded in a previous case to the obliterating endarteritis which is produced by syphilis; I have now to call your attention to the condition of atheroma in the aorta which almost invariably precedes an aneurysm, and which is so often associated with a syphilitic history and generally believed to be produced by syphilis.

With regard to treatment, the man is kept quiet in bed; he is placed on a restricted diet, not quite so rigid as that adopted by Tufnell, but still reduced as far as the patient's inclination will allow after the reasons for the limitation have been explained to him. He is placed on 15-grain doses of potassium iodide thrice daily. On the day of admission his pulse-rate was 98; this morning it is only 74, and the pain in the chest is now much less.

The question of surgical interference is sure to arise later on, as it invariably does in these cases when early consolidation in the sac does not occur. Of the various methods of introducing foreign bodies into the sac so as to produce consolidation of the contents, I am afraid I cannot speak with any degree of enthusiasm so far as any benefit is to be expected from their use. Occasionally a successful result has been reported, but, on the whole, the statistics are of a disappointing nature.

CASE IV.—*Left Basic Pneumonia, accompanied by Right-sided Empyema, followed by Abscess of the Left Lung, Right Hemiplegia, and Death.*

The patient, aged 36, was a bookkeeper in a brewery, and had indulged heavily in alcohol. He was admitted to hospital on May 23rd, 1907, suffering from left basic pneumonia after four days' illness. On admission his temperature was 100° F.; pulse, 120; respiration, 44. Examination of left lung gave diminished movement, increased tactile fremitus, dullness, increased vocal resonance, and fine crepitation. Over the right lung the note on percussion was slightly hyper-resonant. The pulse was small and compressible. The sputum was blood-stained.

The day after admission he was ordered 15-grain doses of chloride of calcium every fourth hour. He was restless and sleepless at night, and paraldehyde in doses of 1½ drachms proved more effective as a hypnotic than trional or veronal. He was given 4 oz. of whisky daily, beaten-up eggs, plenty of milk, chicken broth, etc.

Two days after admission he complained of pain in the right side when a pleural friction rub was detected. The whole trunk became covered with sudamina which in a couple of days had run into the condition of miliaria. This added to his discomfort and distress. His temperature range was now about 102° F. and his pulse remained very feeble. There was little cough and the expectoration was small in amount and no longer rusty coloured.

On May 28th crepitus redux was well heard over the left base. Pleural effusion was demonstrated on the right side.

On June 3rd the chloride of calcium was stopped and a mixture containing digitalis and strychnine was substituted. The patient was making a good fight for life, but the right side of the chest gradually filled until June 6, when, after an exploratory needle had withdrawn pus, my colleague, Mr. William Taylor, was asked to resect portion of a rib and drain the pleural cavity. This was done on June 7th, when a large quantity of pus and fibrinous flakes were removed. The organisms found in the pus were pneumococci. From this date onwards an examination of the left base was not possible owing to the impediment caused by the dressings. This I regretted. For seven days after the operation the patient

expressed himself as feeling stronger and his temperature had been subnormal for several days, but on the evening of June 14th, while the dressings were being changed, he suddenly collapsed, became cyanosed, struggled violently, and finally sank into complete unconsciousness. On the following morning right hemiplegia was demonstrated, and cerebral abscess or embolus was suggested as the cause. His temperature assumed a spiky character, his pulse became weaker, and eventually he died on June 20th, exactly four weeks after admission. I felt fairly certain that we should find an ulcerative endocarditis, although a cardiac murmur could never be detected during life. In this I was wrong, as I also was in my surmise as to the cause of the right hemiplegia. As you will see in a moment, there was embolic softening in the brain, but it was in the right side and not in the motor path.

Necropsy.

I now demonstrate to you the organs which have been preserved and at the same time I give you the result of the *post-mortem* examination, which was made on the morning after death by Dr. William Boxwell, our Assistant Pathologist.

The pleural cavity on the right side contained a small quantity of pus, and the surface of the lung, which was to a great extent collapsed, showed a thick coating of fibrin. The base of the left lung also showed signs of a localized acute pleurisy, and at one spot the diaphragmatic pleura was firmly adherent. At this point, on attempt at separation, the lung substance gave way and disclosed a small cavity about the size of a walnut from which pus flowed freely. The abscess cavity was surrounded by a patch of unresolved pneumonia. At the exactly corresponding abdominal surface the spleen was found adherent, and further examination disclosed a collection of blood-stained pus, corresponding to a large septic infarction which had undergone partial disintegration. Beyond a large double infarction in the right kidney, which also showed signs of softening, there was no other noticeable abdominal lesion. The liver was large, congested, but otherwise normal.

Heart and Pericardium.—In the pericardial sac was a small quantity of clear serous transudate. No evidence of acute pericarditis. The heart itself was not markedly enlarged, but globular in shape and very soft. The myocardium was dark and of a "doughy" consistency. There was not the slightest evidence of endocarditis anywhere. The cavities of the auricle and ventricle were partially filled with dark clots.

Brain.—When exposed the pia arachnoid was oedematous all over and the vessels greatly congested. The convolutions seemed widely divaricated, but there was no noticeable suppurative lepto-meningitis. On section, two days after immersion in a solution of salts and formalin, a patch of softening was found just beneath the cortex on the right side, corresponding to the superior temporal convolution; it was *behind* the "insula." The patch measured about 1 in. each way and was brownish-yellow in colour. The thrombosed vessel leading into it was easily demonstrated. On the left side nothing abnormal could be seen, and serial sections downwards through the corona, capsule, crus, and pons failed to show any clear reason for the right-sided paralysis. The left middle cerebral admitted a flexible probe without resistance, and no evidence of *ante-mortem* clotting on this side could be found on dissection.

This case is of great interest, because of the far-reaching effects produced by the pneumococcus. I regret that I am unable to enter at any length into the ravages which the pneumococcus is capable of producing throughout the body. Apart from any involvement of lung tissue, this organism may produce a general pyaemia with pus formation in the skin, pleurae, kidneys, spleen, joints, etc. It may cause meningitis, endocarditis, pleuritis, and empyema, and the infection is an extremely fatal one.

A CASE OF BRADYCARDIA WITH EPILEPTOID ATTACKS.

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Following your account of the fatal illness of Sir William Gairdner (British Medical Journal, July 6th, p. 53) and Dr. Fred. Hugh Clarke's address (p. 308), a brief note of the following typical case of bradycardia with epileptoid seizures may prove interesting:

History.

Mrs. W., aged 74 years, has a good family history, free from epilepsy and heart disease. Of her eleven children, eight are alive and healthy, two died in infancy from intestinal troubles, and one was killed in an accident. Ten years ago, after a medical examination, she was accepted as a first-class life by an insurance company. Except for frequent headaches, which ceased at the age of 40, she has enjoyed good health until between two and three years ago, when she noticed that she was getting thinner and began to suffer from increasing attacks of breathlessness with a "sinking sensation like hunger" in the epigastrium. As these got worse they were accompanied by "fainty feelings all over." At Christmas, 1905, she was medically attended, and for the first time learned that her heart was affected. In the following March (1906) she had an attack of bronchitis, and since that time she has been subject to "fainting fits."

Six months ago she came under my care for a slight attack of bronchitis. I found she had bradycardia, and advised her to remain under observation and treatment.

Epileptiform Seizures.

About a year ago, after a restless night, during which she several times felt faint, she was surprised to find that she had unconsciously passed urine into her bed. This possibly occurred during an epileptiform attack.

On June 3rd last, while sitting sewing alone in her house, she suddenly felt more than usually faint and lost consciousness. On regaining consciousness she was on the floor, but managed to pull herself into a chair. Here she was found by her daughter with her face bruised and bleeding. Half an hour later, while her bowels were being moved, she became unconscious a second time, and had what her daughter thought was an epileptic fit. She was put to bed. When I saw her, about an hour after the first attack, she was conscious; the face was slightly blue, with abrasions on right side of forehead and cheek; the pulse was 28 per minute, and very weak. While feebly trying to tell me what had occurred she suddenly stopped, made a few restless movements, during which her face became deeply cyanosed, and then, after giving a slight moan, the eyes turned upwards, and the whole body became rigid. In about twenty seconds slight, slow twitchings commenced in the face, and were quickly followed by convulsive movements of the limbs. As these clonic spasms passed off she regained consciousness, and complained of faintness and pain in the epigastrium. This was her third fit within an hour and a quarter, and all were probably similar, though the first was not observed. Her daughter saw the second fit and said it was more severe than the one I witnessed. No biting of the tongue occurred, but she passed urine involuntarily during one or more of the attacks. She was kept in bed and given bromides, with ammonia and strophanthus. She has had no more epileptiform seizures, though she still has frequent attacks of faintness.

Present Condition.

The patient is a well-built woman, and not obviously wasted. Her face is covered with venous stigmata. There are many small, purple, naevoid spots on the face, and several larger and brighter on the body, all having developed during the past two years. She has repeated small subconjunctival ecchymoses. The cardiac impulse cannot be seen or palpated; by auscultation it is in the fifth left intercostal space, 4½ in. to the left of the middle line. Deep cardiac dullness in fourth spaces extends from ½ in. to the right of the right costal margin to 4½ in. to the left of the middle line. The upper limit of superficial cardiac dullness is at the junction of the third left costal cartilage with the sternum. The cardiac sounds are feeble, being loudest at the apex and nearly inaudible in the pulmonary area. The first sound is short, abrupt, and quickly followed by a sharp and slightly louder second sound, which is sometimes reduplicated. Pulse: Rate varies from 26 to 33, and is generally 30 per minute; it is feeble, of small volume, and low tension; vessels are not thickened. All heart-beats are transmitted to radial pulse. A few coarse crepitations are heard all over the lungs. The abdomen is soft and slightly tender, especially over the liver, the lower border of which is 1 in. below the costal margin in the right nipple line; the upper border of absolute liver dullness is at the sixth rib in the same vertical line. Physical examination is difficult, as any but the briefest examination causes her to become blue and faint. The urine is of low specific gravity, and contains a little albumen and a few granular casts.

The bradycardia in this case is probably due to cardiac degeneration. The veins of the neck do not show auricular pulsations of greater frequency than the heart-beat, such as are described as proofs of heart-block in Stokes-Adams disease. The thinness of the vessels, in spite of the kidney condition, is probably due to the absence of high tension. The fact that cyanosis preceded the tonic epileptiform stage supports the view that such epileptiform seizures are due to disturbed cerebral circulation.

The Professors of the medical faculty of the University of Rome have at last succeeded in inducing the Italian Parliament to give heed to their representations as to the inadequacy of salaries. The average amount of the salaries attached to the medical chairs is only £280, while the deputy professors and assistants are of course paid on a still lower scale. A Bill has been introduced into the Chamber of Deputies providing for such an increase as will enable the professors to devote themselves wholly to scientific work.

AN OPERATION FOR EMBOLUS.

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THE chapter of surgery dealing with the operative removal of emboli lodged in the trunk arteries has still to be written. Yet many surgical operations which are now matters of daily occurrence must have seemed equally impossible of achievement only a few years ago.

In 1894 Professor Severeanu[1] of Bucharest, in cases of amputation for gangrene due to arterial obstruction, advised that a bougie should be passed for some distance from the cut surface of the stump, into the divided proximal end of the main artery, so as to ensure its patency, to remove clots, and to minimize the risk of gangrene of the flaps. Severeanu's paper appears up to the present to constitute the literature of intra-arterial surgery.

Lilienthal[2] has suggested that in threatened gangrene due to embolism of the popliteal artery, end-to-end anastomosis of the proximal end of the divided superficial femoral artery with the distal end of the divided external saphenous vein might re-establish the circulation in the affected part. The suggestion is based upon the work of Carrel[3] on the union by suture of severed arteries, and upon the successful experiment of Carrel and Guthrie,[4] who, in a dog, reversed the circulation in a limb by dividing the main artery and vein, and subsequently joining up the proximal end of the artery with the distal end of the vein and vice versa. Lilienthal's suggestion does not seem promising.

In the case now to be described an attempt at the removal of the offending foreign body—in my opinion the most rational treatment—was made with some temporary glimmer of success. I place the case on record because it seems one of those pioneer failures on which ultimate success so often rests.

Attempted Operative Removal of an Embolus lodged at the Bifurcation of the Abdominal Aorta: Temporary Restoration of the Blood Current in the Femoral Artery.

A man, aged 65, was admitted into the Middlesex Hospital under my care, with a strangulated hernia situated in the line of the linea alba, 1 in above the umbilicus. The obstruction had existed for five days, and no flatus or faeces had passed for forty-eight hours. The vomit was not faecal. The patient was a most unfavourable subject for operation. His lungs were emphysematous and his chest hyperdistended. His ears were full of tophi and the joints of his hands were much deformed by chalk stones. Nevertheless, his arteries did not seem to be specially atheromatous.

Operation showed that the hernia contained only small intestine; the absence of large intestine and omentum, so unusual for a hernia in this situation, was doubtless due to the fact that the transverse colon was displaced upwards so as to lie between the diaphragm and the liver. The herniated intestine was not tightly strangulated, and it was possible to return it into the abdomen after division of the stricture. A radical cure was then performed.

Twenty-four hours after operation the patient complained greatly of pain in his left foot, but I could find no objective signs. The skin was not discoloured, and its temperature appeared normal. The patient's general condition was fairly good. In the light of subsequent events, this pain was probably due to the lodgement of one or more small emboli in the smaller arterial branches of the foot. At the time I considered it due to an attack of gout.

Twelve hours later the House-Surgeon (Mr. Mawson) found that the whole left lower limb was cold and discoloured from a point 3 in. below Poupart's ligament. I was unable to feel a pulse in the common femoral artery, or in any of the arteries below it. Judging by the temperature of the limb, the obstruction had occurred three or four hours previously, during the night. It was evident that the whole of the limb was about to become gangrenous. The pulse was quick and feeble, and amputation of the limb would have been immediately fatal.

In this desperate condition I thought a last effort might be made to restore the circulation in the limb by attempting the removal of the arterial obstruction. The pulse in the right common femoral was normal, and it was therefore evident that the upper limit of the obstruction was situated not higher than the bifurcation of the abdominal aorta.

The patient was immediately taken to the theatre, and was lightly anaesthetized. I am inclined to think that local anaesthesia by infiltration would have been somewhat preferable. A vertical incision 3 in. long was made over the left common femoral artery with its centre at the origin of the profunda femoris. The external circumflex branch of the profunda was exposed, ligatured, and divided transversely on the proximal side of the ligature. No bleeding occurred—a fact of ill omen, since it showed that secondary thrombosis of the arteries of the limb had occurred below the point of obstruction. A flexible tube about the size of a No. 4 catheter was passed upwards through the divided proximal end of the circumflex artery into the common femoral artery. The end of the tube was connected to an aspirator, and some soft blood-clot was sucked up into the tube. No blood flowed, and the tube was withdrawn. It was decided to attempt to dislodge the obstruction by a stream of saline solution. In order to obtain better access and a freer reflux, it seemed necessary to divide as large an artery as was compatible with the subsequent maintenance of nutrition in the limb. The profunda femoris was, therefore, divided at its origin and its distal end ligatured. The abdominal aorta was compressed at the level of the umbilicus through the abdominal wall, so as to safeguard the right common iliac from obstruction. A Kelly's ureteral catheter was now introduced through the divided proximal end of the profunda artery. It was cautiously passed upwards along the common femoral, the external iliac, and the common iliac artery until, as judged by previous measurements on the skin, it had reached the bifurcation of the abdominal aorta. A forcible stream of saline was sent through the catheter, and returned freely through the divided end of the profunda. The point of the catheter was moved about within the artery, so as to detach the clot within it. Some fragments of recent clot escaped, but relaxation of the pressure on the abdominal aorta was not followed by a jet of blood. The aorta was again compressed, and the washing-out process was continued. Relaxation of the pressure on the aorta was now followed by the escape through the divided profunda of a forcible, pulsating stream of bright-red blood.

Encouraged by this partial success, I next attempted to clear the lumen of the superficial femoral artery. The common femoral artery was compressed. A small incision was made over the popliteal artery, and one of its branches was divided so as to provide a point of outflow for the saline solution with which I proposed to flush out the artery from above. The catheter was passed easily in from the divided end of the profunda downwards along the whole length of the superficial femoral artery, and almost as far as the bifurcation of the popliteal. Unfortunately, the general condition of the patient, desperate to begin with, forbade me to persist any further. The catheter was withdrawn, and the divided branch of the popliteal was ligatured. On removal of compression from the common femoral no blood flowed, and it was evident that the obstruction higher up had only been partially and temporarily displaced. Had the patient's condition allowed, I should have attempted to pass long crocodile forceps up to the bifurcation of the aorta, to seize the clot, and to drag it out, a proceeding which is certainly practicable. Under the circumstances, I tied off the divided end of the profunda and sutured the skin incisions. The patient died twenty-four hours later in a typhoid condition, with commencing gangrene of the limb.

At the necropsy, made by Dr. Lakin, the left auricle contained a shred of *ante-mortem* clot in one of its recesses. The orifice of the left common iliac artery was blocked by a decolorized and adherent mass of clot which exhibited transverse markings apparently corresponding to the musculi pectinati of the auricular appendix. The clot projected some little distance into the abdominal aorta. Below it the arteries were filled by soft, non-adherent clot. The rest of the *post-mortem* appearances need not be detailed. The herniated intestine had retained its vitality, but the lower part of the large intestine was intensely congested and its vessels were filled by *ante mortem* thrombus. Evidently one or more emboli had lodged in the arteries of this portion of the gut.

I have long waited for an opportunity to attempt the surgical removal of an embolus lodged in a trunk artery, but it is probable that the methods I employed in this case are capable of improvement. My old friend and master, Mr. Jacobson, with whom I discussed the matter, suggested that it might be possible to cut directly down upon the embolus, to remove it, and subsequently to suture the artery. Whatever the method adopted, instant diagnosis and immediate operation, in order to anticipate inflammatory changes in the intima of the embolized artery, must always remain essential conditions to success. Fortunately in many cases the symptoms are so striking that these conditions are not impossible of attainment. In any future case, adopting a hint from Sir A. E. Wright's work, I should make use of sodium citrate solution of about 1 per cent. strength dissolved in normal saline to wash out the vessels, in order to minimize the risk of subsequent thrombosis.

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ANEURYSM OF THE FOOT.

By ALEX. R. TWEEDIE, F.R.C.S.,
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Since aneurysms of the foot are rather uncommon, and a conservative line of treatment often difficult to adopt, the following case seems worth recording:

Miss A. M., aged 25, was seen first in July, 1906. The dorsum of the left foot was the seat of an aneurysm, the centre of which corresponded roughly with the tarso-metatarsal joint, its limits being more or less indefinite, and measuring some $1 \times 1\frac{1}{2}$ in. The chief supply was the anterior tibial artery, whilst the inner pillar of the dorsal venous arch, very much dilated, acted as the main return vessel. This latter joined below and above the inner ankle with the posterior tibial vein, as well as continuing its course up the leg as the internal saphenous vein. On the plantar aspect there was also a pulsating area extending along the centre of the sole for some 2 in. and about 1 in. wide. The skin of the foot was in an unhealthy condition, comparable to that associated with the impaired circulation of varicose veins, and in addition had two chronic ulcers, one on the outer surface of the tarsus and one over the heads of the middle metatarsal bones, each about 1 in. in diameter. The proximity of these to the aneurysm, to say nothing of the chances of an accidental wound, constituted obviously a very grave risk. As her general condition was also very poor, it was thought best first to try and improve this and at the same time give the ulcers a chance of healing by rest and the application of an Unna's dressing.

The previous history is unimportant, except that some years ago she had the anterior tibial artery tied in the lower third of the leg without appreciable improvement. The condition had been present since early childhood, and was attributed to a small punctured wound contracted on the seashore. The foot was gradually becoming more and more of a handicap to walking and more painful, and she urged amputation, which, however, did not seem justifiable without an attempt to obliterate the sacs.

The dressing was worn till September, and under it the ulcers cleared up considerably. At the beginning of that month she had a spontaneous haemorrhage from an enlarged vein, within an inch of the aneurysm on the outer side of the dorsum of the foot, which, however, was satisfactorily controlled by local pressure.

On September 18th, under ether and after the application of an Esmarch's bandage and tourniquet, the enlarged vein on the inner side of the dorsum was dissected out for about 2 in. of its course; then the dorsalis pedis, which was represented by a plexiform arrangement of vessels, an external calcaneal branch, and the external plantar arteries were tied; as pulsation in the sacs still persisted after removal of the tourniquet, the posterior tibial artery was also tied behind the inner malleolus, with the result that apparently the supply to the sacs was efficiently cut off. The wounds were then sutured and firm dressings applied.

As soon as possible she continued taking calcium chloride gr. xx t.d., which was commenced a few days prior to the operation. The foot was redressed on September 22nd; all the wounds were healthy, but there was pulsation in the plantar sac. Her condition was extremely neurotic, and in spite of most careful attention on the part of her nurse, it was almost impossible to keep the foot at rest; and one night, having torn off the splint and dressings, she kicked her foot against the wall, with the result that the little toe was seriously damaged, and pulsation recurred in the dorsal sac as well. This happened ten days after the operation, and was most disappointing, as, in spite of her continuous neurotic condition, one was led to hope that something had been gained. It was thought best to wait until damage to the little toe became limited, and the foot was quite sound, before attempting anything further. So that it was not until November 15th that a second operation was proposed.

On this date several small branches of the dorsalis pedis and a vessel in front of the external malleolus, which appeared to be supplying the sac, were tied. Then an Esmarch's bandage and tourniquet were applied, and both the dorsal and plantar sacs laid open for their whole length, and the interior gently curetted and packed with gauze. The dressing was completed by adjusting two short splints, 3×8, transversely across the dorsum and sole of the foot immediately over the gauze packing, pressure being maintained by tying their free ends firmly together clear of the foot.

By this means it was thought that requisite pressure could be gained, whilst the inner and outer aspects of the foot would be free to carry on circulation to the toes.

The dorsal and plantar sacs were each estimated as capable of holding from ℥ss to ℥j of blood. The former was situated between the skin and the tarsus amongst the extensor tendons, and the latter in the space between the second and third muscular "layers" of the sole.

The foot was subsequently dressed twice under ether, the first time with a tourniquet. The lining of the sacs sloughed, and then both wounds, representing the laid-open sacs, uneventfully granulated. Skin grafts were applied January 7th, 1907, and all healed up firmly. After some two months' further rest she was allowed to commence using the foot.

The present condition is as follows: There is a large healed wound on the dorsum corresponding to the sac of the aneurysm; both ulcers are also soundly healed. The distal half of the little toe is absent, the remaining portion being healthy. The other toes have not suffered as regards nutrition, but have very little power left, due to involvement of their tendons in the sloughing and subsequent granulation after the second operation. On the sole there is a deep longitudinal depression in place of the aneurysmal sac in this situation. Some pulsation can still be detected along the inner border of the sole and dorsal aspect of the first interosseous space, due, presumably, to the fact that the blood supply to the toes is almost entirely dependent on the internal plantar vessel, and thence via the first interosseous artery, but this seems quite separate from the original aneurysm.

Although she is still wearing a crêpe Velpeau bandage to control swelling of the foot and as a precautionary measure, she can get about better than before the operation, and is certainly in a very much safer condition; whilst if any further treatment is necessary, which is not at present indicated, very considerable progress has at any rate been gained.

EPIDEMIC CEREBRO-SPINAL MENINGITIS WITH TYPHOID AGGLUTININS IN THE BLOOD.

BY

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The following case is significant of the caution with which, under certain circumstances, a well-marked positive Widal reaction is to be regarded in the diagnosis of enteric fever, and, moreover, the case, which was one of epidemic cerebro-spinal meningitis, might, in view of the Widal reaction, have been considered to have been typhoid fever with meningeal symptoms. The essential points are as follows:

History.

A muscular woman, 27 years of age, was admitted to hospital with marked symptoms of meningitis; the circumstances of her life, which were intimately known to her family, showed no discoverable contact with any of the epidemic cases of cerebro-spinal meningitis that were, at the time, prevalent in Belfast. Her blood was twice tested by us as to its agglutinative power on the *Bacillus typhosus*, and on both occasions the serum in dilutions of 1 in 200 gave marked clumping within fifteen minutes. Her father assured us that she had had no illness since her ninth year, when she had scarlet fever, and that, therefore, for nineteen years she had never been a day in bed from any cause, and thus, apart from the improbable occurrence of ambulatory typhoid fever, it was extremely unlikely that the agglutinins in her blood had formed previous to her fatal illness.

Notwithstanding the positive outcome of the agglutinative test with *Bacillus typhosus*, her condition was strongly considered to be that of epidemic cerebro-spinal meningitis, owing to the complete predominance of meningeal symptoms, the character of the petechiae over the body, the constipation, the condition of the spleen, etc, and also for the subsidiary reason that epidemic meningitis was present in Belfast during the time of her illness, so much so that lumbar puncture, owing to stress of work, was not performed during life.

Post-mortem Appearances.

There was nothing suggestive of typhoid fever, the spleen was somewhat enlarged, Peyer's patches were normal. There was suppurative meningitis of the brain and cord, and from the pus we recovered, in pure culture and in great abundance, the *Diplococcus intracellularis meningitidis* of Weichselbaum.[1] Moreover, an exhaustive bacteriological examination of the spleen, mesenteric glands and urine was made for the *Bacillus typhosus*, but with uniformly negative results. Further, the autopsy revealed the usual conditions shown by one of us[2] to accompany epidemic cerebro-spinal fever, namely, slightly enlarged spleen, acute gastro-enteritis, enlarged and hyperaemic mesenteric glands, and particularly the swollen and prominent solitary follicles of the intestine, etc.

The *Bacillus typhosus* used in the agglutinative tests was the one that is customarily employed in this laboratory, and during the past year it gave in 112 examinations results which, clinically controlled, were correct in 97.3 per cent. of the cases.[3]

We may mention that we have in preparation a paper dealing with anomalous, or rather with unexpected

agglutinative effects exerted by the serum of cerebro-spinal meningitis on bacteria other than the specific coccus.

This case, then, is an example of genuine epidemic cerebro-spinal meningitis in which the serum gave a positive Widal reaction in a dilution of 1 in 200, and in which the *Bacillus typhosus* had no part in the infection.

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A CASE OF ANEURYSM OF THE ABDOMINAL AORTA WITHOUT SYMPTOMS.

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With a Note on the Pathological Appearances.

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THE interesting points in the following case are the absence of a history of any of the ordinary causes of aneurysm, and the fact that so considerable an aneurysm of the abdominal aorta could have existed causing practically no symptoms and no discomfort to the patient, who had led an active life as a midwife until a few years before her death.

The age of the patient when I first saw her was stated to be 86. Three years earlier she picked a pimple which was worrying her, and as it grew larger she applied some carbolic acid in vaseline from a tin which her nephew was applying to a sore on the back of a horse. As this application seemed to aggravate matters she consulted a doctor, who diagnosed rodent ulcer, but she refused all surgical intervention. When first seen by me a radical operation was practically out of the question on account of her general condition. The sole treatment during her past few months' illness was palliative—orthoform and resorcin playing a prominent part locally—but asthenia rapidly supervened *pari passu* with the malignant growth, which had taken on a fungating fetid character. When the patient was first seen, an abdominal swelling was observed which she said had been there for years, and which never gave her a thought, as it had never given rise to any symptoms either of discomfort or pain; in fact she was unconscious of its presence, and never worried about it. The patient, who was of a very cheery temperament, presented a rather anaemic and emaciated, in fact cachectic, appearance. A to-and-fro movement over the abdominal mass was seen easily, and appeared to respond to, or to be synchronous with, every heart beat; such motion suggested a tumour firmly fixed or connected with the arterial system. The swelling was mobile, easily defined, and solid, and principally occupied the umbilical region. It felt as large as a goose egg, and a heaving sensation was imparted on palpation; no thrill or diffuse pulsation was observed, nor any local varicose, abdominal, or other veins. The percussion note was dull, and auscultation over the tumour was negative. Occasionally, when gaseous distension of the intestine was present, the mass used to alter its position and give rise to uncomfortable sensations, and resemble a distended gall bladder in site and size. The arteries were somewhat thickened and calcareous but not tortuous. The radial pulses and pupils were equal. Inspection and palpation over praecordia, aortic region, and great vessels of the neck revealed nothing abnormal. There were no episternal phenomena. Percussion showed the heart slightly outside the nipple line, otherwise the outline was normal, as was the aortic arch. The apex beat was at fifth interspace, and both sounds were closed with slight accentuation of first mitral and occasionally reduplication of second. The aortic sounds were closed, but with impurity or roughness of the first sound, probably senile or atheromatous. The second sound was markedly accentuated. The tricuspid and pulmonary sounds were normal. There was no dropsy, lividity, pallor, or clubbing of the nose or fingers, or any other circulatory disorder, except cold feet occasionally. All the other systems were inquired into carefully, and nothing worthy of note was recorded. The spinal reflexes were active, and no evidence of pressure was manifested; all tactile sensations were unimpaired. The spinal column showed no deformity, or no tenderness could be elicited. Mental processes were active.

Necropsy.

In conjunction with Dr. J. H. McGee (who had seen the case previously with me) I opened the abdomen (*post mortem*) over the site of the tumour, and great difficulty was experienced in defining the mass, as adhesions were firmly binding down the intestines, omentum, mesentery, and aorta. However, after separation of the transverse colon and small intestines, the tumour was ligatured opposite the second lumbar vertebra above and at the origin of the iliac vessels below. It was found continuous with the aorta, and all the other abdominal organs were examined, but nothing pathological was found. The kidneys were not movable, and the gall bladder was healthy. The liver was not enlarged. There was no evidence of any pressure effects on the vertebrae.

REPORT ON SPECIMEN BY CONSTANCE ELLIS, M.D.

The specimen consists of the lower 5 in. of the abdominal aorta, terminating in the two common iliac arteries. The aorta has been opened along its posterior surface, the orifices of the lumbar arteries being seen thereon, but neither coeliac axis nor mesenteric artery are present in the specimen. There are some atheromatous patches present in the aorta.

The mass of clot forming the aneurysm measures vertically about 4 in., and antero-posteriorly at its thickest part nearly 2 in. The aneurysm has evidently been formed by the giving way of the inner coat of the aorta on its

View from behind: artery wall vertically incised and reflected to show clot within. $\frac{5}{6}$ natural size.

anterior aspect, the condensation of the outer coat and the tissues around forming the wall of the aneurysm.

The clot is very firm and fibrinous and closely united to the condensed tissues forming the wall of the aneurysm. For about 1½ in. above the iliac vessels the clot is present in the aorta and is channelled for the passage of blood. Otherwise the blood flow has been unimpeded in the artery, as it lies behind the aneurysm, which has also left untouched the distributing branches to the abdominal organs. Hence we have the interesting fact, as seen in the notes, that so notable a pathological condition should have given rise to practically no symptoms and to no discomfort to the patient.

The photograph, taken by Mr. Sayce, of the Bacteriological Laboratory, gives an excellent view of the aneurysm.

A CASE OF CEREBELLAR HAEMORRHAGE.

BY

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Cases of cerebellar haemorrhage are of sufficient interest to justify us in recording the following case:

E. H., aged 26 years, was admitted into Christchurch Hospital in a semi-conscious condition.

Previous History.

Her father and mother were alive and healthy. There was no family history of syphilis or consumption.

The patient was quite well until recently, when she began to complain of numbness in the left side of the face, the numbness affecting only the lower half. She had often complained of slight headaches and occasionally of a feeling of giddiness. A fortnight before admission she felt ill, was sick, and went to bed. She remained in bed for two days, and then feeling better she got up, and was apparently in fair health till the day before admission, when she became semi-conscious, and was seen by a doctor, who recommended her to hospital.

Condition on Admission.

The patient was in a semi-conscious condition, speech was thick and unintelligible, the temperature was 97° and the pulse 108. She swallowed slowly and with difficulty. Her mother stated that she had been constipated, and had occasionally vomited after taking food. There was no discharge from the ears. She was not deaf, as she could hear and put out her tongue when asked to do so in a quiet voice. The pupils were normal. The patellar reflex on the right side was exaggerated; on the left it was well marked. There was no ankle clonus, and no retraction of the head. The left arm and left leg were partially paralysed, and could only be moved with difficulty. There were no twitchings or convulsions. The urine was normal.

After-History.

The patient remained in this condition for three days, when slight left ptosis was noticed. The pupils now became widely dilated, insensitive on the left side, and very sluggish on the right. The pulse was 108, weaker, and the limbs became very cold. The patient did not move the left arm, but could slowly draw up the left leg. She began to menstruate.

The Sister of the ward reported that the patient had a curious habit of shaking the bed, as if in play; the movement was quite purposeless, but frequently repeated.

The eyes were examined by Dr. Manning, ophthalmic surgeon to the hospital, who reported: "Corneae insensitive; pupils dilated and unequal. Both act to light, but the right is more active than the left. There is no optic neuritis. Ptosis of left upper lid. Right eye divergent." The patient lay on the right side, and when turned upon her back the head was kept turned to the right, and the eyes were also directed to the right.

On April 30th, the fifth day after admission, she was still in a semi-conscious condition, occasionally moaning. She could not masticate, and food collected in the left cheek. She was rigid all over. Babinski's sign was well marked, especially in the left foot. The breathing was stertorous. No convulsions had occurred. The head and eyes were turned to the right side.

On May 1st the pupils were equally dilated. The left pupil was insensitive to light, the right very sluggish. The breathing was quieter. The limbs were not so rigid. She was apparently more conscious. Since the previous day she had passed her urine into the bed.

On May 2nd the respiration was of the Cheyne-Stokes character; she was weaker and very cold. At 2 p.m. the temperature rose to 101.8°, and she perspired freely. The pulse was 140.

On May 3rd the temperature rose to 104.2°. She became cyanosed, and died.

Necropsy.

Permission to make a partial *post-mortem* examination was with great difficulty obtained and performed by Dr. Crooke, the resident medical officer. The surface of the brain was deeply congested, but there were no adhesions between the pia and dura mater. The dura mater was adherent to the skull-cap. At the base of the skull the meninges were densely adherent, especially in the middle fossa. On removing the brain a small clear cyst, the size of a split pea, was seen lying at the posterior extremity of the pons on the right side, overlapped by the cerebellum. This had no apparent connexion with any deeper structure, as it was removed at a touch. The brain was normal except for general congestion, but in the right side of the cerebellum a cavity about 1 in. in length, which would just admit the tip of the little finger, was found. This cavity was filled with old blood clot adherent to the walls of the cavity. The brain tissue over this area was extremely friable. No thrombosis or embolism was found, and we could not detect any disease of the vessels.

We received little assistance in diagnosis from the history as given by the relatives, the only important fact elicited being the numbness of the lower half of the face a fortnight previous to admission and an indefinite history of attacks of giddiness. The age of the patient was against cerebral haemorrhage, and the absence of any cardiac trouble militated against embolism. The ptosis and condition of the pupils suggested basal trouble, but we did not attach any importance to the curious movements of the patient, as reported by the Sister in charge.

Frederick Taylor records a case of a boy aged 15 whose illness began with pain in the head; the next day he was sick and constantly throwing himself about in bed; the third day he became lethargic and died. Another case mentioned by Taylor is that recorded by Abercrombie. An old woman was seized with sudden coma and vomiting, and died after forty hours. *Post mortem* a clot was found in the right lobe of the cerebellum.

It is stated that the cerebellar lobes are functionally related to the motor tracts of the same side. This will explain the paralysis of the left side, the fibres having decussated below the region of pressure, the slight improvement in the paralysis noticed a few days after admission being, perhaps, due to the relief of pressure when the clot began to contract.

Rigidity of the neck is stated to be a symptom of cerebellar disease. In our case the whole body was noticed to become rigid, but there was no retraction of the head.

The paresis of the lower half of the left face and the eye symptoms could be explained by the close relationship of the cerebellum to the nerve nuclei.

With regard to percussion of the head as a means of diagnosis, it is stated that the "cranial cracked-pot sound" is diagnostic of cerebellar tumour, being caused by separation of the bony sutures from internal pressure caused by accumulation of fluid in the ventricles. We did not elicit this sign, but tapping the skull appeared to cause considerable pain.

Schmidt has reported two cases of cerebellar tumour in which symptoms of increased intracranial pressure occurred when the patient lay on the side on which the tumour was situated. In our case the patient showed no change in symptoms when changed from side to side. A case is recorded by Monro of a man, aged 63, who had been many years blind; the left half of the cerebellum was found to be occupied by a shrivelled myxomatous tumour with atrophy of the optic commissure and nerves; there was no optic neuritis was present in the present case.

Libraries of reference are a luxury at present unknown in this colony, so that we have had little opportunity of examining records of other cases.

Judging from the report of the British Consul-General in Warsaw, Poland must be a very inconvenient country to be ill in. There is a great lack of hospital accommodation in Warsaw, and each year from five to six thousand persons are refused treatment, without counting those who have been told by the doctors that it is useless to apply. The existing hospitals are in great financial straits, and the deficit lately amounted to £47,000, towards which the municipality could only find £27,000, so that a debt of some £20,000 remained. Lodz is still worse off for hospital accommodation. There are 400,000 inhabitants in the town, and only 731 hospital beds, and, as there are no resident doctors of any sort in the hospitals, the state of things has to be imagined, patients often being left for hours unattended. Throughout the country public works seem to be in a corresponding condition. Only in four towns—Warsaw, Lomza, Lublin, and Plock—is there a proper water supply, and only in five—Warsaw, Plock, Konsk, Zamosc, and Brest-Kujawski—any proper drainage. Warsaw has one doctor to every 750 inhabitants, but in Suwalki there is only one to every 3,006 persons, and in Balatuchi one to 36,000. In the towns of Kutno and Terespol there are no doctors at all.

Dr. Walter Grenfell, C.M.G., Superintendent of the Royal National Mission to Deep Sea Fishermen, sends us from Labrador a copy of a health catechism which he has found very useful among the scattered population of the desolate shore of Labrador. In it the principles of hygiene and first aid are reduced to their simplest expression. There are some three dozen questions arranged under the heads: The air; the sunshine; the window; washing; spitting; and wounds, and it is intended that children should learn the questions and answers by heart in the schools, as their predecessors learnt the church catechism.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF DISEASES OF CHILDREN.

ALFRED HERBERT TUBBY, M.S., President.

A DISCUSSION ON THE DISEASES AND DISPLACEMENTS OF THE TESTICLE.

OPENING PAPERS.

I.—D'ARCY POWER, M.A., M.B.Oxon., F.R.C.S.Eng.,

Surgeon to and Lecturer on Surgery at St. Bartholomew's Hospital; Surgeon to the Bolingbroke Hospital; Consulting Surgeon to the Victoria Hospital for Children, Chelsea.

THE diseases of the testicle in children group themselves easily and naturally under the headings of tubercle, syphilis, malignant growths, innocent tumours, and teratomata. The displacements, as all the world knows, are due to faulty processes of development.

In opening this discussion, I propose to give you the results of my own experience, and to ask questions in regard to the points which seem to me to require explanation or elucidation, because it is only at meetings like this that we can interchange ideas, and add to the sum total of our knowledge.

TUBERCLE.

Most of the swollen testicles seen in the wards and out-patient rooms of our children's hospitals are caused by tubercle or by syphilis, or perhaps, speaking more correctly, by tubercle growing in tissues which have been prepared for infection by changes due to congenital syphilis. In private practice they are nearly always tuberculous without any admixture of syphilis.

Our knowledge of tuberculous disease of the testicle in children is comparatively modern, for it appears that Mr. Eusebius Lloyd, one of my predecessors at St. Bartholomew's Hospital, when he was an assistant surgeon in 1821, first referred to the condition. He says in his treatise on *The Nature and Treatment of Scrophula*, which gained the Jacksonian Prize at the Royal College of Surgeons of England in 1818:

> The testicles are certainly subject to scrophula, both in the child and in the adult. I have at present under my care a child, 3½ years old, with his right testicle affected. When he was brought to me the whole scrotum was distended with matter, and appeared like a scrophulous abscess in any other part of the body, and the skin was so thin that you might see the matter through it. A poultice was applied, and in a few days the abscess burst; and the aperture soon enlarged so much that full half of the gland projected through the scrotum and was converted into a mass of yellow scrophulous matter, which a few days after separated, leaving the remainder of the gland enlarged and hardened. This is, however, rapidly diminishing, and seems likely entirely to waste away. This is the only case in which I ever saw the testicle of a child affected with this disease, and I am not able to describe the progress, as the abscess had formed before I saw it.

Subsequent observation has confirmed Lloyd's statement that tuberculous disease of the testicle is rare in children, for Demme records 16 cases in 1,932 tuberculous children, whilst Jullien only saw it 16 times in 5,566 children. Of these 16 cases, 6 were less than 1 year old, and 6 ranged from 1 to 2 years. Of the former, 1 was 1 month old, and 2 were 2 months of age when they were detected. Giraldès has recorded the occurrence of tuberculous testis in infants of a few days old. In four observations by Mr. Lannois tuberculous disease of the testicle appeared at five months, six months, seven months, and thirteen months after birth.

Mr. Monro, of Wigan, records a still more remarkable case, for the swelling was noticed at birth. The specimen was shown by Dr. Dreschfeld at the Manchester Medical Society.[1] It is stated that the tumour was noticed at birth; its removal was proposed, but was objected to by the parents. The child died of general marasmus at the age of 6 months. The testicle presented the appearances characteristic of a scrofulous testis. Microscopically the caseous portions consisted of a detritus surrounded by embryonic tissue in which giant cells occurred. Sections stained by Ehrlich's method showed the presence of numerous tubercle bacilli in the embryonic tissue. It would be interesting to know more of the history of this case, since it is quite possible that the original enlargement may have been due to hereditary syphilis and that the tuberculous infection only took place at a later period.

But tuberculous inflammation of the testicle in children is much more common than statistics drawn from France and Germany would lead us to believe, and there is never a year in which I do not see two or three cases. The inflammation is sometimes primary, but is more often associated with other signs of tubercle, and there is frequently a definite history of injury. It is usual, therefore, for only one testicle to be affected. The diagnosis is easy, but the disease runs a somewhat different course in children from that which it follows in adults, because the gland is not functional in children.

When the infection is simple and the child is fairly healthy the disease may remain localized to the affected gland. The swollen testicle remains enlarged for a longer or shorter period and then slowly diminishes; the inflammation may disappear completely, and the testicle may resume its original condition or the process of involution may be carried beyond the normal, the testicle atrophies and the child becomes monorchous. This, at least, is the statement generally made, but I should like to know whether any one has followed out the progress of a tuberculous testicle until it ended in atrophy. I have seen complete atrophy four years after an operation for the radical cure of a hernia in a child, and I have seen it after enlargement of the testicle due to congenital syphilis, but never in consequence of tubercle.

The treatment in these cases of pure tuberculous testicle may safely be palliative. Fresh air, cream, or cod-liver oil, good food, and plenty of sleep, with a light suspensory bandage, are sufficient. But a jealous eye should be kept upon the child, and he should be weighed at frequent intervals. If the weight falls, a careful and systematic examination should be made to ascertain whether there is any evidence of dissemination; the lymphatic glands, the bones, more especially the vertebrae, the peritoneum, the pleurae, and the meninges of the brain are the most likely parts to become affected. The testicle should be removed at once if there is even a suspicion of such an infection.

The prognosis is not so good when the infection consists of a mixed culture of tubercle bacilli and pyogenic organisms. In such cases an abscess is soon formed, and the neighbouring lymphatic glands quickly become affected. I would, therefore, counsel the removal of the testicle at an early period when suppuration occurs, for I do not believe that any good follows such partial operations as the scraping or excision of the softened parts of the testicle, but rather harm, for I have often seen these cases associated with tuberculous dactylitis, spinal caries, and tuberculous peritonitis.

Some years ago Sir William Bennett drew attention to the fact that tuberculous disease of the spinal column occurs with some frequency in children suffering from tuberculous disease of the testicle. He thought that the disease affected the vertebrae before it spread to the seminal vesicles, though the dissemination did not take place until the original focus of inflammation in the testicle had begun to undergo degenerative changes. I should like to know whether other surgeons have any observations on this point, for no similar cases have come under my notice, though I have often looked for them.

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[1] BRITISH MEDICAL JOURNAL, 1884, vol. i, p. 860.

Syphilitic Inflammation.

Our knowledge of syphilitic inflammation of the testicle in children is much more recent than that of tubercle, for it seems that it was not until Després carefully described three cases in 1875 that any attention was paid to the condition. Before this time it is probable that the condition was either overlooked entirely, or when it was observed it was thought to be due to tubercle.

Syphilitic inflammation of the testicle occurs at all ages from birth up to 24, though it is most common before the age of 3 years. Both testicles are affected, and often at the same time. A hydrocele of the tunica vaginalis is an almost constant accompaniment, whereas in tuberculous testicle a hydrocele does not occur in more than a third of the cases. The patient, if he be an infant, always presents evidence of inherited syphilis, often in a severe form. The testicles are stonily hard, and the beneficial effects of administering grey powder are so marked as to leave no doubt about the diagnosis.

The inflammation is usually diffuse, and leads to a general enlargement of the body of the testicle, but it is occasionally gummatous, in which case the outline is irregular. The epididymis may be affected, but it is much more usual for the tunica vaginalis to be involved in the inflammation, a feature which accounts for the frequent coexistence of a hydrocele. It is rare for suppuration to take place in syphilitic inflammation of the testicle so long as it is free from tuberculous or pneumococcic infection, but it is quite common for the two infections to coexist in the miserably marasmic children who are the subjects of these swollen testicles. The condition is so painless and chronic that it is often overlooked, and children are consequently brought to us from time to time in whom the process has continued for so long that cicatricial contraction of the inflammatory fibrous tissue has occurred and the testicle is atrophied.

I should like to know, in connexion with syphilitic inflammation, whether any observations have been made as to the retardation of puberty which takes place as a result of inherited syphilis. I believe it to be part of a general failure of development, and that it is not a mere consequence of the atrophic condition of the testicles, or of the ovaries, for the delay occurs in both sexes. It is certain that the patient is impotent as well as sterile when both testicles are wasted owing to inflammation due to inherited syphilis.

Teratomata.

Teratomata of the testicle are always cystic, for they are either dermoids or sebaceous tumours. They are so rare that Dr. Hilton of Nebraska, who has lately collected some details about them, has only been able to find 79 cases, whose points of origin he gives as follows: The testicle in 40 patients, the scrotum in 21, the inguinal canal in 14, and the tunica vaginalis in 1 case.

These tumours form an interesting group, and open up many points for discussion, as well as for elucidation by more careful observation. It is not yet known, for instance, whether a dermoid of the testicle is or is not a true tumour of the testicle itself. Indeed, the ease with which it can sometimes be dissected away from the gland makes it highly probable that in many instances a dermoid is in reality a teratoma, using the term in the sense of a parasitic fetus. It is highly desirable, therefore, to determine, as far as possible, in each case whether the dermoid is within the tunica albuginea; whether it merely lies in the connective tissue between the tunica vaginalis and the testicle, or whether it is clearly attached to the scrotum; and, if so, whether the attachment is due to its being the place of origin of the tumour, or the result of inflammatory changes between the scrotum and the wall of the dermoid. A section through the wall of the dermoid may show the presence of atrophied seminiferous tubules if the tumour has been developed within the substance of the testicle.

The tumours are very rare, and this which I show you is one of the very few which have been removed in England. I am indebted for it to Dr. Stanley Wood of Pontypool and to Mr. C. C. Harris.

It was removed from a healthy child, aged 4 years, in whom the swelling had been observed for three years. During the early part of this period the tumour had only grown slowly, but during the eighteen months preceding its removal the growth was more rapid. Before removal the testicle was freely movable in a normal scrotal sac, which was without any scar. The enlarged gland felt smooth; it was heavy, ovoid in shape, and regular in outline. There was some sense of fluctuation in parts, but there was nowhere any translucency. No nodules could be felt on palpation, but the fluctuating parts were less resistant than the rest of the gland. The testicular substance could not be felt and the epididymis was imperceptible. The spermatic cord was slightly thickened. It was thought that the whole body of the gland was affected, and the parents were advised that the organ should be removed. The parents themselves were without malformation so far as could be ascertained.

Examination of the organ after removal showed that the right testicle was affected—a point of some interest, because in the 10 cases collected by Verneuil the right organ was the seat of a teratoma in 6 cases. The testicle measured 2¼ in. in length by 3¼ in. in thickness. The spermatic cord was at first indistinguishably blended with a mass of muscular tissue and blood clot, but by a little dissection its component parts have been unravelled and a bristle has been passed into the cut end of the healthy vas deferens. The epididymis is present as a flattened band, lying, as the testis has been divided, between the spermatic cord and the tumour. The tumour itself occupies the whole body of the testicle, and is enclosed by the smooth and somewhat thickened tunica vaginalis, which is not, however, adherent to it. The teratoma consists of a number of cysts filled with a substance of gelatinous consistency. The cysts vary in size from a small pin's head to one which occupies the whole of the posterior border of the testicle. This large cyst, in the recent state, contained a number of long and delicate hairs which sprang from the deeper layers of its lining membrane. The rest of the tumour is formed by thick septa between the cysts; they consist of dense fibrous tissue with fat, and in some parts islets of calcified cartilage.

Microscopical examination shows that the gland tissue has entirely disappeared from the body of the testicle. The wall of the largest cyst consists of an epidermis and corium. The free edge of the epidermis is turned towards the interior of the cyst, and it seems as if the proliferation of the cells from this edge had formed the gelatinous contents of the cyst, the cells themselves having undergone some colloid change. The epidermis consists of a thick layer of stratified epithelium lying upon a well-marked rete Malpighii. The epithelium appears to have been tilted forwards in some places, so that the constituent layers form an angle with the surface instead of lying parallel to it. The corium consists of dense connective tissue, containing in its deeper part a considerable quantity of fat and a large number of hair follicles. Each follicle has well-developed sebaceous glands in connexion with it, and each contains a non-medullated hair. The connective tissue is dense, and has many of the characters of embryonic fibrous tissue. This specimen is preserved in the St. Bartholomew's Hospital Museum, No. 2810 (*a*).

The dermoid tumours are so rare that an error of diagnosis is pardonable, and it seems that they are most likely to be mistaken for epiploceles and for hydroceles of the cord. They are distinguishable from hydroceles by the absence of that translucency which is invariable in infants, and from omental herniae by the fact that teratomata are more uniform in outline, whilst the careful examination of an epiplocele will often reveal the presence of nodules in the mass. Complete reduction is no more possible in the case of a teratoma than in that of an encysted hydrocele, but in both cases it may be possible to push the tumour out of sight through the external abdominal ring.

There can be no question as to treatment. The swelling in the scrotum should be explored and the dermoid removed without sacrificing the testicle, if possible; but if it is actually incorporated with the gland, as in the specimen I have shown you, the whole organ must be removed, because there is a definite liability to inflammation, suppuration, or haemorrhage after slight injuries. It would be interesting to know whether any one has yet seen teratomata affecting both testicles, for symmetrical teratomata of the ovaries are not very rare.

Malignant Disease of the Testicle.

Sarcoma of the testicle occurs in boys of 10 years old and upwards, and, like sarcoma elsewhere, they follow directly upon an injury in a considerable proportion of cases. The tumour involves primarily the epididymis, and the body of the testis is less frequently involved at first. But the growth often runs a very rapid course. Much time is lost in many cases because it is painless and there is early loss of testicular sensation, so that the patient does not apply for relief until the tumour has attained a sufficient size to make it inconvenient by its weight. The tumour is then found to be smooth, heavy and hard, but its shape and even its very existence may be masked by the presence of a hydrocele or a haematocele.

The affection is most likely to be mistaken for a thick-walled hydrocele, for tubercle or syphilis, but the rapid growth soon points out its true nature.

I believe the prognosis of sarcoma of the testicle to be worse in boys and young men than it is in old people, for all the cases I have seen have ended fatally, even when an early operation has been performed. A misleading feature about the patients is that they remain in singularly good health for a long time, and it is therefore difficult to persuade either them or their friends that they are suffering from a deadly disease. Too much stress in these cases must not be laid upon the existence of enlarged lumbar glands, because, although they are often affected, I have seen more than one case in which there was diffuse sarcomatous infiltration of the entire peritoneum spreading from the epididymis up the spermatic cord without any infiltration of the lymphatic glands.

Here are the details of a case which was under my care last year:

A healthy-looking boy with a ruddy complexion, aged 18, was admitted into my wards at St. Bartholomew's Hospital on November 8th, 1905, with a small lump in his scrotum. He said that the swelling had been increasing in size since the previous April. Examination showed a small, hard, and nodular swelling movable on the right testicle and situated in the head of the epididymis. It was thought to be a sarcoma, and the patient's father was entreated to allow the testicle to be removed if our suspicions were confirmed at the operation. He refused, however, and the growth was dissected away from the testicle and epididymis, as a section made during the operation and examined microscopically proved it to be a spindle-celled sarcoma. The patient remained well until the beginning of February, 1906, when he noticed a return of the tumour in the right side of the scrotum. But in spite of this he did not come to the hospital again until May. The tumour was then adherent to the scrotum, whilst the vas and the spermatic cord were thickened up to the external ring. There was no enlargement of the inguinal or deep lumbar glands. The testicle with the cord as high as the internal ring was removed on May 5th, and the patient soon left the hospital. I saw him again from time to time until he died in November, 1906, with large masses of malignant disease in his mesentery and peritoneum, but without any marked enlargement of the deep lumbar glands.

Mr. Eve,[2] and more recently Mr. A. G. R. Foulerton,[3] have shown the need for reconsidering the whole question of the tumours of the testicle which are usually said to be sarcomatous. Many of these tumours are really columnar-celled carcinomata beginning in the tubules of the rete testis or in the vasa efferentia. They grow much earlier in life than other forms of epithelial malignant disease. Mr. R. W. Parker and Mr. Quarry Silcock[4] have recorded cases which were congenital, and Mr. Parker states that "malignant disease of the testis, though not uncommon during infancy, appears to be exceedingly rare as a congenital condition." Mr. Foulerton says in a valuable report upon a series of these cases:

This form of malignant disease is especially liable to undergo chondrification of the stroma, and, in addition to this chondrification of the stroma, columnar-celled carcinoma shows in a marked degree the tendency to mucoid change, both in the epithelial cells and in the connective tissue stroma which is often found in columnar-celled carcinoma elsewhere. Cyst formation is also a characteristic feature; generally the cysts are formed by a dilatation of the newly-formed epithelial tubules, possibly, also, in some cases by degeneration and softening of the tracts of the stroma. Extravasation of blood into the substance of the new growths is liable to occur, probably in consequence of mucoid changes affecting the walls of the blood vessels.

It would be interesting, therefore, to know whether, in the light of Mr. Foulerton's work, there is any difference in the course and dissemination run by malignant tumours of the testicle when the deep lumbar glands remain unaffected to the end of the patient's life, and when they become early affected. I think it will be found that there are two groups, and that the patients in whom the lumbar glands are unaffected die sooner than those in whom they are enlarged early.

IMPERFECTLY-DESCENDED TESTICLE.

The questions connected with imperfect descent of the testicle open up such wide fields for discussion that it would easily form material for an entire debate. I shall narrow it down, therefore, to a few points upon which I hope to obtain the opinion of such surgeons as Mr. McAdam Eccles and our Honorary Secretary, Mr. Edred Corner, for they have devoted very great attention to the causes and treatment of imperfectly-descended testicle.

Brushing aside all theory, I should like to ask what is the general feeling about orchidopexy or the freeing of a testicle which is imperfectly descended with subsequent fixation to the bottom of the scrotum, the pillars of the external abdominal ring being afterwards sutured to prevent the testicle from re-entering the inguinal canal? I have done the operation many times, but, except in the very simplest cases, I have never satisfied myself that it was advantageous, and in a few cases the result has appeared to be so unsatisfactory that I have afterwards removed the testicle. In 1894 I did the operation of orchidopexy on a boy at the Victoria Hospital for Children, Chelsea, and on May 14th, 1907, thirteen years afterwards, his mother brought him to see me at St. Bartholomew's Hospital. The testicle lay just above the pillars of the ring, which were closed. The gland was a mere shrunken nodule of fibrous tissue, over which the skin moved freely. It was so firmly fixed to the deeper tissues that the testicle could not be moved upwards, downwards, or sideways. I think, therefore, that it is better to advise removal of the testicle in nearly all cases where it is imperfectly descended and can be felt, especially if there is evidence of a hernia, and provided that the abnormality of development is limited to one side.

When a hernia is present the sooner the operation is done the better, after the age of 4 or 5 years. When there is no hernia, or only a small bubonocele which gives no evidence of increasing in size, I usually advise the parents to wait until the child is 7 or 8 years old, in the hope that the testicle may descend further into the scrotum. But I do not think it is worth while waiting until puberty, because a fairly accurate prognosis can be arrived at much earlier if the child be seen a few times at intervals of two or three months.

But these are not the really difficult cases upon which I want to get an authoritative opinion from such a body of surgeons accustomed to deal with children's diseases as is here gathered together. The really difficult cases appear to me to be those where the only child of influential persons is brought to you at the age of 5 with both testicles lying within the inguinal canal close to the external abdominal ring. I see my way clearly when only one testicle is imperfectly descended, when the imperfect descent is associated with a hernia, as it is in about 80 per cent. of the patients, and when pain or symptoms of torsion have appeared, and I know what advice to give when both testicles are situated comfortably in the abdominal cavity. But I confess that I am doubtful as to the best course to pursue when both testicles are situated within the inguinal canal at a point where they may be readily injured in the ordinary course of school life. They ought not to be removed, especially if large interests are at stake, and I therefore suggest that the wisest advice is either to leave them alone until they become troublesome, or else to put them straight back into the abdominal cavity. But if this is to be done the operation should be performed early, as there is evidence to show that testicles replaced after puberty do not undergo any development, or, as the old writers would have put it, the nisus of puberty must find the organ in appropriate surroundings. It is then possible that the testicles may become functional—at any rate, for a short time—though too much must not be promised to the parents. All that one can say is that he will not present the characteristics of a eunuch, and he has been put into the best possible condition, under the circumstances, for the subsequent procreation of children; the generative function being best, or perhaps only developed, about the age of 20.

An ectopic testicle must be treated on its merits. When it lies in the perineum the gland may easily be put into the scrotum, for it is often attached to the tuber ischii, to the external sphincter of the anus, or to the skin by a single band of fibres which can be made tense. The subcutaneous division of this band sometimes allows of the testicle being replaced in its proper position, or, if this fails, an open operation may be performed, and the testicle can then be put into the scrotum. But when the testicle lies in the groin or in the femoral region, I do not hesitate to remove it—first, because testicles so placed are

[2] *Trans. Path. Soc.*, vol. xxxviii, 1887, p. 261.
[3] *Archives of the Middlesex Hospital*, vol. v, 1905, p. 234; and *Lancet*, 1905, ii, p. 1827.
[4] *Trans. Path. Soc.*, vol. xxxvi.

said to be always functionless; and secondly, because they are more especially liable to injury.

Acute Torsion of the Cord.

I have lately had two cases of acute torsion of the spermatic cord under my care, and in both cases the testicle was imperfectly descended. I contented myself in the first case with untwisting the cord, and was rewarded for my forbearance; but in the other case the testicle was removed and the ring sewn up. It is needless to say how much we owe to Mr. Rigby and Mr. Russell J. Howard[5] for their elucidation of these most interesting cases.

The first case was a healthy baby born on December 13th, 1906, and operated upon on March 19th, 1907, so that he was 3 months and 6 days old His mother noticed a swelling in his groin on March 17th, and sent for Dr. Gray, of Ealing, who found an imperfectly-descended left testicle with a hernia. There was a good deal of swelling and oedema of the scrotum, but a truss was applied for a short time under the belief that the symptoms were due to hernia. Its use proved too painful, and it was soon taken off again. The oedema of the scrotum had disappeared on the following day, and a painful hydrocele remained. The characters of the swelling and the symptoms led to a diagnosis of strangulated hernia, and I operated. An incision into the scrotum revealed the presence of an inflamed hydrocele, the tunica vaginalis being filled with inflammatory products; the left testicle was enlarged and prune-coloured, the spermatic cord was greatly elongated and was twisted upon itself. I untwisted the cord without much difficulty, sewed up the external abdominal ring, and cut away the walls of the hydrocele. For a few days after the operation the cord remained thickened, and it seemed as if the hydrocele had reformed, but Dr. Gray tells me that these signs soon disappeared, and when the patient passed out of his care there was no wasting of the testicle.

The mother, writing to me on May 30th, says: "His name is Francis Roger. I am glad to tell you he has grown such a bonny, healthy little boy, plump and rosy, and we have had no further trouble with him."

The second case was that of a boy, aged 20, who was admitted into St. Bartholomew's Hospital under my care on May 30th, 1907, complaining of pain and swelling in the right groin. He said that he went to bed quite well on May 28th, but that he felt a sharp pain in his right groin on getting up next morning. The pain was worse every time he coughed or took a deep breath. He examined the painful spot and found a lump. He vomited at 11.30 a.m. on May 30th, and then consulted a doctor, who ordered him a truss, which he was unable to wear because it made the pain worse.

On admission to the hospital the patient was found to have a tense oval swelling, with gradually fading edges, measuring about 3½ in. by 2 in., with its long axis running in the direction of the right inguinal canal, and the upper extremity ¾ in. above, and external to, the internal abdominal ring. The skin was natural in appearance, but the whole of the area was so tender that it was impossible to make a detailed examination. The scrotum was very small, and did not contain any testicle. A diagnosis of acute torsion of the right spermatic cord was made, and the patient was anaesthetized. An incision made in the long axis of the swelling allowed a small quantity of blood-stained serum to escape from the wound. The testicle lay in the inguinal canal just below the internal ring, and was of a dark purple colour; it was about twice its natural size. The body of the testicle lay lowest, and to the outer side, with the epididymis above, and to the inner side, with the caput, or head, lowest and innermost, and the cauda, or tail, above and outermost.

There was a half twist from left to right between the body of the testicle and the caput of the epididymis, whilst a band of tissue ran upwards from the cauda of the epididymis into the abdominal cavity. This band proved to be the mesorchium which was twisted twice upon itself from left to right; it contained the vas deferens and the spermatic artery. The tunica vaginalis was unusually large; it was formed of dense white tissue and the testicle lay loosely within it except at the point where it was attached to the mesorchium. A mass of congested omentum had recently been pushed through the internal abdominal ring just above the twisted cord. The omentum was ligatured and removed; the cord was transfixed, tied off, and divided above the point where it was twisted, and the inguinal canal was closed by Bassini's method, part of the tunica vaginalis being used to occlude the ring. The patient made a good recovery, and was discharged from the hospital cured on June 15th. I am indebted for the notes of the case to my house-surgeon, Mr. J. G. Gibb, who performed the operation, and to my dresser, Mr. K. D. Pringle.

Hydrocele.

Of all the tumours in the scrotum of children I think an ordinary hydrocele is the most often overlooked or misinterpreted. Every one is alive to the fact that children suffer from hernia, but students and practitioners alike seem to forget that hydrocele is nearly as common in children as it is in adults. Children, therefore, are constantly brought to the surgeon with a diagnosis of rupture when a little care in examination would have shown that the tumour was in reality a hydrocele. The mistake is not very excusable in a case of hydrocele of the tunica vaginalis, though it is venial if the swelling be limited to the cord, especially if it be situated at or near the inguinal canal. The error in diagnosis is unimportant if a woollen truss is worn, but serious harm may be done if determined attempts are made to replace the swelling within the abdomen, or if it be treated as a strangulated hernia because, from other causes, the child has become constipated.

In my own case I base the diagnosis very largely upon the sense of touch. A hydrocele always appears to me to be much more tense and elastic than any hernia I have ever felt. I am careful to place no reliance upon the translucency of the tumour because I know that in young children the walls of the bowel are so thin as to transmit light quite easily. I know, too, that in babies a hydrocele is not so often pear-shaped as it is in adults. It may be so tense and well defined round the testicle that it moves quite easily in the scrotum, and it is often taken, therefore, for an enlarged testicle.

Treatment, I think, should consist in simple puncture and if the hydrocele refills there need be no hesitation in performing a radical operation even in very small babies, the operation being carried out on the same lines as in adults.

II.—Russell Howard, M.S.Lond., F.R.C.S.Eng.,
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As a basis of some remarks on torsion of the testis and malignant disease of the retained testis I shall take cases that recently came under my notice. The first is that of a boy, aged 15, who had both testes retained in the inguinal canal.

Torsion of the Testis.

In 1905, the boy being then 13 years old, the right testis was replaced in the abdomen and the left was brought down and fixed in the scrotum. Both wounds healed by first intention. He was seen again on June 25th of this year. He had well-developed genitalia, and the pubic hair was well grown. The old operation scars were healthy, but neither testicle could be felt in the scrotum.

Two days before admission there had been severe pain under the right scar and some vomiting and feeling of general malaise. On admission there was tenderness under the right scar, but no lump was to be felt. It was on the right side that the testicle had been replaced in the abdomen. The patient was kept in bed without further treatment for fourteen days, and at the end of this time the only symptom was a little tenderness under the right scar. An incision was then made through the old scar and a testicle removed, which showed the usual appearance of torsion.

This case is interesting from two points of view:

1. The total disappearance of the retained testis which had been fixed in the scrotum.

2. Torsion of the testis occurring in the gland that had been replaced by operation into the abdomen, a condition that I think has not been described before.

Position of Testis.

Torsion of the testis occurs both in the fully-descended and in the imperfectly-descended testis, and in 11 cases that have recently come under my notice, 6 were in the retained testis and 5 in the fully descended.

In those cases in which the testicle was imperfectly descended, in 4 it was retained in the inguinal canal, and in the one quoted above it had been replaced in the abdomen from the inguinal canal.

Stiles has described a case of torsion in an abdominal testis, but the organ was the seat of a malignant growth.

Age.

In the 11 cases, the youngest was 4 months old and the oldest 24 years, the average age being 12 years 1 month. In 23 cases taken without selection from the literature, 17 occurred in patients before the age of 20 years, and 8 before the age of 10 years.

Taylor has reported a case at birth and Lexer a case in a man of 60 years. The condition is most common in young subjects, and therefore can be considered in this Section of the Association.

Cause.

The exciting cause of the torsion is not precisely known. On examination of 40 cases from the literature,

[5] *Lancet*, 1907, vol. 1, p. 1415.

violent exertion, sudden strain, taxis of a supposed strangulated hernia, sudden crossing of the legs, have all been given as causes, but in the majority of cases no exciting cause was in evidence. In 2 out of 11 cases the symptoms started whilst the patient was in bed and asleep, and I confess I have no theory to explain why torsion suddenly occurs.

Symptomatology.

The symptomatology of torsion, as is well known, somewhat resembles that of strangulated hernia, but the vomiting is not so persistent and distressing; the bowels react to enemata or purgatives, and flatus is passed. The temperature is frequently a little raised; in one reported case the temperature reached 101° F. If the case is watched, like the one referred to above, the symptoms usually subside in a week or a fortnight.

Physical Signs.

The testicle is swollen, and it is usually impossible to differentiate the various parts. A bloodstained hydrocele is frequently present. Suppuration, gangrene, or atrophy of the testicle may occur.

Diagnosis.

The diagnosis from acute epididymo-orchitis in both the partially and completely descended testis is often difficult, and in the past cases of torsion have usually been described as inflammatory conditions. There is complete absence of any cause for epididymo-orchitis. The patient is usually of an age when gonorrhoeal infection is unlikely, there is no urethral discharge, and no disease of the prostate or vesicula. There is an absence of any history of mumps or other infectious diseases both in the patient and in his immediate surroundings. The suddenness of the onset makes the diagnosis of tuberculosis or syphilis of the testicle unlikely, and the absence of injury excludes traumatic orchitis, although in some cases an account is given of a "strain." The relative position of the epididymis and the body may be of no value, as it is difficult to ascertain the relationships, and it must be remembered that in 1 in 20 of all testes the organ is retroverted. The most positive sign is the presence of a blood-stained effusion into the tunica vaginalis, but this will often only be discovered on exploratory incision. In a case of mine it was removed with much relief to the symptoms.

Anatomy.

I have here a series of specimens that have been recently added to the Museum of the London Hospital Medical College and some diagrams illustrating the pathological anatomy of this condition. During development the genital gland (testis) and the Wolffian duct (epididymis and vas deferens) has each its own fold of peritoneum, but the two folds join at their bases to form the common urogenital mesentery which carries the blood vessels, nerves, and lymphatics to and from the testicle and epididymis.

The fold of peritoneum to the testis—mesorchium—usually practically ceases to exist by the close attachment of the epididymis to the body of the testes; but in some cases, and especially in the partially-descended testis, this mesorchium persists as a distinct fold of serous membrane between the epididymis and the body of the testis.

The usual attachment of the common mesentery is to the whole length of the epididymis and body, except for a small portion of the globus major, and this attachment is seen in the still undescended testes of the fetus as well as in testicles retained in the inguinal canal. In some cases, however, the common urogenital mesentery, instead of extending the whole length of the epididymis, is only attached to the globus minor and the lower pole of the testis.

The blood vessels in these cases run down and enter the lower pole of the testis, which is therefore only attached by a narrow stalk to the posterior abdominal wall, in the same way that the ovary is attached by the ovarian-pelvic ligament. The testicle in this condition lies with the globus major and the hydatid of Morgagni below, and the globus minor with its vascular and serous connexions above.

It is evident that a twist of this stalk like attachment can readily occur, and on examination of the specimens the following conditions will be seen:

The body of the testicle and the epididymis are swollen and congested, and in some cases there is a swelling between the body and the epididymis showing where effusion of blood has taken place into an abnormally long mesorchium.

The twist is always intratunical—that is, it takes place in that part of the common urogenital mesentery that lies inside the tunica vaginalis, and involves the spermatic vessels and the junction of the epididymis and the vas deferens.

The number of times the cord is twisted varies, as many as four twists having been described, but in the 11 cases that have been personally examined not more than one and a half turns were seen, and in the majority of the cases only half a turn.

The structures which are twisted become thinned out and anaemic, and, when the twist is undone, markedly contrast with the congested condition of the rest of the tissues. The twist may be from without inwards or from within outwards.

It has been suggested that torsion of the testis is due to the absence of the middle part of the gubernaculum testis that fixes the testis to the bottom of the scrotum.

In two cases of torsion that I have fully dissected this band of the gubernaculum was present, and this is true also of all cases of undescended testicle that I have examined. On the other hand, the attachment of the gubernaculum was abnormal in the cases of torsion, as it did not reach the body of the testis, but was only attached to the globus minor of the epididymis. Beside this abnormal attachment of the common mesentery the tunica vaginalis is unusually voluminous.

Microscopic Examination.

One of the cases showed no trace of normal tissue, the section looking like a section of blood clot. Teacher, who examined a specimen sent him by Edington, reported that section showed necrosis of the cells, more advanced in the body than in the epididymis, and that the connective tissue was infiltrated with blood. The *Bacillus coli communis* was found in the hydrocele fluid in one case and a faecal odour was present. The case was complicated by hernia.

Result.

The result of torsion is usually atrophy of the testis affected. In one of the 11 cases this atrophy was so complete that nine months after the twist had occurred it was impossible to tell that the testis had ever been in the scrotum, and the case appeared without the history to be one of retained abdominal testis. This complete atrophy is what may be expected to occur in some cases when the microscopic section of the testis is considered, but it is not always present.

In another of the 11 cases, on examination six months after the torsion, the body of the testis was a little flabby and smaller than on the opposite side, but testicular sensation was present and there seemed no cause to fear further atrophy.

Cases of recurring torsion of the testicle are by no means uncommon, Dowden in 1905 reporting 7 cases, and several attacks may follow one another without the testis becoming completely atrophied. This condition of recurring torsion will be briefly referred to again.

In some cases gangrene and suppuration have followed torsion, but this is uncommon, and some complication, such as hernia, is usually present if it occur. That atrophy of the testis is the usual result is borne out by the well-known method of sterilizing animals by twisting the spermatic cord.

Treatment.

In considering the treatment of torsion of the spermatic cord it is important to separate torsion occurring in a partially-descended testis from that in a fully-descended one, and also to consider cases of recurring torsion separately. The partially-descended testis is in most cases functionally useless, the condition is frequently complicated by congenital hernia, and there is always a communication between the tunica vaginalis and the general peritoneal cavity, so that a potential hernia is always present. In the opinion of many surgeons such an organ should always be removed, and the internal ring closed, so that the patient is relieved from the danger of future inflammation spreading to the general peritoneum

the occurrence of malignant disease in the degenerate gland, and the risk of hernia. It is obviously useless to leave in the inguinal canal a testis that has undergone the severe lesion of torsion; and although atrophy is the usual fate of the testis, yet suppuration and gangrene may occur, and such a condition brings with it the danger of infection of the peritoneum and the onset of general suppurative peritonitis, though I have no evidence that such a condition has ever occurred.

Torsion of the partially-descended testis should therefore be treated by removal of the organ as soon as convenient. In cases with severe symptoms, the sooner removal is undertaken the sooner will the symptoms be relieved and recovery occur, but in cases with mild symptoms the operation is not one of urgency. The tunica vaginalis should be removed with the testis and the general peritoneal cavity shut off with a ligature. The internal ring is then closed with deep stitches, so as to prevent the recurrence of a hernia, or to cure one if present. Attempts have been made in cases of acute torsion to save the organ by untwisting the cord and stitching the testis into position. Davies-Colley attempted this in his case, but most of the testis sloughed, whilst in Bryant's case, although the wound healed by first intention, atrophy of the testis followed.

In the fully-descended testis the conditions are different. The testis is physiologically normal and, so far as the patient is concerned, anatomically normal. The cavity of the tunica vaginalis does not necessarily communicate with the peritoneal cavity, and hernia is uncommon. If the case is seen early and the diagnosis of torsion be made, an attempt should be made to untwist the cord. The testis is supported in the hand and first twisted from within outwards. If this increases the pain, and the testis will not stay in the new position, it should be twisted from without inwards.

The most successful case reported is that of Nash. The patient was seen one hour after the onset of the symptoms, the diagnosis was made, and on untwisting all the pain went at once. In half an hour all the swelling had disappeared, except in the cord, and next morning there were no physical signs and no pain. Partial atrophy of the testicle, however, followed. If in an early case it is not possible to untwist the cord, it may be advisable to cut down and expose the cord and untwist it. The parietal portion of the tunica vaginalis is then removed, and the testis is secured into position with a stitch or two. Whether this will give better results than the following method of treatment is doubtful. If the patient is not seen at once, untwisting will not be possible, as it cannot always be done, even when the testis has been removed from the body, and the question arises as to whether an operation should be performed or not. I have already shown that complete atrophy does not always occur after torsion, and that suppuration is not a common result. If the treatment consists of rest in bed, elevation of the testis and application of cold in the form of evaporating lead lotion, the pain subsides in the course of a day or two, and the patient is well, except that the testis is swollen and tender. The swelling gradually subsides and the testis either recovers or atrophies in part or completely. Complete atrophy is more likely to occur in children, but even if an adult atrophy is nearly complete the patient has a testicle of some kind in the scrotum. Although the testicle may be physiologically functionless, yet this condition is preferable to complete loss of the organ, and at any rate the danger and inconvenience of an operation are avoided. Considerable relief of the pain can be obtained by tapping the blood-stained hydrocele that is usually present, and this is better done with a tenotomy knife than with the more usual trocar and cannula. Morphine may also be used to relieve the pain. If, during the first days after the lesion, the temperature rises and the testis become more tender and the skin redder and more oedematous, so that suppuration is feared, the testis should be removed. Orchidectomy with radical cure is also indicated if a hernia be present.

I would therefore advise that in cases of acute torsion in the fully-descended testis which cannot be untwisted, the case should be treated expectantly, unless the symptoms are very urgent, as recovery is possible without marked atrophy, and if atrophy does occur, the patient is not worse off than if orchidectomy had been performed, but should suppuration appear imminent, the testis should be removed at once.

Treatment of Recurring Torsion.

In the treatment of this condition two different stages must be considered—the treatment of the attack and the prevention of further attacks. As regards the first consideration, the treatment is similar to that of acute torsion—that is, the cord should be untwisted if possible; and if this is not possible the case should be treated like one of acute orchitis, with rest and the application of cold or warmth. If atrophy follows, the testis, if in the inguinal canal, should be removed, but if descended into the scrotum should not be interfered with. If atrophy does not follow and a second attack shows that the testis is liable to recurrence of the condition, the treatment will depend upon the position of the testis. If this be in the inguinal canal it should be cut down upon and either removed or an attempt made to place it in the scrotum, the internal ring in either case being closed. If, on the other hand, the testis be in the scrotum, it should be exposed and the testis fixed by removal of the parietal layer of the tunica vaginalis, as in the radical cure for hydrocele. If a patent funicular process is present it should be closed and the internal ring sutured to prevent the occurrence of hernia.

Malignant Disease of the Retained Testis.

The second case that I wish to comment upon is one of sarcoma occurring in a retained testis, and, although the patient was aged 29, yet, as the primary condition was congenital, I venture to think that it is not out of place in this discussion.

The patient's right testicle had always been imperfectly descended, lying just external to the abdominal ring, and from infancy he had had recurring attacks of pain in it which I believe were due to recurring torsion. Ten months before he was seen the right testicle began to enlarge and steadily increased in size. A diagnosis of sarcoma was made, and this was confirmed by microscopical examination of the tumour after removal. I have the specimen with me here.

Besides this case I have records of two others in which malignant growth of a retained testis was preceded by attacks of acute pain coming on without cause and which in my opinion were due to torsion of the testis.

The relationship between malignant growth of the testis and imperfect descent is, I am sure, an important one to solve, and has been mentioned by the opener of this discussion. I only wish to add to his remarks a few facts that I have come across in an investigation of the cases of malignant growth of the testis that have been treated in the London Hospital in the last twenty years.

During that time 78 cases of malignant growth of the testis have been operated upon. Of these, 48 cases occurred in fully-descended testes, in 18 there was no history, and the remaining 12 occurred in retained testes. These figures show that in the London Hospital cases 14.38 per cent. of all cases of malignant disease of the testis occur in the imperfectly-descended gland. As the percentage of cases of imperfectly-descended testes to normally-descended organs is much less that 14 per cent., it appears that malignant growth is more likely to occur in the retained than in the fully-descended testis.

Of the 78 cases I have examined over 50 microscopically, including all the cases of malignant disease in the retained testes, and in all the last-mentioned cases the form of malignant disease was sarcoma. I am well aware of the difficulty of deciding the nature of a malignant growth of the testis, but there is a type of malignant disease which it is impossible to call anything but sarcoma.

Examination of every part of the tumour shows masses of small round cells invading and destroying the normal substance of the testis, and the appearance of all the sections is similar. In these cases there is never any cartilage nor any attempt at alveolar structure. Every case of malignant growth of a retained testis that I have examined belongs to this type, and I have never seen any appearance that would suggest carcinoma or one of the hybrid tumours of the testis. One case is, however, deserving of mention.

Microscopic examination showed a carcinomatous growth, the cells having a definite acinous arrangement, but the case was one of dislocation of a normally descended testis into the inguinal canal by an accident at the age of 7 years.

Amongst the 78 cases collected, only 4 occurred in children below the age of 12 years, although about 20,000 children under 12 were admitted to the hospital on the surgical side during that time. Two of these were inoperable owing to recurrences in the lumbar glands, and the nature of the growth was undecided. In the other two the tumour was removed, and on microscopical examination found to be definitely sarcomatous in nature. The oldest of these children was 4 years.

Examination of the records of children's hospitals might show a larger percentage of cases than these figures, but cases of sarcoma of the testis in infants must, I think, be rare; for in five years' work at the Great Ormond Street Hospital and the Royal Waterloo Hospital I have only seen one case of sarcoma of the testis in an infant.

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ORGANOTHERAPY.

WHILST the subject of organotherapy has received so much attention during recent years, our knowledge of the internal secretion of the testis has undergone but little change. Brown-Séquard supposed that the infirmities of old age were directly associated with diminished sexual power and a suppression of the internal secretion of the testis. At the age of 72 he inoculated himself with fresh extracts from the testes of young dogs, and was convinced that he experienced a return of vital energy which he had believed to be altogether lost, and a rejuvenance of his physical and intellectual power. He further stated that he felt ten years younger, that efficient peristalsis, which had been absent for years, returned, and that he regained power over his bladder and sphincter. From these and other experiments, he concluded that the testis had an internal secretion which had a marked action on metabolism, and which was the cause of the secondary sexual characters. Brown-Séquard's experiment was repeated by a host of other observers, who used all varieties of extract and obtained widely divergent effects. Any one who takes the trouble to examine critically this literature will soon convince himself that no reliance can be placed upon most of these clinical experiments. No attempt was made to eliminate the psychical effect, and in the few cases where the fresh extract was given, control experiments with other nucleo-albumin, such as that from the thymus gland, were never made. The same criticism applies to the ergographic experiments of Zoth, Pregl, and others; in view of the recent work of Rivers on the ergograph, they must be regarded as quite valueless. Poehl has claimed that spermine is the active substance in the testis, and in a voluminous and fantastic literature he extols it as a panacea for all disease. In reality it is probably a degradation product allied to and having the same action as choline. Up to the present time no reliable evidence is forthcoming to show that orchitic injection has any action other than that due to its nucleo-albumin, a substance, of course, which cannot be liberated into the blood stream. I do not hint that there is the slightest doubt of the existence of an internal secretion, but only that its nature is as yet quite unknown to us.

In recent years we have learnt much concerning these internal secretions. Adrenalin, a relatively simple chemical body, which is intimately associated with the sympathetic and reproductive systems, is one of these; it is soluble in water, fairly soluble in alcohol, and is not destroyed by boiling. Secretin is another of these substances; and it occurs in the epithelium cells of the duodenum, not as secretin, but as some antecedent substance. The secretin is liberated—that is, rendered soluble—by the acid of the gastric juice just as it is required by the animal economy. As other examples we may mention iodothyrin, from the thyroid gland; and castoreum, a secretion from the preputial follicles of the beaver. The latter body, as I have shown recently, has a powerful action on the heart and nervous system, closely resembling that of ergot. It is not, then, unfair to assume that fresh orchitic extract may not contain the active substance of the internal secretion; it is possible that some antecedent body first requires activating in a manner at present unknown, in just the same way that pancreatic extracts have been shown to contain no trypsin until they are activated by contamination with intestine.

The testis consists of tubules composed of a basement membrane lined with cubicle cells; next to this epithelium is a zone of larger cells which constitute the seminal gland; and, lastly, in between the tubules are certain large interstitial cells. Bouin and Ancel showed in animals that when the vas deferens was occluded, in some cases the operation was followed by degeneration and loss of seminal cells, but without a loss of sexual instinct. In other experiments they removed one testis from animals and ligatured the vas of the other, and were able to show that in this remaining testis there was a gradual atrophy of the cells of Sertoli and a compensatory hypertrophy of the interstitial cells; and, furthermore, the animals appeared to lose none of their sexual instinct. They concluded that sexual instinct was dependent upon the internal secretion from these interstitial cells. Shattock and Seligman also believed that the interstitial cells between the tubules were responsible for the internal secretion. They showed that if the vas were occluded in the young of Herdwick sheep, the animals still exhibited their full secondary characters. And in the case of fowls, if even a portion of testis was allowed to remain in the bird, the full male characteristics were developed. Bouin and Ancel, from the dissection of embryo pigs, came to the conclusion that the growth of the sexual apparatus varied directly according to the development of the interstitial glands, and that the presence or absence of these cells determined the sex. They state that the organs of generation in the female at this stage contain nothing homologous to these cells.

Having now accepted the principle of an internal secretion from the testis it is well to remember that it is probably of the same nature in all vertebrate animals. For there is the strongest reason to believe that the other internal secretions, adrenalin, secretin and iodothyrin, about which we have learnt so much in recent years, are of the same nature in all vertebrate animals, or, at all events, in all mammals. Secretin prepared from a frog's duodenum will activate the pancreas of a rabbit, dog, or cat, and man's secretin is equally effective on the frog. But the principle of an internal secretion from the genital organs is, in all probability, even wider than that of the other internal secretions with which we are acquainted. Perhaps one example of the effect of castration on invertebrate animals will make this clear.

The cirripede Peltogaster belonging to the Rhizocephala, after completing its free swimming existence, passes through a completely internal stage in the body cavity of the hermit crab *Eupagurus meticulosus*, from which it ultimately dissolves its way out through the soft skin of the abdomen. Whilst in the crab it sends out roots in all directions enclosing the gonads which, in the male, consist typically of a coiled duct with reproductive cells. This gradually brings about what may be termed parasitic castration, the effect being produced probably indirectly through the general matabolism. The effect of this parasitism, as has been shown by G. W. Smith and F. A. Potts, is to stimulate the development of the rudimentary internal ramus of the first three abdominal appendages, the extreme members of the modified series reaching a stage indistinguishable from the corresponding normal female appendages.

Amongst the infected crabs there are many in which it is impossible to assign the sex from external examination, for they are without genital apertures. There seems to be no doubt in these cases that the assumption of the secondary sexual characters of the other sex is confined to the male, and there is a complete series between unmodified crabs and those which have entirely assumed the female character according to the degree and length of castration. Sometimes at an early stage of the external parasitism ova have been observed to make their appearance in the glandular portion of the testis.

Passing now to the case of the human subject, it is well known that castration before puberty prevents the development of secondary sexual characters. The skin remains soft and white, the hair does not grow, and what is present resembles that usually seen in children. Such people grow tall, have long arms and legs, and narrow shoulders; the muscles are poorly developed and their impressions on the bone are ill-defined. The larynx does not enlarge, and there is often difficulty in pronouncing the letter "r." These people are more even tempered, but have less courage, initiative, and general intelligence than normal man.

It is, then, impossible to doubt that the testis has two distinct functions, and the changes occurring at puberty are more likely to give a measure of the presence or absence of testicular tissue than the spermatic function. Yet in spite of all this there is no evidence of value showing that orchitic extract, whether administered by the mouth or subcutaneously, supplies a deficient secretion. This, to my mind, can only mean that the active constituent of the secretion does not occur free in the testis, but like other internal secretions requires the presence of some other substance before it becomes of value. How it is activated, what is the relation of the prostate to the testis, and many other similar problems, we are at present completely ignorant.

There is one other phenomenon to which I wish especially to draw attention, namely, the close relationship which exists between the suprarenal glands and the reproductive system.

Several cases have been recorded of precocious sexual development in children associated with hypertrophy of the suprarenal glands. There is also evidence pointing to the opposite effect—that atrophy of the suprarenals is associated with absence of secondary sexual development. And in rabbits it has been clearly proved that the cortical portion of this gland undergoes hypertrophy during pregnancy. In this connexion I would like briefly to mention some experiments in which Dr. Frank Taylor and myself are engaged. We have shown that the human placenta contains a considerable amount of a substance which is soluble in water and alcohol, and is unaffected by boiling. This body has the property of powerfully constricting blood vessels, of contracting the uterine muscle, and of raising blood pressure. So plentiful is this substance that we cannot doubt that its liberation, when the placenta reaches a certain stage of development, determines the onset of labour. So far as we have been able to determine this body has all the properties of adrenalin, and I only mention it now as an additional example of the very close connexion which exists between the suprarenal glands and the reproductive organs. The relation of the suprarenal cortex to the growth of the body, and to the development of puberty and sexual maturity, is of the closest description. But the nature of the relationship for the present remains hidden.

DISCUSSION.

Mr. McAdam Eccles (London) considered the series of papers had put forward much which was most suggestive both from a practical and theoretical point of view. As to Mr. Power's question concerning the proper method of dealing with cases in which there was an imperfect descent and imperfect development of *both* testes, Professor Dixon's remarks appeared to clear the way for an answer. The presence of "interstitial cells"—those cells which may be the origin of an "internal" testicular secretion—was, in his experience of a large number of specimens, very well-marked. It was also a fact that in the developing testis within the abdomen, these peculiar cells were also found in considerable numbers. Then, again, in those mammals in which the testes are generally retained within the abdomen, it was significant to note that during periods of sexual activity, such abdominal testes not infrequently descended into the scrotum, and just before this transition the interstitial cells became greatly increased in number, and that they disappeared after these periods of activity. It was on account of the presence of their interstitial cells that he believed no imperfectly-descended testis should ever be removed, except it be diseased. Further, the results of scrotal orchidopexy in his experience, both of his own cases and those of others, had not been by any means encouraging. Neither did he believe that these fixed testes remained where they were placed, or that they enlarged even if they did remain. If, therefore, a testis was not to be removed and orchidopexy was not so satisfactory as one would hope, where should the testis be preserved? He believed within the abdomen. If it was carefully replaced into the extraperitoneal tissue, and *tethered* there, neither torsion or any other untoward result would occur, but the boy would retain an organ which might become functional in every way. He agreed with Mr. Russell Howard that in the majority of cases of torsion of an imperfectly-descended testis, there was present that suggestive anatomical condition of a narrow general mesorchium attached to the globus minor pole of the epididymis. The relation between the imperfect descent of the testis and the suprarenal body was a most interesting one. Male cretins seldom, if ever, had their testes in the scrotum, and in some cases, where their suprarenal organs had been examined, these structures had been found small and imperfectly developed. Here there was a province for further investigation which might throw some light on the cause of the frequent co-existence of imperfect descent and imperfect development.

Mr. G. H. Edington (Glasgow) said: Tuberculosis of the processus vaginalis does not always declare itself by outward signs. In the first case which came under my notice the testicle lay in the inguinal canal, and the tuberculous condition was recognized only when the processus had been opened in the course of operation. In another case the sign which drew attention to the condition was the presence of a painless nodular swelling above the level of either testicle and apparently situated on the spermatic cord. In one of these cases the swelling had been mistaken for hernia. Operation showed the nature of the swelling. The sac on one side was excised; the other was not operated upon, and the nodular condition disappeared. In a third case both sacs were affected, but the condition disappeared spontaneously. In a fourth case the condition had been mistaken for tuberculous epididymitis, and the true nature of the case was discovered on opening the processus. In none of these cases were there signs of tuberculous peritonitis, although it probably existed in all. As for tuberculous nodule in the scrotal tissues, in a case in my experience of this nature there was a tuberculous gland sinus in the inguinal region and a hard swelling, apparently of the testicle. Further examination showed the scar of an anal abscess, also that the scrotal swelling was distinct from and lying to the outer side of the testicle. The nodule had softened and broken down. It was probably a lymphatic infection. Whether it was secondary to the anal abscess or to the inguinal adenitis was not clear; in either case it was not in the usual course of the lymphatics. In respect of acute vaginalitis, shortly after observing a case of strangulation of the testicle, due to torsion of a pedunculated mesorchium,[1] I saw a case with great redness and thickening of the skin of one side of the scrotum in an infant of 1 month. It had certainly been present for five days, but absolute duration was not known. The tunica was opened and pus evacuated. A membranous exudation was present on the serosa over the testicle, resembling the membrane within an egg-shell. Some of this was removed for examination, and Dr. Teacher reported that it contained diplococci. About a year later I saw another case of a similar nature in an infant of 3 months. In this case the swelling, which was of three days' duration, extended up along the spermatic cord. The tunica contained pus, and in addition to membranous exudation there was a sloughy condition of the serosa to the inner side of the globus major. No bacteriological examination was made. I do not think that the position of the testicle, on the external oblique aponeurosis above and to the outer side of the external inguinal ring, is sufficiently recognized. Since reading Mr. Corner's paper[2] I have examined carefully to determine this point. While not invariably in this position, the frequency is very great. I have not been able to convince myself of the reason for the organ assuming this position; in one case in which the position was most distinct, there were gubernacular bands noted passing to the pubes. In one case associated with strangulated hernia the bowel which was tightly caught at the external ring had ascended in the fashion with which one is so familiar in femoral hernia. Abnormal relationship of testicle to processus vaginalis is sometimes seen in partially descended testicle, and also abnormal arrangement of the component parts of the organ. As an example of this I may mention a case of Sir Hector Cameron's, where the epididymis was attached to the *lower* pole of the testis. The spermatic vessels reached the organ above the attachment of the epididymis. The testicle was in the inguinal canal and had been associated with hernia, for strangulation of which herniotomy had been performed some months previously.

[1] *Lancet*, June 25th, 1904.
[2] British Medical Journal, June 4th, 1904.

Mr. P. Lockhart Mummery (London) said that from his own experience of swollen testicles in very young children he differed from Mr. Power. Mr. Power attributed almost all enlargements of the testicle in children primarily to syphilis, but he himself believed that most of them were primarily tuberculous. In those cases which he had seen there had not been sufficient grounds to warrant a diagnosis of syphilis, and microscopical evidence when it was forthcoming was almost invariably in favour of tubercle. The condition in most cases was primarily tuberculous, and he believed that undoubted syphilitic lesions of the testicle in children were of rare occurrence. Children were too frequently branded syphilitics simply because the mother had had a miscarriage or because there was a history of snuffles. Snuffles in an infant was in the vast majority of cases due to adenoid growths in the naso-pharynx, and not to syphilitic catarrh of the mucosa. He could not agree with Mr. Power's advice that removal of the testicle was the right and best treatment for undescended testicle. It was not good surgery to remove such an important organ as the testicle simply because its abnormal position might at some future date result in a traumatic lesion, or that its disease, if such should occur, might be more serious on account of that position. If the testicle could not be replaced by operation or otherwise it should be left alone; it should not be removed unless it was causing serious inconvenience to the child. No one would argue that it was right to remove both testicles where both were undescended, and he believed it was wrong to remove even one unless it was causing actual harm. One of the reasons usually brought forward for the removal of an undescended testicle was that it might be the site of cancer at a later date. The cases in which this had been known to occur were few, and it was not in any sense a serious argument. His experience of orchidopexy was very limited as compared with that of Mr. Power, but he had been favourably impressed with its results in suitable cases. In those cases where the testicle was retained in the canal he had seen very good results from the operation. The structure which chiefly prevented the testicle from being brought down was the peritoneum, and he had found that if the testicle was thoroughly freed, and especially if the peritoneum attached to it was freely divided, the vas deferens seldom prevented its being brought down. The blood supply of the vas seemed to be sufficient to retain the integrity of the testicle, and if all the other structures were freely divided there was seldom any serious difficulty in getting the testicle into the scrotum. He had made a practice of stitching the tunica vaginalis to the bottom of the scrotum by a single silk suture and of partially closing the external abdominal ring by a catgut suture to prevent the testicle from being again drawn up. With regard to the points specially raised by Mr. Power in opening the discussion, he would recommend orchidopexy in cases where the testicle was at or near the external ring, and if no improvement had followed a three months' trial of gentle massage, with the object of getting the testicle to come down. In the case where both testicles were retained orchidopexy should be performed on one side, and if unsuccessful the testicles should be left alone. With regard to the most suitable time for operating in cases of undescended testicle, he believed orchidopexy, to be successful, should be performed at as early an age as possible. It was not for many reasons desirable to operate upon children under 6 months of age, but the operation might be performed as soon as possible after that age, providing the child was well and in good condition. The success of the operation greatly depended upon operating before fixation had occurred and the structures comprising the cord became too inelastic to stretch.

Mr. Edred M. Corner (London) thought Mr. Power had much exaggerated the preparative syphilitic changes in the incidence of tuberculosis of the testicle. He (Mr. Corner) had had the opportunity of seeing many cases over which there had been an animated discussion as to whether the disease present was syphilitic, tuberculous, or both; and in a number of these cases it had been possible to examine the glands, either after removal by operation or after death. And in none had there been found any evidences of syphilis, tuberculosis being often found in a curious form, infiltrating the body of the testicle, the testis. Still more curious was the problem of why a disease should pick out and affect an immature gland. Diseases in general affected mature and functional organs. It was an indication that, as had been urged by him (British Medical Journal, June 4th, 1904), the testicles of the young though immature for producing spermatozoa were functional, probably producing an internal secretion which ministered to the production of the male characters. Continuing, he said Mr. Power had asked if there was any evidence that tuberculous or syphilitic diseases ended in atrophy of the testicle. The speaker would expand the question, and for "tuberculous or syphilitic disease" substitute the phrase "inflammation from whatever cause." There was no doubt that the true answer was that inflammation did inhibit the future growth and maturation of the testicle, according to the degree of the inflammation present and the stage of maturation to which the testicle had attained at the time when attacked by the inflammation. If the testicles of adults were examined it would be found that they varied in size far more than did the individuals to whom they belonged, the great variety being produced in all probability by various factors which interfered with the growth and maturation of the glands. With regard to the solid tumours of testicle, there was a very great and very important difference between the pathologists and clinicians. The former, the pathologists, had the greatest difficulty in differentiating the tumours after prolonged and special expert examinations; whilst, it must be confessed, the latter, the clinicians, had not such opportunities, and could not distinguish one from another, such as a sarcoma from a carcinoma. Stress should be laid on the benign or malignant characters of the tumours, their minute differentiation being, in the present state of knowledge, mere pedantry. Besides, there was another point. Any tumour growing in the immature testicle of a child would surely prevent the proper growth and maturation of that organ. And, therefore, both tumour and testicle should be removed as soon as possible. Torsion of the testicle was undoubtedly a very great deal more frequent than was at present thought. It could be found not infrequently in cases in which the patients complained of attacks of pain, particularly in an imperfectly descended testicle. He had no wish to convey the idea that all attacks of pain were due to torsion of the testicle. But there was no doubt whatever that attacks of pain formed a most significant symptom in cases of imperfectly-descended testicle. As Mr. Power had urged, orchidopexy, the operation of suturing the testicle to the bottom of the scrotum, was very frequently a complete failure. In the first place, it was uncommon for it to remain there, and secondly, it did not grow properly, but dwindled if it had already attained any size at the time of operation. If surgeons would see their cases of orchidopexy a few years instead of a few days or weeks after operation, they would discard this operation in about 75 per cent. or more of the cases in which they now did it. If, as the speaker had urged, the child's testicles were not functionless but useful to the growth of the body, it was wrong to excise them—orchidectomy. Therefore, there was a choice of leaving imperfectly-descended testicles alone or of replacing them in the abdomen—the operation of orchidocoelioplasty. Personally, he believed that an imperfectly-descended testicle could be left alone and watched, so long as it did not become tender, inflamed, the subject of attacks of pain, hardened, or was unaccompanied by a hernia, up to the age of 5, 6, or 7. By that time one at least of these occurrences would have taken place, and operation should then be undertaken without further delay. Or, if the child had reached the age mentioned without any complication, he had better be operated on and not left alone.

Mr. W. F. Brook (Swansea) drew attention to primary sarcoma of the tunica vaginalis, or rather its fibrous layer. He believed it to be an extremely rare condition, and asked Mr. Howard whether he could say in how many of the 78 cases of malignant disease of testicles in infants to which he had referred there was evidence of origin in the tunica vaginalis. He had met with one such case in a child of 4. It was of great interest and importance from the point of view of diagnosis. When first seen the enlargement, which had only been noticed for a fortnight, presented four distinct painless and movable tumours in the scrotum, and it was impossible to say which was the testicle. The probable diagnosis was that of tuberculosis of the tunica. In the week's interval which elapsed

before operation the four tumours had become fused together into one. The specimen showed that the tumour was caused by enormous general, but unequal, thickening of the tunica, the testicle not being involved. The microscope proved it to be round-celled sarcoma.

Dr. P. G. LEE (Cork) said that although Cork was a great centre for tuberculous diseases, he never saw a case of tuberculous testicle in children. County Cork was very fairly free from syphilis; therefore he thought that possibly some syphilitic state existed in the cases mentioned, and that the tuberculous state of the processus vaginalis mentioned might have been tuberculosis grafted on the existing condition.

Mr. A. H. TUBBY (London) said he would confine his remarks to one point raised by Mr. D'Arcy Power, namely, as to the association of tuberculous orchitis and spinal caries in children. He had not heard of, nor could he recall from his practice, any such case. But in the instance of adults, he could clearly remember at this date at least four cases in which tuberculous orchitis and caries coexisted, the spinal disease preceding the orchitis.

SOME MALFORMATIONS OF THE PENIS.

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THE following paper is based on a study of 54 cases of malformation of the penis observed during the past six years. It does not deal with the question of treatment—in the majority of the cases no treatment was called for—but is mainly concerned with the details of the various types of malformation which the cases represent. A reference to the development of the penile portion of the male urethra is a necessary preliminary to the consideration of these malformations.

The penis is developed from an elevation, called the "genital eminence," which appears in the fifth or sixth week of intrauterine life "in front of and within the orifice of the cloaca."[1] The elevation is covered with epiblast, which is thickened below so as to form a solid cord of epithelium—the "urethral septum"—running from the urogenital portion of the cloaca forwards along the whole length of the under surface of the genital eminence. This cord is subsequently hollowed to form a groove or gutter, which remains open till the eleventh or twelfth week. The lips of the groove unite thereafter, and convert it into a canal—penile or spongy urethra—which is complete about the fifteenth week. The line of union of the lips of the groove is shown on the under surface of the penis by a ridge—the raphe. The ridge is usually straight and median, and is continuous behind with that on the scrotum and perineum. It is more prominent in infancy and early childhood than later; but in the adult it is often deeply pigmented.

CLASSIFICATION.

On account of several of the malformations which I am about to mention having occurred in the same patient, I have experienced some difficulty in classifying my cases. The following scheme seems to me to be the most suitable that I can adopt:

Group I.—Hypospadias: Class A, of glans, (1) gutter-like opening, 8 cases; (2) gutter-like opening with meatal dimple in front of it, 4 cases; (3) grooved glans, with round or transversely oval urethral opening at corona, 9 cases. Class B, penile hypospadias, 6 cases. Class C, perineal hypospadias, 1 case.

Group II.—Condition allied to hypospadias, 4 cases.

Group III.—Malformation of raphe alone, 10 cases.

Group IV.—Torsion of penis, 12 cases.

GROUP I.—HYPOSPADIAS.

When union of the lips of the urogenital cleft and furrow is incomplete, or fails entirely, the condition of hypospadias results; and the degree of hypospadias varies inversely with the completeness of the union.

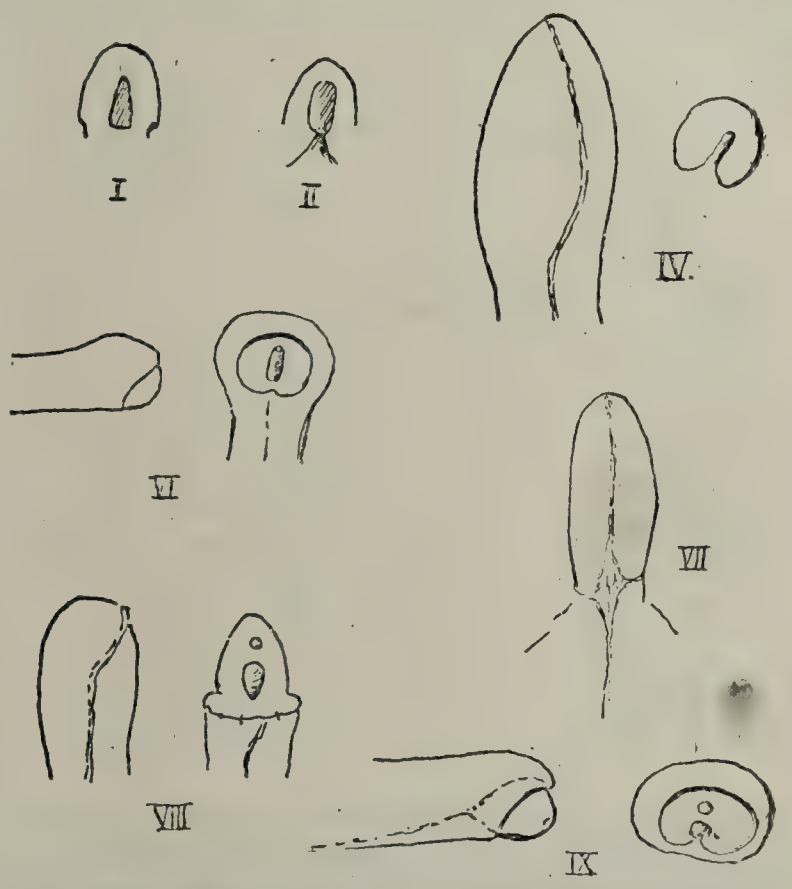
In hypospadic cases there is not only an incomplete closure of the urethral furrow, but there is very constantly a deficiency in the length of the structures on the under surface of the penis. The result of this deficiency is that the penis is curved or bent downwards, and it may be mentioned, in passing, that this curving of the organ demands special measures in the surgical treatment of the malformation. Another feature, the frequent presence of which strikes the observer, is the flattening and broadening of the glans. This was by no means constantly present in my cases; in many of them the glans was in the form of a narrow cone. Again, the prepuce is usually shaped like a hood, open below, but in mild degrees of hypospadias I have found the prepuce covering the glans completely, even on the under surface, and phimosis actually may exist.

I have arranged the cases belonging to Group I into classes, according to the degree of hypospadias present. By far the larger number of the cases presented deficiency in the floor of the terminal part of the urethra. These form Class A, with its subdivisions.

Class A. Glandular Hypospadias.—1. Gutter-like opening on under surface of glans.

CASE I. J. McA., aged 3 months, October 26th, 1905.—Very tight phimosis; skin on under surface of penis very short. Partial circumcision was performed by an oblique cut, which left fraenal region untouched. Urethral opening situated just in front of corona, and is prolonged forwards on under surface of glans as a longitudinally placed trench. (See Fig.)

CASE II. D. R., aged 13 weeks, January 26th, 1906.—Phimosis; induration of prepuce; skin on under surface of penis very



short. No curving of penis; but urethral opening is in form of longitudinal furrow on under surface of glans. Behind actual orifice is fraenum. Circumcision, cutting very obliquely so as to save skin on under surface. The arteries were adherent to skin,* save in neighbourhood of dorsal vein, where one spouting vessel was found lying in exposed subcutaneous tissue. (See Fig.)

CASE III. R. F., aged 4 months, January 25th, 1906.—Condition of urethra same as in Case II. There were firm adhesions between prepuce and glans, but no phimosis.

CASE IV. M. K., aged 10 weeks, December 17th, 1903.—There was slight deviation of raphe to left, in front of middle portion of penis. Circumcision was performed. Urethral opening was in form of groove with smooth floor, extended from normal position of meatus back to corona; its hinder portion was to right of middle line. (See Fig.)

CASE IVa. A. Y., aged 13 weeks, December 8th, 1906.—Penis very short on under surface, and is bent, as well as twisted to left. Tight phimosis. Large hydrocele, left. Raphe seems to bifurcate at root of penis; left division only can be followed. It is sinuous towards left side of penis, and ends in a bulbous fashion on dorsum of prepuce. Prepuce was slit along dorsum, and trimmed. The meatus was gutter-like, very wide, with urethra at posterior end on glans. Fraenum distinct, and on under surface of urethral opening.

CASE V. J. Y., aged 3 months, May 20th, 1907.—Adherent prepuce completely covering glans. Raphe slightly thickened at root of penis, further forward ran to left, and ended on

* In performing circumcision in cases where posthitic or post-posthitic induration of the prepuce exists, I have frequently found the arteries adherent to the skin.

dorsum of prepuce. No fraenum, gutter meatus extending back to edge of glans, where urethra opened. Floor of urethra membranous in terminal eighth of an inch.

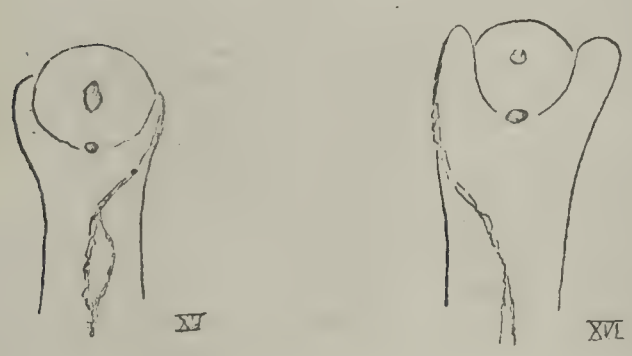
CASE VI. J. G., aged 6 years, October 18th, 1905.—Patient operated on by Sir Hector Cameron for acquired right inguinal hernia. Preputial orifice large, and prepuce slightly hooded. Glans bent with point downwards, and meatus in form of long oval. Fraenum stopped short of meatus. Raphe normal in course, but faintly marked. (See Fig)

CASE VII. S. A., aged 6 years, March 5th, 1906.—Phimosis and adherent prepuce. Raphe very broad at root of penis and showed cruciform arrangement. Gutter meatus. (See Fig.)

2. The cases in this class differ from those just described in that the groove on the under surface of the glans is divided by a transverse ridge into anterior and posterior parts. The anterior part corresponds to the anatomical meatus, and it forms a small portion of the groove. The posterior part on being traced backwards leads into the urethra.

CASE VIII. D. W., aged 4 weeks, September 21st, 1903.—Tight phimosis. Raphe deviated to left, beginning about mid-penis, and terminated on dorsum of prepuce, bifurcating in middle line near preputial orifice. After circumcision, urethra seen to open on under surface of glans in longitudinal oval which was very wide. Further forward, extremity of glans showed a small dimple. (See Fig.)

CASE IX. E. M., aged 7 weeks, November 9th, 1903.—Hooded prepuce. On distal portion of penis raphe deviated slightly to right, gave off a branch to right side of dorsum of penis



and terminated in normally-formed fraenum. Glans bent downwards slightly. Near its extremity was urethral orifice, with meatal dimple just in front. On left lip of urethral orifice was small pit, which admitted wire of hypodermic needle a distance of 1.5 c.cm. Perineo-scrotal raphe normal. Forearms fixed in pronation, apparently from radio-ulnar synostosis. Flexion and extension of elbow good. Hands normal. (See Fig.)

CASE X. D. McD., aged 5 months, May 29th, 1905.—Phimosis, with telescoping of penile integument over prepuce. Circumcision. Urethral orifice on under surface of glans, separated from meatal dimple in front by transverse ridge. Raphe normal.

CASE XI. J. S., aged 2 months, October 26th, 1905.—Very tight phimosis. After circumcision urethral opening seen to be gutter-like, and separated from meatal dimple by slight transverse ridge.

3. In the following series of cases the urethral orifice is situated behind the glans. The cases illustrate the two forms of orifice which are met with—namely, rounded and transversely oval.

CASE XII. C. D., aged 7 years, July 11th, 1899.—Hooded prepuce. From root of penis raphe quickly swept up on to right side, where it continued till near prepuce, on right side of which it bifurcated into dorsal and ventral portions. The ventral coursed directly inwards to end at urethral opening; the dorsal reached the same point after running forwards and downwards along folded outer surface of prepuce. Glans ventrally flexed. Meatal depression tapered posteriorly and was very slightly overhung by an elevation which separated it from urethral opening. This opening was originally narrow, and was slit on account of difficulty in micturition. Probe introduced into urethra showed the tube to occupy normal median position.

CASE XIII. J. G., aged 1 year, July 1st, 1904.—Phimosis. Prepuce adherent to glans and overlapped by fold of redundant penile skin. On drawing back this fold, raphe found to course upwards over left side on to dorsum. Its ultimate destination was undemonstrable. On stripping back prepuce, urethral orifice seen to be wide transverse slit just behind glans. Meatal dimple present in usual situation. (See Fig.)

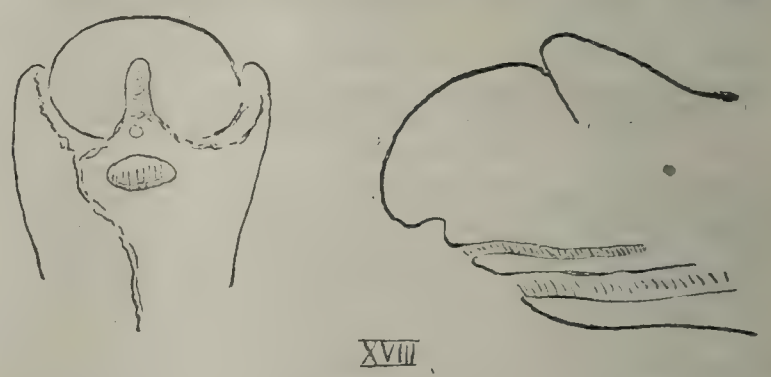
CASE XIV. J. I., aged 1 year 3 months, May 12th, 1904.—Hooded prepuce, which was distinctly bifid, approaching to epispadias. Raphe not noted. Urethral orifice small, rounded, and situated behind a groove on under surface of glans. (See Fig.)

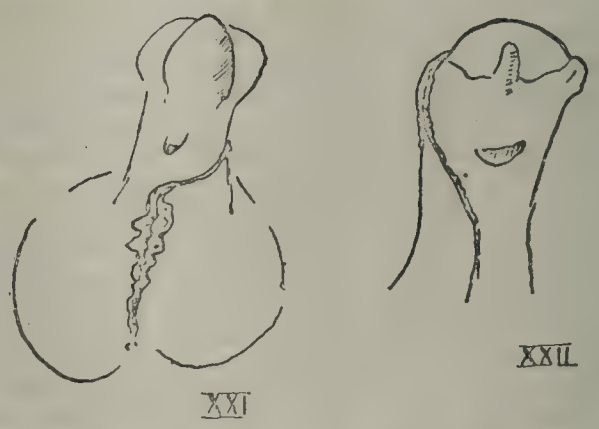
CASE XV.—W. R., aged 2 years 3 months, July 4th, 1904.—Hooded prepuce. Raphe normal in perineum and scrotum, broadened at root of penis, then swept to left side of prepuce. Meatal dimple on glans. Tight urethral opening required dilatation. (See Fig.)

CASE XVI. D. F., aged 3 months, December 19th, 1904.—Hooded prepuce. Raphe deviated to right in distal portion of penis. Urethral orifice small and rounded. Meatal dimple at anterior extremity of glans. (See Fig.)

CASE XVII. J. McC., aged 10 years, October 16th, 1905.—Raphe normal up to near glans, where it turns sharply to left. Urethral orifice transversely oval, situated at hinder end of groove on under surface of glans.

CASE XVIII. A. H., aged 27 years, May 27th, 1903.—Hooded prepuce. Urethral orifice transversely oval and widely open.





In front of this was a rounded opening, which admitted a No. 0 bougie a distance of 2.5 cm., and which ran along roof of urethra. In front of this opening was meatal dimple. Raphe ran to right of urethral orifice, where it bifurcated. One division turned in to reach meatal dimple, the other ran on to dorsum of prepuce. From dimple pigmented ridge ran outwards on prepuce and turned upwards on to dorsum, where terminated by dividing up irregularly. (See Fig.)

CASE XIX. R. G., aged 43 years, August 2nd, 1905.—No prepuce. Raphe coursed to left in last inch or so of penis. Termination not noted. Wide transverse urethral opening at hinder end of groove. Patient stated that meatus was originally "cribriform" and had been slit.

CASE XX. W. M., aged 8 years, December 9th, 1901.—Hooded prepuce. Well-marked meatal dimple on glans. Urethral opening, not strictured, opened $\frac{1}{8}$ in. behind corona and slightly to left. Raphe, broad, ran to right of glans, ending on dorsum of prepuce.

Class B. Penile Hypospadias.—In this class the deficiency in the urethral floor has occurred in a greater degree, so that the urethra opens at some point on the under surface of the penis. In one of the cases the opening was transversely oval; in another there was a partial closing of the groove by a bridge.

CASE XXI. P. M., aged 1 year, August 21st, 1905.—Penis curved considerably. Glans conical. Urethra opened by longitudinal orifice half-way down penis. Raphe double in anterior part of scrotum, and turned to left at root of penis. (See Fig.)

CASE XXII. H. B., aged 5 weeks, February 19th, 1906.—Urethral orifice transversely oval, situated at middle of penis, and showed reddened mucous membrane. Slight furrow on under

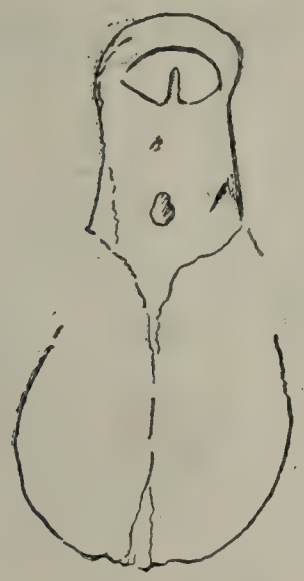
surface of glans. Raphe passed by the right of urethral orifice and on to dorsum of prepuce. (See Fig)

Case xxiii.—Hooded prepuce. Meatal dimple on glans. Urethral opening longitudinally oval, near root of penis. Raphe bifurcated at root of penis; from right branch there was a continuation forwards to right side of prepuce. (See Fig)

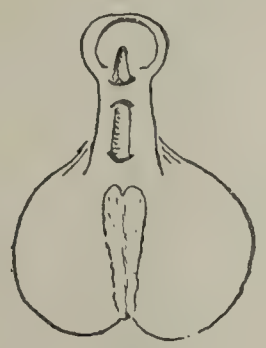
Case xxiv. S. Y., aged 10 months, June 16th, 1902.—Urethral opening on body of penis, very wide transversely. Raphe divided at root of penis, branches meeting on dorsum. From left branch ridge passed forwards on to dorsum of prepuce. Right inguinal hernia.

Case xxv. J. S., aged 9 years, June 12th, 1906.—Hooded prepuce. Almost no urethral groove on penis, a ridge rather. The urethral opening, which was small, opened on the ridge a little anterior to peno-scrotal angle. Behind ridge was depression between it and front of scrotum. Penis much bent downwards. Testicles incompletely descended.

Case xxvi. Infant, aged 1 day, January 6th, 1902.—Prepuce, not very prominent hood. Urethra opened, a little in front of the slightly bifid scrotum, on to groove. Further forwards groove closed over, and opened again just behind glans. Behind posterior opening raphe very broad and lip like. Anus imperforate. (See Fig.)



XXIII



XXVI

XXVIII

XXX

Class C. Perineal Hypospadias.

Case xxvii. Baby C., aged 2 months, August 18th, 1904.—Doctor and parents in doubt as to sex. Large hooded prepuce. Hypospadiac penis, with ridge on under surface running back between the two halves of the bifid scrotum to urethral opening, which was not quite so far back as perineum.

Group II.—Conditions Allied to Hypospadias.

I have placed in this group cases in which there is a deficiency in length of the under surface of the penis, but in which the union of the lips of the urethral furrow is complete.

Case xxviii. J. Y., aged 2 years, August 24th, 1905.—Hooded prepuce. Meatus normal, but fraenum small. Under surface of penis very short, and raphe deviated to the left and was lost on the dorsum of the hooded prepuce. (See Fig.)

Case xxix H. G., aged 3 years, August 24th, 1903 —Hooded prepuce. Meatus normal in shape and situation. Slight curving downwards of penis.

Case xxx. J. M., aged 3 years, January 8th, 1906.—Complaint of micturating against left groin. Slight phimosis. Penis distinctly curved downwards. Raphe became Y-shaped in distal portion of penis, its two limbs terminating on dorsum of prepuce. Upper portion of prepuce cut away obliquely, when it was seen that there was some torsion, so that hinder end of meatus lay to left of middle line. Under surface of glans shorter than normal. (See Fig.)

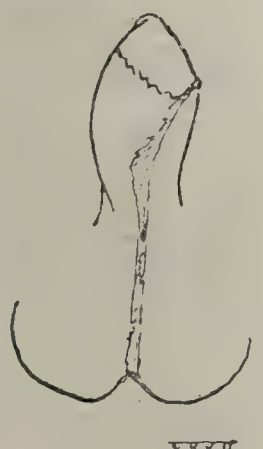
Case xxxi. Aged 20 years, January 3rd, 1901.—Penis small, with glans inclined downwards. About ½ in. from preputial orifice raphe bifurcated, one limb passing up on each side of prepuce and disappearing. Left testicle in inguinal canal, right in scrotum, but soft and of size of large hazel nut.

Group III.—Malformation of Raphe only.

It will have been noticed that in many of the cases noted above mention is made of the devious course of the raphe. This group consists of cases in which deviation of the raphe is not accompanied by any other malformation of the penis.

Case xxxii. R. M., aged 4 months, March 5th, 1903.—There was a large right inguinal hernia. Meatus very small, and history of great straining on micturition. Raphe broad at root of penis, further forward deviated towards the left. Almost half-way along penis raphe bifurcated; left division terminated on dorsum of this part of penis; right was tortuous, and terminated on dorsum at orifice of prepuce. (See Fig.)

Case xxxiii. D. D., aged 11 months, October 5th, 1903 — Large right inguinal hernia noticed at age of 4 weeks. Glans almost entirely uncovered, which condition said to have been observed at birth. Raphe, not at all broad, deviated on to



XXXII

XXXIII

XXXIV

XXXV

XXXVI

right side of penis, and, returning, ended in normal situation at fraenum. (See Fig.)

Case xxxiv. W. T., aged 4½ years, October 26th, 1905.—Tight phimosis. Raphe tended to cruciform arrangement at root of penis. (See Fig.)

Case xxxv. J. C., aged 6 months, January 25th, 1906.—Very marked phimosis, preputial orifice pinhole. Penile raphe bifurcated at root, the two limbs coming together again near end of organ, enclosing lenticular area of skin. Scrotal raphe broad, consisting of two ridges with furrow between. (See Fig.)

Case xxxvi. W. W., aged 2 months, January 31st, 1901.—Phimosis, and large inguinal hernia occupied right scrotum. Prepuce very short in region of fraenum. Raphe normal in scrotum, and also for a short distance in penis. Not far from root of penis raphe sent branch outwards and forwards to left. After following an irregular course, this branch rejoined main ridge in middle line. Area of skin enclosed, glazed and cicatricial-like. Near preputial orifice raphe turned sharply to left and lost sight of. Raphe and branch well pigmented. (See Fig.)

Case xxxvii. J. W., aged 1 year 1 month, August 31st, 1905.—Arrangement of raphe closely resembled that in Case xxxv; area of enclosed skin glazed and scar-like. (See Fig.)

Case xxxviii. January 29th, 1900.—Phimosis. Raphe left under surface of penis towards left side and traced as far as preputial orifice, on left side of which terminated. Just before terminating it was much broadened, irregular, and patchy. (See Fig.)

Case xxxix. Adult, January, 1900.—Raphe enclosed at root of penis, lenticular area of apparently normal skin.

Case xl. W. A., aged 11 years 11 months, February 3rd, 1900.—Difficulty in emptying bladder, which distended. No phimosis. On passing catheter hitched somewhat when half-way along penis. Corresponding to this spot raphe irregular,

having broadened out to form area covered with irregular papillae of brownish colour. Subsequent examination failed to confirm presence of stricture. (See Fig.)

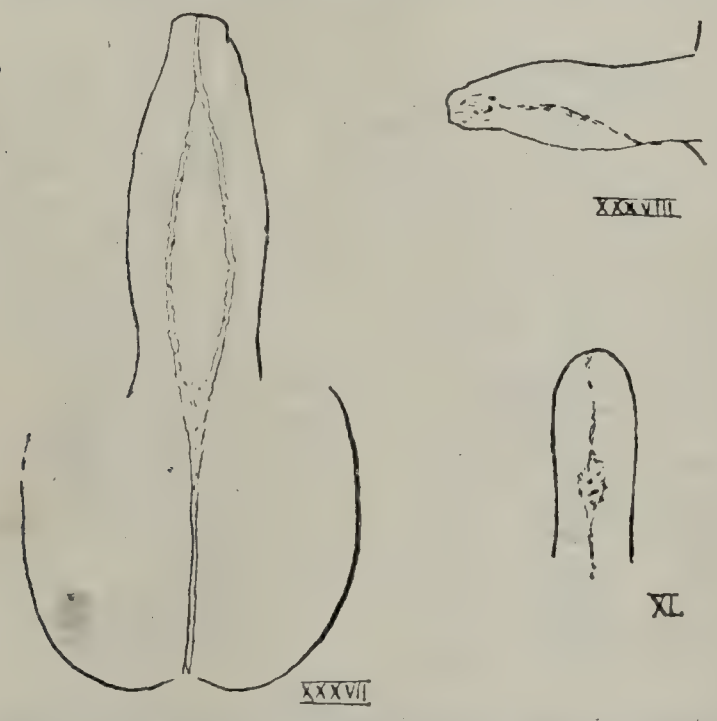
CASE XLI. W. S., aged 22 years, April 4th, 1902.—Small crater-like ulcer near fraenum. Had commenced five years previously as small "blister," which had ruptured and had since continued to discharge. Condition had probably been a small cyst of raphe. Raphe in course along penis ran to right side, and then back to middle line.

GROUP IV.—TORSION OF PENIS.

The following cases are examples of a condition of torsion, by which I mean that the fraenum is to one side of the middle line, and the meatus placed obliquely, with its hinder end corresponding to the lateral position of the fraenum. In none of the cases is there any tendency to hypospadias. The cause of the deviation is not clear. It may be due to asymmetry in the lips of the urethral groove. In one or two of the cases a hernia or hydrocele was present and the hinder end of the meatus was directed to the opposite side. In the majority of the cases, however, neither of those conditions was present; and in these cases the deviation was quite as well marked as in the former.

CASE XLII. T. H., aged 2 years, October 8th, 1903.—Phimosis. No deformity of raphe observed. After glans exposed, fraenum seen lying to left of middle line, hinder end of meatus conforming. (See Fig.)

CASE XLIII. R. S., aged 2 months, December 24th, 1903.—Prepuce followed contour of glans, in front of which it expanded like a rosette. Raphe sinuous, crossing from left of middle line to right, on which side it apparently ended. Hinder end of meatus to left. (See Fig.)



CASE XLIV. J. D., aged 3 years, 1904.—Prepuce widely open. Raphe curved sharply to left at anterior end, meatus conforming. No hypospadias, but tendency to curvature of penis. Large right inguinal hernia. (See Fig.)

CASE XLV. A. S., aged 3 years, February 8th, 1904.—Pain on micturition. Enuresis occasionally. Wide preputial orifice in form of oblique slit running backwards and to left. Raphe very irregular at peno-scrotal junction, where skin pitted. Half-way along penis raphe bifurcated; right half ended on dorsum; left ran forwards and bifurcated near preputial orifice, one portion ending in fraenum, the other running transversely on to dorsum, where it ended independently. Hinder end of meatus directed to left. (See Fig.)

CASE XLVI. J. C., aged 2 years 5 months, April 28th, 1904.—Complaint of bilateral inguinal hernia. No hernia on examination, and external inguinal rings not enlarged. Raphe sinuous to left, and then to right. Hinder end of meatus directed to right. (See Fig.)

CASE XLVII. W. M., aged 6 weeks, February 18th, 1904.—Phimosis, prepuce short and infiltrated. On slitting prepuce meatus seen with posterior end to left. Raphe not noted.

CASE XLVIII. R. C., aged 10 weeks, July 4th, 1904.—Large hydrocele on left side. Raphe sinuous, first to left, then to right. Meatus practically transverse, hinder end to right. (See Fig.)

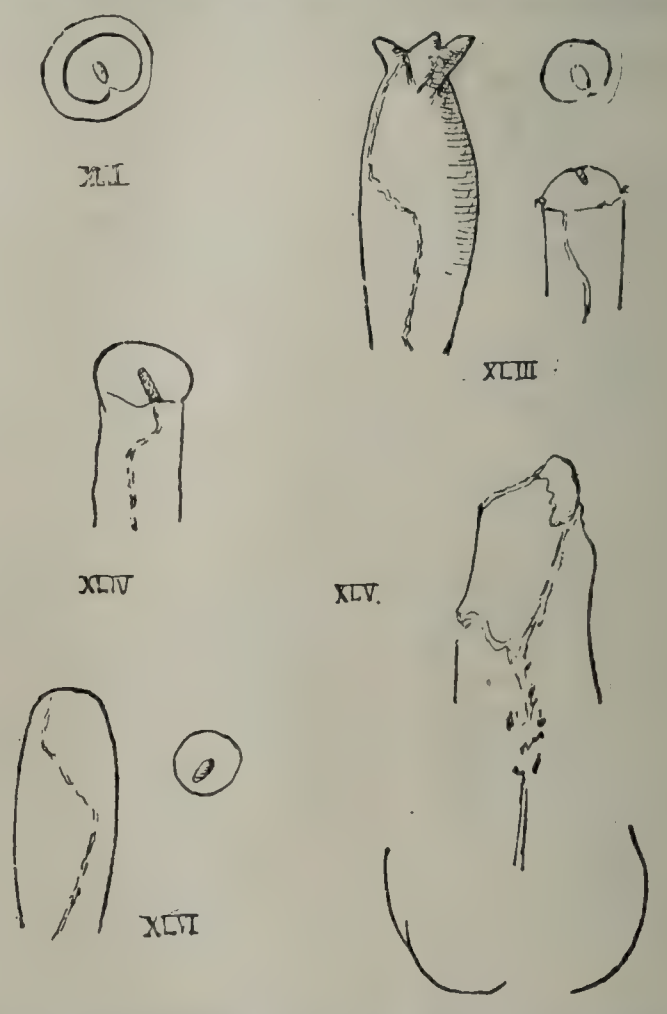
CASE XLIX. D. G., aged 6 months, October 6th, 1904.—Very large right inguinal hernia. Hinder end of meatus to left.

CASE L. A. S., aged 3 months, February 2nd, 1905.—Phimosis. Hydrocele on right; inguinal hernia on left, also umbilical hernia. Raphe displaced to left anteriorly, hinder end of meatus conforming. (See Fig.)

CASE LI. S. G., aged 5 months, March 20th, 1905.—Right inguinal hernia, slight bending of glans. Raphe broad and diamond-shaped at root of penis; near preputial orifice it sweeps to left. Meatus transverse, hinder part conforming to raphe. (See Fig.)

CASE LII. Adult, December, 1904.—Tuberculosis of testicle. Penis undeveloped. Raphe sinuous, first to left, then to right, where ended in fraenum, meatus conforming. Perineal raphe unusually distinct and keel-like. (See Fig.)

CASE LIII. R. B., aged 20 years, August 26th, 1905.—Pelvic sarcoma. Penis very short; hinder end of meatus to right. No hernia, but history of delayed descent of right testicle, which not larger than a hazel-nut.



ANALYSIS OF CASES.

Glandular Hypospadias.—Twenty-one cases. Of these 8 showed phimosis (I, II, IV*a*, VII, VIII, X, XI, XIII). In 8 the prepuce was hooded (VI, IX, XII, XIV, XV, XVI, XVIII, XX); and in 1 of these the hooded prepuce was bifid. In 2 cases the prepuce was adherent to the glans but not phimosed (III, V); in 1 there was practically no prepuce (XIX); and in 2 the condition of the prepuce was not noted. Fourteen cases showed abnormality of raphe (IV, IV*a*, V, VII, VIII, IX, XII, XIII, XV, XVI, XVII, XVIII, XIX, XX), and two showed torsion of penis (IV and IV*a*).

Conditions Allied to Hypospadias.—Four cases (XXVIII–XXXI). In 2 of these the prepuce was hooded; in a third, phimosed; the fourth was not noted. In 3 of them raphe noted as devious, with, in 1 case, associated torsion of penis.

Raphe alone Malformed.—Ten cases (XXXII–XLI). In 4 of these there was phimosis; in 1 case (XXXIII) glans was almost entirely uncovered.

Malformed Raphe Associated with Torsion of the Penis.—Twelve cases (XLII to LIII). Of these 12, half had hinder end of the meatus directed towards the left; in the remaining 6 its direction was toward the right. In 3 cases in other groups (IV, IV*a*, XXX) the direction was left in 2 and right in 1. Including 1 case from another group, there were 2 associated with hydrocele. One of these (IV*a*) showed torsion to left, with left-sided hydrocele; in the other (XLVIII) torsion was to right, away from hydrocele. Three cases were associated with hernia (XLIV, XLIX, LI). In all of these the hernia was on the right, and the torsion was to the left. In 1 case (L) hernia and hydrocele were present on left and right respectively; the torsion was towards the left.

Details of Raphe Malformation.—A consideration of all the cases in which, in the various groups and classes, the malformation was noted shows that most commonly the raphe deviates to the left side of the penis (14 cases). It

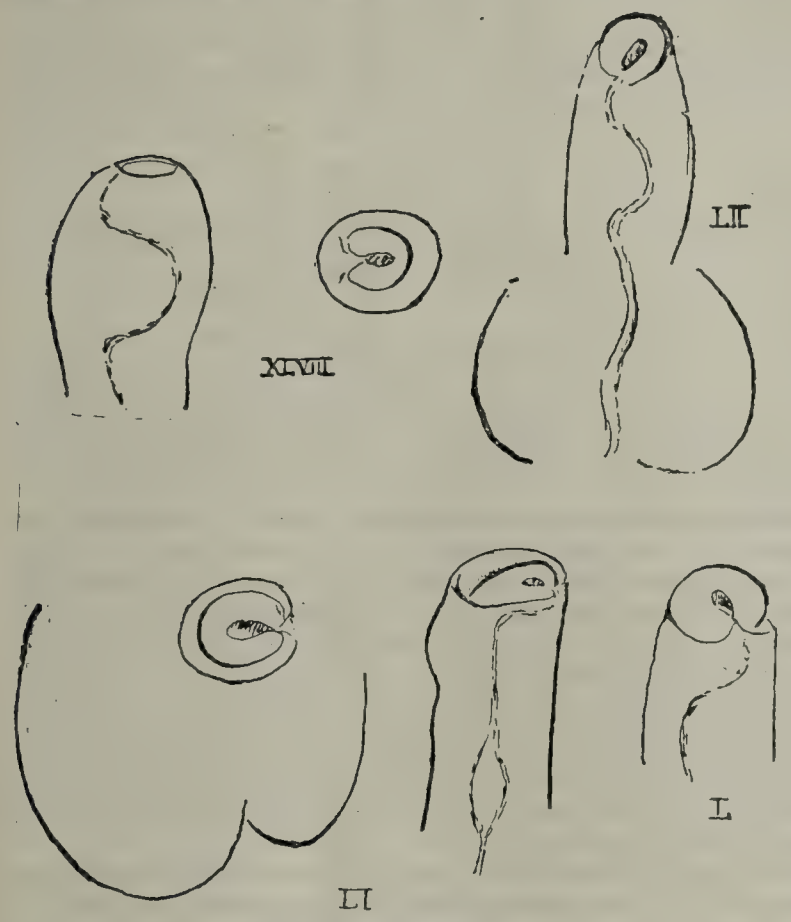
was found on the right side in 8 cases, while in 4 cases it was sinuous, passing in a wavy course from left to right. In 2 (XXI, XXII) of the 6 cases of penile hypospadias also lateral deviation was noted.

Bifurcation of raphe occurs at root of penis in 2 of the cases of penile hypospadias (XXIII, XXIV); it also occurs on the body of the penis in 3 cases (XXX, XXXII, XLV) not associated with hypospadias. Further, bifurcation of terminal portion of raphe may occur in cases of lateral deviation (VIII, IX, XII, XVIII) or in raphe otherwise normal (XXXI).

The raphe may divide, and by the divisions uniting further forwards, an island of skin is enclosed (XXXV, XXXVI, XXXVII, XXXIX, XL, LI). This area of skin may be normal in appearance, glazed and cicatricial-like, or beset with enlarged pigmented papillae.

Lastly, the raphe may assume a cruciform appearance (VII, XXXIV). This arrangement occurs at the root of the penis.

Course of Urethra.—This was noted in 4 cases (XII, XVIII, XIX, XL). In none of these was there any apparent deviation from the normal.



Conclusions.

1. Glandular hypospadias is the commonest form of this malformation.
2. Malformation of the raphe is frequently present in glandular hypospadias, but either malformation may occur independently.
3. Phimosis occurs in a considerable proportion of the cases of glandular hypospadias.
4. Malformation of the raphe may exist alone, but it usually indicates the presence of other deviations from the normal.
5. Torsion of the penis is always associated with malformation of the raphe.
6. Hernia or hydrocele occurring in a case of torsion does not seem to have any influence in the production of the deformity.
7. The deviation of the raphe has probably no effect on the form of the urethra.

References.

[1] *Quain*, 10th edition, vol. i, Part I, p. 127. [2] Fully reported in *Glasgow Hospital Reports*, 1899, p. 295.

PNEUMOCOCCIC ARTHRITIS IN CHILDREN, WITH A REPORT OF TWO CASES.

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The 2 cases which I now record were under my care when Resident Assistant Surgeon at St. Thomas's Hospital, and I am indebted to Mr. Clutton and to Mr. Ballance, for whom I acted, for permission to make use of the notes, and also to Dr. L. S. Dudgeon, Director of the Clinical Laboratory, for the bacteriological reports.

Case I.

L. C., female, aged 1 year, was admitted to St. Thomas's Hospital on May 4th, 1906, with a painless swelling of the left knee which had been noticed for two days. Ten days prior to this the child had an attack of bronchitis, from which she had only just recovered. Apart from this she had always been healthy. The left knee-joint was moderately distended with fluid; the skin over it appeared normal, being neither shiny, red, nor oedematous, and manipulation of the limb caused no pain. The child was slightly wasted and extremely pale. No adventitious sounds were heard in the lungs, and the mouth, pharynx, tonsils, and tympanic membranes appeared normal. Temperature 100° F., pulse 120. The child both slept and ate well. Two days later, as the distension was more marked, the joint was aspirated, odourless, thick, greenish-yellow, curdy pus being withdrawn, from which a pure culture of the pneumococcus was obtained. The general condition remained unaltered, but the synovial cavity gradually refilled; consequently, on May 8th, two days after aspiration, the joint was opened by two vertical lateral incisions, thoroughly irrigated with normal saline, and drained by a tube passing behind the patella. The pus which was evacuated contained numerous masses of fibrin. The articular surface of the bones was explored with a finger, but no diseased area was found. This was subsequently confirmed by a skiagram. The temperature and pulse now gradually fell, reaching normal on the sixteenth day. The joint was washed out twice daily with hydrogen peroxide, and on May 10th the single tube was withdrawn and replaced by two small ones, which only just projected into the cavity. These in turn were replaced by gauze wicks on May 13th, five days after arthrotomy. On May 29th—four weeks after the commencement of the illness—a purulent discharge from the left ear was noticed. This, together with some pus from the knee, was examined bacteriologically, and the pneumococcus and *Staphlococcus albus* and *aureus* were grown from both.

When the child left the hospital on June 16th the wounds were quite healed, and the otorrhoea had ceased. Massage and passive movements were now commenced, and within a few weeks the functions of the joint were completely restored.

Case II.

H. A., female, aged 6 months, previously perfectly healthy, had suffered with pain and swelling of the right knee for four days. The child was well nourished, but was pale and looked very ill. Temperature 102° F., pulse 130. The lungs, mouth, pharynx, tonsils, and ears appeared normal. The right knee was distended with fluid and extremely tender. The skin was slightly red and shiny, and over the head of the tibia, on the inner side, there was a small oedematous area. By aspiration thin, pale yellow, curdy pus was withdrawn. The joint was therefore immediately opened by two lateral incisions, and drained, as in the preceding case. A pure culture of the pneumococcus was obtained from the pus. The temperature now ranged between 98° F. and 101° F., and the discharge from the joint gradually diminished, and, though the child took plenty of nourishment and slept well it rapidly wasted. On the eighth day the temperature suddenly rose to 104° F. A small abscess in the popliteal space, apparently having no connexion with the joint, was incised and drained, but the temperature remained high, ranging between 102° and 103.6° until death. On the fifteenth day signs of meningitis appeared. The right cerebral ventricle was aspirated through the anterior fontanelle and clear sterile fluid was withdrawn. Death took place three weeks after the commencement of the illness.

Dr. C. R. Box kindly made a *post-mortem* examination and reported as follows: Dura mater healthy. Pia arachnoid oedematous on convexity, but at base it showed diffuse haemorrhagic infiltration extending forwards in the sagittal fissure and closely corresponding to the distribution of the anterior cerebral arteries. Pink softening of the right frontal lobe. Tympanic membranes sound; thick yellowish-green pus in both middle ears. (Unfortunately I did not obtain a culture from this.) Lungs congested, but not pneumonic; heart and pericardium healthy. Mouth and digestive tract normal; articular surface of femur and tibia normal; no disease of bone or epiphysis.

In the year 1888 Weichselbaum first clearly identified the pneumococcus as one of the causes of arthritis, and in his classical monograph on the rarer localizations of the pneumonic virus he stated: "The *Diplococcus pneumoniae* causes not only pneumonia, but also various other processes, either at the same time as pneumonia or entirely independent of it." This statement has since been repeatedly confirmed, and many cases of pneumococcic arthritis have been recorded.

After a fairly extensive search through the literature I have found records of 98 cases of arthritis in which the

existence of the pneumococcus was definitely proved by bacteriological examination. These, together with the two I have just described, bring the total up to 100. The sources from which they have been collected are acknowledged at the end of the paper. Thirty-one of these cases occurred in children under 14 years of age, of which 18 were under 1 year, 7 were between 1 and 2 years, and the remaining 6 were respectively 2½, 5½, 6, 8, 12, and 13 years of age. From this it will be seen that the disease is of more frequent occurrence in early childhood, for no less than 25 of these patients were under 2 years of age. This bears out the statement made by Dudgeon and Branson, that "pneumococcus practically monopolizes the etiology of infective arthritis during infancy and up to the end of the first hemi-decade."

Source of Infection.—Statistics go to prove that other channels than the lung more often serve as the primary focus of infection in infants and and young children than in adults; in 18 of these 31 cases no history of antecedent pulmonary affection was obtainable, whereas in 69 cases of pneumococcic arthritis in adults, only 9 were unaccompanied by antecedent pulmonary disease. According to Herzog, the most probable primary focus is to be found in suppuration of the middle ear due to the pneumococcus, whilst the mouth, pharynx, and tonsils all have a share in harbouring this organism. In proof of this contention, he quotes the observations of Netter, who found otitis media in 29 out of 31 autopsies on infants under the age of 30 months suffering from pneumococcal lesions. The importance of suppurative otitis media as the initial cause of the disease is well shown in my two cases, in both of which it existed, whilst in one from which a culture was taken the pneumococcus was isolated.

Joints affected.—Of the 31 cases, the joints of the upper extremity were involved in 7 (shoulder 5, elbow 2); the lower extremity in 13 (hip 5, knee 7, ankle 1); and both extremities in 11. In these polyarticular cases the knee was involved in 9, making a total of 16 out of 31, or in rather more than 50 per cent. of the cases.

The anatomical appearances are very similar to those which occur in other forms of suppurative arthritis, but destructive changes, except in severe cases, are relatively slight. The character of the pus varies with the severity of the disease, and according to Dudgeon and Branson, this variation is of prognostic value. In mild cases it is thick, greenish-yellow and odourless, and contains innumerable fibrinous threads which are loaded with diplococci, whilst in severe cases it is thin and watery, and less prone to fibrin formation. This was a noticeable feature in both my cases, and the results help to prove the value of the observation.

Symptoms.—In comparison with the severity of the local lesion the constitutional symptoms are, as a rule, mild. The skin, particularly of the face, is pale, in spite of the fever, which is irregular and ranges between 99° and 101°. The child takes plenty of nourishment and sleeps well. The appearance of the affected joint is particularly characteristic, for though the joint is distended with fluid, hot to the touch and extremely painful, yet circumscribed redness is usually absent, and brawniness and oedema are only present in very severe cases.

Prognosis.—The prognosis is grave, and as already pointed out, measurable to a certain extent by the character of the pus. In the series of cases I have collected the mortality under 1 year was 55½ per cent., between 1 and 2 years 14 per cent., and between 2 and 14 years 50 per cent.

Treatment.—The treatment is essentially surgical. The joint should be well opened, thoroughly irrigated with normal saline in order to remove the fibrinous threads, and efficiently drained. Tubes should be removed at the end of two or three days and gauze wicks substituted. In severe cases early vaccination against the pneumococcus would be well worth a trial.

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DISCUSSION.

THE CHAIRMAN asked if there were any observations recorded, or if any gentleman present had made such on the condition of the growing bone in the epiphysis, and at the greater epiphysial junction. On the analogy of acute staphylococcic and streptococcic epiphysites, it was advisable to examine the growing line in all these cases, with the object of ascertaining if the disease were primary arthritic or epiphysial.

Mr. SYDNEY STEPHENSON (London) inquired as to the possibility of a conjunctival origin for the arthritis. The pneumococcus was now recognized as a not uncommon cause of conjunctivitis. Indeed, in ophthalmia neonatorum, next to the gonococcus, the pneumococcus was the organism most commonly present. He had seen a case of ophthalmia neonatorum due to pneumococci where arthritis came on towards the end of the second week of life. This, he thought, might be due to generalization of the pneumococcus.

Dr. P. G. LEE (Cork) was very pleased to hear the remarks of Mr. Sydney Stephenson, as he had a case of ophthalmia neonatorum which developed arthritis, which he had looked on as gonococcal; but in the light of Mr. Stephenson's remarks he now believed it to be due to pneumococcic infection. There was a history in this case of exposure to cold.

A DISCUSSION ON ACUTE NEPHRITIS IN CHILDREN AND ITS RESULTS.

OPENING PAPERS.

I.—A. F. VOELCKER, M.D.,
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ACUTE NEPHRITIS AND ITS RESULTS.

FOR the elucidation of the subject of this discussion the experience of one individual is insufficient, and, in order to obtain anything like a correct and sufficient picture of the condition, the experience of those engaged in general practice, those especially engaged with fever hospital work, those engaged in work at a general hospital, and, lastly, those working at children's hospitals, must all be brought together and correlated. It is, therefore, to be hoped that those will contribute whose experience of general practice gives them a much less distorted image than is apt to be created by the experience derived from a special hospital practice.

In hospital practice the early stages of disease are often over before the cases come under observation, while a case, when it becomes chronic, is frequently unsuited for continued in-patient treatment, and so passes out of observation. I am led to make these remarks in the hope that those who have observed anomalous cases, or who have had cases for prolonged periods under their observation, will contribute their experience for the furtherance of our knowledge of this disease.

It will be generally conceded that one of the essentials for a profitable discussion of a subject is that the terms used should be satisfactorily defined. By "acute nephritis" we will mean an acute inflammation of the kidneys, evidenced by certain constitutional symptoms, of which pyrexia, vomiting, headache are the most common, oedema and alterations in the quantity and character of the urine the most constant and obvious physical signs. I make this definition as I wish to exclude from consideration cases in which abnormal constituents, such as albumen, blood, and even casts, appear in the urine, but without the general constitutional symptoms which are present in the condition we are about to discuss.

For the purposes of this paper I have taken the age of 12 as the limit for children, this being the age beyond which cases are ineligible for treatment at the children's hospital with which I am connected.

Acute nephritis, like all other forms of inflammation, is the local expression of the reaction of the tissues of the kidneys to some irritant. The effect of this irritation is to produce changes in the vascular elements of the kidneys, degenerative changes in the renal epithelium, and finally regenerative changes or actual new formations in these organs. While we find each and all of these

changes present, we do not find them all present in the same degree; thus, in some forms of nephritis the vascular, in others the degenerative, in others the productive phenomena are most *en evidence*, and so we come to speak of a haemorrhagic nephritis, a parenchymatous nephritis, or a productive nephritis. Not only does the leading type of inflammatory change vary, but we also find that the part of the kidneys most affected also varies, and so we may recognize a form in which the glomeruli are chiefly affected, one in which the epithelium of the convoluted tubules, or one in which the interstitial tissue is chiefly affected, and such forms we distinguish as glomerulo-nephritis, parenchymatous or tubal nephritis, and interstitial nephritis.

Acute inflammation of the kidneys, using the term in its clinical and not purely pathological sense, as far as my *post-mortem* experience goes, has been invariably an affection of both kidneys, and both kidneys have seemed to me to be equally affected. In this we see a marked contrast to cases of pneumonia, in which we find not only inflammatory processes confined to one lung, often indeed to one lobe, and generally spreading from one part to invade another of the same lobe. There is no evidence with which I am acquainted to show that the inflammatory processes in the kidney show any such mode of commencement or extension. From these considerations, it appears reasonable that we should look for the cause of acute nephritis in some irritant which is brought equally and simultaneously to the two kidneys, and which there, during the process of elimination, acts as a direct irritant to the renal cells, as does cantharides, or which, circulating in the blood, becomes an irritant to these cells when it comes in contact either with the renal secretions, internal or external, or with the renal cells.

When we come to inquire what is the nature, what the origin, and what the point of entry of this irritant into the general circulation, we find ourselves very much in the dark. If we inquire into the conditions under which acute nephritis arises, we find that we can trace a certain number to certain of the acute specific fevers, notably scarlet fever; that a certain number are traced to some exposure to wet or cold or to both; that a few can be traced to direct chemical irritants, such as turpentine, or cantharides, or mercury; but that there is still left a number of cases for which no satisfactory cause can be discovered. In several of these cases the initial symptom noticed has been "a cold" or a "sore throat," and in many of these cases it is possible to exclude the existence of scarlet fever or diphtheria or acute rheumatism, so that it remains possible that some toxic agent gains entrance to the general circulation by the tonsils or throat. I cannot, however, find that there is any evidence that cases of acute nephritis ever occur in epidemics except in association with the acute specific fevers, so that it is most probable that the poison, whatever it be, is one which has its origin within the body and is not introduced from without. It is natural to turn one's attention to the skin and to the alimentary tract in the hope of finding there the source of the toxic agent or agents; but, while it is true that exposure to wet and cold, that extensive burns or acute inflammations of the skin have all at times been followed by an acute nephritis, yet there are many cases of acute nephritis in which there has been no evidence of any structural or functional alteration in the skin. With regard to the alimentary canal, it is certainly tempting to look in this direction for the source of our sought-for toxin. In cases of acute gastro-enteritis in children, a microscopical examination of the kidneys in fatal cases often reveals evidences of early yet distinct inflammatory mischief in those organs; yet such cases do not conform to the clinical type of cases of acute nephritis, nor have I been able to obtain evidence that in such cases, when recovery from the acute intestinal conditions occurs, there is any further development of the symptoms which we find in acute nephritis. Were this the case nephritis in children would be much commoner in the early years of life than I shall show you it is.

To summarize our knowledge of the etiology of acute nephritis we may divide the cases up into:

1. Cases following exposure to wet or cold or to structural alterations in the skin.
2. Cases resulting from the ingestion of certain irritants, such as cantharides, certain balsams, and certain metallic poisons.
3. Cases arising in the course of certain acute infections such as scarlet fever, diphtheria, enteric, pneumonia, rheumatism, measles, whooping-cough, and erysipelas.
4. Cases of unknown origin.

As for season, this does not appear to influence the incidence of the disease. It should also be borne in mind that acute nephritis not infrequently occurs in the course of a chronic nephritis.

The particular anatomical form the nephritis takes is sometimes determined by the nature of the irritant; thus in cases of scarlatinal nephritis the glomeruli are often most affected, while in diphtheria we more commonly find that degenerative changes in the renal tubules (an acute parenchymatous nephritis) is the more common lesion; but it cannot, however, be said that any particular form of acute nephritis is peculiar to a given origin. In one case of enteric fever I have found marked parenchymatous nephritis, and in another acute glomerulo-nephritis.

For the purposes of my contribution to this discussion I have examined:

(1) The records of the Middlesex Hospital, taking this as a type of a general hospital which gives me opportunities of seeing cases after the first twelve years of life are passed; (2) the records of the Hospital for Sick Children, Great Ormond Street, as a type of a special children's hospital; and (3) from the annual reports of the Metropolitan Asylums Board I have collected certain statistics of the incidence of the acute nephritis-producing fevers and of their mortality.

To the general practitioner the meeting looks, and, I trust, will not look in vain, for individual experience as to the occurrence and subsequent history, among other things, of cases of acute nephritis, while I trust that those who have had special opportunities of observing acute nephritis in association with the acute specific fevers will also add their experience for the common weal.

Frequency of Acute Nephritis.—An examination of the records of the Middlesex Hospital for the ten years 1897–1906 shows that 107 cases of acute nephritis were admitted. Of these 30 occurred in children under 12 years of age—that is, 28 per cent. of all the cases occurred in children. If the ages of all the cases are examined and if we classify the cases in age-groups of twelve years, we find that by far the greater number of cases occur in the first thirty-six years of life and in almost equal frequency (30—26—24) in each of the first three groups of twelve years—(1–12) 30 cases, (12–24) 26 cases, (24–36) 24 cases. It must be remembered that these cases were not, as far as could be made out, cases following acute infective fevers, under which conditions we might have expected to find a preponderance of cases in small children, seeing that the acute specific fevers are more common in them. This frequency of acute nephritis in children is not well recognized; indeed, one recent textbook says:

> Acute and subacute nephritis is exceedingly rare in children unless produced by one of the acute infections, but by this term is included not only the eruptive fevers but infections such as bronchopneumonia and the various forms of severe summer diarrhoea, in all of which nephritis is by no means unusual.

My experience at the Children's Hospital by no means confirms this view, for in my own ward of twenty-four beds there have been admitted in the last ten years 45 cases, and my ward was only one of the three general medical wards. In the year 1906, 21 cases of nephritis were admitted into the whole hospital, 8 cases being admitted to my own ward.

Age.—Of the 30 cases at Middlesex Hospital, 21 occurred between the ages of 4 and 9. Of the 45 cases in my ward at the Children's Hospital, 33 (76 per cent.) occurred between 4 and 9. If we divide the first twelve years of life into two equal parts, we find that twice as many cases (50) occurred in the first six years of life as in the second six years (25). In spite of this there were only 2 cases in children under 3 years of age.

Sex.—In the 75 cases I am considering, 45 occurred in boys and 30 in girls.

An examination of the reports of the Metropolitan Asylums Board shows that the proportion of cases of scarlet fever in which nephritis develops is a fairly constant one each year. Thus in 1903 5.37 per cent., in 1904 4.27 per cent., in 1905 3.25 per cent., and in 1906 4.7 per cent. of all the cases of scarlet fever developed nephritis, though unfortunately the ages at which nephritis occurred are not indicated in the report. Now in 1906 there were nearly 18,000 cases of

scarlet fever admitted, and of these 13,230 were children under 10 years of age, and of these 468 died from various causes—that is, there was a mortality of 3·54 per cent. The statistical tables, however, show that out of 17,829 cases of scarlet fever 842 developed acute nephritis, and that of these 842 cases only 29 proved fatal.

Put into general terms we may, I think, say that although scarlet fever is very much more common in the first ten years of life, and with it acute nephritis, yet scarlatinal nephritis is not very fatal in children, and these impressions are borne out by the difficulty experienced of getting specimens of acute scarlatinal nephritis for histological examination. I hope that those who have actually worked in fever hospitals will correct me if these are false impressions, which I have derived from the inspection of these tables of statistics

From the same source I find that out of 4,937 cases of diphtheria only 36 developed nephritis, that is, 0·69 per cent., but that none of these proved fatal. In the same year 651 cases of enteric fever were admitted, 10 of these (1.54 per cent.) developed acute nephritis, but none proved fatal.

Cases of acute nephritis arise sometimes in connexion with erysipelas, with measles, pneumonia, acute rheumatism, but although I have seen acute nephritis in all these diseases I regard it as a rare complication. Some writers have described acute nephritis as a not uncommon complication of whooping-cough, but of 566 cases of whooping-cough under my care at Great Ormond Street I only saw 4 cases, and one of these was in a case of scarlet fever.

Symptomatology.—In children as in adults acute nephritis is very variable both in the severity and in the constancy of its symptoms. Apart from the acute specific fevers and when no history of exposure or irritation can be obtained we may find that a "cold" or sore throat is complained of. As a rule there is less *malaise* than in adults, pain in the back is very rarely complained of. Vomiting is a common symptom, but headache is less common than in adults. Very frequently the first symptom to call attention to the illness is the presence of puffiness about the face, especially about the eyes. There may or may not be some general anasarca, but dropsy is less commonly met with in children than in adults though it may be very pronounced. The temperature is nearly always raised 2 or 3 degrees above the normal, but it returns to the normal level in three or four days. Occasionally a purpuric rash may accompany the disease. Convulsions are, in my experience, rare at the onset of the disease, but when the disease is developed, and especially if the quantity of urine is small, uraemic convulsions may and often do occur, and, as is the case in adults, they are not incompatible with a good recovery.

The Urine.—The changes in the urine are sometimes so obvious that a diminution in the amount and an alteration in the appearance of the urine may be the only reasons for a child being brought to a doctor. It is curious, however, how unobservant parents sometimes are of marked alterations in the physical characters of the urine. I do not propose to deal with the changes in the urine as I see Dr. Sikes has prepared a most interesting contribution on these points, but I should like to insist on the necessity of a microscopical examination of the urine being made in all cases of suspected nephritis.

The complications of acute nephritis in children do not differ essentially from those of adults; serous effusions and serous inflammations are less common in children. Amaurosis, oedema of the disc, and optic neuritis rarely occur. Oedema of the glottis or of the lungs is seldom seen.

Duration—The duration of a case of acute nephritis is variable, and it becomes very difficult, if not impossible, to say when an acute ceases to be an acute, and becomes, as I believe it sometimes does, a chronic nephritis. The acute symptoms, as a rule, under treatment subside rapidly, but if a careful watch is kept on the urine long after all oedema has disappeared, there will be found from time to time distinct traces of albumen in the urine. In some of my cases the albumen permanently disappeared on the ninth day; in others it was present seven weeks, and in one case twenty weeks after the onset of symptoms, a trace of albumen being the only pathological residue detected.

In hospital practice a not inconsiderable proportion of the cases are discharged still having an occasional trace of albumen in the urine, and it is interesting to inquire what happens to these cases. Do they, under less favourable conditions at home, relapse? I do not think that this is the case, for I have checked the names of a considerable number of the patients with a view to tracing their subsequent history, but find very few cases of recurrent nephritis in the children who have been in originally with an acute nephritis. There are, of course, a certain number of cases of chronic nephritis which come in from time to time, improve under treatment, and then go out. The number of cases of chronic nephritis seen in the wards of a children's hospital is small, and the question arises whether the cases of acute nephritis which go out with only a slight albuminuria develop later into cases of chronic nephritis. As the age limit at a children's hospital prevents cases over 12 years of age being followed, I looked up the returns of the ages of cases of chronic nephritis—both parenchymatous and interstitial—at the Middlesex Hospital, and found that very few occurred under the age of 20. Out of 96 cases admitted in seven years (1900-6), only 4 were in patients under 20 years of age, and only 1 of these proved fatal; while of 209 cases of chronic interstitial nephritis only 1 occurred in a child Our *post-mortem* records at Middlesex Hospital also show the very small number of cases of chronic nephritis in patients under 20 years of age. It is quite possible that one of the reasons of the small numbers of fatal cases of chronic nephritis which are seen in a general hospital *post mortem* room is the fact that these patients, being chronic invalids and regarded as incurable, drift off to the infirmaries or die at home. It is on this point that the experience of those who have worked in the infirmaries and those who have watched cases in private can contribute so much to our knowledge. I cannot help thinking that a not inconsiderable number of these cases do recover, though I cannot say that I have ever actually watched a case pass from the acute to the chronic stage and then make a complete recovery.

Results.—Acute nephritis may terminate in death, in recovery, or may become chronic.

Death from acute nephritis in children is not common; out of 30 cases in children at Middlesex Hospital, only 1 proved fatal, while out of 45 cases in my ward in ten years, 5 proved fatal.

Death may occur from uraemia, convulsions and coma setting in. The temperature often rises—in 1 case it was 107°—or there may be no rise of temperature. In 1 case symptoms of a progressive paralysis resembling an acute ascending spinal paralysis occurred in a mentally deficient child.

Pneumonia, multiple serous inflammations and effusions, severe intestinal catarrh, have also been found in fatal cases.

Recovery from acute nephritis cannot satisfactorily be pronounced as having occurred under three or four weeks, and even then there will probably be some anaemia left, but convalescence is often prolonged for weeks or even months, and it may be that, without any other signs of renal mischief, albumen may recur from time to time in the urine for more than two years after an acute nephritis.

What factors determine the question of complete or incomplete recovery? An examination of the hospital records might make us think that the precautions taken there were the cause of the good results we obtain, but when we remember the relative infrequency of chronic nephritis in young adults under 20, and see the little care taken by the parents of children, especially in the country, we must admire the *vis medicatrix Naturae*. Errors in diet, exposure to wet and cold, over-fatigue and irritant medicines, can all of them prolong the duration of nephritis, and increase the chances of its becoming chronic. I have not been able to make out that cases which originate in exposure to cold have a greater tendency to become chronic than those originating in other ways. The prognosis of diphtheritic cases is good, most of the cases losing their albumen before leaving the hospital. In some epidemics of scarlet fever and of diphtheria, however, we may meet with nephritis of a particularly virulent type.

Conditions Simulating the Disease.—The chief conditions which may simulate acute nephritis are those in which blood appears in the urine, or oedema occurs, or where both conditions are present. I will not do more than

enumerate these. Renal infarction in valvular disease of the heart, paroxysmal haemoglobinuria, tuberculous or other new growths in the kidney. The oedema of renal disease may be simulated by the oedema which occurs with acute diarrhoea, with chronic colitis, with endocarditis, pericarditis, urticaria, angioneurotic oedema, tuberculous bronchial glands, purpura, leukaemia.

I recently had under my care a boy who was admitted with a doubtful purpuric eruption and blood in the urine; there were also blood and granular casts, but no oedema was present. Ophthalmoscopical examination showed some retinal haemorrhages. An examination of the blood showed that there was lymphatic leukaemia, from which the boy died. At the autopsy there was no sign of nephritis.

Treatment.—I hope that this Section will discuss this aspect of nephritis, but I have already taken up so much of your time that I do not propose to do more than invite you to discuss the treatment of acute nephritis. I should only like to emphasize the advantage of keeping the urine neutral or faintly alkaline, the advantage derived by the use of large injections of warm water into the bowel, the benefits of hot packs or hot air baths. The question of the use of the icebag, which has been advocated by some is also one in which considerable differences of opinion, if not of practice, may be found to exist. During convalescence I am sure recovery is sometimes delayed by the exclusion of meat from the diet.

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THE PHYSIOLOGICAL ASPECT.

We are at present acquainted with little in the way of physiological differences between renal disease in children and adults, but from the present point of view this is not a matter of great importance, as the question is, What are the physiological points which are useful for us to have in mind?

The alterations in the general metabolism caused by kidney disease are not so obvious as might be expected; they depend to a large extent on how the stomach and the intestines are performing their work, and any changes which occur in renal conditions of even moderate severity are, so far as we know at present, more of a quantitative than a qualitative nature. Taking an average case, there is little change in the amount of the carbon dioxide given off or of the oxygen absorbed. The maintenance of nutrition depends greatly on the diet; and in chronic conditions v. Noorden is amongst those whose who have maintained that a too exclusive milk dietary is sometimes responsible for a patient not getting on well, and that a change to a more varied diet will often cause a marked improvement.

The degree of albuminuria is important from the point of view of treatment. The importance of keeping up the nitrogenous equilibrium in the more chronic cases, and, when treating the acute forms of the disease, of giving the diseased organ as little to do as possible, are two very necessary things to remember. In acute nephritis as high an authority as v. Noorden does not give his patients even milk at the height of the disease, but keeps them on sugar and water to the extent of 150 to 200 grams of the former daily. This diet gives the greatest rest to the diseased organ, and while keeping the patient going for the time gives the inflammation the best chance of recovery. With most other forms of the disease it is advisable to remember the keeping up of the protein metabolism to the normal, and in chronic conditions as much as 90 grams of protein in the day may be given, with the occasional intermission of a few days when a diet poor in protein may be substituted.

Again, with the intermediate forms of the disease between the acute and the chronic interstitial forms, it is now more general to recommend that the diet as regards protein should be more liberal than was formerly allowed. In acute nephritis it is agreed that the quantity of the albumen usually affords an index to the severity of the disease, especially when taken in relation to the amount of water passed, but in chronic states, especially in the chronic granular form, it is not at all so certain that an increase of the albumen indicates that the condition is worse; the contrary certainly obtains in some cases. There is also no evidence in these latter cases that the proteins of the urine are influenced to any extent by the protein of the food.

The extraordinarily rapid increase of the blood pressure in some cases of acute nephritis has never been explained; in children it has been measured to rise from 60 mm. to 120 mm. during an attack. We do not know what the substances are which cause this, or how they act, whether locally or through the central nervous system.

We know that severe gastro-intestinal disturbances often indicate the onset of uraemia, although in children they may occur at the onset of any acute disorder. It appeals to us as being likely that this is more due to toxic influences on the central nervous system, as suggested by Leube, than to any oedematous state of the mucous membrane of the stomach, as thought probable by Bartels. Later, when there may be ulceration, it is possible that this may be caused by the presence of ammonia, produced by the decomposition of urea excreted into the alimentary tract. The faeces in uraemic diarrhoea contain much ammonia, and it has been demonstrated in the contents of the stomach. In severe tubular conditions the hydrochloric acid and the ferments rennin and pepsin are often in diminished amount, but there is no evidence that the motility of the organ is at all altered.

In renal disease nitrogen is sometimes present in such large quantities in the excreta that it must be due to the vicarious excretion of substances containing nitrogen into the alimentary tract from the tissues of the body. This has been proved by the estimation of the nitrogen in the food and in the faeces. One case of acute scarlatinal nephritis in a child is reported where there was a marked excess of the nitrogen of the faeces over that of the food, and indicated a retention of nitrogen in the body during the very acute stage. The amount of ammonia in uraemic stools is especially noticeable.

It has been found by many observers that the amount of ethereal sulphates and indican in the urine is increased, and this may be due to greater intestinal putrefaction; although, on the other hand, it has been used as the basis of a theory as to the production of chronic renal disease from the toxic products of protein decomposition which are not rendered harmless in the alimentary canal, as would obtain in health. The digestion of the fat and carbohydrate elements of the food appears to proceed with little or no variation from that in health.

With regard to the metabolism of protein in renal disease, there is little evidence of definite change from the normal. Qualitative changes in the albumens of the blood have been described, such as a relative increase in the amount of the globulin; but sufficient work has not been done to lead to any conclusion. In uraemia we should certainly expect that there should be some evidence of damage to the proteins of the cells, but reliable work on the subject is very meagre. V. Noorden quotes a case of acute nephritis in a boy of 11 where measurements of the intake and the output of nitrogen showed undoubted breaking down of the tissue protein during the period when uraemic symptoms were present.

The Rôle of the Sodium Chloride.—In mild cases of nephritis the relations of the sodium chloride to the tissues and the urine may be the same as in health, and in other cases the only difference appears to be that when there is an excess taken in with the food, there appears to be some delay before it appears in the urine. Then, again, in other cases there may be a retention of the salt for some time, and perhaps associated with oedema of the tissues. Chlorides do not seem to leave the body by the intestine to any extent, except, perhaps, when there is severe diarrhoea. The amount in the urine and in the system will depend greatly on the quantity contained in the food; there is, however, no certainty as to how an excess of sodium chloride will affect the kidneys; all we know is that when a retention of salt occurs there is usually associated with it oedema of the tissues.

It is also much discussed as to whether the retention of the chloride in the tissues is primary, and so causing a flow of water to the tissues, or whether the water accumulating in the tissues from other causes attracts the chloride from the blood so as to balance the osmotic pressures. Again, some think that the retention of the chloride in the system may be due to some functional incapacity of the renal cells. Cases have been known

where the oedema could be made to appear and disappear by the simple addition of salt to the food. Although generally speaking the retention of chloride will mean the development of, or be associated with, oedema, there is no exact relation at any time between the two. Marie tried to explain matters by assuming that some chloride could be actually fixed by the tissue cells, and so held in a different condition to that which was present in the tissue fluids.

The Influence on the Water of the Urine.—The quantity of water passed is usually diminished when the glomeruli are affected, as is seen in scarlatinal nephritis, and also in the various degrees of parenchymatous disease, acute and subacute. This appears to be mainly due to an incapacity of the cells to allow fluid to pass; hence the giving of water to these patients only further increases the embarrassment of the kidneys, and leads to the accumulation of fluid in the tissues. This is often seen in the acute scarlatinal nephritis of children. To put the matter simply, it seems that there is a tendency for the kidneys only to excrete a urine of a definite molecular concentration, and that the addition of water to the diet will not alter this, but will do harm in other ways, such as in the development of oedema.

In the chronic and the interstitial forms of the disease it is very doubtful to what extent we can wash out the system by giving water. In these cases the disease has affected the kidney so that it has adapted itself to the secretion of a fluid of a lower molecular concentration than the normal. It is quite an open question as to how much of the polyuria in granular kidney may be due simply to the habit of the patient to drink freely.

The Proteins of the Urine.—The proteins of the urine are the same as those of the blood, but the relative proportion is different. The term "protein quotient" has been given to the number obtained by dlviding the amount of the serum albumen by that of the globulin, and as the latter is commonly in excess, the number is usually *plus*. A couple of years ago I did some work on the globulin of albuminous urine, and found that a moderate degree of heat will cause a conversion of some of the albumen into globulin, and also allowing the urine to stand for some time, so that it becomes alkaline, will lead to the same result.

There is little known as to the significance of a larger amount of globulin than the usual amount, and the various attempts to classify renal diseases in these terms have not been very successful. The two best known conditions where is an excess of globulin frequently present are lardaceous disease and the albuminuria of pregnancy. Hoffmann found that in ascitic fluid the quotient was always higher than in blood serum—that is, that the albumen was here present in relatively greater amount.

Czatary mentions that the quotient is greater in the urine passed during the day time, after meals, during the time milk diet is being taken, and as the disease improves, and smaller during the acute exacerbations of the disease, in the chronic parenchymatous forms, and, as has been mentioned, in lardaceous disease.

Various other attempts have been made to determine the gravity of the disease by the protein quotient. Some observers seem to have satisfied themselves that a low quotient is bad and a high one good. I think it would be well worth while for some one to make a good series of fresh observations on this point, but they must be very accurately done or they will be useless. Hoffmann also mentions that globulin is much more difficult to diffuse than albumen, so perhaps a low protein quotient indicates a greater degree of incapacity of the renal cells in allowing the globulin to pass through. A great deal has been written on the precipitate which sometimes occurs when acetic acid in certain proportion is added to urine in the cold. This has been noted in cases of physiological albuminuria, in some cases of tubular nephritis, and in healthy people after exertion. It seems in some cases to be only a loose combination of ordinary protein with other substances, but in other cases it appears to be true nucleo-albumen. The significance and causes of its appearance are not known. It is possible it may be due to increased permeability of the renal cells, or to some alterations of the proteins of the blood so that small quantities pass through to the urine. Proteoses have been described as present in some fevers, and they are also present in some renal cases. As when testing for globulin, it is here also necessary that the urine should be examined when fresh, as proteoses will certainly be found in urine which has been standing for some time, where they are due to bacterial decomposition of the protein. I do not know that their presence has been found as yet to be of any special significance or importance from the view of treatment or diagnosis.

Urea, Ammonia, Uric Acid, etc.—It is well known that when estimated by the usual methods there is a diminution of the urea in most acute and subacute cases of renal disease. It has also to be noted that the amount of urea relative to the total nitrogen is usually diminished, and there may be an increase of the ammonia present.

There is nothing definite to mention with regard to uric acid beyond the fact that the amount varies very little, and in renal disease there is little difficulty in its excretion or in that of the purin bases. There may be some slight retention of creatinin in certain cases, which is interesting on account of the increased importance of this body, as it has been shown to indicate more than we at once supposed the metabolism of the actual tissue proteins. It, however, appears to be comparatively innocuous.

Some Methods of Examining the Urine—There are certain points with regard to the urine about which it would be very useful if we had more knowledge. For instance, the relation of the albumen to the globulin has been accurately done in comparatively few cases. Rough methods of estimating are worse than useless. The separation of the globulin can be made by the half saturating of the urine with ammonium sulphate, the reaction of the mixture being one of the most important items; and the details of the washing and subsequent resolution, reprecipitation, and weighing have to be done most carefully to make the investigations of any value.

Then it would be interesting to have a series of renal cases where the urea was estimated by a method which does not also include ammonia and the amido bodies, which the usual hypobromite method does; Folin's method will estimate the urea alone.

We should also like to have some series of cases where the ammonia was estimated immediately after the urine had been passed. Again, the more observations which are made by competent pathologists on the intake and the output of the chlorides the better. Another substance already mentioned as having come to the front, as it indicates to a great extent the endogenous protein metabolism, is creatinin. Creatinin should be estimated by the new method, also introduced by Folin, where the colour produced by the addition of alkaline potash to the urine is read off against a standard solution of potassium bichromate. A sufficient number of investigations might lead to interesting and important results.

The Blood.—The investigations with regard to the concentration of the blood and its specific gravity reveal after all, what we should expect. In the average case of uncomplicated renal disease the alterations in this fluid seem to depend on the presence or absence of hydraemia. If the kidneys are not seriously impaired in function, there may be no alteration. In oedema the concentration is usually lessened, also in tubular disease it is often so, but in chronic interstitial there is little change till near the end. In acute conditions, and especially in children, the leucocytes are increased. The anaemia which occurs later in renal disease has also to be remembered. It is difficult to say whether there is any retention of the non-proteid nitrogen of the serum or not, as the total quantity and the degree of dilution of the blood are such variable factors. There is also the same difficulty which we found when treating of sodium chloride; there may be some fixation by the tissues of some of these nitrogenous bodies, so that they are not found in the blood stream. The greater part—about three-fourths—of this extractive nitrogen has been shown to be urea and the mono-amido acids. It is true that there may be at times some increase in the amount of the ammonia, and this is important from the affinity that the nervous tissues have for this body. As this is the case, it is difficult to say how much is produced, as some of it may be taken out of the blood stream soon after it enters it.

Our knowledge of the potassium and the sodium salts in the serum is not complete, but the idea that the former

might have to do with the production of uraemia has now been abandoned.

In ordinary cases the reaction of the serum is normal, but in uraemic conditions the alkalinity is usually diminished. The question is whether this change is of importance, or whether it has no more to do with uraemia than, say, uric acid has to do with the causation of gout. Substances such as oxybutyric acid and others of that group have been mentioned as present in uraemia, but v. Noorden considers they have to do with the state of inanition produced by uraemic vomiting and diarrhoea, and before anything can be said this point ought to be cleared up. The freezing-point of the blood is certainly lowered in uraemia, and this is what one would expect if there were concentration of the serum, with, perhaps, the retention of non-proteid nitrogen or other comparatively simple bodies. We should not expect this condition to last, as water will again be taken up to compensate for the concentration.

The chief thing about the proteins of the serum is that the amount of the globulin is relatively increased in some cases; this estimation has, of course, only been possible in a few cases, so has not brought out anything of practical value. As already mentioned, alterations of the proteins of the serum may have to do with the causation of non-nephritic albuminuria. Recent work has shown that it is the euglobulin fraction of the globulin which is increased. It has also been found in puerperal eclampsia that there is an increased amount of globulin in the blood.

In nephritis the amount of fibrin in the blood is usually diminished, while in puerperal eclampsia most investigators have found that there is increased coagulability of the blood occasioned by an increase in the amount of the fibrin.

Drugs.—There are here a few points worth considering. First, with regard to saline diuretics, as to whether they are dependent for their effect on a hydraemic condition or an increased amount of blood in the vessels, or whether they act also on the renal cell. In other words, do they act on the vascular system alone, or on the secretory function of the cells as well? It has been found that two salts of equimolecular value will often produce different amounts of diuresis, and this is apparently due to their differing action on the cells. Again, Brodie and Cullis found in 1906 that salines cause a greater flow of water by exciting great secretory activity. Hence the later factor must be added to the action of saline diuretics on the amount of blood flowing through the kidneys. That caffein acts very definitely on the cells of the renal epithelium has been proved by the giving of chloral at the same time. It was found that although there was an enormous shrinking of the kidney with diminished blood supply, yet the caffein will act as a diuretic; hence this drug is contraindicated in inflammatory conditions where we wish to rest the kidneys as much as possible.

Nephrotoxins, etc.—The questions relating to the influence of extracts of renal cells in producing serums which have a specific action on similar renal cells are in a very uncertain condition; but the work which has been done appears to indicate that we may be on the threshold of an important branch of renal therapeutics. In a paper published in 1903 on the nephrotoxins, Pearce finds that a serum made from the cortex of the kidney is more potent then one made from the medulla. The histological changes he found in his researches include degeneration of the epithelium of the tubules, slight changes in the glomeruli, and an unusual and striking fatty change in the cells of Henle's tubules. No changes in the interstitial tissue were found, and attempts made to induce chronic renal disease by repeated injections of nephrotoxic serum were not successful. Theories of uraemia have been formulated on the assumption that there is in renal disease an increase in the internal secretion of the kidney, which causes the rise in the blood pressure as well as the toxic symptoms, but I do not think there is any conclusive evidence that there is anything in the renal cell juice in health or disease which will raise the blood pressure.

I do not want to weary you with many more details of physiological work, so will only touch on two or three points.

There is an increasing tendency to refute the theory of Ludwig that the glomerulus acts as a mechanical filter, and the excess of water is taken up again in the tubules. Brodie and Cullis, in their experiments published in 1906 on kidneys working against pressure in the ureter, found that under these conditions there was more water secreted from the glomeruli, and Cullis found that in the frog's kidney there is a true secretion from the glomeruli as well as from the tubules, and concludes that reabsorption of water does not occur to any extent in the latter.

Attempts have been made to explain the physiological peculiarities of chloride retention by assuming that in some cases it exists in the system in combination with a body of a colloid nature. Although this may be the case there is no definite proof forthcoming; still the idea is worth considering, and it is well that our attention has been called to it as a probability. The same idea has been brought forward to explain the retention of uric acid in the system in gout. The secretion of an acid urine from alkaline blood has also come in for more investigation, with the result that it has been found that the secretion from the glomerulus is alkaline while that from the tubules is acid.

Uraemia.—There is little that one can say with regard to any new work on uraemia. Research has shown us that there is no one substance which we can put our hand on as the cause. Ammonia, urea, creatin, potassium, chlorides, acids, etc., have all at one time or another been put down as the cause, but further experiment has in every case proved that none of them are responsible. Still, there must be something which gives rise to the condition of uraemia; perhaps, when we keep looking out for some complicated substance, it is possible that after all some retained body of quite a simple constitution may be the cause.

Oedema.—The question as to the exact relation of the hydraemia, or watery condition of the blood, to the genesis of renal oedema has given rise to much writing. One difficulty is the remarkable power that the blood possesses of regulating its own composition; and, although hydraemia may precede oedema in all cases, it is difficult to prove that such is the case. Clinically, in some cases the two conditions do seem to be independent of one another. One factor, however, must be the retention of some product or products which have an affinity for water, and which will attract and retain it in the tissues; and thus we may explain those cases where the oedema seems to be independent of the amount of water taken into the system.

Other factors are the condition of the capillary walls and the long-debated point as to whether there is an increased secretion from them or a mechanical impairment of their permeability.

The general idea seems now to be that the factors are not the same in all cases of renal oedema. In some, in addition to the causes mentioned, the retention of chlorides fixed in the tissues may come in, and also the loss of protein must be considered as altering the composition of the blood. We certainly know that in some cases there may be very free diuresis, and yet the condition of oedema will persist.

Time has not permitted more than a glance at the points which have been mentioned, but the object of this introduction of the physiological element into the discussion will have been accomplished if it leads to more extended accurate observations of the many points where advance is likely to be made, and about which more information is required.

III.—Sydney Stephenson, F.R.C.S.,
Ophthalmic Surgeon at the North-Eastern Hospital for Children, the Evelina Hospital, etc.

THE EYE CHANGES IN NEPHRITIS IN CHILDREN.

It is probable that were affections of the kidney as common in children as they are in adults, retinal complications would be relatively as frequent in the one class as in the other.*

In point of fact, ocular complications appear to be extremely uncommon in acute diffuse nephritis, whether the result of scarlet fever, or other zymotic ailment, of congenital syphilis, or of some less easily recognizable cause. Apart from oedema of the eyelids (the consideration of which need not detain us now), three conditions

* Of 528 cases of chronic interstitial nephritis tabulated by Dr. James E. H. Sawyer (*Birmingham Medical Review*, 1903, p. 514), there was not one under the age of 10, and only 8 under 20 years of age. The diagnosis was in each instance verified by autopsy.

have been met with—namely, inflammation of the optic papilla, retinal haemorrhages, and so-called uraemic blindness. I have failed to find a case of typical renal retinitis in association with acute nephritis, although I should be very far from denying that such may occur. For several years I have made a point of examining the fundus oculi in all cases of acute nephritis that have fallen under my personal notice, but the only change I have found has been bilateral papillitis. It is a little unfortunate that I am not in a position to adduce exact figures with regard to the frequency of the complication; but I can find notes of two cases only, and they are far from complete. The fundus appearances in both might, however, readily have been mistaken for those produced by an intracranial lesion, and indeed it is difficult to see how they could possibly have been distinguished by ophthalmoscopic examination alone. A good instance of this albuminuric papillitis has recently been reported by Richard Gompertz,[1] in a child, 9 years of age, admitted to the Evelina Hospital under the immediate care of Dr. J. Coarlton Briscoe:

Five days before reception it was noticed that the child's feet were swollen, and that her urine was dark-coloured. On examination, the urine was scanty, and contained 2 4 per cent. of albumen and many casts, together with a considerable quantity of blood. Neither retinal haemorrhages nor exudations were present, but both optic discs were oedematous, with ill-defined edges, and the retinal vessels in the neighbourhood were more or less obscured.

Apart from the foregoing case, which I had several opportunities of examining with the ophthalmoscope, I have seen a similar case in a boy, aged 8½ years, in whom acute nephritis was believed to be post-scarlatinal. Retinal changes never developed, and the lad eventually made a complete recovery. Considerable swelling of the optic discs was present in a second case, and there also recovery ensued.

In the case to be next related, one of acute nephritis in a child of 5 years, there seemed to be little doubt that uraemic blindness was present on at least two occasions.

The child developed a high temperature, associated with bouts of vomiting, during recovery from a moderately severe attack of influenza. The urine presented the usual characteristics of that in acute nephritis, such as scantiness, albumen, and blood. During the course of the illness, which lasted about four weeks and then terminated in recovery, the patient on two occasions appeared to lose for several hours the faculty of recognizing objects once perfectly familiar to her. The ophthalmoscopic appearances were normal from beginning to end of the case.

Although I have mentioned this case I am, of course, aware that uraemic amaurosis, strictly speaking, can scarcely be included amongst the eye changes of nephritis, since, as everybody knows, the blindness is obviously of central origin, dependent on a toxaemia. For the sake of completeness I have nevertheless ventured to include it in my list.

On the other hand, literature contains a number of reports of retinal lesions in chronic nephritis, more particularly in association with chronic interstitial nephritis. Of retinal changes in chronic parenchymatous nephritis, on the contrary, comparatively little appears to have been written. This is a curious circumstance when it is remembered that the latter is commoner than the former type of renal mischief in children (L. E Holt).

The only figures bearing on the frequency of renal retinitis in childhood with which I am familiar are those published a year or two back by Dr. J. E. H. Sawyer and Mr. Edward Nettleship respectively. Dr. Sawyer[2] tabulated twenty-four instances of chronic interstitial nephritis in children, and among that number retinitis was recorded in three only. Mr. Nettleship's figures are more important, since they distinguish between the two varieties of chronic nephritis in children. He collected from the literature of the subject and from the records of Great Ormond Street Hospital for Children 80 cases of interstitial nephritis in patients whose age did not exceed 21 years.[3] Retinitis or retinal haemorrhages had been noted in 31 of the cases, but then in about 37 others no ophthalmoscopic examinations appear to have been made. On the other hand, among 149 parenchymatous cases retinitis was found in 7 only. Briefly, then, fundus lesions were found in 75 60 per cent. of the 41 cases of interstitial nephritis examined ophthalmoscopically, and in only 14 per cent. of the 50 parenchymatous cases, also examined ophthalmoscopically. The fallacy inherent to these figures, as Nettleship himself points out, lies in the fact that the ophthalmoscope was employed less frequently in the parenchymatous than in the other cases.

The ocular changes of chronic nephritis assume two types, which may occur together or separately. First stands retinitis, which does not differ materially from the form found in older patients suffering from renal mischief—that is to say, it is marked by silvery spots which show a special predilection for the macula lutea, around which they are often grouped in a way that once seen is not readily forgotten. Multiple haemorrhages often form part and parcel of the retinal inflammation. In a second form, retinitis is replaced by papillitis, like that already described as present in certain cases of acute nephritis. In a third class, a more or less typical papillitis is associated with pronounced papillitis, and to this condition the name "neuro-retinitis" is rightly applied. A fourth class—namely, detachment of the retina—has been described, but always, so far as I know, in association with retinitis. The interstitial and parenchymatous forms of renal mischief appear to present much the same ophthalmoscopic appearances. Nettleship[4] makes the important observation that the severe eye changes in his 40 collected cases of juvenile retinitis was larger than in any consecutive number of cases in older subjects.

To take detachment of the retina in nephritis first. In remarkable cases reported by Dickinson, Davidson, Anderson, and Sawyer respectively, detachment of the retina occurred in association with chronic nephritis in children. W. Howship Dickinson's patient was a boy, aged 11 years, who developed albuminuria after an attack of scarlatina.[5] He suddenly lost his sight, and it was found by Mr. R. B. Carter that in addition to albuminous retinitis, "the retinae had become very extensively detached." The appearances of the kidneys, when examined after death, were characteristic of granular degeneration. In A. D. Davidson's case[6]

A girl of 14 years was admitted suffering from right hemiplegia, with aphasia and paralysis of the right external rectus muscle of seventeen days' standing. The urine, specific gravity 1018, contained $\frac{1}{15}$ albumen and a few blood cells, but no casts. Sight was equal only to the reading of large print (No. 16 on Jaeger's type). The optic discs were much swollen, and some retinal haemorrhages were present, along with characteristic white patches of renal retinitis at the yellow spot. Eighty-four days later the patient was found to have become quite blind, as the result of detachment of the retina in each eye. The *post-mortem* examination showed the kidneys to be in a condition of interstitial atrophy. Moreover, a cavity with ragged walls, containing old blood clot, was found immediately outside the left lateral ventricle of the brain.

James Anderson's case[7] resembles in its essential details the one just related.

His patient was a girl, aged 9 years, the subject of chronic nephritis and severe double neuro-retinitis, with numerous haemorrhages and exudation into the retina. The chronic renal mischief in this case was believed to have originated at the age of 18 months from an attack of measles followed by bronchitis. The child died comatose about three months from the first complaint of visual defect.

At the necropsy both kidneys were found to be the seat of advanced fibroid contraction. Sawyer's case[8] occurred in a girl aged 11 years. The urine, specific gravity 1007, contained a trace of albumen and a few granular casts. There was marked renal retinitis, with detachment of the retina in each eye. Death occurred thirteen days after admission.

As regards chronic parenchymatous nephritis, a good instance has been reported by George Carpenter,[9] where that affection was complicated with neuro-retinitis. The child was watched for some four months, and died shortly after removal from hospital. Pathologically the kidneys were found to belong to the large white type.

Most of the cases of retinal mischief, however, have occurred not in association with parenchymatous but with interstitial nephritis, which may or may not have followed an acute attack. For careful accounts of such cases we are indebted in this country to Hulke (1864), Hutchinson (1871), Jabez Hogg (1873). W. H. Dickinson

[1] *Ophthalmoscope*, July 1st, 1906.
[2] *Birmingham Medical Review*, 1903.
[3] *Royal London Ophthalmic Hospital Reports*, June, 1904.
[4] Loc. cit., p. 4.
[5] *Diseases of the Kidney*, 1877. p. 546.
[6] *Trans. Ophthal. Society*, vol. i. 1881. p. 57.
[7] *Trans Ophthal. Society*, vol. viii. 1888. p 141.
[8] *Birmingham Medical Review*, 1903. p. 566.
[9] *Ophthalmoscope*, April 1st, 1905.

(1877), Gowers (1879), Benson (1883), H. Handford (1890), Lawson and Sutherland (1898), Milligan (1902), Nettleship (1903), and Hobhouse (1905). In general, the ophthalmoscopic appearances have not differed markedly from those found in older subjects. In other words, they have included more or less of a stellate figure having its centre at the macula lutea, along with splashes, as it were, of retinal exudation elsewhere in the fundus, and sometimes haemorrhages along the retinal vessels. In Milligan's case,[10] in a lad aged 7 years, oedema of the optic disc, if not actual neuritis, was replaced in the course of about four months by albuminuric retinitis, haemorrhages and white spots being visible with the ophthalmoscope. In none of the other cases has this sequence of ophthalmoscopic events been recorded. For my own part, I am convinced from what I have seen that the ocular affection may begin and end as a neuritis pure and simple, without any complication with retinitis, properly so called. From a diagnostic point of view, it is of consequence that the existence of these cases should be widely recognized by physicians. Such cases as they occur in adults were described long since by Gowers,[11] and quite recently renewed attention has been directed to them by Arthur J. Ballantyne.[12]

Lawson and G. A. Sutherland, in reporting a fatal case of renal retinitis in a child of 12 years,[13] remark that albuminuric retinitis in childhood carries with it a prognosis as bad as it does in older subjects. The truth of this remark is attested by Nettleship's figures[14] referring to 24 young patients with kidney mischief, who died at a known interval of time after discovery of the retinitis. In no fewer than 16 of the patients—that is to say, in two-thirds of the total number—the interval in question amounted to less than four months. Indeed, in 5 patients only did it work out at more than twelve months. In view of these figures, Nettleship remarks that the prognostic significance of the retinal changes in young subjects may actually be graver than in adults.

Dr. James E. H. Sawyer[15] has laid some stress upon the diagnostic value to be attached to an ophthalmoscopic examination in chronic interstitial nephritis in children, since although albuminous retinitis is usually a late symptom, yet it is a certain indication of the nature of the disease.

The contents of this communication may be summed up by saying:

1. That ocular complications are uncommon in cases of acute nephritis, and that when they occur, they usually assume the form of an inflammation of the optic papilla;
2. That retinal complications are apparently much less frequent in parenchymatous than in interstitial nephritis;
3. That the ophthalmoscopic signs do not appear to differ either quantitatively or qualitatively in the two forms of chronic nephritis;
4. That detachment of the retina may occur as a complication of retinitis in childhood; and
5. That the significance as regards duration of life is as unfavourable in the renal retinitis of children as in that of grown-up persons.

IV—Theodore Thompson, M.A., M.D., M.R.C.P., F.R.C.S.,

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UNSUSPECTED NEPHRITIS IN SEPTIC INFECTIONS.

Nephritis is commonly found in the course of septic infections, and in septicaemia it is almost constantly present. In such conditions as septic endocarditis the nephritis may be sometimes overlooked, but it is not these general conditions to which I wish to allude in this abstract. In children and young people we occasionally meet with cases in which all the signs of chronic interstitial nephritis are found. And in some of these cases a septic infection has occurred a year or two previous to the onset of the chronic nephritis. Thus, a young girl was admitted to hospital with double dacryocystitis. Both lacrymal sacs were full of pus, and both were opened and drained. The patient progressed favourably until a fortnight after her illness, when she complained of pain in the back. There was no vomiting and no oedema. The urine was examined, and was found to contain a large quantity of albumen, although on admission it had been normal. This case has been under observation nearly two years, and during that time the arteries have become thickened, the left ventricle has hypertrophied, and the blood pressure has increased. The urine contains a large trace of albumen, a few casts, and is of low specific gravity. In this case, unless the urine had been tested in the routine way, the nephritis might have been overlooked, since none of the ordinary signs of acute nephritis was present. A somewhat similar case is that of a boy, aged 21, who at 18 years old was operated upon for the radical cure of an inguinal hernia. At this time the urine was normal. The wound suppurated and acute orchitis followed, it being several weeks before healing took place. During this time the urine was not tested. Three years later he had haematuria, headache, and vomiting. The arteries were much thickened and the left ventricle greatly hypertrophied. The systolic blood pressure was 198 mm. Hg. Albuminuric retinitis was present. The urine was of low specific gravity and contained albumen and casts. He eventually died of cerebral haemorrhage. In this case well-marked chronic nephritis occurred in a youth of 21, three years after a severe septic infection.

In cases of bacterial infection many of the bacilli pass into the blood and are voided in the urine. This is well known to occur in typhoid fever, but it does not appear to leave any permanent renal trouble in the majority of cases. In a few cases, however, it is possible that a chronic nephritis is set up, as in the two cases quoted. The occurrence of an unsuspected nephritis in a previous acute septic infection may help to explain some of those cases of chronic interstitial nephritis which occur in children and young people.

DISCUSSION.

Dr. Frank Eve (Hull) said: Two cases of nephritis from accidental poisoning by potassium chlorate have occurred recently in my district. In one case the patient was a man, about 35, who had been accustomed to take potassium chlorate for quinsies, and had come to regard it as a harmless remedy. He dissolved 2 oz. in hot water, and sipped it at bedtime till the whole was consumed. Next morning he was able to go to the office as usual, but was sent home later, as his complexion was turning a curious mixture of slaty blue and jaundice yellow. Next he found himself passing motions like coffee grounds and urine like stout, and very little of that. A man in this plight will be dead within the week from suppression of urine, and the *post mortem* examination will show that the kidneys are much swollen. Possibly their inactivity was partly due to their being choked up (in common with the spleen and liver) with the detritus of broken-up red corpuscles. I noticed that the large mononuclears in the blood appeared to be scavenging large spherical masses of it (up to 3 μ). Infusion was the only thing to do this man any good, causing a secretion of $\bar{3}$vij of pale urine; but it was done too late, and may have contributed to the haemoptysis which closed the scene. In view of the hopeless and distressing nature of these accidents, it would be desirable that some one should experiment on animals poisoned with potassium chlorate to find the best treatment—particularly to find if infusion should be done, and when; and whether incision of the capsule of the swollen kidney would be good treatment. The drug is specially toxic to children and to those with inadequate kidneys and when taken on an empty stomach.

Dr. Frederick Langmead (London) said that it could not but be agreed that the majority of cases of nephritis in children were of unexplained origin. His attention had been directed to the frequency with which a history of sore throat preceding the acute nephritis was given, and since then he had been struck by the truth of this observation. He believed that in many cases infection was by means of the tonsils, just as it was in rheumatism. Another point of especial interest in the study of acute nephritis in children was its association with skin lesions. In Henoch's purpura haematuria frequently occurred,

[10] *Reports of the Society for the Study of Disease in Children*, vol. ii, 1902, p. 99

[11] *Manual and Atlas of Medical Ophthalmoscopy*, 1879, p. 170.

[12] *Ophthalmoscope*, April 1st, 1905.

[13] *Trans. Ophthalmological Society*, vol. xix, 1899, p. 71.

[14] Loc cit., p. 4.

[15] *Birmingham Medical Review*, 1903.

associated with albuminuria. In many instances, no doubt, this was due only to a bleeding from the kidneys, analogous to the bleeding under the skin found elsewhere, whilst albuminuria, apart from haematuria, might be regarded as a lymphorrhage corresponding to the urticaria which frequently replaced purpura; but, as Professor Osler had shown, true nephritis of a haemorrhagic intractable type sometimes occurred in this disease. Syphilis had been considered as the cause of chronic interstitial nephritis in children, but this was not always true. Many instances occurred in which this explanation was unsatisfactory. In acute specific fevers, especially diphtheria, a definite acute interstitial nephritis was recognized, which might well terminate in chronic granular kidney. As regards treatment, he believed that the diet should be restricted to milk only for much longer than was usual in England. If this were done, sometimes the albumen diminished gradually, and finally disappeared, but if additional food were given, it either increased or remained stationary in amount. An ample diet should only be allowed when all hope of cure was abandoned.

Mr. J. HERBERT PARSONS (London) said that the ocular manifestations of acute nephritis in children were conspicuous by their absence. Uraemic amaurosis occurred in children as in adults, but showed no ophthalmoscopic or other objective signs. He had never seen a case of renal retinitis during the acute stage of nephritis in a child. The rarity of such a phenomenon was indeed of some diagnostic value. In his experience the typical ophthalmoscopic picture of renal neuro-retinitis—the swollen disc with marked papillitis and the well-known star-shaped figure at the macula—was seen frequently in children as the result of intracranial pressure. It might easily be mistaken for a true renal neuro-retinitis by those who were not acquainted with the fact of its frequency in association with choked disc. The picture might be an absolutely typical one, but in most cases there was more swelling of the disc (6 D. or more) than was found in renal cases. In his opinion, there could be no doubt that the star figure at the macula in cases of intracranial pressure was much more common in children than in adults; indeed, it might almost be said to be the rule in children with choked discs. This fact was not generally recognized, but was of great diagnostic importance, and he had found it so in several very instructive cases seen at the Great Ormond Street Children's Hospital.

Dr. J. E. H. SAWYER (Birmingham) had been able to collect from many and various sources 55 cases of chronic interstitial nephritis under the age of 21 years. Twenty-three were under 10 years of age, 21 between 10 and 15 years, and 11 between 15 and 21 years. Twenty-two were males and 33 females. From a careful examination of these cases, he had formed the opinion that the contracted granular kidney of children rarely was a further stage of the large white kidney, but was the result of a primary growth or proliferation of the intertubular connective tissue, and was quite an independent process from that which occurs in the other forms of nephritis. The previous history of those suffering from this disease supported this view better than any other argument, since it was found that the patients rarely suffered from renal oedema. A history of past oedema could only be obtained in six instances. If all these cases had passed through a previous stage of acute parenchymatous nephritis, it was difficult to understand how that the great majority could have escaped the dropsy which is so frequently present in what might be assumed to be an earlier stage of the same disease. A history of polyuria since birth was obtained in some of the children, which is not a condition usually associated with the large white kidney. As this polyuria was noticed during the first few years of life, the presence of renal oedema would hardly have remained unobserved or have been forgotten. It was also suggested that, as the proportion of male to female children suffering from interstitial nephritis was about 2 to 3, and as nearly the reverse proportion was found in those suffering from parenchymatous nephritis, it did not seem likely that the former condition was a further stage of the latter, unless there was some additional factor which played a part in furthering the progress of the disease, and which more frequently affected female than male children. The possibility of an acute congenital or intrauterine nephritis, being the beginning of the chronic interstitial nephritis, was discussed. Cases of acute interstitial nephritis in syphilitic infants had been described, and it was thought that such a condition might in some of the cases be the origin of those changes which produced later the granular nephritis of infants. His conclusions were: (1) That the changes found in the true chronic interstitial nephritis of childhood were not a further stage of parenchymatous nephritis, but the results of a primary inflammation of the interstitial tissue of the organs; (2) that the disease usually commenced insidiously, but might in certain cases have its origin in an acute interstitial nephritis.

Dr. D. B. LEES (London) said that knowledge of the etiology of acute nephritis was very imperfect; in most cases the cause appeared to be due to a microbic invasion. In some cases of fatal scarlet fever without clinical evidence of nephritis, Dr. Gordon, of the Manchester Fever Hospital, had found microscopical evidence of early interstitial nephritis. The speaker had found the external application of ice extremely valuable in acute nephritis, the amount of urine increasing, and the blood and albumen passed diminishing. Certain precautions were necessary: (1) A well-trained and trustworthy nurse; (2) medical observation twice daily; (3) warmth of the patient's body, to be obtained by a hot-air bath or hot-water bottles before ice was applied; (4) warmth to be maintained during the whole period of treatment; (5) care in the accurate localization of the icebags over the kidneys—this tests the efficiency of the nursing; (6) the temperature to be taken every four hours. If these precautions were employed, and the patient kept on a milk diet (possibly with some carbohydrate added), much success might be obtained in the treatment of a very grave affection.

Dr. PORTER PARKINSON (London) believed that gastro-enteritis was an occasional cause of acute nephritis, probably owing to absorption into the blood and subsequent excretion from the kidney of abnormal products formed in the intestinal tract. In two cases under his own care acute nephritis followed chronic gastro-enteritis. He had had no experience in the use of the icebag in acute nephritis, but considered dry cupping of the greatest value in certain cases, especially if the urine contained much blood, whether or no its quantity were much reduced. Haematuria often entirely ceased twenty-four or forty-eight hours after this treatment had been employed; it should be used more frequently, as other methods were so inefficacious.

Dr. E. CAUTLEY (London) thought that an acute inflammation of the kidneys could occur in children and run a typical course, as regards the urinary symptoms, with little or no constitutional disturbance. Some cases were extremely mild and lasted only a few weeks, although blood was present in the urine at the onset. He agreed that chronic interstitial nephritis was probably a sequence of an acute interstitial inflammation in infancy. Such attacks were almost always overlooked unless a systematic examination of the urine was made. Etiologically, acute nephritis was due sometimes to the direct action of micro-organisms on the kidneys, but more likely it was produced by the action of toxins on the renal cells—toxins which were microbial in origin, or developed from the irregular digestion or decomposition of food in the alimentary tract, or sometimes in other organs of the body. On account of the mild course of the disease in many cases, Dr. Cautley would not attach undue importance to any particular mode of treatment. He disapproved of the use of the icebag, although recovery might ensue. In his opinion, mild cases would get well under simple rest, warmth, and limited diet. More severe ones should be kept on a diet of milk and carbohydrates, and dry cupping used if there were suppression of urine. There was no objection to increasing the proteid in the diet as the blood excretion ceased and albuminuria decreased, provided that a careful watch were kept on the urine. A too restricted diet reduced the general health and prolonged the duration of the renal disease.

Dr. A. W. SIKES (London) said that he had frequently noticed that the infants of mothers who suffered from eclampsia or severe albuminuria often, for the first few days, passed urine containing albumen. In the children of eclamptic mothers who died in the first few days the kidneys showed the same changes as those found in the kidneys of patients who died from eclampsia.

Dr. Voelcker, in reply, thanked the Section for their kindness in the reception of his contribution to the discussion. He was pleased to hear that the ophthalmoscopic researches into the conditions present in acute nephritis in children had shown that retinal haemorrhages were rare, and he had found this point useful in distinguishing between cases of renal haemorrhage in purpura or leukaemia and cases of acute nephritis. With reference to the source of infection in cases of acute nephritis, although the tonsils were often the seat of invasion, yet he was certain that in many instances this was not the case, and they had to take a wider view of the sources of infection in acute nephritis. With regard to treatment, he was quite in accord with Dr. Eve and Dr. Parkinson as to the value of dry cupping, but he felt hardly bold enough to follow Dr. Lees in the application of icebags to the kidneys.

A DISCUSSION ON LUMBAR PUNCTURE: ITS DIAGNOSTIC AND THERAPEUTIC VALUE.

OPENING PAPERS.

I.—E. Farquhar Buzzard, M.D., F.R.C.P.,
Assistant Physician to the National Hospital for the Paralysed and Epileptic, the Royal Free Hospital, and the Belgrave Hospital for Children.

Lumbar puncture has been a recognized operation for some sixteen years, and its position in the armament of a medical man has been steadily becoming more important and more assured during, at any rate, the latter part of that period, chiefly owing to its association with cytodiagnosis. The present is not, therefore, an unsuitable time for reviewing the situation, for insisting on those facts which the operation has helped to establish, and for bringing prominently forward those questions which are still awaiting satisfactory answers.

As is the universal rule with all new procedures, more has been claimed for it than it deserves, and a tendency has not been wanting in some enthusiasts towards vaunting its value at the expense of more tried, equally reliable, and certainly more pleasant clinical methods of gaining knowledge. At the same time, if we maintain that lumbar puncture is not necessary for the proper diagnosis of all cases of meningitis in children, or of the large majority of cases of tabes or general paralysis in the adult, we must still recognize that it has its value both from the diagnostic and the therapeutic standpoint.

The subject has already attained considerable dimensions, if we may judge by the literature it has excited, and its introduction at this meeting within the space of time allotted to me can only be accomplished by taking for granted a general acquaintance with the operation on the part of every one, and by allowing more time for certain questions which are worthy of discussion.

The Technique of the Operation.

After a considerable experience both with trocars and with needles I have come to the conclusion that a needle, of the hypodermic type but made of platinum and provided with a stilette in case of need, is more reliable and more convenient a weapon than any form of trocar. The second point concerns the aspiration of the fluid. For my own part I prefer to leave the fluid to come away of itself, and, in the event of this failing, in most cases to rest content with failure rather than to use any form of suction. No mechanical harm can possibly be caused by the simple and careful introduction of a needle, but the process of aspiration in the dark is not one which can be regarded as equally innocuous in view of the delicate nature of the tissues with which the instrument is likely to come in contact. Probably the method may be adopted in a great majority of cases without fear of evil consequence, but it is equally probable that it is in those cases in which aspiration is necessary for the obtaining of fluid that the chances of injuring nerve roots are the greater.

General Indications and Contraindications.

It would be impossible and unnecessary to recite the indications for lumbar puncture, as every case in which the question of its employment arises must be decided on its own merits, but it is probably safe to say that, as far as we know, no strong contraindications exist if three precautions are well remembered. The first of these calls for no further comment, and is denoted by the term "surgical cleanliness." The second precaution is one of which the necessity has been clearly and scientifically demonstrated, notably by Nissl. No patient should be subjected to the operation unless he can be at rest for some hours, preferably twenty-four to forty-eight, after it is over. The third precaution relates to the amount of fluid withdrawn, and probably, to some extent, to the rate at which the withdrawal takes place. I have had no personal experience of serious symptoms arising as a result of puncture, but a study of cases in which an alarming disturbance of health, or death itself, has been recorded shows that in almost every instance large quantities of cerebro-spinal fluid—15 to 40 c.cm. or more—have been removed at a single sitting. In such cases the tension of fluid has been pathologically great, and its rapid diminution has probably disturbed the circulation in vital centres, and in that way led to cardio-vascular and respiratory failure. In milder cases the unpleasant symptoms have generally consisted of headaches, nausea or vomiting, giddiness, and palpitation, etc. No absolute rule can be laid down as to how much fluid can be safely removed. When tension is pathologically high, it may be assumed that more fluid may be withdrawn than under normal conditions, but even then the question of making the withdrawal a slow rather than a rapid process must certainly be considered.

Cerebro-spinal Fluid as an Aid to Diagnosis.

Physical and Chemical Data.

The normal fluid is a clear watery liquid of low specific gravity, alkaline in reaction, containing a certain percentage of chlorides, a small quantity of serum globulin, a trace of cholin, and a reducing agent, probably a sugar.

In normal individuals the fluid comes through the needle or trocar at low pressure, usually drop by drop. Under certain pathological conditions there is evidence of greater pressure, and a continuous stream, sometimes of considerable force, is observed. Efforts have been made to measure scientifically both the actual and relative tension of the fluid, with probably a certain amount of success; but I should like to suggest that such methods, even if accurate, do not give us any more valuable information than can be obtained from observation of the stream by an experienced eye; and, secondly, that there are too many possible sources of error to allow of anything like scientific accuracy. The stream may be altered by the position of the patient, by the viscosity of the fluid, by the presence of particles partially blocking its path, and in any case it is not possible to assert whether the tension represents that of the whole of the cerebro-spinal fluid, or of only a part which may be cut off from the rest by adhesions or other pathological processes. Speaking generally, the amount of fluid and its tension are commonly increased in meningitis, intracranial tumours, uraemia, and some cases of hydrocephalus. Taken by itself, high pressure is not a symptom of great diagnostic value, although, as I shall mention later, it may possibly explain certain symptoms.

The chemical constituents of the fluid differ from the normal in some diseases. A considerable quantity of albumen is often present in those conditions in which there is a large cellular increase in the fluid, especially in cases of meningitis, but the relation of the amount of albumen to the number of cells is not a constant one. Albumen is not infrequently found in cases of nervous uraemia, and in such conditions it is at times associated with an increased quantity of urea. A careful study of the uraemic fluid has been made by Carrière, who also mentions a decrease of chlorides and an increase of phosphates and sulphates.

The presence of cholin in the cerebro-spinal fluid has been the subject of a large amount of valuable scientific work, which is associated chiefly with the names of Mott and Halliburton, and there is no doubt that all katabolic organic processes of the central nervous system produce an increase of this substance. From the point of view of practical clinical medicine, however, I do not believe that it is ever, or hardly ever, necessary to seek for the cholin in order to make a diagnosis between functional and organic disease, and this statement is especially applicable to diseases of children.

The presence or absence of a reducing agent is a factor of which our knowledge is not yet sufficiently exact to make it of great importance in diagnosis. The absence of this substance is often noted in cases of meningitis, whether they owe their origin to the tubercle bacillus or to other forms of bacteria. On the other hand, an increase of sugar varying with the glycosuria has been found in cases of diabetes. Some reference must be made to the coagulation of the cerebro-spinal fluid obtained from cases of meningitis. In the tuberculous form the clot generally floats in the middle of the liquid, is translucent or grey in colour, with perhaps a few white flakes. In the more purulent form of meningitis the clot is often yellow, adherent to the sides of the vessel and more easily broken up. The difference is probably dependent upon the cellular contents of the fluid, the consideration of which must now draw our attention.

Cytological Data.

It is to its cytological aspect that the study of the cerebro-spinal fluid obtained by lumbar puncture owes its chief impetus, and it is somewhat curious that up to the present time no very accurate method of making cell counts, analogous to those with which we are familiar in relation to the blood, has been generally employed. Most of the methods which have been suggested are too laborious for everyday use, and, on the other hand, the object aimed at is sufficiently easily attained after a little experience with rougher methods. For this reason it is doubtful whether better results can be expected from more lengthy processes, unless in the future more delicate differential estimates are shown to be of real value. Should this prove to be the case, the new method suggested by Ernest Jones, which has the advantage of rapidity, may come into general use.

Our present knowledge permits us to recount the essential facts associated with the cytological examination of the cerebro-spinal fluid in a few words. In the first place, the deposit of the normal fluid after centrifugalization contains very few cells, so few that in a smear prepared from the deposit only two or three may be visible in any field of an oil immersion lens. Different observers have endeavoured to draw a distinction between a normal and pathological number of cells by the number which may be seen in such a field, a method which is obviously open to fallacy, and it is probably safer to trust to the experience of the investigator to decide this point. Having decided that the number of cells is above the normal, the next point is to consider their morphology. As a general rule, the chief question to be answered relates to the prevalence of lymphocytic cells or of polymorphonuclear leucocytes, although cases of focal haemorrhage or softening have been recognized by the presence in the spinal fluid of the granule cells, phagocytic elements which may be laden with erythrocytes or drops of myelin.

The indication suggested by the prevalence of lymphocytes or of polymorphonuclear leucocytes must be considered on its merits in relation to the general nature of any particular case.

In cases of acute disease in children, when meningitis is suspected, a prevalence of lymphocytes points to a tuberculous infection rather than to a meningitis due to the meningococcus, or to the common pyogenic organisms. In cerebro-spinal fever, in post-basic meningitis, in pneumococcal, staphylococcal, streptococcal, or other forms of meningitis, the polymorphonuclear leucocyte is the prevalent element, and the differential diagnosis between these various forms will depend upon bacteriological investigation. What I have said applies to a case in which the symptoms are neither extremely recent nor of long standing, in other words to the fully-developed acute disease. The reasons for this reservation are twofold. In the first place, a case of cerebro-spinal fever or post-basic meningitis in its subacute or chronic stage, and indeed during its convalescence, if it is on the way to recovery, will often show a lymphocytosis of the cerebro-spinal fluid. In the second place, I am inclined to think—and this is one of the points upon which further information would be very valuable—that in the initial stages of a meningitis owing its origin to the meningococcus or to some of the common pyogenic organisms, the lymphocyte may be the most conspicuous cell in the spinal fluid. My reason for this belief is based on the fact that a lymphocytosis has been noted in a variety of conditions in which there is some acute irritation of the meninges, in herpes zoster, in acute poliomyelitis, in epidemic parotitis, etc. The same point raises another important question: What is the chief factor in the determination of a lymphocytic or of a polymorphonuclear increase? Is the lymphocytosis chiefly significant of toxic irritation and the polymorphonuclear leucocytosis dependent upon the actual presence of numerous bacteria; or does the type of cell correspond with something in the chemical nature of the infective agent? Some of those present to-day may be able to express a more valuable and definite opinion on this point than I feel capable of. I shall also hope to hear discussed by Dr. Batten, Dr. Ross, and others cases which form exceptions to the general cytological rules.

If we leave the subject of the acute forms of meningitis we find that the cytology of other forms of infantile disease is by no means so well understood, and there is probably a considerable field for further investigation in this direction.

Nobécourt and Voisin have published the results of their examination of the cerebro-spinal fluid in a number of cases of pulmonary and bronchial disease in children, and these tend to show that congestion and oedema of the meninges are not infrequent, and that meningeal symptoms may be due to raised fluid tension, with or without an increase in the number of cells. Along these lines may probably be found the explanation of the pseudo-meningeal state (or meningism) with which every one is familiar in young children.

Among the more chronic ailments, the most important are the results of congenital or acquired syphilis as they affect the central nervous system. The lymphocytosis of the spinal fluid which is characteristic of cerebro-spinal syphilis in the adult may also be found in children, and in some cases may be a useful guide to a correct diagnosis and an appropriate line of treatment.

Among the most difficult problems with which we are confronted are those associated with suppurative otitis media and subsequent disease of the temporal bone. Not infrequently we meet with cases in which, after a mastoid operation, the temperature does not fall and the child presents symptoms pointing, perhaps indefinitely, to some extension of disease to the intracranial cavity. The question of a cerebellar or cerebral abscess on the one hand or of a diffuse meningitis on the other arises, and at the same time we are unable to say whether the symptoms may not be the result of an intoxication of the nervous centres which, under favourable conditions, will clear up of itself.

In such a dilemma an appeal to the condition of the cerebro-spinal fluid may be of great value. A positive finding pointing to a diffuse meningitis will save an unnecessary operation, while a negative finding will allow the observer to wait until more definite evidence of an abscess supervenes, or until a favourable turn in the patient's condition suggests his convalescence. Of this assistance I have had practical experience, and no one can afford to overlook any means of help in this particularly difficult class of case.

Bacteriological Data.

At the present time it is the rule to make both a cytological and bacteriological examination of the fluid in all cases, and the former examination acts as a useful control and adjunct to the latter. For instance, the growth of a common pyogenic organism, such as the *Staphylococcus albus*, in a culture taken from the fluid, would be naturally disregarded if the films made from the centrifugalized deposit presented no increase of cells.

On the other hand, the diagnosis of tuberculous meningitis might prove tedious in cases when the examination of cultures and smears are negative as regards bacilli, were it not that the presence of a lymphocytosis indicates the condition before inoculation experiments have time to give a positive result.

More important is the fact that lumbar puncture allows of an early detection of the infective agent, and permits us to hope that with further development of vaccine or serum treatment, diseases which are almost invariably fatal now may prove in the future amenable to treatment on those lines.

Already some measure of success seems to have been obtained in cerebro-spinal fever, and the opsonic method

has been used with interesting results in the same disease.

Further refinements in the science of bacteriology have been employed by Morgenroth and Stertz, who have found syphilitic antibodies in the cerebro-spinal fluid of patients suffering from cerebro-spinal syphilis. It is impossible to say how large a field of useful knowledge lies before us until these various tracks have been properly followed up.

THE THERAPEUTIC VALUE OF LUMBAR PUNCTURE.

It must be admitted at once that this easy method of examining the spinal fluid, and therefore of making accurate diagnoses, has indirectly rendered most important assistance to the treatment of several diseases, but probably further experience will be necessary before we can say definitely that lumbar puncture as a direct therapeutic measure has come to stay.

As a method of decompression in cases of raised intracranial pressure due to the presence of tumours within the skull, the removal of spinal fluid has not given satisfaction, and cannot be compared with trephining on account of its unreliability and its very temporary effect.

At one time it was hoped that lumbar puncture might present a solution of the hydrocephalic problem, but experience has shown that in only some cases is the withdrawal of fluid from the lumbar region attended by relief of symptoms, and in the majority of these the favourable result is only of short duration. The necessity of repeating the operation at frequent intervals must inevitably detract from its utility and general acceptance. In the acute form of meningitis in children I have seen, as most of you have, what appears to be an immediate beneficial effect upon the patient's condition follow the withdrawal of spinal fluid, but I have not observed a permanent improvement in the tuberculous forms. Cases of post-basic meningitis have done well after lumbar puncture, but this is a condition in which a favourable termination was not altogether out of the question before the employment of this therapeutic measure. It is difficult, therefore, to gauge the effect of lumbar puncture on the mortality of that disease.

On the general principle that one can lower a pathologically high pressure, and that one can remove a considerable amount of toxic material, I am inclined to consider lumbar puncture a justifiable and sometimes a clearly-indicated measure in cases of acute meningitis.

Although I have not been lucky in the few cases of uraemia in which I have employed lumbar puncture, yet I cannot help entertaining a hope that in this condition the method may prove of real value. In this belief I have been encouraged by the writings of Alfred Russell, F. C. Eve, and others in this country, and still more by the records of Carrière, who obtained really striking results in children who were the subjects either of a nervous uraemia in the immediate sequel to acute scarlatinal nephritis or of uraemia developing a year or more after the same renal disorder. He has observed complete recovery from a condition of profound coma associated with convulsions, loss of all reflexes, Cheyne-Stokes respiration, and myosis. The same author notes that the fluid removed in these cases has an increased toxicity to lower animals. Whether the relief afforded is due to the lowering of pressure upon the cerebral circulation or to the removal of toxic products is not clear, but probably both factors may play some part in the beneficial result.

Further evidence of the value of lumbar puncture as a therapeutic measure in other conditions is much needed, and one cannot but have grave doubts as to whether all recorded successes are really worthy of serious consideration, or should be regarded as cases in which the question of cause and effect has not been definitely decided.

In conclusion, I would submit that lumbar puncture as a diagnostic measure has undoubted claims; as a therapeutic measure it is justifiable in many cases of meningitis, and probably beneficial in uraemia, but further experience is required in order to decide its exact position as a remedial agent.

II.—F. E. BATTEN, M.A., M.D.Cantab., F.R.C.P.,
Physician to the Hospital for Sick Children, Great Ormond Street.

[*Abstract.*]

DR. F. E. BATTEN said that he intended to deal with the question of the value of lumbar puncture in children, based on the observation of the results of the puncture performed on some 42 cases from the age of 2 months to 12 years, for a variety of conditions, either for the purpose of treatment or in aid of diagnosis.

These cases divided themselves into twelve groups—(1) tuberculous meningitis, (2) cerebro-spinal meningitis, (3) pneumococcal and other forms of meningitis, (4) convulsions, (5) intracranial tumour, (6) hydrocephalus, (7) cerebral diplegia, (8) congenital syphilis, (9) spinal caries, (10) poliomyelitis, (11) retraction of the head, and (12) acute ataxia.

More than half the cases came into the first three groups. The presence of a large excess of lymphocytes was a very constant feature in cases of tuberculous meningitis, but in one case a high polymorphonuclear count had been obtained. What the exact meaning of the high polymorphonuclear count might be he had not been able to demonstrate. The finding of the tubercle bacillus in the fluid was the important factor in the diagnosis. No therapeutic value could be attached to lumbar puncture in cases of tuberculous meningitis.

In cerebro spinal meningitis due to the *Diplococcus intracellularis*, a high polymorphonuclear count was invariably found. The presence of the diplococcus in the fluid and in pure culture confirmed the diagnosis.

Lumbar puncture was not only of value in the diagnosis of atypical cases, but was also of use in the relief of certain of the symptoms.

In pneumococcal meningitis lumbar puncture was of diagnostic value, but it was shown that a perfectly normal cerebro-spinal fluid might be obtained within a week of the patient's death from widespread cerebro-spinal meningitis. In congenital syphilis with obvious affection of the nervous system, a high lymphocytic count was obtained. In infantile convulsions, intracranial tumour, in cerebral diplegia, poliomyelitis, and acute ataxia, no diagnostic or therapeutic value could be attached to lumbar puncture.

With regard to hydrocephalus and spinal caries, he would express no opinion as to the therapeutic or diagnostic value of lumbar puncture. In conclusion, he said that although the diagnostic value of lumbar puncture was not great, yet it was of some service in cases of meningitis. Lumbar puncture had but little therapeutic value. He had never seen any sign of collapse to follow lumbar puncture, except in one case of hydrocephalus in association with cerebral tumour, in which 18 oz. had been withdrawn, and even in that case he could not assert that the subnormal temperature produced was directly caused by the withdrawal of the fluid.

III.—J. GRAHAM FORBES, M.A., M.D.Camb., M.R.C.P.,
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[*Abstract*]

THIS communication is based on the results of examination of cerebro-spinal fluid in some 130 cases. The examination included 50 tuberculous, 36 meningococcal, 16 pneumococcal and streptococcal and syphilitic cases, 10 cases in which intracranial diseases other than meningitis were present, and 18 general cases. In 40 of the 50 tuberculous cases the diagnosis was verified (1) by finding the tubercle bacillus in the cerebro-spinal fluid in 24, and (2) by *post-mortem* examination in 16. In 10 the diagnosis of tuberculous meningitis was made but was not verified. In 21 of the 26 recent cases of tuberculous meningitis, tubercle bacilli have been found. This success has been due to the simple method of staining the fine lymph clot which usually forms on standing, and in which the bacilli can easily be recognized without prolonged search.

The examination of the cell deposit showed an excess of lymphocytes in 25 cases; in 2 cases polymorphonuclears were in excess, in 11 cases scanty lymphocytes and degenerate cells only were found, and in 2 cases no cells were found, but tuberculous meningitis was verified *post mortem* in both.

With regard to those cases in which the polymorphonuclears were in excess, it would appear on clinical and *post mortem* evidence that their predominance was associated with a chronic condition terminating acutely.

In meningococcal meningitis the cerebro spinal fluid

was examined in 36 cases; in 16 cases a marked excess of polymorphonuclear leucocytes was present, varying from 65 per cent. to 94 per cent., and a pure growth of the meningococcus was obtained in each case; in 11 cases the deposit was chiefly composed of polymorphonuclear cells, and in 3 others there was a scanty cell deposit; in 6 other cases lymphocytes or degenerate cells were present.

A survey of these results shows that in severe and fatal cases of meningococcal meningitis and in the acute stage the fluid is turbid, contains a heavy trace of albumen, a large number of polymorphonuclear cells, with the meningococcus identified in film preparations and in cultures.

In the less acute cases the fluid is frequently clear, contains a faint trace of albumen; the cell deposit is scanty but still composed of polymorphonuclears, with a few meningococci in film preparations, but not usually obtained in cultures.

In the chronic cases and those which eventually recover or result in hydrocephalus the fluid is clear, no albumen is present, and the only cells found are a few lymphocytes, often degenerated; film preparations show no organisms or only a very few degenerated diplococci.

In pneumococcal meningitis 8 cases were examined; in 3 the deposit was chiefly polymorphonuclear; in 2 scanty lymphocytes were present; in 2 cases the cerebro-spinal fluid was normal, but on *post-mortem* examination pneumococcal meningitis was found, and in 1 case of tuberculous meningitis pneumococci were obtained in pure culture from the cerebro-spinal fluid.

In 5 cases streptococci were found; in 1 case—the *Bacillus coli communis* from a case of spina bifida—the child recovered.

In 2 cases of cerebral abscess the cerebro-spinal fluid was normal. In 3 cases the cerebro-spinal fluid yielded a deposit of small colourless rhomboid crystals which were considered to be the crystalline form of globin, the proteid derivative of haemoglobin; one was a case of cervical caries, the second a case of tuberculous meningitis, and the third a case of cerebral diplegia with convulsions. The pathological significance of these crystals is not known.

The information derived from the examination of the cerebro-spinal fluid shows that in the majority of cases, both from the positive and negative aspects, the operation of lumbar puncture provides a means of diagnosis of great value.

DISCUSSION.

DR. PORTER PARKINSON (London) said he had practised lumbar puncture frequently during the last five years. It was of great value in the differential diagnosis of cases of meningitis. The enumeration of the cells in the centrifugalized fluid was of great use in the acute forms of meningitis, where the polynuclear cells seemed invariably to be in great excess, while an excess of lymphocytes was in most such cases reliable evidence of a tuberculous origin. Where there was any doubt as to the meaning of cerebral symptoms arising in the course of pneumonia, lumbar puncture had been, in his opinion, the best means of deciding the point easily and rapidly. The pneumococcus was an organism easily demonstrated in and cultivated from the cerebro-spinal fluid, and its presence was of course conclusive. He quoted a case of his own where pneumococcal meningitis was diagnosed in this way, and from which the patient ultimately recovered. As regards the therapeutic use of lumbar puncture, his opinion was not definitely formed. He had often seen consciousness return in tuberculous cases after puncture had been done, but he had not seen any permanent benefit ensue, though his experience was by no means small.

Professor HALLIBURTON (London) said the cerebro-spinal fluid presented problems of interest, many of which still remained for permanent settlement. There were questions (1) of origin; the fluid was doubtless in the main a secretion, but added to this were the waste products of nervous activity, so that the fluid played the part of a lymph in relation to the nervous system; (2) physical questions, such as the pressure relations of the fluid, and whether or not there was or was not pressure discontinuity between the cerebral and spinal cavities; (3) cytological; and (4) chemical questions. It was the last set of problems to which he had devoted most attention. The principal points of chemical interest were (*a*) the small amount of protein in the normal fluid and the diagnostic value of an increase in the quantity; (*b*) the presence of a reducing substance now definitely proved to be sugar; (*c*) the presence of choline in cases of acute degenerative diseases of the nervous system had, by the employment of the recently invented new tests, been conclusively shown to be of diagnostic value; (*d*) the rise of potassium in the same conditions was quite intelligible now that MacDonald had shown the relatively large amount of potassium salts present in nerve fibres. The crystals mentioned by Dr. Batten were doubtless of great interest, and merit further analysis.

Dr. FRANK EVE (Hull) said: In lumbar puncture it occasionally happens that little or no fluid can be obtained, although one is certain that the needle is in good position and free from obstruction. The remedy for this difficulty is very simple, or appeared to be on the one occasion on which I tried it only a few weeks ago, and that is to increase the pressure in the cerebral veins by a very gentle ligature round the neck. There seems no objection to this measure to start the flow of fluid, but obviously it may not be free from danger if the ligature is maintained throughout the operation. This remedy indicates that the cause of the arrest of flow of the fluid is an indisposition on the part of the cerebral veins to dilate. I have met a similar obstinacy on the part of the veins of the arm in infusion, where the spasm (apparently) of the vein was cured by forcing in a few drops of very hot saline solution. It is desirable to measure the cerebro-spinal pressure, not only to study the subject, but also to know, in case any therapeutic benefit results, whether it is to be attributed to relief of pressure or to other causes. In a recent case of tetany[1] there was striking benefit, which, in the face of normal pressure, I ascribed to the hyperaemia produced. The simple instrument[2] which I have devised for measuring the cerebro-spinal pressure has often shown that a very slow rate of flow was compatible with a fairly high pressure. Hence that the rate of flow is quite unreliable as a guide to pressure.

Dr. ATHOLE ROSS (London) said: If in a case of meningitis we perform lumbar puncture, prepare and stain films of the cerebro-spinal fluid, and then find that small lymphocytes are exclusively present or markedly predominate, we may be reasonably sure that the case with which we have to deal is tuberculous disease of the meninges. It is to be noted that we must exclude the possibility of syphilitic meningitis, as there, too, we find that the small lymphocyte is the predominant cell. But compared with tuberculosis of the membranes, syphilitic meningitis is a rare affection. Moreover, in children the presence of the small lymphocyte in the cerebro-spinal fluid almost without exception points to tuberculous meningitis. Mutzner has attempted to discredit the results of all previous writers on the strength of a single example of tuberculous meningitis in which he found, instead of small lymphocytes, the polynuclear cell. His case appears to have been one of acute miliary infection with a primary focus in the lungs, and the meningitis ran a rapid course. At autopsy, although miliary tubercles were obvious along the middle cerebral arteries and their finer branches, "a purulent muff, more than 1 cm. thick, was found beneath the chiasma, the pons, and the bulb." In this case the fact that most of the meningitis was not confined to the interpeduncular space, as is usual in tuberculosis, is certainly strange. Since cultures were not taken at the *post-mortem* examination, the possibility of a mixed infection was not excluded. I have been so fortunate as to observe a similar type of case, for which I can suggest an explanation. In this particular instance the cerebro-spinal fluid contained an excess of finely-granular polymorphonuclear cells and only a few small lymphocytes. Autopsy revealed the presence of tuberculosis. Previous to death, however, the *Staphylococcus pyogenes albus* was obtained in pure culture from the cerebro-spinal fluid. We are here dealing with a case of double infection by the *Bacillus tuberculosis* and the *Staphylococcus albus*. The presence of the latter micro-organism fully explains the predominance of polynuclear cells where lymphocytes were to be expected. Did time permit, I could multiply examples of these discrepancies. Such cases are extremely rare, and I would emphasize the

[1] *Lancet*, July, 1907.
[2] Ibid., April, 1905, p. 1067.

fact that they do not invalidate the great utility of cytodiagnosis as an aid to the clinical methods at our disposal. I feel convinced that, given the presence of cells in the cerebro-spinal fluid, the nature of those cells will give the clinician important information in about 85 per cent. of all cases, at a low estimate. In conclusion, it will be well to state that Widal has found a few small lymphocytes in the normal cerebro-spinal fluid. My experience has not been the same as Widal's in the cases I have examined, and it is by no means easy to obtain normal cerebro-spinal fluid for this purpose, as it is hardly justifiable to perform lumbar puncture on a healthy individual.

Dr. W. E. Wynter (London) referred to his first cases of lumbar puncture, published in the *Lancet* in 1890, in which the operation was performed for the relief of pressure. *Post-mortem* examination showed that in nearly all cases described as tuberculous meningitis the real condition was general tuberculosis, and this discouraged further attempts to relieve the local condition. Other therapeutic applications were the inducement of anaesthesia by injection of cocaine, as in a case of sarcoma of the sacrum now under care, and the injection of antiseptics, such as acetozone, in cerebro-spinal meningitis, a recent instance of speedy and complete recovery having occurred in the speaker's experience.

Dr. Purves Stewart (London) said: For diagnostic purposes it has hitherto been customary to centrifuge a given quantity of cerebro-spinal fluid for a fixed time, then to decant the fluid and collect the deposit with a capillary pipette and blow this on to a slide, stain, and examine with a fixed magnification. This process is satisfactory enough for diagnostic purposes so long as we have to do with a large excess of cells. But it is open to two fallacies: (1) If the smallest fraction of a drop be left at the foot of the centrifuge tube after decanting, this dilutes the deposit when collected in the capillary pipette, and it dilutes it to a variable and unknown extent. (2) When we blow the deposit out on to a slide, even if it has not been diluted, there is no certainty of limiting the deposit to a fixed area, and therefore the number of cells in the field varies inversely with the size of the drop on the slide. Of course, if a large number of observations be made by the same observer, using the same technique, the margin of error is smaller than if different observers count the cells in successive cases. But at the best the standard can only be approximate and rough. This inaccuracy can be overcome by taking the cerebro-spinal fluid, adding to it a fixed proportion of a staining agent, and then counting the cellular elements in a special counting chamber, just as is done in the case of blood corpuscles. Owing to the scantiness of the cells in normal cerebro-spinal fluid, we require a larger counting chamber than in the case of the blood. Fuchs and Rosenthal have devised an excellent modification of the Thoma-Zeiss chamber for this purpose. I have been using it now for several months. By means of this counting chamber we can be absolutely accurate, whereas with a centrifuged deposit we can only have an approximate idea. The one advantage of a centrifuged deposit is that it yields a permanent specimen which can be kept for reference. In health the number of cells per cubic millimetre varies from 1 to 4 or 5, these cells being lymphocytes, with an occasional endothelial plate, never any polymorphs. In a series of 8 successive cases of tabes I found the average number of lymphocytes was 72 3; in 4 cases of general paralysis of the insane the average was 190.4; in 7 cases of cerebro-spinal syphilis the average was 37.6, and so on. The figures thus obtained correspond to what I had found before with the old centrifuge method, but they are more reliable. They demonstrate the well-known fact that as a rule the lymphocytosis of tabes and of general paralysis is far greater than that of ordinary syphilitic affections of the central nervous system. But I would like to point out that this rule of lymphocytosis in tabes is not without exceptions. I have seen one case of well-marked tabes, with most of the classical physical signs, in which the cerebro-spinal fluid on one examination showed only 3.3 lymphocytes per cubic millimetre, and a week later a second observation in the same case only showed 11 per cubic millimetre. Dr. Ferrier has recently had a similar case, and I understand that Babinski has had one also. So far, I have not come across a case of general paralysis without well-marked lymphocytosis. The last point to which I would direct attention is as to the significance of polymorphonuclear leucocytes in the cerebro-spinal fluid. Their presence is always pathological, and indicates some acute process within the meninges. The most marked cases are those of acute suppurative meningitis. I have counted as many as 28,933 polymorphs per cubic millimetre in a suppurative meningitis, while counts of 200, 300, and 400 are exceedingly common in pneumococcus or diplococcus meningitis. But the presence of polymorphs does not necessarily mean a *suppurative* infection; it simply means an *acute* process. In a rapidly-advancing tuberculous meningitis I have found as many as 30 per cent. of the cells to be polymorphs. As an acute septic meningitis subsides the polymorphs gradually become replaced by lymphocytes, and ultimately even the lymphocytes disappear as the cure is complete. Lastly, it is interesting to note that we may get an intense polymorph leucocytosis without any organismal infection whatever. I have found it within a few hours after injecting sterile salt solution into the cerebro-spinal fluid of monkeys.

Dr. A. Gardner Robb (Belfast) said: Having had in the last few months some 250 cases of cerebro-spinal fever, and having in these cases a considerable experience of lumbar puncture, I should like to mention one or two points regarding the employment of this operation in that disease. With regard to the technique, I always use a comparatively large trocar without suction, and give an anaesthetic. In this disease there is likely, in all early cases, to be much struggling, with the result that no fluid may be obtained, or a needle may be broken if an anaesthetic is not given. The large trocar is necessary, as the fluid obtained is occasionally thick pus without any clear fluid, and this would not flow through a small needle without suction, which I think is undesirable. From a therapeutic point of view, I believe that, although in the large majority of cases the result of even frequently repeated lumbar puncture is altogether unsatisfactory, occasionally very marked improvement does follow the operation, and is worth a trial in cases not doing well.

Dr. Buzzard, in replying, referred to the unanimity of opinion in relation to the general aspects of the diagnostic and therapeutic value of lumbar puncture. He regretted that he had not known of Dr. Wynter's paper written on this subject so far back as 1889. With regard to the significance of the polymorphonuclear leucocyte, he did not agree with Dr. Purves Stewart that it denoted acuteness, or that the experiments he had quoted supported that view. Probably phagocytosis was the most important factor in the appearance of polymorphonuclear leucocytes in the meninges, whether the substance to be taken up was organic or inorganic.

PRECOCIOUS DEVELOPMENT.

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When invited to open a discussion on the subject of precocity my first idea was to treat the matter from the point of view that, if not a morbid entity, precocity is at any rate a source of danger and the beginning of mental troubles.

There are many who, consciously or unconsciously, read into the term nothing but what is bad, and consequently regard it mainly as a condition to be combated, antagonized, or warded off, without inquiring very closely into the meanings of the word and its varied usage, and without, perhaps, having fully considered the varied degrees and relations of the condition itself. That precocity, in a vague sense of the term as it presents itself to the medical man, is rightly regarded as demanding this attitude of caution and precaution I should be the last to deny; and so generally has this been taught and so widely is it accepted that it seems almost superfluous to insist upon it, particularly before the members of this Section, who must be fully aware of the dangers and difficulties it presents.

It seemed to me, therefore, that it would be useful on this occasion to stand back, as it were, from our topic, so as to get a wider view, and to try to set these conditions in their natural relations, and, if possible, arrive at some

distinctions which may save us from falling into too stereotyped methods. That there is a risk of this I am convinced. Thus I find Baur (a German writer) saying that

> All mentally precocious children, according to the ordinary use of the term, are pathological, and mentally diseased.

Another writer says: "Precocity is usually pathological" (Czerny). Similarly Lombroso, in considering the precocity associated with genius, describes it as "morbid and atavistic." Crichton-Browne says:

> We look upon it as a morbid psychical condition generally terminating in the worst results.

And, again:

> Precocity may generally be looked upon as expressive of disease.

Speaking generally, one may say that the word carries a bad meaning, and that this preconceived judgement is apt to circumscribe our ideas on the whole subject. For the moment it is sufficient to admit that many cases which are morbid or pathological are also precocious, while reserving the converse proposition for further examination.

The term "precocity" has been used with very different meanings, and often with no very definite meaning at all, but in a vague, loose, or popular way, and some attempt to understand these possible differences seems necessary if discussion of the subject is not to fall into confusion. By some it is defined as an earlier than average attainment of the ultimate growth of maturity; by others, again, as an unduly rapid development in relation to some assumed norm. Whichever of these be accepted, it is important to observe that we have in our mind some standard for comparison. Thus, primitive races are said to be precocious as compared to civilized races; here, it is clear, some race standard of either maturation or development is assumed. But if an English boy is described as precocious, this statement implies a comparison with some average or mean among boys of his own race or country.

There are other possible standards, as has been pointed out by Terman (an American writer); thus, development may be considered precocious in relation to some imaginary or ideal type, and this type may be one of general application, or may be set up as the standard for a particular individual, as, for instance, when it is stated that a child as the result of an illness developed very rapidly in intelligence. If we take it to be the early attainment of the ultimate growth of maturity, we are involving ourselves in a number of uncertainties, and are by anticipation answering some of the questions which are really in need of solution. We may say, then, that precocity is an unduly rapid, or, as I would prefer, early development in relation to some standard which, for ordinary purposes, may be taken as the average of the individuals of the race or nation.

Such an early or rapid development may, as I have already suggested, be due to an inborn tendency in the individual—that is, it may be a variation from the racial type; or it may partly be the effect of external influences, deliberate or accidental in their application. As a variation it may be studied just like any other variation.

For this purpose the rate of development or its early occurrence resolves itself into a question of ability in relation to age; and as Pearson has shown that ability does not vary much with age, it comes to be a question of ability at different ages. Extremely interesting and valuable work has been done in this connexion by Galton in dealing with adults, and by Karl Pearson dealing with children and young adults. Galton showed that, taking examination marks as a measure of ability, the variation so shown followed very closely the law of deviation from the average, and by applying this law gave a numerical value to his terms and classes of ability; Pearson, taking the classification of Cambridge graduates in examination, and a rough grouping of school children by the teachers' estimate into seven grades of intelligence, and assuming the frequency distribution of intelligence to follow the law of deviation, has constructed a curve and a tentative scale of intelligence which is useful as a basis of comparison and to give precision to one's views.

Galton is at pains to show that those who achieve eminence and those who are naturally capable are to a large extent identical, the qualities which, in his meaning, go to make up ability being a combination of capacity and zeal, together with the power of doing a great deal of very laborious work. These things, he says, go together to achieve success, and many who when young possess natural capacity may lack either the zeal or the necessary capacity for work to apply their natural gifts successfully. Throughout he makes it clear that he regards ability as an inborn variation which would render the youth possessing it specially gifted or precocious. Indeed, he goes so far as to say that few who possess very high abilities can fail in achieving eminence. He does not pursue his inquiry very closely into the age at which his eminent men first manifested their superior ability, though he noted some 92 cases in which this was specially early; he also states that eminent men surpass ordinary men in superiority from the first.

Other studies have been made into precocity of genius. Professor Sully in particular has investigated the problem, "What proportion of great men are precocious in youth?" He takes a fairly wide limit for his definition, including all cases of exceptional aptitude or bent corresponding to later development, and he takes into consideration both the age at which ability is first displayed and also the age at which maturity is reached. As regards the first, he finds that 4 out of 5 of his cases displayed talent before 20.

Musicians and artists are the most precocious, philosophers the least, the order being very much in accordance with the degree of abstractness of the subject to which their faculties are devoted, those dealing with sense impressions coming first, those with mental images next, and those with abstract ideas last—or, in the terms that Hughlings Jackson would employ, presentations, representations, and re-representations. Genius, he concludes, is precocious in the sense of manifesting itself early, and there is much evidence to show that early manifestation is not incompatible with prolonged or late development. Havelock Ellis finds that the prevalence of a vague undefined precocity among British men of genius is very considerable; 292 out of 1,030 cases examined are in one sense or another precocious, and he adds that the chief feature in their childhood is precocity.

Jastrow, in a critical analysis of Sully's figures, admits that he shows a general relation between intellectual eminence and precocity, but considers his criteria of precocity and greatness are too lenient. He therefore makes a further and more rigid selection of the 90 very greatest names, and among the precocious selects only those showing unusually early and very pronounced evidence of special gifts, including at the upper end the *Wunderkinder* of the world, and at the lower a somewhat less degree of the same manifestation, but including none that would not of themselves attract great attention. This proves to be four times as exacting as Sully's limit. He then shows that this special degree of precocity is nearly twice as abundant in the very greatest men as in great men in general, the same being true of the *Wunderkinder* taken alone. He also maintains that the eminence of his specially precocious men is unmistakably superior to that of great men in general. This constitutes very strong evidence of the close and essential relation that exists between genius and precocity, and tends to confirm the belief that this correlation holds good for the slighter degrees of ability also. We have, then, a general consensus of opinion among those who have investigated the facts that we draw our great men from the group of those precocious in early years.

The converse question, How many of our precocious or able children and youths become eminent? is a much more difficult question to answer. It must, of course, be only a small proportion, as in addition to ability there is always the possibility of misunderstanding at home, mismanagement in the school, and the difficulty of securing the necessary openings financially and otherwise for forging to the front, and a special liability to the dangers of overpressure. But more than these, there is the necessity for vigour and decision in action, enthusiasm, and ambition for success.

In any attempt to investigate the result in individual cases, one would be practically forced to take as one's material the results of ordinary school examinations, which are apt to bring out not only the brilliant boy all

round, but to include those who have been most skilfully prepared, and perhaps those who owe their success in such a test to well-developed imitative faculties, or a specially facile memory. These qualities are not sufficient to produce ultimate eminence, and probably often result in mediocrity or worse.

On the other hand, there is no doubt a considerable number of the great men of the world who entirely failed to be recognized as specially able in youth, either by examination tests or by the estimates of parents or teachers. These are often those of such strength and power as to have struck out a line of study of their own quietly and unobtrusively, and quite independent of the requirements of school curricula, and these are, perhaps, the most brilliant and precocious of all in reality. Some, again, of the highly gifted have from the counter-attractions of sports and games, etc., never attempted to put forth their powers or to derive much benefit from their instruction, but though such may through sheer force of mind and body rapidly recover lost ground when they take themselves seriously or find their true bent, they form but a small proportion apparently of those who make a great reputation.

Enough, I think, has been said to show the close connexion between eminence in later life and special ability in youth, and this alone must tend to modify to some extent our customary attitude towards precocity.

If, then, precocity is a variation, even though there be a very wide deviation from the average, there is no justification for considering it an abnormal variation or a pathological condition merely on account of its rarity, so long as it is similar in kind, with smaller variations and only differing in degree. From this point of view, it is clear that if we adopt a very strict criterion of precocity, the cases become so rare as to be of little everyday importance, whereas the precocious children one so frequently hears of are numerous, and consequently they must be included under a much wider conception of the term.

There are great differences of opinion as to the physical correlations of ability. Havelock Ellis out of 1,030 cases found definite mention in 213 of extreme delicacy either during infancy or childhood or throughout life. Some writers think there is a tendency on the part of biographers to exaggerate the physical delicacy in order by contrast to enhance the appearance of mental vigour. Yoder, for instance, who, in an inquiry into 50 selected cases, also noted some cases of delicacy in early childhood, concludes that the idea that great men as children have been weak in greater proportion than other children, sickly and inactive physically, is erroneous. They have as healthful development as ordinary children, tall men predominate among them, and a large proportion took part in sports and physical exercise. Galton draws a similar conclusion and in very strong terms. "I do not deny," he says, "that many men of extraordinary mental gifts have had wretched constitutions, but deny them to be an essential or even the usual accompaniment."

Turning to actual measurements of children, Pearson, as a result of investigations of very large numbers, is convinced of the small part played by the size of the head in determining the grade of intelligence. Differences in size will not account for at most one-twelfth, and probably not as much as one-twentieth, of the observed differences of capacity, whether between adults or children. Health and temper, he finds, have more relation to intelligence than any of the head measurements made; and it is a point of some interest that his results show that handwriting is doubly as good a test of intelligence as any head measurement. In the report of the Medical Officer of the Education Department of the London County Council for the year 1906 a very instructive table is given showing the heights of boys and girls in the London schools, distributed according to standards and arranged in age-groups. The 12 per cent. of dullards noted are seen to be nearly all below the mean height, whilst 2 or 3 per cent. exceptionally clever or precocious children are generally above the mean. At any given age the taller children are found in the higher standards, and a group of children at any age and in any standard generally averages less height than the groups of children in higher standards but one or more years younger.

Pearson does not deal with height or weight; but these results are confirmed by Porter's measurements of St. Louis children, and also by Dr. Oebbecke of Breslau, who, taking half-yearly groups, which diminishes the risk of error, finds that there is a relation between height and weight and mental equipment. Boas, however, from similar investigations in Toronto, came to an opposite result. Bohannon, in a study of peculiar and exceptional children, comes to the conclusion, as to general health and mental ability, that the larger children—excepting extremes—are superior to others.

Ellis notes among his 1,030 cases 6 who were seven-months children, or, at any rate, premature. There is a widely-spread impression embodied in popular sayings and insisted upon by medical writers that precocious children do not live long.

For instance, Crichton-Browne, who takes an extremely grave view of precocity and is evidently thinking of the more extreme and rare cases, which have been called *Wunderkinder*, says precocity is a morbid psychical condition generally terminating in the worst results, and those manifesting it almost invariably die young. This general impression can hardly be devoid of foundation, and a lack of vitality and resisting power is not unlikely to be found in cases which present extreme variation from the mean in any direction, whether partial or general, positive or negative. Thus, the imbecile is similarly short-lived. It seems worth while to consider the duration of life among those who survive and become distinguished. Spitzka notes the longevity of persons endowed with high intelligence. Galton, from an examination of 92 of his eminent men who were remarkable for their precocity, found that a curve showing the mortality rate would rise to a culminating point at 38, fall again to 42, rise again to the 38 level by 52, and reach a maximum at 64. The residue of his cases showed an even rise in the curve to a maximum at 68. But it must be remembered that many, if not a large majority of these also, were probably precocious, had inquiry been made and the facts obtainable, as we have seen from other studies. He deduces from this that gifted men fall into two categories—the very weak and the very strong; a small class made up of those who have weak excitable constitutions, and are destined to early death, while the remainder consists of men likely to enjoy a vigorous old age.

On the other hand, Jastrow finds that his specially-selected precocious cases do not live less long than great men in general.

Dividing these into three groups according as their life-work called into play, (*a*) sense activities, (*b*) imagination, (*c*) abstract thought, he finds that the first group gives an average age at death of 60.1, the second 61.1, and the third 66.3; while taking his group of *Wunderkinder*, numbering about 20 in all, and exhibiting the most marked degree of precocity, the average age at death is 56 9. Although, then, there is some difference in opinion as to the physical correlations of precocity, there would seem to be some ground for adopting Galton's view that there is a well-marked group of delicate, highly-strung children of great natural talent with poor resisting power, many of whom may never be heard of; but it would seem the bulk of specially-gifted children are physically strong, and those of them who live to make a name live long.

Though long life may be accompanied by feeble health, this may be due to quite accidental or external circumstances, and not to inborn qualities; similarly a child who is very delicate, and ultimately develops into a man of quite exceptional vigour, can hardly be claimed as showing that physical inferiority characterizes ability.

The correlation between intelligence and size of head or capacity of skull is similarly one about which observers differ. Pearson shows that, taking external measurements, the relation is uniform, but very small and quite useless for purposes of prediction, and that no sensible modification is made in this result if allowance be made for either weight or stature relative to the size of the head.

From the present point of view, the question as to how soon the specially gifted reach the zenith of their powers is one of some interest. Here, again, it has been supposed that there is a rapid rise, an early culmination, and a quick descent, and no doubt a certain number of striking examples could be produced in support of this view; but there is evidence to show that, so far from this being the

usual course of events, the individuals born with great gifts start, as it were, with a greater impulse, show their powers earlier, develop them sooner, continue to develop them longer, reach a higher level, though at a later period, and decline later, as we have already seen. With regard to this point, Sully finds it difficult to decide, but he gives a dozen instances to show that early manifestation of ability is not incompatible with prolonged and even late development.

Galton supports this view. Jastrow considers that his specially precocious class do not achieve a truly great success before other great men, and furthermore, they reach the highest point of their development somewhat later; the average age at which their greatest work is produced being 47, against 45 for great men in general.

This recalls our alternative definition of precocity as an earlier than average attainment of the ultimate growth of maturity. From the foregoing considerations it certainly seems that we must discard it here, as it begs the question at issue, and indeed, is in contradiction to the facts.

The importance of this aspect of the matter cannot be overlooked, as the bed-rock on which human development has been founded is the prolongation of infancy, and there would be much ground for anxiety if it appeared that our ranks of able men were only recruited at the expense of a reversal of this principle of progress.

By regarding precocity as a variation in this way it is possible to see why one so commonly finds in the same family some cases of mental defect and some of extreme brilliancy. Where great variation occurs it occurs in both directions. The frequency with which both imbeciles and men of genius are found to belong to large families is a point of resemblance; and this is true of other variations, such as criminality. There is also a tendency for both imbeciles and men of eminence to be eldest or youngest children rather than intermediate in order in the family, and in both cases it is frequently the case that the parents are of greater age and of greater disparity in age than normal; and here may be mentioned those cases where the precocity is shown only in one direction, such as is seen in the calculating prodigies or those endowed with extraordinary memory powers. These conditions may be associated with high general powers on the one hand, or with a general level of mental deficiency on the other. Similarly we find great mimetic faculty, special keenness of sense-perception or special muscular power, special faculty in the use of words, or great manual skill. What is more common, perhaps, is an early development of intellectual power in a frail and sickly constitution without the necessary development on the emotional and volitional side to give mental balance, steadfastness of purpose and concentration. In these cases we have the material for possible failure and breakdown, and a state of things which needs judicious management and guidance founded on a clear appreciation of the conditions. There will generally be some nervous or physical factors in addition to an ill-centred mental state to put us on our guard. This brings us to a question that we have hitherto left on one side, the effect of the environment in producing or modifying the condition. Accidental external causes may produce harmful variations, as is seen in some forms of imbecility, but rarely beneficial ones, and so we see much harm may be caused to these unstable individuals by the surroundings in which they find themselves, or from harmful conditions deliberately imposed from want of understanding. These may actually induce a forced or pseudo precocity, or prematuration as it has been called by Terman, to distinguish it from the innate precocity we have hitherto been considering.

We are still far from possessing any precise knowledge of the natural order and time of appearance of the various faculties and interests, and until these have been mapped out more fully it is impossible to speak with any certainty as to what is premature; for example, the whole question of the religious education of children may in the future be seen to find its solution in a fuller knowledge of the mental development of the child, and the natural time for the appearance and cultivation of the religious instinct and emotions; and it is possible that much harm may be done by anticipating this. For an answer to such questions as these we may turn to the history of the development of the race to guide us.

At present, both in school life and home life, and in the field of industrial labour, the natural order of development is often inverted, so that we put the abstract before the concrete, precept before practice, reasoning before action, the finer and more delicate muscular adjustment before the broader fundamental growth and training of the larger movements has been sufficiently achieved. We are prone to stimulate the more recent, less organized, less automatic, less instinctive functions of the brain, before the older, more hereditary, and fundamental have become duly established.

The pampering and stimulation of children is very prevalent, and particularly, and perhaps inevitably, in the excitement and turmoil of city life. We are only now beginning to realize the importance of sleep in schools, and, what is equally important, in the nursery and the cradle. Parents are for ever trying to draw out the infant powers by applying all kinds of stimuli far sooner than need be. It has been said that over-pressure is like a bellows blowing into a smouldering heap of loose straw, the more you blow the brighter the flame; but the fire rapidly makes its way through the pile and the whole is soon destroyed. On the other hand, if combustible material be thoroughly compacted, as is the case with coal, then when the light is applied a steady blast from the bellows will produce a prolonged incandescence of such a heat that the ores can be melted and the pure metal obtained. Other conditions in the environment may lead to over-pressure; for instance, over-grown children are very apt to be thrown among their elders, and to be treated and dressed as if they were older than they are, and this often entails an unnatural development. Only children are similarly exposed to special dangers unless great care is taken to avoid them. Naturally precocious children, too, are particularly apt to be submitted to injudicious forcing, and this makes them conceited, lazy, and self-centred. These are some of the numerous dangers of a forced and false precocity.

As we have seen, we want in selecting our boys and men for the best work of the world to discover the naturally gifted and avoid this forced culture. The whole system of scholarships is supposed to aim at this discovery and selection, but till recently all our examinations for entrance scholarships, etc., have been of such a nature as to make it difficult to distinguish the two and to encourage the very evils which it is most important to prevent. The regulations for admission to the navy seem to be a rough and ready attempt to avoid this.

Clouston has shown that during the period of brain growth from 1 to 7 and during the period of puberty and adolescence, neuroses are specially frequent, and in the latter period are associated with mental troubles; whereas, the period from 7 to 13 is peculiarly free from mental defects.

We often find that cases of hysteria or neurasthenia have given evidence of precocity though generally of a peculiar or one-sided type. Early dementia may sometimes supervene on precocity; but in the majority of cases this is not so, but here again it has been ability of an erratic type and often coupled with a defective heredity. It is precisely in these cases that over-pressure is most dangerous. In dealing practically with a case of over-pressure it is quite inadequate merely to advise that the child should be kept back. Repression, if that is to be used at all, must be supplemented by direction and by prescribing an ordered method of life so that proper control may be exercised over the use of the intellectual functions; it must be by planning carefully the way in which the time shall be filled as well as by cutting off the harmful stimuli; healthy simple interests must be cultivated to replace those which appear to be doing harm. A simple and unexciting life must be provided for. The aim should be to secure a complete all-round development, allowing the child steadily to grow through all the stages in order; losing time rather than gaining it, and in doing this it is of the highest importance that the emotional and volitional side as well as the physical health and development should receive attention.

It must be remembered that the child may stimulate himself unduly by concentrating all his energies on some one interest such as excessive reading, and perhaps induce greater nerve tension than ever, or he may be quite unable to face the excitement and competition of ordinary school-boy or childish games without serious mental disturbance, or he may lose just that quality of discipline which he

most needs, or by contracting habits of ease and idleness fail to acquire the power of concentration which is necessary to turn his natural gifts into useful accomplishments.

To sum up, we have seen that in the eyes of the medical profession precocity has been very generally looked upon as an almost unmixed evil; that this view has been based rather on the extreme cases and those complicated with other conditions that mainly come under the special notice of medical men, than on a broad view of the facts; that the term has been used in a loose way which has led to confusion of ideas, and that under the same name have been included conditions very different in nature and origin. I have pointed out that natural ability follows the law of variation from the mean, and that there is no reason to suppose that this is not also true of precocity, and that in the broadest sense of the word precocity is an innate condition based on heredity, and that as such it should not be regarded as abnormal in a strict sense.

It has been pointed out that those who have inquired into the matter from a numerical point of view have shown that from the precocious variations we draw the men who do the world's best work, and that the highest degrees of genius have been in the highest degree precocious. Some evidence has been adduced to show that those who are advanced for their age in intelligence are also advanced in physical development.

On the other hand, I have suggested that the condition which is often confused with this inborn advantageous variation is the acquired result of a forced culture. It is highly probable that it is this artificial form of precocity, either alone or combined with the innate capacity, that has earned for precocity its evil name. I hold that this form is pernicious, particularly in those cases which are physically weak, which have a neurotic inheritance.

Precocity of this kind is closely bound up with the ways of our modern civilized life, and for its correction demands a more accurate knowledge of the natural order and time of appearance of our various faculties, physical and mental. The important thing to bear in mind is, as Froebel says, that the vigorous and complete development and cultivation of each successive stage depends on the vigorous, complete, and characteristic development of each preceding stage; and this applies to both the physical and the mental side.

For the avoidance of the risks attaching to this overpressed, irregular, or one-sided development a negative attitude is not sufficient; it is necessary actively to secure a healthy environment, and definitely to direct the development so that it shall be full, deep, orderly, and many-sided. A broad foundation is necessary if great heights are safely to be reached. Intelligence alone is not enough; it must be supported by enthusiasm and capacity for work and the cultivation of these qualities is especially important if the naturally gifted are to do good work in the world.

We must try, by an estimate of the all-round character of the development, physical, mental, and moral, to distinguish the true from the false precocity, and, while guarding against the latter, take care not to discourage those possessed of valuable natural gifts by an indiscriminating neglect or repression.

PRECOCITY IN RELATION TO THE DUCTLESS AND ACCESSORY GENITAL GLANDS.

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A vast amount of evidence has been accumulated within recent years to show that the ductless glands—namely, the pituitary and pineal bodies, thyroid and thymus glands, and adrenals, and also the accessory genital glands, namely, the testes and ovaries—are all intimately related to each other in function, and are all concerned in some mysterious way with bodily growth and sexual activity. Abnormal conditions of one or other of these glands may be associated on the one hand with gigantism, precocious obesity, abnormal strength and muscularity, premature sexual development and hirsuties; on the other hand, with dwarfism, muscular atrophy and myasthenia, sexual infantilism, and general alopecia.

These opposite conditions would appear to point to excess of function in the one case and to defect of function in the other, on the part of certain of these organs. Hyperfunctional and hypofunctional activity afford a ready explanation of the phenomena; yet the exact part played by each gland in the process is not easy to determine. Similar signs and symptoms may be seen in association with tumours of glands remotely distant from each other. For instance, precocious physical and sexual development may occur in connexion with tumours of the pineal gland or of the adrenal cortex, or of the ovaries and testes.

Gigantism and acromegaly, one and the same affection, are associated with tumours of the hypophysis cerebri. Gigantism is usually accompanied by sexual infantilism or maldevelopment of the sexual organs, whilst acromegaly is often attended by atrophy of the testes and ovaries and sexual impotence. Further evidence of correlation of function existing between all the glands mentioned is afforded by the frequency with which some are found to be simultaneously enlarged, or enlargement of one is seen in conjunction with atrophy or loss of function of another. Tamburini found the thymus gland enlarged in 8 out of 11 cases of acromegaly associated with pituitary tumour. Woods Hutchinson, in 23 cases of acromegaly, found the thyroid atrophied in 7, enlarged in 5, and normal in 11. Hypertrophy of the hypophysis cerebri follows castration and also extirpation of the thyroid gland. Acromegaly and myxoedema occasionally occur together, thus showing again relationship between the thyroid and hypophysis cerebri.

The relationship between the thyroid gland and sexual activity is well known. Freund found the thyroid enlarged in 45 out of 50 pregnant women. Suppression of menstruation is often followed by a goître, which disappears when the menstrual flow is re-established.

General alopecia, impotence and myxoedema have been known to follow testicular atrophy the result of traumatism (Achard and Demanchi). Sexual infantilism is the rule in myxoedematous cretins, and the administration of thyroid extract speedily gives rise to signs of puberty.

The relationship between the adrenal cortex and sexual development has been well brought out by Bulloch and Sequeira. They collected a large number of cases of quite young children in whom there has been a precocious development of hair on the face and on the genital regions usually associated with premature development of the genital organs and of the accessory genital glands. The pathological findings in such cases have been either carcinomata (hypernephromata) or simple hypertrophy of the cortex of the suprarenal capsules. In a few cases the tumours have been described as sarcomatous in type. These writers showed, moreover, that atrophy and hypoplasia of the adrenals may be associated with disappearance or non-development of hair on the pubes and hypoplasia of the genital organs. Enough has been said to emphasize the relationship of function between the ductless and accessory sexual glands. Yet the exact nature of this relationship is at present undetermined.

One cannot in all cases decide how far the signs and symptoms are due to perverted, exaggerated or diminished function on the part of a particular gland affected, or upon the unbalanced action of other glands which are apparently unaffected.

Moreover, precocious physical development may occur in the absence of any enlargement or tumour of any of the glands named, and hence it may be impossible to attribute the condition to functional disturbance of any gland in particular. Also, it must be observed that tumours and enlargement of these glands are not necessarily associated with similar symptoms—in the shape of precocious physical and sexual development and hirsuties—or their opposite conditions. Much will of course depend on the period of life at which the glandular affection occurs. Gigantism is the result of a pituitary tumour in early life, and acromegaly is its consequence after adolescence is reached. But a pituitary tumour in early life may give rise not to gigantism, but to physical and sexual infantilism, whilst in later life a pituitary tumour may be accompanied not by acromegaly, but by loss of sexual and muscular vigour and by loss of hair.

Tumours of the adrenal cortex in young children may be attended by precocious physical, muscular, and sexua

development, or by precocious obesity with hirsuties. In adults similar tumours may occur without producing any physical or sexual abnormality.

Tumours of the testes and ovaries in young children may give rise to precocious sexual development and hirsuties, which disappear after removal of the tumours. These are, perhaps, the only cases in which precocious development can be directly traced to disease of the organs in question. In adults, tumours of the accessory genital glands are, as a rule, associated with loss and not with excess of sexual activity, or with reversion to secondary or opposite sexual characteristics, male or female, as the case may be.

The pineal body is generally regarded as functionless, and a mere vestigial survival of the median eye, which was probably highly developed in extinct amphibia (Labyrinthodonta), and was a sense-organ in animals of the pretertiary periods. Tumours of the pineal body do not as a rule produce any but the ordinary symptoms of intracerebral new growths; but in 2 cases, precocious sexual development with hirsuties in boys aged 6 years and 4½ years was associated with sarcoma of the pineal body.

Fritsche and Klebs have attempted to refer excessive growth of the body to tumour conditions of the thymus gland. I have already referred to the frequency with which the thymus is found to be enlarged in connexion with enlargement of the pituitary and thyroid glands.

That the thymus has some influence on osseous development is shown by Karl Barsch, who found that extirpation of the thymus in young dogs and cats is followed by arrest of growth and changes in the epiphyses of long bones resembling those of rickets. It is possible that achondroplasia—a congenital condition closely resembling rickets, but affecting the diaphyses of long cartilaginous bones, rather than the epiphyses as in rickets—is due to some perversion of function on the part of the thymus or thyroid or pituitary glands.

With the above considerations in view we can assert that bodily growth in general is intimately related to integrity of function on the part of the ductless and accessory genital glands, and that the glands themselves have a functional relationship to each other. Hence it follows that precocious physical development of any kind may be traced to morbid and abnormal conditions of the organs named.

Varieties.—I need make no further allusion to gigantism, but pass to other and more common forms of precocious physical development. These are of mainly two types: (1) The precociously obese type, (2) the muscular or infant Hercules type. Both of these may be associated with precocious development of the sexual organs and with hirsuties.

By precocious obesity (a term first used by Parkes Weber) is meant the obesity commonly seen in middle-aged men and women, and not mere plumpness or excessive adiposity, such as may be produced in infancy and childhood by excess of fattening food, or may occur as a "normal abnormality" (Goodhart). In precocious obesity the features are bloated; the cheeks swell with fatness, the complexion is dusky and congested. The skin may be studded with stellate venules; bluish-white striae, resembling the lineae gravidarum, are seen about the abdomen and thighs. The fat is usually distributed evenly throughout the body, but the upper or lower extremities may remain thin. Rolls or pads of fat are situated about the neck, breasts, and flanks. A lipomatous mass or hump is sometimes seen between the shoulders. The mammae may be large and well-developed; the belly is pendulous and bulging. The subjects of precocious obesity have all the appearances of stout, middle aged persons. The expression is commonly sad and careworn, and may be suggestive of idiocy. A few have been feeble-minded or imbecile; and probably the condition described by Bourneville as "nanisme avec obésité" may be of this variety. As a rule, however, these precociously obese children are also mentally acute beyond their years.

The circulation is usually poor, the heart sounds and pulse may be weak and irregular or intermittent, the extremities are cold and blue. Chilblains and small slowly-healing ulcers form about the toes and fingers. Acne scrofulosorum is not uncommon.

Hirsuties has been present in all morbid cases of precocious development of both varieties. It is shown in early development of pubic hair. It may be present on the face, and sometimes it has been generally distributed.

In the obese type true precocity of development of sexual organs, apart from the presence of pubic hair, is not a constant feature. Abnormal development of the external organs of generation was only seen in three of the cases of the obese type collected by Bulloch and Sequeira.

In my own 2 cases, male and female, there was no precocious development of external or internal sexual organs.

I have collected 10 examples of this precociously obese type; of these, 7 were females and 3 males. In 6 of the female cases hypernephroma was found. In 1 no tumour of any kind was discovered after death. Hypernephroma was present in 2 out of 3 male subjects. In 1 no *post-mortem* examination was held.

The following is a typical example:

Henry M., aged 4¾ years, was born healthy and at full term, and had always been naturally plump, but since an attack of measles in 1904 he had become increasingly stout and hair had grown all over the face, upper lip, and pubes. He presented a striking resemblance to a burly brewer's drayman in miniature. Height, 33 in.; weight, 3 st. 1 lb. 10 oz. The cheeks were enormous and of firm consistency and bright red in colour. The cutaneous venules were dilated. The shoulders, trunk, and upper extremities were laden with flabby fat which hung in pendulous folds about the mammae and flanks and formed a hump like a lipoma in the cervico-dorsal region. The belly bulged with adipose tissue. The buttocks and lower extremities were not especially fat though muscular; in fact, from the level of the sacrum downwards the appearance was that of a normal child.

Hirsuties.—The hair grew low on the forehead, the eyebrows were bushy and joined each other mesially, the eyelashes were long and thick. Coarse, light brown hair covered the dorsal hump, and grew down the back, and was also present on the pubes. He had an incipient moustache and downy hair on the cheeks and chin.

Organs of Generation were not unduly developed for a child of his years.

Heart, Lungs, and Urine were normal.

Intelligence.—A bright, precocious child, given to making shrewd and quaint remarks which showed considerable powers of observation.

Three months after admission to hospital he developed acute tuberculosis, of which he died, March 11th, 1907.

After Death.—In addition to general tuberculosis, a tumour the size of a chestnut was found involving the left suprarenal capsule. Its nature was that of hypernephroma malignum.

Cases of the obese type associated with hypernephromata may occur with or without premature development of sexual organs.

Bulloch and Sequeira's patient, a girl aged 11 years, resembled a stout little woman of about 40. Menstruation began at 9¾ years of age. The external and internal organs of generation were mature. Growth of hair was copious on the face and elsewhere.

Colcott Fox's case was that of a girl aged 2. She was somewhat rickety, gross, and bloated, and had been "enormous at the age of 10 months." The vulva and clitoris were the seat of precocious development. She was quite remarkably hairy. No record of menstruation.

J. Ogle's patient, a girl aged 3, weighed 44 lb. There was a large amount of hair on the face and over the whole body. The genital organs were well developed. Menstruation is not mentioned.

Tilesius, in 1803, met with a girl aged 4 years who had an enormous formation of adipose tissue with premature development of the mammae and the pubic hair. Menstruation and state of organs of generation are not mentioned.

In all of them adrenal tumours existed.

Dr. Still showed before the Clinical Society in 1901 a boy, aged 7¼, who had become enormously stout and had hair on the pubes. His voice was not gruff, and the external organs of generation were not unduly developed. He died with cerebral symptoms, but in the absence of *post-mortem* examination the nature of the case is undetermined.

Precocious obesity and hirsuties may occur without premature development of sexual organs and unassociated with glandular tumour. I have recorded a case of this kind in the *Clinical Society's Transactions for 1906*. The patient, a girl aged 3 years, was enormously fat, and resembled in appearance a little old woman past the climacteric period. There was a fairly thick growth of hair on the genitals, which were otherwise infantile. After death no tumour of any of the glands was discovered.

Cases of hypernephroma with hirsuties, premature development of sexual organs, but without obesity, have been published by Ritchie, Orth, and Dobbertin.

Cases of precocious puberty without obesity associated with ovarian and testicular tumours have been published by Clement Lucas, Rein, Brohl, Hofacher, and Sacchi. It is interesting to note that with removal of the tumours the signs of puberty disappeared, and the patients became much more childlike in appearance.

The characteristics of the muscular or infant Hercules type are true precocious development of sexual maturity, hirsuties, and remarkable growth of stature, and muscular strength without obesity. The type seems peculiar to the male sex, unless cases in female children of precocious maternity are analogous. Legends of Hercules and Samson were probably based on the occasional appearance of individuals of this type.

Pliny speaks of a boy who, when he died at the age of 3, had a great voice, and was 4½ ft. high. Craterus also mentions an individual who in the course of 7 years was infant, youth, adult, parent, and old man, and then he died. The gigantic boy of Willingham, Cambridge, born in 1741, weighed 4 st. 2 lb. at the age of 3. His organs of generation were fully developed, and there was hair on the face and pubes. He could wield a blacksmith's hammer weighing 17 lb. with ease, and collared and threw boys aged 8 to 10 years. He died of tuberculosis at the age of 6. Anthony White in 1806 recorded a similar case in a boy aged 3, who was the exact representation of the "Farnese Hercules." I have been unable to trace his history.

The 11 cases of the muscular type which I have collected were all of the male sex.

In 2 of these hypernephromata were found, in 6 no *post-mortem* examination was made, in 2 the condition was associated with pineal tumour, and in 1 a tumour of the testicle was present.

Cases of the muscular type associated with hypernephroma have been published by Linser and Adams.

Linser's case is that of a boy aged 5 years 7 months. He exceeded the measurement of a normal boy of 15, and appeared to be 16 to 18 years of age. The penis and testicles were of adult type, and the mons veneris was covered with hair. After death a malignant tumour of the left suprarenal capsule was found.

Charles E. Adams's patient was a boy aged 14 years 9 months, who looked like a sturdy little man. Puberty appeared at 10, and the boy developed great muscular strength, and excelled in athletic sports. For two years his beard was shaved daily. At 16 he died, and a malignant hypernephroma or perithelioma occupied the left suprarenal capsule.

A remarkable modern instance of the muscular type of precocity has recently been placed on record by Mr. Hugh Lett, who kindly allows me to show photographs of the boy, now aged 6 years.

He had been rather backward until 2 years old, when pubic hair appeared, and development took place with great rapidity. There was a remarkable growth of hair over the whole body, especially over the pubes and in the lumbar region. The penis and testicles were large, and resembled those of a young adult. His voice was deep, and was like a bass voice not yet under full control. His muscular development was remarkable, especially on the thighs, and he was possessed of proportionately great physical strength. A skiagram of the wrists showed ossification taking place in all the bones of the carpus, and one of the knees presented the appearance of the joint of a boy 17 to 18 years old. No enlargement of the thyroid or suprarenal bodies could be made out. Intellectually he was bright, but had a terrible temper. He had no fits, nor was he subject to headaches. His appetite was voracious. There were nocturnal enuresis, frequent erections, and nocturnal emissions during the previous three to four months. Height, 3 ft. 7½ in.; weight, 3 st. 12 lb.

CASES OF THE MUSCULAR TYPE IN WHICH OTHER THAN ADRENAL TUMOURS HAVE BEEN FOUND.

Pineal Gland.—C. Ogle found a tumour, apparently an alveolar sarcoma, with haemorrhages and cysts of the pineal gland, in a boy aged 6, who showed premature development of the penis and pubic hair.

Heubner has described a precisely similar case in a boy aged 4½ years.

Testicular Tumour.—Sacchi's case, to which allusion has already been made, was that of a boy aged 9½ years, whose development was altogether excessive. His right testicle was atrophied; the left was of enormous size. It was removed and found to be the seat of an epithelial growth. "The boy then became more childlike and his beard fell out."

Prognosis.—The old saying, *Immodicis brevis est aetas et rara senectus*, applies to all these cases. Giants are seldom long lived. When gigantism is due to pituitary tumour signs of acromegaly make their appearance. Death occurs from general decrepitude and myasthenia. Sometimes syncope or some acute pulmonary disease proves rapidly fatal. Sometimes death is due to the effects of the intracranial tumour. In cases of hypernephroma death occurs at an early age in patients of the obese and the muscular variety. The oldest patient was 14 years, the youngest 14 months at the time when death took place. The average age attained was 5 to 6 years. The prognosis seems most favourable in cases of precocity associated with ovarian or testicular tumours. Uncontrollable diarrhoea and vomiting, or general tuberculosis, or cerebral symptoms, close the scene in some cases. Others succumb to the direct effects of the tumour, or die shortly after its removal by operation. In most cases precocious development is soon followed by rapid degeneration. The condition is one of progeria or premature senility. They die "enfeebled old dotards at five."

Nature of the Tumours.—The glandular enlargement found may be due to simple hyperplasia, or it may be malignant, carcinomatous, or sarcomatous in nature. It would seem that all varieties are equally fatal.

With regard to tumours of the adrenal cortex (hypernephromata), Rolleston and Marks say "malignant tumours of the adrenals are a peculiar and special class. They may approach structurally either the carcinomata or the sarcomata, and sometimes one and the same tumour may in parts resemble each."

The term "mesothelioma" has been used to describe these tumours.

Sarcomata and *lymph sarcomata* of the adrenals are, as a rule, unassociated with signs of precocious development. The probable reason is that true sarcomata (that is, developing from the connective tissue and not from the parenchyma of the gland) do not give rise to changes in the activity of the parenchyma cells of the adrenal cortex. Hypernephromata, malignant or otherwise, however, cause precocious development by inducing overgrowth and hypersecretion of the cortical parenchyma cells.

Treatment.—If the presence of a tumour of the adrenals or other glands can be detected it should be removed. But in one of my cases the tumour was too small to be felt during life, and in the other no tumour existed, although there can be no doubt that clinically they resembled each other. Hence one hesitates to advise exploratory operations.

CONCLUSIONS.

1. Precocious physical development, sexual and somatic, may be due to tumours or to hypertrophy of the pituitary and pineal glands, of the adrenal cortex and accessory genital glands.

2. The opposite condition—namely, infantilism, or stunted growth, loss or non-development of sexual attributes—may depend on atrophy or destruction of function of one or other of the organs named.

3. Hypersecretion on the part of one or other of these glandular structures, in the first case, and hyposecretion in the second, may account for the opposite conditions described.

4. Precocious development (sexual and somatic) may in some cases be unassociated with any obvious lesion of glandular organs.

5. There is reason to suppose that a correlation of function, or some mutual check action, exists between the glands which have been mentioned. It is also probable that the thyroid and thymus glands are intimately connected with the phenomenon of physical and sexual development.

6. Two distinct types of precocious development—namely, the *obese* and the *muscular*—are associated with tumours or hypertrophy of the adrenal cortex.

7. The obese type may occur in both cases, but the muscular type seems to be confined to the male sex.

8. Premature hirsuties occurs in practically all cases of premature physical development, but is not necessarily associated with other signs of sexual maturity.

9. Tumours of the adrenal cortex which occasion precocious development are of mesothelial origin, and act by inducing multiplication and overgrowth, and therefore hypersecretion of the cerebral parenchyma cells.

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THE CARE OF TUBERCULOUS CHILDREN.

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TUBERCULOSIS has long been recognized as one of the great scourges of child life. Its frequency, varied manifestations, and far-reaching ills, however, are all too little apprehended by the public, and too often overlooked and their importance underestimated by the profession. It is rapidly becoming abundantly clear to all thoughtful minds that only limited success can attend our anti-tuberculosis campaign so long as we neglect the protection of infants and children from a tuberculous invasion, and fail to provide adequate means for the early detection and prompt treatment of all forms of tuberculous disease occurring during life's all-important initial stages.

In view of what we hope and believe must be speedily arranged for—the medical examination of all school children—and recognizing a rapidly developing interest and informed opinion on the part of the laity in all matters concerning the health of the child, it becomes a subject of practical importance that we should be in a position to render reliable guidance in the solution of a problem which is admittedly highly complex and peculiarly perplexing.

The present paper seeks to present in bare outline the substance for a plea and the material for an argument in favour of individual and collective study and control of tuberculosis in infancy and childhood.

PATHOLOGICAL CONSIDERATIONS.

As a basis for investigation and practical effort it may be desirable to enumerate certain facts and various theoretical suggestions which may energize thought or direct action.

At almost all ages tuberculosis threatens human life. In England and Wales alone, according to the Registrar-General's annual report for 1904, out of a total of 549,784 deaths, tuberculous disease was held responsible for 60,205, of which 41,852 were assigned to phthisis. "More than one-third of all deaths at the ages 15 to 35 are from phthisis."[1]

According to the most recent statistical returns tuberculosis, and particularly pulmonary tuberculosis, in England and Wales is declining.[2] There is reason, however, to believe that the mortality-rate from tuberculosis during the early years of life, instead of presenting a diminution, remains stationary, or, according to some authorities, is actually increasing.

Dr. Hyslop Thomson in his recent study on tuberculosis in childhood[3] states that, "according to Thorne-Thorne, tuberculosis has increased about 20 per cent. amongst children in London during the last fifty years."

According to the late Sir William Broadbent no fewer than 6,391 children under the age of 5 years died from tuberculous disease in London during the years 1901-3.

Of the 1,200,000 new lives added every year to the population of the United Kingdom, "fully one-fourth to one-third . . . are born to want and squalor," that is to say, into an environment strongly predisposing to tuberculosis.[4]

Tuberculous lesions are frequently met with in children dying from other diseases. They are rarely met with under 3 months of age. During the first year of life tuberculous foci are found in from 7 to 8 per cent. of autopsies. With succeeding years the frequency increases. Taking all necropsies in children under 15 years, Harbitz at Christiania found a percentage of 42.5; Hamburger and Sluka at Vienna, 40 per cent.; and Comby in Paris, 38.5 per cent.[5]

Tuberculosis may be contracted during intrauterine life, but a congenital etiology is rare. While, however, the tuberculous seed is quite exceptionally transmitted from parent to child, a tuberculously disposed soil is undoubtedly inherited.

While it is essential to contend on all grounds for a pure milk supply, evidence is accumulating which goes far to show that while milk contaminated with tubercle bacilli of the bovine type may occasionally give rise to disease in the human subject, such is exceptional, and that the main source of the infection of children is from already tuberculous individuals. As Dr. Bernard Lefevre, quoting from Professor Calmette, has it:

> Les bacilles tuberculeux d'origins bovine sont capables d'infecter l'homme, surtout dans le jeune âge, mais la fréquence et la gravité de cette infection sont apparemment beaucoup moindres que celles produites par les bacilles tuberculeux d'origine humaine.[6]

In agitating for a strictly hygienic milk supply, it is very necessary to carefully avoid giving any grounds to the ignorant and neglectful whereby they may seek to excuse personal or domestic hygienic unrighteousness.

Although von Behring's contention that tuberculosis is usually acquired in early life from the milk of tuberculous cows is not generally accepted, his view that tuberculous disease in adult life is often dependent on a development of a lesion which had its origin in infancy and childhood is receiving strong experimental and clinical support. The abdominal and thoracic glands are usually the seat of this latent tuberculosis. Oftentimes an infection by other organisms, such as pneumococci and influenza bacilli, the toxins of measles and whooping-cough, arouse the slumbering tubercle bacilli. It seems clear that children are most commonly infected by tuberculosis from human sources. It is well to remember that even milk may become contaminated by the bacilli of human tuberculosis. Maternal feeding should always be insisted on where the health of the mother does not forbid it.

PULMONARY TUBERCULOSIS IN CHILDREN.

It has been commonly stated that pulmonary tuberculosis is infrequent in children, and that when it occurs it almost invariably runs an unfavourable course. Both these statements are clinical inexactitudes. It is remarkable how little attention has been devoted to tuberculous disease of the lungs in early life. The subject is scarcely referred to in most works on pulmonary affections, and even in treatises on pediatrics it usually receives scant attention. And yet, as I have myself found, tuberculous disease of the lungs is really exceedingly common in children, and, when subjected to well-ordered hygienic treatment, in many cases at least undergoes marked improvement.

Professor Emmett Holt says: "More careful application of our means of diagnosis has made possible the recognition of tuberculosis in very many cases, when otherwise it is likely to be overlooked, and has emphasized the fact that pulmonary tuberculosis is really a very common disease in infants."[7]

During the nineteen months ending May 1st, 1907, 67 cases of pulmonary tuberculosis were under treatment in the New York Babies' Hospital, 62 being under 2 years and 15 under 6 months of age. By taking special precautions Emmett Holt found it possible to demonstrate

the presence of tubercle bacilli in over 80 per cent. of these cases, and it is further of importance to note that "the possibility of infection at home was known to have existed in at least 40 per cent. of the children."

Tuberculosis in School Children.

At a time when we may well hope that the medical inspection of the school children of our elementary schools will speedily be an accomplished fact, it is very necessary that the medical profession should have well-established information regarding the occurrence of tuberculosis in the boys and girls of our public schools.

It must be admitted at once that statistics based upon a mere perfunctory examination are worse than useless: they are misleading. The detection of tuberculosis in its beginnings, whether in the lungs, the glands of the thorax and abdomen, the bones and joints, or elsewhere in the body, can usually only be accomplished by the patient and thorough investigation of one who is skilled in clinical methods and has both tact and experience.

I have no hesitation in stating that incalculable suffering and loss is at present accruing to the children of the nation from our lack to provide means for the early recognition and prompt treatment of tuberculous disease.

It is not surprising that at present evidence bearing on the prevalence of tuberculosis in schools varies much. As far as I have been able to gather, the medical officers of our old-established public boys' schools consider the disease in any form quite exceptional. And this may well be, for in most cases at least it is probable that the family medical practitioner will have been consulted as to physical fitness for the life of a public school.

As regards boarding and high schools for girls, in spite of the marked improvement which modern methods have brought, there is reason to believe that a more discriminating medical inspection, if it could only be secured without offending parental prejudices and scholastic sensibilities, would often foresee and obviate impending trouble in many predisposed subjects.

But with our public elementary schools the case is quite different. The State having insisted on compulsory education, of necessity must be held responsible for the maintenance of conditions essential to health, and must by all reasonable means safeguard the physical wellbeing of its school children.

As far as evidence is available we seem justified in concluding that there is a very appreciable amount of tuberculosis in many of our public elementary schools.

Dr. Leslie Mackenzie records that 14 cases of pulmonary tuberculosis were observed among 600 Edinburgh children; and 3 cases among 600 Aberdeen children.[3]

Dr. William Robertson, the Medical Officer of Health for Leith, discovered 6 cases of pulmonary tuberculosis among 806 children.[9]

Dr. Alfred Greenwood, Medical Officer of Health and Medical Officer to the Education Committee of Blackburn, found among 1,028 children selected specially by school attendance officers for medical examination as to fitness for school life that no less than 6.2 per cent. were phthisical.[10]

Dr. Wilkinson, Medical Officer of Health to the Oldham Education Committee, found among 709 children brought to him last year for medical examination, 54 cases of tuberculous disease, 17 of which were the subjects of pulmonary involvement, or 2.3 per cent.

The case of the metropolis requires special consideration, for here schools and scholars vary greatly. London, moreover, is rich in hospitals and tuberculous children form a very large and important section of their *clientèle*, particularly of those specially devoted to the diseases of infancy and childhood. Very probably in London many tuberculous children receive medical attention at an earlier period than is the case in most provincial centres. At all events, cases of advanced tuberculous disease of the lungs are apparently not met with in anything like large large numbers in metropolitan schools.

Dr. J. E. Squire states that "a careful examination of about 900 children in one school in a very poor neighbourhood gave the proportion of cases of possible tuberculosis of the lungs at about 1.5 per cent., and of other forms of tuberculosis at less than 2 per cent."[11]

Professor Grancher, whose recent death we all deplore, found among the school children of Paris only 1 in every 500 with *open* tuberculosis, but 11 to 14 per cent. of the boys and 17 to 20 per cent. of the girls were found to have *closed* tuberculosis.[12]

Prophylactic and Therapeutic Measures.

It is impossible within the limits of this short paper to indicate the many and varied means and measures which have been proposed or are already being employed to prevent and arrest tuberculosis among children.

First and foremost it is most important to anticipate the development of tuberculous mischief. In connexion with the large home and orphanage to which I am medical adviser, we find that something like 25 per cent. of our children are the offspring of consumptives or are to be considered tuberculously predisposed. All schools and institutions caring for children should make it an essential part of their work to select and provide a special prophylactic environment for such cases.

The schemes of the late Professor Grancher, whereby children were removed from tuberculously-contaminated homes and constant contact with consumptive parents and boarded out in healthy homes, are worthy of consideration and perhaps of imitation.[13] Much also may be expected from an extension of the so-called forest-school system which has been so successfully established in Charlottenburg and elsewhere.[14]

France has long occupied an honourable place in its care for tuberculous children, and has upwards of 6,000 beds available, while we in this country can scarcely count 500,[15] and the majority of these few are by no means ideal in their situation and provision. Tuberculous children should never be treated for long periods in urban hospitals. Special country sanatoriums are necessary. It is most undesirable that children should be kept in institutions designed for, and mainly conducted in the interests of, adults. From personal experience, I have no hesitation in condemning a system which mixes children and grown-ups in the same establishment, and yet in the report of one English sanatorium it is stated that "the number of children admitted amounts to 12 per cent. of the total admissions."

Special sanatoriums for children are urgently required where prolonged medical treatment may be associated with educational and moral training. It is well to note that a marine situation is probably on the whole less advantageous for the majority of cases than a high and dry sheltered inland station.

It is certainly becoming clear that the surest way to cope with the devastating plague of tuberculosis which is bringing such widespread suffering and loss upon us as a people is to take immediate steps to protect our infants and children from tuberculous infection, and to provide the best restorative and alleviative measure for those who have been invaded.

We are still in need of guiding light, and much require some means by which we may secure co-ordination of knowledge and co-operation of practical effort. I believe at the present moment very real advantage might come from the establishment of a National Society for the Study and Care of Tuberculous Children.

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MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

DEPRESSION OF SKULL: OPERATION SIX HOURS AFTER BIRTH: RECOVERY.

MRS. H. was confined at 9 a.m. on June 13th, 1907, of a female child, after being in labour thirty hours. The child was delivered by forceps with great difficulty, and a depression of the right frontal bone the size of a crown piece was noticed; the bones were well ossified, the fontanelle small; as manipulation made no effect on the depression, there seemed little chance of the skull righting itself. I decided without waiting for symptoms to elevate the depressed bone before it became firmly fixed in its abnormal position. I had the child removed to the Phillips Hospital, and at 3 p.m. (six hours after birth) made an incision 1½ in. long, ⅓ in. to the outer side of the depression; after deflecting the scalp and pericranium, with a Hey's saw I removed a narrow V-shaped piece of bone, inserted an elevator under the depressed bone, and lifted it into its normal position; on pressing firmly, the bone rebounded suddenly like a celluloid ball, regaining its shape; the edges of the wound were stitched with horsehair, and "new skin" painted over; no other dressing was applied.

The operation was performed without an anaesthetic, but the child did not seem to feel any pain; it neither cried or struggled, though it was perfectly conscious all the time; no doubt the prolonged pressure during labour had numbed the feeling of the scalp.

For about an hour after the operation the infant suffered slightly from shock, but with hot-water bottles this passed off; it passed a good night and was sent home next morning to its mother. The stitches were removed on the tenth day, the wound being soundly healed.

The child was well developed and the bones of the skull abnormally hard for a child at birth. According to the mother's reckoning (that is 280 days from the end of the last period) the child's birthday should have been May 20th and not June 13th; this may have accounted for the difficulty at birth and the bony condition of the skull. I feel sure the depression would not have recovered spontaneously, from the amount of force required to raise the bone, and I believe the longer the operation was delayed the more the risk, as later on an anaesthetic would be required, and in a young child this would add very greatly to the danger of the operation.

Bromley, Kent. H. WYNNE THOMAS.

THEOSINE SODIUM ACETATE.

WITH reference to Dr. Campbell's article in the BRITISH MEDICAL JOURNAL of August 17th, the following very recent experience of the value of theosine sodium acetate may be of service:

I was hastily summoned on August 13th to see a gentleman aged 50. I found him suffering from vomiting and considerable dyspnoea; the pulse was 120, the apex beat in the sixth space extended over a considerable area with a heaving impulse; the heart's dullness extending well to the right of the sternum, and a systolic bruit was heard over a large area in the region of the apex and impulse; the arteries were atheromatous. The liver descended 3 to 4 fingerbreadths below the ribs, and there was some ascites; considerable oedema over both tibiae and ankles, with much solid oedema of the calves of both legs and the fleshy inner parts of both thighs. The urine contained plenty of albumen, and he had passed less than half a pint in twenty-four hours.

History.—In April, 1906, he had first been troubled with his heart; his legs had been swollen for weeks together, and he had had several bad attacks at intervals similar to the present one but never so bad. I at once administered 2 grains of calomel from my pocket case, ordered a tablespoonful of magnesium sulphate to be taken in an hour, and told him to sip hot water frequently. I prescribed pil. hydrarg. 2 grains each night, and digitaline naturelle crystalisée ¼ milligram every four hours.

On August 14th there was slight improvement, the amount of urine passed in twenty-four hours was ¾ pint, the bowels had acted freely twice, the pulse was 110, there was no change in the abdomen or legs, and I gave him a hot pack and ordered a hot pack for the next day.

On August 15th the pulse was 100, and he was ordered pil. digitalis et scillae co. three times a day.

On August 16th there was slight improvement, 1½ pints of urine had been passed in twenty-four hours. The hot packs were stopped.

On August 17th I saw Dr. Campbell's note, and at once requested the local chemist to obtain some theosine sodium acetate. This arrived on August 20th, and I prescribed a mixture containing tinc. digitalis ♏ij, tinc. scillae ♏x, with 5 grains of the theocin in a cachet to be taken thrice a day. The legs were still oedematous over the tibiae but the solid oedema had disappeared, and 2 pints of urine were passed in twenty-four hours.

On August 21st—after three or possibly four doses—the change was extraordinary; the urine passed in twenty-four hours measured 3 to 4 pints, the oedema was completely absent from the legs, the abdomen was almost normal, and the patient much better, with a pulse of 80. I ordered him to continue the cachets three times a day, and to take one dose of the mixture a day.

On September 1st he had been walking about on one landing, was relatively well and passing 3 to 4 pints of urine in the twenty-four hours. The sodium acetate has caused no nausea or disagreeable symptoms. The heart was in the same state, but he had a pulse of 84; counted with the stethoscope the heart's beats were 88 to 92, so I suggested two doses of the mixture instead of one.

Sidmouth. W. FRANK COLCLOUGH, M.D.Cantab.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

COVENTRY AND WARWICKSHIRE HOSPITAL.

CASE OF WOUND OF CORNEA AND TRAUMATIC CATARACT CAUSED BY A PECK FROM A BANTAM COCK.

(Reported by T. HARRISON BUTLER, M.D.Oxon., Honorary Ophthalmic Surgeon to the Hospital.)

ON March 27th, W.B., a boy aged 5, was sent to me at the Coventry and Warwickshire Hospital, by Dr. R. C. Tweedy, of Kenilworth, suffering from a punctured wound of the cornea. The boy stated that a bantam cock had pecked him in the eye the day before.

State on Admission.—He was found to have a punctured wound, 2 mm. long, in the outer and upper quadrant of the right cornea. There was a large prolapse of the iris, and the lens was completely opaque.

Operation.—Chloroform was at once administered, and the eye washed out for a long time with 1 in 10 000 perchloride lotion. The wound was enlarged with scissors at each end, the prolapsed iris drawn out, and cut off flush. As much lens matter as possible was allowed to escape along the curette. The eye was well irrigated and the iris replaced.

Progress.—The anterior chamber was reformed the next day and the eye looked quiet. On April 5th the anterior chamber was full of soft lens matter. There was little injection of the eye, and no definite iritis.

Result.—The boy was discharged fourteen days after admission. The eye was not injected; there was a coloboma of the iris upwards and outwards, which was full of soft lens matter and capsule. He attended a week later as an out-patient, but he then contracted diphtheria, and was in the Warwick Fever Hospital for several weeks. On July 22nd, four months after the accident, he was readmitted to the Coventry and Warwickshire Hospital. The eye was perfectly quiet, with no injection. Tn. V. = light perception with good projection. The original coloboma had been drawn up to the size of a pin's head, and was filled with capsule. An iridectomy was done for optical purposes down and in. The coloboma was needled on August 20th, and he now has a good black coloboma, through which a normal retina can be seen. He can count fingers at 2 metres, and can see his way about with the good eye closed.

The injury, although caused by a cock's beak, which one would expect to be the most septic of instruments, caused no inflammation whatever, and the boy has an eye which has quite sufficient vision to enable him to avoid being knocked down by a motor car, and which will be useful to him in many ways.

REVIEWS.

GOUT.

DR. LUFF'S book on *Gout*[1] is so well known, and has been so favourably received both at home and abroad, that it is not surprising to find a third edition called for. This issue is larger than its predecessors. Many chapters have been rewritten, a few new ones are added, and the scope of the work has been considerably extended.

The first part of the volume is devoted to a consideration of the pathology of the disease. The author contends that uric acid cannot, in the light of recent investigations, be regarded as a product of the imperfect combustion of proteids into urea, but that it is derived from the nucleins and purins of the food on the one hand, and from the nuclein of the leucocytes on the other. He points out that disease of the kidneys exercises a powerful influence in promoting the accumulation of uric acid in the blood with consequent uratic deposit in the joints, but he believes that kidney disease and gout both owe their origin to the influence of toxins which are in all probability produced in, and absorbed from, the intestinal canal. Many readers will be convinced that he is right when he says:

> Not only in the medical world has an unmerited importance been attached to uric acid as a factor in the causation of disease, but unfortunately, among a considerable section of the public, there has arisen a fetishism of uric acid, which has been pandered to and fostered by the proprietors of the various quack remedies that are so persistently advertised as being capable of dissolving or removing uric acid from the system. The time has come clearly to recognize that uric acid possesses no toxic properties worth speaking of.

The likelihood that gout is primarily dependent, as Dr. Luff suggests, upon one or more bacterial toxins is supported by many facts with which every clinical observer is familiar. Digestive disturbance is an invariable precursor or accompaniment of the gouty state, and it is in accordance with everyday experience that the first essential step to be taken for the mitigation of an acute paroxysm of the disease is to clear out thoroughly the *prima viae*. It cannot be denied that

> the classic remedies for gout have only two things in common: one, that they relieve gout; and the other, that they check intestinal putrefaction, or diminish the absorption of its products or promote their elimination from the system.

The hypothetical view that gout is always associated with diminished alkalinity of the blood is declared by the author to be erroneous, and a series of experiments is described which go to prove that the alkalinity of the blood is actually higher in the gouty patient than in the average healthy individual.

Part II is reserved for an exposition of the etiology, clinical history, diagnosis, and prognosis of the disease. A very useful chapter is concerned with the consideration of gout in its irregular manifestations, an important question to which little attention is given in most textbooks. Dr. Luff believes that the various manifestations of irregular gout are dependent not merely on the local deposit of sodium biurate in the affected tissues, but also on the selective action on a weak spot of toxins conveyed to it in the blood, the seat of selection being determined by natural or acquired defects which are responsible for weakened nutritional activity in the part affected.

The last two chapters deal with the important subject of treatment, and here we find the author at his best. There is probably no pathological condition that has been, and still is, held by both the profession and the public responsible for so many varieties of illness as that which is associated, in some way or other, with uric acid and its derivatives. The term "gout" is applied to so many diverse conditions of disturbed health that, except in so far as it relates to that disease in its classical acute manifestations, it might well be described in terms of present-day familiar parlance as a "terminological inexactitude." Almost every variety of illness is referred by the laity to gout, either active or passive, and in the professional mind the gouty diathesis seems to be a convenient fail-me-never with which to solve obscure etiological problems, and to set at rest the eager questionings of inquisitive and anxious patients. The quack and nostrum vendor finds in it one of the most profitable of all hunting grounds for the practice of his unscrupulous but profitable methods; and even the manufacturing chemist, who is always, and properly enough, ready to flood the market with elegant preparations for the cure of popular maladies, recognizes that gout, more than most disorders, affords him scope for the full exercise of his pharmaceutical ingenuity. It is, therefore, more necessary in this than in most ailments to have treatment discussed on broad but well-defined principles, and to have details of management described and recommended along well-thought-out lines, and on the basis of a rational and comprehensive pathology. It may be claimed for Dr. Luff's book that in this difficult task it succeeds admirably. No one can read his chapters on treatment without being impressed with the sound common sense by which they are pervaded. He starts with the assumption that "the intestinal tract is a very powerful factor, if not the primary factor, in the development of gout," and on that foundation he builds up a plan of medicinal, dietetic, balneological, and climatic management, the study of which will reward those who, being convinced by his arguments, apply the methods he advocates for the relief of this vexatious and widespread malady.

[1] *Gout; its Pathology, Forms, Diagnosis, and Treatment.* By Arthur P. Luff, M.D., B.Sc., F.R.C.P., Physician to St. Mary's Hospital. Third Edition. London: Cassell and Co., Limited, 1907. (Demy 8vo, pp. 234.)

ACUTE PNEUMONIA.

DR. DONALD HOOD puts forth in attractive form a series of lectures on *Some of the Clinical Aspects of Pneumonia*.[2] His readers will be reminded of the older works, which are still read with pleasure and profit by those who value clinical study, of Sir Thomas Watson and Dr. Trousseau. While the textbook lays down the rule, it is the function of the clinical teacher to point out the exception, and Dr. Hood has used his opportunity of so doing with great judgement. His book will be appreciated by all who find pleasure in the perusal of the thoughts of a man of experience conveyed in graceful and simple terms. Every one who has had to do with pneumonia must have found difficulty at times in accounting for unusual phenomena or for the failure of accepted treatment. In reading through these lectures he will doubtless be reminded of many such cases, and some of his difficulties may disappear when reconsidered by the light of the explanations founded on observation that are here given. Pathology is but lightly touched upon. Diagnosis, on the other hand, is closely considered, and due emphasis is laid upon the common error of mistaking acute pneumonia for some acute abdominal inflammation, and notably appendicitis. Plain speaking upon this point has become very necessary of late years. Appendicitis has almost passed out of the hands of the physician, but common experience points to the advisability of a consultation in all such cases before operation. Another matter of recent interest is the association of pneumonia with influenza. The clinical aspect of the disease thus complicated is well described, and the association of localized empyema as a sequel in the mixed cases of pneumonia is demonstrated and exemplified by quotation of many interesting and puzzling cases. Much stress is laid upon the significance of paroxysmal cough occurring in the course of convalescence after pneumonia as indicating the presence of residual effusion. The various conditions under which the early stages of the disease may simulate other infective diseases, especially cerebral inflammation, and the not infrequent occurrence of haemoptysis in the initial phase, are well described and discussed. Abscesses in relation to ulcer of stomach or duodenum may play a part in the production of basic inflammation, and are extremely difficult to diagnose. Dr. Hood does not appear to have made use of the *x* rays for this purpose. The final chapter, on treatment, is perhaps the least interesting of the series. The author is evidently averse to some modern methods which others have found useful, but he does not give any adequate reasons for his objections. The lectures, as a whole, are of great clinical interest, and are written in a style which is at once polished and instructive, a pleasure to read and profitable to remember.

[2] *Some of the Clinical Aspects of Pneumonia.* By Donald W. C. Hood, C.V.O., M.D., F.R.C.P., Senior Physician to the West London Hospital. London: John Bale, Sons and Danielsson, Limited. 1907. (Demy 8vo, pp. 125. 7s. 6d.)

Two lectures delivered at the West London Post-graduate College by Dr. SEYMOUR TAYLOR on the *Signs, Symptoms, and Treatment of Acute Pneumonia* are published in a pamphlet,[3] at the request, as we are told in the preface, of members of the class who listened to them. The collection and comparison from time to time of the opinions and experience of physicians who have had special opportunities for study and observation is always instructive, if only as a reminder to those whose opportunities have been limited. The first lecture deals with the disease itself—acute croupous pneumonia, its symptoms, signs, and complications; but secondary pneumonia, complicating pre-existent disease, is not brought under consideration at all. In the second lecture the subject of treatment alone is discussed. Declaring himself a strong opponent of the expectant method of dealing with the acute disease, Dr. Taylor enumerates many lines of treatment that might be adopted; but it is to be noted that they are mostly hedged about with reservations, and, reading between the lines, it is probable that he would himself, in actual practice, prefer to use the time-honoured dose of the liquor ammonii acetatis of our forefathers and to keep his patient as still as possible, sparing him the frequent disturbance for the poultice, or the still more serious removal into a hot or cold bath, unless very strong reasons for such procedures were present. Believing that the occurrence of crisis may be hastened by treatment, he lays little stress upon the special use of diaphoretics or hypnotics at the critical period—a matter not usually forgotten by the expectant therapeutist. The lectures conclude with a concise summary of the main points to be considered in dealing with the acute disease, and all physicians of experience would agree with the rules laid down therein. This summary should be borne in mind while reading the lectures themselves.

A MODERN DISPENSATORY.

BEFORE a book the first edition of which appeared three-quarters of a century ago, which is now in its nineteenth edition, and is edited by the Professor of Materia Medica and Therapeutics in the University of Pennsylvania, and by the Professor of Pharmacy, and by the Professor of Chemistry in the Philadelphia College of Pharmacy, with the assistance of a member of the committee of revision of the *Pharmacopoeia, U.S.A.*, and the Demonstrator of Pharmacodynamics in the University of Pennsylvania, the reviewer may well stand abashed. To increase his confusion the *Dispensatory of the United States of America*[4] is a volume of over 2,000 pages, consisting of articles alphabetically arranged on official and unofficial preparations. A review in the ordinary sense of the word is, therefore, hardly possible, and it must suffice to give some general short account of the plan and scope of the work. It consists of three parts; in the first, occupying over 1 300 pages in double column, all the substances and preparations in the United States and British *Pharmacopoeias* are described and commented upon, and in addition such preparations in the German *Pharmacopoeia* and French *Codex* as are generally used in the United States receive like treatment. While recognizing that a final judgement on the value of this part of the book can only be formed after prolonged use, we may say that we have tested it in various ways and never found it wanting. The articles all appear to be not only complete but thoroughly practical, and, in spite of the huge size of the completed volume, very succinct. Part II, containing some 340 pages, deals with the non-official drugs and preparations—that is to say, remedies not recognized in the United States or British *Pharmacopoeias*, but which on account of their use in domestic and professional medicine, their toxic properties, their history, or the probability that they may prove in the future remedies of power, are considered to call for notice in an encyclopaedic work of this kind. A liberal interpretation has been put upon this, for we find, for instance, an article on acetylene, not because it has been used medicinally, but because it is a poisonous gas. These two parts of the volume will be as useful to the British as to the American practitioner. The third part is divided into two sections. The first contains the tests of the *United States Pharmacopoeia*, a little essay on the art of prescribing, tables of weights and measures, and so on. The second section consists of an abstract of the national formulary of the American Pharmaceutical Association. At the first glance an objection to the book is the arrangement of articles in three sections, and therefore in three alphabetical orders. If, however, the user knows whether the drug with regard to which he is in search of information is or is not official he will encounter no delay, and in doubtful cases the very copious index, occupying over 100 pages, may be consulted. We have nothing but praise for the volume; it is a monument of industry and enterprise, and we can only regret that its high price must put it out of the reach of the majority of doctors and pharmacists.

BERI-BERI.

The Cause and Prevention of Beri-beri[5] is the title of a book by Dr. BRADDON, State Surgeon, Negri Sembilan, Federated Malay States. In it he deals with the vexed question of the etiology of this interesting disease. His conclusions are that beri-beri is due to the consumption of stale decorticated (white) rice (uncured rice), which at times contains a poison, whereas white rice made from Padi, which has been boiled in the husk and then dried before stripping off the envelopes (cured rice), is always innocuous at whatever period after cleaning it may be eaten, whether, in fact, it be stale or not. The author has collected an enormous mass of detail to support his contention, and the book, big as it is, is well worth reading. The rice theory has many opponents, but, after perusing all the evidence, one is inclined to come to the conclusion that rice does play a part in the production of the disease, or, at least, that further experiments should be carried out to prove or disprove its action as a cause. The importance of beri-beri to the Federated States is so great, and Braddon's statements are so definite, that this should not be difficult. All that is required is to use "cured rice" only in all or part of the Government institutions—gaols, asylums, etc.—for a period of a year or more, and to note carefully the results. If beri-beri disappears, then the sceptical must admit the truth of Braddon's views. All interested in the subject should certainly not omit to read this work.

In the *Berliner Vorträge*, No. 2, PLEHN writes on beri-beri.[6] Though it contains nothing very new, it is an interesting summary of what is known of the disease at the present day, and is worth reading. The statistics of deaths on page 15, if they are correct, show how enormous have been the ravages the disease has from time to time inflicted. No fresh theories as to the cause of the disease are put forward, and this is just as well when we consider how little is known of the etiology of the disease.

NOTES ON BOOKS.

THE tenth annual issue of the *Jahresbericht der Neurologie und Psychiatrie* has just been issued. Professor MENDEL of Berlin, who had been its senior editor since its foundation, died shortly before the volume was completed, and his colleague, Dr. L. JACOBSOHN of Berlin, has written a short appreciative notice, in the course of which he gives an account of the interest which Mendel always showed in the publication, and relates how much individual time and attention he gave to it. As we have remarked in referring to previous issues, the very bulk of this volume is appalling; it contains 1,360 pages, and the index alone fills 60 pages; the first part, on neurology, occupies 961 pages, and the second part, on psychiatry, 330 pages; each part is subdivided into a number of sections, and to each section an elaborate bibliography is prefixed.

[3] *On Acute Pneumonia: Its Signs, Symptoms, and Treatment.* By Seymour Taylor, M.D., F.R.C.P., Physician to the West London Hospital. London: H. J. Glaisher. 1907. (Demy 8vo, pp. 64. 1s.)

[4] *The Dispensatory of the United States of America.* By Dr. G. B. Wood and Dr. F. Bache. Nineteenth edition. By H. C. Wood, M.D., LL.D., J. P. Remington, Ph.M., F.C.S., and S. P. Sadler, Ph.D., LL.D., assisted by A. B. Lyons, M.D., and H. C. Wood, jun., M.D. Philadelphia and London: J. B. Lippincott Co. 1907. (£1 11s 6d.)

[5] *The Cause and Prevention of Beri-beri.* By W. Leonard Braddon, M.B., B.S., F.R.C.S., State Surgeon, Negri Sembilan, Federated Malay States. London: Rebman, Limited. 1907. (Roy. 8vo, pp. 557. 21s.)

[6] *2 Berliner Vorträge. Ueber Beri-beri und ihre Bedeutung für wirtschaftliche und kriegerische unternehmungen in den warmen Ländern.* Vortrag, gehalten in der deutschen Kolonial Gesellschaft, Abteilung Berlin. Von Dr. Albert Plehn. Professor an der Universität, Dirig.-Arzt der Inn. Abteilung des Urban-Krankenhauses zu Berlin. Berlin: Karl Curtius. 1907. (Demy 8vo, pp. 30. M. 0.60).

SPECIALIST APPOINTMENTS IN INDIA.

In the British Medical Journal of August 17th, 1907, a note was published on the new notification of the Government of India (Army Department) as to the conditions governing specialist appointments. By the courtesy of the India Office we are now able to publish the full text of the notification from the official print.

Notification 1933*a*. (June, 1907.)

Specialist Appointments.

General.

1. Specialist pay is an allowance to officers below the rank of lieutenant-colonel for special sanitary, surgical, or medical work done for the State, which it is not in the power of the ordinary medical officer to perform with the same efficiency as the specialist. It will not be a personal allowance, but will be granted only to the incumbents of certain specified appointments when *actually* in a position to perform the duties connected therewith.*
2. Indian Medical Service officers in civil employment are not eligible for employment as specialists.
3. The services of specialists are absolutely at the disposal of Government in any way they may direct, without further claim for remuneration.
4. The duties of all specialist appointments must be carried out in addition to ordinary hospital work.
5. No officer shall hold more than one specialist appointment at the same time.

Appointments.

6. There will be 105 specialist appointments in India, each carrying pay at Rs. 60 a month, the special subjects for which this allowance is granted and the number of each class being shown in the subjoined table. Of these 55 will be allotted to the Royal Army Medical Corps and 50 to the Indian Medical Service in military employment.

Selections for appointments and the distribution throughout the several divisions and brigades will be made under the orders of His Excellency the Commander-in-Chief and notified in India Army Orders, the guiding principle, however, being that officers will be located in those stations where their services are likely to be of the greatest utility to the army.

Specialist Appointments.

	Number.
(*a*) Prevention of disease (including parasitology, bacteriology, and preventive inoculation)	40
(*b*) Dermatology (including the prophylaxis, treatment of, and instructional measures in connexion with venereal diseases)	10
(*c*) Advanced operative surgery	20
(*d*) Ophthalmology	10
(*e*) Electrical science (including skiagraphy) ...	10
(*f*) Mental science	2
(*g*) Otology, laryngology, and rhinology	3
(*h*) Midwifery and diseases of women and children	10
Total...	105

Qualifications.

7. Officers of the Royal Army Medical Corps in India will be eligible for appointment as specialists under the qualifications laid down by the Army Council.
8. Should, however, there not be a sufficient number of these officers holding the above qualifications in (*b*), (*c*), and (*e*) available in this country, the Principal Medical Officer, His Majesty's Forces in India, will decide as to the eligibility of any officer being appointed *a specialist in India* in these subjects, his decision being based on the certificates of a recognized institution, or the reports of Administrative Medical Officers, which should be based on personal knowledge of the individual recommended. Similarly the Principal Medical Officer, His Majesty's Forces in India, will decide as to the advisability of any officer being appointed a specialist in prevention of disease for preventive inoculation work only. Such qualifications will only be recognised as long as the officer is on the Indian Establishment.
9. On the occurrence of vacancies in any of the cases provided for in Rule (8) the claims of fresh arrivals in India holding the qualifications referred to in Rule (7) will receive the first consideration.
10. The eligibility of an officer of the Indian Medical Service as a specialist will be decided by the Director-General, Indian Medical Service, whose conclusion will be based either on certificates of a recognized institution or by examination of the candidate.
11. All officers, before being appointed specialists in (*e*) will be required to go through a course of Skiagraphy at the Debra Dun School, the object being to enable them to become thoroughly acquainted with the apparatus used in India and its working under field service conditions.

* The allowance is admissible to an officer during (*a*) recreation or temporary leave, and (*b*) privilege leave (whether taken alone or as part of combined leave), up to a limit of sixty days. It is inadmissible during any other kind of leave.

THE NEW ENGLISH LIFE TABLES.

Part I of the *Supplement to the Sixty-Fifth Annual Report of the Registrar-General* contains two new life tables; one based on the mean mortality of England and Wales in the ten years 1891–1900, the other on the mortality in certain selected healthy districts during the same period. Many features of that report have already been discussed in the Journal, and attention has been drawn to the marked improvement in the death-rate during the course of the last half-century. The life table is, however, a more effective instrument of investigation than a table of death-rates, because it presents the means of determining precisely the change in the average duration of life, brought about by changes in the death-rate. It was aptly described by Dr. Farr in 1859 as a "biometer, for it gives the exact measure of the duration of life under given circumstances," and "represents a generation of men passing through time." The method of constructing a life table is described in the report, and need not be discussed here; but, in order to make its meaning clear, it may be stated that a life table shows the probability of living from each year of age until the next, the number of survivors at each year of age, the deaths in each year, the mean population living in each year, the aggregate years of life lived by those who survive to any particular age, and the "expectations of life" (called also the "mean after-lifetime") at birth and at each successive year of age. It is in this form that the new tables are shown, and their value is greatly enhanced by the existence of three earlier tables based on the general mortality of the country in 1838-54, in 1871-80, and in 1881-90 respectively, and of two others based on the mortality in selected healthy districts in 1849-53 and in 1881-90.

In the general population the death-rate is very high at the time of birth, but falls, at first rapidly, and afterwards more and more slowly, reaching a minimum about the age of 10 years. After this age it increases continually until the end of life. Consequently the probability of living a year is comparative small at birth, rises to a maximum at the time of lowest mortality, and then decreases at an accelerated rate with increase of age. The new life table for the general population shows that, certainty being represented by 1, the probability of living one year at the time of birth was 0.828 for a male and 0.859 for a female child; in other words, out of 1,000 of each sex born, 828 of the boys and 859 of the girls reached their first birthday. The probability that these children would survive another year was considerably greater, 0·947 and 0.951 respectively; and from this age until the age of 10 years the probability gradually increased, and reached the value of 0.998 in each sex. From the age of 10 years onwards the probability of living one year fell uninterruptedly, but it was not until after the age of 80 years that it reached its initial level. For a few years about the period of maximum the chance of living one year was nearly equal in the two sexes, a slight advantage being on the side of males; at all other ages the chance was greater among females than among males, the difference becoming more marked as age advances.

Referring now to the survivors at each age, the report shows a comparison of the results of the four English life tables. Corresponding to the high rate of infantile mortality, which had fluctuated slightly, but showed no improvement in the period 1891-1900 as compared with 1838-54, there were only 828 survivors at 1 year of age out of 1,000 males born in the later period, against 836 in the earlier period, although the survivors at this age were rather more numerous in each of the two intervening periods. At the age of 2 years the survivors in 1891-1900 were 784, against 783 in 1838-54, but were still fewer than in the two periods 1871-80 and 1881-90. After this age, however, the improvement in the mortality of all except the youngest children had a marked effect, and at the 7th year of age the survivors by the new table were more numerous than by any earlier table, and continued in excess until an advanced stage of life. It would be tedious to trace the changes in the number of survivors year by year, but the amount of life-saving is set forth very clearly when it is stated that whereas in 1838-54 less than one-half of the male children born reached the age of 45 years, in 1881-90 more than one-half of them were living at the age of 52 years. Among females the changes in the number of survivors followed

in almost the same order, although the female were more numerous than the male survivors at every age. More than one-half of the females born were still living at the age of 57 years in the last decennium, or eleven years later than in 1838 54. Among both males and females there was a marked excess in the number of survivors at every age except at the extremes of life. This point will be viewed, however, from another aspect in the remarks which follow.

The results of the changes already mentioned are shown most concisely by the values of the "expectation of life" derived from the four English life tables. Dr. Farr calculated that, according to the mortality which prevailed in the years 1838-54, the average duration of male lifetime was 39 91 years. In the decennium 1871 80 it rose to 41.35 years, in 1881-90 to 43.66 years, and in the last decennium it was no less than 44.13 years. Among females the durations in these four periods were 41.85, 44.62, 47.18, and 47.77 years respectively. Thus, between the periods 1838-54 and 1891-1900 there was an increase of expectation of 4.22 years for males and of 5.92 years for females. From birth onwards the expectation of life increased for a few years, the greatest values by the earliest table having been 49.81 years for males and 50.43 years for females at the age of 4 years, while by the new table the maximum values were 54.26 and 56.49 years respectively at the age of 3 years, the age of maximum expectation of life being reached earlier with improved health conditions. After these ages the fall of expectation was uninterrupted, and was greatest in the years of lowest mortality and least in the years of highest mortality.

The better expectation shown by the recent as compared with the first table continued until the age of 33 years among males and until age 47 among females, but after these ages the expectations were highest in the earliest period. Comparison of the tables for the last two decennia, however, shows almost equal expectation between ages 55 and 75 years, but an advantage in the recent period at all other ages.

The expectation of life or mean after-life time may be analysed to show how the general improvement affected the several stages of life. The expectation of life at birth represents an average lifetime for all children born, some of whom died immediately after birth, while others lived to reach extreme old age. From an economic point of view, therefore, it is useful to determine how these average values should be allotted to the various periods of life. This has been done in the Registrar-General's Report, the whole span of life being divided into periods representing approximately "infancy" (0-5 years), "school age" (5-15 years), "adolescence" (15-25 years), "maturity" (25-65 years, these further divided into four periods of 10 years each), and "decline" (65 years and upwards). The new life table shows that 508,770 male children born lived in the aggregate 22 453,608 years, an average of 44.13 years each, which is the expectation of life at birth. Of these 22 453,608 years, 5,770,701 years were lived before the age of 15 years, and 1,748,518 years after the age of 65, the remaining 14,934,389 years having been lived between 15 and 65 years of age. It appears, then, that of the average duration of 44.13 years, 11 34 years were lived under the age of 15, 3 44 over the age of 65, and 29 35 years between these limits. In 1838 54 the corresponding values were 10.86, 3.19, and 25.86 years respectively. Thus, at ages under 15 years there was an addition of 0.48 years to the mean lifetime lived in that period, and at ages over 65 an addition of 0.25 years; so that at the two ends of life representing "infancy," "school age," and "decline" there was an addition of 0 73 of a year to the mean lifetime. Between the ages of 15 and 65 years, representing the active period of work and production, there was an addition of no less than 3.49 years. These figures represent an addition of 13 per cent. in the working or productive period of life, against only 5 per cent. in the other periods. Among females the corresponding percentages are 17 and 9 respectively.

The first Healthy District Life Table refers to the years 1849-53, and was based on the mortality among half a million people living in districts with death-rates below 17½ per 1,000 annually. In 1881-90 it was found possible to reduce the limit of healthiness to 15 per 1,000, and even then to embrace a population of more than 4½ millions, and ten years later to further reduce the limit to 14 per 1,000, and still to include practically the same amount of population. In these healthiest portions of the community it is found that more than one half of the males born were surviving at the age of 58 years in 1849-53, at the age of 61 in 1881-90, and at the age of 63 in 1891-1900. Of the females, there were as many survivors at the ages 59, 64, and 68 years respectively. In the most recent period the same amount of reduction in the general population was reached eleven years earlier among males, and nine years earlier among females than in the healthy districts. The expectation of life at birth for males in the healthy districts was 48.56 years in 1849-53, 51.48 in 1881-90, and 52.87 in 1891-1900; for females the corresponding values were 49 45, 54 04, and 55 71 years respectively. These values were considerably in excess of those for the general population, the excess in the recent decennium amounting to 8¾ years for males and to nearly 8 years for females. The age of maximum expectation was reached about one year earlier in the healthy districts than in the whole country, and the difference between the initial and maximum values was smaller in the healthy districts, amounting to less than 7 years among males and to less than 5½ years among females; while in the general population it was more than 10 years among males and 8¾ years among females. In the last decennium the excess of expectation in the healthy districts continued, but gradually diminished until about 85 years of age, after which the advantage was with the general population. The same feature was shown also in 1881-90, and in each decennium the excess was greatest in the male sex.

LITERARY NOTES.

IN addition to the writings mentioned in the obituary notice of the late Mr. Timothy Holmes, which appeared in the BRITISH MEDICAL JOURNAL of September 14th, he was the author of a life of Sir Benjamin Brodie. This is one of the volumes of the "Masters of Medicine" series, published by Mr. Fisher Unwin, and displays throughout the care and thoroughness characteristic of all Mr. Holmes's work. The subject did not lend itself to "artistic" treatment, but, apart from the interest of the famous surgeon's career, the book may be commended to medical writers as a model of lucidity and accuracy.

Mr. Henry Rundle, of Southsea, has been among the Dutchmen "takin' notes," and has printed, or rather reprinted them—for they appeared originally in the *Medical Magazine*—with appropriate illustrations. His "holiday recollections and impressions" of Holland make interesting reading.

From time to time our attention is called to the injudicious manner in which a grateful patient sings the praise of his doctor in the columns of a local newspaper. Such unsolicited testimonials must be very distasteful to most of those who are the objects of them. To the victims of this inconvenient form of sentimentalism we may offer such comfort as may be derivable from the worse estate of others who suffer from the too grateful patient. We learn from a correspondent of the *Chronique Médicale* that at Bologna it is the custom to celebrate the achievements of physicians and surgeons in verse, and, what is worse, in verse that is printed and pasted on walls among the advertisements of the newest quack medicine. It appears that this is a survival of an ancient custom. Italy is the land of poetry, and every incident in the life of a person of any position in a town was made the occasion for a salvo of sonnets. For a modest man publicity of any kind is a sore trial, though there are some members of the medical profession who bear it with apparent fortitude. But even the "eminent Harley Street physician" who favours a newspaper reporter with an interview on the slightest provocation—nay, even the prophets of science who deliver their oracles from the tripod of the daily press—might blush to find his fame placarded in the streets in a halting sonnet.

We learn from the *France Médicale* that Dr. Constantine Lamera, Assistant Professor of Gynaecology in the University of Athens, recently took as the subject of an introductory address the "modern" discoveries in the domain of diseases of women which are found in the old Greek writers. Thus the method of treating inflammatory affections of the uterus and surrounding tissues by hot enemas, which is known (in France) as that of

Reclus, is, we are told, described in detail by Oribasius; the dilatation of the cervix, to which in America the name of John Hall, and in Germany that of Hegar, is attached, is said to be fully set forth in Hippocrates; Priessnitz's compresses were used by the Father of Medicine, and are mentioned by Moschion; and medicated vaginal tampons are spoken of by Oribasius. The vaginal speculum, which has made the name of Récamier famous, was, says Dr. Lamera, in familiar use among the old Greek physicians; it is mentioned by Soranus of Ephesus and by Paulus Ægineta. Sounds were used by them for the replacement of the uterus. We are promised a number of similar rectifications of history in a *Library of the Old Greek Medical Writers*, which will shortly appear under the editorship of Dr. Lamera and Dr. J. Foustanos, editor of the *Grèce Médicale* of Syra.

Mr. John Gray, B.Sc., Secretary to the Anthropometrical Committee of the British Association, has prepared *Anthropometrical Schedules*, which H. J. Glaisher is publishing for the Ambrose Company. He is also publishing a *Book of Instructions for taking Anthropometrical Measurements*, by the same author.

The medical staff, past and present, of the Gynaecological Policlinic of the University of Munich, at the head of which is Professor Gustav Klein, have issued, in honour of Professor von Winckel's 70th birthday, a work entitled *Alte und Neue Gynaekologie*. No greater praise can be given to it than that, both in the value of its contents and in its appearance, it is worthy of the occasion of its production. The contributors are Drs. E. Aulhorn, R. Benndorf, H. Eltze, M. Kachel, Th. Petri, A. Stoecker, and Professor Sakurai. The work, which is published by J. F. Lehmann, of Munich, consists of two parts, devoted respectively to the older gynaecology and to that of the present day. The former is of special interest to students of medical history. Professor Klein contributes an article on the illustrations of the female genitals from the ninth century to the time (sixteenth century) of Andreas Vesalius. In it are reproduced a number of photographs of old manuscripts. The earliest treatise on diseases of women is that by Soranus (circ. A.D. 100) which is still extant. The next is one by Moschion, which is assigned to the eighth or ninth century. In the Brussels manuscript of that work, the date of which is thought to be the ninth or tenth century, there is a rough drawing of the uterus, in which are indicated the *fundus*, *latera*, *humeri*, *cervix*, *collum*, *orificium*, and *basis grandis*. Other more or less fanciful representations of the uterus and its appendages are given from later copies of Moschion's treatise and other works. Leonardo da Vinci (1452–1519) was the pioneer of anatomical drawings from Nature. In conjunction with Antonio della Torre he studied the human subject untrammelled by the fantastic notions of the old writers. Several of his drawings of the fetus in utero are reproduced. After him came Vesalius, the illustrations of whose great work were for a long time attributed to Titian; they are now known to be from the pencil of Jan van Calcar. Whether Vesalius was a mere copyist of Leonardo or the actual creator of scientific anatomy is a question that has been raised within the last few years. Jackschath holds the former view, but Professor Klein points out that he has so far found few supporters. A Spanish treatise on generation and pregnancy, dated 1495, forms the subject of a contribution by Dr. Stoecker, of La Paz, Bolivia, and Professor Klein. Johannes de Ketham, a German physician, who lived in Italy towards the end of the fifteenth century, compiled, under the title of *Fasciculus Medicinae*, a treatise for the use of practitioners. It appeared first in Latin at Venice in 1491, and six further editions, some in Latin, some in Italian, were issued between 1493 and 1522. Besides these there were two editions in Spanish, one published in 1495, the other in 1517. The interest of the book consists mainly in its illustrations. It is held by some authorities that these are the first ever produced in print, but this is a mistake, as there is an illustration of the abdominal muscles in a book entitled *Conciliator Differentiarum*, by Peter of Abano (1250–1315), which was printed in 1471. Ketham's work, however, gives the first printed representation of the female genitals. Professor Klein also contributes a paper on the obstetrical writers of the sixteenth and seventeenth centuries. To the former period belongs Ambroise Paré; to the latter Mauriceau, Peu, and Chamberlen. Some amusing specimens of the controversial style of that time are given. Among the papers in the second part of the book we can only mention one by Erich Aulhorn on a case of malignant chorion-epithelioma; one by H. Eltze on the use of the Roentgen rays in gynaecology, and one of special interest by Professor Sakurai, of Nagasaki, on the difference in the duration of delivery in European and Japanese women respectively.

LUNACY IN ENGLAND AND WALES.

The *Sixty-first Report of the Commissioners in Lunacy for England and Wales*[1] for the year 1906, which has just been issued, shows that the total number of certified insane persons in England and Wales on January 1st, 1907, was 123,988, of whom 9,889 were private patients, 113,136 pauper patients, and 963 criminal lunatics. Of the total number, 57,176 were males and 66,812 were females; and, as regards their distribution, 91,160, or 73·5 per cent., were maintained in county and borough asylums, 4,323 in registered hospitals, 3,531 in metropolitan and provincial licensed houses, 164 in naval and military hospitals, 817 in criminal lunatic asylums (Broadmoor and Parkhurst), 17,904 in workhouses and metropolitan district asylums, 494 were private single patients, and 5,595 were outdoor pauper lunatics. As compared with the previous year, the numbers in county and borough asylums show an increase of 1,818; in workhouses and metropolitan district asylums of 162; in registered hospitals, licensed houses, and naval and military hospitals of 45; in criminal lunatic asylums of 41; and a decrease of 34 in private single cases, and of 23 in outdoor pauper lunatics. Out of the numbers returned as being on the books of county and borough asylums, however, 99 were boarded out in workhouses.

Increase of the Certified Insane.

The number of certified insane on January 1st, 1907, shows an increase on that of January 1st, 1906, of 2,009, as contrasted with that of 2,150 for 1905, of 2,630 for 1904, or of 3,235 for 1903. The average increase for the ten years ending December 31st, 1906, was 2,462, and that for the five years ending on the same date 2,655. The increment of each year, therefore, over its predecessor shows a satisfactorily steady diminution. The private patients show an increase of 87 as compared with the increase of 162 for the preceding years and the criminal lunatics an increase of 42 as compared with 9 for the previous year. The pauper patients, numbering 113,136 (males 52,118, females 61,018), constituted 91·2 per cent. of all the certified insane and show an increase of 1,880 for the year 1906, as compared with the increase of 1,979 for 1905. The shrinkage in the increase of pauper insanity which was noted in 1905 was thus maintained during 1906. As regards the fluctuations in the numbers of pauper insane in the separate counties the report shows that London County had again by far the largest increase, amounting to 356 over the last year's number. Middlesex also had the considerable increase of 138. Surrey, Yorkshire (West Riding), Monmouth and Notts had also each a considerable increase of pauper insane, and 22 counties showed a net decrease, amounting, however, only to 152 in all. Turning to the proportional increase of insanity, on January 1st, 1907, the ratio of the total number of certified insane in England and Wales to the estimated population was 1 to 282, or 35·48 per 10,000, the corresponding proportions for January 1st, 1906, being 1 to 283, or 35.31 per 10,000. On January 1st, 1897, the ratio of insane to population was 31.89 per 10,000, so that in the ten years 1897-1907 the ratio has increased by 11.3 per cent., the proportion of insane to general population having risen from 1 to 314 to 1 to 282. This ratio of insane to population, though still mounting, is rising more slowly, for in 1903 the proportion was 1 to 288, in 1904 it was 1 to 285, and in 1905, 1 to 283. As to the ratio to population of the separate classes of insane the private patients have decreased from 2·84 to 2·83 per 10,000, the pauper patients have increased from 32·20 to 32.37 per 10,000, and criminal lunatics from 0·27 to 0·28 per 10,000. The increased ratio to population for 1906 is thus seen to be entirely due to the increase of pauper insanity. Taking the ratio of

[1] London: Eyre and Spottiswoode. (Price 2s. 11d.)

total admissions to population this, like the previous year, shows a satisfactory diminution on the preceding year, having fallen from 6.33 to 6.31 per 10,000. The private admissions to population fell from 0.68 to 0.65, the pauper admissions remained stationary at 5.59, and the criminal lunatic admissions increased from 0.06 to 0.07 per 10,000. This satisfactory state of affairs is further borne out by the ratio of first admissions to population—itself a criterion of the greatest value. Since 1902, when the ratio of first admissions stood at 5.76 per 10,000, it dropped steadily to 5.21 in 1905, and still further to 5.16 for 1906. The tables showing the numbers and proportions of first admissions only date back to 1898, but the Commissioners have been able to collect statistics from institutions for the insane as regards the "first" and "not-first" attacks in those annually admitted for a period of thirty years. The results have been tabulated in quinquennial periods showing yearly averages. Contrasted with the annual admissions for the same period, the first attacks are found to have increased relatively to population to a greater extent than the total admissions, the ratio of first attacks for the quinquennium 1901-5 per 10,000 of population being higher than that of any other quinquennial period in the thirty years under review.

(*To be continued.*)

MEDICAL NEWS.

THE KING has been pleased to grant to Mr. Bryden Glendining, M.B., Physician in Attendance on Her Majesty the Queen of Spain, permission to accept the Insignia of Caballero of the Order of Carlos III, conferred upon him by His Majesty the King of Spain, in recognition of valuable services rendered by him.

THE Local Government Board for Scotland has issued regulations with regard to cholera, yellow fever, and plague similar to those noted in the JOURNAL of last week, p. 757, as issued by the Local Government Board for England.

THE inaugural address of the Pharmaceutical Society of Great Britain will be given on Monday afternoon, September 30th, by Professor Raphael Meldola, F.R.S., F.I.C., at 3 p.m. On the same occasion the President will present the Hanbury gold medal.

DR. G. N. STEWART, Professor of Physiology in the University of Chicago, has been appointed Director of the Laboratory of Experimental Medicine, Western Reserve University, Cleveland, U.S.A., recently endowed by Mr. H. M. Hanna and Colonel Oliver Payne.

DR. T. G. PROSSER, who has been for twenty years medical officer to the Royal Monmouthshire Royal Engineers (Militia), has recently been presented by past and present officers of the regiment with a silver coffee service and salver, bearing a suitable inscription.

MESSRS. T. COOK AND SONS announce that they have added the new steamer *Egypt* to their Nile flotilla, and that twelve steamers altogether will be employed to work the various services on the Nile between Cairo, Assouan, and the Second Cataract during the coming season.

THE first meeting of the United Services Medical Society will be held at the Royal Army Medical College, Millbank, S.W., on Thursday, October 10th, at 8 30 p.m The President, Inspector-General Sir Herbert Ellis, K.C.B., Director-General of the Medical Department of the Royal Navy, will read a short paper on the objects and uses of the society, and this will be followed by a discussion. The Honorary Secretaries of the Society are Fleet Surgeon W. W. Pryn, R.N. (18, Victoria Street, London, S.W.), and Lieutenant-Colonel C. H. Melville, R.A.M.C.

ON Wednesday afternoon, October 2nd, at 3 p.m., Sir Richard Douglas Powell, President of the Royal College of Physicians of London, and an old student of University College, will unveil the medallion portraits of the late Dr. G. V. Poore and the late Mr. Christopher Heath, which have been placed in the entrance hall of the new University College Hospital Medical School. The medallions have been made by Mr. H. R. Hope-Pinker, and the cost has been defrayed by subscription. A bed in one of the medical wards will also be endowed as a memorial to Dr. Poore. On the same day Sir Richard Douglas Powell will deliver the introductory address of the session, and will present the medals and prizes. In the evening the annual dinner of the old and present students of University College Hospital Medical School will be held in the library of the school; the chair will be taken by Sir William Gowers at 7.30 p.m.

HEALTH CONDITIONS IN THE SEYCHELLES.—The Seychelles, according to the report of the Governor (Mr. Davidson) to the Colonial Office, are blessed with an almost perfect climate, temperate, healthy, and equable, with an entire immunity from hurricanes and earthquakes. The death-rate has hitherto been low, and was only some 14 per mille in 1905, but last year an epidemic of whooping-cough occurred, which was rather fatal amongst very young children, and the death-rate rose to 17.28. Eleven cases of beri-beri, 7 from Marie Louise, Id., in the Amirantes, and all from one or other of the outlying islands, were recorded, and of these 3 died. There is a distinct increase of tuberculosis in South Mahé. The numbers of lepers is not stated, but the disease is said not to be increasing. The number of cases in the leper hospital is only 12, but segregation is not obligatory, although it is suggested that it ought to be made so. Lunatics have hitherto been sent to Mauritius, there being no asylum in the archipelago, but one is in course of erection. In addition to some 300 in-patients in the Victoria Hospital, the six dispensaries relieved 4,842 out-patients, or more than double the number attended in 1902. This great increase is due to the poverty caused partly by two years of drought and partly by the enormous fall in the value of vanilla—the great product of the island—which is now less than one-sixth of its price in 1900.

THE CEREBRO-SPINAL FLUID IN HUMAN TRYPANOSOMIASIS.—To the *Archivos de Hygiene e Pathologia Exoticas*, published by the Lisbon School of Tropical Medicine, Professor Magalhaes contributes a paper, very important from the therapeutic point of view, on the permeability of the meninges in cases of human trypanosomiasis. Following up some similar experiments made by Professor Kopke in 1905, he shows that certain drugs given by the mouth or subcutaneous injection do not pass into the cerebro-spinal fluid, and so do not affect any trypanosomes that may happen to be there. Iodine, potassium iodide, and methylene blue were employed both by the mouth and intramuscularly, but though later they were found abundantly in the urine, they never penetrated the meninges. Apparently also atoxyl, which has a real action on certain of the symptoms of the malady—notably on the fever and on the disappearance of the trypanosomes from the blood and the glands—does not penetrate, because, according to the author, the trypanosomes always persist in the cerebro-spinal fluid. The conclusion to be drawn from this, therefore, is that, in order to attack them effectively in this site, the drugs used must be introduced under the arachnoid directly. In the same issue—the second part of Vol. I of this publication—is a long article on blackwater fever by Dr. da Costa, and a paper on cerebellar and bulbar affections in sleeping sickness by Professor Magalhaes.

FERTILIZATION IN LEUCOCYTES.—Mr. C. E. Walker, of the Liverpool Cancer Research Laboratories, has recently communicated to the Royal Society another series of observations on the life-history of leucocytes. The facts recorded were first observed among the leucocytes of *Axolotl*, which had collected in a mass owing to the presence of a foreign body or the infliction of a slight wound. Amongst the cluster of leucocytes thus obtained some were seen to be sending out protrusions from their nuclei, and where this occurred the action often seemed to be mutual on the part of two contiguous leucocytes. The subsequent changes were closely followed, and it was found that after a time the chromatin in one of the two nuclei began to disappear, whilst the amount of chromatin in the other very frequently showed a marked increase. This process was continued until one nucleus was completely denuded of its chromatin and the nuclear membrane collapsed. After establishing these facts in the relatively large cells of the *Axolotl*, the author searched for similar phenomena in mammalian cells, and succeeded in finding most stages of the same process of nuclear change in the normal mammalian spleen. He discusses the significance of this absorption of the nucleus of one leucocyte by another, and is led to the view that it must be regarded as a process of fertilization. These observations are regarded as confirmatory of what has been described as occurring in malignant growths. It has been stated that during the early stages of malignant growths leucocytes, entering into the cytoplasm of some of the tissue cells, proceed to divide mitotically, synchronously with the nucleus of the cell that they have invaded, the chromosomes of the leucocyte and the tissue cell becoming mixed, and being distributed between the daughter nuclei resulting from the mitosis. "This bastard form of fertilization seems to suggest some properties in the leucocytes different to those possessed by any other cells in the body, excepting perhaps the sexual cells."

British Medical Journal.

SATURDAY, SEPTEMBER 21st, 1907.

THE REFERENDUM AND THE REPORTS ON IT.

The members of the Association now have before them in full the opinions of all parties with regard to the points upon which the Council has resolved to take a Referendum. The report of the Council upon the subject was published as part of the proceedings of the Council in the Supplement to the British Medical Journal of August 17th, page 134, and is, we believe, being circulated by the Honorary Secretaries of Divisions with the notice of the meeting of the Division at which the matter is to be considered. This week the Supplement contains the report prepared and issued by direction of the Annual Representative Meeting at Exeter, and also a report from a minority of the Council who disagree with the views expressed by the majority. We are asked to invite members, in order to save expense in printing and postage, to preserve this copy of the Supplement, and to take it with them to the special meeting of their Division which has been, or will shortly be, summoned. All three reports are deserving of careful study. By reference to the report of the Council, it will be seen that a Referendum is being taken on a number of resolutions which relate practically to three points. The first is with regard to the mode in which a Referendum should in future be taken; the Council desires that it should have the power to refer back a resolution or any decision of the Representative Meeting to the Representatives at another meeting with an indication of its reason for so doing, and that it should only take a Referendum to the Divisions after receiving back the resolution or decision unaltered or altered in a manner which appears to the Council to be unsatisfactory. The second point is as to the mode of election of the Council; a by-law in the Draft Charter proposes that the Council should consist of fifty-two members, thirty-one elected by the Branches, twelve by the Representative Meeting, together with, as at present, six *ex-officio* members and one officer recently retired from the Royal Navy, the Royal Army, and the Indian Medical Service respectively, to be nominated by the Council itself. This proposal involves a more extensive grouping than at present of Branches for electoral purposes solely, both in the United Kingdom and the other parts of the British Empire. The third point is the proposal to divide the Journal and Finance Committee into two separate committees, a Journal Committee and a Finance Committee.

This is the first time the machinery of the Referendum has been exercised, and members may find some difficulty in grasping at once the exact nature of the decisions they are about to make, and the effect, one way or the other, of such votes as they may give. As regards procedure, it will be noted that a vote will be taken in each Division upon those resolutions of the Representative Meeting which are referred to the Divisions. The *pros* and *cons* of the various questions at issue are fully discussed in the three reports now before the Association; these naturally deal with questions of principle. The actual vote in the Divisions cannot by the technical nature of the Referendum be taken directly upon these principles except so far as they are embodied in the resolutions which strictly speaking are the subjects of the Referendum. The actual vote in each Division will be taken upon the resolutions of the Representative Meeting referred to, and affirmative votes will count as expressions of approval and negative votes as expressions of disapproval of those resolutions. The votes of the Divisions will not finally be counted separately; the aggregate vote given in all the Division meetings throughout the Association in the affirmative will be counted and the aggregate vote so given in the negative.

EUGENICS AND STATECRAFT.

To the plain man the new science of eugenics must sometimes appear to be surrounded by an unnecessary amount of mystery, mainly, perhaps, because it has come to be associated in their minds with the science of biometrics, with its coefficients of correlation,[1] skew curves, and other unfamiliar terms of a mathematical savour. We are therefore indebted to Professor Karl Pearson, the apostle of biometrics, for publishing[2] the Robert Boyle lecture to the Oxford University Junior Scientific Club, in which he discussed the scope and importance to the State of the science of national eugenics, and explained the part which biometrics is to play in eugenics. The latter term has been defined by its inventor, Mr. Francis Galton, to mean "the study of "agencies under social control that may improve or "impair the racial qualities of future generations, "either physically or mentally," and Professor Pearson tells us "the word 'eugenic' here has the double sense "of the English 'well-bred,' goodness of nature and "goodness of nurture."

Of course the science of eugenics is not new; it is, perhaps, the oldest of all the sciences, but Professor Pearson puts an old thought into preciser terms when he says that all sciences pass through three chief stages of development: First, the ideological, when you evolve your camel from your inner consciousness; second, the observational, when you study the form and habits of the real camel; third, the metrical, when you measure the camel, and study his relation to other camels and to the rest of nature. Eugenics had reached a certain stage of development when Plato wrote his *Laws;* it was already passing from the first to the second stage, but it has been the last of the sciences to enter the third stage, and here its pilot is biometrics.

Biometrics applies mathematical methods to various kinds of association which lack the absolute dependence of pure causation; it in fact applies to biological data generally methods of the same kind that an actuary uses in calculating a life table. It records its results arithemetically on a scale in which 0 represents absolute independence, and 1 complete relationship; this is the coefficient of correlation. The value of the correlation between the length of the right and left femur in man is 0.98, between the length of the finger and the stature 0.66, between the colour of a horse and its grandsire 0.30, between the size of the family of a mother and daughter 0 21, and so on.

The methods are applicable to the study of heredity, not in the restricted sense in which the word is often

[1] British Medical Journal, 1907. vol. ii, p. 95.
[2] *Journal of the Oxford University Junior Scientific Club*, August, 1907. London: Henry Frowde. 1s. net.

used to mean the transmission of some defect, but in the widest sense, to the study in fact of the applicability of the Darwinian doctrine of natural selection to man. That hypothesis is that the sounder individual has more chance of surviving in the contest with the environment physical and organic, and is therefore better able to produce and rear offspring inheriting his advantageous characters; a profitable variation is, to quote Professor Pearson's phrase, "seized on by natural "selection and perpetuated by heredity." That man varies every one admits, and biometrics measures the degree of variation. The same science is showing that variations are inherited; confusion has been introduced into the subject by the controversy as to the inheritance of acquired peculiarities. The question of interest is whether in a stock or family which presents a variation above or below the normal that variation will be transmitted, and, if transmitted, in what proportion. With regard to physical characters, the biometrician's result is that as between father and son and between brothers the correlation has very much the same value as in the case of cattle, horses, and dogs; for what Professor Pearson calls, not quite happily, pathological characters, which include so far only deaf-mutism, insanity, and pulmonary tuberculosis, the correlation is rather higher than for ordinary physical characters. With regard to psychical characters, evidence is being accumulated. The first official publication[3] from the Eugenics Laboratory, generously endowed by Mr. Francis Galton, is a study of certain data bearing on the degree to which some forms of intellectual ability may be regarded as hereditary. Mr. Edgar Schuster and Miss E. M. Elderton have analysed two classes of material, the Oxford examination records and the school lists of Harrow and Charterhouse. They show that there is an appreciable correlation between the class obtained by a father and that of his son at Oxford, and also between the respective successes of brothers. It is further shown from the Harrow and Charterhouse returns that there is a relationship between the position in the school of brothers at the end of the same number of years from entry in each case. The values of the correlation coefficients are appreciably lower than those obtained for the inheritance of physical characters in man, and the authors discuss some of the possible reasons—for instance, the fact that even skilfully conducted examinations are not ideal tests of ability, and cannot be compared in respect of accuracy with physical measurements. In an appendix, Professor Karl Pearson deals with a still more important factor, pointing out that fathers and sons who go to Oxford are not a fair sample of the population. "In the first place," he says, "there is a mild intellectual test in the matriculation "examinations, which excludes at least some of the "very intellectually defective. Secondly, there is "already a class selection; there has been in the near "or distant past ability in the stock sufficient to raise "it to that pecuniary position in which going to the "university becomes a tradition; thirdly and lastly, a "considerable number of men go to Oxford because they "have shown by position in their schools or by obtaining school or college scholarships, that they are "likely to do well at the university. There is "small doubt, therefore, that the academic population "belongs to a selected class, and one with considerably "less intellectual variation than is to be found in the "community at large. This selection of intelligence "leads at once to the reduction of the correlation "coefficients between father and son and brother and "brother." It is shown that if we suppose the reduction to be as much as 25 per cent., the coefficients deduced for the inheritance of ability in the general population approximate to those obtained for physical characters. The inference seems to be that mental and physical qualities are "inherited within broad lines in "the same manner and with the same intensity."

The next point that seems to be established as a general proposition is that those who live longest, and may be assumed to be the most healthy, have the largest number of offspring, although, as Professor Pearson poetically puts it, "man does to some extent "fall in his youth, or prime, or dotage, by the purely "random bolt of death." If longevity depended only on the physical constitution, it might be expected to be inherited at the same rate as other physical characters, but it is always inherited at a lesser rate, and from 25 to 45 per cent. of deaths in man are accounted for by the apparently random character of death's aim. With this qualification the fact of natural selection is clearly established for man. The question, then, arises for the consideration of statesmen whether natural selection is doing its work efficiently, or whether agencies under the control of the Legislature are suspending its action to the possible detriment of the race. Professor Pearson's statistics go to show that degenerate stocks under present social conditions are not short-lived, and have more than the normal size of family, whereas there is more than a suspicion of the limitation of the fertility of the fit. Mr. Heron's statistics on the correlation of birth-rate measured on wives of reproductive ages with the social and physical characters of the population of London show that the survival of the unfit is a marked characteristic of modern town life. Professor Pearson says that he is told that doctors do not believe in heredity. We should like to know who told him so. It may be possible to find *obiter dicta* in this sense, but if so they are paradoxical assertions, and evidence only of the revolt against the too great importance attached for many generations to the hereditary factor in the production of disease. Professor Pearson asserts that not only the medical profession but statesmen disregard two great principles, first the inheritance of variations, and second, the correlation in heredity of unlike imperfections. With regard to the first, medicine has always recognized its existence, only it would use the word "constitution" in place of "variation"; as to the second, medicine was probably the first of the biological sciences to recognize its existence, and it is one of the commonplaces of the textbooks that a family defect in nervous organization may show itself in one member in mental, and in another in nervous disease. We hope that Professor Pearson's prophecy, that twenty years hence every university will offer its students training in the science that makes for race efficiency and in the knowledge which alone can make a reality of statecraft will be fulfilled. Comte said that a science of society is impossible without biology, but we venture to repeat what we have often asserted, that sociology is really a department of biology.

[3] *The Inheritance of Ability; being a Statistical Study of the Oxford Class Lists, and of the School Lists of Harrow and Charterhouse.* By Edgar Schuster, M.A., and Ethel M. Elderton. (Eugenics Laboratory Memoirs I. Dulau and Co. London. 1907.)

THE ATTITUDE OF THE BOARD OF EDUCATION TO SCHOOL HYGIENE.

THE efforts of the British Medical Association, which in this, as in so many other matters, has been the mouthpiece of the profession, have at length been rewarded by the

establishment of a medical department of the Board of Education at Whitehall. The department has been established at this moment in consequence of the provision in the Education (Administrative Provisions) Act, passed last month, which gives local education authorities the duty of providing for the medical inspection of school children, and the power, subject to the approval of the Board of Education, to attend to the health and physical condition of the children.

The provision as to medical inspection was forced upon an unwilling department by the direct vote of the House of Commons, and it is to be feared that unless public opinion makes it clear to the permanent officials that it will insist upon the work being efficiently done, the opposition from within—of which there have been many sinister indications—will have the effect of rendering the provision ineffective, except in those places where an enlightened local authority insists upon putting it into force. We believe that at any rate we do no injustice to the chief permanent official by saying that he regards the whole subject of medical inspection and physical education with no sympathetic eye. We do not question Sir Robert Morant's devotion to his duties, but we think it is clear that he has failed to move with the times, and that the policy which he seeks to impose upon educational authorities in this country is antiquated and reactionary. Sir Robert Morant was first appointed to the British Education Department twelve years ago, his selection being apparently due to the success with which he had organized public education in Siam; he was appointed Permanent Secretary to the Board about four years ago, and the eugenic aspects of education have not prospered during the last few years. The abolition of the epidemic grant, as it was called, was an unfortunate indication of the way in which the wind was blowing. Formerly the attendance grant was allowed for children absent from school on account of diseases injurious to others, and Dr. J. R. Kaye has recently shown that since it was rescinded educational authorities have practically been mulcted a shilling a week for every week a child has been absent from school owing to such diseases as scarlatina or diphtheria. Numerous representations were made to the Board showing that the change was impolitic and reactionary, but without effect.

The two principles that it was the duty of the State to make provision for safeguarding the health of children in elementary schools, and to give in those schools elementary instruction in hygiene, with the corollary that the Central Board of Education must have a medical department to advise it on such matters, were pressed upon succeeding presidents of the Board by the British Medical Association and other medical bodies without result until the force of public opinion, expressed by an overwhelming majority in the House of Commons, forced the Minister literally to accept in the afternoon what he had refused at noon. The institution of medical inspection thereby became a certainty in the near future, and it might have been anticipated that the Board would have accepted its institution with a good grace. Two recent announcements, however, cannot fail to raise a doubt upon this point. In the first place, the President of the Board stated in the House of Commons just before the prorogation that, in the view of the Board, the obligation placed upon the local authority to provide for medical inspection did not of itself compel a parent to submit his child to inspection. This has led to the suspicion—we trust unfounded—that the Board will be satisfied if local authorities make provision for medical inspection, and will not insist upon the provision being carried into effect. If this is the intention we can promise that the medical profession, backed up as it is by unanimous public opinion, will not allow so great a violation of the spirit of the Act to be perpetrated without vigorous and persistent opposition. The other announcement, which has been received by those really interested in this matter with keen disappointment, is the selection made for the important office of chief medical officer of this new department. We publish elsewhere a very outspoken letter from one of the secretaries of the Section of Medical Inspection of Schools at the recent International Congress on School Hygiene in London. We are not in a position to affirm or deny the accuracy of all the allegations contained therein, but we have no hesitation in asserting that he is right in saying that the person designated by medical and public opinion for the office was Dr. James Kerr, the present medical adviser of the London Education Committee, who may justly be called the founder in this country of this new department of preventive medicine. By long study and diversified experience he has made the subject of school hygiene his own, and his appointment would have given the Board a medical adviser of fearless integrity, of wide knowledge and experience, and European reputation.

THE ALLEGED INCREASE OF INSANITY.

At the International Congress of Alienists on the Treatment of the Insane, held at Amsterdam early in this month, Dr. William W. Ireland addressed the meeting on the increase of diseases of the nervous system and of insanity. The three principal points to which he drew attention were the increase of the grosser forms of nervous diseases as revealed by the official returns of deaths in Scotland; the general increase of suicide in Europe generally and in America; and the increase of insanity in England and Wales. With regard to the first point, he showed by means of tables that in Scotland, in which country diseases of the nervous system were stated to be less frequent than in England and Wales, a steadily-increasing proportion of deaths appeared to have been attributable to brain and nervous diseases during the period 1855 to 1895, the ratio per 100,000 of the population having risen from 168 to 231. From 1885 the ratio declined slowly to 214 in 1900. After 1901 a new arrangement of the statistics concerning nervous diseases was made, excluding cerebral haemorrhage, hemiplegia, etc., from the class of nervous diseases; but, including these, as formerly, the ratio declined still further year by year from 212 per 100,000 in 1901 to 194 per 100,000 in 1905, which latter proportion, however, is still well above that of 1855. Dr. Ireland further quoted the statistics of Dr. Newsholme for England and Wales as showing that diseases of the nervous system gave a death-rate per 1,000,000 of 1,546 in the quinquennium 1861–5, and of 1,600 per 1,000,000 in the period 1891–5, and considered that "it was not "going in advance of the evidence to pronounce that "the graver forms of diseases of the nervous system "have increased in Great Britain, as they are said to "have done in France and Germany, during the last "fifty years."

Turning to the second point, he showed from widely-collected statistics that suicide seemed to be increasing in every country in Europe save Norway. Dr. Strahan had shown that in England and Wales the ratio of

suicides per million had risen from 61 in 1867 to 82 in 1888, an increase of more than one-third within twenty-two years; and from his own inquiries he had found that in Scotland the ratio had increased from 48.7 per million in 1881 to 65 per million in 1905. In some of the American States the increase appeared to be even greater, having grown in Massachusetts from 69.9 to 90.9 per million in thirty years, and in Connecticut from 60.6 to 103.3 per million in the same period.

Dr. Ireland's main argument, however, concerned the increase of insanity in Great Britain, France, the Netherlands, Norway, and America. All these countries, with the exception of Norway, showed progressive increases in their certified insane. Dr. Ireland did not accept the opinion of the Commissioners in Lunacy that there was no evidence to show that insanity was increasing in Great Britain out of proportion to the increase in the population, but maintained that all explanations hitherto given of the undoubted numerical and proportional increase of insane people, by accumulation, by increased stringency of certification, and so on, failed to account for the whole increase of insanity. With Professor Kraepelin, he held that we had to deal with an advance along the whole line, an increase in nervous diseases, in suicides, and in insanity.

Dr. Ireland did not introduce any fresh facts into the analysis of a subject with which we have dealt on many occasions. As we have said on more than one occasion, the statistical information available is inadequate for the purpose of drawing any certain conclusion as to whether there is or is not any real increase of insanity. The statistics as to the ratio to population of "occurring" insanity, of fresh admissions to asylums, indispensable for this purpose, do not extend far enough back to be of service, and, as Dr. Ireland said, and as Mr. Humphreys, in a paper read before the Statistical Society, which was treated in a leading article in the BRITISH MEDICAL JOURNAL of April 20th, 1907, pointed out, the Lunacy Commissioners have still no detailed information of pauper lunatics in or outside of workhouses. Nevertheless the combined effect of the proved increase in the proportion to population of deaths from nervous diseases, of suicides, and of certified insane persons is suggestive of there being an actual increase. At the same time, where statistics as to causes of death extending as far back as 1855 are concerned it is difficult to exclude the possibility of an increasing accuracy of diagnosis affecting returns on a large scale. Also the acceptance of an increasing ratio of suicides as indicative of increasing mental disorder may not be free from error. Its value obviously depends upon the truth of Dr. Ireland's statement that "the causes which tend to "induce suicide are the same as those which go to produce "insanity, that is, greater sensibility and irritability and "a lessened power of reaction." To what extent, in our own country, suicide is the outcome of pathological mental states is exceedingly difficult, if not impossible, to determine, but even granting that in every case of suicide a certain degree of mental instability is present, it would still be necessary, before concluding that this mental instability was on the increase, to make certain that the exciting factors were uniform during the years under review. That is, it would have to be proved that in the last twenty or thirty years in our country the struggle for existence had become no keener, the mental and nervous strain no greater, and the anxiety, worry, and general exigencies of life no more severe than heretofore. As to whether this has been so or not we all have our own opinions.

PLURALITY OF HOSPITAL APPOINTMENTS.

THE question of pluralism in hospital appointments has in recent years been discussed as an academic question both by bodies more or less representative of the medical profession and in the lay press. It has now come within the sphere of practical politics in an acute form at Bristol. At a meeting of the Governors of the Royal Infirmary, to be held on September 24th, alterations in the rules will be proposed that, if carried, will debar members of the full staff from holding any professional public appointment other than professorships or lectureships at a university, college, or school, and members of the assistant staff from holding any other general hospital appointment, or more than one special hospital appointment. As to the reasons that may have moved the civic magnates who control the temporalities of the Bristol Royal Infirmary to make this egregious proposal, we are in the mental position of Mr. Micawber in regard to "gowans." Whatever the reasons may be, however, we beg leave to tell the governors that the proposed new rules are at once foolish in themselves and insulting to the medical profession. Hospital appointments are valuable to young men as affording opportunities of increasing their knowledge and perfecting their skill. One would have thought it might have been obvious even to the mind of a lay committee-man that the larger experience a man has the more efficiently is he likely to discharge the duties of a hospital physician or surgeon. It is, therefore, directly contrary to the interest of patients that the sphere in which such experience can be gathered should be arbitrarily narrowed; and it is not only the poor who will suffer from this cause, for it is to the work of hospital physicians and surgeons that we have mainly to look for the development of the art of healing. Want of means or other causes undoubtedly prevent many able men from taking hospital appointments. Those, however, in whose hands such appointments lie are bound to select the best men at their disposal, and the fact that a physician or surgeon is appreciated by the governors of other institutions is prima facie evidence of his professional fitness and of his capacity to work in harmony with his colleagues—a quality almost equally essential in the members of a hospital staff. Young men have not, as a rule, sufficient private practice to occupy all their time; it is natural, therefore, that those who wish to qualify themselves for the consulting ranks of the profession should take every opportunity presented to them of enlarging their experience. Apart altogether from higher considerations, it is their interest to do their work as officers of a public institution as efficiently and as diligently as possible, and their willingness to use in this way the time not otherwise occupied should be regarded as a proof of keen interest in their professional work rather than as a disqualification for appointments. Of course if a man does good work in this way it makes him favourably known to his brethren and through them to the public. It would be mere cant to pretend that hospital work is done wholly from altruistic motives. The doctor has to live by his profession as the priest lives by the altar, and it is only just that he should receive some return for arduous service rendered without pecuniary reward. As long as a man performs in a satisfactory manner the duties which he has undertaken, the governors of a hospital have no shadow of right to interfere with his professional activity in any legitimate direction. The proposed new rule of the Bristol Royal Infirmary is an insult to the profession, for it means that the governors assume it to be within their province to prevent members of their staff from spending time over which they have no control in such manner as these officers may think best for their professional advantage. Lay committees must once for all be taught to clear their minds of the

delusion that physicians and surgeons who do the medical work of hospitals are in any sense their servants. Without entering into the question whether or not hospitals should be administered wholly by laymen, we think it essential that Committees should rightly understand their position. However intelligent and sympathetic they may be—and we think it only fair to say that for the most part they display both these qualities—they are after all only hewers of wood and drawers of water. It is not they who build the city, nor is it their work that gives it such repute as it may enjoy for the relief of suffering and the advancement of medical science. The pretension implied in the proposed new rules of the Bristol Royal Infirmary is an impertinence which will be resented by the profession. The Infirmary has a long and praiseworthy record as a medical institution; next to Chester, it is, we believe, the oldest provincial hospital in England. In the best interests of the Infirmary we urge the governors not to persevere in a policy discreditable to themselves and likely to be harmful to an institution with which are associated many great names in the history of medicine.

SMUGGLING AND ADULTERATION.

The report[1] of the Principal Chemist on the work of the Government Laboratory during the year ended March 31st, 1907, is typical of those numerous documents which are elaborated with the utmost care of highly-skilled officials, "distributed to both Houses of Parliament by command of His Majesty," then relegated to official pigeon-holes—it may be even to the waste-paper baskets of over-burdened members of Parliament—but which nevertheless often teem with curious information about some of the by-paths of our complex civilization. The various laboratories under the control of the Government Chemist are, of course, principally concerned with the work of the Boards of Customs and of Inland Revenue, but their officials are also regularly called upon by the Admiralty, the Board of Agriculture and Fisheries, the Board of Trade, the Colonial Office, the Home Office, the Local Government Board, the India Office, the Post Office, the Stationery Office, Trinity House, and the War Office. Many thousands of analyses and examinations are made annually on behalf of these various departments, and the articles dealt with comprise an extraordinary miscellany, ranging from the spirits regularly tested for excise purposes to examinations of asphalte, sheep-dips, sealing-wax, and gold lace. One of the first impressions gained from a perusal of this admirable report is of the extraordinary complexity of the working-out of customs and excise duties. The next impression we gain is one of the romance of the thing. The old warfare between the smuggler and the excise-man is not ended; it has simply been transferred from the rocky coast to the inland town; the revenue cutter and the musket have been replaced by the chemical laboratory and the test tube. Incidentally all this work, done primarily in the interest of the revenue, is protecting the taxpayer in a double sense; it is one of our outposts against the adulterator. Take, for instance, the bald statement on page 6 of the report: "The 'importation of extracts and essences of coffee and 'chicory (as well as of tea and tobacco) is prohibited, 'but many of the so-called coffee essences are absolutely devoid of coffee. They are often, however, 'found liable to customs duty as burnt sugar (or 'caramel), roasted figs, etc., and are charged accordingly." One can but hope that the "charge accordingly" is prohibitive. Again curiosity is aroused as to the destination of the "methyl alcohol and wood-spirit, purified so as to be potable." Of these we are only told that "of the 213 samples tested 18 were "charged with spirit duty." One would like to know who paid that duty, and why it was worth their while. On the other hand, it is satisfactory to learn that recent remissions of the tea duty have resulted in a great improvement in the quality of the tea imported. It has, in fact, ceased to be worth anybody's while to import the lowest grades of tea. The systematic examination by this department of beer as retailed to the public has revealed the existence of an "extensive "system of fraud on the revenue by the addition to "beer of solutions of sugar and water in such propor-"tions that the dilution of the beer was not apparent "except on chemical analysis." This means, of course, that the specific gravity of the beer was maintained at such a point that although diluted it passed the ordinary hydrometer test. Quite apart from the "Revenue" point of view, it is satisfactory to learn that "prosecutions were instituted against the "vendor of the sugar solutions and against twelve "publicans who had purchased them from him, "and a conviction was obtained in each case." It is again for "Revenue purposes" only that "beverages "sold as temperance drinks" are examined, and it may be startling to teetotalers to learn on this official authority that samples of "herb beer" and "dandelion "stout" were obtained containing respectively 10.5 and 12.3 per cent. of proof spirit! After this the substitution of "sphagnum moss finely ground" for rappee snuff leaves one cold and unsympathetic. The doings of the Army Clothing Department have come in for so much criticism that it is disappointing to be told that the samples received from this department consisted "wholly of gold lace and braid, to be assayed for the "proportion of gold and silver present." Yet other departments had found it worth while to submit samples of waterproofs, leather, and other wearing apparel. These are but a few of the many points of interest in a report which throws a number of unexpected sidelights on the habits of the people, on obscure fluctuations of trade, and on some of the practical details of the work of organizing the life of a great nation.

[1] Eyre and Spottiswoode, 3½d.

THE CAMPAIGN AGAINST TUBERCULOSIS.

A short time ago Dr. R. W. Philip of Edinburgh delivered an address on the organization of preventive measures against tuberculosis before the Society of Medicine and Children's Diseases in Vienna. Professor von Schrötter, the President, in introducing the lecturer, referred to the fact that the scheme at present in force in Edinburgh dated as far back as 1887. Dr. Philip, in expressing his sense of the honour the Society had done him, conveyed to the President, on behalf of old students and friends in Great Britain, their congratulations on the occasion of his 70th birthday. After referring to the special interest that the question of preventive measures against tuberculosis had for Austria, where the mortality from the disease was one of the highest in Europe, Dr. Philip congratulated the President on the conspicuous part which Vienna had taken in the foundation of sanatoriums. There was great need for more thorough organization and co-operation in preventive measures. It was not so much a question of the cure of individual cases as of the extinction of the disease. For an effective plan of operations the following five factors seemed desirable: (1) Notification; (2) a dispensary; (3) a hospital for advanced or dying cases; (4) a sanatorium for early cases; (5) a working colony. Dr. Philip laid great stress on the importance of the dispensary as the centre of operations, and illustrated this by a series of tables, showing the frequency of directly traceable infection dependent on a variety of unsatisfactory conditions in respect of the housing of the poor. Striking

examples were cited of the service rendered to the community by the discovery of whole series of cases—in one instance as many as 15 separate cases—from the visit of one individual patient to the dispensary. It should constitute the uniting point of the various branches of operation. Tuberculous patients of the poorer classes should be directed towards the dispensary. The attention of employers and of the public generally should be drawn to it as an institution where all inquiries as to what was best to be done in particular cases would be answered. The dispensary thus acted at once as a bureau for the reception of inquiries and the dissemination of information and assistance of different kinds, and a "clearing house" for the vast amount of tuberculous material with which each community would have sooner or later to deal. Even in the sanatorium a considerable amount of work might be expected from the patients, and formed a not unimportant factor in treatment. Such regulated activity was a fitting introduction to life in a working colony. Residence in the colony served as a probation between the sanatorium and return to ordinary occupation, or introduced the patient to a new line of life, to be carried out elsewhere or in the colony itself for a prolonged period. From the economic standpoint the colony could be made to pay its way at least. The colony should be recruited by careful selection of suitable patients from the sanatorium. Such an organization ought not to be dependent on private benevolence, but should be maintained, or at least subsidized, by the local authorities. The effectiveness of the scheme rested on the co-ordination and harmonious working of the several elements. The value of the individual elements was remarkably increased by close organic relationship to one another. Co-ordination and co-operation in preventive measures formed the key to a successful campaign against tuberculosis. The address was followed by a short discussion, during which Professor von Schrötter said that he agreed as to the importance of work in a sanatorium, and added that there was little difficulty in inducing the patients to take to work. After a number of other speakers had taken part and Dr. Philip had answered various questions, Professor von Schrötter conveyed to Dr. Philip, in the name of the Society, their heartiest thanks and congratulations. He wished, in their name, to give practical expression to this and to propose that Dr. Philip be made an Honorary Member of their Society. The proposal was carried with acclamation and suitably acknowledged by Dr. Philip.

CHRISTIAN SCIENCE.

THE "silly season," though it affords relief from the loquacity of Parliament, opens the floodgates to streams of verbosity of a different kind. Of course, as Falstaff says, a man must labour in his vocation, and the editor of a newspaper has to fill his columns. There may occasionally be a doubt whether the "young lions" of the office do not help to keep up the roaring. We are inclined to think, however, that the correspondence on Christian Science which has for some weeks past filled a considerable space in the *Daily Telegraph* is entirely genuine. We think so not only because many of the writers sign their names, but because the anonymous defenders of the Christian Science position have displayed a "holy simplicity" which the most practised journalist would find it difficult to imitate. The controversy has been largely theological; with that aspect of Eddyism we do not concern ourselves. As to the claims of healing power put forth on behalf of Christian Science, we have already expressed our opinion, and it is useless to repeat what we have said, for a discussion with the devotees of Mother Eddy is like arguing with a shadow. The only point of interest in the correspondence is that so many persons who seem to have had some kind of education are ready to believe in signs and wonders on no solid evidence and even against the evidence of their own senses. As showing the value that is to be attached to their testimony we need only cite one or two of the "cures" proclaimed by the patients. One relates that he—or she—had "suffered for many years, with constantly increas-"ing severity, from entero-membraneous-mucous "colitis (!), so diagnosed by a well-known London "specialist, and also by the greatest authority on this "disease in Europe," to whom the patient was sent by the London specialist. The name of the disease "surprise by himself" as Count Smorltork would say, and we should like (as Charles Lamb did in regard to the man who asked him if he thought Milton a poet) to feel the bumps of the authorities to whom reference is made. Another afflicted person who had suffered from childhood from "debility, nerve exhaustion, and "cerebro-spinal headaches" (*sic*) was cured by reading Mrs. Eddy's book. We have no difficulty in believing that such diseases do not exist, and we are therefore quite willing to admit that they could be cured by Christian Science. When we have to do with tangible facts, we look in vain for any tangible evidence either as to diagnosis or cure. Christian Scientists suffer from seasickness and wince under the hands of the dentist like ordinary people. Even those who have the true light from its very source die of heart disease, as might any one to whom the gospel according to Eddy had never been preached. The advocates of Christian Science complain of being misunderstood, but when challenged to fulfil their empty boasts in a particular case of deafness or blindness, they "lie low and say nuffin'," like Brer Rabbit. We are told that the alarm about the physical deterioration of the race is unfounded. But if it be true that this sorry cult is spreading among us, the fact must be taken as a proof that we are suffering from mental degeneration. By way of comfort to our readers after this gloomy reflection, we quote the following story told by one of the writers: A little girl who was screaming with toothache was told by her mother, a Christian Scientist, not to cry. "If," she said, "you "only had my faith you would have no toothache." To which the poor child replied with equal point and truth: "Yes, and if you had my toothache you would "soon lose your faith!"

AN ANAESTHETIC SHAMPOO.

CARBON tetrachloride, CCl_4, differs from chloroform, $CHCl_3$, by the substitution of the hydrogen atom by an atom of chlorine; it is a transparent, colourless fluid which gives off fumes possessing anaesthetic properties. Its use as a general anaesthetic was suggested by Drs. A. E. Sansom and John Harley and by Sir James Simpson more than forty years ago, but it has never come into use for that purpose, owing, as it would appear, mainly to Simpson's opinion that it depresses the heart much more than chloroform. It has been used instead of benzine for cleaning clothes, because it is non-inflammable; and recently it has been brought into use by hairdressers for what is called a "dry shampoo." The memorandum from a lady which Dr. McKendrick, Emeritus Professor of Physiology in the University of Glasgow, has sent us shows that the use of this drug by hairdressers is attended by certain inconveniences and dangers. The lady relates that soon after the process of dry shampooing began she found that she was losing consciousness, and probably a woman of less vigorous intelligence and weaker will would have gone off. This is bad enough, but the suggestion contained in the hairdresser's observation that ladies rather liked the effect of the lotion and bought it to use at home, raises

further possibilities of danger. Among the rarer kinds of habitual intoxication is the chloroform habit, and it seems not remotely impossible that a carbon tetrachloride habit might be established to the ruin of the physical, mental, and moral nature of the victim. Apart from this risk of establishing a drug habit, there can be no doubt that a serious and even fatal accident might easily occur, in which case the user or seller of the drug would be in a very awkward position. We hope, however, that the appeal which the facts must make to the common sense of the trade will be sufficient to put an end to so dangerous a practice.

"UNQUALIFIED" BEGGARS.

It may be comforting to some who suffer from the competition of quacks to know that the medical profession is not the only one which finds the struggle against unqualified practice severe. Not long ago an Austrian association of dancing masters sought redress at the hands of the law for the infringement of their prerogative by an unfortunate doctor of medicine who had found it impossible to make a living by the practice of his own profession. But the most remarkable trade-union of which we have heard is one in the South of France formed by beggars for the suppression of unqualified practice. A meeting of street singers and of the lame, the halt and the blind, who extract voluntary contributions from the charitable public was held at Marseilles, a one-legged man being in the chair, for the purpose of organizing themselves into a body strong enough to resist the encroachments of pretenders. The association was duly constituted, with statutes and by-laws. It was decided that only French subjects with genuine malformations or sores could be admitted to membership. Compliance with the latter part of this condition may not be altogether easy to enforce, for the imitation of diseases is a fine art. Readers of the life of Ambroise Paré may remember that when he was still a barber's apprentice he won some reputation in his native town by the exposure of a beggar who used to stand at the door of the parish church exposing to the pity of the faithful a frightful fungating tumour of the arm which proved to be a piece of decomposed mutton. Since the foundation of the association two one-legged men—named, we learn from the *Journal des Débats*, Roisin and Carlier—have started on a mission, delivering addresses wherever they go, warning the public against impostors. The head quarters of the association are to be in Paris, and the organization will be under the direction of one Doussineau, who though he walks on crutches is said to be a man of devouring activity, going up and down beating up recruits. Some difficulty seems to have arisen in regard to contributions, many of the members preferring to keep their earnings to themselves. A feeling of uneasiness seems also to exist lest the list of members should find its way into undesirable hands.

THE CARE AND CONTROL OF PAUPER LUNATICS.

Those who have followed the proceedings of the Royal Commission on the Care and Control of the Feeble-minded will remember the criticisms of the present administration of the laws affecting pauper lunacy, and the changes suggested by Mr. J. S. Davy, C.B., the Chief General-Inspector of the Local Government Board, in his evidence, an abstract of which is printed in our issue of January 26th, 1907. Mr. Davy referred, first, to the growth of expenditure and the steadily increasing proportion of the poor-rate expended on pauper lunatics; secondly, to the lack of classification of paupers of unsound mind; and, thirdly, to the want of co-ordination between the various local and central authorities. He pointed out that whilst the number of lunatics in workhouses had remained practically stationary since 1869, those chargeable to the poor-rate in asylums had grown from 27,000 to 86,000, or more than threefold. For this condition Mr. Davy principally blamed the four-shilling grant, which he stigmatized as wholly mischievous, and proposed that it should be either abolished entirely, or only paid under stringent conditions as to classification. In the course of cross-examination he further stated that the Local Government Board would strenuously oppose any change which would tend to diminish its control over local loans, local finances, or local supervision and administration generally, on the ground that, as the Board has to do with the class which produced lunacy, it should follow up the pauper lunatic. At the time it seemed likely that Mr. Davy's evidence would evoke adverse criticism, and in his annual report on the Hereford County and City Asylum, Dr. S. Cuthbert Morrison, the Medical Superintendent, has addressed his Board in forcible terms on the subject of Mr. Davy's evidence and suggestions. Mr. Davy's not obscure hint that the control of all pauper lunatics should be entrusted to the Local Government Board is objected to by Dr. Morrison on the grounds that it would militate against all effective decentralization, would extinguish the individuality of every asylum, and would disattach the interest of local authorities from a very beneficent work. With regard to the four-shilling grant Dr. Morrison contends that the effect of this has been merely to precipitate the removal of a class that had already begun to drift and would have eventually drifted into asylums to secure proper care and that "it is idle to suggest that the root mischief lies in the "remedy which aided the very work it was intended to "accomplish. By relieving local rates the admitted "evils under which the insane were cared for dis-"appeared. The law has made asylums satisfactory "places for pauper lunatics." Concerning "scientific "classification" Dr. Morrison points out with truth that "without a rearrangement in the administrative "areas of a large proportion of local authorities on "whom the duty is placed of providing asylum accom-"modation, the scientific classification would work "out prejudicially to true economy. By reducing "the units in their small areas and distributing "these units in separate buildings the whole cost "will be effectively increased in proportion to the small-"ness in numbers of such units." This is a real difficulty, but it ought not to be insuperable, if the co-operation and combination of local authorities could be secured. Now whether the four-shilling grant is a bane, as Mr. Davy asserts, or a blessing, as Dr. Morrison would maintain, it must be generally admitted that county asylums, and particularly the infirmary wards of county asylums, throughout the whole country contain very large numbers, forming a considerable percentage of the whole asylum population, of senile, quietly demented, and hopelessly-incurable patients who could be satisfactorily treated in very much simpler and less expensive institutions, and who not only cost the ratepayers much more than they need, but by their presence interfere with the discharge by the asylums of their proper functions of mental hospitals. The separate care and treatment of these cases is both an administrative and a therapeutic need, and this, with other reforms of like nature, can only be attained by the adoption of a scientific classification and the careful compliance therewith. As to the co-ordination of the several authorities to whom are committed the care and control of all pauper lunatics and their supervision and direction under one Board, such unification is so plainly desirable that it is impossible to doubt it will eventually be obtained. In this relation we may perhaps once more draw attention to the recommendations and suggested alterations of

the existing lunacy law made by the Association last year and laid in evidence before the Royal Commission on the Care and Control of the Feeble-minded under its extended form.

DO THE FINER BRANCHES OF THE CORONARY ARTERIES ANASTOMOSE?

There has been a decided difference of opinion amongst anatomists, physiologists, and pathologists concerning the presence or absence of anastomosis between the smaller branches of the coronary arteries. As long ago as 1757 Haller believed in the existence of such anastomoses, but in later years we have been strongly influenced by the opinions of Cohnheim and his immediate followers, who insisted upon the presence in many of the organs of the body of "end arteries," that is, arteries whose terminal branches formed no anastomoses with their neighbours, and whose territories could not, therefore, be supplied with normally-flowing blood if the parent stem became blocked. More recent researches, however, have gradually reduced these "end arteries," and in the early part of this year Janim and Merkel published a series of stereoscopic Roentgen photographs of specially injected hearts which, in their opinion, and the opinion of many observers who examined their work, proved the presence of numerous anastomoses between the smaller branches of the right and left coronary arteries. The matter, however, was still open to doubt, for it is difficult to say from an examination of the photographs, whether or not the points of apparent anastomosis are not merely the points of crossing of two closely apposed vessels. Bearing in mind the differences of opinion and the importance of the subject, Professor Spalteholz, who was himself dissatisfied with the evidence of stereoscopic Roentgen photographs of the injected vessels, devised a new injecting medium by means of which, coupled with a process for making the injected hearts transparent, he obtained a beautiful series of specimens which he showed at the last meeting of the German Anatomical Society at Würzburg. These specimens prove conclusively, as Professor Spalteholz said, that the coronary arteries are not end arteries in Cohnheim's sense. Their branches anastomose freely together on the superficial surface, in the substance of the muscle wall, under the endocardium, and in the papillary muscles. Thus the question is finally answered, the branches of the coronary arteries do anastomose freely together.

FUNGUS POISONING,

The case at Ipswich in which fungus poisoning has already brought about the death of six persons in one family presents many points of interest, among these being certain variations in the symptoms, in the number of hours before ill effects were first noted, and in the course of the ensuing illness. Another point is that one at least of the persons who consumed the supposed mushrooms was doubtful as to their nature, and that his opinion was overridden by the father of the family and one of the victims, who alleged that as he had been gathering mushrooms all his life he must know what they were. Some fragments of the mushrooms seem to have been preserved, but the class to which they belong is not quite certain. It is more than probable, however, that they were *Amanita phalloides*. This fungus is responsible for nearly the whole of the cloud of suspicion which surrounds mushrooms, for in England at any rate nearly all the cases of fungus poisoning reported are due to it. Muscarin is the toxic principle to which mushroom poisoning is commonly ascribed, but really the poison of *Amanita phalloides* is probably a toxalbumin. To distinguish the fungus from wholesome varieties is, as was pointed out in these columns a year or so ago, not difficult. It is never anything but white beneath beneath the cap, where everybody knows the mushroom is pink, purplish-brown, or almost black. On the top *A. phalloides* is frequently nearly white, but traces of yellowish-green, especially about the margin, are always discernible. Unlike the stem of the mushroom, which is nearly cylindrical—or, in other words, nearly as thick above as below—the stem of *A. phalloides* is always bulbous, and springs out of a cup made by the upper part of the bulb, the so-called "poison-cup." The cup-like base of the stem, the permanently-white gills, its shining pale-greenish or yellowish-white top, and the fact that it never grows far away from trees, especially oak trees, should enable any one to recognize this most virulent fungus, and no one should be deceived by the fact that it peels almost as well as the common mushroom. A further consideration raised by the case is whether this fungus is commoner in the eastern counties than elsewhere in England, for a brief glance through our pages shows that all cases reported by us of recent years have occurred in that part of the country. In France, likewise, this fungus is responsible for many deaths, a paper which was published by us some time ago containing a list of upwards of 18 which had occurred in different parts of France within the preceding four years.

WORKMEN'S COMPENSATION.

The Statistics of Proceedings under the Workmen's Compensation Acts and the Employers Liability Act, which are issued annually by the Home Office, present an imposing mass of figures; but, as generally happens with statistics, an analysis of these figures leads to some very interesting results. As the compiler explains, the figures are only partial, since the statutes contain no provision for making returns, so that no information is available concerning claims which are settled by agreement, although these form a majority of the total number of claims. Nevertheless, the cases recorded and here tabulated may be taken as a sample of the whole, and the most remarkable fact that emerges from these is the steady annual increase in the number of claims paid since 1899. Thus, the number of cases recorded in county courts has risen from 1,347 in the year 1899 to 2,532 in 1906, and the other tables given show a proportionate increase. Some of this increase may be due to an increase in the industrial population, and possibly to a greater readiness to claim owing to increased familiarity with the working of the Acts. But there remains a substantial margin of increase which cannot be explained away, and is very disappointing as showing that the Acts have not yet had the effect of lessening the number of accidents, which was confidently anticipated at the time of their introduction. A table giving the total number of cases taken into court, classified under seven different heads according to employment, reveals the surprising fact that the accidents under the heading of "factories" are actually in excess of the total accidents from railways, mines, quarries, engineering works, building trade, and agriculture put together. The average amount of the awards in the eight years also shows an increase from £173 1s. 7d. in 1899 to £190 13s. 11d. in 1906. The difference in the average amount of awards in the various trades is also very striking, varying from £67 18s. 8d. in mines to £15 14s. 2d. in the case of agriculture. The report mentions that the average amount of solicitors' costs works out at £23 14s. 10d. under the Employers Liability Act and £13 7s. 1d. under the Workmen's Compensation Acts, but it is discreetly silent as to any payments made to the medical profession.

Canada.

Dr. R. A. Reeve of Toronto.

At the annual meeting of the Alumni Association of the University of Toronto it was resolved to present the following address to Dr. R. A. Reeve, ex-President of the British Medical Association, on his retirement from the Presidency of the Alumni Association, which he had held since its inauguration in April, 1900; the address was presented by Principal Hutton, Acting President of the University of Toronto:

This Association cannot permit Dr. Richard Andrews Reeve to vacate the office of President, which he has adorned for seven years, without giving expression, however inadequate, to some of the gratitude and appreciation with which they regard his unequalled services and untiring devotion to the society.

When Dr. Reeve became the first President of the important organization, which has since become a power in the land, it was not to office, still less emolument, but to hard labour and unceasing solitude that he was called. It is largely due to the courage with which he faced that anxiety and those tasks that the same office of President has now become an honour, if not a sinecure, in the hands of his successor.

The Ontario Medical Council.

At the annual meeting of the Ontario Medical Council the resignation was accepted of the Registrar, the Hon. Dr. Pyne, the Minister for Education for the Province. Dr. Pyne has filled the position for upwards of thirty years, and has won universal esteem by his intelligent and capable discharge of the often rather difficult duties of the position and the tact and courtesy which he displayed on all occasions. His duties as a Minister of the Crown prevent his continuance in this office, and his retirement was made the opportunity by the members of the Council of presenting to him a service of silver. He is succeeded by Dr. Bray, of Chatham, a practitioner widely known throughout the Province.

Sanatorium for Advanced Consumption.

On August 28th, at Weston, a small village on the lake shore west of Toronto, there was opened by Earl Grey, Governor-General of Canada, a sanatorium for consumptives in the advanced stages of the disease who are able to pay for their maintenance. It is said that this is the first institution of the kind in the world, and fills in Canada what has been a very painfully-felt want. Two separate buildings have been erected, the one an administrative building, the gift of Mr. H. C. Hammond, the other for the reception of patients, the gift of Mr. Robert Mulholland. There is already at this place a sanatorium for the reception of advanced pauper cases of consumption, and this last addition completes the series of hospitals projected by the National Sanatorium Association of Canada, the others being the Muskoka Cottage Sanatorium for incipient cases (pay-patients), and the Muskoka Free Sanatorium for incipient pauper cases. The large sums expended on establishment and maintenance are the gifts of private individuals.

In opening the buildings, Earl Grey said that he considered it a great privilege to be present on an occasion which he assumed to have conclusively proved the fact that Canada was earnest in its determination to sweep away the white plague from the land, as scientists had declared feasible. On his way there he had had evidence of the spirit of the working men on this matter, when he was stopped at the works of the Canada Cycle and Motor Company and was handed from the employés the sum of $100 collected by them for the Toronto Free Sanatorium. He wished them from the bottom of his heart Godspeed and success. Addresses were also delivered by Sir Mortimer Clark, the Lieutenant-Governor, and others.

Tariffs.

At a recent meeting of the Welland Medical Association it was unanimously decided that in view of the fact that the expenses of carrying on practice have been largely increased during the last few years, it was necessary to raise the fees to compensate for increased expenses.

The following are some of the principal items adopted:

Visit in town or village, 7 a.m. to 7 p.m., $1.50.
Visit in town or village, 7 p.m. to 7 a.m., $2.
Mileage in country, $1 50 for first mile, 50 c. each succeeding mile.
Night visits in country, $2 first mile, 75 c. each succeeding mile.
Office consultation and prescription, 50 c. to $1.
Office consultation and medicine, 75 c. to $2.
Consultation fee, mileage extra, $5.
Advice by telephone, 50 c.
Confinement, natural, mileage extra, $8.
Confinement complicated, mileage extra, $12.
Surgical treatment at office, $1 to $5.
Administering anaesthetics, $5 to $25.
Suture of wounds, $1 to $10.

At a recent meeting of the physicians of Toronto practising in the western division of the city resolutions were adopted fixing the minimum fee for insurance examination in fraternal associations at $2, and stating that nurses, ministers, and members of a doctor's household not his own family should pay the ordinary fee.

Natal.

The Vaccination Act and its Administration.

We have received from an official correspondent in Natal a letter dealing with a note from another correspondent on the New Vaccination Act of Natal, published in the British Medical Journal of June 29th, p. 1568. The general effect of this second communication is to impugn entirely the accuracy of the statements made by our first correspondent with regard to this Act, a further inference being that if there were any dissatisfaction with the Act, or its working among medical men in the Colony such dissatisfaction would be entirely unfounded, the Act being a great improvement on its predecessor. It is impossible for us to attempt to judge point by point between our two correspondents, but we can read the Act itself in the light of certain facts as to which there can be no dispute, and only such clauses of the Act as are thus illuminated will be noticed. First comes the question whether the Act really puts the performance of vaccination into the hands of other than medical men. The Act enables the Minister of Public Health to appoint "fit and proper persons" to be district vaccinators and assistant vaccinators. What is a "fit and proper person"? It may very well be that the framers of the Act had in their minds only qualified medical men, but the fact remains that about fourteen months after the Act was passed—namely in August last—it was urged upon the Government in the Chamber of Legislature that the expense of vaccination should be reduced by the appointment of a layman who was willing to undertake the duty of vaccinating the whole colony for something less than £1,000 a year. The Government did not agree to do so, but the party which urged this suggestion managed to get the vote for the Preventive Medical Service reduced from £3,900 to £2,500. It is obvious, therefore, that if these persons came into power, and had the courage of their convictions, they would read as "fit and proper persons" laymen who were prepared to do the work at a low price; and, as will be seen by the report of the deputation from the Natal Branch to the Government, the members of that Branch believe that it is the intention of the Natal Parliament to hand over the work of public vaccinator to a layman. An Act which is susceptible of such interpretation can scarcely be regarded as beyond the reach of criticism. In the *South African Medical Record* there is a letter from a medical man complaining that Indian farmers who are well-to-do and who have been his patients for years, and have been accustomed to paying him 2s. 6d. for vaccinating their children, are being told by the police to go to the magistrate's office, pay 1s., and obtain an order for vaccination at the hands of the district vaccinator. This statement is signed by a well-known medical man in Natal, and throws light on another clause of the Act which enables any person who desires to obtain the services of the district vaccinator to apply to the office of a magistrate, and ask for an order; if he is able to pay 1s., it is given him for that sum, otherwise it is given him for nothing. It is possible that this clause as to payment of a shilling was introduced as a protection to the Government and to medical men alike, but its existence is nevertheless a mistake. It is essential that vaccination, whether compulsory or otherwise, should have no financial obstacles placed in its path, and that it should be made possible for any person to be vaccinated for nothing if he prefers

doing so to paying a fee. No fee, therefore, should be imposed upon any person, rich or poor, for vaccination at the hands of a Government official. Here again the Act is open to grave criticism on public grounds, while from the standpoint of medical men it may well be objected that the introduction by the Act of a one shilling fee will tend to do two things: (1) Lead the public to infer that when they have paid their shilling they are not being vaccinated at the public cost; (2) lead the public to infer that one shilling is a reasonable price to pay for the operation.

Manchester and Salford.

Ethical Rules for Divisions.

THE Joint Committee for the Manchester and Salford Divisions has now got into good working order, and one of its first duties has been to draw up a code of ethical rules, which it recommends the Divisions to adopt. By its constitution the Joint Committee has only the power to recommend, but as it is fully representative of all the Divisions and has carefully considered the whole question, its recommendations will doubtlessly have considerable weight. It has decided to recommend the adoption of (*a*) the draft model rules for ethical procedure; (*b*) the Bradford rules, and (*c*) Rule Z (*a*) and (*b*).

Nothing need be said about the draft model rules, as all the Divisions have already assented to them, and the recent alteration in the wording of Rules 1, 2, and 3 is only in the direction of greater clearness. In some quarters, however, a fear has been expressed that the Bradford rules and Rule Z place too much power in the hands of the Division. It has also been said that they are couched in such intricate legal phraseology that many members will never take the trouble to understand them, and if they are adopted amid such apathy on the part of many members, whenever they come to be applied there may be serious objections. Of course, no argument founded on the apathy of members should be of much account, and yet practically it is very desirous that every member should feel that, however apathetic he may be, he will always receive fair treatment from his Division. There can be no doubt that these rules offer some splendid grammatical examples of complex sentences, in analysing which many seventh-standard students would come to grief. Nevertheless, their meaning is quite clear and distinct when they are carefully read, and it is doubtful whether they could be safely put in fewer words or in simpler phraseology. In addition there is an advantage in having a uniform code which has been so largely adopted throughout the Association. After all, the fundamental question which Divisions have to decide is this: Shall the Division have the power to fix and regulate minimum fees and conditions of practice in its area? If not, the rules are useless. But if the Division wants to prevent unscrupulous men taking cheap clubs, practising for too low fees, or underselling or accepting degrading conditions of contract practice, then the Bradford rules and Rule Z are the best that have yet been devised for the purpose, and without them or similar rules only differing in the wording the Divisions are quite powerless to do anything but waste their time in empty talk.

Broadly speaking, the rules are to enable a Division to regulate contract practice in its area, though at the same time they confer some power to deal with private practice and public appointments. It must be understood, however, that none of the rules fix any fees or conditions of practice; they simply enable the Division to do so by special resolution, which may be altered from time to time according to circumstances, and such resolutions are, by Rule A, made binding on all members of the Division. Rules B and C provide some necessary safeguards against snatch resolutions by small cliques. It is made essential that fourteen days' notice of the terms of the resolution shall be given to every member, and that a three-fourths majority of those present at the meeting shall assent to the resolution before it can be binding on members. If the resolution only applies to a particular district of the Division, seven days' notice and a simple majority of the meeting are sufficient, but in addition, at least five-sixths of the members practising in that district must previously have sent in their written assent to the resolution. Rule D provides that any resolution that affects existing contracts shall be communicated to members concerned, with a request that steps to end the contract shall be taken within a month. Of course, provision is made for any legal notice required by the contract. If a member fail to send in his resignation of the contract or to actually resign when his notice expires, a special meeting of the Division shall consider the circumstances, to decide whether he has broken the resolution of the Division. The extreme penalty for infringing a rule of the Division is expulsion from the Association, but it must be remembered that the power to expel does not reside with the Division, but only with the Central Council. If then the Division decides that a member has broken one of its rules or has acted unprofessionally, its duty is to report the matter to the Branch Council with a request that the question of the expulsion of the member shall be brought before the Central Council. This is set forth by Rule E. At the same time, Rule F forbids any member to meet in consultation or to hold any professional relations with any practitioner who has been judged to have broken a rule of the Division as to professional conduct or to have acted unprofessionally. One month's notice of the resolutions of the Division is to be sent to non-members. Consultations under circumstances of great urgency may be excused, but by Rule G they must be reported and justified to the Ethical Committee of the Division. Rule Z may be regarded as supplementary to Rule F, as it prescribes the exact procedure to be followed in making known to members the names of delinquents. Actions for libel may readily arise if the names are published indiscriminately, and Rule Z has been specially framed to guard against this, and only if the rule is carried out strictly can the Division expect to have the support of the Association. It provides that when a Division has duly passed a resolution declaring any practitioner to have acted contrary to the honour and interests of the profession, the facts of the case shall be reported to the Central Ethical Committee; if that Committee consents, the Division Secretary shall notify the resolution in a strictly prescribed form to every member of the Division; if the Committee does not consent, the Division may still notify its resolution to its members, but in that case only with the consent of a three-fourths majority of a special meeting called to consider the comments of the Central Ethical Committee. The resolution may also be sent to the Secretary of any other Division or Branch of the Association, but only with the consent of the Central Ethical Committee. Of course the consequence of this notification of the name of a delinquent will be, according to Rule F, that members may no longer meet him in consultation or hold any professional relations with him. Rule H finally forbids canvassing for patients either directly or indirectly, and special attention is drawn to the danger of canvassing by collectors paid on commission, for which the medical practitioner might be held responsible.

Such is the gist of the rules, divested of their legal terminology, which the Joint Committee recommends to the Manchester Divisions for adoption, and it is hoped that no time will be lost in giving them full consideration.

The University Grant.

Fresh evidence is constantly coming in of the indignation felt at the reduction of the Treasury grant to the Manchester University from £12,000 to £10,000 per year. At a meeting of the Lancashire County Council Education Committee held on Monday, September 16th, the following resolution was proposed by Sir Henry Hibbert and carried unanimously, and a copy of it was ordered to be sent to the Chancellor of the Exchequer and to the University authorities:

> That the Lancashire Education Committee hears with great regret of the proposed reduction of the grant, and is of opinion that it could not but seriously injure the University, whose excellent work in connexion with higher education is highly appreciated and valued in this county. The county council would regard it as deplorable if, as a result of the diminution of the Government grant, the work is diminished or impaired, and they trust the matter will be reconsidered.

Sir Henry Hibbert said there had been an enormous development in the work of the University, which was invaluable not only to Manchester but to the whole of

Lancashire, and to those parts of Cheshire and other counties which chose to make use of it. It was not as if the University were going backwards, for the Government report was highly commendatory. To fulfil the aim of the University, an increase and not a decrease was necessary, and he hoped that pressure would be brought to bear on the Treasury to induce it to reconsider its decision. Archdeacon Fletcher, who seconded the resolution, said that the reduction was the result of a wooden rule that no grant should exceed £10,000 per year. Other Universities who had less than £10,000 were not reduced. If the grant were reduced, either the work of the University would be contracted or the Lancashire Education Committee would have to pay a much larger sum than the ordinary handsome grant which it made.

Liverpool.

Municipal Treatment of Tuberculosis.

The City Council have decided to place twenty-four beds in the Fazakerley Fever Hospital at the disposal of the Health Committee for the treatment of cases of phthisis, and have appointed an extra assistant medical officer to attend to them. The fact that there are 500 vacant beds in the hospital makes this proceeding possible, and there can be little doubt as to the wisdom of the municipality trying to deal with the terrible scourge of phthisis. An attempt will be made to carry out the most approved methods of treatment while the patients are in the hospital, injections of tuberculin, controlled by observations of the opsonic index being no doubt among the remedies employed. After the patients have left the hospital, they will be systematically visited by the staff of the sanitary department, and so kept in touch with the medical officers who have had them under their care. At the same time the other members of their families or households will be under observation, so that if any member should manifest signs of tuberculous infection, appropriate measures would be taken without delay.

The Study of Tropical Medicine.

When Miss Mary Kingsley, the famous African traveller, died in 1900 the Liverpool School of Tropical Medicine decided to commemorate her work in the Tropics by the issue of a "Mary Kingsley" Medal, to be presented to those who have distinguished themselves in the work of special research into tropical medicine. The original of the medal was designed by Mr. J. H. McNair and Professor Allen, of the University of Liverpool. It is in bronze, and contains a bas-relief portrait of Miss Kingsley on the obverse and a suitable design on the reverse side, with the inscription "Devotion to Science."

The first four recipients were presented with the medals by H.R.H. Princess Christian, Honorary President of the School. The later presentations have since been made, by the courtesy of H M. Secretary of State for Foreign Affairs, through the British Ambassadors to the various countries concerned. The following is a list of those who have received the medal, with a note of their work:

1. Colonel David Bruce, F.R.S., C B., Royal Army Medical Corps. He discovered the cause of Malta fever, an important disease of warm climates, in 1887. In 1894 showed that the famous Nagana, or tsetse fly disease of cattle in Africa, is caused by parasites belonging to the group called trypanosomes, which are carried from one animal to another by the agency of Glossina, or tsetse flies. In 1903 he was head of the Commission which clearly demonstrated that another kind of trypanosome is the cause of sleeping sickness in man, and is carried by another kind of Glossina. Since then he has ably directed an extensive inquiry into Malta fever, which has proved that that malady is produced by the milk of infected goats.

2. Geheimrath Professor Dr. Robert Koch, Nobel Laureate. Ascertained the cause of cholera in 1883, shortly after his epoch-making discovery of the cause of tuberculosis. Later paid many visits to the tropics to study tropical diseases, and has added much to knowledge regarding them, especially his discovery of the frequency of malarial infection in children.

3. Dr. A. Laveran, Pasteur Institute, Paris, and D.Sc. University of Liverpool. In 1880 made the great discovery that malarial fever is caused by parasites in the blood, and has added much to knowledge of this disease, and also of other tropical diseases, especially those caused by trypanosomes in man and animals.

4. Sir Patrick Manson, F.R S., K.C.M.G., London School of Tropical Medicine. In 1878 discovered that one of the parasites of man belonging to the group of Filaria is carried by a kind of mosquito, and since then has contributed much to knowledge of these parasites and the diseases caused by them, and also to tropical medicine in general.

5. Dr. Basile Danilewsky, Professor of Physiology, University of Kharkoff. Discovered numerous parasites of the blood in a large number of animals shortly after Laveran's discovery was made, thus throwing much light on diseases of man due to similar organisms. His observations have been the basis of much of the work done since then on the subject.

6. Dr. Charles Finlay, Chief Sanitary Officer of Cuba. In 1880 originated the theory that yellow fever is carried by mosquitos. By careful observations ascertained the species of mosquito concerned, and thus enabled the American Commission under Major Reed to verify the theory finally in 1901. The methods of preventing the disease, used since then with such brilliant success in Havana and Panama, were largely based upon his original suggestion.

7. Dr. Camillo Golgi, Professor of Pathology, University of Pavia. In 1887 made a complete study of the life-cycle of the parasites of malaria; showed that they belong to different varieties; and demonstrated that the attack of fever is caused by their sporulation—thus elucidating the whole subject of the infection within the human body.

8. Colonel W. C. Gorgas, United States Army. As Chief Sanitary Officer of Havana gave practical effect in 1902 to the discoveries of Finlay and of the American Commission in connexion with yellow fever, and by his energy and capacity succeeded in banishing the disease from the city. Since then, as Chief Sanitary Officer of the Canal Zone of the Isthmus of Panama, has kept that area practically free both from yellow fever and from malaria, thus enabling the construction of the canal to be carried on in security. The practical sanitary labours of Colonel Gorgas have given the work the most brilliant possible example of what such work can effect in the tropics.

9. Waldemar Mordecai W. Haffkine, C.I.E. In 1893 discovered a method of inoculation against cholera, and proceeded to India in order to persuade the people to use it on a large scale. In 1896, on the outbreak of plague in India, elaborated a similar method of inoculation against that disease also. Since then over six million doses of his prophylactic have been prepared and issued by the Government of India, and it has been shown to reduce the mortality among the inoculated to one-sixth. Prophylactics against other diseases have been prepared on the same principles.

10. Dr. Arthur Looss, Professor of Parasitology, School of Medicine, Cairo. Has done much work of great value in connexion with parasitology in general. His discovery of the fact that the young of the parasites called ankylostomes, which produce fatal anaemia in thousands of persons in many tropical countries, enter the body by the skin, is one of leading importance.

11. Dr. Theobald Smith, Professor of Comparative Pathology, Harvard University. In 1893 discovered a new kind of blood parasite in the so-called Texas cattle fever of cattle, and also showed that it is carried from diseased to healthy animals by ticks—a work of great importance in connexion with diseases both of man and animals.

Leeds.

Resignation of the Professor of Midwifery.

To the great regret of his colleagues, Professor Wright has sent in his resignation of the Chair of Midwifery; his connexion with the School of Medicine of Leeds has been long and honourable; it has extended over a period of forty years, and has been characterized throughout by single-hearted zeal and devotion. His earliest work was in the Anatomical Department, where he acted as junior demonstrator. These were the days when the sciences were taught by men on whom the claims of general practice made large demands; and Professor Wright is to be numbered among those who made the sacrifice of much time to meet the wants of the school, for his next work was the teaching of physiology, and this he continued for fourteen years. Not until the end of sixteen years, therefore, and then, we believe, on the resignation of Mr. Nicholson Price, was he appointed lecturer on midwifery. At the time when the Yorkshire College became a part of the Victoria University in 1888, the Professorship of Midwifery was created, and Mr. Wright was naturally appointed to the Chair. His teaching in the department of midwifery alone thus has extended over the long period of twenty-four years. It is not only as a teacher that Professor Wright will be kept in memory, for he manifested the greatest interest in everything that could advance the welfare of the school and university, whether that concerned matters of high academic importance, or was some

minor point of detail. On his retirement from the onerous duties of teaching Professor Wright will carry with him the best wishes of his colleagues and of his numerous pupils.

ENDOWMENT OF A BED AT THE GENERAL INFIRMARY.

The members of the Leeds Co-operative Society have, in celebrating their diamond jubilee, made a donation to the General Infirmary of £1,000, thereby endowing a bed in perpetuity, showing their appreciation of the work done at the institution, and raising a monument to the excellence of the co-operative system which may worthily stand along with the interesting record of the Society's progress during the last sixty years. In presenting the cheque to the Treasurer of the Infirmary, which he did at a public meeting in the Town Hall, the President said that when the plan was proposed as one of the ways of celebrating the jubilee there was not a single dissentient. On behalf of the Infirmary, Mr. Charles Lupton thanked the Society, and gave some interesting details as to the work done at the institution.

South Wales.

AMBULANCE TEAMS.

GREAT progress has been made in ambulance efficiency among colliery workers in the Rhondda, and at the second annual inspection, held at Pontypridd on September 8th, the number on parade nearly doubled that of last year. The members of the Rhondda Fawr and Rhondda Fach Corps marched, under the command of their respective chiefs, to the Ynysynhara grounds, and here the various squads were put through stretcher drill by their officers at the instruction of the inspecting officer, Surgeon-Colonel Cureton, V.D., M.D. Colonel Cureton expressed himself highly pleased with the smart appearance of the men and the efficiency they had attained at drill. He said he should like to see a deeper interest taken in the St. John Ambulance movement by certain employers and managers of the Rhondda collieries, where so many accidents occurred.

CARDIFF INFIRMARY.

The subscriptions promised and paid towards the Cardiff Infirmary's new wing fund amount to £16,875. It may be remembered that Mr. John Cory, J.P., D.L., promised £5,000 towards the much-needed extension, provided £2,500 were raised within six months.

BARRY NURSING ASSOCIATION.

In the annual report of the Barry District Nursing Association the balance sheet shows a credit at the bank of £275 17s. 6d.; the workmen's contributions have increased by £64 10s. 5d. Altogether the receipts have increased by £60 8s. 3d., excluding a certain amount transferred from the "Insole Ward Account." The total expenditure has decreased by £57 0s. 1½d., and the year's receipts have exceeded the expenditure by £82 12s. 2d. The total cases nursed during the year were 529, and the nurses' visits numbered 13,068.

SLUM SPECULATION.

At the meeting of the Abersychan District Council, held on September 9th, Mr. J. Winstone moved that the Council take immediate steps to carry out the provisions of the Housing of the Working Classes Act by erecting a sufficient number of suitable houses in each ward. He said there were persons in the district who were engaged in buying up slum property and getting their living by extracting extortionate rents from the people. He also had ample evidence to prove that some of these houses were not fit for human habitation, and were nothing more than "fever boxes." The motion was defeated. Dr. J. W. Mulligan, medical officer, stated that the general sickness in the district was above the average, and the sanitary inspector reported that he had recently inspected 70 dairies, farms, and cowsheds in the district, and found in the majority of cases that they did not comply with the by-laws. It was decided to serve all defaulters with a notice to comply, and that an advertisement be issued requiring all purveyors of milk to be registered forthwith.

DR. PETER FRAZER, CARNARVON.

Dr. Peter Frazer, the Medical Officer of Health to the Carnarvonshire Combined Sanitary Districts, one of the best-known public men in North Wales, has determined to surrender his appointment in order to enter the foreign mission field, and has offered his services to the Calvinistic Methodist Foreign Missions, asking to be stationed in the Khassia Hills, India, the chief sphere of the foreign mission labours of the Society. Dr. Frazer, who is over 40 years of age, will be accompanied by his wife, who before her marriage was a popular vocalist. Since her marriage she has identified herself closely with her husband's philanthropic work, both public and private, and has devoted her musical talent, as he did his professional skill, to the promotion of that work in various directions.

Ireland.

A TUBERCULOSIS EXHIBITION.

AT a meeting of the Consultative Committee of the Irish Tuberculosis Exhibition which it is proposed to hold in Dublin in October, Her Excellency the Countess of Aberdeen explained that the exhibition would be held under the auspices of the Women's National Health Association, which was formed in Dublin last spring. They had a great deal of evidence from Germany and the United States of the educational value of these little exhibitions. They would visit the poor parts of Dublin, so that the poorer classes who suffered most from the disease might be given a chance of learning something about tuberculosis and what might be done to avert it. The country parts would be subsequently visited.

Professor McWeeney, Dr. Lily Baker, Dr. Alfred Boyd, Dr. W. J. Thompson, Professor Mettam, and Dr. M. F. Cox addressed the meeting, explaining that the object it was desired to attain was the education of the public in the struggle with this formidable disease.

On the motion of Sir Henry Swanzy, seconded by Mr. F. Fitzgerald, a vote of thanks was passed to Her Excellency.

A resolution appealing for the support of the public bodies and the general public was moved by Dr. W. Calwell, of Belfast, supported by Mr. P. J. O'Neill, Chairman of the County Dublin Council; Surgeon-Colonel Flinn, Chief Medical Inspector, L.G.B.; Mr. Walker, Mr. G. Parker, Mr. Lee, Mr. Holmes, Dr. Jameson, Newtownards; and passed.

The exhibition will first be held in a room of the Irish Industries Section of the great International Exhibition, at Ballsbridge, Dublin. It has been decided to divide the work of the exhibition into a series of sections, such as Diagrams and Statistics, Pathology and Bacteriology, Dietary Cooking, etc., Literature (including illustrations from other countries), Appliances and Various Exhibits bearing on Treatment, Veterinary Tuberculosis, and arrangements for lectures and demonstrations. Later on this Tuberculosis Exhibition will be sent to various towns and rural districts throughout Ireland. The object of such an exhibition is to bring home to the people by objective teaching and demonstration all that science at present is saying as to the course of tuberculosis, and as to what can be done to prevent its occurrence, and to treat those suffering from it in any of its protean and varied forms. Such tuberculosis exhibitions have been found of enormous advantage in Germany, and more especially in America, as a means of educating the mass of the people as to the prevention and cure of a very widespread disease. The Women's National Health Association, with their President, Lady Aberdeen, has taken a most praiseworthy step in establishing such an institution, the first of its kind in the United Kingdom, which we trust will be of great value in the campaign that is being waged against the ravages of consumption.

IRISH DISPENSARY DRUGS.

We have previously referred to the attempt of the Irish Local Government Board to fasten upon Irish Poor-law medical officers additional duties without any corresponding remuneration. The Irish Local Government Board pays half the cost of the drugs supplied under contract to workhouses and dispensaries. Previous to 1898 the system adopted led to gross frauds upon the part of contractors and to great waste of drugs. Since then the Board has adopted a much better system, but one entailing considerable extra work upon the medical officers, who are re-

quired to order drugs every three months and in smaller quantities. They are supposed to know just how much will be required for three months, and if they run short the patients can go without. They are also required to take samples of each consignment for analysis and to weigh or measure all drugs received. The latter requirement we should regard as a counsel of perfection under the existing scale of remuneration for Poor-law work.

Our attention has been called to a letter received by a medical officer from the clerk of his union informing him that he is required by the Board of Guardians to return all empties within the period stipulated in the contract (six months), and that failure to comply with this order will be regarded as a dereliction of duty, and he asks our advice. Our advice to him is to comply with the order and return all the bottles and packages, whether empty or not, within the stipulated period. If he does so he will soon bring the Local Government Board and the guardians to a sense of the fitness of things and the unsuitability of red tape to every condition of life on this globe.

Medical Witnesses' Fees in Crown Cases.

A correspondent writes: The scale of fees allowed for attendance in court in Crown cases in England has long been a cause of dissatisfaction, and inasmuch as Crown cases must often involve the medical witness in considerable expense over and above the remuneration he receives, it is surprising that practitioners do not more frequently try to avoid cases about which they may be called upon to give evidence for the Crown. In Ireland things are much better in this respect. In all cases tried in the superior courts, whether in the city or at assizes, a medical witness is allowed 3 guineas a day and first-class railway fare. For giving evidence at petty sessions the minimum fee is 1 guinea, or more if the witness resides at a distance, and Crown solicitors always interpret the law liberally. At criminal quarter sessions the fees are the same as at assizes. In civil cases the taxing masters will only allow fees on this scale, but of course the witness can make his terms beforehand. In Ireland no one ever questions the doctor's right to a guinea as his legal fee, though in actual practice among general practitioners this is only a fiction, the real fees being lower than in England. Still even the fiction tends to maintain the status of the doctor as a member of a learned profession, and this is reflected in the scale of fees allowed by the Crown.

Cork Eye, Ear, and Throat Hospital.

The annual meeting of the subscribers of the Cork Eye, Ear, and Throat Hospital was held on August 21st. The High Sheriff of the city presided. The medical report read by Dr. Sandford stated that during the year 4,160 patients were treated at the extern department, and 519 admitted to the wards. Many of these came from distant places in various parts of a wide area extending from Galway to Skibbereen and from Waterford to Castletownbere, embracing the counties of Cork, Kerry, Waterford, Kilkenny, Wexford, Tipperary, Limerick, Galway, and Clare, with a few more distant places. Three deaths occurred in the hospital in the year, one from sudden syncope in a man of advanced years and two from brain abscess the result of neglected ear disease. A large number of students attended the hospital in accordance with the arrangements of the Royal University and of the Queen's College. Some of the senior students each year are encouraged to help in the routine work of the hospital, and thus acquire practical knowledge under supervision. The financial condition was quite satisfactory, there being a credit balance of £15 13s. 7d. for the year ending 1906, which compared favourably with the credit balance for 1905 of £12.

Health of Belfast.

Infant Mortality.

At the last meeting of the Public Health Committee, Dr. Bailie, M.S.O.H., submitted some rules or advice for the care of babies which he recommended to be printed, and as posters distributed throughout the city. As the preamble states that the chief danger is from July to September, it seems rather belated for this year. The rules are good, but are somewhat academic for the class for whom they are intended, and are not sufficiently imperative; such phrases as "the time specified," "tainted food," "no débris," "generates foul gases," "lower health and vitality," are perfectly intelligible to most people of education, but do not convey much to the poorly-educated girl mother of the mill-girl class. The Ulster Hospital for Children and Women, Mountpottinger, Belfast, has long issued simple printed advice for the rearing of children, and has now excellent rules for both mother and infant, conveying such clear instructions as "Don't use a feeding bottle with a long tube," "Rear your baby on the breast," "Don't give 'soothing syrups' or 'teething powders,'" and the like.

Hong Kong.

Ophthalmic Department of the Tung Wah Hospital.

A report for the year 1906 of the Ophthalmic Department of the Tung Wah Hospital, Hong Kong, has recently been issued. The department was opened in December, 1905. At first it was opened once a week only, but the work so increased, that two days each week are now devoted to the treatment of ophthalmic cases. It was started not only for the immediate benefit of the patients, but also for the education of the Chinese students; and Dr. Montagu Harston, the Medical Director, deserves public recognition for inaugurating and carrying on so excellent a work. Egypt has usually been looked upon as the country in which infective diseases of the eye exist to the greatest extent, but Hong Kong can run it very close, even if it does not actually exceed the proportion found there. In 1905 Dr. Harston made a systematic examination of the eyes of the children of three large charitable institutions, and the result was to show that over 70 per cent. of the children were suffering from trachoma. The main causes of blindness in the Chinese are trachoma and ophthalmia neonatorum, two absolutely preventable diseases. This is sufficient to show the great need that there is for such work as Dr. Harston is carrying out on purely charitable and philantbropic lines. The high appreciation of such work as this was well shown at the British Medical Association meeting at Exeter, when a most interesting paper was read by Mr. A. F. MacCallan, dealing with the work of the travelling hospitals in Egypt, and it is just the same sort of work which is being started in Hong Kong. At present it is left to the individual efforts of one man, who can ill afford the time he spends in treating eye diseases and in giving instruction to his pupils. He has been under the necessity of providing his own instruments, and the hospital is in great need of much apparatus pertaining to an ophthalmic department.

The training of the Chinese as ophthalmic surgeons is a most useful work. They above all others could inculcate elementary ideas of ocular hygiene into the natives, and without this the spread of all forms of ophthalmia, causing so much blindness, is bound to go on. In such a place as Hong Kong there is a vast wealth of clinical material, and besides being most useful to the inhabitants, it would well repay a recently qualified man, with a good ophthalmic training, to go out and to work there for a time, for it is certain that in a few months he would get as much experience as he would get in many years in England, at any rate from the point of view of operative practice. Here is a field of work which, if developed, may mean the founding of the first Chinese ophthalmic hospital run on European lines. The good such an institution may do is incalculable, while it would redound to the credit of Hong Kong if it were to accomplish this pioneer work.

Small-pox in Alsace-Lorraine.—Dr. D. Goldschmidt, of Strassburg, in an article in the *Revue d'Hygiène*, states that small-pox is usually introduced by foreign workmen, chiefly Italians, who arrive in large bands for work in the various factories and mines. These men are for the most part unvaccinated, and are greatly overcrowded in the quarters which they frequent. The municipal authority of Metz during the late epidemic issued an order that all foreign workmen should be vaccinated the moment they arrived at the railway station, *ipso campo*, under pain of immediate expulsion, and this measure, together with the provision of house-to-house gratis vaccination in Metz, put an end to the small-pox outbreak, which was never a great one. Dr. Goldschmidt claims to have shown (see British Medical Journal, June 2nd, 1906, p. 1297) that Napoleon I was the first to initiate obligatory vaccination.

SPECIAL CORRESPONDENCE.

BERLIN.

Sale of Alcoholic Beverages in Sanatoriums.—Sale of Poisons by Medical Men.

Two medical lawsuits, involving important principles, though turning on comparatively trifling objects, have been decided, one in Prussia, one in Bavaria. In the Prussian case, a Dr. X., proprietor of a sanatorium establishment, was charged with selling spirituous liquors without a licence. The defendant did not deny that he had let not only the inmates of his establishment, but also persons who came to visit them, have wine for immediate consumption, nor that he had charged each bottle 40 pfennig (about 4½d.) more than it had cost him. But he alleged that this could not be held to constitute the retailing of spirituous liquors in its legal sense, as the wine was given dietetically and medicinally, and as the difference in price went no further than to cover his working expenses. The court, however, ruled the indictment to be well founded, since the spirituous beverages were habitually taken in his sanatorium, not medicinally merely, but as table luxuries; and since, moreover, a profit of 40 pfennig was made per bottle, presumably Dr. X's object in allowing the wine to be drunk was to make the stay in his establishment as pleasant as possible, and thus to attach the inmates to it and gain new inmates. This constituted an indirect pursuit of profit, and as such must be construed as the retailing of spirituous liquors. The Supreme Court of Judicature in Prussia (*Kammergericht*), to which Dr. X. proposed to carry an appeal, pronounced the verdict of the lower court unimpeachable and declined to reopen the case.

The second lawsuit turned on the paragraph of the German penal code which prohibits the sale of poisons or medicinal drugs by any but licensed chemists and druggists, except under certain circumstances enumerated and set out in a special Imperial rescript. Dr. Y., who was indicted for having given a patient a sublimate pastille to use, based his defence on the common-sense aspect of the matter. He was aware, he said, that the drugs specified in the Imperial rescript might not be kept for sale except by licensed chemists and druggists, and he further admitted that the drug in question had not been given in an extreme case, nor had it been applied by himself personally. However, the drug had previously been bought by himself from a licensed chemist. The paragraph and rescript quoted against him could not possibly have any other objects than, first, to protect the public against dangers attending the use of poisons; and, secondly, to uphold the interests of the chemists' and druggists' trade monopoly. Now, no one could doubt that if a medical man personally instructed his patient in the use of a drug, this was a safeguard no less reliable than the dispensing by a licensed chemist. The sublimate pastille he gave his patient was labelled "poison," exactly as it would have been marked when issuing from the chemist's shop. And, as regarded the second count, how could he have done anything prejudicial to the trade monopoly when the pastille in question had *de facto* been purchased at a chemist's? Nor could the local chemist complain that his particular trade had been made to suffer, since every inhabitant of the place was free to have his prescriptions made up, or order his drugs from any other place, near or far. He, the defendant, had by his action injured neither the chemists or druggists as a body, nor any one particular chemist or druggist. Again, the paragraph in the Penal Code spoke of "keeping for sale," and was formulated on the basis of trade regulations, whereas the one solitary case of handing over a drug *gratuitously* could not possibly be construed as constituting an act of business or trade. Still, the letter of the law was against him, and so he could not expect to be acquitted, but he hoped the court, in formulating its verdict, would place on record that he had in no way violated the duties of his profession. A medical expert, whose opinion was asked by the court, corroborated Dr. Y.'s view that the patient could not be better safeguarded from the danger of poison than by having the drug handed to him by his medical man. Nevertheless, Dr. Y.'s action constituted an infringement of the existing regulations. The court, in consideration of the fact that German law permits none but licensed chemists to dispense poisonous drugs, and that all cases in which an exception may be allowed have been carefully specified in an Imperial rescript, gave its verdict against the defendant, adding, however, that his infringement of the law had been unconscious, and that the minimum penalty of a fine of 1 mark (1s.) only would be inflicted.

CORRESPONDENCE.

MEDICAL INSPECTION OF SCHOOLS.

SIR,—May I, through your courtesy, call attention to the recent appointment of the Chief Medical Officer to the new medical department at the Board of Education? Mr. McKenna, in reply to a question in the House of Commons, gave assurance that the "best available man" in the country would be appointed as medical officer to the Board. In spite of this assurance a man has been appointed who has no knowledge of school hygiene, as he himself voluntarily stated a few months ago, when asked to take an active interest in the recent Congress in London. There are not two opinions as to who is the "best available man" for this important post. Dr. James Kerr is the founder of school hygiene in England, and his reputation is world-wide, second only to that of Professor Burgerstein of Vienna. In 1896 Dr. Kerr wrote a prize essay, "School Hygiene in its Mental, Moral and Physical Aspects," and during the recent Congress many English speakers elaborated much that had appeared in this essay eleven years previously. Moreover, Dr. Kerr's observations upon work in infant schools have revolutionized the Code of the Board of Education.

A Government official holding a high and responsible position has written: "Dr. Kerr's claims are so overwhelming that nothing but malignity can keep him out." The facts are these:

1. Fourteen months ago, when Mr. Birrell was President of the Board, Dr. Kerr was promised, as far as an official promise may be taken as such, the refusal of the post of medical officer to the Board.

2. His proposals and suggestions, which were based on practical experience, and which, I believe, were in accordance with the subsequent recommendations of the British Medical Association, were unwelcome to the Permanent Secretary, Mr. (now Sir Robert) Morant.

3. In January, 1907, Mr. Morant informed Dr. Kerr unofficially that the question of a medical department at the Board had been entirely dropped.

4. In July, as a result of four months' continued pressure from outside, Mr. McKenna resolved to establish a medical department. (It appeared to come as a sudden inspiration, the result of careful deliberation from within.)

5. Mr. McKenna has never interviewed Dr. Kerr, nor asked for his ideas or suggestions; and yet it is solely as a result of Dr. Kerr's work in Bradford and London that any efficient system of medical inspection exists in England to-day. The scheme organized and worked by him under the Education Committee of the London County Council is recognized by all as a model of what a system should be.

6. Nor has Mr. McKenna at any time ever heard the views or suggestions of any one who has had any real practical experience in the routine of medical inspection, but has been content with second and third hand information on these points.

Mr. McKenna's position appears to be indefensible. No one can blame a Minister or a Permanent Secretary for administering his department according to his own ideas. But Sir Robert Morant (who is free to deny any responsibility in the matter) has behaved as an autocrat; surely he should be made answerable for his action, or else he should be overruled by a higher authority—as, indeed, actually happened in the case of his diplomatic obstruction to the recent Congress on School Hygiene.

Dr. George Newman, who has suddenly been appointed to fill the important post at a salary of £1,500 or thereabout, is a personal friend of mine, and would count me as his keenest supporter in his own sphere. He is a very great authority on milk supplies, on the inspection of meat, on food poisoning, on infant mortality, and on the existing sanitary administration of the country under the Local Government Board. But he knows nothing of the

practice of school hygiene, and he knows little enough (I might say nothing) of the theory of ordinary educational methods, of physical training or of mental deficiency; nor does he know much about special eye, ear and throat affections, so common in school children.

How, then, can the Board of Education presume "to advise and supervise the local education authorities" concerning these important matters or "to give directions concerning the frequency and methods of inspection"? The whole thing is an absolute farce. Dr. Newman has been pitchforked into office, probably against his inclination, and certainly against his better judgement.

Of course the argument which the Board will produce to account for Dr. Newman's appointment is that he is an eminent medical officer of health, but so is Dr. Kerr, and he has an equally good knowledge of sanitary administration. The ideas of the Board are in keeping with the scheme of the Incorporated Society of Medical Officers of Health, which Society has during the past few years used its utmost endeavours to subject and subordinate medical inspection of schools to the general sanitary administration of the country. But this is a scheme that has been condemned by all countries and States which have adopted any useful medical inspection of their schools. The Argentine Republic came to this point of view in 1883.

England has at last, after many years of agitation, recognized the need for medical inspection of her schools and scholars. The experience of other countries is before us. Let us not, therefore, throw away a golden opportunity, but let us rather adopt what is best, and let us also procure the services of the "best men available."—I am, etc.,

A. H. Hogarth,
Secretary of the Section "Medical Inspection of Schools," Second International Congress on School Hygiene.

Charterhouse Square, E.C., Sept. 16th.

Medical Inspection of Secondary Schools.

Sir,—Dr. Jones, in his letter of September 2nd, expresses the hope that the new Education Bill as regards medical inspection of school children "may be only an initial instalment of further much-needed reform to ensure an improved physique." I would urge, amongst first measures of the kind, the pressing need of carrying into effect that resolution in Section X of the Congress of School Hygiene which suggests the expediency of extending inspection in matters relating to hygiene and sanitation—including, of course, medical inspection of the scholars—into all public schools. I am sure that we had in our minds the inclusion of every college and school in the country.

It has always seemed to me that no one has a right to enforce inspection in the case of primary schools who is not willing that the system should be extended to the institutions in which his own children, if he does not resort to free schools, are educated.

It is the duty of all to set a good example. It is specially incumbent on the members of the great political parties who are leaders in them, and of members of the various local councils, to do so. Further than this, however, I would urge that such persons have as much right as poorer parents to have their own children safeguarded, which is by no means always the case at present. Many instances to the contrary were mentioned in the Congress. In some cases parents have indeed seemed helpless, because they have been told that if they were dissatisfied they could remove their sons from certain public schools, as their places would be immediately filled by others whose relations were less particular. We were told that such difficulties did not arise in private schools in which there was more competition. It is suggested that we should wait for the growth of a more healthy public opinion. In the meantime, however, promising lads are dying. Does this not seem to be a clear case for the State to intervene in the interests of the race?

This is not a question of reflection upon any one. The managers of public schools and schoolmasters do what is right in their own eyes, often without knowledge of subjects which until recently were even imperfectly known to medical men. The more excellent the masters of schools are from the educational point of view, the less time have they to become acquainted with such matters as the provision of suitable food at different ages, giving an adequate amount of sleep, careful graduation of exercise and even study to strength; the proper ventilation of class rooms, sleeping apartments, or studies, or with sanitation and so on. It is unreasonable to expect such expert knowledge from them.

Surely, then, it is proper to require that every school and every scholar should be subject to thorough and frequent inspection, where these advantages are not yet available, so that all defects may be remedied, and that the youth of our country may be kept in health and strength, and be placed in a position in which the most can be made of their powers. Other nations are enjoying these advantages, and unless we set about the work of ensuring them for our own boys and girls, we must surely fall behind. The Legislature alone can help us by determining that no school shall be conducted without a certificate of efficiency in the above respects being obtained. Until this is done, Dr. Jones's legitimate hopes will not be realized.—I am, etc.,

T. H. Hendley, Colonel I.M.S. (retired), C.I.E.

London, N.W., Sept. 16th.

THE MAINTENANCE OF THE HONOUR AND INTERESTS OF THE MEDICAL PROFESSION.

The objects for which the Association is established are the promotion of medical and the allied sciences, and the maintenance of the honour and interests of the medical profession.—*Memorandum of Association of the British Medical Association.*

We do hereby declare the objects of the Association to be the promotion of the medical and allied sciences, the maintenance of the honour and interests of the medical profession and of the members thereof collectively and individually, and the co-operation of the members of the Association for their mutual assistance and support in all matters affecting them in their professional capacity, including the encouragement, promotion, or provision of means for protecting members and their families against the exigencies of age, sickness, death, or misfortune.—*Draft Charter.*

Sir,—It is not my desire to pose as a defender of Dr. Cox or an adherent of the party led by Sir Victor Horsley, but as a member of the Public Health Committee for many years I cannot allow the letter of Dr. W. B. Parsons in the issue of September 14th to pass unanswered. Dr. Parsons writes: "The Warning Notices of the Journal are a degradation, the support of the *Lancet* is incomprehensible, the agreement of the medical agents is but necessary to their means of living." If Dr. Parsons inquires into the past history of the *Lancet* he will understand why it supports the British Medical Association and that it has always earned the gratitude of the profession by its unceasing efforts to maintain the honour and interests of its members. I would advise him to read *The Life and Times of Thomas Wakley*, and he will then better appreciate what the *Lancet* has done for us.

Does not his statement that "the agreement of the medical agents is but necessary to their means of living" show that his views are not generally accepted? The Warning Notices refer to all kinds of appointments, but I will confine myself to those which come under the notice of the Public Health Committee, namely, Poor Law and Public Health appointments.

The Poor-law medical officers have always been shamefully treated and underpaid. Some improvement was effected by the noble work of Dr. Rogers and the Poor-law Medical Officers' Association, but cases of injustice and unfair treatment are frequent, and the spirit of bumbledom has been regaining strength.

The salaries of medical officers of health are unequal and often utterly inadequate; as they have no security of tenure any appeal for increase leads to dismissal, while an active officer is often penalized for doing his work impartially, and so offending his masters.

The Association has for years tried to improve the position of these officers, and to obtain for them such security of tenure as might enable them to carry out their duties without fear of dismissal, and many deputations to the Local Government Board have been met with the answer that while recognizing the strength of our case, nothing could be done while men were found ever ready to step into the places of their ill-treated brethren. Nothing was done until under the new Constitution the country was divided up into Divisions, and then it became possible to adopt the Warning Notice, which so far has been uniformly successful.

The procedure is as follows: A man suffers some injustice; he complains, perhaps, to the Medical Secretary, who refers him to the Honorary Secretary of his Division; the Honorary Secretary calls a meeting, and inquires into the circumstances; if the Division agrees that the complaint of injustice is well founded, the Honorary Secretary reports to the Medical Secretary, and asks him to insert a Warning Notice. The Public Health Committee receives the report, and approves it with or without modification; care is always taken to keep within the bounds of moderation, and in several instances a reduced salary has been accepted where the Division has been satisfied that the reasons were sufficient in the public interest.

Every case has so far been successful, and the medical man's claim has been sustained. The most gratifying thing is that no young man of repute has applied for such a post, and only now and then a drunkard or some poor old failure.

It is obviously unwise to publish details of these cases, as of course we do not want to boast of our success or make it difficult for Boards of Guardians to give way; but the fact that the Warning Notice is or may be published acts as a deterrent, just as does membership of the Medical Defence Union. I may, however, refer to the case of Dr. Nash, of Southend, which has been fully reported, as an illustration, and I can say from experience that these Warning Notices have done more to promote the brotherly union of medical men than we could have hoped. Any faltering now would be disastrous.—I am, etc.,

C. H. WATTS PARKINSON,
September 17th. Chairman, Public Health Committee.

SIR,—It would be a public misfortune if any large number of our members, who are just beginning to find in the Association an effective means of maintaining the honour and interests of the medical profession, should be distracted from this good work by quarrels about the inscription to be carried on our banner. When one considers the strong bias there is in many minds against certain methods of trade unionism, it is easy to understand that many medical men will hesitate about fighting under a banner ostensibly supporting the principles of these organizations. But, after all, the principles of trade-unionism are the principles of every association, every guild, and every church that has ever been founded or has sprung up without intentional foundation. The bedrock principle is that united effort for good or evil is more effective than individual enterprise. The methods and aims of any church, secret society, or trade-union depend not upon this fundamental principle, but upon the spirit and motives that actuate the majority of its units.

It is surely a very poor compliment to the profession for any of its members to assume, or even to fear, that if the profession attains the power that comes of union by adopting the organization of political associations, religious guilds, or of trade-unions, that this power will be used for purposes unworthy of the high traditions of the profession. This could only occur on the assumption that a majority of the profession is actuated by unworthy motives, and if this is so we have no collective professional honour to maintain.

For my part, I am confident that the closer the union and the greater the power attained by the profession through the development of our Association, the higher will its honour be upheld. I cannot believe that there is any fear of our aims being degraded because our organization follows in external features that successfully adopted by trade-unions. Nevertheless, in view of some of our brethren's antipathy to these institutions, it would be better to discuss the advantages of co-operative action without unnecessary illustrations drawn from avowedly commercial undertakings.—I am, etc.,

September 15th. PROFESSIONAL UNION.

SIR,—It would be instructive if Dr. Parsons were to name the "alternative and honourable means" he refers to. Some years ago I suggested to the chairman of a Board of Guardians that, as he admitted that the salaries his medical officers were receiving were utterly out of proportion to the work done, he might support a proposition to pay a fair wage for good work. His answer was, "Combine!" I reported this Board's doings in the JOURNAL (March, 1904, p. 705), which brought forth an answer from a medical guardian to the effect that the guardians "must be extremely careful to buy in the cheapest market so long as the goods are as good as they are at present" (JOURNAL, ibid., p. 762).

So here on the one side we have Dr. Parsons's "honourable means," a plea to be treated as professional gentlemen instead of tradesmen—result, the salaries are still unaltered; and on the other, a vivid light thrown on the position we really do occupy and the manner in which we may expect to be dealt with until we do combine.

Again, Dr. Parsons says, "if we increase the estimate, mental and moral, which the public has of us, we will increase our wage"; is this true, or is it not flatly contradicted by the latest vaccination legislation? Here the public estimate of the medical man is so high that our legislators have perfect confidence that whatever the material remuneration they offer us, the work will be well done, so—dock the fees by 50 per cent.! I think the proposition reversed would find more ready recognition; at any rate, it was the opinion of one of our greatest thinkers, John Stuart Mill, who accepts

> an opinion prevailing in the community that such persons [physicians, surgeons, etc.] are more trustworthy if paid highly in proportion to the work they perform: insomuch, that if a lawyer or a physician offered his services at less than the ordinary rate, instead of gaining more practice, he would probably lose that which he already had.—*Political Economy*, Book II, cap. xiv.

—I am, etc.,

Bristol, Sept. 14th. HARRY GREY, M.D.

SIR,—Dr. Parsons thinks that "we must be guided by a spirit of altruism."[1] Dr. Crawshaw, in his able letter, says bluntly "the bedrock fact is that our object is to make money."[2] I am unable, without reservations, to accept the position suggested by either of these quotations.

Dealing first with Dr. Crawshaw. I think Dr. Crawshaw's character is a sufficient guarantee that he does not mean exactly what he says. The exigencies of space, however, and the necessity for sweeping away a good deal of rubbishy sentiment, are, I think, a sufficient exculpation. For many men, at all events, there are certainly other motives besides "making money," such as the artist's love for his work, the self-satisfaction which springs from useful work well done, etc. It would, I am sure, be difficult or impossible—were one able to analyse motives with accuracy—to say which of these is the "bedrock" motive in the case of scores of hard-working medical men.

When Dr. Parsons says "we must be guided by a spirit of altruism," I say, of course, we must. Altruism is a new-fangled word, meaning charity, sympathy, love. The ideal of altruism is realized in practice when the command "love your neighbour as yourself" is actually obeyed. But there are well-meaning, if slightly hysterical, persons nowadays who would have us "to love our neighbours *better* than ourselves," which savours more of morbid sentimentality than of sound ethical instinct.

We must relieve suffering and preserve the life of the workman's child—so says Dr. Parsons. So say we all. But the workman is equally bound to assist us to feed our children. He refuses to do so. What then? Will Dr. Parsons seriously affirm that the ethical ideal in such circumstances is to go on doing our duty without any attempt to compel the workman to do his? Or to put the question in more general terms, will Dr. Parsons venture to assert that the "struggle for life" is in conflict with and not complementary to "the struggle for the life of others"? If his reply be in the affirmative, then he differs from an authority who is, perhaps, the ablest and most eloquent exponent of altruism of the last century, the late Professor Drummond. If his reply be in the negative, then his remarks about altruism are clearly quite irrelevant to the present issue, which is, how to assess our work at a reasonable pecuniary value and secure payment of the same, in order that the conditions of our practice may not be such as, of necessity, to render it a farce to the patient and a disgrace to scientific medicine—unless a man has private means.—I am, etc.,

Manchester, Sept. 16th. J. STAVELEY DICK.

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[1] BRITISH MEDICAL JOURNAL, September 14th, p. 700.
[2] Ibid, p. 699.

Sir,—Dr. James Hamilton's letter in the current issue of the Journal is interesting, and it is to be hoped that after airing his views he will immediately try to have them carried out by the practitioners in his own city of Glasgow, where he will find an ample field for his endeavours to maintain the honour of the medical profession; as there it has sunk, long since, to almost vanishing point. I had occasion to address a letter to the *Glasgow Herald*, which was published in that paper on December 13th, 1904, concerning the state of the profession in Glasgow, in which I said, ". . . keeping an open shop for the sale of not only drugs and groceries, but also the purveying and advertising of quack medicines, which unfortunately seems to be the universal practice in Glasgow and the West of Scotland." And again: "A more debased condition of medical practice would be difficult to imagine, and one which is unknown in any part of England. . . ." There were no comments on this letter from any of the medical men of Glasgow. They were silent; but, now that the principles of co-operation are being brought forward which will tend to bind the members of the Association closer together, and will succeed, I hope, in elevating the profession—even in Glasgow—there comes a wail from that city against the proposed reforms. What professional dignity or honour could men be expected to develop, brought up in such surroundings? The worst of it is they do not confine their operations to the West of Scotland, but come South, and bring with them the vitiated atmosphere of their upbringing. Hence sixpenny dispensaries and the low professional tone and practices which the public are quick to see and take advantage of.—I am, etc.,

Stoke Newington, N., Sept. 17th. C. W. J. Dunlop.

Sir,—The correspondence in your last issue appears to mark fairly accurately the line of cleavage which is to exist—to use Mr. Parsons's words—"between those to whom medicine is a Profession and those to whom medicine is a Trade." The distinction, judging from the letters of Mr. Parsons, Dr. Hawthorne, and Dr. James Hamilton, amounts to this: The Professionalists are to have the absolute monopoly of the qualities of altruism, dignity, and nobility. To them are to be handed over the duties of maintaining (1) the high and honourable traditions handed down from the great barber-surgeons, and (2) the inviolable sanctity of Professional secrecy. In return for this they will probably condescend to retain their monopoly of the ancient corporations, medical schools, universities, and of the General Medical Council. To the baser sorts—the low trader fellows represented by Dr. Cox and his friends—are to be handed over the duties of carrying on the everyday work of the common people. They shall attend all confinements free of charge, do all vaccinations and notifications not only without fee but under heavy penalty; and should they at any time venture to protest they shall be publicly bludgeoned with heavy chunks of altruism. To Dr. Hamilton shall at such times be allotted the duty of pointing out that any further burden imposed has been directly due to an indecent act of rebellion.

The irony of the whole thing becomes manifest when we find that between them Dr. Hawthorne, Mr. Parsons, and Dr. James Hamilton probably do not attend one single maternity case in the year. This is, of course, where the nobility of altruism comes in. "But, oh the humbug of it!"—I am, etc.,

London, N.W., Sept. 17th. C. Rawdon Wood.

SWEATING OF THE MEDICAL PROFESSION BY PUBLIC BODIES.

Sir,—During the last eighteen months I have been a member of Glasgow Parish Council and District Lunacy Board, and throughout that period the questions referred to by Dr. T. Russell in the British Medical Journal of August 3rd, p. 298, have engaged my attention, especially the question of payment of fees to the outdoor medical staff for certifying lunatics belonging or chargeable to other parishes. The inspector of poor of Glasgow parish obtains payment of those fees in all cases from the other parishes, but he does not always hand them over to the doctors who earned them. He says that only for the certification of old or recurrent cases belonging to other parishes does he pay over to the medical officers the fees he has collected. He asks the doctors to send in to him accounts for certifying those exceptional cases, and when he pays them they grant receipts. The fees for certifying all other cases of lunacy chargeable to outside parishes are collected by the Glasgow inspector and pocketed by the parish council. The councils of the outside parishes do not concern themselves as to whether or not fees chargeable to them for lunacy certification by Glasgow Council are all paid to the medical officers certifying in each case. As a member of the Glasgow Council I have endeavoured to ascertain why cases belonging to other parishes occurring for the first time and certified by the medical officers are put in a different category from old or recurrent cases. The Glasgow inspector explains that this arrangement was made some time ago because the doctors would be inclined to certify insanity in all supposed lunacy cases belonging to other parishes, in order thereby to obtain the fees. Such perquisites to the medical officers, according to the inspector, had to be curtailed. They are only available now for outside cases that have been in the asylum before.

I have endeavoured to learn whether there is any minute of such resolution of the Council, and after repeated requests the inspector of poor has been good enough to draw attention to a minute of the Barony Board, dated 1878, to the effect that £15 were then added to each medical officer's salary in lieu of lunacy fees. It is to be noted that the Barony Parochial Board and the City Parochial Board united in 1899 to form the Glasgow Parish Council. The present inspector of poor was previous to the amalgamation inspector of the Barony Board. Founding on the old Barony minute of nearly thirty years ago, the inspector holds that the medical officers have "compounded" for lunacy fees, and on the basis of that minute all new appointments on the outdoor staff are made. On the occasion of the last two appointments I pressed for a definite statement (in the minutes) of terms and conditions as to services and emoluments, but did not succeed. Each new medical officer is said to be appointed on the same terms as his predecessors, based upon the Barony minute of 1878 so far as lunacy certification is concerned. Glasgow Parish Council includes in the medical officers' salaries the cost of lunacy certification both of cases belonging to Glasgow Parish and other parishes with exceptions as explained. These medical men, apart from the lunacy law on the point, are clearly entitled to payment for all work done for parish councils other than that by which they have been employed. Of course, I except work done in respect to ordinary adult paupers according to the arrangement of reciprocity.—I am, etc.,

Glasgow, Aug. 3rd. James Erskine, M.B.

Sir,—As the letters of Drs. Moore and Russell appearing in your columns have awakened great interest among parish medical officers, I may state that I am an outdoor parish medical officer in Scotland, and that I have got fees for statutory visits to boarded-out lunatics, also for lunacy certificates; but I have not got all that I am entitled to by the rules and terms of my appointment. The rule here is for the outdoor medical officers to send in their accounts for such, but the inspector of poor does not always send the fees.

Why is an inspector of poor allowed to charge medical fees against other parishes without giving a voucher from the medical officer that such fees have been paid?

Why is an inspector of poor allowed to decide, and instruct his council what fees should be paid, and to whom, when the rules and regulations state distinctly what must not be included in the salary?

Are parish council auditors and the Local Government Board auditor doing their duty when they pass statements of intromissions without vouchers to prove that the fees have been paid to the medical officers, seeing that vouchers have to be produced for all other payments?

What information can the secretary of the Scottish Poor-law Medical Officers' Association give us as to such practice in respect to medical salaries and fees?—I am, etc.

Glasgow, August 3rd. G. Bell Todd, M.B.

THE OPERATIVE TREATMENT OF CARCINOMA OF THE CERVIX.

SIR,—As my name has been quoted in connexion with the correspondence on this subject, and as I showed the specimen in question at the Obstetrical Society, may I be permitted to state that I did so not as "a case purporting to illustrate Wertheim's technique," as Dr. Cuthbert Lockyer says, but to draw attention to the advantages of operating by the *abdominal* route in cases of cervical carcinoma which prima facie seem suitable for *vaginal* hysterectomy?

When the case is viewed from this point of view it seems beside the mark to be punctilious as to whether the exact technique of the operation approximated to that of "Kelly" or to that of Wertheim.

If Dr. Lockyer wishes to insist that the name of Wertheim must not be linked to any operative technique in which the cervix is not enclosed in a vaginal capsule by clamps, then by all means let him have the satisfaction of doing faithful homage to Wertheim and being ruled by him.

But it may possibly turn out that the method adopted by my colleague Mr. Lenthal Cheatle, which Dr. Lockyer wishes to term "Kelly's" method, has been quite as effective in this case and others of the same kind as that of Wertheim; and in his anxiety to "call a spade" by the name by which it is usually known, Dr. Lockyer may have missed the point that there are other equally efficacious if not almost similar implements called shovels.—I am, etc.,

London, S.W., Sept. 14th. VINCENT DICKINSON.

THE DANGERS OF AN ANAESTHETIC HAIRWASH.

SIR,—The enclosed paper is written by a lady of my acquaintance in Glasgow in whom I have complete confidence. It merits publicity as it deals with a practice that can only be characterized as dangerous and improper:

In connexion with frequent recent statements affirming that the "drug habit" is on the increase among women of the better class, it may not be inopportune to draw attention to the fact that an anaesthetic is apparently being made use of in hairdressing establishments to an extent probably not generally known, and which, if continued, must most certainly be attended by deleterious results in one direction or another.

The following incident tells its own tale: A lady in this city (Glasgow) the other day entered one of its largest and deservedly most popular hairdressing establishments for the purpose of having her hair, which was rather weighty, "thinned." This done, she requested that instead of the usual "shampoo" with hot water, etc., some hairwash merely should be rubbed into the roots of the hair. The hairdresser in attendance suggested a "dry shampoo," to which the lady agreed. The lotion used for this purpose smelt so strongly of chloroform (as the lady thought) that she was beginning to request that some other kind be used when she found that her voice sounded to herself "far off," then seemed to die away, and the unpleasant fact dawned on her that she was becoming overpowered by the fumes of the lotion! She was just able to call out that she was "going over" and the man with great promptitude at once pumped a strong current of cold air over her face by means of an apparatus now used for drying ladies' hair, and which stood close at hand. Even with this strong application of air it was some little time before the lady felt quite herself again, or had clear consciousness of things around. Her first thought then was naturally that some mistake had been made in the preparation used, and her astonishment was great to find that instead of being alarmed, or even annoyed in any way, the man seemed merely amused by the incident, assuring her that the lotion was one regularly used for ladies' hair, and that they "rather liked it." He informed her also that the same preparation was supplied to ladies to use themselves at home! He further explained that a different kind was used for men; this the lady asked to see, and on inhaling it felt no bad effects.

Does this use of an anaesthetic fluid by hairdressers not constitute a very real danger in several definite directions which hardly require to be specified? In the case narrated three points may be specially noticed: 1. There can be no doubt that the lady was subjected to the unpleasantness (to put it mildly) of being dazed, or even stupefied, by the fumes from the hairwash. 2. She was at the time in her ordinary health, and there was no reason, so far as known, to cause her to be more readily affected in this way than would be the case with others in like circumstances. 3. The hairdresser informed her that ladies "rather liked it"—namely, the hairwash—and that it was supplied to them to use at home. These facts speak for themselves.

The wisdom of accustoming children and young people to "enjoy" the sensation of "going over" under gas, ether, etc., while in the dentist's hands, may be open to question (to the extent, at least, which is in practice at present); but surely, in view of the experience here narrated, there can only be one voice, both among medical men and laymen, in condemnation of this use of an anaesthetic as a mere hairwash.

Subsequent inquiry on the part of the writer at the above-mentioned hairdressing establishment gleaned the following information: (1) The preparation used is labelled tetrachloride of carbon; (2) it has been in use at all the principal hairdressers' for several years, having taken the place of the "petrol" hairwash formerly used, which has been condemned as dangerous owing to its inflammable nature.

If the above-mentioned fluid is taking the place of petrol in hairdressing establishments on account of the "accidents" which happened with the latter, would it not be wise, before further harm is done, to make investigation into its use, with a view to ascertaining whether we are not replacing petrol by something equally dangerous, and that in more directions than one?

M. R. L.

Glasgow, September, 1907.

—I am, etc.,

Stonehaven, N.B., Sept. 9th. JOHN G. MCKENDRICK.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE COMMAND OF STATION HOSPITALS IN INDIA.

IN consequence of the abolition of Commands in India, the Principal Medical Officer, His Majesty's Forces in India, will in future nominate officers to command Station Hospitals at certain hill stations, and also at the head quarters of divisions and brigades. The tenure of appointments will be two years for hill stations, and three years for the remainder, with a few exceptions.

INDIAN MEDICAL SERVICE.

PROSPECTS IN THE SERVICE.

LIEUTENANT-COLONEL D. G. CRAWFORD, M.B., I.M.S., Civil Surgeon, Hughli, concludes in the issue for September a series of articles which he has contributed to the *Indian Medical Gazette* on the Indian Medical Service. He maintains that it offers scope for varying tastes, a reasonable prospect of good health and long life, with the certainty of an adequate income during the working years of life, and of a pension thereafter. He contends that the position of an Indian medical officer, even when allowance is made for the fact that he has to spend the greater part of his working life in India and for many other disadvantages which he has to encounter, contrasts favourably with that of a man who attempts general practice in Great Britain without special advantages or connexions. His general conclusion is as follows:

"In the preceding pages an endeavour has been made to set forth fairly the prospects which the I.M.S. offers to those who join its ranks; not concealing its disadvantages, which are many, while setting forth its advantages, which are more. Service in the I.M.S. means work; man earns his living by the sweat of his brow, nowhere more literally so than in India. Of course, it involves a long residence—to use the harshest word, 'exile'—in India; but exile tempered by a liberal allowance of fairly paid furlough. No man need enter the I.M.S. nowadays expecting to make his fortune; though, using the word 'fortune' in a moderate sense, even in recent times some few men may be said to have done so. The days of great fortunes to be made in Indian service, such as Joseph Hume's £40,000 in twelve years as an assistant-surgeon, have gone long ago, and gone for ever. Even a century ago, fortunes were usually made, not by practice, but by trade and contracts. A man who enters the I.M.S. should do so with a mind made up not to waste his time and his energies in futile regrets that the career he has deliberately chosen involves service abroad instead of at home; nor grudgingly to compare his own position and prospects with those of the most successful of his contemporaries in England, while he forgets those who have failed to attain success, or who have hopelessly gone under; but to take the rough with the smooth; to worry through hard times in hope of the better times which are sure to come sooner or later; and to do his best for the country, for its inhabitants, and for the Government, as well as for himself. He will find open to him a career with plenty of interesting work, not always hard work; pay at once sufficient to maintain him as a bachelor, and sufficient in a few years to enable him to marry (it is possible for a man to marry on his pay when he first joins, but usually to do so without private means involves a struggle and considerable discomfort. In what other profession would a man ever expect to get pay or income sufficient to justify him in marrying on first starting?); pay steadily increasing as his length of service, and, if married, his necessary expenses, increase; some provision for his family if he falls by the way; and finally a pension, in its earlier stages sufficient to live upon while he gets his footing, if he makes up his mind to retire early, before he is too old to start on a new career; in its later stages, if he prefers to hold on in the service, sufficient to maintain him in comfort after retirement."

It should be stated that Joseph Hume's fortune appears to

have been made, not by the practice of medicine, but through holding several high posts in the offices of the paymaster of the forces, the prize agency officer, and the commissariat.

Medical Relief in India.

A letter on the subject of the Indian Medical Service published in our issue of August 24th, and suggesting a reorganization based on the idea of ensuring that an officer's work increased in scope and responsibility *pari passu* with his promotion, has evoked a letter dealing with the same general subject from another correspondent. In this doubt is thrown upon the suggestion that senior officers are at present comparatively unemployed as is suggested by the previous writer. Our new correspondent points to faulty distribution of work irrespective of rank, and overlapping of effort in many directions, as the errors in organization which must be eliminated if the medical service of India is to be carried on efficiently. The Government of India, he points out, has to care for a population of 300 millions. To perform such a task with a medical *personnel* of only some 700 officers would in any case be difficult, and it is rendered all the harder by the fact that these officers are rigidly divided into two sections, (1) those on the military side, who have too little to do; and (2) those on the civil side, who have many more daily tasks than they can possibly perform efficiently. He would have the hard-and-fast line between the two branches of the service abolished, so as to allow the efforts of the one to be supplemented by those of the other; in ordinary times the work of the country would thus be better performed, and the Indian Medical Service as a whole would prove a more efficient machine if ever circumstances demanded that all its officers should render assistance in time of war. Furthermore, there are at present, he points out, in every large station not one, but half a dozen Government institutions providing medical care for the population, civil and military, European and native; each of these requires a staff and absorbs the services of a greater or less number of Indian medical officers, whether on the civil or military side. He would abolish the whole of these hospitals, and substitute for them one large hospital which in its various pavilions would provide for the needs of all persons who are at present medically assisted by Government. In the different pavilions of such a hospital officers on the military and civil sides of the Indian Medical Service would work side by side, receiving more or less assistance from R.A.M.C. officers and others. The result, he thinks, would be economy of labour and the existence of a hospital in every district of an efficient and up to date character. By way of co-ordinating still further the whole medical work done for the people by the Indian Government and increasing its benefits, and keeping the *personnel* of certain departments constantly up to the mark, he would cause the field hospitals to perambulate the various districts, give such assistance to the people as their arrangements permit, and act as feeders for the great hospitals in each principal town sending on to them the more serious cases.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

University Library.

The report of the Library Syndicate for 1906, recently issued, states that the gift of £5,000 by the Goldsmiths' Company has made it possible to put in hand at once the whole of the structural work and most of the fittings connected with the utilization for library purposes on the ground floor and basement of Cockerell's Buildings formerly occupied by the Geological Museum. Progress was made with the work of recataloguing during the year, and a select list of current English periodicals was issued and can be obtained at the Library. The number of printed books or documents received during the year was 58,668, and of manuscripts 131. The number of books borrowed from the Library was 30,184.

QUEEN'S COLLEGE, BELFAST.

Annual Report.

The President has lately issued his annual report of the College. Seven new assistants have been appointed to the various chairs; among these are included Mr. Howard Stevenson, F.R.C.S.I., in Surgery, and Dr. C. G. Lowry, in Obstetrics. Mr. R. Mackay Wilson, of Dublin, has founded a Travelling Studentship to aid a fresh graduate in medicine in taking a further year of study abroad. As an illustration of the advances the College has made, the President says that twenty years ago there was but one laboratory, and it was condemned by the sanitary authorities; to-day there are eight, including chemical, biological, physiological, pathological, anatomical, and pharmaceutical, all well equipped and in the best modern spirit. A long list of some of the important distinctions and posts obtained by graduates bears evidence that the excellent work of the past is not failing.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

THE INTERVIEWER AT SEA.

A correspondent has sent us a copy of the *Sunday Times* of Sydney, N.S.W.—a newspaper which seems quite recently to have become aware of the fact that the transfusion of blood has been, and is still, occasionally practised. It accordingly sent forth a reporter to interview "the leading medical men in Sydney," but did not find them very ready to be pumped.

"Owing," our belated contemporary states, "to the action of the British Medical Association in debarring its members from giving opinions, or, rather, interviews, to the press, much information has to be presented in a form which lacks the individuality that would surround it if appearing over the names of the informants, but in two cases, where the information was obtained before the actual interview, names are mentioned. In these cases questions were asked, and in each case the request was made that no personal reference should be made, but, in view of the importance of the subject, we feel justified in breaking the self-erected bounds of the conservative B.M.A. and giving to the public that which is undoubtedly its due."

One of the medical men as to whose work information was obtained before the actual interview was Dr. W. J. Stewart McKay, and the interviewer appears to have become possessed of a drawing of an apparatus which Dr. McKay has devised for transfusion; this was reproduced on a large scale and contrasted with a drawing said to have been taken from a medical textbook. Dr. McKay appears to have declined to be interviewed and to have confined himself to an expression of an opinion that there was a great future before transfusion. The other medical man mentioned by name was Dr. Camac Wilkinson, who appears to have done little more than acknowledge the authenticity of the article published in these columns on June 1st last, p. 1298; we may suspect that he adhered more closely to the guarded opinion there expressed than the interviewer understood.

We cannot think that the public interest is really served by the publication of these so-called interviews. The validity of the objection of the British Medical Association to interviews could hardly be better illustrated than by the two topics selected by our contemporary. Transfusion is a most delicate operation and in unskilful hands might easily lead to disaster; further the scientific principles by which resort to the method should be guided have not yet been settled. As to the value of tuberculin as a curative agent very much the same may be said. Its indiscriminate use may undoubtedly do much harm. If it is to do good the physician must be left to exercise his unbiassed judgement in the selection of suitable cases.

MEDICAL ETIQUETTE.

Lemco asks for an opinion on the following case: A. and B. are partners, and have attended Z.'s family occasionally. (Z.'s family have been erratic, and often changed their doctors.) Z. being ill, his wife sent for C., who had not previously attended the family. C. was away, and when his *locum tenens* appeared he was not allowed to see Z. That afternoon A. received a telegram to go and see Z., and Z. wishes A. to continue his attendance after C.'s return, and has written C. to that effect. What ought A. to do?

*** The case is a little unusual, and we have not in mind any precedent which exactly fits it. We should be disposed to hold that any implied engagement of C. was cancelled by the refusal to allow the *locum tenens* to see Z., and that A. is not bound to look upon himself as acting as a substitute for C. A., we think, should explain the circumstances to C., by whom the explanation ought to be received in a friendly spirit.

Medico-Legal.

MEDICAL WITNESSES' FEES AT INQUESTS.

M.B. writes: I attended under subpœna the inquest on the victim of a colliery accident. When the inquest was just finished—that is, after two and a half hours—the coroner said he did not require medical evidence. Am I entitled to a fee, and if not, why not?

*** Our correspondent is clearly entitled to a fee of 1 guinea for attending to give professional evidence, and can, if necessary, recover it from the coroner in the county court.

INCOME TAX.

GENERAL PRACTITIONER commenced to practise in Surrey in April, 1905, but, finding he was losing money and making no headway, purchased the introduction to a death vacancy in West London in January, 1906. Prior to April, 1905, he was not in practice in this country. He asks on what basis he is now assessable to income tax, and whether certain expenses may be deducted in making his return. He also asks whether he is required to add to his income the annual value of the house he occupied in Surrey, which was the property of his father, who allowed him to live in it rent free.

*** Our correspondent is liable to be assessed for the current year (1907-8) on the average annual profits made in the West London practice by himself and his predecessor during the three years 1904, 1905, and 1906. If, however, he can show that those profits have fallen off from some specific cause since he succeeded to the practice or by reason of the change—for example, by his predecessor having had some special connexion which ceased with his death—he can claim to be assessed on the annual profits made by himself since January, 1906. The losses made in Surrey in 1905 cannot be deducted or otherwise brought into the return for the current year. With regard to the expenses: (*a*) Cost of medical and surgical instruments, (*b*) cost of medical papers and books, (*c*) subscriptions to medical associations, were dealt with in a note on income-tax deductions published in the BRITISH MEDICAL JOURNAL for August 24th last; as to (*d*) lawyer's charges for negotiating purchase of death vacancy and drawing up deeds, and (*e*) cost of repairing and altering premises to fit them for medical practice, these expenses are not allowable, being capital charges. Ordinary repairs would, however, be allowed. (*f*) Fees for higher examination and post-graduate study are inadmissible, being regarded as capital outlay for educational purposes. The annual value of the house in Surrey should not be brought into our correspondent's statement of income for the current year.

OBITUARY.

AUGUSTUS JOHNSTON, M.B.DUB., M.R.C.S.,

AMBLESIDE.

BY the death on Friday, September 6th, of Augustus Johnston, at the ripe age of 79, the Lake District has lost one of its well-known and well-beloved personalities. Fifty-six years ago Augustus Johnston began practice in the village of Hawkshead. In 1872 he moved to Ambleside, placing the Hawkshead portion of his practice in charge of his partner, Dr. Charles Parsons, and in Ambleside he was, to within a short time of his death, actively engaged in the pursuit of his profession. Holding the posts of Medical Officer of Health of the district, Public Vaccinator, and Certifying Factory Surgeon, he was brought into contact with poor and rich alike, his conscientious and impartial devotion to the duties of his profession winning for him the respect and love of all who knew him. He was an admirable example of that now fast disappearing type, the old-world "family physician." A man of wide and varied culture, gifted with a lively imagination and a large and gracious sympathy; of refined and gentle courtesy, genial and cheery in temperament, and at the same time skilful in his profession and well abreast of the advancing knowledge of the day, he quickly became to his patients something more than a medical adviser. Few indeed have known him either professionally or socially but have found in that knowledge an influence for good in their lives. With such a character, he was naturally made the repository of the confidences of his patients—of their joys and sorrows, their troubles or hopes—and in many a dalesman's cottage, as well as in many a wealthier home, his death leaves a gap that hardly may be filled. Outside his profession he had many interests. Of a singularly open mind, he pursued with avidity any path that seemed to make for wider knowledge. When after a few hours' illness he passed away, it was in no uncertainty but with the firm belief that it was not into the unknowable or unknown he passed. Of this belief he was a staunch upholder, and on this and allied subjects he was a prolific writer. He was a great temperance advocate, one of the signatories of the recently-published vegetarian manifesto, an adept in shorthand and in Esperanto. Always an enthusiast, he had found the secret of perennial youth in a soul of innocence and unselfishness.

Augustus Johnston was born at "Avenmore," in the beautiful neighbourhood of Glendalough, co. Wicklow, Ireland. He was the eighth son of Benjamin and Katherine Graydon Johnston, and was educated for the medical profession at Trinity College, Dublin. He married in 1861 Mysie Rigby, by whom he had two daughters and four sons. All his sons are now actively engaged in the practice of medicine. His first wife died in 1880, and in 1883 he married Judith Ann Metcalfe, whom he now leaves a widow. A crowded churchyard testified to the universal sorrow of the district which mourns his loss.

H. F. O.

THOMAS LOGAN, M.D.ABERD.,

LATE OF WIBSEY, BRADFORD.

WE regret to record the death on September 4th of Dr. Logan, at Harrogate, where he went to reside about two years ago on retiring from practice. Born in 1839 in Ayrshire, he was in his 69th year. He graduated at Aberdeen, and then spent two years in Paisley Infirmary. After that he went to Penpont, Dumfriesshire, where he remained until he settled in Wibsey, Bradford, about twenty years ago. His services in Penpont were greatly appreciated, and on the occasion of his leaving were commemorated by the presentation to him of a handsome testimonial which he greatly valued. His services at Wibsey were equally acceptable. Dr. Logan was essentially a representative of the family doctor, a class of men who have played a great and important part in the history of medicine. The functions of the "family doctor" in watching over the health of the rising generation, advising the parents regarding them, supervising the health of the parents themselves, and having a more or less intimate acquaintance with the domestic interests of the family, never can be superseded. Dr. Logan excelled in these directions, being looked upon as much as a friend in all kinds of difficulties as a medical adviser.

Among his friends he was greatly beloved. Unmarried, he had not given to fortune hostages in the same sense as have those who have children to provide for and place in life. He was therefore able annually to attend the meetings of the British Medical Association, frequently in the company of Dr. Samuel Johnson, whose unfortunate death it was our sad duty to lately announce, and whose funeral Dr. Logan attended. With Dr. Johnson, or other friends, Dr. Logan was also a very regular attendant at international medical congresses, and in this way he was able to see Canada, the United States of America, Moscow, Lisbon, Madrid, Vienna, Berlin, Rome, and other important places, and so to enlarge his knowledge and outlook on men and affairs. After his visit to the United States he gave an address, full of the Scottish shrewdness known to characterize him, but which was delivered with an unexpected fluency and felicity of diction, and was in its way a somewhat remarkable and noteworthy effort. Knowing what he wanted to say, he was able to say it in the fewest and yet most pointed words, and to impart instruction at the same time that he enchained the interest of his hearers.

Dr. Logan's intimate friends knew that, in addition to the faithful performance of his duties as a family adviser in his district, he was also engaged in the deeper study of some physiological points which greatly interested him. In particular, the circulation of the cerebro-spinal fluid is believed to have occupied a great part of his leisure time; and if, as is understood to be the case, this part of his work has reached a point very near completion, the profession may soon have an opportunity of gauging its value. It is sad to reflect that his death should have taken place just as this part of his labours was on the point of culminating, and only about two years after the time when his colleagues in Bradford gave him a complimentary dinner, at which they wished him the many years of happiness and ease he had so well earned, and which at that time his appearance seemed to anticipate that he would long enjoy.

Lieutenant-Colonel HERBERT JEKYL DYSON, F.R.C.S., Indian Medical Service (Bengal), died at the Presidency Hospital, Calcutta, on September 3rd, aged 47. He was a son of the Rev. S. Dyson, D.D., of Stevenage, and entered the Bengal Medical Department as Surgeon, April 1st, 1885, becoming Lieutenant-Colonel twenty years thereafter. He served in the Burmese campaign in 1886–8, receiving a medal with clasp.

Captain MICHAEL BIDDULPH PINCHARD, Indian Medical Service, Medical Officer 84th Punjabis, died on August 30th, at Dorchester, aged 35. He joined the Madras Medical Department as Surgeon-Lieutenant, January 29th, 1896, and was made Captain three years thereafter. He was in the Tirah campaign, North-West Frontier of India, in 1897–8, receiving a medal with two clasps, and in the China war in 1900, receiving a medal.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

THE BOARD OF EDUCATION.
THE INSTITUTION OF A MEDICAL DEPARTMENT.

IN consequence of the representations made by the British Medical Association and certain committees representing the medical profession, the Board of Education has established a medical department to advise and assist in the discharge with regard to the medical inspection of school children of the duty imposed upon the local education authorities by the Education (Administrative Provisions) Bill, which became law at the end of last session. The chief duties of the Board in this direction will consist in advising and supervising local education authorities as to the manner and degree in which they should carry out medical medical inspection; in giving such directions as may be necessary regarding the frequency and method of such inspection in particular areas; and in considering and sanctioning such arrangements as may be proposed under the Act by individual authorities for attending to the health and physical condition of the children. The Board will also collect and collate the records and reports made by the authorities in the process of carrying out the new duties imposed by the Act, and will issue an official annual report on the subject.

Dr. George Newman, Medical Officer of Health for Finsbury since 1900, has been appointed chief medical officer of the Board. Dr. A. Eichholz, who has for nine years been on the Board's staff as medical inspector of schools, with special reference to schools for blind, deaf, and epileptic children, will also be appointed to the medical department.

THE INSECURITY OF TENURE OF PUBLIC HEALTH APPOINTMENTS.
SOUTHEND-ON-SEA.

AT a meeting of the Southend Town Council on September 17th recommendations were submitted from the Health Committee with respect to the reappointment of Dr. J. T. C. Nash as Medical Officer of Health. At the meeting on August 20th [1] the Committee's recommendation that Dr. Nash be reappointed for three years at £600 a year was rejected, and as Dr. Nash refused to accept £500 a year it was decided to advertise for an officer at that salary. At a special meeting on September 3rd, as has already been reported,[2] a resolution was carried by 9 to 7 that no change was desirable, and the Health Committee was asked to bring up a resolution to revoke that one adopted in August. At this week's meeting 23 of the 24 members of the Town Council were present.

Alderman Francis, Chairman of the Health Committee, in presenting the recommendations, said: I do not think that any chairman of a committee of this Council has ever before been placed in the position I find myself to-day. It is very well known that the work of this Council is divided into departments, that each department is controlled by a committee, and that with that committee there is a chief official and under him a staff. It has been customary, whenever a chief official is required for one of the departments, for the committee having charge of the work to deal with the applications, and to bring to this Council, as a rule, three, so that the Council might ultimately decide who should have the appointment. And having once made the appointment, the chief official deals directly with his committee, and the committee, through its chairman, with the Council. If at any time it became necessary to reappoint a chief official the recommendation of the particular committee has always been accepted by the Council. I think it will be admitted that this is a good and proper custom. At the last monthly meeting of this Council the good old-fashioned custom was entirely ignored, and for the first time in the history of this borough the recommendation of the Health Committee to reappoint a chief officer was thrown overboard, without one word of explanation or any reason whatever, either to the official concerned or to the chairman, or to the committee as a whole. I suggest, Mr. Mayor, in the interest of good government, that ought not to be. I suggest most seriously that if any members of this Council are of opinion that an official is not a proper man to remain in the service of the Corporation, the duty of those members is to inform the chairman of the committee concerned, so that he may bring the matter before the members of his committee, and take their opinion and instructions. Again, speaking in all seriousness, I say that this is the proper course to adopt, and, although it has been departed from on this occasion, I hope it will never be departed from again. What is the result? We are to-day placed in a very serious position. The town has had an advertisement, the result of which it may take years to eradicate. In the first place, although we have not yet heard much from the Local Government Board, we are in conflict with that Board; secondly, we have had a very strong protest from the members of the medical profession; and thirdly, I must not overlook the fact that, rightly or wrongly, the opinion is that if one chief official has been unfairly treated there must be unrest among other chief officials—that goes without saying. There is another serious aspect of the matter—the financial aspect. Members of this Council, as business men, know that when money is being lent—we will say, if you like, upon security of property—not only is the property looked at, but the borrower is also. No man who lends money upon security of property wishes to buy trouble. Therefore he looks at the man to whom he is asked to lend so that he may form an opinion whether his interest will be promptly paid when it becomes due. What applies to private persons applies equally to a corporation, and if you care to study carefully the list of Corporation stock you will see that for yourself. You will find one borough 3½ per cent. stock quoted at a lower rate than our own 3 per cent. That speaks for itself, because there are reasons. I have already had a warning note—in fact, notes—that if this Corporation loses its reputation for fair dealing we shall have greater trouble in the days to come, when we shall have to face the expenditure, amounting to a quarter of a million sterling, and when we must have the money at any price. It behoves us, therefore, if we have made a mistake, to put our house in order before it is too late. At the last monthly meeting of the Council I moved the reappointment of Dr. Nash quite as a formal matter, without having the slightest idea that any one would oppose it. I do not think it necessary to advance any further reasons why Dr. Nash should be reappointed, but I will give you the terms of his original appointment. Dr. Nash was appointed medical officer of health in 1901 at a salary of £400 per annum, rising by annual increments of £25 to £500. But there was a stipulation that Dr. Nash should be allowed to undertake, privately, analyses, laboratory work and other duties of a similar character. In 1903, when the salary automatically became £450, it was decided to increase it to £500; and one of the reasons given at the time was that although up to then Dr. Nash had had the right to charge certain fees, as a matter of fact he had not charged those fees. He stated that in the interests of the borough it was far better that there should be no such charges, but that the medical profession should be encouraged to send specimens to the laboratory without anything having to be paid by the town therefor. Mention has been made of the duties Dr. Nash had to perform in connexion with the schools. It was distinctly understood, when he was appointed, that he should merely visit the schools and see that the sanitary condition was proper. In 1906 the salary was increased to £600, and one reason for that increase was the large increase in the work of the department, and another main reason was the large amount of work Dr. Nash undertook in connexion with the Hobart case—work quite outside his duties as medical officer. Had that work been performed by an expert the cost, as the Law and Parliamentary Committee know, would have reached at least £350. The laboratory work is not very well understood by outsiders, and not by certain members of the Council. I am not saying that offensively, because if you are working on one committee you cannot be expected to be acquainted with the details of another committee. In 1905 Dr. Nash examined 923 specimens at the laboratory—this in itself is work quite apart from the duties of medical officer of health. The sanatorium work is, perhaps, better understood. I have heard remarks about the expenditure in connexion with the sanatorium. It may be interesting to this Council to know that for the year ended March, 1901—before Dr. Nash was appointed—the expenditure was £1,865; in the year ended March, 1906, notwithstanding that the population had almost doubled, the expenditure was only £1,721. Those figures had never been given to the Corporation before, and I hope they will prove that there is some one at the helm who has had regard for the expenditure. Here are some more figures: During the four years 1899 to 1903, before Dr. Nash got his own way with regard to shellfish, there were 20 cases of typhoid for every 10,000 of the population; during the four years 1903 to 1907, there have been only 3 cases per 10,000; and from January 1st last to August 31st, there

[1] BRITISH MEDICAL JOURNAL, August 31st, p. 558.
[2] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, September 7th, p. 165.

were only 2 cases. What does this mean? It means that not only have we a reputation second to no other seaside town, but also that a large expenditure has been saved in connexion with this disease alone. The expenditure in connexion with each typhoid patient is not less than £10, and if you compare the 20 per 10,000 with the three you will find that the expenditure must have been lessened by £700. All this I cannot claim is due to Dr. Nash, but it is proof that you have a man of great ability who is doing his level best for the town whether it gives offence to individuals or not. I say when you have an officer who is doing good service he should be appreciated. If you have an officer who you think it desirable should be removed, or that someone else should take his place—if you like to put it that way—that man is entitled to fair notice, and I say that no public body should be guilty of kicking a man out without giving him fair notice or sufficient and good reason for getting rid of him. At the last monthly meeting I stated that some members voted without considering what the result might be. We all make mistakes. Men may change their minds without lessening their dignity, and I feel sure if certain members will do that to-day they will never regret it, and they will have the satisfaction of knowing that although they were parties to doing something which, according to the views of the great majority, was not right, they did the next best thing—retraced their steps and did their best to put things right. Alderman Francis added that at the last meeting Councillor Garon, although he had nothing against Dr. Nash, objected to a man being appointed for a term without the Council having an equal right. He agreed with Councillor Garon that all the chief officers should be appointed on equal terms, and would amend the committee's recommendations accordingly. He would first propose that the resolution directing advertisements to be issued for a medical officer be rescinded, and if that were carried, he would move that Dr. Nash be reappointed at £600 a year, but that the appointment could be determined by three months' notice on either side.

Considerable discussion followed, and the public in the gallery frequently showed their approval of the remarks endorsing Alderman Francis's statement; so much so, that the Mayor had to request the public to refrain from expressing opinions on either side. Among those who spoke in favour of retaining Dr. Nash were Councillor Colin Campbell, Chairman of the Education Committee, for which Dr. Nash is medical officer; Alderman J. R. Brightwell, Chairman of the Finance Committee; and Councillor G. Allen, an ex-Chairman of the Health Committee.

The arguments against the Health Committee's recommendations were that £500 was quite enough to pay for a health officer; that Dr. Nash had canvassed members for increase of salary; that he had indiscreetly said that he would not bathe in the sea off Southend for £1,000; and that he had given evidence detrimental to the town before the House of Lords.

Councillor Leaney made the statement about the £1,000, but when pressed by Alderman Francis, he admitted that Dr. Nash had not made the remark publicly or officially, but while on a pleasure steamer. This aroused considerable indignation, Councillor Leaney's conduct being denounced by Councillor Doody as "miserable." Councillor Hubbard also said that unless Councillor Leaney could say that Dr. Nash had given untrue evidence before the House of Lords, no complaint ought to be made, whatever the effect might be on the town.

In the end the Committee's recommendation was rejected by 12 to 11 votes. The Mayor voted with the minority.

Councillor Leaney suggested that a private meeting should be held to effect a compromise, but Alderman Francis said he should not be a party to anything private.

SCIENTIFIC INVESTIGATIONS FOR THE LOCAL GOVERNMENT BOARD IN ENGLAND.

THE President of the Local Government Board has authorized the following researches under the grant voted by Parliament in aid of scientific investigation concerning the causes and processes of disease.

1. Further study by Dr. Sidney Martin, F.R.S., of the chemical products of pathogenic bacteria.
2. Bacteriological investigation by Dr. F. W. Andrewes of the air of sewers and drains.
3. Observation by Dr. W. G. Savage of the bacteriology of "garget" and maladies of the udder or teats of milch cows, and of the possible relation of sore throat in the human subject to pathological conditions of the udder and teats of these animals. Also investigation by him of paratyphoid fever and its microbic cause.
4. Joint investigation by Drs. M. H. Gordon and T. J. Horder of the life-processes of the meningococcus, with a view to means of combating cerebro-spinal fever.

THE ABUSE OF PUBLIC INFECTIOUS HOSPITALS.

DR. JAMES G. GLOVER, in an address on the outlook of the medical profession, scientific, social, and financial, delivered before the North London Medical and Chirurgical Society, paid an eloquent if somewhat hackneyed tribute to the work of Pasteur, Lister, and Jenner, and, passing on to the present prospects of the profession, he described them in a spirit of cheerful optimism. He discussed as "obstacles that in the opinion of some are injuring the outlook of medical practice as a calling," the growth of specialism, the licence of unqualified practice, the competition of certificated midwives, and the abuse of medical charity, and for each of these he finds a remedy, or at least a palliative, in the immediate future. Incidentally, Dr. Glover put his finger on an abuse which has not received sufficient notice, and that is the way in which rate-maintained hospitals for infectious diseases are thrown open to the comparatively well-to-do without payment. Dr. Glover specified the hospitals under the control of the Metropolitan Asylums Board, but his remarks apply equally to the institutions managed by Joint Hospital Boards throughout the country. It is too often forgotten that, as Dr. Glover mentions, the original Act which established these institutions provided that those who could pay should be made to do so. The present system is an injustice both to the taxpayer and to the medical profession.

THE RELIEF OF CONSUMPTIVES IN BOSTON.

IN June, 1906, the Commonwealth of Massachusetts appointed a Commission to investigate measures for the relief of consumptives. The report of this Commission contains much that is interesting, and would be of value to any local authority desirous of knowing what is necessary in combating consumption and how the requirements may best be carried out. The statistical tables refer, of course, to the State of Massachusetts, but the information on the nature of the disease and the measures needed for prevention are of general application and are well described. The question of the structure and cost of sanatoriums is well discussed. Compulsory notification is considered to be a *sine qua non* for prevention, and registration of all cases is of the utmost importance. One of the most interesting sections of the report is that describing various schemes and organizations for the treatment at home of poor consumptives who are unable to gain admission or to remain in a sanatorium, and for stamping out the disease in factories. There are some very pertinent comments on the futility of official disinfection which is usually confined to fumigation after the death or removal of the patient. The so-called "tuberculosis classes" which have been organized by Dr. Pratt of Boston, were founded on the belief that the result of home and dispensary treatment of consumptives has been unsatisfactory owing to the lack of the careful supervision and strict discipline maintained in sanatoriums; the scheme aims at carrying out supervision of the consumptive in his own home by the frequent visits of a qualified nurse.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

County Borough of Salford.—The medical inspection of the Salford schools is carried out through the department of the medical officer of health by Dr. J. J. Butterworth, the deputy medical officer of health and assistant medical officer to the Education Committee. During 1906 his visits to schools numbered 392. At the time of these visits the children were rapidly inspected, and those suffering from physical or mental defects were noted. Where a more detailed medical examination was required the parents were invited to bring the children to the education offices, and where necessary, were advised to see a medical man. For three years past anthropometric measurements have been taken of 1,329 boys attending six schools. Three of the schools were situated in better-class districts than the other three. The height, weight, and chest measurements were taken at three age-periods, approximately at 8, 10, and 13 years. At 8 and 10 years the weight and measurements at all the six schools was found to be about equal, but at 13 years there were marked differences, boys from the better-class districts being both taller and heavier than those in the other schools.

County Borough of Southampton.—There were 2,913 children born in Southampton in 1906, and the methods of feeding in the case of as many as 2,725 were investigated by the medical officer of health and his assistants. Of the 2,047 who were breast-fed, 6 per cent. died under 1 year old. Of the remainder (678), 49 died before being fed, and 629 were artificially fed. Of this latter number 20 per cent. died before the end of their first year. In his comments upon the administration of the Midwives Act, Dr. Lauder expresses the opinion that it has resulted in the midwives taking more care and interest in their work, and in making them realize the necessity for cleanliness and the importance of the use of disinfectants in carrying out their work.

County Borough of Preston.—Since the year 1900 the Corporation of Preston has been in possession of power to require the paving of back yards, and Dr. Pilkington reports very favourably upon the result of substituting large flags for pebble pavements. He says that a marked improvement follows the conversion of the privy-midden system to that of water carriage and the paving of back yards and passages, not only as regards the property itself, but also as affecting the social conditions and *morale* of the tenants. The infantile mortality-rate in Preston during 1906 was 200 per 1,000 births, but as Table I of the Local Government Board series is not included in the report, it is impossible to say whether this rate is higher or lower than that recorded previously. Among legitimate children the mortality-rate was 184 per 1,000 births, but among the illegitimate it was equal to the appalling rate of 500 per 1,000 births.

Borough of Keighley.—Dr. Scatterty makes out a very good case for the appointment of a woman health visitor in Keighley. In one part of the borough the infantile mortality-

rate in 1906 was equal to 195 per 1,000 births, while in the whole town it was 149 per 1,000. The death-rate among illegitimate children was three times that of those born in wedlock. The Keighley Corporation has provided a well-equipped isolation hospital, and in other ways has shown a desire to improve the surroundings of the inhabitants of the town; it is to be hoped, therefore, that the members will now turn their attention to the difficult problem of stopping this wastage of infant life.

Cheshunt Urban District.—It is satisfactory to find that the inhabitants of Cheshunt have now assured to them an ample supply of good water. Until 1891 the town was dependent upon shallow wells, which were frequently found to be polluted. In recent years the sanitary authority provided a general supply, and this has now been augmented by a further supply from the mains of the Metropolitan Water Board, with whom special arrangements have been made by the urban district council.

Atcham Combined District.—Dr. Maurice Gepp does not intend that the members of the district councils in the Shropshire combined sanitary district shall have any excuse for neglecting the obligations cast upon them by the Legislature. He has included in his annual report a summary of the powers of sanitary authorities setting out in ordinary type what they may do, and in bolder characters what they *must* do. This partial codification of the Public Health Acts deals with nuisances, infectious diseases, housing, common lodging-houses, milk supplies, factories and workshops, scavenging, sewers, drains, and closets, pollution of rivers, water supply, canal boats, and by-laws. Dr. Gepp's example might well be followed by other medical officers of health.

Mid-Cheshire Districts.—Dr. T. W. H. Garstang again draws attention to the fact that, although there is an aggregate population of nearly 50,000 persons in the one rural and four urban districts under his care, he is not provided either with office accommodation or any clerical assistance. There must of necessity be a large amount of clerical work connected with the administration of the Public Health Acts in these districts, and the time of the medical officer of health could surely be employed to better purpose than by doing office work, which could be equally well done under his supervision by a clerk. We trust the district councils will arrange to provide suitable assistance and so relieve themselves from the charge of extravagance which may now justly be brought against them.

SCARLET FEVER PATIENTS DISCHARGED FROM HOSPITAL.

X. Y. Z. asks: (1) How long after the discharge from hospital of a scarlatina case can that case be blamed for any fresh cases that may occur in the same house—assuming that so far as we can see there is no sign of infection in the discharged case? (2) Suppose a case of rhinitis or otitis complicating scarlatina, and that the patient is discharged from hospital cured of either or both. After a variable time one or other returns and infects other people. Can the hospital authorities be justly or legally blamed?

(1) Authorities differ, but most would agree that the risk exists up to six weeks from the day of discharge; but in order to prove that the discharged patient has been the source of infection all other sources of infection should be excluded, as far as possible, by inquiry. (2) If the hospital authorities have exercised all reasonable care in the discharge of the patient, they cannot justly or legally be held to blame. A few cases of this sort have been before the law courts; each case has been decided on its merits; if the hospital authorities have shown that they have acted with care and precaution they have been exonerated.

HOSPITAL AND DISPENSARY MANAGEMENT.

HEREFORD COUNTY AND CITY ASYLUM.

On January 1st, 1906, there were 545 patients in this asylum, and on December 31st there remained 522. The total number of cases under care during the year was 633, and the average number daily resident 532. All of these numbers show a slight decrease on those of the previous year, partly as the result of the transfer of 25 patients to other asylums. During the year 88 cases were admitted, of whom 72 belonged to Hereford County and City. In 70 of the total number the patients were first admissions. In 32 the attacks were first attacks within three, and in 25 more within twelve months of admission; in 6 not-first attacks within twelve months of admission; in 15, whether first or not, the attacks were of more than twelve months' duration on admission, and in 10 of congenital origin. The admissions were classified into: Mania of all kinds, 49; melancholia, acute and chronic, 14; secondary and senile dementia, 4; delusional insanity, 2; general paralysis, 2; acquired epilepsy, 4; and cases of congenital or infantile defect, 13. As to the probable causes of the insanities, alcohol was assigned as exciting cause in 9, or 10 per cent., venereal disease in 6, previous attacks in none, puberty, old age, and the menopause in 17, various bodily disorders in 35, "moral" causes in 4, and other ascertained causes in 14. In 26, or 29 5 per cent, hereditary influences were ascertained to be the chief predisposing cause of the insanities, and congenital defect existed in 5 more. Dr. S Cuthbert Morrison, the Medical Superintendent, states that 29 per cent. of the males and 40 35 per cent. of the females exhibited cardio-vascular disorders, accompanied in a large proportion of instances in females by glycosuria (without thirst or polyuria) or thyroid disease (goître), the proportion per cent. of the latter disorder in the two sexes being 33.5 per cent. for females and 3.7 per cent. for males. The information with regard to the probable causation of the insanities furnished by Dr. Morrison bears inherent signs of careful preparation, and, with the view of obtaining more complete information, he makes the practical suggestion that the guardians, relatives, and relieving officers should help the asylum staff in the matter by recording facts correctly at the time and place where the patients are seen and where their antecedents are well known. During the year 20 were discharged as recovered, giving a recovery-rate on the admissions of 27.3 per cent., 33 as relieved, and 8 as not improved. There were 50 deaths, giving a death-rate on the average numbers resident of 9 3 per cent. These deaths were due in 11 cases to cerebro-spinal diseases, with only 2 from general paralysis; in 13 to chest diseases, including 7 deaths from pulmonary tuberculosis, in 10 to abdominal diseases, and in 16 to general diseases, including 7 deaths from senile decay and 2 from tuberculosis. Tubercle thus accounted for 18 per cent. of the total deaths. Four inquests were held during the year, a verdict of death from natural causes being returned in 3. The fourth case was that of a man, aged 80, who was pushed down by an imbecile boy on rising from dinner. The fall induced intussusception of the bowel, followed later by hypostatic congestion of the lungs. There were several cases of dysentery and diarrhoea but no other zymotic disease.

The general condition of the asylum was reported upon very favourably by the Lunacy Commissioners at their visit. They drew attention, however, to the lack of accommodation on the male side, and suggested that another floor be added to the male infirmary ward. In the meantime, arrangements have been made to board out patients at the Newport Asylum, as the suggestion made last year by the Asylum Committee to the Board of Guardians that old and feeble cases should be received and treated in workhouses was not favourably entertained. This question of the proper provision for feeble, senile, and chronic cases as between asylums and workhouses has led Dr. Morrison to discuss incidentally in his report the suggestion made to the Royal Commission on the Care and Control of the Feeble-Minded by Mr. J. S. Davy, C.B., the Chief General Inspector of the Local Government Board. Mr. Davy's evidence, a summary of which appeared in the British Medical Journal for January 26th, 1907, p. 237, is subjected to trenchant criticism by Dr. Morrison, particularly with regard to the effect of the 4s. grant. Dr. Morrison discusses the whole matter at considerable length, and we have therefore alluded to this in another column.

THE RETREAT, YORK.

At the time of the preparation of the annual report for 1906 of this historic institution the balance sheet for the financial year had not been completed, but we are glad to note that the Medical Superintendent, Dr. Bedford Pierce, had reason to expect a favourable result, and that, although the income from patients is well maintained, there has been no diminution in the assistance given to the members of the Society of Friends in reduced circumstances. At the end of the year there were 33 patients paying the lowest rate of 12s. weekly, and also 27 patients paying 25s. weekly or less. As the average cost per patient exceeds 50s. weekly, the charitable assistance given annually is very considerable. This registered hospital is available for voluntary boarders as well as certified cases, but, omitting for the present reference to the voluntary boarders, there were on January 1st, 1906, on the hospital register 167 patients, and on the last day of the year 169 The total cases under treatment during the year numbered 215, and the average number daily resident was 169.23. During the year 48 cases were admitted, of whom 36 were direct admissions, 10 transfers, and 2 statutory re-admissions. In 13 the attacks were first attacks within three and in 10 more within twelve months of admission; in 7 the attacks were not-first attacks within twelve months of admission, and the remainder, whether first attacks or not, were of more than twelve months' duration on admission. They were classified as to the forms of mental disorder into: Mania, recent or recurrent, 8; melancholia of all kinds, 15; secondary dementia, 1; delusional insanity, 3; volitional insanity (impulse, obsession, doubt), 4; primary dementia, 9; general paralysis, 1; epileptic insanity, 1; and acute delirious insanity, confusional insanity, stupor and insanity with gross brain lesion also, 1 each. Dr. H. J. Mackenzie, the Assistant Medical Officer, who compiled the statistical tables, supplies a carefully-arranged table showing the various etiological factors in the admissions, differentiating between first attack and not-first attack cases. From these we see that alcohol was assigned

as principal cause in 4, all of them the subjects of first attacks; in 13 of the total number the mental disorder was ascribed to prolonged mental stress; in 2 to the climacteric; in 5 to various bodily diseases; in 12 no principal factor could be assigned, and in 2 no factor was discovered. Insane heredity was ascertained in 13 out of 34 first attack and in 6 out of 14 not-first attack cases, and other hereditary neuropathic tendencies were established in 10 of the first attack cases and in 4 of the not-first. The numbers of these cases for the year are insufficient to draw from them any conclusions of the comparative incidence of the causal factors upon the first attack and not-first attack cases, but doubtless, as the statistics increase, suggestive facts will come to light from the employment of this improved table. During the year 20 cases were discharged as recovered, giving a total recovery-rate of 55.6 per cent. on the direct admissions and a recovery-rate of the direct admissions on the direct admissions of 52.78 per cent. There were also 5 discharged as relieved and 10 as not improved. During the year 11 patients died, giving a percentage death-rate on the average numbers resident of 6.50, the deaths being all due to ordinary causes. Turning to the voluntary boarders, we see that 29 were admitted, of whom 8 were subsequently certified, 5 recovered, 8 were discharged relieved, and 4 not improved. It would be unfair to compare the small number of voluntary boarders who recovered with the recoveries among the certified cases, for Dr. Bedford Pierce points out that many of the voluntary boarders either leave shortly after admission or have to be certified, only 19 out of the 29 voluntary boarders admitted in 1906 staying, in that capacity, more than one month. Dr. Bedford Pierce, however, has no doubt of the value of this form of care. The hardship of certification in some cases is well illustrated by a case which Dr. Pierce relates in which a gentleman engaged in business became actively suicidal. The case was too serious to admit of private care or of admission as a voluntary boarder. As a direct consequence of his certification he lost his position, which was, by the terms of his appointment, to be terminated by the occurrence of insanity. This is only one instance out of many in which the suspension of formal certification for a time would be of great material benefit to the patients. The general health, notwithstanding that the year opened with scarlet fever and ended with an epidemic of influenza, was very good, both in the hospital and at the branch house, Throxenby Hall, Scarborough. The annual report contains also an appeal to the friends of the institution for help in the erection of a new recreation room and superintendent's house. The wooden building erected in 1899 as a temporary recreation room was condemned by the Lunacy Commissioners after the Colney Hatch fire, and since its removal the only available place has been the old workroom. A suitable recreation room is an indispensable part of the equipment of any modern institution for the treatment of the insane, and we hope that the committee, who "desire to maintain the institution at the highest possible level of efficiency, so that, in harmony with its traditions, it may be second to none in providing for all its patients, poor as well as rich, the best available treatment," will receive the cordial support they deserve from the philanthropic public. The Retreat is not only a famous hospital; it is a national monument to the memory of one who did for England what Pinel did for France in initiating reforms which have been a world-wide influence for good and have ameliorated the lot of hosts of sufferers. We have no doubt that the appeal of the committee will meet with a generous response.

CUMBERLAND AND WESTMORLAND ASYLUM.

THE number of patients at the end of the year 1906 was 1 more than at the beginning, there being 743 in residence on January 1st and 744 on December 31st, 1906. Throughout the year the overcrowding which we noted in our report last year was again present, but owing to a fortunate diminution in the number of admissions and an unusually high recovery-rate, the need for fresh accommodation did not more seriously affect the management of the patients than during the two previous years. Two new hospital blocks, a new recreation hall, and several other offices have, however, been erected, and will be by this time in occupation. The total number of patients under care during the year was 903, and the average number resident was 740. During the year 160 were admitted, of whom 118 were first admissions. Of the total number, in 77 the attacks were first attacks within three, and in 19 more within twelve months of admission; in 37 not-first attacks within twelve months of admission; and the remainder were either of more than twelve months' duration (19), or congenital cases (8) on admission. The admissions were classified according to the several forms of mental disorder into: Mania of all kinds, 93; melancholia of all kinds, 37; secondary and senile dementia, 9; general paralysis of the insane, 9; acquired epilepsy, 7; and cases of congenital or infantile defect, 5. As to the various etiological factors considered as operative in these cases, alcoholic intemperance was assigned in 28, that is, 17 per cent. of the whole, or slightly over 26 per cent. of the male admissions, this high proportion of alcoholic cases the medical superintendent, Dr. W. F. Farquharson, points out, coinciding with an increase of prosperity in the districts which the asylum serves. Of the other usually-cited causes, previous attacks were assigned to 39, old age in 10, the menopause in 2, venereal disease in none, epilepsy in 10, "moral causes" in 19, various bodily diseases in 16, and in 24 no cause could be assigned. Hereditary influences were ascertained in 47, or 29.4 per cent., and congenital defect existed in 6. During the year 80 were discharged as recovered, giving the very high recovery-rate—for a county asylum—on the admissions, exclusive of transfers, of 53.3 per cent. There were also discharged as relieved 16, and as not improved 6. During the year there were 57 deaths, giving the satisfactorily low death-rate on the average numbers resident of 7.7 per cent. These deaths were due in 16 cases to cerebro-spinal diseases, in 28 cases to chest diseases including 10 deaths from phthisis, in 1 to general tuberculosis, and in the remainder to general diseases with the exception of 1 death from suicide by suffocation. In this case the patient, formerly considered suicidal but removed from the suicidal list some months previously, swallowed part of a handkerchief, tightly rolled up, in a lavatory. The general health appears to have been good throughout the year, notwithstanding the overcrowding; no casualties of importance had to be recorded, and there was no employment of either mechanical restraint or seclusion—facts which speak very favourabiy of the management of this institution.

BARNWOOD HOUSE HOSPITAL FOR THE INSANE GLOUCESTER.

ON January 1st, 1906, the number of patients in this well-known private aaylum was 142, and on December 31st had increased to 148, the total number under treatment during the year being 184, and the average number resident 147. During the year 44 patients were admitted, only 14 of whom were men, and of these, in only 1 case, Dr. Soutar, the Medical Superintendent, states, was there any reasonable ground for expecting improvement in the mental condition. The 30 female admissions were, however, of a more favourable character, 5 of them having already recovered before the end of the year, and a good prognosis justifiably entertained in 10 more. Of the total 44 admissions, 39 were first admissions, in 11 the attacks were first attacks within three and in 8 more within twelve months of admission; in 8 the attacks were not-first attacks within twelve months, and the remainder were of more than twelve months duration on admission. They were classified as to the forms of mental disorder into: Mania of all kinds, 28; melancholia, acute and chronic, 13; senile dementia, 2; and general paralysis, 1. The probable etiological factors in the admissions were assigned in the following numbers: Alcoholic intemperance, 2; venereal disease, 1; various bodily diseases, 12; old age in 2, and the menopause in 1; previous attacks in 4; moral causes in 12; and in 8 no cause could be assigned. Hereditary influences were ascertained in 21, or 47.7 per cent. During the year 12 were discharged as recovered, giving the low recovery-rate on the admissions of 27.2 per cent., as compared with the total average of 37 4, or with the average of 45.2 per cent. for the previous five years, of this institution. This striking diminution in the number of those recovering is due, Dr. Soutar states, to a marked failing off in the applications for the admission of acute cases within the last few years. With Dr. Soutar we hope that this indicates less occurring insanity in the district which the hospital serves, for, as Dr. Soutar says, the well-known readiness of the committee to receive persons from the educated classes suffering from recent mental disorder at low rates of payment clears out of the way any financial difficulty which may exist; and, we may add, it is to this class of case that this asylum offers particular advantages. There were also 2 discharged as relieved, 16 as not improved, and 8 died. The deaths give the low percentage death-rate on the average numbers resident of 5.4, which is also the average for this institution. The deaths were all due to ordinary causes, and all, with one exception, in patients of over 45 years of age, the average age at death being 54 years The general health was good throughout the year; no serious casualty, with the exception of a dislocated shoulder, had to be recorded, and, like previous years, no mechanical restraint had to be employed. The hospital was twice visited by the Lunacy Commissioners, who left very favourable reports on its condition and management. Dr. Soutar was absent for six months on account of ill-health, but was able to return, we are glad to state, completely reinvigorated by his holiday.

SURREY COUNTY ASYLUM, BROOKWOOD.

AT this asylum there appears to have been a considerable amount of overcrowding during the year 1906, notwithstanding that many cases chargeable to the county were boarded out in other asylums—in fact, to the number of 130 at the end of the year. The Medical Superintendent, Dr. J. E. Barton, reports that on January 1st, 1906, there were 1,341 patients on the register, and that these had diminished to 1,328 on the last day of the year. There was a total number of 1,734 under treatment during the year, the average number daily resident being 1,376. The admissions for the year numbered 393, of whom 347 were first admissions, 38 not first admissions, and 8 re-transfers. Of the total admissions, in 178 the attacks were first attacks within three, and in 55 more within twelve months of admission; in 61 the attacks were not-first attacks within twelve months of

admission, and the remainder were either of more than twelve months (36) or of unknown duration (20) on admission or of congenital origin. A very considerable proportion were thus cases of long standing, and no less than 86 were over 60 years of age. The admissions were classified, according to the forms of mental disorder, into: Mania of all kinds, 201; melanchclia of all kinds, 74; dementia, primary, secondary, senile, and organic, 63; general paralysis, 18; acquired epilepsy, 11; congenital or infantile defect, 25; and not insane, 1. From the table showing the probable causes of the insanities in these casea, we see that alcoholic intemperance was assigned in 47, or 11.9 per cent.; syphilis in 8; periodic causes, puberty, old age, and the menopause in 57; parturition and the puerperal state in 14; previous attacks in 33; moral causes in 86, and in 65 no cause could be assigned. Hereditary influences were ascertained in 120, or 30 per cent., and congenital causes in 26. During the year 112 were discharged as recovered, giving a recovery-rate on the admissions of 31.71 per cent.; 37 as relieved, 102 as not improved, and there were 155 deaths. The deaths, which give a death-rate on the average numbers resident of 11.26 per cent., were due in 59 cases to cerebro-spinal diseases, including 18 from general paralysis; in 55 cases to chest diseases, including 25—or 16 per cent. of the total deaths—from phthisis; in 18 to abdominal diseases, and in 23 to general diseases, including 15 deaths from senile decay. Four inquests were held during the year, the jury in each case returning a verdict in accordance with the medical evidence. Notwithstanding the overcrowding, the general health appears to have been good throughout the year, the only zymotic diseases being influenza, and 4 cases of erysipelas. The asylum was visited in July by the Lunacy Commissioners, who left a very favourable report on its condition and management.

MONMOUTH ASYLUM, ABERGAVENNY.

The annual report for the year 1906 of Dr. J. Glendinning, the Medical Superintendent, shows that there were 985 patients in this asylum on January 1st, 1906, and that on the last day of the year there remained 963. During the year there were altogether 1,361 patients under treatment, and the average number daily resident was 939. During the year 376 cases were admitted, of whom 345 were first admissions. Of the total admissions, in 69 the attacks were first attacks within three, and in 33 more within twelve months of admission; in 37 the attacks were not-first attacks within twelve months of admission, and in the large remainder the attacks were either of more than twelve months' duration (177), or of congenital origin (59), or of unknown duration (1) on admission. The exceedingly large number of cases of congenital defect is noteworthy. The admissions were classified as to the forms of mental disorder into: Mania of all kinds, 111; melancholia of all kinds, 57; dementia, primary, secondary and senile, 134; general paralysis, 15; acquired epilepsy, 23, and cases of congenital or infantile defect, 59. As to the probable causes of the insanities in these cases, alcoholic intemperance was assigned in 22, or less than 6 per cent.; venereal disease in only 2; previous attacks in 58; old age and the menopause in 28; parturition and lactation in 11; various bodily diseases disorders in 33; and various forms of stress, domestic trouble, religious excitement, fright, etc., in 32. Hereditary influences were ascertained in 81, or 21.5 per cent., and congenital causes were operative in 59. During the year 70 were discharged as recovered, giving a recovery rate on the admissions of 34.1 per cent., 33 as relieved, and 210 as not improved. During the year there were also 85 deaths, giving a death-rate on the average numbers resident of 9.0 per cent. The deaths were due in 32 cases to cerebro-spinal diseases, including 10 deaths from general paralysis; in 38 cases to chest disease, including 19 from valvular heart disease, and only 8 (or 0.4 per cent. of the total deaths) from pulmonary consumption; in 9 cases to abdominal diseases; in 1 case to pernicious anaemia, and in 5 cases to senile decay. One inquest was held during the year, on a woman who died of pneumonia two days after admission. The general health appears to have been excellent throughout the year, and no serious casualties are reported by the Medical Superintendent.

DEVONSHIRE HOSPITAL, BUXTON.

It was claimed for the Devonshire Hospital at Buxton, at its annual meeting on July 30th, that it might be regarded as a national institution, since of its 3,295 in-patients, the majority came from distant parts. During the last few years various structural and other improvements have been effected, and it is now intended to house the nursing staff outside the building in order to provide more accommodation for patients. A great majority of the cases admitted are shown by the medical report to be sufferers from rheumatic disorders.

The late Mr. William Richardson, of Hull, who died on July 22nd, left £2,000 to the Hull Royal Infirmary, £1,500 to the Hull and Sculcoats Dispensary, and £1,000 to the Victoria Hospital for Poor Sick Children, Kingston-on-Hull.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* **British Medical Journal** *alone unless the contrary be stated.*

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any Circumstances be Returned.

In order to avoid delay, it is particularly requested that **ALL** letters on the editorial business of the **Journal** be addressed to the **Editor** at the Office of the **Journal**, and not at his private house.

Communications respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the **Journal**, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

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☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Short-circuiting the Vas Deferens.

H. V. D. asks whether "short-circuiting" the vas deferens is effective in cases of sterility due to double orchitis.

*** A successful case has been reported by Dr. E. Martin of Philadelphia, and the operation is described in the sixth edition of White and Martin's *Genito-urinary and Venereal Diseases.* The subject is also referred to in articles by Posner and Neisser in Senator and Kaminer's *Health and Disease in Relation to Marriage*, and in the Epitome of the British Medical Journal, January 16th, 1904.

ANSWERS.

R.A.M.C.—Aspirin is acetyl-salicylic acid, a definite chemical combination prepared by the action of acetic anhydride on salicylic acid. Provided the drug is pure and properly prepared, there seems to be no reason for preferring one brand to another.

Lloyd.—Thiosinamin is obtained from mustard oil or horse radish oil by the action of ammonia. As injections of the alcoholic solution are painful, and as the thiosinamin precipitates from an aqueous solution at a low temperature, Merck introduced a mixture of thiosinamin and sodium salicylate under the name of fibrolysin. With regard to its employment in spinal cord disease we may refer our correspondent to Dr. Pope's paper published in the British Medical Journal of June 22nd, 1907, page 1471.

Medico-legal Aspects of Age.

A. K.—We cannot undertake to express a definite opinion on the long string of questions our correspondent submits. The following quotation from Professor Dixon Mann's *Forensic Medicine and Toxicology* expresses the opinion of an accomplished medical jurist upon the subject generally:—"In determining age in the living, no reliable criteria are available after adult life is reached; in the young, the teeth yield evidence up to the thirteenth or fourteenth year. General indications, of course, exist, but their variability—from idiosyncrasy, mode of life, personal attention, etc.—is so great, that to estimate the age of a living person between the two extremes of life is little more than guesswork."

Gonorrhoeal Rheumatism.

Dr Wm. Hardman (Blackpool) writes: In answer to "Camden," in my experience gonorrhoeal "rheumatism" is an infection from the genito-urinary tract, and as long as the source of the infection persists so long will also "rheumatism." Treat any gleet or leucorrhoea energetically by injections of sulphate or chloride of zinc, seeing that instructions as regards injecting are precise, thoroughly understood, and efficiently carried out. Do this until all such discharges have entirely ceased, or are free from gonococci. This treatment may be aided by the administration of salol 10 to 15 grains t.d.s., which breaks up into carbolic and salicylic acid in the system and completely antisepticizes the urine. Usually under this treatment the gonorrhoeal arthritis will disappear. If, however, it has lasted long, and some particular

joint, such as the knee, seems unable to throw off the inflammatory effects, it should be immobilized, and creasotal (creasote carbonate) 15 to 20 drops given thrice daily. This drug has also an antiseptic effect on the urine and urinary passages. During very many years I do not remember to have personally treated a case of gonorrhoeal rheumatism that has resisted these measures.

LETTERS, NOTES, Etc.

THE "MEDICAL DIRECTORY."

THE Editors of Churchill's *Medical Directory* (7, Great Marlborough Street, London, W.) write: May we be allowed, through your columns, to appeal to all members of the profession to return to us at once their circulars for the *Medical Directory* for 1908? The volume will be published about a fortnight earlier that has been customary, although the circulars were sent out a month later. It will thus be seen that the *Medical Directory* will be more up to date than formerly by six weeks, and in this effort, which will prove an advantage to all concerned, we rely upon the kind help always shown us by the profession.

AN APPEAL.

DR R. B. MAHON, Member of the Mid-Connaught Division of the British Medical Association (Ballinrobe, co. Mayo, Ireland), writes: Will you allow me to bring under your notice a distressing case that has occurred in this neighbourhood? In January last Dr. J. P. Maguire was seized with sudden and severe illness and succumbed to an attack of acute Bright's disease. He left a widow and a little boy quite destitute, and I am trying to get together enough money to pay for the training of the widow as a midwifery nurse. The little boy we have a prospect of settling in a school near Dublin. So far I have only applied locally, but the response has been so feeble I am forced to appeal to a wider public—the charitable members of the profession. The following have generously subscribed:

	£	s.	d.
Dr. J. A. Hanrahan, Hollymount	2	2	0
Dr. M. Semple, Cony	1	1	0
Dr. F. Golding, Headford	1	1	0
Dr. A. Gill, Westport	1	1	0
Dr. Corcoran, Ballinrobe	1	1	0
Dr. Macaulay, Ballina...	1	0	0
Dr. T. B. Costello, Tuam	1	0	0
Dr. McNulty, Killala	1	0	0
Surgeon-General Joynt, Dublin	0	10	0
Dr. J. Hegarty, Clonbur	0	10	0
Dr. Mahon, Ballinrobe	3	3	0
Donation from Royal Medical Benevolent Fund	15	0	0
Total	£28	9	0

Of this sum £4 has been disbursed for pressing necessities, leaving £24 9s. in hand. If this could be brought up to £50 it would enable us to place the widow in a position to support herself.

MEDICAL LIBRARIES IN SEPTEMBER.

WE have received a lament from a practitioner who finds himself in London with some spare time on his hands that the libraries of the Royal College of Surgeons, the Royal College of Physicians, and the British Medical Association, and the Reading Room of the British Museum, are all closed at the same time. It is not quite correct to say that the Library of the British Medical Association is closed; a reading room where current periodicals and many works of reference may be consulted is maintained in the temporary premises, 6, Catherine Street, Strand, but it is true that the bulk of the books are stored during the building of the new house, and are not available for consultation. It is promised that the British Museum Reading Room, with its dome new whited and gilded, shall be reopened very shortly, and as the room has not before been closed since Panizzi succeeded in getting it built, there is not much reason for grumbling. It certainly seems a pity that the libraries of both the Royal Colleges should be closed at the same time, and perhaps the inconvenience so caused may be considered by the Library Committees when making arrangements for the holidays of another year. The Guildhall Library of the Corporation of the City of London is still open.

SHIP SURGEONS.

EX-SHIP SURGEON writes: May I be allowed a short space of the BRITISH MEDICAL JOURNAL to corroborate the statements made by "Medicus" in the JOURNAL of July 27th concerning the treatment meted to a ship surgeon. It is indeed no exaggeration to say that he is treated abominably; and as for status, well, nothing of the sort exists. The only people worth considering are the captain, purser, and chief steward; the other officers are considered to a certain extent, but the medical officer is looked upon as a confounded nuisance and an unnecessary expense. Their contempt for him is shown by the sort of accommodation given him, which is usually of the minimum dimensions allowed by the Board of Trade to a "seaman," and, as if he were the only person capable of roughing it, his "room" is generally placed in the worst, noisiest, and dirtiest part of the ship, such as near a lavatory, the hot bulkhead of the engine room, or close to the third-class passengers, where the noise is incessant, rendering reading out of the question if he is so disposed. If the salary given were good, one would be tempted to put up with these humiliations, but since a living wage is not given, surely it is not too much to expect a decent treatment and a decent accommodation, and it is astonishing to me how any self-respecting man can possibly remain in this capacity for more than a few voyages. It leads to nothing, and it is no recommendation when applying for something else. As for the salary, I think there is a faint notion amongst the profession that it is not princely, but certainly it is thought that the deficiency is more than made up by the valuable presents given by grateful patients. There never was a greater fallacy existing. My experience is, though giving every attention possible, that travellers do not appreciate the doctor's services more than any one else. They seem to take everything for granted, and I assure you that from first-class passengers to the third they are experts in exploiting the medical man, they are entitled to free treatment and medicine, and they mean to get it; and the time when a "little paregoric if the trouble was above the belt or black draught if below" is long gone by. Should one dare to show a little independence, he will hear further about it on his arrival home if one really cared either for them or the office. Excepting in a very few instances indeed, I have not been even thanked for my services. When the increase in salary is considered, as it should in these days of big ships, I suppose the companies will conceive the brilliant idea of making some arrangement with the chief steward to overcome the difficulty; and that if the doctor is a reliable, sober, and capable man he is to have a table in the saloon (I mean to wait on)—in fact, to sign on under the steward's department, or, as an alternative, he will be given the tip by some kind and patronizing clerk at the office that if he is in the good books of the chief mate he will be allowed overtime by doing a turn at the winch or tallying cargo. It is not only the smaller companies that are without their medical superintendents; there are many of the so-called crack ones without them; and as long as this state of things is allowed to exist what hope is there for any sympathy to our grievances from a promoted office boy? This wretched state of affairs ought to be made widely known amongst members of the profession, as there are no doubt many going to sea quite ignorant of what is before them. Like many others, I was under the impression that a few sea trips would be a real pleasure; but it was a rude revelation to me when I realized the humiliating position I was in, and I therefore strongly advise those who are thinking of becoming ship surgeons to perish the idea and fight shy of the mercantile marine.

THE SHADOWGRAPH BOUGIE IN URETERIC SURGERY.

MR. E. HURRY FENWICK (London) writes: Few surgeons, I take it, who are working at renal or ureteric surgery would care to operate without the advantage of a good shadowgraph ureteric bougie. In a small number of cases the bougie is indispensable, for it enables the surgeon to detect false radiographic shadows, and thus to avoid an extensive exploration upon the pelvic part of the ureter. Unfortunately, a foreign firm has placed upon the market a *valueless* shadowgraph ureteric bougie which exactly resembles the bougie used in England, the Marshall shadowgraph bougie. A foreign specimen was handed to me, and to prove its value I placed it and a Marshall bougie on a radiographic plate. The foreign-made bougie left a faint shadow, but the Marshall a strong black shadow. To obtain the best results it is necessary to secure the Marshall or one which casts an equally strong shadow.

PRODROMAL STAGE OF RUBELLA.

DR. W. W. ORD (Salisbury) writes: In the JOURNAL of August 17th Dr. Goodall, in his most interesting paper, writes that he has little to say about the prodromal period of rubella (German measles). During an epidemic occurring here this summer I saw two cases, one in an adult, in whom the cervical glands were enlarged and tender four days before the appearance of the rash. There was no rise of temperature in either case, and no other symptoms antecedent to the eruption.

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An Address

ON

THE INSTRUCTION OF MIDWIVES IN THE SYMPTOMS AND SIGNS OF ABNORMAL LABOUR.*

Delivered at Guy's Hospital.

By PETER HORROCKS, M.D., F.R.C.P,

SENIOR OBSTETRIC PHYSICIAN TO AND LECTURER ON MIDWIFERY AND DISEASES OF WOMEN AT GUY'S HOSPITAL.

The Midwives Act affects medical men in many ways, and one of the most important is the advice you will be expected to give the authorities under the Act concerning its provisions. In a case of abnormal labour the midwife must call in a doctor, and the medical profession is expected to teach midwives the symptoms and signs which indicate that labour is about to become, or has already become, abnormal. The subject is one of great moment, because, upon the early recognition by the midwife of unfavourable symptoms and signs, followed by the prompt calling in of a doctor, will depend the welfare, and in some cases the life, of the mother or of the child, or of both.

In teaching midwives on abnormal labour, you should begin by pointing out that when engaged to attend a woman in her confinement, or when called to a case already in labour, the midwife can at once observe whether the mother is well and properly developed. She should notice if she is narrow across the pelvis, and if there be any doubt, measure the distances between the crests of the ilia and between the anterior superior spines, which ought to be about 11 in. and 10 in. respectively. If both are below 10 and very nearly alike, she has a contracted flat pelvis, and trouble is likely to ensue. By constant observation and practice, it is possible at a glance, by placing the two thumbs on the anterior spines and the two forefingers on the most prominent parts of the crests of the ilia, to tell whether these diameters are good or not. These two diameters may be less than normal and yet not out of proportion. In this case there is probably a generally contracted pelvis. If the midwife detects rickets by curved tibiae or other signs, she must also measure the pelvis carefully. If in making a vaginal examination she can feel the promontory of the sacrum easily, the pelvis is contracted. With the naked eye she may also discover any well marked obliquity of the pelvis. As soon as she discovers a narrow pelvis, let a doctor be consulted. If pregnancy be not far advanced, you will be able to decide as to the advisability of induction of labour, and if labour has already begun, as to the propriety of giving assistance by forceps, version, or Caesarean section. Your action will depend upon the degree of pelvic deformity. All the midwife has to do—but it is a great and important matter—is to detect that there is something abnormal.

Next you should teach midwives to observe whether there is any spinal curvature, either lateral or angular, any disease or deformity in one or other lower extremity, any peculiarity in the patient's gait such as would be caused by a congenital dislocation of both hips. Any obvious deviation from a state of health, such as great pallor of countenance, blueness of the face and lips (cyanosis), breathlessness, emaciation, severe cough, quick pulse, pyrexia, vomiting. Each of these conditions may exist without interfering materially with labour, but the midwife should advise a medical opinion in order to obtain the best advice in regard to the cause of the abnormal condition and its possible effect on labour. Any undue enlargement or prominence of the abdomen should be noted, such as would be caused by tumours with the pregnancy, pendulous abdomen from weakness of the abdominal walls, ascites, contracted pelvis, distended bladder, fetal conditions such as a big child, fetal tumours, fetal anasarca, twins, hydramnios, hydrocephalus, monsters. Abdominal palpation is very important, and by constant practice it is possible to distinguish head presentations from breech cases, and also to discover whether the child's abdomen is directed forwards or not. In vertex cases with the back in front the occiput is anterior, with the limbs and abdomen in front it is posterior. If the child is transverse it is easily discovered by external palpation.

Any obliquity of the uterus to right or to left must be remedied, if possible, by posture and pillows. If the patient be a multipara, previous confinements should be inquired into. If all have been normal, probably also the next will be. If all have been abnormal—for example, if instruments have had to be used in every case, if the child has been dead in each case—no doubt there is some permanent condition which may or may not be insuperable. Such a case should be seen as soon as possible, without waiting until the difficulty has arisen; and, indeed, it is better if the patient can be seen before labour has started. In some cases there is a history of normal labours with living children, and also of one or more abnormal labours where, perhaps, instruments were used, or where the child was stillborn or the labour very prolonged.

Intelligent questions may elicit that such difficulties were accidental. For example, the membranes may have prematurely ruptured in the labour that was prolonged. Hence it need not be assumed that the coming labour will be difficult, for the fact can be relied on that most of her confinements were normal. Note any oedema about the lower extremities, observing especially and closely the ankles; also about the vulva, abdominal walls, eyelids, face or upper extremities, especially the backs of the hands. If any be present, suspect albuminuria. Indeed, in every case it is a good plan to test the urine by boiling a little, so as to find out if albuminuria be present. For this is always a grave sign and one which may result in eclampsia. Note any twitchings of the face or other muscles which frequently herald the approach of eclampsia. Oedema of the lower extremities alone may be due to varicose veins or to cardiac mischief or hepatic disease.

When called to a woman supposed to be in labour it is important that the midwife should know whether the pains are due to uterine contractions or to something unconnected with labour. I have known a woman seized with fearful pains due to a calculus passing down the ureter, and as she was approaching the full time of gestation she was thought to be in labour. The best plan to distinguish real labour pains from other pains is to place the hand on the abdomen and feel the uterus during, and between, the pains. If it gets harder, more spherical, with a more definite contour during each pain, softer, flatter, and less easily felt in between the pains, the uterus is contracting and relaxing alternately and labour has begun. If the pains have no effect upon the uterus they are not labour pains. When making a vaginal examination observe also the condition of the cervix uteri and the os externum. If the membranes can be felt it will be found that they become as tight as a drum during a pain if labour has begun. Whereas if the pain is due to renal, biliary, or intestinal colic, or to some cause other than uterine contractions, there is no such tightening of the membranes. They may become slightly more tense if the woman in her agony holds her breath and bears down, owing to the increase of the intra-abdominal pressure caused by the diaphragm and abdominal walls, which acts on the uterus. But such slight increase in the tenseness is readily distinguished from the drum-like tightness caused by a labour pain. If there has been a "show" this is confirmatory of the onset of labour. At this stage haemorrhage is abnormal. Of course, there is a tinge of blood in the "show," but real bleeding should not occur. Again, if the patient says she has had several attacks of bleeding, then suspect abnormal labour. If there is a history of a blow, a fall, or other injury preceding the haemorrhage, suspect accidental haemorrhage, that is, a partial separation of a normally-placed placenta. If there is no such history, and especially if the woman has had several attacks of haemorrhage, some perhaps coming on whilst she was asleep in bed, then placanta praevia must be suspected.

In making a vaginal examination, if the method is followed which I have described in my address on the Midwifery of the Present Day,[1] inspection will show if there is anything wrong with the vulva which could in any way interfere with parturition. It is rare to find any disease of the vulva, and still rarer to discover anything

* A pendant to the Address on The Midwifery of the Present Day, British Medical Journal, March 10th, 1906.

at all likely to be in the way. But very particular attention should be given to the linen to see if there be any discharge of a purulent character. Indeed, the patient should be asked if she has any discharge, and the midwife should look at the linen herself and note the condition of the vaginal walls as she raises the right labium majus in order to introduce the finger into the vagina. The importance of knowing whether there is any vaginitis, particularly gonorrhoeal, is that steps should be taken to remedy it as far as possible before the parturition, and to prevent ophthalmia neonatorum by very active procedures.

I oppose strongly routine syringing of all parturient women, and the routine dropping into a newly-born child's eyes of any germicide whatever. But where there is vaginitis, and especially when that is gonorrhoeal, as is usually the case, then I advocate very thorough douching of the vagina before labour with black-wash or some similar germicidal solution, and a thorough system of syringing or packing after parturition. I will deal with the question of the child's eyes later.

The discharges from cancer of the cervix may be very foul, but if there is a yellow, green, red, or watery discharge, especially an offensive watery discharge, things are not as they should be, and it is best to submit the case to medical treatment before labour begins if possible.

As the finger passes along the vagina, any narrowing at any portion of that tube will be noticed and any abnormality of the pelvis, particularly any tumours in Douglas's pouch or in front or at sides. The chief object will be to note the condition of the os uteri, the cervix uteri, the membranes, and the presentation.

These four things are so important that they should be dealt with separately and the fullest information possible given.

1. The Os Uteri.

The midwife should be reminded that there are two ora, or mouths, of the womb, one called the os externum and the other the os internum. The former is the one she feels with the finger, and it is very important to note its condition. Towards the end of pregnancy it is often patulous though not patent, that is, it is easy to pass the finger through it, although it does not stand open. In other words, the lips of the os are soft and easily dilatable.

In the early stage of labour the os uteri does stand open and it may be the size of a threepenny piece, and if the woman has a pain whilst being examined the tight membranes within the os can be felt; if felt, then labour is progressing, and it is known that the membranes are unruptured, which are two very important facts. If the os is larger still, say the size of half a crown, the membranes are felt quite easily both during and in between the pains. And when the os is fully dilated, say the size of a five-shilling piece or bigger, the membranes bulge during a pain so as to form a protrusion which is convex, something like the larger end of a hen's egg, and which is as tight as a drum during the height of the pain. If this protrusion be more elongated and more like the lower part of a sausage, there may be some abnormality, such as a transverse, brow or face presentation. When no membrane at all can be felt, or a membrane which is quite flaccid and does not become tight during a pain, then suspect premature rupture of the amnion. This would be confirmed by a watery discharge.

The condition of the margin of the os uteri should be noted. If it becomes thinner and tight as the bag of waters becomes tense, probably it is healthy; if it is thickened, enlarged, or nodular and unyielding, and particularly if it bleeds when touched, there is probably some disease such as cancer present, and as this is a serious complication of labour, medical help must be summoned at once.

In feeling the membranes midwives should be very gentle and take every care not to rupture them, as premature rupture is dangerous to both mother and child, especially to the latter.

2. The Cervix Uteri.

At the end of pregnancy the cervix uteri is very soft and apparently, but not really, shortened. Its softness may best be compared with that of the lips. In the non-pregnant state it is as hard as the nose. The softness extends throughout the cervix and the lower third of the body of the uterus. As labour advances the cervical canal is gradually opened by the amnion from above downwards. Between the pains the finger can be passed along the cervical canal to find out whether it is expanded or not. If the finger can reach beyond the internal os the cavity will be found to sweep away from the margin; but as labour goes on this margin gets lower and lower, until before the end of the first stage of labour the os externum becomes the margin and the finger finds the cavity sweeps away at once all round this expanded ring. The cervical cavity is now completely opened up, and the os externum is the narrowest part of the uterine cavity.

During the examination of the cervix any growth or scar which may interfere with the normal expansion should be noted.

3. The Membranes.

The chief membrane is called the amnion and is a strong fibrous structure lined with epithelium. It is developed from the ovum. It is covered externally by the chorion, which, however, is atrophied into an unimportant thin structure where it covers the presenting part. Occasionally it persists as a membrane sufficiently strong to retain fluid secreted between it and the amnion, and hence when it ruptures and allows this fluid to escape it is easy to make the mistake of supposing the liquor amnii is escaping. When this not very common abnormality occurs, it will be found later on that the membranes still get tight during a pain, and so the first stage is not yet finished.

When the finger can be passed sufficiently far to feel the presenting part and the membranes do not become tight during a pain, it is, as a rule, because they are ruptured. I say "as a rule" because sometimes the presenting part acts like a ball valve and shuts off the bulk of the liquor amnii above, leaving a small quantity below which does not receive the increased pressure caused by the pain, and hence the membranes below the presenting part are not made tense. It is extremely important to discover premature rupture of the membranes. As a rule the rupture takes place at the lowest part, and so the finger can be passed through the rent and feel the presenting part of the child. At other times, but much less frequently, the rupture is further up inside the uterus, and so there is slack membrane between the finger and the presenting part. If there is liquor amnii draining away and the membranes never tighten during a pain, then it can be assumed that the membranes are ruptured, even though there is membrane over the presenting part. Of course where the presenting part can be felt uncovered by membrane then the latter is ruptured.

Under all conditions where it is known or even suspected that the membranes are ruptured before the completion of the first stage of labour, by which I mean the complete dilatation of the cervical canal, including the os externum, the midwife should send for medical assistance immediately, because not only is premature rupture of the membranes a great danger to the life of the child, and some danger to that of the mother, but it is one of those accidents that can be remedied to a large extent by promptly replacing the natural bag of waters by an artificial one, such as Champetier de Ribes's bag. No doubt many such cases end happily for both mother and child even when no help is given, but in numerous instances the child dies through the draining away of the liquor amnii. The question of help must be left to the doctor's judgement, and no doubt he will be guided by the progress of the labour—namely, always to put in an artificial water dilator when the os is small, and to leave the case to Nature only when it is large and the pains are good and progress is being made.

4. The Presenting Part.

The only normal presentation is that of the vertex of the child. The most frequent position is for the occiput to be in front and to the left (first position), but it need not be considered abnormal if the occiput is to the right in front (second position) or to the right behind (third position), or to the left and behind (fourth position). Each of these presentations end naturally in the majority of cases by the occiput rotating under the pubic arch as the head descends. It is a most excellent sign when the skin of the presenting part is felt to be thrown into folds; when it is tight over the skull there is often some obstruction. In the earliest stage of labour the anterior fontanelle is sometimes to be felt, especially in occipito-posterior cases, but as the head descends it becomes more

and more flexed, and so the anterior fontanelle ought not to be felt in the area of presentation. The posterior fontanelle is within this area, but is not easily made out, being obscured largely by the caput succedaneum.

A breech presentation is abnormal, but, owing to the shape which the child assumes in its attitude of flexion of all its parts, it can be delivered breech first. But the mortality in breech first cases is much greater than that of head first cases, because the cord is apt to get compressed between the head and some part of the parturient canal. If traction be made on the child, the head becomes extended, instead of remaining in a state of flexion, and the arms become extended above the head. If no traction be made, then the child may die, owing to the pressure on the cord, as already mentioned. If the circulation through the cord be completely stopped for three consecutive minutes, the child dies. Fortunately the compression does not, as a rule, last for three consecutive minutes. It lasts a shorter time than this, and, the pressure being removed, the circulation is re-established, and so the child lives. Nevertheless, the midwife should call in medical assistance in every breech case as soon as it is discovered.

Again, face presentations are abnormal, and yet most of them are delivered without assistance, and the proper treatment is to leave them alone. Still, they may require help, because it is essential that the chin should rotate forwards under the arch of the pubes for delivery to take place. This rotation forwards does not take place as a rule until the head is well down in the pelvis, and as help may be required, the midwife should call in a doctor as soon as she finds it is a face case.

Transverse presentations are discovered by inspection, by palpation of the abdomen, by the sausage-like shape of the bag of waters, and by making out the presenting part by vaginal examination. Transverse presentations rarely end normally. It is true that occasionally spontaneous rectification, spontaneous version, spontaneous evolution, and spontaneous delivery occur.

But the midwife should never wait for such terminations. As soon as a transverse presentation is recognized by feeling the hand or shoulder, as well as by the signs already indicated—and the sooner it is found out the better—the midwife must send at once for help, and say it is urgent. The doctor must decide whether to convert it into a head, a breech, a footling, or whether to decapitate, and his decision will depend on the mobility of the child *in utero*. Where it is very good he may do a cephalic version and bring the head down; where not so good he can convert it into a breech, or bring a foot down; and, where it is practically *nil* owing to tonic contraction of the uterus caused by all the liquor amnii having drained away, he will not attempt version at all for fear of rupturing the uterus, but will decapitate the child, which, under such circumstances, is already dead.

If the umbilical cord can be felt through the unruptured membranes, it is called prolapse of the cord. It it comes through the rent after the membranes are ruptured, it is called presentation of the cord. In either, the midwife should be instructed to send for a doctor at once; the midwife should notice if there be any pulsation in the cord when she first feels it, and whether the pulsations are slow or quick. Other malpresentations, such as hand with head, one foot and one hand, hands and feet, foot with head, etc., all require skilled medical assistance.

Sometimes a soft substance can be felt presenting, and if it breaks away easily it is probably clot, which can be seen by pulling it out with the finger. If it is not easily friable, it is probably placenta praevia, and in that case there will be bleeding, and medical assistance must be immediately summoned by the midwife.

There are other forms of abnormal presentation which are comparatively rare. These are "arm with head," "foot with head," "hands and feet." Also there are puzzling presentations afterwards found to have been due to some fetal monstrosity, such as anencephalus, conjoined twins, encephalocele, extroversion of viscera, spina bifida, abdominal enlargement from any cause.

Bleeding.

Allusion has been already made to accidental and unavoidable haemorrhage. During the first and second stages of labour there ought not to be much bleeding. There is a little blood in the show at the onset of labour, and there may be a little bleeding from small vessels as the cervical canal gets opened up, but it should not amount to more than a few drachms. If it is more than this, and particularly if there are gushes of blood, the midwife must send for help.

Meconium in the liquor amnii, when the waters are green in colour, means, as a rule, that the child is dead. But it may not be quite dead, and it is important that it should be speedily delivered if it is to have a chance. Therefore, when the liquor amnii is green, the doctor should be sent for.

In breech cases, relaxation of the sphincter ani of the child, with escape of meconium, is a grave sign, meaning death of the child, or its near approach.

The Pulse.

One of the earliest things the midwife should do on being called to a woman in labour is to feel the pulse. In the first stage it ought not to be more than 80 to 90, in the second stage 90 to 100, and in the third stage again 80 to 90. A pulse of 80 to begin with, rising to 120 at any stage, means danger often very grave. In some women the pulse is normally very frequent. In some it is easily made frequent without its meaning anything serious. But it should never be treated lightly; when it remains strong, full and below 90, the midwife can assume that there is no excessive bleeding inside or out. The pulse becomes slow during the first part of the puerperium.

Temperature.

The temperature should always be taken with a thermometer, even though the midwife may think the patient feels cool and the skin is moist; it is much better to make sure by means of a reliable instrument. In normal labour the temperature is normal throughout. In abnormal labour it may rise, but it may be high owing to some condition which has nothing to do with the parturition. For instance, a woman might have influenza, or she might be in the incubating stage of some fever whilst labour is in progress. The taking of the temperature at once when the midwife first sees the case may be of great value in diagnosis and treatment later on.

When the child is born the midwife should look to see if there is any undue haemorrhage. In ordinary labours there is always a certain amount of bleeding. It is impossible to say how much is natural or physiological and how much is unnatural or pathological, because women differ so widely in this respect. But a few ounces of blood, say three or four, coming away immediately after the child would not be excessive. After this there is a trickle of blood over the woman's left thigh. But although one cannot state precisely the amount of blood a woman ought to lose in normal labour, still there is always a most excellent guide in the pulse. If the pulse is over 100 and rising, it may be concluded that the bleeding is excessive. The visible haemorrhage may not appear more than usual, but probably the uterus and vagina are filling with blood. Hence if there is excessive visible haemorrhage, or if without this the pulse rises, the midwife must act at once by grasping and kneading the uterus, and if this does not stop it, express the placenta. The midwife must of course send some one for a doctor at once, but haemorrhage is too serious and urgent a thing to permit delay. Hence, whilst the doctor is being fetched, the midwife must do the best she can, and if unable to express the placenta and the bleeding is excessive, she must pass her hand, after careful sterilization, into the uterine cavity as far as is needed in order to complete the separation of the placenta, for it is partial separation of this body which in the majority of cases causes the bleeding. When it is completely detached she can easily express it from above with the external hand, which is much better than drawing it out with the internal hand. As a rule this stops the bleeding. If it still continues and the doctor has not arrived, the midwife should inject 4 or 5 pints of very hot water, say 120° F., into the cavity of the uterus.

Whilst the doctor is being fetched the midwife can also give ergot. Some medical practitioners still give ergot as soon as the placenta is born as a routine measure, with the idea that it prevents *post-partum* haemorrhage. It is, however, quite unnecessary, and the midwife need never give it except in cases of haemorrhage, which in these days are happily rare. It might be justifiable to give it even before haemorrhage

sets in in certain women who are known to be bleeders, but midwives should be advised to let a doctor attend such women.

If there is no bleeding at all after the birth of the child, suspect an adherent placenta. If the midwife leaves the third stage of labour to Nature and the placenta is adherent all over its surface, so that there is no bleeding, there is no danger. But she must be on the *qui vive* and she must feel the pulse often; if it remains slow all is well. Should the placenta not be delivered within the hour, and particularly if the patient has had pains, and if the midwife cannot then express it, the reason will probably be that it is pathologically adherent, and a doctor must be summoned.

DELAY IN THE THREE STAGES OF LABOUR.

First Stage.

So long as the membranes are unruptured there is little or no danger in delay during this stage; because the child is receiving all it requires from the mother and the uterus is unable to contract down upon the child, which is protected by the liquor amnii. The duration of the first stage varies widely. It is naturally longer in a primipara than in a multipara. Roughly speaking, anything within twenty-four hours would be normal in a primipara and within twelve hours in a multipara. But I have known the first stage last a fortnight without any ill result. It is most trying to the patient, to the relatives, and to the friends, so that frequently pressure is brought to bear upon the attendant that something should be done. As a rule, the pains are neither frequent nor strong when there is delay. In other words, primary inertia of the uterus is the most frequent cause. If the woman is quite well, with a normal pulse and temperature, there is no necessity to hurry matters. But if she is getting restless and irritable, or if the pulse or temperature rises, the midwife must call in medical assistance. Mention has already been made of premature rupture of the membranes, and therefore particular attention must be paid to the evidences of this. The woman may tell you that the waters are coming away. On examination it is found that it is only urine. If there is a watery discharge and the midwife is not sure if it be liquor amnii, she must make an examination to find out if the membranes get tight during a pain.

The delay in the completion of the first stage may be due to rigidity of the cervix, and this may be from spasmodic action of its muscular fibres, or from some organic cause, such as scar tissue, new growths, cancer, fibroids. It takes longer to complete the first stage when the presentation is abnormal. An elongated cervix takes longer to dilate. If the part of the cervix which can be felt in the vagina be elongated, it is, as a rule, a congenital condition. Elongation of that part of the cervix which is above the vagina and which cannot be felt in the vagina is the effect of prolapse, more especially of that degree of prolapse where the cervix uteri protrudes through the vaginal orifice. These cases may require medical help in the way of artificial dilatation. In some instances after complete dilatation the membranes remain unruptured. Speaking generally, the membranes ought never to be ruptured artificially in normal cases before complete dilatation has been effected. But as soon as this is accomplished, the sooner they are ruptured the better. Instances are on record where a child has been born with the membranes intact, and in such cases, if the placenta gets separated from its attachment to the wall of the uterus, the child speedily dies unless it be let out from its watery prison. Less rarely the membranes can be felt unruptured, bulging nearly to, or even beyond, the vaginal orifice.

Second Stage.

Delay in this stage is much more dangerous; because now the head of the child descends into the pelvis, and the cervical canal and the vagina are enormously distended, whilst the surrounding parts are greatly compressed. Like the first stage, the second stage varies considerably in different cases, but in a primapara it ought not to last longer than two to three hours, and in a multipara not longer than one to two hours. As in the first stage, the commonest cause of delay is feeble pains or primary inertia, and this may or may not be accompanied by general weakness or exhaustion on the part of the mother. The midwife should observe whether the woman be strong and robust or the reverse. In the latter case medical help may be required, though it is often astonishing how strong the uterine pains are in a woman who is excessively weak physically. Involuntary muscular fibres are not necessarily weak when the voluntary fibres are. Sometimes the pains are frequent and strong, and yet there is little or no advance. This may be due to a big child, or to the head being large as in hydrocephalus, to a contracted pelvis, to a persistent occipito-posterior presentation, or to some other cause for which medical help is required.

The midwife will be able, perhaps, to find out the cause of the delay, but it is of more importance that she should detect that there is delay. This is evidenced not merely by time, but by the pains having little or no effect in expelling the child, and by the patient becoming restless and the pulse rising in frequency. Her aspect becomes more distressed; vomiting may set in, and the temperature may rise. If the pains are feeble, naturally the child does not descend much, if at all; and yet the liquor amnii is draining away, and so medical help should be given. If the pains are strong and there is little or no descent, there is a reason for this, and again medical help is required. The pains, after being strong, may cease altogether from exhaustion of the uterus. This is called secondary inertia, and is a very dangerous condition. Sometimes, when the head is bulging the perineum, each pain causes a considerable bulge, but in between the pains the head recedes to the position it was in before. In such cases suspect that the cord is round the neck. Medical help is required at once in order to save the child. When the pains are infrequent, or feeble, or ineffective, this can sometimes be remedied by emptying the bladder with a catheter.

It is difficult to give a rule which would be applicable to every case, but if the midwife sends for help if the second stage is not over in three to four hours in the case of a primipara, or in two to three hours in that of a multipara, she will do well. If there should be a quick pulse in addition, the midwife should send sooner.

A pain accompanied by a shriek, and followed by collapse with a thready pulse, indicates rupture of the uterus, and the midwife must at once send for the doctor. If she examines, she will find that the presenting part has receded considerably, or may have disappeared altogether or it is easily pushed back. Sometimes the pain which expels the child also ruptures the uterus. I have known several cases of this where the rupture was not discovered, with the result that the intestines protruded through the rent into the vagina; but it is very rare for a rupture to take place without a great and often profound effect upon the pulse, which becomes thready or imperceptible. The patient, too, is often blanched, the pallor being due partly to collapse and partly to haemorrhage. Therefore, it is very important for the midwife to note the condition of the pulse and the appearance of the patient. She should always send at once for a doctor when she notices these effects, which are not at all normal, whether they be due to rupture or not.

Third Stage.

Delay in this stage is, again, most frequently caused by uterine inertia. This is practically always secondary—that is, the uterus is tired after hard work. It is of the very highest importance that the midwife should know when to let the patient alone and when to help or to send for help. Therefore, the midwife must remember that when all is well there is no excessive visible haemorrhage, the pulse is below 100, often only 80 or between 80 and 90, and in every case less than it was before the end of the second stage, the patient is not excessively pale, she lies still and feels very comfortable. On the other hand, if there is excessive visible haemorrhage, if the pulse rises above 100, if the patient is pale, restless or in pain, there is something wrong, which requires speedy medical help, and the midwife must set to work to obtain uterine contraction and expulsion or extraction of the placenta, and the arrest of haemorrhage whilst a doctor is being fetched.

If the patient is all right, the midwife may wait an hour for the placenta. Probably in anything from a few minutes to thirty or forty minutes the mother will begin to have pains, and the placenta will be expelled. But if it be not expelled in an hour it may be considered abnormal. Where there is no bleeding at all, it is because the placenta is adherent all over its attached surface. In

other cases its retention within the uterus is due to so-called hourglass contraction. When due to inertia, stimulation by rubbing and kneading the uterus is all that is required, though this should never be done until after giving the uterus a good rest, unless there be haemorrhage. A woman's life may be so dependent upon skilled and speedy medical help in this stage that I would strongly advise you to instruct midwives to send for a doctor whenever they detect any danger, even if at times it should prove to be a false alarm.

The Perineum.

The midwife should always examine to find out how far the perineum is torn. In a primipara it is quite the usual thing, and may be looked upon as normal, to find the posterior fourchette and the anterior portion of the perineum torn. No treatment is required. In multiparae there may be no fresh tear or there may be a little tear of the anterior part of the perineum, again requiring no treatment. When, however, either in a primipara or a multipara the tear is severe, going right into or through the sphincter ani, the midwife should summon a medical man in order that suitable stitches may be put in at once. Sometimes the perineum is severely damaged, although to all appearances the outside skin appears all right. It is necessary to feel with the finger (rendered aseptic) just within the vagina in order to detect this form of rupture.

The Child.

As a rule the child makes an inspiratory effort as soon as it is born. This is due chiefly to the stimulus to the respiratory centre in the medulla oblongata caused by the want of oxygen in the blood, and to the exposure of the skin to the air, the comparative coldness of which acts upon the sensory nerves. The very first expiratory effort may be a cry, and in most cases the child will after a few breaths set up a cry. This has a most beneficial effect upon the mother. She knows it is alive. She knows that she has brought a living human being into the world, and it has often seemed to me that this first cry of her child has brought a divine light into the mother's eyes. The movements of the child's limbs are also felt by the mother as the child lies against her thigh, and they produce a thrill of pleasure in her. The child's cry and the perception of its movements have a beneficial physiological effect, promoting uterine contractions. When there is no cry and no movement, as when the child is stillborn, there is greater risk of *post-partum* haemorrhage. Many doctors to avoid this extra risk will not let the mother know for some time that the child is dead. But she is often very suspicious when the child is silent and motionless. At all events, when the child is born all the midwife need do is to see that it lies in such a position that it can breathe. In most cases it breathes and cries and moves, and it can be left just where it lies against the mother's thigh for about five minutes. This gives the child several ounces more blood than if the cord is tied immediately.

After five minutes the cord should be tied and the child removed. If the child makes no effort to breathe when it is born, it may be due to asphyxia. There are two forms of asphyxia, sometimes popularly called blue or white.

Blue asphyxia is when the child is cyanosed, that is, it is bluish in colour all over, the lips being nearly black. Such a condition nearly always ends favourably. The blueness is caused by the circulation in the cord having been retarded or stopped before the termination of the second stage of labour. Hence, the supply of oxygen being cut off, the child's blood becomes venous. But this want of oxygen causes the child to make inspiratory efforts, and sometimes mucus and blood, and watery fluids, are sucked into the lungs. On this account it is a good thing always to wipe away anything that may be in the mouth, and also in a few cases to suspend the child upside down in order that some, at all events, of the inspired fluids may run out.

Very likely as soon as the child is born the pressure on the cord which causes the obstruction is removed, and so the child begins to receive oxygen again through the placenta. Feel the cord at once and see if there be any pulsation. At first there may be a very slow pulsation, and if that begins to get quicker, there need be no fear even though the child has made no effort at breathing.

After a time the child will make an inspiratory effort, and it is very important that there should be absolutely no hindrance to this, and that nothing but air shall be sucked in. Besides feeling the pulsations in the cord, the beatings of the heart under the left breast can often be seen, and sometimes these beatings can be seen when no pulse can be felt in the cord.

When there is no effort at inspiration for two or three minutes, even though the heart is beating and the cord pulsating, especially when the pulsations begin to get slower, the cord should be tied at once and the child separated. The child must be made to breathe by artificial respiration, by dipping it alternately into hot and cold water, or by smacking the skin. Some advocate cutting the cord and allowing a little blood to escape so as to relieve the over-distended heart.

Fortunately in most cases of blue asphyxia the child ultimately breathes, and it is marvellous the way in which the blueness gives way to the rosy pink of arterial oxygenized blood.

In the white or pale variety of asphyxia the chances of the child are practically *nil*. There is no pulsation in the cord and no beating of the heart. The child is dead already. The least flicker of a pulse or a heart beat may give hope, and, in any case, all measures must be tried to stimulate the child to breathe. In most of these pale cases failure occurs, because the child is beyond hope before it was born.

The Child's Eyes.

In nearly all cases it is not necessary for anything to be done to the eyes. When the cord has been tied and the child separated, wrap it up in a warm covering, such as a blanket, and place it in a warm place and in such a position that nothing will get over the mouth and prevent the free ingress and egress of air. Later on, when the child is washed, extreme care must be taken that nothing gets between the eyelids and into the eye that might be injurious. The eyelids must be wiped carefully with some aseptic material, such as sterilized gauze. There is no objection to wiping them with swabs of cotton-wool wrung out in warm boric acid lotion or salt and water, ʒij ad Oj. But no germicide, such as perchloride of mercury solution or nitrate of silver lotion, should be dropped into the child's eyes as a matter of routine. I know this has been taught and that there are good authorities to support it, with the idea of preventing inflammation or ophthalmia neonatorum. I wish to say, however, that it is a bad practice, for in the first place the child's eyes are perfectly healthy and require no such treatment in more than nine cases out of ten, and, what is more, if the eyes have already become contaminated by some virulent poison, such as gonorrhoea, the routine method advocated will not save them from ophthalmia. What should be done is to find out if the mother has any yellow or green discharge from the vagina, or if she has had such a discharge recently, whether her water scalds her, whether the skin about the vulva and neighbouring parts of the thighs is reddened, particularly whether any pus can be squeezed from the urethra. If none of these things are found, then it is to be assumed that the mother is healthy and the child's eyes are to be left alone accordingly. But if there is gonorrhoea, or a vaginitis, or a purulent discharge, or a well-grounded suspicion of these things, then a very active treatment to try and save the child from ophthalmia must be adopted.

Under such circumstances, as soon as possible drop one drop of a 2 per cent. solution of silver nitrate into each eye, carefully wiping away all secretion from about the eyelids, eyelashes, and corners of the eye. A good plan is to wash away the secretions thoroughly by a stream of warm salt and water (ʒij ad Oj). The silver nitrate solution should be dropped into each eye every eight hours at least. I believe that this is a more effective agent than a solution of mercury perchloride, of which several drops, 5 or 6, of a strength of 1 in 4,000, are dropped into each eye, and repeated two or three times a day.

Some authorities believe in using both these germicidal solutions, using the silver nitrate and the mercury perchloride alternately. At all events, let me emphasize this, that where there is gonorrhoea in the mother, a single application of a germicidal solution used as a routine measure will not prevent ophthalmia; indeed, the active treatment above described will not assuredly prevent it, but it is at all events very much more likely to succeed.

Examine the child all over to see if it is normally developed: look for cleft palate, hare-lip, supernumerary or deficient fingers or toes, imperforate anus, defects about the genitals, naevi, etc. If no urine or no meconium comes away within twenty-four hours the midwife must call in a doctor.

The midwife should note position and size of the caput succedaneum, and any effusion of blood under the scalp (haematoma), or any protrusion of cranial contents (encephalocele), or any tumours along the spine (spina bifida).

THE PUERPERIUM.

The calm which follows normal labour is very grateful to the mother. As a rule she lies quiet, and very often goes to sleep; and this should be encouraged. When she wakes up her pulse will be slow and full, and very often it is only 70 or from that to 80. The temperature is normal, and the lochia are free and red in colour. If the pulse begins to increase in frequency, if the temperature begins to rise, or if the lochia begin to be offensive or to get scanty or profuse, the midwife should call in a doctor.

The third day of the puerperium is the one which all accoucheurs are glad to see pass without trouble, for the incubation of the poison which causes the most dreaded form of puerperal septicaemia takes two to three days. Hence a shivering fit or rigor on the third day is an event of evil omen, and the midwife should send at once for a doctor. Possibly the rigor may be due to cold, or some less fatal cause than puerperal septicaemia. The midwife should not hesitate, but send at once for a doctor, and in the meantime take the patient's pulse and temperature, both of which will in most cases be considerably raised.

Again, if the lochia become excessive, if the patient begins to pass large clots or to bleed, there is a case of secondary haemorrhage to deal with, and a doctor must be sent for. A piece of placenta or an extra bit of placenta (placenta succenturiata) may be in the uterus.

If the patient says that she can feel something coming out, a careful examination must be made with all necessary care regarding asepsis, and if anything abnormal is found, the midwife should send for a doctor. The case, for instance, might be one of those rare instances of inverted uterus, which should always be diagnosed early in order that it may be restored.

Inability to pass urine—or, at all events, to empty the bladder—is not uncommon after labour. When it cannot be passed at all, a catheter must be used until the patient can do without it. But trouble is more likely to occur when the patient passes some urine, but not all. The midwife frequently in such cases makes a mistake in thinking that there is no retention. She fails to discover that the amount passed is not sufficient, and hence the bladder gets more and more distended. I have been called in to more than one such case where the patient has had a rigor, and where, owing to her anxious countenance and distended abdomen, the doctor had thought he was dealing with puerperal fever. After drawing off six or eight pints of urine such patients are immediately relieved. The doctor is apt to blame the attendant for telling him that the patient was passing her water all right. The midwife will do well, therefore, to tell the doctor, when he asks her, that, so far as she can judge, the patient is passing urine in sufficient quantity. It is the duty of the medical man to discover if the bladder is distended, and, if he is wise, he will pass a catheter in order to make sure. If the midwife has already done this, she should inform him of the fact.

Lactation.

Probably it will be known if the breasts are normal. The nipples may be retracted or sore. The milk may be poor or scanty. It will be soon detected whether it is secreted in normal quantity, and whether it agrees with the child, and the midwife will, of course, call in a doctor whenever the quantity or quality is abnormal. The first secretion, or colostrum, acts as a purge to the child, though as a rule the meconium, or first motion of the child, comes away before it has had any milk.

Severe pain in the calf of the leg, or in the popliteal space, or in Scarpa's triangle, coming on during the third week after labour, often means the onset of white leg or phlegmasia dolens. The midwife must observe closely to see if the limb begins to swell. It is hardly necessary to say that midwives must be instructed to call in a doctor to such cases, and also to any case in which the patient shows alarming symptoms such as are caused by embolism and by thrombosis. Happily, sudden death from such causes is rare. There is time to get medical aid in the great majority of such cases.

Fetal Movements.

The movements of the fetus are generally perceived by the mother, and in the first stage especially they can be felt through the abdominal wall. One of the stages of asphyxia is convulsions, and therefore it is generally a bad sign when the fetal movements become very violent and then cease altogether. In breech cases with the child partly born this convulsive stage of asphyxia can sometimes be seen, and unless speedy delivery be effected the moribund child will soon pass beyond recovery. If the cord can be reached high up in the pelvis and moved to one or other side of the sacral promontory, it may possibly release the compressed portion and so permit the circulation to go on, thus supplying the child with oxygen through the blood. Whilst the midwife is doing this a doctor must be sent for. The fetal blood gets oxygen from the mother's blood in the placenta, and whenever this supply is cut off the child makes an attempt to breathe. In the second stage of labour the fetal movements are not so easily felt by the mother, or so easily palpable. This is because the liquor amnii has partially escaped, because the uterine walls are thicker from retraction, and because there is less room for the movements.

Fetal Heart.

This is heard better during the second than during the first stage. But it is not often necessary to try and hear it. Still, if it be suspected that the child is already dead, and no fetal movements can be felt, listen below and to the left of the umbilicus, and if not heard there, then below and to the right of the navel. If heard (and care must be taken not to confuse the sound with the beating of the observer's own arteries), then the fetal heart should be counted during and between the pains. Rapidity of the fetal pulse is, as a rule, much less grave than abnormal slowness of the pulse. If it is impossible to hear a fetal heart at all, it by no means follows that the child is dead.

Of course, if the cord can be reached, the presence or absence of pulsations in that gives just the same information in regard to the fetal heart, and there is, moreover, much less liability to mistake. If there is no pulsation at all in the cord the child is dead.

Precipitate Labour.

Rapid expulsion of the child may be due to very strong and abnormally frequent uterine contractions, or to diminution in the resistance to descent in the parturient canal, or to both these causes combined.

As a rule, no harm is done. But the birth of the child coming so unexpectedly may occur whilst the patient is walking about the room, or during micturition or defaecation. The child may be injured by a fall, the cord may be torn across partially or completely, and may require immediate attention. There would be in such a case more likelihood of haemorrhage from a partial tearing away of the placenta from its site. The perineum may be badly torn and require stitching. Laceration of the vaginal wall or of the cervix uteri may be caused, but serious rupture of the uterus is not common in precipitate labour.

When the contractions are very strong and painful and come in quick succession, the mother is sometimes frenzied and may try to do herself or the child harm. Hence, when a woman has a history of precipitate labours in the past, or where it is suspected that she is going to have one, a doctor's aid should be called in.

Obstructed Labour: Tonic Uterine Contraction: Ring of Bandl.

Where there is some obstruction to the descent of the child during the second stage of labour, as, for example, where there is disproportion between the child and the canal, as in a large child or a small pelvis, or where there is a transverse presentation, the uterus may contract well and powerfully, and yet be unable to expel the child. Under such circumstances, unless timely help is given, the liquor amnii is gradually expelled or drains away, until the uterine walls come into close contact with the child. Moreover, they are then frequently in a state of

rigidity which is known as tonic uterine contraction. Such a condition is very serious, and if called to a case the midwife can readily discover it by the condition of the patient, whose pulse will be quick, face anxious, tongue dry, temperature probably raised, uterus continuously hard, and at its lower third there will be felt a groove running transversely. This groove corresponds with a ridge on the inner side, and it is known as the ring of Bandl. Most authoriries believe that this ring marks the division between the contracting expelling fibres above and the relaxing passive fibres below. Be that as it may, whenever felt it shows that there is a case of obstructed labour. Of course the midwife ought never to let a woman get into this condition, because she ought to recognize long before that the case will develop into tonic contraction unless medical help is given. The midwife may not be sent for until it has arisen, but the moment she diagnoses the condition a doctor must be called.

Locked Twins.

Sometimes when a child is born breech first no progress is made after the lower extremities and a portion of the body have passed the vaginal outlet. This may be due to extension of the head and of the arms above the head, a condition which requires medical help. But it may be due to locking of twins, the head of the second child entering the pelvis before the head of the one already partially born. A careful vaginal examination under strict asepsis ought to enable this condition to be detected.

REFERENCE.
1 BRITISH MEDICAL JOURNAL, March 10th, 1906.

ACUTE STREPTOCOCCAL SEPTICAEMIA OCCURRING AT THE MENSTRUAL PERIOD.

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THE *post-mortem* examination on the following case was made at the request of Professor Greenfield, and is of some interest in helping to clear up the diagnosis of an otherwise somewhat obscure and difficult case.

HISTORY.

The patient was a school girl, aged 16, under the care of the late Dr. Sym, who kindly supplied me with the following synopsis of the clinical history. She was born and brought up in British Guiana, and had come to Edinburgh for her education. There was an indefinite history of some old rheumatic condition; she had never suffered from malaria, and the only other point of importance in the previous history was the occurrence of a discharge from the ears in childhood.

Her illness commenced on October 23rd, 1904, as a slight tonsillitis and sore throat, the temperature being at that time 99° F. The patient was menstruating, her appetite was completely gone, but, except for the sore throat, she did not complain of any pain. Next day severe diarrhoea and some vomiting supervened, and the temperature went up to 102° F. The heart's action was rapid and irregular, and there was a systolic murmur present at the apex. A tense, diffuse swelling was found in the region of the left parotid, extending half way down the neck, and very tender on pressure. The temperature remained up, and the patient gradually got worse, and died on the evening of October 27th, 1904, the provisional diagnosis being acute septicaemia arising from the local inflammatory condition in the region of the left parotid gland.

NECROPSY.

The *post mortem* examination was performed early on the following morning.

The body was that of a somewhat slightly built and rather emaciated girl. It was still warm; *post-mortem* rigidity was well marked in the limbs and in the muscles of the jaw, but absent in those of the neck; there was well marked *post-mortem* lividity of the back, together with some slight mottling over the front of the limbs and trunk. The subcutaneous veins were very distinctly outlined, suggesting some septic condition, and there were scattered here and there over the body several bruise-like marks ranging from about the size of a shilling to that of a penny in diameter, evidently *ante mortem* haemorrhages; there were also a few smaller and brighter subcutaneous haemorrhages, 1 to 2 mm. in diameter, over the limbs, and a large subconjunctival haemorrhage with its base towards the cornea in the right eye.

In the region of the left parotid, beneath the pinna and behind the angle of the jaw, there was a firm, tense, non-fluctuating swelling, somewhat diffuse, and passing half way down the neck, and also slightly over the ramus of the lower jaw on to the face. The cervical glands were distinctly enlarged all the way down to the clavicle. On incising the swelling it was found to consist for the most part of hard, firm parotid gland tissue, pale white in colour, and with no sign of softening or suppuration. Around the gland there was considerable inflammatory oedema and matting of the tissues, in which were embedded numerous enlarged lymphatic glands, some dark red and soft on section, others white and firm, and others, again, showing a mixture of both conditions. These were specially marked just behind the angle of the jaw, and were in close connexion with the left tonsil, which was slightly enlarged and congested, the crypts being very well marked but not containing any purulent material; there was no abscess formation. The right tonsil was also slightly enlarged, and on section showed a greenish-grey colour, with some softening, the neighbouring lymphatic glands being somewhat enlarged. There was no ulceration of the tonsils, fauces, or pharynx.

Thorax.—There were no pleural adhesions or pleurisy. The lungs showed very acute congestion and oedema of their lower lobes, and the bronchi were acutely congested. There was no pneumonic consolidation nor any sign of tuberculosis, and there were several small recent pulmonary infarctions. The pericardium contained 2 oz. of clear straw-coloured fluid, but there was no pericarditis nor petechial haemorrhages. The heart was very small and flabby, and showed marked diffuse red staining of the endocardium of all its cavities, and of the aortic and pulmonary valves, which otherwise showed no special changes. The tricuspid, in addition to the red staining, presented some oedematous swelling of the free margins of the cusps; and the mitral showed similar changes, together with some irregular thickening of its attached margins.

Abdomen.—The peritoneal cavity contained no fluid, and there was no peritonitis present. The liver showed intense cloudy swelling together with considerable fatty change. The spleen was much enlarged, and very soft, a condition of acute congestion. The kidneys also showed intense cloudy swelling. The stomach was considerably distended with gas, and contained a small amount of black, blood-stained mucus; over the entire mucous membrane there being scattered innumerable bright red petechial haemorrhages closely crowded together. There was no ulceration, and the pylorus was somewhat firmly contracted. The duodenum and upper part of the jejunum were extremely congested, and showed great oedema of the mucous membrane, especially over the valvulae conniventes, and the solitary lymphoid follicles were somewhat swollen. The caecum was very congested, and contained a considerable quantity of black altered blood, a condition which was also found in the ascending colon, the lymphatic glands in the neighbourhood of these being enlarged and congested. The mesenteric and retroperitoneal glands and the glands at the brim of the pelvis were also considerably larger than normal, and showed no signs of tuberculosis.

Pelvis.—The uterus was of normal size; it was very soft, and the os very patent, the interior containing a small, well-marked blood-cast, and the mucous membrane was intensely congested. The Fallopian tubes were longer than normal, and very red in colour. They were soft, and contained a quantity of light creamy red, thin, purulent material which distended them, especially towards their upper ends. The ovaries were very soft, and both contained numerous small cysts full of fluid. The bladder was contracted and empty, and its mucous membrane appeared to be normal.

Bone Marrow.—That of the ribs was absolutely fluid and presented the appearance of pale watery red blood; the marrow of the femur was like black currant jelly in colour and consistence, the tissue throughout the entire shaft being affected and suggesting the presence of intense and diffuse haemorrhages into it.

Cultures were made from:

1. Parotid gland.
2. Cervical glands.
3. Left tonsil.
4. Fallopian tubes (both).
5. Spleen.
6. Heart muscle
7. Bone marrow (femur).

In every case pure cultures of *B. coli* were obtained, except in the case of the bone marrow, from which a growth of streptococci was also got.

Microscopic Examination.

The parotid showed very intense cloudy swelling of the glandular cells, some catarrhal changes in the ducts, and considerable infiltration of the fibrous tissue, with mononuclear cells and a few polymorphonuclear cells, more especially around the ducts of the gland. The axillary glands were much congested, and showed considerable proliferation of the endothelial cells lining the sinuses, the cervical glands showing similar changes, with, in addition, a large amount of blood pigment in the actively phagocytic endothelial cells. The left tonsil was intensely congested, and contained areas of haemorrhage and necrosis, the latter being at parts crowded with Gram-negative

bacilli, apparently *B. coli*. The purulent material from the Fallopian tubes showed very numerous streptococci, mostly in pairs and short chains together with large numbers of desquamated epithelial cells and mononucleated leucocytes, there being almost no polymorphs present. Films made from the uterine mucous membrane showed numerous streptococci mixed with various bacilli. The spleen showed plugs of streptococci and *B. coli* in the small arteries, and the pulp was intensely congested, with numerous haemorrhages. Intense cloudy swelling was found in the liver, kidneys, and pancreas. The changes in the bone marrow were very interesting. Its naked-eye appearances have already been described. Sections of the rib marrow showed extraordinary congestion and large areas of haemorrhage, some quite recent, and others showing nothing but fine granular material with here and there the faint outlines of disintegrating red blood corpuscles, or a fine network of fibrin. There were crowds of streptococci both in the vessels and in the tissue, the fat cells being completely absorbed. Very few granular myelocytes and erythroblasts were seen, most of the cells found scattered among the red blood corpuscles closely resembling lymphocytes in appearance, though in all probability they were earlier cells of the leucocyte-forming series in which granules had not yet appeared, maturation of these cells being prevented by the intense action of the bacterial toxins present. No eosinophile cells could be found. In the marrow of the long bones similar changes were found. The fat was almost entirely absorbed, a sort of acute gelatinous degeneration resulting. Large areas of necrosis were found surrounding groups of streptococci, which were present both free in the tissues and plugging up the vessels. Throughout the whole marrow there were very numerous enlarged endothelial cells, some of them forming a sort of branching plasmodial network of very actively phagocytic cells filled with the remains of red corpuscles and blood pigment.

The case, therefore, appears to be one of acute streptococcal septicaemia, the presence of the *Bacillus coli* being probably a terminal phenomenon. Though the source of infection *may* have been the throat or intestine, I am inclined to think that the condition of the uterus and Fallopian tubes pointed rather to these organs being the origin of the bacterial invasion, and that the case may be regarded as one of "menstrual septicaemia," precisely analogous to puerperal septicaemia, and due to infection occurring in a somewhat delicate girl during the menstrual period.

The scarcity of polymorphonuclear cells in the various inflammatory lesions is interesting, and is accounted for by the degenerative changes in the bone marrow brought about by the extreme virulence of the streptococci causing the septicaemia. Another point of interest is the occurrence of swelling of the parotid gland, which was regarded clinically as being the cause of, rather than as one of the results of, the septicaemia, the latter view being in all probability the correct one.

A CONSIDERATION OF SOME OF THE FACTORS WHICH CONTRIBUTE TO SUCCESS IN ABDOMINAL OPERATIONS.*

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I HAVE been interested in abdominal and pelvic surgery for the past twelve years, and have been operating and assisting at operations during this time, and have also witnessed a great number of operations at home and abroad. As is but natural, I have formed certain opinions as the result of my observations as to the chief desiderata in abdominal surgery, and it is with some of these I propose to occupy a short space of your time to-night.

SELECTION OF CASES.

It is obvious that a surgeon who will only operate upon selected cases will, other things being equal, obtain better results than the man who operates upon each case as it comes. On this account it is difficult to compare operators one with another. One will accept risks which another will decline, and so mere statistics are of little value as a criterion of surgical merit. It is only by direct observation that a man's work can be judged.

Old people in my experience bear abdominal operations well, provided the duration of their performance is not too long. Cases of malignant disease stand in a class by themselves, and are always attended with greater risks. The mortality amongst them is proportionately much higher than in non-malignant cases. Operation upon them often has to be very free, involving all organs, glands, and tissues that have been actually or probably invaded by the cancer cells. The subjects of malignant disease are often debilitated, aged, septic, and broken down with pain and long suffering. They therefore need especial care.

PREPARATION.

Most patients previous to operation are in a state of nervous tension and impressionable mental condition. Therefore, every influence about them should be optimistic. Nurses should refrain from discussing similar or any operations with their patients. Too many nurses in my experience forget that, though speech is silver, silence is gold. As little as possible of the preparations for operation should be subjected to the view of the patient.

The question of the best anaesthetic to be employed is too large to be entered on here. If there is any suspicion of bronchial trouble I ask that chloroform may be used. That anaesthetic is generally to be preferred to which the anaesthetist is most accustomed. It is well to give the anaesthetist a free hand. The surgeon has his own hands sufficiently full without having to concern himself with the administration of the anaesthetic. It is important, however, to him that complete relaxation of the abdominal muscles should be maintained throughout.

Oral asepsis must previous to operation receive careful attention. Carious teeth and purulent gums are often productive of toxaemic symptoms, and parotitis and parotid abscess are not the least of the troubles that may be caused thereby. It may be necessary to requisition the services of the dentist, though patients often resent this with unusual vigour. At all events, the nurses cannot be too assiduous in their endeavours to keep the buccal cavity in a clean and healthy condition.

Before operation the skin area prepared by compresses is, according to my view, not always large enough. The course of operations, like that of true love, does not always run smooth. Emergencies arise, more handling of the patient becomes necessary than was anticipated; therefore let a large area be prepared. The same applies to the preparation of the skin when the patient is actually on the operating table. I generally cleanse with (1) ethereal soap, (2) methylated spirit, and finally 1 in 2,000 biniodide in spirit, using all three freely—groins, loins, lower ribs, and pubes being included.

Patients should not be kept too long in hospital before being operated upon. Their valour certainly goes, "it oozes out of the palms of their hands," as it did, if you remember, in the case of Bob Acres in the *Rivals*. A week in the wards is often too much for them, and they leave the hospital unhappy and unoperated upon, the tension having become insupportable. On the other hand, no patient with an inflammatory condition and high temperature should be operated upon, unless it is an urgency case, for a few days after admission. So often the temperature of 103° becomes in a few days three or four degrees less with rest and treatment, when operation can be more safely undertaken. Whenever possible, peritonitis should be given a chance to subside before the commencement of surgical procedures.

I have noticed that patients are often subjected to too cold an atmosphere before entering the operating room. Warmth, and a continuous high degree of it, is essential from the moment the patient leaves his or her bed until returned to it. The anaesthetizing room should be as warm as the theatre. The operating table should contain hot-water apparatus. It is a mistake, in my opinion, for patients to be returned into a general ward while intoxicated with the anaesthetic. It is an unnecessary and barbaric practice. To have an intoxicated, shouting, vomiting woman on one or both sides for some hours frightens and often completely upsets a nervous woman, quite unused to hospital life, and herself expecting to be operated upon in a day or two. I have seen this, and have been vexed and pained by it. The practice should be abandoned. As there is a "cooling room" for those who indulge in Turkish baths, so there should be, so to speak, a "cooling room" for people coming round after operation. They should not be let loose upon a peaceful ward until quiet. But this room, or any room for the reception of patients after operation, should be warm. If warmth is essential before operation it is doubly so afterwards.

* A paper read before Chelsea Clinical Society, April 16th.

Patients are often sent through draughty corridors, placed in cold lifts, put in wards with open windows, when "shocked," cold and clammy from the operating theatre. It is not always the ether that is the cause of the subsequent bronchitis, though the ether usually gets the blame. Remember, too, that the anaesthetizing apparatus should be disinfected between each case. Death has sometimes resulted from neglect of this precaution from septic bronchitis. To maintain an equable warmth and obviate shock the practice of wrapping the patient in cotton-wool, with the exception of the operation area, is excellent. I need not remind you that special warm wool surgical stockings are sold and that every nurse knows how to make a pneumonia jacket. Cotton-wool for thighs and arms may be useful in addition in severe cases. These warm things must not be parted with too hastily subsequently, but gradually discontinued. Patients like them, moreover, and find them comforting. Before operation patients should never be allowed to get too "low." No one should be more than three and a half hours on an empty stomach while waiting for operation. How often are all the patients to be operated upon in an afternoon prepared as if all would be operated upon simultaneously, whereas there is often a difference of two, three, or even more hours between the first and last case.

The Operation.

With regard to the operation itself I consider asepsis, in its every minute detail, of superlative and paramount importance. Everyone who comes in contact with the patient should wear sterilized overalls. Boiled gloves are indispensable for nurses and assistants alike, as well as for the operator. In short, everything that can come near the patient should be sterilized, and by heat if possible. From every point of view thermal agencies are preferable to chemical in effecting asepsis. For this reason I always use silk, or thread, or something that I can see boiled myself, in preference to catgut or other material that I may have to take on trust. Marine sponges are not to be thought of for this reason. Armlets of indiarubber should be worn by both operator and assistant. I have often seen the surgically unclean arm of either or both come into contact with instruments or ligatures, in spite of the wearing of gloves. The armlets should reach to the sterilized overalls.

In respect of asepsis it may well be said, "Let him that thinketh he standeth take heed lest he fall"; one must for ever be on one's guard. I have known men who have written volubly on asepsis commit unwittingly glaring mistakes. Nurses, too, are very weak in this direction. It is not an uncommon experience to go to a surgical home taking gloves with one for the chief nurses, and to find them subsequently, while still wearing their gloves, prepared to touch all and sundry articles, sterilized or unsterilized, such as taps, jugs, bedding, and the like; some of them think nothing of opening or shutting a door or window in them. All should remember that there is no more perishable article, in an aseptic sense, than one that has been sterilized. Almost "a breath can mar it." It will be said, "Oh, yes, but all this is not necessary; excellent results can be and are obtained without all this fuss every day." To this I would reply: Many a cranky ship has crossed the Atlantic in safety times and again, but who of us would not prefer to make the voyage in a ship of the highest class notwithstanding this fact? Our patients entrust their lives to us, and it is nothing less than treachery on our part if we betray that trust by carelessly neglecting to eliminate every possible risk.

As to details in operating, I have not time to discuss them. Personally, I very rarely employ drainage unless cutting down directly upon an abscess for the mere purpose of draining it. I have often left large areas of pyogenic membrane, that I could not remove, in the abdominal cavity without the slightest ill result; sometimes I have merely swabbed it carefully, at others copiously irrigated. "Clean well and close well" is my motto. In exploratory incisions more than one is greatly to be feared. A foolish prejudice, perhaps, but my own. An incision in one place to find nothing, and then another somewhere else, possibly with like result, is inartistic to say the least of it, if not dangerous, and says little for our diagnosis. Large incisions are now the fashion, and rightly so. Sewing up the abdominal wall in its various layers has robbed ventral hernia of its terrors. We now rarely see it except in some cases where drainage has been employed. The length of an incision is unimportant; it is as well to see as to feel what one is doing, and easier to work through a large hole than a small one. An incision that only admits two fingers generally has to be enlarged before what is necessary can be accomplished. Free incisions and the Trendelenburg position when necessary commend themselves to me.

Lightness of touch and gentleness are all-important. Some excellent surgeons whose technique is perfect and skill of the highest order, yet fail in obtaining the best results. Such often have strong heavy hands, and use them with a strength that is detrimental to delicate tissues. It is the oft-handled bruised tissues that succumb to toxaemic attack, not the gently touched, briefly exposed and unchilled. No man with heavy hands can lay claim to good horsemanship. If "fine hands" are essential to a horseman, how much more are they to a surgeon!

If there is one thing I believe in it is rapidity in operating. A rapid operator can almost afford a little laxity in aseptic technique, though I say this under my breath. It is customary to say, "The rapid operating of Fergusson would be out of place to-day; with anaesthesia we can operate at our leisure." Not at all; every minute is of value now as it was then. Not a second should be lost from first to last. Be ready to make your incision the moment the anaesthetist gives the word. A harassing complication, such as one involving a resection of gut, may occur at any moment, when the man with time in hand will score heavily. Surgery is a game we play against Death. We play to win of course, and must not give away a single point in the game. Time is on the side of Death, not on ours. Every operation should be completed within an hour if possible. At the end of that time I should like a bell to be tolled continuously or other means taken to remind the operator that he was within the danger zone. I say this deliberately. Most patients can stand an hour well, but after that every additional five minutes is fraught with more and more risk. All seems to be going well when the heart stops and it is all over. A *post-mortem* examination may be made, and the heart is found weak and fatty, kidneys diseased, and a thousand other causes discovered sufficient to account for death, but in my opinion if the operation had been completed within twenty or thirty minutes nothing would ever have been said or heard about heart failure or renal inadequacy. One is so apt to dawdle over an interesting case, and go on doing this and that to embellish the operation and make it perfect in neatness and completeness; but while we are thus attending to local conditions the constitutional powers are being exhausted, and the sands of life itself fast running out. While we are fiddling Rome is burning! If there is much haemorrhage, then there is the more need for haste. A long operation, with considerable haemorrhage is a deadly risk to any patient, and to the old especially. After long operations every precaution must be taken to keep up warmth and the circulation. Hypodermic, rectal, and saline injections all have their place. In my opinion, direct intravenous saline injections are unrivalled by other methods, but it needs a little skill and practice to quickly dissect out the vein and transfuse into it, whereas anyone can administer a rectal or subcutaneous injection.

Many assistants at an operation are so many additional sources of risk. At some general hospitals I have seen three or four dressers assisting the operator at an abdominal operation, in addition to the house-surgeon, each one holding a retractor, or forceps, or other little tool, and between whiles not knowing where to put his hands—and we know from Dr. Watts who it is that "finds some mischief still for idle hands to do."

After treatment.

Rectal injections of normal saline are invaluable for relieving thirst, and may be repeated *ad libitum* at all times. If vomiting is troublesome, or shock pronounced, nutrient enemata are excellent to supplement or assist feeding by mouth. Patients suffer much from thirst. To withhold water is as cruel as needless. Any one who has ever suffered from extreme thirst will sympathise with the craving. There is none stronger.

Everything has become much simplified of late years in the after-treatment of these cases. Patients may be moved gently to a certain extent from side to side, and so be spared

that painful backache which otherwise is so distressing to them. A sixth or so now and then of morphine hypodermically, never does any harm, but more often it is not needed. Flatulent distension of the bowels is still the great trouble after coeliotomy. The rectal tube should be the nurse's *vade mecum* in these cases, and purgatives and rectal injections must be resorted to unremittingly, and sometimes in heroic doses, until the bowels act; after that patients may eat whatever they can.

I am quite convinced that not nearly enough attention is given to the culinary arrangements, either in hospitals or nursing homes. I have often been disgusted with the way in which the food is served to patients in hospitals. In the matter of surgical dressings and appliances nothing is too good for them. If members of the Royal Family they could not get better, but when it comes to the way in which their food is served to them, then it is another affair altogether.

Some years ago I was staying a few weeks in one of the chief towns in the South of Spain, and visited the military hospital there. The Commandant, a most courteous old colonel, showed me everything with the utmost kindness, but he explained to me that if I noticed many deficiencies it was because the Government would not supply them, and moreover the new methods had come in since his time, and he did not mind them much; but what he did think was really important was that the patients should be well fed, and so I was taken to the kitchens and was made to taste all the dishes, the soup and the wine, etc., and was asked my opinion of them. I pronounced them excellent, as undoubtedly they were. There are other things that make for success in surgery besides the latest type of sterilizer. After operations, when convalescing, the appetites of patients want coaxing and tempting, no matter how low the social class to which they belong. How often is the food sent away because it is served untemptingly, the meat cut too thick, or cold, underdone or overdone, or generally unappetizing! It is the same in a large percentage of the surgical homes. The commissariat is weak to the last degree, and the culinary art often almost unknown. Both the quality and quantity of the food supplied are inadequate, and complaints are heard on all sides. If, as Napoleon, said, "a soldier marches on his belly," certainly a patient convalesces on nothing else.

A certain most excellent teacher of surgery was always reminding us as students, when speaking of fractures, that we must restore the function of a broken limb and not be content with merely getting the ends to unite in good position. And so with abdominal work, we perform a big operation and turn the patient out of hospital in record time and are then a little vexed when he or she turns up again with as many aches as before. Do not forget that to some an abdominal operation and the subsequent convalescence has been a great ordeal and has taxed their powers exceedingly. It may take them three to six months to get back to where they were before and to be able to resume their usual occupations. Our work is not merely an exalted form of human carpentry. Surgery does not alone consist of manipulative dexterity and operative skill. Judgement, based on knowledge and experience, is still the master quality in our equipment, and many side issues have to be considered and disposed of by us before our patients are completely restored to health.

All I have said has I am aware been said, and said better, before. I have doubtless omitted many essential facts, but I have endeavoured to emphasize some of the points which in my judgement are important in abdominal and pelvic operations.

A CASE OF PRIMARY EPITHELIOMA OF THE VAGINA, SHOWING AUTOINOCULATION OR CONTACT INFECTION.

BY A. J. WILSON, F.R.C.S., ETC.,
CALDERBANK, AIRDRIE.

THE interest of the question of autoinoculation in cancer lends interest to the following case:

Towards the end of September, 1906, Mrs. Mc., a healthy-looking, rather corpulent woman, aged 48, consulted me about pruritus vulvae, which had been troubling her about three months, and it also came out that even before the itching began she had suffered from dyspareunia. She would not permit local examination, stating rather boastfully that she had always been healthy, and had borne 12 children without the assistance of a doctor, and all she wanted was some ointment for the itching. I gave her some carbolic ointment, and also a lotion of creolin and camphor, but she came back again three weeks later to be examined, as her condition had not improved. A swelling was found slightly ulcerated on the surface, and about the size of half a crown, just at the entrance to the vagina on the left side. On the other side more anterior and extending backwards into the vagina there was a larger ulcerated patch, with rough granular surface and raised edges. There was also a little discharge, which had an offensive odour. The inguinal glands were not enlarged, and the urine was free from albumen and sugar.

The patient was persuaded to undergo an operation, and was admitted to the Alexander Hospital, Coatbridge. On November 4th the growths were excised. The temperature was never above 99 8° F., and the wounds were quite healed in six weeks from the date of operation. There is some contraction of the vaginal orifice, as one would expect, but so far there is no sign of recurrence, and a period of nearly seven months has elapsed.

Microscopical Examination of Tumours.

The tumours were sent to Dr. Teacher of Glasgow for examination, and his report is as follows: "The tumours are both epitheliomata of the squamous-celled type. That which is regarded (I think rightly) as the primary is more cellular and soft than the greater part of the other, which is more of the hard, warty type. Nevertheless they are essentially the same tumour, and I should think Dr. Wilson's theory that the younger is an inoculation across the vagina quite likely to be correct. The other alternative is development of two epitheliomata in one vulva at the same time, which is also possible but I should think less probable."

Primary cancer of the vagina seems to be a very rare condition. Roger Williams, in his data derived from patients under treatment at the chief London hospitals, shows that only 0.43 per cent. of all cancers in women are of vaginal origin. Gurlt, from Vienna hospital experience, gives the percentage as 1 6. Of 7,498 female cancer deaths in Hamburg tabulated by Reiche (1900), only 29 were of the vagina, or 3 8 per cent.; and of Hecht's 4,507 cases, 50 were vaginal, or 1 1 per cent. Averaging these results, it may be said that less than 1 per cent. of all cancers in women are of vaginal origin. These figures do not favour the theory held so strongly by some that cancer is caused by irritation, for few parts of the body are more prone to all kinds of irritation than the vagina. According to Williams, prostitutes are less liable to vaginal cancer than other women, notwithstanding their great proclivity to venereal and syphilitic affections of these parts. With regard to the wearing of pessaries, only a few instances of association of cancer with this habit have been recorded (Meyer, Hegar, etc.), whereas the number of those who have worn these instruments for years must be enormous. Most cases arise long after the menopause (Serafini, Bernard, Williams), the decennium 50 to 60 being the period of maximum frequency. Hence it may be inferred that the origin of the disease has no direct connexion with the incidents of the reproductive life. This is borne out by the fact that nulliparae are as prone to the disease as multiparae; for, as Bernard's data show, one-fourth of those affected have never been pregnant.

In making the diagnosis of vaginal cancer it is necessary to remember that secondary cancer of this part is common, whereas primary cancer is rare; consequently neighbouring organs likely to originate the disease—uterus, rectum, bladder, etc.—must be specially examined. Cancer of the cervix uteri, which is so common, nearly always spreads to the vagina sooner or later. The same is true of sarcoma. The diagnosis has to be made from sarcoma, sloughing myomatous tumours, certain chronic inflammatory affections (Chamberlain, Prickett), various syphilitic and tuberculous lesions, some mycotic infections—for example, actinomycosis; several of these lesions are far more common here than cancer. Bilharzia of the vagina has also been met with (Williams).

It is easy to see how a case showing autoinoculation such as I have described might be mistaken for a soft chancre, which is frequently multiple. Lange has met with a vaginal gumma that presented as a chronic tumour the size of an apple, which, after having resisted many remedies, was at last completely cured by extirpation.

The question of autoinoculation or contact infection is a very interesting one, but it is difficult to get any literature

bearing on the subject In Allbutt and Rolleston's *System of Medicine* Dr W. F. Andrews says :

Direct inoculation has occasionally, though by no means commonly, been observed in human cases of malignant disease. Cancer of the vulva commencing in one labium may extend to the opposite labium without any actual continuity of growth.

The disease usually begins as a small solitary nodule, but Lange, Schwartz, and others have reported instances of primary multiplicity. Mercanton has met with independent outbreaks in the vagina and uterus. Most of these multiple manifestations are no doubt due to local dissemination from the primary focus, but it is probable that some of them result from the spread of the disease by contact infection (Williams). An instance of this kind has been reported by Olshausen, in which the disease was propagated from the posterior to the anterior vaginal wall, and a case by W. W. Russell of vaginal implantation from adeno-carcinoma of the cervix uteri. I am much indebted to Dr. MacPhail of Coatbridge for his kindness in helping me with this case.

[This was written before the delivery of Mr. Butlin's address at the Annual Meeting at Exeter.]

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF PSYCHOLOGICAL MEDICINE.

Thomas Claye Shaw, M.D., F.R.C.P., President.

PRESIDENT'S INTRODUCTORY REMARKS.

PROGRESS IN THE TREATMENT OF MENTAL DISEASES.

Gentlemen.—Whilst acknowledging the honour of being appointed President of this Section for the meeting of the British Medical Association held in this historic city, I feel the responsibility of the office which I have with pride and gratification accepted, and I invite your sympathetic co-operation and experience in the disentanglement of the many knotty problems which must arise in the various discussions to which we stand committed. The importance of these annual meetings instituted by this wide-reaching Association lies in this, that they must be regarded as milestones of progress, and as authoritative records of the state of configuration and relation of the speciality at a definite period.

The barometer of our speciality stands at "change," and, looking back, I recognize how it has risen from an unobtrusive and neglected state of depression whilst confessing that the onward trend has yet far to go before we bask in the sunshine of certainty. Our attitude to-day is one of expectant attention and of the recognition that though we are engaged in exploiting the veiled heights of the pinnacle of a speciality we yet feel that our support and foundation is deep fixed on the common bed-rock of vital bodily processes, and that we really pulsate with and are attuned to all the vibrations of the medical system. The recognition of this gives us the confidence that, so long as we are true to our conditions of stability and equilibrium and to our relation with the medical and social environment, we must continue to progress, and that by preserving a correct orientation we may ultimately arrive at conclusions which, though now obscure, or even perhaps unthinkable, will yet be seen to be in harmony with the fixed proposition on which our corporate allies, the medical and surgical sciences, depend. But shall we be content to dance attendance merely on what our collaborators are doing? We must try to unravel some of the mysteries which are conditions at present inexplicable and which seem to be of a different order from other results of vital processes, though when disintegrated and reduced to their elements they will be seen to be in traceable connexion with what we know, whilst we may be sure that they, in reciprocity, will be valid for the correction and furtherance of our appreciation of the true factors of the great unit of disease. Have there been during the last year any indications that we are nearer now than we were to the true understanding of the nature of mind, whether as a separate entity, as a result of brain action, or as a set of phenomena acting in a psycho-physical parallel? Never was the public so exercised as now with cries for illumination as to the existence of telepathy, spiritism, and other cognate processes, and if so, as to their laws and meaning. Telepathy is the communication of impressions of any kind from one mind to another independently of the recognized channels of sense. Does such a communication exist, or is it nothing more than a *conception*, the recognition of some cause for coincidence in the minds of two persons that cannot be due to chance? Without doubt our present attitude is one of greater tolerance towards the possibility of such intercommunication, and the statement of Dr. J. H. Hyslop that it may be a direct transmission of thought, or some process of vibration or of spiritistic mediation—that is, ethereal vibrations started by a thinker and perceived and interpreted by a spirit—this statement is, I say, perhaps all that we can say towards acceptance of its validity (value, worth). Such a psychologist as Stout can see "no sufficient reason for being peculiarly sceptical concerning communications from departed spirits"; and Sir Oliver Lodge is avowedly at one with those who hold that we seem to be on the threshold of linking up in a direct chain of processes the material with the so-called immaterial or psychical. But further than this we cannot go: we have no knowledge of its laws and conditions; no scientific experimental demonstration has so far come to hand, and for the *vraisemblance* of its existence we are still dependent on the Alhambra and St. George's Hall.

As the Church and esoteric philosophy, treating mind as a separate thing from the body, have not advanced us one whit, though they have for ages discussed its nature and validity from their own standpoint, one can yet see glimmerings of a *rapprochement* between pure theology and medicine or physical science in such books as *The Risen Master* and *Pastor Pastorum* by Dr. Latham, and in our more recent contentions of the actual nature of matter and of radio-chemical activity. As we have not yet succeeded in vitalizing our Frankenstein, neither have we been more fortunate in materializing the spiritual; that is our present position, though we are more ready to acknowledge that there must be an annectant chain of processes, and that we are making progress in the intelligent tracing of the links.

The strictures of the writer in the *Times*, who reproaches us with the inadequacy of our treatment of mental disorders, owing to the way in which we treat mind as a thing in itself, instead of more actively ministering to the body through which alone mind is known to us, is both inaccurate and narrow; *inaccurate* because never so much as within the last twelve months has the influence of bodily conditions and irregularities upon mental phenomena been so energetically insisted and acted upon; and *narrow*, because we *must* investigate mental phenomena—they sometimes indicate (if we analyse and interpret them correctly) the nature of the lesions which are at the physical root of the disorder, and the particular part of the apparatus where we should seek for the damage. But we are in no subservience to the range of one doctrine or of the other, and just as we use the material pharmacopoeia for ridding the body of lethal products or of altering processes which have certain psychical accompaniments, so do we use the spiritualized forms of matter—otherwise mental processes—as curative agents, for example, in hypnotic suggestion, in instruction to exert will power, to cultivate attention, etc.

So different now are our conceptions as to the nature of insanity from what they were that it becomes daily more and more difficult to say what insanity really is, and there is a practical output from this in our reluctance to the signing of certificates, and in the preference for treating patients on general principles with merely a change from

the usual surroundings. We have long recognized that brain disease may exist without insanity, and it now looks as if the converse were also true, and that we may have insanity without disease of the brain. Of course, all depends upon what we mean by "insanity." If we mean simply an impairment of mind, such as loss of memory, power of attention, changed emotional state then it is not right to say either that we may have brain disease without insanity or the converse; but if we mean something else, there can be no hesitation in saying that we may have insanity without (necessarily) disease of the brain, though we must allow that even here there must be some interference with the physical substratum of function which though not disease acts at any rate for the time in the same way. Take, for instance, what has quite recently come into great prominence, the group of "toxic" insanities in which are included such conditions as dementia praecox, folie circulaire, puerperal insanity, etc., and compare them with the state known and described as "toxic neurasthenia." I know no radical difference between the symptoms (in severe cases) of one and of the other, yet we may call the members of the one group "insane" whilst the others are not considered so, and the condition is described, for the benefit of the friends, as one of "nerve weakness," but not one of insanity, not one of disease of the brain, but one in which the brain is secondarily hampered by some alteration in metabolism brought about by toxins or other abnormalities of the general system.

It is quite certain that a change in what we consider insanity to be has come over us, and we are confronted daily with people who are now said to be "not certifiably insane," implying that, whatever we may privately think of their mental exhibits, we dare not, or cannot, place them under certificates, because a wider view now holds as to what insanity is than was formerly the case. There may be the wildest coruscations of fancy; there may be conduct absolutely different from the common routine; there may be conditions of emotion which we cannot reconcile with the ideational state, and yet we cannot always understand that these people are suffering from disease of the brain; rather are they the exponents of some condition of basic material which is working out in the only way which for it is possible; but, though peculiar and exceptional, this way is not the product of disease.

Recognizing how great, even during the last twelve months, has been our advance in the recognition that mental disturbance often depends upon imperfections in the metabolic processes, it is evident that our practice has correspondingly changed. The great question that we must now always put to ourselves is: Where is the toxin, and of what nature is it? It will not explain every case, but it accounts for a good many. Unfortunately, these toxic causes may set up symptoms as dangerous as if there were actual disease of the brain present, and it is not yet always possible to distinguish between them.

It would indeed have been strange if the advent of bacteriology and the study of toxins and vaccines had not influenced our opinions and treatment of mental disease. There has indeed been a revolution in our estimation of causes and pathological processes since the study of micro-organisms was seriously undertaken, and it is clear now that many of our old postulates will have to be rewritten. To many of us these revelations of the new school have come as shocks, upsetting our fixed ideas and setting us to work again to compass the new medicine, saddened, however, by the reflection that it is not easy to jump into a new style of habit whilst the psychological remnants of the old system are still powerful, and the opportunities for studying the new aspects of things are rare or even inaccessible. But to the young school, reared in the modern laboratory, how different is the prospect! I believe that the future of psychological medicine is very hopeful, and that we are nearer than ever before to the rationale of insane states and to their successful treatment. The up-to-date student has possibilities of venturing into regions which to some of the older of us must have been visionary, if even conceivable, because a new survey of the channels by which the end is to be reached has been charted in scientific and fixed grooves, and it does look as if the hour is on the way when the reproach shall no more be cast at us that we are stagnant and unprofitable, placidly ruminating on our well-trodden surroundings whilst neglecting the horizon of new developments. I was very desirous of calling in to our deliberations on biochemical processes the aid of a certain distinguished pure bacteriologist to indicate in what way the recent lines of modern general investigation might be expected to assist us, but it appears that the science is not yet sufficiently advanced for the application of general principles. As an instance, I had recently under notice a boy, aged 14 years, whose condition was very acute, in many features resembling dementia praecox, due almost certainly to a toxic condition of tuberculous nature. I should have liked to have had the patient treated with tuberculin, or at any rate to have been sure that such a treatment was the correct one, but when I asked the opinion of the distinguished bacteriologist I was told that, even supposing the boy's illness was of a tuberculous character, there was no ground for supposing that the tuberculin treatment would have cured him.

We shall have an opportunity of discussing these new developments of treatment when the papers by Dr. Robertson and Dr. Bruce are before us. The Section will have justified its existence if the statements of these distinguished investigators give additional grounds for the hope that the wand of the vaticinator has at last assumed a strong bend over the hidden well of Truth. Every year emphasizes the necessity for *individual* attention in the treatment of acute insanity, calling out in ringing tones that as our knowledge is increasing so our responsibilities are becoming greater. The treatment of disease is daily becoming more specialized, more expensive, more exigent. The laboratory is no longer a fad; it is a necessity in the equipment of the modern asylum, and authorities must recognize that the splendid results achieved by Mott, Bevan Lewis, and other acknowledged exponents of this side of the investigation of lunacy, compel the selection of men trained in the modern school—and not only of men of this class, but of plenty of them; for it must be confessed that, though the harvest is abundant, the labourers are few.

The trend of the mode of dealing with the large numbers of mentally-impaired persons nowadays brought under notice is that a more intelligent separation of the cases shall be exercised—that, whilst it is possible and right to provide for the care and safety of the large numbers of chronic and incurable cases on a less elaborate and expensive scale, there must be nothing spared on the scientific elaboration of hospital wards for the more complete and thorough exhaustive diagnosis and treatment of the acute cases. It is easy enough to find fault, and though personally I do not agree with all the strictures passed upon those who in this country have taken up this speciality by the expert critic of the *Times*, I do so far agree with him that the recognition of the hospital system as the rock-bottom on which progress in the treatment of insanity is to be based is the correct one, and that it is only by a whole-hearted co-operation with the best accessible practitioners in the allied medical environment that the broadest views can be ingrained, and I view with satisfaction the establishment of mental clinics in connexion with the out-patient departments of general hospitals. How far it is possible to go in the location of acute hospitals for the insane in very close proximity to general hospital centres in the large towns is a question on which opinions differ, but to me it seems doubtful if we have yet arrived at the best possible conditions under which the scientific treatment of the insane should be carried out. I am surprised—and shocked—to see, as one does when engaged privately, the amount of sedatives and narcotics given in general practice in the early treatment of acute mental affections. This treatment by the medical masking of what is often merely a symptom of some other constitutional cause is dependent partly on error in pathological appreciation, partly on the difficulty which confronts the general practitioner in the present state of the law as regards the certification or the temporary sequestration of patients. It is to be hoped that the efforts made by this Association, and by the Medico-Psychological Association—and perhaps I may add by the more recently-formed Medico-Legal Society—in the direction in which acute private cases may be treated will have successful fruition both in removing the scruples of the friends to what they term the brand and stigma of insanity, and in a more early and intelligent treatment of the patient on proper lines.

Asylum treatment, even as it now is, has done more good and conscientious work than many of its detractors allow—probably only those who are actively concerned with its system do know its actual merits—but to my mind two of the most important therapeutical truths which it has conclusively demonstrated are the danger of the administration of sedatives and narcotics, and the elucidation of many of the problems of the alcohol question. Not only is the institutional treatment of the insane interested in the results of the recent Commission on the powers and functions of the Lunacy Commissioners, but the private practitioner is also, for to him perhaps more than to any one is the unsatisfactory extent of our powers in dealing with alcoholics ever present. He it is who knows the misery caused to families by the inebriate who cannot be either restrained or reclaimed from his banalities, but for whom new and well-understood legal possibilities are demanded. May we not hope that to a regenerate and authoritative Commission there may be given the power of initiative, and the capacity for pushing on the reform of procedure which the consensus of opinion of those engaged in the large sphere of nervous and mental diseases demands!

Besides the need for new legislation in connexion with those alcoholics to whom I have already referred, the question of responsibility in those for whom insanity is pleaded in criminal cases seems to be entering upon a new phase. There is a growing recognition on the part of the Bar that the plea of insanity set up in criminal cases is not merely an excuse raised as a *dernier cri*, but that it is a genuine expression of the instability which we as psychologists know, both by experience and by mental analysis, is generally associated in one form or another with offences against the law.

I was present on a recent occasion when this question, which represents the most prominent issues upon which law and medicine meet—generally, it must be said, in conflict—was introduced (unofficially) by one of the lord justices, and his suggestion was that there were different degrees of responsibility, and that this question of degree should be the one by which the final judgement should be ultimately determined.

To some of us this expression will commend itself; to others it will occur that there is difficulty in appraising the amount of responsibility in any case of mental impairment of either a temporary or permanent nature. Anyhow, the idea points to a *rapprochement* between law and medicine on this burning question, and is an indication that the principles laid down in MacNaughten's case are no longer those which more advanced medico-legal psychology can receive as the true statement of the premisses from which correct inferences must be drawn. In selecting subjects for discussion during these three days my colleagues and myself have been guided by the idea that we should choose those of great prominence at the moment, and we consider ourselves fortunate in having obtained acknowledged leaders in opening discussions upon the various agenda on the paper. With the views advanced there will probably be divergencies of opinions, and we hope that no one will be deterred from giving voice to criticisms either by the weight of the authority of the reader of the paper or from hesitation to hazard opinions which may seem to be at variance with accepted propositions. All criticism is invited, and it will be received in the spirit in which it is surely made—that, namely, which recognizes that if truth is to remain a living thing it must show itself invulnerable to all the trial shafts hurled against it, and it must respect its opponents, who by their attacks prove in the only possible way its claim to the position it assumes.

Democritus of Abdéra, when he was found by Hippocrates cutting up animals, presumably alive, said: "I do cut up these poor beasts to find out the causes of madness and melancholy, their distempers, vanities, and follies; yet such proof were better made on man's body, if my kind nature would but allow it."

In our day we anatomize man's body when he is dead and his mind when he is alive, and we find much to explain the connexion between the two, but we are yet short of understanding the man when his body is alive but his mind is dead. We know a little more than Democritus, but it has taken us longer than 2,000 years to arrive at it, and we are still plodding. Verily, *ars est longa!*

A DISCUSSION ON ALCOHOL AND INSANITY.

OPENING PAPER.

By F. W. Mott, M.D.Lond., F.R.C.P., F.R.S.,

Physician, Charing Cross Hospital; Pathologist, London County Asylum.

An experience of over twenty years as a physician to Charing Cross Hospital, and over ten years as pathologist to the London County asylums, has enabled me to study the effects of alcohol on two classes of the population—the sane and the insane—in the wards and in the *post-mortem* room.

I have been struck by the fact that, whereas cirrhosis of the liver with ascites is relatively common in the wards and *post-mortem* room of the hospital, I have but once seen, in the whole of my very large experience at the asylums, a case of very advanced cirrhosis *with ascites*, and that was in the case of Jane Cakebread, who was convicted for drunkenness nearly 400 times before she was found incapable of taking care of herself and certified as insane. If she did nothing else, she afforded a constant object lesson to society of the inadequacy of control of the liquor traffic, and of our law to deal with chronic inebriates, for she was *not* insane in the ordinary sense.

The causes of drinking are infinitely varied, and intimately bound up in the temperament and character of man—his fear and anger, his courage and despair, his sympathies and aversions, his joys and sorrows, his love and hatred. It is an expression of his strength and weakness, his successes and his failures. From the time of Noah wine has been used by the nations which have advanced to the highest degrees of prosperity and civilization, and it is related in the Jewish Mashal that when Noah came to plant his vineyard, Satan joined him and asked, "What are you planting?" He replied, "A vineyard." "For what purpose?" rejoined Satan. "Its fruits," answered the Patriarch, "are sweet whether used fresh or dry, and wine is made from them which rejoices the heart." "Then shall we two work it together," observed the enemy.

The effects of alcohol are largely dependent upon not only the quantity and quality of the liquor taken and the period of time over which it has been taken, but upon the personality of the individual, and by *personality* I mean his physical and mental characteristics which differentiate him from every other individual.

In a paper which I read before the Medico-Psychological Association last summer* I collated statistics from hospital and asylum experience, which I will briefly summarize.

First, let me put on the screen a lantern slide showing the statistics relating to alcohol and insanity in the London County asylums since they have been under the control of the London County Council. It will be observed that the percentages of admissions in which alcohol is the asserted cause of insanity varies considerably in different asylums in the same years and in the same asylum for different years, and the differences are so great that the collected statistics derived from this source are not very reliable. The personal equation of the medical officers who obtain the information and the friends who give it as to what constitutes alcoholic excess, and as to how far alcohol is an efficient cause, or merely a coefficient in the production of insanity, is variable. Thus in one year, 1902, from the same class of people, alcohol is the assigned cause of 25 6 per cent. of the admissions to Hanwell, and to Claybury 11.2 per cent.; but in 1906, in 28 per cent. of the admissions to Claybury intemperance is the assigned cause, while at Colney Hatch it is only 14 per cent. At Bexley, where the statistics appear to be fairly uniform since its opening, intemperance as an assigned cause is high, the average being 22 8 per cent. for the seven years; but an analysis of the cases admitted during 1905 to this asylum, in which intemperance was the assigned cause in 25.7 per cent. of the total admissions, shows that there are many cases in which other causes are associated. Thus, out of 248 male admissions, alcoholic excess was the assigned cause in 46, or 18.5 per cent., and out of 246 female admissions alcoholic excess was the principal cause in 38, or 15 4 per

* A full account of this work is published in vol. iii of *Archives o Neurology*.

cent., a total percentage on the whole admissions of 17 per cent. But when we inquire into these cases, we find that 13 were imbeciles, 5 were chronic delusional insanity, 5 epileptic, 5 organic dementia, and no less than 20 were primary dementia. In fact, out of the 84 cases quite one-half were lunatics or potential lunatics and the subjects of an inborn tendency to mental disease. My experience at Hanwell, Claybury, and the other asylums I have visited corroborates this statement. Moreover I have found that the notes show hereditary insanity or epilepsy quite as frequently in these so-called alcoholic cases as in other forms of insanity, and more frequently than in general paralysis. In the histories of these cases of insanity as a result of intemperance we find frequently potential insanity, chronic alcoholism in one or both parents, inherent instability in the form of neuropathies, imbecility, criminal degeneracy, epilepsy, and intolerance of alcohol as manifested by previous admissions, when they were termed recurrent mania, recurrent melancholia, sometimes head injury, brain disease, and not infrequently incipient general paralysis. Suicidal tendency and active attempts at suicide, occasionally murderous assaults or homicidal tendencies, indecent assaults upon children, rape and other sexual crimes, are occasionally met with in the histories. Again, the history frequently reveals that the patient has taken to drink on account of domestic troubles, bodily illness, loss of money, and breaking up of the home, and all those conditions of life in which alcohol is at first taken to obtain temporary relief by those who are burdened with sorrow and despair, the ill fed and miserable, subjects of mental and bodily suffering. Those, again, in whom a suspicious or melancholic inborn temperament can perforce only see the black side of life, who are potentially insane, under the toxic influence of alcohol develop hallucinations and delusions of a persecutory character. The types of insanity in which alcohol is the *essential* cause are not so frequently seen in asylums as is generally supposed; they differ but little from the cases met with in hospitals. They are delirium tremens, mania-â-potu. and polyneuritic psychosis, or Korsakow's disease. Doubtless a considerable number of pure alcoholic cases are kept in the infirmaries, and only those in which the mental symptoms are pronounced and prolonged are sent to the asylums. We may thus divide the cases of alcoholic insanity met with in asylums in two great groups:

I. Those with a *locus minoris resistentiae* in the nervous system by which there is intolerance to alcohol. These cases are the most numerous.

II. Those in which chronic alcoholism, usually in conjunction with some other factor such as syphilis, tuberculosis, microbial toxaemia, arterio-sclerosis, head injury, or organic brain disease, induces sooner or later either delirium tremens, polyneuritic psychosis, or alcoholic hallucinosis.

Consequently cases belonging to Class I can very seldom drink sufficient alcohol extended over a sufficient time to produce advanced cirrhosis of the liver with ascites. A good many may drink sufficient to produce changes in the liver discoverable by microscopic examination. but very few sufficient to produce a change recognizable by the naked eye.

Class II, however, includes cases of alcoholism affecting persons of an inborn stable mental organization as a rule. consequently it is in such cases especially that we find the few cases of large, fatty, and cirrhotic liver on the *post-mortem* tables of asylums.

If, now, we compare the statistics of hospital and asylum *post-mortem* examinations, we are struck with the fact that in the former there are a large number of cases of advanced cirrhosis of the liver, whereas in the latter there are relatively few, and many of those only recognizable with difficulty. I will throw on the screen a statistical analysis of the results obtained in 1,099 autopsies on adults at Charing Cross Hospital, compared with 1,271 *post-mortem* examinations at Claybury. An analysis of the results obtained by Drs. Rolleston and Fenton on *post-mortem* records extending over ten years, at St. George's Hospital, is given, and in the main it supports the opinion that the statistics derived from Charing Cross Hospital agree with those which could be obtained at other London hospitals.

The principal points of interest which this tabular synopsis of a comparative inquiry into the *post-mortem* incidence of cirrhosis of the liver at Charing Cross Hospital and Claybury Asylum afford in relation to the subject of alcohol and insanity may be thus summarized:

At Charing Cross Hospital the notes of the autopsies upon 1,099 adult cases were examined—735 males and 364 females. Out of this number there were 85, or 7·7 per cent., cases of cirrhosis of the liver, which accords closely with the 8 per cent. in which alcohol was the immediate and direct cause of the disease for which patients were admitted to the hospital. The percentage of males is 9.1 and the females 4·9.

At Claybury Asylum the notes of 1,271 autopsies were investigated (627 males and 644 females). Of this number only 23 cases of hepatic cirrhosis were found (14 males and 9 females). The total percentage of cirrhosis of the liver works out at 1·8 per cent. (males 2.2 per cent., and females 1.3 per cent.). There are a number of points of interest to which the synopsis refers, but I will limit my remarks thereon to the following more important facts which have been elucidated, namely, that no case of cirrhosis *with ascites* occurred at Claybury Asylum, whereas of the Charing Cross Hospital cirrhosis cases 66.6 per cent. had ascites, 22.2 per cent. with a history of paracentesis abdominis. At Claybury, in only 1 instance of the 23 cases was cirrhosis of the liver mentioned as the assigned cause of death, whereas at the hospital in 72.2 per cent. of the 85 cases cirrhosis of the liver was assigned as the cause of death. The cases of cirrhosis of the liver met with on the *post-mortem* table at the asylum were mostly cases of polyneuritic psychosis and alcoholic dementia, but there were also a few cases of general paralysis. The single case in which cirrhosis of the liver was the cause of death occurred in a chronic alcoholic billiard-marker, who was admitted to the asylum because he had attempted suicide. This man had previously given himself up to the police as having murdered a woman, which was a delusion. When in the asylum he knew that he suffered with cirrhosis of the liver, and he stated that he felt so miserable on this account that he had attempted suicide. The liver weighed over 2,000 grams. The relatively greater frequency with which acute and chronic gastritis and other inflammatory lesions of the stomach are met with in cases of alcoholic affections of the liver among the insane is shown.

There is a greater frequency of arterio-sclerotic changes associated with cirrhosis of the liver in the case of the insane, especially among the males. Atheroma of the aorta is common on the *post-mortem* table, even in comparatively young people, in asylums. Probably this may be explained by the fact that a large proportion of the deaths occur in the subjects of general paralysis, and this is in all probability due to the syphilitic origin of the disease.

It may be remarked that in only 4 of the fatal cases occurring at the hospital were there nervous symptoms associated. In fact, it is noteworthy that alcoholic cirrhosis of the liver with pronounced ascites and a history of prolonged intemperance, even excessive intemperance, frequently occurs in individuals who show absolutely no mental symptoms beyond a weakened will and loss of moral sense shown by the indulgence of a vicious habit.

Although a man in getting drunk, as Maudsley truly says, presents a brief chronicle and abstract of insanity, it seems that alcohol *per se* does not produce a permanent mental derangement such as constitutes our definition of insanity. Otherwise those persons who have drunk a large quantity of alcohol every day for years, and finally die from alcoholic cirrhosis and ascites, after many operations of paracentesis, should become insane. Let, however, a toxin which might by itself produce delirium be associated with the alcohol, and we may have delirium tremens, alcoholic hallucinosis, or polyneuritic psychosis, which in many respects is a chronic form of delirium tremens affecting especially women.

I would therefore agree with Dr. Sullivan and Dr. Bevan Lewis that alcohol as an *efficient* cause of insanity is not so great as the published reports of the Lunacy Commissioners indicate. In support of this I will briefly indicate some of their arguments. Dr. Bevan Lewis has shown a regional dissociation between alcoholism and insanity, whilst the latter was allied with pauperism, want, anxiety, and other moral factors. Thus

Tabular Synopsis relating to a Comparative Inquiry into the Incidence of Cirrhosis of the Liver at Charing Cross Hospital and Claybury Asylum respectively during the last Six Years.

	Charing Cross Hospital.				St. George's Hospital.				Claybury Asylum.			
	Males.	Per cent	Females.	Per cent	Males.	Per cent	Females.	Per cent	Males.	Per cent.	Females	Per cent.
Total number of *post mortem* examinations ..	735	...	3?4	...	*	...	*	...	627	...	644	
Total number of cases with hepatic cirrhosis...	67	...	18	...	82	...	32	...	14	...	9	
Number of cases with ascites	25	37 3	12	66 6	27	32.9	9	28 1	–‡	...	–	
Number of cases without ascites	42	62.7	6	33.3	55	67 1	23	71.9	13	92 8	9	100
Number of cases with a history of paracentesis abdominis	13	19.4	4	22 2	*	...	*	...	–	...	–	
Number of cases fatal from cirrhosis	24	35 8	13	72.2	29	35.3	18	56 2	1	7.2	–	
Number of cases fatal from diseases other than cirrhosis	43	64 2	5	27 7	53	64.7	14	43.8	13	92 8	9	100
Average age at death of cases fatal from cirrhosis	50·8 years	...	47 years	...	50.3 years	...	46 6 years	...	32 years†	...	–	
Average age at death of cases fatal from diseases other than cirrhosis	46 ,,	...	48 ,,	...	48 ,,	...	45.6 ,,	...	51 years	...	46 years	
Average age at death with ascites	49 ,,	...	47 ,,	...	*	...	*	...	–	...	–	
Average age at death without ascites	46 ,,	...	48 ,,	...	*	...	*	...	51 years	...	46 years	
Number of cases associated with peripheral neuritis	2	2.9	2	11.1	–	...	3	9.4	–	...	2	22.2
Number of cases fatal from renal disease ...	3	4.4	–	...	6	7.3	2	6.3	–	...	–	
Number of cases with gastric disturbances ...	28	41 8	12	66.6	*	...	*	...	13	92 8	7	77.7
Number of cases with arterio-sclerosis	1	1.5	–	...	*	...	*	...	5	35.7	1	11.1
Number of cases with a history of alcohol ...	25	37 3	8	44.4	64 (male and female combined)			56	3	21.4	5	55.5
Number of cases associated with tuberculosis	19 out of 85 cases§			... 22.3	34 out of 114 cases			... 29 8	7 out of 23 cases§			... .. 30.4
Number of cases fatal from tuberculosis ...	4 ,, 85 ,,			.. 4 7	17 ,, 114 ,,			.. 14 9	–		–	
Average weight of liver in all cases	67.5 oz.	...	...	... ...	65 49 oz.	...	...	.. ...	54.3 oz.			
Average weight of the liver in cases fatal from cirrhosis	67 4 ,,	...	...	... ...	63 17 ,,	...	...	... ...	–		–	
Average weight of the liver in cases fatal from diseases other than cirrhosis	67 4 ,,	...	...	... ...	67.19 ,,	...	...	... ...	54.3 oz.			
Average weight of spleen in all cases	9.5 ,,	...	...	.. ...	9.8 ,,	...	...	.. ...	9 3 oz.			
Average weight of spleen in cases fatal from cirrhosis	11 9 ,,	...	...	... ...	11.0 ,,	...	...	... ...	–		–	
Average weight of spleen in cases fatal from diseases other than cirrhosis	8.2 ,,	...	...	... —	9.0 ,,	...	...	.. ...	9 3 oz.			

* Denotes that the information is wanting. † One case. ‡ In one case there was a pint of fluid noted, but there was cardiac failure in this case. It will be observed that the age of the male insane patients is higher than that of the hospital cases, the reason being that a number of old men suffering with arterio-sclerosis under the influence of drink are sent into the asylums. One striking fact was the much greater frequency of atheroma in asylum cases as compared with hospital cases. This may be explained by the fact that nearly half the total male cases in asylums are general paralytics. The relation of syphilis to general paralysis is probably associable with this result. § Of the 7 female cases, only 1 showed active tuberculosis; the remaining 6 were cases of quiescent tubercle. Of the 19 male cases, 6 were cases of quiescent tubercle.

I am indebted to my assistant, Dr. Candler, for this synopsis and for undertaking the investigation of the notes of the autopsies for the past six years.

inland and agricultural communities were the least inebriate, but had the highest ratio of pauperism and insanity; while maritime, mining, and manufacturing communities above all others were the most intemperate, and revealed the lowest ratios of pauperism and insanity. Dr. Sullivan, by careful analysis and tables, shows conclusively that in the regional distribution of insanity it is difficult to trace any evidence of alcoholic influence such as might be expected if alcoholism really accounted for a sixth of the total number of cases. Thus Lancashire, Warwick, and Cheshire, which rank very high in the scale of alcoholism, and the mining counties, where drunkenness is very rife, are alike in showing very low rates of insanity. He concludes that alcohol, as the essential cause of *certified* insanity, falls a good deal short of the 16 per cent. at which it is rated in the official statistics, and may possibly be something under 10 per cent. Again, Dr. Branthwaite, in his report, page 10, remarks:

> Upwards of 62 per cent. of the persons committed to reformatories under the Act are found to be insane or defective in varying degree.
>
> I am satisfied that the majority of our insane inebriates have become alcoholic because of congenital defects or tendency to insanity, not insane as the result of alcoholism, and that the drunkenness which preceded alcoholic insanity was merely the herald—the only obvious sign—of incipient mental disorder. In relation to the final insanity, drunkenness in such cases is the intensifier perhaps, but not the cause of the disease.

Concerning the congenital defectives, which are divided into two classes—(*a*) comprising degenerates, imbeciles, and epileptics, and (*b*) moral and social defectives, he remarks:

> A marked intolerance to the action of alcohol is present in both refractory and quiet class of defectives; very small quantities of drink, no more than is taken daily without apparent physiological effect by an ordinary individual, being sufficient to cause disorderly and violent behaviour. Our experience in this direction has led us to accept the view that intolerance to the exciting effects of small quantities of alcohol may be considered a fairly certain sign of impaired mental equilibrium.

I think I have given sufficient evidence to show that the effects of alcohol depend not only upon the quality and quantity taken but also upon the personality of the individual who takes it. The title of the paper which I sent was The Effects of Chronic Alcoholism upon the Personality, and if I may be permitted to do so, I will proceed with the second part of the subject.

We are prepared now to understand how very different is the effect of alcohol on different individuals. Let us

consider first the well-fed workman, business or professional man of normal mental stability, who on account of his occupation becomes the victim of a vicious habit of indulgence in alcohol to excess. The normal sense of well-being in such an individual which comes from physiological nutritional equilibrium is gradually perverted and replaced by an artificial sense of well-being, owing to the effect of the alcohol. Sooner or later visceral disturbances, notably gastritis, lead to loss of appetite and failing nutrition with more or less persistent *disorder of his organic sensibility*. The craving for spirits replaces the desire for food, and the vicious habit has so altered his nervous system that it can no longer function without stimulant. For a time the symptoms of disordered organic sensibility owing to chronic alcoholism, namely, pain and oppression in the region of the heart, dyspepsia, anorexia, nausea and morning vomiting, muscular weakness and tremors, may be relieved by alcohol, but the quantity taken has to be steadily increased to produce the desired effect. A head injury, microbial infection, an extra bout of drinking and the sudden withdrawal of the alcohol may lead to delirium tremens, when he becomes dangerous to himself and others. Such subjects of chronic alcoholism may live until advanced cirrhosis of the liver with ascites occurs, from which they eventually die after repeated operations of paracentesis. It may be presumed that they possessed an inborn stable mental organization, and, without having any precise statistical data to prove it, I am of the opinion that they would transmit the stable mental organization they inherited rather than the weakened will power which they had acquired by force of circumstance of environment.

The frequency with which crimes of violence, murderous assaults and homicide occur as the result of chronic alcoholism indicates that owing to the loss of control a predominant natural emotion such as anger, with its derived emotion, courage, is converted into fury and recklessness. Again, the frequency with which suicide occurs as a result of chronic alcoholism indicates that the normal emotion of sorrow becomes despair and inability to struggle against adversity. The two primitive emotions of joy and sorrow are strikingly exhibited by the effect of alcohol on two opposite temperaments, and the French speak of the *vin gai* and the *vin triste* types of drunkenness. Thus we see that alcohol inflames the emotions, especially in a chronic alcoholic who has by a prolonged indulgence of a vicious habit weakened his highest control. Then an extra bout of drinking may lead to criminal actions; such a person, however, is not deemed insane. The persons who are especially liable to such crimes are those in whose temperament there is a lack of balance of the primitive emotions.

Again, chronic alcoholics are very liable to sexual crimes, rape and indecent assault, also to exhibitionism, assaults on children, and various sexual perversions. The tendency to the latter can be illustrated best in the words of Shakespeare: "Lechery, sir, drink provoketh and it unprovoketh; it provoketh the desire, but it taketh away the performance." According to Dr. Sullivan (*Alcoholism*, p. 164), "Prison statistics indicate that 60 per cent. of graver homicidal offences and 82 per cent. of assaults are attributable to alcohol, and that in nearly all the cases of the former class and in four-fifths of the minor offences the intoxication had attained a fair degree of chronicity." To a less degree sexual crimes are due to chronic alcoholism. Thus we know that a chronic alcoholic may be more antisocial although uncertifiable than a certifiable lunatic.

It may be asked, How is it that many of these chronic alcoholics in all stations of life are such good skilled workmen and artists? Because individual character also results from one or several intellectual derived tendencies, and the master intellectual feeling—that with which his whole nature is imbued, and the actions of which have by conscious repetition become *subconscious and habitual*—may persist when other feelings have become perverted and gone. Even the *aesthetic feeling* which is the last to come evolutionally, therefore normally the first to go, may, owing to its constant, habitual, and subconscious activities in associative memory, tolerate better the degrading effects of chronic alcoholism and resist longer the work of destruction than the moral sense; even the elementary feelings of right and wrong may be lost or perverted and the aesthetic taste remain. Thus a chronic alcoholic artist may by his conduct be antisocial, and yet still delight the public by his art, whether it be painting, sculpture, music, poetry, or the drama. Consequently the most fragile of all the feelings which go to make up character and especially individualism, when it has become a passion, dominating the whole nature, and become the main object of the habitual routine of life, persists in a moral degenerate. It is sometimes brought forward as an argument in favour of the use of alcohol that some of the greatest artistic geniuses have used it even to excess. It is assumed that it has stimulated their emotions and imaginative faculties even if it did weaken their will power, and making them indifferent to social usages and customs, their aesthetic feelings and passions have been given full play without restraint. But "poets are born, not made," and their poetic imagination has persisted in spite of the alcohol.

Chronic alcoholism may be manifested in the patients' conversation in various ways. There is often a remarkable tendency to wit and humour, but not infrequently the mental association is rather by rhyme and repetition of well-worn jokes, abusive epithets, and coarse vulgar stories than keen repartee. Again, boastful loquacity, untruthfulness, loss of power of attention, and the tendency to relate pseudo-reminiscences is a common symptom of chronic alcoholism.

Both in hospital and asylum practice delirium tremens is much more frequent in males than in females; whereas polyneuritic psychosis is much more frequently met with in females than in males. Both occur in the subjects of chronic alcoholism. Women often take to drink because of the pains experienced at the menstrual periods, and on account of disease of the reproductive organs following miscarriages, abortions, and venereal infection. I have, moreover, so often found *post mortem* metritis, parametritis, and salpingitis in cases of alcoholic paraplegia, that I have thought it probable that the toxins engendered by microbic infection carried up the lymphatics of the nerves has exercised an important causal relationship to the polyneuritis.

As a rule, the convolutional pattern of the brain in these cases of polyneuritic psychosis denotes a fair order of intelligence, and the wasting of the convolutions and the thickening of the membranes is slight as compared with that occurring in general paralysis.

There is a form of alcoholic dementia of the expansive form that simulates general paralysis. The patient may suffer with delusions of grandeur associated with some evidence of neuritis. The dementia, however, is not progressive, and the signs of alcoholism with neuritis would induce one to give a guarded prognosis.

The changes in the brain in alcoholic dementia are not marked as a rule, and do not, in my opinion, account for the symptoms as they do in general paralysis, where the dementia is in great measure proportional to the cortical destruction. I will throw on the screen sections of the cortex of the normal brain, the brain of a case of polyneuritic psychosis of the pseudo-paralytic expansive type, and a case of acute general paralysis.

I will call your attention to a few of the more important points which these sections show. It is obvious that the depth of cortex is rather less in the case of alcoholic dementia, but this was due to the fact that the brain was smaller, being that of a woman. The normal and the paralytic specimens were obtained from the brains of men. The cell lamination is normal in the alcoholic case, and the only notable change is in the large Betz cells; in these there is a perinuclear chromatolysis. The cells in the acute general paralytic brain are distorted, broken up—have lost their columnar arrangement; there is an increased vascularity, and around the vessels there is an infiltration of lymphocytes and plasma cells. This is regarded by many authorities as pathognomonic of syphilitic and parsyphilitic affections, but it is found even more marked in chronic trypanosome infections.

A large number of cases of alcoholic insanity occur in persons of an inborn or acquired unstable mental organization, epileptics, degenerates, imbeciles, potential lunatics, general paralytics, subjects of head injury, local brain disease, syphilis, and arterio-sclerosis; in all such cases the symptoms caused by the poison are liable to be prolonged, and even become permanently installed.

According to the predominant features of the mental

derangement, cases are diagnosed "alcoholic mania," "alcoholic depressive mania," "alcoholic melancholia," "alcoholic dementia," "acute hallucinatory insanity," or, as the Germans term it, "alcoholic hallucinosis," "alcoholic delusional or paranoidal insanity," "epileptic insanity," and "pseudo-paralytic insanity." If alcohol is the essential factor, however, in the production of the insanity there will be certain specific indications in all these varied forms of insanity pointing to the more or less specific action of the poison. Even in the absence of a history of alcoholic indulgence there are certain physical signs and symptoms which point to alcohol as the cause. The more certain these signs and symptoms, the more certain can we be that the cause is removable, and the more hopeful the prognosis. These signs and symptoms are found most pronounced in the two conditions of mental and nervous disorder which occur in hospital practice—namely, delirium tremens and polyneuritic psychosis. The symptoms are in such cases the results of the more or less prolonged action of the poison upon a more or less stable nervous organization—that is to say, drink is the essential cause. Although every form of mental derangement may be closely simulated by alcohol when an insane temperament is acted upon by a sufficient quantity of the poison, yet when alcohol has been an efficient cause in the production of the insanity, there are certain indications in the character and constancy of the illusions, hallucinations, and delusions; in the mental state as regards orientation in time and space and loss of memory of recent events; in the tendency to pseudo-reminiscences; in mental confusion, which in some cases amounts to incoherence, and may then overshadow completely the disturbance of memory; in the existence of a purposeful motor restlessness impelled by illusions, hallucinations, and delusions; and in the existence of tremor. Illusions of identification of persons are common. The hallucinations and delusions are generally of a persecutory nature, and are possibly due to a deranged and perverted organic sensibility of the body and viscera. Moreover, alteration of the deep reflexes, tenderness on deep pressure of the muscles, anaesthesia, paraesthesia, hyperaesthesia indicative of neuritic affection are frequently present, singly or combined. The cases of alcoholic hallucinosis may, however, show very little or no mental confusion and amnesia, and hardly any loss of orientation. They tend to recover within one to six months after admission, but relapses are frequent. Since auditory and visual hallucinations, especially the former, frequently occur in insanity in which there is no alcoholic factor, it is often difficult to decide simply by the hallucinations and delusions alone whether alcohol is the cause. Should they persist, however, while the mind otherwise becomes clear, it is probable that the case is one in which alcohol has only played a subordinate part, and the outlook of recurrent or chronic insanity is probable. This is all the more likely to be so if the hallucinations and delusions become systematized and f there is a complete absence of any peripheral cause.

Alcohol and Syphilis.

In conclusion, I would call attention to the effects of alcohol in the spread of venereal disease. Syphilis together with other venereal diseases is so often acquired as a consequence of alcoholic intoxication that often the effects of the contagium are referred to the alcohol. It is noteworthy that intemperate women are very frequently sterile or they have a high birth-rate and a high death-rate; it is difficult to decide how far the sterility is due to the alcohol. Since alcohol is often the direct cause of venereal infection and its abuse adds greatly to the damaging effect of the virus, we may consider alcohol and venereal disease allies in destroying the offspring of those who are unable to drink alcohol without losing their judgement and control. If it were not for the fact that venereal disease leads to sterility, miscarriages, stillbirths, and death in early infancy, the effects of drink and syphilis on the vitality of the race would be terrible; as it is, I am of opinion, that while syphilis and drunkenness are continually destroying and hastening to destruction neuropathic stocks, they are also continually producing them; for the surviving offspring much more frequently develops neuroses, psychoses and various organic diseases of the nervous system than the offspring of sober and healthy parents. If it be argued, therefore, that alcohol is a weed killer preventing the perpetuation of poor types, it is probably even more effective *as a weed producer*; especially is this so by its alliance with syphilis, the *living virus* of which is transmitted to the mother and the offspring.

How far, when viewed in its effect upon large masses of people, alcohol may act in tempting the weak-minded to destruction, while the strong-minded persist, is a matter of speculation. Certainly those nations that have drunk alcohol for ages past are of greater brain power though not of better bodily physique than the Mohammedans who take no alcohol.

DISCUSSION.

The discussion having been opened by the President, who indicated some of the numerous points for discussion, and reminded his audience that Dr. Mott's wide and comprehensive paper was not on alcohol in general, but on alcohol in its relation to insanity, and particularly on alcoholic insanity, Dr. C. A. Mercier (London) stated that he was glad to hear Dr. Mott lay stress on the influence of the personality in the manifestations produced by alcohol. Of half-a-dozen persons to whom the same dose of alcohol was administered over the same time, one would show no result at all except perhaps in a little brightening of the intellect and loosening of the tongue; another would be thick of speech, reeling in gait, and confused in mind; a third would be hilarious and jovial, and would become on back-slapping and rib-punching terms with mere strangers; a fourth would become vainglorious and boastful, a shameless braggart; a fifth would become quarrelsome; a sixth maudlin, and yet a seventh would become acutely maniacal, tearing up his clothes, smashing the furniture, and running amok. But the different effects of alcohol on different persons became less and less marked as the period increased over which the alcohol was administered. One case of delirium tremens was very like another, and one case of alcoholic insanity was very like another. The personality in such cases seemed not to assert itself. In the State Inebriate Reformatory, of which the speaker was a Visitor, and in which were received the very worst cases of habitual drunkenness from the police courts and prisons of London, there was not at the present time a single case of ascites from cirrhosis of the liver. It seemed as if the several organs had different susceptibilities in different people, so that in one the alcohol acted mainly on the liver, in another on the brain, in another on the kidney, and so forth; and that if the alcohol did its work upon one of these organs it became decomposed and disintegrated in so doing, and there was none left to act upon another. As pointed out by Dr. Branthwaite, every one of these habitual drunkards made the same statement when brought before the magistrate—that is, that they did not take much drink, but that a very little upset them. This statement was so invariable that Dr. Branthwaite attached importance to it, and was inclined to think that there was some truth in it. The speaker had brought the matter before the Board of Visitors, and suggested that it should be tested by the administration to every inmate of the reformatory on admission of a small dose of alcohol. Up to the present he had not been able to obtain the concurrence of the rest of the Board. He went on to discuss the association between the "artistic temperament" and indulgence in alcohol, and challenged the meeting to produce an instance of a poet or artist of high reputation who was a total abstainer. He thought that the good influence of alcohol had not been sufficiently considered, and that it should not be stigmatized as a poison and as unmitigably bad, for it was very possible that the race would be poorer for want of alcohol. At the same time, he admitted that alcohol was not only a weed-killer, but a weed-producer.

Professor Ernest W. White (London) was glad to hear Dr. Mott's statement that confirmed cirrhosis of the liver with ascites was decidedly rare in the London County asylums. This agreed exactly with his own experience extending over thirty-three years in the public asylum service. During that period he could only recall to mind some half-dozen cases of cirrhosis in the *post-mortem* room. He was also thoroughly in accord with Dr. Mott with regard to the value of asylum statistics upon the question of drink as a cause of insanity. To his mind these statistics were absolutely valueless. The cause sheet was

often filled in without sufficient inquiry. In many instances investigation would show that drink had been a symptom in the case and not the cause. In many forms of insanity in the early stages there was depression and a feeling of desire for a stimulant. Then it was the patient flew to alcohol, and on admission into the institution this was wrongly recorded as an etiological factor. He could thoroughly endorse the great frequency of atheromatous changes in the certified insane. Arterial degenerations were very common in the forms of insanity occurring in middle life, especially those of melancholic type associated with defective cerebral blood supply. It was all part of a premature decay, hence it was that these forms of melancholia were incurable. Moral decadence was always the result of the drink habit, and the offspring were extremely liable to inherit this tendency if there had been a lack of mental stability in either or both of the parents prior to the birth of the individual.

Dr. P. W. MacDonald (Dorchester) expressed his approval of the conclusions arrived at by Dr. Mott, and wished to add his support to his appeal for a stricter regard of the personal equation in the collection of all statistics. As regards the high ratio of alcohol as a (given) cause of insanity in large centres, with a low ratio of insane to the population and the opposite in rural districts, this agreed with his experience as recently expressed in his Presidential Address to the Medico-Psychological Association. He further fully agreed with Dr. Mott that a strong hereditary predisposition far outweighed the influence of good environment. The importance of distinguishing between alcohol and its effects in relation to insanity in the light of cause and effect could not be too rigidly kept in the forefront. They all—as a profession—advocated temperance, but they did so in language as well as beverages.

Professor H. M. Hurd (Baltimore) drew attention to the unreliable character of the usual statistical information bearing on this question of alcohol and insanity, and related that many years ago he had to make a careful inquiry on this point in a large institution, with the result that alcohol could be assigned as cause only in between 5 and 10 per cent.

Dr. F. Peterson (New York) also commented upon the numerous fallacies contained in statistics, and urged greater care in conducting the examination of the patient and his history from this point of view; the necessity for excluding all other etiological factors, and in particular the desirability of obtaining clearer definitions of the alcoholic psychoses.

Professor R. J. Anderson (Galway) stated that his knowledge of alcohol in this relation was exceedingly limited, but it appeared to him advantageous to consider not only the differences in the subjects but also the differences in the forms in which alcohol was imbibed, some being much more deleterious than others. It appeared to him certain, however, that some alcoholic drinks had a beneficial narcotic effect.

Dr. G. M. Robertson (Larbert) stated that the importance of the question of the injurious effects of the abuse of alcohol was recognized by all of them, but it was very probable also that these had been exaggerated by many. He, however, did not wish to act the part of *advocatus diaboli*, and he would make this statement, which he did not believe was at all inaccurate: Alcohol was the most important single factor in the production of insanity in men in this country. While asserting this he realized very fully the fallacies and inaccuracies of the statistics of alcoholic insanity. He observed a marked instance of this in the statistics of alcoholic insanity at Claybury presented by Dr. Mott when taken in comparison with his own statistics at the Stirling District Asylum. The most marked wave that had taken place in the incidence of alcoholic insanity was the great increase of admissions to his asylum that had taken place during the two years of the South African war, and which had since fallen to the normal. This marked rise corresponded exactly with a marked fall at Claybury. It was difficult to account for facts like these, but the extreme difficulty of knowing the cause of insanity had been well explained theoretically by Dr. Mercier. He stated that there were two factors in the causation of every case of insanity—an internal factor or hereditary predisposition, and an external factor, or alcohol in this case. These factors were always inversely proportional in their operation; that is to say, with a strong hereditary predisposition to insanity a small amount of alcohol would produce insanity, and with a slight predisposition to insanity a large amount of alcohol was required to produce insanity. Lastly, it was impossible to tell in any particular case what was the exact proportion of these two factors. It was thus impossible to tell with accuracy whether a case was principally caused by alcoholic abuse or was principally due to a natural mental instability. Even in those cases in which they thought they had most definite alcoholic symptoms, as in delirium tremens, it was probable that the disease was due to other factors as well as the alcohol. Dr. Mott had stated that chronic alcoholics were attacked with delirium tremens when they received a head injury or suffered from a microbic infection. He himself had observed two clinical facts that pointed to these other factors. He had frequently noticed that cases of delirium tremens who had recovered from their original symptoms had a relapse a fortnight later in the asylum, when there was no question of alcohol. Again, he had seen a patient who had been for years under observation in the asylum suffer from symptoms exactly similar to delirium tremens, delirious excitement, vivid hallucinations, tremor, etc., and who died of an acute bronchopneumonia. The same difficulty of knowing the causal factor of disease occurred in Korsakow's disease, which was also thought by some to be definitely alcoholic. By other authorities it was believed that other toxins—for example, rheumatism—played their part in its causation. He believed he had seen the disease also in a person who had not taken alcohol. It was evident from a consideration of these facts that the exact diagnosis of forms of insanity, as being definitely due to alcoholic abuse alone, was beset clinically and statistically with many difficulties which it was almost impossible to overcome.

Dr. David Yellowlees (Glasgow) also spoke in support of what others had said with regard to the value of the personal factor. At the same time he would not join in any glorification of alcohol, as he considered it much more a bane than a blessing. He was of the opinion that alcohol had a serious effect on the offspring, and he related to the meeting certain cases which had come within his own experience of defective children begotten in drink.

Drs. H. Davy, W. F. Menzies, F. W. Edridge-Green, L. Oswald, and T. W. McDowall also joined in the discussion, the two latter strongly opposing the general opinion of the members present that the statistical tables referring to the importance of alcohol in the production of insanity were valueless, and Dr. Oswald affirming that, at any rate in Scotland, these tables were prepared with the greatest care, and also that a recent investigation made in Glasgow upon the incidence of crime, insanity, and alcoholism had demonstrated a distinct relationship between insanity and alcoholism, that is, taking the proportional numbers of public-houses in the districts investigated as indicative of the amount of drinking, whilst Dr. McDowall stated that Northumberland, although it gave only a small proportion of insanity to population, had both a large proportion of alcoholics and of alcoholic insane.

Reply.

Dr. Mott, replying, stated that he did not wish to be understood as maintaining that intemperance was anything but a national calamity. He did, however, question whether alcohol in small quantities was a poison, and in support of this quoted recent investigations by Dr. Rivers, which showed that small doses of alcohol *when disguised* do not produce the effects of fatigue previously asserted. He was convinced that no one in the room had any wish to join in any glorification of alcohol, and he further disavowed any intention of discrediting the pains taken in preparing the statistical information criticized; he merely wished to point out that these statistics could not, from the nature of things, be reliable, as there did not exist any common standard of what constituted alcoholic excess. He was glad to hear Dr. White express the opinion that coincidence and cause are too often confused; for a lapse from moderation into intemperance may be the first recognizable sign of a mental breakdown. He was of opinion that the failure to discriminate between what is hereditary and what is the result of the alcohol has been the cause of much confusion respecting the effects of alcohol in the production of insanity. He referred to the inquiry conducted by the American Committee of

Fifty which showed that insanity was attributed to drink in 24.22 per cent. of the patients observed, but that only a little over half that number, namely, 12.22 per cent. were genuine alcoholics. Moreover, he alluded to an interesting illustration of the danger of *post hoc ergo propter hoc* that in the same inquiry total abstinence was found to be more frequently an antecedent of insanity than was intemperance.

THREE CASES OF PERIODIC DEMENTIA.

By Charles Arthur Mercier, M.D.Lond., F.R.C.P.Lond., F.R.C.S.Eng.,

Lecturer on Insanity, Charing Cross Hospital Medical School, and Medical School for Women.

The term "dementia" is used in two entirely and irreconcilably different senses. It is used to express a clinical condition—the condition of permanent, deep, irrecoverable damage of brain and consequent defect of mind and of conduct. It is understood, when used in this sense, to denote none but those examples of human wreckage that constitute the bulk of the inmates of public asylums—the hopelessly, deeply insane—but it does not include all of the hopelessly and deeply insane. Those who exhibit very active symptoms, either in mind or in conduct; those who have active delusions, especially if the delusions are organized; and those who are active in conduct, even if the conduct is on a very low level, are not called "dements." In the one case their malady is called "paranoia," in the other it is called "chronic mania." But nearly all chronic maniacs have their times of quietude, when they would pass clinically as dements; and nearly all dements have their periods of excitement, when they would pass clinically as maniacs. A chronic maniac who has long periods of quietude and short periods of excitement is a dement, and a dement who has short periods of quietude and long periods of excitement is a chronic maniac, and between the two there is a borderland wider than the territory pertaining alone to either. The term "dementia," thus used, is a loose, vague, inaccurate, and somewhat misleading term, convenient clinically, and especially convenient to those who do not care for logical distinctions and whose ideas are somewhat amorphous. But the term "dementia" has also another meaning; strictly, it means "deprived of mind"; and if it is restricted to those who are permanently deprived of mind, then we are sadly lacking for a term to denote those who are deprived of mind only temporarily.

As the use of "dementia" in the sense already defined has become so rooted and confirmed with many psychiatrists, I looked about for a term that could be utilized for the second and wider and, I think, more strictly appropriate sense, and for this purpose I constructed the word "Anoia," which expresses almost precisely the same meaning in Greek; but no sooner had I done so than I discovered to my chagrin that this very term had already been invented and applied to a different and very special use by my friend, Dr. Sherlock, of the Belmont Asylum. I am compelled therefore, to use the old term "dementia," and using it I am bound, and indeed I prefer, to define the sense in which I use it. By dementia I mean, then, privation of mind, carrying with it privation of conduct, but not necessarily permanent or irrecoverable. I need scarcely say that I do not mean the term to convey total privation of mind or conduct. This seems a very obvious limitation of the term; but although it is in fact attached to the term "dementia" by all who use it, yet many who use it would deny that they mean by "dementia" a partial deprivation of mind, and would assert that the word means total deprivation. When, however, it is remembered that total deprivation of mind means total unconsciousness, it will scarcely be maintained that "dementia" is ever used to connote total deprivation of mind. What such users of the word really mean is that they use it to connote deep dissolution—loss of the major part of mind. Dementia with them means deep dementia, severe dementia, a state in which much mind is lost and little is retained. If they were asked how much mind a person must lose before he could be considered demented, they would probably be puzzled to answer, but they would agree that dementia as a clinical term means deep dementia. This limitation, also, of the denotation of the term I must reject. Whatever the objects commonly denoted by the term in its everyday clinical use, they need not in its strict acceptance be limited to those alone in whom defect is great. I admit that the clinical use is fixed, and may perhaps be convenient; but as I am using the term in this paper in a special sense, I shall take the liberty of using it in whatever sense I please that is covered by its etymology, and I use it to connote every kind and every degree of mental defect, great or small, deep or shallow, irrecoverable or recoverable. Each and every such defect is a true dementia, a deprivation of mind, and we have no other term by which this deprivation can be expressed. But I do not rest here. Not even at this boundary do I limit the denotation of the term. I hold, and have held for many years, that in cases of active insanity, of insanity displaying conspicuous attention-attracting symptoms, such as active mania, prominent delusions, aberrant conduct, the important element in the case is not the conspicuous over-action, not the positive element which attracts attention, but the negative element, the defect, the loss, the deprivation which allows the over-action to take place. I hold that the great and fundamental principle of loss of control is valid not only among the lower nerve centres in the cord, the medulla and the motor area of the brain, but throughout the whole nervous system from top to bottom, and is as true of those highest regions which regulate conduct and underlie mind, as of the lowest regions that actuate muscular or glandular action, and have no mental accompaniment. In my view, therefore, every case of insanity is a case of dementia, in the sense that in every case of insanity the important feature in the case is not what is left to act disorderly, but what is taken away, and by its removal allows the remainder to act disorderly.

The three cases that I am about to describe are cases of dementia in this sense. They agree in the periodic removal or loss of the higher faculties of mind. Whether this removal or loss is accompanied, as it is in two of the cases, with conspicuous active positive symptoms from the over-action of what remains when the highest strata of mind are removed, or whether, as in the third case, there are no such active positive symptoms, is to my mind an unessential and accidental difference. The cases agree in presenting a periodical loss of portions of mind and conduct, which is their essential fundamental feature, and for this reason I have called them cases of periodical dementia.

Case I.—May W., 17, waitress. A rather anaemic underdeveloped girl. Has not yet menstruated, and looks childish for her age. Did well at school, and was not backward in early life, though she was delicate, and had abscesses in her glands. Every two or three months she gets "dull in her head" and is unable to do her work because she feels so stupid that she is afraid to take money or give change for fear of making mistakes, and also because she is so drowsy. She has a "muddy" feeling, knows where she is and what she is doing, but is sleepy, dull and stupid. She sleeps a great deal—the greater part of the day—when in this state, and sometimes talks in her sleep, but says she does not dream. When spoken to, she answers after a time, but "with a very great struggle." The answer is sensible when it comes. The attack is two or three days coming on, and lasts altogether eight or nine days, clearing up in the same gradual manner that it comes on. Sometimes the sleep is so heavy that it is difficult to wake her. She feels so weak that she can scarcely do her hair. When the attack is passing off she has pains in her head Since I have attended her, menstruation has become established, and the attacks have been at much longer intervals. During the last six months she has had one attack, and one threatening of an attack which passed off in a day or two without becoming established. Both these attacks were intermenstrual—halfway between two periods.

Case II.—Jessie L., 17, domestic servant. Was a bright child at school, and won prizes for needlework and neatness. Nothing odd was noticed about her until menstruation was established at 15, but for the last two years she has been strange in her conduct at every menstrual period. Ordinarily a staid, modest, quiet, and demure young person, of retiring disposition and very unobtrusive manners, very neat in her personal attire and habits, she becomes at these times excitable, talkative, noisy, and boisterous. She rushes up and down stairs, bangs the doors, laughs, dances, and sings, talks loudly and volubly, is rude and insubordinate to her parents, untidy in her person, lets her hair hang down and get into tangles, and does things that are distinctly odd; for instance, on one occasion she dug up a number of bulbs that had been planted in the garden, and strewed them about. She was in service, but in one of these attacks her mistress sent her home, saying that she was "most trying and peculiar, very excited and hysterical." The attacks last from three or four to nine days, and then die

away. They always occur at the menstrual periods. The attacks vary in severity, are sometimes scarcely noticable except to those who know her well, and sometimes so pronounced that she has lost her place in consequence. I have seen her both in her normal state and in an attack. In the former she is simple, modest, natural, unaffected, answers straightforwardly and readily, and is rather shrinking and retiring in demeanour. During the period of excitement she jerks and squirms about, interrupts her mother, contradicts, and when spoken to appears to sulk and hesitate long before answering. When normal, she recognizes that her conduct during the attacks is not what it should be, that she does silly things, and is in a state different from what is usual. She says it comes on suddenly, and is preceded by sharp pains in her head. During the attack her bowels are constipated, her breath offensive, and she eats very little.

CASE III.—E. J. C., a lad of 21, always been feeble-minded, but for the first week in every month he is much worse. He becomes excited, screams, imagines he sees things in the room —men, men in the drawers, under the bed, everywhere—and is very much frightened. Cries "Take that man away." On one occasion he was arrested by the police for strange behaviour in the street, and taken to the infirmary. His mind is so defective that at school he never reached any standard. There is some weakness of sphincters. He can talk pretty sensibly, however, and can do simple jobs—clean knives, run errands, deliver a message correctly to the right person, and so forth. On one occasion while under treatment he "went off" suddenly at 4 o'clock in the afternoon. He had "fought very hard" against the onset of the attack for some hours, that is to say, he had been very restless. At the time of the attack he was showing his brother his new writing case when he suddenly left the room and began to cry. Thereafter he was very strange in his conduct. Came down one morning with three shirts on, another day without any shirt, played about with his food and did not seem to know what to do with it, behaved altogether very queerly for a week, and then it suddenly cleared up. At 12 o'clock in the day he seemed to wake up, looked about him in a dazed kind of way, and did not appear to know where he was, then was found to be his natural self once more.

All three cases benefited greatly from antiepileptic treatment. The attacks became much less frequent. In the first case, in which the attacks were monthly, four months have elapsed without any sign of one; in the second, the girl in whose case also the attacks were monthly, there has been only one in eight months, and in the third one in six months.

DISCUSSION.

Dr. DAVID YELLOWLEES (Glasgow) stated that he had listened with the greatest interest to Dr. Mercier, but that he could not but feel that Dr. Mercier had been inspired throughout with the spirit of paradox. No one but Dr. Mercier, he was convinced, would have ventured to call these cases of dementia, as dementia to alienists means distinct mind weakness, probably of a permanent kind. Of the three cases described by Dr. Mercier the first was undoubtedly a case of katatonic stupor, the second of menstrual initiation, and the third, periodic excitement occurring in an imbecile. He agreed with Dr. Mercier that states of so-called double consciousness were often allied to epilepsy, but with regard to the larger question involved Dr. Mercier must not quarrel with other alienists if they persisted in regarding dementia as signifying permanent mental weakness depending on organic changes.

Professor HURD (Baltimore) also felt unwilling to accept Dr. Mercier's classification, and saw no advantage in the change of nomenclature. One of Dr. Mercier's cases was a case of what years ago he would have described as periodic mania, another was a case which would now be termed dementia praecox, and none of Dr. Mercier's cases appeared to him to exhibit double consciousness, or to be epileptic in nature.

Professor ERNEST W. WHITE (London) asked Dr. Mercier whether the attacks occurred at anything like regular intervals; whether they could therefore be anticipated and combated by medicinal treatment at the time, and whether the treatment was continuous. That they benefited by antiepileptic treatment was suggestive of their affinity to double consciousness, which was undoubtedly nearly allied to epilepsy. The cases pointed to a lack of mental stability, which could be restored by suitable treatment on the lines of that accepted for epilepsy, namely, the exhibition of the bromides. He had had the pleasure of reading Dr. Wigan's book on double consciousness, and he had been greatly surprised to discover how far the author was in advance of the times in which he lived. Dr. Wigan had anticipated by some forty years the doctrines which were now so largely accepted, and the book was one which ought to be read by all interested in this special branch of medicine.

Dr. G. M. ROBERTSON (Larbert) pleaded for the use of terms such as "dementia," in harmony with the connotation which had become generally accepted in course of time. He thought that the term "insanity" might very well be substituted for Dr. Mercier's use of the term "dementia." Certainly a fixed settlement of terminology would be of value, and he suggested for Dr. Mercier's use in these cases the term "primary mental deterioration."

Dr. P. W. MACDONALD agreed with Dr. Mercier in his extended use of the term "dementia."

REPLY.

Dr. MERCIER agreed entirely with Dr. Yellowlees and others as to the common use of the term, and it was precisely this common use which he desired to alter. At present they were all far too prone to pay attention to words, rather than things. What he particularly wished to emphasize was the fact that all the various features commonly called stupor, mania, and so on were unessential, were manifestations of functions which had not been removed, and that the only essential thing to be considered was the amount of mind removed and the rapidity of its removal. He stated in reply to Professor White that the attacks did occur at periodic intervals, and in reply to Professor Hurd, who thought that one of the cases might be included under the category of dementia praecox, that he agreed; that, in fact, every case of insanity, young, middle-aged, or old, might, according to modern usuage, come under this all-embracing category. He agreed further that his cases were neither cases of double consciousness nor cases of epilepsy, but merely that they had an affinity with both. Lastly, he could not accept the term "primary mental deterioration," as this term connoted therewith a permanent defect.

THE GALVANOMETER AS A MEASURER OF EMOTIONS.

By FREDERICK PETERSON, M.D.,
Professor of Psychiatry, Columbia University, New York.

THROUGH the courtesy of your officers I have been invited to bring before the Section of Psychological Medicine a subject which has occupied much of my time during the past winter—namely, the use of the galvanometer as an instrument of precision in psycho-physical research. I believe that we have demonstrated it to be a far more accurate instrument for recording physical changes associated with mental function than any apparatus heretofore employed, such as the plethysmograph, pneumograph, and the like. Furthermore, its distinctive field seems to be that of recording the effects of emotions upon the organism. I have given the name "electric psychometer" to the galvanometer thus used. Féré,[1] as far as I can learn, was the first to discover the perturbations of the galvanic needle caused by emotional influences. His reference is brief and he did not follow up the discovery. Two years later Tarchanoff,[2] a Russian, gave an excellent account of his experiments with the galvanometer in psychic processes. Incredulity or lack of interest, probably both, account for the oblivion of his work for seven years, when Sticker[3] repeated and corroborated the work of Tarchanoff. Five years more of oblivion followed, when in 1902 Sommer[4] reported his experience with the galvanometer, concluding that no psychic influence upon it could be established with certainty. Thus the matter remained until an electrical engineer of Zurich (E. K. Müller) reported to the Swiss Society of Natural Sciences in 1904 some experiments he had made upon himself with reference to the influence of psychic and physiological phenomena upon human electrical conductivity. He led Veraguth, a Zurich neurologist, to experiment with the galvanometer on the same lines, and Veraguth published a corroboration of Tarchanoff's work in August, 1906—one year ago—in the Geneva *Arch. de Psychologie*. Veraguth made his friend Dr. Jung, of the Psychiatric Klinik, Zurich, acquainted with the instrument, and he began to use it in connexion with word-association experiments, and published an account of these in the Boston *Journal of Abnormal Psychology* for February, 1907. I was fortunate enough to go to Zurich

in the last days of December, 1906, when the subject was wholly new, and Dr. Jung and myself conducted a long series of experiments upon normal individuals and cases of insanity, the results of which are published in the current issue of *Brain* (for July, 1907).

Apparatus Used.

We employed the mirror-galvanometer of Deprez-d'Arsonval (made by Carpentier, Paris, Model A), with a horizontal celluloid scale placed one metre distant from the galvanometer. A movable indicator on this scale was connected by cord and pulleys with a pen for recording the deviations of the light upon the kymograph (one person being delegated to follow the movements of the light with the indicator). A rheostat was employed and usually one Bunsen cell. The electrodes ordinarily used were large copper plates upon which the hands or feet were placed. We employed at times jars of warm water for the contact in order to exclude errors from unequal or changing contact. Sometimes we used one carbon plate and one zinc plate, without a cell, for the moist skin and metal suffice to produce an adequate current.

Psychic Influences on the Galvanometer.

As soon as the test person is placed in the circuit and the experiment begins there is a rapid rise in the curve with some fluctuation, which we find due to expectant attention, a form of emotion. The extent of this expectation curve varies in different individuals, depending upon the degree of affectivity. In beginning an experiment, therefore, we waited until the effects of expectation had subsided and the galvanometer was stationary.

We employed first the following series of varied stimuli: sensory, verbal, strong, indifferent, intellectual, and emotional. Frequently the test person was in an adjoining room, at some distance from the recording apparatus, for electrical and signalling connexions for almost any distance can be readily adjusted.

1. A loud whistle.
2. Fall of a heavy weight with loud noise.
3. Multiply 4×5.
4. Multiply 9×11.
5. Multiply 8×12.
6. Sudden call of test person by name.
7. Where do you live?
8. What is the capital of Switzerland?
9. What is the capital of France?
10. How old are you?
11. Are you married?
12. Were you engaged once before?
13. Have you been long at your present employment?
14. Threat with prick of needle after counting 1, 2, 3.
15. Threat of letting fall a heavy weight after counting 1, 2, 3.
16. What is your first name?
17. What is the first name of your wife?
18. Is she pretty?
19. We have now finished.

This series of stimuli, with slight variations adapted to different individuals, was ordinarily given three times. In many cases word associations were also used, and these were given three times in succession. We made the tests in eight normal individuals and eleven cases of dementia praecox (paranoid, hebephrenic, and katatonic). The moment of the stimulus was recorded by a Morse instrument upon the kymograph, and in the word associations the reaction time was also taken with a $\frac{1}{5}$ second stop-watch.

The galvanic wave begins to rise in from two to five seconds after the stimulus in normal conditions, but in some abnormal states, such as katatonia, this latent time is enormously increased, even to from eight to twenty-seven seconds.

We found that every stimulus accompanied by an emotion produced a deviation of the galvanometer to a degree in direct proportion to the liveliness and actuality of the emotion aroused.

Repetition brings about exhaustion of the power of the stimulus, so that in each series, as above described, the galvanometer waves were smaller in the second trial, and still smaller in the third trial.

A particular value is attached to the use of the galvanometer with word associations, where we see striking waves produced by waves that have a special emotional significance to the individual. A series of words is propounded to the test person, to each of which he responds with the first word that comes into his consciousness. It is like fishing in the sea of the unconscious, and the fish that likes the bait best jumps to the hook. The ordinary words of everyday life are used, because these are the ones associated with all of our experiences. Whenever a word strikes an emotional complex the result is sure to be registered by the galvanometer in a wave directly proportional to the degree of emotion aroused. For instance, one person with a series of twenty-four words propounded to him three times in succession showed notably higher galvanic waves in each series with the following word associations:

The sun—*burns.*
Floor—parquet.
Pay—write.
Warm—the *stove.*

From our experience we felt sure some emotional complex must be hidden behind these words, though there was nothing in the words themselves, aside from the high curves, to distinguish them from other similar and ordinary associations which he had given. Asked about them, he was ignorant of any special significance in them. After distracting his attention for a time, we asked him what the word "floor" suggested to him at the moment, when he suddenly said with surprise and embarrassment that recently a *stove* in his apartment had broken, *burned* the *floor*, and he had to *pay* for a new stove and for an entire new floor, while there had been great danger from fire. As he was an asylum attendant the expense was a hardship. Thus the galvanometer revealed an unconscious complex.

How far this method of study with galvanometer and word association may prove useful in attaining to a knowledge of hidden matters in the minds of neurasthenics, hysterics, the insane, and criminals, it is impossible to foresee; but that it is a new and valuable method of exploration in psychology is already beyond question.

I would like to say here that in cases of acute katatonia the galvanometer usually registers a straight line. There is apathy, an absence of emotion, and consequently there are no, or at most very slight, waves.

Physical Influences on the Galvanometer.

It is natural to inquire what other influences may affect the movements of the galvanometer during an experiment. With dry electrodes, increased pressure slowly increases the deviation, while relaxation of the pressure or raising the palms or fingers so as to diminish the area of contact suddenly lessens the deviation. This can be entirely obviated by the use of warm water contact. A deep inspiration, a deep expiration, and coughing cause a rise in the galvanometer wave. All of these irregularities can be controlled and are readily differentiated from the purely psychic perturbations.

The Physics and Physiology of the Electric Psychometer.

Tarchanoff looked upon these phenomena as due to a secretory current of electricity associated with the sweat glands. Sticker thought the capillary system of blood vessels was concerned in the manifestations, but the phenomena occur when the hands have been made quite free of blood by the Esmarch bandage. So far as we can yet decide from our own and other experiments, the sweat glandular system seems to be the chief factor, either through producing a current under irritation or by altering conductivity. But much still needs explanation in this connexion.

The Relation of the Psychometer Curves and Pneumograph Curves to the Emotions.

For several reasons, we made use simultaneously of the pneumograph in connexion with most of our galvanometer experiments, especially because of the proverbial influence of emotions upon respiration. Respiration is under conscious control, can be altered at will, is affected by many physical and intellectual processes, by the enforced quiet of an experiment, and by disposition to speak, cough, swallow, etc., not to speak of mechanical difficulties with the pneumograph, of individual variations due to temperament and lability of emotions, and to thoracic and abdominal differences. Respiration must be looked upon as an instrument of consciousness, and the respiratory

curve, when affected by emotions, seems to be affected not only for the moment but for a considerable time afterwards by a conscious reminiscence of the emotion aroused. The emotional disturbance persists for an uncertain period in the pneumographic curve, whereas the galvanometer wave quickly subsides with the fall of the emotion.

The galvanometer is a measurer of acute emotional tone, and is beyond the control of the will. This instrument registers emotional conditions in the subconscious or unconscious spheres. We found in our experiments curious differences in these curves. Sometimes, with very labile emotions, there were marked fluctuations in the galvanometer curves, while the respiratory curve would be regular and even. On the other hand, with rather an even galvanometer curve, there may be abrupt deviations in the respiratory curve.

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Dr. Peterson's paper, which was listened to with great interest, evoked very little discussion. Dr. MENZIES questioned the author concerning the electrical technique; and Dr. MOTT, who discussed the records shown by Dr. Peterson, considered that the results obtained probably represented muscular effort and suggested simultaneous plethysmographic records.

Dr. PETERSON, having replied to Dr. Menzies's queries, stated that he and his co workers had no certain knowledge of the psycho-physical operation involved, that they had only facts. He stated also that they had employed the plethysmograph in their experiments, but found that they obtained records which had no effect on or relation to the galvanometrical curves.

ON THE PRESENCE OF A BACILLUS IN THE BLOOD OF PERSONS SUFFERING FROM GENERAL PARALYSIS OF THE INSANE.

By GEORGE M. ROBERTSON, M.B., F.R.C.P.Edin.

[ABSTRACT.]

AFTER referring to the results obtained by Dr. Ford Robertson, the speaker proceeded to describe the investigations carried on by him and his assistants at the Stirling District Asylum. They consisted of observations upon the blood and cerebro-spinal fluid of general paralytics. The period chosen was that during, or within one hour of, a congestive seizure; three flasks, each containing 3 c.cm. of blood, being taken from the median basilic vein with rigorous precautions against contamination, and also cerebro-spinal fluid taken by lumbar puncture.

They had discovered a diphtheroid bacillus which was not identical with Ford Robertson's *B. paralyticans*, which latter he and his co-workers had never isolated. The speaker then showed and commented upon two tables, of which the first showed the positive results obtained in seven cases of general paralysis. In the first three cases the bacillus, drawings of which were shown, was discovered in blood smears and in cultures from blood and cerebro-spinal fluid, and in the first two also, *post mortem*, in the cerebro-spinal fluid; in the fourth case in the blood cultures alone; in the fifth case in both blood and cerebro-spinal fluid cultures; in the sixth case in only the *post-mortem* cerebro spinal fluid; and in the seventh case in the blood cultures only.

The bacillus was found in seven out of fourteen cases examined, and he was convinced that although it might not be the cause of general paralysis it was of importance in the symptomatology of this disease. Lastly, he had found the same bacillus in other forms of insanity in acute cases.

At the conclusion of Dr. Robertson's paper the President suggested that, prior to discussion, they should hear a paper on the same subject by Dr. J. P. Candler, one of Dr. Mott's assistants at Claybury. Dr. Candler's contribution, in the author's absence, was then read by Dr. Mott.

AN INVESTIGATION INTO THE INCIDENCE OF DIPHTHEROID ORGANISMS IN GENERAL PARALYSIS OF THE INSANE.

By J. P. CANDLER, M.B.Cantab., D.P.H.

THE researches of Drs. Ford Robertson and McCrae into the etiology of general paralysis of the insane, for which disease, together with tabes dorsalis, they claim to have discovered a specific organism, have given rise to much controversy.

In the first of their papers, published in the *Review of Neurology and Psychiatry* of May, 1903, they claim for a Klebs-Loeffler bacillus of modified virulence the power of giving to general paralysis its special paralytic character. In the second paper, which formed the subject of the Morrison Lectures of 1906, they claim that the commonly-accepted hypotheses with regard to the pathology of general paralysis are erroneous, that it is an infective disease as specific in its causation as tuberculosis, typhoid fever, and diphtheria, and give to their organism the special title of *Bacillus paralyticans*.

In the third paper, which they delivered in May, 1907, before the Medico-Psychological Association, they recognise two distinct species of diphtheroid bacilli, which they name *Bacillus paralyticans longus* and *Bacillus paralyticans brevis*, assigning to each of these two types definite and specific pathogenic properties.

The main grounds upon which they base their claims to having discovered a specific organism in this disease, endowed with special paralytic properties, appear to be:

1. The discovery of a diphtheroid organism in great frequency in the various tissues of general paralytics, especially in the alimentary, respiratory, and genito-urinary system, where they claim to have found evidence of the invasion of the tissues by this organism.

2. To the effect of prolonged feeding of rats with cultures of their organism, whereby they state that they have produced in these animals symptoms and lesions comparable with those of general paralysis.

3. To the improvement which they state to have occurred in 8 cases of general paralysis and 1 of tabes, *followed by relapse after several weeks*, which had been treated with specially-prepared vaccine.

In this paper I wish to state as briefly as possible the result of a year's work in the Claybury Laboratory, which has been specially directed to the search for diphtheroid bacilli in cases of general paralysis and other forms of insanity, and to mention some of the difficulties which I have experienced in these investigations. Before doing so, however, a very brief summary of the presence of diphtheroid organisms in general may be of interest.

It is remarkable that subsequent to Dr. Ford Robertson's paper in 1903 several important papers by known bacteriologists have appeared, all of which tend to show that diphtheroid bacilli of several species, and which, morphologically, are difficult to distinguish from the Klebs-Loeffler bacillus, are present in great frequency in all parts of the human body, and can also be found in domestic animals and birds.

Graham Smith, in the *Journal of Hygiene*, July, 1904, has gone into this subject in a very exhaustive manner, and gives a most complete bibliography. In short, there is hardly any part of the human body where diphtheroid organisms have been obtained by Dr. Ford Robertson in cases of general paralysis from which other observers have not already been able to obtain similar organisms in cases free from any semblance of insanity. Thus, they have been readily found in the nose, throat, ear, eyes, in lesions of vaccinia and variola, in the male urethra, urine, the pus of liver abscess, ulcerative endocarditis, abscess cavity of the mouth, old discharging wounds and sinuses, phagedaena of the penis, cancrum oris, and cerebro-spinal meningitis; in the majority of these cases the organisms being morphologically similar to the Klebs-Loeffler bacillus and avirulent to laboratory animals.

Furthermore, if it is contended that the mere presence of these organisms in special parts is of no particular significance, but the frequency with which they are met with is of special importance, then two recent publications will show that in two, at least, of the places where diphtheroid organisms are stated by Ford Robertson to exist, namely, the urinary tract and the conjunctiva,

similar organisms can be found in a large percentage of cases of sane individuals.

Reference to the *Lancet*, July 6th, 1907, will show that Hudson and Panton, out of 105 cases of acute conjunctivitis which they have recently examined, in 60 they found bacilli which morphologically resembled the Klebs-Loeffler bacillus. In 11 of these cases these diphtheroid bacilli were the only ones discovered; in the remaining 49 they were found in association with other organisms. In none of these cases had they any reason to suppose that these bacilli were the causative agents.

With regard to the genito-urinary tract, which is stated by Ford Robertson to yield diphtheroid bacilli in large numbers, especially in cases of tabes, I would refer to a recent paper by Stanziale in the *Centralblatt für Bakteriologie*, August, 1906, in which he states the results of his investigations of the bacteriology of the male urethra under normal conditions and in gonorrhœa. By means of a special instrument for scraping selected parts of the urethra, he obtained a diphtheria-like bacillus from the normal urethral mucous membrane in 12 out of 27 cases, and concludes by stating "that there exist in the urethra under normal conditions places which are quite sterile and again other places where different species of avirulent bacteria abound, the most common being staphylococci and diphtheria-like bacilli." He moreover quotes the work of Pfeiffer, who in 15 examinations of normal urethras found diphtheria-like bacilli in 11.

In respect to the frequency of diphtheroid organisms in cases of insanity, Eyre and Flashman, as a result of their investigations, found diphtheroid organisms in 16 6 per cent. of general paralytics, as compared with 17.6 per cent. of other forms of insanity, and state that in their hands diphtheroid organisms cannot be isolated from cases of general paralysis any more readily than from cases of other forms of insanity.

Of the work of O'Brien and of Langdon in America, who write in support of Dr. Ford Robertson's views, that at least of Langdon is too scanty in detail to deserve more than passing mention.

My own observations have been confined to the examination of cases of general paralysis and other forms of insanity in the wards and *post-mortem* room of Claybury Asylum. They have comprised:

1. Examination of the blood, cerebro-spinal fluid, respiratory, alimentary, and genito-urinary tracts of the cadaver.
2. Examination of the urine and urethras during life.
3. Examination of the blood and cerebro-spinal fluid during life.

With respect to *post-mortem* material, 25 cases of general paralysis yielded diphtheroid organisms in 3, or 12 per cent. In Case 1 a diphtheroid organism was isolated from the blood in pure culture, from the respiratory tract in association with organisms, and was seen with other organisms in a culture from the cerebro-spinal fluid, but could not be isolated. Presumably this was a terminal infection, but it is of interest that the organism obtained from the respiratory tract gave a far more luxurious growth on culture media, and possessed fewer metachromatic granules than that isolated from the blood, which was a typical diphtheroid, and appeared to belong to a different species.

In the second case a diphtheroid organism was isolated from the respiratory tract in association with other organisms, and resembled culturally that obtained from the respiratory tract of Case 1.

In the third case a diphtheroid organism was isolated from a number of other organisms from the base of an erosion of the stomach, which showed catarrh of the mucous membrane and erosions.

Fifty-nine cases of insanity, other than general paralysis, were examined *post mortem* in a similar manner.

Diphtheroid organisms were found in 4 cases—namely, in 3 cases from the respiratory tract, and in 1 case from the urethra. The percentage of diphtheroids being 6.6 per cent., as against 12 per cent. in general paralysis.

Examination of Urine during Life.—The urine was collected with due precautions in sterile vessels by means of a sterile catheter, allowed to sediment, and then part was centrifugalized and smeared over the surface of agar plates. Twenty-six cases of general paralysis were so examined, and yielded a diphtheroid bacillus in 2 cases, or 7.6 per cent. Twenty-eight cases of other forms of insanity yielded 1 case, or 3.5 per cent., where a diphtheroid bacillus was isolated.

Examination of Urethras during Life.—The tip of the urethra was carefully cleansed, and then a platinum wire was inserted into the urethral canal as far as possible. Blood serum and agar tubes were inoculated, and the several colonies which appeared were examined. Diphtheroid bacilli were isolated in 5, or 16 per cent., out of 31 cases of general paralysis examined. Out of 44 cases of insanity other than general paralysis, diphtheroid bacilli were isolated in 6, or 13 6 per cent., cases.

Summary of the Investigations.—The total number of all cases examined was 223, 82 of which were cases of general paralysis, and 131 were of other forms of insanity. The percentage incidence of diphtheroid organisms in general paralysis was 12.2 per cent., while in other forms of insanity it was 8.4 per cent. The highest individual percentage of diphtheroid organisms occurred in the urethras of general paralytics, namely, 16 per cent., compared with 13.6 per cent. in other forms of insanity.

These figures cannot be taken to be of accurate statistical value, because the number of cases which have been examined are not sufficient for this purpose; and, secondly, it is not an easy matter to isolate diphtheroid organisms, especially if they are in scanty numbers, from the host of bacteria which are present in the alimentary, pulmonary, and genito-urinary system; but they help to confirm the findings of Eyre and Flashman, who have not been able to observe diphtheroid organisms in cases of general paralysis in numbers sufficient to excite remark.

The examination of *post-mortem* material is, in my opinion, very unsatisfactory. At a very early period after death the blood and cerebro spinal fluid become invaded by putrefactive and saprophytic bacteria, even when recourse has been had to the cold chamber, and the presence of diphtheroid organisms either as a terminal or *post-mortem* invasion would not, in my opinion, be an unlooked-for contingency.

The results of the examination of the urine and urethras of living cases are of interest, especially when contrasted with the work of other observers upon the urethras of normal persons. Without entering into detail, I may remark that the types of diphtheroid organisms met with in the genito-urinary system, both in the case of general paralytics and other forms of insanity, are different to those which I have found in other parts of the body, and both as regards morphology and culture appear to be somewhat like the *Bacillus xerosis*. The slightly greater frequency with which diphtheroid organisms have been found in general paralytics as against other forms of insanity may be due to the greater ease with which scrapings can be obtained from the urethral mucous membrane of the former, and partly to the greater liability of these cases, which in numerous instances have suffered from venereal disease, to congestion of the urinary tract.

I consider it difficult to decide with certainty, from the examination of living persons, whether these organisms have their habitat in the bladder or frequent only the urethra, for whether the urine is voided in the usual way or withdrawn by catheter, contamination with urethral organisms appears unavoidable. I am inclined to believe that their habitat is the urethral mucous membrane, as I have not been able to find them after puncture of the bladder of the cadaver.

The last and perhaps most important observation to which I wish to allude is the examination of the blood and cerebro-spinal fluid of living subjects. Dr. Ford Robertson states that he has isolated a diphtheroid bacillus in pure culture from the circulating blood on four occasions, and from the cerebro-spinal fluid withdrawn by lumbar puncture in two cases. Moreover, diphtheroid bacilli exhibiting metachromatic granules in Neisser preparations have been detected in the fresh blood in one case, and in section of the brain in two cases. Also that bodies exactly corresponding to dissolving bacilli can be detected in the blood and cerebro spinal fluid of the living general paralytic, especially during a congestive attack. The reason that bacilli cannot readily be detected in blood cultures is, he states, due to their being rapidly taken up by the polymorphonuclear leucocytes, whereby they are speedily disintegrated.

Dr. Robertson, the Superintendent of the Stirling District Asylum, has also stated that in the laboratory

connected with his institution, cultivation of the blood of general paralytics has been followed by the discovery of a diphtheroid bacillus of the *xerosis* type in 7 out of 10 cases examined, while in some of the 10 cases the organism has been recognized in film preparations. It is stated, however, to differ from that discovered by Dr. Ford Robertson.

The most recent statement which I have noticed in this respect is that of Dr. Bruce of Murthly Asylum at the meeting of the Edinburgh Chirurgical Society,[1] in which he states that he has been unable to isolate any organism from the blood or cerebro spinal fluid of general paralytics. I have examined the blood of 24 cases of general paralysis on forty-one different occasions during life, some cases having been utilized more than once. In no single instance have I been successful in obtaining a culture of a diphtheroid bacillus, and I have never seen any organisms in films of the fresh blood stained by Leishman's method which I could accept as resembling diphtheroid bacilli.

I may state that the majority of the cases selected were advanced cases of general paralysis, some of whom have since died, and the clinical diagnosis has been verified at autopsy.

With regard to the technique adopted, the first 12 cases were examined as follows:

Blood in amounts varying from 5 to 20 c.cm. was removed from the basilic vein into a sterilized syringe containing a small amount of potassium citrate solution. The greater part of the blood was quickly squirted into a flask containing about 100 c.cm. of sterile bouillon. As a control, 0.5 to 2 c.cm. of the remaining blood was placed in a culture tube containing 10 c.cm. of broth. In addition, the surface of slanted agar and blood serum tubes was also smeared over with drops of blood.

Investigation of the blood of the last 12 cases was performed in a somewhat different manner. Miss Muirhead, bacteriologist to the Stirling County Asylum, when visiting the Claybury Laboratory, kindly informed me of the method she had been adopting for obtaining her variety of *Bacillus xerosis* from the blood of general paralytics. This method, in its main points, I have latterly adopted. Flasks containing 100 c.cm. of sterile bouillon, or bouillon to which ½ per cent. potassium nitrate has been added, were inoculated with 5 to 20 c.cm. of blood, a small amount of blood being also deposited into a culture tube containing 8 to 10 c.cm. of bouillon as a control. The flask was incubated for two or more days at 37° C., and then the centrifugalized deposit of 20 to 30 c.cm. of this incubated boulllon was distributed into two or three tubes of liquefied agar, and plates poured in the usual way; or, as an alternative, the centrifugalized deposit was smeared by means of a sterile L-shaped glass rod over the surface of sterile agar plates. As a control some of the deposit was also smeared over the surface of a culture tube of slanted agar. Films were also made of the deposit and examined for the presence of diphtheroid bacilli. In some instances the flasks containing the blood and bouillon were placed in the cold chamber for a few hours before incubation at 37° C., as suggested by Dr. Ford Robertson.

I understand from Miss Muirhead that the organism which she has obtained by somewhat similar procedures is so difficult to grow, that out of two or three agar plates prepared from the centrifugalized deposit she may only obtain a single colony on a plate, and I have not succeeded in obtaining a diphtheroid bacillus from the blood by this method.

I have also examined the cerebro-spinal fluid of patients during life, nine being cases of general paralysis and one of tabes. In the last seven cases examined the centrifugalized deposit has been plated directly, in a manner similar to that used in the examination of the blood; and the rest of the fluid has been placed in broth tubes and on the surface of agar slants, but I have failed to obtain a culture of a diphtheroid organism from this fluid, neither have I seen diphtheroid bacilli in stained films of the deposit.

In the examination of the blood and also of the cerebro-spinal fluid I have experienced difficulty on occasions, as regard contamination. Despite the utmost care in the sterilization of the patient's skin and instruments, I have had growths occurring both in the broth flasks and tubes on seven occasions out of forty-one. In four the organism was a *Staphylococcus albus*, in one the colon bacillus, in one a small diplo-bacillus with occasional long forms resembling the bacillus of Friedländer; in one case a small and delicate streptococcus which was later obtained in pure culture from the heart blood at autopsy.

Now for obvious reasons it is easier in most cases to negative the presence of a particular bacillus in the blood by use of the methods at present at our disposal than to state that organisms which appear on the culture media actually come from the circulating blood. A glance at the photograph of agar plates exposed to the air of the general paralytic ward during the withdrawal of blood from some of the cases will show what risks are run in the opening and closure of flasks and tubes; while however carefully the skin may be cleansed, there is always some risk that contamination may occur from this source. Therefore I should be unwilling to state that the organisms which I obtained growing in all the tubes inoculated really came from the blood, though in one case at least, in which the same organism was obtained *post mortem* as during life, there is strong ground for this belief, and suggests that during the later stages of general paralysis there may be from time to time a transient invasion of organisms of various species into the blood stream. Much more does the possibility of external contamination come into play, when bouillon cultures of two to three days' incubation are further exposed to centrifugalization and plating on agar. It has been my experience when adopting Miss Muirhead's method to find the initial bouillon flask and culture tube to be sterile, the centrifugalized deposit sown over the surface of an agar slant tube to be sterile, but on examining three agar plates prepared from the centrifugalized deposit to find one plate sterile, and on the other two a colony, say, of a coccus, sarcina, streptothrix, or sporing organism, a contingency which, despite the most careful precautions, must sometimes occur. Therefore, considering the ubiquitous nature of the diphtheroid group, I am of the opinion that caution must be exercised before it is definitely stated that an organism so obtained does actually come from the circulating blood. Dr. Ford Robertson states that he has detected diphtheroid bacilli in sections of the brain in two cases, and that disintegrating bacilli can be recognized in the walls of the vessels, and in the pia arachnoid in many cases of general paralysis; also that the centrifugal deposit of the cerebro-spinal fluid and urine commonly contain abundant diphtheroid bacilli more or less affected by lysogenic action. He has also found the tissues invaded by his organism. Inferences of this nature drawn from the examination of stained smear preparations and histological sections are, in my opinion, liable to be erroneous, especially where claim is laid to detection of disintegrating diphtheroid bacilli. On two occasions during the examination of the urine I have been led to suspect the presence of diphtheroid bacilli, in almost pure culture, upon the observation of a carbolic methylene-blue specimen of a centrifugalized deposit. In both cases short bacilli were seen with pale staining protoplasm and containing what appeared to me one or more deeply stained granules in each; the arrangement of the bacilli in the field was by no means characteristic, and cultures showed the presence in one case of the *Bacillus pyocyaneus*, and in the other of the *Bacillus coli communis*. In another instance the examination of a centrifugalized deposit of cerebro-spinal fluid taken from a case *post mortem*, and stained by Leishman's method, showed some short and slender bacilli which had very much the appearance of a short form of a diphtheroid organism. A second film stained with Loeffler's methylene blue showed a rather short and fat bacillus totally unlike a diphtheroid, the similarity under the Leishman stain being probably due to the shrinking effect of the alcohol in the stain. The organism on culture developed spores. Furthermore, I recall to mind the appearance of a film stained by a modification of the Neisser method, which had been obtained from culture on blood serum from the throat of a suspected case of diphtheria; a rather long and stout bacillus was found which showed deeply-stained dots in situations exactly similar to those in which they are seen in the diphtheria bacillus. The patient was at once isolated, but subsequent culture showed that the organism was a sporing bacillus. Mervyn Gordon in the Local Government Report for 1901-02 mentions that he had found a streptothrix which in stained preparations

made from a culture of the pharyngeal mucus showed granules when stained by the Neisser method which made it very difficult to distinguish from a diphtheria bacillus, and I have met with a strepto-bacillus from the throat, which in direct preparations has caused the same difficulty in diagnosis. These cases lead me strongly to the opinion that evidence obtained from inspection of stained films and histological sections is very liable to be misleading unless confirmed by cultural methods. It is well known that the brain and other tissues of the body are liable to terminal and *post-mortem* invasion by micro-organisms. Mott, for example, has found diplo-streptococci present in the brain and spinal cord of cases dying from sleeping sickness, and I have seen bacilli in the neighbourhood of cerebral tumours, and in stained sections of the cerebral cortex, but I should hesitate to express any opinion concerning their nature from microscopical examination.

Dr. Ford Robertson states that he has produced in rats and a goat symptoms and tissue changes resembling those of general paralysis. In those animals in which he succeeded in obtaining a chronic infection with his bacillus tissue changes comparable with those of general paralysis are stated to have been produced, while the clinical symptoms comprised paresis, slowness and uncertainty of gait, and emaciation. The animals are described as becoming dull, drowsy, stupid and demented-looking. With regard to the histological changes, it was a disappointment not to have had an opportunity of seeing them among the specimens exhibited at the meeting of the Medico-Psychological Association. As for the clinical symptoms I was under the impression that feebleness of gait, emaciation, drowsiness and paretic symptoms were not at all uncommon results of experimental feeding and inoculation of animals with various organisms or their products. An interesting paper by Sokalsky[2] described a peculiar organism which he found in the blood of three cases of progressive general paralysis which produced in guinea-pigs symptoms very similar to those described by Ford Robertson—namely, feebleness, sluggish movements, loss of power in the hind limbs, emaciation, and in one case a peculiar attack resembling a hemiparesis. Lastly, with regard to the improvement which is stated to have occurred in certain patients as the result of treatment with a special vaccine prepared from the *Bacillus paralyticans brevis*, and followed by relapse, it must not be forgotten that remissions do take place in the course of general paralysis which may be of brief duration or extend over several months, and notable instances are recorded in which professional men and athletes have been able to return to their previous occupations with success during such remissions. Further, it is worthy of mention that Dr. Lewis Bruce[3] claimed to have greatly benefited two cases of marked general paralysis by inoculating them with defibrinated blood taken from a case of general paralysis in the second stage of the disease. The discovery also of a motile bacillus in the circulating blood of a general paralytic on one occasion, together with the results he obtained by testing the agglutinating properties of the blood serum of patients in a condition of remission, against a known strain of *Bacillus coli communis*, led him to consider that small subcutaneous injections of blood serum of a horse immunized to the *Bacillus coli communis*, and continued over a length of time, might produce artificial remission of the disease.

Again, temporary improvement of a greater or less degree was stated by Ford Robertson in May, 1903, to have occurred in certain cases treated with anti-diphtheritic serum, although in his later papers he has claimed that his organisms are special and distinct species of the diphtheroid class. It is possible, therefore, that the improvement which is stated to have followed the use of the new vaccine may be found to be only of a temporary character as in the previous instances, but time alone can decide.

In view of all the above considerations, I feel justified in suggesting that whereas it is possible that diphtheroid bacilli in conjunction with several other species of micro-organisms may help to undermine the constitution of persons suffering from general paralysis, and thereby to hasten the progress of the disease, sufficient evidence has not yet been produced to warrant the statement that a particular species of this group is endowed with specific pathogenic and paralytic properties.

In conclusion, I wish to state that, for the reasons I have already given, I consider the examination of *post-mortem* material for the presence of diphtheroid organisms to be unsatisfactory; if, however, an organism of the diphtheroid species has been found with any degree of frequency in the circulating blood or cerebro-spinal fluid withdrawn by lumbar puncture, Professor C. J. Martin, Director of the Lister Institute, had kindly promised Dr. Mott to further the investigation by inoculating animals, with a view to the production of a serum, thereby to ascertain whether any beneficial effects could be obtained by its use in cases of general paralysis.

References.
[1] *Lancet*, July 13th, 1907. [2] *Zent. f. Bakt.*, February 5th, 1907. [3] British Medical Journal, 1901.

The discussion which followed the reading of these two papers was exceedingly brief, neither paper exciting hostile criticism.

Dr. Claye Shaw said that it would be agreed that the presence of any micro-organism having a specific relation to general paralysis had not yet been proved.

Dr. Mercier, however, referred to a serum the results of whose application had recently been brought before another meeting by its discoverer, Dr. Ford Robertson; these results appeared to him (Dr. Mercier) beyond the range of coincidence.

Dr. Yellowlees having stated that this matter was one really for bacteriologists, but that he personally had no doubt that they were on the threshold of important discoveries, and that he, with all others, wished the investigators God-speed in their work, Dr. Robertson briefly replied.

A DISCUSSION ON HYPNOTISM.

OPENING PAPER.

By J. F. Woods, M.D.Durh.,
Late Medical Superintendent, Hoxton House Asylum.

I have much pleasure in acceding to the request to give my personal experience of the treatment of insanity by hypnotism. My experience of this treatment dates from 1892, when I was acting as Resident Medical Superintendent of Hoxton House Asylum. I have now treated over 2.000 cases, with the following results:

No. of Cases.	Recovered.	Improved (many still under Treatment and may Recover).	No apparent Change.
2,076	1,578	293	205

Of this number I have classified 881 as mental cases, including neurasthenia, hysteria, bad temper, etc., some of which are borderland cases, and in which this form of treatment is most efficacious.

Mental and Borderland Cases.

	Number of Cases treated.	Recovered.	Improved (many still under Treatment and may Recover).	No apparent Change.
Neurasthenia and borderland cases	666	597	41	28
Melancholia	118	80	19	19
Delusions...	2	2	—	—
Mania	44	20	16	8
Night terrors	6	5	1	—
Stage fright	28	23	5	—
Phobias	5	4	1	—
Delirium tremens ...	1	1	—	—
Hysteria	7	6	1	1
Obsession...	2	2	—	—
Bad temper	2	2	—	—
	881	741	84	56

Illustrative Cases of Melancholia.

Case I.—Mrs. M., wife of umbrella maker, 36, who was a resident patient in Hoxton House during 1892, suffered from melancholia with delusions. She fancied that men were following her to cut her up, after the manner of Jack the Ripper. She also had asthma, and slept badly. I hypnotized her when she was in bed, telling her to sleep all night and to abandon the nonsensical idea that she was being followed, etc, and that she would awake feeling happy and without asthma. My attention was called to this patient the next day by the nurse, who told me that Mrs. M. appeared to be well, and was helping her in the ward kitchen. I then questioned Mrs. M., and was much surprised to find her apparently well. She said, "How silly I have been to have these fancies for over four months!" The asthma had disappeared.

I sent this case out on trial for a month, and as she remained well, she was permanently discharged.

Case II.—E. B., aged 16, admitted December 20th, 1893. In great distress, continually crying, has delusions, fancies that she is lost, says she wishes to die, and asks us not to burn her; full of self-accusations about being very wicked and going to hell, sleeps badly and refuses her food. In weak bodily health, has no organic disease. Had ordinary asylum treatment with no improvement until the second week in January, 1894, when she was hypnotized about three times, the suggestion being given during hypnosis that she was to sleep, and awaken feeling better. Distinct improvement. Third week: Hypnotized twice with same suggestions. Improving in every way. Fourth week: Hypnotized twice. Has good nights, takes her food well and is much stronger, has given up crying for some days. February 10th: Has not been hypnotized since January, is going on well and gaining in weight, generally cheerful.

March 21st: Health much improved, always cheerful, very industrious, helps the nurses.

April 3rd: Quite convalescent.

Case III.—Mrs. de K., aged 42. Married. Suffered for two years from melancholia. Was very depressed and nothing interested her. She had had ordinary treatment and rest cure. Seen first on May 10th, 1907, and was treated hypnotically for half an hour, and got up feeling better afterwards. Had a good lunch with her husband, having previously very little appetite. Was seen again May 31st: Treatment repeated. Was feeling and sleeping better. June 6th: Again treated. Improvement continued.

June 27th: Had a letter from the patient saying she was quite well.

July 11th: Saw the patient, who appeared quite well and happy.

Case IV.—Mrs. D. F., aged 36. Melancholia. Consulted me during the summer of 1901, declaring that she intended to commit suicide unless I could relieve her, showing me a bottle of laudanum which she had in her bag for that purpose. She could give me no cause, domestic or otherwise, for her illness, but complained of sleeplessness, of great restlessness, and of being easily worried. She was well nourished, and I found nothing physically wrong, except that she suffered from palpitation and sometimes had neuralgia. I told her to sit in my armchair, relax her muscles, close her eyes, and give me the bottle of laudanum, which she did. I then placed one of my hands on her epigastrium and with the other stroked her forehead. In about a quarter of an hour the pulse dropped to 72, having been 102, and she became drowsy. I then told her to try and sleep for a few minutes while I went into the next room. This she did, and, when I awoke her, she began to laugh and said she felt much better, in fact very well.

I saw this patient at intervals for about two months, and she made a complete recovery.

Puerperal Mania.

Case I.—Mrs. A. K. M., aged 28, had been in a state of mania for six months before she was treated at Hoxton House in 1893. She had been shrieking continuously for five days and nights whilst at the infirmary, and was raving when admitted. I told the nurses to place her in the armchair in my office and to wait in an adjoining room. I then started to hypnotize the patient, and, although she did not sleep, she became perfectly quiet and did not speak again for eight hours. I hypnotized her altogether seven times, always during the day, with the usual suggestions for good sleep at night, etc. She made an uninterrupted recovery.

So rapidly did this case respond to treatment that the nurses, not hearing her voice as they left the room, peeped round the door and asked the relieving officer if I had gagged the patient.

Mode of Procedure.

I need not tell you that different operators have different methods of inducing hypnosis. Nor need I detain you with the details of these methods—how one man directs his patient to look into his own eyes until the hypnotic state is induced; how another orders him to gaze at a bright object, such as a diamond; how others, again, employ mechanical devices of various kinds, but all having the same primary object, to engage the attention and fatigue the visual apparatus. Formerly the inhalation of certain drugs, notably cannabis indica, was resorted to to aid the induction of hypnotic sleep, and more recently chloroform has been employed with the same object in cases which do not yield to ordinary methods; but of these methods I have had no experience.

Of late years most physicians who have employed hypnosis therapeutically have shown a tendency to abandon elaborate methods, finding that for practical purposes they are unnecessary, and, indeed, that it is not even always needful to induce complete hypnosis in order to render suggestion effective. Such has been my experience. A great many of my patients improve by suggestion if I simply sit by them and get their attention.

Respecting the method I myself use, I have little to add to the description given in the *Journal of Mental Science* in 1897. It remains much the same to-day as it was then. It is a common practice with me to place one hand on the patient's epigastrium, while gently stroking with the other the patient's head. In this way I am often able to obtain striking results, more especially in palpitation and in epigastric pain or spasm. While applying the hands as just described I engage the patient in conversation, with the object of securing his full confidence, which having done, I get him to relax his muscles to the utmost, and I insist on complete silence, the only sound heard being that of the rhythmic movement of my hand as I stroke the upper part of the face, or, it may be, the arms. This silence I have found in many cases more impressive than words, and a suggestion made at the end of a pause of this sort is, in my experience, far more effective than the uninterrupted drone of a voice making the same suggestion in different phrases, as is the custom of Bernheim, who, like myself, resorts to treatment by suggestion without hypnosis. All this time I remain myself as reposeful as possible; I seek, in fact, to create an atmosphere of repose and silence, which is in itself impressive, and tends to induce in the patient a condition of receptiveness. If, when the psychological moment has arrived, I make a suggestion, I get an effect such as I cannot so readily obtain in any other way, save by inducing actual hypnosis, which many patients object to, and for which there is, in the majority of cases, no necessity whatever.

I would emphasize this fact—that, in most cases, there is no need whatever to send the patient to sleep. Suggestions can, in almost all cases, be made quite as effectually without hypnosis as with it, and certainly in the case of many patients whom it would be impossible to hypnotize. A further advantage of this plan is that treatment can often be carried out in *séances* of quite short duration, and in the consulting room, though, in difficult cases, it may be advisable to visit the patient at his own house in the evening, at the hour of natural sleep, and, in still more obstinate cases, we may find it necessary to isolate our patient, so that he may be removed from injurious home influences.

With regard to the suggestion, which is the essential curative agent, there must be no kind of uncertainty about the manner of making it. It must be forcible and emphatic. But before the physician can speak with this necessary authority he must have gauged the exact condition of his patient, and himself be inspired with confidence in his powers, so that he may infect his patient with that confidence.

Having trained myself in an asylum, it is, perhaps, not unnatural that it should seem to me that such a place is the most suitable one in which to cultivate the art of psychotherapeusis, and for the following reasons: You there learn to deal with people with whom it is impossible to reason; they follow you to a certain point, or for a certain time, and then their attention wanders, and you feel you are no longer holding them, and by degrees you come to see that there is no use arguing with the insane, any more, for the matter of that, than there often is even with the neurotic. They need to be dealt with in other ways. You notice that while one attendant has little or no difficulty in handling the patients under his charge, another is far less successful; you notice why, and try to cultivate his methods. In this way you get

Cases.

	No. of Cases Treated.	Recovered	Improved Still under Treatment.	No Apparent Change.
Neurasthenia	666	597	41	28
Writer's cramp	10	6	—	4
Chronic alcoholism ...	208	141	35	32
Stammering	15	8	5	2
Headache	214	186	15	13
Melancholia	118	80	19	19
Dyspepsia	65	59	2	4
Arthritis	59	16	25	18
Neuritis	41	27	10	4
Insomnia	91	77	8	6
Neuralgia	140	114	14	12
Lumbago	6	4	2	—
Torticollis spasmodica	22	9	9	4
Sea-sickness	4	4	—	—
Sickness of pregnancy, etc.	5	5	—	—
Impotence	8	6	1	1
Sciatica	52	37	9	6
Asthma	8	3	3	2
Masturbation	11	9	1	1
Nocturnal incontinence	5	4	1	—
Gout	10	7	2	1
Urticaria	4	3	1	—
Blushing	2	1	1	—
Pain	5	4	1	—
Night terrors	6	5	1	—
Stage fright	28	23	5	—
Biting nails	2	2	—	—
Epilepsy	50	12	22	16
Functional paralysis ...	9	6	2	1
Hysteria	7	5	1	1
Menorrhagia	4	3	1	—
Morphine and drug habit	12	6	3	3
Tinnitus	7	2	2	3
Sprain	1	1	—	—
Spinal neuralgia ...	5	3	1	1
Chorea	49	35	10	4
Obsession	2	2	—	—
Locomotor ataxy ...	6	—	3	3
Spasm	5	1	4	—
Delusions	2	2	—	—
Bad temper	2	2	—	—
Pianist's cramp	2	2	—	—
Rheumatism	13	11	2	—
Tremors	4	2	2	—
Delirium tremens ...	1	1	—	—
Deafness	8	2	2	4
Palpitation and heart troubles	18	11	6	1
Loss of memory ...	2	1	1	—
Eczema	1	—	1	—
Hay fever	5	5	—	—
Paralysis agitans ...	6	—	3	3
Dysmenorrhoea ...	2	2	—	—
Phobias	5	4	1	—
Mania	44	20	16	8
Grand Total	2,676	1,578	293	205

to learn that much tact is required to cope successfully with mental cases, more, indeed, than with persons in the full possession of their faculties. You soon discover that all patients cannot be treated on the same stereotyped lines, that what soothes and gives confidence to one, alarms and disquiets another; you gradually come to find out that your nervous and mental patients have to be approached with the utmost caution and tact, and to recognize the unwisdom of taking up any decisive attitude towards them until you have first got to understand them. You get, in short, to understand and to be able to control the most difficult of all persons—those who have no control over themselves—and not the least important thing you learn is endless patience. You learn, in fact, how to adapt yourself to the patient's condition, and what forms your suggestion should take, and thus in course of time you come to act instinctively. I myself probably never treat two patients exactly alike, and, indeed, have no notion how I am going to treat a patient until I feel myself in touch with him. Even then my procedure is rather an instinctive one than one which is consciously reasoned out, so that I should often find it difficult to explain the *raison d'être* of my method in individual cases. I frequently, indeed, while treating a patient, find myself following out a train of thought having nothing to do with the case in hand, a circumstance which makes my work far less fatiguing than would otherwise be the case.

When I treat a patient I cannot tell at once whether he is susceptible or not, and I often find that patients with whom I can do little at first on account of a certain anxious nervousness respond after a few *séances*.

DISCUSSION.

The President, in opening the discussion, reminded his hearers of the suspicion with which hypnotism was formerly regarded. Nowadays, however, it was recognized as a useful method of treatment. The striking features of Dr. Woods's paper appeared to him (1) the number and diversity of the cases treated, and (2) the beneficial results which Dr. Woods had obtained in epilepsy. When Dr. Woods stated that cases of epilepsy had recovered under hypnotic treatment, it must be accepted that Dr. Woods stated this with a full sense of responsibility, and it must further be accepted that certain cases, the subjects of organic changes, recovered under hypnotic treatment.

Dr. E. S. Passmore (Croydon) also commented upon the wide area over which Dr. Woods's cases ranged. He himself only wished to touch on two points—namely, headache and mania. As every one knew, these symptoms might be due to several various clinical conditions, functional or organic. He therefore asked Dr. Woods whether he had kept a record of the physical states of the patients treated for headache and mania.

Dr. Schofield (London) stated that his only experience of hypnotism in his practice was from observing the result of treatment in cases he had sent to various London specialists, and he had been struck several times with the remarkable failure of hypnotic treatment in the very cases in which success was to have been expected, and by the, at times, good results in the most unlikely cases.

Dr. David Yellowlees (Glasgow) stated that he, like others, was impressed by the immense list of "cures" given by Dr. Woods. He did not doubt the honesty with which these cases were recorded, but he must confess he had doubts both as to the nature of the cases and also the duration and reality of the "cures." At the same time, he would not cavil at the possibility of relieving pain even in cases of organic disease. He then instanced some cases of this kind from his own practice in support of this. He was quite sure that organic disease and its manifestations might be largely influenced by hypnotic suggestion, and that it was absurd to say that hypnotism was only successful in functional cases. He considered, however, that the practice of hypnotism was not without its dangers, which should be carefully guarded against.

Dr. G. M. Robertson (Larbert) dwelt upon the importance of hypnotism, not so much in itself, but as underlying many other forms of treatment. He had had considerable experience, and twenty years ago was very enthusiastic, but he was bound to admit that his enthusiasm had undergone a decided cooling process. He had found the favourable results of hypnotic—or, as he

preferred to call it, suggestive—treatment not lasting. On the other hand, it was of great value when applied with other remedies—fresh air, baths, etc.—and he considered that every medical man should understand its use and application. After his return from Nancy, where he had been studying this subject, he was much struck by seeing and hearing Dr. Clouston at the Morningside Asylum put in practice precisely the same suggestions to his patients that he had seen and heard at Nancy. As a matter of fact, he himself, however, had found insane people very difficult to hypnotize, and especially melancholics.

The discussion was brought to a close by the PRESIDENT'S affirming his belief that states of mind had an enormous influence on states of body, although they had to confess their ignorance of the underlying connexion.

REPLY.

Dr. WOODS, in a brief reply, stated that he did not profess to do much for the sufferers from organic disease. Also that he was not able to give at that meeting information as to the physical condition in the cases he had included in his tables. As to the duration of recoveries, he had had alcoholic cases keep well for as much as fifteen years, and many other cases for equally long periods. As to the danger spoken of by Dr. Yellowlees, he could only say that he had never yet met with any ill result.

THE TEACHING OF PSYCHOLOGY IN MEDICAL SCHOOLS.

By A. T. SCHOFIELD, M.B.Brux., M.R.C.S. and L.R.C.P.

[ABSTRACT.]

DR. SCHOFIELD alluded first to the necessity, if the goal of medical education was to be kept in view, for the teaching of psychology, a need which required no proof, since recent advances had demonstrated the important part that mind played in both etiology and therapeutics. He affirmed that in modern medical education the goal was constantly lost sight of in the great attention given to minute anatomy, laboratory and analytical work, etc. He suggested that the time given to these subjects should be curtailed and in place of them should be given courses in the psychology of the sound mind as a preliminary to studies of—

1. The interdependence and interaction of body and mind.
2. The psychology of the various classes of disease generally.
3. The psychology of etiology generally.
4. The psychology of therapeutics generally.
5. The psychology of the *vis medicatrix naturae*.
6. The psychology of drugs.
7. The psychology of natural remedies.
8. The psychology of mental remedies.
9. The psychology of the patients.
10. The psychology of the doctor.

At the conclusion of Dr. Schofield's paper, Dr. Claye Shaw, Dr. Edridge-Green and Dr. Passmore agreed with the author that the study of normal psychology should be a necessary preliminary to the study of mental diseases, and Dr. Passmore, having shown to the meeting his flag-diagram for the reading of family histories, the meetings of this Section were brought to a close.

SECTION OF DISEASES OF CHILDREN.

ALFRED HERBERT TUBBY, M.S., President.

(*Concluded from p. 751.*)

PROLAPSE OF THE RECTUM IN CHILDREN, WITH FIFTY CASES.

By P. LOCKHART MUMMERY, F.R.C.S.,

Honorary Surgeon, King Edward VII Hospital for Officers; Assistant Surgeon St. Mark's Hospital for Diseases of the Rectum and the North-Eastern Hospital for Children.

RECTAL prolapse is a comparatively common affection among children, and more especially that class which attends the surgical practice of a children's hospital. I had for some time been struck by the fact that but a small percentage of the cases attending my out-patient department at the North-Eastern Hospital had any of those conditions which are ordinarily ascribed as the causes of prolapse of the rectum. I therefore kept a full account of all the cases, and my remarks to-day are founded upon a careful record of 50 consecutive cases of prolapse in children. I had previously come to the conclusion that phimosis, stone in the bladder, polypi, and some of the other causes for prolapse which are usually given in the textbooks are not nearly such common antecedents of the condition as is generally supposed, and the 50 collected cases more than confirm that view. In fact, several of the generally accepted causes would seem to be so uncommon as to have but little bearing upon the etiology.

Prolapse in children seems to be about equally common in the two sexes. Thus, out of my 50 cases 22 were males and 28 females, showing a slight, probably accidental, preponderance in females.

The average age when the cases were brought up to the hospital was 2.56 years. The youngest child was 3 months and the eldest 5 years.

CAUSE.

Diarrhoea seemed to be the commonest antecedent of the prolapse. The bowel first came down after an attack of diarrhoea in 14 cases. In 13 cases marked nasal obstruction from adenoids was present. In 3 cases the prolapse first came down after an attack of whooping-cough, and in 3 cases after measles. There was a history of constipation in only one of the cases.

Stone in the bladder was not present in any of the cases, and in none was there a degree of phimosis sufficient to cause any straining during micturition.

A local cause in the rectum was present in only 7 out of the 50 cases. Three of the children had worms, 2 polypi in the rectum, 1 had inflammation of the prostate, and in 1 case there was a slight degree of congenital stricture of the rectum.

The following table shows the ascertained causes:

	Cases.		Cases.
Diarrhoea	14	Whooping-cough ...	3
Adenoids	13	Measles	3
Constipation	1	Inflamed prostate ...	1
Worms	3	Stricture of bowel ...	1
Polypi	2	No ascertainable cause...	16

It is quite obvious, I think, that the causes usually given for rectal prolapse in children are but rare, and that there is some other factor which is of more importance, and which renders children especially liable to get prolapse of the rectum.

The causes present in these 50 cases show that by far the commonest factor in causing prolapse is a condition of general weakness and malnutrition. Thus adenoids, diarrhoea, whooping-cough, and measles are the commonest antecedents, and these all result in serious loss of health and malnutrition. While malnutrition and neglect were frequent among those cases where no definite cause was present, in fat, well nourished children prolapse is uncommon, except as the result of some local cause, such as polypus of the rectum.

In a normal infant the rectum is well supported by the surrounding fatty cellular tissue, which forms a firm support for the lower portion of the bowel. In the infant the pelvic cellular tissue consists almost entirely of adipose tissue. As age advances the fat to a large extent disappears, and the cellular tissue becomes stronger and firmer. But in the child the cellular tissue supporting the rectum depends for its stability mainly upon the fat which it contains.

It is a well-known fact that the first effect of malnutrition in a child is the absorption of the fat contained in the child's cellular tissue. It is the removal of this fat from around the rectum which predisposes to the occurrence of prolapse in infants and is in most cases the initial factor in its production.

The exciting cause of the prolapse, however, is the unnatural method of defaecation usually adopted in civilized countries. Pathological prolapse of the rectum is, I believe, unknown in animals, and does not occur among the uncivilized races of man.

There can be little doubt that the natural position for defaecation in man is the squatting position with the abdominal wall in contact with the front of the thighs. There are two important anatomical factors which aid in preventing prolapse in this position. In the squatting

position the glutei and perineal muscles are firmly contracted, and the levator ani muscles are thus supported in their action, while the whole of the pelvic fascia is tightened by the contraction of the muscles in contact with it. This materially aids in supporting the rectum.

Also in the squatting position the coccyx is firmly flexed and fixed in that position by the muscles attached to it. In consequence the terminal portion of the rectum forms a considerable curve or angle. In the sitting position, on the other hand, the rectum is almost a straight tube.

Defaecation is an act almost entirely depending upon the increased abdominal pressure resulting from contraction of the abdominal muscles and fixation of the diaphragm.

The increased abdominal pressure in the squatting position forces the rectal contents against the lower part of the sacrum and the coccyx, and as the pressure is continued the faeces are forced round the angle formed by the last 2 in. of the rectal canal in this position, and so reach the anus. Under these circumstances the posterior rectal wall is forced backwards against the coccyx and sacrum, the anterior wall being also pressed in the same direction. There is thus in the squatting position no tendency for the rectum itself to be forced out of the anus.

When defaecation takes place in the sitting position, on the other hand, the pressure exerted by the increased abdominal tension comes directly upon the pelvic floor, and is in an almost direct line with the axis of the anal canal; the rectum in this position is almost a straight tube, and there is a considerable tendency for it to be pushed out through the anus.

There is another anatomical factor which renders prolapse of the rectum more liable to occur in children—namely, the obliquity of the false pelvis. In the adult the iliac fossae are almost at right angles with the walls of the true pelvis, and much of the weight of the abdominal viscera is supported upon them. In the child, however, the iliac fossae slope off at an angle into the true pelvis, and a larger proportion of the weight of the viscera is thus thrown upon the pelvic floor.

Treatment.

The two chief indications in treating a case of prolapse in a child are: First, to get rid of the predisposing cause by improving the child's general health and nutrition, and, secondly, to remove the existing cause by bringing the natural supports of the rectum into play during the act of defaecation.

The child should be fed up and the dietary carefully corrected, so as to improve the general condition as much as possible. Tonics such as syr. ferri phos. comp. are often useful, and cod-liver oil should also be given. An improvement in the child's general hygienic surroundings is often advisable.

The mother should be told that the child must not use a chamber, but must pass all its stools into a shallow pan placed on the ground, the child itself being in the squatting position. If defaecation is performed in this position the prolapse usually ceases to come down at once. I do not think prolapse would occur if all children were made to adopt this position during defaecation. It is a better preventive of prolapse than the position usually recommended of lying on the side in bed and is far less troublesome. I have for a long time insisted on this method of defaecation for those children who have been brought to me for the treatment of prolapse, and the results have been most satisfactory, in most cases no further prolapse having occurred.

In those cases where a local cause in the rectum is discovered—and it should always be looked for—it must be attended to. I operated for the prolapse in 6 cases. In 5 of these cases linear cauterization was all that was necessary to effect a cure. In one case the prolapse was very large and the anus quite patulous; it was necessary in this case to do something further, and I treated the prolapse by ligaturing it in two or three places and partially closed the anus by making a transverse incision behind the anus and suturing up the wound in an antero-posterior direction—a somewhat similar operation to that for restoring the perineum by Lawson Tait's method. This quite cured the prolapse.

In one of my cases, a boy aged 3½, there was an enlarged and tender prostate. This must be a most unusual affection for so young a child, and it is uncertain whether it had any connexion with the prolapse.

One child of 3 months, who was brought up for prolapse, was found on examination to have a slight degree of congenital stricture of the rectum, and I have no doubt this was the direct cause of the prolapse. The stricture was dilated and the prolapse got well.

Adenoids, if present, should be removed, as they are an important cause of malnutrition. Out of my 50 cases, 13 had adenoids removed.

Discussion.

Dr. Cautley (London) was pleased to hear a surgeon of Mr. Mummery's experience agreed with the physicians that malnutrition and absorption of the perirectal fat were the main cause of prolapse of the rectum. He regarded wasting as the primary cause and diarrhoea as the common exciting one. Adenoids he considered an unimportant factor in this condition. The squatting posture was only suitable for older children, in whom prolapse was comparatively infrequent apart from polypus. Had Mr. Mummery had any experience of ice tampons and perirectal injections of paraffin in the treatment?

Dr. P. G. Lee (Cork) said that many of the cases that had come under his notice were due to indiscreet dosing with castor-oil by the mothers and nurses amongst the poorer classes in Ireland.

Mr. Mummery, in reply, said that prolapse was less likely to occur in the squatting position than in the recumbent. He had formed a most unfavourable opinion of paraffin injection as a treatment for prolapse and looked upon it as a wrong method of treatment.

RETROPHARYNGEAL ABSCESS.

By H. Irving Pinches, M.A., M.B., B.C.Camb.,
Clinical Assistant to the Children's Hospital, Great Ormond Street.

Strictly speaking, the term "retropharnygeal abscess" should be applied only to collections of pus behind the posterior wall of the pharynx; but in many cases the abscess is situated at the side of the pharynx, and therefore is not in reality retropharyngeal. In this paper, however, the term is used to include collections of pus both at the back and side of the pharynx. It is a condition which is frequently overlooked, especially in the early stages of its formation, and this undoubtedly is due to the fact that there is no very definite group of symptoms accompanying it. It is exceedingly important to detect one of these abscesses, for failure to do so will usually result in the death of the child, either owing to dyspnoea, or to the abscess bursting, thus allowing pus to escape down the throat, resulting in death from asphyxia, or later from septic bronchopneumonia. Two main varieties of abscess are usually described—the acute and chronic, or non-tuberculous and tuberculous. In this paper only the acute non-tuberculous abscess will be dealt with.

Acute Retropharyngeal Abscess.

In nearly all cases these abscesses occur in very young children, and are most frequent during the first twelve months of life. As a rule the children appear to have been previously healthy and strong; but in some instances the abscess is a sequel to an attack of scarlet fever, measles, diphtheria, etc. It seems an undoubted fact that the disease is due to the entrance of pyogenic organisms through the mucous membrane of the pharynx, which cause an inflammation of the connective or lymphoid tissue beneath the mucous membrane, leading to the formation of an abscess. It has been held that the organisms obtain an entrance by means of some abrasion of the mucous membrane—this abrasion being due to trauma caused by a fish bone, a small pointed fragment of bone, very hot liquids, etc.; but although these must be regarded as certain causative agents of the condition, it seems that in most cases it results from some inflammatory affection of the tonsil, or other lymphoid tissue in the vicinity. One can look upon the oral and nasal lymphoid tissue as one continuous sheet with some local aggregations as the tonsils, or adenoids, situated upon it. The tonsils and adenoids, owing to their size and situation in an exposed position, are a convenient point for infection to start from. Once organisms have obtained an entrance there, they can spread to any part of the lymphoid sheet. They can stop in their original situation, leading to a tonsillitis or a tonsillar abscess;

they may spread outwards leading to a peritonsillar abscess; or may travel backwards leading to a retro-pharyngeal abscess; in fact the distinction between the two latter conditions is purely artificial and not always easy to make. In support of the view that infection starts from the tonsil, Mr. Waugh[1] states that in his experience cases of retropharyngeal abscess are unknown in children who previously have had their tonsils removed. Another point is that these abscesses do not as a rule commence in the middle line of the back of the pharynx, but on one side behind one of the posterior pillars of the fauces, in close proximity to the tonsil.

If the tonsil is responsible for the entrance of the infective organism, one would expect to obtain a history of previous attacks of tonsillitis, or of mouth breathing, resulting in enlarged tonsils and consequently adenoids. I know of no investigation that has been made on this point, but certainly one is struck by the large percentage of cases of retropharyngeal abscess which are accompanied by enlarged tonsils, and sometimes by adenoids as well, and the presence of these latter removes the possibility of the tonsillar enlargement being secondary to the abscess. A suggestive fact is that a large number of cases are accompanied by a purulent nasal discharge, and it is possible that this discharge is caused by adenoids. It has been held that the abscess is due to the breaking down of and suppuration in the lymphatic glands which are said to lie in front of the upper cervical vertebrae, but this seems to be extremely doubtful, especially since the abscess is usually lateral in position, seldom central. In a series of 16 cases, reported by Mr. Pearson,[2] the abscess was on the left side 10 times, on the right 6 times, but in no case was it central.

Morbid Anatomy.—These abscesses, commencing as a rule behind one tonsil at the side of the pharynx, extend to the back, where the pus collects, presenting as a tense swelling in the pharynx; they may, however, cross to the other side. They sometimes burrow into the neck and point in the anterior triangle, and cases are known where ulceration of the carotid vessels has occurred with fatal haemorrhage. It is, however, extremely doubtful if such abscesses are retropharyngeal in origin; they are more likely to be due to suppuration in a deep cervical gland, and so are in reality extrapharyngeal. Pus situated behind the posterior wall of the pharynx will tend to escape by the easiest route, and it is certainly simpler for it to bulge forwards into the mouth than to burrow outwards into the resisting structures of the neck. The abscess is always unilocular, no diverticula being present. It rapidly increases in size, and unless treated will ultimately burst, discharging into the throat.

Symptoms.—The great difficulty is that the patients, being so young, can themselves give no account of the illness, and for the history one has to depend on the parents of the child, who are not as a rule good observers. The symptoms of the disease are exceedingly variable, and of no one symptom can it be said that it is always present. Advice is usually sought on account of symptoms which can be classed under two heads:

1. Difficulty in swallowing. The usual history is that the child is suffering from "loss of appetite," and will only take liquids, and even with these there is pain on deglutition. If a baby he is unable to suckle properly; a little milk is taken, which is shortly returned through the nose or mouth, owing to the difficulty or pain on swallowing, this sometimes leading the parent to describe the illness under the heading "vomiting."

2. Difficulty in breathing. It is usually remarked that the child breathes rapidly and with difficulty, the latter being increased on lying down. The main complaint, however, may be described under such headings as "croup," "cough," "bronchitis," etc.

On examination, the first noticeable point is that the child looks seriously ill; he is restless, perspiring, pale or cyanosed in colour, the mouth usually held slightly open with a little saliva dribbling away. The breathing is rapid, laboured, occasionally stertorous, and may be accompanied by epigastric retraction. It is much worse on lying down, and is liable to exacerbations from time to time. The child sometimes emits a peculiar muffled cry, which has been said to be pathognomonic. The temperature is usually elevated, 102° to 104° F., and the pulse is correspondingly increased in rapidity. The neck is held very rigid, and the head may be retracted; although the child is restless, the head is seldom moved from side to side. The neck looks swollen, this being due to enlarged cervical glands on one or both sides; this is a most important indication, and if multiple glands of the neck are found to have appeared suddenly in a child, the hint should be taken and the pharynx examined. It is said that a purulent nasal discharge is often present; in Mr. Pearson's series it was noted in 50 per cent. of the cases. On examining the throat, one or both tonsils appear red and enlarged, the pharynx is inflamed, the tongue furred, and a large amount of frothy mucus is present. In many instances it will be noted that the tonsil on one side is pushed forwards, partially obliterating the cavity of the pharynx. It is said that the tonsils do not always show signs of inflammation, but undoubtedly in the majority of cases they do, and the condition of the throat in nearly all instances is sufficiently suggestive to lead one to palpate it digitally. Occasionally at the back or side of the pharynx a swelling can be seen distinctly, but if this is not detected, a retropharyngeal abscess should not be excluded as the cause of the illness until the throat has been examined with the finger. It is often difficult, sometimes impossible, to detect an abscess in this situation by sight, but exceedingly easy to do so by touch. When exploring the pharynx, the fingers should be passed upwards, downwards, and from side to side; in one of these situations, an elastic, possibly fluctuating swelling will be felt. If the abscess is at all large, digital examination must be gentle for fear of rupturing it.

Diagnosis.—All the above signs and symptoms are seldom if ever present, but nevertheless, in the more advanced cases, there will be sufficient to direct attention strongly towards the pharynx. There are certain points which are suggestive—the age of the patient (the first few months of life), dyspnoea, dysphagia, bilateral enlarged cervical glands of recent origin, nasal discharge, stiffness of neck, elevation of temperature, etc. Such a group of symptoms would leave little doubt as to the diagnosis. In very early cases, however, there may be only slight impediment to respiration or deglutition, either of which necessitates examination of the pharynx. The only positive sign is the detection by palpation of the abscess, and one feels certain that the cases will be overlooked again and again unless the pharynx, in all cases where respiration or deglutition are affected, is digitally examined. In dealing at all events with the surgical affections of children, the routine examination of the throat is often helpful in many conditions besides retropharyngeal abscess, and in a child who is obviously ill, but whose symptoms are not suggestive of anything definite, this examination becomes imperative.

Differential Diagnosis.—The wrong diagnosis most frequently made is to call a retropharyngeal abscess laryngeal diphtheria; other faulty diagnoses are scarlet fever, oedema of glottis, tonsillitis, etc. There is no need to point out the various distinguishing features between these, as in every case attention would be directed towards the pharynx, the digital palpation of which would in every instance clear up the diagnosis.

Prognosis.—When once the diagnosis has been made the prognosis is exceedingly good, as nearly all cases operated on—at all events in the early stages before the abscess has burst—recover. If undiagnosed, the abscess ultimately discharges into the throat and is apt to cause septic bronchopneumonia, with a fatal result.

Treatment.—By appropriate treatment it is sometimes possible to prevent the inflammatory condition at the side of the pharynx progressing to the formation of pus. Occasionally, when the case is seen in the early stages, it will be noted that the tonsil on one side is red and ulcerated, and that behind the posterior pillar of the fauces on the same side the tissues are red, thickened, and hard, but no fluctuation can be detected. If such a condition is present it should be treated by spraying the throat with alkaline antiseptic lotions, painting the tonsils with glycerine of carbolic acid, and by administering potassium chlorate and a saline mixture. Such treatment as this will often result in aborting the peritonsillar inflammation; but as soon as the patient recovers the tonsils should be removed, otherwise in all probability the condition will recur. When pus is present the sooner it is evacuated the better. With regard to the method of opening the abscess there is considerable difference of opinion as to whether it should be approached from

the mouth or from the neck. Formerly the main objection against incising the abscess from the mouth was the danger from septic bronchopneumonia; this danger, however, appears more imaginary than real, as statistics fail to show it to be a frequent cause of death. To evacuate pus situated at the back of the pharynx through the mouth certainly seems to be a roundabout way. On the whole, when the abscess is without doubt pharyngeal in origin, one would recommend incising it from the mouth. Unless the child is suffering from advanced dyspnoea, an anæsthetic should be administered, chloroform being as a rule the best. The patient should be laid in the dorsal position with the head well thrown back, as when operating for adenoids; this position will prevent any pus escaping down the trachea. The head should be held in the middle line, and a gag placed between the jaws. A finger should then be put in the mouth, holding the tongue back, and a sharp-pointed tenotome, or a knife guarded with strapping to a ¼ in. from the point, introduced alongside the finger. The abscess should then be opened throughout its whole extent by a vertical cut. It is of no use to make a small opening, as the pus will accumulate again, necessitating further incisions at a later date. If the patient is then turned so that the mouth is directed towards the floor, the pus will run out. The after-treatment consists in the frequent application of antiseptic sprays to the back of the throat. If the child is sufficiently old, mouth washes or gargles can be employed with advantage. The diet should be liquid, and the bowels kept opened. The patient is usually quite well within a week from the operation.

Retropharyngeal abscess is a condition which is very frequently overlooked, possibly more often than any other acute illness of childhood. The reason for this is that owing to the multiplicity and variability of the signs and symptoms accompanying it one has not a clear mental picture of the disease. But in every case, owing to the symptoms, the pharynx should be examined with the finger, and this should reveal the condition, and save disaster.

References.
[1] *Lancet*, September 26th, 1906. [2] Ibid., October 25th, 1901.

OBSERVATIONS ON THE PURPURA OF CHILDREN.

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There are probably few subjects in medicine the study of which is more obscured by a complicated nomenclature than that of purpura. It is my intention to discuss the clinical aspect of that form of purpura which occurs most frequently among children. Before doing so it is, however, essential to refer briefly to the classification which is usually accepted. The first broad division which must be made is that which separates those cases in which purpura is a symptom of some well-known morbid state from those in which the petechial eruption is the dominant and essential feature. The first group includes all cases of secondary purpura, or, to make use of the classification of Professor Osler, symptomatic purpura. Under this heading of "symptomatic purpura," Osler includes the purpuric eruptions due to infectious, toxic, cachectic, neurotic, and mechanical causes. Under the heading of "primary purpura," or purpura as a disease as opposed to a symptom, it is customary to include four conditions; these are purpura simplex, purpura rheumatica, Henoch's purpura, and purpura haemorrhagica.

In the first of these, purpura simplex, the symptoms are practically limited to the appearance of a petechial eruption. In peliosis rheumatica the eruption is associated with arthritic changes. In Henoch's purpura the rash is complicated by gastro-intestinal symptoms, pain, vomiting, and diarrhoea. In this form bleeding from the mucous membranes occurs, and blood is passed from the bowel. Under the name of purpura haemorrhagica are described the very severe cases of purpura in which very considerable haemorrhage occurs. The cases which form the basis of this paper have been admitted to St. Thomas's Hospital during the last ten years, and have been classified as cases of primary purpura. They number 52; of these, 6 occurred in children under 5 years of age, 16 between the years of 5 and 10, 13 between the years of 10 and 15, 2 between the years of 15 and 20, and 15 in persons over 20 years of age. It will be seen that no less than 29, or 55 per cent., occurred in children between the ages of 5 and 15.

An examination of the clinical findings in these cases reveals certain points of interest. In the first place, all or nearly all conformed to one type. The differences noted were differences of degree. The milder cases, with slight constitutional disturbance, might be classed as purpura simplex, those with marked arthritic pain as purpura rheumatica, those with marked gastro-intestinal symptoms as Henoch's purpura. However, a consideration of the entire series of cases produced the impression that all the cases were essentially of one type, and that the differences represented merely differences in the intensity of symptoms in individual cases. The entire series might have been arranged in order, from the mildest to the most severe, and it would have been very difficult to separate the cases into groups corresponding to the usually accepted classification.

In a typical case of moderate severity the illness begins with a period of malaise. The child is noticed to be listless and apathetic. The appetite is bad, and there is often headache and nausea. After a fortnight or less the typical symptoms begin. Pain is felt as a rule in the ankles or knees, and shortly afterwards oedema is noticed over the shins and the dorsal surfaces of the feet. About the same time the gastro-intestinal symptoms present themselves. Severe abdominal pain is felt, and the child vomits. Diarrhoea often follows the abdominal pain and frequently clots of blood are passed in the motions. The purpuric eruption, as a rule, is seen within twenty-four hours of the onset of pain, but its appearance may be delayed for several days. The temperature rises to 100° or 101° F. with the onset of acute symptoms, but usually drops to 98° or 97° F. within twenty-four hours. A slight irregular pyrexia ranging from 98° to 100° F. is, as a rule, observed for some days. During this period the rash fades and the child improves. In a considerable number of cases recurrences of these symptoms occur at irregular intervals for several weeks or possibly months. These recurrent attacks are very typical of the disease. It is unnecessary to describe further the well-known features of a typical case. The majority of cases in the series conformed more or less to the above type. The exceptions represented variations in the intensity of the individual symptoms. Even in the mildest cases, which are usually classed as purpura simplex, evidence was afforded from the history or from observation in hospital of slight joint pain and swelling of legs or some degree of intestinal disturbance.

I now come to the consideration of cases which are usually classed as peliosis rheumatica. In such cases the arthritic symptoms are dominant. The joints usually affected are the ankles and knees, less commonly the wrists and elbows. A close relationship with acute rheumatism is usually claimed for this condition. In no case in the present series could any history be obtained which pointed to an antecedent attack of rheumatic fever, while in every case the condition observed showed marked differences from the typical symptoms of rheumatic fever. It is a very characteristic feature of purpura that its various symptoms tend to recur individually, and occasionally at times when no purpuric eruption is present to distinctly mark the character of the disease. The statistics which have been produced to show a close relationship between acute rheumatism and purpura have, I am inclined to think, been compiled by assuming that the arthritic attacks have been truly rheumatic in nature. Certainly the majority of cases which are called peliosis rheumatica have nothing in common with acute rheumatism.

The joints in purpura are not so hot to the touch as in rheumatism. In purpura, on the other hand, the predominant feature is a generalized oedema of the shin and foot, and the involvement of the joints is not nearly so obvious. The character of the temperature chart is quite different in the two diseases. The profuse perspiration is not seen in purpura, and endocarditis and pericarditis are extremely rare, if they ever do occur.

On the other hand, even in those cases of arthritic purpura where the changes in the limbs are most obvious

evidence of some degree of gastro-intestinal disturbance can be found, although this is apt to be masked by the more prominent changes in the limbs. If cases of rheumatic fever do occur which are complicated by a haemorrhagic rash, I should prefer to classify such cases with symptomatic purpura, the condition being in every way comparable to the haemorrhagic eruption occasionally seen in other acute diseases.

In a large majority of the cases the gastro-intestinal symptoms are a prominent feature. The first symptom is sudden and severe abdominal pain. The pain is paroxysmal, and of the colic type. Vomiting as a rule occurs, and the pain is accompanied or closely followed by diarrhoea. Frequently blood is passed in large clots and often mucus. In a certain number of cases the petechial eruption is not seen until some days after the onset of symptoms, and in these cases difficulties in diagnosis may well arise. Abdominal tenderness, which is most marked in the umbilical region, is a very constant feature.

1. A little girl was admitted with a profuse purpuric eruption. There was very slight constitutional disturbance. It was ascertained that two months before admission the child had had an attack of severe abdominal pain and had passed a quantity of blood in dark clots. On the day following there was considerable epistaxis, but no purpuric eruption was noticed at that time.

2. H. W., aged 15, male. One month before admission the patient suffered from an illness the symptoms of which were extremely vague. He remained in bed for fourteen days, during which time he felt giddy and sleepy. On May 13th the patient passed four motions which consisted entirely of bright red blood. On May 14th and 15th the patient passed two motions which consisted of bright red blood. The amount passed was on each occasion considerable and the patient noticed no faecal matter in the motion. No pain was felt. On May 15th the patient attended as an out-patient. He was thin and very pale. A diagnosis of tuberculous enteritis was made and he was recommended for admission. On May 16th the patient was admitted to the hospital. There was slight tenderness on pressure over the umbilical region. Neither liver nor spleen could be felt. There were no haemorrhoids. A haemic murmur was heard over the heart. On further examination a few haemorrhagic spots were noticed on the mucous membrane of the mouth. On the following day a few petechiae were found on the upper part of the chest and on the neck. On May 18th and on the three following days the patient passed considerable quantities of dark red blood. On May 22nd the blood count was as follows: Red cells 2,396,895 per cubic millimetre, haemoglobin 40 per cent., colour index 0.8, leucocytes 7,000 per cubic millimetre.

Polynuclear neutrophiles	26 8	per cent.
Eosinophiles	1.8	,,
Small lymphocytes	10.0	,,
Large lymphocytes	54.0	,,
Large hyaline cells	5.4	,,
Transitional cells	1 6	,,
Basophilic cells	0 2	,,
Myelocytes	0.2	,,

Rouleaux formation good; fibrin formation excessive. Blood platelets numerous; some poikilocytosis. Two normoblasts seen while counting 500 leucocytes. Some polychromatophilic and granular degeneration. The temperature on admission was 98.8°, and during the first five days fluctuated between 99° and 101°. From May 22nd to May 24th traces of blood were observed in the stools. The rash gradually faded and the haemic murmurs disappeared. The general condition of the patient rapidly improved, and he was discharged on June 6th.

Attention may be drawn in this case to the great relative increase in the lymphocytes. This is a very characteristic, but unfortunately not a constant, feature of the disease. In other respects, the state of the blood is that which is usually produced by sudden and severe haemorrhage. This case is of considerable interest, as the haemorrhagic eruption developed during the patient's stay in hospital. The patient was examined on the day previous to his admission in the out-patient department. There was at that time no skin eruption, and the nature of the case was not suspected. The eruption, when it did appear, was very slight. A consideration of these cases raises the question as to whether purpura may not be an occasional cause of unexplained intestinal haemorrhage. In exceptional cases haemorrhages may occur from the mucous surfaces without any petechial eruption on the skin. In the case which I have quoted a diagnosis of tuberculous enteritis seemed at first most probable. In another case, with abrupt onset of abdominal pain and tenderness, accompanied by vomiting and the passage by the bowel of blood and mucus, the clinical picture of intussusception was closely simulated.

In 7 cases out of 25 well-marked haematuria was noticed. Albuminuria apart from haematuria was noticed only twice. In 4 cases of haematuria both blood and epithelial casts were seen. Occasionally haematuria persists as an isolated symptom for weeks and months after the cessation of the acute phase of the disease. It is quite possible that such cases may present themselves for treatment after the typical eruption has faded, and difficulty in diagnosis may then arise. The following case illustrates the possibility of this:

The patient was a female child, aged 7. Five days before admission the child had complained of pains in the leg, which were attributed to a fall. On the following day the patient passed a motion containing a large quantity of blood and complained of abdominal pain. Two days later the patient began to pass blood by the bowel at frequent intervals. On admission a purpuric eruption was noticed on the arms and legs. In some places the petechiae had become confluent and large areas of subcutaneous haemorrhage were observed. Both ankles and the right wrist were slightly swollen and tender. Oedema of the lower parts of the legs and arms was observed. The heart was normal and no murmurs were heard. Neither the liver nor spleen could be felt. During the night following admission about 7 oz. of blood were passed from the bowel. The urine contained a large quantity of blood. The following day the petechiae were found to be more numerous. The motions contained blood for three days after admission. The urine contained blood in gradually decreasing amount for about three weeks. Fresh crops of petechiae appeared at intervals until May 1st, after which the eruption gradually faded. Blood reappeared in the motions on May 2nd. The temperature chart during the first week showed slight irregular pyrexia with a daily range from 99° to 100.2° F. Subsequently slight rises of temperature coincident with a return of the acute symptoms were observed. The patient was treated with chloride of calcium, and four weeks after admission all symptoms completely disappeared. She was discharged on June 6th. Early in October the child was again noticed to be passing blood in the urine and with her motions. The feet began to swell, and the child complained of pain in the stomach and legs. On admission the child was seen to be exceedingly anaemic, but no petechiae were found on any part of the body. The ankles were tender and slightly swollen. The urine contained a considerable quantity of blood, but no blood was observed in the motions. The temperature rose to 102.8° F. on the day following admission, but fell within a few hours to normal. During the remainder of the child's stay in hospital the temperature was practically normal. The blood gradually disappeared from the urine, and no other haemorrhages were observed. On the occasion of the second admission the disease ran a milder course, and no purpuric eruption was observed.

Had the child been seen for the first time during the recurrence of the attack the condition of the urine and the oedema of the legs might well have suggested a diagnosis of acute renal disease. Not infrequently the renal symptoms form the most serious feature of the case, and there is often evidence of great interference with the function of the kidney. In the following case the symptoms of renal calculus were closely simulated.

A female child was admitted with the following history: Two months before admission a petechial rash was observed. This faded, and one month before admission the child passed a motion consisting of almost pure blood. There was no rash visible at this time, but a fortnight later a fresh eruption occurred, accompanied by severe abdominal pain and vomiting. On admission a faded petechial eruption was visible on the limbs. There was considerable oedema of the dorsal surfaces of the feet and around the ankles. The patient was observed to suffer during the first few days from severe abdominal pain and vomiting. The urine during the first fortnight of the patient's stay in hospital was very scanty, and contained large quantities of blood and albumen. On July 4th, about one month after the patient's admission, she was attacked with severe pain in the right side. The urine was on the same day noticed to have a deep brown colour and contained large quantities of altered blood. Similar attacks of very severe abdominal pain recurred on July 13th, July 30th, and August 2nd, and were accompanied by the passage of dark brown urine containing numerous blood casts. An *x*-ray examination was made, but no shadow suggestive of calculus was seen. The attacks were evidently of the nature of renal colic, and were caused by the passage of blood clot down the ureter. This case may possibly offer the explanation of the severe attacks of abdominal colic which precede the appearance of blood clots in the stools.

The severity of the renal symptoms in certain cases is well illustrated by the following case:

G. I., aged 9, female. January 21st to May 7th, 1905. Onset on December 31st, 1904. Onset with vomiting and severe pain in stomach. Slight haematemesis observed. January 12th, haemorrhagic eruption around joints of legs and arms accom-

panied by slight swelling and pain. Vomiting ceased a few days later, but abdominal pain continued. Fresh spots continued to come out up to time of admission.

The temperature was 99.6° on admission, and rose on the following day to 100.4°. A profuse purpuric eruption was seen. The petechiae varied in size from a pin's head to a split pea. The eruption was most profuse around the elbows, knees, hips and ankles. It also was seen over the abdomen and lower part of back. Both knee joints were swollen and tender, and contained a little fluid. The right wrist was swollen and tender. The elbows and ankles were tender. The abdomen was slightly tender. No haemorrhage from mucous membranes was observed.

On January 23rd the urine contained a large trace of albumen but no blood. Paroxysmal pain and vomiting were noticed. The pain was severe. The vomit did not contain blood. The stools were normal. Paroxysms of abdominal pain continued to occur. A fresh eruption of spots was noticed on January 28th.

January 30th.—Urine nearly solid with albumen on boiling. Blood and casts present. Blood granular and hyaline casts seen.

February 6th.—Still blood and albumen in urine. No evidence of high arterial tension.

On February 15th another acute attack of abdominal pain. Temperature rose to 103° and remained high for next four days. Two days later a fresh eruption of spots accompanied by severe abdominal pain and vomiting. Very little urine was passed during this time, as may be seen from the following daily record:

February 11th,	35 oz.	February 20th,	0 oz.
,, 12th,	24 ,,	,, 21st,	3½ ,,
,, 13th,	25 ,,	,, 22nd,	0 ,,
,, 14th,	32 ,,	,, 23rd,	5 ,,
,, 15th,	27 ,,	,, 24th,	14½ ,,
,, 16th,	7 ,,	,, 25th,	19½ ,,
,, 17th,	6 ,,	,, 26th,	15 ,,
,, 18th,	3 ,,	,, 27th,	26 ,,
,, 19th,	2 ,,	,, 28th,	28 ,,

The treatment of acute nephritis was applied. Hot-air baths were given and leeches were applied over the loins. Albuminuria and haematuria continued, but the patient made considerable improvement.

On March 3rd an attack of otitis media supervened. From this the patient recovered, but at the time of her discharge from hospital the urine still contained a small quantity of blood and albumen.

Other symptoms are comparatively rare in cases of moderate severity. Haematemesis occasionally occurs. In two cases in the series there was evidence pointing to intracranial haemorrhage, possibly meningeal. In one case the signs suggested effusion of blood into the pleural cavity.

Haemorrhages into the buccal mucous membrane and conjunctiva are occasionally seen. Epistaxis is not uncommon.

Retinal haemorrhages are rare except in the most severe cases. The liver was found to be enlarged in about a third of the cases, and more rarely the spleen. In two of the fatal cases out of the three the reaction for free iron was well marked in the liver.

Cases which are usually classed as purpura haemorrhagica do not differ essentially from the more usual type of the diseases except in degree. The rash is not necessarily more abundant. Haemorrhage from the nose, the mouth, and the intestinal canal is very severe. As a result, a very severe degree of anaemia is rapidly produced.

The blood in purpura shows no constant changes. In mild cases no change whatever can be demonstrated by a blood count. The coagulation time of the blood is not as a rule prolonged. Occasionally a slight increase in the total number of leucocytes can be demonstrated, and a relative increase in the number of lymphocytes is a characteristic but by no means constant feature of the condition. In more severe cases the blood count shows an anaemia secondary to the loss of blood. The haemoglobin is disproportionately decreased, and the colour index usually works out at about 0.8.

The changes seen in the fresh blood are suggestive of a recent loss of blood. The fibrin formation is excessive and the blood platelets numerous. If the haemorrhage is very severe, changes in the shape and size of the corpuscles are noticed and occasionally a few nucleated red cells are seen. The rapid production of anaemia and the subsequent recovery, together with other blood changes commonly met with in purpura, are well illustrated in the accompanying table.

In one very severe and rapidly fatal case the red cells shortly after admission numbered 768,000 per c.mm., and the haemoglobin was reduced to 15 per cent. Immediately before death, which occurred about one month later, the red cells had been reduced to 479,680 per c.mm, and the haemoglobin to less than 10 per cent.

A blood count is of considerable assistance in the differentiation of primary purpura from a secondary purpura due to some acute infective process. In the latter case, of course, there is a great increase in the total number of leucocytes with a relative and absolute increase in the polymorphonuclear cells. The value of a blood count in the differential diagnosis is illustrated by the following case, in which a purpuric eruption was the prominent symptom of an acute septic infection:

J. P., aged 17, male, printer. August 24th to September 11th, 1906. Thirteen days before admission the patient had a sore throat, and complained of pains in his knees. He stopped at

	Red Cells per c.mm.	Haemoglobin per Cent.	Colour Index.	Leucocytes per c.mm.	Percentages.								Remarks.	
					Polynuclear Neutrophiles.	Mononuclear Neutrophiles.	Polynuclear Eosinophiles.	Small Lymphocytes.	Large Lymphocytes.	Large Hyaline Cells.	Transitional Cells.	Mast Cells.	Finely Granular Basophilic Cells	Fresh Blood.	Stained Blood.
March 15...	4,450,000	55	0.6	8,180	50.4	—	1.8	28.8	10.6	7.8	0.2	—	0.4	Poikilocytosis, very few platelets seen, rouleaux formation present	Numerous macrocytes and a few microcytes seen, slight polychromatophilic degeneration.
March 21...	1,694,000	25	0 7	8,300	71.8	0.6	1.6	10.8	4.6	9.0	0.4	0.2	—	Rouleaux formation good, fibrin formation well marked, poikilocytosis observed, very few platelets seen	"Ghosts" numerous, microcytes fairly numerous, 4 normoblasts seen while counting 500 leucocytes, slight polychromatophilic degeneration.
May 25 ...	1,498,000	28	0.93	5,300	43.6	0.2	4.2	22.0	18.0	10.2	1.2	0.6	—	Rouleaux formation fair, blood-platelets scarce, poikilocytosis well marked	"Ghosts" numerous, macrocytes and microcytes present, 3 normoblasts seen while counting 500 leucocytes, marked polychromatophilia.
June 23 ...	2,853,000	35	0 6	4,480	52.4	—	2.6	21.2	13.6	9.8	0.4	—	—	Rouleaux formation poor, fibrin formation slight, poikilocytosis	Macrocytes, microcytes, and polychromatophilia observed, 3 megaloblasts, 1 normoblast, and 1 microblast observed while counting 500 leucocytes, polychromatophilia.

home for two days, and was then able to return to work. One week later the pain returned, and twenty-four hours after the onset of the second attack of pain he noticed the appearance of some spots on his neck and shoulders. On admission the temperature was 100° F., the pulse-rate was 80, and the respiratory-rate was 24 per minute. The face was covered with a purpuric eruption. The petechiae were somewhat large. The tissues about both elbow-joints were swollen, and in these situations the skin was the site of numerous subcutaneous haemorrhages. Similar swellings were seen at the wrists and over the right ankle. The legs were covered with a profuse petechial eruption. In places, especially on the dorsal aspect of the feet, large subcutaneous haemorrhages were visible. In places the haemorrhagic areas were definitely raised above the level of the surrounding skin. There was no eruption on the anterior aspect of the trunk. On the back a few petechiae were seen, and a profuse eruption covered the buttocks. The gums were soft, swollen, and purple in colour. They bled readily on pressure. The tonsils and uvula were swollen, and showed subcutaneous haemorrhage. The abdominal and thoracic viscera appeared to be normal. On the following day the face and neck were very swollen. There was marked oedema around the eyes. The petechial eruption was in all regions of the body more marked. The patient complained of pain in both arms. He had great difficulty in swallowing, and constantly expectorated blood-stained sputum. The blood was examined with the following result:

Red cells	...	...	6,000,000 per c.mm.
Haemoglobin	...	...	85 per cent.
Leucocytes	...	...	14,500 per c.mm.

The rouleaux formation was perfect; fibrin formation was poor. Blood platelets were numerous.

On examination of the stained blood: Polynuclear neutrophiles, 89 per cent.; polynuclear eosinophiles, 0.2 per cent.; small lymphocytes, 2.4 per cent.; large lymphocytes, 5.2 per cent.; large hyaline cells, 3.0 per cent.; finely granular basophilic cells, 0.2 per cent.

A film made from discharge from the urethra was examined for the gonococcus with a negative result. On the 26th the patient had great difficulty in breathing. The respiratory movements were accompanied by stridor and retraction of the lower part of the chest wall. It was evident that the oedema had involved the glottis. Tracheotomy was performed with complete relief of symptoms. Subsequently the patient appeared to improve, and the rash began to fade. The temperature, however, which reached 103° F. on the day following admission, remained high. Definite signs of bronchopneumonia were observed on September 5th, and the patient died on September 11th. It should be mentioned that 10 c.cm. of blood submitted to bacteriological examination on August 31st were found to be sterile.

At the *post-mortem* examination nothing of importance was revealed. The cause of death was septic bronchopneumonia.

This case is sharply differentiated from the previously-described cases of purpura. The onset was abrupt in an adult whose previous health had been excellent. The temperature was high. The leucocytes were increased to 14,500 per c.mm., and the differential count showed that this increase was entirely due to the polymorphonuclear neutrophiles. The purpuric eruption was, without doubt, symptomatic of an acute bacterial infection. The presence of a slight urethral discharge, coupled with the fact that the result of the blood culture was negative, suggests the possibility that the gonococcus may have been the organism responsible for the condition.

A consideration of cases in which a purpuric eruption is seen as a symptom of an acute septic infection emphasizes the important difference which exists between such cases and the cases of purpura which have been previously described. The essential cause of the group of symptoms which make up the clinical picture of purpura is not to be sought among the micro-organisms which produce a marked leucocytosis. Evidence, however, is not wanting which tends to suggest that the symptoms of purpura may be the result of some undiscovered infective or toxic process. The acute onset, the general constitutional disturbance, the constant presence of a slight degree of pyrexia, and the occasional presence of a lymphocytosis, are very suggestive of this conclusion. In many cases the periodical occurrence of a definite group of symptoms may be noticed. A short period of malaise is followed by the sudden onset of abdominal pain. The temperature chart shows a sudden rise often to 101° or 102° F. The abdominal pain is followed as a rule by diarrhoea, and frequently by the passage of blood in the motions. In typical cases the temperature falls to 98° within twenty-four hours, and for about a week slight irregular pyrexia with a daily range from 98° to 100° is noticed. Arthritic pain, with swelling of legs and arms, may take the place of the gastro-intestinal symptoms, or more commonly both groups of symptoms are present in a variable degree. About the same time, sometimes a little before the onset of pain and sometimes after, the petechial eruption makes its appearance. Often within a week or ten days the symptoms disappear, the rash fades, and the chart shows a normal range of temperature. After an interval another attack occurs, and the group of symptoms is repeated.

Various observers have observed and described micro-organisms which they have endeavoured to establish as the specific cause of purpura. In no instance has the proof been convincing. Others have thought that the symptoms of purpura may be due to an absorption of toxins from the intestinal canal or to the toxic action of some abnormal product of metabolism. As a part of all these theories a toxic action on the endothelial cells of the vessels, leading to an extravasation of blood, has been assumed. While the infective origin of purpura seems probable on general grounds, there is at the present time no proof.

A consideration of any considerable series of cases of purpura reveals an intimate relationship between this disease and haemophilia. In haemophilia, as is well known, attacks occur in which the symptoms show a considerable resemblance to, if not an identity with, the symptoms of purpura. Attacks in which there is an exacerbation of the haemorrhagic tendency together with gastro-intestinal symptoms, arthritic pain, oedema of the extremities and a haemorrhagic rash are not uncommonly met with. Such cases are, as a rule, distinguished from cases of purpura by an investigation of the personal and family history of the patient. On the other hand, in many cases which would, as a rule, be classed with purpura, a history can be obtained of an abnormal tendency to haemorrhage. Certainly cases do occur in which doubt may be felt as to the appropriate classification. The following cases illustrate the fact that a family history of haemorrhage may be met with in cases which are commonly held to be cases of purpura.

CASE I.

A male child, aged 7. No haemorrhagic symptoms were noticed until two years before admission, when the child had severe epistaxis. Four days before admission the child seemed to be ill. Two days before admission he complained of pain in the left side, and red spots appeared on the neck. On the day before admission he vomited several clots of dark blood. On admission the limbs and trunk were covered with a petechial eruption. Considerable epistaxis occurred for several days. For five days the temperature varied from 98° to 100° F. On the sixth day after admission the temperature rose to 103.4° F. On the two following days the maximal temperature was 100.8° and 101° F., and on both days vomiting occurred. From this time the patient gradually improved, and left the hospital well.

Both the father of the patient and the father's brother bleed freely and suffer from frequent attacks of epistaxis. A sister at the age of 10 was an in-patient of the Victoria Hospital at Chelsea for five months with purpura. Four other children were quite healthy, and no history of bleeding on the mother's side of the family could be obtained.

CASE II.

A male child, aged 7, was admitted with a profuse petechial eruption. Both forearms were swollen and oedematous. There was some diarrhoea, and blood was observed in the stools. There was no history of previous haemorrhagic symptoms, but a brother who died at the age of 8 had been noticed to bleed freely, and had had many attacks of epistaxis. The child left hospital quite well.

CASE III.

A boy, aged 13. Admitted in January, 1893. There were no haemorrhagic symptoms until the boy was 12 years old, when he was noticed to bleed freely. During the summer of 1907 a petechial eruption was noticed. During the week before admission epistaxis and bleeding from the gums were noticed. On admission a purpuric rash covered the limbs and trunk. The patient was extremely pale. Retinal haemorrhages were observed. Slight irregular pyrexia, with a daily maximal temperature of about 100° F., was noticed. There was very profuse epistaxis, which continued to recur, and death took place on February 15th. The patient's father had suffered from frequent attacks of epistaxis during childhood, but not during later life. The patient's brother was quite healthy.

CASE IV.

A female child, aged 6, was admitted with epistaxis and a petechial eruption. Epistaxis had occurred on several previous occasions, but there was no history of haemorrhage in

other forms. The father and four other children were all subject to frequent attacks of epistaxis.

It will be noticed that in each of these four cases the history of haemorrhage was on the father's side of the family, whereas in cases of undoubted haemophilia transmission through the mother is the rule.

Cases in which attacks of purpura recur at intervals for many years in the same individual are not uncommon. These cases, together with those in which a definite family history can be obtained, suggest the possibility that a haemorrhagic tendency may in certain cases underlie the symptoms of purpura. In such persons a slight infection, which would have no effect on a normal individual, may produce the typical symptoms of a purpuric attack. While this appears to be a possible explanation of some cases, it must be admitted that in a majority of cases no family history can be obtained, and often after one attack, or a sequence of attacks rapidly recurring within a period of a few months, the individual remains free from any further purpuric manifestations. The state of affairs may be thus briefly expressed: In the majority of cases a single attack of purpura is the result of a strong infection acting on a normal individual. In the minority of cases repeated attacks are the result of slight infections acting on an individual with an abnormal haemorrhagic tendency. Urticaria, a closely allied condition, provides us with a parallel case. Urticaria may occur in perfectly healthy individuals as the result of an infection. On the other hand, it is well known that many individuals possess an inherent tendency to urticaria, and in such persons a very trifling stimulus may be sufficient to produce the characteristic symptoms of the disease.

In conclusion, I have to express my thanks to Dr. Sharkey, Dr. Acland, Dr. Hawkins, and Dr. Mackenzie for permission to make use of the notes of cases which have been under their care.

THE ACETONAEMIC CONDITIONS OF CHILDREN.

By Frederick Langmead, M.D., M.R.C.P.Lond.,

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No good purpose would be served were I again to detail the now abundant literature on the condition which we are considering. Many valuable articles have recently been written in which full references may be found. It is rather my intention to-day to bring the acetonaemic conditions of children more prominently before you, and to claim for acetonaemia or acidosis a more general notice than it has hitherto received. I believe the subject to be a very important one. It is true that the mere finding of acetone in the urine is usually of no clinical significance, and that indeed in traces it is a normal constituent of that fluid. It is true, also, that it may be found in large quantities in many conditions without symptoms of acid poisoning accruing, as may also diacetic acid, its immediate precursor; but there is a definite and not very limited group of cases in which the whole series of acid-poisoning symptoms occurs, either by itself or complicating some better-known condition; and I contend that this group requires recognition and treatment.

From the clinician's standpoint, patients in whose urine diacetic acid and acetone may be detected by ordinary methods of examination may be classed into three groups:

Group 1.—Those who usually show no symptoms of acidosis. Included among these are cases of excessive fat ingestion, starvation, high fevers, gastric ulcer, malignant disease, and many others, perhaps all due to deprivation of carbohydrates (von Noorden[1]).

Group 2.—Those who, while the subjects of other morbid states, have also symptoms of acid poisoning, which may, to a certain extent, be masked by those of the primary condition. Such are patients suffering from diabetes, a certain type of pneumonia, intracranial disease, toxic forms of gastro-intestinal disturbance, epidemic diarrhoea, sepsis, intestinal obstruction, acute peritonitis, and certain poisons, including morphine, phloridzin, and, as I have shown, salicylate of sodium.[2]

Group 3.—Patients who suffer from uncomplicated acidosis, which *per se* may terminate fatally. These are the subjects of (*a*) delayed anaesthetic poisoning, (*b*) recurrent, cyclical or periodic vomiting—conditions which may be designated by one title, "cryptogenic acidosis."

I shall deal chiefly with the last group.

By "symptoms of acidosis" is meant dullness and apathy increasing to drowsiness and in severe cases to coma, preceded or varied sometimes by restlessness, sleeplessness, delirium or convulsions. Meningitis may be mimicked, especially if head retraction is added. The face is flushed, the eyes are bright, the tongue and lips dry and rough, and there is great thirst. An odour of acetone may be detected in the breath, in the worst cases at a distance of several feet. The urine contains acetone, diacetic acid and sometimes β oxybutyric acid. In the cases comprising Group 3 there is persistent vomiting, sometimes of coffee-like material, associated with great retching and nausea, so that nothing is retained. Extremely rapid wasting results, the eyes becoming sunken and the abdominal wall fallen in, in a few days. A slight icterus is occasionally present. Before the end in fatal cases hyperpyrexia may occur.

Delayed Anaesthetic Poisoning.

This group of symptoms sometimes follows in the wake of narcosis produced by anaesthetics. There may be an interval of several hours between the anaesthetic and the onset of acidosis, or the usual retching and vomiting after anaesthesia may be aggravated into symptoms such as I have described. About 100 cases have now been reported, many of which were fatal. I can now add 3 more.

Case I.

A boy, aged 12, was admitted to St. Mary's Hospital under Mr. Low on January 10th, 1907, for the removal of a mass of recurrent lymphadenomatous glands from the right side of the neck, for which a previous operation had been performed in August, 1906. On January 15th this was done under $CHCl_3$, the operation lasting about forty-five minutes. Some vomiting followed the anaesthetic, but had temporarily ceased, when, about six hours later, he became delirious, and the vomiting became worse. Next day he was stuporose, the pupils being unequal, and the head retracted. Vomiting persisted. That evening (16th) he was very difficult to keep in bed. On the 17th his drowsiness increased, and a squint developed. By this time he had wasted considerably. On the evening of the 18th he was completely unconscious, and began to be slightly jaundiced, and next morning he died with a temperature of 106° F.

Post mortem, the usual buff-coloured liver was found, showing very advanced fatty change, and except for lymphadenomatous glands in the mesentery, and a mass of lymphadenoma in the spleen, no other morbid changes were seen. The brain, middle ear, and kidneys were all apparently normal.

Microscopically, the liver showed very evident fatty change associated with much necrosis. Both the necrosis and fatty change were most marked at the periphery of the lobules.

Case II.

A. T., a stout healthy-looking boy, aged 3½, was admitted into the Hospital for Sick Children, Great Ormond Street, under Mr. Kellock, on October 9th, 1906, for removal of tuberculous glands from the neck. These were excised on the next day, and the wound was sewn up. Chloroform was given for forty-five minutes, and was well taken. He vomited a little afterwards, but was otherwise as usual. During the night he was restless and thirsty, continually asking for water. At 10 a.m. next morning he was very drowsy, but could be roused. There was no vomiting. Acetone could be easily recognized in the breath, but the urine was not examined. He became more and more drowsy in spite of the administration of sodium bicarbonate, both by the mouth and subcutaneously. In the evening the breathing was rapid and laboured, and he became quite comatose. The left arm and face twitched; 4 oz. of urine were withdrawn by catheter. It was very acid, and contained a heavy deposit of albumen, but was not examined for acetone. He died the same evening, with a temperature of 101° F.

Post mortem, the liver was buff coloured, due to extreme fatty change. The thymus weighed 5 drachms 16 grains. No other change was seen except oedema of the lungs.

Microscopically, the liver showed intense fatty change, many of the lobules being apparently quite replaced by fat cells. The fatty change was greater at the periphery of the lobules. The central parts of the lobules show congestion comparable to early nutmeg.

Case III.

A girl, Daisy S., aged 15, attended the aural department at St. Mary's Hospital, under the care of Dr. William Hill, for

adenoids and middle-ear disease. She had been subject to bilious attacks. On May 27th the roof of the auditory meatus was curetted under gas, and afterwards the child returned home, apparently quite well. Two hours later, vomiting started and became very frequent. Next day she was greatly prostrated and began to get drowsy. Medical advice was obtained, and she was sent up to the hospital on the third day after the operation as a case of intestinal obstruction, and was admitted in a very restless condition, tossing about and sighing frequently. Since the operation she had wasted from plumpness almost to emaciation. The eyes were sunken and the abdominal wall collapsed, so that the vertebral column appeared as an abdominal tumour. The breath smelt strongly of acetone, and the urine contained a large quantity of both acetone and diacetic acid. The bowels were opened by enemata. She began to recover soon after admission, and after three days the vomiting had ceased and the acetone series had disappeared from the urine. About ten days later she had regained her normal state of nutrition.

These symptoms were formerly ascribed to delayed chloroform poisoning, but since they occur in only a small proportion of cases, it has long been apparent that there must be some antecedent factor. Some have thought it to be merely an idiosyncrasy, but Dr. Guthrie,[3] who first described this condition in England, was ever of opinion that this was not the true explanation. We now know that his contention was correct, for acidosis has occurred after ether (Brackett, Stone, and Low),[4] after ethyl chloride (Telford and Falconer),[5] and now I add one after nitrous oxide gas. The state of narcosis, therefore, is able to produce acid poisoning no matter which the anaesthetic, and we must look further for an explanation of the underlying cause.

Recurrent or Cyclical Vomiting.

The study of cyclical vomiting throws some light upon the subject. In this condition bouts of acidosis occur from time to time, arising we know not how, but quite unconnected with narcosis. Considered merely in their milder forms, as bilious attacks, it is only when they are severe that they arrest our attention. Although by no means uncommon, they are seldom fatal, since only 5 deaths are on record as due to them. Of these 2 were examined *post mortem*, one by Dr. H. O. T. Kelly[6] and one by myself.[7] In the former case the liver lobules were found to be uniformly infiltrated by fat, and there was necrosis of the mucous membrane of the gastro-intestinal tract, which was thought to be primary. Otherwise only slight parenchymatous changes were found.

In the case which I have recorded the liver was very fatty, and quite conformed to the type described in delayed anaesthetic poisoning. The gastric glands were degenerate; the kidney showed also fatty change. I have notes of 2 more fatal cases, making 4 recorded *post-mortem* examinations in all:

CASE IV.

A girl, Priscilla B., aged 4, was admitted into the Hospital for Sick Children, Great Ormond Street, on February 14th, 1906, under the care of Dr. Garrod. The history was as follows: She had been quite well and strong until February 10th, when she vomited three times, but did not seem distressed by it and had no pain. She then asked for a drink of water and went to sleep. Afterwards she ran about as usual, but vomited again on the morning of the 11th on trying to eat. She slept well that night, but vomited again on the 12th and 13th. During the 13th she became more and more drowsy and irritable, and was delirious in the night. The bowels had been open once during the illness. It was elicited that she had been frequently bilious and had had two or three bouts of vomiting before, but had never been like she was on admission. She was sent to the hospital as a case of intestinal obstruction, and was first admitted to the surgical ward on the 14th. There she was found to be delirious, tossing about and very restless. The face was flushed, the eyes sunken, and the conjunctivae and corneae injected. She took no notice of her surroundings and screamed loudly if disturbed, especially if the abdomen was touched. Her breathing was deep and regular but not hurried, and the breath was laden with acetone. About ½ oz. of urine was withdrawn by catheter and gave a marked reaction for acetone and diacetic acid, but not for sugar. It contained hyaline casts and a trace of albumen. The abdomen moved well and there were no local signs. By enema a large pultaceous motion was evacuated. The air-hunger temporarily improved, but otherwise the symptoms became more marked, and the patient died by coma on the 16th. The odour of acetone was noticeable on passing the end of the bed. The temperature at death was 107° F. Vigorous administration of bicarbonate of soda had been of no avail, since vomiting occurred every quarter of an hour or so and scarcely any was retained.

Necropsy.—The body was that of a very fat well-grown girl. The sweet smell of acetone was noticeable during the examination. The liver was not so strikingly yellow as usual but was very pale and cloudy. No obvious change could be seen in the other organs. The heart muscle and kidneys were pale. No organism could be grown from the blood, spleen or bile. Nine c.cm. of blood examined contained 0.33 per cent. of acetone.

Microscopically.—Stomach: There was some desquamation of the glandular epithelium. Between the deeper portions of the glands were dilated blood vessels, and here and there collections of lymphoid cells. *Kidney:* The glomeruli were congested. The cells showed cloudy swelling and the lumina were blocked with cell débris. No fatty change was seen. *Liver:* Diffuse, well-marked fatty infiltration was present and the cells showed cloudy swelling, but no necrosis. *Spleen:* There was considerable congestion and diffuse increase in lymphoid cells. The Malpighian bodies showed large areas of germinal cells. *Suprarenal Bodies:* Cloudy swelling of the cortex and vacuolation and fatty infiltration of the medulla.

CASE V.

A girl, Elsie H., aged 4 years and 11 months, was admitted into the Hospital for Sick Children, Great Ormond Street, on June 10th, 1907, under the care of Dr. Garrod. For four days the bowels had not been opened, and for two days she had persistently vomited green fluid. She had been kept in bed and had retained no food at all. Before this she had been quite well. She had been restless and sleepless for two nights, and on the day of admission had become drowsy. Since the onset of vomiting she had complained of abdominal pain. Her mother stated that she had had a similar attack twelve months before. When admitted, she was seen to be very drowsy and ill, with sunken eyes and muddy complexion. The bladder was distended, and when it had been emptied by a catheter the abdominal wall became concave. Movement was impaired in its lower part, but there was no local tenderness or rigidity. The liver was just palpable. Pulse 120, respirations 28, temperature 101° F. The urine contained a large quantity of acetone and diacetic acid, but neither albumen nor sugar. Acetone was detected in the breath. It was thought that the symptoms of acidosis were complicating pelvic peritonitis, and the abdomen was explored under $CHCl_3$, but nothing abnormal could be made out. Afterwards the vomiting became more frequent—the vomitus containing a little altered blood—and the child got rapidly worse. The odour of acetone increased and a slight jaundice developed. The drowsiness deepened, the temperature rose to 106° F., and death, preceded by a convulsion, took place twenty-six hours after the anaesthetic and about four days from the beginning of the illness. Ten grains of sodium bicarbonate had been given every hour for fourteen hours by the mouth, and 1 pint of 1 per cent. solution of bicarbonate had been infused into the veins.

Necropsy.—The liver was canary-coloured, due to excess of fat. There were several shallow follicular ulcers in the stomach. No other morbid changes were detected.

Microscopically.—Liver: Intense fatty change was found throughout the organ, but less marked in the outer thirds of the lobules than elsewhere. At the junction of the outer and middle thirds were zones of necrosis. *Kidney:* Cloudy swelling, and here and there slight necrosis. At the bases of the cells of the convoluted tubules fatty change was recognizable, but was much less than in the liver. *Suprarenal Gland:* Early cloudy swelling, and early necrosis. No fatty change. *Spleen:* Intense congestion, apparently passive rather than due to inflammatory change. *Intestine:* Considerable *post-mortem* necrosis, but no other change. *Heart:* Many lines of fine fat droplets were visible within the muscle fibres. Three c.cm. of blood yielded 0.24 per cent. of acetone.

There is not sufficient time to discuss the many interesting points in these cases, but of special importance is the condition found *post mortem*. The buff or canary-coloured liver, previously described as so strikingly characteristic of delayed chloroform poisoning, is also part of cyclical vomiting. In other respects the morbid appearances are similar, although the recent necrosis of liver cells seen in sections from some cases of delayed chloroform poisoning, has not been found in those from cases of cyclical vomiting, and would seem to be a more advanced stage of the more constant pathological lesion, possibly due to a terminal intoxication.

If we would explain the etiology of cryptogenic acidosis we must first explain the cause of the fatty changes in the liver and other organs.

Professor J. B. Leathes[8] says:

> In fatty heart and liver the fat has been transported from the connective tissues and dumped down, so to speak, for the purpose of supplying a source of energy to the organ, from where it was only storage fat to where it would be used up, if the catabolic activity of the cells were normal, but the catabolic changes which liberate energy by the demolition of fatty acids fail and the imported fat accumulates because it cannot be used up.

Rosenfeld[9] showed that if animals were fattened on mutton fat and then poisoned by phloridzin, an acute fatty infiltration of the liver occurred, and that the fat so deposited consisted of mutton fat; and also that whilst normal chicken, if poisoned by phosphorus, developed fatty liver, yet, if first starved, no fatty liver resulted.

We must acknowledge, then, that in this condition the liver and other oxidizing organs are unable to deal with the fat presented to them. They are absolutely or relatively inadequate, or, in other words, they have either an inherently deficient oxidizing power for fats, or fats are presented to them in amounts too great for even normal organs to oxidize. This failure of fat oxidation is borne out by the presence of acetonuria, for we know that the acetone series is a subproduct of the oxidation of fats (Geelmuyden, Rumpf, Magnus-Levy).[10] The balance of evidence favours the view that fats are presented to the organs in too great quantity for efficient oxidation. In diabetes we know that the oxidizing power of the tissues is undiminished. Again, the extremely rapid loss of fat from the subcutaneous tissues in cryptogenic acidosis, can only mean the flooding of the oxidizing organs with very excessive amounts. It is noteworthy that all the fatal cases of cyclical vomiting were of fat children.

I think, then, that the fatty changes in the liver and other organs must be regarded as the results and not as the cause of the altered metabolism, and that we must look for some poison which is capable of causing the transference of the fat from the subcutaneous tissues to the seats of oxidation. Phosphorus and phloridzin we know by experiment are able to do this, and no doubt many other toxic substances are also. There is experimental evidence that toxins may produce acetonuria. Botazzi and Orefici[11] made observations on 5 cases of diphtheria in children, in whom serum was injected. The curve of acetone secretion showed a sudden fall after the serum was administered, and a second smaller fall with convalescence. In diabetes the acetone bodies are increased during febrile conditions.

It is more than probable that one source of intoxication is from the alimentary tract. Gastro-intestinal conditions have long been known to produce acetonuria; appendicitis, intestinal obstruction, epidemic diarrhoea, and intestinal parasites are among its causes. In cyclical vomiting lesions of the alimentary canal have been found in all fatal cases, whilst the vomiting is a much more prominent symptom than in diabetic coma.

The oxidizing tissues of many children, especially such as ingest large quantities of fat, are constantly working at the top of their bent: if now the necessary intoxication occur, whether produced by absorption from the intestine, or by bacterial poisons, such as that of pneumonia, or by inorganic poisons, such as phosphorus, they are flooded by more fat derived from the subcutaneous tissues, and imperfect oxidation occurs.

Should the products of the imperfect oxidation be formed in sufficient quantity or accumulate from deficient excretion (Beesly)[12] then acid poisoning results. Any check to oxidation will produce acid poisoning in a child who is in danger of it, and in this way act the enforced rest, the period of starvation, the mental disturbance, and the narcosis associated with anaesthesia, and to a certain extent the kind of anaesthetic used.

Much stress has been laid upon the fact that cyclical vomiting occurs principally in neurotic children, and it is true that acetonuria may be produced experimentally by fright, but this presents no difficulty, for we know that nervous states may seriously inhibit metabolism.

Children subject to cyclical vomiting are potential victims of delayed anaesthetic poisoning.

To sum up:

1. Acetone and diacetic acid are found in the urine in a number of conditions, and may be, but are not necessarily, associated with symptoms of acidosis.

2. Cyclical vomiting and delayed anaesthetic poisoning are examples of acidosis of unknown origin.

3. Delayed anaesthetic poisoning is due not so much to the kind of anaesthetic used as to the state of anaesthesia.

4. The acetone series is a product of the imperfect oxidation of fats, and hence in these conditions the oxidizing power of the tissues must be inadequate.

5. This is further demonstrated by the condition of the liver.

6. There is evidence in favour of the failure of oxidation being due to too great a supply of fat to the chief seats of oxidation rather than to a primary deficiency in oxidizing power, although the latter alternative cannot be excluded.

7. Probably this may be brought about by a variety of toxins which act like phosphorus.

8. The determining cause of acidosis is the accumulation of the precursors of acetone, either from excessive formation or deficient excretion.

9. Anaesthetics are dangerous to patients who are the subjects of acidosis.

The treatment which is the natural outcome of these conclusions is first to inquire carefully into the previous condition of the patient, especially with regard to bilious attacks, before administering an anaesthetic; and, secondly, to examine the urine for acetone and diacetic acid. If the answer to either of these inquiries is in the positive, a course of alkalies should be given before the operation, whenever this is possible. Ether should be the anaesthetic selected, since $CHCl_3$ is especially dangerous, due to its specific action on the liver and kidneys.

When acid poisoning is actually present, a purgative should be given at once and the stomach washed out. This should be followed by subcutaneous, or, better, intravenous infusion of a solution of bicarbonate of soda. Lactate or citrate of soda should be administered by the mouth. It is generally impossible to feed these patients by the mouth, and in any case fat should not be given in any form.

In conclusion, I have to thank the members of the medical staffs of St. Mary's Hospital and of the Hospital for Sick Children, Great Ormond Street, who have been kind enough to allow me to use the notes of their cases; and Mr. Spilsbury and Dr. Graham Forbes, the Pathologists of those institutions, for the pathological reports which are included.

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DISCUSSION.

Professor Halliburton (London) stated that, although he had no clinical knowledge of acidosis, he was glad to hear that clinical experience confirmed the results of physiological experiment relating to the view that the acetone series of substances originate from the fats of the body. He inquired whether there was any glycosuria in the cases Dr. Langmead had described.

Dr. Lees (London) said the recognition of this morbid condition was very important from the point of view of diagnosis, especially in the diagnosis from intestinal obstruction, and also from tuberculous meningitis. A mistake might be made by attributing to organic disease in the abdomen or in the cerebral membranes symptoms really due to the condition described in the paper, or, on the other hand, such organic disease might be wrongly ascribed to the functional condition.

Dr. Voelcker (London) expressed his indebtedness to Dr. Langmead for first pointing out the condition to him in a case in his ward at the Children's Hospital. He would like to add to Dr. Lees's caution about diagnosis his experience with a case lately under his care. The case had been regarded as one of acidosis, with an alternative diagnosis of intestinal obstruction. The child had had two similar attacks previously from which she had quite recovered. Dr. Voelcker regarded the case as one of tuberculous meningitis, but at the *post-mortem* examination there was no such appearance in the liver as had been described in cases of acetonaemia; there were large caseous and calcified mesenteric glands, but there was to the naked eye only some opacity of the membranes over the tips of the temporo-sphenoidal lobes, but no definite tubercles were seen, nor was there any general tuberculosis.

Dr. G. A. Sutherland (London) said that, although the view that the primary trouble lay in the faulty metabolism

of fat in the liver might be supported on chemical grounds, it was not found clinically to be very satisfactory. He had obtained his best results in cases of recurrent vomiting by massage, rest, and overfeeding, a large quantity of fat being given in the diet. The view that the large amount of acid produced in the system was to be met by giving large doses of alkalies was not confirmed by his clinical experience, for he had found no benefit from such treatment. He thought the acids produced were, like uric acid in gout, the result and not the cause of the disease. The attacks of periodical vomiting in children were very similar to attacks of sea-sickness and migraine, which affections were cerebral in origin. He thought that acidosis was probably due primarily to cerebral disturbance. The patients were usually highly neurotic subjects, and it might be that a functional disturbance of the cerebrum or some part of it produced all the symptoms of acidosis. In organic affections of the cerebrum, such as tumour and meningitis, an excess of acetone was often present in the urine.

Dr. LANGMEAD, in reply to Professor Halliburton, said that he had only dealt with cases of acetonuria and diaceturia unassociated with glycosuria, and sugar had not been present in the urine of any of the cases recorded. In reply to Dr. Cautley, he said that although slight quantities of acetone might occur in the urine as the result of proteid breakdown, yet the great source was from fat; and in cases in which large quantities of acetone were found there was no corresponding increase of the ordinary products of proteid metabolism.

INTERSCAPULO-THORACIC AMPUTATION.

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WHEN an operation is introduced into surgery the first question to be asked is, Is it sufficiently safe to be a justifiable measure? In deciding whether an operation is "sufficiently safe" it is necessary to consider the condition for which it is done. An interscapulo-thoracic amputation is, for practical purposes, done only for one condition, sarcoma in the neighbourhood of the shoulder-joint. It has been done for other purposes, such as removing malignant glands from the axillae, as in cases of sarcoma and carcinoma of the arm. And it is much to be preferred for this purpose to the method of amputating the hand and clearing out the axilla, because it enables the growth to be far more effectively removed. And, further, it is easier to do. It has been abundantly proved that an interscapulo-thoracic amputation is a justifiable surgical measure. There is quite a large literature upon the subject, but as it mostly concerns the cases of adult patients, it will be no further mentioned here. The number of instances in which the operation has been done and the results published is sufficiently small to justify my bringing the two cases in which I have operated to your notice. They illustrate that the operation can be done safely on young subjects, and also raise the question as to whether the benefit conferred by the operation makes it a measure worthy of recommendation.

Before relating the cases to you, there are a few points which I would like to mention, because it is obvious that the earlier the diagnosis is made the better are the prospects of relief offered by operation. The clinical signs of the appearance of a tumour need not be stated. The great stumbling-block in the way of making a correct diagnosis is the question of tuberculosis. Tuberculous disease is much more frequent in the neighbourhood of the shoulder than is malignant disease. Hence there is an *a priori* probability that a case of swelling in the neighbourhood of the shoulder will turn out to be tuberculous. Clinically, there is no sign which can be relied on to indicate the presence of malignant disease, except perhaps the presence of a definite tumour. Hence one has to rely upon two things—an exploratory incision and skiagraphs. In the first, the findings of the surgeon and pathologist may be very disappointing, and in the second, the radiographer is sometimes uncertain. The findings will be considered under three headings: the surgeon at the exploratory operation, the pathologist and the tissue removed at that operation, and lastly, the radiographer.

The Exploratory Operation.—I can describe no better example of the difficulty of coming to a satisfactory conclusion than to quote a case which was in St. Thomas's Hospital when I was Registrar. I reported it in my Surgical Report for 1900, pp. 154–155. It was operated on twice during life under the impression that the disease was tuberculosis, and it was only after death that its true sarcomatous nature was recognized.

A girl, M. McK., aged 17, was admitted to St. Thomas's Hospital. She had noticed fifteen months previously pain in the left hip and thigh, which had been increasing in size since then. She was examined under an anaesthetic on November 27th, 1899, and nothing very definite being found, such as would indicate growth, she was subsequently treated by splintage and extension. But the pain increased in spite of the treatment, necessitating the administration of morphine. On January 22nd, 1900, fifty-six days later, the trochanter was exposed and gouged until an "abscess" was opened, which was curetted and the wound sutured. On February 16th, twenty-five days later, the hip was excised, the joint being found "full of thick pus." After this operation signs of supposed phthisis appeared in the lungs, with some cough and bloody expectoration. Finally, the patient died thirty-six days after the operation for excision of hip.

At the *post-mortem* examination the lungs were found studded with small nodules of growth, into some of which haemorrhage had taken place. On the left and inner side of the pelvis was a mass of extremely soft white growth, which turned out to be sarcomatous. There was no evidence of growth in the femur or in the acetabulum. The growth was diffluent and simulated pus.

In this case every one concerned had been misled by the conditions present.

In another example a man had been operated on for supposed caries of femur, leaving behind a sinus.

After leaving hospital he went to a convalescent home, but was sent back in a few weeks because he had become progressively unconscious and developed a squint. One night he was found dead in bed as the result of a haemorrhage from the sinus in the popliteal space whilst unconscious. *Post mortem*, the disease of femur was found to be a sarcoma and not caries.

These two cases show how difficult it may be to deduce true results from an exploratory operation, the surgeon being from time to time misled in his observations.

The Pathologist's Report.—A great aid to our exploratory operations is the report of the pathologist upon any tissues which we have removed. Yet his reports are at times disappointing. This is partly due to the surgeon who supplies the pathologist with improper tissue or scrapings to be examined, and sometimes to the very great difficulty there may be in deciding on the nature of the growth. In the hands of a first-rate competent pathologist it should be rare, if he is supplied with good material, for him to be unable to give a definite opinion. As an example of this, a case is reported which is a very uncommon one, but which illustrates in the superlative how even the best of pathologists have difficulty.

A little girl, H., had been ill for a week, the temperature on the night before her entering a home being 103° F. The right thigh was swollen and acutely tender. The diagnosis of acute infective periostitis or osteomyelitis was made. Between the periosteum and the bone some suspicious material was found, some of which was removed so that it might be examined. One of the best pathologists in London, Dr. Dudgeon, reported that it was a sarcoma, and confirmed this opinion by a subsequent examination. This meant probably an amputation at the hip joint. Dr. Greg took a careful skiagraph, and reported that he had not seen these appearances "apart from sarcoma." Yet as the result of the operation the child's temperature had fallen to normal, and she had improved in every particular, perhaps the most important being that the swelling had largely gone. The case was then seen with Mr. Arbuthnot Lane, Dr. Hames, and Dr. J. P. Hedley. The decision was unanimous that clinically the case was most unlike sarcoma, that amputation at the hip joint was likely to be useless if the case was sarcoma, and altogether unjustifiable, and, finally, that Dr. Dudgeon be asked to consult with Mr. Shattock over the pathological view of the case. Mr. Shattock and Dr. Dudgeon agreed that it was beyond the power of microscopy to give a certain diagnosis, advising that no amputation be done. The after-history of the case justified this opinion, the child recovered completely.

This case is an example of the extraordinary difficulty which pathologists of the first rank may experience. Luckily such cases are rare. But they show the value of clinical signs when deciding the line of action to be taken

in such a case, and the imperative need of the most skilled pathologist to help.

The Radiographer's Evidence.—We next turn to the evidence which the radiographer is able to supply. To illustrate this I have brought six skiagraphs taken for me by Dr. Ironside Bruce, the Radiographer to the Children's Hospital, Great Ormond Street. They were taken from the specimens removed, and are, therefore, much clearer than the ordinary skiagraphs taken in the living.

Specimen 104 was taken from the part removed from the second case to be reported. Specimen 106 is also in the museum at the Children's Hospital and was removed successfully by Mr. Morgan from a little girl 2 years old. Specimen 107 was removed by Mr. Howard Marsh, and 108 by Mr. Edmund Owen.* Dr. Ironside Bruce regards these as perfectly typical skiagraphs of sarcomata at this age.

The other print is a case of sarcoma of the upper end of the humerus, which was under the care of Mr. Collier. It is No. 19 in the collection of skiagraphs at Great Ormond Street. It is the only skiagraph shown which was taken of the condition in the living. Unfortunately I cannot find the skiagraphs of my first case. They showed in a greater degree the differences and difficulties shown in Mr. Collier's. In the latter some destruction can be seen in the head of the humerus; in mine nothing could be seen except some wanting of the outline of the humerus at one small place, such as is associated with caries of bone.

The print of the little girl's femur, the case just related, also emphasizes the very great difficulty which may be experienced in giving definite evidence from skiagraphs. In this case there was no sarcoma.

The Selection of Operation.

Having arrived at a diagnosis, the next point to settle is the selection of an operation, which consists practically in deciding between an amputation at the shoulder-joint and an interscapulo-thoracic amputation in one or two stages. As regards the mortality between the two operations, there is little to pick. Indeed, with attention to the points in technique to be mentioned, an interscapulo-thoracic amputation can be performed nearly as quickly as one at the shoulder-joint, and with less loss of blood, whilst the soft parts in the neighbourhood of the growth are removed more extensively and completely. It is an old rule, which is not without exceptions, that an amputation for malignant growth should be performed above the proximal attachments of the muscles which pass over it. Indeed, if one examines the most unbiassed records of cases which we have—namely, those in the hospital reports—we find that local recurrences in the stump are much more frequent after amputation through the shoulder-joint than when it is done by the interscapulo-thoracic method. This is as would be expected. As a further point, the amputation being done well above the growth, the parts being in their natural condition, is easier than if it is done lower down.

The two cases which form the text of this paper are now quoted in brief.

Case I.

A little girl, L. W., aged 8, was admitted to the Children's Hospital, Great Ormond Street, in 1903, having injured her shoulder by falling nine months previously. On admission, there was a globular-shaped swelling over the upper part of the humerus, which was cystic in front, where the skin was red. A skiagraph was taken, which has unfortunately been lost, but which showed no sign of sarcoma, but suggested caries, as the outline of the bone was in one place "worm-eaten." An exploratory incision was made in front of the swelling, blood and broken-down tissue being evacuated. Some tissue was removed, but the pathologist was unable to express a decided opinion. A few days later a second exploratory incision was made into the posterior part of the tumour and growth found. An interscapulo-thoracic amputation was then done. The wound healed by first intention. The child complained of no pain, and left the hospital in a fortnight. Seven months after the operation she died of secondary growths in the lungs; the scar was free from all traces of recurrence.

Case II.

A little boy of 4 had a swelling of the right shoulder for four months. On examination a distinct tumour was felt over the shoulder-joint, which a skiagraph indicated was a sarcoma. The specimen is labelled 104 in the catalogue of the specimens in the museum of the Children's Hospital, Great Ormond Street. An amputation of the forequarter was done. The wound healed by first intention. There was no local recurrence after operation, but the child died of secondary visceral growths after four months.

There are two points in the technique of the operation upon which special stress should be laid.

Haemorrhage.—The first and most important step of the operation is to ligature and divide the subclavian vessels. This is done by dividing the clavicle at the junction of its inner quarter and outer three-quarters, the latter being pulled up and out of the way. The subclavian artery and vein are then exposed, ligatured, clamped with artery forceps, and divided between them. The artery is ligatured first, then the arm is raised and its blood emptied through the vein, which is ligatured before the arm is lowered. By these means the patient is saved the loss of a "limbfull" of blood.

Shock.—The prevention of the loss of blood does much to prevent the shock, which may still be considerable when the brachial plexus is divided. To prevent this two or three minims of a 5 per cent. solution of eucaine and adrenalin are injected with a hypodermic syringe and needle into each cord of the plexus two or three minutes before it is divided, distally of course to the injections.

Skin flaps are then raised quickly and the arm with the scapula ablated. In doing this there is practically no haemorrhage as the subclavian vessels are secured, except from the suprascapular and perhaps the posterior scapular arteries. The operation is then completed by uniting the flaps.

After the operation the patient will always be better for some rectal injections of saline.

The time taken by this operation is almost all spent on the first step, the securing of the subclavian vessels, which may be very difficult if the growth extends high. But when it has been successfully accomplished the rest of the operation only takes a few minutes. In fact it may be said that the ease and success of the operation very largely depend on the first step. There is no difficulty if the growth does not extend up along the axillary vessels, though occasionally some very large veins get in the way. Care must be taken during this step to avoid injuring the pleura which lies directly behind and below the vessels. I lost a third case, under the care of Dr. W. B. Winston, from shock about thirty-six hours after the operation, because the growth extended so high that the subclavian vessels could not be satisfactorily and easily secured before commencing to amputate. This case shows the importance of this step in the operation.

These two cases show that the operation of interscapulo-thoracic amputation can be done safely in children. But they show another point. Though the immediate result was successful, both patients died in a few months from the internal dissemination of the growth. Therefore the operation was not successful in its remote results. It is therefore doubtful if it is an operation which is to be often recommended for these cases. Rather would it appear better to reserve it for a few carefully-selected ones, in which cases it is to be infinitely preferred to amputation at the shoulder-joint.

An interscapulo thoracic amputation can be done in two stages; first, amputation of the shoulder-joint, and removal of the scapula later. But the case is quite different from amputations at the hip-joint, which are mostly done on people who are very ill, suffering from old and advanced tuberculous disease. In the case of the upper limb, the amputation is usually done on healthy people, who have a malignant growth which has not as yet impaired their general health. Hence there is not the need to divide the interscapulo-thoracic amputation into two stages, such as it is desirable to do in an amputation at the hip-joint. Further, it is undesirable, because if the interscapulo-thoracic amputation is done in two stages a quantity of soft parts is left behind, such as part of the deltoid muscle, which is in close relation to the growth. Hence local recurrence is more likely to take place if the operation is done in two stages.

* The numbers are those in the Museum Catalogue prepared by Dr. Still, pp. 15-16.

SOME CASES IN WHICH MECKEL'S DIVERTICULUM WAS PRESENT.

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Abnormal involution of any of the omphalo mesenteric structures has been responsible for a great many interest-

ing conditions and also, unfortunately, for a large percentage of fatal cases. When we consider that at least 150 cases of intestinal obstruction caused by the persistence of Meckel's diverticulum have been reported since 1893, and that statistics from various sources estimate the frequency with which this structure is present at roughly 2 per cent, the importance of recognizing the various pathological conditions which can arise in this connexion cannot be over-estimated.

It is impossible in a single paper to deal with the many and diverse lesions which may arise from abnormal involution of these structures; I only propose, therefore, to mention one or two cases which have recently come under my notice, with a very brief review of the literature referring to similar conditions. As would be expected, cases of this nature are commonest in the young; from 10 to 20 years appears to be the age at which these cases most usually come before us clinically. Forgue and Riche[1] mention 55 cases under 10 years of age and 72 between 10 and 20 years. Pathological lesions due to the persistence of Meckel's diverticulum are broadly divisible into four great classes:

1. Inflammatory affections of the diverticulum, presenting all grades of severity, from catarrh to ulceration and gangrene.
2. Affections of the diverticulum due to various acquired malpositions, such as torsion, strangulation, etc.
3. The various forms of intestinal obstruction due to the persistence or excessive involution of the omphalo-mesenteric remains, and
4. Various forms of enterocysts, fistula at the umbilicus, and many other conditions, not in themselves immediately threatening life, but potentially dangerous, and subsequently exciting conditions classified under the previous headings.

The diagnosis of cases where Meckel's diverticulum is present is particularly important in that, to quote Porter:[2]

A persistent diverticulum is a greater menace to life than an appendix vermiformis, and whenever encountered should be removed.

Involution of the omphalo-mesenteric structures may be abnormal in two ways, named respectively: (1) Subinvolution, and (2) superinvolution. The large majority of cases belong to the former class. The latter is rare and unimportant because it is only connected with the various degrees of atresia of the small intestine.

Bland-Sutton[3] has described these latter conditions, and attributes them to the fact that the obliterative process is excessive and involves the intestine, producing all grades of atresia from slight constriction to the termination of the proximal part of the intestine in a cul-de-sac either connected with the distal portion by a fibrous cord or completely separate from it. The proximal part may form a fistula at the umbilicus, hence the importance, in cases of congenital umbilical fistula, of ascertaining the condition of the intestines before closing the fistula. Bland-Sutton[4] reports a case where he diagnosed this condition of imperforate ileum and subsequently verified his diagnosis at operation. This condition is also mentioned by Sheen.[5]

These cases are uncommon, and very fatal when the atresia is extensive enough to give rise to intestinal obstruction. I find two in the records at Great Ormond Street. One of these was under the care of Mr. Steward. The fibrous band was 6 in. in length and attached directly to the caecum in the normal position of the ileum. There was also imperforate anus and atresia of the rectum. An analogous condition is that of atresia of the duodenum at the situation of the bile papilla, mentioned by Bland-Sutton,[6] of which I find one instance at Great Ormond Street, under Dr. Batten. Interesting though these conditions are, practically speaking none but the milder varieties, which rarely give rise to intestinal obstruction, are amenable to surgical intervention.

To turn to those cases of subinvolution, I would mention first a case under the care of Dr. Garrod and Mr. Fairbank at Great Ormond Street. This belongs to the first class of affections of Meckel's diverticulum—namely, those of primary inflammatory nature—and the history of the case is as follows:

A boy of 7 years had been treated for heart disease and chest troubles at various times. He had been seedy for a day or two before he became acutely ill. The onset was at 9 p.m. the day before admission, and was characterized by sudden and very acute pain. The boy woke up and screamed, and the bowels were opened at this time. Vomiting first occurred at 12 o'clock, and again at 3 a.m. Pain continued, so that he could not sleep, and was localized to the umbilical region. Though the child was cyanosed and suffering from dyspnoea while the alae nasi were dilating with each inspiration, the facies was distinctly of the abdominal type. The chest was full of moist sounds, and valvular disease of the heart was evident on examination. The abdomen showed good movement above the umbilicus, but was nearly motionless below, while in the hypogastric region a rounded prominence was apparent. Muscular rigidity was marked in the lower part of the abdomen, while a rounded swelling, dull to percussion and more or less median in position, suggesting distended bladder, could be made out by palpation. This swelling gave a fullness in the recto-vesical pouch, as ascertained by rectal examination, but did not subside when the urine was drawn off by a catheter. The abdomen elsewhere was not distended. Operation by Mr. Fairbank revealed a clean-cut oval perforation of a conical Meckel's diverticulum. The edges of the ulcer were clean-cut and not thickened; the ulcer was evidently acute and $\frac{3}{4}$ in. by $\frac{1}{2}$ in. in extent, and was situated on the lateral aspect of the diverticulum. The latter structure was situated near the pelvis, where there was a spreading septic peritonitis. The intestines in the neighbourhood were inflamed in their peritoneal coats and distended, giving rise to the prominence noted previously.

The child recovered.

This was a case of primary acute diverticulitis, due probably to infection with virulent organisms. There was no suspicion of its being a distension ulcer, as there was no sign of torsion of the diverticulum or of intestinal obstruction. Further, there were no signs of chronic inflammation of the diverticulum. As I mentioned previously, every grade of diverticulitis is known, from simple catarrh to gangrene, and may be due to specific organisms, such as the tubercle bacillus, the typhoid bacillus, or actinomycosis, etc. Of these, according to Forgue and Riche,[7] ulceration occurring in typhoid fever is the commonest, but all of them are rare. There was the possibility that in this case we were dealing with an acute perforation during an attack of "ambulatory typhoid fever." The possibility was certainly remote and negatived by the absence of confirmatory evidence and the subsequent rapid recovery of the child.

Non-specific ulcerative diverticulitis, however, occurs as the result of infection by a variety of organisms, and ulcers may be single or multiple, and may or may not perforate. Makins[8] reported a case where there were thirteen perforations in one diverticulum.

Infection is almost certainly direct in these cases, and is due probably to diminution of the resistance of the mucosa as a result of slight twists and injuries from change of position, to which a structure of this nature is so liable, followed by a direct infection of the injured viscus by intestinal organisms. Further, the blood supply is not particularly good, as there is seldom a mesentery; in this respect Meckel's diverticulum is inferior to the appendix in many instances, and inflammatory attacks in both these viscera much resemble each other; indeed, the differential diagnosis is often impossible, so alike are the symptoms and manifestations. Further, acute abdominal symptoms due to Meckel's diverticulum have more frequently been attributed to the appendix than any other organ. Halstead[9] says that in acute obstruction due to the diverticulum the tenderness is most usually situated at the level or below and to the right of the umbilicus, and that the diagnosis has to be made particularly from appendicitis. Also a differential diagnosis, according to this author, is to be made from appendicitis in cases of torsion and acute diverticulitis. The case just quoted much resembled an attack of acute appendicitis with diffuse spreading peritonitis. Finally, it may be said that diverticulitis sometimes, though not often, according to Halstead[10] and Forgue and Riche,[11] causes the adherence of the diverticulum to neighbouring organs, thus predisposing to intestinal obstruction. This form of inflammatory attachment is, according to most authors, rare, though a few authentic cases are known. Henrotin, quoted by Halstead,[12] describes a case where Meckel's diverticulum became adherent to the exudate on a stump of an appendix removed eight days previously, and caused intestinal obstruction. Adhesions may similarly form through inflammation primarily in the diverticulum.

The next case I wish to bring before your notice illustrates one or two points which aid in the diagnosis of this condition when it gives rise to acute intestinal obstruction.

A boy, 8 years of age, under the care of Mr. Corner at Great Ormond Street, complained of sudden acute pain in the abdomen two days before admission. He vomited at the time of

onset. There is no mention of any previous attacks either in his own or his family history. The next day the pain was relieved, and there was an improvement.

On the day of admission into hospital there was an exacerbation of the pain, and he vomited again. There was absolute constipation. The general condition was not bad in spite of the history of forty-eight hours. The abdomen showed deficient movement in its lower part, while in the hypogastric region some prominence was noticeable. The rest of the abdomen was not distended. There was no muscular rigidity, but a rounded swelling could be well felt in the hypogastric region, dull to percussion and resembling a distended bladder. This swelling, however, did not disappear when a little urine was drawn off with a catheter. There was distinct fullness in the recto-vesical pouch, as ascertained by a rectal examination. A diagnosis of obstruction was made, and operation by Mr. Corner showed a distended loop of small intestine strangulated beneath a Meckel's diverticulum, itself gangrenous and adherent to the mesentery. The strangulation of the small intestine was evidently recent, as the bowel was merely congested, though greatly distended; evidently strangulation had not persisted for forty-eight hours.

The explanation is probably as follows: The first attack of pain was due to some twisting of the diverticulum at its junction with the intestine where it was narrow, obstructing the venous return and causing it to assume the globular character which it exhibited at the operation, and leading to gangrene. The pain, therefore, became somewhat relieved till the swelling commenced to compress the small intestine, giving rise to the exacerbation which occurred on the day of admission, and to typical symptoms of intestinal obstruction.

Compression of a loop of gut is the commonest way in which Meckel's diverticulum causes acute intestinal obstruction, and the distal end is usually attached to the mesentery or small intestine by fibrous cord. Treves,[13] quoting Cazin, says that the attachment was to the mesentery in 10 cases, to the small intestine in 6 cases, and to the umbilicus in 7 cases.

Halstead's[14] figures are: To the mesentery 23 cases, umbilicus 15 cases, and to small intestine 3 cases.

It would seem from the perusal of several cases that the more sudden and fulminating types are associated with the adherence of the diverticulum to the mesentery, while those less common cases of adhesion to the small intestine, where more play is allowed, would seem to present a milder clinical picture. The onset frequently occurs after a meal, sometimes after trauma to the abdominal wall. In the former case the intestinal distension after errors in diet is doubtless the determining factor.

Volvulus of the diverticulum is not at all common, though small twists repeatedly following each other must frequently occur in such a variable viscus. In the discussion following a case of volvulus of Meckel's diverticulum, reported by Taylor,[15] Kelly[15] gives the following chief factors determining torsion of an abdominal viscus, specially applicable to these cases: (1) Growth and alteration of relations. (2) Movements imparted by surrounding viscera. (3) Movements imparted by contraction and relaxation of the abdominal wall. (4) Movements depending on the change of position of the body and alterations of gravity.

Slight twists occurring as a result of these factors are undoubtedly the starting point in many cases of diverticulitis in its various forms and of intestinal obstruction.

Such was, I think, the origin in all probability of the case just quoted. If this explanation is true one would expect in a great majority of cases a previous history of abdominal disorders, and in fact this obtains in the majority of cases. For example Taylor[16] reports a case of volulus of a free Meckel's diverticulum in a girl, 6 years of age, who gave a history of attacks of abdominal pain all her life, relieved by purgatives. Halstead[17] reports a case of strangulation of intestine through the mesentery of Meckel's diverticulum in which a previous history of several severe attacks of abdominal pain with constipation and vomiting had occurred. Forgue and Riche[18] lay stress on the history of previous attacks of abdominal pain and add further that a family history of a similar nature may not infrequently be found.

Apart from mechanical causes predisposing to, or actually causing, acute affections of the diverticulum, any inflammatory affection of the small intestine has a similar effect. Thus, Sailer and Frazier[19] report a case of strangulation of Meckel's diverticulum during the course of typhoid fever in which there were no ulcers in the diverticulum. This case further gave a history of an attack of acute abdominal pain on a previous occasion which had been diagnosed as gallstones.

The importance of this previous history is undoubted. Another point to which I would draw attention, not present in the cases already referred to, but which was present in my next case, is the external appearance of the umbilicus. Those diverticula which are adherent directly to the umbilicus without the intervention of a fibrous band are usually cases which at birth had an umbilical fistula of varying size, usually small (Sheen).[20] Any excessive scarring at the umbilicus, therefore in association with other considerations, during an attack of acute abdominal pain may help towards a diagnosis. This was in fact a leading factor in the correct diagnosis of two cases personally reported to me by Mr. Nitch and Dr. Yarred. A second peculiarity of the appearance of the umbilicus is that of a marked indrawing below the level of the surface of the abdominal wall; this was present in my next case. Such an appearance, if present, would indicate the attachment of the omphalo-mesenteric remains to the umbilicus Intestinal obstruction under these conditions is usually produced by "dragging," though it may be by one of the numerous mechanisms reported and far beyond the scope of this paper. The final point I wish to allude to is the prominence in the hypogastric region so much resembling a distended bladder, but not disappearing after the use of the catheter.

Halstead[21] says that localized meteorism is in favour of obstruction by a Meckel's diverticulum. His case showed localized distension above and to the right of the umbilicus, with flattening of the flanks. He compares the configuration of the abdomen to an inverted cone. The situation of the meteorism would vary according as the strangulated and distended loop passed beneath the diverticulum upwards or downwards; in the two above cases, accompanied with meteorism, the prominence was in the hypogastric region; sometimes it inclines to the right iliac fossa. It is well known that tumours due to distended intestine may give a dull or impaired note to percussion, and this sign was present in both the above cases. To sum up, then, the points in favour of the diagnosis of intestinal obstruction due to Meckel's diverticulum are, according to Halstead:[22]

1. Age. Usually children and young adults.
2. Previous history of minor attacks.
3. The configuration of the abdomen already described, which I would modify by saying that the prominence tends to be central and confined either to a region above or below the umbilicus.
4. Early faecal vomiting. Cazin, quoted by Halstead, says it occurs late. Forgue and Riche[23] note the rarity with which faecal vomiting occurs.
5. Localized tenderness near the umbilicus, usually to the right. Special stress should, I think, be laid on the first three points, and to these one may add:
6. The appearance of the umbilicus if abnormal, and
7. Other signs of small intestine obstruction.

There is not space to detail further the many and varied forms of intestinal obstruction due to Meckel's diverticulum and their clinical and pathological peculiarities, so I now pass on to relate my last case.

A girl of 6 years of age, under the care of Mr. Arbuthnot Lane, for whom I acted, complained of a swelling at the navel since birth. It had been growing larger and she had repeated attacks of pain at the umbilicus. There was a very marked indrawing of the umbilical cicatrix apparent on examining the child, while a rounded swelling beneath and fixed to the umbilicus, appearing to be in the abdominal wall, could be felt. The mass was tender but did not present any cystic feel when palpated.

On pressing the abdominal wall below the umbilicus there was more of a dragging sensation produced on the tumour than was produced by a similar manœuvre above. Operation revealed a cystic swelling filled with old blood clot into whose interior opened a patent Meckel's diverticulum. The diverticulum was constricted at its junction with the intestine and again at its entrance into the cyst. The cavity of the cyst was therefore in free communication with the lumen of the small intestine. Above the diverticulum and attached to the wall of the cyst, which was surrounded with dense fat, was a large piece of omentum. Below and also attached to the cyst wall were the obliterated urachus expanding into the bladder, and below that a fibrous band formed by the fusion of the obliterated hypogastric arteries. The pathological report by Dr. Graham Forbes describes this tumour as probably of intestinal origin as there are a few unstriped muscle fibres to be seen and in places cells resembling those of intestinal epithelium.

The cyst was probably formed by contraction after scarring of the diverticulum at the spot where it was repeatedly pressed upon by the contraction of the recti abdominis muscles. The inflammatory origin of the tumour was, I think, evidenced by the dense matting of the surrounding structures, and the great thickening of the peritoneum and posterior rectus sheath in the immediate vicinity. Had the case been left alone and had no acute abdominal symptoms necessitated surgical interference at any time, I think that probably in due course the condition would have developed into an umbilical cyst connected to the small intestine by a fibrous band, a variety of cysts referred to by Forgue and Riche.[24]

Very many varieties of cysts and enterocysts have now been recorded, but it is apart from the object of this paper to refer to them further. I have hoped only to bring together some points which may aid us in the diagnosis of pathological conditions due to the persistence of Meckel's diverticulum or its vestigial remains. In conclusion, I wish to thank all those gentlemen who have so kindly allowed me to quote their cases.

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DISCUSSION.

Mr. W. F. BROOK (Swansea) said he had hoped to have heard some allusion to inversion of the diverticulum, a condition which, together with the troubles to which it might give rise, was scarcely noticed in the literature of Meckel's diverticulum. He referred to a case in a child of 2½, in which he had been called upon to operate for acute intestinal obstruction with disturbance. An intussusception was found immediately above the caecum, and the cause of it was a partially inverted Meckel's diverticulum attached to the advancing head of the intussusception, or, rather, pulling the latter after it. It was an oval body attached by a pedicle about 1 in. in length to the bowel wall. The enlargement of the distal portion was due to the presence of adenomatous tissue, and also to the fact that at this point the inversion was not complete. The intussusception could not be reduced until the diverticulum had been excised through an incision in the bowel wall.

Mr. D'ARCY POWER (London) drew attention to the interesting nature of the case of intussusception related by Mr. Brook of Swansea, in which a partial inversion of Meckel's diverticulum had enabled the ileum to grasp the protrusion and begin an intussusception. Mr. Power asked whether Mr. Brook had made any microscopical examination of the inverted diverticulum to ascertain whether it was merely oedematous mucous membrane, or whether it was not rather of the nature of a papilloma or polypus.

MEMORANDA:
MEDICAL, SURGICAL, OBSTETRICAL.

AN OPERATION FOR EMBOLUS.

THE extremely interesting report of Mr. Sampson Handley upon his case of embolus, in the BRITISH MEDICAL JOURNAL of September 21st, page 712, has reminded me of a case that was under my care in the Leeds Infirmary in September, 1903, in which an embolus was removed from the popliteal artery. The following is a brief abstract from the notes

Embolic Gangrene of the Right Leg: Arteriotomy: Removal of Embolus: Suture of Artery.

M. B., female, aged 41, was admitted to the Leeds General Infirmary on September 2nd, 1903, complaining of pain in the right leg, and of its being cold and numb. The onset was sudden.

History.—Many years ago the patient suffered from chorea. There is no history of rheumatism.

Present Condition.—The right leg is quite cold. There is some discoloration of the skin over the anterior tibial region. Sensation is much diminished. No pulsation can be felt in either the anterior or posterior tibial artery. It is present in the femoral. On making gentle pressure over the popliteal region considerable pain was caused. Nothing definite, however, could be felt. Examination of the heart showed that the patient was the subject of endocarditis, the mitral valve being the one affected. A diagnosis of embolic gangrene of the popliteal artery was made, and it was determined to carry out an attempt to remove the clot.

On Admission.—Temperature, 104.4°; pulse, 108; respirations, 32.

Operation—September 7th. Ether. Vertical incision over popliteal space. Popliteal artery exposed in all its length. Artery incised in long axis, and a large amount of clot removed, pressure being kept up by the finger of an assistant upon the highest part of the exposed vessel. When the vessel was cleared, so far as could be seen, pressure was remitted, and blood at once flowed through incision in artery. Incision in artery closed by continuous suture taking all coats. Superficial wound closed; drainage by small tube.

September 10th. Patient much worse. Pulse is extremely weak, and patient is coughing up blood-stained mucus.

September 11th. Patient's condition is one of collapse.

Post-mortem Examination, September 12th, 1903.—Incision 9 in. long, over right popliteal space. Suture 1½ in. in length in popliteal artery. Lungs: Some fluid in right pleura; adhesions in left pleura; several infarcts in right lung. Heart: Weight, 16 oz.; right side greatly dilated but empty; right auricle almost admits closed fist. Tricuspid valve thickened and shrunken, barely admits two fingers. Pulmonary valve normal. Mitral valve thickened and calcareous, admits one finger-tip. On posterior segment is a mass of fibrin the size of a hazel nut. Aortic valve: Segments thickened and shrunken; valve quite incompetent. Kidneys: Rather granular; pyramids injected; two small white infarcts in right kidney.

Since this case I have never had an opportunity of carrying out the same principle. But I should not hesitate to do so provided the conditions which Mr. Sampson Handley rightly considers necessary to success, "instant diagnosis and immediate operation," are possible.

Leeds. B. G. A. MOYNIHAN.

RHEUMATOID ARTHRITIS.

As bearing on the discussion at Exeter upon rheumatoid arthritis, perhaps the following case may be of interest. On March 8th I was called to Mrs. X., aged 60, who said she had a fearful pain in her left hand.

She had been away for the day, and it came on before she returned home. She was in great agony with the pain, and it radiated up the arm to the axilla. The hand was seen to be swollen and tender to touch, particularly in the palm and the index finger also. Otherwise no marked swelling nor redness as in inflammation. There was no history of injury at first, till she remembered shutting the railway gate one stormy day, when the iron knob impinged against her hand, but there was no abrasion. She is otherwise healthy, but for her stomach at times, and she once had a sore on the shin the result of a knock against a box. It took some time to heal. Hot applications were applied and general treatment, but without much effect. The swelling increased for a few days, and the temperature reached 104° on one occasion, with feverish symptoms. A faint red line extended up the arm. All subsided but for the tenderness and swelling on the hand, and the back of the hand was oedematous. The arm in a bath of carbolic water gave some relief. She was put on salicin and the salicylates, which gave temporary relief, and the condition subsided very slowly after a month or six weeks, but left a degree of stiffness and immobility which is only being recovered from at the end of this time.

The case altogether presented the appearance of an acute tendo-synovitis of the hand and fingers. There was considerable wasting of the muscles, and for this an electric battery has been in use for a month or two, and has helped the condition. The patient can now use her fingers to a certain extent and the hand is greatly recovered, but there is enlargement of the joints at the back of the hand and fingers, in some instances a marked hardness. It is difficult to apply any other name to the condition but "rheumatic arthritis," though the infection seemed all in the flexor tendons at first. The poison must have gained entrance through the blood, whatever micro-organism caused it, and the slight blow from a gate may have determined the site of the disease. The patient was considerably prostrated with the illness, and adds but one to the mystery of a disease like rheumatoid or rheumatic arthritis. No medicine seemed to be a specific for it, either externally or taken internally.

Dumfries. J. W. MARTIN, M.D.Edin.

REVIEWS.

ANATOMICAL TEXTBOOKS.

When the first volume of Professor Buchanan's *Manual of Anatomy* appeared we drew attention to the author's desire that his book should serve as a textbook of systematic and practical anatomy, and we expressed doubts as to the general success of the scheme, judging from the volume then before us (British Medical Journal, vol. ii, 1906, p. 782). Now that the second volume[1] has appeared, we see no reason to alter the opinion previously formed. This second volume deals with the abdomen, thorax, head and neck, central nervous system, and the organs of the special senses, and, like the first, is well printed on good paper and is illustrated by numerous figures. The figures for the most part are more conventional than impressive, and there is nothing particularly striking either in the matter of the text or in the manner of its presentation. The instructions for dissection, which are placed at the end of each section, are not always as explicit as might be wished, and the student who has been told what to do when the body is placed in the lithotomy position will have difficulty in discovering from the text what the lithotomy position is. The accounts of the development of the different organs and parts which the author places after his various descriptions are generally correct, though in some cases a little antiquated; but admirable as many of them are, their want of continuity will prevent the student from gaining any adequate or satisfactory idea of the general developmental history of the human body from them, and in the course of his reading he will frequently be in a difficulty with regard to terms which are used before any explanation of them is given, whilst, here and there, when the explanation is forthcoming, as in the case of the account of the cloaca, he may be led into a misconception, for that important chamber is described as the common *opening* of the hind gut and urino-genital ducts. In an appendix the English and Latin equivalents of various anatomical terms are placed in opposite columns, and a glossary is added in which explanations of various terms is given. As a whole, the book is good, it is of convenient size, and readable; but its excellencies are scarcely sufficient to enable it to oust any of its predecessors from the places they have gained.

The second edition in English of Professor Spalteholz's *Hand-Atlas of Human Anatomy*,[2] with text translated from the German by Professor L. F. Barker, is practically the same as the first edition, and the figures and text together constitute an excellent handbook of systematic anatomy for junior students. The figures are beautiful examples of artist's work and colour printing, and, so far as we are aware, no other atlas of this description has so many strong and graphic representations of anatomical relations. The first volume deals with bones and joints; the second with muscles and the vascular system, with the exception of the lymph vascular system, which is not included. In the third volume the viscera, brain, nerves, and sense organs are illustrated. All the figures are accompanied by short descriptions which are precise and sufficient to give a general idea of the positions and relations of the various parts. The venous system is particularly good, for the veins are represented full of blood as they appear in formol-hardened preparations, and thus an excellent idea of their appearance in the living body is suggested. The nervous system also forms a strong section, and the figures representing the positions of the nuclei of the cranial nerves and the courses of the nerve fibres in the brain substance are particularly striking and suggestive. The student who uses the book carefully and thoughtfully in association with his own work in the dissecting-room will build up for himself a knowledge of anatomical relations which will be of the utmost use to him in the course of his clinical work. Author, artist, publishers, and translator are all to be congratulated upon their work, which leaves little opening for criticism; but perhaps if any one figure might be improved in future editions, it is that which depicts the mucous membrane of the pars descendans duodeni, for it gives no adequate representation of the important plica longitudinalis.

The illustrations in the second volume of Sobotta's *Atlas and Textbook of Human Anatomy*[3] include representations of the hollow and solid viscera of the body. As in vol. i, the figures are very beautiful examples of what can be done by autotype, multicoloured lithography, and the three-colour process. For the most part they are anatomically correct. Here and there diagrams are introduced mainly for the purpose of explaining relationships more clearly, or to demonstrate some of the chief features of the development of the organs depicted. The text which accompanies the figures has been translated from the German by Professor McMurrick, and on the whole it is very satisfactory, but here and there it appears, like the figures, to be susceptible of improvement. For example, on p. 61, in the description of the gall bladder, it is first asserted that the neck of that organ and the cystic duct are directed towards the right, as represented in Fig. 389, and a few lines further down on the same page occurs the statement that the cystic duct "is a short irregularly cylindrical structure which turns sharply to the left." Of the two statements, the latter is more correct than either the former or the illustration. Clearly the editor has missed a chance of correcting in his translation the slight errors which have crept into the figures. The book may prove very useful to the junior student, but it will scarcely meet the requirements of those preparing for the higher medical examinations.

Mr. C. Gordon Brodie's graphic handbook of *Dissections Illustrated*[4] is admirably adapted to be of great use to the student of anatomy. The plates depict, either at full size or at two-thirds size, the majority of the dissections which the student usually makes and they represent the part as seen from the ordinary point of view on the dissecting table. Further, the dissections depicted are not over-elaborate, on the contrary they represent those which every student is expected to make and which he can accomplish successfully with the expenditure of an ordinary amount of care and diligence. The plates are beautifully executed. The outlines are clear, the colouring is excellent, and if they fail in any point it is that those representing deep dissections scarcely give the requisite idea of depth. The indicating letters and numbers are placed on the parts to which they refer, they are perfectly distinct and are easily found in the accompanying index. These are points of importance, for they greatly facilitate the use of the plates. In addition to the indices, the various plates are accompanied by short descriptions, and in these many extremely useful explanatory diagrams are introduced. In the 73 plates are included representations of dissections of the limbs, the head and neck, the thorax, the abdomen, and the perineum, but the figures do not include dissections of joints and ligaments. From a student's point of view Mr. Brodie's atlas appears to us to be the most useful book of its kind which has yet been produced; indeed, it is so good that we should like to see it further improved by alterations and additions to the thoracic and abdominal sections, for from a clinical point of view, the latter particularly are of the greatest importance, and can easily be made of a very graphic character with the aid of modern means of fixation of parts. But even without these suggested additions the book will prove of the greatest service to students in enabling them to recognize and name the various structures displayed in their own dissections, and it will help the practitioner readily to call to mind and revivify the work he did in past days in the dissecting-room.

TEXTBOOKS OF PATHOLOGY.

The third volume of the manual of pathological histology,[5] which Professors Cornil and Ranvier are bringing out,

[1] *Manual of Anatomy, Systematic and Practical, including Embryology.* By A. M. Buchanan, M.A., M.D., C.M., F.F.P.S.Glasg. Vol. ii. London: Baillière, Tindall, and Cox. 1907. (Demy 8vo, 965 pp.; 363 figs. 12s. 6d.)

[2] *Hand-Atlas of Human Anatomy.* By W. Spalteholz. Edited by L. F. Barker. Vols i, ii, and iii. Second edition. London: J. B. Lippincott Co. (Crown 4to, pp. 872; 935 figs. Two guineas.)

[3] *Atlas and Textbook of Human Anatomy.* By J. Sobotta. Edited by J. P. McMurrick, A.M., Ph.D. Vol. ii, The Viscera, including the Heart. Philadelphia and London: W. B. Saunders and Co. 1906. (Crown 4to, pp. 194; 214 illustrations. 25s.)

[4] *Dissections Illustrated: A Graphic Handbook for Students of Human Anatomy.* By C. Gordon Brodie, F.R.C.S. Second edition. London: Whittaker and Co. (Crown 4to; 142 pages; 73 plates and 37 diagrams. Price, 25s. net.)

[5] *Manuel d'Histologie Pathologique.* Par V. Cornil et L. Ranvier, avec la collaboration de A. Brault et M. Letulle. Troisième Edition. Tome Troisième. Paris: Félix Alcan. 1907. (Roy. 8vo, pp. 1171, with 388 illustrations, some coloured, in the text. Fr. 35.)

with the assistance of Drs. BRAULT and LETULLE and various other collaborators, deals mainly with the nervous system. The brain, cord, and peripheral nerves are treated very fully, and occupy in all 851 pages of the volume. Then follow sections on the vascular and lymphatic systems, the treatment of which is relatively brief. The volume concludes with a chapter on the larynx, being the first instalment of the section devoted to the respiratory system. This subject will be completed in the fourth and final volume, which, it is promised, will appear in the course of this year. As an exposition of the methods and doctrines of an important school of French pathology, the work on the nervous system is of great value. It is not narrow or exclusive; the general literature on the subject is quoted very fully, and, from the standpoint adopted, is reviewed quite fairly. At the same time much of the writing is strongly individualistic and lacks the free atmosphere of whole-hearted impartiality; on this account the book does not compare favourably with some of the best publications, both in English and in German, either as a general textbook for the student or as a book for reference. For example, the section on the peripheral nerves, written by Dr. Durante, is controversial almost throughout. The writer is strongly opposed to the doctrine of the neuron and the well-known law of Wallerian degeneration; he advocates the view that the axis cylinder is not a prolongation of a central nerve cell and regards the nerve tube as consisting of a chain of nerve cells, each segment of which develops its own myelin and its own axis cylinder, the connexion of the chain with a central nerve cell being secondary. As a contribution to the controversy on this subject Dr. Durante's article is of interest, but in a standard textbook one expects to find more emphasis given to established facts, and less space devoted to theories which are still *sub judice*. The book is profusely illustrated, and many of the pictures, particularly the coloured illustrations of nerve lesions, are well executed.

The textbook of practical bacteriology and protozoology,[6] by Drs. KISSKALT and HARTMANN, provides a course of laboratory instruction intended for medical students and practitioners who can only devote a limited amount of time to these subjects. The bacteriological course is planned by Dr. Kisskalt so as to occupy from two to three hours' work every day, Sundays excepted, for a period of two months. He certainly covers a great deal of ground, and a reader who thoroughly masters all the exercises given may regard himself as a bacteriologist of considerable experience. Probably most of those who are beginners will find some of the tasks uncommonly difficult—for example, the cultivation of the tubercle bacillus direct from sputum and the isolation of typhoid bacilli from typhoid stools; but there will be no harm in their trying. A rather less ambitious course would, perhaps, be better adapted to the requirements of the average practitioner. The practical course on the protozoa has been prepared by Dr. Hartmann. In addition to the parasites of importance in human disease, descriptions are given of various non-pathogenic varieties which are of common occurrence and are suitable for demonstration purposes. These have been selected with the object of illustrating general principles of structure and development. Their inclusion adds to the interest of the subject and enables the student to understand better the course of tropical diseases, which he may not be able to observe at first hand.

EMBRYOLOGY.

THE fact that Dr. HEISLER'S *Textbook of Embryology*[7] has reached its third edition in a period of somewhat less than six years is a sufficient proof that it serves a useful purpose and provides for a definite demand. The reasons for its success will be obvious to any one who reads the book, for he will find it to be a clear and well-arranged epitome of much of the present-day knowledge of embryology. The general plan of the book is good, the main facts of the subject are tersely and clearly stated, and the author has not been afraid to repeat statements when repetition appears necessary for the purposes of clear exposition. The text is little burdened with considerations of different types of development, and here and there accuracy is somewhat sacrificed to brevity—as, for example, on page 84, where it is stated that: "It has been shown (p. 54) that the amniotic cavity of mammals is produced, not by upgrowth of folds of somatopleure, but by vacuolation of a portion of the cells of the inner cell mass," a statement which is perfectly true as regards the one mammal chosen for demonstration, the bat, and possibly also as regards man, but far from true as regards many other mammals. It may, perhaps, be surmised that the desire for clearness has prevented the author, in the revised account of the vascular system, from drawing attention to Grieb's important work on the bulbus cordis.

Dr. GURWITSCH'S hand atlas and elements of embryology[8] which forms the thirty-fifth volume of Lehmann's medical *Hand Atlas*, is an excellent introduction to the study of comparative embryology. Being one of this series, it is scarcely necessary to say that it is thoroughly well illustrated, not only with good black and white figures in the text, but also by beautifully coloured plates which reproduce in a most realistic manner the appearance of sections of ova and embryos as they are seen under the microscope, after proper preservation and treatment by the most successful staining methods. As must necessarily be the case in a volume comparatively small in contrast with the subject with which it deals, the text is very much condensed, but if this is a drawback it may be considered to be greatly minimized by the number and clearness of the figures. The book deals, perhaps, too much with general comparative embryology and too little with the embryology of the higher mammals to be an ideal book for the use of medical students, but for those who desire to gain a wide outlook over an interesting subject it will form an almost ideal handbook.

HANDBOOKS OF CHEMICAL PHYSIOLOGY.

DR. PLIMMER'S two little books on *Practical Physiological Chemistry*[9] are intended to serve as a laboratory guide in the classes which he takes in practical physiological chemistry at University College, London. The various exercises are carefully selected, and clearly described. Although the work is in the main a compilation from well-known textbooks, the whole course has an underlying idea which to many physiological teachers will be new. This is, that those portions of pure organic chemistry necessary for the comprehension of the more strictly biochemical side of the subject are given also. The statement has often been heard in the discussion now in progress as to the part chemistry should take in the medical curriculum that organic chemistry cannot be taught by the physiologists. No doubt this is true of some physiologists, but the time is coming when every well-equipped physiological department will have upon its staff one teacher at least who has had the preliminary training of a chemist, and so capable of dealing with the parts of pure chemistry which serve as a foundation for the applied sciences of chemical physiology and pathology. Some limitation of the amount of the preliminary sciences in the medical course will have to be accomplished in the immediate future. The efforts at present being made to cram the unfortunate medical student with a lot of science which is of no use to him subsequently are meeting with about as much success as that which attends the efforts of those who attempt to get a quart of fluid into a pint pot. When these efforts are relinquished and pure chemistry is limited to the first year of the curriculum, then the portion of the science which is of real practical benefit to the future medical man will have to be taught by the physiologist and pathologist; and when this happy time arrives some manual like that Dr. Plimmer has produced will form an invaluable guide. At University College the effort is apparently being made to anticipate this epoch, and we commend the action taken there and wish it every success.

[6] *Practikum der Bakteriologie und Protozoologie.* Von Dr. Karl Kisskalt und Dr. Max Hartmann. Jena: Gustav Fischer. 1907 (Super Roy. 8vo, pp. 180. With 89 illustrations in the text. Mk. 4.50)

[7] *A Textbook of Embryology.* By J. C. Heisler, M.D. Third edition. London and Philadelphia: W. B. Saunders Co. 1907. (Medium 8vo, pp. 432; 212 illustrations. 13s.)

[8] *Lehmann's medizinische Handatlanten, Band xxxv. Atlas und Grundriss der Embryologie.* Von Dr. A. Gurwitsch. München: J. F. Lehmann. 1907. (Crown 8vo, pp 367, 185 figs., and 55 coloured plates. M 12)

[9] *Practical Physiological Chemistry, University College, London.* By R. H. Aders Plimmer. In 2 vols. Junior Course and Senior Course. (Sm. post 4to, pp. 140.)

THE APPLICATION OF PATHOLOGY TO PRACTICAL MEDICINE.

The *Précis de Pathologie Interne* (Medical Pathology)[10] published by Steinheil, of Paris, in four volumes, is the joint production of six authors who have been trained in the same school, and all view their subject from the same general standpoint. The work, as a whole, has therefore the advantage of uniformity in purpose and method. In Vol. I, M. Nicolas deals with infectious diseases, and M. Balthazard discusses intoxications. In the chapter on typhoid fever, there is a good account of the etiology of the disease and its relation to water supply, but in the section on prophylaxis it is disappointing to find that Wright's method of vaccination is dismissed in a single sentence; this method of prophylaxis, though still *sub judice*, is of great practical interest, and a description of it ought to be given in every standard work on pathology. Like most French pathologists, M. Nicolas is strongly opposed to the "dualistic" theory of human and animal tuberculosis, and is a staunch supporter of Arloing, who, in the opinion of many critics, has overstated the case in favour of the unity of different strains of tubercle bacilli. The best article by M. Nicolas is that on syphilis and its relation to the organism now called *Treponema pallidum*, a subject to which he has devoted a considerable amount of original research. In the latter part of the volume M. Balthazard deals with the chief inorganic and organic poisons which are of importance in clinical and forensic medicine. He also discusses, under the title "Auto-intoxications," diseases such as myxoedema, exophthalmic goître, and acromegaly, which may be attributable to some defect or perversion of the internal secretion of certain glands. In Volume II M. Balthazard treats the diseases attributable to disorders of nutrition and diseases of the blood and haematopoietic organs, whilst M. Macaigne describes the pathology of the respiratory passages, lungs, and pleura. The introductory chapter, on the physiology of metabolism, is very useful as a guide to the interpretation of quantitative analyses of the urine in such diseases as gout and diabetes, and, being an effort to show how pathological considerations ought to be based on physiological principles, is the sort of article which is especially welcome in textbooks of pathology. The treatment of the clinical pathology of the blood is up to the average, but calls for no special comment. The main feature of the chapters on the heart and lungs is that a great deal of space is devoted to the clinical examination of the patient and to diagnosis. Volume III, by M. Balthazard and M. Claude, is devoted to the alimentary tract and the abdominal viscera. Perhaps the most valuable portion of this volume is the three hundred pages which M. Claude assigns to renal disease. The more important physiological theories of renal secretion are briefly and clearly described in an introductory chapter, and throughout the various pathological sections which follow the reader is constantly kept in touch with those scientific considerations of the normal renal functions which help to an understanding of abnormal conditions. Modern methods of urinary examination are fully described and particular attention is paid to cryoscopic examinations and the interpretation of their results. MM. Cestan and Verger occupy volume IV with an account of diseases of the nervous system. In discussing the peripheral nerves M. Cestan discreetly inclines to the more orthodox views of Wallerian degeneration and regeneration, though brief mention is made of the theory, advocated by Bethe, Apáthy, and Ballance, which is intended to establish the possibility of peripheral regeneration. Throughout this volume particular attention is given to diagnosis, and treatment is also considered. The general practitioner will appreciate especially the endeavour of the authors to discuss the commoner neuroses, which are so troublesome to deal with, from a thoroughly practical standpoint. Taking the work as a whole, its chief merits are the clearness of exposition and the consistent endeavour to apply pathological principles to practical medicine.

[10] *Précis de Pathologie Interne.* Par MM. Balthazard, Cestan, H. Claude, Macaigne, Nicolas, and Verger, Professeurs agrégés des facultés de Médecine In four volumes. Paris: G. Steinheil. 1907. (Post 8vo. Vol. i, pp. 837; vol. ii, pp. 676; vol. iii, pp. 947; vol. iv, pp. 872. With illustrations. Price of the complete work, Fr. 32)

NOTES ON BOOKS.

Dr. William Ewart has published in a small volume the full text of the address on *Marine Climates in the Treatment of Tuberculosis*,[11] an abstract of which was published in the British Medical Journal of April 27th, 1907, p. 986. The address served to open a discussion on the subject at the British Balneological and Climatological Society, and a report of this discussion will be found in the same issue (page 994) of the Journal. The volume is well arranged under numerous headings, so that it can easily be consulted to ascertain the views of the author on the suitability of marine climate to any particular form of tuberculosis.

The latest issues of the *Edinburgh Medical Journal*[12] in a bound form are volumes xx and xxi of the new series, the editors being Mr. Alexis Thomson and Dr. H. Littlejohn. The dates of the numbers included are not stated, but internal evidence shows that the second volume contains the monthly numbers for this year up to June. The volumes contain, as usual, a good many papers of permanent interest, a certain number of them being illustrated.

Medicine in Many Lands.[13]

It is always of interest to practitioners of any art to learn something of how it is carried on among other peoples, and it is possible to glean instructive hints from the most miscellaneous sources. From this point of view a pamphlet issued by Dr. W. Harrison Martindale, who has been in correspondence with medical men and chemists in various parts of the world with regard to matters of therapeutics and pharmacy, is not without medical interest. The notes are extremely heterogeneous, and the majority will be of more value to the pharmacist than to the medical practitioner, but many of those on prescribing abroad are interesting to the latter also. Thus it appears that in Italy pure sodium hyposulphite is in considerable demand as a purgative; the salt is transformed in the body into sulphite and then sulphate, and exercises a considerable antiputrescent action in addition to the aperient effect of Glauber's salt. In Egypt carbolic acid with oil of citronella is found to act admirably in both driving away mosquitos and allaying the irritation of their bites; a preparation which has been very successful in dysentery is made by boiling ½ oz. each of simaruba bark, pomegranate fruit rind, and gum arabic in a litre of water until reduced to half a litre; the dose is 1 oz. three or four times a day. Among the dispensing labels from Germany and Denmark we note one that might be far more employed here with advantage: "This medicine may not be repeated without written order of the physician," or other words to a similar effect. It is curious to learn that at Gibraltar the inhabitants are fond of taking emetics in place of purgatives, and a printed label "El vomitivo" is as necessary as a label for "The draught" is in Great Britain. The notes on the drugs prescribed in many places not only include, of course, many which are unfamiliar here but also furnish frequent examples of familiar drugs put to unfamiliar uses.

[11] *Marine Climates in the Treatment of Tuberculosis.* By William Ewart, M.D.Cantab. and Dunelm., F.R.C.P.Lond., M.R.C.S.Eng. London: Baillière, Tindall, and Cox. 1907. (Pott 4to, pp. 48. 1s.)

[12] *The Edinburgh Medical Journal.* Edited by A. Thomson, M.D., F.R.C.S.Edin, and H. Littlejohn, M.B., F.R.C.S.Edin. New Series. Vols. xx and xxi. Edinburgh and London: Young J. Pentland. 1907.

[13] *Pharmacy Notes from Various Parts of the World.* By W. Harrison Martindale, Ph.D., Pharmaceutical Chemist. London: Printed by Spottiswoode and Co., Ltd. 1907.

A committee of the Holy Synod of the Russian Church has recently drawn up a new law of divorce. Among the circumstances recognized as justifying a decree of divorce are the following: (1) Mental disorder extending over more than three years; (2) venereal diseases; (3) ill-treatment causing physical and moral sufferings and imperilling the health of the other party for life.

An outbreak of typhoid fever occurred recently at the State Hospital for the Insane, Trenton, New Jersey; it was confined to the main building, none of the patients in the annexe being infected, although the water, milk, and food supply for both were the same. The disease only subsided after all susceptible persons who were exposed to the infection had suffered an attack, and the conclusion is that the infection was conveyed by personal contact, transmission being favoured by the filthy habits of many of the insane inmates.

FOURTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

[From our Special Representative.]

Even a town with three million inhabitants like Berlin can feel the influence of an influx of some three thousand and more individuals. On Sunday evening, September 22nd, scores of medical men arriving from all parts of Germany and other countries drove from hotel to hotel vainly trying to find where to lay their weary heads after their journeys. In the neighbourhood of the Reichstag building, in spite of their number, all hotels were full. The Hygiene Congress had attracted this huge crowd.

The Congress Badge.

Preliminary Reception.

At 9 p.m. on Sunday, in real German style, a welcome or general reception of the members took place in the New Royal Opera House, better known under the old title of "Kroll." Long before the stated hour, members and their ladies flocked in. Soon every available table was taken and new-comers had to satisfy themselves with walking to and fro, passing over the emptied arena, and into the neighbouring hall. Refreshments were served at usual prices up till 9; then split rolls with a variety of foodstuffs, such as ham, cheese, sausage, salmon, sardines, etc., spread on them, fish salad and beer were to be had free. At the stroke of the hour a wild rush for the buffet was made and the effect on the stock was remarkable within the brief space of half an hour. The sight was exhilarating and interesting. Once the first pangs of hunger had been satisfied, members began to be more sociable toward their neighbours, and among the crowd were to be found representatives of all nations. The local committee behaved excellently in greeting every stranger and in doing all that could be done to make each feel at home and at ease, and yet it appears a little doubtful whether this preliminary reception is worth the trouble it must entail. With a whole week before him, the member really does not need this relaxation.

Inaugural Meeting.

The Congress proper began on Monday morning at 11 o'clock, again at "Kroll." From 9 o'clock numbers besieged the Reichstag building to secure the necessary tickets, literature, and other paraphernalia. Ordinary members received a badge of membership. This consisted of a tastefully-designed oxidized silver plaque, representing Hygeia, ornamented with two short black, white, and red ribbands. The presidents, general secretary, president of the ladies' committee, etc., wore red and white rosettes with their badges; delegates and honorary presidents, and the ordinary committee members, white rosettes; and those members who spoke English as well as German a yellow bow; and French as well as German a blue bow.

Under the presidency of Prince Schönaich Carolath, the delegates took their places on the stage, and presented a picturesque sight, evening dress or full uniform being prescribed, and every second member being decorated with orders. In the body of the hall over fifteen hundred members found sitting accommodation, while many crowded the spaces between the rows of chairs. The circles were filled by ladies, the total number present being little short of three thousand. A blast of trumpets and the Crown Prince, accompanied by the "Cultus Minister" and his retinue, entered the royal box facing the stage. Among those present were the Cabinet Ministers, Dr. Holle, von Bethmann-Hollweg, Freiherr von Stengel and Delbrück, von Tschirsky and Bogendorf (Secretaries of State), von Löbell and Wever (Under Secretaries of State), Oberbürgermeister (Lord Mayor) Kirschner, and various other personages of parliamentary and municipal fame, as well as the British Ambassador, Sir F. C. Lascelles. The Surgeon-General of the German Army, Excellenz von Schjerning, and of the German Navy, Dr. Schmidt, were prominent, and among the many distinguished scientists may be mentioned the names of Ehrlich, Loeffler, Laveran, Bumm, Rubner, Chantemesse, Poehl, Lydia Rabinowitsch. In short, it may be said that, with the exception of Koch and von Behring, German science was there, and the scientific world of most other countries was also well represented. The list of members, of which mention will be made later on, proves this.

First, Prince Schönaich welcomed the Congress. He said: Ladies and Gentlemen,—I greet you most heartily. Her Majesty the German Empress, Queen of Prussia, has had the kindness to accept the position of Protectress of the Congress, and we wish now to express our humblest thanks to her for having done so. We regret to learn that the accident which befell Her Majesty a few weeks ago has prevented Her Majesty from honouring our Congress with her presence. However, we are highly gratified to learn that Her Majesty is recovering, and beg leave to express the hearty wish that Her Majesty will soon be completely restored to health. We humbly thank His Majesty the Kaiser for the interest which His Majesty has shown in our Congress in sending His Imperial and Royal Highness the Crown Prince, and we wish to accord him our heartiest welcome. Cheers were then given for His Highness.

The members having been requested to sit, the Cabinet Minister, Excellenz von Bethmann-Hollweg, spoke next in the name of the Kaiser. His welcome included the wish that the work of those congregated together at the Congress might be crowned by success in furthering the interests of humanity. He spoke of the importance of hygiene and demography for the public weal, and in well-chosen words described briefly the aim of these sciences. The first congress had been held fifty-five years ago in Brussels, while to-day the fourteenth congress was the first that had met in Germany. He concluded by greeting the meeting in the name of the Government of the German Empire. His speech was delivered with singular ease, and, although committed to memory, scarcely betrayed the want of spontaneity.

Following, Excellenz Dr. Holle spoke in the name of the Prussian Ministry. He claimed that his department, that of Education, regarded it as one of its chief functions to further the progress of hygiene and demography in every possible way. He also spoke of the importance of the two sciences, and recalled many epochs in their history.

The next speaker was Schjerning. His fine commanding appearance, his clear, resonant voice and free delivery, and his worldwide reputation rendered his speech especially welcome. He was tempted slightly to alter the literal text of the speech in order to gain in fluency. What he said was really neither new nor particularly important, but the way in which it was said earned him the applause which greeted the termination. In dealing with the hygiene of the German army, he pointed out with special emphasis the great results which had followed the introduction of compulsory vaccination against small-pox.

The President of the Congress, Prince Schönaich, then read a lengthy speech; it was afterwards read in a French translation by Dr. Fuster (Paris), who also gave a brief summary in English. Perhaps it would have been just as well to have left this out, since, although Dr. Fuster is a fine speaker in his own language, he has not quite grasped the intricacies of ours. The speech consisted chiefly of reminiscences of past hygiene congresses, and of the history of hygiene from the days of the Roman Empire. The progress which hygiene in town and country has made was also dwelt on, and the fact that all countries vie with one another in friendly competition to further the cause is a matter of great satisfaction. The various international congresses—for tuberculosis, for venereal diseases, for alcoholism, for leprosy, etc.—were mentioned; and the speaker recalled with especial gratification the words spoken in 1891 by His Majesty King Edward VII (then Prince of Wales) in London, and the interest which His Majesty took in the dwellings question. He also quoted President Loubet's remarks on hygiene in Paris in 1900. Turning to his own country, he instanced the financial results of the compulsory accident insurance and old age and invalidity insurance, as showing how the German Government had taken part in promoting the welfare of the people from a hygienic point of view.

LUNACY IN ENGLAND AND WALES.

[*Continued from p. 758.*]

Admissions.

During the year 10,390 males and 11,422 females, or a total of 21,812, were admitted into all asylums (excluding idiot establishments) and single care, giving an increase of 190 over those admitted in 1905. Including the 284 admitted into idiot establishments, there was a grand total of admissions of 22,096 as compared with the grand total of 21,860 for 1905, giving an increase of 236. As to sex, it will be noticed that there is a slight preponderance of female over male admissions, the females constituting 51.0 per cent. and the males 49.0 per cent., thus approximating closely to the sex relations in the general community. A comparison of this proportion with that of the total insane (males 46.1, females 53.9) shows that the lower death-rate of the female elements tends to an increased female accumulation. As to age, about one-fourth of both sexes were below the age of 35. Table XVII, Appendix A, shows that of the admissions for the quinquennium 1901-5 as compared with 10,000 of general population, 0.3 were under 15 years of age, 3.1 between 15 and 19, 6.2 between 20 and 24, 9.2 between 25 and 34, 12.1 between 35 and 44, 13.5 between 45 and 54, 13.4 between 55 and 64, and 15.2 of 65 years of age and upwards. Last year the Commissioners pointed out the increasing proportion of persons above 65 years, and we see that this upward tendency still persists, the proportion having been 9.9 per 10,000 of population in 1884-8, 14.3 in 1899-1903, and now 15.2 for the quinquennium 1901-5. As to marriage, the figures for the five years 1901-5 show for those aged 20 and upwards—males 9,961 and females 10,459—that the distribution is almost precisely that given last year for the five years 1900-5. Of the total admissions in 1906, 17,826 were first admissions. In Table XXIV the Commissioners show by a yearly average the forms of mental disorder in the admissions for the years 1901-5, giving the following proportions: Mania of all kinds, 40 per cent.; melancholia of all kinds, 30.9 per cent.; primary dementia, 2.8 per cent.; secondary, senile, and organic dementia, 9.9 per cent.; delusional insanity, 4.1 per cent.; general paralysis, 6.8 per cent.; and congenital or infantile defect, 5.5 per cent. With the exception of the statistics relating to general paralysis, little importance can be attached to these tables of forms of mental disorder.

Comparison with last year's table for the five years 1900-4 shows that the proportion of general paralytics has risen from 6.6 to 6.8 per cent. A further interesting point is that whilst in the private class only 7 per cent. of these patients were females, nearly 17.5 per cent. of the pauper class were females. The proportion of the admissions suffering from epilepsy remained during 1906 at 7.7 per cent.

The Probable Causes of Insanity.

Table XXII, Appendix A, sets forth the causes of insanity amongst the admissions during the five years 1901-5 in yearly averages. Of these the most noteworthy are: Alcoholic intemperance in 16.5 per cent. of the male and 8.1 per cent. of the female private patients, and 22.8 per cent. of the male and 9.1 per cent. of the female pauper patients, showing a slight diminution in every class as compared with the returns made last year; venereal disease in 7.6 per cent. of the male and 0.5 per cent. of the female private patients, and 4.6 per cent. of the male and 0.9 per cent. of the female pauper patients, showing an all-round increase on the figures given last year, with the exception of that of the female pauper class, which remains stationary; privation and starvation in 0.6 per cent. of the male and 0.2 per cent. of the female private patients, and 1.1 per cent. of the male and 0.9 per cent. of the female pauper patients; puberty in 1.1 per cent. of the private and 1.5 per cent. of the pauper patients; the menopause in 9.6 per cent. of the private and 5.4 per cent. of the pauper patients; old age in 5.6 per cent. of the private patients and 8.4 per cent. of the pauper patients; previous attacks in 12.5 per cent. of the male and 24.7 per cent. of the female private patients, and in 16 per cent. of the male and 21.8 per cent. of the female pauper class; various bodily diseases and disorders in 10.3 per cent. of the private patients and 12.1 per cent. of the pauper patients; and "moral" causes in 27.4 per cent. of the male and 32.8 per cent. of the female private patients, and in 16.2 per cent. of the male and 21.8 per cent. of the female pauper patients, in both classes the incidence of this cause being greater on the female patients.

Hereditary influences were ascertained in 18.4 per cent. of the male and 26.8 per cent. of the female patients, and in 20 per cent. of the male and 25.2 per cent. of the female pauper patients, and congenital defect in 4 per cent. of the male and 2.1 per cent. of the female private patients, and in 6.6 per cent. of the male and 4.4 per cent. of the female pauper patients.

Discharges.

During the year 8,140 were discharged as recovered, giving the recovery-rate on the total admissions of 37.32 per cent., which is 0.47 per cent. lower than the 1905 rate and 0.22 below the average recovery-rate for the ten years, 1897-1906. Calculated on the total number under treatment, the recovery-rate was 6.68 per cent., as compared with 6.79 per cent. for 1905. The county and borough asylums, from which 7,302, or 89.8 per cent. of the total discharges took place, gave a recovery-rate of 36.68 per cent., which is 0.34 per cent. less than that of 1905; registered hospitals a rate of 46.59 per cent.; licensed houses 43.75 per cent.; naval and military hospitals 60.84 per cent.; criminal lunatic asylums 13.98 per cent.; and private single patients 36.64 per cent. There were also discharged as not recovered 2,223, giving a rate of 10.1 per cent. on the admissions. As an index to the rate of discharge of patients from asylums the Commissioners have taken the returns from forty-three county and borough asylums for a period of twenty years ending 1905, and have found that at the end of the first year out of the admissions for 1886, 25 per cent. had been discharged and 10 per cent. had died; at the end of the second year 42.4 per cent. had been discharged and 17.6 per cent. had died, and that thus at the end of the second year 60 per cent. had either been discharged or had died. During the subsequent years of the period of twenty years the percentages of those discharged and died, mounted more slowly, but, naturally, towards the end of the period the deaths increased. By the end of the twenty years' period 57.7 per cent. had been discharged and 36.1 per cent. had died, leaving 6.2 per cent. still in the asylums. The information given is unfortunately insufficient to make any reliable computation of the extent to which accumulation operates in swelling the annual returns of the insane under care.

Deaths.

The deaths during the year numbered 9,648, being 198 in excess of the 1905 total, and giving a death-rate on the average numbers daily resident of 9.85 per cent. for all institutions, excluding idiot establishments, whose death-rate was 2.66 per cent. The death-rate for all institutions (excluding idiot establishments) was thus 0.03 per cent. below that of 1905 and 0.11 below the average for the decade. The male death-rate was 11.16, and that of the females 8.74. As to the causes of death, 3,285 were due to diseases of the nervous system, including 1,618 deaths from general paralysis; 1,229 were due to diseases of the respiratory system (excluding pulmonary tuberculosis); 1,202 were due to diseases of the heart and blood vessels; 705 were due to diseases of the digestive and genito-urinary systems; 13 were due to diseases of the lymphatic system and ductless glands; 988 were due to senile decay; 42 to various local diseases; 58 to accident or violence, and 2,195 to general diseases, including 1,524 deaths from tuberculous diseases (pulmonary tuberculosis 1,338, general tuberculosis 114, tuberculosis of meninges, peritoneum and pleura 34, and of other organs, 38). Thus 15.79 per cent. of the total deaths were due to tuberculous diseases. Amongst the deaths from general diseases were also 206 deaths from dysentery and epidemic diarrhoea, which is practically the same figure as that of 1905.

General Health.

The Commissioners are again able to report that the general health was good throughout the year. The county and borough asylums were notably free from serious outbreaks of infectious disease, and even influenza was less extensive and virulent than in former years. Table XIV, Appendix B, shows that in the 91 county and borough asylums in 1906 there were 1,205 cases of dysentery and 821 of epidemic diarrhoea under treatment. In 1905 there were 1,106 cases of dysentery.

Analysing the returns concerning dysentery according to the relative size of asylums, the Commissioners found that in asylums of over 1,000 inmates the incidence rate per 1,000 was 14.2; in asylums of from 500 to 1,000 inmates it was 13.7; and in asylums of less than 500 inmates it was 3.1 per 1,000. As to seasonal incidence, the lowest month was June and the highest September.

AVERAGE WEEKLY COST.

The average weekly cost of maintaining the patients in the county and borough asylums for the year ending March 31st, 1906—exclusive of repairs, additions, and alterations—was in county asylums 9s. 11d., in borough asylums 10s. 11½d., and in both taken together 10s. 2d. These figures show a reduction of 2d. per head on those of last year for all asylums taken together.

INDIA IN 1905.

THE REPORT OF THE IMPERIAL SANITARY COMMISSIONER. THE author of this important record is Lieutenant-Colonel John T. W. Leslie, Sanitary Commissioner with the Government of India, and the compiler of the appended statistical tables, Captain A. C. MacGilchrist, M.A., M.B. These statistics and the comments upon them relate to the year 1905; but following the excellent practice of recent volumes of this invaluable series, there are interspersed throughout the report critical summaries of research regarding several important subjects and questions brought up to the date of compilation. The chief of these refer to malarial disease, plague, dysentery, enteric fever, Malta fever, and kala-azar. The pathological and bacteriological facts recorded are discussed with reference to their sanitary bearings and a useful bibliography of books and papers is added to each section of the report.

GENERAL CHARACTERS OF THE YEAR 1905.

Following an exceptionally healthy year, the main incidents of which were presented in the BRITISH MEDICAL JOURNAL of August 25th, 1906 (vol. II, p. 438), the conditions affecting health in 1905 were somewhat unfavourable. The cold season was unusually prolonged, damp and raw; the hot season marked by dryness and heat; the monsoon rains late of arriving and of short duration, the rainfall being deficient in Central and Northern India. Floods occurred in September in the lower reaches of the Ganges and Brahmaputra valleys, causing excess of fever and cholera. Crops were short in places where the weather conditions were most abnormal, but there was no general rise of prices nor any scarcity. The severe earthquake which occurred in April in Kangra, killing 1,374 people and causing 185 fatalities among Sepoys at Dharmsala, is a notable event. Peace prevailed in India throughout the year, and nothing occurred to interfere with industry and settled life. The troops employed on foreign service consisted of an annual average of 349 Europeans and 695 natives in the Aden Hinterland, 525 natives in Somaliland, 1,753 in China, 353 in Thibet, 1,477 in Mauritius, and 701 in Singapore. With the exception of the troops stationed at Mauritius, which suffered severely from malarial fever, the health of these several bodies was satisfactory.

VITAL STATISTICS OF THE GENERAL POPULATION.

Registration of births and deaths is still very inaccurate and defective, and the return of death causes still more faulty. This is not surprising, considering the agency employed, the aversion of the people and the difficulties connected with effective supervision and verification. The Sanitary Commissioner records some judicious observations on these points. He claims some value for a comparison of the statistics of the same province from year to year, and, with reservations, of the statistics of different provinces in the same year, which, as he shows by means of a tabular statement, resort to different collecting, reporting, recording, collating, and inspecting agencies. Special investigations made in restricted areas during the year in Bengal and the North-Western Frontier Province revealed considerable deficiencies and errors. Still, on the whole, some improvement is manifest, especially in the more advanced and settled provinces. The high Indian birth-rates deduced by Mr. Hardy from the Census figures he shows to be due not to the exceptional fertility of Indian women but to the large proportion of the married. The general birth-rate for the empire was 39.13, and the death-rate 32.85, against 40.86 and 32.86 in 1904, an exceptionally healthy year. The highest birth-rate was 54.02 in the Central Provinces and Berar, and the lowest 25.31 in Coorg, and the highest death-rate 47.55 in the Punjab and the lowest 21.4 in Madras. Death-rates exceeded birth-rates in the Punjab, United Provinces, and Coorg by 3.2, 2.76, and 0.92 per mille respectively. Urban were higher than rural death-rates in all provinces, and the death-rates of males were higher in six and lower in five provinces. The excess of female mortality was highest in the Punjab, owing to the severity of plague. Infant mortality, calculated on births, was lamentably high in all provinces, the rates among males and females reaching a maximum of 301 and 271 in the Central Provinces and Berar. Defective birth registration, with more exhaustive registration of deaths, tends unduly to exalt this ratio.

PREVALENT DISEASES.

There was an excess of 681,299 deaths registered in 1905 as compared with 1904, and an increase of mortality under each cause specified in the returns—namely, fevers, plague, small-pox, cholera, and dysentery and diarrhoea. The term fever accounts for 54 per cent. of the total mortality; but it is evident from special inquiries that it embraces a large variety of pyretic and inflammatory complaints. The ratio of mortality was 19.57 against 18.09 in 1904. There was a decided excess in Bengal, the United Provinces, and the Central Provinces and Berar, a slight excess in Eastern Bengal and Assam, and a decrease in other provinces. September floods were probably the chief cause of increase, and deaths from influenza, plague, and small-pox appear to have been returned under this head. There was a slight abatement of mortality from kala-azar. The sale of quinine in pice (7 grains) packets is being pushed, but no mention is made of other antimalarial measures. There were 2,811 more deaths from plague in British provinces than in 1904, the rate being 4.17 per 1,000, the highest on record. In the whole Indian Empire the total mortality was 1,069,140—a decrease of 74,793. There was a remarkable decline of the disease everywhere during the last seven months of the year. No British province, except Coorg, escaped, and few Native States were exempt. There was a great rise of prevalence in Bengal and the United Provinces, and the disease appeared and spread in Burma. There was a fall in the Punjab and a still more marked decline in Bombay, Madras, and the Central Provinces. Reference is made to the researches of the Royal Society's Commission, which emphasize the agency of rats and fleas in propagating the disease, as indicated specially by experiments with guinea-pigs. The demand for prophylactic vaccine were more than doubled, and facts are cited in support of its preventive efficiency. Rat destruction was carried out in many places, but difficulties were encountered in attempting extermination. It is stated, however, that in many instances results were encouraging. Observations show that the urine and faeces of rats are not highly infective.

There was a rise in small pox mortality from 0.24 to 0.31 per 1,000, but the prevalence was below the average. The increase was greatest in Bombay and Lower Burmah. The mortality in towns was twice as great as in rural areas. Cholera was more than twice as prevalent as in 1904. The disease was most severe in Bengal, Eastern Bengal, and Assam and Madras. In Assam the mortality in tea gardens was less than half as much as in the province generally. The disease in this province was observed to spread from village to village along the course of streams and rivers the water of which is used for household purposes. A similar experience is reported from the Bombay Presidency. The permanganating of wells was resorted to in some provinces, and, it is stated, with success. No information is given regarding preventive inoculation. The cholera rate for the empire was 1.96, against 0.85 in 1904. The value of Gotschlich's observations at Tor is still *sub judice*.

There was a marked rise in the mortality caused by dysentery and diarrhoea, from 1.06 to 1.17 per mille. The Central Provinces, Eastern Bengal, and Assam and the Madras Presidency furnish the greatest excess. Many deaths recorded as diarrhoea were no doubt due to cholera, and bowel complaints, which are the immediate precursors of death in chronic malaria, kala-azar, phthisis, and other diseases—terminal dysentery and

diarrhoea—are returned under this head. The tea districts of Assam and Cachar are again conspicuous in respect of fatal bowel complaints.

(*To be continued.*)

LITERARY NOTES.

Dr. John Todhunter, a medical graduate of the University of Dublin, and a poet of considerable reputation, has translated Heine's *Buch der Lieder* into English verse, which is said to be both good in itself and a remarkably close rendering of the original. It is to be published in the Oxford Library of Translations.

The autumn list of books to be published by Messrs. Smith Elder includes one by Sir Frederick Treves entitled *The Cradle of the Deep*. Messrs. A. and C. Black's autumn list includes one which is of special interest to all admirers of the author of *Rab and His Friends*—namely, the *Letters of Dr. John Brown, with Letters from Ruskin, Thackeray, and Others.*

We learn from Messrs. Baillière, Tindall, and Cox that henceforth the *Manual of Anatomy* in the University Series, by Professor A. M. Buchanan, will be obtainable in one volume as well as in two, a special index having been compiled for the complete work. The same firm announces for immediate publication a translation of Laveran and Mesnil's work on trypanosomes and trypanosomiasis, by Dr. Nabarro, who, from his own experience and research, has largely added to the original work and has brought it up to date. During the last twelve months Major W. D. Sutherland, of the Indian Medical Service, has been engaged, both here and on the Continent, in research work in connexion with blood stains from the point of view of medical jurisprudence. He has embodied the result of his labours in a work entitled *Blood Stains: Their Detection and Determination of Their Source*, to be published in a few days by Messrs. Baillière, Tindall, and Cox. Dr. Bishop Harman's work on *Preventable Blunders*, shortly to be issued by the same firm, is specially intended for the use of medical officers of health.

We have already more than once had occasion to express a favourable opinion of the work done by the Ceylon Branch as shown in the *Journal* which it issues from time to time. A further number (Vol. iii, Part II, July-December, 1906) has lately reached us, and we congratulate the editor, Dr. M. Sinnetamby, Honorary Secretary, and all the members of the Branch, on the evidence which it affords of fruitful activity in the sphere of scientific work. A new and interesting feature is an introduction consisting of "Editorial Notes," in which various questions connected with the public health are ably dealt with. The ankylostomiasis problem is discussed in a practical spirit, and a suggestion is thrown out that a movement should be initiated in Ceylon under the auspices of the local Branch of the British Medical Association for the prevention of tuberculosis, which is very prevalent in Ceylon, for the establishment of tuberculosis dispensaries in Colombo, and for the foundation of a segregation hospital for advanced cases and of a sanatorium for those in the incipient stage. The erection of an "industrial hospital" for convalescents and latent cases is also proposed. The cost is to be borne partly by the municipality, with the help of philanthropic millionaires. We note with regret that these notes are the swan song of the present editor, who announces that he vacates "the editorial sanctum, owing to effluxion of time, to be filled by one who is younger and more devoted to the work." More devoted than Dr. Sinnetamby it is scarcely possible for any one to be, and we hope that the *Journal of the Ceylon Branch*, which is now in the fourth year of its existence, will continue to flourish as vigorously as it has done under his direction.

The first part of the first volume of the *Frankfurter Zeitschrift für Pathologie* is described on the title page as a *Festschrift* in commemoration of the two hundredth anniversary of the birth of Johann Christian Senckenberg, founder of the well-known institute in Frankfort which bears his name. The editor is Dr. Eugen Albrecht; the publisher, J. F. Bergmann of Wiesbaden. Senckenberg was the second son of a medical practitioner of Frankfort, who died in 1730. He was born in 1707, and took his degree at Göttingen in 1737. He held various public offices in his native city, and died in 1772. He is mentioned by Goethe in his reminiscences (*Aus meinem Leben*). After speaking of his elder brothers, one of whom was an Imperial Councillor at Vienna, the other a Senator of Frankfort, the author of *Faust* mentions:

> The third brother, a physician of the highest integrity, who practised only among a few families of position, and preserved, even to his last years, a somewhat remarkable appearance. He was always neatly dressed, and was never seen in the street except in shoes and knee breeches, with a well-powdered curly wig on his head, and his hat under his arm. He walked fast, but in an odd corkscrew fashion, so that he was now on one, now on the other side of the street, describing a zigzag movement. Scoffers said that by this devious course he strove to escape from the ghosts who might be pursuing him in a straight line, in the manner adopted by those who try to elude a crocodile. All these jeers and the many funny stories told of him, however, changed to reverence when he gave his large house with courtyard and garden in Eschenheim Street to form a medical institute, which, in addition to a hospital for the citizens of Frankfort, should comprise a botanical garden, an anatomical theatre, a chemical laboratory, a considerable library, and a dwelling for the director on a scale of which no university need have been ashamed.

On August 18th Senckenberg gave the city of Frankfort 95,000 gulden for the improvement of medical art and the care of the sick. Two-thirds of the sum were to be devoted to the foundation of a medical institute, of which the trusteeship was vested in a Medical College of the Protestant religion, the remaining third being applied to the foundation of a hospital. For help towards the maintenance of the latter Senckenberg counted—and the history of the Institute has justified his confidence—on the generosity of the citizens of Frankfort. In a historical sketch entitled, "The Doctors of Goethe's Youth," written on the occasion of the centenary of the foundation of the Institute and published in the twenty-sixth volume of *Virchow's Archiv*, 1863, William Stricker says that in 1817 the Scientific Society of Frankfort had taken over charge of Senckenberg's natural history collection, and had thus developed it into one of the finest museums in Europe. The Physical Association, which in 1824 was formed as an offshoot of the Society, established a well-equipped chemical laboratory. The wish expressed by Senckenberg for the development of his Institute in a professional and scientific sense, and for the enlargement of the library was fulfilled by the Medical Association, founded in 1845. The teaching of anatomy has from the first occupied a prominent place in the work of the Institute. Here, too, the idea of the founder has been expanded in the direction of modern scientific thought. When the chair of anatomy became vacant by the death of Lucae in 1885, it was at the instigation of Moritz Schmidt transformed into one of pathological anatomy, and Weigert, who, after the death of Cohnheim, found himself in a somewhat precarious position at Leipzig, was invited to Frankfort. Weigert's work was fully set forth in the sketch of his life, by Rieder, prefixed to the collection of his writings, which appeared in 1906. In 1903, on the occasion of the 140th anniversary of the foundation of the Senckenberg Institute, Weigert was appointed director of the pathological department, his pupil and fellow-worker, Edinger, being at the same time placed at the head of the neurological department. The new periodical from which we take these historical facts contains as a frontispiece a reproduction of an oil painting of Senckenberg, with a view of the original anatomical theatre and hospital in the background. The original contributions are valuable, but we can mention only a few. E. Albrecht writes on cellular pathology, and on the physical organization of the cell; Professor Claribel Cone on our knowledge of cell changes in the normal and diseased epidermis of man; W. Heinen on the present state of our knowledge of diverticula of the oesophagus at the level of the bifurcation of the trachea; and Hans Boit on the complication of Basedow's disease by the status lymphaticus. There are besides abstracts of the reports of work done in the Pathological Institute published in other journals during 1905 and 1906, and a report with bibliography of the work of the Neurological Institute from 1902 to 1906.

MEDICAL NEWS.

THE winter session at the West London Post-Graduate College commences without special ceremony on Monday, October 7th.

It is announced that Dr. Richard Caton, J.P., of Liverpool, has accepted nomination as Lord Mayor of that city, and will doubtless be elected to fill that high office.

THE sixty-sixth annual meeting of the Reading Pathological Society will be held on October 10th, when Professor Howard Marsh will deliver an oration on a study of the forms of evidence used in surgical diagnosis, with clinical illustrations.

THE Argentine League against Tuberculosis has founded three prizes, which will be distributed annually to children under 1 year of age who have been vaccinated and fed at the breast. The prizes will be given for strength and healthiness.

THE professional staff of the Royal Dental Hospital of London and its School will give a *conversazione* at the Royal Institute Galleries, Princes Hall, Piccadilly, on October 18th. On the same occasion the prizes awarded during the past year will be distributed by Sir Frederick Treves.

THE Chesterfield lectures before the St. John's Hospital for Diseases of the Skin, Leicester Square, London, W.C., will be resumed on October 3rd at 6 p.m. by Dr. Morgan Dockrell, who will deal with the present position of dermatology; the lectures will be continued on subsequent Thursdays.

THE first Hunterian Lecture of the Hunterian Society will be delivered on Wednesday, October 9th, at 8.30 p.m., by Dr. F. M. Sandwith, Gresham Professor of Medicine. The subject is dysentery. The meeting will be held in the London Institution, Finsbury Circus, and all members of the medical profession are invited.

THE autumn meeting of the South-Eastern Division of the Medico-Psychological Association will be held, by the invitation of Dr. Reginald J. Stilwell, at Moorcroft, Hillingdon, Uxbridge, on Tuesday, October 8th. Dr. R. H. Cole will describe that institution, and Dr. W. H. B. Stoddart will read a paper on Babinsky's conception of hysteria.

THE annual presidential address at the West London Medico-Chirurgical Society will be delivered on Friday, October 4th, at 8.30 p.m., at the Society's usual meeting place, the West London Hospital. The president for the coming year is Mr. Richard Lake, who will deal with the relationships of diseases of the ear, nose, and larynx to general medicine.

THE first of the usual course of lectures at the Hospital for Sick Children, Great Ormond Street, will be given on October 10th, at 4 p.m., by Dr. Garrod, who will take for his subject diabetes in children. On October 17th Mr. H. Stansfield Collier will lecture on experiences of the opsonic method in surgical cases. The lectures are free to all medical practitioners.

THE first Thomas Young oration of the Optical Society will be delivered by M. Tscherning, director of the ophthalmological laboratory of the Sorbonne, Paris, on Thursday, October 17th, at 8.30 p.m., at 20, Hanover Square, London, W. Medical men desiring to be present can obtain tickets on application to the Secretary of the Optical Society, not later than October 7th.

THE inaugural meeting of the International Stomatological Association was held in Paris on August 6th and 7th, when officers were elected; the secretary for England is Dr. Sim Wallace, 30a, Wimpole Street, London, W. The next meeting will be held at Buda-Pesth in August, 1909, after the International Medical Congress, which will have a Stomatological Section open only to those possessing a medical qualification.

THE North-East London Post-graduate College and the North-East London Clinical Society have arranged this year for a joint opening of their respective winter sessions, the event taking place on October 3rd at the Prince of Wales's Hospital, Tottenham. An address will be delivered by Dr. Hale White dealing with the various conditions causing enlargement of the liver. All qualified medical men are invited to attend.

THE German Society of Neurologists held its first annual meeting at Dresden on September 14th. The proceedings were opened by Professor Oppenheim, of Berlin. After his speech of welcome Professor Erb was elected President by acclamation. Professor Oppenheim and Professor Frankl von Hochwart were elected second presidents, the latter as representative of Austria. In the scientific work of the meeting the subject specially dealt with was the surgical treatment of brain disease. Professor Krause, of Berlin, reported a number of cases of epilepsy in which a cure had been effected by operation. Professors Frankl von Hochwart and von Eiselberg reported a case of brain tumour successfully treated by operation.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 6, Catherine Street, Strand, London, W.C., Dr. de Havilland Hall in the chair. The accounts presented showed that the operations of the society during the spring and summer of this year have been larger than in any similar period of the society's working since it was founded in 1884. During the eight months ending August, 1907, the Society had disbursed to its members nearly £9,000 in sick pay, and in addition had paid substantial cash bonuses to all who reached the limiting age of 65 years. Yet, notwithstanding this heavy outgo, the funds of the Society show a considerable increase. The annual premium income of the sickness branch is now over £17,000, and the interest earned by invested funds produces a sum of from two to three thousand more. The number of new entrants this year has so far considerably exceeded the record year 1905, and, as no agents are employed, and no commission is paid for new business, it seems clear that the great benefits secured by membership in the Society are becoming better known to the medical profession. Prospectuses and all further particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

TREATMENT OF EXPERIMENTAL TSETSE FLY DISEASE.—Professor Loeffler and Dr. Rüss report that in their experimental investigations conducted in the Hygienic Institute of the University of Greifswald during the last two years they have discovered a satisfactory means of treating guinea-pigs, rats, and rabbits which have been inoculated with the Nagana parasite (*Deutsch. med. Woch.*, August 22nd, 1907). They have been able to cure severely-affected animals in a relatively short time and to confer on healthy animals the power of resisting repeated inoculations with the parasite. The drug which they have found to possess these properties in the treatment of the trypanosome is arsenious acid. It is equally efficacious whether administered by the mouth or by injection into the blood-stream or peritoneal cavity, and hence promises to be particularly useful for practical therapeutics. As in the treatment of malaria with quinine, the curative action of the specific drug is only obtained when adequate doses are employed and are administered systematically at the proper intervals. They recommend that the solution of arsenic be prepared by boiling 1 gram of arsenious acid with 10 c.cm. of normal caustic soda and subsequently adding 10 c.cm. of normal saline solution. The lethal dose per kilo of body weight is greater by about one-third than the curative dose. Both doses differ for different species of animals, but the authors maintain that when the proper dosage has been established there is no fear of poisoning the animals. They claim that guinea-pigs which have been inoculated intraperitoneally with a dose of Nagana fatal to the controls in five or six days can, when very ill, be cured by from three to five successive injection of the proper dose of arsenic, and that similar results are obtainable with rats and rabbits. The optimum interval between each dose is five days. They state that when the solution of arsenic is administered to healthy guinea-pigs in repeated doses, with a five days' interval between each, the animals are capable of resisting repeated inoculations with the parasite. These results, they think, suggest that the same drug might be successfully employed in the treatment of diseases due to other varieties of trypanosomes or to the spirillum of syphilis. The authors find that the arsenious acid exercises a directly destructive action upon the trypanosomes, and does not produce this result through the intermediate agency of the leucocytes, the hyperleucocytosis which is observable being a secondary phenomenon consequent on the destruction of the trypanosomes. This direct action of the arsenic upon the trypanosomes can be observed in hanging drops of infected blood even when the drug is present in a dilution as high as 1 in 200,000. The presumption is that the arsenic must be present in the blood, and the tissue juices in an adequate degree of concentration, in order to destroy all the parasites present in the body. When this degree of concentration is not attained, the parasites may disappear from the circulation as long as the treatment is continued, but they are not completely eradicated from the body, and sooner or later there is a recrudescence of the disease.

British Medical Journal

SATURDAY, SEPTEMBER 28TH, 1907.

ALCOHOL AND INSANITY.

For some years now in scientific discussions the alcohol question, from the hygienic and medical standpoint, has been very much to the fore, and, particularly within the last year or so, the opposing views of prominent medical authorities appear to have engaged the interest of the newspaper-reading public. There have been manifestos on each side, blasts and counterblasts, with many well known names appended thereunto; the matter has been recently debated at many scientific congresses, and even the number of bottles of spirituous liquors consumed by a distinguished company of alienists at a now-famous dinner of the Medico-Psychological Association of Great Britain and Ireland has been given with engaging frankness to an interested public for its instruction and edification. In each opposing camp there are names of equal authority which might well carry weight with the outside public. No argument, however, can be based on authority, but must proceed from proved and known fact. Now, where there is room for controversy there must be equal place for scientific inquiry; in fact, it might almost be stated as an axiom that the range and degree of controversy afford a measure of the depth of our ignorance. This is, of course, not tantamount to declaring that where there is no discussion, there also will truth be found; but merely that a hotly contested field has always been insufficiently explored.

As an instance of calm and dispassionately scientific investigation applied to a question whose ground has been obscured by the dust of heated conflict and humanitarian, sociological, and religious side-issues, we lately[1] drew attention to an address on alcohol and insanity read by Dr. Mott before the Medico-Psychological Association,[2] and we need not again particularize the many valuable results of his investigations, but pass on to review the discussion on this subject, a detailed account of which will be found in another part of this issue, fittingly introduced by Dr. Mott at the Exeter meeting of the Association. Dr. Mott, after a long and careful comparative scrutiny of the histories, clinical conditions, and *post-mortem* results in cases sufficiently numerous to warrant definite deductions at Claybury Asylum and Charing Cross Hospital, concluded "that alcohol does not *per se* produce a permanent "mental derangement such as constitutes our definition "of insanity," that is, that for alcohol to become operative in the production of insanity there must be associated with it some other cause, either a latent congenital or acquired defect, an innate mental instability or else such toxins as themselves produce delirium—as, for example, in delirium tremens and in the polyneuritic psychoses.

If this be true, alcohol, as an efficient cause of insanity, does not occupy the place accorded to it by many medical superintendents of asylums, and reflected in the Annual Reports of the Commissioners in Lunacy for England and Wales. In further support of this, Dr. Mott quoted the arguments of Dr. Bevan Lewis and Dr. Sullivan, who have shown a regional dissociation between alcoholism and insanity, inland and agricultural communities being the least inebriate, yet giving the highest ratio of insanity, whereas Lancashire, Warwick, Cheshire, and the mining counties, where drunkenness is rife, give very low rates of insanity. The alcoholism, in fact, in the great majority of those cases in which it is assigned as principal cause of the insanity appears, in the light of Dr. Mott's comparative study of the incidence of cirrhosis of the liver inside and outside of asylums, to be really a revealer of the hidden personality of the subject, of his qualities and defects, and to be the actual cause of insanity in numbers far beneath those shown annually in the reports of the Lunacy Commissioners for England and Wales. To the misleading nature of the information given under the tables of causation returned to the office of the Lunacy Commissioners we devoted a leading article in 1904,[3] and we have on more than one occasion alluded to the altogether discrepant nature of the returns made with regard to this question of alcohol and insanity. We note that in the subsequent discussion the majority of the speakers, who may be taken as truly representative of British alienists, were in practical agreement as to these two points; the tables of causation were stigmatized by Professor Ernest White as absolutely valueless, and their fallacious character was commented upon by several others. Even Dr. G. M. Robertson, who maintained "that alcohol was the most "important single factor in the production of insanity in "men in this country," had to admit that it was very probable that the injurious effects of the abuse of alcohol had been exaggerated by many. A perusal of the full discussion shows that the majority of the speakers were in agreement as to the two points already mentioned, and also that Dr. Mott, Dr. Mercier, Professor White, and Dr. Yellowlees affirmed—their opinion passing unchallenged—that alcohol was not only a weed-killer but also a weed-producer, and, in Dr. Mott's view, probably more effective in this latter direction.

Now, if it be true as was here asserted, and is certainly implicitly believed by great numbers of medical men, that alcoholic parents beget degenerate offspring more frequently than abstemious parents, as the result of the alcoholism, then the share which alcohol has in the production of insanity is still to be defined. It is, of course, *a priori* probable that germ cells are injured by alcohol in the same way as somatic cells, and there is evidence that the developing embryos and fetuses of pregnant intemperate women are so injured. The statistics of Bourneville have shown the high proportion of idiots and imbeciles in the Bicêtre and Vallée with an alcoholic parentage; Lippich, quoted by Leopold Lang,[4] found in the year 1834 that out of 97 children conceived in drink only 14 were normal, and Bezzola,[5] led by his finding that out of 68 deeply weak-minded or idiot children in Grisons the conceptual dates in one-half coincided with New Year, carnival or vintage—all of them periods of alcoholic excess—drew a conception-curve of the 8,196 weak-minded children in Switzerland in the year 1897 and compared this with the conception-curve of about a million normal Swiss with the same result. All of these statistics, however, are vitiated by the often overlooked fact that the defective class is one pre-eminently

[1] British Medical Journal, March 30th, 1907.
[2] *Alcohol and Insanity.* By F. W. Mott, M.D., F.R.S. London: Adlard and Son. Reprint from the *Journal of Mental Science*, October, 1906.
[3] British Medical Journal, October 22nd, 1904.
[4] *Die kindliche Psyche und der Genuss geistiger Getranke.* By Leopold Lang. Vienna: Josef Safar. 1907.
[5] *Alkohol und Vererbung.* By Dr. D. Bezzola, Ebner u. Ko. Chur. 1900.

prone to alcoholic excess and that the defects of the progeny may be as rightly attributed to the defects of their fathers as laid at the door of their drunkenness. Dr. Archdall Reid urged in his evidence before the Royal Commission on the Feeble-minded that these statistics ought to be correlated with others collected from the families of normal people in the same class of life, and we may admit that notwithstanding many suggestive figures, more biological evidence is required to prove that alcohol is in this way a weed-producer.

Leaving this aside and turning to the subject more strictly under review, it is necessary to note that the terms "insanity" and "cause" were used by Dr. Mott in a strictly limited sense—by "insanity" being meant "certified insanity" as encountered in Claybury Asylum, and by "cause" original and sole cause. It is evident that by widening the application of either the results might wear another face. Dr. Mott contended that alcohol *per se* was not an appreciable cause of insanity in its arbitrary connotation. We have little doubt, however, that were any other of the usually assigned etiological factors taken—with the possible exception of syphilis, diseases and injuries involving destruction of cerebral structures and innate defect—and submitted to the same thorough investigation, they would yield a like result.

We are all born to trouble as the sparks fly upward, but we do not all become insane under mental or emotional stress; most of us pass successfully the periods of puberty and the climacteric, suffer grievous illnesses, and even reach the stage where the almond tree flourishes and the grasshopper has become a burden and still retain an erect and dominant mentality. The cause *per se* of insanity is still to seek and probably lies in the innate constitution of the individual, as a group of the countless variations from the normal, provided apparently for the selection of a constantly changing environment, and influenced, possibly, by bodies, toxic or other, not yet distilled from the crucible of human invention. For this reason alcohol must take its place with most of the other usually cited factors as a coefficient, and, regarding it as such, it is quite possible to agree with Dr. Mott and at the same time to hold with Dr. Robertson that it is the most important single factor in the production of insanity in men in this country.

We have said that the term "certified insanity" delimits arbitrarily a certain class. That which constitutes "certifiable insanity" and even "insanity" differs in different countries and at different times. As Dr. Claye Shaw, the President of the Psychological Section, has said in his philosophic *Ex Cathedra Essays:* "Insanity, being some "condition that is opposed to sanity, must depend for its "interpretation upon what is meant by sanity or sane-"ness. . . . Insanity means want of conformity with "an artificial scale, either from inability due to disease, "or from incapacity to rise to such a level as may be "the standard, to a primary ineptitude." Outside of asylums there are numbers of people who are not deemed certifiably insane; in whom, in fact, the question of certification rarely arises. Some find their way to prisons, and others are managed with outward decorum at home, but they are all alike in this—that they exhibit a marked intolerance of alcohol, and under its influence exhibit conduct which cannot but be described as pathological. Many of these cases have been reported upon, after the committal of some crime or other antisocial conduct, by Continental alienists, and in most the course of events has been as follows: First, a period of emotional stress from some cause or other, domestic trouble or financial disaster; the consumption of alcohol in doses insufficient to produce drunkenness; then the conduct, frequently maniacal and violent, but with a purposefulness and resource of which a drunken man would be incapable, which has led to detention; and lastly, with return to the normal state an absence of recollection of the preceding events which the medical men in charge of the case have been able to satisfy themselves was a true amnesia. In some of these cases there does not appear even to have been either any pre-existing mental stress, or, unless it be assumed that alcoholic intolerance is in itself a certain indication of a latent mental instability, any original defect. These cases are strictly outside the range of certifiable insanity, and yet what constituted alcoholic excess for them was the sole discoverable cause of their temporary mental derangement. We mention these cases not to express disagreement with Dr. Mott's conclusions, but merely to point out how a certain and not unreasonable extension of the term "insanity" might affect opinion as to the importance of alcohol in the production of mental derangement.

We cannot discuss here other interesting points raised in this discussion, such as the fact mentioned by Dr. Mott that certain nations which have drunk alcohol for ages are mentally superior, and physically not inferior, to other nations which do not drink; the relationship between the "artistic temperament" and alcoholic indulgence, and the possible good effects of alcohol suggested by Dr. Mercier. Whether, and to what extent, the undoubted ill effects of alcohol are balanced by good effects is an exceedingly difficult question to answer. We take it that it is indisputable that, from the psychological standpoint, alcohol is essentially a lowerer of cerebral function, and that step by step, with increasing doses, it for a time lulls to sleep cortical functions in the inverse order of their phylogenetic acquirement; that is, it is a general narcotic. Its enemies are perhaps too prone to forget that this reversion has its physiological counterpart in sleep, and that it is quite possible, as Professor Anderson said, that in these times of strenuous mental endeavour a temporary, even if artificially produced, release from strain may be beneficial. When that has been said, its good qualities appear to have been fairly summed up.

That alcohol has been of service to any nation in the evolution of mental efficiency, even as a weed-killer, seems very doubtful. The claims of tuberculosis or syphilis might be vaunted in similar fashion as weeders-out of the physically unfit, if no account is taken of the fact that a racially-acquired resistance is only of value against the influence resisted, and, even if it were true, we doubt whether many would be tempted to such altruistic *harikiri*. The whole matter is, perhaps, best expressed in the words of Crato concerning the treacly composition known as Bohemian beer:

. . . . nil spissius illa
Dum bibitur, nil clarius est dum mingitur, unde
Constat quod multas faeces in corpore linquat.

Thus translated by Burton:

Nothing comes in so thicke,
Nothing goes out so thinne;
It needs must follow then
The dregs are left within.

THE WAR AGAINST QUACKERY.

IN the SUPPLEMENT will be found an address on Medical Law Reform and Quackery, delivered before the Reigate Division by Mr. Henry Sewill. For a long time past he has devoted himself to warring against quackery, and

has striven to impress his views on the profession and the public. Like a Cato of medicine he has lost no opportunity of calling for the destruction of the Carthage of quackery. He certainly makes out a strong case, showing that quackery has grown rapidly in recent years both as regards traffic in nostrums and bogus apparatus, and practice by unqualified pretenders. He holds, further, that it is a potent factor in deterioration of the public health.

That quackery affords a large field for the manœuvres of rogues who prey on the ignorance of the public is undeniable. It is equally true that but for the support given them by the newspapers which publish their advertisements, their nefarious industry would cease to be profitable to a degree that would make it scarcely worth the attention of men whose sole aim is the transference of money from the pockets of the public to their own. On the other hand, many newspapers, and especially those which profess to be religious in character, could hardly exist without the support of the vendor of nostrums. Their proprietors probably salve their conscience with the reflection that what they do is done in a good cause. This is only an application of the maxim which they condemn so loudly when acted on by others—that the end justifies the means. Of the two, the quack is the less despicable, for he at least does not blind himself to the fact that his therapeutic invention is directed solely to the relief of one disease—that which Rabelais calls the *imposthume pécuniaire*.

Mr. Sewill may be assured of the support of the whole medical profession when he asks for a reform of the law relative to medical practice; this is what the British Medical Association has long been working to bring about. But the difficulties which stand in the way are greater than he seems to think. The bitter truth must be faced that in the matter of quack remedies the people wish to be deceived, and this state of mind cannot be changed by legislation. The Briton will never surrender his inborn right, as Dr. Gregory put it, to go to the devil in his own way. The history of vaccination in the land of its birth does not, it must be admitted, tend to foster any very sanguine hope that the law will, or can, do much for the predominance of reason in the public mind in regard to medical matters. As Mr. Sewill himself points out, the political influence of the profession is deplorably small. He claims the same amount of protection for it as the law gives to solicitors. But doctors are in a very different position from lawyers. In the first place, the legal profession is largely represented in Parliament, and has a corresponding share in making the laws; naturally it looks carefully after its own interests. In the second place, it is but fair to admit that in legal matters unqualified practice would, from the point of view of the public interest, be more directly and palpably harmful than in medicine. In saying this we do not at all mean that property is more sacred or more valuable than health. But whereas the medicine of a quack harms only the person silly enough to take it, the effect of advice given by an unqualified solicitor may extend far beyond the individual and entail disaster on whole families, and it may be on future generations. The evil done in this way is easy to prove. But a quack can nearly always get whatever testimony may be needed in proof of the salutary action of his drugs. Mr. Sewill's remedy for the evil of quackery is a Royal Commission before which the system of quackery as a whole and its practice by individuals could be laid bare. Doubtless some instructive evidence could be got in this way, but would the result be in any degree commensurate? We take leave to doubt it. Indeed, as most quacks at the present day are clever enough not to offer to the public remedies likely to be directly dangerous, a Royal Commission might possibly defeat the object of its promoters. Unfortunately medicine is not yet an exact science, and the effects of the most skilful treatment, even when successful, may conceivably be ascribed to something else. It would not always be easy to disprove this. Hilton in his book, *Rest and Pain*, tells of a story of a young lady whom he had treated *secundum artem* for disease of the hip for a long time without striking success. Getting tired of her slow progress, she went to a quack, and was soon able to dispense with the crutches ordered her by the surgeon, to whom she ungratefully sent them back Here was a case in which the way for the cure had undoubtedly been prepared by the rest and scientific treatment ordered by the surgeon. The cure was completed by some accidental manipulation of the quack, and so the whole credit of it went to him. There is a sufficient number of cases of this kind in medical as well as in surgical practice to make it at least possible that the "exposure" of quackery might serve as a good advertisement. The problem of "cure" is too complex to be rightly apprehended by public opinion, and a Royal Commission, composed—as it must be if it is to inspire confidence—of mixed elements, is not a suitable tribunal to adjudicate on such matters. Besides, have we not the assurance of the late Lord Salisbury that Governments pay little attention to the recommendations of Royal Commissions? Have we not been told by other statesmen that such Commissions are appointed mainly to shelve inconvenient problems? We do not think, therefore, that a Royal Commission would do the good Mr. Sewill expects from it, and after the Commission had reported it is far from certain that the Government would take any action. It is to the spread of scientific modes of thought among the people, to the creation of that intellectual atmosphere in which, as Lecky said, the belief in wonders and humbug cannot live, far more than to legislation, that we look for the extinction of quackery. On the other hand, whatever can be done by the hand of the law should be done, and we should be glad to see it provided with a "mailed fist" that could shatter the foul idols of imposture before which the people are so ready to worship and whose shrines they decorate with valuable gifts. We heartily wish Mr. Sewill success in his crusade. But a large part of the fraudulent dealing which constitutes quackery is so intangible that it will only with difficulty be reached by any law that can be framed.

THE TRAINING OF SCHOOL TEACHERS IN HYGIENE.

We publish elsewhere an appeal from Mrs. Watt Smyth to the Divisions of the British Medical Association to consider at an early date the steps which should be taken to ensure that the principles of hygiene shall be taught to the rising generation in our elementary schools, and in endorsing the appeal we would point out that the best policy to be followed in bringing about the desired result is a pressing question for the medical profession. The Board of Education has been slow to move in this matter; both Lord Londonderry and Mr. Birrell expressed a benevolent interest in the proposal, but both argued that it could not be put into force until a supply of teachers competent to teach the subject was assured. This meant, of course, that the subject of hygiene must be made a regular part of the curriculum of all colleges where elementary school

teachers are trained. Our correspondent argues that the force of this official contention must be recognized, and that the first step must be to induce the Board of Education to consent to the introduction of the teaching of hygiene into training colleges. Mrs. Watt Smyth has given a pledge of the sincerity of her belief by writing a very excellent *Textbook of Hygiene Founded on Physiology* for school teachers, and at her instance the recent International Congress of School Hygiene unanimously adopted a resolution that practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades. We believe that the policy recommended is thoroughly sound, and that this particular demand should be presented alone. The matter is certainly one upon which the opinion of the profession should be definitely and firmly expressed at an early date. It will not be out of place to utter a note of warning with regard to the whole subject of school hygiene. There is a risk that the opinion of the majority of the medical profession may be thrust aside in the interests of a limited section or of persons calling themselves educational experts. It is very important that the teaching of hygiene in the training colleges should be put from the first on the right lines. There is now before the profession a definite proposition, and if a definite opinion is expressed there can be no reason to doubt that the profession will vindicate its rightful place as the proper adviser of the public and instructor of teachers in this subject.

THE PUBLIC HEALTH SERVICE.

THE practical working of the rule of the Local Government Board which requires that the appointment of a medical officer of health, a moiety of whose salary is paid through the Board, should be for a limited period only has been exemplified in many places within the last year or two, and several cases are now pending. In one instance, that of Wimborne, the local authorities having encountered difficulty in getting the post of medical officer to the workhouse accepted at the rate of remuneration they think adequate, but which is formally declared by the medical profession to be inadequate, propose not to reappoint the present incumbent of the post of medical officer of health, and by combining the two offices to attract some candidate who will be completely under their thumb. At Southend-on-Sea the controversy has ended, for the present at any rate, in the defeat of the Public Health Committee's recommendation that Dr. Nash should be reappointed medical officer of health on the same terms as before. The decision of the town council to dispense with the services of a highly competent officer without reason assigned has aroused much indignation in the borough itself, the wiser inhabitants not only resenting the injustice of the act, but clearly perceiving that the incident cannot fail to have a most injurious effect on the prosperity of the town. Other cases not less glaring have been reported recently, and others have been brought to notice, although the facts are not yet ripe for publication. A new phase of the controversy forced upon the medical profession by the high-handed action of local authorities and combinations appears therefore to be opening. It will call for very serious consideration by the profession as a whole, and by those who look to the public health service as a career in particular. Certain appointments are now vacant, or may shortly be declared vacant, and will be advertised in compliance with the letter of the law, although both the BRITISH MEDICAL JOURNAL and the *Lancet* have refused or will refuse to insert such advertisements. Will the younger members of the profession who are beginning their career in the public health service play into the hands of recalcitrant local bodies by applying for appointments thus rendered vacant? If they accept such posts and do not do their duty, they will not only be false to their profession, but will effectually stop their own advancement. If they do their duty as public officers, they will, after they have given the best energies of their prime to the work, find themselves in the same position as those medical officers who are now to be ousted with, as the local Dogberries assume, their assistance. We can hardly believe that members of our profession who are worth their salt will let themselves be so easily beguiled. It would be a most short-sighted policy in the interests of the profession to which they belong, of the speciality they propose to follow, and in their own.

STATISTICAL STUDIES IN IMMUNITY.

WE have received two interesting papers by Dr. John Brownlee, Superintendent of the Glasgow Fever and Small-pox Hospitals, dealing with some statistical aspects of immunity.[1] In the first paper it is shown that in the diseases investigated—small-pox, varicella, rötheln, parotitis, scarlet fever—the age of the patient appears to have little influence on the length of the incubation period. When the cases are grouped, each group consisting of persons exposed to the same source of infection, the range of variation within each class is very small when compared with the total range, so that the length of the incubation period appears to depend rather upon some peculiarity of the infecting organism than on individual susceptibility. The numbers investigated are not, however, large enough to render the inference certain. An analysis of various figures relating to diseases which terminate by crisis shows a practically constant mean date at which the crisis appears for all age-periods, and the mean date at which death occurs is also nearly constant. This suggests that the greater mortality of old age is not due to a failure on the part of the organism to react, but to an inability to produce specific antibodies. This view is further supported by the fact that the mean severity of attack in typhus fever (Dr. Russell's cases), as measured by the number of days from onset before stimulants were necessary, is not significantly different in the various age-groups, while the mortality between the ages of 15 and 20 years is about 16 per cent., and among those over 50 years, more than 50 per cent. A study of the severity distributions of such diseases as typhus, showing a modal value at the moderately severe cases, is in favour of the author's contention that "the processes of natural immunity must be largely different from those displayed in acquiring immunity." We referred to this some time ago, in noticing Dr. Turner's and Professor Pearson's papers on small-pox statistics. In his second paper, the author deals with the theory of an epidemic. A large number of epidemics are analysed statistically, and it is shown that, in the vast majority of cases, the course is best represented by a "skew" frequency curve[2] of type 4. The spatial distribution of cases round a centre of infection appears to obey a similar law. It would seem that the course of an epidemic depends on the acquisition by an organism of a high degree of virulence at a given time and place, the infective power then diminishing at a rate approximating to the terms of a geometrical progression. This principle was well known to Dr. Farr, but the arithmetical law which, he thought, described the course of an epidemic, leading as it does to the "normal curve of error," gives a much worse "fit" than type 4 of Pearson's "skew" curves. Dr. Brownlee's papers are an important contribution

[1] (1) *Statistical Studies in Immunity: The Incubation Period and the Crisis*, by John Brownlee, M.A., M.D.: printed for the Royal Philosophical Society of Glasgow. (2) Statistical Studies in Immunity: The Theory of the Epidemic, by John Brownlee, M.D. (*Proc. Roy. Soc. Edin.*, vol. xxvi, Part VI.)

[2] BRITISH MEDICAL JOURNAL, 1907, vol. ii, p. 95.

to medical statistics, and if the authorities of other large hospitals were to follow his example, we should soon possess data of the utmost value to the sanitarian.

MINERS' PHTHISIS AT BENDIGO.[1]

From the pen of Walter Summons, M.D., comes an important contribution to the subject of miners' phthisis at Bendigo. The investigation extended over a period of six months, the Trustees of the Edward Wilson Estate bearing the necessary expenditure. The death registers of the district for the last thirty years only were scanned, as prior to 1875 machine rock drills were hardly employed. It is since the introduction of the machine as against the hand rock drill that gold mining has become a dusty and dangerous occupation. Since machine drills have come into use at Bendigo the number of miners dying from lung disease, especially tuberculous phthisis, has considerably increased, as has also the mortality from chronic bronchitis and pneumonia. The total deaths from lung diseases has risen from a rate of 77.0 to one of 191.6 per 10,000, due mostly to an increase in tuberculous diseases which represented by 48.5 in the first period now accounted for to 129.6. The increase is overwhelming and is "out of all "proportion to the annual mortality rate from consump- "tion among adult males." The death-rate compares unfavourably with Victoria taken as a whole, where the mortality has been of late diminishing. The mortality compares unfavourably, too, with the death-rate from phthisis among the adult non-mining population in Bendigo. Most of the miners who die from phthisis are men in the prime of life, and in recent years this has been more strikingly the case. The average age at death, about 50, is higher than it is in South African miners. Dr. Summons gives brief clinical histories of several of the patients, and alludes to the insidious manner in which the disease commences and silently progresses. Frequent recurring colds and bronchitis are the early symptoms of the disease. The general health, however, remains good, and the miner continues to follow his employment for years, it may be. The men suffer from "black spit," which on examination is found to be teeming with staphylococci and putrefactive organisms; no tubercle bacilli are found in the early stages of the malady. Sooner or later the attacks of bronchitis are followed by dyspnoea, which goes on increasing until finally the breathlessness is so extreme that, despite the general health being good, the miner is unable to follow his employment. The dyspnoea is entirely respiratory and in no way associated with cardiac incompetence. At this stage of the illness the blood frequently contains a little more haemoglobin than usual and the red corpuscles are more numerous than in health. In discussing the physical signs Dr. Summers lays stress in the report upon the deficient expansion of the chest. A true fibrosis in its inception, the disease in the first instance is non-tuberculous. Subsequently tuberculous infection may occur. This reveals itself by an increase in the severity of the symptoms, by a rise of temperature, sweating, the presence of tubercle bacilli in the expectoration, and by the malady generally assuming a more serious aspect and running rapidly to a fatal termination. It is stated that 47 per cent. of the cases of miners' phthisis at Bendigo are tuberculous. A comparison is instituted in this respect between the prevalence of tuberculosis in the Bendigo miners and that in other countries. The last word on the relation of miners' phthisis to tuberculosis has not yet been said. The autopsies in every instance showed the presence of fibrosis of the lungs, thickened pleura and in a large number of cases tuberculous excavation. In dealing with the etiology of the disease, Dr. Summons expresses the opinion that the principal cause is dust, but the high temperatures in which the men work and the subsequent chilling of the body, the effects of breathing a vitiated atmosphere when in the mine, and the influence of the home and public resorts are all discussed. In the way of prevention, consumption homes are recommended. If the miners, especially those in whom the disease is well advanced, were sent to these homes, not only would the consumptives themselves be benefited and their life prolonged, but their families would be protected. The conditions in the mine should be improved, dust kept down by the spraying of water during rock drilling, ventilation of the mines made more perfect, and the personal hygiene of the infected miner as well as the disposal of his expectoration carefully attended to. Tuberculous cases should be notified. If suspension from work follows notification, the hardship experienced by many miners will be great unless some fund is provided to keep the infected miner in the sanatorium and to maintain his family while he is there. This, of course, only refers to those cases of miners' phthisis that are undoubtedly tuberculous. Dr. Summons is to be congratulated upon the excellent piece of work he has done, and his valuable contribution to the literature of miners' phthisis.

[1] Reports of an Investigation at Bendigo into the Prevalence, Nature, Causes, and Prevention of Miners' Phthisis by Walter Summons, M.D., B.S. Melbourne: Stillwell and Co. 1907.

ADULTERATION OF FLOUR.

In view of the difficulty of detecting the adulteration of flour with talc dust without having recourse to scientific methods, it is surprising, writes M. Eugène Collin in the *Revue Scientifique*, that the fraud has not long ago been very much more extensively perpetrated. The result of numerous inquiries goes to show that in France the practice has been restricted to the districts of Charente-Inférieure and of Haute-Garonne, in which the fraud was easy to perpetrate owing to the extensive talc quarries of Luzenac in the neighbourhood. The many samples of flour proved to have been so treated in the South show that a large number of millers must have been guilty of the crime, but its full extent cannot be determined until the cases eventually come before the courts. It is so long since flour has been commonly adulterated with a mineral impurity that analysts have been in the habit of not troubling to consider the possible presence of minerals in making their analyses. The determination is, however, easily made, and recourse need not be had to the combustion of the suspected substance, or any of the more tedious methods. The mineral compounds available are of greater specific gravity than chloroform or carbon tetrachloride, while pure flour is lighter than either liquid. Vigorous agitation in a separating funnel forms, therefore, a convenient method for effecting their separation. The percentage of talc is obtained by drying and weighing the precipitate or by estimating the weight of magnesium present, converting it into ammonium magnesium phosphate. Among other methods whereby the presence of talc may readily be established is that of examination by polarized light or simple examination with the microscope. The adulteration of wheat flour has assumed enormous dimensions in the past, the most notable fraud, perhaps, being the substitution of maize for wheat flour in relatively large quantities. The so-called advantages of the maize flour were widely advertised, and many of the most noted houses in America were implicated. In fact, at one time it was said to be impossible to obtain flour in America that had not been thus adulterated, and the fraud was only put an end to by the infliction of the most exemplary penalties. Rice and rye have also been repeatedly employed for this purpose, the quantity of

impurity introduced running up to 9 or 10 per cent. The seriousness of adulteration with talc demands immediate repression. Detection is almost impossible by untrained workers, and though there has been a considerable amount of exaggeration as regards the evil effects alleged to be produced on the consumer, the results are sufficiently serious. Its action on the stomach and intestines is similar to that of the bismuth subnitrate. By virtue of its extremely fine division and its insolubility, it forms a coating on the walls of the stomach and intestine, and, interfering with the action of the follicles of the stomach and intestines and the valvulae conniventes, is responsible for grave functional disorder. If the average weight of bread consumed by the individual is estimated at about 500 grams a day, the presence of a 5 or 6 per cent. impurity of talc is a serious menace to health.

A MEDICO-HISTORICAL EXHIBITION.

A HISTORICAL exhibition of medical and natural sciences was held at Leyden in the spring of the present year, and an account of it is given by Dr. Pergens in a recent number of the *Journal Médical de Bruxelles*. The exposition was organized by Professor van Leersum, and the catalogue which was drawn up by him and Drs. De Feyfer and Molhuysen consists of XX and 298 octavo pages with illustrations. The first part, edited by Dr. Molhuysen, deals with the documents exhibited in the library, which dates almost from the time of the foundation of the university (February 8th, 1575). Among its treasures are the library of Vulcanius, who died in 1614, consisting mainly of classical manuscripts and manuscripts of the sixth and ninth centuries, among which are 113 volumes on alchemy, which form the bulk of the wealth of Arabic manuscripts for which Leyden is famous. Among the manuscripts are courses of lectures by Albinus, Boerhaave, Camper, and Sandifort, and the original drawings used by Swammerdam and Levaillant. There are also the collections of natural plants made by Rauwolf (1573-76), brought together forty years after those of Lucas Ghini, who is said to be the inventor of herbaria. There is also one attributed to Boerhaave. De Feyfer contributes an introduction to the second part, which deals with the relations between science and the arts. It contains a number of portraits, painted or engraved, of celebrities, such as Boerhaave (1668-1738), Albinus (1653-1721), Bidloo (1649-1713), Forestus (1522-97), Nuck (1650-92), and others, all of whom taught at Leyden. This section also contains drawings, papyri, pharmacopoeias, and translations of Dutch works into Japanese before the opening up of Japan. The collection of medical instruments starts with some from ancient Egypt employed in mummification, such as knives of silex and bronze, and hooks for the withdrawal of the brain through the ethmoid and the nose, amulets, a statue of Chouser, God of Medicine at Thebes, another of Imhotep, architect and physician about 2950 B.C, who was afterwards deified. There are also reconstructions of the temples of Epidaurus, of statues and votive tablets of ancient Greece, instruments of the bronze period and the Roman period, some of which were found in Holland. One of the most interesting parts of this section is the collection of gynaecological and obstetrical apparatus, which comprises speculums of Rueff (1580), crochets of Paré, Soligen, Smellie, and others; perforators, starting from those used by Guillemeau, and forceps to the number of 169, arranged from the "spoons" used by Palfijn (1723), and pelvimeters. There was a remarkable collection of ophthalmoscopes described by Professor Snellen, jun., with syringes, old apparatus for narcosis, physiological instruments, mainly invented by Donders, and the artificial eye invented by Huygens. In the eighteenth century it appears that clysters of tobacco smoke were in common use. The anatomical preparations date from the seventeenth century. Among them were old dried parasites, intestines, and calculi, including the famous stone successfully removed from himself by the suprapubic operation by Janazoon De Doot, blacksmith of Amsterdam. The anatomical preparations of Albinus are especially beautiful. A special division, for which Dr. Kerbert wrote an introduction, was devoted to Linnaeus. The *Atlas* of van Stolk, containing seventy portfolios of engravings, plates, etc., deserves special mention. In it are illustrations of everything connected with medical science, documents concerning hospitals, souvenirs of famous jubilees and centenaries, and reproductions of pictures by Dutch artists dealing with medical subjects occupying 120 numbers. There was also a collection of medals and various relics, among them a ring of Leeuwenhoek, Boerhaave's cane, and the catalogue of his books. In an introductory address Professor Van Leersum stated that the first dissection of a human body in Holland is said to have been performed in 1550 on the body of a famous robber condemned to death. Dissecting rooms were established at Leyden in 1597, at Delft in 1617, afterwards at Utrecht, the Hague, Dortrecht, and in every important provincial city. The want of subjects led anatomists to seek for means of preserving bodies. The collection of dissections by Ruysch acquired for him a European reputation and large sums of money. Some of the specimens which have come down through Rau, Albinus, and others, are proofs of the skill of the old Dutch anatomists. The practical sense of the Dutch also showed itself in the establishment of clinical teaching. Students used to come from Hungary, Muscovy, Poland, Germany, Denmark, Sweden, Switzerland, Italy, France, England, and other countries to study under Sylvius, and there Boerhaave trained his pupils, among whom were Haller, Van Swieten, Pringle, Tronchin, and Ribeiro Sanchez, thus justifying the name applied to him of *medicorum universae Europae praeceptor*. The Dutch long had a great reputation for the manufacture of scientific apparatus. It is interesting to learn that Leeuwenhoek and Huygens themselves made their instruments with their own hands; but it is somewhat strange that no mention is made of Spinoza, who, while meditating on the problems of philosophy, earned his living by grinding lenses.

THE ORIGIN OF THE FACIAL NERVE.

IT is well known that in some cases of hemiplegia and in certain nervous diseases of central origin, such as glosso-labio-laryngeal paralysis, the muscles of the lower part of the face may be paralysed and atrophied, whilst those of the eyelids and upper part of the face may be intact, and this more particularly in the case of the upper fibres of the orbicularis palpebrarum. It has been stated, however, by many observers—Féré, Marinesco, and others—that in patients suffering from organic hemiplegia it can generally be shown that the muscles of the upper part of the face are more or less affected. Nevertheless, there are cases in which the muscles of the lower part of the face are paralysed and those of the upper part are healthy or are only slightly interfered with, and many English textbooks explain this condition by stating that some of the fibres of the facial nerve are not derived from the nucleus of the seventh but from the nucleus of the third cranial nerve, more especially those fibres which supply the upper part of the orbicularis palpebrarum. This explanation apparently depends in the first instance upon some experiments of Mendel, but it has received a considerable amount of support, and only last year Giannelli reported a case in which there had been facial paralysis of five years'

standing, and in which, after the death of the patient, he believed he was able to demonstrate degeneration in the posterior part of the nucleus of the third cranial nerve. On the other hand, as the result of experimental, clinical, and pathological observation, Van Gehuchten, Marinesco, Parhon, Minea, and others deny that the facial nerve receives any fibres from the nucleus of the third nerve. They are of opinion that the nucleus of the seventh nerve is separable into a number of sections which may be affected by disease, either individually or collectively, and they assert that the fibres of the facial nerve which supply the upper facial muscles spring from the dorsal part of the facial nucleus. This opinion has recently received very strong support from a case published by Parhon and Minea. In this case the upper fibres of the facial nerve had been destroyed by a tumour, and after the death of the patient they were able to demonstrate, by the Nissl method, the degeneration of the dorsal part of the nucleus of the seventh nerve, whilst the nucleus of the third nerve showed no signs of similar degeneration. Under these circumstances, the assertion so frequently made that total facial paralysis indicates a lesion situated peripheral to the internal genu of the nerve, and paralysis of the lower with more or less normal condition of the upper muscles, a more central lesion, must be received and acted upon with caution.

"IS THE DOCTOR A SHYLOCK?"

It has been suggested by Major Martin Hume that the original of Shylock was a Jewish physician of the time of Elizabeth. Even if there is any ground for the supposition, Shakespeare, in his portraitor caricature, whichever it may be taken to be, of the Jew, took no account of the profession of the supposed original. We are reminded of Major Martin Hume's suggestion by the title of an article in the current number of the *World's Work*, in which Mr. Edgar Allen Forbes discusses the question from the opposite standpoint, asking the question, "Is the "Doctor a Shylock?" Mr. Forbes, who seems to have been a medical book-keeper, has taken considerable pains to collect facts, and he gives a number of figures in support of his views. He thinks it hopeless to expect that patients and doctors will ever agree on the question of fees; their points of view are too widely different. If, he says, the doctor were to be paid for all, or even most, of the professional visits he makes, he could afford to cut his prices in two; but the ethics of his calling demand that he should respond to every ring of his bell, however hopeless the prospect of compensation. "The reputable physician who would demand financial "references before putting his finger on the patient's "pulse, is as rare as the steamboat captain who deserts "his passengers when the ship strikes on a rock—and "he shares the same odium. That he should not "patent nor conceal any new formula whose merits "he discovers; that he should give to his profession "the rights to all instruments he may invent or im-"prove; that he should leave his family or his bed "at any hour at the call of any man; that he "should risk his own life and that of his children "whenever an epidemic breaks out—all this and more "is accepted by the public as a matter of course. This "is a thankless task, and the only member of the com-"munity who realizes the extent of his public service "and the smallness of his recompense, is the doctor's "wife." In estimating the doctor's average income, Mr. Forbes distinguishes between the London specialist, the provincial specialist, the average successful practitioner, and the country doctor. As to London specialists we learn with surprise, mingled with incredulity, that "there are doubtless a number whose incomes range "from £15,000 to £20,000 a year." Again, we are informed that 200 guineas is the usual charge for an operation for appendicitis in the case of well-to-do people. We happen to know that the usual fee charged for this particular operation by one of the foremost surgeons of the day is 100 guineas, and we think it unlikely that surgeons even of the greatest reputation would ask for more, except in cases for one reason or another outside the ordinary run. It is an odd coincidence that Mr. Forbes should refer to a correspondence on the subject which he says was published a few months ago, apparently in this country, on the question of the fee for an operation for appendicitis, and that a correspondence of exactly the same nature should have been published some time ago in the American journals. From that correspondence it appears that the charges of American surgeons are on a much higher scale than among us, ranging as high as £1,000 or beyond that figure. This may be due to some exceptional prevalence of the disease in millionaire circles. In considering the provincial specialist and the average general practitioner, Mr. Forbes takes a provincial town with a population between 200,000 and 300,000. Of the surgeons, there are about a dozen whom their colleagues call "successful," making, perhaps, £5,000 a year, while among those whose annual incomes are less than £1,000 are the dozens of surgeons who have never risen above mediocrity and the younger men whose reputations are yet to be made. In the same town there are probably fifteen general practitioners whose yearly incomes average £1,600. To gain an income of this size, they do much more than ordinary day-and-night medical work. Most of them are also insurance examiners and physicians to institutions; many of them lecture to students, and spend many hours each week in clinics and laboratories. The figures collected by Mr. Forbes, including details of his own experience as a medical book-keeper, lead him to the following conclusions: (1) A very few physicians of pre-eminence have large incomes, and these are smaller than those of men pre-eminent in other lines; (2) something like 20 per cent. of physicians in the larger towns have handsome incomes, in return for expert work and much of it; (3) 80 per cent. of city physicians and most of the country doctors make little more than a decent living—many not even that; (4) The code of medical ethics (established by physicians themselves) is such that no class of the people need suffer for lack of medical attention because of inability to pay. Mr. Forbes has shown that in the field of medical practice the labourer is worthy of his hire, but he has also proved that the hire is in the large majority of cases not commensurate with the amount and value of the work done. He suggests no remedy. Nevertheless, we welcome this testimony from an intelligent and sympathetic outsider, who has had exceptional opportunities of learning the facts of the case, that, so far from being a Shylock, the doctor as a rule places the interest of his patient first and his own profit last. Can the same be said to anything like the same extent of any other profession?

MRS. EDDY RECOGNIZES DEATH.

It is announced that Mrs. Eddy has issued a new by-law to her disciples requiring them to call in a medical practitioner for the purpose of ascertaining and certifying the cause of death of members of their family. This action is said to be the outcome of the numerous prosecution of Christian Scientists which have lately taken place in various States of the Union. It may also be taken as an official recognition by the high priestess of Christian Science of the fact that death occurs, and that it is the result of material causes. When some one brought a composition of his own to Sir Thomas More, he returned it with the suggestion that it should be put into verse. When the author came back with his poem,

More said approvingly: "Marry, this is somewhat; this "is rhyme. But the other was neither rhyme nor "reason." In the same spirit we say that this new order of Mrs. Eddy's is "somewhat." It has a least a gleam of sense in it which is wanting in her book where death is said to be an illusion. Any belief in death, it is said, is false, for it contradicts the spiritual facts of Being. But alas! notwithstanding this ostrich-like attempt to hide the sad fact under meaningless words, Death may still say to us as he said to Dr. Hornbook,

> It's e'en a lang lang time indeed
> Sin' I began to nick the throat
> And choke the breath.
> Folk maun do something for their bread,
> An' sae maun Death.

Mrs. Eddy has tried to persuade her followers that this was all over, and that Christian Science, like Hornbook's physic, made Death's darts "just dirl on the "bane" but do no more. She would doubtless adhere to her teaching that "there is no reality in death." Nevertheless medical practitioners are to be asked not only to certify to an illusion but to ascertain its cause! It is to be hoped that few will be found to give their countenance to such a piece of transparent humbug. Let the profession leave the Christian Scientists to face the consequences of their own folly.

IN HONOUR OF ROBERT KOCH.

A MOVEMENT for the foundation of an institution which is to bear the name of Robert Koch is on foot in Germany, and a committee has been formed for the purpose of collecting money for the purpose. The chairman is Dr. von Studt, Prussian State Minister; the vice-president, Privy Councillor Althoff; the secretary, Professor Schwalbe, editor of the *Deutsche medizinische Wochenschrift;* the treasurer, Dr. Paul von Schwabach, General Consul, Berlin. Among the members are Dr. Bumm, President of the Imperial Health Bureau, Berlin; Count Henckel, Prince von Donnersmarck, member of the Prussian House of Lords; Professor Ehrlich, of Frankfort; Professor Fiedler, some time physician-in-ordinary to the King of Saxony; Dr. von Böttinger, member of the Prussian Chamber of Deputies; Dr. Förster, director of the Cultus-Ministerium, Berlin; Professor Bernhardt Fraenkel, of Berlin; Count von Posadowsky-Wehner; Chamberlain v.d. Knesebeck, Imperial Vice-Upper Master of Ceremonies; Surgeon-General Ilberg, physician to the Kaiser; the Bavarian Envoy in Berlin; the Ministers of the Interior of Saxony, Würtemberg, Baden, and Hesse; and the Surgeon-General of the Prussian army. The institution, which is to be applied to the furtherance of research in all directions for the discovery of means of checking the diffusion of tuberculosis, is intended to be a permanent memorial of the discovery of the tubercle bacillus by Professor Koch twenty-five years ago. Appeal is made for contributions sufficient to make the institution a tribute of gratitude to Koch, similar to those with which the name of Pasteur has been honoured in France and that of Lister in England. Contributions to the Fund should be addressed to the Treasurer, Dr. Paul von Schwabach, S. Bleichröder's Bank, 63, Behrenstrasse, Berlin.

THE CENTENARY OF THE GEOLOGICAL SOCIETY.

THE Geological Society of London is celebrating its centenary this week, and a large number of delegates, foreign members and correspondents, and foreign and Colonial guests are attending the ceremonies. On Thursday morning the President, Sir Archibald Geikie, held a reception, and subsequently delivered an address on the state of geology at the time of the foundation of the Geological Society. Among other addresses delivered was one by Dr. Michael C. Grabham, of Madeira, the representative of the Royal College of Physicians of London. Dr. Grabham pointed out that the College of Physicians, which had now entered upon the three hundred and eighty-ninth year of its corporate existence, took part in the foundation of the Geological Society, as it fostered the rising of the Royal Society a hundred and fifty years earlier. He added that ten of the principal officers of the society since its foundation had been trained in medical science, and that geology was advancing by methods similar to those which determined the advance of medicine. Geology was now not only a science but a profession with a department in the Government. The splendid work accomplished by the geological survey of Great Britain and Ireland, from which the Geological Society of London was inseparable, had become a perennial fountain of practical utility. Dr. Grabham then turned to discuss the future of geology, and observed that it might be assumed that steady progress would continue to be made on existing lines in every branch of present research, and that much would be added to our present scanty knowledge of the population of the earth during the Mesozoic epoch; whilst at any moment, some earlier and less-developed form of man himself than was yet possessed might come to light, or at least some knowledge of influences and associations, humanizing in tendency, during which man might have emerged and have become a living soul.

ALCOHOLISM.

ON September 24th there was opened in Munich an exhibition relating to alcoholism, which will not be closed till October 1st. The exhibition is under the auspices of the Munich Central Association for the Prevention of Alcoholism. It is an independent department of the permanent exhibition established for the benefit of the working classes in Charlottenburg, but supplemented by material gathered from Munich, among which a prominent feature is a series of tables drawn up by Professor Kraepelin and Dr. Gruber. The exhibition covers the whole province of the alcohol question in its hygienic, ethical, and economic aspects. The Committee of Working-class Hygiene and Statistics and the Health Association have arranged for the delivery of several addresses to medical men. The first of these was delivered by Professor Kraepelin on September 24th.

THE ROYAL SOCIETY OF MEDICINE.

THE first meeting of the Obstetrical and Gynaecological Section of the Royal Society of Medicine will be held on Thursday, October 10th, at 7.45 p.m. There will be some business connected with the formation of the Section, and the paper of the evening on the physiological action of the placenta, by Professor W. E. Dixon and Dr. F. E. Taylor, should be of much value. Future meetings of the Section will be held on the second Thursday in each month (except August and September) at 7.45 p.m. Additional meetings may be held from time to time, and they will be specially announced. We are informed by the Secretary of the Royal Society of Medicine that the Library of the Society will re-open for the use of Fellows and Members next Tuesday, October 1st. During the recess a considerable amount of work has been done; shelving for nearly 20,000 additional volumes has been provided, and the libraries of the Societies formed in the recent amalgamation have been brought together and conveniently arranged. A large portion of the premises hitherto let off to tenants has been taken over for the use of the Society, and changes made in the internal arrangement of the Library which will add considerably to its comfort and convenience.

Bristol.

Plurality of Hospital Appointments.

The question whether members of the medical institutions shall hold more than one appointment has, as already stated in the Journal, been raised by the Committees of the Royal Infirmary and General Hospital during the past few months, and has resulted in what promises to be a sharp conflict between the medical staff and the Committees. To make the matter quite clear it is necessary to go back to last spring, when four medical men were invited to act as Honorary Physicians and Honorary Surgeons to the Handel Cossham Memorial Hospital at Kingswood, an outlying district of Bristol. These four, all being members of one or other medical institution in the city, accepted the posts. The rules on dual appointments varied at each institution, and it is perhaps a strange thing that the one at which no rule existed has taken a line of action most distasteful to the medical profession. One of the medical men involved is senior physician to the Children's Hospital, where the rule clearly says that no member of the staff of that institution may hold a like appointment at another medical charity without permission of the Committee, and should he do so, his post becomes vacant. Acting on this rule, permission was sought and immediately granted; indeed, it could hardly have been refused, as several of the staff also acted at other medical charities. So far, the matter was settled. But one of the surgeons to the new hospital was also assistant surgeon at the General Hospital, where the rules disallow dual appointments without sanction, but the framers forgot to impose any penalty in the event of rules being disregarded. The gentleman, on application to the Committee, was refused permission, but took the law into his own hands and accepted the post. The Committee subsequently granted permission, the chief opponents leaving the room before the vote was taken. The two other medical men were attached to the Royal Infirmary, and here there were no rules limiting the holding of dual appointments, except those relating to contract practice, such as clubs or union appointments. These two were, therefore, in no way hampered by rules then existing, but the Committee, for some reason best known to itself, introduced a proposal to prevent any member of the staff taking another post without its sanction. The subsequent proceedings are best understood by following the letter published by the staff in the local papers on September 23rd, the day before the quarterly meeting of governors. This letter was published because an advertisement appeared in the papers saying an alteration of the rules was proposed, the new rule to read as follows:

Rule 36.—No member of the honorary staff shall hold any union or club appointment. No member of the full staff shall hold any other professional public appointment other than professorship or lectureship at any university, college, or school. No member of the assistant staff shall hold any other general hospital appointment nor more than one special hospital appointment. That the full physicians shall limit their practice to medical work. That the full surgeons shall limit their practice to surgical work. That each of the specialists shall limit his practice to his speciality.

From the above-mentioned letter—which is signed by every member of the consulting and acting staff—it appears that on April 17th a letter was written to the President taking exception to a proposal to debar the staff from holding outside appointments. This protest had no effect, for on June 19th a letter was received by the staff, asking them to approve of a proposed rule that no member of the staff should in future hold other appointments without permission of the Committee. To this the staff replied that it would be better to leave such decision to the Committee of Election (a special Committee). On July 1st the staff were informed that the Committee intended to proceed with the matter and replied suggesting the matter should be discussed between the two bodies as it was undesirable to leave the matter in the hands of the General Committee. They subsequently understood that the President was willing to accept a definite rule submitted to them in place of the first proposal of the Committee. The negotiations, however, fell through, and the staff in the letter clearly state their inability to accept the proposed alteration, protesting against the right of the Committee to regulate outside appointments held by members of the staff and quoting part of the article in the British Medical Journal of September 21st.

At the half-yearly meeting of Governors, held on September 24th, the new rules set out above were moved by Mr. Harry Thomas, who said that it had seemed advisable to the Committee some months ago that it should have discretion to grant permission to hold second appointments as the occasions arose. To this the medical faculty took exception, and therefore the alteration as advertised was now proposed. Mr. J. N. C. Pope, who seconded it, made the amazing statement that the Committee thought the resolution was acceptable to the staff. As the Chairman allowed no amendments, Mr. Munro Smith, Surgeon to the Infirmary, on behalf of the medical men affected, spoke strongly in opposition, declaring that they had a perfect right to spend their spare time as they chose. Dr. Shingleton Smith, Senior Physician, who also opposed the alterations, said that they were absolutely unnecessary and pernicious in their tendency; that they were opposed to the best interests of the medical profession, and likely to prove injurious to the welfare of the institution. Dr. James Swain said that the Committee doubtless desired to get the best staff possible, but would defeat that end by limiting possible applicants; at no other hospital in the kingdom were restrictions of such a nature imposed. Mr. Paul Bush, C.M.G., and Dr. Harrison also spoke in opposition to the proposed alteration. A division was taken, when the Committee's resolution was carried by 47 votes to 26.

Manchester and Salford.

The Midwives Act in 1906.

The annual report of the Midwives Supervising Committee for Manchester gives some valuable information as to the working of the Midwives Act during 1906. The total number of midwives practising in Manchester was 160, of whom 98 were certificated, the rest having been in practice before the Act came into force. Out of 18,397 births registered for the year, midwives attended at 11,129, though in some of these cases apparently in conjunction with doctors, the number attended by midwives alone without doctors not being given. The inspection of the midwives themselves, the sanitary condition of their homes and their bags of appliances seems to have been thorough. Their bags have been disinfected once a week, and the lining changed weekly or oftener if necessary; the necessity of taking the fullest antiseptic precautions has been diligently inculcated.

Medical men have been called to the assistance of midwives in accordance with rule in 1,255 cases. By far the commonest cause for summoning medical men is given as "tedious labour," 277 cases being thus classified. Next in order of frequency come "ruptured perineum" 124, "rise of temperature" 83, retained or adherent placenta 71, flooding or convulsions 70. In infants the commonest reason for calling in assistance is "illness from prematurity." We are told that the executive medical officer only visits cases to which medical men have been summoned when there is mention of symptoms of puerperal fever or in a few cases of inflammation of the eyes in the children. It appears that application for fees were made by medical practitioners in only 113 cases where they had been called in by the midwives; and out of these, 35 claims were rejected "as not fulfilling the conditions." The total sum paid in fees was £81 2s. No hint is given of the exact reasons for rejecting so many of the claims. Probably some were cases where the wage limit of the patients was exceeded. In some cases we know difficulties were raised because a practitioner objected to filling in the absurdly long and intricate certificate that the authorities have imposed on medical men in cases of suspected puerperal fever. Other claims for attendance at breech presentations were rejected, because the patient was not a primipara. This is strictly according to the rule, which only orders medical aid to be summoned in breech presentation in primiparae

By far the commonest cause of death of the child in the intranatal period was "delayed after-coming head," which caused over twice as many deaths as anything else named, and every one will agree with the report when it says that the proportion is far too high under this heading. May it not be the fact that midwives are afraid of calling in aid in breech presentations except in primiparae owing to the terms of the rule?

PUERPERAL FEVER IN MANCHESTER.

From the same report we get some important statistics about puerperal fever. It is necessary to note that under this term are included:

All cases in which within seven days after the birth of a child the mother shall have a rise of temperature exceeding 100.4° F., with quick pulse, maintained for a period exceeding twenty-four hours, without any obvious cause other than the puerperal state. It shall also include all cases in which, within seven days after the birth of a child, there has been the occurrence of rigor, with attendant illness without any obvious cause other than the puerperal state.

During the year 103 cases were notified, against 82 in the previous year, and it is stated that the case mortality shows that the increase is not the result of any increase of notification. Of the 103 cases 30 died, being a mortality of 29.1 per cent. of the cases. The mortality of 50 cases treated at Monsall Fever Hospital was 26 per cent., of 43 cases treated at home it was 25.6 per cent., while of 10 cases treated at "other institutions" not named the mortality was 60 per cent. Some explanation of this last very high percentage ought to have been given. Treatment at Monsall was almost universally operative; in all but 8 cases the uterus was curetted, while in all but 2 cases either curettage or some other operation was performed. It is practically certain that far less operative interference takes place in home treatment, and yet the results of home treatment are slightly the better. It may be that only the worst cases go to Monsall, and it is, in fact, stated that the milder varieties are not seen at Monsall, so that perhaps the comparison is hardly fair. At any rate, routine operation is not proved by the report to be the best. It is repeatedly stated that routine douching by midwives after confinements is discouraged. We learn that midwives had attended alone 32 confinements which were followed by puerperal fever, and in 2 cases only had the patient been douched before symptoms of illness occurred, so that there is very little ground for suggesting, as is done, that vaginal douching may be a causal factor in midwives' cases. Of the total 103 cases, douching before the onset of the illness was definitely recorded in 16 cases; in 71 cases the douche had not been used at all, while in the remainder there was no record. Of course, these figures prove nothing, except perhaps that douching is certainly not a common cause. It would be absurd to argue that it was the cause in all or even any of the 16 cases where it was used. It is quite right to inculcate the greatest care and the use of proper instruments, but it is very doubtful whether it is wise to completely discourage douching by midwives after confinements. It might even be argued with some show of truth that the great increase of puerperal fever in 1906 was to some extent due to the increasing neglect of antiseptic douching both by medical men and midwives.

There is a further tacit assumption in the report that may be objected to as not warranted by the facts, namely, that the blame for the occurrence of puerperal fever rests with the attendant. We learn that at Monsall the "doctors' cases" numbered 28 and the "midwives' cases" 16, and we read that "it does not follow that in all cases where a doctor was in attendance he was responsible for the infection, for in many of these a nurse of some sort or other was present too"; and in other cases "the doctor must be held blameless, except perhaps in so far as his responsibility for the acts of the nurse goes." The implication, of course, is that either the doctor or the nurse is to blame when puerperal fever occurs. This is no more correct than it would be to say that a surgeon is always to blame if suppuration occurs in a wound that he has treated, and in view of the fact that legal actions for damages have occurred in such cases it is important not to let the implication go without challenge.

The report gives some further interesting particulars about puerperal fever. The incubation period of puerperal sepsis is said not to exceed 48 hours. In 29 out of 50 cases at Monsall Hospital streptococci were found in the contents of the uterus, and in 5 of these cases the *Bacillus coli communis* was also present; in 2 cases gonococci alone and in 1 case staphylococci alone were found. In 64 out of the 103 the illness began on or before the fourth day, and in 96 before the eighth day. Of the 30 fatal cases, 9 died within a week of confinement, and 11 died in the second week. The average number of cases per 1,000 births was 5.6; the worst district had over 14 per 1,000, while the best had only 1.1 per 1,000. Fifty-seven cases followed normal labour, 38 followed abnormal labour (forceps, adherent placenta, etc.), while 8 were after abortion. Perineal tear was said to be present in 25 cases. By far the greatest number, 34, were primiparae, the liability lessening in multiparae. Numerous other details are given which show the great care expended on the report.

NOTIFICATION OF STILLBIRTHS.

In view of the passing of the Notification of Births Bill, some observations in the above-named report are of special interest. Attention is drawn to the fact that there is a great discrepancy between the number of stillbirths registered at the cemeteries and the number actually notified. The total number of which there is any return was 789, and of these 449 occurred in the practice of doctors, and 340 in the practice of midwives. The cemeteries' returns only give a total of 658, of these 449 being doctors' cases and 209 midwives' cases. But in addition to these 209 midwives' cases the Corporation have midwives' notifications of another 131. Thus it is evident that the cemeteries' returns are incomplete, and that burials must take place in cemeteries for which there is no return. The number 789 is plainly not reliable, and it is calculated that the actual number of stillbirths occurring annually in Manchester is close upon 1,000. One would like to know, however, what is meant by a stillbirth in the report. According to the rules of the Central Midwives Board:

"A child is deemed to be stillborn when it has not breathed or shown any sign of life after being completely born," and all such cases a midwife has to notify.

But this takes no note of the intrauterine age, and the question arises, Is a fetus, born before a viable age, or even before the fourth month, to be regarded as a stillbirth? If so, it is quite certain that many such are never notified at all and appear in no returns. The Medical Officer of Health says: "It is highly desirable that all abortions and premature births should be notified," and it is plain that the Notification of Births Act will be of no use in getting notification of abortions, for it only applies to children "that have issued from the mother after the completion of the twenty-eighth week of pregnancy." There can be no doubt that the procuring of abortion by means of drugs is extremely common in Manchester and Salford. Pills, roughly made from emplastrum plumbi by rolling in the fingers, are used in large quantities, being sold by old hags in back streets for fabulous prices, every possible precaution being taken both by buyer and seller to keep the sale secret. Abortions are also kept secret, very often neither doctor nor midwife being summoned. Only if haemorrhage continues excessive is a medical man called in, and even then any question which would seem to point to suspicion of miscarriage is answered by untruths, and the essential facts are so suppressed that it is often difficult to be sure that anything more than excessive menstruation has happened. Moreover, in cases of natural abortion, where there is no suspicion of anything criminal, there is often a great objection to publicity. Thus, it is plain that statistics of abortions will never be of any value, whatever legislation may be passed, as a very large proportion will never be notified and never discovered. Something more in the nature of detective police work is needed, but would be attended by innumerable difficulties. At the same time, every one must sympathize with the feelings which prompt the desire of the Medical Officer of Health "that provision should be made for educated counsel to those mothers who may stand in need of it." One only wonders if that means extra Corporation officials and still further interference wite private practitioners, who are the most competent to deal with such cases.

Liverpool.

Annual Report of Medical Officer of Health.

The report of the Medical Officer of Health for 1906 follows the usual lines, but the preface, which in former years has set forth the points of special interest in a condensed form, has been reduced to a single page, so that the reader has little or no help in discovering the special features of the year's work.

Infantile Mortality.

The year was characterized by an increase in the infant mortality consequent on the prevalence of measles in the early part of the year, and of infantile diarrhoea which followed upon the excessive heat during the early part of September.

Insanitary Property.

The report contains a brief survey of the origin of the immense amount of insanitary property with which Liverpool has been encumbered, as well as the means taken to deal with it. For many years the city has been slowly ridding itself of dwelling-houses constructed and planned in a manner very inimical to health, and favourable to demoralization and disease. The mischief began at an early date, and increased during the phenomenal development of the first half of the nineteenth century, when no knowledge of sanitary science, no public opinion, and no parliamentary powers were available to stop it. In a history of Liverpool published in 1773 the following passage occurs:

> The first observation which a stranger makes upon his arrival in Liverpool is generally that the streets are much too narrow either for convenience or health.

The writer added that the inhabitants, upwards of 30,000, lived more closely crowded together than in most other towns. In 1784, Dr. Moss, one of Liverpool's earliest medical writers, called attention very pointedly to difficulties which might arise on account of the manner in which the buildings of the town were being erected. He stated that the houses were much too crowded together and complained of the narrowness of the streets which were being laid out, and suggested that the expense of widening some of the congested streets and removing obstacles to the free circulation of air would be met by the increased value of the new fronts on the improved streets. There is, however, no reason to think that Dr. Moss's advice had any effect. The structural evils accumulated without check until 1842. Every green space or backyard of the districts occupied by the working classes had houses put upon it, whilst the court houses erected for the labourers were, owing to the high value of land in these districts, the desire on the part of builders and landlords to secure the most profitable investment, and the total ignorance or neglect of hygienic principles, constructed with absolute inattention to the most elementary needs. Consequently the report of the Royal Commission which sat in 1841-2 to inquire into the state of large towns and populous places showed that, with a population of 240,000, the housing problem in Liverpool was more complex than in any other great city. Acts of Parliament to meet the conditions existing were passed in 1842 and in 1846. The latter Act dwelt especially with the closing of cellar dwellings; but it was not till 1854 that a real check was put on the construction of courts of a most vicious description. In the meantime two things had occurred; one was that this legislation had been anticipated by builders, who seized the opportunity to erect thousands more of the worst type of court houses; the other matter, equally calamitous, was the failure of the potato crop in Ireland, which had the effect of bringing thousands of destitute persons to Liverpool; some 80,000 of them were claimants for the worse class of cellars and courts. After 1854 the difficulty was the removal of the existing burden of insanitary property. The Liverpool Sanitary Amendment Act of 1864 dealt mainly with past mischief, and under it the great bulk of the work of demolition, as effected by the Corporation, has been carried out. This Act requires the medical officer of health to report upon houses in courts and alleys and on unhealthy premises, and empowers the Corporation to take steps for their demolition. Altogether there have been 18 presentments of insanitary property under this Act. In 1864 there were 22,000 houses "structurally insanitary"—that is, without through ventilation—situated in narrow courts, and without suitable sanitary offices. In 1883, 15,000 such houses still remained, and in that year a special committee called the Insanitary Property Committee was appointed to deal with the subject. The President, the late Sir A. B. Forwood, estimated the cost of dealing with the whole of the property at £750,000, while to provide accommodation for two-thirds of those dispossessed a further sum of £600,000 would be required, a total of close on one million and a half. The loss on rental he estimated would leave a loss to the Corporation of only a fraction over one penny in the £ on the rates, a loss which would be more apparent than real, as the gain in health would mean reduced poverty, less drunkenness, and better labour. In 1900, the name of the Insanitary Property Committee was changed to that of the Housing Committee, to emphasize the need for rebuilding as well as pulling down. Under the Housing of the Working Classes Act of 1890, extensive areas have been acquired, and workmen's dwellings have been erected thereon; but one great obstacle is the enormous cost of acquiring premises licensed for the sale of intoxicating drinks. Financially these workmen's dwellings yield a profit; the rents yield £16,600, while their upkeep costs £7,800. The profit, about £9,000, does not, however, cover the cost of compensation and demolition, and the impost on the rates from this cause now reaches nearly 2½d. in the £. Since the passing of the Act of 1864 the amount of money spent by the Corporation in demolishing insanitary property, acquiring sites, and erecting new dwellings for the working classes exceeds £900,000, of which sum more than half has been expended since 1895. These dwellings are only let to persons displaced from insanitary dwellings. The conditions of their tenancy are that they pay the rent and remain sober. Apart from municipal effort, extensive insanitary areas have been removed by private enterprise, especially during the construction of railways.

West Yorkshire.

The Health of Bradford.

The report of the medical officer of health for Bradford (Dr. W. Arnold Evans) for the year 1906 issued recently is of great interest to every one residing in that city. It shows the active and progressive spirit prevalent in this department, and its effect on the wellbeing of the inhabitants. It is impossible to discuss the numberless questions raised in it, and only a few of Dr. Evans's conclusions can be summarized. The births and deaths rates are calculated on the Registrar-General's estimate of the population at midsummer, 1906, which was 288,544. The birth-rate of 20.58 is the lowest recorded in Bradford. If reckoned upon the total female population between the ages of 15 and 45, the result is still less favourable, there being a decrease of 8.3 per 1,000 on the mean rate for the three years 1900 to 1902. The death-rate was 16.0, being an increase of 0.87 on the rate for the previous year. Infantile mortality amounted to 152 per 1,000, being heaviest in the few days following birth, and gradually becoming lighter towards the close of the year. Diphtheria was very prevalent, 480 cases occurring, although of a milder type than formerly. There was less anthrax than in 1905, there being only 11 cases with 4 deaths. All the cases of anthrax occurred in persons engaged in the manipulation of dangerous wools with one exception, that of a butcher, who was infected whilst slaughtering an ox suspected to be suffering from the disease. Cases of cancer and malignant growths increased from 254 in 1905 to 284 in 1906. A great deal of attention was paid to the purity of the foodstuffs sold in the city, and milk dealers and others were warned against the use of chemical preservatives. Bacteriological and chemical examinations made of several brands of canned meats showed that they were all sterile and free from impurity. The number of houses now provided with water-closets is 33,329 as compared with 9,006 in the year 1898. This is a great advance, as any one who knew the conditions prevalent in Bradford prior to that period can well realize. One item of intelligence in the

report is distinctly open to criticism. Why is it that a woman inspector was allowed to give lectures on "midwifery" to the midwives of the city? Surely this is more the function of the registered medical practitioner?

THE FEES OF PUBLIC VACCINATORS.

A considerable number of Boards of Guardians in the West Riding appears to be making determined efforts to reduce the fees paid to their public vaccinators. This is of course a result of the recent Order of the Local Government Board on the subject. The fees paid have not been nearly so remunerative as has been imagined. The enormous amount of work done by public vaccinators during recent years has hardly been taken into account. The domiciliary visit and the after-treatment of the cases vaccinated has necessarily increased the cost. We are glad to note that the Bradford Board of Guardians has acted in a more just and dignified manner than some other Boards. It has recognized that the fees it has paid (1s. for notification from the vaccination officer and 5s. for the vaccination) are just and reasonable, and proposes to continue them. The only change to be made is that when two cases are vaccinated in one house at the same time the fee for the second case is to be only 1s. We commend these reasonable proposals to other Boards of Guardians in the West Riding, especially to that of Halifax, where attempts are being made to lower the fees to such a rate as to make them quite inadequate.

Staffordshire.

SICK CHILDREN AT STOKE WORKHOUSE.

AT the meeting of the Stoke guardians last week a prolonged discussion took place on the unsatisfactory nature of the provisions made for sick children. A report was received from Dr. J. M. Longford, resident medical officer at the workhouse hospital, in which he stated that he had written many reports to the guardians on the subject; in one of these he had mentioned that there were in several instances two and even three children in the same bed; there was no isolation ward, so that children with one disease became infected with another, and those admitted with slight general ailments also became infected, rendering a prolonged stay in hospital necessary. As the children's ward was inadequate to receive all those admitted, children had to be distributed through the general wards, where they learnt nothing but evil; he had to reprimand little girls who, like parrots, repeated the obscene words learnt from prostitutes and the like in whose company they had to dwell. This year special difficulties had arisen, owing to epidemics of chicken-pox and whooping-cough. The report proceeded:

The guardians very rightly have decided to build a nursery for healthy children under 5 years of age, but the urgency for such a building is not so pressing as that of increased accommodation for sick children. At present there are 55 children in the hospital, scattered among the adults, while there are only 23 in the house nursery. There have been 70 children in the hospital, but never more than 31 in the nursery. The nursery children, though their sleeping accommodation is wretched, can live out all day and go for drives in the donkey cart, whereas the sick children may have to live for months and months in a vitiated physical and moral atmosphere, within four dirty walls.

In the hospital there is only one children's ward, containing 16 beds. At present this ward is overcrowded, containing 23 children, though otherwise quite clean. The remaining 32 children are scattered among the adult patients or in day-rooms, where of course there are no lavatory conveniences. It is very questionable whether it would not be just as well to leave children in the squalor of the slums rather than transfer them to the Stoke Union Hospital under the present paralysing condition of affairs.

I suggest as a remedy that a new midwifery block be built, and that the present midwifery ward be transferred into a children's ward. The midwifery cases, at present, are in dangerous proximity to other cases, and while they are so the Central Midwives Board will never recognize the hospital as a training school for nurses. It would also be necessary to provide complete lavatory fittings for the day-rooms in hospitals 3 and 4, now used by children.

In the discussion some guardians urged that instead of building a nursery block it would be better to establish a receiving home or observation house at the Cottage Homes. The medical officer's report was referred to the Cottage Homes Committee, and the question of a site for the proposed nursery block to the Building and Estates Committee. It is clear from the report of the resident medical officer that the position is one which calls for immediate action in the interests of the moral as well as the physical welfare of the children.

Wales.

CARDIFF WORKHOUSE AND THE ISOLATION OF CONSUMPTIVES.

THE Subcommittee appointed to consider the arrangements in Cardiff Workhouse for isolation of consumptive patients and the accommodation for delirious patients has reported to the Visiting Committee that it appeared from the medical officer's statements that the male consumptive patients were at present isolated, but (apart from the temporary stress occasioned through the outbreak of measles and whooping-cough) there was no suitable accommodation for female consumptive patients, and that generally the need of additional and improved accommodation for sick cases had become one of serious urgency. It was also clear, as had been sufficiently shown during past years, that the accommodation for ordinary inmates was too limited to afford any assistance to the hospital, being itself unequal to the strain which regularly fell on the institution each winter. At the present time the choice appeared to be between accommodating in the general hospital wards mothers with babies, who necessarily disturbed the rest of the other inmates, or consumptive patients, who were a source of infection; and as the lesser of two evils the Subcommittee recommended the former course as a temporary provision, so that the ward now used for mothers and babies might be available for female consumptives until some satisfactory arrangement was made. The Committee was unable to suggest any method by which delirious patients could be isolated. A Hospital Committee, consisting of nine members, was appointed.

MORTUARY FOR PONTYPRIDD.

At the meeting of the Pontypridd Urban District Council Dr. Howard Davies, M.O.H., again called attention to the urgent need of a mortuary, remarking that when the recent accident occurred on the Barry Railway there was no available place to receive the mutilated remains. The Health Committee was instructed to negotiate for a site.

PONTYPOOL EPIDEMIC.

The report of Dr. Johnson, who was appointed by the Local Government Board to inquire into the causes of the typhoid epidemic which occurred at Pontypool and surrounding districts last year, has been issued. Dr. Johnson states that there can be little doubt that enteric fever was spread in Pontypool by the polluted water from the gasworks well. In Panteg a few houses were no doubt infected by local supplies of polluted water, and personal infection also played a considerable part in the outbreak, the home conditions at Pontypool, and in a lesser degree at Abersychan, being such that little attempt could be made at isolation of the sick. In regard to the water supply of the district, Dr. Johnson reports that in dry weather the supply was perforce intermittent. In some of the higher parts of the district filtration was almost completely absent, although by the provisions of the Act under which the water company worked all the water should be effectually filtered before passing into the pipes for distribution. Filtration was only attempted on a small scale, and the bulk of the water delivered to the consumers was unfiltered. As to Pontypool, Dr. Johnson says there was considerable crowding of houses upon a given area, and many dwellings were without through ventilation, having been built against banks. Many dwellings were old and dilapidated; the rooms were small, roofs low, and the walls bad. Yards or gardens were limited, and entirely absent in a large part of the town.

CARDIFF AND COUNTY HEALTH LABORATORY.

At the quarterly meeting of the Committee of the Cardiff and County Public Health Laboratory, held at the County Offices, Cardiff, on September 6th, it was reported that 495 specimens, etc., were received and examined during the quarter ended June 30th—waters, 109; sewages, 28; morbid specimens, 358—as compared with a

total of 553 during the quarter ended June 30th, 1906. The County Medical Officer had submitted several samples of material from animals suspected of anthrax; 8 out of the 10 samples were found to be anthrax.

Scotland.

Resignation of Dr. Rutherford of the Crichton Royal Institution.

It is with regret that we learn that Dr. James Rutherford, the gifted Medical Superintendent of the Crichton Royal Institution, Dumfries, has, on account of failing health, tendered his resignation. For nearly twenty-five years he has held that office, and the institution has prospered greatly under his charge. The eldest son of the Rev. A. C. Rutherford, then of Falkirk, where he was born in 1840, he was educated in St. Andrews and Edinburgh, where he graduated in 1863. After graduation he spent a year on the Continent, studying medicine in Berlin and Vienna. As a fruit of this foreign study, he on his return home translated, jointly with Dr. Lockhart Robertson, *Griesinger on Mental Diseases* for the New Sydenham Society, which was published in 1867. He was House-Physician in the Royal Infirmary of Edinburgh, having charge of Dr. Rutherford Haldane's wards, and in 1866 he became a Fellow of the Royal College of Physicians of Edinburgh, with a view to practising his profession in that city; but in 1867, as a result of the publication of the translation of Griesinger's work, he was offered the post of assistant to Mr. Green, of the Birmingham Asylum, which he accepted. In 1870 he succeeded the late Dr. Sibbald as Medical Superintendent of the Argyle and Bute Asylum. Four years afterwards he obtained the superintendentship of the great asylum at Lenzie. There he made his reputation as a first-class asylum physician and a good administrator. He carried out many reforms in the treatment of the insane in the direction of more full employment and greater freedom to his patients. With a view to this, the asylum grounds were extended to over 500 acres. There were no airing courts and no locked doors. These reforms attracted much attention, both in this country and on the Continent. He received many honours from foreign countries, having been elected an honorary member of the Psychological Societies of France, Belgium, Italy, and America. He has more than once been asked to become President of the Medico-Psychological Association of Great Britain and Ireland, but this honour he has always declined. In 1883 he became Superintendent of the Crichton Royal Institution, whose bounds he has extended and whose reputation he has advanced. The handsome memorial church erected at a cost of over £30,000 in memory of the founder, and opened in the Queen's jubilee year, owes its inception and carrying out to his energy. The pauper patients have recently been removed from the neighbourhood of the institution, and have been placed in a segregate asylum in the grounds (which extend to over 800 acres) at a cost of over £60,000, and the country house of Friar's Carse, formerly the property of Mr. Crichton, the founder, has been purchased for £22,000. These are a few of the recent improvements which have been carried out under Dr. Rutherford's superintendence. He leaves the institution in a high state of prosperity, and we hope that the evening of his life may be a long and happy one.

Ireland.

Queen's College, Belfast.

Opening of the New Laboratories.

The new laboratories of the College were opened on September 20th; much regret was felt when Lord Kelvin intimated that, owing to the illness of Lady Kelvin, it would be impossible for him to be present and perform the opening ceremony; the Chairman of the Better Equipment Fund, Sir Otto Jaffe, took his place. Mr. James Thomson, nephew of Lord Kelvin, read the address which Lord Kelvin had prepared; in it he pointed out that it was the first time that so many new laboratories had been opened on the same day; he wished all prosperity and success to the College in its undertaking.

After the formal opening the visitors were entertained at a garden party, and the laboratories were thrown open for inspection, and numerous experiments of a popular nature performed. The original apparatus used by the late Dr. Thomas Andrews, F.R.S., when working out his discovery of the continuity of liquid and gaseous conditions of matter, were shown.

The laboratories are: The "Donald Currie" or chemical; "The Musgrave" or pathological; "The Jaffe" or physiological; "The Harland" or physics and engineering; the biological; and the pharmaceutical.

New Zealand.

Presidential Address to the New Zealand Branch.

At the annual meeting of the New Zealand Branch of the British Medical Association, held not long ago, the President, Dr. L. E. Barnett, delivered an address, in which he said the duly qualified physicians and surgeons at present on the New Zealand *Register* and actually practising in the Colony numbered roughly 600. The population of New Zealand is in round numbers 960,000; the proportion of doctors to population is therefore about 1 in 1,600. By a recent Act of Parliament the portals of registration in New Zealand have been narrowed, so that no one can now gain admission who has not obtained the diploma of a school giving a complete medical education. In the present state of the law, however, there is no protection either for the public or the profession against men who have had no proper medical education, and who have no genuine diploma or only diplomas granted "for financial consideration by some irresponsible body of charlatans or pseudo charlatans." According to Dr. Barnett, the names of unqualified unregistered individuals are printed on the telephone subscribers' list among the doctors. The Council of the New Zealand Branch recently called the attention of the authorities to this impropriety, but the Postmaster-General replied that he was not prepared to exclude the names of unregistered men from the telephone list of medical practitioners. Subsequently, in response to another request made by the Council of the New Zealand Medical Association to the Minister of Justice, a reply was received that steps would be taken to prevent the payment in future of claims made by unregistered practitioners for attendance at inquests. Self-styled doctors are not very numerous in New Zealand, but of the ordinary quacks who do not assume the title of doctor the name is legion. Of the 600 qualified men, 100 have been educated at the Otago Medical School, and hold the diploma of the New Zealand University, with, in most instances, English, Scottish, or Irish qualifications superadded. The Otago Medical School has been sending up candidates for medical diplomas for twenty years; Dr. Christie, formerly of Tokomairiro, and now of Bristol, England, who qualified as M.B., B.Ch., in 1887, was the first medical graduate of the New Zealand University. Since then 107 have obtained medical diplomas, and a great majority of these are now in successful practice in the towns and country districts of New Zealand. In addition to those who have completed their curriculum at the Dunedin School, there is a considerably greater number who, after having been partly educated there, have completed their course in Great Britain and returned to New Zealand to practise.

The relations between the medical profession and ordinary private patients are in general satisfactory. Large numbers of the industrial community, and not a few of the well-to-do, belong to friendly societies. It was hoped that some at least of the questions at issue between the doctors and the friendly societies would have been settled at a conference arranged to be held during the meeting. Unfortunately, the conference fell through owing to the failure of the societies, for a second time, to appoint delegates. Referring to hospitals, the President said that, with rare exceptions, the honorary medical staff had no share in their management. It was generally understood that the scheme of hospital control was to be the subject of parliamentary revision in the near future. Private hospitals had now to be registered, and were subject to Government inspection. Nurses and midwives had to undergo a thorough training and pass State examinations before

getting certificates. The Public Health Department' admirably organized by Dr. J. M. Mason, and with a Cabinet Minister at its head, supplied a medical service of the highest value. Plague and small-pox were kept at bay; war was energetically waged against tuberculosis, typhoid and diphtheria were tracked to their sources, sanatoriums and hospitals for infectious diseases were being established in various parts of the Colony, though not so rapidly as could be wished; the milk and other food supplies were supervised, and arrangements were being made for the periodical medical inspection of school children. Hydatid disease, whether in man or in animals, did not receive the consideration which it deserved, either from the Public Health Department or from the veterinary officials. The disease was not even notifiable. In New Zealand for the ten years ending December, 1905, there were 1,141 cases of hydatid disease in man, with 136 deaths, a mortality-rate of about 12 per cent. The provincial statistics further showed that in Otago the disease was far more prevalent than in any other part of the Colony. For the five years ending 1900, there were 426 cases in New Zealand, and for the five years ending 1905 there were 715 cases, showing an alarming rate of increase. Of these 715 cases, however, only 65 were fatal, showing a marked drop in the mortality-rate, which the President attributed to modern methods of treatment. With regard to the prevalence of the disease in animals, he said that of the fully grown carcasses slaughtered and medically passed as fit for human food, more than 50 per cent. were affected with hydatid disease.

After stating that the membership of the Branch now numbered 361, Dr. Barnett concluded:

Personally, as a New Zealander born and bred, I feel proud to belong to the medical profession in New Zealand—proud of the status of this Association, proud to think that, in addition to a climate of unrivalled salubrity, there may be another factor—namely, the influence of our medical service—responsible in some degree for the remarkable lowness of the death-rate in New Zealand—9.27 per 1,000—the lowest death-rate in the civilized world.

Cape Colony.

Amendment of the Medical Act, 1907.

According to the *South African Medical Record*, the East London Division of the British Medical Association has addressed a strong representation to the Premier, the Members of Parliament for the Division, and the Colonial Medical Council, on the necessity of introducing legislation to amend the present ridiculous and irksome provisions of the Cape Medical Act, which require the production, at a cost of 7s. 6d. and of considerable delay, of a certificate under the hand of the Under Colonial Secretary, as proof of status, every time a medical practitioner goes into a court of law.

The Transvaal.

Contagious Disease among Natives.

The prevalence of syphilis and other venereal diseases among the natives of the Transvaal has become so great as to constitute a serious menace to the community. Recognizing this fact, the Government last October appointed a Commission, consisting of Sir Godfrey T. Lagden, K.C.M.G., and Drs. Charles Porter and George Turner, to investigate the matter, the terms of reference being to consider and report to what extent contagious diseases are prevalent amongst the native population in the Transvaal, and to submit a definite scheme for the treatment of such diseases suitable to the conditions of life of the population.

The Commissioners report that soft chancre and gonorrhoea exist to a very large extent among the natives in all parts. Syphilis appears to have been introduced as recently as 1881 by a native returning from the mines at Kimberley, and has spread widely. Its incidence, however, is very variable, as in some districts it is hardly known, while in others the people are affected to the extent of 80 per cent. The spread of the disease is believed to have been assisted by the use of infected knives in the rite of circumcision, and by the custom of the natives of inoculating the parents with each other's blood after the birth of a child. It has also in several cases been communicated to white children by infected native nurses. One source of difficulty in dealing with the disease is that the primary symptoms are so slight in the natives, and the latter have such a disinclination to seek advice that the disease is almost always in the late secondary or tertiary stage when it comes under notice. The Commissioners recommend that the labour districts, as centres of infection, be placed under a special Contagious Diseases Act similar to that in force in the Cape Colony; that a large hospital be established in the neighbourhood of Johannesburg, with stations in the country districts; that all natives be examined for syphilis, etc., at the Pass Offices, as is already done in connexion with vaccination; and that district surgeons be supplied with potassium iodide for free distribution, and be paid a monthly sum for the treatment of all pauper syphilitics. It is also suggested that natives other than certified paupers should pay a sum of from 10s. to £1 for the entire treatment of the case. This seems an extremely inadaquate fee, even where drugs are supplied. If the conditions of the natives are such that they can only make such a nominal payment, it is surely the duty of the State to see that the medical men on whom the duty of treating these cases is imposed shall receive reasonable remuneration for their work. In any case, it is to be hoped that the report of this Commission will lead to prompt and practical legislation, as a continuance of the present condition of things would be a serious discredit to British rule in the Transvaal.

Egypt.

Insanity and the Insane Asylum.

There is no more interesting study than that of comparative lunacy. The relative incidence of insanity and the different clinical types encountered amongst different nations and races are of the utmost importance, and although the information given in the annual reports of asylums is largely statistical, the results of scientific investigation being published in special journals, it is, nevertheless, if collated from sufficiently wide areas, of great value. For this reason it is always satisfactory to receive the annual reports of the medical superintendents of foreign asylums. We have recently received an interesting report from Dr. John Warnock, the Director of the Egyptian Government Hospital for the Insane, Abbasia, which receives both ordinary and criminal lunatics. It contained on January 1st, 1906, a total number of 663 inmates, which had risen to 750 by the last day of the year; for some time there has been great overcrowding, the number of beds having been raised only in October, 1906, from 520 to 640, yet leaving an excess of patients over provided accommodation of 110. The old Egyptian Army Hospital Buildings have been altered and renovated, and will accommodate 172 patients, but at the present rate of admissions Dr. Warnock calculates that by the year 1910 there will again be an excess of between 300 and 400 patients. It is, therefore, proposed to erect a new asylum at Khanka which will take the convalescent and quieter chronic male cases from Abbasia as well as male working patients of every kind.

During the year 563 cases were admitted, of whom 414 were first admissions; of these, 67 were admitted charged with offences against the law, in 21 cases either murder or attempted murder; 6 were found to be sane and were returned to prison for trial, and 2 were still under observation at the end of the year. At the time of Dr. Warnock's report, there were in residence at Abbasia 138 accused or convicted lunatics, and also 88 at Tourah Prison Asylum, giving a total of 226 of these cases. Out of 59 criminal lunatics in which the forms of insanity were tabulated, we note that 17 were cases of pellagrous insanity, and that the crimes with which they were charged were—in 6 theft, in 3 assault, in 2 arson, in 2 murder, in 1 attempted murder, and in 1 each vagrancy, mutilating a donkey and destroying cotton plants, a list of offences which does not accord with the usual opinion that the form of mental disturbance in pellagra is melancholia, usually suicidal in type.

Returning to the total admissions, 403 were Mohammedans, 113 Christians, and 8 Jews, the greater number (377)

being Egyptian Mohammedans. In no less than 124, or over 23 per cent. of the admissions, the patients suffered from pellagrous insanity, in 63 from insanity due to hasheesh, in 33 from general paralysis, in 91 from mania, in 34 from melancholia, in 42 from chronic mania and dementia, in 15 from epileptic insanity, in 24 from adolescent insanity, in 20 from senile insanity, in 10 from paranoia, and there were 28 cases of congenital or infantile defect. The classification adopted above gives some of the more important causes of insanity among the admissions, but it may be mentioned that the Deputy-Director, Dr. Dudgeon, found that out of 182 cases admitted from maize-eating districts, 172 were suffering from pellagra. Dr. Dudgeon also reported that "of the 33 patients admitted suffering from general paralysis, all but 1 man and 1 woman (a prostitute) had signs or histories of previous syphilitic infection; and 23 of them had histories of alcoholic excesses." This is an important point, because it has been asserted that other African races amongst whom syphilis is widespread show neither a high proportion of general paralytics nor any causal relation between syphilis and general paralysis. In this asylum the general paralytics constituted nearly 7 per cent. of the male admissions, and all but two had suffered syphilitic infection.

In only 64, or less than 12 per cent., was a family history of insanity ascertained. During the year 69 were discharged as recovered, giving a recovery-rate on the admissions—excluding 14 who were found to be not insane—of 12 5 per cent. This recovery-rate should not, of course, be compared to its disadvantage with the recovery-rates of asylums generally, owing to the special character of the institution as both an ordinary and criminal lunatic asylum. There were also 276 discharged as relieved, 40 as not improved, presumably to the care of friends, 14 as not insane, 1 escaped, and there were 76 deaths. These deaths, which give a death-rate on the average numbers resident of only 6 per cent., were due in 41 cases to cerebro-spinal diseases, including 19 deaths from general paralysis; in 8 to chest diseases, in 8 to abdominal diseases, and in the remainder to general diseases, including 11 deaths, or 14 4 per cent. of the total deaths, from tuberculosis, and senile decay (7).

During the year, owing largely to the overcrowded state of the asylum and grounds, a considerable number of accidents occurred, none of which, however, had a fatal termination. Dr. Dudgeon appends an interesting chart showing graphically the rise and fall of atmospheric temperature during the year, and the corresponding curves of monthly admissions and weekly hours of seclusion, all curves simultaneously culminating in June and July. The report contains references to several other interesting points, suggested alterations in the laws affecting lunatics and so on, and in addition to the overcrowding, the difficulties under which the Director and Subdirector labour are well illustrated by the following extracts: "The coal contractor was discovered trying to corrupt the storekeeper by bribes." "The supply of fowls has been bad . . . and it has been impossible to detect stale eggs on their delivery." "The 'characters' brought by employées from the Sheikhs el Harat and friends are often valueless and untrue." With regard to the night staff, "the members often take no rest in their homes in the daytime, and are consequently unable to keep awake at night," and finally "attention has been drawn to the necessity of removing lethal weapons from the insane before conveying them about the country."

CORRESPONDENCE.

THE TRAINING OF SCHOOL TEACHERS IN HYGIENE.

Sir,—May I again call attention to the importance of the medical profession taking the lead in defining the policy which should be followed with regard to the training of school teachers in hygiene? I feel strongly that only if the teaching of hygiene is introduced into the curriculum of all training colleges can medical inspection be carried out on the best lines. We may assume that the students in the training colleges will themselves be given the advantage of medical inspection, and we shall then have a body of teachers healthy themselves and trained to co-operate with the medical profession in making medical inspection in schools, when it is established, a reality. The logical force of this contention was fully recognized at the recent International Congress of School Hygiene, where the medical profession was strongly represented. At a crowded meeting of Section IV (Instruction in Hygiene for Teachers and Scholars) the following resolution was on my proposition unanimously adopted:

> That practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades.

The resolution was subsequently passed unanimously by the general meeting of the Congress.

Successive Presidents of the Board of Education have promised that hygiene shall be taught in all elementary schools, provided that an assurance can be given that there are teachers qualified to teach it. This was not an unreasonable condition to make, and we must now ask for the means to fulfil it.

I venture to hope that all the Divisions of the British Medical Association will take the matter into consideration early in the session now about to commence, and will see their way to affirm the principle of my resolution and transmit it to the President of the Board of Education. The instruction of school teachers in hygiene is an essential preliminary to other action, and I feel strongly that this resolution should be presented separately if the Board is to be induced to give its consent to the introduction of hygiene into the routine curriculum of elementary schools.—I am, etc.,

September 24th. Aimée Watt Smyth.

THE REFERENDUM.

Sir,—I do not know what the opinion of the members may be, but I think it is very regrettable that there should be a conflict between the Council and the Representatives, as is clearly shown in the last Supplement; "a house divided against itself cannot stand"; and I am morally certain that the influence of the Association must be lessened, and lessened to a large degree, when such a disagreement takes place, as is evident to every member who takes the trouble to read his Supplement.

Whatever may have been the shortcomings of the Central Council in the past, it must be apparent to "the man in the street" that the Association must inevitably suffer when two bodies are fighting for the mastery.

It is a thousand pities that this quarrel has arisen now, when matters of the greatest moment are waiting settlement.—I am, etc,

Cardiff, Sept 24th. T. Garrett Horder.

THE MAINTENANCE OF THE HONOUR AND INTERESTS OF THE MEDICAL PROFESSION.

> The objects for which the Association is established are the promotion of medical and the allied sciences, and the maintenance of the honour and interests of the medical profession.—*Memorandum of Association of the British Medical Association.*
>
> We do hereby declare the objects of the Association to be the promotion of the medical and allied sciences, the maintenance of the honour and interests of the medical profession and of the members thereof collectively and individually, and the co-operation of the members of the Association for their mutual assistance and support in all matters affecting them in their professional capacity, including the encouragement, promotion, or provision of means for protecting members and their families against the exigencies of age, sickness, death, or misfortune.—*Draft Charter.*

Sir,—I hope Dr. Parsons is quite satisfied with the opinion he has elicited on this question. I am, for the correspondence seems fully to confirm me in the position I took up in my address, and to prove that there is indeed a transformation in the Association.

The excellent letters from Dr. Crawshaw and others leave me little to answer, but I should like to point out to Dr. Parsons that while he, like us, admits the evils under which the profession labours, he offers no remedy beyond the vague statement that "alternative and honourable means have been suggested." Now, as we have a definite policy (that adopted in the Charter), I think we are entitled to know what these alternative means are.

Perhaps he will tell us at the same time why they were not produced a little earlier when the advisability of a Charter was being discussed. I must confess that, although I have taken considerable interest in the organization of the profession for some years, I have heard of no alternative policy to that laid down in the Charter, except that known as "taking it lying down." That policy we have tried and found wanting.

In my address I used the words trade-union with a frequency and an application which were perhaps a little irritating to those of Dr. Parsons's way of thinking. I did it deliberately, not of course to irritate any one, but to emphasize a point of view which we are apt to overlook. I know as well as any member that we are *more* than a trade-union—that our interests include much more than the making of a living; but I wanted to emphasize (1) the fact that in order to be free for the higher things we must first make sure of decent conditions of work; and (2) my belief that in dealing with organized bodies we must ourselves be organized or go to the wall. Nobody has yet suggested a form of association that will be of any use which does not contain the essential principles of trade-unionism as defined in the dictionary. It is because we believe that not until the struggle for mere existence is less keen can doctors or any other workers do the best that is in them, that we want the Association to look after our remuneration and conditions of work. These secure and on a decent footing, all the rest will follow. I can assure our friends that they have no monopoly of the passion for the dignity of the profession, but whereas they think we cannot be dignified if we think about such material things, we believe that we cannot be dignified until we have thought about them.

Dr. Hamilton truly says that the Association is at a critical stage of its existence. Yes! If Dr. Hamilton and his friends succeed in delaying the Charter much longer, we shall see a crisis which will astonish them. Do they know that the Divisions are sick of the continual references to them of matters they thought had been settled long ago? Are they aware that if we do not soon get the powers the Charter only can confer, and which seem so repugnant to them, we shall in all probability lose many of our Colonial Branches, and almost certainly those in South Africa and Australia? Dr. Hamilton, as a member of Council, must know these things, and yet he talks as if *we* were the persons bringing about the crisis. By the way, is Dr. Hamilton in his letters and speeches at the Representative Meeting speaking only for himself or can he be taken as voicing the opinions of our West of Scotland members? Do they favour the modern conception of what the Association should be—an Association which will deal with everything which concerns the doctor in his professional capacity—or do they adhere to the Hamiltonian doctrine which would leave us helpless but still genteel, respectable, and "high-toned"?

Mr. Parkinson's letter is very gratifying. I suppose few of the veteran workers for the Association accepted the new constitution (of which the Charter is the legitimate expansion) with greater misgiving than he. He was perfectly frank about it at the time, and it is all the more striking to find that he has been driven by the force of circumstances and by his intimate acquaintance with the Association's work, to the conclusion that there is no going back. I commend his letter and the Southend case cited by him to the earnest consideration of Messrs. Parsons, Hamilton, and all other lovers of the good old times. They will find on reflection that not only is there no going back but that there is no standing still.—I am, etc.,

Gateshead, Sept. 22nd. ALFRED COX.

SIR,—Before giving voice to one's views on the maintenance of the dignity and honour of the profession, it should surely not be necessary first to state what one's income is, or how many maternity cases he attends in a year. These and other details of a personal nature might satisfy the curious, but your space forbids, and I do not think they would enhance the value of the discussion; but for the benefit of Dr. Rawdon Wood, I may be allowed to say that he is entirely wrong in his estimate of me, and that his ironical remark, besides being wholly irrelevant to the subject, so far as I am concerned, is absolutely uncalled for and misleading.

As for Mr. Dunlop's advice, I am almost inclined to treat it with the silent contempt his letter to the *Glasgow Herald* in 1904 received and so well deserved. But in case there may be others like himself who think that if a false statement is not immediately refuted it must of necessity be true (strange logic indeed), I should like to tell Mr. Dunlop that he knows nothing at all about Glasgow and the West of Scotland, or he never would have ventured to write such a description of it. Medical practice in Glasgow never was in the condition he depicts it, and even with the "open shop" (a system which is fast passing away, and according to the nature of things must soon cease altogether), I can assure him—and I speak from personal knowledge—that when compared with the kind of general practice which prevails all over England, the position in Glasgow is immensely superior. We have nothing to be ashamed of in Glasgow, and had I the time or inclination to go into details of a comparison between English and Scottish practice, even including Glasgow, the former, I am bound to say, would show up very badly indeed. Why, it is proverbial, and almost too ludicrous to mention, that the men who want to make money the be all and end all of their professional life would never think of settling down in Scotland (even Glasgow), but fix upon some spot in England where the commercial and business element of the profession so largely succeeds. The reasons are obvious. As for the sixpenny dispensaries which Mr. Dunlop states prevail in the south, they must, I think, be peculiar to that region, as they are quite unknown in the "vitiated atmosphere" of Glasgow, which is rather a strange fact if that is their native soil. We have had a few men amongst us in recent years—importations from Ireland and England (none of whose names are to be found among the list of members of the British Medical Association—who have started practice by cutting fees, and who have apparently succeeded in attracting a connexion quicker than those who have chosen the more honourable and respected paths; but these are the only cases of semblance to sixpenny dispensaries we have amongst us, and their owners have all received their commercial training outside Scotland.

All this, however, is far from being pertinent to the subject on hand, and I apologize for the digression, although for one's defence I consider it necessary. No, Sir, this is not the time for side-issues, we have our common grievances as members of a noble profession and our only differences are as to the methods we mean to employ to remedy these grievances. Shortly put, are we in our attempt to improve our position to condescend to the trade methods of boycotting, paid agitators and strike funds; or are we to continue on the lines of the gentler arts of education and persuasion, and by so doing maintain the respect in which we have been held, and justly held, by the public in the past?—I am, etc,

Glasgow, Sept. 23rd. JAMES HAMILTON.

SIR,—From Dr. Hamilton and others you have had letters deploring the alleged tendency to trade-unionism exhibited by the present policy of the Association. Underlying these jeremiads there seems to be the suggestion that the Association has fallen from a high estate when it conserved "noble traditions" to some lower plane. When men of some seniority make such charges it is apt to give younger members qualms that the policy at present promulgated by the Association, and which seems at first sight to be a perfectly clear, straightforward, and honourable policy, cannot be what it seems. Yet it is not easy to find out from the writings of these correspondents what high and noble traditions the Association has actually departed from.

When one approaches non-members to join the Association they do not hesitate to join because the Association is departing from old traditions, but because they do not see what benefit they are likely to derive from so doing. "What does the Association do?" they say, and "What may I expect from it?" If one examines the Contract Practice Report or any of the other reports drawn up by the Association's Committees, one finds statesmanlike documents on which it would seem proper to found the Association's active work as is now being done. Yet Dr. Hamilton says the Association is degenerating, and is now failing to obtain for the profession that respect which was formerly accorded to it. What was it, then, which, prior to its recent reorganization, the Association did that is not now done, or is not now done so well? Further, on

what lines would Dr. Hamilton and other critics desire to see the active policy of the Association develop? Some clear and reasonable statement on these points would be of great value at this juncture.

To conserve the traditions of the profession is no outline of an association policy any more than "efficiency" is an outline of a political one. It is perfectly clear that an adopted policy, whether that of Dr. Hamilton or anybody else, necessitates an organization to give expression to it. This organization is a union, and will doubtless be called by opponents a trade union. The name, however, is of no consequence; the real things that matter are the ends aimed at, and the methods by which these ends are endeavoured to be carried out.

There is surely a lack of virility in the hypersensitiveness shown by some of your recent correspondents because Mr. John Burns (of all people) referred to our Association as a trade union.

We are not going to shrivel up merely because an epithet has been thrown at us.—We are etc.,

WALTER F. BROWN.
ERIC D. GAIRDNER.

Ayr, Sept. 18th.

SIR,—It is very necessary that the question "whether it is desirable to organize the British Medical Association on trade-union lines" should be freely discussed to elicit various opinions, and to prevent the alienation of members by forming a reasonable policy.

In order to come to some decision, the objects of trade unions may be first enumerated, and the points of similarity with the British Medical Association then discussed.

1. One of the chief objects of trade-unions is to form a collective opinion and formulate a common action as regards wages, time of labour, limitation of overtime, sickness and burial funds, and old-age pensions.
2. To constitute a body to carry on collective bargaining.
3. To organize the union to resist unjust oppression by legal defence, strikes, etc.

The idea of any difference in the quality of the individual work is not recognized by trade-unions, each worker being supposed to be capable of doing equally efficient work. There is no attempt to improve the character of the work, and a decided check to the quantity of work, which the more efficient workers could do. In medicine the quality of the work is recognized as varying greatly, and the individual remuneration differs in proportion. The Association in time past has always encouraged advances in medicine by welcoming the contributions of original thinkers, and encouraging the advances of medical science by research scholarships. There has not been any attempt to limit the time spent in medical labour, the individual ability being the only guide in this matter.

As regards old age pensions, sick insurances, etc., there have been some attempts locally to deal with more urgent cases, but these efforts would probably be more efficiently carried out by a powerful combination like the British Medical Association.

As regards collective bargaining, the advantages of an organized body are marked in cases where a corporation or body of officials has to be dealt with, but the vast majority of members probably pass through life without any necessity for collective bargaining. The members of the Association differ from the members in most trade-unions in the fact that, whereas many members of a trade union have one employer, each medical member has many employers, differing in circumstances and requiring separate special consideration. This makes it almost impossible to formulate any definite lines of policy.

The basis of all trade-unionism is co-operation in labour; each worker is more or less dependent on the work of his fellow to carry on his own work. In medicine, although a small amount of co operation is necessary, each worker is independent and is able to carry on his work without aid from his fellows. This will always prevent the strongest factor of trade-unions being applicable to medical politics.

The defence of the members by the Association seems a desirable object, for, although this is efficiently undertaken at present by defence unions, the additional weight of a large body of medical opinion with a considerable reserve fund is very desirable. The use of the funds to check impositions and unmask frauds seems for the common good of the members.

As regards political organization, this is a more doubtful matter. The positions of medical men and their opinions differ greatly, and it is questionable whether there is sufficient unanimity of opinion to allow the common funds to be used without causing discontent.

The position of the trade-union differs from that of the British Medical Association in the entire selfishness of its objects which it pursues regardless of injury inflicted on others. The policy of the Association will never, I trust, be carried on regardless of the welfare of others. The organization of preventive medicine to check the spread of sickness finds no parallel in trade union policy. Every doctor has at times to advise patients in direct opposition to his personal advantage. Our professional morality would not allow a surgeon to recommend an operation if it were not for the advantage of the patient. If the public were not convinced of our superior *morale* in this respect, they would lose confidence in our opinions.

Lastly, the trade union pursues its object to an extent which the medical profession would never sanction. Strikes are carried on without regard to the cruelty or distress which are brought on others. In medicine the most stringent code of ethics must give way in the presence of dire necessity, and no medical advocate of trade-union principles would countenance an action which caused loss of life or urgent distress to any fellow-creature.—I am, etc,

SPECTATOR.

September 18th.

SWEATING OF THE MEDICAL PROFESSION BY PUBLIC BODIES.

SIR,—Dr. J. Bell Todd is a member of the Scottish Poor-law Medical Officers' Association, and may I remind him that the unsatisfactory position of Poor law medical officers in Scotland as regards remuneration under the Lunacy Acts has been brought under the notice of the Scottish Local Government Board by special deputation and otherwise? That our endeavours have had no satisfactory result is surely not our fault.

Further, the same facts have been brought before the Royal Commission on Poor Law, with what result the future only can show.

It is utterly impossible for our Association to know the reasons why Inspectors of Poor and auditors of parish councils are allowed to act, as Dr. Todd truly mentions in his letter. I should say the only source from which such information can be got is from the Local Government Board; certainly it is not within the knowledge of your humble servant.—I am, etc.,

W. L. MUIR,
Hon. Secretary, Scottish Poor-law Medical Officers' Association.

Glasgow, Sept. 24th.

THE IMPROVEMENT OF THE CONDITIONS OF CONTRACT PRACTICE.

SIR,—In the letters of your correspondents on the subject of contract practice, three facts seem to have been lost sight of, namely:

1. That many medical men die and leave widows and children entirely unprovided for.
2. That the country general practitioner seldom receives an adequate fee for the work he does for his poorer neighbours.
3. That the earner of a wage of from 30s. to 40s. a week is quite unable to pay an adequate fee for medical attendance out of his weekly earnings when any protracted illness falls on any member of his family.

What is to be done?

The wage-earner must be educated up to understand that he owes something to his medical attendant.

At present the club member knows the amount paid yearly to the doctor, but neither member nor doctor knows the amount of work done. Let every club doctor keep an accurate account of all he does for his club patients, and at the end of a year calculate what he receives per visit. Then let him lay the results before the more thinking of the club members, and ask "Is this a living wage?"

I think by constantly rubbing these facts into the more intelligent of the club members, and pointing out to them the necessity of their having the best medical advice that money can buy, we should in time raise up a class of artisan who would be willing to pay twice or three times his present contribution for medical aid.

The earner of moderate wages can only provide for his expenses during sickness by some sort of insurance, but that is no reason why he should not pay his medical man properly, and if all club doctors were adequately paid there would not be such a sad record of cases on the list of our charities.—I am, etc.,

Bradford-on-Avon, Sept. 23rd. HERBERT P. TAYLER.

WHAT DO WE MEAN BY TACHYCARDIA?

SIR,—The appearance in your number of August 10th of an interesting article by Dr. Hugh Clarke on epileptoid attacks in tachycardia and bradycardia induced me to look up the notes of a considerable number of cases of rapid heart action which I have collected in the last few years, and also to see what some of the principal textbooks said on the subject. Dr. Clarke takes Professor Clifford Allbutt's definition of tachycardia, and I venture to think that his paper shows the confusion into which we may be led if we take a word of general import, and then try to limit it to a particular condition, without further qualification. We must not be too squeamish about the etymology of the compound words we employ in medicine; tachycardia is as good as most of them, and may be taken without cavilling to mean rapid heart action. I should like with the utmost deference to ask Professor Clifford Allbutt why it should not be used to include all such cases, and should be limited, as he limits it, to a particular group which requires an elaborate definition to make it clear.

Professor Allbutt emphasizes most clearly in that definition the paroxysmal character of the disease, but at the same time denies it the distinguishing prefix which has been given to it by most other writers, for example, Bouveret, Loeser, Nothnagel, and Osler among many others. As he very justly remarks, "If, whenever we talk of tachycardia, the mind is to range over an indefinite scattering of cases in which the pulse is excessively quick, we shall waste a great deal of time in discussion and a great deal of space in books." I venture to think that in withholding from the description of this disorder its distinguishing characteristic he is bringing about the very evil which he wishes to avoid.

The whole subject of rapid heart action of uncertain origin requires careful study. Apart from the physiologically rapid pulse (and an habitual pulse in an adult of over 100 is in my experience a rare thing), I have been accustomed to recognize two or three main groups. One is due commonly to influenza and more rarely to other specific fevers; this generally recovers after a certain time. Another group seems to me to be associated with high tension, especially in young people, and is probably due in common with that to some toxic influence, in some cases tobacco, in others autogenetic. Certain cases appearing about the climacteric seem to be due to that cause, whilst in other instances the rapid pulse is the sole remaining evidence of Graves's disease. Latent disease of the myocardium, Addison's disease, and obscure blood conditions account for a few more, whose etiology is at first sight not very obvious.

Well-marked cases of paroxysmal tachycardia stand out as something *sui generis*, the instantaneous commencement, and still more the instantaneous cessation, the remarkable regularity of the heart when working at a speed of over 200 beats a minute, the singular absence of distress, and the lack of all adequate cause, form a unique clinical picture. Of course, this may be varied very greatly according to the duration of the disease, the previous condition of the heart, and other factors, but the features mentioned above have been the principal elements in the cases I have seen, three in number, and all in people who seemed otherwise healthy. A discussion of the proximate etiology would involve the whole question of the origin of the heart-beat, whether myogenic or neurogenic, and is beside the point here. What I wish to plead for is the recognition of some causal element in these cases which distinguishes them from other cases of rapid heart action, and makes it something more than a symptom of the various other morbid conditions with which it has been found associated. I would suggest that for clinical teaching and for clinical research it is best to recognize a group of cases of rapid heart action of unknown origin, some intermittent, some continuous, of which paroxysmal tachycardia is a special type or subgroup. It seems to me to stand in much the same relation to other forms as megrim does to ordinary forms of headache, and the same arguments might be used for limiting to the latter the use of the word "cephalalgia."

It is, of course, only our ignorance which makes necessary such headings as "vertigo," "headache," "tachycardia," but it is quite certain that they are necessary in textbooks intended for general reference. I have ventured to write this in the hope that Professor Clifford Allbutt may be induced to give us, in the new edition of his invaluable *System*, some general conclusions from his wide experience on a class of case which I myself have not seldom found obscure—namely, continuously rapid heart action without obvious cause—and perhaps to accept my humble suggestion as to nomenclature.

With regard to the article which formed my text, I should like to remark that the pulse-rate is never mentioned in either of the two cases of rapid action, so that we can hardly judge to what category they belong.—I am, etc.,

Brighton, Sept. 17th. EDMUND HOBHOUSE.

CEREBRO-SPINAL FEVER AND DUST.

SIR,—I have been much interested in the article by Dr. W. Robertson, the Medical Officer of Health, Leith, in your issue of July 27th, 1907. Dr. Robertson gives many good reasons for believing that the virus of cerebro-spinal fever is carried by dust. In this point he is in agreement with the very considerable experience of this disease which several Indian Medical Service officers have had in the epidemics in the Central Gaol at Bhagalpur, Bengal.

This "dust theory" was first enunciated and officially reported on by Major C. R. Stevens, M.D.Lond., F.R.C.S., now Professor of Anatomy in the Calcutta Medical College, and the theory has been supported by Major E. R. Newman, M.D., I.M.S., and Captain J. Woolley, M.B., D.P.H., I.M.S., who have had much experience of this fell disease. For a complete account of the arguments in favour of the dust theory of convection I would refer to my own article in the second number of the *Journal of Hygiene* (vol. i, No. 2, Cambridge Press). Again, for a full and complete history of the disease, which is well known in India, I would refer anyone interested to the report by Major Robertson-Milne, I.M.S., published by the Government of India. The prevalence of the disease in many parts of India is also discussed in the *Indian Medical Gazette*, September, 1902; January, June, and July, 1901; and May, 1906, etc.

It is curious that so little mention of the disease in India and in Egypt is to be found in even the best textbooks and systems of medicine; this is probably due to a misleading remark by Hirsch, limiting its prevalence to northern climes, whereas the disease is well-known in India and also in Egypt—for example, at Khartoum at the time of the battle of Omdurman.

The evidence detailed in the *Journal of Hygiene* article above quoted is very strongly in favour of convection by dust.—I am, etc.,

Calcutta, Aug 28th. W. J. BUCHANAN, M.D.,
Major I.M.S.,
Editor, *Indian Medical Gazette*.

LEPROSY AND FISH.

SIR,—I was very much interested the other day in reading over an old history of Waterford, published in 1824, embracing an account of the state of the peasantry of that part of the South of Ireland, "by the Rev. R. H. Ryland," to see in it that King John, in the thirteenth century, probably about the year 1207, established a leper hospital there, the present site of the county infirmary. I quote the words of Ryland's history verbatim, showing that King John was impressed with the erroneous idea that leprosy was caused by eating an excess of fish, or bad fish:

> The King's sons during the time they remained at Lismore were so feasted with the fine salmon of that place, that they lived almost entirely on them, which caused eruptions to break out on their bodies, supposed to be the leprosy, of which the King being informed, founded the hospital for leprous persons, and granted a charter of incorporation by the name of the Master, Brethren, and Sisters of the Leper House of St. Stephens in the City of Waterford.

Personally, I could not satisfy myself, when on a visit to Norway, that the fish theory was accepted, nor does a gentleman in connexion with a leper home in the heart of India, to whom I was speaking the other day, consider the theory proven, for of patients who were admitted there, some never tasted fish at all, and some had not seen nor tasted fish for years. I feel, therefore, that, like cancer, the conditions influencing infection have yet to be discovered.—I am, etc.,

Bandon, co. Cork, Sept. 2nd. JOHN REID, M.D., R.U.I.

STAGES OF DRUNKENNESS.

SIR,—In a recent issue of the BRITISH MEDICAL JOURNAL reference was made to a classification of drunkenness given by Dr. Williams at Marylebone Police-court, and with which the presiding magistrate expressed satisfaction.

The laity, and especially officials who have to deal with such cases, expect some assistance in matters of this kind from the medical profession, hence I venture to ask you to insert the following, which may give some further guidance. I would divide drunkenness into four stages:

1. The stage of excitability.
2. The stage of loss of muscular control.
3. The stage of coma or insensibility.
4. The stage of death.

The first two stages alone require comment at present. In the first stage excitability may tend towards joy or anger. Which form this stage assumes depends on the environments, and often either may assume a lacrymose or melancholy state.

In the second stage, the condition which gives rise to much cross-swearing in police-courts, the loss of control may affect the muscles of locomotion or the muscles in connexion with speech.

It is well known that a person in this stage may, when seated, speak and discuss subjects quite distinctly and rationally, yet, when he attempts to walk, he may not be able to take one step, in fact, may not be able to stand. On the other hand, a person under the influence of drink may be able to walk quite steadily, yet be unable to articulate one word.

This particular stage of drunkenness often leads to considerable difficulty in police-court cases. The policeman, seeing a man staggering towards a public-house and entering it, allows just sufficient time for a drink to be ordered and supplied, then follows in and summons both the licensed trader and the person supplied. When the case comes for trial, the policeman swears the man was drunk, the bar attendant swears the man was sober, otherwise he would not have supplied him.

The explanation is simple. The person in this condition has lost control of the muscles of locomotion, but has control of the muscles in connexion with speech, and, having steadied himself against the counter, he can speak coherently and quite distinctly.—I am, etc.,

Dublin, Sept. 7th. EDWARD MAGENNIS, M.D., D.P.H.

THE EARLY NOTIFICATION OF BIRTHS BILL.

SIR,—In your issue of August 24th, and again on September 14th, there appeared a letter, signed by myself, and dealing with the Early Notification of Births Bill. In these letters I (1) questioned the claim of the Representative Meeting, as advanced by Sir Victor Horsley, to announce the opinion of the "medical profession," and (2) urged that an objection of the first importance to the above Bill was the invasion which compulsory notification by medical practitioners would effect in the confidential relations that, in the public interest, ought to exist between patients and their medical advisers. In short, on this latter point, my position was one of frank and outspoken opposition to the proposed compulsory notification by members of the medical profession. Whereupon enters Dr. C. Rawdon Wood, who, in full view of my letters, has the courage to credit me with a desire to encourage "notifications not only without fee but under heavy penalty." The same authority also generously implies that I am guilty of "humbug," apparently because, holding the views above expressed, I have failed to attend an annual midwifery case in conjunction with Mr. Parsons and Dr. James Hamilton. These courtesies possibly merit acknowledgement as interesting examples of a somewhat eccentric controversial method. Meanwhile, I may perhaps be permitted to remark that in the discussion which can now boast the distinction of Dr. Wood's contribution I have neither directly nor indirectly taken any part.

To revert for a moment to the subject on which I first addressed you, the assumption, in reference to the Early Notification of Births Bill, that the voice of the Representative Meeting was the voice of the profession, may now be conveniently tested by comparison of the Representatives' resolution with the following brief extracts from the leading organs of the medical press:

> Cases may well occur from time to time in which the professional relationship between the medical man and his patient may render him loth to send such a notification, even if he does not feel it his duty actually to keep silence. The amendment which was moved . . . . to relieve medical men from the obligation to notify under the Act *would have been passed if its supporters had made the professional view clear.*—*Lancet*, September 7th, p. 718 (the italics are mine).
>
> It is easy to conceive circumstances under which it would be a most difficult and delicate matter for the doctor to notify.—BRITISH MEDICAL JOURNAL, September 14th, p. 683.
>
> Practitioners are saying very plainly that they will refuse to be Government spies, either with a fee or without a fee.—Ibid., Manchester Correspondence, p. 696.

Yet apparently the claim is still maintained that the Representatives' resolution was a correct and adequate definition of "the attitude of the medical profession."—I am, etc.,

London, W., Sept. 23rd. C. O. HAWTHORNE.

DIARRHOEA MORTALITY AND ITS CAUSES.

SIR,—During the four weeks ending Saturday, August 31st, only 150 deaths were attributed to diarrhoea in London, the corrected average being 1,330 for that period in previous years. How is this enormous decrease to be accounted for? The medical officers of county boroughs, metropolitan boroughs, and such large town centres, advocate municipal milk dépôts, with a view to prevent mortality from this disease, caused, they say, by the dirty udders of the cows, the dirty hands of the milkers, and the foul water with which the milk-churns are washed in the country whence the milk comes. What has happened during the last four weeks to the Londoner's milk? Have the udders of the country cows and the hands of the country milkers all suddenly become clean, and has the dirty water which formerly washed the country churns suddenly become pure, or is there not some other cause which has brought about this enormous improvement in the public health? Remembering that the children of the merchant, the professional, and the aristocratic classes drink large quantities of milk but seldom or never die of diarrhoea, but that it is the children of the artisan class that die of the disease and consume very little milk indeed, is it not perfectly just to assume that the country milk that goes to London is pure when it leaves the parish in which it is produced, and in which the same milk, there consumed in large quantities by the farmers' children, is associated with an infant mortality-rate of 50 to 70 per 1,000 per annum, not 150 to 280 per 1,000, as in some town districts? During the last four weeks there has probably been more unripe fruit in this country than in any previously known summer, so let us dismiss unripe fruit from consideration, further than to observe that babies of under 12 months, who are almost the only persons who die of diarrhoea, do not eat fruit either unripe or otherwise.

May I suggest that, apart from the advice of the lady health visitor, vigorous action of the sanitary inspectors of London in carrying out Section 2 (1) (*c*) and 2 (1) (*d*) of the Public Health (London) Act would have a powerful effect in saving life where it is now sacrificed to diarrhoea? Look around the home of the London artisan, and there you find the man without any allotment garden or other hobby to relieve the monotony of the leisure hours of himself and his children, except the keeping of rabbits or guinea-pigs in boxes or hutches, a dog, a few pigeons, or even a few hens or white rats. Associated with these you have straw, cabbage leaves, fish bones, and broken victuals, called the food of the pets, but in reality the poison of the infant of the household. It is absolutely impossible, particularly in hot weather, to keep such animals in the backyard of a cottage house in London, just outside the window of the pantry, where the food and the milk of the family is stored, without generating death-producing

organisms. If the flagging or the concrete forming the surface of the yard is open-jointed or not water-tight, there must be soakage of decomposing organic matter into the soil and pollution of the ground air.

In this direction, and not in the milk, must medical officers look for the explanation of diarrhoea mortality, for they find no guinea-pigs, rats, or similar pets amongst the aristocratic or learned backyards of Kensington or Harley Street, nor diarrhoea mortality amongst its milk-consuming infants.—I am, etc.,

R. MUSGRAVE CRAVEN, D.P.H Camb.,
Medical Officer of Health, Westmorland Combined County Districts.

September 5th.

THE CHIEF MEDICAL OFFICERSHIP OF THE BOARD OF EDUCATION.

SIR,—I wish to endorse *in toto* remarks made by Dr. Hogarth with regard to the appointment of Dr. Newman as Chief Medical Officer to the Medical Department at the Board of Education. To those of us who are interested in school hygiene and are in touch with all the workers in that particular field there is no question whatever about who is the proper man for the appointment. In Great Britain Dr. James Kerr stands head and shoulders above all other workers in school hygiene, and it is undoubtedly to him that such medical inspection as is in force is due. As an expert in matters of school hygiene Dr. Newman has practically no standing whatever. In the realm of public health his name is an honoured one, but his appointment to such a post is a scandal.

The Government, together with many of our public authorities, seem to think that the knowledge of public health work is the chief qualification for a medical inspector of school children and schools, whereas it is the least. The chief qualification, and one which practically all medical officers of health are hopelessly lacking in and grossly ignorant of, is a thorough knowledge, in sickness and health, in the normal and the abnormal, of the human child.—I am, etc.,

ELWIN H. T. NASH,
Member Second International Congress on School Hygiene; Research Fellow in Public Health, Victoria University.

Beccles, Sept. 24th.

SIR,—The recent appointment made by the Board of Education raises the question whether the medical inspection of school children and of their school environment is to be placed in the hands of medical officers of health armed with the D.P.H., or of a class of men who have devoted special attention to children's diseases, to school hygiene, to defects of eye, ear, or nose, and other matters more specially pertaining to children and schools. The D.P.H. has not, as such, made a special study of these matters, and it does not seem reasonable to expect that any man who has should be required, in addition, to be an expert at meat inspection or other matters required for the D.P.H. It seems, rather, that a new departure might be made, and just as a science degree diverges from an arts degree in its requirements, so might an examination be instituted for those intending to pursue school work to the exclusion of public health work as now done by the medical officer of health.

The average general practitioner can hardly regard himself equipped without special work, nor is the D.P.H. more so. The case of each and all would be met by a code of requirements specially drawn up. The alternative seems to be that the Education Department will come to be regarded as a branch—a subordinate branch—of the Public Health Department. Hoping to see some attempt to thresh this matter out at once in the JOURNAL, I am, etc.,

September 24th. "COMMON SENSE."

METROPOLITAN STREET AMBULANCES.

SIR,—After deliberation for over three years from the date (1904) of the influential deputation from the medical profession and others interested in promoting an efficient ambulance service for the streets and public places of London which waited upon its Police Committee, the City of London has succeeded in solving the difficulties connected with its own area, and has established a service which, after over four months' trial, is universally pronounced to be a success. It is to be hoped that the metropolitan area will not be long in following suit in adequately dealing with the greatly-increasing dangers of its streets.

In addition to meeting its own requirements, the City of London may be regarded as having provided an excellent object lesson for street ambulance administration.

Permit me, now that this subject is still pressing, to point to some circumstances which appear to have narrowed down, almost to a multiplication sum, the requirements of an ambulance service for the streets as applicable to much larger areas of population than the City. Most prominent and essential amongst these conditions is the combination which the City of London has been able to organize—namely, police administration, first aid, telephonic communication, and hospitals, in addition to the most recent type of motor ambulance. The public has yet to learn, and appreciate more thoroughly than it does, that the vehicle or conveyance used is only a single factor amongst several which make up an efficient ambulance service for street accident purposes. Without such a "combine," irrespective of the mere number of ambulances available, experience shows that it is impossible to construct an emergency service where efficiency and cost have to be considered.

In the next place the City service has demonstrated:

1. That a single motor ambulance can cover for street ambulance purposes a much larger area than was previously supposed, or than any single hospital in London, however large, requires.

2. That it is capable of doing its work with a very small staff more rapidly and efficiently during the busiest part of the day than any number of cabs, hand wheeled litters, and less suitable nondescript vehicles. This fact alone has an important bearing on cost when the number of motor ambulances required for working a much larger district, such as the accident area of the metropolis, has to be computed.

3. In the City service the weight of expense in maintaining ambulances for public use in cases of accident requiring them does not fall upon the hospitals. Where a hospital, as, for instance, St. Bartholomew's, in the City service is selected, and consents to be an ambulance station having a definite area, the expense is limited to the institution finding standing room for the vehicle. These are, I believe, some points which serve to illustrate a principle to which prominence should be given in meeting the difficulties connected with the ambulancing of the metropolis generally.—I am, etc.,

REGINALD HARRISON,
President, Metropolitan Street Ambulance Association.

London, W., Sept. 20th.

THE EARLIER RECOGNITION OF CANCER OF THE UTERUS.

SIR,—I am glad to see from Dr. Cullingworth's letter in your issue of 14th inst. that the great importance of this is again attracting attention, as evidenced by the discussion in the Obstetric Section at Exeter and the article by Dr. Milligan in the *Journal of Obstetrics and Gynaecology of the British Empire*, January, 1907. In this Dr. Milligan speaks of Winter of Königsberg as the "pioneer in this work," calling attention to a paper he published in 1891 on the subject. This was in the *Berlin. klin. Woch.* of August 17th, 1891. More than twelve months prior to this, on April 25th, 1890, I read at Ealing before the local Branch of the British Medical Association a paper on Cancer of the Cervix Uteri, in which I laid the greatest possible stress on the importance of its earlier recognition, and I pointed out the symptoms by which it might be suspected—how commonly the first indication is bleeding, which is attributed by the patients themselves so frequently to "change of life," and believed by them to be the correct thing, and is often treated by the medical man, if one be consulted, by the administration of acids or ergot, under the same idea that it is due to the climacteric period, no vaginal examination being made; and I concluded by saying:

It is our duty to operate in suitable cases immediately the nature of the disease can be discovered, and it is imperative that a practitioner shall himself examine a patient who consults him on account of irregular discharges of blood, or those other symptoms I have enumerated, which may possibly be the first indications of this terrible malady, or he shall refer her to some specialist whom he considers better able than himself to

make an accurate diagnosis. And I maintain that if, on the other hand, he consents to treat her without examination until such time as the disease has advanced beyond the range of operation, he is guilty of gross negligence, and the probable sacrifice of his patient's life.

May I repeat now what I wrote upwards of seventeen years ago? In this paper I gave an analysis of 600 cases of cancer of the cervix that had been under my care at St. Bartholomew's Hospital, showing that bleeding was a first symptom in 461, or 76·6 per cent., while it was the *only* symptom in 225, or 37·5 per cent., and I gave a table showing the other symptoms of this disease, *discharge* and *pain*, and their percentage.

In 1891 I wrote an article in the *Medical Press and Circular*, quoting from this paper I had read the year before, extracts from which I have now given, and I had it reprinted in pamphlet form, and sent copies of it to my medical friends, hoping by this means to assist in the *earlier recognition* of the disease, and its prompt treatment by operation.—I am, etc,

London, W., Sept. 24th. CLEMENT GODSON.

THE *MEDICAL REGISTER.*

SIR,—May I ask you in the interests of the profession to draw attention once more to the importance of notifying to this office changes of address for insertion in the *Medical Register*; omission to do this sometimes leads to the temporary removal of the name, with its consequent inconvenience. The *Medical Register* is the official publication, and should not be confused with any of the medical directories which issue circulars annually.

I might also add that if signatures are written clearly and the full names, or at least the full initials, are given, much trouble will be saved.—I am, etc.,

H. E. ALLEN.
Registrar.

General Medical Council Office,
299, Oxford Street, London, Sept. 23rd.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

THE following candidates passed in the Preliminary Examinations in Natural Science:

In Mechanics and Physics.—S. M. Bose, Worcester; R. Dell, non-coll.; A. W. Dennis, Keble; D. D. Drury, New; R. J. Ford, Queen's; G. P. Furneaux, non-coll.; R. L. Gillingham, non-coll.; H. S. H. Guinness, Balliol; H. L. Harvey, Oriel; C. Le P. T. Heaslop, non-coll.; H. Jervis, Trinity; F. C. Lacaita, Balliol; J. T. Lattey, Christ Church; M. M. Machaya, St. John's; J. D. Mackworth, Corpus Christi; F. A. Mason, St. John's; H. W. Normanton, Merton; A. G. Ogilvie, Magdalen; L. A. B. Sharpe, St. John's; E. A. Sitzler, St. John's; T. O. Thompson, St John's; F. M. Trefusis, Exeter; R. B. Turbutt, Christ Church; B. H. Walker, Queen's; G. E. Webb, non-coll.; G. E. Whitfield, New; W. J. Wiltshire, Pembroke; R. B. Winser, Corpus Christi; H. S. Wreford-Glanvill, Merton; W. H. Wyatt, Exeter; J. V. Young, St. John's.

In Physics.—J. V. Collier, Christ Church; R. C. Fairbairn, Exeter; A. Jackson, Queen's; A. Juett, Brasenose; E. W. P. Newman, Christ Church; J. N. Oliphant, Christ Church; M. O. Raven, Trinity; R. Ross, non-coll.

In Chemistry.—W. H. D. Acland, Christ Church; G. H. Alington, Trinity; O. Barkan, Trinity; E. Benskin, St. John's; A. C. Brandon, Merton; J. V. Collier, Christ Church; G. Cranstoun, Oriel; A. A. M. Davies, University; R. Dell, non-coll.; D. D. Drury, New; R. C. Fairbairn, Exeter; R. J. Ford, Queen's; G. P. Furneaux, non-coll.; R. L. Gillingham, non-coll.; H. S. H. Guinness, Balliol; S. D. Gurney, Wadham; D. B. I. Hallett, University; M. R. Hely-Hutchinson, Balliol; J. S. Huxley, Balliol; H. Jervis, Trinity; J. L. Kathju, Exeter; J. T. Lattey, Christ Church; M. M. Machaya, St. John's; J. D. Mackworth, Corpus Christi; F. A. Mason, St. John's; E. E. Mather, Exeter; P. E. Meadon, St. John's; Hon. P. A. Methuen, New; E. W. P. Newman, Christ Church; H. W. Normanton, Merton; A. G. Ogilvie, Magdalen; J. N. Oliphant, Christ Church; D. R. Parry-Jones, St. John's; O. G. Parry-Jones, Magdalen; Q. D. Pictor, Exeter; T. L. Price, Keble; M. O. Raven, Trinity; R. Ross, non-coll.; L. A. B. Sharpe, St. John's; E. A. Sitzler, St. John's; G. B. Tarring, Merton; T. O. Thompson, St. John's; G. E. Webb, non-coll.; G. E. Whitfield, New; W. J. Wiltshire, Pembroke; H. S. Wreford-Glanvill, Merton; W. H. Wyatt, Exeter; J. V. Young, St. John's.

In Zoology.—O. Barkan, Trinity; W. H. Bleaden, Brasenose; A. A. M. Davies, University; W. K. Flemmer, Trinity; G. T. Hebert, Christ Church; A. Jackson, Queen's; G. Meade-Waldo, Magdalen; W. H. Thornton, Trinity; T. A. Townsend, New; H. T. Vodden, Exeter.

In Botany.—G. E. Beaumont, University; E. Benskin, St. John's; H. M. Bond, St. John's; C. E. N. Bromehead, Merton; W. A. Cooke, Worcester; C. F. Cranswick, Exeter; V. C. H. Dearden, Wadham; A. W. Dennis, Keble; D. B. I. Hallett, University; J. S. Huxley, Balliol; A. Juett, Brasenose; N. S. Lucas, New; J. C. Moulton, Magdalen; W. H. Ogilvie, New; R. W. Reed, Christ Church; A. H. Southam, Christ Church; T. A. Townsend, New; J. F. Venables, Magdalen; H. T. Vodden, Exeter; C. W. Wheeler-Bennett, Christ Church; S. B. White, Keble; J. A. Wood, University; J. V. Young, St. John's.

The following candidates have been approved at the examinations indicated:

FIRST M.B.

Organic Chemistry.—G. E. Beaumont, University; C. H. Budd, Oriel; W. Burridge, Christ Church; F. A. Hampton, New; A. H. Southam, Christ Church; A. B. Thompson, New; C. W. Wheeler-Bennett, Christ Church; J. A. Wood, University.

Materia Medica.—H. C. Bazett, Wadham; C. F. Beevor, B.A., Magdalen; W. Burridge, Christ Church; C. B. Fenwick, Magdalen; A. D. Gardner, B.A., University; P. L. Gibson, Trinity; H. M. C. Green, B.A., Wadham; N. F. Hallows, Keble; C. H. L. Harper, Wadham; S. Hibbert, University; G. W. Johnson, B.A., Brasenose; E. G. Martin, B.A., New; H. G. Morris, University; E. O'Connor, M.A., Lincoln; R. C. Ozanne, Hertford; J. F. Penson, non-coll.; A. F. S. Sladden, B.A., Jesus; E. H. Udall, Queen's; G. H. Varley, B.A., St. John's; W. E. Waller, University.

Anatomy and Physiology.—J. L. Birley, University; R. F. B. Bowes, B.A., Queen's; R. F. Bridges, B.A., University; A. R. Chavasse, Hertford; G. H. Cross, B.A., Balliol; D. C. Dobell, B.A., Christ Church; P. H. C. Fowell, B.A., St. John's; N. Glover, B.A., Trinity; G. J. Z. Jessel, B.A., University; C. Newcomb, B.A., St. John's; W. J. Oliver, Oriel; A. S. Roe, Balliol; H. W. Scott-Wilson, Queen's; C. J. G. Taylor, University; W. W. Wagstaffe, New; R. C. Wingfield, Trinity.

SECOND M.B.

Pathology.—C. D. H. Corbett, B.A., University; E. P. Cumberbatch, B.A., Keble; G. R. Girdlestone, B.A., New; B. G. Klein, B.A., Corpus Christi; S. S. Strahan, Keble; J. Wallace, B.A., Exeter; W. W. Wells, B.A., Merton; W. C. Wigan, B.A., St. John's.

Forensic Medicine and Hygiene.—M. B. Baines, B.A., Exeter; C. G. Douglas, B.A., Magdalen; M. W. Flack, B.A., Keble; S. Hartill, B.A., New; J. F. Hornsey, B.A., Wadham; B. G. Klein, B.A., Corpus Christi; O. G. F. Luhn, B.A.; Christ Church; J. Wallace, B.A., Exeter; W. W. Wells, B.A., Merton.

Medicine, Surgery, and Midwifery.—H. B. Billups, M.A., Worcester; E. A. Cockayne, B.A., Balliol; R. Evans, M.A., Jesus; N. Flower, B.A., Exeter; E. L. Kennaway, B.A., New; O. G. F. Luhn, B.A., Christ Church; A. S. MacNalty, B.A., non-coll.; C. T. Raikes, B.A., Trinity; W. W. Wells, B.A., Merton.

M.CH. EXAMINATION.

R. Warren, D.M., New.

The following degrees in Medicine have been conferred:

Bachelor of Medicine and Surgery.—J. Wallace, Exeter; R. Evans, Jesus; C. T. Raikes, Trinity; E. L. Kennaway, New; E. A. Cockayne, Balliol; W. W. Wells, Merton; A. S. MacNalty, non-coll.; O. G. F. Luhn, Christ Church.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examinations indicated:

FIRST M.B.

1. *Elementary Anatomy and Biology, Chemistry and Physics.—Honours, First Class:* J. H. Barclay, M. Brennan.
   Honours, Second Class: W. Hudson.
   Pass List: J. J. Brown, Eleanor Walkinshaw.
2. *Chemistry and Physics.*—J. B. Alderson, R. G. Badenoch, R. M. Barrow, R. Errington, D. Farquharson, Sarah L. Green, T. A. Hindmarsh, L. H. W. Iredale, F. H. Kennedy, J. Lumb, B. B. Noble, C. O'Hagan, A. H. Wear.
3. *Elementary Anatomy and Biology.*—L. E. S. Gellé, H. L. James, R. Y. Steele.

SECOND M.B.

Anatomy, Physiology, and Materia Medica.—Pass List.—O. F. D. Airth, I. Bainbridge, Helen G. Clark, R. V. Clayton, B. G. H. Connolly, J. Hare, S. Littlewood, G. C. M. M'Gonigle, J. H. Owen, M. R. Shearburn, Matilda A. Sinclair, E. H. Shaw, C. J. V. Swahnberg, Olivia N. Walker, S. Worthington, J. C. Young.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.

IN the *personnel* of the Medical School of this hospital a considerable number of changes have taken place during the annus medicus, now in its last days, the following being among the more important: In charge of the anatomy department has been placed Dr. Christopher Addison, formerly Dean of Charing Cross Medical School and Professor of Anatomy at Sheffield; Mr. R. C. Elmslie has been appointed Demonstrator of Pathology, with Messrs. H. Pritchard and H. G. Ball as his juniors; Mr. L. B. Rawling, Demonstrator of Operative Surgery; Dr. C. M. H. Howell, Junior Demonstrator of Physiology; Messrs. T. S. Lakis and C. T. Neve, Assistant Demonstrators of Biology; Dr. J. A. Willett, Demonstrator of Midwifery; and Mr. G. E. Gask, Teacher of Clinical Surgery, as well as Assistant Surgeon.

On the clinical side, Mr. W. D. Harmer has resigned his assistant surgeoncy on appointment as Surgeon in charge of the Department for Diseases of the Throat and Nose, with Mr. F. A. Rose as his Assistant; and Dr. W. S. A. Griffith has become Physician-Accoucheur, with Dr. H. Williamson as his Assistant.

In the Skin Department, Dr. G. A. Adamson is Chief Assistant; while Mr. C. E. West has become Assistant Aural Surgeon. The surgical registrarship is now filled by Mr. C. Gordon Watson, formerly Demonstrator of Anatomy.

ACCORDING to the recently-issued prospectus of the University of Vienna the teaching staff of the Medical Faculty in the coming winter semester will consist of 33 ordinary and 60 extraordinary professors, with 140 private lecturers and assistants. The total number of courses will be 410. In the last summer semester the number of matriculated medical students was 1,190, including 45 women; 43 non-matriculated students, and 275 who took out special courses, giving a grand total of 1,509, as against 1,319 in the corresponding period of last year.

Medico-Legal.

HOSPITAL PORTERS AND THE INLAND REVENUE.

On September 23rd Mr. P. J. Langdon, Secretary, South Devon and East Cornwall Hospital, Plymouth, was summoned for keeping a male servant without a licence.

Mr. Wills (Supervisor) said the male servant was a house porter. The Act under which the case was taken defined many taxable capacities, among them being house porter, page, footman, and waiter. The prosecution alleged that the hospital was keeping a house porter. There were several exemptions under the law which did not apply to the case. They had had a long correspondence with the Hospital Committee, and the hospital had been told that there was no exemption by law in favour of charitable institutions. On August 15th the Board of Inland Revenue wrote that there was no exemption for male servant duty authorized by law in favour of charitable institutions, and in these circumstances, as no steps had been taken to pay the required duty, the Board had no alternative but to proceed for the recovery of the penalties incurred. They had done all they could.

Sir Joseph Bellamy accepted responsibility on behalf of the Hospital Committee, and agreed to pay the duty under protest.

The Mayor said the Bench regarded it somewhat as a hardship that the hospital should be called upon to pay. At the same time they had no option, and he would pay the costs himself.

PARTNERSHIPS.

Te Aro would like to be referred to a reliable book for general information as to the essential points for a doctor entering a partnership or taking up an assistancy.

*** A small manual has been written dealing with this subject among others by Messrs. Barnard and Stocker, which our correspondent might consult with advantage.

FEES DURING INTRODUCTION.

Standard asks what the custom is regarding fees in introduction to a practice. Does the intending purchaser receive half or any share of the takings?

*** This depends on the terms of the sale. According to Barnard and Stocker, during the introduction the profits are either (1) shared equally between vendor and purchaser, (2) for the first half of the time the vendor takes all the profits, and pays all expenses, and for the last half the purchaser; (3) one of them takes all the profits, paying all the expenses, and makes an allowance to the other.

DRUNK OR SOBER?

Deputy Police-Surgeon asks what is a fair average of time (previous to examination) during which it is safe to say that a person examined in custody was not drunk, when such a person on examination passes the ordinary tests in regard to normal aspect, speech, and walking, together with the performance, with precision and without tremor, of the muscular movements of fine accuracy of tongue and finger.

*** We fear that there are no such scientific data in existence as would enable a satisfactory answer to be given to our correspondent's question. The point was much debated before the Royal Commission on Metropolitan Police, whose report is expected shortly, and in the evidence given before the Commission it was shown that while a private practitioner had pronounced that a person whom he had put through several severe tests at 3.30 a.m. could not possibly have been drunk at midnight, an experienced police-surgeon thought this opinion unjustifiable and unsafe. When the report appears we hope to return to the subject and to discuss the point raised by our correspondent more fully.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

INDIAN MEDICAL SERVICE.

Time Spent on Half-pay.

The Government of India have approved of officers of the Indian Medical Service counting up to one year of the time spent on half-pay for promotion and pension if their transfer to the half-pay list was due to medical unfitness caused by civil duty while in civil employ.

The late Deputy Surgeon-General Charles Edward Kilkelly, of Drimcong, co. Galway, who served in the East India Company's Medical Service before the Mutiny, whose death was announced in the Journal not long ago, left estate valued at £74,222.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ended August 10th, 17th, 24th, and 31st, the deaths from plague in India numbered 2,545, 2,778, 3,691, and 4,627 respectively. It will be observed that the plague mortality is gradually increasing since the first week of August, the chief rise in mortality occurring the Bombay Presidency, where during the several weeks in question the deaths from plague have amounted to 1,694, 1,878, 2,515 and 3,241; the fatality has been greatest in the Satara district and the Kolhapur States. In the Punjab the deaths show a marked decrease during the same periods amounting to 277, 138, 113, and 107.

Australia.

Brisbane.—No case of plague had occurred in Brisbane from May 31st until July 6th. During the weeks ended July 20th, 27th, August 3rd, 10th, and 17th, the fresh cases of plague numbered 1, 1, 0, 0, 0. The two patients died. Rats have been found infected during the weeks in question.

Hong Kong.

During the weeks ended August 31st, September 7th and 14th the fresh cases of plague numbered 1, 5, and 1, and the deaths amounted to 1, 5, and 1.

South Africa.

King Williamstown and District.—During the weeks ended August 10th, 17th, and 24th the fresh cases numbered 0, 0, 3, and the deaths 0, 0, 3. The last case of plague under treatment at the King Williamstown Hospital was discharged during the week ended August 24th.

Mauritius.

During the weeks ended August 29th, September 5th, 12th, and 19th, the fresh cases of plague numbered 1, 5, 11, and 4; the deaths from the disease amounted to 0, 4, 11, and 3 respectively.

San Francisco.

An outbreak of plague of some severity has occurred in San Francisco.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

TRANSFER OF POOR-LAW APPOINTMENTS.

St. Thomas (Exeter) Board of Guardians have passed a resolution that upon the resignation of every district medical officer the vacant appointment shall be advertised and candidates invited. It was explained that the object of the resolution was to defeat a plan adopted by some members of the medical profession who when they sold their private practice increased the price by adding the income derived from public appointments. The Board at the same time said they were not averse to appoint as a medical officer the purchaser of a private practice carried on by a retired medical officer if he were the most suitable candidate, and they were even ready to give him a preference in the event of competition for the office. The clerk said medical practitioners make it a point of honour and good feeling not to contest the right of a successor to a private practice from taking any public appointments which his predecessor held.

GUARDIANS AND INSANITY.

With reference to a note in the Journal of September 7th, p. 619, the Vice-Chairman of the Stonehouse Board of Guardians, Dr. W. H. Waterfield, writes:

Perhaps you would like to hear the other side of the question, as you have published such a severe article on the East Stonehouse Guardians: (1) Woman brought her own certificate of supposed lunacy; (2) was not certified by the medical officer of the workhouse as being dangerous, insane, or demented; (3) asked for her own discharge before the whole Board in a rational and calm manner; (4) the husband of said woman and her previous history as to brutality, etc., was personally known to most of the Board; (5) the Board of Guardians had no power to restrain a person against their will, if their own medical officer can find nothing wrong; (6) no insult was ever offered to the doctor who gave the certificate to the patient; he was unknown to the Board.

*** Dr. Waterfield's letter contains no fact or statement which can lead us to modify the opinion we have already expressed, while it seems to show that the members of the Board are not fully alive to the duties cast upon them and

their officers by the Lunacy Act, 1889, Sections 20 to 24. The master of the workhouse was not perhaps legally bound to receive an alleged lunatic without the intervention of a relieving officer or constable, but having admitted her, he was bound to relieve and detain her under the provisions of the Act headed Lunatics in Workhouses. Two courses were open to him: He might either have detained her for three days on the strength of Dr. Sandford's certificate, during which time the relieving officer would have been bound to take proceedings under the Act; or he might have asked the medical officer to certify that she was a fit person to be kept under observation in the workhouse, in which case she could have been detained, even against her will, for fourteen days. The latter is the course which is usually followed, we understand, in metropolitan workhouses, and is such a common one that forms for the medical officers' use in these cases are printed and supplied by Messrs. Knight and Co., printers to the Local Government Board. With regard to Dr. Waterfield's statement that no insult was ever offered to the certifying doctor, we should like to know what he thinks of having it publicly stated that one's conduct is disgraceful, and that it is too easy to certify people as insane.

OBITUARY.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have lately died are Dr. Seneca D. Powell, a prominent surgeon of New York, Vice-President of the American Medical Congress held at Washington in 1895, afterwards President of the New York State Medical Society, well known as a writer, especially on brain surgery, and on the surgical uses of phenol, aged 59; Dr. Eduard Hitzig, Emeritus Professor of Psychiatry in the University of Halle, author in conjunction with Professor Fritsch of researches on the physiology of the brain, aged 70; Dr. Anton Loew, of Vienna, Vice-President of the Austrian Red Cross Society and author of a number of publications on the care of the sick, and the organization and management of private hospitals, aged 60; Dr. A. Gué, sometime professor of dermatology in the University of Kasan; and Dr. Gaylord P. Clark, Dean of the College of Medicine, Syracuse University, and a distinguished physiologist.

HOSPITAL AND DISPENSARY MANAGEMENT.

CROYDON MENTAL HOSPITAL, WARLINGHAM, SURREY.

We have received the fourth annual report of the above asylum for the County Borough of Croydon containing the Committee's and the Medical Superintendent's annual reports for the year ending March 31st, 1907, and the statistical tables for the year 1906. In his report, the Medical Superintendent, Dr. E. S. Pasmore, gives a table showing the steady increase in the numbers of the insane chargeable to Croydon, from 271 in June, 1902, to 402 in December, 1906. From the report of Mr. Hardinge F. Giffard, Commissioner in Lunacy, it is evident that Croydon's asylum accommodation is insufficient to cope with this increase, the asylum being overcrowded at Mr. Giffard's visit to the extent of 15 on the male and 23 on the female side. We see, however, that plans to accommodate 200 more patients have been submitted to the Board of Lunacy. On January 1st, 1906, there were 441 patients in residence, and at the end of the year these had increased to 472. The total number of cases under treatment during the year was 602, and the average number daily resident 470. During the year 161 were admitted, of whom 119 were first admissions, 8 of the remainder being readmissions from Croydon and the rest from other asylums. Of the total admissions, in 84 the attacks were first attacks within three and in 20 more within twelve months of admission, and the remainder were either of more than twelve months' duration on admission (17) or of congenital origin. The admissions were classified according to the forms of mental disorder into: Mania of all kinds, 49; melancholia of all kinds, 42; delusional insanity, 16; stupor, 4; dementia, secondary and senile, 14; general paralysis, 17; epileptic insanity, 2; and cases of congenital or infantile defect, 17. As to the probable causes of the insanities in the admissions, alcoholic intemperance was assigned in 37, or almost 23 per cent., and syphilis in 14—that is, that to these two agents were attributed as exciting causes over 31 per cent. of the year's admissions. Other mentioned causes were: previous attacks in 32; old age, the menopause, and puberty in 15; moral causes in 29; epilepsy in 7; other bodily diseases in 6, and head trauma in 4. Hereditary influences were ascertained in 50, or 31 per cent., and congenital defect was assigned in 12. During the year 54 were discharged as recovered, giving a recovery-rate on the admissions of 36 98 per cent.; 22 as relieved, and 3 as not improved. There were also 51 deaths, giving a death-rate on the average numbers resident of 10.85 per cent., which, though still above the average for this institution, is lower than the 11.91 of the previous year. The deaths were due in 19 cases to cerebro-spinal diseases, including 13 deaths from general paralysis; in 29 to chest diseases, including 10 deaths from phthisis, and 9 from pneumonia; in 2 to senile decay, and in 1 to carcinoma. The general health of the institution was good throughout the year, no cases of zymotic disease occurred, there were no serious casualties, and no patient had to be secluded or mechanically restrained. The proportion of cases walking out beyond the boundaries, however, seems to have been unusually low.

ROXBURGH, BERWICK, AND SELKIRK DISTRICT ASYLUM.

The new female wing of this asylum, to accommodate 60 patients of the quiet, industrious, and trustworthy class, erected at a cost, including furnishings, of £9,349, was opened in November, 1906. It contains two day wards, each for 30 patients, four dormitories with 14 beds in each, four single rooms, separate quarters for 15 nurses, and the usual offices. Other extensions and reconstructions are in plan, and when these have been completed the scheme for the extension of the asylum, by which its capacity will be doubled, and which has been in progress for more than eleven years, will be completed. The Medical Superintendent, Dr. J. Carlyle Johnstone, says in his annual report for 1906 7 that it is unlikely that the present generation will be called upon to make any further addition to the structure.

On May 15th, 1906, there were 331 patients on the asylum register, and on May 15th, 1907, there were 329. The total number of cases under treatment during the year was 405, and the average number daily resident 329 1. During the year 74 cases were admitted, of whom 56 were first admissions. In 26 the attacks were first attacks within three, and in 15 more within twelve, months of admission; in 7 not-first attacks within twelve months of admission, and in 8, whether first attacks or not, of more than twelve months' duration on admission. The physical condition of the patients admitted was good or average in 11 per cent., bad in 82 per cent., and very bad in 7 per cent., more than half the cases suffering from some form or other of physical disease. One of the admissions was a woman who had been charged with the wilful murder of her two infant children by drowning them in the Tweed, who was sent to the asylum under Sec. 15 of the Act 25 and 26 Vic., Cap. 51. Twelve days later she was removed to Edinburgh Prison and sentenced to six months' imprisonment; and Dr. Johnstone takes the opportunity in his report of protesting against "the growing tendency to make use of asylums as convenient houses of detention for dangerous criminals."

The admissions were classified as to the forms of mental disorder into: Mania, recent and chronic, 29; melancholia, recent and chronic, 21; senile and secondary dementia, 8; general paralysis, 4; delusional insanity, 6; insanity with gross brain lesion, 3; and cases of congenital or infantile defect, 3.

As to the more striking probable causes of the insanities in these cases, alcohol was assigned in 14, or nearly 19 per cent., venereal disease in 5, previous attacks in 19, old age, puberty, adolescence, and the menopause in 20, accident or injury in 4, various bodily diseases and disorders in 5, and "moral" causes in 18. Hereditary influences were ascertained in 43, or 58 per cent., and congenital defect in 5. In 27 cases, or 36 4 per cent., suicidal tendencies were present, and 13 of these, or 17.5 per cent. of the total admissions, had made suicidal attempts before being sent to the asylum.

During the year 26 were discharged as recovered, giving the recovery-rate on the admissions of 35.1 per cent., which cannot be regarded as unsatisfactory considering the character of the year's admissions; 11 as relieved, and 1 as not improved. During the year 38 died. These deaths, giving a death-rate on the average numbers resident of 11.5 per cent., were due in 10 cases to cerebro-spinal diseases, including 5 from general paralysis, in 17 to chest diseases, in 4 to abdominal diseases, and the remainder to general diseases. From the table of deaths we see that pulmonary tuberculosis was the sole cause of death in 5, but was a complication in 7 more, so that tuberculosis was the chief or contributory cause of death in over 31 per cent. of the total deaths. The general health was fairly good throughout the year, and except for a few cases of influenza the asylum was free from epidemic disease.

SUNDERLAND INFIRMARY.

The annual report submitted to the Governers of Sunderland Infirmary on July 30th, being the one hundred and thirteenth in succession, shows a steady increase in work. The number of admissions during the year was 3,158, the out-patients standing at just under 10,000. Care continues to be taken, it is stated, to exclude any but those fully entitled to treatment. A site has been acquired for the proposed Children's Hospital, the building fund of which now stands at £15.000. Sundry improvements in the out-patient and administrative blocks are also in progress.

JOINT COUNTIES ASYLUM, CARMARTHEN.

LAST year, in our notice of the annual report of this asylum, we had occasion to refer to the regrettable dispute between the several local authorities which maintain the asylum, and, from the report of the Commissioners in Lunacy, we see that the contending parties are still at a deadlock, to the serious detriment of the asylum. This condition of things is not creditable, the Commissioners remark, to the authorities to whom is entrusted the duty of providing for the care and welfare of their insane. Unfortunately there does not seem to be any prospect of an early settlement. In July, 1906, Dr. Edwin Goodall, who had filled the post of Medical Superintendent of this asylum with conspicuous ability for over twelve years, resigned his post on his appointment to the Cardiff City Asylum, and we see that Dr. John Richards has been appointed in his place. The present annual report, however, was prepared by Dr. W. Gibbon, the acting Medical Superintendent. From the report we see that on January 1st, 1906, there were 660 patients in residence, and that these had increased to 696 by December 31st, 1906, or no less than 62 in excess of the provided accommodation. The total number of cases under care during the year was 778, and the average number daily resident 679. During the year 118 cases were admitted, of whom 101 were first admissions. In 35 of the total admissions the attacks were first attacks within three, and in 19 more within twelve months of admission; in 24 not-first attacks within twelve months of admission and in the remainder the attacks were either of more than twelve months' duration on admission (31), of congenital origin (7), or of unknown duration (2). The admissions were classified as to the forms of mental disorder into: Mania of all kinds 34, melancholia 19, dementia 18, stupor 3, delusional insanity 20, moral insanity 2, confusional insanity 1, general paralysis 5, acquired epilepsy 8, and congenital or infantile defect 8. As to the probable causes of the insanities in these cases alcohol was assigned in 19, or 16 per cent., venereal disease in 1, old age and the menopause in 18, previous attacks in 20, moral causes in 30, and in 15 no cause could be assigned. Hereditary influences were ascertained in 31 and congenital defect existed in 14.

During the year 35 were discharged as recovered, giving a recovery-rate on the admissions of 31.56 per cent.; 8 as relieved and 1 as not improved. During the year also there were 38 deaths, giving a percentage death-rate on the average numbers resident of 5 65, a very satisfactory death-rate for any county asylum, and particularly so for one so overcrowded as this. The deaths were due in 11 cases to cerebro-spinal disease, with only 1 death from general paralysis; in 17 to chest diseases, with 10 from pulmonary tuberculosis; in 5 to abdominal diseases, 3 from old age, and 2 from general tuberculosis. There were thus 12 deaths from tuberculosis, or over 30 per cent. of the total deaths. The general health was good throughout the year, and the number of major but non-fatal casualties was small.

DORSET COUNTY ASYLUM.

THE annual report of Dr. P. W. MacDonald, the Medical Superintendent of this institution, shows that on January 1st, 1906, there were 817 patients in residence, and that by the end of the year the number had increased only by 3. During the year there were 960 patients in all under care, and the average number daily resident was 814. There were 153 admissions during the year, of whom 120 were first admissions; of the total admissions the attacks in 57 were first attacks within three, and in 15 more within twelve months of admission; in 45 not-first attacks within twelve months of admission, and in the remainder the attacks were either of more than twelve months' duration on admission (17) of congenital origin (8) or of unknown duration. The type of case admitted was not, Dr. MacDonald states, generally of a favourable character, and the high proportion of cases of confirmed mania was an unusual experience. The admissions were classified as to the form of mental disorder as follows: Mania of all kinds, 60; melancholia (recent), 37; senile or secondary dementia, 8; delusional insanity, 23; primary dementia, 2; confusional insanity, 3; epileptic insanity, 8; general paralysis, 2; not insane, 1; and 9 cases of congenital defect. The small number of general paralytics, and the high proportion of cases of mania, are the noteworthy features of this list. As to the probable causes of the insanities in these cases alcoholic intemperance was assigned in 11, or in only 7.1 per cent.; venereal disease in none; puberty, old age, and the menopause in no less than 59; previous attacks in 37; various bodily diseases in 28; and "moral" causes in 25. Hereditary influences were ascertained in 43 and congenital defect in 9 more. During the year 61 were discharged as recovered, giving the very satisfactory recovery-rate on admissions of 46 26 per cent., the highest recovery-rate recorded at this asylum; 2 as relieved, 19 as not improved, and 1 as not insane. During the year also there were 67 deaths, giving the percentage death-rate on the average numbers resident of 8 23. These deaths were all, with one exception, due to natural causes: 20 from cerebro-spinal diseases; 7 from pulmonary tuberculosis and 10 from pneumonia; and 22 from general and various diseases, including 10 from senile decay.

The pneumonia, from which 10 died, Dr. MacDonald says, was of a post-influenzal and non-tuberculous nature. Beyond an outbreak of influenza in the early part of the year, no zymotic disease had to be recorded, and the general health appears to have been good throughout the year.

KINGSEAT ASYLUM, ABERDEEN.

WE have received the second annual report of this village asylum for the City District of Aberdeen, a descriptive account of which was published in the BRITISH MEDICAL JOURNAL of November 24th, 1906, p. 1498. The report is of a thoroughly satisfactory character and the Asylum Committee pay a well-merited tribute to the first Medical Superintendent, Dr. Charles Angus, who died, to the deep regret of all who knew him, on July 21st, 1906. To his zealous labours and abilities as organizer and administrator the present satisfactory condition of the institution is largely due. Dr. Hugh de Maine Alexander, Assistant Physician to the Royal Asylum, Aberdeen, was appointed his successor and the Medical Superintendent's report for 1906 is from his pen.

On December 31st, 1905, there were 385 on the asylum register, the total number under care during the year being 517 and the average number daily resident 403.4. During the year 132 were admitted of whom 68 were first and 64 not-first admissions. In 52 the attacks were first attacks within three, and in 8 more within twelve months of admission; in 15 not-first attacks within twelve months of admission and in the remainder the attacks were either of more than twelve months' duration on admission (47) or of congenital origin (10). These admissions were classified as to the forms of mental disorder into: Mania of all kinds, 38; melancholia of all kinds, 40; dementia, secondary, senile and organic, 15; primary dementia, 1; delusional insanity, 16; stupor and alternating insanity, 1 each; general paralysis 6; acquired epilepsy 2, and congenital or infantile defect 12. As regards the probable causation of the insanities among the admissions, alcohol was assigned in 18, or 13.6 per cent. Dr. Alexander, however, states that a neurotic inheritance was probably present in all cases where the exciting cause of the mental attack was attributable to alcohol, as in those cases where inquiry into the family history proved futile the presence of neurotic stigmata in the individual told its own tale. Adolescence, the menopause, and senility were assigned in 28, general paralysis in 6, previous attacks in 8, emotional stress in 5, various bodily diseases or disorders in 15, and in 24 no cause could be ascertained. A neurotic inheritance was established in 29, or 22 per cent. During the year 55 were discharged as recovered, giving a recovery-rate on admissions of 41 6 per cent., 14 as relieved and 2 as not improved. There were also 34 deaths, giving a death-rate on the average numbers resident of 8.4 per cent., the deaths being due in 4 to cerebro-spinal diseases; in 15 to chest diseases, including 7 deaths from pulmonary tuberculosis, or 20 per cent. of the total deaths; in 7 to abdominal diseases, including 1 case of traumatic rupture of the intestine, and in 8 cases to general diseases. One inquiry by the Procurator-Fiscal was held during the year on the case of traumatic rupture of intestine referred to above, the patient sustaining the injury accidentally by falling whilst being undressed by an attendant. No blame was attached to the attendant. The asylum was twice visited by the Lunacy Commissioners, who left exceedingly favourable reports upon the institution and its management. An interesting note is contained in the report of the Committee to the effect that the cost of maintenance per patient for the year ending May 15th, 1906, was only £25 6s. 5½d., thus showing that this modern type of institution is not necessarily more expensive in upkeep than older and certainly inferior types.

M. BRIAND, French Minister of Public Instruction, has addressed a circular letter to the prefects of departments setting forth the precautions to be taken against the spread of certain contagious diseases in public primary schools. In accordance with a resolution passed by the Council of Hygiene and Salubrity of the Department of the Seine, alopecia areata is removed from the list of contagious diseases. In the case of small-pox, the child is to be excluded from the school for a period of forty days, his class and exercise books are to be destroyed, general disinfection of the school is to be carried out, and all teachers and pupils are to be revaccinated. In the case of scarlet fever, similar measures as to disinfection are to be adopted, and the school is to be closed if, notwithstanding these precautions, several cases occur within a few days. In the case of measles, the child is to be excluded for sixteen days, his books and copybooks are to be destroyed, and, if necessary, the school is to be closed to all children under the age of 6. In the case of chicken-pox, the affected children are to be weeded out as the occasion arises. The same measure is to be taken in cases of mumps; the period of exclusion is ten days. In cases of diphtheria, exclusion is to be for forty days; books, copybooks, and playthings belonging to the patients are to be destroyed, and successive disinfections are to be carried out. In cases of whooping-cough, affected children are to be excluded for three weeks. In cases of ringworm, the affected children are to be excluded, and are to be allowed to return only after treatment, regular dressing being kept up as long as necessary.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* **BRITISH MEDICAL JOURNAL** *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that **ALL** letters on the editorial business of the **JOURNAL** be addressed to the **Editor** at the Office of the **JOURNAL**, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the **JOURNAL**, etc., should be addressed to the **Manager, at the Office**, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the **BRITISH MEDICAL JOURNAL** are requested to communicate with the **Manager**, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the **EDITOR** of the **BRITISH MEDICAL JOURNAL** is *Aitiology, London.* The telegraphic address of the **MANAGER** of the **BRITISH MEDICAL JOURNAL** is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2331, Gerrard. GENERAL SECRETARY AND MANAGER, 2630. Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

R. A. asks for information as to the treatment of rheumatoid arthritis by restricting the diet to animal food and water.

C. B. H. asks for references to literature bearing on the popular idea that the marriage of an old woman with a young man tends to longevity on the part of the woman.

A. E. C. asks where he can find a peculiar gouty rheumatic affection of the heel fully described, and what is the most effectual treatment of this complaint. He thinks it is named Morten's disease.

*** Morton's foot is a painful disorder of the metatarsophalangeal joint of the fourth toe, due to local neuritis from bruising of one or more branches of the external phalangeal nerve.

VERTIGO.

V. asks for advice in the following case: A patient complains of giddiness on rising or sitting down, and chiefly when raising his eyes to the ceiling. The symptom is not so bad when walking as when sitting. He has no other symptom, and has no pain. He eats well. Our correspondent has reduced blood pressure by various methods. The patient's ears have no unnatural quantity of wax. No appreciable alteration has taken place. The man can attend his work.

SURGICAL TREATMENT OF INCONTINENCE OF URINE.

A. H. G asks whether any one can speak from personal experience of the value of the operation of dissecting up half an inch of urethra (including surrounding muscle), giving it a twist, and suturing it in its new position in order to cure nocturnal incontinence of urine in an adult female. She has had adenoids removed, but still "talks down her nose" a little. There seems too much room now, the soft palate scarcely touching the posterior pharyngeal wall.

CINCHONISM.

Q. writes: A woman aged 45 years had a mixture containing 1½ grain doses of quinine sulphate. Almost immediately after taking the first dose she experienced great difficulty in respiration, complained of coldness and numbness of extremities, blueness of lips, and vomiting. Some time afterwards the same patient had a mixture of sodium salicylate and 15-minim doses of compound tincture of cinchona, with precisely the same unfortunate experience. It appears to me a most extraordinary idiosyncrasy to arise from such small dosage.

LUBRICANT FOR CATHETERS.

DR. GEORGE H. R. DABBS (London, E.C.), writes: Practitioners who, like myself, nowadays have a good deal of catheter work to do, might perhaps be inclined to state their opinions, and give their experience as to the particular lubricant they affect. My own choice has fallen upon a combination of cocaine, adrenalin, atropia (with an oily medium), and the oil I prefer is almond oil. It may be an exercise of faith, but I cannot help thinking the atropia has some dilating influence. My formula exactly is cocaine 1, adrenalin 1, atropia 1, almond oil 95. I use the atropia alkaloid and not the sulphate, and my oil is sterilized. I should be infinitely obliged for any further hints on the subject.

ANSWERS.

CHARACTER.—We would recommend our correspondent to begin his study of physiognomy by reading Darwin's *Expressions of the Emotions in Man and Animals.* (London: John Murray. 2s. 6d.)

GONORRHOEAL RHEUMATISM

MR. GEORGE PERNET (London) writes: With reference to "Camden's" inquiry as to gonorrhoeal arthritis, the late Mr. Christopher Heath used to insist on the value of large doses of quinine in such cases. Following his teaching, I may say I have found it answer. In a bad case of gonorrhoeal tibiotarsal arthritis I published (*Verlängerte Inkubation der Blennorrhoeïn Derm. Zeitsch.*, xi, 1904) the good effects were very marked.

LIP-READING.

G.—We do not know of any book which is intended for the instruction in lip-reading of those who have become deaf in adolescence or adult life. It is doubtful, indeed, whether the art can be acquired from a book alone. Arnold's *Method of Teaching the Deaf and Dumb Speech, Lip-reading, and Language* (Smith, Elder, and Co. 15s.) is used as a textbook in the training of teachers. As in the study of singing and foreign languages, a few lessons from a qualified teacher would greatly facilitate progress. The School Boards of London and other large centres have such persons on their staffs for the instruction of deaf-mute pupils. A small brochure by Isabel O. Pollock, entitled *Lip-reading: What it is and what it does for the partially deaf* (Simpkin, Marshall, Hamilton, Kent, and Co. 6d.), contains a slip giving the names of several teachers.

HOSPITAL ADMINISTRATION.

A. B. C.—(1) Patients suffering from phthisis are admitted and treated in the general wards of the London hospitals, and are not isolated in the same way as infectious fever cases. Phthisical cases are not desired in the general wards, but as there is insufficient accommodation in special hospitals they cannot be refused. (2) Though a (lay) member of the managing committee of a hospital has not the right to demand information as to the nature of a patient's disease, there would generally be no objection to supplying the information if required for purposes connected with the management of the institution. Presumably the diagnosis is written on the patient's bed-card, and so cannot be called private information, but any particulars about a patient supplied by the medical officers and staff is confidential, and must be so treated. (3) The secretary is presumably obliged to supply any information from his books when demanded by the committee, but not necessarily when asked by any individual member of the committee. (4) It would seem desirable that when possible the disease from which a patient is suffering should be stated on the order for admission. (5) The registrar keeps the record of the disease of each patient; the secretary (as such) need not, and as a rule does not, keep such a record.

LETTERS, NOTES, Etc.

CHRISTIAN SCIENCE.

TRUTH writes: Like many others I was disposed to think that the columns of the *Daily Telegraph* were open to all letters headed "Christian Science," and that the views expressed would give an index of the mental attitude of the readers in like proportion. I was surprised at the credulity exhibited in so many. I could hardly believe that my surmise was correct and that the intellectual development of such a large number of the population of England was so backward. To test whether a certain amount of editorial sifting had occurred, I contributed a note written from a rationalist standpoint. It was not inserted. We may conclude, therefore, that the tenor of the bulk of the correspondence does not necessarily reflect the opinions of the majority of the readers, and that there is more common sense in Great Britain than the recent issues of the *Daily Telegraph* would indicate.

W. M. PLAYFAIR (London) writes: I was much surprised to see in the BRITISH MEDICAL JOURNAL for September 21st that before quoting from a letter written by me to the *Daily Telegraph* you write "the anonymous defenders of Christian Science." As I put both my name and address this seems hardly just or accurate. I could not, of course, give the names of the doctors for publication without having previously asked their permission. I am now writing to ask them if I may furnish your journal with their names and addresses, that you may investigate, as I can quite see the necessity for having all statements as to the results of so new a treatment of diseases fully substantiated and verified. Should there be anything further I can do in the way of proof I shall be glad to do it.

*** If "W. M. Playfair" will read our paragraph again he—or she—will see that there is no ground for the charge that the particular letter referred to was said to be anonymous. We expressly stated that we thought that the correspondence in the *Daily Telegraph* was entirely genuine, "not only

because many of the writers sign their names, but because the anonymous defenders of the Christian Science position have displayed a 'holy simplicity' which the most practised journalist would find it difficult to imitate." The letter of "W. M. Playfair" was quoted, but our article contains no suggestion that it was anonymous. We are sure the profession would be glad to know the names of the authorities to whom the discovery of "enterc-membraneous-mucous-colitis" is due; as a specimen of nomenclature alone it is enough to add a ray even to the aureole of glory which encircles the head of "the greatest authority on this disease in Europe." Should W. M. Playfair obtain the permission required (which we venture to doubt), we shall consider it a privilege to brighten our dull page with the illustrious names of the men who made so brilliant a diagnosis.

SHIP SURGEONS.

AT SEA writes: In your issue of August 31st there is a notice to the effect that there is an association of ship surgeons about to be formed, and you comment on the wisdom of such a procedure. Now, as a member of the British Medical Association of ten years' standing, eight of which I have spent at sea, I am deeply interested in your attitude towards us ship doctors, and I cordially endorse your sentiments that all who belong to the British Medical Association ought to seek its support. But to do this successfully, we must first try to organize our ranks, and this is the great difficulty. We seldom meet one another, and individually are as helpless as wandering leucocytes. For this reason I hope Dr. Metcalfe-Sharpe's proposal will meet with the support of ship surgeons as a body, as it is the first attempt I am aware of of bringing us into touch with one another. Of course we may expect the opposition of the shipping companies, and, as the process of unmaking a ship surgeon is quite easy, the members of the new association, unless they have the general support of the profession, may find themselves in the Gilbertian position of being an association of ship surgeons *without* ships.

A FORMER SHIP SURGEON writes: I understand that a British Ship Surgeons' Association is about to be formed of both past and present ship surgeons. I think the starting of such an Association an excellent idea, and one, if well supported, calculated to raise the status of the profession in that respect, and facilitate, through the issue of a special gazette, the recording of much valuable information as to treatment of disease and accident at sea. It is to be hoped that medical men who early in their career have been to sea professionally, but who probably do not intend "to sign on" again, will nevertheless retain their sympathy and interest in marine medical matters, and actively support the British Ship Surgeons' Association.

S. S. writes: I would earnestly ask those who think of becoming ship surgeons to read "Ex-Ship Surgeon's" warning in your issue of September 21st. From bitter experience I can entirely endorse his statements. The ship surgeon is an absolute nobody in the eyes of the captain and other chief officials of the ship. Let any one who wishes to know the exact estimation in which ship surgeons are held read the account you gave of the death of a ship's surgeon on a steamer homeward bound from the South African ports. You entitled this account as a "Strange Tale of the Sea." It was in the BRITISH MEDICAL JOURNAL in April or May in the year 1897. You made some very strong remarks on the subject. One of the points was that the doctor died on the voyage and no intimation whatever was given to his friends on the ship's arrival in London. It was only after waiting and waiting for him to come home that they found out on inquiry at the office of the company that he had died on the voyage. I have been in various kinds of practice, colliery and clubs of various kinds, but my experience as a ship surgeon has been the most degrading episode in my life. To my mind the medical profession sinks lowest in the position of ship surgeon.

DR. R. BROOKS POPHAM (Ealing, W.) writes: "Ex-Ship Surgeon" has had a most unfortunate time of it evidently, but experience differs. I have been to sea in all kinds of craft, from a deep-sea trawling hospital ship to an ocean-going liner, either with English, lascar, or a Chinese crew, and never have I regretted my seafaring days. Personally I was never treated "abominably" or "humiliated" in any way whatsoever, and, as for status and esteem, that, I believe, depends entirely on the attitude of the doctor on board ship. Petty annoyances one will always get, be it on the high seas or in private practice But if the ship surgeon be courteous to the captain, not ignoring him in matters where both doctor and company are concerned, yet quietly firm and tactful, genial to officers and passengers, abiding by the rules of the ship, not "sticking up one's back," yet not kowtowing as an inferior on the articles—in other words, acting as a gentleman in the true sense—all will be well. Confidence in you and respect will surely soon be gained, and you will leave the ship with many regrets and the good fellowship of captain, officers, crew and all.

PROPOSED TREATMENT OF PHTHISIS BY INCISION INTO THE PLEURAL SPACE.

DR. J. M. THORNE (Brockham Green, Betchworth) writes: The most favourable results of the outdoor treatment (though the best till now by general acknowledgement) require a very long time, and the results in a large number of patients who have benefited while under the treatment prove that relapses are fairly common when they have to resume their ordinary occupations and life. It has occurred to me that, in addition, after a week or two of preliminary observation, the chance of a quicker and more permanent recovery might be increased if an incision was made through an intercostal space into the pleural cavity of the affected lung (or the one more affected), the wound being kept open for a day or two with a gauze drain, and then allowed to heal. The possible advantages are: (1) The lung would have a complete rest from movements for a few days; (2) during the process of the wound healing and the lung becoming reinflated there will be in the wound a leucocytosis, and through the vessels and pleura of the lung an increased flow of blood, containing leucocytes, serum, and lymph, which may attack the tubercles and arrest their further extension. In the case of tuberculous peritonitis with ascites, it was discovered some years ago by accident that a simple exploratory incision into the peritoneal cavity led to recovery. Nowadays this is the recognized treatment, and a very large proportion of the patients operated upon are permanently cured, though exactly how and why is still under debate. May it not be possible that an equally happy result will follow if, as soon as the invasion of a lung is recognized, it is courageously attacked in this or some similar manner before allowing it to become long established? At the present day the technique of surgery has become so perfect that in competent hands the risk of this operation will be very small, and afterwards the many well-situated, well-found, and skilfully-staffed sanatoriums will give the patients everything towards making good recoveries. Finally, after only a few patients had given their consent and undergone the proposed operation, in a very short space of time it would be proved whether there was any benefit or not, and later on the permanent results.

CIRCUMCISION BY THE BITE OF A DOG.

DR. C. R. BROWNE (Falmouth) writes: As cases of injuries to the genital organs by bites of animals are of comparatively infrequent occurrence the writer ventures to hope that the following case may be of interest: On February 9th, 1907, I was called to see F. B., a boy of 13, who had been attacked and badly worried by a large dog which had knocked him down and seized him by the front of his trousers including the penis in the bite. The patient told me that some other boys had come up and driven the dog away, but for which in all probability greater damage would have been done. F. B., though losing a good deal of blood, was able with the aid of the other boys to walk home, a distance of about a mile. When I arrived I found the boy rather collapsed from shock and from somewhat profuse haemorrhage. On removing the trousers and drawers, which were much torn, and cleansing the wound I found that the penis presented the appearance of having been subjected to the classical operation of circumcision which had been interrupted after the removal of the skin, for the whole of the cutaneous portion of the foreskin had been torn cleanly away from about the level of the corona glandis, a small ring around the meatus, and a pointed strip which ran up to and included the fraenum alone excepted. The mucous membrane alone covered the glans. With the aid of Dr. P. Liston, of Penryn, and Dr. Ward, of Plymouth, I completed the operation begun by the dog. The wound healed easily and gave no trouble The only similar case of which I have seen any record is described in Gould and Pyle's *Anomalies of Medicine*, p. 680. So far as I can learn, bites of the genitals more usually result in serious injury and removal of penis and testes, and these cases are of interest on account of the narrowness of the escapes.

AN UNKNOWN QUANTITY.

WE take the following from the *Chicago Medical Recorder*: A village doctor, whose most troublesome patient was an elderly woman, practically on the free list, was vigorously scolded by her one day for not coming when summoned the night before. "You can go to see your other patients at night," she said; "why can't you come when I send for you? Ain't my money as good as other people's?" "I do not know, madam," was the reply; "I never saw any of it"

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An Address

ON

MEDICINE AND ITS SPECIALITIES IN THEIR RELATION TO THE STATE:

A RETROSPECT AND A PROSPECT.

Delivered at Victoria University, Manchester, on October 1st, at the Opening of the Medical Session.

By CHARLES S. TOMES, M.A., F.R.C.S., F.R.S.,

Joint Treasurer of the General Medical Council.

For many years a considerable number of introductory addresses have been delivered annually, so that the more obviously appropriate subjects have become hackneyed, and the difficulty of selection of a theme has become considerable. After thinking over possible subjects, it has seemed to me that the discussion of the relation of the medical profession to the State would be opportune. For in the minds of the profession there is a growing dissatisfaction with the law as it stands, and this dissatisfaction has found expression in the action of the British Medical Association in drafting a new Medical Bill, and in an attempt to put an end to the evasion of the Medical and Dentists Acts as they stand by means of the conditions attaching to incorporated companies, an abuse of the purposes for which company legislation has been framed. Moreover, there has been no little activity in medical legislation in our Colonies, where the lines of the Medical Acts of the home country have been by no means blindly followed.

It may be asked what useful purpose will be served by a retrospect, why should we not confine our consideration to the present. But, like everything else, medical legislation has gone through a process of evolution, and, like an organism, retains here and there the more or less obsolete things, like the rudimentary organs of an animal. Hence there is much more of continuity in such matters than might at first glance be imagined; so much of continuity that a survey of the past may, I think, be made enlightening as to the future, besides presenting much that is curious and interesting in itself. But I feel some diffidence in making the attempt; the time at my disposal only allows of a fragmentary treatment of a large subject, and I can make no pretension to legal knowledge, so that I can only present what may sometimes be technical issues from the standpoint of a layman interested in their results.

For a very long time in the earlier history of medical practice the State did not concern itself at all in its regulation; nevertheless, in order to arrive at an understanding of the conditions antecedent to legislation, which, indeed, led up to legislation, a few words must be devoted to that period.

The first statute passed in this country was in the sixteenth century, in the earlier years of the reign of Henry VIII, but long before that medical education had been to a large extent systematized. Medicine was taught in the University of Salerno in the seventh century, and our own Universities of Oxford and Cambridge granted degrees in medicine at an early period. Learning of every kind was almost confined to the clerics, in whose hands the control of the universities lay. Even in the civilization of Ancient Egypt Herodotus tells us that the sick sought the aid of the priests at the temples, and in England the monks had for many centuries a virtual monopoly of medical practice, a fact which left its impress in certain particulars even after it had passed from their hands. Indeed, the ecclesiastical authorities became from time to time alarmed at its extent, lest the monks should come to prefer the practice of medicine to the more monotonous exercise of their devotional duties. At the Council of Tours it was laid down that any who absented themselves from their monasteries for this purpose for more than two months should be excommunicated, though the decree was softened by calling them the dainty morsels of Satan seduced through the best feelings of their nature, the desire to alleviate suffering. At another Council it was laid down that no attempt should be made to cure the bodily ailment until after the spiritual needs of the patient had been attended to; and yet another ecclesiastical ordinance led to a sharper separation of surgery from medicine, for the monks were told to restrict themselves to the medical side of practice. One of the immediate effects of this was that surgery fell into the hands of a much less educated class, the barbers and the smiths, and even long afterwards the only regular surgeons bearing any sort of imprimatur were the members of the Barbers' Company, and afterwards of the Barber Surgeons' Company. Hence the more highly educated physicians early assumed a position of superiority over the surgeons, which was at first amply justified, and this assumption of superiority left its traces even up to our own times.

We are apt to think that the incursion of ladies into the medical profession is a thing of yesterday, but this is not so; there were lady professors at Salerno, there was a lady professor of anatomy of much distinction at Padua, and we read in Spenser's *Faerie Queen* that ladies treated wounds and dislocations.

But all this time there was little or no attempt to restrict the practice of medicine to those who had given proof of their fitness. Although for centuries the universities had educated and examined candidates for their doctorates, their regulations for restricting practice to these persons appear to have been merely academic. As early as the thirteenth century the University of Salerno had prescribed a five-year curriculum—also, be it noted, no new thing of to-day—and had instituted examinations before a licence to practise was issued, and though somewhat similar steps were taken by our own universities, these regulations, at all events in England, found no echo in the law of the land, though there are indications that the universities had sought such powers. Thus it appears that in the reign of Henry VIII divers university scholars, "on a foresight of the ruin of the clergy, betook themselves to physic, and, though raw and inexperienced, would venture to practise to the ruin of many."

Having brought these few comments up to the period of commencing legislation, a point occurs on which I enter with much distrust of my own powers to put it correctly. It is, I believe, a doctrine of the common law that any one who is competent has a prescriptive right to pursue any occupation he pleases, and the only check upon him is that he does it at his own risk, that is to say, he stands to be judged by results, and if he is grossly incompetent, he has deceived the public, and may be held liable for any damage he has caused. Hence if there is no legal prohibition of practice by other than duly-qualified persons, as in this country there is not (except to a partial extent under the Apothecaries Act), this remains to the present day the position of the quack.

This common-law doctrine is not, I fancy, very familiar to the members of our profession, but it is one which should be kept in mind when we come to consider the terms of restrictive legislation; for, according to Willcock on the laws relating to the medical profession, a valuable work on which I have drawn pretty largely, the effect of the early statutes was to leave to every man his common-law right to practise, if competent, in the profession of physic as in any other calling, but they constituted certain persons or certain corporations to be the judges as to his competency. Then his competency was, as it seems to me, to be ascertained prior to instead of after the event. It seems quite possible that an undue recognition of the common-law doctrine may serve to account for the otherwise inexplicable leniency of our judges in cases where the patients of unqualified persons have met with serious misadventure. And this tendency on the part of the judges is no new thing. Thus Lord Ellenborough in 1807, whilst trying an action brought against an unqualified person whose patient had died as a consequence of ignorant surgical interference after delivery, laid down that to substantiate a case of manslaughter there must have been the grossest ignorance or criminal inattention, and that as the prisoner had delivered many women "he must have had some degree of skill." Hale, too, said, speaking of death arising as a result of treatment by an unqualified person, that if such be not licensed, they are liable to the penalties attaching thereto, "but God forbid that any mischance of this kind should make any person not licensed guilty of murder or manslaughter."

And in the reign of George IV another judge, less well known to posterity, said in a similar case,

where death had resulted from surgical interference by an unqualified person, that, as regards manslaughter, "It is my opinion that it makes no difference whether the party be a regular or an irregular surgeon; indeed, in remote parts of the country, many persons would be left to die if irregular surgeons were not allowed to practise."

Thus there seems to have long been a tendency on the part of the judges to belittle the necessity of proper qualification and to find every excuse for the irregular practitioner, one even going so far as, in directing an acquittal, to say that no imputation whatever ought to be cast on the gentleman at the bar.

In reading over these old judgements, and, indeed, in reading those of our own day, one is struck by the divergent conclusions which different minds may draw from the same facts. To the legal mind, the fact that disaster may occur in spite of adequate skill and care seems to be a sufficient excuse for the quack. To the medical mind, the knowledge that skill and care will avoid disaster in the vast majority of cases seems to aggravate the offence of the quack, who for gain invites disaster by recklessly undertaking that for which he has neither the skill or the knowledge.

In the reign of Henry VIII the first statute regulating medical practice was passed, and its preamble is both interesting and instructive. For the motive of legislation is very fully and clearly laid down to be the protection of the public, and not the safeguarding of the interests of those who had undergone a course of instruction in medicine. This attitude it is very important to keep in mind, as, with the difference in form of expression of the period, it is exactly repeated in the preamble of the Medical Acts now in force. The ancient preamble runs thus:

"Forasmuch as the science and cunning of physic and surgery (to the perfect knowledge of which be requisite great learning and ripe experience) is daily within this realm exercised by a great multitude of ignorant persons, of whom the greater part have no manner of insight in the same, nor in any other kind of learning; some also can no letters on the book so far forth that common artificers, as smiths, weavers, and women, boldly and accustomably take upon them great cures and things of great difficulty, in the which they partly use sorcery and witchcraft, partly apply such medicines into the disease as be very noxious and nothing meet therefor, to the high displeasure of God, great infamy of the faculty, and the grievous hurt, damage, and destruction of many of the King's liege subjects, more especially of them that cannot discern the uncunning from the cunning."

And then it goes on to the new restrictions laid down. Without descanting at length upon the obvious, we have it here very explicitly laid down that the object of legislation is the protection of the public, and that, notwithstanding that medical degrees had been in existence for centuries, and that the existence of a Faculty of Medicine is mentioned in the Act, the public were unable to distinguish the "cunning from the uncunning." Incidentally it is shown that quackery was exceedingly rife.

In the preamble to the Medical Act of 1858 precisely the same motive is laid down—namely, that the public shall be able to distinguish the qualified from the unqualified. But when we pass on to the means adopted to attain this end a great difference is found.

For in 1858 the prohibition of unqualified persons from practising, and the enforcement of this prohibition by penalties, the main feature of all medical legislation prior to that date, disappeared from our statute law, and there was substituted for it a lame provision—namely, the prohibition of the assumption by unqualified persons of titles implying that they were qualified. As the law now stands the only exception to this statement is that under the Apothecaries Act a person who so acts as to come within the special definition of an apothecary can be prosecuted for the act of practice. But no one who reads the reports of the debates which preceded the passing of the Act of 1858 can doubt that this being left unrepealed and not interfered with was an oversight on the part of those who mutilated the Bill. For, with regard to this very Act of 1858, it is interesting to find that, as at first drafted and introduced, the sensible course of prohibiting unqualified practice was adopted. But the Bill was a long time in being passed, and in its progress through the House it was emasculated and reduced to its present inefficient form.

But even in early days the path of the regular practitioner did not remain smooth, for some thirty years after the passing of the original Act requiring qualification came another which is somewhat unique in administering a good scolding to the surgeons. The Company of Surgeons is told that they mind only their own lucres, and nothing the profit or ease of the diseased, and that they will do no cure unless they know they will be rewarded with a greater sum than the cure extendeth to, but for which so many would not rot and perish to death for lack of surgery as daily do. They are told also that the most part of them have small cunning, yet will take great sums of money and do little therefor, and oftentimes impair and hurt their patients rather than do them good. And that they have sued, troubled, and vexed divers honest men and women whom God have endued with the knowledge of the nature, kind, and operation of certain herbs, roots, and waters who have taken nothing for their pains or cunning, but have ministered the same to poor people for neighbourhood and God's sake, and of pity and charity, and the greatest part of surgeons admitted have been much more to be blamed than those persons that they trouble.

And after this vituperative preamble it was enacted that persons having a knowledge of herbs and waters may without let or hindrance minister to outward sores, wounds, outward swellings, or disease, give drinks for the stone, strangury, or agues, according to their cunning. One wonders what the draftsman of this Act had suffered in person or in pocket at the hands of the surgeons to make him revenge himself by putting on the Statute Book such an indictment. This statute has been quoted of late years by the herbalists as a justification for their existence, though it is news to hear that their ministrations are for God's sake and of pity and charity rather than for earthly reward.

It is not a little curious that only two years before the passing of this Act, another Act which was virtually a charter had been passed to incorporate into one the Company of Barbers and the Company of Surgeons. And whilst making the two companies into one it was laid down that the two crafts should not be practised by the same person or their assistants, and that the surgeons shall have an open sign on the street side. But an exception was made in the case of any one employed in the homes of the rich, who might, for his master, exercise both of the crafts.

It is not, however, merely because this somewhat libellous Act is quaint and curious that I have cited it here. It is a proof that in those somewhat remote days a feeling existed which we recognize and deplore as prevalent at the present—a feeling that the unqualified uneducated person can offer something worth having in the way of medical advice, and will give it on cheaper terms than the qualified practitioner.

A remarkable example of this tendency has been afforded only a few months ago by the Select Committee of the House of Lords, to which the Dental Companies Bill was referred.

A number of representatives of companies carrying on dental practice by means of unqualified persons appeared before the Committee, and had the effrontery to say that the services they tendered were as good as those of properly qualified persons or better, and that they were afforded on cheaper terms. There was no opportunity of cross examining these gentlemen, and the Committee was so far impressed by them as to recommend that those of the companies which had been in existence a certain number of years should be given a status. Happily the recommendation embodied a misconception of the existing machinery so complete that it could by no possibility be carried out, and was self-destructive. Had it not been so framed as to be a fiasco, it is conceivable that our Statute Book might have been disfigured by a statutory recognition of unqualified practice granted on little else than the ground that the spirit if not the letter of the law had been successfully evaded without interference for several years. There would appear to have been some confusion of ideas between the position of those legitimately in practice prior to the imposition of some form of restriction, and those who, the restriction existing, successfully evade it.

The recognition of the position of those already in practice prior to the passing of restrictive Acts is in itself, if adequately safeguarded, a proper thing enough. Thus the Apothecaries Act was essentially a measure of this kind. In olden days the apothecary was little more than a

grocer who made a speciality of keeping and selling drugs, and in Chaucer's time appeared to have been an indispensable adjunct to the physician, each physician having his apothecary. Besides selling drugs, it came to be the custom for him to administer them, at all events in so far that the apothecary attended at the patient's house to put on blisters, leeches, administer clysters, and the like. Being thus brought into personal relation with the patient, something in the nature of modern counter-prescribing grew up, and the apothecary came to be regarded by the public as a kind of medical man to be consulted for minor ailments. This grew to such an extent that in 1815 and 1825 it had become desirable to recognize an existing state of things which had to be reckoned with, and to secure that for the future the apothecary should have received such an education and passed such an examination as to secure that he was competent for the duties he was in the habit of undertaking. So in some sense the Apothecaries Act may be said to have been a recognition of a grade of unqualified practitioners, and at the same time a recognition that it was undesirable that such a grade of irregular practitioners should exist in the future. But the right of the apothecary to prescribe, and in fact practise medicine, is not very clear in the terms of the Acts; it was established by a decision of the House of Lords.

When in 1858 the Medical Act was passed, all persons engaged in bona-fide practice were entitled to place their names on the newly-established *Register*, even though not possessed of any qualification. A large number did so, many of them being, it is believed, under age at the time. This fact, as well as the circumstances under which the Apothecaries Act was passed, indicate that although there were statutes prohibiting unqualified persons from practising, they were not very efficient. In the absence of any official medical register, it may have been difficult to discover who was qualified and who was not, and it is possible that there may have been some unwillingness on the part of judges to convict and inflict any penalty. When the Dentists Act was passed in 1878 a similar clause recognizing those already in practice was inserted, and was the source of very great abuse as very large numbers of persons with the shadowiest claims obtained entry on the *Dentists' Register*.

It is possible that something of this kind may have been in the minds of the Select Committee of the House of Lords when they recommended a form of recognition of dental companies of several years' standing, but there is no real parallel between the cases. For in the instance of dentists, prior to 1878 there was no qualification other than a full medical qualification which they could have had, whereas in the case of the unqualified persons under the aegis of dental companies a systematized curriculum and a qualification have been in existence for nearly thirty years. It was recommending an act of indemnity to those who had wilfully failed to avail themselves of the opportunities of rendering themselves competent, and had wilfully adopted a course recommended as enabling them to evade an existing law.

It would be quite impossible for me to trace in detail the various enactments bearing upon the right to practise; the point which I wish to emphasize is that prior to the Act of 1858 every statute bearing on the subject established penalties against unqualified practice and expressly forbade it. In 1858 that principle was abandoned *in toto*, and there was substituted for it the indirect process of forbidding unqualified persons from assuming the titles of the qualified.

One of the results of our having no prohibition of the act of practice is that when we enter upon negotiations with another country for reciprocal recognition of medical or dental qualifications we are crippled by having no sufficient concession to offer as the basis of negotiation; our case is given away by this sort of free trade in medicine. But we, as foreign practitioners, are now rigorously excluded from several important countries on the Continent, and attempts are being made to close others against us.

But before leaving the comparatively remote past it is interesting to note that the association of medicine with the Church was for a time perpetuated by constituting the bishops the licensing authorities for their own dioceses. It is true that they had to associate with them medical men to test the fitness of the candidate, but the ecclesiastic remained the licensing authority. And even down to the present day the Archbishop of Canterbury can grant a doctorate of medicine, although since the establishment of a *Medical Register*, this degree, not being registrable, is of small practical importance.

And, if we look beyond the confines of our own shores, we find that the bad precedent of our Act of 1858 has not been followed elsewhere. Other European countries and America, in their legislation, categorically prohibit unqualified practice, and in many instances render conviction easier by the proviso that holding oneself as ready and willing to practise shall constitute the act of practice. And, although one or two of our Colonies have followed the lines of the Act of 1858, the vast majority—and, indeed, I think I may say all that have passed Acts in recent years—expressly forbid unqualified practice, while many have inserted a clause dealing with the question of company infringement of the Act. Thus the Mother Country is behindhand in this matter altogether. And it is not a little curious to note that the medical legislation of recent years has not followed party lines. In 1858 it was pretty obvious that the opponents of any direct prohibition of medical practice belonged to the Free Trade party, and that the doctrines of that party, pushed into another field, dominated their utterances. But in our Colonies we have the spectacle of very different authorities taking the same sensible line of direct prohibition. Thus, we find ordinances made by High Commissioners, whom we may regard as representatives of a benevolent despotism; measures passed by the Governors of Crown Colonies in Council, representing a highly-educated governing body; by Parliaments with an even distribution of parties, and by Parliaments in which the Labour Party is dominant. And yet in England many people tell us that there is little chance of a more efficient Bill passing the House.

In England, the Legislature has recognized completely only one speciality, namely, that of dental surgery, and the Dentists Act is on the same lines as the Medical Acts, that is to say, the Acts stop short with the prohibition of the assumption of titles implying qualification by the unqualified.

The recent establishment by the Victoria University of degrees in dental surgery, the activity of its dental school, and the efforts that are being made for the establishment on an adequate footing of its dental hospital, renders this speciality of particular interest at the moment. And so, there being the same desire for improvement in this Act as exists in the case of medicine, it will not be foreign to the scope of my address to say a few words about specialism in general and about this one in particular. Some of us are inclined to think that we have in our own time witnessed the rise and growth of specialism. Certainly medicine has become specialized in some fresh directions, such as that of public health, and there is a greater tendency than at any previous period for those who do not wish to be called specialists to, by the force of circumstances, find that their practice has drifted into somewhat special lines. But specialism is not a new thing; it is very old indeed, and in the time of Herodotus it would seem as if specialists were as numerous, or more numerous, than practitioners of general medicine. One might even indulge in the speculation whether specialism was not actually antecedent to general medical practice.

In mediaeval times it certainly existed; in 1561 the College of Physicians granted a partial licence to an oculist, and later Lord Mansfield in a judgement remarked that a man might be fit to practise in one branch who was not fit to practise in another. He further added that licences of a partial nature had been granted for over 200 years, though in his time general licences had become more usual, and that licences had been granted to women, apparently in one instance (though he does not quite say so) for the use of a medicine for stone in the bladder. Hence it appears that not only were there specialists, but that licensing bodies recognized them, and granted licences without their having shown, as a precedent condition, a knowledge of general medicine and surgery.

This, then, is the difference between the specialist of olden times and the specialist of to-day; in olden times he was not supposed nor required to have general knowledge outside the closest bounds of his speciality; to-day he is required to have the general knowledge first, and to engraft upon it his special knowledge.

To this general statement dental surgery offers a partia

exception. It is not required that the candidate for its licences shall have taken a full medical qualification, but, on the other hand, the modern principle is so far recognized that he is required to have a grounding in general medical knowledge, and to have attended for this purpose at a general medical school, though for a shorter period than the general student. I do not like to leave this part of my subject without saying a few words on this general part of dental education. The dental student is not required to have a complete medical education for several reasons. One of the most cogent is that the acquirement of his special subject and of the needful manual dexterity takes so much time and work that, were he to be required to take a medical qualification, his period of study would greatly exceed that needed for the general student. Another is that the lines and scope of his speciality are capable of more close definition than those of most specialists, and that he would be spending time on the acquirement of knowledge which he would never afterwards use. Further, the utilitarian ground of demand and supply comes in. Were all this required of the qualified dentist there would not be an adequate supply of qualified dentists for the community.

But while all this is true, and the curriculum for the future dentist is on the whole well designed, I do not agree in the least with those who would be inclined to curtail the general side of his education, though amongst them are some of those who have the wellbeing of their speciality thoroughly at heart.

It is quite true that the dentist will have nothing to do with, say, the surgery of the foot; neither, for that matter, will the oculist, the aurist, or even the general physician. And so it may be possible to eliminate some matters from his curriculum. But, on the other hand, many of the conditions with which he has to do are local manifestations of general conditions, and the problems which he has to solve, if any progress is to be made, do call for a knowledge of the organism in health and disease.

If we look to recent advances in dental pathology, it is not too much to say that few if any of them could have been made without a knowledge of subjects which are common to the medical and dental curricula, and which twenty years ago might have been considered to have nothing whatever to do with dental surgery. If we turn to the utterances of the most thoughtful amongst physicists, chemists, or biologists, we find them all making the same complaint—that in England there is no sufficient appreciation of science and research for its own sake. If the practical outcome of a research is out of sight for the moment, the public will have none of it. It is quite forgotten that vast numbers of the discoveries which have ultimately become of the utmost practical, and oftentimes commercial, importance, have been made without a suspicion of their ultimate applicability. One need not go outside medicine to find one of the greatest examples. Pasteur investigated bacterial life with a view to improving the manufacture of wine. Who would have dreamt that his discoveries in apparently a totally different field were going to revolutionize the practice of surgery, to render intelligible a vast number of medical diseases, and to elucidate caries of the teeth? Hence one has little patience with the spirit that would set aside this or that as having no practical application to-day.

I do not see how the dental student is to gain his acquaintance with the general principles of medicine and surgery without the study, as concrete examples, of things which he will not afterwards be called upon to treat; and of this I am very sure, that the solution of many of the things he is called upon to deal with can only be reached by the application of medical knowledge of a high order. But I must not digress further in this direction, tempting as it may be to do so.

It is a singular thing that, although half a century has elapsed since the passage of the Act of 1858, which, with all its faults at all events established an authoritative register of duly qualified persons, the law has not in many important particulars been brought into harmony with it. For example, take the question of death certification; it is obvious that a death certificate, to be of any use at all, must be given by a person competent to discover the cause of death. Nevertheless, no penalty attaches to an unqualified, and therefore incompetent, person giving such a certificate, nor are the registrars compelled to refuse to accept it. A few years ago a coroner at Birkenhead held an inquest upon the body of a person whose death had been certified by an unqualified person who was conducting a large practice, and announced at the end of the inquiry that he intended to hold inquests upon all deaths certified by this person. But a mass meeting was got up, the Home Office was appealed to, and the result was that the Home Secretary informed the coroner that he had no power to act in this way, but that he could only hold an inquest where in the individual case he had reason to suppose that something might be wrong. It is not to be supposed that the Home Office desired to encourage the acceptance of informal death certificates, but it was bound to rule according to the existing law. It is obvious that if death certification is to mean anything the law ought to lay down that no certificate other than that of a registered medical man should be accepted; at present its acceptance or refusal appears to be optional.

But the difficulty of getting Parliament even to consider such matters of obvious reform is now immense. Plain business does not appeal to our House of Commons: it is not a business House. The game of politics as played there is a game of "ins" and "outs," played strenuously enough so far as the keeping in of the party in power or their displacement by the other party goes, but played with a sad want of interest where no party capital is to be lost or won.

And the tendency of Governments to monopolize more and more of the time of the session accentuates the evil; the measures they take up are mainly measures which are a part of their party creed and calculated to catch votes. And, though no doubt there are politicians who honestly believe that the supremacy of their party and the consequent advancement of their dogma is of paramount advantage to the country, yet few dispassionate onlookers will be found to agree with them. I am told that it has taken years for the solicitors, with all their influence in the House, to get such an obviously desirable measure of reform as the withholding of his certificate from a solicitor who is an undischarged bankrupt, and so preventing him from handling the money of his clients in the course of his business.

And so the prospects of speedy improvement in medical legislation seem very remote. Such Bills are not showy enough to appeal to Governments in power, and the private member has nowadays but a poor chance of carrying anything. The General Medical Council a few years ago endeavoured to get a Bill passed which was an obvious reform, and was merely, in fact, an endeavour to harmonize existing enactments by giving to the various licensing bodies the same powers as to the removal and restoration of their qualifications. Some of them possess such powers and others do not; some of them can restore a suspended qualification and some cannot do so without re-examination. But, desirable as it must be that there should be uniformity in this respect, and although all of the bodies concerned were agreed, this little non-contentious measure has never been passed.

It is not for one moment suggested that we should give up trying to improve matters; on the contrary we should go on perseveringly agitating in this direction. But it is well to take stock of the situation and it is this. The spirit which has underlain medical legislation in England from the very first is that the protection and advantage of the public is absolutely the only aim and object recognized, and it is for us to show that this object can only be attained by measures which block the path of the unqualified. The medical profession thinks, and thinks with justice, that it has deserved well of its country, and that it is entitled to some consideration in virtue of having expended time, money and brains in rendering itself competent. But that is not the view of the public as voiced by Parliament—if Parliament can be said to voice it—rather it takes all it can get and gives nothing, as instanced by the recent Notification of Births Act, which imposes a new civil duty upon the profession without fee or reward. And the want of sympathy of Parliament towards the profession was exemplified by the utterance of various taunts and sneers which were allowed to pass almost without protest, whilst an amendment to relieve medical men of this duty was got rid of by juggling which was hardly creditable. With this spirit abundantly in evidence there is some risk in bringing measures before Parliament—a risk that something eminently improper may get introduced into a Bill during its passage through Parliament.

This danger was well illustrated by the proceedings of

the Select Committee on the Dental Companies Bill already alluded to. The General Medical Council had introduced a Bill the provisions of which certainly did not err on the side of over-stringency. They acted under advice in framing the Bill in a form thought likely to pass, though they would have gladly made it stronger. The British Dental Association was very much dissatisfied with the Bill as inadequate, and expressed its dissatisfaction with fully as much warmth as discretion. Yet the Bill was too strong for the Committee, which thought fit to make a recommendation which weakened it still more, and in the direction of leniency to the unqualified. The British Dental Association drew a series of conclusions from the facts which seem hardly justified. They reproached the General Medical Council with having introduced a Bill so drafted that it constituted a betrayal of the interests of the dental section of the profession which it was their duty to safeguard. But it might be urged with equal force that the issue showed that the Council were wise in not attempting a stronger measure, seeing that the Select Committee recommended that even as it stood it should be qualified in the sense of weakening it further; and this was in the House of Lords, where we might have expected a larger view to have prevailed.

A difficulty which we have to encounter is the tendency, even in quarters where it might least be expected, to believe in and run after various forms of quackery. This, of course, is no new thing. The brilliant Earl of Rochester, temporarily banished from the Court of Charles II on account of some escapade, amused himself by setting up in disguise as a quack doctor on Tower Hill, and issued a manifesto so specious and attractive that it might be the model on which quack announcements have ever since been framed. At all events, such was his success that several ladies of the Court went to consult him.

That this tendency has survived to our own days seems in great part, at all events, due to the defects of our secondary education. So long as the making of a false quantity in a classical quotation is regarded as a greater mark of want of culture than the most profound ignorance of the rudiments of the science of everyday matters, little else is to be expected. I remember hearing a member of the House of Commons, since translated to the Upper House, actually say that he attached little importance to the political views of another much more distinguished member, because the latter was well known as an author on scientific subjects. Is it, then, to be wondered at that Christian Science and the like find a field in our midst?

It, therefore, may be some time—maybe not until the elements of science have become an indispensable part of a liberal education—that the medical profession and its work will take their proper place in the opinion of the lay public and of Parliament. Till then we must try to educate public opinion so that it may see eye to eye with us, and may discover what to us seems obvious, that the interests of the public are identical with the interests of the medical profession. And until it is seen that the interest of the public is to have at its command a highly competent class of practitioners, and that it is not the way to secure this to allow indiscriminate incursions of the unqualified into the field of practice, we shall still meet with hostility, on the baseless ground that measures of medical reform are class measures, and as such to be viewed with jealousy, and that they smack of trade-unionism.

Almost unaided by the Legislature, we have for years been setting our house in order. We have improved medical education; we have increased the stringency of qualifying examinations; we have given to the public a medical practitioner of far higher average attainments than at any previous period, and both preventive and curative medicine now render service to the public such as only a few years ago was not even thought of. And, whilst alluding to examinations, it is very probable that if some one portal entrance to the medical profession could be established—a State examination, in fact—it would be easier to command the attention of the State to our requirements for further advance.

We may fairly say that medicine has deserved well of the State; is it too much to expect a more liberal recognition of its claims by the State?

THE LIMITED VALUE OF DIPHTHERIA ANTITOXIN AS A PROPHYLACTIC.

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The employment of antitoxin as a prophylactic in diphtheria has met with a very favourable reception in modern medicine, if one is to judge by the accounts from time to time appearing in medical literature. Though it cannot be denied that a certain prophylactic value has been established, there has possibly been a tendency to go to the extreme in estimating the benefits and in pushing the application of this remedy. In view of these facts, it may not be out of place to give the details of an epidemic where its application was anything but a success, and to point out the strict limitations to the usefulness of this procedure.

Those who would be interested to review the special literature of this subject will find a good summary of work done experimentally and practically in an article by Jump.[1] He quotes 6 instances in which prophylactic injections of serum were extensively applied in outbreaks occurring in institutions and elsewhere. Nothnagel[2] also gives a lengthy list of such records—15 in all. Other accounts are given by Ibrahim,[3] Wesener,[3] Cobbett,[4] and Norton.[5] These accounts represent a total of many thousand prophylactic injections of serum. A few of them are certainly very encouraging, but in the majority the inferences drawn are not as convincing as one could wish. They are all unsatisfactory in one particular, that they represent the results obtained by immunizing those who were only "exposed to infection." It is impossible to say how many or how few actually were or became infected with the specific bacillus. Further, it must be borne in mind that in nearly every instance some cases developed an attack in spite of the antitoxin administered.

I will now briefly give the details and contrast the methods used in two outbreaks of diphtheria at Nottingham during 1906.

In the first, beside bacteriological swabbing and isolation of persons found infected, prophylactic injections of antitoxin were used. In the second, bacteriological swabbing and isolation were the only methods employed. In both there was complete arrest of the epidemic.

The first outbreak occurred at the General Hospital. Eight cases having occurred in quick succession, most of them being members of the staff, it was resolved to deal with the trouble in a radical manner by wholesale bacteriological examination of throats and prophylactic injections of serum. The latter step was first proceeded with, and 500 units of unconcentrated serum recently obtained from a well-known wholesale house were given to each person—136 in all. As the result of swabbings repeated on at least three occasions, 21 of these—all young adults—were found harbouring the Klebs-Loeffler bacillus, but with no obvious throat affection. They were all promptly removed either to an isolation home or the isolation hospital. Of these, 7 developed the disease, in spite of the antitoxin, within the three weeks following its injection; the number of days intervening being two, five, five, twelve, fourteen, eighteen, and eighteen in the respective cases. The disease was moderately severe in one, but the others had developed only a small amount of membrane when discovered, one having nothing but redness and soreness of the throat. As they were promptly injected with antitoxin, the disease was not allowed to progress further. There was some doubt about the above-mentioned severe case, which remained unconfirmed bacteriologically after several test swabbings, although a large amount of quite typical membrane was present. In this particular case 1,000 units had been given eighteen days before the membrane appeared. As a result of these radical measures no other cases that could be attributed to the former infection occurred throughout the hospital.

The second outbreak occurred amongst the school children at Dunkirk, an isolated corner of the borough, where cases had been occurring from time to time, some of them being fatal. The throats of 2,000 children were examined, including 400 at Dunkirk School, which was the centre of infection. The latter were all tested by swabbing. The 1,600 other children belonged to two neighbouring schools, and while all were rapidly examined, only 200 were swabbed, these being selected according to the greater possibility of infection and the appearance of the throat. Altogether 20 children were found to harbour the bacillus, 13 of these attending Dunkirk School. The scholars were dismissed after examination, and the schools remained closed for a month. The "carriers" were removed to the isolation hospital, all but 8 who elected to return home. Notwithstanding this fact, only 1 more case occurred at Dunkirk, and 3 amongst the schools so arbitrarily

examined, in the next three weeks. After this time the whole district was free from diphtheria for nine weeks. If we are to ascribe this sudden cessation of the epidemic to the measures employed, it must be set down to the prompt weeding out and isolation of infected children. Although 8 "carriers" remained in the district, this fact seems to have been amply compensated for by the closure of the schools—in itself, as is well known, a powerful means of combating an epidemic. It will be interesting to follow up the behaviour of those "carriers" received into hospital. From 8 of these antitoxin was withheld and only 1 developed an attack, which, however, promptly yielded to antitoxin. To these 8 I might add a list of other such cases received from time to time into hospital with specifically infected but apparently healthy throats, making a total of 30. From all of these antitoxin was withheld, and only 3 developed an attack of diphtheria.

The facts of these two outbreaks do not by any means afford sufficient material to establish the truth of the arguments advanced, but they will serve to give point to the following remarks, and certainly demand some satisfactory explanation. At any rate, they provide something definite by which to judge the value of prophylactic injections of antitoxin. For 7 developed an attack, in spite of the serum, out of 21 whose throats were *certainly known* to be infected with the bacillus. In referring above to the voluminous literature on the subject, it was found to be seriously lacking in information as to the definite amount of infection in the cases mentioned. In estimating the true value of such instances there are many errors to be avoided. In the incidental introduction of serum injections amongst the other methods in dealing with an epidemic, we must be careful that the success achieved is not wrongfully wrested to the demonstration of the benefits of antitoxin. Had serum injections been administered to the whole 2,000 children in and around Dunkirk at the time the swabbing was carried out, one can readily imagine how easily the sudden cessation of the epidemic might have been attributed to it. Again, epidemics are sometimes large, sometimes small, and are susceptible of natural recovery, just as with a disease. In spite of the isolation of "carriers" and closure of schools, I am inclined to think that the Dunkirk epidemic was spent and already dying when swabbing was commenced. The General Hospital outbreak, on the other hand, was caught in the nascent stage. This will probably explain why a larger percentage of "carriers" developed the disease in the latter outbreak; for there is little doubt that many so-called "carriers" are those who have had a mild attack of diphtheria which has passed undetected, and these are comparatively numerous at the end of an epidemic, especially amongst children. I found four children at Dunkirk with definite remnants of diphtherial membrane who had attended school throughout without complaint. Again, it is necessary to understand that a large part of the population are apparently immune from attack with ordinary exposure to infection. In a year of epidemic prevalence at Nottingham, only 10 per cent. of cases represented more than one member of each household affected. Furthermore, it has been shown what a large proportion of persons may carry the bacillus in their throats without developing the disease. Bearing all these facts in mind, the alleged beneficial results of immunization by antitoxin in a given instance will be seriously discounted if we have nothing more to go upon than the bald statement that the persons in question had been merely "exposed to infection."

Since antitoxin is rapidly excreted in the urine, there is a limit to the duration of the immunity conferred. At first this was placed at four weeks; now three weeks is the period more generally set down, and this should doubtless be further reduced. Jump[5] and Herringham[6] both believe that the dose should be repeated after twenty-one days, should exposure to infection continue. The dose is given by the former as 250 units for a child and 500 units for an adult; the latter recommends from 300 to 500 units. Increasing the dose would probably not increase to any extent the duration of immunity. Larger doses, as far as experimental evidence goes, would seem to disappear just as quickly from the blood. One of the cases mentioned above probably developed the disease eighteen days after 1,000 units. This rapid disappearance of antitoxin from the blood has been shown by Ransom[7] to depend largely upon the species of animal from which it is prepared. Where the species is the same, the immunity lasts much longer—perhaps as long as when "actively" produced. This suggests that serum prepared from monkeys would be most effective for the immunization of man. A discussion of this subject opens the question of the different degree of reaction to serum injections in different individuals. Again, the varying amounts of immunity of different individuals must have some bearing on the question, along with the observations of Wasserman[8] and Orlowsky,[9] who found considerable quantities of diphtheria antitoxin in the blood of 50 per cent. of children and 83 per cent. of adults examined without special selection. Whatever bearing these facts may have upon the results of practical immunization, there is certainly some explanation needed for the number of cases that occur, not only at the end of the three or four weeks' period, but at such intermediate times as five and ten days, in spite of the antitoxin. There was no doubt whatever that the two cases occurring at the five-day period in the General Hospital outbreak were genuine attacks. Again, since just as many cases seem to occur within the twenty-one days' period as beyond it, it is difficult to see why this should be the limit chosen. A fortnight would certainly have been safer in the outbreak above referred to. This uncertainty as to the success of the procedure and the inconveniently short duration of immunity when successfully conferred seriously discount its usefulness, apart from the other considerations that follow below.

As regards the practical application of prophylactic injections of antitoxin in dealing with outbreaks of diphtheria, it is clearly not employed as a measure for stamping out the epidemic, but as a secondary aid in guarding against the consequence of attack. In fact, it has been pointed out that there is rather a danger of increasing the epidemic infection where injections of serum are the only means employed. For where the attack is suppressed the infection passes unnoticed, and the "carrier" continues to spread the disease amongst the general population, whereas otherwise he would have been carefully isolated. It has been generally agreed that the injection of antitoxin has no influence in hastening the disappearance of the specific bacillus from the throat either after an attack or otherwise. Though perhaps infection may be more likely to ensue from a membranous throat than a healthy "carrier," yet the alternative danger is certainly one that should be carefully avoided.

The procedures, then, of real importance in dealing with an outbreak of diphtheria are two in number, namely (1) bacteriological examination of throats, and (2) isolation of "carriers" of infection under proper medical supervision. Where both of these measures can be systematically carried out, as is possible in most large towns, there is really no necessity for prophylactic injections of antitoxin, the latter procedure being in this case naturally confined to the few whose throats are found to contain the specific bacillus. Even in these "carriers" there is no need to go to the expense and trouble where there is proper medical supervision, that is to say, a daily inspection of throats; for, in the first place, it has been pointed out that nearly all records will show a few cases where membrane developed in spite of antitoxin, the general hospital "carriers" showing a third of such exceptions. Thus the conscientious medical man feels he is in no way relieved from the duty of careful inspection of throats. In the second place, we have such an efficient remedy in antitoxin that there is practically no danger to the patient if the remedy is administered when the disease first declares itself; this view has also been put forward by Variot.[10]

What may be called fulminating cases of diphtheria are occasionally met with, in which it is possible for the disease to get a good hold in twenty-four hours. Here there must be a great virulence of the bacillus or a great susceptibility of the patient. But one can hardly imagine such cases arising in "carriers," in whose throats the bacillus has already been known to have resided for several days without visible effect.

Where, then, the methods of bacteriological swabbing and proper isolation can be applied, prophylactic injections of serum may be dispensed with. In exceptional circumstances, as when one or both of the above methods are not available, it may be resorted to, for example, in a small outbreak, as a means of mitigating the danger of attack, and of lasting it out by injections repeated every two

or three weeks. It has been urged, and probably with truth, that if an attack develops in spite of antitoxin, the symptoms are milder. Again, where there is a small circle of infection and there is no guarantee of constant medical supervision, as in a poor family, the giving of serum is a justifiable precaution. It must be understood that the writer is discussing the question from the practical rather than the ideal side. Of course, whatever remedy presents any likelihood of doing good should be, ideally speaking, applied. But practically speaking, in dealing with an outbreak, it generally comes to a question of trusting to one measure and one alone, and in such a case it should clearly be understood that prophylactic injection of serum should not be the one to be chosen. Again, the swabbing of a family or of a day school generally means considerably less trouble than prophylactic injections of antitoxin with proper antiseptic precautions. Of course the conditions where serum injections are least of all warranted are where it is proposed to apply them in a wholesale manner to many hundreds who have been no more than exposed in an ordinary way to the likelihood of infection. Here the trouble and expense are generally too great and the results too meagre to justify the procedure.

Beside the trouble and expense of serum injections, it is well not to forget the annoyance and occasional danger associated with their use. This matter is really of some importance where adults are concerned. Healthy adults seem particularly susceptible to the "serum disease," and it will be prudent always to give due weight to this practical consideration. One can readily imagine the inward misgivings of the uninitiated practitioner who beholds the harried and questioning countenance of his patient, a busy City man, after a whole day of misery and two sleepless, irritating nights—all for a mere suspicion of infection. He will doubtless resolve speedily and irrevocably that in future he will prefer to take risks of another kind. The degree of liability to this trouble varies greatly in different individuals, and runs to some extent in families. Repeated doses of calcium chloride[11] are recommended as a prophylactic against this prophylactic as regards its irritating effects; but this very much complicates the matter, especially if we wish to deal with large numbers. I have been particularly unfortunate with the nursing staff, who have been injected on several occasions after tracheotomy operations. On each occasion at least one was temporarily incapacitated for duty, and that just when an extra nurse was urgently required. Apart from this, the risk in such cases under constant medical supervision is practically non-existent and the procedure unwarranted. Fatal results following administration of serum are, indeed, so rare as to be almost negligible, although in Allbutt's *System of Medicine*[6] five possible cases are collected, and another case[12] is quoted from abroad where a lawsuit was instituted in connexion with the sudden death of a healthy child occurring a quarter of an hour after the prophylactic injection. But more often very dangerous symptoms have been produced by the repetition of the serum injection, owing to the greatly increased susceptibility to the foreign serum thus induced. Goodall[13] and Rolleston[14] mention such instances. On the whole, the question of the use of serum prophylaxis depends to a great extent upon the age. We must distinguish between, first, those of tender age, under 4 years, and, secondly, the older children and adults. In the first class the use of prophylactic antitoxin is relatively more important from the fact that on such the action of the toxin is more severe, and the diagnosis of an attack is a more difficult matter, with greater risk if there is laryngeal development.

For permission to publish hospital records and other official matter I am indebted to the kindness of Dr. Philip Boobbyer, Medical Officer of Health and Superintendent of Isolation Hospitals, Nottingham.

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TWO CASES OF HEREDITARY DYSTROPHY.

BY

W. OGILVIE, M.B., D.Sc., Major, I.M.S. and P. G. EASTON, Captain, I.M.S.

THE following cases of dystrophy of the muscles of the shoulder girdle in father and son present some points of interest:

The father, a Punjabi Mussulman, aged 45, states that he first noticed weakness in the shoulders some twenty years ago, that is, when he was 25 years old. His father, he states, was quite strong and healthy. He could not attribute the weakness to any cause, and says that he had no fever at the time. The condition has progressed steadily ever since, unaccompanied by any symptoms whatsoever, except the increasing loss of power in both shoulders and the gradual shrinking of the muscles in the neighbourhood. He had a well-marked "swaggering" gait, the shoulders being thrown back and the abdomen

Fig. 1.

Fig. 2.

protruded. Looking at him from the front, the shoulders and upper part of the chest seemed to be nothing but skin and bones. We had no battery with which to test the muscles, but, so far as we could judge, the following were almost, if not quite, atrophied—sterno-mastoids, pectorales major and minor, and deltoids.

The view from behind was very striking (Fig. 1); the vertebral borders of the scapulae were directed straight backwards, and resembled sprouting wings. The muscles between the scapulae and the vertebral column were so wasted that the ribs protruded. The muscles atrophied in this region were: On each side, trapezius, supraspinatus and infraspinatus, serratus magnus, both rhomboids, the latissimus dorsi, and the muscles of the spinal column. The atrophy of the muscles on the left side appeared less complete than that on the right. There was no atrophy of the muscles of the upper arms, forearms, or hands, and the muscles of the lower extremities seemed quite normal, nor did the patient complain of any weakness in the legs.

The second picture (Fig. 2), that of the man standing at ease, shows the marked lordosis and peculiar tilt of the scapula. The son of the above, aged 25, stated that two years ago he first began to notice weakness of the shoulders, which came on without any cause, and, except for a slowly progressive weakness, he has experienced no symptom of any kind. On examination, the pectorals and deltoids of both sides were seen to be quite atrophied

and the remaining muscles of the shoulder girdle partially atrophied. The wasting was less complete on the right side than on the left—the converse of the father's case—but the same muscles were affected. In the son the winging of the scapulae had not attained to the advanced stage seen in the father.

Fig. 3.

The last picture (Fig. 3) gives a front view of father and son together. A grandson, aged 3 years, was examined carefully, but showed no abnormality.

Osler mentions the hereditary nature of the complaint, but it must be rare to see father and son side by side suffering from atrophy of identically the same group of muscles, which commenced at practically the same age—namely, 22–25—in each case. In neither case was there any history of a preliminary hypertrophy.

REMARKS ON THE BACTERIOLOGY AND TREATMENT OF YAWS (FRAMBOESIA TROPICA).

BY ALEXANDER ROBERTSON, M.B., C.M.,
GILBERT AND ELLICE ISLANDS PROTECTORATES.

YAWS is prevalent in the Gilbert Islands, and also, but to a less extent, in the Ellice Islands; yaws, syphilis, and tuberculosis forming the bulk of the diseases in the Protectorates.

Bacteriology.

Recently I made bacteriological examinations of the secretions of the yaw papule in two series of cases. The first series consisted of 20 cases, the method of staining being Leishman's. In the second series 10 cases were examined, and the films stained with the gentian violet and acetozone solution recommended by Dr. Alex. MacLennan of Glasgow. In each case six films were examined.

In the first 20 cases, examined by Leishman's method, the following were the results:

1. Pyogenic organisms:
   (*a*) *Staphylococcus aureus* and *albus* in large numbers.
   (*b*) *Streptococcus pyogenes* in smaller numbers.
2. Large bacilli with square ends containing spores, occurring in groups, and more numerous in some specimens than in others.
3. Large cocci occurring in pairs.
4. Occasionally a spirochaete, presumably the spirochaete described by Dr. Aldo Castellani of Ceylon.

In the second series of 10 cases the following were the findings:

Staphylococci and streptococci in all the cases.
Bacilli similar to those in the first series in 5 cases.
Large cocci in pairs in 6 cases.
The spirochaete in 7 cases.

Several forms of spirochaetes, presumably transitional, similar in many respects to those figured by Dr. MacLennan in his paper on the *Spirochaeta pallida* in the BRITISH MEDICAL JOURNAL of May 12th, 1906.

Some spirochaetes had a thickening on one side of the ring, not unlike a signet ring. The spiril in some instances began close to the ring; in others there was a straight portion before the commencement of the spirils. Others had a vermiform shape with a thickened part in the middle of the curve, but no spiril. Whether these forms are modifications or transitional stages of the spirochaete of Castellani, or whether they are different varieties of spirochaetes, I cannot say.

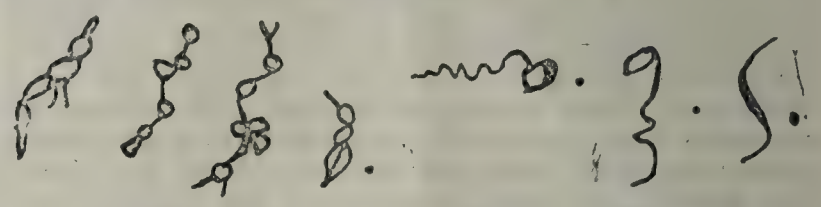


Fig. 1. Fig. 2. Fig. 3. Fig. 4

Fig 1.—Transitional forms (?). Fig. 2.—Spiril beginning close to ring. Fig. 3.—Spirochaete with straight interval before beginning of spiril. Fig. 4.—Vermiform spirochaete with thickened centre.

Observing that large numbers of flies infested the yaws hospital, I caught several dozen in wide-mouthed sterilized bottles and inoculated agar tubes with them. Growths were obtained which on examination showed the presence of the same organisms as were in the secretions obtained direct from the yaw papule, with the exception of the spirochaete of Castellani. The absence of the spirochaete in these preparations may be explained by the legs and bellies of the flies coming in contact with the surface of the papules where the pyogenic organisms are numerous, as since making these experiments I have found that when I removed the crust of hardened pus from the papule, or wiped off the purulent secretion and then inoculated the agar with the comparatively clear secretion of the subjacent papule, I was generally successful in finding the spirochaete. However, in spite of my failure to find the spirochaete in the growths obtained by fly inoculations, I am of the opinion that, as flies infest the native houses and are in frequent contact with the bodies of the natives, infection must often take place in the early stage of the yaw papule, before the secretion has become purulent or a crust formed, by the transference of the spirochaete to other natives, especially those who have sores or abrasions on their persons.

Treatment.

The patients are washed night and morning with carbolic soap, and ung. hydrarg. nit. dil. (1 in 3 vaseline) is then applied to the papules. The ointment serves a double purpose, acting as a germicide and also preventing the flies carrying infection to the other patients in the hospital. In two years' experience in Tarawa, I have not had a single case of yaws arising in the General Hospital, although it is only 60 yards distant from the yaws compound. Potassium iodide is given three times a day in doses of 10 to 20 grains to adults and of 2 to 5 grains to children. Those patients who are anaemic or debilitated receive iron citrate or syrup of iron chloride along with cod-liver oil or petroleum emulsion in addition to the iodide. I tried various preparations of mercury at first, but they had no effect whatever on the pains in the limbs or head, which is the principal symptom the patients complain of. The average time the patients are under treatment and till the papules have entirely disappeared is five weeks. Several cases, even those in which the eruption was extensive, have been cured in three weeks. The most troublesome cases are those in which the yaws are on the soles of the feet. Softening the thickened epidermis with sodium bicarbonate solution and afterwards scraping the skin away with a Volkmann spoon is the most expeditious method of treatment.

The paresis of the limbs which accompanies or follows yaws disappears rapidly under electric treatment. I have not seen the extensive destruction of tissue and bone which is described by some writers as the accompaniment or sequelae of yaws, and I am inclined to think that there may have been a syphilitic taint in the background. Certainly in the Gilbert and Ellice Islands such extensive necrotic processes as necrosis of the palate and nasal bones are due to syphilis and not to yaws.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

George A. Wright, F.R.C.S., President.

The work of this Section was initiated by its President, Professor G. H. Wright, of Manchester, who, after a few brief remarks, called for the commencement of the first discussion.

DISCUSSION ON THE RELATIVE VALUE OF INHALATION AND INJECTION METHODS OF INDUCING ANAESTHESIA.

OPENING PAPER.

By H. P. Dean, M.S., F.R.C.S.,
Surgeon, London Hospital.

It would be impossible to deal fully with the subject of local anaesthesia as indicated by the title of this discussion, covering as it does an enormous field and engaging the earnest attention of workers in the domain of surgery, anaesthesia and dentistry. Presuming that I was honoured by the invitation to open this discussion on the relative value of inhalation and injection methods of inducing anaesthesia because of a paper I published in the British Medical Journal last year upon "the importance of anaesthesia by lumbar injection in operations for acute abdominal diseases," I decided to confine my remarks to that part of the subject to which that paper was devoted.

When drawing up a list of operations liable to be followed by grave surgical shock it is obvious at the present day that those upon the abdomen form the great bulk, now that the classic amputations at the hip and shoulder joints and at the upper part of the thigh, with their high mortality, so frequently performed in the early Victorian period, have become less frequent, and so it comes to pass that but few operations remain with severe surgical shock, outside the domain of abdominal surgery. In advocating the method of lumbar injection anaesthesia for grave abdominal operations, I include those serious operations on the lower extremities, such as amputation at the hip and thigh, together with extensive operations on the pelvic organs and pelvic bones, such as para-sacral resection of the rectum.

Of recent years many operations in which hitherto general anaesthetics had been solely employed, have been successfully performed by one or more of the drugs which have been used for local anaesthesia. In these operations cocaine and β eucaine with and without adrenalin have been largely used, and I think there is general agreement that the limits of this branch of local anaesthesia are well defined, and that good working methods have been evolved which have gained the confidence of all surgeons in all lands. A great impetus was given to local anaesthesia by the results obtained in injecting cocaine into the lower parts of the sheath surrounding the spinal cord and cauda equina, a method which for brevity may be termed "lumbar anaesthesia." From two points of view lumbar anaesthesia seems to be very satisfactory: (1) The degree of anasthesia can, with appropriate doses, be rendered complete. (2) The large area amenable to this treatment—practically the whole body below the level of the umbilicus.

There is, however, an objection to this method being employed as a routine practice on a large scale, namely, the poisonous and treacherous character of the drug hitherto used, namely, cocaine. Apart from the dangers of chloroform and ether, especially of the former during an operation, the effects of these drugs upon the organs of the body generally are most serious. When these general anaesthetics were first introduced two results gradually forced themselves upon the attention of surgeons: (1) The harmful effects of the anaesthetic upon the respiratory and other organs of the body. (2) The fact that surgical shock was not abolished; indeed, it was not materially diminished by the introduction of these general anaesthetics.

I think all of us are agreed that the secondary effects of ether, especially in abdominal surgery, are more far-reaching than those of chloroform. From the moment that the first portion of the vapour reaches the bronchial mucous membrane to the time that it passes out by the excretory organs, there is a summation of poisonous effects which contributes so largely to swell the death-rate from all grave abdominal and other operations in which the general anaesthetics are employed. In the early days of chloroform and ether inhalation it was thought that surgical shock would to a large extent disappear. This, however, was not the case, and for the past half-century the attention of surgeons has been directed towards some method of preventing or of minimizing the effects of this grave condition. When we consider the physiological action of the general anaesthetics we see why surgical shock is not abolished. The effect of chloroform and ether is first directed upon the higher nervous centres, especially those concerned with consciousness; next in order the middle centres so-called are reached, that is, the basal ganglia; then the sensory and motor tracts become affected; and, finally, if the anaesthetic is pushed too far, the centres essential for maintaining life—those connected with the heart and lungs—become involved.

In seeking an anaesthetic that would avoid these dangers it is obvious that we must endeavour to employ a drug that would not irritate in any serious way the mucous membrane of the bronchi and lungs. In the next place we should try and find an anaesthetic that would act upon the peripheral part of the nervous system in such a way that stimuli would be prevented passing from the field of operation upward to the vital centres—some drug that would paralyse all the afferent nerves passing from the region of operation. If the peripheral nerves in the region of the wound were thrown completely out of action, no amount of damage would cause stimuli to pass up to the central nervous system; at the same time consciousness and the integrity of the vital centres would be maintained. Of recent years several drugs have been shown to possess the property of paralysing the peripheral nerves without affecting the central nervous system directly, unless given in maximal doses. The first of these, cocaine, I have already mentioned. It has drawbacks which render it unsuitable for the group of serious cases which we are especially considering.

Within the last two years a drug more suitable for the operation has been discovered by the French chemist Fourneau. It is a chlorhydrate of one of the amino-alcohols, and to it was given the name "stovaine." This drug has been examined carefully, and numerous researches carried out in physiological and chemical laboratories. It is much less poisonous than cocaine, and possesses other physiological differences. It is a vaso-dilator, and instead of having the well-known depressing action of cocaine upon the heart, it seems rather to have a tonic effect; at any rate, the vascular system seems to escape most of the harmful effects produced by cocaine. When employing the lumbar method of injecting stovaine in serious operations, I was profoundly impressed with the way in which this anaesthetic seemed to abolish, or at any rate largely to mitigate, the condition of surgical shock. In addition to stovaine, two other bodies have been used—namely, novocain and alypin; both of these, as well as stovaine, have been used with adrenalin. My own experience is confined to stovaine only, the preparation I have used as a rule being the following:

Stovaine	0 10 gram
Chloride of sodium, pure	0.10 gram
Distilled water	to 1 c.cm.

Each bulb contains 1 c.cm. of the solution.

I do not propose to raise the question concerning the relative value of lumbar anaesthesia versus chloroform

and ether inhalation in ordinary surgical operations, and in persons who present no particular danger to general anaesthetics. To all of us the pushing of a needle through the backbone into the proximity of the spinal cord sounds a formidable proceeding, the method causing a certain amount of pain—in some cases very acute pain, though momentary. In the ordinary operations of surgery, when the anaesthesia required is situated at a low level, that is, at any place below the middle of the thigh, the patient's condition is not likely to make the use of a general anaesthetic a matter of any moment; in such cases, whether lumbar anaesthesia is employed or a general anaesthesia is not a matter of any importance; it is rather a question of sentiment, and is one for the patient to decide rather than the surgeon. Some persons object to general anaesthetics "because it takes their senses away," or "because they are afraid that they would never come round again." To such people the anaesthetic is dreaded much more than the operation itself; on the other hand, there are many who prefer to be completely oblivious of the various stages of the operation, and to them a general anaesthetic would be infinitely preferred.

It is when we are dealing with operations in which the immediate and secondary effects of inhalation anaesthesia are so disastrous, and operations in which surgical shock is a grave danger, that the question of lumbar anaesthesia versus general anaesthesia is at once placed upon a different level; it is no longer a matter of sentiment, it is a matter of life and death. In such a case as that of acute general peritonitis the value of this method cannot in my opinion be overrated; all the harmful effects of chloroform and ether upon the respiratory tracts are absent; all the secondary effects of chloroform and ether upon the organs are not present when these local anaesthetics are used; thirdly, by their action in paralysing the peripheral nerves, the patient is protected largely, if not entirely, from the condition known as surgical shock.

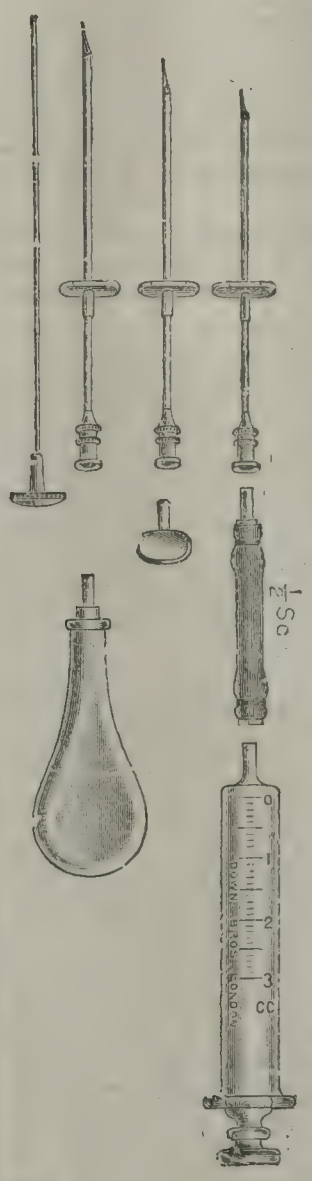
In this country lumbar anaesthesia has made but little way since the introduction of stovaine and similar drugs. On the Continent we see published every week or two papers dealing with large numbers of cases—360 from one clinic, 607 from another, and several others ranging from 200 to 600 cases each. These give one an idea of the wholesale way in which this method has been employed. Yet, notwithstanding this activity, it is curious that very few surgeons have ventured to deal with those cases which above all others seem to cry aloud for lumbar anaesthesia. I refer to the group of serious operations. The explanation seems to be that in obtaining anaesthesia adequate for these cases the danger zone is easily reached. British surgery has made a few contributions to the subject of lumbar anaesthesia, chief among them being Professor Chiene's paper in the *Scottish Medical and Surgical Journal*, which appeared just before my own paper in the BRITISH MEDICAL JOURNAL. The tendency in this country is to regard lumbar anaesthesia as being more suitable for the serious operations.

In order to elicit the experience of my colleagues upon the various aspects connected with this method, I have arranged the points under the following headings:

1. *The Method of Administering the Anaesthetic.*

With a rather small exploring needle the lumbar spinal cord is entered between two lumbar vertebrae, generally the third and fourth. This point is on a level with a line drawn transversely on the back from one iliac crest to the other. There is a difference of opinion concerning the best interval to choose; some authorities have failed to produce anaesthesia by entering between the third and fourth, or fourth and fifth vertebrae, but have succeeded by entering between the first and second. It is obvious that the higher the level chosen the more complete will be the anaesthesia; at the same time, there is a greater risk of injuring the spinal cord, which, it must be remembered, terminates opposite the first lumbar vertebra or the interval between the first and second vertebrae. Another authority advises puncturing below the fifth vertebra, because there is more room. In some cases the resulting anaesthesia has been one-sided. Donitz states that there is a large lymph space around the termination of the spinal cord, into which the drug must be injected in order to obtain the proper amount of anaesthesia; hence he lays stress upon entering the needle exactly in the middle line. The lymph spaces around the spinal cord and cauda equina require accurate investigation; it is more likely that the one-sided effect was due to the fact that the cerebro-spinal space in the lumbar region is completely, or nearly completely, divided by the septum posticum, so that the injection does not readily pass from one side to the other. An experience not uncommon is for the needle to puncture a vein—an accident that has occurred to myself three or four times. We must remember that on the posterior surface of the body of a vertebra is a pit in which lies a large plexus of veins passing from the centre of the vertebra. In the lumbar region these pits are especially large, so that it is quite easy to penetrate one of the veins lying in them. In addition to this, there are several other veins which can be easily penetrated. One must also remember the possibility of striking an intervertebral disc, which in the young is quite a soft structure.

Some authorities have stated that it is necessary to allow some of the cerebro-spinal fluid to escape before injecting the anaesthetic; they maintain that the anaesthetic diffuses with difficulty unless the pressure is relieved to a certain extent. One observer refers especially to this point, stating that until he took this precaution the anaesthesia was very uncertain, but that after letting out a syringeful or two of cerebro-spinal fluid he never failed to obtain the necessary amount of anaesthesia. There is another point of greater importance in my opinion—namely, the question of sudden variation in the cerebro-spinal pressure producing effects in important regions, especially the bulb. It is very probable that to this cause one may attribute certain lesions in the ocular nerves, especially the sixth nerve, which from its origin and course is rendered easily liable to variations of cerebro-spinal pressure. In all probability the headache which is such a constant after-effect of lumbar anaesthesia is due to an increase in the cerebro-spinal pressure induced by the inflammatory disturbance following the injection.



In some of the acute cases it was found that the cerebro-spinal pressure was very low indeed, so that only a drop or two flowed from the needle—in one case the needle was full—but not one drop escaped. In these cases I injected a syringeful of normal saline solution, and then diluted the stovaine so that it could diffuse with greater ease. In one case I could not obtain the requisite amount of anaesthesia until I had injected some normal saline solution.

As regards the kind of apparatus, I prefer an exploring needle, which should be as sharp as possible. One can use a needle of smaller calibre than in the case of trocar and cannula. Owing to a difference in the depth of the spinal cord in different people, whether men, women, or children, I have had the needles made in three lengths. Messrs. Down Brothers have made for me a complete outfit, which packs into small space and is very convenient for lumbar anaesthesia. One can leave a needle in the canal during an operation, and at any moment some more drug can be injected without moving the patient.

To sum up. I consider it best to make the puncture between the third and fourth lumbar vertebrae. If the cerebro-spinal pressure is considerable, I allow a syringeful to escape gradually, if on the other hand, the pressure is low, I inject a syringeful of normal saline solution before injecting the stovaine.

2. *The Management of the Patient.*

The first point to consider is the best way to conceal from the patient the operation or any part of the surroundings which might cause him apprehension and disturb his equanimity. It is advisable for the sister or nurse to sit by the patient, taking the ordinary measures to occupy the attention. A small screen should be held in front of the patient's face, so that it is impossible for the region of the wound to be seen. By placing a towel over the patient's face it is, of course, possible to prevent him seeing anything. Some patients, however, especially those of higher intelligence and education, object to being covered up completely. These patients as a rule do not object to use a pair of blue or smoked spectacles, and have cotton-wool placed in their ears, so that the noise of the instruments, etc., is reduced to a minimum. In several of my cases I requested some one to interview the patients and take down their impressions.

Case I. *Acute General Peritonitis with Appendicitis.*

Woman, aged 22. When she was advised to have the puncture in the back, instead of being put to sleep with chloroform, she thinks she felt rather hysterical and somewhat alarmed. She felt the punctures, but they were practically painless—"just like needle pricks" During the operation she felt nothing except some pulling in the region of the abdomen, as though she was being tugged at with some small cords. The towel in front of her face slipped, and she caught a glimpse of the wound, which made her rather apprehensive. She had wonderfully little pain direct from the time of the puncture. Throughout the whole operation and subsequent dressings she felt practically nothing. She thinks she was lucky compared with many of the patients she has seen coming from the theatre vomiting and feeling very ill She would prefer this method to being put to sleep. She thinks a proper screen would be a good thing, but would not care for cotton-wool in the ears.

Case II. *General Septic Peritonitis.*

Girl, aged 16. Patient was a little alarmed when advised to have a puncture, and not to be put to sleep. She felt the prick very slightly, and almost immediately the pain ceased, and she very rapidly began to lose all sensations in the region of the abdomen. She felt nothing whatever—either pain, or movement, or touching—during the operation. She felt very weak in bed before she came up to the theatre, and at the end of the operation she felt much stronger than at the beginning. She felt too weak to notice any conversation, or to take notice of what was going on immediately around her. She was surprised that there was no pain or discomfort whatever when she was back in bed during the day after the operation. She would certainly much prefer to have this method again, and would not care to be put to sleep with chloroform. She considered it "wonderful."

Case III. *General Septic Peritonitis.*

Boy, aged 16. Patient was in great pain when admitted to the hospital, and this continued until he was taken upstairs to the theatre. The puncture itself was rather painful. Immediately after the prick the pain began to lull, both that caused by the needle, and the pain of the inflamed stomach. He had no sensations at all throughout the operation, and could not even feel anybody touching him in the abdomen. He felt rather thirsty, and had some brandy and water, and was conscious through the whole operation, and heard people talking. He did not feel at all frightened. When he returned to the ward he was still very thirsty, but there was no pain and no vomiting.

Case IV. *Radical Cure of Hydrocele.*

Man, aged 21 The puncture was not particularly painful; he just felt the prick, and then the pain ceased. He felt a little apprehensive when he heard that he would not be put to sleep, and sweated a little. During the operation he felt nothing like a cut or a prick, but once or twice it seemed as if his skin were being pinched. He felt one stitch being drawn through the skin, and also a cold towel on his leg as though it was being used to wipe something away. He talked to somebody who was holding a towel up as a screen during the whole of the operation. When asked if he would like anything, he suggested some tea, but when it was brought he did not feel that he wanted it. The only improvement he could suggest was that he would prefer not to hear any remarks made about the operation while it was being done. He would far rather have the operation done in the same way again than be put to sleep.

Case V. *Sarcoma of the Testicle.*

Man, aged 40. An extensive operation, in which the inguinal canal was opened up, and the spermatic cord followed up into the abdomen; lymphatic glands removed from the groin. The skin wound sewn up measured 17 in. The pain of the puncture was very slight. He thought nothing of it, and would not mind one every half-hour. During the operation he felt them "niggling" a bit, and he was also conscious of some stitches being put in, but there was no pain whatever from beginning to end. He talked during the operation, and drank some tea. When he came back to the ward he felt fine, and wanted his tea badly. He was not at all frightened, and would far rather have the puncture than be put to sleep. He could not suggest any improvement. On another occasion he would prefer not to have any cotton-wool in his ears, as he was interested in everything that was said.

3. *The Dose.*

The minimal dose of stovaine that can be given without fear of respiratory paralysis is half the ordinary capsule—that is, 0.5 c.cm. of the solution (0.05 grain of the salt). If the anaesthesia is required low down in the leg, quite a small dose, often as little as 0.3 c.cm., of the solution is sufficient. With even less than the full amount in a capsule—for example, 0.6 c.cm.—there is produced very often sufficient intercostal paralysis to hinder respiration.

In two cases operated upon by me within an hour of each other, the same dose—namely, 0.6 c.cm.—was given. In one case, that of a young woman with acute appendicitis, the amount was only just sufficient to last twenty-five minutes, so that the latter part of the operation was accompanied by a certain amount of discomfort, scarcely amounting to pain. In the other case—one of volvulus of the sigmoid flexure—the anaesthesia was absolutely complete, and later on signs of intercostal paralysis showed themselves. This divergence of effect is only what one would expect on *a priori* grounds. If the same dose could be relied upon to produce the same effect in all patients, stovaine would differ from all other drugs with which we are acquainted. In these acute cases it is very difficult to estimate the amount that will be required to produce complete anaesthesia, and, owing to the danger zone of intercostal paralysis being near the limit of the anaesthesia required, it is necessary to feel one's way. I consider that it is of paramount importance in cases in which the anaesthesia has to reach the level of the upper abdomen to commence with a full dose and to be prepared gradually to increase it if necessary. It is desirable to leave the needle in position until the maximum degree of anaesthesia has been attained. In cases of acute general peritonitis I commence with a dose of 0.6 c.cm.; if, at the end of seven minutes, it is obvious that the anaesthesia is not sufficient, an extra 0.3 c.cm. should be injected; if, at the end of seven minutes, the anaesthesia is insufficient, another 0.3 c.cm. should be given. If the necessary amount of anaesthesia is not obtained by this double dose there is probably something wrong with the drug or with the method of injecting it. In two such cases in my experience the instruments had been boiled in water containing sodium bicarbonate. Quite a small amount of this will render the stovaine solution inactive. It is possible that the needle may shift from the cerebro-spinal space after it is first inserted, so that one is injecting the stovaine into the surrounding tissue, instead of into the cerebro-spinal space. It is only by gradually feeling one's way that one can avoid the danger of intercostal paralysis. The extra time taken to obtain a definite and safe amount of anaesthesia does, of course, demand extra time and effort from every one concerned, but in those grave cases the result is well worth the trouble. The danger of intercostal paralysis is a very real one in cases of general peritonitis, because the action of the diaphragm is much interfered with in these diseases. partly reflexly and partly by direct extension from the inflamed peritoneum.

Doses during the Operation.—In some cases the anaesthesia tends to disappear before the operation is completed. Even if we could foretell the exact length of the operation it would be practically impossible to judge beforehand the exact amount of the drug that would be sufficient. It is necessary, therefore, to be prepared to give another injection during the operation, and with this in view I have so arranged the exploring needle that it can be left *in situ* during the operation, so that at any moment another dose can be injected without moving the patient beyond a slight degree.

Doses after the Operation.—I should like to elicit any experience on this point. I have not myself had occasion to give injections after the operation, but it is quite possible that a recurrence of pain or of abdominal distension might be dealt with by injecting some more of the anaesthetic.

Reliability of the Method.

It is, of course, very difficult to arrive at a definite

conclusion on this point. When dealing with a new method there are certain mistakes to be avoided, and these time alone can indicate. In two cases of my own there was a failure to produce anything more than a slight amount of anaesthesia, extending but little beyond the ankle. In both of these cases, already mentioned, I ascertained that sodium bicarbonate had been used for cleaning the instruments. If we refer to the literature of the subject it would seem that the anaesthesia is quite reliable if required below the level of the umbilicus. It is when we require the upper abdomen to be anaesthetized that failures occur, necessitating resort to general anaesthetics. My own feeling is that further experience will enable us to arrive at a reliable method.

Influence in Protecting the Patient from Surgical Shock.

Though placed last on the list, it is, in my opinion, the most important point of all—in fact, it is owing to freedom from surgical shock conferred by this method that I ventured to advocate lumbar anaesthesia for those grave operations in which this condition is the great danger. The following case is of considerable interest in this connexion:

The patient was in the Ipswich Hospital, under the care of my friend Dr. Herbert Brown. The patient, suffering from a pelvic tumour, had heart mischief which rendered a general anaesthetic inadvisable. As I was staying with Dr. Brown at the time, he suggested that I should try lumbar anaesthesia. Although more than double the full dose was given, there was practically no anaesthesia beyond the middle of the leg (this is one of the cases in which sodium bicarbonate had been used for cleaning the instruments). After trying to obtain lumbar anaesthesia for some time without success, the patient was anaesthetized with chloroform and the operation performed. It was a very difficult one—a pyosalpinx adherent to the floor of the pelvis—the whole operation occupying nearly two hours. To the surprise of us all, the patient showed few if any signs of shock, notwithstanding her poor condition and the character and duration of the operation. We could draw only one inference—namely, that the stovaine injected, though insufficient to produce anaesthesia, was quite sufficient to protect her from grave surgical shock. From this case, and from one other in my own experience, I am inclined to believe that stovaine may be given, together with a general anaesthetic, if lumbar anaesthesia alone is not considered advisable.

The whole method of lumbar anaesthesia stands or falls, in my opinion, upon its value in protecting the patient from surgical shock, and I think it most important that we should codify our knowledge of this subject as quickly and as completely as possible.

DISCUSSION.

Mr. WARD COUSINS (Portsmouth) said: What are the indications that the spinal injection of cocaine, stovaine, or novocain is likely to take the place of general anaesthesia? What are the probabilities that spinal anaesthesia will be practised extensively in abdominal operations in this country? In America and on the Continent this treatment has gained considerable attention, and especially during the last two years. The injection of cocaine into the subarachnoid space in the lumbar region has now been introduced upwards of twenty years by Corning of New York and Bier of Kiel, and the improved technique of the method has been developed largely by Tuffier of Paris; but at the present rate of progress it will be a long time before it takes the place of general anaesthesia. Now, with all the modern improvements of administration, the researches of chemists, pathologists, and physiologists, and with the skill and practice of specialists, the risks of surgical shock and the dangers of inhalation, although considerably reduced, have not been completely overcome. The risks of anaesthesia have engaged the serious attention of the profession and scientific men since the first inhalation of ether by Morton sixty years ago, and even to-day there appears to be a widespread impression that fatalities will happen, and are unavoidable. But is it not a fact to-day that the production of complete anaesthesia by the vapour of chloroform or ether, or any other method, is not practised even in the most experienced hands without some risk to life? Now the reduction and the exclusion of all risk is our aim. There are many able workers in this field, and it appears probable that more light and more safety may be coming in the direction of spinal anaesthesia. What is the relative value of inhalation and injection at the present time?

1. I fear we must admit that fatalities occur occasionally with both methods. The deaths by inhalation of anaesthetic vapour are less than formerly. Occasionally I have heard of a death during spinal injection. One record in the *New York Journal*, 1901, stated a very high mortality with cocaine—8 deaths out of a total of 2,000 cases. I have no doubt that recent figures are far more favourable with the new agents. We can, however, be quite sure that the relative value of these methods will be determined in the future by the number of these calamities.

2. As regards the immediate and secondary effects of these methods we are not able yet to make any satisfactory statement. In some cases of both general and spinal anaesthesia shock and general depression are absent altogether, especially in operations of medium severity. During prolonged operations in any region of the body the dangers of ether and chloroform are never absent. On the other hand, the new agents, stovaine, eucaine, and novocain, are stated by Mr. Dean and other experienced operators to produce very little effect upon the heart; at the same time surgical shock is materially diminished. As to the secondary effects, nausea and vomiting occur after both methods, and headache, sometimes with disturbance of the circulation and elevation of temperature. Spinal injection has been followed by severe numbness and discomfort over the heart and stomach. Mr. Dean says that peripheral anaesthesia in operations upon the abdomen is of great value, and that many of the injurious effects of chloroform and ether upon the respiratory and other organs are absent. In a paper recently published by Mr. William Green it is stated that spinal injection is successful in every extraperitoneal operation, but that the method is not altogether satisfactory in intraperitoneal manipulations, as they often cause discomfort and sickness. I am sorry to observe that my own experience is too limited to give an opinion on these points. There is another question on the relative value of general and local anaesthesia. With the latter the peripheral nerves are alone paralysed, the complete activity of the brain and vital centres is maintained, and consciousness is not disturbed. The patients can both hear and see everything, and if they like they can watch the movements of the operator. This surely will hardly suit many nervous patients, especially when operations are long and complicated. The state of complete insensibility is in my experience very often a great boon to both patient and surgeon.

3. There is another important matter which must influence the relative value of these methods—the practice of either demands special knowledge and experience. The technique of general anaesthesia may not be very complex, but how much depends upon the anaesthetist! He has to learn how to command the confidence of a patient, how to secure regular and steady respiration, how to act with caution at the onset, and to ensure complete insensibility by a judicious increase of the vapour. The little operation of spinal injection demands the exercise of special skill in preparing the skin, securing the sterility of the needle and syringe, and using a perfect and sterilized solution of the drug. The hands, too, must be made as sterile as possible and then put into sterile gloves. Unless these precautions are skilfully and diligently carried out, there will be the risk that some septic material may be introduced into the subarachnoid space. Now when local anaesthesia takes the place of chloroform and ether in the practice of abdominal surgery, I think that it is very possible that the surgeon will have to do the spinal injection as well as the operation in many cases. In some places, no doubt, general anaesthetists will soon get into the way of practising both methods, and it will be their duty to ask their patients which method they prefer. It is my opinion that the large majority will decide in favour of inhalation.

Mr. ALEXANDER WILSON (Manchester), said: Speaking as an anaesthetist of some years' standing, I must

confess that general anaesthesia by inhalation has certain disadvantages. As Mr. Dean has pointed out, the exhibition of chloroform or ether does not entirely abolish shock. Acting, as these drugs do, on the nervous system from above downwards, it is possible for shock not to be completely abolished, but the symptoms of it merely masked. If it could be induced with reasonable safety, lumbar anaesthesia is obviously indicated in all those cases where the constitutional disturbances following the exhibition of chloroform and ether are likely to be dangerous. Of these, acute abdominal cases, such as acute intestinal obstruction and acute peritonitis, are pronounced examples. In these, the patient is suffering from shock and toxic poisoning, to exhibit a general anaesthetic is to saturate the patient with an additional toxic agent, and aggravate his condition. One often wonders how far the rapidly fatal result in these cases is contributed to by the anaesthetic or operation. These cases are so hopeless that any reasonable alternative method of anaesthesia is to be welcomed. In other abdominal diseases—notably in the newer operations, such as gastro-jejunostomy, one is impressed by the small amount of shock under general anaesthesia. This degree of shock would be much diminished if surgeons invariably handled the abdominal contents with consideration and tenderness. There is, no doubt, a tendency on the part of some surgeons to manipulate the viscera with an undue degree of roughness, under the impression that shock cannot be experienced by an unconscious patient. After all, considering their very wide use, chloroform and ether are wonderfully safe. The deleterious after-effects of chloroform, and especially of ether, are largely due to errors in their administration; the fault, particularly in ether, is the induction of a too profound narcosis. Further, in any anaesthesia induced by injection, a toxic agent is introduced into the general system as effectually as when one is given by inhalation, so that there is more than a local effect. For certain operations on the upper respiratory tract, such as tracheotomy, excision of larynx, and enlarged thyroids producing obstruction, local anaesthesia has been advocated on account of the laryngeal spasm set up by the irritation of the anaesthetic vapour. This can be avoided by the initial induction of anaesthesia by some quickly acting unirritating anaesthetic such as ethyl chloride. I have had severe cases of laryngeal and tracheal obstruction, in which by first administering oxygen to overcome the asphyxia, anaesthesia has been successfully induced in some cases by nitrous oxide and in others by ethyl chloride. In these, as in many other cases considered unsuitable for inhalation anaesthesia, general anaesthesia can be produced with safety and comfort by the agents at present in common use with the addition of oxygen.

Mr. C. A. Leedham-Green (Birmingham) said: As a contribution to this discussion, I wish to urge the claims of spinal anaesthesia. This I think I can do best by briefly giving my own personal experience with this method of anaesthesia. Some eighteen months ago I began to make occasional use of spinal anaesthesia, reserving it solely for those cases in which, in consequence of severe bronchitis or other trouble, a general anaesthetic was contraindicated, and yet the operation was too formidable to be performed under local infiltration anaesthesia. As I became more familiar with spinal anaesthesia, more adept with the technique, and better acquainted with its advantages and disadvantages, I almost unconsciously made use of the method with increasing frequency, until, at the present time, I employ it as the routine anaesthetic for all major operations below the diaphragm, except in the case of children and neurotic patients. I began by using stovaine-Billon, then passed on to novocain with adrenalin. I now use, and use only, simple tropacocaine (1 c.cm. of a 5 per cent. solution) without the addition of adrenalin. After a fair trial of these three agents, I have no hesitation in saying that tropacocaine is by far the best for spinal anaesthesia. In my hands it not only proves to be more certain in its anaesthetic properties, but it is less frequently followed by unpleasant after-effects, such as headache and vomiting. Moreover, I believe it is now established that tropacocaine is decidedly less toxic than stovaine or novocain, and certainly it has far less action on the motor cells than these two. Novocain, still more stovaine, causes a decided, and often complete, temporary paralysis of the muscles of the legs and lower part of the trunk. Tropacocaine, on the other hand, causes but slight muscular interference, so slight that as a rule the patient can raise himself on his shoulders and heels to have an abdominal bandage put on. The slightness of the action which tropacocaine has on the motor cells greatly lessens the liability of the respiratory muscles being interfered with. The addition of adrenalin to the injection fluid is wholly unnecessary, and merely adds an undesirable constituent, complicating the sterilization of the solution. The technique which I now use is as follows: The patient is given a warm diffusible stimulant to drink; then, whilst he sits on the edge of the operation table, with the back well bent forward, a medium-sized exploring needle is inserted exactly in the middle line below the spinous process of one of the lumbar vertebrae. I usually select the interval between the second and third, or, for high anaesthesia, between the first and second. The insertion of a sharp needle of moderate size is usually almost painless, and is, therefore, I think, to be preferred to the fine trocar and cannula, which I reserve for difficult cases. As soon as the cerebro-spinal fluid flows freely and clearly, an aseptic syringe, of a capacity of 10 c.cm., and containing 1 c.cm. of a 5 per cent. solution of tropacocaine, is fitted on to the needle. The piston of the syringe is then slowly withdrawn, and some 6 or 8 c.cm. of cerebro-spinal fluid taken into the barrel, where it mixes with the 1 c.cm. of tropacocaine solution. The mixture of cerebro-spinal fluid and tropacocaine is then slowly injected into the spinal sac. The needle is then withdrawn and the puncture sealed with collodion, after which the patient is placed on his back. I have abandoned the use of the Trendelenburg position, as advocated by Kader with a view to assisting the upward diffusion of the anaesthetic in the spinal sac. The aspiration of the fluid and injection by the 10 c.cm. syringe, as previously described, renders this position unnecessary. The onset of the anaesthetic action is very rapid, so that by the time the patient is placed on his back and finally prepared for operation, the anaesthesia is complete. So rapid and so certain is the action of the injection given in this way that I do not now think of testing whether anaesthesia has taken place or not, but at once start the operation, fully confident that the patient is completely insensitive from the costal arch to the toes. As a rule the anaesthesia extends to about the fourth rib, occasionally as high as the clavicle, or as low as the costal arch. If the technique has been carefully carried out, the clear cerebro-spinal fluid flowing freely through the needle, then it is very seldom that the anaesthesia does not reach well above the costal arch. If, on the other hand, the cerebro-spinal fluid has not flowed freely, so that little or none could be aspirated before reinjecting it with the tropacocaine, then the anaesthesia does not extend nearly so high. In only two out of nearly 100 cases have I found the anaesthetic fail when the technique appeared to be faultless. The average duration of the anaesthesia was one and a half hours; occasionally it lasted as long as three hours, and sometimes less than one hour. As a rule it is ideal, absolutely painless, and unattended by any unpleasant subjective symptoms. Operations on the upper part of the abdomen are not so satisfactory, sometimes being attended by a certain amount of pain. I have consequently not found spinal anaesthesia alone suitable for severe kidney or gall-stone operations. It may, however, be used even in these cases, if a small preliminary injection of morphine, or, better, scopolamin and morphine, be administered *sub cute*. This preliminary injection I have found of service when operating even on the lower part of the abdomen in cases where the peritoneum was acutely inflamed. As long as the dose of the anaesthetic was kept within reasonable limits I have seen nothing of severe, or even troublesome, accompanying or after-effects. On rare occasions the patient has felt some slight nausea and even vomited once during the operation. Afterwards slight nausea or headache may be felt for a few hours, but only two patients complained of headache next day. With these trifling exceptions I have seen no after-effects at all, no fever, no persistent headache, no vomiting, paralysis, etc. As a rule the patient chats freely, completely at his ease, during the operation, and then goes back to bed to read the papers and have his lunch as usual. On the evening of the day of operation, if there is no contraindication, an ounce of castor oil is given to counteract any tendency to headache.

On one occasion I saw serious respiratory trouble result shortly after the administration of the injection, but this was caused by an excessive dose of the anaesthetic. Through a mistake on the part of the chemist, a 10 per cent. solution of tropacocaine was substituted for the usual 5 per cent. Consequently the patient, unfortunately an elderly man, received a double dose of the anaesthetic. The operation, that of cystotomy, had just been completed when signs of severe respiratory failure set in, and the patient (a fat, flabby man with severe chronic bronchitis and nephritis) became unconscious. Stimulants were given at once and the head and trunk well raised, while the extremities were lowered. This had the effect of at once improving the breathing, so that in a little time it became regular and the patient regained consciousness and suffered no ill effects from his collapse. This is the only case in my experience where ill effects have accrued. To sum up. The more I make use of spinal anaesthesia the more convinced I am of its value, safety, and efficiency. While I should strongly deprecate its use for minor cases, which can be performed under local infiltration anaesthesia or nitrous oxide I believe it to be safer and preferable to either chloroform or ether for the majority of operations below the diaphragm. Especially is it indicated in cases where the patient is suffering from bronchitis or other inflammatory conditions of the lungs or air passages, in chronic alcoholism, nephritis, and possibly diabetes. It is of great service in dealing with greatly debilitated patients, such as those suffering from chronic intestinal obstruction, extravasation of urine, of senile gangrene, etc., where the disturbance occasioned by a general anaesthetic often robs the patient of his chance of recovery. Again, I have found it of value when catheterizing the ureters in the male in a sensitive patient, for, unlike a general anaesthetic, it does not inhibit the renal secretion. The contraindications which I have recognised are: children and highly neurotic patients, severe septic conditions, acute inflammation of the peritoneum (not always a contraindication), long and difficult operations above the umbilicus.

Dr. A. GOODMAN LEVY (London) said: The results obtained from the employment of general anaesthetics are unquestionably often far from perfect, and the interest which is being devoted to alternative methods is therefore intelligible. I take it that this discussion implies a direct attack upon the supremacy of general anaesthetics, and it is therefore time to bring forward such reserve forces as we possess in their support. Now, it is somewhat extraordinary that a simple and effective inhalation method is practically unknown in this country; I refer to the "open" method of administering ether. It is a common statement in textbooks that the open method is not applicable to ether, but my personal experience and its very large employment in the United States certainly tend to refute this view. The type of anaesthesia thus obtained surpasses that of chloroform at its best, and its superiority over that of "close" methods is referable I believe, first, to the absence of cyanosis; secondly, to the absence of pressure upon the respiratory apertures. There exists unfortunately a prevalent idea that some degree of cyanosis is a necessary adjunct to the inhalation of ether vapour, and it is common to see patients deeply cyanosed from the start to the finish of an administration. The vapour being concentrated, as it is in closed methods, by "rebreathing" over ether into a bag, anoxaemia is, of course, unavoidable, and it is, further, generally initiated by the preliminary administration of nitrous oxide gas. The direct results of this asphyxial condition are (1) exaggerated respiratory movements, (2) venous congestion. The venous congestion not only adversely affects certain important operations, but in addition must cause a swelling of the mucous membranes of the respiratory passages, and hence a direct obstruction to respiration. The obstructed breathing increases the cyanosis, and is, I believe, incidentally the cause of the spasmodic respiratory contractions of the abdominal muscles which are frequently such an objectionable feature of ether anaesthesia in abdominal operations. Asphyxial troubles are frequently, and especially in unskilful hands, intensified by the application of a closely-fitting face-piece, such as is used in connexion with a Clover's inhaler. Thereby the nares are nearly always compressed, the respirations hence becoming entirely oral. In the absence of proper precautions, the lips are stretched by the pressure and become approximated, and thus an obstructive labial stertor is set up. When this naso-oral obstruction exists, the respirations, which are doubly stimulated by the ether and by the asphxial condition of the blood, produce a negative pressure during inspiration, and thus the congestion of the mucous membranes is reinforced by suction. In this way, as I believe, almost any degree of respiratory obstruction may be induced, and it stands to reason that satisfactory inhalation without free respiration is an anachronism. The supposed necessity for an asphyxial factor is fortunately a myth, and as the open method can be made to supply a sufficient concentration of vapour, most of the objectionable features of ether administration are swept away when it is employed. The physiological advantages and the "safety" of ether anaesthesia are fairly well known, so that I need not now touch on them, and when, in addition to these, there exists a regular, unobstructed, and slightly stimulated respiration, a perfect oxygenation of the blood, an absence of venous congestion, and a relaxed condition of the abdominal walls, surely there is little left for the surgeon to desire. The condition of the patient after the operation is in my experience excellent, and the depressing effects of a prolonged deprivation of oxygen conspicuously absent. The phenomenon of the so-called "dyspnoeic salivation" would lead us largely to connect the usual profuse secretion of saliva and buccal mucus with an asphyxial condition, and it is noticable that this disagreeable condition is greatly reduced in the open method. Lastly, the process is a simple one, easily learnt, and does not call for the exhibition of special skill. Certain objections have been advanced against the method which, however, I do not think can be allowed to counterbalance its manifold advantages. Certainly the induction period is rather protracted, but, on an average, I do not think it takes more than three minutes longer than does chloroform. In hospital work this disadvantage can be minimized by organization on well-known lines, and in any case much time and trouble is saved from the absence of the initial respiratory embarrassment frequently incident to the closed method of induction. As to the plea that the method is a wasteful one, I do not think many would allow economy to stand in the way of efficiency. A good deal of the anaesthetic may have to be used to induce anaesthesia, but a much weaker vapour is required to maintain it than is generally supposed, provided the administration is *continuous*, as it should be. I do not believe a greater concentration than 5 per cent. or 6 per cent. of vapour is required for this purpose, so that considerable economy can be effected by the adoption of a proper method of administration. A large initial dose of ether is absorbed by the body before the blood is brought to the required anaesthetizing pressure, and to introduce this rapidly a high concentration of vapour must be exhibited at first. To effect this by the open method, it is necessary to bear in mind certain points of principle which I referred to in a paper upon the evaporation of anaesthetic fluids, published in the BRITISH MEDICAL JOURNAL, July, 1906. The ether should be suspended in the strands of a loosely-woven fabric such as gauze, through which the inspired air passes freely; when air passes through the saturated fabric it takes up a sufficiency of vapour, and it is essential that almost the whole of the inspired air should take this course, and therefore no free airway should be allowed under the edges of the frame which supports the gauze. Hermetic application of this frame to the face is unnecessary; it is generally sufficient to allow a suitably-contoured frame* to rest lightly upon the face, for comparatively little of the air will pass through the chinks under the mask provided that the airway *through it* is sufficiently large. Occasionally, however, it is necessary to enwrap loosely the margins of the frame with wet lint. I have found it best to employ a cover of several folds of gauze, divided into quarter sections.* The strength of vapour obtained by moistening one quarter with ether is respirable by a conscious person, and by progressively bringing into use the remaining sections anaesthesia is gradually induced. Anaesthesia may be maintained by keeping two quarters, or even only one, continuously

* Messrs. Allen and Hanbury supply frames and covers suitable for this purpose.

moistened, ether being dropped on at sufficiently frequent and regular intervals. Less precise results can be obtained by simply dropping suitable quantities of ether on to an undivided manifold gauze cover; even then, if the administrator is prepared to take a little trouble, the vapour may be very perfectly and continuously controlled by roughly estimating the amount of ether and the intervals between its applications in numbers of drops and of respirations, and suitably varying these two factors until the desired result is obtained. With regard to the respiratory sequelae that Mr. Dean has referred to, I am strongly of opinion that pulmonary congestion from asphyxial conditions, coupled possibly with infected bags, is a more important factor in their production than is the inhalation of a diluted and pure ether vapour. In conclusion, I submit that spinal anaesthesia is passing through the usual initial stage of over-appraisal, and even its admitted disadvantages preclude any comparison, except in a few special cases, with the consistently excellent results obtained from such a method as I have just dealt with.

Mr. J. W. Struthers (Edinburgh) said: I take it that the object of this discussion is not so much to discuss the technique of general, spinal, or local anaesthesia as to define, if possible, the respective field of each. In the abstract of his remarks published in the Journal before this meeting, Mr. Dean made the statement that "when the anaesthesia is required for an operation where shock is not likely to be produced the question of a general versus a local anaesthetic is not a matter of any moment." I venture to disagree with that statement in so far as to say that there is a distinct, though perhaps relatively unimportant, class of operations in which local anaesthesia can be employed with complete success—in which it is one's duty to make use of it, because it is absolutely safe and free from serious after-effects, and therefore offers very considerable advantages over general anaesthesia induced by $CHCl_3$ or ether. It seems to me to be a matter of very considerable moment for the patient that we should employ local instead of general anaesthesia whenever possible, so as to minimize, if not altogether abolish, the risk connected with operative interference of any kind, however trivial. I should like, therefore, to state briefly the conclusions I have formed as to the indications for and against the employment of local anaesthesia. In the first place, one may say without fear of contradiction that the main field for local anaethesia is in minor operative work, and if it is asked what minor operations may suitably be done under it, I would say those in cases where the field of operation is such that the whole area or its nerve supply can be certainly and safely reached by the injecting needle, and can be rendered insensitive to pain with a dose of cocaine, eucaine, or whatever drug is used, which is within the limits of safety. Such operations may be done without risk, without serious discomfort to the patient, and with perfect confidence as to the possibility of completing them under local anaesthesia. In some of them the field of operation may be rendered analgesic by direct infiltration, in others by endoneural or perineural injection with cocaine of the nerves supplying the operation area, producing what is termed regional anaesthesia. I should like to emphasize in passing the great value of regional anaesthesia, especially in the hand and fingers. I believe it is not widely enough recognized how easy it is to render a part or the whole of the hand analgesic by injections into or round the median, ulnar, and radial nerves. Under the analgesia produced by these injections any operation on the hand and fingers can be done, and the method has proved of the greatest value in out-patient work, in working single-handed, and indeed under all conditions. I described the technique of making these injections, which was first elaborated by Braun of Leipzig, in some notes on local anaesthesia which I published some time ago. For such operations local anaesthesia appears to me to be the method of choice, and should be used to the exclusion of general anaesthesia except in children, or adults of a nervous and excitable disposition, who demand a general anaesthetic. Some operations which are frequently done under general anaesthesia, such as that for varicocele, hydrocele (radical cure), castration, the removal of prepatellar bursae, etc., are eminently suitable for local anaesthesia, because the field of operation can be exactly defined and easily rendered analgesic by infiltration, while the possibility of complications arising during operation requiring an extension of the analgesic area can be excluded. It is sometimes maintained that infiltration of the tissues interferes with the satisfactory performance of such operations owing to the oedema produced. To anyone with a very moderate experience that is not so. The addition of adrenalin to solutions for producing local anaesthesia renders them so much more powerful that the necessity of producing the intense oedema of the tissues formerly indispensable in using Schleich's method no longer exists, while the analgesia is a genuine and most satisfactory one, lasting one and a half, two, or more hours. I would, in general, limit the use of local anaesthesia to minor operative work. Attempts to use it where the extent of a dissection cannot be exactly defined and where the field of operation cannot, therefore, with certainty be rendered analgesic beforehand, are as a rule ill advised except where general anaesthesia is absolutely contra-indicated. Its use in such cases is too apt to lead to the infliction of severe pain or the performance of an incomplete and therefore bad operation. One is occasionally tempted, for example, to undertake the removal of one or two enlarged glands in the neck under local anaesthesia, when the glands seem superficial and are freely movable. The proximity of large veins makes it impossible to infiltrate the tissues round the glands with safety. The frequent presence of unexpected adhesions and additional enlarged glands calls for an extension of the analgesic area which cannot be easily made; dragging on the glands involves tissues outside the analgesic area, and the general result is as a rule most unsatisfactory. Attempts have also been made from time to time to extend the use of local anaesthesia to certain abdominal operations, such as colostomy, gastrostomy, the radical cure of hernia, etc., especially since the demonstration by Lennander of the insensibility of the visceral peritoneum and the abdominal viscera. Unfortunately the abdominal wall and parietal peritoneum are acutely sensitive and must not be dragged upon if pain is to be avoided, and the conditions of the analgesia are such that the utmost care has to be exercised to avoid this. It is impossible to foretell what complications will be met with before opening the abdomen, and if an extension of the analgesic area is desired it is difficult and tedious to attain it. The net result is that the operator's freedom of action is always more or less interfered with, and the difficulty in obtaining the best results in abdominal work is such that anything of the sort is to be avoided if possible. I quite admit that many abdominal operations have been successfully carried out under local anaesthesia, but I believe that such operations can be done more quickly, and with a greater certainty of attaining a good result, and with less discomfort and strain for the patient under $CHCl_3$ or ether, and that local should not be regarded as an alternative to general anaesthesia in such work, but merely as an aid to the performance of some life-saving operations, such as the relief of strangulated hernia, or of acute obstruction, when, owing to the gravity of a patient's condition, general anaesthesia is contra-indicated, or in the rare cases where one is compelled to work single-handed, without skilled assistance of any kind in dealing with urgent emergencies. As regards the relative merits of local and spinal anaesthesia there is little to be said, for spinal anaesthesia has still to be classed as a method attended by risk to life and by serious discomfort to the patient in many cases, and therefore occupies the same relative position to local as does general anaesthesia. Before concluding, however, I wish to pay a tribute to three men to whose work on local anaesthesia we owe almost all our knowledge of that subject. I refer to Reclus, Schleich, and Braun. To Reclus we owe the early developments of safe and satisfactory methods of injecting cocaine, which still remains the most generally useful local anaesthetic we possess. To Schleich the discovery of the powers of extremely dilute solutions of local anaesthetic drugs to produce analgesia when properly used, a discovery which did much to extend the field of usefulness of local anaesthesia; while to Braun we owe, more than to any one, our knowledge of the relative merits of the various local anaesthetics now in use, as well as the technique of regional anaesthesia, and the great value of adding small doses of the adrenal active

principle to solutions for inducing local anaesthesia. All that has been written and done in this country on local anaesthesia owes its inspiration to the work of these three men, a fact which is, I believe, not so generally recognized and acknowledged as it might be.

Dr. W. L. RODMAN (Philadelphia) said: It is quite a coincidence that the recent meeting of the American Surgical Association was opened by a paper on lumbar puncture by Professor Küttner, of Marburg. He was quite optimistic in his views. Anaesthesia must ever remain an important—I am almost led to say the paramount—question to all practitioners of surgery. While the danger of general anaesthetics is real, not chimerical, yet I agree with the opinion expressed by Mr. Ward Cousins in his remarks, that the danger is over-estimated and that we get much better results now from ether since the drop method is followed. Both the danger and post-operative discomfort are lessened thereby. Like British surgeons, we in America have been slow to give up general anaesthesia, believing that in so doing one may assume even greater risks. I am of opinion, however, that there is a distinct field for lumbar puncture, as it has been pointed out by the several essayists—namely, in pulmonary, renal, and cardiac diseases—where the dangers incident to general anaesthetics are relatively great. Alcoholics, and senile subjects with arterio-sclerosis, bear lumbar puncture particularly well. In diabetes it should always be given the preference over ether or chloroform. I recently used it in amputating the leg of a diabetic nearly 80 years of age. I was much interested in what was said by one of the essayists concerning tropacocaine. My experience with lumbar puncture has been limited to something more than a hundred cases, and cocaine and stovaine have been the agents employed—the former from 1900 to 1905; since then, stovaine. While satisfactory in the main, the latter particularly so, the high endorsement of tropacocaine will induce me to make use of it in the future. Headache, post-operative nausea, etc., have been rather exceptional complications. In truth, the more I use spinal anaesthesia the better I like it, but I still believe that its superior advantage over general anaesthesia as a routine procedure has yet to be demonstrated. It is quite satisfactory for operations on the lower extremities and abdomen below the umbilicus. It is particularly indicated in prostatic and rectal surgery when the voluntary efforts of the patient are wanted to assist the surgeon. I have sutured both the internal and external sphincters of the rectum in a way that could not well have been done under general anaesthesia. A farmer fell astride a pitchfork, cutting both sphincters as cleanly as could be done by a scalpel. Incontinence was complete. Under lumbar anasthesia, the patient bearing down and rendering valuable assistance, the sphincters were readily brought into view, and sutured without difficulty. The result was perfect control of the rectum. In operating in the country, where one has no assistant, or fears to entrust the ether or chloroform to him, spinal puncture can advantageously be used. I find on the whole that patients like it, and those who submit to puncture are disposed to congratulate themselves upon escaping the post-operative nausea incident to general anaesthesia. I have hitherto considered children improper subjects for lumbar puncture on account of psychic influences to which they are so impressionable. Moreover, they almost invariably bear general anaesthetics perfectly. I was somewhat surprised to learn that Continental surgeons frequently employ it in quite young children. The point has been well made that shock is less after lumbar puncture. The "blocking of the nerves" unquestionably prevents impressions being transmitted to the brain. Wainwright demonstrated that after spinal anaesthesia the limbs of dogs could be burnt to a crisp without producing shock.

Dr. J. SINGLETON DARLING (Lurgan) said: I recently had occasion to remove an ovarian tumour, 70 lb. in weight and universally adherent, from a woman 75 years of age. In the prolonged operation, though only local anaesthesia by the infiltration method of the line of the incision was used, there was practically no pain—none, except when intestine was dragged upon.

Mr. E. CANNY RYALL (London) said: Spinal analgesia has now been practised abroad for several years, and yet in England, one may say, little appears to be known about the many advantages of this procedure in operative surgery. Of all the methods at our disposal for combating shock following injuries or operations on the abdomen or lower extremities, none that I know of can compare with spinal analgesia. This was forcibly brought to my mind last year. The first patient upon whom I operated by this method was an old man suffering from enlargement of the prostate with stone in the bladder. His heart was the seat of organic disease which prevented his taking a general anaesthetic, so I decided to operate under spinal analgesia. The prostate was enucleated suprapubically, and at the end of the operation he was quite cheerful and absolutely free from shock, notwithstanding that he was suffering from serious heart disease. He made a good recovery. Since then I have performed several suprapubic prostatectomies under spinal analgesia, and in no case was there any appearance whatever of shock; in fact, the pulse and general condition appeared to be better after the operation than it was before. Soon after my first case a patient was admitted into hospital suffering from high-lying carcinoma of the rectum. I decided to operate under spinal analgesia, and excised the rectum, having first removed the coccyx and part of the sacrum. During the whole time the operation was in progress I kept up a running conversation with the patient, and when it was completed and he was taken back to his bed, I brought his wife and daughter in to see him. He received them in such a jocular manner that I had some difficulty in making them believe the operation had taken place. He made a good recovery. I would ask you if these are pictures of similar cases performed under general anaesthesia. If time permitted I could give many more instances of the absence of shock following operations, such as cholecystectomies, gastro-enterostomies, nephrectomies, appendicectomies and hernias—strangulated, ventral and radical cures—which I have performed under spinal analgesia. I injected one patient on four separate occasions. He was suffering from rectal carcinoma, and had severe aortic regurgitation. I always use novocain for inducing spinal analgesia, and up to the present, although I operate several times weekly by this method, I have had no death from the use of this drug. Novocain has the following advantages when contrasted with stovaine: (1) Stovaine is acid in reaction and irritating, hence the "after-pain" which is so commonly complained of in the operation wound, following local or spinal analgesia. Novocain is neutral in reaction, non-irritating, and "after-pain" is never complained of in the operation wound. (2) Stovaine in over 10 per cent. solution, when injected beneath the skin or left in contact with mucous membranes longer than ten minutes, is apt to cause sloughing. With novocain no such effect is produced. (3) The analgesia produced with stovaine is not reliable and is of short duration, whereas the analgesia produced with novocain-suprarenin is most reliable and of longer duration. (4) If a muscle-nerve preparation is made and the nerve soaked in a solution of stovaine, then taken out and washed with "Ringer's Fluid" and electrodes applied to the nerve, it is found as a rule that no contraction takes place in the muscle, or if it does it is very slight. This experiment demonstrates the deleterious action of stovaine on the nerve. If a similar experiment is carried out with novocain, a good contraction of the muscle always results. (5) With stovaine the bowels are frequently opened on the operating table soon after the spinal injection is given. This drawback seldom occurs with novocain. (6) Stovaine is more toxic than novocain, and has the most powerful action of any local anaesthetic on the motor nerves; hence it is more liable to cause respiratory paralysis. (7) Many deaths and several cases of permanent paralysis have followed the spinal injection of stovaine. Such catastrophes have not been recorded with novocain, although at the present time this drug is much more commonly employed than stovaine in Germany. From the foregoing remarks it will be seen that I think novocain is the drug most suitable for spinal analgesia, and if stovaine is used at all, owing to its more powerful action on the motor nerves, should only be injected into patients suffering from dislocations or fractures of the lower extremities. *Technique.*—1. *Before operation:* Castor-oil and pyramidon. 2. *Injection:* Patient seated with shoulders arched. Needle inserted through median plane. Site of puncture depends on the operation. Patient kept sitting for five minutes after injection. Then placed in horizontal position and head kept elevated. 3. *After operation:* Head kept elevated.

Pyramidon exhibited. I have worked with 10 per cent., 5 per cent., and 2 per cent. solutions of novocain. During the past two months I have been using only a 1 per cent. solution in conjunction with synthetical suprarenin, which I add myself, in drops, to the novocain solution in the proportion of 1 drop to each 2 c.cm. For operations on the *anus and perineum* I puncture in the third lumbar space; 8 c.cm. of cerebro-spinal fluid is slowly withdrawn; 8 c.cm. of 1 per cent. novocain-suprarenin solution is injected. For operations on the *leg* I puncture in the first lumbar space; 8 to 10 c.cm. of cerebro spinal fluid is withdrawn; 8 to 10 c.cm. of 1 per cent. novocain-suprarenin solution is injected. For operations on the *pelvis* the puncture is made in the second lumbar space; 8 to 10 c.cm. cerebro-spinal fluid is withdrawn; 8 to 10 c.cm. of 1 per cent. novocain-suprarenin solution is injected, For operations on the *abdomen—for operations below the umbilicus:* Puncture first lumbar space; 10 c.cm. of cerebro-spinal fluid is withdrawn; 10 c.cm. of 1 per cent. novocain-suprarenin solution is injected. *For operations above the umbilicus:* Puncture in first lumbar space; 10 c.cm. of cerebro-spinal fluid is withdrawn; 10 c.cm. of 1 per cent. novocain-suprarenin solution is injected + scopolamin and morphine.

Dr. G. A. H. Barton (London) said: If, instead of our going to Germany to learn our business, the Germans would learn from us to employ specialists to administer anaesthetics, we should never have heard of the intra-spinal method. The results of a rough analysis of Mr. Barker's cases in the British Medical Journal of March 23rd give, *pace* Mr. Barker, a death-rate of 1 per cent., failure to produce analgesia 3 per cent., vomiting and headache, in many cases stated to be severe and lasting one or two days, in 3 per cent. The analgesia produced was in many cases irregular in its seat and duration. To-day we hear that there is a risk of puncturing veins, also of intercostal paralysis being temporarily produced. These results are, I think, encouraging to the anaesthetist. A week or so ago, in consultation with Dr. Thoresby Jones of London, he mentioned a case to me which he had encountered in the course of his practice. In view of this discussion I asked him to send me a few details of the case, which presented some interesting remote after-effects. This is what he says: "The man S. is not now at home, so I fear what I can tell you may be of no real use to you. However, I will tell you that I was on May 16th called to him after he had left the hospital three weeks, and at that time he had his lower limbs wrapped in flannel bandages, both being oedematous and nearly twice their normal size. His fingers on both hands were swelled, and the skin peeled off by degrees. He was restless and short of breath. His urine was found free from albumen. The operation was performed at St. Mary's Hospital, an irreducible hernia or encysted hydrocele being, I believe, the cause of his seeking advice. He was unable to resume duty for about three months." In conclusion, I gather from what we have heard to-day that we can safely leave the advocates of stovaine, novocain, and tropacocaine mutually to destroy each other.

DISCUSSION ON THE INDICATIONS FOR PERFORMING CHOLECYSTECTOMY.

OPENING PAPER.

By J. Bland-Sutton, F.R.C.S.Eng.,
Surgeon to the Middlesex Hospital.

It is now recognized that bile, like urine, is purely excrementitious, and the liver, in addition to its glycogenic function, may be regarded as a great organic filter which separates not only toxins from the blood conveyed to it by the portal vein, but also micro-organisms which enter the portal circulation from the gastro-intestinal tract. This aspect of the physiology of the liver has an important bearing on the surgery of the gall bladder, because observation and experiment alike teach that gall stones are the direct outcome of disturbance of the epithelium lining the bile canals and the excretory apparatus of the liver. For some years the view prevailed that the pathologic changes in the large bile passages and the gall bladder which favour the formation of gall stones, or cause acute infection of the gall bladder (cholecystitis), were due to the direct spread of infection from the duodenum into the common bile duct, and thence onwards into the canal system of the liver. More careful observations teach that many of the severe forms of cholangitis and cholecystitis are secondary to the presence of gall stones, and that in many cases the dilatation of the common bile duct by concretions favours the entrance of pathogenic microbes from the duodenum. Although it is undeniable that infection of the excretory apparatus of the liver may be derived directly from the duodenum, experimental research indicates that cholelithiasis, non-calculous cholangitis, and cholecystitis are the consequences of toxic irritants as well as pathogenic micro-organisms separated from the blood by the liver cells and excreted with the bile. Anything which favours stasis of the bile when this fluid contains irritating or infective matter either in the form of toxins or material particles, whether micro-organisms or minute casts of the intra-hepatic canals, leads to catarrhal infections of the biliary passages as well as the formation of concretions. Of all parts of the complicated hepatic canal system, the gall bladder is the one where the arrested bile is under the most favourable conditions for producing pathological changes, and it is in the gall bladder in which, speaking in a general way, 75 per cent. of the diseases connected with the excretory apparatus of the liver which come into the hands of the surgeon have their origin.

In considering the functions of the gall bladder we cannot avoid the conclusion that they are of little importance; anatomically it is a diverticulum from the common duct capable of holding rather more than an ounce of bile. During fasting bile accumulates in the gall bladder, to be discharged when chyme from the stomach enters the duodenum.

Physiological observations fail to show that any chemical change takes place in bile retained in the gall bladder under normal conditions, except an alteration in colour and a slight admixture of mucus. Anatomy, human and comparative, teaches that absence of the gall bladder entails no disadvantage; observations in the dead-house show that disease destroys it very often without causing even inconvenience to the individual, and surgeons practising in large cities can demonstrate that the gall bladder may be dispensed with as easily as the vermiform appendix. Pathological observation and surgical experience are equally eloquent in proclaiming the dangers and catastrophes accompanying many diseased conditions of the gall bladder which it is my business to set down to-day, and to point out the best means of dealing with them.

In order to avoid error, I shall state that it is to be understood that cholecystectomy is recommended in the subjoined list, not for every patient who is suspected to have a diseased gall bladder, but subject to those conditions which judgement and experience teach us that surgical interference is really indicated. Cholecystectomy, or the removal of the gall bladder, is indicated in the following conditions:

1. Injury to the gall bladder.
2. Calculous cholecystitis.
3. Acute (non-calculous) cholecystitis, and gangrene of the gall bladder.
4. Perforating ulcers of the gall bladder,
5. Mucocele (*Hydrops vesicae felleae*).
6. Chronic suppurative cholecystitis (empyema).
7. Biliary fistulae.
8. Malignant disease (cancer, sarcoma, and endothelioma).

In considering the comparative mortality of cholecystotomy and cholecystectomy, it is advisable to deal with the cases as we do in the consideration of the mortality of operations on the vermiform appendix—namely, those performed for acute cholecystitis; the perforative cases should stand in a separate table from those operations needed for chronic disease, especially cholelithiasis. A separate heading should also be used for cases in which cholecystectomy and choledochotomy are performed at the same time. Operations performed for primary malignant disease of the gall bladder should form a class by themselves; while as for rupture of the gall bladder, this is a rare accident, and its consideration need not detain us, as it is an accepted rule of practice to remove it in such circumstances.

Calculous Cholecystitis.

Concretions exist in the gall bladder under a great variety of conditions, and the effects of inflammation on the walls of the gall bladder are so various as to lead to some diversity of opinion in regard to the best mode of dealing with them surgically. The observations which have done more than anything else to crystallize surgical method in this direction are those which prove conclusively that the chief factor in the production of gall stones is chronic catarrh of the mucous membrane of the gall bladder; and it is accepted now as an axiom among surgeons specially interested in this class of surgery that a gall bladder may appear normal to the eye, yet if it contain concretions it must be considered unsound. It is therefore wise to remove it.

Fig 1.—An atrophied calculous gall bladder with obliterated cystic duct The large stone was removed from the common duct (cholecystectomy and choledochotomy). From a woman who had suffered from gall-stone attacks seventeen years.

When a gall bladder has been the seat of acute cholecystitis, and the concretions have been extruded through a fistula into the adjacent bowel, the gall bladder will occasionally disappear completely. After an attack of acute cholecystitis the inflammatory products may find their way down the cystic and the common duct, and escape into the duodenum. If the cholecystitis become chronic, the gall bladder will shrink upon any calculi it contains, and the cystic duct may become a solid cord. (Fig. 1.)

When biliary concretions are sequestered in this way they are often a source of pain, and lead to operation. Surgeons used to be much puzzled to decide how to deal with such gall bladders, as it was impossible to enucleate the stones and bring the gall bladder up to the margin of the wound in the parietes (cholecystotomy). The removal of such a gall bladder is a simple and safe proceeding.

Fig. 2.—An inverted gall bladder, the seat of acute ulcerative cholecystitis, showing ulcers in the mucous membrane, one of which perforated into the general peritoneal cavity.

In such cases the surgeon must critically examine the common duct, for the choledochal stone is a very common companion of an atrophied calculous gall bladder associated with pain and light varying jaundice. In removing a shrunken gall bladder of this kind when it is necessary to ligature the pedicle care must be taken not to include or kink the common duct.

When the surgeon can satisfy himself that the cystic duct is obliterated or strictured, no ligature is needed, but the cystic artery will require the application of a thin piece of silk.

Ulceration and Perforation.

It occasionally happens with the gall bladder as with the vermiform appendix, that an individual entirely unsuspecting that he has any disease is suddenly seized with acute pain in the belly, and in a few minutes is brought within a measurable distance of death, in consequence of a perforation in the wall of an enlarged gall bladder allowing infective matter to leak into the general peritoneal cavity (Fig. 2).

This accident occurs in the following conditions:

(*a*) Ulceration of the gall bladder when it is the seat of acute calculous cholecystitis.

(*b*) Chronic calculous cholecystitis in the course of formation of a fistula into the duodenum, colon, or stomach.

(*c*) Ulceration of the gall bladder in septic conditions; unassociated with calculi; in typhoid fever; and in cancer.

The clinical signs of this accident are those common to perforation of the stomach, or intestine, or sloughing of the vermiform appendix; and an analysis of the records shows that in many instances operation has been undertaken on the supposition that the patient was suffering from perforation of an appendix lying out of its common position. In England the common practice is to open and drain the gall bladder (cholecystotomy), and I have recently read an account of a case in which the operator stitched up the hole in the gall bladder. In all these cases coming under my care I have removed the gall bladder, secured the cystic artery, and occasionally ligatured the cystic duct; then introduced a wide drainage tube, and recovery in each instance has been the outcome. I feel sure that cholecystectomy is more imperatively indicated in these acute infective conditions than in any other.

Fig. 3.—Gall bladder converted into a thin transparent mucocele. (From a female aged 25 years.)

Mucocele (Hydrops Vesicae Felleae).

When the cystic duct is obstructed by a calculus, the gall bladder becomes distended with mucus, and the size it may attain has no limits. No diseased condition of the gall bladder is so favourable for cholecystectomy as a mucocele; it does not matter whether the contents are pure cholesterin calculi freely floating in slightly turbid mucus as in Fig. 3; or large mixed calculi embedded in a stiff gelatinous paste as in Fig. 4. A rare condition is to find the mucus consolidated into a hard firm mass (Fig. 5).

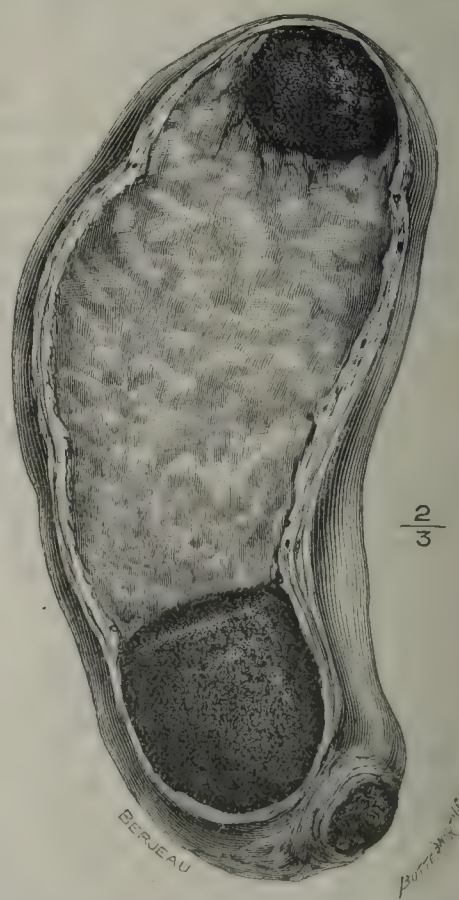


Fig. 4.—Gall bladder filled with stiff gelatinous mucus. (From a man 57 years of age.)

When a gall bladder is the seat of chronic calculous

cholecystitis, the mucus slowly drains into the common duct and escapes; should a gall stone block the cystic duct, the infective material is retained and distends

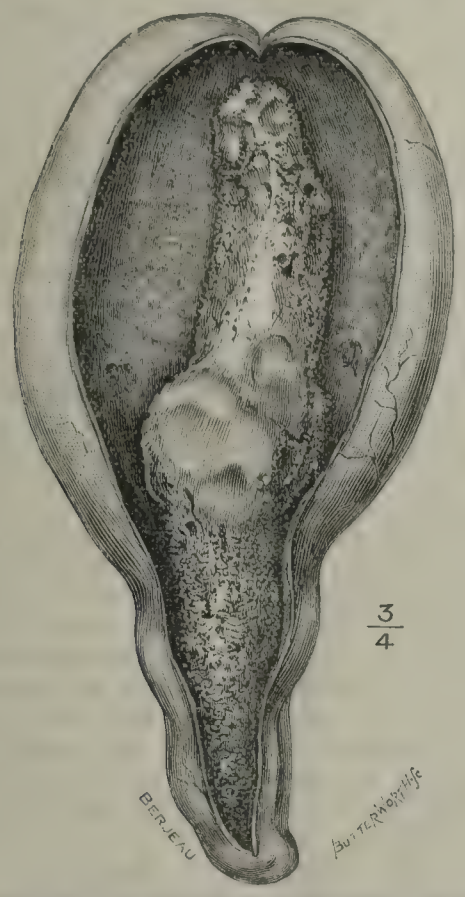


Fig. 5.—A suppurating gall bladder containing a spadix-like body formed of hard mucus.

the gall bladder. Such a distended gall bladder may ulcerate and perforate, the infective fluid escapes into the belly and sets up fatal septic peritonitis (Fig. 2). A calculous empyema of the gall bladder should be removed, and I have found excellent results follow the removal of a chronically inflamed gall bladder associated with non-calculous cholangitis. Villar suggests that removal of the gall bladder when cholangitis complicates chronic pancreatitis permits direct drainage of the common duct by a tube introduced through the cystic duct, and that it gives better results in these conditions than cholecystenterostomy.

I feel sure that many surgeons, whilst quite ready to agree with me that most diseases of the gall bladder are better treated by cholecystectomy than cholecystotomy, may shrug their shoulders at the suggestion of removing it when in the condition of chronic suppuration known as empyema; they may think that such are better treated by drainage. To drain a cyst when it can be conveniently and safely removed is contrary to all the canons of surgery. We do not drain suppurating ovarian cysts, Fallopian tubes distended with pus, suppurating sebaceous cysts, kidneys and the like; we remove them. It is stated that when cholangitis complicates an empyema of the gall bladder, cholecystotomy affords easy drainage. Is this really so? My own experience points in the opposite direction; I have had better results by removing the gall bladder, regarding it in the light of a loculus imperfectly drained by a narrow sinus, which in other parts of the body the surgeon obviates whenever possible. Those who are biassed in favour of drainage in this condition, let me strongly recommend to try the effect of cholecystectomy, and spare the patient the annoyance and misery of a sinus.

Biliary Fistula.

There are two kinds of persistent external biliary fistulae: (*a*) Those in which the gall bladder opens on to the cutaneous surface, either spontaneously or as a consequence of surgical interference, and discharges bile; (*b*) those which discharge only mucus and purulent fluid. Those fistulae falling under the division (*a*) are due to a blockade of the common duct by calculus or a growth either in the duct, ampulla, or some adjacent structure implicating the duct. Those which fall into division (*b*) are due to a calculus obstructing the cystic duct; cholecystectomy in such cases is urgently needed and is a simple operation. In some of these cases the fistula is maintained by the sutures employed by the surgeon to stitch the gall bladder to the incision. Occasionally it is due to recurrent calculi, but most frequently to a calculus in the cystic duct, and occasionally to inflammatory occlusion of the duct. Cholecystectomy in these circumstances is greatly appreciated by the patients, for the continued leaking of mucus and pus is both irritating and annoying.

Malignant Disease.

The only treatment available for this deadly disease is cholecystectomy, but it is rarely possible to remove a cancerous gall bladder. Unfortunately by the time a cancerous tumour of the gall bladder is discovered the opportunity for a successful operation has usually passed.

Primary malignant disease affects the gall bladder in two ways from the point of view of practical surgery. For example, the disease may involve the walls of the viscus very extensively and then permeate the adjacent liver tissue; any attempt to remove such a gall bladder would be hopeless.

On the other hand, when the disease arises in the fundus of a gall bladder projecting well beyond the free margin of the liver, and remains localized to the walls of the gall bladder, cholecystectomy would be attended with some success in affording the patient a fairly long survival. A fortunate condition of this kind would only happen by chance, and probably from the fact that the calculi associated with the disease or infective changes (suppuration) would draw attention to the need of surgery. When the disease is localized to the fundus it will perforate the gall bladder, and sprouting into the general peritoneal cavity infect it and involve any adjacent viscus. (Fig. 6.)

The results of cholecystectomy for primary malignant disease (carcinoma, sarcoma or endothelioma) are very dismal, and operations for this disease should be excluded in estimating the mortality of this operation for cholelithiasis.

Fig 6.—A gall bladder in section. An endothelioma (perithelioma) arose in the fundus and involved the transverse colon. Cholecystectomy was successfully performed and 8 in. of colon removed at the same time.

The scope of this discussion and the time limit do not permit me to consider the defects of routine cholecystotomy; the inconveniences of fistulae, biliary, mucous, or

purulent; and the disappointments to patients and surgeons alike of pain, recrudescence of calculi, recurrent cholecystitis, and other minor evils which are apt to follow this inefficient operation. It will be clear to those who read my argument that I advocate the almost routine employment of cholecystectomy for disease of the gall bladder requiring operative treatment. I am quite certain that when the advantages of complete removal of the gall bladder are appreciated by British surgeons and the simplicity with which it can be effected, the operation of cholecystotomy, like incomplete ovariotomy, will be almost a thing of the past, especially as experience teaches that the removal of the gall bladder has no detrimental effect, immediate or remote, on the individual. As a matter of fact a troublesome gall bladder requires the same radical treatment which to day surgeons mete out to a mischievous vermiform appendix and its removal is followed by the same permanent benefits.

DISCUSSION.

Mr. A. E. MAYLARD (Glasgow), said: I am sure that with most of Mr. Bland-Sutton's opinions all surgeons will agree; but I feel I must differ from him as to the comparisons drawn between the gall bladder and the vermiform appendix. The one has unquestionably a function to perform, while, so far as we know, the appendix is functionless. The possibly intermittent, or it may be continuous, flow of bile into the intestine is a function of the gall bladder which we have no right to regard lightly. It seems, therefore, to me a great mistake to argue from the appendix to the gall bladder, that because we have no hesitation in removing the former we should equally have none in excising the latter. Mr. Bland-Sutton has expressed his knowledge of the difference of opinion which was sure to be evoked by his advocacy of routine cholecystectomy in cholecystitis coupled with cholangitis. I must side with those who will join issue with him in this opinion. The value of the continuous drainage of bile which a cholecystostomy entails has always seemed to me of undoubted advantage; and, still further, the gall bladder being retained, may return to its normal condition, and carry out, therefore, in the future life of the patient, those particular functions which are its natural part to play in the human economy. As regards the operation, I cannot feel proper security after cholecystectomy unless I have free drainage from the ligatured portion of the cystic duct, frequently coupling with the tube some packing also; the result, therefore, is likely to be a weakened cicatrix, and such a cicatrix will probably entail a ventral hernia. For this reason, therefore, I think it a mistake to perform cholecystectomy when cholecystostomy would answer the purpose. Simple and safe as the operation may be in experienced hands, I am disposed to think that that simplicity and safety should not lead us to remove a gall bladder, unless we feel that by doing so we are taking away a menace to the future health and comfort of our patient.

Mr. CHARTERS J. SYMONDS (London) said: Looking over my cases since the end of 1901, about which time I began more frequently to remove the gall bladder, I find some 44 examples of operation on the gall bladder and ducts. In 28 instances the gall bladder was removed, and in 5 the common duct also was opened, while in 16 cholecystotomy, with or without opening and drainage of the common duct, was performed. In the great majority of cholecystectomies union without the escape of bile took place and recovery was rapid. In one a biliary fistula lasted two months, and in one where jaundice was present also, bile escaped from time to time over a period of some months, there being in this case associated cholangitis; 4 cases died, 2 a few hours after operation from acute cardiac dilatation, determined by the anaesthetic chiefly; 1 from cardiac failure after having come round from the anaesthetic; and 1 from pneumonia three weeks after operation and while otherwise doing well. Of the 16 cases where the gall bladder was not removed, 7 were examples of simple cystotomy; in 5 this was associated with choledochotomy; in 2 choledochotomy was performed, the gall bladder being either healthy or not found; and in 2 the gall bladder was united to the duodenum. Two patients died, one directly from the effects of the operation and the anaesthetic. The patient was a man, apparently healthy; the operation rather a prolonged one, owing to the dense fibrous adhesions. The other fatality occurred in a man suffering from rigors and pyrexia, with suppuration, in a gall bladder filled with calculi and new growth; this case might fairly be excluded. The conditions for which the gall bladder was removed were as follows: In 17 cases for calculi only; in 3 for calculi associated with cholecystitis: in 3 for stricture of the cystic duct, where typical hepatic colic had occurred; in 1 for jaundice associated with calculi; in 2 for chronic empyema, with calculus; in 1 for hydatids in the gall bladder; and in 1 the gall bladder was adherent to, and communicating with, the duodenum. In the cholecystotomy cases, in 9 calculi only existed; in 3 there was acute cholecystitis and cholangitis; in 2 pancreatic growth; and in 1 cholecystitis, with adhesions. It is clear from this small record of ordinary experience that one's tendency has been towards the more frequent removal of the gall bladder; the rapidity, as a rule, of the recovery, the simplicity of the operation, especially in women, certainly commends the proceeding, but it will not do to lay it down as the routine proceeding to be advised, and I am strongly of opinion that a choice of operation is often a matter of great importance. It is well known that the gall bladder can be dispensed with, and so far as I can see there is no difference whatever between a man's comfort or intestinal condition whether he possesses a gall bladder or not. In this I agree with Mr. Bland-Sutton that from this point of view cholecystectomy can be recommended. But it is equally well established that recurrence of biliary colic is very rare after removal of the calculi and drainage. Somewhat severe colic with brief jaundice occurred in one of my cases and I thought a stone had been overlooked in the common duct. A second operation failed to discover a stone, and I know that this man has during the last eight years remained well. Therefore recurrence as an objection to cholecystotomy may practically be eliminated. The persistence of a fistula discharging either bile or mucus is the chief objection, but with our better methods this has become less frequent. I would here assert that it is generally possible at the time of an operation to judge in what case a fistula is liable to form. If these be found, clearly the gall bladder should if possible be removed. A gall bladder when the walls are thin and little altered and through which the colour of the bile and the calculi can be seen and felt, is not likely to give rise to a fistula if left. I would advise removal if it be thick and white, whether dilated or not, if it contain mucus only; certainly if there be no calculi in a thickened gall bladder, a condition denoting stenosis of the cystic duct, and unrelievable in any other way; and, finally, if the gall bladder be much injured in the attempt to extract the calculi from the common through the cystic duct. In one case, some years ago, before the gall bladder was removed, such a case occurred to me. Suppuration took place some months afterwards in the gall bladder. Recovery followed incision and drainage, but clearly in the first instance it would have been wiser to remove the gall bladder. I cannot agree that routine cholecystectomy should be advised, that we should lay it down as the only complete operation. In acute cholecystitis I prefer to remove the gall bladder as giving a more rapid recovery and being the best proceeding, and in most instances the gall bladder being thick and large, the operation is simple and brief. But I cannot agree with Mr. Bland-Sutton in his comparison of this condition with gangrenous appendicitis. The rigors and pyrexia accompanying acute cholecystitis, it is well known, carry little danger in the absence of jaundice. The walls of the gall bladder, even if sloughing, seem little liable to give rise to septic infection of the liver, while during the whole process of gangrene in an appendix this fatal complication is always possible. Though it is better to remove a gangrenous gall bladder, there may be so severe a general condition of the patient as to render this undesirable, and it is satisfactory to know that removal is not essential for recovery. In such an instance the gall bladder was drained, a gauze tampon round a rubber tube was placed under the gall bladder, and rapid recovery took place, and this, I believe, will be the rule. When the gall bladder is full of pus, as it may be in a patient who is walking about, in no distress, without pyrexia, and, in

fact, enjoying ordinary life, I fully concur in the wisdom of removal. In these cases there is a solitary stone as a rule, I believe. But while I think it the best practice, can any one say that by no other means will recovery take place? Surely it is sounder surgery to bring about your result with the least risk to life. And in this connexion I observe that Mr. Bland-Sutton has given us no account of his cases and no particulars as to mortality. He seems to have recommended the routine removal of the gall bladder almost entirely on the pathology of the diseases affecting it. Nor does he seem to have considered the position of associated jaundice as modifying the proceeding. In one of my cases there was jaundice, and we found cholecystitis and cholangitis, but no calculi. In such a case drainage I took to be essential. I admit that here I removed the gall bladder, but provided for drainage by using a catgut ligature to the duct. In conclusion, it seems to me that the question whether the gall bladder is to be removed or not must, as in other general surgical proceedings, be decided not only by the condition of the organ itself, but also by the condition of the patient; for it is undeniable that in men especially removal of the gall bladder is sometimes a troublesome proceeding, and may demand an incision three times as extensive as that sufficient in the opposite sex. This greater length of operation may prove too exhausting. Again, one cannot consider these cases apart from affections of the common duct; what may be wise when the gall bladder alone is affected may be unwise when there is associated disease of the bile ducts.

Mr. E. Stanmore Bishop (Manchester) said: I think that we must all agree with the concluding remarks of Mr. Bland-Sutton upon the necessity for distinguishing, as to mortality, between the three classes he mentions: Malignant disease, chronic cholelithiasis, and perforative cases; but I should like to take some exception to his general position with regard to cholecystectomy in chronic cholelithiasis. He has said that the accumulated experience of many surgeons shows that the most satisfactory consequences are obtained by treating the gall bladder, when it requires surgical intervention, in the summary fashion in which we now deal with the vermiform appendix. I venture to protest against the routine removal of the gall bladder in cases of gall stones, and for much the same reason which has influenced me in my protest against the routine removal of the other organ; not because I consider either essential to the good health of the patient, and that therefore their presence is indispensable; nor for the other reason he has mentioned, that any healthful change takes place in the bile in consequence of its retention there; but because both structures may be extremely useful at the time or in the future to both the patient and the surgeon himself. As to the appendix, I published a case some time ago, and some American surgeons, notably Weir, Meyer, and Tuttle, have also published similar cases in which appendicostomy was done for the purpose of treatment through it of intractable muco-colitis; by its help the much more disgusting and troublesome procedure of a caecostomy was avoided, which would have been unavoidable if some enterprising surgeon had previously removed this useful little tube. In a similar way the gall bladder has its surgical uses. Everybody, I presume, agrees that if a gall bladder is gangrenous or shows signs of becoming so, if it is the seat of malignant disease which is confined to it, if the cystic duct is impervious and the gall bladder has been converted into an abscess cavity or is distended with mucus, if it has become cystically degenerated, it is better removed; but if it is merely the seat of gall stones which have produced biliary colic, or if any obstacle exists, either internal or external to the common duct to the free exit from it of its contents, I for one strongly demur. The actual presence of concretions proves the previous existence of some pathological, or the perversion of some physiological, process; and recent researches have made clear to us what that is. The observations of Falcone, D'Amore, Geoffredi, and Boccardi have shown that the liver is the great toxin filter of the body; that the various toxins and micro-organisms absorbed from the intestine during the process of intestinal digestion and the passage outwards of the excreta are there neutralized and killed, whilst their inert products are cast off in the bile; should the liver cells be overtaxed either by the excess of material with which they have to deal, or by a decrease of their own vital force, some of these micro-organisms may pass over into the bile; attenuated in virulence, it is true, but not dead; some of the toxins may still have power to lessen the resistive force of the epithelium lining the biliary channels. Welch has shown that it is to the action of just such attenuated micro-organisms that the formation of cholesterin in this situation is due. By such action a catarrhal condition of the biliary channels is produced. One of the most characteristic objective signs of the presence of these concretions—the tenderness evolved by pressure over Robson's point or elicited by Murphy's test—is due to this concomitant catarrhal inflammation of the channels in which they lie. Surgical experience has shown that the cure of this catarrhal condition is of at least as much importance to ultimate success in the cure of any case as the mere removal of its products—the calculi; and surgical experience has also shown that this is best achieved by drainage of these canals. Most surgeons will also agree that such drainage, whilst certainly possible and practicable if the drainage tube is sewn into the common duct, is much more easily, safely, and expeditiously carried out if the tube is fastened into the gall bladder. And this is not all. Cases occur in which the lower end of these biliary channels are occluded by a stricture or by a growth. Some exit for the bile must be provided. No doubt it is both possible and practicable to make an anastomosis between the common duct above and the bowel below; but what surgeon will not agree that, granted the patency of the cystic duct, it is both more easy and more safe to connect the two through the medium of the gall bladder? For both these reasons, in support of which, had I time, I could easily bring forward numerous cases, I protest against the routine removal of the gall bladder in chronic cholelithiasis. The same line of reasoning will also hold good in the third class—that of acute (non-calculous) cholecystitis; this is seldom or never limited to the gall bladder alone, but is usually continuous with inflammatory changes in the ducts, and therefore drainage is the most effective treatment. Biliary fistula, his seventh division, is the result of (1) Some fault in the technique of a previous operation; either (*a*) the gall bladder has been united to the skin or deep fascia, or (*b*) all the calculi have not been removed; or (2) there is some obstruction, as stricture or growth in the common duct, impeding the biliary outflow. It is precisely in cases which fall into the latter category that, as I have tried to show, the presence of the gall bladder is all-important. In all such cases removal of the gall bladder is, I conceive, the one thing to be avoided.

Mr. J. D. Malcolm (London) said: At first sight it would seem that one of the chief advantages of removing the gall bladder is the impossibility of a recurrence of gall stones in it. But the risk of this is not great. The late Mr. Knowsley Thornton pointed out to me the infrequency of trouble from this source, and Mr. Mayo Robson has recently drawn attention to the point (British Medical Journal, February 4th, 1907). I have only seen 2 cases in which I feel sure that gall stones formed again after the bladder had been completely cleared. In 1 of these another surgeon removed stones from the gall bladder and closed it and the abdomen without drainage. Five years later I excised the gall bladder and found in it three pieces of silk covered with calculous matter. These had been used to close the bladder, and had worked their way into its cavity. This was hardly a recurrence. The case shows that there was still a tendency for stones to grow, but there had been no new stone formed, except on the silks. Although the danger of a redevelopment of stones is not great, and is therefore not a strong argument in favour of excision of the gall bladder, yet the removal of stones is not always followed by complete success. I remember one case in particular in which there was an hour-glass contraction of the gall bladder, shutting off a single stone close to the fundus. I removed the distal portion of the bladder, including the stricture; and, as there seemed to be no further obstruction and plenty of length of bladder, I emptied and drained the proximal part, and after a time allowed it to close. But the symptoms have returned, and there is clearly still an obstruction, which gives rise to symptoms similar to those existing before, although

not so severe or frequent. I now think this a typical case in which an excision should have been performed, on account of the obvious tendency to contraction of the bladder. In the first case in which I performed a cholecystectomy there was a valve-like obstruction at the junction of the bladder with the cystic duct, so that I was unable to pass a probe from the bladder to the duct, even after the parts were out of the body, although it slipped easily from the duct to the bladder. In other cases the cystic duct, at its junction with the common duct, was practically closed, and in one of these a fistulous communication had formed between the gall bladder and the stomach. In such cases the removal of the bladder seemed necessary if a cure was to be obtained. I have not performed this operation frequently, and for the most part only when I thought it absolutely necessary, but I have had no fatal case, and all the patients are now so well that I wish I had adopted the method more frequently. Indeed, there is a strong temptation to follow those who would take away this viscus whenever it requires surgical intervention. In the simpler cases the operation is very easy and safe, convalescence should be short and uneventful, and the patient should be well pleased. But cases in which there is no prolonged or intense inflammation yield excellent results by simple evacuation of the stones, and there cannot be any doubt that conditions may arise in which the presence of the gall bladder may be a matter of the utmost importance to the patient as a means of draining the ducts. This is a very serious point, and in view of the possible development of some such condition it hardly seems justifiable to excise a healthy gall bladder. I would, therefore, urge that in cases of disorganization of the gall bladder by prolonged or intense inflammation it is generally wiser to remove it if the common and hepatic ducts are clear, but that when stones cause obstruction in the cystic duct of a healthy bladder the latter should be preserved. This leaves a number of cases in which the procedure must be settled according to whether the circumstances seem to indicate that the common duct or the cystic duct is the more likely to give rise to future trouble. A cholecystenterostomy is sometimes a way out of the difficulty but it is an unnecessary procedure if the cystic and common ducts are clear. The extra danger of removing the gall bladder seems to me a matter that may be given too great prominence. The operation is very easy and very safe in those simple cases in which I think it unnecessary, and it only becomes great in those cases in which on account of long-continued inflammation it is important that the excision should be undertaken. In many of these serious cases it is possible to reduce the danger very much by simply draining the bladder and removing it later on when inflammatory mischief has subsided; just as in cases of appendicitis the operation is, as a rule, much less dangerous in the interval between attacks. In dealing with gall stones, to which I have confined my remarks, the greatest necessity at present seems to be to get an earlier diagnosis and an earlier operation. In one of my cases the history points to the existence of calculi during more than forty years, and a record of symptoms extending over more than twenty years is not uncommon. If a diagnosis were made early and followed by evacuation of the stones between the attacks the reasons for removing the gall bladder would to a very great extent be obviated, the practically safe operation of evacuating and draining a fairly healthy gall bladder could be substituted for the much more dangerous treatment of inflamed parts and would be practically without a death-rate, whilst those who think it right to remove the gall bladder in all or most of these cases could do so with very little immediate risk.

Mr. J. WARD COUSINS (Portsmouth) said: There are many conditions of the gall bladder which are dangerous and require immediate cholecystectomy, and there are others where this operation ought to be undertaken as the best course to pursue. The improvement in the treatment of gall-bladder diseases is due to the progress which has taken place in the pathology and treatment of disorders of the stomach, duodenum, liver, and gall ducts during recent years. Diseases of the gall bladder may be primary, but far more often they are secondary and are the result of pathological changes which have occurred in the surrounding organs. We have had to day an excellent survey of the special disorders of the gall bladder which are best suited for cholecystectomy, provided the common duct is unobstructed, and I shall only venture upon a few remarks upon the operation in connexion with the treatment of cholecystitis and cholangitis. It is generally recognized that cholecystotomy is the operation in the treatment of affections of the gall bladder and ducts, but it is absolutely impossible to decide upon the form of surgical treatment *until the abdomen is opened* In the large majority of cases after exploration, this operation; followed by drainage, is very safe and efficient; still there are some cases of this class which will be found at the exploration to demand at once excision of the gall bladder. I do not intend to refer at all to acute forms of inflammation of the gall bladder, which often prove so rapidly fatal. Fortunately these are rare cases. Some time since a child was admitted under my care at the Royal Portsmouth Hospital in a dangerous condition, with vomiting, distension of the abdomen, and constipation. It was sent in as a case of intestinal obstruction. The patient had been out of health some time, but the urgent symptoms came on suddenly only a few days before admission. Death occurred in a few hours, and the *post-mortem* examination revealed no form of intestinal or biliary obstruction, but the gall bladder was dark-coloured, swollen, and contained pus, and around it there was well-marked local peritonitis and general engorgement of the portal system. There was no perforation, and I regarded the case as one of cholecystitis, the result of typhoid or septic infection. Acute attacks of this description have just the symptoms of a general peritonitis, which may be due to many serious causes, including perforation, obstruction, or acute appendicitis. In infectious cholecystitis and in calculous gall-bladder troubles—the common disorders of this organ and its ducts which come under the care of the surgeon—fortunately the causes are far more often merely functional and removable than seriously structural in character: such as recurring biliary troubles, gall-stone obstruction, simple empyema, localized peritonitis, and localized abscess, together with all the serious derangements arising from kinking of the ducts and adhesion of the surrounding organs, especially the pylorus and colon. Sometimes partial excision of the gall bladder and suture can be practised in cases of localized softening, ulceration, and perforation with suppuration. In all cases of serious structural disease and injury the operation of complete excision of the gall bladder ought to be performed whenever marked temporary or permanent benefit can be anticipated provided the common duct is fairly clear. In cases of cholecystitis with burried and densely adherent gall bladder the organ is so much softened and loculated by inflammatory changes that it is the best course to excise it; for, after performing complete separation of adhesions and cholecystotomy, recurrent contraction sometimes takes place. Three years ago I did an exploratory operation on a patient with a large tumour in the hepatic region in which the local symptoms, constipation, and condition of the patient indicated malignant disease. The tumour consisted of a thickened gall bladder fixed in a dense mass of adhesions, including omentum and pylorus. The gall bladder contained 4 oz. of pus and its cavity and duct were clear, so after free separation I did cholecystotomy and drained in the usual way for two weeks. Fortunately she continues quite well. In this case I considered at the time of the operation excision would be the proper treatment, but the general condition after a long operation prevented me. The gall bladder after all is a useful organ, and when it can be spared it is a good thing to have in case of a hepatic emergency.

Dr. IRVING H. CAMERON (Toronto) said: My object in rising is to range myself along with the advocates of conservative surgery of the gall bladder. Doubtless all of us will agree with Mr. Bland-Sutton in believing that in acute septic cases the gall bladder should be removed, just as the uterus would be removed in acute septic metritis jeopardizing the patient's life by rapid toxaemia. Again, in the atrophied and contracted bladders, cholecystectomy is the easier and safer operation. In malignant disease of the gall bladder, if operation is at all serviceable, then complete removal is clearly indicated. One strong argument in favour of cholecystectomy is the frequency of malignant disease in damaged gall bladders which may thus be minimized. But the large class of cases associated with cholangitis and pancreatitis can only be satisfactorily

treated by retaining the gall bladder as a way of drainage, and in other cases where the bladder is not damaged beyond the power of functionating, the patient is entitled to have it preserved as every other useful organ should be. Mr. Bland-Sutton's position to-day is precisely that assumed by Mr. Lawson Tait twenty or twenty-five years ago upon the subject, and those of us who are old enough to remember will recall his very able advocacy of cholecystectomy as the easier and safer operation. The score of years which have intervened have served to show in the experience of many surgeons that Mr. Tait's position was fallible and erroneous, and I predict the like result for Mr. Bland-Sutton's present position when five and twenty years are over-past. One powerful argument against drainage urged by Mr. Bland-Sutton is the occurrence of fistula, but the force of this is broken by the fact—which we have all experienced—that fistula is by no means necessary if treatment is kept up until the contents of the gall bladder are proved by bacteriological investigation to be free from germs, and if the union of the gall bladder to the wall has been effected by the method of Mayo Robson and Greig Smith. Greig Smith also taught us years ago how to repair the fistula, if it occur, *cito, tuto, atque jucunde*—and this can be done with local anaesthesia. That the gall bladder acts as a reservoir for bile at night has been well established, and I am persuaded that those of us who retain this nocturnal reservoir sleep better than those who do not. One other possible use of the gall bladder has not occurred to Mr. Bland-Sutton, nor perhaps to any of you; and I am indebted to a case of my colleague—Professor F. N. G. Starr—for its discovery. An aged woman with some obscure symptoms of obstruction was admitted. Her stomach had given out entirely, and rectal feeding had been pursued until the lower bowel too rebelled, and death by starvation was imminent. On coeliotomy a distended gall bladder was found, opened, and drained, and through this the patient was fed for four or five days most satisfactorily, the danger was tided over, and the life saved.

Mr. G. P. Newbolt (Liverpool) said: I am an advocate for cholecystotomy in the majority of cases of chronic cholelithiasis. By this method nearly all such cases can be cured; if it fail, cholecystectomy can then be carried out later. I agree that the gall bladder should be excised in cases of gangrene, fistula, mucocele, perforation, and cancer. By cholecystotomy one can judge whether or not the common duct is pervious. I consider that the operation in many cases may be a most difficult one, and that its routine employment would entail a considerable mortality.

Dr. W. L. Rodman (Philadelphia) said: The subject of cholecystectomy was most attractively presented by Mr. Bland Sutton, and those of us who are not prepared to go quite so far as he would take us to-day must in all candour admit that it is now being done by advanced surgeons all over the world twice or thrice as often as it was five years ago. In addition to the indications given by Mr. Bland-Sutton, I should add gangrenous cholecystitis and small atrophied gall bladders, the former always calling for cholecystectomy, the latter generally so on account of the difficulty of attacking and draining such gall bladders satisfactorily. With Mr. Bland-Sutton, I believe it most unsurgical to sew up and attempt to repair a ruptured gall bladder, as the cause underlying one rupture may easily cause a second perforation. With him, also, I believe that suppurative conditions of the gall bladder call for and are best treated by cholecystectomy. Unlike him, however, I should in hydrops disease prefer cholecystostomy to cholecystectomy. I know of no condition of the gall bladder more satisfactorily treated by simple drainage than mucous cholecystitis or hydrops. I strongly agree to the position urged by Mr. Bland-Sutton in regard to carcinoma. It should not be forgotten that recent observations demonstrate clearly that the number of cases of primary carcinoma of the gall bladder, due possibly to the irritation of gall stones, is rapidly increasing. Therefore it is better to remove the viscus if there are good reasons to believe that cancer has probably begun, rather than to wait until it becomes, as Mr. Bland Sutton rightly says, an impracticable procedure. Now, as to some of the contraindications to cholecystectomy, no one, I believe, has mentioned—if so, it escaped me—that the gall bladder should never be removed until the patency of the common duct has been demonstrated. It would be disastrous to do so. Moreover, accompanying subacute and chronic pancreatitis call for cholecystostomy rather than cholecystectomy. One great objection to removal of the gall bladder as a routine procedure is that at some future time it may be desirable, even necessary, to drain the biliary tracts for the relief of pancreatitis. All of us have done so with the happiest results. Now, as to the objections which have been raised against cholecystostomy. Fistulae, usually due to faulty technique, are rarely seen at the present time, and will disappear with the use of absorbable sutures. As to the recurrence of gall stones, I will state it as my belief that while calculi may of course develop after an apparently successful cholecystostomy, yet when they seem to do so it is safe to say that very generally stones were overlooked at the time of operation. Cholecystectomy is certainly a somewhat more difficult procedure than cholecystostomy, and will yield a definite if not a very much higher mortality. During a visit to Rochester (Minn.) I saw Mayo do a number of operations on the biliary tracts, and often heard him express the view that the mortality of cholecystectomy was somewhat greater than that following cholecystostomy. If it is so in his skilled hands, it must be so with others. To conclude, I should say that the time has come to enlarge the field of cholecystectomy, but we are not ready, I think, to give up cholecystostomy, which is simpler, safer, usually suits the indications, and leaves the patient possibly better off than he is without a gall bladder.

Mr. Sinclair White (Sheffield) said: The gall stone I show you formed around a chromicized catgut ligature. The stone was removed from the gall bladder of a lady who eighteen months earlier had been operated on for gall stones and had a resulting biliary fistula. In cases of cholecystotomy I have for many years used a tube about 5 in. in length, bent at an obtuse angle, and having a constriction near either end. One end is secured in the gall bladder by means of a purse-string suture of stout catgut passed through its musculo-peritoneal coats a little way from the edges of the opening, which are inverted, and the other end continued by a rubber tube, which passes through the dressings and conveys the contents of the gall bladder into a bottle. The tube prevents peritoneal fouling from the cut gall bladder, and does away with the necessity of changing the dressings, which need not be touched until the eighth day. I do not agree with the proposition that the gall bladder should be removed as a routine procedure. In the majority of instances I believe it is unnecessary, while it is undoubtedly more dangerous than cholecystotomy, especially in cases where acute sepsis is present. I have in hospital and private practice during the last eight years performed 158 simple cholecystotomies, and in only 2 of these cases has it been necessary to reopen the gall bladder. My experience does not support the idea that cancer is apt to follow gall stones if the gall bladder is not removed.

Reply.

Mr. J. Bland Sutton, in his reply on the discussion, said: I consider that the art—if any art is necessary—in introducing a discussion consists in presenting the subject in a controversial form; if attempts be made to conciliate a variety of opinions, there can be no keen discussion, and the Section would degenerate into a mutual admiration society. Perhaps the most important net result of the contributions made by those who have taken part in the discussion relates to recrudescence of gall stones. Every writer states that this is a rare phenomenon, yet nearly all the speakers refer to two or more examples of stones met with in the gall bladder long after cholecystotomy in their own observation. Now, it matters not whether these calculi be regarded as overlooked gall stones, or concretions formed around sutures, or new-formed gall stones, their presence is an argument for cholecystectomy; and, although this recrudescence of gall stones may be an infrequent sequel in the practice of any one surgeon, yet, if the recorded examples be multiplied by the number of surgeons who operate on gall bladders in the United Kingdom, the total will be a big one. To-day surgeons are passing through a phase which existed twenty years ago in regard to the vermiform appendix. Many dreaded to remove it; some have this curious feeling in regard to it now, and a few prefer to

remove the appendix in two stages when it is associated with pus. To-day, in the course of the discussion, it was easily discernible in the remarks from several surgeons that they now perform cholecystectomy more frequently than cholecystotomy from choice, and a study of periodical literature indicates in no uncertain way that cholecystectomy is swiftly gaining ground, and this discussion will have a great influence in promoting this desirable result.

LESIONS OF THE SIGMOID FLEXURE AS A CAUSE OF COLITIS.

By P. Lockhart Mummery, F.R.C.S.,
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A great advance has been made in the last few years in our knowledge of the diseases—more especially the chronic diseases—of the sigmoid flexure. This has been due chiefly to the development of the electric sigmoidoscope or rectoscope, by means of which we have been enabled to examine directly the lower bowel and observe the condition of its interior in cases where symptoms of disease are present, and also in part to the fact that many of the cases have been treated by operation, and an opportunity has thus been afforded for the surgeon to examine the condition of the sigmoid flexure in cases of chronic disease of that organ.

Dr. Kelly, of Baltimore, and Dr. Tuttle, of New York, were among the first to make use of the sigmoidoscope for the purpose of directly examining the interior of the bowel. And they pointed out some years ago that the inflammatory lesions in cases of chronic colitis are in many cases confined to that portion of the colon known as the sigmoid flexure. I confirmed their observations in a paper published in the British Medical Journal in 1905,[1] and in addition pointed out that cancer in the sigmoid flexure might cause all the typical symptoms of colitis, and therefore must be looked upon as one of the possible causal agents. In my paper read before the Royal Medical and Chirurgical Society in June of this year[2] I brought forward 36 cases of colitis, and attempted to prove that colitis is in the great majority of cases due to a lesion or lesions in some portion of the large bowel, which lesions can be detected by suitable means. I pointed out that the lesion or lesions discovered differed very considerably in different cases, although the symptoms might be the same, and that the proper treatment was to discover and treat, by surgical means if necessary, the cause of the condition. Most of the speakers in the discussion that followed the paper agreed with me in the main that there was usually a local lesion, and that it was most important to make a careful examination in all cases of chronic colitis to discover the cause of the symptoms.

I only propose to deal in this paper with those lesions of the sigmoid flexure which may cause chronic colitis.

Methods of Examination.

Examination with the Sigmoidoscope.—This is by far the most important method of examining the sigmoid flexure, as by it the greater part of the sigmoid flexure can be readily examined, and the condition of the mucosa ascertained. It is first of all necessary thoroughly to empty the lower part of the large bowel by aperients and enemata. This must be properly and thoroughly done if the examination is to be successful, and it is the only really troublesome part of the examination. No anaesthetic is, as a rule, necessary, as there is seldom any pain or serious discomfort. When the parts are tender or the patient very nervous, an anaesthetic is, however, advisable.

I shall not describe the technique of examination with the sigmoidoscope, as you are doubtless already acquainted with it. With regard to the risks and sequelae of sigmoidoscopy, there is little to be said. I have heard of cases where the bowel has been damaged during an examination, and even where the bowel has been perforated, but although I was, I believe, the first person in this country to use this instrument, and have been using it continually for some years, I have never seen any unpleasant consequences follow sigmoidoscopy, and believe it to be absolutely harmless in experienced hands.

Palpation of the Abdomen.—This method of examining the sigmoid flexure is important, and should be carefully carried out, if necessary, with the patient under an anaesthetic. A bimanual examination with one finger of the left hand in the rectum should always be made, and will often furnish important information.

Examination of the Discharges.—This is an important and useful method of investigating disease in the bowel. A naked-eye examination of the faeces, especially if made on several occasions, will often afford valuable information, but a great deal more can be learnt from a careful chemical and microscopical examination if carried out by a skilled physiological chemist. For the purpose about 2 oz. of fluid stool should be obtained and some formalin solution added to it. The examination should be entrusted to an experienced chemist or clinical laboratory. The objects of the examination are to discover evidence of ulceration of the large bowel, parasites, pathogenic bacteria, or the débris of malignant disease. I had recently a case of chronic colitis under my care in which this method of examination proved most valuable. I was unable by any other means to discover any lesion of the bowel, though I suspected ulceration. Dr. Gomess, who carried out the examination of the faeces for me, was able to find blood, inflammatory epithelial cells, protozoa, and other evidence pointing to ulceration of the bowel, and this was confirmed by his finding deutero-albumose in the patient's urine. We were thus enabled to make a definite diagnosis of ulceration in the large bowel, and, treated upon this diagnosis, the patient rapidly improved. I think that this method of investigating disease of the large bowel deserves more attention than is usually accorded to it.

Laparotomy.—In the vast majority of cases a satisfactory diagnosis as to the cause of the condition can be made by the methods of examination already mentioned, but there are some cases in which, in the present state of our knowledge, no cause for the condition can be found. In some of these cases an exploratory laparotomy is justified, and when treatment has failed and the patient is in danger of becoming a chronic invalid the possible advantages of an exploratory laparotomy should not be neglected.

Inflammatory Lesions.—Under this heading come (1) simple sigmoiditis; (2) granular sigmoiditis; (3) hypertrophic sigmoiditis; (4) follicular sigmoiditis; (5) ulcerative sigmoiditis.

No hard and fast line can be drawn between these different varieties as often two or more may be present in the same case. In the simple and granular types the mucous membrane can be seen to have lost its normal shiny appearance, the surface is dull, is of a bright red colour and bleeds readily if touched. In the hypertrophic type the submucous cellular tissue is oedematous and swollen and this gives a very characteristic appearance to the bowel. The wall is thrown into concentric folds or rings and these bulge into the bowel lumen tending to close it. The mucosa is much paler than normal and there is always an excessive secretion of mucus. The symptoms in cases with this form of sigmoiditis are very chronic and bleeding does not occur. Severe pruritus ani is often present in these cases.

In the follicular type the follicles are red and swollen and can be seen standing out like small beads scattered over the surface of the mucous membrane. If ulceration has supervened, each follicle is represented by a small punched-out looking ulcer.

In the ordinary ulcerative type the ulcers are shallow and irregular in shape, resembling somewhat the dyspeptic ulcers seen on the tongue and pharynx. In some cases the whole surface of the mucosa looks as if it were ulcerated and there is considerable thickening of the bowel wall and enlargement of the lymphatic glands in the mesentery.

The ulcerative type of chronic sigmoiditis is not necessarily accompanied by severe symptoms. I have seen numerous well-marked ulcers in the sigmoid flexure of patients who were continuing their ordinary occupation and who only complained of diarrhoea and passing mucus in the stools.

It is unfortunate that there is no means by which we can microscopically examine the mucosa in these cases, as much valuable pathological data might be obtained. But it is very seldom that an opportunity is afforded of making sections of the bowel wall in cases of chronic colitis. In a series of 36 cases of chronic colitis I found inflammatory lesions of the sigmoid mucosa in 24, and definite ulceration was present in 7 cases.

New Growths.—Out of 36 of my cases of chronic colitis, cancer of the sigmoid flexure was discovered in 7 cases. In all these cases there was considerable doubt about the diagnosis previously to the discovery of the tumour, and several of the patients had been under treatment for many months for colitis. Those cases of chronic colitis due to a tumour in the sigmoid flexure do not differ as regards the symptoms from the cases where the cause of the condition is of a simple inflammatory character. Bleeding may not occur when there is a growth, and at the same time it is quite common when there is no growth. The presence of mucous casts in the stools does not exclude the possibility of cancer, as in two of my cases of cancer of the sigmoid flexure typical mucous casts were passed in the stools. The history of the case is also of little value, as I found a malignant growth in the sigmoid in one case where symptoms of colitis had been present for five years.

It is hardly necessary to point out the enormous importance of making a correct diagnosis in these cases, but I would particularly emphasize the fact that the only means of preventing mistakes is by a thorough and systematic examination of all cases with symptoms of chronic colitis.

Adhesions.—Adhesions binding down or constricting the sigmoid flexure may cause symptoms of chronic colitis either by interfering with the normal movements of the bowel by obstructing its lumen, or by interfering with its blood supply. The adhesion may consist of an inflamed appendix which has become adherent to some portion of the sigmoid flexure, or may result from pericolic inflammation. In some cases it is very difficult to find any cause of the adhesions. In women inflammation of the tubes or ovaries may be the cause. Very tough bands of adhesion are sometimes found binding down the sigmoid flexure, and causing a kink or constriction at that part, and there can be little doubt that even though this may not always be the cause of the symptoms, it is a very important contributory factor in maintaining the disease.

Treatment.

In the inflammatory conditions rest in bed is essential at the commencement of treatment. I am convinced that the ordinary slop diet, which is usually ordered in these cases, is a great mistake. Milk aids the excessive bacterial growth which is often present, and is unsuitable. These patients require feeding up, and a full diet is advisable. In order to prevent any irritation to the inflamed bowel, sufficient fat in the form of butter, cream, etc., should be added to the diet to make the stools soft, and prevent formed motions. I believe that the contents of the colon which result from this form of diet are far less irritating than those which result from the ordinary so-called fluid diet. Some patients cannot take sufficient fat without becoming bilious, and in such cases mineral fats, such as liquid petroleum or vaseline, must be substituted for ordinary fat.

Local treatment consists in irrigation of the affected portion of the bowel. The irrigation, as usually carried out, is quite useless, as the fluid seldom reaches the affected area. The irrigation must be carried out with the patient in the "semi-prone" position, and the fluid must be run in slowly from a douche can. After the fluid has been run in, the patient should be made to assume the "genu-pectoral" position for a few minutes. In this position the loops of the sigmoid flexure tend to become straightened out, and thus allow the fluid to pass up the bowel. The fluid should be retained for as long as possible. It is well to begin with non-irritating solutions, such as sodium bicarbonate 1 drachm to the pint, glycerine thymol co. 15 per cent., or peroxide of hydrogen. Later argyrol 0.5 per cent., or potassium permanganate 1 in 2,000, are useful. At least a pint of the solution should be used at each irrigation. With the sigmoidoscope the condition of the sigmoid flexure can be examined from time to time, and the results of the treatment watched. Any ulcers which do not seem to be healing properly can be treated by direct applications made through the instrument.

When the sigmoiditis has cleared up, the irrigation can be discontinued, but the diet should be carefully regulated for some considerable time, and special attention must be paid to obtaining regular action of the bowels without the use of aperients. Abdominal massage and exercises are most useful, and in some cases I have seen very good results from electrical baths. In some cases where there has been much bleeding and ulceration, I have had very good results from the use of large injections of olive oil to start with. The oil seems to act as a dressing and protection to the ulcers, and healing occurs quickly.

In those cases where malignant disease of the sigmoid flexure is discovered, immediate operation, if the case is not already too advanced, is of course indicated.

If adhesions binding down the sigmoid flexure can be diagnosed, operation should be advised, as it is most unlikely that treatment will be effective unless the bowel is freed. After an operation for the removal of adhesions, it is important to take steps to prevent their recurrence by massage and exercises. I have found that treatment carried out upon these lines is usually most successful, and although recurrences are common, the patient can be ultimately cured, provided that a correct diagnosis has been made in the first instance.

In some cases the operation of appendicostomy may be indicated, but it must be recognized that this operation is in no sense a means of eradicating the disease, but is merely done with the object of enabling irrigation to be more easily and effectively carried out. Left inguinal colotomy is, I believe, seldom if ever necessary in cases of chronic colitis; it should be reserved for those cases of acute colitis where there is continuous diarrhoea, and the patient in spite of treatment is rapidly getting worse.

The most important factor in the treatment of chronic colitis is, undoubtedly, to ascertain first of all the real cause of the condition. The main reason why the treatment of colitis has hitherto often been unsatisfactory is inaccurate diagnosis, and treating as a disease what should be regarded as a symptom.

The point which I wish particularly to emphasize is that it is not safe to treat cases with symptoms of what is called colitis without a very careful examination to ascertain the cause of the condition. In the great majority of cases a definite local lesion can be demonstrated, and it is unreasonable to suppose that we can successfully treat a case without first ascertaining the nature of the lesion or lesions causing the symptoms. A careful sigmoidoscopic examination should always be made when possible in cases where there are symptoms of chronic colitis.

References.

[1] Remarks on the Value of the Sigmoidoscope in the Diagnosis between Primary and Secondary Colitis, British Medical Journal, December 23rd, 1905; and in the *Practitioner*, August, 1906. [2] *Lancet*, June 15th, 1907.

DISCUSSION.

Dr. Michael Foster (Puckeridge) asked if there were always lesions to be found in the sigmoid mucosa. It was his impression that in simple cases of "colica mucosa" *post-mortem* examinations sometimes showed normal mucosae.

Mr. A. E. Maylard (Glasgow) asked why Mr. Mummery used the term "sigmoiditis." He used the term "colitis" as well and almost interchangeably. It seemed to him that unless it was possible to see by the use of the sigmoidoscope beyond the seat of the disease, it would be a piece of incorrect nomenclature to limit the extent of the disease by the name "sigmoiditis" when it was probably much more extensive, and more correctly expressed as "colitis." Mr. Mummery somewhat belittled the value of irrigation by means of appendicostomy; it appeared to the speaker, however, from experience of ileostomy (that is, division of the ileum close to the caecum, implantation of the proximal end into the sigmoid, and fixation of the distal to the parietes), that much good might be looked for from irrigation of the whole length of the colon in extremely chronic cases of colitis.

Mr. V. T. Greenyer (Hove) asked Mr. Mummery to what extent he could examine the bowel with the "sigmoidoscope." Was not the paper practically limited to conditions of the rectum and lower arm of the sigmoid?

Mr. P. Mummery, in reply, said that out of 36 cases of chronic colitis which were examined a definite lesion was discovered in the bowel in 30 cases. There were thus 6 cases out of 36 in which no lesion could be found to account for the symptoms. With regard to the cases mentioned by Dr. Michael Foster in which a *post-mortem* examination had been performed, these only amounted to 4, and certainly in one of those definite local lesions

were discovered. In any case the *post-mortem* cases were too few to give any useful information. The distance to which the sigmoidoscope could be passed was to a little beyond the centre of the sigmoid flexure. About two-thirds of the sigmoid could as a rule be examined. With regard to irrigation, in his opinion it was usually the best treatment, but if irrigation were carried out properly from the rectum, appendicostomy would not be necessary in most cases. The object of using the word "sigmoiditis" was that, in view of the fact that only a small portion of the whole colon could be examined, the word "colitis" was not strictly applicable in describing the lesion.

A CASE OF SARCOMA OF THE SMALL INTESTINE.

By Louisa Garrett Anderson, M.D., B.S.,
Assistant-Surgeon, the New Hospital for Women.

I venture to bring this case before you as an example of a rare condition, and also because I have been able to watch the patient since the operation; and the fact that she is in perfect health after more than eighteen months raises several interesting questions.

So little is known about sarcoma, and especially about the form which occurs in the intestine, that it seems better to put even isolated cases on record.

Clinical History.—Sarcoma of the ileum, 10 in. above the ileo-caecal valve. Resection, January, 1906; well, July, 1907.

Mrs. A., aged 48, married, no children. The patient was admitted to the New Hospital for Women at the end of December, 1905. She complained of pain in the lower part of the abdomen, which she had had for a year, and of flatulence distinctly worse of late, although she had suffered from it for years. Recently she had had attacks of vomiting. Neither the pain nor sickness occurred in relation to food. The bowels were open daily without medicine, the stools being rather loose, but otherwise normal. The climacteric had taken place two years before, and there had been no subsequent trouble.

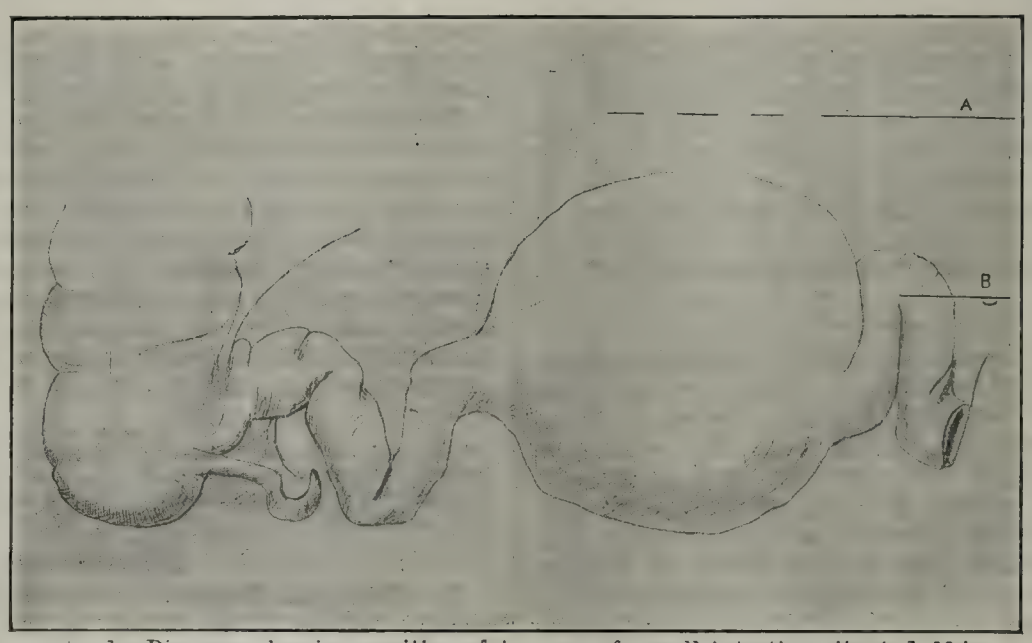


Fig. 1.—Diagram showing position of tumour of small intestine situated 10 in. from ileo-caecal valve, and measuring 5 in. × 2½ in. in diameter, or 13 × 11½ in. in circumference. A, Glands in mesentery; B, ileum above tumour, normal in appearance.

The patient was a bad colour and looked ill, and she said that she had grown much thinner during the last year.

Notes on Admission.

Chest.—Normal.

Abdomen.—The abdominal walls were thin, and peristalsis was seen on one occasion. In the hypogastrium, immediately above the pubes and slightly to the left of the mid line, there was a tumour, rounded, smooth, and solid; it reached three fingerbreadths above the pubes. Percussion over the rest of the abdomen was resonant, but the note over the tumour was dull. (There was no increase in the area of liver dullness.)

Vagina.—Per vaginam the tumour was in front of the uterus. The cervix was atrophied and the fundus could not be distinctly mapped out. Movement of the cervix imparted movement to the tumour, and vice versa. An attempt made in the out-patient room to pass the sound was not repeated, as it had caused pain.

Diagnosis.—Subperitoneal fibroid in front of a senile uterus, and it was suggested from the cachexia that the fibroid might be undergoing a retrogressive change. The patient said that she had had the lump for nine years, which seemed to support the provisional diagnosis. (No one who saw her suggested that the tumour might be in the bowel, as there were no intestinal symptoms except flatulence.)

Operation.—On January 3rd, 1906, laparotomy was performed, the abdomen being opened by a median subumbilical incision. The tumour lay over the brim and partly in the true pelvis, and was entirely free from adhesions. Contrary to expectation, it was found to have no connexion whatever with the uterus or appendages, which were small and lay below and behind it. It consisted of a fusiform swelling, the size of two fists, in the lower part of the ileum. It measured 5 in. in its long diameter, which corresponded to the long axis of the bowel, and 3½ in. in transverse section. There were 10 in. of apparently normal ileum between the tumour and the ileo-caecal valve, and above the growth the intestine also looked normal, being neither hypertrophied nor distended. The mesentery corresponding to the affected piece of intestine contained a large number of glands, some of which were of considerable size.

The operation consisted of a lateral anastomosis of small intestine on either side of the growth, with resection of 12 in. of ileum, so as to remove the tumour and a wide margin of healthy bowel. Several mesenteric glands were also removed, although some which were large and appeared to be affected had to be left behind.

After-history.—The progress was uneventful, and the patient left the hospital three weeks after the operation. Since then she has attended as an out-patient once a month. She has taken arsenic with intermissions, and at the present time she is having 4 minims of Fowler's solution t. d. s. She has gained more than a stone in weight, her colour and her appetite are excellent, the flatulence has gone, and repeated physical examination fails to show any sign of recurrence.

Pathological Report.

The specimen consists of 12 in. of small intestine opened longitudinally opposite the attachment of the mesentery. At either end there is a piece of normal intestine, but the central 5 in. consist of a solid rounded tumour formed by a symmetrical overgrowth in the submucous and muscular coats. It is pale and succulent looking. The peritoneum and mucous membrane over the tumour are intact, there being no adhesions externally and no ulceration internally. The lumen of the intestine, instead of being constricted as it passes through the tumour, seems to be dilated.

Microscopic Examination.—Growth shows structure of small round cells set in a fine stroma. Growth is infiltrating gland tubules and muscularis mucosae. Piece of growth with normal intestine shows at one end of the section normal bowel wall, a little farther on the small round cells of the tumour are creeping up between slits in muscularis mucosae, and invading the gland tubules. Lymphatic glands (from mesentery) show infiltration with new growth.

This case seems to be an example of primary lympho-sarcoma of the intestine—that is, a variety of sarcoma arising in the lymphatic apparatus of the intestine, and showing a reticulum between the cells.

In regard to the sections of the mesenteric glands, it is practically impossible to distinguish between inflammatory infiltration and lympho sarcomatous deposit. At the time of operation the condition of the glands was most suspicious, and they were regarded as malignant, but the long period of immunity which has elapsed since then is against this view, as the progress of lympho-sarcoma is usually rapid.

Sarcoma of the intestine is a pathological rarity. At the Berlin Pathological Institute in sixteen years (1859 to 1875) there was not a single case (Lipman). At the General Hospital, Vienna, during twelve years, and out of more than 21,000 autopsies, there were 3 cases of sarcoma and 248 cases of cancer of the intestines. Nothnagel, who quotes these figures in his *Encyclopaedia of Practical Medicine*, considers them trustworthy, as Kundrat, who was Director of the Pathological Institute, paid special attention to this subject. Other figures may be quoted to show the same thing. In Prague, out of a total of 13,036 *post-mortem* examinations done in fifteen years, there were 13 cases of intestinal sarcoma, all being lympho-sarcoma.

In the *Transactions of the Pathological Society* since 1863 I have found 3 cases. In 1872 Moxon described a case. He wrote: "This form of cancer—I use the word clinically as the substantive form of the term 'malignant'—is rare and yet definite. It has occurred to me twice before to meet a kind of growth primarily affecting the small intestine, and in each case the growth did not contract the bowel, but widened it. In each case, too, the form of cancer proved microscopically to have the structure called lymphoid."

On the other hand, Lipman (*American Journal of Science*) describes 5 cases in two years at the Mount Sinai Hospital, and in the New Hospital for Women we had 2 cases at the same time, one the subject of this paper and the other a sarcoma of the rectum.

When cancer occurs in the intestine it shows a marked preference for certain spots — the flexures of the colon, the lower end of the rectum, etc., disease of the large intestine being far more common than of the small. In sarcoma the small intestine is affected more often than the large, with the exception of the rectum, where it is relatively common, and there are no special seats of election. The different parts of the small intestine seem to be equally prone to sarcoma.

Sarcoma of the intestine may occur at any age, and, although youth might be a point in a differential diagnosis, it has to be remembered that cancer of the intestine may occur very early, while sarcoma has been found in a patient of 70 (Smoler).

Is it ever possible to make a diagnosis? As a matter of fact I have not found such recorded in the literature. Nothnagel describes the disease when he says that without exception there is early and marked deterioration of general health quite out of proportion to local symptoms, which may indeed be absent.

The symptoms contrast curiously with those of cancer of the intestine. Cancer begins in the mucous membrane and spreads round the wall. The growth fungates towards the lumen of the tube, is friable and easily damaged; the mucous membrane ulcerates, and haemorrhage and discharge occur, followed in an overwhelming proportion of cases by symptoms of obstruction.

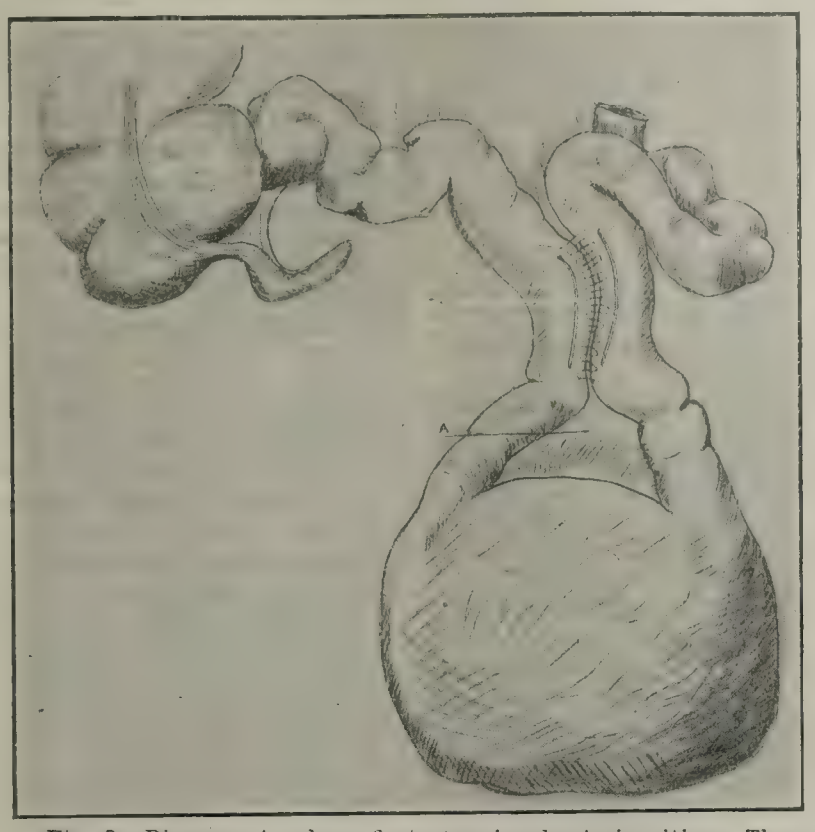


Fig. 2.—Diagram to show first step in short circuiting. The line of stitching should have been placed considerably further from the tumour than the diagram indicates. A, Glands in mesentery; B, anastomosis.

In sarcoma the neoplasm arises under the mucous membrane and infiltrates the submucous and muscular coats without affecting the mucous membrane or the peritoneum, consequently there is no ulceration, no haemorrhage, or discharge. The tumour may reach a large size without causing stenosis, so that obstruction need not occur.

Cases of lympho-sarcoma twice the size of a fetal head have been described, and many inches or even feet of bowel have occasionally been involved.

The tumours tend, from their weight and the absence of peritoneal adhesions, to drop into the pelvis, and in women are apt to be mistaken for growths of uterus or ovary, as in this case. A primary sarcoma of the intestine may produce metastases in other organs, but in lympho-sarcoma it is apparently the rule to have metastases only in the regional lymph glands.

The prognosis is very bad. Most writers give nine months as the limit of life from the time at which symptoms develop. Lipman, in a full and useful paper, written in 1900 (*American Journal of Science*), says, "In only one instance—a case reported by Babes and Nanu—was the patient alive after one year. Other operated cases are as follows: Nicolaysen, spindle cell sarcoma, recurrence in twenty-four days; Zuralski, cystic sarcoma, recovery for the time being; Lannelongue, variety of tumour not given, ultimate result not stated."

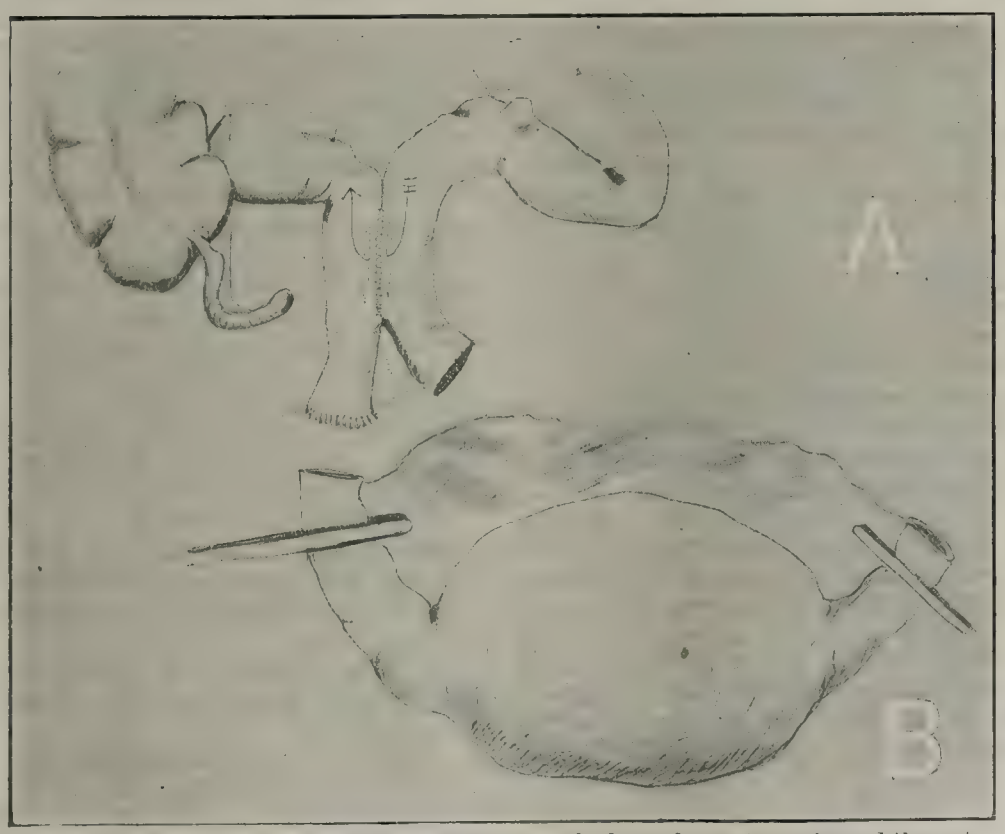


Fig. 3.—Diagram showing (A) parts left—namely, lateral anastomosis and the cut ends of the bowe closed; (B) parts removed—namely, tumour with a piece of intestine on either side of it, and segment of mesentery with glands. The glands were very numerous; some had to be left behind.

In discussing the treatment, Lipman advocates the hypodermic administration of arsenic as having undoubtedly improved some recorded cases. He says: "We believe that this method should invariably be tried in cases of internal sarcoma, and that it should also be used for patients upon whom successful resections have been performed."

This suggestion has been followed with my patient, except that the arsenic has been given by the mouth. It is, of course, impossible to know whether the drug has been of use, but it has seemed to agree with her.

There is little that is fresh about this case, although it confirms previous observations. Its chief interest is that it shows that large mesenteric glands need not contra-indicate a resection. In abdominal hysterectomy for cancer of the cervix we realize that it is impossible to discriminate at the time of operation between inflammatory and carcinomatous glands. Large adherent glands may be innocent, while smaller ones may show a definite deposit of cancer cells.

With sarcoma, and especially lympho-sarcoma, even the microscope may fail to return a certain verdict, so that it is surely best always to remove the primary growth irrespective of the condition of the glands.

THE INDICATIONS FOR PROSTATECTOMY.

By JOHN PARDOE, M.B., F.R.C.S.,
Assistant Surgeon to St. Peter's Hospital, Casualty Surgeon to the West London Hospital.

IT is now thoroughly accepted that prostatectomy is the method of choice for the treatment of certain enlargements of the prostate, and large series of operations have demonstrated that in chosen cases the mortality is extremely low, and in cases of urgency, that is, where long-standing difficulty of micturition and septic infection have worn down the patient's strength, it is not unduly high. The great success of suprapubic enucleation of the enlarged prostate has, perhaps, induced our profession at large to forget that different cases may require different treatment, and that there is a tendency to indiscriminate recommendation of prostatectomy for all and every case where operation seems desirable I can speak with some certainty, for of all the cases in hospital and private practice sent to me with a request for prostatectomy, a considerable proportion is totally unsuited for the operation.

Setting aside inflammatory enlargements of the prostate, there are, roughly speaking, four types of new growth which must be carefully distinguished from one another before a decision is come to with regard to the operation to be advised, for the character of the treatment, curative or palliative, depends entirely upon the nature of the enlargement. The growths are innocent and malignant, and fall naturally into two classes:

1. The epithelial type ... { (*a*) Adenoma (innocent). (*b*) Carcinoma (malignant).
2. The connective tissue type ... ... { (*a*) Fibroma (innocent). (*b*) Sarcoma (malignant).

The ground may be cleared somewhat by putting aside sarcomata of the prostate, for in the first place they are exceedingly rare in men past middle life, and, in addition, I am not aware of any recorded cure of this condition by operative measures.

Carcinoma of the prostate is of far more frequent occurrence than is generally recognized; and although, doubtless, I see more cases of prostate enlargement than do surgeons occupied with a less restricted field of work, and so perhaps am liable to exaggerate the proportion of malignant to innocent enlargements, yet I am certain that more careful methods of diagnosis will substantiate this observation in the practice of surgeons as a whole.

Prostatectomy upon the lines of enucleation is totally unsuited for carcinoma of the prostate, just as no surgeon would dream of enucleating a carcinoma of the breast. Free excision of the gland, together with the trigone of the bladder and the seminal vesicles, as advised and practised recently by Hugh Young of the Johns Hopkins Hospital, is the only curative operation that can be recommended, and the time is too short as yet to say what measure of permanent success attends this severe mutilation.

Such being the state of surgery with regard to malignant disease of the prostate, it is obviously imperative as a first step to discover whether any prostate is innocent or malign. The results of obstructed micturition due to enlargement of the prostate are the same whether the growth is innocent or malignant, and may be considered chiefly with a view to the prognosis of operations.

The examination of a case should proceed in a methodical way, and should be directed to (1) the history; (2) the symptoms; (3) examination of the abdomen; (4) examination bimanual and per rectum; (5) instrumental examination, including testing of residual urine, and where possible a careful cystoscopy; (6) careful analysis of a twenty-four hours' specimen of urine; (7) a general examination of the patient with special reference to the cardio-vascular and respiratory systems.

1. *The History of the Case.*—It is important to ascertain the nature of the onset of the difficulty, or cessation of normal micturition, for an apparently acute retention is often only the culmination of a long-standing trouble; and long-standing difficulty commonly indicates damage to the bladder, ureters, and kidneys.

2. *The Symptoms.*—Undue frequency of micturition is usually the earliest symptom noticed by the patient, and his attention is often first called to it by the necessity of micturition at night—that is, nocturnal frequency.

Pain may be present, and its character and situation should be noted. Sacral pain radiating to the perineum and down the thighs is not infrequent in carcinoma; less so, or more commonly entirely absent, in innocent enlargements. Over-distension of the bladder, vesical calculus, cystitis, and prostatitis complicating the enlargement of the gland give rise to characteristic penile and hypogastric pain before, during, and after micturition.

A very important group of symptoms should be looked for whenever the prostatic difficulty has been long established. They are not confined to cases of prostatic obstruction to micturition, but are met with whatever the cause of long-standing difficulty may have been. They are: Thirst, a dry mouth and tongue, a dry, harsh skin, polyuria with diminished total excretion of solids, especially urea, and constant dull lumbar aching. These symptoms indicate serious damage to the kidneys from long-standing back pressure. Such kidneys are commonly hydronephrotic, interstitial nephritis is present in more or less degree, and they are anaemic.

The recognition of these symptoms has an important bearing upon treatment, for in such cases the bladder must never be suddenly emptied, but should be very slowly and quietly relieved. Sudden emptying of the bladder is not seldom followed by suppression of urine, and the most strict asepsis should be practised, for infection is very easily induced in these cases, and runs riot throughout the whole length of the urinary tract. Sometimes incontinence is complained of, and is of the nature of false incontinence or retention with overflow. On examination the bladder is found to be distended to the umbilicus, or higher, and a constant slight dribbling of urine is taking place. Haematuria is a fairly frequent symptom in prostatic enlargement, more common in the adenomatous than in malignant enlargement of the prostate, except in the latest stages of the latter, when the diagnosis is easy.

3 and 4. *Abdominal and Rectal Examination.*—The abdomen as a whole should first be examined, especially the hypogastrium, for evidence of an over-distended bladder, and next the loins, for back-pressure kidneys are often large and tender, and can be felt. Rectal examination should be made in two positions with the bladder empty: first in the knee-elbow posture with the buttocks protruding, and next with the patient supine, with one hand above the pubes, and the forefinger of the other in the rectum. By the latter method a much enlarged prostate can often be felt between the two hands.

5. *Instrumental examination* consists in testing for residual urine, ascertaining the length of the prostatic urethra, and careful cystoscopy, which will often reveal an intravesical enlargement when per rectum the prostate feels quite small.

6. *Examination of the Urine.*—The total urine passed in twenty-four hours should always be used for this examination.

7. Lastly, a careful examination of the patient's general condition should always be made.

I have already stated that the effects of obstruction to micturition are the same whether that obstruction is caused by innocent or malignant enlargement of the prostate or by obstruction not due to the prostate at all. Therefore the differential diagnosis of innocent and malignant prostates must be made chiefly from examination of the gland itself. This examination should be made purposively and systematically, and the differences can be conveniently set out in tabular form. (See p. 889).

It will be seen that it is not, as a rule, difficult to distinguish between the adenomata and the carcinomata. The difficulty arises in the case of moderate fibrous

Signs.	Carcinoma.	Adenoma.	Fibrous Enlargement.
Shape	Usually irregular, bossy, sometimes flat and spreading	Rounded and smooth, with some lobulation usually to be felt	Small and collar-like.
Outline	Commonly very irregular	Usually smooth	Quite regular and rounded
Consistency	Stony hard, except in earliest stages	Always elastic, sometimes very soft	Always firm, but somewhat elastic, never stony hard.
Size	Moderate at first, may be very large later, slow in enlarging	Varies from quite small to enormous	Always moderate in size.
Interlobar sulcus... ...	Disappears early	Persists	Present.
Mobility	Absolutely fixed	Quite mobile	Mobile but often this point is difficult to determine.
Infection of lymph glands	Very common	Absent	Absent.

enlargements. By the methods I have detailed a correct diagnosis should be made in the majority of cases. We should remember, however, that prostates, innocent at first, may become malignant, and I have met with one case where the prostate was adenomatous in its entire periphery and enucleated easily, but on cutting it across a central nodule of cancer disclosed itself. In such a case I do not think the error of the surgeon was blameworthy.

Treatment.

I have already stated that in carcinoma of the prostate operative treatment, with a cure in view, must be an excision and not an enucleation, and excision is as yet very much on its trial. The treatment of carcinoma, then, must be catheterism so long as that can be performed with fair comfort, and when catheterism becomes too difficult or painful, or is the cause of repeated haemorrhage, a carefully-planned suprapubic permanent drainage should be established. Perineal drainage should never be undertaken in these cases.

Fortunately in a large number of cases the growth does not encroach too much upon the urethra and bladder cavity to forbid catheterism, and it remains fairly easy to the end. Fibrous enlargement of the prostate is particularly well suited to complete cure by operation and without much danger.

The operation of enucleation, so successful in adenoma of the prostate, is neither easy nor satisfactory in these cases. Piecemeal excision or prostatotomy, in both cases by the perineal route, are the two operations which give the best result.

I prefer median perineal prostatotomy, taking great care to leave the compressor urethrae intact, and some patients upon whom I performed this operation five and more years ago are in perfect health to-day, completely emptying their bladders and retaining urine in a normal way.

The most common senile enlargement of the prostate is adenomatous. It may be said at the outset, that in the case of patients who are unfitted by some intercurrent disease of the cardio-vascular or respiratory systems, or in those of generally very feeble health, and whose condition of life permits them to take the very stringent aseptic precautions necessary, catheterism will ensure a comfortable existence without much risk. But in the majority of cases complete enucleation of the prostate is unquestionably the method of choice, and the risk is very different in degree in those cases where the operation is one of expedience on the one hand or of urgency on the other. By expedience is meant that the operation is performed whilst the patient is in good general health, and has not had his powers undermined by long-continued suffering. An urgent prostatectomy, on the other hand, is done when the patient is in serious straits; when after long-continued over-distension, with consequently damaged kidneys, catheterism has been tried and is failing; when sepsis has been introduced, haemorrhage has been repeated, and possibly calculi have formed several times in consequence of decomposition of urine in the bladder.

I am therefore thoroughly convinced that suprapubic enucleation should be done whenever possible as a prophylactic against these secondary troubles.

In the latter class of case it is often wise to do the operation in two stages, first draining and cleaning the bladder by a suprapubic cystotomy, and removing the prostate after a week or two when the local conditions have much improved. I have met with great success by following this plan, and have saved cases similar to others which I have lost before adopting it.

There are some aged men, whose expectation of life is not long in any case, who with capacious bladders need the catheter only twice or so in twenty-four hours, and to whom the use seems merely a part of their toilet operations. These patients appear to have an extraordinary tolerance of catheterism, and though they treat the operation with the greatest contempt (many of them use their hats as catheter boxes and saliva as a lubricant), suffer only the most transient attacks of epididymitis, and slight and passing exacerbations of the mild cystitis which is invariably present. We are all familiar with such cases, and it is not perhaps, our duty to urge prostatectomy upon these very old men, though it may well be offered to them.

Conclusions.

1. Except in very early cases, it is not permissible to operate upon carcinoma of the prostate, except with a view to permanent drainage.

2. In the case of fibrous enlargement interfering with micturition, piecemeal enucleation or a prostatectomy should be done. The mortality of the latter operation is practically nil, and the results are satisfactory, both immediately and permanently.

3. In very aged men with a marked tolerance of catheter life prostatectomy should not be urged.

4. Unfortunately, catheter life has serious discomforts and dangers for the majority of sufferers, and for these enucleation is by far the best treatment. It should be done at the period of election—namely, before septic infection has taken place. I have tried both perineal and suprapubic complete enucleation, and much prefer the latter.

5. The surgeon should not refuse operation to cases seriously infected and very ill. Their lives are sure to be painful and seldom prolonged if operation is refused, and although the mortality is higher than in selected cases, it is not unduly high, especially if the operation is done in two stages.

A FURTHER SERIES OF CASES OF TOTAL ENUCLEATION OF THE ENLARGED PROSTATE,

AND A REVIEW OF 432 OPERATIONS.

By P. J. Freyer, M.D., M.Ch.,
Surgeon to King Edward VII's Hospital, and to St. Peter's Hospital.

Six years ago, in the British Medical Journal of July 20th, 1901, I placed before the profession my operation of total enucleation of the prostate for radical cure of enlargement of that organ, with details of four successful cases. Since then numerous papers on this subject have been published by me, dealing with successive series of cases; and on several occasions I have at the annual meetings of the Association reviewed my work in this direction accomplished during the previous year. My last paper, published in the Journal of March 9th, 1907, brought the record down to my 325th case of the operation. I have now the pleasure of submitting for your consideration the results in a further series of 107 cases operated on by me since the middle of September, 1906, concluding with a brief review of 432 instances, being my entire experience of this operation.

I have brought here for your inspection a series of the prostates recently removed by me, illustrative of the types met with in practice; and you will observe that they have one and all been enucleated entire in their capsules. In my earlier papers I published every case in detail, but in a large series like that now dealt with I can only direct your attention to a few instances illustrative of some practical features of the operation.

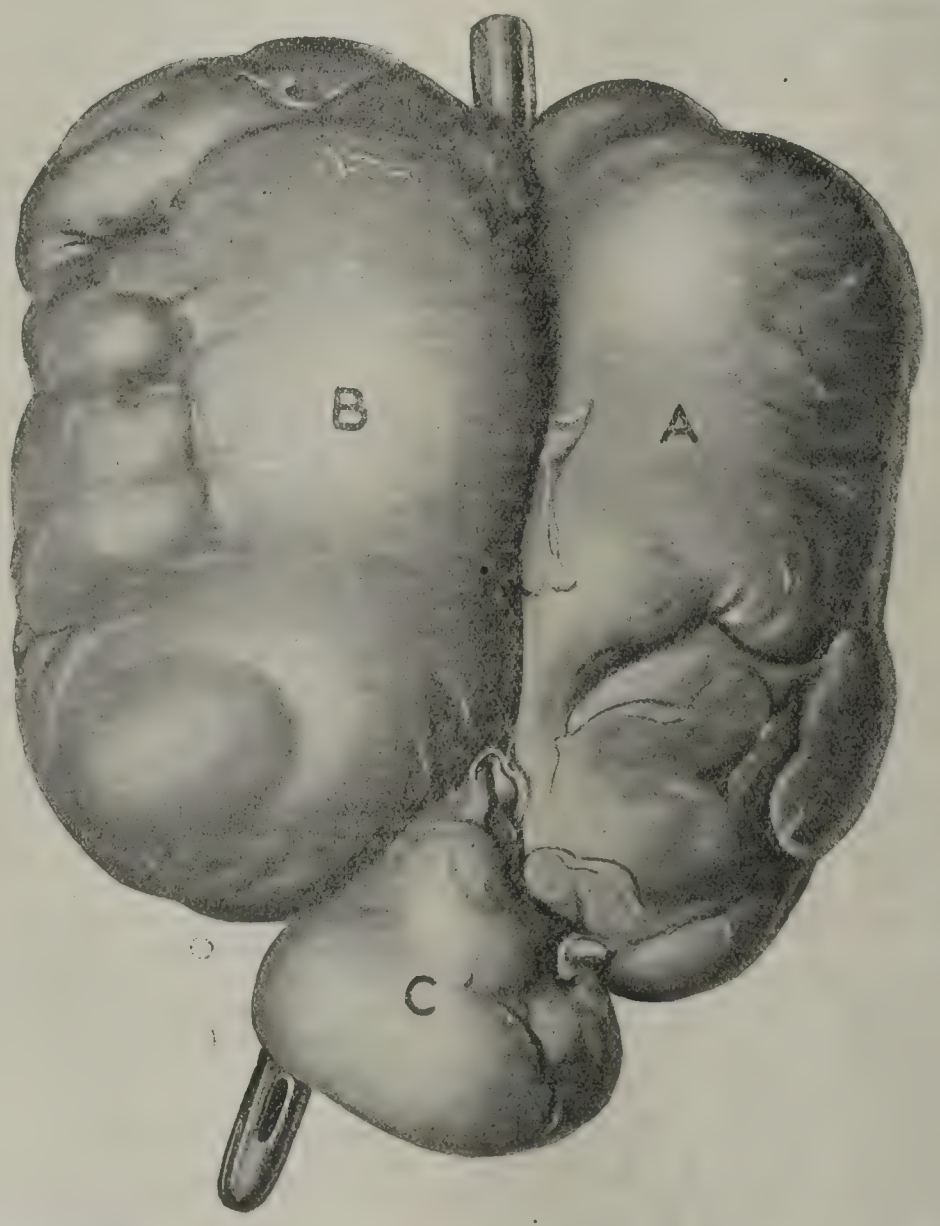
CASE 327.—Gentleman, aged 72, sent by Dr. F. Evered, Emsworth. Prostatic symptoms for fifteen years. Catheter employed for twelve years; entirely dependent thereon for eight years. Haemorrhage occasionally. Prostate enormously enlarged, bilobed, smooth, soft, movable; easily felt bimanually. On September 10th, 1906, I enucleated the prostate, which weighed 7½ oz., entire in its capsule. Time from commencing suprapubic wound till prostate delivered, three and a half minutes. There was scarcely any bleeding. Patient passed some urine per urethram September 28th, and on September 30th the wound was dry. On October 13th he went home perfectly well passing and retaining urine "better than he ever did before," as he stated. On July 24th he writes: "I am enjoying very good health. My water passes without any pain, and I can retain it for hours without inconvenience. I am never disturbed at night."

CASE 329.—Gentleman, aged 66, consulted me July 25th, 1906, on the advice of Sir William Byers, Belfast, and Dr. F. Mouillot, Harrogate. Retention of urine one month previously; impossible to pass catheter; consequently bladder tapped suprapubically by Professor Sinclair, Belfast. Catheter employed since then with difficulty at times. Haemorrhage occasionally. On September 12th, Sir William Byers assisting, I enucleated the prostate, weighing 5¼ oz., entire, in three and a half minutes. More haemorrhage than usual. Wound dry and all urine passed naturally from October 2nd. On July 24th he writes: "I am keeping very well. I pass and retain my water without any trouble. I feel fitter for work than I have done for several years."

CASE 355.—Gentleman, aged 89, seen with Dr. A. Grayling at Forest Hill, October 16th, 1906. Prostatic symptoms had existed seven years, with almost complete retention on several occasions. Catheter introduced September 10th, 1906, and 30 oz. urine drawn off. Severe cystitis ever since. Urine full of pus and very fetid. Patient in great agony and very feeble. On October 16th, Mr. C. Braine being the anaesthetist and Dr. Grayling assisting, I drained the bladder suprapubically with a view to relieve the cystitis and pressure on kidneys. By November 1st the patient had improved in health, though the pulse was still feeble, and nightly delirium existed. I enucleated the prostate, weighing 3¼ oz., entire, in three minutes. On November 3rd the patient was very low and refused food, but he rallied in a day or two. Urine commenced to pass naturally November 19th, and the wound was dry November 24th. On December 10th he went home in good health, passing urine normally and retaining it for five or six hours. For the last fortnight he had his secretary up to work with him daily. On July 24th he writes: "I am happy to say I am quite well in every respect."

CASE 364.—Gentleman, aged 76, with prostatic symptoms for twenty years; catheter for fifteen years; entirely dependent thereon for ten years. Galvano cautery (Bottini's operation) by another surgeon in 1891, but without any improvement. Difficulty in passing catheter; much blood in urine after riding. Total enucleation of the prostate, January 1st, 1907, in six minutes. Weight 5¼ oz. No stone present. Wound slow in healing, but otherwise no unfavourable symptom. Some urine passed naturally, January 26th, and wound dry, February 5th. Left for home on February 21st, in good health, passing and retaining urine as well as ever he did. On July 24th he writes: "I am able to say that the operation has completely effected its object, and has relieved me of inexpressible trouble and discomfort. I enjoy excellent health."

CASE 367.—Gentleman, aged 85, seen at St. Leonard's-on-Sea with Dr. Batterham, December 27th, 1906. Had suprapubic lithotomy twelve weeks before, two calculi being removed, but wound failed to close. Conveyed to London in an ambulance January 4th, 1907, suffering from bronchitis which had existed three weeks. On January 8th I enucleated the prostate, weighing 1¾ oz., entire; scarcely any bleeding, no shock. Commenced to pass urine naturally January 28th; wound dry February 5th, but broke down again. Finally closed February 16th. After this he developed orchitis, which suppurated; but on March 18th he left for the seaside in good health, passing and retaining urine as well as he ever did. On July 24th he writes: "I am pleased to say I can both retain and pass water without any trouble."



Prostate, weighing 11¼ oz., removed from patient, aged 81 (Case 420). A, Right lobe with outgrowth, C, in bladder—so-called "middle lobe"; B, left lobe.

CASE 384.—Clergyman, aged 80, suffering from prostatic symptoms ten years. Calculi removed by me by litholapaxy in 1902, and again in 1904, but patient refused to have his prostate removed. Entirely dependent on catheter for six months. Great straining, causing involuntary movements of the bowels. On February 14th, 1907, I enucleated the prostate entire in five minutes, Dr. E. Playfair, London, assisting; weight 3½ oz. Uninterrupted recovery. Commenced to pass urine naturally March 9th, wound closed March 12th. On March 20th was walking about, and could pass and retain urine as well as ever. Is now in perfect health, untroubled by any urinary symptom. On July 23rd he wrote: "I suppose I may be satisfied without being water-troubled for seven or eight hours at night, and four or five hours in the day. I am quite cured by your operation."

CASE 391.—Gentleman, aged 84, suffering from prostatic symptoms for several years. Catheter never regularly employed, but intense frequency of micturition with consequent broken sleep at night. On March 15th, Mr. C. Braine anaesthetist, I enucleated the prostate, which weighed 3 oz., entire, in two and a half minutes. Scarcely any bleeding; no shock. No unfavourable symptom, except that the wound was slow in healing. Rubber catheter tied in for a week from April 15th, after which all urine was passed naturally. Went home May 9th in excellent health, passing and retaining water normally.

Case 394.—Gentleman, aged 72, seen with Dr. Hamilton Bland (London), April 4th, 1907. Prostatic symptoms six years. Catheter passed for retention three years ago by Dr. Bland; employed twice daily for six months. Great frequency of micturition night and day. Residual urine, 6 oz., contains pus. On April 8th, 1907, Dr. Bland assisting I enucleated the prostate, weighing 5½ oz., in seven minutes. Scarcely any bleeding; no shock. Passed urine per urethram April 21st; wound closed April 23rd. On May 23rd wound was filled in, patient walking about, passing and retaining urine as well as ever. On July 25th he writes: "The operation has quite cured me, and I have no trouble in passing and retaining my water."

CASE 402.—Gentleman, aged 58 sent by Dr. H. B. Todd (Cheltenham), April 29th, 1907. Prostatectomy by a Dublin surgeon, July 12th, 1906. Suprapubic fistula has remained

ever since. Suffering fearful agony from cystitis. Reduced to a skeleton; could not walk or even sit in a chair, owing to the intense pain. I passed a coudée catheter and drew off 6 oz. fetid urine; grating felt, showing presence of calculus. Per rectum I felt two lumps in the position of the lobes of the prostate. On April 30th, Mr. C. Braine being the anaesthetist, I opened up the suprapubic fistula and removed a phosphatic calculus, weighing 185 grains. It was the size of a large marble, and had undergone spontaneous fracture. There was atresia of the urethral orifice. I burst this open with my finger, and enucleated two portions of the prostate that had been left behind at the previous operation, weighing $\frac{5}{8}$ oz. Some urine passed per urethram May 11th; wound dry May 14th. On May 25th patient went back to Cheltenham in excellent health, having rapidly put on flesh, able to pass and retain urine as well as ever he did. He is now in perfect health. On July 24th he writes: "I can pass and retain my water without any trouble."

Case 420.—Gentleman, aged 81, consulted me in February, 1906, for prostatic symptoms of five years' duration. Catheter employed for three months only, but great frequency of micturition; severe haemorrhage on several occasions. Residual urine, 9 oz., contained some pus. Prostate enormously enlarged but soft and movable. Prostatectomy advised, but patient deferred operation till June last, when the symptoms became unbearable, and I saw him again through Dr. C. A. Kent of Dover. On June 13th, 1907, Captain Steen, I.M.S., being present, I enucleated the prostate entire, but owing to its enormous size (see figure, p. 890) the lobes had to be severed to facilitate its delivery from the bladder. The operation lasted nine minutes; very little bleeding; no shock. Uninterrupted recovery, though wound slow in healing. All urine passed naturally after July 19th. The patient is now in excellent health, and can retain and pass urine naturally as well as ever. The prostate weighs 11¼ oz.

Case 421.—Gentleman, aged 80, consulted me June 11th, 1907, on the advice of Dr. E. Hosking (Crawley) and Mr. A. Willett (London). Prostatic symptoms four years, but not severe till during the last few months. Urethra so contracted I could only pass a No. 5 conical catheter, through which I drew off 31 oz residual urine. On June 19th, Mr. Willett, Dr. Hosking, and Dr. Raff Hertz of Copenhagen being present, I enucleated the prostate, weighing 2¼ oz., entire, in five minutes; scarcely any bleeding or shock. Some urine passed naturally July 6th; wound closed July 12th. Is now in excellent health, able to pass and retain urine normally.

Case 424.—Gentleman, aged 62, sent by Dr. H. Dobson, Windermere. Prostatic symptoms eleven years; entirely dependent on catheter ten years. Litholapaxy by a London surgeon in May, 1904, and again in March, 1905. Grit said to have been removed under an anaesthetic on five occasions since then. Patient in great suffering. Haemorrhage frequently. Patient thin and anaemic. On July 4th, 1907, Dr. F. Mollard, Buenos Aires, being present, I enucleated the prostate entire in four minutes. It lay almost entirely inside the bladder, covered merely by mucous membrane, which was removed adherent to the gland; weight 5½ oz. There was considerable bleeding, but scarcely any shock. Uninterrupted recovery. Some urine passed naturally July 19th; wound closed July 25th. Is now in good health and can pass and retain urine naturally as well as he ever did.

The ages in this series varied from 48 to 89 years, with an average age of 68½ years. The prostates weighed from ½ oz. to 11¼ oz., the average being 2¾ oz.

There were 7 deaths among these 107 operations, or a mortality of 6½ per cent. The causes of death were: uraemia, 4; heart disease, 2; shock, 1. In all these fatal cases there was extensive disease of the kidneys or other vital organs.

There were besides during the year several cases of cancer of the prostate requiring operation; and I may mention that the number of cases of cancer of this organ that now come under my care is simply appalling, though the older textbooks regarded cancer of the prostate as extremely rare. I have dealt with the subject in the third edition of my work on *Enlargement of the Prostate* (Baillière, Tindall, and Cox, London, 1906). The contrast between the ordinary adenomatous enlargement and carcinoma of the prostate may be briefly stated thus: In the adenomatous variety the prostate is felt per rectum as a generally rounded, smooth, bilobed tumour, with deep median groove, usually soft and elastic to the touch, though sometimes dense; but it is always movable from the surrounding parts, particularly when felt bimanually. The cancerous organ is, on the other hand, when fully developed, irregular in outline, ridged or nodular on the surface, with the lobes ill-defined and the median groove obliterated. The malignant prostate is occasionally smooth, but always very hard and immovably fixed in the pelvis.

When carcinoma of the prostate reaches this stage no attempt at its removal is advisable, a suprapubic fistula being established if catheterism is difficult or impracticable. But if the disease be recognized at an early period of its development, whilst still confined within the capsule of the gland, the organ can be enucleated with entire success, as many cases in my own practice prove. Hard or dense nodules felt in the substance of a prostate, attended with the usual obstructive symptoms, when not due to calculi, are always suspicious of malignancy. It is incumbent on the ordinary medical adviser in such cases to have expert advice at the earliest possible date, with a view to removal of the gland if thought advisable.

I have now performed the operation of total enucleation of the prostate in 432 cases. The ages ranged from 48 to 89 years, the average being about 68¼ years. The prostates weighed from ½ to 14¼ oz., with an average weight of 2¾ oz. In connexion with these 432 operations there were 29 deaths, or a mortality of 7 per cent., from the following causes:

1. Eleven cases from uraemia, at intervals varying from three to thirty-nine days after operation. In all of these the patients were suffering from pyelonephritis or other chronic disease of the kidneys, resulting from the prostatic obstruction.
2. Five from heart failure, namely, 2 a few hours after operation, the patients, aged 76 and 85 years respectively, having been entirely worn out by the intense suffering of many years; 1 eleven days after operation, suddenly, after having progressed most satisfactorily, the autopsy revealing aortic and heart disease; 1 twelve days after operation, the autopsy revealing aortic disease and interstitial nephritis; and 1, aged 86, on the third day, whose case was complicated by cancer of the bladder.
3. Two from septicaemia, thirteen and thirty-five days after operation, extensive interstitial nephritis having existed in one.
4. Two from mania after the wounds had practically healed, the mania in one instance being hereditary, and having set in before the operation.
5. Two from liver disease, believed malignant, fifteen and nineteen days after operation. One was complicated by a large vesical calculus; the other was jaundiced before operation.
6. Two from shock, seven and twenty-four hours after operation.
7. One from exhaustion thirty-three days after operation, the kidneys being extensively diseased.
8. One from heat stroke, ten days after operation, when convalescent.
9. One from pneumonia, seven days after operation, believed to have been contracted during the journey to town in snowy weather.
10. One from acute bronchitis thirty hours after operation. This patient was suffering from an enormous naso-pharyngeal growth, the removal of which had been twice attempted. The bronchitis was attributed to the anaesthetic acting on an irritable mucous membrane.
11. One suddenly on fifth day from pulmonary embolism. I saw him an hour before death, and he had had no unfavourable symptom since the operation.

Though these deaths are recorded in connexion with the operation, it will be observed that in a large proportion of the cases the deaths were due to diseases incident to old age rather than directly to the operation itself.

The remaining cases were successful. And I must once more emphasize the fact that success from this operation, when properly performed, means an absolute and permanent cure, the patient regaining the power of retaining his urine at will, and passing it naturally, without the aid of a catheter, as well as he ever did. I have in my possession hundreds of letters from these patients, generally written on the anniversary of the operation, and none are more enthusiastic and grateful than my earliest cases, dating back to some six and a half years.

The results are, I submit, remarkable, considering the advanced ages of the patients—no less than 31 were octogenarians—the fact that most of them were in broken health and many moribund before operation, and that grave complications existed in the majority. In 84 cases the prostatic disease was complicated by the co-existence of vesical calculi, which were removed at the same time as the prostate.

A CASE OF SUCCESSFUL RESECTION OF NINE AND A HALF FEET OF SMALL INTESTINE FOR GANGRENE.

By Charles P. Childe, B.A., F.R.C.S.,
Surgeon, Royal Portsmouth Hospital.

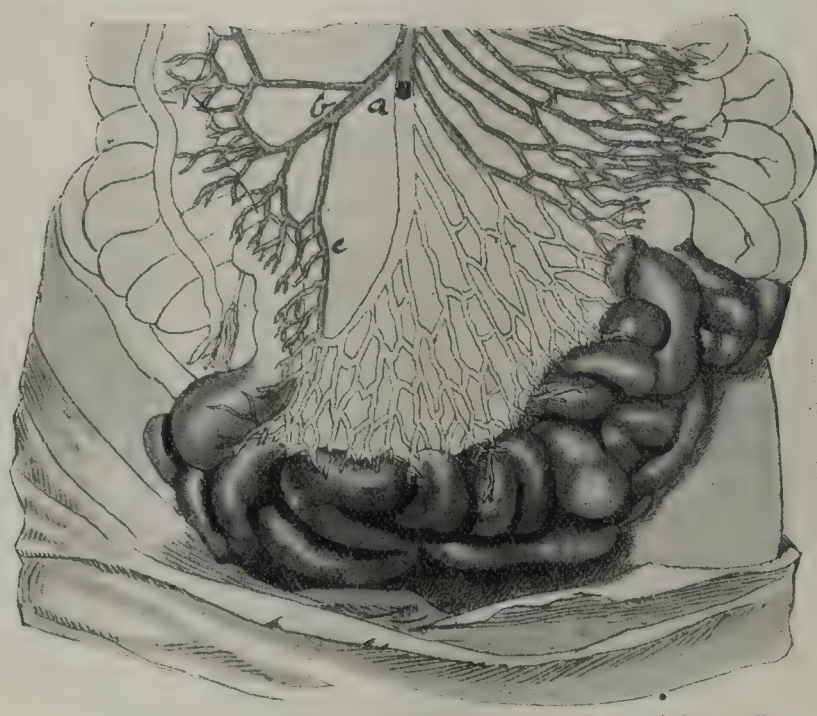
The patient in the following case, a woman aged 59, was admitted to the Royal Portsmouth Hospital on February 1st, 1907. She had been operated upon seventeen years

previously for strangulated femoral hernia on the right side. A radical cure was not performed, and she had worn a truss ever since. According to her statement, the hernia was reducible, retreating into the abdomen at night, but frequently coming down beneath the truss when she was up.

On the morning of February 1st, 1907, she rose from her bed in her usual health. About a quarter of an hour afterwards she experienced a sudden severe attack of abdominal pain, and was sick. The hernia was down, and she attempted to reduce it, but without success. At 11 a.m. she had what she described as an ordinary relief of the bowels. Acute pain both in the abdomen and in the hernia continued throughout the day, and she was constantly sick. During the afternoon an attempt to reduce the hernia under an anaesthetic was made by Dr. Hugh Case of Fareham. As this failed, and her symptoms continued, she was sent into the Royal Portsmouth Hospital, where she arrived about 9 p.m. I saw her an hour afterwards.

Condition on Admission. — She was a well-nourished woman, looking ten years older than her admitted age. A tumour the size of a cocoanut, tender and irreducible, occupied the right femoral region. She complained of agonizing pain in the abdomen and in the tumour. The pulse was 96 and fairly good; she was not much collapsed. The apex beat was ½ in. outside the nipple line, the cardiac impulse was diffused, and a loud systolic murmur was present at both apex and base.

Operation.—The patient was submitted immediately to operation. On opening the sac, foul-smelling, blood-stained serum escaped, and the intestine contained in it (about 2 ft.) was quite black. Acting on the supposition that the case was an ordinary one of strangulated hernia, the neck of the sac (which was wide but tightly grasped the distended bowel) was divided with the view of relieving the obstruction, and bringing down healthy intestine for the purpose of resection. To my surprise, instead of encountering healthy intestine above the obstruction, coil after coil was withdrawn from the abdomen perfectly black, amounting in all to about 9 ft. It was in exactly the same condition as the intestine in the sac, and, like it, had a markedly gangrenous odour. At length there was an abrupt termination in healthy bowel about 2 in. from the ileo-caecal valve on the distal side, and a more gradual transition about 9 ft. higher up on the proximal side. The whole of the ileum, in fact, was gangrenous. Resection was performed, the portion removed measuring 9 ft. 6 in., and, as a proof that there was no undue stretching of the gut during the measurement, I may say that the specimen at the present time, after being six months in formalin and spirit, is 9 ft. 3 in. in length (specimen produced). Both ends of the intestine were closed with a double row of sutures, and a lateral anastomosis was performed between the small intestine and the caecum, which was easily drawn down through the wide mouth of the sac. The operation presented no special difficulty, and occupied no great length of time. After its completion an inspection of the contents of the abdomen in the neighbourhood through the wide hernial mouth showed them to all appearances healthy, the bowel being quite pale and there being no sign of commencing peritonitis. The mouth of the sac was therefore closed with chromic gut, no abdominal drainage being provided. The sac and redundant skin were then rapidly dissected away and the wound was closed, with the exception of the lower end, where a small gauze wick was inserted. The patient bore the operation well, and the next day had not been sick, and was in good condition. For the next six days the temperature varied between the normal and 99½°, and there were no untoward symptoms; with the exception of a little discharge in the track of the gauze, the wound healed by first intention. On the seventh day the temperature rose to 100.2°, and on the eighth to 103°. The tongue became dry, and diarrhoea with slate-coloured stools was present. There was slight tenderness in the right iliac fossa, but nothing palpable, no sickness, and no abdominal distension. On the tenth day the patient passed a copious black stool, evidently haemorrhagic. After this the temperature gradually fell, reaching the normal on the nineteenth day, and her further recovery was uninterrupted. I am unable to say what exactly was the nature of this post-operative illness which supervened at the end of a week from the operation. I feared at the time there was septic thrombosis of the mesenteric veins leading from the anastomotic area. During her remaining stay in hospital she was fed on ordinary light diet, consisting of milk, arrowroot, chicken, fish, etc. Her bowels acted once a day, the stools being partly formed and rather light coloured. She slowly recovered strength, and left hospital on March 21st. Her weight on that date was 7 st. 10¾ lb. I have seen her about once a month since, the last time at the end of June, when the following note was taken: She is pale, and her face is a good deal thinner than when she left hospital. Her weight is 7 st. 4½ lb., a loss of 6¼ lb. since the end of March. The bowels act usually once a day, and are loose. She has a bottle of medicine containing small doses of opium, which she says she is obliged to take and keep the looseness of the bowels in check. She expresses herself as feeling well, with a good appetite, and is able to do the cooking for her son who lives with her. She takes ordinary light food, avoiding fruit and green vegetables. There is no doubt from her anaemic appearance and loss of weight that there is marasmus, and that she has difficulty in maintaining her nutrition. She has, however, I think, maintained her ground during the last month.



(*a*) Position of embolus. (*b*) Right colic artery giving off ileo-colic (*c*).

Remarks.

As regards the cause of this abdominal catastrophe, I think there can be no doubt that it was produced by a sudden and complete interruption of the blood supply to the area implicated. The patient rose from bed in the morning in her usual health; the attack supervened quite definitely and suddenly with the usual attendant symptoms of the acute abdomen, and fourteen hours afterwards some 9 ft. of small intestine, lying partly in the hernial sac and partly within the abdomen, were found in an irrecoverable condition.

I can conceive of no cause producing such an effect within so short a period except a complete and sudden deprivation of blood supply to the part. In the atheromatous condition of the cardiac valves, as evidenced by the loud systolic murmurs at both apex and base, a ready means to this deprivation was present, and the conclusion may be drawn that the case was one of gangrene due to embolism of the superior mesenteric artery. The anatomical distribution of the gangrenous area is in accord with this conclusion. Distally it ceased abruptly between 2 in. and 3 in. from the ileo-caecal valve. The ileo-colic artery, a branch of the superior mesenteric, supplies the junction of the small with the large intestine—the caecum and appendix. It frequently arises by a common trunk with the right colic. An embolus, therefore, lodged in the superior mesenteric just beyond the origin of the ileo-colic, or just beyond the origin of the right colic, if the latter gave off the ileo-colic, would cut off the blood sepply of the whole of the ileum, with the exception of the terminal 2 or 3 in., supplied by the ileo-colic. This was precisely the condition found at the operation. The whole of the ileum was gangrenous, with the exception of 2 or 3 in. in the immediate neighbourhood of the ileo-caecal valve, which were perfectly normal and separated by an abrupt line of demarcation from the remainder (Diagram). The fact that part of the gangrenous intestine occupied the hernial sac was accidental. A constriction was present in the bowel at the neck of the sac, but this, I think, was subsequent to the cutting off of its blood supply and the consequent enlargement and swelling of the gut above and below. As regards the length of intestine removed, 9½ ft., the case, I believe, constitutes a record of any published in this country. Five cases have been recorded from abroad, where greater lengths have been removed. Fantino and Monprofit

each record removal of 10 ft. 4 in., and Ruggi of 11 ft. successfully. Von Eiselberg removed 11 ft. 8 in., and the patient died, and Obalinsky 12 ft. 2 in., also with a fatal result. The largest amount removed with recovery from the operation is therefore 11 ft., or 18 in. in excess of that here recorded. Numbers of experiments have been performed on dogs with a view of drawing a conclusion, if possible, as to how much intestine a human being might reasonably be expected to be able to part with. These have led to different results. Senn, as the outcome of his experiments, came to the conclusion that excision of more than one-third of the small intestine was dangerous to life, productive of marasmus, and in this way eventually fatal. Trzebicky, on the other hand, found that resections of half the small intestine were well tolerated; resection of two-thirds was followed by incessant diarrhoea and inanition. Monari believes that his experiments prove that seven-eighths of the small intestine can be removed without serious interference with the metabolism. In these experiments the cases that have survived have exhibited a hypertrophy of the residual mucous membrane, which was found thicker and more richly studded with villi. Two out of three of these experimenters agree, therefore, that half the small intestine can be safely removed, Senn restricting the amount to one-third. In cases such as the one I have brought before you, in which the intestine was gangrenous, these experiments have not much more than an academic interest, inasmuch as it is obvious that the only chance of saving the patient from immediate death lies in the removal of the gangrenous gut, and we cannot stop to speculate as to whether what is left to him will be sufficient to maintain his nutrition. But it is satisfactory to have proof that removal of 9½ ft., or what is stated by anatomists as constituting about half the length of the small intestine, is compatible with life. It is now six months since the operation, and the patient is in fairly good health, and she told me the other day that she felt well. Still there is evidence of loss of flesh and marasmus, and a tendency to diarrhoea remains requiring opium to keep it in check. The age of the patient might also be naturally expected to influence the result. She was 59 years of age at the time of operation, and looked older, and probably the powers of hypertrophy and growth of new villi in her case are limited or entirely absent. Judging from this case and these considerations, I think it is a reasonable assumption that a younger patient would bear removal of as great a length of intestine as this without any disturbance of nutrition, and there are cases on record to support this assumption. Dr. Roswell Pack, for instance, in the *Buffalo Medical Journal* for April, 1903, has recorded a case of successful removal of 8 ft. 9 in. of gangrenous intestine, or only 9 inches less than the present case. The patient was aged 21, and a healthy individual. He recovered from the operation, and wrote eleven months later that "he weighed as much as ever he did, enjoyed good appetite, and felt himself in the best of health in every respect." A point that must not be overlooked is that the length of small intestine varies within wide margins, the variation being estimated as great as between 15 ft. and 33 ft. So that it is evident that, after removal of a given length, the amount left behind, which is really the vital factor, may vary considerably, and will go far to determine the success or failure of the result. Another noteworthy feature in the present case is that though the bowel withdrawn from the abdomen had a distinctly gangrenous odour, there was no sign of commencing peritonitis, and no peritonitis followed the operation.

This result must be attributed to the absence of delay in removing the offending mass, fourteen hours only having elapsed between the first onset of the attack and the operation. It is certain that within a very few hours longer the peritoneal cavity must have been invaded by micro-organisms through the walls of this damaged intestine with a resulting fatal intoxication. A circumstance in which the patient was fortunate was that it was possible to perform the entire operation outside the abdomen by utilizing the wide mouth of a large hernia, so that she was spared the shock of an abdominal section proper, and this no doubt assisted towards her recovery.

A word in conclusion as to the method of anastomosis. As has been emphasized over and over again, it is essential to success in dealing with these cases that the anastomosis be performed in bowel which, in the judgement of the operator, is above suspicion. I would suggest that an additional element of security lies in the closure of both ends of the divided gut, and the subsequent performance of a lateral anastomosis. Though the latter, when completed, may not look such a neat carpenter's job as an end-to-end join, it leaves no weak spot, and is especially indicated in cases where there may be any doubt as to the perfect soundness of the intestine. During the last few weeks, I have resected 20 in. of gangrenous small intestine in a woman aged 65, in a case of strangulated femoral hernia, adopting the same method of closing both ends of the gut, and performing a lateral anastomosis. The patient made an uneventful recovery.

N.B.—The patient died at the end of August, seven months after the operation.

INTESTINAL OBSTRUCTION.

By William Taylor, M.B.Dubl., F.R.C.S.I.,
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In a survey of abdominal surgery one cannot fail to be impressed by the fact that in all chronic conditions necessitating surgical intervention the operative mortality has been reduced almost to vanishing point, while the mortality attending operations for acute conditions has fallen considerably in all cases save that of intestinal obstruction. It is well recognized by general practitioners and surgeons alike that the earlier operations are performed for such a catastrophe as perforation of a gastric or duodenal ulcer the less the risk, yet it is astonishing how many cases of intestinal obstruction surgeons are first confronted with when the patients are almost moribund.

I feel sure I but echo the experiences of every surgeon whose work leads him to traverse at all frequently the intricate field of abdominal surgery, when I say we seldom cease to regret being compelled to operate in cases of intestinal obstruction when simple alleviation can alone result, or, worse still, when death must almost inevitably follow where cure might have been effected or life prolonged by earlier intervention. I trust I may not be considered presumptuous when I state that this paper is brought forward with the hope that the remarks I have to make may excite a discussion upon the subject that will lead to a better appreciation amongst general practitioners, to whose lot it generally falls to come first into contact in their initial stages with these cases, of the utter futility, nay, positive danger, of resorting to medicinal measures and enemata for their treatment. The genesis of the communication is the experience gained from the operative treatment of 35 cases of various types of intestinal obstruction. The time at my disposal necessarily prevents me taking the cases seriatim, consequently I shall simply take them in groups, and state briefly the conclusions I have formed as to the line of treatment which it seems to me will be attended with the best results.

The cases were as follows:

- 9 cases of intussusception (8 in young children and 1 in an adult).
- 3 cases of obstruction due to strangulation by a Meckel's diverticulum.
- 5 cases of obstruction due to strangulation by bands (acquired).
- 3 cases of obstruction due to acute angulation of intestinal coils from old-standing adhesive peritonitis.
- 1 case of internal hernia—a coil of gut passing through a hole in the great omentum and being strangulated.
- 2 cases in which the obstruction was found, on opening the abdomen, to have been due to Richter's hernia (in one case strangulation took place at the upper aperture of the crural canal, in the other at the obturator foramen, there being no evidence of hernia externally in either case).
- 12 cases of intestinal obstruction due to cancer of some portion of the colon.

In connexion with the first group—namely, acute intussusception—I am convinced that the best results will be obtained by treating every case by immediate laparotomy. Injection of water or oil is a procedure which I have never tried, and to which I have no intention of ever resorting. Clubbe, in a personal experience of 138 cases of intussusception in children, made it his invariable rule to try the effect of injection, but he is compelled to state that he has only found it effectual in 10 per cent. of the

cases. The odds are thus 9 to 1 that the attempt to reduce an intussusception by this method will fail. My chief objection to injection or inflation is the uncertainty that must exist until several hours subsequently as to whether the intussusception has been completely reduced. In this way valuable time may be lost. By immediate operation one can be absolutely certain about reduction, and the shock of operation, if the infant is properly anaesthetized and the operation not unduly prolonged, is not very great. If one works, as one should, upon the principle of "the greatest good to the greatest number," then, I think, immediate operation performed by a competent operator will unquestionably be attended by the best results. I am not aware of any acute abdominal condition more easy, nor, indeed, so easy of recognition, as acute intussusception, and I fail to see any excuse for failure to detect the trouble within, say, twelve hours after its onset. The mortality from this condition all round is well over 30 per cent. Recently a few surgeons have reported series of cases operated upon by them, showing reduction of the mortality to less than 20 per cent. The mortality is not a personal question so far as the operator is concerned, but depends almost entirely upon the length of time that elapses before operation is undertaken. Of my own cases all those operated upon within twenty-four hours after the onset recovered. One recovered from operation after being six days ill before being seen by me, but the case must be looked upon as subacute and quite exceptional, while one case died after operation performed three and a half days after the onset of the symptoms. My own mortality, therefore, in children has been all round 12½ per cent., but in cases operated upon within twenty-four hours it has been nil. My feeling, therefore, is that if every case of intussusception was recognized and operated upon within twelve to twenty-four hours of its occurrence by a competent operator, the mortality should not exceed 5 per cent., and would probably be less still. The operation under such circumstances should not take longer to complete than from ten to fifteen minutes, and my experience of young children is that they bear operations relatively as well as adults.

As regards strangulation by bands, whether congenital or acquired, I have little to say. As a rule, such cases are recognized earlier than other forms of obstruction, because the symptoms are generally urgent from the start and demand immediate attention—a medical practitioner being requisitioned within a very short time. In these cases early diagnosis, followed by early operative interference, will be attended by very satisfactory results. In this respect they differ considerably from the next group of cases in which obstruction was due to acute angulation following adhesive peritonitis, cases which are, perhaps, the most unsatisfactory in many respects a surgeon can be called upon to treat, as the operation is not infrequently prolonged, and the damage to the intestine is considerable, while the adhesions are extremely likely to re-form. The case of hernia through an opening in the great omentum presents no point of unusual interest beyond its rarity. The opening in the great omentum was evidently of recent formation.

The next two cases, in which strangulation of portion of the circumference of a loop of intestine took place, one at the abdominal end of the crural canal and the other at the obturator foramen, emphasize the importance of examining the pelvis and abdominal aspects of the hernial orifices when seeking the cause of obstruction.

The last group of cases, 12 in number, furnishes examples of an exceedingly serious type, especially when acute symptoms have supervened.

The method of treatment of cases of obstruction arising from stricture of the intestine, whether innocent or due to malignant disease, depends upon whether acute symptoms have developed and upon whether the obstruction is removable or not. In a case in which acute obstruction has supervened upon cancer of the rectum, colostomy is the only procedure by which relief can be given. In other cases in which acute symptoms are present, and in which the abdomen has been opened, our subsequent course will depend less or more upon the condition found. In a case of irremovable cancer found in the sigmoid flexure, for example, a permanent colostomy higher up must be performed, but if the irremovable mass occupies the caecum, ascending colon, hepatic flexure, or right half of the transverse colon, a permanent colostomy or enterostomy will then be attended with such suffering and misery, on account of the irritating nature of the fluid discharges, that death would be a welcome relief to the patient. Under such circumstances one must decide whether to perform an immediate short-circuiting operation, or temporarily drain the intestine and perform the short-circuiting at a later date, closing the temporary drainage opening at the same time. The patient's condition and the judgement of the individual operator will be the determining factors as to which of these procedures should be carried out. Personally, I should never perform an immediate short-circuiting in any really acute case, but would employ temporary drainage. The less one does in these acute cases, provided the intestine is drained, the better. In subacute or chronic cases due to irremovable cancer, if possible, one should always perform short-circuiting in preference to colostomy. Of course, the site of the cancer will largely determine the procedure that should be carried out, always bearing in mind the fact that a permanent false anus is often a most distressing condition.

In an acute case, if on opening the abdomen removable cancer is found, one of two procedures may be adopted:

1. One may perform temporary drainage above the site of obstruction, and at a later date open the abdomen, remove the cancer, and perform immediate anastomosis. The temporary drainage opening may be closed at the same time, or later as the operator thinks fit. Not infrequently it closes spontaneously after the continuity of the intestinal canal has been re-established.

2. One may make a fresh opening over the site of the cancer, withdraw the cancerous bowel through the opening, and let it be held there by the assistant until the central wound has been closed and protected. Then between clamps the cancerous portion with its attached mesentery is excised, after which Paul's tubes are tied into each of the divided ends of the intestine. The great disadvantage of the first procedure is, that if any length of time has to elapse after the primary operation of drainage is performed before the second step can be undertaken, the cancer may have so extended, or may have become so disseminated, that when the abdomen is opened for its removal it will be found impossible to attempt any radical procedure.

I know of a case in which temporary drainage was established in connexion with obstruction due to cancer of the upper end of the sigmoid flexure, which at the time was removable; but, on opening the abdomen some four or five weeks later with the object of removing it, the surgeon found it impossible to do anything further than short-circuiting so as to remove the inconvenience of a permanent artificial anus. In a case of simple stricture with acute symptoms, temporary drainage, followed at any time subsequently by resection of the stricture and anastomosis, is the proper course to pursue.

In chronic cases of obstruction the surgeon should get the intestinal tract evacuated as freely as possible, then open the abdomen, remove the cause of obstruction, and establish the continuity of the intestinal tract at once. In performing short-circuiting one should always cut across the upper or proximal loop and close the distal end. The operator can then decide for himself whether to implant the proximal end into the side of the bowel below, or close the proximal end also and perform lateral anastomosis between the two segments. This latter procedure is that which I prefer where possible.

So far as the treatment of primarily acute cases of obstruction is concerned, I am accustomed to describe this as differing according to the stage of the disease into which the patient has passed, and I describe three stages, the division between which is more or less arbitrary.

The first stage is that in which the patient is seen early; his general condition is good, and there is little or no distension. The second stage is that in which the case is not seen until later; the general condition is, however, good, but the abdomen is considerably distended. The third stage is that in which the case is seen very late; the general condition is bad, the pulse is feeble and perhaps intermittent, the abdomen is enormously distended, and the patient is profoundly poisoned by toxic absorption from his intestines.

In the first stage the stomach is washed out, a general anaesthetic is administered and the abdomen is freely

opened, the cause of obstruction is looked for and removed, after which the wound is closed by suturing in layers. The stomach is again washed out before the patient is returned to bed. It is more important, I believe, to wash out the stomach after, than it is before, operation.

In the second stage the stomach is washed out, a general anaesthetic is administered and the abdomen is freely opened, the cause of obstruction is searched for and removed as before. Then the distended intestines are evacuated of their septic contents as well as possible, the opening or openings into the intestines are carefully closed and washed with warm saline solution, after which the intestines are replaced within the abdomen and the wound closed as before. The stomach is thoroughly washed out before the patient is removed to bed.

In stage 3 the patient is not fit for any general anaesthetic. The stomach is washed out, and, after the injection of a little eucaine or cocaine and adrenalin into the subcutaneous tissue in the median line below the umbilicus, a small incision, not much larger than will readily admit the index finger, is made into the abdomen. One finger is introduced and swept round the inside of the opening in the hope that it may encounter the cause of obstruction, which might then be withdrawn and removed. In any case a distended loop is pulled forward, and being clamped by an assistant it is opened and a Paul's tube introduced and tied into it. A little gauze is packed round the gut and wound. No sutures are used, and the procedure is carried out as the patient lies in bed.

In indicating the line of treatment to be carried out in the second stage, I stated that the intestines should be evacuated of their contents as well as possible, subsequent to the removal of the cause of obstruction. This evacuation of the distended intestines of their septic contents is one of the most important points in the treatment of these cases, and though we may all agree upon the general principle of evacuating the intestinal contents, we must, I fear, admit that the process is one about which it is much easier to write or speak than to accomplish satisfactorily.

Simple puncture evacuates but a coil or two at most. Multiple punctures will unquestionably be more satisfactory, but will take up much more time—a very important factor so far as subsequent results are concerned—while the risk of infection is increased in proportion to the number of openings. Opening a coil and passing a soft rubber tube up the lumen of the intestine, a procedure recommended by Mr. Watson Cheyne, is not satisfactory—at least it has not been so in my hands. Then there is the method of Moynihan, of passing a glass tube up the lumen of the intestine until its outer end reaches the margins of the wound in the bowel. The tube and gut are then seized by an assistant and held firmly, so that no leakage occurs by the side of the tube. The surgeon then gently pulls the intestine on to the tube, and thereby empties the bowel a little higher up. Gradually more and more of the bowel is pulled on to the tube until it can take no more. Moynihan says it will thus be found that upon a tube 6 in. in length 6 ft. of bowel can easily be drawn. Above the highest point reached by the tube the contents of the bowel are milked down.

Lastly, there is the method suggested by me some years ago of washing out the entire distended intestine by introducing the nozzle of an irrigating tube into an opening made into the intestine high up—say, the upper part of the jejunum. A stream of warm saline solution is allowed to flow into the intestines, and thus irrigate the whole length of intestine between that opening and a second opening made about a foot or so above the site of obstruction. This procedure has the great advantage of washing out almost all the toxic contents of the distended intestines, thus leaving little to be absorbed except saline solution, but it unquestionably takes time, though not anything like so long as might be expected. On the whole, for bad cases in which time is an important factor, and in which success depends largely upon rapidity of operation, I think the plan suggested by Mr. Moynihan is the best.

The general mortality of intestinal obstruction is at least 40 per cent. Indeed, my own opinion is that the mortality all round is nearer 60 per cent., and yet this disgraceful state of things must in truth be largely attributed to the pernicious habit of meddlesome medication and delay, until the unfortunate patient is so profoundly poisoned by toxic absorption from his intestines, and exhausted to such an extent by pain and vomiting that he is quite incapable of withstanding even the simplest surgical procedure. It is hard to conceive any reasonable excuse for permitting a patient to drift into such a hopeless condition. It is wellnigh criminal. The moment obstruction is recognized surgical assistance should be requisitioned. In conclusion, it should be remembered that just as there is a tide in the affairs of men which, taken at the flood, leads on to fortune, so there is a time in the course of these cases within which operative interference will be attended by the most brilliant results; omit the opportunity this period offers, surgery need not expect any triumphs, while the unfortunate sufferer can only hope that death will come quickly and release him from his misery.

DIRECTION OF ABDOMINAL INCISIONS.

By A. Ernest Maylard, M.B., B.S.Lond.,
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It is doubtful whether any clinical aspect of a question can be regarded as wholly satisfactory unless it find a sound basis on anatomy and physiology. If any result of our work is really and permanently successful, it must be because, in the execution of our object, we conform to Nature's laws, and do nothing that hinders her recuperative efforts in effecting what is her sole prerogative. I shall therefore ask you, before dealing with the clinical side of my subject, to follow me while I refresh your memory upon certain anatomical and physiological facts connected with the structure and functions of the anterior abdominal parietes.

Anatomy and Physiology of Abdominal Parietes.

If you will look at these diagrams you will be able better to appreciate the particular points to which I wish to especially direct your attention. They were kindly made for me by Dr. Macphail, late Professor of Anatomy of St. Mungo's College, Glasgow, now Lecturer of Anatomy at Charing Cross Hospital, London. You will see in this diagram (Fig. 1) the modes of distribution of the muscles, their sheaths, and methods of attachment. The three great abdominal muscles—the external oblique, the internal oblique, and the transversalis—are fleshy at the side of the abdomen, but, as they extend forwards anteriorly, they end in what is technically known as their aponeuroses. While the fibres of the fleshy parts of these muscles assume different directions, the fibres of the aponeurotic portions take practically the same course—that is to say, for the greater part they run transversely only taking a somewhat oblique direction as they, approach the median line for about two inches above the pubes, and for about the same distance below the ensiform cartilage. Further, while the fleshy portions of each muscle form distinct and separate layers, the fibrous parts are inextricably united together at the outer border of the rectus. At this particular line—the so-called linea semilunaris—this conjunction of fibres splits longitudinally, and interpolated in this division courses the rectus muscle. A reunion of the aponeurotic fibres takes place at the inner margin of the rectus; and, finally, a particularly firm junction is effected between the aponeurosis of each side. This line constitutes the linea alba. It will be remembered that this division of the conjoined aponeuroses does not take place below a point situated about midway between the umbilicus and the symphysis pubis. Here the fibres pass in front of the respective recti muscles, a well-defined lunated edge, known as the semilunar fold of Douglas, being left posteriorly to represent the lower margin of the divided sheath.* When, therefore, these three powerful muscles contract, the whole force of their action is brought to bear upon their long central aponeurotic tendon.

The remaining muscles of the anterior abdominal parietes are the two recti, which strictly possess no sheath of their own, but are merely enclosed in the split tendons of the oblique and transverse muscles. But there is this fact, to which I wish to direct especial attention—that intersecting the rectus muscles are certain aponeurotic lines, known as lineae transversae, and the special point

* This is the description usually given in textbooks upon anatomy, but from practical operative experience a well-marked aponeurotic sheath is often found extending down to the pubes.

is that these fibrous bands "are firmly united to the anterior wall of the sheath of the muscle" (Quain). These tendinous intersections are at least three in number, placed one opposite the umbilicus, another on a level with the ensiform cartilage, and a third intermediately between them, with sometimes a fourth and a fifth placed below the umbilicus. Thus, then, contractions of the recti may be considered segmental, each portion between a pair of lineae transversae, acting practically as a separate muscle. The clinical bearing of this fact will be alluded to later.

Will you now look at this diagram (Fig. 2) which represents the vascular, nerve, and lymphatic supply of the anterior abdominal parietes. With the exception of the nerves which course forwards, and therefore have a more or less transverse direction, the blood vessels and lymphatics have a course upwards and downwards. Towards the lateral aspects, however, the blood vessels and lymphatics take a similar course to the nerves and pass backwards. The arterial supply of the antero-lateral parietes is particularly abundant through the free anastomosis which takes place on each side between the deep epigastric below and the internal mammary above. Both these vessels also freely anastomose laterally with the intercostal, lumbar, and deep circumflex iliac arteries; but as their respective branches approach the middle line, they become mere capillaries which do not communicate with those of the opposite side. Thus, then, the linea alba is practically evascular, and equally destitute of lymphatics. As regards the vascular and lymphatic supply of the cutaneous and subcutaneous structures of the anterior abdomen, the middle line, unlike the deeper corresponding aponeurotic portion, does possess these vessels, only very sparsely distributed.

I now pass to the clinical aspect of the subject. A little more than eight years ago I published in the *Lancet* (1899, vol. i, p. 952) a case of dilatation of the stomach, for which gastrorrhaphy was performed. It happened in the case that owing to considerable internal haemorrhage from the exploratory incision in the stomach I was obliged to reopen my abdominal wound. This latter had consisted of a median incision between the ensiform cartilage and the umbilicus, and a second one passing transversely to the right, dividing a considerable portion of the right rectus muscle. The wound healed, with a result which showed a perfectly secure and non-yielding cicatrix of the transverse incision, but marked tendency to hernial protrusion in the median one. It seemed at first as if this were directly opposed to what one ought to have expected, for the free division of the muscle with its tendency to retraction and separation of its margins ought to have left a gap much more conducive to a hernial protrusion than in the case of the median line, where only fibrous tissue had been severed. Further reflection brought to mind other instances of secure non-giving cicatrices in which the muscle had been divided. I refer more particularly to the left oblique subcostal incision which I, in common with others, have employed for performing cholecystostomy. It was these facts that led me to consider more carefully the relative merits of incisions carried through the abdominal parietes.

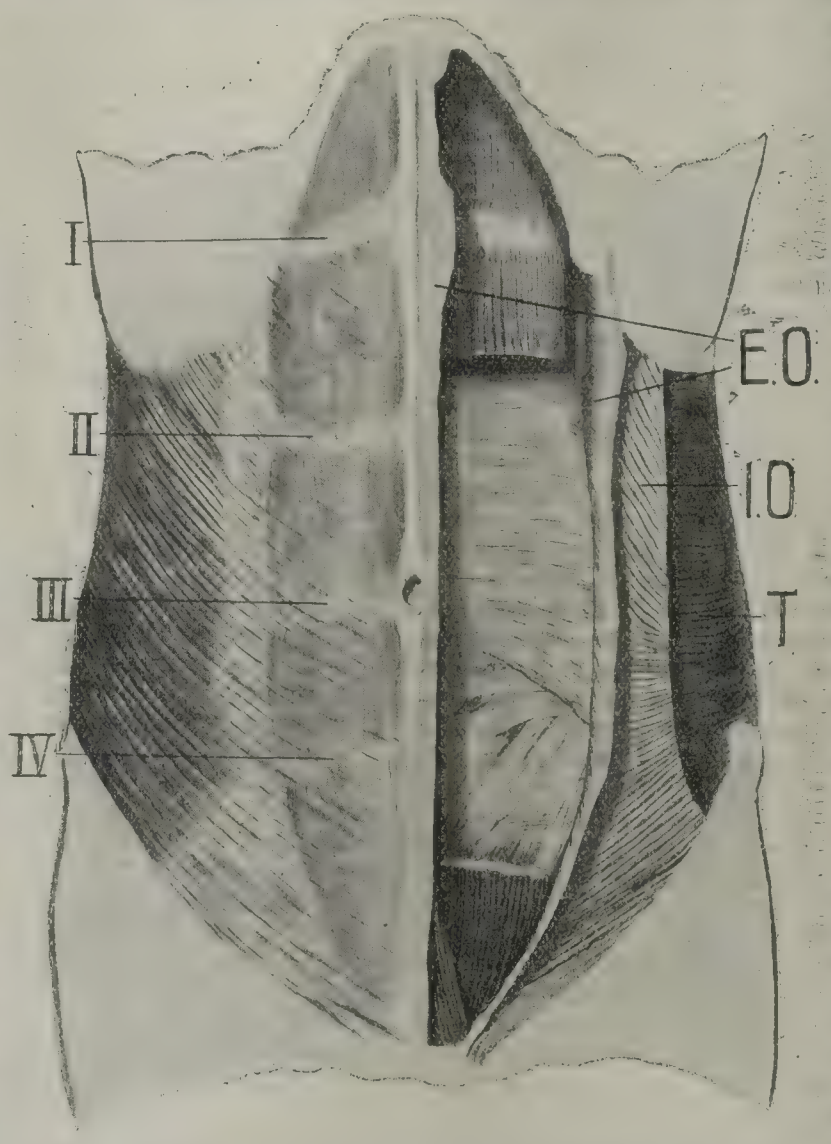

Fig. 1.—Muscles and aponeuroses of the anterior abdominal parietes. I, II, III, IV, Lineae transversae; E.O., external oblique and anterior sheath of rectus removed to show rectus muscle (partly removed) and posterior sheath with fold of Douglas, the sheath being continued downward to pubes: I.O, internal oblique also partly removed to show T., transversalis muscle. (Professor Alexander Macphail.)

If a firm, well-organized cicatrix depends upon the absence of tension between the freshly united margins of a wound, upon the free supply of blood to and from the part, and upon a ready absorption of exudates by means of abundantly distributed lymphatics, then it may be asked, How are these conditions best fulfilled in the case of incisions carried through the anterior abdominal parietes? Clearly, from purely anatomical and physiological considerations, as has above been shown, the median line possesses to a less degree than any other part these assumed requisite conditions. On the other hand, if we consider the line in which these particular conditions are fulfilled to the utmost extent, it must undoubtedly course more or less transversely. An incision, for instance, which runs transversely outwards from the neighbourhood of the umbilicus will, in the first place, course in the direction of and parallel to the fibres of the great aponeurotic tendon of the oblique muscles; it will sever several branches of the deep epigastric or internal mammary vessels, and will also divide innumerable ramifications of the lymphatics. As the aponeurosis is not cut crossways, as in a median incision, contractions of the great oblique and transverse muscles do not put tension of a separation character upon the margins of the wound. Further, the abundant blood supply leads to a more rapidly-formed cicatrix, and to a better organized one, than where there is a deficiency of good nourishment; and such exudation as necessarily takes place between the edges of all wounds is the more readily taken up and removed by means of the access to more distant parts which the large supply of lymphatics affords.

But the question which very naturally presents itself is, What about the recti muscles? Theoretically, it would certainly be reasonable to suppose that a complete transverse division of the fibres of one or both recti must leave a weakened scar. Practically, this is not necessarily so, as I shall presently show by several examples. When a rectus is divided its fibres naturally retract, but only to a very limited extent, for the reason that only one of the segments has been divided—that is to say, only so much of the muscle contracts as lies between two lineae transversae. It will, therefore, be understood that separation of the fibres is likely to be greater below the umbilicus than above, because of the probable absence of any well-marked lineae intersecting the muscle between the umbilicus and the symphysis. What, therefore, happens in the process of healing is pretty much what already exists naturally—that is to say, an artificial or adventitious linea transversa is constituted, and of a particularly firm character, especially above the umbilicus, for the fibrous adhesions are formed, not only between the divided muscular margins, but between these margins and the overlying aponeurosis.

So far I have contrasted anatomically and physiologically the relative merits of the median and transverse incisions, but a few words are necessary on vertical incisions other than median. There are not wanting advocates for incisions carried downwards slightly on one or other side of the median line, and others again who advocate incisions coursing along the linea semilunaris.

These have their advantages over the median in that they course in regions where the vascular and lymphatic supply is better; but, in common with the median, they involve the division of the fibres of the mid-abdominal tendon transversely. It is sometimes also argued against them that the nerve fibres going to the rectus are severed, so that this muscle is weakened, and disposed thereby to lead to hernia. The conclusion is, I believe, purely theoretical, for so long as the sheath of the rectus can be regarded as intact, a paralysed segment of the muscle will neither cause or predispose to hernia.

I shall now venture to answer clinically the two questions which most naturally present themselves. The first is, Is there any good reason for departing from the old-established and almost stereotyped practice of opening the abdomen by a median incision? And the second is, What advantages are offered by employing the transverse incision? It will at once be observed that the two questions involve answers that may be considered as applicable to the one as to the other, for to give one reason for departing from the median incision is to give one advantage for adopting the transverse. I shall therefore not attempt to differentiate very specifically.

Any surgeon who has set himself the task of carefully investigating the results of his median abdominal incisions not less than eighteen months or two years after their execution, cannot fail to have been impressed with the number of post-operative herniae that existed. Successful as everything may appear at the time, and for some weeks or even months after, the subsequent giving of the cicatrix and the formation of a hernia become a source of constant and lifelong discomfort, if not sometimes of positive danger. It is a proof, at least, that success, in one respect, has not been so complete and lasting as desired; and while the disease for which the operation was primarily executed may have been cured, it has been followed by another trouble, the direct result of the means employed for treatment of the original complaint.

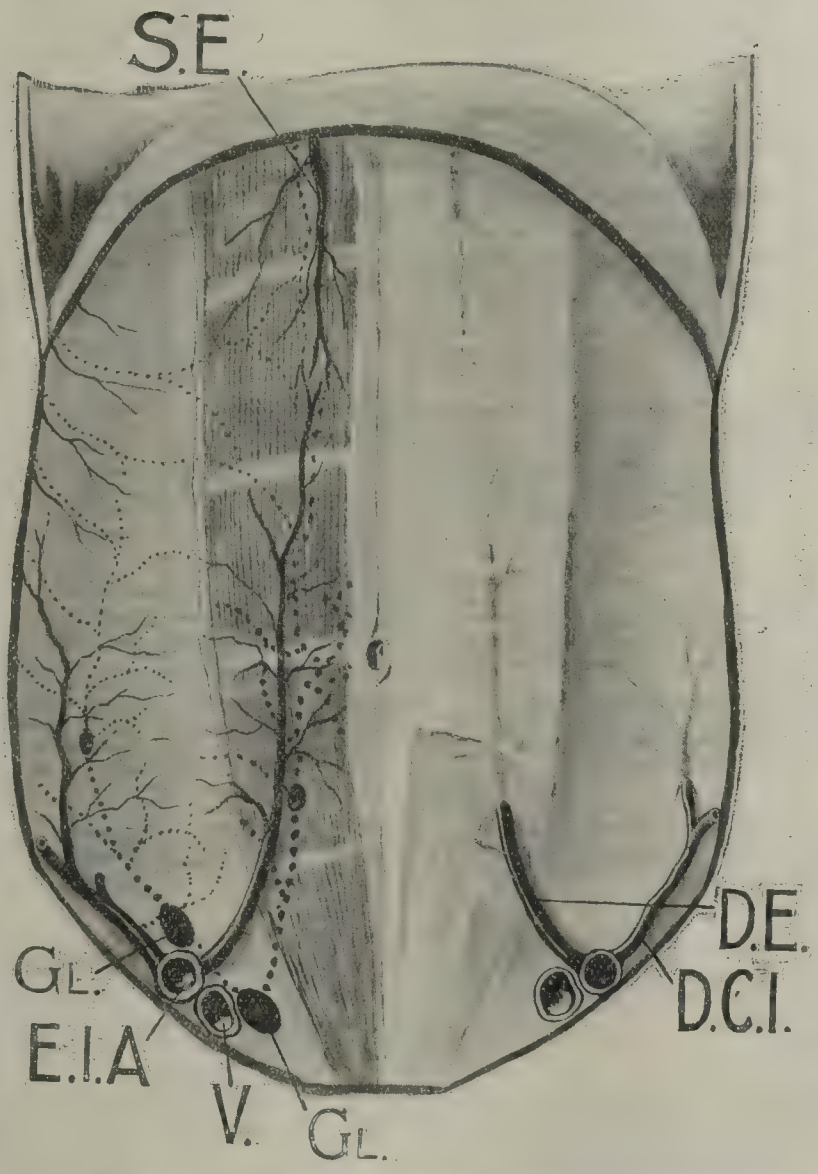

Fig. 2.—Blood vessels and lymphatics of the anterior abdominal parietes. E.I.A., External iliac artery; V., vein; D.E., deep epigastric artery; D.C.I., deep circumflex iliac artery; S.E., superior epigastric artery; GL., lymphatic glands. (Professor Alexander Macphail.)

One reason, therefore, for departing from the median incision—and I might even add the chief reason—is an endeavour to avoid this late result of post operative hernia. In certain cases, as, for instance, the removal of the female pelvic viscera when involved in extensive disease, the room afforded by the subumbilical tranverse or curvilinear incision affords access of a much more ready nature than when the median incision is employed. And ready access to a part, it must be remembered, greatly facilitates all details in execution, and expedites the performance of the operation. The transverse or oblique incision for operations upon the stomach give readier access to all parts between the pylorus and the cardiac extremity than can be attained by any vertical incision; and I am disposed to believe also that the right oblique subcostal incision renders more accessible the common bile duct and the duodenum than does any vertical incision.

The median incision has certainly some advantages over the transverse, in so far as it concerns the time occupied in opening and closing the abdominal cavity; and, when time is a serious consideration in any case, there can be no question as to the propriety of selecting the middle line. In the opening there may be no vessels to tie, and in the closing only a single series of through-and-through interrupted sutures to introduce. For cases of acute intestinal obstruction, acute perforation, advanced malignant disease, or any other condition where the patient's powers are undermined, rapidity of operation is imperative, and median incisions, therefore, the right ones to employ.

Should, for some reason or other, the abdominal parietal wound become septic—and no matter how great our precautions, they will sometimes—the advantage of the transverse is striking. I believe I am right in saying that it is quite the exception for a median incision which becomes septic to form a cicatrix that will not subsequently give and be the source of a post-operative hernia. On the other hand, I can assert most positively that a badly septic transverse incision may form an absolutely sound non-giving cicatrix. I have had evidences of this, or I should not venture to speak so forcibly. But the reasons given for the good quality of the transverse cicatrix, the result of healing by first intention, become applicable even with greater force to those cicatrices which have healed by granulation. It is that the cicatrix becomes well organized by reason of the rich vascular supply and the ready absorption by the abundantly distributed lymphatics, of the inflammatory exudates, anatomical conditions, as already shown, which do not exist in the middle line.

I have now answered my questions, and given what I think may be fairly considered good anatomical and physiological reasons for in certain cases preferring transverse to vertical, and more particularly median, incisions; and I now propose to introduce the only sure proof of the value of any line of treatment, the test of practical experience. With the kind aid of my resident infirmary assistant, Dr. McNeil, and one of my staff nurses, Sister McMartin, I was enabled to obtain a personal inspection of several cases in which I had adopted the transverse or curvilinear incision. In order that my investigation might be a perfectly fair and impartial one, with no attempt at selection, I sought to see all cases from the first case up to the last that would reach a period of about eighteen months ago. My object was to examine only those cases in which not less than eighteen months had elapsed since the execution of laparotomy. A large number of cases of antero-lateral oblique incisions were executed above the umbilicus for either operations upon the stomach or upon the gall bladder and ducts. These I did not include in the present inspection, for they have stood the test of time, and proved most clearly that the rectus and its sheath may be entirely divided and a completely sound cicatrix result. And, still further, these incisions are well known and frequently practised by other surgeons, thus establishing their right to a recognized position in the technique of abdominal surgery.

Lest I should be taken as speaking too optimistically or too confidently on the value of these particular incisions, it should be borne in mind that failures will occasionally be met with; but in nearly every instance some reasonable

explanation is forthcoming. In some cases the interrupted sutures used for uniting the edges of the aponeuroses have led to irritation, and been slowly ejected, by which means the apposing margins of the wound have been allowed to gape. In others, again, the patient has been permitted to rise too soon; or, what is much worse, to engage too soon in active work or exercise. These too latter causes will be found to be probably among the commonest; and when brought to bear upon wounds that have healed by granulation and not by first intention, they are almost certain to be followed by a weak cicatrix, with its attendant ills of a ventral hernia. Continuous post-operative vomiting or coughing must be regarded as seriously detrimental to the formation of a secure cicatrix.

The cases, then, which were inspected, and which are classified in the table, are those in which the incisions were carried in either a transverse or curvilinear direction across the abdomen below the umbilicus. In carefully examining the cases in the table, it will be noticed that in the first column are the number of the cases; and

Table of Cases of Laparotomy Performed by Subumbilical Transverse or Curvilinear Incisions, with the Condition of the Cicatrices at Periods varying from 18 Months to 3 Years.

No.	Name.	Age.	Disease and Operation.	Nature of Incision.	Date of Operation.	Period since Operation.	Condition of Cicatrix	Remarks.
1	Helen McE.	49	Uterine fibroma; panhysterectomy	10 in. curvilinear, 1½ in. above pubes; both recti sheaths and muscles divided	May 6th, 1904	3 years	Perfect; no sign of yielding	
2	Mrs. McG.	66	Uterine prolapse: ventrifixation	3 in. transverse, 1½ in. above pubes; division of recti sheaths; separation of recti muscles	May 30th, 1904	3 years	Perfect; no sign of yielding	
3	Mrs. B.	52	Uterine prolapse: ventrifixation	Same incisions as No. 2	May 30th, 1904	3 years	Perfect: no sign of yielding	
4	Mrs. C.	42	Placental polypus; hysterectomy	4 in. transverse, 2 in. above pubes; both recti sheaths and muscles divided	Aug. 31st, 1904	2 years 9 months	A hernial protrusion which is prevented by median pressure; no bulging through either rectus muscle	About 14 days after operation she developed a pleurisy of the right side, with a temperature reaching to 102° and 103°.
5	Mrs. M.	55	Gall stones; cholecystostomy	4 in. curvilinear, 1 in. below umbilicus; both recti sheaths divided: subsequently the right limb carried vertically upwards almost to the costal margin	Sept. 13th, 1904	2 years 8 months	The curvilinear cicatrix good, but the extension limb vertically upwards has given, and a well-marked hernial protrusion exists	The preliminary incision was made for exploratory purposes, the symptoms not being sufficiently distinctive. Gall stones being detected, the incision was carried upwards to admit of a cholecystostomy.
6	Kate S.	12	Intestinal obstruction from band: laparotomy	3 in. curvilinear, 1½ in. below umbilicus; right rectus sheath and muscle divided	Sept. 19th, 1904	2 years 8 months	Perfect; no sign of yielding	
7	Grace S.	43	Uterine fibroids: panhysterectomy	7 in. curvilinear, 1½ in. above pubes; both recti sheaths divided; right rectus hali divided, left wholly	Sept. 20th, 1904	2 years 8 months	A general and uniform protrusion of the whole lower part of the abdomen	Left the infirmary one month after operation with apparently a firm cicatrix; a waitress by profession.
8	Mrs. K.	34	Disease of ovaries and tubes: double oöphorectomy and salpingectomy	Right "gridiron" incision, with division inwards of fibres of right rectus sheath	Dec. 2nd, 1904	2 years 6 months	Perfect; no sign of yielding	
9	Mrs. M.	26	Disease of ovaries and tubes; pelvic peritonitis; great matting of parts: double oöphorectomy and salpingectomy	5½ in. curvilinear, 2 in. above pubes; both recti sheaths divided, and left rectus muscle partly divided	March 2nd, 1905	2 years 2 months	Perfect; no sign of yielding	The abdominal wound became badly septic, and it was 2 months before the wound healed.
10	Mrs. McF.	58	Uterine fibroids and ovarian cyst; panhysterectomy	6 in. curvilinear, 2 in. above pubes; both recti sheaths and muscles divided, and 1 in. of each side of the abdominal muscles	March 30th, 1905	2 years 1 month	Hernial protrusion for about 2 in. in mid-line; on each side cicatrix good and non-yielding, well shown when attempting to rise from reclining position	The wound suppurated, and the patient was continuously troubled with a cough after operation.
11	Mrs. A.	60	Ovarian cyst; ovariotomy	6 in. curvilinear, 2 in. above pubes; recti sheaths divided and recti muscles separated	March 31st, 1905	2 years 1 month	Perfect; no sign of yielding	
12	Margaret McC.	46	Ovarian cyst; ovariotomy	6½ in. curvilinear, 1½ in. above pubes; recti sheaths divided and recti muscles separated	June 4th, 1905	2 years	Perfect; no sign of yielding	
13	Agnes B.	36	Uterine fibroids: hysterectomy	4 in. curvilinear, 1½ in. above pubes; both recti sheaths and a few fibres of left rectus muscle divided	July 15th, 1905	1 year 10 months	Perfect; no sign of yielding	Wound suppurated; left infirmary at end of seven weeks with wound healed.
14	Mrs. S.	38	Left ovaritis; oöphorectomy	4 in. curvilinear, 2 in. above pubes; both recti sheaths divided; muscles separated	Sept. 7th, 1905	1 year 8 months	Perfect; no sign of yielding	Patient had a child three months ago.
15	Lizzie S.	37	Uterine fibroids; hysterectomy	4 in. curvilinear, 2 in. above pubes; both recti sheaths wholly and recti muscles partially divided	Sept. 29th, 1905	1 year 8 months	Perfect; no sign of yielding	Some purulent discharge occurred at the left extremity of the wound.
16	Mrs. C.	38	Carcinoma of uterus; panhysterectomy	8 in. curvilinear, 2 in. above pubes; both recti sheaths wholly and the muscles partially divided	Dec. 26th, 1905	1 year 6 months	Perfect; no sign of yielding	Some induration and ulceration about the vaginal cicatrix (recurrence?).

here it may be remarked that 41 operations were performed in which these particular incisions were executed within the required period. From various causes, well known to those who seek to trace the history of old cases, I was only enabled to see 16; but I think this number will be sufficient for the purpose. All these cases will be found briefly recorded in the table.

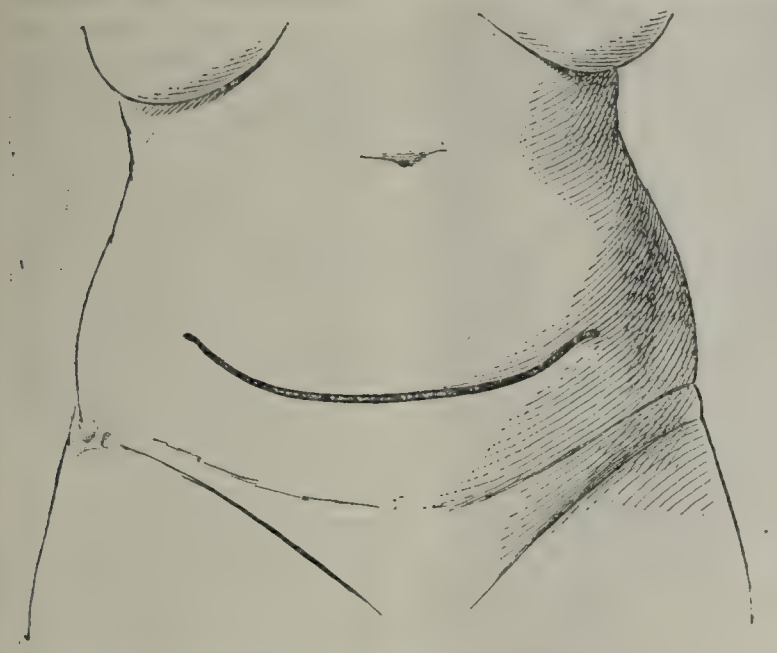

Fig. 3.—Ten-inch curvilinear incision for the removal of a large uterine fibroid (see Case 1 in table). (From a photograph taken by Dr. John Anderson.)

The chief interest of the table naturally centres upon the column headed "Condition of Cicatrix." In every instance in which the recti sheaths were alone divided the cicatrix was perfect (Nos. 2, 3, 8, 11, 12, 14); where, in addition, to the sheaths, the recti muscles were more or less divided, six presented perfect cicatrices (Nos. 1, 6, 9, 13, 15, 16), the remaining four presented the following features: No. 4 developed a pleurisy after the operation with temperatures of 102° and 103°; this may have led to some weakening of the cicatrix, but it was interesting to note that although the recti muscles were divided, the bulging did not take place through them but through the middle line. No. 5 was particularly interesting, the central curvilinear incision involving the division of the rectal sheaths, and the right rectus muscle had left a secure cicatrix; but where the incision had been extended vertically upwards, a weakened cicatrix had resulted, with a well-marked hernial protrusion. No. 7 was a distinct failure, and I am at a loss to explain it, except on the ground that the patient was allowed to return to her duties as a waitress too soon after her operation. The constant strain involved on the lower part of the abdomen by continuous standing, and lifting furniture, etc., one can well understand might act very deleteriously on a cicatrix that had not had sufficient time to become well organized.

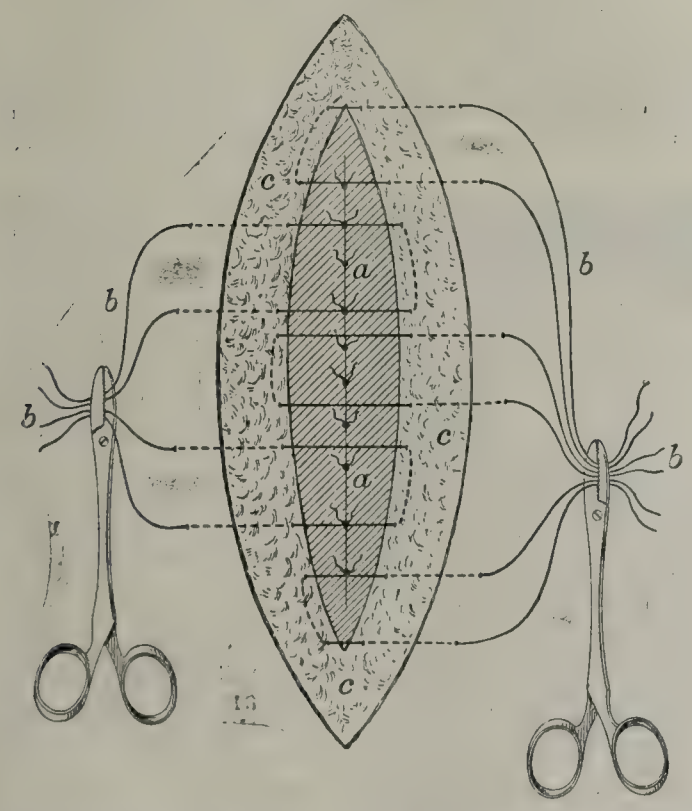

Fig. 4.—Mattress sutures *b*, *b*, *b*, *b*, inserted ready for tying; *a*, *a*, series of interrupted aponeurotic sutures; *c*, *c*, *c*, raw edges of skin flaps.

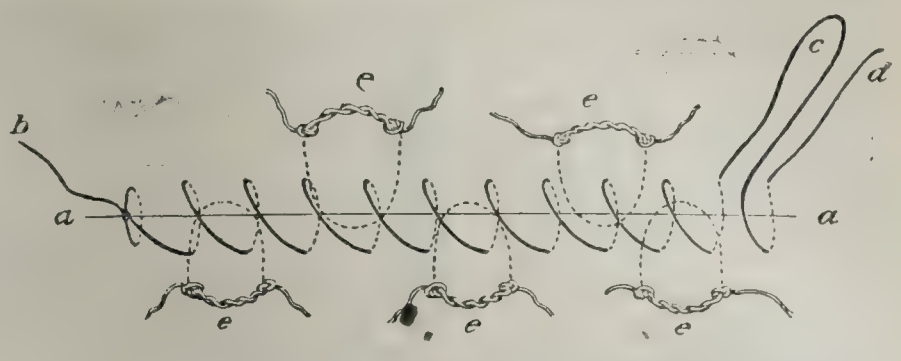

Fig. 5.—Shows the appearance of the stitches when the wound is completely closed. *a*, *a*, Line of incision; *b*, continuous coapting suture with *c*, loop, and *d*, end left long for finishing knot; *e*, *e*, *e*, *e*, *e*, loops of mattress sutures.

In striking contrast to this case is No. 1, where a panhysterectomy was also performed, and where similarly both recti sheaths and muscles were divided. The result in this case was perfect. (See Fig. 3.) No. 10, the last of these four cases, suffered from a troublesome cough after the operation, and also from some suppuration of the wound. Extensive as was the division of the sheaths and muscles in this case, extending as the cut did for 1 in.

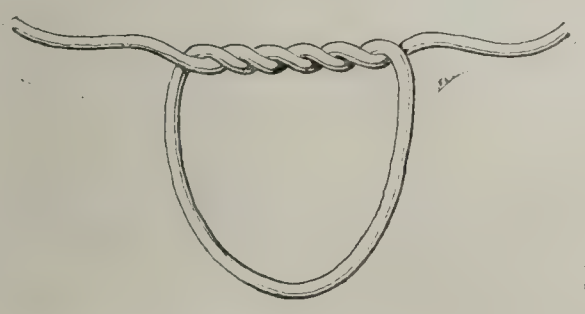

Fig. 6.—First stage in tying mattress suture.

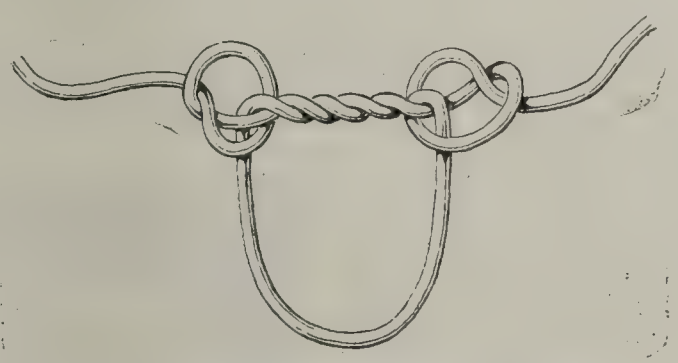

Fig. 7.—Second stage in tying mattress suture.

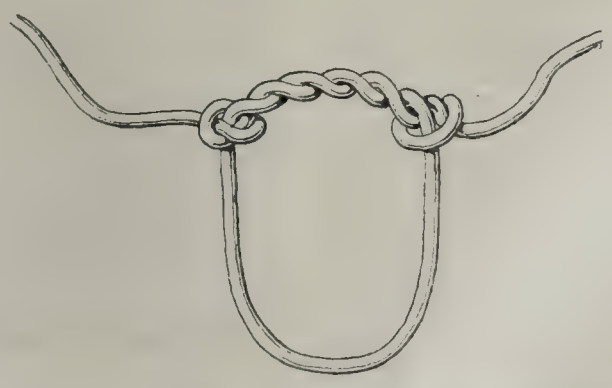

Fig. 8.—Completed stage in tying mattress suture; shows looping of the suture between the two knots.

beyond the rectus on each side, the lateral parts of the cicatrix were secure, the hernial protrusion occupying the mid 2 in. of the incision. Before leaving the table, I would like to draw special attention to case No. 9. The operation necessitated dealing with a septic condition of the pelvic organs; both recti sheaths were divided, and the left rectus muscle partially. The wound became badly septic, and took a couple of months before it healed. As stated, this cicatrix when seen two years and two months afterwards was perfect and non-yielding. Thus, then, in reviewing these cases, there is only one that can be fairly considered as distinctly unsatisfactory (No. 7); but I believe this is not without its value in teaching that in all extensive transverse incisions ample time must be allowed for the organization and consolidation of the cicatrix.

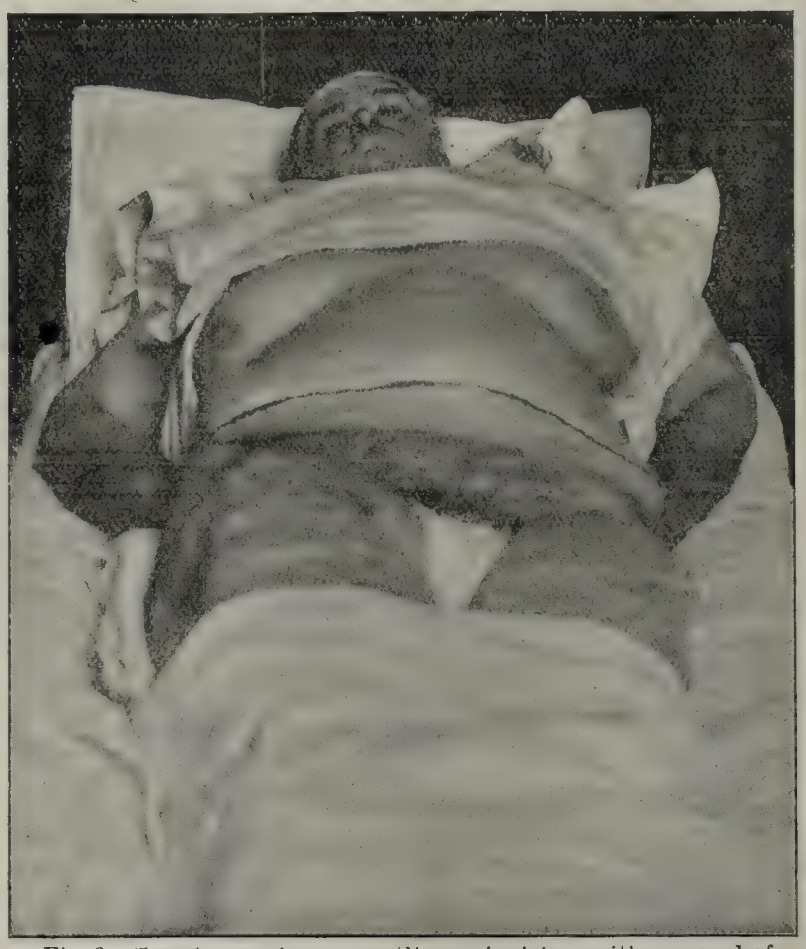

Fig. 9.—Twenty-one inch curvilinear incision, with removal of 10 lb. 11 oz. of adipose tissue. Operation for large umbilical hernia. (Photograph taken by Dr. John Anderson.)

THE TECHNIQUE.

Before summarizing the conclusions which I think the above considerations and cases warrant, I wish to indicate briefly certain details in the technique of transverse or curvilinear incisions.

In incisions above a line indicated by the semilunar fold of Douglas, that is to say, midway between the umbilicus and the symphysis pubis, no attempt should be made to separate the peritoneum from the posterior layer of the sheath of the rectus. Nor should any such attempt be made when, as not infrequently happens, there is a sheath lining the under surface of the rectus from this fold down to the symphysis. Absorbable ligatures are used in all cases for deep suturing; and my own preference is for chromicized catgut carefully selected, so that, when soaked for twenty minutes in a 1 in 40 solution of carbolic acid, it is perfectly pliable. All bleeding points are twisted; but for such as require ligature, properly prepared plain gut is used. The stitching is by serial layers, the sutures being interrupted. The first series takes up the posterior sheath of the rectus and the peritoneum. The second series draws together the divided end of the muscles. I may mention that this step in the procedure is very variable in its results; sometimes the muscle edges come well together, while at other times it is not so satisfactory, and when this is the case it is better to transfix the muscle with the sutures that are used for uniting the margins of the anterior rectal sheath. As these stitches are passed they are made to catch up just the edges of the posterior sheath with the object of closing the space which is sometimes left between the cut, somewhat retracted edges of the divided muscles. Into this space, when it exists, blood and serum is liable to collect, and later it makes its way out through the skin wound. Not that it appears to impair the subsequent soundness of the cicatrix, but it is as well to avoid it if possible. Even supposing, as I think happens in some cases, that the stitches cut their way through in the course of a few hours, they may have held long enough for blood stasis to have taken place, and so prevented the accumulation of exudates in any space that might temporarily exist. When the cutaneous and subcutaneous tissues do not exceed ½ in. in thickness a continuous silk suture will sufficiently coapt the cut edges; but when we are dealing with wounds which exceed this, I am accustomed to adopt a particular method of mattress suturing. It is best understood by a reference to the diagrams. (See Figs. 4, 5, 6, 7, and 8.) The stoutest strands of silkworm gut are selected. A large curved cutting needle threaded with one strand enters the skin about 1 in. outside the cut margin, sinks down obliquely inwards to the aponeurosis, crosses the floor of the wound, enters the opposite side, and takes a circular grip of the subcutaneous fat, re-enters the edge of the same side, and makes its exit through the skin about the same distance from the wound, and about 1 in. from it. This is then tied in the way shown in the diagram. The result of such a stitch is that it approximates the deep parts of the wound and therefore obliterates any possible space; and, further, when tied does not cut off the blood supply to the skin margin embraced by it. As indicating the excellent healing which results in extensive transverse incisions involving skin and subcutaneous tissues, I would refer to three cases operated upon for umbilical hernia. As regards the deep structures, I would merely say that the aponeurotic opening was closed by fixing an upper aponeurotic flap transversely over a lower. All three patients were enormously fat, with pendulous abdomens. The illustrations (Figs. 9 and 10) show two of the cicatrices taken from photographs of the patients. In one—a woman, aged 53, weighing 14 st. 6 lb.—the incisions were 21 in. long, enclosing an elliptical mass of skin and subcutaneous fat, which, after removal, weighed 10 lb. 11 oz. In the other case—a woman, aged 42, weighing 15 st. 9 lb.—the corresponding transverse incisions measured the same, and the weight of the skin and fat removed was 6 lb. 2 oz. All three cases were perfectly successful, and the first case, in which over 10 lb. of adipose tissue was excised, showed at the end of four years a perfect non-yielding cicatrix. The other two cases were operated upon comparatively recently.

Fig. 10. Twenty-one inch curvilinear incision, with removal of 6 lb 2 oz. of adipose tissue. Operation for umbilical hernia. (Photograph taken by Dr. John Anderson.)

CONCLUSIONS.

I will now briefly give the conclusions which I think may be reasonably drawn from what has been said:

1. When time is not of paramount importance, more permanently secure cicatrices result from transverse than vertical incisions, whether median or extra-median.

2. Transverse incisions afford more room for the treatment of pelvic diseases, and are also better for exploratory purposes.

3. Vertical incisions involve the division of fewer blood vessels, and the apertures can be closed by a single series of through-and-through interrupted sutures. For these reasons, therefore, they can be executed much more expeditiously than the transverse, and should be employed in all cases where time is a serious consideration.

4. In dividing the sheath of the rectus, the chief end to be aimed at is to carry the incision as much as possible in the line of the fibres of the aponeurosis. Thus, in the upper part of the abdomen for, say, 2 in. from the xiphoid, the incisions should course obliquely from above downwards and outwards. In the lower part of the abdomen, for, say, 2 in. from the symphysis pubis, the incisions should be carried obliquely upwards and outwards. In the central part of the abdomen—that is, between those parts just delineated—the incisions should be transverse. The diagram (Fig. 11) represents these various incisions.

5. If sufficient room can be obtained by separation of the recti muscles after division of their sheaths, the fibres of these muscles should not be cut; and when division is

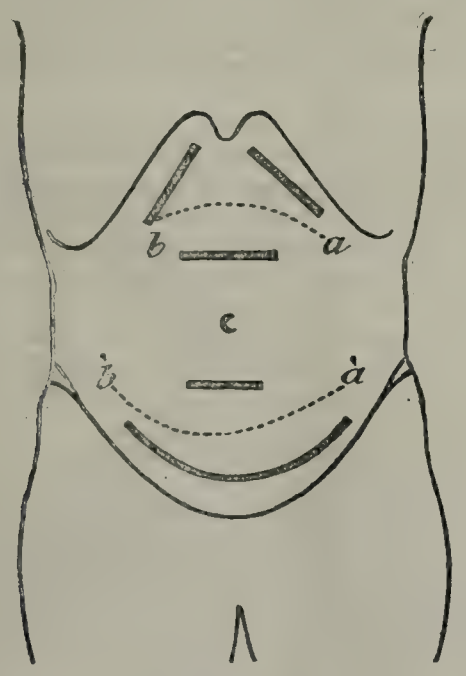

Fig. 11.—Diagrammatic representation of oblique, transverse, and curvilinear abdominal incisions. Above and below the dotted lines a—b and a'—b' the incisions are curved or oblique; between these lines, transverse.

necessary it should be carried obliquely, so as, if possible, to leave some of the outer fibres undivided.

6. Serial suturing should be employed, and particular attention should be given to the accurate coaptation of the edges of the divided aponeurosis.

7. No operation should be performed, if the exigencies of the case do not otherwise demand it, when the patient has a cough which it is possible to cure or alleviate.

8. Four weeks should be allowed, at least, after the operation for rest in the dorsal or semirecumbent position, and two months more before any undue strain is exercised on the wound. In wounds which become septic, and therefore heal by granulation, six weeks to two months should be allowed for complete rest in the dorsal position.

Like not a few others who have employed these incisions, I was unaware until after I had practised them that the proposal to depart from the old methods of median cuts was no new one. In 1904 Lewis A. Stimson, of New York, wrote an article in the *Annals of Surgery* (vol. xl, p. 178) dealing with the subject of transverse incisions; and he, like myself, discovered also that others had preceded him in the practice. Numerous references are given by Stimson to foreign surgeons who advocate the transverse incision. Stimson, who argues much as I have done on an anatomical and physiological basis, also justifies the practice on personal experience, and concludes his instructive article in words which equally express my own sentiments. "I feel," he says, "justified in recommending the method as one that is easy of execution, ample for any abdominal work that can be done through a median incision below the umbilicus, easy of repair, and affording apparently complete protection against post-operative ventral hernia."

MOBILE KIDNEY, WITH A DESCRIPTION OF A NEW OPERATION FOR ITS TREATMENT.

By E. Stanmore Bishop, F.R.C.S.Eng.,
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True floating kidney, that possessed of a mesonephron, being merely a surgical curiosity, the following remarks have reference only to the much more common mobile kidney, which lies entirely behind the peritoneum during its whole existence.

It will be generally admitted, I believe, that the results of nephrorrhaphy for this condition at the present time leave much to be desired. In many cases relapse occurs through yielding of the attachments formed; in others the kidney being fixed at too low a level does not regain its normal, and so the symptoms due to its improper position are perpetuated and sometimes intensified.

The symptoms due to this condition being usually found in neurasthenic and neurotic patients, there is a difficulty in accepting their statements, and still more in differentiating between those actually due to the displacement and those which may be the emanations of a disordered imagination. Medical men who have learnt to distrust the latter are naturally prone to extend their disbelief to the former or at least to greatly minimize the importance of them; for both these reasons, operators become disinclined to interfere surgically in any given case.

But it is not yet proved that the neuroses evidently present are merely concomitant, and not in a great measure the result of the drag—persistent or frequently renewed—upon the sympathetic system of nerves produced by this displacement; the good results which have in many cases followed fixation or support seem to suggest that the latter theory is the true one.

If it is realized that displacement of the kidney downwards must mechanically interfere with the return of blood from that organ, owing to the greater effect produced upon veins than upon arteries by any stretching or kinking, thus producing congestion, especially of its lower pole; that the attachment of the ureter to the side of the spinal column gives way only after the drag of the kidney downwards has been exerted for some time, and that therefore the renal end of the ureter is necessarily narrowed by kinking in the earlier stage; that thereby the pelvis of the kidney is prevented from entirely emptying itself, and so stagnation of urine is caused in the lower half of the renal pelvis; if in addition the effect of the peritoneal drag upon the first part of the duodenum described by Morris is remembered, it becomes plain that sufficient causes exist to explain a great amount of discomfort which is more or less persistent, and which is calculated to still further break down the nervous control which in these patients is already sufficiently weakened.

That we may not succeed in at once building up that nervous control to its normal height by measures which have for their object the removal of the causes which have led to its degeneration is no reason against their adoption; they are but the first, although the most necessary, steps in its regeneration, and without which the later steps are useless.

For certain patients a well applied belt and pad appear to be all that is required. Although Morris does not believe in their efficacy, and Sturmdorf points out that if not efficient they only intensify the symptoms, there yet exists so strong a body of opinion in their favour from that of Sir Frederick Treves downwards, and so many patients even yet shudder at the idea of an operation, whilst I and no doubt many of you have seen cases in which they appear to be efficient, that in such cases I conceive that it is not only justifiable but advisable to continue and even to recommend their use. The best form of belts that I have seen are those made by Salt of Birmingham and Ernst of London.

But after all such cases have been eliminated, there remain a number and even a majority in which either the kidney persistently slips beneath the compressing force and becomes pinched by it, or in which the patient cannot possibly bear the pressure requisite. In such cases some form of surgical interference appears to be called for.

If, then, we admit that there exists a genuine necessity for interference in certain cases, and that the results of present operations are not yet all that we can desire, is it

not worth while to review the principles underlying the methods at present accepted and consider whether any of them are faulty or capable of a new interpretation?

Such a review shows that all the recognized methods of nephrorrhaphy at present available attack the kidney from behind, envisage it through an opening in the muscles of the posterior wall and seek to attach it by adhesions between that wall and its posterior surface. They aim in fact at hanging the kidney up against that wall, and in consequence of the direction of attack there can be no certainty of the correctness of the position when so fixed. For the all-important certainty of fixing the kidney at its normal height is gravely discounted if we can only see a portion of that organ through a posterior opening; whilst the persistent drag of a kidney unsupported below upon an attachment behind tends almost certainly to elongate gradually such an adhesion, and to bring about a return to the original downward displacement. One is reminded of the Hindu fanatics who submit to be swung on a hook fixed in their spinal muscles; the tendency must always be for the hook to tear out.

Besides these points there are certain fundamental facts which have to be reckoned with in any attempt at a new departure in operative work in this direction.

1. In the great majority of cases, variously estimated, but at least 80 per cent, it is the right kidney which is loose. Several attempts have been made to explain this, the most satisfactory of which are:

(*a*) That of Jonathan Hutchinson, jun., who points out the existence of Toldt's fascia on the left side below and acting as a support to the left kidney, and its non-existence on the right side; also the relative positions of the hepatic and splenic flexures with reference to their respective renal organs.

(*b*) That of Professors Cunningham and His, who direct attention to a transverse ridge on the anterior surface of the kidney, and consider this evidence of balanced pressure between the abdominal organs above and those beneath this ridge. The existence of the liver on the right side must to a certain extent modify the incidence of this pressure.

(*c*) The observations of Longyear, who described a band formed of the lower fibres of the suspensorium renis, described by Newman, which, after acting as a framework for the fatty capsule, are, the former writer says, gathered together below into a cord which is inserted into the posterior longitudinal band of the colon, and participates in its movements. These movements are reversed on the two sides, the ascending colon pulling downwards, the descending colon upwards, during peristalsis. If this is correct, the much greater drag upon the right kidney is explained, the left being scarcely if at all affected.

2. The movements of a mobile kidney must necessarily open up the post-peritoneal connective tissue lying below and internal to its normal position; such opening up produces an actual cavity when the kidney is prolapsed, and a potential one after replacement always ready to receive it if the attachments which hold it again give way.

3. After a kidney has been prolapsed for some time the attachments of the renal end of the ureter to the spine are gradually loosened so that the tube itself loses its normal relation, whilst the renal vessels become elongated.

4. During all the period of displacement the action of gravity when the patient is in the upright position must reinforce all the other elements assisting in the downward progress. The best resistance to this will be some support acting below the lower pole of the organ in the direction in which a well-fitting efficient pad acts, but without the same danger of pressure upon parts which do not require it, and which, indeed, are hampered by its presence.

In the days when interference with the peritoneum was considered as equivalent with death, it was natural that all attempts upon an extraperitoneal organ should be carried out extraperitoneally, but in these days, when the peritoneum is opened as a matter of course, it is curious that in this instance almost alone surgical measures are still restricted, since the advantages of attacking the kidney from in front are so many and so obvious. These are:

1. The exact position of the kidney, the direction of its vessels, the kinking or otherwise of its ureter, and the relation of the same to the spine, can all be seen through the semi-transparent peritoneum.

2. Support to the lower pole, that part of the kidney most affected by gravity or the downward pull of Longyear's ligament, in precisely the direction taken by a well-fitting truss can be supplied to it.

3. The potential cavity into which a redisplaced kidney is so apt to fall can be closed.

4. The pull of Longyear's ligament can be transferred from the kidney to the posterior abdominal wall, so that it ceases to act upon the displaceable organ.

Various operations intended to satisfy this last indication have already been devised by American surgeons; one of these pulls out the ligament and attaches it as a loop in the posterior wound, but, so far as I know, none have been proposed which attempt to satisfy all.

The operation I submit to your judgement, and which I have carried out several times on the cadaver and ten times upon the living subject, is designed to fulfil all these indications, and is as follows:

1. By means of Rutherford Morison's incision for cholecystotomy, a transverse one below the ribs on the right side, free access is obtained to the right renal fossa.

2. By lifting the liver and depressing the stomach and hepatic flexure by large retractors, the kidney itself may easily be seen and reached, and its amount of displacement clearly estimated.

3. The kidney being directly pushed upwards and outwards, the return of the renal vessels to their normally transverse direction may be watched, and the renal end of the ureter replaced in its proper position with reference to the spine.

4. The peritoneum is then divided transversely over the lower pole of the kidney, and the true capsule also split across in a direction obliquely downwards and outwards from a point immediately below the renal pelvis. The capsule is then stripped inwards and downwards from the kidney, still, however, remaining attached internally and posteriorly. This supplies a resistant structure capable of being sutured to the parts beneath whilst yet firmly attached to the rest of the organ. The divided edges of the peritoneum are again reunited by a few points of catgut suture.

5. The parts being thus prepared, the kidney is placed exactly in the position it is desired to occupy, that is, in its own normal situation, with its vessels transverse and the ureter close to the spinal column.

6. A long silk thread, armed at each end by long straight needles, is then taken. One of these needles is inserted in a directly antero-posterior direction immediately below the lower edge of the renal pelvis passing through peritoneum, reflected capsule, and the muscles behind. On its emergence through the skin behind it is drawn through, and that end of the silk thread secured by a pair of forceps. The second needle attached to the same thread is passed in exactly the same direction but about 1 to 1½ cm. lower down on the inner edge of the kidney. When both ends of this thread have emerged behind, a loop remains within which grips the capsule of the inner edge of the kidney, and holds it firmly against the posterior structures in the line enclosed by that loop; from three to four such loops are placed around and beneath the lower pole of the kidney in the same manner, each pair of threads on their emergence being held in a pair of forceps and so kept distinct.

7. When all are placed the kidney is seen to be held and supported by a series of silk loops which surround its lower pole, whilst at the same time they close the upper opening of the potential cavity beneath, and pin Longyear's ligament to the posterior abdominal wall, so transferring its downward pull to that more resistant structure.

8. Each pair of threads forming a loop is then drawn up firmly and tied in a groove formed by a division of the skin between them, so becoming buried. The tying of these loops draws up the incisions between the needles into a point, so that no suturing of the skin is required.

9. When all the loops are drawn up and tied the kidney is again inspected to see that its position is correct, further loops being added if required.

In certain cases in which the fatty capsule is well filled, as in my third and tenth cases, the same object may be attained without the somewhat difficult freeing and division of the proper capsule; in such cases it is only necessary to divide the peritoneum covering the kidney, to pass the left forefinger down to the inner side of the organ so as to define it accurately, and to pass the needles through the edge of the kidney itself, thus

making sure of a grip of the capsule, and, after all the fixating sutures are placed and drawn tight, to stitch up again the opening made in the posterior peritoneum. The cases so treated appear to have resulted in as satisfactory a manner as the rest.

10. Finally, the anterior wound is sutured in layers.

In my 10 cases there has been no fatality; all have recovered easily and well; my first 2, however, relapsed, because at that time I did not realize the necessity for a grip of the capsule, and I presume that the loops simply cut through the peritoneum and so permitted once more the descent of the organ; whilst in another suppuration unfortunately occurred around the sutures, an abscess forming in the subcutaneous tissue necessitating their removal. With those treated by partial decapsulation no relapse has as yet occurred, and these cover a period in the respective cases of twelve months in 1 case, ten months in 3 cases, nine months in 2, six months in 1, five months in 3, and one month in 1.

The time is, of course, too short to warrant any expression of opinion as to the final effect of the proceeding; but so far the results have been sufficiently favourable, both as to the persistence of the replacement and the cessation of the previous symptoms. I therefore submit the operation and the reasons for its adoption to the judgement of my professional brethren.

A NEW OPERATION FOR THE COMPLETE REMOVAL OF HAEMORRHOIDS.

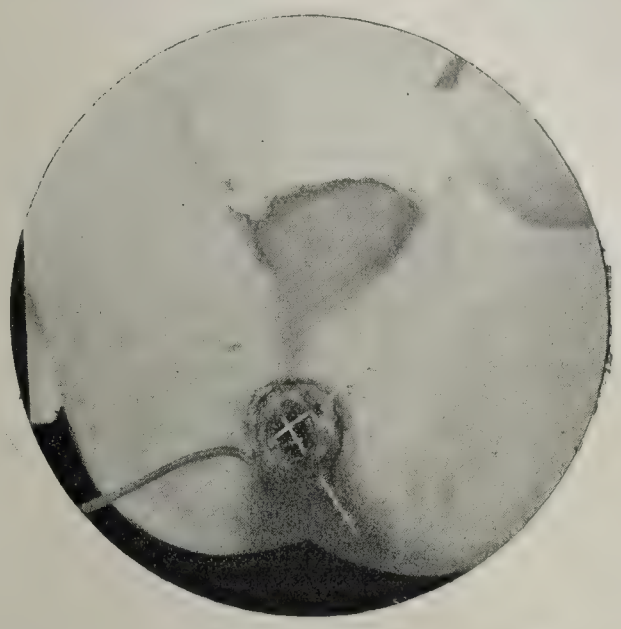
By A. Heygate Vernon, F.R.C.S.,
Bournemouth.

Some five years ago it seemed to me that the various operations as usually practised for the removal of haemorrhoids were somewhat crude and unscientific. If the

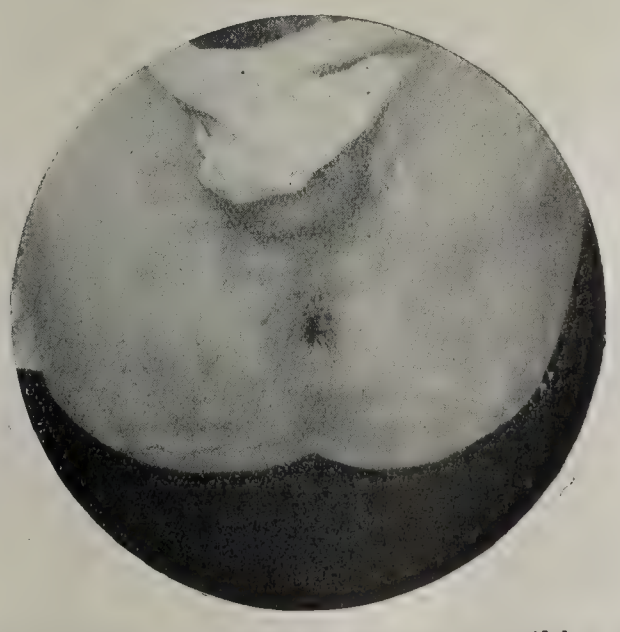
method adopted be that of excision and ligature, which is the one that finds most favour, only a portion, either more

or less of the pile area is removed, and there is left a condition which is liable to relapse. If one adopts a more radical operation, such as Whitehead's, the operation is often a severe one, accompanied by considerable haemorrhage, and at times the sphincter becomes damaged, or the anal orifice loses its natural sensitiveness, so that it fails to possess a complete control, to at any rate the passage of flatus. At times one has to operate on cases where there has been a considerable loss of blood for some months previously, and it is most desirable to limit the shock of the operation as much as possible.

To overcome these difficulties the following operation was devised, by which means one is enabled to remove the whole plexus of veins which lie below the sphincter, to-



gether with as much muco-cutaneous and thickened cellular tissue as may be thought desirable without in any way injuring the sphincter, and at the same time without any haemorrhage occurring.

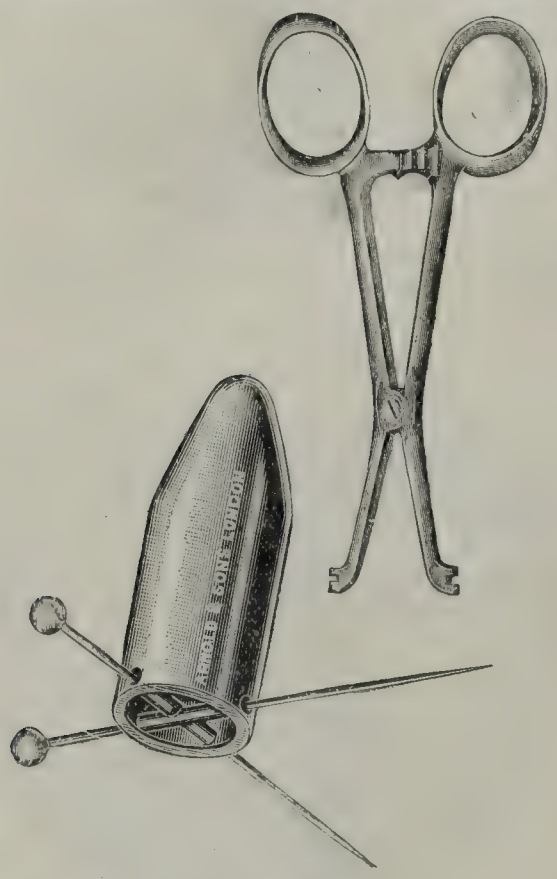


The procedure I believe to be new, as nothing similar seems to have been recorded. As in Whitehead's opera-

tion, all the plexus of veins is removed, but by such an entirely different method that it can hardly be considered a modification of his operation.

In preparing the patient the lower bowel is well washed out with two or three enemata of either plain hot water or water mixed with oil, turpentine, or tincture of asafoetida; it is better not to use an alkaline or soap enema, as the coagulating power of the blood is thereby distinctly lessened. In certain cases it may be thought desirable to administer calcium lactate or chloride for a day or two previously.

The patient, having been anaesthetized, is placed in the lithotomy position and the sphincter dilated. A hollow metal cone or plug, shaped like a bullet, 2½ in. long and 1 in. in diameter, being held in a temporary handle, is passed into the rectum. A large pin, like a lady's hat-pin, is thrust from about three quarters of an inch outside the anus above the sphincter into the bowel, through a channel made in the metal cone, and out above the sphincter at the opposite side. A similar one is passed at right angles to this, so that the lower part of the rectum and the whole of the pile area are transfixed upon this metal cone. A piece of rubber tubing is fixed upon one of the pins, wound round two or three times behind the pins, and finished by fixing it to the pin started from



This causes the piles to stand out, and acts as a tourniquet, effectually stopping all circulation, and so all haemorrhage, during the removal of the piles. The handle of the instrument is now removed. With a pair of scissors an incision is made all round the anus, just outside where the skin joins the mucous membrane, the piles are removed, together with all the veins lying below the sphincter, and as much of the thickened muco-cutaneous and cellular tissue as may be thought desirable. There are left three complete rings or circles, the inner being the cut mucous coat of the bowel, then a perfectly clean sphincter, and outside this the cut skin. Time and care can be taken to do this quite neatly and thoroughly, as there is no haemorrhage except the blood which was in the piles, and so no thrombosed or dilated veins need be left; the whole of the free anastomosis that lies below the sphincter is completely removed. The rubber tourniquet is now removed, and any bleeding points are crushed or tied. A catgut suture is started at the back of the wound in the skin, tying a knot and not cutting off the short end; the cut mucous coat of the bowel and the skin are sewn together with a continuous suture, over the sphincter, working round till the point started from is reached, and is finished off by tying to the short end originally left. The pins are withdrawn and the plug removed, leaving a neat sutured wound showing a little of the mucous membrane, which is subsequently drawn in.

A large number of cases have been operated on by this method, the results of which have been in every way satisfactory. As a rule, healing is complete in a week; and so far I have seen no tendency to any contraction of the orifice, or to any loss of complete control of the sphincter.

The points claimed for this operation are:

1. The complete removal of all piles and the pile area, so that there is less tendency to relapse or recurrence.
2. Advantage of being able to see exactly what is being removed.
3. The sphincter is not liable to be damaged.
4. Very little haemorrhage, and so less shock to the patient.
5. The operation is clean; no retained enema or flatus can be passed while the plug is in position.
6. The healing of the wound is rapid, and there is no tendency to subsequent constriction.

The operation can be performed either during an acute attack of inflamed piles or during a quiescent stage. Prolapse of the rectum has been operated on in a similar way with complete success.

The accompanying illustrations were photographed when an early home-made instrument was being used. The instruments as now adopted have been made for me by Messrs. Arnold and Sons, London.

HYGROMA COLLI AND BRANCHIAL FISTULA.

By G. H. EDINGTON, M.D.Glasg., F.F.P.S., M.R.C.S.,
Assistant Surgeon, Western Infirmary, and Lecturer in Surgery, Western Medical School, Glasgow.

[ABSTRACT.]

IN a former communication[1] to this Section I dealt with the subject of cysts occurring in the middle line of the front of the neck. In that communication the majority of the cases were thyreoglossal in nature. Those I wish to mention to-day occur, as a rule, on the lateral aspect.

A. LYMPHATIC CYSTS (HYGROMA).

In this group of cases we have examples of a condition with regard to the exact nature of which there exists considerable doubt.

CASE I.—*Lymphatic Cyst.*

I saw this case in 1895 in Mr. Freeland Fergus's clinic at the Glasgow Eye Infirmary. The patient, Sarah McA., aged 10, came to the clinic on account of superficial ulceration of the left cornea. A swelling was observed over the lower part of the left mandible; no history of its duration was obtained. It was not in the least tense, and the tissues over it seemed to be very thin, so that the finger, pressed *through* the swelling, impinged on the bone. It was further observed that expiratory effort with the lips closed caused the swelling to increase in size. This change in size is well shown in the accompanying illustrations (Figs. 1 and 2), from photographs. I had no doubt that the condition was a cyst; but whether it was naevoid or a hydrocele was not clear. The presence of dilated venules over the most prominent part of the swelling—a condition which is often seen in subcutaneous naevus—led me to think that the swelling might be naevoid; but in the absence of operation a definite diagnosis could not be made.

CASE II.

A similar appearance was presented by a youth, aged 17, whom I met in the summer of 1901 at a golfing resort on the east coast of Scotland. I had no opportunity of questioning him on the subject, but I could see distinctly a bagginess at the angle of the right mandible. The skin over the swelling was slightly livid, and I noticed particularly when he bent his neck in addressing the ball, and still more when he was taking his stroke, that the swelling became markedly larger.

If we take these two cases together they may, I think, be looked on as examples of "lymphatic" cyst, probably arising from a naevus. This probability is mentioned by Mr. Bland-Sutton.[2] The explanation of the increase in the size of the cyst on expiratory efforts I shall refer to below.

It was not till some time later that I operated upon a case in which the appearances were very similar to the above. The particulars of this case are as follows:

CASE III.—*Widespread Lymphatic Cyst.*

P. McG., aged 13, came to the out-patient department of the Western Infirmary on October 10th, 1904, on account of a swelling in the left submaxillary region of three or four months' duration. The condition had appeared about nine months after an operation for a swelling in the floor of the mouth.

On examination a scar was seen in the left side of the floor of the mouth, which otherwise was normal. In the submaxillary region was a swelling which communicated to the finger the indefinite sensation observed in Case I, being slack and evidently thin-walled; it was well described by the house-surgeon as resembling a "water-bed." Pressure on the cyst did not cause bulging in the floor of the mouth, nor was any sense of fluctuation communicated to the finger in the mouth. The swelling ballooned on forced expiratory effort. A transverse incision over it exposed bluish structures which resembled and were at first thought to be varicose veins. They proved, however, to be lobules of a large cystic swelling. A little lower down in the neck was a solid mass—a displaced portion of the submaxillary salivary gland. Higher up, close to the mandible, was a smaller portion of this gland. (See Fig. 3.) The cyst wall was opened at a point between these two portions of gland-tissue, and glairy fluid escaped. The finger introduced into the cavity could be passed upon the inner surface of the ramus of the jaw (see Figs. 4 and 5), and the hamular process of the pterygoid plate was easily felt. The finger on being passed forward could be felt in the floor of the mouth; while, on passing it backwards, the neighbourhood of the tragus could be projected, and further back the finger struck the mastoid and styloid processes. Below, the cavity extended on the deep side of the submaxillary gland to the level of the lower end of the larynx. The superficial portion of the cyst wall, and the two portions of submaxillary gland were excised, and Wharton's duct ligated. The cavity was packed to its upper limit, and the packing was brought out through the wound, which was otherwise stitched closely with horsehair. The patient was sick after the operation, and the retching was accompanied by a bulging under the lower part of the sterno-mastoid muscle, as if another cyst were situated there; this disappeared when the expiratory effort ceased. The axilla was free.

Fig. 1 (Case I).

The stitches were removed on the tenth day, and the packing was discontinued on the fourteenth day, although there was still some slimy discharge. The wound was firmly healed at the end of the third week, but a ranula had developed on the left side of the floor of the mouth. On December 12th a portion of the wall of the ranula was excised, and typical contents evacuated. The cavity of the ranula, which was confined to the floor of the mouth, was swabbed out with pure phenol, and packed with iodoform gauze. On January 12th, 1905, there was still occasional discharge of ropy material from the mouth, but no recurrence of ranular swelling. I heard from the patient on July 8th, 1907, that he has had no trouble in neck or mouth for the last nine months.

Fig. 2.—Same as Fig. 1, showing effect of expiratory effort.

Microscopical examination of a portion of the cyst wall was made by Dr. Logan Taylor, who found the stricture to be for the most part dense connective tissue, while the lining of the cavity consisted of "granulation tissue" with very many delicate blood vessels in it. Between these two layers were many pretty large thin-walled blood vessels, from which small haemorrhages had occurred in places.

This case is an example of a hygroma with a cavity so widespread and complicated that the condition might be spoken of as a multilocular cyst. The previous occurrence of ranula prevented me considering the condition as naevoid or as an example of blood cyst; and the bulging on expiratory effort was looked on as due to displacement of the sac contents towards the surface by an engorgement of the deep veins. I think, however, that the proper explanation of the bulging is to be found in the relationship of the deeper part of the cyst to the buccal cavity, so that the contents were directly exposed to increased intrabuccal pressure. One or both of these factors probably existed also in Cases I and II. The bulging in the lower part of the neck in this case during vomiting is not so easily accounted for. There was no evidence of cyst in this region, and the swelling was most probably caused by distension of the internal jugular vein and its tributaries. The ease with which the cyst cavity was obliterated and the subsequent occurrence of the ranula is comparable to what obtained in the case of submental ranula which I reported at the Oxford meeting in 1904.

As regards the origin of the condition, it is an open question whether the case is to be looked on as a ranula in connexion with the submaxillary or the sublingual salivary gland or as arising from remains of the lateral portion of the first visceral cleft. It is difficult to account for it on either of the above hypotheses, inasmuch as there is no epithelial lining; such may have existed at one time and may have atrophied from intracystic pressure,[3] but in its absence I do not feel that I can definitely state the origin of the cyst. The vascularity of the cyst wall, mentioned in Dr. Taylor's report, is in keeping with Mr. Bland-Sutton's findings,[4] already referred to; and perhaps the correct view to take is that we have here a lymphatic cyst naevoid in structure, or arising actually in a cavernous naevus.

The next case (Case IV) is an example of a similar formation. The swelling was seated lower down in the neck, and its cavity was not complicated.

CASE IV.—*Thin-walled Hydrocele in Lower Part of Posterior Triangle.*

Miss X., aged 30, was sent to me by Dr. R. Scott Frew,

October 13th, 1906, with a cystic swelling in the lower part of the left posterior triangle of the neck. The swelling was observed first two years previously, and had grown very slowly till within the last six weeks. There had been for about five years a "swelling on the collar bone." I could not make out anything abnormal about the clavicle, but a swelling of the size of a moderately large orange filled up the lower part of the posterior triangle of the neck on the affected side (see Fig. 6). The swelling was spherical, and extended from behind the clavicle to under cover of the trapezius, at which spot there was slight tenderness. It was distinctly translucent and very tense, and it caused patient to have stiffness of the movements of the head. It appeared to be adherent in its deeper part. The axilla was free.

The cyst was exposed by transverse incision, and lay beneath the platysma and the cutaneous cervical nerves. It was enucleated easily, although its wall was very thin, and was accidentally punctured during removal. When it was punctured some watery fluid escaped. This was collected in a dish, where it coagulated in part, forming a gelatinous mass. It had an alkaline reaction, and became almost solid on the addition of HNO_3. Heat caused the fluid to bell, rather than to become solid. The cyst probably lay under the deep fascia, but no muscle was bared by its removal. The space it occupied extended down behind the clavicle and back beneath the trapezius, and the vertebral column was easily felt by the finger in the wound. Many bands of fascia coursed over the cyst wall. They were soft and loose and were easily snipped. The supra-acromial nerves were adherent to the anterior wall of the cyst, but were easily pushed aside by blunt dissection. There were no very pronounced prolongations of the cyst. Healing was uneventful, but there was a complaint of numbness in the area of distribution of the supra-acromial nerves; this area of numbness was perhaps smaller one month later.

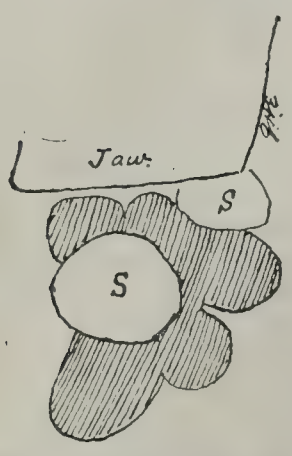


Fig. 3 (Case III).—Diagram of superficial wall of cyst, with portions of submaxillary gland (*S*, *S*).

Histological Character of Cyst Wall.—Sections were prepared by Dr. Leonard Findlay. They show a layer of fibrous tissue with fat externally, and internally a thick layer of what looks like granulation tissue, with very numerous new-formed vessels. In parts this layer has the appearance of lymphoid tissue, but the occurrence of cellular infiltration of the fat points to an (?) inflammatory process. No trace of a lining of endothelium exists.

In this case there is no association with salivary glands. No endothelium was demonstrated in the cyst wall, but the likelihood is that the cyst has originated in lymphatic spaces.

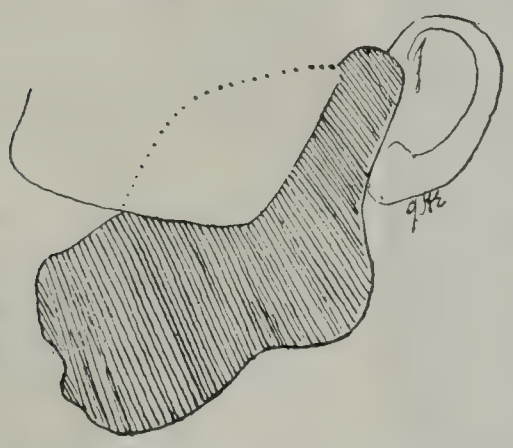


Fig. 4.—Same as Fig. 3. Shows extent of cyst in deeper parts. Dotted line represents relation to inner surface of mandible.

B. BRANCHIAL FISTULA.

The following cases are not examples of cysts, strictly speaking, inasmuch as there was present in each an external opening which communicated with the interior of the cavity. It is, on the other hand, hardly correct to designate the condition a fistula, as there was no evidence of a communication between the track and the cavity of the pharynx. I have, however, retained the term "fistula," in view of its very general use in this connexion. I have observed specimens of three fistulous tracks, of which two were removed from the same patient (Case VI).

CASE V.—*Unilateral Fistula: Opening above Sterno-clavicular Joint.*

Robert H., aged 8 months, was sent to me at the Children's Dispensary on January 6th, 1906, by Dr Samuel MacLean, on account of a discharging opening above the left sterno-clavicular joint.

The discharge was first noticed when he was 8 days old, and it had continued more or less since, although sometimes it had been absent for as long as fourteen days. The discharge varied in quantity, was marked when he cried, and the skin around the opening was sometimes reddened.

On examination there was a punctiform opening ¼ in. above the left sterno-clavicular joint. From this point a swelling could be felt running up along the anterior margin of the sterno-mastoid to the level of the hyoid bone. It was shaped like a French bean, and, although soft, it was quite distinct. Handling it did not cause any fluid to exude from the opening at its lower end. I saw the child again six weeks later, and found the region of the orifice quite dry, although there had been discharge two days before.

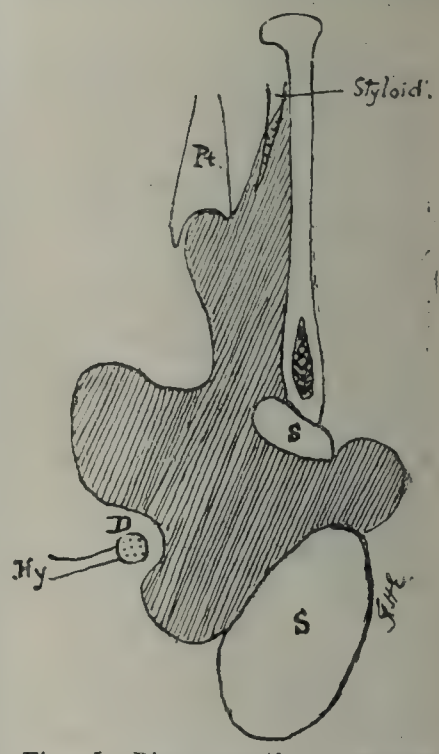


Fig. 5.—Diagrammatic representation of relations of cyst in coronal section. *Pt.*, Pterygoid; *S S*, submaxillary gland; *Hy.*, hyoid; *D.*, digastric.

Operation, February 19th, 1906. An incision, the lower end of which included an elliptical portion of the skin around the orifice of the fistula, was made along the anterior margin of the sterno-mastoid. Beneath the deep fascia lay a tubular cystic structure. This was followed up from the skin orifice, over the great cornu of the hyoid bone, and under the posterior belly of the digastric muscle. Here it had a very intimate connexion with the deep fascia, so that in the course of the dissection the posterior part of the submaxillary salivary gland was exposed. From below the level of the cornu upwards the tubular structure became much narrower, and it continued so to its upper end. This was attached to the pharyngeal wall high up, and when traction was made on the cyst the posterior pillar of the fauces could be felt by the finger in the mouth to be drawn outwards and downwards. There was nothing like an orifice visible in the faucial region, but there was some muco-pus on the examining finger when withdrawn. I could not determine that this came from the part of the fauces to which the fistulous tract was attached. The upper part of the fistulous structure was clamped and ligated as close to the pharynx as was possible, and was then cut away. During the manipulations some greenish-yellow muco-pus came from the skin orifice. The fascia and skin were sutured separately, and no drainage was employed. Recovery was uneventful. I saw the patient on July 9th, 1907. The scar was broadened, but the parts remained soundly healed.

Fig. 6 (Case IV).

On examining the specimen it was bottle-shaped (see Fig. 7) and measured 4.75 cm. long and 1 cm. in diameter at its thick lower part; the narrow upper part measured 2 mm. in diameter. On injecting the cyst with fluid, muco-pus exuded from the skin orifice.

Histological Report by Dr. Teacher. "I find the typical characters of a branchial fistula. The epithelium in the upper part of the tube is stratified; in the lower it is columnar and ciliated. There is considerable evidence of inflammation both in the walls and in the secretion, which contains many polymorphonuclear leucocytes." The upper part of the tube is surrounded by many muscular bundles cut transversely in the section; these are very scanty in the lower part.

In the following case there were bilateral fistulae with openings at the level of the crico-thyroid space and auricular fistulae.

Case vi.

The child, a girl, aged 4 months, was sent to see me at the Children's Dispensary, May 29th, 1905, by Dr. Picken of Bellshill, with a fistula at the anterior border of each sterno-mastoid about the level of mid-larynx. When 3 weeks old "a lump" was observed in the right side of the neck. This discharged through an opening in the front of the neck, and has continued to do so. A discharge was also observed to come from an opening on the corresponding part on the left side, but there was no lump seen. On pressure above the openings clear fluid exuded from the left, and muco-pus from the right. The openings were slit-like. The child was seen again on March 22nd, 1906. On either side of the neck, in front of the sterno-mastoid muscle and at the level of the crico-thyroid space was a pinhole orifice, lying at the bottom of a transverse slit-like furrow. There was no discharge visible. Above the opening on the right side was a fairly tense swelling opposite to the thyroid cartilage and thyro-hyoid space. Pressure applied to the swelling was communicated to the finger in the sinus pyriformis.

Auricular fistula was present in the anterior part of each helix. Suppuration had occurred in the fistula of the right side, and on removal of a crust, pus escaped.

Operation (*right side*), March 22nd, 1906.—A transverse incision in the furrow, and above the orifice, exposed a thin-walled cyst adherent to the deep surface of the deep fascia. During dissection the cyst was ruptured at one point, and fluid like cocoa-nut milk escaped. The tear was picked up with forceps. A band which passed down to the skin orifice was separated down to the orifice and chipped away at this

Fig. 7 (Case v).—Flask-shaped cyst, with cavity opened by removal of piece of wall.

spot, along with an ellipse of surrounding skin. From the upper end of the cyst a pinkish-red, muscle-like band extended upwards and inwards to the pharyngeal wall. High up, the band passed very deeply under the posterior belly of the digastric. The cyst lay to the outer side of the vessels; the band was in front of a large artery (? internal carotid). No nerves or veins were seen in the upper part, as the fascia was undisturbed. Movements of swallowing pulled the cyst upwards by the band. Traction on the cyst pulled on the posterior faucial pillar, and the attachment of the band seemed to be also behind the pillar somewhat as if spread out. During traction the band gave way, leaving a short ragged end on the cyst (see Fig. 8). The upper stump was picked up, ligated, and crushed with forceps. During the operative manipulations some yellow pomade-like stuff escaped from the external aperture. The wound was sutured, and healed uneventfully. When seen in April, 1907, the scar was found with difficulty, being almost invisible. The suppurating auricular fistula was slit up, and a small cavity passing downwards and forwards from the skin was scraped. The specimen removed was an ovoid globular cyst, measuring 2.5 cm. longitudinally by 2 cm. transversely. Springing from each pole was a band or tract of tissue; the upper measured 1 cm. the lower 2 cm. in length. On squeezing the cyst, after removal, no communication with either band was made out. The cyst was opened after having been hardened, and some yellowish material removed. This was found under the microscope to consist of a squamous epithelium débris, and numerous pus cells.

Histological Report by Dr. Teacher: "The section shows a thin wall of dense fibrous tissue, in which is embedded at one point a little mass of mucous gland. Internal to the fibrous tissue is a lining of stratified squamous epithelium. The epithelium is rather thin and crushed in appearance, and there is a good deal of shed scales on its surface."

Operation (*left side*), April 8th, 1907.—A lacrymal probe was passed into the orifice of the fistula, from which exuded clear glairy fluid; above and behind were some enlarged glands. An oblique, almost transverse, incision from over the sterno-mastoid was carried forwards, including the orifice in an ellipse of skin. A narrow, muscle-like band of tissue (4 cm. by 2 mm.) ran up in front of external jugular, and behind, a vessel thought to be internal jugular, but probably the common facial vein. The band passed beneath the posterior belly of the digastric to the posterior faucial pillar at the upper end of the tonsil. A ligature was applied to the band high up; the latter was cut away and stump crushed. Several small lymphatic glands around the lower end of the band were removed with it; larger glands beneath the sterno-mastoid high up were excised. Wound stitched close. Satisfactory healing took place.

Histological Report by Dr. Teacher: "The band of tissue is a tube lined with stratified squamous epithelium. There is a good deal of chronic ulceration of this, with formation of granulation tissue in the wall; but it is not in the least like tubercle. The catarrhal exudate within the tube is for the most part mononuclear. The glands show simple chronic enlargement—irritative, no doubt."

I heard from Dr. Smith of Bellshill on July 8th, 1907, that the parts had "healed beautifully."

These two cases present, on consideration, several interesting features:

1. The anatomical relationships of the fistulous track are very definite. In all three specimens the orifice was in front of the sterno-mastoid muscle; and in all three the wall of the fistula was found to pass up over the greater cornu of the hyoid bone, and under the posterior belly of the digastric muscle, to end on the outer surface of the pharynx at a spot corresponding to the posterior faucial pillar. This termination corresponds to that in the two cases published by Dr. Walker

Fig. 8 (Case vi).—Cystic formation; below is tract leading to skin; above is stump where upper tract broke on removal of cyst.

Downie,[5] and in Morrison Watson's cases quoted by Bland-Sutton.[6] Mr. Bland-Sutton himself, however, states that "when the fistula extends to the pharynx the duct . . . . terminates in the sinus pyriformis." The relation of the fistula to the large vessels was not made out in Case v. In Case vi there is a suggestion of the fistula passing between the carotids. This point could have been demonstrated only by a dissection, which was not justified in the circumstances of the case. It is to be noticed that, while the upper attachment was constant in all three cases, the external orifice was much lower in Case v, than on either side in Case vi. I mention this particularly because I find that some writers[7] try to determine, from the level of the external orifice, the particular visceral cleft from which the fistula has arisen. It seems to me that, in face of the above facts, such a view is untenable.

2. *Structure of Wall of Fistula.*—The striking feature in the structure is the lining of epithelium. This differs in the two cases. In Case v the lower part of the fistula was lined by ciliated columnar cells, the upper part by stratified. In Case vi both fistulae were lined by stratified squamous cells.

It must be borne in mind that the fistulae have nothing whatever to do with the thyroid gland; and further, the upper end of each fistula was attached to a part of the foregut which has no embryological connexion with the gland. We thus have a structure, partly epithelial, in a situation where there is no epithelial tissue except in embryonic life; the structure must therefore be vestigial.

3. *Origin.*—In the embryo there are in this region two distinct structures lined with epithelium—the sinus praecervicalis and the visceral clefts—either or both of

which might conceivably become the origin of a fistula. The sinus is the recess in which, in the development of the neck, the third, fourth, and fifth visceral arches and their intervening clefts come to lie, overlapped by the much enlarged second arch. The sinus is lined with epiblast which is continuous with that covering the lower three arches and dipping into the visceral clefts, from the second downwards. Normally this epiblast disappears; some may remain and form a cyst. If the external opening of the sinus persists a fistula results, opening a little above the sterno-clavicular joint. Taylor[8] considers this method of origin of fistulae such as I have described above. Others, however, look on the visceral clefts as a point of origin of cysts or fistulae. These clefts are looked on by some as being incomplete in man, and as consisting in two depressions, hypoblastic and epiblastic, separated by a thin layer of tissue. Others hold the opinion that the clefts may be complete. Reference to these differences of opinion is made by F. Maurer,[9] who himself thinks that the question is not of essential importance. He quotes Kollmann's opinion that branchial fistulae are due to the remaining open of the posterior branchial clefts (*Offenbleiben hinterer Kiemenspalten*). Whether the clefts are complete or incomplete, their lining epithelium normally disappears with the obliteration of the cleft. No trace remains in the normal fetus of the epiblastic portion of any of the clefts except the first, from which is formed the external auditory canal. The fossa of Rosenmüller and supratonsillar recess and the sinus pyriformis are looked on as representing the hypoblastic portion of the second and fourth clefts respectively.[10] The character of the epithelium in Case V and the presence of a mucous gland in the wall of the right fistula in Case VI point to the hypoblastic origin of these two specimens. The left fistula in Case VI may be hypoblastic or epiblastic. If this fistula be epiblastic it may have arisen from the lining of a visceral cleft or from the sinus praecervicalis, or from both. The lower part of the right fistula in Case VI also may have arisen from the sinus.

In all three specimens the relation to the muscles is important. The posterior belly of the digastric belongs to the hyoid arch,[11] and the fistula passing beneath the muscle is therefore to be looked on as connected with the second visceral cleft, which lies below the second or hyoid arch. The attachment of the fistula behind the upper part of the tonsil confirms this view.

4. *Treatment.*—In spite of the opinion expressed by Ashby and Wright[12] that it is usually best to leave branchial fistulae alone, I think that extirpation is the correct treatment. I wish to draw attention to a difficulty which faces the operator—the leaving behind some of the epithelial tissue. In Downie's cases[13] the stump of the fistula was treated by the ingenious method of invagination on a probe into the pharynx, where it was then cut away. In my patients the calibre of the fistula in its upper part was of microscopic dimensions, and it was quite impossible to introduce even a fine probe. Besides, I had no definite proof that the canal opened into the pharynx. In Case V, therefore, I contented myself with ligating and cutting away as close to the pharyngeal wall as was possible. In both operations in Case VI I took the precaution of crushing the ligated stump. This procedure seems to have been attended so far with success, but I feel that a longer period of time will have to elapse before I can be certain as to the result.

In conclusion, I wish to express my thanks to Drs. Teacher, Logan Taylor, and Findlay for the trouble which they have taken in making sections of the various specimens.

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[1] Oxford Meeting, 1904. BRITISH MEDICAL JOURNAL, October 1st, 1904. [2] *Tumours, Innocent and Malignant*, fourth edition, 1906, p. 175. [3] Senn, *Pathology and Surgical Treatment of Tumours*, second edition, 1900, p. 628. [4] Loc. cit. [5] *Practitioner*, August, 1906. [6] Loc. cit. p. 467. [7] Rose and Carless, *Manual of Surgery*, fifth edition, 1902, p. 822. [8] E. H. Taylor, *A Treatise on Applied Anatomy*. London, 1904, p. 232. [9] Maurer, in Hertwig's *Handbuch der vergleichenden und experimentellen Entwickelungslehre der Wirbeltiere*. Jena, 1906. Band II, Teil I, S. 122. [10] Quain's *Elements of Anatomy*, tenth edition, 1896, vol. iii, part iv, pp. 57, 60, 61. [11] Quain, *Elements of Anatomy*, tenth edition, 1894, vol. ii, part ii, p. 349. [12] *The Diseases of Children*, fifth edition, 1905, p. 192. [13] Loc. cit.

As a measure against quackery the medical practitioners of Elche, Spain, have agreed to refuse their services to any patient who has previously been treated by quacks.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF APPENDICECTOMY IN WHICH THE APPENDIX WAS QUITE SEPARATE FROM THE CAECUM.

A MAN about 30 years of age was admitted recently to the North Lonsdale Hospital after he had recovered from his third attack of appendicitis, which was of a very severe and dangerous character.

On opening the abdomen the appendix was easily found somewhat to the outer side and towards the back of the caecum, lying embedded in the mesoappendix, but quite reversed; that is to say, the tip was near the end of that viscus, the proximal end some 2¼ in. up by the side of the gut.

On opening the appendix the lumen at either end was completely occluded, the middle portion being occupied with a small mass of hardened faecal matter, which was quite inodorous. This condition was quite new to me, and must be comparatively rare. I mentioned the case a few days since to Dr. Knox, of Glasgow, and he informs me that he had a case a short time since in which he "picked the appendix out of the abdomen with a pair of forceps."

I met with a case in which "a man spat up his appendix," in Green's *Encyclopaedia and Dictionary of Medicine and Surgery*.

As the condition is, at all events, somewhat unusual, it appears worth while to put it on record.

J. T. WILLIAMS, M.R.C.S., etc.,
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Barrow-in-Furness.

BONE-GRAFTING AND REGENERATION.

As the following case bears out the conclusions arrived at by Sir Wm. Macewen[1] on the formation of bone from bone, after failures of the periosteum to reproduce it, I venture to send an account of it.

A. B., a sailor, got his leg caught between a cable and the "bits" on his ship; the leg was very severely crushed, as may well be imagined, so much so, that I feared amputation would be unavoidable, but, at his wish, decided to try saving the leg. Two inches of tibia had been squeezed out, but the lacerated periosteum remained; I sterilized the wounds, and in the course of a few days fixed the limb in plaster-of-paris. There it remained for three months; on taking it out of the casing I found the leg useless, as no new bone had filled the gap. I decided to try bone-grafting on a large scale, and procured a lamb, had it killed at the hospital where the patient was at the time. I removed the tibia, split it (after keeping it in hot boracic until the wound was ready), and then placed the strips of bone with their raw surfaces in contact with the raw surfaces of the wound. The result was highly satisfactory, and after another three and a half months the man's leg was as good as ever, and he returned to his work.

Timaru, N.Z. H. V. DREW, F.R.C.S.Eng.

DIPHTHERIA OF THE GLANS PENIS FOLLOWING CIRCUMCISION.

THE following report of a rare condition will be of interest.

On September 1st a boy, aged 13 months, was brought to me owing to the glans penis being swollen and covered by a membrane. I reported the case at once to the medical officer of health and forwarded a swab. On September 3rd I received a report from Laboratories of Pathology and Public Health, stating that the blood serum culture from the swab contained Klebs-Loeffler bacilli and micrococci. The boy had been circumcised at a hospital three days earlier.

London, W. RUSSELL O'BRIEN, M.B.Edin.

[1] BRITISH MEDICAL JOURNAL, June 22nd, 1907, page 1479.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROBERT BARBOUR MEMORIAL HOSPITAL, BHANDARA, CENTRAL PROVINCES, INDIA.

THE THERAPEUTIC VALUE OF CALCIUM IODIDE.

(By J. Rutter Williamson, M.D., Surgeon to Robert Barbour Memorial Hospital, Bhandara, Central Provinces, India.)

As few notes on the use of calcium iodide have appeared so far, it may be of interest to record some cases in which it seems to have been distinctly useful.

Case I.—An Indian Shimpi or tailor, aged 17, came to me with an eczematous patch on one tibia which measured 6 to 7 in. by 3 in. For eighteen months he had been attended by a doctor who had used various remedies. He was attending hospital for three months, and we rang the changes upon lead lotions, tar, salicylic acid, dusting powders, mercury ointments, eucalyptus, and many other remedies. I took him into the wards, and kept him in bed. Bier's congestion treatment improved it more than anything, and he went out after six weeks, but within a week was as bad as ever. There were no varicose veins, no specific history, and no diabetes. Then it occurred to me to try calcium chloride. Great improvement resulted, but after a few days it came to a standstill, as I have since found is usually the case when one employs the chloride. Then calcium iodide gr. 4 was given thrice a day. The improvement was rapid. In about eleven days the place had quite healed, and the skin over it was natural, though tender. He continued the medicine about ten days longer. I saw him six months later; he had had no return of the eczema, and the skin was sound and strong.

Case II.—A Brahman stationmaster, aged 44, came to hospital with a diabetic ulcer on the extensor surface of one foot, involving the whole dorsum except an island about ¾ in. in diameter. The great toe was very dusky and appeared about to become gangrenous. The urine was loaded with sugar; specific gravity 1048. Codein was given for the diabetes, and gr. 4 calcium iodide three times a day. Ten days later the entire dorsum, excepting a place near the root of the great toe about ⅛ in. in diameter, had healed. The great toe had regained its normal appearance. The specific gravity of urine had sunk to 1034. This is the most striking result out of some dozens of cases which I have yet witnessed. Doubtless the codein contributed to the effect.

Case III.—A woman, aged 32, had plastered a sore finger with cow dung to relieve some small pimple or boil. She came to the dispensary with two fingers practically denuded of skin and covered with a foul discharge. The parts were cleansed with weak bichloride lotion and then with boracic lotion and dressed with boracic lint. She was given calcium iodide in the usual doses. A week later one finger was almost healed and the other quite, except a tiny spot near the nail. Here, as in Case II, it was the most peripheral part of the sore which took longest to heal.

Case IV.—A woman, aged about 55, with recurrent mammary carcinoma, had undergone a very partial operation in another hospital six months previously. I was obliged to take away all the pectoralis major and minor, and clear out the axilla and subclavicular glands. A space the size of the palms of two hands was left to granulate, as the edges could not be brought together and no one could be persuaded to give skin for grafting. A dressing with eucalyptus ointment promoted growth, but it became notably rapid soon after calcium iodide had been given.

Summarizing from a considerable number of cases, I am led to believe that in this drug we have a very real addition to our armamentarium for promoting healing of skin surfaces. It seems to act in both young and old subjects and to maintain its stimulating effect upon growth until healing is completed.

The dose needs to be larger than that recommended in the books (½ to 2 grains). I have found 4 to 8 grains in water three times a day better than smaller doses. It should be stored in small (½-oz.) bottles of coloured glass, and preferably glass-stoppered. It deteriorates quickly when opened and seems to vary in quality considerably. A really good maker's calcium iodide, if packed tightly in bottles as above described, seems to keep fairly well, even in India. It should be dispensed in coloured bottles or bottles covered with brown paper.

REVIEWS.

TEXTBOOKS OF SURGERY.

The appearance of the first volume of a new treatise of clinical and operative surgery edited by Professors Le Dentu and Delbet[1] is an event of considerable interest and importance. This work is the successor of the previous well-known publication by the same authors. Instead, however, of filling up gaps and making additions, they have chosen to rewrite the whole. It is to be published in fasciculi, and the fact that thirty-three of these are in preparation will give an idea of the extent of the undertaking. The editors are to be assisted by many collaborators and the list of these contains several names well known to surgeons everywhere. The title of this first volume is *Grands Processus Morbides*. It deals with the chief general morbid processes and infections which concern surgery, commencing with traumatic lesions. These are considered under the headings of the various causative agents, mechanical, physical and chemical. The sections on wounds produced by firearms and on lesions caused by electric currents are particularly notable. Chapters follow these on the complications of traumatisms and on the influence of certain general diseases on the latter. The most important chapter in the book is that on infections. The subject is treated with great success. Under each heading the reader finds all the most important work which has been contributed by bacteriology, histology, and experimental pathology during recent years. We are not aware of any textbook of surgery which presents this work in anything like the same fullness or with quite the same logical force. The chapter is the joint work of Professors Delbet and Chevassu, and deserves the highest commendation. The authors are particularly successful in presenting the various phases and phenomena of infection in such a way that the student is able to grasp at once the relationships between them; he sees them as different aspects of one process, and is left without gaps in his conception. In addition to the more purely surgical methods of treatment the curative and preventive methods by serumtherapy and vaccination are described in the case of each infection, and the success which has been obtained in each case by these methods is discussed. Following the infections comes a chapter on vascular and trophic lesions, and these are grouped under the two headings "gangrene" and "ulcer." Although the definition of ulcer as a wound which has no tendency to cicatrization is not quite satisfactory, the distinction which is drawn here between ulcerative lesions which are simply the expression of the special activity of a specific microbe or other specific agent, and ulcers proper due to disturbances of circulation or innervation, is valuable and sound. The last chapter is on cicatrices, normal and vicious, and on diseases of cicatrices. If this volume is to be taken as a type which subsequently volumes are to follow, the work when completed will be a remarkable addition to surgical literature. Its characteristics are clearness in conception and lucidity in expression. There is art as well as science in its chapters in the sense that each produces a mental picture whose drawing and conception leave the reader in a state of of almost enthusiastic appreciation.

The new edition of Professor Kocher's work on operative surgery[2] is a striking testimonial to the continued energy of its distinguished author, and as such will be welcomed with delight by the innumerable admirers of his genius. As in previous editions, the first part of the work is devoted to the discussion of general operative technique, beginning with chapters on preparation and general regulations. Particular attention is directed to the subject of anaesthesia — local, regional, spinal, and general. It is well known that the author makes extensive use of local and regional anaesthesia, and the chapters in which he describes his methods are especially noteworthy. This edition has been made more complete than its predecessors by the introduction

[1] *Nouveau Traité de Chirurgie.* Publié sous la direction de A. Le Dentu et Pierre Delbet. [New Treatise on Surgery, published under the direction of A. Le Dentu and Pierre Delbet.] Fasc. I. *Grands Processus Morbides.* Paris: J. B. Baillière et Fils. 1907. (Roy. 8vo, pp. 595; 53 figs. Fr. 10.)

[2] *Chirurgische Operationslehre.* [Treatise on Operative Surgery.] Von Dr. Th. Kocher. Fifth revised edition Jena: Gustav Fischer. 1907. (Super-roy. 8vo, pp. 1096; figs. 412. M.20.)

of new divisions, and the whole has undergone some rearrangement, making it altogether a more valuable work for reference. The whole of the surgery of the vascular system has been grouped in one new division, which includes the surgery of the heart, of the arteries, and of the veins. A second new section follows on the surgery of the nervous system; it is particularly notable for its discussion of cerebral operations, and includes details of operations on numerous nerves. The surgery of the extremities is the title of the third new division, which contains new matter on the subject of paralysis and deformities. In the remainder of the book the classification is regional as before, and more than half is taken up with the surgery of the abdomen. All the sections have been practically rewritten. In this edition we find the indications for the various operations more freely discussed and the literature more widely referred to. It is hardly necessary to say that the author shows himself fully cognizant of the work of other surgeons. Altogether this new edition will increase the reputation of a work which is already recognized as a masterpiece. It stands alone as a treatise on operative surgery, and is in the true sense of the word a noble monument to the genius of a great surgeon.

In the second edition of the *Manual* which, although quite a recent addition to surgical literature, is now widely known as THOMSON and MILES's *Surgery*,[3] the authors have, by careful revision, preserved its character as a practical and very useful review of the modern aspects of their subject. Although some sections have been rewritten, the volumes have been only slightly enlarged, and still retain their convenient form. After so short an interval between the first and the second issues of this work it was found unnecessary to add very much to its text, but there has been a copious addition of new illustrations, which include some useful though rather obscure copies of radiograms, and a series of photomicrographs of the bacterial forms most frequently concerned in surgical diseases. The latter have been supplied by Mr. Richard Muir, of the Pathological Department of the Edinburgh University, and are really excellent and instructive pictures. They help to render this manual a complete work on modern practical surgery.

The *Surgical Handbook*[4] of CAIRD and CATHCART, the popularity of which is attested by the number of its reissues in the course of the past fifteen years, will, we have no doubt, maintain in its revised and improved form its reputation as an excellent "pocket-book for reference by the busy practitioner."

Dr. FRIEDLÄNDER's book on surgical diagnosis[5] is a recent addition to the excellent series of medical handbooks now in course of publication under the editorship of Dr. Luithlen of Vienna. Like the preceding volumes of this series, it is intended for the general practitioner, who would be likely to find in the large and costly textbooks on advanced medicine and surgery too much of abstruse science and too little of simple diagnosis and treatment. It will, we have no doubt, be found by German practitioners a very useful book, containing much fresh and instructive matter, in every part thoroughly practical, and, indeed, it seems to us, fulfilling with much success Dr. Friedländer's aim of affording the practitioner who has had neither special training nor much experience in surgical work good help and reliable guidance in the diagnosis of doubtful cases.

PHYSICAL DIAGNOSIS.

IT is evident that Dr. CABOT has had considerable experience in the education of medical students. We say education because Dr. Cabot has, in *Case Teaching in Medicine*,[6] shown that he relies on the Socratic method as a means of imparting to his students ready facility in diagnosis. Dr. Cabot has published accounts of 78 cases, and these are followed by short catechisms which reveal his method of teaching the student "who has learned to open his eyes and see," how to learn to shut them and think. The plan is admirable, and Dr. Cabot may be congratulated on having learnt to the infinite advantage of his classes that education is so much more valuable to the student than instruction. When possible, Dr. Cabot has added an account of the *post-mortem* findings in his clinical examples, and has not hesitated to show how imperfect, and even wrong, a diagnosis may be when based on a faulty "history." This volume will be of use to men going in for their final examination, and will help them to get out of the slipshod habit of rehearsing physical signs instead of giving a clear statement, so far as is possible, of the locality of production of and the nature of the lesion responsible for the signs. It is curious that valvular disease is not more fully brought into prominence by Dr. Cabot, and that the student is not more fully informed of the differentiation of diastolic murmurs heard, say, at the maximum impulse of the heart. We think, too, that an instrumental record of the tension of the pulse in Cases 18, 25, 29, 59, and 60 would have given both teacher and pupils definite information as to the true cause of the symptoms shown by the patients. Dr. Cabot deserves the warmest thanks of all true teachers, for in this volume he reveals methods of instruction which cannot but prove valuable assets to the school and hospital to which he belongs.

The handbook of *Physical Diagnosis*[7] written by Professor LE FEBRE of New York serves as an admirable elementary introduction to the study of the physical expression of diseases affecting the heart and lungs and the abdominal viscera. The first twenty-five pages are devoted to a consideration of the topographical and regional anatomy of the chest and abdomen, and the author has chosen very suitable illustrations, although there appears in Fig. 8 and Plate III and Fig. 9 and Plate IV to be some want of agreement as to the position of the various septa of the right lung. Of special interest are the radiographic pictures of the chest obtained after the introduction of shot into the trachea and bronchi; for although the anatomical relationship of these tubes to the lungs and chest wall have been already fully described, there is a freshness and originality in Dr. Le Febre's pictures. Each section is planned on thoroughly practical lines, beginning with a discussion of the methods of physical examination and concluding with an application of these procedures to the diagnosis of the more common affections of each organ. Pathological considerations are only discussed in so far as they are needed to give the reader some knowledge of the physical conditions underlying the phenomena detected by examination. Probably the writer has preferred not to include the more recent advances that have been made in the study of cardio-vascular disorders until a more extended trial has shown the clinical value of the more advanced sphygmometric studies of Mackenzie and others. A concluding section deals briefly with the help afforded by radioscopic examination of the chest. It would have been better if the writer had shaken himself loose from the use of traditional and complicated schemes of shorthand representations of the numerous variations in breath sounds and of the various types of râles, etc., and had not subscribed to the faulty practice of describing as "myocarditis" pathological changes of the heart muscle, which, though possibly due primarily to infection, are only secondary, even remote, toxic effects. However, Dr. Le Febre has not set himself the task of dealing with pathological problems; his main purpose has evidently been to supply the reader with a well-arranged and serviceable compilation of the accepted

[3] *Manual of Surgery.* By Alexis Thomson, F.R.C.S.Edin., and Alexander Miles, F.R.C.S.Edin., Assistant Surgeons, Edinburgh Royal Infirmary. Vol. i, General Surgery. Second edition. 1906. Vol. ii, Regional Surgery. Second Edition. 1907. Edinburgh and London: Young J. Pentland. (Crown 8vo, pp. 808 and 830 respectively, 516 illustrations. 10s. 6d. per volume.)

[4] *A Surgical Handbook.* By Francis M. Caird, M.B., F.R.C.S.Edin., and Charles W. Cathcart, M.B., F.R.C.S., Surgeons Royal Infirmary, Edinburgh. Fourteenth Edition. London: Charles Griffin and Company. 1907. (Fcap. 8vo, pp. 340, 204 illustrations. 8s. 6d.)

[5] *Chirurgische Diagnostik.* [Surgical Diagnosis.] Von Dr. Friedrich von Friedländer, Privatdocent, Universität in Wien. Medicinische Handbibliothek. Band xvi. Wien and Leipzig: Alfred Hölder. 1907. (Sup. roy. 16mo, pp. 440. M. 6.)

[6] *Case Teaching in Medicine.* By Richard C. Cabot, A.B., L.D., (Harvard), Instructor in Medicine in the Harvard Medical School, and Physician to Out-patients at the Massachusetts General Hospital, Boston, U.S.A. D. C. Heath and Co. 1906. (Medium 8vo, pp. 214.)

[7] *Physical Diagnosis, including Diseases of the Thoracic and Abdominal Organs: A Manual for Students and Physicians.* By Egbert Le Febre, M.D., Professor of Clinical Medicine and Associate Professor of Therapeutics in the University, and Bellevue Medical College. Second edition. London: Hodder and Stoughton. 1906. (Crown 8vo, pp. 479, 102 engravings and 16 plates. 10s. 6d.)

methods of clinical investigation, and in this he has succeeded.

Professor Howard Anders, the author of one of the best of the modern textbooks on systematic medicine, has written an excellent complementary book on *Physical Diagnosis*,[8] in which he has adopted a comparatively new plan of using the records of actual cases to show how the nature of the particular pathological state in question may be arrived at by a process of inductive reasoning. It affords further evidence, if such were needed, that scientific method may be, and indeed is, as much concerned with clinical medicine as with pure pathology or pure physiology, or any other branch of natural science. He gives a good set of clinical pictures and diagrams, and one of the best chapters on the application of radiography to clinical medicine with which we are acquainted. It is a thoroughly up-to date book, and the only important subject which might fairly be considered within its purview that has been overlooked, or at least omitted, is disease of the pancreas. We confidently and cordially recommend this book to students of medicine, both postgraduate and other.

Dr. Charles Lyman Greene's book on *Medical Diagnosis*[9] contains in its 640 pages an enormous amount of information, well-arranged, accurate, and either well-established or, if not, advanced with critical discretion. Although concise, he has endeavoured to achieve—and, as we think, largely succeeded in so doing—a requisite completeness through direct statement, logical arrangement, and the avoidance of unproven or unessential theories and obsolete methods. Marginal notes and running page headlines and numerous, if small, illustrations help to the same end. As would be expected, where elaboration of statement is most needed—as in regard to diseases of the nervous system—the book shows to less advantage. Taking it as a whole, it should prove a nutritious diet for those whose digestion, through age, is sufficiently developed.

We have received the fifth edition of *Medical Diagnosis* by Drs. Graham Brown and W. T. Ritchie.[10] It follows the usual tradition of books of its class and presents to the reader in a compact form a large number of methods of studying the various objective expressions of disease. It is less a fault of the writers, perhaps, than of the pernicious system of cramming for which this book is eminently fitted, that it is so devoid of any personal note of experience of the value of the methods described, or of any method the authors have found to be an improvement on older ones. The reader, whilst grateful for a very fair amount of the clinical investigations originated by Dr. Head, Dr. Mackenzie and Professor Wenckebach, and Sir Almroth Wright would like to know what importance the writers attach to these newer methods, otherwise their volume becomes merely a convenient compilation of various clinical methods from textbooks and lecture notes. We sometimes in the perusal of books of this class wonder when writers will be outspoken enough to relegate to a deserved limbo quite a number of old-fashioned investigations which have long been superseded by more accurate methods; if salicyl sulphuric acid is such a delicate test for proteid in the urine, why do not those authors give their experience and help at once to spare the student and busy practitioner the hesitation born of such an array of tests for albumin in the urine. Useful and well chosen as are the majority of the illustrations, we think that those on pp. 223 and 224 should be replaced.

HANDBOOKS OF TROPICAL MEDICINE.

A new book on *Tropica Medicine*,[11] with special reference to the West Indies, Central America, Hawaii, and the Philippines, is that by Dr. Thomas W. Jackson, Lecturer on Tropical Medicine, Jefferson Medical College, Philadelphia, and being the first of its kind by an American author, is very welcome. The most striking features of it are probably the chapters on beri-beri and dysentery, because they depart so much from the orthodox views, but such a divergence is refreshing rather than otherwise, and should help to stimulate further research. With regard to the former, Hamilton Wright's views are largely adopted, and though the view as to the initial duodenal lesion may have to be modified, the classification and pathology are certainly the best that have been given for this disease. The recent work of the Americans in the Philippines on amoebic dysentery, and the part this parasitic protozoon plays as a causative agent in the disease are related in detail, and it must be admitted that the discussion is very convincing. What is not so sure is whether there are only two types of dysentery in the tropics. The author quotes Buchanan's 1,130 cases of Indian dysentery treated by the sulphate of magnesium and sodium, with the very small mortality of less than 1 per cent., and states that it is manifestly impossible that these were cases of specific infectious dysentery. What were they then? It is equally unlikely that they were all amoebic, especially as the saline treatment is not supposed to do such cases much good. Again, what does the failure of the ipecacuanha treatment in the American cases mean? When we have generations of Indian practitioners and practitioners at home lauding ipecacuanha to the skies in the treatment of amoebic dysentery, can they all be wrong? Common sense says "No," and really the only conclusion one can come to is that the Philippine dysentery must be different in some way or other from that seen in other parts of the world. With all fairness to the author, one can hardly think that his experience is sufficiently great to give us a complete work on tropical medicine; for example, his ideas on sprue, blackwater fever, and some other diseases which he has probably never seen, are much too crude; and even in malaria, a subject he has certainly studied extensively, he does not mention many of the important clinical types such as the hyperpyrexial form, to quote only one. It is by looking at the book as a personal record, however, of what the author has done and seen himself, that we reach a proper estimate of its value, and that is a very high one indeed. The one fact that out of 1,904 cases of malaria, studied in Cuba and treated by quinine, only four deaths occurred and no blackwater fever developed, is of itself an extremely important observation as regards, first, the proper treatment of malaria; and secondly, the etiology of blackwater fever. It is careful studies such as this that are so valuable.

The eleventh part of a *Traité d'Hygiène*,[12] published under the direction of A. Chantemesse and E. Mosny, is devoted to the subject of colonial hygiene. Ten writers contribute to this volume which contains (with the index) 559 pages, three coloured plates, and 69 black and white or coloured figures. The plan of the book is as follows: Professor R. Wurtz contributes the part dealing with general colonial hygiene, and the other authors describe the special hygiene of the different French colonial possessions in detail; the Sergents that of North Africa, Fontoynont that of East Africa, Wurtz that of the French Protectorate on the coast of Somaliland, Marchoux that of French West Africa, Clarac that of Martinique, Guadeloupe, and French Guiana, Kermorgant that of the French possessions in India, Simond that of Indo-China, Noc that of the French oceanic possessions, and lastly, Alliot that of St. Pierre and Miquelon. The information contained is full and fairly well up to

[8] *Physical Diagnosis, with Case Examples of the Inductive Method.* By Howard S. Anders, A.M., M.D. London: Sidney Appleton. 1907. (Demy 8vo, pp. 476. 12s. 6d.)

[9] *Medical Diagnosis.* By C. L. Greene, M.D. London: Rebman, Limited. 1907. (Post 8vo, pp. 639 13s. 6d.)

[10] *Medical Diagnosis.* By Dr. Graham Brown and Dr. W. T. Ritchie. Fifth edition. Edinburgh and London: William Green and Sons. 1906. (Crown 8vo, pp. 508, 8 full plates, 200 illustrations. 8s.)

[11] *Tropical Medicine, with Special Reference to the West Indies, Central America, Hawaii, and the Philippines, including a General Consideration of Tropical Hygiene.* By Thomas W. Jackson, M.D., Lecturer on Tropical Medicine, Jefferson Medical College, Philadelphia: Member of the American Society of Tropical Medicine; lately Captain and Assistant Surgeon, United States Volunteers. London: Rebman, Limited. 1907. (Med. 8vo, pp. 544. 106 illustrations. 17s.)

[12] Brouardel et Mosny: *Traité d'Hygiène.* Publié en fascicules sous la direction de MM. A. Chantemesse, Professeur d'Hygiène à la Faculté de Médecine de Paris, Inspecteur Général des Services Sanitaires, et E. Mosny, Médecin de l'Hôpital Saint Antoine, Auditeur au Conseil Supérieur d'Hygiene. XI. Hygiène Coloniale, par les Docteurs Alliot, Médecin des troupes Coloniales; Clarac, Directeur de l'École d'application du service de santé des troupes coloniales; Fontoynont, Professeur a l'Ecole de Médecine de Tananarive; Marchoux, Médecin des troupes Coloniales; F. Noc, Médecin des troupes coloniales; Ed. et Et. Sergent, de l'Institut Pasteur; Simond, Professeur a l'École d'application du service de santé des troupes coloniales; R. Wurtz, Professeur Agrégé à la Faculté de Médecine de Paris. Paris: J. B. Baillière et Fils. Trois planches coloriées, 69 figures noires et coloriées, pp 559. 1907. (Royal 8vo. Fr. 12.)

date, except in a few particulars. For example, in Wurtz's article "Malta fever" is included under diseases spread by insects, no mention being made of the disease in the goat and the transmission of the virus by that animal's milk. As the volume bears the date 1907 this new work should certainly have been included. Again, it has not been definitely proved that leprosy is spread by insects. On the whole, however, the information contained in all the different sections of the book is reliable and will prove very useful. What is really wanted now in tropical sanitation is not so much new books, of which there are plenty, as practical application of well-known truths. This application, unfortunately, is very tardy in its appearance, but it has been begun in some places, and it is really only a question of time till it spreads and becomes universal.

Professor LAVERAN'S well-known treatise on paludism[13] has now reached a second edition. The general groundwork of the book remains the same as in the first edition, which appeared in 1898, new work and recent researches being incorporated in the text or in new chapters. For instance, a chapter is devoted to the evolution of the malarial parasite in the *Anopheles*, and to a description, sufficient for medical purposes, of the anatomy, biology, and classification of mosquitos. The section on prophylaxis has been considerably enlarged and brought up to date, the question of the destruction of mosquitos, protection of houses and individuals, all being dealt with very fully. A chapter in the first edition devoted to the various endoglobular haematoza of different animals has had to be deleted, owing to the enormous increase in our knowledge of such parasites since that time, but the two well-known malarial parasites of birds are still retained in the part devoted to the ordinary human haemamoebae. The second edition contains over 613 pages, and this fact alone shows what an enormous amount of work has been done on this important subject. Fairly well illustrated, the text runs smoothly and forms easy reading.

TEXTBOOKS OF PSYCHIATRY.

DR. BURR tells us that his small book, *Primer of Psychology and Mental Diseases*,[14] is designed for use in training schools for attendants, for medical students, and as a ready reference for the practitioner. The failure to combine these three functions in any one volume seems to us to be a foregone conclusion, nevertheless the fact that this is the third edition seems to prove that it has met with favour in its own country. It is divided into four parts, the first dealing with general psychology in very elementary fashion; the second with insanity, the classification adopted being modelled on that of Kraepelin; the third and fourth with the practical management of cases of insanity from the medical and nursing standpoint. Though elementary, the instruction given is throughout sound and practical, and should be of use to asylum attendants.

Another small and unimportant work from the United States is entitled *Psychology Applied to Medicine*.[15] It is an attempt, its author, Dr. DAVID WELLS, states, to bridge over the gap between psychology and medicine. The term "psychology," as used by Dr. Wells, evidently includes both normal and abnormal mental states, but has particular reference to the element of suggestion in medical practice. The book contains a good deal of elementary information concerning sensation, particularly visual sensation, instinct, habit and reason, hypnosis and psychotherapeutics, mostly in the form of a summary from other writers, and is altogether a plea for the recognition and employment by medical men of what he terms "the non-medicinal branches of therapeutics" at present largely exploited by "Christian Science," the "American School of Metaphysics," and other crank societies. "Psychics," Dr. Wells says, "has taken quite a hold of our Boston mind, and the intelligent patient has seen enough cures by other than medicinal means to be already convinced of a mental control of body functions." In harmony with this conviction of the Boston mind, he maintains that the "psychic" element is present in all therapeutics, in surgery, and even in astigmatism. It is needless to say more.

A book of a very different class is furnished by Dr KRAUSS'S excellent translation of Professor Mendel's *Textbook of Psychiatry*.[16] Dr. Krauss is the Medical Superintendent of the Providence Retreat for the Insane, and has incorporated into Professor Mendel's text original matter by enlarging materially the chapters on degeneracy and heredity, and has wisely substituted the New York State laws and commitment forms for the legal procedures relating to the insane in Prussia. Professor Mendel is so widely known as a distinguished authority both in neurology and in psychiatry that the sustained excellence of this book was to be expected, but we may take this occasion of congratulating Professor Mendel upon his translator. The book is mainly designed for the student, and the author's object has been not so much to describe and classify types of insanity as to supplement clinical bedside study by supplying information necessarily omitted for want of time at the clinic. This aim the book admirably fulfils, and it will be found not only useful to the student with a view to examinations but much more as conveying a more extended knowledge of the clinical significance of isolated symptoms and individual cases.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE late Conservator of the Museum of the Royal College of Surgeons of England, Professor Stewart, explains in the preface to the third volume of the new edition of the *Descriptive Catalogue of the Physiological Series of Comparative Anatomy*[17] that it must justly be considered as the work of Mr. R. H. BURNE, the Anatomical Assistant to the Museum. We may congratulate Mr. Burne on the services which he has rendered to the student of science who desires to study the nerves of vertebrates and the organs of special sense as illustrated by specimens in the College Museum. The task was by no means simple, and many delicate preparations had become injured since the last catalogue was published, and required replacement. A considerable number of additions has been made, but the Conservator admits in the preface that yet more will be required to make the Special Sense series reasonably complete. This volume is adorned by three plates and fifty-four woodcuts. The first plate represents the auditory organs of the locust, etc., the second the eye in the mollusca, and the third certain structures in and associated with the eye in the vertebrata. All the plates are based on the microscopical work of the most recent authorities. When we study the pages where, through Mr. Burne's industry, the researches of twentieth-century scientists are demonstrated by aid of his descriptions of specimens, we cannot help at the same time admiring the published observations of John Hunter himself. Many specimens described in this work are from the original Hunterian collection. The great founder's observations on the papillary ridges of the hand of the monkey are worth noting. Among the Hunterian specimens under the genus Homo we may mention the left hand supposed to be that of Thomas Beaufort, second son of John of Gaunt—not, we presume, the Earl of Somerset or the Cardinal, both sons of "time-honoured Lancaster." The body was disinterred in 1772. The Irish giant's ear bones are also in this collection, but history and the *Newgate Calendar* are better represented in the osteological series. The ear series is very com-

[13] *Traité du paludisme.* Par A. Laveran, Membre de l'Institut et de l'Académie de Médecine. Deuxième Edition. Paris: Masson et Cie. 1907. (Cr. 4to, pp. 630, 58 Figures dans le texte et une planche. Fr. 12.)

[14] *Primer of Psychology and Mental Diseases.* By C. B. Burr, M.D., Medical Director of Dale Grove Hospital for Mental Diseases, Hint. Mich., U.S.A. Third Edition Philadelphia: F. A. Davis Company. 1906. (Cr. 8vo, pp. 191, illustrated. 1.25 dols.)

[15] *Psychology Applied to Medicine* By David W. Wells, M.D., Lecturer in Mental Physiology, and Assistant in Ophthalmology, Boston University Medical School, etc. Philadelphia; F. A. Davis Co. 1907. (Cr. 8vo, pp. 155. $1.50.)

[16] *Textbook of Psychiatry: a Psychological Study of Insanity for Practitioners and Students.* By Professor E. Mendel, of Berlin University. Authorized translation by William C. Krauss, M.D., of Buffalo, New York. Philadelphia: F. A. Davis Company. 1907. (Cr. 8vo, pp. 311. $2.00.)

[17] *Descriptive and Illustrated Catalogue of the Physiological Series of Comparative Anatomy Contained in the Museum of the Royal College of Surgeons of England.* Vol. iii. Second edition. London: Printed by Taylor and Francis, for the College. 1907. (Roy. 8vo, pp. 414.)

plete. It includes Max Hübrich's preparations of the bony labyrinth in the higher vertebrata; Mr. Alban Doran's series of the ear bones of the mammalia described in a contribution to the *Transactions of the Linnean Society*, issued in 1879 and now catalogued for the first time; and lastly, the elaborate "wet" preparations of the membranous labyrinth. Mr. Burne has availed himself largely of Retzius's exhaustive work, *Das Gehörorgan der Wirbelthière*, published in 1884. The eye series is very complete. The introductory observations preceding the descriptions of the subseries have been revised, and will prove most instructive to the student.

The second edition of the late Sir William Flower's *Catalogue of the Specimens Illustrating Osteology and Dentition* in the same museum has been carefully prepared by the late Conservator, Professor C. Stewart, and his assistants.[18] It includes many specimens known to the general public, such as the skeletons of "Mr. Charles Byrne, the famous Irish Giant," Freeman the American Giant, and Caroline Crachami the Sicilian dwarf; also the skulls of Eugene Aram and Thurtell, certainly authentic; the skeleton of Jonathan Wilde, probably genuine, and a skull and two femora, supposed on quite unreliable evidence to be Lord Darnley's. The two thigh bones are from different subjects—one from a tall and the other from a short man, and the skull is that of a very muscular man of mature years with a low forehead, whilst Lord Darnley was a tall slender young man aged 22 when murdered in 1567, and his forehead was high. Lastly, we may rank amongst these popular specimens the skull of Mr. Charles Nichols, the comic lecturer, which he bequeathed to the Museum. In the same series are specimens famed in the history of science, such as the skull of a Papuan obtained by Huxley sixty years ago when Assistant Surgeon to H.M.S. *Rattlesnake;* also the famous Barnard Davis Collection, which has been partly rearranged by the present conservator and Mr. C. Macnamara. Amongst additions made since the first edition was completed in 1879 are the specimens purchased in 1895 from the Anthropological Society and a large number of mummy skulls. No less than ninety-one, found in tombs near the pyramids of Ghizeh, were presented by Captain R. Burton. They illustrate variations in the method of embalmment, some indeed showing no decided evidence that they were submitted to that process.

NOTES ON BOOKS.

We are glad to see that Dr. Andrewes's useful *Lessons in Disinfection and Sterilization*[19] has reached a second edition. It is primarily intended for nurses, and, without presupposing any previous acquaintance with bacteriology, explains in simple language the bacteriological facts on which the principles and methods of disinfection are based. This information will help the nurse to take an intelligent interest in her work and will prepare her for the study of Chapters VIII to X, by far the most important part of the book, in which practical instruction is given on disinfection in surgery, midwifery, and medical infectious cases. Practitioners, as well as nurses, will derive valuable information from Dr. Andrewes's discussion of the relative potency of different disinfectants, and their attention may be particularly directed to the "acid persulphate mixture" (p. 102), which he recommends as a disinfectant for the hands and for sponges.

Mr. William Partridge, F.I.C., has written a small book on *The Bacteriological Examination of Disinfectants*,[20] which is concerned almost solely with the Rideal-Walker method of ascertaining the carbolic acid coefficient of a disinfectant, that is to say, its killing power in relation to carbolic acid. The factors which must be taken into account in making the test, and the apparatus required are described. Major C. E. P. Fowler, R.A.M.C., contributes a short preface in which he recommends the following method to ascertain the relative value of a disinfectant: "Ascertain the value by the 'Rideal-Walker' method against a pure culture, making the dilutions with distilled water, then confirm this value by carrying out the same technique, but employing 1 or 2 per cent. of some solid organic material in making the dilutions, as recommended in the Sommerville-Walker modification of the test."

A report of the Transactions of the Fourteenth Meeting of the South German Laryngologists held at Heidelberg on May 10th, 1907, has now reached us. The fasciculus (pp. 339 to 480, roy. 8vo)[21] contains fifteen scientific communications; of these, five deal with the pathology and treatment of the accessory sinuses of the nose; four with oesophagoscopy, bronchoscopy, and hypopharyngoscopy, and the remainder with more general diseases of the larynx. The volume as a whole is an interesting and important record of recent work in the more special branches of laryngology.

[18] *Catalogue of the Specimens Illustrating the Osteology and Dentition of Vertebrated Animals, Recent and Extinct, contained in the Museum of the Royal College of Surgeons of England.* By William Henry Flower, Conservator to the Museum. Part I. Man: *Homo sapiens* Linn. Second edition. London: Taylor and Francis (for the College). 1907. (Royal 8vo, pp. 459.)

[19] *Lessons in Disinfection and Sterilization.* By F. W. Andrewes, M.A., M.D., F.R.C.P., D.P.H. Second edition. London: J. and A. Churchill. 1907. (Crown 8vo, pp. 222. 3s. 6d.)

[20] *The Bacteriological Examination of Disinfectants.* By William Partridge, F.I.C. London: The Sanitary Publishing Company, Ltd. 1907. (Post 8vo, pp. 66. 2s. 6d.)

[21] *Verhandlungen des Vereins süddeutscher Laryngologen, 1907.* Herausgegeben von Schriftführer Dr. Med. Felix Blumenfeld. Würzburg: A. Stuber. 1907. (Roy. 8vo, p. 339 to 480. M. 4.)

MEDICAL AND SURGICAL APPLIANCES.

A Thermometer for Midwives.

Dr. R. J. Collie (London, W.) writes: The Midwives Act of 1902 presupposes a knowledge of how to take the temperature. The Act admitted a large number of unqualified women who happened to be in practice at the date of the passing of the Act; these women are crassly ignorant. Many of them are presbyopic. Messrs. Reynolds and Branson, of Leeds, have prepared for me a thermometer which I think may be useful for this particular class of women. It measures 5 in., and the scale is from 95° to 105°; all the marks above 100.4° are in red, with the word "danger" marked above. The decimal marks are in tenths, not fifths. The Act prescribes that when the temperature rises over 100.4° for twenty-four hours it is the duty of the nurse to send for the doctor. The size of the thermometer permits of each decimal point being clearly marked, and although the instrument is larger than medical men are accustomed to carry in their pockets, I think many women with defective eyesight would find it useful. The price is 3s. 6d.

REPORTS OF SOCIETIES.

Royal Society.—At a meeting of the Society shortly before the vacation (June 27th) a paper by Drs. Percy T. Herring and Sutherland Simpson, from the physiological laboratory of the University of Edinburgh, on the pressure of bile secretion and the mechanism of bile absorption in obstruction of the bile duct was read. The following is a summary of the conclusions of this paper: The maximum pressure reached by the bile in obstruction of the bile duct exceeds the figures originally given by Heidenhain. In the dog, cat, and monkey the average maximum pressure is about 300 mm., measured in terms of a vertical column of bile. The highest pressure recorded was 373 mm. bile in a cat. In the ordinary rabbit the pressure reaches about 200 mm. bile, but may exceed 300 mm. in the case of the Belgian hare. After obstruction of the common bile duct and cystic duct, the pressure in the bile passages rises rapidly at first, but slows as a maximum is reached. Subsequent records of bile pressure after temporary release of the bile may exceed the first maximum, but are usually lower. After death the bile pressure falls rapidly until it has reached about 100 mm. bile, after which the fall is comparatively slow, even when the blood pressure in the liver is at zero. The height of bile pressure attained is, as Heidenhain showed, the pressure at which as much bile is secreted every moment as is take up from the bile paths by reabsorption. The obstructed bile leaves the liver by the portal lymphatics. Injection of the bile ducts with carmine gelatine at a pressure not exceeding the maximum bile pressure is also followed by the appearance of the injected material in the liver lymphatics. The examination of sections of livers thus injected reveals the presence of the injection in the liver cells at the periphery of the lobules. Appearances suggest that the bile escapes from the liver cells through the intracellular plasmatic channels described by Schäfer, and that these channels are to be regarded as an intermediate system linking the blood vessels of the liver with the lymphatics at the periphery of the lobules.

LITERARY NOTES.

THE *Quarterly Journal of Medicine* is to be the title of a new periodical on the lines of the *Journal of Hygiene*, the *Zeitschrift für klinische Medicin*, and the *British and Foreign Medico-Chirurgical Review*. The prospectus states that "it will be devoted to the publication of original papers dealing with clinical medicine," and it is added, somewhat cryptically, that "thus, it is hoped, such papers may be dealt with more comprehensively and in greater detail than has hitherto been possible." This, we take it, means simply that the new periodical will publish longer papers than existing journals can find room for. Whether this will "advance the interests of British medicine" remains to be seen; we are disposed to think that the British reader gets as much literature as he can digest. Doubtless the quality of the new supply will be of a highly superior character. Of this the names of the editors—Professor Osler, Dr. Rose Bradford, Dr. Robert Hutchison, Dr. A. E. Garrod, Dr. H. D. Rolleston, and Dr. Hale White—are sufficient guarantee. The *Quarterly Journal of Medicine* will be published by the Clarendon Press. Each number will consist of about 100 pages. The first, which appeared on October 1st, contained papers by Drs. Byrom Bramwell, G. A. Gibson, R. Hutchison, Professor Osler, and others.

Mr. Bishop Harman informs us that the work, the forthcoming publication of which was announced in this column last week under the title *Preventable Blunders*, and described—on the authority of the publishers—as intended for the use of medical officers of health, is entitled *Preventable Blindness*, and is intended "for all who will read it, and particularly those interested in social matters."

In the October number of the *Journal of Pathology and Bacteriology* there appears an announcement that the Pathological Society of Great Britain and Ireland, having adopted the periodical as its official organ, the *Journal*, which will appear quarterly (January 15th, April 15th, July 15th, and October 15th) will now be published under the management of an association. The editor, Professor Sims Woodhead, will be assisted by Dr. James Ritchie and Dr. A. E. Boycott (the latter of whom will have charge of the proceedings of the Society), and by the following committee, composed of members of the Society: Dr. J. M. Beattie, Colonel W. B. Leishman, R.A.M.C., Professor Robert Muir, and Professor Lorrain Smith. The proceedings of the Pathological Society will be printed in the first number published after each meeting.

After this year the *Journal of Anatomy and Physiology* will be issued in two independent parts. In one will be published articles on anatomical, histological, morphological, and embryological subjects, and this will be designated the *Anatomical Part*; the other will contain papers on subjects of physiological interest (including physiological histology and physiological chemistry), and will be termed the *Physiological Part*. In form and size each part will be similar to that of the present journal. The acting editor of the *Anatomical Part* will be Professor D. J. Cunningham (Edinburgh), with whom will be associated Sir William Turner, K.C.B. (one of the original founders of the journal), Professor Alex. Macalister (Cambridge), and Professor G. S. Huntington (New York). The acting editor of the *Physiological Part* will be Professor E. A. Schäfer (Edinburgh), with whom will be associated Professor F. Gotch (Oxford), Professor W. D. Halliburton (London), Professor C. S. Sherrington (Liverpool), and Professor E. H. Starling (London). The issue of the *Physiological Part* will begin in January, 1908, and four numbers of each part will be published annually—namely, in January, April, July, and October. The publishers will be Messrs. Charles Griffin and Company, Exeter Street, Strand, London, W.C. Subscriptions will be received for either part separately.

In the *France Médicale* of July 25th E. T. Hamy, of the Institute of France, writes on Jacques François Bernard Valmont de Bomare, who was a physician in Paris in the eighteenth century. Born in 1728, he was at first intended for the priesthood, but turned his attention to medicine. In a document published by Hamy he gives a detailed description of a case in which living organisms are said to have been expelled through the digestive tract. Bomare traced the cause of the disease to the "stagnant and corrupt waters" which his patient had often to drink in his travels through Holland, England, and Germany, and he recommended the use of boiled water as a preventive. This was in 1769. M. Hamy, in rendering what he himself calls "a very belated homage" to this anticipation of Pasteur's teaching, seems not to be aware that, according to Herodotus (Book I, chap. 188), Cyrus in his march on Babylon carried with him for drinking purposes a supply of water from the Choaspes River, the modern Kerkha of Persia, which was boiled before use. This was 550 years before the Christian era. A later instance of the same precaution is found in a record of the household expenses of Margaret of York, Duchess of Burgundy, wife of Charles the Bold, at Ghent, for June 27th, 1469, where mention is made of the purchase of earthenware jars to be used for boiling the water which the Duchess mingled with her wine. Bomare's anticipation of Pasteur was therefore considerably more "belated" that M. Hamy's "homage." It may be added that in the BRITISH MEDICAL JOURNAL of July 27th, p. 213, a passage was quoted from a manuscript in the Khedivial Library at Cairo, written by Ebu-Raduan in the year 1068 of our era, in which reference is made to boiling as a means of purifying water, and of making it safe to drink.

It is an interesting fact that the British Museum, which owes its foundation to Sir Hans Sloane, himself a famous physician in his day, had among its first officers many members of the medical profession. In the *Cornhill Magazine* for September, Sir E. Maunde Thompson gives an amusing account of one of these, Dr. Templeman, the first Superintendent of the Reading Room, which was opened in 1759. Dr. Templeman is described as "a man of a very liberal turn of mind, of general erudition, with a large acquaintance among the learned of different professions, but of an indolent and inactive disposition." Soon after his appointment he begged the trustees that they would relieve him "from the excessive attendance of six hours' continuance each, for it is more than he can bear." It should be mentioned that there were only twenty chairs for readers at the time. Dr. Templeman was before his time; he should have been a "working man" of the present day. Sir E. Maunde Thompson quotes the following entries from the Occurrence Book:

> August 30th, 1759. On Wednesday, all the company going away a little after one of the clock, the room being cold and the weather likely to rain, I thought it proper to move off too. March 13th, 1760. Last Tuesday, no company coming to the reading-room, Dr. Templeman ventured to go away about 2 o'clock. April 18th. Dr. Templeman took the liberty of walking out twice this week for the space of an hour for the benefit of the air.

Dr. Templeman was soon relieved of an office which he seems to have found so burdensome. At the end of 1760 he was made Secretary of the newly-established Society of Arts, in which it is to be hoped he found abundant opportunities of getting the benefit of the air, and a less strenuous life was demanded of him than at the British Museum.

The *American Journal of Morphology* is about to be reestablished on a sound financial basis. For this men of science interested in animal morphology have to thank the enlightened generosity of Dr. Horace Jayne, formerly Director of the Wistar Institute of Anatomy and Biology. Under the auspices of that Institute the journal will be published. The board of editors is composed as follows: E. G. Conklin, University of Pennsylvania; H. H. Donaldson, Wistar Institute; M. J. Greenman, Wistar Institute; G. C. Huber, University of Michigan; Horace Jayne, Wistar Institute; F. R. Lillie, University of Chicago; F. P. Mall, Johns Hopkins University; C. S. Minot, Harvard Medical School; T. H. Morgan, Columbia University; G. H. Parker, Harvard University; E. B. Wilson, Columbia University; C. O. Whitman, University of Chicago. The *Journal of Morphology* was founded in 1887 by C. O. Whitman and E. P. Allis, and it established a reputation for scientific merit and excellence of printing and illustration unsurpassed by any similar journal in the world. After the appearance of seventeen volumes the journal was compelled in 1902 to suspend publication temporarily, owing to insufficient financial support.

FOURTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

[From our Special Representative]

(Continued from page 830.)

Organization of the Congress.

At the first general meeting the head of the Public Health Department of Bremen spoke on the organization of the Congress, and stated that for the first time no sharp division between hygiene and demography had been drawn. He laid stress on the fact that such an International Congress as the present must bear fruit, inasmuch as no political differences could be felt, while ideas and opinions could be freely interchanged.

The General Secretary of the Congress (Dr. Nietner) also discussed in some detail the organization of the Congress. He announced that over 3 800 names had been entered on the Congress lists, and that even the most distant countries and States were being represented. The speakers who followed were: Waldeyer, for the Academy of Science; Loeffler, who gave a brief eulogy of eminent scientists who had recently died, including Virchow and Brouardel; Kaftan, for the University; Grantz, for the Technical Schools; and Schmalz for the Veterinary College. The various Governmental delegates followed, and their number seemed almost interminable. In reality there were but twenty-nine States represented, but as speech followed speech one seemed to have heard the same thoughts expressed at least 100 times. France led off, being ably represented by Chantemesse: Count de Salis spoke for England in an almost inaudible voice; Pugliani, for Italy; von Juraschek, for Austria; Toth, for Hungary; Berthensen, for Russia; Cortezo, for Spain; Harrington, for the United States; and many more. The American delegate invited the next congress to Washington, and this invitation was accepted most heartily.

A telegram from the Kaiser and Kaiserin to the members of the Congress was then read. The next business consisted in the election of the honorary presidents. Among these, the names of Lister, Koch, Schjerning, Golgi, and von Gruber may be mentioned.

At this point the sitting closed, and with a sigh of relief the members trooped out into the open air, worn out by the loquacity of the speakers, the length of the session, and the heat and stuffiness of the theatre. The Crown Prince, who was in full uniform, bore the ordeal extremely well, and received a nice little ovation as he sped away in his motor, the hooter of which is characterized by sounding two notes, one low and the second an octave higher.

The Congress having been opened, members to a great part considered that enough had been done for one day. Some repaired, however, to the exhibition, which was officially declared open, and examined the many interesting stalls and divisions. A brief notice of the exhibition will be given later. In the vestibule, where the tickets for the various social functions, scientific excursions, and gala entertainments were to be had, such a crowd had pressed its way that the din and pressure were almost insupportable. The programme for the week was composed of a reception by Prince Schönaich-Carolath in the Abgeordnetenhaus for Monday evening at 9, a concert on Tuesday afternoon and a reception by the Lord Mayor (Kirschner) in the Rathaus in the evening, a banquet for Wednesday afternoon at 5, followed by a social gathering in the park, gala performances in the Opera and "Schauspielhaus" on Thursday evening, an excursion to Potsdam and Grünau on Friday afternoon, a concert in the Zoological Gardens on Saturday afternoon, and a special reception by the medical profession of Berlin in the evening, and on Sunday excursions to various places, including Hamburg. The number of members rendered it impossible for every one to receive invitations from the Lord Mayor, and many complaints were heard from those who had been left out.

Entertainments.

On Monday evening a number of influential and eminent personages issued invitations to a number of Congress members to dinner. These voluntary hosts included the Lord Mayor, Professors Rubner, Heubner, and Lassar. Your correspondent was lucky enough to be able to accept Professor Lassar's genial hospitality, and too much cannot be said in praise of the excellent taste of the host and hostess, the warmth of the reception, and the skilful way in which Professor Lassar addressed his cosmopolitan guests in an excellent speech in three languages.

The reception at the Abgeordnetenhaus took the form of a social evening, with light refreshments. Many parliamentary and municipal personages mingled among the guests and lent a special interest to the conversations. Among the Englishmen present may be mentioned Haldane, Ronald Ross, Nuttall, and Hewlett.

Sections.

On Tuesday morning the Sections began their work in earnest. In all there were nine, the original number of eight having been increased by the splitting up of No. VI into two subsections, "the Hygiene of Dwellings" VIA and "the Hygiene of Traffic" VIB. In Section I the etiology of tuberculosis was discussed. Arloing, Flügge, Ravenel, Ribbert, and von Schröter presented papers, while Bartel, Rolf, Rabinowitsch, Calmette, Schlossmann, and many others took part in the discussion. In the main, nothing fresh was elicited, and one cannot help remarking that a great deal of what was spoken in Vienna a few days ago was repeated at Berlin. In Section II the control of foodstuffs was spoken of, Chassemont, Ludwig, and Wiley being the chief speakers. Many others also spoke. In Section III the care of infant life was the subject chosen, Dietrich, Traube, and Szana being the speakers; while Killer spoke on infant homes. In Section IV fatigue through work was discussed by many speakers, the chief of whom were Eisner, Imbert, Roth, and Treves. Oldright also read a paper in this section. In Section V uniform regulation of the method of testing apparatus and disinfectants was fully discussed. Von Esmarch, Proskauer, and Rideal led off, and their remarks were freely criticized. In Section VIA the dwellings of the poor was the subject which was treated by Cacheux, Aldridge, and Fuchs; while in Section VIB the influence of callings in connexion with the various means of transit on the public health was discussed by Schwechten, Périer, and von Zothfalusay. In Section VII the water supply of an army on active service was dealt with by Bischoff and Rouget. Reder also spoke of Austrian arrangements. The removal of waste in military camps was dealt with by Dieudonné and Sforza. In Section VIII various statistical questions were dealt with. In a later issue a brief account of the more important papers and discussions will be given. On the whole, the sections were very well attended, and in I and V especially the rooms became so stuffy and hot that it was astonishing how many sat the whole session out.

The Lord Mayor's Banquet.

On Tuesday evening some eight or nine hundred members of the Congress were entertained by the Lord Mayor of Berlin in the Rathaus. This building is a very fine example of modern architecture, the long lines of the exterior being relieved by artistic sculpturing. The house itself is very capacious and beautiful, and consists of eight large halls, including a fine banquet hall. The decorations are carried out with taste and are in keeping with the style of the building. The fine staircase was freely decked out with beautiful flowers and foliage, and in the brilliant illumination looked almost fairylike. It was here that the Lord Mayor received his guests. The guests included only four or five ladies, but, in spite of this lack of the fairer sex, the multiplicity of uniforms lent a highly festive appearance to the gathering. The banqueting tables were artistically decorated with red roses.

The Lord Mayor rose during the course of the dinner, and in a spirited and eloquent speech welcomed the hard workers to a little relaxation in the name of the Municipality of Berlin. He pointed out that the tasks which the hygienist had to carry out were becoming increasingly difficult as the population of the large towns increased, and the municipal authorities were only too glad to follow the directions of hygiene in connexion with questions such as dwellings, feeding, occupation, and traffic. Berlin was particularly willing to do all that modern science could suggest. The rapid increase in her population had been a spur to her. Two facts showed clearly how deeply Berlin was interested in the public health. In various institutions, hospitals, etc.,

Berlin looked after no less than 15 000 persons, and further, but few of her sons had she honoured more than Rudolph Virchow and Robert Koch. The institutions, etc., would be open to the Congress members to visit, and he hoped that they would meet with a full approval. He then dwelt on the Congress as a means of creating a good feeling among the various nations, and pointed out that hygiene had no frontiers and no limitation of languages. He therefore raised his glass and drank the health of the men and women working in hygienic sciences—his guests.

Prince SCHÖNAICH CAROLATH thanked the municipality in the name of the Congress. In a skilful speech he complimented the Lord Mayor and his colleagues on their hospitality, and paid a high tribute to their hygienic endeavours. He mentioned the name of Dr. Langerhans, the chief of the town council, with special praise, and a toast was heartily drunk to this eminent man.

The speeches that followed were delivered by Surgeon-General Viery (Marseilles), Surgeon-General von Uriel (Austria), Sforza (Italy), and Kaschkadamow (St. Petersburg).

After the banquet the guests remained for some considerable time in conversation. It is extraordinary how at each International Congress Englishmen and Frenchmen form groups for themselves and do not mix freely with their colleagues of other lands. At this entertainment we noted the usual English group and the French group, and, indeed, far into the small hours of the morning the remains of these groups could still be found in some of the well-known cafés.

BRITISH DELEGATES.

It may be in place here to mention that the following were the British delegates:

The Government and Home Office—Dr. B. A. Whitelegge, C.B, and Dr. Theodore Thompson.
The Army—Lieutenant-Colonel W. B. Leishman and Lieutenant-Colonel W. G. Macpherson.
The Navy—Fleet Surgeon Andrews.
The Educational Department—Mr. F. Darlington and Dr. A. Eichholz.
Cambridge University—Professor G. Sims Woodhead.
Oxford University—Dr. J. S. Haldane.
Local Government Board of Scotland—Dr. W. Leslie Mackenzie.

Your correspondent has not been able to discover whether the Irish Local Government Board was represented. Among other members from Great Britain and Ireland who were present may be mentioned Sir Patrick Manson, Sir A. Wright, Major Ronald Ross, Colonel Bruce, Professor Nuttall, Drs. Dean, Bulloch, Nathan Raw, Bashford, Breinl, Selvin Moore, Howlett, Ledingham, and Professor McWeeney (representing the Committee of the Irish Tuberculosis Exhibition).

SECTIONS.

On Wednesday morning the doors of the Reichstag building were opened at about 9, and the usual scrimmage for tickets was soon in full swing in the vestibule. The officials behaved in a most exemplary manner in retaining a polite bearing to all comers, no matter how extravagant their demands might be. In the exhibition but few were to be found at this early hour, but by 9.30 the section rooms were crowded.

In Section I the papers on the bacilli of the typhoid group, which should have been read on Tuesday, were taken first LOEFFLER began. He described the general character of the group, and gave a detailed classification, which he had built up with the assistance of solutions and agglutinating serums. LENTZ came next with an interesting communication, while COURMANT, speaking in French, wound up the official reports. A discussion followed, in which CHANTEMESSE, GHON, STARK, LEVY, BABINSKY, UHLENHUTH, WOLFF, EISAER, CITRON, EISELSBERG, PETRUSCHKY, and BAEUMLER took part, and LOEFFLER then claimed his right of reply. VAUGHAN (Michigan) then spoke on experimental immunity to *B. coli* and *B. typhosus*, TERNI (Milan) on the theory of the sun and water in typhoid epidemics, and ALENQUIST (Stockholm) on the biology of *B. typhosus*. The room had by this time emptied considerably, and after a short struggle to awaken sleeping interests the sitting adjourned until the afternoon.

In Section II RUBNER and BLAUBERG dealt with the dietary of the poor, while ABEL, ANDRÉ, HUEPPE, and KOENIG spoke on the requirements of the legislation on foodstuffs. Several other papers were read in this Section.

In Section III JOHANNESSEN, STEPHANI, and GOPPERT dealt with the value of medical officers in schools, COHN and BERNHARDT gave papers on allied subjects, while CZERNY and JUSZKAI spoke on overwork in school children. This section did not long remain full.

In Section IV the question of invalidity and old age pensions was discussed.

In Section V plague occupied the members all the morning, and an interesting report on The Mode of Spread and the Prevention of Plague in Australia was presented by Dr. J. ASHBURTON THOMPSON, permanent head of the Department of Public Health, New South Wales. The report recalled that plague appeared in Sydney on January 19th, 1900. Between that date and the beginning of 1907 six outbreaks occurred in that city. The report pointed out that in countries where natives predominate it was difficult to obtain exact information concerning outbreaks of epidemics; but this difficulty does not exist in Australia, and Dr. Thompson had the opportunity of studying plague amongst a wholly white community. Starting with the belief that plague in man is chiefly due to infection by plague-infected rat fleas, and not as a rule by communication of the infection from the sick, Dr. Thompson analysed the incidence of plague in Sydney during the several outbreaks. In the outbreak of 1900 the requisite particulars for this analysis were obtained in 289 out of 303 cases. The 289 patients occupied 276 dwellings, which for the most part were widely separated from each; of these dwellings 266 harboured only a single case apiece. In 1902 these observations were corroborated, and, although in both years a few multiple cases occurred, they did not serve to mask the peculiar behaviour of plague in chiefly attacking individuals living in separate abodes, and warranted the conclusions: (1) that the epidemic spread of plague occurs independently of communication of the infection from the sick; and that (2) the infection of plague spreads by means which are external to man, and independent of his agency as a subject of the disease. Dr. Thompson's analysis likewise showed that the primary patient was not the case around which subsequent plague cases centred. The explanation of this was to be found in the infected rat-flea theory, and Dr. Thompson proved, with almost scientific precision, that the rat was the transmitter of plague. The species of mus met with in Sydney were *Mus decumanus*, *M. rattus*, and *M. musculus*, and plague had been identified in them all. The evidence of the Sydney observations seemed to prove that epidemic dissemination of plague was effected by the rat alone, but did not explain the passage of the disease from rat to man. Rejecting the conveyance of plague by food contaminated by rat secretions, and after reviewing our knowledge of the flea as an agent in transmission, Dr. Thompson concluded that, while plague might be casually acquired by man in several ways, the flea was the ordinary agent of infection, and that the flea as well as the rat was indispensable to produce epidemicity. Recognizing the facts that, although plague was not maintained by infection from the sick, yet it was occasionally found to be so communicated; that plague could be, and generally was, communicated from rat to man by the flea; and that it must be possible for the disease to be communicated from man to the rat, Dr. Thompson expressed the opinion that every case of plague should be segregated and that preventive measures should be directed against the rat and the rat flea. In the practical application of these principles, however, although it was advisable to prevent the possibility of plague infection when plague-infected premises were being cleansed, by spraying the floors freely with 5 per cent. solution of crude carbolic, yet the rat must be recognized as the *fons et origo* of the infection for man. Rat destruction, therefore, remained the keynote of preventive measures against plague. The actual killing of rats in any given area could only reduce the numbers of these pests; extermination over a wide area was wellnigh impossible. As in the prevention of malaria it was necessary to destroy the places where the mosquito breeds, so in the elimination of plague it was essential to prevent accumulations of rubbish in places where rats might collect and breed, and to see that wharves, dwellings, outhouses, and warehouses were in

such condition as greatly to impede or prevent the entrance of rats. Reconstruction of a rat-riddled wharf or building where plague prevailed was the true method of arresting plague. Several epidemic diseases could be eradicated only by the expenditure of money, and plague must be reckoned amongst these.

In Section VIa the purification of sewage and the recent experiences of the separation system was dealt with, and in Section VIb the dangers of epidemic diseases in railways and the risks of employing persons suffering from nervous diseases on railways led to animated discussions.

In Section VII infectious diseases on board ship and the sanitary supervision of ports were fully threshed out, while in Section VIII infantile mortality, control of milk supply, and breast feeding were spoken of.

In the afternoon the chief interest was centred on Sections I and V. Wassermann, Bordet, and Paltauf spoke on modern immunizing methods. The latter proved too lengthy for the majority, and after a short time the room which had been well filled suddenly emptied almost completely.

The Congress Banquet.

In the evening the members congregated together in the Blue Room of the Exhibition Park to partake of the Congress banquet. The room is a large one in which many pictures and pieces of sculpture of the modern school, mostly representing nude and semi-nude figures, in attitudes which may be artistic, but are certainly neither in good taste nor elevating to the mind, are collected. These figures, however, were to a great extent obscured by the elaborate floral decorations and by the wealth of tables. In all, some 650 to 700 persons sat down to table. In the centre the officials and the Governmental and municipal delegates of all countries and their ladies were placed, while at either end of the room the other members found their tables, partly by the help of numbers and partly by the colour of the flowers on the tables. The ladies were for the most part in full evening dress. The menu was artistically got up. It took the form of a booklet, of pale brownish colour, tied up with gold cord. On the first page the music programme was given, and here, appropriate for the occasion, almost every nation was represented, either by the composer or by the subject of the piece. The band was in a neighbouring offshoot of the hall, and this distance was a great relief to the diners. On the second page the vital question was settled, to the obvious enjoyment and satisfaction of many a gourmet, by such small matters as turtle soup, Heligoland lobsters, artichokes, and "Melba" peaches. Lastly, on the third page was a very artistic copperplate of Hygeia helping the poor. The speeches delivered were numerous, and some long. One was even supposed to be witty, and, indeed, evoked roars of laughter. Whether this "professorian" humour would have caused the same mirth before dinner is doubtful. The Secretary of State (von Bethmann-Hollweg) said that one of the characteristics of the present day was that institutions are formed for carrying out interests common to the whole civilized world, and these institutions spread far over the limits of single countries. This development, which he realizes is yet young, does not only lead to the interchange of opinions and to the better understanding of the people of various countries, but it also forms the expression of our belief in the stability of human culture. The Congress must be regarded as a striking example of peaceful international endeavour. He paid a tribute to the class of mind which the modern hygienist possessed, and in conclusion proposed the toast of each nation which was represented by the members of the Congress. The Cabinet Minister Delbrück proposed the Kaiserin as "Protectress of the Congress." After dinner, coffee and cigars were served in the verandahs, and later on a dance was organized.

(To be continued.)

MEDICAL NEWS.

Mr. Henry Kimpton, of 13, Furnival Street, Holborn, E.C., has issued a new catalogue of second-hand medical books arranged under subjects.

A course of clinical lectures and ward demonstrations will be held during the ensuing session at the Great Northern Central Hospital, Holloway Road, N., by members of the medical and surgical staff, beginning on Friday, October 11th, at 5 p.m., with a lecture on treatment of thoracic effusions, by the senior physician, Dr. Clifford Beale. The weekly lectures and daily demonstrations will be open to qualified men and to students in their fifth year of study. The hospital is now easily accessible by "tube" to Holloway Road Station. It contains 160 beds, and is usually full to overflowing, with a high percentage of acute cases. It has for many years been the recognized meeting ground of the North London Medical and Chirurgical Society, and, being now within easy reach of the Western and Central districts, its value as a place for clinical study should meet with more than local recognition.

An International Congress on Tuberculosis will be held at Washington from September 20th to October 3rd, 1908, under the auspices of the National Association for the Study and Prevention of Tuberculosis. The President is Dr. Frank Billings, and Dr. Lawrence F. Flick, of Philadelphia, is Chairman of the Organizing Committee, which has enlisted the practical interest of seven Governmental departments—State, Treasury, War, Navy, Interior, Agriculture, and Commerce and Labour. The work of the Congress will be distributed among seven sections, as follows: I, Pathology and Bacteriology (President, Dr. W. H. Welch); II, Clinical Study and Therapy of Tuberculosis—Sanatoriums, Hospitals, and Dispensaries (President, Dr. V. Y. Bowditch); III, Surgery and Orthopaedics (President, Dr. W. J. Mayo); IV, Tuberculosis in Children—Etiology, Prevention, and Treatment (President, Dr. A. Jacobi); V, Hygienic, Social, Industrial, and Economic Aspects of Tuberculosis (President, Mr. E. T. Devine); VI, State and Municipal Control of Tuberculosis (President, Surgeon-General W. Wyman); VII, Tuberculosis in Animals and its Relations to Man (President, Dr. Leonard Pearson). During the three weeks, September 21st to October 12th, a tuberculosis exhibition will be open, and lectures by well-known authorities, among others by Dr. Theodore Williams, will be delivered. Prizes of £200 are offered for the best work in the prevention or relief of tuberculosis done by any voluntary association since the last International Congress, which was held in 1905; for the best exhibit of a sanatorium for the treatment of tuberculosis among the working classes; and for the best exhibit of a furnished home for the poor in furtherance of the crusade against tuberculosis. Several prizes of smaller value will be given for educational leaflets, and a medal is offered for the best exhibit sent by any State or country (other than the United States) illustrating effective organization for the destruction of tuberculosis.

The annual meeting of the French Surgical Association will be held next week in Paris. Those who have attended previous meetings will be the first to recognize that they are attractive not only from the scientific point of view, but as affording occasions which draw together increasing numbers of leading surgeons from all parts of the Continent, as well as from Great Britain and America. Its cosmopolitan character is indeed steadily becoming one of its most striking features, and the fact that it is always held at a fixed date is convenient to surgeons both from the East and West, who can make a point of including a visit to Paris for this congress in their plans for the year. The French railways offer special facilities, which apply also to those who travel from Great Britain, although their number is small. The congress will assemble on Monday next in the buildings of the Faculty of Medicine in Paris, and the subjects selected for special discussion are the effect of Roentgen rays on malignant tumour; the value of nerve, muscular, and tendinous transplantation in the treatment of paralyses; and the relation of chronic surgical affections (tuberculosis and cancer) to workmen's compensation. During the meeting of the Association there is always an exhibition of surgical instruments and appliances, which is both interesting and suggestive, much care being taken in the selection of exhibits to avoid waste of time and space upon articles which would be more suited to a shop. On Tuesday a meeting to which delegates of twenty-six nationalities have been summoned will be held at the Necker Hospital, when a proposal will be made for the foundation of an international society of urology, and for a congress on the subject in Paris next year. The general idea is to establish an organization similar to that of the International Surgical Society, which will hold its second congress at Brussels next year; this year the French Urological Association will hold its meeting in Paris from October 10th to 12th, the chief subject selected for discussion being tuberculous suppuration of the prostate, to be opened by M. Oraison, of Bordeaux.

British Medical Journal.

SATURDAY, OCTOBER 5TH, 1907.

LUNACY IN ENGLAND AND WALES.

THE publication of the annual report of the Lunacy Commissioners is generally the signal for a public outcry that insanity is increasing at an appalling rate, and that the Commissioners, so far from recognizing this, perversely shut their eyes, prophesy smooth things, and explain the apparent increase of certified lunatics by increasing stringency of certification, accumulation within asylums, and a dimishing rate of discharges as recovered. In the face, however, of an increase of certified lunatics, which within the last half century has been thrice as great as the increase in the population, critics find themselves unable to lay to their souls the Commissioners' flattering unction, which, they seem to hold, "but skins and films the ulcerous place, whiles "rank corruption, mining all within, infects unseen."

In these circumstances, and in view of the fact that exactly a century has intervened between the first comprehensive inquiry into the condition of the lunatic poor by a Select Committee of the House of Commons in 1807, and that the completion of the inquiries of the Royal Commission on the Care and Control of the Feeble-Minded this year is likely to be followed, as was the first, by important changes in lunacy administration, we may once more briefly refer to the evidences furnished by the Lunacy Commissioners' Report concerning the increase of lunacy and other kindred matters.

With regard to the increase of certified insanity, we can only repeat what was said on this matter on April 20th of this year—that there are no grounds for any alarmist fears of a rapidly progressive mental deterioration in England and Wales. It is quite true that in 1859 there was only 1 certified lunatic to every 536 of general population, and that this proportion has since then risen so greatly that there was 1 to every 283 on January 1st, 1906, and 1 to every 282 on January 1st, 1907. Inasmuch as this increase has affected the pauper insane almost exclusively, there having been an actual decrease in the ratio to population of private patients in 1906, we have no desire to minimize the seriousness of the matter for the rate-paying public; but these figures in themselves afford no proof that insanity as a disease, as an abnormal variation from the general standard, is increasing. So far from that being the case, a careful examination of the rates of deaths and discharges as recovered in and from asylums, which show that there has been a gradual decline in the total discharge-rate (recoveries and deaths) from 218.0 per 1,000 of the average number daily resident in the five years 1873-7 to 191.2 per 1,000 in 1899-1902, still further to 186.9 in the three years 1903-5, and even to 178 6 per 1,000 in the year 1906, is sufficient to warrant the belief that the bulk of the increase of certified lunatics is due to the great factor of accumulation.

Another potent cause of the increase lies in the fact that the net of certification is both of wider sweep and closer mesh. This was clearly brought out by Mr. Humphreys's comparison of censual and lunacy returns, discussed in the article mentioned above. From that comparison it resulted that, outside the cases of which the Lunacy Commissioners are officially cognizant, there is a great reserve of uncertified cases, appearing in the census returns as feeble-minded, and that this reserve has for many years being increasingly drawn upon, the ranks of the certified being swollen at its expense.

The apparent increase of insanity is thus to a very large extent merely a matter of redistribution. Whether, in addition to this, there is an actual, even though small, increase in the occurrence of insanity there is at present neither any reliable information nor the machinery for its acquirement, and the comfortable assurances of the Commissioners on the one hand and the dismal forecasts of their opponents on the other are seen to be no more than expressions of opinion founded on insufficient data.

That the information necessary for deciding this question should be lacking is a serious fault, but it is a fault of system and not of departments. The point cannot be even approximately determined until we have reliable data, extending over several years, concerning the incidence of occurring insanity, not only in asylums but also among the insane outside asylums—in workhouses or at their homes, in fact amongst the great uncertified reserve; and this indispensable information can never be obtained so long as there exists the present lack of co-ordination between the two great bodies which control lunacy in our country.

If the rate-paying public is justifiably concerned about the steadily increasing incubus of pauper lunacy, it is to an equal degree interested in the causation of insanity. Writing as long ago as 1889, Sir John Batty Tuke, in a paper entitled "Lunatics as Patients, not "Prisoners," asked whether, commensurately with the increasing expenditure on the care and treatment of lunatics, even at that time enormous, there had been achieved an understanding of the hidden processes which underlie the insanities, and means of arresting their occurrence such as the rate-paying citizen might reasonably expect in return for the vast sums expended. These questions he answered by a decided negative, and there can be no doubt that if the tables of causation furnished by the Lunacy Commissioners be accepted as evidence, these questions must be answered in the same way to-day. To the unreliable and positively misleading nature of these tables we referred in 1904, and it will be noticed that with few exceptions this opinion was supported by the members of the Psychological Section at the Annual Meeting of the British Medical Association this year. By this it is not meant that the inquiries of the individual observers are without value by themselves; for, presumably, each investigator has in his own mind a standard of what constitutes alcoholic excess, for example, or from what combination of bodily and mental abnormalities congenital defect may be inferred; and brings the same patience and tact to the discovery of a patient's heredity and the same knowledge and experience to the relative apportionment of such antecedent circumstances as head-trauma, domestic trouble, or venereal disease. But for want of a common standard of such factors as admit of standardization the tabulated result in the Commissioners' Report is not a collation of like, but a miscellany of unlike things, in fact, is so much waste paper. For this the Commissioners are not responsible any more than for the fact that, owing to divergent views concerning clinical types, the tables setting forth the several forms of mental disorder possess very little

value. The scientific value of the Commissioners' reports, so far as they concern the great questions of the growth and causation of insanity, can only be fitly described as exiguous. And yet these two questions are of the utmost national importance, outweighing almost any other. The reasons for this state of affairs are known to every one who has considered the matter at all. We have already indicated the cause of the failure to answer the first question; as to the second Sir John Batty Tuke, in the article to which we have already referred, said that the medical men who had the direction of establishments for the insane were occupied with administrative and economic duties to the practical exclusion of scientific investigation. So far as the medical superintendents of asylums are concerned, this is much less true to-day than it was a few years ago, as the research work carried out by individual investigators throughout the country abundantly testifies, but satisfactory results can never be expected from isolated individual effort. The only means of arriving at a knowledge of the causation of insanity, in the hope of a possible ultimate control, direction, or avoidance of these causes, appears to lie in the institution of a comprehensive and systematic inquiry conducted on strictly scientific lines, under the direction of a central body, which shall embrace within its scope pathological, biological, and biometrical investigations with regard to the insane and defective classes, including within the latter term all correlated neuroses. That such work has not been attempted by the Lunacy Commissioners—who by the terms of their appointment are bound to visit and supervise all asylums certified to receive the insane throughout England and Wales, and whose time is thus devoted mainly to the duties of inspectors of asylums—is not surprising. The annual report, from the administrative point of view, is one of which any country might be proud, even were the Commissioners twice as numerous as they are, and it is not to be forgotten that scientific investigation was not one of the objects for which this Commission was appointed. Nevertheless, the causation of insanity and of its correlative variations is one of the most pressing problems of the day. The Royal Commission on the Care and Control of the Feeble-minded will doubtless in a short time make certain recommendations to Parliament. It is fervently to be hoped, apart altogether from purely administrative changes, such as the unification under one central authority of the supervision and control of all certified or notified lunatics and defective persons, that they will recommend some scheme permitting of the establishment on a scientific basis of a comprehensive inquiry into the causation of insanity. Every one now knows of the enormous losses our country has suffered through the development in foreign countries of British discoveries, owing to our failure to recognize in time the importance of science as applied to the arts. Is it too much to hope that, ere it is too late, the nation will grasp the fact that, if science is of value to our commercial development, it is likely to be of much more value to the development of national efficiency?

One more point in the Commissioners' report calls for remark. On pages 50 and 51 the Commissioners broach the important subject of the boarding-out of pauper patients. The efforts which we have made to direct attention to this subject are well known to our readers, and it is therefore with gratification we read that the Commissioners "have no doubt that power "should be given, and an effort made, to allow it "such extended trial as is found possible, with the "view at least of affording some relief to the financial "pressure which is now keenly felt with reference to the "maintenance of the rate-supported insane and of "removing from asylums persons who do not need "their expensive accommodation and administration." There can be no doubt that if, following this recommendation, the law should be so amended as to permit of the institution of a satisfactory system of boarding-out, it will be found not only to effect a considerable monetary saving, but to be a valuable therapeutic aid and a satisfactory and humane means of treatment of a large proportion of the asylum population—in fine, an indispensable part of every complete system of lunacy administration.

Adverting to the cases, at present nearly 6,000 in number, known as outdoor pauper lunatics, the Commissioners say that they "have reason to believe that "these insane persons, who are in receipt of outdoor "pauper relief, are occasionally living in conditions of "discomfort and neglect, if not of actual ill-treatment," and that, in their judgement, "all of them should be "subject to systematic careful inspection, as a class "for whose care the safeguards are at present quite "inadequate, and who are in need of the protection of "the State." The deplorable conditions under which a considerable proportion of these patients exist were described in our pages, we believe for the first time, on July 8th, 1905, and we therefore welcome the authoritative statement of the Commissioners on this point as heralding the advent of much-needed and most salutary reforms.

THE SCIENTIFIC TEMPER.

We hear much in books and addresses of the scientific spirit with which all who devote themselves to science are supposed to be animated. It is to the existence of that spirit that the vast progress of science, of which evidences are seen in every province of human activity, is due, and it is to the spread of that spirit among the people that we must look for their deliverance from the thraldom of the folly and superstition which still hold large sway over the human mind. It has been said with truth that against stupidity even the gods strive in vain, but there is comfort in the thought that the scientific spirit is at last beginning to make a distinct impression on the inert mass of human ignorance. There is, however, one obstacle to the working of the scientific spirit for which the stupidity of the unlearned cannot fairly be held accountable, and that is the scientific temper. The artistic temper is proverbially irritable. Horace speaks of the *genus irritabile vatum*. We do not know that poets are more irritable than painters or musicians. But irritability is by no means confined to professors of the fine arts. The word *vates* means a prophet or an oracle, as well as a poet; Pliny calls Herophilus a *vates medicinae*. The medical or scientific *vates* is often, we fear, as irritable as other prophets. Science, of course, claims to hold her lofty head far above the disturbing influence of sentiment or passion. Yet there are no controversies more bitter than those between rival scientific workers, and the temper shown in such disputes affords ground for thankfulness that there is no likelihood that a scientific Inquisition will ever be established. If such a thing were to come to pass, scientific heretics would fare very ill.

The irritability of the scientific, like that of the poetic *vates*, does not arise from vulgar conceit so much as from a keen sense of the dignity of his vocation and the loftiness of his work. Hence he feels the lack of appreciation more deeply than men of common clay.

This feeling is too often justified by the neglect which has been the lot of so many men who have given themselves without stint and without hope of material reward to labour for the lightening of the darkness in which we live and move and have our being. Many have been allowed to starve or spend their lives in hidden grooves, their poverty and obscurity being sometimes in strong contrast with the fame and wealth of others who have reaped where they have not sown. The hardest thing for a scientific man to bear is the attribution of his discoveries to men who have come into the vineyard at the eleventh hour and received the reward of his labours. The history of science is full of examples of such injustice; they all point the moral that it is the inevitable fate of the man who has not the gift of self-advertisement to be overlooked.

Sometimes perhaps the scientific worker is a little too sensitive, and when he has received the meed of honour which is his due still asks for more. Instances of this weakness could easily be gathered in plenty at home, but we prefer to go abroad for an illustration. Professor Ramon y Cajal has recently been complaining bitterly of the jealousy and the ingratitude of which he is the object on the part of his fellow-countrymen. He appears to have published a kind of "plaint" from which we take the following passages. "I divide into "two classes the colleagues who honour me by their "interest in the importance and future of my ideas. "There are excellent friends who, being ignorant of a "great part of my work (unfortunately in Spain the "number of persons who have read all my writings does "not exceed two or three) believe that my modest "scientific output is limited to the concept of the neurone "which foreigners are accustomed to associate with my "name; and there are those, happily few in number, "less well informed as to the nature of my modest con-"tributions to science, who seem to take an unspeakable "pleasure and to feel a frantic delight when any foreign "histologist of no repute or authority, making himself "the echo of a German error, allows himself to call in "question the concept of the neurone or rejects any of "my arguments or inductions. To this class of pitiful "colleagues undoubtedly belong certain individuals who "from time to time, à propos of an alleged upsetting of "the neurone of which they have read in some French "medical weekly journal, think they annoy me by "anonymous gross insults and vulgar insolence."

We are sorry that Professor Ramon y Cajal thinks he has cause to complain of neglect at the hands of his countrymen, but we think he may find comfort in the knowledge that he is appreciated throughout the scientific world as the author of a revolutionary discovery in the anatomy of the nervous system. The award of the Nobel Prize to him a year or two ago is a solid proof of the esteem in which his work is held, and may well compensate him for a few anonymous insults. We cannot help thinking, however, that it would have been more dignified on his part to let them pass without notice. His complaint illustrates the over-sensitiveness of the scientific temper. It cannot brook the slightest contradiction. This is retarding to progress, for it tends to bring science into contempt before the public. The want of mental perspective which makes an investigator exaggerate the importance of his own work makes the judicious grieve, and is unfortunately obvious to the groundlings. The real spirit of a worker in the field of science, or in any other, is to do his best, regardless who may get the credit he may think to be his due. In Mrs. Sellar's *Recollections*, published a few months ago, there is a passage which we commend to all scientific workers. While on a visit to her in Scotland, Huxley said to her daughter, while talking of lack of appreciation, "Well, my experience is "that if all the undeserved appreciation one gets were "weighed in a balance against all the undue depreciation, the first would so outweigh the latter that it "would kick the beam."

THE GOTHENBURG SYSTEM.

IN the first half of the last century Sweden was one of the most drunken countries in Europe, and the increase in the drinking habits of the people was the cause of much anxiety to public-spirited Swedes. In 1855 a law was passed abolishing private stills, and giving to every commune the right to decide with regard both to the bar (on) and retail (off) sales of spirits not only in what manner and within what limits the trade should be carried on, but also whether it should be permitted at all. In 1865 a committee was formed in Gothenburg to take advantage of this law, and a company was formed to take over the licenses hitherto disposed of by auction to the highest bidder; the shareholders were to be paid interest at 6 per cent., then the current rate of interest in Sweden, and all profits were to be devoted to schemes for the benefit of the working classes; the essential point of the system was the elimination of private profit upon the sale ot spirits. The company (*Bolag*) immediately took over 36 licences, and within the next three years acquired 25 more, making 61 altogether, but of these only 43 were used—27 for public-houses, and 16 for hotels, clubs, and restaurants. In 1896, though the population of Gothenburg had more than doubled, the number of licences in use had not increased; in fact it had been reduced to 42. The company has established eating-houses for working men where only one dram of spirits is allowed with each meal, and they are not only well conducted but very popular; it has also established reading rooms where no intoxicant except beer is sold. The consumption of spirits in Gothenburg fell very rapidly at first, and appears now to have become stationary. The scheme did not touch the sale of beer, with regard to which something very like free trade was permitted.

An investigation made in 1894-5 by the Swedish finance department appears to have shown that the defects in the then existing law was mainly due to two causes—first, the use of the profits of the company in aid of local rates; and, secondly, the absence of adequate provision to guard against ordinary abuses of administration. In 1895 a new law was passed directing that the accounts of the company should be kept on a system devised by the State finance department, and for the yearly audit of the accounts by auditors appointed by the Crown. The tendency to a remarkable increase in the consumption of beer had already been noted, and the rate of increase became enormously more rapid after the new law came into force, and was attended by an extraordinary rise in the number of arrests for drunkenness in Gothenburg in proportion to the population. The causes of this condition of things were investigated by a committee of the Gothenburg town council, and the report of this committee, while making various recommendations, indicated that the true cure was to be found in bringing the sale of beer under control. The attempt to place the sale of beer under the same regulations as the sale of spirits failed, but we learn from an article in the *Times* that a new and more stringent law governing the sale of spirits came into force on October 1st. One of its provisions is directed to limiting the privileges attached to certain special licences granted for the life of the licensee. These

licensees have carried on an extensive trade in spirits not only in their own towns, but throughout the country by agents. Under the new law no new licences of this class will be granted, and the existing licences will revert to the State on the death of the holders or by surrender in return for an annuity equal to the average yearly profits. Further, the holders of these licences are now prohibited from "offering spirits for sale, by "calling personally or through intermediaries, to "others than holders of similar licences." Further, the new law provides that in every part of Sweden where the communal authorities permit the retail sale of spirits the first option to take over all the licences must be given to a company formed for that purpose. The board of directors of such a company must consist of five members—three appointed by the shareholders, one by the county council, and one by the local agricultural society; the State will appoint a representative to attend all general and board meetings, and to report. Further, the sale of spirits at public entertainments, other than concerts where instrumental music alone is performed, is forbidden. Experience having shown that the policy of appropriating to the relief of local rates the greater part of the profits had a demoralizing effect upon municipal authorities, the proportion payable to municipal authorities is reduced, the balance being paid into the public treasury; while in the country the whole of the profits must in the first instance be paid into the public treasury. Out of the amounts thus received by the Treasury it is, first, to set aside an amount equivalent to one-hundredth part of all the taxes and profits throughout the country to "further the tempe- "rance cause and to fight against the evils of drunken- "ness," and, secondly, to distribute amongst the county councils and towns independent of the county councils a sum equivalent to one fifth of the total spirit trade receipts, and amongst the local agricultural societies a sum equivalent to one-eighth of the total spirit trade receipts. The remaining funds are to be distributed by the Treasury amongst the country districts according to population.

VACCINATION—A CAMPAIGN OF EDUCATION.

THE New Vaccination Order recently issued by the Local Government Board, which will be found printed in the SUPPLEMENT, p. 218, institutes changes in the administration of the vaccination laws in this country which are fraught with danger to the health of the community. Notwithstanding the agitation of certain extremists in Parliament, the present Government has not ventured to depart from the accepted principle that it is the duty of the State to provide vaccination. The facility, however, with which exemption can be obtained under the new regulations is certain to encourage the neglect of vaccination. In England and Wales the registrars have now received copies of the revised "Notice of the Requirement of Vaccination" (Form A, Part 1), a copy of which must be handed as hitherto to the informant of every birth. A truly Gilbertian situation is created by the instruction of the Registrar-General that, along with this Notice of Requirement, a copy of the "Form of Declaration" of conscientious objection (Form A, Part 2) *must* also be handed to the informant of every such birth that occurred on and after September 1st. The incongruity of this is at once apparent, and serious consequences will doubtless be the inevitable result. In Scotland the "Form of "Declaration" is to be supplied on application only—a mode of procedure calculated to impress the informant that the State department concerned really desires to emphasize the importance of vaccination rather than the so called conscientious objection. Thousands of parents are quite ignorant of the reasons why the State provides vaccination. All they know is derived from the mischievous and misleading statements and publications of a small section of extremists, whose false deductions receive the widest circulation. Hence the necessity for a campaign of education. This campaign has begun in at least one part of the British Empire, and will doubtless be much appreciated by reasoning and reasonable parents. An excellent example is provided by the Provincial Board of Health of Ontario. Dr. Charles A. Hodgetts, the Chief Health Officer of Ontario, has published a most convincing pamphlet[1] for popular distribution. The publication and free circulation of such a pamphlet in this country would do much to avert the disastrous results which may follow the present encouragement of thoughtless indifference. A brief and concise history of small-pox in the eighteenth century is followed by facts showing the influence of vaccination in reducing the ravages of small-pox. It is clearly shown how vaccination has changed the age-incidence, and indisputable lessons are taught regarding the beneficial effects of vaccination. A series of illustrations show in a most striking manner the loathsome character of the disease in the unvaccinated. A very remarkable illustration is a photographic reproduction of two infants in the arms of an attendant; one of them—a most unsightly object—showing small-pox in an unvaccinated child which died, the other, a chubby healthy-looking child protected by vaccination; the two infants are actually in physical contact with each other. The pamphlet concludes with a series of masterly arguments which completely vindicate vaccination as a preventive of small-pox taken from the works of Dr. Immerman (Basle), Drs. Welch and Schamberg (Philadelphia), and Professor Metchnikoff (Paris).

LONDON QUACKS IN THE EIGHTEENTH CENTURY.

TIMES, says the poet, change; and we change with them. There is, however, one point in which we never change. As Montaigne said, *l'homme se pipe*—man gulls himself—and he will continue to do so, for as Goethe spoke of the "eternal feminine," so there is an eternal gullible which will always make man the victim of quackery of all kinds. Steele begins a paper in the *Spectator* of July 30th, 1712, with the following words: "It gives me much despair in the design of reforming "the world by my speculations, when I find there "always arise, from one generation to another, succes- "sive cheats and bubbles, as naturally as beasts "of prey, and those which are to be their food. "There is hardly a man in the world, one would "think, so ignorant as not to know that the "ordinary quack doctors, who publish their great "abilities in little brown billets, distributed to all "that pass by, are to a man impostors and murderers; "yet such is the credulity of the vulgar, and the impu- "dence of these professors, that the affair still goes on, "and new promises of what was never done before are "made every day." Instead of the "little brown billets" the quack now publishes his great abilities in the columns of newspapers, the managers of which would doubtless indignantly resent the imputation that they are aiding and abetting persons who are trying to get money on false pretences. But the people swallow "new promises of what was never done before" as greedily as ever. In the middle of the same century, Goldsmith in his *Citizen of the World* represents his Chinese philosopher as saying: "Whatever may be the "merits of the English in other sciences they seem

[1] In the *Sanitary Journal* of the Provincial Board of Health of Ontario, twenty-fifth annual report for the year 1906, printed by order of the Legislative Assembly of Ontario.

"peculiarly excellent in the art of healing. There is "scarcely a disorder incident to humanity against "which they are not possessed with a most infallible "antidote. The professors of other arts confess the "inevitable intricacy of things; talk with doubt, and "decide with hesitation; but doubting is entirely "unknown in medicine; the advertising professors "here delight in cases of difficulty: be the disorder "never so desperate or radical, you will find numbers "in every street, who, by levelling a pill at the part "affected, promise a certain cure without loss of time, "knowledge of a bedfellow, or hindrance of business." The disciple of Confucius goes on to express surprise that, notwithstanding all this, "there are many here "who now and then think proper to be sick"; some even carry their eccentricity to the point of dying. The same thing, strange to say, happens even now when people have all manner of infallible specifics offered to them in every newspaper and magazine. It must be remembered that in the eighteenth century things were not as they are now, when practitioners of the healing art hide their abilities behind a brass plate, and are hurt if their name appears anywhere else. Sir Hans Sloane had a secret remedy for diseases of the eyes, and Jurin, physician to Guy's, a specific for dissolving the stone; others had their own pills, potions, and salves. The little arts for attracting patients practised by Sawyer, late Nockemoff, were used by no less a person than John Huxham, to whom we owe one of the earliest descriptions of diphtheria, and are set forth by Tobias Smollett in *Ferdinand Count Fathom.* In the *Gentleman's Magazine* for 1748 there is a curious list of the "empirics" who flourished at that time, the nostrum of each being indicated. Thus the "special line" of Mr. Townshend of the Haymarket, seems to have been "electuaries for "asthmas, consumption, and barrenness"; Mr. Neeler of Hammersmith offered belts for leprosy and girdles for the itch; Dr. Newman of Holbourn, "drops for colds; "plasters for gripes, powders for heartburn and piles, "and oils for itch and various diseases"; Dr. Henry of Hatton Garden, "drops for coughs, "electuaries for diabetes and leprosies, and medi-"cins for nervous disorders." Mr. Rock of Ludgate Hill had tinctures for the stone and toothache, liquors for the itch, elixirs for hysterics and "hypo." Mr. Squire of the Strand had "essenses for palsy"; B. Schwanberg of the Strand, "liquid shells for stone." "Machines" were favourite weapons in the warfare against disease. Dr. Mortimer of Devonshire had "machines for fevers"; Mr. Banks of Southwark, "machines for agues"; Dr. Deermar of Hyde Park Corner, "machines for broken wind"; Mr. Garner of Holborn, "machines for cancer, canker, and corns"; a gentlewoman of Aldersgate Street, "machines for con-"sumtions"; Mr. Rottier of Golden Square, "machines "for gout and impotency." For the last-named disability Dr. Comyns of the Old Bailey had "confects"; Mr. West of Bow Churchyard, "drops"; Mr. Rock of Ludgate Hill, "elixirs"; Mr. Voyce of St. Paul's Churchyard, "quintessences"; Dr. Edwards of Pope's Head Alley, "sugar plums." Sugar plums were also used by various practitioners for "asthma, blood, and "breath"; for "breath, colic, gleets, and hysterics"; for worms, agues, and itch. There were "peas" for "obstructions," issues, cancer, "female disorder," and fevers. Remedies for "claps," "gleets," and "pox" were so numerous as to give one a low idea of the morals of the day. The list comprises eighty names, not all, it should be said, belonging to London. One may, perhaps, gather from it that the *Gentleman's Magazine* in the eighteenth century discharged the useful task which *Truth* has taken upon itself at the present day.

SCIENTIFIC INVESTIGATION OF ALCOHOL.

THE National Temperance League has arranged for a series of scientific researches into the action of alcohol upon mental and muscular efficiency and on the blood in relation to its power of resistance to disease. The first line of research will be to supplement and continue inquiries already published in which the action of graduated doses of alcohol has been tested on the capacity for muscular work, as compared with the same work done without alcohol. To this will be added a test of capacity for mental work on the same day by the same subjects, ergographic work being alternated with mental tests, for the application of which improved apparatus has been devised. The second line of research will be to test the capacity for muscular and mental work during periods when alcohol is being taken in small doses as compared with that done during periods when no alcohol is being taken. Experiments of this nature have been carried out by Kraepelin on the capacity for mental work, but no work of this kind has hitherto been done on the capacity for muscular work. The third line of research will be to test the action of some alcoholic beverage in ordinary use, and to compare the action with that of ethylic alcohol. In arranging the research the League has had the assistance of a science and education committee, among the members of which are Sir Thomas Barlow, Sir Victor Horsley, Professor William Carter, Professor Sims Woodhead, Dr. Claye Shaw, Dr. Shuttleworth, Dr. Robert Jones, Dr. Hyslop, Mr. Pearce Gould, Mr. McAdam Eccles, and Surgeon-General Evatt, C.B. Under the advice of the Committee a student of St. John's College, Cambridge, who is preparing for the M.B. degree, has been subsidized to do work under the general supervision of Dr. Rivers, in testing the muscular and mental action of subjects under doses of disguised alcohol. The League is appealing for further contributions to enable it to appoint other students under Professor Sims Woodhead, and to assist the research work of some junior members of the profession who are interested in the subject. The secretary of the League is Mr. J. Turner Rae, Paternoster House, London, E.C.

A DIAGNOSTIC MISADVENTURE.

SIR JOHN ERICHSEN used to tell a story of a student who, at the practical part of the Final Examination for the Membership of the Royal College of Surgeons of England, mistook the late Sir George Murray Humphry, who was of somewhat cadaverous aspect, for the patient he had to examine. The effect of this mistake on Sir John Erichsen was such that, as he put it, he was shocked and almost paralysed, so that he could scarcely find words to explain the situation to the unlucky student. What the student's state of mind was we can only faintly conjecture. In a French journal we find an even more appalling misadventure, recorded on the authority of the distinguished writer Aurélien Scholl, which befell not a student but a shining light of medical science, Legrand du Saule, one of the acknowledged authorities on mental disease in Paris. A well-known man of letters, feeling uneasy about a daughter who showed some signs of eccentricity, was anxious to get the opinion of a leading specialist without arousing her suspicions. Parenthetically, we may remark that it is also possible that he wished to consult the oracle without going through the distasteful ceremony of paying a fee. He hit on the idea of giving a dinner to which several celebrities were invited. It was a feast of reason and the flow of soul was full and free. Legrand du Saule took little part in the conversation, but listened attentively and used his highly-trained powers of observation. Towards the end of the dinner he leaned towards his host and whispered:

"You may make your mind easy about your daughter; "she is suffering from nothing more serious than a "trifling nervousness which will pass off. But I "think it right to tell you that there is one of your "guests whose mental condition is distinctly alarming, "and, I fear, hopeless." Being asked who this was, the oracle said: "That stout gentleman yonder, with the "look of a canon, who is laughing so heartily." The man who was thus enjoying himself all unconscious of the doom pronounced upon him was Ernest Renan!

GEOLOGY AND MEDICINE.

As was mentioned last week, Dr. Grabham in his address at the centenary of the Geological Society referred to the part which members of the medical profession had taken in the establishment and direction of the Geological Society; he has since supplied us with further information. The first medical President of the Society was Dr. John MacCulloch, who, as his names indicates, was of Scotch extraction, but was born in Guernsey in 1773. He graduated M.D. Edinburgh in 1793, and resided there for some time, studying what would now be called physical geography and gaining the friendship of Sir Walter Scott. For a short time he practised at Blackheath and became an extra-licentiate of the Royal College of Physicians, but after doing some survey work in Scotland he was appointed geologist to the Trigonometrical Survey and subsequently devoted himself entirely to geology. He was a member of the first council of the Geological Society and President in 1816-18; he died in 1835. The next medical president was Dr. William Babington, whose statue in the south transept was pointed out by Dr. Grabham to the party of geologists who visited St. Paul's Cathedral at his invitation on September 27th. Babington was born in Ireland in 1756, and his first appointment in London was that of apothecary to Guy's Hospital; he was afterwards appointed physician to that hospital, and was most successful in private practice; he taught chemistry at Guy's, but achieved most fame as a mineralogist. He was president of the Geographical Society in 1822-24, and died in 1833. Dr. John Bostock, who was secretary in 1818-20 and president 1826-27, was the son of another John Bostock who practised as a physician in Liverpool. The younger Bostock lectured on chemistry at Guy's, and is said to have been the first person who gave an accurate description of hay fever, founded on his own case. He died in 1846. Dr. W. H. Fitton, who was president in 1829-31, was born in Dublin, and prosecuted his medical studies in Dublin and Edinburgh. He was turned towards the study of geology by Professor Jameson, whose lectures he attended in Edinburgh. He at first practised as a physician at Northampton, but after a short time he retired, and settled in London, became Secretary of the Geological Society, and finally, as has been stated, President. The other medical Presidents of the Society were Professor Huxley, Mr. J. W. Hulke, and Dr. H. Hicks. In addition to those medical men already mentioned, the following were also Secretaries of the Society: Dr. J. Laird, 1807-12; Dr. H. Barton, 1828-9; Professor E. Turner, M.D., 1830-35; Dr. J. F. Royle, 1836-8; and Dr. P. M. Duncan, 1864-71. The Geological Society originally met in the rooms of the Medico-Chirurgical Society, and the reason for seeking the hospitality of that Society was, as stated in the minutes of the committee, to give "a greater appearance of respecta- "bility," and also to save expense, since it was thought that one attendant would suffice for both societies. The historical connexion between the old and young sciences—medicine and geology—was also well brought out by Mr. Henry Morris, President of the Royal College of Surgeons and its representative at the Centenary, in the course of his congratulatory address. It is interesting, he said, to remember that from the Middle Ages onwards there have been students and teachers of medicine and surgery, as well as distinguished anatomists, who have taken part in and stimulated geological researches. In the history of the origin and progress of geology occur the names, for instance, of Falloppio and Steno of Padua, and Cesalpino of Pisa; of Fuchsel of Germany; of Drs. Robert Hooke and Woodward of England, and of the illustrious James Hutton of Scotland, the propounder of the "Huttonian "theory," and the exponent of the uselessness of the many fanciful attempts to form what were called "theories of the earth"; whilst but a few years ago John Whitaker Hulke, F.R.S., who was President of the Royal College of Surgeons, was President also of the Geological Society of London. In conclusion, Mr. Morris said: "May we be allowed to express our admiration of the "part taken by the Society, ever since its foundation "in 1807, in encouraging and promoting the study of "geology as an inductive science, in unfolding numerous "and unexpected truths, and in correcting many mis- "conceptions and erroneous hypotheses; and may we "add that we look forward with confidence to the dis- "covery of still further important results as the "outcome of the labours of the present and future "Fellows of the Society?"

THE PERSISTENCE OF LIES.

Many good people, when they see the triumph of falsehood, comfort themselves with the thought *magna est veritas et praevalebit*. But, as John Stuart Mill showed, truth does not always prevail, but has time and again been killed by persecution. Our own experience in dealing with calumnies against the medical profession has been that it is much more difficult to kill a lie than a truth. For examples one need only look at the periodicals which champion the cause of antivivisection—or perhaps it would be more accurate to say which keep the names of rival champions before the public—and the leaflets issued by the various bodies which make it their business to wage war against experimental research. It is not too much to say that these bodies live on lies; their appeals for public support are based on lies; if their publications were purged of falsehoods, there would be little or nothing left of them. And they are always the same lies—lies which have been thrice, and thirty times thrice, slain, but which come up again and again in new disguises, or naked and unashamed in their original form. The reason is that they are addressed to ignorance and prejudice, and, in Robert Macaire's immortal phrase, "*Tout passe, mais les badauds ne "passeront pas.*" A recent instance of the difficulty of killing a lie is the statement made by many newspapers, British and American, that Dr. Knopf, at the National Congress on Tuberculosis held at Washington last summer, had advised his hearers to "kill their "dying consumptives quickly and painlessly by heavy "doses of morphine." In the British Medical Journal of June 8th we quoted a letter addressed to the American journals by Dr. George Dock, Dean of the Medical Department of the University of Michigan, who was Chairman of the Section to which Dr. Knopf's address was delivered. In that letter Dr. Dock categorically denied the statement. Dr. Knopf himself has repeatedly affirmed that his words had been utterly misunderstood. But the lie lives on, and appears in places where we should not have expected to find it. In *Le Scalpel* of September 29th, the editor, Dr. L. Dejace, makes it the subject of an article in which he says: "Le Dr. Knopf s'était fait le défenseur "convaincu et hardi de l'euthanasie. Il parvint même "à entrainer l'adhésion d'une grosse majorité dans "l'association médicale de New-York." This statement

is followed by some edifying but quite irrelevant remarks on the "abominable consequences of medical "homicide." Only a short time before Dr. J. Noir, an editorial writer in the *Progrès Médical*, had discussed with like ignorance of the true facts the question of "la légitimité du droit de tuer réclamée par les "médecins," and had piously given thanks to whatever may be taken to represent God in the mind of the average Frenchman that his countrymen are not even as those wicked Americans. Dr. Noir seems never to have heard of Dr. Knopf, whose name should be well known in France, for he took his degree at Paris with a thesis on sanatoriums which laid the foundation of his reputation as an authority on tuberculosis. The Alvarenga prize was awarded to him in 1898 by the Philadelphia College of Physicians for another work on tuberculosis, whilst yet another essay won for him a prize from the Congress on Tuberculosis held at Berlin in 1899. He is generally recognized throughout the medical world as an authority on the subject which he has made his own. Yet in the *Progrès Médical* he is "*un docteur Knopf*"! The calumnies of fanaticism and ignorance may be borne with indifference; but it is hard indeed that a man should be wounded in the house of his friends.

THE BEGINNINGS OF THE SHADWELL HOSPITAL.

The announcement that on September 27th the Lord Mayor unveiled portraits of the late Mrs. Sarah Heckford, presented by her sister to the three departments of the Heckford Street Council School, recalls a career in which philanthropy was remarkably blended with romance. In 1866, Miss Goff, as she then was, volunteered for service as a nurse during the cholera epidemic which then raged in East London. In the course of her work she met her fate in the comely person of Mr. Nathaniel Heckford, of the London Hospital. Instead of devoting themselves to living happily ever afterwards in the conventional fashion, the young couple fitted up an old warehouse at Ratcliff as a hospital for sick children. There they were found at work by Charles Dickens, who says he found the hospital established in an old sail loft or storehouse of the roughest nature and on the simplest means. There were trapdoors in the floors where goods had been hoisted up or down; heavy feet and heavy weights had started every knot in the well-trodden planking; inconvenient bulks and beams and awkward staircases perplexed his passage through the wards. But he found it airy, sweet, and clean. There were thirty-seven beds. After describing some of the little patients, Dickens goes on to say: "A gentleman and "lady, a young husband and wife, have bought and "fitted up this building for its present noble use, and "have quietly settled themselves in it as its medical "officers and directors. Both have had considerable "practical experience of medicine and surgery; he as "house-surgeon of a great London hospital, she as a "very earnest student, tested by severe examination, "and also as a nurse of the sick poor during the pre-"valence of cholera. With every qualification to lure "them away, with youth and accomplishments and "tastes and habits that can have no response in any "breast near them, close begirt by every repulsive cir-"cumstance inseparable from such a neighbourhood, "there they dwell. They live in the hospital itself, and "their rooms are on its first floor. Sitting at their "dinner table they could hear the cry of one of the "children in pain. The lady's piano, drawing mate-"rials, books, and other such evidences of refinement "are as much a part of the rough place as the iron "bedsteads of the little patients. The are put to shifts "for room, like passengers on board ship. The dis-"penser of medicines (attracted to them, not by self-"interest, but by their own magnetism and that of their "cause) sleeps in a recess in the dining-room, and has "his washing apparatus in the sideboard." Dickens adds that when the hospital was first opened the people could not conceive but that somebody paid for the services rendered there, and were disposed to claim them as a right, and to find fault if out of temper. It is a way the people have, and even now we suppose the improvident working man who has never contributed a farthing to a hospital is apt, on slight provocation, to put forward the familiar claim that "it's the likes of us "that keeps the likes of you!" The Ratcliff folk, if we may believe Dickens, showed better feeling than the average of their class, for he says "they soon came to "understand the case better, and have much increased in "gratitude." We hope the people of Shadwell have inherited these admirable sentiments. Mr. Heckford died young. A committee was appointed and a site was found at Shadwell, where now stands one of the best-equipped children's hospitals in London. Mrs. Heckford went to Italy to educate her daughter, and later, after much travelling in India and elsewhere, went to the Transvaal shortly after its annexation. There she remained on a lonely farm through both the Transvaal wars. During the second she is said to have ridden forty miles to Pretoria to warn Lord Roberts that a rising was being organized in a district supposed to be pacified. Soon after the conclusion of the war she died in Pretoria, where she had organized a Transvaal Women's Educational Union. She exemplified the strenuous life in many ways, but her best monument is the East London Hospital for Children.

INTERNATIONAL TUBERCULOSIS CONFERENCE.

The sixth International Tuberculosis Conference promoted by the International Antituberculosis Association was held last month in Vienna under the patronage of the Emperor. On September 18th meetings of the commissions on statistics and compulsory notification were held, and the Honorary President of the organization committee, Count Hans Larische-Mönnich, held a reception in the evening. The official opening of the conference took place on the morning of September 19th, when Professor Landouzy explained that M. Léon Bourgeois, the President, was prevented from being present owing to his duties as a member of the Peace Conference at the Hague. His place was taken by Professor v. Schrötter, the Austrian Minister of the Interior, who welcomed the members. A discussion on the route of infection in the system was opened by Professor Weichselbaum of Vienna, who read a report in which he argued that infection took place almost exclusively through the alimentary canal, by milk or meat, and only rarely by the respiratory passages. He was followed, and his conclusions supported by Professor Calmette of Lille, Professor Flügge of Breslau taking the opposite view, and receiving some support from other speakers. In the evening the Archduke Franz Salvator, in the absence of the Emperor, held a reception at the Imperial Palace. At the second meeting, which took place on September 20th, the subject of compulsory notification was introduced by Dr. Nathan Raw of Liverpool, who expressed the opinion that the logical application of the principle of compulsory notification could not be enforced without inflicting considerable hardships on sufferers; he was therefore in favour of adopting modified regulations. A system of classification of cases of phthisis for use in sanatoriums and hospitals was agreed to, and eventually the conference unanimously resolved that in all cases of death from

pulmonary or laryngeal tuberculosis, notification should be made to the health authority so that proper disinfection might be carried out; and, further, that all persons suffering from pulmonary or laryngeal tuberculosis on changing their residence should be required to notify the health authority, so that proper steps might be taken in the interest of the patients and the general community. Dr. Pannwitz presented a report on the cost of sanatoriums, and then the invitation given through Dr. Flick of Philadelphia to hold an international tuberculosis congress at Washington next year was accepted. In the evening there was a dinner and reception at the town hall. At the concluding meeting on September 21st, reports concerning the progress of the tuberculosis campaign in different countries were presented and officers were elected, among them being Dr. Theodore Williams, who was appointed a vice-president.

RIGOR MORTIS IN A STILLBORN CHILD.

For evident reasons it is very important to bear in mind that a dead fetus may be born with rigor mortis. Wolff has collected 34 cases, Caruso 49. Dr. Ulrich adds a further instance where this condition existed.[1] The patient was, he notes, a single woman admitted into the wards of the Erfurt Midwives Institute in labour at term. There appeared to be twins, but the evidence on palpation was not quite clear. Heart sounds could distinctly be heart over the upper part of the uterus, especially to the right, but not over the lower part. A head could be felt presenting, and a child was delivered about eighteen hours after the beginning of labour; there was great delay during the expulsion of the shoulders although the pains were strong. The child was a female over 19 in. in length and 6 lb. in weight. The integuments were pale and nowhere macerated. There were no signs of injury to the cranium. Rigor mortis was very marked. The head presented when the second child was delivered; it was a little smaller and lighter than the first. It was living and has since been reared. The placentae were fused, but each fetus had separate membranes adherent to each other where they touched. The insertion of the funis was velamentous in both fetuses and there could be no doubt that, owing to the disposition of its cord, the first fetus had been killed by pressure upon it. There was no evidence by which it could be ascertained how long death had occurred before delivery. The case shows that rigor mortis is not evidence that a child must have died after delivery. Had the woman, who was single, been delivered outside a public institution suspicion of foul play might have arisen.

A SUPREME NATIONAL HEALTH AUTHORITY.

We referred some time ago to a proposal, emanating from a conference of representatives of various sanitary authorities held at Newcastle-upon-Tyne for the establishment of a "supreme national health authority," to form a permanent union of the sanitary authorities in England and Wales. The conference was presided over by Alderman Dr. Henry W. Newton, Chairman of the Sanitary Committee of Newcastle-upon-Tyne, and a Committee was appointed to carry out the proposal, with Dr. H. E. A. Armstrong, M.O.H. Newcastle-upon-Tyne, as its honorary secretary. Dr. Newton and Dr. Armstrong have now issued a circular letter to the chairmen of sanitary authorities inviting them to send representatives to a conference of the whole of the sanitary authorities, urban and rural, of England and Wales, as well as county councils and boroughs and district authorities of Scotland and Ireland, to be held in London on November 13th, 14th, and 15th. There is, as the circular states, an absence of uniformity of action on the part of sanitary authorities, owing, no doubt, to the diversity of the interests involved, and this has led to much waste of energy and time. The object of the present movement appears to be to bring into existence a body which shall do for sanitary authorities what the Poor Law Association does for Poor-law authorities. The Public Health Committee of the British Medical Association, the State Medicine Section at the annual meeting of the Association, and the Society of Medical Officers of Health succeed pretty well in focussing the opinion of medical officers, but we believe that it is true to say that there is at present no organization in existence for bringing about uniformity of action amongst sanitary authorities through discussion of questions with which all of them have to deal. At the same time we find the circular a little nebulous in its phraseology; its want of clearness may perhaps be in part due to the selection of the word "authority" in the proposed title of the new organization in place of some such word as association. We know what a Sanitary Authority is, and the new body will not be in that sense of the word a supreme sanitary authority; it will have no statutory powers and no executive authority; it will hardly be so much as an association; it will be rather a conference consisting of representatives of such sanitary authorities as choose to take part in it called together to discuss subjects affecting the public health. As such it may do very useful work, and we hope that some other title than "Supreme National "Health Authority" will be found for it.

[1] Ein Fall von intra-uteriner Leichenstarre, *Zentralbl. f. Gynäk.*, No. 33, 1907, p. 1007.

The Clinical Section of the Royal Society of Medicine is to hold its first meeting on Friday, October 11th, at 8 30 p.m., when its President, Sir Thomas Barlow, will deliver an inaugural address.

We regret to have to record the death of Professor Charles Stewart, F.R.S., Conservator of the museum of the Royal College of Surgeons of England. We hope to publish an obituary notice in a subsequent issue.

The Berlin Cancer Institute, which is under the direction of Professor von Leyden, is to be considerably enlarged. New laboratories for the investigation of cancer will, it is announced, be built in a house in the neighbourhood of the Charité Hospital.

Colonel F. J. Lambkin, Lecturer on Syphilology at the Royal Army Medical College, is proceeding to the Uganda Protectorate at the instance of the Secretary of State to report on the prevalence of syphilis in that Colony and suggest measures for checking its ravages.

The annual meeting of the Medical Society of London will be held on Monday, October 14th, when the President, Dr. J. Kingston Fowler, will deliver an introductory address, and Professor Rose Bradford will read a paper on some unusual cases of diabetes. The first clinical meeting will be held on November 11th, and on December 9th a discussion on pneumococcus infections will be introduced by Professor Osler of Oxford. The Lettsomian Lectures will be given by Mr. Charters J. Symonds, two on tuberculosis of the kidney, and one on malignant disease of the caecum. The anniversary dinner will be held on March 11th, 1908, and at a *conversazione* to be given on May 18th, Mr. Clinton T. Dent will deliver the annual oration.

Manchester and Salford.

PRESENTATION TO DR. MILSON RHODES.

AN interesting meeting was held on Thursday, September 26th, at Didsbury, at which Dr. Milson Rhodes was presented with an illuminated address and a cheque for three hundred guineas in appreciation of his labours in connexion with the administration of the Poor Law. The Rev. W. C. Ford, Rector of Barlow Moor, presided, and in his introductory remarks alluded to Dr. Rhodes as the champion of the poor. The presentation was made by Mr. G. H. Gaddum, and complimentary speeches were made by Councillor Fletcher Moss and Mr. J. Norris. Dr. Rhodes, after thanking his friends for the kindness shown to him, gave an interesting account of the advances made in Poor-law administration since he became a member of the Chorlton Board of Guardians twenty-five years ago. One of the first subjects to which he gave attention when he became a guardian was that of the workhouse dietary, which at that time was not only bad but extremely wasteful, and it was largely owing to his persistence that the Local Government Board had the dietary scales put on a scientific basis. Dr. Rhodes was also one of the founders of the Northern Workhouses Nursing Association, the object of which was to provide trained nurses for the smaller workhouses. Since then matters have advanced so far that the law compels union hospitals to employ trained nurses, and many of these hospitals are as well equipped in the nursing department as any voluntary hospital. Dr. Rhodes was also one of the promoters of the Styal Homes scheme and the Langho Home for Epileptics, and was largely instrumental in procuring the David Lewis Epileptic Colony at Sandlebridge, one of the finest institutions of its kind in the world. He has also been Chairman of the Central Poor-law Committee of England and Wales, and President of the Poor-law Unions Association. He is an honorary member of the Belgian Society for the Protection of Children, and the Sanitary Inspectors' Association. Dr. Rhodes is an energetic member of the South Manchester Division of the British Medical Association, and his evidence before various Royal Commissions on the Working of the Poor Laws has been especially valuable not only from a public but from a professional standpoint.

SANITARY WORK IN MANCHESTER.

In a report just issued on the work of the Sanitary Committee of the Corporation, reference is made to the smoke nuisance in Manchester. There are five inspectors specially employed in this work, and they have reported 174 cases where black smoke has been emitted for over two minutes in half an hour's observation. Of these, 133 were sent to be dealt with by the justices, the others being merely cautioned. There have been several prosecutions for the emission of black smoke by railway and road locomotives. Special attention seems to have been given to stopping the firing of house chimneys, which is so often done by householders to save the cost of chimney sweeping. One cannot help seeing that the greatest part of the smoke nuisance is due to ordinary household fires, and in spite of the praiseworthy vigilance of the sanitary officials, no very material improvement will take place until some better methods of burning coal in domestic fireplaces are devised and adopted. Reference is also made in the report to the contamination of the food supply. Proceedings have been taken against eleven milksellers for storing milk in places where it would be liable to contamination, and also against five ice-cream sellers for not taking proper precautions against contamination or infection. The whole report deserves careful perusal, and shows what elaborate precautions are now taken for the public safety.

CORPORATION OFFICIALISM.

While expressing the highest admiration for the splendid work done under the Sanitary Committee of the Manchester Corporation, it is a somewhat invidious task to have to make complaints, but in at least two quarters great dissatisfaction has been caused, first among the property owners and second among medical men. Every one will admit that the Committee is only doing its duty in compelling owners to keep their property in the best sanitary condition, but to compel them at the cost of hundreds of thousands of pounds to adopt the "pail system," then in a few years to condemn this system and to attempt to lay the cost of conversion on the owners, is neither reasonable nor just, and Mr. J. Burns in the House of Commons strongly opposed what he called "the attempt of Manchester to impose its archaic sanitary law on the whole country." By all means let sanitary science advance, but it is no more reasonable to make property owners bear the whole cost of every new official fad, than it is to impose public duties on medical men without a fee. If the public derive the benefit the public should pay the cost.

The complaint made by medical men in Manchester is of meddling interference with private patients by sanitary inspectors. It is not at all an uncommon thing for an inspector to enter the bedroom of a patient who is suffering from infectious disease, though such patient is under medical care. The people think that the inspector has a right to do so, and thus no objection is expressed, though it is often strongly felt. Neither is it an unknown thing for an officer, after seeing and questioning a patient who is really too ill to bear the disturbance, to pass his opinion on diagnosis and treatment. Advice as to how a patient should be clothed and fed directly opposed to that of the medical attendant has even been given, and that by men who have no qualifications for expressing any opinion. Complaints of this meddling have on several occasions been made, but with no practical result except a statement that the inspectors are not ordered to enter the bedrooms, but may do so if the patient's friends do not object, and if there be any necessity; apparently the inspector—not the medical attendant—is left to be the judge as to such necessity. The matter has gone on to such a degree that many medical men, simply in self-defence against rampant officialism, which seems to scorn medical ethics, are instructing their patients to refuse admission to the inspectors. It was a similar officialism in another Corporation department that led to the scandalous treatment of Dr. Bagley some months ago, treatment which was condoned by the Watch Committee, inasmuch as it allowed Dr. Bagley to be mulcted to the extent of £30 costs for doing his duty to his patient. The Manchester daily papers of October 2nd contain a letter from the Secretary of the Lancashire and Cheshire Branch again drawing public attention to this matter and containing a strongly-worded resolution of the Branch Council.

One cannot imagine that the higher officials quite realize the extent of this meddling with private practitioners by sanitary officers, or some more radical measures would have been taken to prevent it. Medical men may be somewhat jealous of their prerogatives, but there is nothing that will so hinder that union of effort for the public good which ought to exist between medical men and public authorities as unnecessary and irritating official interference in private work.

Leeds.

THE LEEDS PUBLIC DISPENSARY.

THE annual meeting of this institution, which was established in 1824, and which may be regarded as the second of the great charities of Leeds, was held on August 15th, when the chair was taken by the Lord Mayor. The report submitted dealt with the twelve months ending June 30th, 1907, and was a record of work carried out on the same lines as for many years past. One great feature of the work of the charity consists in the visiting of many of the patients at their own homes. This is a form of work that is not dealt with by any of the other medical charities of the city. The visiting is carried out mainly by the resident medical officers, of whom there are five, two being attached to the branch on the south of the river. Special cases are seen from time to time by the various members of the honorary staff. There is also a very large out patient department, which includes medical, surgical, ophthalmic, and aural departments, and a recently-added department for diseases of the throat. From the out-patient medical and surgical departments special cases are reserved by members of the resident staff for the clinics of the honorary physicians and surgeons.

The number of accidents attended to during the period covered by the report was 5,425, the number of ear and eye cases was 1,858, and of cases of diseases of the throat and

nose, 231. The ordinary medical and surgical cases amounted to 31,537 and the operations to 429. These figures do not include the dental work of the institution, which will be referred to separately. The total number of new patients attended to during the year was 44,528, which is an increase of 2,681 over the preceding twelve months.

The great expenses incidental to the provision of the new buildings and the consequent increase of work are a source of anxiety to the Board. In May, 1906, a special appeal was made for a sum of £15,000, but as yet the response has been small, and the amount reached only £4,258. A special source of gratification to the Board was the receipt of a subscription of £800 from the Leeds Workpeople's Hospital Fund, which is the largest amount yet received from that source. From this subscription a sum of £50 was allocated to the dental department which has recently been started, and the accounts of which are kept separately.

The dental department has now been in full working order for two years, and, as was anticipated, is filling a long-felt want in the surgical and prosthetic treatment of the mouths of the necessitous poor of Leeds and district. With the accommodation and equipment now at its disposal, the honorary staff is enabled to carry on dental work in all its departments, and those who urged the institution of such a department will be pleased to learn that students may now obtain in it a full course of instruction in practical dentistry, and that several pupils have been at work in the rooms for the last twelve months. The number of dental cases attended to last year was 2,666.

West Riding Medical Charitable Society.

The annual meetings of this Association are as a rule well attended, and this for the double reason that the work done by it is of a kind that appeals to the best instincts of the medical profession, and that its meetings provide an admirable opportunity for medical men from all parts of the West Riding to come together under conditions which differ from those afforded by the gatherings of the other medical societies. At Dewsbury on September 26th a large muster assembled under the Chairmanship of Mr. Edwin Lee. The annual report and balance sheet was presented and read by Mr. C. G. Wheelhouse. It had to record the loss by death of Mr. E. W. Kamp of Castleford, Mr. Gerald Coleman of Hemsworth, Dr. Lowson of Hull, Mr. F. Carter and Mr. W. H. Brown of Leeds, Mr. S. Lodge of Bradford, Mr. W. Oxley late of Rotherham, Mr. J. J. Mais of Thorner, Dr. T. Logan late of Wibsey, Dr. A. F. Bradbury of Halifax, and of a young member, Dr. W. C. Hirst, of Leeds, who was murdered by an epileptic patient. The number of applications for relief, which shows, as might be expected, an increase from year to year, reached on this occasion the formidable total of 49, and after careful consideration the meeting had the great pleasure of being able to make grants in every case, and yet to feel that it had not allowed generosity to outrun the resources of the Society. In this way the sum of £1,720 was voted in grants varying from £15 to £65. The work of the Society was so fully discussed in this column on August 12th, 1905, that we may content ourselves with quoting a few facts and figures. Starting from the smallest of origins in 1828, the Society has steadily grown in size and usefulness. Including the grants voted at the annual meeting, the amount distributed to necessitous members of the profession and to their widows and families reaches the very gratifying total of £44,615 10s. The present financial condition of the Society is sound, the income from investments amounts to about £1,100, the subscriptions to about £750, and the expenses are remarkably low, thanks to the unsparing efforts of the Treasurer and Secretaries and Stewards. . No one who attends these meetings can fail to be impressed by two things: one of these is the sadness of some of the tales of distress—tales which in many instances are absolutely unexpected, and all the more painful on that account. The other cause for surprise is that every medical man in the West Riding is not a member of the Society. It was a real pleasure to those who dined together after the meeting to hear Mr. Wheelhouse—who seems, despite his advancing years, to retain all his enthusiasm and all that clearness of mind and diction for which he is so well known—respond to the toast of his health, which was ably proposed by Dr. Burney of Bradford. Mr. Wheelhouse's connexion with the Society dates back to 1855; he worked under Mr. Garlick and Dr. Chadwick, each of whom, in succession, held the post of Secretary, and for many years has acted as Treasurer and Secretary, having been in the latter capacity ably supported by Mr. Herbert Rowe for some twenty years. At his own urgent request, the more onerous duties of Secretary are now removed to the younger shoulders of Mr. Rowe, who will be assisted by Mr. Michael Teale; but every one was pleased to learn that Mr. Wheelhouse had agreed to act as Treasurer for "as long as he was able." As Treasurer he will continue to guide the finances of the Society with discretion. "Some of you," he said, "in the kindness of your hearts were a little disposed to allow your generosity to outrun your resources. I trust that in the future we may, as in the past, be able to give year by year an increasing sum in grants; but had we in former years not carefully husbanded our resources, we should not have been able to day to meet the demands on our sympathy. Some little sum of money you must allow me to lay by every year just as a nest-egg and as an inducement for me to remain sitting." Long may he sit!

Bristol.

Plurality of Hospital Appointments.

The position on the question of dual appointments between the committee of management and the honorary staff has not materially, if at all, altered during the last week, but it may be as well to point out how wide is the prohibition of the proposed rule. It is more than probable that the committee when they promulgated such a sweeping ordinance had no idea of its scope; indeed, it is more than likely that they did not inquire into the matter, intending merely to restrict the staff from being honorary physicians and surgeons to any of the other Bristol medical charities. The rule, however, goes a great deal further than this, and says that no member of the staff shall hold "any other professional public appointment other than professorships, etc.," and includes such appointments as the following: Home Office appointments such as medical referee under the Workmen's Compensation Act, examiner under the Midwives Act, examining physician to the magistrates, physician to a convalescent home or such places as Winsley Sanatorium, and would prevent any one of the staff from holding a surgeon's commission in the volunteers or St. John Ambulance Brigade. No medical work might be done for the Corporation such as police or education committee, or for any of the numerous little charities that exist in Bristol. To debar their staff from holding these places is a grave matter, for in many cases it might prevent a junior member from making a living, for an assistant surgeon or physician is to be bound by the same rule, except as regards one special hospital appointment.

A meeting of the Bath and Bristol Branch of the Association has been called for Monday, October 7th, "to consider and discuss the rules passed on Tuesday, September 24th, 1907, by the governors of the Bristol Royal Infirmary, and which are awaiting confirmation." To suit the convenience of members living at a distance, the hour for meeting has been fixed at 5 p.m.

We have received the following from Mr. Ernest W. Hey Groves, M.S., F.R.C.S., Assistant Surgeon Bristol General Hospital, Surgeon to the Cossham Hospital: Would you be good enough to correct an important mistake in the account of the conflict which has arisen about plural hospital appointments in Bristol? The mistake occurs on page 843 of your issue of September 28th, and is of importance, because it has been quoted in all the local papers as an instance of the wrong attitude of the staff. The statement runs: "The gentleman in question (the Assistant Surgeon to the Bristol General Hospital), on application to the Committee, was refused permission (to hold another appointment), but took the law into his own hands and accepted the post." The fact is that I was asked to be one of the surgeons to the Cossham Hospital in April, 1907. I signified my willingness to do this, but was at first refused permission by the General Hospital; but on persisting in my request, and by reason of the fact that the staff of the General Hospital gave me their most generous support, permission was granted to me on May

8th, 1907. I did not enter on my duties at the Cossham Hospital until June 1st, and therefore I have never held the appointment contrary to the wish of the General Hospital Committee. During the whole course of the discussion on this matter at the General Hospital members of the Committee have shown me the utmost courtesy, and therefore I should much regret if it should appear that I had been acting in open defiance of them.

West Yorkshire.

THE BRADFORD CITY HEALTH COMMITTEE.

THE Chairman of this Committee in an address delivered in Bradford on September 26th gave an outline of the work accomplished during the last three years. Altogether forty-one inspectors of various kinds had been engaged, and the inspection of food and milk was much more thorough than it had been for many years. The total cost of the Committee's work to the rates was 4⅖d. in the pound, of which 2⅖d. was for hospitals. Bradford was still sixth on the list of large towns in regard to overcrowding, and there were still in the town 300 or 400 cellar dwellings.

The Health Committee, through their municipal milk dépôt, had tried to reduce the infantile mortality, which in the Exchange Ward was 265 per 1,000. In the four worst wards of the city the infantile mortality averaged 213, but in the four best wards it was only 119. This enormous sacrifice of life was mainly due to poverty and uncleanliness—especially uncleanliness in the milk supply.

BRADFORD POLICE SURGEONS.

The Watch Committee of the Bradford Corporation made their final selections for the posts of Chief Police Surgeons and Divisional and Subdivisional Police Surgeons at a meeting held on September 27th as follows:

Chief Police Surgeonship: William Wrangham, M.D.Lond.
Division A.: Richard Bladworth, M.B.Edin.
Division B.: A. Gray, M.B.Glasg.
Division C.: R. A. R. Lankester, M.D.Durh.
Division D.: Richard Honeyburne, M.D.Lond.
Division E.: J. A. Hope, M.B.Glasg.
Division F.: A. H. Robinson, M.B.Edin.
Division G.: A. H. Stewart, M.B.Glasg.

It will be remembered that the list of duties and amount and method of remuneration for these appointments were subjected to keen criticism by the medical profession of Bradford some time ago. The Corporation at first refused to make the desired concessions to the profession, and eventually nearly fifty medical men withdrew their applications for the appointments. The Bradford Division was very active in the matter, and eventually the Watch Committee agreed to meet the wishes of the profession and altered the conditions as desired.

Wales.

MERTHYR BOROUGH COUNCIL.

THE Merthyr Corporation have for some time been considering the best means of remedying a defect in their Pentwyn reservoir. There was a huge fissure in the bed of the reservoir, originating in a fault and a drop in the strata, and extending under the dam. The Corporation has had shafts sunk in the bed of the reservoir beyond the fault to ascertain whether suitable foundations exist for the erection of a new dam, which would impound water in a much larger area than at present. The foundations having proved satisfactory in the opinion of the borough engineer, the Corporation decided to take the opinion of Mr. G. F. Deacon, who has reported favourably upon the proposal to construct a new dam on a site which has been proved north of the great east and west fault. The outlay involved will probably amount to £200,000, but it was decided to ask Mr. Deacon to prepare an estimate.

ISOLATION HOSPITALS.

The isolation hospital built at Blackmill to serve the Ogmore and Garw Urban District was opened recently by Colonel Henry Lewis, Chairman of the Sanitary Committee of the Glamorgan County Council, who observed that the hospital occupied a good position, with good roads from all parts of the district, except Gilfach Goch. It was said that there was a certain amount of prejudice against the use of these hospitals, but that would doubtless disappear as soon as people realized how very much better the accommodation and treatment were at these hospitals than they could ever hope to have at their homes. After the company had inspected the hospital, Dr. D. J. Thomas, C.C., Medical Officer of Health, proposed a vote of thanks to Colonel Lewis and Dr. W. Williams, County Medical Officer, and the other visitors for their presence; this was carried with acclamation. Colonel Lewis, responding, said that when the Glamorgan County Council came into existence there were only a few isolation hospitals in the county, and those were of a temporary character, affording accommodation for less than 100 patients. As soon as the Isolation Hospitals Act, 1893, enabling county councils to compel district authorities to provide such hospitals, was passed, the county council set to work, and now there were seventeen isolation hospitals of a permanent character in the county, with accommodation for 500 patients. Only two districts in the county were unprovided. In addition, there were fourteen hospitals for the treatment of smallpox. He had it on the authority of the Local Government Board that Glamorgan was the premier county in England and Wales as regards isolation hospitals. Dr. W. Williams, County Medical Officer, also responded, and said that only a little firmness on the part of the medical practitioners of the district was needed to get the public to use these buildings; he eulogized the work of Alderman W. Llewelyn, as Chairman of the Local Government Committee of the County Council, and that of Dr. D. J. Thomas, as a member of the Sanitary Committee. The most important matter the Glamorgan County Council now had in hand was the provision of an adequate and wholesome supply of water for every district in the county, and he hoped they would not rest until they had brought this about. Dr. J. D. Jenkins, Medical Officer of Health to the Rhondda District Council, said that the building was in a splendid position, and he was glad to see that it could be extended if necessary. The Chairman intimated that visitors would be welcomed to the hospital during the ensuing week.

Ireland.

DUBLIN HOSPITALS.

THE forty-ninth annual report of the Board of Superintendence of Dublin Hospitals which share in the Parliamentary grant has just been published. These hospitals are the Lock Hospital, Steevens's, the Meath, Cork Street Fever, Richmond, Rotunda, Coombe Lying-in, Royal Victoria Eye and Ear, and the Royal Hospital for Incurables. The Governors state: "In all we found evidence of advancement with the times in their equipment and their supply of modern appliances, while the reputation of the visiting professional staff—a reputation that stands high both in the general and medical world—leaves no room for doubt that all that science is now capable of doing to relieve suffering and cure disease is put at the disposal of the sick poor as fully as is possible under very straitened circumstances." They also commend highly the matrons and the registrars.

The Lock Hospital was found to be in excellent sanitary condition. Steevens's was in most admirable order, and a commodious apartment had been provided for the reception of accident cases on first arrival, and generally the favourable criticism of former reports held good. In the Meath at every turn there were indications of enlightened progress and energy. An admirable nurses' home had been completed. Of Cork Street Fever Hospital there is high commendation. In the case of the Richmond, Whitworth, and Hardwicke, the contrast between the new buildings on the surgical side and the old over on the medical side struck one. But, as at Steevens's, one could not help remarking how well old boards can be made to look when they are properly kept. Undoubtedly the one thing wanted by Dublin hospitals is money. The Board inspected the well-equipped bacteriological laboratory on which the hospital governors have with wisdom laid out a good deal of money. How much has been done! How much remains to do! The Board of Superintendence

make these remarks in connexion with this institution—for it seems to be the best equipped and to do the most bacteriological work of those under the Board. It is plain that the proper upkeep of the laboratory of the future is a matter of great economic importance. Money, more and more money, must be provided by the public for our hospitals, owing to the ever-growing demands made upon them under this head.

The Rotunda was found to be in excellent order; the wards were bright, scrupulously clean, and well ventilated. In the Coombe Lying-in Hospital the most beneficent changes have been carried out during the period of office of the present Master.

The Royal Victoria Eye and Ear Hospital and the Royal Hospital for Incurables receive high praise.

There are numerous tables to show the expenditure in different departments, but that of the average cost per bed for maintenance and establishment, exclusive of buildings and furnishing buildings, will be found of interest for purposes of comparison: Lock, £45 7s. 10d.; Steevens's, £62 2s. 0½d.; Meath, £52 2s. 1d.; Cork Street Fever, £54 12s. 8¼d.; Richmond, Whitworth, and Hardwicke, £52 18s. 0½d.; Rotunda, £63 14s. 5½d.; Coombe, £77 12s. 0¼d.; Incurables, £33 6s. 3½d.; Royal Victoria, £45 17s. 5¾d. The patients appear to be well fed.

The new Secretary, Mr. R. F. Tobin, F.R.C.S, has made a most excellent report, with many new suggestions forcibly put. We hope he will revise the lists of diseases in his next report. Some of those named are curiously quaint.

Opening of the New Consumption Sanatorium, Belfast.

Some years ago the consumptive patients of the Belfast Board of Poor-law Guardians were scattered indiscriminately amongst the other patients throughout the Infirmary; by degrees the guardians adopted the principle of segregation, chiefly at the instigation of Dr. Hall, one of the visiting medical officers, and wards were especially set apart for these patients. Two years ago a further move was made; a demesne of thirty-three acres was obtained at a cost of £5,000 at White Abbey, about five miles from the city; there was a large mansion, and the grounds were well laid out and sheltered by numerous pine trees; some forty patients were removed there at once from the ordinary infirmary. Building operations were soon commenced, and £32,000 has been spent in providing a well-equipped and modern sanatorium. On September 19th this was formally opened, and now some 120 patients are in residence, and as soon as the cooking apparatus is ready the whole 200 to 300 consumptive patients will be accommodated and enjoy the enormous advantages of sanatorium treatment.

Pavilion.

The site was the residence of the late Sir Charles Lanyon, an architect of more than local fame, who designed the Queen's College, Belfast; the house is still in excellent condition and is used as an administrative block, quarters for resident medical officer and nurses' residence; the nurses' and patients' dining halls are in rooms adorned with some of the finest Italian workmanship, and looking out on a wealth of various kinds of firs.

There are four pavilions, each one story in height, facing south, and well elevated above the ground level. Each includes a central sitting-room, 30 ft. by 20 ft.; at each side of this room are wards 30 by 20 ft.; and beyond these, again, is another ward 20 by 20 ft.; these wards have a glass-covered verandah, 8 ft. wide, with doors opening from the wards by which beds are wheeled out; Pavilion No. 1 has two of its wards 40 ft. long. All the sanitary arrangements are in annexes in the rear, and are approached by double doors and cross windows. The

Inside of pavilion (ward).

heating of the wards is by low pressure hot-water pipes, with ventilating radiators placed below the windows; all the windows are hung as casements to allow the maximum of air inlet. The artificial lighting will be by electricity. Each pavilion contains thirty beds.

In addition to these four pavilions, there is the "hospital," also facing south, with a frontage of 200 ft., and comprising a central block with wings advancing on each side; bay windows and balconies relieve the monotony in appearance. There are four wards, each 84 ft. long by 23 ft. wide, and occupied by twenty-four beds; and, in addition, there are ten smaller, providing total accommodation for 148 patients; or, including the pavilions, for 268 patients in all. The heating is effected by hot-water pipes and ventilators from Royle's heater, and

Pavilion (closer view).

there are numerous floor and roof ventilators. The floors are laid with pitch pine, and all the ground floors are underlaid with asphalte. All the new buildings have been erected with the best Belfast red brick, with sandstone dressing. The pavilions are especially light and attractive-looking, and have none of the gloomy heaviness which characterizes nearly all Poor-law buildings in Ireland. The patients will be sent to the hospital first, and will then be transferred to the pavilions at the discretion of the medical officer; the advanced cases will be retained in the hospital.

The opening of this sanatorium marks a new era in the Poor-law treatment of tuberculous affections in Ireland. Not many years ago these consumptives were huddled together in wards where pretty nearly every kind of disease was treated; now they are classified. The incurable is segregated, and will be no longer a danger to his neighbour; and his end is made as comfortable as it can be under the circumstances; the early stage is sent to an open-air pavilion, and given the best chance of recovery; in all cases the food is special, and so freed from the strict dietary of the Poor-law system.

QUALIFIED MIDWIVES IN IRELAND.

According to the last report of the Irish Local Government Board, there are 623 qualified midwives in the Irish Poor-law Service. The Local Government Board seems determined that each dispensary district shall have a trained midwife. It begins by asking the guardians to appoint a midwife for a district in which there is a town or village, and if this is complied with they advise the appointment of one for each of the other dispensary districts of the union; if the guardians persistently refuse, a sealed order settles the matter. The salaries paid these women are small, generally £20 a year, while in large districts £5 extra may be allowed for car hire. Persons requiring their services gratuitously have to procure tickets similar to the well-known "scarlet runners" of the dispensary service. Of course the handy woman is by no means extinct, but the qualified women give their services upon such reasonable terms, that they generally have as much as they can do. Midwifery is the curse of the Irish dispensary doctor's life. One pound is the recognized fee in private cases in most unions for spending a long night in a comfortless cabin possibly ten or fifteen miles from home, and he dare not demand more lest he should get a "scarlet runner"; the trained midwife saves him much drudgery by taking such cases off his hands.

Scotland.

EDINBURGH POST-GRADUATE COURSE.

THE four weeks' post-graduate course just concluded in Edinburgh appears to have been a great success. Those who attended the course seem to have been well pleased, and the demonstrators one hears on every side are more than satisfied, so that the gloomy forebodings of pessimists, chiefly to be numbered among the older generation, who predicted that a second venture would be less successful than its predecessor, have been shown to be erroneous. The course this year has been much more elaborate than that of 1906, a number of additional subjects having been introduced at the suggestion of those who attended during that year. There has been an attendance of 78 this year, as compared with 71 during the corresponding period last year, while as many as 58 lecturers and demonstrators were included in the teaching staff. On Thursday last the graduates entertained the lecturers and demonstrators at dinner in the Caledonian Hotel, when a most convivial evening was spent.

GLASGOW FEVER HOSPITALS.

The report of the City of Glasgow Fever and Small-pox Hospitals, Belvidere, for the year ending May 31st, 1906, has been issued. Dr. Brownlee draws attention to the fact that in the past four years the numbers of admissions from scarlet fever and enteric fever has steadily declined. Thus, for scarlet fever the numbers are 865, 525, 447, and 368; while for enteric fever the corresponding figures are 338, 305, 221, and 138; but it must be remembered that both these diseases present marked interepidemic periods. The number of admissions from measles did not differ much from the previous year; the number of cases of whooping cough was small, but the disease was very severe, and the mortality was high—20.2 per cent. The type of disease in diphtheria appears to be changing. The number of admissions was larger than in any previous year, but the percentage of laryngeal infections—the commonest type of severe cases, was smaller, forming only 24 per cent., as against 40 per cent. in the previous two years. The number of tracheotomies was correspondingly smaller, yet, despite this, the mortality from diphtheria was very high, amounting to nearly 17 per cent. This was only in part due to admissions of moribund cases. It seems chiefly to have depended upon an unusually severe type of disease, causing profound poisoning, and less susceptible to serum treatment than is customary. The number of cases of post-diphtherial paralysis was also very high, equalling all the cases observed in the previous four years put together. Further, the cases were of a severity without parallel since the introduction of the serum treatment in 1896.

Dr. Brownlie has an interesting note upon the influence of race in determining the susceptibility to and the severity of attacks of scarlet fever, diphtheria, and enteric fever. He has selected these diseases as those in which the great bulk of the sufferers are removed to hospital. Using the religion of the patient as a means of distinguishing race, he classifies Catholics as Irish Celts, and contrasts them with Jews and Protestants. Almost all the patients were born in Glasgow. The following facts were observed: The death-rate among the Catholics from enteric fever was lower than that among the Protestants, being 14.1 per cent. against 16.4 per cent.; but evidently race had little influence in determining the severity of the attack. With regard to scarlet fever, the results were more striking. The death-rate among the Catholics was much higher than among the Protestants. This was in favour of the view that the influence of race was a very potent factor in determining the severity of scarlet fever. The difference in the case of diphtheria was slight and negligible. Very few Jews were admitted with enteric fever; but with scarlet fever and diphtheria the case was different, the proportion of cases admitted being four times greater than was to be expected from the numerical proportion of Jews to the total population, so that it appeared that the Jew in Glasgow was more susceptible to these two diseases than the average of the population. But the death-rate from these diseases was very small among the Jewish population—an observation in accord with the general rule that considerable susceptibility to a disease is associated with high recuperative powers. Dr. Brownlie insists that his results apply only to Glasgow.

Victoria.

THE MELBOURNE HOSPITAL STAFF ELECTION.

THE quaternary elections for the appointment of the honorary medical staff to the Melbourne Hospital have just been held. The result has been the return of all the members of the old staff. The interest manifested by the subscribers on this occasion has been keener than on any other during the lifetime of the hospital. With the exception of the offices of indoor surgeons all the other positions were competed for, more particularly that of outdoor surgeon; there were five such appointments and fifteen candidates. The proceedings at the polling booth were very deplorable. The approach, which was in the principal thoroughfare of the city, was crowded with candidates, their friends, and professional canvassers. The spectator was reminded of a political election; the touting, the shouting of the names of the candidates, the hustling up of subscribers, the cabs, carriages, and motors, all assisted in intensifying this impression. With all this, the subscribing public has recognized that the best interests of the hospital are served by retaining the services of those who have proved their fitness for their position by their past work.

An asterisk appears against the names of the retiring candidates:

SURGEONS TO IN-PATIENTS.

(Returned unopposed.)

*Dr. F. D. Bird
*Dr. William Moore
*Dr. C. S. Ryan
*Dr. R. A. Stirling
*Dr. G. A. Syme

PHYSICIANS TO IN-PATIENTS.

(Five to be elected.)

*Dr. H. C. Maudsley ...	4,019
*Dr. J. W. Springthorpe	3,758
*Dr. W. R. Boyd ...	3,691
*Dr. J. E. Nihill ...	3,591
*Dr. G. T. Howard ...	3,492

The unsuccessful candidate received 2,532 votes.

PHYSICIANS TO OUT-PATIENTS.

(Five to be elected.)

*Dr. R. R. Stawell ...	4,057
*Dr. R. H. Strong ...	3,933
*Dr. W. Ostermeyer ...	3,352
*Dr. J. F. Wilkinson ...	3,065
*Dr. K. Hiller	3,014

The highest number of votes given to an unsuccessful candidate was 2,225.

SURGEONS TO OUT-PATIENTS.

(Five to be elected.)

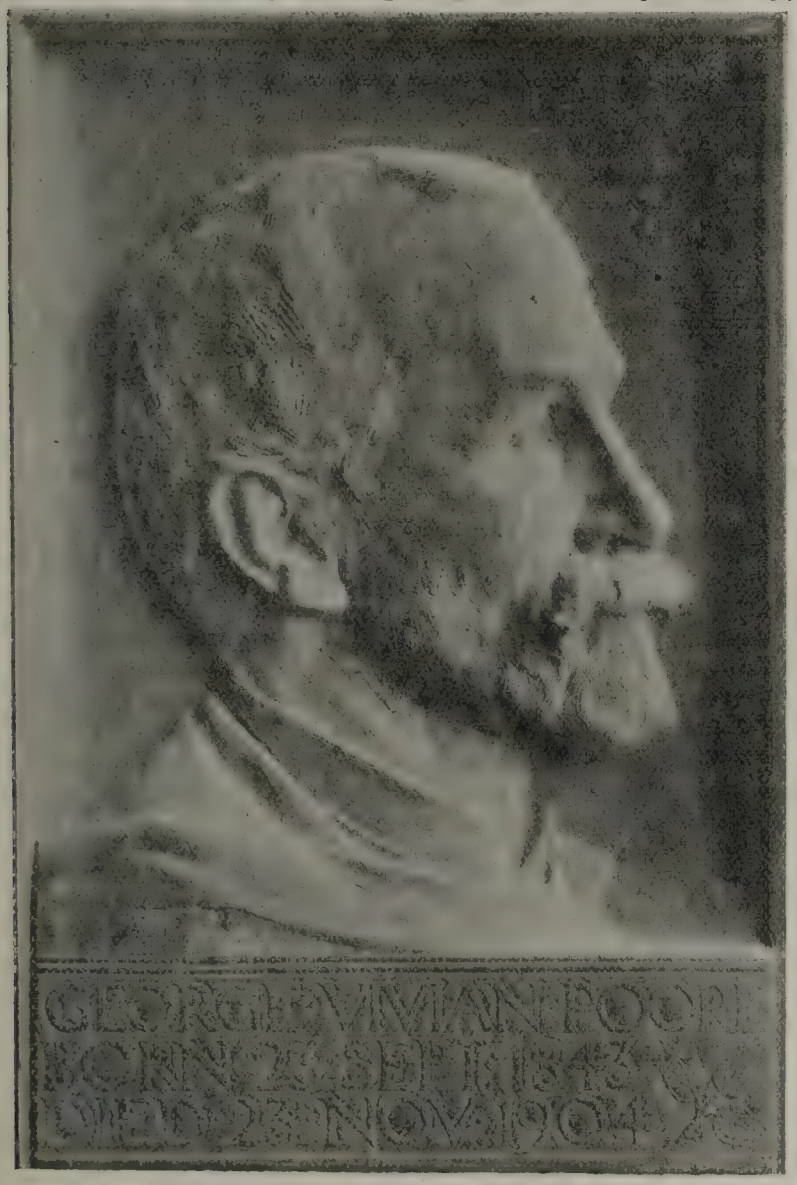
*Dr. G. C. Rennie ...	2,759
*Dr. T. H. Boyd	2,753
*Dr. F. H. Langlands ...	2,552
*Dr. John Gordon ...	2,409
*Dr. A. W. Finch Noyes	2,315

The highest number of votes given to an unsuccessful candidate was 1,798.

THE OPENING OF THE WINTER SESSION OF THE MEDICAL SCHOOLS.

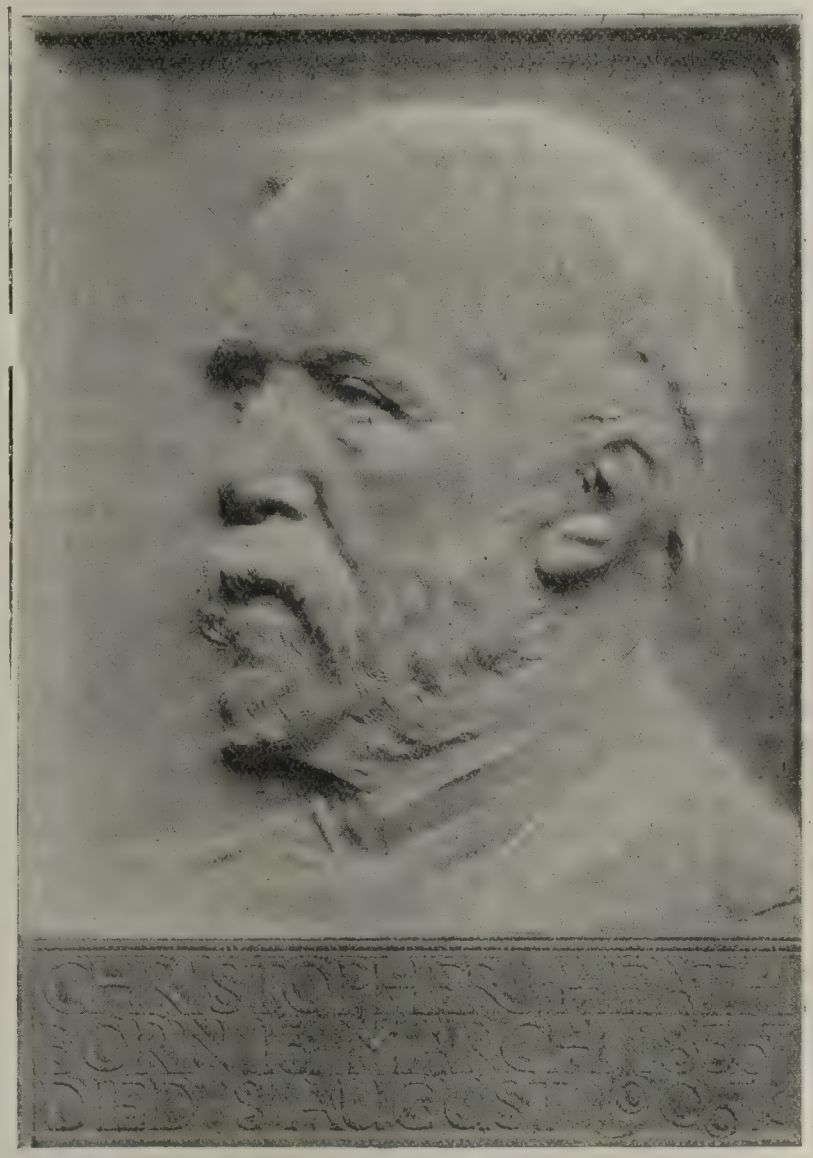
UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

With the incorporation of University College in the University of London, which was effected at the beginning of this year in accordance with the orders made by the Commissioners under the University College London (Transfer) Act, the Faculty of Medicine was divided into two parts. The one, comprising the subjects of advanced medical studies, was separated from the College and formed into the University College Hospital Medical School, which is now lodged in the stately and spacious building recently erected opposite the hospital on the south side of University Street, out of the fund generously provided by Sir Donald Currie. The other, including the various sciences which constitute the preliminary scientific and intermediate medical courses, as well as certain subjects of post-graduate study—namely,



pathological chemistry and hygiene—remains in the College under the designation of the Faculty of Medical Sciences.

The Faculty of Medical Sciences of University College consisted at first of the Professors of Botany, Chemistry, Physics, Zoology, Anatomy, Pharmacology, Physiology, Hygiene, and Pathological Chemistry, but it has since been strengthened by the addition of those teachers of chemistry, physics, zoology, and physiology especially charged with the conduct of classes attended by medical students; it now consists of 16 members. The Dean in his report for 1906–7 states that during the session the total number of students in Faculty of Medical Sciences of University College was 149, of whom 54 were registered internal students of the University of London and 31 were post-graduate and research students; the number of new students was 56. Arrangements have been made with University College Hospital Medical School, according to which students of the Medical School may obtain their instruction in surgical anatomy and hygiene in the College classes, while, on the other hand, students of the College may receive instruction in practical pharmacy and bacteriology in the Medical School of the hospital. By the removal of the School of Advanced Medical Studies and of the Boys' School space is set free for the expansion of various departments of the College. It was, however, found that the intermediate medical studies could not be satisfactorily accommodated in any of the rooms that had been vacated, at all events without an amount of rearrangement and alteration that would practically constitute a rebuilding. It has therefore been decided that the departments of anatomy, physiology, and pharmacology shall be housed in a new building to be erected on the former school playground. The funds at the disposal of the College, which have been augmented by generous donations from Mr. Ludwig Mond and Dr. R. H. Aders Plimmer, are sufficient to allow of the commencement of this work, and plans are being prepared for a physiological department, the building of which is to be proceeded with forthwith. The large museum of the Medical School is eventually to become the great hall and science library of the College; but in the meantime, until



the new department of anatomy is provided, it is divided into two, the one half serving as the anatomical museum, while the other is allotted to the library, which thus gains immediately a portion of the space it urgently needs The Zoological department receives at present only one additional room, but the Botanical department, which has for some years been greatly hampered by the want of laboratory accommodation for ever-increasing classes, will experience immediate relief by the occupation of the vacant Pathological laboratory; but this is only a temporary arrangement, as the whole department will be transferred to the top floor of the north wing when that is set free by the removal of physiology to the new building.

Although the new buildings of the Medical School which have just been completed have not yet been formally opened, they were used on the occasion of the opening of the winter session on Wednesday, October 2nd, when Sir R. Douglas Powell, President of the Royal College of Physicians, distributed the prizes

in the library, and afterwards delivered an introductory address.

The Dean of the Medical School, Dr. Sidney Martin, read a report for the year 1906-7, in which, after enumerating some of the principal distinctions won by students during the year, it was stated that the new nurses' home had been completed, and that another ward, raising the number of beds in the hospital to over three hundred, was thus made available for occupation, but could not be opened owing to lack of funds. During the year the school had received a gift of £2,500 from Sir Thomas Barlow, senior physician to the hospital, for the advance of the study of pathology; part of the income derived from it would be used for the payment of an assistant in the clinical pathology department of the hospital. An anonymous gift of £1,000 had also been received, and would be devoted to the promotion of the study of pathology in the school.

Sir R. Douglas Powell, having distributed the prizes, gave a short address, in the course of which he referred to the circumstance that that was the first meeting in the new buildings, designed by Mr. Waterhouse and erected at the cost of Sir Donald Currie. The gift was an object lesson to those who could follow so magnificent an example, inasmuch as it recognized the principle that a medical school should be an adjunct of a hospital and under the same control; a medical school without a hospital was an emasculated institution, wanting in inspiration and lacking the criticism, enthusiasm, and appreciation which a hospital received from students; without a school, however well the patients might be cared for, the hospital furnished no lessons for humanity at large. While insisting on the unwisdom of those who would alienate the medical school from the hospital, he recognized the propriety of placing the earlier subjects under academic control. He held that the student ought only to give two years to the intermediate subjects, and that this was all the more important when, as at the present day, the student of these subjects did not enter the hospital. Further, he held that chemistry, physics, and biology ought to be taught in the secondary schools, so as to leave the student two years clear for anatomy, physiology, and pharmacology, and so much comparative anatomy as might be necessary for the comprehension of human anatomy, and so much chemistry as might be required in physiology. He insisted, however, that the teaching of these intermediate subjects should look to the future of the student, and he counselled those whom he was addressing to cultivate an openness of mind and readiness to receive new ideas, while retaining intellectual independence to judge of new theories continually arising in all departments of science. He said that 90 per cent. of the students in London were preparing for the diplomas of the Conjoint Board, and paid a high tribute to the thoroughness of the training required, regretting only that the successful candidate received no more distinctive appellation; he considered that the student taking that course should be able, by devoting some extra time, say six months, at the end of the second year, and perhaps a year at the end of the fifth year, to obtain a degree from the University of London.

A vote of thanks, proposed by Sir Thomas Barlow and seconded by Mr. A. E. Barker, was carried by acclamation.

Sir R. Douglas Powell then gave an appreciative account of the careers of Mr. Christopher Heath and Dr. G. V. Poore, and read a letter from the Duchess of Albany, who expressed regret that a domestic engagement prevented her from attending the ceremony of the unveiling of the memorial to her friend, Dr. Poore, at the medical school of the hospital in the construction of which he had taken so deep an interest.

The company then adjourned to the entrance hall, where the tablets, which are bas-reliefs in white marble, were unveiled. Both medallions (reproductions of which are given on p. 931) are by Mr. H. R. Hope-Pinker, and the cost has been defrayed out of the memorial funds founded to commemorate the memory of the two departed teachers.

In the evening the annual dinner of old and present students was also held, under the presidency of Sir William Gowers, in the library, which is a handsome room, lined with bookcases, and having a gallery carrying busts of Bell, Carswell, Marshall, Erichsen, Liston, and other eminent teachers connected with University College Hospital in the past.

ST. BARTHOLOMEW'S HOSPITAL.

THE old students' annual dinner took place on Tuesday, October 1st. Mr. W. Harrison Cripps, senior surgeon to the hospital, was in the chair. Among the visitors was the Treasurer (Lord Ludlow), Sir Ernest Flower, Professor Clifford Allbutt Professor Sims Woodhead, and Lieutenant-Colonel Greenhill. The Chairman, in proposing the health of "The King," remarked how loyally His Majesty had supported the profession, and how careful he had always been in making sure that the best men should be the recipients of the highest honours. In proposing the health of "The Prince of Wales," the Chairman observed that when the new buildings were opened last summer His Royal Highness spent two hours in the wards, and showed that he possessed an intimate knowledge of the principles of hospital architecture. The Princess on that occasion said words of womanly sympathy to every patient in one ward around which he had the honour of conducting her. In proposing "Prosperity to the Hospital and Medical School," the Chairman remarked that this annual dinner was now an institution which had been in existence for over half a century. We, the old students, have our personal interests, he observed; but we never forget that we are members of a community, and it was as members of a community that we met on October 1st. So ready are Bartholomew's men to combine that last year three old students in a remote part of Asia, living about four hundred miles from each other, met together in an eastern city to dine on October 1st. The gold—the treasure of medical science—is never gained by scraping. On the contrary, we must dig deeply. Every department of our work must be efficient. Therefore he was glad that since the last dinner the new school buildings had been opened, that the teaching staff had been enlarged, and that the resident staff had at last been allowed comfortable quarters. Young men so hardly worked and so cumbered with responsibilities deserved a suitable residence. A lady who recently visited the new buildings, full of home comforts, exclaimed that it was a pity that the house-surgeons were not married. The Chairman distrusted State control; freedom from such control was the very breath of the life of medical teaching. Nor did he care for millionaire's endowments; but he spoke well of the old universities and of London University, which, under the new arrangements, made the metropolitan medical schools into colleges, so that the theory and practice of medicine could be taught under one roof. He insisted that the education in question should be essentially medical. The relief of human suffering was more important than physiological experiments and other purely scientific pursuits. Continuing, he humorously detailed the deficiencies in hospital management in past times, even down till a few years ago, and ascribed great credit to the almoners and House Committee for their energy in promoting the recent improvements. The Treasurer (Lord Ludlow) knew that the interests of the hospital and medical school were identical. Lord Ludlow, in reply to the toast, agreed with Mr. Cripps in commending the almoners, governors, and staff. No treasurer, no one man, could "run" the hospital, but loyal support had made it a success. The staff of a bygone date supported it in the past, the present staff supported it now, and the students of to-day would largely support it in the future. But the staff wisely left the finances to him and the governors. He (the Treasurer) was once in practice at the Bar, and so he knew how long it took to make money. He and the governors had made and opened the new out-patient block, and were able to pay for it. There had been critics, but the medical and surgical staff were satisfied, and that was enough. The Prince, as the Chairman had observed, took great interest in the hospital, and when in London he always summoned him (Lord Ludlow) to Marlborough House to discuss its wants. Thus the desired Pathological block was in construction, and would be opened next year; and then, they both agreed, the buildings to serve as the Nurses' Home must be erected. Mr. Bowlby, C.M.G., proposed "The Navy, Army, and Auxiliary Forces." For the first time a hospital ship had accompanied the fleet on a peace cruise, and that ship was commanded by a Bartholomew's man. Many old students were in the Indian Medical Service and in the Royal Army Medical Corps. In 1899 Dr. Tooth and himself met a major in the R.A.M.C. in South Africa. He

had rapidly gained promotion, and was now Director-General of the Army. Mr. Bowlby called on him to reply. Sir Alfred Keogh, K.C.B., in reply, dwelt upon the territorial scheme, so much spoken about. Dr. Norman Moore proposed "The Visitors." He was glad to see Mr. Ianson and Mr. Hazlehurst, also the Rev. William Osler, now about to retire, and Mr. Hallett and Mr. Cowell, representing the Conjoint Board, and the representative of the Society of Apothecaries, a Bartholomew's man. There were also several visitors representing the old universities, including Professor Howard Marsh, the successor of Humphry and now the head of one of the colleges of Cambridge in succession to Dr. Hill, also a Bartholomew's man. He coupled with the toast Sir W. Job Collins and Sir Melville Beachcroft. He also dwelt on the civic history of London and St. Bartholomew's. In 1191 the first Mayor of London was elected; in 1889 a new body—the London County Council—was instituted, and with it Sir W. Collins's name was intimately associated. The latter was also M.P. for St. Pancras, and thus the homologue of certain mediaeval magnates, extramural dignitaries, of whom Dr. Moore made some mention. As Vice-Chancellor of the University of London, Sir W. Collins had most ably discharged his duties. Sir Melville Beachcroft, as Chairman of the Metropolitan Water Board, was one of the arbiters of the health of London. As for the value of water, Dr. Moore referred to an old student who was on march in Egypt during the wars in the Eighties, when one wineglass of water "was the ration for each man, washing included." Sir W. Collins, in reply, said that October 1st was devoted to the killing of pheasants and the beginning of the annual course of medical studies. No one need blush for the London County Council. Certainly they did not blush at St. Bartholomew's Hospital, for, when they wanted a new Treasurer, they looked to the Council and chose from it Lord Ludlow, who with good looks and good aims combined a zeal for moderate municipal reform. He agreed as to the advantages of the recent arrangements between London University and the medical schools. Mr. Butlin had ably co-operated with him in bringing about that arrangement. The liberality of the University was well known; it now admitted women, and it was the first to recognize surgery as distinct from medicine. Sir Melville Beachcroft referred to his recent visit to certain North German towns to investigate water supply. He commended the authorities of Hamburg for their regulations for the supply of pure milk. The popularity of the London County Council had made itself manifest during the past few months. Hospitals were once threatened, now the threat had been removed. Water supply was excellent in London, several millions of people received as much water as they required, and it was only in the common lodging-house that the supply has been met with disapproval. The health of the Chairman was proposed by Dr. Champneys, and that of Mr. Waring, honorary secretary to the dinner, by Mr. Bruce Clarke. The total number of diners was 180.

KING'S COLLEGE.

Dr. W. H. Allchin, in his introductory address at the opening of the winter session at King's College on October 1st, dealt with medical education in London at the present time. He said that it was not until the formation of an association for promoting a teaching university in London in 1884 that the Senate of the London University attempted to meet what was demanded of it, and it was fourteen years later before an Act was passed reconstituting the University on its present lines. The various educational and even the examining bodies in London awaited with much interest the action of the new University, anxious to see in what way it would co-ordinate the teaching and adjust this to examination requirements, and, above all, how it would meet the crying demand for a degree for the London student—questions that for more than a decade had been the subject of profound unrest. A wise and comprehensive policy was looked for that should improve and more firmly establish the London medical schools by concentration and by combination, that should give teachers the controlling voice in the character of the examinations, and that should furnish the legal title of Doctor on satisfactory terms. But, after seven years, most of this was still to be sought, for the reconstitution of the London University was shackled with what had proved to be a cumbersome and unwieldy machinery and had far from fulfilled the hopes and expectations of those who for so many years had striven for its improvement and could hardly be looked upon as having satisfied the wishes of those more recent workers in the field who had played the greater part in directing its course. The reconstitution of the University was, in fact, nothing but a compromise between the views of those who maintained the all-sufficiency of examinations and accounted it almost sacrilege to lay altering hands thereon, and those who, admitting the necessity of tests, yet would subordinate them to the teacher and to teaching. Opportunism and expediency had had their usual result, and the University of London had lost the great chance it had had, when starting on its fresh course, of becoming the standard examining body for London. For many years past that honourable position had been most efficiently filled by the Royal Colleges of Physicians and Surgeons, though the qualifications that they granted gave no legal right to the title of M.D. An association for examination purposes between the University and those corporations was always contemplated, and a scheme for effecting the same was submitted, but was set aside, and the degree for the London student was no nearer attainment than before. The speaker recognized what the University had and had not done for the concentration of medical teaching, and testified to the improvement it had effected in the examinations and in their relation to medical teaching. In conclusion, he said that he had felt bound to comment on the serious shortcomings in medical education in London, but his remarks were not to be taken as expressing the opinion that the character and ability of those sent out from the metropolitan schools with the hall-mark of the metropolitan examining bodies were other than of the highest. The public might rest content that it was well served. His criticism was directed towards methods as they affected teacher and student, and these it was widely felt should and could be greatly improved.

THE LONDON HOSPITAL.

At the London Hospital the winter session was inaugurated on Tuesday afternoon by an informal reception given to old students by the staff in the college buildings. This is such an excellent way of effecting one of the purposes for which October 1st ceremonies are designed to fulfil that it might well be more widely adopted. This, indeed, would probably be the case if all hospital authorities like those of the London possessed the secret of the widow's cruse—a happy knack of converting perennial poverty into practical wealth, with the resulting ability at the annual gatherings to show to old *habitués* year by year some new improvement in buildings, some fresh advance in accommodation and arrangements. In the evening there was a very well-attended dinner at the Savoy Hotel, Mr. Eve, the Chairman, being supported by many well-known men, including Mr. Jonathan Hutchinson. The name of the latter did not figure anywhere on the formal agenda list, but when mentioned incidentally by the Chairman it evoked such a round of applause that the proceedings were temporarily interrupted, and eventually Mr. Hutchinson had to respond to a call for a speech. In proposing the usual loyal toasts, Mr. Eve made special allusion to the fact that the Queen and her sister, the Empress Marie Feodorovna of Russia, had spent this summer a whole day at the hospital; he also read a letter which the Empress had addressed to the Weekly Board, expressing her gratification at what she had seen, and indicating her intention to make a gift of £400. The toast of the evening, likewise proposed by Mr. Eve, was announced simply as "The London Hospital"; for, as was subsequently emphasized strongly by various speakers, including Mr. Douro Hoare, the Chairman of the College Board and a prominent member of the governing body, at this institution the interests of this school and hospital are regarded as identical and inseparable. Mr. Eve, in the course of his remarks, referred to several losses which the combined institutions have sustained during the year by death and other causes, mentioning more particularly Dr. Schörstein, Dr. Sansom, and Mr. Page. Dr. Sansom when he retired had done his

work, and had done it well; while the work of Dr. Schörstein, unhappily cut short by death, would live in the labours of those whom he had instructed. Speaking of the hospital, he mentioned that with the building of a theatre for aural operations, the addition of balconies to several wards, and the opening of the opsonic department, the rebuilding scheme was practically complete. As for the school, its numbers had been steadily increasing for many years past, its most recent record of entries overtopping those of any other school in London. This was the more remarkable because not only the records of metropolitan schools but those of England as a whole showed a great diminution in the number of candidates for the medical profession. The speech included an interesting account of the hospital as it was just 100 years ago; this being based upon some documents which have recently, it would appear, been unearthed by the popular secretary of the hospital, Mr. E. W. Morris. Among the more curious points mentioned were that at that time only two meals were served a day, breakfast of water gruel and bread, and dinner consisting five days a week of meat and on two of pea soup. The hospital secretary was also chaplain, and responsible for the interment of deceased patients in the hospital grounds. The funerals had to be attended by such patients as could leave their beds, and an entry showed that on one occasion the clerk had been reprimanded for reading the service over a number of bodies together instead of separately. At night the wards were left unattended, for the nurses, then known as watchers, were only on duty in the daytime. The head porter and matron had their meals together, living on the leavings of the apothecary. The latter, a person of great importance, was allowed to take pupils, who slept under the counters of the dispensary. A Black book was kept, in which were recorded the names of patients who ran away to avoid the terrors of an operation. Before the ceremony concluded the assemblage was reminded that next year all old London men will have to assist in making the quinquennial appeal, due in 1908, a success.

ST. THOMAS'S HOSPITAL.

The annual dinner of the old students of St. Thomas's Hospital was held at the Hotel Cecil on Tuesday, October 1st, under the chairmanship of Dr. Theodore Dyke Acland. When the loyal toasts had been duly honoured by the large and enthusiastic company present, "St. Thomas's Hospital and Medical School" was proposed by the Chairman, who, in the course of his remarks, mentioned Dr. Sharkey's long service; he had qualified for the rank of consulting physician, but, to the great pleasure and profit of all St. Thomas's men, he had consented to continue his work as physician and as a teacher in the school. The Chairman also made reference to the loss sustained by the death of Professor Charles Stewart and to the improvements in progress at the hospital, and concluded by coupling the toast with the names of Mr. Wainwright, the Treasurer of the hospital, and Mr. Wallace, the Dean of the school. The former, in his reply, mentioned that he was speaking to this toast for the sixteenth time; speaking of the bond between the school and the hospital, he deplored the attitude taken up by the King's Hospital Fund in reference to medical education; in looking askance at the utilization of any part of the hospital funds for the purposes of the school, it ignored altogether the reciprocal benefits in which the hospital was certainly not the loser. The Dean, Mr. C. S. Wallace, who acknowledged the toast on behalf of the school, was in the happy position of being able to present a record of honours and achievements by St. Thomas's men of which there was every reason to be proud. After a tribute to Dr. Sharkey, he mentioned the changes on the staff associated with the names of Dr. Turney, Dr. Russell, Mr. Robinson, and Mr. Nitch. The examinational successes had been very satisfactory, and there was ample evidence of a literary activity on the part of members of the staff that bade fair to remove the reproach under which St. Thomas's was supposed to labour of not producing any books. The entry was quite satisfactory, and the prospects in the matter of sports were rosy. He was glad to hear the favourable terms in which the Treasurer had referred to the proposed institution of a ward for the reception of lying-in cases; this was a matter of the greatest importance to the students, who could not otherwise attain that intimate knowledge of obstetrics now imperatively demanded. The health of the Chairman was proposed in felicitous terms by Dr. Hobhouse, who voiced the feelings of all those present by his tribute to the long and valued services of Dr. Acland, not only to the hospital and school but also to the science of medicine. Returning thanks, the Chairman called for one more toast, that of "Absent Friends." The dinner was followed by a *conversazione*, which afforded opportunity for the revival of old friendships and the retailing of pleasant reminiscences. During the evening a greeting was received from the old students of King's College Hospital, who were dining in an adjacent room.

THE MIDDLESEX HOSPITAL.

The winter session at the Middlesex Hospital Medical School was ushered in by a ceremonial which included the distribution by Mr. Henry Morris, President of the Royal College of Surgeons, of prizes and scholarships awarded during the past year, and an address by Mr. A. G. Foulerton, lecturer on public health and bacteriology at the institution. The latter dealt with the value of preventive medicine as a factor in the welfare of the State, and was successful in his endeavour to bring home to the minds of the new students the importance of a branch of medicine which, in the course of a hospital career, is so often overshadowed by the more pressing claims of curative medicine and surgery. He dwelt on the fact that though the whole science of public health was practically born in England, and had been carefully nurtured by such men as the late Sir John Simon, the late Sir Richard Thorne-Thorne, and the present medical officer of the Local Government Board, Mr. W. H. Power, it had never, so far as Government recognition is concerned, received the assistance that in other lands has been freely given. The people, he said, of the United States, of Germany, and Japan had profited by work, which though done in England, was neglected or ignored by English party politicians; only of late years had the value of the health of the individual worker as a factor in the prosperity of the State begun to be recognized in this country by politicians, the net result being that this year it had been resolved to take a step long since taken even by such nations as Servia and the Argentine Republic, steps which would aim at safeguarding the health of children during their years of compulsory school attendance. In the evening the annual dinner took place at the Trocadero Restaurant, the chair being occupied by Mr. Andrew Clark, Senior Surgeon of the Hospital, who was supported on his right by Sir Richard Douglas Powell, President of the Royal College of Physicians and a member of the consulting medical staff, and on his left by Mr. Henry Morris, President of the Royal College of Surgeons and member of the consulting surgical staff. There was an excellent assemblage, the company including the Weekly Board of Governors, the honorary medical and surgical staff, and many past students of the school. After the loyal toasts, the Chairman proposed "The Middlesex Hospital and Medical School," and in an interesting speech briefly outlined the gradual growth of the joint institution, emphasizing the close relationship that had always existed between its two parts. Mr. Gillett, Chairman of the Council, in replying on behalf of the hospital, dwelt on the importance attached to the school by the governing body. It was the constant desire and endeavour of the Weekly Board that the equipment, both of the hospital and its school, should always be up to the high standard of excellence now required by modern medical science. The toast of past and present students of the school was proposed by Mr. Bland-Sutton in a speech of much humour, and neatly acknowledged by both Mr. Arnold Lawson and Mr. C. F. Robertson. A toast to the visitors followed, this being proposed by Sir Richard Douglas Powell, and acknowledged on behalf of the guests by Chevalier Wilhelm Ganz, who with the assistance of Messrs. A. Bovett, Richard Green, and George Müller, gave a charming musical selection during the course of the evening. The toast list ended with a health to the Chairman, Mr. Andrew Clark. In proposing this, Mr. Henry Morris referred to Mr Clark's long association with the Middlesex Hospital, his distinguished services to the British Medical Association, and his eminent position as a veteran volunteer surgeon.

The Chairman, in his reply, expressed his deep regret on his retirement at having in a measure to say farewell to his colleagues the staff and the students of a hospital with which he had been so long connected as now to be "father of the house." The conclusion of Mr. Clark's speech, which was received with deep attention, brought the formal proceedings to a close.

CHARING CROSS.

At the medical school of this hospital the opening proceedings of the winter session took the form of a distribution of prizes and awards for the past year, this duty being performed by Lord Kilmorey, who likewise delivered a short address. A general report upon the school was read by the new Dean (Mr. F. C. Wallis), which, besides giving details as to the changes which had taken place in the *personnel* of the school, recorded the fact that during the past year the school had been associated with others in opposing—so far successfully—the proposed erection at South Kensington of a third centre for the teaching of the preliminary and intermediate medical sciences. This centre being without any adequate funds for building purposes and without any endowment, would, according to the view at present held by the School Committee, only exaggerate the prevailing competition and fail to promote the interests either of the University of London or of higher teaching. He also stated that the financial position of the school had greatly improved, ordinary income now exceeding expenditure, while the new entries showed a substantial increase in the number of students. In the evening there was a large assembly of past and present students of the hospital and of members of the medical staff at dinner in the Great Hall of the Criterion Restaurant. Mr. H. S. Clogg took the chair and proposed the toasts to "The King," and to the "Hospital and Medical School." In the course of his remarks regarding the hospital and its school, he observed that of all institutions hospitals were the most exposed to offhand and ill-informed criticism on the part of the public. In the case of hospitals, which to some extent at any rate depended for their support upon the esteem in which they were held by the general public, criticism of this character was particularly objectionable, and it could not always be avoided even by the best managed institutions. Charing Cross did, and doubtless would continue to get its full share of criticism of this nature, inasmuch as in one sense it had been prematurely built. He had heard, for instance, the out-patient department characterized as being finished in a style suitable to a palace, and the part of the building devoted to operations as being a marble hall. People who made such remarks forgot that hospitals were built not only for the needs of to-day, but for those of to-morrow as well. They should be so constructed as in some degree to forestall the requirements seen to be looming in the future, and in such fashion that, as developments took place in scientific knowledge and its application, all improvements could be adopted and turned to the benefit of the patients. The clinical laboratory recently provided was excellent, and it was much to be desired that the second operating theatre should be provided. The school, as a whole, was in a decidedly flourishing condition, and the scheme by which it shared the work of instructing the dental pupils of the National Dental Hospital as well as the medical students was working most happily. Another happy arrangement was that with the Royal Orthopaedic Hospital, for it gave the students the advantage of being able to make a special study of orthopaedic surgery until the institution which was to provide for the needs of the amalgamated orthopaedic hospitals was ready. During this and the succeeding speeches there were several references to those whose services the school and hospital had lost during the past year and much regret was expressed at the departure to St. Bartholomew's Hospital of Dr. Addison, who during his six years' connexion with Charing Cross had been so faithful a colleague and so popular as a lecturer. A similar compliment was paid to Dr. Fenton, who has given up the joint lecturership in practical medicine; and a warm welcome was offered to Professor Alexander Macphail, formerly of St. Mungo's College, Glasgow, who has been appointed to fill the post of Lecturer on Anatomy vacated by Dr. Addison. The whole evening was a great success, the pleasure of those assembled being increased by some excellent songs and musical sketches, among those who contributed in this way being Dr. Mott.

ST. GEORGE'S.

The ceremonies marking the opening of the winter session at the medical school were in the nature of a triple function, for they included an address, the opening of a new laboratory and the unveiling of a memorial tablet in connexion with it and the usual meeting of old students at dinner. The opening of the laboratory, which preceded the address, was performed by the treasurer of its endowment fund, Dr. Latham. He dedicated it to the memory of the late Dr. Robert Barnes, and unveiled a tablet bearing the following inscription: "In recognition of his great services as a lecturer and teacher, and of his munificent support of the Medical School, this laboratory is named after Robert Barnes, M.D., obstetric physician to the hospital 1875 to 1885, consulting obstetric physician 1885 to 1907." In his short address Dr. Latham said the late Dr. Barnes was a man of whom St. George's might well be proud. Many of his works had stood the test of over fifty years. Often ahead of his contemporaries, he saw many of his views confirmed. Great as he was as a thinker and teacher, it was his love for St. George's that endeared him most to them. As Dr. Barnes once said, he had served in many London hospitals, but his heart was St. George's. They were indebted to him for a cheque for £1,000 and the permission to use some of the money to attract the attention of the public and thus enable them to relieve the school from its pressing financial stress and establish that and other laboratories. Dr. Latham then formally entrusted the keeping of the laboratory to Dr. Salusbury Trevor, the head of the pathological department. The introductory address was delivered by Dr. William Ewart, who entitled it "Res Medica, Res Publica," and in its course dealt with the future work and wage of practitioners of medicine. He indicated a belief that the medical world is passing through a severe crisis, medical men being too many and patients too few. The position was due to multiple causes, among these being the growing success of the medical profession in reducing the prevalence of disease, a decline in the spirit of invalidism, a more general recognition of the value of moderate living and of attention to simple rules of health, and the lessening use of alcoholic beverages. It was suggested as inevitable that the medical profession should become more and more the servant of the State, and that, so far as treatment of actual disease was concerned, medical men had seen their busiest days; in the future they would devote their time less to the cure of physical disease than to the care and culture of health. The dinner was held at the Whitehall Rooms of the Hotel Metropole, Sir Herbert Mackay Ellis, Director-General of the Medical Department of the Royal Navy, who was in the chair, presiding over an assembly of some 125 persons. Besides proposing the usual loyal toasts he moved the toast of the evening, "The Hospital and its Medical School," which was acknowledged on behalf of the Hospital by Mr. West, the Honorary Treasurer, and on behalf of the School by Dr. E. I. Spriggs, the Dean. The latter was able to give those present the pleasing assurance that the school seemed at length to have turned the corner, for the number of students who had this year put down their names for the full course was more than double the previous record. In his consideration of the affairs of the school and its future, and of the parent institution—the hospital—he dwelt on the value of a definite policy and punctuated its importance. The health of the orator of the day, Dr. Ewart, was proposed by Sir William Bennett, who referred to the great regret felt by all those connected either with the school or the hospital that Dr. Ewart was about to end his active connexion with the two institutions, the time for his appointment to the consulting staff having nearly arrived. The health of "Past, Present, and Future Students" was proposed by Mr. Mason and acknowledged by Dr. Hewitt and Mr R. R. James, the formal proceedings terminating with a toast to the Chairman, which was proposed by Mr. Dent and briefly acknowledged by Sir H. M. Ellis.

THE LONDON SCHOOL OF MEDICINE FOR WOMEN.

In common with other medical schools in the metropolis, the London School of Medicine for Women formally opened its doors on Tuesday, the inaugural proceedings taking the form of an address, followed by general conversation over tea and light refreshments. The address was delivered by Miss Gray, F.R.C.S.I., Surgeon to the Nottingham Hospital for Women, who dealt in a very practical fashion with some of the mistakes not infrequently committed by those who are fresh from the schools, and who have yet to acquire knowledge of private practice. Speaking more particularly of women, she suggested that every student should pass at least one year at home in pursuance of ordinary social life before commencing work at a medical school. There would thus be less risk of lack on her part of knowledge of ordinary life and household and business affairs. There would, too, be less of the tendency shown by some students to neglect small conventionalities. Manner and dress and general ways were not the trifles which they were sometimes thought to be, but points of importance by which the doctor would be judged by her patients. Her house, her manners, her dress, the very way she wore her hair would all tell for or against her, and, more than that, would have a real influence in some cases on the well-being of the patient. In this connexion Miss Gray instanced the case of a patient who had told her what a refreshment it was to see her doctor, who was a remarkably well-dressed woman, come into her room. On these points, as well as on the subject of medical etiquette and related topics, she would much like to see students receive more definite instruction. Other observations made by her applied to students of both sexes; she pointed, for instance, to the advisability of endeavouring to see things from the patient's point of view, and laid stress on the legitimacy and duty of attaching a due amount of importance to the opinions expressed by them. At the first visit at any rate the patient's story should be carefully listened to from beginning to end; no grievance on the part of patients was more keenly felt than failure in this respect, and perhaps patients might not infrequently be right in their belief that points in their treatment had been overlooked because the doctor would not hear them to the end. Patients and their friends always wanted the doctor to "do something," and if possible it was advisable from every point of view to satisfy them in this respect. If the proper treatment was to do nothing but wait, that should be carefully explained. If a cheering verdict could be given it should be given in the plainest English. When and whom to frighten was a point upon which the doctor should always be clear in his or her mind; sometimes it was all-important to alarm the patient's friends, sometimes almost criminal to do so. In any case the creation of alarm should never be unintentional, for nothing could excuse the betrayal of panic on a doctor's part. In the very worst emergencies it was his or her duty to maintain for the patient's sake a demeanour of calm courage. The address concluded with a few useful axioms, these being to the effect that patients were mostly not idiots, and that doctors could best help them when they respected them; that doctors must recognize the value of work as well as of rest, the dangers of idleness as well as those of overwork. Finally, she remarked that the duty of a doctor was not confined to individuals; in dealing with a family or community the interests of the healthy members must be considered as well as those of the sick person.

LEEDS.

The session of 1907-8 has for the first time for many years been opened without anything in the way of a public ceremony or an opening address on the first of October. It is interesting to note that in many quarters, especially on the part of former students of the school, considerable regret has been expressed at this innovation. Certainly the high quality of the opening addresses to which the members of the Leeds School have become accustomed would have justified their continuance. One calls to mind with pleasure the addresses of Sir James Paget, of Sir Michael Foster, Dr. Clifford Allbutt, and more recently the charming and amusing address of Sir William Gairdner on the "automatic doctor," the wise orations of Sir James Crichton-Browne on old age and on the medical curriculum, and the personal charm of Sir William Banks when he opened the session some years ago. Such addresses can ill be spared, and though as a rule, perhaps, the school should formally open by the simple and natural process of ceasing to remain formally closed, an opportunity might well be given—say once or twice in the career of the average student—for him to hear well-chosen words of advice at the beginning of the winter session from some one outside the list of his own teachers. In the evening the annual dinner of the medical profession of Leeds and district was held, and the Committee were fortunate in being able to have as the chief guest one who has done so much credit to the scientific aspect of the medical profession as Major Ronald Ross. Professor Grünbaum, the Dean of the Faculty of Medicine, who presided, in proposing the toast of "Pioneers of Medical Research," made a graceful reference to the work done by Major Ross, and referred to the other, and to many of those present the unknown, sides of his versatile abilities. Major Ross, who in his reply held the large audience keenly interested in his remarks, touched in the first instance on some of the recent researches on malaria and on their practical outcome. He then made an eloquent and convincing appeal for the endowment of research to investigate the many problems, such as the immediate cause and means of transmission of the common diseases—scarlatina and measles—which, he was convinced, were ripe for solution; and he paid a generous tribute to the work of Haffkine—whom he considered to have been most unjustly treated—of Manson, Laveran, Koch, Bruce, Wright, and others, including the Chairman. The toast of "The University of Leeds, its Founders and Faculties," was, in the absence of the Lord Mayor, entrusted to Mr. Veale, and was dealt with in that mixture of wisdom and humour which his former efforts had led every one confidently to anticipate. Dr. L. C. Miall, who, after some thirty years' occupancy of the Chair of Biology, has retired, replied in a weighty, interesting, and characteristically modest speech. Professor Wardrop Griffith, who replied on behalf especially of the Faculty of Medicine, referred to the loss by death of Mr. W. H. Brown and to the retirement of Professor C. J. Wright. He considered that Mr. Wright's position was a remarkable and a proud one. In good health and vigour, far removed from the stage of the "lean and slippered pantaloon," he could look back on upwards of forty years of faithful service to the school, done in such a way as to entitle him to the grateful respect and affection of all his colleagues. Reference was also made by Dr. Griffith to the facilities which are now afforded in Leeds for instruction in dentistry at the Leeds Public Dispensary, and to the fact that degrees and diplomas in that division of surgery could now be conferred by the University. He dwelt on many of the advantages afforded by the Leeds School and by its fine Infirmary, and the opportunities, considered by him to be unrivalled, which it gave for the acquisition of a large and varied experience. The necessity for adequate accommodation and equipment for the growing subjects of pathology and bacteriology was insisted on, but he considered that the greatest requirement for the continued welfare of the school was the maintenance, and if possible an increase, in the enthusiasm and loyalty of every student past and present, and of every individual member of the staff, for without this everything else was useless. The toast of "The Chairman" was ably proposed by Professor Littlewood; the arrangements for the dinner were happily entrusted to the experienced hands of Dr. Hellier and Mr. Martin Frobisher, who acted as secretaries, and whose work earned the gratitude of the large company numbering about 100 who attended the gathering.

BRISTOL.

The winter's work began this week, its commencement being taken by the Pathologist of the Royal Infirmary, Professor I. Walker Hall, as an opportunity to invite the medical profession of Bristol and the neighbourhood to an exhibition of the newly-mounted specimens at that institution. A very considerable number of medical men took the opportunity of being present, and fully appreciated the specimens shown. In addition several demonstrations were given, lasting over an hour. Professor Walker Hall showed microscopic sections of the mounted

specimens, as well as new methods for mounting specimens, for the estimation of sugar in urine, and for the investigation of fat in faeces. Dr. J. M. H. Munro (Bath) gave a lantern demonstration of residual opsonins, and Dr. J. J. S. Lucas dealt with some anomalies of tuberculosis. Professor Walker Hall has issued a list of dates on which he proposes to give pathological demonstrations during the winter session at the Royal Infirmary. These will be given twice a week, on Mondays and Fridays, at 3.15 p.m., and will be on surgical pathology on Mondays and general pathology on Fridays. Like demonstrations were given last year, and were much appreciated by those who went to them. The value of them to the students is incalculable, and would be a proof, if any were needed, of the high standard of work done by the Professor of Pathology at University College, Bristol, both at the College and at the Royal Infirmary.

ST. VINCENT'S HOSPITAL, DUBLIN.

Work for the winter session at the medical school of this hospital was inaugurated by an address in which Mr. R. F. Tobin, late Surgeon-in-Ordinary to the Lord-Lieutenant of Ireland, gave an eloquent description of the state of public health in Ireland, more especially in regard to tuberculosis, and described what the medical profession had done, and what might be expected if any real power in the matter lay in its hands. He showed, however, that the position was hopeless unless one thing could be secured, namely, general education on the subject. Who, he asked, should be educated? and answered every individual Irishman; not merely County Councillors or Members of Parliament or even the English Government, but every man and woman and child who was given room on the land called Ireland. Each individual must be taught that health was his first duty and the best economy whether he considered himself or his country. He must be taught, added Mr. Tobin, quoting the words of Mr. Redmond as applied to another subject, that "every year's delay in the settlement of this question means inadequate efficiency for Ireland in every walk of her national life, political, social, commercial, economic, and perhaps I might say religious. Delay in the settlement of this great question bars the way to all national progress and development." Continuing, he added, "it must be recognized by every man that the work of maintaining health consists in in the carrying out of certain rules, the enforcement of which lies partly at his door, partly with the corporations whom he elects to represent him. The rules for himself may be put under two heads. First, cleanliness of his own body and of all other premises for which he is responsible. Secondly, self-restraint in regulating his appetites on principles easily learned and which are more widely known than practised. It is here really that the whole difficulty comes in, for given courage and honesty culminating in true action on this point all else is easy." In this connexion he showed that a true conception of the meaning of the term patriotism, whether by the soldier or by the civilian, should lead to his cherishing and developing the strength and qualities which God had given him, and then in devoting that strength and those qualities to what his conscience told him was his duty. Asking who was to inculcate this view of patriotism, he answered the Gaelic League, to which Ireland already owed much, and to which in this way it would owe very much more. One duty every individual Irishman owed to himself was to see that the right men were elected on the county council—men who would see that the council had at its side a medical officer with a diploma in State Medicine to guide its action in relation to public health, and one enabled by his salary to give his whole time to his work, and placed in a position which would render him independent of all opinion save that which was expressed by the council in its corporate form. Finally, he indicated that reform meant expense, and that Ireland was poor, but being poor there was all the more reason that it should be economical, and there could be no such lack of economy as that which lay in the wastage of the best asset of any country, the lives and health of its inhabitants.

BRITISH MEDICAL BENEVOLENT FUND.

At the September meeting of the Committee seventeen applications for assistance were considered and grants amounting to £154 voted in relief, one case being postponed for further inquiries. Three annuitants were appointed to fill vacancies caused by death. Appended is an abstract of the cases helped:

1. M.D.St. Andrews, aged 82, who practised in Kent, but has been disabled as the result of an accident for nearly twenty years. No children; income insufficient for the bare necessities of life. Recommended by Mr. J Forrest Leeder, Honorary Local Secretary. Voted £12 in twelve instalments.

2. Widow, aged 49, of L.R.C.P.Edin. who practised in London. Quite unprovided for at husband's death, and children only able to give slight help. Recommended by Dr. R. T. Smith and Dr. Heywood Smith. Voted £10 in ten instalments.

3. Wife, aged 43, of M.R.C.S., L.S.A., who practised in Hampshire, but is now confined in a county asylum. Six children, aged 13½ to 5½. No income. Has endeavoured to support herself and family by keeping a small shop. Recommended by Dr. R. C. Brown and Mr. J. Deane. Voted £12 in twelve instalments.

4. M.B., C.M.Edin., aged 39, who practised in Edinburgh, but has been incapacitated by illness for the last three years. Wife takes lodgers. One child, aged 6½. Recommended by Dr. J. Thomson.

5. Widow, aged 53, of M.R.C.S., L.S.A., who practised in London. No provision at husband's death, eight years ago. No income; slight help from children. Relieved three times, £30. Recommended by Sir Anderson Critchett, Vice-President. Voted £10 in ten instalments.

6. Daughter, aged 59, of late M.R.C.S., L.S.A., who practised in Northamptonshire. Has supported herself for many years by dispensing but is now unable to obtain a post. Only income a few shillings a week. Relieved once, £10. Recommended by Dr. F. H. Haynes. Voted £10 in ten instalments.

7. Daughter, aged 59, of late M.R.C.S., L.S.A., who practised in Derbyshire. No income; small earnings from needlework. Relieved once, £12. Recommended by Sir William Church, Vice-President. Voted £12 in twelve instalments.

8. Widow, aged 52, of M.R.C.S., L.S.A., who practised in London. No income; no children; permanent ill-health. Relieved four times, £36. Recommended by His Grace the Archbishop of York. Voted £10 in ten instalments.

9. Widow, aged 46, of L.S.A., who practised in London. Quite unprovided for at husband's death two or three years ago and health too bad to attempt self-support. Children unable to help. Relieved twice, £26. Recommended by Dr. J. A. Ormerod. Voted £12 in twelve instalments.

10. Daughter, aged 73, of late M.R.C.S., L.S.A., who practised in Somersetshire. Only income a small pension. Relieved once, £12. Recommended by Mr. W. H. Axford. Voted £5.

11. Daughter, aged 30, of late M.D., who practised in Hampshire. Has supported herself since father's death some years ago by acting as governess, companion, etc., but has recently broken down in health and been obliged to take a rest. Relieved once, £5. Recommended by Mr. T. J. Ollerhead. Voted £5.

12. Daughter, aged 56, of late L.R.C.P.Edin., who practised in London. Subject to frequent attacks of epilepsy and dependent on the charity of friends who can ill afford to help. Relieved once, £10. Recommended by Dr. Henry Willson. Voted £10 in two instalments.

13. Daughter, aged 37, of late F.R.C.S., who practised in London. No income and partially disabled by tuberculous disease of a large joint. Relieved once, £12. Recommended by Professor Howard Marsh, Vice-President. Voted £12 in two instalments.

14 Daughter, aged 51, of late M.R.C.S., L.S.A., who practised in Suffolk. Endeavours to support herself by keeping a registry office, but is a chronic invalid. Relieved five times, £39. Recommended by Dr. R. J. Ryle. Voted £12 in twelve instalments.

15. Daughters, aged 43 and 35, of late L.S.A., who practised in Essex. Both incapable of earning a living on account of physical infirmities, and dependent on mother whose only income is a small pension. Recommended by Dr. R. T. Nichols. Voted £12 in twelve instalments.

Sir Felix Semon, M.D., K.C.V.O., has, at the request of the committee, undertaken to deliver an address at the opening of the session of the Manchester Medical Society. The subject of the address, which will be given in the General Theatre of the Medical School of the University of Manchester on Wednesday evening, October 16th, at 8.45 p.m., will be English and German medical education—a parallel.

The Society for the Study of Disease in Children will hold its first meeting of the session at 11, Chandos Street, London, W., at 5 p.m., on Friday, October 18th. The Wightman lecture will be delivered before the Society by Mr. Watson Cheyne, F.R.C.S., C.B., on May 23rd, 1908, and the provincial meeting will take place at Birmingham on June 20th.

CORRESPONDENCE.

WHAT DO WE MEAN BY TACHYCARDIA?

SIR,—The interesting letter of Dr. Hobhouse in your issue of September 28th commands my assent so far that, were it not for his courteous appeal to me, I should not burden your pages with a comment upon it. Yet there is something more to be said. If, without injustice, Dr. Hobhouse's demur may be indicated in a sentence, it is this, That an article of mine on (paroxysmal) tachycardia errs in "taking a word of general import, and using it without qualification in a limited sense"; for "tachycardia may be taken without cavilling to mean rapid heart action." Quite true; if this be so we are committed to the pedantry of using a pretentious word for a simple thing, a habit of which, with some truth perhaps, we medical men are commonly accused. When ten years ago I wrote the article I trusted this particular bit of finery had not fixed itself on physicians generally, but that we were still content, as our fathers were, to speak of a pulse as rapid.

But, it may be objected, if we like imposing language, and if the word has now become customary, what is the harm? And, again, that as tachycardia means etymologically no more than rapid heart action, the name cannot be made definite. Well, to take this point first: Dr. Hobhouse says, and says well, "We must not be too squeamish about the etymology of the compound words we employ in medicine; tachycardia is as good as most of them." Why, thus it was that I proposed to use the name; that its meaning should not be abandoned to mere etymology, but should receive that precision which so elaborated and imposing a compound should have. For instance, as a careful writer does not by etymology water down the name Hyperpyrexia, so as to disperse it over all and any high temperatures, but endeavours more precisely to signify by the name a certain class of cases of fairly uniform symptoms, cases of which the name and feature of hyperpyrexia denotes not this only but also a symptom group, so I sought to give precision to the name Tachycardia. If we are to use it, it should, in my opinion, connote something more than its mere etymological content—namely, a particular group of fairly uniform symptoms.

As to the alleged harmlessness of using fine words if we prefer them, I would reply that not the student only, but his teacher also, when he uses big words is led insensibly to invest them with more than the trivial meaning which Dr. Hobhouse desires. Surely, thinks the student, this name cannot be mere magniloquence; it must mean a disease, or, as he calls it, a "morbid entity"; and thus he is taught to feed his mind on husks. Nay, and towards his teacher too creeps nearer and nearer the subtle temptation to regard an imposing name as imposing some new quality upon the thing; and so, more or less, to explain it, or to classify it; for, if it does not, why desert plain language?

SCH.: Doch ein Begriff muss bei dem Worte sein?
MEPH.: Schon gut! Nur muss man sich nicht allzuängstlich quälen.

—or is the quotation too hackneyed? If Dr. Hobhouse thinks that, having rolled "tachycardia" over our tongues, we shall never consent to give it up for so small a phrase as "rapid pulse," well, I admit the effort to give to the big word a precise meaning must also be given up.

To turn to the other subject on which Dr. Hobhouse is so good as to ask my opinion, concerning, that is, "a class of cases . . . . not seldom obscure, namely, continually rapid heart action without obvious cause." The chief of the cases he thus recalls to my memory were unquestionably larval Graves's disease, and for this reason I avoid the name "exophthalmic goître," as in the not infrequent absence of these features, too often regarded as cardinal, not only is diagnosis missed, but even repudiated when suggested. Such cases persist for years unrecognized.—I am, etc.,

Cambridge, Oct. 1st. T. CLIFFORD ALLBUTT.

ON THE EFFECTS OF RESPIRATION ON THE CIRCULATION.

SIR,—The recent contributions to the literature of this subject by Dr. Watson Williams and Sir James Barr contain references to observations made upon the dog in the physiological laboratory. But I think it is not very generally known that dogs in health and under normal conditions present a remarkable relation between respiration and circulation. I noticed that in my own sporting dogs—setters and pointers—there was great irregularity in the heart's action during repose. Four or five beats occur with regularity, then comes a pause during which there are either no beats or one or two beats at irregular intervals, and then the quick beats recur again. So far as rough observation without the aid of instruments goes, the quick, regular beats take place during inspiration, the pause occurs during expiration.

When the heart-beat is increased in rapidity by exercise the irregularity entirely disappears, to be resumed after a short period of rest. This is peculiar to the adult dog; puppies with their quicker circulation have a perfectly regular pulse.

It would seem that this close relation between respiration and circulation is common to the whole dog tribe. I have found it in mastiffs, greyhounds, collies, setters and pointers, retrievers, and in toy dogs of inactive habits, such as King Charles spaniels and pugs, and in the only wolf I have met with tame enough to allow of such an observation being made without exciting the animal the same expiratory pause existed. Whether it exists in the jackal I do not know, as those in the Zoological Gardens are rarely tame. But it is not noticeable in other carnivora examined, which included a puma, a panther, a kinkajou, and a coati-mundi. It was my intention to extend these observations over a much larger number of animals, but as it may be an indefinite time before I do so, I venture to communicate these very brief statements for what they are worth.

I am, of course, well aware that they are not sufficiently precise to be of any use in elucidating the problems discussed by Dr. Watson Williams and Sir James Barr, but they may interest them notwithstanding. It has occurred to me that a close interdependence of respiration and circulation may be of use to animals which hunt their prey down and indulge in sudden and prolonged "spurts" with intervals of very complete repose; whilst the felidae or other carnivores which steal upon their prey do not make the same sudden calls upon their respiratory and circulatory apparatus. If there be any truth in this supposition, the peculiarity was probably acquired in the wild state and before differentiation into varieties occurred, and has been retained, in spite of their abandonment of active habits, by such breeds as the King Charles.

It would appear that, under the influence of an anaesthetic, this rhythmical irregularity is very greatly diminished, and in febrile conditions it—sometimes, at all events—disappears.—I am, etc.,

London, W., Sept. 26th. CHARLES S. TOMES.

ON THE PREVENTION OF THE OPHTHALMIA OF THE NEWBORN.

SIR,—The great majority of cases of purulent ophthalmia occur in the practice of midwives. It therefore appears to me highly important that their attention should be directed to the terrible consequences resulting from this disease. With this intention a week ago I invited all the midwives practising in Sheffield to a tea at the Royal Infirmary with the object, as the card of invitation stated, of "enlisting their assistance in preventing the very large amount of blindness caused by inflammation in babies' eyes shortly after birth." The staff and nurses had kindly arranged an interesting musical programme. Between 70 and 80 midwives, as well as the women sanitary inspectors, attended, and after tea I drew their attention to the terrible ravages of the disease, pointing out that at the Sheffield Blind School, out of 335 inmates who had passed through the institution no fewer than 136 owed their blindness to this cause. What was true of this institution was true of others. It was explained to them that it lay in their power in a great measure to stamp out the disease by giving attention to the babies' eyes at the time of birth and the means necessary to be adopted were plainly put before them.

I sincerely hope that others may be willing to adopt a similar course in other parts of the country, as by doing so I feel sure a most important step will be taken towards preventing the disease and the consequent fearful loss of, or impairment of, sight. It is desirable to enlist the

assistance of the medical officer of health, but this should be as readily forthcoming as it was in Sheffield.—I am, etc.,

Sheffield, Sept. 30th. SIMEON SNELL.

CEREBRO-SPINAL FEVER AND DUST.

SIR,—I am greatly indebted to Major Buchanan, I.M.S., for his kind remarks and informative letter. When seeking inspiration for my article which appeared in your columns I was struck with the meagre information contained in our standard textbooks. German authorities afforded me greatest assistance. I am sorry I was unaware of the existence of Major Buchanan's contribution to the subject. I am indebted to him for that and the other references which he quotes.

I am pleased and interested to learn that dust is looked upon as a powerful factor in the dissemination of the meningococci in infected districts of India and Egypt. I felt convinced regarding the influence of dust for evil in Leith during the blustering, cold, and dry weather of January, February, and May of the present year. The undue prevalence of epidemic cerebro-spinal meningitis among coal miners had due prominence given to it by Dr. Jehle and other Continental authorities. Finally, the fact that meningococci are to be found in throat and nasal secretions of "intermediaries" renders the probability of dust infection almost absolutely certain.

I may take the present opportunity to add that my suggestion that infection reached the system through the tonsillar path receives strong support from Westenhoeffer. Dr. Goeppert Kattowitz goes still further by maintaining that the whole respiratory tract is a possible point of entrance. Those suffering from enlarged tonsils or "sore throats" must therefore provide ready victims. The preventive measures are obvious. These authorities also refer to the appearance of a throat involvement which was noticed in many of the Leith cases during their first few days of illness.—I am, etc.,

W. ROBERTSON,
Leith, Oct. 1st. Medical Officer of Health.

THE REFERENDUM.

SIR,—Your leading article of September 21st places the points on which a Referendum is to be taken concisely and with commendable impartiality.

First. The Council desires that in the future an attempt should be made to arrive at an agreement between the Council and the Representative Body before a Referendum is finally decided upon.

Secondly. The present system of electing the Council by the Branches according to their size was adopted four years ago after prolonged consideration, and it has stood the test of experience. Indeed it has proved much more satisfactory than the system of electing Representatives of Divisions. In many of the largest and most active Divisions, such as Wandsworth and Manchester, it has often been found difficult to get a bare quorum for an election, even when the quorum is fixed very low. Members come to a clinical evening gladly, but it is not easy to get them to attend a purely business meeting. Dr. MacManus in 1905 tried to get the Representatives elected by ballot papers in the same way as the Council, but he failed. It was argued that members must be educated to come, and that it was the privilege of the few who did come to elect and instruct the Representatives. Is it not wiser to frame the Charter for men as we find them, rather than for men as we hope to make them? By the present constitution a member of Council is nominated and voted for by each member of the Association residing within the Branch who chooses to fill up the ballot paper sent to him; the choice is thus larger, and the poll heavier, than if the election took place at a small meeting. As many Representatives are also like myself members of the Council, and as all the Council take part in the Representative Meetings, it is not correct to say that the two bodies are not in touch with each other. Mr. Ballance went so far as to propose that the whole of the Council should be elected by the 150 members of the Association who are chosen as Representatives at the Divisional meetings. This was a thinly veiled attempt to get rid of the Branches altogether, or, at least, to deprive them of any influence in the Association. A later proposal, which is one subject of this Referendum, is to reduce the Council to 52. It now varies from 70 to 75, according to the size of the Branches at the time. The 52 are to be allotted thus: 12 to the Representatives, 9 to the Colonies and the Services, and 31 to the Branches grouped into new units, the present election by Branches being abolished. The practical result is, roughly speaking, that by this scheme about

Every 15 Representatives elect one member of Council.
Every 200 members residing in Ireland elect one member of Council.
Every 450 members residing in Scotland elect one member of Council.
Every 800 members residing in England elect one member of Council.

The present Council is elastic, varying in size with each change in the Association, and it is by no means too large when the number of Committees it is necessary to form out of it is considered. Out of 75 members an attendance of 40 men engaged in active practice is a full Council, and is as much as can be expected. If the Council is to be reduced to 52, the attendance will be proportionately smaller, and the Committee work will fall more heavily on its members. It will then be difficult to get men engaged in full professional work to undertake it, and these are the men whose help is most valuable to the Association. I consider the apportionment of the Council as shown above to be inequitable in its distribution, and incapable of adaptation to a varying Association, especially to one with rapidly-expanding Colonial Branches. The present Council would be lacking in the performance of a constitutional duty if it adopted a scheme so crude and wholly untried without first respectfully asking the Divisions for their guidance and help. The Council does not object to the Charter; it is anxious to see it granted, so long as it preserves the constitution of the Association. What is really hanging up the Charter is the attempt to use the application for a Charter as an opportunity for tinkering with the constitution as it was settled four years ago. It is highly imprudent to introduce into a permanent Charter untried schemes which are on the face of them unjust and unworkable.

Thirdly, the division of the Journal and Finance Committee is a purely practical question, and surely in this matter those who have had actual experience are the best able to guide us. Dr. Radcliffe Crocker points out very forcibly (SUPPLEMENT, p. 196) that almost all matters relating to the JOURNAL involve expenditure, so that, should the Journal and Finance Committee be split up, the same subjects would have to be discussed twice over, and delay, waste of time and of money would result.

As to the Minority Report, the less said the better. A minority report appearing late, with additional names appended, does not seem to me to savour of that *esprit de corps* which brings respect to the decisions of any public body.

I have every confidence that the Divisions will declare that those particular alterations in the Constitution to which the Council has drawn their attention do not represent the wishes of the Association, and that they will vote against the resolutions on which a Referendum has been taken.—I am, etc.,

Wilton, Salisbury, Sept. 27th. CHARLES R. STRATON.

SIR,—I do not take the same view of the action of the Central Council of the Association, in reference to the Referendum, as Dr. Garrett Horder—namely, that it is a quarrel between that body and the Representatives. Its action is quite constitutional, and shows that it is watching the interests of the Association as it ought to, and that without a mandate from the Divisions on this specific point it will not concur in it. If it had allowed the application for a Charter to go without a Referendum it might subsequently have been blamed for not taking that action.

Therefore I do not look at this action in the sense that it is evidence of a quarrel between these two bodies, but simply that the Council does not approve of the action of the Representatives, and wishes instead of endorsing that action by passive acquiescence to throw the responsibility of approval or not on the Divisions.

The idea of the Charter means another new constitution entirely, and every member of the Association ought to be made aware of this, and the more each one is stirred up to look into it and to express his views the better.

There are many Representatives themselves who would

probably be all the better if they were further enlightened upon the subject by discussion in the JOURNAL and in the Divisions, for to be a Representative does not always mean that he has been fully informed upon such an important subject, or that he has given it much attention. He may have been elected to his position by half a dozen members, and in some cases because he is the only man available to attend the Representative Meeting. I am speaking of no individuals personally, but in a general sense. We ought not to be swayed too much by what that meeting decides upon. These things I am discussing dispassionately, for personally I like the meetings and the men who attend, and have attended from their first institution; but, as in all bodies, the chief part of the talking is done by a few men year after year, and there are many we do not come across at all personally; and, if I must say what my impression is of the component parts of the Representative Body generally, I must confess I do not feel quite satisfied with the weight of it. Therefore it is all the more valuable what the Council has done, and I do not look at it as some do that it is a waste of money, and especially if every member will only do his part and go fully into the subject at issue. In fact, I am looking forward that it will be found that it is money well laid out.

What I desire above all things is that every opportunity shall be taken, by careful deliberation and avoiding anything savouring of a rush in the settlement, that the management of the Association shall never fall into the hands of a clique. Therefore, the election of the Central Council should always be truly representative of all sections of the members, and this I spoke in favour of at the Special Meeting of Representatives.

It will be said that in the draft Charter this is provided for. True, but we are told that it may be altered in twelve months after it is given by the Representative Meeting deciding that all the Council shall be elected by it, and not any portion by the Branches, and then the safeguards which we have now would be abolished.

It is true that the party now in power is composed of earnest men, but we want a stronger opposition to check and criticize them. By this means we shall have more safety and security, if less speed.—I am etc.,

Manchester, Sept. 28th. G. H. BROADBENT.

THE IMPROVEMENT IN THE CONDITIONS OF CONTRACT PRACTICE.

SIR,—In reply to Dr. H. P. Tayler's letter (page 851), wherein he invites every club doctor to keep an account of the work he has done, I may say that since 1902 I have kept an account of the work I have done and the cash received, and it works out as follows: Roughly speaking, I received an average of £300 per annum for the years 1902 to 1906; that at 3s. per member gives 2,000 club members. My yearly visits upon these members work out at an average of 8,000 and 12,000 bottles of medicine. In some years the visits have numbered 10,000, in others 6,000. The medicines have been as high as 15,000 and as low as 10,000. I calculate, taking the medicines alone and giving in the visits, that I receive about 6d. a bottle, including, as stated, visit and medicine or consultation at surgery.—I am, etc.,

Sept. 28th. CLUB DOCTOR.

THE WAR AGAINST QUACKERY.

SIR,—Your sympathy is gratifying, your encouragement stimulating, but they do not blind me to the fact that one obscure member can do little, and that the crusade against quackery can be brought to a successful end only by the determined effort of the united profession acting through an organization like the British Medical Association. For the sake of the poor and ignorant—the greatest sufferers from quackery—it is the imperative duty of the profession to enter upon this crusade. The case for legislation is overwhelming; it needs only to be brought home to the minds of responsible statesmen. If it can be shown that a Royal Commission (in which I still firmly believe) does not seem the best medium towards enlightenment, other ways can be devised. The profession alone know the facts; they alone are in a position to expound them; they are, I hold, bound at any reasonable cost in money and personal effort to force them into publicity.

It may be doubtful whether the quack doctor is as harmful as the bogus solicitor, but, I submit, the real question is whether the quack is harmful enough to call for the interference of the State. The penal clauses of the Medical Acts, devised to prevent fraudulent practice, to enable the public to distinguish between legally-qualified and unqualified practitioners, are a failure; they can be amended and made efficient. The Medical Council can be reconstituted, with powers approximating to those of the Law Society, both with respect to qualified men and pretenders. With regard to the traffic in quack drugs and apparatus, there can be no difficulty in demonstrating its gross and cruelly fraudulent character. The series of analyses already published in the JOURNAL point the way in this matter. Suggestive also have been the results of cases in the Courts in which ruin of their business has followed exposure of companies of nostrum-mongers that had expended hundreds of thousands of pounds annually in puffing their worthless wares. The Food and Drugs Acts, and the Merchandise Marks Acts, are designed to protect the public against deceptions much less injurious. Medical quacks of all denominations rank with the classes of habitual criminals. This fact is capable of demonstration, and it is impossible for me to agree with the suggestion that the State should allow these malefactors to remain beyond the reach of the law, and should wait patiently for the time, perhaps after the passing of generations, when the people shall have become sufficiently educated, and capable of distinguishing between science and its cunningly designed counterfeits.—I am, etc.,

September 28th. HENRY SEWILL.

PS.—Years ago I pointed out that the Veterinary Surgeons Act afforded greater protection to the profession and the public than the Medical Acts. This fact is exemplified in the *Times* of to-day. At the Feltham Petty Sessions, on Tuesday, an unqualified man was fined 20s. for using the description "canine and feline medical expert," implying that he was specially qualified to practise a branch of veterinary surgery. There are hundreds of medical quacks using much more deceptive language with complete impunity. The Medical Acts do not reach them; there exists no public body or authority like the College of Veterinary Surgeons charged with the duty of enforcing the law.

October 1st.

THE CHIEF MEDICAL OFFICERSHIP OF THE BOARD OF EDUCATION.

SIR,—I have read with interest the wild and whirling words of your three correspondents relative to Dr. Newman's appointment to the above office.

Dr. Hogarth says he is "a friend" of Dr. Newman's. Heaven preserve us from such friends! But Dr. Hogarth is also Dr. Kerr's assistant. Ah! "There are not two opinions as to who is the best available man for this important post," says Dr. Hogarth. Well, I should say that there are probably at least half a dozen opinions on the subject. "It is *solely* as a result of Dr. Kerr's work . . . . that any efficient system of medical inspection exists in England to-day." That, of course, is nonsense. "The whole thing is an absolute farce." Such an observation, where a man of Dr. Newman's standing is concerned, is a measure only of the animus of its author.

Dr. Nash says that Dr. Newman's "appointment to such a post is a scandal." Could personal feeling worse pervert a man's judgement? Dr. Nash adds incidentally that "the qualification which *practically all* medical officers of health are hopelessly lacking in and grossly ignorant of is a thorough knowledge . . . of the human child." How comes it that medical officers of health in particular are so lacking in knowledge of "the human child"? Have they smaller families than other people? and, by the way, what varieties of children are there other than "the human"?

Your third correspondent judiciously covers himself with a cloak of anonymity. He fears "that the Education Department will come to be regarded as a branch—a subordinate branch—of the Public Health Department." Surely his fears are groundless. The Legislature is not likely to transfer to any public health department the schooling of the children in the three R's, not to speak of Latin, French, and mathematics, cooking and laundry-work. But what your correspondent probably desired to say was that there is a chance of the medical inspection of schools and school children becoming a department of the Public Health Department.

The truth is that the characteristic of this little coterie is the lack of a sense of proportion. They have never, apparently, learnt that "the whole is greater than a part." They decline to see that in whatever cloud of words they involve the matter the medical inspection of schools and school children is a department of public health work. Nothing can alter that fact.

The supervision of the sanitation of schools is at present under the Health Department. Schools, in Scotland at least, come within the definition of the word "house." The plans of all school buildings have to be passed by the sanitary authority. All such plans in my district pass through my hands. The medical officer of health, in Scotland at least, and he only, has the power to enter any house or premises in which he has reason to believe that any infectious disease exists or has recently existed, "and to examine any persons found on such premises, with a view to ascertaining whether such person is suffering or has recently suffered from any infectious disease." The supervision of the health of the children, whether at home or at school, is in the hands of the Health Department. All cases of infectious disease—and they are mostly amongst school children—are notified to the medical officer of health. Their disposal rests with him. In practice neither they nor the other members of the family can return to school without his certificate.

Your correspondents propose to establish a new and independent department. This department would be in contact at every point with the Public Health Department. It is not difficult to realize that if Dr. Kerr had been appointed to the Education Department, and if he shares the views of his friends, twelve months would not have passed without the Education Department being embroiled with half the local authorities in the country. It is not impossible that the Education Department had this prospect in view when they did *not* appoint Dr. Kerr, and that they are wiser and farther-sighted than their critics.

Medical officers of health have no desire to assume the duties of medical inspectors of schools and school children under the Education Act. For the discharge of these responsible duties it is to be hoped that the most competent men will be appointed. But if the medical inspector of schools is to have free scope in the discharge of his duties he must have the information and the powers with which the official position of assistant medical officer of health alone can endow him. There is no room for two rival officials in the public health work of a district.

May I suggest that among the qualifications for medical inspectorships of schools a knowledge of the King's English is not unimportant? Such phrases as—"Dr. Kerr was promised, so far as an official promise may be taken *as such*," and "the average general practitioner can hardly regard himself [as?] equipped without special work, nor is the D.P.H. *more so*"—are not models of lucidity.—I am, etc.,

Sept. 30th. A. Campbell Munro, M.B., B.Sc.

Sir,—As one of a group of some 2,000 practitioners of medicine who for a considerable period of years have been requisitioned to discharge frequently important and responsible medical duties for the Board of Education, I beg to take exception, in the strongest possible terms, to Dr. A. H. Hogarth's letter in your issue of September 21st, which, in my humble opinion, is lacking in good taste, with a distinct aroma of personal bias. It is impossible to allow such an epistle to pass unquestioned, as if voicing the opinion of our profession, which I cannot believe it does; and as it displays such a limited conception of the diversity of subjects with which a chief medical adviser to the Board of Education may be called upon to deal, one is irresistibly constrained to ask by whose authority and on what facts has the writer assumed to himself the right to condemn Dr. George Newman's aptitude for this new office and to practically denounce Mr. McKenna and Sir Robert Morant as being incapable men—incapable of administering the large public departments of which they are the duly-accredited heads, or of recognizing the best available man for a position they may in the course of their duty be called upon to fill? Dr. James Kerr doubtless is an eminent medical man, but it is preposterous to a degree—nay, almost ridiculous—for Dr. Hogarth to maintain that he is the only man fitted to efficiently discharge the duties which will appertain to this newly-instituted public appointment

Letters such as Dr. Hogarth's do an infinitude of harm to the medical profession, and only conduce to its incurring the enmity and contempt of the heads of public departments in place of securing for it their sympathy and admiration, which daily becomes increasingly necessary.—I am, etc.,

Nottingham, Sept 23rd. R. R. Giddings.

THE EARLY NOTIFICATION OF BIRTHS ACT.

Sir,—Dr. Hawthorne, for whose opinions I have the greatest respect, lays too much stress upon the idea that the adoption of this Act will endanger or destroy the confidential relations which properly exist between doctor and patient. I have had considerable experience in the working of the Notification of Infectious Disease Act, both as a whole-time medical officer of health and as a general practitioner, and from either point of view I fail to see how, except in very isolated cases, this new Act need do this.

No doubt situations may arise in which the notification of a birth may be a somewhat delicate matter, but to write of the notifying practitioner as being a Government spy is surely a travesty of language. By implication this casts a very serious slur upon the medical officers of health, for after all a notification conveys only very limited information, and the medical officer of health will be found, when delicate situations arise quite as sympathetically silent as the practitioner himself.

I have taken the trouble to review some 500 births occurring in my practice during the course of the past few years and I fail to find one where I could say that my relations with parents or guardians would have been in the least degree endangered by notification, but I can find many where the influences which the medical officer of health might bring to bear would be of inestimable benefit to the newly-born. The object of the Act is undoubtedly to aid those who are striving to reduce the infant mortality in this country, and for that reason alone it ought to be welcomed. It is, at all events, a step in the right direction.—I am, etc.,

A. C. Farquharson, M.D., B.Sc., D.P.H.(Camb.)

Bishop Auckland, Sept. 30th.

MEDICAL WITNESSES' FEES.

Sir,—I am glad this subject has again been raised in the British Medical Journal. The general public do not know how great a grievance these inadequate fees are. Why do medical men become witnesses? They are called in all haste to cases of wounding, homicide, rape, etc., to which they go as a matter of humanity, and for which they are often very inadequately paid, or not paid at all. When they have attended they are witnesses to facts, and to these facts they can be ordered to give evidence at the magistrate's and coroner's court and subsequently at sessions or assizes. Even when resident in the assize town one guinea is a most inadequate fee for a surgeon in active practice for being detained all day in court. In the case of doctors coming from a distance even the increased fees and allowances are not enough, and must leave some out of pocket. The present time is excellent for ventilating the subject; the profession has been most forbearing and long-suffering. But it cannot go on, and medical men will decline to go to cases which promise to end at the assizes.—I am, etc.,

Liverpool, Sept. 26th. Fred. W. Lowndes.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

The Radcliffe Travelling Fellowship for 1907 has been awarded to John Freeman, M.A., B.M., of University College, and the Welsh Prize in Anatomy to Watkin E. Waller, of the same college.

An election to the Philip Walker Studentship in Pathology will take place this month. This studentship was founded "for the furtherance of original research in Pathology." It is of the annual value of £200 (payable quarterly in advance), and is tenable for three years. The student may be of either sex, and need not necessarily be a member of the University of Oxford, nor be legally qualified to practise the profession of medicine. While holding office the time of the student must

be devoted to original pathological research; no business or profession may be systematically followed, nor any educational or other work engaged in, which, in the opinion of the Professor of Pathology and of the Board of Managers, would interfere with the pursuit of original inquiries. The place and the nature of the studies of the student are subject to the approval of the Professor of Pathology, but the student is bound to pursue these studies within the University during at least three terms of his tenure of the studentship. This requirement may, however, in special cases be dispensed with. If the work done by any student be of exceptional promise, the studentship may be extended for a second period not exceeding two years. The full text of the regulations relating to the studentship will be found in the *University Gazette* for February 2nd, 1904, and copies of these regulations can be had on application to the Registrar of the University.

UNIVERSITY OF LONDON.

University College.

The Calendar.—The *Calendar* for the session 1907–8, which has just been issued, contains a sketch of the history of the college by Dr. Carey Foster, and a statement of the regulations by which the college is now governed in its position as an integral portion of the University. The use to which the extended buildings have been put are shown in a set of plans, and it appears that the space now available for University purposes is greater by one-third than last session. Special rooms have been provided for the Galton research laboratories in connexion with the Eugenics Institute founded by Mr. Francis Galton. The arrangements for post-graduate courses of lectures and research work are fully stated. Research may be undertaken by any person recommended by the professor of the department as qualified to do such work, a general fee of one guinea a session being paid to the college. Last session the number of post-graduates and research students was 171 (140 men and 31 women).

UNIVERSITY OF DURHAM.

Third Examination for the Degree of Bachelor in Medicine.

The following candidates have been approved at the examination indicated:

Third M.B.—*Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology*).—*R. Rafile, H. C. W. Allott, Harriet A. R. Apps, A. H. Bower, J. G. Campbell, B.A., L. W. Evans, P. A. Galpin, F. F. T. Hare, E. P. L. Hughes, J. P. Jackson, Annie V. Mack, C. J. Neilan, Ruth Nicholson, C. E. Reindorf, T. W. Stallybrass, H. W. Sykes, Dorothea M. Tudor.

* Second-class honours.

THE ROYAL UNIVERSITY OF IRELAND.

The following candidates have been approved at the examinations indicated.

First M.B.—S. Acheson, A. N. Berman, Mary K. Carroll, †V. A. Cox, †F. Crooks, C. Burke, †D. Enright †S. R. Foster, G. Hayes, T. Hill, R. McCulloch, H. McDonald, †T. J. R. Maguire, †H. F. Moore, G. R. Naylor, L. J. Power, J. Prendiville, A. E. H. Reid.

Second M.B.—*R. H. Barter, *H. Black, *M. J. Fogarty, *T. J. KilBride, *P. D. McCullen, *S. A. McSwiney, *M. Maloney, *D. Murphy, *T. Reynolds, *C J. Simpson, *J. Stewart, J. T. Brady, P. M. J. Brett, F. J Burke, L. Cohen, G. Cooper, R. C. Cummins, T. A. Daly, E S. Dixon, H. Emerson, T. Fitzgerald, P. J Gaffikin, G. S. Glass, B.A., J. J. Hanratty, C. A. P. Harrison, T. F Hegarty, D. Higgins, R A. Kerr, A. J. Moran, J. E. O'Sullivan, G. Sheridan, W. J. Smyth, J. Stephenson, B. Teeger, F. J. Wisely.

* Upper pass and qualified to appear at a further examination for honours.

† Qualified to appear at a further examination for honours in one or more subjects of the examination.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

SUPERSESSION.

S.E.C.T.—(1) C. did not do wrong in proposing to retire from the case as he considered himself to be S.'s substitute. (2) C. might consent to continue in attendance as S.'s substitute at the patient W.'s express wish. (3) On the question of fees, it would be better to have a friendly explanation with S., and find out whether he had been W.'s medical attendant on previous occasions, as it sounds rather like a quibble on the part of W. to say that S. was "not his doctor, but only his wife's doctor"; our impression is that C. should be content to act as S.'s substitute unless S. is quite satisfied. (4) If C. remains in attendance as S.'s substitute he will be debarred from attending W. as his own patient until some interval of time has elapsed—for example, at least twelve months.

LUNACY CERTIFICATION.

M.D.—The incident seems to reflect discredit upon no one concerned, for even the clerk may be excused for thinking that C. might be able to certify when B. could not. The failure of B. and C. to certify by no means proves that the alleged lunatic is sane. B. could not legally refuse to give up the schedule; nor do we see that in any future case he should act differently, although he might represent to D. the inadvisability of asking for a lunacy certificate to be filled up in a hurry where the signs of insanity are not plainly perceptible.

Medico-Legal.

DOMESTIC SERVANTS AND THE WORKMEN'S COMPENSATION ACT.

Inquirer writes: I was recently called to attend the unmarried housemaid of a patient of mine, who was reported to be losing blood profusely per vaginam. The condition was the result of a two months incomplete abortion. I was at first amused and then staggered by her suggestion that, as she attributed the miscarriage to overwork, under the new Act, she considered her mistress responsible for her illness and the medical expenses attached thereto. At first sight this appears to be the height of impudence, but is it really so with our present supreme ignorance of nice points of the Act as it stands? I am not touching on the obvious field which exists for legal argument, but, absurd as it may seem, it occurs to me that the girl has at least a prima facie case despite the annoyance of the affair to the girl's mistress and the loss of her maid's services. The existence of a disability or weakness in a workman would render an employer chary of engaging him, but if he did engage him, any injury that man sustained by reason of his disability would not absolve the employer from an action against him for compensation. The normal end of pregnancy is full-time delivery; abortion is abnormal, and in that sense accidental. This "accident" occurs during service under her employer and it prevents the girl from working. Are you, sir, or any of your readers bold enough to prognosticate the finding if the girl's employer is sued, especially if the weight of evidence tends to prove that the abortion was directly due to her work.

*** Our correspondent raises a point of some interest. It is plain that the maidservant is a "workman" within the meaning of the Act; the question is—Did she meet with an accident in the course of her employment? The Act of 1906 specifically makes employers liable where their workmen suffer from certain well-known industrial diseases; but it does not say anything to prevent a county court judge holding that abortion is an "accident" within the meaning of the Act; and if the woman could prove that it was due to her work the employer might probably be held liable. This may seem to be a *reductio ad absurdum*, but we are advised that the court might not improbably take this view. If so, it is a striking example of the defective principle upon which the Act was framed, and of the unforeseen consequences which may flow from the hasty inclusion of domestic servants.

WORKHOUSE MEDICAL OFFICERS AND LUNACY FEES.

B.S.—The proceedings in this case appear to have been somewhat irregular, but there seems no reason why the resident medical officer, having been called in by the magistrate to certify as to the fitness of the alleged lunatic to be detained in the workhouse for fourteen days and the fitness of the accommodation at the workhouse for his detention therein, should not retain the fee of one guinea which the magistrate authorized to be paid to him; for, (1) though the relieving officer's action may have been irregular, there is no reason why the medical officer should suffer for that, and (2) and (3) in cases precisely similar fees are constantly paid in metropolitan workhouses.

OBITUARY.

JOHN ST. SWITHIN WILDERS, M.R.C.S., L.S.A.,

CONSULTING SURGEON, QUEEN'S HOSPITAL, BIRMINGHAM.

We record with regret the death of Mr. John St. Swithin Wilders, which occurred at his residence in Harborne, near Birmingham, on September 20th. He was in his 71st year, and had been an invalid for many years. Formerly he was very active in municipal, hospital, and political work in the city. His father was also a medical man who practised in Temple Row, Birmingham, but he died quite young.

Mr. Wilders was educated at Repton and studied medicine at the Queen's College, Birmingham, being articled to the late Professor Sands Cox, the founder of the College. He became M.R C.S.Eng. in 1858 and L.S.A. in the following year; he afterwards studied in Paris. He was then appointed Resident Medical Officer at the Queen's Hospital, Birmingham, and was connected with this institution for the rest of his life. He held the posts of Assistant Surgeon and Surgical Pathologist, and then became full Surgeon. When he retired from hospital practice in 1896 he was Senior Surgeon to the Queen's Hospital and had been associated with it for about forty years. The General Committee appointed him Consulting Surgeon to the hospital, and this office he held up to the time of his death. He was also Consulting Surgeon to the Birmingham Dental Hospital and to the Birmingham and Midland Ear and Throat Hospital.

Mr. Wilders was Lecturer on Materia Medica for many years at the Queen's College, and when the medical Faculty was transferred to Mason's College he became Professor of Forensic Medicine. He afterwards became Emeritus Professor of Forensic Medicine in the University of Birmingham. He was President of the Birmingham Clinical Board from 1889 to 1891, Secretary of the Midland Medical Society, 1873 4, and Vice President of the Birmingham Medical Benevolent Society, 1894-5.

Mr. Wilders took an active part in the municipal and political life of Birmingham. He was elected on the town council as the Conservative representative of the Ladywood Ward in 1886, and was soon placed on the Watch Committee, becoming later the Chairman. He was for some years President of the Council of the Central Division of the Conservative party. In 1890 he was made a Justice of the Peace for the City.

Although Mr. Wilders had not been in active practice for many years, yet his great skill as a surgeon, the soundness of his judgement, and his kindly disposition, are well remembered by his professional brethren in the Midlands. Always ready to help by his advice and sympathy, he was very popular with the Birmingham medical students. He was liked by all who knew him on account of his kindly and courteous disposition, his genial manner, and broadmindedness, and was greatly honoured and admired for the heroic and uncomplaining way in which he bore the painful illness with which he was afflicted during the last fifteen years of his life.

Mr. Wilders married in 1871 the eldest daughter of Mr. William Bach, of Sandfields, Erdington. Mrs. Wilders survives her husband, and has one son.

The funeral took place at Harborne parish church on September 24th, and there was a large attendance of friends, besides those representing the various institutions with which Mr. Wilders had been connected.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

NOTIFICATION OF BIRTHS ACT.

THE Local Government Board has issued to councils of counties, boroughs, urban districts, and rural districts the following circular calling attention to the Notification of Births Act:

THE NOTIFICATION OF BIRTHS ACT, 1907.

The object of this Act, which will only be in operation where it has been adopted by the local authority with the consent of the Board, or has been declared to be in force by the Board, is to provide a speedy means whereby information of the birth of a child may be given to the Medical Officer of Health of the local authority, so that, if necessary, advice may be given to the mother in regard to the rearing and nurture of the child.

Mode in which Act may be put in Force.

Outside London the Act may be adopted for their areas by Councils of Boroughs and other Urban Districts and Rural Districts, or by County Councils for the whole county or for any county district therein. [In London by the Council of a Metropolitan Borough.]

Provision is also made which would enable a district council, after the adoption of the Act by the county council, to become the local authority for their district, or on the other hand would enable the county council to become the local authority for a district, after the adoption of the Act by the district council. In these circumstances the Board may, if they think fit, on the application of the district council, or of the county council, as the case may be, make an order declaring that the Act shall take effect as if it had been adopted by the district council instead of the county council, or by the county council instead of the district council.

Section 3 of the Act enables the Board by order to declare the Act to be in force in the area of any local authority who have power to adopt it, although it has not been so adopted, if they think this expedient, having regard to the circumstances of the area, and in that case the order of the Board will have the same effect for the purpose as a resolution of adoption duly passed by the local authority of the area and assented to by the Board.

Resolution of Adoption.

The manner in which the Act can be adopted by the local authority is by a resolution of adoption, and the following provisions are to have effect with respect to the resolution:

1. The resolution must be passed at a meeting of the council.
2. One calendar month at least before the meeting special notice of the meeting and of the intention to propose the resolution must be given to every member of the council.
3. The resolution after being passed must be published by advertisement in some one or more newspapers circulating within the area of the council, and otherwise in such a manner as the council think sufficient for giving notice of it to all persons interested.
4. A copy of the resolution must be sent to the Board.
5. The resolution will come into operation at such time, not less than one month after the first publication of the advertisement, as may be fixed by the Board.

Provision as to Notification.

In the case of every child born within an area in which the Act is in force, it will be the duty of the father of the child, if he is actually residing in the house where the birth takes place at the time of its occurrence, and of any person in attendance upon the mother at the time of or within six hours after the birth, to give notice in writing of the birth to the Medical Officer of Health or the local authority who are acting in the execution of the Act in the area in which the child is born.

The enactment will apply to any child which has issued forth from its mother after the expiration of the twenty-eighth week of pregnancy, whether alive or dead.

The notice is to be given by posting a prepaid letter or postcard addressed to the Medical Officer of Health at his office or residence, giving the necessary information of the birth within 36 hours after the birth, or by delivering a written notice of the birth at the office or residence of the Medical Officer within the same time. The local authority is required to supply without charge addressed and stamped postcards containing the form of notice to any medical practitioner or midwife residing or practising in its area who applies for them. A person who fails to give the requisite notice of a birth will be liable on summary conviction to a penalty not exceeding 20s., but he will not be liable to a penalty if he satisfies the court that he had reasonable grounds to believe that notice had been duly given by some other person.

The notification is to be in addition to, and not in substitution for, the requirements of any Act relating to the registration of births; and any Registrar of Births and Deaths whose subdistrict or any part thereof is situate within any area in which the Act is in force, is at all reasonable times to have access to the notices of births received by the Medical Officer of Health, or to any book in which those notices may be recorded, for the purpose of obtaining information concerning births which may have occurred in his subdistrict.

Attention of Medical Practitioners and Midwives to be Called to Act on Adoption.

Subsection (3) of section 2 makes it the duty of any local authority by whom the Act is adopted, as soon as the consent of the Board is given to the resolution of adoption, to bring the provisions of the Act to the attention of all medical practitioners and midwives practising in their area.

Expenses of Local Authority.

The expenses of executing the Act will under subsection (6) of section 1 be defrayed as part of the expenses of the council in the execution of the Public Health Acts [by a metropolitan borough as part of its expenses in the execution of the Acts relating to public health.]

The Board may observe that in their opinion there is no occasion for imposing upon parents and others the obligation of notifying births unless steps are taken to carry out the ultimate object of the measure, viz., the giving of advice and instruction to those who have charge of the infants, and in ordinary circumstances they would not be prepared to consent to the adoption of the Act unless it appeared that arrangements had been made for this purpose. These arrangements would usually be best carried out by local agencies under the Medical Officer of Health. The Board trust that the Council will consider the question of adopting the Act and of co-operating with any agency that may exist so as to secure its successful operation.

Should the council propose to apply to the Board for consent to the adoption of the Act, they should be in a position to show that the necessary arrangements for carrying out its objects have been or would be made if they became the authority for executing it.

WE have received from Ernst Leitz of Wetzlar, and 9, Oxford Street, W., a catalogue of microscopes and accessory apparatus of a very comprehensive character, and a separate catalogue of microtomes.

DR. GEORGE REID, Medical Officer of Health to the County Council of Staffordshire, will deliver his presidential address to the Incorporated Society of Medical Officers of Health at 5 p.m. on Friday, October 11th. The annual dinner of the Society will be on the same evening at the Trocadero Restaurant.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated..*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

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☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DIATHESIS asks what would be the most suitable district in England as a residence for a medical gentleman, aged 45 years, with a decided rheumatic tendency, who has suffered from several severe attacks of lumbago, each attack lasting from seven days to one month or more.

MOTOR BICYCLES.

CYCLIST will be glad to know whether the vibration felt in riding a motor bicycle is really bad enough to affect the spinal cord injuriously, and whether skidding can be entirely prevented by the use of chains.

SIDE-SLIP.

R. writes: I shall feel extremely obliged if any brother motorist will enlighten me as to best method of preventing side-slip in 8-h.p. Rover two-seated car, whether by studded type covers or by any of the numerous studded appliances which are superimposed upon ordinary smooth tyre covers, namely, Dunlops. I find a two-seated car of the above kind skids badly on thick grease, owing, in my opinion, to the position of the weight in the body being almost midway 'twixt driving and steering wheels.

PYORRHOEA ALVEOLARIS AND TOBACCO.

DR. J. C. MCWALTER (Dublin) writes: It is the opinion of all observers that the affection known as pyorrhoea alveolaris is distinctly on the increase, and responsible for many obscure gastric and haemic disorders, but it appears to me to be not so prevalent amongst smokers. I should like to have the experience of your readers on the point; mine is that although smokers have notoriously black teeth they are not at all so liable to pyorrhoea alveolaris as non-smokers.

LETTERS, NOTES, Etc.

A WARNING.

DR. A. GEORGE BATEMAN (General Secretary, Medical Defence Union, 4, Trafalgar Square, W.C.) writes: Will you allow me to warn the profession generally, and medical men practising in the Sussex area in particular, against assisting, by money or otherwise, a woman calling herself either the wife or the widow of "Dr. Wilson," of Capetown, or other address? The woman is aged about 38 years, 5 ft. 7 in. in height, with fair hair and complexion, long face, ladylike appearance, and quiet manner. She is dressed in black. Her story varies—a bicycle accident, or non-delivery of remittances from the Cape has been variously given as the reason for help required. At the present time her address is unknown, but she was last heard of in Lewes, where she obtained assistance by means of a false pretence. If any of your readers can give me any information about the woman I should be greatly obliged, as the matter is in the hands of the Medical Defence Union and the police authorities.

THE NEWEST SPECIALITY.

IT is announced in the *South Wales Daily Post*, under the heading of "Boneless Surgery," that "Dr." Walford Bodie will shortly visit Swansea. "Bloodless surgery" is already a Tom Tiddler's ground for irregular practitioners; if there is to be a "boneless" variety, too, quacks will soon be driven by stress of competition to exclude the muscles and nerves as well. It would be no loss to mankind if they were finally forced to eliminate the whole human frame from the scope of their manipulations. As it is their natural province, it might be termed "brainless surgery."

LULWORTH COVE.

DR W. SOUTHEY WRIGHT (Wool, Dorset) writes to recommend Lulworth Cove, on the Dorset coast, lying about midway between Swanage and Weymouth, to those who desire quiet, warmth, dry soil, bracing sea air, and most beautiful surroundings during the winter months. The village itself, he says, lies in a valley, protected on north and east by high hills, which run down to the Cove, a charming inlet shaped like an oyster shell, with the narrower end opening on to the sea and surrounded by glassy cliffs, its peculiar shape giving shelter from any wind except due south, whilst all the sun there is can be caught. The soil is dry and drains quickly, and there is a good water supply and a comfortable hotel. I myself, he adds, owe it a debt of gratitude for the good it has been to my little boy, who has been suffering from chronic Bright's disease for some years. He was very oedematous when first he went there, and had been all the previous summer; but in the course of a week or so the oedema quite disappeared, and the whole time he was there, with the exception of a slight puffiness now and again, he was free from it. Since then, whenever the weather has turned cold or he has shown signs of oedema, he has been sent there, and it is remarkable how quickly it has disappeared. It has not cured him, but his health has improved greatly, and I am sure the winter he spent at Lulworth was of the greatest value to him. I have no desire to gush about the place, but it has several peculiarities of situation and conformation which I think give it an advantage as a winter resort over its larger neighbours. I may add that an article appeared in the November number of *Cassell's Magazine* for 1905, written and delightfully illustrated by Mr. Spencer Edge, on this little-known watering place; and for those who, while not actually invalids, yet desire to get away from the noise and fog of the big cities, I can confidently recommend it for its fine air, beautiful coast, and the glorious country of woods and moorland that lies behind it.

THE CAUSATION OF CYCLICAL VOMITING.

DR THEODORE FISHER writes: In his valuable paper upon acetonaemic conditions in children Dr. Langmead refers to the obscure nature of the causation of cyclical vomiting, and attributes it, like other observers, to acidosis of unknown origin. No doubt some personal peculiarity which renders the subject of the affection liable to certain disorders of metabolism must be present, associated probably with an unusual sensitiveness of some nerve centres towards the products of this disordered metabolism. It seems, however, probable also that the immediate exciting cause of the disturbance may be an infection. Some children are subject to recurrent febrile attacks, possibly suffering from half a dozen or more in the course of a year. The fever, and the usual accompaniments of fever, such as headache, restlessness, or delirium, may be the only symptoms, but not uncommonly as the fever subsides cough, lasting a few days to a week or longer, follows. In children suffering from cyclical vomiting also there is generally fever at the onset, the temperature, it may be, reaching 104° It may be added that, like other recurrent febrile conditions in children, cyclical vomiting commences in early childhood and disappears towards puberty. In the presence of fever, therefore, in the recurrence of attacks, in the time of onset and the period of life through which it lasts, cyclical vomiting resembles other recurrent febrile conditions in children, and it seems reasonable to suppose that there may be one factor common to cyclical vomiting and these febrile attacks, that is, a susceptibility to a similar or the same infection which influences children differently according to individual peculiarities. In closing, it may be mentioned that I have performed an autopsy on a fatal case of cyclical vomiting, in which an operation for supposed intestinal obstruction had been performed. Acetone was found in the urine. Although interested in the association of fatty liver with febrile conditions in children, there was nothing in the liver which attracted my attention; the microscopical examination, however, was made

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Clinical Remarks

ON THE

FUNCTIONAL ELEMENT IN CERTAIN FORMS OF ANOSMIA.

By P. McBRIDE, M.D., F.R.C.P.E., F.R.S.E.,

CONSULTING SURGEON, EAR AND THROAT DEPARTMENT, ROYAL INFIRMARY, EDINBURGH.

Loss or diminution of the sense of smell may arise from many causes, and perhaps it may be well to begin these remarks with a brief survey of the chief etiological factors which may be responsible for the defect. Anosmia may be caused by:

1. Obstructions in the nostrils which prevent odorous particles from reaching the olfactory region (atresia, deviations of or projections from the septum, tumours, hypertrophy, inflammatory swelling, etc.).
2. Changes in the olfactory region, which may be inflammatory, caused by disease (syphilis, tubercle, or atrophy, as in ozaena and old age), or due to injury. In this category we may also place cases in which loss of smell has been caused by the local application of toxic substances (cocaine, tobacco, or nasal douches containing carbolic acid, sulphate of zinc, or alum).
3. Injury, congenital defects, or disease affecting the olfactory centres, bulbs, or nerves (falls or blows on the head, defective development, general toxic agents—for example, morphine, tobacco, alcohol, and lead—diseases of the central nervous system, such as cerebral and cerebellar tumours, locomotor ataxia, etc.). Probably the anosmia which sometimes follows exposure to very powerful odours and that which has been observed in pyrexia may be classed under this heading.
4. Causes which we cannot localize, but which probably have a definite pathological basis, of which the most important is influenza.
5. Functional, in which category we may place anosmia occurring during pregnancy and menstruation, in hysteria, after removal of the ovaries, and under conditions which we cannot further define.

In the above list are comprised most, if not all, the known causes, but to those who are desirous of studying changes in the sense of smell as they occur in general diseases, I would recommend perusal of the elaborate paper by Onodi and Zirkelbach.[1]

It will be obvious that certain of these conditions can readily be diagnosed by means of careful examination and due attention to collateral circumstances. On the other hand, there are cases of anosmia which seem to present great difficulties.

When the observer meets with a patient who complains of loss of smell, he may at once detect in the nose changes sufficient to account for the symptom, and in that case treatment of the pathological condition will be indicated, and may often result in recovery of the sense. He may, on the other hand, find a state of matters as to which he is uncertain whether or not sufficient obstruction exists to account for the symptom. I have now met with a number of cases in which it seemed to me that there was some blocking of the space between the anterior end of the middle turbinated and septum. In not a few of these I have known the sense of smell return for a short time either after the application of the cautery or of a mixture of adrenalin and cocaine. At first I used to look upon this as of most favourable prognostic import; but extended experience has, I am sorry to say, somewhat shaken my faith, and I am now very unwilling to give anything approaching a definite prognosis in such cases. Perhaps I may be allowed to illustrate this point by giving the histories of a few patients.

Mr. ——, aged 39, first seen in June, 1901, stated that he had lost his sense of smell and taste for six months, and that at the beginning of this period he suffered from violent sneezing; he said that he occasionally had periods when he could smell and taste. On anterior rhinoscopy both middle and inferior turbinateds were seen to be enlarged. Posterior rhinoscopy showed the right middle meatus blocked by enlargement of the corresponding turbinated, while the left side revealed no abnormality. As treatment he was ordered to use a spray of menthol in parolein.

On July 4th I examined him again. He told me that five days after his last visit smell and taste had come back perfectly for one day. This was repeated on several days, smell and taste returning about 1 o'clock and being lost again before 7, excepting on the first occasion. Examination of the nose gave the same result as before. After applying cocaine, the sense of smell was immediately restored. Several pieces were removed from both middle turbinates, and he was directed to continue the spray.

On July 12th he returned, stating that he had been better, but that smell only recurred at times. Some further pieces were removed from the middle turbinates. On August 3rd he could smell when he came to me, but after the application of cocaine was no longer able to do so. Some more tissue was removed from the middle turbinates, and on this occasion for the first time suspecting that there might be a functional element in the case, I prescribed a mixture containing strychnine and dilute hydrobromic acid. On October 2nd he again reported himself, and stated that he had only had partial return of smell on one or two days since his last visit. On this occasion a considerable piece of each middle turbinated was removed with Grünwald's forceps. On January 21st, 1902, he stated that a month after the last visit he began to smell well, and that this lasted for four or five weeks; however, during the last three or four weeks the sense was less acute, although present. I may pass over several examinations until June 4th, 1902, when I removed practically the whole remainder of the right middle turbinated. After this there was still the same intermittence of the sense of smell. On January 7th, 1903, he could smell with the right nostril but not with the left. I therefore introduced a median rhinoscopy speculum (Killian) between the left middle turbinated and septum, forcing these parts asunder. Immediately afterwards he could smell on this side. After this I asked the patient to keep a diary as to sense of smell. It ran as follows:

January 8th (the day after last visit). Clearer in the head, but no taste or smell.
9th. Could smell very well such things as scent; taste very weak.
10th. Could smell very well-scent, soap, cigar, etc.; taste very weak.
11th. Could smell very well.
12th. Smell not so strong, quite gone in the evening.
13th. Can smell still, but weakly; taste also faintly.
14th. Both (smell and taste) present still, but very weak.
15th. Smell and taste fairly good at 1 o'clock, both away again in evening.
16th, 17th, 18th, 19th, 20th. Both still present but faintly.
21st. Both fairly good until dinner time, then gone.
22nd. Both very poor, could not taste or smell a cigar.
23rd. Had whiffs of smell such as smoking lamp and cigar.
24th and 25th. Both slightly present.
26th, 27th, 28th, 29th. Practically neither, but occasional whiffs.

After this merely tonic treatment was employed, and some improvement seemed to follow its use. In July, 1905, he could smell, but he stated that the sense was more acute in the middle of the day. I may state that the patient was a hard worker, took few holidays, which I could not induce him to increase, and had dilated pupils and exaggerated reflexes. Further, he was a brewer, and therefore smell and taste were of great moment in his profession.

The important points in connexion with this patient are the following: (1) Loss of taste and smell, with intermissions, and in the presence of middle turbinated enlargement; (2) gradual diminution of the middle turbinates was effected by operative means, and eventually the entire structure was taken away on one side; (3) even this did not prevent relapses; (4) for this reason, the cause of the anosmia was not to be found in obstruction; (5) at the same time the intermissions proved that there was no organic change in the nerve endings, nerves, or centres; (6) the inevitable conclusion seemed to be from the above that the periodic losses of smell and taste must be described as functional.

Another case in some respects resembling the preceding was the following:

An unmarried lady, aged 27. I first saw her in February of 1887. She could smell quite well up to September of the previous year, and at some period between that month and November lost her sense of smell. She could, however, taste food. On examination by anterior rhinoscopy some enlargement of the middle turbinates was detected, while posterior rhinoscopy showed the choanae and adjacent parts to be normal. Treatment consisted of cauterization of the middle turbinates with nitrate of silver, chromic acid, and eventually the electric cautery, while an alkaline spray was also prescribed. Up to July, 1887, the only evidence of the existence of the sense of smell was that on one occasion she detected cigar smoke, and on another whisky. On July 7th, however, she was able to smell after the application of the electric cautery to the middle turbinates. This was, however, lost again. At this consultation, suspecting a functional element, I prescribed zinc valerianate. The patient was most intelligent, and apparently quite the opposite of neurotic. I asked her whether she would kindly let me know the subsequent history, and in 1891 was much interested by receiving a letter in which she told me that she was now married, and had quite recovered her sense of smell after a recent rather violent cold.

The salient features here were: (1) Complete loss of smell and preserved taste. It will be remembered that

sweet, salt, acid, and bitter are the only so-called tastes which are perceived by the gustatory nerves, and that flavours are really impressions of smell. The power, then, of being able to appreciate food proved that there was no gross lesion of the nerve apparatus concerned in the act of smelling. (2) The temporary recovery of smell after the application of the cautery. (3) The permanent recovery after a cold and after marriage. It appears to me that here again we must, for want of data for further definition, class the anosmia as due to functional causes. It may be noted that this patient was not tested with cocaine and adrenalin, which is accounted for by the date of examination, 1887.

I have selected these two cases as typical of a class, but the difficulties as to diagnosis and prognosis presented by them I have frequently met with in other instances. Thus in two patients—both males—who had suffered from polypus and been operated upon, smell and taste came and went in a way which could hardly be accounted for on any other hypothesis than that in both the symptoms were due to functional rather than to organic causes.

A man, aged 31. When I first saw him a very thorough removal had been effected, and only some enlargement of the middle turbinates was detectable by anterior rhinoscopy, while posterior rhinoscopy showed the choanae to be normal. Cauterization seemed to do good, but there remained a tendency for anosmia to set in at certain periods of the day. Thus the senses of smell and taste tended to be lost at 5 or 6 p.m., and remained away until bedtime. I gave him quinine, and he thought that this prevented the occurrence of anosmia.

A man of 59 suffered from complete loss of smell and taste, excepting salt, acid, sweet, and bitter. When I saw him polypi were seen on anterior rhinoscopy, but the choanae were free. Removal of the polypi took place in February of 1901, but there was no return of the sense of smell. In May of next year he returned, stating that the anosmia had continued until two months before, when he had experienced an attack of influenza, and that during convalescence he was able to smell for six days. Some small recurrences of polypoid tissue were on this occasion removed from the right nostril. Next month he came to see me again, and reported occasional whiffs of smell; I then snared off a piece of the anterior extremity of the left middle turbinated. The patient's home was at a great distance, and I was only able to see him at intervals. After this, until October, 1902, I saw him occasionally, and during this period there was a recurrence of polypoid tissue, which was removed, but the sense of smell did not return.

The points of special interest presented by these cases are:—(1) The presence of nasal polypi, which were removed as completely as possible. (2) The recurrence of smell and taste under circumstances unlikely to exert a favourable influence upon nasal obstruction, that is, at certain hours of the day in one case, and for a week during convalescence from influenza in the other. (3) In both taste—that is, for flavours—was lost, periodically in one case, and generally in the other excepting just after influenza, while in both the choanae were free. I am quite aware that in these patients the evidence as to functional impairment is not so strong as in the first two recorded. Still, I think the balance of probability is rather in favour of this view.

The following case is an instance of loss of smell, in which the probabilities are immensely in favour of a functional rather than an organic cause.

M. W., aged 35, male, consulted me in January, 1896, on account of anosmia. He could smell well until November 11th of the previous year. On that day he was injured by a gas explosion, and was insensible for several days; there was no bleeding from the ear or nose, but bruising of the left side of the head. After that he began to notice a constant sweetish odour; on trying his sense of smell he found it lost. On testing him I found that he could not smell, but there had been no interference with taste.

On examining the nose anteriorly a marked spine was found on the left side of the septum, and this, together with a large inferior turbinated, prevented examination of the middle meatus. In the right nostril the inferior turbinated was large, while the middle was in contact with the septum anteriorly. The posterior nares were normal. The electric cautery was applied to the anterior part of the left middle turbinated, and strychnine prescribed internally. I saw the patient again six months later, when he still complained of the sweetish odour and inability to smell, while he stated that his sense of taste was so good that he could distinguish port from sherry in the dark. The enlargement of the inferior turbinates had disappeared, and the olfactory cleft was seen to be open on the right side.

In this case the following points indicate its purely functional nature: (1) The history, (2) the perfectly-preserved appreciation of flavours.

My next case, although at first sight it appears to be obviously functional, is really of a more doubtful nature.

Mrs. W., aged 49, consulted me in 1898, stating that she had lost her sense of smell and taste seven months ago, and ascribed this to the shock caused by her husband's death. She had lately felt a burning sensation in her throat. She could taste salt, bitter, sweet, and acid substances. Both middle turbinates were in contact with the septum, and there was in addition a spine projecting into the left nostril. The posterior nares, pharynx, and larynx were healthy.

Here we find the following points favouring the diagnosis of a functional condition: (1) The history, (2) the time of life, (3) the discomfort referred to the throat. On the other hand, the complete loss of smell and the fact elicited by questioning that she had a cold which may have been influenza when anosmia first set in point rather in the opposite direction. As I only saw the patient once I have had no opportunity of throwing any further light on the case. In all probability the trouble was either functional or post-influenzal, and not due to any obstruction by the middle turbinates, as in that case with normal choanae we should have expected the flavours of food to be perceived.

I do not desire to bring forward any further cases, although I have notes of several more bearing upon the points I am about to raise.

Unfortunately we have no method of investigating the olfactory nerve which at all compares with the tests we now employ in studying nerve deafness. Zwaardemaker has devoted much time and talent to this matter, it is true, since 1888; he invented what he termed an "olfactometer," which he has from time to time improved, and which Onodi and Reuter have simplified. The principle employed by Zwaardemaker is an odoriferous cylinder sliding over a glass tube, the open extremity of which is inserted into the patient's nostril. The cylinder is either composed of odorous material or impregnated with it. This method of examination is somewhat troublesome, and I question whether sufficient data at present exist to make it of clinical value as opposed to physiological interest.

Zwaardemaker and Reuter[2] have suggested a series of odours which they have attempted to make representative of different varieties, and they have, moreover, endeavoured to give each member a certain definite value. The substances chosen were: (1) Beeswax, (2) aniseed, (3) benzoin, (4) radix sumbul, (5) asafoetida, (6) tar, (7) mutton suet, (8) opium, (9) skatolwood. Reuter,[3] in an elaborate paper on neuritis of the olfactory nerve, assumes that in respiratory anosmia all classes of odours are equally affected, while in affections of the nerve the opposite is the case. Again, according to his observations, neuritis causes a great tendency to fatigue of the nerve, that is, an odour which is at first perceived is quickly lost. Zarniko[4] is of the same opinion. He writes:

Purely respiratory disturbances of smell are characterized by the fact that all odours are equally affected, that there is no tendency to rapid fatigue, as in affections of the olfactory nerve, and that they often vary to a certain extent, the changes occurring with swelling or diminution of the parts which produce the anomaly.

Of course, in complete anosmia, these data are of no value. At the same time it must be admitted that if careful olfactometric examinations were conducted in all cases of anosmia and parosmia the results might possibly be of great importance. I therefore much regret that I did not employ this method in the cases I have recorded. My excuse must be that some of them were observed by me before the invention of the olfactometer, and that even now this method of examination, to be of real value, must be carried out with a large expenditure of time and trouble. To quote Zarniko again:

Olfactometry must be carried out in a room free from odours (tobacco smoke, lysol, carbolic). The apparatus must be kept in a place where there are no odours, and in order to prevent evaporation the inner tubes must be kept in the cylinders. These tubes must be carefully washed and dried.

I am aware that my cases must, as regards this method of examination, be considered as having been imperfectly observed, and that the omission may be an important one in view of possible further developments of diagnosis by means of the olfactometer. Be that as it may, it does not

affect the main point of my thesis, which is intended to show that the functional element probably enters more largely into the etiology of anosmia than most authorities are prepared to admit.

Whether Reuter be correct in his distinction between anosmia due to neuritis and the respiratory form, I am unable to say. It is possible that careful employment of the olfactometer may eventually aid us to distinguish the purely functional form, only it must be remembered that the apparatus can only be of use where smell is defective but not quite absent. In the cases I have brought forward, facts have been adduced which seem to me to prove that loss of smell in the presence of nasal obstruction is by no means always due to this cause. If the obstruction be very marked, operative measures will be indicated on general principles. The difficulty in arriving at a decision is pronounced in those cases in which the middle turbinates are somewhat enlarged, and may give rise to the symptom. It might be thought, as indeed I did think until recently, that where the sense of smell returned after measures calculated to diminish the enlargement, we have sufficient evidences to justify an expectation of great benefit to be derived from operative procedure. The cases I have detailed—more particularly the first—however, show that this is not so. At one time it seemed to me that, given a case of anosmia with retention of the power of appreciating the flavours of food, and an obstructive condition detected by anterior rhinoscopy which might interfere with the entrance of odorous particles, we were justified in concluding that the removal of the obstruction would benefit, or even restore, the sense of smell. It appeared probable that the preservation of the power of tasting in the above sense indicated a healthy condition of the olfactory nerve. An analysis of my cases, however, negatives this view.

I am not aware that physiology has contributed anything towards the solution of the question. Of course, we are all familiar with the fact that an expiratory current is required for the appreciation of flavours; but it must be borne in mind that the class of cases which present difficulty are those in which expiration, and indeed respiration, as a whole are not interfered with. It would be tempting to theorize as to the possibility of there being different sets of fibres or nerve endings concerned in smell proper and taste in so far as it is dependent upon the olfactory nerve, but definite proof seems to me impossible to obtain at present. I have spoken of the condition of the olfactory nerve present in these cases as functional for want of a better term. It will, however, at once occur to the reader that in its obstinacy and in the uncertainty which attends its prognosis, the defect in the patients I have referred to differs from many other affections which we are accustomed to classify thus. I have therefore written this paper not only with a view to calling attention to a form of anosmia which seems to me to have been insufficiently studied, but also in the hope that others—whether rhinologists or neurologists—may be induced to throw more light upon a matter which, I must confess, seems to me at present somewhat obscure.

REFERENCES.

[1] *Arch. f. Laryngol.*, vol. xv, p. 123. [2] Ibid., vol. iv, p. 55. [3] Ibid., vol. ix, p. 147. [4] *Krankheiten der Nase*, 1903, p. 570.

CONGENITAL SYPHILITIC OBSTRUCTION OF THE COMMON BILE DUCT.

By H. D. ROLLESTON, M.D., F.R.C.P.,

PHYSICIAN TO ST. GEORGE'S HOSPITAL AND TO THE VICTORIA HOSPITAL FOR CHILDREN.

This case appears to be worth recording because of its rarity, and also on account of its relation to the more usual form of congenital obliteration of the bile ducts.

A female child, aged 3 weeks, was admitted to the Victoria Hospital for Children, under my care, on January 9th, 1906, for jaundice, melaena, and wasting, and died twelve hours later.

Family History.—The father, a retired soldier, lost his voice in 1904. The mother had a bad throat two years ago, and was treated for three months; a year ago she had a child born dead at the seventh month; no other miscarriage; she presents slight scarring with a serpiginous outline about the fauces and soft palate; she says she is subject to jaundice.

History.—This child was born with instrumental assistance at full term, and weighed 7 lb at birth; artificial respiration was necessary for half an hour after birth. It was not jaundiced at birth, and did not become so till seven days later. The motions were green, and since the onset of jaundice were offensive; for the last week of life blood was passed by the bowel. The child was breast-fed, and vomited curds for the last week of life. "Snuffles" were noticed during the last two days of life only.

When admitted to the hospital the infant was emaciated, much jaundiced, collapsed, with ulceration of the mouth and a dry tongue, pulse 76, irregular; respirations 40, temperature too low to be registered, except on one occasion when it was 95.4° F. The abdomen was retracted, the liver came two and a half fingerbreadths below the costal margin, and felt hard. No tumour could be felt. The spleen was just palpable. The urine contained bile and blood, but it might have been contaminated with faecal matter. During the twelve hours that the infant was in the hospital the bowels acted six times, the motions being green, offensive, and containing curd and blood. The treatment consisted in stimulation by brandy and heat applied in the form of hot bottles and baths. For these notes I am indebted to Mr. G. E. Friend, House-Physician.

The autopsy was performed thirty-five hours after death by Dr. A. J. Jex-Blake, who kindly preserved the abdominal viscera intact, with the exception of the intestines, for me to dissect. The skin was jaundiced. The thoracic organs were natural, except for bile-staining of the aorta. The liver (4 oz.) was bile-stained. The surface was smooth, not particularly firm, and did not convey the impression of cirrhosis, though in one or two places there were fibrous bands surrounding the

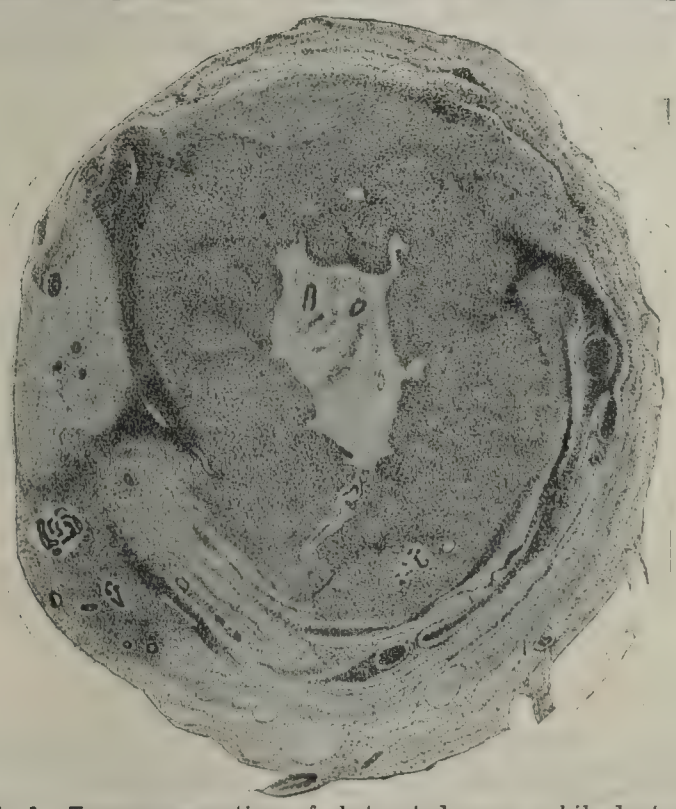

Fig. 1.—Transverse section of obstructed common bile duct, the obstruction being due to syphilitic granulation tissue.

superficial veins. There was no perihepatitis and no adhesions. On section there was an increased amount of fibrous tissue in the portal canals, but the liver did not appear specially firm or cirrhotic. On section of the transverse fissure the lumen of the bile ducts was visible, and was stained yellow; there was some dilatation of the ducts in this position, and the walls were thickened. The gall-bladder showed no pericholecystic adhesions, but its outer surface was white, as if slightly thickened; it contained bile-stained mucus with a white, flaky precipitate, but no calculi. There was some excess of fibrous tissue round the cystic duct, and on transverse section its lumen showed up as a brown spot. The common hepatic and common bile ducts were much thickened by pericholangitic fibrosis; a probe passed freely down from the hilum of the liver towards the duodenum until a point about half an inch from the biliary papilla where it was arrested: the distal part of the common bile duct formed a thick white cord about the size of an adult's vas deferens, and ran down to the biliary papilla without any definite adhesions in the neighbourhood. On transverse section the thickened common bile duct resembled the cross-section of the stem of a clay pipe, there being a minute round hole in the centre with a thick wide rim. On opening the duodenum the orifice of Santorini's duct was visible. The biliary papilla was very prominent and swollen; pressure on the gall-bladder did not drive any bile out of the papilla. Prolonged pressure on the papilla led to the exit of some whitish opaque fluid. There was some bile-staining of the duodenum. The small intestine was natural but there was some colitis and there was haemorrhage into the mucous membrane of the sigmoid flexure. The pancreas was enlarged, firm, and white; on section of the head of the pancreas there was some interstitial fat necrosis; no dilatation of Wirsung's duct. The spleen weighed 2 oz.; a splenunculus was present. Kidneys, 1¾ oz. each, were bile-stained, but otherwise normal.

Microscopic Examination.—The thickened lower end of the *common bile duct* shows in transverse section (Fig. 1) the marked thickening described above. This is due to granulation tissue situated mainly inside the muscular coats, but in places passing through into the outer fibrous coat, and surrounding the mucous glands in that situation. The granulation tissue is composed of round and spindle-shaped cells; there are no giant cells and no caseation. The lumen of the duct shows a little epithelial débris.

The liver shows pericellular cirrhosis and in addition some increased fibrosis around the portal spaces, and here and there plugs of bile-stained mucus in the bile capillaries. The plugs are no doubt due to the biliary obstruction. In short, the liver shows the changes characteristic of congenital syphilis with the effects of bilary obstruction. After hardening in the usual manner sections were stained for the *Treponema pallidum*, but with a negative result.

The pancreas presents a high grade of interstitial fibrosis, the lobules of the gland being invaded and broken up and the acini destroyed or widely separated by connective tissue in various stages of development—round mononuclear cells resembling lymphocytes, plasma cells, spindle cells, and fibrous tissue. Some of the arteries show periarteritis but not endarteritis. The islands of Langerhans are well preserved and prominent, as can be seen in the photomicrograph (Fig. 2) most kindly shown by Dr. Cammidge. The ducts of the gland are not dilated. The interstitial pancreatitis is so advanced that the normal appearance of the gland is quite obscured. It is important to note that this diffuse interacinous pancreatitis is quite different from the interlobular pancreatitis described by Emanuel[1] in the usual form of congenital obliteration of

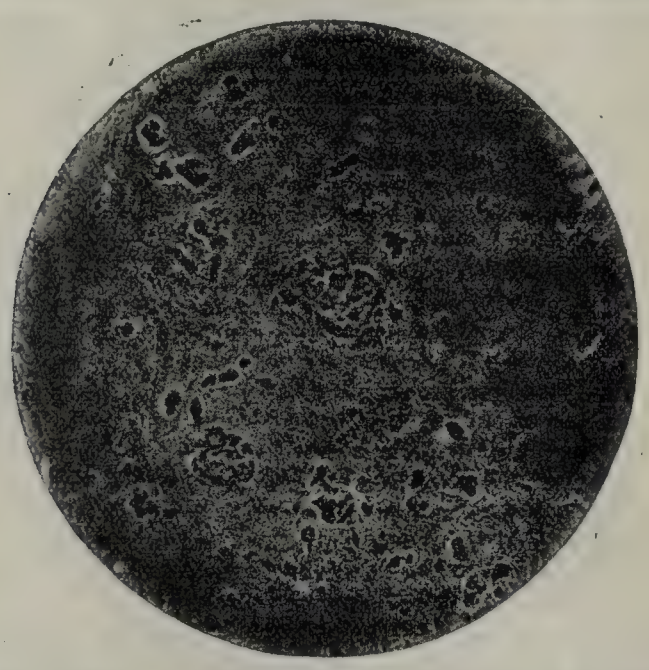

Fig. 2.—Section of pancreas showing interacinous pancreatitis due to congenital syphilis. The islands of Langerhans are prominent. (Photomicrograph by Dr. P. J. Cammidge.)

the bile ducts. For, as shown by John Thomson,[2] congenital obliteration of the bile ducts (that is, the form presenting mixed portal and monolobular hepatic cirrhosis) is not connected with syphilis.

REMARKS.

There are two possible views as to the nature of this case, first that it is syphllitic, secondly that it is an early stage of congenital obliteration of the bile ducts. In favour of the syphilitic origin of the lesion are the following points: The definite history of syphilis and the syphilitic character of the associated morbid changes on the liver and in the pancreas. I have hesitated to publish this case because the *Treponema pallidum* was not found in the hardened sections, but this failure is probably to be attributed to the tissues having been hardened in the ordinary way. Against the view that the granulomatous change in the common bile duct is an early stage of congenital obliteration of the bile ducts is the absence of the hepatic changes (a mixed monolobular and multilobular cirrhosis) met with in that disease; further, as already pointed out, the form of pancreatitis present in this case is quite different from that figured by Emanuel in congenital obliteration of the bile ducts. I believe, therefore, that this is a case of congenital syphilitic obstructive cholangitis. This condition has been very rarely recognized. The only case like it that I know of is that reported by Beck,[3] though possibly some of the reported cases of stricture of the common bile duct in early life may be a later result of this process.

This case supports the view that several different conditions may give rise to obstruction or obliteration of the larger bile ducts on the newborn. Thus, the ducts may be narrowed as the result of peritoneal adhesions set up by fetal peritonitis; the ducts may be obstructed by syphilitic inflammation, as in this instance; or, as in the majority of cases, there may be a mixed form of hepatic cirrhosis, which is followed by a descending and obliterative cholangitis, the disease usually called congenital obliteration of the bile ducts. Further, it may be pointed out that the recognition of congenital syphilitic obstruction of the common bile duct offers an explanation of recovery under mercurial treatment of cases which appear to belong to the well-recognized group of congenital obliteration of the bile ducts. Poynton[4] has recorded a case in point, but interpreted the obstruction as due to peculiarly tenacious bile.

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A MODIFICATION OF LEISHMAN'S METHOD OF ESTIMATING THE OPSONIC INDEX.

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LEISHMAN'S original method of estimating the opsonic index is so much simpler and more rapid than Wright's that it seemed desirable to experiment with it in the direction of greater accuracy. Several estimations were made from blood mixed direct with a citrated emulsion of tubercle bacilli, and the results showed marked discrepancies with estimations made by Wright's method, a normal index working out, for instance, to 2.0 or to 0 5, and seldom exactly to 1.0. After trials in various directions it appeared that the inconstant factor vitiating results was the differing number of leucocytes in the respective bloods. Counts of the leucocytes, estimations of the index by Wright's and by Leishman's method modified were then made, and it was found that the figures, expressing the index by Leishman's method and the number of leucocytes, varied inversely, the emulsion being constant.

By a simple formula, based on the above proposition, several apparent indices were corrected, and were then found to agree closely with those estimated by Wright's method; but still discrepancies occurred, and for the following reason. It is usually convenient to obtain blood by the pressure of an elastic or other band; if the same drop of blood thus obtained is used both for the index and leucocyte count, good results are produced. But this needs agility, and in practice would require an assistant. If different drops of blood are used, the haemocytometer and incubation pipettes may contain differing numbers of leucocytes; it is inconvenient to get blood without pressure as a deep puncture has then to be made, possibly daily. Finally, a simple plan was hit upon; after mixing blood direct from the finger—under any pressure, with the bacillary emulsion, the number of leucocytes in the mixture itself was counted, either before or after incubation, each batch being done in the same way. For this the red blood corpuscle pipette serves, and the process is more rapid if there is one for each blood; but any pipette and any dilution desired may be used by drawing up successive volumes of the mixture and diluent as recommended by Wright.[1]

After using a drop or two to make a film the mixture is kept in its capillary tube till required for the leucocyte count. The total number of leucocytes need not be estimated, the figure expressing the average for the fields sufficing. A fallacy exists that the phagocytes are not in constant proportion to the total number of leucocytes.

The actual modification of Leishman's method is very simple. The capillary pipette is that in ordinary use; it is convenient to make a bend in it 2 or 3 in. from its distal end. A rubber tube, as in the haemocytometer pipette, is easier to manage than a rubber teat, or a Wright's throttled pipette may be used. A mark is made above the bend, giving a long column of blood and emulsion, making for greater accuracy of dilution and providing enough of the mixture for its two purposes—namely, for making a film and for leucocyte count.

The emulsion consists of (tubercle) bacilli suspended in citrated normal saline—say, 0.75 per cent. each of

sodium citrate and sodium chloride. This emulsion is sucked up to the mark above the bend; it will be found that it is difficult or impossible to do this with a rubber teat owing to fluidity of the emulsion (unless a throttled pipette be used). The pipette may now be laid down, and the column of emulsion will be found to stay steady while a puncture is made in the finger. A short column of air having been taken up, a column of perfectly fresh uncoagulated blood is aspirated to the mark, and the whole rapidly blown out on to a glass slide, so that the citrate may at once act on the blood and so prevent coagulation; this is not so efficiently done if blood is taken up first.

The two fluids are then mixed, aspirated, sealed, and incubated, unless a portion be reserved for the leucocyte count. The films are made in the usual way, by blowing out and mixing before spreading; this remixing is important if the estimation of the leucocytes is made after incubation. The film need not be fixed before staining with carbol fuchsin; the index is calculated in the usual way. To correct the apparent index, multiply the control index by its corresponding number of leucocytes and divide the result into the other index multiplied by its corresponding number of leucocytes, as shown in the following examples:

T. B. per Cent.	Index (Leishman).	Index (Wright).	Leucocytes.
A. 190	1.0	1.0	11,000 $\frac{0.6 \times 16.000}{1.0 \times 11,000}$ =0.87 corrected index.
B. 115	0 6	0.9	16,000

The corrected index, 0.87, corresponds closely to 0.9 as got by Wright's method:

T. B. per Cent.	Index (Leishman).	Index (Wright).	Leucocytes (Average per Field).
A. 114	1.0	1.0	18 $\frac{0.73 \times 25}{1.0 \times 18}$ = 1.01 corrected index.
B. 84	0.73	1.01	25

In another case, where a hundred leucocytes were found in one field, they were found to contain about 100 per cent. bacilli; whereas in the control only twelve leucocytes were found, and those on the film were so full of bacilli that no count could be made, though they illustrated the proposition of inverse proportion.

Some interesting experiments with the writer's own blood were made, and may be recommended as a method of practice; a drop of blood was obtained from the finger, mixed and incubated as usual; then a second drop of blood from the same finger, and only three minutes later, was similarly treated, except that the pressure used in obtaining it was not necessarily the same as that used for the first drop. The leucocytes and indices were estimated in the two specimens, calculating the first as 1.0, and very good illustrative results were seen; thus, on one occasion, each specimen contained the same number of leucocytes per haemocytometer field (13), and the bacilli ingested were respectively 200 and 205 per cent.; on another occasion approximately twice the number of leucocytes and half the number of ingested bacilli were found in one specimen as compared with the other; several similar results were seen, and as the same blood was used on all occasions for each comparison there could be no doubt as to the actual index.

A tube was mixed and kept for half an hour at room temperature, and showed no phagocytosis at the end of that time, but showed good results after incubation. The mixing may therefore be done at the bedside, and the mixture carried some distance to the laboratory. Dr. Campbell[2] suggests that the emulsion be made up of previously stained and washed bacilli. This would further simplify the procedure. One might almost be able to count these already stained and ingested bacilli, and the leucocytes in the haemocytometer chamber at the same time.

The method as a whole is simple, requires little apparatus, and is quite within the powers and opportunities of the general practitioner after a little practice. It seems to be more especially applicable when it is only desired to estimate two or three indices occasionally, as in diagnostic work, as with T. R.,[3] or as suggested by the writer with T. O.[4]

The proposition of the inverse proportion between ingested bacilli and leucocytes suggests several interesting speculations. Should it be proved universally true, the number of leucocytes per c.mm.—at any rate, within wide limits—seems unimportant as far as the opsonic action is concerned. Yeast, cinnamic acid, and other drugs have been used in the hope that the leucocytosis caused by them would combat disease. But Huggard and Morland[5] showed that yeast altered the tuberculo-opsonic index as well as the number of leucocytes, and so it may possibly be shown of the other drugs. May we regard leucocytosis as superfluous as far as opsonic effect is concerned? The leucocytes might be compared to the fielders in a cricket match. If the fielders are as good at their work as the leucocytes are, of a hundred balls delivered ten fielders could theoretically stop as many of them as a hundred fielders could. But the limits must not be too wide; *one* man could not stop them all, and one leucocyte cannot do the work of a hundred. Another consideration is that experimental phagocytosis lasts only (say) fifteen minutes, whereas in the body phagocytosis has all day to go on, when a larger number of leucocytes may be more useful if only in bringing up reinforcements.

I have to thank Dr. Ritchie, Superintendent of the Laboratory of the Royal College of Physicians of Edinburgh for invaluable advice; Dr. R. W. Philip of the Royal Victoria Hospital, Edinburgh; Dr. de Watteville, Grampian Sanatorium; and the honorary physicians of the Royal National Hospital, Ventnor, for permission to work in their respective laboratories.

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MALIGNANT DISEASE OF THE INTESTINE RENDERING AN INGUINAL HERNIA IRREDUCIBLE.

By CHARLES T. MacL. PLOWRIGHT, B.A., M.B., B.C.
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The rareness of this condition warrants, I think, the account of a case occurring in my practice.

R. T., a man, aged 57, apparently otherwise healthy, came to me in July, 1906, with an irreducible left inguinal hernia of long standing, which was causing him pain. He also had a complete inguinal hernia on the right side, but this was reducible.

He was kept in bed for a week or so on a careful diet, but as the hernia remained irreducible and painful, he was advised to submit himself to operative treatment, to which he consented.

Operation.

On July 18th, 1906, the sac was opened and was found to contain a loop of large intestine markedly adherent to the sac. On freeing the gut a hard mass of malignant disease was found in the concavity of the loop, and in the centre of this mass a small abscess cavity containing 2 or 3 drachms of foul, appendix-abscess-like pus; this was evacuated, and the loop of intestine was excised, together with about 2½ in. of healthy gut on each side of the growth. The cut ends of the intestine were fixed in the original incision in the inguinal canal, an end-to-end anastomosis not being considered advisable, owing to the presence of the pus. The patient made an uneventful recovery.

After-History.

The colotomy opening so formed was only meant as a temporary measure, but the patient having been fitted with a double inguinal truss, the pad on the left side being replaced by a cup-shaped receiver for the faeces, found that he could get about his work all day without any inconvenience and has hitherto refused to have an end-to-end anastomosis done.

I saw him twelve months after the operation; he had gained weight, the colotomy wound looked healthy, and there was no evidence of any secondary deposits in the liver.

Description of Specimen.

It consists of 12 in. of large intestine having a growth involving the central 6 in. which at one point has protruded into the lumen of the intestine. In the centre of the growth is a necrotic area. Microscopic examination showed a columnar carcinoma.

RECURRENCE OF RETROPERITONEAL LIPOMA: OPERATION: RECOVERY.*

BY R. J. JOHNSTONE, M.B., F.R.C.S.ENG.,

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IN the BRITISH MEDICAL JOURNAL of December 2nd, 1905, I reported a case of retroperitoneal lipoma weighing 21 lb., situated in intimate relation to the right kidney and ureter, which I removed with ease, the tumour shelling out of its bed apparently completely.

The patient, a woman aged 40, rapidly recovered from the operation, and put on flesh. She remained in perfect health for about two years, but at the end of that time, eight months before I saw her again, she began to suffer from stomach troubles, and from slight pain in the back and sides. Two months later the abdomen began to swell, and these symptoms went on for six months, when she consulted Dr. Kirkhope of Belfast, who sent her to me. She came into hospital on March 2nd, 1907. Her appearance on admission was much better than when she first came under my care, she was much fatter and more healthy looking. I found the abdomen distended and filled with a lobulated tumour; the individual masses were firm in consistence, one in the epigastrium in particular was so hard that I was led to fear that the recurrence which was evidently present was of a malignant type. During the four days which she passed in hospital before operation she was quite free from symptoms of any kind. It is interesting to note that the scar of the first operation, which measured over 9 in. in length, showed no signs of yielding.

On March 6th I opened the abdomen by an incision of about 9 in. in length, and found the following state of affairs: The tumour consisted of a number of lobes varying in size from that of a goose-egg up to that of a Rugby football, more or less pedunculated, and only united at their common site of origin, which was in the right flank in the angle between the outer border of the kidney and the iliac crest. The right colon lay internal to this, and several large vessels ran from its outer border into the pedicle. One small mass, burrowing beneath the caecum, had opened up the layers of the meso-appendix, and extended into the iliac fossa. I removed all the masses, some for convenience sake being tied off and separated from the pedicle, and completely cleared away the perirenal fat, leaving the quadratus lumborum bare. I also removed the appendix when enucleating the mass which I have described as burrowing beneath it and the caecum. The peritoneum was then sutured over the denuded muscles, and the abdominal wound closed. Recovery was uneventful, and the patient left hospital on the twenty-first day after operation. I need hardly say that I shall keep a careful watch over her future history.

The tumour masses weighed altogether 12½ lb., were pinkish-white in colour when fresh, and microscopically showed typical lipomatous tissue, with no trace of malignancy.

The case is of considerable interest, both on account of the rarity of the original condition and also on account of the recurrence. Adami,[1] in his monograph on retroperitoneal lipoma, was able to collect 42 cases. Of these 26 were operated on, with only 12 recoveries. In one of these cases recurrence took place, but I do not know whether this case was operated on again or not.

I was surprised at the recurrence in my case, as the first growth shelled out with so little trouble, and as the tumour, which has been preserved, shows no cut or torn surface anywhere, and seems altogether encapsuled. I do not think the secondary growth can be malignant, both on account of the negative microscopic finding and also because there were no signs of haemorrhage or degeneration such as are almost invariably present in retroperitoneal sarcomata which have attained any considerable size. The clinical evidence, absence of cachexia, of loss of weight, and of signs of metastasis, is also entirely against any presumption of malignancy.

REFERENCE.

[1] Adami, *Montreal Medical Journal* (January and February, 1897). Quoted in Nothnagel (English edition), *Diseases of the Intestines and Peritoneum.*

* Read before the Ulster Branch of the British Medical Association.

THE late Miss Caroline Everard of Salisbury, who died on August 28th, left £1,000 each to the Norfolk and Norwich Hospital; the Royal Hospital for Incurables, Putney; the Asylum for Idiots, Earlswood; and the Hospital for Consumption, Fulham Road; £800 to the British Home for Incurables; and £500 each to the South London Ophthalmic Hospital; the National Hospital for the Paralysed and Epileptic; Salisbury Infirmary; the Seamen's Hospital, Greenwich; and the West London Hospital.

A CASE OF RETROPERITONEAL HAEMATOCELE PRODUCING ACUTE INTESTINAL OBSTRUCTION.

BY H. TEMPLE MURSELL, M.B., M.C., F.R.C.S.E.,

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RETROPERITONEAL haematocele is a somewhat rare condition, and intestinal obstruction of acute character in association therewith is rarer still. The following case, therefore, seems worthy of record.

History.

In July, 1907, I was asked by Dr. F. Pershouse, of Johannesburg, to see in consultation with him a lady, aged 39, who the previous day had shown typical symptoms of acute intestinal obstruction. The history was that three years previously, shortly after confinement, she discovered a lump in the left lumbar region, which caused a certain amount of dull aching pain in the back. She suffered always from constipation, but could obtain relief by means of cascara A year ago while in London she had symptoms of obstruction, but apparently not of acute character. Under the advice of a surgeon whom she consulted massage was carried out, with complete relief to the symptoms. From time to time, however, she had left lumbar pain, and always more or less constipation.

Condition before Operation.

When I saw the patient she had been confined twelve days before, having a perfectly normal labour. The facial aspect was anxious; vomiting was frequent, the vomited material being greenish-brown and of inoffensive odour. The pulse was 100, and rising steadily. The abdomen was distended, though not greatly so, and in the left lumbar region a hard movable lump could be felt. It could be felt bimanually to extend into the loin, and was movable antero-posteriorly but not laterally. It was dull on percussion. The impression conveyed was that of a pararenal growth of some kind. There had never at any time been any renal symptoms. The lump extended from the left renal region down to the umbilicus, and over to the middle line. The nature of the swelling was quite uncertain, and beyond a vague suggestion that it was a pararenal "something" no diagnosis was made.

Operation.

The condition of the patient was critical, since no relief had been obtainable by enemata, and the acuteness of the symptoms was hourly increasing. She was therefore removed to a nursing home, with a view to operation. Four hours later, Dr. Pershouse anaesthetizing and Dr. Stanley Heberden assisting, I opened the abdomen in the left linea semilunaris over the swelling. There was no sign of peritonitis. The ascending colon was completely flattened over a large tense swelling, which bulged forward the posterior peritoneum, the colon lying to its outer side. Some large vessels, apparently supplying the colon, ran over its surface. Above, the swelling was apparently continuous with the left kidney, and it extended well over to the middle line. An exploring needle and syringe withdrew pure blood only from the swelling An incision was made parallel with the vessels through the posterior peritoneum, and an attempt made to shell out the swelling. It was, however, completely fixed posteriorly and above, and a fresh layer was attempted in what looked and felt like a tumour capsule. Suddenly the finger slipped into a large cavity, from which rushed some fluid blood and large masses of blood clot, some recent and some old. The peritoneal cavity had been well packed off, and there was no soiling of the peritoneum. The cyst cavity being thoroughly emptied and sponged out, the cyst wall was stitched all round to the peritoneum of the anterior abdominal wall and the cavity stuffed with gauze There had been free oozing from the wall of the cyst but this ceased on pressure with the gauze packing. None of the cyst wall was removed, since there was none to spare when the cut edges were brought forward.

After-History.

The subsequent progress of the case was uneventful. Flatus was passed on the following day, but there was no full action of the bowels for forty-eight hours. The cyst cavity gradually and completely closed in a month.

Contents of Cyst.

The material removed from the cyst was submitted to Dr. Pakes, Pathologist to Johannesburg Hospital, and his report was that it was old and recent blood clot with fluid blood.

It seems clear that the origin of the trouble was a retroperitoneal haemorrhage during the confinement three years ago; that at the recent labour a fresh haemorrhage occurred rendering the cyst tense and flattening the colon over it. Precisely the source of the haemorrhage it is difficult to determine—whether from a mesenteric vessel, a renal branch, or a pancreatic vessel it was impossible to decide.

Greig Smith,[1] speaking of cysts of the mesentery, divides them into traumatic, sanguineous, sero-sanguineous, and serous. These arise from rupture of a blood vessel between the layers of the mesentery with extravasation of blood into the areolar tissue. The blood may be diffused or may become encysted, forming a haematoma. The natural changes in clot may result in the formation of a cystic tumour containing liquid blood or blood-stained serum. The rupture of a vessel into a simple cyst may produce a condition identical clinically with a true traumatic cyst. The case in question may, I think, be regarded as a traumatic blood cyst, the traumatism being the straining during labour. The possibility of the blood being of renal origin—that is, from a branch of the renal artery—must be borne in mind. Henry Morris[2] states that:

Hildebrandt has put on record a blood cyst containing one litre and a half of fluid blood, and not communicating with the renal cavity. He considered it was a haematoma due to rupture of an aneurysm. Blood cysts may occur from accidental rupture of vessels or from the giving way of diseased arteries. They are almost invariably mistaken for renal cysts.

Could the nature of the swelling in the present case have been diagnosed, there is no doubt that drainage through the loin by an extraperitoneal operation would have been the ideal one. Fortunately, however, all went well by the method adopted.

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WHAT CAN THE FAMILY DOCTOR DO FOR THE INEBRIATE?

By JOS. S. BOLTON, M.D.,
NOTTINGHAM.

It is now generally admitted that inebriety is a disease, and one not easily cured. So refractory, indeed, has it proved that some have asserted that when it attacks the female sex it is incurable. There is no doubt that many doctors have declined to attempt its treatment because they felt hopeless of success. Since, however, the publication in the columns of this Journal of articles setting forth the treatment by hypodermic medication, without the aid of any institution, a few have been induced to attempt it, and with the happiest results.

It may be urged that there is nothing new in this treatment; that the drugs now suggested have been employed for years, and are to be found in every surgery. This is quite true, but seldom in the past has the family doctor set himself to treat inebriety as he would treat any other disease, with the full intention of producing a cure. There is, moreover, a great advantage in the hypodermic method, which renders it certain that the patient gets the drug, and that it enters, not the stomach only, from which it may be at once expelled, but the blood and the general circulation. The regular visits to the doctor are very important. The patient feels that something is being done for him, that his doctor really believes that he is ill, and intends to cure him. The doctor also detects at once how his patient is going on, and whether he is giving up alcohol.

A very useful drug for hypodermic injection in the acute stage of alcoholism is apomorphine. If a patient is suffering from delirium tremens, and in his terrible excitement scarcely restrained by his attendants, and quite unable to obtain any sleep, a small injection of this drug will at once produce a calm. Within five minutes he begins to yawn, and before there is time to get him to bed he is fast asleep. This sleep is sometimes, but by no means always, preceded by vomiting. The patient, if sitting up, is liable to faint, and should therefore be placed in a horizontal position. Five drops of inj. apomorph. hyp. is generally a sufficient dose, and it can be repeated if necessary. Usually about four hours' sleep is thus obtained, and the patient awakes clear and refreshed. But apomorphine is no remedy for alcoholic craving; it is only a temporary measure to control the patient till he comes under the influence of other drugs. It is a very good way of commencing treatment.

When the patient is thus cleared of his delirium and his drink, he is able to discuss the question of his future, and his doctor will be able to discover whether he has any real desire to give up alcohol or only wishes to be patched up. It is impossible to cure any man against his will, but it sometimes happens that a patient has had no thought of cure, because he deemed it impossible; but when the possibility is placed within his reach he is quite willing to grasp it. In which case the hypodermic injections of atropine and strychnine may be commenced at once.

Many patients, however, are not subject to acute attacks, but continually drink more than is good for them, and, if they try to give it up, the craving for it is so strong that they take to it again. Immediate relief can be given in these cases, and it is quite safe to assure them that within forty-eight hours after the treatment has been commenced the craving will have left them. This assurance is very important, for many of these patients have lost hope through repeated failure in their attempts to cure themselves.

For convenience in carrying out the treatment a mixture of the two drugs liq. atrop. sulph. and liq. strych. hydrochlor., in the proportions of 1 to 4, may be kept in readiness. Five drops of this should be injected into the biceps muscle twice or thrice a day, the patient attending at the doctor's surgery for this purpose.

The patient should also be supplied with a pick-me-up, which he can take whenever he feels low or depressed, or has any craving for alcohol. Four drops of tincture of capsicum, with 15 of liquid extract of cinchona, will answer the purpose. Careful attention must be given to the general health, and the food must be suited to the digestion. A calomel purge is often required at first. Albumen in the urine is not a contraindication. Indeed, it often disappears under the treatment. For the first few visits the patient should be brought by his friends, but after that he will be quite able to pass the public-houses alone. These injections occasionally cause some dryness of the mouth and difficulty of accommodation. A few tablets of potassium chlorate will remedy the former. For the latter, spectacles have sometimes to be worn for close work during the treatment. But the patient can be assured that no injury will be caused to the eyes.

The injections must be given twice a day till the patient has regained health and vigour. This will take from two to four weeks. Then once a day for two or three weeks longer, after which the frequency should be gradually reduced. Under this treatment the general health will greatly improve. The feelings of depression and despair will pass away. The nerves will become steady. The desire for alcohol will go, and a healthy appetite for food will take its place.

The use of such powerful drugs is only safe under the eye of the doctor; but they are absolutely safe in his hands, and no harm comes of the injection except occasionally an appearance of bruising on the arm. I have had several patients return voluntarily for treatment when they had lapsed or felt a return of the craving, but I have never had a patient contract a habit of drug injection.

It is essential that the doctor should keep in touch with his patient for months after the treatment is finished. In this way he will prevent relapse. The patient should be carefully warned against over-confidence. He can never become a moderate drinker again. If at any time a period of mental unrest or depression should come to the patient, a renewal of treatment for a few days will tide him over it. A relapse is not more difficult to treat than the original illness. Indeed, usually a short treatment only is necessary, and the patient is often more cautious for the future. Several of my cases had one relapse, and stood firm ever after.

The patient should be advised as far as possible to avoid the old associations which led to his downfall and seek to have his mind and body occupied in useful work and healthy recreation. The most hopeless cases are those who have nothing to do.

It is stated in the *Allgemeine Wiener medizinische Zeitung* that the Austrian Prime Minister has informed Professor von Jacksch that a new Public Health Bill applicable to the whole empire is actually being prepared, and will be submitted to the Reichsrat at the end of the present year or the beginning of the next.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

R. McKenzie Johnston, M.D., F.R.C.S.Edin., President.

PRESIDENT'S INTRODUCTORY REMARKS.

THE TEACHING AND STATUS OF LARYNGOLOGY AND OTOLOGY.

Gentlemen,—As your President it is my duty—a duty which is both a pleasure and a privilege—to bid you welcome to Exeter, and to invite you to take part in the work of this Section. I hope that you will enjoy a pleasant time in this charming and ancient Cathedral town, and that you will carry from here the feeling that you have added to your store of knowledge, that you have contributed something to the knowledge of others who, like ourselves, are specially interested in the study of laryngology, otology, and rhinology.

First of all, let me express my grateful thanks for the very great honour that has been conferred on me in making me President of your Section. It is a distinction that I greatly value, though I am but too conscious how little I have done to merit it, and how far from qualified I am to fill the position. However, I feel confident that I may count on your assistance and your indulgence, and thus be enabled to perform my duties.

Among the regulations made for the guidance of officers of Sections, there is an excellent recommendation that the President should not deliver a formal address, and that any introductory remarks should not occupy more than fifteen minutes. In view of this, and of the fact that we have two important discussions, in addition to a number of papers, which will probably more than exhaust our available time, I have decided to set an example in brevity by withholding the address which I originally intended to give. In this way I shall conform strictly to the regulation referred to, and, at the same time, best meet your wishes. I propose merely to mention two topics which greatly interest me, and to commend them for your individual consideration, without myself enlarging on them.

The first is, What ought we to do to emphasize the importance of the study of diseases of the throat, nose, and ear, and what can we do to advance the teaching of these subjects? It will, I am sure, be generally admitted that in the past ten years there has been a vast improvement in the general practitioner's knowledge of our speciality, compared with former times. Still there is great room for further education in this direction. The practitioner should strive to learn as much as he has time for, but at least he should learn to know his own limitations and when to seek further advice, so as not to lose valuable time by delay, which sometimes almost amounts to criminal delay.

> Thou shalt not kill, but needst not strive
> Officiously to keep alive

is a version of part of the Decalogue which may suit the practitioner who is content to sit with folded hands, but which will not do for the active conscientious man who has a proper sense of his duty to his patient.

I confess I am not an advocate for increasing compulsory courses. I would prefer to make the student realize the importance of this branch of medicine rather than insist upon his taking a course the value of which he does not comprehend, beyond the getting of a certificate. In my own University, where till recently I taught our subject, I had ample evidence in the extraordinary growth of the class, that the student is quite able to appreciate the necessity for special study even without the force of actual compulsion. This is also the experience of my successor. Our duty, however, is surely clear—to advocate the importance of a satisfactory knowledge of the subject, and to neglect no opportunity of teaching those who require it.

Now for my second topic. What is the present status of our speciality in the world of medicine? I am old enough to remember that, not so very long ago, we were looked upon with doubt, with suspicion, and with distrust. Now, I think I may truthfully claim that we occupy an assured and respected position, and that we are entitled to hold up our heads with the best in any branch of medical or surgical science. We owe this in part to the high standard set by our leading men, and to the good work done and being done by a large class of able workers, and, also, in no small degree to the influence of such meetings as the one we are now attending. In the Association I notice, in some directions, a tendency to adopt methods common in other spheres of life, and perhaps to place self-interest too prominently in front of what should be the foundation of our life's work—the love of our work.

I have never ignored the importance of the business side of our profession, nor the duty we owe to our less fortunate brethren, but I hope that we, at least, shall not agree to lower the dignity of our profession, nor forget that a true scientific interest in our work is the surest basis on which to build up happiness and material prosperity.

> Who works for glory misses oft the goal;
> Who works for money coins his very soul;
> Work for the work's sake, then, and it may be
> That these things may be added unto thee.

I content myself by suggesting to you these subjects for thought, and I now redeem my promise by no longer interrupting the proper business of the Section.

A DISCUSSION ON THE DIFFERENTIAL DIAGNOSIS OF TUBERCULOSIS, SYPHILIS, AND MALIGNANT DISEASE OF THE LARYNX.

OPENING PAPERS.

I.—Sir Felix Semon, K.C.V.O., M.D., F.R.C.P.Lond.,
Physician Extraordinary to His Majesty the King.

When I summarize the results of my experience concerning the differential diagnosis of tuberculosis, syphilis, and malignant disease of the larynx by saying that this differential diagnosis usually is easy, not rarely difficult, and in exceptional cases for a time almost impossible, I merely state what is known to every one of you. There is very little danger of mistaking the so-called "typical" cases. Even the merest tiro in the field of laryngoscopy will readily and correctly enough diagnose laryngeal tuberculosis if, in the case of a hectic-looking young individual with a characteristic history and with well-characterized constitutional symptoms, he finds the larynx pallid, the epiglottis and the arytenoid cartilages changed into rounded, semi-transparent tumours, or the larynx wholly or in part superficially ulcerated. There is equally little danger of mistaking the manifestations of tertiary syphilis for either tuberculous or malignant disease, when deep ulceration, without tumefaction in the neighbourhood, leading to partial destruction of the organ, or when great disfigurement of the part, owing to cicatricial adhesions, are seen, concomitantly with rupia or some other form of tertiary skin eruption, and with evidence of present or past syphilitic disease in other parts of the body. Again, even a beginner is not likely to diagnose syphilis or tuberculosis when in a man of advanced age he finds a large ulcerating tumour in the larynx, accompanied by great enlargement of the cervical lymphatic glands on one or both sides of the neck, fetor of the breath, frequent small haemorrhages from the throat, general cachexia, and pain shooting from the throat into the ears.

It is not for the consideration of such cases, I think, that the present discussion has been arranged, but rather for the analysis of those categories of the three diseases named in which either the appearances are so deceptive as to induce even an experienced observer to form an erroneous conclusion, or in which the signs are so ambiguous as to make the expert pause before committing himself to a definite opinion, or, finally, in which no clue is offered by either the local or the general phenomena as to the true nature of the case.

With these three categories I shall deal in my introductory remarks. I intend to confine myself to the discussion of such points of which I have had personal experience, without for a moment asserting that they exhaust the list of all the differential diagnostic difficulties which may be encountered. Further contributions towards the subject will be made by my co-referee, Dr. Jobson Horne, and others will be offered in the course of the discussion which is to follow.

The points upon which I shall touch are:

1. Congestion of the vocal cords as an initial sign of tuberculosis, syphilis, and malignant disease: (*a*) Bilateral; (*b*) unilateral.
2. The difficulties of diagnosis between tuberculous, syphilitic, and malignant laryngeal tumours.
3. Laryngeal tuberculosis in middle-aged or old people as a source of error in the differential diagnosis between tuberculosis, malignant disease, and syphilis of the larynx.
4. Difficulties of differential diagnosis between all three diseases when appearing in the form of infiltration.
5. Combination of two of the diseases under consideration, and consequent diagnostic difficulties.

1. *Congestion of the Vocal Cords.*

(*a*) *The Bilateral Variety.*—Congestion of the vocal cords, when bilateral, is of course, in the great majority of cases, due to catarrhal influences or to overwork of the organ, but by no means rarely may be, as you all know, a sign of secondary syphilis or of beginning tuberculosis of the larynx. The laryngoscopic image in such cases is anything but characteristic, and in itself—except in the extremely rare instances in which mucous patches are visible in the larynx—does not throw any light upon the real nature of the affection. In syphilis, as well as in tuberculosis of the larynx, it often is only the obstinacy of the congestion, and its refractoriness to treatment, which after a time may lead the observer to suspect that he has to do with something else than ordinary laryngeal catarrh. The extremely minute characteristics of syphilitic laryngeal catarrh, which have been described by some authors, have not been confirmed by laryngologists of the greatest experience, and I certainly would not take upon myself, unless I saw actual condylomata in the larynx, to make the diagnosis of secondary syphilis of the part from laryngoscopic examination alone. Practically the same applies to the obstinate laryngeal catarrh which often is the forerunner of more characteristic changes in laryngeal tuberculosis, though in a few such cases the combination of congestion of the vocal cords with marked pallor of the pharynx and of the epiglottis, may induce an experienced observer to think of tuberculosis in the first place. The differential diagnosis between the two affections will only be arrived at, as a rule, from concomitant local and general symptoms. If there be mucous patches in the fauces or pharynx, together with other characteristic symptoms of secondary specific disease, with a distinct history of primary syphilis, and with a roseolar or a papular syphilide on the skin, the laryngeal catarrh is, of course, also likely to be of a syphilitic nature. If there be characteristic tuberculous signs in the lungs, together with hectic temperatures and the presence of bacilli in the sputum, the observer will not hesitate long in registering the laryngeal catarrh amongst the tuberculous phenomena, although in neither case ought one to forget the possibility of a *simultaneous* existence of both the diseases in the system, or of a simple catarrh supervening in a tuberculous or syphilitic individual.

Only in extremely rare cases will bilateral congestion of the vocal cords be the forerunner of malignant disease of that organ; but the possibility of such an occurrence must not be entirely left out of consideration. I shall never forget a case of that kind, the development of which led to rather serious consequences. A middle-aged gentleman consulted me on account of chronic hoarseness from which he had suffered for several years. On examination the vocal cords were seen to be congested, granular, and thickened. There was no difference between the two sides, the movements of the cords were perfect, there was no history nor any signs of syphilis or of tuberculosis, and the diagnosis seemed to be a perfectly straightforward one of chronic laryngitis. The patient's occupation so he told me, prevented him from at once undergoing treatment for his complaint. A few weeks after the consultation he went to insure his life. The examining physician, who happened to be one of our most esteemed authorities on laryngology, noticed the patient's hoarse voice and examined his larynx. He too arrived at the diagnosis: chronic laryngitis, and did not consider this to be any reason against accepting the patient's life. Within one year, however, from the insurance being effected, the patient died from undoubted malignant disease of the larynx. It was not unnatural that the medical officer should have been upbraided by his directors for having accepted the life as a good one, particularly in view of the fact that the sum insured was a heavy one. Fortunately I could come to his assistance and certify that at the time when the insurance was effected it was quite out of the question to diagnose malignant disease of the larynx. I have never seen a similar case, but the gravity of the situation incurred makes it certainly desirable to keep the contingency in mind in future cases.

(*b*) *The Unilateral Variety.*—It is a common rule amongst laryngologists, well founded upon experience, that a unilateral congestion of a vocal cord, unless caused by traumatic influences, should be looked upon as a danger signal with regard to the possible development of tuberculosis, syphilis, or malignant disease of the larynx, and this rule I certainly have found a very useful one in my own experience. But one must not consider this rule to be an *infallible* one, nor look upon every case in which unilateral congestion of a vocal cord is present as *invariably* leading to more serious development. I have myself seen several cases in which the unilateral congestion either disappeared or remained stationary without anything more serious occurring, and Professor Rosenberg of Berlin has recently described[1] some such cases from his own experience. The occurrence of isolated congestion of one vocal cord, therefore, should be taken, I think, as a valuable sign, putting the observer on his guard with regard to possible further development, but not as sufficient to threaten the patient or his friends with predictions of certain further mischief.

Even when unilateral congestion of a vocal cord is the forerunner of more serious developments, it is impossible to say from laryngoscopic appearances whether this mischief will be of a tuberculous, syphilitic, or malignant character, and, as in the bilateral cases, all concomitant circumstances must be taken into consideration to arrive at a correct diagnosis.

2. *The Difficulties of Differential Diagnosis between the Three Diseases when appearing in Tumour Form.*

That laryngeal tuberculosis may appear in the form of a well-circumscribed definite tumour has only become generally known in the course of the last twenty years, although a few isolated cases had been already published at an earlier period. Recently their number has considerably increased. Generally speaking, however, this form is, in proportion to the great frequency of laryngeal tuberculosis, very rare, and many experienced laryngologists probably have never seen a single instance of its occurrence. Tuberculous tumours may arise at any time of life, and may start from any part of the larynx. Their appearance is not at all characteristic, whilst their size varies from that of a split pea to that of a small marble. They are covered by normal mucous membrane, with a smooth or somewhat granular surface, and a grey, reddish, yellowish, or whitish colour. Their form usually is a rounded one. Sometimes they are semi-globular, sometimes almost globular. They thus bear a great resemblance to sessile fibromata, commencing malignant growths, and to gummata in the pre-ulcerative stage. The difficulty of distinguishing between tuberculous and malignant growths is the greater, first, because tuberculous tumours occur in cases in which there may be no demonstrable pulmonary lesion and no cough, so that no

[1] Les Affections Unilatérales des Cordes Vocales, *Archives Internationales de Laryngologie*, tome xx, No. 4, July-August, 1905.

examination for bacilli can be made; and, secondly, because the form of tuberculous tumours is, as a rule, so rounded and their surface so smooth, that it is often enough impossible to remove a fragment for the purposes of microscopic and bacteriological examination. Thus occasional errors will be almost unavoidable, and the difficulties will be particularly great if tuberculous tumours arise in elderly people, and in situations where fibromata are not likely to occur, such as in the ventricle of Morgagni, the posterior wall of the larynx, the subglottic cavity below the anterior commissure. Under such circumstances, they are very apt to be mistaken for malignant tumours.

I myself must plead guilty to having once performed thyrotomy for what appeared to be an infiltrating malignant tumour below the anterior commissure of the vocal cords, but which on microscopic examination of the removed growth turned out a tuberculous tumour. (Such errors are the more annoying on account of the liability to tuberculous infection of the wound in thyrotomy performed in tuberculous cases. This actually happened in the case just referred to. Fortunately, after energetic scraping and application of lactic acid, the ultimate result was very satisfactory, but such cases show the imperative necessity of being mindful of the resemblance between tuberculous and commencing malignant tumours.) In such cases it will be desirable—unless the situation of the growth should render immediate interference unavoidable—to watch the suspicious growth for some time, and see from the course which it takes whether it is more likely to be tuberculous or malignant. Of course, iodide of potassium should be given at once to exclude syphilis. Should the diagnosis still remain doubtful, intralaryngeal probatory removal and microscopic examination should if possible be resorted to. If this, however, should also be impossible on account of the situation and general configuration of the growth, the best policy to be adopted is, I think, to explain to the patient and his medical adviser that longer waiting may have disastrous consequences, that the only way to get rid of the tumour is by radical operation, and that, if the growth should turn out to be tuberculous, tedious after-treatment, and possibly some further surgical interference, may become unavoidable.

As already incidentally stated, gummata in the preulcerative stage might be confounded with either tuberculous or malignant new growths. Gummata occur in the larynx in three forms: First, as a nodular syphilide, "in which a number of rounded nodules of the size of a shot up to that of a pea are found, sharply defined from and somewhat elevated above their neighbourhood, and generally situated so close to each other that they sometimes nearly seem to coalesce. The covering mucous membrane, which is in the beginning normally coloured, gradually acquires a more yellowish tint" (Mauriac). Secondly, as a gummatous infiltration, of which I shall speak later. Thirdly, as a "circumscribed gumma," which may attain the size of a pigeon's egg, and which is, until its sudden and complete breakdown occurs, covered by apparently intact and, as a rule, yellowishly-coloured mucous membrane. In its neighbourhood an area of bright congestion, or even oedema, often exists. These gummata are apt to occur at a rather late period of life when a primary infection may bona-fide have long been forgotten, or when no history of infection appears to exist at all. This fact, taken in conjunction with the patient's age and the aspect of the larynx, may give rise to a suspicion that the growth is of malignant nature. The effect of the administration of iodide of potassium, however, and—in cases in which the use of this drug has been omitted—the extremely sudden and complete breakdown of the tumour and its replacement within two or three days by a deep and extensive dirty ulcer, will soon enough clear up the diagnosis.

3. *Laryngeal Tuberculosis in Middle-aged People.*

Whilst laryngeal tuberculosis in young people is extremely unlikely to be mistaken for cancer of the larynx—although in very exceptional cases even then such errors may occur—the difficulties of differential diagnosis sometimes are considerable in cases of middle-aged or old people. To begin with, the occurrence and even comparative frequency of tuberculosis in middle-aged and old people is not sufficiently realized by some observers, and secondly, the laryngeal phenomena in such cases are not nearly so characteristic as the appearances seen in typical cases of laryngeal tuberculosis occurring in young people. The observer, being very naturally bent in favour of the diagnosis of malignant disease, when he sees an obscure ulceration in the larynx of a middle-aged or elderly person, is very likely to make a mistake. No better proof can be given of the truth of what I have just said than the statement, which I find in Grünwald's recent work on the treatment of laryngeal tuberculosis[2]—namely, that out of 93 radical operations undertaken for the cure of what was supposed to be laryngeal cancer, in not less than 17 the diagnosis turned out to have been mistaken—that is, in nearly 20 per cent.—and if reliable statistics existed as to the total number of diagnostic mistakes which had been committed in operations for what was supposed to be malignant disease of the larynx, and which turned out to be tuberculosis, I have not the remotest doubt that the percentage would be even greater. I here include, of course, tuberculous tumours as well as tuberculous ulcers. True, with sufficient care, the great majority of these mistakes can and ought to be avoided. Thus, even if the laryngoscopic appearances should be ambiguous, and neither characteristic of tuberculosis nor of cancer, other phenomena, such as enlargement of cervical lymphatic glands, concomitant signs in the lungs, the presence of tubercle bacilli in the sputum, rise of temperature, etc., will be of much assistance; and, further, microscopic and bacteriological examination of the secretion covering the laryngeal ulcer, and of fragments of the latter itself removed by means of curetting, will usually clear up the doubt previously entertained; but after all a number of cases remain, in which concomitant symptoms are conspicuous by their absence, and in which mistakes may easily be committed.

The differential diagnosis between tuberculous and syphilitic ulceration in middle-aged people may also offer considerable difficulties. Broadly speaking, it may be said that tuberculous ulceration is distinguished by the pallor of the affected parts, syphilis by its decidedly inflammatory character; that the development of the tuberculous ulcer is slow, that of the syphilitic very rapid; that phthisical ulcers are usually small and situated on both sides of the larynx, whilst syphilitic ulcers are, as a rule, from the very first comparatively big, solitary, and unilateral; and, finally, that the syphilitic ulcer is, as a rule, much deeper and more sharply limited than the tuberculous, which gives the part a more worm-eaten appearance. Again, however, it must be said that the characteristics of the tuberculous ulcer in middle-aged and old people often are not nearly so well marked as in young people, and that the general constitutional symptoms, their accompanying signs in other parts, and bacteriological examination ought all to be made use of for the differential diagnosis. Should, as would now seem likely, the *Spirochaeta pallida* be the real cause of syphilis, and should its presence become readily ascertainable, this will of course be a further important aid towards the differentiation of the two diseases.

The differential diagnosis between deep syphilitic ulcers and malignant disease does not, as a rule, offer great difficulties, because even in the ulcerating stage of cancer there is, as a rule, much greater tumefaction of the margins of the ulcer than is found in the tertiary syphilitic ulcer of the larynx; and additionally, if the cancer belongs to the extrinsic variety, the enlargement of the corresponding cervical lymphatics is as a rule much more considerable than met with in syphilis. There are, however, some cases in which the diagnosis may be very doubtful from the mere laryngoscopic aspect, and in which administration of iodide of potassium and microscopic and bacteriological examination of fragments removed may be necessary to clear up the difficulty.

4. *Diffuse Infiltration.*

The greatest diagnostic difficulties certainly are encountered when the three diseases present themselves in the form of a diffuse infiltration, occupying, as they do as a rule in such circumstances, either the posterior wall or one side of the larynx. May I confess that I have been sometimes equally surprised and amused when such cases have been shown in societies in order to obtain diagnostic help, and when some members cheerfully com-

[2] *Die Therapie der Kehlkopftuberculose.* München: J. F. Lehmann. 1907. Pp. 55.

mitted themselves after one such fugitive examination as is possible in the meeting room of a society, to a definite diagnosis as to the nature of an obscure infiltration? True, in some such cases concomitant signs may be extremely valuable, and greatly facilitate differential diagnosis, as, for instance, the simultaneous existence of tuberculous chest disease, of skin eruptions belonging to the tertiary stage of syphilis or other signs of that disease, or the coexistence of so considerable an enlargement of cervical lymphatic glands as is commonly met with only in malignant disease; but when such signs are absent, and when one has to make one's own diagnosis from the laryngoscopic aspect of a diffuse infiltration alone, occupying either the posterior wall of the larynx or one of its sides, being in some cases still covered with normal mucous membrane, or in others already superficially ulcerated, one cannot, according to my experience, be cautious enough in not committing oneself to a definite diagnosis from one examination. To give but one illustration of this: You all know the common experience, that unusual cases usually occur in couples. I shall never forget the cases of two men, each aged 50, who by chance consulted me on the same morning, one immediately after the other. In each case the complaint was about difficulty in swallowing, about thickness and weakness of voice, occasional slight pain in the throat, not shooting into the ears, and about great increase of secretion from the throat. The laryngoscopic appearances in both cases were so similar that the cases appeared to be, as it were, twins. In both cases the posterior wall of the larynx was enormously thickened, and the movements of both arytenoids, which were much swollen and congested, were somewhat impeded in either direction. In neither case was there any considerable cachexia or any swelling of the cervical lymphatics, and in both cases there was no distinct history of syphilis. Yet, iodide of potassium being at once prescribed in both cases, one patient was cured within a few weeks; whilst in the other, after a short temporary improvement, the unmistakable symptoms of malignant disease developed, to which the patient ultimately succumbed.

These cases, which occurred at a comparatively early period of my practice, were a lesson, for ever cautioning me against rashly making any definite diagnosis in cases of infiltration of the larynx. As a rule, after a certain period of observation, coupled with investigation of all concomitant signs and symptoms, and administration of iodide of potassium, the diagnosis is cleared up. A few cases, however, remain obscure till the very end, and even at the *post-mortem* table cannot be decided, so that only subsequent microscopic examination may settle the actual nature of the case. An instance of that sort was reported many years ago by Dr. Samuel West.[3]

The truth of the matter is that the perichondritis, which may be engendered in cases of syphilis and tuberculosis as well as in malignant disease, in some cases so completely masks the signs of the original affection as to render the diagnosis from the laryngoscopic aspect alone practically impossible; and the difficulties of differential diagnosis are the greater, because not only perichondritis from other causes than those which form the subject of to-day's discussion, but also obscure *infective* inflammations of which as yet very little is known clinically, but which are very unpleasant realities, may laryngoscopically be perfectly indistinguishable from tuberculous, syphilitic, or malignant infiltration.[4]

Nor ought one to judge too rashly from a certain degree of improvement occurring in the appearances and in the symptoms from the use of iodide of potassium. That drug, as you know, has a resorbing influence, not only upon syphilitic, but also upon inflammatory products of other origin, and fallacious amelioration not at all rarely takes place in cases of malignant disease which is but too quickly doomed to disappointment. Only when actual disappearance of the doubtful infiltration has taken place under the use of the drug is the diagnosis of syphilis justified. From the moment that the infiltration begins to break down the diagnosis, of course, becomes easier through the fact that microscopic and bacteriological examination of the secretion, and of fragments of the base and margins of the ulcer removed by curetting or by forceps, places a number of additional diagnostic weapons in the hands of the practitioner. Still, as the literature of our speciality shows, diagnostic errors in cases of this kind are anything but uncommon.

My final remarks apply to

5. *The Combination of Two or More of the Diseases under Discussion*

in one and the same patient, and to the diagnostic difficulties engendered thereby. The possibilities here occurring are manifold, and capable of every conceivable permutation. A tuberculous patient may become syphilitic or affected by malignant disease. A syphilitic patient may acquire tuberculosis or cancer. A victim to malignant disease may—theoretically at any rate—fall a prey to either tuberculosis or syphilis, although seeing the age at which malignant disease usually occurs, subsequent infection with either tuberculosis or syphilis will in the nature of things but very rarely occur. Even a simultaneous occurrence of all three diseases in one and the same patient is by no means beyond the limits of possibility, although I am not aware that a case of this kind has actually been recorded. Again, when two of the diseases named occur in one and the same person, it is possible that their manifestations may either arise in one and the same organ and at one and the same time, or that they may follow one another, or that the manifestations of the one may appear in one part of the body and those of the other in another. Thus a patient may simultaneously have tuberculous and syphilitic ulcers in his larynx, or he may have a tuberculous infiltration in his larynx and an eruption of roseola on his skin. A patient suffering from pulmonary tuberculosis may at the same time be afflicted with cancer of the larynx, or a patient suffering from cancer of the liver may at the same time show in the form of adhesions and loss of substance, or even in the form of fresh gummatous ulceration, the effects of constitutional syphilis in his larynx. Or again, phenomena of deep destructive ulceration combined with tumefaction in another part of the larynx may represent the simultaneous occurrence of both syphilis and cancer, but this event is a much rarer one in the larynx than it is in the tongue.

In former days it was a sort of axiom that tuberculosis and malignant disease were mutually exclusive of one another, and never occurred simultaneously in one and the same person. This notion, however, has long since exploded, and I have myself recorded a case in which,[5] as shown by the *post-mortem* examination, laryngeal cancer co-existed with pulmonary tuberculosis.

It need not be said that the simultaneous occurrence of two of the diseases under consideration will, as a rule, greatly enhance the diagnostic difficulties. Even when their manifestations do not appear simultaneously in the larynx, but only one of them produces pathological changes in that organ, whilst the other constitutional disease affects quite another part of the body. the diagnosis may be thereby rendered much more difficult. Take, for instance, the case of a person suffering from pulmonary tuberculosis and obstinate catarrh of the larynx. The presumption would, of course, be in favour of tuberculosis of the larynx as well, more particularly so when a bacteriological examination has been made and tubercle bacilli have been found. Yet the laryngeal congestion may be due to secondary syphilis, the pulmonary and bacteriological signs notwithstanding. The possibility of such a combination, therefore, ought always to be remembered, and tentative antisyphilitic treatment should be introduced if there be the slightest doubt about the matter. Nor should, if there be any ulceration in the larynx, an examination of the secretion from it for *Spirochaeta pallida* be neglected. Again, take a case like the one above referred to—namely, the case of a middle-aged man, with a suspicious growth in the larynx, who has at the same time undoubted tuberculosis of the lungs and tubercle bacilli in his sputum. The presumption naturally would be that the laryngeal disease, too, was tuberculous. Still, as this and a few other cases show, this presumption is not infallibly right, and the possibility of a simultaneous occurrence of

[3] *Pathological Society's Transactions*, vol. xxxviii, p. 35.
[4] Semon, Some Points in the Diagnosis and Treatment of Laryngeal Cancer, British Medical Journal, February 2nd, 1907, pp. 241, 242.
[5] Reports of the Throat Department of St. Thomas's Hospital, 1885, vol. xiii, p. 47.

laryngeal cancer with pulmonary tuberculosis ought not to be lost sight of.

Even more difficult are the cases in which manifestations of two of the diseases coexist in the larynx. Under such circumstances, the characteristic phenomena of each of them may and do become completely blurred, and it will be only from the employment of every kind of additional information that a correct diagnosis may ultimately be formed. In not a few instances, however, of this kind it will be very difficult, or may, indeed, be impossible, to unravel the true nature of the combination. Under all circumstances, in obscure cases the possibility of a previous syphilitic infection, even if there be absolutely no history of such, should be kept in view, and iodide of potassium should be given as a help towards clearing up the diagnosis. A thorough examination should be made, not only of the larynx, but of the patient's whole body, and every help that could be afforded by investigation of the patient's temperature and weight, by the family, and his own previous history, by microscopic and bacteriological examination of the secretion and fragments removed, should be made use of.

Many a time in my experience have I been painfully aware of the imperfection of our knowledge concerning the differential diagnosis of tuberculosis, syphilis, and malignant disease of the larynx. Often enough have I keenly felt my responsibility when I had to advise as to the performance of a radical operation and when I was by no means absolutely certain of the true nature of the disease in the individual case. But only when preparing this paper for your consideration has it become quite clear to myself how great and manifold are the difficulties which we may encounter in trying to establish a differential diagnosis between the three diseases. Let me hope that in the discussion following these remarks further light may be thrown on what is no doubt one of the most difficult, as it is one of the most interesting, chapters of our speciality.

II.—W. Jobson Horne, M.D., B.C.Cantab.,
Surgeon to the Metropolitan Ear, Nose, and Throat Hospital; formerly Ernest Hart Scientific Research Scholar of the British Medical Association.

Some few years ago—it was on the occasion of the British Congress for the Prevention of Consumption—I had the pleasure of conducting some eminent laryngologists round the Pathological Museum which was formed in connexion with the Congress. One of my visitors commented on the large amount of space which had been allotted to the larynx, and on the introduction of specimens illustrating diseases other than tuberculosis of that organ. Side by side with the specimens of laryngeal tuberculosis were placed, for the purpose of teaching differential diagnosis, examples of syphilis, lupus, leprosy, carcinoma, and pachydermia of the larynx.

The explanation I offered for the introduction of these specimens was that the eye trained to recognize changes in the larynx caused by tuberculosis would make very few errors indeed in the diagnosis of laryngeal diseases. To this my visitor replied, "Quite true, my good fellow, but where are you going to meet with such a monster?" If the dictum is true, let us hope that we are all monsters, or if we are not, that we are gathered together to-day with a view of becoming monsters; for I purpose approaching the subject of our discussion from the standpoint of the exclusion of tuberculosis.

With a view of arriving at a solution of a problem such as the one before us, it is as well to have some practical method or scheme to work upon. The method of investigation should have a scientific basis, it should be workable, it should not subject the patient to experimental tests, either of an operative or therapeutic nature, if such tests would be detrimental to the patient's recovery. The scheme I shall submit is one of elimination.

When the practitioner, who is in regular attendance, offers an opinion upon an ambiguous disease of the larynx, I find that he is generally correct. He is thoroughly conversant with his patient's previous health and family history, and is in a position to exclude tuberculosis and syphilis as possible factors. The natural anxiety of a specialist is for fear that he overlooks malignant disease in its earlier stages. This anxiety is reflected in the fact—in my experience—that when an expert makes an error in diagnosis it is usually on the side of regarding an innocent growth as malignant, and not on that of overlooking malignant disease. It is a good error, but none the less an error in diagnosis. When I say "in my experience," perhaps I should amplify that by adding that it has fallen to my lot in the course of clinical work to spend some ten years of my life in the dead-house and the pathological workroom. In that time there have passed through my hands many specimens of tissue removed from the larynx in the belief that they would show malignant disease, and which have occasioned surprise when they have demonstrated tuberculosis. More than once I have known thyrotomy performed under a similar misapprehension, and I have known also the entire larynx removed in a case of tuberculosis mistaken for malignant disease. In this experience I am not alone. Let me assure you that this reference to errors in diagnosis in the practice of others is made with all humility that is born of pathology; it admits of only one interpretation, namely, gratitude, for, however learnedly we may talk here and elsewhere, it is quite evident that each one of us will have to bear his cross in silence before he can lay claim to experience.

The elimination of tuberculosis is, therefore, a point to be gained, and I would suggest that it is the most practical way of arriving at a positive diagnosis of cancer. The suggestion is not made to satisfy an idle fancy. It is dictated, as I have shown, by pathological as well as by clinical facts. There are difficulties at times in adopting this course I admit, but in the present day they are not so insurmountable, and to them I shall revert.

It is not my intention to describe and differentiate the clinical signs and symptoms met with in typical and uncomplicated cases of tuberculosis, of syphilis, or of cancer of the larynx. In doing so one would be recapitulating a great deal of what Sir Morell Mackenzie wrote, and to which there is very little to be added. Moreover, it is understood that our discussion is not concerned with typical cases—although the term "typical" in this matter must be a relative one. It is also understood that the discussion is limited to intrinsic disease of the larynx. Nor is it my intention to discuss the value of any one sign in the differential diagnosis of these diseases. It is more with general principles that I shall deal in arguing from the unknown to the known.

Speaking generally, there is very little to be gained by putting the patient through a lengthy inquiry into the history of his case or an account of his symptoms. These can be supplied by the patient's medical attendant. It is better for the larynx to have remained at rest as long as possible before the examination is made, and, needless to add, it is also better that that examination should be made unprejudiced by any previous expression of opinion.

Before proceeding to the objective aspect of the matter there are, however, four subjective factors which may be usefully considered. The four questions which I would previously ask are the following:

1. Pain—is it constant or intermittent?
2. Vocal function—has it been impaired previously, and, if so, after what interval of immunity was there recurrence?
3. Is there any evidence of fibrotic degeneration? What is the condition of the urine?
4. Has the larynx recently undergone any local treatment?

Pain is experienced, relatively, much earlier and more continuously in malignant disease. At first it is localized to the larynx, and afterwards it radiates to the ears. Whereas, in tuberculosis, and still more so in syphilis, there is often a noteworthy absence of pain when the larynx is at rest.

Hoarseness or impairment of the vocal function for a long period is not against the disease being malignant; but a recurrence of impairment of the vocal function after an immunity for an interval—it may be some years—is consistent with a recrudescence of tuberculosis in the larynx, when, perhaps, the disease has become arrested in the lungs. Further, the character of the voice is helpful. There is this marked difference between the hoarseness occasioned by tuberculosis and that by syphilis or malignant disease. In the former the voice is weak, perhaps a mere whisper, due, as I have shown, to a myositis of the intrinsic muscles, whereas, in cancer and syphilis, the voice is strong though hoarse. Impairment of the vocal function may be characterized as asthenic in tuberculosis and sthenic in the other two diseases. Fibrotic

degeneration in other organs points to syphilis or malignant disease, or pachydermia, rather than to tuberculosis, for it may be truly said that a person smitten with tubercle should pray to become gouty, using the word in its comprehensive and non-committal sense. As regards an inquiry into previous local treatment, it is not amiss to make quite sure the larynx has not been spoilt for an independent opinion by some previous application of drugs or cautery, or by an attempt to remove a portion of the affected part for an examination.

I now pass to the objective part of the matter, that is, to the laryngoscopic examination itself, and I propose to place the cases in four groups, it being understood that each case is ambiguous and that we are arguing from the unknown to the known.

My four groups are as follows:

1. Those cases in which there is only congestion of the laryngeal mucosa, and perhaps impaired mobility of a vocal cord. The congestion may be patchy and limited to only one part, or it may be diffuse and involving both sides. The paresis may be bilateral.
2. Those cases in which there is (perhaps in addition to congestion and impaired mobility) some tumefaction, if not a definite tumour or excrescence.
3. Those cases in which in addition to congestion, impaired mobility and tumefaction, there is ulceration.
4. And lastly, those in which there is external evidence of disease, such as glandular enlargement.

As the discussion before us is intended to be essentially a clinical one, I do not propose to divert it into pathological channels, but a little pathology is very helpful at times as an aid to clinical diagnosis. In quite the earlier stages of tuberculosis and malignant disease there are fundamental changes in the larynx, such as congestion, tumefaction, and paresis, mentioned in Groups 1 and 2, which, whilst appearing to overlap, in reality do not join issue. To differentiate these changes a minute knowledge of the histology of the larynx is essential, and more particularly of the distribution of the two varieties of epithelium, the columnar and the tessellated, lining the larynx. A knowledge of the sites of transitional epithelium is also essential to the elucidation of the biological processes we have to consider. I will not weary you with a detailed account of the part played by the epithelium in the larynx in health and disease. Suffice it for me to remind you that this epithelium presents striking contrasts at different stages of life. In the fetus its distribution is very different from that in the infant, in the infant from that in adult life, and again with advancing years there are further changes in the relative proportion of the columnar to the tessellated variety. Then, again, comparing age with age, there is a difference in the two sexes, and in this we have a clue to the relative frequency of intrinsic disease in the male compared with the female subject. In the male the epithelium seems to have a greater proclivity to undergo a metaplasia under the provocation of irritants and disease, with the result that there is a greater tendency to the formation of squamous-celled neoplasms.

At the Edinburgh meeting of the Association in 1898 I demonstrated that the part of the laryngeal mucosa which is richest in glandular structure is most vulnerable to tuberculous infection. I have also shown that that part is covered with columnar epithelium. Whereas the part which is clad with squamous epithelium is relatively free from glands and immune against tuberculous infection, becoming involved in a tuberculous process only by continuity, and at a later stage of the disease. On the other hand, it is commonly accepted that epithelioma is by far the most common form of intrinsic malignant disease of the larynx. It is also commonly agreed that the ventricular bands and the vocal cords are the more frequent sites of origin of epithelioma. Personally I would restrict this statement to those parts of the ventricular bands and of the vocal cords which are covered with squamous epithelium, and would add to the statement the sites of transitional epithelium. All these parts can be well defined. For although the diameters of the larynx in any direction are less than an inch, for practical purposes the different areas to which I have referred are a mile apart.

It therefore follows from what has been said that it is of the utmost importance as an aid to differential diagnosis between tuberculosis and malignant disease, in the earlier stages which we are now considering, to localize the site of origin. Should the congestion be so diffuse as to involve the entire side of the larynx or both sides, then steps can be taken to reduce it by the application of cocaine and adrenalin by means of a drop syringe in preference to a spray. Dr. StClair Thomson has already called attention to this aid in the diagnosis of lupus of the nose. Having localized the site of origin in this way, we have grounds for stating whether the disease is tuberculous or malignant. The exceptions to this statement, such as the development of adenoid cancer in the regions vulnerable to tuberculosis, do not invalidate the general application of the principles I have stated.

Passing now to another point in an early differential diagnosis. All three diseases have this in common, they consist essentially—but in varying degrees—of a cell proliferation and infiltration, which gradually burrows extensively and deeply into the surrounding parts, with the result that the intrinsic muscles sooner or later become affected, and impaired mobility of one or both cords results. It therefore follows that this impaired mobility is not peculiar to malignant disease. In tuberculosis, however, the paresis is less marked and less persistent than it is in cancer, inasmuch as it is occasioned by a myositis secondary to a bacterial invasion rather than to a cell proliferation, as in cancer. All the same, I have seen laryngeal tuberculosis ushered in by double abductor paralysis. In pachydermia laryngis simplex impaired mobility of the cord may occur. In expressing this opinion I find myself at variance with my co-referee.[1] I have not only observed clinically a fixation of the cord in pachydermia simplex, but I have also microscoped specimens of this pathological condition, in which the damage done by the deposition of fibrous tissue in interrupting the continuity of the intrinsic muscle fibres would fully account for the clinical phenomenon. It would, therefore, seem that impaired mobility of a vocal cord is of value as evidence of malignancy in those cases in which the disease presents a well-defined tumour or excrescence, other than pachydermia, which may be mistaken for a benign neoplasm. It is also evidence of the extent of the growth beneath the epithelium. The sign is also of service in cases in which the origin of the growth is so deep-seated that fixation of the cord is the only clinical feature observable in the larynx above the level of the glottis.

Passing on to Group 2—namely, those cases in which there is a tumefaction, if not a definite tumour or excrescence—it will be inferred from what I have already said that its situation will assist in excluding or admitting tuberculosis into the diagnosis, unless the tumour happens to be situated at a site of transitional epithelium such as the vocal process. This brings me to a brief consideration of pachydermia laryngis. Some few years ago, at the Portsmouth Meeting of the Association in 1899, and in a paper privately published as a thesis in the University of Cambridge, I brought forward evidence to show that pachydermia laryngis should be regarded more as evidence of disease than as a disease in itself. I showed that a pachydermatous condition may be brought about by syphilis, or tubercle, or malignant disease, and that even the variety which might claim to be called simplex was not uncommonly associated with fibrotic disease in other organs. The three diseases we are considering, acting as irritants, may all induce a hyperplasia followed by a metaplasia of the superjacent epithelium, with the formation of the clinical appearances of pachydermia. It therefore follows that a diagnosis of pachydermia is not sufficient in itself. One must be prepared to exclude the causation of the pachydermia. In illustration of this point I may perhaps be allowed to refer to the case of the late Emperor of Germany. Some of you may remember that Virchow gave it as his opinion, from an examination of the part removed, that the disease might be of the nature of a pachydermia laryngis. No mention was made of any cause for the pachydermia. At that time the condition had only recently been described by my old teacher, and it is evident from reading his report that the condition was not then regarded as a manifestation of the underlying disease.

This brings me to a consideration of the advisability and of the manner of removing a portion of the suspected growth for microscopic examination. It is now generally

[1] Sir Felix Semon, Malignant Disease of the Larynx, *Encyclopaedia Medica*, vol. vi, p. 386: "Pachydermia, in my experience, never causes, however much the tumefaction may be developed, impairment of the mobility."

agreed, I think, that unless the patient is prepared to submit to an operation for the removal of the disease in the event of the microscopic examination being positive, it is as well to advise the patient not to undergo this little exploratory operation. In the event of the removal of a portion of the growth for examination being decided upon, it is as well for it to be understood that a negative report from the microscopist counts for nothing. It certainly should not be made use of for shifting the responsibility of a negative diagnosis from the clinician on to the pathologist. For the pathologist can go no further than report upon the tissue submitted to him. It is therefore incumbent upon the clinician to remove a portion in such a manner as to reach the deeper part of the growth. It is unnecessary to add that this is more easily carried out in those cases in which there is a distinct excrescence than when there is only a diffuse tumefaction. Failure is in no small measure to be attributed to the forceps used. Those cutting from before backwards, or laterally in the same line as the shaft of the instrument, are best avoided, for they cannot be insinuated so as to reach the deeper part so well as those of the punch-cutting variety, in which the knife is set at an angle to the shaft of the instrument. The piece of tissue removed should be placed in sterilized water or saline solution, in order that an animal experiment may be conducted with a fragment, with a view to finally excluding tuberculosis. The remaining portion could then be prepared for microscopical examination, and if the operator has not cut deeply enough to reach diseased tissue or to permit of a useful opinion being formed, this should be clearly stated in the pathological report.

I now pass to a consideration of the third group of cases, in which the tumefaction has broken down and there is ulceration. I will not dwell upon the relative significance of pain, fetor, the nature of the ulcer, or the character of the discharge. At this stage we are considerably assisted in excluding tuberculosis by the pathological fact to which I have drawn attention elsewhere, that when tuberculous disease in the larynx presents ulceration that in the lungs has already reached cavitation. True it is that the pulmonary disease may have become arrested, or may be so deep-seated as to escape the vigilance of a most careful auscultation. But in such a case a Roentgengraph would probably disclose any old disease in the lung if the temperature chart, the repeated examination of the sputum, and animal inoculation with the same have failed to do so.

At times it is not amiss to go below the belt in seeking the diagnosis of ambiguous ulceration of the larynx. Some few years ago there came under my notice a case of laryngeal ulceration which was suggestive of malignancy. There was extensive tumefaction with sloughy ulceration of one side, and there was also marked cachexia. The man was brought into the hospital. A study of the temperature chart led to an examination of the spleen, and this in turn to a bacteriologic culture of the blood, with a positive result. At the autopsy a diagnosis of infective endocarditis was confirmed. The primary seat of infection was undoubtedly the larynx. The features in the case were that little or no pain was complained of by the patient, that the alteration of voice was very slight in proportion to the extent of the laryngeal disease, and that there was an absence of glandular enlargement.

Passing now to the fourth or last group, that in which there is external evidence of laryngeal disease such as glandular enlargement. This might appear to be in itself presumptive of the disease in the larynx being of a malignant nature. It does not, however, exclude the possibility of it being tuberculous, for I have found that when the disease has become arrested in the lung, but from any cause has been lighted up again in the larynx, then there is the danger of the cervical lymphatic glands becoming infected, and more particularly so if such a larynx has been subjected to any active local treatment.

Before eliminating tubercle in a differential diagnosis, one should mention that cases have been recorded in which tuberculosis and malignant disease have occurred in the same larynx. I can accept the statement, for I have observed it both in the larynx and in the lungs. One case in the course of ten years and out of many hundreds of *post-mortem* examinations, I think might almost be regarded as a negligible quantity, but in the cases that we are considering it is as well to bear in mind that it is the unexpected which is sure to happen.

From the foregoing it may be assumed that tubercle has been eliminated from the diagnosis, so that the problem now resolves itself into a diagnosis between syphilis and malignant disease. Having excluded tuberculosis, large doses of iodide of potassium may now be pushed without the possibility of doing the patient harm, and, assuming that the condition clears up—as it generally does if it is purely syphilitic—the diagnosis may be allowed to rest with that of syphilis, more particularly if there is a strong history in support of it; but, needless to add, such a history would not exclude the possibility of syphilis being only a factor in the case and not the important part of the disease. The scar tissue formed in the process of healing of syphilis of the larynx presents features of a plastic nature not met with in tubercle and malignant disease.

In connexion with cancer of the larynx I would mention briefly transillumination as an aid in the differential diagnosis. It is a matter of common knowledge that with an ordinary laryngoscopic examination it is not easy to investigate at all thoroughly the parts of the larynx below the level of the vocal cords. It is also known that in tuberculosis and syphilis of the larynx the parts above the cord are those mainly affected, whereas in malignant disease there may be deep infiltration, burrowing, and forming a definite tumefaction on one or both sides of the subglottic region. In such cases I have found of service a double lamp, such as that which is used for the transillumination of the frontal sinus. By placing it on either side of the thyroid cartilage one is enabled to obtain a better view of the subglottic region in a mirror placed in the mouth in the usual way, the investigation, of course, being conducted in a dark room. In this way one is able to form a better opinion, not only of the presence or absence of any disease in this region, but also, when present, of its extent.

Finally, I come to a brief mention of the value of the opsonic index in the diagnosis of malignant disease of the larynx. So far as I can gather, I fear it will not be of much service to us when that service would be most helpful.

The reference which I have made, in the brief fifteen minutes at my disposal, to certain scientific principles which may be of service in arriving at a solution of the problem before us, must not be misconstrued to mean that in them we shall find a solution of all our difficulties. Whilst I would be one of the first to admit that clinical experience, *per se*, brings with it a certain something that nothing else can bring, at the same time one has to bear in mind that clinical experience cannot be measured or weighed like scientific data. Moreover, one's own clinical experience is so often fallacious, and teaching based upon the experience of one person, unsupported by scientific facts, is after all empiricism. All that I have attempted to do is to briefly indicate how a diagnosis may be arrived at on some lines of scientific deduction, so that should the opinion expressed be proved to be an erroneous one, we have at least the consolation of knowing that it cannot be characterized as sheer guess-work. The great lesson that is borne in upon one by attempting to discuss a matter of this sort is the all-importance of a laryngoscopic examination and of that examination being made at the earliest possible opportunity. We are dealing with the three most dreaded diseases of the larynx; all three are amenable to arrest, if not to cure; the differential diagnosis of these three diseases might well be a chapter in itself in any textbook; their respective treatment is diametrically opposed to one another, and accuracy in diagnosis is half the cure. All three are so insidious in their onset that they would seem to have no beginning, and yet so progressive in their character that an early examination is the only hope of saving the larynx from becoming a most veritable citadel of misery.

DISCUSSION.

Dr. N. C. HARING (Manchester) said that after the masterly exposition by the openers of the discussion, it was to be regretted that no new light had been thrown on the difficulties of diagnosis in early or aberrant cases—especially so when Sir Felix had probably had a greater experience of malignant laryngeal growths than any other

man. The greatest difficulties in diagnosis were found in the early stages of the disease, just at a time when surgical interference, if required, would be most successful. This rather suggested that, if an error were to be made, it was wiser to operate when in slight doubt, rather than to leave matters alone with the risk of postponing extirpation to a time when it would have a smaller chance of a successful issue. Limitation of the movements of a cord, out of proportion to the visible lesion, was often the earliest sign of malignancy, and in his experience was more marked in malignant growths than in cases of either tuberculous or syphilitic affections—of course, paralyses of the recurrent laryngeal were to be excluded. Removal of fragments by an *emporte-pièce* was of great value when the histologist could give a positive answer; there was, however, a possible fallacy in the removal of adjacent tissue which might be normal or only affected by congestion. A few special points had attracted his attention: (1) That in secondary syphilitic affections of the larynx the congestion was most pronounced in the anterior portions of the larynx. (2) That the most difficult of tuberculous lesions to diagnose were those in which the lesion was situated on the posterior portion of the larynx low down. The difficulties were twofold, first, the lesion itself was not easily seen, and secondly the pulmonary signs were not so well marked in several of the cases that he had seen, as was usually the case in laryngeal tuberculosis. He had known such cases to be mistaken on the one hand for hysteria and on the other for malignant growth of the oesophagus. The early symptom was dysphagia. (3) Other laryngeal affections might occur to increase diagnostic difficulties. A case he had seen of post-enteric perichondritis which improved slowly but not to complete cure would have been utterly undiagnosable except for the history of its occurrence as a sequel to enteric fever.

Dr. Herbert Tilley (London) related details of a case which illustrated the difficulty of making a diagnosis between syphilis, tubercle, and malignant disease: Patient, male, aged 52, complained of hoarseness of six months' duration. His general health was good, no history of syphilis. No definite signs could be made out in the chest beyond some evidences of old adhesions over the back of the left upper lobe. Laryngological examination showed that the region of the left ventricular band and vocal cord were occupied by a greyish-white mass with a granular surface, which caused complete fixation of movement of that side of the larynx. The administration of iodide of potassium caused no improvement in the appearances. Opinions were agreed that it was a case of malignant disease of the left side of the larynx and thyrotomy was performed. Microscopic sections showed round-celled infiltration of the mass, and inoculation experiments proved that tubercle was the cause of the trouble. The external wound healed firmly, but five weeks later it broke down. Definite tuberculous ulceration was obvious, and eventually the scar was completely dissected out. The patient recovered, and had remained well up to that date. The operation took place two years ago. He thought that too much had been made of tumefaction with fixation of a cord as a pathognomonic sign of malignant disease. It was not so. If a tumefaction were associated with fixation of a cord on attempted movement, it was strongly in favour of malignant disease, but the latter might be present with a freely movable cord if the disease was superficial and in its early stages. He related a case which proved this contention, and which also showed how inadvisable it was to apply irritating and caustic remedies to a larynx in which a doubtful lesion was present. If doubt existed, and experts were undecided as to its nature, the patient should be taken into confidence, the difficulties explained, and a course of treatment—possibly exploratory thyrotomy—advised. If no radical operation were performed, the larynx should be left alone, and carefully watched for a few weeks. In the meantime, iodide of potash or inunction of mercury might be used to eliminate the possibility of syphilis, while the evening temperature should be noted. Retention of the patient's weight would also help to exclude the probability of tubercle. He had listened with great interest to Dr. Horne's paper, and to his suggestions that help in diagnosis might be gained from accurate observation as to the starting-point of the disease in the larynx. It was, however, early to speak of what help might be thereby gained, but speaking from his practical experience, he felt that it would not give any reliable data on which to base a diagnosis.

Dr. Dundas Grant (London) said there could be no more practical subject introduced, nor two more competent authorities to introduce it, than those who had done so that day. All who listened to them would feel that they had been amply rewarded. There were general questions and points of detail which might be considered, but it was impossible even to attempt to touch all the points that had been suggested. They must feel relieved to learn that their difficulties had been shared by an authority of so great experience as Sir Felix Semon. Dr. Grant wished they could go away from the meeting feeling that they had more absolute data for diagnosing these various conditions. Unilateral congestion in the very early stages was suggestive of tuberculosis, but if the condition was unilateral at a late stage it was probably not tuberculous. A great deal had to be learned by familiarity with the examination of these parts. Sometimes, by looking at the cord, one could say that it was tuberculous, though unable to say why. He had seen cases in which tuberculosis showed itself by a sort of roughness along with the redness of the vocal cord, a fine roughness of the surface distinguishable from the beefy redness of simple inflammation of the cords. Sometimes in later stages there was pallor of the cord, accompanied by a cushiony look due to a slight oedema. Dr. Horne brought it out more distinctly on a former occasion than he had done this morning. The redness of secondary syphilis was not distinguishable from the congestion of any other cause unless the mucous patches could be seen. There was an acute laryngitis which was described and pictured, with white patches, and which he had only seen once in the case of a young boy. It cleared away, but, if it had occurred in a subject likely to have secondary syphilis, it would have caused great difficulty. In one case he saw what appeared to be a condyloma on the vocal cord of a man who had had syphilis, but it had disappeared again in about ten days. This seemed to be a herpetic condition similar to that described by Mr. Jonathan Hutchinson as occurring on the prepuce of persons who have suffered from syphilis. In regard to the "tumour" form of tuberculosis in an elderly man, he had observed a growth beneath the anterior commissure, which looked innocent and like a fibroma, but, when removed, was found to be tuberculous. It was shown at the Laryngological Society. The general infiltration of tertiary syphilis was well described in Heymann's handbook; it resembled a thorough-going tuberculous infiltration of the epiglottis and the ary-epiglottic folds, only it looked a little "quieter," if one might put it in that way. He brought a case before the Laryngological Society of London, and the question of its being a syphilitic infiltration did not seem to strike him or the other members, but shortly afterwards a typical ulcer appeared on the posterior pillar of the fauces which entirely disappeared under iodide of potassium and mercury. Dr. Horne had hit upon an excellent mode of thought which helped to clear the ground. He said that it was a very common error for tuberculosis to be diagnosed as malignant disease. There was also the possibility of erring in the other direction, and those who saw a great deal of tuberculosis were very apt to diagnose it when the disease was something else. Its elimination was of the greatest importance, and to do this it was essential to consider both the general and the laryngoscopic appearances. The great thing was to accustom oneself to the look of the part for which a good light and good eyesight were essential. The opsonic index was also of help in excluding tuberculosis. Dr. Horne had laid great stress upon the removing a portion of the swelling for examination under the microscope. Dr. Grant lately had a case of infiltration of doubtful nature which he regarded as tuberculous, but the chest and sputum were negative. He removed a part with the punch forceps for examination, but no tubercle was found. When he subsequently examined the throat, the patient coughed, and the sputum was found to contain tubercle bacilli. One had to guard oneself against error when negative results were obtained from the examination of sputum or of the tissue removed, as the sputum given might be only or mainly salivary secretion, or the tissue removed might not involve the diseased part. The punch forceps cutting upwards and downwards was the most thorough-

going instrument. Jurasz's forceps took a bigger mass than it could exactly bite off. On one occasion he removed a piece of the vocal cord with his forceps with the result that too much was taken away. This showed complete absence of epithelioma, and the patient was now in the enjoyment of everything except a good voice. These were a few of the accidents which had occurred during his experience. In another instance, however, the appearance of the larynx suggested tuberculosis, but the portion removed by means of Jurasz's forceps was found to be epitheliomatous.

Dr. G. W. HILL (London) agreed that the first measure was to eliminate by scientific methods the question of tubercle, and he thought this had been generally, consciously or unconsciously, done. It was a pity that animal experiments, the culture of tubercle, and the test of syphilis by iodide of potassium, all took up so much time in cases where delay might really be a matter of moment. The administration of iodide not only delayed but might improve for the time being a case of cancer, lessening the concomitant inflammatory condition. It also failed to clear up the mixed cases. They were also not free from danger in tumefaction of glottic and infraglottic regions. In addition to iodides he also used mercurial inunctions over the larynx. He in one case had had experience of great oedema and very serious laryngeal obstruction as a result of iodide administration, and he thought that this risk should be laid before the patient and the medical attendant.

Dr. R. H. SCANES SPICER (London) considered that the opening paper was an able review of the points on which laryngologists had been accustomed to rely in arriving at a differential diagnosis between cancer, tubercle, and syphilis of the larynx, and he congratulated Dr. Jobson Horne on having proposed a fresh method of approaching a case in which the diagnosis was doubtful as between the three diseases, namely, to regard the case as tuberculous until the contrary was proved. Since there were so many ways of readily and rapidly obtaining positive evidence of tuberculous infection if present, or of accumulating negative evidences, the speaker thought that this mental aspect towards the problem was likely to mark a distinct advance; for, though not infallible, it could be but seldom that tuberculosis thus systematically sought for could be overlooked if present, or excluded in error. If absent, it was a comparatively easy matter to decide between cancer and syphilis. Yet there still remained the mixed cases to be grasped. He did not think that a set systematic exclusion of tubercle had hitherto been the practice. Casually it might sometimes have been done; but from his own observations what usually took place was a more or less thorough weighing of pros and cons, and then a conclusion rather instinctive than logical, yet no doubt usually right in the case of the experienced laryngologist. The speaker also thought the suggestion as to the histological character of an endolaryngeally-removed fragment giving a clue as to the probable site of origin of a malignant formation in the larynx likely to be of much value from a scientific point of view. The special object of his own remarks was to bring out that it was often a more difficult, and in his own experience a more frequently occurring, problem to differentiate early enough posterior wall cancer from tuberculous and syphilitic manifestations attended with diffuse infiltration and perichondritis simulating it than it was to diagnose intrinsic laryngeal cancer (vocal cord area) from its tuberculous and syphilitic imitations. In view of the recent work of Glück and others, he did not regard the grouping of malignant disease into intrinsic and extrinsic—valuable as it was with reference to gland infection and spread—of the same importance as formerly; nor did he think all the present statistics as to the relative frequency of cancer of intrinsic and extrinsic origin were reliable. Dr. Jobson Horne had stated that he had only had in view intrinsic cancer of larynx in preparing his comparison. Now in the speaker's experience posterior wall cancer was far more common than that of the vocal cord area, and when the disease appeared more advanced in the former site, the presumption was rather that the cancerous process had commenced there, or had spread from the pharynx or oesophagus, than that it had originated in the latter, which, however, it might be invading. Twenty years' hospital and private special practice had led him to have no doubt that posterior wall cancer occurred in scores of cases as against units in which it could be positively affirmed—not surmised—that the disease was of intrinsic origin. He was at a loss to fully explain this discrepancy between his own experience and the statement first made in Mr. Butlin's monograph that intrinsic cancer appeared to be commoner than extrinsic, and which had since then been copied from one textbook into another. Sometimes the terms "intrinsic" and "extrinsic" were used as referring to the site of origin (as originally designed by Krishaber apparently) and at others to the site of implantation, maximum pathological change, or even subsequent extension. For example, De Santi quotes even Krishaber himself as saying, "as long as the cancer remains intrinsic, there is no cervical glandular enlargement; when it is extrinsic the glands are infected." He was by no means alone in this confusion. In a different category altogether were the statistics of Sir Felix Semon. At first sight they might appear to dispose of the contention raised; but when one considered the inseparable association of his name in the medical press for many years with the symptom of persistent hoarseness after middle age, it was only natural that the profession at large had referred to him the lion's share of such cases, and that most of his brother specialists, knowing his keen interest in the question, had brought him their own cases whenever possible. On the other hand, the cases—which he ventured to think formed the immense majority—that commenced with pain and difficulty of swallowing (rather than hoarseness) applied rather to throat surgeons and throat clinics, so that unless the observer was specially interested in this particular statistical point he would have left them unrecorded as commonplace, or perhaps classified them as cancer of pharynx or oesophagus where he might have deemed them to originate. With reference to the assistance to be derived from opsonic principles in differential diagnosis, having had exceptional opportunities of comparing laboratory investigations in this sense with clinical observations over long periods of time, he did not think that as yet these methods were sufficiently developed for dependence in cases in which expert clinicians were in doubt. Regarding the problem from a bacteriological point of view, the newer points were that experts now declared that the discovery of the *Spirochaeta pallida* in a lesion aroused a presumption that almost amounted to a certainty of syphilis; and as the organism had well-defined characters, and the processes of fixing and staining were easy, this examination bid fair to help them considerably in the near future in primary and secondary lesions. But the *Spirochaeta pallida* had never yet been found in gummata or other tertiary lesions, and these were the cases which most often required further evidence of their real nature. *Per contra* somewhat similar spiral organisms had lately been described by several independent observers in malignant growths, though it appeared that the processes for demonstrating the same were different—complicated and difficult.

Dr. BIRKETT (Toronto) said that he had listened to the discussion with interest and profit. He was anxious to hear of the experiences of his British colleagues upon the use of tuberculin, which had proved in America of the greatest possible value in doubtful cases, especially in those of localized hyperaemia of one vocal cord when physical signs were not present in the chest, and where tubercle bacilli were not found in the sputum. In such cases tuberculin had shown the presence of tubercle.

Dr. W. S. SYME (Glasgow) said with regard to the differential diagnosis between the catarrh caused by secondary syphilis and that of early tuberculous disease, he should be inclined to say that in the former the hyperaemia was deeper and rather of a purplish colour, and that the cord or cords were more generally affected, whereas in the latter the colour was pinkish, and the edge was the part chiefly involved. In a case lately seen by him, a young woman, there was hyperaemia chiefly confined to the edge of one cord, which also showed small thickening, giving one the impression that at these points infection with the tubercle bacillus had taken place. Although there was no history of tuberculous disease of the lung a diagnosis of probable early tuberculous disease of the larynx was made and subsequently tuberculous disease of the lungs became undoubted. He was glad to hear Dr. Jobson Horne refer to recurring loss of vocal function in relation to the

diagnosis of early tuberculous disease of the larynx. This was a point to which he intended to refer, and it seemed to him that a recurring loss of voice with intervals during which the voice was normal was strongly suggestive of early tuberculous laryngeal disease. This loss of voice showed itself often only after a very moderate use of the voice, and the patient complained of the effort to talk. Sir Felix Semon referred to tuberculous tumours, and in this connexion he should like to mention the case of a medical man which caused him as well as the patient himself a good deal of anxiety. About five years ago he underwent sanatorium treatment for early lung disease, and returned to his home quite cured, and at that time there was no affection of his larynx. This he was assured, both by the medical man at the sanatorium and by a well-known laryngologist. Nearly two years ago he came to see the speaker, complaining of hoarseness, and he found a swelling of about the size of a pea affecting the anterior end of the left ventricular band. As he was a man of 50 or thereabouts one naturally felt suspicious of malignant disease, at the same time of course bearing in mind the question of tubercle. Since he first saw him this swelling has remained practically unchanged. His general health was good. One knew that a tuberculous lesion in the larynx or elsewhere might undergo fibrous changes and cure without ulceration occurring; but what he should like to ask was how long a small growth in the larynx, which ultimately proves to be malignant, may remain unchanged. In the case he had mentioned he considered the swelling to be a cured tuberculous tumour.

Dr. A. Bronner (Bradford) agreed with Dr. Hill that mercurial inunctions were more reliable than iodide of potassium for eliminating cases of syphilis. The drawbacks were that inunctions were dirty and liable to give rise to domestic trouble if the patient was married. He had seen 3 cases of unilateral diffuse fibroma of the vocal cords in old men which at first looked malignant. Such cases were not described in textbooks. Were they common? Congenital specific laryngitis in children of 17 to 18 was not uncommon and was characterized by diffuse papillomata of red colour, which grew chiefly on the vocal cords and ventricular bands. These growths disappeared very rapidly under specific treatment. It was very dangerous to inject large doses of tuberculin for diagnostic purposes; it often caused acute oedema. It should only be used when controlled by the opsonic index.

Dr. J. B. Ball (London) said that in spite of what some speakers had said, he thought the administration of iodide of potassium was a valuable help in many doubtful cases. As to the diagnosis by exclusion, the exclusion of syphilis by iodide of potassium would suggest itself as the first step in the diagnosis of certain cases. In other cases the removal of a fragment for microscopical examination would be obviously the first thing to do; and in another class, no doubt, the exclusion of tuberculosis by some of the methods alluded to by Dr. Jobson Horne should be attempted.

Dr. Watson Williams (Bristol) said that in a large proportion of cases a definite diagnosis could be made without grave difficulty to the laryngologist, but Sir Felix Semon had rightly placed outside the scope of this discussion the consideration of cases which presented features which were associated with general symptoms or signs that were sufficiently characteristic to enable them to arrive at a diagnosis, and the questions before them concerned alone those borderland conditions which caused them so much difficulty and anxiety. A first question that must arise in their minds was whether, if the suspected lesion were malignant, it was one in which they could recommend radical operative measures, because it was so necessary not to delay a diagnosis when operation was possible, whereas if that were out of the question they were more than justified in watching and in adopting diagnostic methods that involved delay rather than risk a premature and unwarranted suspicion of malignant disease. One group of cases which were especially difficult were those early cases where one vocal cord or ventricular band was infiltrated without an obviously delimited tumour. Considerable assistance was afforded by the beneficial effect of complete vocal rest in partially clearing up the hyperaemic infiltration of tuberculous disease, whereas in malignant disease any relief was subjective, not objective. The weakness of the voice was more suggestive of tubercle, the weakness of movement of the cord of malignant disease. When infiltration was associated with definite tumefaction, and syphilis was excluded, they should surely freely remove a portion of the growth and subject it to examination by a histologist. If a fragment were removed it should be large enough or deep enough to give the pathologist an opportunity of expressing an opinion on the nature of the lesion.

Dr. McKenzie Johnston (President) said that the subject was one of very great importance, and he believed that they had assisted the general practitioner by their remarks. They had impressed the importance of early diagnosis, and they had shown that there was no high road to diagnosis, as the conditions met with were so variable in different cases. It was necessary that the profession should have it stated clearly that a diagnosis could not be made on the spot by a simple examination of the larynx, but that the conditions necessitate a careful consideration of all the circumstances of the case. He thought that the discussion would do a great deal to limit the number of mistakes, and that a diagnosis might be made at an earlier stage of the disease. He considered, therefore, that the discussion had been and would be of still greater use in this respect. He realized the great importance of separating cases of tubercle as soon as possible.

Reply.

Sir Felix Semon, in his reply, thanked the speakers for their kind remarks. He could not quite associate himself with the President's belief that the discussion would clear the difficulties in differential diagnosis. His own frank opinion upon the discussion was that they were very much where they were when they started. He would be delighted if Dr. Horne's diagnostic points would prove to be of great use, but he was doubtful, for his practical experience was that the helps mentioned were not of much use. He had seen typical tubercle, syphilis, and malignant disease start at all parts of the larynx. Of course there were broad clinical facts regarding sites of predilection, etc., which he had not mentioned, but when it came to a question of differential diagnosis between the three diseases under discussion he could not say that such had helped him much. He would agree with Dr. Horne in trying to eliminate tubercle whenever possible, but after all this was nothing new in the way of differential diagnosis. He had been, he thought, the first to draw attention to the great importance of impaired mobility of the vocal cords occurring in laryngeal cancer, but he had never done so in relation to the differential diagnosis between tubercle, syphilis, and malignant disease. It was in the diagnosis between innocent and malignant tumours that he laid such stress upon it as an important factor, and he still attributed as much importance to it as ever in this connexion. But if diminished mobility were not present one must not exclude malignant disease for this reason alone. The sign had positive value, but no negative importance, for there might be a superficial growth without impaired mobility. With regard to removal for microscopic examination, a growth no bigger than a pin's head may show definite evidence of epithelioma, and one case of this kind more than counterbalanced those in which no possible result was gained. The intralaryngeal removal should, however, only be done if the patient expressed readiness to immediately undergo radical operation if the microscopic examination should reveal malignancy. Again and again he desired to emphasize the desirability of not meddling with doubtful cases. Do not apply strong irritants; rather leave the larynx alone. He could not from laryngeal appearances differentiate between tuberculous, syphilitic, and malignant catarrh. If the discussion was to be of use to the profession at large they must not be too didactic in these cases. There was no high road. All might be mistaken in diagnosis, and because one once had seen a peculiar congestion of the cords in a certain case one must not conclude too rashly that similar appearances in another case meant similar disease. They must run the small risk of oedema of the larynx rather than the greater one of not giving iodides. His experience of tuberculin had been tolerably extensive when it was first introduced, and was not satisfactory. He had not used it much of late, but, provided that it was controlled by the opsonic index, he was not opposed to its employment. With regard to extrinsic and intrinsic carcinoma, the former

comprised the cases in which the disease starts from the epiglottis, the aryepiglottic folds, and the oesophageal aspect of the larynx; the latter are those in which the growth originates in the laryngeal cavity proper. Of course in many cases one could not say where the growth had started. Intrinsic cases were seen in private much more frequently than in hospital, because the first, and often for a long time the only, symptom was hoarseness, which did not worry the working man sufficiently to come for treatment until the disease was further advanced; but, if the history of a case was that hoarseness had been the first and for a considerable time the only symptom, he would not hesitate to say that it had been originally intrinsic, and had later become a mixed case. With regard to Dr. Horne's explanation of the differing seat of laryngeal cancer in the female, the speaker, though he had no better explanation to offer, could not yet definitely give his adhesion to that ingenious theory.

Dr. JOBSON HORNE (London) thanked the members of the Section for the attention they had given to the several points dealt with in his introductory paper, and said that, in view of the amount of time that had been taken up by the discussion, and also in view of the number of papers before them, he had been asked by the President to be brief in his reply. It would, therefore, be difficult for him to deal at all fully and individually with all the points raised in the debate. Speaking quite generally with reference to the remarks—for they did not amount to criticism—that had been made anent the practical value of a minute knowledge of the histology of the larynx, he sincerely trusted that in those remarks there would not be found an excuse to deter others from making similar investigations, for he could strongly recommend the part played by the epithelium of the larynx in health and disease as a field for the most valuable research. Passing to consider individually the different points raised by the several speakers, he had in mind the damage done to the larynx in some cases of enteric fever when he said that it was not amiss at times to go below the belt in the elucidation of an obscure case of laryngeal disease. The difficulty of the diagnosis, as Dr. Haring had remarked, was considerably removed by the history of enteric fever. Dr. Horne desired to thank particularly Dr. William Hill and Dr. Scanes Spicer for their appreciative remarks of his efforts to approach the subject from the standpoint of deductive science. Dr. Horne was inclined to agree with Dr. Scanes Spicer that in hospital practice extrinsic malignant disease of the larynx was more frequently met with than intrinsic disease, using the term "extrinsic" to include not only those cases which were extrinsic in origin, but also those which were originally intrinsic and had become extrinsic by the time they came under observation. Dr. Syme's observations on the difference of the tint of the laryngeal mucosa in the early stages of syphilis and tuberculosis coincided with his own views. The point raised by Mr. Bronner concerning "a diffuse fibroma" of the larynx occurring in old people, was almost a subject in itself, and one deserving of detailed consideration.

NASAL OBSTRUCTION: SUBMUCOUS TURBINECTOMY.

By W. STUART-LOW, F.R.C.S.,

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IT is very surprising to discover how frequently nasal obstruction, under various forms and in various degrees, becomes a subject of complaint. This fact is forcibly impressed by an analysis of the large outdoor clinic of any busy throat and nose hospital. The proportion of patients seeking relief from "stuffiness," "blocking," and "stoppage" of the nose is always very large, and in private practice it is the same tale that is told. It would not, I am certain, be overshooting the mark to say that from cases met with, both in private and hospital practice, some failures in life are surely to be attributed to nasal respiratory impediment. This respiratory defect is sufficient to explain many instances of irresolution, moral and mental, and constitutes a physical unfitness, and, as a consequence, inability to face successfully the emergencies of existence.

These obstructive conditions of the nose are encountered at all ages, although it is during adolescence and middle life that the climax of distress is reached, and that remedial measures are oftenest called for.

The great importance of this subject is not, then, likely to be disputed; and the legitimate questions may be asked: Is this importance always sufficiently recognized by practitioners, who must first and most frequently hear the initial wail of complaint, and whose opinion is oftenest asked with regard to the possibility of some remedy? and, again, Are the best measures always taken for the radical removal or alleviation of these distressful conditions when they are located and properly diagnosed?

The chief objection to many of the operations as at present performed on the nasal passages for the alleviation of obstruction is that frequently too much tissue is removed. In the anxiety to successfully remedy the embarrassment of breathing the soft tissues are unnecessarily sacrificed. It is not the mere removal of the mechanical obstruction that is the great desideratum, but that this may be successfully accomplished and yet the full functional uses of the nose be maintained unabated. Such can only be achieved by the operator keeping constantly before his mind a clear conception of what a composite organ the nose is, and practising, therefore, what might be called physiological surgery. The bane of intranasal surgery, especially in the past, has ever been that what has been done in the way of clearing the obstructed nasal passage has been overdone—too much has been removed, resulting in much too great destruction of what is most essential for proper functional activity—namely, the erectile tissue and mucous lining. These structures ought always to have shown them the greatest consideration surgically, as they are indispensable to the carrying on of the fundamental functions of warming, filtering, cleansing, and moistening the respired air.

No case can be permanently benefited, nor will any patient feel grateful for the restoration of freedom of breathing through the nose, if the penalty has ever after to be paid of dryness of and incrustation on the nasal interior. This charge cannot be said of the operation that I have for some time been performing with every satisfaction, as it comes essentially into the category of conservative surgery.

Most nasal obstructions are located either on the turbinated bones or on the nasal septum, and are either soft and resilient, firm and resistant, or hard and cartilaginous or bony, if not a combination of these two structures.

For most septal deviations and displacements there is no operation more suitable and effective than Killian's resection.

There are many cases, however, in which the obstruction is considerable, and principally caused by enlargement of the inferior turbinals, but such obstruction is often a good deal aggravated by slight or moderate disturbance in the position of the septum. It would be stretching the principle of always attacking the nasal septum in preference to the turbinals too far, however, to seek to reduce the redundancy by always operating on the septum according to Killian. The proper and better method, where the obstruction is mostly due to the enlarged condition of the turbinals, and especially the inferior, is to remove a portion of the obstructing factor. This is commonly accomplished by the use of the electric cautery, or by cutting away whole pieces of the turbinals, anteriorly and posteriorly, or nearly the whole turbinal is bodily wrenched away. It is such mutilation of the turbinals I wish to condemn, and for which I propose to substitute the operation which I venture to call *anterior submucous turbinectomy*.

The ideal manner of overcoming the disadvantageous protuberance of the turbinals would be by a method that, while reducing their size, still preserves the soft covering with its mucous glands and conserves the underlying erectile tissue, with its congeries of blood vessels so invaluable for warming and moistening purposes. A study of the anatomy of the bony framework of the turbinals shows its cribriform nature. It is only at the outer attached border that the bone becomes firm and denser. The inner two-thirds of this singularly-constructed bone has always a frail and mesh-like arrangement, and can therefore easily be cut through, or crushed or nipped

away. The inner part of the bone has a curved, turbinated appearance, and overhangs the floor of the nose. A careful examination also shows that the submucous tissue is not very firmly attached to the periosteum, and can, therefore, be detached without any great difficulty.

The principle of the operation of anterior or middle submucous turbinectomy is essentially a submucous resection of the turbinated bones; it is applicable to either the inferior or the middle turbinals.

The method consists in incising and dissecting up the soft structures from the underlying bone, and then making a submucous resection of the bone and extracting the resected portion. In this manner the flaps are allowed to subside on to the outer wall of the nose, and their integrity is maintained. For the operation some special instruments are necessary, and considerable lightness of touch and dexterity of manipulation are required.

All the patients that I have operated upon have stood the operation very well under the influence of the local application of eucaine, and no general anaesthesia seems necessary; but this depends upon the person, and it might be better to administer a general anaesthetic in the case of some very sensitive people. In a usual way, however, the patient simply sits in an upright position, and has the head sufficiently supported. The exterior and vestibule of the nose are first sterilized with a solution of ethereal soap, or a weak solution of lysoform, and afterwards sponged with a 1 in 2,000 solution of spirit and biniodide of mercury. The anterior half of the inferior turbinal is rendered anaesthetic by (1) applying repeatedly a 10 per cent. solution of cocaine by means of cotton-wool mops, and (2) a pad of wool soaked in this solution is then applied for ten minutes to the turbinal surface. This usually completes the anaesthesia, but, if it is thought desirable to make this more perfect, a submucous injection of eucaine or cocaine may be made. To diminish the amount of haemorrhage, which is often considerable, it is a good plan to pack a strip of gauze soaked in a solution of suprarenal under and over the turbinal about to be operated upon, and leave it in position for ten or fifteen minutes. With a good reflected light and the nasal speculum in position, a clear view of the turbinal is obtained, and an incision through the mucous membrane down to the bone is made by means of a special short-bladed, crescentic-shaped knife. The incision should extend longitudinally for nearly half the length of the turbinal surface, and be along the most dependent part; it should be continued anteriorly up to the point of attachment of the turbinal to the outer wall of the nose. A sharp-pointed, somewhat curved deflector should now be introduced at the incision, and the soft tissues raised from the bone. This is done both on the upper and under surfaces, and with persevering and cautious manipulation an upper and a lower flap are gradually freed. A blunt curved deflector is used after the separation has gone a little way, and in this manner one can work with greater confidence and less danger of slipping or buttonholing the flaps. The process of raising the mucous membrane is sometimes best completed by means of a special long speculum with slightly curved blades. The blades of the speculum are gradually insinuated between the bone and its soft coverings, and so a good view of the bone can be obtained. It only remains now to cut through and extract the cribriform piece of the bone. This is accomplished by first severing its connexion with the outer, denser portion by means of a pair of short-bladed, sharp scissors pushed forcibly backwards, and then with a pair of long, thin forceps, roughened longitudinally, the extraction of the severed piece of bone is completed. The flaps should be pressed outwards on the outer wall of the nose, and maintained in position by means of plugs of cotton-wool firmly wedged into the nasal passage, the object being to bring the cut edges into apposition, so that healing takes place very rapidly. To facilitate the removal of these plugs it is an excellent plan first to adjust a strip of oiled silk over the cut surface and to pack the woollen plugs over it. In such a manner the wool is prevented from adhering to the wound, and the whole can be pulled out with the greatest ease and only very slight traction. The plugs are usually left in position for forty-eight hours.

When the middle turbinal is under operation the same steps are followed, but the incision is carried along the under surface and up on to the anterior border. The soft tissues are deflected from the bone on each side, and the bone is removed either with Grunwald's forceps or curved scissors. The flaps are then pressed together by means of woollen plugs passed up on either side—one along the septum and one on the outer wall.

Where the impediment to free nasal breathing is due to enlargement of the anterior one-third or one-half of the inferior turbinals, or to blocking of the middle meatus by the hypertrophy of the middle turbinal, this method of extracting the bone and pressing the flaps together is the most satisfactory in its results. On the removal of the plugs the feeling of freedom of breathing is immediately experienced, the patients frequently giving generous expression to their sentiments on the pleasant change. There are no disagreeable after-effects, as the parts heal by first intention. The subsidence of the enlargement of the turbinal is permanent, and if properly performed there can therefore be no failure of the operation nor any necessity for its repetition.

DISCUSSION.

Dr. William Hill contrasted his method of intranasal packing, which consisted of an ordinary thin rubber finger-stall, which could be inserted into the nostril and its interior then plugged. This could be removed without difficulty or without causing bleeding.

Dr. Jobson Horne (London), whilst fully agreeing with the general principle that surgical efforts should be attended with an endeavour to save the soft parts covering the turbinal bodies, at the same time considered that cases suitable for the operation which had been described would be few and far between, inasmuch as in such hypertrophic cases it was more commonly the soft parts which were enlarged, and not the bony portion of the turbinate bodies. He assumed that the object of the paper was to revive interest in an operation suggested some few years ago, but which had fallen into disuse presumably for the reasons Dr. Horne had mentioned.

TERATOMA ARISING FROM THE RIGHT TONSILLAR REGION.

By Robert Fullerton, M.D.,
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The notes of the following case refer to an uncommon growth of the right tonsillar region. Its unusual character is my excuse for reporting it here. It gave rise to few and unimportant symptoms, its removal was easy, and after the lapse of eight months nothing abnormal could be detected in the region from which it had sprung. Considerable difficulty has been experienced in deciding as to the nature of this tumour. In parts it resembled a round and spindle celled sarcoma, and again a fibromyoma, but the variety of the structures encountered determined Dr. Workman to regard it as a teratoma.

J. C., aged 20, locomotive stoker, was first seen by me on January 23rd, 1906, when he complained of a feeling of discomfort in his throat. On looking into the mouth, the space between the tongue and palate was found to be largely taken up by a heavy fleshy-looking mass. This mass appeared to arise from the position of the right tonsil, and, supported by the posterior portion of the tongue, it extended across the oropharynx until almost in contact with the left side of the fauces. Its upper and anterior surfaces, especially towards its distal portion, were rough, thickened, and of a greyish-yellow colour—this colour being largely due to a coating gathered from the oral cavity. Beneath and nearer to its point of attachment it had a bluish-grey purple appearance somewhat resembling a quantity of large-grained boiled sago enclosed in a semi-translucent capsule. The tumour appeared to have a distinct covering. No ulceration could be detected, but rather beyond the inner half a well-marked fissure was observed on the upper surface running from behind forwards. On depressing the tongue the growth was shot up to the right and on to the dorsum of that organ, and palpation discovered it to be attached to the right tonsillar region, and to be firm, smooth, and slightly nodular. The

picture presented on looking into the mouth was very striking, and hitherto I had seen nothing at all resembling it. It seemed incredible that such a tumour could have gradually developed, or, indeed, could exist in its present position for a single day, without causing intolerable discomfort and serious interference with respiration and deglutition. The patient was a well-developed healthy-looking young man of fair complexion and with a heavy phlegmatic disposition. His nose was prominent, narrow and well formed, his mouth small, the palate highly arched, and the uvula slightly bifid. There was a very small development of tonsillar tissue, and no enlargement of the cervical glands. He stated that he never experienced pain in his throat, and only about four months before seeing me, when suffering from cold, did he discover that there was anything unusual the matter. He then felt as if there was something sticking in his throat. Since that time he continued to have this sensation, but thought it was due to a tonsil. About a month previously he had taken another cold which gave rise to a good deal of coughing, and when he coughed the mass came up over his tongue and tended to choke him. There never was any actual difficulty in breathing, but it produced the sensation of his breath being taken away. It interfered to a slight extent with deglutition when any dry or hard food was taken.

The case was admitted into the Greenock Eye Infirmary on January 26th, and on the following day, assisted by Dr. Eric Wilson, I endeavoured to remove the growth, after having applied a 5 per cent. solution of cocaine at its attachment. The patient, however, could not tolerate the presence of the gag, and chloroform was accordingly administered. The smallness of the mouth, the enormous amount of mucus secreted, and the tendency for both tongue and tumour to fall backwards and obstruct the breathing, rendered the placing of a ligature round the pedicle somewhat difficult. While endeavouring to pass the ligature, the growth, which was held up by a vulsellum, gave way slightly at its attachment to the pedicle. Finding that practically no bleeding resulted from this, I straightway removed the growth with scissors, guided by the fingers of the left hand. A second pedunculated growth, smooth and firm, of a pale-grey colour, and about the size of the terminal phalanx of the little finger, was found attached immediately below the one removed. This I also took away. The roots of the pedicles of both tumours were afterwards cut through with the cold snare close to their attachments. There was practically no bleeding at any time during the operation. The larger growth was found to be attached to the tonsillar surface by a fibrous band about half an inch broad, situated in a line with, and immediately behind, the anterior pillar of the fauces, while the pedicle of the smaller was separate from but placed immediately below it. Three days after the operation the patient returned to work.

He afterwards reported himself to me repeatedly, being last examined in September, 1906, and at that time there was no appearance of any recurrence. About the beginning of the year I wrote asking him to see me, but receiving no reply I presumed he had gone to China, having had an offer of employment in connexion with a railway there. The following is the report by Dr. Charles Workman on the microscopic character of the growth, and I wish here to express my indebtedness to him and Drs. Scott and Mary Hannay for the trouble they have taken in connexion with the sections and photographs:

Sections from the tumour have been cut in celloidin, and on examination under a low power they show the characters of a connective tissue growth, with numerous thin-walled small vessels and capillaries. In some places the connective tissue is evidently infiltrated with round cells. Under the high power a considerable part of the tumour is found to be made up of bands of spindle cells running in various directions, some of which are evidently non-striated muscle cells with staff-shaped nuclei. There are also numerous very-thin-walled capillaries and small vessels, arteries, and veins; then wide spaces are seen, containing endothelial cells and leucocytes of various kinds, probably lymphatic spaces and vessels.

Other parts of the tumour consist of small round cells, so that the tumour has the character of a mixed round and spindle celled sarcoma. There has evidently been marked inflammatory reaction, as much of the tissue is infiltrated with polymorphonuclear leucocytes, and near the surface of the tumour groups of bacilli and micrococci of various forms are seen. In other parts of the tissue some myxomatous degeneration is found, and parts near the surface have evidently undergone necrosis. In one or two places there are large cells in a matrix resembling cartilage. From the variety of structure I am inclined to consider the tumour a degenerated teratoma.

OBSERVATIONS ON THE DETERMINING CAUSE OF THE FORMATION OF NASAL POLYPI.

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AT the present time it is considered by most rhinologists that a mucous polypus of the nose is, essentially and in its earliest stage, a patch of mucous membrane which has become oedematous; and that the pedunculated appearance which a polypus commonly assumes is a character not peculiar to itself, but shared with many other intranasal swellings and new formations, and chiefly referable to physical causes acting on the primary patch of swollen, oedematous mucosa.

Since a mucous polypus—to which the term "nasal polypus" is now almost invariably confined—is a condition which possesses certain definite characteristics that distinguish it from other intranasal swellings, it may be as well to briefly define it. Mucous polypi may be described as new formations arising commonly from some portion of the mucous membrane covering the ethmoidal region of the nose, and mainly composed, when fully developed, of a loose network of fibrous tissue. Essentially, however, they consist of the normal tissues of the mucous membrane, the component parts of which are present in varying proportions, more or less altered in character, and associated with serous exudation and round-cell infiltration, and the structures are covered by the epithelium of the parts from which they spring (Fig. 2). It is generally recognized that, in the majority of instances, these formations appear in both nasal cavities, at or about the same time, without any manifest local cause which satisfactorily accounts for their occurrence; that they are usually multiple and recurrent; that they are associated sometimes with accessory sinus suppuration or other septic discharges; sometimes with lesions of the underlying bone, and frequently, if not invariably, with an inflammatory condition of the mucous membrane. Moreover, it is usually considered that the typical mucous polypus does not present the characteristics of a true tumour,* in the ordinary significance of the term; that it is not composed of granulation tissue (oedematous or non-oedematous), and that it is not merely a pedunculated hyperplasia which has undergone a secondary serous infiltration.

Clinical and pathological observations have shown, indeed, that the oedema of a mucous polypus is primary, and that, as already mentioned, the pedunculated appearance is secondary, or, as in the case of broad-based or sessile polypi, is never developed. The question of etiology centres, therefore, on the determining cause of the initial oedema which represents the first stage of the condition. A number of theories have been advanced to account for this process, and several of them are based on the assumption that the oedema is of an inflammatory nature. In this category come the supposition that the condition is due to the presence of septic discharges emanating, as a rule, from the accessory sinuses (Grünwald[2]), and the theory that the oedema is referable to disease of the underlying bone (Woakes, Lack[3]). It is impossible, on account of time, to discuss these interesting theories, both of which have gained a considerable number of supporters, but neither of which, in the opinion of many observers, presents a complete explanation of the problem of polypus formation, or one which is entirely free from logical defects.

It is well known, however, that an inflammatory condition of the mucous membrane, whatever its cause may be, is a very common antecedent and accompaniment of polypus formation, and a number of observers have considered that this inflammatory condition, combined with the structural peculiarities which are known to exist in the regions in which these "growths" usually develop, is sufficient to account for the incidence of polypi. But in view of the fact that an inflammation of the mucous membrane is obviously present, in varying degrees of intensity and persistence, both in the "polypus regions" and elsewhere, in a great number of cases which do not at any time give evidence of polypus formation, it appears

* It is perhaps hardly necessary to mention that the theory held by the older pathologists that a polypus was a myxoma has been long since disproved.[1]

reasonable to conclude that an inflammation of the mucous membrane does not directly and of itself lead to the production of polypi, but only indirectly and when it secures the intervention of another factor, the presence or absence of this factor determining whether the inflamed mucous membrane does or does not undergo polypoid change. Since, therefore, we are concerned, in the discussion of this question, with an oedema of the mucous membrane which has not been shown to be due directly to an inflammatory process, it may be inquired whether any other probable cause of the production of oedema is capable of demonstration.

It is known that oedematous infiltration may occur in a part if there exist an obstruction to the return circulation, the obstruction being capable, under certain circumstances, of bringing about the increased transudation of serum through the capillary walls which constitutes the oedema. I hold that a condition of this character is to be recognized in the early stage of polypus formation, and my own view is that the initial localized oedema, which occurs in the nasal mucous membrane and is the first stage of the process in question, is a serous infiltration of the tissues, the result of the obstruction of certain definite capillaries and veins—in other words, that the oedematous infiltration is due to an obstacle in the efferent circulation which is in relation to the area in which the oedema occurs.

In connexion with this hypothesis there are several points to which I must briefly refer: (1) The particular vessels which are believed to become obstructed; (2) the circumstance or process which would be capable of bringing about the obstruction of these vessels; (3) the manner in which the process referred to would effect this, and so lead to an oedema of the mucous membrane; (4) the evidence, derived from observation and experiment, that the process in question is the determining cause of polypus formation, and the verification of this evidence by clinical and other facts.

Fig. 1.—Pedunculated inflammatory hypertrophy of inferior turbinate. The mucous membrane shows round-cell infiltration, hyperplasia and other signs of chronic inflammation. E, Epithelium; G, mucous glands (normal).

1. The particular vessels which become obstructed are the capillaries and veins, which are arranged in a close network around the excretory ducts of the mucous glands, and, to a lesser extent, those which are arranged around the subsidiary ducts and acini.

Fig. 2.—Mucous membrane of middle turbinate from a case of early polypus. E, Epithelium; F, superficial layer of mucous membrane showing chronic inflammation, and commencing oedematous infiltration; G, dilated gland ducts; A, acini (normal); V, vessels.

2. The circumstance or process which causes the obstruction of the vessels is the distension or cystic dilatation of these excretory ducts (Fig. 2, G), and, in all probability to a lesser extent, the subsidiary ducts and acini of the glands, which process, I believe, from my own observations, to be the essential initial lesion of polypus formation.

3. In order to arrive at an explanation of the manner in which obstruction of the vessels could be effected by mechanical changes in the glands, and how the latter process would thus indirectly bring about an oedematous infiltration of the mucous membrane, it is necessary to refer to a point in connexion with the anatomical arrangement of the blood vessels in the nasal mucosa, as described by Zuckerkandl.[4] The arrangement in the turbinal and meatal regions is, so far as it concerns the present subject, as follows: The arterial supply of the mucous membrane ramifies in three networks. One network supplies the periosteal layer, a second is distributed to the glands, and a third to the superficial epithelial layer. The glands, which are surrounded by a special capsule, are closely enveloped by their network of capillaries. Around the excretory duct there is a tube-shaped network of capillaries and veins, which is so closely applied to the duct that, in Zuckerkandl's opinion, it helps to keep the channel closed when the gland is not actively secreting. When a mucous gland undergoes marked distension or cystic dilatation, the excretory duct is apparently the first to suffer. Recklinghausen has considered that it is the only part of the structure that participates to any conspicuous extent in the process. My own observations have given me a similar impression, although some distension of the acini may be observed. When, therefore, the duct undergoes distension, and enlarges, for example, to five, ten, twenty, or many more times its normal size, the pressure which is exerted on the closely-applied tubular network of capillaries and veins which surrounds that structure must evidently be very considerable and have a great tendency to hamper or altogether obstruct the flow of blood through these vessels. This obstruction would raise the intravascular pressure in the associated capillaries and tend to produce transudation of serum through their walls into the loose tissues around—the process being materially assisted by the increased permeability of the capillary walls, the result of inflammation or of a passive hyperaemia.

The Probable Sequence of Events.

This is (1) *chronic inflammation* of the mucous membrane, (2) *dilatation of the glands*—more particularly the gland ducts—going on to cystic distension, caused either (*a*) through marked inflammatory infiltration of the excretory ducts and sealing of their orifices, produced by the presence of septic discharges, as in mucous polypi associated with accessory sinus suppuration or with a malignant growth, or (*b*) through excessive filling of the glands, the

result of their hyperstimulation, combined with a partial obstruction to the exit of the gland contents, the result of congestion and swelling of the mucous membrane such as occurs in chronic catarrhal rhinitis. (This latter train of events appears to occur in the formation of polypi associated with certain of the reflex nasal neuroses and with other conditions characterized by periodic nasal hypersecretion.)

(3) *Oedematous infiltration* of the surrounding tissues resulting from the passage of serum through the capillary walls, due (*a*) to increased pressure in certain of the capillaries, owing to obstruction of the periglandular capillaries and veins towards which they lead; (*b*) to increased permeability of the capillary walls, the result of inflammation; and (*c*) to the laxity of the surrounding tissues, which is relatively marked in the regions from which polypi usually take origin.

(4) *The formation of folds*, or projections, on the infiltrated mucous membrane, produced either from folds which are normally present, or, more commonly, by the widening of the sulci, formed by the dilated gland ducts (see Fig. 5 G), which results in a projecting boss of oedematous tissue bounded by the broadened sulci.

(5) *The increase of oedema* in certain of the folds, formed in the manner described, combined later with a hyperplasia of the fibrous elements. This results in—

(6) *The formation of flat, oedematous projections* containing the essential constituents of the mucous membranes (broad-based or sessile polypi), or the formation, through the influence of gravity and other physical causes, of oedematous projections, containing the same constituents but a greater amount of fluid, and, perhaps, of hyperplastic tissue, and each possessing a base which gradually becomes relatively constricted or stretched until it constitutes a pedicle (pedunculated or gelatinous polypus). The pedicle connects the remainder of the structure, which has now become a globular swelling, with the mucous membrane from which it sprang.

4. The evidence in favour of the mechanical changes in the glands being the determining cause of polypus formation is based on pathological, experimental, and clinical observations.

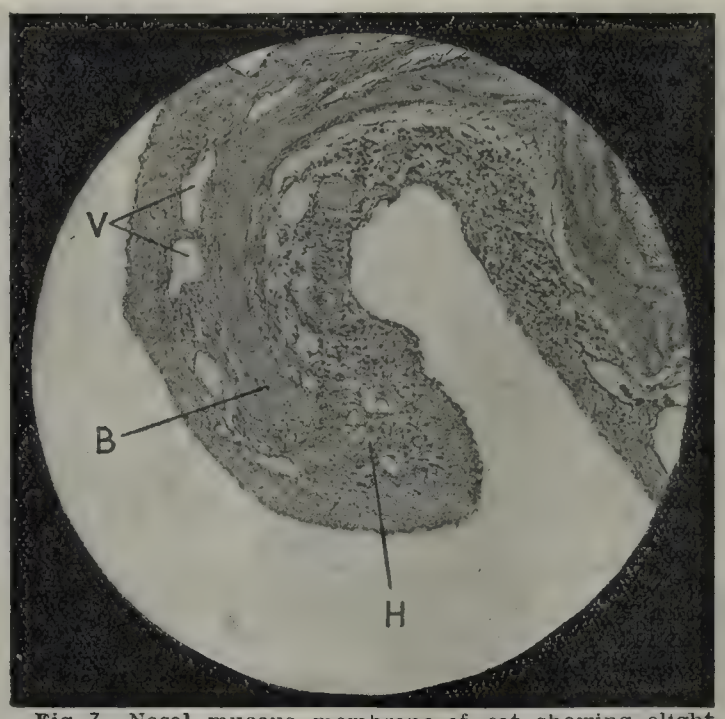

Fig. 3.—Nasal mucous membrane of cat showing slight changes of a chronic inflammatory nature (produced experimentally). H, Mucous membrane showing numerous blood spaces of varying size; V, larger venous spaces; B, bone. (The epithelium in this and the two following sections has become detached in mounting.)

Pathological Evidence.

(1) The observation, almost invariably, in the specimens examined, of a number of glands in a state of marked distension or cystic dilatation.* By this is meant that the glandular changes were invariably found at various points in the mucous membrane when it was in an early stage of polypoid change (Fig. 2); invariably in the tissues contiguous to pedunculated polypi wherever the tissues in question were oedematous, and usually, but not invariably, in isolated sections—that is to say, sections which were not cut serially—of the actual pedunculated growths themselves. (2) The observation of the particular glandular changes in instances of mucous polypi occurring under varying circumstances or conditions—the circumstances or conditions being in some cases common, in others exceptional. (3) The observation that these glandular changes were absent in those instances of inflammation of the nasal mucous membrane in which the characteristic oedema of a mucous polypus was also absent (Fig. 1). (4) The fact that portions of inflamed mucous membrane removed from the regions in which polypi develop, and similar portions in an early stage of polypoid change removed from the same regions, appeared to resemble each other in all essential residual conditions except one—the condition of the glands.

From these observations it appears reasonable to conclude that these two pathological conditions—dilatation of the mucous glands and polypoid change—which are found to be present in such constant association, both when polypi develop under ordinary circumstances and when they arise under exceptional conditions, and which are also observed to be simultaneously absent, the non-occurrence of the one coinciding with the non-occurrence of the other, stand to one another in some way in the relation of cause and effect. In order to ascertain which, of two phenomena possessing an etiological relationship, is cause and which effect recourse may be had to the method of experiment, by setting in action the phenomenon which is assumed to be the cause and by observing whether the remaining phenomenon is thereby produced.

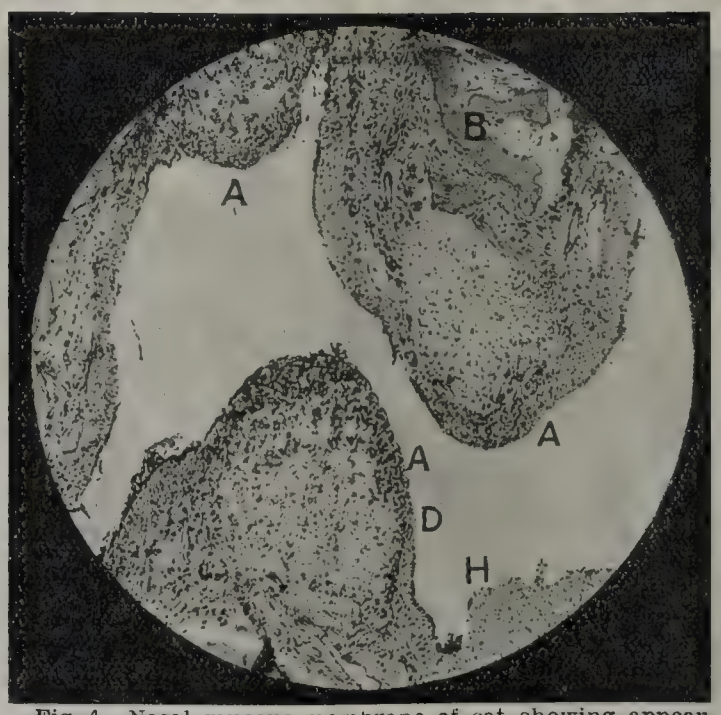

Fig. 4.—Nasal mucous membrane of cat showing appearances corresponding with those which characterize the early stages of mucous polypus (produced experimentally). A, Nipple-like projections of mucous membrane formed by inflamed, oedematous, hyperplastic tissue, the fibres of which form a loose network; D, H, non-oedematous hyperplasia; B, bone.

Experimental Evidence.

As cats are known to suffer from ordinary bilateral mucous polypi[5] that species of animal was selected for the experimental determination of this point. Without going into the details of the experiments, which I have already described in another publication,[6] it may, in summing up the results, be said: (1) That the production of an inflammatory process, in appropriate areas of the nasal cavities of these animals, was not followed by any indication of polypoid change or of any changes in the glands of the character described (Fig 3). (2) That the production of an inflammatory process in similar animals, produced in the same manner and by the same agents, and lasting for a similar period of time, but combined with measures calculated to cause overloading and distension of the mucous glands, was followed by localized oedematous infiltration and polypoid changes (Fig. 4) in the mucous membrane, the latter showing marked distension of the

* It is obviously unnecessary that two phenomena, which are assumed to stand to one another in the relation of cause and effect or effect and cause, should be found in *invariable* association, since a *frequent* association is quite sufficient for the purposes of correct reasoning. Moreover, the occasional absence of dilated glands in isolated microscopic sections which show polypoid changes is no more a proof that the glandular condition was not present in the cases from which the sections were obtained than the failure to detect any glands whatever in similar sections, as occasionally happens, is a proof that there were no glands in the mucous membrane at all.

glands (principally the gland-ducts) on histological examination (Fig. 5). (In the instances in which hyperstimulation of the glands alone was practised, without setting up an inflammatory process, no obvious ultimate effects of any kind were noted).

The setting up of an inflammatory process alone was therefore not followed by oedematous infiltration of the mucous membrane, whereas the introduction of a fresh circumstance (glandular dilatation), which was thought to be the cause, was followed by another fresh circumstance (polypoid change), which was therefore assumed to be the effect.

With reference to the question of whether the glandular changes may not be secondary to the oedema of the mucous membrane rather than the indirect cause of it, as I myself believe, it may be said that, apart from the experimental evidence in favour of the latter supposition, it is not apparent in what manner an oedema would set up these glandular changes. It is, in fact, well known that an inflammatory process, of itself in some instances and in others with the assistance of another known factor (overloading of the gland due to hyperstimulation), is capable of producing these changes quite independently of the presence or absence of oedema. Moreover, in some instances in which marked oedema has occurred—for example, in the mucous membrane covering the anterior portion of the middle turbinate — apart from polypus formation and due to other manifest causes, these glandular changes have been absent, whereas if the oedema were the cause of the glandular changes the latter should, under these circumstances, have occurred.

Corroborative Clinical Evidence.—Lastly, it may be inquired whether the theory which I have advanced as to the pathogenesis of mucous polypus, is capable of explaining undoubted clinical and other facts which have been observed. It is known, for instance, that polypi may occur under circumstances which appear to be extremely varied; yet although the conditions are frequently unlike, the structures themselves are essentially identical, and the question arises whether my hypothesis could explain and reconcile the pathogenesis of similar structures occurring under dissimilar circumstances. The following examples may be selected:—Unilateral polypi occurring with a unilateral suppuration of an accessory sinus, and apparently due to the irritation of the purulent discharge; bilateral polypi not associated with accessory sinus suppuration or with evident focal suppuration of any kind; polypi occurring in the course of the reflex nasal neuroses, and polypi which appear to be hereditary, or which occur in several members of the same family.

Fig. 5.—Nasal mucous membrane of cat showing distension of gland-ducts (G); also oedematous infiltration and hyperplasia (produced experimentally). (Same specimen as Fig. 4.)

In the case of unilateral polypi associated with a unilateral septic discharge, it is hardly disputed that an inflammation of the mucous membrane is set up by the purulent secretion, and that the glands may undergo cystic dilatation through obstruction of their ducts by inflammatory infiltration, or perhaps, in long-standing cases, by the contraction of newly-formed fibrous tissue. I suggest that, as the glands dilate, the intracapillary pressure becomes augmented (as described above), transudation begins to take place, and oedema supervenes.

On the other hand, bilateral polypi, occurring without any manifest local cause, must apparently be due either to a particular irritant or agent to which only some individuals are exposed, or to a common irritant or agent which, owing to inherent or constitutional peculiarities in the individual, can produce the particular effects which constitute the disease only in certain persons. With reference to this latter and more probable alternative, the question arises whether there is any known constitutional peculiarity which is present in some individuals and not in others, and owing to which the particular glandular changes which have been described could occur in both nasal cavities under certain known circumstances. A "known constitutional peculiarity" of this description is an instability of the vaso-secretory mechanism of the nose, which leads, among other effects, to periodic hypersecretion and overloading of the glands; which frequently declares itself plainly as one or other of the reflex nasal neuroses, but which may exist in certain individuals—and, according to Chiari,[7] does exist, although usually to only a slight extent, in the majority of people belonging to the civilized races—without causing symptoms sufficiently exigent to attract special attention, until an intranasal irritant has manifestly upset the balance, or until actual polypi, which are usually assumed, without proof, to be the cause rather than the effect,* have developed. Yet by no means every case which gives even obvious signs of this constitutional peculiarity suffers from nasal polypus, although a considerable number of such cases do so. A superadded factor must therefore be present in certain cases of this description in order to produce the mechanical changes in the glands which would lead to the obstruction of the periglandular vessels, and so to the initial oedema.

A "common irritant or agent" which, combined with the above-mentioned "constitutional peculiarity," may (as indicated earlier in this paper) be regarded as capable of producing these specific glandular changes, could be supplied in the shape of an ordinary chronic inflammatory process affecting, as is usual, both nasal cavities—a condition which is apparently insufficient, of itself, to cause polypus formation.† The well-known, but hitherto unexplained, relationship that exists between certain of the nasal neuroses (which are characterized by periodic reflex hypersecretion) and polypus formation, is thus rendered intelligible, and I believe, moreover, that this affinity also renders intelligible the occurrence of a hereditary, family, or constitutional tendency to polypus formation (of which many observers[10 11 12] consider there is abundant independent evidence), since one of the factors in the production of ordinary bilateral mucous polypi is of a hereditary or constitutional nature. The correspondence of the usual age-incidence of the two conditions (15 to 50) may also be capable of explanation on similar grounds.

The remarkable frequency with which nasal polypi have been found in bodies examined *post mortem*‡ by several well-known observers who have investigated this point, and the relative infrequency with which these growths are detected, on clinical examination, in the living, seem to be explicable on the supposition that polypoid changes, although usually of minor degree, are extremely common, as would be expected if the disease were referable, as I contend, to the conjunction of two very common conditions—namely, a condition of reflex hypersecretion on the part of the mucous glands and a chronic

* Jonathan Wright,[8] on the other hand, "cannot escape the conviction that in very many instances, but of course not in all, the local disease is the result rather than the cause of the neurosis."

† It has been proved experimentally that marked dilatation of the glands, and a consecutive oedema, can be produced by the conjunction of these two factors.[9]

‡ Zuckerkandl found nasal polypi in 1 out of every 8 or 9 bodies examined; Heyman found the condition in 1 of every 28 bodies. Recently Oppikofer has made a number of investigations and found polypi in 1 out of every 16 bodies.

catarrhal inflammation; but that the subsequent evolution of the condition, in a large number of cases, is so slight as not to cause any marked symptoms, or the symptoms are attributed by the patient to a chronic nasal catarrh.

With reference to the question of recurrence after removal (by which I mean a veritable reproduction, and not a further development merely of polypoid outgrowths which have escaped removal), I may say that the known differences in the behaviour of polypi in this respect appear, generally speaking, to be explicable by the suggestion which I have advanced—namely, that the growths are due, in some instances, to an obvious local cause (for example, accessory sinus suppuration), the effective removal of which would be likely to result in the cessation of the effects, and therefore in non-recurrence; but that they are chiefly referable, in other instances, to a general constitutional cause, which is not removed and continues to produce its effects, and would therefore be likely to be followed by recurrence.

The customary location of polypi in certain special intranasal regions and in certain of the accessory sinuses is to be explained chiefly by the known structural peculiarities of these regions. Concerning the question of whether the usual non occurrence of mucous polypi in other nasal areas might be due to the usual absence of cystic dilatation of the gland ducts in those areas, or whether, the condition being present, it is unable to bring about an oedema, owing to the firmness and relative thickness of the tissues, I may remark that my own observations have led me to believe that these changes in the glands do not occur in the aforesaid areas, apart from those exceptional instances in which new formations, possessing the structure of genuine mucous polypi, develop there. In such cases the glandular changes have been found to be present.

In conclusion, I wish to point out that my theory is not advanced as an explanation of all instances of oedema which may occur in the nasal cavity, whether in the "polypus areas" or elsewhere, nor of all pedunculated intranasal swellings, many of which, although not mucous polypi, undergo secondarily a serious infiltration from pressure on their pedicles and from other causes. My contention is simply that the glandular changes which have been described are capable of explaining the initial oedema of the mucous membrane which represents the essential primary stage of one particular pathological process—namely, mucous polypus formation.

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[1] The "myxoma theory" was disproved by Köster (*Berlin. klin. Wochenschr.*, 1881, p. 526) and his pupils, and independently by Hopmann, Zuckerkandl, and many others. The principal fallacy in the theory which grouped nasal polypi with one of the rarest varieties of tumour, was the statement that polypi contained large quantities of mucin—the characteristic substance in myxomatous growths—whereas it was proved that the actual fluid was serum. [2] Grünwald, *Nasal Suppuration*, trans. Lamb, from 2nd German edition, London, 1900. [3] Lack (L.), *Diseases of the Nose and its Accessory Sinuses*, chap. xi. London, 1906, p. 173. [4] Zuckerkandl, *Anatomie Normale et Pathologique des Fosses Nasales*, traduit par Lichtwitz et Garnault, Paris, 1895. [5] Hobday, *Surgical Diseases of the Dog and Cat*, London, 1906. [6] Yonge, *Polypus of the Nose*, Manchester and London, 1906, p. 67. [7] Chiari, *Maladies du Nez*, traduit par Breyre, Liége et Paris, 1905, p. 78. [8] Wright, Jonathan, *Textbook of Diseases of the Eye, Ear, Nose, and Throat*, edit de Schweinitz and Randall, London, 1894, p. 1146. [9] Yonge loc. cit., pp. 64, 70. [10] Heyman, Die gutartigen Geschwülste der Nase, *Handbuch der Laryng. und Rhinol.*, Bd iii, H 2, Wien, 1900, p. 819. [11] Jacques, Nature, Causes, et Traitement des Polypes du Nez, *Rev. heb. de Laryngol.*, October 31st, 1903. [12] Ball, *Diseases of the Nose and Pharynx*, fifth edition, London, 1906.

DISCUSSION.

Dr. WATSON WILLIAMS (Bristol) considered that the author of the paper had brought forward much interesting evidence in support of his ingenious theory, but he must join issue with him on nearly every point. First, in his experience so-called reflex nasal neuroses were very often, not always, due to unrecognized and perhaps in the early stages unrecognizable organic lesions in the nasal passages; and polypi were never due to the vascular changes associated with a pure neurosis. Secondly, he believed and had already published his own theory that "mucous" polpi of the nose were the outcome of obstruction in the lymphatic vessels in a restricted area of the involved mucosa, and that the obstruction was an inflammatory change resulting from infection; in other words one had an infective lymphangitis with resulting blocking of the lymphatic vessel very much analogous to elephantiasis. If the obstruction were temporary, the oedema might disappear, if permanent a polypus formed, and continued to grow, being fully supplied with blood; indeed, polypi were usually highly vascular structures. In course of time various hypertrophic changes took place in the polypus due to the excessive lymph supply. The infective processes which, when the mucosa was involved, caused a polypus, also caused inflammatory bone changes; the processes in the mucosa and in the underlying bone were concomitant and not interdependent lesions. Polypi in a minute stage of development might sometimes be seen growing and developing in the oedematous tissue caused by pus in the ethmoidal cells, and, although as they became larger they became dependent owing to the force of gravity, their polypoid form was not due to what was meant by the term "physical forces." Although it was easy to realize that infective lymphangitis was the cause of polypi when suppurative disease was present, it was, of course, less obvious when no pus was to be seen. But there were many infections reacting on and involving the nasal mucosa which were not always or usually associated with suppuration (for example, morbilli), and it seemed likely that the single large polypus that sometimes was found growing for years was due to a former but long since subsided infective process which had caused obstruction. Hence in such cases the removal of the single polypus was usually a final cure.

Dr. SCANES SPICER (London) understood Dr. Watson Williams to say that reflex neuroses were evidence of pathological processes, but in some cases it seemed to him they were merely physiological responses to peripheral stimulation.

Mr. STUART-LOW (London) said that the origination of nasal polypi was, in his opinion, intimately wrapped up with the natural thickness or thinness of the mucous membrane of the nose. After observing a large number of these cases he had never yet seen an instance which was not what he had described as "hypomyxiatous." He had spoken of this in his book, *Mucous Membranes, Normal and Abnormal*. In his opinion, viewed from this standpoint, some of the obscure and irreconcilable aspects of the subject became much clearer and more understandable. For instance, hereditary influence, which was undoubtedly a causal factor, was explained by the fact that, just as thick and thin skins were inherited, so were thick and thin mucous membranes. The thin mucous membranes were those liable to readily develop polypi, because they were so susceptible to the action of irritants, which caused them to become easily inflamed. This also explained the ease with which nasal polypi could be induced to grow in the case of an animal, as the cat, in which the nasal mucous membrane was naturally very thin.

Dr. BRONNER (Bradford) said that if hypertrophy of the glands were the cause of polypi, one would expect that every case of polypi would be preceded by hypersecretion, also that all diseases of the nasal mucous membrane which were accompanied by hypersecretion would show polypi. Probably decreased intranasal atmospheric pressure, also the direction of the air passing through the nares, which varied very much, played a very important part in the formation of nasal polypi. He asked how it was that those races with broad nostrils, such as the negro, very rarely suffered from nasal polypi.

Dr. J. B. BALL (London) said: As regards the causation of mucous polypi, from the clinical point of view the cases may be divided into three classes. In one class we get a history of paroxysmal coryza, vasomotor rhinitis, or whatever we may call the familiar condition. A fair proportion of these patients develop mucous polypi in course of time. In another class we get a history of repeated attacks of acute rhinitis—that is, of inflammatory catarrhal attacks. Lastly, there are the cases associated with sinus suppuration. He thought in the vast majority of cases they might trace the causation of mucous polypi to one or other of these conditions, or a combination of them. He thought these facts did not clash with the interesting theories contained in Dr. Yonge's paper.

Dr. MILLIGAN desired to know the actual pathological factor at the bottom of the condition. He thought that the case as presented by Dr. Yonge was not convincing. He shared the opinion, already expressed by Dr. Watson Williams, that the condition of the lymphatic system of

the nasal mucosa had much to do with the pathogenesis of nasal polypi. If localized irritation was a main factor in their production, as stated by Dr. Yonge, how was it that snuff-takers were almost invariably exempt? The flaw in Dr. Yonge's experiments appeared to him to lie in the fact that animals prone to nasal polypi were made use of, and also that no intranasal examination was made either before or during the process of experimentation.

Dr. A. L. Whitehead (Leeds) said in his experience polypi seemed almost invariably to occur in cases with accessory sinus suppuration, with some bony or other obstruction, or in those who had a history of a peculiarly susceptible nasal mucous membrane. In one particular case, a lady who had been under his observation for years, during the summer time her nose appeared perfectly healthy, but during the winter its whole mucous membrane degenerated into a condition of solid oedema; although in this case prolonged oedema had been present at intervals for years no polypi had developed. Dr. Watson Williams's infective theory did not seem adequate to explain why polypi might exist in large numbers, and why in other cases a single polypus might alone be present for years. He knew of no theory which would satisfactorily explain this dissimilarity of behaviour in different cases.

Dr. McKenzie Johnston (President) was in favour of Dr. Watson Williams's theory in reference to many of the cases, but he did not think that it would fit every case of polypus. The history of the cases showed that some seemed to date from some severe infective inflammatory condition of the nose. He considered that Dr. Yonge had rather based his theory upon some experimental work and results obtained after death, but he thought that something should be done by clinical observations upon cats before death for comparative purposes. This absence rather invalidated the importance of his experimental work in this direction. Of course, he quite saw the difficulty in carrying it out. He highly praised the work Dr. Yonge had already done, and asked what were his particular methods and the particular irritants he used.

Dr. Yonge, in reply, said he was glad his paper had given rise to such an interesting discussion. He thought Dr. Watson Williams had misunderstood his remarks about the reflex nasal neuroses. Dr. Yonge did not say that he believed any of the reflex nasal neuroses to be the cause of polypus, but only that a circumstance—increased glandular activity, leading to overloading of the gland—which was often associated with these neuroses, was the chief factor that determined the mechanical change in the glands which led to polypus formation. The theory that the oedema of a mucous polypus was analogous to that of elephantiasis, in which pathologists accounted for the oedema by the obstruction of the lymphatic glands by the ova of a certain parasite, was an interesting one, but as this was a very exceptional cause of oedema, and as no pathological or clinical evidence in relation to its occurrence in polypus had been advanced by Dr. Watson Williams, the theory appeared to come, at any rate for the present, merely in the category of conjectures. Mr. Stuart-Low's suggestion that the thinness of the mucous membrane was a factor in polypus formation appeared eminently reasonable, but it seemed difficult, for several reasons, to conclude that a structural peculiarity alone was the determining cause of polypus formation. In reply to Dr. Bronner's criticism that all cases of nasal hypersecretion should suffer from polypi if the theory which had been advanced in the paper were correct, Dr. Yonge said he had specifically stated that by no means all cases of hypersecretion gave evidence of polypi, because a separate and independent factor was also necessary. The direction of the passage of air through the nasal cavity could not be the cause of polypus formation, as polypi frequently occurred where this supposed cause was not in operation, for example, in the accessory sinuses. Dr. Ball's division of polypi into inflammatory, paroxysmal, and suppurative types was quite compatible with Dr. Yonge's theory, as the various causes indicated by this division were cited in the paper as being in operation under certain circumstances, in some instances one cause (or type) predominating and in other instances another. Dr. Milligan's interesting statement that snuff-takers did not suffer from polypi, although they inhaled an irritant, appeared to corroborate Dr. Yonge's contention that mere irritation alone of the nasal mucous membrane was not sufficient to cause polypus formation, but that a superadded factor was necessary. In reply to the President, the substance used in the experiments on animals to set up an inflammatory process was a solution of olive oil containing a trace of volatile oil of mustard. Hyperstimulation of the glands was carried out by placing the animal in a chamber specially constructed for the purpose, which contained a small quantity of fine white pepper. Examination of the interior of a cat's nose previous to experiment being of course impossible, the experimenter took the obvious course of testing the patency of the nasal cavities as a preliminary, and of subsequently experimenting on one side only, leaving the other nasal cavity for purposes of comparison.

THE IMPORTANCE OF THE NASAL ACCESSORY SINUSES IN RELATION TO THE EARS.

By George Jackson, F.R.C.S.Eng.,
Honorary Surgeon, Devon and Cornwall Ear and Throat Hospital.

My object in reading this paper before the Section is not to bring anything very novel under the notice of the members, but rather to call attention to some points in connexion with diseases of the nose, ear, and throat that I believe are often overlooked. I do not think that the frequency with which caries and sometimes necrosis of the superior and middle turbinates, and the ethmoidal cells, especially the anterior ones, occur is always properly recognized, and is not sufficiently looked for in cases of middle-ear and post-nasal troubles.

Some years ago Dr. Woakes drew attention to it, and described what he called necrosing ethmoiditis. He applied this term to a specific inflammation of the nasal tributaries of the ethmoid bone, including the inner periosteal investment.

The objective symptoms he described were enlargement of the lower turbinates, progress marked after a time by the presence of squames or spiculae of dead bone, which may or may not be detected but remain concealed, commencing in the spongy projections, insidiously invading the anterior and posterior ethmoidal cells. Chronic inflammation of the periosteal strata tends to cause necrosis of the subjacent bone. It is generally bilateral—commences as oval or rounded projections on the anterior margins of the middle turbinates; a proliferating stage succeeds. Wherever there are polypi there are necrotic squames or spiculae. After polypi have appeared the necrosing process advances from the ethmoidal cells to the orbital plate of the bone. This may become destroyed, the contents of the orbit are then separated from the nasal cavity only by the thickened orbital periosteum. Sometimes a thin plate of atrophied bone is found quite bare in the midst of an exuberant cauliflower excrescence which may fill up the entire nasal cavity, or again, as in true ozaena, the myxomatous or proliferating tendency is absent throughout. As to the causation of the disease it is not always very clear. Dr. Woakes attributed it to measles, scarlet fever, catarrh, or influenza. He does not consider syphilis is a cause.

I have now for some years made it a routine practice, as no doubt many others have, to interrogate the nose in all cases of middle-ear disease, as well as post-nasal or laryngeal complaints, and especially to examine for caries of the turbinates—superior and middle—and of the anterior ethmoidal cells. Out of a total number of 318 cases of nose, throat, and ear disease I have found 95 cases in which there were caries of the superior or middle turbinates; and of these, in 53 cases the anterior ethmoidal cells were affected, varying in intensity from merely a bare spot of bone on the superior turbinates to a complete breaking down of the cells, and I have very little doubt but that there were more which from one reason or another were overlooked. Wyatt Wingrave, in an article on Atrophic Rhinitis published in the *Transactions of the British Laryngological and Rhinological Association*, vol. ii, p. 66 et seq., 1863, says that in 60 cases observed by him bare bone was distinctly felt on probing the anterior ethmoidal cells in 10 instances.

Dr. Woakes regrets that he does not say anything about the posterior ethmoidal cells or their nasal wall, as he generally finds evidence of bare bone in cases of progressive deafness with tinnitus associated with atrophic changes in the region of the nose. In some cases the disease may be traced to an attack of scarlet fever or influenza, or measles, but oftener than not there

is no especial history. With regard to tubercle or syphilis the evidence is not clear. Dr. Pethybridge has kindly made cultivations for me in a few cases in which tubercle or syphilis was suspected, but without any result. I believe it is very difficult to get evidence of tubercle bacilli in the nose.

In one class of cases, atrophic rhinitis, the disease appears to have commenced at a very early age. I have notes of cases which commenced as young as 10 years of age, and in which no special reason can be alleged. These cases are extremely intractable, so far as treatment is concerned, and apparently will go on—with some improvement it is true, but without cure—for years. It appears extremely difficult to arrive at any satisfactory conclusion as to the causation of this disease. In some cases an acute attack of a zymotic disease may be the starting point.

CASE.—W. G., aged 47; previous health good. Had an attack of facial erysipelas about three months before he came under my observation. He was then complaining of discharge from post-nasal region. The inferior turbinates were enlarged; the superior turbinates were bare, and there was a large hole in the septum nasi. In about a month's time the bone was covered with mucous membrane, and the foramen, which had formed in the septum, had become more healthy. The bare spots of bone had been cauterized with the galvanic cautery. A lotion of tr. hamamelis virginica c. glyc. boracis had been used, and some ung. hydrarg. flava had been applied to the foramen.

Dr. Woakes, in his book on *Deafness, Giddiness, and Noises in the Head*, lays stress on the association of progressive deafness with tinnitus associated with atrophic changes in the ethmoid region of the nose, especially of the posterior ethmoidal cells or their nasal wall. I think I am justified in saying that in almost every case in which the ethmoidal cells are affected, there is more or less deafness, but that in many cases would be due to the extension of chronic inflammatory mischief extending to the pharynx, and so through the Eustachian tubes to the middle ear, producing in some cases chronic catarrh of the middle ear, and in others chronic otitis media. In some cases in which the labyrinth appeared to be involved there was some other cause of a general character, such as influenza, which it is well known has an injurious influence on the auditory nerve.

With regard to treatment in those cases in which the ethmoidal cells are involved, especially in children, I prefer to give a general anaesthetic and thoroughly curette the diseased parts with the nasal curette, using subsequently a lotion of tr. hamamelis virginica c. glyc. boracis, and also, where the discharge is offensive, an application of peroxide of hydrogen 10 per cent. I have also found iodic acid, about 1 in 500, a useful lotion, which may be diluted. In those cases in which there are only bare spots of bone, on the superior or middle turbinates, especially if occurring in cases other than of children, I use the electric cautery—curetting at the same time. I prefer this treatment to that by chromic acid, which has been advocated by Dr. Woakes, as it is difficult to limit its action. Of course polypi, which frequently occur, especially when the ethmoidal cells are affected, should be removed, the diseased surfaces of bone being subsequently cauterized and curetted. In cases of true ozaena with atrophic rhinitis, in which the formation of crusts is a very troublesome symptom, I find an application of one-third ichthyol, one-sixth glycerine, and one sixth spiritus vini rect with one-third aq. dest., a useful one to be used after syringing with some alkaline lotion.

The statements of Woakes have, I know, been much called in question, but I do not think we can be wrong in attributing many symptoms to the irritation caused by the nasal trouble, as well as to the septicity which also arises in connexion with it. The nose may be considered to be one of the most vulnerable parts of the human frame, being the most accessible to the various germs which are floating in the atmosphere. Woakes states that out of 921 cases of deafness 1 in $3\frac{1}{3}$ exhibited also the presence of ethmoiditis—namely, 274 in number. Of those showing both deafness and ethmoiditis, 1 in 4 had tinnitus only, 1 in 25 vertigo only, and 1 in 14 had both vertigo and tinnitus.

Of the 647 of these 921 cases whose deafness was not associated with ethmoiditis, 1 in 9 had tinnitus only, against 1 in 4; 1 in 64 had vertigo only, against 1 in 25 of the preceding 274; and 1 in 32 had both tinnitus and vertigo, against 1 in 14 of the same group.

One in $3\frac{1}{2}$ cases of chronic deafness of the non-suppurative type was associated with ethmoiditis, while the proportion of those not associated was 1 in $6\frac{1}{2}$.

These are the results of Woakes's earlier observations; in his later ones he has found distinct evidence of ethmoidal disease in at least 1 out of 2 of all the patients who, having no gross objective lesion in the ears, complain of deafness with giddiness, or tinnitus, or of any combination of those symptoms. In his experience 99 per cent. of those patients showing both nasal and ear disease revealed the presence of necrosis in the ethmoidal region of the nose.

To sum up: I think it is quite fair to assume that in the bulk of the cases in which complaint is made, or in which any discharge is found in the post-nasal space or pharynx, or in which there is any condition approaching what is termed pharyngea sicca, caries, to a greater or lesser extent, will be found in the nasal cavities, and where there is any long-standing or serious mischief the disease will be found to have extended to the ethmoidal cells. When this is the case, there will be associated with it middle-ear disease, with vertigo and tinnitus.

Although it is possible that Dr. Woakes may have laid too much stress on the nerve symptoms connected with the nasal mischief, I think there is no doubt of the importance of treating the nasal mischief.

DISCUSSION.

Dr. SCANES SPICER (London) was glad to hear Mr. George Jackson insist again on the great frequency of nasal disease in ear patients, and the practical importance of examining the nose and correcting abnormalities there when there were ear symptoms. There was no doubt that Dr. Edward Woakes had shown an acumen altogether in advance of his time in this connexion, and the substantial value of his work was hardly at all diminished by such minor matters as his terminology, his explanation of certain phenomena by a hypothesis of reflex action in sympathetic ganglia, and an early—possibly excessive—enthusiasm. Other explanations of the relations and processes were no doubt possible and sometimes probable, but the progress of otological science and practice had on the whole justified Dr. Woakes's contention as to the necessity of getting the nose in order when the ear was diseased. Personally he (the speaker) was more radical than Mr. Jackson appeared to be, and he had had no cause to regret it; for these cases usually came late, and any saving of time was of importance.

Dr. A. BRONNER (Bradford) thought that the figures of Dr. Woakes were very much exaggerated, and could not be accepted as accurate at the present day.

ETIOLOGY OF THE COMPLICATIONS OF EMPYEMA OF THE ACCESSORY NASAL CAVITIES.

By Professor Dr. A. ONODI,
Buda-Pesth.

IN purulent inflammations of the sinuses, the following are of etiological importance, namely, infection, the course of the inflammation, gaps in the bone, and circulatory disturbances. On the whole, *post-mortem* information is very scanty, and, with individual exceptions, consists of macroscopic details, which in general establish the causal connexion of the purulent inflammation of the sinuses with the visible bone destruction, perforation, thrombophlebitis, meningitis, orbital and cerebral abscess, etc. Exact histological examination, however, which would determine the path of infection as well as the changes in the sinus walls, in the vessels, the venous connexions, the optic nerve, etc., are absent. The observations of Ortmann[1] and Hajek[2] show that the path of infection is through the tissue connexions and the blood vessels. In sections through the bones and skin diplococci can be demonstrated, and also the invasion of the blood channels by streptococci. The nasal lymphatic path of infection has yet to be microscopically determined.

Etiologically, the strength and thickness of those bony walls of the sinuses which border on the cranial cavity, the sinus cavernosus, the optic nerves and the orbits,

possess a practical importance, since they may favour the continuance of the pathological process, the destruction, the circulatory disturbance, the tension and fracture, or they may raise a barrier to, or even prevent, these results. These bony walls may be as thin as paper, or may show a thickness of 1 to 12 mm. My preparations show these differences in the bone walls.

In the etiology a rôle is also played by the gaps in the bone, their practical significance consisting in the fact that they may directly favour and produce orbital and intracranial complications, as well as disturbances of sight.

The diseased mucous membrane of the sinuses may come into direct contact with the orbital periosteum, the dura mater, and the sheath of the optic nerve, and in this way the pathological process may easily spread to the parts indicated and cause perforations. Moreover, apertures in the vessel grooves may lead to disease of the vessel concerned. Congenital apertures in the orbital wall of the antrum have been observed by Zuckerkandl[3] four times, and by Merlin[4] twice. Congenital apertures of the anterior wall of the frontal sinus were noted by Zuckerkandl, Helly,[5] and Onodi,[6] and in the upper wall of the frontal sinus situated between the lamellae of the upper orbital walls by Ónodi. Those gaps in the lamina papyracea of the ethmoid, which also extend on to the orbital wall of the frontal sinus, were observed by Zuckerkandl and Onodi, each three times, and by Merlin once. On the common septum of the frontal sinus congenital gaps of varying size may occur (Denonvilliers, Gosselin,[7] Winkler,[8] Killian,[9] Onodi). The congenital gaps in the lamina papyracea of the ethmoid were observed by Zuckerkandl in 14, Ónodi in 18, and Merlin in 3 cases. Physiological gaps in the side wall of the sphenoidal sinus have been observed by Zuckerkandl, Spee,[10] and Ónodi. Apertures in the walls of the optic canal have been described by Gallmaerts,[11] Holmes,[12] and Onodi. My preparations show these congenital apertures. Zuckerkandl, Merlin, and Ónodi have found apertures in senile atrophy. Through these gaps between the sinuses and the cranial cavity, pachymeningitis, extradural abscess, perforation, and cerebral abscess may originate; by the gaps between the sinuses and the forehead, cheek, and pterygo-palatine fossa, periostitis, phlegmon, abscesses, and thrombophlebitis may arise; by the gaps between the sinuses and the orbits, emphysema of the orbit, periostitis, orbital phlegmon, orbital abscess, and thrombo-phlebitis may be set up; by the gaps in the optic canal, periostitis, optic perineuritis, neuritis, and atrophy of the optic nerve may arise. The spread of the inflammation, of the pathological process in the sinuses, the pathological changes of the contents of the orbit, of the optic canal, and of the optic nerve, the intracranial and cerebral complications, all stand in close relation to the venous system. The connexion of the veins and venous meshwork are of practical importance; they explain the origin of the circulatory disturbances, the thrombo-phlebitis and thromboses. The veins of the nasal mucous membrane are connected with the veins of the face, of the eyes, and of the capillary network in the pterygo palatine fossa. According to Zuckerkandl, the anterior ethmoidal veins are associated with those of the dura mater and pia mater. The perforating veins of the frontal sinus join, according to Kuhnt,[13] those with the dural capillary network. The veins of the nose and of its accessory cavities are associated with those of the eyes, with the dural and meningeal capillary network, and with the blood channels of the cranial cavity. The anterior ethmoidal veins may, according to Onodi, run freely for a varying distance in the ethmoidal semicanal described by him. He found this half canal in 16 cases; its length varied from 5 to 12 mm.; three times it was found in the frontal sinus, and thirteen times in the ethmoidal cells. The mucous membrane of the sinus approaches laterally the orbital periosteum, medianly the dura mater; the pathological process may spread in both directions, and moreover, circulatory disturbances may set in, and the ethmoidal veins, which are in connexion with the dural capillary network, and the plexus ophthalmicus, are directly exposed to the danger of a thrombo-phlebitis which may extend into the dural and orbital capillary network. My preparations show the course of the ethmoidal canal from the anterior ethmoidal foramen to the cranial fossa.

Besides these conditions, the spread of the inflammatory process may reach the periosteum, the bony walls of the sinuses and the neighbouring soft parts, and may lead to inflammation of the bone, bone destruction, caries, necrosis, perforation of the individual sinuses, phlegmon, and abscesses of the orbit, and of the neighbouring parts of the particular sinuses with their consequences. If the inflammation spreads further through the bones, then the optic nerve, in the region of the optic canal, as well as its sheath, may easily be drawn into participation; if the inflammation reaches the orbit through the bones, then arises first a periostitis, which may spread directly to the optic canal, and may produce disease of the optic nerve, and, further, orbital phlegmon and orbital abscess, which may cause pressure on the optic nerve and its vessels, as well as thrombo-phlebitis, with its serious consequences. The spread of the pathological changes of the diseased sinuses to their vessels, the destruction of the bony walls, the involvement of the cranial cavity, lead to intracranial and cerebral complications, to meningitis, pus collections, brain abscesses, and thrombo-phlebitis of the blood channels.

The thin common septa between individual sinuses may by perforation cause involvement of the neighbouring sinuses. Onodi's[14] examinations have shown that the antrum was separated in six cases from the sphenoidal sinus by a thin partition, 4 to 10 mm. wide. Further, there may be common septa between the antrum and ethmoidal cells, between the frontal sinus and the ethmoidal cells and also the sphenoidal sinus, and between the ethmoidal cells and the sphenoidal sinus. The pathological process may in this way spread from the antrum to the ethmoidal cells and the sphenoidal sinus, from the frontal sinus to the ethmoidal cells and the sphenoidal sinus, and from the ethmoidal cells to the sphenoidal sinus on the same side. It may also happen, as a result of infection through the common walls of the ethmoidal cells, that the opposite sphenoidal sinuses may be affected. The same occurrences may take their starting point from the opposite direction. My preparations show the sinuses, with their lining mucous membrane *in situ*, in their relation to the cranial cavity, the frontal and temporal lobes, the optic nerve, sinus cavernosus, internal carotid, orbit, and nasal cavity.

I also mention my observations, which concern on the one hand the relation of the frontal sinus to the brain lobe, on the other hand the bony gap, and communications between the frontal sinus and the orbital cells.

In asymmetry of the frontal sinuses I have noticed that one frontal sinus stands in close relation with the frontal lobes on both sides. In one preparation the right frontal sinus extended 17 mm. beyond the mid-line, and in another preparation 20 mm. over the mid-line, towards the left; the right frontal sinus, by its great extent, thus comes into relation with both frontal lobes. In one preparation the left frontal sinus extended 16 mm. to the right over the mid-line, and was associated with both frontal lobes. In such cases disease of one frontal sinus may cause, among other things, a frontal lobe abscess on both sides, or on the opposite side. Of course, beside the destruction of the posterior wall of the frontal sinus and perforation, embolus, thrombo-phlebitis of the perforating veins, and venous communications must be taken into consideration in the etiology. In one preparation the left frontal sinus, 15 mm. wide, extended over the right frontal sinus, and also 30 mm. upwards. In this case, to the disease of the left frontal sinus a bilateral or crossed cerebral complication is possible. In one case the left frontal sinus extended to the middle cranial fossa; it had an area, between the fissura orbitalis inferior and the temporal fossa, in width 25 mm. and height 10 mm., and formed the most anterior and the superior wall of the middle cranial fossa. In this case intracranial complications in the anterior and middle cranial fossae, as well as cerebral abscess in the frontal and temporal lobes, are possibilities.

The bony gaps observed by me in the septa between the frontal sinus and the orbital cells may be hidden by the mucous membrane, or form a free communication between the sinuses. In disease of the frontal sinus the orbital cells may participate, and in operative measures to the frontal sinus the bony apertures, covered with mucous membrane, may remain untouched and the small openings easily overlooked; consequently the diseased orbital cells

may form the starting point of different complications. One can clearly see by the above-mentioned etiological details the origin of the different severe complications. I summarize the severest of these that have been demonstrated.

In empyema of the antrum abscesses have been observed three times, perforation three times, and thrombo phlebitis once. Abscesses were present in the fronto-temporal and occipital lobes. Rupture into the sphenoidal sinus occurred once, into the pterygo-palatine fossa once, and once into the mid-cranial fossa. The thrombo-phlebitis concerned the plexus ophthalmicus and pterygoideus.

In empyema of the frontal sinus perforation of the posterior wall was observed eight times, perforation of the posterior and inferior wall three times, brain abscess eight times, meningitis eight times, and thrombo-phlebitis six times. Frontal abscesses were associated in 6 cases with perforation of the frontal sinus wall. The thrombo-phlebitis affected three times the sinus cavernosus and the vena ophthalmica, three times the longitudinal sinus. In certain cases extradural and intradural abscesses were present.

In empyema of the ethmoidal cells meningitis was present five times, brain abscess thrice, perforation of the lamina cribrosa three times, perforation of the upper orbital wall once.

In empyema of the sphenoidal sinus, meningitis was present eleven times, thrombo-phlebitis nine times, and perforation into the cranial cavity seven times. The thrombo-phlebitis involved the sinus cavernosus, the sinus petrosus, the sinus circularis, and the sinus longitudinalis.

In empyemata of several sinuses, meningitis was present seven times, thrombo-phlebitis seven times, brain abscess seven times, perforation twice, in individual cases, extradural and intradural abscesses. My preparations show also the intimate relation between the optic nerve and the sinuses, the free course of the optic canal in the cavities, and the relations to the opposite optic nerve. They give the explanation of the origin of the disturbances of sight and blindness on the same as well as on the opposite side.

In empyemata of the sinuses permanent disturbances of vision have been observed, blindness in 27 cases. In 3 cases injuries of the optic nerve have occurred through operative procedures in the nose.

In my book[15] I have described fully the therapeutics of sinus diseases and set forth the indications in the particular cases. It follows from the above that suitable and early operation may prevent complications, or may secure the favourable course of a complication if present. Brilliant results have indeed been obtained in the severest cases. In drawing attention to the etiology of the severest complications on the basis of our examinations, we hope, in the future, that in addition to the knowledge gained by macroscopical examination, exact microscopical study will also determine histologically the finer details—the path of infection, and the causal connexion between the purulent inflammation of the sinuses and their complications.

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DISCUSSION ON THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR WITHOUT RESORT TO RADICAL MASTOID OPERATION.

OPENING PAPER.

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NOTWITHSTANDING the widespread interest which has been taken in the treatment of chronic suppurative disease of the middle ear, and despite the enormous amount of literature which has been written upon the subject, there still exists considerable diversity of opinion not only as to the best and most effective methods of treatment, but more especially as to that much-discussed question "at what stage of the disease should local treatment cease and operative interference of one sort or another begin?"

It is my intention to lay before you certain deductions gained from personal experience, and to attempt to evolve therefrom a working hypothesis. It is held by many that the surgical pendulum has already swung too far, that there is a too great readiness to resort to surgical interference without having first given local therapeutic measures a fair trial, whilst, on the other hand, there are many who claim that the pathological findings in cases of chronic suppurative middle-ear disease warrant an even earlier recourse to surgical interference than is at present adopted.

Before considering the question of treatment in any of its aspects, it is essential to have a clear conception of what constitutes chronicity.

Clinically, chronicity is evidenced by an absence of acute pain, by a more or less continued abeyance in the function of the implicated organ, by the existence of a discharge from the infected tympanum, and by such objective indications as the presence of a perforation with gradually thickening edges, by the formation of exuberant granulations, or by extension of disease to the underlying bone.

From a histo-pathological examination we find that, whereas during the course of an acute suppurative otitis media there is extensive shedding of the superficial columnar epithelial elements of the mucosa in conjunction with a copious leucocytosis and the frequent presence of red blood cells in the discharge, as chronicity becomes established the type of epithelium becomes changed to a much more flattened and squamous variety, whilst leucocytes tend to be gradually replaced by lymphocytes and myelocytes.

Chronic discharges from the middle-ear cleft are almost invariably mixed infections, the predominating organisms being saprophytes. The invasion of the tympanum by organisms, pathogenic or otherwise, in pure cultivation or in mixed, induces an active resistance on the part of its mucosa whilst the tissue changes which result are of a purely defensive nature. The factor of prime importance is the endeavour on the part of the cytoplasm of the part to digest the attacking bacteria. Where the irritant is slight desquamation results, where of greater virulence leucocytes are present and act as phagocytes, and by means of their intracellular ferments the cytases take an active share in ridding the infected region of micro-organisms.

The endothelial cells of the tympanic capillaries participate also in this defensive warfare, whilst, owing to their extreme permeability, they permit of the passage of phagocytes into the surrounding tissues.

It may be asked, In what way do these facts help us to determine the question of an acute *versus* a chronic process? The greater the number of shed macrophages and microphages, the more active the defensive action of the tympanic mucosa, the more acute the underlying inflammatory process. Conversely, given a decreasing number of living leucocytes in the discharge, the discharge still remaining fairly copious, the deeper the tissue changes effected, the more chronic the process. The fibroid changes which gradually take place in the tympanic mucosa are neither more nor less than the outcome of prolonged phagocytic warfare. The newly-formed vascular loops are projected by the action of the endothelium of the minute blood vessels, whilst around them cellular elements collect and granulations form with subsequent metamorphosis into definite connective tissue bundles. In cases of acute septic otitis media it is by no means unusual to obtain pure cultures of an organism, whereas in chronic cases the infection is invariably a mixed one. The more numerous the varieties of bacteria found, as a rule, the more chronic the process.

The types of chronic suppurative middle-ear disease met with in practice are of two main kinds—(1) the septic, (2) the tuberculous to which a septic infection has been grafted. In the majority of cases of genuinely chronic septic middle-ear disease the whole middle-ear cleft is involved. We have thus to deal with infection in a somewhat composite cavity whose lining membrane is con-

stantly secreting discharge—a discharge which tends to be retained, owing to imperfect means of exit, and to infect the surrounding bony parietes.

The first essential treatment is the establishment and the maintenance of free drainage. Were this simple axiom more generally attended to in the acute stages of the disease, there would unquestionably be far less chronic mischief. Small perforations should invariably be enlarged. This may be effected by means of a free incision or by a fine cautery point. My own practice is to make two incisions through the existing small perforation in the shape of a St. Andrew's cross, and then to aspirate the contents of the middle-ear cleft by means of a Siegle's speculum or a Sondermann's suction apparatus. Aspiration confers a threefold benefit. In the first place it empties, or at least helps to empty, the middle-ear cleft of secretion, in the second place it draws from the distended tympanic blood vessels a large quantity of serum possessing bactericidal properties, and in the third place it secures a certain eversion of the lips of the incision thereby tending to prevent a too early closure.

The actual removal of a definite segment of the membrane is at times advantageous, but it is not easy to carry out. Tufts of granulation tissue, which obviously tend to prevent the exit of discharge and the ingress of medicaments, should be removed either by the application of chemical caustics or by means of small spoons, curettes or forceps. For this purpose I have found the minature Hartmann's forceps of great value. On the other hand, where granulation tissue is present in small amount and where it in no way interferes with the mechanism of drainage, the proper course, I believe, is to leave it alone, recognizing the fact that it is the outcome of an effort on the part of Nature to protect the mucoperiosteum and to ward off pathogenic invasion. Its removal under such circumstances serves merely to open up fresh channels of possible infection, whilst if free drainage be provided and the inflammatory process in the tympanum subsides, exuberant granulation tissue tends spontaneously to disappear. In chronic septic inflammation of the middle-ear cleft where Nature—or failing Nature, the surgeon's art—has provided satisfactory and efficient drainage, inflation by means of the Eustachian catheter or Politzer's bag is of undoubted value. Its usefulness is much increased if followed up by aspiration.

Irrigation of the middle ear by way of the Eustachian tube is a useful and effective method of lavage, the main objections to its employment being that, to be of real service, it must be carried out by a surgeon accustomed to handle the Eustachian catheter. Where this is possible the method has the great advantage that it cleanses the original pathway of infection—the Eustachian tube—that it empties the hypotympanum of residual secretion, and that it irrigates the middle-ear cleft from end to end.

Considering that the vast proportion of cases of middle-ear sepsis are the result of infection *per tubam*, I would here emphasize the necessity of attending to the condition of the nose, naso-pharynx, and pharynx. All pathological entities arising in the upper respiratory tract and tending to interfere with the normal physiological function of the Eustachian tubes, or to cause infection or reinfection of the antrotympanic mucosa should be summarily dealt with. Under the former heading are included adenoids, naso-pharyngeal growths, nasal polypi, deflected septa producing definite nasal stenosis, hypertrophy of the inferior and middle turbinated bodies, enlarged tonsils, *et hoc genus omne*; under the latter, suppurative disease of the nasal accessory sinuses, purulent rhinitis, atrophic rhinitis (ozaena), and carious teeth. There is no question that many a case of chronic purulent middle-ear disease clears up rapidly after removal of even comparatively small tufts of adenoid vegetations situated in the immediate neighbourhood of the tubal orifices—tufts which produce no nasal stenosis, but which, by harbouring localized catarrhal changes, interfere materially with the ventilation and drainage of the middle-ear cleft. As the naso-pharygeal mucosa is invariably septic in cases of chronic purulent otitis media, regular lavage or spraying with alkaline antiseptics should be the rule, and this even after the performance of intrameatal or extrameatal operations.

I would particularly draw attention to the rôle played by nasal accessory sinus suppuration in causing and in maintaining purulent disease of the middle ear. In like manner the presence of nasal and naso pharyngeal atrophic rhinitis is not to be overlooked as a factor of importance in maintaining purulency owing to the disappearance of all lymphoid elements and the consequent absence of phagocytes. The existence of carious teeth at times retards the arrest of a middle-ear discharge. Personally, I consider it as of just as much importance to have a hygienic mouth as it is to have a hygienic nose. The constant contamination of the oral and pharyngeal secretions by carious teeth and the tainted air inspired through the mouth is, to say the least, unlikely to be beneficial to the morbid ear or ears. In several of my own cases of chronic otitis media and in a large number of cases observed by Mr. Wyatt Wingrave the *Spirochaeta dentalis* and the *B. fusiformis* either together or separately, and certain other mouth organisms, were found, thus confirming the belief of the interdependence, to some extent at least, of the one lesion upon the other.

Having secured free drainage from the tympanic cavity and having placed the contributory paths of possible infection in as healthy a condition as is possible we have now to decide as to what form of local treatment is to be employed in any particular case. As all treatment should, so far as is feasible, be based upon scientific rather than empirical principles, a detailed examination of a droplet of pus taken from the infected region should first of all be made, to determine, if possible, the nature and the extent of the inflammatory process. For some time past, and recently in conjunction with Mr. Wyatt Wingrave, I have made a careful microscopical examination of the discharge from chronic septic cases and as a result have gleaned information which has been of great practical value. The method adopted has been as follows: Antiseptic treatment having been entirely stopped for a few days the meatus is carefully mopped out by means of sterilized wool. Discharge is then drawn from the middle ear cleft by means of a suction apparatus. A drop of this discharge is then placed upon a cover-slip. Another cover-slip is placed over this droplet and pressure is applied. The two cover-slips are separated by a gliding motion, the smear thus obtained slowly dried, stained, and examined for organisms and for cytological evidence. The characteristics of the cellular elements are first taken into consideration and afterwards the bacteriological findings. Provided the cytological examination reveals an extensive leucocytosis with, in addition, degenerated columnar epithelial cells and but few lymphocytes, the conclusion to be come to is that the process is superficial, exudative, limited to the mucosa and capable of arrest by means of efficient local treatment. On the other hand, the presence of a number of lymphocytes is indicative of granulomatous changes in the mucosa, changes which suggest an extension of the inflammatory process to the deeper layers of the mucosa and changes which are unlikely to be arrested by any form of purely local medication.

The finding of large numbers of flattened polyhedral "acid-fast" squames is diagnostic of cholesteatomatous degeneration, antral or tympanic. In like manner an analysis of the organisms found is of immense practical importance. The various micrococci have very varying degrees of pathogenicity, and thus of practical importance. The most virulent organisms in my experience are the diplococci, including the Gram-negative cocci, namely, Weichselbaum's meningococcus, the gonococcus, and the *Diplococcus catarrhalis*, and the Gram positive pneumococcus. The well-known proclivity of these organisms to produce intracranial complications demands their immediate suppression.

Next in order of virulence comes the *Streptococcus pyogenes*, an organism with inherent potentialities of causing severe and often fatal complications and demanding surgical intervention for its removal. The staphylococci—very common organisms in middle-ear exudations—are undoubtedly much less virulent, although often most troublesome to dislodge. In such cases, continuance of purely local treatment is quite justifiable and often successful, especially if the opsonic index can be raised by a few injections of a staphylococcic vaccine. Certain discharges from the middle-ear cleft will be found to contain practically no cell elements. In such cases the discharge is often profuse, thick and fetid. Microscopically, it consists chiefly of amorphous granules, and swarms with all kinds of bacteria, many of them "acid-fast." Such a discharge is simply "pocketed," and disappears after

drainage and sterilization of the infected cavity. The information derived from a cytological and bacteriological examination of the discharge from the middle ear appears to me to be of so much practical value as to entirely overshadow the former more or less generally accepted "time-limit" method of dealing with these cases. In the first place, the treatment of these obstinate cases of middle-ear suppuration is placed upon a scientific basis, and in the second place there is in a given case a certain assurance that an operation is necessary, an assurance which is by no means always forthcoming if the mere duration of purulency be the sole criterion.

It must be recognized that a careful cytological examination demonstrates at times that chronicity—in the scientific acceptation of the term—may occur at a comparatively early stage of the disease, and that deep-seated changes may be taking place in the mucosa in parts hidden from actual objective examination at a much earlier period than is usually thought to be the case. It is also possible by this method of examination to differentiate between those cases which may be classified as dangerous and those which are not dangerous. To the former, or dangerous class, belong those cases of chronic purulency where the *Diplococcus intracellularis* or the *Streptococcus pyogenes* are the predominating organisms, where lymphocytes are found in abundance, together with myelocytes, and where the epithelioid elements—"acid-fast" squames—indicative of cholesteatomatous degeneration crowd the field; to the latter those cases where the infective organisms are mainly staphylococci, and where there is an abundant supply of living leucocytes.

To epitomize: the discovery in the discharge of lymphocytes and epithelioid cells is presumptive evidence of granulation-tissue formation; of lymphocytes, epithelioid cells, and myelocytes of an osseous lesion; of lymphocytes and "acid-fast" squames of cholesteatomous changes; whilst the presence of lymphocytes, epithelioid cells, myelocytes, and giant cells is indicative of tuberculous disease of the temporal bone. In every case more than one cytological examination is desirable before drawing any definite conclusions.

The two conservative methods of treatment in everyday use are the wet and the dry. Certain circumstances favour the employment of the former, certain other circumstances the latter. The following points should be taken into consideration in deciding this question:—(1) Is the discharge profuse? (2) Is the discharge fetid? (3) Is it possible to see the patient at frequent intervals? (4) Is the patient of sufficiently cleanly habits to be entrusted with the carrying out of his own local treatment? Where discharge is profuse there need be no hesitation in recommending fluid treatment, frequent and copious irrigation, and the instillation of antiseptic lotions. The particular form of antiseptic employed is of comparatively small moment so long as the drug employed does not act as an irritant to the tissues of the middle or external ears. Personally, I have a strong leaning to the employment of solutions of carbolic acid. Its penetrating qualities, its antiseptic action, and its analgesic effect upon the inflamed tissues of the middle ear render it an ideal drug for the purpose in hand.

Preparations of boracic acid, mercury, hydrogen peroxide, creolin, resorcin, formalin, permanganate of potash, salufer, etc., are all useful. With a Wyatt Wingrave's syringe and an abundant supply of a warm antiseptic solution much good may be effected. After copious irrigation the external meatus should be filled with a warm antiseptic and astringent solution, which should be allowed to remain *in situ* for ten to fifteen minutes at least twice a day. Experience, perhaps more than anything else, will indicate the type of lotion to be used in one case, to be avoided in another. Experience also indicates that an occasional change of drug has a salutary effect upon the chronically-inflamed mucosa. In infants and young children the fluid method of treatment is the simplest and the best borne. The main disadvantages of a long-continued fluid method of treatment are that an oedematous condition of the mucosa with the formation of flabby granulations is encouraged, whilst an increased osmosis from the minute blood vessels and an increased flow of glandular secretion result.

Where, on the other hand, the discharge is not profuse, where good drainage exists, and where the patient is readily accessible, there is much to be said in favour of the dry method of treatment—either the insufflation of one or other antiseptic powder, or tamponading with wicks of antiseptic gauze.

On general principles it is desirable to treat septic disease of the middle ear upon the same lines as septic disease elsewhere in the body. The constant reinfection which must take place where patients are allowed to manipulate their own ears appears to be one of the strongest arguments against leaving the treatment of middle-ear suppuration in the hands of the laity. The more I see of practice, both hospital and private, the more favourably impressed am I with the advantages of the dry method of treatment. When employed in suitable cases—that is, where the amount of discharge is not very profuse, where there is good drainage, and where the patient is under observation—I believe it to be the most efficacious, the most speedy, and the most scientific method of treatment. Such powders as boracic acid, europhen, dermatol, aristol, xeroform, are the ones I have found most generally useful. Iodoform, owing to its disagreeable odour, its tendency to form almost solid deposits in the middle ear and to promote exuberant granulation tissue, is better avoided. Gauze wicks made of iodoform or cyanide gauze and packed loosely into the ear are particularly efficacious, acting not only as excellent drains but also as efficient protectors against external sources of infection. In addition, an antiseptic dressing should be worn over the affected ear.

There can be no doubt that a large number of cases of chronic septic disease of the middle ear yield fairly readily to an intelligently planned and carefully carried out system of conservative local treatment. It is equally true, however, that there are vast numbers of patients seeking relief whose middle ears are in a deplorably unhealthy condition, whose function of hearing is seriously impaired and likely to be still further impaired by a continuance of suppuration, and whose lives are hanging in the balance. In such cases the surgeon's task is a peculiarly difficult one. On the one hand the septic disease must be got rid of, on the other hand the function of audition must be carefully conserved. Where polypi, as distinguished from exuberant bone granulations, are present, their removal should be immediately effected. This may be accomplished by snare or forceps, or by the injection of rectified spirits or an alcoholic solution of formalin. Following the removal of the growth some form of caustic application should be applied to its base. In my hands nothing has given so much satisfaction as chromic acid applied upon the end of a cotton-tipped probe. Antiseptic lotions containing rectified spirit should be used regularly afterwards, or gauze packing lightly applied until suppuration has ceased.

In many cases, however, notwithstanding persistent and careful local treatment, suppuration persists. To what is this due? Have we to deal with some deep-seated bone lesion, or is it merely a peculiarly chronic infection of the mucosa of the middle-ear cleft and adjacent sinuses? The most careful objective examination will in many cases fail to detect the presence of any bone lesion, and subjective symptoms indicative of its presence are conspicuous by their absence. It is in cases of this kind—cases of chronic purulency without definite evidence of bone disease—that a cytological and bacteriological examination of the discharge yields information useful alike from the point of view of diagnosis and of treatment.

In the treatment of cases of suppuration of the middle-ear cleft much will depend upon the situation of the existing perforation—whether it be in Shrapnell's membrane or in some portion of the membrana tensa. Epitympanic suppuration is peculiarly troublesome and peculiarly liable to drift into chronic disease, and to be complicated by caries of the ossicular chain and outer attic wall, and by the formation of tufts of exuberant bone granulations. In addition epitympanic suppuration is frequently accompanied by the formation of cholesteatomata, which materially influence the progress and the prognosis of the case. The high situation of the perforation, the frequent shutting off by inflammatory adhesions of the epitympanum from the tympanum and the imperfect drainage from the infected area induce chronicity and involvement of bone. In such cases frequent

intratympanic syringing with one or other of the specially constructed intratympanic syringes in ordinary use is essential. Enlargement of small perforations of the membrana Shrapnelli is called for, followed by the intratympanic injection of such drugs as iodoform emulsion, peroxide of hydrogen, permanganate of potash, boric acid, etc. Haug[1] has obtained excellent results in epitympanic suppuration by means of the following method of treatment: The attic is first cleansed with a solution of permanganate of potash or boric acid. A solution of perhydrol in equal parts of alcohol and glycerine is then injected and retained for fifteen minutes. A pledget of wool soaked in iodine potassium iodide glycerine is then inserted, and the meatus plugged with gauze. If necessary the application is repeated in about ten days. For the breaking up of an attic cholesteatoma the injection of a solution of salicylic acid in alcohol or in anilin oil is excellent.

The unsatisfactory results so frequently obtained from the local treatment of chronic tympanic and epitympanic suppuration have led to the introduction of various operative measures for their relief, such as removal of the malleus and incus, removal of the outer attic wall, and removal of the ossicular chain and outer attic wall, followed by curetting of the attic mucosa.

Were it possible to gauge accurately beforehand the extent of the implication of the surrounding bony parietes, such operative procedures would be very much more successful than they usually are. It is quite impossible, however, in the present state of our knowledge, to settle this point without having recourse to a free exposure of the attic—the iter and the antrum—hence these minor operative procedures frequently fail because operations of a more radical nature are really demanded. Consequently I see no reason why exploratory opening of the posterior end of the middle ear cleft should not, in cases of doubt, become a recognized method of procedure. The question arises, Is it worth while to perform an ossiculectomy and remove the outer attic wall? My experience has been that when smears taken from the deeper regions of the epitympanum reveal large numbers of lymphocytes and myelocytes together with infected "acid-fast" squames, the only treatment of permanent value is the performance of a Küster, a Stacke, or a Schwartze-Stacke operation. Where, on the other hand, lymphocytes are very sparingly present, where there is a generous leucocytosis and an absence of melocytes and "acid-fast" squames, the removal of the ossicular chain, with or without the removal of the outer attic wall, is a procedure well worth trying and likely to be attended by successful results.

There are certain cases of an urgent and dangerous nature where there need be no hesitation and no delay in performing a complete radical operation—for example, cases of intracranial disease secondary to chronic middle-ear suppuration, cases of extensive mastoid caries with fistula, cases of labyrinthine suppuration, etc. On the other hand, there are many cases of tympanic suppuration where the bone complication is apparently limited, where no urgent symptoms are present, but where there is constant danger from possible extension of disease or impending pyosepticaemia. Treatment in the form of antiseptic lotions or insufflations or the local application of mineral acids is, in my experience, distinctly disappointing. Curetting what is apparently localized disease through the meatus is inexact, as a rule is insufficient, and always possesses an element of risk.

It is a vexed question how far one is justified in attempting to deal with such carious foci through the meatus. My own experience is that the actual extent of bone implication is very rarely accurately gauged by mere inspection, and that when exposed, as so frequently must be done by external operation, it is found to be from two to three times as extensive as was suspected. Formerly I was much impressed by the value of intrameatal operations in chronic suppurative disease, but must confess to have changed my opinion, and in actual practice now rarely resort to this particular *modus operandi*. Experience, moreover, showed me that recurrence of suppuration was unduly frequent, and this I attributed to incomplete removal of disease at the time of operation. During the years 1892–1896 I performed both in private and in hospital practice a large number of ossiculectomies in cases of chronic epitympanic suppuration and also in a fair number of cases of tympanic suppuration with a marginal perforation in the upper and posterior quadrant of the membrane. Many of these cases I have had the opportunity of seeing from time to time ever since. In the majority the result was at first excellent; suppuration ceased, hearing improved, tinnitus and vertigo disappeared. Time has, however, shown that the so-called cure has not been a permanent one. In 32 per cent. of the cases of which I have notes suppuration recurred after intervals of from 4 months to 2 years, necessitating the performance of a more radical operation.

Theoretically, I admit ossiculectomy and curettage of the tympanic cavity appears an ideal method of procedure. In actual practice, except in cases of isolated caries of the ossicular chain, it has, in my hands at least, proved disappointing. It is only fair to state that certain operators have recorded such favourable results from ossiculectomy and removal of the outer attic wall as to lead them to strongly urge its performance. Mr. Richard Lake, in his recent book, records favourable results. Thus, out of 50 consecutive cases, he obtained 42 cures. He admits, however, that in a certain proportion of cases there is a liability to recurrence. Mr. Faulder White, of Coventry, has for years past advocated a method of procedure which he calls otectomy, and which consists in removal of the membrana tympani, the malleus, and, in certain cases, the incus. This operation he follows up by very copious irrigation, using about a quart of salufer solution four times a day. Provided that the septic process is confined to the cavity of the tympanum and to its mucosa, the results from such a method of procedure should be satisfactory. My own experience leads me to believe that in genuinely chronic cases of epitympanic suppuration it is not merely a question of disease of the epitympanic recess and its mucosa, but of the posterior end of the middle-ear cleft and the adjoining accessory spaces. Those cases which do well as the result of an ossiculectomy, and I must confess that in my experience they have not been numerous, are, I believe cases where, had a cytological examination been made, lymphocytes, myelocytes, and "acid-fast" squames would have been found conspicuous by their absence. No irrigation treatment is, I believe, capable of arresting the septic process when it has once invaded the deeper layers of the tympanic and epitympanic parietes. It is true that for a time it may produce an apparent cure, but the disease is merely latent, and will recur sooner or later.

In such cases we have, as a rule, to face the performance of one or other form of post-aural operation—an operation which, whilst laying bare the area of sepsis, must be of such a character as not to injure the mechanism of audition. There can no longer be any doubt that the removal of the remains of the membrana tympani and the two larger ossicles is not necessarily followed by an impairment of hearing. I would go farther and say that by so doing the hearing power of the individual is frequently much improved. What means have we, then, at our disposal to enable us to judge when to remove and when to preserve the membrane and the ossicular chain? Where there is no direct evidence that the ossicular chain is diseased, where its movements are free, where lymphocytes are sparingly found in the discharge from the tympanum, and where the hearing power is good, the opening up and drainage of the posterior end of the middle-ear cleft—in other words, the mastoid antrum—and the removal of the greater portion of the posterior meatal wall with any soft and disintegrating bone in its immediate neighbourhood, and with preservation of the membrane, will in most cases effect a cure of the septic process and an improvement in audition. On looking up my hospital notes I find that from 1897 onwards I have performed many operations upon this principle. The auricle was first thrown forwards and the postero-superior meatal wall chiselled away, so as to open up the iter and the antral cavity, the ossicular chain and the membrane being preserved. The following case is quoted in illustration:

L. M., female, aged 23. Right sided septic otitis media of seven years' duration; perforation of posterior part of Shrapnell's membrane; operation May 1897; antrum opened from posterior meatal wall, membrane and ossicular chain preserved; complete arrest of suppuration. Patient seen May 13th, 1907. Parts remain thoroughly healed; hearing power unaltered.

[1] *Archiv. of Otolog.*, vol. xxxiv, November 6th.

It must be recognized, however, that there is always a certain risk in leaving the ossicular chain in cases of old-standing purulency. The fact that lacunar bone absorption goes on at times insidiously under an apparently healthy periosteum must not be lost sight of. This most frequently is found to occur in tuberculous cases.

Where, on the other hand, careful palpation with a delicate probe demonstrates ossicular caries, where lymphocytes and myelocytes are found to be numerous, and where the hearing power is very defective, the membrane and the ossicular chain should, in my opinion, be removed.

In many of these last-mentioned cases Stacke's operation answers all possible requirements, and the complete radical operation is not called for. As the exact extent of disease in the surrounding bone cannot, however, be accurately gauged beforehand the operator must always be prepared to follow up the various paths of septic infection and perform what practically comes to be a complete radical operation.

In cases of the type first alluded to, the technique adopted by Mr. Heath will be found to be of service. I use the word "technique" advisedly, because there can be no manner of doubt that his method of operating in no sense constitutes a new operation. In genuinely chronic cases this method of operation must of necessity have very narrow limitations.

The assumption that the "danger zone" lies entirely within the mastoid antrum is a pathological error of the first importance. Every operating surgeon who is conversant with the pathology of temporal bone suppuration is fully alive to the fact that in chronic septic middle-ear disease infected cells are frequently met with as far down as the tip of the mastoid process, that necrosis of the tegmen tympani is not uncommon, and that ossicular caries and caries of the outer attic wall are pathological entities with which to reckon.

Notwithstanding this, Mr. Heath urges upon the profession as a routine measure a method of procedure in which there is an entire disregard of these pathological possibilities, not to say probabilities.

Whether a Stacke's operation or one of its modifications be performed, my practice is to keep the patient in bed for from ten to fourteen days, to remove the packing on the fourth or fifth day, and to treat the granulating cavity by the frequent instillation of a saturated alcoholic solution of boracic acid or by daily insufflations of pure boric acid. I am satisfied that rest in bed for at least ten days is of advantage to the patient and assists in the formation of healthy granulation tissue, whilst I am equally satisfied that prolonged packing promotes the formation of soft oedematous granulations upon which epithelium finds a difficulty in living. Where the wound in the bone is not of any great dimensions it is unnecessary to graft, but where, on the other hand, a considerable area of the surrounding bone has had to be removed, grafting is, I hold, a very valuable adjunct to the healing process and does not in my experience injure audition.

Treatment by Bier's method of congestive hyperaemia has given such excellent results in cases of acute septic middle-ear disease that it is but natural that it should also have been tried in cases of chronic purulency with or without mastoid complications. Unfortunately the results in chronic cases have so far not been very successful. This no doubt is due, in part at any rate, to a faulty selection of cases for treatment. Hyperaemization can effect no possible good in cases where dead bone is being thrown off, or remains as a sequestrum, or where a cholesteatoma is present.

If, however, a careful cytological examination of the pus from the diseased middle ear be first of all made, and if it be found that "acid-fast" epithelioid cells, diagnostic of cholesteatoma, and myelocytes, indicative of a breaking down of the cancellous bone around the infected tympanum, are absent, a small percentage of chronic cases will be found to yield to this particular line of treatment. My experience of hyperaemization in chronic septic otitis media without demonstrable bone lesion is that free drainage from the middle ear should first of all be provided, that granulation polypi should be removed, and that the constriction of the cervical vessels should be kept up almost continuously.

To relieve the headache which is so frequent in cases of chronic middle ear disease I have found lumbar puncture of considerable value. The main indications for its employment are in those old-standing cases where, in the absence of objective indications of local retention of pus, headache, mental hebetude, and occasionally slight vertigo are complained of.

There is a type of chronic purulent disease of the middle ear, occurring in infants and young children, produced by a specific organism and attended by such early destruction of tissue that even in the absence of any definite implication of bone early operative interference is necessary. I refer to gonococcal otitis media or otitis purulenta neonatorum.

Ophthalmologists have for long recognized the existence of ophthalmia neonatorum and have laid down very stringent rules as to its treatment. Aural surgeons have not in the past, I think, sufficiently recognized a corresponding disease of the tympanic mucosa, common in infants and remarkable alike for its power of destroying the delicate tissues of the middle ear, for disintegrating the petro-mastoid, and for producing labyrinthine complications. The essential and the causative agent in producing the disease is the gonococcus, occasionally found in pure culture, more usually, however, in conjunction with other cocci. Given a diagnosis of otitis purulenta neonatorum, no time should be lost in opening the posterior end of the middle-ear cleft, in securing and in maintaining free drainage.

Tuberculous disease of the middle ear and its adnexa presents many peculiarities, both clinically and therapeutically. Perhaps the most prominent symptom of the disease is its painless, asthenic and chronic course. There can be no question that tubercle may lie latent in the cavity of the middle ear for long periods without producing any symptom of moment. If, however, a secondary infection ensues, the hitherto dormant tubercle is roused into activity, rapid breaking down and disintegration result, accompanied by extensive carious or cario-necrotic bone lesions. The question whether such tuberculous changes are ever primary in the middle-ear cleft does not particularly concern us at present. The point at issue is the method of treatment most likely to be efficacious.

Local measures in the form of lavage, instillation of antiseptics, or of such drugs as lactic acid, iodoform, iodol, etc., have been tried, and have almost invariably been found to be wanting.

In a few cases of chronic tuberculosis of the petro-mastoid I have obtained good results by the cautious subcutaneous injection of Koch's tuberculin T.R. The opsonic index having first of all been taken—and it is in these cases generally low—injections of tuberculin are made every three days and the local reaction carefully watched.

Apparently the only measure likely to be beneficial, capable of arresting bone disintegration and preserving the continuity of the ossicular chain, is retro-auricular drainage. No set operation, no extensive operation is advisable. The general asthenic, debilitated, and often cachectic condition of the patient negatives this. A free retro-auricular opening, the maintenance of drainage, and the removal of necrotic areas of bone will be found to answer better than the performance of any typical operation, such as the Stacke or the Schwartze-Stacke.

In tuberculosis of the middle ear, secondary to advanced pulmonary tuberculosis, operations of any sort are generally contraindicated on the ground that the general condition of the patient is not such as to stand any prolonged operative interference. Whilst no doubt this view is, as a rule, correct, I am satisfied that there are cases where retro-auricular drainage is advisable, and where much benefit, both locally and constitutionally, arises as the result of the improved drainage thereby effected.

The points, therefore, which appear to me to be of special value in the treatment of chronic purulent disease of the middle ear are:

1. The securing of free drainage from the infected middle-ear cleft.

2. The treatment of any lesion of the upper respiratory or buccal tracts likely to interfere with the drainage or the ventilation of the middle-ear cleft or likely to cause its reinfection.

3. The value of a cytological examination of discharge from the infected ear in assisting in the determination of operative *versus* non-operative treatment.

4. The post-auricular exposure of the posterior end of

the middle-ear cleft and the following up of the paths of septic infection thereby brought into view.

DISCUSSION.

Dr. William Hill (London) expressed himself as in cordial agreement with Dr. Milligan regarding the value of local medication, which, if really efficiently carried out, would lead to a practical cure in a large proportion of uncomplicated cases of chronic suppuration, without resort even to intrameatal surgery. There were, however, great difficulties in the way of attaining any approach to efficiency in out-patient practice, and even in dealing with private patients brilliant results were rarely obtainable in very chronic cases, unless the case was seen almost daily for two or three weeks by a practitioner *au fait* at intrameatal treatment, and supplemented by the services of a skilled nurse, who could attend to the aural tollet at least thrice daily with the aid of the mirror and speculum. Where patients could be persuaded to submit to such a course of efficient treatment a large proportion of gratifying results could be recorded. But unfortunately, in hospital practice, beds were rarely available for chronic cases, other than those requiring urgent operative treatment. The speaker then gave a review of the history of mastoid surgery.

Dr. McKenzie Johnston (President) appealed to members to keep the discussion within narrow limits, and to avoid personal allusions or spreading their remarks over too wide a range. He reminded them that the object of the discussion was, if possible, to find how successfully to treat their cases of chronic suppuration without resort to the radical mastoid operation. In short, to try and discover some satisfactory half-measures between simple cleansing, etc., and this operation. It would, therefore, not be necessary to discuss in detail any of the varieties of mastoid operation, nor did the question of priority of any particular operation fall within the scope of the discussion.

Mr. Cresswell Baber (Brighton) said that the larger his experience the more convinced he became of the uselessness of half-measures in a large proportion of cases of chronic suppuration. As regards pre-operative treatment, he discussed the moist and dry methods. For the former he thought there was nothing better than thorough syringing with an antiseptic, followed by instillations of alcohol. The treatment by dry powders (of which there was still nothing better than boracic acid) should only be employed with caution, as the powder often only masked the disease, which continued to go on under the same. He had been disappointed with the results of ossiculectomy and curetting of granulations. He thought that operations for opening the antrum through the meatus were more likely to endanger the facial nerve than a radical operation in which those parts were clearly exposed to view. He considered that the drawback of leaving the ossicles was the difficulty of ascertaining whether they were diseased or not. He advocated the disuse of packing after the radical mastoid operation as far as possible. Although well aware of the benefit to hearing often produced, he gave a warning against the indiscriminate use of artificial drums, as he considered that allowing a patient to insert cotton-wool or other artificial membrane on to a tympanum from which there was any discharge was a very unsurgical procedure. He thought that there was not yet sufficient proof of the importance of treatment based upon the bacteriological examination of the discharge.

Dr. Reeve (Toronto) pointed out the importance of thorough inspection of neighbouring cavities, and the treatment of any diseased conditions found before doing any major ear operation.

Mr. Stuart-Low (London) said that he had found the great importance of attention to the hygiene of the hair and scalp, especially in females, in cases of chronic discharge from the middle ear. For this purpose he had found that if the head were washed twice a week with lysoform soap and a lotion composed of an aqueous solution of 30 per cent. sp. vini rect. and 25 per cent. liq. hydrarg perchlor., rubbed into the scalp, improvement often followed. He also emphasized the value of careful cleansing of the meatus and middle ear. For this purpose a solution consisting of sodium citrate 1, sugar 10, water 100, was very useful. This solution also increased diapedesis and leucocytosis. Having cleansed the parts in this manner, sterilized horse-serum prepared by Messrs. Burroughs and Wellcome was injected into the tympanic cavity. This was made use of also with the object of increasing diapedesis and leucocytosis. It was founded on Sir A. E. Wright's researches, and acted on the bacteria by virtue of its opsonins, and prepared them for destruction by the freshly-exuded leucocytes; many cases which were intractable to ordinary methods rapidly improved when treated on these lines.

Dr. W. S. Syme (Glasgow) said Dr. Milligan had struck the right note in pleading for what he would call improved detailed diagnosis. Before deciding on the question and extent of operation, one should try to determine whether the actual disease was in the middle-ear cleft, and whether the lining membrane alone was involved or whether any part of the bone was also affected. If it should be found that cytological and bacteriological examination of the discharge could be relied on they would have obtained help of much value, but he trusted they would not neglect to pay attention to the results of aural examination with reference to increasing deafness, increasing tinnitus, slight vertigo, and so on. Where these symptoms were found, he was of opinion that no operative procedure should stop short of the radical method. The conditions found in the performance of a number of radical mastoid operations which he tabulated in a paper published in the British Medical Journal some time ago showed that frequently necrosis was found in the tympanic cavity itself, in the tegmen tympani, and other parts, so that the performance of a limited operation as a routine method seemed certainly inadvisable. He quite agreed with Dr. Milligan, and in the paper to which he had referred he had emphasized the necessity for the preliminary examination of the nose and naso-pharynx, and for the preliminary treatment of pathological conditions found there.

Mr. George Jackson (Plymouth) regretted he had not the opportunity of hearing Dr. Milligan's remarks, and thought it was probable he would be repeating what had been already said. He advocated the use of peroxide of hydrogen as a simple method of treating chronic discharge from the ear, especially when there was a probability that syringing would not be done properly. When granulations were present he had found curetting useful, with the use of boric acid dissolved in spirit afterwards. The application of pure carbolic acid in the crystal form on a probe slightly warmed once a week to the tympanic cavity was very useful, and he had found it successful in a case of long standing. The advantage of examining the discharge was, no doubt, great, especially for the recognition of tuberculous mischief, but there was great difficulty in doing it in hospital out-patient treatment. The use of artificial drums was sometimes disastrous when discharge existed. He agreed thoroughly with Dr. Reeve as to the necessity of investigating the nose, and attention should be paid to the condition of the turbinate and ethmoid bones. They were often the cause of infection and re-infection of the middle ear. Formerly he used the insufflation of powders, such as boric acid, etc., but found it frequently resulted in a clogged meatus.

Dr. Henry Smurthwaite (Newcastle-on-Tyne) said that, with regard to Dr. Hill's very interesting historical survey of the radical operation, it mattered not to whom they gave precedence in performing a certain operation; their main object was to adopt that one by which they could thoroughly remove all necrosed and diseased bone, maintain a good drainage and at the same time preserve a certain amount of hearing power. Keeping strictly to the point of the discussion, and reviewing it in a broad manner, one from experience would come to the conclusion that by far the greatest percentage of cases of chronic suppurative otitis media were due to an unhealthy or diseased condition of the lining membrane of the middle ear only, a septic condition following a catarrhal, and undoubtedly these cases could be and were cured by appropriate systematic intermeatal treatment without resorting to an operation of a radical nature. In deciding whether a conservative or a radical operative treatment should be adopted, so much depended on the nature of the case, the constitution of the patient, and his surroundings. One knew that cases coming from the better class were much more amenable

to conservative treatment, for the simple reason that their surroundings were in their favour, and treatment could be carried out more thoroughly. Where one would suggest a radical operation in a hospital case—knowing a simple treatment would not be thoroughly carried out at home—in a private patient one would rely on less severe means of effecting a cure. In fact, the method should be adapted to the individual case, and not the individual case to the method. The principle of the treatment of chronic suppurative middle-ear disease was the same as in any other part of the body—namely, should there be necrosed bone present, it should be removed by some operation of the class discussed by Dr. Hill. On the other hand, where there was no markedly diseased bone, if one maintained a free ventilation and a free outlet for the pus, with thorough cleansing of the canal with an antiseptic solution, drying out with absorbent wool, followed by instillation of rectified spirit—the object being to keep the parts as dry as possible—such treatment would effect a cure in the largest number of cases. In long-standing cases where the drum membrane was in greater or lesser part destroyed, the free outlet to the discharge was often prevented by granulation tissue, small polypi, inspissated pus, débris, etc. These must naturally be first removed before resorting to the rectified spirit treatment.

Dr. A. BRONNER (Bradford) strongly recommended the dry method of treatment in cases of chronic otorrhoea. Powders which did not cake should be used, and in small quantities. When there was little discharge plugging with ribbon gauze was often useful. All cases should be treated on general surgical principles, and an exact and careful diagnosis made. Some otologists at once opened the mastoid in every case of otorrhoea. It was no honour to have operated on so many hundred mastoids, because in competent hands many of these cases would have been cured without operation. He thought that in the future the opsonic index would be useful in the treatment of cases of obstinate chronic otorrhoea.

Dr. DUNDAS GRANT (London) said it was very interesting for one who had practised in the pre Stacke period to see the swing of the pendulum with regard to radical operations coming back to a more reasonable limit. Although the radical operation had saved many lives which were previously sacrificed, a good deal was then done that was far from useless, and many good results in cases of chronic suppuration of the middle ear were obtained without radical operation. He hoped that Professor Lucae's statement would be taken to heart, and that they would pride themselves more on how few radical operations they were obliged to undertake instead of how many. In the earliest days of the radical operation the speaker had probably done as many or more than others, but he was soon outstripped by the more energetic members of the profession. He drew attention to Dr. Knapp's observation that there was now a distinct tendency to diminution in the frequency with which operators on the Continent did the radical mastoid operation. A good deal of the difference in the practice of operators seemed to be due to difference in opinions as to pathology. He was much struck by noticing a statement of Mr. Heath's that attic disease could not be differentiated from that in the tympanum, and that both were dependent on mastoid disease; while Professor Politzer, on the other hand, said that in an overwhelming majority of cases of attic disease the suppuration was localized in the outer attic. Many of these cases could be perfectly well treated through the meatus without opening the antrum or mastoid cells. He dwelt upon the extent to which neglect might be the sole cause of the persistence of the suppurative disease, and quoted, as the most exaggerated instance of it which he had seen, the case of a man aged 59, who had had suppuration in his ears for fifty years and which he had systematically neglected; under treatment the discharge practically disappeared in a couple of weeks and the hearing was restored to such an extent as to surprise his friends; the fact was that he had a small polypoid mass of granulations in the postero-superior part of the tympanum, the membrane being nearly gone; the treatment consisted in removing these granulations, applying chromic acid to the root, and instilling alcoholic drops. In another case the discharge had lasted for twenty years and disappeared under local treatment. The length of time that a suppuration had existed was not, therefore, always an index of its intractability. He agreed with Dr. Milligan as to the value of the chromic acid treatment, and added that a small galvano-cautery point was sometimes of the greatest use. He was in accordance with those who insisted on attention being paid to the nose. While of the opinion that the radical mastoid operation was often unnecessary, there were cases in which the anatomical structure of the bone in the individual allowed of nothing short of it, as, for instance, in the case of extension of the cavities backwards, to which Mr. Ebsworth had given the name of accessory antrum. Mere removal of a portion of the postero-superior wall of the meatus would not be sufficient in such a case. With regard to ossiculectomy, while agreeing that its habitual practice was to be deprecated, he thought there was a limited scope for it, and he considered that it was justified if the ossicles were of no use and only formed an obstruction to the outlet from the attic and aditus, so as to prevent the escape of diseased products that helped to keep up the suppuration. Under such circumstances, good results were sometimes obtained from it without any further operation. He quoted a case in which the removal of such useless ossicles relieved a lady who had suffered from fearful attacks of giddiness, due to the presence of a cholesteatoma extending to the aditus and antrum, and which had caused erosion of part of the wall. After this removal the alcohol treatment, which had previously been ineffective, led to a drying-up of the contents of the cholesteatoma and disappearance of the vertigo and the discharge. It had to be admitted that attic disease was by no means always confined to the outer attic, and that a cholesteatoma, such as was very frequently found there, often, if limited to that space at the time, had a tendency to spread, and did not permit of neglect. The removal of granulations in the attic had often brought a long-standing suppuration to an end. While fully appreciating the value of peroxide of hydrogen, he had observed it occasionally to cause increase of the giddiness in the subjects of cholesteatoma. Intratympanic syringing was an invaluable means of treatment, and, although he had tried many other forms of syringe for the purpose, he had found Dr. Milligan's to be the most generally useful. In regard to artificial drums, he found that if they were moistened with paroleine instead of water they had less tendency to cause a recurrence of discharge.

Dr. A. L. WHITEHEAD (Leeds), speaking as a clinician, found that, excluding those cases in which urgent or dangerous symptoms clearly called for radical operation, a large number of cases of chronic otorrhoea remained. Very many of these could be cured by conservative treatment and attention to nose, naso-pharynx, and accessory sinuses. A residuum remained which seemed to divide themselves roughly into two classes. The first group showed granulations, extensive obstruction of the drum, and probably offensive discharge, with very defective hearing. These, in his experience, required as radical an operation as possible. He knew of no form of treatment and no operation short of a complete removal of all granulations and all diseased parts which would cure those cases. In the second group there was probably a simple perforation, fair hearing, and an odourless discharge. These were the cases which caused much anxiety as to the propriety of operation and as to what operation to perform. A few years ago a great wave of operative enthusiasm swept over the country, and he was rather encouraged to perform radical operations on these cases, following the example of Ballance and others, and, although he cured his patients, he often found very little disease, and frequently the hearing was lessened. The wave was now passing away, and he thought they should give credit to those who had helped to repress this excessive operative enthusiasm. With regard to this group he had mentioned he thought they must be prepared to consider each case individually. A private patient living in healthy surroundings probably ran no risk, and in many cases no operation was urgent. A short time ago he had a typical case of bilateral chronic otorrhoea. After several consultations with eminent otologists all over Europe, it was decided to do a modified radical operation on one side. This was entirely successful, there was complete cure, and no loss of hearing, but the rest in bed, etc., brought about a complete cure also of the side not operated upon. He thought the discussion would show that in a certain number of cases of chronic otorrhoea a modified mastoid

operation would effect as complete a cure of chronic suppuration as a complete radical operation without as much risk to the hearing.

Dr. A. Logan Turner (Edinburgh) regarded the investigations of Drs. Milligan and Wyatt Wingrave as of special value in connexion with the discussion of this subject. Accurate diagnosis was essential, and Dr. Milligan had shown that in working at the cytology of chronic middle-ear suppuration they were advancing along lines which would lead to a more accurate knowledge of the exact pathological condition present. Each case must be considered by itself. There were certain cases in which no operative measure other than the complete radical operation should be considered. There were others, again, in which a modification of the complete operation would be sufficient, and, if cytological and bacteriological examination would assist them in determining the latter class of case, they would have their clinical diagnosis still further advanced. He was of the opinion that they owed a dept of gratitude to Mr. Heath for bringing prominently before the profession the question of modifying the radical operation by leaving the tympanic membrane and ossicles, and thus preserving or improving the hearing. There was probably a tendency to do the complete radical operation in most cases of chronic middle-ear suppuration when a mastoid operation was decided upon, and Mr. Heath's work would at any rate lead them to remember that there were other elective procedures which ought to be carefully considered. It must not be forgotten, however, that in a certain proportion of cases in which the complete operation was performed the hearing power was improved. A knowledge of that fact and a knowledge of the fact that by the complete operation they were doing the best possible thing to cure the discharge should prevent them from departing from that operation where they thought that it was probably the safer procedure.

Mr. Chichele Nourse (London) said he was very glad to hear Dr. Milligan recommend so strongly the microscopical examination of the discharges from the ear. It gave support to the plan he had adopted for some years, namely, to get his colleague, Dr. Wyatt Wingrave, to examine the discharges from each case. This gave one a great amount of help, not only in the way of bacteriological results, but as a guide to the treatment. He recollected a case where a man had an old suppurative ear, and beyond some granulations in it, there was nothing else striking about the case, except that he had some enlarged glands below the auricle. He handed the discharge to Dr. Wingrave, who showed it to be a case of tuberculosis, so it was decided to adopt radical measures at once. Another point that the question of the examination of the discharge suggested was pointed out by Dr. Wingrave in an article in the *Journal of Laryngology* for the month of August; it was the relation of throat organisms in discharges from the middle ear. It appeared as if, particularly in children, in many cases of chronic suppuration of the middle ear, the ear was continually being reinfected from the nose; and the source of infection being closed, the condition of the ear healed up without further trouble. No doubt that had been found in the experience of every one. Chronic suppuration in a child, that had not been treated at all except by the removal of adenoids and the simplest possible treatment through the meatus, stopped and the membrana tympani healed up, and in a short time it was impossible to say whether anything had been the matter or not.

Dr. McKenzie Johnston (President), in summing up, said that they had had an interesting discussion, and one which in the future might lead to important results. It seemed clear that the time would soon come when the man who successfully treated his patients with the fewest radical mastoid operations would be looked upon as a better otologist than the man who could show the largest list of such operations. Dr. Baber objected to half measures, and he had to admit that the phrase was an unfortunate one, as generally speaking half measures were bad. He wished to make it clear that under no circumstances would he justify delay in the serious cases that required operation. He, however, believed that the number of cases requiring the radical mastoid operation might be reduced by improved methods of treatment in the earlier stages. Dr. Milligan's paper gave them some assistance in separating the cases in which delay would not be justifiable in the patient's interests. They would all agree with Dr. Smurthwaite in the importance of free drainage, but they might ask themselves, Did they get the best drainage in their cases, or could they do anything to assist this? The results of lesser operative treatment, such as ossiculectomy, etc., did not at present seem very promising; but might this not in part be because they were not yet clear how to select suitable cases? In view of the enormous number of cases of persistent and quiescent suppuration of the middle ear he felt sure that the importance of the subject would be fully appreciated.

Dr. Milligan (Manchester), in replying, said the main point he desired to bring forward and to emphasize, was that before any treatment was undertaken, a detailed and accurate diagnosis should first of all be made. As an aid to accurate diagnosis, and therefore to efficient treatment, a cytological examination of the discharge was particularly useful. In any given case, several smears should be examined upon the lines he had indicated. There appeared to be a general agreement upon the various points he had raised, but he was disappointed that no one had made any reference to the necessity of attending in detail to the state of the teeth. He agreed, as already indicated in his paper, in dispensing with all packing at an early date—as a rule, after the first dressing. He believed that much could be done for chronic cases by intelligent intrameatal treatment. At the same time, there would always exist a fair proportion of cases where post-auricular operation would be necessary.

Dr. Hill, in his reply, thought the discussion would have an important bearing, although at the outset it had been a little wide. He would study Dr. Milligan's paper very carefully. There were really three operations with which Küster's name was associated, as this operator had modified his original method. With regard to vaccines, he had not been helped as much as he had hoped, though occasionally he had received valuable assistance. He was in agreement with Dr. Dundas Grant in his advocacy of moderation of operative zeal. He also agreed with Dr. Milligan's statistics regarding the proportion of operative cases.

OBSERVATIONS ON FRONTAL SINUSITIS.

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The following observations upon frontal sinusitis pertain almost entirely to that affection in its chronic form.

Acute frontal sinusitis, as met with by the surgeon, is accompanied by symptoms which are sufficiently definite in character, and it usually tends to resolution without the necessity for operative interference. Cases generally yield to inhalations of mentholized steam, the application of adrenalin and cocaine to the middle meatus, and other medical measures. Occasionally it is possible to pass a curved probe through the fronto-nasal canal. In one such case the introduction of this instrument was followed by a gush of bloody discharge, immediate relief from pain, and a speedy cure.

It is not clear what relationship, if any, exists between these acute cases and the chronic form. Not only does it seem that perfect recovery from acute sinusitis is the rule, but generally in cases of chronic frontal sinusitis there is no history at all of any previous acute catarrh. In one case only was a history obtained of what might perhaps have been a previous acute attack. On the other hand, many sufferers from chronic sinusitis state that they have previously suffered from attacks of coryza. One patient, with frontal and ethmoidal sinusitis, attributed his disorder quite definitely to a bad cold caught during an evening cycle ride.

As the distinctive symptoms of acute frontal sinusitis are due to retention it is possible that there are other cases also, without retention and therefore without symptoms, which pass unnoticed, and it may be that these sometimes lay the seeds of chronic disease.

Whether this is so or no, or whether chronic sinusitis takes its origin *de novo*, cannot at present be determined. Certainly most cases of chronic frontal sinusitis are latent from the first. As stated by Luc,[1] the entire clinical expression of the affection may be confined to a discharge of pus from one of the nostrils or into the pharynx.

The other prominent symptom is pain over the frontal

region, which is very frequently present; and it may be observed that neither pain nor tenderness in this form of the disorder is dependent upon obstruction of the fronto-nasal canal, or retention of discharge. The condition of things which is found is altogether different from that present in acute sinusitis, where the primary seat of the disease is the epithelial surface as in other acute catarrhs.

In chronic sinusitis, on the other hand, with the exception of certain cases to which reference will presently be made, the disease is situated in the substance of the muco-periosteum itself, which is not only engorged with blood, but oedematous, and infiltrated with inflammatory products. It is often thickened to an enormous extent, and polypoid outgrowths project into and greatly diminish the lumen of the sinus.

A considerable secretion of pus takes place, but it usually trickles away nearly as fast as it is formed, partly because there is no room in the sinus for any large collection, and, chiefly, because the ostium, situated at the lowest and most dependent point, is usually widely open.

As a rule, the fronto-nasal canal becomes larger than it is in the normal state, and the pus drains away continuously in a scanty stream, often so small as to be scarcely noticeable. Sometimes, however, a granulation or a cluster of polypi may impede the exit of discharge, which then collects in greater quantity, or the lining of the fronto-nasal canal may become acutely inflamed and swelled from some temporary cause.

Permanent retention does occasionally occur with the production of an entirely different clinical picture, but it is not common.

Sometimes the disease extends to or penetrates the bone and gives rise to complications, and there are some cases besides in which a bony swelling occurs over the diseased sinus, due, apparently, to a limited area of osteitis.

Two such cases of bony swelling have been shown at the Laryngological Society of London by Dr. Scanes Spicer,[2] one by Dr. Peters,[3] and one, probably similar, by Mr. F. J. Steward.[4] The author has met with this condition in three cases, in each of which the bone was thickened and vascular.

CASE I.—*Frontal Sinusitis and Empyema of the Antrum on the Left Side.**

A bank clerk, aged 30, whose dusty occupation consisted in counting dirty silver money, had suffered for two years from left frontal pain, mental dullness, and continual discharge into the throat. There was marked prominence of the bone over the left frontal sinus, but no tenderness. After intranasal treatment of the frontal sinus by injections for eighteen months, the radical (Ogston-Luc) operation was performed. The sinus contained granulations and pus. A second operation was performed four months later. The antrum had been drained through an alveolus.

CASE II.—*Left Frontal and Maxillary Sinusitis.*

A girl, aged 20, with symptoms of two years' duration. She had discharge from the left nostril, subjective fetor, swelling of the forehead, tenderness, and pain. At the radical operation (Ogston-Luc) the bone over the sinus externally was found to be thickened and vascular. The lining membrane was thick and red, and the sinus contained granulations. A radical operation was performed on the maxillary antrum twelve days later.

CASE III.—*Right Frontal and Ethmoidal Sinusitis.*

A traveller, aged 34, whose symptoms had lasted two and a half years. He had discharge from the right nostril, frontal headache, bony swelling over the right frontal region, puffiness in the upper part of the right orbit, and swelling of the upper eyelid, with local tenderness. The supposed cause was a cold, following an evening cycle ride. The sinus contained pus and granulations.

Besides chronic suppuration of the frontal sinus, another condition occasionally met with is one which may be described as chronic catarrh. In the three cases where this was found it will be seen that there was no variation in the symptoms, but instead of pus the sinus contained thick mucus; the lining membrane was hardly thicker than the normal.

CASE IV.—*Chronic Catarrh of the Frontal Sinus.*

A male, aged 26, had suffered for six months from frontal headache, with severe paroxysms, and discharge from the right nostril. There was polypoid degeneration in the middle meatus. The patient had influenza nine months before, and there was a definite history of syphilis five years earlier.

The sinus was full of thick, jelly-like, greyish transparent mucus, which welled up under pressure when the sinus was opened. There were one or two masses so thick as to resemble polypi; no bleeding occurred from the lining of the cavity. A little later the patient developed tertiary syphilis in the nose and a gumma in the tongue.

CASE V.—*Maxillary and Ethmoidal Sinusitis, and Catarrh of the Frontal Sinus.*

A servant maid, aged 35, had symptoms of two years' duration, namely, frontal headache and nasal discharge, with recurrent nasal polypi. The frontal sinus was small; it contained thick grey mucus. The maxillary antrum and ethmoid cells were dealt with later.

CASE VI.—*Chronic Catarrh of the Right Frontal Sinus.*

A male, aged 29, came under treatment in 1903 for right maxillary and ethmoidal sinusitis; after some local treatment he was operated on successfully in 1904. The right frontal sinus, which appeared less translucent than the left, was examined at that time with a curved probe and cannula, and appeared to be healthy. The patient lost all his symptoms, and seemed to be perfectly well.

In September, 1906, he returned again with the following history: A fortnight before, while at the seaside, he had a very severe pain on the right side of the head, lasting for two days; then a yellow discharge came from the right nostril, and he felt relief. Since then there had been constant pain over the right eyebrow, and a profuse discharge of pus from both nostrils and into the throat; he complained also of stiffness round the back of the neck, which, he said, made him lose himself.

In March, 1907, the right frontal sinus was opened. It was very large, extending as far as the outer angle of the orbit, and upwards for some distance. The lining membrane was distended with thick opaque grey mucus, which was examined by the author's esteemed colleague, Dr. Wyatt Wingrave. His report was as follows: "The material consisted of mucin, with a small amount of globulin. There were only a few lymphocytes and leucocytes, and no epithelial elements. The only bacteria present were a few diplococci."

A month after the operation the patient reported that the headache and pain over the brow were gone, but that he still had a little stiffness round the neck. All discharge of pus had ceased.

A case which is similar to these has been recorded by Mignon of Nice.[5] It is as follows: A woman, aged 30, complained of great pain in the left frontal region, which was less translucent than the right. Local applications and irrigation through the catheter gave no relief. At the operation the sinus was found to contain only mucous secretion.

In reference to diagnosis, the establishment of a certain conclusion as to the presence of chronic frontal sinusitis is not always easy. For this purpose the frontal sinus cannula is particularly useful. The only method of making the diagnosis absolutely sure is by demonstrating the presence of pus in the sinus. With this object it has been suggested to dam up first one and then another of the ostia in the hiatus semilunaris by small tampons of gauze, and, after cleansing the parts, to watch for the reappearance of a bead of pus. But the most satisfactory way of investigating the condition of the sinus is by means of a probe and cannula. If a suitably curved instrument can be introduced into the sinus and discharge blown out, the existence of a diseased condition is proved beyond question, and radical treatment can be undertaken with much more confidence.

It is not always possible to introduce a probe through the fronto-nasal canal from the nose, especially if the sinus and canal are healthy; but if the instrument is of a suitable form it can certainly be effected in the majority of instances where the sinus is suppurating. It has already been stated that in such conditions the fronto-nasal canal is generally of a larger calibre than in the normal state. This is of such regular occurrence that the author considers that a sinus which would not admit a probe after two or three careful trials is probably healthy. As regards the form of the instrument, each surgeon probably has his own preference. For diagnostic purposes it should be of such a shape that there can be no doubt of its position when it is in the sinus.

The disposition of the parts is well shown in Professor Onodi's excellent *Atlas of the Nasal Cavity and Sinuses.* The floor of the sinus slopes downwards from front to back towards the ostium, which is situated at its hinder and most dependent part. The fronto-nasal canal, in health generally a short and narrow track between

* Shown at the British Laryngological, Rhinological, and Otological Association in 1899.

ethmoidal cells, is directed downwards, backwards, and a little inwards, and enters the middle meatus of the nose at the upper end of the hiatus semilunaris, or just above it. In a certain number of cases there is no canal, but the lowest point of the sinus opens directly into the middle meatus.

Lichtwitz has remarked that the axis of the fronto-nasal canal forms about a right angle with a line drawn from the hiatus, downwards and forwards to the hinder edge of the nasal orifice. The form of the probe and cannula preferred by the author consists of a segment of one-third of the circumference of a circle, with a straight shaft. It has only one drawback—namely, that the long curve makes it sometimes a little difficult to introduce; this, however, becomes less with practice.

It has been said that if the quantity of pus flowing from the middle meatus is profuse, the frontal sinus is the cavity affected; but this is not quite correct. From a suppurating sinus with a gaping ostium the secretion drains away as fast as it is formed, often in a stream which is so nearly imperceptible as to escape notice until a blast of air driven through the cannula dislodges the few drops which are retained in the interstices between the polypoid masses, and causes them to appear alongside of the instrument. In all the author's cases, the sinus was examined with the probe previous to operation. In two cases only was a cannula of Hartmann's pattern, with a wide curve, passed more easily than the much-curved form. In general, the pattern described was found most suitable, and in many cases it is the only shape which will enter.

The fact that the anatomical disposition of the frontal sinus, with the ostium at its lowest point, is so favourable for good drainage, as well as the tendency of acute catarrh to spontaneous cure directly drainage is established, may be used as arguments in favour of treating frontal sinusitis through the infundibulum. A very little further help, it might be said, would be successful where a cure has not been effected by the unaided efforts of Nature. But these considerations are based upon the hypothesis that chronic frontal sinusitis is kept up by obstruction of the outlet and insufficient drainage.

This proposition, however, is open to doubt. After a prolonged experience with intranasal methods, it must be confessed that the results, so far, have been rather disappointing. The modes of treatment adopted were irrigations and various kinds of injections through the cannula; and, further, with the view of creating a large outlet for discharge, rubber drainage tubes of increasing sizes were introduced into the fronto-nasal canal, and worn constantly by the patient for a week or two at a time. It is true that the symptoms can thus be often reduced to a minimum, but they are apt to recur, and we have to fall back on radical measures after all.

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DISCUSSION.

Dr. Herbert Tilley (London) said that scarification of the middle turbinal and the middle meatal region was more efficient in promoting drainage in cases of acute suppuration of the frontal sinus than inhalation of mentholized steam or the application of cocaine and adrenalin solutions. In the diagnosis of chronic empyema of a frontal sinus a skiagraph was a very valuable aid—the affected sinus showed a dim outline when contrasted with the clearer outline of the healthy side. Furthermore, they were enabled to obtain a very good idea of the size and depth of the sinus and, therefore, could form a fair estimate as to the probable amount of depression which would follow a radical external operation. Within the past four months he had, at any rate temporarily, cured 2 cases of chronic frontal sinus suppuration by first cleansing the sinus with a simple antiseptic lotion, and then injecting a solution of nitrate of silver 100 grains to 1 oz. This destroyed the large oedematous granulations and in forty-eight hours' time the débris could be washed from the sinus. The latter was then thoroughly cleansed, dried by injections of warm air and a ¼ per cent. solution of formalin injected. Mr. Tilley thought that such treatment might be of value in those cases where free drainage into the nose had been secured and in which the contour of the sinus (as shown by skiagraphy) was even and the air space undivided by bony septa. The common cause of failure to cure these cases by operation was not due to the frontal sinus itself but to infection of this cavity by suppurating ethmoidal cells which spread outwards below the floor of the sinus, and in the radical operation these should be very thoroughly removed or a permanent cure could not be hoped for.

Dr. Milligan considered that there was a great field for skiagraphy in cases of frontal sinus suppuration. He had frequently made use of the method before submitting the case to operation, and in fact considered that no radical operation upon the sinus should be undertaken until a skiagraph had first of all been obtained. In acute cases he would like to mention the relief at times afforded by using Sondermann's suction apparatus after a preliminary cocainizing of the nasal mucosa.

Mr. Stuart-Low agreed with Killian in the importance of removing the whole of the mucous lining of the sinus, and spoke of the possible connexion of the two sinuses.

Mr. Nourse, in his reply, thanked the speakers, and was glad to hear of Dr. Tilley's method, and would certainly try it. With regard to mortality, his own experience had been fortunate. He had had no deaths, but the mortality might in some cases be rather high.

REMARKS ON A CASE OF ACUTE SUPPURATION OF THE MIDDLE EAR COMPLICATED BY SEPTIC MENINGITIS AND BRAIN ABSCESS.

By W. S. Syme, M.D.Edin.,

Assistant-Surgeon, Glasgow Ear, Nose, and Throat Hospital.

The case which I wish first to relate and afterwards to offer some remarks upon is that of a schoolboy, aged 14, whom I was asked to see by Dr. I'Anson, of Whitehaven, on March 5th of this year. On that day he had a discharge from his left ear of a week's duration. There had been also a discharge from the right ear, but this had ceased after two days, and at the time of my visit this ear had recovered. The aural condition had followed a mild attack of influenza, which was especially prevalent in the school, and which in several cases was complicated by pneumonia. On February 28th this boy had had a slight rigor with sickness, the temperature rising to 103°. It fell the next day, and did not again rise till the morning of March 5th, on which evening I first saw him.

Condition on Examination.—Free discharge from left ear, with a fair-sized perforation in the antero-inferior segment of the membrane. No pain over the mastoid, and no tenderness on pressure; no severe headache, photophobia, ocular paralysis, or other symptom suggesting intracranial lesion. There was no mental dulling; the temperature was 100°, and the only anxious point was the somewhat slow pulse—70.

Treatment.—I contented myself with recommending the ordinary antiseptic treatment of acute middle-ear suppuration, together with a brisk purge. For two or three days he went on satisfactorily, and those in attendance on him thought he was quite in the way of recovery. On the third day, however, he seemed somewhat dull, answering only slowly when spoken to. At the same time tenderness appeared at the anterior part of the tip of the mastoid process, and also over the region of the antrum. The pulse-rate, too, had fallen to 60.

Operation.—On March 9th I saw him again. We could find no other sign or symptom suggesting cerebral complication, except the mental dullness and slow pulse, but in view of these and the mastoid tenderness I decided to operate, and with the assistance of Dr. I'Anson and Dr. Macpherson I opened the mastoid cells and antrum, doing the ordinary radical mastoid operation, and exposed the dura of the middle fossa above and the lateral sinus behind. Towards the inner side of the tip of the mastoid the cells had commenced to break down, but otherwise they were in a condition of intense inflammation such as I have never seen. In the attic and aditus some soft granulations were found. The dura in the middle fossa was more injected than usual and the pressure seemed slightly increased. On this account we discussed the advisability of incising the dura, but finally decided against doing so. The lateral sinus appeared healthy. Considering that it was possible that further operative measures would be required I left the wound open.

After-Progress.—The immediate result of this operation was an improvement in the mental condition and an increase

in the pulse-rate. On the 12th, however, the temperature began to rise, till on the morning of the 13th it reached 105.4°. On the evening of this day I saw him. Mental dullness had become more marked, and was now accompanied by restlessness. He complained of pain in the lumbar region, and had once or twice had an involuntary evacuation from the bowels, The operation cavity was satisfactory. I exposed the sinus still further backward and downward. Posteriorly it appeared healthy, but toward the lower part the wall was greyer and apparently thicker than usual; it still contained fluid blood. Protecting the sinus with gauze, I opened the dura in the middle fossa, and at once gave exit to a small amount of pus. On passing a director backwards into the posterior part of the temporo-spheroidal lobe it met with little resistance, and on withdrawing it, shreds of what appeared to be broken-down brain tissue escaped, giving one the impression of commencing necrosis or abscess of the surface of the lobe. After introducing a drain, I cleansed the operation cavity and proceeded to open the sinus, expecting to find changes in the inner wall with mural thrombosis. The vessel bled freely, but on controlling the posterior part of the sinus, the haemorrhage from the lower part was seen to be slow and was easily stopped. Though no changes were detected in the inner coat of the sinus at the place where it was opened, it is probable that nearer, or in the jugular bulb, thrombosis had occurred. I did not, however, think it advisable to carry the dissection lower.

Result.—After two or three days the patient became comatose, and died just a week from these last operative measures. No *post-mortem* examination was obtained.

REMARKS.

In looking back on this case, several points of interest, and worthy of consideration, present themselves. There can be no doubt, I think, that the actual cause of death was septic meningitis with acute necrosis or abscess of the temporo-sphenoidal lobe. The point of entrance of the infection was probably the roof of the attic, that is to say, directly from the tympanic cavity, and not from the antrum or cells. The age of the patient, and the presence and site of the granulations occurring in an acute suppuration, suggest that we had here a process of the meninges directly in communication with the tympanum by way of the petro-squamosal suture; while the early rigor suggests the presence of a petro-squamosal sinus which is occasionally found passing directly to the lateral sinus. On first seeing the patient his condition was such as is commonly observed in acute suppuration of the middle ear, and those phenomena pointing to cerebral irritation, if nothing more, to which the term "meningism" has been applied, were by no means so marked as one sometimes gets them in cases of this disease—especially in children, in whom even congestive changes in the optic discs may be found—which recover without complication, or, at the most, with extension only to the mastoid cells and antrum. An example of each of these will bring into relief the features of the case I have described.

1. I received an urgent request from a medical man to see a young woman in whom cerebral symptoms had arisen in the course of an acute middle-ear suppuration. When I arrived I learnt that she had had a shivering attack, hardly amounting to an actual rigor, the night before. The temperature had risen to 103°, the pulse was slow, and she had become drowsy and difficult to rouse. She was somewhat better when I saw her; the temperature was 100.2°, pulse 64, and though she was still mentally dull, she answered, though slowly, when spoken to. There was only a small amount of discharge from the middle ear through a perforation in the antero-inferior segment of the membrane. There was no sagging of the posterior superior wall of the meatus, only slight tenderness over the mastoid, and no definite symptoms of intracranial complication. After, of course, consideration of the question of operation, we decided, in view of the slight improvement, to wait, and the patient recovered without any extension of the disease.

2. In another case in which meningism was fairly well marked, the mastoid became involved, and, on operation, was found completely excavated. Here lethargy was a marked feature; the pulse, too, was slow, and the optic discs were congested, with blurring of the edges, and this was especially noticeable on the right side, which was the side on which the ear disease was. Vomiting had occurred on several occasions. The patient recovered completely after the operation on the mastoid.

Such cases are not uncommon, and one has difficulty sometimes in holding one's hand. After the first operation on the schoolboy whose case is here described, it seemed to me that the condition of the mastoid, pointing, as it did, to the action of some strong infective process, was sufficient by its proximity to account for the cerebral symptoms, or that we had to deal with a serous meningitis due to toxic substances absorbed from the attic. The increase in the intracranial pressure which we noticed, lent support to this view, and made me consider the question of making an opening in the dura. The further course of the case made it more than probable that this was the actual condition at that stage, and that it was later, and, it may be, aided by the curetting of the granulations in the attic, that the organisms themselves found their way into the subdural and subarachnoid spaces, with the consequences already described. In this case it would seem that lumbar puncture might have been of value both diagnostically and as a method of treatment in the early period of the case. Under similar conditions I should certainly make use of it.*

DISCUSSION.

Dr. WHITEHEAD (Leeds) said that he had reported a similar case to that of Dr. Syme, which had, however, a more fortunate ending. There was extreme caries on both sides, and nothing to localize the disease to either side. He operated upon both sides, as the one he first attacked happened to be the healthy one.

Dr. SYME, in reply to a question from Dr. MILLIGAN, said he did not consider his experience sufficient to draw any deductions from the results of lumbar puncture in these cases.

A CASE OF THROMBOSIS OF THE LATERAL SINUS AND OBLITERATION OF THE JUGULAR VEIN.

By ADOLPH BRONNER, M.D.,

Senior Surgeon, Bradford Eye and Ear Hospital; Laryngologist, Bradford Royal Infirmary.

THE patient in the following case, a female child then aged 9, was first seen by me in 1896. She had had discharge from the left ear off and on for three years, and there was a large perforation of the left drum. Insufflations of iodoform and boric acid were ordered. She was not seen again until 1905, when there were perforations of both drums.

State on Examination.—In November, 1906, she called again. She had had much pain on the right side of the head for one year. Several rigors during the last few days. Right mastoid was painful on pressure, but not swollen. No pain or swelling over the jugular. Large red perforation of the right drum. Both optic discs were swollen, and the retinal veins were tortuous. Temperature 102.5°, pulse 108.

Operation.—On November 16th the mastoid was opened and the sinus exposed. The attic was full of cholesteatomous débris, and there was some pus round the sinus and the dura was thickened. On opening the sinus there was free haemorrhage. An incision was made over the jugular and the sheath exposed. This was much thickened. The jugular could not be found, nor could the vagus be seen. The facial vein was exposed, and it ended apparently in the thickened sheath. This part of the sheath was carefully exposed, and a thickened fibrinous band was found which was evidently the jugular.

Progress and Result.—During the next few days there were several rigors. On November 23rd the lateral sinus was opened and found to be thrombosed. It was opened up and scraped, and the upper part, which bled freely, was plugged. There were no more rigors, but there was much pain on the right side of the head for three days, with apparently impaired cerebration. The papillitis gradually subsided. There was occasional haemorrhage from the sinus for some weeks, and it was frequently plugged.

REMARKS.

This case is interesting from several points of view. The upper part of the sinus was not visibly affected, and there was no apparent meningitis, and yet there was well-marked double papillitis. The jugular was evidently completely obliterated for at least 2 in., and the sheath thickened. I have failed to find any record of a similar condition. It was only possible to find the jugular in the sheath by the help of the facial vein. The vagus could not be found, and was evidently embedded in the thickened sheath. There never had been any heart symptoms. When first seen, the upper part of the sinus was not thrombosed, as it bled very freely when opened. This case proved that in all cases of suspected disease of the sinus the jugular should be ligatured, even if the upper part of the sinus is apparently normal.

* As I have done with advantage since reading this paper.

DEMONSTRATIONS.

During the course of the sessions of the Section there were several lantern demonstrations, some account of which follows:

By W. Milligan, M.D.,
Aural Surgeon, Manchester Royal Infirmary.

THE SURGICAL TREATMENT OF LABYRINTHINE SUPPURATION.

The vast majority of cases of labyrinthine suppuration are secondary to chronic, more rarely acute, septic disease of the middle ear. The most frequent paths of infection from the one cavity to the other are:

1. Through a fistulous tract in the external semicircular canal.
2. Through the fenestra ovalis.
3. Through the pars promontoria.

In only from 1 to 2 per cent. of cases of chronic septic otitis media does labyrinthine infection result. This, no doubt, is due to the denseness of the bone forming the labyrinthine capsule, and to the rigidity of the annular ligament and the membrana secundaria.

Once septic infection has gained access to the internal ear there is nothing to prevent its passage to the base of the brain or to the surface of the cerebellum.

The various paths along which pathogenic organisms travel brainwards are the perivascular sheaths of the auditory or facial nerves, the aqueductus vestibuli, and in exceptional cases by erosion of the superior semicircular canal. Another path of infection is at times possible—namely, by transference of organisms along Mouret's canal, a canal running from the posterior wall of the mastoid antrum through the pars petrosa and opening upon the posterior wall of the pyramid above the internal auditory meatus.

The surgery of labyrinthine suppuration has received a great impetus from the writings of Lermoyez, Gradenigo, Friedrich, Jansen, Hinsberg, Botey, Bourguet, and others, yet it may be said to be still in its infancy.

Various operative procedures have been devised for the purpose of exposing the area of disease and for eradicating, if possible, the foci of infection.

Whatever means be adopted to open up the labyrinth, the first and an essential step is the performance of a "complete radical mastoid operation," with a free and generous removal of the facial spur. In this way the outer labyrinthine wall is brought fully into view, and under a powerful illuminant fistulous tracts are carefully looked for. A word of caution is necessary here, as it is very easy to mistake the opening of a minute bone cell for the mouth of a fistulous tract. A careful examination with a probe is essential under such circumstances.

The main practical difficulties experienced in opening up the labyrinth are due to the anatomical disposition of the following structures: the facial nerve, the internal carotid artery, the jugular bulb, and the superior petrosal sinus.

If during the performance of the radical mastoid operation the facial spur be freely cut away, the position of the fenestra ovalis and the fenestra rotunda is readily demonstrated.

The horizontal semicircular canal is invariably situated 3 mm. above the Fallopian aqueduct, and is usually separated from it by a small furrow in the bone. Occasionally, however, the one canal merges imperceptibly into the other. The general direction of the external canal is oblique and not horizontal, as its name would imply. Its anterior arm is 5 mm. in length, and opens into the posterior wall of the vestibule by a dilated orifice. This opening is 1½ mm. above the Fallopian aqueduct, or 4½ mm. above the fenestra ovalis, and is found in a vertical line drawn through the posterior border of the oval window. The posterior branch opens also upon the posterior wall of the vestibule. The anterior branch is almost invariably situated above the facial nerve, but in a certain proportion of cases—estimated at about 12 per cent.—it occupies a lower position, and is crossed by the facial nerve.

Various methods have been suggested for opening up the interior of the labyrinth. Jansen, to whom the credit of having first opened the labyrinth is due, performs a complete radical mastoid operation, and freely exposes the outer labyrinthine wall. The posterior branch of the external canal is first of all located and opened. By working in a direction forwards and upwards its anterior branch is followed into the vestibule. The opening thus made is carefully enlarged, great care being taken to avoid wounding the Fallopian aqueduct, which in normal cases is situated 1½ mm. below the ampullary orifice of the anterior branch of the external canal. In performing Jansen's operation care must also be taken to avoid injuring the dura mater and the superior petrosal sinus

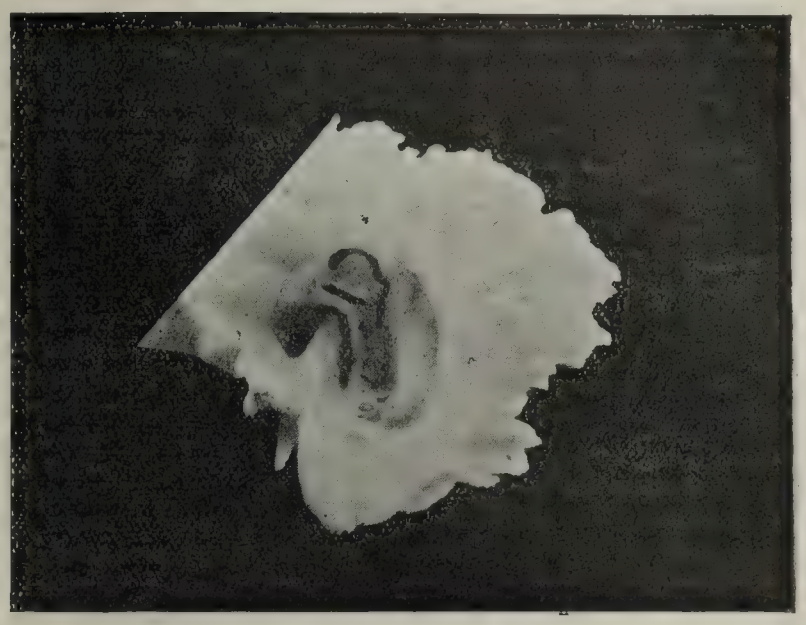

Fig. 1.—Temporal bone prepared to show complete radical mastoid operation; relative position of the three semicircular canals and of the opened up Fallopian aqueduct.

above and the jugular bulb below. Botey opens the vestibule by taking as his immediate landmark the anterior limb of the external canal, opening it, and enlarging the opening thus made anteriorly and superiorly. Should the stapes happen to be still *in situ* he removes it, if not he opens the fenestra ovalis and cuts away the posterior portion of the pars promontoria between the two fenestrae. In this way an opening is made both in front of and behind the curve of the Fallopian aqueduct. Hinsberg, after a complete and radical mastoid operation, opens the fenestra ovalis by the removal of the stapes if still present. The opened fenestra is carefully enlarged in an upward direction. A small stylet is then introduced into the vestibule as a guide, and the bony covering of the anterior limb of the external canal is cut away until the stylet is exposed to view.

The Bridge Operation.

The operation which I have performed in ten cases of severe labyrinthine suppuration, and which has given excellent results, is as follows: A complete and radical mastoid operation is first performed, and in order to secure free access to the whole operation area the

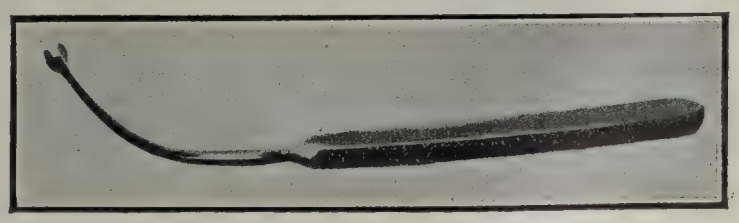

Fig. 2.—The author's facial protector.

following method of making a flap from the soft parts is adopted. A long knife is introduced into the meatus and made to cut vertically outwards along the line of junction between the superior and posterior cartilaginous walls of the meatus. The incision is carried well into the concha. The knife is now swept round in a circular direction parallel to the curve of the antihelix to the floor of the meatus. The comparatively large flap thus secured is trimmed, folded downwards and backwards on to the floor of the excavated mastoid process. The flap is kept in

position by two silkworm strands passed first through the skin of the neck, then through the flap and back again to a point close to the original point of entry, and tied over a rubber tube. The petro-mastoid is now entered in the triangular space between the posterior limb of the external canal and descending limb of the posterior canal. This little triangle (Fig. 1) is situated 4 mm. behind the highest point of the extreme convexity of the descending portion of the Fallopian aqueduct.

The opening thus made is enlarged upwards and backwards until the posterior canal is freely opened. By now working forwards along the external canal its anterior

Fig. 3.—The "facial protector" *in situ* during the opening up of the semi-circular canal system.

limb is opened, and by following this the vestibule is ultimately reached.

A special "facial protector" (Fig. 2) is now inserted, and is held by an assistant over the aqueduct (Fig. 3). The fenestra rotunda is now located, opened by means of a small bur, and the pars promontoria cut away in an upward direction until the fenestra ovalis is reached, the stapes being removed if still present. By means of a specially constructed bur cutting vertically the bone lying immediately under the aqueduct is cut away so that finally, when the facial protector is removed, the aqueduct

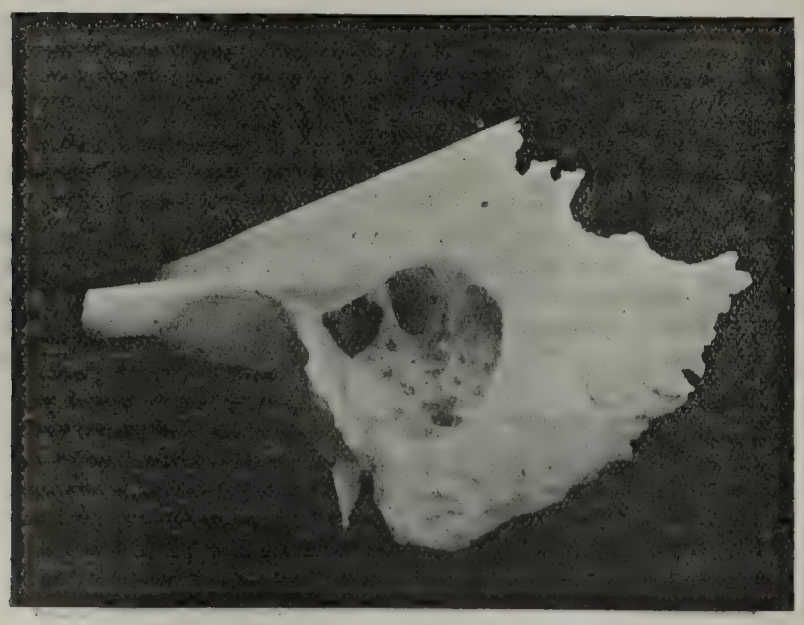

Fig. 4.—The completed "bridge operation."

appears like the arch of a bridge—end on, as it were, and facing the operator—between the semicircular canal system behind and the cochlear system in front.

Free drainage of the various segments of the internal ear (Fig. 4) is thus effected, whilst the cavity is allowed to granulate, and, finally, to obliterate itself.

After the completion of the operation, and when the auricle has been put back into position (not necessarily sewn back) the edges of the incised concha are trimmed in such a way that when the finger is placed into the enlarged meatus its edge is found to occupy the same level as the floor of the exenterated mastoid.

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By P. WATSON WILLIAMS, M.D.Lond.,

Laryngologist and Rhinologist, Bristol Royal Infirmary.

I.—SURGICAL ANATOMY OF THE ACCESSORY SINUS.

THIS was a demonstration with stereoscopic lantern slides on some points in the anatomy and surgical treatment of nasal accessory sinus disease. He showed, amongst others, illustrations of operations on the frontal sinus, as practised by Killian of Freiberg and Delsaux of Brussels, and also illustrations of a method he had himself devised. The latter consisted of an initial incision extending along the eyebrow, towards the root of the nose, thence downwards just outside the middle line. If the sinus was, together with the fronto-ethmoidal cells, found to be diseased, requiring radical operation, the skin and soft tissues of the periosteum were raised over the anterior surface of the frontal sinus, the size of which could be determined beforehand by skiagraphy, and the anterior wall of the sinus completely removed to within 3 or 4 mm. of the floor. He made a second incision, about ¾ in. long, along the inner and lower margin of the orbit, so as to expose the lacrymal groove and duct; the duct was next turned aside, and with a chisel or bur entrance was made into the nasal passage. A fine saw was then passed through the nose, to come out at this opening, and made to divide the nasal process of the maxillary bone, a second saw cut being made extending from the lacrymal groove up to the frontal sinus. The first incision was then completed by means of a saw extending right through into the fronto-nasal duct, and downwards so as to divide the nasal bone near the mid line. The osteoplastic flap was then turned out, giving free access to the fronto-nasal passage and ethmoidal cells, which could be readily removed and cleared away if necessary, right into the sphenoidal sinus. He then curetted away the whole pyogenic mucous membrane of the frontal sinus and removed any ridges, and packed the cavity with a preparation of paraffin or wax. The osteoplastic flap was then replaced and the incisions sutured. In this way one was able to get very free access to the dangerous ethmoidal region, and, by packing the frontal sinus in this manner, one could avoid the depression that inevitably followed with a deep frontal sinus, when the soft parts were allowed to sink against the posterior frontal sinus wall.

II.—SPHENOIDAL SINUS DISEASE.

THIS was a description of a diagnostic syringe and cutting forceps for sphenoidal sinus suppuration. The demonstrator said that in any case where there was reason to suspect the existence of sphenoidal sinus suppuration or collections of muco-purulent secretion it was an immense advantage to have at one's disposal a safe and easy method of setting doubt aside without resorting to measures such as removal of portions of the middle turbinated body which were at least undesirable if subsequently found to be wholly unnecessary. He was now able to demonstrate the existence or absence of secretion in the sphenoidal sinus in the course of any intranasal operation by touch alone without having to inspect the sphenoidal sinus wall.

Dr. Watson Williams described his method of procedure as follows: The blunt trocar and cannula are passed along the floor of the nose till it impinges against the posterior pharyngeal wall; then the distal end is carried forward along the roof of the naso-pharynx till it slips up the anterior wall. In this way one gets the point against the lower border of the anterior wall of the sphenoidal sinus. Holding the cannula as nearly horizontal as feasible it is

gently but firmly pressed against the thin anterior wall which it readily enters. The cannula is then removed and the syringe attached. The contents of the sinus are then aspirated or some boracic acid solution is thrown in

Fig. 1.—The sphenoidal sinus cannula attached to the syringe with two-way stop-cock.

and sucked up into the syringe. (The instruments were made by Messrs. Mayer and Meltzer of London.)

If pus is present and the sinus has to be opened, this is done by introducing blunt-pointed cutting forceps in much

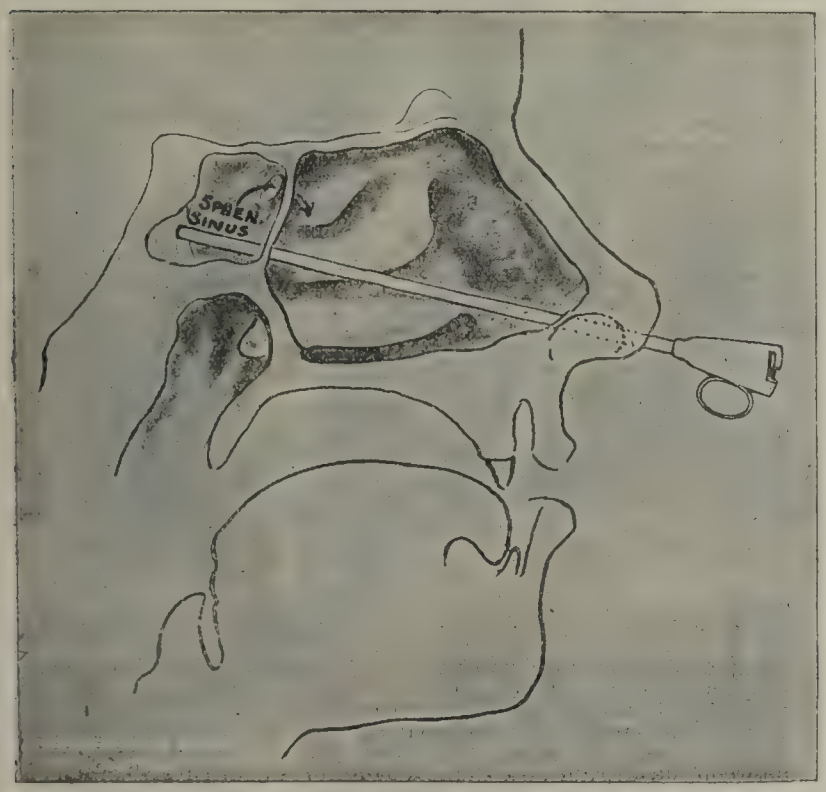

Fig. 3.—The cannula introduced into the sphenoidal sinus through the anterior wall at a point below the ostium.

the same way—the exact distance of the anterior sphenoidal sinus wall and the depth of the sinus itself having been already measured by the syringe cannula—and as it cuts it is rotated. In this way the sinus could be opened with comparative ease and safety, as it is only the posterior wall that has to bear the pressure of the blunt end of either syringe or forceps, and this wall is always thick and strong.

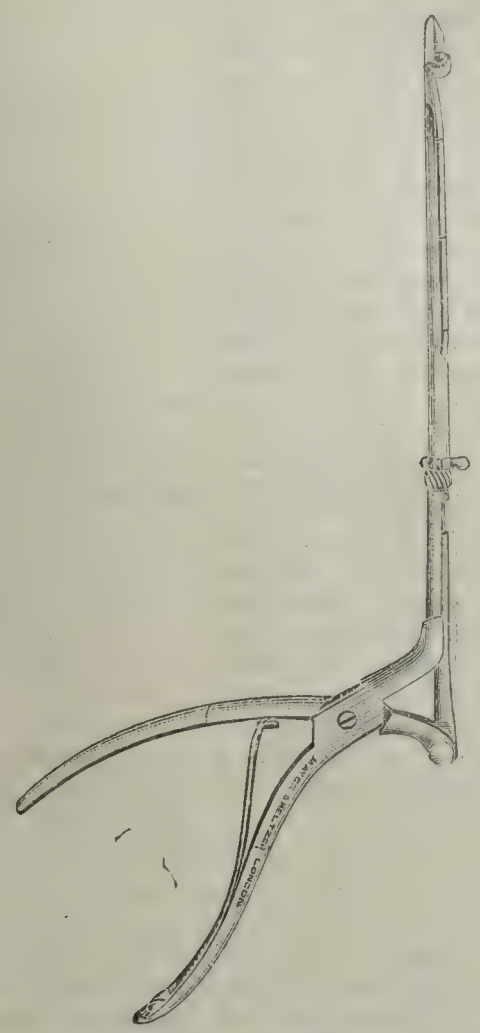

Fig. 2.—The sphenoidal sinus cutting forceps, with rotating action.

Dr. Watson Williams also showed a safety knife for cutting the cartilage in submucous septal operations. It had two buttons on the side of the blade; one prevents the knife entering too far, the other pushes away the

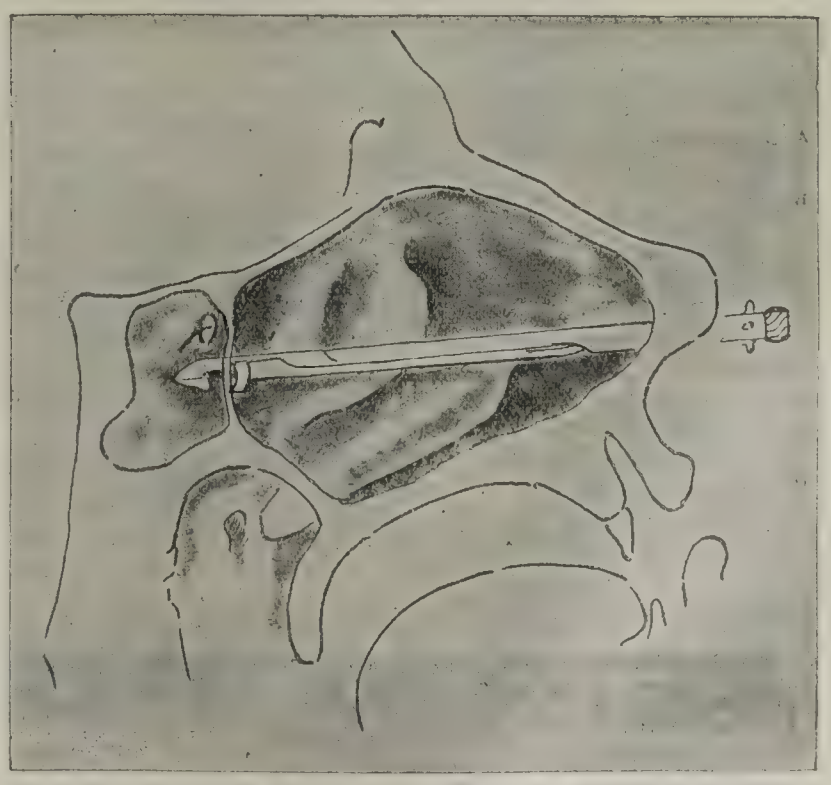

Fig. 4.—The cutting forceps in position. The male blade inside and the female blade outside the sinus.

cartilage in front of the incision, and in doing so lifts the muco-perichondrium of the opposite side away from the edge of the knife and makes it difficult to cause a perforation.

By THOMAS GUTHRIE, M.B., B.C.Camb., F.R.C.S.Eng.

DEVELOPMENT OF THE MASTOID.

MR. GUTHRIE showed a series of drawings illustrating the development of the mastoid antrum. He said: These drawings have been made from microscope specimens of fetal temporal bones of ages ranging from 2½ to 7½ months of fetal life. In each case the portion of the bone containing the middle-ear cleft was embedded by the paraffin method, and serial sections were cut, the plane of section corresponding as nearly as possible to that of the tegmen tympani. The sections selected for drawing were among those which seemed best to illustrate the development of the mastoid antrum.

In a paper on the "Continuity of the Several Cavities of the Middle Ear, with observations on their development and on the treatment of acute septic inflammation of the tympanic cavity (so-called otitis media)," read before the Otological Society in June, 1905, Professor A. H. Young and Dr. Milligan showed that the antrum is essentially a part of the middle-ear cleft, and is not formed as a diverticulum of the tympanum. I think that these drawings not only support that view, but also bring out a further point of some importance. Although it is true that the antrum is essentially a part of the middle-ear cleft, its size in the early stages of development is, relatively to the Eustachian and tympanic portions of the cleft, so small, that at first sight one might be disposed to say that no representative of the antrum existed. This would, however, be untrue; for even in the youngest of the specimens which I have prepared there can be no doubt that the recess labelled A in the drawings is the rudimentary antrum. It is clear, however, that at this age (about 2½ months of fetal life), and for some time after it, the representative of the antrum is in no way marked off from the rest of the cleft; it is indeed nothing more than the small angular recess with which the middle-ear cleft terminates posteriorly. The walls of the recess are formed by the squama and the periotic, and it is closed behind by the apposition of these bones. The drawings show the gradual increase in size of this recess, and make it clear that its growth is relatively very great as compared with that of the tympanic portion of the middle-ear cleft. The result is that at birth the antrum is a well-defined cavity, quite distinct from the tympanic portion of the cleft, with which it communicates by means of a definite aditus, narrower in all its diameters than the antrum itself.

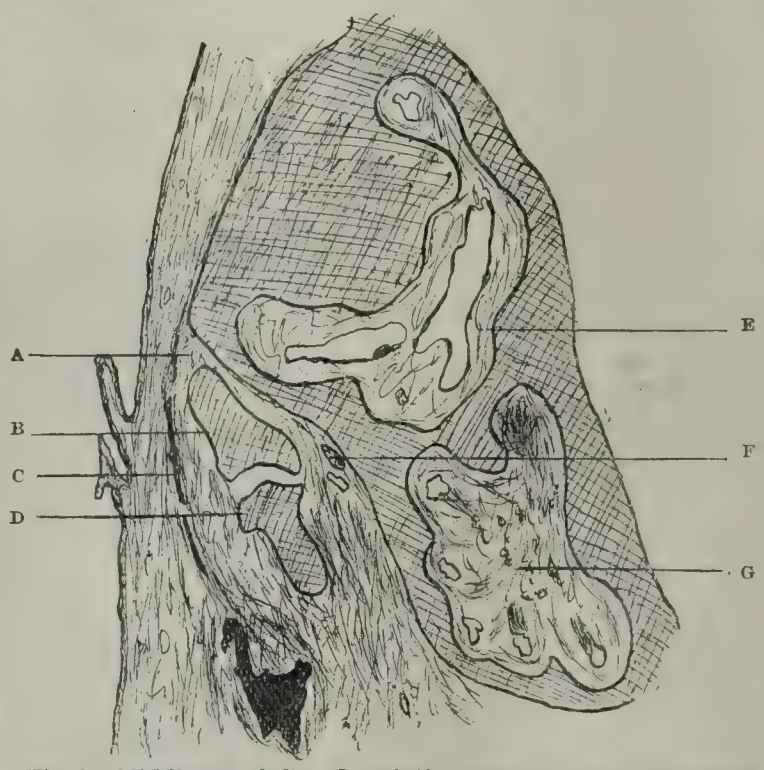

Fig. 1.—Middle-ear cleft and periotic capsule at about 2½ months of fetal life. The parts on the left-hand side of the section are superficial, those on the right are deep. A is the recess at the posterior end of the attic. It is the only representative of the antrum at this age. B, Incus; C, squama; D, malleus; E, vestibule; F, facial nerve; G, cochlea.

This question of the development of the mastoid antrum is of some practical interest, in view of the cases which have occasionally been reported of apparent absence of the antrum in the adult. Let us suppose that, owing to arrest of development, the state of things which exists in the younger of these specimens were to persist, an operator finding such a condition would be very likely to assume that the antrum was absent. I think it is clear, however, that in such a case the antrum would be in reality not absent but undeveloped or embryonic.

I am greatly indebted to Professor Paterson, of Liverpool, for providing the material for this investigation, the greater part of which was carried out in his laboratory and at his suggestion. I should also like to thank Mr. Arthur H. Cheatle for kind assistance and advice.

[Seventeen drawings were shown, of which three are here reproduced. In each of these the plane of section is parallel to that of the tegmen tympani, and passes through the attic. Bone is represented black and cartilage by cross-hatching]

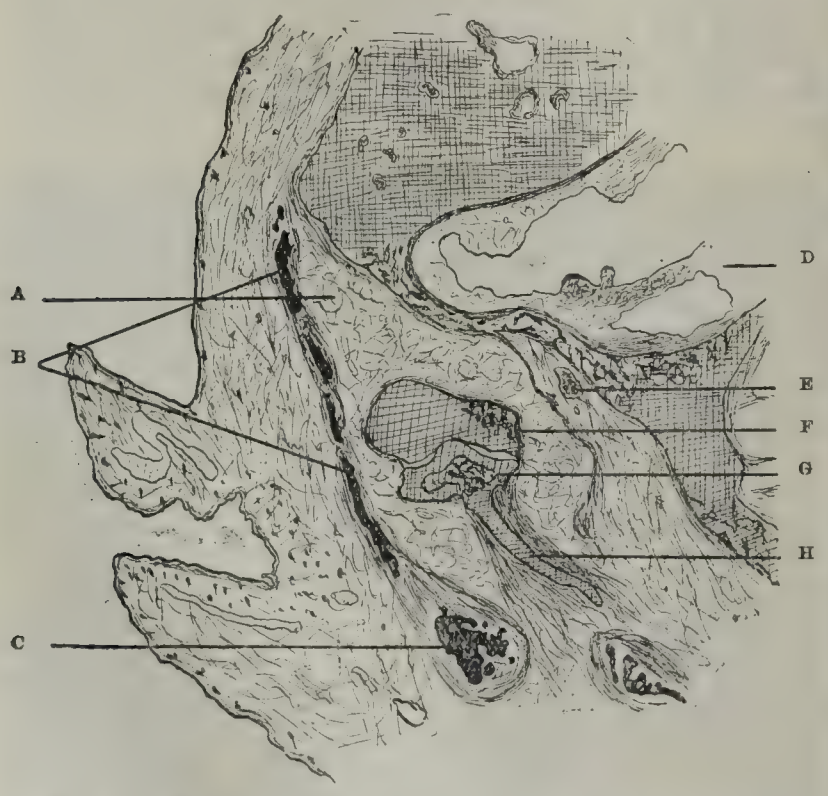

Fig. 2.—Middle-ear cleft at about 4 months of fetal life. A is the antral recess. It is here relatively much larger than in the preceding specimen. B, Squama; C, tympanic bone; D, vestibule; E, facial nerve; F, incus; G, malleus; H, Meckel's cartilage.

Fig. 3.—Middle-ear cleft at about 7½ months of fetal life. The antrum is here a large cavity. Absorption of the embryonic gelatinous tissue has begun. (At the end of fetal life the antrum is relatively larger still; so much so, that it is greater in all its diameters than the aditus—that is, the part of the middle-ear cleft between the antrum and the tympanum.) A, Antrum; B, incus; C, malleus; D, tympanic bone; E, external semicircular canal; F, facial nerve; G, chorda tympani; H, tensor tympani muscle; I, Eustachian tube.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE VOLVULUS OF THE VERMIFORM APPENDIX: OPERATION: RECOVERY.

Dr. T. Priestley of Sheffield, who sent the patient to the Royal Infirmary, has very kindly supplied me with the following notes of this case:

J. R., aged 5 years, was quite healthy until September 4th, when he received a blow on the abdomen from a playmate. During the succeeding night he complained of "belly pain." On September 5th he ate his breakfast and went to school. At dinner time he again complained of pain, but returned to school in the afternoon. In the evening he refused food and was sick several times, but was able to play with other boys in the street. During the night of September 5th he was unable to sleep because of pain. Dr. Priestley saw him on the morning of September 6th. He complained of pain and tenderness in the region of the appendix, and there was rigidity of the overlying muscles. The temperature was 99.8° F., and the pulse-rate 100 per minute.

He was admitted to the infirmary during the afternoon and was forthwith operated on. On incising the peritoneum some opalescent fluid escaped. The appendix, which was situated behind the caecum, was greatly swollen, dark in colour, and covered with flakes of grey lymph, but not perforated. On bringing it to the surface it was seen to be twisted on its long axis to the extent of two complete turns. The torsion was limited to the caecal end of the organ and was easily untwisted; but as the appendix was obviously gangrenous it was removed and the stump invaginated in the usual way. The meso-appendix extended only to the junction of the basal and middle thirds of the tube. A small rubber and wick tube drained the right iliac fossa for forty-eight hours. The boy made an excellent recovery.

I have sent this case for publication because a search of the surgical literature within my reach has failed to reveal any mention of acute torsion of the appendix.

The diagnosis and treatment of the lesion call for little comment. It would be impossible to distinguish between it and ordinary acute appendicitis until the abdomen is opened, and appendicectomy is called for whether the appendix is gangrenous or not.

Sheffield. Sinclair White.
Senior Surgeon, Sheffield Royal Infirmary.

RUPTURE OF MIDDLE MENINGEAL ARTERY: OPERATION: RECOVERY.

On April 25th, 1907, a man, aged 38, was admitted into the Queen's Hospital, Birmingham, in an unconscious condition. About four hours before, the ladder on which he was standing was pulled from under him by some boys, and he fell several feet on to his head. He was dazed at first, but soon recovered and walked to hospital. He was then found to have sustained a scalp wound over the right parietal eminence. No evidence of fracture of the skull was discovered, and as he appeared to be quite well, the scalp wound was dressed, and he was allowed to return to work. In a little while, however, he became drowsy and unconscious, and was brought back to hospital.

When seen, the patient was deeply unconscious, and breathing stertorously. The face was ashy pale, both pupils dilated and fixed, and the pulse rapid and feeble. Operation was at once decided upon. The scalp wound was found to be superficial only, the occipito-frontalis aponeurosis not having been penetrated. A large flap was turned down, and an area of bone in front of the right parietal eminence bared. A fissured fracture, commencing about 1 in. in front of the scalp wound, and extending forwards for about 2 in., was discovered. A circle of bone at the posterior extremity of the fracture was removed with a trephine. The dura was then seen to be separated from the bone by a mass of blood clot fully 1½ in. thick. On removing the clot, blood was seen trickling into the space anteriorly. With rongeur forceps the opening in the skull was extended forwards to a point 1½ in. behind the external angular process of the frontal bone and 1½ in. above the zygoma. Both branches of the middle meningeal artery were then found to have been cut across by the fracture just beyond the bifurcation of the main vessel. The bleeding was controlled by means of horse-hair stitches passed beneath the arteries as they lay on the dura. The cavity was then cleared of blood clot, and a small drainage tube passed into it through a puncture in the scalp flap which was secured in place by a few stitches. No bone was replaced. The dura had been separated very extensively from the skull, the separation extending down to the base of the skull and almost to the middle line above, over practically the whole extent of the right side.

The patient recovered satisfactorily, and at the end of a month was discharged with the wound firmly healed and apparently quite well except for some bilateral deafness which was noticed as soon as he regained consciousness. This deafness has to some extent improved, but is still complained of.

William Billington, M.B., M.S.Lond. F.R.C.S.
Surgeon to Out-patients, Queen's Hospital, Birmingham.

LOOSE BODIES IN THE KNEE-JOINT: OPERATION.

A youth, aged 19 years, had suffered from pain in his left knee-joint, accompanied by effusion on five occasions, during the past three years. He had been treated by plaster-of-paris bandages on each occasion. His medical adviser detected a loose body in the joint.

When I saw him the left knee-joint was distended with fluid, and two loose bodies were readily felt in the inner suprapatellar pouch. The operation area having been carefully prepared, by shaving the part, well scrubbing it with soap and water, and applying a carbolic compress overnight, my partner, Dr. Coombs, administered chloroform, and I made an incision over the inner side of the joint. Upon opening the joint, synovial fluid freely escaped, but the loose bodies which had disappeared into the joint remained behind. The joint was flexed and digitally explored. Three loose bodies of cartilaginous nature were removed. The synovial membrane was closed with a fine continuous catgut suture, the internal lateral ligament with interrupted catgut sutures, and the skin incision with silkworm gut. A dry cyanide gauze dressing was applied. The limb was then placed upon a back splint with foot-piece. There was no rise in temperature after the operation. The skin sutures were removed on the tenth day, and the wound healed by first intention. Four days after the removal of the sutures a plaster-of-paris bandage was applied and kept on for three weeks. The patient now plays tennis, and enjoys all kinds of recreation without pain or discomfort of any kind.

Haemarthrosis of a joint may end in the organization of the clot, and a fibrous mass being formed, may act as a loose body.

Inflamed portions of synovial membrane may become organized and detached, and so form a loose body. In osteo-arthritis these inflamed portions may become cartilaginous. In osteo-arthritis an enchondrosis springing from the margin of the articular cartilage may become detached.

Again, portions of articular cartilage may exfoliate and form loose bodies.

Concerning the treatment of these cases, if pain and recurring synovitis incapacitate the patient, as in this case, there is but one treatment—namely, by operation.

In a straightforward case such as this nothing further than the removal of the loose body is required, as we remove the cause; but in cases of osteo-arthritis, where the presence of a loose body is merely an incident in the disease, which may repeatedly recur, especially if the patient be otherwise crippled by the disease, then the question of excision of the joint must enter into consideration. This remark applies also to tuberculous disease of the knee-joint, in which a loose body with repeated synovitis may be the earliest manifestation of tuberculous synovitis.

In the case just recorded there was no evidence of gross change in the joint.

Bedford. S. J. Ross, M.D.Vict.

THE TREATMENT OF COLLES'S FRACTURE OF THE WRIST.

Most of us, no doubt, have been horrified from time to time at the ogee-like style of our workmanship when the scaffolding has been cleared away and the contour of the wrist finally revealed. Accordingly, when a few days ago I had occasion to treat a strong man with a badly deformed

Colles's fracture, and mindful of the usual more or less ineffectual struggles to rectify the deformity, I bethought me of a cobbler's iron foot. This I planted upon the table, and placing the convexity of the wrist curve upon the waist of the iron foot and steadying the arm above the fracture with my right hand, I seized the hand and carpus with my left hand and bore down with great force. I had at last discovered an immovable fulcrum, and the wrist immediately straightened with a gratifying crunch. I wish to emphasize the fact that the cobbler's implement is so perfectly adapted to this purpose, that Colles's fracture being so common, all surgeons should have one for this special object—even if the struggle for existence does not drive them to make any other use of it.

Sittingbourne. R. M. Boodle, M.R.C.S., L.S.A.

A CASE OF PNEUMOCOCCAL INFECTION.

The following has, I think, some points of interest as being a case of pneumococcal cellulitis which followed the temperature course of typical pneumonia and resolved by crisis on the fifth day.

On August 25th, while resecting a rib in a case of pneumococcal empyema in a child, I pricked the third finger of the left hand with a needle. This occurred at 1 p.m. On the morning of August 26th the finger felt slightly tender; fomentations of carbolic, 1 in 40, were applied during the day. By night the finger was greatly swollen and acutely painful. At 10 p.m. rigors and vomiting occurred; the temperature rose to 102° F. Two incisions were made and fomentations continued. No pus was at any time formed, the cellulitis spread steadily into the hand and the arm to a short distance above the wrist joint. The lymphatics of the arm showed lymphangitis. The axillary glands were enlarged and tender.

On August 28th three incisions were made in the back of the hand; this relieved the tension slightly. The temperature remained high, varying from 101.6° to 102.8°, morning and evening. There was great prostration, backache, general malaise, and weakness. The arm was treated with lysol baths every two hours and fomentations, and quinine was given in 5 grain doses.

On August 30th, about 10.30 p.m, profuse sweating occurred, the temperature fell to 98.8°, and on the morning of August 31st was 97.8° F. The malaise and weakness had gone, and a general improvement of sleep and gastric functions was at once marked.

On examining the serum escaping from the incisions pneumococci in pure culture were found, there was a distinct leucocytosis, and marked phagocytosis in the leucocytes from the wounds.

Considering the course of the infection, the absence of pus, and the resolution by crisis, the question arises in such cases of septic cellulitis of treatment without incision. In a similar case I should be inclined to examine the serum for pneumococci, and if found treat as an ordinary pneumonia, giving morphine in small doses for the pain. The incisions certainly relieved tension by bleeding freely, but no pus was formed, and the resulting cicatrization has produced considerable stiffness and tenderness, which is yielding slowly to massage.

T. Arnold Johnston, M.B., Ch.B.Edin.,
Acting House-Surgeon, Royal Infirmary, Bradford, Yorks.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

COLONIAL HOSPITAL, ST. VINCENT (B.W.I.).

FATAL ENTEROSPASM, DIVERTICULA ON JEJUNUM.

(Reported by C. W. Branch, M.B., C.M.Edin.)

J. H., aged 51, black, was admitted on May 9th, 1907, suffering from constipation of several days' duration and tympanites. There were no urgent symptoms, and it was decided that there was no strangulation of the gut. Accordingly treatment with enemata and repeated small doses of Epsom salts was tried all that day; for relief of the pain due to the tympanites he was given in the night morphine and atropine hypodermically. Next morning the bowels were still unrelieved, and the patient's condition now rapidly became grave. He was given morphine hypodermically for euthanasia, and died that day, May 10th.

Post-mortem Examination.—The small intestine was greatly distended and contained a large quantity of brown liquid. There was nowhere any mechanical obstruction, nor was any part of the gut unduly congested. About 3 in. of the ileum, just above the ileo-caecal valve, was contracted, but there was no organic stenosis. This portion was pale. A coil of the distended jejunum presented a series of six irregular saccular diverticula and a few smaller bulgings. This portion of gut was removed and photographed, but the photograph was unfortunately a failure. However, I had myself made the accompanying sketch.

I assisted lately in the autopsy of a valuable stud ass which had died of obstruction. The floating colon and caecum were enormously distended with dung, and there were several contracted parts of the gut of exactly the same nature as that above described. The lowest was at the splenic flexure, and the accumulated dung was all

Diverticula on jejunum.

above this. No other cause of obstruction was apparent. It may be mentioned that the animal had been freely treated with hypodermics of strychnine and atropine at my suggestion.

In the British Medical Journal lately was reported a case in which enterospasm was discovered after laparotomy; the contraction relaxed spontaneously during the operation, with the subsequent relief of the obstruction and recovery of the patient.

The persistence of the constrictions in my two cases, even after the spasm had relaxed at death, was no doubt due to the simultaneous failure of peristalsis. There was no impelling force to distend the relaxed but narrowed portion of gut.

The saccular diverticula figured had the appearance of having been slowly formed by bulging of weak spots at some time previously, with separation of the muscular fibres. The protrusions were divided and marked by fibrous bands. I have never met a similar condition, and believe that, together with the enterospasm, it justifies the reporting of the case.

Under the will of the late Mr. Francis Williams Dymond of Heavitree, Devon, who died on September 9th, Exeter Dispensary receives a sum of £1,000.

Tuberculosis and Dairies.—The Iowa Society for the Study and Prevention of Tuberculosis has, according to the *Medical Record*, discovered that tuberculosis is far more prevalent in the dairy district than in southern Iowa. This is held to support the theory that contact with dairy cows is a fertile source of tuberculosis in man. The Society will report the results of its researches to the State Legislature next session and ask for an appropriation for stamping out tuberculosis in the dairy herds of the State.

REVIEWS.

METABOLISM AND PRACTICAL MEDICINE.

As the translator truly remarks, an English edition of Professor von Noorden's well-known textbook of metabolism requires no specific introduction, and English readers are indebted to Professor Walker Hall and the publisher for bringing it within their reach in these two volumes, entitled *Metabolism and Practical Medicine*.[1] The first, deals with the physiology of metabolism, the problems of digestion and assimilation, the influence of forced feeding and of old age; the second is concerned with the pathology of metabolism in which the results of morbid conditions are considered, those of hunger and chronic starvation, of over-feeding, of fever and infections, and diseases of the stomach, intestines and liver, of respiration and circulation, of the blood and kidneys. The second volume of the German edition[2] which will form the third of the English translation, is perhaps the most interesting part of the work, as may be seen from the enumeration of its contents; it comprises sections on the metabolism of diabetes mellitus and insipidus, gout, oxaluria, phosphaturia, obesity, skin diseases, diseases of the thyroid gland, cancer, nervous diseases, and on the influence of mineral waters, of baths, of light, of *x* rays and of radium, of poisons and of drugs on metabolism. The translation is the work of various collaborators, and is not all on the same level; for example, the section on diseases of the stomach and intestines is admirable, while that on fever and infection is presented in an English idiom which is neither elegant nor clear. In translating from German it may be at times impossible to follow the original construction of the sentences if they are to be converted into intelligible English, nor can there be anything less pleasing to the reader or less instructive than to struggle through passages of Anglified German. In the first volume there is an interesting account of the metabolism of athletes, in which it is pointed out that in Germany, at least, the vegetarian is ahead of the meat-eater, especially in long-distance walks. Chittenden's results receive less attention than they deserve, and the author, Professor Adolf Magnus-Levy, appears to undervalue the evidence he has adduced. It is, indeed, a little difficult to understand what view he takes of them, for he says:

> We must, although recognizing the correctness of the results of Chittenden and his predecessors, at the same time bear in mind that a certain difference exists between their experimental conditions and those of daily life.

And again:

> One may scarcely call in question Chittenden's results, but the theoretical conclusions that he draws from them are, after all, rather too general, and are scarcely warranted.

And, lastly:

> It is possible that we may soon have a new system of dietetics in opposition to the forced feeding one. It will not be necessary, however, to carry out this new system to the extent that the scientific investigators did; in fact, it would not be advisable to do so.

We have no reason to doubt that Professor Magnus-Levy has read Professor Chittenden's book, but it looks as if he had not understood him. This great work is more valuable for reference than for reading, for in it opposing opinions and facts are often so carefully balanced that no conclusions can be drawn, and where this is the case, unless the reader remembers all, he retains nothing but a confused memory of conflicting theories and experiments.

Professor Graham Lusk's book *On the Elements of the Science of Nutrition*,[3] which is dedicated to the eminent physiologist Carl von Voit, is a carefully-compiled review of the scientific substratum upon which our knowledge of nutrition in health and diseases is based. Without making any pretence to be original either in his theories or his methods, Professor Lusk has succeeded in putting clearly before his readers the results arrived at by modern physiologists, most of whom are German, but also by his eminent fellow-countrymen, Atwater, Chittenden, and Folin, whose work is tending to revolutionize some of our ideas. Professor Lusk has himself done valuable work in connexion with the metabolism of diabetes, to which he properly refers. It is difficult to give in a short compass so much necessarily detailed information in such a way as to make a readable book; its pages may appear to be loaded with tables, but it is a useful and well-written compendium of what is at present known, and may be confidently recommended as a work of reference to those who do not possess the larger manuals.

[1] *Metabolism and Practical Medicine.* By Carl von Noorden. Vols. i and ii. English issue. Edited by I. Walker Hall. London: W. Heinemann, 1907. (Roy. 8vo, vol. i, pp. 468; vol. ii, pp. 541. £2 12s. 6d. 3 vols.)

[2] *Handbuch der Pathologie des Stoffwechsels.* Von Carl von Noorden. Zweite Auflage, Zweiter Band. Berlin: August Hirschwald, 1907. (Roy. 8vo, pp 1006. M.24.)

[3] *The Elements of the Science of Nutrition.* By Graham Lusk, Ph.D., M.A., F.R.S. (Edin.). Philadelphia and London: W. B. Saunders Co. 1906. (Demy 8vo, pp. 326. 12s.)

DERMATOLOGY.

The New Sydenham Society's new fasciculus[4] contains plates representing eczema, really a trade dermatitis, in a paper stainer; a comedonous form of lichen in association with leucoderma, about which opinions will differ, for the word "lichen" is here apparently used in an obsolete sense; tinea in man, contracted from the horse; some illustrations of gouty tophi; and Fordyce's disease, about which, again, opinions may differ. The two plates stated to represent Darier's disease have been left to the last, in order to point out how vague and confusing are the remarks in the text, assimilating as they do the condition which goes under that name to lichen scrofulosorum diutinus and chronic comedonous lichen. After reading the text it must frankly be confessed that the conception of Darier's disease, as described and seen, and of which Brocq states, "L'aspect de cette maladie est vraiment pathognomique, quiconque en a vu un cas la reconnaîtra sûrement," disappears into nothingness.

In these columns various concise works on dermatology, both English and American, have been reviewed from time to time, so that the necessity for another book of the kind is not very obvious. Dr. Whitfield, however, in his *Handbook to Skin Diseases and their Treatment*,[5] gives a fair account of the subject, considering how protean are morbid skin affections. The treatment, which has been denominated opsonic, is dealt with under the different diseases to which this method is applicable. As to the results obtained by its use alone in lupus vulgaris, it may be said that they have been disappointing, and the author has evidently found it so, for he recommends other simultaneous treatment (by the Finsen light and *x* rays). With regard to multiple scarification, excellent results can be obtained, and it is not necessary to employ a general anaesthetic. Nor is it possible to agree with the author's rejection of insoluble mercurial preparations in syphilis. This method has given, and is giving, excellent results, not only abroad, but Lambkin, Pernet, and others in this country have demonstrated its value (see a paper on this subject in the British Medical Journal for March 27th, 1907).

In books on diseases of the skin there are always a number of formulae, so that the necessity for Mr. Startin's *Pharmacopoeia for Diseases of the Skin*[6] is not at first sight apparent, but as this is the sixth edition there must be some demand for such. As to the formulae, some of the genitives and other cases want looking after. The weakest part of the booklet is the therapeutic index. The treatment of cancer, for instance, is misleading. Again, chloasma and tinea versicolor are lumped together. Under molluscum contagiosum the author recommends iron and cod-liver oil internally in addition to local measures. Lepra graecorum is not true leprosy; elephantiasis graecorum is the proper synonym for this disease, or lepra arabum.

Judging from the preface, Dr. Meachen's little book on the nursing and general management of *Skin Diseases*[7] is

[4] *An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology.* Compiled for the New Sydenham Society. Fasc. xxvi (double number). London: H. K. Lewis. 1907. (Dbl. demy 4to; plates 167a—174. 21s.)

[5] *A Handbook to Skin Diseases and their Treatment.* By Arthur Whitfield, M.D., F.R.C.P. London: Edwin Arnold. 1907. (Cr. 8vo, pp. 332; illustrated. 8s. 6d.)

[6] *A Pharmacopoeia for Diseases of the Skin.* Edited by James Startin. Sixth edition. Bristol: J. Wright and Co. 1907. (Demy 16mo, pp. 64. Price 2s. 6d.)

[7] *Skin Diseases: their Nursing and General Management.* By G. Norman Meachen, M.D., B.S.Lond. London: Scientific Press. (Crown 8vo, pp. 142. 2s. 6d.)

chiefly intended for nurses. In a small compass a variety of conditions are dealt with, and it is very likely that nurses will, after perusing this work, come to the conclusion that they are as able to treat cutaneous ills as well as anybody. There is too little about the nursing and too much about the treatment within the covers. One point is not touched upon apparently, and that is the great care nurses should exercise in dressing and attending syphilitic cases to avoid accidental infection. The author says it would no doubt be regarded as a perversion of the artistic sense to assert that morbid processes can ever be beautiful. De Quincey, in his *Murder Considered as one of the Fine Arts*, reminds us that Howship the surgeon, "in a work of his on indigestion makes no scruple to talk of admiration of a certain ulcer which he had seen, and which he styles 'a beautiful ulcer'"; and De Quincey adds that it is well known that Mr. Howship makes war upon all ulcers, and "without suffering himself to be seduced by their charms, endeavours to banish them from the County of Middlesex."

GENITO-URINARY SURGERY.

THE bulky thirteenth volume of the *Johns Hopkins Hospital Reports*[8] is wholly devoted to urological surgery, and the principal contributor to its pages is Dr. Hugh H. Young, whose name appears either alone or in collaboration at the head of twelve of the twenty-one articles of which the volume is made up. The other contributors are Drs. Fowler, Churchman, Geraghty, Lehr, Stevens, Watts, and Baetjer. The longest and most elaborate articles are those on stricture of the urethra, based on a study of 400 cases, and a review of the literature by Drs. Young and Geraghty, and an experimental and clinical study of chronic prostatitis, with an analysis of 358 cases by Drs. Young, Geraghty, and Stevens. Among the other subjects dealt with are the seven-glass test in the differential diagnosis of inflammatory lesions of the urethra, prostate, seminal vesicles, and bladder; urethral and vesical diverticula; the smegma bacillus in the diagnosis of urinary and genital tuberculosis; the treatment of bacteriuria; the use of the cystoscope in diseases of the prostate; the use of the *x* ray in the diagnosis of renal and urethral calculi; and nephritis and haematuria. The book ends with an interesting description of the dispensary for the treatment of genito-urinary surgical cases at the Johns Hopkins Hospital. It is, of course, impracticable to give a detailed account of these numerous papers. It must suffice to say generally that all are valuable and worth careful reading; that the various subjects dealt with are treated at length and apparently without restriction as regards space; that the views of other observers receive due consideration; that full reports of illustrative cases are given; and, finally, that the volume will probably appeal more particularly to those who are specially interested in the practice of genito-urinary surgery.

Dr. DEANESLY'S object in writing this small work on *Diagnosis in Urinary Surgery*[9] is to describe "the principal modern methods of localizing and distinguishing those diseases of the urinary organs which are usually assigned to the surgeon." The book is divided into four chapters, dealing respectively with the interpretation of urinary symptoms, abnormal conditions of the urine, physical examination of the patient and of the urinary organs, and differential collection of specimens of urine. On all these matters a good deal of information is given which will no doubt be helpful to those who have not devoted special attention to urinary diseases. But Dr. Deanesly's method of examining the urethra by means of catheters can hardly be said to be modern, nor do we think it the most desirable routine method. Nor can we agree with him that if a rubber catheter of No. 8 to 10, English scale, can be passed the urethra may safely be assumed to be normal. In connexion with this it may be remarked that as there is no standard English scale it is better for the sake of accuracy to use the French (Charrière) gauge. That useful instrument the *bougie à boule*, by the way, is not mentioned. In the third chapter the author's remarks on the use of the cystoscope are well worth bearing in mind. In the last chapter the urine separators of Luys and of Cathelin are described. Dr. Deanesly prefers Luys's instrument, and states that he has satisfied himself that it provides a means of separating the two urines so exact, so simple, and so easily applied that it leaves very little to be desired.

[8] *The Johns Hopkins Hospital Reports*, vol. xiii. Studies in Urological Surgery. Baltimore: The Johns Hopkins Press. 1906. (Imp. 8vo, pp. 626, 6 plates, 201 figures, 1 coloured chart. 5 dollars.)

[9] *Modern Methods of Diagnosis in Urinary Surgery.* By Edward Deanesly, M.D., F.R.C.S. London: H. K. Lewis. 1907. (Crown 8vo, pp. 103. 3s.)

THOMAS'S HIP SPLINT.

FROM time to time the excellent hip splint of the late H. O. Thomas is rediscovered and described, and the principles laid down by its inventor insisted on afresh. Dr. Ridlon, now of Chicago, did this some years ago for the United States, and now we have Dr. BRUCE BENNIE, of Melbourne, claiming in the preface to his *Rational and Effective Treatment of Hip Disease*[10] that with Thomas's splint "we can arrest the progress of the disease" and "we can cure a diseased joint." Again, at p. 37, he says:

> If the mechanics of your splint is (*sic*) right, and if shortening from the destruction of the joint is not present when you receive the case, the patient should be cured *without any deformity whatever.* Shortening from destruction of the joint is the *only* deformity that cannot be cured with this treatment. (The italics are ours.)

From this we think that it will be evident that Dr. Bennie is an enthusiast, and enthusiasm in a good cause is useful, provided that it does not by exaggeration provoke opposition and reaction. We fear that the latter result may follow the publication of this book, for we are unfortunately not able to share fully Dr. Bennie's extremely optimistic opinion of the results of treatment with Thomas's splint, nor his excessively pessimistic views as to the effects of all other methods. For example, weight extension often relieves pain in a way that no splint alone will do, but he will have none of it. There is no doubt, however, that it is well that attention should be drawn from time to time to the proper method of making, applying, and using this splint, for British surgeons are somewhat apt to leave too much to instrument makers, who often supply far too slight and elastic an appliance. It is important, too, that surgeons should be alive to the need of modifying and reshaping the splint from time to time if the best possible results are to be obtained. Dr. Bennie gives elaborate mathematical formulae for designing the splint for every case. However theoretically useful these may be, we do not think that in practice they are necessary. His table of dimensions should be useful, and his accurate method of measurement and shaping the splint is a distinct improvement. The difficulty with this and other splints arises from the mobility of the lumbar spine and the shortness of the lever formed by the pelvis. The addition of a pelvic wing is of some use in controlling lordosis, but Dr. Binnie does not apparently employ this, nor does he refer to the difficulty. As to the etiological relationship of congenital syphilis and tubercle, we are compelled to differ from the author, for although *a priori* it might be expected that a disease such as inherited syphilis, which lowers vitality, would conduce to tubercle, yet in practice it very seldom happens that symptoms of the two diseases are manifested in the same child. Dr. Bennie objects to plaster-of-paris in the treatment of tuberculous joint disease, because he says it prevents "access to the joint of the different rays in the sunlight which are beneficial to recovery." We have seen such good results from Scott's ointment and fixation by plaster-of-paris when used together in white swelling of the knee and other joints, that we should require much stronger evidence than any offered by Dr. Binnie before agreeing with him to discard so valuable a means of treatment.

A SKIAGRAPHIC ATLAS.

HITHERTO the successful reproduction of radiographs in printed form has not been a strong point with British radiographers, but Dr. IRONSIDE BRUCE, Physician to the

[10] *The Rational and Effective Treatment of Hip Disease.* By P. Bruce Bennie, M.A., M.D., B.S. (Melb.). (Founded on experience of numerous cases in hospital practice during twenty-eight years.) Compiled by Alex. B. Bennie, M.A., M.B., B.S. (Melb.). London: Baillière, Tindall, and Cox. 1907. (Demy 8vo, pp. 120. 5s.)

X-ray and Electrical Departments, Charing Cross Hospital has now shown what excellent results in half-tone can be gained, in spite of the loss of detail occasioned by the intervention of the process block. His *System of Radiography, with an Atlas of the Normal*[11] contains upwards of eighty radiograms of the joints, and, indeed, of all parts of the body, as they appear in the healthy subject. The views are taken in twenty-seven fixed positions, and the same part is shown at three ages—5, 15, and 25 years—in order to afford a knowledge of the epiphyses, which often cause uncertainty in cases of supposed displacement of the bones. No irregularities are shown, even for purposes of comparison, the idea being to make the surgeon acquainted with the normal radiographic appearance of every part. Dr. Bruce takes the reader fully into his confidence as to his methods of ensuring accuracy, exact duplication, and the maximum effect in bringing out anatomical details. Under the canvas of his *x*-ray couch are two carriages, the first running lengthwise and bearing a rigid upright and a cross-arm, and the second running across the breadth of the first carriage, and bearing a tube-box, which has a small opening for the rays. The cross-arm has a centimetre scale to correspond with the scale on the first carriage below, and while a plumb-bob from the cross-arm indicates some definite and accessible anatomical point on the patient, the place of the tube-box below can be so adjusted that its opening is directly below the point indicated by the plumb-bob. In this way the nicest precision is possible in relating the tube to the part. A certain lack of vigour in some of the reproductions may be accounted for by the fact that no retouching has been allowed from first to last. To retouch a collection of radiograms, in which everything depends on accuracy of detail, and which even in the original are difficult to interpret, would be fatal to their diagnostic value. It was decided to bear with loss of detail rather than to have the false detail which inevitably follows upon the work of the retoucher. Therefore, that gentleman, artistically useful no doubt, but scientifically a vandal, has had no hand in this production, nor has there been any reduction or enlargement of the original negatives. Particularly in the hip region, where appearances are often obscure and diagnosis is difficult, will the radiographic views of the normal be of service, and some of the reproductions of these parts cover 100 square inches. It is safe to prophesy that very soon every worker with the *x* rays for diagnostic purposes will find an atlas of this kind indispensable to his equipment.

NOTES ON BOOKS.

The work upon eye diseases connected with the reproductive function in women,[12] by Drs. Berger and Loewy, is a most laborious compilation, and the industry which its composition displays is most praiseworthy. The authors have collected, read, and digested everything that they could find. The connexion of some eye diseases with pregnancy is unquestionable, and their importance great. In making this remark, we have chiefly in mind the retinal changes which occur along with the renal diseases peculiar to pregnant or lying-in women. There are many other ocular disturbances which have been observed in women who were also suffering from some disease of the sexual organs, and in which those who thought the cases worth putting on record believed that there was some relation between the disorder of the reproductive function and that of the visual organs. But between accepting the facts that the two disorders occurred together and going on to believe that the connexion between them was more than coincidence is a wide jump, a jump that, as to many of the eye conditions treated of in this work, we cannot find courage to take. The authors' methods are those of the compiler. Each fact stated is vouched for by reference to the writings of others. There are few original observations and little of the critical spirit. As a guide to the literature, this treatise will be most useful to those who wish to investigate the subjects with which it deals.

[11] *A System of Radiography, with an Atlas of the Normal.* By W. Ironside Bruce, M.D. London: H. K. Lewis. 1907. (Imperial folio, pp. 121, 111 illustrations. 15s.)

[12] *Ueber Augenerkrankungen sexuellen Ursprunges bei Frauen.* [On Diseases of the Eye of Sexual Origin in Women.] Von Dr. Emil Berger und Dr. Robert Loewy. Deutsche Ausgabe uebersetzt von Dr. Beatrice Rossbach. Wiesbaden: J. F. Bergmann; and Glasgow: F. Baumeister. 1906. (Roy. 8vo, pp. 179. 4s.)

LITERARY NOTES.

Sir Isaac Pitman and Co. will shortly issue a book entitled *The Future Life and Modern Difficulties*, by the Rev. Frederick Claude Kempson, who combines the functions of Demonstrator of Anatomy in the University of Cambridge with those of Priest in charge of the parish of Dean, Kimbolton, Hunts. Mr. Kempson, who was formerly Senior Demonstrator of Anatomy at St. George's Hospital, is a member of Gonville and Caius College, and took the degree of B.A. at Cambridge in 1889, and that of M.B. in 1893. He is a member of the Anatomical Society, and has contributed papers on the skull of an adult microcephalic idiot and on emargination of the patella to the *Journal of Anatomy and Physiology*.

Messrs. J. and A. Churchill inform us that the fifth edition of Jacobson's *Operations of Surgery* will be ready for publication on October 21st. It has been found necessary to enlarge the book considerably. The work is complete in two volumes, containing 2,000 pages and 777 illustrations. Of these 350 are new. Mr. Jacobson has himself written the sections on the upper and lower extremities, and those on the head, neck, thorax and spine. Mr. R. P. Rowlands, Assistant Surgeon to Guy's Hospital, has written the sections dealing with the general surgery of the abdomen. The chapters on operations of the ovary and uterus are by Mr. G. Bellingham Smith, Assistant Obstetric Physician, Guy's Hospital.

Mr. H. K. Lewis, of Gower Street, has just issued a new edition of *Hygiene and Public Health*, by Drs. L. C. Parkes and H. R. Kenwood, being the third under their joint authorship. A second edition, revised and much enlarged, of Dr. George Oliver's *Studies in Blood Pressure* will be published shortly. Other new publications will be the third edition of *Diseases of the Nose and Throat*, by Drs. Havilland Hall and Herbert Tilley, containing many new illustrations printed as plates, the text being largely rewritten; a new work on *Squint and Ocular Paralysis*, by Mr. E. Lucas Hughes; a book on the *Opsonic Method of Treatment*, by Dr. E. B. Allen; and one on the *Preservation of Infant Life*, by Mrs. de Voss (*née* Kanthack). Another book of interest to all who have been connected with ambulance work, will be *Reminiscences in the Life of Surgeon-Major Hutton*.

The September issue of the *Canadian Journal of Medicine and Surgery* is its annual illustrated number. This year it is published in direct connexion with the meeting at Montreal of the Canadian Medical Association, held on the 9th, 10th, and 11th. In addition to a number of articles written especially for the number, there are forty pages of half-tone illustrations of some of the hospitals, sanatoriums, and public institutions of Canada, and a number of views of places in the Dominion remarkable for their beauty. Our contemporary certainly makes a brave show, and we congratulate all concerned in its production.

A correspondent of the *Standard*, signing himself "Medicus," recently wrote:

> It has been stated with some show of authority, that the Romans performed the extremely difficult operation of the removal of the spleen from some of their gladiators in order that they might be able to perform running feats of endurance with greater ease,

and made an appeal to any classical readers who might have come across records of such operations to publish chapter and verse for the purpose of setting at rest "a point which is of immense interest to medical men." As far as we are aware only one answer to the question has appeared. A correspondent signing himself "J. S. M." pronounces dogmatically that the Romans did not excise the spleen even for disease, and says the only writer who mentions the operation is Caelius Aurelianus, who believes that it had never been performed. This learned correspondent has, however, overlooked a passage in Pliny's Natural History (eleventh Book) which in Philemon Holland's version runs as follows: Speaking of the spleen he says:

> This member hath a propertie by itself sometimes, to hinder a man's running: whereupon professed runners in the race that be troubled with the splene, have a deuise to burne and wast it with an hot yron. And no marvell; for why? they say that the splene may be taken out of the bodie by way of incision and yet the creature live neverthelesse: but if it be man or woman that is thus cut for the splene hee or she loseth their laughing by the means. For sure it is that untemperate laughers have alwaies great splenes.

FOURTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

[From our Special Representative]

(*Continued from page 917.*)

General Meeting.

On Thursday morning the general meeting took place in the big hall, which corresponds to our House of Commons. This hall is more than twice as large as the latter, and is arranged with a capacious platform with various "Chairs," a tribune, and a row of seats on either hand. The body of the hall is arranged in lecture theatre fashion, each member having a caned spring seat and a desk. There are two side galleries with ample accommodation and a central gallery. Prince zu Schönaich Carolath took the chair at a little past nine o'clock, and in a brief speech read telegrams from the Kaiser and the Kaiserin, delivered a verbal message from the latter, and read messages from Lord Lister, Schjerning, Althoff, Koehler, Brunner, and von Gruber. His Majesty's telegram was as follows:

I thank the Fourteenth International Congress of Hygiene and Demography very warmly for the friendly greeting. It will give me great pleasure to follow the endeavours to solve the difficult problems in connexion with these sciences, as I am convinced of the great importance which the hygiene of the people possesses for the satisfactory progress of humanity. I hope with my whole heart that the laudable work of the Congress which has met in my capital and residential town may be fruitful.

Wilhelm, I.R.

The Kaiserin regretted extremely that she was prevented from being present at the Congress. She further thanked the Congress for the friendly message. Lord Lister's telegram read:

If I may accept *in absentia* the very high honour offered me by the Congress through you, its illustrious President, I do so with the deepest gratitude.

The general meeting included three orations, which were not open to discussion. Professor Chantemesse (Paris) spoke first on the serumtherapy of typhoid fever. He said that during the past six years the mortality of typhoid fever in the civil hospitals dealing with 5,621 patients was 17 per cent. In his own hospital he had treated over 1,000 patients during the same period and obtained a mortality of 4.3 per cent. He utilized the same treatment as his Parisian colleagues—that is, baths of from 24°C. to 30°C., but in addition he injected an antityphoid serum. On analysing the statistics of the various hospitals he found that the lowest mortality exceeded 12 per cent. He then proceeded to describe the effects of the serum. The effect on the symptoms can be described in two periods: (1) The reaction following the injection, and (2) the period of deflorescence. The first stage lasts from a few hours to five or six days, and is characterized by little or no depression of temperature. At the end of this period the temperature falls rapidly, sometimes after a brief increase of fever. The patient only begins to feel alleviated during the second stage. A short time after the commencement of this stage an extraordinary change comes over the patient. The pallor and the disturbed mental condition, the raging fever, the cold clammy extremities, and the cyanosis all disappear. The skin is red and the mind clear. This change is the more striking the earlier the serum is injected. He stated that he had not lost a single patient to whom he was able to give an injection during the first seven days of illness. The types of temperature curves were exhibited and explained. With regard to the pulse he stated that although Liebermeister had found that when the rate exceeded 150 per minute the patients always died, he was able to observe many recoveries after the pulse-rate had been as frequent as this. The quantity of urine becomes increased. In the blood certain changes are noted. At first there is an increase in the number of leucocytes, chiefly due to increase of the mononuclear elements, but later the neutrophile polynuclear cells increase. The cells become increasingly phagocytotic, and he calls this condition "*opsonisation antityphoïde*." The spleen always increases in size. Convalescence then follows rapidly. The speaker then dealt with the ophthalmic diagnosis. It has been recognized that the conjunctivae of phthisical patients who are treated with tuberculin are very susceptible to small traces of this substance. The same was found to hold good with his serum in typhoid fever. He found that in many cases a good reaction was obtainable at a time when the ordinary agglutination test gave negative results. He regards this as important, since it may be possible to diagnose by its means cases that now remain doubtful or undiagnosable. In speaking of the serum itself, he stated that it was prepared by injection of a soluble toxin derived from emulsions of virulent typhoid bacilli into horses. These bacilli were grown on ox spleen bouillon. The strength of the serum decreased during the course of time. In animals it was found to be quite harmless, three or four drops injected into each hemisphere of the brain in guinea-pigs being always well tolerated. Very small doses are needed for treatment, and at times it is necessary to repeat the injection after ten days. The speaker then dealt with the results of the injections as evidenced by changes in the opsonic indices, and attempted to explain the rapid improvement from the point of view of the protective substances. In concluding, he stated that, although he believed that his serum was active and valuable in the treatment of typhoid fever, he considered it wiser to assist the action by giving cold baths. By means of the combined treatment one could obtain an extraordinarily low mortality. The speech was much applauded.

Dr. J. C. Haldane spoke on recent investigations in connexion with subaqueous and subterranean work. He said that it had been ascertained by a commission appointed by the British Admiralty, of which he was a member, that a diver could work comfortably at a depth of about 20 metres if properly equipped, and if he were supplied with sufficient air. Discomfort and dangerous symptoms are felt when working at greater depths, such as from 40 to 50 metres. The cause of the symptoms has been minutely studied. It was found that the carbonic acid content of the alveolar air varied inversely to the barometric pressure. Normally, the respiratory centre responds only to variations in the partial pressure of CO_2 in the blood which irrigates it. Considerable variations in the partial pressure of oxygen can take place without harm so long as this does not fall below two-thirds of the normal. Compensation in the carbon dioxide pressure is easily produced. As long as a diver does not get more than 3 per cent. CO_2 while at work he feels no distress. If he goes down 10 metres, and the percentage of CO_2 in the helmet air remains the same as it was at the surface, the alveolar CO_2 percentage will be doubled (that is, 5.6 per cent. instead of 2.3 per cent. at two atmospheres instead of one). He must, therefore, receive twice as much carbonic acid at 10 metres as he received at the surface. Lieutenant Damant and Gunner Catto remained free from distress under these conditions at a depth of 65 metres. Excess of carbonic acid must be guarded against, since the diver may become unconscious, and it is extremely dangerous to draw a man up rapidly from a great depth, especially if he has been down for a considerable time, and it is also dangerous to leave an unconscious man at the bottom. He showed that the high mortality in gold, silver, tin, copper, and lead mines (which he investigated for the British Government in 1903) is not due to excess of carbonic acid. Provided that this gas does not exceed 1 per cent. in mines at ordinary pressure, carbonic acid may be disregarded. The mortality proved to be due to tuberculous phthisis and to ankylostomiasis. The formidable dangers which deep divers have to contend with only occur in the ascent to the surface. The symptoms in mild cases are pains in the limbs and elsewhere ("bends"), in more serious cases temporary or permanent paralysis, and in very serious cases asphyxia, which may lead to a fatal result. Thirty years ago P. Bert showed that these symptoms were produced by the liberation of gas bubbles in the blood or other body tissues. Von Schrötter and others have done a considerable amount of work on this subject. When decompression takes place too rapidly the nitrogen, which has saturated the tissues according to Dalton's law, becomes liberated in the form of bubbles, and the symptoms are produced by the local or general blocking of the circulation by these bubbles. It was formerly thought that no liberation took place if the decompression were carried out slowly. In a series of experiments conducted at the Lister Institute on man and goats the author and his collaborators produced conditions similar to those of caisson disease in a steel pressure chamber, the gift of Dr. L. Mond. It could be shown that the danger of rapid

decompression could be obviated. The fact was elicited that fat takes up about six times as much nitrogen as blood, and thus a considerable store of nitrogen would be available for the production of symptoms. Experiments further showed that the pressure could be reduced rapidly from 2 to 1 atmosphere without danger of symptoms, and this led the investigators to ascertain whether 4 atmospheres could be reduced to 2 and 6 to 3. They found that this could be done with safety. Stage decompression was further studied, and as a result they elaborated tables for decompression of divers, which have been adopted by the British navy. The method has proved absolutely satisfactory, both for man and goats. In discussing deep mining the speaker dealt with the question of temperature. First, he spoke of the sources of heat, and then he stated that as long as the temperature (measured by the wet bulb thermometer) did not exceed 31° C. to 32° C. no symptoms occurred. Cornish miners have recognized the significance of increased heat, and stop working as soon as they feel the heat at all excessive. In this way it is the mine owner, and not the miner, who suffers. With regard to ventilation, the fact that a considerable draught of air dries the dust, air, and surroundings, and thus raises the air temperature, led the speaker to state that excessive mine ventilation is much more dangerous than too little. Haldane was also much applauded at the end of his address.

The third speaker was Professor Schattenfroh of Vienna, who dealt with the principles of a proper standardization of water. After a very long introduction, during which many of the audience stealthily crept out of the hall, he said that, besides the geologist, the hydrologist, and the chemist, the hygienist should also be consulted on this question. Difficulties are sometimes met with, when the opinions of the medical man do not coincide with those of the hygienist. The most important diseases which can be transmitted by water are cholera and typhoid fever. Water poisoning is rare, but at times lead may be found, and this may give rise to poisoning. The speaker then dealt with Pettenkofer's theory on the autocleansing of rivers. He believes that epidemics can be spread by means of drinking water. Although there are differences of opinion as to whether water used for washing, bathing, etc., is capable of spreading disease, there is no doubt that the hygienist must remedy any soiling or polluting of this water, too. He regards hydrogen peroxide as the best chemical means of sterilizing water, but the action is very slow. Boiling, however, still remains the most reliable method. He then turned to the means of controlling waterworks and the best methods of planning new works. In the first place, one must insist on regularity in the control, and this must be both chemical and bacteriological. The latter must be extended to bacteria which infiltrate soil. Any recent chemical or bacterial alteration in water must be detected immediately and dealt with promptly. He thought that an international commission on this question could do much for the public good. Much still needs to be carefully studied.

Before the sitting closed the President received the permission of those present to send a memorial telegram to Pasteur's widow on the occasion of the anniversary of Pasteur's death.

The Work of the Sections.

On Thursday afternoon the Sections met again, and worked for two or three hours. The subjects under discussion included immunity, typhoid fever, vaccines and opsonic indices, the prevention of dust in the industries, the fitness for tropical service, and the dangers of electricity.

In Section V Pfeiffer spoke first on the protective inoculations against enteric fever, cholera, and plague, and claimed for himself priority in having founded the method on which all later modifications have been based. After his speech a pause was made while the Section was being photographed. Sir A. Wright then spoke, and urged his own claims in such a tone that Pfeiffer left the room. Sir A. Wright's views appear to have undergone some change, inasmuch as he stated that the opinion that opsonic substance is identical with the amboceptor of Ehrlich's teaching may or may not be correct, and he did not lay any stress on it, since he dealt with the opsonic function, and would not go so far as to insist that there was any opsonic substance in the sense of a chemical body. He did not, however, make his present view very clear.

On Friday morning, at the Reichstag Building, evident signs that the members had had nearly enough was noticed. The Sections were only fairly filled, and in several the audience was inattentive, talkative, and restless. Beginning at 9, one found that by 10.30 some rooms had only a handful of people left.

The arrangements of the Sections were on the whole good. In the majority of cases the programme was carefully prepared and the time limit was rigidly enforced. The presidents certainly found the control easier than is usually the case, and it may be said that during the first three mornings most of the members were quiet and attentive. The photographer was one of the drawbacks. Constantly a Section had to be photographed, which meant an interruption of from quarter to half an hour, and resulted in pictures of doubtful value. True the interruption at times had one advantage when the photograph was taken in another place, namely, that the room cooled down beneficially. The weather during the whole week was beautifully sunny and warm—and as a result the rooms became almost overpoweringly hot when the attendance was good.

The Etiology of Tuberculosis.

Arloing said that he regarded the bacilli of human and bovine tuberculosis as identical, and that the small differences which are noted are only the signs of altered local conditions. He therefore believed that in the attempts to prevent this disease a great risk was run if reliance were placed on a lessened susceptibility of one species toward the bacilli of another. Ravenel thought the alimentary tract was a frequent portal of entry for the tubercle bacillus, and that it could pass through the intact mucosa without producing any lesion. He was convinced that milk from tuberculous cows was a source of infection in many cases, while he regarded infection by contact as less frequent and less important. Flügge considered that inhalation of infected droplets was the most common form of infection, and advanced evidence that when animals were infected by feeding much greater numbers of bacilli were necessary. Ribbert, basing his opinions on his *post-mortem* experience, took the view that the most common form of infection is the airborne, since in the great majority of cases the bronchial glands and the lungs are the primary seats of the disease. He considered that intestinal infection was rare, and would adopt measures against the inhalation of bacilli. Von Schrötter spoke of the lungs as the most common seat of primary tuberculosis, but considered that at present the frequency of primary infection of the various organs was not exactly known. It was not possible by clinical examination to determine which organ was primarily affected; this could always be determined by necroscopic investigation. Bartel believed that infection took place through the lymphatic channels, and spoke of a lymphoid form. Rolf agreed with von Schrötter. Rabinowitsch-Kempner spoke of some experiments which she had carried out with Orth, tending to show that tubercle bacilli could be absorbed through the intestinal tract in pigs, and gave rise to general tuberculosis. Gastrostomy was performed, and after the fistula had healed, measured quantities of bacilli in suspension were introduced with great care through a tube, the fistula itself not being touched by the infected material. Tuberculosis followed on a dose of 3 grams, while although no macroscopical signs could be detected after a dose of 1.2 gram, it was proved by inoculation that the blood of the pig contained bacilli.

Bacilli of the Typhoid Group.

Loeffler said that bacteria of this group comprised a large number of varieties, some of which were the causal organisms of severe general infections, some gave rise only to local infections, and some were non-pathogenic. He grouped them together under the family name of Typhaceae. The characteristics of the group are that they are small rodlets with rounded ends, do not present any endogenous spore formation, are not stainable by Gram, and grow in gelatine as round, oval, or hone-shaped grey or brown colonies, presenting a more or less granular appearance. The colonies do not liquefy gelatine. Morphologically

and biologically, the various forms can be differentiated in several ways. Some have no power of movement, some are slightly mobile, while others, possessing flagella, present extensive movement. Some form indol, others proteinchrome in peptone solutions, while others do not form either. Again, the behaviour toward the different sugars can be used to differentiate the individual species. Lastly, the pathogenicity towards various animals and the reactions towards agglutinating serums render it possible to distinguish minute characteristics. He investigated the question of adding bile to the culture media after Conradi had obtained excellent results with his bile-blood method, and found that a bouillon nutrose agar, to which 3 per cent. of ox bile and 1.9 per cent. of a 0.2 per cent. of malachite green solution had been added, formed a medium which was specially adapted for the cultural detection of typhoid bacilli. (It may be pointed out that Loeffler did not mention MacConkey, who was the first to recommend the addition of bile to the medium for *B. typhosus*.) Loeffler finds that it is advisable to use fluid or gelatinous nutrient media, which contain certain dyes, the characteristic changes revealing the influence of the components on the substratum. The dye he used was malachite green; his solution for the typhoid bacillus consisted of peptone, nutrose, grape sugar, lactose, and malachite green, while that for the paratyphoid was the same without grape sugar. By means of these solutions, and with the assistance of specific agglutinating serums, he was able to distinguish the following groups and forms:

Typhae, which do not form gas in either solution, which precipitate typhoid solution, but not paratyphoid solution. There are five forms in this class, the characters of each of which he described.

Josarceae, which produce gas and foam in typhoid solution and decolorize paratyphoid solution. He described eight forms of this class.

Coleae, which produce gas in both solutions. This class only contained two forms.

LENTZ, in the absence of Babes, was next called upon for his report. He said that typhoid and paratyphoid fevers were bacteraemic affections. The bacilli gained entrance through the lymphatic apparatus of the intestinal tract and multiplied in this situation as well as in the mesenteric glands, the spleen, and the bone medulla. From these situations they entered the blood and passed through the liver into the bile and through the kidneys into the urine in the process of being excreted. The bacteria did not increase in the intestinal contents. The only means of distinguishing between the two affections in all cases was by bacteriological examination. The bacteria of meat poisoning might produce symptoms which were due either to the absorption of toxins from food or to the entrance of the bacteria into the lymphatic system as in typhoid infections.

CHANTEMESSE considered that Loeffler's test might prove valuable. He discussed the difficulties met with clinically, without being able to throw any new light on the problem.

GHON spoke on the infection of the meninges by the two bacilli, and came to the conclusion that a differential diagnosis could only be made by bacteriological means.

STÄRK believed that many cases of paratyphoid fever were absolutely indistinguishable from typhoid fever, and it was just the milder cases which should claim minute attention. The diagnosis must be bacteriological.

LEVY agreed, and stated that in three-fourths of all cases paratyphoid bacilli were to be found in the blood.

BAGINSKI spoke of cases of typhoid fever which run a course similar to summer diarrhoea, but he did not believe that paratyphoid was ever clinically like typhoid. Further, he recognized cases exactly like typhoid which ended in recovery and in which neither *B. typhosus* nor *B. paratyphi* could be found. Uhlenhuth, who had experimented with both bacilli in animals, had found that paratyphoid bacilli frequently lived a saprophytic life in pigs. He therefore thought that attention should be paid to this point, and that if his observations were confirmed more control should be exercised over pork, ham, etc., so that paratyphoid infections might be prevented.

WOLLF-EISNER had seen cases of paratyphoid indistinguishable from typhoid fever and others very like cholera nostras.

CITRON spoke of the difficulty of distinguishing paratyphic and "*Schweinepest*" bacilli bacteriologically. The agglutination test was not sufficient.

BÄUMLER thought that if the paratyphoid bacilli were as widely spread as they were supposed to be, it was strange that infection was not more common. He supported the view that the two infections were similar, and asserted that paratyphoid fever was just as dangerous as typhoid fever.

In reply, LOEFFLER stated that no serum existed which could be relied upon to distinguish each form by agglutination. He suggested that an international commission should be appointed to investigate and draw up recommendations with regard to the problem. Four or five institutes were named as being suitable for such work.

(*To be continued.*)

THE CANADIAN MEDICAL ASSOCIATION.

[FROM OUR CORRESPONDENT.]

THE fortieth annual meeting of the Canadian Medical Association was held in the McGill University Buildings, Montreal. The attendance, as was expected after the British Medical Association's meetings last year, was not quite as large as usual, but a very profitable and enjoyable time was spent by the delegates.

FIRST GENERAL MEETING.

The President, Dr. MCPHEDRAN, of Toronto, occupied the chair at the first general meeting, the routine business including the reading of the minutes, the secretaries' report, the proposal of new members, and notices of motion. Among the communications was one from the British Columbia Medical Association, asking the support of the Canadian Medical Association in obtaining laws for the protection of the public against patent medicines, and expressing its disapproval of the "unscientific and possibly dangerous" practice of prescribing the secret proprietary medicines.

DEMONSTRATIONS.

The general meeting was followed by a lantern demonstration of radiographs, illustrating certain forms of Colles' and Pott's fractures, chiefly showing the malformations resulting from union in deformity, by Dr. Girdwood, of Montreal. In addition to these slides a very fine series of radiographs was shown as a special exhibit by the Royal Victoria Hospital. At 12.30 there was a clinic at the Royal Victoria Hospital, followed by a lunch.

The Sections of Medicine and Surgery met in the afternoon rather behind schedule time, owing chiefly to the length of the general meetings; the following papers were on the programme for the afternoon:

In Surgery.

Discussion on Hypertrophy of the Prostate—
Etiology and Pathology: Dr. G. E. Armstrong (Montreal).
Symptomatology and Diagnosis: Dr. Starr (Toronto).
Treatment { Non-Surgical: Mr. Cameron (Toronto).
Treatment { Operative: Dr. James Bell (Montreal).

In Medicine.

The Normal Temperature: Dr. Rudolph (Toronto).
The Psychology of the Sick Room: Dr. J. Hunter (Toronto).
The Treatment of Tuberculosis with Tuberculin: Dr. G. W. Ross (Toronto).
The Treatment of Tuberculosis with Marmorek's Serum: Dr. de Martigny (Montreal).
Chronic Enlargement of the Parotid Gland: Dr. C. P. Howard (Montreal).
Grocca's Sign of Paravertebral Triangle of Dullness: Dr. Lyman (Montreal).
The Irritable Heart: Dr. W. S. Morrow (Montreal).

ADDRESSES.

In the afternoon Dr. OLMSTEAD of Hamilton delivered the Address in Surgery, and in the evening the President's address was delivered in the beautiful rooms of the McGill Students' Union. There were over 200 delegates present, besides a large number of ladies, and at the close of the address an adjournment was made to the reception and dining rooms where the members were received and refreshments served.

Dr. McPhedran's speech covered a wide range of subjects. He emphasized the need of reorganization, and declared that the time was now ripe for the Association to meet the demands of a growing country; even for a continuance of existence radical changes in the constitution must be

made. In the past they had been satisfied with a quiet life, content to take by the way anything that was offered, obeying both in the spirit and in the letter the injunction, "Take no thought of the morrow." Many of the younger men knew nothing of the Association, and it was time that of the 6,000 medical men in Canada 6,000 should be enrolled in its books. The Committee on reorganization had completed its work, and the scheme submitted had been approved by the Associations of Nova Scotia and Ontario before whom it had been placed. The main reason for this change was the comparative indifference to scientific research of the people as a whole and the medical men in particular. The struggle for existence incident to a young country was doubtless the chief cause; but it was not an excuse, and the duty of the Association was to elevate the status of the profession and advance the scientific interests of the country. Another important object was the uplifting effect on general medical education and the unification of the requirements for qualification in the various provinces, which would lead to a working basis for general registration as provided for in the Roddick Bill. Passing on to other points, Dr. McPhedran made a strong plea for the establishment of a good medical journal, which would be recognized as the representative medical paper of Canada. This he thought could be easily done, as there were at present none but journals of comparatively local interest and hardly representative of the Dominion. Lastly, he emphasized the importance of a State Commission on sanitation, illustrating his remarks by reference to the Petewawa military camp, which was followed by so many cases of typhoid fever this year.

Second General Meeting.

At the general meeting on the following morning the question of a Dominion medical journal was discussed. A rather hot debate resulted in the question being left over for a committee to gather information on the subject and lay it before the next meeting, the general impression being that the project would be carried through.

Medical Protective Society.

The annual meeting of the Medical Protective Association, which is always held in connexion with the Medical Association, was the next business. Dr. Powell, the President, was in the chair, and all the reports showed a flourishing condition of affairs. The chief business was connected with a motion limiting membership to those who were eligible for the Canadian Medical Association. The motion was carried after some discussion, owing to the fact that several homoeopathic physicians already belonged to the Medical Protective Association. The officers were all re-elected.

Sections.

The meeting then divided into Sections, the following papers being on the programme:

Surgical Section.

A case of Primary Bilateral Mastoiditis: Dr. Goldsmith (Toronto).

Vaseline Oil in the Dressing of the Radical Mastoid Operation: Dr. Roy (Montreal).

Cholesteatoma Involving the Labyrinth: Dr. Matthewson (Montreal).

A Machine for the Forcible Correction of Deformed Feet: Dr. Nutter.

Danger Signals in Anaesthesia: Dr. Johnston (Toronto).

Seven Hundred and Fifty Abdominal Sections and what they have Taught Me: Dr. Smith (Montreal).

Medical and Laboratory Workers' Sections Combined.

Discussion on Cerebro-Spinal Meningitis: by Dr. J. J. Mackenzie (Toronto), Dr. Lafleur and Dr. Blackader (Montreal).

A clinic was then held at the Montreal General Hospital followed by lunch, and after a general meeting the Sections resumed work as follows:

Surgical Section.

A case of Long-Standing Melano-Sarcoma of the Palate: Dr. Roy.

Listerism: Dr. Wright (Toronto).

Cancer of the Breast: Dr. Armstrong (Montreal).

The Treatment of Tuberculous Arthritis: Dr. Primrose (Toronto).

The Clinical Side of Ectopic Pregnancy: Dr. Chipman (Montreal).

Medical Section.

When and How to Resume Normal Feeding in Typhoid Fever: Dr. Fotheringham (Toronto).

Rectal Hydrotherapy in Typhoid Fever: Dr. McKeough (Chatham).

Paresis; Certain Features in Regard to Etiology and Differential Diagnosis: Dr. Fitzgerald (Toronto).

Cases of Brain Tumour: Dr. Shirres (Montreal).

Tabes Dorsalis and its Re-educative Treatment: Dr. C. K. Russell (Montreal).

Aneurysm of Cerebral Arteries: Dr. A. H. Gordon (Montreal).

Cyst of the Pia-arachnoid: Dr. Robins (Montreal).

Section of Laboratory Workers.

On So-called Lymphosarcoma and Hodgkin's Disease: Dr. Keenan (Montreal).

The Occurrence of Congenital Adhesions in Left Common Iliac Vein: Dr. McMurrich (Toronto).

On Diphtheroid Bacteria in the Nose and Throat of the Sane and Insane: Dr. Connell (Kingston).

The Bacteriology of Canned Goods: Professor Harrison (St. Anne).

Note on the Tubercle Bacillus, Isolated from Fatal Cases of Primary Cervical Tuberculous Adenitis: Dr. Duval (Montreal).

A Case of Retinitis Pigmentosa: Dr. S. H. McKee (Montreal).

Heart with Double Mitral Orifice and an Unusual Defect of the Auricular Septum: Dr. Abbott (Montreal).

In the afternoon Dr. and Mrs. Roddick entertained the members at a garden party.

Address in Medicine.

In the evening the Address in Medicine was delivered by Dr. Rolleston (London) at the McGill Students' Union, on recent work in connexion with the suprarenal gland being his subject. The lecture was of the greatest interest, and was listened to with marked attention. The subject and manner of treatment did not lend themselves to abbreviation, and, as the address will be published, no attempt will be made to present a summary. A hearty vote of thanks was tendered the lecturer at the close.

New Constitution: Next Meeting.

The third day was commenced with election of officers and adoption of the new constitution in the general meeting. Ottawa was chosen for the next meeting in 1908, and—

Dr. Frederick Montizambert, Director-General of Public Health, was elected President.

The General Secretary and General Treasurer—Dr. Elliot and Dr. Small—retain their offices.

The Vice-President and Local Secretary for each province are as follows:

Quebec—Dr. England and Dr. Gordon.
Ontario—Dr. Aikens and Dr. Hackney.
New Brunswick—Dr. Ross and Dr. Anglin.
Nova Scotia—Dr. Curry and Dr. Mathers.
Prince Edward Island—Dr. McWeil and Dr. McLaughlin.
Manitoba—Dr. Smith and Dr. Bell.
Saskatchewan—Dr. Kemp and Dr. Kee.
Alberta—Dr. Sansom and Dr. Dow.
British Columbia—Dr. Pearson and Dr. Walker.

Federal Executive Committee: Dr. Powell, Dr. Echlin, and Dr. Gibson.

The new constitution drafted by the Committee appointed two years ago was adopted without discussion. The most important change is the adoption of a system of affiliation by which it is hoped that the Dominion Association and the various provincial bodies will be enabled to work together. It has been felt for some time that there was unnecessary rivalry between the claims of the local and Dominion organizations, and the new constitution is designed to define the scope of work of each society.

(To be continued.)

ROYAL COMMISSION ON VIVISECTION.

Third Report.

The Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till the evening of Thursday, October 3rd.* We continue our abstracts of the evidence.

* London: Printed for His Majesty's Stationery Office by Wyman and Sons, Limited, 109, Fetter Lane, E.C. And to be purchased, either directly or through any bookseller, from Wyman and Sons, Limited, 109, Fetter Lane, Fleet Street, E.C.; and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin, 1907.

Evidence of Sir T. Lauder Brunton, M.D., F.R.C.P., F.R.S.

In reply to questions by the Chairman, Sir Lauder Brunton said that in his experimental researches he had particularly tried to ascertain the action of drugs, especially with a view to utilizing them in the treatment of disease. Asked as to the "baking" experiment referred to by some antivivisectionists, he said that in 1870 Professor Stricker found that rabbits, when completely narcotized with chloral, lost their power of maintaining their temperature and died. If those rabbits were enveloped in cotton wool, they lay senseless for many hours, and ultimately recovered. He found that if, instead of merely wrapping them in cotton wool, he kept them warm artificially with an ordinary hot-water bag, or by a tin hot-water can, the animals would bear a bigger dose of chloral, and still recover. These experiments had borne practical fruit. Continuing, the witness said the next thing he wanted to find out was why certain drugs, given in cases of disease accompanied by high fever, did not act in the usual way. It was pointed out by Professor Thomas that pneumonia, when treated by digitalis, did not yield to the drug in the way one would expect from the action of the drug upon a healthy man. It occurred to the witness that this might be due to the effect of temperature upon the heart, and he made a number of experiments upon animals with high temperatures. If a healthy animal or a healthy man was kept in a warm place as a rule the temperature did not rise very high, but if an animal was narcotized completely, and then kept warm, it had lost its power of regulating the temperature, and the temperature went on rising until the animal died, although it remained perfectly unconscious the whole time. He therefore narcotized animals (especially rabbits) by a large dose either of chloral or opium, and placed them in a bath, of which he showed a model. A full description was given in the *St. Bartholomew's Reports*, volume vii, for 1871, page 218. The object of the experiment was to find out the condition of the heart in hyperpyrexia. In many cases of disease the temperature of the patient rose high above the normal, and then these patients were in a state of extreme danger, and unless the temperature could be reduced in some way the patient would die. The rabbits were all killed before they came out of anaesthesia, or died from the effects of the chloral. There were two different series of experiments. The first was upon the effect of heat in preserving life; the second series upon the effect of heat in causing alteration in the heart. The statement that chloral and opium or morphine were not narcotics, and did not remove pain, was simply a lie. If one gave any animal a sufficiently large dose of chloral or opium, sensibility was so completely abolished that there was nothing one could do that would awaken its sensibility. Nearly all his experiments were done after he had been in Ludwig's laboratory in Leipzig, in which the invariable rule was that before any experiment was done the animal should be thoroughly narcotized. Mr. Graham referred to a series of experiments recorded in the *Practitioner*, vol. xxxiii, p. 273. He had probably mixed up these experiments and yet a third set upon the action of aconite as an antipyretic. In many cases of fever small doses of aconite seemed to reduce the fever very much; and Dr. Cash and the witness tried to see how far the aconite would do this in animals, and more especially they used pigeons. The normal temperature of a pigeon was about 104°, whereas in man it was only 98.2° F. With these pigeons they did use a metal box with a glass top; surrounding the box was a second case in which one could put either hot or cold water, so as to raise the temperature of the box to a degree as they liked. They padded the inside with brown paper, so as to prevent any contact of the animal with the metal itself, because they did not want any local chill or any local burning to vitiate the experiment. They raised the temperature of the animals by raising the temperature of the box, in some cases to 106° F.; but this could hardly be described as baking alive, because whereas the highest temperature to which the box was raised was 106° F., he had found by inquiry that the lowest temperature of the Jermyn Street Bath was 120° F., their highest temperature running up to 230°. If one narcotized a cat completely with either chloral or with opium, and left it just with the cotton wool round it, and it was warm, its temperature gradually rose because the narcosis disturbed the normal power of regulating the temperature, so that the temperature of the cat would rise to 111°, 112°, and 113°, and then that was hyperpyrexia, and it died, just as patients who had acute rheumatism often died with high temperature in a hospital ward. Asked by Colonel Lockwood if he looked upon the present laws on the subject of vivisection as a stop to science, he said to a certain extent he did. As one illustration how the Act had interfered with work which might have been beneficial, he said that about 1871, in making experiments upon snake venom with Sir Joseph Fayrer, they found that there were certain substances which would destroy snake venom absolutely, but they had not succeeded in obtaining immunity or saving life after a big dose had been injected. The Act prevented their continuing the experiments at home. They lapsed for a number of years, and were only taken up again about two years ago by Colonel Rogers. He was able to take them up again because Professor Waller had invented a method of giving chloroform continuously for thirty hours or more, so that he was able to give the poison and then keep the animal for many hours under the anaesthetic, and then he could try the effects of the antidote. Colonel Rogers had now got 17 or 20 cases of snake bite, in which the persons would almost assuredly have died, and who had been saved by the use of a small lancet, in the handle of which was a small amount of permanganate of potash, and in using it the punctured wound made by the snake's fang was converted into a slit, and permanganate of potash was rubbed in after being wetted with saliva. He did not think any further inspection of laboratories necessary. He believed that the experiments in these laboratories were conducted absolutely painlessly. In reply to Sir W. Collins, the witness stated that B. W. Richardson's chief account of nitrite of amyl was given in the report of the British Association for 1864. All he did was to show that it was a "powerful excitant of the vascular action," without going into details. He did suspect, and correctly, that the excitement of the heart was probably due to the effect of nitrite of amyl in dilating the capillaries and lessening the resistance, but he did not pursue that any further. Rutherford and Gamgee then made experiments upon animals with an ordinary manometer, and found that the blood pressure was greatly reduced by nitrite of amyl. At that time the witness was working a good deal in the laboratory with Gamgee, and knew all about the experiments. He was then house-physician in a hospital in Edinburgh, and there was a man in the wards suffering from angina pectoris. He gave him chloral, ether, alcohol—everything he could think of—but it was all no use. He found that his pulse during the attacks became very tense; he then gave nitrite of amyl, and it was perfectly successful. But for the experiments he would never have known the action of nitrite of amyl; nobody would have done so. In reply to further questions, he said he did not think he had used curare at all since the passing of the Act, because he always had the feeling that curare alone might not completely destroy sensibility. Asked if it would not be well that there should be some right of entry by authorized people occasionally to witness experiments, he said he did not know that it would, because they would describe things in a way that was coloured by their own imagination. There would be no objection to having them if they applied to a central authority, the Home Office, and the Home Office thought they were proper persons to see them. He went on to say that the power of dealing with disease had increased immensely. That increase of knowledge would not have come from mere clinical observations without experiments upon animals, because clinical observations had been carried on for very many centuries, and had led to nothing. He regarded abdominal surgery as starting with some experiments upon animals made by Ludwig and Thiry, who were investigating the action of intestinal juice. These experiments were continued for a long time only in the laboratory; then they were taken up by the surgeons, more especially by Billroth. In reply to further questions the witness said that as there was absolutely no pain involved to animals and a great deal of advantage to be gained by students and thereby a great deal of pain saved to patients afterwards, he thought it the bounden duty of the teacher to give demonstrations. Anaesthetics ought always to be used. Asked in what direction he would

relax the existing law, he said he would allow greater freedom in regard to experiments in which no actual pain was inflicted, such as the inoculation experiments. In connexion with this point he mentioned that Huxley, who was then a member of the Fisheries Commission, said to him one day:

> If I take a live minnow and put a hook right through it, and then spin it round alive until I catch another live fish, and I pull the live fish, after many struggles and a length of time, out of the water, I am perfectly entitled to do that because I do it for sport; but if I scratch the nose of a salmon for the purpose of ascertaining the nature of the salmon disease, I am making an experiment, and if I have not got a licence I am liable to a fine of £50.

From his experience there was no difficulty in keeping animals, including dogs, under the influence of anaesthetics for lengthened periods. Asked as to a statement made by previous witnesses that all that was of value was learned by Dr. Beaumont from the examination of the stomach of Alexis St. Martin, he said that was not correct. The practical introduction of pepsin, pancreatin, and all the adjuncts to digestion had resulted from the experiments upon animals, made afterwards by Blondlot, Bernard, Bedder, and Schmidt, and others, and most recently by Pawlow. Asked if in his opinion gastric fistula in an animal, or an intestinal fistula in an animal was a condition in which it suffered great pain, he said certainly not. In man the opening of the stomach was usually done without any anaesthetic; the attachment of the stomach to the wall was done under anaesthetics. After the stomach had been opened the patient seldom or never experienced pain in the passage of the tube into it for food. In reply to further questions, he said no one should do experiments upon animals excepting the holder of a licence or in a licensed place. He thought if one got a licence as a recognized good worker it might be at once endorsed: "This licence carried with it the liberty to work upon such and such things." Every now and again in every research a question cropped up, and if one had to wait to get a special licence before tackling the question the opportunity for answering it had sometimes gone. He suggested that the licence should last a year. There were no grounds for saying that the witnessing, or the performance of experiments on living animals in any way affected the character of the spectator or the operator. If experiments on dogs were prohibited, medical science would suffer, because for many of the experiments guinea-pigs, rabbits, and cats were too small, and other animals of the same size, such as sheep, goats, and pigs were too expensive. He did not agree that an animal differed so materially from a human being that only false deductions could be drawn from experiments on animals. In reply to further questions he said that for his own part he would not be inclined to allow the use of curare as an anaesthetic. But if an animal was anaesthetized, he did not see why one should not use curare. It would do the animal no harm, and it might possibly be of service in keeping it quiet. Asked if he agreed with a statement by Sir James Thornton that "No experiments were ever made in connexion with the discovery of the anaesthetic properties of chloroform," the witness said so far it was right in that the anaesthetic action of chloroform was discovered by experimentation upon man, unless the story were true that it was accidentally discovered in the voluntary experiment of a dog upon itself. The story was—he did not know whether it was true or not—that a chemist had got hold of some of this new stuff, which he put in a little jar in a corner of his shop, and one day a lady came in with a little lapdog. The dog smelt at this jar, when it fell over insensible; and that was what started Simpson on his experiment. But the definite experiments in regard to its anaesthetic action were really made by Simpson upon himself and Matthews Duncan and one or two others. It was not true that the cruelty of experiments on living animals was admitted by most of the experimenters themselves. In regard to another statement made by Sir James Thornton that the experiments of Claude Bernard, Schiff, Pavy, and others on diabetes were of no value, he said the experiments had taught us a great deal about the nature of diabetes, and as the result of them diabetes could be alleviated. Diphtheria antitoxin was extraordinarily valuable, and practically robbed diphtheria of much of its terror. The evil effects attributed to it by Sir James Thornton were much more likely due to the toxin rather than to the antitoxin. Asked as to a further statement that the experiments with drugs and animals had not only been futile but misleading, the witness said that the statement was made in pure absolute ignorance. The treatment of myxoedema introduced by Dr. Murray of Newcastle was founded upon experiments on animals. In reply to further questions, the witness said he was a member of the Commission sent to investigate the utility of Pasteur's treatment about 1884 or 1885. He went, perfectly convinced that Pasteur was wrong. He came away perfectly convinced that Pasteur was right, and there was no doubt whatever, he thought, in the mind of any unprejudiced person that Pasteur's treatment had produced a complete revolution in the treatment of hydrophobia. Hydrophobia was a most frightful disease. Just before he went over he was a member of a Committee of the British Medical Association to investigate hydrophobia, and he went throughout all the country examining cases, and the cases he saw were simply heartbreaking. As the result of it his finger got inoculated with rabid poison when making a *post-mortem* examination, and he had to burn it out. He used caustic potash; there was nothing else. He took a stick of caustic potash and rubbed it in, and scraped it out and rubbed it in again. That was the only treatment available at the time, but it did not improve the fingers. Asked as to a statement by Sir James Thornton to the effect that poisons acted so differently on animals and man that no true inference could be drawn from one to the other, the witness said the same might be said of the action of the drugs upon different men. A dose of aloes might be swallowed by certain men with perfect impunity, and yet it was known that in the great majority of human beings aloes would act as a purgative. The same with opium. Sir Robert Christison used to tell of a particular family who were not affected by opium. Sir William Hamilton, the Scottish metaphysician, would swallow an ounce of laudanum with perfect impunity; it had no action at all upon him, but it was not that he was an opium-eater or accustomed to it. It was a pure idiosyncrasy, and it was inherited by his eldest son. Still, the majority of people were affected by laudanum; so that what held good, he said, in regard to animals applied in the same degree to man. With regard to another statement by Sir James Thornton that "No alteration in the treatment of fever has resulted from the experiments of Claude Bernard on raising the temperature of animals till death occurred," the witness said that was not so. When he was a student, a man with pneumonia came into the hospital in Edinburgh, and was dying. Professor Bennett, who was a clinical physician, was very much disgusted because this was going to spoil his average. He said that he had had over 100 cases of acute pneumonia, and he had never once lost a case. However, this man was really dying; he was moribund, so Professor Bennett gave a grunt and passed on. A Swiss named Skolberg, who was visiting the clinic, asked what Professor Bennett thought about the man. "He is going to die." "May I treat him?" "Yes, you can do what you like with him," So Skolberg pulled off all the bedclothes; he got a sheet, dipped it in a tub of water, and wrapped it round the man, pulled it off again in five minutes, and then repeated the dose. The witness went away, and about half an hour or three-quarters of an hour afterwards he returned, expecting to find the bed empty. To his astonishment he found the man apparently perfectly well and sleeping comfortably. That man was dying of hyperpyrexia; but that was just before the introduction of the clinical thermometer, and they did not know what he was dying of. It was a bit of pure empiricism. But the experiments on animal temperature now allowed any student to know what was happening, and to know the time when he was to apply the cold douche and so to save the lives, not of one, but of many. What was then a mere accident was now the routine practice. Of course the treatment was 1,800 years old. Musa, the physician of Augustus, saved the Emperor's life by cold baths, but, not knowing how to apply them, he killed the Emperor's nephew, the next patient he had to treat. In reply to Dr. Gaskell, he did not think that dogs were more liable than other animals to have stoppage of the heart and vagus action in consequence of the administration of chloroform. He thought there was very little danger with

dogs if one was watching what one was doing. He would say that the difficulties with a dog and man were just about the same. He had had experience of chloroform given to a vast number of dogs, and he had entirely convinced himself that they had been under anaesthesia, as complete as any patient could possibly be under on the operating table.

THE OPENING OF THE WINTER SESSION OF THE MEDICAL SCHOOLS.

GUY'S HOSPITAL.

As in other recent years, the session at Guy's Hospital was inaugurated by a dinner attended by the staff and very many past and present students, which took place on Friday, October 4th, in the dining hall of the Students' College. Mr. Cosmo Bonsor, the Treasurer, presided, and proposed the sole toast of the evening, "The King." Immediately after the dinner an adjournment was made to the Anatomical Theatre, where the annual meeting of the Pupils' Physical Society was held. The veteran president of the Society, Sir Samuel Wilks, occupied the chair, and introduced to the meeting Dr. G. A. Gibson of Edinburgh, who delivered an address on "Past and Present." In his introductory remarks Dr. Gibson said there existed between the southern and northern schools the strong tie formed by personal attachments. Throughout the last two centuries many distinguished graduates of Edinburgh continued their studies afterwards at Guy's, while on the other hand many of the most brilliant Guy's men went north to Edinburgh to study and graduate there. Proceeding to discuss the various theories in regard to Addison's disease, Dr. Gibson observed that Addison's discovery was fully published in 1855. There was a description of 11 cases, accompanied by 11 plates, so thorough that very little was left from the clinical point of view for subsequent observers. He proceeded to indicate later observations, and described cases which had come under his own observation. He also described his observations on blood pressure in the disease, showing a range from 95 to 150 mm. Hg. He mentioned a case of Janeway's with 140, and 2 cases of Stursberg's with 65 and 70. The facts, he said, manifested an undoubted variability as regards the circulatory appearances, and, considering them in the light of the fluctuations of the other clinical phenomena, it seemed probable that ere long it might be possible to attain to some classification of different types of this interesting affection. The last theory was that Addison's disease was caused by an inadequate internal secretion of the suprarenal bodies. It had been found that normal suprarenal bodies yielded a powerful extract which acted as a powerful pressor agent, and it had been discovered by Schäfer and Oliver that from suprarenal bodies obtained from cases of Addison's disease no active extract could be obtained. The result of these investigations had been to render the theory that Addison's disease was due to a lack of internal secretion almost certain. It might be supposed that Addison's disease might result in part from inadequacy of the medullary portion leading to asthenia and hypopiesis by loss of adrenalin, and by failure of the cortex to maintain certain as yet unknown, but probably important, functions particularly associated with pigmentary excretion and toxin destruction. On this view there might be a most variable assemblage of symptoms, according as the one or the other portion of the suprarenal body was mainly affected. The consideration of the facts and views which he had referred to furnished them with an instructive picture of the ebb and flow of scientific thought. The conception of the disease, as originally described by the great man in whose honour it had been well named, was from the clinical standpoint almost complete, while the pathological explanation for long seemed adequate, and was regarded as having attained finality. Even in the early times of its recognition, however, there were currents of thought advancing and receding like the waves of the rising tide, but ever with an onward movement. The fact was constant; the explanation was changing; subsequent generations modified their views according to their gifts and lights. Sir Samuel Wilks proposed a hearty vote of thanks to Dr. Gibson, and alluded in a genial way to many of the topics discussed in the lecture. He said that Trousseau had first suggested the name of "Addison's disease" for the suprarenal malady which Addison described. One of the early objections that Addison encountered was the suggestion that the conjunction of the various symptoms of the disease was "*a mere coincidence;*" he was able, however, to show that in four cases during life he had located the mischief in the suprarenal glands and nowhere else in the body, and inspection after death had proved the correctness of his forecast. He (the speaker) thought that those who devoted attention to blood pressure were apt to neglect the factor of the rapidity of the blood stream, the pressure being actually the greater when the stream was slow. He thought there were more deaths from haemoptysis and heart disease at night, when patients were quiet and lying down, than when they were in the erect posture and working during the day. He thanked Dr. Gibson very cordially for his practical, interesting, and eloquent lecture. The vote of thanks was carried with acclamation, and was acknowledged by Dr. Gibson, who said that in some recent examination of football athletes just before and after big matches it was found that the blood pressure had in every case fallen after the match. Mr. K. H. Digby proposed a vote of thanks to Sir Samuel Wilks for presiding, and Dr. Gibson, in seconding it, said that he had heard Sir William Gairdner, Sir Samuel Wilks, and Sir John Banks described as the three "grand old men" of medicine. Now the first of the three was, alas, no more. To Sir Samuel Wilks he would apply the words of Oliver Wendell Holmes:

> For him in vain the envious seasons roll
> Who holds eternal summer in his soul.

Sir Samuel Wilks feelingly returned thanks, and the proceedings closed with a visit to the Gordon Museum.

ST. MARY'S HOSPITAL.

The winter session at the medical school of St. Mary's Hospital opened on Wednesday, October 3rd, with a distribution of prizes, Professor Osler officiating. Addressing the students, he said that a good constitution was necessary for success in the medical profession. It had been said that success was largely a matter of the survival of the fittest, which in their work meant that it was largely a matter of good health. As a class medical men were notorious sinners in that respect—if they did not work too hard they smoked too much or were indifferent to the benefits of sufficient exercise. Medical students must study three subjects—science, art, and man. In regard to science it was hard to "get the right sort into the medical student." In order to give medical students a proper conception of science it was necessary to catch the student early enough, and after teaching him a reasonable amount of Latin and Greek to train him in preliminary scientific subjects, not forgetting French and German and a leavening of literature. If that plan were followed there would then be time enough for the student to spend in the out patient department, in the wards, and in the laboratories. The great principle to be grasped was that unless a student acquired the scientific spirit he was unable to obtain any true perspective. By the word "scientific" Professor Osler said he did not mean the acquisition of mere facts, but an understanding of the methods of science, a realization of its aims, and an inoculation with its spirit. It was an attitude of mind that made a student burn with ardour till the solution of any difficulty had been accomplished. It might be said that such an idea was Utopian; but he maintained that it was not so, and that true scientific education must imbue a man in the manner he had described, and it must be inculcated into the student from the very start. One great difficulty was that students were sent to the medical schools without any preliminary scientific training. One year only was allotted for the acquirement of such training, and it was therefore small wonder that some students never reached a vantage ground from which a true perspective might be obtained. Another great difficulty was the examination system. If they had deliberately set themselves the task of devising a plan by which the all-precious spirit of scientific investigation could be quenched they could not have found anything so effective as the examination system, which made the meeting of examination tests the end of all study. As a concession to human weakness, he thought that an examination might now and then be allowed in

the course of the career of a student, but they should be strictly designed for the purpose of finding out a man's methods rather than his familiarity with the minutiae of medicine and surgery. He advised the students, so far as they were able, to dismiss all thoughts of examination from their minds. He counselled them not to take thought for the morrow, but rather to let the interest in the day's work absorb all their energies, for then the future with its examinations would look after itself, and their devotion to science and saturation with its spirit would give them a sane, cool reason which would enable them to sift the true from the false in life, and at the same time would keep them well in the van of progress. He advised them to consecrate themselves to the art of medicine, which he observed was much harder to acquire than the science of medicine. They must stop their ears against the wiles of that Celtic siren, Sir Almroth Wright, who would abolish Harley Street and all that it represented; there was, however, still much virtue left in that long, unlovely street. Moreover, the art of medicine could not be replaced by, but must absorb, the new science. The art of managing patients and curing diseases was difficult to teach students, and it was a question for discussion whether the ordinary set lecture was of much use. He urged that more attention should be given to the hygienic and dietetic treatment of patients. Students were allowed to pick up information concerning those points in a haphazard fashion. He considered that a junior member of the staff should give systematic teaching on these subjects to the students. A serious defect in the training was that nurses were allowed to do a great many things that the medical students should do. There was no question that the nurses did it well, but the nurses did it all. He wished a hospital could be started where the nurses would be medical students. In conclusion, Professor Osler said that a student might possess scientific knowledge and excel in the art of medicine and yet might dangle his heels in idleness if he had not studied his fellow-man and fellow-woman. Their success and happiness in life depended on that, and also on the attitude of mind they assumed towards their fellow-creatures. He advised them not to be too sensitive, nor too ready to resent the minor irritations of life. In the Dean's report, which was read, it was stated that the attitude of the St. Mary's Hospital Medical School in relation to the proposed concentration of the teaching of the preliminary and intermediate medical subjects at a University Institute at South Kensington had again been under consideration, and it had been decided that the Medical School shall continue to maintain, as hitherto, complete courses of instruction for the entire curriculum, including the preliminary scientific and intermediate medical subjects. In the evening the usual annual dinner of past and present students was held at the Whitehall Rooms, Hotel Métropole. There was an excellent gathering, some 120 being present, and the assemblage having for chairman Mr. H. A. Harben, the Chairman of the Hospital Board. The latter, after the usual loyal toasts, gave the toast of the evening, "St. Mary's Hospital Medical School," and in the course of his speech made reference in sympathetic terms to the great loss St. Mary's had sustained by the death of Sir William Broadbent. His connexion with the school was a long one, and during its continuance he did much to promote its interests. Mr. Harben also mentioned with regret the resignation of his office as Dean by Dr. H. A. Caley, a medical man who, besides the work he had performed for St. Mary's Hospital, had done much for the medical education of all London. Finally he made allusion to the lustre shed on the medical school by the brilliant work of Sir Almroth Wright and his colleagues in connexion with the therapeutic inoculation department which had been established. The task of replying for the School was undertaken by Mr. W. H. Clayton Green, the new Dean, who took a hopeful view of what the future had in store for it. He made reference to the many and great services which Mr. Harben, as Chairman of the Hospital Board, had rendered, paid a graceful compliment to his predecessor in the office of Dean, and recounted the changes which had taken place in the *personnel* of the hospital and the school. He also alluded to the arrangements made with the Middlesex Hospital for a joint sports and recreation ground, which he thought would do much to favour athletics at St. Mary's. In proposing the toast of "The Visitors," Sir Almroth Wright, in a characteristic speech, lamented the necessity of speaking for others, as it was his wont to speak for himself alone. It appeared, he said, to be his lot in life to be the critic of his own profession, and, speaking of bacteriology, he indicated a belief that in that science lay all hope of great progress. In particular he ridiculed the crudeness of methods which faced disease armed with knives and drugs, and yet still expected to be called modern. At the same time, he acknowledged his indebtedness to the staff of the hospital for the way in which it had helped him in his researches, and had co-operated with the therapeutic department in the treatment of bacteria-born disease. In an amusing reply on behalf of the visitors, Professor Osler gave a forecast of the day when Sir Almroth Wright would find himself in the hands of the clinicians, and drew a picture of him suffering from an attack of gout and shrieking for the physician and his morphine, or standing in equally grave need of relief at the surgeon's hands. Adopting a more serious tone, he then expressed an opinion that the hospital and the school should from a financial standpoint be regarded as one and indivisible. The training of the younger generation of practitioners was a public service, and the suggestion as to the municipalization of the hospitals of London was one to be deprecated in the strongest terms. Finally, he expressed regret that so many London students passed examinations which were in all respects equal to those passed by provincial students but nevertheless did not thereby obtain the degree of M.D. The final toast of the evening was one to the Chairman, which was proposed by Dr. Sidney Phillips, senior physician to the hospital. In alluding to the many services which Mr. Harben had rendered to St. Mary's, he laid stress upon his success in fostering a spirit of good feeling and co-operation between the school and its parent institution, the hospital. Mr. Harben expressed his thanks in a short speech, and the formal proceedings then terminated. During the intervals between the speeches, the diners were enlivened by some clever sketches by Mr. Percy French.

WESTMINSTER HOSPITAL.

The annual dinner of the past and present students of the Westminster Hospital took place at the Trocadero Restaurant on Thursday, October 3rd, under the chairmanship of Mr. A. H. Tubby. In proposing the toast of the "Westminster Hospital and Medical School," the Chairman, after mentioning the successes of the students in examinations, on the playing fields, and in camp, took occasion to point out how satisfactorily the arrangement made with King's College for the teaching of the preliminary subjects was working out. He was glad to find that the Westminster men were winning for themselves at King's the same high character he had found amongst them when he first came to Westminster from Guy's and had always found reason to esteem. In these days, when the diminution in numbers of medical students in London compelled the larger hospitals to put forth every effort to attract men, it became increasingly difficult for the smaller schools to keep up their numbers. Although he himself came from a big school, he knew that, so far as clinical work went, the smaller hospitals were certainly at no disadvantage, and they excelled in one most important particular, namely, that it was in their power to offer to a large proportion of their students the prize of resident appointments. He was glad to have the opportunity of laying stress once more upon the inestimable advantages that accrue to a hospital from its association with a medical school, advantages which there seemed some danger the lay public might lose sight of. The Dean, Mr. Paton, in his reply, urged upon all Westminster men the necessity for individual effort in support of the school; it was in the power of the old students, much more than in that of the staff, to secure new students. The only change in the *personnel* of the staff since the last dinner was one which would commend itself to all; he referred to the appointment of Dr. Stanley Dodd as obstetrical tutor. Dr. Allchin, in proposing "The Health of the Guests," said that the presence amongst them of Professor Halliburton and Professor Thompson was eloquent of the happy relations now existing between Westminster and King's College; of Dr. Ainley Walker, with whose name the toast was

associated, he remarked that he had found something new to say about that very old subject "inflammation," and had said it in lucid and attractive fashion. Professor Halliburton and Dr. Walker replied. "The Health of the Old Students" was proposed by Dr. Hebb, and acknowledged by Dr. Macnamara. The toast of "The Chairman" was given by Colonel Sparks, who spoke of the reputation which Mr. Tubby had attained as an orthopaedic surgeon, and of the energy which had enabled him to achieve signal success as a mountaineer and big-game shot. During the evening a musical programme, highly appreciated by the large company assembled, was rendered by Captain Denniss, Mr. Hallenstein, Mr. Evans, Dr. Fleming. Dr. Dodd, and Mr. Gandy. As for so many years past, Dr. Nimmo Watson kindly officiated at the piano.

BRISTOL.

The annual distribution of prizes in connexion with the Faculty of Medicine of University College, Bristol, took place on October 1st, the Right Honourable Lewis Fry presiding. In reviewing the academic year the Dean of the Faculty, Professor Fawcett, said that probably it had been the most important in the history of the Medical Faculty, as changes had been made of a far-reaching character, which it was hoped would be for the welfare of the college and the Faculty of Medicine. After referring in sympathetic words to the great loss the college had sustained in the death of Dr. Markham Skerritt, Professor Fawcett stated that the Faculty of Medicine was now an integral part of University College, and so was now on an equal footing with the other faculties. The Council had taken the important step, on the recommendation of the Faculty, of admitting women to all parts of the curriculum of medicine, and with the co-operation of the Royal Infirmary and General Hospital they would now be on the same footing as men. The dental department had been brought up to the required standard of the day by the institution of mechanical and metallurgical departments. The work of the Faculty had received grateful assistance from without, for during the past year two special prizes had been offered for competition—one by Dr. Burroughs for the best answers on medical terminology, the other by Mr. George Wills for the best pathological essay. The list of prize winners was then read. The Chairman then introduced Professor Gotch, a Bristolian by birth and the son of a distinguished citizen. Professor Gotch, after distributing the prizes, said he was deeply sensible of the great honour of being present, for he represented the University of Oxford, which always viewed with interest and goodwill the progress of University College, Bristol. He congratulated all those connected with the Faculty of Medicine upon the progress made, for he believed that they were destined to play an important part in higher education in the immediate future. The adequate pursuit of the science of health required enthusiasm under difficulties and failures, and restrained by success. He rejoiced to see so many entering on the curriculum of medicine with a light heart, though he was led to ask himself whether this lengthy course of study in all its elaborate detail could be justified as that most fitted to achieve its purpose—the equipment of the student for a profession in which he could make a living. It was their duty to consider what should be the limiting size of the scientific foundation stones of this curriculum, but was it not possible to bring about a better organization of medical teaching and medical examination? It was possible in Bristol, if they threw aside the filters of external examination and entered upon a new era as the University of the West. When would Bristol do as Liverpool has done? The development of greater facilities for secondary education was one of the questions of the day, and now was the psychological moment for the establishment of a new university. He believed in living benefactors and in natural growth, not in forcing processes or annuities under the grip of the dead hand of the philanthropist. A university could not be created in a night, but required strong roots and a prepared soil. These requirements already existed in Bristol. Her geographical position, her civic prosperity, and her wealth of educational institutions were such that no excuse existed for longer delay. It was the unorganized character of their many activities that had been and still was her bane. She was to attain the organization of the teaching resources, was to segregate all the scattered educational efforts in a university. The advantages of a university over a college, even the most efficient, were numerous and great. It conferred educational stability, and hence greater educational efficiency. It segregated all the higher educational enterprises of the district, rivalry gave place to co-operation, general interest was awakened and was sustained by the knowledge that, having become a working partner in a great enterprise, it must at all hazards be a success. The credit of the community was then at stake, thus ensuring proper support. Stability was as essential for educational as it was for commercial undertakings. If they thought it desirable to facilitate higher education to provide on a large scale more efficient teaching for the profession, to train more appropriately teachers for the young, to interest more fully the public at large and with it all to make education more generally available and more attractive, then let them segregate their educational interests and form them into a university. A university enjoyed freedom. At present their college could not formulate its own hall mark. The power to confer degrees carried with it a matter of enormous educational advantage, for it conferred freedom. Whereas collegiate teaching had to follow lines laid down by those bodies that gave degrees, such prescriptions stifling educational development, a university enlarged the area of educational responsibility and increased prestige, and as long as Bristol had only a college she would have from an educational standpoint little prestige. They had great names on the role of teachers; the students had achieved notable successes, but they were still poor in prestige. Prestige was not what they thought of their own college, but that vague ephemeral thing—the opinion of the world, on an estimate made by those who were also engaged in higher education. So long as Bristol remained as it was at present, so long would she not gain in prestige, but he feared would lose what she had. It was his firm belief and hope that Bristol would in the immediate future win the honour of a university and reveal the virtue and worth of her educational establishments. Once started it would astonish them by its vitality and fine growth, and would be the pride of the citizens who supported it. Professor Lloyd Morgan and Dr. Clarke proposed a hearty vote of thanks to Professor Gotch for his address, and it was enthusiastically carried. The annual students' dinner took place the same evening, Professor Gotch being the guest of the evening.

THE next meeting of the International Anti-Alcohol Congress will be held in London in 1908.

THE third annual exhibition of instruments, drugs, foods, etc., organized by the *British and Colonial Druggist*, was held during this week in the Royal Horticultural Hall, Westminster. Many of the exhibits have recently been described in our columns in the account given of the exhibition at the annual meeting at Exeter. We may here mention a handy little electric diagnostic lamp for examination of throat, ear, nose, and vagina, shown by Messrs. Thomas Christy and Co. (London); the same firm showed antrophors for the treatment of urethritis which can be charged with any drug desired, and some useful little metal eye baths. Messrs. Evans, Sons, Lescher and Webb (Bartholomew Close, London) showed their "Membroids," drugs enclosed in membranes by a patent process by which drugs liable to irritate the stomach are enabled to pass into the intestine undissolved. C. A. Hoefftcke, Ltd., showed an instantaneous gloving machine, by means of which an india rubber glove is put on one hand without using the other by simply treading on a footpiece connected with a vacuum-producer, whereby the glove is so stretched that the hand can be easily inserted therein. This firm also showed appliances for fractured femur, tibia, or fibula, which are in use in several London hospitals, and also for ununited fractures. Having the use of this apparatus, patients with recent fracture of the thigh can be permitted to walk about three days after the fracture occurred. Callard and Co. (Regent Street, London) showed starchless foods to supersede gluten preparations for diabetes and obesity. George Culver, Ltd. (Pentonville) exhibited a patent self-recording keratometer, some of the new points claimed being abolition of the secondary position, exactitude of focus, self-recording of class of astigmatism, and comparative lowness of cost. The well-known medical publishers, Baillière, Tindall, and Cox, Messrs. Constable and Co., and the Oxford Medical Publication Co., had each an excellent display, which space forbids us to enlarge upon.

MEDICAL NEWS.

The annual dinner of the Association of Public Vaccinators of England and Wales will be held at the Hôtel Métropole, Leeds, on Friday, October 25th, at 6.30 p.m.

The medical staff and lecturers of the Royal Hospital of St. Bartholomew's will give a *conversazione* to view the new out-patient and special departments block on Wednesday, October 23rd, at 9 p.m.

The courses of practical instruction at the Central London Throat and Ear Hospital recommenced this week. As last winter, they are to be given on Tuesday and Friday of each week, commencing at 3 45 p.m.

At the meeting of the Royal Microscopical Society, 20, Hanover Square, on Wednesday next, at 8 p.m., Mr. Alfred Letherby will read a paper on systematic exposure with transmitted light in photomicrography.

It is stated that the King of Siam, who recently visited the new Virchow Hospital in Berlin, has given orders for the foundation of a similar institution, with surgical and bacteriological departments of the most modern type, at Bangkok.

A commission has been appointed to consider questions relating to factory labour in India. The medical member is Lieutenant-Colonel C. Mactaggart, M.B., I.M.S., Inspector-General of Prisons, United Provinces of Agra and Oudh.

Professor C. J. Patten, M A., M.D., Sc.D., Professor of Anatomy in the University of Sheffield, has been appointed Extern Examiner in Anatomy in the Medical and Science Faculties of the University of St. Andrews and University College, Dundee.

A course of practical training in food and meat inspection for commissioned officers and professional men has been arranged by the Royal Sanitary Institute beginning on November 12th. Further particulars can be obtained on application to the Secretary, Margaret Street, London, W.

We are asked to state that the eighth annual dinner for medical men residing in West Somerset will be held at the London Hotel, Taunton, on Friday, October 25th, at 6.30 p.m. sharp. The Chairman will be Dr. G. W. Harvey Bird, of Bridgwater. Guests may be invited, and the charge for dinner will be 6s. per head. A light musical programme will be carried out after dinner.

A State Commission on Consumption has been appointed in Massachusetts. Its functions are to attend to the building of hospitals, and to disseminate information in regard to methods of overcoming the disease. Dr. Arthur T. Cabot, formerly President of the Massachusetts Medical Society, has been appointed Chairman of the Commission.

The Child Study Society has arranged a course of lectures and discussions to be held during October, November, and December at the Parkes Museum, Margaret Street, W. The first lecture will be given on Tuesday, October 15th, at 8 p.m., by Sir John Cockburn, the subject being the aims and objects of the Society. Further information can be obtained on application to the Honorary Secretaries at the Parkes Museum, Margaret Street, London, W.

The first meeting of the winter session of the University College Hospital Medical Society will be held in the new school buildings, on October 16th, at 8.30 p.m. Sir Thomas Barlow will be in the chair. Professor William Osler will deliver an address on the influence of the Medical Society in the education of the medical student. The Society will be glad to see students from other hospitals as well as old University College Hospital men. Evening dress.

The New York Board of Education is said to be contemplating the establishment of a separate department of school hygiene, the special function of which is to be to advise on all matters relating to the health of the children and to recommend safeguards for the protection of their bodily health. The estimated cost is £6,000. The School Commissioners hold that the results would justify such outlay, and believe that the expenditure would be generally approved by the taxpayers.

Four lectures will be delivered at Gresham College, Basinghall Street, E.C., this month, by Dr. F. M. Sandwith, Gresham Professor of Medicine. The lectures, which are free to the public, will be given at 6 p.m., on October 15th, and the three following days. The syllabus issued indicates that the first two will be devoted to a consideration of Gresham College and the City in Elizabethan times, and the remainder to the problem of the control of the milk supply.

Under the will of the late Mr. Samuel Valentine, of Brixton, the following hospitals each receive £1,000 for the endowment of a Jacob and Rachel Valentine bed: The London Hospital, St. Peter's Hospital for Stone, Charing Cross Hospital, King's College Hospital, Guy's Hospital, St. Thomas's Hospital, the Cancer Hospital, and the Metropolitan Free Hospital.

A course of post-graduate lectures on ophthalmology at the Royal Eye Hospital, St. George's Circus, S.E., will be opened on Wednesday next, at 7 p.m., when Professor Simeon Snell, President-elect of the British Medical Association, will deliver an address on injuries and wounds of the eye, eyelids, and orbits. The lecture will be illustrated by lantern slides, and all medical men interested in ophthalmology are invited to be present. The subsequent lectures of the course will deal with errors of refraction, medical and surgical ophthalmology, and the pathology of the eye. Particulars as to fees and hours can be obtained on application to the honorary secretary, Dr. H. Willoughby Lyle, at the hospital.

Italian Medical Congress.—As has already been announced in the British Medical Journal, the seventeenth Congress of the Italian Society of Internal Medicine will be held at Palermo on October 21st and the three following days. Almost all the clinicians of Italy have expressed their intention to be present, and among the distinguished foreign physicians who have promised to attend is Professor Bouchard of Paris. The subjects to be discussed are neurasthenia in its pathological, clinical, and therapeutic aspects; serumtherapy, its advantages and disadvantages; acupuncture as a means of diagnosis and of treatment; and the etiology and epidemiology of malaria.

Tropical Medicine in Australia.—The Senate of the University of Sydney has agreed to contribute £100 towards a fund of £250 for organized research on tropical diseases in Australia on condition that the remaining three-fifths is contributed by the Universities of Melbourne and Adelaide. The *Australasian Medical Gazette* says that while this proposal will tend to unite the three Universities of Australia in the furtherance of the scheme, the amount suggested, unless it be intended as an annual contribution, is totally inadequate for the purpose. With this opinion everyone who has a notion of what research work is will agree. If such work is to yield satisfactory results it must be spread over some years, and even a grant of £250 a year is scarcely sufficient endowment for a worker whose whole time would be spent in the work.

Insurance Companies and Medical Fees.—It is said that some of the life insurance companies in the United States (among which the Equitable and Mutual Life Assurance Company of New York is particularly mentioned) have returned to the former fee of $5 (£1) for each medical examination. They admit (says the *Atlantic Journal-Record of Medicine* for September) that there was much disorganization of the medical departments from the almost unanimous refusal of the medical examiners throughout the country to enter into the cut-rate contracts. Many of the most experienced field medical representatives resigned, and the companies realized the danger of the risks they were incurring in allowing this state of things to continue. It is expected that the other companies will soon make similar announcements. The obvious moral is that the medical profession can succeed in securing equitable treatment by united action.

Nursing of the Mentally Disordered.—It would appear from a note in a recent issue of the *Nursing Times* that a scheme which is somewhat of a new departure has reached fruition. This is an association formed purely of nurses who have received special training in the duties incumbent on those who attend to cases of mental disorder. The plan, which is to be worked on co-operative principles, was to be put into practice at the beginning of this month. Nurses with the training indicated can be obtained from many ordinary associations, but no doubt it will be a convenience to those into whose practice the treatment of alienism enters largely to have an institution devoted solely to this class of disorder. Presumably all the nurses will be obliged to hold the special certificate of the Medico-Psychological Association. A quotation from the questions set at the last examination will show the sort of knowledge which the association expects its certificate holders to possess: 1. What is dementia? Mention the mental features seen in patients suffering from it. 2. How should a nurse act in regard to the delusions of a patient? 3. What would lead you to suspect that a patient was suicidal? 4. How should homicidal impulse be guarded against? The head quarters of the new body are at 115, Edgware Road, W.

British Medical Journal.

SATURDAY, OCTOBER 12TH, 1907.

LUMBAR ANAESTHESIA.

Despite the considerable proportions already assumed by the literature of lumbar anaesthesia, despite, too, the fact that some authors[1] speak from an experience of more than a thousand cases, there is still great diversity of opinion as to the selection of suitable cases, as to the choice of a drug, and as to the manner in which the desired, as well as the unexpected, results are produced.

Even with regard to technique, while there is pretty general agreement as to the choice of mid-line for the puncture, and no very bitter quarrel as to which inter-lumbar space should be selected, it is by no means settled whether or not cerebro-spinal fluid should be drawn off before injecting the drug, and whether the drug should be dissolved in the abstracted fluid, or in some other medium; since exactly contrary opinions are expressed with quite equal certainty, it may be assumed for the present that the point is immaterial.

Of the drugs that now hold the field, stovaine, novocain, alypin, and tropacocaine, the most recent publications[2] indicate a growing preference for the last named as the most reliable and the least dangerous. It seems probable, however, that further experience will show, not that any one of them is immeasurably superior to all the others, but that certain qualities of each may be found of advantage for special details of requirement; thus, the necessity for complete relaxation of the muscles in setting or wiring a fracture, might outweigh the disadvantage accruing from a greater liability to undesirable sequelae in the use of a certain drug.

Most advocates for the spinal route in anaesthesia agree that alcoholism, diabetes, severe cardiac and pulmonary lesions, and perhaps arterio-sclerosis, constitute direct indications; severe scoliosis is admitted as a contraindication even by those who have adopted the method as a routine; early childhood and hysteria are accepted by most as unsuitable; beyond this narrow ring, however, wide divergences are found.

Mohrmann[3] asserts in emphatic terms that suppurative processes are an absolute bar. He, like Sonnenburg, has had an unhappy experience in a case of osteomyelitis, where a fatal meningitis ensued in circumstances leaving no reason to doubt that the thecal affection was metastatic, and not conveyed mechanically by the puncturing needle. Dean, on the other hand, considers lumbar analgesia strongly indicated in all acute inflammatory processes within the peritoneum, because in his experience shock is diminished to a remarkable degree, and he has never had reason to regret its use. It is true that a case of appendix abscess is not strictly comparable with one of osteomyelitis, and therein lies the weakness of both positions; it is hardly justifiable to argue from a few cases of bone suppuration that lumbar anaesthesia is negatived in all suppurative processes, but neither must it be lost sight of that by preferring spinal to inhalation narcosis, desirable as it may be to avoid shock, one may be exposing a patient, with some forms of intra-abdominal suppuration, to a risk which altogether outweighs that gain.

The undesirable "by-effects" and after-effects of lumbar injection are very numerous, but for the most part they are not more severe than those which may accompany the exhibition of chloroform, ether, or other drugs, such as the various antitoxic serums. Some are almost certainly due to errors of technique, and will be eliminated; others are strictly "accidental"; but there remain some to be reckoned with very seriously. One of the most serious is paralysis of the ocular muscles, chiefly of the external rectus, but also of the superior oblique, and occasionally of those supplied by the third nerve. Mohrmann[3] makes much of the fact that ocular palsies have been observed after the use of both stovaine and novocain, drugs which, apart from their anaesthetic properties, are widely different in all other respects; further, he points out that in many of the cases in which this phenomenon has occurred the analgesia has not been produced, or has only partially developed, or appeared very late. On these grounds he explains the paralysis as resulting from a too rapid diffusion of the drug permitted by the use of adrenal extract (or its synthetic equivalent) that has undergone chemical decomposition as the result either of mere keeping or of too prolonged or too frequent sterilization. A difficulty in accepting this explanation arises from the fact that similar paralyses have been observed after the use of these drugs without any admixture with a suprarenal derivative. Ach[4] lays stress on the selection of those nerves which run a long course through the meningeal spaces and might therefore be supposed to offer a maximum surface to the action of the medicament. He recalls the case of post-diphtherial palsy to explain both the selection of particular nerves and the "postponement" of the symptoms. If the length of the nerve trunk exposed to the action of the drug had any great influence on the nature and degree of the loss of function induced, it might be expected that some relation would be noticeable between the depth of anaesthesia of areas supplied by individual trunks of the cauda equina and the length of their intrathecal course. Beyond the observation by Mr. Barker[5] that in a few instances the anaesthesia has been patchy in distribution, there is nothing to suggest either inequality in depth or loss of sensation in areas corresponding to peripheral distribution of nerves, or, apart from the definition of the upper limit of the analgesia, that the distribution is segmental. Various observers have noted in their experiments on animals that changes of a temporary character are to be found in the nerve cells of the cord and medullary ganglia as a consequence of the injection of stovaine. They are of the nature of swelling with vacuolation and displacement of the nucleus and some slight staining abnormalities. It has been suggested, too, that the ocular palsies may be due to nuclear haemorrhages, but the evidence is clinical rather than that of *post-mortem* observation. There is, on the other hand, experimental evidence to show that the drug undergoes some kind of chemical fixation in the substance of the nerve trunks.[6]

If the elucidation of the ocular sequelae is still to

[1] Schwarz, *Wiener klin. Woch.*, 1906, No. 30; Zahradnicky, *Revue v. Neurol., Psychiat.*, 1907, p. 8.
[2] Bosse. *Deutsche med. Woch.*, 1907, No. 5; Thorbecke, *Med. Klinik*, 1907, p. 384; Wiener et de Graeuwe, *Ann. de la Soc. Belge de Chir.*, 1907, April.
[3] Mohrmann, *Therapeut. Monats.*, 1907, p. 398.
[4] Ach, *Muench. med. Woch.*, No. 33, p. 1624, 1907.
[5] Barker, British Medical Journal, 1907, vol. i, p. 665.
[6] Heineke u. Lawen, *Von Langenbeck's Archiv*, 81, Hft. 1.

seek, the explanation of the severe headache which is the most constant of the after-effects, is only furthered to the extent of discrediting the original idea of a mild or "aseptic" meningitis. Most authors are content to ascribe it to a capricious toxic effect; some prefer to attribute it to alterations in the cerebro-spinal pressure, whether due to the direct abstraction of fluid, or to the injection of extra fluid, or indirectly to an increased outpouring determined by mechanical interference or by chemico-physical disturbance. It is not impossible that the cause is to be sought in a derangement of renal function, for Schwarz[7] has found, by careful investigation of the urine of patients with previously healthy kidneys, who had had injections of stovaine, evidence of nephritis in 78 per cent. of the cases. The average duration of the nephritis was only six and a half days, and the maximum a month; in no case did there appear to be any permanent damage to the kidney. But if his observations be confirmed, they will go far to compel the inclusion of kidney mischief in the list of absolute contraindications.

The very important paper by Mr. Barker on the conditions influencing the range of effective action of a drug injected into the lumbar thecal sac, published in the British Medical Journal last March, has not, apparently, obtained the attention it deserved. His tests for isotonicity were perhaps open to some question, but his experimental observations upon the behaviour of fluids of different densities, when injected into the cerebro-spinal fluid, were not only ingeniously devised, but were also rich in the most suggestive results—results, moreover, which enabled him to present a record of the later series of his cases singularly free from blemishes.

It is a hopeful sign that most workers have experienced considerable improvement in the results of their later cases, and there is every reason to anticipate a speedy attainment of that accurate knowledge of the possibilities and the limitations of a method of inducing anaesthesia that bids fair to find an established place in everyday usage.

THE DISORGANIZATION OF THE PUBLIC HEALTH SERVICE.

We had occasion a few weeks ago to refer at some length to the object lesson with which the Town Council of Southend-on-Sea was providing the country in regard to the present unsatisfactory method of appointing medical officers of health for limited periods, and the evil results which flow from this insecurity of tenure.

It is curious that at the very same time yet another health resort was engaged in a somewhat similar crusade against the public health department. It appears that some time ago the Town Council of Cheltenham appointed a Committee to inquire into the expenditure of the borough with the view apparently of effecting economies. The main economy recommended was a reduction in the salary of the medical officer of health from £600 to £500 a year; as only half the salary is paid out of local funds, the other moiety being paid by the Local Government Board, this means a saving to the rates of Cheltenham of £50 a year. Dr. Garrett has held the office for fifteen years. He was originally appointed at a salary of £500 a year, but six years ago this was, with the approval of the Local Government Board, raised to £600. No allegation of inefficiency is made against Dr. Garrett; on the contrary, judging from statements made during the discussion in the Town Council last week, it seems that we have here another illustration of the old story that a competent and zealous medical officer runs a risk of becoming unpopular with certain members of the community who find that the impartial administration of public health laws in the public interest may damage their pockets. Dr. Davies, a member of the Town Council, who made a spirited speech against the proposal to reduce the salary, said that the medical officer of health's work had brought him into conflict with vested interests, especially with regard to the butchering trade, the closing of slaughter-houses, and the closing of shallow wells; and added that one member of the Council interested in the butchering trade had taken part in a meeting of butchers which called upon the Council to dismiss Dr. Garrett because he had attacked their interests. Eventually a proposal to refer the matter back to the Public Health Committee was rejected, and the Council adopted the principle of the reduction in the salary, and instructed the Public Health Committee to draw up a report to carry this into effect.

About the same time the local authorities at Wimborne, in Dorsetshire, were supplying yet another object lesson, which is in some respects even more striking and instructive than those given at Southend-on-Sea and at Cheltenham. The guardians found themselves unable to fill the appointment of medical officer to the workhouse, as the terms they offered were considered inadequate by the local medical profession; they determined to terminate their vaccination contracts, and at the same time the Rural District Council, which is substantially the same body, announced its intention of not re-electing Mr. C. H. Watts Parkinson to the post of medical officer of health, which he had held for twenty-five years. The object of this manœuvre was that, by advertising as vacant the two appointments of medical officer of health and medical officer for the workhouse, and at the same time inviting application for the vaccination contracts, some outside medical man might be induced to come into the district and accept all three posts. In this they have succeeded, a medical man, Mr. S. Greenwood, L.R.C.P. and S.Ed., L.F.P.S.G., and L.S.A., who formerly practised in Birmingham, but has more recently resided at Boscombe, offering himself as a candidate for the two posts, and also expressing his willingness to accept the vaccination contracts. At a meeting of the Rural District Council, Mr. Greenwood, who does not appear to possess a diploma in public health, was by 14 votes to 9 appointed medical officer of health, and at a meeting of the guardians which immediately followed, a motion to postpone the question of appointing a medical officer to the workhouse for two weeks was rejected, and Mr. Greenwood was appointed by 15 votes to 11. Subsequently he was appointed public vaccinator for one of the districts, while to the other the guardians, with a very tardy recognition of the invidious position in which the Board had been placed, reappointed the previous occupant.

The repetition of incidents such as these—and the cases noted above by no means exhaust the list—cannot fail to have a most injurious effect upon public health administration, and must tend to disorganize the public health service. Men of integrity and independence of character will be deterred from devoting themselves to this department of medicine. The public health laws were not passed in the interests of builders or butchers, or milkmen, or restaurant-keepers, but of the community as a whole, and if they are not enforced it is the public that suffers in health and life. The evils growing from the present system of appointing medical

[7] Schwarz, *Zeit. f. Chir.*, 1907, No. 23, p. 651.

officers for limited periods have been brought to the notice of the legislature by the British Medical Association. More than two years ago a bill which had previously been drafted was revised and introduced into the House of Commons by Dr. (now Sir C. F.) Hutchinson; in November 1905 a deputation appointed by the Public Health Committee of the Association waited upon the then President of the Local Government Board, and on that occasion the official objections to the proposals of the bill were in some degree ascertained. It was again modified and was introduced into the House of Commons in 1906 by Sir Francis Sharp Powell; it had the support of Sir Walter Foster and Sir John Batty Tuke, but it was unsuccessful in procuring a good place in the ballot, and had finally to be dropped; it was again introduced by Sir Walter Foster on March 1st, 1907, when it was read a first time; it was put down several times for second reading but was never reached.

Sir John Dickson-Poynder's Committee, which reported last December on the housing of the Working Classes Acts Amendment Bill, condemned the present system of appointment in rural districts, and observed that "under it there is a natural desire on the part of "the medical officer or inspector to avoid friction with "the appointing authority, and a consequent reluctance "to set the law in motion against those whose dis-"approval of an officer's acts might lead to unpleasant "relations, if not to failure to secure reappointment." Despairing of the public spirit of small local bodies, the Committee recommended "a drastic change in the "character and administration of the law," and proposed that the administration of the public health and housing laws should be transferred to the county council.

This proposal no doubt affords one way out of the difficulty which local authorities by their shortsighted and arbitrary action are creating. It would probably greatly increase the efficiency with which the public health law as it affects rural districts and small boroughs is administered. Whether it would tend to diminish the rates is another matter, but after all wise expenditure is often the truest economy.

MEDICAL MEN AND THE POLICE.

IN view of the facts of the case with which it deals, it would have been difficult to indite a more temperately worded letter than that which the Honorary Secretary of the Lancashire and Cheshire Branch, acting on the instruction of the Branch Council, addressed recently to the Manchester newspapers. Dr. Larkin's letter, which has already appeared in the *Manchester Guardian* and the *Manchester Courier*, is reprinted at p. 1010. Being mainly concerned with the action of the Watch Committee, it does not mention some facts which nevertheless have an indirect bearing on the question. It appears that the patient concerned, an old man of 65, suffering from softening of the brain, was charged with attempted suicide at the police-court on February 7th, but was discharged on the relatives undertaking to look after him. He died about the end of March, and though at the inquest the jury gave a verdict of death from senile decay, and exonerated the police from any charge of accelerating his death by removal to hospital, they added the following curious rider to the verdict: "We "think the police ought to be a little more careful, and "not go too far." This rider rather reminds us of the Irish verdict, "Not guilty, but don't do it again"; and it ought to be read side by side with the previous decision of the magistrates, that the police had no right to remove the man without a warrant, and were not engaged in the execution of their duty when Dr. Bagley made his protest. It may well be asked whether it is in the interests of public safety for police officers on their own responsibility to remove a man, when the only medical opinion that has been taken is that the removal is dangerous. If the police are justified in acting in this way, the death penalty may be inflicted, possibly for the most trivial offences, at the mere will of a police officer. The reply of the inspector, made to a question addressed to him during the inquiry at the police-court, throws a rather lurid light on the state of mind of the police. When asked, "Supposing he" (the old man) "had bled to death on the way?" his answer was, "Those are among the chances we have to take"; in other words, the patient's side of the question is not considered, but only the risk the policeman runs. It ought not to be competent for a policeman to take such chances.

In fact, everything goes to confirm the opinion expressed in a leading article in the *Manchester Guardian* of February 7th, that "the action of the police seems to "have been neither reasonable nor kind," and that "to "have taken out summonses against them" (that is, Dr. Bagley and the patient's two sons) "was a singularly "tactless proceeding." And yet, for this "tactless proceeding"—shown to be worse than tactless, by the way in which the magistrates quashed it—Dr. Bagley has had to pay heavily. The *Manchester Courier*, referring to Dr. Larkin's letter, has a strongly-worded leader, entirely endorsing the opinion of the Branch Council, and expressing its surprise and disappointment at the action of the Watch Committee in refusing to pay Dr. Bagley's costs. The article points out that the "decision of the "magistrates, who refused to support the police in their "prosecution of Dr. Bagley, was unequivocal," and that "the Watch Committee tacitly admitted that they were "at fault," quoting the fresh instructions given to the police, which have modified what our contemporary calls "the engaging insolence which the by-laws had "encouraged." "Yet," the *Courier* continues, "the "Watch Committee refused to pay Dr. Bagley the costs "which the action of the police had imposed upon him. "The result is that for doing a perfectly legal act, in "the interests of a fellow-citizen, Dr. Bagley was "mulcted to the extent of £30. Such shabby treat-"ment is a reflection on the community." The article concludes by expressing the opinion that the letter of the Branch Council "will be cordially welcomed and "its protest will be generally endorsed." This testimony from two of the leading Manchester daily papers is ample evidence, if any were required, of the reasonableness of Dr. Larkin's letter, and it is hardly credible that any honourable public body should persist in refusing to agree. One cannot see how the Committee can do otherwise than admit that the prosecution was an error of judgement, for which the Committee is responsible. If Dr. Bagley were claiming a large sum for damages, counsel advises that he would have had a good case to go before a judge, but the Branch Council, on his behalf, is claiming nothing at all except his bare legal expenses in defending himself against proceedings which common sense, to say nothing of the magistrates' decision, tells us ought never to have been taken.

PROPRIETARY REMEDIES.

MR. O. C. BEALE recently presented a report on the control of proprietary remedies to the Australasian Commonwealth Government, the text of which is published in the *Chemist and Druggist* of October 5th. Only

a brief abstract of his proposals can be given here. He recommends that every preparation offered for sale shall be accompanied by the formula "plainly and "legibly expressed upon the bottle, label, or package," and that non-official preparations shall be described in ordinary chemical terms, not by any fancy or proprietary name. Further, "no advertisement, announce- "ment, persuasion, recommendation, testimonial, refer- "ence, certificate of merit or efficacy, mark of distinction "or picture, symbol or emblem signifying or suggesting "any of these" is to be placed either on the article itself or on the bottle, box, container, cork, capsule, label or attachment, or on the invoice, bill, advice, or notification. Mr. Beale also recommends that no advertisement or announcement of any proprietary or secret cure be allowed to appear in any newspaper, journal, serial, book, pamphlet, handbill, poster, wall-plate, or by painting, impressing, or embossing; and that it shall not be lawful to transmit by mail any books, magazines, periodicals, circulars, handbills, posters, catalogues, or other publications, wrappers, or labels which contain announcements of proprietary medicines or "cures" or testimonials to their virtues. He recommends that letters patent be granted, as now, for any approved and novel formula for the combination of drugs and for apparatus of any approved kind for the prevention, alleviation, or cure of human ailments, provided that no patent be granted for any single drug or agent which is not compounded, whether it be natural, extracted, derived, or synthetic. Mr. Beale recommends the adoption of a policy for the protection of the nation's health and morals similar to that indicated by the resolution of the German Federal Council. He suggests that a conference be held of the heads of the State Departments of Health to devise means and regulations for the carrying out of Commonwealth and State legislation to control the handling and the sale of drugs in general, apart from patent or proprietary rights. He recommends further that no anti-conceptional preparations or articles intended for that purpose be held for sale or sold, and that the importation, manufacture, holding for sale, hiring out or giving away of objects intended for indecent interference with the sexual organs, be made by express provision a felony. Lastly, he proposes the establishment of a bureau of chemistry in the various ports of the Commonwealth for the prevention of frauds and mistakes. A similar movement is on foot in New Zealand. On October 1st a new German law relative to patent medicines came into force. For some years past the makers have been compelled to state on each packet or bottle the ingredient of the medicine and their quantities. All written or printed praise of the specific and all public advertisement are now prohibited. Moreover, no pharmacist who does not know what a patent medicine is made of may supply it without a doctor's prescription. Russia, the Argentine Republic, and some other South American States are considering, or have already made, ordinances of like character.

FEES FOR PUBLIC VACCINATION.

The Vaccination Order issued by the Local Government Board on May 21st, 1907, made serious alterations in the minimum fees for vaccination. Instead of a minimum fee of 5s. for each case of domiciliary vaccination the minimum was reduced to 2s. 6d.; and it was further provided that if, during a period of twenty-four consecutive hours, two or more successful vaccinations should be performed at the same house or premises, while the minimum fee for the first case should remain half-a-crown, "in respect of every "other person vaccinated or revaccinated the amount "to be paid to the public vaccinator shall be such "a sum as is fixed in the contract approved by "us and in force for the time being, or such a "sum as . . . is fixed by an Instrument executed in "pursuance of" one of the subdivisions of the Order. Many of the Boards of Guardians interpreted this as a direct incentive to reduce the fees still further, and in various unions 1s. 6d. and 1s. 3d. have been the amounts suggested as adequate fees for vaccinations after the first vaccination on the same premises. The Instrument in question has now been issued; the fees agreed upon between the public vaccinator and the guardians are recited, and spaces are left for the signatures of the public vaccinator, the clerk to the guardians, and the assistant secretary of the Local Government Board, as a sign of the approval of that Board. It is interesting to read a footnote to the Instrument which appears to indicate that the Local Government Board is waking up to the injustice which is being done to the public vaccinator by the new order, for, to quote the note, "It is suggested that the fee for the first case "should be that which would ordinarily be paid in "similar circumstances if one vaccination only were "performed, and that the fee for every other case should "*not be less than 2s. 6d.*" It is a great pity that this suggestion has come so late.

THE VOLUNTARY PRINCIPLE IN SOCIOLOGY.

Mr. Montague Crackenthorpe, K.C., has recently republished in a volume entitled *Population and Progress*[1] three essays which had previously appeared in the *Fortnightly Review*, and has added two others for the sake, presumably, of completeness. The contention which Mr. Crackenthorpe endeavours to maintain may be summed up as a plea for the "voluntary principle" in most, if not all, mundane things. Individualism, socialism, evolution, orthodoxy, morality, war, and suffrage, are a few of the sociological problems which the writer brings within the range of his specious argument. If he is not quite an advocate of Malthusian doctrines, he pins his faith uncompromisingly to the eugenic school, and labours hard to convince his readers of the self-evident truth that "it is as important that "the right people should be born as that the wrong "people should not be born." There is ample need for improvement both in the physical and mental condition of the race, but the eugenic system of culture demands more than elegant and sententious phrases to clothe its bare bones with living tissues. It is all very well to call on England no longer to act "the "part of hypocrite and refuse to admit the plain truth, "that a man, whatever his station in life, has no right to "become the father of a dozen children when he can "only afford to maintain two or three;" or to admit "that where there is serious hereditary transmissible "disease a man ought not to allow himself any children "at all." It is not to England he must appeal, but to the individual citizens. The people must be educated to greater physiological and sociological righteousness before it becomes the duty of the State to enforce the tenets of a new religion of health. Similarly we believe that, however devoutly many of us wish for such a consummation, the time has not yet arrived when the nation would tamely submit to disease, whether transmissible or otherwise, being entered on the statute book as "a just cause or impediment why two persons "should not be joined together in holy matrimony." The ideal woman of the twentieth century will be, according to Mr. Crackenthorpe's standard, one who possesses the instinct of sex in its best and highest form, and who will decline "to give to her children for "father the degenerate, the drunkard, the physically or "mentally unfit. Marriage is for her a sacrament in "the truest sense of the word, and one to which only "the shriven are bidden. It is no longer a love-feast

[1] *Population and Progress.* By Montague Crackenthorpe, K.C. London: Chapman and Hall. 1907. (Crown 8vo, pp. 131. Price 2s. 6d.)

"without any thought of the morrow." Let women, by all means, be educated up to this standard; when it is reached, the great problem of race culture will be solved. But the ideal is beyond present accomplishment, and has, we fear, many generations of probation to anticipate before it can hope to enter the sphere of practical politics. Yet one more reference may be permitted in another field of the author's argument. The remedy for the evils of war lies, he says, "in the more "complete consciousness of the human race as to the "conditions on which its progress depends." This is another way of saying that wars will cease when it has become obvious to the general intelligence that it is no longer profitable to wage them. With this we fully agree, but the golden age is still far distant when, by general consent, swords shall be beaten into ploughshares and spears into pruning-hooks.

THE WOUNDED OF FONTENOY.

Readers of Carlyle's *Frederick the Great* will remember his description of the battle of Fontenoy, beginning with the Homeric exchange of more or less courteous salutations between the leaders and ending in the gathering up of the broken fragments of humanity from the battlefield. We hear particularly that "Army "Surgeon La Mettrie, of busy brain, expert with his "tourniquets and scalpels, but of wildly blasphemous "heterodox tongue and ways, is thrice busy in hospital "this night." The order given by the victor in regard to the wounded was, in the words of the historian, "English and French all one to you, nay, if "anything, the English better." An article by Dr. Dujardin, which appears in the *France Médicale* of September 10th, gives us a glimpse of the hospitals of Douai and Lille to which a large number of the wounded were transported. At Douai room had to be found in the Saint Sauveur Hospital for some two hundred, and in the Comtesse Hospital for almost as many. The senior surgeon of the former was Dr. Pollet, who was assisted by Dr. Guérin. At the Comtesse Hospital the Chief Surgeon, Théri, was assisted by a Lieutenant of the King's Surgeon, Guffroy, and Dr. Vandergracht. At Douai Surgeon-Major Majaut was at the head of the military hospital, with Dr. Faure, a former *aide major* of the French army, as assistant. According to a report by Faure, of nearly 300 cases of amputation of limbs in the Lille and Douai hospitals, only 30 or 40 survived. He attributed this high mortality to the haste with which the operations had to be done. Faure did not believe in operating "when the soldier was in "mettle"; he preferred to wait not only till the shock was over, but till the patient was exhausted to the last degree by prolonged suppuration. His success, or rather his luck, was wonderful. He reserved ten beds in the Douai Hospital for cases in which amputation was clearly necessary. In his own words, while waiting for the right time, he confined his intervention to such dressings as were required, opening the abscesses which formed—"in short, observing "all the rules of art." This Fabian policy was kept up for a month, the poor fellows meanwhile passing through every complication which can follow gunshot wounds with fracture of bone. Naturally they fell into a low state, and wasted to a degree which astonished the cautious surgeon. The first man he operated on was an Englishman, aged 25, who had had the head of the humerus shattered, the acromion injured, and the deltoid partly destroyed by a cannon ball. Faure amputated, and the man was well in two months. This success encouraged him to operate on the others who by this time were in a pitiable state of exhaustion, their wounds discharging unhealthy matter, and the broken bones showing no sign of union. He performed amputation of the thigh in two cases, of the leg in another, and of the upper extremity in the remaining cases. All recovered quickly without a bad symptom. Faure's conclusion was that amputation should always be delayed for a month or six weeks after the infliction of the wound, except in cases where an artery had been laid open or a limb carried away. This opinion was vigorously opposed by Boucher, Professor of Anatomy at Lille, who held that if amputation was done early there was always a hope of saving one-third of the cases. In support of this view he cited some cases successfully dealt with by him in this manner at the Saint Sauveur Hospital after Fontenoy. His statistics did not, however, compare favourably with those of Faure, inasmuch as he only saved four out of nine of his cases. This awkward fact was explained away by Boucher by the remarkable plea that the state of weakness to which Faure's patients were reduced was more favourable than the "excessive vigour" of recently-wounded men, which tended to cause tension and inflammation. It might be thought that by this admission Boucher cut away the ground from his feet; but he argued that in order to prove that delay was preferable it must be shown in a sufficient number of cases in which amputation was obviously necessary, that recovery was more frequent when the operation was done late than when it was performed early, "which is "contrary to reason and experience." These echoes of a controversy long dead and buried have only a historical interest for the modern surgeon, but M. Faure's experience serves to give some measure of the power of endurance of the men who fought at Fontenoy. When we read accounts of the wounds of which the veterans of Napoleon, Wellington, and Nelson carried the scars through a dozen campaigns, and compare them with the descriptions of the hysterical enthusiasm with which latter-day heroes who gracefully retire with a single wound, or perhaps without a scratch, are received, we are tempted to think that, whatever official reports on physical deterioration may seem to show, our manhood is being sapped by what may be called the luxury of sanitary precaution.

THE TRANSFUSION OF BLOOD.

A paper by Dr. Crile, of Cleveland,[1] giving the results of recent research on transfusion of blood, seems likely to arouse renewed interest in a subject that for some years past has lost much of its practical importance. In the experimental and clinical investigations Dr. Crile was assisted by several colleagues, and he describes in detail the methods employed. Investigation into the choice of blood vessels led to the conclusion that blood could be transferred from one individual to another with the greatest certainty and under the best control by directly attaching the proximal end of a divided artery of the donor to the proximal end of a divided vein of the recipient. Whilst large and proximal vessels were selected in laboratory work, the vessels usually anastomosed in clinical transfusions on the human subject were the radial artery and some peripheral vein. To prevent clotting at the seat of anastomosis use was made of a mechanical device constructed on the principle of the Murphy button, by means of which the ends of the divided artery and vein were so brought together that intima was brought in contact with intima alone, without the risk of any foreign body coming in contact with the blood stream. Some interesting results were obtained by the investigation of the effect of transfusion from one normal individual to another, in the first place on the blood transfused, and in the second place on the blood and tissues of the recipient. The conclusion reached was that the blood of one normal animal is physiologically

[1] *The Canada Lancet*, August, 1907.

interchangeable with that of another of the same species, and the results of microscopical examinations and of observations on metabolism would seem to confute the view held by Senn that the transferred blood elements do not retain vitality. Transfusion in the normal animal, it was found, raises and sustains the blood pressure to a much higher degree than the intravenous injection of the readily absorbable saline solution. While rapid transfusion is likely to cause acute and fatal oedema of the lungs, the chief danger of a slow and excessive transfusion, an over-distension, in fact, of the circulatory system, consists in intense congestion of the abdominal viscera speedily resulting in death. The result of another series of experiments on animals may be thus briefly stated: direct transfusion of blood when properly practised is a very efficient means of averting death in cases of profuse haemorrhage and surgical shock; it may probable do good, when preceded by free bleeding, in cases of poisoning by illuminating gas; but has no value at all after excessive abstraction of blood in cases of strychnine poisoning and certain forms of toxaemia. In a separate group of experiments on cases of very profound and apparently hopeless haemorrhage, the animal could still be resuscitated so long as there was an auricular beat, after the complete failure of current methods, including maximum saline infusion. The striking effects of transfusion on shock led to a trial of this procedure as a means of prevention, when it was found that animals carefully over-transfused and afterwards subjected to shock-producing traumatism, could not be killed by shock alone. The interest and value of this paper depends mainly on the record of the experimental work. The reports of the clinical research, though dealing with many forms of disease, are scanty and, from a lack of sufficient material in many instances, are either unsatisfactory or at the best barely suggestive. Excellent results were certainly obtained in some cases of shock, but in the treatment of this condition, and, indeed, of all others in which intravascular infusion of some kind is clearly indicated, surgeons, we imagine, will find no good reasons given here for abandoning the safe and simple method of saline injection.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.[1]

The quarterly section of the *New English Dictionary*, which has just appeared, deals with the remaining part of the letter N, and forms the concluding part of the sixth volume of the work; one or two sections of the letter M have, however, yet to be published before the volume is completed. This section is not, perhaps, so rich in medical terms as some that have preceded it, yet it contains quite a number of them. First, in the order of the rubrics, comes the "weed *nicotian*," so called in memory of him who gave "the first intelli-"gence thereof unto this Realme," namely, Jacques Nicot, French ambassador at Lisbon, by whom tobacco was introduced into France in 1560. Around this word (*nicotian*) are grouped several others derived from it, such as *nicotia*, *nicotiana*, *nicotianin*, *nicotiant* (a nonce-word for smoking), *nicotic*, *nicotidine*, *nicotina*, *nicotine* (the alkaloid), *nicotinism*, *nicotism*, and *nicotize*. An illustrative quotation from the genial author of the *Poet at the Breakfast Table* reads: "I have been a "Nicotian. . . . more than half my days." Another quotation, dated 1873, is more alarming; it reads: "Lapped in nicotinean elysium, the incautious wor-"shippers of the weed recline in fancied security." The next medical or semi-medical term is *nictitation*, "the "action or habit of moving the eyelids," and the *nictitating membrane* is defined and described. Mr. Craigie, who edits this letter for the *Dictionary*, is, like the veteran Dr. Murray himself, not so scientific a lexicographer as to shut out all lighter allusions, and we can imagine a smile passing over his face, accompanied by a nictitation of the left eyelid, as he selected this as one of the illustrative quotations: "I know by "that satisfactory nictitation of your eye that you agree "with me." *Night* is not, of course, a peculiarly medical term; but *night-blindness*, *night-stool*, and *night-sweats* are; and we learn that *night-blain* is a chilblain, and that *night-sight* is *nyctalopia*. *Nyctalopia* itself is fully defined and illustrated in another part of this section; and it is interesting that *nystagmus*, *nyctalopia*, and *nictitation*, which are often associated clinically, are all included in this part of the *Dictionary*. Among the less familiar terms is *nirles*, "a kind of rash or efflorescence of the "skin" somewhat like measles. *Nitrogen*, *nitrates*, *nitrites*, and all the *nitro-compound* words occupy a good deal of space; *nodule*, *nodulus*, and *nodus* have medical meanings which are fully defined; and so has *noisome*. A little-suspected source of infection is hinted at in the quotation which speaks of "such a noisome thing "as a collection of postage-stamps." *Noli me tangere* is defined as "an eroding ulceration attacking the face," and, in later use, "lupus." *Noma* follows close, and is defined as "a gangrenous ulceration of the throat, "occurring mainly in young children." *Normoblast*, a nucleated red blood corpuscle of normal size, is referred to, and then the *Dictionary* passes to the enumeration and illustration of *nosology* and the various associated terms (*nosography*, *nosonomy*, *nosocomial*, *nosophobia*, and *nosotrophy*). All these are derived from the Greek νόσος, disease. *Nostalgia*, or home-sickness, may be so severe and so closely allied to melancholia as to justify its description as a medical term. A *nostrum* has the special meaning of "a medicine or medical application, "prepared by the person recommending it;" and an illustrative quotation comes to the sad conclusion that "no nostrum gives the bloom of health again." *Notalgia* is "pain in the back without inflammatory symptoms." *Notifiable* curiously enough seems only to have been used in the medical sense of a disease "that should be "notified to some authority." *Nullipara*, *nympha*, and *nubility* are obstetric terms which are dealt with; and *nucleus*, with its many derivatives, occupies a large space. Finally, under *nymphomania*, we find an illustrative quotation which tells us that "the girl in whom "the cerebellum was absent suffered from nympho-"mania."

[1] *A New English Dictionary on Historical Principles*, vol. vi, Niche—Nywe. By W. A. Craigie, M.A. Oxford, at the Clarendon Press. October 1st, 1907. Price 5s.

MEDICAL MEN AND INSURANCE AGENTS.

One of the wiles by which the agents of inferior insurance companies victimize medical men has been exposed in these columns with great frequency, but nevertheless the same kind of confidence trick still appears to be practised with some success. A case in point has recently been investigated by *Truth*, and is all the more noteworthy because in this instance the victim does appear to have exercised at least a certain measure of caution. Our contemporary states that when approached by the agent of a body calling itself "The British United Assurance Corporation," which invited him to take out a policy with the company in return for being appointed its sole referee in the district, the medical man obtained from the agent a written guarantee that his fees for the first year's work should not be less than £25, and the terms of this agreement were subsequently confirmed in a letter purporting to be signed by Mr. Mander Burrows as Managing Director of the company. The medical man paid the premium on his policy, but no work ever came to his hands, and on his reminding the company of its undertaking at the end of the year, received replies refusing either to pay the fee or refund the

premium. On the face of it there seems no reason why the medical man in this case should not recover his fees by an ordinary action; but possibly, now that he is in possession of some of the facts disclosed by *Truth*, he may not think the game worth the candle. That periodical, speaking of the British United Assurance Corporation, which purports to include in its business sickness, accident, and employers' liability insurance, says that its very existence is disgraceful and indefensible, and goes on to state that it is closely connected with one or two now defunct companies which have gone through the Bankruptcy Court, in spite of their having, like the present company, enjoyed the advantage of having Mr. Mander Burrows at their helm. *Truth* also states that in a recent annual report the Comptroller of the Companies Department of the Board of Trade refers to the scandalous revelations which have been made in connexion with the insolvency of various companies, and places one of the companies with which Mr. Mander Burrows has been associated at the beginning of the list of such concerns. We give these statements on the authority of *Truth*, which in a further article prints a letter from a Mr. A. Y. Harper, who signs as Joint Manager of the company, the services of Mr. Burrows having, it appears, been dispensed with on August 1st of this year. In this letter, however, the account above given of the agreement with the medical man is in no wise controverted, and though an attempt is made to excuse the company in the matter, *Truth* declines to accept it as in any wise successful, and concludes its consideration of the whole incident by stating that the British United Assurance Corporation has no capital worth speaking of, and that in view of the connexion of Mr. Harper and of two of its directors with the bogus concern from which it sprang, no confidence can be felt in its management. It may be added that attention has also been drawn to the general subject by the *Daily Telegraph*, which makes somewhat scathing remarks on the facility with which medical men are gulled by such companies. The plan is sometimes to ask the medical man to insure himself in return for his appointment as medical referee, sometimes to take shares in the company. The *Telegraph* points out, however, as has been frequently stated in our own columns, that the only genuine attraction of medical men for insurance companies is not their capital but their professional skill and the acumen which they are likely to employ in enabling the company to distinguish between profitable and unprofitable lives, and the selection of medical referees is regarded as of such importance that no agent, and practically not even the head officials of the company, has anything to do with the matter, the task of selecting referees being entrusted to the person who is considered most likely to perform it efficiently—namely, the chief medical adviser of the company.

SMOKE AND DARKNESS.

IF there is one condition pertaining to city life which renders it more inimical to the best health interests of the population than life in the country, it is the comparative prevalence of coal-smoke fogs and the effect these have not only in rendering the air impure to breathe, but also in diminishing, or even effectually shutting out, the light of day. It has been computed that smoke alone is responsible for about one fog in five, and that all fogs are prolonged and polluted by it. It is therefore an obviously urgent problem of city sanitation to deal effectively with the fog—or, in other words, the smoke nuisance. If smoke could be abolished, there is no reason why the air of the city should not be as pure as that of the provincial town; or why, indeed, given healthy conditions as to space, housing, water supply, etc., the expectation of life should not be as good for the town dweller as for his country cousin In an interesting and readable book, recently written by Mr. John W. Graham, Principal of Dalton Hall, Manchester,[1] the smoke nuisance is thoroughly discussed and many valuable suggestions made both to manufacturers and to citizens, in whose hands, as Mr. Graham rightly says, the cure lies. The injurious influence upon health is not the only disadvantage arising out of the smoke which is allowed to issue, without any attempt at restraint, from every house chimney and every locomotive engine in the country, and with only insufficient supervision from the chimney shafts of our large manufactories. From the economic point of view the waste of fuel by dispersion in smoke is enormous, and is said to exceed 40 per cent. of the whole. Mr. Graham points out that in winter we now use in this country as much coal in a single week as was used in a whole year when Watt invented the steam engine, and that, on the present average of output, the visible supplies of coal will be exhausted in about two hundred years. Though legislation for posterity may have disadvantages, it becomes the duty of this and future generations to protect their descendants, as far as possible, from such a humiliating experience as the following, which is outlined as being a none too remote possibility: "When our coal has gone the manufacturing "and mercantile part of the greatness of England will "have gone too. London will live by running hotels, in "which Americans can spend their holidays, and as a "centre of culture and fashion; in Lancashire and "Yorkshire sheep will wander over the ruined heaps of "former towns; Manchester and Liverpool will be "visited chiefly for their art galleries and libraries, "their impoverished universities and interesting old "town halls, doubtless cleaned at last. The people, or "those who survive, will have emigrated, and be work-"ing in cotton mills in Saskatchewan and Rhodesia." A gloomy future enough from the national point of view! but how much more cimmerian if the effect of two more centuries of increasing fog and decreasing sunshine upon humanity be contemplated! The survivors who, whether from inclination or necessity, became possessed of a craving to carve their way to fortune in Canada or Africa would probably have become so degenerate in body and mind as to be hopelessly handicapped in the competitive struggle in younger, sunnier, and healthier countries. The remedies for this great smoke waste are still wofully inefficient, but we confidently look, at no distant date, to a scientific issue out of our present difficulties. The dormant possibilities of gas and electricity as heating agents are by no means fully realized, while the hope that a fuel may be discovered which shall be smokeless already shows some evidence of fulfilment. Our principal interest in the question is from the hygienic aspect, and we cordially welcome Mr. Graham's essay as a well-timed protest against not only the wastefulness and inefficiency of our present plan of combustion, but also against its uncleanliness and unhealthiness.

SANITARY DISH WASHING.

THE question was recently asked in a newspaper, What is the most dismal of professions? Among those that occurred to us as having a claim to be so considered were grave digging, scavenging, listening to Parliamentary orations through an all-night sitting, and the writing of poems—or articles—that nobody reads, for, as Touchstone truly says, "When a man's verses cannot be under-"stood nor a man's good wits seconded with the for-"ward child, understanding, it strikes a man more dead "than a great reckoning in a little room." The answer given, however, was that the washing of dishes is the

[1] *The Destruction of Daylight: A Study in the Smoke Problem.* By John W. Graham, M.A., Principal of Dalton Hall, University of Birmingham. London: George Allen. 1907. (Fcap. 8vo, pp. 160. Price 2s. 6d.)

most dismal of occupations, for what Sir Toby Belch might have called the exquisite reason that it is "cleaning up the dregs of others' pleasure." But the interest of dish-washing may perhaps become greater when it is realized that it may be made a high and holy function if it is done in a scientific spirit. The subject is dealt with by MM. Christiani and Michelis in a recent number of the *Revue Médicale de la Suisse Romande*, in which they describe a number of experiments made by them as to the effect of different modes of cleansing glasses of germs. In one series the glasses were simply wiped with a sterilized cloth, without previous washing; in another they were rinsed in a basin of cold water and then wiped with no particular care, as the authors say is generally done in kitchens (let us parenthetically hope that this is a calumny or, at any rate, a hasty generalization); in a third series the glasses were thoroughly washed and rinsed in fresh water, and afterwards wiped with scrupulous care, as is done in laboratories. From the glasses that were simply wiped or washed in the perfunctory kitchen fashion, more or less abundant cultures of germs were obtained; on the other hand, when the washing was thorough and the glasses were carefully wiped, the organisms found were, like the leaves in Shakespeare's sonnet, "or none, or few." From this the authors draw the pretty obvious conclusions that the mere washing of dishes when conscientiously carried out is highly beneficial; and that thorough washing, even in cold or lukewarm water, followed by vigorous wiping, may entirely remove whatever organisms may be present, or reduce them to a quantity which, from a sanitary point of view, is negligible. This will be comforting to many of the present generation who suffer from what may be called microbiophobia. The practical outcome of MM. Christiani and Michelis's experiments is that for the washing of glasses and dishes, the nearer the boiling point is the water, the more satisfactory will be the result The addition of 2 per cent. of carbonate of soda makes the sterilization very much easier, even at a temperature so low as 122° F. We fear, however, that housewives will not find it easy to persuade servants to "wash up" with the care that is used in laboratory experiments. Moreover, the use of water near the boiling point would not improbably lead to a number of claims under the new Compensation Act. After, all, these teachings of science are counsels of perfection. In ordinary life, we have to take a good deal on trust, and sometimes the very prophets of science fail to practise what they preach. It is related—though, of course, we do not vouch for the truth of the story—that Pasteur, at a dinner party, held his audience entranced by describing the organisms that, "horsed on the sightless couriers of the air," or lying in ambush in water, food, clothing, and everything about us, constantly threaten our lives. While speaking, his hands were dabbling in the finger bowl, and, to the stupefaction of the company, he brought his discourse to an end by swallowing its contents!

COWSHEDS IN RURAL DISTRICTS.

Reports have recently been issued by three different medical inspectors of the Local Government Board relating to rural districts in Yorkshire, Lancashire, and Somerset. Remote as the districts are from one another, there is in all a singular lack of appreciation of the importance of cleanliness in the production of milk. Referring to the rural district of Helmsley, in the North Riding, Dr. S. W. Wheaton says that the condition of nearly all the cowsheds is extremely unsatisfactory. Some are mere hovels of rubble, with a little straw thrown over a few beams for a roof, almost wholly without light, ventilation, or drainage, and greatly overcrowded. No attempt was made to keep the cattle clean, or to cleanse the teats or the milkers' hands before milking. Frequently an accumulation of stinking filth, manurial or otherwise, was found placed beneath the only opening by which fresh air could enter the dairy. The medical officer of health had called the attention of the council to the condition of many of the cowsheds, but little had been done in the way of improvement. In the Limehurst rural district near Oldham Dr. J. Spencer Low found that although the council had adopted regulations under the Dairies, Cowsheds, and Milkshops Orders they were not enforced. There are over 100 dairy farms in the district, and the condition of most of the cowsheds visited by Dr. Low is described as very bad. At one, where fifty cows were kept, and from which milk was sent to Ashton-under-Lyne and to Oldham, the shippons, which were formerly cottages, were said to be dark, dirty, ill-drained, badly ventilated, and dilapidated. The walls were covered with cobwebs, and a place more unfit for cow-keeping and the production of milk could hardly be imagined. The same story is told in the report of Dr. Theodore Thomson upon the cowsheds in the Yeovil rural district. Their prevailing characteristic, he says, is dirt. Most of those which he saw were absolutely filthy, partly due to want of care on the part of the farmer and partly to defective construction which rendered effective cleansing difficult. It is to be feared that there are many cowsheds in other parts of the country which are no better than those described by the Board's inspectors. Fortunately the type of farmer who stoutly insists that where there is milk production there must be "muck" is gradually dying out, and a new generation of men is with us who have a knowledge of the causes of putrefaction, and who realize that it is to their interest to secure absolute cleanliness in the surroundings of their trade. During the past few years the Local Government Board has endeavoured to persuade local sanitary authorities, who have not already done so, to adopt regulations concerning dairies, cowsheds, and milkshops. Without such regulations the difficulties of inspection and insistence of cleanliness seem to be almost insuperable. The refusal to make any regulations is itself, moreover, an indication of apathy on the part of the sanitary authority. The time has surely arrived when every sanitary authority should be compelled not only to make regulations but to see that they are properly enforced. But the official who is responsible for their enforcement must not be, as is the case at present, dependent for his continuance in office upon the goodwill of the farmers and others who may object to comply with the requirements of the regulations.

The first meeting of the Medical Section of the Royal Society of Medicine will be held at 20, Hanover Square, on Tuesday, October 22nd, at 5.30. Dr. Hector Mackenzie will open a discussion on the complications and sequelae of pneumonia, and the possibilities of treatment by serum or vaccine. Drs. Bosanquet, Caley, Dalton, Eyre, Foulerton, Gossage, Hadley, Herringham, Latham, Pasteur, Batty Shaw, with others will take part, and statistics will be supplied from metropolitan hospitals.

During the meeting of the International Congress of Hygiene at Berlin, an International Society of Tropical Medicine was founded which it was resolved should hold a congress about every three years. Sir Patrick Manson was, on the proposition of Dr. Nocht of Hamburg, elected President by acclamation, and Professor G. H. F. Nuttall (3, Cranmer Road, Cambridge) Honorary Secretary-General and Treasurer. A Committee of Management was appointed, which will meet in London within the next year to make further arrangements.

Manchester and Salford.

MEDICAL MEN AND THE POLICE.

THE following letter has, on the instructions of the Council of the Lancashire and Cheshire Branch of the British Medical Association, been addressed to the Manchester newspapers by the Honorary Secretary of the Branch:

Sir,—It is with much regret that the Council of the Lancashire and Cheshire Branch of the British Medical Association, representing one thousand six hundred members of the medical profession in these counties, feels compelled to draw public attention to what it considers to be a most unjust and oppressive sequel to the prosecution by the police of Dr. Bagley. It will be within your recollection that Dr. Bagley was charged with obstructing and assaulting the police while in the execution of their duty.

It was proved in court that Dr. Bagley was attending an old man who had attempted to commit suicide by cutting his throat. The wound had just been stitched up, when the police officers entered the house, arrested the old man without a warrant, and insisted on removing him to the Ancoats Hospital. The family were quite willing and able to look after the old man and to afford the police every facility to guard him. The doctor was strongly of opinion that there was serious risk to the old man in removing him in the weak condition he was then in, and he and the sons resisted the police; but in spite of all this the police persisted, and did remove him. The magistrates decided that the police had no right to enter the house and remove the man without a warrant, and so they were "not in the execution of their duty" when they were resisted. The prosecution accordingly failed.

Full accounts of the case and correspondence thereon appeared in the Manchester papers in February, March, and April last. After the trial the Watch Committee were approached by Dr. Bagley with the request that his costs, which amounted to about £30, should be allowed him. The Watch Committee refused. They were then approached by the Branch Council of the British Medical Association, who also met with a decided refusal. Dr. Bagley has consequently had to pay heavily for obeying the ordinary behests of humanity and for his opposition to the inhuman and admittedly illegal action of the police. The BRITISH MEDICAL JOURNAL of June 29th last voiced the feeling of the medical profession that Dr. Bagley had been treated with gross injustice.

The Branch Council does not claim that whenever a charge by the police fails, the defendant's costs should be allowed; but in a case like this, where it is decided by the court that the police were acting *ultra vires* and illegally, we think it should be done, especially seeing that it is self-evident that the doctor was simply acting in the interests of his patient's life. It seems intolerable that in addition to the annoyance of being brought into court, he should be put to great expense in defending himself. The Branch Council does not wish it to be inferred that it accuses the police of malice. It does nothing of the sort. It seems to us that the case has arisen through a default on the part of the Watch Committee. We are of opinion that the Watch Committee, as well as being the director of the police, is rightly also one of the guardians of the rights of the citizens. As director of the police it has neglected to provide them with proper instructions as to the extent of their powers; while its guardianship of the citizens should scarcely allow it to compel a citizen to spend £30 in teaching the police what the Committee has neglected to do.

As the Watch Committee admits that the decision of the magistrates was good, for they have not appealed against it, and fresh instructions to the police have been tardily issued by the Chief Constable, it would seem that in simple justice they should pay the costs incurred. The Branch Council, on receiving the official reply of the Chairman of the Watch Committee refusing to pay Dr. Bagley's costs, passed the following resolution:

> That this meeting of the Council of the Lancashire and Cheshire Branch of the British Medical Association strongly disapproves of the answer of the Chairman of the Watch Committee of Manchester refusing to allow Dr. Bagley's costs, and considers that to repay the legal charges and expenses incurred by a citizen in defending himself against the illegal action of their servants is the very least that could be expected of an honourable public body.

—I am, Sir, on behalf of the Branch Council, your obedient servant, F. CHARLES LARKIN,

54, Rodney Street, Liverpool, Sept. 30th. Secretary.

PROPOSED MEMORIAL TO PROFESSOR DRESCHFELD.

Every one who knew the late Professor Dreschfeld will agree that the splendid work which he did as a physician, as a teacher of medicine, and as a man of science, calls for some permanent memorial, and there can be little doubt that the committee that has been formed for this purpose will meet with the heartiest support. It would be natural, of course, that any such memorial should be in some way associated with some object in which he himself took interest. But his interests were so widespread that the choice is difficult. His University was the *universitas generis humani*, and of no one could it be said more truly that he was *in omni recto studio et humanitate versatus*. He commenced as a student in Manchester and became Lecturer in Pathology, then Professor of Pathology at Owens College, and later Professor of Medicine in the Manchester University. At the same time he was physician at the Royal Infirmary and gave a great part of his time to his work there both for the patients and the students. In addition to these more public offices, he might be described as the ultimate referee in matters of medical diagnosis for all the practitioners of the district. Thus the scope of his work was by no means confined to any one department of the medical world. Some time ago he took especial interest in the scheme for the establishment of a medical hall where all the various medical societies might hold their meetings and gather together for social intercourse. He lent his rooms for preliminary meetings at which he himself presided and expressed his intention to support the scheme financially. The scheme, however, fell through for the time, and it has been suggested that a Dreschfeld Memorial Hall would be a suitable way of perpetuating his memory. Another suggestion has been to found one or several scholarships in medicine at the University and the Royal Infirmary. The Manchester University is particularly poor in this respect. At Oxford and Cambridge any student of average ability can almost support himself in his undergraduate days by scholarships, and perhaps of all the schemes put forward this would be most likely to receive the support of the public. A third idea is to made provision for endowing a "Dreschfeld Chair of Medicine" at the University. Perhaps this will appeal to the smallest number of outside subscribers, and to provide even so low a salary as £400 a year, for which one could hardly expect any first rate man to devote his whole time to the work, at least £10,000 would have to be raised and invested at 4 per cent. Whichever scheme is ultimately adopted, a certain amount ought to be first set aside to obtain a bust or portrait by some competent artist, to be placed in a suitable position in the University buildings. In any case it is hoped that a perfectly unanimous resolution will be obtained at the meeting to be held in the Council Chamber of the University on Wednesday, October 16th, at 4.30 p.m.

THE MIDWIVES ACT IN SALFORD.

It has been ascertained on reliable authority that the Health Committee of the Salford Corporation has finally decided not to pay any fees to medical men who are summoned to the assistance of midwives under the Midwives Act. It is difficult to understand what reasons have weighed with the committee in coming to this decision. When the deputation from several medical societies waited on the Health Committee some months ago, it had what seemed to be a most favourable reception, though, of course, the committee made no promises except to consider the question and to communicate its decision. Such communication has only been received this week, though it is definitely known that the committee made its decision a considerable time ago. As matters stand now, attendance on a suitable case in one part of a street which is in Manchester will be paid for by the Manchester Corporation, while a similar case next door, but in Salford will not be paid for. Several

members of the Health Committee professed great sympathy with medical men on the ground that they have to do so much public work for nothing. Medical men will now know how much value to place on such sympathy, and not until the Committee, recently appointed by the Divisions to watch the interests of medical men at municipal and other elections, gets to work, is there any chance of anything except similar empty sympathy. It will probably be said by the Health Committee that medical men ought to apply to the guardians for a fee in cases where the patient is too poor to pay. It is well known in Salford what that means—endless trouble for the doctor in laying his case before the guardians, and inquisitorial visits by Poor-law officers to the patient's home, inflicting the stigma of pauperism on women whom the supervising authority, not the guardians, has practically compelled to have a doctor, when often she would have been content with the midwife. It is not about paupers that the dispute arises, for they are sufficiently provided for already. It is the class just above the pauper class that is so nearly concerned, women just able by dint of the hardest struggling to get the barest living from day to day. This class, the Salford Health Committee says, must in future be treated as paupers.

West Yorkshire.

Royal Eye and Ear Hospital, Bradford.

At a special meeting of the governors of the above hospital held recently, a new departure was taken in appointing no less than twenty-eight ladies to act as a Ladies' Committee. It is thought that this committee will be of great service in creating increased public interest in the hospital and the Convalescent Fund connected with it, which is to be started shortly.

Meals for School Children in Bradford.

It is expected that the new arrangements under the Education (Provision of Meals) Act will come into operation in Bradford shortly. A specially-designed kitchen has been arranged, in which all the cooking will be done by steam. Some idea of the scale of the equipment may be gathered when it is said that three pans will be used, each of 100 gallons capacity. When the food has been cooked it will be sent out by motor car to dining halls at four centres in special wooden vessels covered with charcoal, so as to prevent any appreciable loss of heat. A special dietary scale has been prepared by the medical superintendent of schools (Dr. Ralph H. Crowley) and the superintendent of domestic subjects. For the five days of the school week there are two meat dinners, one of fish, and two of vegetarian dishes. The constituents, however, are so varied that the same dinner need not be given more than once in three weeks.

North Bierley Union and its Vaccinators.

No less than thirty public vaccinators connected with this union have been required to acquiesce in new arrangements in regard to their remuneration. The Special Committee of the guardians adopted the following resolutions:

(1) That the Committee cannot recommend the guardians to pay any public vaccinator in the union any additional sum for any vaccination performed by him beyond a 3 miles radius from his residence or surgery. (2) That the guardians should not pay anything for postage incurred by the public vaccinator. (3) That where during a period of twenty-four consecutive hours successful vaccination or revaccination has been performed upon two or more persons, and at one and the same time, on any premises (other than the surgery of the public vaccinator) whereon those persons were together present at any time during the aforesaid period, the public vaccinator shall be paid the sum of 3s. 6d. for the first person and 2s. 6d. each in respect of the second or further number of such persons.

Only one public vaccinator appears to have declined to fall in with the Committee's suggestion.

Norwich.

Norwich Medico-Chirurgical Society.

The first winter meeting of the Norwich Medico-Chirurgical Society took place last week, and was followed by a dinner, at which Dr. Cooper Pattin, M.O.H., presided over a large assembly. Among those present were Mr. Rider Haggard and Mr. G. H. Roberts, M.P., both of whom responded to the toast of "The Guests." The former, in searching for an explanation as to why he should have been invited to address an assembly of medical men, reminded himself and his audience that he had once written a medical book, about which he made the following remarks:

> I don't suppose any of you have read it or are likely to. Its subject was vaccination, and it treated that small but important operation from the romantic point of view. I am proud of that book, for it was instrumental in converting a confirmed antivaccinationist to ways of wisdom, and so enthusiastically did he accept the proof of the error of his former way that not only he, but all his family, were vaccinated. He wrote to me directly after, and I can scarcely now describe to you the terror in which I lived during the next few weeks for fear of learning that some dire calamity had overwhelmed him and his family as a direct result of his conversion.

Mr. Haggard also alluded to the pleasure he took in exploring mediaeval records; and, speaking of witchcraft and the brutalities to which belief in its possibility led, he remarked, "As we read of these, we are inclined to say, Thank God we are better than they;" but, he continued, Was this really so? Had the world really advanced in respect of freedom from superstition? and replied:

> It is difficult to answer that question in the affirmative. When we see that greatly-increasing cult called "Christian Science," which forces into its service the name of Him who was known as the Beloved Physician, when we constantly see inquests held on the bodies of children whose parents have allowed them to perish without the benefit of skilled help, because of their superstitious belief in faith healing, can we claim that the human intellect has advanced to any great extent since the days of witch burning?

Mr. Roberts, in his speech, called for the creation of closer relations between medical men and politicians. Both, he claimed, were striving toward corresponding ends, and much more might be done towards the abolition of conditions evilly affecting the individual and the community if they united forces. A toast to the outgoing President was proposed by Dr. Burton-Fanning, and neatly acknowledged by Dr. Muir Evans.

Bristol.

Medical Appointments at the Bristol Royal Infirmary.

A special meeting of the Bath and Bristol Branch of the British Medical Association, which all medical practitioners in the district were invited to attend, was held on Monday last to consider and discuss the rules passed on September 24th by the governors of the Bristol Royal Infirmary forbidding a member of the staff to hold any other professional public appointment than professorships or lectureships. About 150 medical men were present at the meeting, and two votes were taken on each resolution: first of members, and secondly of non-members. The following resolutions were adopted *nem. con.*

1. That this meeting of the Bath and Bristol Branch of the British Medical Association, having considered the rule passed by the governors of the Bristol Royal Infirmary on September 24th, 1907, regulating the holding of other public professional appointments by the members of the honorary staff, hereby expresses its conviction that this rule, if confirmed, would be inimical to the interests of the sick poor and derogatory to the honorary medical and surgical staff of that institution and to the profession at large.
2. That this meeting advises the honorary staff to take the strongest possible measures in resisting this, or any rule which in effect embodies the substance of this rule.

Scotland.

Complimentary Dinner to Dr. Alexander Macphail.

A large number of friends entertained Dr. Alexander MacPhail at the Grosvenor Restaurant, Glasgow, on October 4th. The occasion of the dinner was the departure of Dr. Macphail from St. Mungo's Medical College to take up the post of Lecturer in Anatomy at Charing Cross Hospital Medical School. Professor Cleland presided over a large gathering of laymen and medical friends, while

Dr. J. F. Gemmell and Mr. R. L. Bremner acted as croupiers. The toast of the evening was proposed by Dr. Gemmell, who congratulated Dr. Macphail on his appointment, and expressed the best wishes of all present for his success and happiness in his new sphere. He recalled how, as a student, Dr. Macphail had ever been a leader in all forms of student life. His popularity had followed him in his career, first as Senior Demonstrator of Anatomy in Glasgow University, and later as Professor of Anatomy at St. Mungo's Medical College. His all-round qualities had gained him many friends in other fields outside his profession. He referred to his musical talents, his literary tastes, his keenness as a volunteer, and his prowess as a golfer. The toast was enthusiastically received, and afterwards Sir John Ure Primrose, in an eloquent speech, asked Dr. Macphail to accept as a token of their goodwill a chronometer watch, a dissecting microscope, and a large number of books. In replying, Dr. Macphail said that in that gathering of friends were represented all the influences to which he owed what he had become and all that he might ever hope to be. Leaving Glasgow meant for him leaving the home which had sustained and sheltered him, and the city whose warm-heartedness, whose friendships and comradeships, had made him what he was—a man. Glasgow had ever been kind to her children and peculiarly encouraging to every spark of effort they might show.

Ireland.

HEALTH OF BELFAST.

AT the last meeting of the City Council, on October 1st, Dr. Bailie, M.S.O.H., reported that the death-rate for the last month had been 15.1, the lowest on record; the death-rates from both zymotic diseases and from diseases of the respiratory organs were considerably lower than the average for this time of the year. The Market Committee is considering plans for a new public abattoir; the committee are against enlarging the present building, as it would be expensive to work and not satisfactory. The cost of the proposed new structure is estimated at £30,000.

PUBLIC LECTURE BY PROFESSOR SYMMERS.

Dr. Symmers, Musgrave Professor of Pathology, gave a lecture on Bacteria in the large hall of the New Technical Institute, Belfast, on Saturday evening, October 5th. There was a large and most interested audience, who followed the graphic outline of the science of bacteriology, and the light thrown upon many of the problems of the tropics and of hygiene at home that had to be faced by Englishmen. A very hearty vote of thanks was proposed by Dr. Calwell, seconded by Councillor Mercier, and passed by acclamation.

PROPOSED TUBERCULOSIS EXHIBITION IN BELFAST.

A meeting to make preliminary arrangements for the proposed Tuberculosis Exhibition in Belfast was held in the Lord Mayor's parlour, City Hall. The Lord Mayor (Lord Shaftesbury) presided, and Lady Shaftesbury was also present, and promised to be President of the exhibition.

The Lord Mayor called upon Sir John Byers, who explained that it was proposed to invite the Tuberculosis Exhibition in Dublin to come to Belfast. Such exhibitions had been held in Germany, the United States, and Canada, and had had a valuable educative effect. That very shortly to be opened in Dublin was organized by the branch of the Women's National Health Association in Ireland which had been lately inaugurated by Lady Aberdeen, and a branch of which was to be opened in Belfast on October 29th, so that the proposed Tuberculosis Exhibition would be a Committee of the Health Association. The exhibition would have a statistical, a food, a pathological, and a veterinary section, and there would also be a section showing models and illustrations of sanatoriums, and other means of treatment. A resolution approving of the proposal was carried, and a large Committee appointed to take charge of the matter. Dr. T. Houston and Dr. MacIlwaine were appointed honorary secretaries.

QUEEN'S COLLEGE, CORK.

The retirement of Professor J. J. Charles from the Chair of Anatomy and Physiology at Queen's College, Cork, has caused the Government to avail itself of the opportunity of dividing the chair. The Chair of Anatomy will in future be occupied by the President of the College, Dr. B. C. A. Windle, who was Professor of Anatomy in Birmingham for more than twenty years and down to the time when he left that city to take up his abode in Cork. Dr. Windle has been Examiner in Anatomy in the Universities of Cambridge, Glasgow, Aberdeen, and Durham, and also to the Royal College of Physicians in London, and is at present Examiner in that subject in the Royal College of Surgeons in Ireland. Dr. Windle will have the assistance of Dr. D. P. Fitzgerald, who has for some years been Demonstrator under Dr. Charles, and in that capacity has gained the confidence and respect of the students who have worked under him. Dr. David Barry has been appointed to the Chair of Physiology. He is an old Cork student, and has studied physiology in London and Liverpool, as well as in Berlin, and during the past year has acted as Demonstrator in that subject in Queen's College, Cork. He is a M.D. of the Royal University, is a Fellow of the Royal College of Surgeons in England, as well as D.P.H. of Liverpool University. Dr. Charles occupied the dual chair with great acceptance since the foundation of Queen's College, and his name will long be remembered by his old students in the various parts of the world in which they are settled for the conscientious and able manner in which he fulfilled the duties of the Professorship.

Wales.

THE HEALTH OF GLAMORGAN.

DR. W. WILLIAMS, the County Medical Officer of Health (Glamorgan Council) in his annual report for 1906 states that the number of births registered during the year was 23,735, giving a birth-rate of 34.42 per mille, which is greatly in excess of that for England and Wales (27). The deaths numbered 10,646, giving a death-rate of 15.4, equal to that of England and Wales. The average annual excess of births over deaths during the fourteen years (1893-1906) was 10,851. The average infant death-rate was 151, the higher urban rates being Aberdare (209), Merthyr Tydfil (179), Rhondda (174), Mountain Ash (170). In Cowbridge Borough it was *nil*, and at Oystermouth, Gower, and Porthcawl extremely low. Among the important causes of infantile mortality are mentioned:

(*a*) Early marriages.
(*b*) Improper feeding, unsuitable clothing, and inadequate care of the infant, the last-named being due to ignorance rather than lack of care.
(*c*) Antenatal conditions affecting the unborn child through the mother, for example, alcoholism, syphilis, and employment of the mothers outside the home, etc.
(*d*) Want of skilled assistance during and after labour.
(*e*) Indifference on the part of parents to the dangers of measles, whooping-cough, diarrhoea, etc.

Diarrhoea, debility and marasmus, convulsions, bronchitis, and pneumonia contributed most to the mortality, and among the remedial measures recommended are: Instructions in the laws of health, the education of the expectant mother, special attention to the cleansing of streets, the better protection of children born out of wedlock and farmed out, the registration of stillbirths, the removal of infants from undesirable parents, and the provision of skilled assistance at birth. It is stated that 402 deaths occurred from cancer and malignant diseases. There were notified small-pox 2 cases, scarlet fever 2,081, diphtheria and membranous croup 1,082, enteric fever 526, continued fever 4 cases, relapsing fever 1 case, puerperal fever 68 cases, and erysipelas 508 cases, making a total of 4,272 cases. Of these, 364, or 8.5 per cent., proved fatal. As regards isolation hospitals, it is stated that when the County Council began (in 1895) to enforce the provisions of the Isolation Hospitals Act, 1893, there were only ten hospitals (mostly temporary buildings) within the administrative county; since then fourteen hospitals have been built, two are in course of erection, and three others are in contemplation. As regards the sanitary control of schools, the medical officer remarks that as the result of the administration of the Education Acts by the County Education Committee, considerable improvements have been effected in the sanitary condition of many of the elementary schools. Much necessary work still remains to be done, not only in regard to school sanitation, but in

dealing with such subjects as (1) the medical inspection of scholars, (2) the training of mentally and physically defective children, (3) the efficient disinfection of schools, (4) the examination of teachers as to their health and bodily strength, and (5) the training of school teachers in the laws of health. As a public precaution, school closure in the case of measles, if delayed until the attendance is materially affected, is of little good. A Subcommittee was appointed to consider the report, and instructed to submit its observations upon it at a future meeting.

Cray Waterworks.

The extensive waterworks undertaking of the Swansea Corporation at Cray was formally inaugurated on October 2nd. After experiences, many of which were more or less unfortunate, with sources of supply, which can now only be regarded as subsidiary or reserve sources, the Town Council at last sought a site for a reservoir with a practically inexhaustible gathering ground. Tests were made, and it was found that so great was the rainfall on the Cray side of the Bwlch Mountain that in one period of forty-eight hours sufficient water ran over the gauges to fill the whole enormous capacity of the prospective reservoir. The reasons which decided the selection of the River Cray as the best available source of supply were (1) the heavy rainfall; (2) the great elevation; (3) the fact that the site was devoted to mountain pasture, with only two small shepherd's cottages: (4) the good facilities for the construction of works. The watershed consists of 2,640 acres of excellent gathering ground in the wettest portion of South Wales. Parliamentary powers were obtained as long ago as 1892, but in passing through Committee clauses were inserted by which any water authority, any part of whose district was within one mile of the main pipe line, might demand and obtain a supply, leaving a prior right to Swansea of 25 gallons a head. The authorities indicated include the whole of the population of the Swansea Valley and the Swansea district, numbering at the present time about 60,000 people. These populations are situate on the coal measures, and their local authorities are feeling the effect of the coal workings which will in time destroy their springs; therefore, the demands on the Cray are likely to be much more extensive than was originally contemplated. The storage reservoir is 100 acres in extent, 1¼ miles long, ¼ mile wide, and contains 1,000,000,000 gallons of water. The top water is 1,000 ft. above sea level, the impounding dam is 1 250 ft. long and 144 ft. deep from the foundations to the top bank level. The depth from the overflow level to the surface of the rock at the old river course is 100 ft., and the rock excavations at the centre are 37 ft. deep. The overflow water from the reservoir passes over a granite weir crest 200 ft. long and down the back of the dam. This unusual length is provided to meet the violent floods which occur in the valley due to the steepness of the surrounding hills, the watertightness of the ground, and the very heavy rainfall. Compensation water to the extent of 1½ million gallons a day is discharged through the 3 ft. pipes into the River Cray for the riparian owners and fishing interests on the Rivers Cray and Usk. The Cray Reservoir not being in the natural drainage area of Swansea it was necessary to devise a tunnel, commencing at the bottom of the reservoir and terminating in the watershed of the River Tawe, which passes down to Swansea. This tunnel is about three miles long, and is 5 ft. high and 3½ ft. wide. The water emerges in a gauge basin where screens are provided, after passing through which the water enters the mains to Swansea. At the present time one main has been laid complete; it discharges 2,500,000 gallons a day into a service reservoir at Townhill, 580 ft. above sea level, immediately overlooking the town of Swansea. This main is 23½ miles long. A second line of pipes is now in contemplation which will deliver to a height of 350 ft. above ordnance datum into a service reservoir yet to be constructed. An idea of the rainfall in the Cray watershed may be gained from the fact that from 1899 to 1900 rain fell on 171 days, and in 1903 it rained on 223 days. The greatest rainfall is on the saddle of the Bwlch, where it has been registered at 112·91 in., against 40 in. at Swansea and 30 in. at Hereford. The greatest rainfall at Bwlch on a day was 6.67 in. on January 26th, 1903. The works were designed by Mr. R. H. Wyrill, the Borough Engineer, and the cost up to date is £548,483.

SPECIAL CORRESPONDENCE.

PARIS.

Contagious Disease in Communal Schools.—French Congress of Medicine.—Proposed Presentation to Professor J. Lucas-Championnière.—Dr. Paul Bar appointed Professor of Obstetrics.—The Annual Meeting and Dinner of the Continental Anglo-American Medical Society.

M. Aristide Briand, the Minister of Public Instruction, has recently addressed to the prefects a circular concerning the precautions to be taken in the public primary schools against certain contagious diseases. In the first place the Minister declares that, desiring to put an end to a state of uncertainty which can only cause anxiety in families, he has decided, in accordance with the resolution adopted by the Conseil d'Hygiène et de Salubrité of the Department of the Seine, to remove alopecia from the official list of contagious diseases. The following are the measures now prescribed when the undermentioned diseases occur in schools:

Small-pox.—Children affected must not return to school for forty days. Their books and copybooks must be destroyed. General disinfection in the school. Revaccination of all masters and pupils.

Scarlet Fever.—Children affected must not return to school for forty days. Destruction of books and copybooks. General disinfection of the school. Closing of the school if several cases occur within a few days in spite of all precautions being taken.

Measles.—Children affected must not return to school for sixteen days. Destruction of books and copybooks. If necessary, children under 6 years of age shall be forbidden to attend the school.

Chicken pox.—Removal of cases as they occur.

Mumps.—Children affected must not return for ten days.

Diphtheria.—Children affected must not return to school for forty days. Destruction of all books, copybooks, and toys which may have been contaminated. Successive general disinfection of the school after each new case.

Whooping-cough.—Children affected must not return for three weeks.

Ringworm.—Removal of cases as they occur. Return only allowed after treatment and with methodical dressing.

The French Congress of Medicine will meet in Paris on October 14th, 15th, and 16th, under the presidency of Professor Debove, in the Faculty of Medicine. The following subjects are selected for reports: Treatment of simple ulcer of the stomach, MM. Linossier and Castaigne; pathogeny and treatment of exophthalmic goître, MM. Gilbert Ballet, Derthem, and Sainton; haemophilia, MM. Carrière and Marcel Labbé.

The pupils and friends of Professor J. Lucas-Championnière have decided to offer him a plaquette portrait to celebrate his promotion to the grade of Commander of the Légion d'Honneur. Lord Lister is the Président d'Honneur, and Professor Guyon the President of the Committee. The execution of the plaquette has been confided to Dr. Paul Richer. Subscriptions may be sent to M. G. Steinheil, Editeur, 2, rue Casimir-Delavigne, Paris. All subscribers of 25 francs will receive a bronze copy of the plaquette.

Dr. Paul Bar has been appointed professor of obstetrics in the Faculty of Medicine in Paris, as successor to the late Professor Budin. Professor Bar was born in Paris in 1853. He became interne in the Paris hospitals in 1876, and spent his fourth year in the wards of Professor Tarnier, whose collaborator he eventually became. He took the degree of M.D. in 1881, receiving a silver medal for his thesis on the pathogeny of hydramnios. He became accoucheur des hôpitaux in 1883, and was appointed professeur-agrégé in 1887. Since 1897 he has been head of the Maternity in the St. Antoine Hospital. Professor Bar was one of the founders of the Société d'Obstetrique de Paris, of which he was for seven years secretary. He collaborated with Tarnier and Budin in bringing out the *Traité de l'art des accouchements.*

The annual meeting of the Continental Anglo-American Medical Society will be held in Paris on Friday, October 18th, at 4.30, at the residence of the Honorary Secretary, 1, rue d'Aguesseau. The annual dinner will be held the same evening at 7.45 p.m. at the Hôtel du Palais d'Orsay, when the chair will be taken by Mr. Frank H. Mason, United States Consul-General in Paris.

VIENNA.

Small-pox.—New Lunatic Asylum.

THE small-pox epidemic, of which mention has already been made, may now be regarded as at an end, since three days have passed without a fresh case being reported. Only 140 genuine cases in all were notified, whilst a few persons were brought to the hospital supposed to be suffering from variola, a diagnosis which proved to be erroneous. The epidemic, small as it was, brought home to the public mind the fact that vaccination is a real protection against the disease. It may be stated, without fear of contradiction, that now at least 85 per cent. of the entire population of Vienna is either vaccinated or revaccinated, and the remainder will be vaccinated within the next two weeks. As regards the clinical aspect of the outbreak the majority of the cases belonged to a mild type, with a mortality of 12 per cent. More than 60 per cent. of the patients were under 25 years of age. The actual proportion of the vaccinated to the unvaccinated patients has not yet been definitely made out, but the deaths occurred only in unvaccinated persons. The cause of the fatal issue was mostly sepsis. Here lymph is generally kept on ice for four months and then sold to the profession and the public. The supply of such lymph was soon exhausted, and then the vaccinators had to resort to lymph imported from Switzerland, Germany, or Hungary, or to use immature lymph which had not been kept for sixteen weeks in the refrigerating chamber. The reaction after the use of this lymph was mostly severe, with pyrexia, erythematous rashes, or erysipeloid inflammation of the vaccinated arm. Haemorrhagic pustules appeared in about 10 per cent. of all cases, mostly in persons vaccinated for the first time, or in such as had been vaccinated twenty to twenty-five years ago. As 20,000 to 25,000 persons were vaccinated daily in the public vaccinating stations, within one month more than 1,000,000 vaccinations were performed without any accident or untoward after-effect. The best plan as regards dressing was found to be to let the wound alone after drying, or to cover the slight excoriation with a piece of sterile gauze fastened by means of two pieces of adhesive plaster to the skin. This ensured a perfect development of the pustule and gave the best results as regards involution.

A new asylum for mental diseases was opened in Vienna a few days ago. It consists of thirteen pavilions for 870 poor patients, eleven pavilions for 888 paying patients, and a colony of twenty houses for 250 patients suitable for outdoor-occupation treatment. Attached to it is a sanatorium for 350 mentally afflicted persons of dangerous type, so that 2,400 patients can be accommodated; but if necessary room for 800 more patients can easily be provided. The grounds cover an area of more than 1¼ millions of square metres, of which only 55,000 are occupied by the buildings. The cost of the site was £200,000. The means of communication between the pavilions, which are distant from each other at least 100 metres, is supplied by an electric tramway. The kitchen is a large hall, with twenty cooking stoves, each capable of cooking the food for 150 persons. All cooking is done by gas. The wards are all large lofty rooms, with high windows out of reach of the patients. Ventilation and illumination in the wards allotted to noisy patients are supplied by skylights. A theatre, a concert hall, a library, and a church are provided. Special attention has been paid to the occupation-treatment, and for this purpose numerous small laboratories and workshops have been erected. There carpenters, bookbinders, tailors, shoemakers, and agrarian labourers may be seen at work, while gardening is encouraged as much as possible. The walls of the parks are low, as they are not intended to prevent the escape of patients, but to protect the inmates from the curiosity of the outside world.

A MEDICAL DEPARTMENT has recently been opened in the University of Manila. It is proposed to devote special attention to tropical medicine.

THE meeting of German Scientists and Medical Practitioners recently held in Dresden was attended by some 2,000 members. It was decided that the meeting should be held next year at Cologne, under the presidency of Professor Wettstein von Westerheim, of Vienna. Professor Rubner, of Berlin, and Dr. Wien, of Würzburg, were elected to be his deputies.

CORRESPONDENCE.

THE TRAINING OF SCHOOL TEACHERS IN HYGIENE.

SIR,—Since the publication of my letter in the BRITISH MEDICAL JOURNAL of September 28th (p. 849), I have received inquiries with regard to the arrangements which should be made for teaching hygiene in training colleges. In reply, may I, in the first place, recall that the resolution which was passed unanimously at my instance by the recent International Congress of School Hygiene in London was—

> That practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades.

My hope is that this resolution, which so nearly concerns the interests of the medical profession, may be endorsed by the Divisions of the British Medical Association.

In the next place, in order to show the present attitude of the Board of Education to the question, I will quote the following paragraphs from the Prefatory Memorandum in the *Regulations for the Training of Teachers and for the Examination of Students in Training Colleges*, 1907 (dated July):

> The Board have under careful consideration the need for requiring the special instruction of all students, in whatever type of college, in the principles of hygiene, so that they may be able to deal profitably with this most important subject in the schools.
>
> The Board are well aware that the mere addition of this subject to the list of those which are part of the student's compulsory course would increase a burden already serious, but they hope that the considerable diminution of academical work made possible by the shortened courses in English and in history and geography set forth for the first time in the regulations of this year may provide some room, as a temporary expedient, for the more adequate treatment of hygiene, by making it a part of the ordinary course in science. It is intended that further steps shall be taken in the same direction as soon as possible, with a view of securing for hygiene its proper place in the education and training of all persons intending to become teachers in public elementary schools.
>
> The Board would have preferred, if it had been possible, to place hygiene at once in its proper position, by making it compulsory on all students, at least to the extent of the ground covered by the syllabus in the present regulations for its study as an optional subject. But for the reasons given above, they are not prepared to go further at present than to recommend that in the drawing up of schemes of work careful consideration should be given to the paramount claims of this subject.

It should, perhaps, be explained that a candidate may obtain a certificate as a public elementary school teacher in several different ways, and may do so without attending a Training College. Even at a college there may be several different classes of students; the majority, however, are two-year students, and the two years' curriculum may be taken as the normal or typical course. The subjects of study are ordinary (or compulsory) and optional. Among the ordinary subjects is elementary science, which for the first time this year has been made to include hygiene. There is, however, no regular examination in this subject, the candidates' fitness to be passed being ascertained by the inspector from an inspection of the students' notebooks, from experiments made in his presence, and from the replies to any oral questions he may see fit to put. The inspector, however, has the right, if he considers it necessary, to set a short paper. No scheme or syllabus for elementary science is drawn up by the Board, but each college submits its own scheme for the approval of the Board. Students take up optional subjects in order to win additional marks at the final examination. The syllabus for hygiene as an optional subject is, roughly, divided into two parts—(1) elementary physiology, with practical work; (2) hygiene.

This is the maximum amount of instruction which a candidate preparing for a teacher's certificate in England and Wales receives, and will only receive that much if he or she chooses hygiene as an optional subject.

In the case of candidates who take university courses the position, strangely enough, is worse, and the prefatory memorandum states that though "it is impossible at present to impose on them the instruction in hygiene which should form an essential part of the equipment of

a teacher, and more especially for service in a public elementary school," this omission is "indefensible."

Scotland is in advance of England in this matter. The curriculum of students training to be teachers includes seventy hours of practical and theoretical instruction in personal and school hygiene. The course includes the personal hygiene of children as well as the hygiene of the schoolroom; instruction is also given by practical observation of children, who are examined by students while at work in the schools.

Hitherto, when the Board of Education has been approached by deputations asking that hygiene should be taught to children in elementary schools, the reply has invariably been, "Where are your teachers?" This answer points to the crux of the whole matter. The hint has not been taken, and the Board of Education has at last shown, by the above-quoted passages from the recently-issued *Regulations*, its desire that hygiene should become a compulsory subject in the curricula of all training colleges. The psychological moment seems to have arrived. Scotland has given a lead, and the Board is not only willing but anxious to listen. Medical inspection of elementary schools is already law, and will be put into force on January 1st. What will happen? The doctors will have to tackle an impossible piece of work; instead of receiving intelligent co-operation from the teachers, they will find themselves confronted by a mass of work which, owing to the size of the schools and the masses of unhealthy children in them, it will be impossible for them conscientiously to undertake alone.

The section in the Act of this year requiring the medical inspection of elementary school children is premature, and a bad system is likely to take root in this country unless teachers are equipped without further delay to assist the doctors in working out this great problem.

On the part of the students and teachers themselves no difficulty will be encountered. It is almost pathetic to see how teachers put on their time tables a short course of elementary hygiene, always in fear and trembling that some of the less enlightened inspectors may object. They have discovered for themselves the effect that even a slight knowledge of personal hygiene has upon the children. Schemes for instruction in hygiene are drawn out by individual teachers in some of the training colleges, and the subject is generally taught by lecturers armed with a certificate in hygiene from the Sanitary Institute or elsewhere. But there is no systematized teaching by competent people, and I submit that the proper persons to teach this subject in the Training Colleges, and Pupil Teachers' Centre are fully-qualified doctors, men or women as the case may be. The London County Council, when selecting teachers for posts in its schools, gives the preference to those who have taken a certificate in hygiene. Teachers are thus beginning to realize that they had better qualify in this subject, and some of them take a Science and Art Department course, or a course at the Sanitary Institute. This cannot be satisfactory, for they are already hard pressed with work, and are all learning under different systems. England has made herself a reputation by always doing things in their wrong order. It is not too late to guard against this last illogical measure of making the medical inspection of school children compulsory by law before creating teachers to undertake the new duty, thrust upon them, of singling out the sick, the maimed, and the blind for the doctor's inspection; it seems only logical that the doctors, while there is still time, should support a resolution which concerns them so intimately.—I am, etc.,

October 7th. AIMÉE WATT SMYTH.

SIR,—There can be no doubt in the minds of those who have given any thought to the problem of the best means to be adopted for spreading a knowledge of the principles of hygiene amongst the masses of the people, and ensuring their practice in daily life, that this is to be found in the teaching of the subject in our primary and secondary schools. Other measures may usefully serve to awaken the public to a sense of the importance of the question, and may indicate general means by which gross violations of the laws of health may be avoided. But such measures can only reach or appeal to a small section of the adult population. The remainder, and particularly the youth of the nation, are left to continue as indifferent to the observance of the laws of health as their fathers and mothers for generations before them. The matter is, as you state in your article of September 28th, "one upon which the opinion of the medical profession should be definitely and firmly expressed at an early date."

The great difficulty which the problem entails has been recognized on every hand. It consists in the provision of competent teachers of hygiene for the schools, or rather in securing the adequate training of a sufficient proportion of the existing teachers; so that they in turn may impart a knowledge of the subject to their pupils. The work cannot be done by supplying special instructors for the subject of hygiene whose time could hardly find full occupation. It is rather to be achieved by making use of part of the material at hand and converting it to the purpose in view.

Time has consequently to be found, and the expenses met, of providing proper courses of training for these teachers in the subject of hygiene. Such courses must be practical, and based on experimental work all through. Mere didactic teaching will never sufficiently inculcate the principles to be followed. Moreover, such teaching could never equip the teacher in a way that would enable him to awaken the interest and secure the attention of his pupils.

There are two ways, however, by which the difficulties of finding time for the training of teachers might be met. One of these has been applied with satisfaction in Ireland so far as the problem deals with secondary school teachers, by the Department of Agriculture and Technical Instruction. The scheme has been in operation as regards the subject of *Physiology and Hygiene* for the past five years, and as regards other subjects in experimental science for a longer period.

Short summer courses extending over the working days of almost four weeks are given at different centres to which teachers are drafted. Experimental work along the lines of a syllabus carefully drawn up for each subject is gone through for five hours of the day. The teachers record their experiments in full before the next day's work is taken in hand, and these notes are subsequently read over by the "Professor in Charge" who corrects and supplements where he finds necessary. At the end of the period examinations are held, both practical and written, to ascertain how far the teachers have profited by the courses. It is not claimed that the method is faultless, but no one who has not had experience of its working could believe what excellent results have been achieved by it. The teacher at the end of the course has gone over a wide field of experimental work. The hundred hours devoted to it are utilized to the full, so that "every moment tells." The theoretical principles and bearing of this experimental work are also explained, and in the end the teacher has in his possession an accurate record well illustrated by diagrams of both the theoretical and experimental sides of his subject. It would be too much to suppose that the whole of the mental food thus supplied in compressed form has been sufficiently digested in the time. But it should be remembered that we are dealing with trained minds already selected for teaching ability and eager to grasp the subject in hand. Further, these teachers are employed in imparting their knowledge to pupils during nine months of the following year. In this time they are able to take asunder piecemeal the material acquired, re-examine it, test it, and supplement it in a way that trained teachers know best how to do, so as to present it in an assimilable form to younger minds.

Nor is the training of the teacher limited to one summer. Similar courses are gone through the next year and the next before a final certificate of competence in the subject is given.

From an experience of five years of this system in the subject of *Physiology and Hygiene* I can speak most highly of it. The time allocated is amply sufficient to give teachers a thorough training, and the enthusiasm with which they devote themselves to the subject is beyond all praise. Further—and this is a matter that cannot be too much insisted upon—the subject can be treated experimentally from beginning to end in a way that the trained teacher knows will enlist the sympathies of his pupil. "Teacher, do let us make experiments to-day," is a request that I am told is often made.

Equally good results can, however, be attained, I

believe, in another way, particularly in large centres of population where considerable numbers of teachers are within easy reach of laboratories. This consists in providing on Saturdays for twenty-five weeks in the year—say from October to March—four hours' practical instruction each week for teachers who are in a position to take advantage of it. This plan in a simpler form has been applied for a year or two past in Cambridge with good results by Professor Sims Woodhead. The method has its limitations: it cannot very well be adopted in other than large or fairly large towns, but there is no reason why the two systems might not be made to supplement each other.

For permanent success in any scheme something more, however, has to be done than straightway to embark in courses of instruction in hygiene to all and sundry of the teachers who apply for it. Nothing is more firmly impressed on me than the inevitable necessity of insisting that such teachers shall have gone through preliminary courses of physics and chemistry conducted on the same experimental lines. Nobody recognizes this better than intelligent teachers themselves who have encountered the difficulties of attempting to grasp the principles of hygiene without having had the advantage of such preliminary courses. In the early years of work under the Department of Agriculture this was possible; it is now no longer allowed. But it happened in the present year that one such teacher attended a third year's course of physiology and hygiene, of which I had charge during the month of July. This teacher had not previously been in any of my classes. Speaking one day of the difficulties of that first year, before any knowledge of chemistry had been acquired, I was much impressed by a remark dropped upon the subject. "I did not even know what oxygen was," said the teacher, "and many a time during that first course I thought, 'Oh, if I could only handle oxygen.'"

There are also other requirements for success no less necessary than the preliminary training in experimental science. The teaching of hygiene must be based upon and go hand-in-hand with instruction in the mode of working of the organs of the human body in health. Physiology and hygiene must be linked together to achieve the best results, while physiology, in its turn, must be based on some sound knowledge of the structure of the body. These points have been recognized in the excellent syllabus adopted by the Department of Agriculture and Technical Instruction in Ireland.

As regards the amount of time to be allocated to the teaching of the subject in the schools, there are certain to be differences of opinion. The standard of one hundred hours in the year is a very useful one to aim at, and if secured will provide room for a satisfactory course each year.

It is not likely that the teaching of physiology and hygiene in girls' schools would be overlooked. But I do not know that it is recognized to be even more important for the subject to be taught to girls than to boys. In daily life the wives and mothers have more to do with the health of the household than have the husbands and fathers. If the wives and mothers of the next generation possess sound ideas on the subjects of personal and household hygiene, it may be safely relied upon that these ideas will be imparted to the boys as well as the girls of the succeeding generation.

Nor can the work cease after the schools have been provided with competent teachers in the subject. For many years its teaching must be supervised and encouraged by careful and sympathetic inspection. The laboratories and appliances must be kept up to date, and opportunities afforded to qualified teachers periodically to attend what may be termed post-graduate courses of instruction.

It will, I am sure, be generally conceded that nothing could better repay the nation than the setting of its house in order in this matter. Towards this end it is, as your article well expresses it, "very important that the teaching of hygiene in training colleges should be put from the first on the right lines."—I am, etc.,

W. H. THOMPSON, M.D., Sc.D., F.R.C.S.Eng., M.R.C.P.I.,
King's Professor of Physiology, Trinity College, Dublin.

September 29th.

THE REFERENDUM.

SIR,—The Representative Meeting considers the present Referendum has not been taken on constitutional grounds. As a member of the Council, speaking for myself alone, may I offer a few words of explanation? Our present Draft Regulations were brought forward at a general meeting at Exeter Hall on June 28th, 1902, there being present less than 150 members out of a total membership of nearly 19,000. At that meeting both the mover and seconder of the resolution in favour of their adoption urged those present to accept the resolution in order that we might test them. Accept these resolutions, they implored, in order that we may see how they work out. Eventually the new scheme was accepted by a very narrow margin. Had four gentlemen present voted differently, government by Divisions would not have been heard of now.

What has been the test of time? I submit that we are not in a position to form an accurate judgement, inasmuch as the Council has deprived us of our only chance of forming such a judgement. The Council has refused to allow its members to know how the Divisional Meetings have been attended; we are not allowed to publish in the JOURNAL the numbers present and voting at our Divisional Meetings.

If we knew that the Divisional Meetings had been a success, that they had been well attended in all parts of the country, that their Representatives really voiced the views of the majority of the medical men living in their districts, then indeed a heavy responsibility would fall on the shoulders of men who demanded a Referendum on questions which had already been settled by the Divisions.

On the other hand, when we have been told over and over again in the JOURNAL that in many parts of the country the meetings of Divisions are very poorly attended, and that in many cases Representatives are elected by so small a number of members that it is impossible for them to know the views of the bulk of the members in their Division, and when we know this description to be true so far as our own Divisions are concerned, we have a right to assume that very possibly the bulk of the members of the Association are not in favour of the very radical changes the Representatives now wish to introduce into the Charter, and that therefore it is our duty to put the matter to the test.

The same line of argument proves to my mind the necessity of a second chamber. We are certain in the future to have a number of highly-controversial questions brought forward, and unless it can be shown that the Divisional Meetings at which these questions are discussed are well attended, there will always be the danger of one or other of them being too hastily accepted by the Representative Meeting, and the Council should have the power in extreme cases of testing them by the Referendum. Would the Council retain this power if largely elected by the Representatives themselves? I think not.

In conclusion, may I ask those who do not agree with these views to give me, and those who think with me, the credit of endeavouring to act in what we believe to be the best interests of our Association?—I am, etc.,

Oxford, Oct. 7th. W. COLLIER.

SIR,—I am afraid I did not make my meaning clear in my last letter. I can assure Dr. Broadbent that I am in favour of the Council being the only *governing* body of the Association, and therefore hail with joy their action in taking a Referendum. One has great respect for the many able men who form the House of Representatives; but is it possible, I would like to ask, to make the election of members of the Central Council more democratic than it is at present? Every member has an opportunity of voting for a member of that Council, whether present or absent at any meeting.

May I be allowed to remark that what really is wanted in the way of reform is:

1. That the Council should elect an executive body from their numbers.
2. That this Executive should meet monthly, and
3. That the quarterly meeting of the whole Council should be fully reported, as the meetings of Representatives are.
4. That members of the Association should call upon their members of Council to render an account of their stewardship.

What I deprecate is an attempt to make the House of Representatives a body that shall attempt to override the decisions of the Council. If the members of the Council do not fall in with the views of the members. turn them out and elect fresh members in their place.—I am, etc,

Cardiff, Oct. 8th. T. Garrett Horder.

Sir,—Mr. Charles Straton mentions my name in his letter published in the Journal of October 5th; perhaps you will therefore allow me in reply a small space in your columns. Mr. Straton arranges the subject-matter of his letter under three headings. First, the question is raised of the possibility of an agreement being arrived at between the Council and the Representative Body before a Referendum is finally decided upon. In the second part of his letter Mr. Straton makes the astonishing statement that "all the Council take part in the Representative Meetings." What a sarcasm upon the facts as we know them! If only all the Council had taken part in the Representative Meetings up to the present, I for one most firmly believe that we should have heard nothing whatever about a Referendum. No one is more anxious than myself that harmonious relations should exist between the Council and the Representative Body, but in my opinion the proposal in the Referendum Report, of which Mr. Straton approves, that the Council, whether they consider that a resolution of the Representative Meeting does or does not truly represent the wishes of the Association, should have power to refer such resolution back to the Representative Meeting for reconsideration, is not calculated to promote such relations. The reasons for holding this opinion cannot be set forth more clearly than is done in the Report by the Representative Meeting published in the Supplement of September 21st. It is there shown that if the Council consider that a resolution of the Representative Meeting does not truly represent the wishes of the Association, the only constitutional action which the Council can take is for it to refer such resolution to the Divisions without delay, and not back to the Representative Meeting; but that if there is no reason to doubt that such resolution represents the wishes of the Association, the Council can have no other course open than to carry it into effect. It is also shown that the proposal approved by Mr. Straton would either delay the operation of the resolution for at least twelve months or involve an expenditure of £150 to £200 for the convening of a Special Representative Meeting.

Secondly, Mr. Straton states that the resolution which I moved at the Special Representative Meeting in May, that those Members of Council who represented the United Kingdom should be elected by the Representative Meeting, "was a thinly veiled attempt to get rid of the Branches altogether, or, at least, to deprive them of any influence in the Association." There is no shadow of justification for such a statement. On the contrary, I am anxious that the Branches should display far more activity and be of greater use to the Association in the future than has been the case in the past. If it had been the wish of my Division, by whose instructions I moved the resolution, to prevent the Branches having any influence in the Association, I should have said so.

Mr. Straton next alludes to the proposed reduction in size of the Central Council. I believe that the great majority of the members of the Association would agree that a Council of 52, instead of about 75 as at present, is amply large enough as an executive body to conduct our affairs successfully, and to staff adequately the various committees. It would be of advantage to the Association in the future, and increase the interest taken in it, to enlist more often the services, upon many of the committees, of members who are not on the Council. If this be done it will be found that a Council of 52 affords ample scope for it to be represented effectively on all committees, provided that all members of Council take their due share of committee work.

Mr. Straton speaks of the Council as proposed, as one "incapable of adaptation to a varying Association, especially to one with rapidly-expanding Colonial Branches." I should like to remind Mr. Straton that it was actually at the suggestion of a Colonial Representative, Dr. R. R. Stawell (Victorian Branch), whose able presentation of the Colonial point of view has been of such assistance to the Representative Meetings held this year, that the number of the Colonial Representatives on the Council of the future was decreased from 10, the number originally proposed by me, to 7.

Mr. Straton states that the number of Colonial Representatives on the proposed Council of 52, added to that of the service members, makes 9. This is an error; if he will refer to the minutes of the Special Representative Meeting he will see that it is 10.

If the Council is to be reduced at all, and the great majority of its members elected by the Branches, as approved by the Representative Meeting, the Branches *must* be temporarily grouped for this special electoral purpose only, if due topographical representation is to be preserved, and how such grouping can be thought to be prejudicial to the interests of the Branches or of the Association I cannot conceive.

Thirdly, I do not wish to enter at length into the whole question of the proposed division of the Journal and Finance Committee into two Committees; but Mr. Straton, in defending the retention of the present status of the Journal and Finance Committee, quotes Dr. Radcliffe Crocker's opinion "that almost all matters relating to the Journal involve expenditure." Cannot the same thing be said as regards a new piece of work of any magnitude undertaken by any one of the Committees of the Association? and is not this the very reason which renders it desirable that all Committees should be represented on the Finance Committee? Owing to the fact that the Journal has a great deal to do with receiving and spending the moneys of the Association it is right that its interests should be preponderatingly represented on the Finance Committee. This is exactly what is proposed to be done with regard to the newly-constituted Finance Committee.—I am, etc.,

Norwich, Oct. 7th. Hamilton A. Ballance.

Sir,—A question of great importance is now before the Divisions, and it is desirable that they should be fully instructed in the arguments for or against it. I refer to the power of veto by the Council over resolutions passed by the Representative Body. I am well aware that there are earnest Representatives who are anxious to push on what they consider progressive measures, but I consider that a full deliberation of many questions will prevent the British Medical Association making great mistakes.

To show the necessity of a strong second chamber, I will draw attention to certain points in the proceedings of the Representative Body.

1. The complete agenda for the Representative Meetings have never been in the possession of the Representatives for more than ten days before the beginning of the meetings. At the last meeting a lengthy appendix arrived on the day before the meeting. As the agenda are bulky and contain a very considerable amount of matter, the contents are seldom thoroughly mastered by the Representatives, who are at a great disadvantage in critlcizing the proceedings of the various subcommittees. Hence the advantage is always on the side of the subcommittee against the critical members of the Representative Body.

2. Again, new resolutions may be introduced on the agenda in the intervals between the daily sessions. These resolutions cannot be brought before the Divisions, but must be decided by the Representatives, who are uninstructed in the opinions of their supporters. These resolutions, if carried, have the same weight as those which have been fully discussed by the Divisions.

3. It is a common experience that many Representatives attend the meetings uninstructed by the Divisions on important questions under discussion. In fact, their votes represent in many cases their individual opinion, and are not the expression of the will of the Divisions they represent. This seems to me a very important point in urging the necessity for a strong power of veto by the Council, as resolutions may be passed which by no means are the feeling of the Divisions.

4. In the proceedings of the Representative Meeting a considerable amount of time is spent in discussing matters of fact or history, and frequently the important point, the resolution, is hurried over. I am aware that we have been very fortunate in having able and impartial chairmen, who have been very anxious to allow to every one free expres-

sion of opinion, but I think that the debates might, with advantage, have been shortened on some questions and further debate required on others.

5. That the Representative Body has passed resolutions at one meeting and rescinded them at the next, showing that it does not consider its resolutions to bind its own body, and therefore it may be presumed that its resolutions without revision should not bind the whole Association. For example, I may refer to the issue of the *Year Book*, ordered at one meeting of Representatives, altered and enlarged at the next meeting, and done away with at the third meeting of the Representative Body. Other instances might be given, but this will suffice.

6. Lastly, there have been projects started which I venture to think would have been better left alone. I refer to the incident of the London Coroner, Mr. Troutbeck. Much as one may sympathize with one's professional brethren subjected to discourtesy by a law officer, I think other and better means might have been found to settle the matter. A point was raised at the last meeting, in which the Association undertakes to prosecute medical delinquents before the General Medical Council, having had an eminent expert opinion that this is an illegal procedure. Thus the Association places itself in the anomalous position of committing an illegal act in order to prevent others doing the same.

These facts should make the Divisions cautious not to diminish the powers of the Council.—I am, etc.,

Bradford, Oct. 5th. WILLIAM HORROCKS.

SIR,—Without venturing to enter on a discussion of the Referendum Report, let me call attention to Minute 399. It is proposed that Branches be grouped to return four members. The results of the last London County Council elections, especially, have conclusively proved that this is the worst possible mode if we want to have true representation. There is an attempt at modification in the word "topographical," whatever that may be made to signify. In that case why *group* the Branches? If, however, Branches are grouped so as to return three members or four, and the election conducted by the method of Proportional Representation, the result would be the most satisfactory that can be devised. Either that, or the present single-member constituency carried out rigidly. The proposals of the Representative Meeting are unthinkable. I give no opinion as to the proper number of members of the Central Council; but whatever the number, let them be truly representative, and trust them accordingly.

I might go on to notice a very serious omission from all the plans—namely, in the regulations for the alteration of rules. For example, two amendments were sent up from the Kensington Division, and if theory had been practice, the Representatives would have been ready with their votes on the first day of the meeting, but they, with other amendments were relegated to the fag end of a very busy meeting. Those proposals are of so moderate and practical nature that it is inconceivable that if they had been properly considered by the Divisions they would not have been adopted.

Then it is by some asserted that the Representative Meeting expresses more exactly the mind of the members than the Council. Doubt has been expressed by more than one in your columns whether the former is, after all, even approximately representative. But some reform is surely needed in its mode of expressing the opinions of constituents. If the number sent up is 180, a quorum is 90, and two-thirds—that is, 60—is sufficient to carry any measure of importance—namely, one-third of the total number. Is it a fact that, as to one of the resolutions of this Referendum, only about half of the Representatives took part in the voting, the numbers being 52 to 35? Who said "unconstitutional"? It is to be noted that the report in the JOURNAL very seldom gives the numbers voting. Why not?—I am, etc.,

London, W., Oct. 3rd. GEORGE CRICHTON.

*** A division is not very often taken at the Representative Meetings, the decisions being reached by a show of hands; when the numbers have been taken they have, we believe, always been stated in the report in the JOURNAL.

SIR,—It is most unfortunate that Mr. Straton did not verify the facts and figures on which he bases his superstructure of arguments, for his letter simply bristles with direct and indirect misstatements.

He says that in the Wandsworth Division "it has often been found difficult to get a bare quorum at a meeting for an election" (that is, of a Representative). This statement is a pure flight of his imagination, for the rules of that Division contain no mention whatever of any quorum being a necessity.

He considers the minority report beyond contempt; but does he realize that its existence is solely consequent on the action of himself and some of his colleagues? When a Referendum is necessary the rank and file of the Association look to the Central Council to issue with it a memorandum that sums up impartially all the *pros* and *cons* with regard to the point at issue, and which will also state why they have been compelled to come to the conclusion that the resolution of the Representative Body does not convey the wishes of the Association. In this way the members would be placed in a position adequately to discuss the question and vote.

But the document now issued by the Central Council contains no statement why Mr. Straton and his friends have concluded that the resolutions do not express the wishes of the Association; it ignores entirely one large and important set of views, and expresses solely the private views and pleadings of certain members of the Council. Hence the necessity for a minority report.

Mr. Straton is of opinion that the present system of electing the Central Council by the Branches has stood the test of experience. The Representative Body considered that time had proved the system to be a failure.

Let us take one, and the latest instance. In the Referendum document issued by the wish of certain twenty-five members of the Central Council, and signed among others by Mr. Straton, appear two statements: (1) "The Central Council is the most representative body in the Association"; (2) "your Council is responsible to the Branches." Will Mr. Straton let us hear if he was instructed to sign that document, and also has his Branch subsequently approved his action? As a matter of fact the members of the Central Council, with few exceptions, do not represent any one except themselves; they never consult nor receive instructions from their electors; they never report to them nor do they see them; and they hold their seats quite as much because of the honourable professional position they hold in the district they live and practise in as for their business qualifications. When the Association was run for science only this was justified; now politics are being taken up considerable modification will be found desirable.

The Representative Body considered the election by the Branches to be practically a failure. They desired on the Council some, at least, who were representative of and responsible to somebody; so they have reduced the number to be returned by the Branches by grouping the Branches, and have secured a few seats for their own nominees. If these groups of Branches, so soon as the Charter is obtained, will organize themselves—forming really Federations of Branches—and will delegate to a body formed of nominees of all the Branches (a Federate Council) the nomination and election from among its own members of their Representative on the Central Council, then there is a possibility of the scheme proposed working satisfactorily. But if this is not done, the next step will be that the whole Council will be elected by the Representative Body, which will be divided up into topographical groups for the purpose of electing each its own Representative from among candidates locally nominated.

There is no necessity for a large Central Council as Mr. Straton advocates. Many consider 30 members ample; to have 52 was a compromise. The reasons against a large Council are briefly these. There are to be 13 standing committees. We can omit the Naval, Colonial, Scottish, and Irish Committees. The remaining 9 committees are to have a membership from the Central Council of 35 members. The Representative Body also elects 35 others. Each of these committees can form as many subcommittees as are required to deal with specific questions. Each subcommittee can co-opt members from all districts of the Association who are specialists on the question to be considered. It is here

the work of the Association will really be dealt with. These committees will report to their own standing committees, who will again report to the Central Council. This double reporting will only be necessary in order that decisions may be moulded—not necessarily radically altered—to the needs of the Association before being finally issued. The amount of work, therefore, for the Central Council as a body to do should be little; to make it a large body would encourage talk and red tape, and to give it in addition the power to co-opt other talkers would only tend to inefficiency.

The Finance Committee under the Charter will have the duties of controlling throughout the Empire all Association, Branch, and Division finances; medical defence finance, benevolent and provident finance, accident and sick insurance finance, etc., etc. In consequence the Journal if attached to that committee would have to have its work delegated to a subcommittee. There would be no time otherwise to deal adequately with the various points. Such a necessity would be an absolute disaster to the Association, so it is to be hoped that all will approve the decision of the Representative Body (68 votes to 5) that the time has come to have two separate standing committees, while allowing the Journal Committee two additional seats on the Finance Committee.

Dr. Broadbent considers that the action of the Central Council in taking a Referendum is constitutional; Dr. Horder considers it proof of a quarrel; many think the act unconstitutional; but beyond investigating this question so as to become versed in the machinery of the Association and to formulate his own opinion, a member can well leave it alone; especially seeing that the Representative Body itself, in July last, did in many cases act unconstitutionally in affirming as dicta of the Association principles submitted to them in annual reports that had never been before the Divisions for consideration and instruction.

It is to be hoped that the members will back up the work of their Representative Body, which has endeavoured during two years to develop in a Charter the possibilities of a useful and comprehensive Association, and will resolve "that at the time the Charter was last considered the conclusions then arrived at did represent the wishes of the Association," and will in consequence vote solid in support of their decisions.

May I add, for the question has been several times put to me, in view of certain submitted amendments to an ordinance that appeared in the Supplement for September 7th, that such a resolution as the one suggested above is in no way incompatible with the right of a Division to consider and support any detail amendments at a later date, in view of more mature experience with regard to the subject.—I am, etc.,

Southfields, S.W., Oct. 7th. E. Rowland Fothergill.

THE BOARD OF EDUCATION AND MEDICAL INSPECTION OF SCHOOLS.

Sir,—It would have been unnatural if my letter in your issue of September 21st concerning the constitution of the new medical department at the Board of Education had not evoked adverse criticism; and I am glad of the opportunity for emphasizing the real points at issue. My letter dealt with hard facts, whereas my critics do not adduce a single fact beyond the obvious truism that "medical inspection of schools and school-children is a department of public health work." I may urge, however, that it is a new department, and that it concerns public health in its widest, not in its ordinarily accepted and narrow, sense.

In the first place, it seems almost superfluous for me to justify at greater length Dr. Kerr's "overwhelming claims" to office, yet apparently some of the medical profession are still quite ignorant of what Dr. Kerr has done in the schools during the last fourteen years. He is more than "an eminent medical man." He is recognized as a pioneer in a particular branch of public health work and in modern educational methods. And it so happens that the general opinion on this point was endorsed in your editorial columns: "We have no hesitation in saying that the person designated by medical and public opinion for the office was Dr. James Kerr"; nor must the cool and dignified comment of another reputable medical journal be forgotten: "The Board of Education cannot expect that at least one of the (two) appointments thus announced will escape criticism." If, therefore, any one disagrees with these statements, let him show cause for his disagreement. The point need not be laboured further. But if Dr. Campbell Munro really wishes me to substantiate my parenthetic statement (which he has not thought fit to quote either accurately or in full, but which he describes as "nonsense"), namely: "And yet it is solely as the result of Dr. Kerr's work in Bradford and London that any efficient system of medical inspection exists in England to-day," I am prepared to do so.

The Board of Education, having determined to appoint as its medical adviser a man who knew nothing about school hygiene, could not have done better than appoint my friend, Dr. Newman, whose ability and good sense are such that he will after a time gain a sound theoretical knowledge of the subject. I say nothing whatever against Dr. Newman, but I reaffirm my previous statement that he has been pitchforked into office as the result of a compromise between the Board of Education and two or three medical officers of health who ought to have known better. The schemes of these medical officers of health who ought to have known better harmonized with the schemes of the Board of Education, which indeed was compelled only by stress of public opinion and by the absurdity of its false position to establish a medical department. This, however, did not suit the preconceived notions and the prearranged plans of the Local Government Board, nor of these two or three medical officers of health, and as the result of careful deliberation it was agreed to place at the head of this new department an approved medical officer of health.

Now, Dr. Kerr is the only medical officer of health who has made a practical and theoretical study of public health administration in the schools, but he was not approved. He has been boycotted both by the Board of Education and also by these two or three medical officers of health, and by each party for a widely different reason. So much, then, by way of emphasizing the first point which I raised in my previous letter.

The second point, which I scarcely touched upon before, concerns the undignified action during the past year or two on the part of a few medical officers of health—perhaps I was wrong when I said the Incorporated Society of Medical Officers of Health—as to school hygiene. Without having any real practical experience of the subject in this or in any other country, they have done their utmost to belittle the new work, and have arrogated to themselves the office of dictating about medical inspection of schools to the responsible Government departments—ostensibly for the sake of securing co-ordination in the public health administration of this country.

This introduces a third point to which I have not previously alluded. It concerns the future organization and administration of school hygiene in England, about which there is still room for difference of opinion. But may I suggest that the three points which I have raised be kept rigidly distinct, so that no misunderstanding can arise? The three points are (1) the boycotting of Dr. Kerr by the Board of Education, and by two or three medical officers of health who ought to have known better; (2) the attitude—past, let us hope—of certain responsible medical officers of health who for the last year or two have used their utmost endeavours to subject and subordinate—not co-ordinate—medical inspection of schools to the general sanitary administration of the country; (3) the future organization and administration of school hygiene in England—and this last is now the only practical point in question.

In conclusion, I am at one with Dr. Giddings as to the harmfulness of medical politics, but when the methods of a Government department constitute a grave public scandal (as is proved by the facts in my previous letter), it is certainly no time for silence.—I am, etc.,

A. H. Hogarth,
Secretary of the Section Medical Inspection of Schools, Second International Congress on School Hygiene.

London, E.C., Oct. 5th.

Sir,—The pious desire of certain people that school inspection should be free from any contamination by the Public Health Service is almost amusing.

That men who have had no experience in practice, but have stepped straight into public health, have, as a rule,

had no experience in diseases of children is probable, but it seems to be forgotten that the large majority of health officers are or have been private practitioners, and, as such, have more experience of children and their diseases than is set forth by your correspondents (p. 854).

Otherwise no class of school experts exists, and until it is seen what local authorities or the Board of Education are prepared to pay for exclusive work it will not be worth while to specialize.

Meantime the Health Department must be the consultative authority, and until the new class of experts arises may well be made the administrative authority also. Co-ordination is vital to success.—I am, etc.,

West Bromwich, Sept. 28th. HERBERT MANLEY.

THE MAINTENANCE OF THE HONOUR AND INTERESTS OF THE MEDICAL PROFESSION.

THE objects for which the Association is established are the promotion of medical and the allied sciences, and the maintenance of the honour and interests of the medical profession.—*Memorandum of Association of the British Medical Association.*

We do hereby declare the objects of the Association to be the promotion of the medical and allied sciences, the maintenance of the honour and interests of the medical profession and of the members thereof collectively and individually, and the co-operation of the members of the Association for their mutual assistance and support in all matters affecting them in their professional capacity, including the encouragement, promotion, or provision of means for protecting members and their families against the exigencies of age, sickness, death, or misfortune.—*Draft Charter.*

SIR,—It has been questioned how far the body of Representatives is entitled to voice the opinion of the medical profession in matters of policy. Touching his own Division, each honorary secretary has the means of answering this question so far as an examination of figures can answer it. It would be instructive as well as precautionary to collect such answers before a policy definitely distasteful to many members is officially pursued by the Association.

The distasteful constituent is the trade element of our unionism—that is to say, "boycotting," "paid agitators," "strike funds," and the persecution of individuals.

When two or three, or a few individuals unite together to oppose unfair conditions nothing but good can result; but when a powerful organization like the British Medical Association is called in to assist the demands of individuals by establishing a general lock-out, the state of affairs is very different. This is the principle of trade-unionism which I do not allow to be anything but wrong and derogatory. The assumed analogy between us and the butcher or baker is false, because we do not barter a commodity. It would be to his interest for a doctor to patent and sell a secret remedy for a particular ailment—one that may be both good and efficacious, and in no sense a fraud, but he does not do it.

This correspondence is headed by relevant extracts from the Memorandum of Association and the Draft Charter. It is sought to extend the scope of the usefulness of the Association to its members, but hidden away among much benevolence is the request for power to use Association funds for trade-union purposes, and in ways that are undefined.

So long as these ways are the ways described by Dr. Parkinson, I think no harm can follow, although I do not like the Warning Notice. There is, however, no certainty that counsels of moderation will always prevail, and funds for the purpose are not only not necessary but they are a direct danger and an incitement to agitation. There is surely a boundary beyond which interest and honour do not keep company, although they may go hand in hand to that limit.

I have been called upon for alternative means. They are these:

I. The Association might increase the public estimate of us by publishing in the JOURNAL authoritative anonymous articles by the best medical writers on matters relating to medicine which have a public interest, as suggested by Mr. Brudenell Carter about forty years ago. Quackery, hospital abuse, and pernicious semi-medical journalism would receive a death-blow, but the JOURNAL would have to be wholly given up to this object for a period. Medical news, correspondence, and Association matters could be published in the SUPPLEMENT, which should be then circulated only among members.

II. The Association might remedy the evils of contract-practice (1) by causing to be printed a "form of contract" which it would advise all doctors to use when accepting "clubs." By the terms of the contract the doctor would reserve to himself the right to refuse the admission to medical benefits of any individual whom he does not consider suitable; (2) by recommending to all holders of club appointments the propriety of making arrangements to be paid for work done instead of at a definite rate per head. The workman would then receive his bill, which he would endorse and send in to the club secretary for payment. In this way the workman would estimate the services he has received at the face value of the bill, and not at so many pence per week.

III. The Association might increase the public estimate of us by increasing its own estimate of us, and refusing to draw invidious distinctions of title. It should cease to call us *practitioners.*

Dr. Parkinson misunderstands me. That the *Lancet* should support the British Medical Association is very natural, but that it should aid boycotting is what is incomprehensible to me.

Referring to the adoption of the title "practitioner," the *Lancet* long ago said:

> It is a monstrous title for men of learning and character whose minds are stored with the richest treasures of the sciences. A more clumsy, a more vulgar, or a more inapplicable expression could not be found. It is offensive to an educated and cultured ear. Physician, surgeon, and apothecary, the doctor in general practice prescribes, operates, and dispenses. Yet this man, armed with so much knowledge, so highly gifted, and so pre eminently entitled to respect and consideration, is dubbed a practitioner

I quote from memory, and I do not think I seriously misquote the passage. The public call us doctors. Let us take the title. In special practice or in general practice we are by profession doctors, and need no academical warrant for the name.

If the tone of Dr. Cox's address had been more in harmony with that of his letter, we should have been less disquieted. The "other voice" of the Association still slumbers, and we cry in the wilderness. If and when the success of mild trade-union methods tempt those in authority to try the loyalty of their followers by urging upon them the fiercer methods, that "other voice" will awake, and it will be the voice of a multitude. It is futile to suppose that the medical profession will ever consent to adopt trade-union methods in their entirety. What a pity it is to think of ever beginning them!—I am, etc.,

London, N.W., Sept. 29th. W. B. PARSONS.

SIR,—Reading the correspondence on this subject one would think that the honour and interests of the whole profession were at the mercy of a small band of irresponsible revolutionists. Will the members of our Association never realize that with each of them individually rests the responsibility of the conduct of our affairs? The Representatives who govern and the Councillors who administer should be, and might be, the men of their own choice. If the majority do not consider their honour and interests worth the trouble of exercising their power to attend Divisional meetings or to elect those who govern, they have only themselves to blame if affairs are not conducted to their satisfaction.

However, it is difficult to see what their real objection is. No new principle has been adopted. What some are pleased now to call trade-unionism is only the old code of medical ethics amplified and adapted to a practical organization.

Local unionism has always been an essential part of our ethical system. Look, now, at the case of the Bristol Royal Infirmary. The support that the honorary medical staff expect, and will undoubtedly obtain, is nothing more nor less than what members of a trade-union expect and get. It is only now that the same practice is being made general and being systematically arranged that the cry of trade-unionism is raised, but I doubt if the objection is really to the word "union"; I expect it is the word "trade" that rankles. If unionism was essentially an affair of trade, and trade only, the objection might

have some foundation; but "trade" is only an accidental addition to the word "unionism," and by its association we are apt to attach to unionism the abuses which have made trade-unionism offensive.

But because bodies of uneducated working men have abused their power, it is no reason—and little compliment to ourselves—to suppose that we shall be likely to do the same. Medical men have never yet abused that enormous power which they, as individuals, have over their patients.

If by unionism weak and careless men are to be helped at the expense of their patients, if we are to lose any of our individuality or independence of character, if in any way our new strength is to be used as a tyrant's, then by all means let us give up that unionism; but no one has shown that any of these things are likely to happen, and we know that we can ourselves make it good or bad, honourable or dishonourable, useful or harmful. Of what we will do I have no doubt.—I am, etc.,

Bradford-on-Avon, Oct. 2nd. CHAS. E. S. FLEMMING.

ALCOHOL AND INSANITY.

SIR,—In the discussion reported in the BRITISH MEDICAL JOURNAL of September 28th Dr. Mott mentioned that in an inquiry carried out in America it was found that total abstinence was more frequently an antecedent of insanity than was intemperance.

In one of the numbers of the JOURNAL issued this summer Dr. Savage states that he was impressed with the number of teetotalers who became insane.

Dr. Mott apparently would agree that without further and much more extensive investigation these statements indicate nothing beyond exceptional experiences.

But it would not be surprising if a considerable number of total abstainers became unsound in mind. Many children of intemperate parents, shocked and horrified at the awful experiences of an unhappy childhood, abhor alcohol. Such may inherit a weak constitution. To mention only two cases in illustration:

A. B., a young man, came for advice because of general weakness. Unable to endure fatigue, he earned a small pittance in menial work. With bitten finger-nails, he exhibited the signs of neurasthenia. He was a lifelong abstainer, and attributed his ill health to the fact that his mother was an habitual drunkard, and to the sufferings of mind and body he experienced in consequence in childhood.

C. D., a patient in good position, a lifelong abstainer, aged about 30, was unable to play tennis, or cycle, or go about as others. He was subject to headaches and vague pains. He asked if the cause of ill health could be attributed to an habitually intemperate father.

It would not be surprising if either of these later in life became of unsound mind, and if so the insanity should be linked not with the total abstinence but with the drunken parent.—I am, etc.,

London, W., Oct. 8th. HENRY STURGE.

THE LATE DR. ROBERT BARNES AND THE SHADWELL HOSPITAL.

SIR,—The association in your current issue of the foundation of the Shadwell Hospital for Women and Children, and the unveiling of a tablet in memoriam of the late Robert Barnes, reminds me that a few months before his death Dr. Barnes wrote and told me of his high esteem of Dr. Heckford, the founder of that hospital. Incidentally he related that Dr. Heckford placed a ward at his disposal wherein was practised for the first time in this country modern obstetrical and gynaecological surgery. It will be recalled that you have already noted that a street and a London County Council school now bear the name of Heckford.—I am, etc.,

London, E., Oct. 5th. STANLEY B. ATKINSON.

MRS. EDDY AND DEATH.

SIR,—Will you allow me to point out that the new by-law of the Christian Science Church referred to in your article "Mrs. Eddy Recognizes Death" does not alter the position of Christian Science with regard to death in any way whatsoever, as you would seem to think. Your misconception on this point has arisen from the common mistake of confusing the absolute with the relative in criticizing the teaching of Christian Science. Mrs. Eddy teaches that death is unreal in the sense that it is not of God, who is infinite Life. In adopting this attitude she has the support of the greatest physician that the world has ever known, who regarded death as one of "the works of the devil," that false sense "which," as John said, "deceiveth the whole world." That death has a subjective existence in the human mind—in the mind that has the forbidden knowledge of good *and* evil, and consequently of life *and* death, she has always recognized, and thus no "official recognition" by the Christian Science leader "of the fact that death occurs" was ever necessary. Nor does the new by-law recognize that "it is the result of material causes." What it does recognize is the fact that the majority of mankind believes life to be in matter instead of in God, and as Christian Scientists are taught to obey the laws of the land, they are taught to follow the usual procedure in case of death. It would seem probable that there may have been a case or cases where this procedure was not followed, and the leader of the Christian Science movement has very properly indicated the right course to any of her followers (very few, I am sure) who might otherwise have failed to take it.

Again, you write, "Mrs. Eddy has tried to persuade her followers that this [death] was all over." Allow me to tell you that she has never done anything of the kind. She teaches that "sin brought death, and death will disappear with the disappearance of sin," and I think you will agree with her that this is not likely to be for some considerable time.

In conclusion, may I point out to you that a large proportion of—perhaps I might almost say the large majority of—those who are now Christian Scientists have started by ridiculing and opposing what they have thought to be the teachings of Christian Science, but what, on further inquiry, they have found to be their own misconceptions of its teaching. One who has done this cannot with justice find fault with another for doing the same thing, but I hope you will not consider it presumptuous if I ask you, before you criticize the teaching of Christian Science any further, first to make sure that your conception of its teaching is correct.—I am, etc.,

GEOFFREY WILKINSON, Captain.
Christian Science Publication Committee.

London, W.C., Oct. 1st.

*** We print Captain Wilkinson's letter as he wishes; but we cannot say we think it will help the cause which he represents. If all that is meant is that the soul is immortal, we would remind the writer that the authorship of that comforting doctrine does not belong to Mrs. Eddy. It is not even peculiar to Christianity. Many pagans believed with Horace

> Non omnis moriar; multaque pars mei
> Vitabit Libitinam.

Captain Wilkinson's statements do not alter the fact that *Science and Health* contains the following illuminating utterance (1898, p. 426): "Mortal mind affirms that the mind is subordinate to the body, that the body is dying, that it must be buried and decompose into dust; *but this is not so*" (the italics are ours). Elsewhere (p. 424) it is said: "Man is immortal, and the body cannot die, because it has no life to surrender." What, then, it may be asked, is there that a doctor can certify? Mrs. Eddy possibly knows, but her style, like that of all oracles, has a convenient obscurity. As the line of defence generally adopted by the advocates of Christian Science when their teachings are called in question is that unbelievers do not understand, we beg leave to assure Captain Wilkinson that we have read Mrs. Eddy's book—a most wearisome task—with a desire to be enlightened. The result of our studies may be expressed in the elder Weller's famous deliverance on matrimony: "Wen you're a married man, Samivel, you'll understand a good many things as you don't understand now; but vether it's worth while goin' through so much to learn so little, as the charity boy said ven he got to the end of the alphabet, is a matter o' taste. *I* rayther think it isn't." We understand Mrs. Eddy and the mental constitution of her devotees; and that, we take it, is all there is to understand in Christian Science. This being the case, we think it needless further to discuss her recent edict.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

THE CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY.

AT the forthcoming annual meeting of the Continental Anglo-American Society it will be proposed that the following notice, framed and glazed, be hung up in the offices of Thomas Cook and Sons, and the Wagon-Lits Company, in London, Paris, Rome, and such other cities as the Committee shall decide: "The travelling public can obtain in this office a list of fully-qualified American and English physicians resident and practising on the Continent of Europe and North Africa (Egypt, Algiers, and Canary Islands)," and already a note of alarm has been sounded as to the expediency of this proposal.

We see no objection to a list of English and American physicians practising abroad being placed in the hands of travellers, or copies of the list being supplied to the companies mentioned and to others, but with the request that they will take their own means of distributing them to the public. It seems to us that this would follow the precedents of the *Medical Directory* and of the publication of the names of physicians in Baedeker, which have been sanctioned by long-established custom; but we hope the framed and glazed notices will not be adopted.

Medico-Legal.

WORKMEN'S COMPENSATION ACT.

MEDICAL REFEREES AND EXPERT EVIDENCE.

AT the Liverpool County Court on September 27th application was made on behalf of a firm to reduce or terminate an award of 17s. 6d a week made under the Workmen's Compensation Act in favour of an employé. The applicants proposed to call a medical man as witness, but the respondent's representative objected on the ground that this medical man had accepted the appointment of official medical referee to the court, and that under the rules as to medical referees he was by implication precluded from acting as a partisan expert. He submitted that it was indecent and contrary to public policy, and that properly construing the rules governing the appointment of medical referees the difficulty had been anticipated and provided for.

For the applicants it was contended that there was nothing in the definition of the Home Office rules to bind a medical referee to the county court in an official capacity; a medical referee had no official appointment until the moment when the arbitrator appointed him in a particular case.

The judge said that, in his opinion, the Home Office had not imposed any restriction which prohibited a medical referee from acting in his private capacity, though inconvenience might arise if a case submitted subsequently came before the court in which it would be desirable to refer to the medical referee, because no such reference could be made to a medical referee who had already acted as one of the advisers of the party in the case. He thought that the medical man in question had done nothing improper, having regard to the way in which the rule was framed and the conditions imposed.

The representative of the respondent admitted that he ought to have said that it was indecent that a State rule should allow such procedure; it did not reflect so much upon the doctor as upon the Home Office.

DOMESTIC SERVANTS AND THE WORKMEN'S COMPENSATION ACT.

DR. F. L. NICHOLLS (Fulbourn, Cambridge) writes: In your reply to "Inquirer" (p. 942), have you not overlooked Sec. 1 (2) (a)? Surely this covers the point. However wrong and unjust all right-minded people must consider this clause, no one would for a moment believe our present legislators had any wish to encourage immorality, and a judge would in my humble opinion not only be carrying out the spirit but also the letter of the law in non-suiting a claimant for damages for the ill-consequences of an abortion. Provided, of course, the claimant was unmarried, a widow, or a woman living apart from her husband, and also that the disability was not permanent or the cause of death. Who will be bold enough to say that immoral acts are not "serious misconduct?"

*** Sec. 1 (2) (a) is probably a mistake for S. 1 (2) (c), which provides that the employer shall not be liable if the accident is due to serious and wilful misconduct, unless the injury results in death or serious and permanent disablement. This provision was not overlooked in answering the query. It may well be that an immoral act is "serious and wilful misconduct"; but we are advised that the question for the court would be, What is the *causa proxima* of the accident or injury? This may seem hard upon the master or mistress. It may be added that every employer who takes into or keeps in his service a person suffering from a physical defect which renders that person more liable to accident is exposed to all the liabilities of the Act.

MEDICAL FEES IN COMPENSATION CASES.

EQUITY writes: I shall be obliged by your opinion on this case: A woman consulted me for a poisoned finger, the result of an accident whilst washing clothes. She was employed as laundress at a house where she went once a week. The finger was not healed for six weeks, during which time I attended her. When making her claim to her employer she included my fees. The company by which her employer was covered offer a small sum, equivalent, I believe, to half the wages for six weeks, but repudiate any liability for the doctor's fees. I shall be glad to know if this is in accordance with the Act.

DR. THOMAS LAFFAN (Cashel) writes to suggest that the medical profession should unite in supporting an insurance company which would undertake to provide remuneration for medical attendance.

*** Neither the company nor the employer is liable to pay the doctor's fees. He must look to his patient. The only case in which the employer is liable for medical expenses is specified in Sched. (1) (*a*) (iii), which makes provision for the payment of (*inter alia*) medical expenses if the injured person dies and leaves no dependents. Most of the insurance companies, we believe, issue at a slightly-increased premium a policy providing a stated sum to meet the cost of medical attendance on domestic servants.

EVIDENCE AT INQUESTS.

JURIST.—The answers to the questions propounded to our correspondent should have been: (1) The difference between an effusion and a clot is that the former is an outpour of serum or blood, the latter coagulated blood. (2) Falls are, in the experience of most surgeons, a more frequent cause of intracranial haemorrhage than blows. (3) It is just possible that a man may be sobered by a severe blow or fall on the head, but it is not easy to believe that he could be rendered perfectly sober.

CORONERS AND INQUESTS IN IRELAND.

B.M.(Ireland) asks whether, in the case of an inquest held on the body of a drowned person, the coroner—a medical man—can get two justices to hold the inquest and he himself examine the body and give evidence, when other medical evidence can be had; also if under such circumstance the medical coroner can claim fees for such examination and evidence. Should such a proceeding not be allowable, to whom should application be made to stop such practices?

*** Unless our correspondent has omitted some circumstance which may have justified the course adopted by the coroner, we should regard his action as improper. He is paid a salary for discharging certain duties, and if he tries to obtain fees in addition, such conduct would be unethical, and we think that should the County Council pay him a fee, the auditor would, if his attention was called to it, very probably surcharge it. Coroners, like other magistrates, are under the control of the Lord Chancellor, and complaints are usually addressed to his Secretary. If our correspondent's statements are correct, we consider those magistrates who permitted such a course to be taken are to blame.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE course of instruction for Surgeons, R.N., at Haslar, was brought to a close on September 28th, when the prizes were distributed. The gold medal was awarded to Surgeon R. Connell of Trinity College, Dublin, the silver medal and books to Surgeon C. Ross of Glasgow University, and the microscope to Surgeon G. Price of St Thomas's Hospital. The names of the candidates with the marks gained at the entrance examination and at the Haslar course are subjoined.

	Marks.		Marks.
Connell, R., M.B., B.A. ...	4,247	Langdale, H. M.	3,663
Ross, C., M.B....	4,146	Vickery, G. G., M.B., B.A...	3,434
Price, G....	4,083	Drennan, H. D., M.B., B.A.	3,186
Baker, C. R. M., M.B. ...	4,010	Hutcheson, W., M.B., B.A.	3,138
Creaser, T., M.B., B.A. ...	3,704		

THE late Mr. Thomas King, an auctioneer, of Portsmouth, whose will has now been proved, left £2,000 to the Portsmouth, Portsea, and Gosport Hospital for the endowment of a bed; £500 to the Portsmouth and South Hants Eye and Ear Hospital; and £200 to the Victoria Association for Nursing the Sick.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

GUARDIANS AND INSANITY.

In the remarks which we have felt it our duty to make touching the East Stonehouse Guardians' action in the case of an alleged lunatic, we have dealt principally with the duties imposed upon them and their officers by the Lunacy Act, 1889, with which they seem to be very imperfectly acquainted. It is quite possible that if the facts of the case come to the knowledge of the Commissioners in Lunacy a sharp reminder may be given the Board of the necessity for carrying out those duties more carefully in the future. A subsidiary question arises as to the want of courtesy shown to Dr. Sandford by members of the Board. He was misrepresented in the local press as having given his certificate to the woman herself (the alleged lunatic), whereas in fact he gave it to her husband, directing him to take it at once to the relieving officer, by whom it is admitted that it was actually received. When the attention of those reported to have made the misstatement was called to it, they declined to take steps to correct it. Then the Board directed a letter to be addressed to Dr. Sandford asking him to explain his reasons for certifying; this was quite *ultra vires*, and he was not bound to take any notice of it; he did, as a matter of courtesy, reply, with the result of exposing himself to further unpleasant remarks. Finally, when, by the poor woman's determined attempt at suicide, Dr. Sandford was shown to have been right in certifying, and the Board to have been wrong in ignoring his certificate, those guardians who had made the disparaging remarks refused to withdraw them, and gave it to be understood that if another similar case occurred they would act as they had done in this. We shall be much surprised if either the Local Government Board or the Commissioners in Lunacy are content to let the matter rest where it is.

GUARDIANS AND LUNACY FEES.

At the meeting of the Dartford Board of Guardians on October 1st a discussion took place on the subject of fees paid to medical officers of the union for certifying pauper lunatics. Curiously enough the discussion was originated by a magistrate (Mr. Chambers, J.P.), who must have known that the fee allowed was strictly legal and authorized by the Lunacy Acts, and who may himself have signed authority for such payments. In the course of the discussion the insulting suggestion was made that the medical officers sent cases to the asylum for the sake of the guinea fee, and there appears to have been only one guardian present who had enough good feeling to dissociate himself from the suggestion. Although the Clerk to the Guardians pointed out that it was open to the magistrate to send for any other medical man to assist him in these cases, and that he did not think it was within the Board's power to include these fees in the salaries of their medical officers, a notice of motion was handed in that all examinations of lunatics or supposed lunatics be included in the salary of the medical officer, and that no specific charges be made or allowed by the Board. When this motion comes on for discussion, we would recommend the guardians either to study the Lunacy Acts for themselves, or to take the advice of their clerk who appears to have done so, and also to remember that they cannot alter the conditions of service of the medical officer whom they have insulted without his consent.

OBITUARY.

CHARLES STEWART, M.R.C.S., LL.D., F.R.S.,

HUNTERIAN PROFESSOR OF COMPARATIVE ANATOMY AND PHYSIOLOGY, AND CONSERVATOR OF THE MUSEUM, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Professor Charles Stewart was born in 1840 at Plymouth. He came of a medical family, both his father and grandfather having been in practice in Plymouth. Partly no doubt for this reason, and partly owing to an innate love of natural science, he was himself trained for the medical profession, and was educated at St. Bartholomew's Hospital, obtaining the diploma of M.R.C.S. in 1862. For the next few years he resided at Plymouth, but in 1866 was appointed Curator of the Museum at St. Thomas's Hospital, then still situated in Surrey Gardens. This post must have been particularly welcome, as he was by temperament inclined rather to the pursuit of pure science than to practice. In 1871, shortly after the removal of the hospital to the Lambeth Embankment, he was appointed Lecturer on Comparative Anatomy, and in 1881 joint Lecturer, with Professor John Harley, on Physiology. He was also for some time Professor of Biology and Physiology at Bedford College.

In 1884, his connexion with St. Thomas's was severed by his appointment as Conservator of the Museum of the Royal College of Surgeons of England, in place of Sir William Flower, who had just been made Director of the British Museum (Natural History), in succession to Sir Richard Owen. The year after entering upon his duties at the College of Surgeons he was made Hunterian Professor of Comparative Anatomy and Physiology, and continued to lecture annually at the College till 1902. During the time that Professor Stewart was at the College of Surgeons he on two occasions delivered "Friday evening" lectures at the Royal Institution, and also held the Fullerian Professorship of Physiology there for four years (1894-97).

Professor Stewart was intimately connected with several learned societies, and his interest in and work for them are sufficiently shown by the official posts he occupied. He became a Fellow of the Linnean Society in 1866, and received the honour of election to the Presidency in 1890 and to a Vice-Presidency in 1895. He also took an active part in launching the Anatomical Society of Great Britain and Ireland, being its original Treasurer (1887-92). He was a member and Vice-President of the Royal Microscopical Society, and acted as one of its Honorary Secretaries (1878-82). He was also deeply interested in the welfare of the Marine Biological Association.

The esteem in which Professor Stewart's scientific work was held by his colleagues was shown by his election in 1896 to the Royal Society and by the conferment upon him in 1899 of the degree of LL.D. *hon. causâ* by the University of Aberdeen.

Professor Stewart's scientific knowledge was derived comparatively little from books, and he was always very chary of accepting statements as true unless he had himself verified the facts. The extent of his own personal observations was truly remarkable and perhaps fully realized only by those who had the privilege of working with or being taught by him. It was characteristic of him that in answering a request for information he would say, "It is so and so, I saw it under such and such circumstances," instead of the more familiar, "You will find it all in 'Schmidt's' paper on . . ." In spite of this he published comparatively little. He wrote some excellent papers it is true, especially on Echinoderms, but from several causes—pressure of routine work during his teaching days and a natural repugnance to the act of literary composition—it was only rarely he could be induced to commit the results of his valuable researches to paper. The papers he did write dealt mostly with the minute structure of invertebrates and appeared in the publications of the Linnean Society and various Microscopical journals.

In the museum at St. Thomas's Professor Stewart found a congenial training ground in all the various processes involved in the preparation and display of anatomical specimens. The practical knowledge of museum technique thus acquired stood him in good stead when later on he had charge of the great Museum in Lincoln's Inn Fields. During the St. Thomas's period he also gained (as the necessary result of the variety of his appointments) a firm grasp of the essentials of many different subjects. Although in the first place an anatomist, he was also a capable physiologist, botanist, and pathologist, and at the same time was deeply interested in certain questions of physics, particularly polarized light, upon which at one time he carried out somewhat extensive researches. The result of this diversity of interest, although, perhaps, it prevented him from pursuing exhaustively one special branch of science, eminently fitted him for the charge of such a Museum as that of the College of Surgeons, in which the collections are designed (in conformity with the broad-based scheme of John Hunter) to include the structure of man, animals, and plants, both normal and abnormal. In this work his previous training specially fitted him to appreciate the needs of the department of anatomy which fell under his direct control, while at the same time he was able to enter fully into the plans and difficulties of the successive specialists who under him were directly responsible for the care of the Pathological Collection.

In practical museum work Professor Stewart has had few, if any, rivals. His deftness of hand was so combined with a refined artistic sense and untiring patience that his preparations were not merely of strictly scientific

value, showing with the necessary clearness the several structures to be shown, but beyond that were well thought-out works of art, finished in every part with the delicacy of an early Flemish master, and so displayed as not only to show their scientific characters to the best advantage, but by their appropriate mounting to be also artistically satisfying. Those familiar with the College of Surgeons Museum will at once recall his magnificent series of preparations of the internal ear of fishes and his beautiful specimens of sound-producing organs in invertebrata and of endoskeletons in Anthozoa. During his Conservatorship his best energies were directed to the enlargement of the "Physiological series"—the collection of comparative anatomy in which Hunter had attempted to illustrate the leading adaptive modifications of structure in the organic world. Latterly he was also engaged in editing a descriptive *Catalogue* of this series, and at the time of his death had completed three volumes, containing descriptions of the internal skeleton, joints, muscles, nervous system, and organs of sense. In part of this work he was both author and editor, but in dealing with the mammalian brain the work of authorship was performed by Professor G. Elliot Smith.

Although Professor Stewart was, perhaps, most in his element in a museum, he was also a most accomplished and attractive lecturer. All his life his lectures were marked by the same excellences, differing only in that with advancing years the material at his command became fuller and deeper. His success in the lecture theatre and as a teacher depended largely on his personality. By the peculiar charm of his manner he was able to keep the interest of his subject always vivid and absorbing. His style was free, but at the same time absolutely lucid, and was enhanced by a wonderful power of rapid and effective drawing on the blackboard. During the time that he held the Hunterian Professorship at the College of Surgeons his lectures formed a running commentary on his work in the Museum. Thus, they embraced such subjects as the organs of hearing (1886-7), the integumentary system (1889), phosphorescent organs and colour (1890), secondary sexual characters (1891), endoskeleton (1895), joints (1897), protection and nourishment of young (1897). His Fullerian and "Friday evening" lectures at the Royal Institution followed much the same lines, a particularly striking one being that on "Associated Organisms," delivered in 1893.

Professor Stewart's extensive knowledge was always at the service of any one who seriously desired information. He was ready at all times to expend time, labour, and trouble in giving an opinion on the many varied objects brought to him at the Museum for determination. He was also interested in the furtherance of education, and gave to ambulance classes and organized parties of artisans facilities for visiting the Museum on Saturday afternoons, acting himself as guide on most occasions, and explaining with great pains specimens, a knowledge of which might be of service or of interest to them.

It is difficult to convey to those who did not know him an idea of Professor Stewart's simple and kindly nature. He was before all things sincere, hating with an intense hatred anything that savoured of snobbishness, false presumption, meanness, or dishonesty of purpose. This hatred was so strong that at times it stood in the way of his own worldly interests, preventing him sometimes from accepting the recognition that was unquestionably his due, for fear of even the suspicion of usurping the fruits of others' labour. His underlying reserve was relieved by a cheery, almost boyish, light-heartedness of manner that made him always a welcome and popular companion amongst his associates, whether at the Savage Club, of which he was for long a member, or in the circle of his private friends.

JOHN STUART NAIRNE, F.R.C.S.Ed., F.F.P.S.G.,

CONSULTING SURGEON, SAMARITAN HOSPITAL FOR WOMEN, GLASGOW.

ON Sunday, September 8th, there died at his residence in Glasgow, in the 61st year of his age, Dr. John Stuart Nairne. He was a man of many parts. There were in him elements of the poet, the artist, and the scholar; and till his death he numbered amongst his friends and patients many teachers, artists, and men of letters.

In his earlier days he was engaged in teaching, and at that time it was his intention to devote his life to literature and to take up his residence in one of the German university towns. He began the study of medicine as a means towards that end; but immediately on qualifying he was asked to become colleague to the late Dr. Alexander Morton, of Glasgow, and he soon afterwards succeeded to his practice. But his mind lay towards surgery, and in particular abdominal surgery; and it may justly be claimed for him that he was one of the pioneers of abdominal surgery in Glasgow. In 1887 he read a paper before the Glasgow Obstetrical and Gynaecological Society, urging the performance of Caesarean section in preference to craniotomy, stating that never again would he perform craniotomy if he had the choice of performing the other operation. This course did not commend itself to the majority of his hearers, but the treatment he advocated twenty years ago is the treatment of to-day. He was a very skilful and successful surgeon. Patients came from all parts of the country to be under his care, and nothing could exceed the confidence and affection he inspired in them.

To Dr. Nairne was due the inception of the Glasgow Obstetrical and Gynaecological Society, and he was its first secretary, afterwards filling the president's chair. He also inaugurated the movement which led to the founding of the Glasgow Samaritan Hospital for Women, one of the largest and best-equipped women's hospitals in Great Britain. To that institution he devoted a considerable amount of his time and energy, and was its surgeon from its beginning until eighteen months ago, when, on account of his health, he retired from the active duties of surgeon, and became consulting surgeon.

Last year, at the hands of the Lord Provost of Glasgow, he received a public testimonial, consisting of a cheque for £300, a study chair, and a piece of silver plate for Mrs. Nairne.

Dr. Nairne is survived by Mrs. Nairne, three daughters, and one son.

LIEUTENANT-COLONEL H. J. DYSON, F.R.C.S., I.M.S.,

FELLOW OF THE UNIVERSITY OF CALCUTTA.

IN Lieutenant-Colonel H. J. Dyson, whose death was briefly announced in the JOURNAL of September 21st, the Indian Medical Service has lost a member distinguished alike by his professional attainments and his winning personality. He was the son of the Rev. S. Dyson, D.D., and passed into the service from St. Mary's Hospital in 1884, obtaining a position on the list of candidates that ensured his being posted to Bengal. On his arrival in India he was posted to the 23rd Pioneers, and at once became a *persona grata* with the officers of that distinguished corps. He next saw active service in the last Burmese campaign. Subsequently, on transference to the civil department, he became Deputy Sanitary Commissioner of the Punjab. Here his work was distinguished by the unremitting zeal with which he pursued it, and by his important researches on the pathology of hill diarrhoea. Dyson enlarged and amplified the old theory of the part played by mica in the causation of that affection, showing how it was present in the soil of those hill stations where the disease occurred, how it ceased when the water supply was filtered before distribution, as exemplified at Darjeeling, and how it was non-existent in the stations where mica was not present in the soil. So well did he perform the duties of his office that he was selected for the important post of Sanitary Commissioner of Bengal at a comparatively early period of his career. During his occupancy of this post he instituted many needed reforms, and made further researches connected with his department; amongst others may be mentioned his experiments on direct vaccination from kids. His reports, models of what reports should be, always received the commendation of Government. After his term of office as Sanitary Commissioner of Bengal had been completed, he received the important and onerous post of Superintendent of the large gaol at Hazaribagh. Latterly he had also in addition been appointed Lecturer on Hygiene and Sanitation in the Medical College, Calcutta. For his distinguished services he received the high honour of the Fellowship of the University of Calcutta.

Lieutenant-Colonel Dyson was attacked by sprue, and stuck to his work too long before putting himself under proper treatment. He had not long been married, but his widow may receive some consolation from the esteem her late husband was held in by his brother officers, for he

has died universally regretted by all who had the good fortune of his friendship.

HAROLD B. MEAKIN, M.D.Lond.,
Captain, I.M.S.

Captain Harold Budgett Meakin, I.M.S., son of Edward Ebenezer Meakin, a merchant, of Almora, India, was born at Redhill, Surrey, on August 23rd, 1870. His earliest education was at home and at Reigate Grammar School. He then went to Dollar School, in Scotland, and in 1885 to Wesley College, Sheffield, under Dr. Dallinger. In 1889 he joined St. Bartholomew's Hospital. He obtained the diplomas of M.R.C.S. and L.R.C.P. and the degree of M.B.Lond., with Honours in Forensic Medicine, in 1894, and the M.D. in 1895. At the hospital he was House-Surgeon to Mr. Howard Marsh, President of the Abernethian Society, and editor of the *St. Bartholomew's Hospital Journal*. He held other appointments at the Metropolitan Hospital, and at the London County Asylum, Banstead; and was for some months in private practice in Chelsea. In the spring of 1898 he passed second into the Indian Medical Service, and won the Montefiore medal and prize in Military Surgery at Netley. He went to India, and was sent to Landi Kotal, on the frontier, beyond the Khyber Pass, and later to Lansdown as medical Officer to the 9th Gourkhas. He returned to England and was married at Cambridge on January 6th, 1900, to Francis Amelia, elder daughter of Sir Robert Ball, F.R.S., who is left with a son.

He returned to India at once after his marriage, and went to Lucknow to help to mobilize a native field force for the relief of Peking. A fortnight later he sailed with the 43rd Field Hospital, which was the first to enter Peking, the day after the relief. For this service he received the medal and the military order of the Dragon. From Peking he wrote: "I have seen more of the horrors of war than anything I ever read made me imagine possible." He was afterwards head of the native General Hospital in Wei-Hai-Wei. In 1901 he returned to Calcutta and was sent with the 5th Bengal Lancers to the blockade of Waziristan, for which service he received the Waziristan medal. In 1902 he received what seemed to him the crown of all his work, the appointment of Surgeon to the Presidency General Hospital, Calcutta. For a year he enjoyed that honour, to which was added the appointment of officiating Professor of Pathology at the college. His hospital work was very heavy; he fell ill, and was found to have phthisis. He returned to England and went to Nordrach-upon-Mendip, where he so far recovered that he could not resist the longing to get back to his work. Contrary to the advice of his friends, he returned to India, but even before he got there his health failed. For a few months he was at Fyzabad as medical officer to the 2nd Bengal Lancers (Gardner's Horse). Then he had to surrender, was invalided home, and went again to Nordrach, where he died on September 21st, 1907.

One of his friends writes of him: "He was a man of very remarkable strength of character. He came of a clever family, and was brought up at home under rules that would now be thought unduly strict. At first, as a student at the hospital, he was inclined to be a bit aggressive; that soon passed, and left him free to use his rare intellectual and spiritual gifts. By nature he had a keen, self-confident, far-seeing, rather restless temperament; but he had also a tight hold over himself, and was a great lover of books and of serious thought. He was absolutely practical, yet he never despised or was indifferent to those ways of thought and of faith which we are apt to call unpractical. Also he had in a wonderful measure the gift of personal influence over men, the genius that makes friendships. From the time he was a student to the day he died he never ceased to draw men to himself. Wherever he was, at St. Bartholomew's, or at Netley, or on the Indian frontier, or at the relief of Peking, or on the staff of the Residency Hospital, or ill at Nordrach—and nowhere more than at Nordrach—he exercised this influence. Perhaps it was the union in him of sharp and ambitious energy with quiet critical enjoyment of good literature and music and high thinking; or his downright honesty of talk, his clear cut opinions, his common sense; or his humorous judgements of himself and of other men, and his passionate will to make the right use of his life. In one or another of these ways or in all of them he did exercise deep and wide influence; he had authority, he convinced our minds, he won our hearts. All through his long illness he never lost this power. By his early death his life seemed to be wasted and his work spoiled, but his spiritual career may fairly be called complete. Here was a man who, as he lost ground in his physical strength, gained ground in his inward strength; and his unconquerable spirit did its best work when all professional work was ended and put away from him."

On Saturday, September 21st, at Friar Gate, Derby, occurred the death of Frank J. Lochrane. He was 29 years of age, and during the short time he had been in Derby had shown much promise of future success. Born at Glasgow, he studied and graduated at that University, taking the degrees of M.B., Ch.B., in 1901, and that of M.D. three years later. He studied also in London, Edinburgh, Dublin, and Vienna. His first professional appointments were those of House-Surgeon and House-Physician at the Glasgow Royal Infirmary; subsequently he held the post of House-Surgeon at the Peterborough Infirmary and Dispensary. In 1905 he was appointed Honorary Surgeon to the Women's Hospital at Derby, and entered private practice. Last July he was also appointed to the honorary staff of the Derbyshire Royal Infirmary to take charge of the Gynaecological Department. His illness was of short duration, and due to rheumatism. He was unmarried. The interment took place at Glasgow; a requiem mass was celebrated at St. Mary's Church, Derby.

Staff Surgeon William Thomas Billings, R.N., died at 9, St. James's Terrace, Regent's Park, on September 27th, aged 86. He was appointed Surgeon, March 1st, 1845, and Staff Surgeon January 26th, 1855; the date of his retirement not being stated. He was Surgeon of the *Melampus* in the Black Sea during the Russian war in 1855, and received the Crimean and Turkish medals.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. J. Tillemont Fontes, Professor of Neurology in the University of Bahia; Dr. William Marshall, Professor of Zoology and Comparative Anatomy in the University of Leipzig, aged 62; Dr. Francis H. Markoe, Professor of Clinical Surgery in the College of Physicians and Surgeons. New York, aged 51; and Dr. Adrien Doyon, formerly Physician Inspector of the Uriage Springs, and corresponding member of the Paris Academy of Medicine, aged 84.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Entrance Scholarships at the London Hospitals.

The following candidates have been successful in gaining entrance scholarships at metropolitan hospitals: E. J. Z. Jessel, B.A., University, at the London Hospital; H. P. Newsholme, B.A., Balliol, at St. Thomas's Hospital; E. W. M. H. Phillips, B.A., Jesus, at St. George's Hospital; P. N. Cave, B.A., University, at St. Mary's Hospital.

Scholarships in Natural Science.

Natural Science Scholarships are announced for competition as under:

December 3rd.—Balliol College, Christ Church, and Trinity College.

December 3rd.—Queen's and Hertford Colleges.

December 10th.—University, Lincoln, and Magdalen Colleges.

January 14th.—Jesus College.

March (date not fixed).—Merton College, New College, and Corpus Christi College.

UNIVERSITY OF CAMBRIDGE.

Appointments.

Dr. Humphry has been appointed Assessor to the Regius Professor of Physic for the ensuing academical year. Mr. J. J. Lister, M.A., St. John's College, has been reappointed Demonstrator of Comparative Anatomy for 1908. Dr. G. F. Rogers, F. C. Kempson, M.B., and Dr. Duckworth have been reappointed Demonstrators of Human Anatomy for five years.

Diploma in Tropical Medicine and Hygiene.

The following candidates have passed the examination for the Diploma in Tropical Medicine and Hygiene:

J. C. C. Ford, C. A. Godson, F. C. H. Grenier, F. H. C. Hutchinson, T. G. N. Stokes, J. N. Walker, G. Wilkinson (Emm.), W. S. Willmore.

Council of the Senate.

Three vacancies on the Council of the Senate are announced owing to the resignations of Dr. Kirkpatrick, Dr. D. MacAlister, and Mr. Parry.

Benefaction Fund.

The Vice-Chancellor has announced that the Benefaction Fund to the University has now reached over £100,000.

UNIVERSITY OF LONDON.

CONVOCATION.

THE requisite quorum of 50 members of Convocation not being present at the University on October 8th, at 5.30 p.m., the general meeting appointed for that time could not take place; and at the expiration of half an hour, the quorum being still deficient, the Chairman adjourned the meeting to Tuesday, November 5th, at 5.30 p.m.

UNIVERSITY COLLEGE.

Dr. W. M. Bayliss, F.R.S., will begin his course of eight lectures on certain fundamental problems in physiology common to animals and plants in the department of physiology, on Wednesday, October 23rd, at 5 p.m. The lectures will be devoted mainly to enzyme action, and are open to all students of the University and qualified medical men.

UNIVERSITY OF DURHAM.

THE following degrees were conferred at a convocation on September 28th:

M.D.—T. Hartigan, F. W. Kemp, W. H. Lamplough, F. Laughton-Smith, F. R. H. Laverick, M. Richards, E. C. Young.

M.D. (*for practitioners of fifteen years' standing*).—H. T. S. Haveline, E. Beaumont, J. F. Butler-Hogan, B.A., M.D.Brux., G. Cross, J. Cumming, L. Cooper, J. Freeman, A. Hawkyard, J. W. D. Hooper, H. Hill, L. Lewis, W. M. Palmer, A. W. Read, H. J. Roberts, H. F. Steele, J. F. Woodyatt, R. M. West, G. C. W. Wright.

M.B.—G. E. Davis, W. H. Edgar, G. R. Ellis, C. W. Greene, H. F. Joynt, E. P. H. Joynt, C. G. Kemp, H. M. Levinson, H. G. G. Mackenzie, M.A., S. D. Metcalfe, Elizabeth N. Niel, R. W. Pearson, J. W. Smith, G. Walker, L. L. Westrope, F. Whitby, C. R. Wilkins.

B.S.—G. E. P. Davis, W. H. Edgar, G. R. Ellis, C. W. Greene, H. F. Joynt, E. P. H. Joynt, C. G. Kemp, H. M. Levinson, S. D. Medcalfe, Elizabeth N. Niel, J. W. Smith, G. Walker, L. L. Westrope, F. Whitby, C. R. Wilkins.

B.HY.—G. Denholm, G. P. Harlan.

The following received the Diploma in Public Health (D.P.H.).—G. Denholm, A. G. W. Pearson.

UNIVERSITY OF ABERDEEN.

Election of Assessors.

THE Business Committee of the Aberdeen University Council reports that the term of office of two of the General Council's Assessors, Angus Fraser, M.A., M.D., LL.D., and Albert Westland, M.A., M.D., expires at the statutory half-yearly meeting of Council in October, 1907. Dr. Angus Fraser has acted as Assessor continuously since November, 1889; Dr. Westland was elected in October, 1905, for a period of two years. These gentlemen are eligible for re-election. An election to fill the two vacancies will therefore form part of the business of the statutory half-yearly meeting, and under Ordinance No. 9, Section 4, will take precedence of all other business. No member of the Senatus Academicus may preside at the meeting, or vote, or take any part in the election. The nomination of candidates must be in writing on a nomination paper of prescribed form, which may be obtained from the clerk. If more than two candidates are nominated, the Chairman will ascertain by a show of hands which candidates have a majority of votes at the meeting. If a poll is demanded by the proposer or seconder of a candidate, the poll will be taken by means of voting papers issued to all members of Council (not being members of the Senatus Academicus) who appear from their address on the Register to be resident in the United Kingdom or the Channel Islands. It is quite competent for members of the Senatus to be present at, and take part in, the subsequent business of the meeting.

The University Court has granted permission to P. J. Anderson, M.A., LL.B. to hold the office of Clerk of Council, to which he was appointed at the April meeting in conjunction with the office of Librarian to the University.

UNIVERSITY OF GLASGOW.

THE following candidates have been approved in the subjects indicated:

FIRST M.B. (*B., Botany; Z., Zoology; P., Physics: C., Chemistry*).—M. J. Aitken (Z., C.), J. B. Alexander (C.), J. C. H. Allan (P.), W. L. Anderson (Z.), T. S. Barrie (B., P.), W. E. H. Beard (Z., C.), S. H. Bloom (Z. C.), D. S. Brough (B., P.), S. Bryson (B., C.), A. D. Buchanan (B., Z.), D. S. Buchanan (B., P.), E. T. Burke (B., P.), C. Cameron, M.A. (B., P.), J. Campbell (B.), J. A. J. Conway (Z., C.), R. C. Corbett (B., P., C.), W. T. G. Davidson (B., P.), J. Dunbar (B. P.), K. Falconer (B., P.), W. Fraser (B., P.), L. L. Fyfe (B.), A. Gardner (B., P.), A. Garvie (Z., C.), A. R. H. Geyer (Z., C.), L. Glushak (B., P.), W. G. Goudie (B., Z., P.), C. W. F. Greenhill (P., C.), J. R. Grice, M.A. (B.), J. M'F. Grier, M.A. (B., Z., C.), G. C. Griffiths (Z., C.), C. H. Haddow (Z., C.), J. S. Hall (Z., P.), A. S. Hannay (Z., C.), A. G. Henderson (B., P.), P. Henretty (C.), J. R. Herbertson (B., Z., P., C.), A. G. Holms (B., P.), J. Johnstone (B., P.), F. A. Kerr (B., P., C.), A. Kirkhope (Z., C.), R. P. A. Kirkland (B., P.), J. M. C. Lang (Z., C.), W. J. B. Lavery (B., P.), F. Lawrie (B., P.), H. D. M'Crossan (B., P.), J. R. M'Curdie (B., P.), N. M'Farlane (B., P.), W. W. MacNaught (B., P.), S. A. MacPhee (Z., C.), G. H. M'Robert (Z., P., C.), A. T. M'Whirter (C.), M. Manson (C.), W. S. Martin (B., P.), F. Matheson (B., P.), J. Matheson (B., P.), A. Mitchell (Z.), A. Muir (P.), R. Parker (B., P.), H. Paterson (B., P.), T. F. Patrick (B., P.), J. Purdie (B., P.), J. C. Pyper (B., P.), A. Rae (B., P., C.), H. C. D. Rankin (B., P., C.), H. Y. Riddell (B., Z., C.), J. R. R. Ritchie (B., P.), E. Robertson (B., P.), J. H. Robertson (B. P.), W. L. Scott (P., C.), J. Smith (P., C.), R. A. Steven (Z.), J. A. Stewart (C.), L. T. Stewart (P., C.), W. P. A. Stewart (B., C.), A. H. Taylor (B., P.), G. Taylor (B., P.), W. Taylor (B., P.), W. R. Taylor (Z., C.), J. A. H. Telfer (B., P.), W. Tudhope (B., P.), G. A. Valentine (B., P.), A. G. Waddell (Z.), J. L. Walker (B. P.), T. Waterhouse (P.), E. C. White (C.), M. White (B., Z.), T. Whitelaw (Z.), A. Wilson (B., P.), W. B. Wilson (B., P.), J. C. Wood (C.), W. P. Yates (Z., C.) Women—J. R. Anderson (B., P.), M. L. Kirkwood (B., P.), B. Macgregor (B.), K. S. Macphail (C.), L. M. Ross (B., P.), C. H. Shearer (B., Z.), P. Stewart (B., P.), M. B. Thomson (Z.).

SECOND M.B. (*A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics*).—A. Aitchison (M.), W. S. Alexander, M.A. (A., P.); J. Allan (A., P., M.), A. C. Anderson (A.), J. G. Anderson (A., P.), W. Anderson (A., P., M.), E. Barnes, M.A. (A.), A. M. Bayne (A., P.), E. A. C. Beard (P., M.), D. M. Borland (M.), J. A. G. Burton (A., P.), J. Cairns (A., P., M.), J. A. M. Cameron (A., P., M.), J. L. Cochrane (A., P., M.), D. R. Cramb (A.), C. Duguid, M.A. (M.); T. S. Fleming (P., M.), G. Fletcher, M.A. (A.); E. G. Glover (M.), R. D. Goldie (M.), J. Graham (M.), J. Granger (M.), J. Gray (P., M.), W. Howat, M.A. (A., P., M.), W. Howie (P.), J. W. Jones (A., P., M.), D. N. Knox (M.), A. Leishman (A., P.), W. M'Adam, M.A. (M.); W. C. Macartney (A.), D. M'Dougall (M.), D. M'Intyre (A.), T. Mackinlay (M.), D. Mackinnon (M.), W. A. Maclennan (P.), C. Macmillan (A., P., M.), J. W. M'Knee (M.), T. Marlin (M.), W. A. L. Marriott (A.), D. Meek (A., M.), A. Millar (P.), H. B. W. Morgan (M.), F. Murchie (A., P., M.), F. L. Napier (A.), W. Nicol (A.), C. Nicholson, M.A. (A., P.), J. Robertson (A., P.), W. W. Scott (A.), W. A. Sewell (M.), A. H. Sinclair (A.), J. S. Somerville (A., M.), R. Steel (M.), A. F. Stewart (M.), R. Sweet (M.), A. G. W. Thomson (M.), C. H. Wagner (A., P., M.), W. S. Waterhouse (M.), J. B. Whitfield (M.), H. J. Windsor (A., P., M.), W. R. Wiseman, M.A., B.Sc. (A., M.), D. Yellowlees (M.), D. Young (M.), J. Young (M.). Women—C. Barrowman (A.), F. A. Gallagher (A.), E. A. Hay (A., M.), J. D. M'Whirter, M.A. (A., P.), M. Muir (A.), E. M. Walters (M.), M. A. Wylie, M.A. (A., P.).

THIRD M.B. (*P., Pathology; M., Medical Jurisprudence and Public Health*).—D. Anderson (M.), T. Archibald (M.), W. H. S. Armstrong (P.), J. Atkinson (P.), A. Ballantyne, M.A. (M.), J. Blakely (M.), J. N. Brown, M.A. (M.), W. B. Brownlie (M.), J. Cameron (M.), M. I. T. Cassidy (M.), D. Clark (P.), D. J. Clark (M.), A. B. Cluckie (M.), J. Cook (Coalburn) (P., M.), W. Dawson (P.), T. S. Forrest (M.), W. L. Forsyth (P.), J. Fotheringham, B.Sc. (P., M.), R. D. B. Frew (P., M.), W. E. Gemmell (M.), A. I. A. Gourlay (M.), E. O'D. Graham (P.), T. Harkin (P.), J. M. Henderson (M.), J. M'L. Hendry (P.), J. H. Hislop (P., M.), W. A. Hislop (P., M.), W. H. Kiep (P., M.), J. T. Kirkland (P.), W. Leitch (P., M.), D. C. M'Ardle (P.), F. C. Macaulay (M.), R. M'Carlie (P.), J. G. M'Cutcheon (P.), A. M. Macdonald (M.), W. M'Kendrick (M.), M. D. Mackenzie (M.), F. W. Mackichan (M.), W. C. Mackie (M.), J. J. Mackintosh (P., M.), J. M'M. M'Millan (P., M.), A. Macpherson (M.), M. M'K. M'Rae (P.), A. Maguire (P., M.), F. N. Marsh (M.), W. A. Muir (M.), C. S. M'K. Murison (M.), W. Noble (P. M.), R. M. F. Picken, B.Sc. (M.), R. Rae (M.), H. N. Rankin (M.), H. G. Robertson (P., M.), A. Semple (P., M.), J. B. Sim (M.), W. Stevenson (M.), H. C. Storrie (M.), D. Taylor (M.), W. Telfer (M.), A. Turnbull, M.A., B.Sc. (P., M.), H. White (M.), D. M'G. Wilson (P.), J. A. Wilson (P., M.), J. Y. Wood (M.), H. Young (M.). Women.—M. B. S. Darroch (M.), O. Robertson (M.), W. M. Ross (M.), J. H. Stewart (M.).

The following passed with distinction in the subjects indicated:

FIRST EXAMINATION.

In Botany and Physics.—W. W. MacNaught. *In Botany.*—D. S. Brough, J. R. M'Curdie, F. Matheson, E. Robertson. *In Zoology.*—G. C. Griffiths, A. G. Waddell. *In Physics.*—T. S. Barrie, J. Dunbar, A. Gardner, F. A. Kerr, J. E. Paterson, J. C. Pyper, J. R. R. Ritchie, J. H. Robertson, W. L. Scott, G. A. Valentine.

SECOND EXAMINATION.

In Anatomy.—W. Howat, M.A.; A. Leishman. *In Physiology.*—J. A. M. Cameron, Jeanie D. M'Whirter, M.A. *In Materia Medica and Therapeutics.*—E. G. Glover, J. Granger, W. M'Adam, M.A.; J. W. M'Nee, H. B. W. Morgan.

THIRD EXAMINATION.

In Pathology.—A. Turnbull, M.A., B.Sc. *In Medical Jurisprudence and Public Health.*—M. I. T. Cassidy, F. W. Mackichan, R. M. F. Picken, B.Sc.

UNIVERSITY COLLEGE, CARDIFF.

Two scholarships, each of the value of 72 guineas, open to competition amongst students of the Universities of Oxford, Cambridge, and London, who are beginning their fourth winter of medical study, have been won by C. W. Shepherd (Cardiff) and W. Reece Thomas (Tylorstown), who have just completed their third year at the Cardiff College Medical School. A third Cardiff student, G. Ambrose Williams, B.A. (Gowerton), who competed at the same time, obtained third place, and has been offered an exhibition of £36. Mr. A. A. Read, Lecturer in Metallurgy, and Mr. Herbert Bruce, M.A., Lecturer in History, were appointed Associate Professors in their subjects. A letter was read from the Newport Education Committee agreeing to contribute £200 annually to the College in the same manner as contributions are made by the Cardiff Corporation and the county councils of Monmouthshire and

Glamorgan. The Principal and the registrar were appointed representatives of the Council to attend the conference of the South Wales District of the Workers' Association at Cardiff on October 12th. Mr. H. R. Jordan, B.A., was appointed Assistant Lecturer in the French Language and Literature.

CONJOINT BOARD IN ENGLAND.

The following candidates have been approved at the examinations indicated:

FIRST EXAMINATION.

Part I (Chemistry) and Part II (Physics).—J. C. Beddard, †M. Ffoulkes, G. J. Gallagher, C. L. Graham, *A. P. Green, *A. Holmes, *G. B. H. Jones, B. R. Khanna, S. Lal, J. L. Lauder, †G. N. Martin, *C. H. G. Pochin, *E. H. S. Scarr, †D. Scott, A. W. Woo, †K. E. Wood.

Part III (Elementary Biology).—E. C. Bowden, E. R. Chambers, T. Clarke, H. D. Field, C. L. Graham, A. Holmes, F. M. S. Hulke, B. R. Khanna, C. V. N. Lyne, R. T. McRae, J. H. Paget, E. H. S. Scarr, C. G. Stoddard, A. Tilbury, R. E. S. Waddington, V. J. A. Wilson, A. W. Woo, H. S. Young.

* Part I only. † Part II only.

HOSPITAL AND DISPENSARY MANAGEMENT.

WILTS COUNTY ASYLUM.

The annual report of this asylum for the year ending March 31st, 1907, contains the report of Dr. Ireland Bowes, the Medical Superintendent, for the year 1906. The Committee in their report allude to the overcrowding which has existed in the asylum for the last few years. The Lunacy Commissioners, they say, have given them clearly to understand that they will not tolerate any such overcrowding as occurred in 1904–5–6, and they fear that the necessity for enlarging the asylum will again force itself upon consideration. In the meantime, chiefly by discharging to their respective workhouses about 20 harmless patients, they have been able to reduce their numbers to an average lower than that of the two preceding years. During the year 1906 the overcrowding was still felt on the male side, and doubtless the carrying out of the proposed extension on the male side, plans of which were approved by the Commissioners some time ago, would relieve the pressure for some years. Nevertheless, pauper lunacy in Wiltshire does not appear to be at present on the increase, for we see from a table furnished by Dr. Ireland Bowes that the total pauper insane in the county, in the asylum, workhouses, and with friends, numbered 1,178 in 1904, 1,168 in 1905, and 1,165 in 1906. In the asylum on January 1st, 1906, there were 988 and on December 31st, 1906, there were 967. The total number of cases under care during the year was 1,161 and the average number daily resident 987.9. During the year 173 were admitted, of whom 145 were first admissions. In 77, or 55 per cent., the attacks were first attacks within three and in 16 more within twelve months of admission; in 50 the attacks were not-first attacks within twelve months of admission; in 23 the attacks, whether first or not, were of more than twelve months' duration and the remaining 7 were of unknown duration. They were classified as to the forms of mental disorder into: Mania of all kinds, 97; melancholia of all kinds, 49; senile and organic dementia, 6; general paralysis, 2; acquired epilepsy, 5; and cases of congenital or infantile defect 14. The table of probable causes shows that alcohol was assigned in 21, or just over 12 per cent., venereal disease in 2, old age in 20, the menopause in 2, "moral" causes in 45, previous attacks in 43, and the remainder were distributed over other usually cited causes, including various bodily diseases and disorders in 17. Hereditary influences were ascertained in 72, or over 41 per cent., congenital defect existed in 10, and further a family history of phthisis was obtained in 19, and a family history of intemperance in 16.

During the year 58 were discharged as recovered, giving a recovery rate on the admissions of 33.5 per cent.; 39 as relieved, and 4 as not improved. During the year also there were 93 deaths, giving a death-rate on the average numbers resident of 9.4 per cent. The deaths were due in 20 to cerebro-spinal diseases, with 9 from general paralysis; in 37 to chest diseases, including 13 deaths from pulmonary tuberculosis; in 9 to abdominal diseases, including 2 deaths from enteric fever and 1 from peritoneal tuberculosis; in 10 to general diseases, including 2 from general tuberculosis, and 17 deaths were due to senile decay.

For the first time for fifteen years, since the re-drainage of the asylum, enteric fever occurred in this institution. Five male patients and one nurse were attacked, and two of the former died. No cause could be discovered for this outbreak. Dysentery also attacked 21 patients, all males, and Dr. Ireland Bowes notes that the disease prevailed to a greater extent among patients in the crowded division. No inquest was held during the year, and the only serious casualties were fractured bones incurred by three patients.

The institution was visited in July by the Lunacy Commissioners, who drew attention to the overcrowding on the male side, and again urged the extension of this asylum to cope with this condition, and a pressure for accommodation which they believe is likely to become accentuated.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2631, Gerrard.
GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

MOTOR TRICYCLES.

MOTICULUS asks for information in regard to motor tricycles or tricars. He wishes to know whether the engines are air-cooled or water-cooled, whether there is a change speed gear or not, and whether the differential gear is similar to that in a motor car or a free-wheel arrangement.

OVARIAN PAIN.

MONTIFEX asks for advice in the treatment of a young married woman, who on and off for the last two years has had more or less severe left ovarian pain. A few months ago he sent her to a general hospital, where, there being slight leucorrhœa, curettage was performed. Previous to that he had treated her by rest, counter-irritation, tampons, douches, bromides, etc. The pain still comes and goes with unfailing regularity. It is not increased at the menstrual period, in fact rather the reverse. She seems in excellent health otherwise. She has no children, and our correspondent supposes she is not likely to. Can anything else short of ovariotomy be recommended?

CLOVER'S ETHER INHALER.

G. H. T. I. C. asks the use of the "water jacket" in Clover's ether inhaler. Is it filled with cold water to prevent too rapid evaporation of ether? My limited experience (he adds) seems to be that with cold water in the "jacket" the patient takes much longer to go under than when no water is used; and, also, that the moisture from the patient's breath condenses in the ether chambers, sometimes to such an extent as to give the impression that ether still remains in the chamber, when only water is present, as found by the glass inspection stopper.

*** The original object of the water jacket was to secure a more uniform temperature of evaporation. It was warmed in cold weather by being placed in hot water before the ether was poured in, and in cold water during great heat in the summer time or tropics. The present form of Clover's ether inhaler is usually made with a much smaller, and therefore less active, water jacket than was the case with the original pattern.

ANSWERS.

DELTA.—If the condition is congenital, medical treatment is not likely to be of use. If it has been acquired, the question of treatment would depend on the cause, and on a careful consideration of all the circumstances of the case.

MOTOR BICYCLES: SIDE-SLIP.

DELTOID writes: "Cyclist" will be interested to hear that Mr. Cantlie in his book on *Physical Efficiency* says: "The limit of time a motor cyclist who rides frequently can continue riding before he seriously damages certain important organs is about eighteen months. It is a form of conveyance that is to be condemned." Mr. Cantlie evidently wrote without any practical knowledge. The present writer has from the very first appearance of the motor cycle, some five or six

years ago, been an almost daily rider, has ridden considerably over 20,000 miles, and can assure "Cyclist" that vibration is not likely to affect his spinal cord, while it will probably have a most beneficial effect on his liver. The question of side-slip is very largely a matter of skilful balance and careful riding, and probably cannot entirely be prevented by chains. The writer finds it a most economical means of getting about, as he has had the same motor for nearly five years, an Excelsior, and it seems to run quite as well as in its first year. It very seldom indeed gives real trouble or breaks down on the road.

DR. W. J. DIXON (Temple Combe, Somerset) writes: I have ridden a motor bicycle for the past twelve months and have not noticed any injurious results from the vibration, and as I have not got spring forks I have had every opportunity of judging. I have had no experience of chains to prevent skidding, but I can strongly recommend Lovelace's patent rubber tread. I have ridden my bicycle every day with very few exceptions in all weathers, and these treads are really wonderful for preventing side-slips. With ordinary care and moderate speeds one need not fear side-slips if one has Lovelace tyres or his treads fitted to one's own tyres.

DR. J. L. RENTOUL (Lisburn) writes: In answer to "Cyclist" (October 5th), I have used a motor bicycle for three months, and have suffered in no way. If "Cyclist" gets a good small machine with spring forks and a good spring saddle, he will ride easier than on a "push bike." I extracted grains of powder from an eye after a five-mile ride about three weeks ago; this will show that the "shaking" is very little. As to side-slip, if you ride with caution and use a 20-in. frame machine with good grooved tyres, you need not fear skidding. My bicycle is a 1¾-h.p. F.N., magneto ignition, geared 8 to 1. The country around me is hilly, with very bad roads, but I have not yet met the hill I cannot get up without pedalling. "Cyclist" will get full particulars from the F.N. Motor Agency, 106, Great Portland Street, London, W., and I will be very glad to answer any questions if your correspondent wishes to write me. The main thing for a doctor is to have a light, low-powered, and low-geared machine.

DR. J. SADLER CURGENVEN (London, W.) writes: In answer to "R." (October 5th), I have driven a two-seater 8-h.p. Rover for the last six months, using it for my professional work in London, and this summer for a trip down to the Lizard and back. I quite agree with "R." as to the liability of the car to skid; this is, I think, due to the fact that there is not weight enough over the driving wheels. I started using two-studded non-skid Continental tyres on the rear wheels, but I found that these were anything but non-skidding on *dry* wood, the cobble stones of crossings, and on asphalt. I had one bad skid, the car turning completely round, when trying to pull up suddenly on dry wood pavement. After this I had a grooved Dunlop cover put on one wheel, and retained one of my studded Continentals on the other. This is supposed not to be very good for the car, but I find that it answers fairly well in town; the Dunlop holds on the dry wood, and the Continental on wet, but even with this arrangement it is necessary to drive with caution when negotiating curves, or if a sudden "pull up" is likely. During my run to Cornwall and back I had the studded tyres on both rear wheels, and on the country roads had little or no trouble from skidding. On a car with plenty of weight at the back the studded tyres are quite satisfactory. I also drive a Panhard landaulette, on which I have two of the studded Continentals, and I have had absolutely no trouble from skidding with that.

HOWK writes: I have never heard that the vibration on a motor cycle caused any abnormal condition of the spinal cord. Several friends of mine have used motor cycles for a long time, both in their practice and in their pleasure, but have not experienced bad effects. The condition of the men who took part in the A.C.C. six days' reliability trial was good. I have never experienced any symptoms after travelling nearly 100 miles a day for some days. One country practitioner I know has done his round on a motor cycle for over a year regularly and has not experienced any unusual sensations. The vibration on a good machine with a springy saddle and spring forks is not much. A spring seat pillar and spring handle bars would prevent any vibration that there might be. There is also on the market a spring arrangement in connexion with the back wheel. My machine is fitted with a springy saddle and spring forks, and the vibration, except over a bad road, is very slight. I have used spring foot rests and found them excellent. As regards side-slips, I have never heard of chains on a motor cycle, that is to say, like the non-skid chains on cars. Side-slips are best guarded against by having a non-skid band on back wheel, low frame, and cautious riding with feet on pedals. Stop the engine on crossing tram lines or on very greasy patches of road, and also round corners. Slips are more liable to occur on picking up speed than on slowing down. A great deal depends on the rider and the make of machine. The further back the saddle is the more likely is a slip to occur.

J. H. R. writes: "R." will find the usual studded bands satisfactory as regards side-slip, but they are expensive and do not last long. A more economical device, if he does not mind putting them off and on when required, is the Parson's chains. He can use them on either or both driving wheels, and in my opinion they are superior to any other method for small cars. Of course, the tyres must be kept well inflated. I have used them for eight months on an 8-h.p. Sizaire, and am thoroughly satisfied with them, as they have never failed, though the car is a nasty one to skid on greasy ground. The Dunlop grooved tyres are very good on a slow car, but would not answer nearly so well in pulling up sharply, as the most careful driver sometimes has to do. The chains have not injured my tyres, though I have taken journeys one hundred miles each way on them.

DR. A. J. BRIANT (Helsby) writes: "R." should try the Radax tyres manufactured by the British Insulated and Helsby Cables Company, Helsby, near Warrington. Besides being non-skid, they are practically unpuncturable. The tread is composed of cotton canvas, fixed with the fibres endwise to the road. When worn through they can be re-covered at a moderate cost.

LUBRICANT FOR CATHETERS.

DR. T. GERATY (Nottingham) writes: In reply to Dr. Dabbs, I find "K Y" Lubricating Jelly a most excellent and elegant preparation; it is non-greasy, and its lubricating qualities are perfect. It is prepared by Van Horn and Sawtill.

DR. J. MACMUNN (London, E.C.) writes: As no one has acceded to Dr. Dabbs's request in your issue of September 28th to give hints on the above subject, I may be permitted to write a few words. He uses a lubricant of almond oil containing atropin, adrenalin, and cocaine. Personally I find adrenalin fulfils a use only in some cases, such as cases of retention with congestion (and, of course, cases of haemorrhage). In other cases I find it actually adds to the difficulty by contracting the musculature of the urethra. How can such things act at the time? How can they act on the part required, since the meatus really wipes off the lubricant as ordinarily used? By far the best plan is to inject the lubricant a little time before; then, if we use a fairly large instrument, the latter acts as a piston and sends it on. I always use long, thick, small-bore syringe nozzles in cases of obstruction. Completely filling the urethra down to the obstruction, these nozzles compel the things injected to go through, and not act merely on its face, as is usual. All oils are vastly inferior to mucilages. Whoever uses Gouley's or Van Horn's will never use anything else.

LETTERS, NOTES, Etc.

ERRATUM.—In the note on "The Causation of Cyclical Vomiting" (BRITISH MEDICAL JOURNAL, October 5th, p. 944) the last line but one should read: "*No* microscopical examination, however, was made."

THE "MEDICAL DIRECTORY."

THE Editors of the *Medical Directory*, 7, Great Marlborough Street, London, W., write: The amalgamation of various London medical societies under the title of the Royal Society of Medicine necessitates a great many alterations in the forthcoming issue of the *Medical Directory*, and we shall feel obliged if all Fellows of the Society or Members of Sections will kindly give us at once the necessary information. We may say that we have now decided to abbreviate the entries to the following:—Fell. Roy. Soc. Med., or Mem.—Sect. Roy. Soc. Med. Many gentlemen, in making their returns, have overlooked the fact that several of the old societies have ceased to be. Of course, we have to delete such entries for the future.

RELATIVE VALUE OF INHALATION AND INJECTION METHODS OF ANAESTHESIA.

DR. E. LAWRIE (London, W.) writes: Stovaine may or may not be everything Mr. Dean says it is, but the claims he puts forward are chiefly based (1) on the effects of chloroform improperly administered; and (2) on the after-effects and collapse which are inseparable from the use of ether. Until Mr. Dean has compared the effects of chloroform inhalation conducted on sound principles with the injection methods of analgesia, he is hardly justified in asking us to give up the certain safety and freedom from shock of my method of chloroform anaesthesia for a plan which, even when properly carried out, may involve the consequences described by Dr. G. H. A. Barton.

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INEBRIETY: ITS CAUSATION AND CONTROL.

Being the Second Norman Kerr Memorial Lecture.

By R. WELSH BRANTHWAITE, M.D.,

H.M. INSPECTOR UNDER THE INEBRIATES ACT.

Whatever may be the opinion of each of us regarding the influence exercised by habitual drunkenness in the actual causation of lunacy, social disorder, and crime, its mere association with these conditions is sufficient justification for a careful study of the condition, and persistent search for any means calculated to reduce its prevalence. The subject may well be considered of extreme importance to all persons who take an intelligent interest in questions of national welfare, quite regardless of their individual opinions regarding total abstinence or the moderate use of alcohol. Every sound man, be he abstainer or otherwise, must acknowledge a personal responsibility in regard to the care and treatment of the unsound, and a moral duty to protect himself and his weaker friends from the disgrace, ruin, and danger which accompany inebriate habits. Furthermore, every householder, whether an alcohol-taker or abstainer, who is called upon to subscribe towards the maintenance of social wrecks, must see the value, from an economic standpoint, of any measure calculated to result in material relief of expenditure.

The Need for More General Interest in the Subject.

When full weight is given to the foregoing conclusions, the apparent apathy of the general public regarding the treatment and control of drunkards is not easy to explain, except on the grounds of ignorance and misconception. Knowing, as I do, how many inactive persons are convinced of the necessity for more definite measures, it is a matter of daily surprise that no organized effort has been made by them, on broad, common-sense lines, to remedy a condition which is so closely associated with all the evils of civilization.

Although in the United Kingdom it is estimated that some three and a half millions of persons have banded themselves together to attack, at its source, the drinking habits of our country, with a view to the ultimate reduction of drunkenness, only a mere handful take a real practical interest in the drunkard himself, as apart from, or in addition to, general interest in the drink problem. The voice of the man in the street is a mere useless whisper, scarcely heard and quite unheeded. Up to the present time general interest in the question has been wanting, or practically so, and I fear that little progress will be made until such interest is awakened to a sufficient extent to impress upon our lawmakers the necessity for action, and to imbue them with the certainty that detailed treatment of the subject will meet with approval and support from the broad-minded, moderate-drinking majority. There are 36 to 38 millions of persons in the kingdom who, whether moderate drinkers or not, are at any rate not known to be abstainers. These must be enlisted as workers before any satisfactory result can be obtained, otherwise any attempt at progress, made only by the abstaining section of the population, will have little chance of success. Any effort by abstainers, unsupported by others, would be equivalent to the power of a boy matched against the dead weight or active resistance of an elephant.

I cannot help feeling that the extremist policy of the abstainer, and his known advocacy of universal abstinence as the only possible remedy for drunkenness in all its forms, is largely to blame for our failure to elicit general interest in the inebriate. The broad-minded, moderate-drinking members of the community, amongst whom are the majority of legislators, economists, and thinking men, consider this no remedy at all, or as fanatical, millennial, and outside the range of practical politics. Regarding the suggested remedy in this light, they also class the alleged importance of the inebriate problem in the same category, as a product of fanaticism, and accordingly disassociate themselves with all in relation thereto. It should be somebody's business to make clear to the moderate man the moral duty which devolves upon him to render assistance in matters appertaining to the reclamation or control of the inebriate; persuade him that he can conscientiously do this without stultifying himself in the least degree, and convince him that his assistance is not only valuable, but essential to the successful solution of a great social problem. I think no society is better fitted to accomplish this object than the one I am now addressing—

The Society for the Study of Inebriety.

Dr. Norman Kerr, himself an advocate of abstinence, fully realized the necessity for conjoint action between philanthropists and scientists, without regard to the question of personal habits, in the hope that a study of the drunkard might be instituted, untrammelled by prejudice, and in order that some interest in the subject might be kindled amongst the moderate majority. With these objects in view, he invited all and sundry—teetotalers and otherwise—to form a body of persons who would engage in a cold-blooded, common-sense inquiry into the matter of the drunkard—an unprejudiced "Society for the Study of Inebriety." Constituted thus, and conducted on these principles, our Society should wield an enormous power for good, and eventually succeed in awakening sympathy amongst those who are still apathetic. The motives which directed its foundation were admirable, and no better purposes can be found to control its continued existence. In any case, the belief that this original scheme still governs its constitution justifies me in speaking freely and without fear of eviction for the possible assumption of an unorthodox or reactionary attitude.

For many years past, under Dr. Norman Kerr's direction, and under the able guidance of those who have followed him in secretarial and presidential offices, the Society has done excellent work. Many papers have been read and published bearing upon the pathological, psychological, medico-legal, and ethical aspects of the inebriate problem. We have heard lots, too, about heredity, and ought to have learnt much—at any rate, we know fairly well how opinions differ. On the whole, therefore, our Society may be congratulated upon the thoroughness with which it has tackled the study of the subject, the completeness with which it has warranted its title in so doing, and thereby carried out the intention of its principal founder.

The Scope of the Present Lecture.

So thoroughly has the scientific position been ventilated that I am conscious of my inability to add much of value to what has already appeared from time to time, nor do I propose to attempt the impossible. My unique position, however, as the only man in close touch with all inebriates under legal detention in England justifies me in assuming that some record of my personal observation may be useful in support or otherwise of scientific, more or less theoretical, contention.

In all forms of mental or physical variation from the normal, numerous advantages are obtainable from the study of cases in mass; definite characteristics, which may easily escape notice when reliance is placed upon isolated cases, often become evident and unmistakable under collective conditions. Habitual drunkards, studied as a class, segregated from normal individuals, have proved no exception to the general rule. I therefore propose to confine myself to matters which relate strictly to practical work, endeavouring to describe the inebriate to you as I have found, studied, and weighed him, through something like twenty-five years' intimate association with his kind. Afterwards I may perhaps be permitted to indicate the principles which govern the treatment and control of drunkards, the directions where such efforts fall short of what is required, and the additions which are necessary for adequately dealing with the class.

The Inebriate Defined.

In the meantime, however, before proceeding further, a few words seem desirable to indicate my interpretation of the word "inebriate," lest misapprehension arise, and subsequent remarks be taken as applicable to persons who do not merit inclusion.

Viewed from an alcohol-drinking standpoint, all classes of society may be divided into those who take alcohol and those who do not. The alcohol-takers may again be subdivided into—(*a*) strictly moderate, (*b*) careless

and occasionally excessive, drinkers, and (c) habitual drunkards. Eliminating the total abstainer and the moderate drinker, we have the last two subdivisions left for consideration—the careless and occasionally excessive drinker and the habitual drunkard. So far as the occasionally excessive drinker is concerned, merely passing attention will suffice; then we may also dismiss him from future notice. The essential difference between persons of that type and the habitual drunkard is the fact that the former retains the power to remain sober, if he desires to exercise it. Lacking, perhaps, to some extent, in moral sense, power of control over impulses, and power of judgement, he is still on the right side of the line, and may therefore be practically eliminated from consideration for present purposes. He is a person who requires education into sobriety by moral means; if these fail, and he becomes a nuisance to the community, misspends his savings to the detriment of public funds, or commits crime when under the influence of drink, he needs coercion in the shape of control, more penal than reformatory, to bring him to his senses. So far as we are concerned to-night, we may safely leave him to the temperance worker or the magistrate It is possible that degenerative changes, consequent upon many week-end "drunks," bank-holiday sprees, convivial meetings, or banquets, may eventually bring him into our hands; but until those changes occur he remains outside the class in which we are specially interested. So far, however, as the habitual drunkard, inebriate, chronic alcoholic, or dipsomaniac, is concerned (I consider all these terms synonymous), the matter is entirely different. Whatever difficulties are experienced by the Parliamentary draughtsman in his endeavour to find an incontestable definition of the species, none need trouble us. My conception of a definition to suit our purpose is an exceedingly simple one, and as such I commend it to you: An inebriate is a man who may or may not desire to live soberly, but in any case cannot unless and until some change takes place in his mental state. The more I see of habitual drunkards, the more I am convinced that the real condition we have to study, the trouble we have to fight, and the source of all the mischief, is inherent defect in mental mechanism, generally congenital, sometimes (more or less) acquired. Alcohol, far from being the chief cause of habitual inebriety, is merely the medium which brings into prominence certain defects which might otherwise have remained hidden but for its exposing or developing influence. In the absence of alcohol the same persons, instead of meriting the term "inebriate," would have proved unreliable in other ways; they would have been called ne'er-do-weels, profligates, persons of lax morality, excitable or abnormally passionate individuals, persons of melancholic tendency, or eccentric. I do not believe that any drunkard, of all the eight thousand or so I have known, has voluntarily and of intention made himself so; on the contrary, I am convinced that all who possessed a sufficiently developed mental equilibrium to appreciate the seriousness of their condition have urgently and honestly desired to live a sober life, and have fought to this end and failed in a struggle against weakness the strength of which a normal man is quite incapable of realizing. I am inclined to think that sufficient credit has never been given to the honesty of an inebriate's fight against inclination, or to the inherent weakness of power to resist impulse which renders his struggle for victory unsuccessful. When confirmed inebriety has apparently been acquired through persistent careless habits, the individual has, during the course of transit from one condition to the other, been unconscious of advancing slavery; he has honestly believed that his power over himself remained unaffected long after it had gone. It seems to me exceedingly doubtful whether habitual inebriety, as above defined, is ever really acquired in the strictest sense of the word—that is, in the absence of some measure of pre-existing defect. In other words, I am sceptical—very sceptical indeed—as to the probability of any normally constituted individual becoming a habitual drunkard, even if he permits himself to indulge occasionally in a fair measure of careless drinking, without the intervention of nerve shock, or other influence sufficiently potent to disturb the equilibrium of nervous and mental mechanism. Although the experiment cannot be regarded as a safe one, because of the possible existence of unrecognized mental defect, there is no doubt whatever, in my opinion, that the man who has taken alcohol regularly, without apparent detriment, during a long life, has applied to himself one of the most perfect tests of mental equilibrium, power of control over impulses, and power of judgement. This, I think, explains why so many of our hardest thinkers and hardest workers are moderate drinkers; there is no reason for them to be otherwise: they are safe and they know it. The fact that the unsafe also consider themselves safe does not appear to me to alter the position in the very least.

PRESENT FACILITIES FOR INEBRIATE STUDY.

The control of inebriates under the Habitual Drunkards Act of 1879, and under the Inebriates Act of 1898, enables us to make a detailed study of all classes and of all types of cases at close quarters, a position which is not shared by any other country. In fact, there has never been any time in the history of the world when the chances for observation and conclusion have been greater than they are at present. In State and certified reformatories we have to deal in the main with the lowest stratum of humanity, that sad and hopeless layer composed of individuals who are habitual criminals, frequenters of police courts, and prison recidivists, mostly addicted to violence, brawling, and immorality. A small minority of persons who are committed to these institutions are capable of segregation from the general ruck, on account of better education, social position, and a personal history of moral conduct. These selected cases may be considered, for our present purpose, some degrees better than those previously mentioned. Still better in many ways are the persons who have voluntarily applied for admission, and have been received into the lower and middle class retreats; mostly artisans or their wives, they are decent, and usually without taint of criminal complication. Again, in the more expensively conducted retreats we find tradesmen, professional men, and persons of no occupation who have sufficient means to maintain themselves; or we meet the wives of such persons. The most expensive retreats contain members of good families and wealthy persons of both sexes. It will therefore be evident that our possibilities for study are not limited to any one class or sex, and that the types available are extremely varied.

CONCERNING INEBRIATES COMMITTED TO REFORMATORIES FROM COURTS OF JUSTICE, UNDER THE ACT OF 1898.

It is customary for the writer of a monograph relating to a specific disease to restrict his attention, in the first place, to a description of those characteristics which are nearly always present in a typical case, and afterwards show how the same disease may exist without many such distinguishing peculiarities. This manner of treating the subject is necessary owing to the variations commonly met with in mild attacks of nearly every common ailment. For instance, when an infectious disease is epidemic, cases often occur which would not be recognizable but for the fact that they are found amongst others more definite. In these cases most, possibly all, distinguishing characteristics are absent, notwithstanding the fact that the causative poison is the same to all intents and purposes. In other words, the description of every disease amounts to a pen picture of a well-developed, severe example, the milder cases being classed as variations of the same condition by reason of their association with bad cases, or from the discovery, after careful search, of some known features in obscure or modified form.

Without a thorough knowledge of severe types, the milder ones would undoubtedly escape recognition. In regard to my present subject I think I can hardly do better than follow the same course: deal first with cases which exhibit clearly marked symptoms, such as those admitted to State or certified inebriate reformatories, and afterwards endeavour to show that the same special peculiarities are usually present, in modified form, amongst the milder cases in retreats, and therefore amongst all inebriate cases met with in ordinary life.

The cases admitted to State and certified inebriate reformatories are all sentenced thereto from courts of justice. If a man or woman commits an offence which is punishable by imprisonment, or is repeatedly convicted of drunk and disorderly behaviour, and can be proved to be a habitual drunkard, our law permits a judge or magistrate to order

a sentence of detention in an inebriate reformatory instead of a sentence of imprisonment. Many habitual drunkards have been committed to detention under this power, and I now propose to submit for your information some details concerning the mental state of 2277 cases committed to special care previous to December 31st, 1906.

The following table, which relates to these cases, may well serve as a text for subsequent remarks:

Classification according to Mental State.	Number in each Class.	Percentage to Total Number of Persons admitted to Reformatories.
1. Insane—certified and sent to asylums ...	51	16.1
2. Very defective—imbeciles, degenerates, epileptics	315	
3. Defective—as above, but less marked, eccentric, silly, dull, senile, or subject to periodical paroxysms of ungovernable temper	1,060	62.6 46.5
4. Of average mental capacity—on admission, or after six months' detention ...	851	37.4
Total admissions	2,277	—

It classifies all the cases in question into four groups—"insane," "very defective," "defective," and "of average mental capacity." A brief glance at the figures placed against each section will show that upwards of 62 per cent. have proved to be either insane or defective in varying degree, and that only a little over 37 per cent. can be described as "of average mental capacity." In regard to the latter I may say, at the outset, that the standard of mental capacity adopted for the purpose of this classification is an exceedingly low one, if judged by what would be considered a normal standard in ordinary life; in other words, that the percentage here shown would have been considerably smaller had I not been anxious to avoid the least chance of an indictment for exaggeration. In fact, if I had followed my own inclination, uninfluenced by others, the class in question would have been described as possessing mental capacity of a low order, and a fifth class would have been added to distinguish cases of good mental capacity from all others. I tried that scheme, but found my fifth class sufficiently minute to appear ridiculous, and therefore abandoned it, again fearing an accusation of exaggeration. Furthermore, any such table compiled by me would have depended upon the estimation of one man, and I thought it better for present use to adopt one which has been the joint work of ten or eleven observers working separately. After all, the table as it stands needs no alteration to serve our purpose.

The Prominence of Mental Defect.

Amongst all the characteristics and peculiarities encountered during a study of inmates of inebriate reformatories, none are so definite as those ascribable to mental defect or disease. There are no other general distinctive peculiarities, or even hint of any other common condition which would point to a reason why these people are habitual drunkards and we are not. Every effort to find other causes, apart from those associated with psychic or neurotic abnormality, has failed utterly. The general presence of the conditions we do find, and the negative result of search for other agencies, have been the main influences which conclusively satisfied all in close touch with inmates of reformatories that the fundamental cause of habitual drunkenness (at least, in these particular cases) is mental defect or disease—an amount of defect or disease which is clearly obvious in 62 or 63 per cent., and suspected in the remainder. When we remember the symptomatic variation met with in other diseases, and the absence of definite characteristics in many mild attacks of other affections, the fact that certain distinctive peculiarities, which are associated with the worst cases in reformatories, are not so apparent in milder cases becomes of little importance. Nevertheless, in my opinion at least, if careful search be made, the same characteristics can be found, although modified, even in the mildest of all the cases which come under our notice.

If, then, the mental aspect of inebriety occupies such a position of importance in causation, it becomes necessary to refer briefly to the various forms of mental defect and disease found in inebriate reformatories, and reflect upon the bearing each is likely to have in the formation of habits of drunkenness.

Group 1. Insane Inebriates.

Amongst the fifty-one persons classified as insane, none has been included except those actually certified and sent to asylums during their reformatory sentence. At least four or five times this number have, justly, been considered insane—that is, the subjects of mental disease in fairly advanced form, but have escaped certification owing to the transient condition of the more obvious symptoms, and the difficulty of finding sufficiently definite evidence of delusion, hallucination, maniacal condition, or melancholic state, to render detention in an asylum probable for more than a short period. Furthermore, if certification is resorted to whenever such a course becomes possible, we should always be transferring our inmates to and fro between asylum and reformatory. The number of cases in this group, therefore, only represents the cases actually sent to asylums, not those which might have been sent without any misuse or too liberal construction of the word "insane." Some of the cases included in this group as actually sent to asylums were found to be suffering from delusions when first admitted to reformatories; others were in an excited state, which gradually merged into mania; a third section contained persons obviously demented; a fourth class were melancholic and suicidal; a fifth epileptic, with violent attacks of mania; and a sixth were the subjects of recurrent mania, which developed and subsided, in some cases two or three times, during their period of detention as inebriates. It is therefore certain that (1) the large majority of inmates of this description were either actually insane during their police-court history, or (2) in a state bordering on insanity, and (3) that mental disease was the condition for which they were repeatedly imprisoned—mental disease merely masked by alcoholic indulgence. The exact relationship between drunkenness and insanity in these cases is extremely difficult to determine; their previous history, so far as we are able to piece it together, supplies too little reliable information to warrant definite conclusion. Notwithstanding this, when good information has been available, it has nearly always pointed to the existence of brain disturbance, as evidenced by erratic behaviour, excitement, or melancholy, previous to the commencement of habitual drunkenness. Ordinary experience indicates that the mental disease, in some cases, may be due to tissue degeneration produced by persistent alcoholism, to repeated alcoholic epileptiform convulsions, and recurrent attacks of delirium tremens, or to shock after shock to the nervous system arising from the sudden discontinuance of alcohol which accompanies every sentence of imprisonment imposed during heavy drinking. But, for all that, I am satisfied that the majority of our insane inebriates have become alcoholic *because of their tendency to insanity*, not insane as the result of alcoholism, and that the preceding drunkenness was merely precursory evidence of approaching mental disorder. Whatever we may determine as the cause for drunkenness in regard to such types as are hereafter to be discussed, I think there can be no doubt, so far as the large majority of units in this group are concerned, that drunkenness is merely a symptom of mental disease, and not in any sense to be studied or treated in any other light.

Groups 2 and 3. The Mentally Defective.

The "very defective" and "defective" groups in the above table may reasonably be considered together; the characteristics of both are the same, varying only in degree. "Defective," in the sense used here, includes every person admitted to reformatories who is found to be much below an average standard of mental capacity, but insufficiently so to justify a certificate of insanity, or only now and then certifiably insane during short, transient paroxysms.

Certain peculiarities in cranial conformation, general physique, and conduct have long been recognized as evidences of congenital defect. Nearly all the 1,375 cases included in the two "defective" sections of our table have given evidence of possessing some of these characteristic

peculiarities, and it is morally certain that the large majority of them started life handicapped by imperfect brain development. The smaller number of cases where evidence of early defect is wanting are probably instances of brain degeneration produced by persistent alcoholism, advancing nervous disease, senility, or other cause. It is when degenerative changes are added to original defect that difficulty arises in apportioning the true significance of each. Unfortunately for any hope of clear distinction, there are many inmates with family history strong enough to warrant a certainty of congenital defect, who are marked more prominently when sent to reformatories with the damage caused by a subsequent life of drunkenness and immorality than with the signs of defect existing at or resulting from birth. When antecedents can be traced, and the life-history of cases during infancy and childhood is known, the evidence is strong enough; but too often the result of inquiry is negative, and reliance for approximate diagnosis must be placed upon other indications.

Perhaps the most conclusive evidence of congenital defect, from a scientific point of view, is the common presence amongst inmates of certain *physical* signs of arrested or distorted development. Many instances of stunted growth can be found amongst our "defective" inebriates, abnormally small or misshapen heads, and case after case of developmental arrest or irregularity in upper or lower jaw. There are plenty of examples of the thin-faced congenital, with high cheek-bones, deeply-placed eyes, projecting ears, and shifty, hunted expression; but more common still is the heavy, repulsive, masculine type, with a tendency to violence and brutality, beady eyes, square jaws, and dull, flabby, expressionless face. Features are often found asymmetrical, nose misplaced, eyes irregular, and some abnormalities in shape of palate and in dental formation have also been noted. In short, the same physical abnormalities are to be found in mentally defective inebriates as are present amongst idiots and imbeciles, only in less degree, because the defect is less severe. The sketches and photographs accompanying this lecture need little comment; they illustrate somewhat imperfectly the cranial and facial indications of congenital defect found in this type of inmates of reformatories. Even the untrained eye should meet with no difficulty in recognizing "something wrong" with all of them.

Although there are so many physical signs to indicate a congenital basis for the impaired condition of inmates in these groups, by far the most practical evidence is to be obtained from a study of their character, conduct, and mental capacity when under control. But, notwithstanding my opinion, I am not prepared to insist upon the universality of congenital defect. Unfortunately, the grounds for proof are not definite enough to justify more than a suggestion of something approaching to congenital basis for all the most evident peculiarities. After all, the main point is not so much whether the defect is congenital or not as whether, if it exists, it preceded or succeeded the commencement of drunken habits.

The chief characteristic mental symptoms observable in these cases may be considered under three main heads: (1) Impaired development of moral sense; (2) imperfect control over impulse; and (3) defect in power of judgement.

Impaired Development of Moral Sense.

Of all the three characteristics, impaired development of moral sense is, perhaps, most apparent in the largest number of cases, and the one of all others which is most likely to have existed previous to drunken habits. The early history of all cases where this symptom is marked has justified a probability of congenital origin. Odd and peculiar from birth, these persons have always seemed incapable of acting like other people. There is often a history during childhood of fits, chorea, or other neuroses; as children they have proved uneducable, and as adults unemployable—from incapacity to learn the details of a wage-earning occupation. They appear to be unable to tell the truth, and cannot be made to see any reason why they should do so. They are filthy in habits, and require supervision, even force, to ensure a moderate amount of cleanliness when under detention. They do not care in the least for the opinion of others in matters relating to conduct, nor can they be induced to see any reason why dictation from others should be obeyed. Drunkenness is justifiable, prostitution is justifiable, any course they choose to adopt is justifiable, so long as they can show (to their own satisfaction) some so-called "reason" for their conduct. Deficient in moral sense, they cannot be made to understand the ethics of social life, or the necessity of obedience to moral law, and an unfriendly attitude is manifested towards all who endeavour to exercise refining influences. These persons are drunkards because they are antisocial; they are incapable of being otherwise, or of appreciating the advantages of even attempting to be otherwise. They help to swell the numbers of the habitual criminal classes to no inconsiderable degree. There can be no doubt whatever that these persons are mentally unsound first and inebriate afterwards, and that their drunkenness is the direct result of mental defect, for which they are virtually, if not legally, irresponsible.

Imperfect Control over Impulse.

This symptom, again, is exceedingly common, and accounts largely for erratic behaviour, whether it takes the form of drunkenness, immorality, or crime. In addition to drunkenness, only about 15 per cent. of all cases admitted to reformatories have been quite free from crimes of violence, wilful damage to property, or larceny; the majority, indeed, have been convicted many times of one or other of these offences.

There are few persons in ordinary life, even amongst the most sane, who are quite free from occasional impulses to commit acts which are inconsistent with strict moral rectitude. The particular nature of the desire differs with the individual, and with the same person under different circumstances. Some, for instance, may be tempted to indulge an innate or acquired desire for alcoholic stimulation; others may have to maintain something like a permanent struggle against an impulse to defy the moral laws which regulate sexual indulgence; and there are many who are constantly incited by impulse towards the squandering of money to gratify a desire of the moment, to corrupt business practices, or to other similar offences against a high standard of integrity and honour. Impulses regulate the actions of a child; but in later life, if nervous development be normal, and educational surroundings are favourable, the brain assumes the regulation and control of impulse. The mechanism by which this result is attained is exceedingly complicated, but the evidences of its existence are clear: (1) The acquirement of a sense of right and wrong—without which in the majority of its inhabitants no civilized community can exist; (2) the development of experience, arising from the stored memory of bad results from past wrong actions by the individual, or by persons with whom he is acquainted; and (3) a power of judgement—the faculty of choice between alternatives—the possession of which is the best proof that intellect has assumed the control of impulse. A well-developed brain causes a man to hesitate before he strikes to avenge an insult in the street, although impulse urges the action. During the period of hesitation he brings his sense of right and wrong into use; he remembers a similar experience in the past which ended in a crowd and a police-station, and he decides that the action is unwise—his judgement has, in fact, controlled his impulse. But the antithesis to this illustration obtains in regard to very nearly all habitual inebriates admitted to reformatories. Like children, they act upon impulse; they strike without intermediate consideration; they drink blindly, become unchaste and profligate, lie, steal, and commit wilful damage, because their sudden impulses take those directions, and because power of control is wanting.

Defect in Power of Judgement.

Associated closely with the symptom last referred to, this third and last one is important enough to deserve special illustration. It is the defect of all others which causes trouble in reformatories, owing to the apparent impossibility of persuading inmates that their view of circumstances may possibly be an incorrect one. Two and two put together make four, but any inmate who is satisfied that the same numbers make three or five cannot be persuaded to the contrary, notwithstanding the plainest demonstration. If driven into a corner by argument, they

will simply state that their conclusion is true, and proceed to follow the course adopted by a losing barrister, and bully the demonstrator. Nothing, somehow, appears to them in the same light as it appears to an observer of ordinary ability; the relationship between cause and effect is non-existent. They are restless, uncertain, excitable, and ready to take umbrage on the least provocation, or on flimsy pretexts which would not be considered provocation by reasonable beings. A glance, a word, an innocent action, not by any means intended to give offence, is construed as contempt, vituperation, or meditated attack, and is resented accordingly. In their view law-makers are tyrants, and the servants of the law but instruments of organized persecution. The constable who arrests, the magistrate who convicts, and the persons who detain are in league together to inflict injury, presumably for the sake of pleasure and gratification. No power on earth will persuade them otherwise. There is usually no sign of sorrow for the disorderly results of inebriate habits, both drunkenness and disorder being denied or justified, notwithstanding the obvious ill-effects of the former and ample evidence of the latter. It is useless to point out defects in their arguments, for they are incapable of exercising the faculty of judgement, or reasoning any question to a conclusion. Indeed, if an attempt be made to crystallize a grievance or explain a position, the inmate is inattentive, and makes no effort to follow or understand the explanation; the interview usually ends with a repetition of the same silly or irrelevant conclusions with which it started. Judging from the life-history of these cases, we are driven to the conclusion that the defect has existed from birth or early age, and that habitual drunkenness has been largely due to impaired judgement throughout—to a faulty power of appreciating the immediate or ultimate result of an action.

Group 4. Inmates of Average Mental Capacity.

It is with a sense of relief that I turn from my first three groups to one which contains at least some persons who are only affected to a partial degree by malign influences. It would have been pleasanter for us all if I could have glossed over the unpalatable part of my subject, and given a generally hopeful view of the treatment of the inebriate, whether mentally defective or not. But we are attacking the subject from a scientific standpoint, and no good is to be done by endeavouring to emulate the charlatan and the misguided philanthropist in their barefaced promise of unfailing cure. Owing to their mentally defective state, it is practically impossible to do other than write off all persons who merit inclusion in one of my three first groups as practically hopeless from a reformation standpoint. Nothing short of a miracle can convert them from what they are into sane and sober individuals. Unfortunately, we cannot say that the fourth group, because of the absence of obvious defect, is composed entirely of reformable individuals. The transit from the consideration of earlier groups to the present one is rather a change from bad to better than a move from bad to good. Too many of the cases included in this group, although not obviously so, are nevertheless tainted with some of the conditions already described, and consequently hopefulness or otherwise depends entirely upon the degree of defect. The nearer any case in this group approaches the type included in Groups 2 and 3 the less the benefit likely to be derived from care and treatment, and vice versa. Every remark I now and hereafter apply to the class of inmates distinguished by the mark "of average mental capacity" is equally applicable to patients detained in retreats; we shall find that all present the same characteristics if the element of education, which makes the latter appear better than selected reformatory inmates, is not permitted to influence our judgement. Furthermore, I think we are quite safe in extending the scope of our observations, regarding the present group, to all confirmed inebriates, whether or not they happen to be under detention in institutions. At any rate, we shall be absolutely safe in so doing if we remember that any conclusions we arrive at are subject to modification according to degree of defect, which may vary in extent from a slight deviation to a condition just sufficiently good to avoid being placed in Group 3. So far as my experience warrants an opinion, I think I may safely say that I have rarely been brought into close contact with an inebriate, irrespective of class or status, inside or outside an institution, without being able to discover evidence of one or other of the three conditions which are so evident in the advanced types we have already discussed.

Impaired development of moral sense is undoubtedly to be found in most of them—disregard of truth, a tendency to immorality, preference for undesirable company, carelessness as to business matters, wilful squandering of property, sometimes without regard to ownership, and often without care for resulting misery to persons who should be protected, neglect of domestic responsibilities, false and malevolent assertions concerning people who are of the nearest relationship, cunning, deception, and unreasonable resistance to the suggestions of those who advise for good, are all common traits which tell their own story. All these evidences are not to be found in each individual case; but one or more of them may always be discovered without difficulty.

Imperfect control over impulse is similarly evident in the majority of these milder cases, and can perhaps be recognized with greater ease than the foregoing. Notwithstanding apparent capability of resistance, promises, good intentions, and full knowledge of evil results, a sudden impulse to drink, even after months of abstinence, is yielded to without an effort at restraint. Asked why, the only answer forthcoming is, "I don't know why I did it; I just had to" I have known men suddenly cease work or play to go off, no matter where, because the impulse took that form; and I have known many smash tools, tennis racquets, and billiard cues, because of some trivial error or mischance. I have myself suffered, more than once, from acts of impulse occurring in persons with whom I have been, at the time, on the best of terms. Apologies and real sorrow for these sudden acts follow immediately, and the impulse is usually satisfied and exploded in the act, which, having found vent, is no longer felt—for a time. This condition bears close resemblance to an epileptic seizure, and sometimes, like epilepsy, restlessness or other definite symptoms precede the attack.

Misinterpretation regarding the meaning of occurrences, suspicion concerning the acts of relatives (almost amounting to delusion in some cases), accusations of injustice and bad treatment, justification of erratic actions, and denial of habitual drunkenness, despite ample evidence to the contrary, are some symptoms to be found in most cases pointing to defect in power of judgement.

All these signs found in milder cases are merely variations of the more definite characteristics which accompany the advanced condition, and definitely indicate a pathological lesion which is identical, modified only in degree.

Predisposing and Exciting Causes of Mental Defect in Habitual Drunkards.

To make the story complete, it is impossible to avoid some reference to this phase of the subject. Time, however, will not permit of more than a very brief outline, and a promise of future attention.

As predisposing causes I place in order of importance: (1) A neurotic heredity, especially of mental disease, epilepsy, or similar defect which has caused habitual drunkenness in forbears; (2) imperfect nutrition during fetal life, and the influence of alcohol-drinking by the mother during pregnancy; (3) injury at birth; (4) the administration of alcohol during infancy; (5) falls, blows, or other injury, and bad feeding or general neglect during childhood; and (6) any shock, injury, or disease during later life which affects the nervous organization injuriously, and thereby impairs vitality and resistance to impulses.

Given these conditions, or some of them, the exciting causes may practically be summed up in one word—environment. The absence of moral training during youth, together with the constant presence of drunkenness and vice, are sufficient to explain the condition which evidences the defect, or the development into an active state of an imperfection which might otherwise remain dormant.

Treatment and Control.

Concerning treatment much might be said; but, like the foregoing section, this question also requires more time and space, for full consideration, than is now available. Notwithstanding this it may be desirable and useful to indicate broadly the principles which tend to good result in the treatment of cases such as have been described. The

various agencies applicable to these cases may be classed under three main heads:

(1) Influences which incite or strengthen moral resolution;
(2) Medical treatment; and
(3) Control and enforced abstinence.

Influences which Incite or Strengthen Moral Resolution.

I think it cannot be too definitely stated that all influences which incite or strengthen moral resolution are useful only when applied to inebriates whose mental condition approaches the normal. Success as the result of such methods will always be in inverse proportion to the amount of existing defect. If an inebriate possesses a fairly-developed moral sense, some measure of control over impulses, and moderate power of judgement, these attributes, or the exercise of them, may undoubtedly be strengthened by various influences; but if such qualities are rudimentary or badly warped, the outlook is bad. The influences which fall within this category are practically those which substitute for free volition temporary dependence upon a course of life ordained by others. As instances, I have known a few inebriates who have ceased their drunken habits and have apparently regained complete control over themselves as the result of religious enthusiasm. I have also known others who have been able to attain the same end through the mere influence of persons of strong individuality, in whom they had confidence, and under whose direction they were willing to order their lives. There have also been cases apparently cured by hypnotic suggestion, and a fair number have recovered through the agency of faith cures, quack medicines, and other measures closely approaching humbug. All these influences have been known to produce good results, dependence and trust having temporarily supplanted free agency, until some amount of self-control has been regained, and the patient finds himself able to stand alone.

Medical Treatment.

Owing to an imperfect recognition of the mental aspect of habitual drunkenness, much more reliance has been placed upon the value of drugs than is warranted by results. In my opinion drugs are extremely valuable—indeed, necessary—for the relief of unpleasant symptoms during the transition from long-continued drunkenness to enforced sobriety, and to avoid many complications which may occur during this period of "knocking off." They are also necessary when acute symptoms of alcohol want have disappeared, as aids to the removal of temporary damage resulting from excessive indulgence, and to help towards recovery to good physical health. Any person who attempts to treat habitual drunkenness without the use of drugs for these two purposes is neglecting potent influences for good. Further than this I am not prepared to accord any value to the administration of drugs, and my reiterated belief in the mental origin of drunkenness renders it unnecessary for me to state an absolute unbelief in the possibility of the existence of a specific.

Some mention should be made of hygienic measures, as essential factors in the medical treatment of habitual drunkards after acute stages are passed. Regular life, good food, work and amusement, are all necessary—in short, all the same principles must be adopted which are found desirable in the treatment of the insane.

Control and Enforced Abstinence.

I see no reason to object to the exercise of every possible influence which might conceivably produce good result before physical control is resorted to; the attempt to avoid restraint is both natural and desirable. Experience shows, however, that resort to physical control is too often delayed until it is useless to apply it, too much valuable time being wasted in fruitless endeavour to attain the object in view by mild measures, notwithstanding proof of worthlessness and repeated failure. By all means let every chance be given of possible benefit by other methods, but when failure results, no further delay should be permissible in the best interest of the patient. Control should be applied before the original defect is increased by added degeneracy. Some persons are sufficiently normal to be amenable to moral influences, others are not; when the latter require to be dealt with, no efforts will have a reasonable chance of success in the absence of compulsory control. The first principle in the treatment of habitual drunkenness is the removal of alcohol. If by the exercise of ordinary home influences abstinence can be secured, well and good; medical treatment and moral influences can be applied with some hope of success; but when a patient cannot be so restrained, all else is worthless. All inebriates must require control in some form or other, because they are admittedly incapable of self-control, otherwise they would not merit their designation. The amount and character of control necessary for each individual depends entirely upon his mental state; if he is too bad for effective home control, something more powerful should be applicable to his needs.

It has been argued that, if sufficient defect exists to prevent good result from mild measures, control and enforced abstinence are not likely to be of any avail. It is only necessary to watch some cases in reformatories to see how wide from the mark is this statement, and what advantage might result, even to some of the worst, had earlier control been applied. Moreover, I have known very many persons admitted to retreats, apparently hopeless, who have left, after some months' detention, free from all signs of abnormality. The subsequent history of such cases, after ten to fifteen years has elapsed, justifies a hope of good result from enforced control, even in some apparently hopeless cases, certainly in many which have been unaffected by milder measures.

With reference to treatment and control, the main points I want to emphasize are: (1) The necessity for greater attention to neurotic and psychopathic indication; and (2) the necessity for an earlier recognition of these conditions, with a view to the timely exercise of effective control in cases which cannot possibly be benefited by milder measures.

THE UNSATISFACTORY NATURE OF EXISTING FACILITIES FOR DEALING WITH DRUNKARDS.

Unfortunately, however, the only chance for an attempt at early control rests with the inebriate himself, no power being available for interference with his wishes. Seeing that his habitual drunkenness has been mainly due to defect in moral sense and power of judgement, his wishes are not likely to help much, and it is not surprising to find that by far the greater number of victims fail to realize their state, see no necessity for amendment, and decline to take any steps towards remedying something which, in their opinion, does not exist. In other words, just at the time when a little compulsory treatment might be of the greatest possible advantage, no power to apply it exists; time is wasted, and opportunity for good is lost for ever. Only those in close touch with inebriate reform work know how many attempts are made to induce inebriates to consent to place themselves under treatment of some sort, and what an enormous percentage of such attempts result in failure. When consent to treatment cannot be obtained, subsequent history depends upon the pecuniary circumstances of the inebriate and his social status. If he is wealthy, and no personal influence exists strong enough to induce him to take action of his own accord, only death will end the scene, unless illness or increased mental defect affords an opportunity for the application of suitable treatment or restraint. If in a good position, but not wealthy, no person can interfere until such position is lost or jeopardized, and impending poverty or disgrace places the drunkard into the hands of his friends. More often than not it is then too late.

As a general rule, except as the result of impulsive violence, the better-class inebriate manages to keep out of the clutches of the law. He is surrounded by friends who protect him from the possible results of his habits—for his own advantage, and to prevent a family disgrace which would bring discredit upon all concerned. Therefore, so far as better-class cases are concerned, the Act of 1898, which applies only to convicted inebriates, is practically useless. The only power of any value in regard to them exists in the voluntary Act of 1879; but, as any action under this statute requires the consent of the inebriate, its value is strictly limited.

In much worse case is the inebriate member of the lower classes. Friendless, or with friends who have neither time nor money to hedge him round with protective influences, he drifts into a course of degradation which is increased by the means commonly used to prevent him from being a nuisance and danger to the community.

When he becomes drunk there is no kind hand to hide his weakness or take him home; he is "found drunk" in the street, arrested, and fined or imprisoned. The fines, be they small or great, are rarely forthcoming; consequently, this treatment soon resolves itself into prison, prison, prison, and again prison. The degenerating and hardening effect of gaol life upon habitual drunkards is fully realized, and the advanced defective state of those inebriates who have been sent to reformatories is undoubtedly due largely to the preceding years of alternating drunkenness and prison. Regarded as a remedy for habitual drunkenness, especially when we remember its mental basis, oft-repeated confinement in prison is indefensible and inhuman. That such a course should ever have become established is evidence of old-time ignorance concerning the neurotic aspect of the condition; that, in face of all evidence of uselessness, it still persists, is inexplicable.

The Inebriates Act of 1898 was meant to substitute reformatory treatment for prison procedure, but as it stands it only partially serves its purpose. It is quite right, and in full accord with English methods, that every possible safeguard should exist to prevent the misuse or careless administration of any Act which enables interference with personal liberty. But in designing such safeguards there is always the possibility of hedging procedure to such an extent as to render proper working almost impossible; or if not impossible, then of such limited scope as to materially affect its value. After nearly eight years' experience of the Act in question, those who are in a position to judge will tell you that some such result has been attained. It is still easy to send habitual drunkards to prison, and exceedingly difficult to send them to reformatories; until the reverse is the case full advantage will never be obtained from an Act which might otherwise prove of inestimable value.

Work for the Society for the Study of Inebriaty.

It is for a society such as this to seriously consider whether or not some means cannot be devised to remedy this unsatisfactory state of affairs, and, if found, pressed home with a view to early adoption of generally improved methods. It is quite useless to wait and hope for universal abstinence to provide a remedy; the evil must be attacked in a common-sense manner, as a mental probleme under existing conditions, in the presence of alcohol. Only three and a half millions out of something like forty. or more in the kingdom are teetotalers; we cannot afford to wait until the remainder are converted, or until alcohol is banished from the world. Total abstinence societies have been established for something like a hundred years, with the result that moderate people have become more moderate, and many moderate persons have become teetotalers. An excellent result for excellent work, because abstinence and strict moderation is conducive to good physique, national health, and national prosperity. It is also probable that some mentally unstable persons have been saved by abstinence from becoming drunkards. But has the actual number of habitual drunkards decreased as the result of all this temperance energy? I think not. The hundred years is, of course, a matter of history so far as I am concerned, and I have insufficient confidence in the value of statistics to pass an opinion concerning that length of time; but I can say something about the last twenty-five years, which I have spent entirely amongst drunkards and drunkenness. I do not believe, during that period, that habitual drunkenness has decreased, and so far as women are concerned, I am convinced that it has materially increased. The reason seems to me plain enough: whilst temperance workers have succeeded in inducing the moderately strong-minded healthy man to exercise restraint and avoid alcohol, they have been unable to do much towards obtaining the same result in regard to the very persons who need it most, those who cannot realize the fact, or carry out the remedy. Whilst temperance societies have been preaching teetotalism to persons capable of listening to and benefiting from the appeal, thousands of persons are drinking daily in the slums of London, and making others drunkards by force of example and precept. These persons are not in the least affected by orthodox temperance efforts; they continue to propagate drunkenness, and thereby nullify the good results of temperance energy. Their children, born of defective parents, and educated by their surroundings, grow up without a chance of decent life, and constitute the reserve from which the strength of our present army of habituals is maintained. Truly we have neglected in the past, and are still neglecting, the main source of drunkard supply—the drunkard himself; cripple that, and we should soon see some good result from our work.

There is much to be done, and much this Society could do to help in the direction of improvement; indeed, I know of no body better constituted for the work. What we want is full consideration of the possibility of stronger legislation, enabling earlier control and treatment for inebriates, irrespective of their personal opinion as to its necessity. It is also desirable to consider whether, as a first step, the principle of guardianship, already adopted in other countries, could not be made applicable to the needs of England; and whether, in the event of failure to produce good result by guardianship, power should exist for compulsory committal to institution care on certificate and evidence. It is also necessary to have a well-discussed opinion as to whether, after years of control, and after every possible effort at reform has been tried, continued drunkenness and evident mental defect should not warrant an indeterminate sentence, with occasional licence to be at large; and whether some arrangement could not be arrived at to render impossible the future manufacture of habitually drunken prison recidivists. These are all matters upon which the evidence and opinion of this Society would be valuable, and subjects which seem to me to be of the utmost importance. I am not prepared to say that a satisfactory solution of any one of them is yet within the range of practical politics; but unless some distinct effort is made, I am satisfied that none ever will be.

Introductory Address
ON
THE CHOICE OF A MEDICAL CAREER,
WITH REMARKS ON
MEDICAL ETHICS AND ETIQUETTE.

Delivered at the Meath Hospital and County Dublin Infirmary.

By JAMES CRAIG, M.D.Dub.,

Registrar, Royal College of Physicians of Ireland; Physician to the Meath Hospital and County Dublin Infirmary.

[After some preliminary observations, and after discussing some of the openings for young medical men in England and in the public services, Dr. Craig continued as follows:]

The Irish Poor-law Medical Service.

What prospects, however, lie before the majority who have a wish to remain in their own country? In the chief towns it is here and there possible for a good class practitioner to make a living wage by private practice alone; but in most cases, even in the larger towns, it will be found that the men who are able to live in even comparative comfort are those who have the emoluments attached to a Poor-law appointment to supplement the amount that is to be gained from private practice. There is small chance, therefore, for a practitioner to make a comfortable livelihood in Ireland outside of the teaching centres unless he is able to secure a Poor-law appointment either as visiting surgeon to a union infirmary or as medical officer of a dispensary district.

I cannot in all honesty recommend these positions to those of you who may have such a career in view, for apart from the evils associated with the efforts to secure these positions, to which I will allude later on, the service suffers from the disabilities attached to meagre pay, uncertain holidays, and doubtful pensions.

Abler pens than mine have been used with perennial fertility to expose the disabilities under which the officers of the Poor-law Medical Service suffer. It is not my purpose here to denounce this service with the virulence which my pen could command, for with all its shortcomings it is possible for a man to lead a happy life in

ministering to the sufferings of the poor, although he may find it hard at times to pay his weekly bills. Up to the present, in the matters of salary, holidays, and superannuation, the service has not been one that offered a bright prospect for an ambitious youth. But of recent years some improvements have been taking place, mainly owing to a combined agitation on the part of the majority of the medical profession, and indeed everything points to a further continuance of the policy which has led to a recognition by some of the Boards of Guardians of the justice of the claims of their medical officers.

It is to be feared, however, that the increases in salaries that have already been adopted have been, for the most part, in the districts where the pinch of poverty was least felt among the medical officers; and this inequality is a crying shame, but the medical profession are awaiting some definite action on the part of the Local Government Board authorities to compel the unions which up to the present have either rejected or failed to consider proposals to improve the position of their medical officers to do their duty in the matter.

I regret to say that not the least formidable obstacle to Poor-law medical reform has arisen from the selfish and unsportsmanlike conduct of members of the medical profession themselves. It has been mostly among the younger men that this disloyalty has occurred. Let me cite an example: A medical vacancy occurred in a union in the North of Ireland. The salary offered was quite inadequate, and the neighbouring medical men, in loyalty to a decision of the Irish Medical Association, unanimously agreed to abstain from competing for the appointment. The guardians would have been compelled ultimately to offer an increased salary, which would have been in some measure commensurate with the amount of work required from the medical officer; but this was not to be, for a young gentleman from the South of Ireland, equipped with the degrees of the University of Dublin, and who, in other circumstances, would have stood no chance whatsoever of being chosen, offered himself for election, and, in spite of remonstrances urged from many sources, persisted in his candidature, and was in the end elected. I am not in a position to state whether this gentleman is yet tired of doing work at a remuneration which the Irish Medical Association and men of experience and knowledge of the locality had decided to be entirely insufficient; but at all events I know of no excuse that could justify the lack of *esprit de corps* shown by him. We may, however, assume that inexperience and ignorance were accountable for this act of selfish folly, which the medical profession was bound to condemn. But it is just such acts of folly that help to retard the long-needed reforms in the Poor-law Medical Service.

Apart altogether from the questions of salary, holidays and superannuation, one of the gravest objections to this service is the methods which have to be adopted by candidates in order to secure an appointment by the votes of the members of the Boards of Guardians. It is very rarely indeed that the question of merit arises. Influence, religion, politics—anything, in short, rather than professional attainments—may secure the support of the electorate. Far be it from me to suggest that men of the highest distinction are not to be found in the Poor-law Medical Service, for such a suggestion would be entirely at variance with facts; but that does not in the least minimize the highly objectionable methods that obtain in the securing of these appointments.

I have to admit that objections have been urged against the establishment of a State or National Medical Service as suggested in the recent Report of the Viceregal Commission, but any such reasons that could be adduced against such a service are small in comparison with the evils that at present exist, and have made the service notorious.

For my own part, I have no hesitation in saying that the entrance to the service should be gained by competitive examination. I say this in spite of the fact that examinations may not be in all cases the highest test of a candidate's ability or fitness for a post, still the adoption of such a principle would give merit the place it deserves in the qualifications necessary for such important positions, and it would at once put an end to the humiliating experiences which candidates at present undergo in canvassing for these appointments. But, far beyond every other consideration, it would make for a more efficient service in the interest of the poor people who are to be treated by the medical officers, particularly so if, as should be the case, the scale of salaries were fixed on a more liberal basis, so that the best class of men turned out from the various medical schools in the country might be encouraged to compete for the appointments.

I believe the statement to be incontrovertible that the establishment of a National Medical Service, which would be entered by competitive examination, and in which the medical officers would receive an adequate wage for their services, would make for higher efficiency in the treatment of the poor.

Let us stop for a moment to consider the manner in which the suggestion of the Viceregal Commission for a National Medical Service was received by the medical profession. At what was probably the largest meeting of medical men ever gathered together in Ireland for the consideration of a specific point, it was decided last autumn by the members of the Irish Medical Association that such a service was highly desirable, the majority in favour of the proposal being at least 10 to 1.

After a prolonged discussion in the State Medicine Section of the Royal Academy of Medicine in Ireland, the proposal to establish a national medical service was, I believe, unanimously adopted. Further, the Council of the great British Medical Association also approved the scheme on the recommendation of some of its Irish Branches. These expressions of approval of the suggested service, emanating as they did from all sections of the medical profession in Ireland, cannot well be ignored.

The strongest argument that can be adduced against its adoption is that the local bodies, which at present are responsible for raising the money to pay a portion of the salaries of the Poor-law medical officers, would be deprived of the patronage which they now possess in electing the candidates for whom they have a predilection.

I frankly acknowledge that this is an objection, and I also admit that to increase the burden on the ratepayers so as to secure more adequate salaries for the members of the service would in many unions be quite impossible. But even these difficulties are not insuperable, and many solutions to them have been already offered. I am unwilling, at this stage, to prejudice in any way the possible inception of the scheme by putting forward my personal views as to the methods by which it might be made generally acceptable, for I hold a very strong opinion that, acting on the precedent of the Land Conference the best way to secure a solution of this problem of a National Medical Service would be to get together a round table conference, at which the various interests involved would be represented by capable conciliatory men, who would produce a scheme acceptable to the Government and to the interested parties.

I venture to express a confident hope that this as well as many other of the most excellent suggestions put forward by the Viceregal Commission may be given effect to at no distant date. At any rate, a medical service in connexion with the treatment of the poor, if instituted on the lines broadly laid down by the Commission, would command the support of the great majority of the medical profession in Ireland, and would probably put an end to many of the grievances under which the Poor-law medical officers have suffered for many years, and I have no doubt whatsoever but that it would tend to place at the service of the poor, as well as of the paying class in this country, many men of high ability who under present conditions are driven to seek their fortunes in other lands.

MEDICAL ETHICS AND ETIQUETTE.

This is a side of medical education which receives too little attention, either from the professors in the medical schools or from the teachers in the hospitals, with the result that young men are allowed to go forth into practice without any knowledge of the pitfalls that await them in their dealings with the other members of the profession and the public.

It has been said that we require no other principle to guide us in our professional conduct than to follow the apostolic teaching of doing unto others as we would that others should do unto us. I have no reason to dispute this advice, which is altogether excellent, but, like many

of the minor commandments, it is much too general in its application to meet many of the questionable points of professional conduct that arise in the everyday practice of our profession.

Medical ethics are the rules or principles that should govern our professional conduct. Medical etiquette is the ceremonial to be observed in our relations with one another and with the public. The public have a mistaken notion that medical etiquette consists of some rules unintelligible to them which the medical profession has imposed on its members in order to safeguard their own selfish interests, but which are detrimental alike to the welfare and the pockets of the general public. This is by no means the case, as these rules have been formulated quite as much in the interest of the patient as for the benefit of the members of the medical profession. If these rules at times appear to be faulty, it is generally due to a false interpretation of them.

Permit me, however, first of all, to point out to you a few of the matters that are regarded as unethical in professional conduct and then I shall say something later on concerning etiquette. You will scarcely have been given time to add to your probably meagre wardrobe the silk hat and frock coat which, with a diploma, go to the making of a professional man, until you will be besieged with requests from the manufacturers of patent medicines and patent foods to give laudatory testimonials of their products for subsequent publication. All such appeals must be persistently ignored if you desire to run on ethical lines. As time goes on you will be filled with a burning desire to see your names in the daily papers as the authors of marvellous cures, or the performers of some wonderful operations. Whatever valuable discoveries you make are to be used for the advancement of knowledge in your profession, and may only be communicated to the medical societies or medical journals, where your results can be examined and intelligently criticized.

You must be no participator in any public laudation of your own professional achievements. The respect of your professional brethren is a subtle sentiment, won only by slow degrees, but extremely easily lost, and once damaged seldom if ever regained. To win this respect it is necessary for you to play an honourable part in the game of life, and one of the points upon which the opinion of the profession is most sensitive, and most readily turned in a practitioner's disfavour, is the semblance on his part of any coquetting with the bewitching siren of advertisement. You must endeavour not to obtain practice by any unworthy means—no success, no notoriety is worth the loss of the respect of your brethren in the profession.

Another pitfall which the unwary practitioner must diligently avoid is the giving of professional assistance to unqualified persons—particularly unqualified dentists. It is not permissible for a practitioner to give his professional services to any society or combination of individuals, unless the entire sum of money paid by the members for the purpose of securing medical attendance for themselves and their families finds its way into the coffers of the practitioner.

I have already alluded to the depravity of underselling, particularly where a principle is involved, and the instance I have related should require no further elaboration.

It is not desirable for a practitioner to erect a notice board outside his residence on which is set forth the small value which he places upon his medical skill. It may be that he estimates his services at a shilling or even at half a crown a visit, but it is unbecoming to tell as much to the passer-by.

A leaning towards any form of quackery is certain to place the practitioner immediately without the pale of decent medical society, and where it is openly practised leads at once to ostracism and removal of the practitioner's name from the *Register* of the General Medical Council.

Although I have not by any means exhausted the ethical rules which help to regulate professional conduct, I must now pass on to the subject of medical etiquette. First of all it may, perhaps, clear the air of any misapprehension if I state quite clearly that no individual member of the public is to be regarded as the absolute property of any medical man. The public must be permitted to have a free choice in the selection of a medical attendant, but whether they are wise to be chopping and changing their attendant is quite another matter. During the progress of any specific illness if a patient sees fit to change his medical adviser, the medical profession expect that an intimation will be given by the patient to the practitioner in attendance that his services are no longer required. This is to prevent possible misunderstandings from arising between the medical men, and to ensure that the patient will not be subjected to the advice and treatment of different medical advisers at one and the same time.

In a case of emergency where a practitioner is called upon to see a patient in the absence of the regular medical attendant, the former should communicate the fact to the latter at the earliest possible moment, and he should not remain in attendance after the regular attendant is available; further, where for any reason a practitioner has been placed in charge of patients by a brother practitioner, he must exercise the most unceasing care neither to undermine the faith of the patients in their own absent attendant, nor afterwards himself undertake the treatment of such patients.

In the matter of consultations it is a practitioner's duty to accept with alacrity the earliest hint from a patient that a second opinion on his case would be gratifying either to himself or to his friends; but there are certain conditions in which it is imperative upon him to urge the necessity for further advice and assistance without waiting for a request from the patient or his friends. The Ethical Committee of the British Medical Association have formulated these cases as follows:

(*a*) When a question arises of the propriety of performing an operation or adopting some course of treatment which may be dangerous to life or permanently injure the condition of the patient, especially if the condition which it is sought to relieve by this treatment be not itself dangerous to life.
(*b*) When a question arises of destruction of a fetus or unborn child in the interest of the mother.
(*c*) When the practitioner in attendance is definitely in doubt either as to the diagnosis or as to the treatment to be followed, and when delay in arriving at a decision might be fraught with serious consequences to the patient.
(*d*) When there is evidence of serious doubt in the mind of the patient or his friends as to the correctness of a diagnosis or of the treatment pursued.
(*e*) When the attendant has reason to suspect:
  (i) Performance of any illegal operation.
  (ii) Administration of poison.
  (iii) Commission of any other criminal offence.

In regard to the choice of a consultant, it is generally expedient to follow the wish of the patient or his relatives; but if the case is one which demands special knowledge. it is the practitioner's duty to endeavour to secure the services of the consultant from whom he expects to derive the greatest assistance. The practitioner in attendance arranges for the consultation, and punctuality on the part of both advisers is so necessary that it is not incumbent on either to wait beyond a reasonable time. Failing punctuality, the consultant may see the patient in the absence of the other. The regular attendant enters the patient's room first and leaves it last, and the opinion arrived at after consultation should be communicated to the patient in the presence of the regular attendant. If a difference of opinion exists between the two medical practitioners it is most desirable that it should be communicated to the patient or his friends, so that further advice may be obtained in the interest of the patient. The regular attendant should inform the patient or his friends as to the amount of fee to be paid to the consultant. Where a personal consultation is impossible the medical attendant should write a letter of information and introduction to the consultant, who in turn communicates his opinion and suggestions as to treatment to the medical attendant.

There are two most essential rules which it is the duty of the consultant to observe in the strictest manner. In the first place, he should exercise the most scrupulous care to avoid disturbing the confidence of the patient in his ordinary medical attendant; and in the second place he should not supersede the practitioner through whom he has received an introduction to the patient. This latter rule seems to be somewhat at variance with the general principle which was previously laid down—that the public must not be regarded as the private property of any individual practitioner; but, again, this rule has been

formulated for the advantage of the public, so as to lessen any possible contingencies that would tend to detract from the freedom of consultations.

In conclusion, let me say that there is one point upon which it is almost impossible to give advice, and that is—how far a knowledge of a patient's actual condition should be communicated to himself by his medical attendant. In many instances it is right to take a patient entirely into your confidence. In some cases, however, it would be most injurious for his future well-being that his actual physical condition should be explained to him; but this much I can say, that where a practitioner has no doubt in his own mind as to the serious nature of an illness he should be perfectly candid with the friends of the patient, and thereby obviate any reflections that might possibly be cast upon him at a later period.

THE CALMETTE SERUM REACTION IN OPHTHALMOLOGY.

By SYDNEY STEPHENSON, M.B., C.M.

IT would be a truism to say that our ordinary methods of clinical examination not infrequently leave us in doubt as to whether a patient is or is not affected with tuberculosis, dormant or otherwise. This is especially apt to be the case when tuberculous foci exist in the bronchial or mesenteric glands. The injection of tuberculin is undoubtedly of service in the recognition of these conditions. Its use, however, implies confinement to bed or to hospital ward, the careful taking at frequent intervals of the patient's temperature, systematic records of weight, and, last but not least, the methodical determination of the opsonic index. These requirements stand in the way of the everyday use of tuberculin as a diagnostic agent.

In June last Dr. A. Calmette[1] announced a new method of diagnosing tubercle of almost incredible simplicity. His plan was to place a drop of a 1 per cent. watery solution of dried tuberculin in the eye of the patient. In the case of healthy subjects the result of the application was *nil*. On the other hand, the tuberculous subject showed a local reaction, now widely known as the "ophthalmo-reaction of Calmette." From the third hour onwards the eye to which the tuberculin had been applied became reddened, and in the course of several hours showed all the appearances of a more or less pronounced attack of acute muco-purulent inflammation of the conjunctiva. The maximum reaction was seen within six or seven hours after the application of the tuberculin. All traces of inflammation had disappeared within two or three days. The plan is free from danger, and causes the patient scarcely any discomfort.

Calmette's results have been confirmed by Prouff,[2] Grasset and Rimbaud,[3] and other French and Swiss observers. Indeed, it can scarcely be doubted that the genius of Dr. Calmette has placed in our hands a most simple, trustworthy, and efficient means of recognizing the existence of tubercle in any part of a patient's body.

Now, apart from lesions of the eye recognized by all competent observers as tuberculous, there are several others—especially chronic irido cyclitis, scleritis, and some forms of choroiditis—of which the tuberculous origin is as loudly proclaimed by one school as it is decried by another. The preponderating part unquestionably played by syphilis in the production of many of these affections has, perhaps, tended to render some of us a little blind to the influence of other causes, prominent among which, as I believe, stands tuberculosis. How often do we meet with disseminated choroiditis, indistinguishable by the ophthalmoscope from the form due to syphilis, in patients in whom there is no evidence whatever of a specific taint, acquired or inherited. I feel tolerably confident that the systematic employment of the ophthalmo-reaction will show that no small number of such non-syphilitic cases are in reality due to tuberculosis.

Calmette's serum has already been used in eye work by Painblan,[4] who obtained positive results in a couple of cases of tuberculosis of the conjunctiva. Brunetière[5] had negative results in 3 cases thought possibly to be of tuberculous origin—kerato-iritis, interstitial keratitis, and exudative choroiditis. Aubaret and Lafon[6] employed the serum in 18 eye cases, including intraocular tuberculosis, phlyctenular conjunctivitis, and keratitis, episcleritis, interstitial keratitis, lacrymal affections, and, lastly, optic papillitis. Brunetière[7] in the course of a second communication, while reaffirming the diagnostic value of the serum, regretted that it could not be applied to every doubtful case.

My personal experiences with the Calmette serum are far from complete, but up to the present time I have applied it to the eyes of upwards of thirty patients, all of whom were suffering from some disease or affection of the eye. The more important cases may be briefly described as follows:

1. *Phlyctenular (Eczematous) Conjunctivitis and Keratitis.*—The tuberculous origin of these common affections of the eye has been suspected for years, and the view is widely held at the present day that they are caused by a tuberculous toxin circulating in the blood stream. The Calmette serum was applied to the eyes of six children, all of whom had been affected with long-standing and relapsing ulceration of the cornea. Only two of the patients manifested tuberculous lesions elsewhere. The ophthalmo-reaction, however, was obtained in every instance. On the other hand, the result was negative once in a case of recent phlyctenular keratitis. It is to be noted that Aubaret and Lafon (*loco citato*) elicited the ophthalmo-reaction in 4 healed cases of phlyctenular disease.

2. *Choroiditis.*—The serum has been applied in 3 cases of choroiditis in young women, free, as far as could be ascertained, from evidences of syphilis, acquired or inherited. Two of the patients were single, and the third married. The choroiditis was bilateral in 2 and unilateral in 1 case. The choroidal lesions were of long standing. In Case No. 1 the gross disseminated choroiditis presented no ophthalmoscopic features whereby it could be differentiated from a syphilitic process. In Case No. 2 the changes affected almost exclusively the central region of the fundus. Case No. 3 showed in the central region of one fundus a map-like area of choroiditis, and while under observation a second area of disease made its appearance below the optic disc. Each eye was myopic to the extent of 3.5 D. In each of these three patients the ophthalmo-reaction was obtained, although in none had a tuberculous focus been found by clinical examination.

3. *Interstitial Keratitis.*—Of the 8 cases tested, 5 manifested obvious stigmata of inherited syphilis, and it is significant in them that the ophthalmo-reaction was not elicited. On the contrary, in the remaining 3 cases positive results were forthcoming in all.

4. *Episcleritis.*—One case of episcleritis was tested, with positive reaction to the serum. The patient, a woman aged 19 years, showed two massive episcleritic patches, one above and the other below the right cornea. The fundi were normal. A suggestion of tuberculosis was given, by the fact that the cervical, inguinal, and axillary groups of glands were somewhat enlarged. Two other cases in women, aged 50 and 28 years respectively, yielded no reaction to tuberculin.

5. *Tubercle of Iris.*—A female, aged 12 years, was admitted to the North-Eastern Hospital for Children on August 2nd last suffering from a disabling affection of the left eye of nearly six months' duration. The anterior chamber of the left eye was almost filled with solid-looking, yellowish-grey exudation, so that the pupil could be recognized with difficulty. The eye was somewhat reddened, tension was slightly minus, and sight was equal only to counting the outspread fingers when held close to the child's face. No clinical signs either of tubercle or of syphilis. The state of the eye was so characteristic, however, that I did not hesitate to diagnose tuberculosis of the iris and ciliary body, of the form described in systematic treatises as "iritis scrofulosa" or "conglomerate tubercle." For that matter, the tuberculous nature of the process was attested by the general reaction that on two occasions followed the injection of $\frac{1}{1000}$ mg. of tuberculin T.R. It was confirmed later by the action of the Calmette serum. On September 22nd, a drop of the liquid in question was instilled into the child's unaffected eye by Dr. R. A. Chisolm, resident medical officer to the hospital. A well-marked reaction came on in nine hours, and persisted for twenty hours.

6. *Tubercle of Cornea.*—A girl, aged 12 years, was seen by me on May 29th, 1907, with the history that her right eye

had been more or less inflamed for about two months. The child's mother suffered from phthisis pulmonalis, and one of her brothers had died at 9 months "with lungs badly affected." The patient herself "had brought up blood" on one occasion. *On Admission:* Weight, 4 st. 4 lb.; temperature remittent; general examination, including *x* rays, negative. Right eye: Tension minus 1. Vision, fingers at 2 metres. Slight photophobia and patchy ciliary redness. Several curious looking deposits lay at different levels in the substance of the cornea, where they formed a kind of mosaic. Their colour was greyish-white, and they might be compared with drops of cold mutton fat. In addition, the rest of the cornea was more or less hazy. No deposit, such as those on which great stress has recently been laid by Dr. Stock,[8] could be recognized on the anterior surface of the iris. The pupil responded imperfectly to atropine, which disclosed the existence of posterior synechiae. Although a reflex could be obtained through the upper part of the pupil, yet no details of the fundus could be made out. *Provisional Diagnosis:* Tubercle of cornea, probably secondary to a similar condition of the iris and ciliary body. The injection of $\frac{1}{1000}$ mg. of tuberculin T.R. on June 19th and 25th yielded no definite result, but a rise in temperature to 100.8° F. followed a third injection made on June 28th. On June 20th the cornea had cleared sufficiently to allow of an ophthalmoscopic examination of the fundus, when areas of yellowish-white exudation, probably of tuberculous nature, were found in the peripheral parts of the choroid. On September 21st, under treatment by injections of $\frac{1}{1000}$ mg. of tuberculin T.R., sight had risen to $\frac{5}{60}$. On the following day, serum was applied to the unaffected eye by Dr. Chisolm. A reaction was noted in five hours, and this had disappeared completely thirty-one hours after the serum had been used to the eye.

7. *Chronic Irido-Cyclitis.*—If there be one class of case more than another in which tuberculosis is believed to play a prominent rôle it is in insidious and recurrent irido-cyclitis in young adults. According to Stock's recent investigations,[8] of 59 patients suffering from chronic irido-cyclitis no fewer than 61 per cent. showed a general reaction after the injection of Koch's older tuberculin, T.V. I have submitted two patients to the tuberculin test and obtained the ophthalmo-reaction in both. The essential facts follow: (*a*) G. B., aged 9 years, came under notice on January 14th, 1903, with the history that she had been treated at the North-Eastern Hospital for Children for four years on account of "tubeculous disease of the left knee." On examining her eyes, which were free from obvious evidences of inflammation, it was found that the right pupil was both "excluded" and "occluded" and that numerous posterior synechiae were present in the left eye, as the result of irido cyclitis which had wholly escaped the attention of the child's parents, who declared that the eyes had never been bloodshot. Patient, eldest of three children, was well nourished, but she presented arthritis of the left knee and dactylitis of the left little finger. On February 23rd iridectomy upwards was performed on the right eye and nine days later upon the left eye. On June 18th, 1904, there was much pigmented keratitis punctata; right vision equalled perception of light, and left, fingers at 0.5 metre. From that time to the present the child has been subject to slight attacks of redness of the eyes, sometimes associated with temporary hypopyon. The injection of 0.005 mg. of tuberculin T.R. on March 28th, 1907, was followed by no reaction, local or general. On May 2nd, 1907, the aqueous humour was withdrawn from the left anterior chamber, but bacteriological examination of the fluid was negative as regards the *Treponema pallidum* and the tubercle bacillus. On June 25th, 1907, the injection of $\frac{1}{750}$ mg. of tuberculin T.R. was succeeded by a slight rise in temperature, together with pain at the site of the needle-prick. On September 23rd a slight reaction was obtained nine hours after Dr. Chisolm had applied the Calmette serum to one eye. It had disappeared seventeen hours after the application. (*b*) Mrs. P., 35 years of age, consulted me on September 23rd last for a dullness of the sight of her right eye of fourteen days' duration. No recent illness. General health stated to be good. On examination, I found the right eye affected with a painless irido-cyclitis, the stress of the inflammation falling on the ciliary body, as evidenced by the symptoms, which included bad sight ($\frac{6}{60}$), punctate keratitis, and raised tension. The fundus could not be seen owing to the cloudy condition of the cornea. The other eye showed slight choroidal disturbance at the yellow spot, evidently of long standing. A sister of the present patient, aged 28 years, had been under my care nine years ago for unilateral irido cyclitis, and during the course of the illness what was believed to be a tubercle of the choroid developed in the inflamed eye. A drop of the Calmette serum placed in Mrs. P.'s left eye on September 24th, produced in sixteen and three-quarter hours a feeling of stiffness and tenderness in the lids, and when she was seen twenty-three and a quarter hours after the application, the appearances were those of a rather marked acute catarrhal conjunctivitis. The reaction had not wholly subsided in four days.

The further history of the case was most instructive.

On September 28th the cornea had cleared enough to allow me to identify a tubercle of some size that lay in the choroid not far from the right optic disc below the superior temporal artery and vein. On the same day the anterior chamber of the left eye was tapped and the aqueous humour examined bacteriologically. Smears stained with carbol blue were found to contain few formed elements—merely pigment particles, together with a scanty number of endothelial cells and degenerated leucocytes. No bacteria could be recognized. Preparations treated by the Ziehl-Neelsen process, however, included a few slender rods stained red. A careful search was necessary before a single tubercle bacillus was found. The total number in all the preparations examined was extremely small.

In conclusion, it should be added that, according to Calmette, neither ordinary tuberculin nor Koch's older tuberculin (*Alttuberculin*) must be employed in the test, since their contained glycerine is apt to irritate the conjunctiva and thus to mask any proper reaction. Calmette advises 1 part of dried tuberculin, precipitated by alcohol, dissolved in 100 parts of sterilized water, and of this liquid he places one or two drops in the eye to be tested. The Pasteur Institute, Lille, France, prepares suitable tuberculin in two forms: (1) as dry tuberculin in small glass phials, to which the surgeon adds ten drops of water; and (2) as a solution in hermetically sealed glass tubes, each of which contains several drops of the product ready for immediate use. The price of neither preparation* is prohibitive.

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A CASE SHOWING THE STOKES-ADAMS PHENOMENA.

By CLIFFORD BEARDS, B.A., M.B., B.Ch.Oxon.,
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Cases showing the Stokes-Adams phenomena—a slow pulse and occasional syncopal attacks—have recently become of greater interest, owing to the elucidation of the path for impulses from auricle to ventricle by the work of His, Tawara, Keith, and other observers. It now seems probable that cases of the Stokes-Adams syndrome are due to some lesion in this auriculo-ventricular band, allowing the auricles to beat at the normal inherent rate, but so blocking the passage of impulses to the ventricles that the latter beat at a slower rate. This condition, to which the term "heart-block" has been applied, has been studied recently on clinical cases by Gibson and Russell.

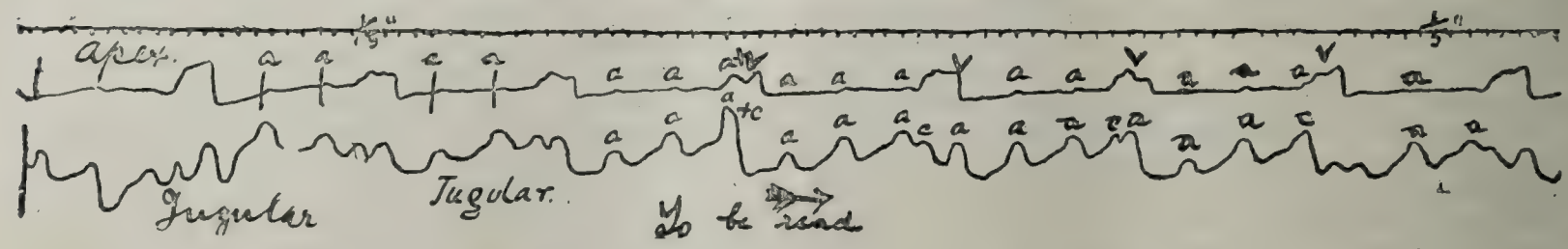
At this interesting stage of our knowledge of this condition, a record of a case at present in this hospital may not be out of place.

History.

J. L., a man aged 62, a cricket-ball maker by occupation, came to the hospital on April 22nd, 1907, complaining of "fits." Dr. Fenton, recognizing the nature of the case, sent the man into the wards under the care of Dr. Galloway.

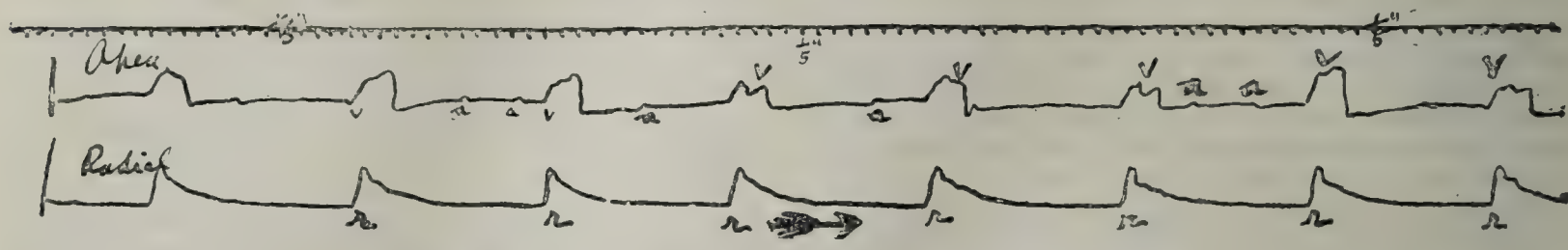
* Can be obtained from Mr. Martindale, 10, New Cavendish Street, London, W.

TRACINGS OBTAINED BY DR. MACKENZIE'S POLYGRAPH. MAY 19TH, 1907.



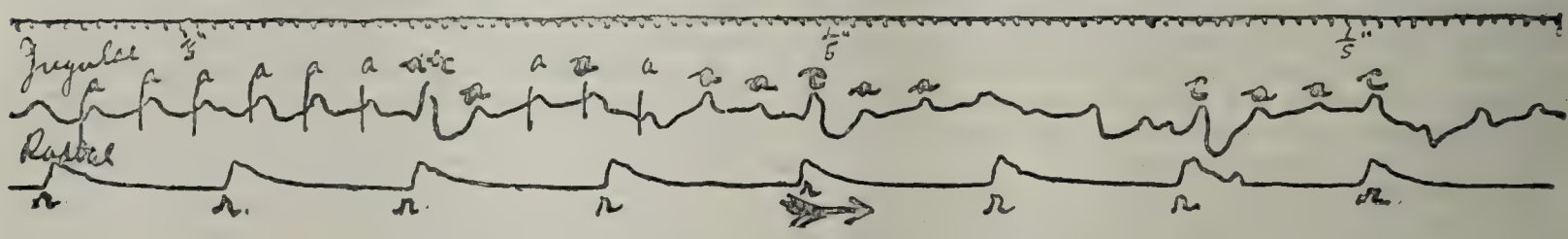
a = Auricular. *v* = Ventricular. *c* = Carotid pulsation.

This record shows the transmitted auricular pulsations in the apex tracing synchronous with the auricular pulsations in the jugular tracing.



a = Auricular. *v* = Ventricular. *r* = Radial pulsation.

The apex tracing in this chart shows the ventricular pulsations (*v*), and in some of the intervals the auricular pulsations (*a*) transmitted to the apex.



a = Auricular. *c* = Carotid. *r* = Radial.

This tracing shows the auricular pulsations to be 3 to 4 times as numerous as the radial.

It appears that the patient was quite well until two years ago, but that in the winter of 1904-5 he began to suffer from "fits." These seizures, which were occasionally but not always preceded by a "buzzing" noise in the head, which gradually increased in intensity until the patient suddenly lost consciousness, occurred at intervals of a few weeks, and lasted a varying time, from a few seconds to a quarter of an hour. He had scarlet fever at the age of 16; he had not had rheumatic fever nor syphilis. He had been a moderate drinker. There was no family history of epilepsy.

Condition on Admission.

The patient is a well-nourished man, who looks his age. There is a well-marked arcus senilis in both eyes, and the radial and brachial arteries are unduly degenerated. The examination of the cardio-vascular system reveals several interesting features. The radial pulse is 24 per minute, and slightly irregular in rhythm. There is evidence of enlargement of the heart, and there is a mitral systolic murmur propagated into the axilla. Occasionally, at the base, faint sounds suggestive of the auricular contractions can be heard in the interval between the ventricular sounds. The remarkable feature, however, is that the jugular veins in the neck can always be distinctly seen pulsating at the rate of 72 a minute, while the radial pulse is only 24 a minute.

Progress.

The patient has been examined with the screen (*x* rays), but it was found impossible to see distinctly whether the auricles were or were not beating independently of the ventricles. An ophthalmoscopic examination revealed the fact that the retinal veins were pulsating at exactly the same rate as the radial arteries. This, of course, does not disprove the idea that the auricles were beating more frequently than the ventricles, for the pulsation of the retinal veins is almost certain to be a pulsation transmitted from the retinal arteries and not due to a reflux wave from the distant auricles. The blood pressure, as is usual in these cases, is high, averaging about 180 mm. in the brachial artery.

On May 19th, 1907, the patient was seen by Dr. Mackenzie, of Burnley, who took several tracings of the jugular, carotid, apex, and radial pulsations by means of his new polygraph instrument. These records show quite clearly that while the jugular pulsation is at the rate of 72 per minute, that of the apex and of the radial and carotid arteries is only 24 per minute. The apex tracing is particularly interesting, as it shows in each of the intervals between the large excursions due to the ventricular contractions, two small ones undoubtedly due to auricular contractions transmitted to the apex, because they are synchronous with the jugular pulsations taken at the same time and on the same record.

The syncopal seizures, until treatment was begun, recurred at irregular intervals of about three or four days. The usual type of seizure is that the patient, while sitting or standing, suddenly becomes unconscious, and remains so for 30 seconds to 1½ minutes. On one occasion the result was that the patient, who was walking in the ward at the time, fell down and sustained a severe scalp wound. Occasionally the patient perceives the aura already mentioned, and has time to sit down on a chair before the attack comes on. These attacks have always been true syncopal attacks; they have never been epileptiform in character. The pulse has never been observed to alter before these attacks, but has often been found to be 40 to 50 per minute immediately after. The only other occasion on which the pulse has reached 40 per minute was after the patient had suffered the slight exertion of being taken (in a cab) to a medical meeting.

Treatment.

After being kept in hospital without any drug treatment for about five weeks, during which time his condition remained unaltered, the patient was put on medicinal doses of strychnine. In a week his pulse had gone up to 35, at which level it now remains. The frequency of the seizures has also diminished; in fact, the man has only had two or three minor attacks since treatment was begun.

From an analysis of the tracings obtained it would appear that the case is one of complete heart-block. In many of the classical cases reported the bradycardia has varied in degree; in this case the pulse rate has been wonderfully constant day and night week after week.

I am greatly indebted to the kindness of Dr. J. Galloway and Dr. W. J. Fenton, of this hospital, for permission to publish this case; and to Dr. J. Mackenzie, of Burnley, for his courtesy in allowing me to make use of the tracings he obtained.

TWO CASES OF PERNICIOUS ANAEMIA WITH UNUSUAL FEATURES.

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The following notes on two cases of pernicious anaemia are of interest from the special features observed in each case. Incidentally both were patients who first came under notice by reason of mental disorder, and both in the latter stages of the disease exhibited the marked apathy and languor characteristic of it, in decided contrast to their previous mental symptoms.

Case I.

A male, admitted to the Devon Asylum in 1891, was an imbecile who had suffered from epilepsy since birth, but who had been able to maintain himself by farm labour. Generally quiet and inoffensive, he suffered from excitement after the fits, and in this state was aggressive and violent. His age was 30. After admission, his seizures being mainly nocturnal, he was able to employ himself in farm labour, though he still showed post-convulsive impulsiveness.

In January, 1905, owing to his pallor, he was thoroughly examined, and his condition was made manifest. He then looked about 60, his hair and beard being snowy white, and his skin being of the typical lemon-yellow tint. Haemic murmurs were distinct, and the lungs were somewhat retracted. He was easily exhausted, and the anaemia was profound. After April his temperature became a little elevated, but never above 100° F. Vomiting set in on June 16th, and he died on June 21st, at the age of 44. Throughout the course of the disease, there was no oedema, haemorrhages, or tenderness of the long bones. He exhibited subjective sensations, however, complaining always of feeling cold. The epileptic fits were not arrested by the disease, he having one the night before he died, but during the six months he lived after his condition was recognized there was a distinct diminution in the number of seizures, not, however, progressive. Compared with the previous six months, this reduction amounted to 33 per cent.

Case II.

A female, aged 25, was admitted in 1870. She also belonged to the class of imbeciles, and had not been able to follow any occupation. After admission, though generally quiet and tractable, she was found to have periodic outbursts of excitement, but she was able for indoor employment.

In 1905 discoloration of the skin, consisting of brown patches of pigmentation over the front of the chest and abdomen, was noticed. These patches extended gradually and coalesced, so that the pigmented areas became the predominant feature. In March, 1907, owing to cardiac symptoms, she was brought under special observation. She then presented a curious appearance; her hair and face were very white and the mucous membranes pale. The anterior aspect of the trunk was of a bronze colour, with the exception of several small patches with well-defined outlines, which were of the same aspect as the face. It was difficult at first to decide which areas represented pigmentary anomalies. Towards the axillae and genitals the colour was deeper, and over the thighs small spots the size of a lentil were distributed, gradually becoming rarer as the knees were reached. The back of the trunk and thighs, the arms and the legs below the knees, were pale and not pigmented; nowhere could a lemon tint be discovered. A blood count gave the red corpuscles as 1,100,000 per c.mm. There was marked poikilocytosis, and alteration in size, and many nucleated red corpuscles. Haemic murmurs were present, and some tenderness over the long bones. Vomiting set in on April 25th, and the patient died on April 29th, 1907. There was never any oedema or haemorrhages and the temperature varied between 99° and 100° F. The patient had complained mostly of feeling cold.

Necropsies.

Post mortem examinations were made in both instances, and the ferrocyanide test applied and bone marrow examined. No extravasations could be determined in either with the naked eye. In both the fat was of bright yellow colour, and the internal organs pallid. Gigantoblasts were found in the bone marrow.

Case I.—Male, aged 44.	Case II.—Female, aged 62.
Brain.—Weight 43¼ oz. Excess of fluid. Evidence of iron in cortex, dura mater, optic thalamus, and white matter generally.	*Brain.*—Weight 37½ oz. Excess of fluid. Evidence of iron in cortex and white matter. Not in membranes.
Heart—Weight 13¼ oz. Clot in all chambers. Large deposits of fat under pericardium. Valves all competent. Evidence of iron in endocardium.	*Heart*—Weight 12¼ oz. No clots. Marked fatty degeneration of muscle. Mitral valve dilated. Evidence of iron in endocardium.
Lungs.—Less pigmented than normally. Oedematous. Evidence of iron. Weight: Right 14¼ oz, left 14 oz.	*Lungs.*—Less pigmented than normally. Oedematous. No evidence of iron. Weight: Right 15¾ oz, left 14 oz.
Liver.—Weight 41¾ oz. Fatty. Marked evidence of iron. No bile in gall bladder.	*Liver.*—Weight 43 oz. Fatty. Marked evidence of iron. Gall bladder full.
Spleen.—Weight 5 oz. Soft and friable. Marked reaction.	*Spleen.*—Weight 4¼ oz. Hard and firm. Slight reaction to test.
Kidneys.—Pale and fatty. No reaction to test. Diminution of cortex. Weight: Right 4¼ oz., left 4¾ oz.	*Kidneys.*—Pale and fatty. Slight reaction to test. Diminution of cortex. Weight: Right 4¼ oz., left 4½ oz.
Suprarenals not abnormal.	Suprarenals not abnormal.

There are several points worthy of notice in connexion with these cases. In Case I it was observed at the *post-mortem* examination that the gall bladder was empty. Hunter,[1] in summarizing the *post-mortem* conditions found by Eichhorst, states that the gall bladder was full of bile in every case. For this anomaly I am unable to give any explanation. Another unusual feature is the occurrence of pernicious anaemia in epilepsy and its beneficial effect as regards the number of paroxysms. In what manner the reduction was brought about is difficult to determine. Hare[2] refers to the relief following haemorrhage, which is sometimes obtained in cases of headache and migraine, and quotes Graves as follows in reference to epilepsy:

> Detraction of blood is sure to remove the violence and shorten the duration of the fit, but it is as sure to increase the subsequent tendency to their recurrence.

Unless one can credit that, had the patient lived longer, the fits might have shown a tendency to augmentation, it is not easy to accept the explanation that the extravasations or haemolytic changes which form some of the characteristics of this form of anaemia are the deciding factors in the diminution of the seizures. Nor is it quite probable that the toxaemic condition which is generally accepted as the basis of this disease acts as a direct antagonist to the development of the paroxysm. Of the many intercurrent diseases which have been reported to exert their influence on the progress of epilepsy, the majority are pyrexial in character, and in all likelihood owe their effect to this fact. Malaria,[3] typhoid, measles,[4] diphtheria,[5] and erysipelas[6] perhaps most of all, are instances. Increase in the acidity of the urine in epileptics usually precedes a diminution in the tendency to convulsions, and this increased acidity is common to all pyrexial attacks. In this, may be, there is an index of the manner in which these diseases produce their effect. I have noticed during an attack of erysipelas in an epileptic patient that a temporary fall of temperature was coincident with a recurrence of the fits, these ceasing again with the elevation of temperature. It is noteworthy that in the present case the reduction was most marked after the onset of the pyrexia. It must be remembered that though improvement in epilepsy has followed the injection of erysipelas antitoxin, the general results of the injection of bacterial products with a view to the alleviation of the convulsions have been discouraging. It is probable, therefore, that where any benefit has accrued in epilepsy from the onset of a toxic condition, it has been due more often to some accompanying condition general to other toxic states than to any specific action. In this instance, though such a conclusion may point to the pyrexia as a solution, there is another equally if not more deserving of consideration.

It is indeed likely that the reduction in the number of the fits was due to the altered coagulability of the blood. Turner[7] has demonstrated the increased coagulability which occurs in epileptics, and the diminution which occurs in pernicious anaemia is a constant feature of the disease. Is it not reasonable to assume that in this case the alteration was sufficient to determine a diminution of the paroxysms?

The most striking feature about Case II was the pigmentation. Microscopic examination of stained sections of skin from the pigmented areas showed that while haemosiderin crystals were present in the subcutaneous tissue and also in the corium, these were relatively very few in number, whereas numerous granules of melanin were present in the basal layers of the epidermis. No uterine or intra-abdominal cause could be discovered for the excessive pigmentation present, and unless we concede a general disturbance of the sympathetic system,

often present in mental disease and evidenced here by subjective sensations of coldness, as sufficient cause, it is somewhat difficult to understand the pigmentary deposition. Whether or not melanin be a degeneration product of haemoglobin, the coexistence of iron-free granules in the epidermis and haemosiderin crystals in the connective tissue is extremely suggestive. It will be noticed from the history that the possibility of the pigmentation being derived from the administration of arsenic is out of the question.

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A CASE OF SPLENO-MEDULLARY LEUKAEMIA.

BY JOHN DEE SHAPLAND, M.D.DURH., M.A.CANTAB.

THE chief reason for reporting this case lies in the fact that the usual duration of these cases is stated by Osler to be from 2 to 3 years, by Frederick Taylor from 6 months to 7 years, whereas this case gave a history of over twelve years, and had been seen by many leading physicians and surgeons during that period.

Mrs. H., aged 62 years, a Jewess, was first seen by me on November 28th, 1906, when I found her in a rigor, teeth chattering, face pale, drawn, and covered with clammy perspiration, eyes sunken, conjunctivae very pale, and the sclerotic of pale yellowish hue. The cheeks were flushed, the alae nasi dilated, the breathing was 36, and the pulse 120. A dry, harsh cough caused pain in the left side. The temperature was 103.2° F. There was marked wasting of the body, the bony points being most conspicuous and prominent. Dilated venules were very conspicuous, and tortuous over the lower thoracic region and abdomen. A large swelling could be seen occupying the left hypochondriac left lumbar and left inguinal regions, and extending across the abdomen to the epigastric and umbilical regions: the former it practically occupied in its entire extent, the latter only the upper third. Along the anterior border of this could distinctly be felt several notches, and the outline of the spleen could be easily felt by dipping the fingers over the edge of the rounded mass, when these notches became very evident to the touch. The spleen was tender, and varied in size daily, some days being as much as two to three finger-breadths larger than on others.

Her history was as follows: She had married when 18 years of age; had eighteen children, of whom four are alive; there was also a history of numerous miscarriages, but as to their number I could obtain no definite information. All her confinements and miscarriages had been uneventful. Up to twelve years ago she had always enjoyed the best of health, and there was no history of any prior illness. At that date she noticed a swelling in her left side, and then consulted many of the leading physicians and surgeons, who told her that her spleen was greatly enlarged, and wanted to know if she had ever resided abroad or in the fen country, but to this she replied in the negative, as she was born in the north of London, and had never been out of England.

The attack for which I was called in was one of influenzal pneumonia, which took rather a severe course, as there were symptoms of cardiac failure, but under the use of hypodermic injections of strychnine she gradually recovered. It was then that the spleen gradually began to enlarge still more, and became extremely tender, but no fluctuation was to be detected, and it used to vary in size two to three finger-breadths. She also frequently complained of agonizing abdominal pain located in the regions occupied by the spleen: it occurred after taking food and was relieved by eructation, being evidently due to the distension of the stomach pressing on the spleen and other viscera, and stretching the adhesions which had formed between the spleen and intestines. The bowels were a constant source of trouble, as she had alternate spells of constipation and diarrhoea.

The one and only specimen that I could obtain of her blood contained a large number of leucocytes in proportion to the red cells, but, not possessing a blood-count slide, I was unable to estimate accurately their percentage. I tried to obtain a second in order to have this done, but the patient and her relatives stoutly refused.

The ophthalmoscopic appearance of the eye grounds was that the vessels of both retinae were extremely tortuous and the veins full and of a much paler hue than normal; scattered here and there were diffuse haemorrhages; the discs were very pale. Vision was not greatly affected, though she complained of occasional blurring of the outlines of furniture and other objects in her bedroom. The urine contained albumen in varying amounts, on some occasions there being only a faint cloud, on others a distinct amount, but never more than $\frac{1}{20}$; the reaction was acid; specific gravity varied from 1010 to 1015. Urates and phosphates were often present in great excess, and once Fehling's solution was reduced.

On February 4th, 1907, she developed syncopal attacks, which recurred with increasing severity each day, and, in spite of hypodermic injections of strychnine and digitalin, terminated fatally on February 11th.

During the last few days there were marked signs of progressive cardiac dilatation, which was evidently due to degenerative myocarditis produced by the toxic condition induced by the spleen. There was no epistaxis, bleeding from the gums, haemoptysis, or haematemesis, though there were a few scattered purpuric spots on the arms and legs. There was no jaundice, nor could any ascitic fluid be detected in the abdomen, the walls of which were very supple, allowing palpation to be readily made, and there was no oedema of the feet and legs. Towards the end there was a slight elevation of temperature, ranging from 99° to 100.4° F.

She was given splenic pulp tabloids (B. W. & Co.) gr. v ter in die, but I think that one could hardly consider this a fair test of them, as the disease was so far advanced before trial was made of them.

A FORGOTTEN SWAB: ANOTHER WARNING.

BY G. T. GIFFORD, M.D., M.R.C.S.,
DARWEN.

ON the evening of June 12th last I was asked by the *locum tenens* for a neighbouring doctor to see a woman who was suffering from symptoms of intestinal obstruction. She had walked to his surgery on the previous day, complaining of pain in the lower part of the abdomen and constipation, but no vomiting had then occurred. She stated that three months previously she had undergone an abdominal operation for what was afterwards ascertained to be an extrauterine fibroid. Since the operation she had felt well until within the last forty-eight hours. Nothing very definite was to be made out by palpation excepting spasmodic contraction of the abdominal muscles with general tenderness. This condition, together with much pain of a straining character and incessant vomiting, necessitated an immediate operation.

The same evening I opened the abdomen; distended and inflamed coils of small intestine presented, which, on being followed down, soon displayed a mass impacted within the ileum about half-way along its length. I made a longitudinal incision in the bowel wall over the site of the impaction just long enough to enucleate it; and then, after sewing this incision and the abdominal wall up again, got the patient back to bed as soon as possible. Her subsequent recovery was uneventful and uninterruptedly good.

On examining the impacted mass directly after the operation, it was found to be a surgical swab (wool surrounded by gauze), which had been left in the abdominal cavity at the previous operation, and which had eventually ulcerated through the intestinal wall and was now trying to be passed along the intestine. It had evidently gained entrance to the bowel several feet above the site of impaction, where there was noticed to be an inflamed portion of bowel adherent to the posterior abdominal wall.

I have never heard of a case similar to this, and consider it sufficiently interesting to report, and worth while adding to the already numerous warnings against using small swabs within the abdomen during operations.

THE occurrence of a rare human parasite in a boy has recently been recorded by Dr. Blanchard before the Académie de Médecine of Paris. *Dipydilium caninum*, as its specific name implies, is chiefly found in dogs, though it also occurs in cats, and probably in other animals. There are some ten or a dozen different species of the genus *Dipydilium*, all being parasites of the carnivora, and six being known in the cat and dog. The present species, however, is the only one as yet recorded as infecting man, and hitherto only 60 cases have been known, 59 of which were in Europe and 1 only in the United States. *D. caninum* is a taenia, usually about 18 in. or 20 in. in length, the terminal segments longer than their width, and measuring about 10 mm. to 12 mm. by 2 mm. or 3 mm. They are expelled per anum, and are easily recognized by their reddish-white colour. This, which disappears in alcohol or formalin, is due to the ova, which are massed together in groups of 8 to 15, and fill the whole segment. The clinical symptoms are mainly of a reflex order, similar to those produced by *Trichocephalus dispar*, and thymol is recommended as the best remedy. A fact of much interest is that the flea is said to be the intermediate host.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF TROPICAL DISEASES.

James Cantlie, F.R.C.S., President.

PRESIDENT'S INTRODUCTORY ADDRESS.

It is two years since this Section met, and during the period an enormous amount of work has been accomplished in tropical medicine. At previous meetings the record of twelve months' work occupied the full time available for our discussions, but with twenty-four months' work to discuss and consider there is evident danger of your President having to apply that objectionable method of curtailing discussion, the closure—a duty always disagreeable to perform, especially when really valuable information is apt to be stifled.

Importance of the Protozoa.

Perhaps the most noticeable change in our discussions during the past few years is the increasing importance we bestow upon the Protozoa as factors in the cause or spread of disease. During the last quarter of the nineteenth century bacteriology usurped the attention of medical observers, but with the advent of the twentieth century the protozoologists would appear to be about to oust the bacteriologists from the foremost place in our search after the origin and the epidemiology of disease.

In the schools of tropical medicine in London and Liverpool lectureships in protozoology have been founded, and not only so, but the subject has had to be still further specialized, for in these schools we find lectureships on parasitology, helminthology, and arthropodology as necessary adjuncts to the study of diseases of the tropics. In this direction, as in several others, the schools of tropical medicine are but the pioneers, and, considering the important part the protozoa are destined to play, not only in tropical but in the pathology of temperate climate diseases, every general medical school in the realm must follow the example set unless it is content to fall behind in teaching efficiency. Nor is the list of necessary special subjects exhausted; one of the most urgently required is a lectureship dealing with the geographical distribution of disease—a subject which, though touched upon in several departments of our medical curriculum, requires collating and handling by one who has made this interesting and most useful branch of study his life's work. It is to be hoped that the holders of these special chairs will always be medical men, otherwise the several subjects they deal with are in danger, in the hands of a pure scientist, of being elevated to a high position, it may be, in the scientific arena, but possibly destitute of direct practical bearing upon disease, its elucidation, amelioration, or its extinction.

No feature in the sphere of practical medicine has developed in so remarkable a degree as the extent to which domestic and other animals have been proved to play a part in the transmission of disease. For some time it has been known that certain animals served in this way; the dog was known to transmit hydrophobia and hydatids, the horse glanders, and the pig trichina; but during the past decade there is scarcely an animal useful to man, or an insect which besets his path, that has not been shown to be an alternative host, or a transmitter of serious scourges, more especially in tropical countries. The cow is now accused of conveying tubercle to man, the goat Malta fever; malaria, filaria, and yellow fever have been proved to be transmitted by mosquitos; rats, by their infected fleas, are answerable for plague in man; trypanosomes are met with in many animals, and find their way to man by blood-sucking flies; piroplasmata pass from animal to animal by means of ticks, and possibly to man by the same media; the cyclops communicates the guinea-worm to man; the bed-bug, the common house-fly, fleas, cockroaches, lice, and the animals we style vermin have been each severally inculpated, are responsible for the conveyance of disease to man. In fact, there is scarcely an animal with which man is apt to be brought into contact at whose door the accusation of infecting man with disease is not now laid. This is a new and important feature in pathology, which has widened the sphere of investigation to such an extent that the prospect is bewildering in its immensity.

The dangers from these animals and pests have long been suspected and acted upon in an indefinite way, and modern investigation is only now explaining the why and wherefore of these conjectures. The abhorrence of vermin is no doubt part and parcel of a time-honoured and inherited legacy; it is out of all proportion to the direct inconvenience so-called vermin cause to mankind, and admits of some more deep-seated explanation. Our forefathers, when they drove rats from their abodes, were conscious, on some empiric and indefinite grounds it may be, but none the less practical therefor, that they were casting out the possibility of infection by plague; and that, by destroying vermin generally, they were at the same time ridding themselves of channels of disease. In no other way can the extraordinary intolerance of man towards animals we style vermin be explained.

It may well be asked, Has contact with domestic animals no other aspect than that of disease? Have the cattle, horses, dogs, cats, pigs, etc., no hygienic virtues to bestow upon man, with whom they are in constant juxtaposition? The evil influences of the relationship are now being studied for the first time in medical history, but their sanitary benefits, if there are any, have not yet been thought of. The day may come when we shall look for transmitters of health-giving properties between animals and men, or vice versa, and understand aright the balance of health and disease in Nature's scheme. An inquiry of the kind implies a superlative and super-Darwinian mind, but I do not despair of human intellect rising to the occasion.

To deal with all the developments and discoveries in tropical pathology during the past two years in the space at my disposal is impossible. I can merely mention some of the more remarkable and important. In Europe Malta fever has been shown to be due to the entry of the *Micrococcus melitensis* to the human body by the medium of milk from goats infected by the coccus; the prophylaxis is evident and the complete extinction of the disease brought within the possibilities of practical hygiene. In Asia, and especially in India, plague engrosses the attention of scientific and practical workers. Over 1,000,000 persons died of the disease during the first six months of the current year, and before 1907 closes we cannot expect the mortality from this disease to be less than 1,250,000.

The germ origin of the disease has been known for many years; rats have been connected with its prevalence ever since the present pandemic developed, and the rat flea is now believed to be the medium by which the disease is conveyed to man. In spite of this knowledge, however, plague seems to defy sanitarians, at any rate, sanitarians in India, and it would seem as though the eradication of the disease must be undertaken on other lines than those hitherto attempted. It may be, however, that it is only the machinery of sanitary effort that is at fault, and it would seem to be imperative that India be equipped with a public health service independent of the military service, and directly responsible to the Government.

Beri-beri has not yet been traced to its source. Many theories have come and gone during the past few years, and the latest is that of Dr. W. L. Braddon, who, in his painstaking and thoroughly scientific publication, *The Cause and Prevention of Beri-beri*, contends that stale white rice occasionally contains a poison which produces beri-beri, and that the cause of the disease is a stable and non-volatile alkaloid, resembling atropine and muscarine in its effect. In Africa sleeping sickness is the scourge to which most attention is being given. An International Sleeping Sickness Commission has been formed, composed of members from countries having possessions or interests in the afflicted zone. All evidence points to the tsetse fly —the *Glossina palpalis*—as being the medium by which

sleeping sickness trypanosomes are conveyed. The question whether the trypanosomes undergo development in the body of the tsetse fly or whether the fly is merely a passive transmitter of the disease has not been settled.

Time will not permit of more than a categorical statement of diseases in other lands, and of the observations made in connexion with them. Spirochaetes have been found in many tissues and in many lesions during recent years, but their exact pathological significance and their place in zoological classification are as yet not complete. The piroplasmata and the haemogregarines have assumed an importance in animal pathology hitherto unsuspected, and the haemoflagellates are fascinating the attention of the pure scientist and of the practical pathologist. It is satisfactory to note, however, that of the chaos of isolated observations, serious attempts are being made to classify the several blood inhabiting protozoa. The most recent attempt is that of Sambon, who bases his classification on the changes in the oökinete, and arranges the haemoflagellates into the four families as the result. Sambon's classification of the haemoprotozoa (1906): (1) Haemogregarinidae (produces sporozoites in secondary capsules or spore bags); (2) Plasmodidae (produces naked sporozoites); (3) Spiroschaudinniidae (elongates and breaks up into numerous sporozoites); (4) Haemoproteidae (divides by longitudinal fission into two similar forms, which again divide repeatedly, until minimal forms or sporozoites are produced). In the first two groups the oökinete encysts, and in the last two it remains free. Our knowledge of schistosomes has been advanced considerably. The parasite so long known as the *Bilharzia haematobia* or *Distomum haematobium* is now styled the *Schistosomum haematobium*. There are now recognized four varieties of schistosomes, determined by the characters of the egg: (1) In *S. haematobium* the eggs are ovoid and possess a terminal spine; (2) in *S. bovis* the eggs are spindle-shaped, with a terminal heart shaped spine; (3) in *S. japonicum* ovoid and no spine; and (4) in *S. mansoni* oval with a lateral spine. The *S. mansoni* occurs chiefly as an intestinal occupant, whereas the *S. haematobium* affects the urinary tract.

The metamorphosis of *Dracunculus medinensis* (Guinea worm) in *Cyclops quadricornis* has been known for some time, but how the filaria entered the human body remained undetermined. Recently, however, Leiper has helped towards the belief that the parasite gains access to the human body by way of the alimentary canal, in consequence of his observation that the cyclops itself, when brought in contact with hydrochloric acid, is digested, but that the larvae of the Guinea worm it may contain are stimulated to activity thereby.

It is impossible to recount the many observations made by medical men in tropical countries during recent years, for tropical medicine has many keen workers entered in its ranks, men who, far separated from laboratories and often in out-of-the-way parts of the world have contributed to our store of knowledge, and helped to advance this department of medicine, which may with truth be said to have outstripped in discovery every other branch of medicine.

PAPERS DISCUSSING
ANTIMALARIAL SANITATION.

I.—W. J. R. SIMPSON, M.D.Aberd., F.R.C.P.Lond.,
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RECENT DISCOVERIES WHICH HAVE RENDERED ANTIMALARIAL SANITATION MORE PRECISE AND LESS COSTLY.

THE change in ideas concerning the causes and prevalence of malaria which has come about in consequence of the work of Laveran, Manson, and Ross, together with the progress which has been made in the practical application of Ross's discovery, renders a discussion on the prevention of malaria a much easier and more practical undertaking than formerly. The vagueness attending former discussions was not because of doubts being entertained as to the beneficial results following in certain instances the clearing, draining, and reclaiming of low-lying lands. The freeing from malaria of the fens of England, of the low lands of Holland, of the marsh lands in Italy, and a host of other places in Europe and elsewhere, were undeniable proofs of their efficacy. But it was due to the inadequacy of the miasma theory to explain satisfactorily the prevalence of malaria when there were no marshes or forests and when the drainage of the land appeared to be good.

Similarly the personal protective measures based on the theory were found to be far from being uniformly successful. Sleeping in upper rooms of houses, having windows looking into a central courtyard to avoid exposure to the malarial wind, closing windows at night, opening up dark passages in houses, and letting light and ventilation into the lower rooms of a house, though found useful in some cases failed in many others. Success and failure were alike uncertain, and probably the explanation of these and the value attached to any particular precaution were obscured by the fact that mosquito nets were not infrequently used, with the object of protection against the bites of mosquitos, sand flies, and other insects.

Fortunately the vagueness and obscurity are now cleared up. The facts established, that the malarial parasite has a life-cycle in man and in certain genera of mosquitos, that such mosquitos are the carriers of infection, and that water is required in the breeding places of the mosquitos for their larval development, explain the value and the limitations of clearing, draining and reclamation; and interpret the meaning of the protection sometimes derived from sleeping in upper storied rooms or with the windows in the central courtyard open while all the others were closed. They bring to light the value of the mosquito curtain as a protective against malaria which was in some indefinite way suspected. They also not only make clear the reason for the marshes and forests being malarious, but they transfer our vision to the many breeding places of the mosquito, most of which are generally closer to dwellings and are more easily removed and dealt with.

WHAT SHOULD BE THE FIRST STEPS TAKEN IN A MALARIOUS DISTRICT?

In opening the discussion on malarial fever prevention I am assuming that the prevalence of the disease in the locality is an ascertained fact, for if there is any doubt on this matter inquiry and investigation must precede the adoption of preventive measures. Even in districts known to be malarious the disease is not uniformly distributed. It is desirable, therefore, to localize those parts that are malarious and those that are not; and the question confronts one as to the easiest and most expeditious method of differentiation. Can it be best done by examination of the children or by searching for the malarial-bearing mosquitos, or should both be conjoined? I am putting the question in this form in order that those most experienced may have an opportunity of advancing their views. It appears to me that the adoption of both methods is most satisfactory when practicable, as the one is useful in localizing the area of malaria prevalence and the other in focussing or discovering the particular source or sources in that area from which the malaria is derived, in other words the breeding places.

Every one, however, is not conversant with the niceties of distinction between the different varieties of *Anopheles* that are malarial-bearing and those that are not; nor is the work of separation in such a state of completion as to bring it within the reach of practical politics except perhaps to a very few entomologists who are specialists on the subject.

If it is to be a choice between one or other, I think the examination of the children according to locality is the most important and safest method, while for preventive purposes the search for *Anopheles* generally is sufficient in order that their breeding places shall be first dealt with. I would, however, supplement it by treating all breeding places of mosquitos in the area and its vicinity.

A question arises here—and I speak under correction in the presence of so many experienced collectors of mosquitos and investigators into the life and habits of these insects—if the differentiation of the *Anopheles* is of very great importance from a preventive point of view. Has not the result of differentiation in many cases shown that harmful and harmless *Anopheles* with *Culices* are not infrequently associated together in the same breeding places? If this is so, one can conceive the possibility, after an unsuccessful search for *Anopheles* known to be malarial-bearing—the failure being due to the presence

of a large number of non-malarial-bearing *Anopheles* and *Culices*—of coming to the conclusion that there is no malaria in the district, and yet the examination of the children refuting this conclusion. It appears to me that if this association of different species and varieties of mosquitos is a fact, then, as soon as it is ascertained the children are suffering from malaria, the campaign should be directed against the mosquitos and their breeding-places in the vicinity, rather than against any particular species of *Anopheles* which is known to be malarial-bearing. But even if it is not a fact, I would still advocate the destruction of all mosquitos in the neighbourhood of dwellings, because very few have the knowledge whereby they can discriminate between an *Anopheles* that is malarial-bearing and one that is not.

How Far from Dwelling-houses is a Protective Zone Required?

Another point of importance from a preventive point of view is how far from dwelling-houses need preventive measures be taken. Unnecessary expense is always to be avoided, and it is essential that, while protecting the community, operations should not be extended further than will meet this requirement. There are many present who will be able to give valuable information on this subject from personal experience. The distance depends a good deal on local conditions. I think it is recognized that the *Anopheles* is a more or less domesticated creature, and does not fly far from its breeding grounds. As a rule, could it not be laid down, even in very malarial districts, that a distance of a quarter of a mile is a sufficiently protective zone? As an instance, I have in mind Port Swettenham, in the Malay States, which was so malarious as to raise serious proposals for its abandonment, and which has now been rendered free from malaria though situated less than a quarter of a mile from marshes containing *Anopheles*. On the other hand, a distance of a quarter of a mile may not be enough when a periodical but gentle wind blows directly over and from a marsh on to houses exposed to the same wind, and especially if the houses are elevated somewhat above the marsh, so that there is no protection by trees. Such conditions when existing, and the huts and houses cannot be removed to a healthier site, can only be met by mosquito netting in the windows and doors of the huts and houses and mosquito curtains for the beds, but before coming to the conclusion that it is the marsh all nearer breeding places of mosquitos should be sought for and removed.

Different Conditions Demand Different Modes of Applying Anti-malarial Sanitation.

As different conditions demand different modes of applying anti-malarial sanitation, I propose to select a few of the more common conditions associated with malaria and to illustrate their mode of removal. Protective measures against encroachments of the sea and against the overflowing of rivers, as well as the drainage of great marshes, do not come within the scope of this paper. They are costly and demand the mechanical skill of highly-trained engineers well versed in the drainage and reclamation of land. When such conditions exist, removable only by the execution of large works, the community is best protected by the safeguards adopted in the Roman Campagna—namely, by mosquito-protected houses, mosquito curtains, the destruction of breeding places in and around the immediate premises, veils and gloves in the evening, and quinine as a prophylactic in the unhealthy season. In this connexion interesting points for discussion are: When, how long, and in what doses should the quinine be given, and what should be administered as a substitute when quinine cannot be taken? What is the value of arsenic under such circumstances? Precautionary measures of this kind will not be taken by more than a few, unless, as in Italy, there is a medical staff with authority to systematically visit the houses once a week during the malarial season.

In any campaign against malaria, whatever may be the anti-malarial measures adopted, I would emphasize the necessity of there being a staff, however small it may be, under the direction of the medical officer in charge, for the purpose of carrying out the requisite measures or seeing that they are carried out. Theoretically it is an excellent thing to diffuse information as to the precautions required for self-preservation, and this should always be done, but it is not sufficient, for the vast majority of a community will never take the trouble to carry out any protective regulations unless its members are constantly reminded of them by seeing that a practical interest is taken in their adoption by those from whom the information emanates. The best educative agent for the present generation is the health department, and without the latter it is useless to expect the active co-operation of a native community.

Measures in Localities Subject to Tidal Floodings.

Even under the most unpromising circumstances simple measures adopted with the object of preventing tidal waters overflowing on to the low-lying land close to the town, and the draining of this low-lying land in order to lower the sub oil water and give a free outlet to the rain water, bring about excellent results. I do not think I can bring forward a better instance of this than one which came under my personal observation last year when I was in the Malay States. It is that of Port Swettenham, rendered practically free from malaria by the energy of Drs. Malcolm Watson, and Travers, ably seconded by the engineers. Port Swettenham is a small town built on raised land reclaimed from a swamp, and adjoins swampy land covered with mangrove trees. As stated previously, it was so unhealthy as to raise a question of abandonment. Before doing so, however, it was decided on Dr. Watson's recommendation to construct a bund in such a situation as to prevent the tidal waters from the marsh overflowing on to the low land close to the town which formed a part of the marsh, to clear this low lying land and drain it by a series of parallel ditches with small wooden sluices at their outlets through the bund, and to fill up any portions of low land that could not be drained. The result is that Port Swettenham has been freed from malaria. There were no known cases when I was there in August, 1906; and in 1905 an examination of seventy-six children showed none to be infected.

I consider Port Swettenham one of the worst localities which could have been selected for carrying out anti-malarial sanitation, and the success which has been achieved shows that no place with similar conditions, however malarious, should be considered to be beyond remedial measures.

Marshes at the Foot of Hills.

Small marshes, or small areas, with a water-logged soil are frequently brought about by the configuration of the hills and valleys, or by the nature and relative position of the strata of the soil. They are best dealt with by constructing intercepting or catchwater drains, which intercept the flow of water coming from the high lands, and which carry it away to the lower natural waterways without permitting it to lodge and waterlog the low lands or plain stretching from the foot of the hills. These intercepting drains cut off the springs, underground water, and surface water from the high lands. They may be of the simplest kind; for instance, a ditch constructed so as to follow the windings and contours of the high land where it joins the plain will cut off most of the water, which is then conveyed into larger trenches and finally discharged into the natural waterways of the localities. The waterlogged low land can then be dried by the construction of the necessary number of ditches that may be required to lower the level of its subsoil water and effectively drain it.

This use of contour catchwater ditches, together with ordinary ditches, in the portion of land waterlogged is a method which experienced planters have adopted for drying their lands under the circumstances mentioned. It is used much in Italy, and has been employed with excellent results by Dr. Malcolm Watson at Klang, where conditions of this kind exist. It is a method which can be easily carried out by a few coolies cutting the ditches to a proper gradient under supervision after a rough plan of the lines of proposed drainage have been carried out and agreed upon by the engineer and medical officer. If there is no engineer the work can still be carried out. The cost is small, but the results in drying the land and the consequent removal of breeding grounds for mosquitos are remarkably good.

The ditches have to be kept in good condition, and not be permitted to assume a switchback railway undulation,

or to have their utility spoiled by being blocked or by the growth of vegetation on them. These conditions may often be seen in malarial districts.

It is not always convenient to have an open ditch in certain situations, and then a deeper one filled in with rubble stones, pebbles, gravel stones, and covered with gravel or earth, makes a good substitute so long as they are numerous enough.

POOLS IN WATERCOURSES.

Backwater and other pools found in many rivers during certain seasons of the year or in waterways in the plains or on the sides of the hill are not uncommon agents causing malaria in a district; very little work with a few coolies can, by the cutting of channels into the main stream or running many of them together, remove the stagnancy of their water, or at least remove the pools to a safe distance away from the houses. In the case of watercourses coming down the sides of the hills, if any pools cannot be removed by this method or by training them, they can be regularly treated with kerosene or petroleum. The draining of nullahs, together with other anti-malarial measures, has been followed by very excellent results in Hong Kong, where the admissions to hospital for malaria have been reduced more than half during the past two years.

Ellichpur Cantonment in the Berars is another good example of the improvement in health as regards malaria which may result from a few simple measures systematically carried out.

The cantonment is situated about three miles from the foot of the Satpura range, and the neighbourhood with its villages, including the forest of Mehl Ghaut on the slopes of the hill about seven miles away, is similar in character to the Terai, but on a smaller scale.

In former days the cantonment was a large one, having been established by the Duke of Wellington after the battle of Argaon in 1803 to guard the passes across the Satpura to prevent the encroachment of the Pindarries and Mahrattas. It was always exceedingly unhealthy owing to malarial fever aggravated by the type brought in by the people living in the Mehl Ghaut forest, and on that account was later recommended to be abandoned. This was not done, but the troops were reduced, and within recent years no more than a battery of artillery and a regiment of native infantry of the Hyderabad contingent were stationed there until the reorganization lately carried out by Lord Kitchener, and then the troops were withdrawn altogether. The military lines were within 100 yards of one of the hill streams. In 1898, Colonel Swain, the Principal Medical Officer and Sanitary Commissioner of Berars, basing his action on Ross's discoveries, began to put into force anti-malarial measures. These consisted in cutting channels from the stagnant pools in the rivers to the small central streamlet, and thus draining them, filling up those that could not be drained, and pouring kerosene oil on others. In the lines themselves the vessels kept full in case of fire were emptied once a week and scrubbed out with kerosene oil.

The water vessels in the sepoys' houses were emptied every week, and dried and exposed to the sun, all pools were filled in, no water was permitted to remain lying about, and quinine was given out periodically. The result was a great improvement in the health of the troops, and the cantonment, which was previously dreaded by the soldier for its unhealthiness, became as healthy as other cantonments which had no malarial fever. The civil population of Ellichpur, where no similar measures were carried out, did not share in this change, but continued to be malarious. Major Bidie commenced carrying out these measures, and later, when he was on leave, they were continued by Captain Liston, who found the prevailing variety of mosquito to be *Anopheles listonia*.

The whole was done by regimental labour parties and the cost was very small. Thus a station which was a terror to the soldier and his family was converted at a very small cost into a healthy cantonment.

ARTIFICIAL CONDITIONS FAVOURING MALARIA.

Turning to artificial conditions favouring malaria prevalence as distinguished from natural conditions, those caused by excavation works, railway embankments and buildings are well known. It is extraordinary to see the amount of damage to the health of a locality an engineer or contractor will do, because no one has the courage to insist, in the agreement drawn up for the execution of the works, that the place shall not be made malarious by them; wherever one goes in any part of the world the same mistakes are seen, and the same preventable conditions are reproduced.

The sanitarian's advice is only sought for when the locality becomes notoriously unhealthy, and then sanitary works to remedy what could have been prevented are set down as very costly. For preventive purposes the advice should be asked for before the works are begun. It is more valuable then, and would save an immense amount of sickness and expense. No one but the Americans have hitherto proceeded on these lines.

ANTIMOSQUITO SANITATION OF DWELLING HOUSES.

In regard to house sanitation, I shall not waste your time by an enumeration of the ordinary measures adopted, but merely to say that while attending to the pools and puddles in the garden and premises, and the fumigation and lighting and ventilation of any dark rooms, the vessels containing water for baths and for kitchen purposes should not be forgotten; neither should the latrines. Dr. E. Ross, Health Officer of Port Said, has practically freed the town of mosquitos by periodically and systematically pouring petroleum down the w.c.'s and latrines leading to the cesspools, and filling up underground cellars flooded with subsoil water or sewage.

II.—Professor HANS ZIEMANN,

Surgeon-Major, German Navy; Medicinal-Referent in Cameroons.

MALARIA PREVENTION IN UNCULTIVATED DISTRICTS.

THE general subject of malaria prevention might be divided into (1) general malaria prevention, (2) personal malaria prevention, but a special treatment of the latter subject is not necessary, since the same general precautionary measures apply.

We can practise general malaria prevention in extirpating the malaria parasites in man (1) (*a*) by systematic prophylaxis with quinine of those infected with malaria, (*b*) by killing those malaria parasites which invade the human body at the beginning of their development and before a fever attack has set in—that is, real quinine prophylaxis; (2) by extirpating those mosquitos which convey malaria; (3) by protecting man against the bites of malaria mosquitos; (4) by endeavouring to raise the resisting power of malaria-infected people by social prophylaxis—by care for the better feeding, housing, clothing, and instruction in the nature of malaria, etc.

The presupposition for the following discourse is that the development of malaria parasites takes place only in man and in mosquitos. This observation may henceforth be generally accepted, as all blood parasites found in animals have much similarity with human malaria parasites, but which, nevertheless, have proved to be different. I remember in this respect especially the parasites in the red blood corpuscles of Cameroon bats, on which I commented in 1896, and which in their juvenile stages are not at all to be separated morphologically from the earlier forms of malignant malaria parasites (see *Centralblatt für Bacteriologie*, 1896) and later observations on bats by Dionisi.

Up to the present also the most thorough attempts to prove the existence of malaria parasites in the eggs of malaria-infected mosquitos have been in vain. As is known, Schaudinn referred to the possibility of the malaria germs being transmitted to the young brood of the malaria-infected mosquitos.

1. The method of extirpating malaria parasites by the systematic application of quinine to an entire malaria-infected population (as R. Koch would have it) is only possible under entirely definite presuppositions on small islands and with the help of a large official staff, which guaranteed a constant supervision. Every relaxation of this supervision would instantly give rise to new malaria epidemics. In a practical sense this prophylaxis, at least in West Africa, is not to be accomplished, owing to the fluctuation of the population. On this point I am at one with all British authorities.

On the other hand, the real quinine prophylaxis just mentioned, which purposes to kill at the beginning of their development those malaria parasites which eventually invade the body, is of practical worth. Of course, this method has on its introduction met with considerable difficulties from the tropical white population. The earlier isolated attempts with quinine prophylaxis, which took place without simultaneous blood investigation, are, of course, not to be recorded as systematic.

I was laughed at by all old Africans in the year 1894-5, when for the first time, on board His Majesty's ship *Hyäne*, I subjected the entire crew to a systematic quinine prophylaxis under careful simultaneous microscopic blood control. My subjects received at that time 1 gram of quinine generally every fourth day. The result was directly successful. Of the crew of 86 men, only 23 fell ill, most of them with mild attacks, which were not to be recognized as malaria without blood investigation, although this year was one of the severest malaria years of West Africa.

Of course, at that time a very energetic quinine treatment and re-treatment of malaria was exercised, so that I could prove that it is possible through prophylactic blood investigation to discover the malaria parasites often before an outbreak of fever has set in, and even in their incubation stage.

It is obvious that for an effective quinine prophylaxis only serviceable easily soluble quinine (for example, hydrochloride of quinine) is to be used, and that the intestines absorb the quinine. In this case it is indifferent whether the quinine is taken in wafers, tabloids, or gelatine capsules.

I can recall, however, 4 cases which suffered from severe chronic malaria in spite of the fact that they had taken unusually large quantities of quinine from the very beginning. Investigation showed that in one case the quinine capsules swam undissolved in water even after three hours. In other cases the quinine powder had become entirely unserviceable, and did not produce the well-known subjective effects.

As is well known, the number of different methods of administering quinine is considerable. Some give small doses daily, as, for example, the British tropical doctors of West Africa; others give ½-gram or gram doses, varying the length of the intervals. Others again, on the precedence of Robert Koch, give a gram every eight or nine days, otherwise every seven or eight days.

I can only say that there is more than one way leading to Rome, and favourable results can be obtained with diverse methods. Only one thing I should like to say of all methods, namely, that an *absolute protection against malaria, that is, against the first infection, is not to be effected by quinine alone*—that is to say, by any method that can be endured without injury to the body. One must endeavour, with the smallest possible quinine doses and under the least possible disturbing doses, to achieve the highest possible protection against malaria. On this ground I cannot feel enthusiasm for the two and three day quinine prophylaxis (every eighth and ninth, or seventh and eighth, or seventh, eighth, and ninth day). The quinine taken, according to this, on the second day, or even taken repeatedly on the third day, gave rise in the large majority of cases in the climate of West Africa, to an abundance of subjective trouble.

On the other hand, I could see that small daily doses of quinine had good effects in districts with milder malaria, while in districts with severer malaria, such as the Cameroons, little effect was shown. I know a large number of Englishmen who earlier took daily 0.3 gram of quinine and suffered considerably from chronic malaria and the disposition to blackwater fever. In my opinion the prophylactic quinine doses must, wherever possible, on disciplinary grounds, correspond with scientific therapeutics; but this amounts to a 1 gram dose, which makes a quinine solution of 1 to 10,000 in a full-grown man, assuming a blood quantity of 10 litres. On the other hand, it appears necessary, in order to secure efficacious quinine prophylaxis, that quinine shall constantly circulate in the body. Since the quinine is excreted from the body after four days, it is, without further comment, clear that if one takes quinine every eight or nine days the body is exposed without protection to the possibly invading malaria germs.

Again, a quinine prophylaxis must not be according to scheme, but must permit of individualizing the prophylaxis. This individualization of the malaria prophylaxis and of the treatment is often missing It is clear that nervous persons with a disposition to blackwater fever and with strong idiosyncrasies against the action of quinine, as well as delicate women, have to use a different prophylaxis with quinine to that used by strong full-grown men.

From these considerations I recommend the so-called four-day universal prophylaxis, which permits of the necessary quinine individualization.

I prescribe: (*a*) 1 gram quinine every four days, best given in the evening before going to bed, with 5 drops of acid. hydrochlor., in a glass of water, and on the appearance of ringing in the ears and nervous troubles, with 1 gram potassium bromidi; (*b*) 1 gram euchinin every four days, if 1 gram quinine cannot be endured; (*c*) ½ gram quinine, if 1 gram euchinin cannot be endured; (*d*) ½ gram euchinin, if ½ gram quinine cannot be endured. Those who cannot endure ½ gram euchinin had better not go to the tropics at all.

In order not to forget the quinine days, I recommend that quinine be taken on the 1st, 4th, 8th, 12th, etc.; in short, on all dates divisible by 4 up to the 28th, and then to begin again on the first of the following month. This method permits of being applied in all countries, whether they be the seat of milder or severe malaria, and to all persons.

The utmost value must be attached to the stringent observation of the quinine days, so that quinine is permanently to be found in the body If, nevertheless, malaria sets in, I still give for three days after the successful recovery from fever 1 gram quinine daily, then every second day for the next fourteen days, and again every fourth day.

In case of insuppressible vomiting and diarrhoea, I recommend most strongly the intramuscular injection of quinine bihydrochlor. (1 gram in sterilized solution in the proportion of 1 to 2 aqua) into the glutei. This method, which I have applied since 1894, should be much more generally employed, as a sure absorption of the quinine takes place thereby.

The Cameroons used to be for Europeans a place of terror and death. Even twelve years ago the mortality in Duala reached 8 to 9 per cent., which gradually fell to zero in 1906, so far only as tropical diseases are taken in consideration. After the introduction of the above-mentioned prophylaxis among the employés in a large cocoa plantation, consisting of upwards of 80 Europeans, the mortality fell from 11 per cent. to zero in seven years. In Victoria, where the comforts of life were in earlier days very few, this result is in the first place to be ascribed to quinine prophylaxis.

A railway is now to be built from Duala to the Manenguba Mountains, through broad swamps, where the European often for whole days is obliged, while surveying, to do his work standing in water. During the administration of the above-mentioned prophylaxis among the 60 (and upwards) white men, there occurred only very light malignant attacks for the most part. Nobody had blackwater fever, nobody required being sent back. Several warships in the Cameroons have had during late years no malarial attacks on board at all, or only isolated cases.

2. The destruction of malaria mosquitos in uncultivated districts is best achieved by destroying their eggs, larva, and nymphae.

It is not necessary for me to discourse on this point in further detail, as such splendid results have been obtained in British colonies with this method, which I have likewise for years recommended for the German colonies. The number of malaria infected negroes in Duala (Cameroons) has been reduced in a few years by about 50 per cent. In places where a modern malaria prophylaxis is not possible, where the swamps are so immense that to combat the mosquitos is impossible, no further European colonization should be taken in hand—in any case only with the doctor in advance.

In my opinion the influence of the doctors in the tropics should become much greater than has hitherto been the case, for most Government measures are closely connected with hygienic necessities. I have heard numerous complaints in this respect from the doctors of nearly all European colonies in Africa. Men like Balley

and MacGregor have shown the possibilities in hygienic respects of a broad-minded administration in Africa.

In my opinion, still further systematic efforts should be made in propagating such plants as the waterpest (*Anacharis alsinastrum*) which covers the surface of the water, and in this way suffocates the larvae and nymphae of the *Anopheles*. In North Germany the rapid decrease of malaria in the neighbourhood of Wilhelmshaven is to be associated chronologically with the propagation of waterpest in the trenches which traverse the marshes in this district.

I proposed some time ago that, where possible, sea water should be allowed to flow into swamps near the coast, being influenced by the experience that the larvae of *Anopheles* do not thrive in water with a percentage of more than 1 per cent. of common salt. Lately, however, *Anopheles* larvae have been found in water containing more than 2 per cent. of common salt; therefore these measures would have offered only temporary benefits, as the *Anopheles* could gradually become accustomed to the change of medium. Further efforts must still be made in the case of settlements for the cultivation of manioc, rice, etc., and the compulsory removal of swampy places and of useless vegetation. It is a question of political character, whether one may exercise any pressure at all on the natives in this respect. It depends very much on what kind of people we have got to deal with. I have tried for years to promote through the Government a mild but legal pressure on the natives. You can certainly treat the more intelligent negro of Upper Guinea differently from the less intelligent negro of Lower Guinea. The object of mechanical sanitation must be the successful removal of swamps. The pouring of kerosene and saprol can only be carried on permanently where other mechanical means of sanitation are impossible or too expensive.

3. The protection of man against the bites of the *Anopheles* is best realized by living in mosquito-proof houses. Certainly we cannot yet dispense with mosquito nets, especially on expeditions; but in permanent European settlements we should use as far as possible metal gauze—brass or nickel wire gauze being best. This is not the place to discuss details. It is to be regretted, however, that many mistakes are still made in the arrangements. I have not seen much success with the automatic door lockers, because the mechanism suffers quickly from the influence of the humid climate. Of course one endeavours to protect the ankles and neck as much as possible by wearing high boots and collars. Most Europeans do not wear gloves and veils. Naturally one makes use of veils and gloves during expeditions in specially infected malaria districts.

I have not up to the present seen the smallest permanent success from the application of ointments and oils supposed to prevent the mosquitos from biting. Some of these preparations help at most for a few hours, and their peculiar smell would prove repulsive to most Europeans.

It is of importance that Europeans should be required to live at least from ¾ to 1 kilometre from the malaria-infected natives, especially in uncultivated districts. The British Commission for investigating malaria arrived at this conclusion at the same time that I did myself in 1900. The good results obtained therefrom in Old Calabar, in Acra and in Cameroons are well known.

4. The above-mentioned social prophylaxis is of the utmost importance. In all malaria countries, including malaria districts of Germany, the poor population contributes the largest contingent to the malaria-infected. So that the combating of malaria is also a social question. One can see also in Africa that the population which nourishes itself best, clothes itself best, and builds the best huts is also the best protected against malaria.

It is beyond doubt that malaria sweeps away considerably fewer people from the Dualas of Cameroons, which are a rather rich commercial people, than from the mountain tribe of Bakwiris in the Cameroons mountains.

Certainly much good has been done, especially in British colonies, through social care of the negro, through the building of market halls, and through the introduction of general education of the people in hygienic matters. I have myself endeavoured to work in the same sense in Cameroons, but much has still to be done for the natives in Africa. Much better results could be obtained were the importation of alcohol everywhere prevented in Africa.

The nutrition of the natives, especially in Lower Guinea, is in many respects entirely unsuitable. The weaning from the breast takes place very suddenly. Just in the years when malaria is most prevalent among children their tender organism is packed in the most senseless fashion with indigestible solid vegetables, such as manioc (*Manihot utilissima*). The result of this is intestinal catarrh and dysentery. Soups, which the negro in Upper Guinea (for example, in Togo) knows, and which are of such importance after weaning from the mother's breast, are completely unknown in Lower Guinea. I know tribes which live almost entirely upon plantains. I consider the plantains the greatest curse of the native, this present of an over-benevolent Nature compelling him, indeed, to idleness. An imperishable fruit such as rice, which admits of being preserved long after being harvested, is frequently lacking in Lower Guinea. I have had tables made in different districts of Lower Guinea on the time of sowing and harvesting by the negro, and found that during a large part of the year many negroes are underfed. Makabo also keeps for only two months at most, and only manioc can be obtained, as a rule, in Lower Guinea during the entire year. I consider this manioc—it is necessary to have tried this disgusting stuff oneself—as the most unsuitable food for the negroes.

It seems to me the investigation of the physiology of food in the tropics is to-day of more importance than the constant search for new parasites. The physiological chemist is much required also to elucidate the food suitable for dwellers in the tropics. In many flourishing African colonies, again, no one troubles himself much about the early marriages of the negro, about the constant marrying of near relations which is practised in some districts, or about senseless superstitions which lead to so many artificial abortions.

In my opinion it is a superstition which must be demolished, that the negro has such an immense advantage over others in being acclimatized to his native land. Except for malaria, the negro falls ill much more frequently than the European race to diseases, especially of the respiratory and digestive organs.

There are not so many old people among coloured races as among the European race; the abundance of children in negro families living a monogamist life seems more limited than with the European. The consumption of animal albumen is often too limited, and why? Because a multitude of animal diseases, especially the trypanosome infection, have decimated the cattle. I could at least prove this for the entire Lower Guinea. The inordinate desire of the negro for flesh forces him to assail dead elephants, and even in some countries of the Hinterland to exume dead enemies. Without doubt, Africa is in many districts much too poor in men and in cattle, and I have endeavoured, in the *Colonialblatt* in 1904, to systematically group the causes. Enlarge the population and you enlarge the trade, and as the negro cannot, of himself, arrive at culture, so we must, as a more enlightened race, help him to it. But for this we want legislation, which supplies the needful means and gives the doctors the necessary influence. Of course, I can only suggestively touch on the immense sphere of social prophylaxis in the tropics. I think of returning to this matter again at the International Congress in Berlin. The social prophylaxis has also to extend itself to the Europeans in West Africa.

The immense contrast between the comfort of Europeans in Africa and in the East Indies has already struck such men as Stephens and Christophers.

In conclusion, I should like to advocate with the greatest firmness that we do not confine ourselves to only one of the above-mentioned prophylactic methods, as has regretfully often fanatically occurred.

Only through the combination of all the methods referred to is it possible to reach that splendid goal—the real conquest of Africa for the white race.

DISCUSSION.

Major NOTT, I.M.S., said: In 1905 I was Civil Surgeon of the district of Murshedabad in deltaic Bengal, and had practical experience of undertaking anti-malarial sanitation on a somewhat large scale. It was decided that

measures should be taken with regard to a portion of the town of Burhampur, the civil station of the district, with a view of deciding whether it was possible to carry out similar measures to those used in other well-known cases with a less special supervision and at a reasonable cost in Lower Bengal. The area selected was the portion of the town containing the European quarter and a detached portion of the town, altogether about two square miles in extent, and in character partly urban (a bazaar) and partly rural, that is, scattered houses in the midst of tanks, rank vegetation, and small cultivated fields. A visit was made to the town in the rainy season of 1904, and a report made on the presence of malaria and an examination of the species of *Anopheles* implicated, from which it appeared that the malarial index was a high one, and various species of *Anopheles*, including the *Anopheles listonii*, were found. Unfortunately, many circumstances prevented the experiment in 1905 being as complete as possible; it commenced rather late, and was in other ways hindered in detail. The measures taken were those of superficial drainage of collections of water, removal of jungle (especially round running and stagnant water), and repeated application of kerosene oil. The measures were carried out under the combined supervision of Captain Gourlay, I.M.S., Deputy Sanitary Commissioner, and myself (so far as my other duties, which were very considerable, permitted). The Deputy Sanitary Commissioner made visits at intervals, and made the microscopical examinations and control observations. The result was that by the beginning of October it was evident that the breeding of *Anopheles* in the area had been controlled, and a week later in all the test spots no *Anopheles* larvae were to be found. As was expected, there was no means of forming an opinion whether malaria was lessened; conditions in a town of this description are such as to render any comparison with previous years fallacious. But success certainly attended the efforts in showing that the breeding of *Anopheles* in such a neighbourhood can be checked by measures of a modest character as regards organization and cost. The latter was not more than £70, mostly expended on coolie labour and kerosene oil.

Dr. W. T. Prout, C.M.G. (Liverpool), said: The question of antimalarial measures will vary according to the nature of the population and to the part of the world, and I propose to deal with this matter as affecting the negro, with whom I have been in contact for many years. The negro can be divided into two classes, the aboriginal and the so-called educated. The aboriginal is easy to deal with; he is docile, intelligent as to his surroundings, and will as a rule follow the lead and obey the advice of the European. The so-called educated native, on the other hand, is quite different; he has a superficial veneer of civilization, he thinks that his knowledge is profound where it is very shallow; he is very sensitive and intolerant to criticism, and the result is passive and very often active obstruction. And this leads me to the point I wish to make, namely, that it is not wise to entrust the carrying out of sanitary measures to local town councils or local Boards on which the majority is entirely native. Instances could be given where this has resulted in an absolute stoppage of sanitary progress, and sanitary administration should be kept in the hands of the Government. Then education is important, so far as the children are concerned. It is useless to attempt to convince the adult native; he is too conservative and too fatalistic; but the negro child has shown himself extremely susceptible to education, and assimilates hygienic teaching with avidity. It is to the younger generation that we must look for sanitary progress. As an antimalarial measure, I do not think the importance of the administration of quinine to native children has been sufficiently realized, and I would strongly advocate the free distribution of quinine among the natives. For the European it will be found as a matter of practical experience that 5 grains will be taken regularly when 15 grains will not, and I have found that the taking of 5 grains of quinine daily has a very marked prophylactic effect. So far as actual destruction of mosquitos is concerned in inhabited places, I think the onus of keeping a place free should be placed on the native, and this can be done by making it a punishable offence to have larvae breeding in the yard. It should be made a legal nuisance. This has been done in Sierra Leone, and should eventually result in great benefit. Professor Ziemann has spoken as to the necessity for placing more power in the hands of medical men. With this I fully agree. There is not a single medical man who has served any time on the West Coast who is not familiar with the ignoring of recommendations and the disappointments which are met with, and I can only hope that this Section will pass some concrete resolution urging the necessity of increasing the influence of medical men on the Coast and carrying out their recommendations.

Dr. H. Marcus Fernando (Ceylon) said: Professor Simpson's remarks in connexion with prophylaxis of malaria perhaps did not apply sufficient emphasis to the question of the prophylaxis suitable to rural districts. In towns and villages it is undoubtedly true that draining the land and eradicating mosquito breeding grounds are the best and most efficacious measures whereby to suppress malaria; but in rural districts, where the habits of the people, and more especially the agricultural practice of locality, preclude the drainage prophylaxis. The staple food and agricultural industry of the rural districts is rice. For rice cultivation, artificially-created mosquito breeding grounds are absolutely necessary; hence, if malaria is to be exterminated by drainage, rice cultivation will have to be given up—a condition in the countries I am referring to where the remedy will be worse than the disease. In the rural districts, and especially amongst large plantations such as tea and rubber estates, where the population is under intelligent control, quinine administration can be given as a prophylactic and curative agent much more systematically and promptly than is usually done. I do not go as far as Koch, when he recommends that a malarial-threatened community should take 15 grains every week for months, but I have no hesitation in saying that in a plantation where the labourers are carefully supervised 5-grain doses of quinine when given as soon as fever shows itself amongst the infected will cure such cases rapidly, and prevent the appearance of gametocytes in the peripheral blood, which alone can infect the mosquito and spread the disease. In 1903 I read a paper before the Tropical Section at Swansea, wherein I stated that in two plantations in Ceylon under my medical control malaria had been controlled and fresh infections prevented for over nine years by the above method. I am happy to state to-day that the same success has been attained up to this year. Last year a Government experiment was carried out in quinine prophylaxis in a malarious village supervised by the headman and with very little professional help with great success. With regard to the dose of quinine as a prophylactic, I cannot agree with Professor Ziemann that 15 grains should be given every week. It is too large a dose to be administered with comfort. A 5-grain dose every other day I find quite satisfactory if given in solution and before a meal. The usual quinine distribution by Government is inefficient, as such distribution is by means of powders in the form of the common sulphate. As regards mosquito-proof houses and other appliances for preventing mosquitos attacking human beings, I am afraid such measures are unsuited to the climate of Ceylon and the habits of the poorer classes.

Dr. Andrew Balfour (Khartoum) said: The subject of malaria is important in the Sudan, where there is certainly a population in the more primitive stage of civilization. But the conditions are changing, especially with regard to the type of irrigation employed. Native irrigation by means of sakieh wheels and shaloofs never attains any great dimensions. The area of land to be controlled is small. It is quite a different matter, however, when land is taken up by capitalists; great stretches are cultivated, and there are many irrigation channels and perchance irrigation ponds. This is what is occurring in the Sudan, and it has called for speedy action. The following are the recommendations for clauses to be introduced into future irrigation concessions for the prevention of malaria, drawn up by a Subcommittee of the Central Sanitary Board, and adopted by the Sudan Government.

Recommendations for Clauses to be Introduced into Future Irrigation Concessions for the Prevention of Malaria, as adopted by the Sudan Government.

1. Irrigation channels should be constructed on a higher level than the surrounding land, so that when the flow of water in them ceases they may drain dry.

2. They should be constructed of such material and in such a manner as to prevent leakages.

3. Their banks and beds should be kept in good repair and the bed even, to prevent the formation of pools.

4. "Dead-ends" of irrigation channels should be reduced to the smallest size compatible with efficiency, so that water will not stagnate in them.

5. Vegetation should be periodically cleaned out of the channels.

6. Sluices should be constructed so that there is no leakage to form stagnant puddles.

7. Where possible fish should be introduced and kept in the main channels to destroy larvae.

8. Lands where water is apt to stand should have proper surface drains.

9. Crops, such as sugar-cane, rice, or others, which require to stand in water, should not be grown within a mile of any town or village.

10. In the event of an engine or pump breaking down, particular care should be taken to deal with stagnant pools, and petroleum should be used when necessary.

11. Malarial fever and excessive numbers of mosquitos should be notified to the Governor of the province by the manager of the concession.

These regulations are likely to be very valuable, and so far have been well received and acted upon. As regards quinine for curative purposes, I would like to draw attention to the value of effervescing preparations, first indicated, I think, by Dr. Burney Yeo. In stating the cost of anti-malarial operations it is very essential that a common-sense view should be taken and errors both of omission and commission avoided as much as possible.

Major G. T. BIRDWOOD, I.M.S., said: I was very glad to hear the good detailed laws and regulations on drainage just given by the last speaker. I myself can speak of an experience of nine years in the United Provinces of India, and I would like to lay stress upon the fact that the greatest of all anti-malarial measures is drainage. This is a matter of money, and you must get money out of your municipalities or out of your Governments for this purpose. What was the condition of the Cambridgeshire fens some years ago? They were notoriously malarious. What is their condition now? No malaria is met with. Take the question of a fairly big town or native village; is it really possible to kerosene oil all the neighbouring pools and ponds? In fact, I believe it is quite impossible to diminish the incidence of malaria over any big area by this means, although it may help a little on a small scale round individual dwellings; but unless the main source or supply of mosquitos is dealt with by improving the surface drainage, smaller measures are useless. Improve the drainage, and the mortality will fall. It seems to me that there is often a contest between commercial and economic conditions and sanitary laws. If you want your rice fields and your plantain cultivation you must have irrigated land and consequently the prevalence of malaria; but common-sense regulation of the drainage round inhabited areas, and the prohibition of irrigation in the neighbourhood of dwellings, will do much to diminish it. Another point I should like to lay stress upon is the bad ventilation of native houses. Mosquitos just love the dark corners of badly-ventilated rooms, and I would like to see a law passed for the better construction of native huts and houses, and make it compulsory for them to have at least one window in every room. The hovels and huts which many big towns allow to be built on their outskirts are often unfit for healthy human habitation, and mere resting-places for infected mosquitos.

Lieutenant-Colonel G. M. J. GILES, I.M.S. (retired), said: Dr. Simpson has referred to the question of the practical bearing of the work of differentiation of species of Anophelines. In my opinion this is of less importance than might be imagined. There are exceptions, but, speaking generally, where one species will breed another will. *Anopheles rossii* will breed in filthy water, and most of Indian malaria-bearing species will not do so; but, on the other hand, *funestris* in West Africa, which is one of the best-known malaria carriers, will be found in water as dirty as any which will be tolerated by the probably harmless *rossii*. As our knowledge of the harmlessness of most species is very uncertain, and based mostly on negative evidence, it is clearly best to destroy all possible breeding places within reasonable distance of the place to be protected. In Italy the admission of sea water to marshes has been found highly effectual. In Port Swettenham in the Malay Peninsula the opposite plan of embanking and drainage was adopted. This depends on the power of certain tropical Anophelines to live in salt water. I have found *funestris* in West Africa in water which from evaporation was somewhat salter than the sea. The Italian *maculipennis*, *pseudopictus*, etc., will, on the other hand, not live in salt water. Hence while all fresh-water collections must be unhesitatingly done away with, the policy adopted in dealing with salt marshes must be based on an investigation of the powers of resistance to salt of the larvae of the local Anophelines. An excellent proof of the practical fact that malarial foci may be quite small is the case of Ismailia. In the face of such cases, the discussion of instances, doubtless genuine enough, but exceptional, of migration of mosquitos is of little practical importance. The reports of the Italian Society for the Study of Malaria are full of such instances. On this account spot maps of incidence of cases in infected towns are of the greatest importance in the work of practical sanitation. I should like to ask Professor Ziemann as to what plan he recommended for quinine prophylaxis, as, unfortunately, I could not quite hear his plan. I gather, however, he prefers frequent small doses. I am strongly inclined to believe that this is apt to give rise to chronic cinchonism. During my visit to West Africa the year before last I met with numbers of cases of such poisoning, and on the other hand met with none amongst the few who had adopted the alternative plan of a weekly large dose. Daily large doses may have even worse effects. In the ship by which I returned I was fellow passenger with a deplorable instance of this in the person of a young military officer. He had had one or two attacks of fever—from his account certainly not serious. He had been given 15 grains of quinine daily for months, and was then invalided for heart trouble, as I believe functional, and brought about by chronic quinine poisoning. I got him to leave the drug off and improvement of his symptoms commenced at once. Self-drugging with quinine, however, is extremely common amongst the white residents. Secondly, as regards Dr. Balfour's remarks as to irrigation. It appears that his suggestions are most practical, but the fish introduced should be ascertained to be larva eaters; the best way of preventing puddles is for the canal administration to punish severely any waste of water. I am afraid we are hardly likely to upset the balance of Nature, but something approaching it has been done in all civilized countries without serious harm.

Sir PATRICK MANSON agreed with the suggestion that had been made by Professor Ziemann that medical officers in responsible positions in the tropical colonies should be allowed fuller control and more executive power. At the same time he warned medical men in high positions in the colonies that it was necessary to cease calling their superiors fools because they did not immediately fall into their way of thinking, however wise and apparently needful from a sanitary point of view the suggested reforms might possibly be. One of the chief means of dealing with the eradication of disease from any malarial district was by educating the inhabitants in the elements of sanitation, especially elucidating the means of freeing themselves of the particular scourge to which they were liable. In the schools of the Crown colonies ample opportunity of instructing children in these matters was afforded, and he was glad to say that the opportunities had not been neglected, for in most of the schools of the important Crown colonies teaching directed towards elimination of disease now constituted a prominent feature of the instruction given.

Dr. LOUIS W. SAMBON (London) stated that anti-malarial measures failed from want of thoroughness. The several methods in vogue, whether by mosquito destruction, by quinine, or by improved sanitation, were all carried out on too limited and temporary a scale to ensure permanent success. That malaria could be got rid of they knew from several examples, none, perhaps, more pertinent than in the cases of England and Holland; in both these countries malaria had been got rid of by drainage and improved sanitation. In their efforts at the extinction of malaria they had an unsuspected ally, however, of which little account had been taken. This ally was, however, none the less powerful because independent of man's inter-

ference, for it was hyperparasitism, that was, the natural inimical parasites of the malaria parasites themselves. There was no doubt that Ross's black spores were an example of a hyperparasite attacking the malaria organism within the stomach of the mosquito and destroying it. They had not yet done much more than cross the threshold of investigation in regard to malaria and its extinction; further investigation and prolonged study were required to secure a sound basis for future guidance.

DISCUSSION ON DIABETES IN THE TROPICS.

OPENING PAPERS.

I.—Sir R. Havelock Charles, K.C.V.O., M.D.,
Lieutenant-Colonel, I.M.S.,
Physician-in-Ordinary to His Royal Highness the Prince of Wales.

In introducing a discussion on a disease such as diabetes, in the Tropical Section, some explanation, in my opinion, is necessary, since we can scarcely state that diabetes is a tropical disease *per se*. It can be said, however, that its peculiar prevalence amongst the Hindu races in India, and especially its very considerable increase in that country of late years, give sufficient interest to afford a practical subject of debate even in the Tropical Section. It is not the intention to give a complete summary of the disease, my desire being that this meeting should afford to the medical public an expression of opinion on the peculiarities of diabetes as met with in the tropics, and that the remarks generally should be founded as much as possible on personal experience.

The Glycosuria of the Tropics—The Part Dyspepsia Plays Therein.

In India, as in Europe, one defines diabetes as an intractable and constant glycosuria, associated with serious general symptoms and marked impairment of the health. If the brunt of disease in cold climates falls on the respiratory system, in the tropics it is on the gastro-intestinal canal that the burthen is heaviest—hence, malassimilation of food and its consequences are at the root of many troubles. Regarding glycosuria as a symptom of malassimilation, its relationship to dyspepsia, as a cause, is easy to comprehend. Glycosuria is admitted to include any and every condition under which the urine gives the reaction of grape sugar in response to ordinary tests.

It is also admitted that sugar may appear, either persistently or occasionally, in the urine of individuals who, to all appearance, are in good health. These are cases of "*simple glycosuria*," and supposed to be comparable to cases of "*physiological, or intermittent, albumosuria*." That is, they are called so when the practitioner can easily control them; but when control fails, then he calls them diabetes mellitus. Who can truly differentiate between them? The typical diabetic case is easy of diagnosis, for in association with the glycosuria will be the cardinal signs of polyphagia, polydipsia, polyuria, and possibly emaciation. But every exception and variety exists. Nothing but the lapse of time can enable us to say definitely as to the benign nature of a given case. We may surmise, but when we bear in mind that glycosuria may entirely disappear for a long period and then recur, with possibly considerable malignancy, we must be guarded, as such periods of latency cannot be justly estimated; and the very causes assigned for glycosuria are as commonly associated with the onset of diabetes mellitus, though we admit that all who have glycosuria are not diabetics.

I may cite, from my own experience, as examples of temporary and comparatively unimportant glycosuria:

1. The patient has had a meal with an excess of sugar in it beyond his powers of assimilation.
2. Certain cases of congestion of the liver.
3. Certain hysterical women during pregnancy; certain youths at examination times; certain cases of accident.

The first two headings are due to hepatic and gastro-intestinal disturbance. The third group presents the influence of the nerve centres on the metabolism. All illustrate derangement of digestion, and practice in India impresses strongly on one the part dyspepsia plays in glycosuria—the portent of diabetes.

Practically every case coming before me had been the subject of what are known as the symptoms of dyspepsia, and we may say no diabetes without indigestion—its forerunner.

What is there in Lower Bengal to account for the commonness of the disease there?

The lazy and indolent rich suffer—the overworked medical and legal practitioners are taxed with the scourge. What is there in common between these classes? Simply indigestion and its consequences. The menial element even affords examples in Calcutta, though up country, as far as I know, it is rare amongst this class. Why? Money is more plentiful, excesses more possible, life's conditions more irregular and strenuous, the result being digestive disturbances.

The Marwari, in Rajputana, but comparatively little attacked; in Calcutta a very common victim. In that city he leads high finance, and thus working the machine to the utmost, attending least to its needs, receives offended Nature's punishment for errors of diet and digestion.

The sick Bengali pleader, leaving his overwork and anxieties, that have broken every law for the efficiency of assimilation, goes to the hills. Resting in a better climate his overheated machinery again performs its functions—the symptoms of indigestion are ameliorated, and considerable improvement follows. The Calcutta climate and hustle even overthrows the Chinaman, here furnishing the exception to his so-called immunity from diabetes. Is it that in Lower Bengal the digestive tract, being more handicapped by climatic conditions, is the weak link in the chain, and that overstrain acts more strongly on it, causing the malassimilation which is the stepping-stone to diabetes? The special factor of the disease finding its victim, as it were, opsonized for it by dyspepsia. The European selected official is practically immune; the domiciled European and Eurasian are troubled. The former class is strong on arrival, and is removed on breakdown of health (8 cases in 76,000 officers and men—San. Report, 1905).

Peculiarities in Type.

It is very likely that there may be differences of opinion as to the significance of the peculiarities, but I shall briefly state what my own experience has taught me.

Acute cases are more seldom met with, and the patient is generally of middle age or approaching it. He is rarely emaciated, and his appetite is less ravenous than in the European type; in fact, it may be dull. His skin, save in advanced stages, is probably moist, possibly due to climatic causes. Sugar is frequently absent from the urine temporarily. Albumen is very commonly met with, and is of less moment, provided casts be absent, than in a European case. But it is a grave complication when surgical interference is necessary.

The duration of the disease may be very considerable—up to twenty-five years. Indeed, when the disease comes on late it runs a mild course. Here success in life has been attained, and hence mental worry is less. For this reason I think elderly diabetics of a philosophical temperament can sustain the affliction for very many years. The progress is therefore slower than in the European type.

One sign, that is, the loss of virile power, has been spoken of. In several cases of mine it has been a premonitory symptom.

Loss of knee-jerk is early and common. Coma, more often than in Europe, is the last scene that ends this strange eventful history. One might say that these unconformities can be explained by racial habits, disposition, and climatic conditions, and are not due to etiological or pathological differences of type.

The Peoples.

The peoples of India with whom I have been most familiar are those living in the Punjab and Bengal Provinces. These are two portions of India very relevant to the discussion of the tropical aspect of diabetes; for in the Punjab it is comparatively a rare disease, whilst in Bengal I regret to say that it is exceedingly common, and growing more so. This idea coincides with the opinion of Bengali medical men of long experience. There is also

unanimity between practitioners of the Western as well as of the Vedic systems on this point. My own knowledge, gained in twelve years' practice in Calcutta and twelve years in the Northern Provinces, confirms the view as to the growth of the disease. The climatic conditions of the Punjab and Bengal proper are totally opposed, the former being a dry climate, whilst the latter is damp; both at times are hot, but the Punjab has a long cold season, Bengal a short one. Geologically both are similar, being alluvial plains. Ethnologically they differ considerably in food, customs, conditions of life, and struggle for existence, the strife being much fiercer in Bengal than up country. The Bengali himself has his definite peculiarities, and is in India a special Aryan type. In order to keep pace with the advance in Western thought and in the general progress in social matters due thereto, he has altered his former habits to a dangerous extent, and, by so doing, has exposed his constitution to influences with which heretofore it was unfamiliar.

In other days his tastes were simple, his wants few, and his ambitions limited. Now, amongst this people, wise in sophistry, of intellect the best, possessing many of the weaknesses of the ancient Athenians, the new leaven is working, and hence have arisen novel desires and fresh aspirations. Here we have hard and strenuous efforts to secure a livelihood or obtain honour, with the political dreams and the mental worry following on unsatisfied ambition.

These have a mischievous effect on the health of the young Bengali, who, however keen may be his brain, however persevering in intellectual toil, has not by Nature been blessed with a physique to bear the strain which the altered conditions of life impose upon him.

The daily sustenance of this people is chiefly rice, flour, pulses, sugars. Those who can afford it add fish and goat-meat. Here it is that the problem of Pavy strikes one forcibly from the commonness of this disease—"How is it that in the healthy person carbohydrate food is applied to the benefit of the individual, whereas in the diabetic it is allowed to run to waste without utilization?" I have already stated the opinion that the exciting causes of dyspepsia are indirectly those of diabetes. Worry of official life, lack of time for proper digestion and assimilation of food—these slowly but surely lead to the establishment of diabetes when there exists a predisposition to it, especially in those whose family history points to it. I have met with many clear examples showing the force of heredity, and also four families in which the husband and wife alike were sufferers.

The drudgery and anxiety of annual reports cause in many Government servants the onset of the dreaded symptoms, and these officials themselves date the commencement of their troubles from such worries. Other patients assign great family afflictions, grave grief, or prolonged anxieties.

In India syphilis and malaria have been regarded as predisposing causes, but these are so only in so far as they lower the vitality, and alter injuriously the assimilative powers.

For Bengal. if I may attempt to classify the somewhat indefinite and unsatisfactory causes, I would divide them into remote and immediate. Amongst the former:

1. Depressing climate.
2. Defective hygienic conditions, indolence, lack of exercise, overcrowding.
3. City strain *v.* bucolic ease, the disease is commoner amongst old residents of Calcutta than inhabitants of the rural areas.
4. Severe struggle for life under altered circumstances.
5. Rich living, too great excess of carbohydrate food, special tendency to digestive troubles.

Amongst the more immediate causes:

1. Excessive venery.
2. Mental or nervous strain, fright, bereavements.

In fact, the overtaxing of the nervous system in the pursuit of knowledge, business, or pleasure is, we may say, the direct incentive to the onset of the disease, and then, *if the essential cause—toxic agent or otherwise*—be present, diabetes is the result.

INCIDENCE ACCORDING TO RACE AND STATUS.

What strikes one most in India is the great preponderance which this disease bears to the Hindu peoples, attacking them more than the Mussulmans, Beharis less than Bengalis. The Sonthal, or hillmen, rarely suffer, though Nepalese high officials furnish many cases. The Marwaris of Calcutta are more a prey to it than their brothers in Rajpootana. In Bengal the Brahmins, Kyasths, Byades, and Bannias are more affected than the other castes.

A very experienced and learned Bengali practitioner—my friend, Dr. Koilas Chunder Bose—has stated that in his opinion 10 per cent. of the Bengali gentlemen suffer from the disease. These have in common great increase in their wealth, high education, the evils of prosperity. They are the fat, the robust, the intelligent, the well-to-do—eating too much, thinking idle thoughts, doing nothing.

Following on those with no profession come the lawyers and medical men. Continuous intellectual overwork, without adequate physical exercise to correct the possibilities of their diet—all too rich in carbohydrates—demands, and gets, a very high toll from these classes. The merchants follow close upon them.

As in the West, it affects mostly those of the upper classes; but by no means always so, for very frequently cases from the menial orders are treated in hospital.

I do not think that any people in the plains of India is immune to this disease. One race—the Chinese, of which there are great numbers in Calcutta—has been stated never to suffer from diabetes. This to my knowledge is not correct as far as the Calcutta Chinaman is concerned.

Regarding sex. Whilst it is true that males suffer mostly, still my experience has led me to form the opinion that the women of India are by no means as free from the disease as was formerly considered, and, as time goes on, bringing with it closer attention to female ailments, it will be found that they furnish more victims to the disorder than has been thought.

Indian women, though, suffer less than Eurasian or Greek or Armenian. The cause, I think, is in the greater temperance in food and habits of the former.

THE URINE.

The correlation of sugar to specific gravity is only an approximate one. I have known of one case giving a strong sugar reaction, and yet the specific gravity was 1000! We may say that the specific gravity is not invariably high, and that it runs from 1010 to 1016 or 1040. It is to be borne in mind that the specific gravity of Indian urine is lower than European. An important clinical point is that, in any case, a low specific gravity does not necessarily mean arrest of progress of disease!

The amount of sugar varies from 1½ per cent. to 8 per cent. It may be absent on occasions: (*a*) At certain times during the day, (*b*) under diet, (*c*) by "preparation." These are important points for the life assurance examiner. In prognosis it is to be remembered also that sugar disappearing from the urine does not necessarily indicate cure, but in certain cases may be a danger signal.

Albumen is to be found in most chronic cases, but, generally, the characteristic symptoms of albuminuria are absent. Albumen is of less moment, if casts be not present, in Indian cases than in those met with in Europe. My friend, Dr. Koilas Ch. Bose, has pointed out that, whilst albumen is present in nearly all chronic cases, it comes on late in those *not* taking meat.

The quantity of urine varies much. Polyuria is not invariable. As has been said, the excretion of an enormous quantity is only less dangerous than its retention.

A paper of great interest to medical practitioners in the East who meet with diabetes cases is that recently published in the BRITISH MEDICAL JOURNAL of June 22nd by Dr. Hugh Maclean on the causes and significance of certain ambiguous reactions obtained in testing urine for sugar. I read it with pleasure on account of its bearing on much clinical material I had met with in Calcutta.

LIFE ASSURANCE AND DIABETES.

Assurance companies in India should be on their guard in all cases of glycosuria. This is more especially for those taking chiefly Indian lives. Considerable experience in assurance work has taught me that companies have suffered losses through carelessness in accepting risks with a history of glycosuria. Personally I have ever regarded every such case with great suspicion, and followed watchfully the various points: Heredity, diet, habits, general health—gums, teeth, skin, etc.—in

addition to carefully examining the urine passed at different hours, and repeating this for a number of days. I state that for life assurance in India greater strictness is required with reference to glycosuria than in Europe. The very possibility of glycosuria is a proof of the giving way of the assimilative powers upon which so many dangers hinge in India.

Surgical Complications.

The commonest of these in India are those of carbuncle, gangrene, and cellulitis. In carbuncle I am a firm believer in excision done rapidly, but carefully. Here, however, is a most excellent field for the method of serum treatment. The opsonic index for staphylococci of the blood in a diabetic case affected with carbuncle is about half normal.

This, then, is the line indicated:—Patient unfit for operation: serum injection and palliative local treatment. Patient fit for operation: excision and serum. A point of great practical importance is that one cannot be too careful in the use of strong antiseptics because of the low vitality of the tissues.

In the preparation of all diabetic cases for operation disinfect with caution and care; only the mildest antiseptics should be used, and, in cases of amputation, it is best to rely on a strict and thorough asepsis.

The knife cannot be used too early in cases of cellulitis. Regarding gangrene, I would point out that death generally occurs after the line of demarcation has formed, and hiccough is its constant forerunner. Hence do not wait for the line of demarcation. If arterio-sclerosis be the cause, then amputate above the origin of all the muscles affected in the gangrenous part. You then most likely escape those pyogenic organisms which grow in and spread with such rapidity and virulence along the sheaths of the muscles. It is neglect of this rule that is oftenest followed by necessity for secondary amputation. In every way the patient from this method gets the best chance.

It is different if the case be one of those due to nerve disturbance. Here leave the gangrene alone; merely open up and remove only the necrosed parts, treating on general principles. For such cases compresses and the waterbath, both properly used and not abused, are best.

Is there any justification in distinguishing the diabetes of the tropics from the type known in the temperate regions?

Personally I am of opinion that the diabetes of the West is the same as the diabetes of the East, with certain of its symptoms modified, owing to racial peculiarities, food, habits, and the bearing on the disease of the climatic conditions found there. And, although the carbohydrate excess in the food of the Indian is very great, still, just as in Europe, where the consumption of sugar, vegetables, and beer may be also in excess, the essential cause of diabetes must be present, or otherwise the factors mentioned will not determine the disease—so it is in the East.

What I have been saying, as Bacon has it, may not be better than that noise which musicians make while they are tuning their instruments, which is nothing pleasant to hear, yet it is a cause why the music is sweeter afterwards. I am content to tune the instrument that they may play that have better hands.

II.—Dr. Rai Koilas Chunder Bose, Bahadur, C.I.E.,
Fellow, Calcutta University.

[Abstract.]

No constitutional disorder has interfered so much with the successful treatment of wounds and other surgical diseases as the distemper commonly known by the name of diabetes mellitus, and yet with all our therapeutical agents and resources at our command we are unable to fight successfully such a formidable foe. The early history of diabetes is very obscure, and any attempt to bring it into light will, I fear, be mere waste of time and labour. The Indians knew the disease, and their description of *Madhumeha* (sweet urine) tends to show that they had treated cases of diabetes mellitus. For want of sufficient knowledge of the Ayurvedic system of medicine I regret I cannot place before my professional brethren facts other than those supplied to me by my learned friend Kaviraj Norendra Nath Roy, of Calcutta. It would, I trust, be not altogether out of place to record a few of the most important symptoms of *Madhumeha* as described by Chrak and Susruta in their texts on the Hindu system of medicine. *Madhumeha* is a disease which the rich principally suffer from, and is brought on by their over-indulgence in rice, flour, and sugar. The patient feels weak and emaciated, and complains of frequent micturition, thirst, and prostration. Ants flock round his urine. Carbuncles and phthisis are its frequent complications.

There is not the slightest shadow of a doubt that with the progress of civilization, of high education, and increased wealth and prosperity of the people under the British rule, the number of diabetic cases has enormously increased. Nearly 10 per cent. of the well-to-do class of Bengali gentlemen suffer from it. The circumstances in which they live, study, and aspire to rise to the higher level of society are well fitted to increase their susceptibility to the influence of diverse diseases which originate from the malassimilation of their food. From close observation I have been induced to believe that the factors of diabetes lie in the liver, in the gastro-intestinal tract, and the nervous centres. When one of these factors is involved diabetes is only a temporary disorder, and the sugar disappears on the removal of the defect. The term "glycosuria" is employed to signify such temporary disorder, and the health does not suffer much from it. It may arise from errors in diet. Again, a small quantity of sugar may be occasionally detected in the urine of pregnant women. I know an instance where a hysterical lady when pregnant used to pass an unusually large quantity of saccharine urine, and the sugar used to disappear after her delivery. Her sister, who was a primipara, also suffered from the same disorder during the last three months of her pregnancy, and, like her, recovered completely after the birth of her child.

There is marked difference between glycosuria and diabetes mellitus; the latter would mean a wasting disease which, if allowed to run its course uninterruptedly, would invariably end in death of the patient. There are three varieties of diabetes—acute, subacute, and chronic. Acute diabetes is most uncommon in this part of the country, and it is only the subacute or the chronic variety of the disease that practitioners are chiefly called in to deal with. The Hindus, who form the greater bulk of the population, and who principally live upon farinaceous food, and who generally eat more than is actually necessary for the maintenance of health, are more susceptible to diabetes than their Mohammedan or Christian brethren. It is difficult to state the part food plays in the production of diabetes, and what part gluttony supplies in the manufacture of sugar within the system. True it is that our diet chiefly consists of rice, flour, pulse, and cereals of diverse kinds; but so long as there does not exist the essential cause of diabetes, which is still unknown, they exert little or no deleterious effects upon our health, and a man may continue to take carbohydrates and sugar lifelong, and still may not suffer from diabetes; he might suffer from temporary glycosuria. I do not agree with those who believe that carbohydrates are the only factors of diabetes, for meat-eaters are not immune against the disease.

[After referring to the symptoms and some of the more noticeable features of diabetes, such as heredity, absence of knee-jerk, the part played by sex, the characters of the urine, Dr. Chunder Bose continued:]

Occasionally we come across cases where persons who have sustained bodily injury suffer from temporary diabetes, which, when present, retards the healing up of wounds. A Marwari boy fell off the terrace of his house and sustained compound fracture of the left thigh. Three or four days after the accident his father drew my attention to the fact of his child passing too much urine. The urine was analysed and found to contain sugar. He had no symptom of concussion of the brain. The sugar disappeared with the healing up of the wound.

Cirrhosis of the Liver is sometimes associated with diabetes. This must, I think, be due to the altered function of the liver and disordered state of the nervous system. A man suffering from temporary congestion of the liver might also suffer from temporary glycosuria. My conviction is that the factors of diabetes lie in the functional derangement of the liver, in the abnormal conditions of the digestive apparatus, and in the disordered state of the nervous system. Disturbance of any one of these factors might bring on glycosuria. Habit and environment play an active part in the production of diabetes. Poverty and

insufficient quantity of food do not cause diabetes. It would, I trust, be no exaggeration to say that the agriculturists, who principally live upon farinaceous food and who can ill afford to take meat or fish daily, are almost immune against diabetes. In India university examination has been often taxed as the factor of deteriorating the health of the students and rendering them more susceptible to the influence of diabetes. But when we take up the matter for our serious consideration, we fail to find fault with our university examinations, for the victims of diabetes are generally selected from men who have finished their education and joined a service or business of some kind. Early marriage has sometimes been attributed as a cause of diabetes. But record does not support the theory. The intelligent and well-to-do class of men frequently suffer from diabetes. The rich zemindars consider it derogatory to their dignity to take any physical exercise, or to follow the fundamental rules of hygiene, even in matters of personal comforts.

In India dyspepsia and diabetes are linked together. I might, without fear of contradiction, urge that one must suffer from dyspepsia before developing symptoms of diabetes. The circumstances under which our people live, and the habit they inherit as legacy from their predecessors, materially alter the conditions necessary for healthy digestion. Taking meals immediately after a cold bath is a violation of a fundamental principle of physiology, and we cannot avoid doing this.

[The question of the opsonic index of the diabetic blood was also referred to, and the state of the blood and the brain in diabetes discussed. Of complications, Dr. Chunder Bose especially mentioned the following:]

Angina Pectoris is by no means a rare complication of our Indian diabetes. I have seen several cases of the very worst form invariably ending in death. In diabetes the heart undergoes fatty degeneration, and the inelasticity of the coronary artery and contraction of its calibre brought on by the presence of sugar in the blood exhaust the muscular power of the heart.

Influenza.—Diabetic patients are very bad subjects for influenza. As a rule it proves fatal to old diabetic patients; the young sometimes recover.

Neuralgia.—This is a concomitant evil of our Indian diabetes. A diabetic patient is apt to complain of pain of some other kind. In rare instances we find ataxic gait in a diabetic patient. Sciatica is another obstinate complaint, and when a patient comes and gives a history of bilateral sciatica he surely suffers from diabetes. Indeed, I never failed to find diabetes in patients who suffered from sciatica on both sides.

Cataract, glaucoma, retinal haemorrhage, optic neuritis, are evils which give lots of trouble to the victims. Diabetic cataracts mostly do well after operation; but the presence of albumen in the urine interferes materially with the healing up of the flaps and sometimes ends in iritis and occlusion of the pupil. Retinal haemorrhages make a patient absolutely blind. A busy medical practitioner of the town lost his sight from this complication.

The skin of a diabetic patient is always covered by patches of eczema. The prepuce is mostly affected by it. Phimosis is a common complication and gives much trouble to the patient. The females suffer from prurigo, which always makes them miserable.

Carbuncle is a grave complication, and early interference is necessary to save the life of the patient. In some cases its appearance is preceded by a pause in the excretion of sugar.

Gangrene.—This is a dangerous complication of diabetes mellitus. Elderly people mostly succumb to it, but young men may sometimes recover.

Hiccough is another complication of our Indian diabetes which generally kills patients outright. It is sometimes the result of reflex irritation of the diaphragm due to the presence of acetone in the blood or an evil attended with septic absorption. Whatever may be the factor of a diabetic hiccough it is the harbinger of death.

Headache.—The presence of headache in a diabetic patient sometimes bespeaks of serious complication, and every attempt should be made to promote the action of the skin, induce sleep, and enjoin absolute rest. I have seen cases where headache was the harbinger of coma and of death.

Coma.—Diabetic patients generally die of coma.

TREATMENT.

Treatment could be described by one word—"None." Each case ought to be treated according to its own merit. We simply palliate the symptoms and give temporary relief to the patient.

Aspirin and antipyrin, each 5 grains, materially reduces the number of night calls for micturition, and relieves thirst and burning. Antipyrin should on no account be exhibited when the kidneys are seriously affected.

Jambul reduces the specific gravity and the quantity of sugar. Its prolonged use is followed by anorexia and gastric troubles. It can never effect a cure.

Asafoetida and nux vomica remove the sinking depression of a diabetic patient,

Codeine is gradually getting out of vogue, and, in fact, it does no good except reducing the frequency of micturition.

Milk is the best diet for a diabetic patient.

Meat in advanced cases cannot prevent formation of sugar. Sugar is extracted from the tissues of the patient and passed with the urine.

Indian diabetic patients invariably do well in the hills at Darjeeling.

Vapour baths sometimes do immense good in bringing about perspiration without acting upon the heart. Out of a good number of cases, two regained consciousness and one managed to make a will.

III.—C. L. BOSE, M.B., F.C.S.,

Additional Chemical Examiner, Bengal.

[ABSTRACT.]

THESE observations are primarily based upon the records of 325 cases, 483 samples of whose urine were examined by me during the last six years. It would appear that in many respects the phenomena presented by the disease in India are different from those observed in Europe and America.

ETIOLOGY.

Age.—In the majority of my cases the patients were between 40 and 50 years of age, and this is the usual period of the first appearance of the disease in Indians. A comparatively small number of persons contracted the disease under 40, and in a few instances only the disease appeared before 30. The youngest person in whom I have seen diabetes was a high caste Bengali Hindu aged 18 years. His was a bad case, as it usually happens in very young people. Neither dietetic restrictions, nor medicines, nor the influences of a climatic change produced the least impression on the excretion of sugar in his case.

In India, as in Europe, true diabetes usually runs a short and severe course in the case of young people. The younger the patient is, the more intractable the disease becomes; and in such cases excessive thirst, rapid emaciation, burning of the skin, and the other classical symptoms of diabetes, which are less marked in diabetes in advanced life, are found to exist.

Sex.—The disease is more prevalent among males than in females.

Social Position and Profession.—Diabetes is pre-eminently a disease of the well-to-do upper classes of the Indian community, and herein the Indian and the English statistics agree. What gout is to the nobility of England, diabetes is to the aristocracy of India. No doubt cases do occur now and then among the agricultural and labouring classes, but their number is very small. It is the indolent aristocracy and the well-to-do middle class men who are most affected by the disease. It is the scourge of the educated section of the Indian community. It is very common among the members of the judicial service. It is less common among members of the executive service, and the cause is not far to seek. Their duties keep them in open air for much longer time than their brethren of the judicial service. Exercise, as a rule, is disliked by the gentlemen class of Bengal after a certain age, and members of this service form no exception. Further, in addition to sedentary habit, excessive mental labour, often in overcrowded court-rooms, and ingestion of heavy, fatty, starchy, and saccharine meals, seem to be no unimportant factors in the causation of the disease among this class of highly useful Indian public officers. The sedentary habits of Indian clerks account for 9·5 per cent. of Dr. Mitra's cases, while 45 per cent. of his cases are individuals who are stated to belong to "no profession," which, in India,

means owners of landed property, who are noted for their indolent habits.

Race.—It appears that Hindus are more susceptible to the disease than other races living in India. The statistics of my 325 cases give the following percentage of the incidence of the disease among the various races:

Bengali Hindus	64.62	76.92
Hindus of other provinces... ...	12.30	
Mohammedans	8 00	
Europeans	5 54	
Jews and Armenians	4 00	
Eurasians	2.47	
Jains	2.15	
Native Christians	0.62	
Parsis	0 30	
	100.00	

In the statistics of 250 Bengal cases in which the urine was examined by the late Dr. R. C. Dutt, F.C.S., the percentage came up to 92.4 among Hindus, 0.8 among Mohammedans, and 6.8 among Europeans and Eurasians.

In the all-India statistics of 200 cases collected by Dr. A. Mitra, the percentage was 65 among Hindus, 17 among Mohammedans, 4.5 among Europeans, 2.5 among Eurasians, and 3.00 among native Christians.

Even taking into consideration the fact of the preponderance of the Hindu population in India over the Mohammedan, the ratio of the incidence of the disease among these two communities is out of all proportion to their respective numerical strength; for example, the proportion of Hindus to Mohammedans in Bengal alone is, roughly, 2 to 1, but, as shown in my statistics, the disease is found to be prevalent among the former nearly eight times more than among the latter. Dr. Mitra's statistics show it to be nearly four times more. Dr. R. C. Dutt's figures are, in my opinion, too high for the Hindus and too low for the Mohammedans.

Some medical men doubt the existence of diabetes among the Jains, who totally abstain from all meat or fish, but, from the table given above, it will be seen that 2.15 per cent. of my cases were Jains.

Worry and Mental Shock.—Occupation causing excessive strain on the nervous system and other matters causing constant worry are known to favour the development of the disease. Death in the family or failure in business, causing sudden and severe mental shock, is known to have produced the disease in acute form in a good many cases.

Symptoms.

As in Europe, so in India, two forms of the disease have been recognized, the acute and the chronic. In India we do not see many cases of the acute type. The acute form is generally found, as has already been stated, among the young people, and it usually runs a rapid course. Mild chronic forms are common in people of middle and advanced age; it is the least troublesome form of the disease, and generally yields to diabetic treatment. It is not necessary in such cases to exclude starch and sugar altogether from the diet; sugar generally disappears from the urine when their quantity is cut down. This form of diabetes, although apparently innocent in the beginning, gradually develops into the severer chronic form of the disease after a few years, and then it runs the usual course. This chronic form of the disease may be improved under hygienic and dietetic treatment, but is seldom cured.

The symptoms of the disease as commonly met with in India differ somewhat from those recorded in English books, not so much in kind as in intensity. I mention here some of the principal symptoms of the disease, noting the points of distinction between the Indian and the European types.

[In referring to the condition of the urine Dr. Bose noted the following points:]

Specific Gravity.—The highest specific gravity noticed by me was 1044. In confirmed diabetics I have detected sugar (a trace only) in urine of a specific gravity of 1002.

Sugar.—The highest percentage of sugar detected in my cases was 7 per cent. It is frequently noticed that sugar diminishes with the increase of albumen in the urine. When diabetics suffer from fever, sugar usually disappears from the urine. In some cases it has been noticed that, with the appearance of a carbuncle, the quantity of sugar in the urine is diminished, and this continues for some time after the patient recovers from the carbuncle.

Oxalate of Lime.—In 26.50 per cent. of my cases oxalate of lime was detected in the sediment. Many people suffering from oxaluria are known to have developed diabetes in later life; and I have seen cases where sugar and oxalate of lime occurred alternately in the urine. It is possible that, in some of these cases at least, they are the two phases of one and the same disease caused by malassimilation of food.

Uric Acid.—Uric acid was detected in 14.70 per cent. of my cases. Diabetics often make an error on the side of excess in regard to animal food, and this probably explains the presence of uric acid in a good many samples of diabetic urine.

Acetonuria.—Acetone and diacetic acid are found in the urine of a small number of diabetic patients; I have often, though not always, failed to detect them in the urine of patients suffering from diabetic coma.

Complications.

1. *Albuminuria.*—This is the most frequent complication of diabetes. When a person continues to pass sugar in moderate quantity for some time, traces of albumen invariably appear in the urine, and a few pus cells can be detected under the microscope. This is due to the irritation of the urinary passages caused by saccharine urine. In most cases the kidneys become more and more affected with the progress of the disease, the albumen increases in amount, pus cells become more numerous, and tube casts are detected in the sediment. In 47.41 per cent. of my cases a trace of albumen was detected in the urine, and in 17.39 per cent. albumen was present in measurable quantity, varying from $\frac{1}{2}$ to $\frac{1}{100}$ by volume. The tube-casts are usually not many in number, and may be either granular or hyaline, or more commonly both. Sometimes an acute attack of nephritis supervenes over the chronic affection, and then blood, epithelial casts, and renal epithelial cells are seen along with the granular and hyaline tube-casts. This generally happens when the patient is troubled with a carbuncle, or cellulitis, or gangrene of the extremities, and the prognosis in such cases is always very grave. The quantity of albumen has generally been found to vary inversely as that of sugar. When albumen continues to be excreted in large amount with traces or even absence of sugar in the urine, we know for certain that the poor patient has not many days to live. All the symptoms of chronic albuminuria begin to appear: puffiness of the face, oedema of the whole body and of the lungs, dilatation of the heart, all come in rapid succession; the patient complains of breathlessness and suffers badly from dyspnoea, and coma generally ends the scene. Albuminuria is not often singly responsible for the fatal termination. It is frequently found associated with one or more of the following complications:

2. *Pulmonary Phthisis*—It is a much less frequent complication than albuminuria, but often found associated with it. The onset is insidious and chest symptoms may be altogether absent in the beginning. It seldom begins with haemoptysis, though in the advanced state of the disease where large cavities are formed much blood may be expectorated, and death has taken place suddenly from the rupture of pulmonary blood vessels. Phthisis in diabetes has been noticed to affect the bases of the lungs in most cases. This disease occurs in patients of different ages. The course of this complication is very rapid. Tubercle bacilli abound in the sputum.

3. *Carbuncle.*—This is a complication which carries away a large number of diabetic patients in India. Some patients appear to be peculiarly susceptible to this complication, carbuncles or crops of carbuncular boils appearing almost annually with the advent of the hot season. Many, however, tide over the first few attacks, but their vitality gradually gets undermined and they ultimately succumb to a more severe attack. Carbuncles may appear on any part of the body, but those on the back and on the nape of the neck usually assume a severe character and terminate fatally.

4. *Cellulitis.*—Slight injuries are often found to be followed by cellulitis in cases of diabetes. Diabetics have good reason to dread the prick of a pin.

5. *Gangrene.*—This is a less frequent complication than carbuncle, but usually terminates fatally. It generally

attacks the extremities, and in almost all cases may be traced to some traumatic origin, often of a very trivial nature, such as a scratch or the prick of a pin or of a shoe-nail. It is always in the moist form; its progress, though slow, is seldom arrested, and death ultimately occurs by blood poisoning.

6. *Special Organs (Cataract).*—Occurrence of cataract at a comparatively early age is generally due to diabetes; usually both the eyes are affected simultaneously.

IV.—SATYASARAN CHAKRAVARTI, M.D.,
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[ABSTRACT]

DIABETES MELLITUS is a disease of town life, and is rarely met with in villages. In Calcutta the total mortality from diabetes and its complications is declared to be about 10 per cent. of the total mortality by certain Indian writers. This may be due to accidental causes, such as the residence of a disproportionately large number of diabetic persons in the locality from which the statistical material is collected rather than to any endemic influence. There is, however, reason to believe that the disease is increasing of late. The total mortality amongst the Hindus from diabetes and its complications is scarcely higher than amongst other races in other parts of the world. The mortality from diabetes among the educated Bengalis is certainly very high in Calcutta, but for the provinces of Bengal and East Bengal and Assam the mortality is less, and much more so when the whole Indian population is taken into consideration. Inquiry at the burning ghat shows that the mortality is much less among the Hindus than the figures given above—that is, 10 per cent. of the total deaths.

Etiology.

The disease has been attributed to the ingestion of a very large amount of carbohydrates, but, as is seen from the excellent health of the village cultivators, this alone is not sufficient to cause diabetes. It is an acknowledged fact that the coolies get very little proteid or fatty food in their dietary, and still they do not suffer from diabetes and their health is generally good. By this it is not meant that these people are absolutely immune, as some of the worst cases have occurred amongst the Hindu or Mohammedan labourers. This relative immunity is due to a great extent to their freedom from the nervous strain which is inseparable from the worry and anxieties of pursuing intellectual occupations in a large town. It seems that overstrain brought about by competition in business, anxiety in connexion with law suits, fear of exposure to the public of some crime committed, poverty, shock after injury or bereavement, affect the function of digestion as well as assimilation of food, and act as predisposing causes of diabetes. Early marriage has been attributed as a predisposing cause; but diabetes is practically absent among the lower class Hindus, among whom early marriage is more prevalent than in the upper classes.

The reason why diabetes is less prevalent in villages than in towns is that the mode of living is healthier in the former than in the latter, air in villages being purer than the vitiated air in towns, and the habits of the villagers being more active. The processes of digestion, assimilation, and general metabolism are more satisfactory in villages than amongst people of the same race in towns. Emotional disturbances during eating and digestion are practically unknown to coolies, and consequently we see comparatively fewer cases of diabetes amongst them. Diabetes is not known in the first decade of life, except perhaps as a consequence of shock due to injury either to the nervous system or to some other part, or it may be due to toxaemia, after acute diseases, starvation, or fright, these being only different ways by which emotional disturbances of digestion and assimilation could be brought about at this time of life. These cases are generally secondary, and disappear if the primary causes are removed or cured. In the second or third decade severer forms of the disease are seen, but still they are few in number, and chiefly amongst students preparing for examination and over-exerting themselves, or in business men overworking themselves to establish their reputation. The fourth decade is, however, the age when we see the largest number of cases of diabetes in Bengal, just when the system has already passed through the highest phases of vital activity. Almost all the cases of diabetes that we see in Bengal are between the ages of 40 and 60. It is an admitted fact that diabetes is less common in females than in males. The cause of this probably is the more equable life led by the females, free from the cares and anxieties of the males. A factor in the apparent less frequency of the disease in females is the difficulty in procuring urine from them for examination, which alone settles the diagnosis in most cases.

Of the Indians, the Hindus are mostly affected, though some of the worst cases are seen among the Mohammedans. Of the Hindus, those that take a mixed diet and are given to the use of alcohol are more affected than the vegetarians like the Jains and Marwaris. Next to the Hindus the Jews are affected, and some of the worst cases of carbuncle among the diabetics are seen in these people. It is rare among the Europeans in India, due probably to their better mode of living and comparative freedom from emotional disturbances during digestion. This difference in the incidence, however, seems to vanish in the army, where both the European and native troops live under nearly similar conditions. Thus, from the Government of India Sanitary Commissioner's report for 1905, it would appear that there were only 8 cases in the European army, including officers, of about 71,000, and 23 cases in the native army and gaol population, taken together of about 198,000. In Bengal and other parts of India, the cases of diabetes occurring in the plains are milder than those occurring in dry higher altitudes. Cases of diabetes from Chota Nagpore and other hilly tracts improve when they are brought down to Calcutta if they are still in the early stages. The skin probably acts better in the plains than in the hills. The diabetic gets a wider range of diet in Calcutta, and better digestion leads to an improvement in the disease. In the severer climate of the hills the devitalized diabetics may be expected to become worse, and an Indian gentleman of great distinction suffering from diabetes, who was quite recently advised to proceed to Darjeeling by his medical advisers, had to be brought back in hot haste within a week, as the symptoms rapidly became alarming. Those patients, however, who are in the early stages and yet strong, and those who complain of a burning sensation all over the body, improve to a great extent. This is due to the inevitable rest from work consequent on the change of climate. Apart from the climate, these patients live comparatively easily, and consequently eat, digest, and assimilate better in the hills. The cool climate induces sleep and also enables these diabetics to take some exercise, which is beneficial in most instances.

Heredity.

The influence of heredity is not so well marked in diabetes mellitus as in diabetes insipidus.

The Varieties of the Disease and its Course.

Two types of the disease are met with generally in this country. The first may be termed "acute diabetes," not because its duration is short, but because it is more active. This form is seen chiefly in young persons who come from the poorer classes and who waste rapidly. These cases are few in number, and some of them may last for several years. The other type, known as the chronic type, is less active. The patients are of the obese type and prematurely aged. These cases occur among the overfed, who generally show a deterioration of health, though not of appearance. In the earlier stages of this form of the disease, glycosuria is intermittent or it may be permanent, though very slight in amount.

[After dealing with the morbid anatomy, symptoms, complications, and prognosis of diabetes, Dr. Chakravarti proceeded to discuss the treatment]

Treatment.

The chief difficulty in treating diabetes in Calcutta and the surrounding area consists in selecting the dietary. Orthodox Hindus are purely vegetarian, and vegetable food consists of starch mainly. By restricting the starchy food and giving milk and milk products, we increase the quantity of proteids and fat in the dietary. But the palate demands variety, and soon the patient gets sick of the same kind of food. The dietetic treatment is not so difficult in those Hindus who take meat or fish. On the other hand, sudden deprivation of starches acts deleteriously on the system, and cases are not infrequently seen

where the appetite fails and nutrition becomes greatly impaired, so much so that a judicious allowance of starchy food, especially rice, must be given to maintain the health of the patient. In middle-class people who cannot afford a purely meat diet, or who cannot tolerate a meat diet, milk diet answers best. This latter reduces the sugar, assuages the thirst, and keeps the patients contented. They lose weight on account of the polyuria. A mixed diet of meat, milk, and milk products with a small amount of starches is most suitable. It is difficult to get a patient to restrict himself to the purer forms of a nitrogenous diet, as there is always craving for carbohydrates. Mixed diet is better than meat diet given alone. In some cases it is better to keep the patient always hungry and to avoid overfeeding. This is the only procedure which will diminish the formation of sugar in the system under certain conditions. As regards drink, butter-milk and water may be given freely, as well as fresh lime juice diluted with water. Sweet wines, and, in fact, wines of any sort, are better avoided. When necessary, spirits, like brandy or whisky, are to be preferred to the red wines. With a moderate amount of exercise, the diabetic assimilates food better and improves, and in such a case exercise does good, but in some cases it is harmful. One has got to see actually whether exercise does good or not. In order to keep the patient fairly healthy we have to keep our patients under control under trying circumstances, and this is difficult—for example, the chief craving may be for sugar, and experimentally one has to see how much sugar the patient can assimilate by examining his urine shortly after meals, and if the patient assimilates a fair amount of carbohydrate it is better to give him the assimilable amount. In certain stages with threatening coma starches and sugars are to be given. Fatty food should be forbidden at this time, because the lower fatty acids may give rise to coma. During the earlier stages of diabetes fat is well tolerated Richly cooked meat, however, is never well borne, and hence this article of diet should be avoided.

Drug Treatment.

All the remedies contain astringents and tonics. Opium, morphine, and codeine are given as a curative. Opium is given in small doses as a prophylactic late in life, after 45. Arsenic, antipyrin, bromides, alkalies in large doses, jambul seeds, the green juice of certain cucurbitaceous plants have all their proper uses and have been known to be beneficial in some case or other. The tonic glycerophosphates will do good in certain cases of not very severe type.

As to the administration of an anaesthetic, it has been observed that prolonged anaesthesia under chloroform has sometimes precipitated diabetic coma. Thus if the operation be only incisions or if it takes a short time, it is sometimes advantageous to perform it without an anaesthetic. But if the operation be at all severe or takes a long time, an anaesthetic should be given, for the shock is more liable to bring on coma than chloroform.

Ayurvedic Views on Diabetes Mellitus.

From what can be gathered from the ancient Ayurvedic literature, it will be seen that diabetes, or the condition of polyuria, comes within the *Prameha*s or urinary disorders. Whether the diseases described as *Ikshumeha* and *Madhumeha*, which both denote sweet urine (literally sugar-cane urine and honey urine), are different phases of diabetes mellitus, it is very difficult to decide. The former is said to be quite curable, the latter in certain of its phases is not so. *Ikshumeha* thus would correspond with alimentary glycosuria, and *Madhumeha* with diabetes mellitus. In Charaka, *Nidana sthan*, or the Causation of Diseases (verse 40), is mentioned a form of *Prameha* or urinary disorder due to derangement of the nervous system (neurasthenia) brought about by sexual excesses or which is secondary to acute diseases, the poisons of which act through the nervous paths and, obstructing the normal relation of the humours, bile, or phlegm, act on the urinary system. The symptoms of this disease, known as *Madhumeha*, are identical with those of diabetes mellitus. This variety is to be distinguished from Charcot's other variety of *Prameha*, which is also called *Madhumeha*, and which usually follows the other sorts of *Pramehas* if neglected. In the same section, verse 43, describing the early stages of the disease, Charaka says that the patient shows an alteration of the hair, which becomes dry and brittle; the patient has a sweet taste in the mouth, partial anaesthesia about the soles of the feet and palms of the hands, burning sensation in the body and extremities, dryness of the mouth, and thirst. He feels tired with little exertion, and shows a dirty dry skin. The patient's urine and sweat are such as to attract insects like ants, bees, etc., and there is such a torpor as may almost verge to drowsiness, or may eventually terminate in it. In verse 44 are given the sequelae and complications, which may be boils, abscesses, phlegmonous inflammations, cellulitis superficial and deep, carbuncle and gangrene, etc. These, when associated with intense thirst, diarrhoea, fevers with excessive burning sensation all over the body, great asthenia, loss of appetite, or indigestion, are almost incurable.

Susruta's Views.

Susruta, supporting and quoting all the above, adds that the complications of spreading inflammation when occurring about the rectum, scalp, shoulder, high up in the back, or in vital parts such as the cardiac region, or when occurring in the weak who cannot take any food, generally prove fatal. As regards the treatment of surgical complications, Susruta recommends local blood-letting in the early stages, and, if seen later, incisions and proper local applications, which, if not done at the proper time, lead to absorption of matter. The drug treatment consists of astringents and tonics, and silajotu is strongly recommended. As regards diet, the list does not show any restriction of carbohydrates, meat is recommended, although certain forms of meat are not allowed.

Bhava-Prokasha.

Here also silajotu treatment is recommended for diabetes mellitus, and the views of the previous writers recapitulated. But a variety of *Prameha* is described, known as *Soma roga*, which seems to be diabetes insipidus, as there is no mention of a saccharine matter voided with the urine. The causes of this disease are sexual excesses, grief, excessive labour, poisoning, etc., which lead to polyuria. The symptoms are painless evacuation of a very large volume of pale, clear urine, without any sediment and odour. The patient becomes weak, and cannot hold the urine. He is unfit to make any physical exertion, complains of a light feeling in the head, dryness of the mouth, faintness, yawns too much, and even talks incoherently; the skin is dry, the thirst is insatiable, and the appetite excessive. This disease is said to occur more often in females than in males. The treatment of this condition is by astringents, and the disease is curable. It is only as late as the time of the author of *Vaisajya Ratnavali* that opium is mentioned as one of the best drugs in the treatment of diabetes mellitus. Kavirajes now appreciate the value of restricting the carbohydrates in the early stages, and have taken to it.

V.—Dr. Rai Devendranath Roy, Bahadur,

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[Abstract.]

There is an impression that within recent years diabetes has become more prevalent amongst the intellectual classes of Bengal. Statistics to compare the present condition with the remote past are not in existence, hence no definite statement on that point can be made; but this much is certain, that the number of people belonging to the professions, law and medicine, etc., and also clerical establishments, is increased to a great extent, and a good proportion of them nowadays suffer from this disease.

It may, perhaps, be interesting to some of your readers to know what the ancient Hindu physicians of India said about the disease. I have culled the following from the Hindu books of medicine. They were written centuries ago, consequently nothing of pathological interest will be found there; but still it is amazing to find how minute were their observations.

They called diabetes mellitus *Prameha* or *Madhumeha* (sweet discharge), and diabetes insipidus *Soma Roga* or water disease. The causes are said to be sexual excesses, grief, hard labour, mental worry, lassitude, indiscretion in diet, and dyspepsia.

Signs.

A very large flow of urine, loss of eyesight, intolerance of heat, lassitude, inordinate thirst, a voracious appetite with some and loss of appetite with others, general loss of flesh and strength, premature old age.

Complications.

1. *Sarápiku*, circular inflammation with raised edges and depressed centre.
2. Circumscribed inflammation resembling the back of a tortoise, accompanied with severe burning sensation.
3. *Jalini*, the inflamed surface is studded with small ulcers and looks like an ordinary fishing net, accompanied with severe burning sensation.
4. *Billúta*, the affected part is bluish in appearance, very painful and is ulcerated. It generally appears on the abdomen or back.
5. *Aláji*, blackish or reddish eruptions, very painful.
6. *Mûsûrika*, very painful pimples of the shape and size of mûsûr—a sort of small lentil.
7. *Sarsapika*, also painful eruptions of the shape and size of mustard seed.

(Nos. 5, 6, and 7 may be furuncles.)

8. *Pûtrini*, a large inflammatory mass studded with minute furuncular eruptions.
9. *Bidáriká*, inflammatory masses of the shape and size of large tubes.
10. *Bidradhi*, inflammation followed by accumulation of pus.

Some of the above would look as if they were distinctions without differences; but I give them to show how the ancient Indian physicians were anxious to notice all the symptoms in their minutiae of all diseases, however much they may look at the first sight to be fanciful.

Treatment.

Chiefly hygienic and dietetic. Diabetics, as a rule, should avoid night-keeping and exposure to heat. Long walks in fresh air, riding, and physical exercises are advised. Diabetics, whether they are suffering from carbuncle or not, should avoid sexual excesses. The following articles of diet are recommended: New rice, curd, flesh of animals living in swamps, fish, sweets, wines, vinegar, excess of oils, and onions.

Restrictions.—They should not drink milk, eat fish and meat at one and the same meal; sugar-cane and preparations made from its juice should not be touched; excesses of acid and salt should be avoided.

The following articles of diet are especially recommended, for they are considered to be very beneficial: Barley, flour of old wheat, Moong dâl, Arabar dâl, Chena dâl (Bengal grain), fried rice, sesamum seeds, meat juice, old wines, old honey, whey, sparrows, pigeons, rabbits, snipe, peacock, venison.

Medicines.—Jambul, seeds and roots of lotus, dates, all bitters and astringents.

Pathology.

[Dr. Roy proceeded to discuss the probable pathology of the disease, and dealt with the relationship of the glycogen and glycolytic processes, saying:]

In the glycosuric variety, when the carbohydrates are forbidden, the sugar disappears from the urine. In the glycolytic variety, however much the diet of the patients be restricted to strict meat diet, sugar seldom entirely disappears from the urine. In my experience and practice amongst Bengalis I have found restriction in diet certainly reduces the quantity of sugar in the urine—nay, even it may disappear for a short time—and these patients do not suffer from the graver variety.

Recent observations prove the part played by the pancreas in diabetes, and by experiments it has been found that the total extirpation of the pancreatic gland is followed by a severe form of diabetes, and on *post mortem* examination of diabetics also some changes in the gland are found in that variety.

Symptoms.

[In dealing with the symptoms of diabetes, Dr. Roy stated that Europeans living in the tropics drink liquids in any shape—as iced water, tea, coffee, beer, etc.—to a large quantity, to compensate the great loss of water they suffer through profuse sweating. Continuing, he said:]

The Bengalis do not perspire so much as the Europeans do, and they also do not drink water so much as the latter do. Eykman has calculated on the ordinary basis that "a moderately-working Malay eliminates 2,315 grams of water and the Europeans living there eliminate 3,068 grams." The specific gravity of urine amongst the Bengalis normally is lower than that of the Europeans on account of the difference in their food and drink.

Slight albuminuria is frequent, but when it becomes persistent and the quantity of albumen is large, then it becomes a very grave complication. Coma is not frequently seen in Bengal, why, I do not know. The coma that is seen here in diabetics is almost always in connexion with carbuncle; although the patients in Bengal do not leave off carbohydrates from their diet, still they do not get coma so often as is apprehended.

Causes.

Hereditary tendency, nervous causes—for example, anxiety, great mental strain, shock. Some traumatic lesion to the nervous centres and racial predilection are mentioned as principal causes of this disease; but in Bengal dyspepsia has been found to be a potent cause. The middle-class people always have two dinners a day. The first meal, at about 9 a m, is just as heavy as a dinner; the last meal, between 8 and 9 p.m., is also a heavy one; practically they live on these two meals a day. Immediately after their first meal they have to walk long distances, in some cases three miles, and that in a tropical country. In the afternoon they rest for a few minutes and at that time some of these people take a little food; the students, as a rule, take some food between the two heavy meals mentioned before. The average income of the majority of these people is not more than Rs. 25 or Rs. 30 a month; on this income they have to live and maintain a family as well. It will be plain that when men have after a hard day's work to satisfy their hunger with indifferent materials, and that again in insufficient quantities, the stomach will begin to suffer sooner or later They become dyspeptics in some shape or other, and chronic and intractable dyspepsia appears and brings in its train diabetes. I repeat, dyspepsia of the pancreatic variety is a frequent and potent cause of this disease in Bengal. Gout is not prevalent here, consequently that cannot be accepted as one of the frequent causes of diabetes.

Treatment.

I always allow my patients to take articles of food which, on principle, are opposed to the accepted theory of the disease, for they suit the taste of the patient, and he does not lose all taste for food; in fact, he takes a sufficient quantity of it, and thereby recovers the lost ground.

It is well in practice not to stick to diets which, by laboratory experiments, seem to be good or bad, but to select articles which, on account of the peculiar idiosyncrasy of the patient, are beneficial to him.

For my patients I have always ordered a mixed diet, with only this injunction—that whenever a very large quantity of urine is passed daily, meat should be consumed in preference to starchy food. From time immemorial rice has been the principal article of food of the Bengali. To stop that at once and substitute a strict meat diet will make him miserable, and he will begin to live on short commons, and hence will soon die. At the onset of the disease, in spite of the racial and religious objections, meat diet should be insisted upon, and all food substances containing carbohydrates avoided; but as the disease becomes chronic a mixed diet is allowed, and then a small quantity of sweets is rather beneficial than otherwise. There are a good many Hindus who never touch meat or fish; with them milk, flour, and vegetables have to be ordered. We have to maintain an average standard of nutrition, and not to enforce a too rigorous diet, which is "obviously impairing the general strength and nutrition of the patient."

[After discussing the skimmed milk treatment of diabetes and the régime recommended by various authors, Dr. Roy said:]

I contend that when a patient can digest a large quantity of milk he does not require many other articles of food for his daily meal. For those in whom the sameness of diet kills all appetite, one is bound to change the food often. I advise them to reduce

their quantity of rice as much as they can, and to replace it by bread toasted, *chapatees* (thin unleavened bread), *loochies* (unleavened bread fried in clarified butter—fried hard to make it almost brown), fish, meat, all sorts of green vegetables, potatoes, all subacid fruits.

I allow my patients to drink water pretty freely, but advise moderation, otherwise they are bound to suffer; by this not only relief is given as far as thirst is concerned, but also they perspire freely, for clammy perspiration always brings on a crop of boils or furuncles, ultimately leading to carbuncle. Fortunately, very few of my patients are partial to alcoholic beverages, consequently I can exclude these from the list of drinks for them.

In regard to treatment by drugs nothing has yet been able to surpass the beneficial effects of opium or its preparations—for example, morphine, codeine. Pulv. jambul as a change is useful; it very soon reduces the quantity of urine, and thus reassures the patients and benefits them largely. For those who lose appetite early in the disease, because the pancreas does not work well, alkaline mineral waters are of great value.

For the gouty lithium carbonate, sodium arseniate, aspirin, with or without some mineral waters, are absolutely necessary.

VI.—F. M. Sandwith, M.D., F.R.C.P.,
Consulting Physician, Kasr-el-Ainy Hospital, Cairo.

DIABETES IN EGYPT.

Judging by private and hospital practice in Cairo, I should say that diabetes is one of the common diseases among Egyptians, who live chiefly on bread and vegetables, instead of meat, and are very fond of sugar in all forms. The statistics of my hospital wards show only 63 admissions for diabetes during eleven years, the total number of medical cases having been 8,191. I once had 4 cases in hospital under my care at the same moment, 2 men and 2 women. During ten years there were only 4 admissions for this disease in the Egyptian Army hospitals; the average strength of the army for those years was 18,160. All my hospital cases were adults, with the exception of a boy, aged 15, who had one year's history of excessive drinking and excessive urination. He had early phthisical signs at both lung apices. I once saw another boy in the Church Missionary Society's Hospital in Cairo, who was aged 14, and had had glycosuria for one year for certain and probably for much longer. He had much acetone in the urine, facial neuralgia, and air hunger, with pain at the epigastrium, pallor of the face, and very distressed rapid breathing. His condition was somewhat improved by sulphate of soda, with large doses of bicarbonate of soda. He had very carious teeth, which is a rare phenomenon among the Egyptian peasants.

All my hospital cases belonged to the thin, nervous type, and at the autopsies of those who died we never succeeded in finding either atrophy or fibrosis of the pancreas. The rarer lesions of the pancreas, such as fatty degeneration, cystic disease, and calculi, were also absent. Besides the hospital cases I have seen many Egyptians in private practice, some of whom suffered from the gouty form of diabetes, occurring after middle age and persisting for some years without apparently doing much harm. English and Greeks living in Egypt I have also seen as private patients, but no Jews.

I have notes of the following complications: Constipation, even before any opium had been administered; neuralgia, chiefly in the lower limbs; neuritis; depression of spirits, sometimes resulting in melancholia; local erythema of the skin at and near the genitals from irritation of the urine; pruritus, boils, eczema, herpes, psoriasis; dry gangrene of the foot in those aged about 60; incipient cataract but not retinitis. As regards lung lesions, tubercle was present in about 12 per cent., which corresponds with Professor von Noorden's statistics; the patients had very little cough and expectoration, no fever, and no haemoptysis. I submitted four of these patients in 1891 to treatment with Professor Koch's tuberculin, which he had then just introduced; I had the opportunity of showing these cases to him, and curiously enough no reaction took place after injecting 10 mg., though one of the four cases died suddenly of coma, and was proved at the autopsy to have phthisis in the upper lobe of the right lung. I have notes of pneumonia in one patient, and chronic gangrene of the lung in another, due to many small necroses.

As regards treatment, I should like to say that I think well-to-do patients should be warned not to travel during the acute stage, nor with any unnecessary fatigue, for I have seen three visitors, who had been recommended to winter in Egypt, die within a few days of their arrival there.

Hospital cases, on their admission, were placed on the ordinary mixed diet for three or four days in order to get their correct weight and the average amount of sugar excreted. They were then placed on a strict diabetic diet, when the sugar always became lessened and the patient's weight improved. When they tired of the diet, which is unusually irksome to a man accustomed to fill a dilated stomach three times a day with native bread, they were allowed in rotation cakes made from ground almonds, or cocoanut, or what is called in this country the "monkey-nut," perhaps because it is sold in bags at the Zoological Gardens. The monkey-nut has the great advantage of being cheap and of containing much oil. It is astonishing what large quantities of butter can be administered with vegetables or oatmeal, as I have learned from Professor von Noorden. Directly the patient was found not to be passing large quantities of sugar, opium pills were administered in doses beginning with 1 grain, three times a day. The next best thing to opium is aspirin, 5 to 15 grains, three times a day, for diabetic patients seem specially tolerant of this drug, provided there is neither kidney disease nor any gastro-intestinal disturbance. I may, perhaps, conclude by saying that the favourite remedy for diabetes among the Egyptians themselves is a pill made of ox bile and the seeds of a common indigenous plant, called in Arabic "helba," being the *Trigonella foenum graecum*. I have tried this remedy upon patients for more than a month at a time without seeing any improvement in body weight or diminution of sugar, though the patients were at the same time in hospital on strict diabetic diet.

DISCUSSION.

Lieutenant-Colonel Geo. M. Giles, I.M.S. (retired), said: Diabetes is a symptom which presumably may depend upon more than one etiology, and the particular form we are considering to-day has a very peculiar geographical distribution. It is by no means peculiar to the tropics, and many hot countries are practically free from it. When we meet with it in the tropics it is essentially a class disease, and the poor, in spite of their preponderating carbohydrate diet in the East, are comparatively free from it. Confining ourselves, however, even to the well-to-do, in India it is essentially a Bengali malady. In Upper India I doubt if it is much more common than in Europe, and in my own experience most of the cases I have met with have been in the persons of Bengali residents. It is clear, therefore, that the cause is rather to be found in some circumstance of habit or environment to which the Bengali is exposed to a greater extent than other Indians, and we should therefore analyse how these differ. I need hardly remind you that the symptom of diabetes can be artificially produced by injuring the floor of the fourth ventricle, and that a common cause for the appearance of the symptom is probably injury to the nervous system. Now there is one point in the habits of the Bengali in which he differs from every other Indian and almost from all other tropical men. He is, at any rate, the only civilized tropical man who goes about with a closely cropped bare head. Why, it is difficult to say. It is usually a very finely shaped cranium, and it may be that national vanity with them takes the form of instinctively exhibiting the Grecian proportions of one of their best physical characteristics. Further, especially among the well-to-do, the skin of the Bengali is by no means deeply pigmented. Many, indeed, would pass unnoticed in Southern Europe, and none are sufficiently black to be able with impunity to expose their heads in the fashion made obligatory by caste custom. I should like, therefore, to ask those who have greater knowledge of Bengal than I can claim to, whether they have found the disease especially common in men of what is called "wheaten" complexion in India, and whether any special microscopical examination of the medulla has been made in any autopsies they may have had the opportunity of

performing. As some confirmation of this view it is interesting to note that though uncommon in the hospital practice diabetes is common among the upper classes in Egypt. Now, these well-to-do Egyptians, though they do not go bareheaded, wear only the very inadequate fez cap, which, though of good non-actinic colour, protects only but a small portion of the skull.

Dr. H. M. Fernando (Colombo) said: My experience is restricted to cases met with in Ceylon. The climatic conditions in Ceylon are entirely equatorial. As far as Ceylon is concerned, diabetes, which is very common amongst the educated higher classes of natives of the island, is a disease not so much dependent on climatic or racial peculiarities as on conditions of diet and habits of life. European residents in Ceylon are no more prone to the disease than they are in England, whereas amongst the native professional men and merchants the disease is extremely common. Another feature of the disease is that amongst the hospital cases the disease is comparatively rare, and when it does occur it is of the serious nervous type. From the point of view of diet, the disease is commonest amongst the vegetarian Hindus of the Tamils. The Mohammedan community supply the next largest percentage of cases, and finally the Cingalese. Without going into details, I may sum up the causation of disease as obtains in Ceylon to three distinct causes operating simultaneously: (1) A diet where carbohydrate food preponderates—one in which the nitrogen ratio is extremely low; (2) sedentary habits with little or no exercise; (3) continuous occupation in business pursuits year in and year out without intervals of rest or holiday. As regards the diet, even amongst the professional men that suffer from diabetes the proteid content does not amount to 1½ or 2 oz. per day, whilst among vegetarians it may sink as low as 1 oz. per day. On the other hand, the carbo-hydrate constituents may amount to 24 oz. or more in some cases. Diabetes is now looked upon as a disease of nutrition, allied to gout and obesity, with a strong tendency to hereditary predisposition. Diabetes of the tropics comes within the above definition in all particulars. It is essentially a disease that affects people whose diet is physiologically unsound when taken in conjunction with their pursuits and habits of living. The majority of cases occur amongst the overfed and obese. In fact, as von Noorden puts it, obesity in these cases in early adult life may be looked upon as masked diabetes. Finally, the disease runs in families to a remarkable extent. Under the circumstances I cannot distinguish in diabetes appearing in the tropics anything special from the well-recognized forms described in Europe. The tropical cases chiefly correspond to the alimentary or gouty varieties of European writers. The treatment of these cases is exceedingly satisfactory if taken in hand early, provided the patients permit a full control of their diet not only qualitatively but also quantitatively. Over 70 per cent. of the cases met with in private practice cease to pass sugar in urine in a few weeks, even with an allowance of 100 grams of carbohydrate per day. As is well known now, this tolerance of carbohydrates is further increased under treatment, so that after some months of treatment and dietetic control these cases may be permitted to have a fairly varied diet without fear of deterioration. In the majority of these early cases so rapid is the improvement when the diet is controlled that the danger is that patients get out of hand and revert to their former habits, with the result that the glycosuria returns, and this condition may go on with temporary improvement under treatment for years. In the majority of such cases, however, the chronic glycosuria eventually produces serious and widespread albuminous changes: chronic nephritis, angina pectoris, dilated heart with aortic incompetence, cerebral haemorrhage or thrombosis, and diabetic gangrene are, then, the forms in which such cases terminate. In a large number of the chronic and neglected cases of long standing, acetone and even diacetic acid in traces may be often met with in urine. Although the presence of these substances calls for immediate dietetic control and treatment they are not of such serious import as is often supposed. I have known cases where men have been passing slight traces of acetone and diacetic acid in urine for years, yet capable of great exertion and attending to their usual avocations. But the danger in such cases arises from the fact that on the onset of any intercurrent malady, such as influenza, pneumonia, coccal infection, or after chloroform inhalation undertaken for an operation, say carbuncle, serious acidosis supervenes with diabetic coma. I cannot agree with Sir Havelock Charles that dyspepsia is the important cause. It is certainly common amongst the long-standing neglected cases, but at the commencement the patients have good digestive powers with abnormal appetites. That climatic conditions are a direct cause I cannot admit, although they exert deleterious influences indirectly. If climatic conditions were such an efficient cause I cannot explain why the European resident in the tropics should be so free from the disease. Colonel Giles's theory that diabetes in the tropics may be due to insolation is not borne out by the experience in Ceylon. The Tamil coolies who work with bare heads often do not suffer from the disease.

Dr. W. H. de Silva (Colombo) said: I have very little to add except that the ocular symptoms in diabetes as observed in Ceylon are not to be distinguished from the ocular manifestations usually met with in Europe. My own experience in the Colombo hospitals and practice is that the ocular symptoms are not in any way specific in nature, but are due largely to malnutrition, a toxaemia, or an arterio-sclerosis as the result of chronic diabetes. In diabetes which is amenable to dietetic treatment, most of the ocular symptoms disappear under ordinary treatment with the improvement of the glycosuric index. One often meets with ocular complications in the nature of conjunctivitis, keratitis, early presbyopia, hyalitis, and even neuritis and optic atrophy, but these conditions are met with in other diseases due a faulty nutrition or a toxaemia. There is no doubt that diabetics are more prone to cataract, and in them, when the patient is placed under a strict dietary, and if there is a diminution in the quantity of sugar passed, the operation of extraction can be safely undertaken. True, that in some cases coma supervenes after the operation, very often due to shock or mental worry. Haemorrhage and retinitis (which is rare) are often the result of the arterial degenerations which are secondary to nephritic changes which in a number of cases supervene on chronic diabetes. With regard to the dietetic treatment of diabetes, it is often felt in countries like Ceylon, where the staple food of the people is rice, that it is extremely difficult to get the patients to give up their ordinary starchy foods entirely, and it is worth while investigating whether any of the cereals recommended by the older Indian medical writers, like Susruta and Charaka and others, are advisable. It is also interesting to note the thorough and careful clinical descriptions given of diabetes and its complications and sequelae by the Ayurvedics of old.

Major A. H. Nott, I.M.S., said: I consider the influence of dyspepsia a very doubtful point as a distinct factor in causation. As regards symptoms, coma as seen in young diabetics in England without warning is very rare in India. I have met with no cases. Coma is common at the later stages of chronic cases in connexion with gangrene and carbuncle, and is much mixed up with septic intoxication. It has been also my experience that many cases of diabetes in older men are often devoid of serious symptoms for years, and is not incompatible with quite prolonged life; but still there are many more rapid cases differing in no way from those met with in Europe. Owing to the frequency of the chronic type of diabetes in well-to-do and somewhat elderly patients it has been contended that life insurance with a "loading" should be practised, and I have refused cases which would seem from subsequent history to warrant such a procedure. Thus, one case, a gaoler in charge of a very large gaol, was refused on my recommendation ten years ago, although the specific gravity of his urine was nearly 1040, but he suffered from thirst; he is alive, I believe, now, and still working hard. Still, the cases of a similar character which have been carried off in a few days from complications of acute disease have been so many and so striking that I am firmly of the opinion that established diabetes should be a sufficient cause for entire rejection. There is no doubt that rest in a more bracing climate has a very great beneficial effect on overworked Bengalis. I have had several years' experience of Hazaribagh—a dry, somewhat warm climate, and Darjeeling—a cold climate. At Hazaribagh the Bengalis domiciled there suffered more than anywhere else I have known, yet

diabetics coming there for rest obtained considerable benefit. Darjeeling, however, is much more satisfactory, and has been in my experience of extreme benefit, especially to those who can stand otherwise the cold and, at many periods of the year, wet climate. Two cases of professional men are known to me in Darjeeling who have taken up their residence there permanently with the happiest result. Opium and codeine have given me the best results as general treatment; nitrate of uranium occasionally does good.

Sir Patrick Manson (London) said: Diabetes is rare in China, although there the natives expose themselves freely to the sun, many overfeed, many overwork and subject themselves to all the usual reported causes of diabetes. The interesting point of this Bengal diabetes is its endemicity. It is curious how history repeats itself. It may be that in the matter of the etiology of diabetes it is about to repeat itself again. Diseases formerly attributed to food, exposure, nervous influences, heredity, and so forth are now known to be germ diseases—thus, with leprosy and tuberculosis, sleeping sickness, and so forth. To my mind the endemic diabetes of Bengal suggests a germ disease.

Dr. Louis Sambon (London) said he agreed with Sir Patrick Manson as to the germ nature of diabetes. The disease presented many features characteristic of parasitic diseases. It had a peculiar geographical and topographical distribution, and has a marked tendency to increase and decrease in places and periods. It attacked animals as well as man; it affected the infant as well as the adult, showing a decided preference for the adult male. It showed an undoubted tendency to occur in families, often passing from husband to wife and more especially from parent to child, so much so that it had long been regarded as hereditary. Some years ago Schmitz suggested the contagiousness of diabetes on account of the great frequency of conjugal diabetes. Cases of conjugal diabetes have been recorded by most authors. Hofmeister mentioned no less than 200 cases. The disease was comparatively rare in children, but quite a number of cases had been recorded in children under 1 year of age. True diabetes mellitus had been described in dogs by Friedberger, Fröhner, Schnidelka, Eichhorn, and others; in horses by Heim, Rueff, and Dieckerhoff; in the monkey by Leblanc. In comparison with its incidence in European countries, diabetes was a rare disease in America. A very interesting fact was that the disease was gradually increasing in the United States just as it was gradually increasing in Bengal. It would be important to have accurate information as to the presence of diabetes in China, Japan, Australia, and the Pacific, where until lately it was believed to be absent. His own experience of the disease in Southern Italy was against the food theory. He believed that diabetes, like pellagra, gout, and other diseases attributed to faulty metabolism, would soon take their proper place amongst the parasitic affections.

Professor Hans Ziemann (Cameroons) said: It is interesting to know that amongst the negroes in the Lower Guinea diabetes seems to be extremely rare. Amongst over three hundred carefully-made and repeated observations of the urine of the negroes I found twice only a very slight saccharine reaction, and this non-permanently. Clinical evidence of diabetes was not observable amongst this people. All the patients whom I refer to were nourished almost exclusively by eating vegetables like plantains (musa), manioc (manihot), but not rice, which is eaten so generally in the East Indies. The conclusion to be drawn from my cases is that the common method of feeding in Lower Guinea does not produce diabetes. The influence of the sun also does not produce diabetes in West Africa. The head of the black man in West Africa is not at all protected against the sun.

Major G. T. Birdwood, I.M.S., said: As regards Sir Patrick Manson's suggestion that there is possibly a germ present in the blood as the cause of diabetes, I would like to mention the case of a friend of mine who contracted diabetes shortly after his wife contracted it, and subsequently his two children. This is only an isolated case, and may only be a coincidence, but it may in the future be supported by subsequent discoveries. As regards life insurance, I look upon any permanent trace of sugar in the urine as most serious, and I recommend the company to reject the applicant. I had a practical lesson on this point. A rich native, not knowing himself in any way to be ill, had on examination a fair amount of sugar. The company fortunately refused him, for in six months he was dead from acute diabetic coma. As regards carbuncle, it would be interesting to know how many cases have been treated with serum injections. I myself would hesitate to irritate tissues readily disposed to necrotic degeneration. My own treatment is to excise the carbuncle widely and deeply, and to apply pure carbolic to its base. I have treated 20 to 30 such cases in the last two years with the most excellent result. The sugar in the urine is at once diminished, and the site of the excision is soon covered with healthy granulations. If these cases of carbuncle are left they almost invariably die, but if operated on widely and deeply they recover and do well. As regards diet, it would be interesting to know Sir Havelock Charles's experience on this point. It is the foundation of our treatment, and our success in this point is of the chief interest to our patients. The dieting of natives is extremely difficult. Their staple diet in India is rice or wheat, and if we cut this off there is little to fall back on. A few hints of Sir H. Charles's experience on this point would be valuable to the Section.

Dr. I. M. Mallick (London) said: Carbohydrate given to a diabetic patient brings on more sugar in the urine than that introduced as food—sometimes twice or thrice as much. This extra quantity must be due to the breakdown of the tissues of the body, caused by sugar circulating in the blood and acting as a toxin. That this is the result of a breakdown of the tissue is supported by the fact that urea undergoes an increase as well as the total acidity of the urine. If carbohydrate be withheld early in the onset of the disease, sugar in urine disappears, and very often the power of carbohydrate assimilation is restored after some time, when carbohydrate may be taken by the patient without passing it out with the urine—alimentary form. In chronic cases, however, where no diet restriction has been made, the circulation of sugar in the blood diminishes the resisting power of the tissues (opsonic index for streptococci), and may steadily break down, yielding sugar in the urine even when all carbohydrates are withheld from food—composite form. The last circumstance constitutes the real danger in diabetes, in which the body wastes and susceptibility to gangrene and phthisis occurs. Such a condition should by all means be prevented by withholding carbohydrate early and rendering urine sugar-free. Urea eliminated by Indians is very much less than what is stated in European books—very often half of that quantity. This is due to their food being poorer in nitrogenous material and to their deficient musculature, as well as to their comparatively less active life. In diabetes this invariably increases along with the acidity of the urine. Carbohydrate food, which in normal condition causes its diminution, in diabetes increases it still more by causing breakdown of tissues by toxic action of sugar. Proteid diet under normal condition increases urea, but comparatively decreases it in diabetes. In this disease, carbohydrate increases it endogenously, while proteid increases it exogenously in normal health. Body weight, as a rule, falls in diabetes, specially during its first onset, and particularly in young subjects. In old subjects, however, it may go up, but that is all due to gout. Muscles always get flabby. They are improved by muscular exercise, which, if taken regularly and continued for some time, is often found also to cause a perceptible diminution of sugar. This shows that diabetes is as much of glycolytic as of glycogenic origin. As long as the disease lasts carbohydrate food generally causes diminution, while proteid causes increase in weight—just the reverse of what obtains normally. In 60 per cent. of cases of diabetes the albumen was detected only after many years, although in many of them the sugar was as high as xxx grains to ℥j. The appearance of albumen depends more upon the chronicity of the disease than upon the quantity of sugar passed. The nature of kidney change in such cases is more like chronic interstitial nephritis, slowly brought about, like any other toxin (lead, mercury, syphilis, etc.), circulating in the blood and causing sclerotic changes in the arteries. The quantity of albumen is generally small, and the nature of the casts found is mostly hyaline or granular hyaline variety. It is a fact worth noting that albumen

given in food in such cases does not increase the amount in the urine, as sugar does sugar under similar conditions. The reason of this is that the former is not an abnormal constituent of blood as the latter (sugar) is. From these facts it follows that diet restriction should be early imposed by curtailing carbohydrate till sugar disappears from the urine. This change may cause some trouble at first, but is usually soon tolerated. Diabetes is very common among the educated Hindus in Lower Bengal because as a race they are mostly vegetarians, and do not get a sufficient amount of proteid element in their food, especially in the building period of life (early life). This causes their growth to be defective, specially their muscles. Bengalis are notoriously poor in musculature. Their staple food is "rice," which contains the largest amount of starch, 95 per cent., and only 5 per cent. proteid. Starch with a poor association of proteid is always less assimilable than where the proteid association is greater. The same quantity of starch brings on more sugar in the urine when given as rice than when given as wheat. Dr. Pavy explains this fact, that carbohydrates are more safely carried embodied within the bodies of the lymphocytes of the villi if synthesized with proteid, and never free in blood. The educated Bengali as a rule greatly neglects physical exercise. Thus there is a very large intake of carbohydrate of the least assimilable sort, and little output of it by muscular exercise, causing a large excess of sugar in the blood, which very naturally flows out through the urine. Mental strain or worry in life is considerably increased nowadays in the face of the greater struggle for existence. Being married early in life, they are already saddled with a family before they have finished their education period and commenced earning for themselves. This causes a severe strain in their early professional life, and they break down under the strain. There is nothing like mental worry to disturb metabolism and assimilation.

Dr. J. B. CHRISTOPHERSON (Khartoum) said: Glycosuria in the Egyptian Sudan is very rare. During an experience of five years I have met with it only once, and this in the case of an Arab. This is interesting as supporting the view that its frequency in other countries is related to the subtle influences of civilization and diet. With reference to Colonel Giles's suggestion that the direct rays of the sun, acting on the medulla, plays a part in the production of diabetes in tropical climates, I should be inclined to doubt it on anatomical grounds, the medulla being too deeply situated; also the majority of the Sudan natives, especially the Sudanese (negroes), go about with shaved and unprotected heads.

Mr. P. J. CAMMIDGE (London) said: Since the conclusive experiments of v. Mehring and Minkowski, in which they showed that removal of the pancreas produced diabetes in animals, much work has been done, but we do not know the exact nature of the relationship. It is highly probable, however, that the islands of Langerhans are in some way intimately associated with sugar metabolism, and personally I have no doubt that in at any rate the majority of cases of diabetes lesions of the pancreas, and particularly the islands of Langerhans, are responsible for the disease. This disease may arise either by extension from the duodenum or by way of the blood vessels. With regard to disease of the blood vessels, in my experience the most common is arterio-sclerosis. This arterio-sclerosis is also responsible for the albuminuria which occurs in the later stages of some diabetics; it is not, as is commonly thought, the effect of the irritating action of the sugar on the kidneys. Extension from the duodenum gives rise to the various forms of chronic pancreatitis. The commonest form, interstitial pancreatitis, only gives rise to diabetes in advanced cases, for it is not until the disease is well advanced that the islands of Langerhans are affected. I think it is quite likely that one may have a chronic pancreatitis gradually developed, and then if from any cause the virulence of the organism in the duodenum is increased a subacute or rapid advancement of the interstitial changes may occur and so give rise to diabetes. In this connexion it is interesting to note that Delagénème has pointed out that the head of the pancreas is for anatomical reasons more liable to injection and interstitial change than the rest of the organ.

Dr. W. CARNEGIE BROWN (London) said: Though in the tropics diabetes is rare in Europeans, it is prevalent in certain sections of the native communities. It occurs principally in the wealthier class and is rare in hospital practice. The hard-working coolie, though his normal diet, like that of his more leisured compatriots, consists of carbohydrates and hydrocarbons in an excessive proportion to proteids, seldom has glycosuria, and probably never suffers from true diabetes. At all events, I have never seen a case. Possibly it is on account of this circumstance that the belief that diabetes is rare in the Chinese race has gained credence. That error has been copied by one writer from another through several generations of text-books, and I see that it is repeated in the latest work on medicine, which is now being issued under the authoritative editorship of Professors Osler and MacCrae. As a matter of fact, there is no race predilection for diabetes, and the disease is very common amongst the upper classes of Chinese. The indolent and the overfed on one hand, the speculative, anxious, and overworked man of business on the other, furnish, irrespective of nationality, practically all the cases of diabetes that are seen in the tropics. And the toll they pay to the disease is a heavy one, though it is not so much in its severity as in the frequency of its occurrence. The disease does not, in fact, assume a severe type. The graver complications of acetonaemia and albuminuria are by no means usual, but, on the other hand, carbuncle is extremely common, and is a frequent, and by far the most frequent, cause of death in diabetics. With the time at our disposal it is impossible to give even a comprehensive outline of the characteristic features of diabetes in the tropics, but one cannot touch on carbuncle without referring to the necessity for immediate and radical treatment. Where the skin is continuously moist, as it almost invariably is, putrefactive germs increase and spread with appalling rapidity. A carbuncle, say, in the interscapular region, that is as large as a filbert in the morning may be the size of an orange in the evening, and of a melon the next day. It is idle to wait for fluctuation, or to make simple incisions. Extension through the cellular tissues is so rapid, the supervention of septicaemia so certain, that complete excision, scraping, and cauterization by strong nitric acid of the septic tissue is the only rational treatment. The cavity should then be treated as an open wound by moist boracic dressing, and, in the great majority of cases, these cases do well. No doubt objection will be made by the patient, but the operation should always be insisted on, and much pain and many lives will certainly be saved if it is done in time. With regard to what has been said about the possibility of diabetes being of parasitic origin, it is perhaps rash, with our present experience, to say that it too will not fall into the capacious grasp of the parasitologist, but, at present, clinical experience would seem to indicate that if there is one disease which is purely and certainly an endogenous disorder of metabolism, the problems of which are to be solved by biochemistry alone, it is diabetes. Though our knowledge of the pancreatic ferments is still incomplete, the comprehension of the processes of intestinal digestion is now greater and clearer than it has ever been before, and we know enough about the interrelations of the secretions of the duodenal mucosa and the pancreas to justify the hope that the whole problem of sugar metabolism is not far from solution. In the tropics there are excellent opportunities for clinical determination of how far the absence of pre-secretin from the duodenum and secretin from the pancreatic juice may be remedied by the administration of trypsin or pancreatic or duodenal extract or substance. But so far we have in diabetes no means of determining whether the particular case is due to the duodenum failing to supply pre-secretin, or the pancreatic cells failing to respond to the stimulus of that substance, or even whether these ferments are normal, or if the liver and muscular tissues are unable to deal with the sugar, so that the administration of pancreatic remedies must be to some extent haphazard, although it is significant that they have been highly successful. My own experience of pancreatic substance and of trypsin has been considerable, and it is altogether encouraging, and the potential utility of this line of treatment seems to be all the greater in that it enables a patient to take during their administration a limited amount of carbohydrate food without aggravation of his symptoms. Irksome and disagreeable as the restriction of carbohydrates is to a European, it is to an Oriental

far more severe, and often altogether intolerable. The sudden arrest of his staple and invariable form of nourishment is not infrequently followed by dangerous nausea and depression. As a matter of fact, rice is less hurtful to a diabetic than other forms of farinaceous food, and small quantities should be allowed, for it is certain that its total exclusion, and the substitution of some nauseous so-called diabetic food are likely to be followed by more serious symptoms of malnutrition than can possibly be caused by a slight increase in the amount of sugar. Save in exceptional cases, a moderate quantity of rice should always form part of the diet of patients whose staple it is, and, if combined with "pancreatic" treatment, a considerable amount is readily tolerated. On the other hand, with or without pancreatic extract, sugar in any form is impossible, even in a greater degree than in temperate climates, and its ingestion is invariably followed by polyuria and exhaustion. In the tropics opium is preferable to codeine, though neither seems to be of much use. The systematic administration of narcotics in diabetes is as unsuccessful as it is unscientific.

Mr. James Cantlie (President of the Section) said that amongst Chinese who indulged in European food extensively diabetes was common. This seemed in consonance with experience in every part of the tropics. Natives who suddenly gave up, or to a great extent left off, the food which they and their ancestors had been accustomed to, and took to European food, especially when sweet wines were taken as well, were apt to develop diabetes. The question of adapting a race to food of another clime was a question of perhaps many generations of development; in this way the prevalence of diabetes, even amongst the Jews, might be explained. Europeans indulged in moderate quantities of alcohol with impunity, whereas the same, or even an infinitesimal, quantity of alcohol taken by natives of the tropics might prove harmful or even deadly. The tolerance of alcohol was a question of gradual evolution, and no doubt an excess of proteid materials in food could only be tolerated by natives of the tropics after many generations. Traumatic glycosuria was of great physiological and clinical interest and importance. Cases of fractured ribs in the lower part of the right chest wall frequently developed sugar in the urine; this might be due to direct injury to the liver, but, on the other hand, it might be that the mere suspension of movement of the chest over the area of the liver during respiration affected the hepatic function and established a glycosuria. Actual laceration of the liver was less seldom attended by sugar in the urine than when several of the ribs over the liver itself were fractured.

Reply.

Sir Richard Havelock Charles, K.C.V.O., in his reply, said: I agree with the late Colonel Crombie in the belief that diabetes is the gout of the Bengali. Most emphatically I concur with him, and draw attention to the action defective metabolism has in both these diseases. Sir Patrick Manson is very strong on the point that I have not made mention of, the "germ cause" of diabetes. I point out that I have stated that diabetes in the tropics is the same as diabetes in Europe, and that in both forms—the Indian especially—the essential factor, be it toxic agent or otherwise, finds its victim opsonized by dyspepsia and its results. This is a field for research in Europe as well as in India. Find the toxic agent, or "germ cause" if you will, of gout, and possibly that of diabetes may be discovered. Dr. Sandwith has well drawn attention to the futility of sending diabetic cases for change of air in the last stage. It is a common thing when a patient can't be cured to say, "Oh, go for a change of air!" This may relieve the physician's helplessness, and may be an aid to the patient's desire for health that "hopeth all things." But in practice it is bad, very bad. Let a patient go from Calcutta to the hills in the earlier stages, and the good of the move is apparent to all. Send him on a journey in the later periods and he dies away from home! Dr. Sandwith states that in Egypt the Jews are not much affected. This is not my experience in Calcutta—some of my worst cases of carbuncle have been in Hebrew subjects. Indeed, the high intellectual development of this race, with its concomitant nerve strain, puts it on a par with the Bengali and Parsi. An interesting point brought out was the composition of an Egyptian panacea for diabetes—ox gall. Now this is mentioned in old Vedic writings, and, empirically, what was good for dyspepsia (intestinal) was tried for diabetes. In Calcutta I was ever struck with the tenderness elicited on deep pressure of the part occupied by the head of the pancreas and descending duodenum. In most chronic dyspeptics it is present, and this is interesting when borne in mind with Dr. Cammidge's remarks on the pancreas. Colonel Giles has suggested a theory as to the reason why the Bengali specially suffers from diabetes—because he goes bareheaded. But I reply the disease is more prevalent amongst those *not* exposing themselves to the sun. The lazy rich man avoids the discomfort of the sun's fierce rays. The harrassed and worried and over-anxious doctor, pleader, or merchant, is certainly not basking in the sunbeams from the necessities of his calling. The agriculturist in the fields, sweating from early morn till dewy eve in sweltering heat, does not suffer from the scourge, whilst the others are its chief victims. Dr. Fernando does not put much stress on the evil influence of change of custom in Ceylon, nor does he think that old customs have changed. In Bengal things are very different. In the old days—the Gooptu Empire, the Mogul times, John Company's régime—the children attended their master in the little village open shed and shouted out in unison their easy tasks. The cool morning air fanned them. The heat of the day was given up to rest and ease. In the evening, the sun's strength having spent itself, again the easy lessons were shouted out. Now, what happens? School or college begins at 9 a.m. and goes on till 5 p.m.! When the sun is hottest, then the pursuit of the muses is fiercest! What did the merchant do when Job Charnock lived in Bengal? He worked in his office in the early morn, closed it during the day, again doing what might be necessary in the evening. One mail in the year kept his communications with Europe in very moderate bounds. Now, my experience has shown me that the merchant's and the merchant's clerk's life is much more strenuous than it is in London. They plod from 9 a.m. till 7 p.m., and often till late in the night. The climatic conditions are the same. Hustle and bustle and the necessities born of competition have changed the habits of children and adults. Can we defraud Nature without punishment? No. I point out that the *resident European* and Eurasian suffer considerably; the incidence on the European changing population is very slight—8 cases in 76,000 officers and men in one year. I have stated that climatic conditions are a remote cause, and not a direct cause—that they and others, with causes more direct, which strain the nervous system, opsonize the victim for the special factor, whatever that may be found to be. Dr. de Souza concurs with me in thinking that the diabetes of the East is the same as the diabetes of the West. One point is that, if diabetes be not transmitted, neurasthenic tendencies certainly are by diabetic parents. This brings it into line with the strumous constitution which tuberculous patients can bequeath to their offspring. Major Nott is not inclined to lay as much stress as I do on the commonness of dyspepsia in diabetes cases. Dr. Mallick, however, has clearly shown in his able criticism that dyspepsia is the bane of the Bengali from even early childhood. Majors Nott and Birdwood agree with me in enforcing the greater importance of glycosuria in Indian applicants for assurance than in European risks. Major Birdwood asks that I should give in detail points regarding dietetic treatment. Shortness of time prevented my taking up that part. Knowing that the Bengali practitioners who have written papers for this Section had dwelt on the matter I left it to them, and a perusal of their remarks will, I hope, satisfy the desire expressed. I am quite in agreement with Major Birdwood regarding carbuncle. It was my practice to excise it, swab the base thoroughly with pure carbolic, pack with sterile boric gauze—applying graduated pressure. Rapidity of operation prevents much loss of blood. In 90 seconds much can be done with the knife. But there are many cases where you are called too late. If you operate, assuredly the morrow will see your patient at the burning ghat. You discredit surgery and frighten suitable cases from undergoing an operation that would save their lives. Surgical intuition is required in such cases. The serum treatment is surely harmless in all, and will be serviceable in those where operation is inadvisable. Professor Ziemann has given his experience amongst the negroes in West Africa. He has found them to be only slightly affected, but has not noted, as has been deter-

mined in the United States, that the negress is more often a victim than her male. Dr. Sambon is very strong on the opinion that the disease is parasitic, and ignores much the question of digestion. In Lower Bengal the people who suffer are—(1) the lazy rich, (2) the professional classes. Indigestion scourges both; in the former it is due to the effects of sloth, in the latter to over-fatigue. The agriculturist, enjoying fresh air and exercise therein, is practically immune. Dr. Inanendrenath Mallick has described, in a most excellent manner, the evils arising from improper food in Bengal, and demonstrates the commonness of digestive troubles in consequence, telling us how dilated stomach with subsequent gastro-duodenal catarrh and pancreatic tenderness follow one another. Most interesting are his ideas advanced about the defective muscular development of the Bengali with the superabundance of adipose tissue. The bearing on these views of the empirical treatment of old days—of open air and walking exercise—is manifest. This is the treatment which still holds good, whilst drugs by the thousand have been tried and rejected. Mr. Cantlie draws attention to the glycosuria that frequently follows on multiple fracture of the lower ribs and the possible liver complication therein. I would suggest that in such cases there is probably a considerable post-peritoneal haemorrhage engaging the pancreas and its neighbourhood.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

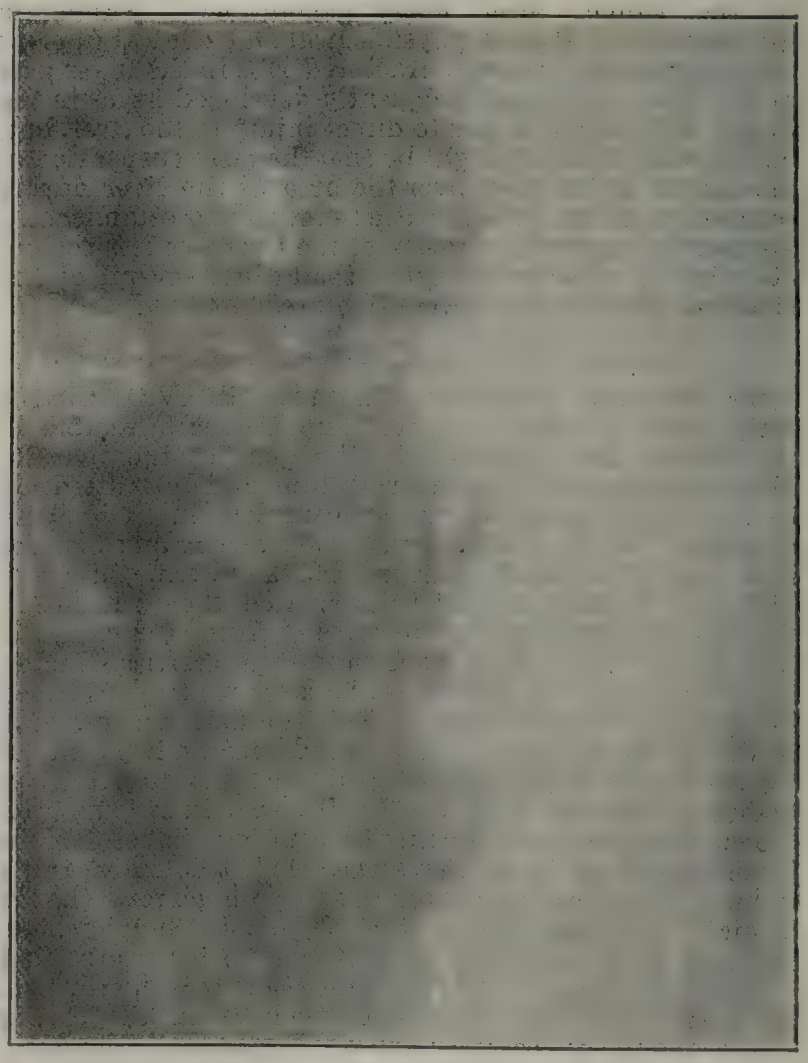
PHLEBOLITHS AND THE ROENTGEN RAYS.

The cases of phleboliths described by Mr. L. Herschel Harris (British Medical Journal, June 15th, 1907, p. 1423) are very interesting, and illustrate well the difficulties occasionally met with in making a correct diagnosis

by the *x* rays. In these cases the more excellent the skiagram the more likely is the mistake to occur, unless these uncommon cases are borne in mind, for I think that on the whole the cases are not very common, although they may be sometimes met with by those who take a large number of skiagrams for renal calculi. I would recommend those interested in these difficult questions of diagnosis to study a series of beautiful skiagrams that you published of similar cases by Dr. Mackenzie Davidson on June 17th, 1905, and another instructive series on January 20th, 1906. It will be noted in the first series how a differential diagnosis was made in some of the cases by passing a metallic bougie into the ureter, proving the shadow not to be in the ureter; this certainly is a most beautiful scientific demonstration of the fact, but how many of us can command the skill or the means to do this?

I think most of the mistakes that occur, resulting in worse than useless operations, are in these cases of a small stone supposed to be in the ureter, and generally low down, and for various reasons I usually advise that these cases be let alone. In the first place it is not unreasonable to expect that a small stone that has travelled so far, might very likely travel into the bladder, where it may be passed or more easily dealt with. I think these stones are usually passed; instances giving a clear history of the process are not at all uncommon. In the next place these operations often lead to more formidable ones than originally intended, and quite out of proportion to the benefit derived. I remember watching one case where the zealous surgeon, in his prolonged attempt to discover a missing ureteral calculus, extended his wound from the lumbar region, right round ultimately nearly to the groin, without finding it. On the other hand, I have never seen a failure to find a stone shown in a skiagram, when it has been of a fair size and well defined—perhaps I have been unusually lucky in my skiagrams—the only occasion when I nearly had that experience was a skiagram showing I thought four or five good-sized stones, and the surgeon could find nothing. Afterwards he had sufficient confidence in the *x* rays to try again, and discovered them, they were deep and unusually high up.

I have had two or three experiences of one possible source of error—a calcified tuberculous gland which gave a very fair shadow, and the most striking case of all is the one of which I am sending you the skiagram. In this case the usual symptoms of renal calculi were strongly marked—pain and most persistent haematuria. So severe



was the haematuria that before examination by the *x* rays it was regarded as possibly a papilloma of the bladder. The skiagrams taken of both kidneys, which I send, although quite different to anything I had seen before, also two others I took of the pelvis, showed apparently numerous small calculi extending through the entire track from both the kidneys to the bladder. It was recognized to be an uncommon condition, and an exploratory operation performed by Mr. O'Hara on one kidney showed

that the shadows were cast by calcified tuberculous deposits, and that there was no sign of a calculus anywhere.

T. G. Beckett, L.R.C.P., etc.,
Honorary Medical Electrician and Skiagraphist, Alfred Hospital, Melbourne.

REPEATED RUPTURE OF THE TUNICA VAGINALIS.

In the *Archives of the Middlesex Hospital*, vol. viii, 1906, Mr. Somerville Hastings reported a case of this rare accident, which was under the care of Mr. Bland-Sutton. An example of this condition has recently come under my notice.

A clergyman, aged 73, had suffered from hydrocele for twenty-four years; it required tapping about once every year. Fifteen years ago his scrotum was accidentally squeezed; he was seized with pain in the hypogastrium, and found that the hydrocele had suddenly gone. It returned again in a few weeks. Tapping continued to be performed as before, and was last done by me on October 16th, 1905. At the end of August, 1906, when the hydrocele was very large, the patient fell and bruised his scrotum. In the course of two or three days the swelling had entirely gone, but gradually reappeared.

It appears from the reported cases that rupture of the tunica vaginalis does not often cure the hydrocele. Very few cases of this injury have been reported in England. So far about 40 cases have been published, most of them in France and Switzerland.

Bedford. W. Gifford Nash, F.R.C.S.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

DRUMCONDRA HOSPITAL, WHITWORTH ROAD, DUBLIN.

A CASE FOR DIAGNOSIS.

(Reported by E. H. Brook, M.B., House-Surgeon.)

A girl, aged 13, suffering from a tuberculous ankle was admitted to hospital under the care of Mr. Graves Stoker. The ankle was opened, scraped, and drained. As her condition did not improve, Syme's amputation was performed two months later. The wound healed well, with the exception of a small piece about the size of a sixpence, and after her dismissal from hospital she came regularly to have this dressed. All went well till two months later, when the child suddenly became ill; the temperature was 104° F. and the pulse 115, and there was nausea. This condition lasted two days, when the nose, face, and left side of the thorax became tinged with a brown discoloration. The patient became delirious at frequent intervals, and complained of great pain in the head. The pupils were contracted and the tongue dark brown in the centre and dry. It was now noticed that the brown patches on the face had partially disappeared, except that on the nose, which was dark brown and cold to the touch; sensation was diminished. The toes of the left foot became similarly affected, and the general condition was now very grave. Upon the fourth day of her illness her throat became dark in the region of the pharynx, and eight hours later a dark grey slough appeared, along with great fetor of the breath. The patient died on the morning of the fifth day.

An autopsy being unobtainable, the diagnosis must remain largely conjectural. The cause of the gangrene, which might be considered of the Raynaud type, is very obscure, and in the absence of sepsis we rather incline to the idea that infection took place through the mouth, which was in a bad condition. Personally I have never seen a case of Raynaud's disease attack such a large area—that is, face, chest, foot, and throat.

Under the will of the late Mr. John Bayley Lees, of Handsworth, who died on August 14th, Queen's Hospital, Birmingham, receives a sum of £500.

REPORTS OF SOCIETIES.

MEDICAL SOCIETY OF LONDON.

J. K. Fowler, M.D., F.R.C.P., President, in the Chair.

Monday, October 14th, 1907.

Presidential Address.

The President said that the present time was one of great progress, but that while this was admittedly true of surgery, the laity were by no means assured that it was equally true of medicine. Indeed many, and those by no means persons of small understanding, were frequently heard to deplore the fact that notwithstanding the great advance of surgery during the past thirty years, medicine had not progressed in like manner. It was to remove that too prevalent misconception that his address would be directed. Whatever degree of importance was to be attached to the opinions of laymen upon such a matter, it would hardly be denied that the view indicated if widely held would not tend to advance the honour and esteem of the physician. Indeed the physician was just now much beset; he was on his trial, and almost needed to justify his existence. The surgeon was daily making inroads into the territories which until lately the physician considered his own, and a high authority had recently had to deny that he ever advised the public to abstain from drugs. The President then proceeded to discuss in detail the advances made in medicine during the last thirty years, and in conclusion claimed that, having regard to the wide field covered, the advance of medicine had been infinitely greater in the mass than that of surgery, although it was not perhaps so readily appreciable by the public. In the future he believed progress would far outstretch the results attained in the past, for they were as yet but on the threshold of knowledge which would illumine all the dark recesses of the ignorance common to medicine and all other sciences, and this it was the duty of all to attempt to remove.

Unusual Cases of Diabetes.

Dr. J. R. Bradford described three unusual cases of diabetes. He said that the term "diabetes" probably included a number of conditions dependent not only on various causes, but also associated in all probability with different lesions. The view was generally held that only a proportion of cases of diabetes could be associated with lesions of the pancreas. Still, it seemed as if the number of cases of the malady that could be attributed to a pancreating origin was increasing. There was still much difference of opinion as regards the nature of the pancreatic lesions associated with diabetes, although most observers had recorded atrophy and a peculiar variety of diffuse cirrhosis as the most common. Diabetes had been found in association with other pancreatic lesions, as, for instance, calculi, cystic disease, and new growths; but all these pancreatic lesions had frequently been described as occurring without diabetes. In some very rare instances glycosuria and diabetes had been found associated with acute lesions of the pancreas, but there was a general consensus of opinion that diabetes and glycosuria were but rarely seen in association with such acute lesions as acute haemorrhagic suppurative gangrenous pancreatitis. The three cases described by Dr. Bradford were cases of diabetes that seemed to date their origins from a preceding attack of acute pancreatic disease. In all the cases this was an inference rather than a proved fact, inasmuch as in none had a *post-mortem* examination been made. The point of interest in the first case detailed lay in the fact that on the patient's second admission to University College Hospital she presented all the signs and symptoms of a typical case of diabetes mellitus; three years previously she had suffered from a large tumour in the region of the pancreas which had apparently disappeared spontaneously after an exploratory incision. The second case, seen in consultation, was almost identical in that a lady had come under observation with a large abdominal tumour in the epigastric region, which was explored by a laparotomy, regarded as malignant and incapable of removal. Subsequently to this symptoms of indigestion, thought to be dependent on pyloric obstruction produced by the mass, developed, and a second operation was performed and gastro-enterostomy effected. Dr. Bradford

saw the patient eighteen months after this second operation, when she was suffering from diabetes mellitus in a very severe form. Palpation of the abdomen, which was easy owing to the emaciation, failed to reveal the presence of any tumour. The diabetes was so severe that the diet had but little influence on the course of the malady. He had during the last few years seen three other cases in which a mass was present in the epigastric region, and where an operation had been performed, and what was apparently a malignant growth found, and where subsequently to the operation the mass had disappeared and the patient regained health. But in none of those three cases, so far as he knew, had glycosuria or diabetes ensued. The suggestion he made was that in the first two cases he had mentioned there was a subacute pancreatitis accompanied with considerable swelling and induration of the organ. The third unusual case was that of a lady, aged 31, who had an attack of what was looked upon as catarrhal jaundice presenting all the typical features of this affection. During its subsidence she was suddenly attacked with intense thirst and polyuria, and the urine contained as much as 8 oz. of sugar in the twenty-four hours. In that case the symptoms of diabetes came on suddenly one night whilst the patient was under observation and the urine was known to be free from sugar. Diabetic treatment reduced the quantity of sugar, but six months later the patient still required a rigid diet to keep the urine sugar-free. The suggestion had been made that some cases of catarrhal jaundice were dependent on acute swelling of the head of the pancreas, and it was conceivable that that was the cause of this patient's illness. In some instances of catarrhal jaundice hepatic cirrhosis was known to develop as a complication and had been regarded as depending on an ascending infection from the biliary ducts. Diabetes had also been regarded by some as depending on an ascending infection of the pancreas from the onset, and he brought forward the case as possibly affording some support to this view.

Dr. PAVY said that the number of cases recorded in which diabetes had been associated with pancreatic disease showed that that organ was concerned in the changes occurring in connexion with the assimilation and disposal of carbohydrates in the body.

Dr. S. PHILLIPS quoted two cases almost similar to the three described, and Dr. BRADFORD replied.

ROYAL SOCIETY OF MEDICINE.

PATHOLOGICAL SECTION.

Mr. S. G. SHATTOCK, President, in the Chair.

Tuesday, October 15th, 1907.

FATTY DEGENERATION OF THE BLOOD.

MR. S. G. SHATTOCK and Mr. L. S. DUDGEON made a communication upon this subject. At a meeting of the Pathological Society on May 29th, 1906, the authors had made a preliminary statement to the effect that they had observed the occurrence of fatty degeneration in the blood in certain morbid conditions. They were not aware of any similar observations having been published before that date. It would be apparent on theoretical grounds that in cases where fatty degeneration of the solid tissues was due to a deficient oxygen-carrying power of the blood, or to a toxic condition of it, the state of the blood might react upon itself so as to induce similar changes in its own leucocytes. In the technique it was essential that the blood film should not be dried, and that the use of fat solvents, like absolute alcohol and ether, as fixing reagents should be avoided. The fixation was made in a chamber of formol vapour, the films being afterwards treated with Scharlach solution, and counter-stained with haemalum. Out of 79 cases of various morbid conditions, fat was found in the following: Chlorosis, chronic Bright's disease with anaemia of chlorotic type, carcinoma of pylorus with anaemia of chlorotic type, influenza, pleurisy with pericarditis, toxaemia of pregnancy, acute pneumonia, purpura, diabetes with lipaemia, myelaemia, lymphadenoma, acute cerebro-spinal meningitis. Most of these cases fell into the group of toxic diseases. The authors believed that the fatty changes present in the finely granular polymorphonuclear leucocytes were the result of the direct action of the toxic substances present in the blood itself. Recovery took place in some cases, notwithstanding the presence of fat in the leucocytes. This was so in some of the cases of acute pneumonia. In diphtheria and pernicious anaemia the authors had found the leucocytes to contain fine granules which, though deeply stained, did not exhibit the transparency and proper red colour of ordinary fat. For convenience they named the appearance "Scharlach granulation." It was not unlike some manifestations of the glycogenic or iodophilic reaction. This explanation, however, was excluded, since the Scharlach granulation was not observed in control films if treated with absolute alcohol before being transferred to the dye; the glycogenic reaction was as readily obtainable after this treatment as without it. The appearance of the "granulation" in diseases in which a fatty degeneration of the leucocytes might have been anticipated, and the fact that in some cases of acute pneumonia the proper Scharlach reaction of the points in the cells was obtained, whilst in others it was the brown, opaque "Scharlach granulation," made the authors think that the granulation was indicative of a degeneration, and, seeing that it was not obtainable after treatment of the blood films with absolute alcohol, they concluded that it was allied to that known as fatty.*

MACROGLOSSIA NEUROFIBROMATOSA.

Mr. W. G. SPENCER and Mr. S. G. SHATTOCK recorded an example of this remarkable condition, the first case of which was described in 1903 by Mr. F. C. Abbott and Mr. S. G. Shattock, from whom it received its name. The two cases were much alike, except that the first concerned a child, and the second a young adult 24 years of age. There was no evidence of the enlargement having been congenital, nor was any pain associated with it. The disease was confined to the left half of the organ, which portion was successfully removed. There was nothing externally to indicate the cause of the enlargement. On dissection of the parts excised, a large lobulated swelling was found beneath the tongue, which was resolvable into a plexus of greatly enlarged fibromatous nerves. From this swelling branches penetrated into the muscular substance, some of these being traceable as far as the mucosa. Both the hypoglossal and the lingual nerves were involved. In microscopic sections the disease presented the usual characters, namely, a diffuse endoneurial growth of delicate richly-celled connective tissue. From the corresponding side of the neck there was removed an extensive mass which admitted on dissection of being unravelled into strands of thickened tuberous nerves.

INCOMPLETE HERMAPHRODITISM IN THE FOWL.

Mr. S. G. SHATTOCK and Dr. C. G. SELIGMANN exhibited the above. The bird, which had belonged to Professor Leonard Hill, had been observed to tread a hen, and cocks had been seen to drop their wing to it. It was furnished with sharp spurs and male neck hackles; the comb and tail were female. On dissection a well-developed normal oviduct was found. The sexual gland was single and deeply lobulated. Certain of the lobules presented no epithelial structures, but consisted only of a vascular and cavernous connective tissue. Other lobules showed in addition narrow columns of epithelial cells devoid of lumen, resembling Pflüger's tubes; and others contained larger tubuli lined with columnar cells, as in the testicle. Neither spermatogenesis nor ovogenesis was seen. In the latter particulars the hermaphroditism was less marked than in a case previously described by the authors. The exhibitors regarded both as of interest in their bearings upon a theory they had advanced—namely, that the transformation of plumage in the female of certain birds to that of the male, accompanied as it sometimes was by the cessation of laying and the acquirement of male instincts, indicated a hermaphroditic condition of the sexual gland, the *male* constituent of which commenced to functionate after the atrophy of the *female*.

CLINICAL SECTION.

AT a meeting on October 11th, Sir THOMAS BARLOW, Bart., President, in the chair. Mr. T. H. OPENSHAW showed (1) a boy, aged 10, with *Congenital absence of the fibula*. The

* The main facts recorded in this paper were communicated to the Royal Society in March, 1907.

outer half of the foot, including the outer two toes on the same side, was also missing. By means of suitable apparatus the boy was able to walk well and play cricket and football. (2) A boy, aged 7 months, whose tibiae were practically absent. There had probably been intrauterine fracture of the right leg, and a well-marked dimple of skin marked the lower end of the upper fragment of the tibia. The internal malleolus was absent; the foot in the varus position. The upper fifth of the the left tibia alone was present, the fibula being enlarged and curved. The mother was quite healthy; the patient was a first child. Mr. Openshaw could not advise amputation for such a case.—Mr. F. J. Steward showed a girl, aged 4½, admitted to the Hospital for Sick Children under Dr. Garrod, with pneumonia. April 15th, 1907, empyema found at left base was drained after resection of eighth rib; a pure cultivation of pneumococcus was grown from the pus. Early in May the child was not doing well; temperature 103°; pulse 148. May 6th, a bulging mass was detected through the resection wound, which *x* ray examination showed to be a distended pericardium. May 9th, pericardium opened from the back; 2 oz. of thick pus evacuated. Flanged rubber drainage tube inserted. The child thenceforward improved. Pericardium gently irrigated daily with normal saline. May 22nd, tube removed. June 14th, wound soundly healed. Mr. Steward referred the cure chiefly to the fact that the drainage was from the back. Dr. S. West doubted if the case was pyaemic; he had seen recovery after an anterior opening; and advocated simple incision without thoracectomy. Mr. R. J. Godlee related a case in which Mr. Raymond Johnson had successfully drained a pyopericardium, secondary to osteomyelitis. He advised that a good opening should be made if it were from the front, and the pleura avoided, if possible.—Dr. Douglas Drew showed (1) a girl, aged 7, who, after two arthrectomies of the knee performed for tuberculous disease, had a useful movable joint. (2) A case in which there had been genu valgum, and the dislocation used to occur outwards during flexion even after the genu valgum had been rectified. The final operation was in April last when the tubercle of the tibia with the ligamentum patellae attached was fixed to the denuded inner tuberosity of the tibia.—Dr. A. E. Garrod showed a woman, aged 25, with *Multiple nodules* after rheumatic fever two years ago, but without cardiac lesion. The nodules had been present eighteen months, but had softened under the influence of Bier's treatment; they were over the knuckles, elbows, knees, and one shoulder. Dr. S. West had seen several similar cases, many having no heart lesion. Sir Dyce Duckworth emphasized their long duration. Dr. B. Abrahams doubted if the nodules were always of rheumatic origin, as he had found them without any other sign of rheumatism. In adults the nodules were usually bilaterally symmetrical. Dr. Poynton thought it was to be expected that the nodules being fibrous would last a long time. The President agreed with Dr. Garrod's diagnosis. In his experience the association of nodules with organic heart disease in adults was not nearly so frequent as in children.—Mr. Jonathan Hutchinson, jun., showed a woman, aged 60, in whom a swelling regarded as a fusiform aneurysm of the right common carotid had existed for eighteen months, and now extended from the sternum to the thyroid cartilage; her voice had simultaneously become harder. There was no history of syphilis. He proposed to perform distal ligature; the proximal operation was impossible.—Dr. F. E. Batten showed a male, aged 62 but looking older, who since March, 1903, had been unable to walk alone. His gait was markedly ataxic, but he could stand well, and there was no Rombergism. The incoordination was in general slight, but the ataxia in the legs when the patient walked was extreme. Nystagmus was slight. The knee-jerks were active, and all forms of sensation were perfect. The condition was probably due to *Atrophy of the cerebellum*.—Dr. H. A. Lediard (Carlisle) showed a male, aged 65, who had on his scalp, face, neck, shoulders, chest, and upper part of the abdomen numerous skin tumours. The growths on the scalp had coalesced, and presented a dark blue mass. In the neck and left axilla the lymphatic glands were affected. The disease, regarded as an instance of *Multiple sarcoma cutis*, began three months ago on the scalp, when patient worked for three weeks under a hot July sun without a hat. It was at first painful, but now pain had ceased. Sir D. Duckworth did not agree with the diagnosis, and advocated treatment by large doses of sarsaparilla. Dr. J. H. Stowers also was not satisfied with the diagnosis, and thought specific remedies and treatment by light should be tried. Mr. R. J. Godlee advised microscopy of the growth to confirm the diagnosis.—Mr. Cecil Rowntree showed a man, aged 67, with a large, probably *Myxo sarcomatous growth* on the right thigh, extending from the gluteal fold to the popliteal space, beneath the hamstring muscles—soft, not attached to the femur, and freely mobile. It gave no symptoms beyond the inconvenience of the position and weight of the tumour. The man was in good health, and could walk ten miles a day. The circumference of the right thigh was 26 in.; that of the left 18 in.—The President then delivered an introductory address on the history and work of the Clinical Society during the forty years of its existence.

Glasgow Medico Chirurgical Society.—At a meeting on October 4th, the President (Dr. Walker Irvine) delivered an address on the history of the Society. Instituted in 1814, the Society, he said, had more than once changed its title, and gave in its *Transactions* an interesting and historical summary both of the development of medicine and of the work and personality of its various members. In the early days members read papers in rotation, and were fined if they failed to comply with the most exacting rules then in force. Absentees without adequate excuse or leave were also fined. The range of subjects was most extensive, including discussions on "blue devils," the case of a fasting woman, and on interesting poison cases. The title of one of the essays was, "What proofs have been adduced in support of the theory of compression in the consolidation of mineral strata?" In a discussion on *post-partum* haemorrhage transfusion was strongly advocated by Dr. Lym, who used a dissecting blowpipe and a bladder. Anaesthesia by ether was discussed in 1847. Dr. Perry thought it caused an intoxication, and during this the inner character of the subject was revealed. Dr. Bell thought its effects worse than the pain of operation. The use of chloroform was discussed in 1848. Dr. Easton then said they were not justified in using such a dangerous remedy. Dr. Lym strongly advocated its use, but emphasized the importance of having it administered by a specially-skilled assistant, whose sole attention was to be absorbed in the administration of the drug. Dr. Lym also advocated its use in obstetrics. Professor Pagan argued against its use that it made the patient unable to guide them by her sensations. Dr. Robertson thought it unnecessary in normal and injurious in instrumental labour. In 1837 Dr. Robert Perry demonstrated in the Glasgow Royal Infirmary the grounds for his belief in the non identity of typhus and typhoid fevers. In 1863 an interesting discussion on tracheotomy and diphtheria was introduced. Dr. Reid opposed the operation in croup and thought it seldom required in diphtheria. Dr. Morton considered it useless, as death was due to poisoning, as in scarlet fever. In 1860 a discussion took place on the excessive infantile mortality in towns, the causes of which were considered much the same as now. In 1864 Dr. George Buchanan described a successful case of ovariotomy. Mr. Lister in 1868 described a case of an incised wound of the thorax penetrating the diaphragm and with protrusion of the omentum, which he cut off. The left pleural cavity was distended with air and haemorrhage, displacing the heart over to the right side. The case was treated by the carbolic spray and dressings, and made a perfect recovery. His favourite dressing was composed of emplastrum plumbi, with one quarter of its weight of beeswax impregnated with carbolic acid. Lister's experiments were conducted in the Glasgow Royal Infirmary. Dr. Eben Watson doubted the presence of germs in the air and their association with pus. Dr. Morton thought carbolic acid was not superior, and in many cases inferior, to other methods of treatment. Dr. Alex. Patterson ranked the carbolic acid treatment of wounds as second only to chloroform as a boon to practical surgery. Tuberculosis as an infectious disease was discussed in 1891. Professor Gairdner considered it the one disease whose infectiousness had been accurately proved, and the logical issue was that tuberculous patients should be isolated as lepers. At present

he did not feel willing to face this conclusion. The President also gave the history of the Pathological and Clinical Society of Glasgow (founded 1873), and described the steps which led up to its amalgamation with the Medico-Chirurgical Society.

GLASGOW SOUTHERN MEDICAL SOCIETY.—The first meeting was held in the Society's rooms on Thursday, October 3rd, when the PRESIDENT (Mr. A. Ernest Maylard) delivered an address on some of the difficulties connected with the diagnosis of gastric derangements. The first question, in differentiating all symptoms of supposed gastric origin, was whether the symptoms were really gastric, or attributable to disease of some other part; and the second question was whether unequivocal symptoms of gastric disorder owed their origin primarily to disease in the organ itself, or were secondary disturbances the result of mischief elsewhere. Unless it could be clearly shown that disease existed in the stomach, any treatment of purely gastric symptoms would only be temporarily beneficial so long as the primary cause remained active. The difficulties which had to be encountered were always greatest in the initial stages of disease; and dyspepsia in its many phases was as frequently symptomatic of innocent as it was of malignant disease. As regards carcinoma, suspicions should always be entertained when marked symptoms of pain after food, occasional attacks of vomiting, and gradual emaciation were observed in patients over 30 years of age; and more especially so when these symptoms arose in patients whose health had been previously good, and in whom no cause for the symptoms could be discovered. The difficulties connected with early diagnosis in other diseases, such as chronic gastric ulcer and pyloric obstruction, were also dealt with; and, in conclusion, a general plea was entered for exploratory operations in all cases of intractable dyspepsias where a reasonable time had been exercised in the employment of the customary gastric remedies. A hearty vote of thanks was proposed by Dr. JAS. W. ALLAN and unanimously accorded to Mr. Maylard for his most interesting and instructive address.

SOUTH-WEST LONDON MEDICAL SOCIETY.—At the opening meeting of the winter session on October 9th, Dr. DUMVILLE ROE, the President, in the chair, a discussion on the use and abuse of forceps in midwifery practice was opened by Dr. M. G. BIGGS. Restricting his remarks to the application of forceps during the second stage of labour, he said that the parturient woman had a right to demand every alleviation which medical science had provided, such as anaesthesia, asepsis, and rapid delivery. If certain precautions were observed—(1) os fully dilated, (2) empty bladder, (3) membranes ruptured, (4) strict asepsis—no abuse was possible. The time at which the forceps were to be applied depended on the conditions in each case, while the old view that the application was to be delayed till signs of danger to mother or child were apparent was erroneous. Medical men were no longer old-fashioned accoucheurs — obstetrical passive resisters—watching the course of labour, but obstetrical surgeons whose duty it was to assist actively in the safe and early termination of labour. He also gave statistics from a large number of cases in his own practice showing that in multiparae he applied forceps in 7 per cent. and in primiparae in 30 per cent., and quoted other observers who had recorded as high a rate as 50 per cent. He dealt with the injuries to the child that might occur and with the comparative frequency of ruptures to the perineum. The discussion was continued by the PRESIDENT, who placed the percentage of forceps cases at 35, and referred to some neurotic cases in which spasm of the cervix necessitated the application of forceps before the os was dilated. Dr. AITKEN discussed the surgical injuries which followed the use of forceps, pointing out that cerebral haemorrhages were more likely to be obviated than caused by the early use of forceps. Dr. A. SWALLOW remarked that the old adage regarding meddlesome midwifery was now out of date; he held that the lower the head was in the pelvis when delay occurred the earlier the forceps should be used. He commented on the lack of practical training in their use given at the medical schools. Dr. DICKINSON referred to the possibilities of injury to the os uteri, and noted that the proportion of cases in which uterine inertia occurred increased yearly. Dr. GAY, who was in general agreement with Dr. Biggs, held that the judicious use of forceps aided in avoiding perineal ruptures. Dr. MCMANUS inquired as to the general use of anaesthetics with forceps, and pointed out that in some districts asepsis was an impossible ideal, while the results were not unsatisfactory. Dr. M. ROBINSON found that frequently the application of forceps above the brim ensured an easy delivery. He placed the percentage at 40, and thought that they might be used oftener with advantage. Ruptured perineum was often inevitable, and no comparison could be made because forceps were often necessary on account of the rigidity of the maternal parts. Mr. E. F. WHITE related that in successive periods his percentage of forceps cases had risen from 37 to 48. Most of his cases were under chloroform, and he looked upon a labour in the light of a surgical operation under the most stringent aseptic conditions attainable. He never regretted having used forceps. Dr. BIGGS, in summing up the debate, said that the majority of doctors evidently used forceps more frequently than in the past, and that with anaesthesia and asepsis no bad results followed to the mother or child provided the forceps were used as a tractor only, not as a lever or compressor.

HUNTERIAN SOCIETY.—At a meeting on October 9th Dr. F. M. SANDWITH delivered the First Hunterian Lecture on dysentery, considering the subject under two headings, bacillary and amoebic dysentery. Bacillary dysentery, he said, was seven to eight times less frequent in England than the amoebic type, and might be diagnosed by the isolation of the bacilli from scrapings of the rectal mucosa, from the stools, or by the agglutinative power of the serum. Treatment consisted in clearing out the bowel with castor-oil, magnesium sulphate, or calomel, rest in bed, and warmth. Antidysenteric serum, especially the polyvalent variety, had been proved to be of immense value not only as a curative agent, but also as a prophylactic. Amoebic dysentery was more chronic, and the symptoms to which liver abscess gave rise might be the first to call attention to the dysentery. Ipecacuanha preceded by a dose of laudanum, taken in diminishing doses every night for a week, as suggested by Sir Patrick Manson, was successful in most cases. Chronic cases were treated by copious enemata given with the hips raised, and might consist of quinine, silver nitrate, or copper sulphate, each in the strength of 1 in 1,000. The enemata should be given warm and retained for five minutes.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.—At a meeting on October 1st, the President, Dr. MAY THORNE, having given an account of the formation and early history of the Association and of its scope and future work, Mrs. DICKINSON BERRY, M.D., read a paper on the family history and home surroundings of children in the London centres for the mentally defective. In this was recorded the results of an inquiry into the family history of one hundred children in schools for the mentally defective and of an equal number of children attending ordinary elementary schools and living in the same districts. She emphasized the following points: (1) The homes of the defectives were characterized by poverty, dirt, and overcrowding to a much greater degree than those of normal children, even in the same streets. (2) The parents were of a distinctly lower type—25 per cent. were unable to read and write as compared with 5 per cent. of the parents of normal children. The fathers were largely engaged in casual labour, and frequently out of work. Alcoholism was undoubtedly common, but to exactly what extent could not be estimated. (3) There were more children born in the families of defectives, but a larger proportion died in infancy. Many of the brothers and sisters of defectives were stated to have been dull at school and unable to reach the higher standards; in several instances there was more than one child in a special school. (4) A family history of nervous disorders, such as epilepsy, insanity, and imbecility, was much more frequent in the families of the defective than in those of the normal children. A tuberculous family history was also more frequent among the defectives, but only to a slight extent. Mrs. Berry compared her results with those obtained in a similar inquiry made previously by Dr. Ettie Sayer. In the main the results were similar.

REVIEWS.

A NOVEL WITH A PURPOSE.

The New Religion[1] is an able but bitter and unjust attack on some aspects of modern medical practice. It is worthy of study by the profession, in order that we should learn to see ourselves as others (we hope only a few) see us. The picture presented by the novelist, as he puts it in a dedication, "for those who are sick; for those who believe they are sick; for those who want to live longer than other people; for nobody else," is a distorted and unreal picture. The mirror held up to this particular social phase of life has not reflected truly, and the story, while not at all sensational in its structure or its plot, is nevertheless constructed on the usual method of writers for effect, by concentrating in a single sketch all the horrors collected over a long time in a field as large as the civilized world. The method is superficially effective, but tends to destroy its influence by the very exaggeration on which it is built up. Satire, to produce its full effect, must conform to reason and survive analysis. Mr. Maartens has spoiled, in our opinion, what might have been a very useful book by striving after lurid effects. The story opens with a very charming picture of an ideal country home occupied by a young wife and a middle-aged husband. The wife breaks down with ill-defined, and we must say from a medical point of view very ill-described, nervous symptoms. The local doctor is called in, is puzzled, because he can find no obvious cause for the symptoms, and under pressure calls in a specialist, who, finding nothing to do for his branch of work, honestly says so, but recommends the greatest living nerve specialist, and then the horrors begin. The general practitioner, Dr. Rook, is a delightful sketch, simple, honest and wise, but rather overwhelmed by the greatness of the specialists. Indeed throughout the book the family doctor is always described as the honourable member of the medical calling. The great nerve specialist, Dr. Nathaniel Russett, is a contrast. He is *the* character in the book, and combines in his own person all the worst attributes of the medical adventurer. "He was a man of connoisseurships, but the culinary headed them all." So we are introduced to him while he is devising a new sauce. With a fine presence, a courteous and flowing mode of speech, and little conscience, he holds that "advertisement is the manure of a modern reputation," and admits to his wife that he is a gigantic humbug. The dread of his life is that his son, whom he has brought up to the profession, should some day find him out. Well, this man makes short work of the happy home. He recognizes the wife's case as one of neurasthenia, insists on removal to a sanatorium, and undertakes to get her received by a Dr. Vouvray in his home at Gringinges-sur-Aulch. It is to be a long and expensive treatment, a year or more, but the specialist is to have his percentage from his Swiss colleague. The poor husband sacrifices everything to save the wife, even to becoming a patient himself in order to stay in the sanatorium, ends by developing acute phthisis while there, and by so doing does more for her recovery than by all his sacrifices while alive. Dr. Vouvray is a strange compound of enthusiast and quack, whose theory is that as mankind came from the anthropoid apes they should, when broken in health, try and revert to the primitive habits and diet of their ancestors. "When the science of curing—which never was worth much—is become the science of living," then what he calls "the perfectly healthy life" will be attainable. Of course, Vouvray will not keep a consumptive in his institution for fear of infection, and so the husband and wife are packed off to the Riviera, where they fall in with another charlatan of "the Dosimetric variety," a Pole who is a more squalid specimen than any of the others. The great nerve specialist's son turns up opportunely at this stage, and shows all the fine qualities of sympathy and self-sacrifice which we hold are the general characteristics of the medical practitioner. The redeeming feature in the book is the delicacy and skill with which the author has drawn this young man, as a contrast to the older doctors, demoralized by success and money-making.

We will not spoil the story for readers by telling more of it, for the book should be read as an example of the kind of criticism and misrepresentation to which the profession is liable at the present time. It is always well to know the attitude of our censors. Medical men in all ages have come under the lash of the satirist, and probably, on the whole, with benefit to themselves and the public. The censors come and go, but the work of the doctor goes on steadily gaining more and more control over human ills, however zigzagging may be the line of advance. There can be no doubt that certain developments of modern specialism have given ground for criticism, such as we meet in the pages before us. The danger of the book consists in the fact that some people may read it as a fair description of the moral position of the profession. In that respect we emphatically repudiate it. It is a gross libel on doctors as a whole. There are very few men in this country, we believe, who correspond with the characters described by Mr. Maartens. The doctor who is a compound of recognized teaching ability, humbug in practice, and greed for commissions is an impossible being. The profession as a body is very jealous of its honour, and this corporate sensitiveness prevents many a weak and poor member from going wrong, and ruthlessly punishes malpractices when discovered. While we affirm this very strongly, we must admit that of late years the mixing up of commercial risks with medical treatment has had a bad effect. Private hospitals, sanatoriums, and nursing homes in medical hands, do inevitably tend to bring the commercial side of the work to the front. A man has to get a living and make his home pay its way, and so the temptation to keep patients longer for the sake of profit than is absolutely necessary for the sake of treatment necessarily comes in. We believe the temptation, whenever consciously recognized, is promptly resisted and overcome, but nevertheless, in our opinion, all such institutions should be under public control and management. They should be strictly organized for the public and not for private advantage. There are such increasing numbers of valetudinarians and nervous patients whose main trouble is that they have too much time to think of their ailments and too much money to spend on fashions in treatment, that health resorts and sanatoriums flourish. Chronic and incurable cases honestly treated will always be numerous enough to fill them, and, without incurring any just censure, the profession can use them. *Qui diverticulis aquarum aegrotos fallunt* was a saying in old Roman times, but neither then nor now has it been said with justice that medical men have been conscious impostors like the soothsayers of old. The gravity of the position is, as Dr. Russett puts it, "The world has given up caring about its soul; it has got all the more anxious about its body. The old beliefs have gone; your digestion's your conscience to-day"; and again: "Nobody listens to the poor dead parsons. *We* are the new infallible priests that ban and threaten a trembling world!" It is the dread of this priesthood which haunts the public mind to-day, and largely accounts for the jealousy of the medical profession and the tendency in Parliament and in all public bodies to check—we think with great unwisdom—the just claims of the profession to support and consideration. The *New Religion* formulates this view, and so may prove useful as a book after all, in setting thinking people to cogitate on a pressing problem.

[1] *The New Religion.* A Modern Novel, by Maarten Maartens. London: Methuen and Co.

TEXTBOOKS OF ANATOMY.

Starting originally as a comparatively small, though exquisitely clear book, Professor Cunningham's *Manual of Practical Anatomy*[2] has been regularly improved and kept up to date, and the fourth edition which has now appeared stands unrivalled as a handbook of human anatomy, adapted both for dissecting-room work and home reading. The plan of work adopted in the two volumes is that which is in vogue in the majority of medical schools in which English textbooks are read, and it is the one which has been proved by experience to be, on the whole, that which gives the best results, though it is possible that some of the details of procedure might be modified with advantage. In the present, as in the preceding

[2] *Manual of Practical Anatomy.* By D. J. Cunningham, M.D., D.Sc., LL.D., D.C.L., F.R.S. Vols. i and ii. Fourth edition. Edinburgh and London: Young J. Pentland. 1907. (Cr. 8vo, vol. i, pp. 639; vol. ii, pp. 616. 10s. 6d. per vol.)

editions, the first volume deals with the limbs and abdomen, and the second with the head, neck, and thorax. The two volumes have been thoroughly revised, but the most important alterations and additions are to be found in the sections devoted to the thorax and the abdomen, in both of which not only has the text been considerably altered and improved, but many new and excellent illustrations have been introduced, which will greatly facilitate the student's comprehension of a series of difficult relationships. In the former section the figures giving views of the thorax from the right and left sides, after the removal of the lateral portions of the ribs and the lungs, are particularly good, except that in the view from the right the terminal part of the vena azygos major appears to be running more to the right than it actually does in ordinary bodies; the figures of the heart are extremely instructive and excellently reproduced. We are glad to see that Professor Cunningham has introduced a figure showing a dissection of the auriculo-ventricular bundle of the heart, and a short account of the dissection necessary to expose it, but it seems a pity that the illustration showing the bundle should have been drawn from the dissection of the heart of a calf and not form a dissection of a human heart. Several new figures have been introduced in the abdominal section, and all are decided acquisitions from the point of view of the study of complicated anatomical relationships. The new account of the stomach is admirably conceived, and the definitions of the positions and characteristics of the pyloric vestibule and pyloric canal are clear and precise, but the student must not expect to find all specimens agreeing absolutely closely with the descriptions. There can be no possible doubt that this *Manual* will continue to hold the high position it has so deservedly gained.

It is not often that so great a change occurs in the passage of a standard textbook from one edition to another as that which we note in *Morris's Human Anatomy*.[3] Originally it was written by English teachers for English students, it was edited by a distinguished English surgeon and anatomist, and it was, we believe, entirely in the hands of an English publishing firm. Now, although the name of the original publishers appears on the title-page, a publishers' note, which takes the place of the editor's preface of previous editions, is signed by P. Blakiston, Son, and Co., and informs us that "the very favourable reception accorded to the previous editions of this work in America suggested the desirability of making the present (fourth) edition international in its character by placing it largely in the hands of an American editor and by securing the services of American anatomists in the revision or rewriting of certain sections." The result of this policy is that of the thirteen sections into which the subject-matter is divided three are written by English authors, one partly by an English author, and the remainder by American authors, some of whom have a world-wide reputation as anatomists, whilst others are scarcely known in this country. There would be no cause to regret this drastic change of authorship and editorship were it not that with the changed conditions of production the distinctive characters of the book have largely disappeared. Originally it aimed "at being a complete and systematic description of every part and organ of the human body so far as it is studied in the dissecting room"; and, in spite of the presence of other well-known textbooks of anatomy, it made a place for itself on the lines laid down. Now this primary characteristic of the original book is broken by the introduction of some fragments of histology and some disjointed notes on embryology. Originally the figures were clear, many of them were strong and effective, and their utility was enhanced by what was then a new and very useful mode of description. Many of the new figures are extremely flat, uninteresting, and poorly executed. With regard to some of them, it cannot be said that they have been well selected, though in other cases the idea is good, but its expression is unsatisfactory, and in some instances where the original system of description would have been invaluable another has been substituted, apparently with the object of saving space. On the other hand space is given up to a special article on the structures of the pelvic outlet. This is written by an author who thoroughly understands his subject, and is in itself interesting and instructive, but it overlaps considerably with the description of the perineum in the topographical section, in spite of the cross-references which have been introduced. We recognize the fact that the new authors have brought the articles up to date as far as details of description are concerned, but the contents of the present volume are less uniform in character than was the case in preceding editions. The special characteristics of the original book have been blurred, and the new illustrations compare very unfavourably with those in the more recent editions of other textbooks of anatomy.

[3] *Morris's Human Anatomy.* Edited by H. Morris, M.A., M.B., F.R.C.S., and J. P. McMurrich, A.M., Ph.D. Fourth edition. London: J. and A. Churchill. 1907. (Royal 8vo, pp. 1,550, figs. 1,025. 30s.)

NOTES ON BOOKS.

WE have received the first published volume of the *Cook County (Illinois) Hospital Reports*,[4] an advance dating from the reorganization of the hospital. The volume, which is compiled and edited under the direction of the Publication Committee of the visiting staff, contains no fewer than thirty-seven papers. Among the more interesting of these the following may be mentioned, but they may serve also as types of the whole:—Gross Abnormalities of the Appendix Vermiformis Noted in 3,550 Autopsies, by Dr. A. P. Heineck; Rare Pneumococcal Infections, with Report of Cases—Pneumococcal Peritonitis, Parotitis with Subcutaneous Abscesses, and Arthritis, by Dr. H. E. Wolf; Kernig's Sign, with Report of Cases where the Angle has been Accurately Determined. by Dr. J. L. Miller; a Case of Traumatic Brown-Sequard Paralysis, by Dr. J. Grinker; and Degenerative Changes in the Spinal Cord in Pernicious Anaemia, with Report of Six Cases, by Dr. J. R. Morrell. In the aspiration of the Cook County Hospital to rank in scientific output with the Johns Hopkins and the Massachusetts general hospitals we cordially sympathize.

The Midwives' Pocket Register and Casebook[5] has been prepared by Major R. J. BLACKHAM, R.A.M.C., to provide practising midwives with a portable substitute for the bulky official register. It certainly is portable, for it measures 5½ in. by 4 in., and is only ⅔ in. in thickness. It contains forms which, if duly filled up, are a complete record of labour and puerperium of 50 cases. In the interest of portability the space given for each detail is so small that fine penmanship is needed to keep it legible. The rules of the Central Midwives Board, with annotations by the author, are prefixed, and also some notes on the care of children. We feel bound to comment upon the instructions given as to the child's eyes. Two authors are quoted (p. 13): an English writer who says that if the mother has a yellow or white vaginal discharge, the vagina should be douched before and after rupture of the membranes with 1 in 5,000 biniodide of mercury solution, and immediately after the child's head is born its eyelids should be wiped clean, held open, and a few drops of the biniodide (strength of solution not stated, but we presume the 1 in 5,000 previously mentioned) dropped into them. The other authority quoted is an American, who says that "even when infection is not suspected one or two drops of a 2 per cent. nitrate of silver solution should be dropped into each eye." Might we suggest that Major Blackham should read Mr. Sydney Stephenson's paper on Ophthalmia Neonatorum and the discussion thereon published in the *Transactions* of the Obstetrical Society of London of 1903? He will there find it shown that the only solution which has proved as effective as the 2 per cent. silver nitrate solution is a 1 per cent. solution of corrosive sublimate; 1 in 5,000, either of biniodide or sublimate, is far too weak. He will also find a general consensus of opinion that the routine use of a 2 per cent. silver nitrate solution in every case of infection is impracticable, because it produces a transient slight conjunctivitis. As the reason for using it is one which cannot be explained to the patient, or if explained would hardly ever be accepted by her, the result of the routine use of drops which make babies' eyes sore would be that the midwife or young practitioner who did so would soon have few opportunities of preventing ophthalmia. We hope the author will pardon the emphasis we have put upon this small point; but the prevention of blindness is so important that we think those who teach midwives ought to be clear and certain as to their facts.

[4] Chicago: H. O. Shepard Co. 1906. (Roy. 8vo, pp. 320.)

[5] *The Midwives' Pocket Register and Casebook.* By R. J. Blackham, L.R.C.P., L.M., D.P.H., etc., Major, R.A.M.C. London: Bailey and Sons. 1907. (Cr. 16mo, pp. 50. 1s. 6d. net.)

THE ANNUAL REPORT OF THE MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD.

The following is a summary of some of the more interesting articles contained in the recently-issued Report of the Medical Officer to the Local Government Board for the year 1905–6:

Water Supply and Typhoid Fever.

The Senior Medical Officer, Mr. Power, directs special attention to this subject. Reviewing the epidemics of enteric fever at Basingstoke and Lincoln, accounts of which have been furnished by Drs. Farrar and Reece, he makes the significant comment that they "afford a useful lesson to local authorities taking over and developing public water sources originally established by private enterprise." In the case of Basingstoke, 170 cases with 15 deaths occurred in the town between September and November, 1905, an attack-rate equal to 15 per 1,000 of the estimated population; and in Lincoln, in the course of some six to seven months, more than 1,000 cases occurred, with 120 deaths, giving an attack-rate of about 19 per 1,000. The history of the outbreak at Fulbourn Asylum is also of grave significance. In 1902 the Board, in view of a report by Major Norton, Engineering Inspector, directed the attention of the Town Council of Cambridge "to the danger that exists of possible pollution to the asylum wells and those of the Cambridge Waterworks Company by discharge of untreated sewage from the asylum direct on to land having a chalk subsoil and in close proximity to the water supplies above mentioned." Much correspondence ensued, but without substantial result, until, early in 1905, there occurred a serious prevalence of enteric fever among inmates of the asylum. Thereupon the Board, at the instance of the Commissioners in Lunacy, directed Dr. Copeman to conduct an inquiry, with special reference to the question of sewage disposal at the asylum and possible danger therefrom to the Cambridge water supply. Dr. Copeman discovered that, owing to special hydro-geological conditions of the particular area on which the asylum sewage was being disposed of, and from which a large portion of the Cambridge water supply was being drawn, colouring matter in solution allowed to permeate into the soil of the asylum irrigation area was able to pass toward, if not into, the Fulbourn well of the Cambridge Water Company, and that it also passed into the asylum well, which drew upon the same basin of underground water. The danger, alike to the asylum inmates and to the town of Cambridge, was therefore obvious.

From the evidence furnished by these outbreaks, Mr. Power draws some conclusions of practical importance. They indicate that too little attention has hitherto been paid to possible sources of dangerous pollution in schemes of water supply submitted to the judgement of Parliament. It therefore becomes a question

> Whether antecedent to sanction by Parliament of powers of water supply sought by any company or local authority, inspection of the sources of such projected supply should not be undertaken by some responsible Government officer, whose duty it should be so to make report that the facts ascertained by him and his inferences thereon may be available to the Committee considering the Bill.

In their third report (1905) the Royal Commissioners on Sewage Disposal drew attention to the fact that water supplies are liable to other and serious pollutions besides those which can be dealt with under the Rivers Pollution Prevention Act; they therefore recommended the establishment of a central water authority exercising general superintendence over the whole country in regard to prevention of pollution of water. So far the Legislature has not found time for dealing with the matter. But "it is much to be desired," says Mr. Power, "as will appear from the above histories of particular public water supplies, that time should be so found, and with as little delay as practicable."

Navvies and Small-pox.

During the summer of 1905 the Board received information of several outbreaks of small-pox among colonies of navvies employed on large constructive works, such as railways and waterworks. In order to obviate further occurrences of the kind, a circular, prepared by the medical department, was sent to all local sanitary authorities calling their attention to the danger, and advising them to search for unreported cases and to provide hospital accommodation for the isolation of affected persons. A historical study of recent small-pox epidemics amongst colonies of navvies has also been made by Dr. H. F. Parsons, and forms the subject of a memorandum published in the present report. Dr. Parsons points out that small pox is one of the infectious diseases to which large colonies of navvies are especially liable. The conditions of housing of the navvies and their families, whether they be quartered in temporary huts or lodged among the permanent population, are often such as to favour the propagation of infectious disease; and the navvies themselves are often difficult to deal with, careless in their habits, and, since a sore arm interferes with their work, indisposed to submit to vaccination. In cases where timely provision of hospital accommodation has been made, the outbreak is generally stamped out in its early stages, but where the requisite accommodation is lacking the disease may attain large dimensions and be carried to distant parts of the country. It has also happened that though hospital provision has been made by the local authority, a dispute as to financial liability has prevented its use, with the result that the disease has spread. In several instances, Dr. Parsons observes, undertakers of large engineering works have admitted and carried out the principle of providing hospital accommodation for the isolation of infectious disease amongst their workmen, and in at least two instances the duty has been imposed on them by Parliament. Dr. Parsons suggests that the attention of Parliament should be drawn to the point with a view to the insertion in private Bills, in appropriate cases, of a clause requiring the provision of housing for the work-people, and of means for the isolation of cases of infectious disease.

The Meat of Tuberculous Pigs.

Owing to administrative difficulties arising in London with regard to the meat of pigs affected by tuberculosis, an inquiry into this subject has been undertaken by Dr. G. S. Buchanan. Stating in general terms the principal considerations which have arisen out of his investigation, Dr. Buchanan points out that owing to the apparent liability of tuberculosis to become rapidly generalized in the pig, the Royal Commission on Administrative Measures in regard to Animal Tuberculosis, in their Report of 1898, recommended that the presence of tuberculosis in any degree in the pig should entail rejection of the whole carcass for food. But whereas in London practically all the authorities concerned with meat inspection have accepted this recommendation as the basis of their administrative action, local authorities in England and Wales do not universally adopt this standard of judgement. Meat traders have become aware of this lack of uniformity, and have begun to recognize that carcasses of pigs which have suffered from tuberculosis in any degree are, in London, liable to seizure and condemnation. But even in London the system is not altogether satisfactory. The control exercised in this matter is mainly that afforded by the system of inspection adopted at the Central Meat Market at Smithfield by officers of the Public Health Department of the City Corporation. This control depends upon the examination of the dressed carcass by the Corporation's meat inspectors. But, owing to the conditions under which trade has to be carried on at this market, it is impossible for the inspectors to examine systematically every carcass, and Dr. Buchanan finds that opportunities exist by which the carcasses of tuberculous pigs may pass through without their condition being ascertained or brought to the notice of the inspectors. Moreover, a considerable quantity of pig's meat is sent to London traders without passing through Smithfield Market at all, and, except in one or two boroughs where special attention has been given to the matter, such meat is not liable to anything more than a remote chance of inspection by any officer of a public authority. Dr. Buchanan comments on this unsatisfactory state of affairs as follows:

> From the point of view of securing uniform observance of the recommendations of the Royal Commission of 1898 in regard to pigs, therefore, the present system of control in London is in the first place uncertain and weak in operation, and in the second place it is weak in that it is primarily dependent on examination of the dressed carcass and not on examination of the animal at a place where carcass and internal organs can be inspected together. It is

true that in the great majority of tuberculous pigs the presence of tuberculosis is shown in the dressed carcass on examination of the glands about the throat, but this circumstance appears to have led not infrequently to the systematic excision by meat traders of all throat glands, or to the practice of sending the carcass of the pig to the London market or retailer after detaching the head.

A good deal of the pork consumed in this country is received from abroad. Certain foreign countries, notably Denmark and Holland, have provided a system of official expert inspection of pigs, the meat of which is to be exported to the United Kingdom, the carcasses inspected bearing labels attesting that the animals have in each instance been examined by a qualified meat inspector and have been found free from tuberculosis in any degree. This is an excellent guarantee, but unfortunately it is not forthcoming in the case of all the pig's meat received from these countries. For example, in 1906 Dr. Buchanan found that side by side with the carcasses of Dutch pigs specially inspected before dispatch for England, other pigs from Holland which had been subjected to no kind of inspection habitually reached the London markets. In discussing the importation of frozen "box-pork" from the United States, Dr. Buchanan concludes with the following remark:

No examination that is practicable of "box-pork" in this country would enable the fact that particular portions of pork were derived from tuberculous animals to be ascertained.

With regard to meat of pigs coming to London from home sources, Dr. Buchanan recommends the adoption of a system of marking carcasses which would enable inspectors at Smithfield Market or in the metropolitan boroughs to recognize all pigs which have already been subjected to systematic examination at the place of slaughter.

(To be continued.)

FOUR YEARS' WORK WITH THE OPHTHALMIC HOSPITALS IN EGYPT.

IN a paper on Four Years' Work with the Ophthalmic Hospitals in Egypt, read in the Ophthalmological Section at the annual meeting of the British Medical Association at Exeter, Mr. A. F. MacCallan, F.R.C.S., Chief Inspector, gave a very interesting account of the ophthalmic hospitals in Egypt.

In the beginning of the year 1903 the Right Hon. Sir Ernest Cassel, G.C.M.G., gave a sum of £41,000 for the ophthalmic relief of the necessitous inhabitants of Egypt; Lord Cromer was appointed sole trustee, and his successor, Sir Eldon Gorst, K.C.B., has now taken his place. Under the advice of the Director General of the Department of Public Health a travelling ophthalmic hospital was organized, on the lines of the so-called "ophthalmic flying columns" existing at the time in Russia, and to this Mr. MacCallan was appointed Ophthalmic Surgeon and Inspector in 1903. His duties were to organize and administer the travelling ophthalmic hospital and to train in ophthalmic surgery Egyptian doctors attached to it.

Mr. MacCallan first made a general tour accompanied by his Egyptian assistant, formerly ophthalmic house-surgeon at the Cairo Government Hospital. By this tour he familiarized himself with the conditions under which the work would have to be carried on and obtained confidence that the scheme could be made a success. The first encampment, consisting of ten or twelve large Indian tents, was pitched in the neighbourhood of a populous town of the Egyptian Delta called Menuf in January, 1904. Mr. MacCallan's staff consisted of his Egyptian assistants and clerks, hospital attendants, servants, watchmen, etc. The routine at the first camp was practically the same as that which obtained at all succeeding camps, except that there was afterwards a larger staff of assistants.

AN OPHTHALMIC CAMP.

Mr. MacCallan describes the day's work as follows:

Clinical work commences daily at 8.30 a.m. by a visit to the in-patients' tents and is followed by two hours' operating.

The operations having been finished, the dressing of out-patient cases is proceeded with, and then the new cases are seen. Frequently there are at the present time as many as 200 new cases to be seen, and from whom the most urgent cases and those which will best repay treatment have to be chosen. As about one-third of all cases require operation, and as about 90 per cent. have trachoma, the treatment of all would-be out-patients is impossible. When the old cases, between 200 and 300 in number, have been treated, minor operations are performed in the theatre, such as scraping the lids for trachoma, etc., and the morning work ends at 1.30 or 2 p.m.

In the afternoon more detailed examination of interesting cases is made, office work is done, and the tents are prepared for the next day's work.

Each Thursday is reserved for refractions, so on this day no operations are performed and no new patients seen. Refraction cases are likely to increase very greatly in the future. Friday, being the weekly Government holiday, is a *dies non* except in so far as the dressing of in-patients is concerned.

Every patient treated at the hospital receives a numbered card and a leaden disc stamped with a number corresponding to the number on the card. Full clinical notes are written on each patient's card, which is kept at the hospital. At each visit the patient presents his number to the hospital clerk and receives his card, from which the surgeons at once learn the clinical condition and the progress of the patient. A record of every case treated is thus kept.

Each camping ground is occupied for a period of about six months, at the end of which time work is transferred to some other place. This is not because, even after prolonged stay in a place, there is any diminution in the number of people applying for treatment, but because we consider it only just, to give different provinces the benefit of ophthalmic treatment by the travelling hospital.

During the hottest summer months only rough house accommodation is used instead of tents.

Mr. MacCallan states that there is ample work for a permanent hospital in every large town. There never has been the slightest hesitation on the part of the people to visit the hospital for treatment or to submit themselves to whatever operation was advised. All patients are treated free, and are given lotions, etc., for home use. By far the greater number of patients appear to be very poor.

FUTURE DEVELOPMENT OF OPHTHALMIC HOSPITALS.

When the success of the experiment was assured, a second travelling hospital was, again through the liberality of Sir Ernest Cassel, rendered possible. During the last two years one of these hospitals has been working in Upper Egypt and the other in Lower Egypt.

Owing to representations made by Mr. MacCallan, the Egyptian Government has adopted the policy of building ophthalmic hospitals, one or more a year as the finances permit, and Mr. MacCallan received official rank for the purpose of controlling them, under the Director-General of Public Health. At Assiout, where one of the travelling hospitals remained six months, the inhabitants, seeing the immense amount of good which was being done, subscribed £5,000 towards building an ophthalmic hospital in that town.

Mr. MacCallan's staff at the present time consists of two English ophthalmic surgeons, four Egyptian surgeons, and a large clerical and hospital staff.

English Surgeons.—The number of English surgeons will not be increased. Extra Egyptian surgeons will be provided as the grants from the Ministry of Finance for each additional hospital are made, and as they become sufficiently trained in the special work. The duties of the English surgeons are to give instruction to the Egyptians and to be responsible for the clinical work of the camp they are in charge of. They have little or no administrative work. The posts are very valuable from the point of view of operative experience, as there is endless material always at hand. The posts are held for two years, during which three months' leave is granted on full pay. The pay, £E.500 a year, with the addition of two months' pay in lieu of travelling expenses to and from England, is sufficient to enable a man to save half his salary if he be so inclined.

Egyptian Surgeons.—The Egyptian assistants are paid at the rate of £E.220 a year on joining the hospitals, immediately after becoming qualified at the Medical School. They have usually at first no more ophthalmic knowledge than is picked up by the average medical student during his hospital career. Their interest in their work, which is often extremely onerous, their energy, and their progress are gratifying, and promise well for the future development of the scheme. They are not allowed to do private practice during two years of novitiate; at the end of this time they will be appointed to the charge of permanent hospitals as these hospitals are completed. The opportunities that the Egyptian

ophthalmic hospitals afford of acquiring experience of every kind, but especially operative experience, are, Mr. MacCallan believes, unrivalled. He hopes that in the future full advantage will be taken of these opportunities by Egyptians, and perhaps by Englishmen.

Clinical Work During 1906.

During the year 1906, 40,103 patients in all were examined at the hospitals, and of these 7,327 were admitted for treatment either as in-patients or as out-patients. The number of operations performed was 5,846, including minor operations (such as scraping the lids for trachoma) performed on 2,649 patients.

The number of patients with entropion or trichiasis seen during the year was 2,612, or 8 per cent. of all the cases seen; the number of cases seen in which operations for trichiasis had already been performed, generally by charlatans, and in which the condition had either not been cured or had recurred, was 1,693, or 4.25 per cent. of all the cases seen.

There is a great deal of glaucoma simplex in Egypt, but it is nearly always too late to operate when the patients present themselves for treatment. The number of cases of absolute glaucoma in one or both eyes was 701, or 1.7 per cent. of all the cases seen.

The number of patients blind in one or both eyes was 1,960, or 4.9 per cent. of all the people who applied for treatment.

During the year 1906, 657 cases of cataract were seen. Of the 487 cases of senile cataract 102 were operated upon, and of the 170 cases of soft cataract 123 were operated upon. In a large number of cases there was too severe a condition of trachoma to permit of operation being performed without a long period of treatment as a preliminary, and in many cases the cornea was greatly damaged.

Operations for Entropion.—The operation for entropion or trichiasis which is usually performed is a modification of Snellen's. About 2,000 of these operations were performed during 1906. As to this Mr. MacCallan states:

Snellen's operation is merely a modification of Streatfield's original entropion operation described by him in 1858 in the Royal London Ophthalmic Hospital Reports. An incision is made through the skin of the lid 2 or 3 mm. from its free border. The muscle is dissected from the tarsus and a horizontal wedge-shaped strip is removed from the tarsus immediately above the roots of the lashes. A needle carrying fine silkworm gut is passed through the lower edge of the skin wound vertically upwards, a bite of cartilage above the groove is taken horizontally, and the needle is passed from behind forward through the lower skin flap again. Four such sutures are inserted and then tied. A metal spatula (an improvement on the old shoehorn), made for me by Weiss, is used instead of a clamp. No sutures to approximate the skin edges are usually necessary, though they may be employed. The eyelashes, except those which are displaced inwards, are cut previous to the operation.

The advantages of this operation are many. It is applicable to a very large majority of the cases of entropion met with in Egypt, and being easily performed it can readily be learnt by inexperienced surgeons. It can be rapidly performed; in fact, both upper lids can easily be operated on in fifteen minutes by a moderately competent surgeon. A great effect can be produced in the way of eversion of the lid. The operation is applicable to both upper and lower lids. In a very few cases some lashes are still found to be inverted after the above procedure has been carried out; in these cases an incision through the mucous membrane along the free border of the eyelid immediately posterior to the lashes, as recommended by Agnostaki in 1857, completes the eversion.

There are, of course, a large number of modifications of these operations which we occasionally practise. Van Millingen's graft of mucous membrane from the lower lip is also frequently done, especially in cases where there is much contraction of the eyelid as the result either of disease or of an ill-planned operation.

Contraction of the upper lid, as the result of operations by charlatans for the relief of entropion, is very often seen. This operation is called the "reed" operation, and consists in the inclusion of a fold of skin of the upper lid between two pieces of reed the ends of which are tied tightly together; the result is that the fold of skin, having its blood supply cut off, necroses and falls off with the reeds, leaving a raw surface, which soon granulates and becomes covered with epithelium. The primary result of the inclusion of the fold of skin is the eversion of the eyelashes, a result which it is desired to produce; the secondary result is the shortening of the upper lid, often to such an extent that permanent lagophthalmos results, with consequent degenerative effects on the cornea.

Most of our lid operations in adults are done under the influence of adrenalin and cocaine injected hypodermically.

All operations on the lids are performed on out-patients, who go away after the operation and return to be dressed after three or four days.

As regards the treatment of trachoma I have nothing new to chronicle. We carry out surgical procedure of some kind or other on about three-quarters of the cases of trachoma that we treat, such as scraping, scarification, squeezing, or combined excision of tarsus and conjunctiva as performed by Kuhnt. I have radium at my disposal to the value of £150, but I am unable at the present time to pronounce definitely on its therapeutic value for trachoma.

Conclusion.

The amount of suffering relieved has been very great, and it will be increased with each new hospital. The principles of cleanliness are taught by excluding patients with dirty faces.

The prevention of trachoma seems almost a hopeless task among, at a rough estimate, the six million people infected with it. Comprehension of ophthalmic hygiene is not beyond the powers of boys now being educated in the Government schools. It is there that this must be taught by the practical treatment of the eyes of trachomatous pupils. In 1901, 51 per cent. of pupils in the Government schools in Cairo showed evidence of trachoma. In 1904, Mr. MacCallan, in the Government school at Damietta, found 56.9 per cent. showing evidence of trachoma; 9.7 per cent. had eye affection other than trachoma; 25.5 per cent. had gross corneal change sufficient to cause deterioration of vision.

An arrangement has now been made whereby the staff of the ophthalmic hospitals shall undertake regular daily inspection and treatment in October, 1907, at Tanta Government School. Mr. MacCallan hopes it will be possible in the future to provide for the efficient inspection and treatment of all the Government schools in Egypt.

THE CANADIAN MEDICAL ASSOCIATION.

[From our Correspondent.]

(*Concluded from p. 995.*)

Address in Pathology.

After the general meeting, Dr. Adami delivered the Address in Pathology in the Physics Building. He stated that he wished to draw attention to the fact that this was the first time that an address in pathology had been presented to the Canadian Medical Association, and that the section for laboratory workers was also an innovation. So great had been the interest taken in the section meetings that it had justified its existence, and would become a regular part of the Association meetings in the future. Pathology was the foundation of medicine, and as time went on the connexion between pathological and clinical work would become more and more evident to the general practitioner. Even the most technical and out-of-the-way laboratory findings and theories could be shown to be of practical value, and he had chosen his subject partly with the desire of demonstrating this fact. Notwithstanding this, however, it was evident that a special section was necessary for the discussion of such points, as many of them would be listened to with impatience by the physician and surgeon which would be of the greatest interest to the laboratory man. He considered that the interest of the general practitioner in things scientific was increasing, as evidenced by the large audiences which attended medical meetings, and listened attentively to the latest results of laboratory research. He felt sure that the new five-year course at McGill would tend to make such men. The idea of the extra year was not to crush in new subjects or to increase the laboratory work, but to render more thorough the practical work in medicine and surgery. To this end the whole time is to be spent in the hospital, from 9 in the morning till 5 in the afternoon; bedside work, care of cases, outdoor department, operating-room, clinical theatre, and clinical laboratory, will all receive their due, and the best kind of all-round man will be produced. Doubtless some of the colleges to the South can and will continue to furnish greater facilities for study in specialities and in special departments of laboratory work, but for the making of good general practitioners the opportunities will be unexcelled. Dr. Adami then proceeded with the main subject, namely, a discussion and demonstration of twins and double monsters, with an explanation of the laws of development. This most delightful lecture was

illustrated with lantern views, and began with a few words on the normal division of the impregnated ovum. This was followed by the usual explanations of the different forms of twin birth. Next was taken up the older theories explaining double monsters, namely, by double inclusion, which in the infolding process could only affect the head end. The method of growth in a plant was next touched upon, with its growing centre at the very tip, and the method by which branching takes place. This illustrated the theory which Dr. Adami so ably advocated. A growing centre of a similar nature could be imagined at each end of the germinal streak, and from this any form of double monster could arise by division at either or both ends. These various forms at different stages were well illustrated by the slides shown during the lecture. A vote of thanks was tendered at the close of the address, and the meetings of sections followed immediately.

Surgical Section.

Generalized Blastomycosis: Dr. Mackenzie (Toronto).

Sigmoiditis and Diverticulitis of the Rectum: Dr. Graham (Toronto).

A Contribution to the Diagnosis of Renal Tuberculosis: Dr. Campbell (Montreal).

Traumatic Myosteoma—Report of Three Cases: Dr. Archibald (Montreal).

Medical Section.

The Rights of Children: Dr. Hastings (Toronto).

The Defensive Action of the Products of Metabolism: Dr. Chambers (Toronto).

Some Experiences with Thoracocentesis: Dr. Hamilton (Montreal).

Metastatic Gonorrhoeal Inflammation of the Optic Nerve and the Retina: Dr. Byers (Montreal).

Notes on Gonorrhoeal Endocarditis: Dr. Mackenzie (Montreal).

Section of Laboratory Workers.

The Significance of Certain Chronic Glomerular Changes obtained in Experimental Nephritis: Drs. Dickson and Mackenzie (Toronto).

A Case of Calcification of the Kidney: Dr. Lundry (Montreal).

A New Test for Lactic Acid in Gastric Contents: Dr. McPhedran (Toronto).

Experiments with a View to Determining the Bactericidal Value of Solutions of Boracic Acid: Dr. Fyshe (Montreal).

Three Cases of Mould Infection: Dr. Keenan (Montreal).

In the afternoon, after the luncheon at the Montreal Hunt Club, there was tea at Sir George Drummond's country residence.

SECTIONS.

The sectional programmes were not very well carried through this afternoon, with the exception of that of the Laboratory Workers, which was completed in good time.

The following should have been read:

Surgical Section.

A Case of Rupture of the Bladder: Dr. Gibson (Belleville).

Operative Treatment of Diverticulum of the Bladder, with Report of Case: Dr. von Eberts (Montreal).

Some Cases of Chronic Pyloric Obstruction simulating Chronic Cholecystitis: Dr. Gourow (Montreal).

Notes on the Pathological Anatomy of Congenital Dislocation of the Hip: Dr. Turner (Montreal).

Thor Axenfeld Conjunctivitis: Dr. S. H. McKee (Montreal).

Medical Section.

Chronic Gastritis illustrating Difficulties of Diagnosis: Dr. Moody (Winnipeg).

Acute Dilatation of the Stomach and Intestines: Dr. Nichols (Montreal).

The Incidence of Chronic Gastritis: Drs. Martin and Tull (Montreal).

Hydronephroma of Adrenal, with Pressure Paraplegia from Metastasis: Dr. Finlay (Montreal).

Section of Laboratory Workers.

On the Protective Influences Exerted by the Iris in Perforated Wounds of the Cornea: Dr. Tooke (Montreal).

Exhibition of Tracings illustrating the Physiology of the Respiratory Centre: Dr. Morrow (Montreal).

Some Further Considerations on the Classifications of Tumours: Dr. Adami (Montreal).

Certain Considerations of the Technique for the Estimation of the Opsonic Index: Dr. Ross (Toronto).

The Effect of Anaesthesia on the Opsonic Index: Dr. Rankin (Montreal).

Necrosis of the Liver: Drs. McCrea and Klotz (Montreal).

The Relation of the Eosinophiles of the Blood, Peritoneum, and Tissues to various Toxines: Dr. Howard (Montreal).

Bacteriaemia, its Diagnosis and its Diagnostic and Prognostic Value: Dr. Guid (Montreal).

CLOSING ENTERTAINMENT.

In the evening there was a smoking concert at the Victoria Rifles Armoury, which brought to a close the meeting of 1907.

REMARKS.

On looking over the programme it is evident that the meeting of 1907 will be remembered for several reasons. First, the changes in the constitution and the discussion upon the establishment of a medical journal for the Dominion; then the formation of a section for laboratory workers, and an address in pathology. In the latter the Association was particularly happy in its selection of Dr. Adami as lecturer, and the impetus thus given to this branch of the work will doubtless carry the section through another even more successful session.

Dr. Adami's paper on some further considerations on the classification of tumours, was a contribution to the permanent literature on the subject. It was a continuation of the paper delivered a year ago, and was received with approval by all who were far from satisfied with former attempts at classification. Dr. Rolleston's paper will long be remembered by those who heard it, and for a time will remain the best reference to recent work on the suprarenals.

The choice of Ottawa for the next meeting place is popular, and Dr. Montizambert well deserves the honour of being elected President. Dr. Frederick Montizambert, D.S.O., M.D.Edin., F.R.C.S.E., D.C.L., etc., Director-General of Public Health and Sanitary Adviser of the Dominion of Canada, was born at Quebec in 1843, and is a grandson of Chief Justice Bowen. He was educated at the Montreal High School and Upper Canada College. His medical studies were undertaken at Laval and Edinburgh. He entered the public health service at 23, and was long connected with the St. Lawrence service. He was for many years surgeon of the Quebec Volunteer Garrison Artillery, served in the Fenian raid, and had his quarantine staff enrolled as a battery, which he commanded for some years. He is an ex-President and life member of the American Public Health Association, and a Fellow or honorary member of a large number of hygienic societies in Europe and America. He has written several papers on quarantine and public health topics.

It is expected that a record attendance will next year gather at the capital of the Dominion, as special efforts will be put forth to attract the medical men from all quarters.

FOURTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

[FROM OUR SPECIAL REPRESENTATIVE.]

(Continued from page 994.)

THE WORK OF THE SECTIONS.

Immunization.

WASSERMANN gave an excellent summary of the newer methods of immunizing. First he dealt with the work done in attempting to establish an immunity against malignant cells, and said that in animal experiment, it had been possible to produce changes by means of immunizing serum, in the character of carcinomata. He discussed the process of active immunization with killed or attenuated cultures, and detailed some of the well-known modifications. Prophylactic injections against enteric fever had led to satisfactory results as far as mortality was concerned. Immunizing with attenuated bacteria had proved better than with dead bacteria for plague. He proceeded to describe Loeffler's method of drying small quantities of dead bacteria and injecting them into the veins in order to prevent a marked reaction, and then discussed the attempts to separate the active antigen from those substances which act harmfully. Breiger's experiments showed that it was possible to obtain active extracts from living bacteria, and he was of opinion that the recognition of agressin methods had advanced the subject considerably. After speaking of the production of antiagressins from exudations taken from the infected cadaver, he reviewed briefly the question of dosage, and then passed on to phagocytosis. He regarded opsonin as being identical with Ehrlich's amboceptor. Without discussing Wright's theory, he simply described the method of determining

the opsonic index, and then mentioned the results obtained by this worker by vaccination with killed bacteria. With regard to tuberculosis, he raised the question of how long the bacilli could remain alive in an animal—a question which had not yet been satisfactorily answered. Many experimenters claimed that they had been able to produce immunity against tuberculosis. With regard to syphilis, he pointed out that the production of amboceptor did not necessarily mean that immunity had been obtained—that is, that the causal organism had been killed off. He thought that it was possible to produce an immune substance of syphilis without finally disposing of the spirochaetes. He spoke briefly of the advances made with regard to local immunity, referring to the work of Loeffler, Citron, and himself, among others. Passive immunity only occupied him for a few minutes. He recalled the work of Metchnikoff, MacFadyen, and others in respect of bactericidal serums.

Bordet also dealt with the subject in generalities. He spoke of the conditions which bring about attenuation of virus for the purposes of active immunization, and said that it was not yet known what were the substances in the cultures which produced immunity. The variety of methods of attempting to immunize against tuberculosis were due to this want of knowledge. Opsonin he regarded as identical with amboceptor or complement. He considered that the importance of agressins had been much exaggerated.

Paltauf also spoke on this subject, without elucidating any new facts.

Kraus (Vienna) spoke of the endotoxins of cholera vibrio, and also of typhoid endotoxin.

Möller dealt with active immunization with tuberculin. He regretted that tuberculin had been employed by so few practitioners. He had given over 30,000 injections, and had never seen any harm arise. He recommended it especially for patients who visit the doctor at his house. He divided his cases into two groups: those who reacted to the tuberculin, and these did best; and those who gave a negative result to the injection. He explained this want of reaction by presuming the presence of amboceptor in the blood of the patients. He had obtained 50 per cent. of good results in the first stage of the disease, and 36 per cent. in all stages, as against 10 per cent. without tuberculin.

Spirochaetes.

In the discussion on the pathogenic spirochaetes, Doflein spoke from the point of view of the biologist. He regarded them as taking a position midway between the bacteria and the protozoa, and preferred to speak of them as proflagellates. They multiplied partly by transverse and partly by longitudinal division. The transverse division was best marked in the smaller forms. In some what he regarded as multiple division could be seen. No sexual processes had been noted.

Levaditi spoke of the spirochaetes of recurrent fever, of the various forms of spirilloses, of yaws and of syphilis. Many of the spirochaetes had no distinguishable morphological characters. He described general characters and also the methods of staining and demonstrating the undulating membranes. Spirilloses were blood infections, and each species of spirillum had distinctive biological properties. Although they had not been cultivated outside the animal body, it had been shown that an immunity could be obtained by injecting dead microbes.

Haendel spoke of recurrent fever. Before commencing he asked to be allowed fifteen minutes instead of the allotted ten minutes, but this was denied him. Woithe spoke of the satisfactory results of the treatment of dourine with atoxyl, and Marcus Rabinowitsch, Loeffler, Manteufel, and Uhlenhuth took part in the discussion.

Syphilis.

Hoffmann stated that *Spirochaeta pallida* was found with great regularity in almost every lesion during the early stages of this disease, and could also be found in many lesions in the later stages. There was no longer any doubt that this spirochaete was the causal organism of syphilis. All attempts to cultivate the germ outside the body had so far failed, but notwithstanding it had been studied carefully, and sufficient had been made out to warrant positive statements as to its morphology and biology.

Zabolotny spoke of the agglutination of *Spirochaeta pallida* by the serum of syphilitic patients.

Metchnikoff then dealt with the prophylaxis of syphilis. He had experimented on monkeys in the Pasteur Institute during several years in order to determine whether it was possible to protect by chemical means against infection, since it appeared to him that this protection must be of importance in hygiene. He found that the application of an ointment containing at least 25 per cent. of calomel prevented infection, provided it were applied within a few hours of the inoculation. Weaker ointments were useless, and he mentioned various advertised quack remedies, some bearing his name, which had no action at all. Lately he had experimented with atoxyl instead of mercury, and found that a single dose sufficed to protect monkeys from the effects of inoculation. It was further found that the injection of atoxyl could be successfully carried out a week or even a fortnight after the inoculation. That the atoxyl had really neutralized the virus was shown by the fact that the monkeys could be reinfected with syphilis some months after the atoxyl treatment. He then spoke of giving atoxyl by the mouth, and concluded by saying that these preventive measures had been applied to man without any harmful effects following.

Bertarelli, speaking in Italian, dealt with the detection of *Spirochaeta pallida*. He was convinced of the specificity of this micro-organism. He detailed ultramicroscopic as well as staining methods.

Landsteiner of Vienna followed with some remarks on immunity and sero-diagnosis in human syphilis; an infection was followed as early as the incubation period by a stage during which no fresh infection was possible. This immunity, however, was not always complete, and freshly applied virus at times called forth certain symptoms which demonstrated that the virus had gained an entrance. The syphilitic person reacted to the virus in various ways corresponding to the state of his organism and to the presence of the toxins produced by the virus. In the tertiary stage the syphilitic reacted to the ordinary virus with tertiary symptoms. He dealt with the process of super-sensitiveness. While he believed that a primary and a tertiary manifestation of syphilis might appear simultaneously, he regarded this as extremely rare. Specific antibodies had been detected in the serum of syphilitic men and animals. These were partly germicidal and partly antihaemolytic. The latter might be utilized for diagnostic purposes, the process of complement deflection promising to be very useful. The method of the production of meta-syphilitic affections, such as general paralysis of the insane, tabes dorsalis, etc., had yet to be investigated, and he was loth to speak with confidence of the effects of the injections of attenuated virus.

Fleishmann and Michaelis took part in the discussion, but did not say anything new.

Pathogenic Protozoa.

Wasielewski then opened a discussion on pathogenic protozoa. He stated that the pathological importance of the coccidia had been considerably lessened since it had been shown that the disease *Dermathytis coccidioides* was not caused by any coccidium. A fraction of the cases of dysentery was caused by the *Endamoeba histolytica;* the majority of the cases were dependent on bacteria. Infection took place chiefly by feeding. Haemosporidia and flagellata were more important. The latter had claimed much attention, especially with regard to morphology and biology. Sexual dimorphism had been established for the trypanosomes.

Hewlett spoke of the danger of relying on morphological differences alone as guides in the differentiation of species. In the same way, although one group of parasites might be carried by similar hosts, this was not universal. In dealing with the malaria parasite, he raised the question whether this was a single species or three or more species. Evidence existed showing that double infection occurred, and inoculation experiments showed that the type of fever and of parasite might be reproduced in the inoculated individual. Different malarial fevers were accompanied by distinct blood changes. The variations in the morphology, movements, and developmental cycle of the parasites in the types of fever and in the blood changes led the author to believe that there were at least three distinct species—*Plasmodium malariae* of

quartan fever, *P. vivax* of benign tertian, and *Laverania malariae* of subtertian fever. The latency of malaria appeared to be due either to encapsulation (Bignami) or to the formation of unfertilized macrogametes. He next touched on the evidence of the existence of a true malarial toxin, and then passed on to the discussion of blackwater fever. So far no specific parasite had been discovered, but it would seem that the disease was related in some obscure way to malaria. He suggested in dealing with the Piroplasmata that their proper generic name should be Babesia. He dealt with a number of Piroplasmata of animals, and stated that, so far, human Piroplasmata had not been observed. Leishman-Donovan bodies of kala-azar and the cause of spotted fever of the Rocky Mountains were not of this species.

Insects as Carriers of Disease.

Dönitz dealt with Ixodidae (ticks), which carry both spirochaetes and Piroplasmata. These parasites not only multiplied in the ticks, but also underwent a stage in development, so that as soon as this stage was completed the parasites were again capable of infecting animals or man. The author mentioned certain forms of ticks which had been observed to carry certain of the spirochaetes and of the Piroplasmata. It was still doubtful whether different kinds of ticks could propagate the same disease, but this seemed probable, at all events for the *Argas* forms. There was still much to be learned of the stages of development of the parasites in the bodies of the ticks, and an extension of knowledge of the habits and kinds of ticks was desirable. It had been found that sucking of blood harmed the ticks; each tick could suck from 1 c.cm. to 4 c.cm. of blood. In conclusion, the speaker deplored the confusion which had arisen by the multiplicity of the names of ticks.

Galli-Valerio then spoke of apes as carriers of disease. They might act as direct carriers, but they might harbour insects which contained protozoa in a developmental stage, or the protozoa might go through the developmental stage in the insects and be then taken up and carried by the apes.

Nuttall said that *Glossina palpalis*, and probably other species of Glossina, captured in a wild state in places where sleeping sickness occurred, were capable of conveying *Trypanosoma gambiense*. The same held for *G. morsitans*, *pallidipes*, and *palpalis*, with regard to *T. brucei*, the flies being infective up to twenty-four hours, perhaps longer, after having been captured. *G. palpalis*, when transferred directly from sick to healthy animals, conveyed *T. gambiense* and the "jinja" trypanosome. The former also transmitted Abyssinian fly disease and mule disease trypanosomes after an interval of from six to twenty four hours. Stomoxys, when transferred from diseased to healthy animals, conveyed either *T. gambiense, evansi*, or the trypanosome of African camel disease. *Atylotus nemoralis* and *tomentosus* behaved in a similar manner with regard to the camel trypanosome. Rat fleas (*Pulex cheopis*) transmitted *T. lewisi*, and this, and to a lesser degree other species, transmitted *B. pestis* from rat to rat, and were the chief cause of epizootic plague in India. This flea had been found in various localities where plague occurred; it attacked and bit man.

Babinski, in discussing the foregoing papers, called attention to the common house-fly as a carrier of disease.

In replying, Galli suggested that the Section should recommend that experiments should be performed to determine how wards and *post-mortem* rooms could be best freed from flies; and further that the subject of the methods of extermination of flies and other insects should be discussed at the next Congress.

Before the Section I closed this discussion M. Metchnikoff proposed that a wreath should be laid on the grave of that eminent investigator of syphilis, Fritz Schaudinn. This was unanimously agreed to.

Foodstuffs.

The question of the addition of preservatives to food was brought up for discussion and many members spoke on the subject. It was opened by Lehmann, who dealt with a number of chemical agents used for preserving foodstuffs, but did not utter any fresh opinions. Blauberg and Kerp followed.

Dosquet-Manasse said that there were many preservatives which act well, but could not be regarded as satisfactory on account of the over-cooking required. The preserving industry had undergone a great change by the giving up of the antiseptic methods which altered the natural constitution of meat and by the adoption of an aseptic method which he had introduced. His experiments showed that meat boiled in a saucepan was germ-free. The meat, as a rule, was reinfected in passing from the saucepan to the preserving tins in the factories. He described an apparatus which permitted of the cutting off and packing of pieces of meat, without being touched by hand, the whole process taking place in a space filled with filtered (that is, sterile) air. He alleged that by this method meats could be preserved retaining a full fresh flavour, and could be sold cheaply.

Kerp spoke of the presence of sulphurous acid in foodstuffs. After discussing the conditions under which it was met with, he turned to the chemical condition of the acid. In most foods (save meats) it was bound to aldehydes, sugars, and similar substances. In wine acetic aldehyde sulphurous acid was met with, in dried fruits glucose sulphurous acid, and in other foods complex combinations of sulphurous acid and formaldehyde, benzaldehyde, acetone, and also arabinose were found. In aqueous solution these compound acids underwent spontaneous dissociation, and free sulphurous acid as well as the organic component were split off. It was possible, therefore, to determine by chemical experiment the degree of toxicity in each case.

Holst, Abel, Rost, Hüppe, and Gruber took part in the discussion which followed, the chief points dealt with being the addition of peroxide of hydrogen, formaline, sulphurous acid, and fluorine compounds to foodstuffs.

Diet and Metabolism.

Flinker spoke of the effects of fasting on the health. His experience of ritual fasting in the Greek Church led him to deplore the strict rules, but he realized that it was useless to attempt to persuade the uneducated masses to follow hygienic rules. During the fasts, which in the course of the year amounted to about four months, neither meat nor milk was allowed. The effect on the general nutrition, on the mental condition, on the frequency of epidemics, especially of typhus fever, on the mortality, and on the morale of the people was terrible.

Rost said that Pettenkofer-Rubner's respiration apparatus determined the carbon dioxide and aqueous content of the respired air sufficiently accurately for practical purposes, but for general use the investigator should be prepared to gauge the limits of experimental error, and he exhibited a number of tables which illustrated these points.

Trommsdorf dealt with a test for pus, leucocytes, and micro-organisms in milk. He simply centrifugalized the milk and measured the sediment in a graduated capillary tube. When pus and streptococci were found the existence of inflammatory processes in the udder might be assumed. The test could be rapidly carried out.

Rost, Hesse, and Franz demonstrated some photographs of the spectral analysis of blood.

In speaking of the minimum intake of proteid necessary for health, Rubner said that the question must be regarded from two points of view. In the first place, the smallest amount which would prove sufficient in a laboratory experiment must be determined, and in the second place the minimum amount necessary for the masses. In the first case the test person fasted and the amount of nitrogen excreted was estimated, and from this the corresponding amount of proteid was calculated. Only adults could be used for such experiments. The amount of excreted albumen during fasting varied considerably. Part could be covered by the intake of carbohydrates and fats, and the remainder must be regarded as the minimum of necessary albumen. The form of proteid taken was of importance. When given in the form of potato, 37 grams of pure albumen sufficed, while in the form of bread 81 grams were necessary. On an average, 57 grams of proteid derived from a mixed diet were required to maintain the weight and working capability of an adult weighing 70 kilos. In dealing with the proteid for the masses, he pointed out that it must be palatable, sufficient, and assimilable. Meat answered this purpose best of all foodstuffs. He considered that for a person who worked for an average number of hours daily, the

amount of albumen should be 131 grams, while 118 grams must be regarded as the minimum. The excess over the amount necessary in the laboratory experiment served partly as a safety valve and partly to cover the increased needs of heavier work.

Forster (Strassburg) expressed the opinion that certain combustible components of foodstuffs and of the body tissues, with regard to which there was as yet little exact knowledge, played an important part in nutrition. Pigeons could be kept alive when fed exclusively on wheat, but if the wheat were extracted with dilute acids the pigeons died in from three to four weeks; if the substances thus extracted were added to the treated wheat death still occurred. This proved that the elementary ash must be combined with the cell in order to be utilized. He then turned his attention to those substances which had a special function in the body, such as ferments, internal secretions, and protective bodies. They contained nitrogen, and were presumably proportionate to the amount of albumen dissociation. Fats could not be utilized to a full extent as long as the body was kept on a minimum of proteid. Animals which were underfed for a considerable period could not always be refattened. In conclusion, he dealt with the diminished production of agglutinins during underfeeding, and on the opsonic index of the serum of animals kept on certain forms of diet.

Hindhede (Denmark) thought the German farmer gave his cows too much albumen. He believed that it was practically impossible to reach a minimum of albumen intake even with a mixed diet; he had kept his family on food which cost him 15 pfg. (about 1½d.) a head per diem for years, and they had remained healthy. His wife had been able to ride from 80 to 100 kilometres a day on her bicycle on this diet without difficulty. In his opinion meat and beer were extravagant foods from the point of view of their caloric value.

Hirschfeld did not think that much attention should be paid to the results obtained in laboratories, and Caspari had satisfied himself that violent athletic exercise was possible with a very small intake of proteid.

Hüppe disagreed with the extreme views expressed, and considered that as long as the albumen intake was kept in excess of the minimal requirements, work might be changed without special training.

Von Wendt stated that a diet containing too little phosphorus prevented the body from absorbing the iron contained in the food. He regarded it as essential to give a certain quantity of meat which contained plentiful quantities of phosphates for this reason.

Jürgensen was of opinion that the temperature to which the food was raised was important with regard to the effect on the quality of the albumen. Strauss recommended for the masses bread baked in buttermilk, as it contained more albumen than ordinary bread.

Blauberg, Marcinowski, Albu, and Moll-Weiss also took part in this discussion, and Rubner and Forster replied. In connexion with this discussion several speakers dealt with the subject of scientific cookery, a subject which all agreed was practically non-existent.

Alcoholism.

The subject of alcoholism also gave rise to lively discussion. Mayer dealt with alcoholism from the point of view of the physiologist. It was quite possible that alcohol was produced in small quantities in the cells, being derived from the combustion of carbohydrates. It was in its turn burned up, and liberated a corresponding amount of heat. In this way alcohol could replace an equivalent amount of fat or carbohydrate. This meant that alcohol was capable of producing a certain amount of energy. A cell which only produced enough heat to keep itself alive could be rendered safe by alcohol. Nevertheless, alcohol was not a food which could be used regularly as such, for it could not be stored up and used when required, but had to be burned up at once. It was important that the intermediate products should be dealt with properly. This was not so with alcohol. With regard to the toxic effects, he found that while glycerine, cystin, and sugars were soluble in water, alcohol was not only soluble in water, but also in fats. It could therefore penetrate into the fatty constituents of the cells, and thus act directly on the cell protoplasm. It did not act chemically, but physically. This penetration rendered the cell membrane abnormally permeable, and thus the metabolism between the cell and the surrounding lymph was enormously increased. When the alcohol had been burnt out, the cell had lost nearly all its energy. Turning to the increased muscular activity alleged to occur after the intake of alcohol, he stated that this could be explained (1) by the increased metabolic processes in the motor regions of the central nervous system, (2) by the diminution of the tiring reflexes, and (3) by the increase of the output of energy. The strengthening of the cardiac and circulatory activity was due to (1) a primary increase of the volume of blood passing through the heart, and (2) the improved conditions of nutrition caused by the increased amount of blood in the arteries. He regarded the changes found in the tissues of chronic alcoholists as being due to the effect on the cell membranes.

Moelli maintained that the increase of strength after alcohol was only a deceptive subjective sensation, and that the habit of taking alcohol for the sake of sociability was absurd. Alcohol was not utilizable as a food, and as a tonic it did harm. He thought that children should not be allowed to take alcohol, and in connexion with this that more care should be exercised in prescribing alcohol as medicine. Good drinking water and free hot water for coffee, tea, soups, etc., should be provided, and the sale of alcoholic drinks in canteens should be limited to the evening, and then only in connexion with meals and in the form of weak alcoholic drinks. Dwellings should be improved, so that the temptation to wander into the public-houses would be lessened, and excursions, sports and games of all kinds should be organized, at which alcohol-free drinks only should be supplied. He dealt with the pernicious regulation of some halls, institutes and restaurants, in which the customer was forced to partake of alcoholic beverages, with the value of organizations to explain the pernicious effects of excess and drunkenness, and with the laws respecting drunkenness. He discussed the psychopathic effects of alcoholic indulgence, and contended that it was especially spirits which ought to be forbidden in this class of person. Lastly, he spoke of the institutes for the treatment of alcoholism.

Triboulet dealt with the connexion between alcoholism and tuberculosis. The beneficial effects of alcohol in tuberculosis were very doubtful, while the harmful effects of alcoholic drinks on the tuberculous were seen daily. The measure of the harmful action did not depend only on the dose of alcohol, but also on the resistance of the organism. This resistance was proportionate to the functional activity of the liver. When the liver did not perform its work satisfactorily, the resistance toward all noxes, and especially toward tuberculosis, was diminished. French clinical teaching went so far as to say that the progress of tuberculosis was almost an index of the function of the liver. He deduced from these considerations that the struggle against tuberculosis should not be limited to the improvement of the hygienic conditions of houses, food, and industries, and to the removal of overfatigue and want, but should seek as a primary principle to introduce temperance.

Vogt then read a paper which should have been delivered by Cramer. It dealt with alcoholism as a sign of a psycho-pathological disposition. The resistance of alcoholics was diminished. About 60 per cent. of all alcoholics were influenced by heredity, and he held there was an endogenous cause of alcoholism—alcohol being the cause and not the result of race degeneracy. Persons not predisposed could be turned into drinkers by the giving of alcohol in early childhood, and by the ease with which alcoholic drinks could be obtained. Closely connected with this was the frequency of insufficient nourishment and unhygienic dwellings. Not only large but small quantities of spirits acted harmfully. Excess was difficult to define, but any quantity which left any traces in the organism after the time of drinking had passed was excessive. In conclusion, the presence of other chemical substances, such as fusel, in alcoholic drinks was briefly dealt with.

The discussion which followed was long and lively; Bonne, Ike, Delbrück, Flamme, Marcinowski, Hindhede, Hüppe, and Reiche spoke. There appeared to be a fair degree of unanimity as to the pernicious effects of alcohol, the differences of opinion being limited to the advocating of total abstinence, of temperance, and of careful use as a medicine. No new physiological or practical facts were elicited.

ENTERTAINMENTS.

On Thursday evening the members were offered two gala performances—one in the Opera and the other in the "Schauspielhaus." The delegates and press correspondents were presented with free tickets, while others paid a small sum for each seat. In the Opera Wagner's *Tannhäuser* was performed. Kraus took the title rôle, but his voice showed evidence of tiring, the inequality of the notes being at times very noticeable. Frau Krull of Dresden sang the part of Elizabeth in a manner which was almost perfect, and the rest of the artists also sang and acted extremely well. The orchestra was exceptionally good, and the *mise en-scène* excellent. The house was packed, the royal box being the only unoccupied space to be seen. Uniforms of various countries lent a brilliancy to the audience, which one only rarely sees. In the Schauspielhaus an excellent performance of *Die Rabensteinerin* was given to a highly appreciative audience.

On Saturday evening, the medical profession of "Larger Berlin" entertained the Congress in the Exhibition Hall in the Zoological Gardens. The Hall is immense, but was not a bit too large for the masses which streamed in at the appointed hour of 9 p.m. At least 2,500 persons, if not more, must have been present, and all found sitting room at tables laid for ten or twelve apiece. At an early hour Professor Lassar attempted to deliver a speech from the gallery, but the proportions of the hall were too much even for his powerful voice, and few heard what he said. The evening was pleasantly spent in conversation, in partaking of refreshments, and in attempting to listen and watch the various entertainments which were rendered by a number of troupes, by a cinematograph, by a military band, and by various performers. One of the most popular "turns" was a song sung by the whole of the audience to a well-known melody, the words of which were composed for the occasion by Professor Posner. The first line of each verse was rendered in Latin, the second in German, the third in English, the fourth in French, and the last in Italian. And the verses were in rhyme as well as in rhythm, strange to say.

Vivant omnes hospites,
Alle werten Gaeste!
We have studied all the week
Au progrès du bien public
Qui si fanno feste!

At 9.30 Sir F. Lascelles received a number of the English delegates and Press members at the Embassy. Assisted by ladies and by Count de Salis, Sir Frank engaged his guests in conversation, and a very pleasant couple of hours were spent by all.

On Thursday evening His Highness the Crown Prince entertained the foreign delegates at his palace. Dr. Whitelegge was the British delegate, while other countries were represented by one or more of the Congress delegates. Each guest was introduced by Prince zu Schönaich-Carolath, and the Crown Prince engaged freely in conversation at times in English, at times in German, and at times in French. At dinner he sat between von Juraschek (Austria) and von Berthensen (Russia). The band of the 4th Grenadier Guard Regiment was in attendance. The guests all expressed themselves charmed with the delightful hospitality of their royal host.

THE LANGUAGE DIFFICULTY.

It may be said that on the whole little new was brought to light during the week—but in spite of this many of the discussions may prove useful as a means of an interchange of opinions and views. It could be noticed with regard to the question of language that English was little understood. In the plenary session when Haldane spoke, only a small fraction appeared to be able to follow, and in the Sections the same effect was noted. French was better understood, the greater part of the members apparently being able to grasp what was being talked about. One or two speakers addressed the audience in Italian, but this, too, was not largely understood, in spite of good delivery and simple language. BERTARELLI was one of those who spoke in Italian, and he found it necessary to give a brief summary of his speech afterwards in French. As usual, a large number of the speakers wished to occupy more than the allotted time, and it generally seemed that those whose communications were neither new nor particularly interesting always were the longest-winded. NUTTALL was exceptionally happy in his speech on insect carriers. He spoke in good German, and only read a brief summary, relying on the full paper being read when the Congress transactions appear. With regard to the delivery it may be said that the best speeches, from the point of language, were delivered by Frenchmen. In not a few cases even a dramatic tone was indulged in, which led to applause, even if it did not always lead to conviction.

GENERAL ORGANIZATION.

A word must be said on the general organization. Professor Neitner, who received his title of professor during the week, must be heartily congratulated on having managed the Congress in a most exemplary manner. Always courteous and level-headed, he withstood all the difficulties which arose during the early days, and performed a very difficult task excellently. The fact that over 4,000 members took part in the Congress, and the fact that many of the social functions could only be opened to a few hundreds, rendered it impossible to please everybody. One defect which was remedied at the eleventh hour was that sufficient places for the work of the press members were not prepared. However, press rooms were opened, and as far as could be ascertained, press members received invitations in time for everything. At the international Medical Congress in Lisbon, a room, boldly marked "Press," was set aside, wherein pigeon-holes for each paper or journal were to be found. In these pigeon-holes members reading papers laid abstracts. Such an arrangement might with advantage have been made at this Congress. Perhaps in future it will be carried out. Apart from the organizing work of the Sections, of the general meetings, and of the general entertainments, three other branches of work were ably and thoughtfully worked out. The first of these was the organizing of parties to view the various establishments in Berlin and its neighbourhood. In some cases the number of members in one group was too large, and in this way it was not possible to study each institute in detail. But on the whole, the tours of inspection were carefully planned and chosen, and the hours thus spent were well spent. The second branch was the careful organization of the exhibition, which cannot be too highly praised. No trace of trade advertisement, no littering of worthless pamphlets, and no exhibits which were out of place were included. The third branch was the organizing of visits to places of interest and arranging for the comforts of the lady members by the Ladies' Committee. In turns, one of the members of the Committee took charge of a party of members, and led them to hospitals, infants' and mothers' homes, big and incomparably artistic shops, and the like. These ladies were excellent guides, and those who joined the parties returned full of enthusiastic admiration.

The ladies in the Central Bureau, and the gentlemen too, deserve a special word of notice. The former were especially helpful to the many who found themselves in need of assistance, and it must be recorded that these ladies proved themselves mistresses of a surprising number of languages. They are further to be congratulated on having exhibited a talent for management, by always having some method of solving difficulties.

(To be continued.)

ROYAL COMMISSION ON VIVISECTION.

(Continued from p. 998.)

THIRD REPORT.

THE Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till the evening of Thursday, October 3rd.* We continue our abstracts of the evidence.

ANTIVIVISECTIONIST TESTIMONY.

Evidence of Miss L. Lind-af-Hageby.

The witness said she was a native of Sweden but had been living here since 1902. She had taken a great interest in the vivisection question since 1900, and had taken an

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active part in the agitation for some seven years. She studied physiology simply for the purpose of assisting her action on the question of vivisection. She and Miss Schartau were confirmed antivivisectionists before they came to England; they were joint authors of the *Shambles of Science*, which was written as a protest against the cruelties of vivisection, the callousness of vivisectors, and the demoralizing effect of vivisectional demonstrations before students. The book threw light on the manner in which the provision of the Act of 1876, that only experiments which were "absolutely necessary for the due instruction of the persons to whom such lectures are given" was interpreted. Their experience as recorded in the book showed that a great many experiments were performed before students which could not be justified under the words of the Act. As an instance, she had mentioned the injection of diseased spinal cord matter taken from a lunatic into a dog. Her argument was supported by the fact that the experiment had no therapeutic value whatever; further, that it was not absolutely necessary to demonstrate it from the physiological point of view. Professor Halliburton, who conducted this demonstration, in his *Handbook of Physiology*, referred to the test for cholin; and he said the cholin might be tested in two ways, by a purely chemical test and by a physiological test; but (in the witness's opinion) as there were the two tests, he might just as well have chosen the purely chemical test. The choice of what was absolutely necessary seemed to depend upon the individual taste of the physiologists who were lecturing and demonstrating. Thus Dr. Bayliss, during the Bayliss *v.* Coleridge trial in 1903, referred to his particular experiment upon which the action was based as one that was "absolutely necessary"; whilst Professor Gotch, during the trial, said that that particular experiment was not included amongst those which he showed to his students. Her next point was that incomplete anaesthesia was frequently advised in the textbooks. One of the most important lessons to be drawn from a study of these textbooks was the utter inadequacy and unreliability of vivisectional anaesthesia as a means of abolishing pain. "The sleep of anaesthesia is a pathological condition due to the action of a poison," said Professor Halliburton in his *Handbook of Physiology*, and experience of vivisection as it was taught and carried out showed that experiments frequently required partial or perfect freedom from that condition. Instead of warning students against cruelty, some textbooks deliberately advised light anaesthesia, and warned their readers against employing anaesthetics in a manner which would bring about deep anaesthesia. Asked for the page of the book referred to, she said she had forgotten the page. On the Chairman putting it to her that she only read part, she said the rest was her own; it was badly read by her. She then drew attention to Professor Brodie's book, *Essentials of Experimental Physiology for the Use of Students*, in which he expressed his preference for light anaesthesia and curare in the following terms, at page 176, dealing with stimulation of the sciatic nerve:

> Often, too, struggling movements are produced, especially if the animal be only lightly under the anaesthetic, when, with each convulsion, the blood pressure rises considerably. The only completely satisfactory method of obtaining a pure pressor effect is to previously curarize the animal;

and at page 202, dealing with the superior laryngeal, he said:

> We may stimulate this nerve in two ways. We may imitate the normal method by introducing into the larynx a curved probe whose end has been wrapped in cotton wool. In this instance, and, indeed, for all these nerve stimulations, the rabbit must not be too deeply under the anaesthetic.

She did not mean to suggest that Professor Brodie was advocating that the rabbit should still be sensible to pain, but that vivisectional anaesthesia was exceedingly unreliable, as the deeper stages of surgical anaesthesia were not compatible with physiological research. She went on to quote passages from Stewart's *Manual of Physiology* and Waller's *Exercises in Practical Physiology*, and said she meant to suggest that all these implied the induction of an anaesthesia which, from the humane point of view, was unreliable because it was too light. Asked by Sir John MacFadyean if she would admit that there was any point in the argument if the authors of these books told them that when they said the anaesthesia was not to be too deep they never for a moment intended it to be so light that the animal was to be conscious, the witness replied that she admitted that the defenders of vivisection would say that; but her point was that vivisectional anaesthesia was unreliable, because the scientific requirements did not tally with the humane requirements, and because these scientists would always rather follow the scientific requirements than the humane ones. She meant to suggest from the antivivisectionist point of view that it was very likely that the animal was insufficiently and improperly anaesthetized. Asked by Colonel Lockwood why she said it was "very likely," she replied because she knew something of the difficulties of anaesthetizing generally; and from her experience of vivisectional anaesthesia she knew how that was practised too. They knew that anaesthesia was always fluctuating between deep and light, and that therefore the tendency would be towards the light, towards the return of consciousness, rather than towards the total and permanent abolition of consciousness. Asked by Dr. Gaskell if she did not know that in the kind of experiment which she had quoted there was a difference in the result according to the amount of anaesthetic given—that it was a difference in the pressor or depressor effect, and also in the action of the nerves on the vasomotor centres, and that if there was any pain the experiment could not be carried out at all—she said she did not think that was so. Her next point was that there were cases where even no anaesthesia was spoken of as a condition that was quite likely to be necessary. It was certainly not only light anaesthesia that was advocated in these textbooks; sometimes they calmly described the course of experimental results in unanaesthetized animals, or pointed out that better results were obtained if no anaesthetics were employed. As an illustration she quoted from a *Manual of Physiology*, by G. N. Stewart (fifth edition, pages 137-8). Dealing with the depressor nerve in the rabbit he said:

> Excitation of its central end causes a marked fall of blood pressure, accompanied by, but not essentially due to, a distinct slowing of the heart. If the animal is not anaesthetized there may be signs of pain, and for this reason the depressor has sometimes been spoken of, somewhat loosely, as the sensory nerve of the heart.

Her suggestion here was that experiments on unaesthetized animals productive of pain did not seem to be an impossibility to teaching vivisectors, nor did they withhold information. In reply to the Chairman, who asked whether the writer might not be describing observations made when he had seen such operations performed in France or Germany, she said she could not possibly say what Professor Stewart meant to infer; she must leave it to the Commission to draw inferences. On Sir John MacFadyean putting it to her that she had read this evidence with the object of getting the Commissioners to draw certain conclusions, she said, Certainly. Asked if she wished them to conclude that the writers had actually performed, or that any other licensed person had performed, painful experiments without anaesthetics, she said she wished the Commission simply to draw the conclusion first, that experiments were desirable under light anaesthesia; and, secondly, that there were cases where no anaesthesia was scientifically preferable. The witness proceeded to quote a number of passages from works by Flint, Leonard Hill, Pawlow, and others, and contended that in practice pain was considered a lesser evil, and whenever there was a conflict between moral and scientific claims, the vivisector preferred those of science. Asked by the Chairman if she meant that the English vivisector, when he could get a better result with pain, defied the law, she said, Yes, she assumed that. She had a right to assume it at the present moment, because Professor Starling had said before this Commission that, were there no such things as anaesthetics, he would yet admire the man who performed experiments without anaesthetics. In reply to the Chairman, who said that that was quite a different thing she said, No; it was the same thing. Being pressed on the point, she said she was not at present suggesting that anybody broke the law. On the Chairman pointing out that she used an argument which had no force whatever unless she were suggesting that, she said she had come to bring evidence of the existence of pain even in England. Being asked for real facts, not suggestions, showing that such operations were performed, she said that with the defenders of vivisection

cruelty was generally interpreted as the unnecessary infliction of pain and suffering, whilst in their opinion the supposed necessities of science at once justified the infliction of pain and suffering. Foreign textbooks showed great frankness in connexion with the priority of scientific considerations to moral ones. Her next point was in connexion with vivisectional anaesthesia and the *Shambles of Science*—that is, that the use of morphine as an anaesthetic for vivisectional operations, especially when combined with curare, constituted cruelty, and that such use of morphine was illegal under the present Act, as morphine was not, in the words of the Act, an "anaesthetic of sufficient power to prevent the animal feeling pain." Even in experiments before students morphine was used. She had seen severe experiments performed under morphine—for instance, one described in the *Shambles of Science* under the title "An Experiment that is Not Supposed to be Useful." This experiment, which involved opening the chest of a dog widely, removing the ribs, setting up artificial respiration, enclosing part of one of the lungs in an oncometer, and stimulations of various kinds, was, according to the lecturer himself (Dr. Brodie), performed under morphine. Other severe experiments described in the book were, in the words of the lecturers, performed under "morphine and scarcely any anaesthetic at all," and under "morphine and a little chloroform." In reply to Sir John MacFadyean, who asked if the animal was curarized, she said nothing was said about that. Asked if that was the experiment of which she said in the *Shambles of Science* that "we can be almost certain the dog has been also curarized," she said Yes. On its being pointed out to her that a minute before she had stated that nothing was said about its being curarized, the witness replied that she said that nothing was said about it. What they thought at the time was that it was certain it was curarized. She had already given instances of the vivisector's preference for morphine and their dislike of anaesthetics. It was only natural that they should attempt to prove that morphine had the power of abolishing pain in vivisected animals. The witness referred to Professor Hobday's *Surgical Diseases of the Dog and Cat*, published last year, and said there was an important chapter on the art of giving anaesthetics to dogs and cats. In contradistinction to Mr. Leonard Hill and many other vivisectors, he considered chloroform the ideal anaesthetic to choose for the average adult dog. Instead of supporting the vivisectors' contention that morphine was an anaesthetic for dogs, he said that "compared with man the dog is extraordinarily insusceptible to morphine" (p. 46). Professor Cushny had said before the Commission that morphine was an effective anaesthetic for dogs, and that a large dose of this drug acted as an anaesthetic. In his *Textbook of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease* (fourth edition, 1906) he expressed opinions which made his statements before the Commission strangely contradictory, or which showed that he held one kind of theories when he spoke as a scientific pharmacologist and another kind when he spoke as an ardent defender of the doings of vivisectors. On page 208 of that book Professor Cushny said of the action of morphine on dogs:

> The sensation of pain seems to be much lessened, but not entirely abolished, and reflex movements are difficult to elicit. After larger quantities an exaggerated sensibility to external stimulation seems present, for the animal starts convulsively at loud sounds and on pinching, but when left undisturbed lies in profound sleep.

On reading Professor Cushny's evidence before the Commission, she found that he entirely contradicted what he had said in his own textbook, where he said that larger quantities in the dog produced an exaggerated sensibility, and also that pain seems to be lessened, but not entirely abolished. In reply to Sir John MacFadyean, who asked if these were not doses which were still non-poisonous, she said she did not think that was inferred; he said that larger quantities produced an exaggerated sensibility. In reply to Sir William Church, she said she thought that morphine was as little an anaesthetic for dogs as for human beings. She wished the Commission to take evidence from her that morphine, if given in large, even fatal, quantities, would not produce complete anaesthesia. In reply to further questions, she said she supposed one could poison a man to death with morphine, as one could poison a dog to death with morphine, but it had no anaesthetic properties. She did not mean that a man, when unconscious from morphine, felt pain. Asked if she meant that when an animal was unconscious from morphine it felt pain, she said there was a very great difference between an anaesthetic and a narcotic. Asked by the Chairman how long a person or a dog might live after it had received a dose that would ultimately kill it, without its coming to, she said that question had better be asked of some physiologist. Asked further, if, supposing that a dog lived for half an hour under a dose that was really poisonous, it could not be operated upon during that half hour, she said it was very difficult for her to answer. In reply to further questions she said her point was that, if a large dose of morphine were given the animal might die, but that up to the point of death it might feel pain. Asked by Sir William Church if in the case of a dose which was perfectly fatal, when the animal had become perfectly unconscious, she thought that animal felt pain, she said her answer was that we did not know, and that the evidence was overwhelming on the side that that animal might be feeling pain, although it might be lying perfectly still. She thought we knew that a man fatally poisoned with morphine did not feel pain. Asked on what grounds she inferred that an animal in a similar condition felt pain, she said because morphine, as Professor Hobday pointed out, acted differently on dogs and men. In reply to Sir John MacFadyean, who asked if she knew whether Professor Hobday had ever administered a poisonous dose of morphine to a dog, she said she did not know. The use of morphine as an anaesthetic should be illegal. She thought one could have no objection to it when merely preparatory to anaesthesia, but she objected to experiments done only under morphine or under morphine and curare, and especially on cats. She went on to draw attention to the difference between vivisectional operations, and surgical and veterinary operations under anaesthesia, as attempts were often made to identify the two. She had attended at some veterinary operations, and she also attended some vivisectional operations, and surgical operations too. Veterinary operations were not disturbed, but aided, by deep surgical anaesthesia. Vivisectional operations, dealing as they did with the delicate measuring of functional activities, were often disturbed by deep anaesthesia. Suffering after veterinary operations could be mitigated in every way. Suffering after vivisectional operations often formed part of the experiments, its causes and development being carefully recorded. Through the courtesy of Professor Hobday she was some time ago present at an abdominal operation on a dog which was in a state of perfect surgical anaesthesia, in which every sign of consciousness or pain was entirely absent, and the dog lay in an absolutely limp and motionless condition through the action of chloroform administered by a special anaesthetist who devoted his whole time and attention to this, and who kept the anaesthesia uniformly constant and careful doses of the anaesthetic. The difference between this anaesthesia and conditions which she had seen in the physiological laboratories was very great. The whining and struggling dog which she saw on February 26th, 1903, at the Physiological Laboratory, University of London, in which the abdomen had been opened, the intestines pulled over to the right side, and the kidney placed in an oncometer, the neck opened, and which was subjected to the usual stimulation of nerves, compression of veins, and injection of foreign substances, was an instance of a victim of the light anaesthesia which the vivisector preferred. It was described in the *Shambles of Science* under the title, "A Troublesome Dog"; it was troublesome because it whined. Asked if she intended to suggest that it was conscious of pain, she said she intended to suggest that so far there were signs of consciousness. Asked what she wished them to believe, because there was no point in it if the animal was quite unconscious, she said the difficulty of proving this was that nobody, neither the Commission nor she, nor any vivisector, could say whether that particular dog felt pain. She simply said that the dog whined and cried and seemed to be conscious, and one never could go by any other signs. Her next point was that books intended for students did not even avoid referring to the production of pain in animals as part of the ordinary routine of experimental experience. In his book, *The Elements of Human Physiology*, Professor

Starling spoke of the stimulation of the (sensory) afferent nerves of the heart (page 249) in these words:

> We may investigate their functions by stimulation of the central ends of the divided nerves. They may produce one or more of four effects: (1) Pain as evinced by the movements of an animal not fully under the influence of an anaesthetic (we should be more correct if we said that stimulation of these nerves produced reflex movement).

Professor Starling, no doubt, spoke from personal experience there, and yet he had told the Commission that he had never seen pain inflicted in any experiment on a dog, cat, or rabbit. In reply to further questions, the witness said she had not quoted textbooks for the purpose of showing that they might incite students to take up illegal vivisection, but to show that the general tendency in them was one of disregarding altogether all moral or humane considerations, and that the study of physiology at the present moment could not but be entirely indifferent to the humane and moral claims. In quoting them she had criticized the tone of them, but she was quite prepared to say also that in her personal experience she had found nothing in the teaching of physiologists which justified the claim made that vivisectors nowadays did everything to further humaneness. Professor Starling had advocated his views that students should first attend vivisectional demonstrations, and further take up vivisection themselves for the purpose of acquiring manipulative skill, and under those circumstances, as vivisectors were so anxious to spread their teachings and to reach the younger generation, she maintained that their indifference from the point of view of humaneness and mercy and kindness and all such things showed that they were indifferent on that point. She referred to a book just published by Messrs. Macmillan and Company, in London, *Collected Papers on Circulation and Respiration*, by Sir Lauder Brunton, as an example of demoralizing literature in that sense. In 1907 Sir Lauder Brunton calmly published a paper (included in this volume) on Experiments on the Influence of Digitalis on the Pressure of Blood in the Arteries (p. 103), which, it was true, recorded experiments performed before the present Act, but which, nevertheless, were of a peculiarly brutal nature, and couched in words which could not but give the direct lie to the assertions of vivisectors that the old-fashioned experiments would be met with disgust to-day. These experiments, which involved opening the neck of dogs and sheep, exposing the carotid arteries, and inserting the nozzle of a haemadynamometer, and injecting digitalis through the open jugular vein, had been referred to before the Commission by Professor Cushny as having been done under anaesthetics. Professor Cushny also asserted that had no anaesthetics been used the experiments could not have been performed owing to the movements of the animals. The witness was proceeding to read extracts from the paper which she held showed the inaccuracy of these statements, when the Chairman pointed out that it was extremely immaterial whether an operation before 1876 was or was not performed under anaesthesia. Asked as to her statement that the experiments were described in brutal terms, she said she read them simply as being material to her point of view, to show that the modern literature of vivisectors and physiologists tended to demoralize those who read it, and she brought, as the very strongest instance she could bring, the republication in 1907 of such terrible experiments in a book which could be bought for 7s. 6d. by any medical student. She went on to say that the vivisector responsible for them would certainly not republish them in 1907 if he really had any feelings with regard to humaneness or want of humaneness in carrying them out. Asked if she would establish a sort of Press censorship to obliterate all record of any past painful experiments, although they had contributed very useful knowledge, she said she thought that certainly from an educational point of view it would be much better and more in accordance with the claims made by vivisectors. In reply to further questions, she said she adhered to all the statements made in the *Shambles of Science*. She went on to say that Professor Starling's evidence before the Commission brought out very clearly that students were at the present moment allowed to experiment upon frogs without licence. Asked if she understood what pithing was, she said the word was used by some vivisectors and physiologists in the sense, which she believed was the proper sense, of the total destruction of the brain and spinal cord. It was used by others merely to convey destruction of the cerebral hemispheres. Asked if she could tell the Commissioners the different physiologists who used the term in those different senses, she said she could if she were allowed time to look it up in the books which she had brought. Asked about a chapter on "An Experimental Production of Blood Clotting by Injection of a Nucleoproteid," she said that Mr. Thane considered the suggestion that tetanic spasms might have counteracted the effect of a possible anaesthesia ridiculous. She maintained that it was not impossible. Their suggestion was intended to convey that the presence of convulsions indicated that the animal was not under the influence of an anaesthetic. The fact that anaesthetics were constantly used as antispasmodics and known to allay convulsions generally, indicated that deep anaesthesia and convulsions were two incompatible conditions. Asked by Colonel Lockwood if she had any reason to believe, from personal knowledge, that the law as it at present existed was evaded in the laboratories, she said several of the accounts in the *Shambles of Science* would tend to show that the law, if not evaded, as it stood admitted of cruelty. Asked if she had ever seen a distinct breach of the law that she could point out, she said there was, in her opinion, a distinct breach of the law stated in the *Shambles of Science*. On the Chairman pointing out that the question asked was whether she had been present when any such operation had been done, she replied that she had been present at several experiments at which the anaesthesia was not complete or satisfactory from a humane point of view; she must leave it to the Commission to infer whether that was a breach of the law or not. As an instance she cited that of "A Troublesome Dog." The operator was Dr. T. G. Brodie, assisted by Dr. Alcock. She added that all the experiments in Professor Starling's laboratory—that is, all the experiments performed by Mr. Bayliss—in her opinion gave very little guarantee that the animals were insensible, especially the one of which an account was given under the title of "The Struggling Cat." She objected on principle to all experiments on living animals, whether anaesthetized or not, and she did not believe they could be useful in saving life. Asked for suggestions for changes in the law, supposing it was continued in some form or other, she suggested the prohibition of demonstration experiments before students. All experiments on dogs, cats, monkeys, and all the higher animals were objectionable, especially experiments on monkeys. She believed that all experiments on living animals could very well be dispensed with by science. She thought the present inspection an utter failure, but she did not feel justified in saying that she would agree to any steps for further inspection. Her objection included all inoculations and testing experiments. In reply to further questions, she said she was perfectly sure that in a deeply anaesthetized animal the introduction of air into the vascular system would not result in struggles. Asked what made her perfectly sure, she said the general behaviour of an animal under deep anaesthesia—the totally limp condition and absence of struggles. Asked if she had any reason for the certainty she expressed, she said she had the reason of her general knowledge of the effects of anaesthesia. Her general knowledge of the demeanour of the patient, whether animal or man, under anaesthesia, made her believe that if an animal were properly anaesthetized, it did not struggle when air was blown into the jugular vein. She was only giving her inference; she dared say she could get some facts with regard to it. The witness was then questioned as to Mr. Thane's comments on some of the accounts of experiments given in the *Shambles of Science*. In regard to the "miserable white rabbit," Mr. Thane said the "writer omits to state that it was dead." If it was true that it was dead, there was nothing in the *Shambles of Science* that contradicted that in any way. They said that the animal struggled until it was carried out as described, and then they saw nothing of the rabbit in the laboratory until they were leaving, when they met the boy carrying it in again, and then they said, "The little creature lies still on its board, the head is wet, the hairs stick to the skin, the eyes are protruding and look like glass balls" Asked by Sir William Collins if she thought it was superfluous to

state that it was dead, she said that they made that statement there in connexion with that particular period, whether it was dead or alive. Asked by Sir John MacFadyean if she thought that was not calculated to lead the reader to believe that it was still alive, she said there could be no wicked suggestion there, because the suggestion would be that it was properly anaesthetized. In reply to Sir William Collins who quoted the following passage from Mr. Thane's report:

Two suggestions run through this work, expressed either openly or by implication. One is that the animals are not properly anaesthetized. This, in the only case in which it has been possible to test the question, has been proved emphatically to be untrue. I believe there is no better foundation for the insinuation in the other cases. Of the thirteen lectures dealt with, eight took place at the University of London. Dr. Waller, the director of that laboratory, is, one may say, an expert, probably the first in the country, on the physiology of anaesthetics. He has given much attention to the subject, and for the last two or three years has devoted, I believe, his whole time to the study of the action of anaesthetics on the nervous system,

the witness said she entirely disagreed with Mr. Thane that in the case of the brown dog, to which he presumably referred, it was proved that the anaesthesia had been satisfactory. The brown dog was that referred to in the case Bayliss *v.* Coleridge. The jury heard her evidence, and they did not agree with her conclusion. The *Shambles of Science* was published on July 10th, 1903, by Mr. Ernest Bell. During a period of barely four months there were more than 200 reviews and notices in daily papers and journals of various kinds. Previous to the publication of the book, Mr. Stephen Coleridge had asked them to give him a statement describing a certain demonstration at which they had been present. That was in illustration of a lecture by Dr. W. M. Bayliss at University College on February 2nd, 1903. She wished to prove that there was no connexion between the trial and the book. The book was not libellous. During the trial Bayliss *v.* Coleridge, which took place in November, 1903, the connexion between that statement, and the chapter "Fun" in the *Shambles of Science*, became established, and in consequence of this the solicitors to Mr. Bayliss threatened Mr. Bell with legal proceedings unless he signed an undertaking to withdraw all copies from circulation, and not to print or publish any further copies. She wished to point out that they gave no undertaking to withdraw the book from circulation, that they in no way concurred in Mr. Bell's decision, and that the rest of the chapters of the book could in no way be affected by the result of the Bayliss *v.* Coleridge trial. That opinion was strengthened by a remark made by the Lord Chief Justice during the trial. He said, referring to the *Shambles of Science*, "This book is not libellous." [We think it best to give the following part of the evidence as reported in the Blue Book:]

Chairman: I have never found any report of that taken by itself. Do you mean to say that he said there was nothing in the book that was libellous?

Witness: He said, referring to the *Shambles of Science*: "This book is not libellous."

Chairman: Has that been reported?

Witness: It has not been reported, but at the time there were so many people who had heard the statement that a special list was circulated and signed by a number of people who had heard it. The reason why it was omitted from the report I do not know.

Chairman: I am quite sure it was never said.

Secretary: It is not in the transcript.

Chairman: I am quite sure that the Lord Chief Justice never said it.

Witness: I know that he said it.

Chairman: If he said it, he said it with qualifications, and in a context which could not give it the meaning which you are giving it now.

Witness: He absolutely said those words. I have brought with me the list signed by a number of people who heard it.

Chairman: I do not care if a thousand people signed it; I should say that it had not got his authority. I am quite sure that the Lord Chief Justice never would confirm it.

Witness: I am sure that he said it.

Chairman: He says in the course of the trial that it is an undoubted libel to speak of a person having committed an illegal act?

Witness: He could not say that, because the book itself is not libellous, and cannot be libellous, because no names are mentioned. How could it be libellous when no names are mentioned?

Chairman: You do not understand enough law, I am afraid, o know that it is not necessary to mention persons' names to constitute a libel.

Witness: May I just say that had the book been libellous there was plenty of time to institute actions of libel against us. The book was out for four months.

Chairman: We are not here to try the question whether the book is libellous or not. What you are entitled to say is that, inasmuch as it is made a point against you that you have withdrawn your statements because Mr. Bell withdrew that chapter from the book, that was not done by your wish or authority?

Witness: That is all I beg leave to say.

The witness went on to say that Mr. Thane had told the Commission that they had misrepresented the question of anaesthesia in their book. She submitted that they had stated nothing which was not amply borne out by other records and experiences of vivisectional anaesthesia, some instances of which she had laid before the Commission. Out of twelve chapters which contained descriptions of various experiments, two recorded attempts to produce satisfactory anaesthesia; three described experiments under morphine and a little chloroform, which took place at the Physiological Laboratory, University of London. Of these animals, one was described as being quiet, and one as giving a good deal of trouble by struggling and whining, the third as struggling after it was supposed to have been killed by air blown into the jugular vein. The descriptions of three other experiments which took place at Professor Starling's laboratory, University College, contained no such record, for the lecturer, Mr. Bayliss, gave the students no instructions as to the existence or conditions of anaesthesia. During the trial of Bayliss *v.* Coleridge, he admitted that it was not his practice to tell the students about the methods of anaesthetizing the animals (second day, 354). During one of those demonstrations, that described under the title "The Dog that Escaped," Mr. Bayliss stated that the animal was slightly curarized. Professor Starling had grossly misquoted that chapter, and then characterized his own misquotation as "wilful deception." Anyone who read the chapter could see that they did not use the suggestive "if," but, on the contrary, stated definitely, on the authority of Mr. Bayliss himself, that the dog had had a dose of curare, and, according to their own observation, that no artificial respiration had been established which was the cause of the early death of this particular victim. Mr. Thane had given as his opinion that there was no foundation for their statement that "very often vivisection is received like a kind of entertainment; there is laughter and merriment, and nearly always there is evidence that most of the students find the proceedings exceedingly 'exciting.'" She feared Mr. Thane could never have been present at any of those demonstrations, and at any rate that the 28 experiments out of the total of 19,084 which were witnessed by him in 1903 did not include any of those described in the *Shambles of Science*. Medical students were not notorious for dignified seriousness, and though they had no intention of suggesting that the infliction of pain and suffering would in itself give rise to merriment, she thought the general taste for fun and rowdyism in medical students was sufficiently well known to justify the sentence quoted. Their experience that the students found the proceedings exceedingly exciting had been shared by many, as, for instance, the late Professor Bigelow, Professor of Surgery in Harvard University, who said, "Watch the students at a vivisection. It is the blood and suffering, not the science, that rivets their breathless attention." In reply to further questions, she said she regarded chloroform as a true anaesthetic if used in the proper way, both in men and in dogs, and in the lower animals generally. She regarded morphine not as an anaesthetic but as a narcotic. Asked to state the difference between anaesthesia and narcosis, she said narcosis was an artificial condition of sleep in which pain was abolished to a certain extent, but not altogether; whereas anaesthesia was a condition where pain was entirely abolished and consciousness was entirely lost, which was not the case in narcosis. The difference between narcosis and anaesthesia was not a difference of degrees, but one of kind. In reply to Sir William Collins, who asked, presuming that vivisectional experiment was carried out under chloroform or ether or one of those true anaesthetics and under conditions in which the anaesthetic was faithfully and continuously applied throughout the experiment,

what moral or ethical principle in her opinion would be violated by such experiment, she replied that in the first place she did not believe that vivisectional operations generally could be carried out under deep surgical anaesthesia for the reasons already stated. Secondly, her moral objection to vivisection was the whole principle of exploiting the lower animals for their supposed service and use. She took her stand as an opponent of vivisection rather on that ground than solely and entirely on the ground of pain. Asked by Sir John MacFadyean if she would deny that anything useful for the cure or prevention of human or animal disease had ever been discovered by means of animal experimentation, she said that was a question which it was very difficult to answer. From her own point of view, she was prepared to say that nothing which she would call useful had been obtained by experiments on the lower animals. She offered her opinion as a lay person. She did not admit that inestimable advantages had been gained by vivisection. Assuming for the sake of argument that such advantages had been derived by vivisectional experiments, personally she would never make use of anything which she consciously knew had been derived by such means. Asked whether by "exploiting animals for human use" she considered keeping of animals in confinement covered that expression, she said, No, it need not be. Killing animals for food by methods which involved pain was certainly exploitation of animals. She was a vegetarian on that account. Asked if she thought that a method of immunizing animals against cattle plague by the use of the serum of animals which had recovered from cattle plague or had been hyperimmunized against it, a method which was believed to have saved millions of money, could have been discovered without experimentation on animals, she said she believed on the whole in natural immunity *versus* artificial immunity, and she was not at all inclined to admit that the principle was a true or right one. Asked to suggest an alternative that might have been used, she said she believed that probably there was some cause of that outbreak of cattle plague which could have been avoided. She believed in methods of prevention by sanitation above all. She believed that slaughter and isolation had been proved to be the best remedies in such cases.

ENTRANCE SCHOLARSHIPS AT THE MEDICAL SCHOOLS.

St. Bartholomew's Hospital.—The following awards of entrance scholarships have been made: (1) The *Junior Entrance Scholarship in Science*, £150, to Mr. B. W. Howell. (2) The two *Senior Entrance Scholarships in Science*, value £75 each, to Messrs. A. J. Clark of King's College, Cambridge, and Norman Glover, of Trinity College, Oxford. (3) The *Entrance Scholarship in Arts*, value £100, to Mr. W. B. Christopherson, of Norwich School. (4) The *Shuter Scholarship*, value £50, to Mr. R R. Armstrong, of Trinity College, Cambridge. (5) The *Preliminary Scientific Exhibition*, value £50, to Messrs. D B. Pascall and W. Simpson (equal). (6) The *Jeaffreson Exhibition*, value £20, to Mr. G. B. Richardson, of King William's College, Isle of Man.

Charing Cross.—The following entrance scholarships have been awarded: The *Epsom Scholarship* (115 guineas) to Mr. J. E. Ashby. The *Huxley Scholarship* (55 guineas) to Mr. E. M. Morris. Entrance Scholarships have also been awarded to Mr. A. E. Hallinan (40 guineas) and to Mr. W. Leslie (30 guineas) and two *Universities Scholarships* of 72 guineas each to Mr. W. R. Thomas and Mr. C. W. Shepherd, both of London University.

St. George's Hospital.—The Entrance *Scholarship in Science*, value £120, has been divided between Mr. R. F. Jones, of Pembroke College, Cambridge, and Mr. L. A. Lewis, of Edinburgh University, and a further scholarship of 50 guineas has been allotted to Mr. E. W. M. H. Phillips, of Jesus College, Oxford.

Guy's Hospital.—The following are the successful candidates for the various entrance scholarships: The *Senior Science Scholarship* for University students, £50, J. G. Saner, Caius College, Cambridge. The first *Junior Science Scholarship*, value £150, J. F. Mackenzie, Preliminary Scientific (M.B.) Class, Guy's Hospital; the second, value £60, R. D. Passey. Of the *Entrance Scholarships in Arts*, the £100 scholarship has been awarded to Mr. C. S. L. Roberts, Cheltenham College, and the second scholarship in the same subject (value £50) divided between Mr. G. D. Eccles, Plymouth Technical School, and Mr. G. F. Romer, Malvern College.

King's College Hospital.—The *Entrance Scholarship* for University students, value £50, has been awarded to Mr. H. A. A. Tredgold, and the Warneford Medical *Scholarship in Arts*, value £100, to Mr. A. S. Wakeley.

The London Hospital.—Of the various entrance scholarships at the Medical School at this Hospital, the *Price Scholarship* (value £120) has been awarded to Mr. T. D. Williams, and the *Price Scholarship in Anatomy and Physiology* (value £60) to Mr. C. J. F. Jessel, of the University of Oxford. The winners of the two *Science Scholarships* (£60 and £35) are Messrs. N. R. Rawson and J. H. Lloyd, the *Epsom Scholarship* (£126) going to Mr. E. H. Henson.

St. Mary's Hospital.—The open *Scholarships in Natural Science* have been allotted as follows: One of £145 to J. T. S. Gibson, Aske's Haberdashers' School; one of £78 15s. to C. R. Harrison, Balham School; and two of 50 guineas each to W. B. James and C. E. S. Jackson, of Derby Municipal Technical School and Haileybury College respectively. The winner of the *University Scholarship* of 60 guineas is Mr. H. B. Richmond, B.A., King's College, Cambridge; and of the *University Exhibition*, value 30 guineas, Mr. P. M. Cave, B.A., University College, Oxford.

London School of Medicine for Women.—The *School Scholarship*, value £30, has been awarded to Miss M. A. Jukes; and the *Bostock Scholarship*, value £60 a year for two years and extendable to four years, to Miss C. B. Turner.

University College Hospital.—The two *Entrance Scholarships*, each of the value of 80 guineas, have been awarded to Messrs. C. E. Shattock and M. D. D. Gilder respectively of University College. The *Bucknill Scholarship*, value 135 guineas, of University College, the holder of which must pass on to the medical school of University College Hospital, has been awarded to Mr. T. C. Graves, of the Royal Veterinary College, Camden Town.

THE REPORT OF THE INSPECTOR UNDER THE INEBRIATES ACTS.

Dr. Branthwaite's report for the year 1906[1] should be read by every person interested in the practical treatment of drunkenness.

Whether as a pathological, social, or economic problem, the question of the disposal of the hopeless, helpless, habitual drunkard, who is insane or quasi-insane, receives at Dr. Branthwaite's hands an answer equally masterly in its scientific precision and in its practical humanity.

Dr. Branthwaite has shown beyond dispute that the habitual drunkard, as well as the criminal drunkard, is a very sick, a very mischievous, and a very unfortunate individual, as yet badly lacking protection against precisely the same miseries and ill-treatment that once enveloped, and often finally destroyed, many curable insane persons in this country.

He has further incontestably shown that our existing method of committing to prison for months, or years, persons—often very young persons—who, if they had been mercifully and rationally dealt with might have recovered, is as cruel as it is expensive and futile.

He has also shown how it is possible, for the welfare of all concerned, for the State to assume control over all these persons; not to punish, but to protect, control, and educate them; to ameliorate their pitiful, degraded, unhuman condition, and often, in spite of entirely unfavourable circumstances and history, to cure them.

He has further demonstrated that this may be done at no greater expense than their detention for short periods in the local gaols, but with many more good results. He has, in fact, swept away every reason that could be advanced against reformatory as contrasted with prison treatment. He directs a department excellently organized for the treatment of men and women of every kind, character, and social class who, being habitual drunkards, have the good fortune to come under reformatory detention. It is a matter of regret that the department which for the last eight years

[1] *The Report of the Inspector under the Inebriates Acts, 1879-1900, for the Year 1906.* To be obtained of Messrs. Eyre and Spottiswoode, London. 1907. (2s. 6d.)

has been doing such a fine piece of work should still remain practically unknown to the majority of medical men. Many are barely aware of its existence; more know nothing of its working; few are interested in it as a work of equal importance with the care of the insane. Yet, if its operations were rendered effective, the work would cover a field as great or even greater.

During the year 1906, 110 men and 294 women were admitted to reformatories under the Act. These were a mere fraction of those eligible for committal—the quasi, or absolutely insane—who are still being punished for mental defect in the old way.

Dr. Branthwaite pays a high tribute to the Society for the Prevention of Cruelty to Children, which has secured the conviction and committal of 291 out of 364 persons charged as criminal drunkards. A notable feature of these cases is that they are among some of the most sane and reformable, mainly because they have not been the subjects of continual and useless antecedent prison sentences. Dr. Branthwaite points out that the Society is incidentally doing a much greater work than the actual care of children.

We may quote one case illustrating the irresponsible and impulsive behaviour of persons called habitual drunkards, and also one is tempted to say of the committing justices. The woman in question began her prison career at the age of 15 years and 9 months. She was sent to gaol seven times in one year for being drunk and disorderly and obscene, and for soliciting, fighting, and assault She continued her prison history for twenty-five years, during which time she was punished 115 times, twenty-one times for assault and wilful damage. The report states that "under control the woman is quiet and amenable, but she is so ill-balanced mentally as to become excitable and quarrelsome under the influence of liquor. She is irresponsible when in this alcoholically quarrelsome state, and there is no limit to the amount of injury she may then inflict, given a suitable weapon."

Another woman "admitted in 1906 had a twenty years' drunken history, had served thirty-one sentences for assault one term of three years' penal servitude for inflicting grievous bodily harm, and is now in a reformatory on a charge of manslaughter. . . . . Murder seems to be the only crime associated with passion she has not yet committed, and she is quite capable of that."

After quoting another similar instance of a woman who, in spite of 9¾ years spent in prison sentences, brought into the world five children, the inspector concludes: "This fairly represents the 'old way' so far as this woman was concerned, and there is reason to believe that at any moment during 1906 from 35 to 75 women might have been found in at least one English prison to whom the same description is applicable."

Dr. Branthwaite's description of the mental characteristics, general conduct, and moral character of the persons committed to reformatories, should be studied by all medical men. His account of the manner of classification, facilities for removal to superior homes, and other admirable machinery for the reform of the reformable, and segregation and care of the irreformable, is most interesting. As regards the financial question, he shows that the expenses of working the reformatory system compare favourably with those for working the prison system, the last and least objection to the working of the Inebriates Acts thus being overruled.

In this connexion Dr. Branthwaite notes that the various county councils, which derive large financial benefits from the sale of liquor, are very chary of spending money upon the victims of the liquor trade. Out of £1,050,323 thus received by county councils only 0.85 per cent. has been spent on the maintenance of inebriates. Some local authorities have spent nothing, and the most energetic have only spent 2 per cent. of their receipts. It is to be hoped that medical men, by informing themselves and others upon the subject of the work, will both benefit some of their patients and strengthen Dr. Branthwaite's hands.

DR. RICHARD KANDT, a well-known German explorer and author of a book entitled *Caput Nili*, has been appointed by the Kaiser Imperial Resident at the Sultanate of Ruanda in East Africa. Dr. Kandt began life as a medical practitioner in Bayreuth and Munich.

THE MIDWIVES ACT.

THE PAYMENT OF MEDICAL MEN SUMMONED TO ASSIST MIDWIVES.

MEDICAL men practising within the area of the Ecclesall Bierlow Union have received a letter signed by the clerk of the Board of Guardians stating that it has been decided to pay a fee of one guinea to all medical men whose assistance is sought by midwives in accordance with Rule 18 of the Regulations of the Central Midwives Board, on being satisfied that the legally responsible relatives of the lying-in woman are unable to pay the necessary fee. The letter also states that midwives practising within the union have been informed that when a difficulty covered by the rule arises they should send for the nearest medical practitioner. Finally, a wish is expressed that when such cases occur the medical man concerned should send a notification to the Board, giving briefly the particulars of the case and of the midwife who sent the requisition, in which case the matter will forthwith be brought before the Board. From the general tone of the letter, apart from its precise terms, it may be concluded that this Board, unlike some others in the country, does not intend to throw any difficulties in the way of medical men obtaining fees to which they are entitled for services rendered under the circumstances indicated, and this is satisfactory even if the fee promised does not err on the side of generosity.

The Guardians of the Bradford Poor Law Union have recently considered the question of medical assistance for midwives. They have now decided that in those cases where under No. 18 of the Rules of the Central Midwives Board, a midwife has advised that assistance should be obtained, it will be advisable for the certified midwife to call in on these occasions the district medical officer. On being satisfied that the woman is too poor to pay the medical fee the Guardians will be prepared to pay him. The fee suggested is 15s. for ordinary cases, special cases to be paid for at the rates laid down in the Local Government Board Order.

LITERARY NOTES.

AMONG the additions to be made to Messrs. Macmillan's Golden Treasury Series is one that will interest many of our readers. It is entitled *Aphorisms and Reflections from the Works of Thomas Henry Huxley*.

We are informed that the Oxford University Press is about to publish *Studies in the Medicine of Ancient India*: Part I, *Osteology, or the Bones of the Human Body*, by A. F. Rudolf Hoernle, C.I.E., Ph.D., of the University of Tübingen, Hon. M.A. (Oxford), late Principal Calcutta Madrasa. According to the author the amount of anatomical knowledge displayed in the work by the earliest medical writers of India—the sixth century B.C.—is surprising as regards extent and accuracy. Dissection of human bodies, he says, was practised, but apparently, there was no dissection of animals.

The publishing house of Gebrüder Borntraeger, 11, Grossbeeren Strasse 9, Berlin, S.W., offer the first two volumes of the *Hygienisches Centralblatt*, which is edited by Dr. Paul Sommerfeld, Head of the Laboratory of the City Kaiser and Kaiserin-Friedrich Kinderkrankenhaus, Berlin, free to all members of the Fourteenth International Congress for Hygiene and Demography who subscribe for the third volume, which is in course of publication.

In the *Bristol Medico-Chirurgical Journal* for September Mr. L. M. Griffiths gives an interesting account of the Bristol Medical Reading Society, which was founded in 1807, "for the purpose of promoting medical knowledge and a friendly intercourse among its members, and for purchasing medical books." The membership of the Society has never exceeded twelve. The members met at each other's houses once a month, and were fined 1s. for absence and 3d. a day for retaining books beyond the time allowed. The Society did not limit its scope to medical literature, but at different times took in the *Quarterly* and *Edinburgh Reviews*, the *Literary Gazette*, and the *Revue des Deux Mondes*, which, however, were, after various vicissitudes, given up in 1870. It is amusing to follow the changes in the Society's attitude in regard to our respected contemporary, the *Lancet*. It was ordered

from the commencement (October 5th, 1823), but in the following February

> It was resolved that the *Lancet* is a publication unfit for this Society, and that it be discontinued.

In June, 1825, the Society reconsidered its decision and ordered the *Lancet* in half-yearly volumes, and in the following January it was decided to take it again in weekly numbers. But in August, 1828, a vote was passed that

> This Society, considering the *Lancet* as a publication injurious to the respectability and best interests of the profession and disgraceful to the medical men who conduct it, resolves that its circulation in the Society be henceforth discontinued.

An attempt made in January, 1835, to reintroduce it failed, but was successful at the next annual meeting in 1836. In January, 1846, the *Lancet* was once more in disgrace; but two years later it was again taken, on the condition of one member making himself responsible for the subscription. In April, 1854, the *Lancet* once more offended the susceptibilities of the Society, and it was resolved:

> That in the opinion of the members of this Society the conduct of the *Lancet* of late (more especially with reference to the proceedings in the case of Mr. Gay at the Royal Free Hospital) has not been such as becomes the journal claiming to be the organ of an enlightened and honourable profession, and therefore that it be discontinued.

A few months later, however, it was again ordered for the Society, but only on the undertaking of a member to purchase it at half-price. In January, 1856, it was decided that the *Lancet* should again be received into favour, and after that there is no mention of further ostracism. At the annual meeting in 1840 the Society ordered the *Provincial Medical and Surgical Journal*, the primordial germ of the British Medical Journal. Mr. Griffiths makes no further mention of it, from which we may perhaps draw the moral embodied in the maxim, "Happy is the nation that has no history." The Society celebrated its centenary last April with a dinner. In conclusion we may quote some verses with which the late Mr. Greig Smith embellished the menu card at his secretarial dinner in 1885:

Twelve Medicos of high renown,
In this our ancient Western Town,
Harmoniously combine
To take in books for culture's sake,
Meet once a month for tea and cake,
And once a year to dine.
These twelve, of varied reputation,
Are competent to treat a nation,
For, be your ailment what you please,
There's one at least for your disease.
Of eyesight should you threaten loss,
The man to make you see is *Cross;*
And should your reason show a flaw,
The man to lock you up is *Shaw;*
And if you think you cannot hear,
Let *Harsant* peep into your ear.
From hidden holes your germs to ferret
There's none so 'cute as *Markham Skerritt:*
His microscope will soon determine
How *Shingleton* will kill the vermin;
And livers weary of their life
Find comfort in the arms of *Fyffe.*
With *Griffiths* strong on vaccination
And apt Shakespearian quotation,
With *Lansdown* for our angiomas,
And *Dobson* for round-celled sarcomas,
We need not fear; but if more ill,
There's *Beddoe* and there's *Prichard* still.
Should these eleven fail to mend you,
Then *Greig Smith's* knife will gently end you.

THE ANNUAL REPORT OF THE PRISON COMMISSIONERS.

The Annual Report of the Prison Commissioners for the year ending March 31st, 1907, shows that 178,343 prisoners were received into local prisons during the year, under sentence of penal servitude or imprisonment by the ordinary courts, as compared with 195,050 for the preceding year. There were also 545 sentenced by courts-martial as compared with 648 for the previous year, and 19,230 imprisoned as debtors or on civil process, and 1,164 in default of sureties, as compared with 20,414 debtors and civil process, and 1,208 in default of sureties for the preceding year, giving an all-round reduction of 18,044 on the year ending March 31st, 1906.

With a view to making possible a comparison of the existing criminality of the country, so far as it can be measured by commitments to prison, with that of previous years the Commissioners for the past four years have caused a table to be prepared at all prisons showing the actual offences which were the causes of imprisonment, a summary of the result being given in this annual report. From this we see that in 1906–7 as compared with 1905–6 offences against the person increased by 78, but that offences against property decreased by 25, other offences tried at assizes and quarter sessions by 59, indictable offences tried summarily by 1,618, and other offences tried summarily by 15,039. Last year the Commissioners called attention to the decrease in the number of cases of imprisonment for drunkenness, offences against police regulations, etc., misbehaviour by paupers and assaults, and this year they have to report a further decrease of 5,202 for drunkenness, 682 for breach of police regulations, etc., and 588 for assault. Also a decrease of 1,572 for larceny, 1,835 for prostitution, and 2,379 for begging and sleeping out.

As compared with population, the annual proportions of commitments have fluctuated during the last quarter of a century between 460.7 per 100,000 (in 1900–1) and 621.6 per 100,000 (in 1882–3). From 1900–1 there was a progressive rise to 586.2 in 1904–5, and since then the proportion has declined to 516 2 per 100,000 for 1906–7.

On the whole, if commitments to prison furnish an approximate measure of the numbers of criminal acts, this annual report is highly satisfactory.

A further encouraging sign is that juvenile delinquency (that is, under 16 years of age), as measured by prison statistics, is diminishing year by year. the last ten years having shown a decrease which, the Commissioners say, is almost marvellous, the total numbers of such cases having declined steadily from 1,688 in 1897 to 728 in 1906–7. Doubtless this is largely due to an increasing reluctance to commit juveniles to prison; and in this relation the Commissioners state their opinion that in the case of the young, impressionable, and imaginative a sentence which only familiarizes with what ought to be the great mystery and dread of the interior of a prison, and which does not admit of sufficient time for any reformatory influence, must do more harm than good. With regard to delinquents between the ages of 16 and 21, the report contains an exceedingly interesting account of the special reformative measures now applied to the "juvenile-adult" class at Borstal, Dartmoor, and Lincoln, and many other prisons, and widely known as the "Borstal system"; for the gratifying results of its application we must refer inquirers to the report itself.

As in previous years, the report of the Medical Inspector (Dr. H. Smalley) is of particular value. It has often been maintained that repeated imprisonment has a bad effect on the habitually intemperate, that is, that the sudden stoppage of alcohol precipitates attacks of delirium tremens and epileptiform convulsions, which result eventually in progressive mental deterioration. With the object of settling this question, inquiries were instituted at all local prisons in England and Wales, and it was reported that among 212,000 prisoners, of whom 62,991 were convicted of actual drunkenness, only 246 cases of delirium tremens were treated in the twelve months under review, and, further, it was elicited that epileptiform convulsions were rarely observed among alcoholics in prison. The unavoidable conclusion was that the periods of enforced abstinence had a quite other than unfavourable influence. Another point of interest brought out by Dr. Smalley concerns the large number of persons sent to prison with varying degrees of mental and bodily defect. The cases of recognized mental defect amounted, Dr. Smalley computes, in 1906-7 to some 6,000 prisoners, that is about 3 per cent. of the total number received, and it is certain. he states, that large numbers of others are unrecognized owing to the shortness of their sentences and consequent lack of time for observation. As regards physical disease, a reference to Table C., Appendix 18, in which the causes of death are set forth, shows that many prisoners died within a few days of incarceration, and that in Dr. Smalley's words, "prison was not the place

for them." One or two of these will suffice in illustration though many others might be quoted:

A female, aged 57, received into prison April 7th, 1906; died of acute nephritis and congestion of brain April 8th, 1906.

Male, aged 24, received into prison June 18th, 1906; died of acute miliary tuberculosis of lungs and tuberculous meningitis June 22nd, 1906.

Male, aged 40, received into prison October 19th, 1906; died of cirrhosis of liver, ascites, and heart failure October 22nd, 1906.

The total number of deaths in the local prisons was 132' and in the convict prisons 28. Of the total deaths 135 were due to natural causes, 14 to suicide, 2 to accident, and 9 to judicial execution. The death-rate in the local prisons, expressed in terms of the total number of prisoners received, was 0.51 per 1,000, or 7.3 per 1,000 of the average numbers daily resident, and in convict prisons the deaths, excluding 2 cases of suicide, give a death-rate of 8.2 per 1,000 of the average number daily resident. One other point calls for mention, and that is the death-rate in convict establishments from pulmonary consumption. Counting 2 prisoners who were released on medical grounds as dying in the prison, there were only 4 deaths from this disease, or 1.38 per 1,000 of the daily average population. Comparison with former years shows a decided diminution of prison tuberculosis within recent years, and a further comparison with the mortality from tuberculous diseases of other countries is entirely in favour of our penal establishments; in Belgium it was 2.7 per 1,000, Prussia 5 3 per 1,000, Saxony 9.0 per 1,000, and in Bavaria, France, Austria, and Hungary, 10.0, 12.0, 16.0, and 19.1 per 1,000 respectively.

A REPUTED CURE FOR THE OPIUM HABIT.

In view of the fact that in the past various "cures" which have been put forward for dipsomania and other drug habits have proved on investigation to be devoid of the properties ascribed to them, and have survived chiefly in the form of fraudulent quack medicines, the attitude of the profession towards any new substance put forward as a cure for a drug habit must necessarily be one of reserve, and even scepticism. Nevertheless, the magnitude of the boon which would be conferred by a drug that would really benefit the victims of morphine, alcohol, etc., and the wide extent to which the habits prevail, are sufficient to ensure attention to any new substance for which the claim is made; and if its credentials appear satisfactory after a preliminary investigation, a full and fair trial is certain to be accorded to it. During recent months sundry reports have reached this country about the marvellous efficacy of a new anti-opium drug which is being used in the Malay Peninsula; and as the drug appears to have now obtained a footing here also, it may be of service to summarize the chief facts which are known concerning it.

The plant yielding the drug in question is *Combretum sundaicum*, a woody climbing plant abundant in the plains and jungle around the town of Kuala Lumpur, in Selangor. More than one version has been given of the accidental discovery of the virtues of the drug; according to the account given to Mr. L. Wray, Director of Museums, Federated Malay States, a party of Chinese woodcutters, working in the jungle, ran out of tea, and tried the leaves of this plant as a substitute; an infusion of the raw leaves produced bowel complaint, but if the leaves were first roasted a fair substitute for tea was obtained which had no ill effects. Opium dross, or the refuse opium after being smoked, was then added to the beverage, and the men continued drinking this in place of tea for a week or more. After that time it was found that all desire for opium smoking had been lost. On the other hand, Mr. J. G. Alexander, the honorary secretary of the Society for Suppression of the Opium Trade, was told in Kuala Lumpur that the plant was brought home by mistake by a collector of medicinal plants, who prepared an infusion of the leaves and tried it on himself and a friend; the latter, an opium-smoker, found that the beverage took away his desire for opium. Nothing is said in this version about previous roasting of the leaves, or of the addition of opium dross to the infusion.

Whichever version may be correct, further trials of the drug were made, and the results led to the formation of a Selangor Anti-Opium Society, which began work on November 3rd, 1906, preparing the medicine and distributing it gratis to those who applied for it. The number of applicants was 6,130 in the first three weeks; branches were started in other towns, and the work was also taken up by members of the Methodist Episcopal Mission, who supplied the medicine to many thousands of people. It appears from Mr. Wray's paper[1] that from November 16th to 23rd about 396 patients had reported that they were completely cured of the habit; no records were kept before the first date mentioned. Mr. Alexander, writing about the work of the Methodist Mission, said last year, "I have not heard of any relapses as yet, although the cure has been going on for more than a month, the numbers who come having rapidly increased within the past fortnight." Mr. Wray also points to the interesting fact that the official opium return for the State of Selangor shows the consumption during November to have fallen below the average for the previous five months by no less than 38 chests, or 25 5 per cent., without any variation in industrial conditions to account for it. In December, however, the consumption was 16 chests above that for November, which he thinks was probably due to the return of a certain number of the patients to their opium pipes.

The method of preparation and administration which appears to be invariably adopted is as follows: The branches and leaves are the parts of the plant used. The latter are separated from the woody portions, which are cut into thin slices and short lengths. Leaves and stem are roasted separately on an iron plate over a charcoal fire and then mixed together, the reason for separating being that the leaves would be charred by the amount of heating necessary for the wood. A decoction is then prepared by boiling from 8 to 11 oz. of the roasted drug in 4 gallons of water for three hours in a loosely-covered vessel and straining, at first roughly and then through a white cloth. Each patient is supplied with two bottles of the decoction, usually holding about 25 oz. each; into one he puts a quantity of burnt opium equal to the amount of his usual daily allowance, and none into the other. A dose of about 1½ oz. is taken from the first bottle as many times a day as the patient has been in the habit of smoking, usually three or four times. Each time a dose is taken the bottle is filled up from the second until the latter is emptied, when the patient continues taking the mixture that remains, without further alteration of its composition. Thus the patient begins with a dose of opium of only about one-sixteenth, or a daily dose of from one-sixth to one-fourth of his usual daily amount, and instead of smoking it he takes an aqueous extract of the residue left after roasting it in the same way as for smoking; with each dose he takes a quantity of the decoction of combretum, and the amount of extract of opium progressively diminishes to the seventeenth dose, when it is approximately only one-third of that in the first dose; it then remains constant to the last, or thirty-second dose. It is stated that in the majority of cases the cure is then effected; if it is not complete, the patient obtains a second supply of the medicine, into which is put only half the amount of burnt opium that was added to the first. As, however, the dose has been already reduced to one-third, it appears an irrational proceeding to increase it again to a half prior to a further reduction. In some cases a third bottle is necessary. When once the point is reached at which the patient can do without opium, further use of the combretum is not considered to be necessary; the "cure" is thus not a mere substitution of one drug habit for another.

Assuming that many, if not all, of the reported cures achieved by the treatment just described are genuine, it is important to ascertain which of the contributory factors are essential. Mr. Wray observes that, whether the active ingredient is the antiopium plant "or the burnt opium administered internally in gradually decreasing doses is a subject worthy of investigation. The latter is possibly the true cause, and the antiopium plant may only act as an astringent, preventing the distressing intestinal troubles which usually supervene on a stoppage of a customary supply of opium. The amount and nature of the alkaloids present in burnt opium is also a promising field of inquiry. The charred state of the antiopium drug, which was in use up to quite recently, suggests that any

[1] *Journal of the Federated Malay States Museums*, December, 1906.

alkaloidal principle which it might possess had been destroyed in the process of roasting, or rather charring, to which it had been subjected." The drug is now more lightly roasted than formerly. A preliminary examination of the drug made in the laboratory of the Pharmaceutical Society in London[2] showed the presence of some substance of the tannin group, but not of an alkaloid; and in the annual report of the Department of Agriculture of the Federated Malay States the Government chemist reports that a preliminary investigation had not shown the presence of any alkaloidal, glucosidal, or other bitter principle, the organic matter consisting principally of tannin.[3]

We understand that chemical investigation of the constituents of combretum is being continued in this country, and that pharmacological tests are also being carried out with preparations made from it. Until the results of these tests are published there will naturally be reluctance to depart from the methods of administration hitherto employed, but it is clear that these leave a good deal to be desired. We have referred above to the irregularities involved in the method of reducing the dose of opium. The reports from Malaya also state that the decoction is very subject to fermentative and other changes, so that it often becomes putrescent, and has to be thrown away before the end of a course. No doubt British pharmacists will be able to prepare a product free from such objections while obtaining the virtues, whatever they may be, of the cruder preparation.

MEDICAL NEWS.

The laboratories of pathology and public health, conducted by Mr. G. Leslie Eastes, M.B., B.Sc., have been removed to 38, New Cavendish Street, London, W.

A German Society of Tropical Medicine has recently been founded. The Presidents are Professors Baelz of Stuttgart, and Nocht of Hamburg; the Secretaries, Professor Fülleborn and Dr. Mense of Cassel.

The recent election of Dr. Pièrart brings up the total number of representatives of the medical profession in the Belgian Parliament to ten. Of these four belong to the Liberal Left; four, including the new member, to the Right; and two to the Socialist Left.

The Annual Festival Service of the Birmingham Ward of the Guild of St. Luke will be held at the Holy Trinity Church, Coventry, on Tuesday next, October 22nd, at 8 p.m., when the Rev. Canon Newbolt, M.A., Chancellor of St. Paul's Cathedral, will preach. Members of the medical profession are cordially invited. Academical costume will be worn.

The London County Council will again in January next award six scholarships of the value of £25 each to persons wishing to become midwives; the course of training provided will extend over a period of six months. Further particulars can be obtained from the Executive Officer, L.C.C. Education Offices, Victoria Embankment, W.C.

The Duchess of Albany visited the new buildings of the school of advanced medical sciences in connexion with University College Hospital recently to see the medallion portrait of the late Dr. Poore, who for many years was physician to the late Duke of Albany; Her Royal Highness also visited the nurses' home and the scientific departments of the school.

Appeal is being made for further support for the Mission to Lepers in India and the East. Altogether some fifty asylums for these unfortunate people are maintained by it in India. At one of these, in the Punjab, there is a ward for English lepers, which at present has five inmates. The Secretary of the Mission is Mr. John Jackson, F.R.G.S., 33, Henrietta Street, Strand.

In view of recent legislation, the Life Assurance Medical Officers' Association believes that the extension of its objects to include the medical aspects of disease and accident assurance is desirable, and medical men holding appointments from accident and disease assurance companies, and other members of the profession are invited to join the association in order to advance the study of this branch of medicine. Further information can be obtained from Dr. T. D. Lister, 50, Brook Street, London, W., or Mr. A. Shillitoe, F.R.C.S., 2, Frederick Place, Old Jewry, London, E.C.

At a meeting on October 11th, Dr. J. Magee Finny was elected President of the Royal Academy of Medicine in Ireland for the coming year, Dr. James Craig and Sir J. W. Moore being respectively reappointed General Secretary and Secretary for Foreign Correspondence. As Presidents of Sections the following were chosen: Medical Section, the President of the Royal College of Physicians, Dr. J. M. Redmond; Surgical Section, the President of the Royal College of Surgeons, Sir H. R. Swanzy; Obstetrical Section, Dr. Hastings Tweedy: Pathological Section, Dr. A. R. Parsons; Section of Anatomy and Physiology, Dr. A. F. Dixon; Section of State Medicine, Dr. W. R. Dawson.

The sanitary state of the towns in Madagascar, according to the Consular report, differs very considerably. Tamatave, although on the coast and hence more exposed to malaria than the high inland regions, shows a remarkably low rate of mortality. Some time ago much good work was done by widening the streets, doing away with the slums, etc., and this has had a very beneficial effect. While, for example, in May of last year there were in Antananarivo 204 births and 543 deaths, of which no less than 396 were from malaria alone, there was only one death in Tamatave from this cause during the same period. The capital suffered unusually during the month just mentioned, but malaria would seem always to be prevalent.

A quarterly court of the Society for the Relief of Widows and Orphans of Medical Men was held on October 9th, Dr. Blandford, president, in the chair; thirteen directors were present. One new member was elected and the death of one reported. It was decided that a Christmas present of £544 be distributed among the annuitants of the charity, each widow to receive £10, each orphan £3, and each orphan on the Copeland Fund £5. Since the last court a donation of £100 had been received from the executors of the late W. Cattlin, Esq. Mr. Cattlin was elected a member of the Society in 1860. Five letters had been received from the widows of medical men who had not been members of the Society asking for relief, but for this reason it had to be refused, as relief is only granted to the widows or orphans of deceased members. Membership is open to any registered medical practitioner who at the time of his election is resident within a twenty miles' radius of Charing Cross. Full particulars and application forms may be obtained from the Secretary at the offices of the Society, 11, Chandos Street, Cavendish Square, W. The Secretary attends there on Wednesdays and Fridays from 4 to 5 should a personal application be desired.

The annual pilgrimages from Egypt are ever a source of trouble and anxiety to the Egyptian Government, for such collections of the dirtiest and most insanitary people afford many occasions for epidemics of cholera, plague, and other diseases to flourish. Several reports published under the auspices of the Conseil Sanitaire, Maritime, et Quarantenaire d'Égypte for 1907 deal with the health of those assemblages. Fortunately plague and cholera appear to have been absent, but other diseases carried off their annual quota. In Dr. Soliman Bey Hamada's report on the pilgrimage to Hedjaz these are duly enumerated. Malaria still seems to be prevalent, and dysentery and other enteric troubles are also very common. Dysentery, as Dr. Crendiropoulo points out in his report, presents the greatest interest. The type is evidently the bacterial or epidemic, and it is difficult to see how it can be prevented. Generally appearing where large numbers of people are collected promiscuously together it is probably very often spread by flies settling on and contaminating the food; in other cases the water supplies become infected. In encampments something may be done in the way of prophylaxis, but when the people are on the march the difficulties are obvious. Still the excellent sanitary work being done by the Egyptian Government, under the able direction of the Sanitary Council, of which Dr. Armand Ruffer is President, without doubt greatly mitigates the evils attendant on those campaigns, and every praise is due to it for its laudable efforts.

The Royal Society of Medicine.—The Therapeutical and Pharmacological Section of the Royal Society of Medicine, which is the successor of the Therapeutical Society, will hold its ordinary general meetings at the Apothecaries' Hall, Blackfriars, E.C., at 4.30 p.m. on the fourth Tuesday of each month, from October to April, except in December, when the meeting will be on the third Tuesday. The President of the Section is Dr. T. E. Burton Brown, C.I.E.; the Honorary Secretaries are Dr. H. Charles Cameron and Dr. J. Gray Duncanson, Wingfield House, Shooter's Hill, London, S.E., by whom further particulars will be supplied. The Epidemiological Section of the Royal Society of Medicine will hold its opening meeting next Friday evening, when Dr. Newsholme the President, will deliver an address dealing with poverty and disease, as illustrated by the course of typhus fever and phthisis in Ireland.

[2] *Pharmaceutical Journal*, January 26th, 1907, p. 77.
[3] Ibid., September 7th, 1907, p. 331.

British Medical Journal.

SATURDAY, OCTOBER 19TH, 1907.

THE MEDICAL SERVICE OF THE TERRITORIAL FORCE.

THE Secretary of State for War, in the address to his constituents on October 10th, gave an outline of the arrangements which have been sanctioned by the King for the organization of the Territorial Force in accordance with the plans sketched by Mr. Haldane in his speeches in the House of Commons last session. The War Office were asking the volunteers and yeomanry to assist in this organization, and Mr. Haldane expressed the confident expectation that officers and men would be obtained, because the scheme, while giving the volunteers a better organization and status, would not in reality put a greater burden upon them. There would be fourteen divisions for the whole country; each division would, as a rule, consist of three brigades, and each brigade of four battalions, which with eight extra in Scotland would give in all about 168 battalions of infantry; there would be 56 regiments of yeomanry which were already in existence, and a due proportion of field artillery which would have to be raised. The territorial force is intended solely for home defence, and this must constantly be borne in mind when considering the proposals for the organization and administration of its various branches.

With regard to the medical service of the territorial forces, Mr. Haldane said that the Director-General was then in Scotland to consult with the medical profession in the chief centres with regard to its organization. We are very glad to observe that this course has been followed; it is both wise and politic, for if the medical service is to be at once popular and efficient it is essential that the military requirements should be adapted to the special circumstances of the medical profession. The medical profession is patriotically desirous of giving its services for the benefit of the country's citizen soldiers, and of this it has given many striking proofs equally before, during, and since the war in South Africa; at the same time experience has shown that some of the regulations and requirements of the War Office have not hitherto possessed sufficient elasticity, and have made undue and, as we believe, unintended calls upon individual members of the profession, who have found their ordinary civil avocation interfered with by military duties. This clashing of interests might, as has frequently been pointed out in these columns, have been avoided by a more sympathetic study of the conditions of medical practice, and this truth Mr. Haldane and Sir Alfred Keogh have, we are extremely glad to notice, fully grasped. A scheme has been drawn up and its main features have been already communicated to meetings of medical men in Glasgow, Aberdeen, and Edinburgh by Sir Alfred Keogh, who intends to continue his mission within the next few weeks by visiting Manchester, Leeds, and other centres in England. It would be premature to go into details of the scheme, but we are in a position to indicate in general terms the nature of the proposals which have been submitted by the Director-General for the consideration and criticism of the profession.

We may say at once that the new scheme follows pretty closely the general lines of the recommendations made by the Volunteer Medical Service Committee of the British Medical Association in its report of June 19th, 1906. The suggestion of this Committee to constitute a single army medical corps on the lines of other consolidated corps—artillery and engineers—has been adopted, but in order to meet special medical requirements the regimental system will be retained. All future medical officers will be members of the territorial medical corps. Not more than two medical officers will be attached to each battalion or unit, the remainder being the staff of the medical units (field and cavalry ambulances, stationary, clearing, and general hospitals) as well as sanitary companies. The new corps will consist of officers, warrant officers, non-commissioned officers, and men, and an appeal will be made to nurses to volunteer for duty in time of war in the hospitals of the territorial forces. Future appointments to the medical service of the territorial forces will be gazetted as to the medical corps, and existing regimental medical officers will be invited to join it. The order of seniority of officers of the corps will be at first that of their seniority at present; an officer will enter as lieutenant, will become captain after three and a half years' service, and major after eight and a half years' service as captain; eventually there will be a fixed establishment of colonels and lieutenant-colonels. The corps will be generally modelled upon the lines of the Royal Army Medical Corps of the regular army, but the medical units for the various divisions of the territorial forces will be as far as possible raised within the area covered by the division. The existing bearer companies and field hospitals of the Royal Army Medical Corps Volunteers will, as far as possible, be consolidated into field ambulances for cavalry and infantry, three being provided for each division of the territorial forces. So far the arrangements are merely a natural expansion of the existing organization, but in addition certain new features will be introduced. It is proposed to make an appeal to hospital physicians and surgeons and to members of the public health service, to assist in completing the organization of the medical and sanitary service of the territorial forces. Stationary and general hospitals will be organized, the staff consisting of hospital physicians and surgeons in the territorial area, and it is hoped that the staffs of the local civil hospitals will co-operate with the divisional staffs by giving their services in the vicinity of their own civil hospitals.

The importance of preventive medicine to an army is frankly recognized in the scheme, and members of the public health service will be asked to promise to give their advice should troops be massed in the vicinity of their own spheres of work in time of war. They, like the hospital physicians and surgeons, will be invited to become officers *à la suite* of the medical service, and will not be required to undergo any special training, nor is it proposed to make any demands upon their time during peace. The duties they would assume in time of invasion would be identical with those which they are accustomed to discharge in civil life, and it is expected that the number of officers both for hospitals and for sanitation who will be found ready to be enrolled will be so much larger than the actual requirements as to allow to each individual the utmost elasticity in the discharge of his duties to the territorial force.

The whole corps will be under the Director-General of the Army Medical Service, by whom the principal

appointments will be made. The personnel of the corps will be distributed to combatant units for general medical and sanitary work, to field ambulances, to hospitals, to the sanitary branch, and to the administrative divisional staff, one selected officer in each division being appointed for administrative duties. In framing the scheme for training and appointment of medical officers, especially those appointed for duty with battalions, it has been sought to give as much elasticity as possible. The war establishment of a battalion is one medical officer, but as it is essential that a volunteer battalion should have a medical officer with it during the annual camp training, it is proposed, in order to meet the exigencies of civil practice, to appoint two medical officers to each territorial battalion; it is believed that it will generally be possible for one of these to attend the camp training, while the other will be asked to fulfil certain specific obligations in lieu of that attendance. Should neither battalion medical officer be able to attend, the Principal Medical Officer of the Division will have power to arrange for another officer of the territorial medical corps to attend the camp training. In the same spirit arrangements will be made in the case of subordinate personnel that attendance in camp shall not be absolutely obligatory on any individual should his business render such attendance impossible. The Army Council intends that the arrangements for medical organization and training shall be made after a conference between the members of the medical profession in each area, the results of the conference being submitted to the Director-General of the Army Medical Service, who will be at the head of the new corps; he will appoint the Principal Medical Officers, staff officers from the regular medical service, the officers commanding medical units, and the whole of the personnel of the sanitary and hospital branches.

No doubt improvements in detail will be made as the result of the conferences which are taking place between the Director-General and the medical profession in various localities, but we believe that the scheme in its main outline will commend itself to the profession generally, and that it will also have the approval and support of the majority of those medical men who already hold commissions in the volunteers.

THE TOXICITY OF HORSE SERUM.

In the September issue of the *Montreal Medical Journal* Drs. Campbell P. Howard and Oskar Klotz discuss the complications and accidents which occasionally arise from the use of horse serum in antitoxin administration. The clinical picture of "serum disease," as the Germans call this comparatively rare condition, is fairly well known. From eight to twelve days after the serum inoculation there appears at the site of injection an exanthem, usually urticarial in character, which rapidly spreads over the body. It may persist for only a few hours or, at the most, for two or three days. Coincident with the appearance of the rash there is an elevation of temperature; local glandular enlargement is commonly observed, and occasionally a general enlargement of the glands has been noted; there is almost invariably a considerable amount of oedema, resembling the oedema of nephritis, and in a few cases there has been slight albuminuria on the third or fourth day after the appearance of the oedema. The general condition of the patient is usually little affected, and convalescence occurs on the third or fourth day. A fatal issue is very rare, but Dr. Klotz has collected some cases from the literature. "The nature of the death following the administration "of serum," he says, "is hardly to be confounded with "that of any other disease, even when diphtheria is "present. The symptoms in man may come on within "five minutes of the treatment, with collapse, unconsciousness, convulsions, and death as the result. "Death, in some instances, takes place within fifteen "minutes, and the symptoms are alike, whether the "patient is suffering from diphtheria or not." Amongst the cases quoted is that of Professor Langerhans's 2-year old son, who was given 1.3 c.cm. of serum as a prophylactic measure and died ten minutes afterwards. At the autopsy no abnormal conditions were found save some vomitus in the respiratory tract. Fortunately, these untoward results are extremely rare, and are far outweighed by the undoubted benefits which serum-therapy has conferred in the vast majority of instances.

The theoretical explanation of these complications is involved in considerable obscurity. Hamburger and Moro, quoted by Dr. Howard, believed that the phenomena were due to the formation of precipitins which, by interference with the circulation, caused the exanthem mechanically; but it was afterwards shown that in the living blood no precipitin was produced. Pirquet and Schick, who published a monograph on the subject in 1905, associate the manifestations of "serum "disease" with a chemical interaction between the antigens of the horse serum and the antibodies of the vital reaction. And other suggestions have been tentatively put forward in explanation of the remarkable fact that after reinjection the serum disease occurs more frequently, is provoked by a smaller dose of serum, and is accompanied by more intense symptoms.

Scientifically allied with this subject there are the interesting phenomena of anaphylaxis in the guinea-pig, that is, the increased susceptibility to intoxication by horse serum manifested by guinea-pigs which have been inoculated previously with this serum. A recent contribution to the investigations on these problems has been furnished by Drs. Rosenau and Anderson, of the United States Hygienic Laboratory.[1] According to these authorities guinea-pigs may be sensitized with horse serum by injections made directly into the heart. Hence they infer that the cells lining the peritoneal cavity or the connective tissue cells of the subcutaneous tissue do not necessarily play a part in the phenomenon of hypersusceptibility. The sensitizing substance is not dialysable through a collodion sac, but guinea-pigs may be sensitized with the filtrate obtained from horse serum after precipitation with ammonium sulphate, a process which excludes most of the globulins whilst retaining most of the serum albumen. The toxic substance is not appreciably influenced by formaldehyd, which is capable of destroying the poisonous properties of tetanus and diphtheria toxins, nor is it altered by various ferments such as pancreatin, rennin, invertin, pepsin, and many others. Is the toxic principle specific? Upon this question the observations of Drs. Rosenau and Anderson are worth quoting in their own words: "The toxic action is quantitatively specific so "far as various blood serums are concerned. That is, "a guinea-pig sensitized with horse serum is more "susceptible to a subsequent injection of horse serum "than to a subsequent injection of the blood serum of "cattle, sheep, cats, dogs, hogs, etc. The specific "character of the hypersusceptibility is more apparent "when proteid substances of quite different origin are "used at the first and second injections. For example,

[1] *Studies upon Hypersusceptibility and Immunity.* By M. J. Rosenau and John F. Anderson, Hygienic Laboratory, Bulletin No. 36. Government Printing Office, Washington. 1907.

"guinea-pigs sensitized with horse serum do not react "at all to subsequent injections of peptone, vegetable "proteid extracts, egg albumen, or milk." As a corollary to these results, it naturally occurred to the investigators to determine whether guinea-pigs, sensitized with albuminous substances, such as the last mentioned, would be sensitive to subsequent injections with horse serum. Tests were performed with milk, egg albumen, peptone, and the albuminous substance extracted from peas, and it was found that the animals did not react when horse serum was injected subsequently. But whilst the reaction with horse serum is specific, this property is not confined to the serum obtained from this species of animal, since the guinea-pig shows quite as high a degree of susceptibility to the serums of cattle, sheep, hogs, dogs, and cats. In fact, the authors declare in general terms that "the reaction following a second "injection of proteid matter in the guinea-pig appears "to be common to all the higher forms of albuminous "substances, no matter from what source." The duration of susceptibility appears to be very long. It is stated that "there is no diminution in the susceptibility "of a guinea-pig to subsequent injections of horse serum "for at least one year. The longest period we have "observed is 480 days." Consideration has also been given to the question of the transmission of hypersusceptibility from parents to offspring, and the authors have found that the increased sensitiveness to the toxic action of horse serum is transmitted through the female guinea-pig, whether sensitized before or after conception, but not through the male. No part is played by the milk in the transference of this susceptibility.

From what has been said the inference may reasonably be drawn that pathologists can tell us much more about the hypersusceptibility of guinea-pigs to horse serum than they can about the reasons for the undesirable results which occasionally follow the use of this serum, probably much the safest which can be employed, in human therapeutics. But we must not on that account regard these laboratory experiments as no more than an ingenious display of scientific gymnastics. "Anaphylaxis" and "antianaphylaxis" in the guinea-pig are something more important than the latest fashion in experimental research and abstruse nomenclature, partly because the toxic potentialities of serum are of practical concern in therapeutics, and partly because it is becoming apparent that "hypersuscepti-"bility" is in some degree scientifically akin to the first stages in the processes of immunization.

RAT FLEAS AND PLAGUE.

THE Advisory Committee appointed by the Secretary of State for India, the Royal Society, and the Lister Institute, to inquire into problems relating to plague infection has largely concerned itself with experiments upon the transmission of plague by fleas. In the first report, issued last year,[1] many interesting articles were devoted to this subject, and we find that the further investigations on fleas which have been considered necessary occupy a prominent place in the second report, a full notice of which was recently published in the BRITISH MEDICAL JOURNAL.[2] It is clear that the Committee attaches high importance to the significance of rat fleas as vehicles in the transmission of plague, and therefore it is worth considering what are the salient facts elucidated by their inquiry.

[1] BRITISH MEDICAL JOURNAL, October 20th, 1906, p. 1045.
[2] Ibid, July 20th, 1907, p. 155.

In the first place, it has been shown that rat fleas, such as are commonly met with in India, actually do bite man. This is an important point to establish, since it has often been denied, on the authority of Galli-Valerio, that the flea can thus act as an intermediate agent in the transmission of plague from the rat to man. But whilst it is true that the species of rat fleas which are common in Europe, upon which Galli-Valerio based his observations, rarely attack man, the common rat flea of India, Australia, and Manila is a different species (*Pulex cheopis*), and the human subject is by no means exempt from its bites. In the course of their work members of the Committee and their native attendants, who had previously been well immunized with Haffkine's prophylactic, were often required to enter plague-infected dwellings in Bombay. On the bare legs of the natives, who had remained in the infected rooms for only a very short time, large numbers of fleas were caught, and of these a very considerable proportion proved to be *Pulex cheopis* (51 out of 113 in one case, and 60 out of 80 in another). Still more significant are the experiments in which captured rat fleas were kept in wide-mouthed jars and fed by the daily introduction of a man's hand and forearm. It was observed that they bit readily enough, and the man himself soon became aware of the fact. In this way rat fleas could be kept alive for nearly four weeks by feeding them on human blood.

Recognizing the possibility of the flea being an infective agent, it is desirable to form some idea as to the quantity of plague virus which these insects are likely to convey. It has been shown that the blood of plague-infected rats shortly before death may contain as many as 100 million plague bacilli per c.cm. The average capacity of a rat flea's stomach is 0.5 c.mm.; it is therefore possible for the insect to ingest as many as 5,000 plague bacilli. Another important fact which has been ascertained is that multiplication of the plague bacillus takes place in the stomach of the rat flea.

It is thus abundantly clear that the flea is capable of carrying about large numbers of plague bacilli, and the next question which arises is, How does the insect dispose of them? On rare occasions bacilli have been found in the flea's oesophagus, but never in the body cavity nor in the salivary glands; and no evidence has been obtained in favour of infection either by contaminated mouth parts or by regurgitation from the stomach, although, as a theoretical possibility, these modes of infection cannot be excluded. On the other hand, it has been shown that (1) the bite of a healthy flea affords a sufficient avenue for infection by septicaemic blood spread upon the bitten part; (2) plague bacilli are present in the rectum and faeces of fleas taken from plague rats, and such faeces are infective to guinea-pigs both by cutaneous and by subcutaneous inoculation; and (3) that the flea has a habit of defaecating whilst it is sucking blood. An obvious corollary from these considerations is that the rubbing of the skin consequent on the irritation produced by a flea-bite is a very likely means of inoculating the body with any plague bacilli which may have been conveyed to its surface by the insect.

It is impossible to resort to direct experiment in order to ascertain whether the human infection may actually be induced by the agency of fleas, but valuable indirect evidence has been obtained by observations on the lower animals. It has been shown that when rats are kept near to each other, but under such conditions that, whilst there is a free passage for fleas from one to the other, the rodents cannot come into contact with each other's bodies, urine, or faeces, plague is readily transmitted from rat to rat. In different series of experiments the percentage of successful transmissions has varied from 37 to 69. The same fact has been established in experiments, yielding over 50 per cent. of positive results, where fleas have been taken from infected rats and directly placed upon healthy animals. Much weight is added to these observations by the fact that in control experiments, where fleas were

excluded, there was no transmission of plague from infected to healthy animals. These investigations, in which guinea-pigs were employed in addition to other animals, have been carried out by the Committee in "godowns," or cabins, specially constructed for the purpose. From their earlier observations, published in 1906, in which between 300 and 400 animals were used, the Committee concluded that "close contact of plague-"infected animals with healthy animals, if fleas are ex-"cluded, does not give rise to an epizootic among the latter. "As the godowns were never cleaned out, close contact in-"cludes contact with faeces and urine of infected animals, "and contact with, and eating of food contaminated "with, faeces and urine of infected animals, as well "as with pus from open plague ulcers." On the other hand, "if fleas are present, then the epizootic, once "started, spreads from animal to animal, the rate of pro-"gress being in direct proportion to the number of fleas "present." The disease could be transmitted without direct contact of healthy and infected animal, as was shown by one of the experiments, in which the healthy guinea-pigs were not put in until the last inoculated guinea-pig had died and been removed. Nor was contact with contaminated soil necessary, since plague was set up in several guinea-pigs and a monkey which were placed in cages 2 in. above the ground. But when the animals were suspended in cages 2 ft. above the ground, a distance outside the jumping capability of the rat flea, they did not contract the disease; the possibility of aërial infection may therefore be excluded. From these and other observations the Committee arrived at the following important conclusions: "Plague can be transmitted by the rat flea not only "from guinea-pig to rat but from rat to guinea-pig. Further, "it can also be transmitted from guinea-pig to monkey." Continuing their work on the same lines during the off-plague season of 1906 and the plague season of 1907, the Committee have provided additional corroboration of the conclusions already formulated.

Not confining themselves to the proof that fleas can transmit the disease from experimentally infected animals, the investigators have also adduced more direct evidence for believing that the spontaneous disease is also propagated by these insects to a large extent. They lay stress on the anatomical evidence, which shows that there is a close correspondence between the localization of the primary bubo in spontaneously infected rats and in rats purposely infected by fleas. Amongst 5,188 rats belonging to the former class the percentage of animals showing cervical buboes was 72, whilst axillary buboes were present in 23 per cent., and inguinal in 18 per cent. Flea-infected rats, 117 in number, gave cervical buboes in 61 per cent. of the cases, axillary in 22 per cent., and inguinal in 25 per cent. In no instance was either a naturally infected rat or a rat purposely infected with fleas found to exhibit a mesenteric bubo. On the other hand, amongst 119 rats experimentally infected by feeding, the percentage of mesenteric buboes was 72.5, whilst the percentages of cervical, axillary, and inguinal buboes were, respectively, 36, 1, and 1. From these observations the authors conclude "that naturally infected rats are not infected by "feeding, and that these results afford additional evidence "that they are infected by the agency of fleas." In confirmation of this conclusion experiments are cited which show that the distribution of buboes in guinea-pigs artificially infected by fleas is identical with their distribution in those animals which become infected in consequence of their being placed for a few hours in plague-infected houses in Bombay.

The Advisory Committee has not yet completed the issue of its reports, but we think we have said enough to show that the details already published form a valuable contribution to the study of plague, and we await with interest the appearance of the epidemiological studies of plague in Bombay and the Punjab villages which will form the subject of two future reports.

EGYPTIAN OPHTHALMIA.

The account which Mr. A. F. MacCallan, Chief Inspector of Ophthalmic Hospitals in Egypt, has given of his four years' work will be read with much interest (p. 1072). On July 1st, 1903, he was appointed ophthalmic surgeon and administrator of a travelling ophthalmic hospital in Egypt. His first step was to make a general tour, accompanied by his Egyptian assistant, in the Egyptian Delta, staying in some of the more important towns; his coming was announced by the local authorities, and poor people in need of ophthalmic treatment were invited to attend at the Government general hospitals for treatment. Although the treatment was necessarily inadequate owing to the short time spent in each place, the tour was very useful in giving opportunities for studying the general conditions, in gaining the confidence of the people, and in rousing them to the necessity of having their eyes treated. The travelling hospital, in reality a camp consisting of a set of large tents, was quickly in working order, and very soon a second travelling hospital was organized; as a result of representations made by Mr. MacCallan, the Government has adopted the policy of building hospitals in large towns, one or more yearly as the finances permit, and has given that gentleman official rank for controlling them under the Director-General of the Department of Public Health. The idea of establishing special hospitals was adopted because there was no available accommodation in existing hospitals, and no land to be obtained for building purposes in their neighbourhood, and because the large number of patients attending the ophthalmic section daily (often 500) would have disorganized the arrangements of the general hospital. Mr. MacCallan hopes in the course of eight to fourteen years to have a special ophthalmic hospital in each of the fourteen provinces of Egypt. Further, by this work a nucleus of Egyptian ophthalmic surgeons has been formed, and Mr. MacCallan says: "I have striven to instil into them some of those "traditions and axioms of ophthalmic surgery "which I learnt during my three years' tenure of "the post of house-surgeon at Moorfields." The most important step of all seems to us that which Mr. MacCallan has taken with regard to the schools. He says: "It is in the Government schools that we must "teach ophthalmic hygiene by the practical means of "the treatment of the eyes of the trachomatous pupils," and he states that he intends to introduce a system of regular daily inspection and treatment of the eyes of the scholars in the Government schools by the staff of the ophthalmic hospitals which are to be built in all the large towns. We protest, however, that as flies and dirt are the cause of a great proportion of the mischief, it is the bounden duty of the sanitary authorities to aid Mr. MacCallan in his splendid effort to abolish contagious eye diseases in Egypt. Trachoma is so common in Egypt that it used to be called Egyptian ophthalmia, and recent examination of the pupils in the Government schools in Cairo has shown that more than half (51 per cent.) suffer from this one disease, and an even larger percentage (56.9) was found in the Government school at Damietta. If Sir Ernest Cassel realized that there was a cause to which this disease must be traced, he would be the first to suggest that a special scientific commission should be organized, and a portion of the fund he has so generously provided devoted to defraying its cost, in order to discover the cause of the disease and to suggest methods of prevention. A study of the reasons for its great prevalence in Egypt would confer a great benefit not only on the people of that country but on mankind. Trachoma is contagious, and therefore due to some living agent. More than one microbe has been named as the cause, but on insufficient evidence, and the

question deserves and demands further scientific study. Once established the disease is most intractable to treatment—a reproach to ophthalmology. It should be attacked at its root, and for this two things are necessary. First, a determined and well-organized effort should be made to work out its bacteriology, and secondly, the fact that it is a communicable disease should in the meantime be utilized to protect children as yet uninfected. Very useful knowledge, such as the value of cleanliness of the person and of the house, and the danger of flies, might be taught to the scholars in the schools. Mr. MacCallan, however, has probably thought of this, for the ability he has shown in the difficult task of organizing the hospital scheme, and the amount of good work he has already accomplished, is a guarantee that he will not put treatment before prophylaxis. His plan of giving instruction in the Government schools is admirable, as far as it goes, and should prove of infinite value if imitated in other countries in which trachoma is prevalent.

THE PHYSICAL FITNESS OF RAILWAY MEN.

IT is difficult to explain some of the recent railway accidents, including the terrible wreck at Shrewsbury this week, except on the assumption that the responsible person was not at the time in full possession of all his faculties. The questions put by the President of the Board of Trade at the inquiry on Wednesday show that he had this point in mind. The accident seems clearly to have been due to the driver allowing his engine to take a curve at the speed of about sixty miles an hour, although he had often driven the train before and knew that he ought to slow down to eight or ten miles an hour. So far as can be ascertained, the brakes and all the other mechanism of the engine were in good order, so that the only explanation is that the human instrument failed. There seems not the smallest ground for supposing that either the driver or his fireman was under the influence of alcohol, and the railway officials unanimously repudiate the suggestion that he could have mistaken his position and thought himself further from Shrewsbury than he was. The only remaining suggestion seems to be that the driver suddenly broke down owing to illness leading to temporary failure of his powers and physical collapse. Mr. Lloyd George pressed the locomotive foreman at Crewe for an alternative, but no answer was given. Mr. Lloyd George elicited from the locomotive superintendent that a man complaining of illness while on the engine plate would be taken off duty, the superintendent adding that he never knew of a case of a man actually collapsing on the plate. To a further question whether the drivers ought not periodically to be subjected to examination, the witness replied in the negative, but added that he made a point of seeing the express men frequently, questioning them about many details and seeing that they were "right," which he explained to mean capable of taking up their duties. To this Mr. Lloyd George made the obvious retort that the locomotive superintendent could not express an opinion as to their physical fitness, and the witness admitted that there were no means of ascertaining whether a man had, for instance, a weak heart, and said that he could not assume the position of a medical man. Mr. Lloyd George, while agreeing with this, pointed out that there was a time when a man breaks down, and that knowledge of his condition might not come until it was too late, adding that to drive an express train must be a tremendous strain having regard to the responsibilities involved. The officials seemed to be disposed to deny this, but the public will agree with the President of the Board of Trade. The idea in the mind of the President was clearly that men holding such responsible positions as drivers of express trains and signalmen ought to be subject to periodical medical inspection; this we have frequently urged in the past, and we sincerely hope that this terrible accident may induce the Government to introduce legislation for the purpose, if the companies will not spontaneously undertake to make the necessary regulations.

TENURE OF OFFICE OF MEDICAL OFFICERS OF HEALTH.

LAST July attention was called to the decision of the Southwell District Council to reduce the salary of the Medical Officer of Health, Dr. Charles Wills, upon grounds which appeared to be altogether insufficient. A meeting of the council on October 4th was attended by Dr. Farrar, Medical Inspector to the Local Government Board, and Major Arnim. The inspectors were informed by members of the council that the reason for the proposal to reduce the salary of the Medical Officer was that Dr. Wills held a similar office in five unions, so that the Southwell district only received ten weeks of his time during the year, and that by the appointment of a second sanitary inspector the work of the medical officer of health would be lightened. Another member hinted that the real reason for the reduction was "to take it out of Dr. Wills," because the council had to appoint two inspectors. A clerical member of the council argued that Dr. Wills was adequately paid, considering the amount of work he did, and asserted that Dr. Wills had accepted the reduction. Dr. Farrar immediately pointed out that this acceptance was subject to reference to the Local Government Board, and went on to say that Dr. Wills's services could not be measured by time, because he was a sanitary expert; moreover, there were 116,000 acres, or nearly 180 square miles in the union, and the medical officer had to travel either by horse or motor car long distances, as it was impossible for him to use trains to do his work. So far from his work being diminished by the appointment of an extra inspector, the fact was that the more inspectors the greater would be the work of the medical officer if the inspectors were active conscientious men. Further, it must be remembered that the population had doubled; the reduction proposed would only amount to one-tenth of a penny on the rateable value of the union. Dr. Farrar concluded by saying that the Local Government Board might refuse to pay one-half the salary as at present, if the reduction was made. After Dr. Farrar had answered certain questions, Dr. Hind gave notice that at the next meeting he would move to rescind the resolution to reduce the salary of the medical officer of health. With reference to the proceedings of the local authorities at Wimborne, we may say that we are informed that Mr. Greenwood has resigned all the offices to which he was recently appointed. It is to be hoped that the local authority will take advantage of the opportunity thus afforded, and bring the dispute to an amicable conclusion.

DISCUSSIONS AT MEDICAL SOCIETIES.

MR. SHATTOCK, the new President of what used to be the Pathological Society and is now the Pathological Section of the Royal Society of Medicine, has inaugurated his reign by the introduction of a change in the manner of discussing papers which we believe will have a salutary effect. In the presidential address with which he opened the work of the session on Tuesday last he said it had hitherto been the practice, after a paper had been read, for subsequent speakers to make their observations in a set or continuous form. In place of this he proposed to substitute, during his year of office, another method of discussion, which might by contrast

be called that of interruption. This was the method which persons adopted in discussing any subject privately. Its advantages were, he submitted, that it would encourage debate by making it much easier for members to take part in it; it would elicit opinions more effectively, and it would be less tedious to those who listened. The method, in short, was that commonly spoken of as the Socratic, as illustrated in the Dialogues of Plato. Surely, said Mr. Shattock, no higher guarantee of its value was needed than this. It was, he thought, a method particularly adapted for the discussion of scientific questions. As long, therefore, as Mr. Shattock, who for many years has been the *praesidium et dulce decus* of the Pathological Society, holds sway, the formal debate is to be abolished. It must be acknowledged that it is too often a weariness both to the flesh and the spirit, and that it has the serious drawback of giving an unfair advantage to mere fluency of speech at the expense of sound thought. There is far too much oratory in this country as it is; for examples of its evils we need look no further than to the debates in what Carlyle irreverently called the Grand Palaver House. Under the new dispensation readers of papers in the Pathological Section will have to stand the fire of questions arising directly out of the subject dealt with; many men can throw useful light on a question by asking for explanations or by casual remarks who do not care to make a set speech. We believe that by the method introduced by Mr. Shattock time, and possibly temper, will be saved, and a freer expression of opinion will be secured. His proposal is, we believe, entirely original as far as he is concerned, but it may be pointed out that a similar method was enjoined on the first members of the Royal Medical and Chirurgical Society when it was founded in 1805. In the preface to the statutes of that body, the following passage occurs: "The reading of such communications "as are presented to the Society forms one part of "its ordinary business. The interchange of practical "knowledge, in the way of easy conversation, is the "other, and the President and Council have much "satisfaction in noticing the important advantages "which have resulted, and still continue to result, from "the opportunities which are afforded, in a meeting of "liberal and enlightened professional men, of stating "difficulties, imparting observations, or suggesting "improvements in practice. . . . It may be proper, "however, to remark, that it does not at all enter into "the plan of this institution, to suffer its proceedings "to assume the form of debate or disputation." We venture to express a hope that the precedent once more established by Mr. Shattock will be followed by other medical societies.

THE OPEN-AIR TREATMENT OF INSANITY.

At the recently-held International Congress of Alienists at Amsterdam a paper was read by Dr. C. C. Easterbrook, the Medical Superintendent of the Ayr Asylum, on the Sanatorium Treatment of Active Insanity by Rest in Bed in the Open Air. Dr. Easterbrook stated that previously to 1902 he had been accustomed to prescribe exercise in the open air for those cases of active insanity whose physical condition did not require confinement to bed in the asylum hospital, but that after that date, and until the opening in 1906 of the specially-designed hospital[1] for the sanatorium treatment of active insanity, he had submitted all new patients to a preliminary course of indoor treatment in bed. This indoor rest treatment, which is now becoming commonly applied to all cases of recent or acute insanity, he found to give favourable results so far as the mental condition of his patients was concerned, a comparison of the recovery-rates of those treated by rest in bed showing a slight increase on those of the patients treated by exercise. On the other hand, there was generally a retardation of the improvement in the physical condition, general metabolism, and non-nervous functional activity which was often observed after exercise in the open air. To remedy this matter he instituted rest in bed in the open air, and since the opening of the new hospital all newly-admitted patients have been straightway placed in beds in the verandahs attached to the reception wards of the hospital, where they remain during the whole of the daylight hours, and he has found that this treatment combines the advantages of both former methods. There is, he stated, a rapid subsidence of the nervous and mental symptoms as a rule within two or three weeks, an increase of the hours of sleep at night, not counting light slumbers during the day, and a rapid improvement in the physical condition, the quality of blood improving, appetite increasing, and an increase of weight amounting to 5 lb., 6 lb., or 7 lb. occurring during the first two or three weeks. This practice having proved so beneficial to newly-admitted patients, he has since extended it to other patients during their relapses and phases of active insanity, with a like result. This treatment has not been established long enough to afford a statistical expression of the results, but there can be no question that rest out of doors is superior to rest within doors, and there can be no reason why the extensive verandah accommodation found at so many general hospitals for patients confined to bed should not be provided at asylums. Doubtless, the open-air treatment of suitable cases of insanity has long been employed by isolated medical men; in fact, we know of one physician, lately deceased, who treated for nearly forty years all cases of recent insanity on the lines now generally accepted as beneficial in the treatment of pulmonary tuberculosis, but as a routine treatment for the non-tuberculous acute insane it was, we believe, first instituted in America by Dr. E. C. Dent in 1901, a fact to which Dr. Easterbrook alluded in his paper. As a means of treatment of the tuberculous insane, and further, as diminishing the risk of the tuberculous infection of other patients, the advantages of prolonged rest in the open air are obvious, but with regard to the non-tuberculous insane it is possible that the beneficial influences of direct sunlight and open air have not been even yet sufficiently appreciated, and it appears probable that the erection of specially-constructed sanatoriums with this object will undergo further development.

[1] British Medical Journal, September 14th, 1907, p. 694.

MORAL SURGERY.

In that organ of sweetness and light, the *Daily Express*, of September 21st, 1904, an account was given—it is almost needless to say from an American source—of a surgical operation that had restored an incorrigibly criminal boy to mental and moral health. Similar operations were said to have been performed two years before, and it was alleged that "as a result it is "now accepted data (*sic*) that injuries to the brain "through accident or war, through the carelessness of "drunken parents or nurses, or received by children at "play, are frequent causes of the development of "criminality and desperate homicide." "Science," it was added, "with faith in this new belief, set to work "and has now proclaimed that criminal mankind can "be redeemed." Criminal tendencies were in fact to be extirpated by the surgeon's knife, and crime, including such comparative trifles as burglary, tramping and lying, was to be eliminated from the social body more drastically and more successfully than Sir Peter Laurie succeeded in "putting down" suicide. Following in the footsteps of the American pioneers of

moral surgery, Dr. Bernard Hollander has recently reported to the Incorporated British Phrenological Society the case of a boy who was a liar, a thief, a bully, and a terror to his family, and who, after being trephined, became quite a decent member of society. We are told that he not only lost his bad propensities, but showed higher moral feelings. The case would seem to afford some confirmation of the ancient belief that a man could be delivered from evil spirits by making a hole in his skull through which they escaped. We congratulate Dr. Hollander on his brilliant success as a surgical exorcist. It opens up a hope that an easy cure may be found for the "Sins of Society" of which we hear so much. It is the penalty of genius nowadays that its utterances are often made to appear in a blaze of sensational publicity which must be disconcerting to the modesty that is one of the characteristics of a man of science. This penalty Dr. Hollander has suffered to a degree which must be peculiarly distasteful to a person of his retiring disposition. Not only has his case been trumpeted forth in most of the London newspapers, but the reports have in some cases been illustrated with portraits which, though we have no personal knowledge of the illustrious original, we venture to think must be libellous. The newspapers are really somewhat unkind to Dr. Hollander, for this is by no means the first time that they have given an undesired prominence to his name. He has written to us to complain of this, and we hope the newspapers will take note of the fact that Dr. Hollander extremely objects to the "discreditable sensation" which the publication of his views on the possibilities of surgery as a cure for certain forms of insanity have produced. There is however, this excuse for the newspaper scribes, that they doubtless believed that a new discovery of great importance to the future of mankind had been made, and therefore thought it was their duty to proclaim it to the world. Perhaps Dr. Hollander will develop the resources of moral surgery still further. We remember to have read some years ago a novel[1] in which a doctor tried grafting the centres of speech and memory from a criminal into the brain of a young lord who had lost these faculties as a result of an injury to his head. In regard to the purpose intended, the operation was successful, but unfortunately the criminal tendencies of the man from whom the graft was taken were transplanted at the same time. The young lord took to burglary and murder, but was cured by a second operation in which the criminal brain graft was removed. Might not Dr. Hollander try the effect of grafting the moral centres from some suitable subjects—and there is so much altruistic sentiment professed at the present day that we are sure there would be no lack of volunteers in so good a cause—and transforming hooligans and other pests of society into good citizens? Of course he will have to secure the approval of the *Star*, for we regret to see that that illuminating periodical has appended to a letter from him a note which seems to show that it regards his views with some distrust. An alarmed correspondent of the *Morning Leader* thinks it necessary to write to express the hope that "no exaggerated value is going to "be attached to Dr. Bernard Hollander's views." We think we can give him the assurance that there is no cause for anxiety on this point.

TEACHING AND LEARNING MEDICINE.

IN his fifth volume of *Clinical Studies*, recently published, Dr. Byrom Bramwell includes an introductory lecture delivered by him before his winter course on the principles and practice of medicine, in which he discusses the value of systematic lectures. He realizes, in the first place, the great difficulty experienced by any lecturer on medicine in the present day owing to the impossibility of dealing adequately with the whole subject within the compass of a hundred lectures, and he explains that he endeavours to get over this by devoting his time to the more important subjects, and to those diseases commonly met with in practice, which is after all the only reasonable method to pursue, although, perhaps, no two teachers would entirely agree on the list of subjects selected as of chief importance. He says, moreover, that his aim as a lecturer is to convey information in as useful a form, in as great a quantity, and as pleasantly, impressively, and attractively as possible. No doubt all lecturers aim at this, but attain it in very varying degrees. On one occasion Dr. Bramwell had some of his lectures reported in shortland, but the 'results were not very satisfactory,' from which we may infer that it is better for students not to take down lectures *verbatim*, but to be content with noting the main points; a student who listens carefully, and writes out an abstract of the lecture after getting home, probably gains more knowledge than he whose attention is occupied with the mechanical business of note-taking. This is, however, a matter upon which differences of opinion exist. Dr. Bramwell rightly insists upon giving vitality and interest to systematic lectures by combining them with ward work and seeking in the hospital living examples of the facts detailed in the classroom. In no other way can systematic lectures be made of value. He deplores the extent to which students allow themselves to be cramped by the requirements of examination, and thinks that there is a disposition to exaggerate examination difficulties. This is an opinion which we completely share so far as the final examination is concerned, but may there not be something in the suggestion that the minds of students become cowed by the cramming which they undergo for the earlier examinations, so that they come to their final examinations without that mental freshness and capacity for taking interest which are to be desired?

[1] *The Experiment of Dr. Nevill*, by Emeric Hulme Beaman, London, 1900.

THE WORK OF THE CLINICAL SOCIETY OF LONDON.

AT the first meeting of the Clinical Section of the new Royal Society of Medicine, the President, Sir Thomas Barlow, chose as the subject of his inaugural address the great services done for medicine by the Clinical Society of London of which the Clinical Section is the lineal representative. The first ordinary meeting of the Society which was held on January 10th, 1868, was addressed by the venerable President, Sir Thomas Watson, who dwelt on the great deficiency of modern medicine on the therapeutical side, and appealed for attempts to be made to bring the therapeutical department of medicine more nearly on a level with those other parts which are strictly ministerial to this. And the object was to be attained by making the bedside observation of disease as accurate, complete, and useful as possible. The initial rules suggested ten minutes as the usual time to be allowed for a communication—a regulation which indicated the necessity of keeping close to the case, but has certainly not been generally observed in recent years. The method of investigation to be pursued by the Society was "absolutely intolerant of speculative "nonsense and the non-scientific use of the imagination." Small committees of one or more members to investigate incomplete cases, and larger committees to investigate clinical and therapeutical questions were also planned, and by their agency enormous advantages had since accrued to medicine. Hyperpyrexial rheumatism was one of the earliest subjects discussed, and received its clinical quietus in an elaborate report of a

special committee submitted to the Society in 1882. In his presidential address Sir James Paget remarked that clinical facts were as certain as anything in biology and had remained certain for centuries, while the explanation of them had changed with every successive change in physiology, and he contended for the dignity and immense value of case records. In the third volume of the Society's *Transactions* Sir Lauder Brunton reported his initial case of angina pectoris treated by amyl nitrite—an instructive example of physiological suggestion. In the next volume Dr. Hughlings Jackson reported a case of hemiplegia in a syphilitic subject, and therein anticipated what has subsequently become common knowledge respecting the different modes in which syphilis can affect the brain. Sir W. Gull's two valuable papers on anorexia nervosa and on the cretinoid state supervening in adult life in women showed him to be one of the greatest clinicians of his time. Sir Thomas Barlow considered the term "anorexia nervosa" and the lines of treatment advocated by Gull both admirable. The report of the Committee on Myxoedema, of which Dr. Ord was Chairman, submitted in 1888, rendered the volume for that year the most valuable publication of the Society. Hilton Fagge, Buzzard, Anstie, and Dyce Duckworth all contributed valuable clinical material in the early struggling years of the Society. Sir W. Jenner's Presidential Address and Murchison's contributions on the period of incubation of scarlet fever and some other fevers paved the way for the valuable report of the Committee on the Periods of Incubation of Acute Specific Diseases, edited by Dr. Dawson Williams. Another important report was that on antitoxin treatment of diphtheria, edited by Dr. W. Pasteur, which led to the almost universal adoption of that method in the English treatment of diphtheria. The Presidential Addresses of Sir A. Clark, Sir W. Broadbent, and other physicians met with the full appreciation of the speaker, and he drew particular attention to certain papers on localized obliterative arteritis, thinking it almost certain that other types of recoverable arterial sclerosis and combined arteritis and phlebitis would be found if looked for; and that chronic forms of erythromelalgia yielded evidence of localized lesions more marked on the arterial than on the nerve side. The work done by the Society in the elucidation of many skin diseases was eulogized; and much of the surgical work and two surgical reports—that on spina bifida, edited by Mr. Parker and Mr. Shattock, and that on Charcot's joint disease, edited by Mr. Pollard—were declared to be excellent. Lord Lister's philosophical discourse concerning the subject of ligatures was brought to mind; and the successive invasions of surgery on diseases of the thoracic and abdominal viscera, and on some of those of the brain and cord, were duly noted. The surgery of the appendix, Mr. Henry Morris's operation of nephrolithotomy, operations on the pancreas and liver, those for perforation of the bowel in typhoid, for gastric ulcer, for neoplasms of the alimentary canal, and injuries of the spleen were also amongst the triumphs of surgery chronicled in these *Transactions*. The index to the first thirty volumes, with its endless cross-references, industriously prepared by Dr. Garrod, was pronounced invaluable for clinical investigation. Of the 128 original members of the Society 26 still survive. As regards the future, the work of the Section will be rather that of cases than subjects. Demonstrations of living specimens will be the leading feature of every meeting, and after the informal inspection in the anterooms before the meeting, each case will be fully demonstrated and discussed at the meeting itself. Modern methods of clinical investigation will also be discussed.

THE GERMAN ANTIQUACKERY LEAGUE.

On the occasion of the twenty-fifth jubilee of the Antiquackery Union of Amsterdam, the German Society for the Suppression of Quackery, founded on November 11th, 1905, convened an international meeting, which was held on September 24th, in the Langenbeck Haus, Berlin. The meeting was held under the presidency of Dr. Siefart, President of the German Society, and Dr. Rost represented the Imperial Health Office. On the proposal of Dr. Neustätter, of Munich, it was decided to amalgamate all the bodies taking part in the Congress into one association. It was further decided that twice a year reports should be furnished from the local bodies to the Central Committee, and that these should be published in the *Gesundheitslehrer*, a periodical edited by Dr. Kanton, of Warnsdorf. The opinion was expressed that similar associations should be formed in other countries. An exhibition, organized under the auspices of the German Committee, was held in connexion with the International Congress of Hygiene and Demography. It consisted largely of a collection of quack literature, medicines, and apparatus made by Dr. Carl Alexander, of Breslau, with a number of similar things illustrating quackery in the seventeenth and eighteenth centuries, from the private collection of Professor George Meyer, of Berlin. The exhibition was arranged in ten sections, and covered the whole field of quackery, including magnetic healing, prayer cures, and Nature-healing. The statistical section showed the enormous development of quackery in Germany; it was estimated that in Berlin alone the number of quacks had increased by 80 per cent. in the last twenty-five years. Another section consisted of documents of various kinds showing the scope of the existing laws against quackery in Germany and proving how easily they were evaded.

SURGERY AT THE ROYAL SOCIETY OF MEDICINE.

Next Wednesday, October 23rd, at 5.30 p.m., the Surgical Section of the Society will hold a special meeting, in conjunction with the Clinical, Laryngological, Medical, and Obstetrical Sections, to receive a communication from Professor Goldmann, of Freiburg, on his researches into the relations of cancer in man and animals to the vascular system, with especial reference to the spread of the disease in the blood vessels, the circulation within malignant growths, and the defensive value of the blood vessels in them. Specimens will be shown, and he will also show *x*-ray pictures of cases of obscure abdominal diseases, cancer, subphrenic abscess, appendicitis, etc. It is hoped that this first meeting of the Surgical Section will be largely attended.

We learn from the *Tribune* that mass meetings are to be held in Hyde Park at 3 o'clock and 7 o'clock on October 20th to advance the cause of antivivisection. Letters of approval have been received from the Rev. R. J. Campbell, Archdeacon Wilberforce, Mrs. Besant, Mr. Franklin Thomasson, M.P., Mr. Will Crooks, M.P., and Mr. Pete Curran, M.P.

At the request of the Government of Mauritius, the Colonial Office has arranged with Major Ronald Ross, Professor of Tropical Medicine in the University of Liverpool, to proceed to Mauritius in order to advise the Government of that Colony as to the best methods of dealing with malaria. On the suggestion of Colonel David Bruce, C.B., the Director-General of the Army Medical Department (Sir Alfred Keogh) has nominated Major Fowler, R.A.M.C., to work in association with Major Ross as regards the military aspects of the matter.

Scotland.

THE MEDICAL SERVICE OF THE TERRITORIAL ARMY.

SIR ALFRED KEOGH, M.D., K.C.B., Director-General of the Army Medical Service, has been visiting Scotland with a view of consulting with the medical profession in the chief centres with regard to the organization of the medical service of the territorial force to be created under the Territorial and Reserve Forces Act. A meeting was held in Glasgow on October 12th, under the chairmanship of the Lord Provost of Glasgow, as Lord Lieutenant; it was attended by the Principal of the University, the President of the Faculty of Physicians and Surgeons, the Regius Professor of Surgery, Dr. Beatson, C.B., Professor H. E. Clark, C.M.G., and many other members of the profession interested in volunteer work. In his address the Director-General dealt first of all with the defects in the present volunteer medical organization. He pointed out especially the absence of any hospital organization therein, and how under the existing volunteer regulations the leading civilian physicians and surgeons were debarred from taking any active part in the medical service of the volunteers. He also called attention to the fact that the volunteer force had no existing sanitary organization, and that it possessed no administrative staff. He made it clear that if the territorial army had to be mobilized for the defence of the country in the absence of the regular army, that the existing volunteer medical organization would be quite unfitted to perform the important duties that would devolve upon it, with the result that grave disaster might fall on these mobilized troops in the shape of sickness and epidemics. He then, with the assistance of diagrams, described the medical and sanitary arrangements of the regular army, and said that that of the territorial army should be an exact counterpart. The meeting, without committing itself to any definite resolutions upon the scheme, clearly took a very favourable and friendly view of the proposals, as was shown in the speeches of Principal MacAlister, Sir Hector Cameron, Dr. Reid, and others. Colonel Mackenzie, Brigadier of the Highland Light Infantry Brigade, also spoke in support of the scheme, while Mr. Hedderwick, Chairman of the Royal Infirmary, assured the meeting that the scheme would have every support from the managers of that institution.

A Committee, consisting of Principal MacAlister, Sir Hector Cameron, Dr. Reid, Dr. Napier, Dr. A. K. Chalmers, M.O.H. Glasgow, Dr. F. Adams, and Dr. Mackintosh, M.V.O., Medical Superintendent, Glasgow Western Infirmary, with Dr. Beatson, C.B., as convener, was appointed to receive any suggestions from the profession, and to lay them before the Director-General. The meeting closed with a vote of thanks to the Lord Provost.

Sir Alfred Keogh has also visited Aberdeen and Edinburgh, and will, during the course of the month, go to Manchester and Leeds to confer with the medical profession in those centres.

CEREBRO-SPINAL MENINGITIS IN SCOTLAND.

The Registrar-General for Scotland reports that during the month of September 44 deaths were due to cerebro-spinal meningitis. Of these 29 occurred in Glasgow, 8 in Edinburgh, 4 in Dundee, 1 in Aberdeen, 1 in Paisley, and 1 in Leith.

OPENING OF THE MEDICAL SCHOOLS.

The classes in the University of Edinburgh and in the Extra-Academical School of Medicine were opened for the winter session on Tuesday, October 15th. A special graduation ceremonial, mostly in medicine, will take place on Saturday, October 19th, at 10.15 a.m.

Ireland.

MEATH HOSPITAL.

THE opening of the Session at the Meath Hospital was marked by the delivery of an address by Dr. James Craig, F.R.C.P., one of the Physicians, which is reproduced elsewhere in this issue. The President of the Royal College of Physicians occupied the chair. The President of the College of Physicians said Dr. Craig had rightly warned his hearers against the Poor-law medical service. He ventured to say that the absence of competition was the only thing that induced any one to enter it. He moved a vote of thanks to Dr. Craig Dr. J. Magee Finny seconded the motion, which was passed unanimously. The Provost of Trinity College was called to the Second Chair, and a vote of thanks to the President was moved by Sir J. W. Moore, seconded by Mr. Taylor.

THE TUBERCULOSIS EXHIBITION.

Preliminary Conference.

Under the patronage of the Lord Lieutenant and the Countess of Aberdeen, an exhibition has been opened in one of the buildings of the Irish International Exhibition at Dublin, for the purpose of impressing the public with the serious dangers of tuberculosis, and of illustrating the methods employed in combating it. The actual promoters are the members of the Women's National Health Association, of which Lady Aberdeen is President, and on October 11th a conference was held of delegates from various parts of Ireland. Diagrams were exhibited showing that, as compared with England and Scotland, Ireland's position is most unsatisfactory and discouraging. According to one of the diagrams, the deaths from tuberculosis in Ireland in 1906 amounted to 11,756, a figure much in excess of the gross number of cases of mortality resulting from any other disease in that year. Of every 100 deaths 76 were caused by phthisis. Statistics gathered from authentic sources show that Ireland holds fourth place with regard to this disease among the British possessions and foreign countries. As indicated by maps specially coloured to throw into relief the parts of Ireland where tuberculosis is most prevalent, the unions of Cork and North and South Dublin stand out prominently among the districts which suffer to the greatest extent from its ravages. Other sections are devoted to pathology, literature, and models of shelters by Kennan and Sons, Dublin, S. Burge, Sandymount, Dr. Finegan, Carlingford, Dr. Leopold Hare, Dublin, Dr. Steede, Rostrevor, Dr. Smyth, Altadore, Wicklow, and Langan and Co., Dublin.

At the opening of the conference, Lady Aberdeen in her address said that it was urged that the exhibition would be an object lesson to everybody in Ireland, and that every one—all classes of men and women, people who were in positions of public authority, mothers in their own homes, teachers—every one, as well as the medical profession, should join in the effort to stamp out the disease. It was hoped that the exhibition would bring home to them the present state of things, and show them the great results attained in other countries by the means adopted to combat the disease. The exhibition would go to Belfast, and no doubt there would be invitations to send it to north, south, east, and west.

The Registrar-General, Dr. Thompson, Dr. Boyd, and Dr. Ella Ovenden having spoken,

The Archbishop of Tuam (Dr. Healy) moved a resolution declaring the exhibition to be worthy of inspection by all connected with the administration of the Public Health Acts.

Lord Monteagle seconded the motion.

Dr. Ussher (Dundrum) said sanatoriums might be good for people in cities and towns, but for those in the country, where there was abundance of fresh air, what was of more importance was the improvement of the dwellings of the poor as a preventive.

In the evening there was a large meeting in the lecture hall of the Royal Dublin Society, when, under the presidency of the Lord Lieutenant, Dr. William Osler, Regius Professor of Medicine at Oxford, delivered an address on What the Public can do in the Fight against Tuberculosis. Two of the greatest illustrations of the victory of human efficiency might be said to be in connexion with fevers. They had had one of the greatest victories ever achieved in the abolition of one of the most terrible of scourges—namely, typhus fever. Until a decade or two ago it ravaged this country. From 1871 to 1880 there were 7,495 deaths from this disease. In 1905 there were 68. There had been a victory over that disease in this country which many of them were not aware of, and he wished to bear testimony to the noble and great men who fought that plague for so many years for the Irish people—the physicians of Ireland. If there was one record of their profession of which they might be proud, it

was the record of the Irish physicians fighting typhus fever from year to year. Not only typhus but enteric fever had gradually disappeared. There were other directions in which this victory of human efficiency could be illustrated, but he called to mind but one disease, and that perhaps the greatest and most terrible disease that the white man had to contend with—namely, malaria. The victory over malaria was to-day practically complete, and they might say that the solution of the white man in the tropics had been solved altogether by scientific investigation. Now there was one great scourge remaining, "the white plague," as Oliver Wendell Holmes called it, a disease which killed, it was estimated, at least a million annually—the terrible disease of tuberculosis. This, too, was a disease about which they might have the fullest possible measure of optimism, just as full as about typhus fever and about enteric. They had had in the past twenty-five years an extraordinary increase in their knowledge of it. In the first place, they knew the germ. They knew the cause so distinctly that they could pick it out as easily as they could a beech nut from other nuts; secondly, they knew whence it came. The two sources were from persons with tuberculosis and from the milk of tuberculous cows. Thirdly, they knew how it got into the body. They took it in through the breath, and they swallowed it with their food. It was the soil that was the important thing. How was the ground prepared for the seed to grow? There were three "bads"—bad food, bad air and wretched habitations and improper methods of living, and bad drink—alcohol. The great majority would not get tuberculosis if they avoided those three B's and did not cultivate the soil proper for its growth. Then they had learned how to recognize the disease, and they knew how to prevent it just by the distinction of the germ if they could only get the people to help them in it, and by making the soil unsuitable. They had also learned how to cure it, and, lastly, they had learned that the disease was not hereditary. What was the condition to-day in reference to tuberculosis in Ireland? They would see by the chart before them an appalling record—a total of 12,000 deaths from tuberculosis in 1905, one-sixteenth of the entire number of deaths. He asked what were they to do to be saved? Three things. In the first place, to institute a campaign such as that in which they were at present engaged. The second great thing was the reorganization of the public health service. First, compulsory notification. The only possible way they could get at the disease was to know where it was. Second, full control of these cases as far as seeing that measures were carried out in reference to disinfection, and particularly to the disinfection of the houses of the poor after the death of a patient. And, most important of all, absolute control on the part of the public health authorities over the hovels in which the people lived; for if there was one thing more than another which made him boil with indignation when he came to Ireland it was to see the awful hovels in which some people had to live. Then, the third great thing was the proper care and cure of cases. For this purpose he advocated separate wards for advanced cases, and the building of sanatoriums for fresh cases; but if they built sanatoriums, they should build cheap ones. In fact, a sanatorium that they could afford to burn down every fifth or sixth year was the better form to adopt. Finally, there were two all-important things in this crusade they must bear in mind, without which they could not get on at all. The first was enthusiasm. That they must have; but, after all, it was not hard to get up enthusiasm when they knew they were fighting a winning battle. And the next was perseverance. It was not a year's work, nor was it two years' work, nor five years' work. A decade would probably make a great difference in Ireland. A generation should see a remarkable reduction of mortality, and their children and grandchildren would point to a victory as memorable, if not so conclusive, as that which they and their fathers had won in this country over typhus fever.

The President of the College of Physicians moved, and Dr. Little seconded, a vote of thanks to the lecturer.

Lady Aberdeen supported the resolution. She believed the lessons Professor Osler had taught would be laid to heart by the members of their Association.

The motion was passed unanimously.

Sir Francis Cruise, M.D., was called to the second chair, and a vote of thanks was passed to His Excellency on the motion of Sir Henry Swanzy, seconded by Sir Charles Cameron. His Excellency proposed:

> That this meeting affirms its belief in the possibility of repressing and stamping out the disease of consumption, and pledges itself to support and promote every well-considered effort towards that end.

Dr. Cox seconded the motion, which was carried.

The Opening of the Exhibition.

On Saturday, October 12th, the Exhibition was opened by His Excellency the Lord-Lieutenant, in presence of a distinguished assemblage.

Lady Aberdeen, as President, gave an address, in which she described the purposes of the Exhibition at length.

The Lord-Lieutenant, in declaring the Exhibition open, said the remarkable deliverance they had heard the previous evening had illustrated the many-sided character of the movement which they were inaugurating. With regard to the improvement of the sanitary condition and conveniences of the houses of many of the people, it was encouraging to remember that this matter was being attended to. For instance, the Labourers' Dwellings Act passed about twenty years ago resulted in about 20,000 cottages being erected, and quite recently an Act had been passed for a similar purpose, and already no less than between 50,000 and 60,000 applications had been made for new cottages. He hoped and trusted that the work of the Labourers' Dwellings Acts would go on, and that its lessons would be taken to heart, and he was sure it was the disposition of the Government that that object should be secured. He had now with great satisfaction and pleasure to announce a message which he was sure would stimulate them in their efforts, and which he had just received from His Majesty the King. They all knew the interest taken by His Majesty in all the subjects which concerned the interests of the people, and that of tuberculosis was one that His Majesty had given special attention to. Not very long since, when he had the honour of attending on His Majesty on his arrival at his Highland home, he (Lord Aberdeen) had the privilege of presenting to him an American physician who had done splendid work in the matter of tuberculosis, and who was well known to Professor Osler. The first thing the King said to this physician was: "Have you seen the sanatorium at Banchory?" That sanatorium was for consumptives. He would now read the message he had received from the King. It was as follows:

> I am commanded by the King to express his good wishes for the success of the Tuberculosis Exhibition, the first of the kind ever held in Great Britain and Ireland, on the occasion of its being opened by you. His Majesty is greatly interested in the problem of checking the progress of this disease, and he trusts the Exhibition may be the means of directing attention of the public to the terrible ravages caused by this scourge and to the efforts that are now being made to arrest its progress.

Lord Aberdeen thought the inauguration of the Tuberculosis Exhibition was one of the most auspicious kind, and he could not conclude without offering a tribute of deep appreciation and grateful admiration regarding the efforts that had been made, and that had resulted in the Exhibition that they were about to open. Personally, he could say that he had never taken part in any object with which he sympathized more fully, and he had now great satisfaction in declaring the Exhibition open.

Mr. A. Birrell, M.P., and Professor Osler addressed the meeting in sympathetic speeches, and the proceedings closed.

Compulsory Notification of Tuberculosis.

The Consultative Committee formed by Lady Aberdeen held a further meeting at the Exhibition on October 14th, when Her Excellency presided. There were delegates from all parts of the country, and the following resolutions were adopted:

Mr. Joseph Mooney, J.P., P.L.G., moved, and the Mayor of Limerick seconded:

> That it is desirable that the Government should, without delay, introduce special legislation with the object of making it compulsory to notify all cases of pulmonary tuberculosis, taking care, at the same time, to protect consumptive patients from any undue interference with their liberty.

Dr. Hillis, Rathmines, proposed, and Dr. Usher, Dundrum, seconded;

That this meeting strongly recommends the adoption of more stringent measures for the regulation of milk and food supplies.

Moved by Mr. Kenny, Waterford, seconded by Mr. E. Lee, Bray:

That the Consultative Committee of the Tuberculosis Exhibition desires to draw the attention of local authorities in Ireland to the effective and inexpensive means illustrated in the Tuberculosis Exhibition, whereby tuberculosis can be checked, cured, and prevented from infecting healthy persons.

Proposed by Dr. Agnew, Lurgan, and seconded by Dr. Jameson, Newtownards:

That it is desirable County Councils in Ireland should be enabled to erect and maintain such hospitals, sanatoria, and dispensaries for the treatment of consumption as they think fit.

THE IRISH LANGUAGE.

In the account given in these columns of the ceremony at the opening of the winter session at St. Vincent's Hospital Medical School, one point of some interest was not mentioned; this is, that for the first time so far as we are aware, the Irish language was used in a public discussion of medical matters. Mr. Tobin, as was noted at the time, after referring to the Gaelic League and to the work it had already done for Ireland, expressed his belief that it was only through its influence that education with regard to sanitation could be sufficiently spread to enlist in the cause of hygienic progress every patriotic inhabitant of the island, and thus secure common action against tuberculosis. Dr. Douglas Hyde, who was present on the occasion, subsequently acknowledged the testimony paid to the League of which he is President, and, speaking in Irish, assured the meeting that the League would use all its influence in the direction indicated. He was followed by Mr. Stephen Gwynne, M.P., and by Dr. J. P. McHenry, both of whom, likewise speaking in Irish, discussed the causes which principally conduce to the prevalence of tuberculosis, and the means by which they may be eliminated. The ease and effectiveness with which the discussion was carried on may be ascribed to the fact that the structure of Gaelic, like that of German, lends itself readily to the formation of new words.

THE ANNUAL REPORT OF THE IRISH LOCAL GOVERNMENT BOARD.

The annual report of the Irish Local Government Board for the year ending March, 1907, is this year a thoroughly business document, showing the efforts the Board has made to carry on the local government of the country properly in spite of the muddling of the local bodies. Many matters of considerable interest to the Irish profession are dealt with, and it would be well worth the while for Irish readers to ask the clerks of their respective unions to let them see it.

The futile efforts to induce the local bodies to try to check the ravages of tuberculosis have already been referred to in these columns, and it would appear from the report that the open-air treatment has, so far, only been successfully carried out in two unions, while some other unions are "considering" the propriety of erecting those costly sanatoriums which Professor Osler regards as objectionable, preferring cheap wooden structures which could be destroyed when thorough disinfection was required.

A further marked decrease in the incidence of infectious fevers from 1,806 in 1906 to 1,249 in 1907 is noted, thanks to the ill-paid dispensary doctors who for a paltry £20 a year have sacrificed their best-paid work in the interests of humanity, and have got the reward they had too much reason to expect.

Naturally the epidemic of cerebro-spinal fever is exhaustively dealt with, especially by Dr. Clibborn, the medical inspector for Belfast, who has done yeoman service in helping to stamp it out; and there is also a most instructive and valuable paper by Professor McWeeney on the bacteriology of the disease.

Up to the date of this report 39 unions had adopted a graded scale of salaries for the medical officers, and since then 13 more have done so. We hope that this has not exhausted the sense of justice of the Irish guardians. We note that in many of these unions the maximum salary attainable after thirty years' service has been fixed, with the approval of the Local Government Board, at £150 or £160. This is utterly inadequate, and in our opinion the medical officers would have been better advised to decline such a paltry acknowledgement of their invaluable services to the people for the amount they have saved the community in the last forty-two years by reducing the incidence of infectious fevers from 26,566 to 1,249 per annum is incalculable. It is hardly credible, but it is true, that the Irish peasant pays only one halfpenny in the £ on his rateable valuation for the services of the Poor-law doctors. The great majority of the holdings are under £10 valuation, so that a farmer pays 5d. or less per annum for himself and his family, and thinks himself aggrieved if the dispensary doctor asks for a small fee.

THE JUDICIAL PROCEEDINGS OF THE IRISH LOCAL GOVERNMENT BOARD.

We had occasion recently to comment upon the conduct of a sworn inquiry held in the Dunshoughlin Union, the result of which was that the master of the workhouse, after a service of over twenty years, was called on by the Local Government Board to resign because he failed to distinguish between insanity and pneumonia in the case of a man whose friends sought admission for him to the infirmary. We note with satisfaction that when the matter was fairly brought before a full meeting of the guardians the section which wished to get rid of the master was defeated by a large majority, and the Local Government Board was asked to reconsider its order. We will not presume that our comments had any influence, but at any rate, the master is let off with a caution. The incident reminds us of that peculiar feature of the British legal system under which, when a man is wrongly convicted, he is granted a free pardon for a crime he did not commit.

A COTTAGE HOSPITAL.

A meeting in support of the establishment of a cottage hospital was held on Saturday evening at Greystones, a fashionable watering place near Dublin. Dr. A. M. Archer presided, and speeches advocating the proposal were made by the chairman, Sir Arthur Chance, Sir Henry Swanzy, Dr. Maunsell, Sir John William Moore, and Dr. Price. Several subscriptions were handed in.

Manchester and Salford.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

UNLESS Manchester and Salford practitioners are willing to leave the whole arrangement for the medical inspection of school children in the hands of the medical officers of health, it is high time that the Divisions should bestir themselves. Already advertisements have appeared in the daily papers for nurses to assist the medical officer of health in the work, and inquiries show very plainly that practitioners will have themselves to blame if they do not very quickly and in no uncertain voice proclaim their ideas. The idea is being most zealously instilled into the authorities who will have to decide the question by those interested that the general practitioner cannot be trusted to do the work of inspection, partly because it is said that he is not qualified for the work, and partly because it is asserted that the claims of private practice will prevent him giving proper time to it. In the second place, there is little doubt that a certain amount of free treatment of disease will be undertaken by the authorities on various pretexts, unless some protest is made. Taking these points in order, it is almost the unanimous opinion of the Manchester and Salford Divisions that the inspection should be entrusted to general practitioners, though of course co-ordinated and regulated by a medical superintendent under the Education and Health authorities. The Annual Representative Meeting was also very definite in its opinion that the medical inspectors should be appointed from the general practitioners of the district, the resolution of the Brighton Division to this effect being adopted, while an opposite suggestion from Bradford was absolutely negatived. Details were referred to the Medico-Political Committee; the matter is urgent, at any rate in this district, for in

this, as in many other public matters, the subject is canvassed and practically settled long before it appears on the agenda papers of the corporation committees. Already attempts are being made to bias members of the committees against the American system, and to spread the idea that with very little additional assistance, such as a nurse or a non-medical inspector, the present staff can do all that is at present necessary. Then little by little the work will be extended, the salaries of the permanent officials increased, and in course of time, perhaps, another special officer appointed. The whole thing is mapped out already in some of the northern towns, and general practitioners are left out entirely. If only the interests of medical men were at stake, the public would care little; but there are far greater interests involved, for it may be argued that as a rule whole-time medical officers of health, who are not engaged in general practice, are far less competent to examine the general health of children than practitioners who are doing it every day as the business of their lives.

Again, there is every reason to suppose that a certain amount of treatment of diseases of children will be done by the authorities, whether legal provision for this is made or not by the Board of Education. This is done at present in Salford to an extent and in a way that is becoming serious, at any rate to one branch of the profession; and though it is done with the full consent of the health committee, nevertheless the system ought to be condemned in every respect, for it not only takes away patients from private practitioners, but involves an underselling, which ought not to be allowed in any corporation department. The following facts are taken mainly from the official reports of the health department. It appears that about two years ago, with the consent of the health committee, a scheme was inaugurated to deal with defective eyesight in school children. The assistant medical officer of health visits the schools and examines the children for any defects of sight. If a defect is found, the teacher is instructed to fill in a printed form which is supplied, and send it to the parents informing them that their child has defective sight, and recommending them to see a medical man, but, the form continues:

> The education committee instruct me to say that, if you so desire, their medical officer will examine your child further and prescribe spectacles where necessary, which may be obtained through the committee or from an optician. If you wish to obtain the spectacles through the committee, you must pay the sum of 3s. 6d. to the head teacher, who will receive the sum in instalments if desired. No spectacles will be provided until the above sum has been paid.

The form is signed by the head teacher and the Director of Education. Of course most parents, seeing a cheap and easy way of getting spectacles, either at once pay the 3s. 6d. or send a few pence weekly to the teacher, and when the full amount has been paid it is sent by the teacher to the medical officer at the Town Hall, who then fixes a date when the child must be taken to the education offices, where the medical officer fully examines the child's vision, prescribes glasses, and gives an order to be taken to a particular firm of opticians. Any loss that might occur would have to be borne by the officials personally; but seeing that there is no charge for the testing, as it is done by the medical officer, who has a fixed salary paid by the corporation, there is a slight profit on the whole year, which is used to provide a few of the poorest children with spectacles free. If the spectacles were only prescribed and supplied to the poorest children, there would be some objections, but the evil is intensified by the fact that no inquiries are made as to the circumstances of the parents if they pay the 3s. 6d., and it is a fact that numerous children have been thus tested and supplied with spectacles, whose parents had an income of over £5 a week. The last report to the health committee states that since the scheme was inaugurated 327 children have been specially tested and supplied with spectacles, and it is quite certain that many of these would have gone to their own doctor or to an ophthalmic surgeon if they had not been attracted by the underselling of the health committee. It is thus perfectly plain that cheap or even free treatment can be and is practised under the direct sanction of a municipal corporation, and the existence or non-existence of provision for such treatment by Act of Parliament makes no difference whatever if some member of the corporation or some official only takes on himself the infinitely remote possibility of money loss. The Manchester and Salford Divisions, as well as the Association generally, will have to be constantly on the watch to see that the interests of practitioners are not totally ignored, and that as ratepayers they are not burdened with the most unjust exactions.

Liverpool.

The Incorporated Liverpool School of Tropical Medicine.

Sir Alfred Jones, Chairman of the Incorporated Liverpool School of Tropical Medicine, will entertain at dinner at the University Club, Liverpool, on Monday next, Mr. W. M. Haffkine, C.I.E., on the occasion of the presentation to him of the Mary Kingsley medal (particulars of which were published in the British Medical Journal of September 21st, 1907, p. 769), and Major Ronald Ross, F.R.S., C.B., on his departure for Mauritius.

The Medical Institution.

The opening meeting of the Liverpool Medical Institution took place on October 10th, when an address was delivered by the President, Mr. F. T. Paul, who took for his subject his experience of the various operations on the abdomen. A vote of thanks was moved by Mr. Edgar Browne in a charming speech containing reminiscences of the days when abdominal surgery was in its infancy, and was seconded by Mr. Rushton Porker. Subsequently the President entertained the members at supper and a smoking concert. The alterations and extension of the institution buildings, which have been in progress during the past two years, are now practically completed, except as regards the decoration of the enlarged council room, which is to be handsomely panelled in oak.

The New Lord Mayor.

Great satisfaction is felt by the members of the medical profession, and indeed by the community at large, at the selection of Dr. Richard Caton for the office of Lord Mayor during the coming year. Dr. Caton has worked hard for the good of the city since his retirement from the post of Physician to the Royal Infirmary, especially on the Housing Committee of which he is Chairman.

Mr. Rushton Parker.

Mr. Rushton Parker, Professor of Surgery in the University, has resigned his position as Senior Surgeon to the Royal Infirmary, where he has been a member of the staff for the past thirty years. He was appointed assistant surgeon in the year 1877 in succession to Mr. (afterwards Sir William) Banks, and became full surgeon in 1889, when the removal of Mr. Reginald Harrison to London caused a vacancy on the staff. During his long connexion with the infirmary his industry has never flagged, and his genial presence will be greatly missed in the wards. It is expected that the two present surgeons to out-patients, Mr. R. A. Bickersteth and Mr. W. T. Thomas, will compete for the vacant post, but it is not probable that there will be any other candidates. The appointment will be made by the Election Committee which is composed of nearly 100 trustees, and the election will probably take place about the middle of November.

Annual Service for the Medical Profession.

The annual service for the medical profession will take place on Sunday, October 20th, at 3 p.m., at St. Luke's Church. The preacher this year will be Bishop Welldon, the Dean of Manchester, and the offertory will as usual be devoted to the Medical Benevolent Fund.

West Yorkshire.

North Bierley and its Public Vaccinators.

In the last issue of the Journal it was stated that the public vaccinators of this union had been requested to acquiesce in new arrangements in regard to their remuneration, and that with one exception the public vaccinators appeared to be prepared to fall in with the Committee's suggestions. It appears that the new arrangements which the public vaccinators had made with

the Guardians Committee were not the same as those submitted by the Committee for signature and presentation to the Local Government Board. Material alterations had been made in the conditions, and these the public vaccinators in North Bierley decline to accept. The fee to be paid for each case received on the vaccination officer's form was to have been 1s. 8d., and this has been changed to 1s. A mileage fee was to have been paid for vaccination performed by the public vaccinator beyond a three-mile radius from his residence or surgery; this the Committee now declines to pay. As a consequence of these alterations the whole of the public vaccinators in the union have signed a letter, which has been forwarded to the guardians, and in which they state that they cannot sign the necessary contract until the conditions have been altered in a satisfactory manner. We trust the guardians will meet the public vaccinators in an amicable spirit.

The Association of Public Vaccinators.

At the annual meeting of this Association, to be held in Leeds on Friday, October 25th, Dr. W. E. de Korté will give an address on The Scientific Defence of Vaccination and Dr. A. E. Cope on The Saving of Child Life by Vaccination. The annual dinner, as already announced, will be held at the Hotel Metropole at 6.30 on the same day.

Bristol.

Dual Appointments and the Royal Infirmary.

The members of the honorary medical and surgical staff of the Royal Infirmary have issued to the governors of that institution a manifesto on the proposed new rule excluding them from holding a second appointment. There is no need to recapitulate the series of events that have led to this important and momentous step beyond saying that the President, Sir George White, and the committee proposed at the last quarterly meeting of the governors in September last a rule that would prohibit any member of the full staff holding any other appointment except a lectureship or professorship at a university, college, or school, and that the staff expressed their disapproval of this in unmistakable terms. The manifesto recounts the negotiations that have taken place since April, the date on which the movement began, and as this has been fully narrated in previous numbers of the Journal, it need not be repeated. It points out that in July the staff informed the Committee that it was prepared to consider, with them, the possibility of framing a rule by which the holding of other appointments might be regulated, yet, in spite of this representation, the Committee persisted in pressing forward the more drastic rule to which the staff could not agree. To ascertain the opinion of the medical profession a meeting of the Bath and Bristol Branch of the Association and of medical men in the district was held on October 7th, and, after it had been explained that the rule was not retrospective, and that the point involved was of great importance to the profession at large and to the interests of a great and useful medical charity, two resolutions were proposed and carried without a dissentient vote, to the effect that the rule "would be inimical to the interests of the sick poor and derogatory to the honorary medical and surgical staff of the institution and to the profession at large," further advising the staff "to take the strongest possible measures in resisting this or any rule which, in effect, embodies the substance of this rule." The manifesto states that the Hospitals Committee of the British Medical Association, after consideration of the facts and the resolutions, expressed its sympathy with the staff and with the action of the Branch. The attention of the governors is called to a statement of Sir George White, made at a meeting on September 24th, that similar rules existed at other hospitals in the kingdom, and it is shown that no such rule obtains in London, Edinburgh, Dublin, Oxford, Cambridge, Leeds, Newcastle, or Cardiff, while at the Queen's Hospital, Birmingham, no rule of this nature exists; at the General Hospital there is one, yet the staff are allowed to accept appointments at special hospitals and the post of visiting physician or surgeon to the workhouse infirmary, a paid appointment. Liverpool and Manchester have rules limiting external appointments. These limitations where they are in force are approved by the Faculty and refer only to hospitals and charitable institutions. In no case has any hospital in the United Kingdom so far-reaching a rule as that now awaiting the confirmation of the governors of the Royal Infirmary, and the staff can hardly believe that knowing these facts and that the rule is repugnant to them, the governors will persist in imposing the measure upon those who give their voluntary services. Finally, the manifesto states that unless the rule is withdrawn the staff will feel bound to tender their resignations and state that they will not hold office under any similar rule, which they consider opposed to the best interests of the institution or of their successors.

This is signed by twenty out of the twenty-one members of the staff, honorary and active.

Medical School Annual Dinner.

The annual dinner of past and present Bristol medical students was held on October 1st, at the Royal Hotel, Bristol, when over 100 were present. Mr. J. Herbert Parsons, an old Bristol student, was in the chair, and Professor Francis Gotch, F.R.S., was the guest of the evening. In proposing "The Bristol Medical School," Professor Gotch spoke of the urgent need for a University of Bristol, and showed the way to obtain it. Professor Walker Hall, in his reply, said that all that was now wanted was the financial support of the citizens of Bristol. Professor Francis replied for the Faculties of Science and Arts. Mr. Hey Groves proposed "Past and Present Students," which was acknowledged by Dr. Walter C. Swayne and Mr. H. R. B. Hull. Dr. J. A. Nixon proposed the health of the Chairman, to which Mr. Parsons replied in an excellent speech.

Wales.

Newport Infantile Mortality.

On October 7th the Newport Corporation Infantile Mortality Subcommittee decided to recommend the Sanitary Committee to petition for an additional lady visiting inspector. It was also decided to recommend the co-option of a number of ladies, the idea being to allocate a number of ladies to each ward, with a captain at their head.

Thirty Years' Medical Officer.

At a meeting of the Panteg District Council, held on October 8th, the Chairman (Mr. A. A. Williams, J.P.) presented Dr. J. R. Essex with an illuminated address in recognition of thirty years' service as medical officer of health. The Chairman said it was impossible to estimate how much the public had benefited through the doctor's efforts. During his term of office the population had increased by 6,000, and the death-rate had been reduced from 20 per 1,000 to 10.7 per 1,000 per annum. The whole of the members present testified to the services rendered by Dr. Essex, whose health was heartily drunk by all present. Dr. Essex suitably responded, and paid a high compliment to the sanitary inspector.

Monmouthshire Medical Supervision.

The adjourned conference of representatives from the District Councils of Abercarn, Abertillery, Bedwellty, Blaina, Brynmawr, Ebbw Vale, Risca, etc., with reference to the appointment of a county medical officer for Monmouthshire, has just been held, at which it was resolved to defer the question of the appointment of such an officer.

Cardiff Infirmary.

At a meeting of the Board of Management of the Cardiff Infirmary on October 9th, the Chairman (Colonel Bruce Vaughan) criticized the work of the light and electrical department, which had cost £2,000; he contended that it was not as efficient as could be desired, and quoted the figures and results of cases treated elsewhere by the Finsen light which went to support his contention. Dr. T. Wallace argued that Colonel Bruce Vaughan's statements were inaccurate, and, while admitting that the department had not up to the present been so successful as might have been wished, denied that it had been a failure; both Finsen light and *x* rays were comparatively new methods of treatment, and he could not altogether accept the statements as to the good results obtained at other places, as he knew that some supposed cures had

not stood the test of time. Dr. William Sheen said that the efficiency of the *x* rays had been fairly good, and that the Finsen light worked well with the appliances available, but these were insufficient. It was eventually resolved to give the Medical Board authority to obtain the services of an expert to inspect the department and report.

Monmouthshire Water.

At the meeting of the Parliamentary Committee of the Monmouthshire County Council on October 2nd the proposed County Water Bill was discussed. The expert engineer in his report provides for the construction of three large reservoirs on the Grwyne River, on the border of Breconshire and Monmouthshire, to supply 4,000,000 gallons a day, at a total cost of £730,000, only part of which would be expended at first. The report stated that the site of the drainage area could be acquired on very reasonable terms. There was much discussion, the representatives of districts which already possess waterworks urging that if a Bill was promoted such districts should have protective clauses. It was resolved by a practically unanimous vote to recommend the County Council to promote a Bill in the next session of Parliament, and that it should contain protective clauses for Ebbw Vale, Nantyglo and Blaina, and Tredegar districts, where waterworks have been provided.

Housing Reform at Merthyr.

The Merthyr Borough Council is patiently pursuing its policy of providing suitable houses at cheap rents for the working classes; thirty-eight council houses were recently tenanted at Penywern, Dowlais, and on the recommendation of Dr. A. Duncan, M.O.H., the Health Committee has resolved to declare thirty-five houses unfit for human habitation, while closing orders were made in respect of three houses previously represented as unfit for human habitation. A subcommittee recommended that the surveyor be authorized to negotiate for a site on Colonel Lockwood's estate at Treharris for fifty houses for the working classes. Alderman Wilson stated that the matter was of great urgency, as there were 118 families living at Treharris in apartments, while they waited for houses. The Committee adopted the recommendation.

Canada.

The Association of Medical Officers of the Militia of Canada.

This Association, which was organized in 1892, has been revived and reorganized. All medical officers are members by virtue of their commissions. The objects of the Association are the development of medico-military *esprit de corps*, the discussion of military medical subjects, and the reading of papers on military medicine and surgery, hygiene, and equipment. The following are the officers:

The Honorary President, The Hon. Sir Frederick Borden, K.C.M.G., M.D., M.P.; Honorary Vice-Presidents, Colonel E. Fiset, D.S.O., M.D., Deputy-Minister of Militia and Defence, and Lieutenant-Colonel Guy Carleton Jones, M.D., D.G.M.S.; President, Colonel G. Sterling Ryerson, M.D., M.R.O Toronto (Founder of the Association); Vice-Presidents for the Canadian Military Districts, No. 1, Captain D. H. Hogg, A.M.C.; No. 2, Lieutenant-Colonel Hillary, 12th Regiment; No. 3, Lieutenant-Colonel Duff, P.A.M.C.; No. 4, Major J. D. Courtney, A.M.C.; No. 5, Major McTaggart, 1st Regiment; No. 6, Lieutenant-Colonel Worthington, A.M.C.; No. 7, Lieutenant-Colonel Grondin, 87th Regiment; No. 8, Lieutenant-Colonel MacLaren, A.M.C.; No. 9, Lieutenant-Colonel Sponagle, A.M.C.; No. 10, Major Devine, P.A.M.C.; No. 11, Lieutenant-Colonel J. A. Grant, P.A.M.C.; No. 12, Lieutenant-Colonel Johnson, A.M.C.; No. 13, Captain W. S. Hewetson, A.M.C.; Secretary, Lieutenant T. H. Leggatt, Ottawa.

The next meeting of the Association will be held in Ottawa, February 26th, 1908.

A Pasteur Institute in connexion with the University of Minnesota was opened in August last. It is under the direction of Dr. Orinna McDaniel. Seventeen persons have been treated for bites inflicted by rabid animals.

In a decree recently issued by the Prince of Monaco, mental derangement, epilepsy, alcoholic delirium, and syphilis are included among the reasons for which a divorce may be obtained in that State.

CORRESPONDENCE.

THE REFERENDUM.

Sir,—I was not a member of the Council when the Charter was considered and the Referendum decided upon, nor have I had anything to do with the Referendum Report except that I voted for its issue. I did so because I thought it was as well that something should go before the Divisions, and that there should be a final fight. Still, when I gave that vote I felt that the battle had been already decided.

I have all through been an opponent of the Charter, but only so because I thought we were going too fast. In my opinion our new five-year-old Constitution should have been allowed a little more time to grow. I have held, and still hold, that we are in a transition state which the Charter will tend to stereotype and so may check our evolution.

Now, however, the Charter is, so far as the Association is concerned, practically a settled matter. It has been accepted by both Representative Meeting and Council, and we have been denied the opportunity of exercising the Referendum on it.

I cannot say I ever expected much from the Referendum, for our Referendum is not plebiscite of the individual members, but merely a referring back of a measure to the Divisional meetings whence it arose a few weeks or months previously. Any value the Referendum had, we have, however, been robbed of by the Council.

When I read the Referendum Report of the Council I wrote across it the word "dished," for I saw that those of us who had wished to delay the Charter had been completely "dished" by this document.

I suppose we all recognize that the Charter consists of three parts:

1. The Charter proper—the fundamental and essential portion—which is, when obtained, practically as unalterable as the laws of the Medes and Persians.
2. The Ordinances, which can only be altered with the consent of His Majesty's Privy Council.
3. The By-laws, which can be altered at will by a two-thirds majority of the Representative Meeting.

The Charter proper is not opposed by the Council, and has, therefore, now become non-contentious matter in the Association.

The Ordinances—twenty-six in number—are all, except one, agreed to by the Council, and therefore are, with this exception, also non-contentious.

The By-laws number sixty-one. The Council only challenges four. The remaining fifty-seven are therefore non-contentious.

In *the Schedule to the By-laws* one point is challenged, the rest is non-contentious.

So that five of the six points contested are matters of by-law, which it is agreed may be altered at any time by the Association itself without any external interference.

Ordinance 17—the Referendum ordinance—is the only ordinance that is still contentious. The Council suggests that it should be compelled to refer matters back to the Representative Meeting before it refers them to the Divisions.

I will pass over the question whether it is proper in a Referendum to propose an amendment. I will simply say that I think it is not, and I cannot see that with our kind of Referendum any advantage would accrue by adopting the Council's suggestion.

Dr. Fothergill (Wandsworth), in a very common sense communication in the Supplement to the Journal of September 7th, thinks something should be done "to prevent important negative or positive decisions arrived at by the Representative Body becoming binding on the Association in a case where an opportunity to consider the principle involved has *not* previously been given to the members in their Division meetings." I think that the best way to have done this would have been to make the proviso as to notice (Ordinance 16) apply to all authoritative resolutions of the Representative Body. But the Council has made Ordinance 16 non-contentious.

The questions raised by the Council on the by-laws are:

1. Is the management of the business affairs of the Association to be transferred from the Council to the Representative Body?

2. Are the powers and functions of the General Meeting to be transferred to the Representative Meeting?
3. Should there not be a "second chamber," and should the Council not be that chamber?

Before answering these questions, let us see what the Council has agreed to in relation to these matters in those parts of the Charter which it has now made non-contentious.

It is agreed by the common consent of the Council and Representative Meeting that the following shall be among the

DUTIES AND POWERS OF THE REPRESENTATIVE BODY.

1. It shall have "the general control and direction of the *policy* and *affairs* of the Association" (Clause 7 of Charter).
2. It is the only body in the Association that can *add to, amend, alter*, or *repeal* the By-laws (Clause 12 of Charter and Ordinance 26).
3. Its *resolutions* "shall be deemed to be *a decision of the Association*" (Ordinance 15).
4. It can make by-laws regulating not only its own proceedings, but the proceedings of the Council also (Subclause 9 (1) (i) of Charter).
5. It can, whenever it thinks fit, make by-laws regulating the number of members of the Council, their mode of election, and by whom they shall be elected (Ordinance 19).

With the exception of the members *ex officio*, the Council is made by by-law, and the by-laws can be altered at will by the Representative Body.

On the other hand, it is agreed in the uncontested portions of the Charter that:

THE DUTIES AND POWERS OF THE COUNCIL—are:

1. To "*carry into execution* resolutions passed by the Representative Body" (Clause 8 of Charter).
2. To "*administer* the affairs of the Association in accordance with" the "Charter, Ordinances, and By-laws" (Clause 8 of Charter).
3. To prepare and present to the Annual Representative Meeting a balance sheet and financial statement (Ordinance 24)
4. To prepare an annual report for the Representative Meeting (Ordinance 24).
5. To nominate honorary members and propose the cancelling of the same to the Representative Meeting (By-law 8).
6. To appoint, dismiss, and fix the duties and salaries of the salaried officers of the Association (Ordinance 22, and By-law 54).
7. To do all such other acts that the Association can do that are not directed to be done by the Representative Body (Clause 8 of Charter).

It is to be noted that such of these powers as are fixed by by-law can be taken from the Council at the will of the Representative Body.

By agreeing without demur to so much, I think I am justified in saying that the Council has already answered its own questions.

Is the Representative Body to manage the business affairs of the Association? The answer of the Council is "Yes." It gave that answer when it took no Referendum on the seventh clause of the Charter.

Are the powers and functions of the Annual General Meeting to be transferred to the Representative Meeting? The Council again answers "Yes," as no referendum is taken on the clauses that provide for the change, the chief of which are Clauses 7 and 13, and Subclause 9 (1) (i) of the Charter, Ordinances 15 and 24, and By-laws 8, 50, and 52.

Is the Council to act as a "Second Chamber"? The Council says, "Certainly not," as it has agreed to clauses, mentioned above, that make it into an executive body simply, and give the Representative Body all control and direction of the affairs of the Association, full power in all matters of law and policy, full power to constitute the Council as it wishes, and to regulate its duties and even its proceedings. It is true the Council has taken a Referendum on the particular way this is to be done in the first instance, but it has conceded the general principle. The composition and mode of election of the Council, and the number, composition, and duties of the Standing Committees are now purely matters of by-law, and are therefore admittedly not vital matters and can be altered from year to year at will. This contention cannot be disputed by the Council, as it has taken no Referendum on Ordinances 19 and 20, and agrees with them. The Representative Meeting makes the Council.

Though the Council does not object to the Representative Meeting having the power to make by-laws to alter its constitution and mode of election, yet it objects to the exercise of that power. One cannot, however, feel that the Council has encouraged the Association to support it, at any rate in its objection to the lessening of its numbers.

According to the Referendum Report the Council considered the meeting of June 5th an exceedingly important one. At it matters affecting seriously the future well-being of the Association were to be discussed and determined on. Yet out of a Council of over 70 members, only 40 put in an appearance during a meeting lasting from 2 o'clock to 7 50.

Mr. Straton argues that an attendance of 40 out of 70 to 75 is quite good when one recollects that the Council consists of medical men in busy practice residing all over a wide area, and I think his argument is perfectly reasonable when applied to the ordinary meetings; but this was a meeting of very special importance.

It is not, however, the actual number that put in an appearance that matters so much. It is the number present continuously throughout the sitting. The attendance does not seem to have been sufficiently regular and continuous to give logical continuity to the result. The largest number that took part in a division was 32, or 44 per cent. of the Council, while the lowest number was 14, or 19 per cent. of the whole body. The average number voting was 22—less than a third of the Council. In other words, on an average two councillors were absent or did not vote for every one that voted on these questions.

My object in writing the above is to show that the opposition to the Charter has so far absolutely failed. I do not say that all possible methods of opposition have been exhausted, but the battle, at any rate within the Association, is very nearly finished, and, unless the opposition to the Charter is going to organize itself very differently in the little future that remains to what it has in the past, it may be neglected.

I would seriously suggest to those who, like myself, have thought, in what we considered the best interests of the Association, to steady the pace, that in the future we had better accept the Charter and bend our energies to making it as far as is possible of advantage to the profession and the Association, to whose interests we are all equally devoted.—I am, etc.,

F. CHARLES LARKIN.

Liverpool, Oct. 9th.

SIR,—The Association is passing through a grave crisis, and I trust the fiasco of the *so-called* Representative Meeting will be thoroughly exposed. Representatives are elected by so few members—one in this Branch this year by 3 votes at the annual meeting of his Division. Last year I was returned by 7 votes; this year I resigned, and no one would have the appointment! With two or three exceptions, this is the case throughout the country, and yet these gentlemen have the temerity to assert they are truly representative of the wishes of the electorate. Why do these gentlemen persistently decline to give the numbers present at the Division meetings? Simply because of the unpleasant revelation that they only represent themselves. I was returned at an open election to the Central Council by between 500 and 600 votes throughout the whole Branch, and others by a larger number still!

The Divisions, if they are still to exist, must be of the Branch, not of the Association directly. The memorandum upon the action of the Council in exercising the power of the "Referendum" issued by the Representatives (?) and signed by the Chairman of the meeting is a strange contradiction of the deliberate statement of this gentleman in the council chamber that the Representatives had no feeling towards the Central Council other than a desire to work in harmony with it. The whole document bristles with ill-conditioned expressions—indeed in some instances barely mannerly!

That the present *managers* of the Association have failed is too clear to need comment. The pitiable conditions of our finance is quite enough to prove how disastrous a policy is being carried on. Before the reconstitution we had a prospect of enough cash saved to pay for the whole rebuilding when completed; now *all* the money must be borrowed. Already we are less well off than we should have been under the old government by over £30,000. We intend to have a special meeting of the Lancashire and Cheshire Branch to discuss the Referendum

and see if or not the Council is right in its endeavour to save the Association from ruin. The Referendum must go back to the same men who are absolutely antagonistic to the central authority—the men who also wish to do away with the Branches altogether.

It will be well if all the Branches follow our example. I aver that not 20 per cent. of the Association would agree with the attitude of these Representatives.—I am, etc.,

Old Trafford, Oct. 15th. JAS. BRASSEY BRIERLEY.

SIR,—Dr. Rowland Fothergill seems to take it for granted that because the Representative Meeting is so designated, it is, *ipso facto*, "representative" of the profession or of the Divisions, whereas it is only of the Representatives themselves, plus five or ten others, multiplied by the total number of that body. And he goes on to say that if the new areas made up of different Branches do not take action in the way indicated by him in electing a certain number of members of Council, this Representative Meeting will take the matter in hand and elect the whole Council.

Did ever any one read such fallacious reasoning in reference to sound representation? What a Council would be elected in deed and in truth! Some of the members might have been elected by hundreds of votes, and yet, if that did not suit the Representative Body, they would take it in hand, and the Council would be elected by men each of whom might not have been actually voted for by more than twenty members of their respective Divisions. What a muddle such a proceeding would land us in! Yet the draft Charter would allow the Representative Body in twelve months, after it were granted, to vote and decide that it should elect the whole Council!

The election of Council as outlined in the draft Charter, instead of being in the By-laws, ought to be placed in the Ordinances, and fixed for at least three years, if not five. We must try to arrive at some fixity, and not be liable to having our ground shifted any year. It does not seem right or moral to get the Association to consent to the election of the Council as now given, and then to be liable to have it changed and all the power placed in the Representative Body. It savours to me of a kind of hoodwinking, and the more I think of it the more serious does the matter appear, especially after Dr. Fothergill's way of putting it. It is tantamount to saying we will give it you in this form now, to obtain your consent, but we can alter it any time we choose afterwards.

There is another point which should be made universally known before it is too late—individual members of the Association ought to have the right of speech or inquiry at the Annual Meeting. Under the draft Charter this will be entirely abolished. It is said that instead of this method he must make his voice heard through and by his Division. Let us take the case of a Division falling into the hands of an active clique, and the individual member cannot or will not trouble to make his voice heard at its meetings, and suppose this is the case in several Divisions. If these individual members have the right to bring their views before the Annual Meeting it is only what is understood to be the custom in all societies, and is considered as one of the greatest safeguards to the interests of the individual member.

It is rather curious that no steps have been taken to reform the Representative Body itself. This seems to have been understood to be perfect, or as nearly so as possible. It is just possible the cause of this is in the name itself. It is termed "Representative," and most people seem to think that therefore it is so. Would it not be better that a rule were made that each one should have had the actual votes at least of half or two-thirds of the members of his Division?

Whilst we are sifting and analysing everything else in the constitution of the Association the Representative Body ought certainly to have its share of attention, and Dr. Horrocks's letter in the JOURNAL of October 12th deserves the attention of those members who have not already seen it.—I am, etc.,

Manchester, Oct. 12th. G. H. BROADBENT.

THE BOARD OF EDUCATION AND THE MEDICAL INSPECTION OF SCHOOLS.

SIR,—Dr. Hogarth, in his letter of October 5th, still persists in his "wild and whirling words." For example, he reiterates the assertion that "it is solely as the result of Dr. Kerr's work in Bradford and London that any efficient system of medical inspection exists in England to day." Is it not the case that we have only, as yet, reached the initiatory stage of debating the best form of such inspection. Again, surely Dr. Hogarth in his zeal for his friend Dr. Kerr ignores the pioneer work of Dr. Warner, and above all the telling facts as to the health of school children so laboriously gathered by Drs. Matthew Hay and Leslie Mackenzie, which indeed were the means, more than any other agency, in forcing this question of medical inspection of schools to the front of public opinion.

Still more, is any man, especially the secretary of a body dealing with this particular subject, entitled to discuss it without referring to the very able work of my friend, Dr. Mackenzie, on *The Medical Inspection of School Children*, where the history of the movement in favour of State interference on behalf of these unprotected units of the population is so clearly set forth? No doubt the author deals with the question chiefly from the point of view of the well-ordering of Scottish education. But has England not much to learn from her sister country both on education and public health, and the best means for encouragement on the paths of progress of these essential elements of civilization?

I may be pardoned in this connexion for referring to my own small efforts in behalf of the cause of hygiene in schools. In my first report—that for 1891—to the county of Ross and Cromarty, it is stated that "a knowledge of the laws of health must begin in the public schools in the county"; and "it is essential that the schoolmaster should be thoroughly acquainted with the laws of health, the working of the different organs (of the body), especially of the brain, the care of the senses such as the eyesight."

Passing on to Dr. Hogarth's second point, I know nothing as to the influences at work which prompted Dr. Newman's selection. Enough has surely been said on so personal a question. And, on his third head, it is only necessary at this time to quote Dr. Leslie Mackenzie's words:

> The medical inspection for public health purposes and the medical inspection for educational purposes should be perfectly continuous; no effort should be made to divide the child, as it were, into two, the one part to be examined medically for public health purposes, the other for purposes of education.

So much, Sir, from the standpoint of the public. If your space would allow, it would be interesting to discuss this question from that of the profession at large. How is the medical faculty likely to fare from this process of specialization of function which is going on day by day? Is the door to be slammed in our faces, as a body, at every turn?—I am, etc.,

WILLIAM BRUCE, M.D., LL.D., M.O.H.

Dingwall, N.B., Oct. 14th.

SIR,—For the sake of lucidity I would repeat what I had in mind to say in my previous letter, "that the general practitioner, without special preparation, can hardly consider himself equipped for the work of medical inspection of school children, and that the diplomate in public health (*quâ* his D.P.H.) cannot be regarded as better equipped." Either candidate would require to specialize in order to become an efficient officer in the new field, and that whether or not this field is a part of public health work. If the whole field of public health work does not contain men properly qualified, in spite of their other many and varied attainments, it will become, sooner or later, necessary to devise means of getting such men; in other words, either the scope of the D.P.H. examination will have to be widened so as to include the subject of medical inspection of school children, or a new examination devised on somewhat different lines—if, that is, efficiency and not cheapness is to be aimed at.

Dr. Munro reminds us that "the whole is greater than a part"—a self-evident fact in the sphere of geometry—but in the sphere of health one part may differ from others, and what seems the smaller in magnitude be the greater in importance. As "the body is more than raiment," so is the school child of more importance than the school building. And here we have a new departure, which recognizes this importance of the individual child

for the first time; and from the medical profession, to which much is given in this scheme, much will be required.

I am informed that in the city of Manchester the inspection work is under the Education Committee, and apart from the sanitary work of the city, and yet—though there must be contact—there seems not to be rivalry or clashing between the separate authorities. In this instance at least, then, Dr. Munro's prophecy seems not to have been fulfilled.

My excuse for writing on the subject is that there seems a danger of the medical inspection of school children being treated with less seriousness than its vast and far-reaching importance demands.—I am, etc,

October 8th. COMMON SENSE.

THE WARFARE AGAINST QUACKERY.

SIR,—In the *Times* of October 12th is a lengthy summary of the report lately presented to the Australian Government by the Royal Commissioner, Mr. O. C. Beale. This effectively supplements your note headed "Proprietary Remedies" in the BRITISH MEDICAL JOURNAL of the same date, in which you refer to the same report, as well as to the new legislation against quackery that has just come into operation in Germany. The views which you did me the honour to criticize so sympathetically in your leader of September 28th obtain such strong justification from Mr. Beale's report and from the action of the German Government, that I am impelled to beg space for a few further remarks.

If one lay Royal Commissioner armed with scanty powers can frame a solid indictment such as Mr. Beale has drawn up, what might not be done by a Commission with full powers, including the power to compel the attendance of witnesses and to examine and cross-examine them on oath. I would suggest that if the Association would direct its energies to the task, and be prepared to spend a few thousands of pounds in carrying it through, it could, even without Government sanction or help, organize an independent inquiry into quackery and prepare a report which would carry hardly less weight or authority than that just drawn up by the Australian Commissioner.

With regard to the new German legislation, if the law be carried out with the zeal which now always characterizes the administration of all measures directed to the preservation of the public health in the Fatherland, an end will be speedily put to the fraudulent drug and apparatus traffic, as well as to the many forms of illicit practice to which, there as here, it serves as a cloak. That which has been successfully begun in Australia and perhaps finally accomplished in Germany ought not to be impossible in these islands.—I am, etc.,

October 12th. HENRY SEWILL.

THE INHERITANCE OF PULMONARY TUBERCULOSIS.

SIR,—The desire not to trespass unduly upon your space has apparently resulted in diction not fully intelligible to Professor Pearson.

To our first question, as to whether a correction should not be applied to the number of tuberculous offspring of non-tuberculous parents, to allow for those of the offspring who will subsequently be affected, Professor Pearson answers "No." The reason he gives is that (1) "The number of tuberculous offspring [of tuberculous parents?] is obtained from tuberculous *patients who are parents*"; and (2) "the number of tuberculous offspring of non-tuberculous parents is obtained from the tuberculous offspring who are themselves patients." Now (2) agrees with the original memoir, but (1) does not. In the memoir both the numbers are obtained in precisely the same way—namely, from the records of the parents and brothers and sisters of the Crossley patients. A comparison of the figures in the table at top of page 9 with the figures in the table on page 10 will make this quite plain, allowance, of course, being made for some small differences due either to slips in the arithmetic or to printer's errors. The paragraph on page 11, which Professor Pearson thinks escaped our notice, refers to a corrective factor for the non-tuberculous *parents*, not *offspring*.

To our second point the reply is made that we are right in questioning the correctness of a certain procedure, but that we are wrong in supposing it to have been followed in this case. Now, referring to the original memoir again, we find that the proportions of tuberculous and non-tuberculous offspring of tuberculous parents *were* obtained from histories of families in all of which one child at least was tuberculous. The 80 families in Thompson's *Family Phthisis* are of this nature, a fact which Professor Pearson has probably overlooked.

Professor Pearson does not find it very surprising that the proportion of deaths due to tuberculosis among the married and widowed population is greater than among the total population. His explanation of this fact is no doubt correct. But what we think should have surprised him is that in his random sample on p. 12, the proportion of deaths due to tuberculosis amongst the married and widowed (1 in 21 for the female pedigrees) is far less than among the total offspring (1 in 10). It was this very surprising state of affairs in the "General Population, Random Sample," which first caused us to look carefully into the assumptions made in its construction.

In this connexion Professor Pearson says: "My tables represent . . . random samples of the *adult* population." The italics are his own. Surely this is not so. There are 78 of the Crossley cases under 20 years of age, and doubtless a large proportion of the brothers and sisters included in the offspring are under age also. However, if without giving any indication in the memoir that he has done so Professor Pearson has excluded all persons not adult, then the assumption on p. 12 of 1 in 10 affected with tuberculosis is very wide of the mark, being much too low a proportion.

The strictures on the obscurity of one paragraph are doubtless well deserved. What we tried to say was that for non-tuberculous offspring the proportion of tuberculous to non-tuberculous parents was too small. The completed table in the memoir gives 157 to 5,837 for the female pedigrees. Several series, practically "completed," which we have, show that the proportion of tuberculous to non-tuberculous parents of non-tuberculous offspring is not one-eleventh of the proportion of tuberculous to to non-tuberculous parents of tuberculous offspring, but more nearly one-fourth or one-half—that is, that where in the table we find 157 tuberculous to 509 non-tuberculous parents of tuberculous offspring (a proportion of, say, 3 to 10) we should expect to find for non-tuberculous offspring a proportion of, say, 3 to 40, or 3 to 20, instead of 157 to 5,837 (say 3 to 100). We are trying to be very conservative and give the benefit of every doubt to Professor Pearson's tables, but a reference to the following articles will show that many investigations have given a much more nearly equal distribution of tuberculosis among the parents of tuberculous and the parents of non-tuberculous offspring: Burckhardt, *Zeitschrift f. Tub.*, 1904. v, 297; Fischer, *Beiträge z. klinik d. Tub.*, 1904, iii, 30.

Why, in this connexion, should Professor Pearson assume that our ratios are "probably based on very incomplete histories"? As a matter of fact, the histories are practically "complete," and it is somewhat galling to have it suggested that we had overlooked so important a point—a point, too, which was so fully emphasized in the memoir under discussion. We have during the past two years studied almost every one of the important and interesting series of Professor Pearson's writings on statistical theory and evolution, beginning with the memoir on the Dissection of Frequency Curves in 1894 down to the Boyle Lecture in the present year, and our criticism of the formation of the random sample at present under discussion is based on considerable time and thought given to the question of the construction of such random samples from a large mass of data in regard to tuberculosis which we have been gathering for a considerable time and hope shortly to publish.

In your issue of May 27th, 1905, Professor Pearson discussed the formation of random samples, and it seems to us that it is his neglect in the present case of the third requisite in that paper which has caused this discussion.

We do not underrate the value of Professor Pearson's memoir, but we feel that the point at present under discussion is of great importance, and we would not venture to criticize Professor Pearson's procedure in this case if we did not feel that we had Professor Pearson to uphold us with his article, On the Inheritance of Insanity, and

several other most valuable contributions to the mathematical theory of heredity.—We are, etc.,

Lawrason Brown.
E. G. Pope.
Adirondack Cottage Sanitarium, Saranac Lake, N.Y.,
Sept. 30th.

DIRECTION OF ABDOMINAL INCISION.

Sir,—I have read with much interest Mr. Maylard's article on the direction of abdominal incisions in your issue of October 5th, p. 895, but without being converted to a belief in the virtues of the transverse incision.

As Mr. Maylard says, the important point to decide is whether the vertical or the horizontal incision has the lesser chance of being followed by a ventral hernia, and the anatomical and physiological facts which he quotes appear to me to favour a selected mode of vertical incision rather than a horizontal one.

Consideration of a case of large omental umbilical hernia will show that the hernia is produced by a relatively great intra-abdominal pressure acting on a weak spot in the musculo-aponeurotic layers of the abdominal wall, and not by the pulling apart of a cicatrix by the lateral abdominal muscles, as Mr. Maylard seems to infer when he lays stress on the fact that "when these three powerful muscles contract the whole force of their action is brought to bear upon their long central aponeurotic tendon."

What ordinarily happens is that the patient is getting stout and the abdomen fuller (by a good many pounds weight) of fat; the tension becomes greater than the resisting power of the umbilical cicatrix, and the latter yields and a small hernial protrusion results, which, with the continued pressure from within, is gradually enlarged until there is a multilocular sac containing (in the cases Mr. Maylard mentions) 6 lb. to 10 lb. of adipose tissue.

In a post-operation scar a single weak spot may yield, and a similar hernia with a narrow neck, surrounded by sharp aponeurotic margins, results, or the whole scar may prove too weak to withstand the intra-abdominal pressure and an extensive hernia be produced. Thinning of the unwounded linea alba may also give rise to a ventral hernia, as in a case on which I recently did a radical cure, where, during parturition, the thinned-out aponeurosis yielded and a huge hernial protrusion occurred.

In fact, one may say that a ventral hernia will occur whenever the resisting power of any portion of the abdominal muculo-aponeurotic tissues, which consists of a single layer, becomes less than will withstand the intra-abdominal pressure. I say "a single layer," because I know of no instance in which there has been a hernia through a double thickness of muscle or aponeurosis.

Mr. Maylard seems to make rather a fetish of the *direction* of the incision, and has altogether failed to differentiate between such essentially different incisions as (1) that for an umbilical hernia where only skin and sac are divided and the abdominal layers essential to the prevention of a hernia are not incised at all, and where it consequently does not matter in the least what direction the skin incision takes; and (2) that where the rectus sheath is divided; and (3) (most important of all) that where the rectus muscle itself is cut across.

Moreover, he groups together all cases in which the incision is transverse, including those made close to the subcostal margin or just above the pubes, where—especially in women—the clothing tends to give more support, and where also the intra-abdominal pressure is much less than over the central parts of the abdomen.

One may mention also, without wishing to make too much of the point, that his argument that, because the large arteries are divided in the transverse incision, therefore the wound gets better vascularized, seems to rest on a fallacy. Surely the vitalizing, circulating lymph and blood transude from the capillaries and not from the larger vessels, and, provided the incision is through a part well supplied with capillaries, the direction of the main arteries will as little affect the intimate blood supply as the water supply of a house is affected by whether the main supply pipe runs in the same direction as or at right angles to its front wall.

Whereas the division of the nerves supplying the rectus muscles, which Mr. Maylard regards as of no moment, I must regard as of considerable importance, inasmuch as the atrophy of the muscles consequent on such division cannot fail to weaken the resisting power of the abdominal parietes.

The method which appears to me to be best calculated to prevent a ventral hernia will consist in (1) going through a vascularized part of the abdominal wall, (2) if possible without dividing any muscular nerves, and (3) suturing the wound in such a way as to leave a scar consisting of two or more musculo-aponeurotic layers, of which, preferably, one should consist of undivided muscle. Such an incision is the one mentioned by Mr. Maylard, in which the anterior rectus sheath is incised vertically about an inch outside the middle line, the muscle is retracted outwards, and the incision completed in the same line as it began. In sewing up the wound the peritoneum and posterior sheath are stitched with a continuous catgut suture; a few catgut stitches are used to fix the edge of the muscle in the middle line, bringing it right across the incision in the sheath, and then the anterior sheath is closed by a continuous suture.

The patient gets up early in the third week, and goes home at the third week end. In practice the results of this method are excellent; but should a ventral hernia result there will not be any difficulty in doing an operation for its radical cure, whereas when, as in Mr. Maylard's Case No. 6, a hernia follows a transverse division of the rectus muscles, it would appear hopeless to attempt any radical operation, as the ends of the muscles will have retracted too far apart to permit of their approximation.

The points I should like to emphasize are these:

1. In considering the question of prevention of ventral hernia, the skin and peritoneum may be neglected, and attention concentrated on the musculo-aponeurotic layers.
2. Consequently the direction of incision through the skin and the sac of an umbilical hernia has no vital bearing on the subject under discussion.
3. If, when Mr. Maylard opens the abdomen in the middle line without dividing the rectus muscles, he divides the anterior sheath, then retracts the muscles outwards and divides the posterior sheath transversely (he does not detail the steps of the operation, but I presume this is what he does), the effect is exactly the same as in the method I advocate, but he would seem to have a more awkward incision to work through, and his method offers no obvious advantage over the easier vertical incision.
4. Where the muscles are divided there is (Mr. Maylard admits) a definite risk of a hernia: (*a*) if the patient gets pleurisy or any other complication attended by a cough; (*b*) if she gets up before the end of a month; or (*c*) if she begins to do anything like hard work before the end of three months. Any hospital surgeon must know that this last desideratum is practically unattainable.
5. Should such a hernia occur, the retraction of the divided ends of the rectus muscles will most probably make it quite impossible to do anything in the shape of a radical cure.

—I am, etc.,

Bradford, Oct. 7th. James Phillips.

THE KIDNEYS IN BERI-BERI.

Sir,—In the Journal of July 27th last, page 201, Messrs. Hewlett and De Korté make the following statement in summing up their article on the etiology and histology of beri-beri:

"We have examined a number of kidneys obtained from cases of acute beri-beri. Sections of these kidneys show changes similar to those met with in the monkeys' kidneys, but in a more intense form, namely, congestion of the glomerular vessels, and haemorrhages into the glomeruli, scattered patches of haemorrhages into the tubuli recti and convoluted tubules with denudation of epithelium in these areas, and much widespread cloudy swelling of the renal epithelium. We believe that these changes have not been described before."

These morbid kidney changes are certainly common in beri-beri. But the authors are not correct in stating that "these changes have not been described before. In numerous articles on beri-beri I have more or less intimately described such changes in the acute pernicious, acute and subacute forms of the disease (I am using my own classification of beri-beri), while in beri-beri residual paralysis along with these changes are numerous foci of small cell infiltrations and interstitial overgrowth. (See, more especially, my brochure, *On the Classification and Pathology of Beri-beri*; John Bale Sons, and Danielsson, December, 1903.)

In a careful review of my numerous sections from all classes of beri-beric kidneys I do not find that I can insist

as strongly as do Messrs. Hewlett and De Korté on the intertubular haemorrhages. But the interstitial variety is common especially in the acute pernicious form where massive oedema was present. The sections from the kidneys of those monkeys which contracted beri-beri in the Kuala Lumpur gaol are normal. (See *Brain*, Winter, 1903)—I am, etc.,

Washington, D.C., Sept. 27th. HAMILTON WRIGHT.

HYPNOTISM AS A THERAPEUTIC AGENT.

SIR,—Dr. Woods's able and interesting paper on the subject of hypnotism, and the discussion which followed at the meeting of the British Medical Association (JOURNAL, September 28th, p. 809), will go far towards removing any lingering doubts in the minds of the majority of medical men as to the power for good which the process undoubtedly possesses. I find at present that it is still viewed with suspicion by many of our professional brethren, and that they still need education on the subject before they regard hypnotism as anything but a last and doubtful resource.

The position of the lay public towards it is more difficult to deal with. The upper classes, indeed, realize that members of an honourable profession will not risk their reputations by dealing with any sort of quackery, and the lower classes will accept everything their doctor suggests with a blind faith. But it is different with the middle-class man, who prides himself on his common sense and freedom from superstition, and declares that he will not let any man tamper with his free will if he knows it.

As an example of this I may cite the case of a young woman who has suffered for many years from trigeminal neuralgia and who is now cheerefully going to have her ganglion removed rather than take the "risk" of a trial of hypnotism. Exhortation and explanation are in vain. She has heard of hypnotism and prefers to be cured by what she calls "natural means," that is, operation. Again, an old fellow suffering from lumbago says, "No, we'll try all honest means first." All this shows that the amount of prejudice to be overcome is still very considerable, and it seems almost a pity that some new name has not been applied to medical hypnotism to distinguish it from music-hall hypnotism.

I have found that a very large proportion of people are susceptible enough for curative suggestion to be effective, and that the results obtained are often beyond one's most sanguine expectations.

Not only is it remarkably effective in all neuroses, neuritis, and neuralgia, especially lumbago and sciatica, but it is also of great assistance in such troublesome matters as rheumatoid arthritis, and I believe that in a good hypnotic subject taken fairly early would be actually curative.

I have found it act "like magic" in alleviating the miseries and discomforts that some women are troubled with during the last few months of pregnancy, and in some cases to have decidedly diminished the pain of labour, besides having abolished the fear of the confinement; an advantage not inconsiderable. Dysmenorrhoea is an ailment that might, I think, be more often handed over to the hypnotist. And here again I would protest against the fashion of calling him in only after all other means, including operation, have been exhausted. The benefit to these cases is often very striking, and surely hypnotism should be nearer the top of the list of remedies than right at the bottom.

I must finish trespassing on your space by endorsing Dr. Woods's opinion that no harm has ever come of hypnotism in intelligent hands, and that to be applied intelligently each patient must be studied and treated as an individual. At the same time I think there is no doubt of the value of hypnotizing new patients in the presence of old habitués; a greater percentage of successes will occur under such conditions.—I am, etc.,

London, N., Oct. 1st. E. W. J. LADELL, M.B.

THE DISORGANIZATION OF THE PUBLIC HEALTH SERVICE.

SIR,—Your leader on the above subject hits the nail on the head, so to speak, and your persistent efforts to show up the existing condition of affairs in the above service will very materially assist in having matters put right, I feel certain.—I am, etc.,

October 11th. ANOTHER UNFORTUNATE.

THE INSTRUCTION OF MIDWIVES.

SIR,—As a lecturer to midwives I have read with much pleasure and profit Dr. Horrocks's admirable address on this subject. I propose to communicate the substance of it to my class of pupil-midwives at the earliest opportunity; and I think it would be a good plan if Dr. Horrocks would allow it to be reprinted for circulation amongst midwives and others interested.

It may seem almost ungracious to offer any criticism on such an excellent address, but one or two points in it struck me as not quite in accordance with accepted ideas. In speaking of the presenting part, Dr. Horrocks says:

> If the umbilical cord can be felt through the unruptured membranes it is called prolapse of the cord. If it comes through the rent after the membranes are ruptured it is called presentation of the cord.

Is it not just the reverse, the former condition being presentation, and the latter prolapse of the cord?

Then again, in speaking of the causes of delay in the second stage of labour, he says:

> Sometimes, when the head is bulging the perineum, each pain causes a considerable bulge, but in between the pains the head recedes to the position it was in before. In such cases suspect that the cord is round the neck.

Writing to the JOURNAL some time ago, I pointed out that whatever difficulties may arise from the cord being round the child's neck, this condition could not possibly have any influence in retarding the advance of the head, for the very simple reason that at each advance of the head the uterus and its contents, including the placenta and cord, advance *pari passu* with it. The recession of the head is, in my view, due to the relaxation of pressure in the uterus after the pain is over.

What pleased me most of all in the address was the very sensible advice with regard to the child's eyes. It has always seemed to me most unwise to instruct the ordinary midwife to drop a germicide solution into the child's eyes as a matter of routine. Who can tell but that in opening the eyelids and dropping in this solution the midwife may not introduce the very matter we all wish to exclude, namely, gonorrhoeal pus? I quite agree, and always teach my pupils, that in every case, as soon as the head is born, the outside of the eyelids (not the eyes) should be thoroughly cleansed with an antiseptic lotion.—I am, etc.,

Swansea, Oct. 5th. F. KNIGHT.

LEPROSY AND FISH.

SIR,—With reference to Dr. John Reid's letter on the above in your issue of September 28th, the eruptions from which the King's sons suffered were probably urticarial or of the nature of erythema multiforme. In the old days "a leprosy" was applied to all sorts of skin diseases, as I have shown in my article on Leprosy in the *Quarterly Review* (No. 394, April, 1903). In the same place I took the opportunity of dealing critically with the so-called fish theory, showing on what a flimsy basis it rested.—I am, etc.,

GEORGE PERNET,
Co-Editor, *International Journal for Leprosy.*

London, W., Oct. 1st.

LEPROSY IN THE ARGENTINE REPUBLIC.—A draft of a Bill for the Repression of Leprosy has been submitted to the Minister of the Interior of the Argentine by the National Department of Hygiene. Its main provisions are that every case of leprosy must be notified to the proper authority without delay; that all persons declared to be suffering from leprosy shall be treated either in their own homes, if they undertake to obey the injunctions of the sanitary authority, or in special institutions. Children suffering from the disease or belonging to families regarded as suspect by the sanitary authority shall not be admitted to schools, either public or private; special schools will be established for them. The regulations as to notification are very stringent, and heavy fines are imposed on doctors and all concerned for any breach of them. All foreigners found to be suffering from leprosy are excluded from the territory of the Republic.

OBITUARY.

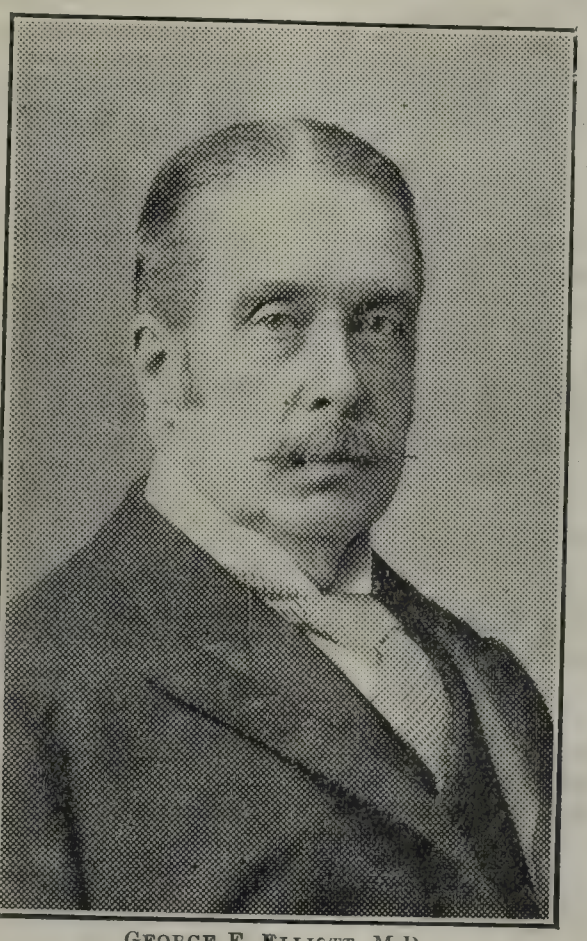
GEORGE FREDK. ELLIOTT, M.D.Dub., F.R.C.P.Lond.,

PHYSICIAN TO THE HULL ROYAL INFIRMARY.

The city of Hull has lost by death one of its most distinguished members in the person of Dr. George Frederick Elliott. He had attended to his professional duties during the day of Friday, October 4th, and seemed in his usual health, but during the evening was attacked with syncope. He rallied well, and apparently seemed to be recovering, but in the early hours of October 6th became insensible and passed away quietly.

The funeral took place quietly at Filey on October 9th, in the churchyard attached to the old Norman church which stands on the headland overlooking the peaceful waters of the bay and the well-known Brigg of Filey. At the same hour, at All Saints', Hull, where Dr. Elliott used to worship, a memorial service was held, which was largely attended by the profession, representatives of various public bodies, and a number of personal friends.

Dr. Elliott was educated at Trinity College, Dublin, graduating M.B. in 1855 and M.D. in 1864. He was also M.D Oxon. *com. causâ*, and F.R.C.P. At the commencement of his career he entered the Navy, and took part in the Chinese war. He was present at the capture of the Taku forts and the siege of Canton, for which he held a medal and two clasps. He was surgeon on board H.M.S. *Samson* at the blockade of the Baltic, and held appointments at Haslar and Chatham during the Crimean war. At its close, on the occasion of a visit of H.M.S. *Samson* to the port of Hull, he, together with his fellow-officers, was publicly *fêted* by the town.



George F. Elliott, M.D.

Owing to maternal pressure, though devoted to the navy, he retired after eight years' service, and settled in Stamford, where he was appointed Physician to the Stamford and Rutland Hospital. In 1866 he was attracted to Hull by a vacancy in the lectureship of medicine in the then Hull School of Medicine, and was appointed a Physician to the Infirmary, a post which he held up to the hour of his death with distinction to himself and benefit to a large number of patients. During the thirty-nine years of office he saw many changes; all his colleagues died one by one; the building itself increased both in size and usefulness and became a Royal Infirmary.

Much against his will, Dr. Elliott had decided to retire from the active work of the infirmary, and had placed his resignation in the hands of the Board of Management.

Dr. Elliott was an exceedingly reticent and unassuming man, never mixing in public affairs, but giving his whole time to the practice of his profession, to which he was devoted. Whatever tasks and pursuits he may have had in his younger days—for we hear that he was fond of fishing and shooting, and possessed of a facile pencil—he on coming to Hull gave up all for the pursuit of his profession. He rarely allowed himself a holiday, but when he did tear himself away from work, it was to take a rest in his much beloved Filey where he was able to indulge in his one amusement—sea-bathing; he was wont to say that a fortnight's sea-bathing set him up for a whole year. Dr. Elliott was an omnivorous reader both inside and outside his profession, being specially attracted by the English and American humourists. Though he never wrote much in a professional capacity, when he had occasion to employ his pen, he was a polished writer; and though in no sense an orator yet when he was compelled to speak, his remarks were always to the point and in choice language. To his professional brethren he was courtesy and consideration personified, and many in Hull have to thank Dr. Elliott for countless acts of kindness and sympathy. In the heyday of his life he held the leading position in the East Riding and North Lincolnshire, and his sound advice was in constant demand. Those who were permitted to enjoy a closer intimacy have lost in him a warm-hearted and sincere friend and one not easy to replace.

Dr. Elliott left behind him a widow, four sons and a daughter, none of whom, however, have chosen the profession of the father.

We are indebted to the editor of the *Eastern Morning News* for the process block from which our portrait of Dr. Elliott is struck.

JAMES CARROLL, M.D.,

MAJOR AND SURGEON, UNITED STATES ARMY.

Dr. James Carroll, Major and Surgeon in the United States Army, whose name is associated with those of Walter Reed and Jesse W. Lazear in the demonstration of the truth of Carlos Finlay's theory that yellow fever is transmitted by mosquitos, died at Washington on September 16th of heart disease, from which he had suffered since 1900. While serving on the Yellow Fever Commission in Cuba, he allowed himself to be bitten by a mosquito which had previously bitten three persons suffering from yellow fever. Four days later he was attacked by the disease in a severe form, and, though he did not die of it, like his colleague Lazear, the disease left him with a permanently crippled heart.

Dr. Carroll was born at Woolwich, England, on June 5th, 1854. When 15 years of age he emigrated to Canada, and for some years he led the life of a backwoodsman. About 1881 he enlisted as a soldier in the United States Army, and, after being promoted to the rank of sergeant served as a hospital steward. In the discharge of his duties an interest in medicine was aroused in him which led him to devote his spare time to its study. He entered the University of the City of New York in the session of 1886-87. After an interruption extending over a year, he resumed his studies at the University of Maryland, Baltimore, where he took his doctor's degree in 1891. During the winters of 1891-92 and 1892-93 he went through post-graduate courses in pathology and bacteriology at the Johns Hopkins Hospital. He was then appointed Contract Surgeon, but in 1902, in recognition of his services on the Yellow Fever Commission, the age limit was waived and he was allowed to present himself for examination for admission to the Medical Corps and was appointed First Lieutenant and Assistant Surgeon. In March, 1907, Congress passed a Bill authorizing the promotion of Dr. Carroll to be Major and Surgeon on account of his services on the Yellow Fever Commission. As, owing to his heart affection, he was unfit for active service, he was appointed Curator of the Army Medical Museum.

Professor Howard A. Kelly, in his Memoir of Walter Reed, states that Carroll's first association with that investigator was in 1893, when he was assigned to duty at the Army Medical School in Washington. They continued to be more or less connected during the next six years. In 1899 they were both appointed by Surgeon-General Sternberg to investigate the true nature of the *Bacillus icteroides*, which Sanarelli asserted was the specific cause of yellow fever, and in 1890, when the Army Commission on Yellow Fever was appointed, Dr. Carroll was placed second in command. He sailed from New York in company with Dr. Reed on June 21st, 1900, and reached Havana on the 25th. On August 4th, when matters were in working order in Cuba, Dr. Reed returned to the United States for two months on official business while

Dr. Carroll remained at the head of affairs in Cuba. It was during this interval that he had the attack of yellow fever, which was the first case produced experimentally by the bite of the mosquito. Lazear made the first experiment on August 11th, 1900; but nine inoculations on persons, including himself and Acting Assistant Surgeon A. S. Pinto, were unsuccessful. It is now known that these failures were due to two facts: First, that patients after the third day of illness cannot convey the infection to the mosquito; and secondly, that a mosquito which has bitten a patient with yellow fever cannot transmit the disease till after an interval of twelve days. On August 27th a mosquito which happened to fulfil both these conditions was applied to Dr. Carroll. The result was an attack in which for a time his life hung in the balance. Dr. Carroll himself said that the proudest circumstance of his life was the fact that he was the first person to succumb to mosquito inoculation, adding, however, that "with a wife and five young children at home my thoughts during the serious part of my illness may be better imagined than described." All the reports of the Yellow Fever Commission bear the name of Dr. Carroll as well as that of Dr. Reed, and Professor Howard Kelly says that

> In reading them we should always bear in mind that, while the experiments were planned by the master mind, the accuracy with which they were carried out and the care by which all possible precautions were taken to exclude every source of error are due to Dr. Carroll quite as much as to Dr. Reed.

In February, 1901, Dr. Carroll returned to the United States with Dr. Reed, but in the following August he was again in Cuba completing the experiments with inoculation of the blood begun at Camp Lazear. Besides the reports of the Commission, Dr. Carroll embodied the results of his work in several papers. The first of these, published in July, 1902, dealt with the treatment of yellow fever; in two others which appeared in 1903 he discussed the history, cause, and mode of transmission of yellow fever, and the occurrence of similar types of fatal fevers in places where yellow fever is not known to have existed.

Dr. Carroll deserves a place in the roll of the martyrs of science as well as any of the heroic seekers after truth who have died, so to speak, on the battlefield in fighting the powers of darkness. Of the Yellow Fever Commission the only surviving member now is Dr. A. Agramonte, a Cuban physician.

W. O. ATWATER, PH.D.

THE late Professor W. O. Atwater, whose death we regret to note, was one of the most distinguished among the band of eminent Americans who during the last generation have brought their country to the front rank of the nations engaged in scientific research. Unhappily his work ended two years ago, when he had an apoplectic seizure which left him helplessly paralysed.

As Professor in the Wesleyan University, Middleton, Connecticut, his work became widely known; from 1875 to 1877 he directed the Connecticut Agricultural Experimental Station, the first institution of the kind in the United States, and in 1888 he founded the Federal Department of Agriculture, which has done so much for agricultural chemistry, but it is especially in connexion with human metabolism that he is known to the medical profession. By an elaborate series of researches he established the fuel value of the various classes of food, and constructed dietary standards in heat units for people engaged in different kinds of work; but besides the standard dietaries, his studies on absorption, his work with Benedict on the food value of alcohol, and with Sherman on the loss of water from the body during work, were of the highest importance. It is no exaggeration to say that no account of the science of metabolism as we know it to-day could be written were Professor Atwater's work omitted.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Degree of D.M.

IN a congregation held on Thursday, October 10th, the degree of D.M. was conferred on C. U. Aitchison, M A., B.M., Balliol College.

Examination in Preventive Medicine (D.P.H.)

The examination for 1907 will commence on Tuesday, November 19th. Names must be received not later than 10.30 a.m. on Tuesday, October 29th, by the Assistant Registrar (Old Clarendon Building), from whom full particulars may be obtained.

Rolleston Memorial Prize.

This prize, which is of the value of about £60, will be awarded in 1908, for original research in any subject comprised under the following heads: Animal and Vegetable Morphology, Physiology and Pathology, and Anthropology. The dissertations must be sent in to the Registrar before 6 p.m. on Tuesday, March 31st, 1908. The conditions of candidature are published in the *University Gazette* of October 11th, 1907, p. 34.

UNIVERSITY OF CAMBRIDGE.

SANITARY SCIENCE EXAMINATION.

THE following candidates have satisfied the Examiners in both parts of the Examination:

R. C. E. Atkinson, F. A. Bainbridge, Annie T. Barnard, J. Bibby, G. G. Buchanan, Catherine L. Corbett, C. N. Davis, A. H. Fardon (Christ's), R. B. B. Foster (Captain I.M.S.), D. W. Hunter, E. Jennings (Major I.M.S.), Florence B. Lambert, J. E. MacIlwaine, W. A. Milne, F. H. Noke (Captain R.A.M.C.), F. L. Pochin, D. F. Riddell, M. de L. Robinson, G. U. Smith, Barbara Tchaykovsky, J. E. Thomson, Ada M. Whitlock.

APPOINTMENTS AND DEGREES.

A. H. Lees, B.A., King's College, has been appointed to the Research Studentship in Medical Entomology.

The following degrees were conferred on October 10th:

M.B., B.C.—E. F. Skinner.

M.B.—B. H. Stewart.

ROYAL UNIVERSITY OF IRELAND.

THE THIRD EXAMINATION IN MEDICINE, AUTUMN, 1907.

THE following candidates have been approved at the examination indicated:

Third M.B. (Upper Pass).—*A. V. Craig, *W. Dickey, J. A. Hanrahan, *R. W. G. Hingston, D. Horgan, *J. C. Houston, *E. G. Kennedy, E. W. Kirwan, *P. J. Lydon, B.A., *M. G. O'Malley, D. A. Rice, T. Scanlan, W. S. R. Steven, A. M. Thomson, M. Twohig.

Third M.B. (Pass).—D. R. Acheson, W. J. Ashby, P. M. J. Brett, D. Broderick, F. S. Carson, V. L. Connolly, W. Doolin, J. S. Doyle, W. P. Dunne, B.A., P. Hayes, J. Holland, J. Keyms, B.A., S. K. McKee, W. Magner, T. P. Magnier, G. E. A. Mitchell, T. J. S. Moffett, J. M. O'Reilly, A. Patton, B.A., S. P. Rea, W. Riddell, J. Spence, H. W. White, R. Young.

* Qualified to attend a further examination for honours.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on October 10th, Mr. Henry Morris, President, in the chair.

The late Mr. Timothy Holmes.

The Council recorded their deep regret at the death of Mr. Timothy Holmes, and their sincere sympathy with his widow in her bereavement, and their appreciation of the services rendered by Mr. Holmes to the College in the conscientious discharge of the several duties which devolved upon him as a member of the Council and of the Court of Examiners.

The late Professor Charles Stewart.

The Council expressed their deep regret at the death of Professor Charles Stewart, LL.D., F.R.S., Conservator of the Museum, and their sincere sympathy with his widow and family in their bereavement, and their appreciation of the great advantages which the College derived from his wide knowledge of all branches of science represented in the Museum, and more particularly from the special attention which he bestowed on the Physiological Series, and their record of their appreciation of the zeal and ability which he displayed in performing the duties of Conservator of the Museum during the past twenty-three years.

The Physiological Catalogue.

The best thanks of the Council were given to Professor C. S. Sherrington for his valued assistance in revising the proofs of Volume iii of the *Physiological Catalogue*, and an honorarium was voted as a mark of the Council's appreciation of his services.

Annual Meeting of Fellows and Members.

This will be held on Thursday, November 21st, 1907, when the annual report of the Council will be submitted to the meeting.

Executive Committee of the Imperial Cancer Research Fund.

Mr. H. H. Clutton was elected a member of this Committee in the vacancy caused by Sir John Tweedy, who ceased to be a member of the Committee on his retirement from the Council of the Royal College of Surgeons. Mr. Edmund Owen was re-elected a member of the same Committee.

The London Ambulance Service.

The President was appointed to give evidence before the Committee appointed by the Secretary of State for the Home Department on the above subject.

SOCIETY OF APOTHECARIES OF LONDON.

PRIMARY EXAMINATION.

THE following candidates have been approved in the subjects indicated:

BIOLOGY.—F. G. Norbury.
CHEMISTRY.—F. G. Norbury, S. B. Webster.
MATERIA MEDICA AND PHARMACY.—I. M. Bernard, J. G. Morgan.
ANATOMY.—F. S. Hawks, C. B. Hawthorne, G. Whitehead, J. W. Williams.
PHYSIOLOGY.—W. E. Dimond, F. S. Hawks, A. Singha, G. Whitehead, J. W. Williams.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

THE ETIQUETTE OF LUNACY CERTIFICATION.

H. R.—It is hardly credible that C. and his friend should have tried to force themselves into the presence of the patient of another man for the purpose of certifying him as a lunatic. C. should be allowed to explain before any opinion can be expressed on conduct which seems so opposed to the rules of professional propriety.

ASSOCIATION WITH UNREGISTERED DENTISTS.

REX.—As registered medical practitioners are forbidden by the General Medical Council to be associated in practice with unregistered dentists, we have no doubt that it is ethically improper and a breach of the spirit of the regulation of the General Medical Council for a medical practitioner to exhibit the advertising card of an unregistered dentist on the wall of his surgery.

Medico-Legal.

THE RESPONSIBILITY FOR A CONSULTANT'S FEE.

AT the Stafford County Court last week, Dr. Charles Reid sued a master carpenter for a fee of £3 3s. for a consultation in respect to defendant's wife. The point at issue was whether the defendant was properly liable for the fee or the defendant's family physician, Dr. Bull. In 1904 the defendant's wife was taken ill, and Dr. Bull pronounced the case to be one of scarlet fever and forbade the husband to go to work. The defendant, however, persisted that his wife was suffering only from measles. Defendant alleged that Dr. Bull asked him if he had any objection to another opinion, and defendant said he had none, but alleged that he said he would not be at any expense in the matter. Eventually Dr. Reid was called in and gave his opinion, subsequently sending in an account for £3 3s. to defendant. Dr. Bull admitted that he had never mentioned the amount of the fee to defendant. The County Court Judge (His Honour Justice Ruegg) in giving a verdict for the plaintiff, commented on the fact that defendant, on receiving Dr. Reid's account, had never repudiated the debt nor had he mentioned the matter to Dr. Bull. It had been held before that the person actually calling in a doctor was responsible for his fee, and in this case the question seemed to be was the doctor who called in Dr. Reid acting as the agent of the defendant? The decision of the Judge indicates that, in his Honour's opinion, he was the agent of the defendant and that the defendant was bound by such action.

MEDICAL EXAMINATIONS IN CRIMINAL CASES.

M.T.—If the case is sent for trial, our correspondent is entitled to claim for what is technically known as "qualifying to give evidence." (1) one guinea for the examination of the woman; and (2) one guinea for the microscopical examination of the mucus and stains, which will be paid, if allowed, by the same authority as the fees for giving evidence. Should the case not be sent for trial, the claim must be made against the head of the local police, whose authority should have been obtained previous to making the microscopical examination.

THE WORKMEN'S COMPENSATION ACT.

HOSPITAL NURSES.

INKPOT asks whether a nurse of a large hospital suffering from varicosity, which she alleges was caused by the work she performed for her institution, would be able to claim as a "workman." The injury occurred before July, 1907, when the Act came into operation, and she is still unable to work. He has been asked to certify. Will the certificate of a registered practitioner be considered enough by a county court judge or are there duly appointed men for such certifying?

*** Seeing that the injury was caused before the Act came into operation on July 1st, it is clear that, even if her employment came within the Act, the nurse could make no claim. The question whether a hospital nurse is entitled to the benefit of the Act is by no means easy; but we have been advised that, having regard to the wide meaning of the term employment, nurses are probably entitled to compensation. The question whether varicose veins are an accident has yet to be decided. With regard to certifying, the duties of certifying surgeons under the Act relate only to industrial diseases, and "varicose veins" is certainly not an industrial disease.

M.D. asks whether a nurse employed as a midwife at a workhouse who contracted ophthalmia from a case of ophthalmia neonatorum in the course of her duties and lost one eye in consequence, is entitled to compensation under the Workmen's Compensation Act, 1906; the insurance company repudiates liability, and the disease is not in the schedule issued by the Home Office.

*** It is true that ophthalmia is not one of the industrial diseases in the schedule to the Act, or in the order of the Home Office on May 22nd, 1907. Nevertheless it is open to the Court to say that it is an "accident" (see S. 8 (10) of the Act of 1906). But apparently there must be an element of something fortuitous and unexpected about the case. So lead poisoning, miners' cellulitis of the hand or knee have been held not to be accidents. But in a recent case anthrax contracted by a workman sorting foreign wool was held to be an accident. In that case the late Lord Chancellor said: "It does not appear to me that by calling the consequences of an accidental injury a disease one alters the nature or the consequential results of the injury that has been inflicted."

DISTRICT MEDICAL OFFICERS.

NOVICE writes: I am district medical officer for two separate unions. One Board has insured all officers, the other has not. While motoring on professional work, on starting the car the handle flew back from a "back fire," striking my right wrist so severely that I was incapacitated from doing work for a fortnight, and consequently had to engage a *locum* for that period. I wrote to the clerk of the guardians who had acknowledged insuring their officers, and in reply received the following: "————, If you met with your accident in performance of your duties as district medical officer, I anticipate your claim for compensation will be accepted, but if you will let me have full particulars I will further consider the matter." Now on that day I am not aware that I visited any parish patients, although I passed through a large part of my district, and might have been called in but was not, and I might have done some local visiting afterwards, but could not.

*** This is the kind of point bound to come up sooner or later, but there has been no decision under the Act of 1906. Assuming that the employment was within the Act, which assumption may safely be made, there are two other questions which must be answered before the claim of "Novice" can be established: (1) Did the accident arise out of and in the course of the employment? and (2) What was his salary (*a*) from the union, (*b*) from all sources? As to (1), we are advised that, upon the admitted facts, the accident would hardly be said to arise in the course of the employment. But this is a pure question of fact with regard to which judges might hold different views. It has been decided that an accident happening to a man going to or coming from his work is within the Act. Hence, if "Novice" had been actually summoned to see a patient for the union, it is probable that the court would award him compensation. The second question raises a point about which lawyers are still undecided. If a man earns £250 or more in his employment to which the Act applies, he is excluded from the Act. But suppose in this case he receives £100 from one union and £150 from another, is he within the Act as an employé of either union? That is a point with regard to which we do not care to express a definite opinion. If the two salaries united are less than £250, well and good; but the question then becomes complicated by receipts from private practice. We are advised, however, that in all probability the receipts from private practice may be disregarded in estimating the amount of remuneration.

A CARD.

LIVERPOOL.—In our judgement the circulation of such a card as our correspondent sends under the circumstances detailed is unethical; we would advise our correspondent to bring the matter to the notice of the Council of the Branch.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

THE INSECURITY OF TENURE OF PUBLIC HEALTH APPOINTMENTS.

SOUTHEND-ON-SEA.

AT the monthly meeting of the Southend Town Council on October 15th the Health Committee reported that in accordance with the resolution of the council at the August quarterly meeting advertisements had been issued inviting applications for the appointment of medical officer of health at £500 per annum. The advertisement had been inserted twice in the *Municipal Journal*, *Local Government Journal*, *Times*, and *Daily Telegraph*. The BRITISH MEDICAL JOURNAL and the *Lancet* declined to insert the advertisement, and the BRITISH MEDICAL JOURNAL, with the concurrence of the British Medical Association, warned their readers against applying for the appointment. The committee added:

Under these circumstances, it is not surprising that only four applications have been received as compared with forty-eight upon the occasion when Dr. Nash was appointed. Your Committee has considered the four applications, but they cannot see their way to recommend the Council to appoint any one of the applicants. Under the above circumstances, and having regard to the very serious position in which the Council is placed, your Committee recommend that Dr. J. T. C. Nash be asked to perform the duties of the medical officer of health and his other duties for a further period of twelve months from November 20th proximo (being the expiration of the current period for which he has undertaken the duties), and that his remuneration for such services be at the same rate as hitherto—namely, £600 per annum, £80 of such salary to be allocated as his remuneration as medical superintendent at the sanatorium, and that the necessary sanction of the Local Government Board be applied for to such appointment.

Alderman J. Francis, Chairman of the Health Committee, before submitting the recommendation, said that Dr. P. J. S. Nicholl, Honorary Secretary of the Stratford Division of the British Medical Association, had written to him, forwarding the following resolution adopted at a recent meeting of the Division, with a request that it should be read to the council:

> Having regard to the many close associations existing between Southend and the eastern suburbs of London, the Stratford Division of the British Medical Association feels justified in expressing grave concern at the position in which Dr. Nash has been placed by the action of the Southend Town Council. The high reputation gained by Dr. Nash as an expert in public health has gone far towards increasing the value of Southend as a holiday and health resort, for which purpose it has been habitually recommended by medical men practising throughout East London. The Division therefore trusts that, in the interest of Southend itself, a full recognition of Dr. Nash's services will not be withheld.

Alderman Francis said that the recommendation as to the time for which the appointment should be made did not express the real opinion of the committee and might not be sanctioned by the Local Government Board, but in view of the gravity of the situation in which the town was placed, it was put forward as a compromise. After a proposal to limit the period for six months had been made and withdrawn, the recommendation of the Public Health Committee was adopted by 15 votes to 4.

AN ISOLATION HOSPITAL AT A HEALTH RESORT.

SOME British health resorts seem desirous of gaining an unenviable reputation with regard to their public-health administration. A letter was recently published in the *Isle of Wight County Press* from the officer commanding the boys' brigade at Nettlestone complaining that he had encountered great difficulty in dealing with an outbreak of diphtheria in the camp owing to the refusal of the Ryde borough authorities to receive the boys into their isolation hospital. A subsequent issue of the same paper contained a letter from two medical practitioners in Ryde stating that the arrangements of the isolation hospital are of a most unsatisfactory kind. The hospital, they state, is nothing more than a shed with two rooms containing eight beds, in charge of a caretaker, who is supposed not only to do all the nursing both by day and night, but also to cook and clean. The caretaker has no means of communicating with the doctor or relatives in an emergency without leaving the patient unattended; there is no means of isolating more than one disease at a time, and no disinfecting apparatus. We have frequently contended that one of the first things that persons interested in the welfare of a health resort should do is to establish an effective system of dealing with infectious disease. Health resorts are perhaps even more liable than other places to the importation of infection, and adequate means of dealing promptly and effectively with the earliest cases are among the first necessities of a health resort.

MILK AND INFECTION.

THE United States Public Health and Marine Hospital Service has decided to undertake the collection of data in regard to the transmission of disease by milk supplies. A circular letter has been addressed to medical practitioners inviting them to communicate to the service the results of any observations bearing on the subject that they may have made. The data asked for include the date, the place, the number of cases, the mortality, the number of cases among milk consumers, the circumstances attending the outbreak, the locality in which the original case or cases occurred, the manner in which the milk was infected, and the reasons for believing that the disease was conveyed in this way.

MEDICAL CERTIFICATION OF PATIENTS FOR EMIGRATION PURPOSES.

DISTRICT MEDICAL OFFICER writes saying he was requested by letter from the Clerk to the Guardians to examine a woman and ten children and to fill up eleven accompanying certificate forms for the Canadian Government. There were twenty questions or more on each form, and the replies involved much care and attention to detail. Our correspondent considers this certification was not one of his duties as district medical officer, and asks whether he can claim a fee for each case, and if so, "who should pay?"

*** We know of no rule or regulation which casts this duty on a district medical officer, and as the information was obtained for the Canadian Government and not for the guardians themselves our correspondent is no doubt entitled to a fee for each case certified by him. As the guardians have by letter become responsible for the fees, application should be made to them for payment. The question as to what amount should be paid by the guardians as suitable fees is not unlikely to crop up; we are of opinion that not less than 3s. 6d. and not more than 7s. for each case certified would be a judicious claim for our correspondent to make.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE MEDICAL SERVICE OF THE TERRITORIAL ARMY.

WITH commendable promptitude Sir Alfred Keogh, the Director-General of the Army Medical Service, has taken up the question of the medical organization for the new territorial army. Impressed by the grave defects of the existing volunteer medical service, and recognizing how under the present volunteer regulations the leading civilian physicians and surgeons are debarred from taking any active part in the medical service of the volunteers, he has outlined a scheme that he hopes will remove these disabilities, and will consolidate the medical profession generally into a homogeneous corps to serve with the territorial army in time of invasion. This new medical organization will not sweep away existing medical arrangements, but will make important and necessary additions to them so as to meet the recognized deficiencies in them, and in the carrying out of it everything will be done to make its provisions compatible with the civil life and occupation of those agreeing to undertake work under it, and especially will steps be taken to ensure the utmost elasticity as regards the assumption of duties in time of war.

This new medical service of the territorial army will be modelled on the lines of the Royal Army Medical Corps of the regular army, and will, consequently, have several departments of work, so that members joining it may select those branches that their own inclination or their special position fit them for. At the same time, however, as already mentioned, it will be a single consolidated corps, to which all members of the medical service must belong, and in future all appointments of medical officers will be made to it. Certain of its members will be posted to the regimental units of the territorial army to do duty with them, so that the regimental system will be retained, but under conditions that should materially increase its usefulness.

From what has been made public of Sir Alfred Keogh's proposed scheme, it may be said that the three new features characterizing it are (1) the introduction into it of an administrative department, (2) the provision of hospitals, and (3) the institution of a sanitary staff. In connexion with administration it is proposed to have for each division of the territorial army a selected officer to act as principal medical officer, there being attached to him also a staff officer of the R.A.M.C. and a sanitary officer. The hospital accommodation will take the form of stationary and general hospitals to be staffed by hospital physicians and surgeons, and to be placed in the territorial area of each division. The sanitary corps will be made

up of officers and specially trained men, and will have as one of their chief duties the preservation of the health of the troops on the line of march and in camp, some of the sanitary corps being posted for duty with the individual regiments. Naturally where hospitals have to be provided nurses will be required, and Sir Alfred Keogh proposes to supply the numbers needed by enlisting the support of the nursing matrons of the different civil hospitals in our large towns, so that there will really be provided a nursing branch in connexion with the territorial army.

Established on such a plan, the proposed new medical service will provide *personnel* for the general medical and sanitary work of the regimental units, for the field ambulances, for the stationary and general hospitals, for the sanitary branch, and for the administrative work of the division. It will in fact be an exact counterpart, with the exception of its regimental arrangements, of that provided for the regular army, and it should make good those defects in the matter of hospital accommodation, of administrative staff, and of sanitary supervision that are so marked in the present volunteer medical service. It does this by making it easier for the services of the whole profession being utilized, and under conditions that will in peace time make very little, if any, demands upon their time or interfere with their daily vocations. In fact, for those who have to do any training, the requirements insisted on are not severe and are elastic in their nature, while the pay and allowances to be granted to members while called out for training are satisfactory and even liberal, being at army rates and in accordance with rank.

Another very important step that is proposed to take to facilitate training and the obtaining by officers of certificates of efficiency, is the establishment of additional schools of instruction by raising selected head quarters of field ambulances to this status. Further, to assist in the training of the *personnel* of the new medical service, it is intended to place the resources of every military hospital throughout the country at the disposal of the medical officers of the territorial army, while courses of instruction in civil hospitals will also receive recognition. In this way there is imparted to the scheme a comprehensive and national character.

Until the whole details of Sir Alfred Keogh's new proposals are before the profession an opinion cannot be expressed upon them, but the departure taken by him of first laying them before the profession and inviting suggestions or alterations on them before they are finally and officially settled is a step in the right direction, and it contrasts most favourably with the usual procedure of the War Office. Speaking generally, the scheme propounded must be said to be drawn up on a workable and considerate basis, and should evolve an efficient medical service for the new territorial army.

An Experienced Correspondent writes: The first seven recommendations of the report of the Volunteer Medical Service Committee of the British Medical Association, headed "Officers," seem to be carried out entirely, and I notice it is specifically mentioned that each battalion is to have two medical officers, so that one may probably always be available, and that, if not, the Principal Medical Officer may temporarily attach some one else; this is badly wanted for camp. The provision that members of the new corps will only be required to serve within the area of the military division in which they reside will have the effect of not frightening men from joining lest they might be sent, say, from London to Newcastle, and thus their practice be interfered with.

As regards the paragraphs in the Association Committee's report headed "Field Ambulance," the first is adopted; paragraphs *b*, *c*, *d*, and *f* are details which very likely have been or will be adopted; paragraph *e* is another matter hardly a detail. Nothing is said about the reserve; I imagine the volunteer medical reserve at home will disappear, as it should, since the new force will replace it, but I should have thought a reserve willing to serve abroad would have been useful; this is probably arranged for.

The first ordinary meeting of the Laryngological Section of the Royal Society of Medicine will be held at 20, Hanover Square, on Friday, November 1st, at 5 p.m.

Major Blackham, R.A.M.C., has published, through W. H. Bailey and Son, 38, Oxford Street, a *Household Emergency and Reference Chart*, designed to be hung on the wall. It gives in concise clear terms a remarkable amount of useful information regarding injuries, infectious diseases, and sundry forms of accident, and should be highly useful if those who possess it consult it when the emergency arises. It should also be of assistance to candidates for first-aid and home-nursing certificates, by enabling them to focus their knowledge prior to an examination. The charts, price 6d. each, can be obtained from the firm mentioned.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* British Medical Journal *alone unless the contrary be stated..*

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any Circumstances be Returned.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal, and not at his private house.

Communications respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the Journal, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

Telegraphic Address.—The telegraphic address of the EDITOR of the British Medical Journal is *Aitiology, London.* The telegraphic address of the MANAGER of the British Medical Journal is *Articulate, London.*

Telephone (National):—
EDITOR, 2631, Gerrard.
GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

C. S. asks for references to an analysis of a considerable number of midwifery cases, in English, German, or French.

ANSWERS.

Motor Bicycles: Side-Slip.

W. S. P. writes in reply to "Cyclist": I have ridden an Excelsior motor cycle (2¾-h.p.) for many years, and have now ridden over 70,000 miles, both day and night, in all kinds of weather, and on several occasions when there has been 2 or 3 in. of snow on the ground, and I have never had a side-slip except twice when dismounting, which is of very little consequence. I always use Palmer tyres, and cannot ride on greasy roads with any other make of tyre with any confidence. I have ridden 120 miles with one stop, and my hand was as steady at the end as when I left home. I use a double-spring Brooks saddle (no spring forks), and I feel much better and less tired than I do when driving, and have certainly felt no ill-effects.

Vaccination—A Campaign of Education.

J.S.—Application for copies of the pamphlet on vaccination by Dr. Hodgetts, of Ontario, mentioned in the Journal on October 5th, may be made to Mr. Charles Greenwood, Secretary of the Association of Public Vaccinators of England and Wales, 1, Mitre Court Buildings, Fleet Street, London, who hopes shortly to have a supply from Canada. The *Sanitary Journal of the Provincial Board of Health of Ontario* (twenty-fifth annual report, 1906) contains a full reprint of the pamphlet and is printed by L. K. Cameron, Printer to the King's Most Excellent Majesty, Toronto.

Treatment of Lumbago.

Dr. C. Stennett Redmond (Manchester) writes: In reply to "Diathesis," who asked recently for advice as to the best residence for a patient suffering from lumbago, I can, from personal experience, most confidently and gratefully say—Buxton. On New Year's Day, 1903, I went there a most miserable man, bent double, on two sticks; I could not straighten myself for the wealth of India—after a miserable month in bed and ringing the changes in every known remedy, internal and external, and hypodermic injections of morphine at night. In seven days I walked up Carbur Hill in 6 in of snow, and at the end of three weeks returned "as fit as a fiddle." About a year ago I had to return for a mild attack which ten days' treatment put right. Of course, I have lived ever since on a limited proteid diet—porridge and milk, bread and milk, fish, cheese, potato pudding, vegetables freely, fruit, and no alcoholic drinks. If your correspondent desires to write to me I shall be only too pleased to give him full details of my diet, etc., on which I may say that I feel to get younger each year instead of older! I have recently sent two patients there who have come back delighted and loud in their praise of Buxton. Vivat Buxton!

THE PUPIL IN HYPERPYREXIA.

DR. ALLAN C. PEARSON (M.B., B.C., D.P.H., Deputy Medical Officer, H.M. Prison, Manchester) writes: I noticed in a recent case of rheumatic hyperpyrexia that when the contracted pupils began to dilate shortly before death, they did so in an irregular manner, showing at different points attachments of the iris to the anterior capsule of the lens. The attachments were only momentary, as if the iris was moving in a sticky medium. As I do not find the condition described I should like other opinions as to the cause of this phenomenon. The patient was a man of 40, who had had no previous attack of rheumatism; the attack appeared to be quite mild, and the complication occurred very suddenly, the temperature rapidly rising to 110·4°. There was no iritis, and after death the margin of the pupils was quite regular. There was no apparent turbidity in the anterior chamber.

LETTERS, NOTES, Etc.

MEDICAL MEN AND INSURANCE AGENTS.

DR. HUGH WOODS (General Secretary, London and Counties Medical Protection Society, Ltd., 31, Craven Street, Strand, London, W.C.) writes: Complaints still continue to reach us from medical men who have been induced to take out policies in insurance companies by promises of appointments as district medical examiners to the companies. The fees they are led to expect do not accrue. Will you, therefore, kindly allow me, through your columns, to warn medical practitioners against all insurance companies which offer the position of district medical examiner in return for a policy?

*** We have very frequently called attention to this matter, the last occasion being so recently as last week.

SHIP SURGEONS.

ONCE BIT writes: Let me give you my experience of life as surgeon on board ship. I went on board an Anchor Line steamer in mufti, with a note of introduction to the captain from the company. After reading it, he said: "Oh, you are the new doctor, are you?" spat on the deck, and turned his back. The porter who later on carried my luggage on board was not allowed to take it down the staircase where the cabin passengers' luggage was taken, although it was the nearest way, but was turned back. My cabin was next the steerage w.c., and we carried a large number of emigrants. The only bed at first was a red plush cushion saturated with water; a bed was afterwards made up for me on the top of this. The doctor who inspected the ship at the Tail of the Bank said my cabin was unfit for human habitation, and he would get me another. However, I never got it, and my requests for help to stop the constant drip of water were rather rudely declined. I eventually slept for five weeks under an umbrella. This cabin was used as a surgery also. If a stoker came with a crushed finger or retention, he had to sit or perhaps lie on my bed—there was nothing else for him. The officers had similar accommodation, only their cabins being lined with wood were dry—mine was merely bare iron—and they had steam heaters while I had none. The chief steward had a much better cabin than anybody except the captain and, perhaps, the chief officer. The captain usually took no notice of me whatever; he certainly never addressed a civil word to me the whole time, and occasionally he was most rude. The stewards were very familiar and disobliging, but every one else treated me with the utmost kindness and courtesy. The head man in the office on shore was most rude on several occasions. As he and I and the shore doctor were watching the emigrants coming on board I ventured on a simple remark, but was promptly shut up by him and told I was not allowed to speak in the presence of my betters. You will scarcely believe that this 4,000-ton ship sailed from the Tail of the Bank without a set of dispensing scales. On my protest this was remedied at Moville. I rather fancy this protest had something to do with my subsequent troubles.

M.B., F.R.C.S., writes: As a former "ship-doctor" of some two years' experience in different lines and under four separate skippers, I would like to make a few remarks on this subject. I think your correspondent last week must have been unhappy in his experience or is unduly pessimistic. I look upon my experiences at sea as one of the pleasantest two years of my life. My first voyage was to India in an "intermediate" line, and although my cabin was somewhat limited in size and near the engine-room it was quite respectable. However, I was told at once that on sailing I should have the choice of vacant cabins in the first saloon, and I had a delightful one both out and home. The pay was not munificent—£5 per mensem—but my duties were very light indeed. Then I sailed in one of the large Cape liners, and my lot was even better, £10 a month and very nice quarters. In one mail steamer to which I was appointed there was a surgery, a sitting-room cabin and a sleeping cabin provided, also a dispenser. The work was sometimes considerable with three hundred or more third-class passengers and first and second saloon—but not a few first-class passengers who were seriously ill on the voyage handed me a substantial fee before leaving. My only objection was that this was entirely gratuitous, of the nature of a "tip," and one could not render an account for what one had really earned. Certainly some passengers were most ungrateful, never even saying good-bye or expressing thanks. Others were again rampantly objectionable and annoying and had to be treated "as sich." Chief stewards seemed to know their position and keep to it, chief officers were always friendly, and as for the "old man," he made no trouble if you did your work and knew how to do it. There are some occasions when it is difficult to make any layman see things in the proper light, but I always went on the principle of insisting on my rights, declining to be coerced into anything I did not approve of, and I always got what I wanted. I would be glad to meet any of my old shipmates again any day. In the better class ship there is rigid discipline for all, it must be remembered, but this is not unwholesome nor need it be unpleasant. There are also cliques on most ships. It is best to keep out of them.

The "office" authorities are, as a rule, those most inclined to show the cloven hoof. There is that dreaded entity "the marine superintendent"; ours was a perfect fire-eater. But I was never treated unfairly or without perfect courtesy and consideration. I would recommend no man to become a ship surgeon as a fixture. He will inevitably get "rusty," his morals will not improve, and he will possibly develop alcoholic tendencies. And I would warn young medical men against voyages to West Africa "for health," if necessary. But I think we are all the better of a little knocking around and seeing a little of the world before settling down to the humdrum routine of any sort of practice. There is nothing "humiliating" in the life, and a gentleman who has self-respect and knows his work will find he has not much to complain of. I think an association of men employed in this way might be very useful, to themselves and to shipping companies. I also think a minimum pay of £10 a month should be fixed or fees exacted from passengers. But there, we are all underpaid.

DR. G. GREENWOOD (Bush Hill Park) writes: I made several voyages in the ill-fated ss. *Drummond Castle* in 1882-3, and must say I received every support, consideration, and courtesy from the Castle Line officials, captain (the late Edward Jones, R.N.R.), officers and crew. I enjoyed myself thoroughly, so much so that some fifteen years afterwards I renewed my experience in the ss. *Orienta* on a trip to Norway, with the same result. I met a great many surgeons from various lines who, with one exception, enjoyed the life! the "one" did not! and judging from the amount of "side" he put on, I was not surprised, for you can trust a sailor to tackle that. I can fully endorse Dr. Popham's letter.

DR. R. A. S. CHARD (West Tarring, Worthing) writes: I acted as the above for two years in the Castle Line and was always treated with the greatest kindness and consideration, by the officers and shore officials; and I take this opportunity of thanking them for having given me "such a good time."

WASP STINGS.

DR. G. HARVEY LOW (Bentley, Hants) writes: So few cases of wasp sting with complications have been published, that I think the following may interest others: A boy, aged 6 years, was stung on the left side of the face on the afternoon of September 23rd. His father, who by the way is a man of science, said that within a minute or two of being stung his son became drowsy and went to sleep; soon after this he observed a rash, first near the sting, which rapidly spread over face, trunk, and limbs; the eyelids and lips were swollen, and the breathing was difficult—croupy. The sting was extracted and liquor ammoniae applied; the patient waked and retched several times, but did not vomit, and was given a few grains of sodium bicarbonate, was sponged with weak solution of ammonia, and wrapped in a blanket and went to sleep again. I saw him an hour after he was stung; he was awake and quite cheerful, and not much troubled by the urticaria which still covered him; it was fading, and though his lips and eyelids were still rather swollen and his voice husky, there was no difficulty in breathing. The temperature was normal. No further treatment seemed necessary, and when I saw him again at night a small patch of urticaria on the abdomen was his only trouble.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

An Address

ON

SOME EXPERIENCES IN ABDOMINAL SURGERY.

Delivered at the Opening Meeting of the Liverpool Medical Institution on October 7th, 1907.

By F. T. PAUL, Ch.M., F.R.C.S.,

Surgeon to the Liverpool Royal Infirmary, President of the Institution.

I propose this evening to offer you the results of my experience in some branches of abdominal surgery. I shall make no attempt to review the whole position. That has been better done by others than I could do it, and I prefer to limit my criticisms to matters which have come under my own observation and are within my personal experience. You will recollect that the abdominal operations which we now see undertaken with such confidence almost every day are almost all of them new since I was a student. Indeed, I did practically none of them until I had been a hospital surgeon for ten years. It was Senn's gastro-enterostomy with decalcified bone plates, and Lawson Tait's successful operations on gall stones and other abdominal affections, following the splendid results obtained by Spencer Wells and others in ovariotomy, which gave the first impetus to that tremendous development which has since been accomplished in abdominal surgery. We seemed quite suddenly to wake up to new possibilities, and during the past twenty years the evolution has been continuous. How great the transformation has been is easily recognized by simply recalling the fact that previously no form of abdominal disease was ever admitted into a surgical ward. To-day, if I were to transfer all the patients suffering from kidney, liver, stomach, and bowel affections, my wards would be almost empty; whilst, if my memory serves me correctly, I believe I do more major operations every year than were undertaken by the whole surgical staff of Guy's Hospital when I was a student, though I have only fifty beds to the three or four hundred which were occupied in that institution with surgical patients. Perhaps the pendulum has swung too far, and our enthusiasm has carried us beyond wisdom in some directions. Be that as it may, there can be no doubt that by attempting much we have gained a great deal, and I hope the spirit of enterprise will be well maintained in the rising generation. I, however, am arriving at that period of life when one inclines to look more critically at the results obtained by hazardous proceedings, when overconfidence has been toned down by failures, and caution engendered by experience. It is in this spirit that I review some of my past work, and submit to you the lessons I have learnt from it.

Gastrostomy.

The terrors of starvation appealed very strongly to our forefathers, and long before the more valuable curative operations on the stomach were attempted the older surgeons were led to risk the poor remnant of life in a patient suffering from oesophageal stricture in the hope of saving him from this dread contingency. Unfortunately in these early times gastrostomy was almost invariably fatal, and until the newer operations suggested by Witzel, Franks, Kader, and Senn were undertaken, the attempts to relieve oesophageal stricture by gastrostomy were sad failures. The mortality was very heavy—I should say quite 75 per cent., and the remainder had such a miserable existence, owing to leakage of gastric contents, that their life was an intolerable burden to them.

Gastrostomy is almost invariably undertaken for cancer. Other forms of stricture of the oesophagus are comparatively rare and generally yield to bougie treatment, which is often not desirable in cancer cases. This operation is on a very different footing from that of gastro-enterostomy. It is never in itself curative, and only occasionally yields material prolongation of life. The chief point in its favour is that, when undertaken in properly-selected cases, it saves much suffering, and renders the terminal weeks, or possibly months, of the life of a patient suffering from cancer of the oesophagus tolerable instead of most acutely and distressingly painful.

First, as to the selection of cases. This is a most important matter. The operation is only beneficial when (*a*) the air passages are threatened, or (*b*) starvation is imminent. If, on passing a bougie, a very tight stricture is discovered at any part of the canal which is unsuitable for bougie treatment, and if the patient cannot take a reasonable amount of liquid nourishment, gastrostomy may be advised. Otherwise it should not be recommended unless the growth is situated in the pharynx or behind the trachea. In either of these positions it will probably involve the air passages sooner or later, and then so much distress results from every attempt to swallow, that there can be no question as to the advantage of an alternative route for the introduction of food. We should not wait until the complication occurs, but operate fairly early in such cases. I do not, however, advocate early operation when the disease is lower down, as although it is not a source of much danger, there is no object in doing a gastrostomy upon a patient who has a fair prospect of being able to swallow fluid nourishment to the end.

Patients will always submit to gastrostomy if it is pressed upon them, because they are conscious of their serious condition, and generally have a profound faith in the resources of surgery. I fear we sometimes strain that faith a little too much; and when gastrostomy is done simply because a patient has cancer of the oesophagus, whether demanding such a procedure or not, disappointment will be experienced in many cases, and an operation which is sometimes really valuable becomes discredited. Too much must not be expected from gastrostomy in any case. I do not know why it is we never see that marked benefit which so frequently follows a gastro-enterostomy for malignant obstruction of the pylorus; but it is a fact that the profound cachexia is only very rarely relieved, and only the doctor is fully conscious of the benefit afforded to a patient who gets a perforation into the trachea. Neither the patient nor his friends can realize the suffering which he has been saved.

There are many ways of doing gastrostomy, but only two are popular, Franks's method and Senn's modification of Kader's operation. I see Franks's method most frequently advocated, and always did it myself until Senn's was published, for the latter possesses certain practical advantages which cannot be overlooked. Franks's operation, to be satisfactorily accomplished, requires that the stomach wall shall be fairly lax. Now, in chronic starvation, the stomach becomes atrophied to such an extent that it is frequently impossible to draw enough of its anterior wall through the abdominal wound to make the necessary diverticulum. It is not safe to permit much tension on the sutures, especially when immediate feeding is required, or they will be likely to cut out, with probably a fatal result. This is where the advantage of Senn's operation comes in. It can be accomplished in all cases, and as it involves the presence of a tube in the stomach, from the first immediate feeding is facilitated. The chief points requiring consideration in selecting the operation are danger to life, and the risk of leakage of gastric contents through the fistulous opening. On both grounds I prefer Senn's method. In many cases the wound is absolutely dry throughout, though in exhausted subjects there is a slight disposition to leak a little from about the fifth to the tenth day when the tube is separating, and in any case there may be some leakage during the last stages of exhaustion before death.

The mortality from gastrostomy is but slight. In this matter there is indeed a change since my earliest experiences. Then almost every case was fatal, either primarily from shock, or secondarily from leakage of gastric contents with consequent erosion of the tissues. Now it is very rare for either of these contingencies to occur when the case is properly managed, and for this a trained nurse is as essential as a skilled surgeon. The nursing is most important. In these exhausted patients the adhesions between the abdominal wound and the stomach are very fragile, and at the time when the tube is loosening they are easily disturbed by rough handling. The inexperienced nurse realizes nothing of this, and if she happen to let the tube slip out when feeding, will endeavour to poke it in again, with possibly fatal consequences. If gastrostomy is to be undertaken,

an experienced nurse is a *sine qua non*. It is not an operation to do in a poor home, where such advantages cannot be obtained; but under proper conditions the risk to life is very slight, and need not deter us from undertaking any suitable case.

When, however, we come to consider the subsequent duration of life there is not much ground for enthusiasm. A great many patients only live from four to six weeks. Those exceptional successes who survive for six or twelve months are the cases which get into print; but it is best to recognize that we are not justified in recommending this operation as tending to appreciably prolong life in the great majority of cases. Up to three months is not uncommon; but anything beyond three or four months is exceptional.

The only ground on which gastrostomy should be advised is that in certain cases it relieves the patient from a painful mode of death. Many patients are not threatened with this, for the starvation is not the painful starvation of health. It is a combined starvation and toxaemia, which is chiefly distressing through the extreme exhaustion which results from it. So long as the growth is not in a position to involve the larynx or trachea, and the patient can swallow milk, gastrostomy is not called for; but when the reverse is the case it should be advised.

PYLORECTOMY.

I next direct your attention to the grave operation of pylorectomy, or partial gastrectomy. In the early days of gastric surgery I think the hopes of most surgeons were fixed upon the successful removal of malignant growths of the stomach soon after their commencement, at least I know mine were. There seemed no very evident reason why cancer should not be as successfully dealt with in the stomach as elsewhere; but you will all have observed that the most enthusiastic abdominal operator has but little to say on the subject. The fact is that no one as yet has met with any very remarkable success. The best result I can recall in Liverpool was the first case of recovery from this operation shown at our Medical Society. The patient was operated on by the late Mr. Rawdon at the Royal Southern Hospital. The growth was large, and involved the removal of about 5 in. of the pyloric end of the stomach. This patient remained in good health for four years, when a recurrence took place which was fatal a year later.

I have done the operation six times, with a 50 per cent. mortality. One patient died outright from the operation; two because they were too exhausted at the time it was undertaken. These succumbed from shock within forty-eight hours, though the operation went very well. Only three recovered. Two of these had a recurrence of the growth within about twelve months, from which they subsequently died. Both were able to work for one year, and lived nearly two years. Only one made a permanent recovery, and in that case the microscope showed no evidence of malignancy in the hardened mass removed from the pyloric region. A more conservative selection of the cases would have lessened the mortality, but cancer of the stomach, somewhat like cancer of the oesophagus, saps the vital energy of the patient—as witness the difference in the mortality from gastro-enterostomy for simple and malignant stricture—and in this lowered condition such a serious operation as pylorectomy must always have a high mortality. Also cancer of the stomach is much more malignant than cancer of the bowel, and infects the glands earlier, so that circumstances are against pylorectomy becoming a favourable procedure under present conditions. I regret very much to feel that this is so, for there are no insuperable difficulties in the technique, and when the patient does not die from shock he recovers rapidly and thoroughly, though unfortunately not often permanently. A permanent success should not be recorded as such without a proper histological examination of the tissue removed, as in no part of the body is it so difficult to decide between inflammatory changes and cancer by the naked eye as in the stomach. I have no doubt that I shall occasionally repeat this operation under circumstances that seem favourable to it, and I hope that increasing experience will yield better success, but I have no expectation that any form of gastrectomy, as we know it, will prove a very satisfactory method of treating cancer of the stomach.

PYLOROPLASTY.

Pyloroplasty was an operation about which I wrote and spoke enthusiastically some years ago. It yielded some of the very best results in my earlier cases, and at that period was much less dangerous than gastro-enterostomy. There seemed to be no difficulties and no drawbacks, and one thought that the restoration of the natural orifice of the stomach must be better than an artificial inosculation. Later experience has, however, told a different tale. One after another over a series of ten years these cases of pyloroplasty have come back again with a recurrence of symptoms, and have had to be finally cured by gastro-enterostomy. They have not all come back; but I think all but one of the really bad cases have had a second operation, and I never now do pyloroplasty for any bad type of pyloric obstruction. The case which did not come back occurred in a man, aged 20, who had had symptoms since he was 6. The stricture I thought congenital, as it consisted in a sudden reduction in the size of the pyloric part of the stomach to the thickness of a cedar pencil for a good ½ in. without adhesions. He rapidly gained weight after the operation, from 8 to 11 st., and remained in excellent health for a few years, when he disappeared and I know no more of his history.

The cases in which pyloroplasty seems to me to be serviceable are those in which a dilated stomach is associated with a tight and perhaps hypertrophied pylorus. In such the widening of the ring by this operation is beneficial. I have long given up every modification of Loreta's dilating operation. In bad cases it is dangerous, and in all it is inefficient. The one great recommendation of pyloroplasty is that the operation is fraught with very little danger to life. I have done a few cases annually for many years, and have never had a fatal one. The idea of draining a dilated atonic stomach by means of a gastro-enterostomy is a terrible mistake. It does not work; or rather it works in the wrong direction. If, therefore, on exploration one finds no definite stricture, but yet there seems to be some slight thickening or tightening of the pylorus, the idea of pyloroplasty may be entertained. If it fails no harm is done, whilst a gastro-enterostomy would probably have established a vicious circle and made matters infinitely worse.

GASTRO-ENTEROSTOMY.

Gastro-enterostomy continues to be the operation most frequently performed upon the stomach. Some, indeed, think it is much too frequently undertaken. It is, however, a common experience that too much should be expected from an operation which springs suddenly, as this has done, into great popularity. Practitioners have to form their opinion on the published results of operating surgeons, and many of them forget that these are the *crême de la crême* of results, for those which are less successful are too frequently not brought into the market. In fact, the doctor bases his view on the best results of the best operators. On these grounds he has no occasion to think that gastro-enterostomy is at all a dangerous operation, or that such troubles as absence of relief, regurgitant vomiting, peptic ulcer, etc., are other than negligible drawbacks. I certainly do not wish to decry so valuable an operation as gastro-enterostomy, or to underrate the good work of those who have done so much to make it a splendid success; but it is well to recognize that the best published results are one thing and the average hospital results another. If the profession generally accept the former for its guidance I fear it is too optimistic, and that we are still a long way off that just appreciation of this most valuable operation which is necessary if the public are to receive the full measure of its benefits. The enthusiasm which paints everything rose-colour is one of youth's happy privileges. A young surgeon is right to make the most of his successes, but those who are older should be able to sink personal glorification for the general good. Much harm has been done by the publication of unduly favourable statistics, or perhaps I ought rather to say by the insufficient publicity given to general hospital statistics, which if they were known would correct any improper influence that might be exercised by the former. But as frequently only the very best results find their way into print, the public (who read the medical journals), the practitioners, and less experienced surgeons are liable to be misled, and think too lightly of the proceeding, whatever it may

be, prostatectomy or gastro-enterostomy, and so lives which ought never to have been risked are lost. It has become too much the practice to prescribe an operation for a disease, or even a symptom, without sufficient consideration of collateral circumstances. For years we had the cry of "operate on diagnosis" in appendicitis—a most pernicious doctrine, now happily losing ground. So in the present instance, though no one has gone so far as to suggest that every one who was sick should have a gastro-enterostomy, still it has been prescribed for all kinds of dilatation and ulceration of the stomach, whilst its real use is to relieve pyloric and duodenal obstruction, and I seriously doubt if it should be undertaken in the absence of these conditions. Of course ulceration may cause obstruction by thickening and paresis, though there may be plenty of room for food to pass, and it is sometimes right to operate under such conditions; but there is no doubt that there are a great many people going about now who would be much better if the anastomosis between their stomach and jejunum could be obliterated again.

Much discussion has raged over the question of the site of the operation in gastro-enterostomy. The fact is that the site does not matter very much when the operation is really required; but if there is little or no obstruction, and still you must do a gastro enterostomy, then it is important to do that kind which will effect the least harm. The three positions in which the anastomosis is commonly made are (1) between the pyloric end of the stomach and the duodenum, (2) between the anterior surface and the jejunum about 1 ft. from its commencement, (3) between the posterior surface and the beginning of the jejunum. Of these, the first would suggest itself in the form of Finney's operation as the nearest approach to a restoration of the normal anatomy of the part in cases of stricture of the pylorus. My first experience was entirely in favour of Finney's operation, but I have been disappointed with the subsequent history of the cases. A certain tendency to recurrence of symptoms; or a want of that complete relief generally obtained by gastro-jejunostomy has been observed, and has led me to prefer the latter in most cases. The cause of failure in Finney's operation is probably the too close proximity of the disease. It is better that the new opening should be further removed from this influence. But when the contraction is slight and there is no active ulceration it is well to select Finney's operation, as it is probably a little less dangerous than gastro-jejunostomy, and, what is of more importance, it avoids the risk of vicious circle.

The chief differences of opinion as to the site of the operation have been concerned with the question as to whether it should be anterior or posterior, and the weighty opinion of the largest operators has been given in favour of the latter. I am not, however, satisfied that a final and just conclusion has yet been arrived at. Moynihan, who has taken up the cudgels strongly on behalf of posterior gastro-enterostomy, whilst demonstrating the splendid success attained by him in that operation, shows that he has but little practical experience of the former, the few cases in which he has done it having been amongst his earliest operations, and these seem to have been successful, so his condemnation apparently rests largely on a theoretical basis. Now I am absolutely without any prejudice in the matter, but I happen to have done the anterior operation a great many times, and doubt if it has any very serious disadvantages. It must not be forgotten that the anterior was the first method generally practised, and that consequently it has to bear all the odium attaching to the imperfection of early operations and the training of surgeons in a new kind of work. Taking the two operations as performed to day with equal skill and experience, I believe it will be found that the supposed imperfections of the anterior method have little or no foundation in fact. I have not the least desire to advocate one operation more than the other. I so far accept the opinion of those who have a larger experience than mine as to generally adopt the posterior operation; but whenever I do the anterior I find that it yields equally good results. The anterior can be accomplished with a smaller abdominal wound, and with less handling, disturbance, and exposure of the viscera; it is therefore a slightly less serious operation, and for that reason has advantages in cases suffering from exhaustion in cancer, haemorrhage, etc. Not only is there no greater tendency to post operative regurgitant vomiting than with the "no-loop" posterior method, but, I think, rather less. Certainly, in the early days of gastro-enterostomy, when the anterior operation was general, primary regurgitant vomiting was not uncommon, and was sometimes fatal. Mayo Robson and Moynihan consider that the adoption of the posterior no-loop operation has abolished this trouble altogether. The fact is that improved management and technique have removed the early tendency to this complication, though it still crops up occasionally some weeks later, and, strange to say, in my experience in cases in which a thoroughly satisfactory no-loop operation has been done. If I had always been responsible for the primary operation I should have had less confidence; but that is not the case, for some of these patients had been operated upon by well-known London and provincial surgeons. Those who watch the cases after the operation are also entitled to speak, and the Sister who has had charge of my female ward almost since this operation has been introduced tells me that she considers the cases who have been operated on by the anterior method do better than those who have had the posterior done. I therefore see no reason to alter my practice of selecting whichever operation I think most suitable to the occasion.

Posterior gastro-jejunostomy yields the neatest and most attractive looking anastomosis. When one has to open the abdomen subsequently nothing abnormal is apparent until it is carefully searched for, as there is the least possible displacement in the normal arrangement of the viscera. This, however, must not be thought too much of. I have already called attention to the fact that one appreciated pyloroplasty and gastro-duodenostomy on similar grounds, but found them unsatisfactory in other ways. The no loop operation is a very difficult one to interfere with afterwards when it turns out unsatisfactory; but if gastro-enterostomy were only done on patients who really require it there would be very few unsatisfactory cases.

As to the manner of performing the operation I can add nothing to the advice of Mayo Robson and Moynihan. I use their stomach clamps and the suture as recommended by them. Though personally interested in mechanical devices I was one of the first to abandon them in favour of simple suture. I may be pardoned for recalling to your memory, now that it is all ancient history, that I was the first surgeon to use bone tubes for intestinal anastomosis, and I devised an equally effective though less ingenious button for gastro-enterostomy, prior to Murphy's invention, and I think I was the first surgeon to do the posterior operation with my button. These designs served a useful purpose in training us to attain the present success; but their day is over, and the method of attaching the parts by simple suture is completely re-established. As a suture material I prefer sulpho-chromic gut. This ultimately absorbs, and never sets up any chronic irritation and fibrous thickening as silk will sometimes do in a septic wound. In principle I think it is of great importance that the inner row of sutures which pierce the mucous membrane and become septic should be absorbable if sufficiently strong to be reliable, and I find sulpho-chromic gut sterilized in xylol and stored in alcohol containing 5 per cent. of carbolic acid fulfils all requirements.

After the operation the stomach is left entirely at rest. Feeding is harmful and unnecessary. For two days nothing is swallowed. The patient may rinse the mouth out, but it is better not to swallow at all. Sufficient fluid can be given by the rectum. On the third day water in teaspoonfuls may be allowed, and on the fourth water and beaf-tea A day or two later Benger's food made with half milk and water is suitable in small quantities. Later additions to the diet should be gradual, as no good purpose is served by hastily resuming a full diet; on the contrary, a contracted stomach favours a complete cure.

A few patients must be expected to succumb to the operation when we consider the circumstances under which it frequently has to be undertaken—such as cancer, severe haemorrhage, and extensive ulceration. Death in these cases usually occurs during the first five days from exhaustion, and though one sometimes allows such patients more nourishment than that indicated above, I have never seen it do any good. The fact is that if a

patient cannot stand a few days' starvation he is not a suitable case for gastro-enterostomy. Sutures hardly ever give way nowadays, and peritonitis is equally rare. The patients that die are chiefly those who would have been better not operated on if only one's judgement were more trustworthy.

Gastro-enterostomy has but one serious fault—regurgitant vomiting—and that fortunately is not frequently met with. This complication never occurs when the stomach is vigorous and capable of emptying its contents into the bowel. Stomach contents have to be extruded by muscular contraction. They will not fall out whatever facilities are offered. When the stomech walls are strong almost any kind of orifice becomes efficient; when they are inert nothing is good enough, not even a "4-inch" gastro-enterostomy. I have reopened the abdomen a few times for persistent regurgitant vomiting both in my own and other surgeons' cases. At first I readily explained that this or that little detail was the cause of the trouble; but further experience showed me that there was but one common feature in these cases, and that was an absence of obstruction. I feel quite certain that vicious circle is not due to any faulty detail or method, but to mistaken judgement in doing the operation when it was not required. If a stomach needs draining or resting for a time it should be kept empty; but do not do a gastro-enterostomy. Vicious circle results from a want of sufficient expulsive effort on the part of the stomach, together with facilities for a continuous circuit of fluid out of the stomach by the pylorus and back by the new opening. Up to the present I have struggled with the difficulties of entero-enterostomy combined with more or less puckering and occlusion of the afferent limb, but with indifferent success. I say "difficulties" advisedly, for it is more or less impossible to accomplish this proceeding satisfactorily in a no-loop operation. As I believe absence of pyloric obstruction to be the cause of the failure, I feel very much inclined to narrow or close the pylorus in one of these cases. It must, at any rate, put a stop to a complete vicious circle, and so might remove the regurgitant vomiting.

As one who frequently performs the anterior operation, I think I may speak quite definitely on the point of regurgitant vomiting being due to departure from the approved no-loop method. It is quite certain that this has nothing to do with it. No, it is the atonic stomach in the neurotic subject which the surgeon has attempted to drain (!), or the slightly ulcerated stomach which he endeavoured to rest in which the case goes wrong. For in the former instance he has supplied the organ with an afferent instead of an efferent canal, and in the latter he has loaded it up with bile and intestinal juice to add to its previous troubles, and the last state of these stomachs is much worse than the first. There is only one way to avoid this complication, and that is to refrain from doing the operation when on exploration one finds no genuine obstruction.

As regards peptic ulceration of the bowel as a complication of gastro-enterostomy, up to the present I have had no experience of it.

HOUR-GLASS STOMACH.

Hour-glass contraction of the stomach is not a rare condition, though it is met with much less frequently than pyloric and duodenal obstruction. The most frequent situation is rather nearer the pyloric than the cardiac end. The opinion seems gaining ground that this form of stricture is always due to preceding ulceration, and is never, as we used to think in the *post-mortem* room, of congenital origin. I must confess, however, to retaining the old belief in regard to a proportion of the cases. In some that I have met with there has been a narrow channel about ¾ in. long between the cardiac two-thirds and the pyloric third of the organ, quite free from all trace of scarring and adhesions and lined with soft mucous membrane. In such cases, where the condition must at any rate have been of old standing, the patients have sometimes passed long periods recently quite free from discomfort, and operation has been called for owing to subsequent pyloric ulceration, showing that food has passed the hour-glass constriction easily and attracted no attention when the organ was otherwise healthy.

In such cases, when there is no other mischief, I do a gastroplasty by Kammerer's method—like Finney's gastro-duodenostomy. When, however, there is a recent ulcer it is necessary to do a gastro-gastrostomy instead. If the hour-glass contraction is complicated with pyloric obstruction, one has to do gastro-enterostomy as well as one of the above methods. Kammerer's operation in simple cases is naturally very successful, for it is not at all a severe operation; but in my experience cases of hour-glass contraction are usually more serious than pyloric and duodenal obstruction, and operations undertaken for their relief are attended by a higher mortality. The condition is usually of long standing, and it may be that the greater death-rate is partly due to delay in seeking treatment.

PERFORATING ULCERS.

I propose to pass over the subject of operating for perforated ulcers of the stomach and bowels with only one or two remarks. First I think we cannot too clearly recognize that a surgeon should always be called at once to all cases of sudden abdominal pain which suggest perforation, not that he should always operate, but that he should have the opportunity of operating early in all those cases which are to be operated on at all. Next I wish to say that, in my judgement, indiscriminate operating in all cases of sudden pain suggestive of perforation is a mistake. I suppose, if there be any class of case in which it is fully agreed that operation should at once follow diagnosis it is in suspected perforation. Now, strange as it may seem to you, I do not like rushing into abdominal section except in those cases in which the symptoms are fairly well marked, such as intense pain followed by collapse, with a thready pulse and anxious expression, and general abdominal tenderness and rigidity. In many cases with less marked symptoms I have not operated, and when I look back I still have more regrets for operating unnecessarily than for having withheld operation. I do not mean to say that I have never failed on the latter count; but only very rarely, and then because I had mistaken a stomach for an appendix perforation. I believe I am right in saying that in every stomach perforation in which the symptoms were not severe and I have declined to operate, the patients have recovered, while I have a strong conviction that a few who died after operation might have recovered without it. Whenever the perforation has taken place after a meal, or when the symptoms are generalized and severe, or when food has been taken after the perforation, I should operate; but when the stomach is empty—and that is not uncommon—and the symptoms are localized and less serious, or when thirty-six hours have passed and the symptoms are inclined to ameliorate, I think non-operative treatment is better. This involves complete abstention from all food and fluid by the mouth for a period of from one to two weeks with rectal alimentation. The great majority of the slighter perforations localize as readily as an appendicitis and recover very well, though a few may suppurate and have a protracted convalescence, a condition which is not infrequent after laparotomy has been undertaken. I do not wish to be understood as advocating delay in operating in the more serious cases of stomach perforation; but in the borderline and doubtful class in which most surgeons seem to think operation imperative I prefer medical treatment, however unorthodox and antiquated it may appear. Duodenal perforation is different. The intestinal fluids are more septic and the danger of general peritonitis greater. Operation is always indicated when a duodenal perforation is suspected.

APPENDICITIS.

Regarding appendicitis I have nothing to add to what I said in 1901 and 1906. I continue to advise the interval operation whenever possible. The disease seems to me more virulent than ever, for I have not previously experienced such a succession of suppurating cases as I have seen throughout the whole of this year. For the past five years I have made the incision through the outer border of the rectus muscle in simple cases, and though all wounds are closed by through-and-through silkworm-gut sutures I have not met with a single example of post-operative hernia.

ENTERECTOMY AND COLECTOMY.

Enterectomy for affections of the small bowel I only do very occasionally. This is generally a less serious operation than colectomy, and the general condition being

favourable the patient may be expected to do well. Usually primary end-to-end anastomosis is the best operation in the small bowel.

Colectomy for cancer is an operation I continue to take much interest in, and I do several cases every year. In previous papers I have explained my method of doing the operation, and the chief object I have in referring to the subject now is to advocate more strongly than ever the advantages of bringing out the ends of the bowel. This year I found myself gaining so much confidence in cases of colectomy that I began to try and do away with the troublesome stages of artificial anus, clamping the spur, and closing the opening. In one case I removed the spur primarily, but left an artificial anus. In another I did end-to-end anastomosis. Both died, though neither were unsuitable subjects for the operation, whilst others in which I brought out the ends were some of them old and feeble, and looked quite unfit to stand such a severe operation; still they went through the various stages, and are now all right. Time cannot be spared this evening to explain fully why the two cases in which I tried to attain a quicker cure should have died. It is sufficient for my present purpose to say that I am satisfied the unfortunate result was due to not bringing out the ends of the bowel as I have been accustomed to do, and as I always intend to do in the future. When this is done, and there is no intestinal obstruction present, the mortality is almost *nil;* but when primary union is attempted in the large bowel the operation at once becomes dangerous and has a high mortality.

Colotomy.

Finally, I should like to say a word about colotomy. Of late, in simple cases without obstruction, I have given up using the tube and suture the bowel at once to the surface, taking care to make a good spur. In such cases this operation seems almost devoid of danger. It makes a good artificial anus if the orifice be small, and with an aluminium mushroom plug retained in position by an elastic belt a left inguinal colotomy is no bar to any ordinary occupation.

Many surgeons have, in my judgement, made a great mistake in entirely giving up the old lumbar operation. In the case of extremely debilitated patients in whom colotomy becomes imperative, the lumbar is a less serious operation than the iliac, because when such patients die from the operation it is nearly always due to the want of good union between the bowel and the surface, a matter of minor importance when the peritoneal cavity has not been opened.

If Amussat's operation on the left side is worth retaining, that on the right is still more valuable, and in my practice has been the means of saving many lives. I do it comparatively frequently in cases of obstruction due to malignant stricture of the large bowel, and I can only recall one case in which it failed. In that I believe (though I had not the opportunity of making certain) that I mistook a twist of the sigmoid for a malignant stricture. It is not a rare thing for a surgeon to be called to cases of obstruction with great meteorism, but in which he cannot do more than decide that the trouble lies somewhere between the caecum and the rectum. Laparotomy in these cases is very fatal, whilst right lumbar colotomy is almost invariably temporarily successful. In a few days, when the abdomen is empty and flat, the exact situation of the disease is usually apparent, and as soon as the patient is fit for the operation it may be safely removed. The original artificial anus gives very little trouble, for it not infrequently heals spontaneously, when the need for it disappears. I wish very strongly to advocate the practice of doing right lumbar colotomy in such cases. It is much less dangerous than opening the caecum in front, even although you may have already made an anterior wound for exploration. It is also less troublesome to the patient, as the faeces are more formed and do not pour away so continuously. Another important point is that the artificial anus is so completely out of the way as not to prejudice the subsequent laparotomy which will probably have to be undertaken to relieve the stricture. Whilst fully appreciating the advantages of inguinal and transverse colotomies in suitable cases, I am satisfied that there is still very good use for both the right and left lumbar operations under the circumstances I have indicated.

There are, gentlemen, other abdominal operations, notably those upon the gall bladder and bile ducts, to which, if time had permitted, I should have liked to refer; but I have already tested your patience sufficiently, and will not longer postpone your adjournment to that lighter and more congenial entertainment which is an important feature of our first reunion after the summer recess.

ON CHOLECYSTECTOMY: THE INDICATIONS AND CONTRAINDICATIONS FOR ITS PERFORMANCE.

By A. W. MAYO ROBSON, D.Sc., F.R.C.S.

Out of nearly 1,000 operations on the biliary passages, I have performed cholecystectomy 94 times for various diseases. It has been suggested that on physiological, anatomical, and pathological grounds the gall bladder is not only a useless but a dangerous organ, and that when any of its diseases require surgical intervention it should be treated in the summary fashion in which we now deal with the vermiform appendix. My experience does not support these views, and I would urge that it must not be forgotten that gall stones, though usually forming in the gall bladder, may arise in any part of the biliary apparatus, both within and outside the liver. As a matter of fact, I have known gall stones to develop in a dilated common duct on several occasions after cholecystectomy had been performed by various operators; whereas in the very large experience of Mayo, Kehr, and myself, whose aggregate of operations on the gall bladder amount to over 3,000, it has been stated by each separately that the recurrence of gall stones after cholecystotomy is an extremely rare event.

Bile is constantly being formed in the liver at the rate of about 1 oz. an hour, as I proved by a long series of observations some years ago,[1] but it is normally only poured into the intestine after food has been taken and is passing through the pylorus, the sphincter at the orifice of the common duct opening in response to the reflex effect of the stimulus of food passing the pyloric sphincter. In the intervals the gall bladder acts as a reservoir in storing the bile until it is required to neutralize the acid chyme and to help in emulsifying fat. While the bile is in the gall bladder mucus is added to it, and from observations that I made in 1889 I know that the amount of mucus is considerable, 72 c.cm. in twenty-four hours. This serves the purpose of rendering the bile less irritating.

A series of experiments performed by Dr. Flexner demonstrated the fact that if pure bile is injected into the pancreatic ducts it sets up acute pancreatitis, but when bile is mixed with mucus the action is very considerably modified, and when a certain amount of mucus has been added it no longer acts as a serious irritant.

This would seem to prove that the admixture of mucus with bile in the gall bladder may be important; and at the best it is merely an expression of ignorance to say that the gall bladder has no regular purpose to serve.

It is a question whether the loss of the gall bladder does not lead to a dilatation of the common duct, so as to replace to a certain extent the reservoir function of the gall bladder. That this has occurred in some cases I know from personal experience. If this is universal, it seems not unlikely that after cholecystectomy the dilated common and hepatic ducts may ultimately form a reservoir, and in cases of infection concretions may, and in fact do, develop in the dilated common duct. Moreover, if the bile ducts within and outside the liver have to act as reservoirs, there must necessarily be back pressure on the secreting part of the liver, conditions which do not apply when the gall bladder is acting as a bile storer.

Sufficient time has not elapsed to show whether the liver is injuriously affected by this pressure and absorption, as it is only recently that cholecystectomy for almost normal gall bladders has been adopted by some enthusiasts as a routine procedure.

Whether cirrhosis of the liver and the pancreas will result in a certain proportion of cases remains to be seen. That interstitial pancreatitis does at times develop I know by actual experience, as I have had to operate on several

such cases, and all that I could do under the circumstances was to drain the common duct for a length of time, whereas had the gall bladder been present a cholecystenterostomy would have been easy and recovery more perfect.

In ordinary cases of cholelithiasis, cholecystotomy with drainage of the gall bladder is a very safe and efficient operation, and if the ducts are cleared there need be no fear of fistula or of recurrence of gall stones. Seeing that cholecystotomy has led to such good results, both immediate and remote, in the surgery of gall stones, the operation should not be too hastily condemned and replaced by cholecystectomy as a routine procedure. Although my experience is that cholecystectomy, though a more prolonged operation than simple drainage of the gall bladder, can with due care and in experienced hands be performed with hardly more immediate risk (in my last 57 cases only one death), and that when the gall bladder is contracted and infected, or inflamed and thickened, or gangrenous, or much dilated, it is better to remove it, yet I feel sure that if cholecystectomy were to become the routine procedure for inexperienced operators, the death-rate from gall-stone operations would be greatly increased. The rate of mortality shown in some of the recent works on gall stones does not reflect credit on the hospitals whose statistics are quoted; the mortality of simple cholecystotomy should not exceed at the most 1 per cent., and will not if due precautions are taken. If, however, these operations are done by inexperienced surgeons who have not taken the trouble to master the technique of the operation and of the after attendance, the mortality will continue to be considerable. But if the mortality of cholecystotomy in inexperienced hands is considerable, what would happen if a consensus of opinion was allowed to go forth that cholecystectomy is the operation that ought always to be performed for gall stones? For every surgeon must acknowledge that it is much more difficult to remove the gall bladder than simply to drain it. I hold that no one ought to do any operation for gall stones who is not fitted by experience and surgical ability to perform choledochotomy, cholecystectomy, cholecystenterostomy, or any of the more serious operations on the bile ducts, as it is frequently impossible to say beforehand what operation may be required.

Since introducing the method of more completely exposing the biliary tracts when operating for gall stones, I find no difficulty in deciding as to the common bile duct being free from concretions or other obstruction—a necessary condition to ascertain before cholecystectomy can be justifiable.

Seeing that recurrence of gall stones after cholecystotomy with efficient drainage is an extremely rare event, that the danger of cholecystotomy in uncomplicated cholelithiasis is almost *nil*—not 1 per cent. over a large number of cases—that drainage of the bile passages after any gall-stone operation is distinctly advantageous, and that if at some future time it should be necessary to drain the bile passages—say for obstructive jaundice or interstitial pancreatitis—the difficulties would be increased by the absence of a gall bladder, though not by a cholecystotomy, my feeling is very decided that cholecystectomy should not replace the simple operation of cholecystotomy as a routine procedure in operating for gall stones.

Cholecystectomy is indicated in the following conditions:

1. In cancer or other new growth of the gall bladder where the disease is local and limited.
2. In contracted and useless gall bladder the result of repeated attacks of cholecystitis.
3. In dilated or hypertrophied gall bladder resulting from obstruction in the cystic duct.
   (*a*) Always, if resulting from stricture.
   (*b*) Usually, if resulting from impacted gall stones which may have induced ulceration that will subsequently lead to stricture.
   (*c*) Usually, if resulting from kinking of the cystic duct or from adhesions.
4. In phlegmonous or gangrenous cholecystitis.
5. In empyema of the gall bladder.
6. In calcareous degeneration of the gall bladder.
7. In mucous fistula of the gall bladder, the result of stricture or other obstruction of the cystic duct.
8. In gunshot or other serious injuries of the gall bladder or cystic duct.

It is unnecessary in ordinary cholelithiasis, where the gall bladder is not seriously damaged and where the cystic duct is not ulcerated or narrowed by stricture; and it is contraindicated in all cases where the surgeon cannot be certain that the deeper bile passages are free from obstruction, unless at the same time the cystic or common ducts be short-circuited into the intestine.

The conditions for which cholecystectomy may have to be performed may be conveniently divided into simple and malignant; no other classification seems to me necessary or desirable. In the former class the variety of the conditions for which I have performed the operation is considerable—phlegmonous cholecystitis, gangrene ulceration, hydrops, perforation, adenoma, cystic disease, hour-glass contraction, inflammatory contraction and calcification of the gall bladder, simple tumour, ulceration and stricture of the cystic duct, mucous and suppurating fistulae, rarely biliary fistula, unless at the same time the common duct has been freed from obstruction. In the latter class—cancer, endothelioma and sarcoma of the gall bladder or cystic duct.

In my Bradshawe Lecture at the Royal College of Surgeons of England for 1904 I expressed my views very fully as to the causative relationship between gall stones and cancer of the gall bladder and bile ducts, and gave my reasons for believing that biliary concretions are the chief determining cause of malignant disease of the biliary passages; increased experience only confirms in my mind the views I then held.

The practical conclusions which I feel confidence in urging—both from my own experience and that of others—are, that as there is an undoubted relationship between cholelithiasis and cancer of the gall bladder and ducts, and as gall stones produce characteristic symptoms, and are therefore as a rule easily diagnosed, and since they can be removed in the early stages before serious complications have supervened with less than 1 per cent. of risk, the preventive treatment for cancer of the gall bladder is obviously removal of the source of irritation. So impressed am I with the importance of this view, that although I know the symptoms of gall stones, which frequently depend on the associated catarrh, can often be relieved for a time by general treatment (though the gall stones producing the catarrh cannot be removed by medicine), yet I consider it wise to recommend their early removal by the simple operation of cholecystotomy, because the symptoms, even if temporarily relieved, will be likely to recur and lead to cancer or to other complications.

REFERENCE.
1 *Proceedings of the Royal Society*, vol. xlvii.

ANASTOMOSIS BETWEEN THE COMMON BILE DUCT AND THE DUODENUM FOR OBSTRUCTIVE JAUNDICE.*

BY ANDREW FULLERTON, B.CH., F.R.C.S.I.,

HONORARY ASSISTANT SURGEON TO THE ROYAL VICTORIA HOSPITAL AND TO THE BELFAST HOSPITAL FOR SICK CHILDREN.

TAKING all the facts of the following case into consideration, I believe that the patient has been suffering from chronic pancreatitis with complete occlusion of the duodenal opening of the common bile duct. His recovery after the ducts had been so blocked that all trace of bile had disappeared from their contents is remarkable.

A male, aged 66, was admitted to the Royal Victoria Hospital, Belfast, under the care of Sir William Whitla, on May 12th, 1906, suffering from jaundice and loss of flesh. His previous history was good, and there was no record of any illness whatever since childhood.

History and Diagnosis.

The present affection began suddenly on April 20th, when the patient's friends noticed that he was jaundiced. He states that at the same time his motions became pale in colour, and his urine dark coloured. He complained of no pain, and beyond the fact that he was jaundiced, he felt quite well. During the next few weeks he lost almost 2 st. in weight, his colour deepened, and his urine became darker. On admission, patient was found to be a well-nourished man, 11 st. 11 lb. in weight. The skin was dark yellow, and the conjunctiva deeply

* Read before the Ulster Branch of the British Medical Association

tinged. The urine was a deep greenish-yellow colour, and contained bile and a small quantity of albumen. The motions were almost white in colour. The liver was found to be enlarged, the lower edge projecting about a fingerbreadth below the costal margin in the mammary line. A large pear-shaped tumour—the distended gall bladder—could be felt on the right side, in the line of the tip of the ninth costal cartilage, extending from the liver almost to the level of the umbilicus. Its lower end could be felt to move with respiration. Patient remained in the medical wards under treatment for more than three weeks, but his progress was not satisfactory. He lost almost a stone in weight, and his jaundice became so deep that his face was almost a bronze colour. At this period I saw him with Sir William Whitla and Dr. Walton Browne, and we came to the conclusion that the case was probably one of tumour of the head of the pancreas obstructing the common bile duct, and recommended an exploratory operation. The diagnosis lay between chronic pancreatitis and carcinoma. The absence of pain and the distension of the gall bladder were against gall stone. The most probable cause was thought to be carcinoma of the head of the pancreas or of the common bile duct near its termination. No tumour, except the distended gall bladder, could be felt.

Operation.

With a view to operation the patient had four doses of calcium chloride, 15 grains every four hours, the day preceding the operation. On June 6th, 1906, a hard pillow having been placed under patient's back, a vertical incision, 5 in. long, was made over the most prominent part of the tumour and the abdominal cavity opened. The gall bladder was found to be distended so as to be rather larger than a goose's egg. There were no adhesions. The liver was enlarged and was dark purple in colour. It was firm in consistence. The peritoneal cavity having been shut off with large gauze pads, the gall bladder was opened, and a large quantity of clear glairy fluid escaped. Three small black mulberry-shaped calculi were fished out of the gall bladder, which was now in a collapsed condition. No stones were discoverable by palpation in the cystic duct. On the under surface of the right lobe of the liver was found an irregular whitish scar about the size of a sixpence. On drawing the liver upwards a hugely dilated common bile duct was brought to view, and on tracing this down it was found to lead to a hard mass in the position of the head of the pancreas. Several smaller nodules, thought to be enlarged glands, could be felt extending towards the foramen of Winslow. The dilated duct was almost as large as a piece of small intestine. An attempt was made to empty it by massaging its contents through the cystic duct towards the gall bladder, but without success, owing to some difficulty at the neck of the gall bladder, the nature of which I was unable to determine. Accordingly, I decided to drain the common duct by anastomosing it with the first part of the duodenum. This was accomplished with some difficulty, on account of its deep position, by means of a small Murphy button, using fine silk for the purse-string sutures and several reinforcing Lembert stitches to prevent possible leakage. Before placing the female portion of the button in the duct an incision was made into the latter and a large quantity of glairy fluid with no trace of bile in it was quickly mopped up. The finger could be introduced into the duct and passed up into cavities in the liver corresponding with the dilated hepatic ducts. To facilitate manipulation of the parts it was found necessary to make a transverse incision at right angles to the upper end of the original wound in an inward direction. The button having been satisfactorily adjusted, the abdominal cavity was mopped dry and a stab puncture was made in the loin to provide drainage. A split rubber tube with a gauze core was passed through the opening so made. It will be seen later that this puncture gave serious trouble, on account, I believe, of a small vessel having been wounded, which commenced to bleed after the patient had recovered from the shock of the operation. The wound in the gall bladder was sutured to the peritoneum and transversalis fascia and the viscus was drained by a rubber tube led from its interior to a sterilized bottle. The abdominal wound was closed with through-and-through sutures of silkworm gut, and the patient was returned to bed, having stood the operation well.

After-History.

He recovered from the chloroform without sickness and had no pain. A small quantity of bile flowed from the gall bladder a few hours after the operation. On June 9th, however, that is on the fourth day after operation, patient became collapsed, with distended abdomen, quick weak pulse running up to 120, cold clammy extremities, face cyanosed and lips anaemic. He vomited a clear sour-smelling fluid at frequent intervals, regurgitating it with very little effort. He had no pain. His bowels had moved several times since the operation. Strychnine hypodermically was administered and he was transfused with saline and a little adrenalin. As a result of these remedies he rallied somewhat, but his condition was still grave. Next day he passed a large quantity of flatus and immediately began to improve. His pulse fell to 96 and his abdomen became flat. He was fed on small quantities of albumen water, raisin-tea and raw meat juice. On June 13th his urine began to clear and on the 15th bile was seen in the motions. The tube was removed from the gall bladder on the twelfth day as very little bile was coming through. At no time did the quantity reach ℥iv, and latterly had varied from ℥ss to ℥j, in the twenty-four hours.

On June 22nd patient had severe haemorrhage from the lumbar wound, with difficulty controlled by packing with adrenalin. A discharge of dark blood in large quantities took place for several weeks and became septic, thus retarding his recovery. Probably the small vessel which had been wounded bled into the abdominal cavity and gave rise to a haematocele, which subsequently discharged through the lumbar wound. The button was passed on June 29th, more than three weeks after the operation, and at about this time the gall-bladder fistula closed. The jaundice did not entirely disappear until nearly a month after the operation. His convalescence was still further disturbed by an attack of cystitis, which was not due to catheterization, the patient having been able from the first to pass urine without assistance. He also had a bedsore, which gave trouble, but he was finally discharged in comparatively good health on August 2nd, 1906. His weight at this time was 10 st. 8lb.

Two months later I heard from Dr. Davison of Ballymena, who was looking after him, that a small abscess had burst over the position of the gall bladder, giving exit to a curdy fluid. This I presumed to be a reopening of the gall-bladder fistula. This healed in a short time, and has remained sound up to the present date. I had the opportunity of examining the patient five months after his operation; I found him in good health and spirits, having put on flesh, his weight now being 11 st. 4 lb. The gall bladder is still palpable, and will, I believe, again discharge through the original fistula. The reason for this I am unable to discover.

The Mayo Brothers have reported 4 cases of this nature. All died within four days.[1]

The operation which I have described is called by the cumbrous name of "choledochenterostomy," and is hardly mentioned in works on operative surgery. Mayo Robson[2] reports 3 cases. In the first the cystic duct was united to the colon by a decalcified bone bobbin on account of a biliary fistula. Jaundice recurred after some months. In the second the dilated cystic duct was connected to the small bowel by means of a Murphy button for the relief of a biliary fistula. This case completely recovered. In the third case the dilated cystic duct was connected to the duodenum by a Murphy button. This patient died on the fifth day.

He refers to successful cases under the care of Sprengel, Kiedal, and Swain.

Mayo[3] describes a case in which he implanted the common duct into the duodenum by suture. A wick drain was placed close to the suture line. The removal of the drain disturbed the line of union and caused a fistula, from which the patient died at the end of the eighth week. The same surgeon describes a second case in which he implanted a dilated hepatic duct into the duodenum by simple suture, with a successful result. These cases of Mayo demonstrated the feasibility of union between the common or hepatic duct and the duodenum at a spot where the latter is covered by peritoneum.

REFERENCES.

[1] *Amer. Jour. Med. Sciences*, March, 1905. [2] *Diseases of the Gall Bladder and Bile Ducts*, p. 296. [3] *Annals of Surgery*, July, 1905.

Old ideas die slowly, and none more slowly than those as to the etiology of malaria. As a rule nowadays it is the old-time non-medical resident from the West Coast of Africa that lays down the law on the subject; but we have received a reprint from the *New York Medical Journal* for August 17th, 1907, of a paper by a Dr. Braddock, entitled "Some Notes on Malarial Fever as Seen in the Jungle," a study of which carries one back to twenty years ago. It is difficult to realize that we are living in 1907 when we read that it is "a fact that persons can, and do contract malarial fever when there are no mosquitos to give it to them," and that "it is also certain that a person can acquire malarial fever if he disobeys certain natural laws, and which Kipling might call the laws of the jungle." Again: "If a dozen men are working in the tin mines, surveying, or prospecting in the jungle, those who do not change their clothing when wet, who drink unboiled water, and who sleep on the ground, all of the mosquito nets in the world will not save from fever, while those who use the mosquito curtain and obey the law of the jungle can travel through 'the country of ghosts' and laugh them to scorn." It would probably be useless to point out to Dr. Braddock that his first class already have the parasites in their blood, and that the damp and other factors only stir them up to activity. The examples quoted are sufficient; further comment is unnecessary.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE.

WILLIAM GORDON, M.D., F.R.C.P., President.

PRESIDENT'S INTRODUCTORY REMARKS.

DR. GORDON said: I am not going to waste time, already too limited, with unnecessary words, but there are a few things which cannot fitly be left unsaid at the opening of our proceedings. First, I desire to offer my best thanks to the Association for the great honour it has done me in entrusting to me the presidency of this Section; that is an honour which, I need scarcely say, I keenly appreciate. Next, on behalf of my colleagues of the South-Western Branch, I would offer to those members of the Association who come to our meetings a very hearty welcome; and, on behalf of the Section, an equally hearty welcome to those gentlemen who have come to us from foreign countries. I should like also to take this opportunity of expressing my great indebtedness to my fellow officers of the Section for the very kind and cordial co-operation which has made my share of the work a pleasure instead of a toil, and I desire especially to say that the Section owes it to its three Secretaries that we have before us to-day a programme of such exceptional interest and importance. Lastly, I would congratulate the Section on the value of the subject-matter which they have prepared for us, and on the list of distinguished speakers whom we are to have the privilege of hearing.

DISCUSSION ON THE INDICATIONS FOR OPERATION IN CASES OF INTRACRANIAL TUMOUR.

OPENING PAPER.

By J. S. RISIEN RUSSELL, M.D., F.R.C.P.,

Professor of Clinical Medicine and Physician, University College Hospital, and Physician to Out-patients, National Hospital for the Paralysed and Epileptic.

DR. RISIEN RUSSELL said: I make no apology for introducing the subject of this discussion by referring to the importance of being sure of the diagnosis of intracranial tumour before an operation is recommended, for I am too grateful for the honour of being allowed to open a discussion in so important a Section of the Association to allow myself to forget the responsibility that is inseparable from the task. I recognize that it is my duty to deal with diagnosis first, and then to consider in what cases operation is not advisable, just as carefully as I do those in which surgical intervention is indicated. Moreover, when I tell you that in my own experience I have known a case of hysteria trephined in the belief that the symptoms were the result of cerebral tumour, and that cases of disseminate sclerosis, general paralysis of the insane, cerebral thrombosis, and other affections have had narrow escapes from similar treatment, recommended as the result of faulty diagnosis, you will recognize how necessary the warning is.

I am anxious to see the profession in this country change its attitude towards cerebral surgery; for, although great advances have been made in this department of surgery even within my own recollection, there is a very general impression among the profession that little good can be expected from operations for tumours of the brain. This is an error which I hope that this discussion may help to remove. One of the best ways to get the profession to recognize that operations for tumours of the brain are of advantage to patients is that those who are responsible for recommending surgical intervention should be careful to select suitable cases, and not to increase the number of unsatisfactory results by submitting for operation cases in which no tumour exists. If cerebral surgery has not made as rapid advance as was to be expected, and if the number of successful cases of operation for intracranial tumour is not as large as could be desired, a very cogent reason is that cases are not diagnosed early enough, or, at any rate, if diagnosed, they are not submitted to the surgeon in time to permit of his dealing with the condition while the growth is in an early stage and of small size. The more the profession becomes alive to the fact that operations for the removal of brain tumours are successful, the greater will be the attention given to the diagnosis of these cases, and the earlier will they come into the hands of the surgeon. In making this appeal I do not desire to see any intemperance in regard to operations on the brain. All that I ask is that the subject should be approached with less of the spirit of scepticism than it has been my experience to meet with among members of the profession not intimately associated with this department of medicine and surgery.

There can be no reasonable excuse for operating on a case of hysteria in mistake for one of intracranial tumour, for the signs of organic disease cannot be confounded with anything that hysteria is able to furnish. I need only remind you that, though blind, the pupils of the hysterical subject react to light unless the eyes have been tampered with by atropin or some similar drug, and that neither optic neuritis nor atrophy will be found to support the defect of vision that is complained of. The motor cranial nerves are not paralysed in the way that so often happens in cases of intracranial tumour, and although the limbs may be paralysed they do not reveal certain signs which usually obtain when a tumour causes the paralysis. Thus the knee-jerk is never lost, as it may be in some cases of tumour. If ankle clonus appears, it is wanting in certain features which characterize the organic form, and the plantar reflex is never of the extensor type, such as is met with in organic disease which involves the pyramidal system. Convulsions may be one of the manifestations of hysteria, but the phenomena from which we conclude that consciousness is lost in a true epileptic fit are wanting. Notably, the pupil does not fail to respond to light in the way that it does during the loss of consciousness which forms part of a true epileptic attack. Moreover, after severe epileptic attacks the knee-jerks may be lost, and when they return may become exaggerated, at which stage in the recovery of the patient ankle clonus commonly appears, and the plantar reflex becomes extensor in type. After a variable period the ankle clonus disappears, the extensor type of plantar reflex is replaced by the normal flexor response, and all that may remain is the exaggerated condition of the knee-jerks.

Although the knee jerks are commonly exaggerated in hysteria, and a form of ankle clonus may be met with in this affection, the series of phenomena in the order in which I have detailed them cannot be regarded as due to this affection. The general convulsions, indistinguishable from those of idiopathic epilepsy, are those that call for most consideration in this connexion, for hysteria is not responsible for the type of convulsions which characterize Jacksonian epilepsy, and which are so often the outcome of a tumour of the brain. Convulsions which have the characteristics that belong to this type of epilepsy cannot be regarded as otherwise than of organic significance.

I may perhaps be excused for reminding some of my audience that in this form of epilepsy consciousness is commonly preserved, that the fit has a local beginning, that the convulsions spread in a definite order, which corresponds to the order in which the motor centres are arranged in the cerebral cortex, and that the convulsions may be limited to the part in which they commence, or may spread so as to involve other parts, in which spread they may become general, though they commonly remain unilateral; and that after the fit is over temporary paresis may be determined in the parts that have been affected by the convulsions, while aphasia may be also a transitory phenomenon met with after such an attack.

That general paralysis of the insane should have supplied some of the cases in which tumour requiring operative intervention has been suspected is not surprising, when we remember that this malady may be responsible for several of the phenomena that belong to the clinical picture of some cases of cerebral tumour. There are, for instance, the convulsions, which may even be of the Jacksonian type so characteristically seen in cases of tumour. The attacks of hemiplegia and of aphasia, loss of memory, and mental apathy, and even the tremor which is so characteristically seen in general paralysis, may be reproduced in tumour, at any rate, in so far as the hands are concerned. It is especially tumours of the frontal lobes of the brain that are liable to be confounded with general paralysis; but although there is enough similarity between the two clinical pictures to raise the question in diagnosis, there ought not to be much difficulty in distinguishing between the two affections as a rule. General paralysis does not occasion the severe paroxysmal headaches of tumour, nor are the attacks of purposeless vomiting a part of the clinical picture; and while a primary grey atrophy of the optic discs akin to that met with in tabes may occur, there is never the form of optic neuritis, with papillitis, which is so characteristic of tumour. Moreover, even in some of the features in which the two clinical pictures resemble each other there are differences, for the hemiplegia or the aphasia occasioned by tumour is usually progressive and not transitory, whereas in general paralysis such attacks are transitory and oft repeated.

Without allowing myself the liberty of devoting too much of the valuable time at my disposal to considerations of diagnosis, I need only add that the Argyll-Robertson pupil of general paralysis, that state of the pupil in which it contracts on accommodation, but fails to do so when the eye is exposed to light, and the characteristic articulatory defects of speech, are not phenomena that usually leave much doubt as to the real nature of the disease responsible for the patient's symptoms.

Disseminate sclerosis is more liable to be confounded with tumour of the cerebellum and the mesencephalon than with tumours of the cerebrum.

You need only be reminded of a few of the symptoms and physical signs in this affection to make it clear that care is needed sometimes if mistakes are to be avoided. As in tumour there may be vertigo, vomiting, failure of sight, nystagmus, paralysis of cranial nerves, inco-ordination, spastic paralysis with the usual alterations of the tendon jerks and superficial reflexes which accompany this form of paralysis. Headache is, however, not a special feature, and is not usually likely to have the paroxysmal characters that obtain when a tumour exists. Although optic atrophy is common, and there may be optic neuritis of the retrobulbar type, there is never the papillitis, with choked discs, which is so characteristic of tumour. The spastic paralysis, with its attendant phenomena, is usually bilateral, and reveals itself by paraplegia rather than by hemiplegia, which is the type of paralysis most likely to be met with in tumour of the brain, and which is a rare effect of disseminate sclerosis. The emotional tendency, the form of articulatory disturbance of speech, and the paralysis of the sphincters, are, on the other hand, all features of disseminate sclerosis. How difficult the diagnosis may be in some cases is, however, well illustrated by the following example:

K. W., female, aged 15 years. On admission into the National Hospital she complained of headache, vomiting, loss of sight, and loss of power in the right arm and leg. She had had attacks of vomiting for eight weeks, and for five weeks had noticed numbness of the right arm and leg. For three weeks the right leg had been becoming weak, so that the foot was dragged when she walked. About this time she began to suffer from severe headache, which was paroxysmal, and affected the frontal region chiefly. The right arm and leg became progressively weak until two weeks before her admission, when the disability occasioned by the paralysis necessitated her remaining in bed. A week later her sight began to fail, the left eye becoming affected before the right. The vision became much worse a few days later, when she could no longer recognize people except by their voices. When examined no optic neuritis was discovered. The pupils were very sluggish in their reaction to light, and at times one pupil failed to react altogether. There was marked loss of power in the right arm, and scarcely any movement was possible in the right lower limb, which she dragged when she attempted to walk. Both knee-jerks were increased, as were the ankle-jerks, but the right more so than the left. The plantar reflexes were both extensor in type. The sphincters were not affected. Subsequently her symptoms became bilateral, and she presented defective upward movement of her eyes. The upper limbs became inco-ordinate, and intention tremor of a coarse character was evoked when voluntary movements were attempted. She became quite unable to stand or walk, areas of anaesthesia developed in different parts, and some articulatory disturbance of speech became noticeable.

Tumour of the mid-brain was the diagnosis first made, but was subsequently abandoned in favour of that of disseminated sclerosis, which proved to be correct, for the patient became completely well for a time, but has since had several minor relapses, although she has never been as ill as when she first came under observation.

A case of cerebral thrombosis is usually easy to distinguish from one of cerebral tumour, but it may be otherwise when in the former affection the onset of the paralysis is unusually slow, or when in the latter it is unusually rapid, especially if headache is not marked in the case of tumour, and there is no optic neuritis present. The following is a good example of the difficulty that may be experienced in diagnosis:

M. P., female, aged 40 years. Three months before she came under observation, when dressing one morning, she noticed that her left arm was weak, and by the evening the limb was so useless that she was unable to do her hair or to button or unbutton her clothes. Neither the face nor leg was affected at that time. She next noticed tingling and numbness of the right arm, and after varying a little from time to time the weakness in the arm became much worse two weeks before her admission into the National Hospital, so that she was quite unable to move the limb. During the whole time there had been no headache, vomiting, or vertigo, but she now began to feel ill and to experience a peculiar sensation, although she had no definite fit. A few days after her arm became first affected she noticed a numbness and tingling in the left side of her face. The inside of her mouth felt drawn and stiff, and the nose and eye had a similar feeling, and a fortnight before she came to the hospital facial weakness had become definite. More recently she had noticed tingling down the front of her leg, but she had experienced no loss of power in this limb. There had also been a good deal of tingling and numbness down the left side of her trunk. She had experienced sharp pains on the right side of the head for a few days, and the right eye had been aching. Her voice had become altered, and her articulation disturbed, but there had been no aphasia. The sphincters were not affected.

When examined she was found to have marked arterio-sclerosis, and the ophthalmoscope revealed the "silver wire" appearance of the retinal vessels which is so characteristic of this condition. There was no optic neuritis.

Her mental state was somewhat peculiar, and she presented well-marked facial weakness on the left side. The limbs were similarly affected, the arm suffering more than the leg. Indeed, so marked was the paralysis of the arm that no movements were possible, but the leg, though useless, could be moved in bed. There was slight general blunting of sensibility over the left half of the body, and complete loss of muscular sense, with asteriognosis. In addition to the ordinary alteration of the tendon jerks met with in hemiplegia the extensor type of plantar reflex was present on the left side.

Many of the features of this case suggested the possibility of tumour, notably the slow progress of the paralysis, but the marked arterio-sclerosis found on clinical examination made it far more probable that cerebral thrombosis was in reality the condition which existed, a view that was justified by the subsequent course of the patient's illness.

Conditions under which Operation may be Recommended.

When we are reasonably sure of our diagnosis of tumour, we have next to determine whether the case is one in which operation is to be recommended, and if so, we must decide with what object the operation is to be undertaken. The circumstances may warrant our advocating an operation in the hope of effecting cure, or all that may be justified by the conditions may be that an operation can be proposed with a view to relieve symptoms, and possibly to prolong life.

1. *Circumstances in which the Operation is to be Recommended in the Hope of Effecting a Cure.*—The following important considerations influence this question:

(*a*) In the first place it is obviously of extreme importance that the diagnosis of tumour should be supported by evidence which enables its accurate localization to be determined. It is usually comparatively simple to arrive at the diagnosis of intracranial tumour, but it is a very different matter when an attempt is made to determine the exact seat of the tumour, without which knowledge it cannot be pretended that operation can be recommended

with a view to effect cure. Before we are in a position to determine the possibility of cure we must have data at our command which enable us to say where the tumour is, and this not only in so far as to be able to say that the tumour occupies the brain, as opposed to the cerebellum for instance, but also which cerebral or cerebellar hemisphere is affected, and which part of the hemisphere is involved. It is only the possibility of accurate localization of this kind that enables us to determine the next point on which the chance of recommending operation with a view to effect cure depends.

The following case illustrates how simple the diagnosis and localization of a tumour may be:

M. B., female, aged 40 years, complained of increasing weakness of the right foot for two months. She next noticed twitchings of the right toes, in attacks which lasted a minute or two, and which occurred once or twice during the twenty-four hours. These clonic movements and the motor weakness, gradually ascended the limb, until six weeks after the commencement of her illness they culminated in a Jacksonian fit, which, commencing in the foot, subsequently involved the right arm and face without causing loss of consciousness. A similar fit occurred three days later.

Seven weeks from the onset of her illness she began to notice progressive loss of power in the right upper limb, but at no time did she become aphasic. She had been entirely free from headache.

When she came under observation there was hemiparesis on the right side. The face was only slightly affected, the arm much more so, and the leg most of all. Indeed, no movement was possible at the ankle, or in the toes.

The diagnosis of tumour of the leg area in the left Rolandic region was made, and Sir Victor Horsley operated upon the patient, with the result that a tumour the size of a walnut was removed from about half an inch below the cortex of the leg area.

As an immediate effect of the operation there was marked increase of the hemiplegia, but the paralysis subsequently improved, so that, before the patient left the hospital, seven weeks after her operation, feeble movements could be made in the right toes and of the foot at the ankle in which parts no movements had been possible before the operation.

The next case to which I wish to refer is an example of correct diagnosis, but incorrect localization of the tumour, in which the supposed seat of the tumour was, nevertheless, sufficiently near its actual position to permit of success from the operation.

A. C., female, aged 60 years. About a year before she came under observation she noticed that she was becoming deaf on the right side. For about three months she had suffered from frontal headaches, which were more severe on the right side A month later her gait became affected, so that she noticed a tendency to fall to the right when walking, and even when standing. She next began to suffer from frequent attacks of vomiting, and the headaches became more severe. Numbness of the right side of the face then occurred, and was followed by diplopia, while she also became aware of a certain degree of weakness of the right limbs, and her handwriting was impaired.

Physical examination revealed double optic neuritis, which was more marked in the right eye than in the left. Nystagmus was present, and was of a coarse character when the eyes were turned to the right, but less so when they were directed to the left, when the movements of the eyes became much more rapid. There was blunting of sensibility, both to touch and pain, over the distribution of the right fifth nerve Slight weakness of the lower part of the face on the right side could also be determined, in addition to which there was nerve deafness on the same side, and the palate was drawn over to the left. The sterno-mastoid and upper part of the trapezius were slightly weaker on the right side, and there was slight relative weakness of the right limbs, which were also slightly inco-ordinate. On standing or walking she tended to fall to the right.

A tumour of the lateral recess, involving the eighth nerve, was diagnosed, and the operation for its removal was performed by Sir Victor Horsley, but instead of a tumour being found outside the cerebellum, a cyst was discovered in the right lateral lobe of the organ and was successfully evacuated.

Immediately after the operation there was complete loss of power on the right side of the face, and complete anaesthesia over the distribution of the right fifth, with complete paralysis of the motor division of this nerve. The patient, however, no longer suffered from giddiness or headache, the optic neuritis subsided, and she was eventually discharged cured.

There are other cases in which the diagnosis of tumour seems certain, and yet no evidence of its presence can be determined at the operation. We are ignorant of the real nature of these cases, although the term "pseudo-tumour" has been applied to them, and various suggestions have been made as to how they are to be explained.

The following is a good example of the kind:

L. P., female, aged 26, came to the hospital with a history of headache of three months' duration. The pain had been almost constant, with exacerbations from time to time. It was described by her as "splitting" and "maddening," and affected chiefly the left fronto-parietal region and the back of the left eye. For twelve weeks there had been ptosis on the left side, which had become more marked during the last six or seven weeks, at which time she noticed that she saw double when she looked to the right. For eight weeks she had suffered from frequent attacks of vertigo, with a tendency to fall backwards.

Involuntary extension of the right fingers and hand, preceded by a tingling in the thumb and right forefinger, had been noticed for six weeks. When the spasm passed off it left the hand weak, but the arm and shoulder were not affected. Difficulty of speaking accompanied the attack, and the headache was increased. A week before she came under observation she awoke one morning to find her left hand useless. Three days before this there had been an attack of vomiting. On examination tenderness was determined in the left frontal region. Her pupils were found to be equal and their reactions normal. There was marked ptosis on the left side, with weakness of the left internal and superior recti, and slight weakness of the left side of the face. The right upper extremity was slightly weak, but it did not present any tremor, involuntary movements, or rigidity. There was no affection of sensibility, and the reflexes were normal.

She left the hospital improved, in that the headache was less severe and the ptosis less marked; but she was subsequently readmitted owing to increase of the headache and owing to the occurrence of faintness and attacks of giddiness. She also experienced attacks of paraesthesiae, each of which began with a stinging pain in the right eye, followed by a vibratory feeling, which shot down the left arm and which was succeeded by a feeling of "pins and needles" in the left fingers and round the mouth. These sensations were unaccompanied by any motor spasm, except slight twitching of the left angle of the mouth. These attacks ultimately culminated in a more severe one, in which she became unable to move the left arm or leg, and was unable to stand, owing to weakness of both legs. The power in the limbs soon began to return, but they had never regained their normal strength. Subsequently a good deal of twitching occurred in the left arm, and the left angle of the mouth, but the leg was not similarly affected. The left limbs felt numb and dead. She never lost her speech, but her voice became weak and indistinct. Subsequent attacks occurred, followed by increase of the weakness in the left arm and leg, and she also experienced a singing noise in the left ear after some of the attacks.

On examination she was found to be very tender all over the skull, but the tenderness was most marked over the right ear. There was still no optic neuritis to be detected. There was slight but definite weakness of the lower half of the left face. The left limbs were relatively slightly weaker than the right, and there was a slight tendency to drag the left foot on walking. No defect of sensibility could be determined. The left knee-jerk was more active than the right, and the plantar reflex was of the extensor type on the left side.

At the operation, performed by Sir Victor Horsley, the brain bulged considerably when the dura mater was opened, and the cortex was congested in appearance in the lower post-central region, but no tumour could be discovered, although the brain was incised after ligature of some of the vessels.

Considerable weakness of the face, arm, and leg on the left side resulted from the operation, but the power was subsequently recovered, and the patient left the hospital much improved—indeed, her gait was almost natural.

Dr. Gordon Holmes, to whom I am indebted for a very careful investigation of the case when the patient was in the hospital, informs me that he had an opportunity of examining her comparatively recently, when he found her quite well, with the exception of the slightest possible defect of her arm.

(*b*) The data at our command may be so satisfactory and complete as to enable us to localize the seat of the tumour with the greatest certainty, and yet it may be impossible to recommend an operation, for the reason that the neoplasm may be in a position that is quite inaccessible to the surgeon. Tumours that offer the best chances to the surgeon are those which are near the surface of the cerebrum, those which occupy one lateral lobe of the cerebellum, or which lie at the side of the cerebellum and pons, occupying what is termed "the lateral recess." On the other hand, positions that may be regarded as inaccessible from the point of view that the tumour cannot be reached and removed with the possibility of cure are the mesencephalon, anterior part of the middle lobe of the cerebellum, and the deeper parts of the cerebral hemispheres.

(*c*) The probable nature of the growth whose removal is to be attempted must of necessity influence the question now under consideration, for, in expecting cure, we not only aim at successful removal of the tumour and recovery of the patient from the effects of the operation,

but we hope that the removal will be so complete that the new growth will not recur. This being the case, an attempt must be made to determine the nature of the growth as far as possible, that is to say, whether it is simple or malignant in type. There is unfortunately no more difficult problem to solve, and although the data at our disposal permit of a definite conclusion in some cases, and of a probability sufficiently strong in others to amount to a certainty, in a large number of cases it is quite impossible to say what the nature of the tumour is.

Malignant growths, though capable of removal, naturally offer less chance of cure than do simple tumours, in that there is always the chance of recurrence in the malignant forms. When a tumour is malignant the more circumscribed it is the better the chances of cure, whereas when it is diffuse, and its limitations ill-defined, the chances that some of the growth will escape removal are of course very great.

While in some cases the clinical data justify the belief that one or other of these conditions obtains, it is often impossible to determine this except by actual examination of the seat of the tumour at the time of the operation.

What is true of diffuse tumours applies with even greater force to tumours that are multiple, so that when the evidences support the belief that more than one tumour exists, and when, for instance, metastatic tumours are met with in the brain secondary to tumour elsewhere in the body, there is no chance of cure from operation. Under such circumstances, even if one tumour in the brain can be localized and attacked, the probabilities are that there will be others present, which will make their deleterious influence felt later on. The more strongly the evidence supports the belief that the tumour is single, and the greater the probabilities that it is circumscribed, the more the justification for recommending an operation in the belief that cure may be obtained.

While the cerebrum supplies many tumours that fulfil these requirements, the cerebellum and lateral recess probably supply an even greater number, if not actually, at any rate proportionally to the total number of tumours that occupy these respective parts of the intracranial cavity.

It is impossible to leave this part of the subject without referring to syphilitic tumours, for it cannot be too strongly insisted that a considerable proportion of all these require to be dealt with surgically on precisely similar lines to those which obtain when other forms of tumour are met with. Experience has taught me that it is a mistake to waste valuable time in pushing antisyphilitic treatment when the symptoms are not yielding to mercury and iodide of potassium. I also feel convinced that it is best to deal with each case on its own merits, and that it is a mistake to attempt to lay down any rigid rules to guide us as to how long antisyphilitic treatment should be persevered with before this line of treatment is abandoned in favour of surgical intervention. There are chronic syphilitic tumours that all the mercury and iodide of potassium that a patient can take will never alter. These we must submit to the surgeon to be dealt with in precisely the same way that we recommend operation in any other form of cerebral tumour. When the diagnosis has been made and the localization determined, unless there is very decided improvement under antisyphilitic treatment within a few weeks, it is best to recommend operation, as otherwise even a fatal result may ensue while valuable time is being lost. Indeed, the patient's symptoms may be sufficiently urgent to make it a mistake to take even the risk of employing antisyphilitic treatment for a few weeks on the chance of good resulting, and it may be imperative to recommend immediate operation even in a syphilitic case, owing to the urgency of the symptoms, which would no doubt in time be relieved by mercury and iodide of potassium, were it not for the fact that while we are waiting for this happy result the patient's life may be sacrificed, or at any rate irreparable damage done to the nerve elements by its continued presence.

I first became impressed with the importance of recommending operation early in cases of syphilitic tumour by my experience in the case of a man who had been long treated with the usual remedies, and in whom I diagnosed a gumma of the angular gyrus and adjacent part of the temporo sphenoidal lobe of the left cerebral hemisphere. The patient died before he could be operated on, and at the necropsy the diagnosis and localization were confirmed, so that had the patient lived it would have been possible to remove the tumour without difficulty.

(*d*) In attempting to decide whether or not an operation is to be recommended in the hope of cure, it is, of course, of primary importance that we should be in a position to say what the probable effects of the operation are likely to be, and the most important consideration of all is the degree of risk there is to life from the operation and its immediate effects. This is a part of our subject on which I hope that we may have the privilege of hearing the pronouncements of some of the surgeons who are taking part in the discussion, as they are of course far better able to speak with authority than I am. I am, however, not entirely without the experience that justifies my venturing an opinion on this subject.

One of the greatest, if not the greatest, risk from the operation of removal of a cerebral tumour is shock, but this risk has been reduced to a minimum since the method of performing the operation in two or more stages has been in vogue in this country. Formerly the bone was trephined, the dura mater opened, and the tumour removed at one operation. Now the custom is to trephine and remove the bone at the first operation, and to leave the opening of the dura and the attempt to remove the tumour until some days later, thus allowing time for any shock that has resulted from the first operation to pass off before the second stage is proceeded with. Since this alteration has been made in the operative procedure it has been quite the exception to hear of patients dying from shock after the removal of an intracranial tumour.

I cannot help wondering whether it would not be better to depart from this rule in some cases, and I am encouraged to venture to seek the opinions of our surgeons on this point because I understand that the American surgeons are in the habit of performing the whole of the operation in one stage when the condition of the patient does not negative this. The need for such an alteration in our procedure was first suggested to me by the death of a patient in the interval between the time that she was trephined and the time fixed for the second stage of the operation for the removal of the tumour. At the necropsy the tumour was found exposed beneath the trephine opening in the bone, and it was quite superficial, so that it could have been removed with ease.

In competent hands, the risk of any ill-effects from haemorrhage is so small that it need scarcely concern us, and the same applies to the chances of sepsis, while acute oedema of the brain is fortunately sufficiently uncommon to make it unnecessary to allow this to deter us from operation in cases that are otherwise suitable. Indeed, it may be said that very little, if any, greater risk attaches to an operation for the removal of a cerebral tumour by a surgeon familiar with the technique of the operation than is attendant on any major operation in surgery. In short, where other considerations lead us to hope that a tumour that has been diagnosed and accurately localized can be successfully reached and removed by the surgeon, the risk to life from the operation ought not to deter us from recommending it.

Another consideration that must engage our attention and on which we must leave no doubt in the minds of the patients and their friends, is what amount of permanent defect may result from the operation. It is, of course, possible that the tumour may be so situated that its removal not only results in cure, in so far as that the growth does not recur, but that certain defects that were produced by the tumour are also recovered from, and the patient is thus restored more or less to a normal condition of health. This is a result that we are especially justified in expecting when a lateral recess or cerebellar tumour has been diagnosed, but it is less likely to occur when a tumour has been removed from the brain. The degree of compensation which is possible after destructive lesions of the cerebellum is remarkable, whereas such possibilities of compensation do not obtain in the same degree in the case of the brain.

Here the most common defect that is likely to result is paralysis, which varies in degree according to the amount of brain tissue that it is necessary to remove in the enucleation of the tumour. It may thus be necessary to

prepare the patient for an increase of the paralysis which already exists, and even for the occurrence of paralysis as a result of the operation when none has as yet been produced by the tumour. In all such cases some recovery from the paralysis that is an immediate result of the operation may be confidently predicted, but only in some cases can complete recovery from such paralysis be expected.

Important as is this consideration, it is not likely that the patient would allow the fact that paralysis must result from the operation to influence him against this procedure when death from the effects of the tumour is the only alternative that presents itself, and those of us who have to assist such patients by our advice cannot reasonably hesitate to advocate operation even when permanent hemiplegia is to be expected.

It, however, becomes a very much more difficult problem when aphasia is the permanent defect that the patient must face if he is to have the benefits of the operation in so far as it offers the possibility of saving his life. Dear as is life to most people, the majority, confronted with this problem, must of necessity hesitate, if indeed they can ever bring themselves to accept an alternative to which death seems almost preferable. To be unable to express themselves in spoken or written language, and possibly also to be unable to understand what they hear or read, may be a prospect too gloomy for them to accept instead of death.

2. *To Relieve Symptoms and Prolong Life.*—When it is impossible to recommend operation with any reasonable hope of effecting a cure, the fact must not be lost sight of that an operation may yet be advisable with a view to relieve the patient of distressing symptoms, and possibly in the hope of prolonging life.

(*a*) *Indications and Contraindications for Trephining.*—There can be no question as to the benefits to be obtained in these ways by trephining, provided that a sufficiently large area of bone is removed, and that it is possible to open the dura mater freely, so as to relieve the excess of intracranial pressure. The patient's life may be prolonged by this measure, owing to the fact that severe pressure is no longer exerted on the medulla, and accordingly the respiratory and cardiac centres are no longer being prejudicially influenced as heretofore, when the patient was in constant danger of death from arrest of respiration consequent on excessive pressure on the respiratory centre in the medulla. Not only can the patient's life be prolonged, but it can also be made infinitely more bearable, for the severe paroxysmal headaches are relieved, as are the distressing attacks of vomiting. Indeed, so much relief is obtained in these ways that the operation should be recommended with a view to relieve these symptoms if drugs no longer influence them, even if the indications do not justify the belief that life is in immediate danger from the effects of abnormal intracranial pressure.

It is, as a rule, useless to recommend the operation when the patient is already deeply comatose, nor is it of any avail when the heart has failed. It should, however, always be attempted when respiration has alone ceased and the heart is continuing to beat, although even in this class of case the chances of saving the patient's life may be remote.

It has also been claimed that by removing part of a tumour the growth of what is left is retarded, and some cases that have been treated in this way appear to justify this belief.

(*b*) *The Importance of Saving Sight.*—One reason why the operation may have to be undertaken, to which I have not as yet referred, deserves separate consideration, and if I do not appear to give it the full consideration which its importance merits my excuse must be that there are those who are to take part in the discussion who are better able to impress you with the value of the operation from this standpoint than I can expect to do. I can be sure, however, that everything that they are likely to say in support of the value of the operation as a means of arresting the progress of optic neuritis and of saving sight, I shall be prepared to endorse. Indeed, so strongly am I impressed with the value of trephining for the relief of optic neuritis, and with the object of saving sight, that I have no hesitation in saying that no patient suffering from intracranial tumour ought to be allowed to become blind when in this operative measure we have an effective means of preventing so lamentable an occurrence, provided the operation is undertaken early enough, before the neuritis has subsided into consecutive atrophy of the optic nerves.

It must, however, not be supposed that every patient suffering from optic neuritis has an intracranial tumour, or that trephining will relieve every form of optic neuritis irrespective of whether the condition be due to increase of intracranial pressure or not. It is only where the papillitis is dependent upon increase of intracranial pressure that the operation of trephining can be expected to bring about the beneficial effects that have been claimed for it. It is accordingly most important that we should be sure of our diagnosis before we recommend operation, for it would, of course, be worse than useless to submit a patient to the operation of trephining when the optic neuritis was in reality of toxic origin.

(*c*) *The Circumstances under which Lumbar Puncture may be Substituted for Trephining.*—A discussion on the indications for operation in cases of intracranial tumour would not be complete without reference to the circumstances under which lumbar puncture may be substituted for trephining. There are those present who are better able to speak of the value of lumbar puncture in general, and of this procedure as a substitute for trephining in cases of intracranial tumour. No one is, however, likely to suggest that in this operative measure we have a means that offers any chance of effecting cure in cases of intracranial tumour, so that it is only when we are dealing with the possibilities of relieving symptoms and of prolonging life that this operation need be considered. Even in this connexion lumbar puncture should only be regarded as a temporary measure, which cannot be expected to relieve symptoms in the permanent way that trephining does. In saying this I do not in the least mean to detract from the value of lumbar puncture, for in this measure we have a means of relieving urgent symptoms of pressure, when to wait for a surgeon to trephine would be to allow the patient to die, or when the patient's condition is too bad to permit of the major operation, even when a surgeon is available. In both of these classes of case it is possible that the relief given by lumbar puncture may so improve the patient's condition as to permit of the major operation of trephining on some subsequent occasion.

Moreover, as it has been necessary to introduce this discussion by referring to some questions relating to the diagnosis of intracranial tumours, it would not be fair to lumbar puncture were I to allow this opportunity to pass without calling attention to the important part which this procedure plays in the diagnosis of general paralysis of the insane, one of the affections which I have referred to as likely to be confounded with intracranial tumour.

Lumbar puncture is accordingly a procedure to be employed for diagnosis and for the relief of urgent symptoms in cases of intracranial tumour, but not as a procedure which is likely either to permanently relieve symptoms and prolong life, or to effect cure.

DISCUSSION.

Sir WILLIAM MACEWEN (Glasgow) said he held that an operation should be sometimes performed for brain tumour even in the absence of its classical symptoms. He was quite in agreement with Dr. Risien Russell that in certain cases of syphilitic tumour of the brain operation was urgently indicated, but especially if the gumma were large or caseated. The duration of an adequate trial of medicines in cases of brain tumour was a matter which was ordinarily left to the physicians, but it should not in his opinion be long, not many months at any rate. With regard to the alternative plan of doing the operation of removal of an intracranial tumour in one or two stages, he considered it a good method to wait until the first stage was completed before deciding whether the further operation should be postponed or at once proceeded with, the decision depending on the condition of the patient, with reference to shock, at the time. Operation was certainly to be recommended in suitable cases for the relief of symptoms alone. Moreover, he had often seen the paralysis following on an operation completely pass away. In those cases, however, where aphasia or sphincter paralysis seemed inevitable, he would be reluctant to advise operation. With regard to lumbar puncture for the relief of intracranial pressure in brain tumour, he thought sufficient data were not forthcoming to establish its efficacy or otherwise.

Dr. J. Michell Clarke (Bristol) said: One group of cases in which the greatest difficulty of general diagnosis arises is that in which the group of symptoms enumerated by Oppenheim is present—namely, headache, vertigo, optic neuritis, vomiting, paresis of external rectus muscle, nystagmus, especially in the direction of action of the paretic muscle, with or without tinnitus, diminished hearing on the same side, and ataxia of cerebellar type. Gross unilateral symptoms in limbs are generally absent, and, if present, are usually slight and non-progressive. Attacks of convulsions with somnolence or even coma may appear for a few days, and not recur again for months. In a case of this kind recently under my care, the patient, a girl of 18, suffered from intense headache, vertigo, vomiting, and optic neuritis. She was very ill for four weeks, but eventually left the hospital quite recovered after an illness of three months' duration. Some years ago I had two patients with similar symptoms, but in the first, a girl aged 19, there was also labial herpes, and in the second, a youth aged 19, there were also marked mental dullness, general muscular weakness, so that he could not stand, dilated and unequal pupils, and occasional clonic spasm of the right hand. Both recovered, but the youth was left blind from optic atrophy and the girl had great impairment of vision; in one of Nonne's cases also blindness resulted, an important point with regard to treatment to which I shall return. These symptoms are referred by Oppenheim to internal hydrocephalus due to a serous meningitis. But some cases of this group are no doubt due to tuberculous masses in the brain, which become obsolescent, and therefore in reality come under the category of intracranial tumour, and in others the exact cause is uncertain. Syphilis and anaemia are of course excluded. Another point to be borne in mind is that a patient suffering from an intracranial tumour may first come under observation for an apoplectic seizure due to a large haemorrhage having taken place into the growth. In such cases the diagnosis from simple haemorrhage will be made by the discovery of intense optic neuritis, in the absence of lead poisoning, Bright's disease, and profound anaemia.

Difficulties of *localization* of a tumour are often really due to the absence of any data as to the size of the growth, so that it is impossible to say how far the effects observed are to be attributed directly to the growth itself, or indirectly to interference with the circulation and the production of congestion and oedema of more distant parts of the brain. Dr. Collier in his valuable paper has shown how these factors may complicate the diagnosis. He has also pointed out that undue stress in localization may be laid on attacks of Jacksonian epilepsy or on localized paralysis, and that to be of value for locating a growth it is essential that both these signs occur early in the illness. In tumours of the substance of the frontal lobe, it is often very difficult to be sure whether the mental symptoms present are more than those which may accompany any large intracranial growth. Of tumours which occur on the surface of the brain, and are accessible for operation, those of the temporo-sphenoidal lobe seem to me to present great difficulty in diagnosis, perhaps because I have recently had two cases of this kind. In one the occurrence of motor aphasia was misleading, as it was thought to indicate that a frontal tumour was extending backwards, and I believe that great caution must be exercised in using the various forms of aphasia as an aid to local diagnosis in tumour, because of the readiness with which the speech centres may be affected by the presence of a large growth in their neighbourhood without actually involving them. The position in respect to cerebellar tumours, which, from the point of view of relief by operation, were not so long ago regarded as most difficult, has now, thanks largely to the admirable work done by the opener of this discussion and his colleagues at the Queen Square Hospital, undergone a complete change, and tumours of the lateral lobes of the cerebellum can now be accurately diagnosed and often successfully removed. In five intracerebellar cases under my care, in one the patient refused operation; in the second and third cases the growth affected the middle and both lateral lobes; in one of these there was also a growth in the frontal lobe, and in the other, a child of 3, the tumour was obviously very extensive, so that both were unsuitable for operation. In two a cyst of the lateral lobe of the cerebellum was found and removed—in one the patient made a complete recovery, in the other the cyst was deeply-seated and was not found at the first operation; a second operation was undertaken later through the old wound and the cyst found, and, after slicing away a part of the lateral lobe, removed; unfortunately the patient, who at first did well, died from a septic complication. I should like also to briefly refer to the group of extracerebellar tumours described by Fraenkel, Hunt, Woolsey, and Elsberg,[1] because they are especially accessible and suitable for operation in their early stage, and because the pronounced aural symptoms are likely to mislead. They are characterized by long duration, three to six years; the initial and most striking symptoms, tinnitus, deafness, Ménière's syndrome, are of gradual onset, and followed by general and focal symptoms of a tumour of the posterior fossa. These cases are due to a neuro-fibroma of the auditory nerve. A symptom which occurs in some cerebellar tumours, as well as in those of the optic thalamus and subthalamic region, is marked tremor, often of the intentional type, and is a contra-indication to operation. With regard to local tenderness and alterations in percussion note of the skull as aids to localization, I think that tenderness, even if persistent, is a somewhat fallacious guide to the position of the tumour, but may be used if the other signs corroborate it as regards the seat of lesion. In case there are no other localizing signs and a palliative trephining is undertaken, it may be well to select a persistently tender area to trephine over; this in one case led directly to the discovery of a large tumour of the upper parietal lobe, which weighed over 6 oz, and was successfully removed many years ago. The patient, a young man, is alive and able to lead an active life. Occasionally a further indication of the seat is obtained after shaving the scalp, as in a recent case in which a small elevation of bone became evident over the tender spot. With respect to the treatment of intracranial growths, this practically reduces itself to the possibility of removal by operation. Recently Walton and Braun, in 424 collected cases of cranial tumour, estimated from the *post-mortem* appearances 7 per cent. as certainly, 13 per cent. as doubtfully suitable for operation, and 80 per cent. as inoperable. This 7 per cent. they still further reduce from various causes—for example, failure of localizing signs, etc.—to 3.3 per cent. Treatment by mercury and potassium iodide is even now often carried out for too long a time. Making due allowance for the difficulty of excluding syphilis, I do not think that it is proper to carry out such a course of treatment in a case where there is no history or evidence of syphilitic infection. In cases where there is a history of syphilis, and where the tumour is a gumma, which does not yield to a full course of specific treatment, an operation should be done, and there is the advantage in such cases that the lesion will be generally superficially seated. In any case where there are no localizing signs but the patient is being worn out by intense headache, and is in danger of becoming blind from optic neuritis, a sufficiently extensive portion of the skull should be removed. In cases such as those mentioned, where the symptoms of an intracranial tumour are present, but in which recovery occurs, the cases of so-called pseudo-tumour cerebri, I think that if the optic neuritis is very intense, and loss of sight is distinctly threatened, a craniotomy should be done. So far as I can speak from my own experience, I have not found that where a palliative trephining has been done, the chance of a later more exact localization of the growth is increased; rather the condition becomes more complicated. In intracranial growths the danger of sudden death is always to be borne in mind after the diagnosis has once been made, and by relief of pressure upon the bulbar centres palliative craniotomy should materially reduce the danger of this occurrence. In an old-standing syphilitic growth there is the same danger; a patient under my care recovered, with the exception of damage to sight, from a large gumma in the frontal lobe, but died quite suddenly in the street four years later. The presence of the growth was proved *post mortem*. One of the serious points in considering operation for intracranial tumour is as to how far an operation in a particular case is likely to be successful in the only true sense, that is, to restore the patient to an active and useful life. Tumours of the motor cortex, though the first ones to be localized, and giving the best features for operation—that is, accurate localization

[1] *Ann. Surg.*, 1904, xl, 293.

and accessibility—are from the point of view of the result disappointing, in that if the cerebral cortex is actually involved a more or less degree of paralysis is apt to be left, the extent of which it is impossible to gauge before the operation. Further, if anything should go wrong at the operation, the amount of paralysis will be increased. So in tumours of the speech centres, or their neighbourhood, the removal is apt to be followed by a permanent affection of speech, which, if severe, is almost a greater misfortune from the point of view of incapacitating the patient than some paralysis. Operations for growths which entail the removal of large portions of the visual area of the cortex may entail permanent damage to vision. Thus in a case in which in 1900 my colleague, Dr. Lansdowne, removed a very large tumour of the left parieto-occipital lobe, the tumour weighed 6¼ oz., and the patient, besides suffering intense headaches and almost complete blindness, was practically demented from pronounced mental symptoms. He made a complete recovery, with the exception that there remained right hemianopsia and loss of vision over part of lower quadrants on left side, but he is able to get about and to work. I think, although considerable advance has in late years been made in this direction, that there is still urgent need for greater accuracy in the distinction between growths lying on the surface and those on the substance of the brain itself, and in the distinction between simple cysts and other tumours. With regard to the operation itself, I have only to say that there is an obvious advantage in removing as large a bone flap as possible, and in the use of a sphygmomanometer to determine variations in blood pressure during the course of the operation.

Mr. R. MARCUS GUNN (London) said: My contribution towards this discussion must mainly consist in giving a short account of the results of surgical interference so far as vision is concerned, and in describing the ophthalmic indications for such interference. It may be useful also to consider here how the optic nerve comes to be affected in intracranial tumour, in so far as this affords a reasonable explanation of the effects of operation. That the presence of optic neuritis in brain tumour is compatible with perfect vision was a clinical observation of great importance, for which we are indebted to Dr. Hughlings Jackson. The physician was consequently led to examine the fundus oculi early in all cases of suspected intracranial disease, and not to wait for the occurrence of visual loss. It thus became recognized clinically that optic neuritis may, in exceptional cases, persist for weeks and then subside, leaving no ophthalmoscopically visible trace of its former presence, and without vision ever having been affected. Such cases were at one time undoubtedly rare, but have become much less so since the introduction of surgical measures aimed at removal of intracranial new growths or at reduction of intracranial tension. Although these cases are conveniently classed under the general term "optic neuritis" or "papillitis," evidences of a true inflammation are often wanting. The diagnosis rests on the increased redness of the papilla, blurring of the optic disc-edges, swelling of the papilla, with filling in of the physiological pit, and distension of the vena centralis retinae. I hold that these early changes are in reality indications of an oedema of the papilla, produced in some way by the presence of an excess of fluid at the termination of the intersheath space surrounding the nerve. It seems at least probable that the excess of fluid in this situation acts at first mechanically, and it is thus intelligible how the changes in the papilla subside when we succeed in relieving and in keeping reduced the intersheath tension. Allow me in a few words to remind you of some anatomical relations bearing upon this question: (1) On leaving the intracranial cavity the optic nerve carries with it, and is in its further course enveloped by, sheaths which are a direct prolongation of the meninges, and the spaces between these sheaths are continuous with the spaces between the meninges of the brain. The wider and more important of these intravaginal spaces surrounding the nerve is the subarachnoid, because the subarachnoid space around the brain, with which it is in direct continuity, contains a relatively large amount of cerebro-spinal fluid, and is again in direct communication with the cerebral ventricular system through the foramina of Magendie and of Key and Retzius. (2) The intersheath space of the optic nerve ends abruptly anteriorly where the nerve pierces the sclerotic to gain the interior of the eyeball. Commonly this termination of the intersheath space is somewhat pointed, with the apex directed towards the pial sheath all around the optic nerve entrance. This is particularly the typical ending in hypermetropic eyes, while in myopia the intersheath space is continued for some distance in the substance of the sclera away from the nerve trunk. Whether in causal relationship or not, these peculiarities are of interest in as far as tumour-papillitis is most commonly associated with hypermetropia, even in countries where this form of eyeball is not so common as in England, and papillitis is relatively rare in myopia both here and abroad. It would appear as if in myopia an increased pressure within the sheath-space were less likely to press directly upon the nerve, and more likely to be relieved by filtration or absorption of the contained excess of fluid. (3) Distension of the intersheath-ending exerts pressure directly on the pial sheath surrounding the optic nerve entrance. In this pial sheath travel veins that serve in large measure to return the blood which has circulated in the papilla. Partial obstruction of the pial and other neighbouring veins so produced will cause hyperaemia and secondary oedema of the papilla. The axis cylinders here are comparatively loosely arranged, and consequently do not suffer readily in their conductive power from an amount of oedema that, in the nerve trunk, would cause visual failure. Supposing, then, that from any cause the amount of cerebro-spinal fluid within the cranial cavity is in excess, there will be an increase in the intracranial tension; this tends to relieve itself by forcing the fluid so far as may be outside the cranium, along the sheath spaces around the optic nerves, and around the spinal cord, the relative amount displaced in each direction probably varying in different cases from purely anatomical or pathologico-anatomical peculiarities. The degree of relief obtainable by such displacement being limited, a further rise of intracranial tension must cause much greater pressure within these sheath-spaces. No relief can be obtained except by permitting of the free escape of this fluid, or by preventing its secretion in excess, or by removing whatever foreign substance is responsible for the rise of tension. In the event of no relief being procured, the degree of pressure becomes sufficient to cause, intracranially, intense headache and vomiting, sometimes paresis of sixth nerves and anosmia; extracranially, degeneration of the posterior nerve roots and papillitis. What, for convenience, I have termed tumour-papillitis may be clinically divided into stages, according to the appearances found.

Stage 1.—The earliest ophthalmoscopic signs of papillitis are increased redness of disc, loss of definition in its edges, slight prominence of its surface, and narrowing of the physiological pit.

Stage 2.—At a rate which varies much in different cases, and which seems to bear a decided relation to the degree of intracranial tension (as evidenced by headache and sickness), the swelling of the papilla increases, the physiological pit disappears, and the disc-edges become quite obscured; along with these signs there is now slight haze of the surrounding retina, and the retinal veins show evidence of retarded circulation.

Stage 3.—In an advancing case, the next alteration consists in further swelling of the papilla, so that it becomes both more prominent and occupies a larger fundus area, and in the venous distension becoming very marked; fine folds not infrequently appear in the oedematous retina, particularly between the disc and macula, and there may be retinal haemorrhages.

Stage 4.—The papilla becomes more opaque and sometimes more prominent, the haemorrhages increase in size and number, and there are inflammatory exudations on the disc and surrounding retina. At this stage vision has become impaired.

Stage 5.—The next change consists in a gradually decreasing vascularity of the papilla, parts of its surface becoming even paler than normal, while the prominence either persists or slowly subsides. At this time, also, we first note a change in the branches of the central artery, in the form of diminished breadth.

Should intracranial tension be relieved in Stages 1, 2, or 3, the prognosis as to vision is decidedly favourable. In Stage 4 the prognosis is bad, though I have known

useful vision obtained after operation even in this condition. In Stage 5 there is, I believe, no reason, so far as sight is concerned, in performing any operation, as the outlook is distinctly bad. A few points concerning the conservation of vision by cranial operation may be remarked upon. (1) The degree of swelling of the papilla in itself is no accurate indication of the visual prognosis. The result may be disappointing where the prominence has been comparatively slight, and may be excellent even in cases of great swelling. *All* the ophthalmoscopic appearances must be considered in every case before forming an opinion. (2) The presence of retinal haemorrhages is no contraindication to surgical interference. (3) While the retention of normal vision before operation is naturally more favourable, this alone is no safe guide. Vision previously normal has in some cases been lost after operation, and a preceding visual failure may be followed by retention of what remains, or even by a decided improvement. (4) In favourable cases the subsidence of disc-swelling is first evident some days after opening the dura. The date of its first occurrence, and the rapidity with which it proceeds, vary considerably, and are earlier and more rapid in cases where the operation has been performed not later than Stage 3. (5) I do not think that the effect on the papillitis is earlier or better when the tumour is removed than it is when the dura is merely freely opened. At the same time, it must be noted that in some cases where the tumour was either not found, or imperfectly removed, the relief of the papillitis so effected proved to be merely temporary. (6) Visual improvement after operation, although long delayed, may ultimately be very satisfactory. Thus, in one case there was only very slight improvement at the end of the second month, yet two months later—that is, four months after the operation—the result was most satisfactory, one eye having regained $\frac{6}{5}$ from $\frac{6}{18}$; and the other $\frac{6}{6}$ partly, from mere hand reflex. In such delayed recovery of vision, the subsidence of the disc swelling is also equally delayed. (7) Some of the most striking visual results have been obtained after operation in cases of cerebellar tumour.[1] As to the localizing value of optic neuritis, unilateral and bilateral, in cases of intracranial tumour, I have elsewhere expressed my opinion.[2] The only remark I would make now is to emphasize the proneness to and the severity of optic neuritis in connexion with cerebellar tumours, and to suggest that a possible explanation of this lies in the position of the growth tending to block the escape of cerebro-spinal fluid along the spinal meninges, and thus to favour a larger amount being displaced along the optic nerve sheaths. In any case of one-sided papillitis, we must bear in mind the possibility of its being a retro-ocular neuritis with involvement of the papilla; these latter cases are not very uncommon, have no relation to intracranial disease, and are easily recognized by a defective pupillary reaction and by the presence of a central scotoma. Rarely, in hypermetropia, we find a condition of papilla closely simulating the appearances found in connexion with brain tumour. Should this condition be accompanied by severe headache or sickness, the possibility of error is much increased. The chief points in the differential diagnosis between pseudo-papillitis and tumour-papillitis lie in the condition of the physiological pit and of the vena centralis retinae; in the former condition the floor of the pit is still clear, while the central vein shows no engorgement, even when there is much blurring and prominence of the papilla. Regarding the relief of tumour papillitis by the operation of lumbar puncture I have no personal experience. My impression is that the puncture would not afford so thorough a relief as the cranial operation, and would need to be frequently repeated, in most cases if not in all, so as to keep the intersheath tension adequately reduced. Opening the optic nerve sheath immediately behind the globe has been tried, but does not recommend itself for many reasons. The operation when thorough is a difficult one, and is not unaccompanied by grave risks of sepsis; it must, to have the same amount of local influence as the cranial operation, be performed on both optic nerves; and finally, any opening so made is liable to soon close up, entailing the probable necessity of repeated double operations, each with renewed difficulties and septic exposure. In short, in favourable cases of tumour-papillitis I regard the cranial operation as not only justifiable, but as likely to continue to prove the safest and most thorough surgical means of influencing the optic nerve changes, and thereby preserving sight.

Dr. Newton Pitt (London) referred to two cases in which a diagnosis of cerebral tumour had been made on account of the presence of optic neuritis, headache, and vomiting with vertigo, and in one of the cases with mental disturbance and coma, occurring in young women. These patients had ultimately apparently recovered, and were well a year later. Other possible toxic causes of these symptoms had been excluded. He next referred to the cases of chronic hydrocephalus following months or years after concussion, of which he had seen two, which had been trephined under the impression they were cases of cerebral tumour. Was there any *post-mortem* evidence that when a gummatous tumour had formed in the brain any treatment by mercury or iodides was capable of leading to its complete absorption? It was always assumed, from the efficiency of these drugs on gummata elsewhere, that such masses in the brain can be absorbed, but he had not met with a single case in the *post-mortem* room where the gummatous mass had not persisted. He brought forward the case of a patient with a tumour in the angular region, for which exploration had been performed and a large area of bone removed, but the tumour was not discovered. Great relief was afforded to the symptoms and the patient's sight was saved by drawing off some cerebro-spinal fluid every few months, while the patient's life was also prolonged for four and a half years. Such treatment, when a tumour could not be removed, might in some cases be of great value.

Mr. Donald Armour (London) said: The first point that I think should be impressed upon the profession is that the surgery of brain tumours is now established upon an exact scientific basis. The indications for and against operation are usually clearly defined, and we recognize now more definitely the proper method of dealing with the various conditions found. Moreover, the elaboration of the details of technique, together with the methods of preventing shock and sepsis, have been so far developed that operations on the brain can be performed with very much less risk to the patient's life, while the chances of improvement, or even complete recovery, are very much increased. A good deal of confusion and misunderstanding have arisen owing to the different meanings which have been applied to the word "operable," and hence one finds widely divergent opinions expressed as to the operability of cerebral tumours. For example, Walton and Paul, from statistics of the clinical and *post-mortem* records of 421 cases of cerebral tumour, class 7 per cent. as "operable," 80 per cent. as "inoperable," and 13 per cent. as "doubtful." Under "operable" tumours they include only those which are primarily accessible and well defined, removal of which can be carried out without cutting the brain tissue. The majority of these are endotheliomata growing from some part of the dura By "inoperable" tumours they mean those involving deeper structures of the brain, widely infiltrating gliomata, and cases of multiple growths and metastases. Under "doubtful" cases they include gliomata and non-encapsulated sarcomata, growing in accessible regions, and subtentorial tumours and cysts which can simply be evacuated. It will be seen from a consideration of their statistics that they use the term "operable" as synonymous with "curable." Moreover, such statistics are really of little surgical value, inasmuch as they are based upon cases where death had been caused by the size of the tumour. If statistics, always of doubtful value, are to be worth anything from a surgical point of view, they must be derived from the records of the operating theatre, or from the *post-mortem* records of those cases in which the surgeon has had an opportunity of operating fairly early in the course of the disease. The surgery of the brain differs in no wise from that of other parts of the body, in that the earlier the disease is recognized and localized the more favourable will be the prognosis of performing a radical operation. Seeing that the disease is almost invariably fatal without operation, I should describe as "operable" any case of brain tumour in which the growth can be wholly or partially removed with subsequent benefit to the patient. One should be quite clear in one's mind as to what any particular operation may be expected to accomplish.

[1] I have to thank my colleague, Mr. L. Paton, and our resident medical officer at the National Hospital, Dr. Wilson, for notes of numerous cases which have served to illustrate many of the facts here stated.

[2] *Brain* 1898, p 332

From this point of view cases may be divided into three classes: (1) Those in which the tumour is completely removed and the patient cured; (2) those in which it can be removed in part with marked, though temporary, benefit to the patient; (3) those in which the tumour cannot be removed at all, but the patient is relieved of the painful symptoms of the disease by the operation. While the accessibility or inaccessibility of a brain tumour is the main factor in the success of the operation, the nature of the growth must also be considered, inasmuch as localized and encapsuled tumours are obviously easier of removal than vascular and infiltrating growths. Apart from the failure of operation from shock or haemorrhage, the want of success in obtaining a radical cure is usually due to the infiltrating nature of the tumour precluding the possibility of its entire removal. An important point, therefore, which one ought to try to decide is whether those intracranial tumours which, by reason of their infiltrating nature, cannot be entirely removed, should be interfered with or not. There are two points which have an important bearing on this question—namely, whether the partial removal of a tumour may retard the growth of the rest, and how much benefit the patient is likely to derive from such partial removal. Obviously, in order that an operation may be radical, not only must the diagnosis of an intracranial tumour be made, but its localization accurately determined. An operation begun as radical may end in being a palliative one, either owing to the tumour being irremovable or the localization being incorrect. Even in cases in which the tumour has been definitely localized it is impossible to say before operation whether the case will be suitable for a radical rather than a palliative operation. The duration of the disease is no guide either to the size or nature of the tumour. Notwithstanding this, the operation should always be undertaken with the idea of exposing the tumour. Should the growth not be found, or should it prove to be an inoperable one, the question of a palliative operation at once arises. Palliative operations, however, must not be regarded as a substitute for radical operations. Whenever possible, the tumour should be removed. It should be now well recognized that operations undertaken merely as a palliative measure are of the greatest value in allevlating the distressing symptoms of headache and vomiting, and stopping the optic neuritis, and thus saving sight. The relief of these symptoms is often permanent during the remainder of the life of the patient. There are two classes of cases in which a palliative or decompressive operation may be undertaken: (1) Those in which the tumour cannot be removed, though localized; and (2) those in which the tumour cannot be localized, but in which there is a demand for relief to the patient of the intense headache, distressing vomiting, and the progressive loss of vision. Sänger suggests that the best time for palliative operation in these cases is when the vision commences to fail. If the operation is left till later, some optic atrophy is always left. No other palliative operation, such as lumbar puncture or puncture of the lateral ventricles, can be compared in efficacy with trephining. In performing a decompressive operation there are two important points to be kept in view: (1) The opening should be over as "silent" and unimportant an area of the cortex as possible, and (2) means should be taken to prevent an unnecessarily large hernia cerebri. Cushing has obviated the occurrence of the latter by the introduction of his temporal intramuscular method, by which means the muscle and fascia act as a check to the hernia. An important point, and one which must be decided during an operation for the exposure of a tumour, is that of exploration for subcortical growths. Should these cases be regarded as inoperable and an attempt to find the growth be abandoned, or should we proceed to further exploration in the hope of exposing and removing a subcortical growth? The answer to this question depends upon how far, by such subcortical exploration, we may permanently interfere with the functions of any part of the brain, remembering always that if the growth is not removed death will certainly follow.

Professor William Osler (Oxford) considered it a reasonable scepticism on the part of the general profession with reference to the value of operation in cases of cerebral tumour; that was when general surgery and not highly special surgery, by surgeons with exceptional training, was concerned. He remarked on the striking interludes in symptoms sometimes seen in cases of intracranial tumour. He himself was not hopeless of cure of gumma of the brain from treatment by medicines if it was begun early. No doubt, as compared with other organs, the effect on the brain of syphilitic tumour was largely influenced by co-existing arterial changes.

Dr. W. B. Lees (London) said that in several cases of cerebellar tumour compressing the iter, and thus producing distension of the lateral ventricles by accumulation of cerebro spinal fluid secreted by the choroid plexuses, he had seen great temporary relief obtained by tapping the descending horn of the right lateral ventricle by Keen's method. When hydrocephalus existed the operation was usually quite easy. The relief of cerebral pressure was immediate, and the improvement in symptoms often very striking. An exploratory operation for the removal of the tumour might then be undertaken with much better prospect of a successful issue. The localization of a cerebellar tumour was sometimes much aided by a distinct local prominence of the occipital bone, on one side or the other, visible after the head had been shaved.

Dr. Edwin Bramwell (Edinburgh) said: Operation in cases of intracranial tumour may be undertaken with two distinct objects in view. The surgeon may operate in the hope of removing the tumour (the radical operation), or he may operate merely with the idea of relieving pressure (the palliative or decompressive operation). The prejudice undoubtedly entertained by some medical men against surgical interference in cases of intracranial tumour is to some extent accounted for by the insufficiently clear distinction which is drawn between these two procedures. When it is remembered that the risk attending the decompressive operation is *comparatively* slight, that the most intense headache is often relieved thereby, that optic neuritis tends to subside after the operation, and that sight may be preserved if the neuritis is not already too advanced, the indication for a palliative operation, in cases which present pronounced general symptoms yet insufficient data to locate the growth with certainty, is obvious. The patient's life is often thus prolonged in comparative comfort, while the risk of sudden death—a common accident in these cases of great intracranial pressure—is minimized. It is, in the opinion of the writer, desirable that a distinct understanding should be arrived at in every case between the physician and surgeon prior to operation as to the procedure to be adopted should there be no local indications pointing to the immediate proximity of a tumour when the surface of the brain is exposed. When the facts of the case indicate that the tumour is almost certainly of tuberculous origin, the writer would hesitate to advise operation unless there was reason to believe that the tumour was actively progressing. In the case of tumours of the cerebellar pontine angle, it is to be remembered that a bilateral growth is not infrequent.

Reply.

Dr. Risien Russell, in reply, said that he was very glad that Sir William Macewen had found time to take part in the discussion. It was most gratifying to him to hear that so great an authority on cerebral surgery agreed with so much of what he had said in his paper. He had evidently given a wrong impression of the practice in America, which he wished to correct. American surgeons acted in precisely the same way that Sir William had said was the custom in Scotland. If the patient's condition allowed of this the operation was completed at once, and if not it was done in two stages. He was sorry that Professor Osler had not been able to agree with what he had said about gummata in the brain, because he was quite sure that they behaved in a very different way from those in other parts of the body. He was, accordingly, very glad to have the support of Sir William Macewen, whose experience agreed with his that there were chronic gummata of the brain that required removal by operation, as no amount of mercury or iodide of potassium could ever bring about their absorption. He could endorse what Professor Osler had said in regard to the rapid way in which symptoms and physical signs altered in some cases of intracranial tumour; indeed, the girl whose case he had quoted was under his care at the National Hospital before she was operated on by Sir Victor Horsley, so that he was able to confirm all that Professor Osler had said about the extraordinary way in

which her symptoms had disappeared by the time she was admitted to the hospital. What Professor Osler had said as to the need for men with special training to deal with cases of intracranial tumour was the only reply he could give Dr. Newton Pitt as to why there should be greater success with those cases at Queen Square than at general hospitals. The surgeons had had the special training needed to enable them to deal with the brain in a way that could not be expected from a general surgeon, no matter how great his skill in operating on other parts of the body. He had had no experience of draining the lateral ventricles for the relief of pressure in cases of intracranial tumour, but he saw no likelihood that this procedure could lead to better results than those obtained by trephining and opening the dura mater freely. He was much indebted to Dr. Michell Clarke for giving fuller details of the cases that had been spoken of as "pseudo-tumour," as time had not allowed of his doing so in opening the discussion. He was glad to find that he was in agreement with him as to the way in which syphilitic cases should be dealt with. Mr. Marcus Gunn's contribution to the discussion had been, as he had anticipated, of the greatest possible value. What he had said in regard to the influence of hypermetropia and myopia on optic neuritis was especially interesting, but the most important information he had supplied related to the rules which would enable them to decide when an operation could be recommended in the hope of saving sight, and when it was useless to hope for any such favourable result. He had not referred to the operation of opening the sheath of the optic nerve, as he supposed the operation to be useless and obsolete. Dr. Edwin Bramwell had referred to a point of great importance, for there could be no doubt that a full understanding of what was to be done under different circumstances ought always to be arrived at between the physician and surgeon before an operation was undertaken. In spite of adverse criticism, he felt that it was right to recommend a patient to accept hemiplegia as a result of the operation, although he was not prepared to advise any one to accept aphasia. Mr. Donald Armour's remarks were so entirely in accord with his own views that no further comment was necessary, except that he would like to emphasize what Mr. Armour had said as to the importance of selecting a "silent region" of the brain over which to trephine when the only object of the operation was the relief of intracranial pressure. He felt quite sure that the President (Dr. Gordon) would have no reason to regret his decision to have the skull trephined in the occipital region in any future case in which decompression was desired, and in which the indications suggested a subtentorial tumour. The experience was that pressure was best relieved in these cases by trephining in the subtentorial region of the occiput.

SOME OBSERVATIONS ON THE RECENT OUTBREAK OF CEREBRO-SPINAL FEVER IN BELFAST.

By A. Gardner Robb, M.B., D.P.H.,

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Belfast has recently suffered from a sharp outbreak of epidemic cerebro-spinal fever, and I wish to bring before you to day a short account of the main points observed in the cases admitted to hospital up to the end of last May—that is, in the first four months of the epidemic. These have now been observed to their termination.

The cases number 230—namely, 200 admitted to the City Fever Hospital, Purdysburn, and 30 admitted during the same period to the Belfast Union Fever Hospital. The outbreak began with the admission in the last three days of December last of five members of the same family all suffering from cerebro-spinal fever. All 5 had taken ill within forty-eight hours; 2 of these quickly ended fatally, 3 recovered. The clinical symptoms in these cases were so marked as to leave no room for doubt as to diagnosis, but this was confirmed by lumbar puncture and the obtaining of the meningococcus in 3 of the cases, and by *post mortem* examinations in the 2 fatal cases. No cause for the outbreak in this family could be found, and no further cases were admitted until January 24th, nearly four weeks later, when another family living in a distant part of the city were attacked with great suddenness; 5 members of this family were taken ill within ten hours; 4 of the 5 were dead within thirty hours of the first onset, 2 dying before admission to hospital, and 2 a few hours after admission. The fifth had a mild attack and completely recovered. The diagnosis was confirmed in these cases by lumbar puncture and by *post-mortem* examinations. Cases then occurred in quick succession all over the city, in widely separated districts, having no apparent connexion with each other.

It has been usual to classify cases of this disease into four varieties: (1) Acute fulminant; (2) ordinary; (3) chronic; and (4) abortive. If we add to these a fifth or "mild" class, our cases would readily fall into this classification. Of each of the first three varieties we have observed many examples. The abortive type has with us been rare but occasionally found; the mild a very rare but important type. The following cases may be taken as typical examples of *average* severity of the various classes:

1. *Acute Fulminant.*—A man of 20 years, who had always enjoyed robust health, went to bed well at 11 o'clock; at 1 a.m. he awoke with severe pain in the head, vomited repeatedly, two hours later became delirious and unmanageable, and was only kept in bed by restraint and morphine hypodermically. He was admitted to hospital when twenty four hours ill, then semi-comatose and cyanosed, with a few scattered purpuric spots, marked rigidity of the neck and spine, and well-marked Kernig's sign; pulse full 76, temperature 102°; the coma gradually deepened, the temperature rose to 106°, and he died after forty-four hours' illness.

2. *Ordinary.*—A girl of 16 years was admitted when thirty-six hours ill; the onset had been absolutely sudden, with headache, vomiting, delirium in six hours; she had complained of stiff neck. On admission she was semi-conscious and very irritable, temperature 103°, pulse 120. There was marked and painful rigidity of the neck and spine, and Kernig's sign was present; no eruption. The lymphatic glands in the neck and groins were hard and shotty. The following day (the third of her illness) temperature fell to normal, pulse to 112; headache was not complained of, and delirium had passed off; rigidity was much the same On the fourth day herpes appeared in large patches on the lips and nostrils, and that evening temperature again rose to 101° and remained at that level until the seventh day, when it again fell to normal. Squint appeared on the fifth day, and remained for two weeks. From the seventh day to the sixteenth she had occasional returns of headache and rise of temperature for a few hours. Rigidity remained until the end of the third week. She made a complete recovery, and was discharged at the end of the seventh week.

3. *Chronic.*—A child of 8 years was admitted on the fourth day of illness. The symptoms for the first week were practically the same as in the "ordinary" case just described. From the end of the first week she had daily rises of temperature, with almost constant headache and recurrent attacks of vomiting. Emaciation was very rapid; from the third week on the temperature was periodic, remaining elevated for three or four days at a time, then normal or subnormal for three or four days; rigidity of neck and retraction of the head remained. Lumbar puncture at first seemed to give some relief to symptoms, but the vomiting persisted. Emaciation became very marked; she was reduced to a mere skeleton and she died on the eightieth day.

4. *Abortive.*—A healthy boy of 14 took suddenly ill with violent headache and vomiting, was wildly delirious in two hours; he was admitted to hospital four hours after onset, then semi-comatose, cyanosed, with marked rigidity and Kernig's sign; temperature 101.8°, pulse 60, no eruption. He remained in this condition, with falling temperature and rising pulse-rate, for twenty hours, when he regained consciousness. Temperature was normal thirty-six hours from onset. His mind was then clear; rigidity of the neck and Kernig's sign remained for three or four days, knee-jerks were then absent; he had no further symptoms and made a good recovery.

5. *Mild.*—This variety appears to be very rare—we have had only 2 cases—but is very important, as, owing to the very mild symptoms, such attacks might be easily overlooked. A boy aged 11, one of a family of 5 who were attacked, and of whom 2 quickly died, complained only

of headache and slight vomiting lasting only two hours; he was admitted to hospital with other members of his family the following day, and then reported himself quite well. He showed only slight rigidity of the neck and general enlargement of the lymphatic glands; his temperature was 99°. Later he showed loss of knee-jerk. On the fourth day he had a rise of temperature to 100°, with slight headache, which quickly passed off, and he had no further symptoms. The whole attack was so slight that but for the illness of the other members of his family it might have been entirely overlooked.

Whatever type the disease assumed the onset has been the same, with practically no variations; commencing with absolute suddenness with intense headache, followed quickly by vomiting, stiffness in the neck, back, and legs. Kernig's sign has been found in all the cases except in (1) some comatose and dying on admission, (2) the very mild cases, and (3) some admitted very late in the disease. Headache at the onset has been constantly reported, generally intense; initial vomiting has been reported in over 95 per cent. of the cases; convulsions at the onset very rarely. Delirium was common, varying in severity from slight muttering to the violent maniacal type closely resembling that of severe delirium tremens; many of the patients were only kept in bed by mechanical restraint and morphine; chloroform had occasionally to be administered. When delirium of this violent type was present it was usually of short duration, the patient gradually becoming exhausted, passing into coma, and generally dying within the first day or two.

The temperature varied greatly, and is of little value either in diagnosis or prognosis. In a large majority of the severe cases it was found considerably raised early in the attack, 103° or 104° being commonly observed on admission, frequent variations of several degrees being observed in the same case within a few hours. In some of the most rapidly fatal cases it was found to be normal or even subnormal on admission, rising before death to 105° or more—in one of our cases 108° was registered just before death. In other rapidly fatal cases the temperature was high on admission, rapidly falling to subnormal before death. In the ordinary type of attack the temperature was generally raised to 102° or more at the onset, at the end of the second or third day a fall to normal, or nearly so, with general improvement in symptoms was common, the improvement lasting a day or two with secondary rise lasting several days, followed by a second fall. In some cases of the chronic type the temperature showed marked daily variations for, in some cases, seven weeks. The pulse-rate also varied greatly. In the most quickly fatal cases it was often found to be slow, full, and "delayed"; a temperature of 103°, with a pulse of 60 or even less, was frequently observed. A rapid, small pulse, corresponding with the temperature, was more common, and is a more favourable sign. I show charts of the various types. The more severe cases almost invariably show marked cyanosis, with frequently a bluish mottling of the skin early in the attack.

Rashes.—Purpuric eruption was observed in less than 20 per cent. of our cases, and almost exclusively in the acute fulminant variety, so that in the large majority of our cases purpuric eruption, giving rise to the term "spotted fever," has been absent. Erythema and urticarial eruptions have been fairly common. Herpes has been observed in 39 per cent., very rarely seen before the third day; in the large majority it first appeared on the fourth, so that many of the cases did not survive long enough to show this sign; it was present in 50 per cent. of those who survived the fourth day. It has been so frequently present and is so constant in the time of its appearance that it is a sign of considerable diagnostic value. The herpes varied in extent from small patches on the lips or nostrils to larger patches sometimes covering the whole side of the face, ear, and neck, occasionally also seen on the chest, arms, and hands, generally unilateral.

Slight general enlargement of the lymphatic glands has been almost constantly present, the posterior cervical chains, the glands in the axillae and groins being found hard and shotty. *Post mortem* the mesenteric glands have always been found enlarged.

Rigidity of the neck, lasting in those cases which recovered well into convalescence, has been constant in all but a very few cases admitted completely comatose and dying. More or less arching of the neck and spine has been common in the younger children, in some gradually increasing till the occiput almost touched the buttocks (in one of our cases the head reached within 1½ in. of the buttocks). In patients over 5 years of age any marked arching of the spine has been but rarely observed.

Kernig's sign has been almost constantly observed; with the exceptions mentioned, it has continued well into the convalescence except in very young subjects. In those showing arching of the spine it passes off more quickly.

Vomiting, practically constant at the onset, generally passes off quickly. In the chronic type recurrent attacks of vomiting with recurrent and very troublesome headaches was the rule.

Eye Symptoms.—Squint has been most frequently observed, being present in 28 per cent. of our cases, generally appearing towards the end of the first week. The rotation has been invariably internal. Purulent discharge from the conjunctival sac has been found in a few cases in young subjects. Steaminess of the cornea, ulcer of the cornea, and iritis have been occasionally present, pus in the anterior chamber more rarely. One case of loss of vision in one eye and one case with partial loss of vision in both eyes due to optic atrophy have occurred in the patients who recovered.

Facial paralysis was observed in 11 cases, hemiplegia in 4, paraplegia in 1, aphasia in 3; no permanent paralysis remained in those who recovered. Endocardial murmurs have been frequently present, and pericardial friction was found in 17 cases. Gangrene of the feet and hands occurred at the eleventh week in one case aged 2 years. Synovitis was only observed in two cases.

Purulent discharge from one or both ears has been observed in a few cases only. Complete loss of hearing occurred in 14, 9 of whom died. Five of the 68 cases who recovered were completely deaf at the time of their discharge from hospital, in 3 of these some improvement has since taken place. In the large majority of cases knee-jerks have been absent from quite early, and in many of those discharged there was little or no improvement in this at the time of their leaving hospital. In a few cases only was early exaggeration of knee jerks observed.

Of the 230 cases 162 ended fatally, giving a case mortality of 70.43 per cent. The death-rate was highest in infants under 1 year, being in them 85.7 per cent. A gradual improvement in the rate was found up to 20 years, between ten and twenty years the mortality was 61.9 per cent.; in those over 20 the rate again increased, and in the cases over 30 years was 76.0 per cent.

Mortality Table.

Age.	Cases.	Died.	Mortality per Cent.
Under 1 year	14	12	85.7
1 to 5 years	45	35	77.7
5 to 10 years	60	42	70.0
10 to 20 years	63	39	61.9
20 to 30 years	23	15	65.2
Over 30 years	25	19	76.0
All ages	230	162	70.43

The duration of illness in the fatal cases varied greatly—from 9 hours to 120 days. In 9 cases admitted to hospital death took place within 24 hours of the onset, but many cases occurred in the city in which death took place too quickly to allow of removal to hospital. The duration in 32 per cent. was less than 4 days; in 54 per cent. less than 7 days; and in 73 per cent. less than 14 days.

Duration of Illness in Fatal Cases.

	Cases.
Less than 24 hours (shortest, 9 hours)	9
Between 2 and 4 days	43
,, 4 ,, 7 ,, ...	38
,, 7 ,, 14 ,, ...	29
,, 14 ,, 21 ,, ...	7
Between 3 and 6 weeks	13
,, 6 ,, 9 ,, ...	7
Over 9 weeks (longest duration, 4 months) ...	16
Total	162

Treatment.—With a mortality of 70 per cent. it will readily be understood that attempts at treatment have been very unsatisfactory. Three varieties of anti-meningococcus serum were employed without, I believe, any influence whatever on the course of the disease. The varieties used were Kolle and Wassermann's, Ruppel's, and that supplied by Burroughs and Wellcome. These serums were frequently pushed beyond the doses and frequency recommended. In all 79 cases were treated with serum, with a death-rate of 74 per cent.

Most of the drugs recommended were tried without any satisfactory results. Some relief of symptoms for longer or shorter periods was given by morphine and opium. In many cases the recurring headaches were relieved by phenacetin, which in our experience was much the most satisfactory of this class of agents. No good results appeared to follow the use of mercury, iodides, bromides, quinine, or the salicylates. Frequent hot baths gave great relief, causing relaxation of the rigidity, and frequently inducing sleep. They were well borne and often asked for by the patients. Ice to the head and spine was found useful. Blisters gave no relief. Occasionally marked improvement followed lumbar puncture, especially if a considerable quantity of fluid was allowed to flow off, 2 to 3 oz. or more being frequently removed. (Unless the patient was unconscious I have always given chloroform and used a large trocar without suction.) But this relief was only occasional; in many other cases no relief was afforded by lumbar puncture, even when frequently repeated. Notwithstanding that, the results sometimes obtained convince me that this treatment should always be tried in cases not doing well. Professor Osler has stated that in the presence of an epidemic the diagnosis from clinical examination in these cases is rarely in doubt, and that has been our experience. In every case in which there was any doubt the diagnosis was confirmed by the obtaining of the meningococcus from the cerebro-spinal fluid, or by the opsonic index and agglutination methods, or both.

Drs. Houston and Rankin are reporting to another Section of this meeting the results they have obtained in a large number of determinations of the opsonic index in these cases to the meningococcus, and of the agglutinating power of the blood serum. I can fully confirm the opinion they have formed of the great diagnostic value of this method. After the sixth day of the disease this method affords a more reliable confirmatory test than lumbar puncture.

In 14 instances more than one case has been admitted from the same house; in the large majority of these instances those attacked took ill at the same time. In the two instances mentioned five members of the same family were attacked at once. Several times two or three of a family were simultaneously attacked. In most of the cases where a second patient was admitted from the same house after an interval of time, that interval was such as to preclude the possibility of direct infection. For example, in one reformatory two boys took ill on the same day, a third case being admitted five weeks later.

In the Union Fever Hospital it is the practice when a breast-fed child is admitted to admit also its healthy mother if she so wishes. We have had three such cases; the mothers nursed these cases, one for seven weeks, when the child died; another for six weeks, when her child died; the third for ten weeks—this child recovered. (The meningococcus was found in all three of these cases.) The mothers all remained healthy. Again, two mothers were admitted with severe attacks, each on the second day of illness; both had children on the breast until the time of admission, and the children remained healthy. No member of the staff at either fever hospital has contracted the disease, and no relative of any of our nurses employed in the nursing of these cases has been attacked.

After consideration of all the available facts, I am of opinion that our cases do not afford any evidence of direct infection from contact.

DISCUSSION.

Dr. F. J. Poynton (London) remarked that during the last winter there had been marked increase, in his experience, in the cases of posterior basic meningitis in London. If, then, the view be a correct one that the post-basic meningitis and the epidemic form are in reality the same, this increase must be looked upon with feelings of apprehension. He alluded to interesting cases in which multiple arthritis was a prominent feature, and had seen some cases in which Ruppet's serum had appeared to produce rapid benefit, but mentioned them with great caution in view of the curious natural recoveries that have been recorded, and the few cases he had to record.

Dr. H. L. McKisack (Belfast) referred to the difficulty in distinguishing many of the cases of the epidemic form from those of posterior basic meningitis. While it has been taught by many authorities that the micro-organism producing these two conditions is identical, there seems to be no doubt, in the light of recent research, that they can be demonstrated to be different organisms. Some striking results have been obtained by Drs. Houston and Rankin in the course of their investigations on the opsonic and agglutinative power of the blood serum of cases of cerebro-spinal meningitis, and further research on these lines may lead to important results.

TUBERCULIN TREATMENT OF TUBERCULOSIS IN CHILDREN.

By Clive Riviere, M.D., M.R.C.P.,
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The modern tuberculin treatment, based on the researches of Sir A. E. Wright, has already become so familiar a subject to most of us that I need not apologize for passing on with but little pause to the particular aspect of it on which I propose to address you—namely, its application to tuberculosis in children. I may remind you before proceeding to special points, that for purposes of tuberculin administration it has been found convenient to group cases of tuberculosis under two headings:

1. Strictly localized tuberculosis.
2. Tuberculosis not strictly localized, that is, accompanied by symptoms of general disturbance, such as fever.

The distinction hinges on the relation of the tuberculous lesion to the general blood stream, and hence is closely dependent on both the anatomical position and the extent of the lesion. It forms a convenient division, but it must not be supposed that any hard-and-fast line can be drawn between the two groups.

It is among the former group, localized tuberculosis, that the most certain successes of tuberculin are achieved, and it is on the child population of the country that the weight of localized tuberculosis falls; the vast field of surgical tuberculosis in children comes under this heading. Thus it happens that tuberculosis in children should be the very home of tuberculin treatment, and it is for this reason and because this branch of the subject has been up till now neglected that I venture to make it the subject of this paper.

Dosage.—The success or non-success of tuberculin treatment resolves itself into a question of dosage. The results obtained by different observers are not comparable, owing to the want, hitherto, of a standard of dosage for children, and the very conflicting results in different hands are largely attributable to this cause. I do not hesitate, myself, to ascribe the bad results obtained by many to over-dosage.

When I began to use tuberculin for children I used quantities which I now consider ample for adults, and in many cases the effects of over-dosage were apparent. Similarly disappointing results have been obtained by others with similar or larger doses, and tuberculin has been blamed where the fault really lay in its administration. As the result of personal experience, I now consider $\frac{1}{12000}$ to $\frac{1}{8000}$ mg. suitable for a child of 1 year, $\frac{1}{4000}$ mg. for a child of 5 years, and $\frac{1}{3000}$ mg. for children of 10 or 12 years. These doses suit average cases, but the effect on the opsonic index should be watched, and, a convenient dose being fixed, this is best given every two weeks during the progress of the case. I consider it important, even with a knowledge of average dosage, that the opsonic index should be watched during tuberculin administration in children. This offers no bar to treatment, since the blood can be sent any distance through the post for examination, and the report or a suitable dose of tuberculin received in return. On the other hand, in cases where, on account of poverty or other causes, the opsonic index cannot be used as a guide to treatment,

I would still urge the use of tuberculin in average doses, the weight and progress being used as guides. This is better, I am sure, than withdrawing it in suitable cases.

With respect to the opsonic index, I would remark that in the hands of an experienced observer considerable accuracy may be obtained, but it is desirable that 150 to 200 bacilli be counted in each slide. Thus, if the phagocytic index (that is, the number of bacilli per leucocyte) is 2 or more (a desirable average), 100 or less leucocytes will be counted; if the phagocytic index is below 2, 100 or more leucocytes will need to be counted.

I will now describe shortly the results of my own experience of tuberculin treatment in children:

1. For *localized tuberculosis* I have found tuberculin, in suitable doses, an almost certain remedy. The improvement in cases of tuberculosis of all varieties is threefold—first, there is a change in the general health, the appetite increases, and a gain in weight, colour, and general fitness ensues. Secondly, there is a marked mental change, exhibited in a more cheerful and confidential demeanour and a renewed interest in toys; this was first pointed out, I think, by Dr. Henry M. W. Gray of Aberdeen. Thirdly, there is a tendency to local healing. Often the local lesion improves, even to healing, after the first injection; but there is generally a relapse, and several inoculations are necessary to complete the cure. Among cases of localized tuberculosis I have treated tuberculous dactylitis, superficial abscess, tuberculous glands, and tuberculous joint diseases. Cases of tuberculous dactylitis and abscess proved very suitable; tuberculous glands do well, but need prolonged treatment. My experience with joint cases has been too short and scanty to give convincing results.

2. Cases of *tuberculosis accompanied by symptoms* such as phthisis and tuberculous peritonitis are certainly benefited by tuberculin in most instances. In these cases the general poisoning shows itself on the one hand by fever and other symptoms, on the other hand by a fluctuating and often high opsonic index, and it would seem probable on theoretical grounds that the introduction of fresh tuberculous elements, as in a tuberculin injection, would only add to the patient's disability. In practice this is not so; under tuberculin the opsonic power is steadied though it rises no higher, and striking improvement in the general and local symptoms often takes place. This contradictory result impresses me with a conviction that there is much underlying the action of tuberculin which we do not yet understand, and that the changes in opsonic power present to us but a partial view of the effects of its injection.

Nearly all my cases of tuberculous peritonitis improved rapidly; one child had been persistently going downhill for many months on ordinary medical treatment and was regarded as a hopeless case. Directly tuberculin was given she became cheerful, and her weight rose from 1 st. 11 lb. on October 26th last to 3 st. 2 lb. on July 12th. She is now practically well and still progresses at the rate of nearly ¾ lb. weekly. As a result of clinical experience I would say that general symptoms and a fluctuating or high opsonic index are in themselves no bar to tuberculin treatment. The condition most unpromising for success of any I know is marked wasting, and of course in cases obviously beyond cure tuberculin must not be expected to achieve the impossible.

3. One of the most remarkable of the effects of tuberculin is that on the secondary infections. Open tuberculous lesions soon become the home of other organisms, mainly staphylococci and streptococci, and it has been shown that the dissemination of tubercle is accelerated by the presence of a mixed infection. In wide lesions, moreover, a condition of sapraemic poisoning is kept up which largely contributes to the downward course of the case.

Dr. C. J. Shaw, by examination of the opsonic index of asylum patients to tubercle and other organisms (staphylococcus, *Bacillus coli*, and *Micrococcus rheumaticus*), discovered that a lowered index to tubercle among them was accompanied by a lowered index to these other organisms also. This seems to indicate a proneness on the part of the tuberculous or pretuberculous to infections by other organisms, and he also found that a large dose of tuberculin depressed the opsonic power not only to tubercle (its specific effect), but also to the other organisms above mentioned. The converse to this, in absence yet of proof, may be taken as probable—namely, that the opsonic power to other organisms rises *pari passu* with its rise to tubercle under suitable doses of tuberculin. If this is so, it will explain the remarkable manner in which the secondary infections clear up under skilled tuberculin treatment. I have attempted to prove the truth or otherwise of this proposition, but have not yet found a quite suitable opportunity. In a boy of 7 years with an open tuberculous hip lesion associated with a secondary streptococcus infection I found that a tuberculin injection ($\frac{1}{4000}$ mg.) raised his tuberculo-opsonic index from 0.7 to 1.5, but his index to streptococcus remained at about its original figure (1.1). This, however, was a first injection, and since the discharge from the sinus was in no way controlled, the result obtained was not unexpected. Under a continuance of tuberculin treatment the local condition will probably improve, and under these circumstances I expect to find that the opsonic index to streptococcus rises with that to tubercle.

In illustration of the effect of tuberculin on the secondary infection I may mention a case of psoas abscess infected with a white staphylococcus which was pursuing a steady downhill course under ordinary methods. Under tuberculin the patient gained weight rapidly, and is now in perfect general health; for a time a deep sinus remained, but this has now nearly closed on tuberculin alone.

In conclusion I would strongly urge that tuberculin given on modern lines be more widely used in the treatment of tuberculosis in children, and would beg you to believe that failure is generally attributable to faulty administration, and not to the uselessness of tuberculin.

DISCUSSION ON THE DIAGNOSIS OF ACUTE PANCREATITIS.

OPENING PAPER.

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[ABSTRACT]

PROFESSOR OSLER said the history of our knowledge of pancreatic disease might be divided into three periods—that time when the pancreas was believed to be of little if any importance, the time when the work of Fitz appeared, and the later times of the discoveries of the influence of pancreatic ferments and the relation of the pancreas to the production of diabetes. He recognized two groups of cases of acute pancreatitis—one group in which there was distinct enlargement of the gland, which might, however, be partly due to haemorrhage into its substance; and another group in which the gland was in a state of suppuration or necrosis. As to the haemorrhage, it was frequently very difficult to say whether it had followed or preceded the inflammation. An important distinctive anatomical point, however, was that in the acute pancreatic haemorrhage cases there was no fat necrosis. There were three main causes of acute pancreatitis: First, a mechanical cause, as a calculus in the common bile duct leading to bacterial infection—a calculus in the pancreatic duct was, however, rare; secondly, a chemical cause, as bile, gastric juice, or duodenal contents; and thirdly, and most important of all, an infective cause—the various pathogenic organisms living in the intestine. It was well known that the pancreatic juice had bactericidal properties, and it was not until stasis had occurred that infection resulted. The frequency of the association of gall stones with acute pancreatitis was very remarkable—it occurred in nearly half the cases; an especially favourite site for the gall stone was the ampulla of Vater. A stone might, however, be present in Vater's ampulla for years without giving rise to suppuration, the patient merely having periodically rigors, slight pyrexia, jaundice, and pain. Still, it was in these cases where there was stasis of the bile that acute pancreatitis was liable to develop. It was probable that bile alone, independent of bacterial invasion, was unable to set up the disease. A very large number of the cases showed gastro-intestinal disturbance, and a large proportion of these were alcoholic; the condition present was probably duodenitis, with blocking of the duct. Among the less common causes of acute pancrea-

titis were mumps and enteric fever. Having regard to diagnosis the cases might be arranged in two groups—the acute and subacute. Acute pancreatitis afforded one of the severest forms of the "acute abdomen," exhibiting a sudden prostrating agony referred to the abdomen, recurring in paroxysms, quickly followed by vomiting, similar to that of an acute intestinal obstruction affecting the upper part of the small intestine, with intense shock, frequently a diffuse lividity, with tenderness sometimes from the onset over the upper part of the abdomen, and sometimes a diffuse swelling might be appreciable; this, however, was often obscured by the rapid distension of the abdomen. It must be said that the diagnosis of acute pancreatitis was often impossible. The very same symptoms might be found in an attack of severe hepatic colic or in acute perforation of the stomach. In the diagnosis the history was of greatest significance, especially one of alcoholism in middle aged men or a record of gall stones, and then the sudden severe symptoms. Death occurred as a rule in three or four days from the onset. In the suppurative cases the symptoms were not at first so acute; the pain was less urgent, but fever was present and a swelling might be found between the ensiform and the umbilicus, or extending to the left and reaching to the flank. The urine and stools were characteristic of pancreatic disease. The stools might contain fragments of necrotic pancreas or the typical excess of fat. In reference to prognosis, taking a large series of cases, 90 per cent. of those not operated on died, and of those operated on more than 50 per cent. recovered. The cases in which gall stones were the cause were particularly fatal.

DISCUSSION.

Dr. Cammidge (London) said: I have recently had occasion to investigate the literature of diseases of the pancreas, and in reading through the recorded cases of acute pancreatitis I was much struck by the small proportion in which a correct diagnosis was made at the bedside prior to operation or *post-mortem* examination. If one excludes the earlier cases on the ground that descriptions of the disease in the textbooks were either imperfect or non existent, there still remain a considerable number to which this cannot be held to apply. Taking 50 recently-reported cases, the authors of which were presumably acquainted with the symptomatology of the condition, I find that 12 were diagnosed as perforating gastric ulcer, 12 as intestinal obstruction, 4 as peritonitis, 2 as appendicitis, 2 as cholecystitis, 1 as strangulated hernia, 1 as angina pectoris, in 12 no diagnosis was made, and only 5 were correctly diagnosed as acute pancreatitis. Such results as these cannot be considered satisfactory, and suggest that reliance upon the clinical history and symptoms alone is more apt to prove misleading than to furnish the basis for a correct opinion. The important part that modern research has shown the pancreas to play in digestion and internal metabolism naturally suggests that an examination of the excretions of the body will be likely to afford evidence of the disturbance of function brought about by inflammation of the gland or its partial destruction in acute pancreatitis. In a communication to the Pathological Section at the Leicester Meeting in 1905 I showed that analysis of the faeces by a method I then described usually revealed an excess of fat in chronic pancreatitis, and that this excess was generally due to unsaponified neutral fat and fatty acids. Unfortunately the constipation that usually accompanies the onset of acute pancreatitis, and is liable to lead to a diagnosis of intestinal obstruction, does not permit of the application of this method, and I have not up to the present had the opportunity of analysing the faeces from a case of acute pancreatitis. But even if it were possible to obtain specimens in the early stages, I am inclined to think that they would not show the excess of fat and disturbed relation between the "neutral fats" and "combined fatty acids" seen in chronic inflammation and malignant disease of the gland, for I have found that in the early stages of catarrhal and interstitial pancreatitis not only is there a subnormal percentage of fat but the combined fatty acids are often present in excess. This, I believe, is to be explained by an initial increased flow of pancreatic juice in the early stages of the inflammation corresponding to the salivation that is sometimes noticed in the early stages of parotitis In those cases, therefore, of acute pancreatitis in which the inflammation precedes the haemorrhage, I think it is probable that fat digestion will be rather increased than diminished, and it will only be when a large proportion of the gland substance has been destroyed by haemorrhage or inflammatory changes that the stools will show the more characteristic changes met with in chronic pancreatitis. I have investigated the urine from 8 cases of acute pancreatitis and 1 of glycosuria caused by that disease. Of the 8 bile was present in 4, a proportion corresponding to Egdhal's percentage of cases in which regurgitation of bile into the duct of Wirsung was probably associated with the onset of the disease. A pathological excess of urobilin, pointing to the presence of cholangitis, was present in 6. Acetone and aceto-acetic acid were found in the urines of 6 cases, often in large amounts, but no trace could be discovered in 3. Five showed a well-marked deposit of small calcium oxalate crystals, such as I have shown to be present in the urine of a considerable proportion of cases of chronic pancreatitis. Woolsey has stated that glycosuria exits in 10 per cent. of all cases of acute pancreatitis, but no dextrose was found in any of my cases examined in the acute stage. The case of chronic glycosuria following acute pancreatitis had 0 95 per cent. of sugar when I examined the urine a year after his recovery from the operation, and he is said to have had 8 75 grains per ounce immediately before the operation [1] As Woolsey states, however, that sugar may be present in the first day or two and disappear later, it is possible that an earlier examination than I was able to make might have demonstrated its presence in some of these cases. No maltose or free pentose could be demonstrated in any of the cases I have examined. In 1904 I described a method of examining the urine in suspected cases of pancreatic disease, and referred to the results obtained in 3 cases of acute pancreatitis. I subsequently investigated specimens of urine from 2 other cases by this method and found that, as in the first 3, they gave a well-marked "A-reaction," consisting of fine crystals that rapidly dissolved in 33 per cent. sulphuric acid, while the "B-reaction" was negative or gave a much less marked deposit than that yielded by the "A" method. This method of analysis had the great disadvantage of being dependent to a large extent upon the experience and skill of the observer, and it also required at least twenty-four hours for its completion. By the improved method which I now employ these objections have to a great extent been overcome, the personal element has been largely eliminated, so that now only a reasonable amount of care and manipulative skill are required, and it is often possible to make a diagnosis in a few hours. It is not necessary for me here to describe the method in detail, as a full account has been given in the British Medical Journal, May 19th, 1906, and the *Transactions of the Royal Medical and Chirurgical Society*, 1906, but I may mention an additional point of some value in making a provisional diagnosis, and that is, that when it is found that the filtrate obtained after treatment of the specimen with basic lead acetate comes through turbid, in spite of careful and repeated filtration, or the filtrate becomes cloudy on standing for a few minutes a positive reaction is exceedingly likely to be obtained. Three cases have been examined by this method and all gave a well-marked reaction within a few hours of the completion of the experiment. The turbidity of the lead acetate filtrate I have just mentioned was observed in each instance.

The first case was under the care of Mr. Mayo Robson. At operation a gall stone was found in the common duct, and there was gangrenous pancreatitis. The patient recovered and an examination of the urine a fortnight after the operation showed that the "pancreatic" reaction in the urine, which had previously been well marked, was then less characteristic, and a month later it had almost disappeared. The second, also under Mr. Mayo Robson, was a woman who for six years had suffered at intervals from spasm and jaundice. She had had influenza six weeks before she was first seen. For two days she had vomited much, and complained of an acute epigastric pain radiating to the left shoulder blade. There was an epigastric tumour, and the stools were said to be pale, although no specimen could be obtained for examination. The urine gave a characteristic "pancreatic" reaction. The patient died the day after the examination was made, but no *post mortem* examination was allowed. Clinically, however, it was a well-marked case of acute pancreatitis.

The third case was in a medical man on whom Mr. Mayo Robson operated. At the operation diffuse fat necrosis

[1] Gifford Nash, *Lancet*, November 1st, 1902.

was found in the abdomen, the pancreas was acutely inflamed, but no gall stones could be found. The urine contained a trace of bile, and a specimen passed the day before the operation gave a well-marked "pancreatic" reaction. Subsequent to the operation the "pancreatic" reaction diminished in intensity and finally disappeared. The patient is now in good health. The fourth case was under the care of Dr. Fison of Salisbury, and a full account of it was given in the *Lancet* of June 4th, 1904. It was a case of acute pancreatitis with fat necrosis, and proved fatal. The results of the urinary examination suggested an acute pancreatitis occurring in a pancreas already damaged by past inflammatory changes. The fifth was under the care of Dr. Tabb of Greenwich. It was a case of well-marked pancreatitis, and the patient died. The urine gave a characteristic "pancreatic" reaction.

The sixth case was under the care of Dr. Gifford Nash of Bedford. The patient had suffered from dyspepsia and occasional epigastric pain for six months before the onset of the acute symptoms. On December 3rd, 1905, she was seized with sudden violent epigastric pain, she vomited, and became collapsed. On December 9th there was an epigastric swelling and a distended gall bladder but no jaundice. On December 15th Mr. Nash operated upon her, and found fat necrosis and a cavity containing bloody fluid, giving the reactions of pancreatic fluid behind the stomach. She died on January 26th. A specimen of urine examined on January 2nd showed many fine crystals dissolving in 33 per cent. sulphuric acid in five to ten seconds by the improved or C reaction. With a specimen obtained a few days later, however, no reaction could at first be obtained, and it was not until the urine had been made acid with hydrochloric acid that it was secured. Two other samples, one of which was taken the day before the patient died, gave a well-marked result, and it is noteworthy that in this instance the reaction did not diminish or disappear after the operation as it did in those which recovered. The seventh case was in a boy of 10 under the care of Dr. Edgecombe of Harrogate. On April 22nd, 1906, he had an attack of mumps. On April 27th there was epigastric pain and vomiting. The next day tenderness and swelling in the pancreatic region were found; the temperature was 102° and the pulse 105. A specimen of urine gave a well-marked "pancreatic" reaction. The patient recovered. This was one of four cases showing evidence of pancreatic trouble in an outbreak of mumps involving thirty-two boys in a school.

The eighth case was under the care of Dr. Lambert, of Lincoln. There was abdominal tenderness, with pain and swelling in the pancreatic region, vomiting, a high temperature, and slight jaundice. The urine gave well-marked "pancreatic" reaction, and the stools were, later, clay-coloured. In the ninth case I had not the opportunity of examining the urine until a year after the onset of the acute symptoms, and the patient was then suffering from glycosuria. The urine gave a "pancreatic" reaction, such as I have found in cases of pancreatic diabetes. The case is reported by Dr. Gifford Nash in the *Lancet* of November 1st, 1902. I should also like to refer to a case reported by Mr. Cassidy in the current volume (xxxiv) of the St. Thomas's Hospital Reports, as it is the only published case of acute pancreatitis, excepting my own, in which the urine has been examined for the "pancreatic" reaction. The patient was a boy of 7 who, three days previous to his admission, had been run over by a furniture van, two wheels passing over the abdomen. He was operated on by Mr. Clutton, who found fat necrosis of the omentum and below and to the left of the stomach. On April 3rd fat was found in the stools. On April 17th the urine gave a positive A-reaction and a negative B-reaction by the old method, thus pointing to there being active pancreatitis. On May 3rd, however, six days before his discharge from the hospital cured, both the A and B reactions were found to be negative.

Dr. NEWTON PITT (London) inquired as to the frequency of recovery without operation of cases of acute pancreatitis, and referred to the only case he had seen recover unoperated on. A man, aged 50, on his voyage from America, had been exposed to very wet, cold weather, and had received a slight blow on the epigastrium. This was followed twenty-four hours later by collapse, severe vomiting, complete constipation, rapid pulse, slight pyrexia, and extreme collapse, with lividity. On examination great distension and tenderness were found above the umbilicus. The condition was so grave that it was thought he was too ill to allow of exploration. The condition was looked upon as one of acute pancreatitis. The man's condition slowly improved, and he ultimately recovered completely. He also referred to an acute case now under his care where the cause appeared to be due to an intestinal infection starting from a foul condition of the mouth and profound anaemia. The onset was typical, although the diagnosis was not clear at first and very acute, and a tender, hard swelling developed in the right hypochondrium, which on exploration was found to be a mass of fat necrosis, with a collection of bile-stained bloody serum. The sac in front of the pancreas was drained, and suppuration had persisted for four months since then. In this case the urine had failed to give the pancreatic reaction.

Dr. F. C. MOORE (Manchester) said: The records of acute pancreatitis and my own experience would appear to show a tendency for this condition to arise in well nourished or obese subjects and in those addicted to alcoholism and in whom there is commonly a history of anomalous attacks of dyspepsia. In the manifestations of what generally proves to be the terminal attack the essential characteristics appear to be the sudden onset of very acute abdominal pain, rapidly becoming paroxysmal, and localizing itself in the epigastrium or occasionally in the appendicular region, associated with local resistance and tenderness, of vomiting which is persistent and profuse, the vomit at first containing food remnants, later consisting of a bile-stained fluid, an acceleration of the pulse-rate to 110 or more, an elevation of temperature to 101° or more, and a condition of very profound collapse with perhaps cyanosis of the extremities. In contrast to perforative peritonitis it would seem that acute pancreatitis is peculiar in the intensely ill aspect of the patient, although Bornhaupt has expressed the opposite opinion. As an occasional and misleading manifestation acute maniacal delirium occurred in two cases which have come within my cognizance, in one of which, reported with Dr. E. S. Reynolds, this along with other symptoms led him to suspect acute atropine poisoning. Bearing on the incidence and prognosis of acute pancreatitis it is of interest to consider the possibility whether the so-called dyspeptic attacks from which these patients suffer may not b manifestations of slight attacks of pancreatic inflammation.

Dr. POYNTON (London) mentioned a case of ulcerative endocarditis in which there was well-marked evidence of infarction and considerable abdominal pain and vomiting. After death, among other lesions, an infarct was found in the pancreas with surrounding pancreatitis. He would like to hear from Professor Osler whether acute pancreatitis was a condition associated with malignant endocarditis, for there appeared to him such essentials present as bacteria circulating in the general blood stream which when localized in an organ such as the pancreas produced toxins. Although somewhat beside the point, he would ask if Professor Osler associated the acute acholia of children with acute pancreatic disease.

Dr. HENRY DAVY (Exeter) mentioned a case simulating appendicitis with a temperature of 103° and tenderness over appendix, followed by partial recovery and relapse with another partial recovery, but with a great complaint of weight in pit of stomach. About two months after the second partial recovery the epigastric region was found occupied by a large cyst, which on operation was found to be connected with the pancreas and to contain 2 or 2½ pints of fluid. This was drained, the wound eventually closed, and the patient now, four or five years after operation, was apparently quite well.

Professor NORTHRUP (New York) said: I wish to emphasize the value of such a discussion as this. Before '49 there was no gold in California. Many years ago, before an old friend of Professor Osler—Reginald v. Fitz (Harvard)—came from Boston to New York, I for one had never heard of pancreatitis as a live question of diagnosis. Once there was no appendicitis, no scurvy in infants; in another form of expression, there was no gold in California. I wish to congratulate and thank the President of this Section for bringing up for discussion the subject of diagnosis of acute pancreatitis.

Dr. TYSON (Folkestone) said: Although many cases of pancreatitis, as the previous speakers have mentioned, are often mistaken for some other diseases, yet there is a condition, namely, embolism of the superior mesenteric artery, which in my opinion most closely resembles an

attack of pancreatitis. The symptoms and signs are in both almost similar, namely, vomiting, abdominal pain, tenderness and swelling, and collapse. Some haemorrhage from the rectum often follows the condition of superior mesenteric embolism, and may be diagnostic.

Professor Nolan (Cairo) confirmed Dr. Tyson's remarks, and mentioned a case of thrombosis of the superior mesenteric artery, traumatic in origin, which simulated pancreatitis, and presented symptoms of intestinal obstruction with slight jaundice. At the necropsy there was found commencing gangrene of 2½ metres of the small intestine, the pancreas being normal.

Reply.

Professor Osler, in reply, said he had met with several instances of angina pectoris in which all the symptoms were abdominal, and he was not therefore surprised from Dr. Cammidge's list that acute pancreatitis had been diagnosed as angina pectoris. The great majority of the cases not operated on probably went on to a fatal termination; the fact was that the patients were often in so low a condition as to discourage operative help. The clinical picture of acute pancreatitis was as a rule much more severe than that of acute perforative peritonitis. It was quite possible that coeliac disease had an association with the pancreas. Blood in the stools differentiated embolism of the superior mesenteric artery from acute pancreatitis.

OPEN-AIR ROOF WARDS ON METROPOLITAN HOSPITALS.

By W. P. Northrup, M.D.New York,

Professor of Pediatrics New York University and Bellevue Hospital Medical College; Attending Physician Presbyterian and Foundling Hospitals; Consulting Physician to the Hospitals of New York Health Department.

The Presbyterian Hospital, New York City, has recently built, so far as I know, the first and only open-air roof ward, and since I know all about this one and nothing of any other, I limit my paper to a discussion of it. I shall speak of:

1. Its construction and appointments.
2. Its function.
3. The general impression of its usefulness after experience.

The children's service in the Presbyterian Hospital had outgrown its accommodations. Furthermore, a daily sojourn in the open had been adopted as a regular therapeutic measure. We were sending cases to the roof by elevator. This was begun in the month of May. By the following midwinter more and more cases were regularly sent, and the winter being mild we soon found it practicable to send them up for two to six hours a day, even when the snow-shovel had to be used first. The elevator door was wide enough for children's cribs but not wide enough for adults' beds. You will note that all these experiences were with children.

Open roof, before wards were built, 1903-5.

The result of one winter's experience in treating children with acute febrile disease by a daily airing, was sufficiently good to justify an appeal to the authorities for a protecting structure on the roof, such as would enable the children to remain in the open air all day and all night. We are very much pleased to say that Mrs. William K. Vanderbilt, sen., became interested in the scheme, and she and her husband volunteered to finance the building of such a structure.

1. *Construction and Appointments.*

The roof ward consists of a steel shed facing the south, an open platform surrounded by a high wire fence, and a sun room into which open the stair and elevator doors. One-half of the shed is on the east and one-half on the west side of the central sun room; the two separated halves accommodate the two sexes, but are connected by a broad platform passage to the south of the sun room. There are also the necessary warmed service rooms, closets for linen and bedding, dishes and utensils, steam tables, hot and cold water; in fact, the usual conveniences of a hospital ward. The mental picture will be clearer by summarizing.

The medical pavilion of four stories extends east and west; the roof is flat, tiled, surrounded by a high wire fence. In the middle of this space is the steel shed, the sun room, elevator shaft, and accompanying stairway. The sheds flank the sun room east and west, the open platform completes the circuit of the sun room on the east, south, and west. The entire new structure covers only about one-quarter of the entire roof, the remaining three-quarters serving for a useful promenade. The extent of the new structure east and west is approximately 80 ft., north and south 55 ft. The depth of the steel shed is 25 ft., its height in the south opening approximately 11 ft., and in the north closed extremity 8 ft. It will be noted in the photographs that there is a short sharp break in the roof above the opening, thus securing good drainage, a sort of protecting apron, and a lofty air space within. The photographs will, I trust, make complete the mental picture.

If a "horse shed" is as familiar an object in England as it is in America I need not describe it further. The familiar illustration is the horse shed at the rear of the country church grounds. The shed is deep enough to allow a horse and carriage to be driven straight into it at right angles and thus be entirely protected from the weather.

This design is admirably adapted to our purposes. Deep in the cavity of the shed a patient in bed is protected from storm and winds, and supplied with gently-flowing fresh air. It is rather surprising, too, how mild the atmosphere is, even in severely cold weather, in this dead end of diffused atmosphere. It will be noted that all beds are on wheels.

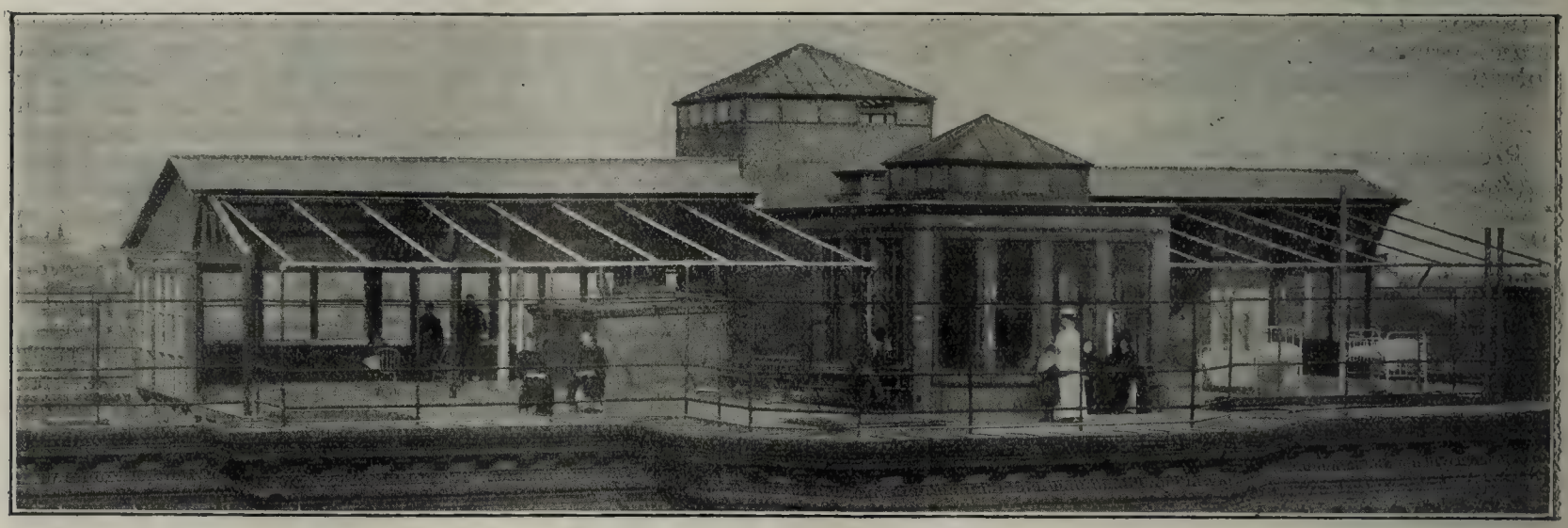
In our shed there are windows on the east, north, and west sides which can be freely opened in warm weather. The shed backs up against the extreme northern boundary of the roof, the platform lying before the open southern side. The floor of the shed and platform is level with the floor of the sun room, is of painted canvas over wood, like the deck of a ship. The building laws of New York require that this should all be supported on a 4-in. cement and concrete foundation. There is an air space between this foundation and the original tile roof. The whole steel structure is bolted to the steel structure below.

2. *Function.*

The roof ward is at present an adjunct to the ward

service available for adults and children, male and female, medical and surgical. It does not increase the total number of hospital beds.

Since April 26th six to twelve cribs of children have been night and day on the roof. For that length of time the roof ward has functionated, so far as children are concerned, as a regular ward, night and day, through all varieties of weather. I must remind you that the shed is



Roof ward just finished, March, 1907.

deep north and south, and the storms are still further hindered from entering by canvas awnings extending 20 ft. and more to the south; there are also side curtains, which can be lowered.

Thus far the roof ward has been used for children confined to bed needing a limited amount of attention. They have been cases of empyema and appendicitis after operation, endocarditis, anaemia from any cause, adult convalescents from any of the wasting diseases in beds raised on trucks or in wheel chairs, surgical cases on crutches, etc. (The pictures show the design of trucks for adult and children's beds.) So it appears for children we have an open-air roof ward fully equipped; for adults we have a day resort—a roof garden.

I shall show you plans of a new open-air roof ward about to be built on a neighbouring hospital, which plans I consider ideal according to our present light. These plans have been drawn under my personal supervision, and I shall be able to answer questions concerning them. This will be truly an open-air roof ward in the fullest sense, adapted to all ages and degrees of severity of cases, medical and surgical.

I waste no words on the good effects of two, to six, or twenty-four hours in open air for convalescents, nor is this the place to ventilate my particular method of treating acute pneumonia in the open air. I would only say that it is reserved for some of you to witness the improvement in the mental status, and the joy which glows in the countenance of a convalescent on being for the first time, after prostrating illness, wheeled out on the roof garden. Central Park lies just before his eyes, and he feels the warm glow of the sun.

Of first importance it is for me to say that thus far no one has caught cold in the open air—neither infant, child, or nurse. We have had the same backward cold spring that you have had in England. It has been a sorry spring for trying this experiment, but nothing has occurred to cause a single regret. When the mornings have been especially raw and cold, the children's cribs—which are, as you see, all on wheels—are rolled into the sun room for "grooming" purposes.

The need of regular open-air treatment has established its claims already. The results of our experiment have made us all the more convinced that nothing can take its place. It is the loitering many hours in the open that does the good. There, too, the patient must be comfortable. The patients should have no cause to dread going out. *The patient must be made comfortable.* Let there be no arbitrary limit to blankets and hot-water bottles at first. Gradually these are called for less and less. There is no such sleep as a child gets in the open air, no such appetites as they acquire in living in the open.

Roof ward (east), June, 1907.

Roosevelt Hospital, New York, will be our first imitator, and will far surpass our first experiment.

3. General Impression of the Experiment.

The usefulness of the roof ward has impressed itself on the visiting staff of the hospital, on the Board of managing trustees, on the interne staff, and nursing staff. This, I argue, is the first and most critical judgement to secure. Three other hospitals have planned to imitate.

DISCUSSION.

Dr. WATSON WILLIAMS (Bristol) said he welcomed Dr. Northrup's paper, as he had had the advantage of inspecting the roof wards under Dr. Northrup's guidance, and of seeing the happy conditions under which the patients were placed. He felt, however, that although it was at first difficult to agree with the idea of placing patients in acute pneumonia and other acute febrile states in the open air with snow all around, yet on reflection they

must realize that it was only a more physiological and certainly more pleasant method of applying a principle that they had already accepted when they utilized cold baths and ice pack in similar diseases and for the same purposes.

Sir Philip Sydney Jones (Sydney, N.S.W.) said that, as an advocate of the open-air treatment of pulmonary tuberculosis for twenty years or more, he had listened with intense interest to Professor Northrup's paper and demonstration. He was, however, under the impression that he had read of cases of acute pneumonia treated on the balconies of the Hampstead Hospital for Consumption and other Diseases of the Chest. After all, when they remembered the bactericidal effects of pure fresh air, they should not perhaps be surprised at its beneficial effect in all acute pulmonary affections. He was inclined to believe that fresh air treatment would have a much wider application in the near future. Professor Northrup's paper should surely help to remove the fears which some practitioners still had of placing their febrile patients in the open air. As a deplorable contrast to this plan he would mention that not long since he visited a sanatorium in the United Kingdom in which only a few years ago the practice was, by means of steam heaters, to maintain a constant temperature of 60° F. The results were, as might be imagined, disastrous, and for the last two years it had been entirely abandoned.

Reply.

Professor Northrup, in reply, said: Perhaps I am identified with a threefold fad—namely, roof playgrounds on private houses in New York City, with open-air treatment of pneumonia, and with the building of the first open-air ward on the roof of the Presbyterian Hospital in New York. If there is any comfort to be extracted from all this it is that the physicians practising in the lower east side districts are able to open the windows a little in cases of acute febrile disease. This is truly a rapid advance for a generation and a half, for you know the people had previously been accustomed to closing and pasting up of the windows. If I have helped to open the window an inch I am pleased with the success.

A CASE OF LYMPHADENOMA TREATED BY *X*-RAYS.

By J. Michell Clarke, M.A., M.D.Cantab., F.R.C.P.,
Professor of Medicine, University College, Bristol; Physician to Bristol General Hospital.

The following case is recorded as showing the beneficial effect of *x* rays in lymphadenoma:

Albert C. first came under observation in May, 1904, aged 10 years. Family history unimportant. The patient had scarlet fever at 7 years. He was admitted with signs of nephritis, namely, a moderate degree of anasarca, effusion into the pleural cavities, with albumen, hyaline and granular casts, but no blood, in the urine, whose specific gravity was 1028. At this date there were many enlarged glands on each side of the neck, discrete, the largest about the size of a hen's egg. No enlarged glands elsewhere, and liver and spleen not felt. Under ordinary treatment the signs of renal disease cleared up, with the exception of a small amount of albumen, and occasionally a few hyaline and granular casts, which remained throughout the case. The glands slowly increased in size, whilst showing no tendency to coalesce, and with no implication of the skin. From August 13th to 27th he had five applications of the *x* rays, which resulted in a rapid diminution of the glandular swellings and he left hospital in fair health at the latter date.

In October, 1904, he returned on account of the increased growth in the cervical glands, which now formed two huge masses on each side of the neck, most on the right, making two lobulated tumours bounded by angle of jaw, mastoid, cricoid cartilage, inner end of clavicle to within 1 in. of mid-line of neck behind. They showed no sign of inflammation or of breaking down, they were not very hard but elastic, and were discrete. There was one enlarged gland in the right axilla, and a few of moderate size in each inguinal region. Liver and spleen slightly enlarged.

From November 19th, until December 23rd, 1904, he had twelve applications of the *x* rays of five to ten minutes' duration each time. Improvement was observed after the first dose; the glands became softer, more discrete, and were rapidly reduced in size, the circumference of the neck falling from 17 in. to 12 in. The urine remained as before this treatment; average quantity 32 oz. daily, specific gravity 1014, slight trace of albumen. Temperature normal throughout.

He left the hospital to return on April 14th, 1905, when he stated that he had felt well until April 1st, when he suffered from malaise, the cervical glands began to enlarge, and oedema of the face and upper part of chest reappeared. There seemed to be no material change in his condition and he was not seen again until August 29th, 1905. The cervical glandular swellings were again much larger; the axillary and inguinal glands slightly enlarged; there was dullness over the manubrium and over the first three dorsal spines, attributed to enlarged mediastinal glands. The liver reached to the level of the umbilicus and there was a moderate enlargement of the spleen. Temperature normal. Urine as before. There was more decided anaemia than before (see chart). A course of *x*-ray treatment was now carried out from September 6th to November 16th, 1905; thirty-five applications, each of ten to twelve minutes' duration, with the lamp at 4 in., over both sides of the neck and sometimes over the spleen. Under this treatment the right cervical glands were reduced to small, hard kernels; the left this time showed less diminution. The treatment was once suspended for a few days on account of redness of the skin. The general condition improved and the blood showed a marked rise in haemoglobin and red cells and a fall in the leucocytes. The urine was unaffected. The liver was also greatly reduced in size, the tip of the spleen could only just be felt, and the dullness over the manubrium sterni disappeared. He was sent to the convalescent home and was not seen again until May 10th, 1906, when he was readmitted with pneumonia, of which he died on May 12th. Until this time he had apparently remained in fairly good condition.

At the *post-mortem* examination, made thirty-six hours after death, the body was somewhat emaciated. The cervical glands were enlarged on each side, and chains of enlarged glands extended alongside of the trachea and in the posterior mediastinum to the roots of the lungs, where the bronchial glands were enlarged and also deeply pigmented; the tracheal gland was enlarged to the size of a walnut. The enlarged glands varied from the size of a pea to that of a walnut; they were discrete, firm, and on section pale and elastic; there was no sign of suppuration; the gland capsules were slightly thickened.

There were some recent adhesions over the lower lobe of the right lung, which showed incomplete consolidation; the lower lobe of the left lung was congested.

In the heart the ventricles were moderately dilated, the wall of the left ventricle was very pale and rather soft.

Abdomen.—Peritoneum normal; no ascites, no enlargement of glands in any part of the abdomen; the haemolymph glands were not enlarged.

The *liver* was smooth, and weighed 2 lb. 8 oz. On surface and section were scattered numerous lymphadenomatous nodules, mostly quite small, the largest the size of a pea. The periphery of the liver lobes was pale, apparently fatty. No waxy change.

Spleen of moderate size, red, smooth. On section were seen numerous pale, firm, rounded nodules, like those in the liver, raised above the surface, and the largest measured ⅓ in. to ½ in. in diameter. The pulp showed, in addition, in the neighbourhood of the Malpighian bodies, firm rounded areas, resembling a waxy spleen, and staining faintly with iodine, but not so translucent as in waxy disease.

Kidneys large, smooth; capsules stripped fairly well. The cortex was swollen—cortex to medulla as 1 to 2½; interpyramidal cortex swollen; it was pale, smooth, with small whitish dots and streaks. Pyramids slightly injected. Note.—All the organs appeared anaemic and dry, and the total amount of blood in the body appeared small.

On microscopic examination, the lower lobe of the right lung showed commencing red hepatization. The tissues were hardened slowly in Müller's fluid, and subsequently in alcohol. Sections of the organs were stained in haematoxylin and eosin, Van Giessen's stain, rubin and rosin, etc.

The glands showed the ordinary changes of the chronic or fibroid type of lymphadenoma. The capsule was only slightly thickened. The connective tissue of the framework of the gland was over large areas very much increased in amount, and the cellular tissue in these areas largely replaced by coarse bands of connective tissue. This, again, over large areas, had undergone a hyaline transformation. In other parts of the gland and in glands where the process was less advanced the cellular element predominated. In the glands in which the change was most advanced the cellular elements were scanty. They consisted of the ordinary cells found in lymphadenoma,[1] lymphoid cells, endothelioid cells varying much in size, mostly large, some very large with an oval, indented, sometimes rounded, nucleus, and abundant clear protoplasm, and giant cells with two or more nuclei, some with a row of small nuclei near the periphery of the cells. Eosinophile cells were either very scanty or absent. In some parts the vessels showed periarterial thickening, which had become hyaline, but no endothelial change. There were also some areas of anaemic necrosis. In the least diseased glands some lymph follicles could still be seen under the capsule. There was no waxy degeneration of the glands, and sections stained for tubercle bacilli gave a negative result.

The *liver* showed numerous nodules of lymphadenoma of the same structure as in the glands, but giant cells fewer. There were also small areas of liver which had apparently undergone necrosis.

The *spleen* presented a peculiar appearance. There were lymphadenoma nodules of the same structure as above, but

Blood Examinations.

Date.	Haemoglobin.	Erythrocytes.	Leucocytes.	Polymorphs.	Small Lymphocytes	Large Mononuclears.	Transitionals.	Eosinophiles.	Basophiles.	Myelocytes.
	Per cent			Per cent.	Per cent.	Per cent.	Per cent.	Per cent	Per cent.	Per cent.
July 4th, 1904	60	3,670,000	8,800	74.5	11.8	1 9	0.8	1.7	0.4	0.6
October and November, 1904	68	3,780,000	15,200	79.0	9 0	11.0	—	1.0	—	1 0 (finely granular).
December, 1904	85	5,000,000	27,000†	—	—	—	—	—	—	—
May 1st, 1905	52	3,590,000	18 500	79.0	7.9	11.7	0.4	0.4	0.2	—
August 29th, 1905	40	2,000,000	12,500‡	—	—	—	—	—	—	—
October 15th, 1905*	40	2,600,000	6,200	62.0	31 1	—	—	2.0	—	1 0
November 15th, 1905*	60	4,160,000	6,100	60.0	19.0	17 0	—	2.0	1.0	2 0

* After *x* rays from August 29th.
† After six weeks' treatment with *x* rays.
‡ Differential count as on May 1st, 1905.

containing many multinuclear giant cells with reddish protoplasm ; some appeared to be dividing actively, and others to contain cell inclusions. These nodules showed in many parts hyaline swelling and degeneration of the interstitial tissue, in which case the cell elements were scanty.

The Malpighian bodies presented an appearance which closely resembled that of the waxy (sago) spleen. Their central vessel was normal, and in the early stage of the affection a few strands of connective tissue could be seen passing out radially from the vessel through the Malpighian body. At this stage the cellular elements had a normal appearance. Later the structure of the body was altered to consist of thick, radiating fibroid strands, and, where most advanced, the cells between the bands had disappeared ; in a less advanced stage they could be seen in small numbers, angular, flattened, and atrophic. This fibroid material had later undergone some degeneration, which in appearance closely resembled waxy degeneration, and, when fresh, stained faintly with iodine, but, after hardening, gave no reaction with methyl violet, iodine, safranine, Nile blue, Unna's polychrome methyl blue, or any other stain. With picrofuchsin it took a yellowish colour. The affected parts presented a structureless appearance. The arteries in the pulp, and, indeed, throughout the spleen, were generally healthy and showed no degeneration. In a few the coats were thickened. The erythrocytes were plentiful; masses of blood pigment were seen in the pulp sinuses in places, generally near the periphery of the Malpighian bodies. The reticulum of the pulp was generally somewhat thickened, but not degenerated.

The kidney showed a moderate degree of chronic glomerulo-nephritis. The glomeruli in the early stage showed injection of capillaries, proliferation in cells of peripheral and central layer of capsule; later, thickening of capsule and capillary tuft, and a round-celled infiltration in neighbourhood of capsule and along afferent arteriole ; later still, contraction of the glomerulus and its conversion into a mass of fibrous tissue. In the majority of the glomeruli the disease had not passed beyond the first or second stage, and in many parts of the kidney they were healthy. There was also a round-celled infiltration along the arteriolae rectae of the cortex and their branches. This was capricious in distribution, in places intense, with overgrowth of connective tissue, and in these there were secondary changes in the adjacent convoluted tubes, the epithelium of which was swollen, finely granular, whilst some tubes contained casts. The interpyramidal cortex was also affected ; some cloudy swelling was present in parts, as well as casts in some of the small collecting tubules. There was nowhere any waxy, hyaline, or calcareous change. Pyramids healthy. The other organs were healthy.

This case presents several points of interest. The first is the striking and speedy effect of the *x* rays on the glandular enlargements, which rapidly decreased under their use. On the other hand, although the glands ceased to be visible, they could still be felt as small, firm nodules, in the same condition as found at the *post-mortem* examination. The *post-mortem* findings show that, although the glands had thus decreased, the essential change of lymphadenoma—that is to say, the presence of the endothelioid and giant cells—was not done away with, and presumably, therefore, there might at any time be a recrudescence of the disease. Further, the beneficial effect of the *x* rays had not hindered the spread of the disease to the internal organs and the development of the characteristic nodules in the liver and spleen, although neither of these organs attained the large size sometimes met with in this disease, the spleen being only slightly enlarged. This latter fact may be due to the peculiar degeneration which had occurred in this organ. Although hyaline degeneration is known to occur in lymphadenoma, it is, I believe, not seen to anything like the extent in this case, and it is possible that the *x* rays may have induced the peculiar and extensive degeneration present in the glands and spleen. I have called it hyaline because of its appearance, and because it gave none of the reactions for waxy disease, except that the spleen stained slightly with iodine at the *post-mortem* examination, all of which were carefully tried. In fact, no specific reaction of any kind was obtained.

That the *x* rays had not got rid of the cells peculiar to lymphadenoma, although their number must have been enormously reduced *pari passu* with the decrease in size of the glands, is an interesting point in connexion with their action in leukaemia, in which a great destruction of leucocytes is produced by them. It seems, however, in several of the most carefully reported cases of leukaemia that the myelocytes never entirely disappeared from the blood, and it is not yet established that the *x* rays cure leukaemia, although they undoubtedly relieve it. Heincke[2] found that a brief exposure in rabbits, mice, and dogs to the rays caused a destructive process in the lymph follicles. He claims to have produced a distinct destruction of the nuclei of the leucocytes in the follicles of the spleen. Analogous processes took place in the other lymphoid elements. Linser and Helber,[3] however, believe that there is a primary destruction of leucocytes in the circulating blood, and that leucocytes are found in the follicles of the spleen, intestine, and in the bone marrow when absent from the circulating blood, and that direct damage to the haemopoietic organs is improbable. They conclude: (1) That the white cells are affected in a selective way by *x* rays, the lymphocytes being most susceptible; (2) by the action of the rays there arises in the circulating blood and also in blood treated outside the body a leukotoxin which, when injected into animals, causes a destruction of leucocytes; (3) this leukotoxin produces an immunity against itself; (4) the leukotoxin produces nephritis by its elimination by the kidneys; (5) on red cells, blood platelets, and haemoglobin, *x* rays have little or no effect.

I was unable to observe in my case any decided changes in the nuclei of the various cells of the glands and spleen, except in those which were undergoing atrophy from pressure from the hyaline swelling of the overgrown interstitial tissue. This process was, however, so widespread as to account for some considerable destruction of cellular elements.

There is another point about the case in connexion with the chronic glomerulo-nephritis from which the boy suffered. At the time that the *x*-ray treatment was begun, so much was not known as to their action on the kidneys, and the danger of producing a parenchymatous nephritis ; with our present knowledge I should hardly have ventured to use them. Fearing, however, at the time that *x* rays might have some prejudicial effect in view of the kidney lesion, careful observations were made upon the urine, and, as no difference at all appeared in it, the treatment was continued. The *post-mortem* examination certainly showed no change in the kidneys which could be attributed to the *x* rays, the lesions found being those consecutive to a mild scarlatinal nephritis, together with those incidental to death from pneumonia.

Warthin[4] has described extensive calcification and chalk infarcts into the kidneys in two cases of leukaemia treated by *x* rays, and in experiments on small animals parenchymatous degeneration in direct proportion to the number of degenerated white cells in the blood, spleen,

bone-marrow, and lymph-nodes, and which he attributes to an excessive destruction of leucocytes by the *x* rays. It is only right to add that Krause and Ziegler[5] have repeated the experiments on animals without finding kidney changes. It is interesting to note that in this case of lymphadenoma apparently no aggravation of the original affection of the kidney occurred, and generally that the same severe symptoms have not been generally observed in lymphadenoma as in leukaemia—possibly because there is usually no, or only a slight, excess of leucocytes in the circulating blood, and that the cells in the lymph-glands only undergo a gradual or slow destruction by the *x* rays, so that the products of their destruction only pass slowly into the blood, whereas in leukaemia a large number of cells are suddenly destroyed in the blood stream. The *x* rays undoubtedly had a remarkable effect in causing the practical disappearance of the glandular tumours; whether there was any real curative effect on the disease is doubtful, considering the condition of the liver and spleen which was found *post mortem*. If we may regard the peculiar cells found in the lesions of lymphadenoma as the expression of the reaction of the tissues to the exciting cause of the disease, whatever that may be, this question must be answered in the negative, as although they must have been reduced in number with the reduction of the glands, they were there in characteristic form. As to their effect on the duration of the disease this case affords no guide.

Lastly, I must express my great indebtedness to Dr. W. K. Wills for his care in carrying out the *x*-ray treatment; to Professor Walker Hall, for aid with the pathology of the case; and to Mr. James Taylor, for preparing lantern slides.

References.

[1] Reed, *Johns Hopkins Hospital Reports*, vol. x, pp. 3, 4, 5. [2] Quoted in *Progressive Medicine*, 1906, vol. ii, p. 289. [3] *Deut. Archiv. f. klin. Med.*, lxxxiii, 5, 6, quoted in *Progressive Medicine*, ibid. [4] *Amer. Journ. of Med. Sci.*, May, 1907. [5] *Fortschritte aus dem Gebiete des Röntgenstrahle.*

SOME REMARKS ON THE DIAGNOSIS AND TREATMENT OF PERICARDITIS.

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The signs of pericarditis are pain, friction, increased cardiac dullness, and altered heart sounds. The three forms of pericarditis are dry pericarditis, pericardial effusion, and adherent pericardium. The value of the signs varies in the different forms, and I propose shortly to discuss them.

The pain in pericarditis may be due to friction or may be of cardiac origin. When due to the friction it is generally limited to the precordium, and is not radiated or referred. It may be absent even when friction is loud. I think the variation in the pain may depend upon the degree to which the inflammation involves the visceral layer of the pericardium, which is not particularly sensitive, while the parietal layer is more sensitive, though not to the same extent as the pleura.

When effusion forms, the discomfort complained of is rather a feeling of oppression and distension in the region of the heart than of actual pain.

Cardiac pain of the acute kind at all resembling angina is very rare, and is met with only when there is acute cardiac dilatation, but by no means always then.

Friction is the most characteristic sign, and when present is conclusive. It is sharply localized and not referred. It is heard only over the place where it is produced. If, therefore, pericarditis develop behind at the back of the heart, no friction will be audible until the inflammation reaches the front, over which it may spread with very great rapidity.

I recall one case in which the diagnosis of pericarditis had been made on other grounds, and friction remained absent for two days or so; then it was detected at the apex, and within three hours it had spread over the whole precordial area. When effusion develops, the rule is stated to be that the friction which has been audible in front disappears, but returns again so soon as the effusion is removed (redux friction). The explanation usually given is that the heart distended with blood is heavier than the serum in which it hangs, and therefore sinks. It is not correct, however, to maintain the converse—namely, that if friction be audible there cannot be a large effusion, for even with a very large effusion friction may be heard over a very wide area, and that without any apparent reason discoverable during life or after death.

I have lately seen a case in which there was an enormous pericardial effusion, yet friction was very loud over a space as large as the palm of the hand. The friction grew less as the effusion became smaller, ultimately disappeared, and never returned. There was no reason to suppose that the absence of redux friction was to be explained by the two layers of the pericardium having become adherent, for when convalescence was complete the cardiac dullness was hardly larger than normal.

The Cardiac Dullness is always increased. Where there is pericardial effusion this is a matter of course, but it occurs equally when there is no effusion and is then due to dilatation of the heart, which must of necessity occur in any form of pericarditis. For the visceral pericardium is directly continuous with the fibrous tissue of the myocardium, which forms a meshwork in which the bundles of muscle fibres lie and along which the blood vessels and lymphatics run. Acute inflammation, then, will extend from the surface some way along this meshwork and thus involve the muscle cells. In chronic pericarditis this interstitial tissue becomes thickened and tends to contract; in this way the muscle cells suffer just as in interstitial hepatitis the liver cells do. Thus in every form of pericarditis the muscles will be enfeebled, and a weak muscle stretches or dilates.

The dilatation will be most marked where the muscle is thinnest and weakest, namely, the left auricle and right side.

One of the earliest signs of pericarditis is said to be an increase of cardiac dullness to the left base, and this is attributed to effusion, but I think it is really due to the dilatation of the left auricle produced in the way I have described, for it is met with when there is no other evidence of effusion, and *a priori* we should suppose it to be almost the last place that small amounts of fluid would be found.

The left ventricle is the last part of the heart in which dilatation occurs. As long as the left ventricle escapes the shape of the cardiac dullness is not different from that which is met with in mitral disease. When the dilatation is general it affects the left ventricle as well. The cardiac dullness tends to take a globular shape, and when the left ventricle is greatly dilated no difference can be made out between dilatation of the heart and moderate degrees of pericardial effusion. It really makes no difference so far as the shape is concerned whether the excess of fluid to which the distension of the pericardial sac is due is caused by effusion into the pericardium and therefore outside the heart, or by the blood within the weak and flabby heart.

To describe the cardiac dullness of pericardial effusion as pyriform with the apex upwards, as if it could in this way be distinguished from that due to dilatation, is fanciful and misleading. When the effusion is very large the shape is more distinctly pyriform, but the apex is towards the left axilla downwards and outwards, and the globular part of the apex towards the right and the base.

The clinical experience of paracentesis proves beyond question how very difficult the diagnosis between pericardial effusion and cardiac dilatation is, even in the hands of the most competent diagnosticians. The apex beat is said to be raised in the early stage of acute pericarditis, but the impulse felt in the fourth, or may be third, space is, in all probability, not the apex but some higher part of the dilated left ventricle, or perhaps even the auricle. In effusion the apex is difficult to locate. If it can be fixed it is generally found somewhat outside its normal place; if extension of dullness beyond this point can be made out it is one of the most characteristic signs of a large effusion.

Systolic recession of the apex beat is a pathognomonic sign of adherent pericardium when it is present, but the converse is not true that the pericardium is not adherent if systolic recession of the apex beat be absent, for adherent pericardium may be present with no definite sign at all, unless it is a slight increase of the cardiac dullness, for which other causes might be assigned. When other lesions are present, such as valvular disease, the diagnosis of adherent pericardium is often correctly

arrived at because something more than valvular disease is required to explain the physical signs.

Some explanation is required of the fact that the systolic recession of the apex beat is sometimes present, sometimes absent. It is, I believe, this: When the heart contracts, its long axis—that is, the measurement from the base to the apex—shortens, but the sudden passing of the blood into the aortic arch tends to straighten it out and the apex descends causing the apex beat. If the heart be fixed at its base by adhesions to the mediastinum, the heart cannot descend, consequently the shortening of the ventricle shows itself by the drawing of the apex up or inwards. If there be no mediastinitis, even though the pericardium be totally adherent, not only is systolic recession of the apex absent, but the movements of the heart are but little interfered with, as the loose tissues of the mediastinum provide a sort of pseudo-pericardium outside in which the heart moves freely.

Heart Sounds.—When there is effusion enough to separate the heart from the chest walls, the heart sounds will be muffled, but the heart sounds may be equally weak with dilatation only.

I have seen a case in which the cardiac dullness was greatly enlarged in all directions, the heart sounds almost inaudible, and a to-and-fro sound resembling pericardial friction heard, so that the diagnosis was made at first of pericardial effusion. But it was soon obvious that the case was simply one of double aortic disease and extreme cardiac dilatation. Many similar cases have come under my observation. Indeed, most of the cases which I have been asked to see in which the question of pericardial effusion and paracentesis have been raised have proved to be cardiac dilatation.

A *perverted pulse-respiration ratio* is often spoken of as if it was peculiar to acute pneumonia, but in acute pericarditis it is often as marked or more so. I have frequently found the respiration-rate to be 50 or 60, and recently in a case of very large pericardial effusion as high as 70. In some instances the acceleration of breathing is due to pain, just as it may be in acute pleurisy, but in others where pain is absent or slight it must be referred, I presume, to congestion of the lungs produced by a weak heart.

The *pulsus paradoxus* is often described as if it were of common occurrence. It is true that where the heart is very feeble the suction of inspiration may show itself in irregularity of force or frequency of the pulse, but the true pulsus paradoxus—that is, *pulsus cum inspiratione intermittens* — where the pulse entirely disappears during inspiration, is very rare except with mediastino-pericarditis, where adhesions or bands in the mediastinum are so placed that they mechanically pinch or compress the aorta as the chest is expanded on inspiration. Under any circumstances, however interesting it may be as a phenomenon, it is of no practical use in diagnosis.

When the effusion is very large there are two other signs to which reference may be made: one is *bulging or prominence of the epigastrium* over which pulsation can be seen and felt; the other is *displacement of the left lobe of the liver*, which is so pushed down and twisted that its lower edge can be felt near the umbilicus.

Latent Pericarditis.—Dry pericarditis may be latent—that is it may be discovered by physical signs when there are no symptoms to suggest it. The conditions under which this usually occurs are gout and granular kidney. In gout it may disappear as quickly as it came, but in granular kidney it is of very grave significance, and death follows soon, though not necessarily from the heart.

Purulent pericarditis also may be latent. In patients dying of pyaemia this is not surprising, but there is another group of cases which is very remarkable. I had a lad in the hospital who had a straightforward attack of acute pneumonia; he had his crisis, and seemed well advanced in convalescence, when one day, sitting up in bed to take his dinner, he suddenly fell back dead. *Post-mortem* examination showed that there were several ounces of pus in both pleurae and half a pint of pus in the pericardium. This had all developed in a few days during the course of what seemed to be a perfectly normal convalescence from an ordinary acute pneumonia. So well did the patient seem that no physical examination was thought necessary for some days. I have seen the same condition once or twice since, so that now I never omit to examine both heart and pleura as a matter of routine every few days during convalescence from pneumonia, for the condition could not possibly have been overlooked if the chest had been examined, but the entire absence of symptoms was deceptive.

TREATMENT.

In respect of treatment there are only two special points to which I wish to refer: the use of opium and paracentesis.

Opium—I cannot understand the objection often felt to the use of opium in heart affections. I have used it largely, and have never seen anything but good follow its judicious administration. In acute pericarditis it is an invaluable remedy, for it allays the irritable excited action of the heart in a way no other drug does. No large amount is required. Small doses at frequent intervals, say 5 minims of laudanum or so every four hours, are all that is necessary. Then the patient, who has been restless, distressed, and in pain, becomes quiet and relieved, the pulse-rate drops 20 beats or more, and the action of the heart becomes steadier and more sustained. Many cases of rheumatic heart affections in the acute stage do better with opium than any other drug, and some seem to do no good without it.

Paracentesis is rarely necessary in pericardial effusions of rheumatic origin. They are always serous, and even the largest usually spontaneously disappear. A purulent effusion must be evacuated, but before it can be diagnosed the nature of the effusion must be determined by exploratory puncture. It becomes important, therefore, to consider where exploratory puncture or paracentesis, if it be decided on, can be most safely done.

It is obvious that the needle should be inserted where the heart is farthest away from the seat of puncture, so as to be out of reach of the needle. There is only one really safe place, and that is between the extreme limit of the cardiac dullness in the axilla and the place where the apex is determined to be. If a hollow needle be carefully inserted here no harm can possibly follow. In any other place the risk of striking the heart is considerable. It is not so much a puncture right through the walls of the heart that is to be feared, for this has often been done with impunity both by accident and intention. The danger lies in the needle scratching the heart, which then rubs a hole in itself, as it were, leading quickly to a tear or rupture, with the escape of blood into the pericardium and immediate death.

It seems to me that in many books the difference between paracentesis and incision is not clearly drawn. The places advocated are Rotch's notch in the fifth intercostal space near the sternum on the right side, or in the fourth left space near the sternum well within the normal area of cardiac dullness. Both are very dangerous places for puncture.

Rotch's notch I must confess I cannot make out, at any rate in such a way as to assist in the diagnosis between dilatation of the heart and pericardial effusion, and consequently it seems to me useless as a help in paracentesis.

The only argument in favour of choosing a spot within the normal cardiac dullness for paracentesis is that the pleural cavity need not then be penetrated. But hepatic abscesses are not infrequently opened through the lower ribs behind, and if no regard is had to the pleura in such cases, why must it be treated with so much respect in paracentesis or incision of the pericardium? In peculiar cases unusual cases may have to be selected. I have myself with impunity punctured in many strange parts; I have even drawn blood, showing that I had punctured the heart. But in all ordinary cases the only really safe place is between the apex and the outer limit of the pericardial dullness, and that in spite of the pleura being traversed.

If the effusion be purulent, of course further procedure will be necessary, but paracentesis must precede incision, for there is no other way of ascertaining the nature of the effusion. In one interesting case in which I had by means of a fine needle ascertained the presence of pus, I endeavoured to pass a larger needle in order to draw it off, but found the needle blunt, so that it would not pass without more force than I cared to exercise. I therefore postponed further proceedings till the next day.

I must have punctured the pericardium, for during the night the pericardium emptied itself into the pleura. This was then tapped, and in a few days the patient was

convalescent. In many cases in which the pericardium has been incised the original incision was made into the pleura, either because there was, or was thought to be, a pleural effusion. The pericardial sac was then felt bulging and incised. In one case of this kind the pericardial effusion developed in the course of pyaemia, of which the child died. I was thus enabled to examine the pericardium three days after the incision, and I found it universally adherent and perfectly empty of pus. This is an important case, for it shows that purulent pericarditis is more likely than empyema to be cured by paracentesis, though there are many cases of empyema, too, in which paracentesis has sufficed for cure.

When purulent pericarditis has been diagnosed and incision is decided on, it is advised that the seat of incision should be near the sternum on the left side, and that portions of the ribs here should be removed. The excision of ribs here I consider highly undesirable, for it weakens the chest permanently. I have already shown that after evacuation the pericardium very rapidly closes upon the heart, and that even if pus escape into the pleura it need not affect materially the ultimate prognosis. But, as a matter of fact, it does not follow that the operation must be followed by empyema. Therefore I would on the whole strongly advocate that puncture should be made in the apex region, as I have suggested, and, the pus having been found, that the needle should be used as a director, the knife passed along it, an incision be made in this place, when the pericardial sac may be washed out, if necessary, and drained here.

SOME REMARKS ON THE PREVENTION OF APPENDICITIS.

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I think there can be little doubt that appendicitis has much increased of late years. Although many years ago cases of appendicitis were almost invariably put down as peritonitis, yet these peritonitic cases were less numerous than we meet with to-day. The type of case, I believe, has also changed, as in many other diseases, for the so-called simple or medical cases we see less frequently than we used to.

Between the years of 1893 and 1905 inclusive, 107 cases of appendicitis were admitted into the Victoria Hospital, Folkestone, every variety of the disease being found among this number.

From 1885 to 1902 inclusive not a single case was recorded, although in the last year, 1902, 263 patients were admitted.

I have carefully gone through our statistics, which show that not only have the appendix cases increased absolutely—for this is to be expected in a growing neighbourhood—but relatively so. For 1893 the proportion of appendicitis to all cases amounted to 1 in 100, whereas in 1904 and 1905 the proportion was 1 in 26 and 1 in 29 respectively.

Twenty-two cases died, being roughly one-fifth of the entire cases.

It is possible to exaggerate the importance of the above, but, after many years of hospital and private work, one must come to certain opinions, and they are these: That cases of appendicitis are absolutely and relatively increasing; that the ordinary medical or simple cases are not so frequently met with as formerly; and, again, that this type is more frequently of a grave septic character.

Before passing on to the clinical aspect of my paper, it is well to say that there seems no doubt that the real starting point of the appendicular peritonitis is the presence of the *Bacillus coli communis* in the appendix; yet this statement requires an explanatory note, for this bacillus is always present in large numbers through the whole alimentary canal, from the mouth to the anus; again, it varies greatly in its virulency. It is only when the bowel becomes the seat of any morbid change that the bacillus, so to speak, comes into play. Thus, any change brought about in the bowel by constipation, diarrhoea, obstructed bowel, congestion of the bowel, becomes of immense importance. Thus, it seems that for an attack of appendicitis to occur there must be some lesion of the appendix to allow the escape of the bacillus, and the bacillus must be in a state of virulency.

Ordinary or simple catarrh of the appendix is evidently of common occurrence. *Post-mortem* examinations show this. It generally leads to no symptoms, and is not often clinically diagnosed. But there is a further stage of the trouble, in which more or less inflammatory material is thrown out—this material may go on to the formation of pus or be entirely absorbed.

Coming now to the practical or clinical side of our subject, every one must at once be struck with the change of mind which has taken place in respect to the treatment of appendicitis. A few years ago all cases of appendicitis were admitted into the medical wards and treated by the physicians. Now surgeons seem to claim these cases, and all writers and speakers of to-day, when discussing the subject of appendicitis, refer to it almost entirely as requiring surgical treatment. This was particularly brought out at a meeting of the Royal Medical and Chirurgical Society on February 28th, 1906, when Sir Frederick Treves opened the discussion "On the Subsequent Course and Later History of Cases of Appendicitis after Operation." Although the terms of the title of the discussion practically precluded the preventive or medical aspect of the subject, they nevertheless showed the trend of the feeling of the profession at the present time on this subject, namely, the surgical side, and practically ignored the preventive or medical part.

I maintain that the purely surgical treatment of this disease, although, of course, right in its proper place, is treatment at the end of it; and all scientific and sound treatment of disease should aim at the prevention of disease, or treatment in its very early stages. There is always a difficulty in discussing, especially with the lay public, the two great lines of treatment, (1) the preventive, and (2) the surgical; the former method can hardly be appreciated by the patient, for the disease has not yet come on; there is no pain, sickness, or general feeling of illness. But in the advanced stage of the disease, in which an operation has relieved all the above symptoms, the patient is not likely to forget the great benefit received. In other words, it is very difficult to get carried out rules of diet, exercise, etc., in order to prevent a disease, however serious, which the patient knows nothing about, and of the consequences of which he is entirely ignorant. Still, I maintain, if this disease is to be stamped out, or, at any rate, brought under control, the real clinical causes of it must be studied, and much more attention be paid to the carrying out of the rules by which we think the disease can be avoided.

I may mention here that the disease seems to be one of civilization; it is rarely if ever met with among coloured races. Although the white people in the United States seem to suffer more than any other race from appendicitis, the negro inhabitants of the Southern cities are almost exempt. The same may be said among the coloured races of Africa; and Dr. Sandwith states that in Egypt they had to wait for some fifteen years after the English occupation to find an appendicitis patient among the Egyptians or Soudanese, either in hospital ward or in the deadhouse. Dr. Sandwith goes on to say that during the last few years, however, some cases have been seen, and in January, 1906, whilst visiting Dr. Cresswell's hospital patients with him at Suez, he found five cases of appendicitis being treated in a ward containing only sixteen patients.

I believe that the most prominent and active cause of appendicitis is constipation, a lodgement of undigested matter, or faecal masses, in the bowel. It is often very difficult to decide on the presence of constipation, for the daily evacuation is not sufficient to settle this point. In those extreme cases in which patients come to us saying that they are suffering from diarrhoea, on rectal examination the lower bowel may be discovered to be entirely blocked up with hard masses of faeces; but, apart from these, there may exist hard faecal lumps in the hepatic, splenic, or sigmoid flexure of the colon, and even in the small bowel, with a daily natural stool.

I have on two occasions suffered from acute attacks of appendicitis, at an interval of a twelvemonth, both of which I traced to constipation. The cause of the second attack was most clear to me. I was travelling by quick stages along the South Coast of France, visiting the various health resorts in that neighbourhood. My bowels had been confined for four days, and on the fifth my attack commenced and lasted for eight days. It is the

experience of many patients that when the bowels have not been opened an attack of appendicitis is apt to occur.

I think that our ancestors and the old physicians and apothecaries insisted much more strongly on the need and importance of regular and thorough bowel action than we do at the present day. The regular dosage with salts and black draught had much more to do with the prevention of intestinal toxaemic conditions than, perhaps, we even to-day are prepared to admit. Practitioners in those far-off days had more time to study clinically the symptoms of disease than the overwrought student and precise physicians of to-day. Men in those days were great observers, and they noticed that free stools kept the head clear and the body cool. The Oriental seems to be often a large, if not a voracious, eater, especially at a feast, but he has a horror of constipation.

Now, there are a good many conditions, which have increased of late years, which are more or less associated with constipation, directly or indirectly, such as oral sepsis, excessive and unnatural eating (as seen in our modern hotels), unsuitable foods, alcoholism in its various forms, weakened abdominal muscles, wrong methods of stooling; each of these require some notice.

Treves says:

> Defective masticating teeth are exceedingly common among the subjects of this disease, and especially among those who have passed the period of youth. Over and over again it would appear as if the want of proper and efficient teeth had been the direct cause of the attacks. Such patients often bolt their food, and such meat as they eat can hardly reach the stomach in a condition fit for complete digestion. The bolus passes into the bowel still ill-digested. It fails to stimulate normal peristalsis; it is prone to lodge in the great receptacle, the caecum, where it decomposes, and, if there be any existing lesion of the appendix, must tend to encourage the morbid change.

In connexion with this question of the teeth, I have often wondered why dentists have not paid more attention to the prevention of decay. Surely something might be done to prevent the almost universal decay of teeth that we now witness in all classes of the community, and at all ages. We are always hearing of the bad results, and in some cases apparently very serious consequences of oral sepsis, and yet stopping the teeth, or their extraction, seems at present the only remedy, forgetting that no artificial substitutes in the mouth can fully take the place of sound teeth naturally fixed. In the coloured races it must be noted that their teeth are perfect; they do not hurry over their meals, and they rest after them—how different from the scene often witnessed of a man or woman bolting food and reading a newspaper.

I also might refer at this stage of my paper to the present faulty mastication which now necessarily takes place with the soft artificial foods which are in vogue. This has been prominently brought forward and constantly urged by Dr. Harry Campbell. The full significance and the evil resulting from this mode of feeding, primarily on stomach and intestinal digestion, and secondarily on the general system of the child, is not to-day fully appreciated.

Coming on now to the question of food, there can be little doubt that a great change has come about in our methods of eating, also in the quality and quantity of food we take. Personally, I cannot help thinking, and many hold this opinion, that the enormous amount of iced food, in the shape of meat, fish, game, etc., which are now taken, plays an important part in many of our intestinal troubles. The above custom seems at present a necessity, and it seems little use to say very much about it. Yet for a long time I have thought that there are decided dangers connected with the iced food traffic.

Then again, as a rule, I think that nearly all of us are eating too much, too quickly, and not taking sufficient rest after the meals. It is not a fair argument to say that our ancestors ate as much, for it must always be remembered that they lived and exercised much in the open and fresh air; whilst many people to-day who eat most take little or no exercise. Again, the modern *table d'hôte* dinner, as taken by the well-to-do people, is not favourable for peace and quietness among the contents of the digestive canal, nor can the present state of the knowledge of cookery among the poorer classes be considered conducive to their well-being. When the question of feeding is more carefully and systematically considered, I believe that it will be found that it plays an important part in intestinal inflammation; also, apart from the quality and quantity of the food taken, irregularity of eating tends to set up gastric and intestinal irritation, and conceivably inflammatory conditions, such as appendicitis. Commercial travellers seem more liable to the foregoing conditions than other people.

Another point worth considering is the present method of stooling, and also of the little use we make now of our abdominal muscles for the thorough expulsion of faeces and flatus. The old-fashioned and natural method of stooling on the ground, with the thighs flexed on the abdominal walls, so that in straining the inguinal and femoral canals are practically closed, has now gone out of fashion, and the modern unscientific, though comfortable, method is substituted for it. I believe the former method of stooling is much more conducive to the thorough emptying of the bowel, and therefore less likely for obnoxious and poisonous materials to be left behind. I am glad to see that there are already in the market some waterclosets made which to a great extent carry out the natural methods.

Again, the stays, as worn by women in the present day, must more or less weaken the expulsive action of the abdominal muscles. The practice of kneeling down, bringing the buttocks in contact with the heels, and the anterior chest wall in contact with the thighs three or four times every morning is a good and beneficial exercise, one which I have practised myself for some time past, and recommended it to others.

The question of climate and the various uses of mineral waters have been considered for many centuries, long before the Christian era. These waters are scattered in abundance throughout the whole Continent of Europe, and have more or less been systematically used by all classes of people and for many diseases. It has often been said that the people who need these waters—I am referring just now to those that are taken internally—do so on account of the excessive eating or indigestible food which they have indulged in previously to the treatment by balneology. This may be true in some cases, but I am sure that the custom of drinking special waters and of bathing is far too prevalent a custom to think that all these thousands of people who wash themselves inside and outside have overeaten. To my mind this exceedingly common Continental custom of "water drinking" periodically and regularly must have had a very beneficial effect in the cure and prevention of many intestinal diseases. These waters existing in great varieties in great numbers of places, in great abundance, of various temperatures, and in different climates, seem to me to have a purpose that we in England have scarcely recognized or appreciated.

We possess in our own country most valuable waters. It is not my purpose to describe these, which I think will be more fully understood and scientifically given when their *raison d'être* is understood. In these days of strife and stress, living as most of us do in towns, our habits tend more and more to be sedentary. The internal organs under this mode of living are apt to get clogged and to work heavily, and unless they get unloaded by some means the system suffers. I can hardly imagine anything more beneficial to the economy of the body than that of a course of waters suitably taken at one of our bathing resorts. I believe the regular washing out of the intestinal canal would do much to prevent a large number of cases now known as colitis and appendicitis.

I have avoided quoting cases in support of views expressed in this paper. It would take too long, and probably be wearisome to you. Every kind and form of appendicitis are daily recorded. For the last twenty-five years it has fallen to my lot to see both in hospital and private work a great many of the above. A large number have required immediate operation, but a larger number have recovered under medical treatment.

The title of my paper precludes the later or surgical aspect of the subject. It almost entirely deals with the prevention of the disease. Still I see and read that there is a strong tendency, not so strong as it was, I think, to ignore the treatment of the early stage of the disease, at which time I believe that much good can be done by suitable and timely treatment. What I have tried to bring out in this paper, and wish the profession earnestly to consider, are some methods or modes of treatment which will prevent to a great extent this now common

disease of the appendix, and also allay the morbid fear about the disease which is unhinging a large number of nervous people. I feel that a great deal more might be done than at present is the case to stamp out this popular disease. The operation that is constantly being done cannot be considered the true scientific treatment, although absolutely necessary in many cases, when the disease is far advanced. My paper is essentially a clinical one, and I do not claim for it any true scientific standpoint. Yet many of the best methods of treatment, I may also say most, have been discovered experimentally, before they have been explained scientifically. To give two examples: ague was stamped out in Romney Marsh by careful and systematic drainage, long before the real cause of it was even thought about. The drainage disturbed and upset the mosquito, and then the ague lessened and gradually disappeared. The giving of quinine was only a passing phase in the evolution of the treatment of the disease; although a most beneficial and comfortable crutch, quinine never lessened the amount of ague, although it modified the attack. Once more, the operation of removal of the tongue for cancer has been one of the most unsatisfactory ones in the whole range of surgery. Clinically, this fact has been known for many years, but now it has been clearly demonstrated by Mr. Cheatle that almost invariably there is present in the genio-hyoid and the genio-hyo glossus muscles, cancer growth which is not touched at all in the ordinary operation for the removal of the tongue. Some day before long, I hope, we shall be able to demonstrate conclusively the exact cause and method of an appendicular attack. In the meantime, my experience leads me to think that some such view as I have attempted roughly to give you in this paper will partially explain the increasing number of cases of appendicitis that we meet with to-day.

Appendix.

When one is hearing so much about the uselessness of the caecum and the appendix, it is well to bear in mind that organs before now have been thought to be functionless, which by further experiments and experience are now known to be most beneficial, if not necessary—for example, the thyroid and the spleen.

Comparative anatomy teaches us that in the carnivorous birds and animals digestion occurs principally in the stomach and small intestine, the caeca in the above being rudimentary or absent. In the herbivora the caecum is enormously developed, and in the solipeds the caecum is the main digestive organ, the stomach occupying a minor position. Man, as we know, in his eating is carnivorous and herbivorous, and so, as we should surmise, possesses not only a stomach and small intestine, but also a caecum; the latter is small, because the vegetable food which he takes is not bulky, and it is generally of a nutritive character.

Sir William Macewen has shown by experiments on patients watched by himself, and also by those carried out on the lower animals by other observers, that the caecum and the appendix perform an important part in the final stages of digestion.

It seems most probable that the part played by the caecum and appendix in the general digestive process has not until now received its proper attention. We have been for some years past thinking too much about cutting these organs away, rather than working out a method by which they might be preserved in a normal condition for active working.

When proper mastication of food, preservation of teeth, simple feeding at regular intervals, and at quiet times, are properly taught in our schools and practised in our houses, we may then hope to see a marked diminution in the number of cases of appendicitis, which are now so appallingly common. Somebody has pithily said that man has neither a crop like a bird, nor a caecum like a horse, so that he has no provision made for bolting his food.

DISCUSSION ON RHEUMATOID ARTHRITIS AND THE MORBID CONDITIONS WHICH SIMULATE IT,

WITH ESPECIAL REFERENCE TO PATHOLOGY AND TREATMENT.

OPENING PAPER.

By A. P. Luff, M.D., F.R.C.P., B.Sc.,

Physician and Lecturer on Medical Jurisprudence and Toxicology, St. Mary's Hospital.

Dr. Luff said: The term "rheumatoid arthritis" is objectionable, as suggesting a causal connexion with rheumatism. If, however, it is employed and understood as merely meaning an arthritis somewhat resembling some forms of rheumatism, the term may be retained, although the name "arthritis deformans" is less open to objection. I suggest, however, in this discussion that we retain the term "rheumatoid arthritis" owing to its long usage, as I am afraid that the description of the disease under another and less recognized name may lead to confusion.

Rheumatoid arthritis is held by some to be a very complex disorder which has many factors concerned in its etiology. I do not hold with this view. My own opinion is that although there are several infective diseases of the joints which somewhat resemble it, yet that rheumatoid arthritis is a distinct clinical entity, which, with care, may be distinguished from other forms of arthritis.

Rheumatoid arthritis is a constitutional disease, not a local one—the affection of the joints is only a part, although an important part, of the morbid process. It is, I believe, a disease due to the presence of micro-organisms which gain access to the blood in the majority of cases probably through some chronic catarrh of the alimentary tract, although the invasion may occur from the nose, pharynx, or air tubes. After gaining access to the circulation they find a suitable nidus for their growth in the joints, where they grow and propagate in the synovial membranes, ligaments, cartilages, and bones. As a result of their presence inflammatory changes occur which result in ulceration, erosion, destruction, and coincidently as a rule, in hypertrophy also. During the active growth of these micro-organisms toxins are produced and discharged into the circulation, and by their action on the nervous system give rise to the nervous symptoms of the disease, while the toxins acting on the vasomotor nerves and the trophic nerves of the skin produce the local sweatings and pigmentation which occur in connexion with rheumatoid arthritis.

That it is an infective disease is shown by the febrile disturbance which, although not severe, always accompanies the early stages of the disease; by the rapidity of the pulse, the local sweating of the hands and feet, and by the progressive involvement of many joints. In its early stages it may very closely simulate subacute rheumatic fever, but it may be distinguished from it by not reacting to treatment with salicylates. The disease usually commences in one joint, commonly one of the metacarpophalangeal articulations, and then rapidly spreads to other joints. Shortly after its commencement it is always polyarticular. The so-called forms of monarticular rheumatoid arthritis are, in my opinion, always traumatic in origin, and are due to degenerative changes set up within the joint as the result of chronic inflammatory processes which result in the disintegration and wearing away of the joint cartilage. It would be better, I think, to restrict to these forms the name "osteo-arthritits."

Rheumatoid arthritis occurs in two forms—acute and chronic. Both are due to the same infective cause, and simply differ, as regards their clinical features, in the degree or virulence of the infection, or in the different results of a similar process attacking the joints at different ages. It is commoner in females than males. In the acute form it is generally met with in earlier adult life. The chronic form may be a later stage of the acute disease, or, as is more frequently the case, it is chronic from the first, and occurs especially in middle life and in females. In the latter it is specially prone to start about the climacteric period. Comparatively slight injuries of a joint, especially of a small joint, may lead to rheumatoid arthritis, and to an extension of the process to other joints in a symmetrical order. The injuries are frequently the outcome of excessive work and strain, especially in elderly and enfeebled persons with a diminished power of resistance, increasing with years and with imperfect nutrition.

In the acute form the synovial membranes are primarily and mainly affected, while the ligaments are softened and infiltrated, presenting the well-known spindle-shaped enlargements of the joints. The cartilages are damaged secondarily, and it is not until the disease has assumed the chronic form that the signs indicative of destruction of the cartilage become evident, accompanied with cartilaginous and osteophytic outgrowths. Cases with Heberden's nodes represent the mildest degree of the disease. The nodes consist of little hard swellings of the finger-joints, affecting almost entirely the terminal phalangeal, and are due to a

very chronic form of rheumatoid arthritis. This type is more commonly met with in women than in men, and usually at or after the middle period of life. The nodules are due to enlargement of the ends of the bones, which are frequently covered by a pouch of the projecting synovial membrane, which acts somewhat as a bursa. The joints become swollen and tender. The cartilages are softened, and the ends of the bones are eburnated. The enlargements are osseous in character, but there may be a certain amount of increase of the periarticular fibrous tissues. After a time the disease usually becomes arrested, but the swellings remain, and eventually may cause no discomfort.

In the great majority of cases rheumatoid arthritis is a primary disease, but at the same time it is probable that in a small number of cases an antecedent attack of rheumatic fever, or of some form of septic arthritis, such as gonorrhoeal arthritis, or even an acute attack of gout, may have left the joints in such a vulnerable condition that they may subsequently become the seat of true rheumatoid arthritis. Any debilitating condition may predispose to this disease, and especially of late years I have seen many cases of rheumatoid arthritis which have followed repeated attacks of influenza.

TREATMENT.

Rheumatoid arthritis, if left untreated, tends to spread from joint to joint, and produces progressive destruction of the joint tissues. Occasionally treatment fails to effect any arrest of the disease, and this is especially apt to occur in connexion with the rheumatoid arthritis of the old. For the successful treatment of this disease it is essential that the treatment should be commenced while the disease is in its early stages; hence the importance of an early recognition of the malady, and of its distinction from gout and rheumatism. The treatment must be persevered in for a lengthened period of time, generally a year or two, and during the treatment everything possible must be done to increase the patient's strength and to maintain the general condition of nutrition at the highest possible level.

If rheumatoid arthritis is seen and recognized early in the acute stage, it is curable. In the later chronic stages it is possible to arrest the disease, to remove the pain, and to secure greater movement of the joints; but it is not possible to bring the disorganized and deformed joints back to their normal state. It is remarkable, however, even in many chronic cases, what a considerable amount of improvement may be effected in the joints if suitable treatment is persevered with for a prolonged period of time.

The not infrequent mistake of diagnosing rheumatoid arthritis as gout, and the consequent placing of the patient on a restricted and spare diet, has undoubtedly led to the development of severe and incurable forms of the disease. It is essentially a disease that requires good and nutritious feeding, and I have seen many cases of rheumatoid arthritis which have gone thoroughly to the bad through the initial error of mistaking the disease for gout, and treating it with a spare diet. The diet should be as liberal and as good as the patient can digest, and animal food should be partaken of freely, though not to the exclusion of vegetables. A moderate quantity of wine or stout should be taken with lunch and dinner. Any kind of wine that agrees with the patient may be taken, but perhaps a generous red wine, such as burgundy, is the most suitable.

The drugs that I have found most useful in the treatment of rheumatoid arthritis are guaiacol and potassium iodide. I have now employed guaiacol in over 3,000 cases, and as the result of my experience I do not hesitate to say that, if administered in sufficient quantities, and for a sufficiently long period of time, it is capable in the great majority of cases of arresting the disease, of diminishing the size of the joints, and of permitting increased movements. It also relieves pain markedly. It is useful in both the subacute and chronic forms of rheumatoid arthritis. The guaiacol probably acts by inhibiting the growth of the specific micro-organism in the intestinal tract, and after absorption by combining with the bacterial toxins and assisting in their elimination. It is not to be imagined for one moment that the guaiacol renders the intestinal tract sterile, but just as the administration of cinnamon oil in cases of enteric fever exerts a restraining influence on the propagation of the typhoid bacilli, and renders them less capable of elaborating a virulent toxin, so, I believe, the guaiacol exercises an inhibiting effect upon the micro-organisms responsible for the production of rheumatoid arthritis. The iodide of potassium probably acts by promoting absorption of the hypertrophied fibrous tissues.

The most convenient form of administering the guaiacol is the carbonate in cachets. This salt is a white powder which is free from the disagreeable odour, taste and irritating effects on the stomach of guaiacol itself. In the intestines it is slowly split up into guaiacol and carbonic acid gas. At first from 5 to 10 grains of the carbonate of guaiacol should be given three times a day, and the dose should be increased by 1 to 2 grains each week until from 15 to 20 grains are being taken in each dose. It is essential that this treatment should be continued for at least twelve months. The beneficial effects of the guaiacol are very much increased by administering at the same time a mixture containing potassium iodide; the depressing effect of the iodide should be counteracted by its combination with tonics.

The treatment that I have just detailed is, in my experience, incomparably superior to the prolonged treatment for two, three, or more years of such cases with small doses of arsenic and iron, a method of treatment which still has many supporters. After the treatment with guaiacol carbonate and potassium iodide of a very large number of cases of rheumatoid arthritis, I am convinced that it is capable, in the great majority of cases, of arresting the disease, and so of preventing the frightful suffering connected with movements of the affected joints, a condition which is so common in cases of unrelieved rheumatoid arthritis. If the treatment is commenced in the comparatively early stages of the disease, then recovery with very little deformity may result; but even if after arrest of the disease much deformity results, very considerable mobility of the joints may be promoted by baths, superheated air, massage, and passive movements. It is frequently remarkable to find after such treatment what an amount of mobility and capacity for usefulness has been restored to joints which have been left in a severely deformed but quiescent condition.

The thermal treatment of the affected joints, either by means of baths, superheated air, or electric light baths, is most beneficial. Douche massage is the most effective form of treatment with hot water, and perhaps next to that rank peat baths and brine baths. Electric light baths, in which the affected joints are bathed in the heat and light rays reflected from a number of incandescent electric lamps, are also beneficial in many cases. Properly-regulated movements and properly-applied massage are of great use in overcoming the stiffening and fixation of the joints and the muscular wasting in their vicinity.

Climate.—Dry heat benefits cases of rheumatoid arthritis, whereas damp cold increases the disease. Seaside resorts are not suitable for most cases. As a winter resort there is no better climate than that of Egypt.

DISCUSSION.

Mr. T. S. P. STRANGEWAYS (University of Cambridge) gave a brief description of work being carried on in Cambridge on diseases of joints, and asked for a systematic and careful study of the disease before forming any opinion on the cause or treatment. Literature was of no help; the only hope for advance was in research work along all possible lines of investigation.

Dr. HENRY DAVY (Exeter) spoke of the rareness of the disease in Devonshire. The bad reputation of Devon for rheumatism and rheumatoid arthritis was due to the fact that Devon at one time was so full of gout caused by mild lead poisoning. Seventy years ago, when lead presses were used in cyder-making, lead poisoning was very common in Devon, and with this gout of all kinds. Now, when for years lead had disappeared from the cyder presses, there was little or no lead poisoning in Devon. Cyder was one of the most healthy drinks possible, and the bulk of rheumatism and rheumatoid arthritis had disappeared from the county. He agreed with Dr. Strangeways that many various conditions were mixed up under the name of "rheumatoid arthritis," and hoped the discussion would tend to elucidate more about the disease.

Dr. T. MCCRAE (Johns Hopkins University) said: In the discussion of a disease with so many aspects as arthritis

deformans it is not possible to do more than pick out certain points on which to dwell. I should like merely to draw attention to certain features under etiology, diagnosis, and treatment.

1. *Etiology.*—There seems little doubt of the disease being essentially dependent on infection of some kind. Some of the points supporting this may be noted:

(*a*) The character of the attacks: In the great majority acute features occur at some time or other. They may not be very acute and not last for a long time, but are of the nature of an acute condition. The form with marked polyarticular arthritis affords the best example. The signs in the joints, the general glandular and splenic enlargement are important. The last-named condition is most common in earlier life, but in any age is found about in proportion as it is looked for. The occasional association of pleurisy, endocarditis, and pericarditis has to be remembered. (*b*) The occurrence of certain changes, much like those found in this disease following infection with various other organisms; thus, after infection with the gonococcus, changes in the spine may occur which are exactly like those in arthritis deformans. The same has been shown in regard to both the typhoid and paracolon bacillus (typhoid spine).[1] As a result of such infections there may be a spondylitis, followed by definite deposits of bone along the spine. It may be urged that such findings suggest that arthritis deformans is nothing more than a collection of lesions due to many organisms. This may be true, but while in the spine it may not be possible to distinguish between the changes in this disease and those following infection with the gonococcus or typhoid bacillus, yet it does not apply to the peripheral joints, in which, as a rule, there is, except perhaps at the onset, little difficulty in making a clinical distinction. (*c*) The association of arthritis deformans with various infections and the influence of these on it: Thus infection about the nose and sinuses, pharynx, tonsils, pyorrhoea alveolaris and carious teeth, bronchiectasis, dysentery, infection of the pelvic organs in women and especially of the genito-urinary tract in males, apparently may stand in relationship. This is supported by the rapid improvement which may follow treatment of such local foci, and the influence of such infections, newly acquired, on the disease if previously present. (*d*) The occurrence of fever, a rapid pulse, and the marked disturbances of nutrition all speak for an infectious process. That the lesions are due to the local action of bacteria cannot as yet be proved, and there are certain points which suggest that the toxins may have an important influence. This is supported by the rapid improvement in the arthritic features—especially when acute—which may follow when a local focus of infection can be promptly and thoroughly treated. In this connexion the importance of local treatment of urethritis in gonorrhoeal arthritis may be cited. Reference may be made to one point, namely, the relationship of this disease to rheumatic fever. It is possible that an individual may have rheumatic fever and subsequently arthritis deformans. That one disease passes into the other seems very doubtful. The writer has not been able to see this in personal observations.

2. *Diagnosis.*—The importance of diagnosis cannot be overestimated. It is no reproach to us that the disease sometimes progresses despite all treatment, but it is a reproach, and a serious one, when this disease is regarded as "rheumatic" and treated as such for months, perhaps years. The diagnosis in advanced stage requires no mention; it is early in the course that its importance is so great. In the polyarticular form it is essential to recognize the frequency with which the disease begins as an acute polyarthritis, with fever, pain, and sometimes redness and swelling of the joints. Here the distinction is most difficult to make from acute rheumatic fever and gonorrhoeal arthritis. From rheumatic fever the knowledge of how easily error may be made is a great help. The fever in arthritis deformans is rarely very high, the pulse is relatively rapid, and the pain may not yield to salicylates. But the greatest help comes from the character of the arthritis. In arthritis deformans a joint once attacked is rarely left entirely free, and the arthritis rarely shifts from joint to joint. Certain joints are specially liable to involvement—the joints of the cervical vertebrae, the temporo-maxillary joint, and the thumb. Some of the fingers are usually concerned, and it is here that the changes are so characteristic. The first interphalangeal joint most frequently shows some thickening. Too much stress cannot be laid on the importance of watching for any sign of change in the joint. This is especially likely to occur early in some of the joints of the fingers. Gonorrhoeal arthritis may give considerable difficulty. That this is polyarticular in the majority of cases, especially at the onset, is often forgotten. The careful search for gonococci in the urethra is important. In many cases it may not be possible to obtain them from the joint itself. While at an early stage it may be difficult to distinguish these diseases, yet it must be said that in the majority, after a certain interval, there is little doubt from the clinical aspects. In the monarticular form the arthritis may be entirely overlooked and only the accompanying neuritis be recognized. This is especially likely in the case of the shoulder joint, in which the pain is referred principally to the arm. To the hip-joint the diagnosis of sciatica may be made. Careful examination of the joint readily gives the diagnosis. Spondylitis: The recognition of involvement of the whole spine is easy, but difficulty comes in diagnosing the instances of local disease. This is especially likely to occur in the lower dorsal or lumbar region, and as the symptoms are largely referred to other parts, error is easily made. This condition is comparatively common in males, and examination directed especially to the spine is of great assistance. Local changes may be found, but the restriction of movements is especially important. This may be for one movement only, perhaps only a lateral movement to one side. Such are always suggestive of local trouble in the spine. It is probable that in some cases there may be involvement of the vertebral joints without any permanent change being left, or at any rate, such a degree of change as we are able to recognize. It must always be kept in mind that the symptoms, when the vertebrae are involved, are most often referred to points elsewhere. The frequency with which sciatica is secondary to arthritis of the spine or hip puts emphasis on this. If there is any suspicion of tuberculosis—which is usually readily separated from arthritis deformans—tuberculin can be given. In all of these special mention should be made of the use of the *x* rays. These are of the greatest aid and should be used in every doubtful case for diagnosis and in many to decide as to the best treatment. In the great majority of cases, by the *x*-ray plate we are able to decide as to the form of arthritis present, as well as the amount of change in the joint; naturally this is of particular aid in the spine. The treatment depends largely on the type of disease present. In all forms, however, the first effort must be to make a careful search for any source of local infection. Every possible situation should be gone over carefully. The nose and pharynx, the tonsils, the mouth and teeth, the intestinal tract and the genito-urinary system should be investigated, and any abnormal condition treated. It is well to explain frankly to the patient the nature of the disease, and that his co-operation and assistance are all-important. By impressing patients with the importance of their help much assistance is given. One of the most encouraging things in the writer's experience has been the results obtained in dispensary patients, many of whom lived in unfavourable circumstances, by teaching them how to live and fight the disease, such as we do with tuberculosis. (*a*) General treatment must be largely devoted to improving the general hygiene. An open-air life as far as possible, all the sunshine available, and good food are essential. The diet should be as full as possible. Too often much harm is done by cutting down the diet; there is only one diet for these patients—that is, full diet. It is well to give milk and eggs between meals. Of course, attention has to be paid to the patient's digestion and the state of the bowels. With this large amounts of water should be given, best on an empty stomach. Tonics, especially iron and arsenic, are important. (*b*) Local treatment has to be directed towards the preservation of as much function as possible in the affected joints. During the acute stages the joints should be handled gently, but light rubbing is usually possible, and certainly should be begun as soon as the more acute features show signs of subsiding. With this the patient should be encouraged to move the joints himself, and taught how to give kneading movements to as many joints as possible. Simple exercises can soon be begun, at first few in number, and increased gradually. The more of these the patient does himself the better. Another measure of great aid is the application of the Bier method of producing hyperaemia. This may be done even when the joints are actually inflamed, and often gives great relief to the pain. The duration of this treatment can be gradually increased. Counter-irritation may be employed, perhaps best in the Paquelin cautery lightly applied. In arthritis of the spine it is usually found that rest is important. This may be attained by the applica-

[1] *American Journal of the Medical Sciences*, vol. cxxxii, 1906, p. 878.

tion of starch or plaster bandages, to be replaced later by some form of support. If the view that the disease is an infection or due to infection be correct, we may suggest that in all such conditions treatment of any local focus of infection, improving the general resistance and favouring elimination are important. As for the joints, the endeavour must be to keep them in as good condition as possible until the attack is over. Luckily it tends sooner or later to run its course. The fact that in many of the milder attacks the joints are left with so little damage is encouraging in this regard. The danger of future infections and the necessity of the patient being kept in the best possible general health are important. Patience and perseverance on the part of both patient and physician are essential throughout. While the outlook for the success of treatment is usually regarded as being discouraging, it is well to remember that these results followed too often after a diagnosis made when the damage done was already extensive. To handle a patient from the onset and endeavour to prevent serious damage is a very different story from the attempt to repair joints perhaps extensively destroyed and deformed. In conclusion, I should like to lay stress on the importance of early diagnosis followed by as careful oversight of every detail in the patient's life as if he had tuberculosis. With this and constant fighting there seems hope of doing much in the prevention of the severe articular changes, at any rate in many patients.

Dr. W. Ringrose Gore (Llandrindod Wells) said: As regards the origin of the disease, there can be no doubt that it is a bacterial disease. Although the specific microbe has not been isolated, I myself believe that it probably is an infection from the gastro-intestinal canal. There is almost always digestive disturbance in rheumatoid arthritis, and treatment which improves digestion and prevents intestinal fermentation has a great effect in stopping progress of the disease, the starting point being a gastro-intestinal catarrh. As in diseases of the respiratory tract, if two individuals are exposed to chill the resulting catarrh may produce in the one case a growth of the pneumococcus causing pneumonia, in the other the growth of those bacteria that produce a nasal catarrh, so I think in one individual a gastro-intestinal catarrh may produce gout, in another rheumatoid arthritis. The *modus operandi* may be seen in my work on nasal catarrh; the catarrhal secretion loses its power of inhibiting the growth of those bacteria normally present, which thus increase and become pathogenic. As regards the differential diagnosis, it is doubtful whether there is such a disease as chronic rheumatism pure and simple; most chronic joint diseases excluding gout are varieties of rheumatoid arthritis, the one in which most difficulty and errors seem to occur is the distinction between the early stage of gout and of rheumatoid arthritis. This distinction is the most important, as the treatment of both diseases is so different; irremedial harm may be done to the patient by this error in treatment, as rheumatoid arthritis is a very chronic disease, and patients nowadays are so learned in their symptoms that they usually find out this mistake for themselves. I naturally see a great many cases of rheumatoid arthritis, and I find a very large proportion of them were originally treated as gout; the majority think their symptoms are due to the presence of uric acid in the blood, and are dieted or diet themselves accordingly. Now of all the diseases that might be due to uric acid, rheumatoid arthritis is one with which it certainly has nothing to do; the uric acid craze has done more harm in the treatment of rheumatoid arthritis than in any other disease. The diagnosis between rheumatoid arthritis and gout should be easily made if one remembers that in the former disease progress is slow, a joint attacked does not recover; it is usually symmetrical, starting in the hands; it does not begin with pain, swelling, or redness; there is often pain and stiffness at the back of the neck; that the temporo-maxillary are joints that are frequently affected, and that uric acid is not found in the blood. Gonorrhoeal rheumatism is often mistaken for rheumatoid arthritis, especially in women. The treatment of rheumatoid arthritis must be systematically carried out if it is to be of real benefit. At a spa one has a great advantage in treatment, as one has the patient under control and the patients can devote themselves to the cure; in the general treatment it is of the greatest importance to get the digestion improved, the diet should be nutritious, containing rather an excess of the easily digested fats, such as will be assimilated with the least tax on the digestive organs, easily fermentable food should be avoided, excess of fat and proteid rather than carbohydrate. In Llandrindod we attribute a great part of the benefit that occurs to the action of the internal use of the waters there in improving the digestion and assimilation of food as well as its action in washing away the toxins that cause the subsidiary symptoms. Patients suffering from rheumatoid arthritis have almost always some form of gastric derangement, usually intestinal fermentation shown by the symptom of flatulency and the presence of indol in the urine. In cases of gastric or intestinal fermentation it should be recognized that they are due to a catarrhal condition of the gastro-intestinal mucous membrane, and as long as that condition exists you cannot get rid of fermentation; you may cause a temporary improvement by administering antiseptics, but as long as the gastro-intestinal secretions are abnormal so long will you have an abnormal growth of intestinal bacteria. It is in this way that diet is so important in rheumatoid arthritis—a different form of diet from gout, as while in both a diet must be ordered which will check intestinal fermentation, in the one case it should be as limited as possible, in the other as liberal. For local treatment electric-light baths and massage give the most effect, and the free perspiration that follows also helps to eliminate the toxins. Massage increases the mobility of joints, and also by increasing the flow of blood through the joints would have a specific effect on the bacteria present. With the same idea I have quite recently been treating rheumatoid arthritic joints in limbs by causing passive congestion with an elastic bandage well above the joint, so far with good results. After the effusion of serum into the joint tissues that this treatment produces, the joints soon become more mobile, more free from pain, and swellings round the joints are reduced. One would also expect, as in similar treatment of tuberculous joints, that the opsonic index of blood to the specific bacillus would be increased. I have just been treating one of the worst cases of subacute rheumatoid arthritis of two years' standing that I have seen; the hands are stiff, swollen, and deformed; they cannot be closed, and are useless. For a fortnight I have caused passive congestion of one arm by elastic compression for several hours daily, with the result that the fingers of that hand can be closed and the pain and swelling are much less, the other hand remaining as before. In the choice of a spa one should prefer one that is bracing, and combines internal and external treatment. And, finally, whatever treatment you adopt, never let your patient get reduced too much; nothing more facilitates the spread of the disease.

Dr. W. J. Midelton (Bournemouth) said: History should be taken very carefully; accidents at birth may be a factor, and pyogenic organisms are always a factor. I do not believe rheumatoid arthritis is due to a specific germ. I prefer the term "chronic cerebro-spinal toxaemia." I think treatment of the nervous system most important, and after carefully treating a number of cases according to the method revived by Dr. P. W. Latham—namely, continuous counter-irritation opposite the cervical and lumbar enlargements of the spine—I am strongly convinced of its efficacy. I have notes of 43 cases treated in this way. As a result of this treatment I have seen joint swellings quickly disappear, hearing improve, nutrition also, with great improvement in eyesight in one or more cases. In one patient who had lost the faculty of perspiration for over three years, this returned after three weeks under treatment by continuous counter-irritation to the spine. The climate of Bournemouth in the neighbourhood of the new golf links is specially suitable as a residence for arthritic patients, with a gravel soil, dry air, etc., warm in winter and cool in summer, and few thunderstorms.

Dr. Tyson (Folkestone) said: The present etiology of the disease is so doubtful that one must consider it from a clinical standpoint. The prevention and early treatment of it, in my experience, is best carried out by recommending the patient to live in a dry and a ventilated room, and to see that all the joints should be regularly and systematically exercised.

Dr. Preston King (Bath) said that from a long experience at Bath he was led to think that rheumatoid arthritis was not so much a specific disease as a constitutional and

joint affection resulting from absorption from centres of infection. The present nomenclature of the disease was unfortunate. "Osteo-arthritis" was the official name, but most cases showed no *bony* changes, the disease being confined to the soft tissues. Its connexion with gout was often marked, and many cases should certainly be called rheumatic gout. A gouty history was very frequently found in these cases, and especially among women. It would seem that the more orthodox disease—gout proper—passed down as an heirloom to the son, whilst the daughter's portion was rheumatoid arthritis.

Dr. J. Odery Symes (Bristol) said: Rheumatoid arthritis is a general term and includes both a fibro-arthritis and osteo-arthritis. Both of these are caused by bacterial invasion (cocci, gonococci, and *Diplococcus rheumaticus*) or by metabolic changes—senile, arterio-sclerotic, toxaemic, or neurotic. The points distinctive of early rheumatoid arthritis are: Rapid pulse and cold sweats, with low temperature, pigmentation, exaggerated reflexes, vasomotor disturbances, persisting symmetrical arthritis not yielding to salicylates, with wasting muscles, subjective sensory symptoms, and translucent bones. These points are not present in subacute rheumatism. Fluid drawn from joints in subacute rheumatism shows a polomorphonuclear leucocyte count. Fluid from rheumatoid arthritic joints shows a mononuclear leucocyte count.

Dr. Michael G. Foster (San Remo) said: In considering the treatment of this disease, one characterized by the affection of several joints with more or less cachexia, the influence of climate may be viewed in two aspects, (1) as relieving pain, (2) as improving nutrition. As regards the effects of climate in relieving pain it is impossible to foretell whether climate will be of any benefit. For the improvement of the general nutrition Egypt and the Canary Islands are probably the best. Whatever the climate the essentials of treatment are the same, rest in the open air, abundant nourishment, and passive movements of the joints. Drugs, other than cod liver oil, or for the relief of pain, are useless, but electric baths are often useful.

Dr. W. B. Lees (London) thought that the condition known as rheumatoid arthritis needed further analysis. When one had excluded cases of gout, cases of true rheumatism (due to the rheumatococcus), and cases partly due to gout and partly to rheumatism, also all chronic joint disease due to tubercle or to syphilis, all cases of gonorrhoeal arthritis and of tabetic arthropathy, there remained a group of cases which they called "rheumatoid arthritis." But this group needed further analysis. First there was the chronic polyarthritis of young children (chiefly girls) described by Dr. Still from cases at Great Ormond Street, in which the synovial membrane was found thickened and injected, but with very little affection of cartilage and no bony outgrowths; enlargement of the spleen and of lymphatic glands often exists, and sometimes adhesions of the pericardium and pleurae. This, he thought, was certainly a microbic disease. Secondly, there were the subacute cases of rheumatoid arthritis found in early adult life, especially in young women, with symptoms more or less suggestive of rheumatic fever, but which subsided into a chronic affection of one or two joints, with creaking and other evidence of chronic change. Many of these he thought to be really rheumatic in nature, for Dr. Poynton had proved that the rheumatococcus was able to produce in animals a condition of joints which could only be described as a rheumatoid arthritis. He had found that a vigorous use of sodium salicylate was often of very great benefit, and he described the method by which it was often possible to increase the dose to 400 or 500 grains daily. Thirdly, there was the well-known group of cases of women in the later part of life, with severe and increasing crippling of joints. If these were of microbic origin, he thought that the microbes might be of many kinds, as in malignant endocarditis. But one point deserved special attention. Many people, especially women, limited far too much their consumption of water. They did not take enough to make possible a due metabolism and elimination, and the waste products probably accumulated in the by-paths of the circulation. Lastly, there was the senile group of cases. He thought that "rheumatoid arthritis" was really a group of diseases.

Dr. F. J. Poynton (London) said that he would confine himself to a few remarks upon the pathological side. Discussions upon rheumatoid arthritis generally became difficult, because some spoke of the arthritis as the feature for consideration, while others dwelt upon the constitutional disease of which arthritis of a crippling kind was a prominent symptom. This latter was clearly Dr. Luff's view. He himself had with Dr. Paine obtained clear experimental proof that so far as joints were concerned it was possible for an infection to produce rheumatoid arthritis. They had experimented with a micrococcus obtained from a rheumatoid arthritis. The diplococcus found in rheumatism would also produce rheumatoid arthritis. He held that any bacterial infection which invaded the joints might produce a transient arthritis, a periarticular arthritis, or an osteo-arthritis. Some, he admitted, did so more certainly than others, but he felt convinced that, so far as the joints were concerned, rheumatoid arthritis was not an entity. Was there, however, as Dr. Luff maintained, a disease, rheumatoid arthritis? He did not deny this, but held it not proven. He ventured to disagree with Professor McCrae, and maintained that a rheumatoid arthritis might, and not infrequently did, arise directly from rheumatism in this country. Lastly, he was convinced that the constitution was an important factor in the pathology of arthritis, and was heretic enough to believe that rheumatic gout was often the most accurate description of an arthritis. The rheumatic infection attacking a gouty man would, he believed, produce a rheumatic gout; and, again, he believed that the tendency for delicate women of gouty stock to develop rheumatoid arthritis depended, probably, upon their gouty constitution rather than upon the peculiar nature of the infection, if such it was, that produced the arthritis. Gout was a constitutional disorder altering the soil. Arthritis was probably the expression of some infection modified by that soil.

Dr. A. W. Sikes (London) agreed with Dr. Poynton that gout and rheumatism had a definite relation to rheumatoid arthritis. His opinion was that in many cases the bacterial element came in late. The point on which they all differed was where the bacterial element came in. He thought there were many forms of rheumatoid arthritis. With regard to treatment, the chief things were heat, electricity, and exercises.

Dr. E. L. Fox (Plymouth) remarked that the disease was very prevalent in South Devon, in the Plymouth district. For treatment he relied on massage, superheated air, and diet.

Dr. J. W. Draper (Huddersfield) advocated for prevention of the disease concrete floors and keeping down ground air, and especially the avoidance of water in the cellar. For prevention he advocated the maintenance of good digestion and a healthy alimentary tube.

Mr. V. T. Greenyer (Hove) advocated surgical treatment in the cases of rheumatoid arthritis with chronic effusion into the large joints—namely, washing out the joints.

Dr. William Odell (Torquay) said that thirty-seven years ago one of his teachers observed that "he would not wish his worst enemy anything more difficult than to have a case of rheumatoid arthritis to treat." Although there was much more known about the disease from a bacteriological point of view, it seemed to Dr. Odell that little more was known about the treatment. He had found most benefit from the use of salicylates in the early stage, and guaiacol and hypophosphites in the later. In a recent case he had found great benefit from ichthyol.

Dr. J. Morrell Thomas (Newport) said: As regards treatment, the fact that so many different drugs have and are being tried makes it clear that so far we have no one drug of any special value in the treatment of osteo-arthritis. Locally massage and passive movements with counter-irritation in the shape of small blisters and warmth seem to relieve the pain and swelling best, but above all things patients should seek a warm dry climate inland and carry out the régime of the sanatorium treatment for consumption, because one finds as patients put on flesh and improve in general health there is a corresponding improvement in the joints as regards pain, swelling, and recovery of function. Sometimes joints get almost ankylosed in an unfortunate position and in some cases it is good treatment to break down adhesions under an anaesthetic. Five or six years ago I saw a patient with general osteo-arthritis and with one knee practically ankylosed in a flexed position; she could only get about on crutches

owing to inability to put her foot to the ground. I moved her knee-joint under ether and followed this treatment up with massage and passive movements. This patient is able to get about to-day without the aid of a stick or a crutch in comparative comfort.

REPLY.

Dr. LUFF, in reply, said he wished again to insist on the necessity of early diagnosis. A simple way of differentiating rheumatoid arthritis from rheumatism was that the one did not react to salicylates and the other did. It was an interesting difference noted in its prevalence in different parts of Devon, its frequency in the Plymouth district was probably due to its moist seaside climate. He thought it was not practicable to use the Bier method when many joints were involved. He had not himself found any benefit in rheumatoid arthritis from counter-irritation of the spine. He dissented from the view that rheumatoid arthritis was a rheumatic disease; he believed that the micro-organisms implicated would prove to be quite distinct.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF WASP STING.

A MARRIED woman, aged 40, who had had three healthy children and no miscarriages, had always enjoyed good health except for periodical attacks of migraine, which a distinguished consultant told her were due to her liver. This has been a great solace to her. The catamenia began at 17 years of age, and had been regular every month till the last onset, which occurred a week before its proper time, and she had not felt quite well since.

On September 6th she ate a small fried sole for dinner. On September 7th she had partridge for dinner, and also had it cold for supper on September 8th. No other suspicious food of any kind was taken. On September 8th she went to bed feeling as usual. At 7.45 a.m., on September 9th, she awoke feeling an urgent desire for stool, slipped on a dressing-gown, put her feet into slippers, and went to the lavatory. Just as she reached it, she felt a most intense pain in her left foot, and found a wasp had stung her on the outer side of the great toe, just at the level of the great and second toes. She killed the wasp. The pain was excruciating. She had often been stung before, but had never felt such pain as this.

She walked back to her bedroom after the bowels had acted, and within five minutes she began to itch all over, and felt herself swelling from head to foot. This was followed by abdominal pain, and a desire to defaecate. She tried again to go to the lavatory, but remembers nothing more. Her husband tells me that he was present, and that his wife was much frightened and suffering from shock. The bowels acted before she had time to reach the w.c., although it was adjoining the bedroom. She then collapsed, and her husband and a maid carried her back to bed. She was then unconscious.

I arrived about 9 a.m. She had swallowed a little brandy before my arrival. I found her in a semi-conscious condition, and the whole body irregularly convulsed. She rallied when spoken to and then relapsed into apparent unconsciousness again. The pupils were normal and reacted to light, and the corneal reflex was not affected. The whole of her body was covered with a dark, measly rash. There was a mark on the toe where the sting had been inserted, but otherwise there was nothing to distinguish the affected toe from any other part. The skin felt hard and tense and brawny. The hands, and especially the finger tips, were livid. The face was congested and the eyes suffused. She tells me there was a feeling of nausea all the time. The skin was cold, the pulse feeble, and the heart sounds faint. A distinct wheeze could be heard over the chest. An emetic of salt and water was given and a little grumous fluid was ejected from the stomach.

At 10 a.m. she felt better, but complained of the tight feeling all over the skin and the difficulty of breathing.

At 2 p.m. the rash had almost gone. She felt much better, but there was still some dyspnoea and feeling of constriction. There was a round erythematous patch on the dorsum of the left foot about 1½ in. in diameter. I thought she was nearly well again.

At 9 p.m. I found her very hot and flushed, and the skin now covered again from head to foot with a very bright scarlatiniform rash, and on the back and hips were many extensive wheals.

On the morning of September 10th all rash had practically gone, but there was some oedema of both eyelids. All the other symptoms had disappeared. I would add that each time the bowels acted there was a little bright blood in the motions. Is it possible that all this trouble could arise from the sting of a wasp?

Chadwell Heath. T. REUELL ATKINSON.

THE REMOVAL OF FOREIGN BODIES FROM THE HAND OR FOOT.

1. THE removal of a splinter from under the nail is an operation of some little difficulty when there is no projecting portion to seize with forceps. In such a case a very serviceable instrument is found in the so-called lens-hook of ophthalmic surgeons which often forms part of a box of instruments intended for microscopical dissecting purposes. Happening to possess such a hook I used it the other day to get out a splinter which had entered the whole length of a finger nail. The hook was passed down the track of the splinter and the point then turned upwards so as to press the splinter against the nail; the hook being then withdrawn brought the splinter with it painlessly. Splinters and thorns in other situations can be well extracted by the same method, the foreign body being compressed against the surgeon's finger applied to the skin. Most other instruments are too clumsy or not stiff enough for this purpose.

2. The needle of a hypodermic syringe filled with cocaine solution makes an excellent probe for the location of foreign bodies under the skin. Instead of being withdrawn after injection of the solution, as soon as anaesthesia is established the needle should be pushed on and moved about in the soft tissues till its point clicks upon the foreign body. Not long ago a coachman came to me who in brushing the lining of a carriage swept his hand over a needle which his mistress had left sticking into it, with the result that it entered the side of his finger and broke off. The orifice of entry could be seen, but the needle could not be felt; so filling a syringe with cocaine solution I passed the needle of the syringe into the track, and after a moment felt about with it, and found the needle lying along the bone. Its end could be clearly defined, and was cut down on without difficulty. This is an excellent method of locating without delay needles which have run into the sole of the foot; also thorns which have penetrated under the skin of the forearm or into the orbit, and have then broken off.

London, S.W. J. B. NIAS, M.D.

SECOND ATTACK OF TYPHOID FEVER: PERFORATION: LAPAROTOMY: DEATH.

IN view of the generally-accepted theory regarding the immunity conferred by an attack of typhoid fever, the following may be of interest:

Samuel H., aged 23, came under my care on July 31st, 1906, suffering from typhoid of a mild type; his brother developed a very severe type of the disease about five days later, and a sister who was nursing both of them took to bed with the same disease some weeks later. On July 10th, 1907, Samuel H. again sickened with typhoid of even a milder type than that which he had had previously. On July 19th, the sudden onset of dangerous symptoms led to the diagnosis of perforation; laparotomy was performed, stovaine being administered by lumbar puncture, and a perforation was found a short distance above the caecum. He died seven days after the operation. It may be said that the attack of a year ago was not typhoid, and I unfortunately did not try the Widal reaction in his case; but the positive clinical symptoms, coupled with the fact that his brother and sister subsequently developed the disease, leaves little doubt in my mind that the fatal attack was the second time of infection.

Winnipeg. E. S. MOORHEAD.

REPORTS OF SOCIETIES.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

R. Marcus Gunn, F.R.C.S., President.

Thursday, October 17th, 1907.

President's Introductory Address.

Mr. Gunn first tendered his warm thanks to the Society for the honour implied in his election to the presidential chair, and assured the members that he yielded to none in feelings of loyalty to the Society, whose interests he would do his best to serve. The first portion of the address was devoted to a review of the history of the Society dating from the issue of a circular letter in February, 1880. He referred to the most important contributions to the *Transactions* under various headings—physiological, surgical, clinical, pathological, etc. Passing on to the future, he said an exact knowledge of the etiology of affections of the cornea, iris, and choroid was much wanted, while they awaited an explanation of recurrent retinal haemorrhages in eyes otherwise seemingly sound, in persons whose general health was not manifestly at fault. If a diminished coagulability of the blood were found to be present, and that was kept at bay, it was reasonable to expect that the recurrence due to that cause would be checked, but such treatment had been disappointing. Opacities in the lens occasionally presented forms which did not seem explicable at all by our knowledge of its anatomy or its nutrition. Could these be accounted for? Prognosis was a very important matter to the patient, yet it was often uncertain, and must continue so; yet, if the ophthalmic surgeon knew a little more of the true nature of the different diseases which he had to treat, his knowledge of their course and duration would be materially increased. In the past few years a great advance had been made as to the nature of infective agents, and the ways in which the body attempted to free itself from invasion. There was the whole army of bacterial poisons, with their antibodies, and ophthalmic surgeons must know sufficient to be able to intelligently follow the reason involved in serum and vaccine therapy. If it was useful in their speciality, they must inquire when and how far, and how it should be employed. With regard to medicinal treatments, he hoped they would keep their armamentarium as small as possible without the sacrifice of efficiency. Too many drugs were a weariness of the flesh, both to him who gave and him who took. He thought the Society might well revert to more frequent committees and discussions, as in the earlier history of the Society. He referred to the large number of card-specimens now shown before the Society, many of them of great interest and importance, but members did not seem able to take full advantage of them, and their very number was the cause of that inability, for they could not see all, if indeed they could see any satisfactorily in half an hour in a crowded room. The institution of clinical evenings was quite an advance, but much still remained to be done. It would be well to have standing committees for men interested in special lines of work, whose duty it would be to report upon any case when the member showing it approved. Of such committee the exhibitor would be a member for the time being.

Tumour of the Optic Nerve.

Mr. J. B. Lawford described a case of tumour of the optic nerve.

The patient was a female aged 38, single, who came under observation in June, 1906. The eyelids on the left side were puffy and slightly red; there was a moderate degree of proptosis, the displacement being almost directly forwards. The movements of the eyeball upwards and outwards were restricted, rotation downwards and inwards full. No oedema, and but slight vascularity of the conjunctiva. No tenderness on pressure; nothing abnormal in the orbit; no pain, but some discomfort. Vision was reduced to perception of light. The media were clear, the optic papilla ill-defined and pale, and the retinal veins tortuous. No haemorrhage nor disease of the choroid. The family history was good; the patient was a healthy, robust woman, and tuberculous and syphilitic disease could be reasonably excluded. There was no history of injury. Something amiss was noticed in the left eye four years previously, and in April of that year she consulted Mr. Wherry of Cambridge, who recorded the vision on that date as follows: Right, $\frac{6}{6}$; left, $\frac{6}{18}$; but with correction of hypermetropic astigmatism, $\frac{6}{9}$ partly. The patient was seen by another ophthalmic surgeon during 1903-4, and was under treatment by drugs for some months, but there was no improvement in the symptoms. The diagnosis made in 1906 was (?) tumour of optic nerve sheath, (?) osteoma of orbit. Treatment by iodide of potassium was advised, and was carried out for some weeks, but without benefit. In July, 1907, there was a slight but noticeable alteration—the proptosis had increased, the movements of the globe were much restricted in all directions, the pupil was inactive to light, and there was no perception of light. The patient could not state how long the blindness had existed. No haemorrhages could be distinguished, the retinal veins were tortuous, there was no tenderness, no tumour could be felt, nor deep pulsation detected by the finger. The proptosis could not be reduced by pressure. There was no severe pain. The general health did not appear to be prejudiced by the orbital disease. Operation was advised. Three days later the patient was seen by Sir John Tweedy, who thought it was either osteoma of the orbital wall or tumour of the optic nerve, probably the latter. In June, 1907, the eyeball and tumour were removed. The tumour extended from the back of the eyeball to the apex of the orbit, and the nerve was divided as close to the optic foramen as possible. There was extensive haemorrhage into the orbital tissue; the swelling gradually subsided, and she left the nursing home a fortnight after the operation.

Fifteen similar cases had already been recorded, which was in contrast to the number of cases of primary intradural tumour of the optic nerve, which numbered 102 up to 1901. The age of his own patient was above the average. The microscopical characters of the growth were described and demonstrated by Mr. George Coats.

ROYAL SOCIETY OF MEDICINE.

Obstetrical and Gynaecological Section.

Atresia Vaginae and Delivery.

At the inaugural meeting of this Section, held on October 10th, 1907, Dr. Herbert Spencer, President, in the chair, Dr. Amand Routh reported a case in which, finding vaginal atresia so marked that during the completion of labour irremediable injury must be caused to the bladder, he removed the child by Caesarean section and the uterus by subtotal hysterectomy. Both mother and child recovered without further incidents. He advocated Caesarean hysterectomy in all such cases, giving a table of 30 cases in which it had been performed, with a mortality of 20 per cent. In 11 of these cases, in which the stump was treated by the intraperitoneal method, all the mothers recovered. The President agreed that the extensive cicatrization involving the bladder as described furnished a clear indication for Caesarean section, to be followed by hysterectomy. He had seen very extensive vaginal cicatrices yield to the pressure of the head in natural delivery, but in Dr. Routh's case this would have entailed great risk of injury to the bladder. He would prefer total hysterectomy, if practicable, to supravaginal hysterectomy, on account of the free drainage which it afforded.

Oedematous Fibroma of the Pelvis.

Dr. Tate described the case of a married 5-para, aged 39, who since her last confinement six years ago had noticed enlargement of the abdomen. This on abdominal section was found to be caused by a large, flattened, oedematous mass covered with peritoneum and imbedded in the pelvis, which was removed by enucleation. The cavity thus left was packed with gauze, and the uterus then removed. The ends of the gauze plugs were brought out through the vagina and the peritoneum brought together so as to cover up the large cavity in the pelvis. The patient had two attacks of secondary haemorrhage and subsequently some sloughing of the walls of the cavity. It was difficult to say in what structures the tumour originated, but it certainly had no connexion with the uterus. Mr. Alban Doran recalled a similar case in which the bulky tumour lay between the folds of the mesometrium without opening up the mesosalpinx, so that the Fallopian tubes and ovaries lay free on the upper surface of the tumour. When removing a fibroid by enucleation from the mesometrium, the surgeon must remember that the ureter might run above it, though as a rule it ran below the tumour, in which case it might be firmly adherent to the lower surface of the new growth.

Physiological Action of the Placenta.

Professor W. E. DIXON and Dr. FRANK E. TAYLOR gave an epidiascopic demonstration on the physiological action of the placenta, setting forth the results of an investigation into the subject. They showed that the effect of injection of placental extracts on the circulation was very similar to that of adrenalin, but differed in three ways: (1) A less rapid rise of blood pressure; (2) a more prolonged rise; and (3) a less marked cardiac effect. Intestinal volume was decreased, and its movements were inhibited. In the uterus the results differed in the pregnant and non-pregnant condition. In the pregnant uterus there was an increased tonus of the uterine musculature, together with a well-marked increase in its rhythmic contractility. They concluded that the placenta produced a chemical substance which developed with the ripening of the placenta, the liberation of which, by contracting the uterus and the vessels, might induce the onset of normal labour. Dr. AMAND ROUTH alluded to a case of his own[1] in which labour occurred during paraplegia. That case induced Dr. Mott to suggest that in part at any rate labour might be due to metabolism of the pregnant uterus. Dr. W. S. A. GRIFFITH could not accept the chief conclusion of the authors—namely, that a substance contained in the placenta ascertained to increase uterine contraction was the cause of labour either premature or full time. There were many agents which increased uterine contraction but were almost useless for the induction of labour. Dr. C. NEPEAN LONGRIDGE mentioned that he had found a definite and progressive rise of blood pressure in a moderate number of primigravidae during the latter months of pregnancy. He also referred to the theory of Dr. Blair Bell that labour was brought about by an accumulation of calcium in the blood. But since calcium was practically insoluble in alcohol it could not be a constituent of the extracts which Dr. Taylor had used in his experiments.

Exhibits.

Among the exhibits was a chorion-epithelioma of the uterus with metastases in the vagina, lungs, liver, and brain, shown by Dr. T. W. EDEN.

MEDICAL SECTION.

The Complications of Pneumonia.

AT a meeting on October 22nd Dr. HECTOR MACKENZIE introduced a discussion on the complications of pneumonia. This disease, he said, was a plague more fatal to the population of these islands than typhoid and the other infectious fevers combined, and was responsible for a large proportion of the deaths at the two extremes of life. It was a plague due to a parasite which was very frequently present in the upper air passages of apparently healthy persons. It was stated on good authority that practically every individual acted as a host to organisms of true pneumococcus type at some time or other during the winter months. The disease was airborne, and one against which measures of prevention ought to be adopted. The organisms left the body with the saliva or sputum, especially by spitting, and in either moist or dried sputum might remain virulent for a considerable time. Naturally there was a considerable degree of resistance or immunity to the pneumococcus inherent in the human body. Recent experiments on animals supported the view that pneumonia was a local affection of the lung which the virus reached through the respiratory tract. Typical pneumonic lesions had been produced by injecting highly virulent cultures into the tracheas of rabbits previously immunized. Animals not previously immunized as a rule died from acute bacteriaemia. Pneumonia was a defensive process with the object of preventing an acute bacteriaemia. Where the antibacterial substances were abundant, as in the young and adolescent, recovery was the usual termination; where they were deficient, as in infancy and after middle life, death was common. The pneumococcus was almost constantly present in the blood in cases of pneumonia, and it was through the blood infection that the microbe reached the distant organs or tissues in which secondary affections arose. In the case of all the complications except those in or near the local lesion in the lung the microbes reached the organs or tissues in which they set up inflammatory changes through the blood current. Toxaemia was the cause of the graver constitutional symptoms, but it had not yet been possible to produce a serum having antitoxic properties. Animals could be successfully immunized, but their serum was antibacterial, not antitoxic, and hitherto on this account serum treatment of pneumonia and its complications had been unsatisfactory, uncertain, and inconclusive. Of the complications of pneumonia, pleurisy was the most common, empyema the most important. The pneumococcus was the cause of empyema in nine cases out of ten. It was difficult to explain why empyema should be more frequent on the left side. A pleural effusion after pneumonia, which required tapping, was almost invariably purulent. The most important diagnostic point distinguishing serous from purulent effusions was the history of the illness. If there were a history of acute onset the effusion was almost certainly purulent and pneumococcic. If, on the other hand, there were a history of gradual onset the effusion was most likely serous and tuberculous. Empyema should always be thought of when, after the time of the crisis, in a case of pneumonia pyrexia continued or returned. Gangrene of the lung was a rare but almost invariably fatal complication, characterized by prostration, dyspnoea, and high fever, with fetor of breath and sputa to an almost intolerable degree. In circumscribed cases the gangrenous mass might soften and form an abscess which might be surgically dealt with. Abscess of the lung was also rare, and more difficult to diagnose. Very few cases were recognized during life. When an abscess was suspected, an exploration should be performed, and, if pus be discovered, a free opening should be made. Chronic pneumonia was an unusual and quite exceptional termination of acute pneumonia. Pericarditis was the most frequent complication after pleurisy. It was attended with a high rate of mortality, and few cases in which it was diagnosed recovered. At present its recognition was more important from the point of view of prognosis than of treatment. The possibility of pyopericardium should be borne in mind. It should be treated by incision and drainage. Endocarditis was less common than pericarditis, although one out of every four cases of ulcerative endocarditis was due to the pneumococcus. It was a more frequent complication in women than in men, and in persons over the age of 30 than in those under. The aortic valve was affected in half of the recorded cases. Physical signs of endocarditis might be absent. It should be suspected when, after the time of the crisis, a remittent type of pyrexia persisted, without there being evidence of lesions in other organs or parts of the body to account for it. Sometimes it was not until the occurrence of embolism that it was possible to make certain. The discovery of the pneumococcus in the blood was important evidence. The prognosis of pneumococcic endocarditis was extremely grave. One's hopes at present rested on vaccine or serum treatment. Peritonitis seldom resulted from pneumonia. When pneumococcal peritonitis occurred, it was probably through the stomach or intestines that the microbe had reached the serous membrane. It was more common in children than in adults, and in the female than in the male sex. The constitutional disturbances at its onset were similar to those of pneumonia. Herpes labialis was sometimes met with. The fluid exudation was usually thinner than in other forms of peritonitis, and the prognosis was more favourable. Otitis media, while commonly due to pneumococcus infection, was quite a rare complication of pneumonia. Meningitis was also a very rare complication, and was almost invariably fatal when acute and purulent. A chronic and sero-fibrinous form of pneumococcus meningitis had been met with. Cerebral abscess of pneumococcic origin had been observed as late as six months after an attack of pneumonia. Neuritis was rare. Diffuse neuritis was also met with. Transitory attacks of hemiplegia, probably of toxic origin, had been observed. Arthritis usually appeared as a complication after the crisis. The larger joints—the knees, the hips, and the shoulders—were those most commonly affected. It was still a rare affection. It was the result of the blood infection, and was in most cases accompanied by grave constitutional symptoms. The joint affection was persistent instead of fugitive, as in the case of rheumatism. When there was an obvious accumulation of fluid in a joint the treatment should be

[1] *Obstet. Soc. Trans.*, vol. xxxix.

surgical, by incision and drainage. Pseudo-membranous inflammation of the mucous membranes and cases of croupous colitis of pneumococcic origin had been recorded. Thrombosis occurred in a small proportion of cases. It was nearly always the femoral veins which were affected, and more commonly the left than the right. About 80 per cent. of the cases recovered. Acute tonsillitis and tonsillar abscess, subcutaneous abscesses, cellulitis, conjunctivitis, corneal ulcer, and hypopyon were comparatively rare and less important complications. Nephritis was a more frequent complication in youth than during other periods of life. A large proportion of the fatal cases between the ages of 7 and 19 had had some kidney complication. Often a number of complications were co-existent, pointing to pneumococcal bacteriaemia in a severe form. Such cases were at present invariably fatal. In judging of the effects of treatment by serums and vaccines it was important to bear in mind the varying mortality of the disease at different ages, and especially the fact that the great majority of young subjects recovered under the usual methods of treatment, while the old and the very young almost invariably died.

Mr. A. G. Foulerton said that in discussing the vaccine treatment of pneumonia it was necessary to distinguish between the early and late stages of the pneumonic process, a vaccine being indicated in the later stages alone. He had found in a number of cases of empyema that in the case of adults 75 per cent. were streptococcal and only 25 per cent. pneumococcal, but in children over 80 per cent. were pneumococcal. In some of the cases of pneumonia with slow resolution in old subjects an antistreptococcal serum was well worth trying. In treating acute pneumonia a decision had to be made between a vaccine and an antiserum. During the first three or four days—that was, during the negative phase—the use of a vaccine would be hazardous. The serum treatment, on the other hand, had up to the present time been practically a failure. Of 7 test cases at the Middlesex Hospital, in 2 only was there success with the serum. The cause of the failure of the serum treatment of pneumonia was probably that the antibodies disappeared very rapidly from horse's blood.

Dr. W. P. Herringham explained and discussed a set of statistics of complications of pneumonia from St. Bartholomew's Hospital, supplied by the Medical Registrar.

Dr. W. Pasteur brought forward similar statistics from the Middlesex Hospital, and gave details of two cases of pneumonia with acute dilatation of the stomach, and two cases of gangrene of the lung in which recovery occurred.

The discussion was adjourned.

University College Hospital Medical Society.—At a meeting on October 16th, Sir Thomas Barlow in the chair, Professor William Osler delivered an address on the influence of the medical society on the education of the medical student. After reference to one or two existing societies, at St. Bartholomew's, at Guy's, and in Edinburgh, he ascribed two special functions to a students' medical society—the establishment of a library and the promotion of education, steps being also taken to induce students at an early period of their career to take interest in medical literature; thus, subjects in important journals, not only English but German and French, should be systematically reviewed. The medical society should also institute the seminar for its members. The seminar was a discussion by means of question and answer of some special subject decided on in advance, explained to the student from the most advanced standpoint. It was a plan carried out in Germany and also in Oxford. Ultimately the seminar would be a most important adjunct in medical education, replacing to a large extent the systematic lectures. Such seminars had their analogue in America in the form of what were known as recitation classes. One of the first items on the programme of a students' medical society might be a short historical account of some aspect of medicine. Then there should follow the demonstration of some specimens. These should be from cases specially studied by the man who brought them before the society. Such a procedure was of great educational advantage to the individual who supplied the specimens and presented his report thereon. The programme for the meeting should also include a set paper on some topic for discussion. The subject should be chosen with care by the committee responsible for the choice, but should be dealt with by a student, the invasion of senior men being carefully guarded against. The great point was that the students should do the work themselves. The papers should be on work in the laboratories and in the wards, for the two should never be dissociated, a fact too often overlooked. In the preparation of his paper a medical student would find great assistance in Professor Clifford Allbutt's book on the preparation of the medical essay. Brevity should be studied, the papers read at medical societies being commonly far too long. The committee responsible for choosing the subjects of the papers should be careful to select a topic suitable to the individual student preparing the paper, and sufficient time should be allowed for its elaboration. It was rather hard on the society that an individual member should educate himself at their expense, for the man reading the paper was certainly practising on the society, but his efforts should be received kindly and sympathetically. The student should learn in the medical society to get up on his feet and think and talk; it was difficult to acquire, but it was only to be learnt by practice, and that on fellow students. Such practice was neglected in England, in the United States, and in Canada, but in Paris candidates for all posts in hospitals were compelled to train themselves to be able to express their thoughts clearly. The acquirement of conciseness was difficult to attain, but lucidity was harder still. Many did not think clearly, and if they did not think logically it was very hard to speak with lucidity. Improvement in this respect might be expected if students were obliged, as they should be, to make their reports to the visiting physicians without referring to the notes of the cases. Such training was essential in order that in later life the student might have confidence in himself.

Leeds and West Riding Medico-Chirurgical Society.—At the first meeting of the session on October 18th, Dr. James Allan, the President, read an address descriptive of recent work on infections by pathogenic bacteria and protozoa, and a series of cases were shown or described, including the following: Mr. J. Stewart: A case in which a *Solid fibroid of the ovary* advanced in front of head during delivery; the fibroid was replaced in the abdomen and the confinement completed, ovariotomy being performed at the end of the sixth week. Mr. Lawford Knaggs: *Leontiasis ossea* in a girl of 13. Seven years before a bony tumour of the left superior maxilla had been explored and a retained tooth embedded in it was removed. Since then the right superior maxilla and the left side of the mandible had become affected and symmetrical outgrowths of bone had appeared behind the external angular processes of the frontal bone. The enlarging superior maxilla produced very marked deformity of the face. There was no optic neuritis; certain epileptiform manifestations had lately occurred but might have a menstrual origin. Mr. A. L. Whitehead: A case after operation for the relief of *Extensive symblepharon*, the lower eyelid being almost completely adherent to the eyeball before the operation. A large flap of conjunctiva had been transplanted, after the eyelid had been dissected off the globe, and at a later period a plastic operation had been performed on the eyelid for the cure of entropion caused by cicatricial contraction. Dr. E. F. Trevelyan: (1) *Congenital syphilis* of the fauces in a girl of 15. The uvula and adjacent parts of the soft palate were destroyed; the edges of the new arch were irregular and not yet completely healed. There was some evidence of congenital but none of acquired syphilis. (2) A specimen of *Cerebral softening* from a girl, aged 14, the subject of advanced febrile phthisis. The left middle cerebral artery was occluded and there was a dark red patch of commencing softening in the middle third of the lenticulate nucleus. Death occurred twenty-nine hours after the onset of a partial hemiplegia and aphasia. (3) Incomplete Graves's disease in a woman aged 28, with great preponderance of the exophthalmos on one side; Müller's and Stellwag's symptoms were present, but there was no thyroid enlargement, no increase in the pulse-rate, no tremor, and practically no palpitation; occasional nervousness. Dr. Churton: A man with intention tremor of trunk and limbs after a fall on the vertex, with probable contre-coup of mid-brain. Dr. T. W. Griffith: A case of congenital heart disease, probably complicated by acquired mitral disease

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.—At a meeting at Liverpool on October 18th, Dr. E. O. CROFT (Leeds), President, in the chair, Dr. W. E. FOTHERGILL (Manchester) narrated the case of a single lady, aged 28, who complained of a bladder trouble dating from puberty. For about five years micturition was necessary every hour or so to relieve intense pain in the left iliac region. None of the usual causes of bladder irritability could be found. The uterus could not be retroverted, and appeared to be attached to the back of the bladder, and to dig into it as soon as 2 or 3 oz. of urine had accumulated. The abdomen was opened, and it was seen that the utero-vesical pouch was practically absent, the bladder with the small anteflexed uterus lying between the layers of the broad ligaments. The peritoneum over the fundus of the bladder was incised, and the organ separated from the uterus. The peritoneum was united from side to side, so that the line of suture was antero-posterior, a utero-vesical pouch being thus formed. The fundus uteri was fastened to the peritoneum in the lower angle of the abdominal wound, to keep the uterus from pressing on the bladder. The patient, a year after the operation, has greatly improved in health, and has lost the pain which previously accompanied the distension of the bladder. The organ, however, is still irritable at times. Menstruation, which previously was rare and scanty, became regular and profuse, and the uterus gained in size and tone.—Dr. ARCHIBALD DONALD (Manchester) described a case of post-climacteric haemorrhage in a woman aged 66, who had one child thirty-eight years ago. Menstruation, which began at 13 years of age, was normal and regular up to 39—that is, twenty-seven years ago. For sixteen years there was no discharge of any kind. Then irregular haemorrhages began at variable intervals. The flow would last from two to ten days, and was not attended by any pain. The patient was markedly anaemic, and the face presented a striking appearance, being of a lemon-yellow tinge. The pulse was 90 per minute, and there was a diffuse precordial pulsation. Bimanually the uterus was the size of a three months pregnancy. Vaginal hysterectomy was performed on May 18th, 1907, and the recovery was uneventful. On opening the enlarged uterus, its cavity contained a growth apparently originating in the endometrium but invading the musculature. Microscopically, cylindrical down-growths of epithelial-like cells invaded the muscular wall. Professor Lorrain Smith pronounced it to be an endothelioma, probably originating in the lymph spaces of the endometrium or body of the uterus. —A paper on the pathology of solid ovarian tumours was read by Dr. BRIGGS and Dr. T. E. WALKER. In the hospital and private practice of the former during twenty years and eight months 488 ovarian new growths were removed by operation. They were arranged in two groups, the cystic group of 439 including 284 adenocystomata, 44 dermoids, 36 broad-ligament cysts, 24 papillomata, 50 carcinomata, 1 perithelioma (sarcoma). The solid group of 49 included 31 ovarian fibromata, 3 fibromata of the ovarian ligament, 3 adenomata, 1 surface papilloma, 8 solid carcinomata, 1 solid teratoma (myxo-chondro-sarcoma), 1 cellular spleen-like tumour. In the cystic group Dr. Walker during a recent research had found 50 ovarian carcinomata and 1 ovarian sarcoma (perithelioma). Thirty-one fibromata in 488 indicate the occurrence of these tumours in 6.4 per cent., the common textbook statement being 2 per cent. The wide range of structure observable amongst these tumours, from the structureless or almost structureless calcified fibroma to the highly cellular new growth, was pointed out.

THE Japanese Minister of the Interior has appointed a committee, of which Professors Ogata and Kitasati are presidents, to consider a scheme of sewerage for Tokyo.

THE late Mrs. Elizabeth Mason, of St. Leonards, whose will has now been proved, left £1,000 each to the London Hospital and the London Homoeopathic Hospital, and £500 each to the Buchanan Hospital, St. Leonards; All Saints' Convalescent Home, Eastbourne; the British Home for Incurables; the Convalescent Home for Poor Children, St. Leonards; the Hospital for Incurables, Putney; Brompton Hospital for Consumption; and the Alexandra Home for Chronic Invalids, St. Leonards. Subject to the payment of various legacies, she left the residue of her property, estimated at about £8,000, between the London Homoeopathic Hospital and the Buchanan Hospital, St. Leonards.

REVIEWS.

DISEASES OF THE LUNGS.

PRESENTED in the form of a single, well-printed, and suitably-illustrated volume, Dr. BABCOCK's work on *Diseases of the Lungs*[1] is "designed to be a practical presentation of the subject for the use of students and practitioners of medicine." The scope of the work is that of a comprehensive treatise, and it includes diseases of the pleura. The author modestly disclaims any pretension to instruct the "experienced internist." The book, however, may well claim a place amongst the more ambitious works of its own kind that have appeared in recent times. It bears the impress of the experienced writer; but it would, perhaps, be found of more value as a work of reference if it were not overladen by quotation from other writers, of possibly less experience. Special attention is called in the preface to the sections on pneumonia and phthisis, and to these we would chiefly refer. It will suffice to mention that the subjects of diseases of the bronchi and disorders of circulation in the lungs are duly dealt with in the earlier chapters, the concluding parts being devoted to diseases of the pleura. The description of acute fibrinous pneumonia will be found to contain reference to the recent investigations directed to the study of the blood in the disease. The use of larger quantities of blood for investigation has enabled the presence of the pneumococcus to be recognized in a much larger proportion of cases, but the relation of the number discoverable to the severity of the attack has not yet been determined. Similarly, much remains to be done in respect of the degree of leucocytosis at different stages of the illness, but it becomes increasingly clear that wider knowledge upon this point may have a definite bearing in the future upon the treatment of the more severe type of case for which so little can be done at present. The association of arthritis with acute pneumonia, until recently generally assumed to be more or less of a coincidence, is here insisted upon, and the frequent discovery of the pneumococcus in arthritic fluid, by Herrick and others, is called in evidence. Dr. Babcock is a great believer in the value of cold in the treatment of the acute condition. He advocates cold air and cold water, and would apply the former vigorously by means of ice tents constructed over the patient's bed, but he does not record any cases of sudden collapse such as have been seen by others who have used these methods. Digitalis in heroic doses would also appear to have found favour with him. In the section devoted to tuberculous disease of the lungs will be found a good account of modern views with regard to the whole subject, probably written before the publication of the last report of the British Tuberculosis Commission. We can commend the work as a whole as worthy of a place in the practitioner's library.

In the preface to their monograph on acute purulent pleurisy in children,[2] Drs. VIGUARD and MONOD are careful to disclaim any pretensions to absolute originality. Their work has been to test and develop methods of treatment suggested and to some extent used by others. But, this modesty notwithstanding, their book has considerable practical value, and may be read with interest and profit not only by the general practitioner, but especially by those engaged in hospital work. The best method of treating pleural effusions, whether serous or purulent, has long been, and still is, a matter of some controversy, and the first part of the present work is devoted to a discussion of the history of this subject and a criticism of the various methods of treatment in use now and in the past. In empyema the authors pin their faith to pleurotomy without resection of a rib, followed by continuous drainage by means of a siphon. Their technique is founded on the method of siphonage used by Cavaillon for continuous drainage of the intestine after establishing an artificial anus, and by him suggested as possibly applicable to the drainage of an empyema after pleurotomy (Cavaillon, *Lyon Médical*, 1905, vol. ii, p. 722). The authors have had exceptional opportunities

[1] *Diseases of the Lungs.* By Robert H. Babcock, A.M., M.D., formerly Professor of Medicine and Diseases of the Chest, College of Physicians and Surgeons, Chicago. London: Sidney Appleton. 1907. (Med. 8vo, pp. 828, with 12 coloured plates and 104 text illustrations. 25s.)

[2] *La Pleurésie Purulente Aiguë de l'Enfant.* Par les Drs. P. Viguard et S. Monod. Paris: A. Maloin. 1907. (Demy 8vo, pp. 168. Fr. 2.50.)

of applying this treatment, and seem to have established its superiority to the various methods of repeated paracentesis, continuous drainage following puncture, pleurotomy, with or without section followed by ordinary drainage, or the same operation followed by washing out the pleural cavity and immediate closure of the wound. The apparatus required is simple, and the description of their technique, which is the important thing, in the second part of the book, is admirably clear, and will repay perusal by any surgeon who may be called upon to deal with cases of this nature. The authors claim that their method ensures thorough fixation of the drainage tube, which is specially constructed with an internal and external flange; conveyance of the pus, so that fouling of the dressing, with all its attendant inconveniences, is avoided; and the eventual development, by means of the siphon, of an actual negative pressure within the pleural cavity, so that expansion of the lung is assisted. The third part of the book is devoted to a detailed account of 15 cases in which this treatment has been adopted, and there is an elaborate bibliography which cannot fail to prove a great assistance to every sincere student of the subject.

The book of Professor v. Schrötter, of which the volume entitled *Hygiene of the Lung* is an English translation,[3] is one of a series dealing with the hygiene of different organs, such as the heart, the lung, the nose, fauces, and larynx, etc. Its object, as stated in the preface to the German edition, is to instruct the lay person on the functions of the respiratory organs and on the importance which a free exercise of these functions possesses for the human organism. The book seems to fulfil its object satisfactorily. Its scope was somewhat wider than the title would at first sight suggest. Ventilation, exercise, clothing, cleanliness, and even food all have their influence on respiration and are, in this connexion, discussed. Part I gives a sufficiently complete sketch of the structure and functional activity of the lungs. Part II deals with the care of the healthy lung; with the quality of the air; the necessity for free respiration; with dust and ventilation. Part III treats of diseases of the lungs, including the effects of irrespirable gases. The effects of dusty atmospheres, of changes in atmospheric pressure and of poisonous gases are here discussed, as well as the causes and effects of bronchitis, emphysema, and consumption. It is gratifying to find England referred to as the pioneer of hygienic life and to have English homes and schools held up as patterns; on the other hand, it is surely incorrect to say that in English needle-grinding factories there are no arrangements for sucking out the dust such as are found in the German factories. The translator might have added a footnote in correction of this statement. The concluding pages of the book deal with the precautions for preventing the spread of consumption. Altogether this is a useful little book, and Mr. Armit's translation is excellent.

THE VALUE OF SYMPTOMS.

Dr. H. L. McKisack has written a useful *Dictionary of Medical Diagnosis*.[4] It is clear and accurate, and up to date. The majority of the sections are of course, like the stories in the laic dictionary, "unco short," but some of the longer ones have claims to the title of articles, and not a few are of decided value. Among those especially good are the articles on the physical signs of the lungs and heart, and some of those on nervous diseases. The articles on examination of the blood, by Dr. Thomas Houston; examination of the sputum, by Dr. J. E. MacIlwaine; and *x* rays in diagnosis, by Dr. J. C. Rankin, are all thoroughly practical. The volume contains some helpful tables, of which those on the muscular atrophies and on the signs of the different renal diseases may be mentioned as examples. Although the book is arranged on the alphabetical system it is informed throughout by a distinct purpose. The author in his preface says truly enough that "among the most fruitful methods of clinical teaching is that of considering fully the nature and origin of individual symptoms," and that "it is possible, by reviewing in this manner the subjective and objective symptoms, severally and collectively . . . to indicate the nature and situation of the diseased condition." It is, we believe, true that the study of a textbook of systematic medicine arranged in the ordinary way rather tends to interfere with the cultivation of the habit of independent observation. The habit of making a "snapshot" diagnosis is likely to be contracted, and this is apt to blur the mental vision so as to prevent the observer from seeing phenomena in their true relation and perspective. We remember an instance in which, at a competitive examination for an appointment, a newly-fledged graduate who subsequently attained considerable distinction, rushed to a diagnosis of renal disease from the observation of albumen in the urine, entirely overlooking a number of typhoid spots, although some of these were actually encircled with ink and marked with the date of their appearance. The sound diagnostician is he who goes to every case with an open mind and refuses to form an opinion until he has observed all the signs and symptoms; and in the higher refinements of diagnosis it is the man who thus suspends his judgement and then deliberately combines all his facts who wins the palm. Dr. McKisack's book is an endeavour to assist the student in acquiring this habit, and as such it may be warmly commended. The style is clear throughout and most of the photographs are faithful reproductions of diseased conditions and well selected to illustrate the subject. The diagrams are perhaps somewhat rough, but they serve their purpose. The book, so far as we have been able to test it, appears to be very complete, although neither in the text nor in the index nor in the articles on heart disease can we find any reference to angina pectoris or arterial sclerosis; the latter, so far as we have observed, is only referred to incidentally in connexion with tortuosity of the arteries, and the former does not appear to be mentioned at all.

FORENSIC ASPECTS OF ALIENISM.

Within the whole range of medical activity no task offers difficulties, both inherent and extraneous, so great as that of justly determining the mental and emotional status of any given individual. The inherent difficulties are so manifest that they hardly require pointing out. There is first of all the obvious fact that we have and can have no direct knowledge of the mind, thought or feeling of any one except ourselves, and that we can, therefore, only draw inferences concerning others from their conduct or reactions to their environment. There is, secondly, the fact that these inferences are only valid in relation to a norm or standard which varies according to race and country, and even within any country according to the time or age. There is further the fact that our means of investigation are as yet largely inadequate to the end in view and, lastly, that in many cases it is impossible to exclude simulation or dissimulation, for reasons which may or may not be apparent to the investigator.

In courts of law the task is simplified because the law itself furnishes a definite standard of conduct, but at the same time it introduces new and extrinsic complications by regarding the medical evidence only in the light of its own stipulated terms, thus often ruling out as irrelevant evidence which appears to the medical experts important.

A comparative study of the medical jurisprudence of different countries, of the views of eminent authorities upon such much debated questions as testamentary capacity, criminal responsibility, and so on, cannot fail to throw light on fundamental principles. So far as German medical jurisprudence is concerned the third volume[5] of the great handbook of forensic medicine, edited by Professor A. Schmidtmann, of Berlin, may be earnestly commended to the student of comparative jurisprudence. It is from the pen of Professor Siemerling, of Kiel, and, in harmony with the two-fold division of civil and criminal relations in which expert information may be required, he treats in the first part of his work, after a general account of the function and scope of the mental expert in

[3] *Hygiene of the Lung in Health and Disease.* By Professor Dr. L. von Schrötter. Translated by H. W. Armit, M.R.C.S., L.R.C.P. London and New York: Rebman Ltd. 1907. (Crown 8vo, pp. 150. 2s.)

[4] *A Dictionary of Medical Diagnosis.* By H. L. McKisack, M.D. M.R.C.P. London: Baillière, Tindall, and Cox. 1907. (Demy 8vo, pp. 595. 10s. 6d.)

[5] *Handbuch der gerichtlichen Medizin.* [Handbook of Forensic Medicine.] Edited by Professor A. Schmidtmann, with the collaboration of Professors Haberda, Kockel, Wachholz, Puppe, Ziemke, Ungar, and Siemerling. Being the ninth publication of the Caspar-Liman Series of Handbooks. Vol. iii, Streitige geistige Krankheit (Contested Mental Disease). By Professor Siemerling. Berlin: August Hirschwald. 1906. (Pp. 727, M. 16.)

legal courts of the various procedures in them, of the reasons for the putting under committee (*Entmündigung*) of persons on account of mental incapacity or disorder, or because of inebriety, and also of testamentary capacity, and of marriage and its annulment. In the second part of the book, which occupies over 600 pages, and is concerned with special psycho-nosology in its forensic aspect, the subject matter is divided according to the usual clinical categories, elucidated by a casuistic which includes full and detailed notes of 64 cases, giving in each an account of the legal proceedings, the medical evidence, and the facts as to the medical history, mental state, and final medical and judicial results. As the various clauses in the *bürgerliches Gesetzbuch* (Civil Code), *Strafgesetzbuch* (Penal Code), and the *Zivil* and *Strafprozessordnung* (Civil and Penal Proceedings) dealing with the subject are given in full and explained in the text in due order, the work will be found most valuable as a book of reference. It is not so much, however, as a commentary on legal procedure in German courts with regard to mental cases, and as thus furnishing by comparison suggestions as to our own, valuable as these may be, that it will be found of greatest use, but as an illuminating exposition of mental disorders in their legal bearings in general. Apart, altogether, from the important question of the position of the alienest expert in relation to the evidence bearing on the criminal responsibility of an accused person, a question discussed at some length by Professor Siemerling, many interesting points on which German law and procedure differs from our own are brought out—for example, insanity as a ground of divorce—points which will repay careful perusal.

NASAL POLYPUS.

THE views expressed by Dr. E. S. YONGE in his volume on *Polypus of the Nose*[6] are already known to readers of the BRITISH MEDICAL JOURNAL. It embodies a paper on the mode of origin of nasal polypus communicated to the British Medical Association in 1904 (BRITISH MEDICAL JOURNAL, 1904, vol. ii, p. 1239) with some important and useful additions, notably a historical review of the subject and a discussion of the various methods of treatment.

In the paper referred to the author quotes Heymann in attributing our want of definite information about the actual and immediate causes of the formation of mucous polypus of the nose to the fact that no observer has, up to the present, been able to demonstrate, in a satisfactory manner, a nasal mucous membrane in which the special changes and appearances could be traced from normal tissues up to polypus formation; and he further quotes the same authority as believing that this will, perhaps, never be effected.

The primary object of the book before us is to make known the results of certain pathological and experimental investigations which the author has been making in relation to the actual pathogenesis of the disease. The experiments were conducted on cats, since this animal is known to suffer from mucous polypi and because the turbinal tissues possess resemblances to the corresponding tissues in the human body. These results have led Dr. Yonge to formulate a theory which is opposed to that of Dr. E. Woakes, which has recently been revived in a modified form by Dr. Lambert Lack.

The theory advanced by Dr. Woakes at a meeting of the Medical Society of London in 1885, very briefly stated, amounted to this that polypi resulted from a chronic inflammatory process of the muco-periosteum of the middle turbinated bone associated with a morbid condition of the osseous tissue. The whole process he named "necrosing ethmoiditis."

Dr. Lack has revived this theory and considers that "polypi, in fact, may be regarded as circumscribed oedematous infiltrations of the nasal mucous membrane, the result of osteitis in the underlying bone."

Dr. Yonge's theory, reduced to its crudest essentials, amounts to this—that, following upon a chronic inflammation of the mucous membranes, the localized oedema, which represents the first stage of polypus formation, is a serous infiltration of the tissues, the result of obstruction of the efferent circulation of the part, the particular vessels which become obstructed being the periglandular capillaries and veins, the cause of the obstruction being the cystic dilatation of the mucous glands and their ducts. In a word, Dr. Yonge favours the influences of gravity and other physical causes. So far from accepting Dr. Lack's statement that bone disease is a constant concomitant of nasal polypi, he has found no trace of bone disease at all in the specimens he has examined, nor were any signs of rarefying osteitis to be detected in a series of specimens he submitted to an expert pathologist.

Dr. Yonge reverted to his Observations on the Determining Cause of the Formation of Nasal Polypi at the recent meeting of the Association at Exeter. From the discussion which followed the paper, a report of which will be found in our issue of October 12th, it would seem that his views were not generally accepted. The President of the Laryngological Section, whilst highly praising the work which Dr. Yonge had done, pointed out that the absence of clinical observations upon cats, and the difficulty in conducting such observations, rather invalidated the importance of Dr. Yonge's experimental work.

When we come to that part of the book dealing with treatment we must confess to some disappointment. We were led by the publisher's announcement in the advertisement columns to look for a "special reference to a new and simplified method for the radical cure of nasal polypi." All the methods mentioned have been well known to rhinologists for some time.

The proofs might have been more carefully read, and a little more care bestowed upon the printing; names of authorities are erroneously spelt, and that of the expert pathologist might have been given. The book as a whole is a concise account of a malady which, although prevalent enough, is far more prevalent in the public mind than in actual practice.

[6] *Polypus of the Nose.* By Eugene S. Yonge, M.D.Edin. Manchester and London: Sherratt and Hughes. (150 pp.; 20 plates. Price, 2s. 6d. net.)

NOTES ON BOOKS.

WE have received a copy of HOSSFELD'S *Polyglot Correspondent*,[7] a little work in pocket form which claims to enable the student to compose any mercantile letter in either English, French, German, or Spanish. The examples given are very numerous, and so arranged that a very slight knowledge of the required language would be sufficient to combine them into almost any conceivable form of mercantile correspondence. The scope of the book is strictly confined to commercial matters, but there is an appendix containing a vocabulary of technical words and expressions which will form a useful addendum even to the best dictionaries for any one who has occasion to correspond in any of the four languages dealt with.

We are pleased to see a third edition of *Orthopaedic Surgery* by Dr. WHITMAN,[8] who is a well-known authority on this subject on the other side of the Atlantic. In a review of the first edition it was necessary to say that the work was somewhat unequal in merit, but we are happy to say that the new edition evinces greater thoroughness and more carefully-chosen diction than its predecessors. The illustrations are particularly good. Among the new features we note on page 260 an account of the tuberculin test, and we find that obstetrical paralysis and infantile and spastic paralysis are discussed. We wish, however, that the author had gone more fully into these matters, as they have been so much in evidence lately, more particularly as orthopaedic surgeons have done a good deal to advance the surgical treatment. One noticeable feature of the book is the vast number of statistics, many of them original. We congratulate the author on the success he has achieved.

A volume which has reached us covers the *Transactions of the Therapeutical Society* during its fifth and final session, for the Society has now united its fortunes with those of the Royal Society of Medicine. It held seven meetings, in the course of which some fourteen papers were read and discussed. Among them is one in which Dr. George Crichton advocated the adoption of the metric system in prescribing.

[7] Hossfeld's *Polyglot Correspondent in English, French, German, and Spanish.* London: Hirschfeld Brothers, Limited; Glasgow: A. Stenhouse. (Cr. 16mo, pp. 461.)

[8] *A Treatise on Orthopaedic Surgery.* By Royal Whitman, M.D., sometime President of the American Orthopaedic Association. Third edition. London: Henry Kimpton. 1907. (Roy. 8vo; pp. 883; illustrations 554; price 28s. net.)

LONDON SCHOOL OF CLINICAL MEDICINE.

Formal Opening.

The formal opening of the London School of Clinical Medicine, attached to the Seamen's Hospital, Greenwich, took place on October 8th. The chair was occupied by Mr. Percival A. Nairne, Chairman of the Committee of Management, and of the audience of about 150 more than three-fourths were post-graduate students or associates of the School and general practitioners.

Introductory Address.

An address on the Advantages of Post-graduate Education was delivered by Sir R. Douglas Powell, Bart., K.C.V.O., President of the Royal College of Physicians of London. After congratulating the Seamen's Hospital Society on having established a school in connexion with the Dreadnought, he said it was well known that unqualified students and qualified men did not mix very well together in hospital; for whereas the student proper had not yet had the experience which would inform him as to the limitations of his own knowledge, the qualified man, whilst he had learnt much, had also forgotten something, and his experience needed to be brought into line by fresh study. In the early days of medicine it was a very common practice for those who had qualified at the great universities of Great Britain to pass on to the older universities of the Continent, to receive theoretical and practical instruction there from the great masters of medicine of the day. Even in recent times it had been the practice of men after graduation to go abroad for a certain time to go through some courses of clinical instruction or research in foreign universities. There was much to be said in commendation of this practice, inasmuch as men's minds were widened by foreign study. For a number of years now our own schools had been as well equipped as those abroad, and many foreigners now came to the English schools for the same purpose that we went to theirs; thus there was reciprocity of great value, not only to science but also to international amenities. There were several sorts of post-graduate courses. In a recent address he had emphasized the importance of a kind of post-graduate course after each period of the student's career, for those who were desirous of going beyond the Conjoint Examination and of passing on to some of the higher grades in their profession. He had thought that after the first two years had been completed a further advanced course of six months for students would be very valuable, and that after the fifth year a further year of clinical medicine or of hospital appointment would be valuable and, indeed, necessary for those who were passing on to the higher degrees. Again, there were certain men who were fully qualified and yet wished to equip themselves more fully in some special department of medicine, surgery, or research, and for these there was nothing for it but a prolonged post-graduate course. For practitioners laboriously engaged in general private practice there had been—up to recent times, at least—a great lack of opportunities of reconsidering the problems they had formulated and not solved in their own minds. Most of them could remember, not so many years ago, when, for instance, the tubercle bacillus was first recognized, and many could remember some of the rather amusing—if, perhaps, not a little painful—experiences that were witnessed in those times. He well remembered seeing more than one patient almost pickled with antiseptics, outside and inside, who was perhaps not suffering from tuberculosis at all, or in whom, at any rate, the tubercle bacilli, if present, were found gaily going on their course unaffected by the remedies which were so destructive to the patient. It had come to be rather too much a habit of the present day for the practitioner to have dictated to him a diagnosis from a research laboratory, to have the opsonic index taken and to be told that his patient had a low index, and therefore had tuberculosis. The practitioner could not find tuberculosis, but that was his fault. A Widal's test was taken, and was found to be positive — therefore the patient had typhoid fever; as a matter of fact, he had not, still he ought to have. Only last year, in the course of a fortnight, he happened to meet with instances in which three separate patients had been stated to have typhoid fever on the strength of a research laboratory finding a positive Widal test, and the only thing in which these three patients agreed was that none of them had the disease. One case he might mention was that of a man for whom he was called upon to give his sanction for the treatment already arranged for him; a nurse had been obtained, and two rooms had been thoroughly scoured and rendered aseptic for his reception, but the patient himself was very comfortable upstairs with only a mild attack of influenza, and in a few days was about again. The Widal test was accurate enough, but the misfortune was that the gentleman who was so assured that his patient must have typhoid fever was biassed and staggered by this new phase of medical learning. The patient had been in South Africa, and it was very likely that he had had an attack of enteric and that his blood had not forgotten it. He was not saying these things at all slightingly of the members of his profession, for he knew no more level-headed men in any profession than there were in medicine. They all made mistakes—Heaven knew he had made enough of them himself!—but there was a danger of avoidable mistakes being made through attaching too much importance to one particular symptom or discovery, which had not yet received its due place in clinical medicine. The fact was that they were living in days of somewhat special investigations and they had to keep an open mind to receive them with every acceptance which their importance required, but to relegate them to their proper place and regard them as aids and not the whole facts of the case. Besides these means of keeping up to date there were the medical societies, and he did not think he could exaggerate the value of these in keeping men's minds bright. But the great means, which were only now beginning to be realized, for supplying this post-graduate polishing up undoubtedly were the post-graduate schools of medicine. This school, which had only recently been established, gave the highest and best

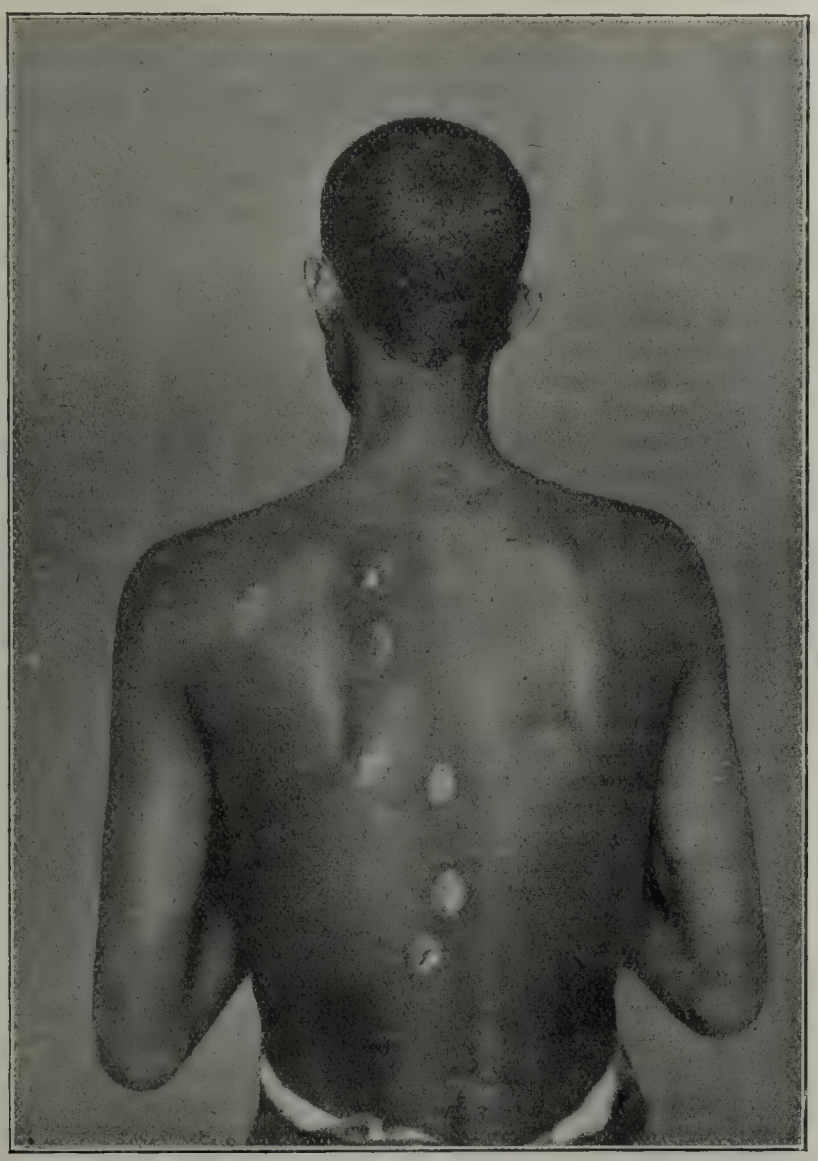


Fig. 1.—Native medicine in Zanzibar. Festering cuts made by native doctor, probably for the cure of rheumatism or pleurisy. (*From a photograph of a patient in the Seamen's Hospital, Greenwich.*)

promise of great success, especially amongst the men in the large surrounding district. At such a hospital as this well-arranged clinics could be visited, definite groups of cases brought together for examination, for discussion, and for demonstration, the great point being to illustrate some fact, some principle in medicine, by a series of cases. The Dreadnought Hospital had a considerable number of cases of tuberculous disease, for which there were special facilities of treatment; it was peculiarly rich in cases of cardio-vascular changes, as well as in all the ordinary cases to be seen in a hospital of its size. Whether from the stress of their calling or the irregularity of their lives, the patients who came to the Dreadnought Hospital numbered among them a large proportion of cases of this kind—cases of aneurysm, arterial degeneration, cardiac disease, and the like. Amongst other courses of instruction, the means of learning operative surgery on the dead subject were much greater than they were in many other similar institutions. There was also a class on practical pathology, microscopy, and bacteriology. It was impossible for practitioners to become expert bacteriologists, for the technique of to-day would have quite altered in three weeks' time. A busy man could not rely upon his own information derived from bacteriology, but must depend upon an expert. The hospital was prepared to carry out pathological investigations for those who required them. The practitioner should, however, know enough about the methods and means of bacteriological research not to be led away and biassed by the results, but to place the facts so derived in their proper place in clinical medicine. The danger of medical education of to-day was unquestionably an overcrowding of the preliminaries. The length and intricacy of the first part of the student's course tended to be so great as seriously to interfere with the later and more practical part of his studies. He agreed very strongly with the opinion not long ago expressed by the last President of the Royal College of Physicians, that it would be most desirable if the chemistry, physics, and biology of the early education of students were relegated to the public schools, and if such students started on their medical education with these preliminary subjects swept aside and began at once with anatomy and physiology. No medical man could be a scientific expert, but he must have a scientific training, and he must have his mind and knowledge disciplined by clinical research. He must keep an open mind to recognize all the developments and discoveries of his time, but he must not be easily misled by any of them. The most profitable means of acquiring this proper state of mind was for a man to attend a post-graduate course of medicine, such as that most admirably furnished at the Dreadnought.

Sir DYCE DUCKWORTH proposed a vote of thanks to Sir Douglas Powell, expressing his appreciation of the honour that had been conferred upon the school by the presence of the President of the Royal College of Physicians. This was seconded by Mr. MALCOLM MORRIS.

Fig. 2.—Specimens of sea captain's surgery.
(*From the Museum of the Seamen's Hospital, Greenwich.*)

DEVELOPMENT OF THE SCHOOL.

In the BRITISH MEDICAL JOURNAL of January 27th, 1906, an account was given of the establishment of the London School of Clinical Medicine, which was founded in connexion with the Seamen's Hospital at Greenwich in response to the growing demand for post-graduate teaching in London. It was felt that it was a pity, from the humanitarian as well as from the scientific point of view, that the large opportunities for study offered by a hospital containing such an abundance and variety of cases of exceptional interest should be lost. Another consideration which had weight with the Seamen's Hospital Society was the fact, proved by universal experience, that the usefulness of a hospital in regard to the successful treatment of patients is vastly increased when the work is done under the eyes of critical observers. For an account of the school the reader is referred to the article; we now wish to call attention to some developments which have taken place since it was written.

The hospital was again visited last summer by a representative of the BRITISH MEDICAL JOURNAL, who was received with the greatest courtesy by Dr. Guthrie Rankin, one of the physicians; Mr. Charles C. Choyce, the Medical Superintendent; Dr. Mackenzie Davidson, physician in charge of the *x*-ray department; Dr. Bayon, the pathologist, and Mr. P. Michelli, C.M.G., the secretary, to whose organizing and energizing abilities the success of the school is largely due. Our representative noted that the hospital as a whole had undergone a thorough renovation. Some of the wards were being enlarged. Among the other structural alterations in progress may be mentioned additions to the out-patient department and waiting rooms; the addition of an anaesthetizing room and a sterilizing room to the operating rooms; reflooring of the hospital had been commenced; the sanitary blocks and bath rooms were being rebuilt; a new isolation block was being built, and the dispensaries were being rearranged and enlarged. Departments for diseases of the eye and ear had been opened. The school premises are in one wing of the hospital; they are separate from the hospital, though in structural continuity therewith. There is a spacious and well-ventilated lecture room, provided with projection lantern and other teaching fixtures.

There are two laboratories, each fully equipped for both teaching and original research; they are under the direction of a resident pathologist. Among the points of interest seen in the laboratories may be mentioned many specimens of tumours in process of diagnosis; a new method of isolating the *Bacillus typhosus* early in the disease, by culturing in bile and then transferring to a medium stained with carbol fuchsin; and a specimen of experimentally-produced goître in a rabbit. This is believed to be the first time that it has been possible to produce goître experimentally in a country where animals are quite free from thyroid changes. It should be stated that many pathological investigations are made for practitioners at fixed fees. There is an increasing disposition

on the part of practitioners all over the country to avail themselves of the facilities thus offered.

Museum.

The museum has been greatly increased since our representative's previous visit. Most of the specimens are mounted by Kayserling's "natural colour" method. Some special features are: (*a*) A very varied lot of tumours, many of them rare; (*b*) a large number of catalogued microscopic slides; (*c*) a series of 300 ethnological skulls; (*d*) specimens of "sea captain's surgery," and others of curious interest. It should in fairness be stated that many of the fractures and other injuries treated by skippers show very creditable results. Nearly every skipper has a copy of either Leach's or Johnson Smith's manuals of instruction, both written by late resident medical officers of the hospital. Nevertheless, there are in the museum a number of specimens of fractured bones showing union in bad position; as illustrations the reader is referred to Figs. 2 and 3. Much of the interest of these specimens lies in the small amount of disability apparently caused by them; in most of the cases the patients continued to labour in their vocation for some years, and eventually died in the hospital from other causes. Even now striking examples of the results of want of treatment or bad treatment are often brought to the hospital, and it may be assumed that there are many more which never reach Greenwich. Many tragedies at sea occur through want of efficient surgery. Too many shipowners seem to think a doctor a needless luxury, and the recent correspondence in our columns shows that some at least of the shipping companies which do carry, as the advertisements used to say, "a surgeon and a cow," put these "officials" almost on a par in point of treatment. For two examples of ship captain's surgery we are indebted to Mr. Choyce, whose kind help in the collection of materials for this article we here take an opportunity of acknowledging. One case was that of a young man suffering from appendicitic abscess who was "palpated" by his skipper with a view to diagnosis. During the examination he complained of sudden sharp desire to micturate, and passed a large quantity of pus *per vesicam et urethram*. Eighteen days later he reached the Seamen's Hospital almost in a moribund state; upon operation it was found that the abdominal walls on the right side were infiltrated with inspissated pus, that the peritoneum all over the right side was uncommonly thickened and that the appendix was adherent to and had perforated into the right ureter. The other case was that of a young sailor who was brought into the casualty room with the history that he had fractured his leg at sea five days previously. On examination the leg and foot were simply wrapped up in a piece of dirty sacking; no attempt had been made to reduce the deformity, to cleanse or to apply splints. The lower third of the leg and foot were lying at right angles to the rest of the limb, and both tibia and fibula were projecting and very filthy and foul smelling. As the result of treatment this man went out with firm union and only half an inch of shortening. Among other specimens of interest in the museum may be mentioned the lungs and trachea of a child with a shrimp stuck fast in the trachea. The specimen is from a child who died in the hospital as a result of too free participation in a Greenwich shrimp tea (Fig. 4). Another remarkable specimen is a collection of nails, wheels, etc., from the caecum and ascending colon of a lascar who died suddenly.

Fig. 3.—Specimen of sea captain's surgery.
(*From the Museum of the Seamen's Hospital, Greenwich.*)

Teaching Arrangements.

The character of the teaching is thoroughly practical. Clinical demonstrations are given in the morning and afternoon in the out-patient department on surgery, medicine, and one or other of the special departments—throat and nose, skin, eye, and radiography. In addition to these there are many special classes. The teaching of the school is recognized by the Royal Navy, Army, and the University of London. At the time of our representative's visit Dr. Rankin was lecturing in the lecture room upon "angina pectoris"; Sir William Bennett was in the wards demonstrating cases, amongst which were appendicitis, cephalic meningocele, thyroglossal fistula, and biliary fistula; Dr. Mackenzie Davidson was demonstrating in the *X*-Ray Department, and Mr. William Turner operating in the Theatre. Incidentally it may be said that if Charles Bell's wax models of morbid conditions were, as Sydney Smith said, the "Apollo Belvedere" of pathology, Dr. Mackenzie Davidson's shadow pictures may be called the "Laocoon" of skiagraphy. Operative surgery is a special feature in the teaching of the school. Classes may be taken almost at any time of the year. This fact is sometimes of use to men who cannot attend at their own hospitals at the times at which the classes are being held there.

Opportunities of Clinical Study.

The hospital is divided into two main sections, medical and surgical. In addition to the examples of disease to be found in all general hospitals, there is naturally found in the Seamen's Hospital a large proportion of diseases from which sailors are especially prone to suffer. These are the effects of syphilis, alcohol, and hard work. Heart affections, sclerosis of the arteries, and aneurysm are therefore very common. There is also a large number of cases of tuberculosis. These cases are segregated on one of the upper floors, with which is connected a flat roof with several shelters. Here the men spend a large portion of their time in all weathers. There is space for 40 patients.

Our representative was struck by the comfortable and cheerful appearance of the patients on the roof. The results of treatment in this class of cases have been very satisfactory. It is hoped very shortly to set aside another floor entirely for venereal cases, room for which would be obtained by moving the nurses' home out of the hospital.

Under the terms of the grant of the building by the Admiralty, the hospital is bound to receive pensioners from the Royal Navy who are suitable cases for indoor medical relief up to the number of 25. At the time of our representative's visit there was a pensioner suffering from hemiplegia and completely aphasic who had been an inmate of the hospital for eight and a half years. It is a

proof of the efficiency of the nursing that the man had never suffered from bedsores.

As an example of native African medicine may be mentioned a man who was in the hospital at the time of our representative's visit. He was a native of Zanzibar, and bore upon his back, chest, arms, legs, etc., many marks of scarification performed by a native medicine man with the object of curing an illness that was probably pneumonia (Fig. 1). Upon his forehead, too, was a curious V-shaped cut, probably intended to make him look fierce.

Arrangements for Students.

Thoughtful provision has been made for the comfort and amusement of students. There is now a tea room at

Fig. 4.—Case of suffocation by a shrimp in the trachea.
(*From the Museum of the Seamen's Hospital, Greenwich.*)

their disposal, a billiard room with a full-sized table, and a smoke room, which is much used in the evenings when the classes and demonstrations are over. There is also a library containing current periodicals and works of reference. The Royal Naval College has made naval surgeons studying at the school members of its mess. It may be mentioned that the total number of students enrolled since the opening of the school is 144; the number actually in attendance is 30. There are also fourteen or fifteen general practitioners in the neighbourhood who have enrolled themselves as associates of the school. These associates, on the payment of a couple of guineas, have the right of attending the clinical courses of instruction given by the staff.

It may not be superfluous to mention that access to the Seamen's Hospital from central London is easy. There are trains from Cannon Street to Greenwich, from Charing Cross and Cannon Street to New Cross, and thence by tram (eight minutes); from Victoria to Greenwich Park, and from any of the bridges or from the Embankment or Victoria.

Comfortable lodgings, personally recommended by the Medical Superintendent, may be obtained in the immediate neighbourhood of the hospital.

The students up to the present have been drawn from the Royal Navy, the Indian Medical Service, the Royal Army Medical Service, the Colonial Service, and from South Africa, Australia, New Zealand, India, the United States, Canada, as well as from England, Scotland and Ireland.

THE MEDICAL SCHOOL, BELFAST.

THE ceremonies connected with the opening of the Winter Session at Belfast took place in the Royal Victoria Hospital on October 17th, Sir WILLIAM WHITLA presiding over a large assembly. The principal event was the delivery of an address by Dr. R. J. JOHNSTONE, who dealt with the aims of hospital attendance and how best to attain them.

The art of medicine, he said, like many other arts, was governed by canons and practised after a method, both of which might vary from time to time, be altered by new discoveries or overridden by great geniuses; it was art which he who was ambitious to practise it must learn, and he would learn it best by watching it applied at the hands of a master—his clinical teacher.

The student's first aim in attending hospital was, therefore, to learn clinical methods both of diagnosis and treatment. The tiro was apt to look exclusively at brilliant diagnosis or to busy himself with acquiring copies of prescriptions, while he would be much better employed in observing the steps by which a diagnosis was reached or the considerations which determined the selection of a given treatment. His first study should be the physician, and his second the patient. Case-taking was invaluable as serving to crystallize a student's vague notions of method; it compelled him to follow the established order of attack on a clinical problem, and gave no countenance to "lightning diagnosis" or "pathognomonic symptoms," so specious and attractive, yet so often misleading. It led him finally to the acquisition of a method which, as improved by wider knowledge and more extended experience, should be his instrument during life—his most useful if his least showy professional attainment.

The student negligent of method was apt to degenerate into the medical journeyman, content with the most superficial of examinations, the most provisional of diagnoses, and with an armamentarium of paregoric for a cough, bismuth for a pain in the stomach, and morphine when in doubt. The diligent student of method fitted himself for the loftier conception of the practice of medicine, which did not look upon a patient as merely a suitable receptacle for drugs and a necessary disburser of fees, but as an interesting study and an attractive problem, however squalid or repulsive—an attitude of mind which was its own exceeding great reward.

The second aim of the student in attending hospital was to gain first-hand experience of as many types of disease as possible, and so to supply himself with touchstones and tests for the conditions he was to encounter in practice. Before he had got a knowledge of method he did this, but under the eye of a teacher; later on he might with advantage exercise his powers of diagnosis by himself. One case thoroughly examined and studied increased the clinical experience of a student more than half a dozen in which he only observed some salient symptom and then passed on. Of two common faults, the first was lack of interest in everyday complaints, of which it was so important for them to have a thorough knowledge when in practice for themselves; secondly, the common impression that to have seen a case once was to have learned all that it could teach should be avoided, and it was vital for a student to store his mind, not with mere clinical snapshots, but with records of the whole course of a disease and its response to treatment.

The third object was to learn how to use books in connexion with practical work. To do this properly required a development of the critical faculty—not by any means dormant in medical students, but rather requiring proper direction and occasional repression. Books and journals were of value in two ways. They supplied our lack of experience or supplemented its poverty, and so increased prevision of the course of a disease or the effects of a treatment. The experience of others, as narrated in books, should arouse criticism of the reader by himself. When results of treatment were found to be different, this

should lead to careful revision of the reader's own methods, to see whether some error in observation or flaw in technique might not account for the discrepancy. The second use of books was to supply new ideas, and here strict criticism should be exercised and very convincing proofs demanded before adherence was given to a new theory or a novel treatment; otherwise, the reader's practice would be altered by each week's journal and revolutionized by each new book studied by him. The final court of appeal for new ideas lay in the test of clinical experience. The student and the young practitioner would do well to read up every case encountered unless he was perfectly familiar with the disease, and carefully scrutinize the effects of classical treatment as if it were but of yesterday. Perfection in method, widening of experience, and increased power of criticism went hand in hand, but let all men beware of thinking their achievements complete. When the practitioner had nothing more to learn of medicine, medicine had no more use for him. Many arts of great use in practice, mainly of manner, some noble and some ignoble, could not be learned in hospitals. But the student would have ill learned his lesson there if he had not lost the layman's attitude of blind terror or impotent pity in the face of death and disease, and if he did not look upon them rather as natural processes to be averted, directed, or arrested, and if he did not realize that his daily mission was to meet them with the calm courage of knowledge, and to assist the sufferer with a sympathy which was not less helpful, if often silent.

A cordial vote of thanks to the lecturer was proposed by Sir John Byers, seconded by Professor Symington, and conveyed by the Chairman.

FOURTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

[From our Special Representative.]

(Continued from page 1078.)

The Exhibition.

The greater part of the ground floor of the Reichstag building was utilized for the exhibition in connexion with the Congress, and in spite of a large number of exhibits the space was neither overcrowded nor was any difficulty experienced in examining what was being shown.

The Imperial Board of Health of Berlin exhibited models, pictures, and diagrams of the Institute, various publications, and plastic representations of the health of the German Empire, as well as maps, etc. There was a small but well chosen set of pathological specimens dealing with the results of the inoculation of the various types of tubercle bacilli in a variety of animals, and an excellent collection of microscopic, chemical, and physical paraphernalia, illustrating Uhlenhuth's biological blood test. The Royal Institute for Infectious Diseases exhibited cultures, tables, apparatus, and various specimens. The collection of mosquitos was of considerable interest, and the equipment for the malaria and for the sleeping sickness campaigns were also centres of attraction. The general practitioner must have found the test tube evidence of syphilitic antibodies (complement deflection) and other similar reactions interesting, since he can but rarely have an opportunity of seeing these things. The Berlin Hygienic Institute exhibited for the most part apparatus. The medical department of the Prussian War Office showed a fine model of the Potsdam barracks, a reproduction of the disinfection station at Thorn, and a number of other interesting models and objects. Ehrlich's Institute in Frankfurt sent a good collection of exhibits. Among these, the apparatus for standardizing serum, the test for snake poison, as a type of haemolysis, as well as the haemolytic test for human blood, and specimens of mouse tumours may be quoted as being of instructive interest.

In a second section various children's asylums were depicted and the results obtained in them graphically set forth in tables. Some good wax models representing the changes in the skin and other organs in certain diseases of children were shown. In another room a model of the sanatorium at Sülzhayn, one of the children's sanatorium in Hohen-Lychen, and a third of the Berlin Red Cross convalescent home, were exhibited by the German Central Committee for the Prevention of Consumption.

General bacteriology had a department to itself, and contained so much of educational interest that it would be impossible to make a selection of the most important exhibits. Suffice it to mention that the macroscopic and microscopic specimens set out by various institutes of various lands, and also by Professor Benda, Dr. Siegel, the more important chemical factories, and by the serum laboratory of Hamburg, all claimed attention. The department illustrating the various methods of water supply and disposal of sewage contained excellent models, drawings, and plans.

A small room was set aside for the German Society for the Abolition of Quackery. In this room a surprising number of newspaper cuttings, referring to advertised quack remedies, most of which had proved to be utterly worthless, and a large number of the stock-in-trade of the quack himself were carefully arranged. A useful little book was also shown which dealt with the laws of the chief States with regard to the prohibition of quackery.

According to the regulations of this Society, the objects of its existence are first to instruct the laity as well as the profession on charlatanism, which does harm to the public both with regard to health and pecuniarily; and, secondly, to instruct the public on scientific prevention of disease and proper care of invalids. The Society attempts to gain these ends by the publication of pamphlets, and possibly by the publication of a journal; by reporting in the daily press on cases in which harm has been done by quacks; by influencing laws relating to the subject; by attacking quack advertisements, by delivering lectures in various places, and by supporting all undertakings which aim at the suppression or diminution of quackery. Every adult can become a member of the Society, and other societies can also join. The personal subscription is placed at a minimum of 3s., and that of societies at one of 10s. a year. The membership can be determined by resignation, by failure to pay the subscription after two applications, and also when the member acts in opposition to the objects of the Society. There are the usual rules with regard to general meetings, alterations of rules, election of the Committee, etc.

In the course of the week an International Society for the Abolition of Quackery was founded out of the existing national societies, a number of countries joining.

In the sixth department plans and pictures, and also models of hospitals, illustrating the types of structure, and also of disinfection apparatus, were exhibited.

In the seventh department dietary and clothing were dealt with. The exhibits of the former class were scarcely new, while the latter, as would be expected, included the so-called "reform" dress in all its details.

In the department set aside for industrial affections, the exhibits relating to lightning and electric stroke were highly interesting. Most of these were portions of clothing, anatomical specimens, models, and objects partially destroyed by the current.

The ninth department exhibited objects in connexion with the hygiene of air, heating, and illumination; it was full of interesting apparatus and plans.

A few specially chosen firms of laboratory outfitters were invited to fill a department and they did so in a manner which every one who saw it admired. Without allowing a trace of advertisement to creep into the exhibition, these firms showed the newest models of microscopes with dark field illumination, and other modern laboratory apparatus of a truly excellent type.

Among the many other exhibits, one department was devoted to demography proper, and was well equipped with interesting data in maps, diagrams, and tables.

A number of prize medals were awarded for the best exhibits in the exhibition. The gold medal presented by Her Majesty the Kaiserin was awarded to the Board of Health of Brazil in Rio de Janeiro, while the town of Charlottenburg received the silver medal. The gold medal of the Ministry of Education was awarded to the Central Committee of the various branches of the German Red Cross Society. A number of other awards were also made. Each exhibitor received a diploma.

Visits to the Berlin Institutes.

During the course of the week the members of the Congress had an opportunity of visiting the various

institutions in and around Berlin directly or indirectly connected with hygiene. The number of the institutions which were prepared to receive members was 98, and it will therefore be readily understood that even the most energetic correspondent could not visit and describe them all. On each day parties were formed, and, under the guidance of one of the Committee, a couple of these places were visited. Apart from this group visiting, members were received singly at all hours of the day at most of the places. The institutions included hospitals, hygiene and bacteriological institutes, State institutions for the control of foodstuffs, schools (including those for the blind, etc.), slaughter-houses, baths, sewage farms, etc.

The Imperial Board of Health under the directorship of Dr. F. Bumm is housed in a magnificent building. It contains four departments—medical, chemical hygienic, veterinary, and bacteriological. The work of the Board of Health is so well known that it is scarcely necessary to dwell on the functions which it fulfils, and it will be sufficient to state that the arrangements are quite in keeping with the high standard of work accomplished.

The Municipal Slaughter-house.

Among other places of interest visited by the members of the Congress, the slaughter-house, the sewage stations, the waterworks, and the prisons and asylums deserve mention. The slaughter-house was erected in 1878 at the cost of nearly a million sterling. It covers an area of over 110 acres. Upwards of 174,400 heads were slaughtered here in 1905, the maximum for one day being 14,625. The municipality employs 657 persons to control the meat sent out from the house, and in 1905, 2,335 whole beasts were condemned as unfit for the market. Apart from this, a large number of parts of the animals were condemned. Beside the slaughter-house proper, there is a spacious cattle-yard, and a cattle-station on the railway, a police slaughter-house, a boiling and sterilizing department, and a cold store. There is also a disinfection station for cattle trucks, etc. The whole arrangement of the place is excellent, and the businesslike way in which the work is performed is admirable.

Drainage and Sanitation.

The drainage of Berlin is conducted on the so-called "radial system," each radial section being connected with a pumping station, from which the sewage is passed on to the sewage fields. The daily quantity of sewage disposed of in 1905 averaged 268,188 cubic metres, or about 59,000,000 gallons. The pumping stations are placed in the deepest situation in the system close to the main emergency drains. These emergency drains serve for storm water. The sewage passes through a large main drain and also a "sand trap" before entering the pumps, and an iron grating, which serves to keep back coarse particles, is also interposed. The sewage fields are situated in Blankenburg-Malchow and Osdorf-Grossbeeren. They cover an area of some 40,000 acres, but only 19,250 acres are at present utilized in this way.

In connexion with the drainage system a few words on the domestic arrangements in this respect may be in place. It is a remarkable fact that the system of town drainage, the cleansing of the streets, the equipment of public institutions, etc., and the care of the water supply are all excellent and well controlled. But in spite of this the majority of the flats (in Berlin, as in Paris, everyone lives in flats) are supplied with water-closets which would certainly fail to satisfy Englishmen. In flats with a rental of up to £50 or £60 per annum, the water-closet is placed in the bath room. The flush is quite inadequate, and in many cases, in spite of traps, there is a considerable odour. In the more expensive flats and hotels the closets are better, but only rarely is a good pattern of pan seen.

With respect to the water supply, this may be regarded as satisfactory, but inasmuch as, save in those houses which are accommodated with central heating, no hot water supply is furnished (the German kitchener is an instrument for cooking exclusively), those who have been spoiled in an English house feel the want of hot water laid on very much. Light is better supplied than in London flats, since a regulation exists in Berlin that no house may be over 20 metres high, and every street must be at least 20 metres wide. In this way even the basement is illuminated in the daytime with daylight. In the bath rooms of the less expensive flats the baths are of zinc, and are not enamelled. In order that the baths may look nice the turned edge is polished, and presents a bright surface, while the rest of the bath is dull. It would seem as if the labour involved in this polishing is a deterrent to the frequent use of the bath. Apart from this, a hot bath has to be prepared by the lighting of a special furnace. Yet in a private lunatic asylum or a hospital or other institute supported by public or by private funds for socially defective persons, there are water-closets and bath rooms of a type fit to make the fastidious Englishman wish he had such arrangements in his humble home. The contrast is very striking.

Prisons.

There are four prisons in the area of larger Berlin, accommodating altogether some 4,750 persons, but apart from this number there are prison hospitals, and in Moabit there is a criminal lunatic department capable of housing 50 males. Three of the four prisons are penal prisons, the one at Moabit being built after the model of Pentonville; the fourth is destined for prisoners awaiting trial. From a hygienic point of view the accommodation is excellent, minute attention having been given to the ventilation and heating, etc.

Municipal Lunatic Asylum.

There is one municipal lunatic asylum, which accommodates 1,570 patients. Of these, 150 are criminal lunatics, and 620 require infirmary treatment. The asylum has only been opened some sixteen months, and is quite modern in equipment. Two of the houses (the whole establishment consists of a number of pavilions or houses) are set aside for the treatment of harmless patients without restraint, and one for persons suffering from infectious diseases; there are houses or villas also for observation of certain classes of patients, houses for patients who require special nursing, etc. The staff consists of a medical superintendent, 3 senior medical officers, 10 assistant medical officers, 2 voluntary or unpaid medical officers, 8 head warders, and 6 head nurses, as well as 155 male attendants and 137 nurses. The water supply is derived from a spring, and the water is freed from iron by being passed through a filter of gravel of varying state of division; the heating is carried out by means of steam and hot-air radiators, and the drainage is separated from the neighbouring drainage. The wards are very well planned, and are extremely comfortable. The special departments, kitchens, washhouse, etc., deserve unqualified praise.

VISIT TO HAMBURG.

On Sunday, September 29th, two special trains carried a large number of the members of the Congress to Hamburg, landing them at their destination at about 8 and 9 p.m. The rest of the evening was spent in the most pleasant manner at the Zoological Gardens. In spite of a very convivial time, and comparatively late going to bed, the members turned up at the appointed hour of 9 a.m. on Monday at the starting points of the various groups of inspection. Groups I and II were shown over the harbours and docks, the former visiting the institute for tropical diseases and also an emigrant ship and the emigrant station, while the latter inspected the waterworks, etc. Both groups were entertained by the Hamburg-American Line at a sumptuous lunch on board steamers. The third group visited the Orphan Asylum, St. George's Hospital, the disinfection stations, etc.; the fourth group went to the wonderful "Eppendorf" Hospital, which is only second to the Virchow Hospital in Berlin, as well as to prisons, the crematorium, etc.; while the fifth group visited the slaughter-house, the morgue, the criminal museum, and last, but not least, the Hygiene Institute.

Your correspondent joined the first group, but also visited the Hygiene Institute by himself. At the Institute of Tropical Medicine, Professor Nocht explained the plan of the building and sketched the work carried out. Professor Fülleborn then gave a lantern demonstration of the microscopical and clinical appearances in connexion with malaria, kala-azar, filariasis, etc. The room in which the members had congregated was in reality too small to permit of those behind seeing and hearing, but for the others, the demonstration was most interesting. Another worker of the institute then explained the Nocht-Giemsa

apparatus for killing rats in the holds of ships. A second excellent demonstration then followed, illustrating the methods employed in colour photography and giving some beautiful results. After the speeches, the members wandered round the Institute, where one saw live specimens of various mosquitos, of snakes, and also of flies, microscopic preparations of parasites, and numerous "pickled" specimens. The laboratories were neither large nor ornate, but they gave the impression that they were localities where honest good work was carried out, and commanded respect all the more because they were not show places. Connected with the institute was a small hospital for infectious and tropical diseases, a very workman-like type of establishment. Cleanliness, good hygienic conditions, and plenty of air space were apparent. After about twenty-five or thirty minutes a bugler blew a blast, and every one went to the harbour. A small steamer was in waiting, and the river Elbe looked most picturesque as the steamer wended its way between small and large craft towards one of the Hamburg-American Line docks. In the sunlight the waters danced merrily, and the busy world of the harbour looked quite at its best. Disembarking at a small landing stage, the members strode along a big quay, and then climbed on board the *President Lincoln*, a British-built ship, which the Hamburg-American Line had bought, and was utilizing as an emigrant and passenger ship. She was of 18,000 tons register, and although not very long, was remarkable for her immense depth. The emigrant pays 140 marks for the journey to New York in the steerage, but if he cares to invest another 20 marks, he can sail third class, and then enjoys considerably more comfort. The emigrant berths and cabins were quite acceptable, and the dining rooms, washhouses, water-closets, etc, clean and moderately roomy. During the voyage one person of each table—which is, by the way, devoid of tablecloth—is chosen to fetch the dishes. The third-class passengers have tablecloths, and are waited on at table. Light, air, and reasonable moving room, however, is supplied to the steerage passenger. The first-class passage costs up to 450 marks, according to the cabin chosen, and the ship is fitted with a fair amount of comfort for its better-class passengers. One of the holds was open, and into the depths of the ship one noticed two thick pipes, the upper end of which issued from a single still larger pipe, which was connected with a machine on board a small vessel lying alongside, while the distal ends hid themselves in the mysteries of the hold far out of sight. The machine was the Nocht-Giemsa disinfector. The principle of the rat disinfection may be briefly summed up as follows: Before the cargo is unloaded the holds are filled with so-called generator gas, which consists of carbon monoxide, carbon dioxide, and nitrogen. The gas does not, it is stated, damage the most delicate cargo, but it is a safe means of killing off all life in the holds. If any rats infected with plague are present they are killed at once, and therefore no infection of dock rats can take place. The apparatus consists of a generator or furnace; a pump, which sucks the gas through the generator, and also through a cooling and cleaning cylinder; a water pump, which sprinkles the coke in the cooler; a steam motor, which works both pumps and a steam boiler, inserted between the generator and the cooler, which allows of a certain amount of the heat to be utilized as steam power. The gas, passing as it does through a layer of coke of a definite depth, cannot contain more than 8 per cent. of carbon monoxide, and thus an explosive mixture cannot result; 5 per cent. of this gas is sufficient to act rapidly, the rest of the gas mixture being immaterial as long as oxygen is excluded. The gas can be sucked out of the holds and ship by the same machine after all the rats and mice have been killed. The dead rats are easily found among the cargo as this is being unloaded.

The bugle sounded again, and the members collected on the landing stage, and again embarked in the small steamer for another dock. The journey this time was short, and at its end the members strolled across a quay and passed over the *Koenig Wilhelm II*, and another smaller ship on to a hospital ship. This was fitted up by the Hamburg-American Line, and was capable of accommodating some 40 sick. Ambulance drill was carried out; one of the sailors lay down on a swing bed, and was hoisted off the ship and on again into the night quarters of the hospital. After this ship had been viewed, the company entertained the members at luncheon on board the *Koenig Wilhelm II*. The ship's orchestra played a selection during the repast. Afterwards a few speeches were made; but, truth to tell, all the members had had enough of speeches for the time being. The small steamer was then again requisitioned and a somewhat longer journey made down to the Elbe proper, and a glimpse of the wide stretch of water below Hamburg was got as she turned back and hurried restlessly through the busy water thoroughfare of Hamburg, past quays and harbour, past the greater part of the beautiful town, past the splendid Bismarck statue towering like the giant he was, past the meat inspection station until at last the Veddelhöft was reached, where carriages were in waiting to carry the members to the emigrant station in Veddel. At the chief entrance they alighted and entered a hall, where the topography and management of the place was explained in a clear manner. The members were told that they were at the time in the "unclean" side; but, truth to tell, no trace of this quality could be detected. The station was said to be able to take care of 4,000 persons if necessary, the beds when the space was required being arranged in two rows, one above the other. The Jewish kitchen and dining hall were kept separate from the Christian apartments. After the emigrant has passed through the bathing department, and had his or her clothes disinfected, if necessary, he or she was drafted into the "clean" side. Here were the sleeping corridors, hospital, observation quarters, etc. The water-closets presented one striking peculiarity in that, instead of the connexion pipe being trapped, it passed straight to the main drain, and this in its turn passed to the cesspool. The pans were flushed with water automatically every five minutes. The fluid then flowed through a disinfecting house, where it was treated with calcium chloride, and thence flowed away into the river. The solid particles which escaped being broken up and flowing into the calcium chloride tanks were dealt with separately. Apart from these departments, mention should be made of the existence of a Protestant and a Catholic church and a Jewish synagogue.

The Hygiene Institute, situated near the Zoological Gardens, is under the charge of Professor Dunbar, and is housed in a substantial building of four stories. The individual laboratories and working rooms are very well fitted up, and are spacious and well lighted. In two respects the institute presents very striking attributes. The first of these is the department in which the disposal of sewage and the control of the water supply is cared for. One was shown the English working models with automatic distributors first, and then Dunbar's latest model, in which the mechanical contrivances are replaced by physical means. The sewage is allowed to flow on to a trough, from whence it flows on to the surface of a thick layer of finely-divided charcoal, through which it becomes distributed in all directions by capillary action. It then passes through a layer which is less finely divided, then through a still coarser layer, and so on until the lowest layer is reached, which is made up of coarse lumps. Apart from this model, the control of the Hamburg water supply, the degree of infection of the Elbe, the purification system of water, the freeing from iron, etc., were all shown. The second point is the plague control. In this department the graphic record of plague rats and men (the latter are but few) was demonstrated first. The rest of the laboratory was taken up with the complete demonstration of the bacteriology of a recent human case of plague. The effect of the inoculations of the tissue fluids, etc., into rats, the cultures, and the microscopical specimens were each in turn ably demonstrated. In this laboratory a plan of a formaline steam disinfecting apparatus was exhibited, the efficacy of which was shown by leather and other objects which had been dealt with in this apparatus, and similar objects which had been exposed to steam. It must, however, be understood that, although only these few points have been picked out for description, the Institute possesses much which is worthy of admiration and of careful study.

At 9 p.m. the members and others, including the officers of the Italian training-ship *Etna*, arrived at the Rathaus, opposite the magnificent Binnen-Alster. The guests were received by the Bürgermeisters Mönckeberg and Burchard and by the Senators. The Rathaus is a fine building, of

sandstone, built in the German Renaissance style, with a spire in the centre some 340 ft. high. Its situation is well adapted to the proportions of the structure. Passing up a handsome marble staircase, the walls of which were richly decorated, the guests passed through one of the many pairs of heavy bronze ornamented gates into the Phoenix Hall, where they were received by the Bürgermeister. They then passed on through a number of other spacious apartments, each one of which presented architectural and pictorial beauties of its own. There were some 650 guests, and one feature which contrasted with the other functions of the Congress was that the fairer sex was but sparsely represented. After a more or less long wait the guests were ushered into the "*Festsaal*," and here the Bürgermeister delivered a speech, every one standing the while. He said that in welcoming the members to Hamburg he was sure that they had heard enough lectures and speeches to satisfy them for the present, and he did not wish to deliver a long scientific speech which might tire his hearers intellectually. He was glad that they had come for a few hours to Hamburg to see the scientific places of the town after a week of hard work in Berlin. He regarded hygiene as the science *par excellence* which was of paramount importance to the public at large; indeed it touched on all sorts and conditions of men, and on all ages, from the cradle to the deathbed and beyond, for it dealt with the treatment of the remains of human beings, either by burial or by cremation. He hoped that the members had found much that was interesting in the institutes of Hamburg, and that they would not regret the time spent on their way home from the Congress. The Vice-President of the Congress, the Secretary of State His Excellency von Meyer, spoke next, and thanked the first speaker, in the name of the Congress, for the hospitality extended to them. Chantemesse spoke for France, and praised the hospitality of the German highly. Sir Shirley Murphy spoke for England, and said that the success of the Congress largely depended on the capable way in which Bumm and his colleagues had managed their difficult task of catering for 4,000 persons. He also paid a high tribute to Hamburg. Several other speakers followed in the name of their countries. At the termination of the speeches the members sat down to a most dainty supper in true Hamburg style. The guests retired at about eleven o'clock, grateful to Hamburg and satisfied with eight days of hard work and genial hospitality.

(*To be continued.*)

THE ANNUAL REPORT OF THE MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD.

(*Continued from page 1072.*)

Disinfection on Shipboard.

A further inquiry has been instituted by Dr. Wade into the various processes of fumigation by sulphur dioxide, as applied in the destruction of rats and in disinfection on shipboard. He finds that rats and insects would be destroyed in less than two hours by the uniform diffusion of at most 0.5 per cent. of sulphur dioxide. This condition is easily and quickly realized in cabins and empty holds, and in the space around the cargo in a loaded hold; but, owing to the extensive absorption of this gas, air containing 3 per cent. of it must be circulated around the cargo for eight to twelve hours to ensure adequate penetration. Pathogenic bacteria in exposed places would also be destroyed by the above treatment; and if the hold be closed for a like period afterwards, sufficient penetration will have taken place to ensure the disinfection of all those parts of the interior of the cargo in which these bacteria are likely to be present. Complete penetration can in extreme cases be secured by repeating the fumigation without opening the hatches. Textile fibres and fabrics, metals, and furniture are not affected by sulphur dioxide, but are liable to injury by the accompanying sulphuric acid when the gas is produced by burning sulphur, unless they are protected by means of a suitable covering. Jute in bales is not affected in any case. Moist foodstuffs, such as fruit, vegetables, and fresh meat, are uneatable after exposure to sulphur dioxide, and wheat in bags is rendered useless for bread-making; but owing to the slowness of penetration wheat in bulk is not seriously affected. Barley and maize are practically unaffected by fumigation with sulphur dioxide. The gas may be generated for the above purposes either from sulphur or from the liquefied gas, the former process being on the whole preferable on the ground both of convenience and of economy. By combining a small sulphur furnace with a large air blower and providing suitable distributing valves, several holds may be supplied simultaneously with sulphur dioxide in sufficient concentration for the above purposes.

Pathogenic Staphylococci.

Owing to the wide importance of staphylococci as agents of suppuration and sepsis, Drs. Andrewes and Gordon have endeavoured to ascertain how far specific differences are discoverable amongst the staphylococci found to be pathogenic. In the first place, they point out that the pathogenic cocci which are sometimes classed as staphylococci fall into two groups, which they regard as generically dissimilar. The first group, which does not come within the scope of the investigations dealt with in the present report, consists of the Gram-negative cocci (*M. catarrhalis*, meningococcus, gonococcus). These organisms are distinguished by their highly-developed parasitic character, and the relative difficulty with which they can be cultivated artificially, as well as by their staining reactions and their tendency to an intracellular habitat in the morbid processes to which they give rise. This group is readily separable from the Gram-positive staphylococci which have formed the main object of the present inquiry. These latter organisms are characterized by their morphological grouping in clusters, by their uniform size, and the readiness with which they can be grown on ordinary culture media. They show no disposition to an intracellular habitat, though often enclosed in cells as a result of phagocytosis. By far the commonest and most important of these pathogenic staphylococci is the organism known as *Staphylococcus pyogenes*. This is responsible for a large proportion of the acute localized suppurative processes seen in man, and more rarely for generalized septicaemic and pyaemic processes. The typical form of this organism develops an orange pigment and is known as *Staphylococcus pyogenes aureus*, but the investigators consider that it is specifically identical with the lemon-tinted and white forms—that is, there are no grounds for supposing *Staphylococcus pyogenes citreus* and *Staphylococcus pyogenes albus* to be other than varieties of the commoner form, due to partial or complete suppression of its chromogenic properties. Drs. Andrewes and Gordon regard the common saprophytic coccus of the skin, *Staphylococcus epidermidis albus*, as a species perfectly distinct from the foregoing, and readily distinguishable by its biological features. Though it is of feeble pathogenic powers, they consider that this species is capable of playing some part in disease processes. They have encountered a few examples of staphylococci associated with human disease which appear specifically different from the two forms just mentioned, but the evidence of their causal connexion with disease has not as yet been conclusively established. In addition to the ordinary morphological, tinctorial, and cultural characters of the staphylococci, the authors find that these organisms can be differentiated by taking into account their positive or negative response to each of the following eight physiological tests: (1) The clotting of milk within one week at 37° C.; (2) the liquefaction of gelatine within one week at 22° C.; (3) the reduction of neutral red within forty-eight hours at 37° C. under anaërobic conditions; (4) the reduction of nitrate to nitrite within three days at 37° C.; (5) the production of an acid reaction when cultivated for one week at 37° C. in a Lemco-litmus medium containing 1 per cent. of maltose; (6) the same, with lactose (instead of maltose); (7) the same, with glycerine; (8) the same, with mannite.

Chemical Products of Bacillus Enteritidis.

Dr. Sidney Martin has continued his work on bacterial toxins. In his report of last year he dealt with the chemical products of the growth of *B. enteritidis sporogenes* in various media. The products in question (ecto-toxins) appeared to possess very little toxic property

under the conditions of experiment, and it seemed necessary to ascertain whether the pathogenicity of this bacillus was due, not to the products of its growth, but to an endotoxin contained in the bodies of the bacilli. It was found, however, that search for endotoxin was attended by special difficulties, owing to spore formation. But in fresh experiments on the subject Dr. Martin has devised methods which have enabled him to test the properties of watery extracts prepared from the bodies of the bacillus in question. These extracts were found to exert very little physiological action when injected subcutaneously into guinea-pigs, though the living bacilli are virulent for these animals. These results, together with others obtained by intravenous injection of watery extract into rabbits, are in marked contrast to those produced by watery extracts of other bacteria, such as *Proteus vulgaris*, which produce their pathological effects by means of an endotoxin. In further experiments with *B. enteritidis sporogenes* Dr. Martin has investigated certain soluble substances produced by the bacillus in the medium in which it grows, using for this purpose solidified blood serum in which the bacilli have produced liquefaction. Albumoses obtained from serum thus treated, so far as they were tested, proved physiologically inert, a result which accorded with those reported the previous year. The non-proteid constituents of the medium, however, were found to comprise a substance, soluble in alcohol, which showed definite toxicity when inoculated subcutaneously into guinea-pigs, and, in less degree, when inoculated intravenously into rabbits.

Dr. Klein's Plague Prophylactic.

Dr. Klein discusses the value of his proposed prophylactic against plague, prepared from the dried tissues of experimental animals infected with the disease. He has ascertained that the dried tissues (bubo, spleen, lung) of animals dead of plague, when injected into mice and rats, not only produce symptoms characteristic of plague, but cause speedy death of the animals, although there is complete absence of multiplication of the bacillus in their bodies. He has also shown that by subjecting rats to sublethal doses of the same material these animals could be immunized against inoculation with virulent plague bacilli. His later investigations have been pursued with the object of finding the rodent best fitted to furnish a satisfactory plague prophylactic, the best method of preparing and preserving the material, and the appropriate dosage for ensuring adequate protection without detriment to the health of its recipient. His researches have led him to believe that the guinea-pig in which subacute plague has been artificially induced is the most promising animal for the purpose of readily obtaining his new prophylactic in large amounts. With material thus obtained Dr. Klein has succeeded not only in protecting rats but also, in a large proportion of cases, guinea-pigs, a class of animal especially susceptible to the disease. He has also tested his prophylactic upon monkeys. These animals, which may be regarded as an experimental substitute for man, have been found to be highly susceptible to inoculated plague. Nevertheless they proved to be easily protected against the disease by inoculations, relatively small in amount, of the new prophylactic, and it was found that they tolerated the treatment without manifesting symptoms of intoxication.

ROYAL COMMISSION ON VIVISECTION.

Third Report.

(*Continued from p. 1083.*)

The Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till the evening of Thursday, October 3rd.* We continue our abstracts of the evidence.

* London: Printed for His Majesty's Stationery Office by Wyman and Sons, Limited, 109, Fetter Lane, E.C. And to be purchased, either directly or through any bookseller, from Wyman and Sons, Limited, 109, Fetter Lane, Fleet Street, E.C.; and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin, 1907.

Antivivisectionist Testimony.

Evidence of Miss L. Lind-af-Hageby.

Miss Lind-af-Hageby, whose evidence, abstracted in the British Medical Journal of October 19th, occupies twenty-two double-columned pages of small print in the Blue Book recently published, was recalled later. For convenience of reference we give a summary of this further evidence (which occupies nearly twenty-one pages of the same Blue Book) here. As, however, there is much repetition, we think it necessary to give the main points of this evidence briefly.

She said Miss Schartau and she did not attend lectures with any fixed idea to write a book or to make a public accusation. She had previously attended Dr. Waller's lectures on the action of anaesthetics and narcotics in order to get efficiency on that subject. She had also attended operations on human beings and seen the administration of anaesthetics, and she had also had chloroform herself and other anaesthetics. When she had chloroform she was not conscious and felt no pain. Asked whether she agreed with the evidence of Mr. Morris, the President of the Royal College of Surgeons, that when an anaesthetic was given the power of feeling disappeared before the power of motion, she said she did not think that was always so. She thought there would be a sensation of pain at the time, though the brain was unable to record it afterwards. Having seen Mr. Thane's observations on her book, she still adhered altogether to the statements in the *Shambles of Science*. She did not think that the experimenters she saw produced proper anaesthesia. From her knowledge of what vivisection was she could not trust vivisectors with regard to complete anaesthesia. Her opinion was that people who performed vivisectional experiments preferred light anaesthesia, and did not give complete anaesthesia, and in some cases preferred no anaesthesia at all. Asked if she could give a case of this in England, she said there was a statement in a book to which she had referred by Sir Lauder Brunton, saying that experiments with drugs could not be made under anaesthesia. She had no objection to vivisection, provided that the vivisectors experimented on themselves. In reply to further questions, she said she objected to blood sports most seriously, and she considered the antivivisectionist who did not object to them most illogical. Asked if she had any suggestions to make on the assumption that experiments on animals could not be forbidden altogether, she said demonstration experiments should be forbidden; the use of morphine as an anaesthetic should be made illegal; curare should be forbidden altogether; experiments on all the higher animals, dogs, cats, monkeys, horses, asses, etc., should be forbidden. She would not only repeal the present Act, but substitute another prohibiting vivisection. She would define vivisection as experiments calculated to inflict pain on living animals for scientific purposes. Asked if that would not leave a very wide field open by which great pain could be inflicted on a large number of animals, not for scientific purposes, but for purposes which might be considered less worthy than scientific purposes, she said: Certainly; there was a great deal of other cruelty which should be stopped by other Acts, if possible. Asked if she would stop the farmyard operations which had been spoken of by other witnesses, she said it should at least be enacted by law that those operations were not permissible without anaesthetics. She agreed that the Act was of advantage in making things better than they were in countries where there was no such Act; but the Act, as it now stood, admitted of a great deal of cruelty. The experiments described in her book extended over a period of six months. Asked if at any period during that time she had made any representation or any complaint, she said she had made representations, but not to the Home Office or to the Inspector. Asked if she had made them to the public through the book, she replied, "Yes; I think we did." Asked if she ever applied to the experimenter to know whether she had misunderstood what was done or to ask for any explanation, she said she did not. She was not an antivivisectionist solely on the ground of pain, but on the ground of objecting to the general exploitation of animals. Asked by Mr. Ram for her definition of exploiting animals, she said she could go on for days telling the Commission what she considered to be exploitation of

animals. Mr. Ram, "in mercy to the rest of the Commissioners," withdrew the question. In reply to further questions, she said that in some cases no doubt there was a certain amount of truth underlying the whole system of serumtherapy, as, for instance, they knew that in the case of measles and certain other diseases, if one had an attack one was liable to be protected for a certain time. But she believed that the principle and its application were wrong. Asked by Mr. Ram to whom the following sentence in her book applied:

> The tormented long for their freedom, but the tormentors fight the merciful death. They are artists in the black art of producing the utmost agony, while the gateways through which death could enter are carefully watched; but sometimes they are not clever enough.

she said it was not meant to apply to any special vivisector; it applied to the whole system. Asked if she had ever in England seen an operator who, in her opinion, endeavoured to produce the utmost agony while watching the gateways through which death could mercifully enter, she replied that she had read of many—as, for instance, the experiments of Mantegazza in Italy. The words were applicable to the whole system of vivisection as practised to-day in England, too. Asked whether in England, under the law as it existed to-day, she could give any instance of any person whom she had either seen in England or read of in England who had produced the utmost agony and carefully seen that death did not occur, she said she was sure that she could give an instance of that. The method of vivisection in itself was an attempt to stop death because death would interfere with the experiment. Asked by the Chairman to answer the question a little more directly, she said she could say that there were vivisectors at present licensed and holding certificates in England who, she thought, would be quite capable of exercising the "black art of producing the utmost agony, while the gateways through which death could enter are carefully watched." Asked to give names, she mentioned Dr. Klein, Professor Schäfer, and Sir Lauder Brunton. Asked to give instances either of people or of operations since the present Act was passed which justified that definition, she said she thought she would be able to do it if they would allow her a few minutes to think. Mr. Ram asked about the following passage which occurred on page 152, under the heading of "Vivisection Bankrupt:"

> In the pain-tortured bodies, trembling under the sharp steel, bathing in their own blood, and in vain trying to tear the straps that fasten them to their crosses of agony, twitching under the piercing currents of artificial electricity, there is no trace left of the normal life in the nerves, in the blood, in the wonderful co-ordinated mechanism of the internal organs.

Asked if that passage was a true representation of vivisection as practised in England to-day, she said it was a true representation according to other descriptions of vivisectional experiments given in other chapters. Asked if it was not often the case that patients under a slight anaesthetic, like laughing gas, not only cried out but made violent movements when the tooth was drawn, and afterwards asserted that they felt no pain at all during the operation, she said that was often the case; but it was equally often the case that people did feel pain, and yet were in a kind of subdued state; as, for instance, when slight doses of chloroform were given to women in labour. She knew of one instance of a woman who felt pain all the time. On its being put to her that that meant that a very little more chloroform might have been given with advantage, she said the patient could not ask for more, because the people round her thought that she was unconscious, and talked of her as being unconscious, and she heard them talking of her as being unconscious. Asked by Dr. Gaskell if she knew that with ordinary anaesthesia, when the recurrent laryngeal nerve was stimulated one got closing of the glottis, and that when anaesthesia was pushed deeply one got opening of the glottis, she said she was not acquainted with these experiments. She thought she was generally aware that the peripheral nerve altered its effect according to the condition of anaesthesia, because that was one of the reasons why she had stated that physiologists preferred light anaesthesia, as deep anaesthesia sometimes interfered. Asked if she knew of Bowditch's experiments upon the action of anaesthesia upon the sciatic of the frog, she said, No. Asked if she knew the difference between pressor and depressor effects upon the stimulation of an afferent nerve, according to whether the anaesthesia was deep or not, she said she had some knowledge of that, and also as to the difference in the effect upon the respiratory centres, and how inspiration took place in one case and expiration in the other. Asked if she did not then see that the reason why physiologists made a distinction between light and deep anaesthesia was on account of the reversal of effects which took place in nervous actions, she said she had seen that all the time, though, of course, not only from the vivisector's point of view. On Dr. Gaskell pointing out that it had nothing to do with the question of pain, she said it had to do with the question of pain. For instance, Professor Starling in one place referred in his *Elements of Human Physiology* to incomplete anaesthesia, and spoke of:

> Pain, as evinced by the movements of an animal not fully under the influence of an anaesthetic.

That proved, in her opinion, that incomplete anaesthesia had to do with pain. On Dr. Gaskell saying he was using her own terms—light anaesthesia and deep anaesthesia, not incomplete anaesthesia—she said that was the same thing, light or incomplete, so far as she could understand. Dr. Gaskell said that what he wanted to get her to see was that it was not the same thing. The witness said she had never heard that before. Asked as to her theory that the spinal cord of the frog was capable of feeling pain on account of the apparently purposive activities which took place on stimulation of a nerve when the spinal cord was isolated, she said that in holding that view she was in very distinguished company. She thought that a man's spinal cord was not capable of feeling pain, but that a monkey's was. She could not be absolutely dogmatic on that point. In reply to further questions, she admitted that there was evidence of purposive reflexes from the sympathetic system. She did not think that any physiologist had ever put forward that the sympathetic system would be capable of any kind of consciousness; but a great number of physiologists had put forward that the spinal cord would be capable of a kind of hushed consciousness. In reply to Mr. Tomkinson she said she had witnessed a certain number of operations on living animals. In two cases only she thought complete anaesthesia was established and maintained throughout the operations. In reply to the Chairman, who asked if that meant two of those in the book or two of the fifty she spoke of, she said all the experiments they saw were not described, but the severer ones were described in this book. It would be an exaggeration to say two out of the fifty, because during many of those fifty there was nothing which might be called real vivisection. But among those described in this book there were only two. In reply to further questions she said that if medical men belonging to one or other of the antivivisection societies were allowed to be present at experiments she thought that would give a good deal of satisfaction and more guarantee than those societies had at present. If they were medical men she did not think that physiologists would have any objection; at any rate, they would object less than to lay people. She added that an association of medical antivivisectors was being formed called the International Medical Antivivisection Association; there were already some 200 members. There were about 100 members in England and 100 in France; it was only at its beginning. In reply to Sir William Collins, who asked if she contested the assertion of the many witnesses who had stated that various drugs and other modes of treatment, as well as other useful discoveries had been made by experiments upon the lower animals, she said she answered that her personal opinion was that nothing indispensable or in the higher sense useful had been discovered by such means. She would not contest Dr. Cushny's evidence that various soporifics, such as chloral and sulphonal, had been discovered by experimentation on the lower animals. But she contested that they could not have been discovered by experiments on human beings who offered themselves voluntarily. From the experimental point of view, they might just as well have been discovered by experiments on voluntary human beings, who were anxious to find out the truth about a drug which they believed to be of value. As regards local anaesthetics, she would say that cocaine was exceedingly useful. She did not think she would say that it was not discovered by experiments upon animals; but it might perfectly well and better have been demon-

strated on the human being. The same answer applied to the case of nitrite of amyl, and to all cases. If she were keenly interested in the testing of drugs she would certainly offer herself for testing them. She would not do it on dogs, cats, and rabbits. She did not deny that one could discover things by experiments on animals; she thought she would be very foolish to attempt to deny it. The question was, first, whether the discovery was really valuable; and, secondly, whether the discovery could not have been made through other means. In reply to further questions, she said she did not think the Pasteur treatment useful. In regard to the treatment of typhoid fever, plague, and cholera, she would say that useful treatments had not been discovered by experiments on animals wherever the treatment took the form of a serum. She was not aware of any successful treatment that had been brought out for snake bites which necessitated experiments upon animals. With regard to the treatment of myxoedema by thyroid extract, she thought it had partly been made by experiments on animals, but the principle might just as well have been discovered by other experiments—in fact, an equivalent of thyroid extract was being made very largely, she understood, in chemical laboratories and prepared synthetically. She did not think the use of adrenalin was absolutely necessary, or that she would include it among that which was useful. She thought it was discovered by experiments upon animals. In regard to the treatment of anthrax and the prevention of anthrax, she thought there had been a great deal of failure. In reply to the Chairman, who asked if she preferred her judgement to that of Sir John MacFadyean, with his large experience upon a question of that kind, she said she had not heard his opinion. In reply to Colonel Lockwood, she said she thought there were infinite possibilities in the discovery of the *x* rays, both for physiological investigation and the healing of disease; and in the light treatment and in all the new treatments, more than in any vivisectional treatment.

THE ROYAL COMMISSION ON TUBERCULOSIS.

The Pathogenic Effects of Human Viruses.

Volume II of the Appendix to the Second Interim Report of the Royal Commission on Tuberculosis is occupied with Dr. L. Cobbett's evidence on the pathogenic effects of human viruses. The records of Dr. Cobbett's experimental work occupy over twelve hundred pages, and are bound in two parts.[1]

Plan of the Work.

The main object of Dr. Cobbett's experiments was to classify the various strains of tubercle bacilli obtained from man according to their virulence for different kinds of animals.

The viruses used in the experiments are sixty-three in number, and were obtained from human beings of all ages suffering from tuberculosis. They include 4 viruses obtained from sputum, 10 from lesions of the lung in cases of primary pulmonary tuberculosis, 4 cases of bronchial gland tuberculosis (in 2 of which the bronchial glands were the only parts tuberculous), 9 cases of cervical glands removed by operation (no other tuberculous lesions being discoverable), 19 cases of primary abdominal tuberculosis, 10 cases of joint and bone tuberculosis, 1 case of tuberculous testicle, 1 of tuberculous kidney, and 1 of lupus.

The species of animals used for the investigation have been the ox, goat, pig, dog, monkey, rabbit, guinea-pig, and rat. Some experiments have also been made on the cat, mouse, and fowl, three on the chimpanzee and two on the baboon.

The details of the experiments, which are drawn up on the same admirable plan as that followed by Dr. Griffith in Volume I, form an extremely valuable statistical record and are simplified by the insertion of numerous diagrams showing the course of complicated experiments and by tables summarizing the main results.

With the exception of some few feeding experiments, the animals were usually infected by inoculation. Most of the calves were inoculated subcutaneously, but sometimes the intravenous method was employed, and in the case of cows injections of infective material were made into the milk sinuses of the udder. For the rabbit, guinea-pig, and rat the intraperitoneal method of inoculation was preferred. The material used for injection consisted sometimes of emulsions of tuberculous tissue and sometimes of suspensions of bacilli grown in artificial culture.

Classification of Human Viruses into Two Groups.

As the result of his experiments on bovines and rabbits, Dr. Cobbett has shown that "the viruses obtained from man were, with the exception of one from a case of lupus, found to be broadly separable into two groups—namely, those which caused fatal tuberculosis in the ox and rabbit, and those which did not. . . . Injected subcutaneously into the calf in suitable doses, such as 50 mg. of culture, they either produced (except in the case of one animal) rapidly fatal general tuberculosis, or in these, and even far larger doses, they produced no more than a transient disturbance of health and localized or minimal lesions, which soon became retrogressive. The viruses which were highly virulent for the ox species were also highly virulent for the rabbit, and rapidly caused fatal tuberculosis, while those which had a low degree of virulence for the calf had also a low degree of virulence for the rabbit, and very rarely caused progressive or fatal tuberculosis. Almost without exception our strains of tubercle bacilli have fallen into one or other of these classes, which have been called Group I (virulent) and Group II (slightly virulent)."

Dr. Cobbett therefore tabulates his experimental results on the basis of this classification. Referring to certain human viruses which became increased in experimental virulence after "passage" through calves, he makes the following important observation: "The *original* strains of those viruses which afterwards became modified in virulence by 'passage' through calves are included in these tables, because there is no reason to think that they differed in any way from other viruses classified under Group II."

General Characters of the Bovine Disease.

(*a*) *The Effects produced by Group I.*

"The calf and adult bovine animal showed themselves to be highly susceptible to tuberculosis induced by strains of tubercle bacilli belonging to our Group I. Feeding proved a less severe mode of infection than injection. But even subcutaneous injection failed to provoke a *progressive* tuberculosis if the dose were not large enough. Great, indeed, proved to be the influence of the dose given: 50 mg. of culture subcutaneously injected was an almost certainly fatal dose for a calf; 10 mg. was an uncertain dose, often producing fatal tuberculosis in one calf but not in another, and very small doses of either culture or tissue emulsion produced only minimal retrogressive lesions which could not be distinguished from those caused by viruses of Group II."

(*b*) *The Effects produced by Group II.*

"The subcutaneous injections of bacilli of Group II did not, as a rule, cause anything more serious than a swelling at the seat of injection, of greater or less size according to the dose, and which became softened and liquefied, and dense calcareous nodules in the nearest lymphatic glands. In about half the cases there were in addition some, usually very few, minute translucent tubercles, obviously in a stage of retrogression, found after careful search in the lungs or other large organs, or some opaque calcareous grains in some of the peripheral lymph glands." Whilst strains of bacilli belonging to Group II invariably failed to cause progressive or fatal tuberculosis in the calf when injected subcutaneously, they readily caused fatal tuberculosis when injected intravenously in suitable doses. "That in these cases there was a real tuberculosis set up was proved not only by the presence of microscopic tubercles, but of tubercles, in some cases at least, clearly visible to the naked eye. Yet the tuberculosis did not tend to spread, and if it proved fatal did so at an early stage. . . . The longest illness which proved fatal after intravenous injection was in two cases fifty-seven days (Calf 319, H12, H.N. and Calf 457, H22, F.W.). These were exceptional; death took place, as a rule, either within two or three weeks, or recovery resulted. For this reason well-formed tubercles clearly visible to the naked eye were not common. Calf No. 361 (H8, S.C., killed after seventy-six days), among the intravenous animals, showed the most advanced tubercles." In comparing the effects of Group I with those of Group II, Dr. Cobbett points out that, after subcutaneous inoculation into the ox, even bacilli of the latter group become widely and rapidly distributed all over the body. "Thus the peculiarity

[1] Second Interim Report of the Royal Commission appointed to Inquire into the Relations of Human and Animal Tuberculosis. Part II, Appendix, vol. ii, pp. 1 to 616 and pp. 617 to 1217. The Pathogenic Effects of Human Viruses. By Dr. L. Cobbett. (With numerous charts and photographic reproductions.)

of tubercle bacilli of our Group II as contrasted with that of our Group I is not that they are unable to become *disseminated* in the body of the calf, but that when they have become disseminated they are *incapable of causing progressive disease.*" After emphasizing this very profound difference in virulence, Dr. Cobbett remarks: "It seems probable that this is not a mere difference in degree, for while Group II is far less virulent than Group I for the ox and rabbit, etc., it appears almost equally virulent with Group I for the very susceptible monkey and guinea-pig and for the more resistant dog and rat."

Exceptional Characters of Certain Viruses.

In reply to the question whether the viruses classified in each group differed in virulence from one another, the general answer is in the negative, but a few exceptions are to be noted. Amongst the Group I strains, "the most notable exception was the virus No. 49, T.C., which came from an old case of primary mesenteric tuberculosis in a young adult." The virulence of this virus fell somewhat below the standard of Group I. "The difference was not great, but was unmistakable, and we may be confident that had differences of even this small amount existed among the other viruses they could not have been overlocked." After discussing other and more doubtful instances of Group I viruses falling below the average of virulence, Dr. Cobbett makes some remarks on an exceptional virus, derived from a case of lupus, which "may perhaps be considered to be one of intermediate virulence, forming a link between our Groups I and II." The virulence of this virus for the calf, though low, was not so low as that of the Group II viruses; but its virulence for the rabbit, when injected intraperitoneally, was high and almost equal to that of Group I. An important point about this virus is that its virulence was not raised by passage through the bovine; in this respect it differed from the above mentioned virus H 49 T.C. Dr. Cobbett also remarks that in the "passage" experiments, where transitions were effected from Group II to Group I, viruses of intermediate virulence were obtained. Amongst the other Group II viruses no important exceptions were noted.

"The viruses belonging to Group II did not appreciably differ in virulence among themselves. A few cases did, indeed, develop numerous lesions in their glands or organs, but these lesions were not progressive, and other animals injected with the same viruses developed only minimal lesions."

Virulence for the Rabbit.

The rabbit was very extensively used for the purpose of testing virulence. Dr. Cobbett usually employed the intraperitoneal method of inoculation, "subcutaneous injection being found to produce tuberculosis far less rapidly, and to result in the formation of an ulcer in the skin at the seat of inoculation. The latter was considered objectionable on account of the opportunity it afforded for the escape of tubercle bacilli."

To the viruses of Group I the rabbit proved to be highly susceptible, and with moderate doses of culture—for example, 1 or 0.1 mg.—it invariably succumbed to tuberculosis within a few weeks, sometimes in less than a fortnight. When very much smaller doses were given the animals lived longer, but never failed to develop fatal general tuberculosis. "In this respect," Dr. Cobbett remarks, "the rabbit differs strikingly from the calf, which is able to resist a comparatively large dose of bacilli belonging to Group I, and to recover completely." Similarly with the viruses of Group II the rabbit is found to be a somewhat less resistant animal than the calf.

"In exceptional cases very large doses, such as 50 mg., or even occasionally 10 mg., of culture injected intraperitoneally, have proved fatal. But in such cases death occurs early, and the rule is either early death or complete recovery, and recovery is by far the more common result. In very rare cases chronic progressive tuberculosis occurs, and may end fatally after a year or more with the formation of small cavities in the lungs. . . . With more moderate doses of bacilli of Group II—such, for example, as 1 mg. of culture—tuberculous lesions are more widely distributed in the rabbit than in the calf. . . . In spite of the fact that tuberculous disease in the rabbit infected with a virus belonging to the human Group II is often widely spread, the peritoneum, lungs, and kidneys being commonly more or less affected, yet, as a rule, these animals remain well and grow large and fat, and the functional activity of their organs does not seem to be seriously deranged. Thus, there is a very real difference in the way the rabbit reacts to the two groups of human bacilli, and the difference is striking to those who see the one lot invariably die and the other, as a rule, live to be large well-grown, and fat animals."

Anthropoids and Monkeys.

Two young chimpanzees were infected with tuberculosis by Group II bacilli—one by subcutaneous injection and the other by feeding, the dose being in each case 1 mg. of culture. The former died in 50 days and the latter in 77 days. Both were found to be suffering from general tuberculosis. A subcutaneous inoculation of 1 mg. of a virus belonging to Group I produced fatal generalized tuberculosis in another chimpanzee in 79 days. Dr. Cobbett observes that bacilli of low virulence for the calf and rabbit appear to be as highly virulent for the chimpanzee as bacilli possessing high virulence for the two first species of animals. When tested on the chimpanzee, both types of bacilli "are capable, in small doses, either by feeding or subcutaneous injection, of causing acute general tuberculosis."

One baboon was fed with culture of bacilli belonging to Group II and died from general tuberculosis 108 days afterwards. There was no ulceration of the intestine; the cervical and mesenteric glands were affected, the former the more severely. Another baboon was inoculated subcutaneously with Group II, and when it died, 38 days afterwards, early general tuberculosis was found; but this experiment was complicated by the fact that the animal had never been in good health, even before the experiment commenced.

Both Group I and Group II were tested on Rhesus monkeys—in some experiments by inoculation and in others by feeding—and the general result appears to have been that these animals were as highly susceptible to the latter class of viruses as to the former.

Pigs.

With regard to the virulence of Group I bacilli for the pig, Dr. Cobbett writes:

"Infection by bacilli of Group I, injected subcutaneously in doses of 50 and 10 mg., proved fatal about as rapidly as it did in the calf (but one pig only was injected with each dose), but smaller doses, 1.0 and 0.1, also produced general tuberculosis of a severe and progressive type. The pig would therefore seem to be less capable of resisting small doses of bacilli of Group I, when subcutaneously injected, than the ox. By feeding also the pig is easily infected with bacilli of Group I, and single doses (10, 1.0, or 0.1 mg.) of culture thus administered have produced general tuberculosis. After 10 mg. the disease was severe, but with the smaller of these doses the lesions at the end of three months were only slight or moderate."

Bacilli of Group II were also tested upon the pig, and proved to be of very much lower virulence than Group I:

"The bacilli of Group II proved as incapable of causing a progressive tuberculosis in the pig as in the ox or goat. By subcutaneous injection, 50 mg. produced only trivial local lesions, some tuberculosis of the neighbouring lymph glands, a number of little retrogressive tubercles in the lungs, and perhaps a few elsewhere." These small tubercles, however, seemed to be more numerous in the pig than was commonly the case in the calf, and to be more constantly present.

Feeding with bacilli of Group II, in the form of culture, also caused only minimal lesions. Feeding for five months with large quantities of human sputum (Sp. A) containing numerous tubercle bacilli "caused only minimal calcareous lesions in some of the glands connected with the alimentary canal."

Other Animals.

Goats.

"Only a limited number of experiments were made with the goat, but they are sufficient to show that this animal reacts to the two kinds of tubercle bacilli just as the calf does; in other words it is capable of resisting serious infection with tubercle bacilli of Group II, while it succumbs to bacilli of Group I, unless the dose be small, and in that case it develops a limited and non-progressive tuberculosis. . . . Five goats were subcutaneously injected with tissue emulsions containing tubercle bacilli belonging to Group I. All died, or were killed when very ill, and were found to be suffering from general tuberculosis. . . . Two goats were fed with culture belonging to a virus of Group I. They both died of tuberculosis with severe and extensive ulceration of the intestine The doses were not particularly large (10 and 1 mg.), and this species of animal would therefore appear to be rather susceptible to infection by feeding. With viruses of Group II four very young kids and three goats were injected; tissue emulsions being used in each case. . . . One of the kids was injected intravenously; the other animals were injected subcutaneously; in no case did fatal or progressive tuberculosis result, and such little tubercles as were found in the glands and organs were translucent and obviously retrogressing."

Guinea-pigs.

"The guinea-pig is very susceptible to infection by both our groups of tubercle bacilli of human origin. It proved rather more susceptible to viruses of Groups I than to those of Group II." Most of the guinea-pigs were inoculated, but a relatively small number were fed. From the latter experiments Dr. Cobbett finds "that the guinea-pig is less easily affected by feeding than by subcutaneous injection, and that after feeding repeatedly with milk containing small numbers of bacilli, they may even escape infection altogether."

Dogs.

Not many experiments have been performed on these animals. "With bacilli of Group II four dogs have been infected by feeding; two by subcutaneous, and two by intraperitoneal injection. All these developed some amount of tuberculosis, and in two the disease proved fatal. . . . One young terrier, No. 17, was injected in the peritoneal cavity with 10 mg. of a Group I virus (H. 59, L.B.). It died of acute general tuberculosis in thirty-seven days. This animal, though a little older, is fairly comparable with Dog 15, which died in forty-eight days after a similar injection of an equal dose of bacilli belonging to a virus of Group II. This single experiment with bacilli of Group I gives no indication of any great difference in the susceptibility of the dog to the two groups of human tubercle bacilli."

Cats.

Dr. Cobbett has not performed a large number of experiments upon cats, but considers that his investigations are sufficient to show that the cat is highly resistant to the Group II bacilli, but more susceptible to Group I. In considering the liability of cats to infection from Group I he says: "The experiments are too few in number to determine how great that susceptibility is, but they are sufficient to show that the cat possesses a considerable amount of resistance to the bacilli of this group also, at least when introduced by way of the alimentary canal."

Rats.

"The rat, though relatively insusceptible when compared with many other animals, was nevertheless found to be capable of developing a slowly progressing and fatal tuberculosis of a peculiar kind, the principal characteristics of which were the comparatively slight amount of new tissue formation and the enormous multiplication of tubercle bacilli. The dose necessary to produce this condition was large. . . . With regard to the question of the relative susceptibility of the rat to our Groups I and II, it can only be said that they are susceptible to bacilli belonging to both groups; and while the evidence seems to point to Group I being rather the more virulent of the two for this species, the evidence is not sufficient to be conclusive."

THE HARVEIAN ORATION.

The Harveian oration before the Royal College of Physicians of London was delivered by Dr. Frederick Taylor on October 18th.

Dr. Taylor said that Harvey's injunction to search and study out the secrets of Nature by way of experiment wanted to be addressed to the lay public, not, indeed, that they might experiment themselves, but that they might promote and forward such experimentation, or at least not hinder and obstruct it. Nature was something more than dry bones and dead anatomy; not so much what they were as how they worked was what must be known with regard to the structures of the body before the needs of the physician could be satisfied. Opposed to this necessity from the point of view of a desire for knowledge was the humane sentiment which operated to restrict the interference of science with the comfort and existence of the lower animals. In whatever degree justified by sentiment, the restrictions imposed by Parliament must limit the number who could enter upon experimental researches, and must prevent to a large extent compliance with Harvey's precept. Had some of the opponents of vivisection more knowledge of the enormously difficult problems presented by disease, could they picture to themselves the thousands, nay millions, of sufferers upon the face of the earth, he could not help thinking they would be converted to the view that the alleviation of this suffering, and the prolongation of life, did indeed justify the sacrifice of animal life which the profession thought necessary. Consideration of the value of experiment and research led to the reflection how enormous had been the progress, on the one hand, made in medicine in the last few years, and how large, on the other, was our ignorance of natural phenomena in relation to disease and its treatment or control. After referring to the advances achieved by medicine by the aid of the germ theory and by the discovery that many diseases were due to definite animal forms or protozoa, the lecturer observed that in any address concerned with the memory of Harvey problems concerning the circulation of the blood must hold a foremost place, and he accordingly proceeded to touch on some subjects of this kind which had been recently engaging the attention of clinical physicians—the nature of the heart's beat in relation to the condition known by the rather undesirable term "heart-block," the structure of the blood, and the condition of the arterial tension or pressure. He went on to mention the work of Professor Ernest Starling, to whom the Baly medal for the present year was being awarded, on the chemical relations of the functions of the body, as being particularly in accordance with the spirit of the man who was being commemorated that day, and then briefly discussed two other advances which both stood in that group of results which was especially welcome to the lay mind—namely, the immediate practical results of treatment. These were the improvements in surgical practice which, initiated by Lord Lister, had led to the present theory and practice of asepsis in surgery, and the advances on the therapeutical side which were intimately connected with the subject of prevention and immunity, and the treatment of disease by antitoxins and the later opsonic methods. But there was a reverse to the medal. Of the diseases of which the micro-organisms were known, few could the physician prevent, few cure or exterminate. Influenza, a scourge of fifty or sixty years ago, yielded up the secret of its existence almost directly it appeared in a bacteriological age; but in the fifteen years that had passed since then no advance had been made. It went on its own sweet way, broke out in scattered epidemics from time to time without obvious reason or cause, attacked some individuals over and over again, spared others entirely, invaded the different organs in the most erratic way, and defied all efforts to control it. Then there were two other infective diseases of which in recent years the organisms had been clearly isolated—plague and sleeping sickness. The latter extended over tracts of Africa formerly free from it, the former killed its thousands in the week in India, and held its own year after year; though it might, of course, be admitted that science had not a free hand in their case on account of ignorance, indifference, and prejudice, as well as religious, political, racial, and financial difficulties. But the cure and prevention of infective diseases was only a part of the task that lay before the profession. Pathology was not all inflammation, even if inflammation was mostly micro-organisms. There remained degenerations and new growths, and mechanical troubles, and congenital deformities. The field for research was enormous, the necessity for research patent, and even if the number of workers who could conduct research on the highest lines was limited, whether on social, financial, or moral considerations, there could be no doubt that the profession as a body would continue actively to support the maxim contained in Harvey's injunction to search out the secrets of Nature by experiment. The Orator concluded with the customary "commemoration of all the benefactors" of the College, and with the exhortation to others to imitate them.

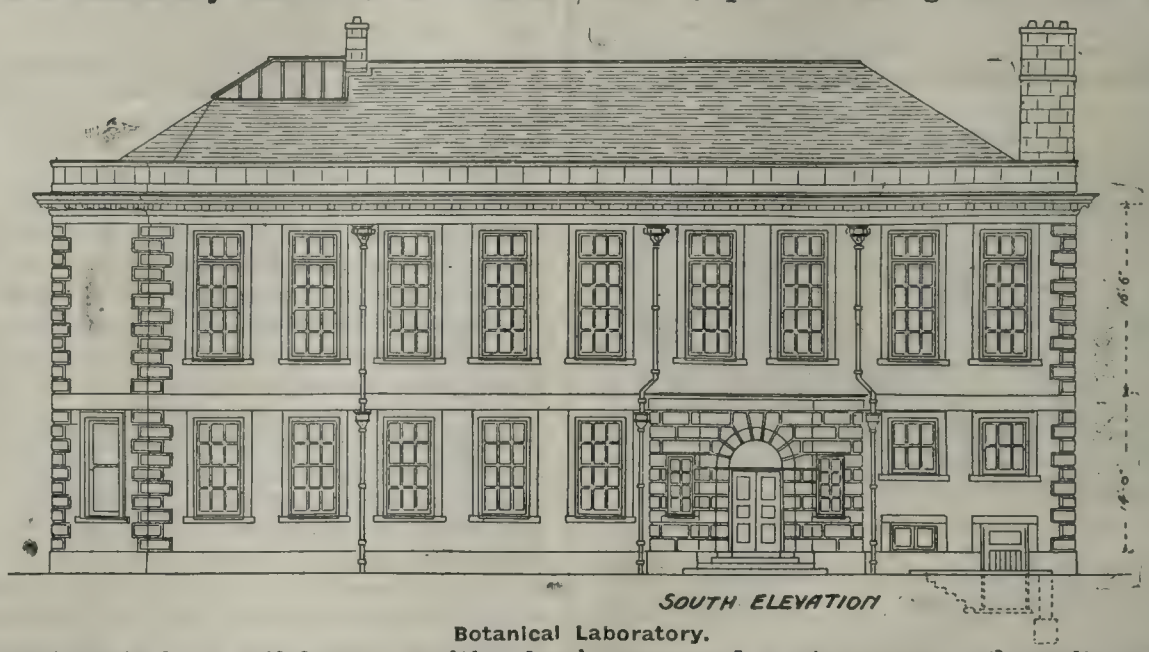
After the address, the President (Sir Richard Douglas Powell) presented the Baly medal to Professor Ernest Starling, saying: Professor Starling, I have to hand to you the Baly medal, which has been awarded you by the College for your distinguished services to physiology. I do so with peculiar pleasure because I am well aware that in times past you have suffered accusations of inhumanity in your work from some who should have known better, and many who in simple-hearted ignorance have been misled and influenced by them. I am glad of this opportunity as President of declaring that the brilliancy of your work and the humanity with which it has been conceived and carried out have been at all times recognized by this College, as by the scientific world at large, and it is with great satisfaction that the Royal College of Physicians confers upon you this distinction in memory of a great and humane physician, Dr. Wm. Baly. I wish you long life and happiness in our Fellowship.

The German Balneological Congress will hold its twenty-ninth meeting at Basel in March, 1908. The General Secretary is Dr. Brock, Thomasius Strasse 24, Berlin, N.W.

TRINITY COLLEGE, DUBLIN.

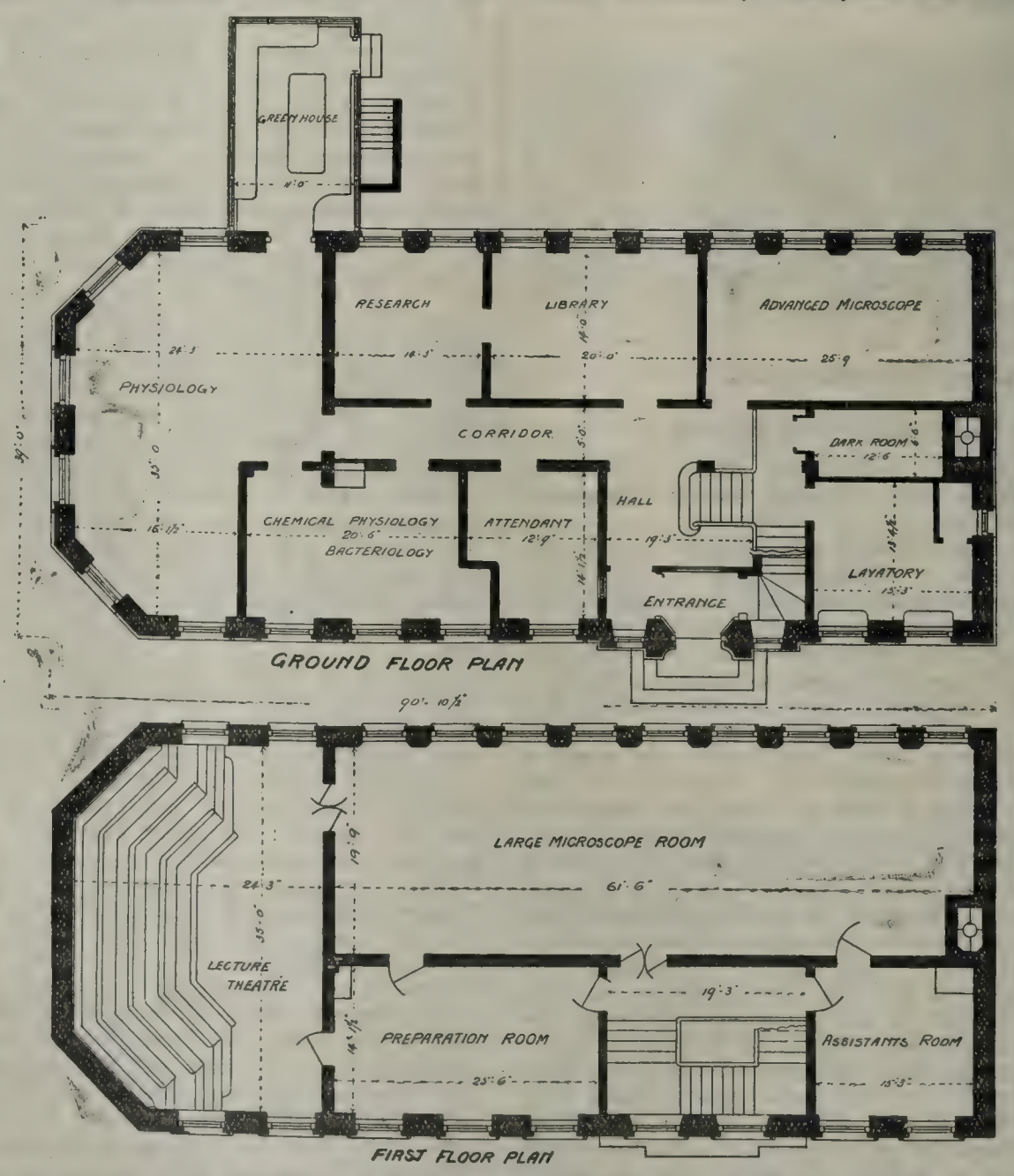
NEW SCIENCE LABORATORIES.

A FEW years ago a Committee was appointed to consider the steps necessary to bring the scientific equipment of Trinity College into a satisfactory condition. As a result a carefully-considered report was drawn up and circulated among the friends of the University, showing what was required in each department and indicating (1) the sums of money necessary to provide the new accommodation in each case, and (2) the amount of capital required to endow each of the proposed new additions and place the departments in a satisfactory position for the discharge of their increased activities. In the matter of raising the necessary fund, the Earl of Rosse, the Chancellor of the University, took the initiative, and came forward with a handsome donation. He was followed by Viscount Iveagh, a graduate of the University, who most generously undertook to provide the funds required to erect and furnish all, or any of, the proposed laboratories, for which other friends of the College subscribed the extra funds necessary as endowment. Thanks to his generosity, and to the goodwill of many of her former students and friends, Trinity College is to-day provided with two new thoroughly up-to-date laboratories—one for experimental physics and the other for botany. The money subscribed as endowment has been invested, and the interest will be available annually for the encouragement of research, for the payment of additional assistants, for the maintenance and increase of instrumental equipment, for the purchase of books for the departmental libraries, and for the payment of a skilled mechanic.



SOUTH ELEVATION

Botanical Laboratory.



The new buildings, which are of cut granite, have been erected in the College Park, close to the Zoological Museum and to the Medical School buildings. They lie parallel to one another, and form opposite sides of a proposed new quadrangle.

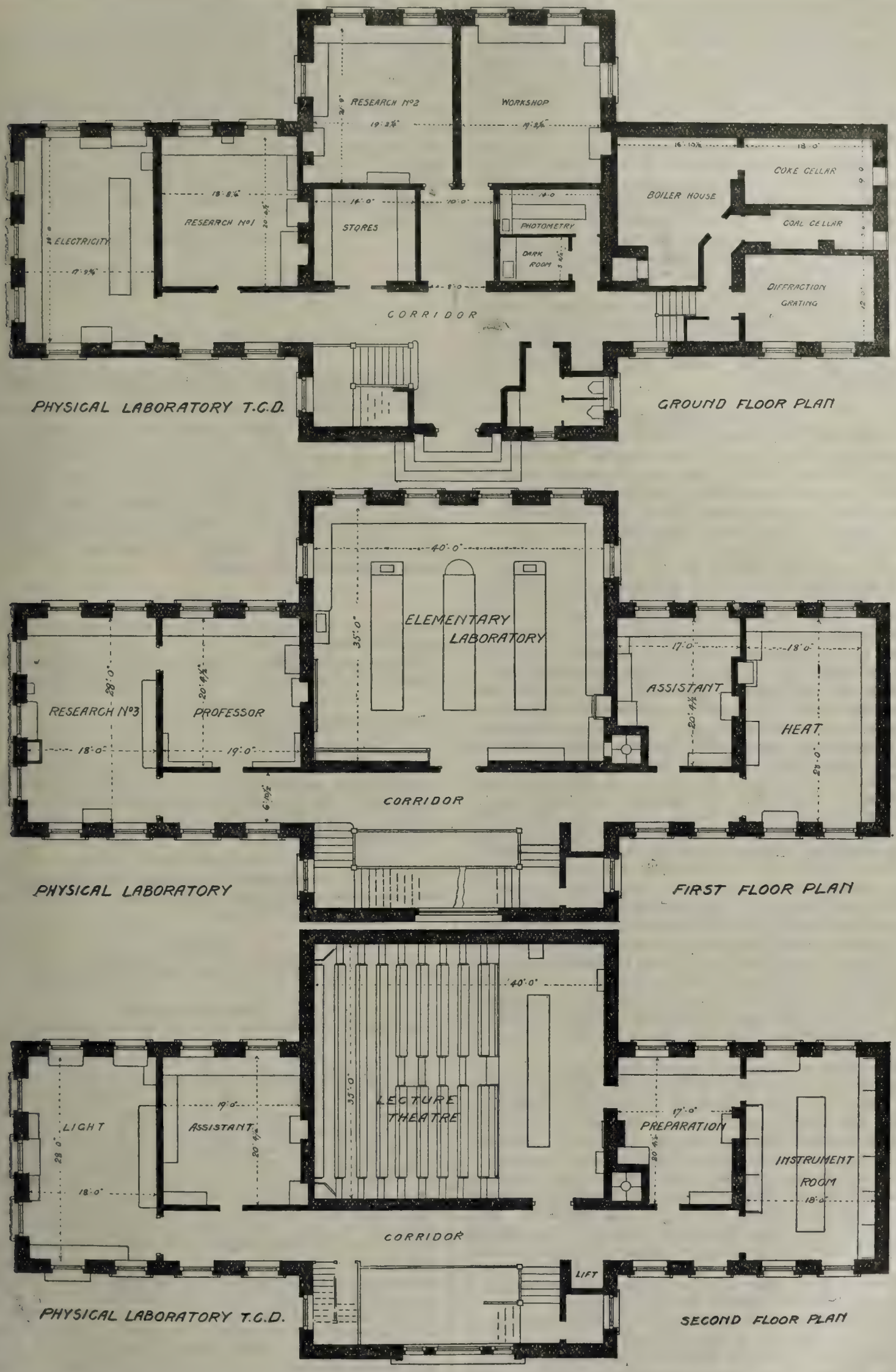
Physical Laboratory.

The Physical Laboratory is a three-storied building with a part of the ground floor subdivided by a mezzanine floor. It forms a block 122 ft. long and 60 ft. wide. The handsome entrance is in the central part of the south side, and leads through a hall, from which the main staircase ascends, into a corridor running east and west. To the left of the entrance the following rooms open off this corridor: An electrical laboratory, a research room, and a store-room. Opposite the main entrance a passage leads to a research room and a workshop, while to the right the corridor leads to special rooms devoted to photography, photometry, and spectroscopy. The boiler-house, cellars, and the lift also lie at this end of the building. The mezzanine floor on this side contains the room for accumulators and the electrical workshop.

The first floor of the building is occupied by a general elementary laboratory, a professor's room, a research room, an assistant's room, and a room fitted for experimental work in heat; all of these open off a long corridor running east and west. The second floor contains a lecture theatre, a preparation room, an instrument room, an assistant's room, and a room designed for experimental work in light.

The wide handsome staircase is contained in a portion of the building which projects outwards on the south side, and which has an ornamental effect, relieving the long and otherwise flat frontage.

The wide straight corridors on the first and second floors are so arranged that the whole length of the building is available when necessary for experimental work. The height of the building can also be made use of for experimental purposes, as the lift, which ascends beside the



staircase, is so planned that the full length of its shaft is available.

The lecture theatre is arranged for 132 students, but has comfortable accommodation for at least 200 persons. It is lighted mainly from the roof, and can be easily and rapidly darkened when it is desired. Above the part of the ceiling over the lecturer's table there is a chamber, through trap-doors in the floor of which diagrams or pieces of apparatus can be lowered so as to be visible to the class. The great height available over the table renders it possible to demonstrate many experiments which cannot be shown in an ordinary lecture room; for instance, it has been found possible, by means of a Foucault's pendulum, hung over the table from the

room above, to enable a large class, seated in this theatre, to appreciate the rotation of the earth. The lecture table is furnished with the three-phase current of the city supply, as well as with continuous current at 10, 20, 30, 50, and 100 volts. The air, as it enters the theatre and laboratories, is warmed by passing over hot-water radiators, and ventilation is provided for by means of a ventilation shaft. This shaft is built round the flue which ascends from the furnace in the boiler house, and the warmth of the flue causes a continuous updraught in the shaft. Where necessary the various rooms have openings into the shaft.

The general laboratory is fitted and equipped for a class of 50 students, and it is well lighted by several large windows. Its fittings, like those throughout the building, are of teak, slate slabs being substituted in rooms where necessary. The laboratories and research rooms are connected with the accumulator room, and so continuous current at various pressures is available in each. Several of the rooms are also supplied with the three-phase city current, which charges the accumulators through a motor generator. The various rooms and laboratories are connected by telephone.

Botanical Laboratory.

The Botanical Laboratory, as will be seen from the accompanying illustration, is two stories high, and is 91 ft. long by 40 ft. wide. The main entrance is on the south side, and leads through a vestibule into a square hall, as shown in the plans, which are reproduced; a corridor connects this with a microscope room for advanced students, a library and professor's room, a research room, a laboratory for general physiology, a laboratory for chemical physiology, and with a workshop and attendant's room. A greenhouse opens off the laboratory for general physiology. From the vestibule a short staircase leads down to a store-room in the basement. From the right of the inner hall a handsome staircase ascends to a small landing, off which open a photographic dark-room and a cloak-room and lavatory. These form a mezzanine floor over the basement. The landing on the upper floor gives entrance to an assistant's room, a large microscope room, and a preparation room. The lecture theatre may be entered through either of the two last-mentioned rooms.

A noticeable feature of the design is that the least possible space is devoted to corridors and stairs, but at the same time each of the rooms is easy of access. The microscope rooms are illuminated by the northern sky, and the windows, which are exceptionally high, afford a good working light even to the back of the rooms. Each student working in one of these rooms has a supply of water, gas, and electricity. In the larger room, which will accommodate about 60 students working simultaneously, special provision has been made to render the floor as dead to vibration as possible. Over the deal boards supported by the joists is a thick layer of felt, which in turn is covered by a cross floor of oak. The legs of the benches pass through the oak floor and felt, and are supported on the deal flooring beneath. The flooring of the lower rooms is of pitch-pine blocks.

As will be seen from the plans, the west end of the building is octagonal, and is occupied by the lecture theatre above and the laboratory for general physiology beneath. This arrangement gives a very compact theatre, with all the seats of the auditorium close to the lecturer; while for the laboratory below lighting on five sides is obtained, and the room is filled with diffuse light, which is thus valuable in experimental work. The greenhouse, which opens off this latter room, is a very solid structure. The shelves are of slate, supported on brick piers. It is heated by a special hot-water system, the furnace being in a cellar below. A special radiator under a central slate bench, supporting a glass case, allows this case to be kept at a temperature above the rest of the greenhouse.

The architect for the buildings was Mr. Marshall of London. The fittings of the various rooms, in both the Physical and Botanical buildings, were supplied and fixed by Messrs. Baird and Tatlock, of London. The builder's work has been carried out by Messrs H. and J. Martin, Belfast and Dublin.

A sum of £16,500 has been expended upon the Physical Laboratory and £8 000 upon the Botanical School.*

* These amounts, as above stated, have been provided by Viscount Iveagh.

In addition to the moneys which the College has hitherto been able to spend annually on these departments there will, in future, be the interest arising from a sum of just £19,000, subscribed to the Science Fund by graduates and friends of the University.

The buildings, although completed, have not yet been formally opened. It is, however, hoped that subscribers to the Science Fund who are at any time in Dublin will visit and inspect the departments which their subscriptions are helping to maintain. An alphabetical list of the subscribers to the Science Fund has been printed in the special supplemental volume to the *Dublin University Calendar*.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

DURING the weeks ended September 7th, 14th, 21st, and 28th, the deaths from plague in India numbered 6,390, 7,080, 9,038, and 9,515 respectively. The chief centres of the plague mortality during the weeks in question were:—Bombay Presidency 4,498, 4,753, 6,572, and 7,116; Bengal 111, 86, 88, and 106; United Provinces 96, 124, 105, and 104; Punjab 135, 311, 166, and 175; Rajputana 44, 0, 59, and 73; Central Provinces 677, 793, 915, end 810; Central India 74, 75, 93, and 128; Hyderabad State 179, 100, 124, and 157; Mysore State 406, 581, 608, and 587; Burmah 122, 67, 88, and 53. Investigations are being conducted at Kangra, Multan, and other districts in the Punjab, where plague is unknown, to ascertain if possible the cause of the immunity enjoyed.

AUSTRALIA.

Queensland.

Brisbane.—No cases of plague between July 26th and September 14th.

Cairns.—A fatal case of plague occurred on September 4th; a plague seizure was also reported on September 9th.

HONG KONG.

No cases reported since September 14th.

SOUTH AFRICA.

During the weeks ended August 31st, September 7th, 14th, 21st, and 28th, no case of plague reported at King Williamstown. At Cathcart, during the week ended August 31st, 5 cases of plague were reported with 2 deaths. Two cases remained under treatment on September 28th.

MAURITIUS.

During the weeks ended September 26th, October 3rd and 10th the fresh cases reported numbered 5, 8, and 4, and the deaths from the disease 5, 4, and 3.

ALGERIA.

Oran.—On September 30th the number of cases of plague reported amounted to 12, and 4 deaths from the disease.

SAN FRANCISCO.

On October 3rd the cases of plague to date numbered 51, with 30 deaths from the disease; 30 cases are under observation.

IN a pamphlet on house flies and their ways at Benares, Major F. Smith, D.S.O., R.A.M.C., contributed to a recent issue of the *Journal of the Royal Army Medical Corps* some very interesting information as to the breeding habits of certain Indian domestic flies. The common house flies, as is well known, deposit their eggs in manure, but we do not think any one has previously pointed out the interesting fact that the maggots which arise from those eggs may make their way down into the soil for a considerable depth below the faecal accumulation and develop there into flies which eventually pass back again to the surface and escape into the air. Such a procedure ensures the development of the maggots even though the original faecal deposit is completely dried up by the sun, and will readily explain the prevalence of these pests in places where human and other excreta are carelessly deposited. Digging into the soil below a faecal deposit four days old showed maggots at a depth of 5 or 6 in. and flies eventually appeared. The conclusions Major Smith arrives at are that man and domestic animals provide the breeding media in their own excretions, and that increased attention should be paid to the cleanliness of the ground and to the removal or destruction of excreta. It is not safe to allow faeces to lie about to be dried up naturally by the sun; such deposits, owing to the power of the maggots to penetrate into the soil, are by no means harmless even in single deposits.

LITERARY NOTES.

We learn from the *New York Medical Journal* that among the exhibits at the International Zoological Congress, held not long ago in Boston, was a set of cards issued by the Concilium Bibliographicum, a central agency founded by the International Congress of Zoology for the purpose of collecting zoological bibliography from all current publications. The papers are classified according to a very complete system, and the references are printed on cards of the library bureau size, which are then sent out to the subscribers. The work is supported financially by the Swiss Confederation, the Canton and City of Zürich, the Zoological Station of Naples, the Elizabeth Thompson Fund, the American Association for the Advancement of Science, the Zoological Society of France, the American Microscopical Society, and numerous individuals. It is under the patronage of an international commission composed of Professor Lang, Professor Spengel, Professor Hickson, Professor Scott, Professor Blanchard, Dr. Hock, and Professor Schimkewitsch. It is pointed out that this bibliographical compilation touches medicine at many points—anatomy, physiology, embryology, cytology, and parasitology, and with some additional labour it could be extended so as to include the other departments of medical literature. It suggests that "in view of the probability that the Carnegie Institute will discontinue the publication of the *Index Medicus*," this extension might be accomplished. Our American contemporary does not seem to be aware that a similar plan was tried in Paris some time ago, but it did not, we believe, find adequate support. With regard to the Carnegie Institute, it was stated in this column of our issue of December 22nd, 1905, that the institute had intimated that "unless it appears that the *Index Medicus* is of greater service to the medical profession, and can help to support itself to a greater extent than in the past, it may become advisable to discontinue its publication." We may recall the fact that the *Index Medicus* was established in 1879, and died for want of support in 1899. In 1903 the Carnegie Institute made a grant of £2,000 a year to keep it alive, while the subscription price was reduced to £1 per annum in order to bring it within the reach of modest purses. In 1905 the total number of subscribers was only 532, of whom—to the shame of this country be it said—396 were in the United States. The subscriptions defray only about one-fifth of the cost of production. It is, perhaps, useless to make a second appeal to the medical profession to keep alive a work which is simply invaluable to all who have occasion to engage in bibliographic research, but we cannot help once more expressing regret that it should be allowed to die a second time.

Our Trees and How to Know Them is the title of a new book by Mr. Francis George Heath, well known as an authority on the subject. It will contain about two hundred illustrations, and will be published immediately by the Country Press of Kensington.

Thomas Lovell Beddoes, a dainty edition of whose poetical works was recently published by Messrs. George Routledge and Sons, was a member of the medical profession. He was the son of Thomas Beddoes, the famous physician who founded the Pneumatic Institution at Bristol, where Humphry Davy was his assistant. His mother was a sister of Maria Edgeworth. Young Beddoes, who lost his father in childhood, was sent to Charterhouse, where he soon won distinction in literature, and wrote a novel with the unattractive title, *Cynthio and Bugboo*. In 1820 he entered Oxford, where he continued to write verses, producing the *Improvisatore*, which was published in 1821, and *The Brides' Tragedy*, which appeared in 1822. These were the only two volumes of his poetry which were given to the world in his lifetime. In 1825 he took his bachelor's degree at Oxford. He then went to Germany and began the study of medicine at Göttingen. He worked hard, continuing nevertheless to woo the Muse. He afterwards spent three years at Würzburg, where he graduated Doctor of Medicine in 1832. His liberal political opinions brought about his banishment from Bavaria, among his fellow proscripts being Schoenlein, the author of *The Natural Diseases of Europeans*, which Beddoes seems to have intended to translate. He settled at Zürich, where he practised his profession for several years. A political rising made it expedient for him to leave Zürich in 1840. He wandered about Switzerland and Germany, being attracted by Liebig's reputation to the "wretched little town" of Giessen. In Frankfort he met with an accident while dissecting, which was followed by blood poisoning. He recovered, but suffered from depression, during which he inflicted on himself a wound which made amputation of one of his legs necessary. He appeared to recover his health, but at the beginning of 1849 he poisoned himself with curare. He left a letter, in which he said:

> I ought to have been, among a variety of other things, a good poet. Life was too great a bore on one peg, and that a bad one.

That Beddoes was a true poet is shown by the appreciation of such men as Walter Waller Procter and Edmund Gosse, who wrote his life and published an edition of his works. Among his plays the most powerful is *Death's Jest Book or the Fool's Tragedy*. He excelled as a song writer, and, according to his latest editor, Mr. Ramsay Colles, some of his songs are matched only by the Elizabethan lyrics, "while the dirges might have been penned by Webster and the grim humour have emanated from Cyril Tourneur." The following passage from *Death's Jest Book*, published in 1850, is interesting as showing his ideas of the origin of life:

> It was ever
> My study to find out a way to godhead.
> And on reflection soon I found that first
> I was but half created; that a power
> Was wanting in my soul to be its soul,
> And this was mine to make. Therefore I fashioned
> A will above my will, that plays upon it,
> As the first soul doth use in men and cattle.
> There's lifeless matter; add the power of shaping,
> And you've the crystal; add again the organs,
> Wherewith to subdue the sustenance to the form
> And manner of one's self and you've the plant:
> Add power of motion, senses, and so forth,
> And you've all kinds of beasts; suppose a pig;
> To pig add reason, foresight, and such stuff,
> Then you have man. What shall we add to man
> To bring him higher? I begin to think
> That's a discovery I soon shall make.

It does not appear, however, that he did make this discovery in which the doctrines of spontaneous generation are combined so as to form a curious medley.

Thomas Lovell Beddoes's father, though not a poet, was a very remarkable man. When speaking of his own career at Oxford, the third Lord Holland says of him, in his *Further Memoirs of the Whig Party, 1807–1821* (Murray, 1905):

> Dr. Beddoes had not closed his lectures when I first went to College, but I never attended them; nor did I become acquainted with the lecturer till he had retired from the University in consequence of some disgust arising either from his opinions in politics and religion, or from the peculiarities of his temper, which was neither conciliatory nor tractable. He was a man of science and of genius, but by no means successful as a lecturer. His figure and delivery were ungraceful, his language inflated and ambitious, and he was so singularly awkward in the mechanical part of his experiments that they generally failed, and he was then compelled to proceed in his discourse on the hypothesis that the result had been the reverse of that which the eyes of his audience would have led them to believe. He contributed, however, to the advancement both of chemistry and medicine, and had the merit of discovering the talents and directing the labours and studies of an indigent youth who afterwards became Sir Humphry Davy. All his writings, whether on politics or science, are eloquent and original, but they betray great want of taste, judgement, and prudence. He was rash and paradoxical in the extreme. He above once announced discoveries which he was obliged to retract; and Dr. Ingenhousz (who somewhat enjoyed his discomfiture) blamed him more for his ignominious candour in abandoning than his hasty presumption in publishing such crude and erroneous conjectures. As an instance of his bad taste in language and conversation, I remember that when asked by Lord Lansdown how an election at Bristol was likely to go, he began his reply with these words, "My lord, when the floodgates of the human mind are once opened. . . ." I believe Lord Lansdown and his audience were not much disposed to await the torrent of eloquence and metaphysical reasoning which was to ensue. In proof of the wildness of his theories, suffice it to mention that he seriously maintained the non-existence of bodily pain. It was the mere effect of education, and a child properly trained for that purpose would find it a pleasurable sensation, and what we consider as pleasurable sensations might, by an opposite system of discipline from that usually practised, be rendered odious and disagreeable and abhorrent to our desires. He afterwards undertook the tuition of young men; and the acquirements of his pupils (of

whom Mr. Lambton was one), as well as their attachment to the memory of their preceptor, do much credit to his head and heart.

The older Beddoes was born in 1760, and died in 1808. He resigned his readership in chemistry at Oxford in 1792, partly, it is said, owing to his sympathy with the French Revolution.

MEDICAL NEWS.

AT a recent meeting of the Society for the Study of Diseases in Children Dr. George Carpenter was appointed Chairman for the ensuing year.

AT the annual meeting of the Peckham Nursing Association, on October 17th, it was stated that during the past year the nurses had paid 5,073 visits to 187 patients.

THE Chelsea Hospital for Women has received from Earl Cadogan a donation of £500, and the Council has resolved to name a ward of the hospital in memory of its late benefactress, the Countess Cadogan.

THE annual dinner of the Society of Anaesthetists was held at the Café Monico on October 18th. Some forty members and guests were present, Dr. Probyn Williams being in the chair; the guests of the evening were Mr. Warrington Haward and Dr. A. D. Waller.

THE proceedings of the First International Conference on Sleeping Sickness, held in London, in June, 1907, have been issued as a Parliamentary Paper (Cd. 3,778. 6d. London: Eyre and Spottiswoode.) The nature of the proceedings was indicated in the JOURNALS of June 29th, p. 1556, and August 17th, p. 406.

THE German Congress of Urology held its first meeting at Vienna on October 2nd and three following days. It was attended by some three hundred members. A banquet was given in their honour by the Austrian Minister of Education. The next meeting was fixed for Berlin in 1909. Professors Posner, of Berlin, and Zuckerkandl, of Vienna, were elected presidents; Professor Casper and Dr. Brennen, vice-presidents. Among the honorary members elected by the Congress was Mr. Reginald Harrison, of London.

A COMMITTEE of which Mr. Henry Morris, President of the Royal College of Surgeons, is Honorary Treasurer, and Mr. Percival Turner, 4, Adam Street, Adelphi, London, W.C., Honorary Secretary, has been formed to perpetuate the memory of Archdeacon Robinson Thornton, D.D., who in 1855 was appointed first Head Master of Epsom College, and retained that office for fifteen years. Donations of 10s. 6d. and upwards are asked for; among the objects suggested are a window in the chapel, a new classroom, and a laboratory.

THE yellow fever record in Cuba for 1907 is, up to the present, the worst for several years. Seventy-eight cases with nineteen deaths were reported between January 1st and September 9th. All but two of the cases occurred since the middle of May, and during September the number of new cases increased rapidly. According to the *Medical Record* of October 5th, the disease is now present in at least five places.

THE annual prize-giving ceremony of the London School of Dental Surgery (Royal Dental Hospital) took place in the galleries of the Royal Institute of Water-Colour Painters, Piccadilly, on October 18th. Mr. J. F. Colyer, the Dean, in the course of his remarks upon the progress of the school, observed that there was a tendency towards increase in the number of dental students taking the full medical curriculum. The principal prize-winners for the year were Messrs. H. Stobie (Entrance Scholarship), W. Thew (Saunders Scholarship), S. Bellman (the Ash Prize), who with other successful students received their awards at the hands of Sir Frederick Treves. A pleasant *conversazione* followed. The annual dinner of the school is to take place on November 23rd, on which day the staff will be "at home" at the hospital from 2 30 p.m. to 5 p.m.

THE annual medical service at St. Paul's Cathedral took place on Tuesday evening, and was attended by a large congregation. The members of the Guild of St. Luke and several other members of the medical profession, wearing their academic robes, walked in procession to places reserved for them under the dome. Minor Canon Besley intoned the service, and Sir R. Douglas Powell and Mr. Parker Young read the first and second lessons respectively. A choir, under the direction of Mr. Alfred Redhead, Organist of St. Augustine's, Kilburn, rendered the music. The Bishop of Kensington preached the sermon, taking as his text Revelations iv, 10—"The four-and-twenty elders fall down before Him that sat on the throne, and worship Him that liveth for ever and ever, and cast their crowns before the throne." He said that the text revealed the picture of the future, but that it was the meaning of such a service as that in which they were then engaged. A great profession brought its crown. The story of the past told them how Christ held up the offices of the physician and the prophet, the healer and the teacher, uniting them, and thus consecrating the medical profession with an eternal consecration, whilst pressing home upon the hearts of all men the work of the medical missionary—the highest expression, in a sense, of that twofold office—and flinging a halo round that College of St. Luke, in which their young men were trained to become medical missionaries.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 6, Catherine Street, London, W.C., on October 11th, Dr. de Havilland Hall in the chair. The operations of the society during the summer have produced a considerable surplus, and the Committee arranged for an investment of about £7,000 at 3¾ per cent. The assumed rates are 3 per cent. for the Annuity and Life Assurance Branches and 2½ per cent. only for the Sickness Branch. All interest earned beyond these rates is placed to a special Investment Fluctuation Reserve Fund, and the amount now at the credit of this Fund is over £13,000. The funds now amount to over £215,000, and are still rapidly growing. Prospectuses and all particulars can be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

PRACTICAL MIDWIFERY FOR STUDENTS.—The Committee of management of the Queen Charlotte's Lying-in Hospital, London, is making arrangements, under the advice of the medical staff, to meet the requirements of the General Medical Council as to the instruction of medical students in practical midwifery. There is accommodation at present for four students every month; this number will be increased as necessary, and it is expected that the hospital will be able to admit as many as fourteen students each month early next year (168 per annum) to the practice of the hospital in order to receive the preliminary instruction, which is preparatory to the attendance on twenty cases of labour still required in addition to the course. The instruction will include: (1) Practical instruction in the methods of examination of pregnant women; (2) delivery of women in labour, under the direct supervision of a medical officer of the hospital; (3) practical instruction in the treatment of the mother and child during the puerperium, including clinics held four times weekly by the visiting medical staff; (4) instruction in the clinical laboratory of the hospital. Students will be accommodated in the residential college adjoining the hospital, and the inclusive fee for hospital practice and board and lodging will be £12 12s. per calendar month; 1,704 women, of whom nearly two-thirds were primiparae, were delivered in the hospital in 1906, and a large number of the cases were abnormal.

A VERY successful *conversazione*, arranged on unusually elaborate lines, was given by the staff of St. Bartholomew's Hospital on Wednesday evening in the new out-patient building. The entertaiment was intended to inaugurate the commencement of work in all the numerous sections of the new block, and to give those directly and indirectly connected with the institution an opportunity of inspecting the great advance which this constitutes. Between 9 and 12 in the evening upwards of 5,000 persons were distributed about the building, but the place is so vast that, in spite of numbers, there was no inconvenient crowding except occasionally on the stairways and in passages. The ventilating arrangements, moreover, were thus put fully to the test and proved satisfactory. The rooms in their complete condition won approval both from hospital experts and ordinary visitors, the latter admiring the proportions of the rooms, and the former approving the circumstance that, although nothing which modern science can suggest has been omitted in structural arrangements or appliances for work there is nowhere evidence of the extravagance which nowadays too commonly characterizes the building of hospitals. Of the very numerous exhibitions and demonstrations it is impossible to give an account. In the electrical department the orthodiagraph displaying and measuring the movements of the living heart was shown in action, and in the large waiting-room for medical out-patients there was a remarkable collection of engravings and pictures depicting the hospital and its surroundings from early times up to the present date; in an adjoining room there was a display of the ward furniture and surgical appliances, bleeding basins, old-fashioned matches, and the like, which were in use in the hospitals in the middle of the eighteenth century.

British Medical Journal.

SATURDAY, OCTOBER 26th, 1907.

SYNTHETICAL CHEMISTRY AND BIOLOGY.

Those who have thoughtfully studied the advances which physiology is now rapidly making do not need to be reminded of the important part played by chemistry in its progress. This was not so universally recognized in the past as it is to-day, although certain masters of the craft, such as Liebig and Dumas, quite clearly perceived the relationship between biology and chemical science. At the present time Professor Emil Fischer is the most conspicuous example of one who has grasped the intimate relationship between the two sciences, and it is his work and the work he has inspired which has done so much in the past to make each more exact, and which in the future is likely to do still more in the same direction. In the Faraday Lecture he delivered before the Chemical Society on October 17th he took as his subject Synthetical Chemistry in its Relation to Biology. In this important discourse he gave a rapid review of the work of those who have built up in the laboratory substances previously found only in the animal or vegetable kingdom, and so have sought to unite again the sciences which, in the progress of over-specialization, have drifted too far apart. The synthesis of carbohydrates is rapidly now becoming a fact of ancient history; the building up of that marvellously active substance, adrenalin, is a triumph of more recent work. Fenton's success in making formaldehyde from carbonic acid and water was referred to in terms of praise as a notable instance of how laboratory processes can be adapted to imitate what occurs in the leaves of a plant in the ultimate formation of starch. But he remarks, "How thorough is the work of the plant in comparison with laboratory practice!" The importance of the part played by enzymes in hastening at moderate temperatures reactions which in an ordinary test tube require great heat or strong reagents cannot be over-estimated when dealing with the living organism. The physiological chemistry of the future will be more and more concerned with the study of fermentative changes. The number of known ferments has increased to an extraordinary extent during the last ten years, and yet practically nothing is known of their composition, and the complete isolation of one of them has never been accomplished. The disciples of science are proud, and justly proud, of its progress, but they are equally aware of the great gaps in knowledge which still have to be filled up; it is only by a frank recognition of these that they may hope to overcome the limitations in science which at present exist.

The synthesis of the albuminous molecule, the main object of Emil Fischer's present ambitions, is probably the widest gap of all. It is a truism to assert that a knowledge of this, the most important substance in the composition of living material, will bridge across most of what is at present obscure in the series of changes termed metabolism, both in plants and animals. But before synthesis is possible there must be correct analytical knowledge of the component parts of the complex albuminous molecule. Fischer and his co-workers have shown that nearly all the *Bausteine*, or building stones of the protein molecule, are members of the amino-acid family. By linking these acids into short chains he obtains the materials known as polypeptides; by linking them into longer chains, he has already obtained substances having the properties of the peptones. By a continuance of this process—that is, by making the chains still longer, and choosing the links in the right proportion and in the right order—all hope that it will not be long before Fischer can chronicle the successful synthesis of albumen itself. If this piece of complex architecture is accomplished, it will be the crowning triumph of organic chemistry.

It is well known that some of the proteins which occur in Nature are less complicated than the majority. Kossel has assigned to those substances which can be separated from fish sperm, and which are called protamines, the humble position of being the simplest members of the group. The *Bausteine* in their molecules are comparatively scanty, and the accurate estimation of the quantity of each present has been nearly accomplished. No doubt it will be such comparatively simple proteins that will be the first to appear in the test tube. But, as Professor Fischer pointed out, there is another protein which bids far to oust the protamines from their lowly place, and this is fibroin, the protein constituent of silk. Here also analytical knowledge is so far advanced as to justify an early attempt at synthesis. It is well known that artificial indigo has replaced the native product, but we do not think the silk industry need be alarmed at present, because it will be many years before artificial silk will replace the natural article. Silkworms have the secret of being able to make it in large quantities easily and with little expense. Natural silk, moreover, is not pure fibroin; it is a mixture of the protein named with other substances, one of which, *Seidenleim* or silk gelatin, appears especially useful in conferring upon silk its lustre and cohesiveness.

Réamur many years ago surmised that the substance of the spider web is related closely to the product of the silkworm. This has been recently confirmed. Spider silk and silkworm silk contain as their main constituent an almost identical protein. There is a slight difference in one of the *Bausteine*, but that is about all. The silk of the Madagascar spider has been obtained in sufficient quantity for the making of fabrics, and a dress of spider silk was shown at a recent exhibition in Paris. But again we do not think the growers of silkworms need be alarmed, for silkworms can make their skeins out of vegetable food, whereas the spiders are carnivorous animals, and the meat used in their feeding is too expensive to render the cultivation of the spider a successful commercial venture.

Not the least interesting of the ideas arising out of these considerations is again the marvellous superiority of the living laboratory as compared with that of the chemist. Here we have animals widely differing in metabolic habit, and yet one is able to manufacture the same product from the vegetable world which the other requires animal food to produce.

This, further, is an illustration of the truth which is rapidly being accepted by biologists, that in digestion a complete cleavage of the foods takes place into quite simple substances; each animal takes the *Bausteine* necessary for its own particular purposes in the building up of the living substance peculiar to itself, and so is enabled to retain its chemical individuality in spite of the variations in the composition of the raw material it ingests in the form of food.

That the chemist with his comparatively crude

methods will be able to imitate this power, and to rival the adaptability which the living cells possess, is probably too much to expect in our time, but if any living chemist accomplishes the feat, it is more probable to be our eminent visitor, Professor Emil Fischer, than anybody else.

TROPICAL MEDICINE.

THE position which tropical pathology and the London School of Tropical Medicine have both attained was well evidenced at the opening ceremony of the winter session at the School on Monday, and at the annual dinner of the same institution at the Savoy Hotel the same evening. On both occasions there were present many persons more or less intimately connected with the School who have obtained high scientific distinction in a branch of medicine which a few years ago was practically unrecognized; while proof that the connexion between tropical medicine and at least one department of His Majesty's Government is to be maintained was given by the presence at the afternoon meeting of Mr. R. L. Antrobus, and at the dinner of Mr. Read, both of the Colonial Office.

As for the School, founded some nine years ago as the happy outcome of the statesmanship of Mr. Joseph Chamberlain and of his consequent readiness to fall in with the ideas of Sir Patrick Manson, it has now, as was stated by the Chairman at the dinner—Fleet Surgeon Bassett-Smith—seen some 700 students pass through its laboratories, lecture rooms, and wards. It has also received, as was not stated at the dinner, what in such connexion is the most desirable form of flattery—the establishment elsewhere of schools of like sound foundation and admirable intent, namely (1) the investigation of the various causes of diseases prevalent in warm countries, the study of the means by which their prevalence may be lessened, and the lines upon which individual cases may best be treated; and (2) the dissemination of the knowledge thus acquired amongst those concerned.

In this object the progress made is already not small. A complete revolution has been effected in the general character of the medical work performed in tropical and subtropical countries, and it may even be said that in some respects medical men engaged in practice in tropical countries now carry out their duties on more scientific lines and with greater precision of knowledge than their fellows in countries where, except in the case of accidents, life and death stand usually further apart. This alteration is in itself no small gain, for the scientific spirit underlying the work thus done must in the long run influence all those who witness its benefits. On the analogy of England this at first sight may seem improbable, but it is to be remembered that in the countries in question communities are for all practical purposes, and apart from pure natives and untutored savages, very much smaller, and that of these communities a far larger proportion is daily brought face to face with serious disease and with the economic and other problems raised by its prevalence. This is so much the case that one of the difficulties encountered has been that many long-time residents in tropical countries are disposed to regard their knowledge of local diseases as quite as good as, if not better than, that of medical men. In most places this difficulty has now been overcome, the net result being that there is a tendency to recognize to the full the value of scientific sanitation; and this mental attitude, as personal communication between distant countries and England is increasing year by year, may be expected to spread from the tropics and do something to foster the growth of a kind of knowledge which, *caeteris paribus*, is quite as necessary in Great Britain as in the most typically tropical climate in the world.

But beyond such considerations there are other results, more easily represented in terms of pounds, shillings, and pence, which after all are, in this very practical world, the ultimate ratio by which the value of science is commonly assessed. The commercial value, in short, of the work which has been done infinitely exceeds, as was indicated by Fleet Surgeon Bassett-Smith, the whole of the money which has been expended in one direction or another in the investigation of problems of tropical disease. Of actual achievements in this direction Sir Lauder Brunton, who delivered an address at the afternoon meeting, gave a brief account, mentioning more particularly the reduction of malaria in many countries, and the stamping out of yellow fever in Havana and many districts of the Southern States of America; while Mr. Antrobus laid stress on the vast improvement in the health of the British Colonies and Protectorates in West Africa, and on the greater ease with which the service of the Government is now conducted. Similarly, at the dinner, Fleet Surgeon Bassett-Smith drew attention to the value to the whole nation in men and money of the discovery of the causation of Mediterranean fever, and of the precautionary measures to which this has led, these having resulted in a single year in practically abolishing Mediterranean fever among H.M. sailors and soldiers at Mediterranean stations.

These are facts the force of which might have been buttressed by another circumstance of an equally practical nature—namely, that many of the more enlightened contractors and commercial houses—the merchant adventurers of the twentieth century—have recognized the value of the study of tropical diseases, and are taking steps to turn it to advantage by securing in connexion with their businesses in tropical regions the assistance of executive medical officers who have been through one or other of the schools of tropical medicine. Some of them, too, have shown their appreciation of this study in that most practical of all fashions, which consists in drawing a cheque for its furtherance, among these being Mr. H. S. Wellcome, well known as the founder of the Wellcome Laboratories at Khartoum, and a supporter of the London School of Tropical Medicine, who was present at the dinner as the guest of the evening.

But he, with Sir John Craggs and one or two others, are in London the happy exceptions. London as a whole has by no means done its duty by its school—not a tithe even of what has been done elsewhere, for instance at Liverpool, by single benefactors, while in America very large sums have been provided for the same purpose from private and official sources. The net result is that the endowment fund of the London School still stands at only £1,000 instead of the £25,000 which it should possess. Government benefits so directly by the work that at first sight it might seem as if all the assistance required, either by this or the Liverpool school, should be forthcoming from it immediately, but this is not quite the case. Shortsighted as it may be in other directions, the British Government as represented by the Colonial Office has now under two Administrations shown its entire sympathy with this particular cause—shown it, too, in practical fashion by supplying a certain amount of money. Indeed, as Sir Patrick Manson pointed out, the Government realizes the importance of the subject to the full; but it can hardly

be expected to venture to do more than it is doing in the way of subvention until the general public, which makes and unmakes Governments and regards all expenditure on scientific objects with a specially jealous eye, has been educated up to the importance of the subject.

Meanwhile it is to be hoped that private benefactors in increasing numbers will continue to make it possible to maintain the progress of this and other like schools, for the work, quite apart from its commercial value to the country, is deserving of support upon general grounds. Though "East is East and West "is West," there is an immense amount in common between the pathology of the diseases prevalent in tropical and temperate zones, and the work which has been done in connexion with the former has already thrown useful light upon problems nearer home, and as time goes on may be expected to help to abolish many diseases which are our own familiar foes.

THE GALVANOMETER IN THE STUDY OF MENTAL DISEASES.

In the Journal of September 28th last, a paper read by Dr. F. Peterson of Columbia University, New York, under the Proceedings of the Section of Psychological Medicine, entitled the Galvanometer as a Measurer of the Emotions, was published. It was founded upon the results of certain psycho-physical investigations with the galvanometer and pneumograph which had been carried out by Dr. C. G. Jung of Zürich University and Dr. Peterson at the laboratory of the Clinic for Psychiatry at Zürich last year. This paper aroused great interest in the Section, the members of which will be glad to have the opportunity of reading the fuller account of these investigations recently published in *Brain*.[1] In the paper published on September 28th an account was given of the historical development of the use of the galvanometer in this relation and of the apparatus used by Drs. Jung and Peterson, to which account we may refer our readers; but we may recall the fact that it was proved that every stimulus accompanied by an emotion caused in normal people a deviation in the galvanometer, recorded upon a kymograph as a curve, the amount of such deviation—or the height of the curve—being in direct proportion to the liveliness and actuality of the emotion aroused. The stimuli were of the most varied kind—for example, the threat of a needle, the sudden fall of a weight with a loud noise or the threat of it, arithmetical calculation, sudden call by name, and so on—and the resulting curves were found in normal people to vary directly in amplitude according to their unemotional and phlegmatic or excitable temperament. Certain features, however, were constant; first, successive stimuli caused a diminishing reaction; secondly, in all cases a certain initial latent period was obtained differing in different people and at different times, but as a rule lasting between two and five seconds, and, thirdly, this latent period increased with successive stimuli.

In the paper in *Brain* an account is given of the results obtained in 11 cases of dementia praecox of different types—3 cases of paranoid dementia, 2 cases of hebephrenia, and 6 cases of katatonia. The galvanometer curves were found in many of these tests to be extraordinary. In the paranoid and hebephrenic forms the curves showed no marked departure from the normal, but in the cases of katatonia the waves were almost always of gradual ascent and of exceedingly small amplitude, while one case showed no reaction whatever to any kind of stimulus, the resulting record being a horizontal straight line. Further, all of the katatonic cases in which reaction occurred showed a marked lengthening of the latent period, amounting in one case to as much as 26.94 seconds.

Perhaps the most interesting part of these investigations is concerned with the authors' association experiments in combination with galvanometrical tests. It will be remembered that since Galton, Wundt, and Kraepelin employed these simple association tests, which consist in presenting, orally or visually, words—as a rule substantives—to the test person, who must respond as quickly as possible with the first word which occurs to him. This method of psycho-analysis has undergone great development at the hands of Sommer, Ranschburg, and others, and has given valuable results. The employment of the galvanometer in these association experiments, however, undoubtedly endows them with additional value, and for this reason it may not be amiss to outline the main point of the authors' discussion of their results.

Freud has shown that in hysteria and obsessional states there are always certain hidden "thought-complexes" associated with strong emotional tone which dominate the individual and decide the symptoms, powerful emotional associations, and constellations dwelling in the subconscious which had their origin in real life possibly years before, as Morton Prince in *The Dissociation of a Personality* has shown. Boris-Sidis in his *Psycho-Pathological Researches* has called them "resurrected moments." Such underlying ties may be disclosed in hypnotism or by association experiments. Jung and Peterson maintain that in dementia praecox there is a close causal relationship between the mental disorder and an underlying complex; a subconscious complex was discovered in a normal individual by means of marked fluctuations in the galvanometer curves at the associations "sun-burns," "floor-parquet," "pay-write," and "warm-stove" (the case mentioned at the Sectional meetings, in which the subject, an asylum attendant, had had to pay for damage by a stove burning the floor), by the word-association and galvanometer method. The authors hoped to lay bare the underlying thought complexes in their insane test-persons by the same method. In the word-association tests the reaction times were found to vary, the period between the word and the response being of considerable length in some cases. In repeated tests, although the reaction times in the succeeding tests were, as a whole, reduced, in some instances the same words were always followed by a comparatively slow response. It was found that wherever this occurred a hidden complex had been hit upon—for example, a patient who a short time before had, when greatly depressed, determined to drown himself, gave long reaction times with *water*, *lake*, *ship*, and *swim*. Further, in such cases the reproduced response was often a different word from that first given—that is, there was an inhibition depending upon strong emotional tone. The task of the authors was, therefore, to discover whether the "psycho-galvanic" reflex ran in parallel course with the complex indices just mentioned. In the normal individuals upon whom they experimented this was found to be the case, certain cases showing a clear parallelism or correspondence between the length of reaction time and the height of the galvanometer curve and also such associations as were changed in the repeated tests, showing a notable increase in the galvanometer curve as compared with that of those

[1] Psycho-physical Investigation with the Galvanometer and Pneumograph in Normal and Insane Individuals, by Frederick Peterson, M.D., and C. G. Jung, M.D., *Brain*, vol. xxx, No. 118, July, 1907.

reproductions which were unchanged. Unfortunately, and doubtless owing to the authors' scanty pathological material, only two of their cases of dementia praecox being susceptible of combined galvanometrical and association tests, the results obtained from these cases were entirely inconclusive and even contradictory, the reaction times being in certain tests extraordinarily long, but with only average galvanic durations. The authors give their results with great reserve, regarding them "as only preliminary and as being of questionable "value, but as foreshadowing features of interest for "future inquiry and investigation." It certainly appears as yet uncertain whether, as a means of discovering the underlying mechanism of mental disorders, the galvanometer will give information which cannot be more easily obtained by the ordinary psychoanalytic methods. Nevertheless, it is no scientific toy; its value as a measurer of emotional reactions seems beyond doubt, and certainly in one direction, the detection of simulated psychoses, though this is not suggested by the authors, it appears likely that its employment would be of use.

THE BRISTOL ROYAL INFIRMARY.

The nature of the controversy between the medical staff and the committee of the Royal Infirmary, Bristol, brought about by the action of the latter in passing rules prohibiting any member of the full staff from holding any other appointment than a lectureship or professorship at a university college or school, and any member of the assistant staff from holding any other general hospital or more than one special hospital appointment, has been fully detailed in our columns during the last few weeks, and, as will be seen from the Supplement of October 19th, p. 229, the staff of the infirmary has the support of the members of the Bath and Bristol Branch, who have advised the staff to take the strongest possible measures to resist this or any other rule which in effect embodies its substance. The rule has been passed by the Governors, but before it becomes operative must be confirmed at a subsequent meeting, which has not yet, according to our information, been called. In the meantime, we would invite medical practitioners who may be approached with a view to accepting appointments at the Bristol Royal Infirmary to communicate with the honorary secretary of the Bristol Division, Dr. Newman Neild, 9, Richmond Hill, Clifton, Bristol, or with the Medical Secretary of the Association, 6, Catherine Street, Strand, London, W.C. It is understood, however, that negotiations of some kind have been entered into on behalf of the Committee of the hospital, with a view to filling possible vacancies. We should regret to learn that any medical practitioner had so far forgotten the obligations not only of medical but of ordinary ethics as to enter into any negotiations with regard to the acceptance of an appointment which is not only not vacant, but which we trust is not even in prospect of becoming vacant. It is to be hoped that the Governors in view of the temperate and reasonable protest of the staff will consent to an amicable solution of the difficulty.

MEDICAL INSPECTION OF RAILWAY MEN.

On October 19th an engine driver employed by the Midland Railway Company was taking a goods train from Nottingham to Leicester, and when driving at the rate of between eight and ten miles an hour suddenly fell, and, in the opinion of the fireman, died immediately. By the coroner's instruction a *post mortem* examination was made by Dr. A. J. Denham Riddett; the appearances showed that death was due to old-standing heart disease; the heart was much enlarged, weighing 18 oz., and the left ventricle was much hypertrophied, the semilunar valves of the aortic orifice were atheromatous, and had undergone calcareous degeneration forming quite a large mass of very hard calcareous substance, giving rise to aortic stenosis and regurgitation; the aorta was also atheromatous; there was no evidence of mitral disease, but the lungs were normal, with the exception of slight pleural adhesions on the right side; the liver and spleen were normal, and the kidneys only a little congested. The superficial veins on the surface of the brain were engorged, and there was an embolism of the middle cerebral artery on the right side. Dr. Riddett's opinion was that death was probably due to syncope produced by the aortic regurgitation and stenosis, although the embolism of the middle cerebral artery might have been a factor in its suddenness. In reply to the coroner, Dr. Riddett stated that the disease was probably of at least four or five years' standing, and that if the man had been medically examined recently, the heart disease would have been at once discovered, and it would have been known that he might die at any minute. The coroner in summing up observed that it was a serious matter to have a man with heart disease of this character driving an engine, and the incident seemed to him to be an argument in favour of the periodic medical examination of drivers, since it was clear that, had this man been thoroughly examined, the fact that he was suffering from serious heart disease would have been discovered. The jury, in returning a verdict of death from natural causes, heartily endorsed the coroner's remarks about medical examination for drivers. "For all we know," the foreman added, "it might have "been this very disease which caused the recent accident." The case certainly lends strong support to the opinion that men employed in such responsible positions as engine drivers and signalmen should be subjected to medical examination at relatively short intervals. The case will not, we are sure, escape the attention of the President of the Board of Trade, and will afford him an additional argument for taking action either by legislation or by strong representations addressed to the directors of all railway companies.

MONARCHS AND MEDICINE MEN.

We are glad to note that the skill of English doctors is recognized by the rulers of foreign nations. Only the other day a dusky potentate was cured of some affection by a well-known London specialist, and the fact was recorded among the fashionable intelligence in the *Times*, presumably by the wish of the august and grateful patient himself. Now we learn from the *Liverpool Daily Post* that another monarch closely allied by marriage with our own Royal Family is threatened with consumption, and proposes while on a visit to this country to "submit himself to a consultation of "three English specialists." The expression may recall to the profane scoffer at medicine the passage in Corneille's *Horace*, where the stern old Roman father, when asked about his son who was supposed to have acted on Falstaff's principle that discretion is valour's better part,

> Que vouliez-vous qu'il fît contre trois?

answers indignantly,

> Qu'il mourût!

And in this case there are to be four: for if our contemporary is to be believed, the three specialists whose province, it is to be presumed, is the chest, propose to save the situation by calling in a "throat expert." This oracle of science is said in no way to resemble the conventional practitioner, except in the marvellous

delicacy of his touch. "He looks like a prosperous "easy-going man about town. His rather ruddy "complexion and reddish moustache help to make "him appear younger than he is, whilst he is inclined "to put on weight. His patients idolize him, and "Madame Melba never sings at Covent Garden "unless he is in the house to come to her dressing "room between the acts to spray her throat. He "possesses a wonderful drawing room suite of Louis XV "furniture, and the walls of his consulting room are "practically papered with the signed and framed photos "of eminent sufferers he has relieved. He holds a trifle "aloof from the profession, and probably makes twice "as much as any other aurist in the world. He has "completely filled the place of his old friend, the late "Sir Morell Mackenzie." Who is this light of Science, who is at once a throat specialist and makes twice as much as any other aurist in the world? We do not recognize the portrait, and we cannot help thinking that the scribe has mixed his facts and presented to his readers a composite Frankenstein of medicine fashioned of stray fragments of gossip vivified into a semblance of life by his own lively imagination.

PROPRIETARY REMEDIES.

In the British Medical Journal of October 12th a summary was given of the recommendations relative to proprietary medicines made to the Australasian Commonwealth Government by Mr. Octavius C. Beale. His report has been discussed more than once in the House of Representatives at Melbourne. On September 11th it was severely criticized by Dr. Liddell, who said it would have been better if Sir William Lyne had submitted the "ridiculous report" to some medical man before placing it on the table of the House. Dr. Salmon said he thought the report an honest and earnest effort to cope with what was admittedly a great evil. Mr. J. Cook expressed a hope that the report would be revised by a professional man. Dr. Liddell's motion for the adjournment of the House was eventually negatived. In the course of the debate Sir William Lyne announced that he was dealing with the patent medicine question in a Bill now being drafted. The Bill will not, however, touch the root of the evil, if we may believe a Reuter message from Melbourne dated October 16th, which states that the Bill will contain no legislative power to demand a statement of the composition of patent medicines. In the meantime Mr. Beale's report has fluttered the dovecots of the manufacturers of patent medicines here. The London Chamber of Commerce addressed to the Secretary of State for the Colonies a letter dated October 11th, by which he is officially informed that at a recent meeting of the Owners of Proprietary Articles Subsection of this Chamber attention was called to certain proposals affecting the importation into and sale of patent medicines and foods in Australia in a report made by Mr. O. C. Beale. It is urged that these proposals, if adopted in the form suggested, will result in the practical exclusion of proprietary medicines made in this country from the Australasian Commonwealth. It is pointed out that the owners of such medicines most strongly object to the compulsory publication on the label of every patent medicine of its composition, on the ground that disclosure of the formulae in Australia would enable any one to manufacture similar articles in England, and to use the name by which they were previously called. Thus exporters to Australia, if the regulations become law, will find that market closed to their enterprise. The letter goes on to say: "In order to meet, if possible, the acknowledged "desire of the Federal Government to endeavour to "prevent the importation and sale of certain "classes of medicines which are either used for "improper purposes or are obviously frauds, it is "respectfully suggested that a schedule of deleterious "drugs and other substances should be prepared by the "Federal Government, the use of which should either "not be permitted at all in proprietary medicines "generally or only to a very limited extent, and the "manufacturers of such medicines are prepared to "make sworn declarations that their goods do not "contain any of the drugs which may be so scheduled, "or any ingredient or deleterious drug in quantities "injurious to health, or drugs, alcohol, etc., in excess of "quantities which the Commonwealth authorities may "by regulation prescribe." Such regulations, it is added, would meet with the approval of manufacturers and exporters in the United Kingdom, and would obviate the necessity of making the formulae public. A letter to the like effect has been forwarded to the President of the Board of Trade, and efforts are being made to induce Lord Elgin to receive a deputation of representatives of the interests concerned in Mr. Beale's proposals.

NURSING UNDER THE METROPOLITAN ASYLUMS BOARD.

The Matrons' Council of Great Britain and Ireland, a body which holds a standing brief on behalf of the senior, if not the junior, divisions of the nursing world, summoned in haste last Saturday a meeting to consider a change impending in the status of some of its fellows in the service of the Metropolitan Asylums Board. It is, perhaps, due to the hurry in which the arrangements were made, that the notices sent out and the resolutions formulated were so worded as to create a mental image of a number of ladies bridling indignantly and perhaps not in a very dignified manner over a more or less fancied offence. This, however, does not affect the real question nor the nature of the change. This, though otherwise than etymologically it can scarcely be characterized as a degradation of the persons concerned, may certainly be well regarded by nurses as a grievance, and certainly deserves serious consideration at the hands of any body which deems itself bound to consider the interest of nurses, and is in a position in any wise to make its influence felt in the councils of the Board in question. The change, in short, is an alteration in the official status of the ladies at the head of the nursing departments of the various hospitals and other institutions administered by this Board, it being proposed to rank all future appointees as second, not first-grade, officers. The main immediate effect of this will be that such employées will be dismissible by the Board at a month's notice, and without reference, as at present, to the Local Government Board. If the dismissal of a matron is proposed on good grounds the Local Government Board would never fail to confirm it; and, this being the case, it seems scarcely worth while to make an alteration which, in the way of by-products, is likely to have results not easily realized by those who have never been members of a large service in which rank and official status count in many, if not large, ways for much. This particular question, indeed, is one in the treatment of which this Board has never been happy. Its success in inducing the Local Government Board to displace all members of the medical staff with the exception of superintendents, from the rank of first-grade officers has always been a source of discontent, and led as recently as two years ago to the Board having forced upon it an unpleasant inquiry, the net outcome being that its service is far less popular than it should be, and that the Board thus has a less desirably wide choice of medical officers than otherwise would be the case. It is possible, of course, that in its latest move—that affecting nurses—it is desirous of completing a scheme in the theoretical soundness of which it indicated a belief on a former occasion, namely, that

of having only one first-class officer in each department of its general services. It is to be remembered, however, that schemes which in theory are perfection, in practice often work most imperfectly, and that though nurses in theory do their work under medical men, a nursing department in practice is one in the administration of which medical men rarely take any direct part. However this may be, if the Council really makes the change indicated, the Matrons' Council is certainly able and likely to take the step which was threatened in the formal resolution passed at a meeting last Saturday, namely, to endeavour to deter nurses as a body from offering themselves to the Board for employment. In this case the nursing performed at its institutions, which should be of the highest character, will certainly suffer in efficiency.

THE CITY OF LONDON POLICE AMBULANCE SERVICE.

A most interesting demonstration of the working of the motor ambulance belonging to the City Police was given on October 17th at the Police Office, Old Jewry, E.C., under the authority of Captain Nott Bower, Commissioner of the City Police, and in presence of Mr. Henry Morris, President of the Royal College of Surgeons, Mr. Gordon Brown, surgeon to the City Police, Mr. Reginald Harrison, Mr. Dixon of the Home Office, and others. The visitors were first shown the routine of receiving and transmitting messages in use at the head office. A call being received from any one of the fifty-two call boxes which are spread all over the City area, in less time than it takes to write it down this was transmitted to the ambulance station at St. Bartholomew's Hospital, the message indicating the locality where the ambulance was wanted, and any further directions which might be necessary. Next the visitors were asked to suppose that an accident had happened in the Guildhall Yard and a call had been received, which they saw transmitted to the ambulance station. They were then taken in motor cars to the Guildhall, and by the time they arrived the ambulance was also there, and in a very few minutes the case, which was supposed to be a compound fracture of the thigh, had had first aid rendered it by one of the police force with splints and bandages, was placed comfortably on a stretcher and lifted into the ambulance, ready for conveyance to hospital. By returns furnished to the Commissioner it appears that the average time taken from receipt of call to arrival at hospital is in the case of the motor ambulance nine and a half minutes as against twenty-one minutes, the average time taken by the old hand litters. Since May last 442 cases have been conveyed by the new method, and 195 by the old. From a police point of view the saving of eleven and a half minutes a case is most important. It clears crowd and obstruction from the streets, and saves the time of the police for other duties. The value of the new system to the sick and injured will be best appreciated by medical men whose duties bring them into contact with these cases. Mr. A. Bowlby, C.M.G., one of the Surgeons to St. Bartholomew's, writes to the Commissioner: "The "patients who have been brought in the new "ambulance have been very well looked after by "your police. They have evidently been very care-"fully lifted and moved, and have suffered much less "pain in transit than if they had been conveyed "in any other way. I think the new ambulance is a "complete success." Dr. Ludlam, Superintendent of the Ambulance Service of New York, who has seen the new motor ambulance at St. Bartholomew's, has also written to the Commissioner expressing the opinion that the vehicle itself is admirably adapted to the purposes for which it is intended, and is in some respects, he thinks, in advance of the type in use in New York. Its record—in commission for three months without breakdown and without expenditure for repair—was excellent. Dr. Ludlam thinks, and we agree with him, that the fact that by means of this motor ambulance the time from the occurrence of an accident to the delivery of the patient at a hospital is reduced to a very few minutes, and that the transportation is made with a minimum of suffering to the patient, should be an unanswerable argument in favour of the new system. While, then, we congratulate the City authorities on the excellent results they have attained, we are unable to believe that the Metropolitan Police Force, within whose area motor ambulances are at least as much required as in the City, will be denied much longer by the Home Office the means of putting London on a par with other great cities in this respect.

THE AVERAGE FEE OF A POOR-LAW MEDICAL OFFICER.

We have received from Dr. Percy Rose, one of the district medical officers of the West Ham Board of Guardians, a copy of a letter which he has sent to each member of the Board. This is a statement of the work done and the payment received during the twelve months ending March 31st last. The annual salary is £130, and during the year extra fees were received, amounting to £36 7s. 6d. For this total payment of £166 7s. 6d. the medical officer had made 5,647 attendances, including visits and consultations at his surgery, so that on this basis his rate of payment works out at 7d. per attendance. But as the work done for the extra fees necessitated 324 attendances for £36 7s. 6d., or 2s. 2d. per attendance, the remaining work done for the regular salary was at the rate of only 5¾d. per attendance. Dr. Rose suggests in his letter that this is less than the usual rate in other unions, and attributes the fact to the unusual destitution of his district, rendering the population less unwilling to seek the services of the parish doctor. Whatever the cause may be, every one must agree that an average of 5¾d. is an inadequate and improper fee for a public body to offer its medical officer. It would be well if other Poor-law medical officers would draw up a similar statement, so that the average rate of pay might be ascertained.

DAIRY FOLK-LORE IN NORFOLK.

Dr. C. B. Plowright, of King's Lynn, Medical Officer of Health for the Freebridge Lynn Rural District, has just completed for the Local Government Board a thorough investigation of the dairies and cowsheds in the district. The results of his researches were, we learn from the *Lowestoft Weekly Press*, laid before the District Council at Gayton on September 19th. We are not here concerned with the scientific part of his report, but with some interesting examples of dairy folk-lore which he mentions as prevalent in West Norfolk. He said that there had come down from time immemorial various superstitions connected with milk and milking. One of the most widespread of these was that unless the hands of the milker were washed before and after milking the cow would become dry. Although it could not exactly be said that milk was looked upon with superstitious reverence, yet the vessels and utensils used for it were never used for any other purpose, nor was the milk ever stored in any place where there were bad smells of any kind, as it was believed that the liquid would absorb the evil flavour. For instance, milk was never kept near cheese, herrings, onions, or where there was any stench from drains. Milk was also regarded as a universal antidote for all kinds of poisons, and was believed to absorb and convey infectious disease from the atmosphere. It was

considered that milk must always be kept still, and, therefore, the dairy door was never shut violently. To spill it in milking, or, as it was said, "to milk wide of "the pail," was a thing to be most scrupulously avoided lest any should fall on the cow's feet and legs, as it was said that in such a case the cow would become dry. On the other hand, when a cow was milked, the first few drops were used to moisten the milker's palms, for it was said not to be well to milk with a "dry hand." Dr. Plowright expressed the opinion that this was an instance of sympathetic magic, the idea being to increase the quantity of milk obtained from the animal that was being milked. Again, before the process of milking was regularly begun, another rite was performed. The teats were "drawn," that is, a few drops were milked upon the floor; they were not allowed to fall into the pail, but must be milked upon the ground. By this means, it was thought, the duct of the teat was washed out, and any dust or impurity that might have got into it was got rid of before the full milking was entered upon. This, Dr. Plowright thought, was clearly a survival of the rite of sacrifice, a libation poured upon the ground to propitiate the gods in the hope of ensuring a plentiful supply. Possibly the sacrifice was made to some Scandinavian deity, such as Freya, or Freyja, or perhaps even to Friga. It was also customary to throw away the last few drops of milk which remained at the bottom of the vessel which had contained it, whether jug, or basin, or pail. It was said by those who had the handling of the milk that any deleterious substance which the milk had absorbed settled to the bottom of the containing vessel, and that by throwing away the last few drops the impurities were got rid of. This was so general a custom, however, that there could be little doubt that it was a folk-lore survival, like that of the beggar throwing away the dregs from the cup from which he had taken a drink. Lastly, however matted a cow's tail might become with filth, the hair must never be cut off with a sharp instrument, as it was believed that this would cause the cow to abort.

ENGLAND'S GREATEST MEN.

Some months ago we referred to a *plébiscite* which had been taken in France for the purpose of deciding the question who were the ten greatest Frenchmen of the nineteenth century. The result was that Pasteur headed the poll by a large majority, Napoleon being fourth. In the list were Curie the discoverer of radium, and M. Roux of the Pasteur Institute. The rest, with the exception of one or two men of letters, were politicians. In commenting on the matter we pointed out that the result of the voting showed how high science stands in the esteem of Frenchmen. We ventured to predict that the result of a similar vote taken in this country would be very different; the list, we said, would include politicians, two or three soldiers, and one or two popular novelists, while science, and in particular those branches of it which are applied to the art of healing, would be nowhere. We recalled the suggestive fact that when the Order of Merit was established there naturally was a good deal of difference of opinion as to the names proposed. We said that there was one name as to which disagreement could scarcely have been expected; yet in some of the alternative lists proposed the name of Lister was conspicuous by its absence. A curious confirmation of our remarks has recently been given by the list of distinguished men to whom the empty pedestals in the House of Commons have been assigned by the readers of the *Evening News*. There are, it appears, twenty-seven places vacant for statues. The result of a vote taken on the subject was that Shakespeare was first; close after him came Wellington and Nelson; Mr. Chamberlain was a good fourth; then came Dickens, Cecil Rhodes, and Lord Roberts. There were only two men of science in the list—Darwin who was sixteenth, and Newton who was twenty-fifth. Lister was literally "nowhere," being thirty-ninth in the list, with 584 votes. No other representative of medicine found a place, and science in general found few to do her reverence.

CONVALESCENCE FROM MENTAL DISEASE.

The After-Care Association devotes itself to endeavouring to facilitate the re-entry into ordinary life of persons of the poorer classes when discharged from asylums as recovered. During the last year the number of cases the Association has been able to assist has increased, and more branches in connexion with asylums in different parts of the country have been formed. It cannot, however, with its present funds do all that is required, so any assistance in this direction would doubtless be welcome. It need scarcely be said that, quite apart from their mental condition, many of those who are discharged from asylums as cured—and their number year by year is great—stand badly in need of assistance. Their previous illness has often wrecked their careers; they have lost their homes and friends, and it is not easy for them to find work. Moreover, not a few require treatment of a kind not differing essentially from that very freely provided for those who have suffered from physical sickness or injury, namely, rest in the country for a time under favourable conditions as regards food, air, and companionship. Ordinary convalescent homes, however, refuse to admit persons on discharge from asylums; so, in default of special arrangements such as those which the After-Care Association is sometimes able to make, many must take up the struggle for existence, so far as they can, the moment they leave the asylum premises. This is to be regretted, for it cannot be doubted that in many cases a period of rest in pleasant and healthful surroundings would do much to consolidate an apparent cure. One of the black spots in the asylum system of these islands is the frequency, familiar to every asylum medical officer and every student of asylum statistics, with which patients are discharged as recovered only to reappear at a shorter or longer interval on the admission list of the same or some other allied institution. Worry is one of the commonest precipitating causes of mental disease, and the worry attached to endeavouring to restart life, entirely unassisted as is the lot of too many of those who are discharged from asylums, must certainly count for much in the frequency with which ostensible recoveries prove to be only temporary. The combined objects of this After-Care Association are therefore undoubtedly meritorious, and the work done by it is so useful that all interested in stemming the calls made upon the public purse by the need for providing more and more asylum accommodation should endeavour to aid its progress. It has upon its Council a large proportion of those who are prominent as alienist physicians, the honorary treasurer being Dr. George Savage, the offices being at Church House, Dean's Yard, Westminster.

A DISTRICT OF WEST AFRICA.

A medical man who is well acquainted with Abo, or Aboh, in Southern Nigeria, informs us that the account summarized in these columns on August 3rd, from the pages of the *Empire Review*, conveys some erroneous impressions. The rainfall, he considers, is not really excessive, being considerably less than in many other parts of the world; it is even less than in the plains of Eastern Bengal, with which locality Abo, in point of climate, fauna, flora, and general configuration, has much in common. Nor is the country habitually more or less under water, for though the Niger in some years really overflows and floods certain parts, what usually happens is that in autumn it empties its surplus

water into well-known creeks through which the water eventually finds its way to the sea. The Niger, in short, merely spills over at places, like other rivers whose beds lie at a higher level than that of the surrounding country. With few exceptions, Europeans inhabit houses raised on iron piers, well above possible o od level, and do not live in mud huts. No European has died there of late years, which cannot be said of neighbouring districts. The whole country is green, trees predominating over grass. Insect life is both varied and vigorous, but the *Pulex penetrans* is not common; it prefers drier soil than that of Abo. The *Culicidae* are well represented, and the *Tabinidae* and *Glossinae* amongst many other blood-sucking diptera are by no means rare. It is true that there is a carnivorous ant, the notorious Driver ant, but it is nomadic and not peculiar to Abo, or even to Southern Nigeria. It travels about in vast hordes, occasionally entering dwellings, and when this is the case everything else makes haste to quit. Between the blood-sucking diptera and man there is constant war, and the diptera very often have the best of it. Even the natives fear them and endeavour to protect themselves. Neither a mosquito-proof room nor a mosquito curtain confers complete immunity from them, for some of the smaller species are able to pass through even a very fine-meshed tissue. Pools of stagnant water should be filled up, and all vegetation in the neighbourhood of houses kept down, measures which might advantageously be taken throughout West Africa much more commonly than is usual. The district is inhabited by three tribes, the Abohs, the Egabos, and the Ejans, as to whose religious beliefs little can be said with assurance. As to their methods of disposing of the dead, they bury the corpses of married men inside their huts, and those of unmarried men outside them. The bodies of women who have died during pregnancy, or from small-pox, and also the corpses of small children, are thrown into the river, those of suicides being placed in the "bush." Not only the dead, however, are thrown into the river; twin children and infants who cut their upper before their lower incisors are got rid of in the same way. Circumcision, clitoridectomy, and filing the incisor teeth, and tattooing are practised, and polygamy is general. If indeed, a man is a chief, and can afford it, he may, if he likes, have as many as ten wives. A wife, however, is not an entirely inexpensive luxury. She must be paid for either in gin or cowries: ten cases of the former, twenty bags of the latter are the alternative obstacles that lie between the shrinking maiden and the expectant bridegroom. It appears that the custom of killing witches and of trial by ordeal and slave driving are no longer permitted, but these are facts upon which a civilization which has succeeded in elevating bottles of gin to the position of current coins of the realm can scarcely pride itself greatly. The more notable diseases which occur are leprosy, yaws, small-pox, ankylostomasis, filariasis, syphilis, phthisis, pneumonia, and dysentery, but the latter three are much less prevalent than in some parts of India. Moreover, the country is free from those terrible scourges of the East —plague, cholera, and choleraic diarrhoea. Latterly some cases of sleeping sickness have been noted. In physique the natives are a fine people, but they are indolent, improvident, immoral, addicted to drinking, and fond of fine clothes and dancing.

MEDICAL LEGISLATION IN AMERICA.

AMERICA is pre-eminently the land of "freak" legislation. Every month or two we hear that one State or another has, or is about to, forbid the smoking of cigarettes, the drinking of alcoholic liquors, or getting married without a medical certificate. We have a shrewd suspicion that some of such measures at least are allowed to remain as inoperative as the stringent laws against quackery for which, without any particular reason, we envy France and Germany. Recently, however, we have come across some proposals said to have been brought forward in one of the Western States which show that the saying of Cicero about the philosophers, to wit, that there was no absurdity which had not been held by one or other of them, might be applied to the legislators of the several States of the Union. Premising that we must not be held responsible for the style, we give the text of the proposed law as we find it: (1) A law compelling all physicians to give duplicate prescriptions in English, so that they can be read by any one. Also giving in English on prescription name of trouble for which prescription was given. (2) A law compelling all physicians to give duplicate prescriptions, one for the druggist and one for the patient. (3) A law compelling the county clerk to publish every three months a list of doctors who had deaths occur of patients under their charge, giving number of deaths after each name. (4) A law providing that where a physician prescribes morphine or opium for the cure or relief of a patient, and the patient acquires the habit therefrom, that charges may be brought against said physician, and upon conviction he shall be sent to the penitentiary. (5) A law prohibiting a physician from charging more than the following scale of prices for calls: Between 7 a.m. and 6 p.m., 1 dollar; between 6 p.m. and 7 a.m., 1 50 dollars. (6) A law providing that should a patient not receive any benefit from a physician's treatment, that the physician cannot collect his bill. (7) A law providing that in case of death of a patient while under the physician's care or treatment, bill for services must be cancelled. The only comment we have to make on these egregious proposals is that a Bill should be brought in at the same time providing that any legislator who introduces a Bill which fails to become law should be deprived of his salary, and on a repetition of the offence should be given free quarters in the State penitentiary; and that the Governor and other officers of the State should, whenever there is a majority against them, incontinently be hanged. Further, it would be only fair that a law should be made that lawyers who lose a case should not only forfeit their fee but be fined for their failure. Clergymen, too, any members of whose congregation should stray from the path of morality, should for every such offence be liable to imprisonment. This would place the professions on an equal footing.

THE redecoration of the Library of the Royal College of Surgeons of England has been completed earlier than was expected, and it will be reopened on Monday next, October 28th.

DR. E. H. STARLING, Jodrell Professor of Physiology, University College, has been nominated for the vacancy in the representation of the Faculty of Medicine upon the Senate of the University of London. So far as we have heard no other candidate has been mentioned, and it would be difficult to find any one so well qualified for a seat on the Senate or more likely to do useful work there.

IT is with great regret that we have to announce the death on Tuesday last, after a long illness, of Dr. T. M. Dolan, who recently resigned the appointment of medical officer to the Halifax Union Workhouse, the efficiency of which he had done so much to increase. Dr. Dolan was for some years a member of the Central Council of the British Medical Association, and at the time of his death was Vice-President of the Yorkshire Branch. A full obituary notice will be published in a subsequent issue.

Manchester and Salford.

Memorial to Professor Dreschfeld.

There was a fairly good attendance of medical men and members of the University staff at the meeting at the University on October 16th, called to consider the proposed memorial to the late Professor Dreschfeld. The Vice-Chancellor, Dr. A. Hopkinson, was invited to take the chair, and paid an eloquent tribute to the memory of Dr. Dreschfeld. He said that in view of Dr. Dreschfeld's long connexion with the University, it had been felt that the memorial should be in some way connected with the University. Sir Felix Semon, speaking as one who had been a personal friend of Dr. Dreschfeld for a quarter of a century, alluded to the great pride he had always taken in the Manchester Pathological Laboratory. Throughout France, Germany, and America he was known and respected as an accomplished pathologist and physician, but his whole interest was centred in Manchester, and something should be done not only by the medical profession but by the public at large to keep his memory green. Various suggestions were made at the meeting as to the form the memorial should take. The first idea had been to endow a Chair of Medicine at the University. The Joint Committee of the Manchester and Salford Divisions had suggested as alternative ideas either the establishment of a Dreschfeld memorial hall or the foundation of a memorial scholarship; and the last suggestion was finally adopted. It was accordingly resolved that a committee be appointed, consisting of both medical men and laymen of Manchester, to invite subscriptions and arrange for a Manchester University Scholarship in Medicine. It was left to the committee to determine the nature of the scholarship, though it was suggested that it might be either an entrance scholarship for the children of medical men or a research scholarship. In addition it is probable that a bust or portrait of Dr. Dreschfeld will be placed in the University.

The University Union.

On Wednesday, October 16th, the annual meeting of the Manchester University Union was held, Dr. Shaw, the retiring Chairman, presiding. A report of the year's work was adopted, the committee expressing some disappointment at the fact that, so far, only £7,500 had been promised towards the new building fund, while at least £10,000 was required, exclusive of the cost of furnishing. The Union is one of the most valuable factors in the social life of the University. Its present premises are extremely cramped, and yet it manages to provide reading and writing rooms and billiard and smoke rooms, while the debating society in connexion with it continues to flourish. Still, a new building is urgently needed, and it would be a great pity if the plans had to be cut down or the new premises occupied under any considerable debt. The foundation-stone will be laid at an early date, and it is hoped that the new building will be ready in the early part of 1909. The following are the officers for the ensuing year: Chairman, Mr. P. Sandiford; Vice-Chairman, Mr. T. M. Popple; Treasurers, Mr. R. C. Barnes and Mr. T. A. Jordan; Secretary, Mr. C. W. Knott: Trustees, Mr. Alfred Haworth and Mr. C. T. Needham. The retiring committee made an urgent appeal to all the members to work hard to obtain the necessary funds.

West Yorkshire.

Bradford Royal Eye and Ear Hospital.

A most notable gathering of influential ladies and gentlemen took place in Bradford on October 18th in celebration of the jubilee of this hospital. The guests, who numbered nearly 700, were received by the Lord Mayor and Lady Mayoress in the beautiful Cartwright Hall. Amongst them were most of the prominent medical men of Bradford. The Lord Mayor said he was greatly delighted to see such a large gathering. The fifty years since the Eye and Ear Hospital was founded had been a period of continuous progress. The hospital was established by the late Dr. Edward Bronner, who was later assisted by Dr. John Henry Bell. In 1865 a new building was erected; an extension was made in 1878; in 1884 the hospital was enlarged to accommodate 46 beds; and in 1898 a new operating theatre was provided. During the present year the King had graciously allowed the hospital to be known as "Royal." The name of Bronner had been perpetuated in connexion with the medical staff by Dr. Adolph Bronner, who had been a brilliant successor to his father. Fifty years ago 357 persons were treated for diseases of the eye and 153 for diseases of the ear; for last year the figures were 5 903 and 1,367 respectively. The operations fifty years ago numbered 66, and last year 1,084. Sir George Scott Robertson, K.C.S.I., M.P., and Mr. W. E. B. Priestley, M.P., having spoken, Professor Stirling, of Manchester University, gave a most interesting address on curiosities and defects of vision, which was listened to with the greatest attention. It is proposed to again increase the accommodation of the hospital as soon as the necessary funds can be obtained.

Ilkley and Hospital Maintenance.

It has been determined to establish in connexion with the Ilkley Coronation Hospital a Workpeople's Hospital Fund. An effort is also being made to get the employees in workshops and other places of business to allow ½d. or 1d. a week to be deducted from their wages for hospital purposes. This hospital has been found of so much value to the district that it is proposed to extend it as soon as the necessary funds can be obtained.

Liverpool.

Mr. Haffkine and Professor Ronald Ross.

At the University Club on Monday Sir Alfred Jones gave a banquet on an imposing scale in honour of Mr. W. F. Haffkine, to whom the Mary Kingsley Medal was to be presented, and of Professor Ronald Ross, F.R.S., who is proceeding at the request of the Colonial Office to Mauritius to advise in what way malaria in that island can be diminished. In his speech preliminary to the presentation of the medals Sir Alfred Jones, after reference to the work done by Professor Ronald Ross, mentioned that Mr. Haffkine had been instrumental, by reducing the death-rate from plague in India, in saving millions of lives. He was followed by Dr. J. W. W. Stephens, who explained that the Mary Kingsley Medal had already been presented by the Liverpool School of Tropical Medicine to certain persons who had done distinguished work in connexion with tropical study and sanitation. Mr. Haffkine's services were not confined to plague, for in 1893 he discovered a method of inoculation against cholera, and proceeded to India in order to introduce its use on a large scale. Three years later, while still working in that country, he elaborated his method of inoculation against plague; since that date—1896—more than 6,000,000 doses of his prophylactic had been prepared and issued by the Government of India, and it had been shown that the method had reduced the mortality among the inoculated by one-sixth. In conclusion, Dr. Stephens thought that the list of medallists would not be complete until the medal had been conferred upon Sir Alfred Jones, in recognition of the magnificent work he had done in promoting the study of tropical disease. In the course of the evening telegrams were sent to Princess Christian, as Honorary President of the Liverpool School of Tropical Medicine, and to Mr. Joseph Chamberlain, informing them of what was going on. The telegram to Mr. Chamberlain concluded with the words: "We recognize what you have done for tropical medicine, and hope you may live many years to do as much more." In reply, the following telegram has since been received from Mr. Chamberlain:

> Telegram only received this morning; many thanks for it. I assure you of continued interest in all that concerns spread of tropical medicine. Congratulate Professor Ross especially on the knowledge gained of these diseases, and him and Mr. Haffkine on the part they have had in practical results.

Wales.

INFANT MORTALITY-RATE AND THE TEACHING OF HYGIENE.

IN a report on what he terms the appalling death-rate among children, Dr. Howard Jones, M.O.H. Newport, states that during the past year the deaths amongst children in the town were in the proportion of 145.4 per 1,000 births. The death-rate amongst illegitimate children under 12 months of age was 260.8 per 1,000, as compared with 142 0 amongst children born in wedlock. In the previous year the rate was 126 2; while 118 infants died before they were a month old, 64 died within a week of birth. If this death-rate had continued during subsequent weeks, all the infants born in Newport in 1906 would have died within 38 weeks of their birth. The medical officer made various recommendations to remedy matters, including the education of expectant mothers, education of girls in domestic hygiene and temperance, strict supervision of illegitimate children and "farmed out" infants, provision of a pure milk supply for infants which cannot be breast-fed, etc. A special committee of the sanitary authority has considered this report, and has now issued recommendations. It is suggested that the Education Committee should consider the question of educating girls in the higher standards in domestic hygiene and temperance, and the head mistresses of the girls' schools have been asked to consider the inclusion of these subjects in the time tables, with special reference to more time being devoted to them in the upper standard. The question of the establishment of a municipal milk supply, or of making arrangements with certain milk vendors for the supply of pure milk for infants which cannot be breast-fed, was still under consideration. The committee state that it is essential that at least one additional woman health visitor be appointed, for the special purpose of ensuring better protection of infants, the supervision of illegitimate children and farmed out infants, seeing to the registration of "stillbirths," the removal of infants from unfit parents, and securing skilled assistance at birth. A fund should be raised by means of voluntary contributions to provide nourishment for expectant mothers who are too poor to provide such nourishment themselves, and who are not qualified to apply to the guardians of the poor. The committee also considered it of the utmost importance that an Infantile Health Central Committee should be formed to co-operate with any other organization in the borough with a view of educating mothers in respect of infant and domestic hygiene, of keeping all infants under observation from birth until 12 months of age, and of organizing a systematic visitation of all the wards, such committee to consist of members of the council and any ladies and gentlemen interested in the protection of infant life. It is further urged that an appeal should be made to the midwives practising in the borough to endeavour to persuade expectant mothers to adopt breast-feeding, and it is recommended that the Notification of Births Act, 1907, should he adopted and put in force in the borough. With the exception of the adoption of the Notification of Births Act, 1907, which question was deferred, the Sanitary Committee has adopted the whole report.

Scotland.

NOTIFICATION OF BIRTHS ACT.

THE Local Government Board in Scotland has issued a circular with regard to the Notification of Births Act, 1907, in terms very similar to the circular issued by the Local Government Board in England (see BRITISH MEDICAL JOURNAL, October 5th, p. 943).

THE MEDICAL SERVICE OF THE TERRITORIAL ARMY.

Last week Sir Alfred Keogh, the Director-General of the Army Medical Service, addressed a meeting at Aberdeen which was presided over by the Lord Provost and was attended by over seventy representative medical men. Sir Alfred Keogh explained that the main feature of the proposed scheme for the territorial army medical corps was that volunteer medical officers would in future be members of a single corps to which all future appointments would be made. He stated that officers would be appointed to act with special battalions if they so wished, and that those at present attached to different regiments would still be permitted to wear the uniform of that regiment, though it was hoped that all would join the territorial army medical corps and form a united body. In each territorial Division a territorial army medical school would be established which would be the centre of education for all classes of medical work connected with the Army Medical Corps, and at which volunteer medical officers would attend a course of instruction in their different duties, sanitation, administration, etc. Though under the scheme two medical officers only would be allotted to each battalion, it was not intended to interfere with the present medical officers attached to battalions in excess of this number, if they elected to stay on, but no fresh appointment would be made to these battalions until by resignation or otherwise the number had been reduced to two. Regimental medical officers would be required to train the sanitary squads detailed from these regiments. A very important point in connexion with the new scheme was that the money allotted by the Government for the training, etc., of the medical corps was in future to be at the entire disposal of the Director-General and not paid into regimental corps as at present.

Special arrangements would be made for the examination of recruits in country districts. Colonel Russell, R.A.M.C., Deputy Assistant Director-General, read the details of the organization, an outline of which will be found in another column. Professor Matthew Hay referred to the importance of military sanitation and to the special training required in this subject, adding that the medical officers of health present would be ready to assist the scheme in every way in their power. The Lord Provost having been compelled to leave, the chair was taken by Professor Ogston, who proposed a vote of thanks to Sir Alfred Keogh for his address, assuring him of the sympathy of all the medical men present with the scheme. We may add that the general opinion of the meeting seemed to be that the scheme would prove very workable, and was one in which volunteer medical officers would be treated fairly, and recognized by the Government to be a useful and important part of the territorial army.

ABERDEEN.

Professor Finlay on Alcohol.

In opening his class at Marischal College, Aberdeen, on October 16th, Professor Finlay delivered an address, in which he said that sixteen years ago, in an introductory address, he had called attention, with approval, to the diminished use of alcoholic stimulants in disease. He said that whether the point was tested by statistics or by the general impression of physicians, the more favourable results of moderate alcoholic stimulation in febrile diseases, and in many cases even of no such stimulation at all, marked a notable improvement as compared with those of the prevailing medical practice a quarter of a century ago. Dealing with the present position, he said we had not gone far enough on the non-alcoholic road in treating disease. There were extremists on both sides; he believed both were wrong, and he did not belong to either camp. He firmly believed that he had seen great benefit from the use of alcohol in other people, and he was certain that he had experienced benefit himself when attacked by severe and sudden, though transient, illness. As years went on he had come to use alcohol less and less in the treatment of disease. Among the acute diseases most often met with, pneumonia and enteric fever might be taken as the type of ailments in which for limited periods alcohol in small quantity might sometimes be useful, but he had rarely prescribed it for youthful patients, and he had generally abstained from ordering it even for adults approaching the middle period of life. He had long taught that the routine use of alcohol in disease was bad even in acute cases, and that in most chronic cases it was wasted, or worse, except when prescribed for some temporary condition, such as sudden heart failure in cardiac disease. Professor Finlay summed up his teaching in the following series of recommendations: (1) Regard alcohol as a drug, a very valuable and dan-

gerous one, and put it in the same category as morphine, strychnine, atropin, and the like. (2) Prescribe it not after a routine method, but having regard to each case on its own merits, and considering such points as the state of the pulse especially, the age, previous health and habits, and the severity and period of the attack. (3) Young patients of good constitution are better without it, except in presence of heart failure or crisis of some kind. (4) Use the smallest doses possible, and give strict injunctions as to time and mode of administration. Watch its effects carefully, and omit it when the critical condition has passed. (5) Be especially sparing in chronic diseases, where in most cases it does not the slightest good but only leads to waste. These views were the result of observation and practical experience in the treatment of disease, aided by a reasonable consideration of the opinions expressed by many observers, and of the evidence upon which these opinions were founded. The general question of the consumption of alcohol did not come within the scope of his address, but he believed that its daily dietetic use, except in such persons as were weakly, was harmful, specially so in the young. That it might be at least not injurious in the case of many who were beyond the meridian of life, taken in wise moderation, he was not prepared to deny, and in the case of the aged he believed it to be often decidedly beneficial.

Dr. David Nicolson.

Dr. David Nicolson, C.B., was the guest of the Aberdeen Grammar School Former Pupils' Club at its annual dinner held in the new banqueting hall of the Palace Hotel, Aberdeen, on the evening of October 12th. Dr. J. Scott Riddell, M.V.O., occupied the chair, and in proposing the health of the guest of the evening rapidly sketched his brilliant career, and referred to his present high position as a neurologist and to his fame as an authority on criminal insanity. In replying, Dr. Nicolson made a most interesting and entertaining speech, full of reminiscences of the old-time Grammar School and the University Medical School.

Ireland.

Consumption in Ireland.

The people in Ireland are showing signs of awakening as to the responsibility of establishing sanatoriums for the treatment of consumption, a disease which causes more deaths in Ireland than all the infectious diseases put together. An important conference has been held in the City Hall, Waterford, and the following resolutions were adopted:

1. That an urgent necessity exists for the taking of immediate steps to check the ravages of consumption in the counties of Waterford, Wexford, Tipperary and Kilkenny.
2. That this conference is of opinion that in order to combat the spread of tuberculosis, it is desirable to establish a central sanatorium for the treatment of suitable cases, in which four counties are represented, also to form local committees in each centre of the population, who should visit the houses and instruct patients as to necessary preventive measures and that the contribution to same should not exceed a penny in the pound.
3. That this conference strongly urges the necessity of legislation with the object of placing, subject to proper safeguards, tuberculosis on the list of diseases which are compulsorily notifiable.
4. That owing to the great mortality from consumption and the combating of its ravages being a national question, we ask the Government for substantial financial support to help us in our present efforts towards reducing the death-rate.

It is to be hoped that the Tuberculosis Exhibition which was so happily opened by the Countess of Aberdeen in Dublin on Saturday, October 12th, and is shortly to go on tour round the country, will do much to instruct the poorer classes of the people how best to help themselves to prevent the scourge from entering their households.

The Tuberculosis Exhibition.

The Tuberculosis Exhibition at Dublin attracts a good many visitors. It has been made as interesting as possible. The Committee, under the presidency of Lady Aberdeen, has organized a series of lectures and demonstrations which are designed to awaken and instruct the public on the subject of the ravages of this disease in Ireland. Among the lecturers have been Professor Lindsay of Belfast, Dr. Birmingham of Westport, Mr. J. Lentaigne of the Mater Hospital, Professor McWeeney, Dr. A. R. Parsons, Mr. A. F. Tobin, and Professor Mettam of Dublin.

North Infirmary, Cork.

On October 15th, 1907, a tablet was unveiled at the North Infirmary, Cork, recording the warmest gratitude of the Board of Management to Lieutenant-Colonel McDonnell, R.A.M.C., for his princely contributions to the infirmary, the latest of which was a gift of £2,000 for the purpose of endowing two beds in perpetuity for the reception of patients who through misfortune have been reduced in the world, and who would, under ordinary circumstances, have to enter the ordinary wards of the infirmary. The opportunity was taken to place on record in no uncertain terms the gratitude of the Committee for the magnificent donation, and one which ought to serve as an incentive to the wealthy to emulate so noble an act. The beds endowed will be an undoubted boon to the class of patient Colonel McDonnell wishes to help—those who are too poor and yet too proud to avail themselves of charity.

Alleged Corruption at a Dispensary Election.

We commented recently upon the conduct of a sworn inquiry held by an inspector of the Local Government Board at Skibbereen in co. Cork regarding charges of bribery in connexion with the election of a medical officer for the Drimoleague Dispensary.

The evidence taken at that inquiry was, in our opinion, quite inconclusive; but since then the Crown has taken the matter up, and the charges of bribery against the medical officer, his solicitor, and some other persons has resulted in their being returned for trial by the magistrates at petty sessions. Similar charges were made against one of the defeated candidates, but so far the Crown has not taken them up, neither have any proceedings been taken as the result of the Limerick inquiry.

Ceylon.

Public Health and Medical Institutions.

The White Book on Ceylon records the fact that the opening up of the remoter parts of the island for rubber cultivation is rendering the provision of fresh hospitals and dispensaries a matter of some urgency. There are now 68 hospitals and asylums, in which last year 84,988 cases were treated, with 11,205 deaths, the number both of cases and deaths being largely in excess of those of the year preceding. In the General Hospital at Colombo, which has 425 beds, the total number treated was 17,115, with 2,044 deaths, while in the previous year there were 13,044 cases and 1,234 deaths. The reason of this remarkable increase was mainly the prevalence of malaria, cholera, and dysentery.

In the De Soyza Bacteriological Institute Drs. Willey and Castellani were engaged in researches on the haematozoa of vertebrates, and special investigations were also made on cerebro-spinal meningitis and dysentery. At the Medical College, which comprises a separate building for women students, there were 103 medical and 31 apothecary students, and post graduate courses to keep pace with recent advances in medical knowledge were attended by eleven medical officers.

The population of Ceylon at the beginning of 1907 was estimated at 3,984,985, an increase of 34 862 on the previous year. The birth-rate was 37.4 per mille, and the death-rate 35.9; a comparison with the previous year shows a decrease in the former of 1.3 per mille, and the very considerable increase in the death-rate of 8.5. The public health during the past year was not satisfactory. Cholera occurred in every province except the North-West, and small-pox in almost every province, while a serious epidemic of malarial fever began in April after the prolonged drought and lasted till August, the resources of the hospitals being tried to the utmost. Quinine was regularly administered to school children, as well as to any villagers who cared to take it, as a

prophylactic during the unhealthy season in the worst districts. The total number of malarial fever cases treated in the various hospitals during the year was 17,252, with 2,206 deaths, and, of 5,897 admitted as suffering from malarial cachexia, 2,000 died. Cholera showed a case-mortality of 59.3 per cent., 449 dying out of 756 attacked, and that of enteric was 26 8, there being 615 cases and 165 deaths. Dysentery was very prevalent, 1,649 persons succumbing to it, or more than double the number of the previous year, the deaths being 34 4 per cent. of those attacked. Leprosy appears to be fairly stationary, and only 491 cases were treated during the year. Ankylostomiasis, on the other hand, is undoubtedly increasing fast. It was originally confined to the Malabar coolies on estates, who brought the disease from India, but is now reported as spreading in most places. In the last three years the numbers of the cases treated have been 1,937, 2,810, and 3,206, and the deaths 286, 517, and 788 respectively. Strong measures are now needed effectually to combat this disease. There were no cases of plague.

The abnormal amount of sickness in Colombo resulted in Dr. Chalmers being appointed to investigate the state of affairs, and in an exhaustive report at the end of last year he showed the thorough sanitation of the city to be a work of the most pressing necessity. Colomba Lake, which is in an insanitary condition, would, it is thought, be best dealt with by filling it up, though aesthetic reasons are against this, and it has also the advantage of freely admitting the sea breezes. The general sanitary condition of Kandy also leaves much to be desired, but the cost of the proposed drainage scheme is at present prohibitive.

Gibraltar.

HOSPITALS AND PUBLIC HEALTH.

UNTIL 1815 Gibraltar was without a hospital, but in that year an old building known as the Blue Barracks was repaired and made a civil hospital, deriving its maintenance partly from public subscription and Government grants, and partly from a tax on flour and on every vessel anchoring in the bay. It was not till 1888 that the present hospital was built at a cost of £24,000. A new block, with separate wards for female lock cases and providing also accommodation for the nursing staff, was added in 1904. For many years—until 1891—the Spanish Government made an annual grant of 1,250 pesetas, in consideration of which the Spanish inhabitants of Linea received medical treatment free of charge. Although this grant is now discontinued, the gratuitous treatment is still accorded. The small-pox hospital, first started in 1884, has recently been enlarged by the addition of two small separate wards of eight beds each for military and naval cases respectively. There were 122 cases of small-pox during the year in the hospital and of these 99 were discharged cured and eleven died. The average residence of the former in the wards was forty-two days. There has lately been a marked increase in the number of persons seeking relief as out-patients, for while there were only 6,397 in 1904, in 1905 they numbered 10,584, and last year 12,367. There was a daily average of 62 in-patients, and the gross cost per bed was £102, or after deducting patients' fees, £88.

The total population is estimated at 25,140, of whom 6,516 are military. The sanitary condition of the Rock is stated to he steadily improving, the death-rate being about 17 per mille, as against 18 1 of the preceding year.

HITHERTO but little attention has been paid by the authorities of the French army to the condition of the soldiers' teeth. Yet that this has been a source of considerable loss of service is shown by the fact that in 1903 alone affections of the teeth were the cause of 1,845 men being sent to the hospital, the total number of days they were on the sick list amounting to 18,639. M. Henri Chéron, Under-Secretary of State for War, has recently issued a circular pointing out the need of reform in this matter, and instituting courses of instruction in dental surgery at the Val-de-Grace Military Hospital. Medical examiners are instructed to make a careful inspection of the condition of the mouth and teeth of every recruit, and record the results on a special form. Afterwards the men's teeth are to be examined every three months.

CORRESPONDENCE.

THE TERRITORIAL ARMY MEDICAL CORPS.

SIR,—Mr. Haldane's speech upon the territorial army medical scheme, to my mind, amply proves that his technical advisers thoroughly grasp what the country requires, and I feel sure that the medical profession will adequately respond. Never before has the medical régime at the War Office had more sympathy with, or so thorough an acquaintance and appreciation of, the resources of the volunteer medical services. When the scheme is fully given, I do not think there will be any antagonism between the principle of one corps and a regimental basis for the service. There will be one great corps—that is, a "Royal Army Medical Corps, Territorial," or "auxiliary"—that shall co-ordinate with that of the Royal Army Medical Corps, to which all who now hold medical commissions in the auxiliary branches can transfer, and all who join in future will be gazetted.

The regimental basis will be preserved by providing that all who transfer or join in the future will have great freedom and invariably be attached to any unit they may desire. This will permit: (1) A common system of seniority (of course, allowing selection in certain instances); (2) all higher commands open to all; (3) free exchange for service in any department or unit; (4) one general uniform; (5) all having equal chance for honours.

With regard to units for divisions each territorial district will, as in the regular army, have medical officers posted to (*a*) units, (*b*) field ambulances, (*c*) hospitals, (*d*) sanitary and specialities, (*e*) schools of instruction, (*f*) staff. Under such a scheme the Volunteer Medical Services of the present will have the opportunity of being a corps co-ordinate to the Royal Army Medical Corps.

It is only to be hoped that all private ideas of individuals may be merged into the desire of becoming a really valuable national asset.—I am, etc.,

P. BROOME GILES,
Commandant of the Volunteer Ambulance School of Instruction.

Bletchley, Bucks,
October 13th.

THE REFERENDUM.

SIR,—The discussion on this subject threatens to be voluminous, but prolixity and even heat may be preferable to that deadly indifference with which the members of our Association generally treat its business affairs. In the critical transition now taking place in our constitution we need waking up, and we ought to follow with intelligence and vigilance the changes proposed before it is too late to prevent mistakes and perhaps disaster. I trust you will give me an opportunity to criticize with freedom and frankness the policy being pursued by the leaders of the Representative Meeting, and the result likely to follow if it is successful.

At the outset allow me to say that I have the utmost respect for the ability and honesty of motive of these men, and strictly refrain from any personal remarks calculated to give them just offence.

To make my argument clear, and save time, I will put my points in the form of propositions:

1. *That the Representative Meeting is not worthy of its Name.*—It is notorious that business meetings of Divisions are attended by a mere handful of members—generally of a few faithful officials and of a sprinkling of men who read the JOURNAL spasmodically and take some interest in the Association. At one of such meetings the delegate is elected by a show of hands, without much reference to his fitness, but chiefly to his ability or willingness to attend the annual meeting. A desultory conversation takes place on the supposed programme of business which has to be discussed there, and from the remarks made, or resolutions arrived at, the delegate has to pick up the line of conduct he is expected to pursue. If the honorary secretary is a good business man he may give him written instructions, but it is safe to say that such precise methods are rare, and the delegate has but a faint idea of the views of the members generally. To take my own case, and from inquiry at Exeter I find it is not by any means unusual, I was elected at a meeting of 12 members out of 126. I heard the business of the Special Representative Meeting and the Annual Meeting discussed. The Honorary Secretary, with commendable

care, gave me in writing what he understood was the opinion of the meeting on two or three matters, and for the rest I had to guess the views of my professional brethren. Before going to Exeter I was asked to represent another Division of 140 members, the delegate chosen being unable to go. He had only received instructions on one point, which he communicated to me. After reaching Exeter I received a letter from yet another Division asking me to represent it, and no instructions were sent. The membership of the last was 70, so that I was supposed to voice the opinions of some 336 members, and only on four points received any definite instructions, and these from a small portion of the constituency. The agenda was sent to me about a week before the meeting, and I had no time to discuss it with any of my *confrères*. On leaving for Exeter I had an uneasy feeling that I was in a false position. Responsibility and unpreparedness combined to oppress me, and, if it had been possible, I would have thrown up my task in disgust. There is no true representation in such a case, and on comparing notes I found many who had been quite as perfunctorily elected and instructed. In my opinion, therefore, the Representative Meeting is not worthy of its name.

2. *That the Business of the Annual Meeting is not Satisfactorily Conducted.*—I am not impugning the ability or fairness of the Chairman, or the zeal and attention of the staff. There is too much business, too many interruptions, and too little acquaintance with the work among the rank and file of the delegates. Nearly a third of the men there are fresh to their duties, and certainly not a half of the representatives had attended more than two consecutive sessions. Not only is the agenda overloaded, but new business is introduced not found on that paper. Social functions, which might have been otherwise provided for, broke in on the precious time, and a Council meeting was made the occasion of a whole morning's waste. On the last day, in order not to encroach on the more interesting sectional meetings of Wednesday, the sitting was prolonged till midnight, and the haste and impatience of the delegates led to a scamping of the work. The fitness of the ordinary members, especially the fresh comers, to get a proper grasp of the business, and give intelligent votes, is, to say the least, doubtful. The result of all this rush and confusion is to put the whole power in the hands of a few skilful men, and, without any intention of bringing a charge of dishonesty against them, I submit that they are not entitled to claim that the decisions of the Representative Meeting are truly the reflection of the mind of the meeting, or at least of the Association they are supposed to represent.

3. *That the Leaders of the Representative Meeting have Misconceived the True Functions of the Association.*—I think I am quite justified in taking this last annual meeting as typical of the previous ones, and emphatically saying that it is not trustworthy as the custodian of the fortunes of the Association. Yet this is the body to which the draft Charter proposes to entrust the sole governing power over its affairs. Under the guidance of this misnamed and largely self-constituted body, and the influence of a small, but united and determined, section, the constitution of the Association has been revolutionized within the last five years. Its scientific objects are being rapidly subordinated to a more or less open type of "trade-unionism." Under the impression that this policy will increase the usefulness and popularity of the society, it is proposed to make it a defence association, an insurance company, a benevolent institution, and a political party. All this huge enterprise is to be developed on a small income, barely sufficient for present expenses, and with financial trouble threatening it in the near future. Although advised by counsel that the Association cannot incur expense in prosecuting in penal cases, the leaders of the Representative Meeting succeeded in getting a vote in favour of beginning this militant policy at once—a policy both illegal and unconstitutional. Similarly, at the Special Meeting in May a vote was passed committing the Association to the absurd and impossible policy of promoting the candidature of members of Parliament to support our interests in the political sphere. Thus, even before the Charter has been obtained, we are about to embark on a costly and doubtful campaign, for which no provision has been made, and the end of which may mean financial ruin.

4. *That the Draft Charter would Deprive the Council of its Revising Functions.*—The only consolation I felt on leaving Exeter was that a second chamber existed which might (and ought to) revise the hasty and half-digested business transacted there. Without some such safeguard the Association is in serious danger of shipwreck. The only reason for the existence of a Council is to have an independent body, not under the immediate control of the Annual Meeting, which can check any hasty or unwise legislation. Now, the provisions of the draft Charter clearly diminish, if not destroy, that independence, and reduce the Council to a mere executive and administrative committee, such as could be far better appointed by the Annual Meeting from its own members. The provision to elect twelve of the members of Council at the Annual Meeting would secure, as it seems meant to do, that its decisions will not be challenged in the future. They, with the support of the Annual Meeting at their back, would prove more than a match for the twenty-four members elected by the Branches, even if the latter were united—a highly improbable contingency. It is stated that the Council is not representative, but, being conducted by ballot, and the voting papers issued to all members and returnable by post, the election is far more testing and popular than that of the so-called Representative Meeting.

5. That the draft Charter would throw the representative power into the hands of the men residing in populous districts and further weaken the country districts. The interests of the profession in cities are largely identical, and require therefore fewer spokesmen. In the scattered districts, on the contrary, these interests may be varied and even conflicting, and the possibility of being properly represented is difficult. Injustice and even hardship is the result of a want of understanding of local conditions, and yet this inequality will be further accentuated by the Charter. In place of seventy members of Council only twenty-four will be elected by the Branches, and a drastic slumping of them for franchise purposes will be needed. In this process the country districts will suffer almost entirely, and many large areas will be left without representation. It may be safely assumed that members living in these will quickly withdraw from the Association.

In conclusion, I see from Dr. Larkin's letter that he thinks the Council has been "dished," and that it is too late for them to draw back. That may be true of the Council, but not of the members of the Association generally. They have been deceived into thinking that they were being represented, and they have no call to fall into the pit digged for them. They can call a halt, and insist on further inquiry before going further with the Charter. Meantime let the Divisions show by their votes that they will stand by the majority of the Council in its belated attempt to resist the extinction of the veto upon hasty and ill-considered work.—I am, etc.,

Edinburgh, Oct. 21st. A. Walker.

Sir,—I am extremely sorry that Dr. Broadbent considers my remarks in your issue of October 12th "fallacious reasoning," but would suggest that this is possibly because he has not fully grasped what was referred to.

I was desirous to shorten my communication, and therefore omitted to discuss the question whether the Representative Meeting was only representative in name, as also to contrast it with the Central Council as at present elected.

One hears so repeatedly the statement made "that as the Division meetings in many districts are so poorly attended, it is wrong for any one to claim that the decisions of the Representatives returned by them to the Representative Meeting voice the wishes of the local members," that it would seem desirable to consider this question, especially as Dr. Collier and others have made it a reason for voting in favour of a Referendum which many consider unwarranted.

I would, therefore, as concisely as possible give reasons for disagreeing with these pessimistic conclusions, and afterwards contrast the Representative Body and the Central Council in order to show to the ordinary member the real facts of the case.

General Statements.

1. At least 75 per cent. of the members of any society or similar body are actively interested in some other direction

and are content to leave the conduct of that society to the 25 per cent., only supplying their share of the funds required. For the 25 per cent. to wait until the 75 per cent. did take any interest would mean waiting for ever.

2. It is an error to state that this 75 per cent. of members because they do not come forward are therefore in favour of, apathetic about, or opposed to any policy suggested.

3. The average attendance of even the 25 per cent. of members actively interested in a society is never beyond 10 per cent. of the total membership.

4. If in a meeting of, say, 20 members the voting on any proposed policy is 15 for to 5 against, it can be taken that were 200 members present the voting would be 150 for to 50 against.

5. It *is* possible, therefore, by considering the ratio of the voting in a small meeting to estimate the opinion of the total membership of any society.

6. If a resolution affecting the policy of a society has been carried by, say, a three to one majority of those present and voting in a meeting held after due notice has been given and where an adequate quorum is a necessity, the members of that society can be satisfied that the resolution would have received support in a similar ratio had every member been present and voted, quite irrespective of remarks made subsequently by non-contents.

7. To give true representation on the council or ruling body of a society, every one of its members should represent exactly the same number of constituents, or, where this is impossible, a vote by card should be taken.

Now keeping these points in view, we will see how they apply to the resolutions arrived at in a Division meeting, and what weight such resolutions should carry. Shortly, these are the facts.

(*x*) The average attendance throughout the Association at a Division meeting can be taken as 10 per cent.

(*y*) There being, say, 150 Divisions, it is not overestimating it to conclude that 4,000 members of the Association are brought into touch with the work and take an active interest in it, especially as many Divisions hold meetings in different areas of their districts, and thus come into touch with considerably more than an average of 10 per cent. of their members.

(*z*) The Representative Meeting therefore voices by its 124 members the opinion of these 4,000 members, or 20 per cent. of the Association.

This being so, is it reasonable to conclude, in view of statements 1, 2, 3, 4, 5, and 6 above, that we are doing so badly after all, especially considering the peculiar ties on a medical practitioner's time which prevent him attending a meeting, however willing to do so?

The voting in May last on the various resolutions referred was as follows: Two were carried (that is, by cries of "Agreed"); two were carried *nem. con.*; two were carried by 68 votes to 5; two were carried with only 5 dissentients; two were carried with only 1 dissentient.

Applying statement 4 above, the deduction would be that if all the 20,000 members of the Association could have been present, the voting in each case would have been exactly in the same ratio; and members should be content to acquiesce in decisions arrived at if carried, as these were, after due consideration has been given to them by the Divisions.

Finally, to contrast the "Representative" Body and the "Representative" Central Council, as to the truly representative character of which there seems such a great diversity of opinion. While doing so there is no intention to hold the members of the latter responsible for the constitution under which they find themselves placed:

"Representatives" at the Representative Meeting.	*"Representatives" on the Central Council (in the Majority of Cases).*
(*a*) It will be possible under the Charter to elect these by voting papers.	(*a*) The election is now by voting papers.
(*b*) Can be elected nine months before they take office, and in this period can be trained.	(*b*) Are elected two months before they take office, and no training is thought of.
(*c*) The district represented being very small, the Representative is "known by sight" or "to speak to" by, say, 50 to 75 per cent. of the Division members.	(*c*) Are "known by sight" or "to speak to" by, say, 5 to 25 per cent. at most, the district being vastly larger.
(*d*) They are chosen because of their interest in medico-political subjects.	(*d*) They are chosen primarily because of their honourable professional position.
(*e*) Their qualifications for the post can be discussed in duly summoned meeting.	(*e*) The electors have no such opportunity afforded them.
(*f*) They, as they live in the districts they represent, are intimately acquainted with the medico-political peculiarities and needs of the district, as also with the desires of the local profession, and are *not* entirely dependent on meetings for education.	(*f*) They are absolutely ignorant of at least three-fourths of the district they represent and of the members living therein.
(*g*) They see their constituents, in meetings, at least three times a year; in some cases ten or twelve times.	(*g*) They never meet their constituents.
(*h*) They have opportunities for explaining their views on medico-political subjects to their constituents at these meetings.	(*h*) They never have such an opportunity offered them, nor do they ask for it.
(*i*) They are directly instructed during the year how to deal with subjects that will appear on the agenda of the meeting.	(*i*) They never receive any instructions, nor do they ask for them.
(*j*) On matters of great moment they can say, "I am instructed," "I am requested to oppose," etc.	(*j*) They are obliged to own, when taxed, that the idea suggested "is off their own bat."
(*k*) They report in the autumn to their constituents, explain difficulties, and receive approval or otherwise for their votes given.	(*k*) They report to no one; nor does any Branch consider their action at the Representative Meeting or on the Central Council.
(*l*) Statement 7 above *is* carried out.	(*l*) Statement 7 above is *not* carried out.

Yet Mr. Straton and his friends have signed and issued a memorandum with the referendum stating "the Central Council is the most Representative Body in the Association." Do they suggest that true representation follows with the increased size of electoral areas and the extra number of votes that can consequently be recorded?

A member of the Central Council for the Glasgow Branch urged the Representative Body to vote in a certain direction at their meeting in July last, and all the six Division "Representatives" comprised in that district voted straight against him. The former owned he had no authority from his Branch for the resolution he proposed.

Personally I am in favour of maintaining the Branch Council for the organization and co-ordinating of the work of the Divisions they represent; also in order to decentralize the work of the Association and to do away with central interference; but I am convinced that had the members of the Central Council been nominated and elected in the past by the Branch Councils, possibly from their own bodies, the present scheme to reduce Branch representation would not have received so hearty a support as it has done. It is because of this that I urge the step Dr. Broadbent seems to object to, which is putting it in the by-laws as permissive for any group of Branches to elect its Central Council member, if it wishes to, in the way suggested above.—I am, etc.,

London, S.W., Oct. 20th. E. ROWLAND FOTHERGILL.

THE LONDON PROVIDENT DISPENSARIES' COUNCIL.

SIR,—Public attention has been frequently drawn of late years to the overcrowded state of the out-patient departments of our hospitals.

Not only does this overcrowding put a great strain upon the resources of the hospitals, and cause delay in the treatment of patients, but, what is of far more importance, it implies that many persons who are well able to provide for themselves seek free medical relief at the hospitals for comparatively trifling ailments. Their sense of personal responsibility is diminished, and the hospitals are put, however unintentionally on their part, into competition with the local medical practitioners.

The only means of effectually combating this evil lies in co-operation between the hospitals and provident dispensaries.

A provident dispensary places efficient medical attendance within the reach of those wage-earners who, though they may be unable to pay ordinary medical fees, are yet not poor enough to justify them in seeking free medical treatment.

A provident dispensary properly so-called should have a membership on the basis of regular payments on insurance principles, a reasonable wage-limit being fixed as a condition of membership, and its medical staff should be sufficient in number to preclude the suggestion that it is established for the benefit of one or two practitioners.

It should, moreover, be managed by a committee, upon which the medical staff should be represented, and a properly audited balance sheet should be published annually.

While there exist in various parts of London many excellent dispensaries established upon the principles I have indicated, they are not sufficiently numerous or well distributed to be able to undertake the treatment of the respectable and provident poor of the whole of the metropolis.

In these circumstances the London Provident Dispensaries' Council has been lately formed as the outcome of a conference of the provident dispensaries of London.

Its objects are to circulate information on the provident medical movement among the medical profession and the public at large and to promote the establishment over the whole area of London of well-equipped and well-regulated provident dispensaries. It will endeavour, while promoting the independence and individuality of existing provident dispensaries, to promote co-operation between them, and to afford opportunities for comparing their methods of administration.

It will also endeavour to promote that co-operation between provident dispensaries and hospitals which is essential for the relief of the out patient departments of the latter institutions. Every provident dispensary of London has been asked to send a representative—medical or lay—to the Council, and it is intended to add a few co-opted members, including nominees of the British Medical Association.

It is hoped that all those who are interested in existing dispensaries, and all who desire to encourage habits of thrift and self-reliance among the poor, will endeavour to further the objects of the London Provident Dispensaries' Council. Further information will be gladly supplied by the honorary secretary, Charles H. Warren, and may be obtained at the temporary offices of the Council at 5, Lamb's Conduit Street, W.C.—I am, etc.,

H. A. Harben,
Chairman, London Provident Dispensaries' Council.

London, W.C., Oct. 17th.

THE INSTRUCTION OF MIDWIVES.

Sir,—Allow me to thank Dr. F. Knight for pointing out the clerical error in my address on abnormal labour. "Presentation" of the cord is where it is felt through unruptured membrane, and "prolapse" of the cord is where it has slipped through the rent when the membranes rupture. When the head bulges the perineum, and each pain increases the bulge, the head receding, in between the pains, to the same place as before, so that no advance is made, a midwife should send for assistance and the doctor should deliver at once, preferably with forceps. It will be found in many such cases that the cord is round the neck and the child partially or completely asphyxiated. The explanation of this is quite another matter. Let me add that in some such cases the cord is not round the neck, and in some cases where it is round the neck this to-and-fro movement of the head does not take place.

It is very gratifying to me that Dr. Knight and others who have written or spoken to me, agree that the routine practice of dropping a germicide into the eyes of *every* newly-born child is, to say the least, an unnecessary measure; and before long, it is to be hoped, it will become as obsolete as routine vaginal syringing after labour.—I am, etc.,

London, W., Oct. 19th. Peter Horrocks.

THE DISORGANIZATION OF THE PUBLIC HEALTH SERVICE.

Sir,—The article on the above subject in the Journal of October 12th shows at least that you, at any rate, are cognizant of the conditions now existing in the above service, and it is sincerely to be hoped that the proper authorities will mark, learn, and inwardly digest its contents. It is simply astounding to behold the manner in which medical officers of health of high standing, both by experience and qualification, have been compelled to relinquish their position and their places given to men of neither experience nor qualification, and in fact in some cases almost absolutely ignorant of public health matters. That the Medical Officer of Health Bill which was introduced last Parliament sitting, and passed the first reading, requires to be reintroduced at the earliest possible time and put in force, there is no possible question of doubt.—I am, etc.,

October 22nd. Efficiency.

THE WARFARE AGAINST QUACKERY.

Sir,—I believe myself that a Royal Commission would do a great deal of good to expose the ways of the patent medicine vendors, and would open the eyes of the public to the way that they are exploited.

Newspapers reap a rich harvest from the insertion of the special "news" letters of the purveyors of these medicines, but the question is whether they would like to have their means of making extra profits exposed to the public eye.—I am, etc.,

Cardiff, Oct. 17th. T. Garrett Horder.

THE ORTHODIASCOPE.

Sir,—I see in the number of your Journal for September 14th an article on the orthodiascope by Drs. Hugh Walsham and Halls Dally, illustrated by representations of my improved form of orthodiascope. In this article no mention is made either of myself as the inventor of the improvements or of the maker of the apparatus, Messrs. Reiniger, Gebert, and Schall. I trust you will of your courtesy repair the omission.

A full description of my orthodiascope and its evolution from earlier instruments is appearing in the November number of the *Archives of the Roentgen Ray*.—I am, Sir,

Bad-Nauheim, Oct. 15th. Dr. Franz M. Groedel.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Romanes Lecture.

The Romanes Lecture will be delivered by the Right Honourable Lord Curzon of Kedleston, D.C.L., F.R.S., All Souls' College, Chancellor of the University, in the Sheldonian Theatre, on Saturday, November 2nd, at 2.30 p.m. Subject, "Frontiers."

Philip Walker Studentship in Pathology.

Upon the nomination of Professor Dreyer, the Board of Managers of the Philip Walker Studentship have unanimously elected to the studentship James Sholto Cameron Douglas, B.M., Christ Church.

Hospital and Other Scholarships.

Norman Glover, B.A., Trinity College, has been elected to a Senior Entrance Scholarship in Science at St. Bartholomew's Hospital.

Mr. Victor T. Ellwood, of Merchant Taylors' School, has been elected to the Theodore Williams Medical Scholarship at Pembroke College.

UNIVERSITY OF CAMBRIDGE.

Appointments.

Dr. Gaskell has been elected a member of the Senate, and the following appointments have been made:

University Lecturer in Botany.—R. P. Gregory, M.A., St. John's College.

Demonstrator in Botany.—A. M. Smith, B.A., Emanuel College.

Member of General Board of Studies.—Professor Sims Woodhead.

Elected to Professorship of Anatomy.—Dr. Langley.

Elected to Downing Professorship of Medicine.—Dr. Gaskell.

Member of State Medicine Syndicate.—Dr. Louis Cobbett.

Examiners in Pharmacology.—W. E. Dixon, M.A., Downing College, and Professor Stockman, M.D.Edin.

Examiners in General Pathology.—T. S. P. Strangeways, M.A., St. John's College, and J. Ritchie, M.D.Edin.

On October 17th the degree of D.Sc., *honoris causâ*, was conferred on Dr. Emil Fischer, Professor of Chemistry in the University of Berlin.

The General Board of Studies will shortly proceed to the appointment of a Lecturer in Advanced Human Anatomy. The annual stipend is £50. Applications should be sent to the Vice-Chancellor before Tuesday, November 5th.

Freshmen.

The number of freshmen who matriculated in the Senate House on October 21st was 1,099, an increase of 78 over the number last year. In 1900 the entry was 841, and there was a steady increase for the next three years, averaging about 20 a year. In 1904 there was a drop of 2, but in 1905 an increase of 124. The School of Medicine also shows a steady increase; the number of freshmen registered as medical students was 89 in 1904, 117 in 1905, 122 in 1906, and 130 this year.

UNIVERSITY OF EDINBURGH.

AT a special graduation ceremonial on October 19th the following degrees were conferred:

M.D.—G. D. McRae.

M.B., CH.B.—Aung-Tun (Burmah) E. Banks, J. P. Berry, F. V. N. Bruce (*in absentiâ*), T. Buchan, R. A. Campbell, W. G. Cobb, F. G. Cowan, H. C. D. Cross, P. S. Dias, C. A. A. Dighton, Joanna M. F. Drake, A. D. Edington, B.Sc., R. Edwards, J. G. Fleming, S. Forrest, M.A., R. Fraser, L. Gavin, F. G. Harper, D. K. Henderson, J. M'A. Hill, L. Hughes, T. J. Hughes, Mohamet A. Hukk, H. B. Hunter. M.A., S. Jackson, Catherine Kirk, M.A., J. G. de Kock, R. M. Liddell, G. L. Little, H. B. Low, G. H. Lowe, G. J. Luyt, B.A. (second-class honours), T. Lyon, J. Macdiarmid, J. F. Mackay, Jamesina J. Marr, C. J. van der Merwe, F. W. Michael, G. G. Middleton, A. G. Murchison, W. Murdie, M.A., A. T. Paterson, O. E. Powell, Barbara Richardson, A. N. Robertson, C. F. T. Scott, F. L. Scott, H. B. Thomson, A. E. Turnbull, A. M. Vlok, R. N. Wallace, E. D. Wilmot.

At the close of the "capping" ceremony the Vice-Chancellor, Sir William Turner, said: Graduates, you have got your degrees, and we congratulate you on having come to the end of your labours in this direction. Although there are many labours and anxieties before you in your future lives, still it is something to have accomplished successfully one step in your career. That has been accomplished to-day. This graduation in October represents graduation not in a single faculty, but in many faculties in the University, and in the name of my colleagues in the Senatus of the several faculties to which you have belonged we congratulate you on your success.

UNIVERSITY OF ABERDEEN.

AT the statutory meeting of the General Council of the University on October 9th the first business was the election of two Assessors of the Council. The retiring Assessors were Dr. Angus Fraser and Dr. Albert Westland, both of whom were eligible for re-election. Dr. Selbie said it was with very great pleasure that he proposed the name of one of the assessors whose term of office had expired, but who was eligible for re-election, and who was willing to continue his services if desired. The name was one which would commend itself to the General Council—Dr. Angus Fraser. This gentleman had been one of their representatives for eighteen years continuously. He had thus sat from the first in the Univeriity Court as remodelled by the Universities Act of 1889, and had had his part to play in connexion with all the changes for the better or the worse that had been made on the old curriculum and arrangements. Dr. Fraser's well-known sagacity and statesmanlike grasp of a situation commended him at first to those who chose him as their representative, and the confidence then reposed in him had been amply justified. Dr. Fraser had hitherto been elected more especially by the medical part of the electorate, but he had now established a claim on the confidence of the other sections, and by re-electing him to the office of Assessor the General Council could do honour alike to him and to themselves, and would entrust the interests of the whole body to safe hands.

Dr. Edmond proposed the re-election of Dr. Albert Westland, and both motions were unanimously agreed to.

This was the first occasion on which ladies graced the General Council meeting with their presence.

University Court.

At the last meeting of the University Court receipt was intimated of a legacy of £500 by Mr. Alexander Gillander, a native of Aberdeen and a late Customs House officer in England, for the purpose of founding a bursary or medals in the Faculty of Medicine. The Court remitted to the Senatus to suggest a scheme as to the manner of bestowal of the benefaction.

Mr. John E. Kesson, M.B., was appointed Second Assistant in Physiology.

Gift of Shelley MS.

An interesting Shelley MS. has been presented to the library of the University of Aberdeen. This is the Trelawny MS. of Shelley's lyric, *The Magnetic Lady to Her Patient*, and it has been presented by Lieutenant-Colonel Call and Mrs. Call. Lieutenant-Colonel Call, in sending the gift, refers to his birth in Strathdon district of Aberdeenshire and to his early associations with Aberdeen. Professor Grierson has made a careful study of the MS. and comparison with the printed texts of the poem, and in a letter in last week's *Athenaeum* he states the result of his examination. There are various verbal and other differences, which will be noted with interest by Shelley students. The MS. belonged to Captain Trelawny, hence the name.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved in the subjects indicated:

PRACTICAL PHARMACY.—T. E. Ashley, C. N. Atlee, J. J. Clarke, A. W. Duncan, H. Galloway, W. J. Gibson, A. J. Graves, A. A. Henderson, G. L. H. Johnston, C. Y. Laing, G. Llewellyn, J. T. Lloyd, M. C. Mason, W. Mathieson, A. H. Owen, W. N. A. Paley, D. H. Pennant, E. A. Pywell, M. Salem, S. Sharples, R. H. E. Stevens, A. F. Waterhouse, W. Watkins, L. C. Watkins-Baker, F. Wells, F. St. B. Wickham.

ANATOMY AND PHYSIOLOGY.—J. D. Anklesaria, J. P. Benskin, F. S. D. Berry, T. R. Bowen, S. L. Brohier, J. J. Brown, L. K. Cooper, W. K. Cooper, E. A. Coorey, E. G. H. Cowen, J. A. Edmond, B. C. Eskell, E. L. Z. Fickling, L. Game, N. L. Guilford, S. T. Gunasekara, A. H. James, T. H. James, M. M. Khan, S. J. Lauder, E. A. Lindsay, J. P. Lupton, C. McIver, C. R. Menon, C. Noon, R. J. Paget, T. S. Rippon, F. F. Saldanha, E. G. Stanley, E. L. Sturdee, J. S. B. Vakil, C. R. B. von Braun, F. J. Williams, R. R. Williams, H. A. Woodruff.

ROYAL UNIVERSITY OF IRELAND.

THE following candidates have been approved at the examinations indicated

Final M.D.—T. Barry, R. Chambers, F. Coates, B.A., W. J. Maguire, B.A., J. B. Slattery, R. Steen, W. J. Wilson, B.A.

M.B., B.Ch., B.A.O.—†T. S. S. Holmes, *†J. B. Lapsley, †J. E. A. Lynham, B.A., *†W. D. O'Kelly, *†H. H. Prentiss, †J. Shaw, *†J. A. Shorten, B.A., *†A. L. Stevenson, J. H. P. Boyd-Barrett, E. B. Brooke, M. F. Caldwell, G. Calwell, W. F. A. Carson, R. Cox, B.A., J. Dewar, M. L. Donovan, B.A., J. J. Flood, C. E. L. Harding, J. J. Hickey, J. Horgan, J. B. Horgan, J. Hughes, F. Keane, J. P. Kerlin, R. R. Kirwan, T. J. McAllen, J. S. McCombe, W. McCready, A. P. MacMahon, J. J. O'Reilly, C. F. X. O'Sullivan, *D. T. Sheehan, J. Sinclair, H. C. Swertz.

† Upper Pass. * Qualified to appear for honours in one or more groups of subjects.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

PRESIDENTIAL ELECTION.

AT the annual meeting held on October 16th Mr. Joseph Montagu Cotterill was unanimously elected President for the ensuing year.

The Fellowship.

The following gentlemen have been admitted to the Fellowship:

W. R. Bacot, H. G. Bennetts, G. H. L. Fitzwilliams, J. M. Graham, W. E. Graham, D. Lorimer, P. McEwan, W. L. Robertson, W. C. Stewart, S. M. Wells. Dr. John Pinkerton, Honorary Physician to His Majesty the King, Gwydyr House, Crieff, Perthshire, has been admitted an Ordinary Fellow without examination.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

PRELIMINARY.—*J. T. McConkey, *J. I. Pollock, W. I. Adams, A. C. J. Austin, A. J. Bodell, G. Bailey, A. T. Cannon, G. Campbell, T. F. Collins, D. Dudley, A. P. Flood, P. A. Gardner, R. M. Gordon, S. Griffin, D. J. Healy, N. S. Hood, T. Kennedy, W. J. Marmion, M. Meehan, D. Murphy, J. J. Murphy, A. J. Patterson, F. P. Shields, M. Scher.

FIRST PROFESSIONAL.—M. L. Bourke, F. E. Fitzmaurice, J. M. Gilmore, C. W. Joynt, J. Kirker, C. J. Kelly, A. G. J. MacIlwaine, B. Malaher, B. Murphy, D. McDevit, B. Neary, A. J. Neilan, J. M. K. O'Byrne, J. H. Rishworth, C. Roche, G. Wilson, G. Young.

* With honours.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

THE MEDICAL SERVICE OF THE TERRITORIAL FORCE.

IN considering the plan of organization for the medical service of the territorial force, which Sir Alfred Keogh has proposed and Mr. Haldane has sanctioned, the purpose of the force as a part of the military forces of the country must be borne in mind. The general idea is that the regular army would furnish an expeditionary force for service abroad, and it would of course take with it practically the whole of the whole Royal Army Medical Corps; under such circumstances the territorial force would be mobilized for home defence and in a short time there would probably be an army of say 70,000 men assembled in various places to defend the country against threatened invasion. Each army would require (1) field units—that is to say, the medical organization of the fighting line; (2) a general service—that is to say, the medical units at the base and on lines of communication, hospitals stationary and general, sanitary officers and dépôts for medical supplies.

We may leave the field units out of consideration for the present and turn attention solely to the general service. At present the volunteer medical service is deficient in administrative medical officers and sanitarians, and wholly without staffs for stationary or general hospitals; a force of 70,000 men would probably give 2,000 sick in the first few days, and no one can doubt that so large an encampment would quickly become infected with various diseases, especially, if we may judge from American experience, with typhoid fever. At present there is no sanitary department to take prophylactic measures or to attend to the general sanitation of a camp, neither is there any provision for dealing with the sick. The territorial force would be organized in divisions and each division should have its sanitarian. The proposal is that leading men in the public health service should be asked in peace to undertake that in the event of mobilization of the territorial force for home defence they would accept the responsibility of advising on disease prevention in the Division to which they would be allotted; the work would be of the same nature as they are accustomed to do every day and they would not be asked to undertake so-called military training. Next, with regard to general and stationary hospitals, each would require a staff consisting of an administrator, senior surgeon, senior physician, and a surgical and medical staff. The proposal is that surgeons and physicians already attached to civil hospitals should be asked to give a similar undertaking to that given by the sanitarians—that is to say, that in case of invasion or threatened invasion they would be prepared to give their assistance. No call for military training would be made upon them in time of peace, for here again the duties they would have to discharge would be exactly similar to those which they fulfil every day.

We are authorized to state that the proposals with regard to the constitution of the corps and the training of officers, non-commissioned officers and men, are in the main as follows:

Constitution.

The proposal is that the Royal Army Medical Corps of the territorial force shall consist of officers, non-commissioned officers, and men. The ranks and designations of the officers would be lieutenant-colonel, major, captain, lieutenant.

The establishment of colonels would be at least sufficient to enable one to be posted as administrative medical officer to each division.

The establishment of lieutenant-colonels would be determined when the number of medical units and other posts in the territorial army had been settled. The rank of lieutenant-colonel would be attained by promotion into a fixed establishment.

The rank of major would be given after eight and a half years as captain, and after having qualified in such manner as may be determined later on.

Lieutenants would attain the rank of captain after three and a half years' service, having qualified in such manner as may subsequently be determined.

The officers of the Royal Army Medical Corps, Territorial Army, would be posted to battalions and medical units, as well as to staffs, and to special appointments such as sanitarians. The establishment of medical officers in battalions would not exceed two, ordinarily not above the rank of major.

The total establishment of officers, non-commissioned officers, and men of the corps would be such as would enable the territorial force on mobilization to be supplied with the necessary medical personnel as for regulars. The number of non-commissioned officers and men would be determined by the units provided for, and by the number of sanitary posts to be filled, on lines similar to those of war establishments of the regular army.

Training.

It would be necessary that the annual training should vary according to the requirements and according to the section (nursing, cooking, clerical, and general duty) to which the personnel belonged.

As a rule, the personnel of the nursing section should be required after the "training on enlistment" to undergo "annual training" in hospitals (civil or military) in nursing duties only; the personnel of the cooking section in hospitals, civil or military, or some other suitable institution, and the clerical section in military hospitals only. Officers, as well as members of these sections (nursing, cooking, and clerical) appointed to field units should do one annual training in three in camp, whilst those allotted to general or stationary hospitals should, as a rule, train in hospital.

In the event of it not being possible or desirable for individuals (officers, non-commissioned officers, or men) or sections allotted to field medical units to train annually in camp, the course laid down for hospitals might be carried out in lieu.

The general duty section, whether allotted to general or stationary hospitals or field units, should not train in hospital more than once during each period of engagement (four years).

All ranks should, as far as possible, be required to pass for promotion under conditions similar in principle to those of the Royal Army Medical Corps. The exception being that the certificate of education and dispensers' examination need not be compulsory.

In order to carry out the training on enlistment and the annual training, it would be necessary to establish schools in various commands. The number of these schools would depend upon local requirements. As a rule, they should be established in connexion with the head quarters of the companies Royal Army Medical Corps (Volunteers) now existing.

Training of Officers.

Concerning training in general, this much may be said: that the officers intended for stationary and general hospitals could (after a little preliminary training—say, within the scope of the "*p*" certificate now given to volunteers) learn all that was required of them in the military hospitals and in the above-mentioned schools. Attendances at these hospitals and schools for limited and not continuous periods should therefore count as training. Those intended for field units (the class now in the R.A.M.C. companies of volunteers) should either:

(*a*) Go into camp each year, or, when not for annual camp,
(*b*) Go through certain courses of instruction in their own schools or in selected military institutions.

Those of all classes who hold the certificate "*p.s.*," or a recognized hospital appointment, and are not attached to combatant or medical units, might be allowed (not compelled) to come up every third year, either for camp or for school course.

Training of N.C.O.'s and Men.

With regard to the training of N.C.O.'s and men, the corps would require:

Male nurses...	...	... N.C.O.'s and men.
Clerks ...	...	... N.C.O.'s and men.
Cooks ...	...	... N.C.O.'s and men.
General duty	...	... N.C.O.'s and men.

Male nurses could be trained in military or civil hospitals, but clerks can only be trained in military hospitals. Cooks should receive part of their training in military hospitals.

[From a Correspondent.]

There are two essential considerations which must be taken into account if the scheme for the medical service of the territorial force is to prove a success:

1. The organization, including the training of the personnel, must be based on the requirements of war service.
2. The personnel and material (stores, including surgical appliances and drugs, tools, transport and horses, etc) must be obtainable, when required, both for training and for war mobilization.

The military advisers of the Government may be trusted to decide what are the requirements for war, though they may not be equally acquainted with the difficulties which most civilians, and especially medical men, find in getting the necessary time for training in military duties. It is mainly in the second consideration mentioned above—namely, obtaining the necessary personnel—that difficulties may be encountered.

It would be futile to discuss whether the medical organization of the volunteer force—which is presumably the material from which the territorial army is to be evolved—is suitable for the new home defence army, for the volunteer force never had a medical organization based on war requirements. It was one of the constant complaints of all branches of the volunteer force that it never was organized as a possible fighting machine.

Without precise knowledge of the organization of the territorial army and the exact duties which it is intended to fulfil on mobilization it is impossible to attempt to define the details of a suitable medical organization.

There are, however, some general principles which must to some extent determine the kind of medical organization which will be most suitable to the requirements of the force. In the first place the territorial army, to be of any value as a fighting force, must be trained in its duties during peace. Since the individual members of the force are volunteers—at least in the sense of voluntarily joining the force—and have to earn their livelihood by civil employment, their training in military duties must take place at such times as least interfere with their work. Evenings, half-holidays, bank holidays, and a week or two of annual holiday, represent the full opportunities of the great majority of those who will constitute the force. If this force is to be efficiently trained—and if it is not it will be a source of danger rather than of safety—training will have to go on all through the year for individuals and small units; the larger units—divisions, etc.—meeting for combined training at the annual camp.

The medical organization must provide for the examination of recruits and for the necessary attendance of medical officers and orderlies at range firing, gun drill, mounted drills, and all such duties, which are never free from risk of accident, and are more dangerous when the men are untrained or only partly trained. In the volunteer force it was found advisable for each unit which had to do part of its training independently to have its own medical and ambulance aid. And it would seem desirable—for similar reasons to those which made a partly regimental medical organization necessary for the volunteer force—to have one or more medical officers and some trained ambulance orderlies attached to each battalion, battery, or squadron. Though each such unit would, when mobilized, still require its own medical officer and ambulance orderlies, it would not then need so many of either as during peace, since volunteer medical officers and orderlies cannot possibly attend all drills and parades of their unit, and regimental medical details therefore require to be duplicated during peace for training duties. Provision must be made in the scheme of organization for utilizing the excess of the regimental medical details on mobilization.

When the various regiments, etc., are acting in larger units, such as divisions, ambulance units (field hospitals) are required; these must be organized and trained as units during peace. As the force is to serve only in this country, civil hospitals may be relied upon as general and base hospitals. The ambulance units should, however, be purely military organizations.

It would thus seem desirable that the scheme should provide a regimental as well as a departmental organization. There is little doubt that the patriotic spirit of the medical and nursing professions may be relied upon to induce the members to do what they can to ensure the success of any scheme which may be decided upon. It is, however, somewhat doubtful whether it will be possible for those who are actively engaged in professional work to give up the necessary time for training in the military duties without which their usefulness with an army in the field would be materially impaired. Even the necessary duties with combatant units during the training of these would entail an expenditure of time which the busy practitioner would find it difficult to spare. The almost nominal service which used to be given by the old-style volunteer regimental doctor would not suffice for a force which was seriously intended to be trained for use as an army of defence in time of war.

The individuals—medical officers, nurses, and orderlies—should be trained in their duties as components of a military organization; friction and possible disaster may result from any attempt to carry out the medical work of a military force on active service by purely civilian medical men and nurses. Thus a sufficient number must be enrolled or enlisted in the territorial force during peace, and these must be prepared to give up a certain amount of time to training with their different ambulance units. How are the necessary medical men and nurses to be induced to come forward for military training and duty? If military service is not recognized as one of the obligations of citizenship which may if necessary be enforced, it must be made sufficiently attractive to appeal to a large enough number to keep up the establishment.

To the business man, clerk, artisan, and labourer, the change of work and environment make soldiering something of a relaxation, and the annual camp provides a pleasant holiday at little or no expense. Medical men, nurses, and dispensers who join the territorial force as such give to the State not only the time occupied in military duties, but the special knowledge and skill by which they earn their livelihood. There is no change of work to attract them to soldiering, nor can they thus get the much-needed relaxation from medical work. On mobilization the medical officers would have to leave their practice for months, and there are those who have learned by experience that whatever may be the duration of a civilian medical officer's service with an army in the field, twice as long a period will probably elapse after his return before he has regained the patients he has lost by his absence.

Can a medical man in practice afford to place himself in the position to be liable to be called away from his practice under such circumstances, whilst his less patriotic or more shrewd neighbour reaps the benefit of his absence? It may be argued that, since the territorial army is from its very object only liable for service in this country in time of national danger, business of all kinds will then be disorganized in consequence of the emergency which has necessitated the mobilization of the force. Thus the members of the force would lose little by their absence from work. This may be to some extent true for the ordinary members of the force, but will have little application to the medical man. It must, however, be remembered that the primary object of an efficient territorial army is to prevent invasion rather than to resist it, and the more efficient this force the less will be the risk of invasion and consequent panic. The more thoroughly the members of the territorial army learn the business of soldiering, and therefore the more time they spend in training, the greater the security of trade in the country. This security can only be maintained in time of war by having the territorial army mobilized; and though in such case—thanks to the efficiency of the force—the general business of the country may go on uninterruptedly, the men by whose efforts and patriotism this is rendered possible will suffer by not being able to attend to their own affairs.

But there is also the possibility—nay, the probability—that the territorial army may be mobilized, apart from any fear of invasion, when the bulk of the regular troops are required for a campaign abroad (as in 1900-2). In such case, again, the members of this force will be the chief persons to suffer loss, for they will be unable to attend to their civil occupations.

The disadvantages above alluded to would, of course, apply to all members of the territorial army, and not only to the medical branch of that force. It is, however, the professional man, whose personal attention is essential to success in his efforts to gain a livelihood, who would suffer in greatest measure from his enforced absence.

The object of these remarks is not to discourage medical men from joining the medical service of the territorial army; on the contrary, the obligations of patriotism should be recognized by all. These notes point out certain difficulties which confront the military authorities. Training in military medical duties is absolutely necessary for all medical men who are to be employed with troops on active service, and there is danger in any attempt to provide for the medical services of the territorial force by merely keeping a roll of doctors and nurses who would be willing to join the force on mobilization. Since, however, the necessary training and service of medical officers of the territorial force will impose considerable sacrifice on those who undertake these duties, it is to be hoped that the authorities will be disposed to offer adequate inducements (pecuniary, municipal, political, or otherwise) to recompense those who are willing to offer their services.

UNITED SERVICES MEDICAL SOCIETY.

THE Society, which it is hoped will furnish a common meeting ground for officers of the medical departments of the Royal Navy, of the army, and of India and the auxiliary forces, held its first meeting by

permission of the Director-General of the Army Medical Department on October 10th at the Royal Army Medical College. Altogether, some eighty members of the new Society were present, and were addressed by its first President, Sir Herbert Ellis, Medical Director-General of the Navy. He laid stress on the fact that the Society was non-official in character, although it had been essential that in the earlier consultations as to its foundation the heads of the services should be consulted. Its idea was to bring together medical officers of different services periodically, and enable them to exchange ideas and detail their own experiences, and by so doing increase their interest in their work and enable them to render more worthy service to the Empire. The naval medical officer when afloat found himself entrusted with the care of men who, like himself, had as their home an unstable tenement which was anything but a model hygienic dwelling, and it required the exercise of the most scrupulous cleanliness and the strict use of such means of ventilation as were available to maintain a fair average of health. The outbreak of zymotic disease on board ship was likewise a difficulty to be faced sometimes. The medical officer of the army worked under other conditions, but had similar obstacles to overcome. Each had in his different sphere exceptional opportunities for observation, and each should be able to bring his experience to complement the other's knowledge. The Indian medical officer from his experiences among a teeming native population, added to his often-varied duties, could bring something further to their councils and debates. No Indian medical officer need be deterred from joining their ranks by the fear of limitation of subjects. Moreover, it was hoped to welcome Colonial medical officers at the monthly gatherings, and to profit by the knowledge and information they gained by permanent residence in various countries with which the Society's members had as a rule only slight acquaintance. Furthermore, the medical officers of the auxiliary forces would be able to bring an impartial criticism to bear upon the discussions. In this way each could supplement the other's experience, and a common fund of knowledge would result. On financial and other grounds it had not been considered desirable to make the Society a section of the Royal Society of Medicine. Its first aim should be to enrol as members as large a number of officers as possible; in fact, to attract to itself every medical officer holding a commission in His Majesty's naval and military forces. The next step would be to start local branches abroad, where the size of the station was suitable. For the present it would be quite impolitic to start branches at home stations. It would sap the strength of the central organization before that strength was assured, The length of time occupied in reading a paper should be limited to half an hour, so that time might be given for debate and criticism and for the exhibition of objects of interest. At present arrangements had been made for publishing the papers read at the meetings in the *Journal of the Royal Army Medical Corps*, but the Society should aim at the publication of papers and transactions in a periodical of its own, issued quarterly, if not monthly. This would act as a bond between the various members of the Society at home and abroad. The difficulty in the way would be chiefly financial, but he hoped some definite conclusion might be reached at the meeting of the Council in December. A discussion followed, in which various points connected with the Society were considered, the proceedings terminating with an exhibition of objects of interest in the Pathological Laboratory.

ROYAL NAVY MEDICAL SERVICE.

We understand that, at the forthcoming examination for commissions in the Royal Navy Medical Service, to be held on November 11th, fifteen vacancies will be filled by qualifying candidates. It is necessary that intending candidates should apply at an early date to the Medical Department of the Navy.

ROYAL ARMY MEDICAL CORPS.

An examination for not fewer than thirty commissions in the Royal Army Medical Corps will be held on January 30th, 1908, and following days Applications to compete should be made to the Secretary, War Office, London, S W., not later than January 20th, on which date the list will be closed. Candidates who are over the regulated limit of age at the date of the examination will be permitted to deduct from their actual age any period of service in the field after October 1st, 1899, which they could reckon towards retired pay and gratuity, if such deduction will bring them within the age limit. The presence of candidates will be required in London from January 28th.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

CLUB CERTIFICATES AND QUACK TREATMENT.

F.R.C.S. was consulted a few weeks ago by a patient suffering from epithelioma of the tongue of some duration. He advised an operation without delay, and instructed the patient to go into the hospital. The patient has since come to him for a certificate for a friendly society, having put himself under the care of a popular quack cancer curer instead of going into the hospital. F.R.C.S. has refused to give this certificate. Was this the proper course to take?

*** Yes, unless he is the medical officer to this society. In the latter case he should certify, but inform the society that the member has refused to follow his advice, and has put himself under the care of an unqualified practitioner.

Medico-Legal.

MOTORS AND MEDICAL MEN.

At the South-Western Police Court last week a case was heard in which a medical man was involved in a charge of driving a motor car at an excessive speed, alleged to be twenty-eight miles an hour, at Park Side, Wimbledon Common. The action was brought against the chauffeur, whose master stated that he had received an urgent message to visit a patient who was very ill; under these circumstances he was not, he thought, exceeding his rights in directing his driver to go fast. The case was dismissed, the magistrate remarking that if he were taken ill he should wish the doctor to arrive promptly. The view thus indicated is, we believe, much the same in principle as that taken by the authorities in France and America with regard to medical men driving in the discharge of their professional duties, even if exception in their favour has not been introduced into the published regulations regarding motor traffic. It may be doubted, however, if the profession as a whole desires this exceptional treatment, or that the precedent now established in England shall be followed by magistrates generally. It is, of course, desirable that a medical man should reach his patient promptly, but it may be doubted whether by driving at an excessive speed he will usually arrive at his case any earlier. Apart from the increased probability of his being arrested by an accident he is liable to be stopped by a police officer, who cannot always be expected to distinguish at sight the motor car of a medical man from that of an ordinary individual. It is to be hoped, therefore, that medical men as a rule will not be tempted by this case to drive at a higher speed than usual, for in the long run if they do so the public will certainly suffer and their patients will not always benefit

CORONERS AND MEDICAL FEES.

At a meeting of the Cornwall County Council Finance Committee at Truro on October 22nd, a letter was read from Mr. A. de Castro Glubb, county coroner, Liskeard, regarding the deduction made from his last quarter's account of fees paid to medical officers in respect of an inquest at Callington. The chairman stated that £2 was deducted from Mr. Glubb's account on the ground that four medical witnesses were summoned by the jury. In looking into the Coroners Act, the Committee came to the conclusion that the jury was only empowered to summon two. Mr Glubb wrote that the Home Office and the Local Government Board gave it as their opinion that Section 31 and Subsection 3 of the Coroners Act did not preclude the coroner from calling additional medical evidence if he thought it necessary. He begged to give notice of appeal of the surcharge to the Local Government Board. The chairman said that Mr. Cowlard, clerk to the County Council, had advised that undoubtedly the coroner had power himself to call additional medical evidence, but the powers of the jury were confined to summoning two. The witnesses were summoned, not at the request of the coroner, but at the request of the jury, and certificates of the jury's action were put in. Mr. Cowlard's advice was that they should allow Mr. Glubb to appeal so that the subject might be settled, and this was agreed to.

PUBLIC HEALTH
AND
POOR-LAW MEDICAL SERVICES.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

A COUNCIL meeting of this Association was held at 9, Copthall Avenue on October 15th. Surgeon-General Evatt, President of the Association, was present, and Dr. Balding, J.P., Chairman of Council, presided. Among the matters discussed by the Council were the following:

A Workhouse Medical Officer had consulted his Board of Guardians as to an operation on a pauper patient in a "scattered home." He was instructed by the Clerk to send the patient into the local hospital, but on his own authority ordered the same into the workhouse infirmary, where he operated himself with the assistance of an outside practitioner, who administered the anaesthetic. He had since applied to the guardians for a fee to be paid to the anaesthetist. This had been refused, and he wished to know whether he was justified in the action he took and could claim the fee. The Council thought not. Had he taken the same course without asking for instructions it might have been otherwise.

A Poor-law Medical Officer inquired if compensation could be claimed for the determination of one of his Poor-law offices with the consent of the Local Government Board. The Council were of opinion that no compensation could be claimed, but that if a Poor-law officer holding two offices had one of them determined, and could claim to retire under the Superannuation Act, he should lose no time in doing so, as he might then claim his pension on the emoluments derived from both offices, which he could not do at a later period.

The attention of the Council was also drawn to a report in the *Staffordshire Sentinel* of a meeting of the Stoke Guardians, in which one of the guardians spoke about the shilling fee paid to the public vaccinator for visits to offer to vaccinate, as if it were a gratuity payable according to the number of births registered in his district. The Honorary Secretary reported that he had pointed out the injustice done to public vaccinators by such random statements, and detailed the work that had to be done for this shilling fee. He had contended that instead of being an overpayment, it was really inadequate for the work done.

COUNTY COUNCILS AND MEDICAL INSPECTION OF SCHOOLS.

THE Somerset County Council has rejected by 41 votes to 37 the recommendation of its Sanitary Committee to appoint a county medical officer of health. The Sanitary Committee was moved to make the recommendation at this time by the County Education Committee, which had pointed out that the new statutory requirements for the medical inspection of school children and the extent to which epidemic disease prevails in public elementary schools rendered it necessary that the committee should have permanent medical expert advice. The Sanitary Committee regarded the appointment as desirable also for the general sanitary welfare of the county. The discussion disclosed the usual confusion of ideas. One member considered that it was a good thing that children should have measles and other infectious diseases as young as possible; another thought that a county medical officer of health would try to make the county council do more work in public; health and thus lead to further expenditure; another member asked how one man could inspect 7,000 children; and so on. A medical officer to a County Education Committee could not of course inspect all the school children in the county, and the principle advocated by some speakers of employing general practitioners in the locality to do this work is thoroughly sound; but the Education Committee requires an expert adviser to organize the work and to analyse the reports from various districts. A county council most undoubtedly needs a county medical officer to advise it on general public health questions—on the Housing of the Working Classes Acts, for example, and many others; it is the truest economy in the long run, and there can be no doubt that sooner or later the legislature will make the appointment of such an officer compulsory.

THE HINCKLEY BOARD OF GUARDIANS AND ITS MEDICAL OFFICER.

FOR more than seven years the Infirmary accommodation of the Hinckley Union has been both inadequate and insanitary. In July, 1900, the inspector of the Local Government Board reported that the provision made for a population of over 20 000 consisted of a small building of two floors containing sixteen beds, eight on the male side and eight on the female; that in consequence during the winter months, cases of sickness had to be treated in the main building intended only for healthy inmates, and that some had even died there; that there were no proper sanitary conveniences inside the building, no bathing arrangements, nor a proper hot water supply. Nothing having apparently been done in the meantime to remedy these defects, the medical officer in his last half-yearly report pointed out that the infirmary had been overcrowded with men for over two years; that all female patients had to be treated in the workhouse, there being no room for them in the infirmary; that the sick had suffered from the nursing staff being insufficient both in quantity and quality, the matron being the only member with hospital training, and there being no night nurse to look after some forty-five sick persons scattered over the workhouse; that in consequence of these conditions, patients were deterred from seeking admission and exposed to the cruelty of interested and ignorant persons outside, so that when admitted many of the old and demented patients were found to be filthy, bruised, neglected, and even gangrenous. That the maternity ward was in an inaccessible part of the workhouse, distant from the nurse and infirmary, and that isolation wards were required for infectious and contagious cases, and also for mental, syphilitic, and itch cases.

When this report came before the guardians it was much criticized, one guardian remarking that he thought the Board should have the power to prevent any of their officials making such a damaging report. It was resolved that Dr. Barrett should be asked to attend the next Board meeting to explain his report, which he did, but without apparently being able to convince the guardians that it is the existence of the facts detailed in his report that is damaging to them. In the end it was resolved to adjourn the consideration of the question for twelve months, *until it was ascertained what was going to be done about old-age pensions!* The present infirmary, it was said, had lasted sixty years and could go on a little longer.

We are of opinion that if the Local Government Board does its duty it will insist on the building of the new infirmary, the urgent need for which was recognized by its own inspector more than seven years ago, being commenced at once.

POOR-LAW SUPERANNUATION.

A CORRESPONDENT inquires as to the possibility of making a claim for superannuation on resignation of *one* Poor-law appointment, a *second* appointment being still held by applicant. As our correspondent is not 65 years of age he can only claim superannuation allowance on the ground that "he has become incapable of discharging the duties of his office with efficiency by reason of permanent infirmity of mind or body or of old age." If he is able to prove this to the satisfaction of the guardians, and thereby obtains superannuation, we cannot see that any Board of Guardians could consistently allow him to continue to hold any other appointment of which they may have the control. Even if the guardians were so disposed we question whether the Local Government Board would sanction any such arrangement, as it would appear to be contrary to the spirit of the Superannuation Act.

THE NOTIFICATION ACT AND INFECTIOUS HOSPITALS.

IN DOUBT.—Sec. 3 of the Infectious Diseases (Notification) Act, 1889, provides that no fee shall be paid to a medical practitioner for notifying cases of infectious disease which occur in "a hospital in which persons suffering from an infectious disease are received."

OBITUARY.

WILLIAM HENRY DAY, M.D.ST. ANDREWS, M.R.C.P., M.R.C.S.,

CONSULTING PHYSICIAN, SAMARITAN FREE HOSPITAL, LONDON.

DR. W. H. DAY, who resided for many years in Manchester Square, London, was a Crimean veteran, but is chiefly remembered as a former anaesthetist and assistant to Sir Spencer Wells and as the author of a work, *On Headaches, their Nature, Causes, and Treatment*, and a second on *The Diseases of Children*. The former passed through four and the second through two editions.

Dr. Day, who was born on November 30th, 1830, at Wantage, was the son of Thomas Day, of Holly Hill and Stratton St. Margaret, Wilts. He began his medical education in Bristol and completed it in King's College, London, obtaining the diploma of M.R.C.S. in 1854. He was present at the siege of Sebastopol as Assistant Surgeon to the Buffs, witnessing the attack on the Redan, and often related his experiences on that occasion. In

the Crimea he became acquainted with the late Sir W. H. Flower, K.C.B., and Mr. J. W. Hulke, and co-operated with Sir Spencer Wells. At the end of the war he returned to England, and was appointed Physician to the Samaritan Free Hospital, where he became intimately associated with Wells, who was then beginning to found his reputation as an ovariotomist. Dr. Day contributed several papers to the medical societies; perhaps the best of those contributions was a memoir on the pulmonary and cardiac complications of abdominal tumours, with remarks on blood-letting, read before the Royal Medical and Chirurgical Society in 1875. He spent the last years of his life at his estate, Holly Hill, Meopham, Kent, and died on Tuesday, October 22nd. Dr. Day was a kindly genial, and hospitable man, and his loss will be regretted by a large circle of friends.

Deputy Surgeon-General Rowland Wimburn Carter M.D., retired Army Medical Staff, passed away in his sleep at Southsea, on October 20th, in the 77th year of his age. His commissions were dated: Assistant Surgeon, July 18th, 1854; Surgeon, March 9th, 1867; Surgeon-Major, March 1st, 1873; and Brigade-Surgeon, November 27th, 1879. He retired from the service with the honorary rank of Deputy Surgeon-General, November 26th, 1884. He served throughout the Crimean campaign in 1854-5, and was at the battle of the Alma, the siege and fall of Sebastopol, and the capture of Kimbourn (medal with two clasps, and Turkish medal). He was also in the Indian Mutiny campaign in 1858, being present at the actions of Khankur and Bunkagaon (medal), and in the Afghan war in 1878 80 (medal).

Lieutenant-Colonel Edwin Oswald Milward died at Oxford on October 1st, at the age of 54. He entered the Army Medical Service as Surgeon, July 31st, 1880; was made Surgeon-Major, July 31st, 1892; and Lieutenant-Colonel, July 31st, 1900. During the South African war in 1899-1902 he was at the relief of Ladysmith, including the action at Colenso; he was also present in the actions at Spion Kop, Vaal Kranz, on the Tugela Heights, Pieter's Hill, and Laings Nek; subsequently, as Principal Medical Officer of the Eastern Mobile Force, he was in operations in the Transvaal and Orange River Colony; he was several times mentioned in dispatches, and had received the Queen's medal with six clasps, and the King's medal with two clasps.

Captain James Allen Dredge, Indian Medical Service, Staff Surgeon at Bangalore, was accidentally killed while riding at Glastonbury on October 8th, aged 34. He joined the department as Surgeon-Lieutenant, July 28th, 1897, and was promoted to be Captain three years thereafter. He served in the China war in 1900, and had received the medical granted therefor.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Professor Johann Kessel, Director of the Ear Clinic of the University of Jena; Dr. Guiraud, Professor of Hygiene in the Medical Faculty of Toulouse; Dr. Joel Wilbur Hyde, Consulting Obstetrician to the Long Island Hospital, and Consulting Gynaecologist to the Bushwick Central Hospital, Brooklyn, aged 67; Dr. Peter M. Wise, President of the New York State Commission in Lunacy, aged 56; Dr. Rudolf Blasius, Professor of Hygiene in the Technical School of Brunswick, and author of a number of publications on school hygiene, the purification of water supplies, the sterilization of milk, etc., aged 64; Dr. Leopold Glück, Chief of the Bosnia Herzegovinian National Hospital at Sarajevo, and a distinguished dermatologist; Professor Robby Kossmann, originally a zoologist, but in later years a well-known gynaecologist of Berlin, and author of several works on subjects within his special sphere of practice, aged 58; Dr. Livius Fürst, of Berlin, a well known authority on children's diseases, to the literature of which he made considerable contributions, aged 67; and Dr. N. Vaschide, Assistant Director of the Laboratory of Experimental Psychology in the École des Hautes Études, Paris, who had acquired a wide reputation by his writings on psychological subjects, aged 33.

HOSPITAL AND DISPENSARY MANAGEMENT.

WONFORD HOUSE HOSPITAL FOR THE INSANE.

The Committee of this private asylum, at the beginning of the report for 1905, said that that year had been a lean and also an unfortunate one, for whilst at the beginning of the year there was a credit balance of £1,740, at its close there was a debit balance of £582. This state of affairs has been thoroughly redeemed by the year 1906, as not only has it been a fat year but it has established a record for the institution. An abstract of the financial results of the past five years shows that the average number of patients, the amounts received for the board of patients, and the balance on maintenance were all greater in 1906 than those of the other years, and that instead of a debit balance of £582, as in 1905, there was a credit balance at the end of 1906 of £2,216. As this institution does much good work by accepting patients at reduced rates—there being 57 such cases in 1906—this state of affairs is thoroughly satisfactory. The annual report of Dr. P. Maury Deas, the Medical Superintendent, shows that there were 122 patients in the asyium on January 1st, 1906, and that on the last day of the year there were 133. The total number of cases under treatment during the year was 148 and the average number resident 131. During the year 26 cases were admitted, of whom 22 were first admissions. In 8 the attacks were first attacks within three and in 2 more within twelve months of admission; in 6 not-first attacks within twelve months of admission, and in 10, whether first attack or not, of more than twelve months' duration on admission. The admissions were classified as to the forms of mental disorder into: Mania of all kinds, 5; melancholia, 5; dementia, 3; delusional insanity, 6; acute confusional insanity, 2; and alternating insanity, volitional insanity, and general paralysis, 1 each. As to the probable causation of the insanities in these cases alcohol was assigned in only 1, venereal disease in none, old age in 2, previous attacks in 8, an insane heredity in 4, moral causes in 5, and in the remainder various bodily illnesses or disorders. During the year 9 were discharged as recovered, giving a recovery-rate on the admissions of 52.9 per cent. as compared with 26 8 per cent. for the previous year, 1 as relieved, and 4 as not improved. During the year there was but one death, due to cerebral apoplexy in a lady aged 65, giving the unprecedently low mortality rate of 0 8 per cent. on the average numbers resident. The general health was good throughout the year, no serious casualty occurred, and the condition and management of the asylum were favourably commented upon by the Commissioners who have visited the asylum during the year.

COUNTY AND CITY OF WORCESTER LUNATIC ASYLUM.

From the annual report for the year 1906 of Dr. Geo. M. P. Braine-Hartnell, the Medical Superintendent, it appears that on January 1st, 1906, the number of patients in residence was 1 199, and that the same number remained on the last day of the year. The total number of cases under care during the year was 1,457, and the average number daily resident, 1,202. During the year 20 male patients had to be boarded out, giving an actual increase, not shown in the above figures, of 20 for the year. During the year 258 cases were admitted, of whom 211 were first admissions. Of the total admissions, 27 only were in good bodily health and condition, the remainder being either in reduced condition and indifferent health (165) or in an exhausted state (66). In 88 the attacks were first attacks within three and in 29 more within twelve months of admission, in 54 not-first attacks within twelve months of admission, and in the remainder the attacks were either of more than twelve months (47), or of unknown duration (25), or of congenital origin (15). The admissions were divided as to the forms of mental disorder into: Mania of all kinds, 119; melancholia of all kinds, 62; dementia, 31; general paralysis, 9; acquired epilepsy, 22; and congenital or infantile defect, 15. The probable etiological factors amongst the admissions were assigned in the following numbers and proportions: Alcoholic intemperance in 31, or 12 per cent.; venereal disease in 1, or 0.3 per cent.; previous attacks in 62, or no less than 24 per cent.; old age in 12; general paralysis in 7; epilepsy in 23, or 8 9 per cent.; other bodily diseases in 11, and moral causes in 28 Hereditary influences were ascertained in 35 or 13 6 per cent, family predisposition (not direct heredity) in 45 or 17.4 per cent., and congenital defect existed in 15 or 5.8 per cent. During the year 114 were discharged as recovered, giving a recovery-rate on the admissions of 47 5 per cent., excluding transfers—a very satisfactory recovery-rate. There were also 7 discharged as relieved and 40 as not improved. During the year there were 97 deaths, giving a death-rate on the average numbers resident—omitting the boarded-out cases—of 8 per cent. The deaths

were due in 18 cases to cerebro-spinal diseases, including 10 from general paralysis; in 47 to chest diseases, including 29 from phthisis pulmonalis; in 10 to abdominal diseases, and in 22 to general diseases, including 17 from senile decay.

The only noteworthy feature of this death list is the high proportion—almost 30 per cent.—of the deaths from phthisis. Dr. Braine-Hartnell attributes this in part to the overcrowded state of the wards during the year. We note that the sleeping accommodation as returned to the Board of Lunacy is for 530 males and 638 females, whereas the average number daily resident during the year under review were males 542 and females 660. One inquest was held during the year on a male patient who had sustained fractured ribs from a fall, and there were eight non-fatal casualties due to falls or struggles with other patients. One case of typhoid fever occurred, and three cases of scarlet fever, one of which proved fatal, but otherwise the general health was reported by the Commissioner in Lunacy at his visit as very fair.

GLAMORGAN COUNTY ASYLUM.

In their forty-second annual report the Committee of Visitors of the Glamorgan County Asylum place on record their high appreciation of the services of the late medical superintendent, Dr. R. S. Stewart, to the county. Dr. David Finlay, who had been twenty-one years in the service of the county, was appointed medical superintendent. The appointment of a deputy medical officer in the place of Dr. Finlay has been deferred for the present. The work of reconstruction of the temporary blocks is in progress. The Committee has been in communication with the Lunacy Commissioners with regard to the plans of the new permanent block at Parc Gwyllt, and it is expected that they will be approved at an early date. The Lunacy Commissioners, after their annual inspection, pointed out that the canned-meat dinners given twice a week were not popular, and the Committee has revised the patients' dietary by doing away altogether with canned meat and substituting fresh meat and fish. The total number of patients in the asylum on November 21st was 1,723 (960 males and 763 females). The charge to the unions in the county for the maintenance of pauper lunatics was at the rate of 8s. 2d. a week. The number of patients on the books on January 1st, 1906, was 1,695, 930 being males and 765 females. The admissions for the year number 349 (197 males and 152 females). The discharges and deaths were 341 (179 males and 162 females). The total number of cases who received care and treatment during the year was 2,044 (1,127 males and 917 females). The total average numbers resident were 953·1 males and 770·9 females; total, 1,724. In England and Wales 35.3 per 10,000 of the whole population is in asylums, while for Glamorgan the rate is 24.1 per 10,000; in other words, there is one lunatic (in asylums) to every 283 of the whole population in England and Wales, and 1 in 415 of the whole population of Glamorgan. Whether this difference is real, or due only to variations in administration, we have no means of judging. In the cases admitted in which intemperance in drink was a recognized cause, a further decrease is to be observed. The percentage for both sexes is 11.0 (males 15·7, and females 5.2), as compared with 12.0 per cent for both sexes (17.0 for males and 5.8 for females) in 1905, well below the average of 16 per cent. for England and Wales. The cases attributable to religious excitement are less than half the number of the previous year. The other chief causes were "domestic trouble" and adverse circumstances, these being accountable for 50 cases, or 14.3 per cent., as compared with 10.6 per cent. for the previous year. In 18 per cent. of these there existed an inherited tendency to insanity. The Commissioners in Lunacy report "that on the last five years the annual average of cases admitted into asylums with this history was for males 19·2, for females 25.0 per cent." The average in this asylum for a similar period shows a percentage of 25.8 for males, and 28·6 for females, or 27.0 for both sexes. This rate is in curious contrast with that for the asylums in the adjoining counties, Carmarthen being at one end of the scale with 36.4 per cent., and Monmouth at the other end with 11.7 per cent. The patients discharged numbered 155, of whom 120 were recovered, giving a percentage of 35.7 calculated on the admissions, and a recovery-rate higher than it has been for the past ten years, but 1.3 less than the rate for England and Wales.

The third International Congress on the Care of Lunatics will be held at Vienna, October 7th to 11th, 1908, under the presidency of Professor Obersteiner. All information as to the Congress may be obtained from the General Secretary, Docent Dr. Alexander Pilcz, IX, Lazarettgasse, 14, Vienna.

The Sale of Cocaine and Eucaine in New York.—Under a new law which lately came into force in the State of New York, the retail sale of cocaine, or any preparation containing it, except on the written prescription of a duly registered medical practitioner, is a penal offence. The same law applies to alpha and beta eucaine. Proper safeguards are also provided for the wholesale vending of these drugs.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* British Medical Journal *alone unless the contrary be stated.*

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any Circumstances be Returned.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the Journal be addressed to the Editor at the Office of the Journal, and not at his private house.

Communications respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the Journal, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

Telegraphic Address.—The telegraphic address of the EDITOR of the British Medical Journal is *Aitiology, London.* The telegraphic address of the MANAGER of the British Medical Journal is *Articulate, London.*

Telephone (National):—
EDITOR, 2631, Gerrard.
GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

The Status of Scottish Diplomates.

Sandy writes: At the quatercentenary celebrations of the College of Surgeons, Edinburgh, I understand the Council was petitioned to alter the status of Licentiates to that of Members of the College. I believe the Association of Medical Diplomates of Scotland had the matter in hand, and if the Secretary can give any information on the subject through the medium of the Journal I feel sure it would be of interest to many members of the British Medical Association who are Scottish diplomates.

Treatment of Keloid of the Face.

Keloid asks for suggestions as to the treatment of a boy, aged 2½ years, who was burned four months since through the ignition of his pinafore. When healing was in progress, and apparently satisfactory perfectly free from suppuration, to prevent subsequent disfigurement skin grafting was resorted to. To this end, the new granulation tissue was rubbed down, under an anaesthetic, and strips of skin 2 in. by ⅛ in. were applied to the rawed surface. Within forty-eight hours copious suppuration followed. At present scarring extends from behind both ears round the lower jaw and over the chin. Long hard ridges of hypertrophic scar tissue raised considerably above the level of the unaffected skin produce an unsightly appearance in an otherwise good-looking child. The lower lip towards the left angle of the mouth is dragged down and everted by two large triangular keloid-like patches broadening downwards in one, and to the side in the other. Can any plastic operation be depended upon to correct this? Is there more hope of success by use of thiosinamine, fibrolysin or x rays? The experience of others in these, or other, methods of treatment and results is greatly desired and would be much appreciated.

Motor Bicycles.

Motor Cyclist writes: In reference to the correspondence in your columns about the suitability of motor cycles for medical men, I should be pleased to know of the experience of any one who has used a "Motosacoche." The makers make a great point of the absence of vibration. Is this borne out when the machine is in constant use?

ANSWERS.

Ignotus.—We do not know of any charitable or semi-charitable institution for the training of children under 5 years. Application might, however, be made to Mr. Lock, Superintendent, Western Counties Asylum for Imbeciles, Starcross, Devon.

Morton's Foot.

In answer to a query by "A. E. C." (September 28th, p. 859), "Carrier Pigeon" writes to say that interesting references to the subject of pain in the heel will be found in two articles in the issue of the *Journal de Médecine et de Chirurgie Pratiques* for July, 1907, and also in a recent thesis by Dr. Lemée (Thèse de Bordeaux).

Motor Bicycles: Side-Slip.

Rustic writes: I am 46 years of age. I have done nearly the whole of the work of a fairly wide country practice for the past five years, in all weathers, in all conditions of road, and in all seasons, on a motor cycle. I have tried practically all forms of non-skids on the market, and some which are extinct. I now have no hesitation in saying that I believe Parson's chains to be the only reliable cure for side-slip. Their only defect is that when run on a dry road they soon wear out, and then cut the cover. These observations apply only to a two-wheeler on greasy country roads. As to vibration. I am the unfortunate owner of a floating kidney, which can generally be felt close under the anterior abdominal wall, anywhere between the umbilicus and the crest of the left ilium. I get occasional attacks of hydronephrosis, the symptoms of which, though perplexing, insidious, and extremely unpleasant, are speedily relieved by a ten or fifteen miles' run on my motor cycle. I have been advised operative treatment, which I did not undergo; a belt makes me worse, so it is not to be wondered at that I now do not believe in the accepted theories as to the treatment of floating kidney. Further, two years ago I broke a rib, and immediately after I rode for four consecutive days an average of fifteen miles a day, then only desisting owing to the pain incurred in mounting and dismounting. This may sound like a fairy tale, but the Editor has my permission to disclose my name and address to any professional brother who may like to interview me. No letters, please.

LETTERS, NOTES, Etc.

Vaccination—A Campaign of Education.

With reference to the note on this subject in the Journal of last week, p. 1111, Mr. Charles Greenwood, Secretary of the Association of Public Vaccinators of England and Wales, 1, Mitre Court, Fleet Street, London, E.C., asks us to state that Dr. Hodgetts, of Ontario, has informed him by telegraph that copies of the pamphlet on vaccination have been dispatched to this country, but none are at present available.

The Diagnosis of Primary Syphilis.

Mr. Arthur Cooper (London, W) writes: The recommendation by Metchnikoff and Roux of calomel ointment for the prevention of syphilis seems to have led some people to believe that what is good for preventing syphilis must also be good for the cure of venereal sores in general. But, although calomel may be good for syphilitic sores, it ought to be made clear that it is not advisable to use it for sores of doubtful origin. Nearly every one, I suppose, now knows that the giving of mercury in the case of a doubtful sore—"to be on the safe side," as it used to be said—is liable to lead to temporary, and sometimes to permanent, difficulty in diagnosis; but it is not sufficiently recognized that local applications of mercury should be avoided for the same reason. The point is this: That as long as we have to rely upon clinical signs for the diagnosis of primary syphilis so long will it be unwise to prescribe mercury, either generally or locally, until a diagnosis has been made.

Medical Men and Insurance Agents.

Dr. A. Ogier Ward (London, E.C.) writes: The above is your heading, I presume, to Dr. Hugh Woods's caution against certain insurance companies which offer the position of medical examiner in return for a policy. I quite endorse Dr. Hugh Woods's caution about the companies; any company must be very queer indeed to have recourse to such methods. But the line must be sharply drawn between companies and agents. No respectable company makes such overtures; but agents do, even though printed instructions issued to agents may explicitly order them to refrain. I am not altogether sure, also, that medical men do not sometimes shut their eyes to this. There is always a suggestion that your neighbour may be willing to take out a policy, when of course the energetic agent will represent him to be the most up-to-date local practitioner, and you as rather tardigrade. At a recent meeting of the Life Assurance Medical Officers' Association I raised the question, and urged that efforts should be made to secure to the head medical referee of each company the entire control of appointments, though not necessarily of nominations, of district referees. If this reform can be secured, the particular abuse referred to will of necessity cease to exist.

Fleas as Carriers of Disease.

Dr. J. T. Knight (M.O.H., Carlton, near Nottingham) writes: Whilst reading the leading article *re* rat fleas and plague in the Journal of October 19th it occurred to me that this and other species of this diminutive though ferocious insect might probably be guilty of carrying many other disease germs than those of plague from one individual to another. For instance, enteric fever during the South African war might have been so spread. In such a climate the pest is undoubtedly plentiful. A friend of mine told me, hyperbolically perhaps, that whilst out there he had to leave his tent at night to shake them off, having previously allowed them to settle on his body, before he could hope to get any rest. Disease germs, such as those of enteric fever, conveyed by fleas directly into the circulation might entail a shorter incubation period than when ingested.

Fees of Medical Experts in the Thaw Trial.

According to the *Boston Medical and Surgical Journal* the following fees for the experts and alienists in connexion with the Thaw trial have been sanctioned by the Controller: Dr. Carlos F. MacDonald £1,260; Dr. Austin Flint, £1,063; Dr. William Maybon £797; Dr. Robert C. Kemp, £620; Dr. A. R. Diefendorf, £197; Dr. William B. Pritchard, £84; Dr. Albert W. Ferris, £76; Dr. William Hirsch, £84; Dr. R. A. Witthaus, £28; and Dr. August Hoch, £18.

An Appeal.

Dr. R. B. Mahon (Ballinrobe, co. Mayo) writes: On behalf of the widow of the late Dr. J. P. Maguire I thank you for the assistance you have given by publishing my appeal in the British Medical Journal, September 21st, 1907, p. 784. Appended hereto is a list of names of those who have generously subscribed and who now have the satisfaction of knowing that their charitable and kindly action has rescued this deserving case from penury and placed her in the position of one able to pay the expenses of her training as a midwifery nurse, and so to earn her living in the future.

I intend to close the list on November 9th, and as the widow has many expenses to meet I hope to receive some more subscriptions before the list is closed.

	£	s.	d.
Amount already acknowledged	28	9	0
Dr. Hession, Tuam	1	0	0
Dr. T. McCarthy, Sherborne...	1	1	0
Dr. James Little, Dublin	1	1	0
Dr. E Govan, Cockermouth...	1	1	0
Dr. Lombe Atthill, Monkstown Castle, co. Dublin	2	2	0
Anon, Wolverhampton	0	10	0
Dr. J. Galwey-Cooke, County Infirmary, Londonderry	1	1	0
A. F.	2	2	0
Dr. J. Medley Wood, Bournemouth ...	0	10	6
C. E. C.	1	0	0
Dr. J. F. Keenan, Ballinalee, Edgworthstown	1	0	0
Dr. M. McManus, 268, Walworth Road, London...	2	2	0
H. R. L.	2	0	0
Dr. Frank Godfrey, "San Roque," Nettlestone, Isle of Wight...	0	10	0
Dr. E. Murphy, 23, St. Patrick's Hill, Cork	0	10	0
Dr. W. J. O'Sullivan, Lisdoonvarna ...	1	1	0
D.	0	7	6
Dr. J. B. Story, 6, Merrion Square, Dublin	1	0	0
Dr. R Allan Bennett, Saltburn-by-the-Sea	1	1	0
Mrs. M. H. Bennett, Saltburn-by-the-Sea	1	1	0
M. D.	0	10	0
K.	0	10	0
Dr. J. J. Magrath, St. Helen's, Dunfanaghy, co. Donegal	1	1	0
Dr. Walter Smith, 25, Merrion Square, Dublin	1	0	0
Captain W. Watson Scarlett, R.A.M.C., Pulteney Hotel, Bath	1	1	0
Dr. J. F. O'Malley, 16, Weymouth Street, W.	1	1	0
Dr. G. Baynton Forge, West Malling, Kent	2	2	0
Total	£57	15	0
Disbursed to date	6	0	0
Balance in hand	51	15	0

The Natural Enemies of the Mosquito.

Colonel Mathew D. O'Connell, M.D. (Ret)., writes: The proceedings of the Section of Tropical Diseases published in the Journal of October 19th, reveal, as the president said, an enormous amount of work accomplished in the last two years. The methods approved by the distinguished scientists present for the prevention of malaria included drainage, quinine, mosquito proof houses, mosquito nets, paraffin oil, and regret was expressed that these measures were not used to the fullest extent owing to the want of appreciation of the benefits to be derived from them on the part of those who control public expenditure. But while Governments refuse to see that such expenditure would be true economy, why do not scientists turn to Nature for assistance in their campaign against mosquitos? Nature has provided many enemies of the mosquito anxious to assist in its extermination if permitted. They invade our houses in the tropics, but with curious logic we sweep them out as dirt. They return again and again, and it costs both time and money to keep houses free of them. Lizards, frogs, birds, and a host of others are only a few of those that might be mentioned. Even insectivorous plants grown in the verandahs play havoc with mosquitos. It is, however, to the spider as a culicicide that I would invite special attention. She would, if only allowed, quickly cover every door and window with her beautiful gossamer free of cost. And what is so deadly to fly or mosquito? I have seen cobwebs laden with the remains of mosquitos in Indian houses.

It is, however, only in dark corners and rooms where they escape observation that they are tolerated. To the public—as, indeed, to the sanitarian—they are anathema, and are swept forth as soon as detected. If the destruction of mosquitos will eradicate malaria, sanitarians should educate the public, and point out that in removing spiders and cobwebs from our houses we are expelling our best friends. Moreover, the common house fly has come under suspicion of propagating both enteric fever and summer diarrhoea. This is another reason for protecting spiders and their webs both at home and abroad. It is indeed difficult to understand the intolerance of spiders and their webs. They are harmless; they are beautiful and interesting to those who study them, notwithstanding that the late Mr. Grant Allen described the spider as "cruel, bloodthirsty, and having not even one redeeming virtue." But if they are of use in protecting us from diseases propagated by flies and mosquitos, their redeeming virtue is evident.

A MISADVENTURE AT MONTREUX.

DR. STUART TIDEY (Belle Rive, Montreux, Switzerland) writes: An account of a recent unpleasant experience, in which I played the part of the "Poor Old Buffer" in that descriptive legend the "Misadventure at Margate," may possibly save some intended victim.

On Friday, September 13th, when at my mountain home, I received the following note from my head quarters in Montreux: "Arthur Oliphant, from Sir X. Y. (a celebrated London surgeon). Important." The following afternoon, returning from my rounds, I found a man of good address and refined appearance in my waiting room. He was tall, dark, clean-shaved, the skin of the face somewhat rough, suggesting pitting from a bygone attack of small-pox. He wore an expression of suffering, and walked with a slight lurch to the left, with his hand held to the same side, as if to give support to a painful kidney. On commencing to recount his symptoms, he broke off to ask if I had heard from Sir X. Y. On my reply in the negative, he said, "Then you will hear to-day." Meanwhile, he produced a letter purporting to come from Sir X. Y., in which he was addressed as "my dear boy," and which was throughout couched in terms of great personal interest and intimacy. The patient was advised to place himself at once in my hands and to ask me to make a daily analysis of the urine, sending the report to Sir X. Y. The letter was addressed from an hotel in Sweden, where the eminent surgeon was represented to be staying in the course of a motoring tour. The patient further mentioned that his father and mother were on a motoring tour in Spain, and that it had been originally intended that he should join one or other of these motoring parties, but that eventually it was decided that the jolting would be injurious to him in his present condition. He therefore came to Switzerland to gain strength in order to undergo a radical operation. The patient then gave me a brief sketch of the career of "Lawrence Oliphant," which I knew to be more or less correct from my late father's account of that strange personality, with whom he had come in contact and who by a strange coincidence lay side by side with him in the Twickenham Cemetery. The patient then gave me minute details of his own career as Governor of the Solomon Islands.

The interview concluded by my giving the patient an injection of morphine and atropine, which he was taking according to instructions given him before leaving home.

Shortly after dinner I received a telephone message from the Palace Hotel saying that Mr. Oliphant was coming to see me. After a short interval he was shown into my room. On entering he said, "I know no one in the place, so I have come to you. I have received a telegram informing me that there has been a motor-car accident at Xeres, that my father and the chauffeur are killed, and my mother is unconscious and dying. I must get away at once, but I do not know the best way to get there, whether by Paris or Marseilles." Being unable to inform him, I offered to introduce him to a gentleman who could. But I said, "You are not fit to take that long journey." In reply, he said that, whether fit or not, he must go. I then took him to the club and introduced him to a gentleman, who gave him full and minute details of the journey to Xeres. Finally, it was Saturday night, and he wished to start by the early train next morning. He had not enough money, and the hotel rule was not to cash cheques under eight days' notice. I said I would undertake to get his cheques cashed, and took the responsibility for the payment of two, one for £6 and the second for £15. On September 26th the £6 cheque was returned by Messrs. Barclay and Co., with the note "No account as drawn"; the second I received subsequently with the same endorsement.

I have also a letter from Sir X. Y., saying that he feared the individual in question must be classed as a sharper; that he had *de facto* been under his care for renal colic, and had passed calculi with much agony, which naturally elicited sympathy, but he had not the faintest right to make any use whatever of his name. The motor trip to Sweden was a pure fabrication as I imagine was that to Spain. The one consolation I have is that I firmly resisted all attempts to make myself responsible for a larger sum than £21.

FAMILIAR LETTERS IN A NEW LIGHT.

IT was scoffingly said by Juliet, What's in a name? but, then, she was a young thing who knew little of the world. The modern advertiser knows that there is much in a name, and in consequence he does not like certain recent decisions of English judges. That letters as well as names have a distinct value none have better reason to know than medical men, for the public is too apt to judge a man by the number of alphabetical appendages to his name. The letters "M.D." and "F.R.C.S." are in themselves professional assets of very decided value, while "D.P.H." nowadays carries not a little weight. They are sometimes perhaps made to carry a little more than their fair value; thus the University of Cambridge has recently felt it due to its own dignity to point out that they are sometimes strung on to other alphabetical symbols in such a way as to make it appear that the "M.D." preceding them emanates from that ancient University as well as the D.P.H. An unsuspected value has lately been discovered in the "D.P.H." Dr. Charles Alexander Hill, who we learn from the *Liverpool Daily Courier* is a candidate for municipal honours in that city, has the right to append these letters to his name. At a recent meeting, which he was prevented by illness from attending, they were the cause of some amusing mystification. Some one seems to have asked what the letters meant, whereupon the chairman, doubtless seeing an opportunity of improving the occasion for electioneering purposes, suggested as alternative interpretations, "Do Please Help" and "Double the Poll for Hill!"

THEOCINE SODIUM ACETATE.

DR. EDWARD BIGG (Bingham, Nottingham) writes: Seeing the correspondence on this subject, may I claim space to relate two cases in which I have used the above drug successfully?

1. An old man, very obese, aged 80 or more. The heart sounds were weak, there was great dyspnoea, dullness over the bases of the lungs, and ascites; the legs were very oedematous. He was treated with recent infusion of digitalis and apocynum without relief. The urine was concentrated and scanty, about 10 oz. in twenty-four hours. Theocine sodium acetate was prescribed, gr. vj twice a day in powder. The urine rapidly increased, and after five doses the drug was discontinued. The oedema and ascites completely disappeared and the thin muco-serous expectoration diminished.

I saw him again on later occasions, when he had not been under treatment for some time. The above symptoms were very pronounced, and there was great oedema of the scrotum. I at once ordered him theocine again and infusion of digitalis. There was no improvement for five days, and I began to consider that paracentesis should be performed. However, I procured a fresh supply of theocine, and was pleased to note a very rapid improvement. During convalescence I prescribed pil. hydrarg., digit., and scilla. There can be no doubt that in this man's case theocine saved his life on several occasions.

2. The other case was that of an emaciated old woman; there was no valvular lesion, but the heart sounds were very weak; if I remember right, there was no albuminuria. There was pronounced ascites and oedema of the legs, and scanty micturition. I put her under the same treatment at once, and the case cleared up in ten days. A second attack also responded to theocine, but the third attack was fatal.

3. A third case is called to my mind, in which there existed a slight systolic aortic bruit, and there was a little fluid in the abdomen. Here, however, theocine seemed to have no effect, but owing to my leaving the district I did not see the case through.

In none of these cases did theocine appear to have any deleterious effect. Apocynum and digitalis caused a slight amount of nausea, but no sickness. I am given to understand that patients soon become very tolerant of theocine, and that in such cases its use should be supplemented with agurin. I have no experience of the latter drug, I should like to hear the experience of others. Theocine seems to act quickly or not at all, and a small quantity will produce a lasting effect.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

Eight lines and under	£0 4 0
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ENGLISH AND GERMAN EDUCATION:

A PARALLEL.

An Address Delivered at the Opening Meeting of the Medical Society of Manchester, October 16th, 1907.

By Sir FELIX SEMON, K.C.V.O.,

physician-extraordinary to his majesty the king.

"Art is long, Time is short, Technique is difficult." In these immmortal words 2,000 years ago the Father of Medicine pithily described the problem of the science and art of medicine, and no better introduction could I choose for what I have to lay before you to-night than the ever-green facts expressed in this sentence. For the problem of medical education is inseparably bound up with the progress of medicine, which can never be solved for once and ever, because medicine itself is ever-changing. Thus, whilst medical education requires to be remodelled time after time in accordance with the progressive character of our knowledge, we must always bear in mind that the years devoted to it cannot be indefinitely extended, because a proper proportion must always be preserved between the period of learning, and that of exercising, our profession.

The fundamental question with regard to medical education arising out of the foregoing considerations is extremely simple, and may be formulated thus: How is the necessarily limited time of medical education to be most profitably employed in imparting to the student such knowledge as is most useful to him in his future career? If one looks for an answer to the official medical curriculum of different countries, one is struck by the fact that apparently "all roads lead to Rome," and that the question is replied to in many different ways by the legislation of different countries. It would by far exceed the limits of an address, if I were to endeavour, however hurriedly, to contrast the regulations of medical education in a larger number of civilized countries, and I the more readily limit myself to a comparison of the methods of Great Britain and Germany, since the point which I particularly have at heart—namely, *the claim for more consideration of clinical studies in the official curriculum of this country*—will best be elucidated by a parallel between the study of medicine as officially prescribed in these two countries.

Before approaching my task proper allow me to state that, in order to duly prepare myself for it, I have endeavoured to ascertain as accurately as possible from official sources the present regulations governing medical study in this country and in Germany. Thanks to the kindness of various authorities and of personal friends, I have been able to obtain, I trust, reliable knowledge of those facts which are of practical importance for my subject. The latter I found much more difficult to treat than I had thought when I selected it. This difficulty is due to several causes.

In the first place, there is a superabundance of material, and it is no easy task to select and compress within the limits of an address the most essential points. I mention this particularly because I cannot hope to treat exhaustively so big a subject.

Secondly, when I was beginning to prepare this paper, I intended, guided by the wish to substantiate my statements, to textually incorporate the more important official regulations of both countries in it. However, when I had written a good deal of what I wanted to say and glanced through it after an interval of several weeks, I could not conceal from myself that the quotation of all these official regulations made my paper very dry and tedious, and would have rendered it difficult for you to follow the leading points of my parallel. To entirely avoid this danger was impossible, because the very purpose of this address consists in a contrast between certain British and German regulations. I have, however, limited my quotations as much as I possibly could, and must refer those who are interested in the subject and wish to obtain further detailed information to the short bibliography which will be found at the end of this address when it appears in print, and which contains the regulations to which I can only refer in passing.

Thirdly, when endeavouring to draw my parallel, I found myself greatly hampered by the fact that, as you all know, no uniform system of medical education exists in this country, although the General Medical Council has succeeded, I am assured on unimpeachable authority, in bringing the regulations of the various teaching and examining bodies more or less into line. A comparison, therefore, between the arrangements of a country like Germany, in which everything is regulated according to a uniform plan, and those of Great Britain and Ireland, in which the regulations are of a very diversified character, is a task the entirely satisfactory solution of which is practically impossible. Whatever British regulations may be adduced for the purpose of a comparison, it would probably be easy to point to others in which such comparison would not hold good. All, therefore, I can do is to select some of the admittedly most representative British educational arrangements for the purposes of my parallel, and to disarm objections as much as possible at the very beginning of my remarks by pointing towards the diversity of the British regulations.

Finally, to make this address practically useful, I find it unavoidable to briefly consider the conditions of preliminary education in both countries before entering upon my subject proper. The necessity of such a consideration will, I trust, become apparent in the course of my remarks, as I shall endeavour to show that it is to a great extent by *modifications of the present preliminary education* of the future medico in this country that essential improvements of his medical education proper can be hoped for. Naturally I shall in my description of English education be as brief as possible, since you all have been through the course yourselves, and are fully acquainted with the customs and regulations relating to the question. It will suffice if I briefly remind you of such salient points as will serve as the basis of comparison with the analogous subjects of German education.

The English boy intended for the study of medicine as a rule leaves his paternal roof between the ages of 8 and 10 for a preparatory school. Almost all these schools are in private hands, and no official control is exercised over their plan of studies. Their common aim is to prepare the boys confided to their care for admission into the public schools. How they achieve this purpose is left to their own discretion. It is commonly recognized, I think, that the amount of actual knowledge acquired is not very great, whilst the pupils are almost always during this time, if they have not been so already before, impregnated with that love of sport which is so characteristic a feature of this country, and whilst they have a good chance of developing their innate characteristics.

At the age of about 13 to 15, the boy, after passing a very easy examination, is admitted into one of the high schools. Although, according to the regulations of medical studies, it is optional for him to follow the classical or the modern side—and although at an institution like Epsom College, which specially prepares for a medical career, the modern side comes in for a much larger share of attention—the great majority of youngsters intended for a medical career go on the classical side, and for the next four or five years, apart from sports, which still occupy a large amount of time, and in many cases the largest amount of interest in their thoughts, their work consists practically exclusively in studying Latin and Greek, mathematics, the English language, a moderate amount of geography and history, and a very modest modicum of French and German. Science also is nominally included in the curriculum, but the achievements, so far as my personal knowledge allows me to judge, are as a rule not great.

Such in the briefest outline is the average education of the young Britisher before beginning his medical studies. There are, I am well aware, numerous exceptions. Some boys from beginning to end have nothing but private tuition; others are day boarders in high schools, etc. The above description, however, applies, I think, to the great majority of future medicos.

On leaving the public school at the age of from 18 to 19,* the pupil has not to pass an examination showing the proficiency he has obtained during his time of pupilage,

* According to the "interim report" of the Education Committee submitted to the General Medical Council in May, 1907, the mean age of entrance into the profession in this country is 19 years and 3 months.

but before entering upon the study of his future profession he is required by the General Medical Council to pass a preliminary examination in which the following subjects are included:

(*a*) English (grammar; paraphrasing; composition; questions on English history and geography).

(*b*) Latin (grammar; translation into English from unprescribed Latin books; translation into Latin of a continuous English passage and of short idiomatic English sentences).

(*c*) Mathematics (arithmetic; algebra, including easy quadratic equations; geometry, including the subject matter of Euclid, books i, ii, iii, and simple deductions).

(*d*) One of the following subjects:

(*a*) Greek (grammar; translations into English from unprescribed books; translation into Greek of short idiomatic English sentences); or

(*b*) A modern language (grammar; translation into English from unprescribed books; translation of a continuous English passage and of short idiomatic English sentences).

Having passed this examination, he may commence his medical studies at any university, school of medicine, or recognized scientific institution at which medicine is taught in the United Kingdom, but if he desires to register as a student according to the system established by the General Medical Council he must begin study at an institution not only recognized by a licensing body, but approved by the Council. The registration of students was a system instituted by agreement amongst the bodies represented on the Council, and its object was to ensure that a sufficient standard of general education had been attained, and to provide an official record of the time at which medical study was commenced. The registration of students is not prescribed by statute, and, though the large majority of the licensing bodies require their students to register, registration cannot be enforced by the Council.

Whilst the General Medical Council has no power to enforce a uniformity of course, it has formulated the requirements of professional education, and, if failure on the part of any licensing body to follow out these requirements is proved by the result of the Council's inspection of examinations, it has power to report the defaulting body to the Privy Council with a view to the cancelling of its powers to grant qualifications. The regulations, as already stated, concerning graduation and qualifications so considerably vary in the different universities, colleges, and institutions, that I must be content to select as one of the highest types aimed at in British medical education the regulations of the University of London. In that University, to obtain the degree of Bachelor of Medicine and Bachelor of Surgery five years of study after matriculation are necessary. The first year of study is devoted to chemistry, physics, zoology, and botany; the second year in the winter to anatomy with dissection, physiology, practical physiology, and organic chemistry; in the summer to histology, practical histology, organic chemistry, and pharmacy; the third year in the winter to anatomy with dissection, physiology, practical physiology, and pharmacology; in the summer to anatomy, physiology, and pharmacology. In the fourth year the student during the winter studies medicine, surgery, general pathology, practical pathology, and junior clinical medicine; in the summer, midwifery, pathology, forensic medicine, and therapeutics; whilst hospital appointments are held throughout the year. In the fifth year he has to work during the winter at medicine and surgery and practical surgery; during the summer at hygiene, ophthalmic medicine, and mental diseases, whilst during both winter and summer hospital appointments may be held, and senior clinical medicine, clinical surgery, midwifery cases, anaesthetics, study at fever hospitals, and vaccination also form part of his work.

After the first year the student has to pass the first part of the preliminary scientific examination, embracing chemistry, physics, zoology, and botany; after the second year the second part of the preliminary scientific examination, consisting of anatomy, physiology, and organic chemistry; after the third year follows the intermediate examination in medicine, and after the conclusion of the official studies the final examination for the Baccalaureate of Medicine and Surgery is held. You know, of course, that even with these so-called final examinations the list of further possible examinations is not exhausted, since the student, if so minded, may pass the examination for the Doctorate in Medicine and the Mastership of Surgery.

Perhaps the most characteristic feature of English medical education is that a student has the option of entering upon practice through many different portals, some of them more easy, others difficult to pass through. Thus he may be satisfied with passing the Conjoint Examination of the Royal Colleges of Physicians and of Surgeons of England, and with being allowed to place the initials L.R.C.P., M.R.C.S., at the end of his name, or, if he wishes to hold a higher qualification, he may pass the examination for the Membership of the College of Physicians, or the Fellowship of the College of Surgeons. Again, he may become a Doctor or Bachelor of Medicine of any University of the United Kingdom, or a Fellow or a Licentiate of the Royal Colleges of Physicians and Surgeons of Edinburgh or of the Faculty of Glasgow, or a Bachelor of Surgery of any University of the United Kingdom legally authorized to confer such a degree, or a Licentiate of the Societies of Apothecaries of London or of Dublin, etc., provided always that he has passed a qualifying examination in medicine, surgery, and midwifery held for the purpose of granting registerable degrees.

It is in conformity with this freedom of selection that the qualifying examinations considerably vary in extent, duration, and severity, and that the candidate's subsequent status in the profession, unless he makes a position for himself through original work of some kind, almost entirely depends upon the question of what examinations he has passed, and what degrees he holds.

Now let us turn to medical education in Germany. At the very threshold of our investigation we find ourselves confronted by a fact markedly contrasting with English habits. The entire education in Germany, from early school life till after the passing of the final medical examination, is much more under the immediate control of the State than it is in this country. Private preparatory schools only exist in very limited numbers in Germany. In the great majority of cases they are attached to the higher schools, and the transition from the highest form of the preparatory school into the lowest form of the higher school takes place almost insensibly. The high schools are, with very few exceptions, State or municipal institutions, and the plan of education throughout Germany is an absolutely uniform one, regulated by the State itself. This applies to the preparatory schools as well as to the three forms of high schools which at the present moment qualify for the study of medicine in Germany. These high schools are the "Gymnasia," or classical schools; the "Realgymnasia," that is, high schools, the curriculum of which represents a compromise between classical and modern education; and the "Oberrealschulen," in which the teaching is exclusively modern, and in which the classical languages are altogether omitted. For each of these a definite curriculum is prescribed, which is the same throughout the length and breadth of Germany.

The German boy intended for the study of medicine usually begins his propaedeutic education, like his English cousin, at a preparatory school, but as a rule at a somewhat earlier age, namely, between 6 and 8.

The length of his stay at each of the forms of the preparatory school is half a year, and provided that his teachers are satisfied with him, he is at the end of that time promoted to a higher form. The total length of his preparatory studies amounts to from two and a half to three years. During this time he learns reading, writing, German orthography and grammar, elementary mathematics, and is instructed in religion, drawing, singing, and gymnastics.

It is a further characteristic difference between English and German education that, unless the parents live in the country, and are thus compelled to send their boys to town for the purposes of education, the German boy during his whole school life usually remains an inmate of his father's house, being as a rule sent to the nearest preparatory—and later on high—school in his paternal town. This, of course, tends much less to development of individuality than English school life. If the German boy should hail from the country he usually—but by no means always—becomes a boarder in the house of one of

the teachers attached to the school to which he is sent. As in England, it is now optional whether a boy who wishes to devote himself to the study of medicine will enter into a "Gymnasium"—that is, a classical or humanistic high school—where German, Latin, Greek, mathematics, history, and geography form the most prominent subjects of learning, and where French and physics are of more subordinate importance, whilst English or Hebrew are facultative, or whether he will pass his school life in a "Realgymnasium," in which Greek is altogether omitted, Latin considerably reduced, and French, mathematics, drawing, and natural sciences more fully cultivated, whilst English is a compulsory subject, and German, geography, history, and instruction in religion occupy the same standing which they hold in the humanistic "Gymnasium."

Quite recently the "Oberrealschulen" have also been admitted as qualifying for the study of medicine, provided that the candidate, before passing his final medical examination, shows that he possesses a certain knowledge of Latin. This he will have to acquire privately, since the curriculum of the "Oberrealschule" does not include Latin at all. The difference between the curriculum of the "Oberrealschule" and of the "Realgymnasium" is that in the former still a good deal more time is spent on French, English, and natural sciences than in the latter.

It remains to be seen whether many candidates for a medical career will avail themselves of the last-named concession, which dates only a few weeks back. To conclude from the paucity with which they have hitherto made use of modern facilities, such as offered at a "Realgymnasium," this does not seem very likely at present, for, on making inquiries into that subject, I find that of the Prussian students matriculating in medicine in the summer of 1905 at the University of Berlin 64 only had been educated in a "Realgymnasium," whilst 435 had adhered to a classical education in a humanistic "Gymnasium."

On completing the school curriculum, every German who intends following a university career has to pass an ex-matriculation examination, the so-called "Abiturienexamen." This is conducted by the teachers of the institution itself under the presidency of a technical Government inspector, and extends over nearly a week's time. It is most searching, and consists of a written and viva voce part. According to the question whether the candidate has been educated in a Gymnasium, Realgymnasium, or an Oberrealschule, it comprises the writing of essays in German, Latin, French, English, translation from any of these languages, or from Greek into German or vice versa, the solving of a number of higher mathematical problems, and a viva voce examination in all these subjects, and in addition in history, geography, physics, and chemistry. It will, of course, be understood that not all these subjects are examined into in the case of every candidate; but that whilst those who have had a purely classical education are examined in German, Greek, Latin, mathematics, French, history, and geography, in the case of the youth who has been brought up in a Realgymnasium Greek is replaced by greater demands in English, French, and natural sciences, whilst in the case of those who have been trained in an Oberrealschule, Latin is entirely absent from the subjects of examination, and its place is taken by increased demands in the modern languages.

The written part of the examination is, needless to say, under all circumstances conducted in the presence of an examiner, and at the viva voce examination all the teachers are present.

When the intending medico has passed this ordeal, which he usually does at the age of 18 to 20, he is admitted without any entrance examination to any German university, medical education in Germany being exclusively conducted at universities, and there being no teaching institutions analogous to the teaching hospitals of this country. The place of the latter is taken by the medical faculties of the universities, which are throughout Germany conducted on a uniform and officially-prescribed plan.

The German medical student may not only select his university according to his own liking but has the privilege of changing it during the time of his studies at the end of every term, the university year being divided into two half-yearly terms, called "Semesters." There are no restrictions as to the number of times he may do so. In fact, the length of the German medical curriculum being six years, of which five years go to the university curriculum and one to the so-called "practical year"—of which more anon—he might during his first five years visit no fewer than ten universities. Practical expediency and pecuniary considerations, it goes without saying, effectually forbid that any one should avail himself to the full extent of this privilege; but most students attach themselves to more than one university during their university career, and it is by no means unusual to find that a man has been to three or even four universities. This, again, I need not tell you, is in marked contrast to the English habit, according to which a student, having once selected a hospital in which to pursue his studies, with the fewest of exceptions sticks to it until the end of his medical career.

Freedom similar to the selection of a university obtains in Germany with regard to the selection of the teachers. A number of lectures and courses, which form part of the curriculum, must, it is true, be attended in the classes conducted by the officially-appointed professors. But with regard to a large number of others, the student is at perfect liberty to select his own teachers amongst the professors-extraordinary, or private lecturers ("Privatdocenten"), attached to his university; and, as a rule, he is not slow to avail himself of this privilege, preferring the greater attention which can be bestowed upon the individual student in smaller classes, and the freer use of the material afforded to him in the demonstrations and classes held by the less-known younger men, to the crowded clinics and the want of personal intercourse with his teacher which naturally obtains in the classes of the great official luminaries.

Now, as to the study of medicine in Germany itself, I wish to draw your attention prominently to the following three facts:

1. The length of the entire curriculum, as already stated, is six years.

2. *Of these six years two and a half years are devoted to what is known in this country as the preliminary and intermediate medical education, two and a half years to the study of medicine proper, and one year to acquiring, after passing the final examination, practical proficiency in the wards of a recognized hospital.*

3. *There is no such separation between the preliminary and intermediate studies as that which has been recently adopted in this country*, and which has from the first given rise to almost general dissatisfaction. On the contrary, what are called here primary and intermediate subjects are taught *simultaneously* in Germany.

Let us now follow up this plan of studies more in detail, and begin with the last proviso.

The German student on entering the university studies in the first two and a half years (1) anatomy, (2) physiology, (3) physics, (4) chemistry, (5) zoology, (6) botany. These subjects are distributed somewhat as follows:

Anatomy is studied during each term of the time. During two winter terms practical work must be done in the dissecting room. In addition, in the third or fourth term a microscopic course of anatomy must be taken, and in the fifth term a course of topographical anatomy.

Physiology begins in the second year. During three terms the student has to attend physiological lectures, and in the last term a practical course of physiology is taken.

Zoology is taught during the first three half-years, and a practical course of zootomy has to be taken during the first or second semester.

Botany, including a practical course of microscopic botany, has also to be studied during the first year.

Physics are studied during the whole of the first year.

Lectures on *Chemistry* are heard during the first three half-years. In the fourth semester, additionally, lectures on *Physiology* and a practical course of *Physiological Chemistry* are attended.

In addition to all this it is advised that during the first term some mathematical and physiological lectures, in the second half-year a course of lectures on evolution, during the third semester a course on embryology, during the fourth some special lectures on anatomy and physiology, during the fifth term lectures on psychology, be attended.

From all this you will see that the German student has

his hands pretty full during his preparatory period, and that his studies on the different subjects are conducted much more concomitantly than they are in this country. At the end of the fifth or the beginning of the sixth term he is expected to pass his first examination, which is, needless to say, conducted at all German universities in exactly the same fashion, and in accordance with absolutely identical regulations.

Whilst thus nominally two and a half years are devoted in Germany to the study of the preliminary and intermediate subjects, which by the present regulations of the University of London is supposed to require three years, a very important factor comes in, which in practice still further curtails the German student's preliminary and intermediate studies.

As you all no doubt know, every able-bodied German has to serve twelve years in the army, but with the difference that whilst the bulk of the populace serve three years with the colours and remain nine years in the reserve, those who have enjoyed a superior education serve only one year in the ranks and compensate for this privilege by remaining eleven years in the reserve. The German doctor has to fulfil his military obligations towards the State like everybody else, but it is arranged that of the year during which he actually serves in the army he has to pass six months only in the ranks, whilst the second half-year is to be spent in the capacity of a medical subaltern in the military medical service. Now it is expressly provided in the official regulations concerning medical examinations for the German Empire of May 28th, 1901, paragraph 7, that if a student who has matriculated at a university serves his time at the university town where he is studying, the time of his military service is to be counted as equivalent to half a year of his ordinary medical studies. Considering the fact that his military duties leave him very little time for study, the practical meaning of these regulations obviously is that the German authorities consider the time of a little more than two years as sufficient to master the subjects for the study of which in this country, according to some of the present regulations, *three* years are provided.

The subjects of the first professional examination embrace anatomy, physiology, physics, chemistry, zoology, and botany, and it lasts four days. The regulations concerning the manner in which this examination is to be carried out are so important for the purpose I have in view that I do not apologize for giving them to you in verbal translation. They run as follows:

In the anatomical examination the student has

1. To demonstrate the parts situated in one of the main cavities of the body with regard to form, situation, and connexion, or to demonstrate in the dead body a region of the trunk or the limbs.

2. He has to make and demonstrate *lege artis* an anatomical preparation of nerves or vessels, and following this to show in a viva voce examination his knowledge of the various parts of the prescribed anatomy.

3. He has to make and explain two microscopic anatomical preparations, according to the rules of the art, and following this to show in a viva voce examination a thorough knowledge of histology and to prove that he is familiar with the fundamental principles of embryology.

In the physiological examination the student has to show that he has made himself familiar with the whole of physiology, including physiological chemistry, and that he has a knowledge of the more important apparatus and methods.

The examinations in physics and chemistry are also to be conducted in a thorough fashion, and *have to keep particularly in view the requirements of the future physician.* (The italics are my own.)

In zoology the examination is to be limited to the fundamental principles of comparative anatomical physiology; in botany it is to be limited to the fundamental principles of anatomy and physiology, and to a general survey of the vegetable kingdom, particularly with regard to the plants *which are medically important.* (The italics are my own.)

When the student has passed this examination he enters upon the study of practical medicine.

In his sixth half-year he attends a course of lectures on general pathology and pathological anatomy, on pathological physiology, on special pathology and treatment, on fractures and dislocation of bones, on general surgery, and on pharmacology, balneology, and toxicology, whilst he takes a course on auscultation and percussion, and attends a medical or propaedeutic clinic.

In the seventh half-year he continues his courses on general pathology and pathological anatomy, pathological physiology, auscultation and percussion, and internal medicine, whilst additionally he attends a course on pathological microscopy and chemistry, the surgical clinic and polyclinic, and the obstetrical and gynaecological clinics.

In his eighth semester, pathological anatomy, medicine, surgery, and gynaecology are continued, practical courses of obstetrical operations, of pathological microscopy, of laryngoscopy, otoscopy, rhinoscopy, ophthalmoscopy, are taken, and the psychiatrical and neurological clinics are attended.

In the ninth semester the student attends medical outpatients, continues to work at the surgical, gynaecological, obstetrical, psychiatrical, and neurological clinics, takes a practical course of surgical operations, and continues his ophthalmoscopic course, whilst he also visits the ophthalmoscopic clinic. Further, he must attend children's wards, and hear lectures on hygiene, experimental therapy, serum treatment, and immunity, and take a practical course of vaccination.

In his tenth and last term he continues his ophthalmoscopic studies, visits the wards or out-partient departments for skin and venereal diseases, as well as those for diseases of the throat, nose, and ear; he takes courses in physiological therapy, orthopaedics, hygiene, bacteriology, forensic medicine, bandaging, and repeats his course in topographical anatomy, and in performing *post-mortem* operations.

At the end of the tenth semester he may apply for admission to the final or State examination. The application is to be accompanied by certificates that the candidate has fully passed the preliminary examination, and that he has:

1. Regularly attended for two and a half years as "Practicant" the medical, surgical, and obstetrical clinics, and has by himself, although in the presence of his teacher or an assistant, delivered four women.

2. That he has regularly attended for half a year's time each as "Practicant" the ophthalmic clinic, medical polyclinic, children's clinics and polyclinics, psychiatrical clinic, as well as special clinics or polyclinics for affections of the throat, nose, ear, skin, and venereal diseases. Further, that he has taken part in the practical instruction in vaccination, and that he has acquired the technical knowledge necessary for practising vaccination and for obtaining and preserving lymph.

3. That he has attended lectures on topographical anatomy, pharmacology, and forensic medicine.

The examination itself is conducted with the same, or if possible, even greater thoroughness than that which characterizes the preliminary examination. It would take me too long to describe minutely the regulations, which provide that the candidate is being examined with regard to every conceivable detail which may be of practical importance to his future career, the examination not being limited to medicine, surgery, and gynaecology, but extending also to the special branches I have enumerated above. In every group the examination is partly by papers, partly viva voce, and is conducted in as practical a fashion as possible, the candidate having to show his knowledge by diagnosing and fully describing medical, surgical, and gynaecological cases, by prescribing for them, by carrying out in the presence of the examiner a *post-mortem* examination, by performing some smaller operations on the dead body, by showing his familiarity in applying bandages, etc. It will give you, perhaps, the best idea of the thoroughness of this examination when I tell you that my own State examination extended over a period of fully three months, and that during this time I was on no fewer than forty days under actual examination.

This searching, difficult, and lengthy examination does not confer the coveted title of "doctor" upon the successful candidate. The student who has passed the "State examination" and has served his "practical year" receives the title "Praktischer Arzt," which is equivalent to the English term "registered practitioner," from the State; but if he wishes to adorn his name by the prefix "Dr.," he has to pass another examination before the academical authorities of any German university.

Since this examination is for a degree only, and does not confer the right of practising, it does not only not tax the candidate's knowledge as does the State examination, but is also conducted with infinitely less severity. Presumably when the uniform regulations were introduced into Germany after the wars of 1866 and 1870, it was felt that the old universities ought not to be deprived of their vested rights of conferring degrees, but the title was made purely ornamental. However that may be, the fact remains that a German student who wishes to obtain a degree, which is by the German public as much thought of as is a university degree in this country, is mulcted, to

put it plainly, in a perfectly unnecessary and not inexpensive examination, and is therefore on a par in this respect with those who have passed the Conjoint Examination in this country—the only difference being that the German injustice is inflicted upon *all* German students without territorial differences, whilst in this country it is reserved for those who have had the misfortune of being born south of the Tweed!

Even after the passing of the final examination the German medical student's education is not finished. He does not receive his licence and is not allowed to practise until, after the passing of the State examination, he has spent one year as an assistant in one of the hospitals recognized for that purpose.

The introduction of this additional year, which is called the "practical year," to the former five years' curriculum is of very recent date (1904). It did not surprise me when I first heard of it. In my own student days the clinics, medical, surgical, and gynaecological, in the university hospitals were each under the care of one or, in the very big centres, at the utmost of two professors, each of whom had simply an enormous number of beds. Every professor had of course a few assistants and clinical clerks, but the number of students at many of the centres of medical learning in Germany, more particularly in the big universities, such as Berlin, Leipzig, Munich, and Breslau, etc., was so great, that only a very small percentage of them succeeded in getting clerkships or dresserships, whilst the professor's visits to the bedside could in the nature of things be profitable only to the few who succeeded in getting near the teacher and the patient, and whilst the great majority hardly got a glimpse of the patient, and had to content themselves by listening to deductions made from examinations which they could not see themselves. Thus the clinical education of but too many medical men was in my own time confined to the various classes of instruction in physical methods, to clinical lectures in the amphitheatre, with or without demonstrations, to the visiting of smaller and special out-patient clinics, and to the personal examination of some very few in-patients, as prescribed by the regulations, before being admitted to the final examination. It is easy to see that this state of things was not satisfactory, that the majority of students, whilst thoroughly saturated with theoretical knowledge of all kinds, had not sufficient bedside experience, and that, when they entered into practice, but too many were deficient in the management even of simple cases. I am told that nowadays matters are much better in this respect, inasmuch as more hospitals are utilized for teaching purposes, and that the students thereby get more opportunities of acquiring practical experience. Those who have informed me to that effect have told me that the introduction of the "practical year" was mainly due to the fact that, with the ever-increasing amount of knowledge the five years' curriculum simply did not suffice. Whether this or the condition of things described by me above has been the real cause of the addition, the fact is obvious that the necessity of further practical experience after the completion of the five years' curriculum must have been felt so keenly by the authorities that this important addition had to be made. It remains to be seen whether it will fulfil the expectations connected with its introduction. I have heard various opinions with regard to this point. Whilst some express themselves as quite satisfied, others hold that there is not the requisite amount of further teaching during the practical year, and that the young physician is almost as much thrown upon his own resources as he would be if he had at once entered upon private practice. By not a few the opinion is entertained that it would have been better to put the date of the practical year *before* the passing of the final examination. Further experience with regard to this question will have to be gained. Meanwhile I only wish to state that when the practical year has been passed to the satisfaction of the authorities, the candidate at last is allowed to enter the portal of practice, as little "golden," alas! in Germany as it is in this country.

I may, perhaps, mention here in passing that the total amount of educational expenses, including school life, university career, and examination fees, is considerably less in Germany than it is in England, but that the different price of living in these two countries has to be taken into consideration in making a comparison.

If I have succeeded, gentlemen, in holding your attention during what I am afraid must have seemed to you in many points a tedious enumeration of dry regulations, I venture to think that one thought must have struck a good many of you, namely, how singularly the system of medical education in each of the two countries corresponds to the character of that country itself. In this country, which is passionately fond of the freedom of its institutions, and which, if I may say so without giving offence, is somewhat morbidly afraid of State interference, almost everything in general as well as in medical education is left to private initiative, be it of persons or of corporations. No uniformity of system exists, there is plenty of healthy rivalry, but, it must be frankly stated, also plenty of jealousy between the various teaching institutions, which in the opinion of many does not always result in the promotion of the best interests of medical education itself. Vested interests have to be respected at almost every step, the control of the State, which after all could not be altogether dispensed with, is applied in a timid and indirect manner. Dissatisfaction with the curriculum, as it now stands, constantly increases. As a result of all this there is a chronic state of "unrest" in evidence, characterized by ever-renewed changes, which the more forcibly remind one of the analogous experiments made with the British army, because usually in neither case is the chance given to the new regulations to be tested by practical experience, they being withdrawn and replaced by others, not infrequently almost immediately after their introduction.

The German system, on the other hand, is equally comparable to the rigid organization and discipline of the German army. From first to last it is the State—or the municipalities and universities under the immediate supervision of the State—which superintend the education, as of every citizen, thus of its medical men. There is no attempt at individualizing, no scope for private enterprise, the whole German medical educational system is modelled upon the one principle that since the State places $\frac{999}{1000}$ of its citizens under the care of the remaining $\frac{1}{1000}$, it is the duty of the State to make sure that every one of this $\frac{1}{1000}$ should possess a uniform thorough standard of medical knowledge high enough to entrust him with every responsibility which may fall to his lot.

These deep-rooted differences pervade every aspect of scientific medical life in the two countries under comparison. Financially they are fundamental. In Germany the teaching authorities are not worried with questions as to ways and means. The State, either direct or through the municipalities, provides the necessary funds for the maintenance of the teaching hospitals, and for the endowment of professorships and laboratories—in fact, for every item that is required for the promotion of the progress of medical science. In this country, on the other hand, which takes a great pride in its hospitals being maintained by voluntary contributions, and in which the State does not contribute directly or indirectly one tittle towards the maintenance and furtherance of medical teaching institutions, the question of ways and means, except in the case of a few well-endowed institutions, but too often offers a serious and not rarely insuperable stumbling-block to contemplated improvements, and even seriously threatens the maintenance of the existing arrangements.

Lest this statement should be thought exaggerated, let me quote to you what only a few months ago the treasurer of one of the greatest teaching London hospitals said on the occasion of the annual prize distribution to the students.[1]

> I can assure you that the difficulties of carrying on medical education at the present time, unaided as we are from any outside source, are very great. Expenses are heavy, outside help *nil*, and we governors would most heartily welcome and strongly support any movement which would lead to some grant in aid of our medical school, so that our professors and our teachers might receive at least some acknowledgement of the arduous labours that they devote to the teaching of our students.

Again, the manner in which the teachers are selected and provided for diametrically differs in Germany and in Great Britain. In the first-named country every medical man who feels a vocation for teaching, and who satisfies the State as to his capabilities, has the chance not merely

1 *St. Thomas's Hospital Gazette*, No. 6, vol xvii, July, 1907, p. 143.

of realizing his ambition, but also of attaining the highest official position in the medical hierarchy. He may even teach as a freelance without asking anybody's permission, but if he wishes to belong to the body of official teachers, he must qualify, by writing and getting adopted by the Faculty an original thesis, for the position of "Privatdocent," that is, private teacher in the university. Having attained this position, it will entirely depend upon his further achievements whether he will for ever remain a "Privatdocent," or whether he will be appointed, first, Professor-Extraordinary, and, later on, Professor-in-Ordinary at one of the universities. Again, it will entirely depend upon the quality of his work whether he will have to spend the rest of his life in one of the smaller university towns, or whether he will be called to fill a high position in one of the greatest university centres.

The State pays emoluments of varying amount to the Professors-Extraordinary and In-Ordinary, which, together with the proportion of the students' fees who frequent their classes, goes towards making a decent, though by no means brilliant, income, and at any rate materially adds to the proceeds of the professor's private practice, which he is in no way precluded from carrying on.

There is no compulsory retirement on account of age-limit in Germany, and very few men ever retire before they have passed their 70th year. That this is an unmixed blessing I will not maintain for a moment. It certainly sometimes happens that venerable ruins are allowed to fill important positions much longer than they ought, and the limitation of the tenure of office to the age of 65 or of 70 at the utmost, as is the case in Austria, would certainly seem a desirable progress.

In England, on the other hand, the teaching appointments are, as you all know, managed in a fashion entirely different from the German method. To begin with, there can be no doubt that the system of "inbreeding" still very generally prevails, although I am perfectly aware that a good many exceptions to this rule could be quoted. The student who has passed his hospital career and his examinations creditably, endeavours to get an appointment at his own alma mater. Keen competition certainly exists amongst the younger men as to the coveted appointment of assistant physician or assistant surgeon, but having once obtained this, and thus put his foot on the lowest step of the ladder, the aspirant's further promotion takes place as a matter of course. Unless he dies prematurely, or commits some atrocity or other, the youngest member of the staff well knows that in the natural course of events he will some day become the senior physician or surgeon to his hospital. That this comfortable feeling is not exactly calculated towards stimulating further original work or research goes without saying. Comparatively seldom is the teaching body of a hospital, at least in London, recruited from outside. How very rarely does it happen that an eminent provincial teacher gets an appointment at a London hospital! An outsider may make his mark at the medical societies, by publications in medical journals, and in private practice, but unless he has behind him the power and influence of a hospital, his teaching talents will be sadly wasted. That the teaching positions at the large hospitals practically are purely honorary is well known to you. Although in some of the largest hospitals a certain proportion of the students' fees goes to the teachers, in but too many instances the expenses of the medical school are such that the students' fees are entirely or nearly swallowed up by them. Again let me quote from the speech of our friend the treasurer:

> I do not hesitate to say that at the present time our preliminary teachers in the schools are most inadequately paid, whilst our learned physicians and surgeons receive absolutely nothing at all for the immense amount of time, trouble, and learning embodied in the lectures which they give so diligently and so regularly to our students. Grants in aid are furnished from certain Government and county council funds for secondary education, but the medical profession and medical learning are apparently considered not to need any such help. This is the only interpretation I can possibly give, for it cannot be that they are considered unworthy of help.

Finally, in this connexion the regulation is maintained that at the age of 60, or 65 at the utmost, or after twenty years' full service on the staff, the members are at most hospitals retired compulsorily—a very regrettable regulation, I think, when it comes into force in teachers at the age of 60, and one which deprives the hospitals of the services of men when their experience is ripest and neither their intellect dimmed nor their hands shaky.

The remarkable differences just stated may be summarized by saying that appointments and promotions in Germany are bestowed on the strength of personal achievements only—that is, with due regard to the teaching talent and original research of the author—whilst in this country the possession of some higher qualifications obtained not by original work, but by the successful passing of some examinations, immediately opens the prospect of teaching appointments and automatically leads to promotion when such an appointment has once been obtained.

Comparisons of this kind could be easily multiplied and would afford food for interesting reflection, but I refrain from entering more fully upon these points, because, although they are germane enough to my subject, they would not be profitable. They are grounded upon fundamental differences, which, for the present at any rate, it will be extremely difficult to reconcile, and I wish rather to deal with questions in which speedy improvement is possible than with such in which pious wishes only can be expressed.

Let us now compare the preliminary education of the young Englishman and German who have decided to follow a medical career. From what I have told you there can be no doubt—and this, I think, is a fact universally admitted—that the young German enters upon the study of his profession much better equipped with actual solid knowledge of the subjects he has been taught than his British cousin. Conclusive proof for this statement is to be found in a comparison of the requirements of the English matriculation examination, and of the German "Abiturientenexamen," the demands of the latter being higher in practically every respect than those of the former. At the same time, it must be freely admitted that the English plan of education is much better suited to develop the individual qualities of a youngster than the German plan, which drills everything into a monotonous uniformity. The English boy of 15 or 16, whilst not being nearly equal to his German cousin in actual knowledge, certainly beats him on the average, so far as individual way of thinking, determination, and resourcefulness are concerned. The state of matters has been very happily and tersely summed up by the present Lord Mayor of London, Sir William Treloar, when he quite recently said in an after-dinner speech at Berlin: "The English boy wants more work, the German more play." Yet, even if the present plans of education were modified in accordance with this wise counsel, I do not think that the prevalent classical education in either country is the best preparation for a medical career, and I shall develop this thought further in the concluding part of my remarks.

Before we reach this, however, we have to turn our attention to the main subject of this address, namely, to a comparison between the two systems of medical education proper in Great Britain and Germany. At the very threshold of this inquiry we are confronted by the extraordinary discrepancy in the amount of time allotted to the preliminary and intermediate studies on the one hand, and the clinical subjects on the other, in Germany and Great Britain respectively. Briefly summarized, matters stand as follows:—Whilst in Germany with a six years' study two and a half years nominally and little more than two years in reality are allotted to what in this country are called the primary and intermediate studies, and whilst in Germany fully three and a half years are devoted to clinical work, in this country with a total length of study of five years, three years, according to the regulations of the University of London, are devoted to the preliminary and intermediate subjects, and two years only to clinical work in all its branches! This discrepancy is the more startling as, prima facie, one might have expected exactly the reverse of these conditions to obtain. One would have thought it to be quite in accordance with the usual notions of German love of theory and abstract science, that a rather excessive amount of the available time should have been assigned to purely scientific studies and that the more practical aspects of medical work should have been given a back seat. In reality, however, we find that this time the rôles have been exchanged, and that it is the German idealist who has made practical arrangements, whilst the practical English-

man has allowed himself to be overpowered by the doctrinaire demands of the teachers of purely scientific subjects. The correctness of this statement is proved by the regulations, which I have quoted, of the first professional examination in Germany. They provide expressly that the examinations in physics and chemistry "have to keep particularly in view the *requirements of the future physician.*" That wise proviso, so far as I know, has found no place in words or in spirit in any of the syllabuses regulating the analogous examination in this country, yet it is precisely here where I feel sure the fault lies. I confess I have not the least sympathy with the plaintive cry of some of the teachers of the preliminary and intermediate subjects, "Shall the standard be lowered?" I should as cheerfully agree to a lowering of the present standard of the requirements in some of the preliminary and intermediate subjects, as I should vote against the teaching of piano playing in Board schools. The present standard of the preliminary sciences, notably of chemistry and of physiology, is not only in my own opinion but in that of many others able to judge, in excess of the requirements of the future physician. Some teachers of chemistry and of physiology, and just those whose voices are heard loudest in connexion with this question, seem to forget that they are to prepare not chemists or physiologists, whose whole lives will be spent in this sphere of work, but medical men, to whom chemistry and physiology are but means towards an end, and who have to learn a great many other things to make them fit for the exercise of their profession. I am very glad, however, to be able to add that not a few of the most eminent teachers of physiology and chemistry see the situation in its true light.

I speak with the less hesitation on this point, since my own original work has been as much in the domain of physiology as of pathology, and since nobody will consequently be able to accuse me of underating the importance of pure physiology. But I am fully convinced that if a medical man through inclination or circumstances is in later life drawn to do work in a particular line, his preparation for this purpose ought to be a private and individual one, and that not the whole medical community should be compelled to spend a disproportionate amount of time and energy upon subjects which will be of real use to very few only, whilst subjects of the greatest importance have to suffer in proportion to the amount of time devoted to purely scientific purposes. No doubt the learning of science for science's sake is a most lovable thing, and one which every scientific worker would instinctively encourage as much as he can, but here the stern fact interferes which serves as a motto to this address, namely, that life is short, and art is long, and that there is much to learn. The claims of individual sciences, which are only accessories towards the making of a doctor, must of necessity be subordinated to higher purposes, and the highest purpose in the education of the medical man is to make him fit for the exercise of his future duties. The work of the teacher who understands the real requirements of his pupil consists not in the cramming, for the mere purpose of an examination, into the youngster's brain an inordinate amount of chemical and physiological data which will be of no earthly use to the humble average practitioner, and which will be forgotten the moment the examination has been passed, but in making him familiar with those results of the science he teaches which will be practically useful in the doctor's future career. Yet, oddly enough, with all the excessive amount of time spent on the preliminary and intermediate subjects, and with the severe demands on the candidate's knowledge of these subjects, as shown by the extremely serious percentage of failures in the examinations on them, the startling fact was quite recently stated at the meeting of one of the highest bodies of medical education by a universally-respected teacher, and certainly not excessively severe examiner, that he found the candidates but too often deficient in their knowledge of the chemistry of the urine! Could any fact be presented more vividly illustrating the futility of training unless adapted to the real needs of the pupil?

The importance of these facts is enhanced by the downright impossibility of condensing within the course of two years the study of not only medicine, surgery, diseases of women, and of all the special branches—a knowledge of which nowadays is indispensable to every general practitioner—but also the mere learning of all the numerous and yearly increasing methods of modern investigation of disease.

One can only wonder how it was ever possible that practical men should have consented to an arrangement which is manifestly against the true interests, not only of their own profession, but also of the public. I have been told that when the fifth year of study was added to the curriculum it was originally intended for the improvement of clinical instruction, and that it was, so to say, usurped by the teachers of the preliminary and intermediate subjects. Mr. Henry Morris, in his very instructive address on the financial relations between the London hospitals and their affiliated medical schools, says on this point:

> Any system which keeps a medical student away from the hospital for three years out of the five ought to be absolutely condemned. When the four-year curriculum was lengthened the intention was to add a year for clinical work, but somehow the preliminary science teachers and the physiologists have been allowed to appropriate it.[1]

However that may be, it cannot be right to let a mistake continue for ever simply because it has once been committed, and I am glad to think that the teachers of the practical medical subjects throughout the country have at last been thoroughly roused, and are now putting their shoulders to the wheel to bring about a juster distribution, and one more in accordance with the actual needs of the practitioner, of the time of medical studies.

In the concluding part of my remarks I will endeavour to show how this could be done without unduly disturbing existing arrangements. Before we reach that point, however, we have to compare the second part of the curriculum as conducted in this country and in Germany.

From what I have stated as to the length of time officially devoted to these studies in the two countries respectively, it is perfectly obvious that the German student has an enormous advantage over his English colleague. Whilst in this country the total length of the clinical studies is two years, we find in Germany two and a half years devoted to the same purpose, to which has to be added the "practical year"; in other words, there are three and a half years' practical learning and preparation for the actual life-work of the medical man against two years in this country! That, under these circumstances, everything can be taught more thoroughly and methodically in Germany than can possibly be the case here goes without saying. A simple comparison between the German and the English syllabus proves this fact to demonstration. I may be pardoned if I refer more particularly, and somewhat feelingly, to the fact that in the German plan it has been found possible to include in the curriculum a very thorough teaching of all the special subjects, which in this country are still treated as Cinderellas, the student's practical knowledge in these subjects being tested in Germany at the final examination.

On the other hand, I am genuinely glad in being able to point to, at any rate, one feature in which English medical education is, so far as I am able to judge, much superior to the German. This is the fact that, owing to the much larger number of teaching institutions, and to the distribution of the students of medicine over them, there is a much better chance for the English student to acquire practical bedside knowledge already during his student days, whilst at the same time much more individual attention can be and is being paid to every student by his teacher. Practically every student in this country acts as a surgical and medical dresser and as clerk in one or several of the out-patient departments, whilst the positions of House-Physician, House-Surgeon, and Clinical Assistant in the out-patient departments are open to a much larger number of men here than in Germany. That the English system is faultless I will not say. I well remember to what desperation I was driven time after time when my clinical assistants had to leave me just at the moment when they became efficient, and when, to the detriment of the whole department, I had to train new men, who again had to leave just when they became competent.

But this and similar drawbacks—which, moreover, could be easily enough corrected—are but small when compared with the great advantage accruing to every British student who chooses to make use of his opportunities, from the constant personal contact with a number of experienced teachers, and from being actually able to

[1] Annual Oration at the Medical Society of London, May 15th, 1905.

follow the course of the disease in a large number of patients. In Germany, on the other hand, although I believe the conditions described in a previous part of this address with regard to the overcrowding of the large clinics have considerably improved since my own student days through utilization of a larger number of non-official hospitals for teaching purposes, there is still not nearly so much opportunity for practical and personal instruction at the bedside as in this country, and this fact, I think, above all others, has necessitated the introduction of the "practical year."

An arrangement of that kind, though excellent in itself, would not be nearly so urgently required in this country as it was in Germany, in view of its more practical system of clinical teaching, if only the second part of the curriculum were long enough to allow this system to bear fruit! But it is just here that the shortsightedness with which clinical studies have been treated in the present plan of medical education revenges itself. Even the best system of clinical teaching cannot produce good results if it be not long enough pursued, and two years, I entirely agree with Mr. Morris, are utterly insufficient for the purpose. The lamentable outcome of the insufficiency of time at present allotted to clinical studies has been so tersely described by him that I cannot do better than give it to you in his own words:

> The final two years are (consequently) overladen; the students complain that too much of their time is given up to preliminary studies and too little to acquiring a knowledge of the main work of their lives, and medical practitioners all over the country complain that the recently qualified assistants are very badly up in their practical work. A long experience as a lecturer and an examiner has convinced me that these complaints are well founded.

My own information entirely confirms these statements.

Nor has the general dissatisfaction with the present state of matters stopped at mere complaints. The following equally curious and significant fact, whatever interpretation may be given to it, shows, at any rate, indisputably that in the British student's own experience the period of five years officially allotted to his studies is not nearly sufficient, under the present arrangement, to enable him to become fully qualified. From an interim report of the Education Committee submitted to the General Medical Council in May of the present year I have obtained the following official statistics referring to the length of the curriculum as actually pursued at the present moment: "The mean length of the curriculum of the men who qualified in 1906 was 6 years and 11.3 months over the whole country. In England it was 7 years 4.9 months, in Scotland 6 years 6.2 months, and in Ireland 6 years 5.1 months."

In other words, whilst the official length of the curriculum is five years, the actual time spent by the average British medical student over his studies is nearly seven years!

This fact surely affords ample food for reflection. I am well aware that it could be interpreted in more than one way, and in all probability it is caused, not by one factor alone, but by the co-operation of a good many, the exact influence and importance of each of which cannot yet be accurately gauged. Amongst these, however, I feel sure, the faulty proportion of the preclinical and the clinical periods of study stands in the front rank, and I am equally convinced that no improvement is possible until the three years are restituted to the clinical portion of the curriculum which it was originally intended to bestow upon it when a whole third of it was appropriated by the preliminary science teachers and physiologists.

It remains to compare the systems of examination in the two countries. From what I have said it is obvious that such a comparison is extremely difficult, on account of the diversity of the British examinations. Whilst in Germany a medical man, from the beginning of his school life until his qualification for practice, has to face three examinations only—namely, the "Abiturientenexamen," the first medical examination ("Tentamen physicum"), and the final examination ("Staatsexamen"), to which, it is true, in the case of most men, the examination for the degree of M.D. is superadded—in this country examinations, from the time that the boy enters a high school until he is qualified, are almost uninterrupted. He has to pass an entrance examination when entering the high school, the matriculation examination when beginning his professional studies, the preliminary and intermediate examinations before beginning his clinical work. Should he be satisfied with a diploma to practise, he has to go through the conjoint examination of the colleges, or some similar examination in Scotland or Ireland, so that, as the minimum, he has to pass five examinations. Should he, however, elect to go to a university, and should he aspire to a higher rank in the medical hierarchy, the number of examinations materially increases. He has to pass the Bachelor of Arts and Master of Arts examinations, the examination for the Baccalaureate of Medicine or Surgery, the examination for the Doctorate of Medicine or Surgery of his University, and the examination for the Membership of the College of Physicians or the Fellowship of the College of Surgeons, leaving alone such degrees as those in Public Health and in Tropical Medicine and Hygiene. This means that, whether he wishes to be a physician or a surgeon, he may, in addition to the five examinations already mentioned, have to pass not less than five additional examinations, or ten altogether, not a few of which are mere repetitions of one another.

Here comes in the marked injustice to English as against Scottish students already referred to, inasmuch as in Scotland the university examinations suffice to get not only full qualifications but also to obtain the coveted title of M.D. It is true that there is some retaliation, inasmuch as not a few English hospitals require candidates for higher appointments to be Members of the Royal College of Physicians or Fellows of the College of Surgeons of England, and thereby practically exclude Scottish competition.

That the German examinations, although fewer in number, are much more searching than any of the British will be clear to you from the descriptions I have given, and they certainly fulfil, without incessantly worrying the student and mulcting him in heavy fees, the purpose of ascertaining the actual knowledge possessed by a candidate, and reducing the element of luck—which I think plays a considerable part in some British examinations—to a minimum. At the same time, I am not blind to one great advantage derived from the great number of British examinations—that is, that they keep the student, particularly in the earlier part of his career, when young men after years of rigid school discipline are apt to kick over the traces, more steadily at work than the German system. My own opinion on the question of examinations I may summarize by saying that I think unnecessary repetition of examinations should be avoided, and that under all circumstances the bestowal of the qualification to practise should include the title of doctor. This, however, is more easily said than put into practice, seeing that the universities are sure to resent any interference with their monopoly of the bestowal of that coveted title.

And this brings me to the last part of my address: the lessons to be learnt from the parallel I have endeavoured to draw between the systems of medical education in Germany and in Great Britain. From the whole trend of my remarks you will have seen, I am sure, that I think the German system on the whole is preferable. At the same time I trust that none of you will think for a moment that I say this because I am of German birth myself. I have arrived at my conclusion because, having had a German education myself, and having afterwards studied, passed examinations, practised, and taught in this country for thirty years, the comparisons which I have drawn in this paper have throughout my medical career involuntarily forced themselves upon me, and more particularly so since I have had the honour of belonging to the staffs of various teaching hospitals, to the Royal College of Physicians, and to the Board of Advanced Medical Studies of the University of London, in which questions of medical education form the main topic of discussion.

If I had to propose a scheme for medical education in conformity with the exigencies of the present day, unhampered by vested interests and by the financial considerations which are inseparable from the English system, I should certainly freely draw upon many of the provisions of the German system with regard to the organization of the curriculum, the appointments of the teachers, and the one-portal system of examination. At the same time I am mindful of what I said myself in a previous part of this address—namely, that the two systems of education are not the outcome of accidental or

arbitrary decisions, but are in singular conformity with the general spirit pervading the public life of the two countries. Anything in the way of a slavish imitation of the German institutions would, I feel sure, produce resentment, quite apart from the fact that in the whole question it is impossible to ride rough-shod over the vested interests of many corporations, universities, and colleges which possess the halo of antiquity, and the very life of which would be threatened by an adoption of the German system. An evolution in the sense just indicated can therefore only take place, if at all, in accordance with the general laws of evolution in this country, slowly and gradually, although I by no means despair of its ultimate realization.

Meanwhile, however, two points remain in which something, I think, might be done even now without producing any revolutionary upheaval, namely, an improvement in the school education of the intending medico, and, above all, a rearrangement of the medical curriculum in the sense that more scope is to be devoted to clinical and less to purely preparatory work.

Of these the first one of necessity can be but slow, as it demands the education not only of the authorities, but also of the parents, towards realizing that the present purely classical education is not the one best adapted for the requirements of a medical man. Far be it from me to say a word against classical education. I have been through it myself, and I know well how much I owe to it. If life were long enough, I should, animated by the desire to see my profession possessed of as wide a culture as possible, only too gladly agree to a combination of the full curriculum with those studies of modern languages and natural sciences which are of such pressing importance in modern medical life. But since life is short and art is long, we must come to a compromise between the conflicting claims of the classical and modern sides in order to attain the results best adapted for the requirements and interests of the future medical man. This, I am fully convinced, lies in a combination of a moderate amount of classical with modern education, such as offered by the German "Realgymnasium," and to some extent by the modern side of our public schools. I would not miss the early training of a boy destined for medicine in Latin, because the very formalism of that language is a most excellent training of the brain towards methodical and logical thought, but from the experiences of my own schooldays, and from what I have seen in others, I believe that the amount of time bestowed upon the dead languages, both in this country and in Germany, in the humanistic schools is excessive. It prevents, through the preponderating amount of time given to it, the effectual teaching of modern languages and of natural sciences, whilst in the enormous majority of future medical men the same experience applies of which I have spoken when discussing the excessive amount of chemistry and physiology taught at present in the early years of the medical curriculum in this country, namely, that all that has been learnt so laboriously is but too speedily forgotten as soon as compulsion ceases. As to the argument likely to be raised here that by dispensing with Greek and with the Latin poets you deprive the boy of much intellectual enjoyment, I frankly confess that it makes not much impression upon me. No doubt there are some boys who realize the literary beauties of the Greek and Latin authors, and who when they read their Homer not merely think of the construction of the sentences and the difficulties of translation, but understand the human passions of the poet's heroes and the beauty of his descriptions. How few, however, are they in proportion to that large number who, when the hour of release from the school desk has struck, throw their Latin and Greek authors into the corner, never to look at them again!

And where is the incitement, so far as their future career is concerned, to persevere with their classical studies? So far as I know, with the only exception of the examination for Membership of the Royal College of Physicians, in which the candidate has to translate some Greek and Latin sentences into English—a task for which, as a rule, he has laboriously to prepare himself, his knowledge of the dead languages usually having grown sadly rusty since his schooldays—no practical necessity exists for him to occupy himself any further with the main subjects of those studies which almost exclusively occupied him during fully ten or eleven years of his early and most precious years. Even where the inclination exists to keep up his knowledge, but too often the time is wanting. It has been urged that Greek is indispensable to every member of the medical profession on account of the large number of Greek expressions used in our vernacular. I cannot admit the justice of this argument. How many of us, when new Greek expressions are nowadays introduced into our terminology, such as, speaking at random, spirochaete, opsonins, poikilocytosis, trypanosoma, ankylostoma, polyorrhomenitis, etc., can honestly pretend that their acquaintance with Greek enables them to understand the meaning of the new term without reference to a dictionary? What applies to these new terms applies equally, I think, to any of the older ones. Teach the student once the meaning of these Greek expressions, and it will remain engraved in his memory through sheer force of repetition!

On the other hand, nowadays when medicine really becomes more international every day, when the reading of important new papers in the original language is most desirable to many of us, when we have international medical congresses, at which the use of the three great modern languages—English, French, and German—is optional, when we come into personal contact with so many foreign *confrères*, and when not rarely patients belonging to other nationalities and not speaking a word of English, seek the aid of many of us—a conversational knowledge at any rate, and one enabling us to read French and German medical papers in the original, is becoming every day more a requirement of the cultured medical man. And again, natural sciences, which are the foundation of medicine, and which are relegated to an utterly inferior position in the curriculum of the classical studies, are of the greatest possible importance for the intending medical man. Not only would a more extended scope given to them during the schooldays train the minds of the future medical men in the capacity of accurate observation, which is such a fundamental requirement in the medical career, but it would also, if universally adopted, *deplete* most beneficially the congested time of the preliminary and intermediate studies! This is a point of the very highest importance. If the future medical man were taught a certain amount of organic and inorganic chemistry and physics during his schooldays, the time devoted to the study of these sciences in the preliminary stage of medical education could most advantageously be devoted to physiological and pathological chemistry and to physiological physics, which would be most useful to him in his future career.

The justice of this demand is so perfectly obvious that I am not surprised to find that I have been forestalled in it. Nearly twenty years ago no less a person than Huxley, in a Memorandum to the Senate of the University of London, said "that the student ought to have acquired, as part of his general education, such knowledge of physics, chemistry, and elementary biology as is now demanded of him." And Mr. Morris, from whose address I quote this fact, further states that "the General Medical Council and the two Royal Medical Colleges in London have approved in principle of these subjects being treated as matters of preliminary scientific education and of an examination being passed in them after the examination in general education and before the commencement of medical studies proper." Personally I would rather make the examination in these subjects a *part* of the examination in general education, than demand a *special* examination in them, but this, after all, is a question of detail.

It may be argued here, and certainly with some reason, that many boys only make up their minds to devote themselves to a profession long after they have entered a high school, or even after the completion of their school life. This is perfectly true, but my reply to this objection is, that we cannot possibly provide for such cases, and that the existence of this class ought not to prevent us from giving sound advice to the parents of those boys who have at an early time made up their minds to go into the medical profession or to those parents who, in the absence of any decided inclination on the part of their sons, select a medical career for them.

That the substitution of a more modern for a purely classical education, even if it came to pass at an early date, which I gravely doubt myself, would act as a panacea, I am far from believing. It is not only the question of the subjects to be taught, but also of the *amount* of

knowledge to be acquired, which here comes into consideration. So far as I can judge, the only practical way of securing such an increased amount of knowledge consists in elevating the standard of the *matriculation* examination. I am loth to advocate anything which is an addition to the troubles of the embryo medical man, but I can conceive no other means of inducing the school authorities to realize Sir William Treloar's word that the English boy "wants more work" than by raising the requirements of the "matriculation" examination. Moreover I hope to compensate for the additional burden here proposed by lightening the one at present imposed by the requirements of the preliminary and intermediate examinations.

I am fully conscious, I repeat, that the substitution of a mixed classical and modern education for a purely classical one will be at the best but a slow process. The practical experience of Germany, which I have reported in an earlier part of this paper, shows how slowly people are becoming alive to the advantages of such a change, and in this country, moreover, several of the universities would have to make modifications in their matriculation examinations. At the same time the advantages seem to me so obvious, that I have no doubt that they will ultimately assert themselves, and I think the van ought to be taken by medical men who intend their sons to follow their father's profession.

Whilst the question of school education just discussed, and most of the other problems referred to in this address are of such a nature that they can only be solved by a process of slow evolution, and whilst in solving them, not only medical, but other interests also have to be gravely considered, matters are different with the one remaining subject of my parallel—the most important of all, namely, the question of the medical curriculum in this country. This is a domestic affair, which can and ought to be solved without delay by the action of the profession itself. The present condition of things is, as I trust I have sufficiently shown, simply anomalous. To spend three years on preliminary and intermediate subjects, and two years only on those which form the real preparation for the life task of the British practitioner, is a distortion of the rational proportions of the two periods.

The experience acquired in Germany, where the regulations quoted by me have been in force for nearly forty years, conclusively shows that a sufficient amount of anatomy, physics, biology, physiology, and chemistry, such as is required for a medical career, can well be taught in two and a half years or less; and in earnestly pleading for a reduction of the time devoted to the preliminary and intermediate studies to such a period in this country, I wish pointedly to draw attention to the fact that it has been found practicable in Germany to teach all those subjects which in this country are called primary and intermediate *concomitantly*—that is, not one *after* the other, but all of them *at the same time*. If the German boy can simultaneously be taught anatomy, physiology, physics, and chemistry, I fail to see why the English student could not be taught them as well, and equally effectively. It is in the opinion of competent judges the not doing so which is one of the causes why the study of medicine has become extended to seven years in this country.

The half-year thus gained would be an extremely valuable addition to the present but too short time devoted to clinical studies, and its usefulness would, I think, be greatly increased, if its *first* three months were devoted to *systematic* instruction in all the important methods of clinical observation, such as auscultation and percussion, ophthalmoscopy, laryngoscopy, otoscopy, rhinoscopy, examination by means of Roentgen rays, methods of staining, examination of the opsonic index, etc. When a man is expected to use his tools in his profession the very first thing he ought to be taught is, I think, the use of the tools themselves, and when he approaches the sick bed, having previously been fully instructed how to examine patients according to modern methods, he will from the beginning of his clinical studies derive much more benefit from the instruction of his clinical teachers than when he merely stands by and sees others use instruments with the use of which he himself is not acquainted. It is in this way, I think, that, without any violent measures, an important reform of medical education can be introduced at once, resulting in benefit to the medical profession and to the community at large.

To the half-year thus gained I should like to see another six months added in the curriculum, to be devoted to farther perfecting in clinical work. Seeing the indisputable fact, that the British student nowadays on the average studies nearly seven years unofficially, the official addition of another six months to the five years' curriculum could be effected, I venture to say, without doing harm to any body and with decided benefit to the plan of studies.

That in a subject of such magnitude as is the question of medical education I should find everybody to agree with the views which I have laid before you I do not for a moment expect. Even those who may think as I do on some of the more important questions I have touched may find fault with the details of my proposals. I think I may say, however, with tolerable confidence that on the question of the necessity of a rearrangement of the medical curriculum most clinical teachers in this country are agreed.

The purpose of this address will have been fully attained if I have succeeded in setting a number of medical men in this country thinking about the great and ever-present problem of medical education, and if some of the proposals which I have made should be thought worthy of further consideration and discussion.

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THE CANCER PROBLEM—A SUGGESTION.

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ALTHOUGH the experimental investigation of the propagation of cancer in mice seems to afford little clue to the origin of the cancer cell, yet it lends itself admirably to the study of those conditions, both artificial and natural, which make for recovery. A knowledge of the cause and origin of the cancer cell would doubtless lay the foundation of a rational preventive treatment, but this we may find beset with great practical difficulties; the second half of the problem—the cure of cancer—might then take precedence over the first, and it is to this side of the question that this short article belongs.

The essential characteristic of the cancer cell is its apparently unlimited power of multiplication; relatively to its neighbours it is a young vigorous embryonic cell.

It is a well-recognized fact that the nucleus determines the division of cells, and takes the chief share of work in that process, the separation of the protoplasm being secondary. Our attention must, therefore, be centred on the cell nucleus. Is it possible to act upon and so modify this as to rob it of its abnormal power of proliferation, to bring it down in this respect to the level of those in its neighbouring tissue cells?

Chemically the nucleus consists of nuclein which is identical with the chromatin of histologists. What, then, is the source of the nuclein bodies in which cancerous growths are so rich? Let us first consider the question: At the expense of what tissue does the cancer cell thrive and multiply? But before answering this it is necessary to briefly revise our knowledge of the process of repair of tissue. Formerly it was thought that the leucocytes of the blood took the chief part in the regeneration of a damaged tissue, but there is a growing tendency now among pathologists to emphasize the importance of the local tissue cell itself. This is the cell that multiplies and ultimately restores the tissue. What part, then, do the leucocytes play? They congregate at the damaged area, some of them break down and form a nutritive pabulum in which the fixed tissue cells can develop.

Whether they supply the stimulus to growth is uncertain, though highly probable, but they doubtless supply the nuclein bodies which are so necessary for the nucleus of the now actively multiplying tissue cell. May not the cancer cell, therefore, receive its stimulus from and depend for its nourishment and growth on certain leucocytes, which by breaking down or actual conjugation supply the necessary nuclein? The induration around a cancerous growth is evidence of the infiltration of leucocytes, which, however, is hardly inflammatory in nature, seeing that it is not always accompanied by the cardinal signs of that condition. Pure blood plasma within the blood vessels does not contain nucleo-proteid (the progenitor of nuclein), which would produce intravascular clotting, but becomes coagulable lymph in the tissues by the addition of fibrin ferment derived from the breaking down of certain leucocytes. It seems legitimate, therefore, to suppose that certain leucocytes supply the nuclein bodies so necessary for the rapid mitosis of the cancer cell. Let us assume that this is the case; it will certainly account for some very significant facts connected with cancer growth. It is well known that malignant growths have been noticed to be benefited by an attack of erysipelas. Presumably in a diffuse spreading inflammation like this, within the lymphatic system itself, more leucocytes are concerned in repair than in an ordinary circumscribed abscess. The determination of leucocytes to the diseased area might rob the cancer cells of their normal requirements in the way of nourishment provided a sufficiently extensive surface is involved, and it is only natural to suppose that repair of an injury is of more vital importance to an organism and must take precedence over mere growth.

It is a significant fact that cancer tumours in mice remain stationary at a certain stage of their development, possibly when the limit of nutrient supply is reached, and it would be interesting to know whether metastases were more numerous with smaller or larger primary growths.

The difficulty of inoculating a second tumour after a primary growth of fair size is also explicable on the theory of a limited supply of essential food. The theory of immunity due to a toxin formation does not appear sound, because we are dealing with what might be called an abnormal physiological growth rather than a purely pathological process.

Quite recently[1] in this Journal Dr. Mackay, followed by Dr. Sommerville, reported very interesting cases of amelioration of carcinomatous growths following pleuritic effusion. I did not accept the explanation there given as final, because it seemed to me the circumstances were capable of being explained otherwise. The pleural cavity may be regarded as an enlarged lymphatic space. In acute effusion, which these cases presumably were, innumerable leucocytes take part in the formation of the layers of lymph and adhesions which result; there is probably a general determination of leucocytes to this most extensive lymphatic space, and, as in the case of erysipelas, less important processes, such as growth, must wait their turn. Moreover, as the whole energies of the cancer cell seem to be spent in the function of reproduction, may not the suppression of this function by the absence of essential food endanger its very existence, for, as far as whole organisms are concerned, the young and growing are said to feel the effects of lack of nourishment first and most severely. When a growth is locally damaged it responds by increased growth, the damage having probably caused an increased determination of leucocytes to the damaged area. Similarly when ulceration of a large tumour occurs, cachexia and wasting, hitherto absent, soon make themselves evident. The acquired immunity to re-inoculation of cancer is on this assumption explained by the exhaustion of some particular nutrient material necessary for the growth of the rapidly-multiplying cancer cell, this essential consisting chiefly of nuclein bodies supplied for the most part by certain leucocytes.

If, then, nuclein is so important for rapid mitosis, would it not be possible to considerably modify this process by its withdrawal from the food altogether, or to so act upon it chemically as to alter its functional activity? The key to such chemical alteration might be supplied by the following considerations: From a chemical point of view nuclein is remarkable amongst organic bodies for its high percentage of phosphorus. Could we not substitute for phosphorus a chemical having somewhat similar affinities? Turning to the periodic system of elements we find that the phosphorus group contains the well known bodies: Arsenic, antimony, bismuth, and three rarer elements.

Arsenic and antimony are already known to have a profound action upon epithelial tissues, probably because these are always multiplying, and, therefore, need much nuclein. Arsenic seems also to have an action on leucocytes, for it diminishes their number in leukaemia. Perhaps the action is due to the part substitution of the element used for the phosphorus of nuclein. Bismuth as ordinarily given in the insoluble form only acts mechanically. The internal administration of arsenic[2] has been praised in America, and has been said to have an inhibitory action on malignant growth. I should think the heavier metals of this group, if substituted for phosphorus in the nuclein molecule, would be more detrimental to its functional activity.

Now that the experimental investigation of cancer is possible in mice, and there is no question of human suffering, the experiments that naturally suggest themselves out of the foregoing considerations are as follows:

1. The action on carcinomatous tumours of a diet free from nuclein and its progenitor—nucleo-proteid. Such a diet in the case of man would correspond somewhat with the purin-free diet suggested for gout and its manifestations—and by the way, any observed associations between this disease and cancer would be extremely interesting. Cancer has much greater incidence among those taking a mixed diet than among vegetarians, and a vegetarian diet as well as a restricted nitrogenous diet has been extolled as beneficial in both external and internal cancer.[2] This plan "the nuclein-free diet" could also be tried in conjunction with the internal administration of arsenic or other member of its periodic group.

2. The action of a "phosphorus-free diet" with or without the internal administration of arsenic, etc., might be tried. Seeing, however, that phosphorus is such an important element in the nervous system of vertebrates, it is doubtful whether the living organism could withstand its entire withdrawal from the food, and it is possible a cancerous growth might still draw its necessary phosphorus from the nervous system, thus producing mental depression or other nervous state.

3. The production artificially of extensive inflammatory conditions far away from a cancerous growth with a view to withdrawing the leucocytes thereto and noticing the effect, if any, might prove interesting if of no practical importance.

In conclusion, the present helpless state of our knowledge of the cure of cancer behoves those engaged in cancer research "not to leave a stone unturned," so to speak, and alone justifies the trouble of any experimentation, even though based on purely theoretical considerations.

References.

1 British Medical Journal, July 20th and August 3rd, 1907.
2 *Ibid.*, October 6th, 1906.

AN X-RAY METHOD FOR IMMEDIATE LOCALIZATION OF FOREIGN BODIES.

By C. FRED. BAILEY, M.D.Lond., M.R.C.P.Lond.,
Assistant Physician, and in charge of the Electrical Department, Sussex County Hospital.

While recognizing the value of the various ways which have been suggested for the localization of foreign bodies by the *x* rays, not omitting the stereoscopic method, they all appear to present certain disadvantages; either they require somewhat complicated and expensive apparatus, or they involve rather elaborate calculations, or again they need the exposure and development of plates which with subsequent measurements, etc., involves much valuable time. Therefore a method giving a fairly accurate idea of the position of a foreign body, such as a needle, shot, or piece of glass, in a hand, foot, or even a thicker part, from a simple fluorescent screen examination, and that at once, is, I venture to think, worth consideration.

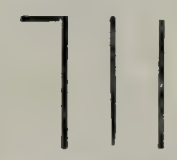
The plan I am using, which is an elaboration of a suggestion of Mr. Shenton, is based on the principle that an upright thin plane, illuminated vertically from below, gives a linear shadow. If the illuminant be moved to a position on the same horizontal plane as it originally occupied and at right angles to the plane examined, then the shadow of the original thin plane becomes a figure

bearing a certain definite relation to the plane, and the parts of the shadow also bear a proportionate relation to the corresponding parts of the plane under examination.

In practice one requires only the ordinary *x*-ray couch, the tube being 18 in. below the position the screen will occupy, having a diaphragm, and being capable of longitudinal and transverse movement; a fluorescent screen, an aniline marking metal pencil, some lead foil, and some stamp paper. The lead foil is used for twisting into a thin wire—this is easily done by the fingers—the wire being afterwards cut or bent into stylets of the size and form required.

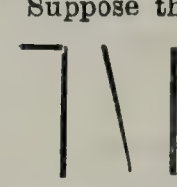
Taking the common case of a needle in the hand. Let the hand lie on the couch palm upwards, and with the screen search for the needle; manipulate the hand into such a position that the shadow of the needle finally lies transversely to the couch and in the centre of the smallest aperture of the diaphragm, the hand still lying flat on the couch. Now with a damped aniline pencil mark the shadow line on the palm. Cut a lead stylet so that one limb corresponds to the line, the other limb being short and at right angles. This piece at right angles is merely to make the palmar stylet distinctive. Fasten the appropriate limb to the marked line with stamp paper. Re-examine, when dry, with the screen, when the shadow of needle and stylet limb should register. Now place the hand palm downwards and again examine; make the lines register and mark on the dorsum of the hand with the pencil. Again attach as before a straight lead stylet, and now, on examining the hand palm upwards, the three shadows should register and appear as one shadow with a short limb at right angles. We now have fixed the vertical plane in which the needle lies.

To discover the depth and direction of the needle in this vertical plane, the tube is moved about 6 in. to one side, say the left, the diaphragm being much enlarged or removed. The original single shadow at once resolves itself into three, thus—



The left shadow is the palmar stylet, the right the dorsal, and in a variable position between is the shadow of the needle. The distance between the lead shadows corresponds to the thickness of the hand, and, for all practical purposes, the proportion of the distance which the needle shadow (or any part of its shadow) takes up represents its depth (or the part's depth) in the hand. In the above case the needle lies parallel with the palmar surface and about halfway between palm and dorsum, its exact depth being therefore one-half the thickness of the particular hand.

Suppose the three shadows are thus—



Here the needle is in a slanting direction, its head about one-third of the hand-thickness from the palm, its point about one-fourth of the hand-thickness from the dorsum; we know the plane it occupies; its *true* length may be estimated by constructing a four-sided figure, whose sides are the lengths of the stylets and the thickness of the hand, marking off one-third of the upper line and three-fourths of the lower, and measuring the distance between these points.

Modifications are easily suggested for a needle vertical to the palm—a shot, an irregular piece of glass, or a fragment of metal. It is quite easy to find the relation of the foreign body to a bone, for instance, by noting the relative displacement of the foreign body shadow as compared with the displacement of the *spot* (either on the bone or between contiguous bones) over which it was lying when the shadows were in register.

It may be objected that the method is not absolutely accurate; it is not. If *x* rays were parallel it would be quite correct, but the more divergent they are the greater becomes the inaccuracy. However, with a tube 18 in. from the screen, the rays are so nearly parallel that, when a hand is under examination, the results are near enough for all practical purposes.

Absolute accuracy is possible by plotting out on a sheet of paper a diagram having a central 18-in. line and two cross lines at either end. On the upper cross-line is measured the distance between the anterior right-angled stylet shadow and the shadow of the foreign body; on the lower cross-line is measured off 6 in. on the opposite side. On joining the points the depth of the foreign body is found on the central 18-in. line. It will be found how near the method I have just described is to the truth. The tendency is for the depth to be slightly underestimated; for example, in examining the calf of the leg with a thickness of 6 in., the *mid-point* between the shadows of two stylets (anterior and posterior) corresponds to a real depth of 3½ in. instead of 3 in.

It affords great help to an operator to know the surface line *across* which he will make his incision, the depth he will have to go, the direction and length of the foreign body. These he can obtain as above at once. I have italicized *across*, as the difficulty of finding a needle is enormously increased if the incision is over or parallel to it. Local or general anaesthesia is very advisable, and an Esmarch's bandage to make the part bloodless is almost a necessity; but these are matters for the operating surgeon.

CASE OF RADICAL MASTOID OPERATION;

WITH SUBSEQUENT SEPTIC INFECTION AND RUPTURE OF THE LATERAL SINUS.

BY KNOWLES RENSHAW, M.D, B.C.CANTAB.,

AURAL SURGEON TO THE MANCHESTER EYE AND EAR HOSPITAL; AND ASSISTANT PHYSICIAN TO THE MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT.

THE following case presents some features of more than usual clinical interest:

N. S., aged 21, a patient of the Manchester Eye and Ear Hospital, had been suffering from purulent otorrhoea of left ear for five years. Occasionally there had been pain in the ear or in the adjoining mastoid region. During the last six months the symptoms had become steadily worse and the discharge more profuse and extremely offensive. On examining the ear, the membrane and ossicles were found to be absent; bare bone could be felt with a probe in the region of the iter ad antrum. The hearing power was fair—medium voice 4 ft., whisper 1 ft.

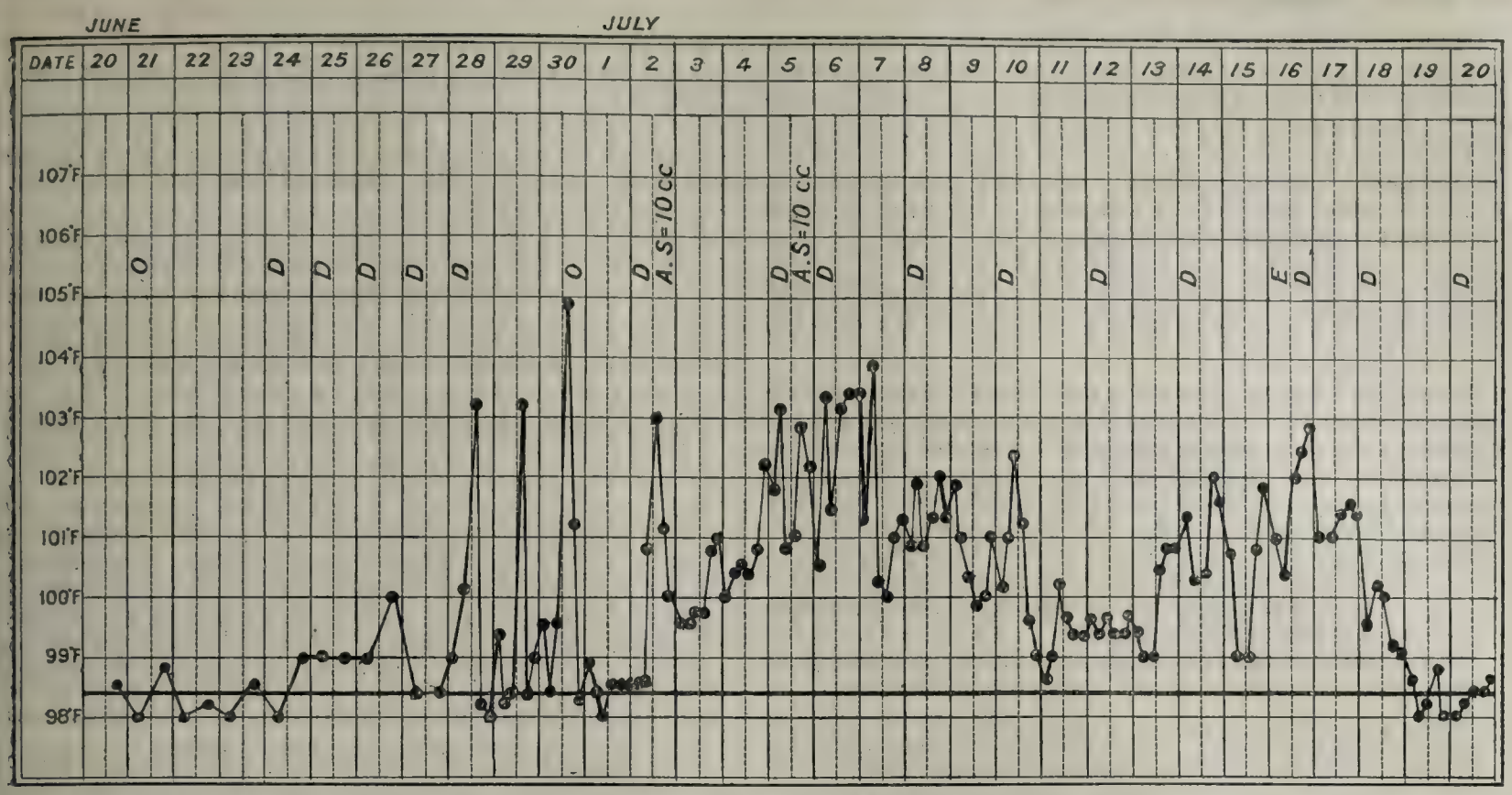
Operation.—A radical mastoid operation was decided upon and was performed on June 21st. There was nothing unusual about the early stages of the operation, but on commencing to remove the bone the sinus was almost immediately exposed, lying only a little over ⅛ in. behind the posterior wall of the meatus. The sinus wall was apparently uninjured. The antrum and attic cavity were then freely exposed; the bone was everywhere found to be extremely sclerosed; patches of carious bone were found in the outer wall of the antrum and in the overhanging edge of the outer wall of the attic; the contents of the antrum were very offensive. All diseased tissue was carefully removed, and after arresting haemorrhage and treating the cartilaginous meatus according to the Panse method, the cavity was packed and the superficial wound sutured.

For the first week the progress of the patient was uneventful. The packing was removed through the meatus three days after the operation, and after syringing the cavity with boric lotion it was gently repacked. This was repeated daily. On the morning of the seventh day (June 28th), immediately after the dressing, the temperature suddenly rose to 103 2°. The packing was at once removed, as was also one of the sutures which appeared rather tense. At 6 p.m. the temperature was normal, but on the following day there was a similar rise about the same hour. All the stitches were removed, and warm boric fomentations were applied. The temperature again subsided as rapidly as on the previous day, but next morning (June 30th) there was a slight rigor, and the temperature rose rapidly to 104 8°.

Second Operation.—I then decided to open up the wound and ascertain whether a septic thrombus had formed in the lateral sinus. Before this could be done there was a sharp haemorrhage from the ear. The original incision was opened up and the cavity found full of clot. On carefully removing this there was a sudden gush of blood. The haemorrhage, which was very severe but easily checked by pressure, was evidently coming from the spot where the lateral sinus was exposed during the first operation. This opening was now enlarged in a backward direction, with the intention of occluding the sinus by placing a plug between its outer wall and the bone. The haemorrhage could not, however, be sufficiently controlled to allow this to be done, so the aperture in the sinus was plugged with iodoform gauze. A drainage tube was passed through the meatus into the deeper part of the antro-tympanic cavity. The rest of the cavity was gently packed with gauze through the wound behind the ear, which was left open.

After-History.—For two days the patient was comfortable, and the temperature remained normal. The packing was then removed (July 2nd). As soon as the plug in the sinus was withdrawn, there was severe haemorrhage. Fresh packing was immediately reinserted and the wound dressed as before.

The temperature, which had been slightly elevated (100° F.) before the dressing, continued to rise; six hours later, therefore, 10 c.cm. antistreptococcus serum was injected; the



O, Operation; D, dressing; A, S, injection of antistreptococcus serum; E, erythema appeared. The temperature was recorded twice daily from June 20th to 27th, and afterwards every four hours.

temperature immediately improved, but remained irregular. Thinking that there might be some intracranial complication, I asked Dr. Jelly to examine the optic discs. He reported that there was no optic neuritis, but on both sides the fundus was rather congested. A few scattered rhonchi could be heard in the chest, otherwise the general condition of the patient was good. On July 5th, the wound was again dressed; on this occasion the piece of gauze in the aperture in the sinus was left undisturbed. This was removed on the following day, with the exception of a very small piece, which was adherent to the sinus wall; this was removed piecemeal at the subsequent dressings as it became detached. Antistreptococcus serum was again injected on the evening of July 5th, but had no immediate effect on the temperature, which remained high for another two days.

During the following week the progress of the case was satisfactory. Although the temperature was irregular, it steadily approached the normal line. The pulse-rate, also, was considerably lower. After July 13th, the irregularity of the temperature became more marked, the evening temperatures especially becoming more elevated, and on July 16th an erythematous rash made its appearance upon the face and trunk. The use of iodoform in the dressings was at once stopped, and from this time until August 10th, when the patient left the hospital cured, the progress was uneventful. The wound behind the ear entirely closed, and the cavity became lined with healthy epithelium. The hearing power was much increased, the patient being able to hear a medium voice up to 16 ft., whispering 9 ft.

One or two points in the case are of interest. In the first place, the rise of the temperature at the end of the first week after the operation was due, in my opinion, to septic infection of the sinus wall. This may have been slightly injured at the time of the operation, although there was no evidence of the fact; certainly there was no haemorrhage from the sinus either at the operation or until the ninth day afterwards; at the latter period the part of the sinus wall which had become septic appears to have sloughed, and in consequence haemorrhage occurred. When, at the subsequent operation, the clot in the cavity was displaced with the greatest care, the haemorrhage was very rapid and was obviously coming from a considerable aperture in the sinus wall. After plugging the sinus and clearing out the operation cavity, the advisability of ligaturing the jugular vein was considered, but, as the sinus was evidently not occluded and there was no evidence that the septic process had spread beyond the portion of the sinus which was exposed, I decided to await events (in which decision my colleague, Dr. Arnold Jones, who was assisting at the operation, concurred).

The influence of antistreptococcus serum on the case was indefinite. On July 2nd the temperature was rising 100.8°) when the case was dressed; after the dressing it continued to rise, and when the serum was injected six hours later, was 103°; it then fell steadily to 99.8° twelve hours later, and remained low for almost a couple of days. After the second injection, on the 5th, however, although there was a slight fall, it was of very slight duration. At the latter period the patient was suffering from slight bronchitis, which may to some extent account for the irregularity of the temperature. The slow, unsteady rise of temperature from July 13th to 16th was due, I think, entirely to the toxic effect of iodoform, which had been freely used in the dressings from the second operation until this date. When, on the 16th, a definite erythema appeared, the use of iodoform, as stated above, was immediately suspended. The erythema then rapidly disappeared and the temperature fell to normal.

TREATMENT OF DELAYED RESOLUTION AFTER PNEUMONIA.

By W. M. CROFTON, M.B.R.U.I.,
SUTTON BRIDGE.

There is, as far as I am aware, no recognized treatment for the above condition. The following case of delayed resolution was treated by intramuscular injections of fibrolysin, a double compound of theosinamin and sodium salicylate.

Previous History.

A labourer, aged 32, had had an attack of pneumonia in the left lung two years previously, and had since frequently been troubled with a cough.

History of Present Illness.

He was suddenly seized with a severe pain in the left iliolumbar region and dyspnoea. He had all the physical signs of pneumonia of the lower lobe of the left lung; the expectoration was blood-stained. Temperature 104° F. Hot applications and a calcium chloride mixture quickly relieved the severity of the pain. On the third day there were signs of heart failure necessitating digitalis and strychnine instead of the calcium chloride; his heart recovered its force under this treatment. His temperature was very irregular, ranging from 100° to 104° F. On the fifth day a severe general bronchitis supervened, with profuse expectoration which he found very difficult to get up, and he was becoming cyanosed; a mixture containing ammonium chloride and ipecacuanha wine gave him relief. On examination of the affected lobe it was now found that the previous tubular breathing had disappeared and no breath-sounds could be heard over it except a faint murmur over the upper part of the lobe at the back. The outline of the dullness corresponded with the lobe. There was no displacement of the apex-beat; the lung was in a condition of massive pneumonia. From this till the ninth day, when a crisis occurred, his illness was uneventful.

A month after the crisis there was no improvement in the local condition, in spite of counter-irritation, tonics, etc., but his temperature was normal; he was allowed to get up, and after a week he got out of doors, but was extremely weak and

had a distressing cough which only brought up a small quantity of viscid yellow sputum. He remained in very much the same condition for another six weeks (ten weeks after the crisis), so that I was afraid he was doomed to fibrosis of the lobe. Knowing that thiosinamin had the power to dissolve pathological fibrous tissue, I determined, as a last resort, to give him intramuscular injections of fibrolysin. The morning after the first injection he brought up a large quantity of greenish-yellow sputum, and continued to do so during the treatment in gradually decreasing amount. He received an injection (2.3 c.cm.) every second morning and had eighteen in all. His lung has completely cleared up; his cough has almost disappeared; the sputum is reduced to a small quantity in the morning, and he is steadily increasing in weight, as much as 3 lb. a week.

When the tubular breathing disappeared the diagnosis had to be made between pneumonia complicated with effusion into the pleural cavity and massive pneumonia. The limits of the dullness and the normal position of the apex-beat made the latter most probable, and the result of the treatment confirmed it. The unchanged condition of the lung ten weeks after the crisis made the prognosis as to resolution very bad, although I am aware resolution has taken place after eleven weeks (Osler). The fibrolysin injections are practically painless.

The following report on the sputum during the fibrolysin treatment was made for me by Professor McWeeney:

Naked eye.—Thick, greenish, muco-purulent.
Microscopically.—Genuine polynuclear leucocytes numerous. Micro-organisms not very numerous and consisting of—

(*a*) Gram-positive encapsulated diplococci (probably pneumococci).
(*b*) Gram-positive streptococci.
(*c*) Gram-negative plump diplococci.

On culture on ordinary agar only (*b*) and (*c*) grew. (*c*) Strongly resembles Pfeiffer's *Micrococcus catarrhalis*.

A CASE OF CHYLOTHORAX:

WITH A RECORD QUANTITY OF FLUID WITHDRAWN FROM THE LEFT PLEURAL CAVITY, AND ULTIMATE RECOVERY.

BY J. PENN MILTON, M.R.C.S.ENG., L.R.C.P.,
UDAL TORRE SANATORIUM, YELVERTON.

THE following case of chylothorax, I believe, constitutes a record in the amount of fluid withdrawn from one pleural cavity at one sitting—namely, 300 oz. (15 pints). The case is interesting because of its long standing, and also from the fact that the patient has made a good recovery, which is somewhat unusual.

K. D., aged 25, formerly a female telegraphist, consulted me in the summer of 1905 for general ill-health and amenorrhoea. She was anaemic, and crepitations with dullness were found at the right apex. Tubercle bacilli were found in the sputum. The heart was displaced slightly to the right, and the base of the left lung was dull. As the diagnosis was apparently evident, open-air treatment was carried out, but not in a sanatorium. I did not see the patient again until February, 1907, when I found her in bed in a helpless condition. She had been on her back for many weeks, and her parents reported that she had often been at death's door. The left chest was full of fluid, and this was responsible for most, if not all, of the symptoms.

She was admitted to my sanatorium on June 27th, 1907, when the physical signs were the same as in February, but her general condition slightly better. There was much dyspnoea on exertion. Emaciation was not marked. The facial expression was anxious. The temperature was normal. The chest resembled a barrel, with bulging intercostal spaces on the left side, and complete collapse of the left lung. The spine was curved to the right. Cardiac and breath sounds could be heard on the left side, evidently conducted from the right side through the fluid. The heart was in the right mid-axillary region, very near the surface, and a loud systolic murmur was present. The right apex had quite cleared up since 1905, and only roughened breath sounds and prolonged expiration were heard. The chest measurement was: Right, 16 in.; left, 18½ in. The radial pulses were unequal, the right being greater than the left.

On July 1st an exploratory puncture confirmed the diagnosis of fluid. On July 2nd a trocar and cannula was inserted just below and to the outside of the angle of the scapula; the fluid was allowed to run until it had exhausted itself, the remainder being withdrawn by aspiration. The total quantity withdrawn was, approximately, 300 oz. (15 pints), weighing roughly 23 lb. Some was spilt during the operation.

The following is the report of the bacteriologist of Messrs. Ferris and Co., of Bristol:

"Yellowish, turbid, puriform fluid. Specific gravity, 1027. Reaction alkaline. Cells conspicuous by their absence; so few and disintegrated that differential counts could not be made. No tubercle bacilli, but a few cocci, mostly in pairs, and one or two bacilli. The fluid contains a large amount of fat and also of coagulable albumen. It is, therefore, like the fluid met with in cases of chylothorax."

I began the operation at 10.15 a.m., with the assistance of my nurse, the patient being placed in a comfortable position, and the trocar inserted as above described. Delays occurred, owing to the onset of cough and attacks of faintness. Digitalin hypodermically was given, also brandy by the mouth, the patient picking up each time. There was such a large amount of fluid to be withdrawn that I thought of repeating the process in a day or two, but as the general condition of the patient was so good and there were no signs to contraindicate it, I completed the withdrawal of as much fluid as would come away, and with no ill effects, as the result shows. The operation was concluded at 4.15 p.m. The physical signs at the finish showed the heart just to the right of the sternum, and it had receded more into the thorax. The pulse was good, but slightly intermittent and quick. Dyspnoea was much relieved. There was a slight pneumothorax, induced by the entry of air through the cannula; it occurred to me that this was good, as the air took the place of the fluid to a certain extent and prevented a little the shock generally following too quick a relief of tension, and in this case also too quick a change in the position of the heart. From this point to the date of her discharge convalescence was uneventful and rapid.

The physical signs of the chest on July 29th, the date of discharge, were: The left lung had expanded nearly to the base, at which there was a very small collection of the fluid left after aspiration. The measurement was: Right 14 in., left 15½ in.—a diminution of 2 in. on the right and of 3 in. on the left. The heart was behind the sternum and slightly to the left of it. The systolic murmur had disappeared and the radial pulses were equal. The spine was almost straight.

The following points, observed during convalescence, are interesting: When the patient started exercise she complained of a feeling of lost equilibrium, which was natural considering the position of the spine and the weight of fluid withdrawn. As the spine became straight equilibrium was recovered. The pneumothorax disappeared in a few days. Menses, which had been absent for a long time, became re-established. The weight gained from July 2nd to the 29th was 9 lb. The temperature was normal throughout except for a slight rise on first going out.

On August 22nd last I examined K. D. at her home in Cornwall. Her improved condition was remarkable, and her general appearance, beyond a slight look of weakness, was one of health. She could walk several miles without discomfort or dyspnoea, and she was up and about all day. The left lung had expanded practically to the base, and the air entry was good; it was very slightly dull low down. She eats well, feels well, and sleeps well. There is no apparent re-collection of fluid.

The patient has been ill since early in 1905, and her condition was always one for alarm. As soon, however, as the fluid was withdrawn, recovery was remarkable in its quickness. I am unable to find that such a large collection of fluid as 15 pints has ever been withdrawn from the pleural cavity at one sitting.

In Fowler and Godlee's *Diseases of the Lungs* Dr. Fowler quotes a case in which 264 oz. (13 pints 4 oz.) were withdrawn over a period extending from October to January, 80 oz. being the largest quantity withdrawn at one time.

Suggestions have been made that the fluid in my case was withdrawn from the abdomen through the pleural cavity. The position of the insertion of the cannula at the angle of the scapula, its length of 1½ in., and the absence of all abdominal signs, disproves this theory.

The original signs in the right apex, which have cleared up in a remarkable manner, point to the case being of a tuberculous nature, and, as it has apparently gone on to recovery, it is probable that compensation by anastomosis through the right lymphatic duct has taken place, and that the original lesion in the thoracic duct has healed similarly to the disease in the right apex. Dr. Kingston Fowler (loc. cit.) says: "We are not, indeed, aware that recovery has ever occurred, but if obstruction is slowly produced it is quite possible that, as suggested by Dr. Cayley, an anastomosis may be established through the right lymphatic duct." Of the two cases quoted by Dr. Fowler (1) his own case died in eight and a half months; (2) in Dr. Martin's case death occurred in six months. My case has been bad for at least two and a half years, is now apparently well, and I feel no doubt she will become a permanent cure.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF OPHTHALMOLOGY.

Louis Hy. Tosswill, M.B., President.

Mr. Tosswill inaugurated the work of this Section by a few words of welcome, in the course of which he mentioned that the Eye Infirmary at Exeter was founded only four years after Moorfields. He then called on Dr. Landolt to open the first discussion.

DISCUSSION ON THE FORM AND MANIPULATION OF INSTRUMENTS USED IN OPHTHALMIC SURGERY.

OPENING PAPER.

By Dr. E. Landolt,
Paris.

I feel that it is somewhat rash on my part to come and talk about ophthalmic surgery in a country which has seen and still possesses such valuable masters in our art. But it is precisely for this reason that I have chosen my subject. In talking art to artists, one is better understood than in talking to mere workers in art. Our special branch of surgery is a part of the larger sphere of general surgery. Some of us, although not yet old men, remember what may be called the pre-ophthalmic epoch, when surgeons interposed a cataract operation between two amputations, and performed plastic operations on the lids as they would cover a loss of substance resulting from an ablation of the breast. We shall do well not to lose track of what our venerable mother, general surgery, has done and is doing, especially in following conscientiously the rules of asepsis; but with regard to *operative technique* we may well emancipate ourselves from the older methods and evolve new ones more suited to our particular problems.

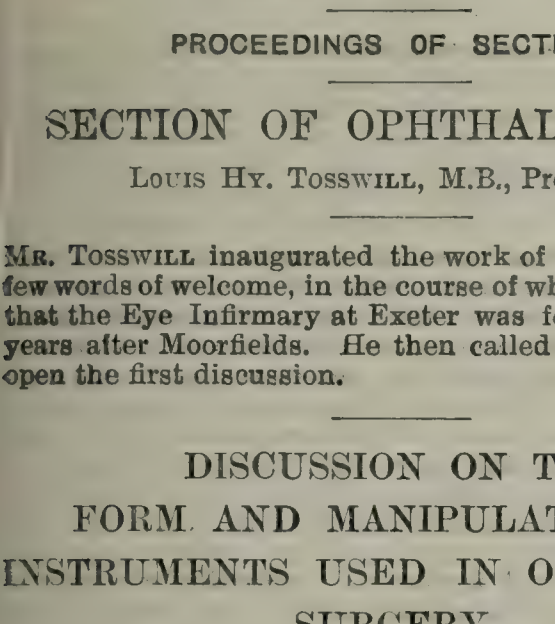


Fig. 1, A and B.—Correct way of holding the linear knife with the ends of the fingers, and handling it with the forward and backward movement of the fingers.

I should venture to assert that many of the instruments that we employ still retain the form and design given to them by the general surgeon, and that therefore they are less well adapted to our purposes than might well be the case. The imperfections may easily be accounted for when we consider the differences between our operations as compared with those of the general surgeon.

Our field of operation is a very limited area. The globe of the eye, the site of our most important operations, is the most delicate and the most movable organ in the human body, and, further, the most difficult to fix in the position required by the operator; and yet our operations demand mathematical precision in execution and the attainment of healing by first intention. In order to

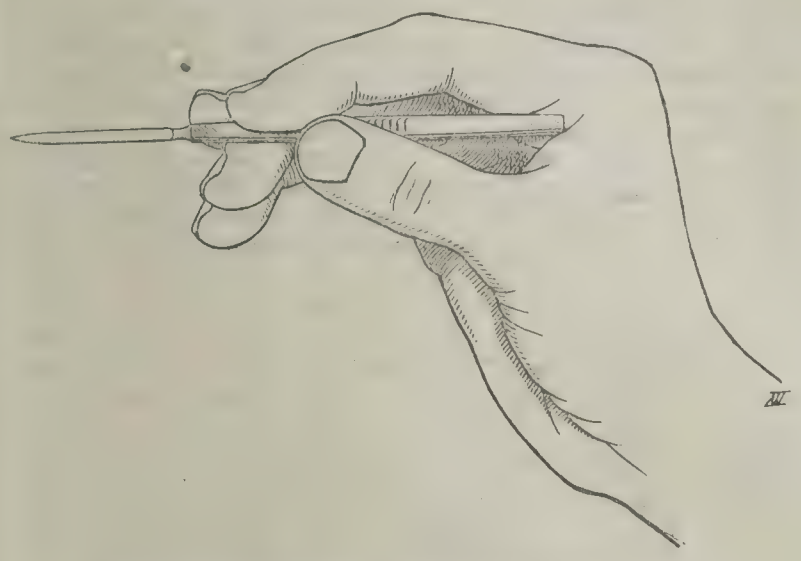


Fig. 2.—Incorrect way of holding the linear knife.

achieve these results, conditions different from those of general surgery are essential, or at least most desirable.

(*a*) In order to attain to the requisite lightness and delicacy of handling, we must bring our finger tips as close as possible to that portion of the instrument which is to perform the actual work—let us call it the "active part" of the instrument—because the tips of the fingers possess the most accurate tactile sensation.

(*b*) The requisite movement should be obtained from the finger-joints and not from the wrist, and even less from the arm. These two essentials will be obvious if we consider the execution of an exact drawing of small dimensions.

(*c*) To obtain the requisite lightness and delicacy of touch we must use the minimum of muscular effort in working with our instruments. A heavy or slippery handle, a forceps with a too resistant spring, etc., require a force which naturally detracts from the fineness of the execution.

(*d*) Resting the little finger on the orbital margin of the patient gives a support to the hand which will make the movements of the fingers steadier and more precise, just as the draughtsman supports his hand with the little finger on the paper. Still more important, this procedure ensures that the operator's hand moves with the patient's head, and any sudden movement on the part of the patient is thus discounted. If the hand of the operator is independent of the patient's head, it might happen that the patient would injure his eye against the instrument.

A few illustrations taken from treatises on ocular surgery, recently published in different countries, will show you how these principles of which I have spoken are sometimes ignored even by those who venture to teach (see Figs. 2, 4, 13 and 14).

Let us now see how far the instruments, in the form they are furnished us by the manufacturers, fulfil these postulates. In all surgical instruments we can distinguish three portions—the *handle*, the *active extremity*, and the *intervening part*, which we shall call the *shaft*.

Considering first, the *scalpel*, you will remark at once, even in the small scalpels, (Fig. 5) that the blade is too

long, and is at such a distance from the handle that it is impossible to take a point of support on the patient's face; consequently our sections will lack precision.

I show you here the instruments with remarks on the label attached to them. This form of scalpel may be well suited for major surgery, but it is not the proper instrument for operations upon the eyelids. Here is the form which I recommend for both the large and small scalpels. (Figs. 6A and 6B.) The blade is separated from the handle by a very short shaft, and is much shorter than the blades of most of the scalpels supplied by the trade. These scalpels with a short and strong blade are very convenient to handle. They adapt themselves well in the hand and bring the fingers near that part we are incising, and we are able to turn them easily in all directions. We have almost the sensation of operating with our own fingers, and readily appreciate the resistance of the tissues which we attack (skin, muscle, periosteum, etc.), and so are able to use the required force.

Fig. 3.—Correct way of holding the curette, spatula, etc.

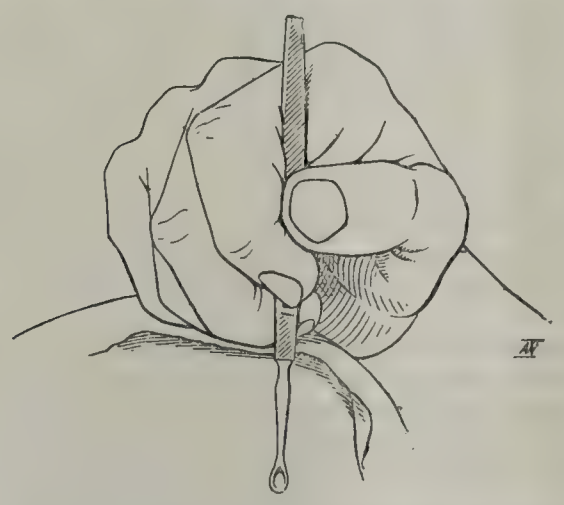


Fig. 4.—Incorrect way of holding the curette.

The blades of the *cataract knives* are generally well made and of good dimensions, as the makers of them have the good sense not to separate the blade from the handle by a long shaft. On account of this the instrument can be held as it should be by the fingers, and the little finger can be applied quite naturally to the orbital margin.

With *iridectomy knives*, however, we find the same fault as with scalpels. The shaft is too long. We are not able to apply our little finger to the orbital border during the section, or at least not without abandoning the handle and holding the instrument by the shaft, which is a bad procedure. The handle and not the shaft is made for the grasp. Here are some iridectomy knives—one the ordinary form with a shaft of 35 mm., the other with a shaft of 22 mm. (20 mm. would be sufficient).

You notice at the same time the curved shape of my knife. In this shape movements of the instrument take place in its curved axis, and give it more force and accuracy. (Fig. 7.)

May I also call your attention to the form of the blade. The edges of the blade, instead of forming, as usual, two straight lines joining at a more or less wide angle, have towards the apex a slight incurvation. The point of the knife forms thus a much smaller angle than the rest of the blade. This curvilinear shape of the blade answers its purpose much better than the usual form. The latter would be right if the body which we attack had throughout the same resistance, but when we do an iridectomy, we find first a strong resistance at the corneal line; the point of our instrument having passed through this part

Fig. 5.

penetrates into the aqueous chamber which offers no resistance. It is therefore essential that the blade of the keratome should be more pointed as long as it passes through cornea and sclera. The point having passed through these tissues, the rest of the blade follows easily, whatever its breadth may be.

Look at the shaft of this *Taylor's scoop* (Fig. 8) and this *Pagenstecher spoon*, and see how long they are! How is it possible to execute satisfactorily with such instruments those most difficult of eye operations: the extraction of a dislocated lens, or of a lens in its capsule? It removes the operator's fingers to too great a distance from the patient's eye, and also from the active end. In order to remedy this inconvenience, one is tempted to hold the instrument by the shaft only, and run the risk of its thin round shaft revolving in the grasp, and further of destroying the proper balance of the instrument. The same is true of cystitomes, curettes, and spatulae—in fact, of all the instruments which we introduce into the globe. Let us curtail the shaft of all these instruments to its proper length. (Fig. 9.)

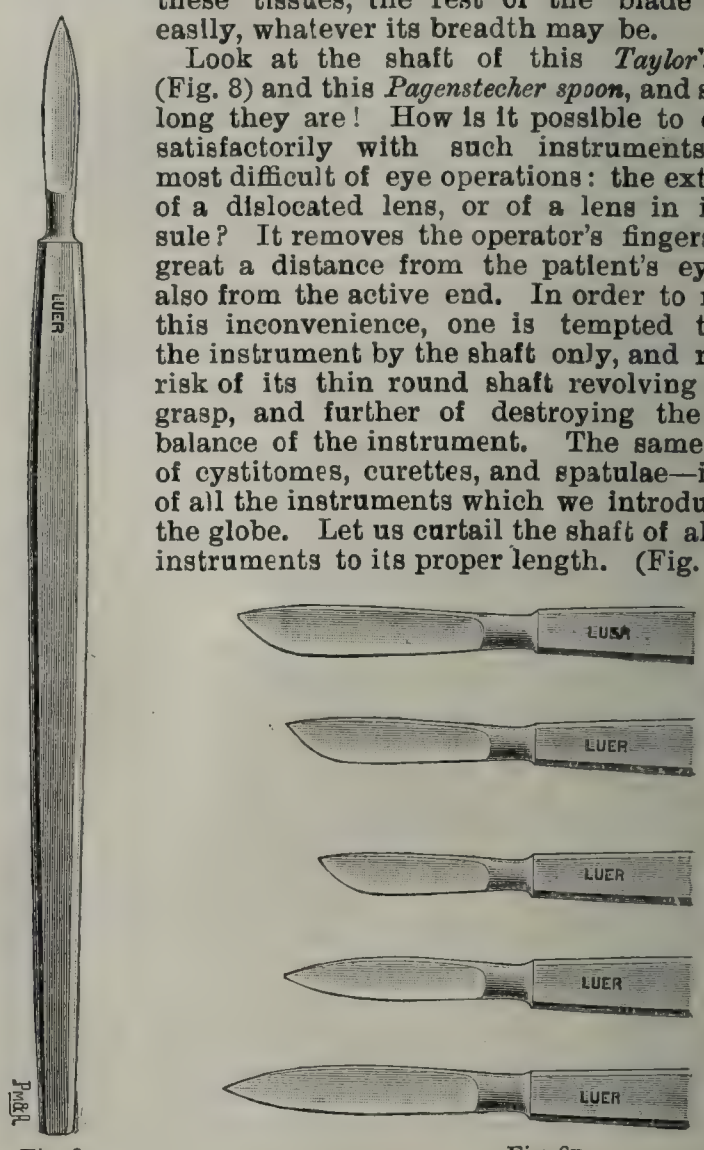


Fig. 6A. Fig. 6B.

THE HANDLE.

It seems to me sometimes that the importance of the handle of our instruments for our delicate operations has not been sufficiently appreciated. We may consider it from the point of *material*, *form*, *dimensions*, *weight*, and *surface*. The handles of the instruments were formerly all of ivory.

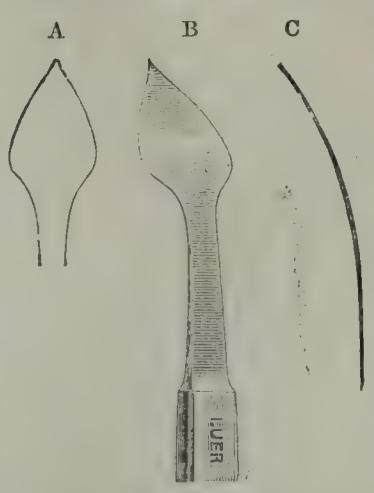


Fig. 7.

Ivory is an ideal material for this use, it is not too heavy or too light, it is a poor conductor of heat, but its best quality is the character of its surface—it is not slippery, and yet adheres delicately to the fingers. We are thus able to manipulate the instrument with accuracy and lightness as well as security.

But we have been educated in the science of asepsis, and the sterility of our instruments must be our first consideration. There is no doubt that the ivory handles, as the makers give them to us, do not bear well the high temperature required for sterilization. But in reality it is less the ivory, than the cement and resin which are used in

fastening the blade to the handle, that give way under the high temperature. The resin melts and the blade soon hangs loosely in the handle. If, however, we can discover a cement which is not spoiled by heat, or if the maker will take the trouble to fasten the blade with a screw in a metal matrix made secure in the handle, this invaluable material may still be made use of. Although ivory cracks and is spoiled after repeated exposure to 140° C. it is able to stand several sterilizations, and the handle can then be changed, as ivory is not an expensive material.

Instead of trying to save ivory for us, the makers of instruments have substituted for it iron, steel, and aluminium. Our brothers in general surgery have accepted this change without a murmur. Of course, when the instrument is held by the whole hand, the material makes little difference, but with us, who must manipulate our instruments with lightness, the weight and surface of the handle is of capital importance.

The handles of steel and iron are too heavy for our work, even the hollow ones as they are furnished; their weight and slippery surface make us grip them with so much muscular effort that the delicacy of our manipulation suffers. The rough surfaces, although they are to be preferred to smooth ground surfaces, are not satisfactory. The ideal material is still ivory, and the only thing which approaches it is aluminium.

Here are handles which come from London and Paris and satisfy me completely from this point of view.

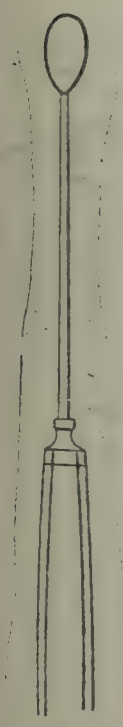


Fig. 8.

Fig. 9.

Aluminium has another quality in which it approaches ivory, that is, lightness; it is superior to ivory in the ease with which it stands dry sterilization. Aluminium, however, at least that which our instrument makers use, is not always pure and is spoiled by certain antiseptic solutions; but this is of no importance, as dry heat sterilization is to be preferred to boiling, and simple sterilized saline solution to so-called antiseptic solutions during the operation.

There is little or nothing to say against the *form* of the handles supplied to us by the best makers. The handle thickens a little in its third part nearest the blade, a section of it showing a rectangle with bevelled edges. The surface of the cataract knife blade, as the iridectomy knife blade, is parallel to the broad side of this rectangle. This is quite correct. Though we hold these instruments in a different fashion, one must always have the tip of the thumb on one of the broad surfaces and the tips of the first and middle fingers on the opposing broad surface of the handle, so as to prevent its rotating on its axis without the operator's wish. If, on the other hand, he desires to rotate slightly the instrument, he must be able to do so easily; this the bevelled edges permit. The corners must therefore not be sharp but rounded somewhat, so that the movements can be made slowly and precisely.

It sometimes happens that the blades of curettes and vectis are placed perpendicularly to the broad side of the handle, instead of being parallel to it. This is an unpardonable fault.

It is natural that instruments which are rotated around their axis while in use should have a handle a section of which is square, with rounded rather than bevelled edges.

A word in regard to the length of the handle, which is of some importance. I have never found a handle too short, but I have often had to criticize excessive length. The centre of gravity is in such cases too far away from the fingers, notably in those instruments which (as the iridectomy knife, cystitomes, vectis, etc.) are manipulated exclusively by the finger tips without the support of a phalanx. Nothing is easier than to remedy this error.

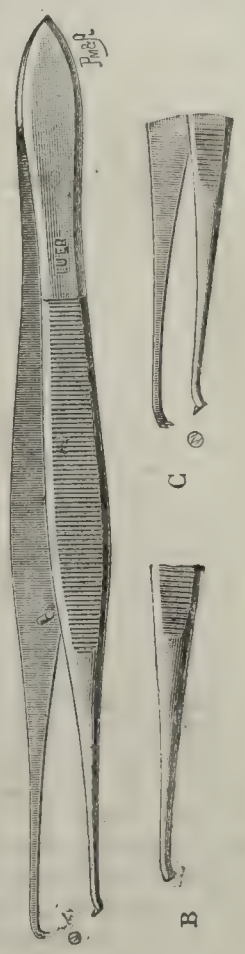
The Forceps.

The forceps is such a simple instrument, and so much in use, that one would think it would have attained great perfection of form, but this is not always the case, especially in the forceps that we use in ophthalmic surgery. In most of the forceps the spring is too stiff. This is a great inconvenience, for reasons we have already expressed.

Even the ordinary forceps have often too strong a spring, whilst, on the other hand, the blades are too weak. When we seize an object with some force, like the periosteum in extirpation of the lacrymal sac, the blades come together and cause the teeth to separate, and the seized tissue slips away. We must demand a light spring and strong blades for ordinary forceps.

Another thing to criticize in most forceps is that the extremities of the blades are too long. The portion below the grip should be shortened by almost 5 mm.

A further remark concerning the teeth of the forceps: We rarely apply the forceps perpendicularly to the object we seize. Generally the forceps make an angle of 45° with the surface upon which they are to act, and consequently only one or two of the teeth are in contact with the tissues. In order to remedy this inconvenience, I have for many years had my forceps made so that the teeth are placed obliquely to the blades and perpendicular to the surface we wish to seize (Fig. 10).



A B

Fig. 10.

These forceps are made with two or three opposing teeth, in models of different strength.

Allow me to show you a forceps which I have had made for a special purpose. Its form is different from the usual one. This is the forceps I use when I cut a buttonhole through conjunctiva and Tenon's capsule for operating on an ocular muscle. The introduction of the muscle-hook is only successful when we can see the sclerotic at the bottom of the buttonhole; it is only then that the hook will slip under the muscle without folding it. With an ordinary forceps one gets insufficient hold of the tissues. The layers which cover the muscle are so many that, when one tries to incise them successively, one almost always goes astray, and is surprised at the delay in reaching the sclera. I have had this model constructed with very sharp teeth, so that they lock with the points crossing one another (crossbill forceps). With this forceps one grips the tissues much deeper, and usually succeeds in cutting at once to the sclerotic.

The Scissors.

The handling of the scissors should be governed by the same principles as that of the other instruments. They should be steadied between the extremities of the fingers only, and the active part of the instrument should be as near as possible to the finger-tips.

To attain this purpose, the scissors, as you all know, should be held by the extremities of the first four fingers. The end of the last phalanges of the thumb and ring finger are delicately inserted in the rings of the scissors, so that the simple movement of those two fingers will open or close the blades. The index finger, which, of course, should be curved, is applied to the crossing. The extremity of the middle finger is applied, on the opposite side, to the ring and corresponding handle. Thus the scissors are steadied by the thumb and ring finger on the sides, by the index finger above, and by the middle finger underneath. They can escape in no direction, and can even be turned over without any difficulty. Moreover, they can be worked with the greatest lightness.

This method of holding the scissors has another great advantage. Owing to the fourfold contact of the instrument with the most sensitive parts of the fingers, the scissors are no longer simply a *cutting forceps*, they become

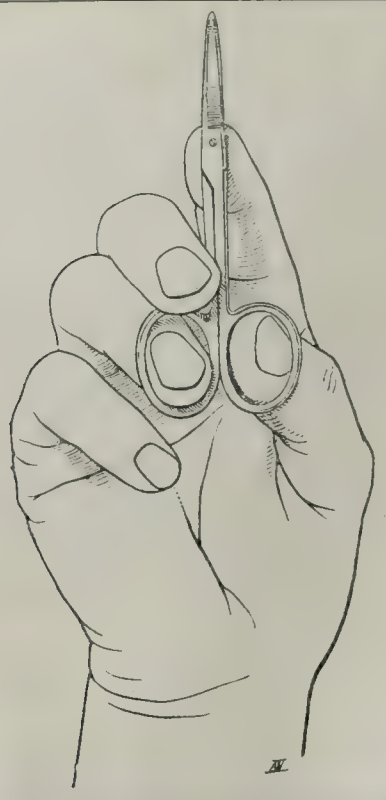


Fig. 11.—Correct way of holding the scissors.

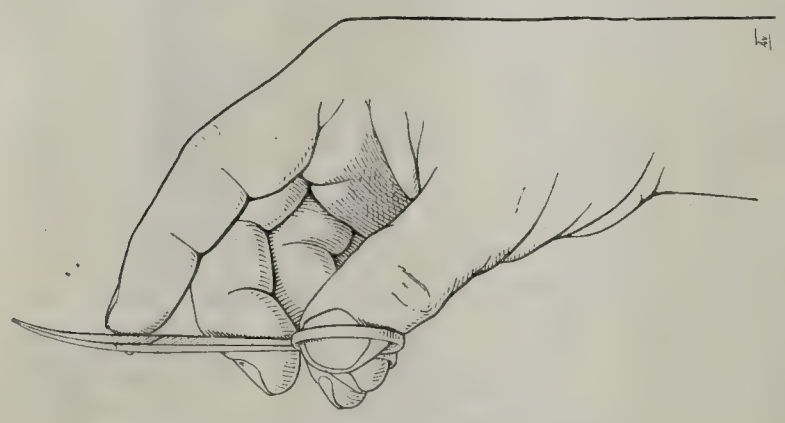


Fig. 12.—Correct way of holding the scissors.

a most sensitive probe, and can give us most valuable information as to the nature of the tissues with which they come in contact, and as to the precise situation of the points of the blades. Moreover, the tip of the index finger being here again as near as possible to the active part of the instrument, it can be handled with the greatest degree of precision.

To ensure proper handling, the scissors should be proportionate to the hand of the operator. The hand being half-opened and the thumb and ring-finger being inserted in the rings, the tip of the curved index finger should rest exactly on the lock (Figs. 11 and 12).

The scissors usually supplied to the profession do not always fulfil this condition; very often the handles are too long (Fig. 16), and the operator, if his hand is small or medium-sized, is obliged to extend outwards his index finger, and by so doing mars the lightness of his movements.

Generally the scissors are unnecessarily pointed and the handle too delicate. The blades should be thin in most of the scissors used in ophthalmological practice, but the handle should be strong and solid.

We might indulge in further criticism of the instruments at present in general use, but our time is limited. If we remember the fundamental rules in the handling of instruments, we shall be able to give to the manfacturers the necessary directions for them to turn out instruments really fitted for our purpose. The essential thing is never to lose sight of the classical principles of ocular surgery which have been followed by the greatest masters in our art—Desmarres, v. Arlt, v. Graefe; in this country, Bowman, Critchett, and others well known to us all, whom I refrain from mentioning, since, fortunately, they are still amongst us.

DISCUSSION.

Mr. JESSOP (London) agreed with the points stated by Dr. Landolt as to the handles, shafts, and active ends of ophthalmic instruments. The curvilinear keratome was a very useful instrument, for by providing an acute angled point a larger linear section could be made in glaucoma; the ordinary keratome was limited as to its section by the difficulty of making the instrument with a big angled point. The "cross-bill" forceps were exceedingly handy, especially in "advancement" cases.

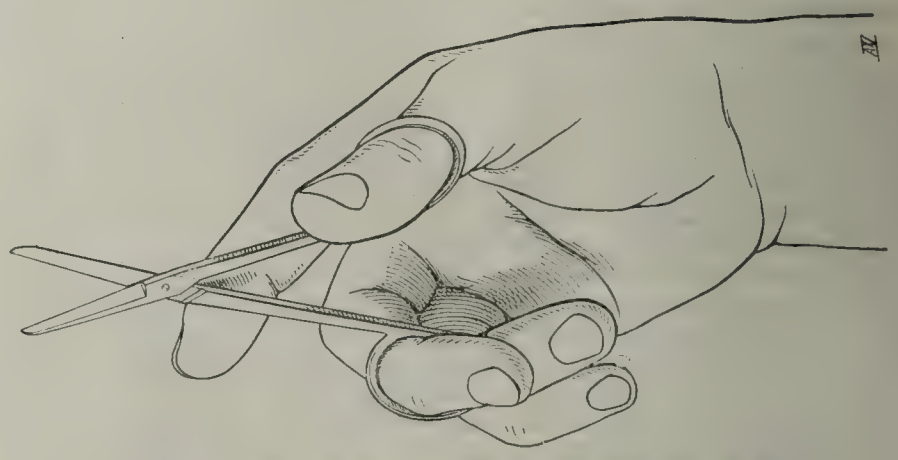


Fig. 13.—Incorrect way of holding and handling the scissors.

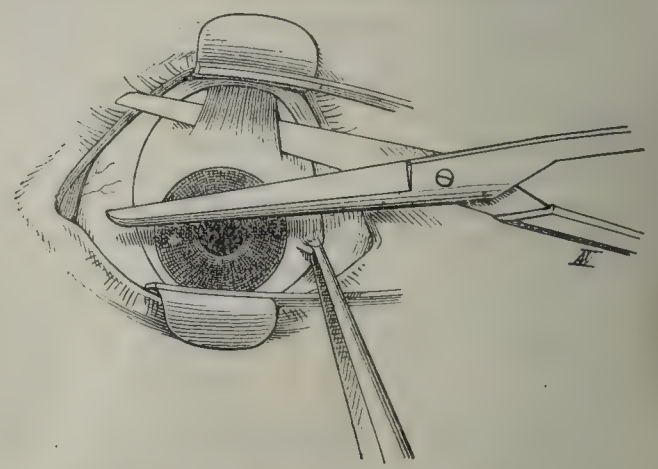


Fig. 14.—Incorrect way of handling the scissors.

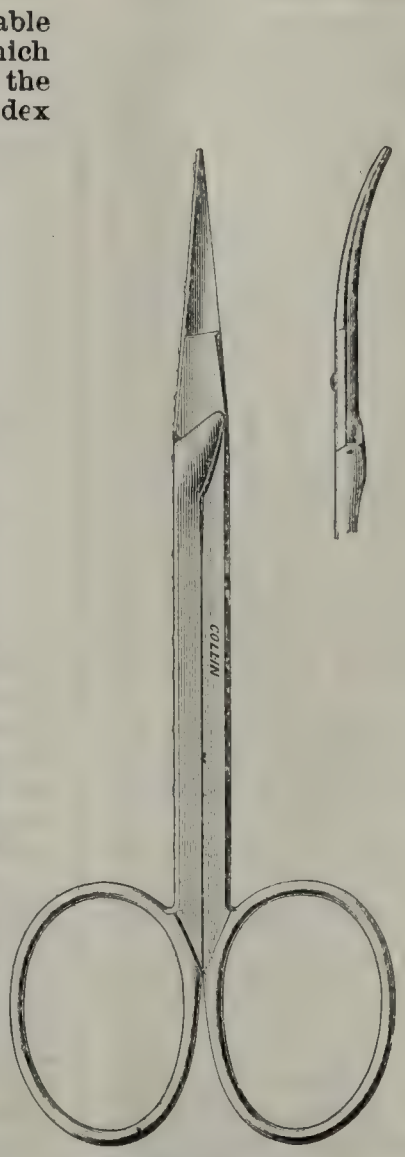


Fig. 15.—Convenient form of scissors.

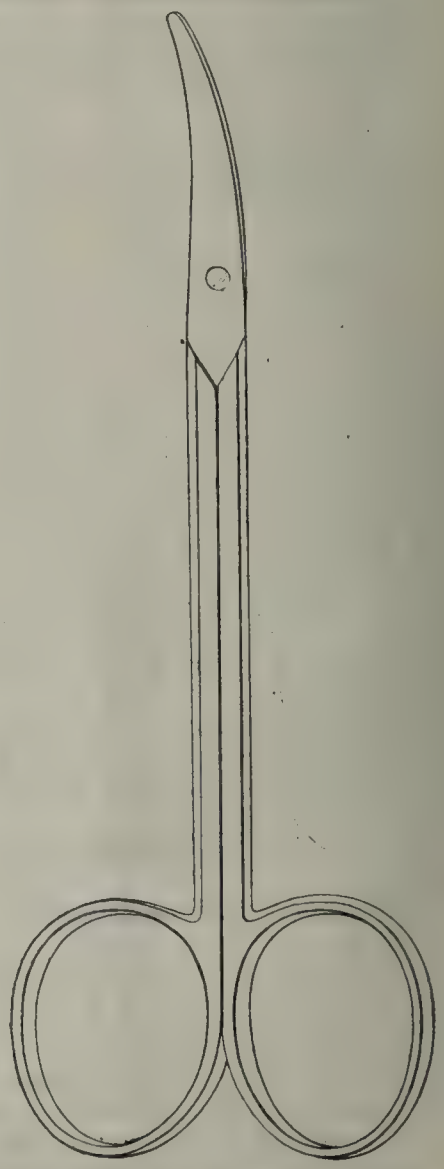


Fig. 16.—Scissors with too long handles.

Dr. Karl Grossmann (Liverpool) said that while wishful to record his thanks to Dr. Landolt for his very valuable paper—admirable and interesting as all his communications were—he should like to point out that the length of the blade and the length of the handle would necessarily vary somewhat according to individual operators. With regard to the shape of the keratome, the straight edges could be more readily sharpened than the curved edges; such at least had been his experience throughout. With regard to the handle, the drawback of ivory was due to the cement; on the other hand metal, especially steel when nickel-plated, became too slippery, and as neither fingers nor handles came into contact with the eye, the disinfection of the blade was practically all that was required, though, of course, the use of aluminium handles might get over this difficulty altogether. With regard to the fixation forceps, the position of its teeth at 45° was an excellent innovation. He had himself had such an angle introduced for the ordinary forceps for epilation of eyelashes and had used them for twenty-five years.

AN INQUIRY INTO THE CAUSES OF BLINDNESS IN 333 INMATES OF THE SHEFFIELD SCHOOL FOR THE BLIND.

By Simeon Snell, F.R.C.S.Ed.,
Ophthalmic Surgeon, Royal Infirmary, Sheffield; Professor of Ophthalmology at the Sheffield University, and Ophthalmic Surgeon to the School for the Blind.

In the Sheffield School for the Blind seventy inmates are received. During the first few years after its foundation the numbers were somewhat smaller. At the first, too, only completely blind children were admitted, but since the passing of the 1893 Education Act, a proportion of not altogether blind have been received, for by this Act the expression "blind" was held to mean "too blind to read the ordinary school books used by children." The incompletely blind have, however, formed a very small proportion of the inmates, and for the purposes of this paper all the cases may be considered as blind in the ophthalmic sense, with rare exceptions. Under the Education Act, 1893, also, no children are retained in the school beyond the age of 16, whereas in the first years a few were kept for a longer period.

The seventy beds are allotted equally to males and females, and therefore of the total number no information is afforded of the relative frequency of blindness in the two sexes. When dealing with the various causes of blindness, some information in this respect can, however, be gained.

During the early years the inmates were drawn almost exclusively from Sheffield and the neighbourhood. Since the 1893 Education Act came into force, the majority of the children have, however, come from a very wide area, embracing in fact most parts of England. At the present time there are twenty inmates from Sheffield and district and fifty from distant places, and this proportion has practically held good since 1893.

Unfortunately, the medical certificates have seldom afforded the exact information needed for such an inquiry as this. In many cases the examination disclosed all that was necessary, but in some others, when possible, inquiries from parents and others have been made to elucidate doubtful points. All the cases, except a very few, have passed under my own observation, and of the small number of exceptions the cause of the blindness was usually easily recognized, and they have therefore been included in the series under review, but when the data have been insufficient or unreliable they have been excluded.

Ophthalmia of the newborn provides, as it does unfortunately in all similar institutions, the largest number of inmates. Out of a total of 321 no fewer than 136 can with fair accuracy be traced to the results of this disease, being more than a third, or 42 36 per cent. At any time it is possible to collect together a number of the children illustrating in both eyes the varying destructive changes wrought by this disease. A careful consideration of the records for successive years does not even point to a diminution in more recent times. The ravages of this disease are therefore clearly shown to be still rampant, and this notwithstanding the efforts made in some quarters to demonstrate that it must be regarded as a preventable disease, or that when present it can, in the great majority of cases, be successfully treated.[1] To prevent, and indeed stamp out, the disease, all that is needed is to give attention to the baby's eyes at its birth.

It is believed the medical profession has become much more alive to this important fact, but much yet needs to be done to bring home to the midwives, in whose practice the cases mostly occur, the urgent necessity there is for cleanliness and simple preventive measures. It may be that the new order of midwives will be made better acquainted with their duties in this respect. In this connexion, it is pleasing to note that recently the Central Midwives Board censured a midwife for not calling in the aid of a medical practitioner in a case where ophthalmia neonatorum was present,[2] and that later a midwife was struck off the rolls for such neglect.[3]

My practice at the Royal Infirmary did for some years lead me to hope that the disease was becoming less frequent, but more recent experience has rendered me less sanguine in this respect.

Ulceration of cornea, apart from ophthalmia neonatorum and the specific fevers, was the cause in 7 cases, or 2.18 per cent. There has, in some instances, been a difficulty in separating this class from ophthalmia neonatorum in consequence of imperfect history, but if any error in this respect has arisen it has only been in two or three cases, and has not, therefore, if incorrect, affected materially the number classed under ophthalmia neonatorum. Of the 7 cases, the ages at which sight was lost were only given in 5, and are as follows: At 7 years, 14 years, 7½ months, 3 years, and 16 months. Three were boys and 4 girls.

Trachoma.—There was only 1, or 0.31 per cent., that can be definitely classed under this heading.

Interstitial Keratitis.—Ten, or 3 11 per cent., are found under this heading—3 boys and 7 girls.

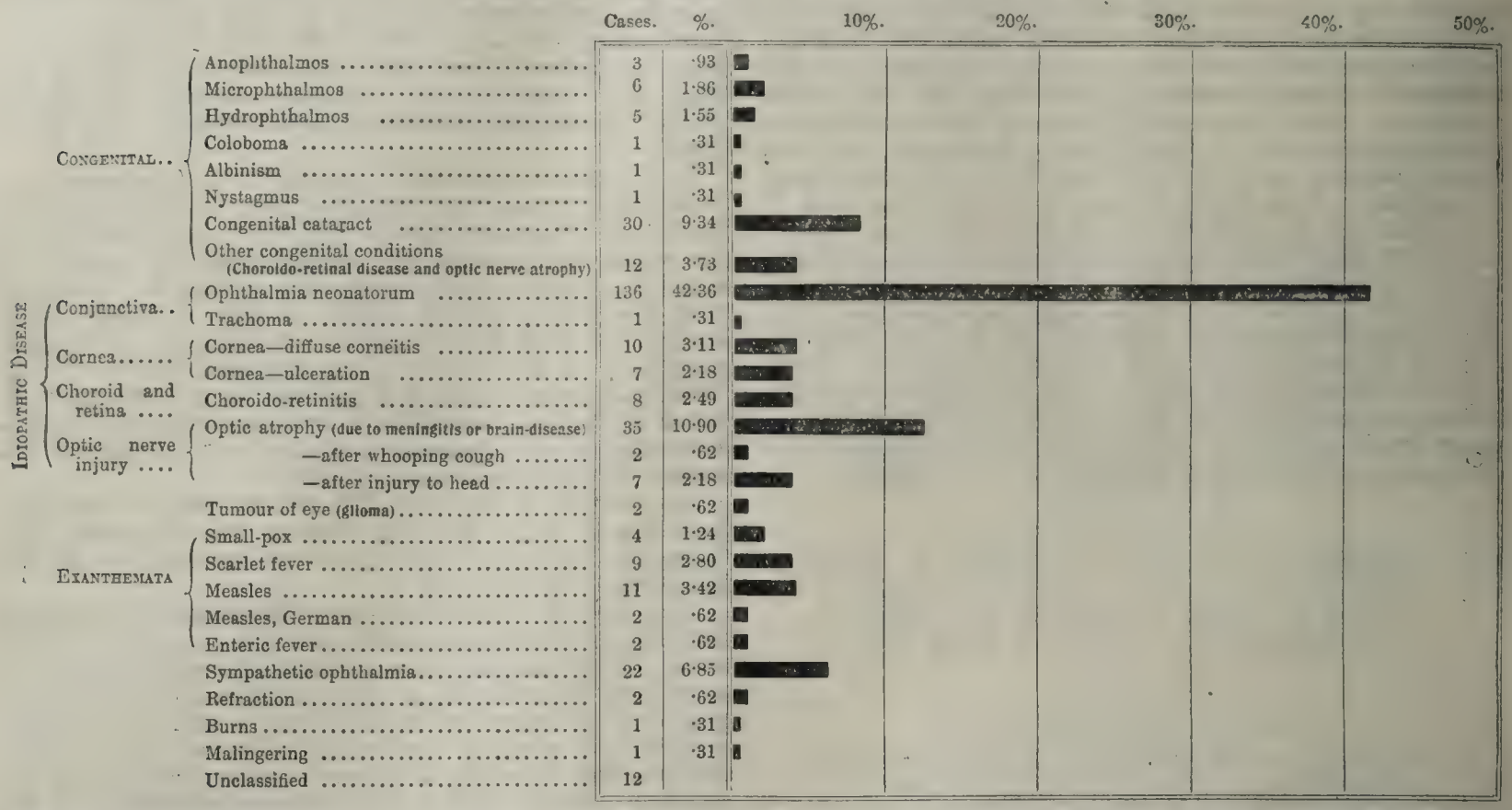
Sympathetic Ophthalmia.—There are 22 cases, or 6.85 per cent., to be classed under this heading, 14 of them being boys and 8 girls. One may perhaps be regarded as doubtful, the injury being said to have resulted from a tin of hot coffee at 18 months of age, but whether or not both eyes were injured it is hardly possible to say. The medical certificate, however, described it as sympathetic ophthalmia. Of the remainder, 13 were injured in the right eye, and 6 were injured in the left, and in 2 the eye hurt is not specified.

The injuries are stated to be as follows: One eye had been destroyed by fever, the other subsequently suffering from sympathetic ophthalmia. One eye was hurt by a knitting needle; in 3 other cases the eye was injured by a stick; 1 by a piece of pot, the same eye being hurt subsequently by a nail; 1 by a stone; in 3 cases by a fork, in 1 by a spark from the fire, in 2 the thorn of a tree caused the injury, in 1 a piece of wire, and in 1 each a piece of iron, a burn, quicklime, spilling of caustic potash, the bursting of a glass bottle, and a piece of glass respectively was the cause of the injury. Lastly, the head and eye were hurt in a tram accident. The ages in these cases were as follows: At 11 there were 2, at 14 there were 3, at 13 there was 1, at 8 there was 1, at 5 there was 1, at 4½ there was 1, at 4 there was 1, at 2 there was 1, while 2 were designated "in early childhood," and in 8 the age at which the injury was inflicted was not stated. The eye of one child was injured twice, first by a piece of pot when 4 and again by a nail when 8, the latter injury exciting the sympathetic disease.

Congenital Defects: Anophthalmos.—There were 3 cases, or 0 93 per cent., under this heading. In one, under my care as an infant, there was a congenital cyst in each lower eyelid, but that in the left was much the larger.* Examined under chloroform, it was found that both orbits and their bony walls were properly formed, but nothing like an eyeball was discovered. Towards the back part of each orbit a feeling of resistance only was noticed. The conjunctiva covered the entire orbital cavities.

In another case the lids were very small, and the palpebral fissure very narrow. If eyes were present, they were of the most rudimentary character; none were discovered. The third case was very similar to the last. Palpebral fissure so narrow that no eyeballs could be discovered, but a feeling through the eyelids gave an

TABULATED REPRESENTATION OF THE CAUSES OF BLINDNESS, WITH THE PERCENTAGES, IN THREE HUNDRED AND THIRTY-THREE INMATES OF THE SHEFFIELD SCHOOL FOR THE BLIND.



impression of diminutive stumps. One of these cases was a boy, and two were girls.

Hydrophthalmos.—Under this heading were 5 cases, or or 1.55 per cent., aged respectively 13½, 9, 8, 13, and 7¼. In the first, a boy, it was said to have resulted from "Inflammation when aged 5 months." In the second the certificate says "Infantile glaucoma," but when I saw the boy both globes were shrunken, and he said the eyes had been big and had burst. The third case, a girl, had slight scars on the cornea as if operations had been done, and she said she had never seen. For the fourth, a girl, iridectomies had been performed. The left eye subsequently burst and shrunk to a small stump. She died of phthisis. The fifth was a boy.

Microphthalmos.—Six cases, or 1.86 per cent., are classed under this heading. In all the microphthalmos was well marked. In one[5] there was a coloboma of iris, below, running into the choroid. Vision in the right was $\frac{4}{60}$; in the left, fingers.

Coloboma. — In addition to that mentioned under microphthalmos there was 1 case, or 0.31 per cent. The coloboma was below.

Albinism.—One case, a girl, or 0.31 per cent. Nystagmus was present. Vision = about $\frac{4}{60}$. The father and mother were not related. There were no sisters, but three brothers, and they were not affected.

Nystagmus.—One case only, or 0.31 per cent., apart from any definite disease.

Congenital Cataract.—No less than 30, or 9.34 per cent., 8 girls and 22 boys, are included under this heading; in 1 the globes had been destroyed after operation, apparently by suppuration; operations had been performed on the great majority—namely, in 23 cases, 18 boys and 5 girls. In many instances, however, treatment had been abandoned before the best and final result had been attained, and opaque capsule, more or less dense, occupied the area of the pupil. These cases admitted of further improvement.

In two or three instances the operations had been successful, and the pupil was clear, but the sight was very defective or only light perception, owing to optic nerve defect.

In 7 instances no attempt had been made by operative means to improve vision; all these were lamellar cataracts, as were nearly all the others. They were all suitable cases for operation.

Lamellar cataract was present in two brothers. Inquiry has not disclosed other members of the family as affected, nor were the parents related previous to marriage.

There were also three brothers similarly affected. I put myself into communication with the father, and learnt that he had been afflicted in a like manner. He and his wife were not related. There were eight children, six boys and two girls. Another boy was in another blind institution, thus making four brothers affected, but no others were afflicted. As far as could be ascertained the disease did not extend further back than the father.

Congenital Blindness.—The cases due to retinal and choroidal disease and optic nerve atrophy number 20, or 6 23 per cent., and among them may be mentioned a brother and sister, aged at the time of examination respectively 14½ and 13. In both the optic discs were perhaps a little pale, and the vessels were thought to be small, but there was no marked change in the fundus; in the girl there was nystagmus. A communication from the father left no doubt as to their both having been born blind. The elder one (boy) was early seen by Sir W. Bowman, who testified that there was no light perception. The parents had four children besides, one a boy preceding the two here mentioned, and three children succeeding, and all possessed good sight; the father and mother were not related before marriage. The boy was "far from being bright intellectually." The little girl, somewhat crippled and dwarfish for her age, was of a bright and happy disposition, but was said not to be very quick at learning. Hearing in both was "tolerably good." A cousin of the children's father (their grandfather's sister's daughter) had a blind boy and girl. It was the knowledge of this fact coming to the mother during pregnancy that is assigned as the cause of the blindness in the elder, and the thought of the misfortune to this one as the cause of the condition in the younger. There was no other blindness in the family, nor had they intermarried; neither father nor mother had suffered from any nervous disease. The other cases included:

(1) A boy; cause attributed to choroido-retinitis. (2) A boy, both optic discs atrophied; irregular edges suggested a preceding neuritis; there was bare light perception; he was said to have been born blind. (3) A boy; in the left there was evidence of inflammation of the uveal tract; right, choroidal patches and optic atrophy; nystagmus noticed three days after birth. (4) A girl; constant nystagmus; pigment patches in each fundus; discs atrophied, right bluish-white; known to have been blind at 3 months. (5) A boy; nothing marked in fundus; V. barely light perception. (6) A boy; retino-choroiditis the cause. (7) A boy; optic atrophy and nystagmus; was said to have been born blind. (8) A girl, in which there was progressive macular and optic nerve degeneration.[6] (9) A girl; optic atrophy; blind from birth. (10) A girl; issue of niece and uncle; no l. p.; optic atrophy. (Not examined by me.)

The following cases are closely allied to those just mentioned, the defect being either congenital or noticed in very early life:

(1) A boy; discs waxy; pigment like retinitis pigmentosa. (2) Another boy had retino-choroiditis; pigment; optic

atrophy. (3) Another boy had choroido-retinitis; father and mother not related; ten children died in infancy. (4) Another had retino-choroidal changes (intrauterine). (5) Another had both discs atrophied; pigment at periphery; mother was blind. (6) Another, pigment at edges; nystagmus. (7) Another boy, aged 14, had nyctalopia (retinitis pigmentosa). He had been able to do sighted work at school until about a couple of years before; then sight became too bad. He is at the present time engaged at the Workshops for the Blind. The left eye was lost at the age of 3 by an injury from a piece of glass. A brother, a year younger, has also retinitis pigmentosa, but is at present able to do sighted work. R.V. -2.5 D $= \frac{6}{9}$, and L.V. -3 D $= \frac{6}{12}$. And in the last, a boy, there were retino-choroidal changes, especially in the macular region.

Small-pox.—Four, or 1.24 per cent., owe their blindness to this cause, and in each it was occasioned by destruction of the cornea, and blindness was complete. Three of the cases occurred during the severe Sheffield epidemic in 1887-8; the other instance, admitted to the school in 1890, came from a distance. All four instances tell the same tale of either non-vaccination in three or no evidence of vaccination in the other. Though few in number, they serve as illustrations of the severity of the eye disease in the unprotected. The same remark held good in patients during the epidemic already mentioned. All cases at that time coming under my notice were in the unvaccinated or in those in whom the period of protection had been more or less exhausted. Of the 4 instances here mentioned, 2 were males and 2 females; 1 case was not vaccinated, and had the disease when 18 months old; another, much pitted, had small-pox at three weeks, and was said to have been vaccinated after having the disease; the third case was only vaccinated in infancy, and had four fair marks, and was 16 years old when she suffered from small-pox; the fourth case was in a girl, and she had the disease at the age of 5 years; the face was greatly pitted.

Scarlet Fever.—There were 9 cases, or 2.80 per cent., resulting from this affection—6 boys and 3 girls. The ages at which the fever occurred were given in 7 cases, namely, 5½ years, 14 months, 9 years, 3½ years, 5 months, 10 years, and 6 years.

(1) One case, a boy, had scarlet fever and measles at the same time, and became blind shortly afterwards. There was atrophy of the optic nerve in each eye. (2) In another case there were only very small stumps left in each orbit. (3) In a third the left eye was only a small button, whilst in the right the whole cornea was opaque. (4) In another the stumps were so small that it appeared as if both eyes had been removed. (5) In another both eyes were destroyed. (6) In another case there was a large central leucoma in the right and in the left a smaller leucoma at the lower and inner side, allowing V. $= \frac{6}{6}$.

Measles.—Under this heading there were 11, or 3.42 per cent. In 9 the blindness seems to have resulted from ulceration of the cornea, and 2 left the institution without my seeing them, but, from the description, I should also place them them under the same category. One case had previously been under my care and had recovered a small amount of sight by iridectomies, but it was only equal to "fingers." Of the 11, 8 were girls and 3 boys, and the ages at which they suffered from measles were as follows:

Eleven months, 9 months, 12 months, 3 or 4 years, 3 years, 4 years, 17 months, 3 years, 15 months, and in two the age was not stated.

German Measles.—Two cases, or 0.62 per cent., come under this heading. One, a boy, suffered from rötheln at the age of 16 months, and the blindness was due to optic nerve atrophy, apparently following meningitis. The second was a boy, the disease occurring at 18 months of age. The right eye was a mere stump and the left staphylomatous.

Enteric Fever is responsible for 2 cases, or 0.62 per cent., and there was optic atrophy in each.

Whooping-cough.—Under this heading are 2 cases, or 0.62 per cent. In both there was optic nerve atrophy.

Optic Atrophy from Brain Disease.—These number 35, or 10.90 per cent., 18 being boys and 17 girls. Nearly all were the result, apparently, of meningitis, the exceptions being the following: Two were certified as cerebral, and another as a cerebellar, tumour; one was associated with hemiplegia, and another, whose case at the time was worked out completely by Dr. Dyson, Physician to the Blind School, was classed as cranio-tabes. Both optic nerves were atrophied, apparently after papillitis. There were peculiar lumps over the parietal eminences, and, while there was evidence of rickets, there was little doubt that she was the subject of congenital syphilis. She subsequently became imbecile and died.

Injury to the Head.—There are no less than 7 cases, or 2.18 per cent., under this heading—4 boys and 3 girls. In each optic atrophy was present in both eyes.

(1) One boy was said to have suffered from concussion of the brain after a fall out of bed when 16 months old. (2) Another boy, aged 9, whilst running, had his legs taken hold of by some one, and he had fallen, striking his head. He became unconscious, and, when he recovered, his sight had been lost. (3) Another, aged 11, had fallen backwards, striking his head. He became unconscious, and, after recovering, his sight failed, and there was only light perception in each eye. (4) A girl had been knocked down sixteen steps, hitting the back of her head. After this it appears that sight was immediately affected, and gradually diminished to light perception. (5) In another girl blindness was caused by blows on the head. No light perception, optic atrophy. Blind at the age of 2. (6) In a boy, meningitis supervened after a blow on the head. (7) A girl, when aged 2, received a blow on the head from a shovel, and blindness followed.

These cases of injury to the head followed by optic atrophy are of interest in association with the class of cases met with in adults in which fracture of the skull, chiefly in the anterior part, is followed by blindness and optic atrophy. On this subject I wrote a paper enumerating a large number of cases in the *Transactions* of the Ophthalmological Society for 1897.

Glioma in both eyes. There were 2 cases, or 0.62 per cent. In one I had removed each eye for glioma. In the other the medical certificate said that the eyes had been excised for "tumour."

Refraction.—Two cases, or 0.62 per cent. One was of compound hypermetropic astigmatism, and with correction, V. $= \frac{6}{12}$. The other was of myopia, and she had -15 D. With this R.V. $= \frac{6}{36}$, and L.V. $= \frac{6}{12}$.

Burns.—There was 1 case, or 0.31 per cent., under this heading, and the burn was caused by a fall into a lime-pit.

Malingering.—Only 1 case, or 0.31 per cent., comes under this heading, and this occurred in the early days of the school. It was a girl, aged 18½, who had been operated on for squint, and was sent from a London workhouse. Shortly after admission sight gradually commenced to recover. When she was examined hypermetropia was found and excellent vision; the left eye the squinting was amblyopic. She afterwards did work at the school as a general servant. It appears not unlikely that she feigned blindness at the workhouse to avoid work, and that she found the education of the blind more irksome than anticipated, and gradually recovered vision.

Fourteen cases were not seen by me, or examined by me, but my inquiries have enabled me to classify 6, leaving 8 which must be excluded from my report as "unclassified," and to these 8 must be added 4, the information with regard to which is too meagre to permit of classification.

NOTES AND REFERENCES.

[1] Mr. Sydney Stephenson's recently-issued book on *Ophthalmia Neonatorum* will be found to be full of most valuable information on this subject. [2] *Lancet*, 1907, vol. ii, p. 62. [3] SUPPLEMENT, BRITISH MEDICAL JOURNAL, July 27th, 1907, p. 80. [4] Congenital cysts in the lower eyelids, in one case with apparent anophthalmos, and, in the other, with microphthalmos, etc. *Trans. Ophthal. Soc.*, vol. iv, p. 333. [5] Congenital cysts of the eyelids, associated with anophthalmos or microphthalmos *Trans. Ophthal. Soc.*, vol. xiv, p 190. This boy, R., is here reported. There was congenital cyst in the right upper eyelid; the eyeball was rudimentary only; the cyst was tapped and ultimately cured The left eye was microphthalmic, with coloboma, and no light perception in either eye. [6] This case will be published later in fuller detail.

DISCUSSION.

Mr. SYDNEY STEPHENSON pointed out the higher proportion (42.36 per cent.) of the inmates blinded as the result of that preventable disease—ophthalmia neonatorum. He moved the following resolution:

> That, in the opinion of the Section of Ophthalmology, the time has come when action should be taken by the British Medical Association towards the prevention of ophthalmia neonatorum.

(This motion when eventually put to the vote was carried unanimously.)

Dr. KARL GROSSMANN had much pleasure in seconding the motion. Some years ago he had read a paper on this subject at the annual meeting of the British Medical Association, and at the International Congress at Berlin he moved a similar resolution, but it was found that the by-laws of the Congress did not admit of any action being taken in the matter. Fortunately the British Medical

Association had commenced to take up matters of this kind of late, and there was no doubt it would not only be willing, but also able, to do useful work in the matter.

Dr. CECIL SHAW supported Mr. Stephenson's resolution, and was sure the Science Committee of the Association would gladly take up the matter, but he hoped Mr. Stephenson would give some indication as to the form the proposed action should take. On the general question of ophthalmia neonatorum, he wished to mention one source of such cases which he had lately seen in Belfast—namely, chemical irritation, from too vigorous prophylactic measures carried out by midwives.

Mr. F. RICHARDSON CROSS said that in all blind asylums the larger number of patients had suffered from ophthalmia neonatorum. This disease had been long known to be an absolutely preventable condition, practically always, and it was time that the law of the State should insist on the proper simple methods for its prevention. In many infants "blind" from cataract the condition was complicated by abnormal development of the brain or nerve structures. A wounded eye in a child should be saved when practicable, so that the orbit, etc., should not atrophy; but all cases should be very carefully watched, for it was easy for a child with a wounded eye to gradually acquire a sympathetic ophthalmia without observation, and thus become gradually blind. As regards cases of optic atrophy, it was well known that many young people recovered their health after a condition which had shown all the typical symptoms of tumour; but they were blind from atrophy, the result of optic neuritis. He thought that the question of trephining should be raised at an early period of the occurrence of optic neuritis, in order to prevent this.

Dr. JOHN HERN (Darlington) said his own statistics differed from those of Mr. Snell, but only slightly; they were founded on far fewer cases. As to the cases of ophthalmia neonatorum, most of the cases he had seen had been attended by midwives, and there could be little doubt that as midwifery had largely of late passed into the hands of the midwives, unless some such action as that proposed by Mr. Sydney Stephenson were taken, this preventable disease would increase most certainly. As to the blindness from optic atrophy due to brain disease, he entirely agreed with Mr. Richardson Cross that the brain cavity should be opened if the patient could bear it. He had recently had a case in which the condition of the patient would not admit of it.

Dr. TROTTER (Perth) drew attention to the fact that ophthalmia neonatorum was diminishing in his district. He had only seen one case in the general hospital in four years, and none in his private practice. He attributed this to the use of 2 per cent. silver nitrate solution and the absence of the Midwives Bill.

Dr. ERNEST THOMSON (Glasgow) remarked that he had been particularly struck by a point in Mr. Snell's paper. Mr. Snell had come to the conclusion that ophthalmia neonatorum was not diminishing. Some months ago he (Dr. Thomson) had had occasion to go over the statistics of the Glasgow Eye Infirmary and had found that for the past fifteen years, at any rate, there had been no appreciable diminution in the number of cases of ophthalmia neonatorum coming under treatment at that institution.

Dr. E. DYKES BOWER (Gloucester) drew attention to the curious percentages of some of the diseases and injuries in the tabulated statement which was handed round. There were 9 cases of rare congenital conditions (anophthalmos and microphthalmos) out of the 333 cases; this seemed an unusually large number. There were only 10 cases of interstitial keratitis and 7 of corneal ulceration, a smaller number than one would have expected, but still more curious was the large percentage of cases of sympathetic ophthalmia—22 cases—which was generally considered to be much less frequently seen than formerly.

A STUDY OF OPTIC NEURITIS IN CONNEXION WITH NASAL ACCESSORY SINUS DISEASE.

By HENRY MANNING FISH, M.D.,
Chicago.

THE study of an affection of the optic nerve in connexion with diseases of the nasal accessory sinuses has aroused during the past few years an unusual interest in the ophthalmic world. Different authors—Ziem, Kuhnt, Posey and others—have advanced the claim that sinus disease can induce an optic neuritis, reporting clinical cases in evidence thereof, yet this causal relationship appears still to be doubted by some authors—the two lesions, when noted, being looked upon as merely coincidental. A careful search in literature, however, has disclosed about 100 cases of both primary and secondary optic neuritis with all degrees of visual disturbance, from a papillitis with no reduction in vision, to total loss of light perception. These cases, furthermore, show that each one of the nasal sinuses, the frontal and maxillary as well as the ethmoidal and sphenoidal, can cause an optic neuritis—a statement doubted by many to-day, owing to the generally accepted theory that the nerve lesion is due solely to an extension by continuity. Richet, by opening the frontal sinus, restored normal vision to an eye blind for more than a month, and Fliess's patient was able to "read the finest print" after being "about blind" for months. The vision in Hajek's case, reduced to counting fingers, returned to normal, and in Despagnot's, of maxillary empyema, it improved from $\frac{1}{50}$ to normal. Characteristic of the results in these cases is the rapid disappearance of the nerve oedema and consequent improvement in vision; thus Coppez's patient, with vision of $\frac{1}{20}$, had normal vision on the eighth day; Brawley's vision of $\frac{1}{5}$ was normal on the fourth day, and Wurdemann's $\frac{1}{6}$ was normal a few days later. Mendel's patient came with vision reduced to counting fingers and was "stone blind" at the time of the operation; light perception appeared the same day, and fine vision equalled $\frac{2}{3}$. Bourgeois improved the vision from $\frac{1}{50}$ to $\frac{1}{4}$ on the third day and later to normal. In case No. 19, of haemorrhagic neuro-retinitis, drainage of the frontal sinus, by introducing a probe into the frontal nasal canal, improved the vision from hand movements to $\frac{1}{5}$ in forty-eight hours' time. In addition to the cases of amaurosis already mentioned, a case is reported by Wolff in which "vision returned" in an eye that was "blind." In a personal case, No. 10, with total loss of light perception, vision improved to counting fingers, but on discovering a sarcoma of the sphenoid, the treatment was discontinued, and the patient died a few months later.

Risley's case is of special interest, as in 1896 he noted an optic neuritis with V. equalling $\frac{1}{2}$. Four years later the vision, reduced to $\frac{2}{50}$, improved after sinus operation to $\frac{1}{2}$. Case No. 3, with bilateral papillitis, was restored to normal, although treatment for three years by eminent ophthalmologists had been without result. Another bilateral case by Brawley, with vision $\frac{2}{50}$ in each eye, was restored to normal. In each of these two last cases, an unfavourable prognosis had been given.

Before discussing this question, it may be well to devote a few minutes to the study of sinusitis, its frequency, tendencies, and some of its symptoms. The most common type of acute sinusitis is a cold in the head, with its congestion and feeling of fullness or heaviness, often accompanied by a greenish nasal discharge. That, gentlemen, is sinusitis pure and simple—the most widespread of troubles, rather than a *rara avis*. Acute sinusitis tends to heal spontaneously—as noted by Semon, Hajek, and others—whether it be a simple cold in the head or the more or less purulent initiatory coryza of the infectious diseases. Sinus disease is usually bilateral, hence should be thought of in cases of double optic neuritis as well as those confined to one side.

Chronic sinusitis may lie dormant for months or years, only to become suddenly manifest at any time; these exacerbations are especially apt to appear during the inclement weather of spring and winter that predisposes to colds.

Dizziness is a very suggestive symptom—it was present in 19 out of 26 cases.

Pain, generally supposed to be severe, is mild in many instances, and, in some cases, is absent entirely. (Two cases never suffered any pain whatever.) Severe pain sometimes causes nausea and vomiting—Case No. 15—and in a recent case of migraine ophthalmique following influenza, the symptoms—hemicrania, vomiting, prostration, concentric contraction of 10° to 25° of the visual field—were relieved by drainage of the sinuses.

A purulent nasal discharge—another symptom expected to be found in every case—is very frequently wanting.

The failure to find this classical symptom has only too often led to an exclusion of sinusitis.

Nasal congestion, or engorgement of the turbinates, both middle and lower, is very suggestive of sinus disease.

An involvement of the external ocular muscles is a symptom by no means rare; it was present in 9 cases—33 per cent.

Pain on pressing the globe backward was noticed while rubbing my own eye during a recent exacerbation—in fact, the globe was tender to pressure in any direction. The three cardinal symptoms of closed sinusitis are dizziness, pain, either dull or severe, and nasal congestion.

The pathological anatomists report that sinus disease is very common and the clinical cases cited above show that it can give rise to an optic neuritis; theoretically, then, it should be a very frequent cause of an affection of the optic nerve. Three years ago the writer conceived the hypothesis that idiopathic ocular lesions were often but the symptoms of an affection in the surrounding cavities, and in all cases of optic neuritis the nostrils were examined, and in the recent cases the sinuses were treated, even though in some instances there were no intranasal evidences of sinus disease present. The results were surprising as well as gratifying, as in a series of 36 cases sinus disease was found to be present 26 times. The direct causal relationship was shown in the 15 cases by improvement in the ocular condition following drainage, and, on *a priori* grounds, the 11 remaining cases were also attributed to the same cause, although the connexion could not be demonstrated by any ocular improvement, as most of the cases presented more or less optic atrophy, while in others the treatment as advised was not undergone. It is conceded that some unknown etiological factor, as, for instance, an intracranial lesion, may have been present in some of the cases in this second series, but remember, gentlemen, that sinus disease can cause a bilateral optic neuritis, dizziness, pain, and vomiting—symptoms that have in several cases led to the diagnosis of tumor cerebri, and yet at the autopsy no tumour was found.

The proper examination of the sinuses would greatly reduce in number the etiological factors of optic neuritis. This pathogenesis of the cases due to a cold has already been referred to. According to Hanke, Pearce, Wolff, and others, an empyema is found at the autopsy in the majority of the cases of measles and scarlet fever. In 13 influenza autopsies Weichselbaum found an empyema of one or more of the sinuses 12 times; in the one exception—the first case—the sinuses were not examined. In the 11 influenza cases herein reported the optic neuritis was traced to sinus disease 10 times; in the one exception—with the initial coryza, anosmia, dizziness, and severe pain that induced vomiting—craniectomy was performed, but the sinuses were not properly examined, although the writer strongly urged it; the case terminated in bilateral amaurosis. In the writer's opinion, the more appropriate term for these various cases would be optic neuritis due to sinus disease following influenza, scarlet fever, measles, etc., as the case may be. This hypothesis would explain the appearance of the ocular lesion, as a rule, during convalescence, or, in some cases, long after recovery.

Idiopathic facial erysipelas, with its frightfully high percentage of blindness when the optic nerve is involved, is considered by the writer as but an evidence of a streptococcic or staphylococcic infection of the aural, buccal, or more frequently the nasal cavities underneath, and the reason why these cases so often terminate fatally as to both vision and life is because two symptoms are held to bear the relationship of cause and effect, and the therapy is directed towards the relief of a symptom rather than of the real cause. The same is probably true in regard to the "cases of optic atrophy due to ozaena" or "to nasal polypi."

Syphilis is a frequent cause of sinus empyema—"nothing more frequent in tertiary syphilis than the nasal lesions," according to Fournier. We have, then, in syphilis, in addition to the tabetic optic neuritis arising from degenerative changes in the central system, a second form due to sinus disease. This type of optic neuritis, although its cause, sinusitis, is due to syphilis, cannot in reality be called "specific," and treatment, in addition to the usual therapy, should be directed towards the sinuses. In the cases by Schmiegelow and Pollascek, specific maxillary and sphenoidal empyema, in spite of classical treatment, terminated in blindness, the second case in each eye.

Without questioning the possibility of a hereditary optic neuritis, it may be remarked, however, that the diagnosis is usually arrived at by exclusion, and the sinuses are not examined. Hereditary tendencies, however, can hardly be accountable for 10 per cent. of the cases of retro-ocular neuritis, as has been claimed, and, furthermore, will the profession adopt Hanke's theory of a "dormant hereditary optic neuritis aroused by a cold"—a synonym of sinusitis? Each one of Hanke's patients suffered from pain in the head, dizziness, etc.

I have heard the argument used in reply to mention of this or that case cured by sinus treatment, "Yes, but we have all relieved different cases by the usual treatment, and most cases recover any way."

Attention is called once more to the fact that the majority of cases of sinusitis are self-limited, especially the acute cases arising from a cold in the head, and even the exacerbations of the chronic form are followed by intervals of relief. There can be no doubt that many cases of optic neuritis terminate favourably owing to natural drainage of the sinuses. Coppez and Lor's case is an instance—the neuritis recovered on spontaneous drainage of a sphenoiditis. In Bethune's case, each suppression of a purulent discharge from the frontal sinuses was accompanied by marked loss of vision, and on the reappearance of the nasal discharge the sight always returned. In Case No. 13 the vision began to improve before the patient was seen, owing to the sinuses discharging, and in a recent case of facial erysipelas with reduced vision the fever had disappeared and former vision returned after an abundant discharge from the antrum, that occurred a day or two before the writer saw the patient. The secretion in the middle meatus showed streptococci (Columbus Medical Laboratory). In Case No. 4 the patient was treated by an ophthalmologist but without result, the vision falling to $\frac{1}{20}$. Later the vision improved under strychnine to nearly normal, but was again reduced a few days later to $\frac{1}{20}$ in each eye. The treatment of the real cause—an ethmoidal empyema—restored the vision to normal and there has been no ocular trouble to date—now six months. Risley states that the vision of his patient "improved under potassium iodide" but its continual use did not prevent its gradual reduction to $\frac{2}{60}$, when the treatment of the real cause, as in the above case, improved the vision to $\frac{1}{2}$. In Case No. 25 the vision was reduced in each eye "following facial erysipelas," the condition terminating in normal vision in the right eye and total atrophy in the left. A somewhat similar case was reported last year by Soderlink. History of influenza with nearly total loss of vision in one eye and rapid complete recovery without treatment. A few days later, the patient consulted Soderlink, on account of reduced vision in the other eye, but, in spite of treatment, optic atrophy ensued. The reporter states that "the abundant purulent nasal discharge probably came from the frontal sinuses," but, for some reason or other, sinusitis was excluded as a cause of the optic neuritis. In these two cases the evident explanation is that the bilateral empyema drained sufficiently on but one side only. In a case seen in consultation, the patient announced that he was "feeling much better," and incidentally called our attention to a yellow secretion he had been blowing from his nose. What caused the complete recovery in this case, the usual treatment, or the spontaneous nasal discharge?

Three of the observations herein reported are cases of glaucoma, two primary and one secondary. In each instance the affection of the sinuses was clearly present, and the causal relationship was shown by the improvement in the ocular condition following the drainage of the cavities. In the case of secondary glaucoma the vision improved from $\frac{1}{15}$ to $\frac{1}{2}$, and the patient was able to read the newspaper, the first time in four years. One of the primary cases showed improvement in both the vision and the visual field, but unfortunately this patient had a clear history of haemophilia, and the tight tamponnage, necessary for days after the nasal operation, brought on fever, delirium, etc., owing to the damming up of infectious materials in the sinuses, hence the further surgical interference, necessary to completely cure the chronic empyema, was not undertaken, and when last seen the patient was again using eserin. In the third case an acute

THIRTY-SIX CONSECUTIVE CASES OF OPTIC NEURITIS: NASAL ACCESSORY SINUS DISEASE PRESENT TWENTY-SIX TIMES.

CASES SHOWING IMPROVEMENT OF OCULAR CONDITION FOLLOWING TREATMENT OF THE NASAL SINUSES.

Case.	Eye.	Lesion.	Recent or Old.	Sinus Treatment.	Vision.		Pain in Head.	Dizziness.	Involvement of Ocular Muscles.	Etiology of Sinusitis.	Diagnosis Elsewhere.	Remarks.
					Before.	After.						
1	O. D. O. S.	Ret.-oc. Ret.-oc.	Recent Recent	Non-operative Non-operative	Fingers Fingers	1 0 1.0	Severe Relief	Present Relief	Absent —	Influenza —	— —	No reply received to recent inquiry as to the present condition. Last report gave the V. normal.
2	O. D. O. S.	Ret.-oc. Ret.-oc.	Recent Recent	Operated on Non-operative	0 1 0 1	1 0 1.0	Absent —	Present Relief	Present Relief	Cold —	— —	No recent report; last account good.
3	O. D. O. S.	Papillitis Papillitis	— —	Non-operative Operated on	1 0 1 0	1 0 1 0	Severe Relief	Present Relief	Had been present	Cold —	— —	Consulted different ophthalmologists during three years, who gave a grave prognosis. Complete relief; patient has been at work during past six months.
4	O. D. O. S.	Neur.-ret. Neur.-ret.	Recent Recent	Operated on Non-operative	0 05 0 05	1 0 0.5	Present Relief	— —	Absent —	— —	Albuminuric	Patient, now practising dentistry, reported June 13th, no trouble with his eyes since the operation in January.
7	O. D. O. S.	Secondary Secondary	— —	Non-operative Non-operative	0 07 0	0.5 0	Present Relief	Present Relief	Bilateral ptosis spontaneous cure	— —	Luetic intracranial lesion	V. reduced for four months. Improvement in V. due in part to diminution of vitreous opacities. One year later "can read as good as ever."
10	O. D. O. S.	Ret.-oc. Ret.-oc.	Recent Part. op. at.	Operated on None	0 0	Fingers 0	Present —	Present —	Present —	Tumour posterior cells	Cerebral lesion	On determining a probable sarcoma of the ethmoid a further treatment was not advised.
13	O. D. O. S.	Papillitis Primary	Recent Op. at.	Non-operative None	Form 0	1.0 0	Present —	Absent —	Absent —	Influenza —	Tumor cerebri	Operation of sinuses advised but refused; recurrence; final V. = movements.
14	O. D. O. S.	Primary glaucoma, each eye	— Op. at.	Operated on —	0 05 0	1 0 0	Present Relief	Present —	Absent —	Influenza —	Glaucoma —	V. F. enlarged. Ocular condition satisfactory for weeks. Radical operation for chronic polysinusitis not advised on account of haemophilia. When last seen patient again instilling eserin.
15	O. D. O. S.	Secondary glaucoma, each eye.	— —	Non-operative Non-operative	Enucleation 0.05	— 0.05	Severe Improved	— —	Absent —	— —	Secondary glaucoma	O. S. iridectomy four years before. Improvement in V., reduced for four years, due in part to diminution of vitreous opacities. Partial atrophy of disc.
18	O. D. O. S.	Papillitis Papillitis	Years before —	None Operated on	1 0 0.15	— 1.0	Present Relief	Present Relief	Present —	Influenza —	— —	Chronic left empyema, subject to exacerbations with consequent visual disturbances. V. in June reduced to 0.15 owing to relative scotoma of upper half of field; relief following curettage of posterior ethmoidal cells.
19	O. D. O. S.	Normal Haem. neur.-ret	— Recent	— Non operative	— Movements	— 0.25	Absent —	Present —	Absent Absent	Influenza Influenza	— —	Absolutely normal nasal finding. Fundal changes resembled retinitis albuminurica.
20	O. D. O. S.	Papillitis Normal	Recent —	Non-operative —	J. No. 4 —	1 0 —	Present Relief	— —	— Absent	— —	— —	Patient dismissed the sixth day with normal V.
22	O. D. O. S.	Normal Primary glaucoma	— Op. at.	— Non-operative	1.0 Greatly reduced	— —	Severe Relief	— —	— —	— —	Glaucoma —	Useful V. lost. Hemicrania, vomiting and T + 3 relieved by drainage of frontal empyema.
21	O. D. O. S.	Neur.-ret. —	Old —	None Operated on	Fingers 1 0	— 1.0	Present Relief	Present —	Absent —	— —	— —	O. S. flashes of light and asthenopia relieved. Severe pain became strictly unilateral. Operation right side, postponed and not performed.
9	O. D. O. S.	Ret.-oc. Ret.-oc.	Old Old	Operated on —	0 0	— —	Present Relief	Present —	Present Improved	— —	Tumor cerebri tabes alcohol-nicotine	Total ptosis and muscular involvement greatly improved. Typical case of chronic empyema aside from the absence of nasal secretion. Consulted numerous specialists; nostrils never examined. Had been the subject of many clinical lectures.

Cases in which Nasal Sinus Disease was Present.

Case.	Eye.	Lesion.	Recent or Old.	Sinus Treatment.	Vision. Before.	Vision. After.	Pain in Head.	Dizziness.	Involvement of Ocular Muscles.	Etiology of Sinusitis.	Diagnosis Elsewhere.	Remarks.
6	O. D. O. S.	Haemor. neur.-ret. —	Op. at. Op. at.	None —	Fingers Fingers	Cent. V. Cent. V.	— —	— —	— —	Influenza —	— —	Peripheral V. better. Operation advised; refused.
5	O. D. O. S.	Haemor neur.-ret. —	Op. at. Op. at.	Non-operative Non-operative	Movements —	Movements —	Severe Improved	Present Improved	Absent —	Influenza —	—	Operation advised; refused.
12	O. D. O. S.	Papillitis Papillitis	Op. at. Op. at.	None Non-operative	L. P. 0	— —	Severe —	Present —	Present —	Influenza —	Tumor cerebri, syph.	Syphilis denied. Consulted many specialists. Nostrils never examined.
8	O. D. O. S.	Ret. oc. Haemor-neur.-ret.	Recent Op. at.	Non-operative Non-operative	0 75 Fingers	— —	Severe Improved	Present Relief	— —	Cold —	— —	Marked relief from pain and vertigo. Operation advised; refused.
23	O. D. O. S.	Normal Ret.-oc.	— Recent	— None	— Reduced	— Reduced	— Absent	— Present	— —	Cold —	Contrecoup.	Left nostril nearly occluded by congestion and purulent secretion.
24	O. S.	Neur.-ret.	Old	None	"Blind"	—	—	—	—	—	Albuminuria	Operation advised; refused.
16	O. D. O. S.	Ret.-oc. Ret.-oc.	Old Old	None —	0.4 0.4	— —	Present —	Present —	Absent —	— —	— —	— —
25	O. D. O. S.	Normal Primary	— Op. at.	None —	1.0 0	— —	Had been present	— —	— —	— —	Erysipelas —	V. O. D., which had been reduced, probably restored through spontaneous drainage of cells on that side.
17	O. D. O. S.	Ret.-oc. Ret.-oc.	Part. op. at. —	None Operated on	0.07 0.4	— 0.5	Present —	Present —	Present —	Syphilis —	Syphilis —	After amputation of part of mid. concha polypi were removed Increased vertigo attributed "to operation." Second operation refused.
11	O. D. O. S.	Haemor. neur.-ret. —	Op. at. Op. at.	Operated on Non-operative	L. P. L. P.	— —	Severe —	Present —	Present Spon. cure	Tumour post. cells	Intracranial lesion	—
26	O. D. O. S.	Normal Ret.-oc.	— Part. op. at.	— —	— 0.5	— —	Present Relief	Present Relief	Absent —	Influenza —	— —	Operation advised but postponed. Patient writes, July 8th, "Pain relieved."

Cases with Unknown Etiology.

Case.	Eye.	Lesion.	Recent or Old.	Sinus Treatment.	Nasal exam.	Vision. Before.	Vision. After.	Pain in Head.	Dizziness.	Involvement of Ocular Muscles.	Etiology of Sinusitis.	Diagnosis Elsewhere.	Remarks.
27	O. D. O. S.	Primary Primary	Op at. Op. at.	Negative Negative	Negative Negative	L. P. L. P.	— —	Had been severe	Present —	Present Early	— —	Tumor cerebri	Spontaneous cure of muscular involvement. Attacks of severe pain months apart, with intervals of complete relief.
28	O. D. O. S.	Primary Primary	Op. at. Op. at.	Negative Negative	0 0	— —	Present —	Present —	Absent —	— —	— —	Superior cervical ganglia removed in 1903.
29	O. D. O. S.	Primary Primary	Op. at. Op. at.	Negative Negative	0 0	— —	Present —	— —	— —	— —	— —	Patient seen but once.
30	O. D. O. S.	Primary Normal	Part. op. at.	Congestion —	0.7 1	— —	Present —	— —	Absent. —	— —	Later diagnosed as "glaucoma"	Recent cold followed by pain, lid oedema, and op. neur. Sinuses inaccessible; operation refused.
31	O. D. O. S.	Haemor. neur.-ret —	Recent Recent	? —	0 0	— —	Present —	Present —	— —	Followed influenza	Syphilis Cerebral Lesion	Sphenoidal cells had been opened; craniectomy negative. Writer advised treatment of eth. cells; refused. Final V.=0 each eye.
32	O. D. O. S.	Haemor. neur.-ret. —	Recent Recent	Congestion (Year later)	Reduced in one eye	Normal Normal	Severe —	Present —	Present —	— —	Abscess or tumor cerebri	Craniectomy advised unless condition improved within few days. Complete recovery under KI.

Cases with Known Etiology.

33 Bilateral amaurosis appearing at the menopause. Case 34. Bilateral amaurosis following removal of basilar tumour.

35 Bilateral amaurosis due to hydrocephalus internus. Case 36. Bilateral neuro-retinitis albuminurica complicating pregnancy.

CASES OF OPTIC NEURITIS DUE TO SINUSITIS.

I. CASES SHOWING IMPROVEMENT AFTER TREATMENT OF THE SINUSES.

(A) *Bilateral Cases.*

Reporter.	Sinus.	Vision. Before.	Vision. After.	Remarks.
Wölge ... ... O. D.	Fr.	"Blind"	"Cure"	—
O. S.	Fr.	"Blind"	O	—
Ziem... ... ... O. D.	Max.	Fingers	0.25	—
O. S.	Max.	Fingers	0.2	—
Alexander... ... ... O. D.	Sph.	1.0	—	Bilateral Papillitis, cure.
O. S.	Eth., sph.	1.0	—	—
Brawley ... ... O. D.	Fr.	0 4	1 0	Normal V. one year later.
O. S.	Fr.	0.4	1.0	—

(B) *Unilateral Cases.*

Beer	Fr.	Reduced	"Cure"	—
Galezowski	Max.	O	1.0	L. p. same day; V.=1.0 ninth day.
Richet	Fr.	O	1 0	Blind more than a month.
Risley	Fr.	0.04	0.5	Op. neur. with V.=0 4 noted four years before.
Trantas	—	O	Fingers	Blind for three months.
Coppez	Poly.	0.05	1.0	V.=1.0 on eighth day.
Despagnet	Max.	0 05	1 0	—
Hoffmann	Sph.	Fingers	0.6	V.=0.6 few days later.
Würdemann	Sph.	0.15	1.0	V.=1 0 few days later.
Würdemann	Fr., eth.	0.2	Not given	Papillitis (personal communication).
?	Fr., eth.	0.5	1.0	"Case of papillitis recently seen." (Personal communication.)
Bourgeois	Eth., fr.	0.02	1.0	V =0.02 to 0 25 in three days' time.
Courtaix	Max.	Reduced	1 0	Other treatment without result.
Mann	Eth.	0.25	1.0	—
Riolacci	Max.	Fingers	"Cure"	"Complete cure"; V. not mentioned.
Desbrières	—	—	Cure	Choked disc.
Nordquist and Pohl	Max.	0.1	1 0	Retro-ocular neuritis.
Same case, relapse	Max.	Reduced	1 0	—
Hajek	Eth.	Fingers	1 0	Usual treatment failed.
Mendel	Max., eth.	Stone blind	0.6	V. improved same day.
Fliess	Eth., sph.	About blind	1.0	"Reads finest print"; blind for months.
Kuhnt	Max.	0.3	1 0	Haemor. neuro retinitis.
Germann	Max.	0.2	0 7	Syphilitic. Contracted V. F. restored.
Germann	Eth.	0.5	0 8	—
Galezowski	Max.	0.25	1.0	Papillitis: cure fifteenth day.
Johnson	Fr.	1.0	1 0	Choked disc; cure.
Valude	Fr.	1.0	1.0	Papillitis; cure.
Vieusse	Eth.	0.02	1.0	—
Lipscher and S.	Eth.	Reduced	"Cure"	—
Vossius	Eth.	0.4	1.0	—
Panas	Max.	O	Fingers	Cerebral abscess; exitus.
Wittemberski	—	0.3	Improved	Final V. not given.
Holmes	Max.	0 2	Improved	Musc. involv.; recurrence; exitus.
Rollet	Max.	—	Cure	Beginning op. neur; no data.
Coppez et Lor	Sph.	Reduced	Cure	Spont. drainage; sudden blindness.
Merz	Max., eth.	0.4	0.6	Choked disc.
Desbrieres	Fr.	Reduced	Cure	Papillitis.
Guttmann...	Max.	Reduced	"Cure"	Final V. not given.
Brawley	Fr.	0.2	1.0	V. = 1.0, fourth day.
Paunz	Eth., sph.	0 1	0 7	Haemor. neuro-retinitis.
Posey	Eth , sph.	0.7	1 0	—
Posey	Eth , sph.	0.8	1.0	Beginning optic neuritis.

II. CASES WITHOUT IMPROVEMENT.

De Lapersonne	—	—	O	Sarcoma.
De Lapersonne	—	Op. at.	O	—
De Lapersonne	Max.	—	—	Progressive optic neuritis.
Mendel	Max.	Op. at.	Fingers	—
Mendel	Max.	,,	O	—
Mendel	Max.	,,	O	Bilateral.
Groenbeck	Poly.	,,	O	—
Ripault	Fr.	,,	O	—
Posey	Eth.	,,	O	—
Martin	Fr.	,,	Fingers	—
Post...	Sph.	—	O	—
Vail	Eth , sph.	Op. at.	—	No data.
Pischel	Fr.	,,	Movements	Haemor. neuro-retinitis.
Swan	Fr.	,,	O	Condition at the time of first visit.
Abstein	—	—	0 3	No data.
Gaine	Max.	—	O	—
Snellen	Sph	Op. at.	—	Two cases; no data.
Lagrange	Fr., eth.	,,	0.3	Epithelioma.
Lagrange	—	,,	O	—
Zentmayer	Fr., eth.	,,	O	—
Desbrières	Fr.	,,	O	—
Jeantry	Max.	,,	—	No data.
Redlich	Sph.	Atrophic	—	Bitemporal hemianopsia; no data.
Spencer Watson...	Fr.	Op. neur.	—	No data.
Guilini	—	Op. at	O	Unrecognized.
Escat	Eth., sph.	—	O	—
Hastings	Eth.	—	No cent. V.	—
Weiss	—	—	—	Haemor. neuro-retinitis (fatal).
Pollascek	Sph.	—	O	Bilateral.
Richter	Sph.	—	0.1	No data.
Polyak	Poly.	Op. at.	O	Bilateral.
Ewetsky	Eth.	—	0 5	Slight papillitis.
Kuhnt	Max.	—	0 06	—
Kuhnt	Max.	—	0.08	Haemor. neuro-retinitis.
Salter	Max.	—	O	Haemor. neuro-retinitis.
Kuhnt	Max.	—	Fingers.	Operation refused.
Bronner	Sph.	—	—	Fatal.
Sandford	Sph.	—	O	Bilateral.
Gerrard	—	—	O	Two bilateral cases.

Other cases, not reported in detail or inaccessible to the writer, have been mentioned: by Nuel, three cases; Litchwitz, two cases; Schmiegelow, Berger, Kohler, Hjort, Leber, Axenfeld.

attack appeared in an eye already nearly blind from chronic glaucoma. The increased intraocular tension yielded to the drainage of the frontal empyema under two different conditions: the first before the use of a myotic, and second after the use of eserin, the patient having refused the surgical treatment of the frontal sinus.

De Lapersonne Paquet and Germann have reported glaucoma due to maxillary empyema, and the well-known case of Lennox Browne was also probably a chronic empyema. Each one of these three cases showed improvement, and each one had failed to yield to an iridectomy. Ayers reported the cure of a case of glaucoma, without recurrence during a period of five years, that had been brought about by the removal of nasal polypi. In a recent personal communication de Lapersonne mentions another case of glaucoma, primary, due to maxillary empyema. That glaucoma can result from trigeminal irritation is shown by the fact that a diseased tooth will cause it; witness the well-known case by Redard, in which the extraction of a tooth relieved the glaucoma after failure of the usual operative treatment. Desbrières reported increased intraocular tension in two sinus cases. A cold in the head is an admitted etiological factor. Wagner says of his own case, the attacks of glaucoma were less frequent when he was free from colds and the consequent congestion in the head. In a fourth personal case, diagnosed glaucoma by several ophthalmologists, a severe cold in the head was followed by frightful frontal pains, rapid loss of vision, secondary cataract, etc., in each eye; nasal examination made a few weeks later showed positive evidence of a bilateral sinus disease. The many varied types of sinus disease are strikingly similar to the different forms under which glaucoma appears—from the acute attack, with oedema of the surrounding parts, to the slow chronic form, with its occasional exacerbations during a period of years. This hypothesis accounts for the bilateral appearance of glaucoma in the majority of instances; its greater frequency during the inclement weather of the winter and spring seasons; the variation in the intraocular tension during the period of twenty-four hours; the instances in which pain long precedes the appearance of the increased tension, as well as the persistence of this pain in some cases, even after enucleation, Case No. 15 furnishing an example. It may be argued in opposition that the performance of an iridectomy, which so often relieves glaucoma, can have no possible effect on a disease of the sinuses. But remember that it is in the acute cases that an iridectomy relieves, and in the majority of the chronic cases it fails. This very hypothesis affords an explanation for this marked difference in the results of the operative treatment, for, assuming that sinus disease is a common cause of glaucoma, as the acute cases of sinusitis are in the majority of instances self-limited, the iridectomy relieves the increased tension and so saves the eye from threatened destruction, and the sinus affection gradually heals spontaneously; the iridectomy has carried the eye over the dangerous period. But in chronic sinus disease, with its ever-recurrent exacerbations, iridectomy often fails in its mission, and the eye goes on to gradual loss of function. Case No. 15 again affords an illustration, as at the time of the initial attack an iridectomy relieved the increased tension, and so preserved the globe and a portion of the vision. It will be admitted that the usual treatment of glaucoma is directed solely towards the relief of a symptom—the increased tension. If a cause of glaucoma can be determined, we may reasonably hope for better results.

Before leaving this subject I cannot but refer to the case of that eminent ophthalmologist, Javal, who in describing his own case refers to the recurrent glaucomatous attacks accompanied by an oedematous condition of the corresponding nostril, a congestion sufficiently marked to be even subjectively perceptible. This, gentlemen, is a symptom of sinus disease, and, after seeing time and again a nasal congestion subside on treatment of the sinuses, I cannot but think that the case of our unfortunate *confrère* would not have terminated in blindness had the treatment been directed towards the drainage of the nasal sinuses in place of the repeated operations on the eye, all of which were in vain. The above cases, though few in number, demonstrate that accessory sinus disease can cause glaucoma; it is urged, therefore, that the sinuses be carefully examined, in those cases at least where blindness seems to be inevitable, as possibly this unhappy termination might be prevented.

In conclusion, let me emphasize one thing, and that is, a negative nasal finding does not exclude sinus disease, and to say further that, after due consideration of this subject, the writer is convinced that accessory sinus disease, in place of being a rare cause, is the most frequent cause of an affection of the optic nerve.

DISCUSSION.

Mr. Ransom Pickard (Exeter) said he had, during the past year, a case of bilateral optic neuritis (not retrobulbar) accompanied by purulent discharge from above the middle turbinates, in which improvement resulted in the optic neuritis and vision, with the subsidence of the discharge from the nose, after the use of a simple alkaline lotion. There was great need for a thorough nasal examination in many eye cases.

Dr. Reber (Philadelphia) stated that the diagnosis of latent accessory sinus disease was extremely difficult and called for the highest technique. He was hardly ready to say that he believed much bilateral optic neuritis (whether of the head of the nerve, or retro-ocular) was due to accessory sinus disease. But when it came to unilateral optic neuritis, it seemed to him that the evidence was strongly in favour of this condition being often focal—that is to say, due to disease of the upper air cavities—the teeth or some other distinctly local cause. This view was enforced by the thought that the eye was surrounded by the accessory sinuses. He had had two cases of unilateral optic neuritis with coincident orbital abscess, in both of which accessory sinus disease was proved to be the etiological factor; and another in which the only symptom was distinct lowering of the power of accommodation. That the relation was of sufficient frequency to justify a search of the sinuses in every case of optic neuritis of doubtful origin he was fully convinced.

Mr. Chichele Nourse (London) said that from the point of view of the rhinologist, he might be permitted to express his appreciation of the value of Dr. Fish's paper. He was aware of the work done by Dr. Ziem of Dantzic upon the connexion between ocular affections and diseases of the nose and accessory sinuses; and in his cases of sinus disease he had been for some time on the alert for any evidences of disturbances of vision, or of disease of the eye, especially where the sphenoidal had been the sinus affected, but so far without any marked result. The most common defect he had found was one of refraction. The tendency of modern medical science was to search for a tangible objective cause in all cases of obscure affections which formerly they were satisfied to describe as idiopathic. In the light of common experience this rational attitude was one with which he cordially agreed, and there was no doubt that Dr. Fish had drawn attention to a field of work which would prove fertile in the future.

Mr. E. Dykes Bower (Gloucester) entered a plea for the more systematic examination of the nasal cavities by ophthalmic surgeons, and the best speculum, and the most comfortable to the patient, for this purpose was Duplay's. It was not difficult to make such an examination, and one could at any rate detect a purulent discharge and locate its position. Polypi were as a rule easily seen, and any other nasal obstruction could at the same time be detected. Of course, the absence of a purulent discharge did not necessarily eliminate disease of the sinuses; and it was most important to remember this fact, as cases of closed sinuses were not uncommon. Although he had no statistics to offer, his impression, as the result of the systematic examination of the nose in ophthalmic cases for many years, was that the association of lacrymal obstruction, optic neuritis, and other ophthalmic diseases with nasal disease, was not a very common occurrence.

AN IMPROVED FORM OF ARTIFICIAL EYE.

By Karl Grossmann, M.D., F.R.C.S.E.,

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I have very often felt the desirability of rectifying the one great shortcoming which exists in a large number of artificial eyes, that is, the sunken appearance of the eye

itself, which generally gives the secret away at the first glance. The Snellen eye is a considerable step in the right direction, as far as the conjunctiva is concerned. The irritation caused by the sharp edge of the old glass eye is practically eliminated, and by its use we avoid the frequent occurrence of chronic traumatic conjunctivitis which so often leads to complete flattening of the conjunctival fornix, especially in the lower lid, and which may render the socket quite unfit to hold an artificial eye. The Snellen eye does not, however, help us with the sunken appearance of the upper lid.

For some time back I have been making models in wax, adding to the procurable glass shell a protrusion corresponding to the part of the lid that sinks in most, and I have tried to have these models carried out in glass by giving them to various retailers of artificial eyes. But invariably the answer came, "It cannot be done." It was only recently that I succeeded in getting hold of an excellent working glass-eye blower, who was not only willing to comply with my wishes, but pleasantly surprised me by showing me some glass eyes made practically as I wanted them.

The eyes shown in Fig. 1 are all right eyes, and all

Fig. I.

have the protrusions at the upper margins. These protrusions are placed where the lids sink most, and have to be adapted to each individual case. The eye is a hollow compressed ball with no sharp edge. When required the back wall can also be made to bulge out, as shown in Fig. 2, where the three upper glass eyes are seen from

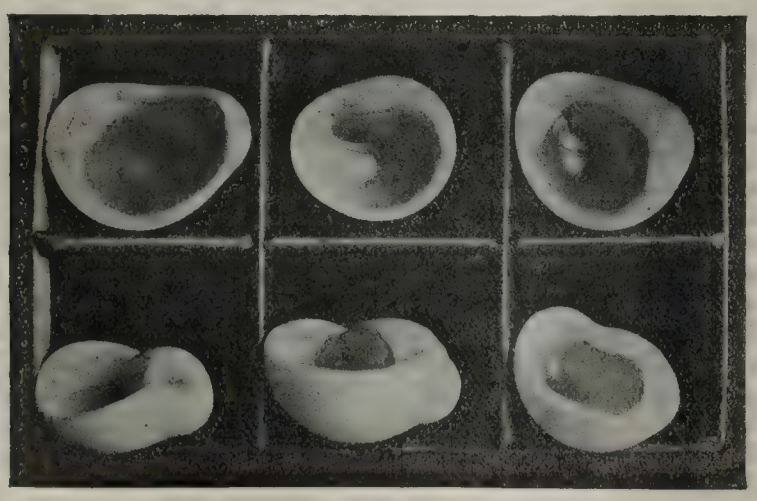

Fig. II.

the back, and the three lower ones in profile, showing the protuberances towards the back of the socket. I have always been uncompromisingly in favour of simple enucleation and not for Mules's or similar operations. The idea of having a foreign body implanted in living tissue chemically not indifferent to it is absolutely unsurgical, and could at best be tolerated under exceptional circumstances only. In my opinion, the great point is that each eye required should be made by the glass-blower with the patient present. The former can then not only match to perfection the colours of the iris as well as of the sclerotic, but he can at the same time satisfy the requirements of the socket, which is at least equally important both for comfort and appearance.

The ordinary glass-eye seller, with his stock of badly fitting shells, has no *raison d'être*, and the sooner this is acknowledged by the profession the better for our patients. Every single anophthalmos artificialis has been under surgical treatment, and may always be instructed by his surgeon where to go for his glass eye. And every ill-fitting artificial eye will henceforth be a discredit to the attending ophthalmic surgeon who does not send him to a competent glass-eye blower. The question of cost need not come into consideration. The demand for artificial eyes is not great, and will not give employment to more than one or two individuals in this country. If every ophthalmic surgeon in the United Kingdom were to keep a special record of his enucleation cases, notifying the number to some centre, the various localities could then be mapped out and the glass-blower might take district by district, taking each place once, twice, or oftener in a year. The glass-blower would personally see the colour of the patient's eye and the surgeon might mention any point he would like specially noticed, and this at a very reasonable rate, especially if several eyes should be required. Possibly we may fix on some such centre under the auspices of the British Medical Association. In no case must we, through sheer indifference, allow our patients in future to drift into the hands of the ordinary glass-eye retailer. The appearance of the one-eyed is often of the greatest commercial value to him or her, be he or she clerk, workman, or servant. And the damage to the conjunctival sac due to a badly fitting glass eye is a thing for which we are morally to blame, if we can get hold of a competent glass-blower.

A PORTABLE REFRACTOMETER AND A PORTABLE ASTIGMOMETER.

By Karl Grossmann, M.D., F.R.C.S.E,
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The correct determination of refraction is becoming more important from day to day. The struggle with outside competition has forced this country to a higher degree of activity than was customary in the middle of the Victorian era, and closer application to work has required a more strenuous use of the visual organ. Thereby, the very frequent occurrence of ametropia in this country has been revealed not only among adults, but among children. This has led to the outcry about the appalling deterioration of the race—a perfectly incorrect statement, called forth by the existing love for sensationalism and by the unwillingness to acknowledge the up to then prevailing ignorance of the state of affairs. We are beginning to outlive this transition stage, and to recognize that the best means of fighting deterioration is its prevention; and this applied to vision means the early correction of any ametropia that may exist and can be corrected. This work, if to be well and thoroughly carried out, can be neither easily nor quickly done, and of course cannot be done by competent experts without adequate remuneration.

The public, never so happy as when trying to procure something for nothing, has in its gullibility become an easy prey to the advertising spectacle-seller, who offers his "advice"—which he declares to be both competent and scientific—gratis, making the public pay for his outlay in advertisements, etc., by the price of his wares.

To a great extent the medical profession is to blame for this state of affairs, by having allowed the public to drift into the hands of the spectacle-seller. The general practitioner, as a rule, knows little about refraction, and the ophthalmic surgeon finds it difficult to get time for refraction work, especially at the hospital. In the eye departments of some of the largest hospitals in the country the surgeon does not attend to refractions for want of time. This is indefensible, because if

there be any justification for a medical charitable institution, *all* eye troubles should be attended to in its ophthalmic department. Want of time should be no excuse: if necessary, more than one surgeon should be available, and, if need be, should be paid for the work he does.

In the examination of refraction fatigue of the examined eye is a fertile source of mistakes. Any means of facilitating and shortening the time of examination must therefore be welcome. The smaller the amount of fatigue to the examined—and, be it not forgotten, also to the examining—eye, the better will be the result obtained. Having done refraction work for more than twenty-five years in an unusually large out-patient department, I at an early date used an arrangement of lenses which enabled me to examine refraction very rapidly by skiascopy. The idea of putting a series of glasses together in a circular disc or a straight row is not new and was first applied for ophthalmic purposes in the refraction ophthalmoscope, the modifications and varieties of which are legion. For skiascopy the straight rows have been used with preference, though not exclusively. *But in order to shorten examination for refraction we must emancipate ourselves altogether from the spectacle trial case and once and for all restrict its use to its legitimate limits.* This I accomplish by the following two instruments:

1. The Refractometer (Fig. I).

It contains, in contradistinction to all preceding instruments of a similar kind,[1] *the complete series of spherical glasses of the spectacle case,* in 2 frames of 16 glasses each:

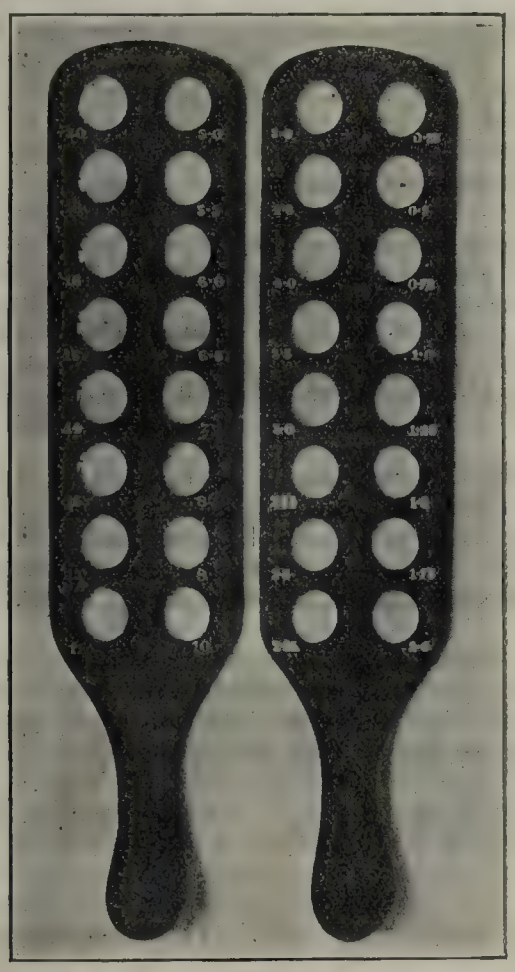

Fig. I.

0.25	5 0	5	20
0 5	4.5	5.5	18
0.75	4.0	6	16
1.0	3.5	6 5	15
1.25	3.0	7	14
1.5	2 75	8	13
1.75	2.5	9	12
2.0	2.25	10	11

[1] British Medical Journal, May 29th and June 13th, 1903, p. 1092 and p. 1380.

The glasses are arranged from 0.25 to 2 downwards in one vertical row, from 2 25 to 5 upwards in the adjoining vertical row, these 16 forming one frame. The other frame begins again with 5, where the first frame left off, and with the useful addition of 6.5 goes downwards to 10, and then from 11 to 20 upwards in the adjoining vertical row completes the series as found in the spectacle case; one pair containing the convex and the other the concave *spherical* glasses. The arrangement is such that the frame is moved up along the nose and then turned back to front and moved down again, thereby avoiding any criss-cross turning when going from one glass to the next. The diameter of the glasses is 18½ mm, large enough to be used both for skiascopy and for subjective examination (sight testing).

By the completeness of the series this refractometer does away with the spectacle case, as far as the spherical glasses are concerned, and a great saving of time is effected by obviating the necessity for taking out and putting back the glasses from the spectacle case. Moreover, the examined eye is in a position to compare the effect of the different glasses almost instantly, the change of glasses before the eye being possible within a fraction of a second. And, last but not least, there is no fingering of the glasses, either on the part of patient or examiner, so that they remain clean, permitting their refractive effect to be full and undisturbed without the necessity for cleaning or wiping.

Only after having thus found *subjectively* the best correcting spherical glass, first for one and then for the other eye, does the time for using the spectacle trial case arrive. We put the glasses found correct for each eye together in the spectacle frame and verify the result. Here again no unnecessary fingering of the glasses of the spectacle trial case takes place.

There still remains the large number of astigmatic eyes, and here the spherical refractometer is only of limited utility. While with its help we can objectively—that is, skiascopically—determine the principal axes of the existing astigmatism at a glance, and also its amount for the two extreme meridians, it fails us completely for the subjective examination—testing of vision; and we should still be obliged to recur to the spectacle trial case, which is ever so much more cumbersome and tedious for astigmatic work than for purely spherical cases.

2. The Astigmometer.

These inconveniences ultimately became so irksome to me that they induced—I may say forced—me to arrange some practicable device which completely fulfils my wants. Similar in appearance to the refractometer, the astigmometer (Fig. II) contains *all the cylinder glasses of the ordinary spectacle trial case,* 36 in number, distributed in two frames, one containing the 18 convex, the other the 18 concave cylinders. They are again arranged in two vertical rows, beginning from the top 0.25 downwards to 2 25, then from the base of the adjoining row 2.5 upwards again to 6.

Fig. II.

0.25	6
0. 5	5. 5
0.75	5
1	4. 5
1 25	4
1. 5	3. 5
1 75	3
2	2.75
2.25	2. 5

The glasses are of the same diameter as in the refractometer—namely, 18½ mm. Each glass is mounted in a circular toothed mount (Figs. III and V). The teeth do not

go down the whole thickness, but leave a smooth flange (Fig. VI, *F*) which fits into the frame (Fig. III; in section, Fig. VII). Between the rows of toothed mounts and gearing into them is placed a toothed rod (*D*, Fig. III). This rod is moved up and down by a knob (*K*), thereby rotating all the mounts round their centres. Fig. IV gives an alternate mode of rotating the mounts by means of a screw thread and a milled knob (*M*). It will be noted from this arrangement that when the rod (*D*, Fig. III) is moved, all the glasses in the

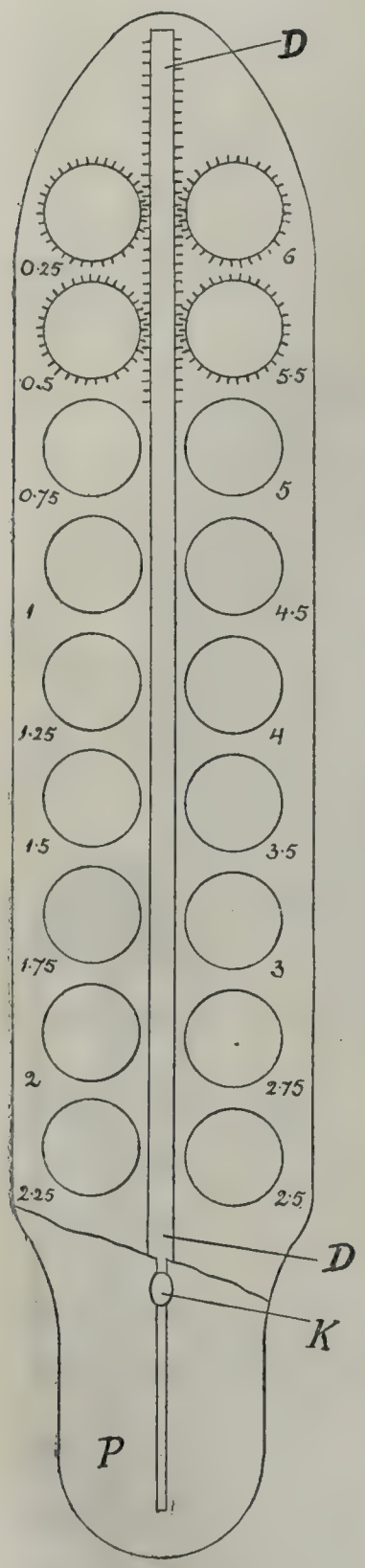

Fig. III.

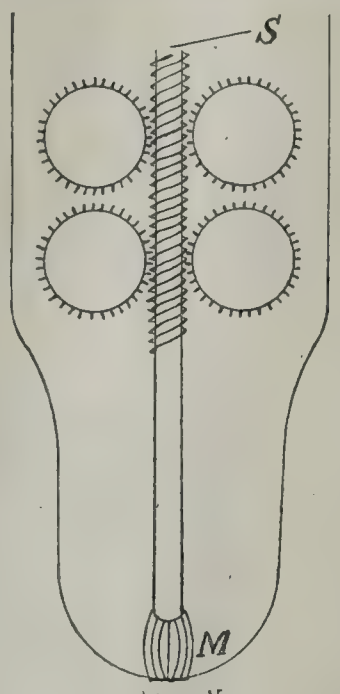

Fig. IV.

Fig. V.

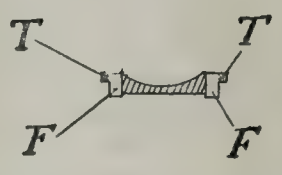

Fig. VI.

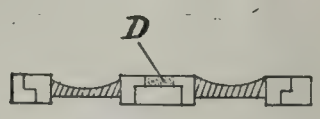

Fig. VII.

left vertical row turn in one direction, while those in the right column rotate in the opposite direction, and this for the following purpose:

When the principal meridian of astigmatism has been approximately found by skiascopy, the instrument is held with the most likely glass before the eye, and the axis put in the right position by moving knob and rod accordingly. This done, all the other glasses are at once in position, and can be placed before the eye by simply moving the frame up or down. This for the one vertical row. Should the required glass be in the other row, the instrument is simply turned round its longitudinal axis, back to front, and owing to the symmetrical rotation of the mechanism all the cylinder glasses of this row are again in correct position. The reversing of the instrument is necessary—the same as in the spherical refractometer—because it has to be passed with its edge along the nose, so as to allow the glass to be properly placed before the eye.

The execution of the instrument has been troublesome. I have approached the likeliest instrument makers in this country and abroad, but met with the greatest discouragement. Of the technical objections, the chief one was that the friction of eighteen toothed wheels would be too great for the toothed rod to work at all. This objection, I am glad to say, has been shown to be completely without foundation. I have had the instrument made in brass and in other materials. In brass it works very well, although it is rather heavy. Only a few days ago I received the latest model, namely, the frame made of wood, which, as you will see, answers excellently. The mechanism works so smoothly that it is a pleasure to use it. One of the greatest difficulties was that the instrument must be so light and smoothly running that it can be worked equally well with either hand singly, back and front.

Both refractometer and astigmometer are portable. They are not intended to leave the hand of the examiner.

I take this opportunity of pointing out that there seems to be a generally accepted notion that skiascopy requires a minimum distance of at least 1 yard or more of examiner from examinee. Is it really necessary for me to say that this is a fallacy? When recently demonstrating my instruments to an ophthalmic surgeon, he could not understand that skiascopic examination can be carried out at 18 in. distance, as well as at 2 yards. He told me he had never heard of such a thing, and I suspect that in his inmost heart he did not quite believe me. I have not the time to-day to go into particulars about skiascopy, and must leave this to another occasion.

I have tried to solve the problem of a portable refractometer for both spherical and cylinder glasses by means of a system of glasses at variable distances from each other, and have arrived at a satisfactory conclusion theoretically. There are, however, too many reflecting surfaces, and the single lenses in the form I have shown here are infinitely superior for practical work. For this purpose the instruments have been devised to suit my personal requirements.

The numbers of the glasses are marked on both sides. For use in the dark room the vertical column carrying the weaker glasses will be specially marked in the spherical refractometer. The astigmometer has the axes marked not only on the glasses, but also on the mounts, on both sides.

I have to thank the makers of the refractometer, Messrs. Priest and Ashmore of Sheffield, for the interest they have taken in its production. As for the astigmometer, I had to go to Germany where the mechanical difficulty of overcoming the friction of the eighteen wheels has been solved in such an admirable manner by the maker, Mr. Sydow of Berlin, that no praise of mine is needed.

A DISCUSSION ON IRIDOCYCLITIS.

OPENING PAPER.

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INSIDE the ciliary muscle and between it and the epithelial layers which constitute the pars ciliaris retinae is a fine network of blood vessels supported by a fibrillar connective tissue. The main blood supply is from the circulus arteriosus major, which sends branches backward in the ciliary muscle towards the choroid, others forward to supply the iris and its vascular ring around the pupil, but the greater part of the blood passes into the ciliary processes, forming in them a plexus of fine capillaries, so that each process in the pars plicata is a blood reservoir somewhat like a glomerulus in the kidney. The pars nonplicata, on the contrary, is somewhat sparsely supplied with blood vessels.

While the chorio-capillaris of the choroid is placed between two impermeable layers—the internal (Bruch's layer) and the external limiting membrane—at the ciliary body these membranes disappear, and allow the

capillaries to come into direct contact with the epithelial cells. The aqueous is secreted from the chorio-capillaris of the ciliary body by the intervention of these cells.

The ciliary veins are very numerous, nearly all of them empty towards the vasae vorticosae; a few twigs from the outer part of the ciliary region pierce the sclerotic, as the small "anterior ciliary veins," while others join the canal of Schlem.

The blood vessels and other parts of the ciliary body are supported by a fibrillar connective tissue with which the iris is directly continuous, the two forming one structure. The anterior surface of the iris contains a number of crypts which open into the anterior chamber and are probably concerned with absorption rather than with secretion.

The inner wall of the ciliary body is known as the "pars ciliaris retinae." At the ora serrata the external pigment layer of the retina (uvea) is carried on unaltered to cover the ciliary body and its processes, with their folds and lacunae. But the rest of the retina is profoundly modified; the rods and cones and nerve elements somewhat suddenly disappear, while the connective tissue portion and limiting membranes become modified and give place to a layer of cylindrical epithelium, which lines the inner surface of the uvea and passes everywhere with it.

The surface provided for the secretion of the intraocular fluids is much increased by the arrangement of the ridges, folds, and undulations of the "pars plicata." Its area has been estimated at about 6 cm. (nearly 2½ in.) square.

Though in animals below the mammalia there may be other sources for the aqueous and intraocular nutrient fluids: anatomical, experimental, and clinical evidence all go to show that in man and mammals the intraocular fluid is secreted from the ciliary processes, and that the other vascular structures in the eye take very little, if any, part in its production.

There is probably but little secretion from the anterior surface of the iris, its structure seems to resemble that of the "filtration angle," and it is essentially concerned with absorption.

Is the fluid from the ciliary processes merely a transudation (like lymph) solely due to simple *filtration* from the ciliary capillaries? Or is it a *secretion* from the epithelial cells? Leber thinks that the intraocular fluid is produced from the ciliary processes simply by *filtration*, and that the amount is determined by the difference in pressure between the blood in the capillaries and the fluid in the eyeball. Nicati believes that the aqueous is a *secretion* from the cells of the glandular epithelium of the pars ciliaris retinae, and he names this the gland of the aqueous humour.

The blood pressure, intraocular pressure, and secretion of aqueous stand in a causal relationship to one another. A rise of intraocular pressure causes an increase in the amount of fluid secreted. The rate of absorption (or filtration) is also hastened by increase in the intraocular pressure. An increase of proteids in the intraocular fluid (thus hindered in its filtration) lessens the rate of absorption.

Treacher Collins believes that he has discovered special gland-like processes from the pigmentary layer in the epithelium best marked in the plicata at its junction with the "nonplicata" (Collins's glands).

When we consider the important functions of the ciliary body in the secretion of the aqueous, and of the nutrient fluids for the vitreous and lens, we should expect a slight modification of the secretory process to occur from time to time. Evidence, however, in this direction by the presence of vitreous opacities is by no means common.

Sometimes we observe a fine haze in the anterior part of the vitreous just behind the lens, or dots or fine threads may be seen floating in it; such a condition is probably due to exudation from the ciliary vessels or Collins's glands. Any mild catarrh or hyperaemia of the ciliary body is likely to be accompanied by slight superficial synchysis; but unless the fibres of the vitreous body are structurally injured, such haze behind the lens is temporary, or so slight as to be unobserved.

Choroiditis is undoubtedly often associated with vitreous opacities, and should always be suspected when the synchysis is thick and dense. But, on the other hand, very definite and widespread choroiditis may be present without any well-marked vitreous opacities, which, when present, are probably to a large extent dependent on implication of the ciliary body.

A. Serous cyclitis may consist merely of excessive secretion from the ciliary vessels, but, when more definite, it consists essentially of a catarrhal inflammation of the ciliary body and gland. There is congestion of the ciliary blood vessels, with circumcorneal hyperaemia, increase in the aqueous fluid, which becomes fibrinous, and may contain a few leucocytes, with pigment epithelium.

The more solid particles wash into the meshes of the filtration angle, and others are easily seen as punctate spots at the back of the cornea.

When the secretion is albuminous it does not readily exude, and it may distend the aqueous (aquo-capsulitis) and produce a form of glaucoma which needs paracentesis of the chamber. The iris becomes discoloured, but few if any synechiae are formed. Such cases subside without any deterioration of the sight, but like other catarrhs they have a tendency to relapses and recurrences, to a more or less definite extent. According to the control of the ciliary blood vessels or the condition of the blood we see *serous*, *catarrhal*, *haemorrhagic*, or *plastic* exudations.

There is a form of slight iridocyclitis which has a great tendency to recur. If well treated years may pass without any permanent synechiae being formed or any damage done to the eye or sight, after repeated attacks. In such a case each return of "cold in the eye" should be looked upon as an attack of "recurrent iritis," and mydriatics should be used to stop the attack and prevent synechiae which will otherwise form.

Another type of iridocyclitis in its progress closely resembles interstitial keratitis. A serious amount of mischief may be done to the eye, but it eventually results in a gradual and more or less complete recovery. These cases are essentially chronic and continuous, often binocular; the cornea is unaffected, excepting for the presence of K.P., though this may occasionally set up descemetitis and proliferation of the cells lining the aqueous chamber. There may be no peg teeth or other evidence of inherited syphilis.

B. Plastic Iridocyclitis.—When the inflammation is of a more active type, the hyperaemia is more intense, the eyeball is congested, and the conjunctiva swollen. The exudation is fibrinous and associated with the presence of leucocytes; it lines the surface of the ciliary body, passing forward among its processes and back along the pars nonplicata and retina. Multinuclear cells are seen on the surface of the iris, and they pass into the vitreous and aqueous fluids. A hypopyon may be chiefly cellular and fluid or fibrinous, according to the composition of the exudate. The leucocytes almost certainly come from the blood vessels of the ciliary body; they have migrated either through the epithelium of the pars ciliaris retinae or have escaped more readily by damage in this membrane. The pigment cells may break up and pigment escapes. The exudation spreads in all directions, the leucocytes proliferate and form new cell material; new blood vessels are also formed. As the exudation continues to develop it forms layers; towards the ciliary body it tends to be fibrous; towards the vitreous cellular; and fibrinous between the two. Cell growth and proliferation is most active towards the vitreous. Leucocytes, lymphocytes, cells from the retinal epithelium, and large, free masses of protoplasm are formed in the fibrinous exudate. The connective tissue of the ciliary body is oedematous and densely crowded with multinuclear cells. The future progress of this exudation depends on the progress of the original irritation which has been its cause. If the irritant is removed, or if the inflammation ceases, the vessels will contract and existing diapedesis will be checked. But the exudate already existing can only be gradually modified. If it is small in amount it may be slowly absorbed; if large, the cellular portions towards the centre of the vitreous tend to degenerate and undergo fatty changes, which may be accompanied by softening of the vitreous humour.

Along the ciliary body, iris, and adjoining structures, fibroblasts develop from the fixed connective tissue cells and invade the exudate. The fibrous tissue increases, forming cicatricial bands or membranes which will affect the eyeball in various ways, according to their relationships. The lens may be bound down behind by lymph and cyclitic membranes, or in front by synechiae. The ciliary body may be dragged away from the sclerotic, or

the retina towards the lens, with more or less implication of the pupil, or even complete obliteration of the posterior chamber. Degeneration of the ciliary body and vitreous with shrinking of the globe may follow, and if there is no pain and has been no external wound or lesion of the eyeball, it may usually be safely left alone.

The tension in iridocyclitis is variable. The ciliary body presides over the nutrition of the eyeball, and affections of it are usually associated with diminished tension. During inflammation, however, the tension may be raised (*a*) by the increased blood flow through the arteries and the engorgement of the veins, (*b*) by the increase in the secretion of intraocular fluid and by the difficulty in its escape at the filtration angle by reason of its albuminous nature When there is a free escape for the secreted fluid or when the amount of secretion is diminished the tension again becomes reduced. The usual conditions that predispose to glaucoma act during an attack of iridocyclitis, and the most important are the conditions of the filtration angle and the nature of the exudate.

C. After injuries to the eye or in patients in a very low state of health, the inflammation may be acute and the exudation *purulent*. Micrococci and polymorphonuclear leucocytes are in great excess, the epithelial layers are destroyed, and the pigment cells proliferate. Hypopyon is usually present; prognosis is very serious, for panophthalmitis usually results.

We have a typical picture of iridocyclitis in "sympathetic ophthalmia." It is generally subacute in character, with lacrymation, impairment of accommodation, injection of the anterior ciliary arteries, haze in the aqueous, sluggish pupil, circumorbital pain, and tenderness of the ciliary region. The exudation passes into the vitreous humour, it discolours the front of the iris, causes swelling of the stroma, produces synechiae at the pupil, or causes retraction of the root of the iris by gumming it to the ciliary processes. There is always "cornea punctata," sometimes hypopyon.

Causation.

Iridocyclitis is usually the effect of constitutional dyscrasia depending on organisms, an incident in a general infection rather than a disease, a blood poisoning associated with syphilis, inherited and acquired; in rheumatic fever it is rare; in gonorrheal rheumatism not uncommon. In rheumatoid arthritis an infective disease due to micro-organisms in the joints, scleritis and insidious iridocyclitis are fairly frequent. Attacks of mild iritis often occur in indefinite rheumatoid, rheumatic, or gouty conditions. Iridocyclitis may complicate the retinitis of albuminuria or diabetes, or may occasionally anticipate retinitis in these diseases, it may complicate the toxic poisoning of gastro-intestinal or vaginal inflammations, or it may be caused by "pyorrhoea alveolaris" or sepsis in the nose or accessory cavities.

Mumps and typhoid fever have been complicated by iridocyclitis. Typhoid bacilli have been found in the aqueous humour. Iritis may complicate septicaemia; cardiac and vascular disease may cause it; and a few cases have been reported of "cornea punctata" with tachycardia. Anaemic women seem specially predisposed to recurrent painless iritis.

Iridocyclitis thus appears to be essentially an endo-infection, depending probably on microbes. But the effect of cold, slight injuries to the predisposed eye, ocular fatigue from overwork, or light may be the exciting causes.

Lastly, as a cause of iridocyclitis, must be mentioned *wounds*, which in the ciliary region, or "dangerous zone," are liable to be followed at a longer or shorter period by a sympathetic cyclitis of the fellow eye. The progress of a wound in the eyeball will depend partly on the mechanical injury inflicted and partly upon the infection of the wound by septic organisms.

Treatment of Iridocyclitis.

A wounded eye must be thoroughly disinfected by repeated antiseptic washings; foreign particles must be removed, with any crushed or infiltrated edges of tissue; application of the cautery may be sometimes advisable. Thorough asepsis is of the first importance; a stitch or two may be thought advisable, but no deleterious substance must be sewn in. In all cases of iridocyclitis there must be *rest* of the eye and of the patient; relief from pain, if necessary by the free administration of morphine.

Can any special protection be applied against the action of micro-organisms or of the toxins they produce? The nutrient humour has some inhibitory power which it derives from the blood serum—subconjunctival injection of a 4 per cent. sterilized salt solution increases this antitoxin effect, and seems to aid the escape of the antibodies from the blood serum; recently sterilized air has been injected under the conjunctiva, 1 to 2 c.cm. as a dose. Sublimate and oxycyanide of mercury $\frac{1}{2000}$ have proved useful as antiseptic injections.

The local blood pressure will be relieved by use of leeches on the eyelids, and by the administration of a hydragogue purge. The application of *heat* (*dry* or *damp*) is always comforting. The use of a *mydriatic* is essential. A quite moderate iritis may block the pupil and prevent the escape of fluid from the posterior to the anterior chamber. But besides dilating the pupil, atropine tends to constrict the blood vessels and lessens the exudation from them. The increase of tension due to exudation may be at once relieved by it, or in its place hyoscine hydrobromate may be used. Dionine is often of great service in relieving pain and the vascular overdistension.

There is no sound reason for the use of myotics in iritis or iridocyclitis, even when the tension is high, for this is not due to narrowing of the filtration angle, but to its engorgement from the imperfect diffusion of the albuminous exudate—one or two applications of eserin or pilocarpin may occasionally be of service, but if continued they will only increase the vascularity and secretion, and will encourage the formation of synechiae. If the tension continues the aqueous chamber should be tapped by a wide sclerotomy; this will relieve the pressure, give escape to the albuminous exudation, will for some days give good drainage, and allow of the free use of atropin.

Paracentesis of the anterior chamber during health encourages the flow of antibactericidal substances from the normal blood into the aqueous, but they soon disappear; during inflammation it is of service in this way, and also because it allows of the escape of bacteria and toxins and of unhealthy secretions, while at the same time it improves the local conditions of the blood, as well as the power of its circulation. It may be beneficial even when tension is subnormal, and if there is much congestion and exudation it may be of great service, and can be repeated without fear of danger. Iridorrhexis, tearing of the synechiae with a spud, may occasionally be associated with paracentesis.

Iridectomy frequently becomes necessary, but it should not be done during the acute attack if it can be avoided; most of the urgent conditions can be met by paracentesis which may be repeated if required.

Occasionally occlusion of the pupil, or other complication may seem to render it necessary, but fresh exudation is liable to refill the coloboma, or the vitality of the eye may be more lowered by the operation, and may tend to softening and shrinkage.

When the eye is quiet after an attack, iridectomy should be done, if the pupil is becoming tied by multiple synechiae, and particularly if it has become *excluded* with or without the complication of iris bombée.

Operation is necessary for high tension, but it may be occasionally beneficial when the tension is subnormal, particularly when there is haze or floating opacities in the vitreous humour, for these are caused by an unhealthy condition of the ciliary body, which the operation may improve.

Complete posterior synechiae will make the operation difficult, but even so the front of the iris can usually be removed, leaving the uvea in contact with the front of the lens and the posterior chamber opened up.

I frankly admit the great value of iridectomy in lessening the attacks, or even in arresting the disease in certain cases. But is not our application of it somewhat empirical, based upon bare practice? It is often recommended as a panacea. But a large experience shows its effects to be very disappointing in many of the cases.

If a case of iridocyclitis is a local manifestation of the faulty blood condition in a general disease, treatment must be directed to this primary cause of the eye affection, and it is of first importance that an accurate diagnosis in this direction should be made, so that a sound prognosis can be given and the appropriate remedies applied without

delay. Every consideration for the general health, and particularly of the intestinal tract, which often requires purgatives and antiseptics, is desirable. Encouragement of elimination by the skin by Turkish or other baths, and the exhibition of drugs suitable to the case, and particularly of mercury when causation seems uncertain, give the main lines for treatment.

DISCUSSION.

Mr. Holmes Spicer (London) said he would like to ask Mr. Cross for his definition of the term "strumous"; whether he intended it to mean tuberculous or not; because if not, its use appeared to him vague and unsatisfactory. With regard to the so-called rheumatic cases of iridocyclitis, Mr. Holmes Spicer had seen some cases of rheumatic iritis produced by the injection of the rheumatic streptococcus, but the appearance of the iris was very different from any form of rheumatic iritis that we were familiar with. There were large suppurating nodules on the iris discharging pus into the anterior chamber, and seemed to be more pyaemic than rheumatic. As to operations, he was not disposed to operate on these cases; his experience was that the iridectomy coloboma generally closed again; but he believed that iridectomy in recurrent iritis was most valuable as a preventive and curative agent. He thought that eserine was to be avoided in all these cases.

Mr. J. Herbert Parsons (London) confined himself to the discussion of the pathology, etiology, and treatment of the disease. He briefly described the normal conditions of lymph supply in the eye and the functions of the ciliary body in the process of secretion. He pointed out that the conditions of secretion were not inconsistent with a theory of simple filtration, but he did not deny the probability of factors which could not be explained upon a purely mechanical theory. The resemblance of the ciliary processes to the glomeruli of the kidney was striking in this relationship, and chronic cyclitis had many points of similarity to chronic nephritis. Subacute and chronic iridocyclitis must be regarded as essentially toxic in origin, and the problem was to discover the source of the toxaemia. Syphilis was a common cause. Oral sepsis, especially pyorrhoea alveolaris, might be accepted as a fully-established cause. Sometimes the nasal passages or sinuses were the seat of septic mischief. More commonly the generative organs were at fault, and the frequency of uterine disorders probably accounted largely for the greater prevalence of the disease in women. Perhaps the most important cause of all was toxaemia of intestinal origin, which must also be taken into account in considering the sex incidence. Enterogenous toxaemia was difficult of proof, and further research on the subject was much needed. He would commend the suggestion made to him by his colleague, Mr. Percy Flemming, to test the opsonic reaction of these patients against *Bacterium coli*. Finally, the possibility of the existence of specific cyclotoxins must be borne in mind. Rational treatment must be founded upon the views of etiology already expressed. Any source of sepsis or other cause of toxaemia must be sought out and attacked. In the absence of oral, nasal, or uterine disorder it was advisable to attend to the cleansing of the intestinal tract. Calomel was the most important agent in this respect, and he recommended that it should be followed up by intestinal antiseptics, for example, naphthol, guaiacol carbonate, etc. He believed that the good sometimes resulting from the use of salicylates was often due to this effect. As regards local treatment, in addition to the usual remedies, he had had some remarkably good results with dionin, precipitates on the back of the cornea ("k.p.") clearing up in a quite unexpected manner. Subconjunctival injections of saline might be used. He deprecated paracentesis except in those comparatively rare cases in which the intraocular tension was extremely high; it was wrong on theoretical grounds and proved relatively unsatisfactory in practice. It was his custom in cases which resisted treatment to place the patient under a prolonged and energetic course of hot baths, diaphoresis with pilocarpin, mercurial inunctions, potassium iodide by the mouth, etc.

Mr. Roper (Exeter) said that he would wait for a very long time—from six to twelve months—before making an artificial pupil. He considered that enough stress had not been laid on the effects of the free exhibition of mercury, preferably by inunction, and said that he had been favourably impressed by the action, both on the local condition and on the nutrition of the patient, of iodipin.

Dr. Hern said: I would like to ask Mr. Cross how he treats his sympathetic cases of this disease. I seldom do an iridectomy in these cases, for unfortunately softening of the eyeball and blindness follows the worst cases, whether iridectomized or not, and, as has been mentioned by more than one speaker to-day, the coloboma becomes filled up, and the last condition is worse than the first.

Mr. Devereux Marshall (London) said he quite agreed with Mr. Richardson Cross as to the use of atropine and, if necessary, paracentesis. He thought that eserine always did harm, no matter what the tension was.

Dr. Reber (Philadelphia) said: In the States I think the disposition is to look upon iridocyclitis as the local expression of a general disease. As ophthalmic surgeons, we are prone to look too much upon the local disorder to the neglect of the constitutional condition. Particularly is this true among our younger men, who are rushing into ophthalmic practice with scarcely any general medical or surgical experience. It is our practice to look upon all such patients as the subjects of very defective elimination as evidenced by acetonuria and indicanuria. They are therefore briskly purged by a course of calomel, and the mercurial effect then continued by other means. Gastric intolerance we do not see much. If met with, the patients are sweated heavily, when their gastric tolerance is generally re-established. Syr. hydriodic acid is usually gratefully accepted by such patients. Subconjunctival injections are of little, if any, value in rheumatic iritis, but in the quiescent stages of the proliferative form of the disease are often distinctly helpful. In these conditions (assisted by dionin) much exudate may thus be cleared away. It is with extreme hesitation that I go counter to the experience of such authorities as Professor Landolt and Mr. Spicer. But in the later stages of obliterative iridocyclitis or uveitis, the patient ought to be given every chance, and if such cases are iridectomized, and this later persistently followed up by dionin and subconjunctival injection locally (and prolonged mercury internally), I believe we are then giving the patient every chance we can.

Colonel Herbert referred to plague as a common cause of very distinctive iridocyclitis in India. Maynard had described cases some years ago. In most cases rapid disorganization of the eye occurred without violent reaction. And the atrophy which ensued was marked by extreme shrinkage of the cornea, and usually by perforation of the sclerotic in the ciliary region. In the treatment of infective iridocyclitis, after operation Colonel Herbert had received great help from mercury by inunction and otherwise, sufficient rapidly to produce slight salivation. As regards iridocyclitis with high tension, the majority of these cases present visible exudation in the anterior chamber, and one properly performed tapping usually reduced the tension permanently. This might be done subconjunctivally in out-patients by a very narrow Graefe's knife thrust across the periphery of the anterior chamber. The counter-puncture was made subconjunctival by twisting the blade as the point came slowly through, to allow of leakage of aqueous under the conjunctiva. Difficulty as regards treatment was experienced in cases where the predisposition to glaucoma was marked in old people with shallow chambers, and where sometimes the degree of iridocyclitis was very slight. The cases were not far removed from primary subacute glaucoma.

FOUR CASES OF CONGENITAL WORD-BLINDNESS OCCURRING IN THE SAME FAMILY.

By James Hinshelwood, M.A., M.D.,
Surgeon to the Glasgow Eye Infirmary.

The term "word-blindness" was first used by Kussmau in his article in *Ziemssen's Cyclopaedia* on Disturbances in Speech,[1] in 1877. In this article Kussmaul first clearly pointed out that blindness for words can be met with as an isolated condition. His exact words are "a complete text blindness may exist, although the power of sight, the intellect, and the powers of speech are intact." Kussmaul

invented the term "word-blindness" for this condition, in which the patient, though seeing the words, is yet unable to read them. The cases of word-blindness referred to by Kussmaul were cases of acquired word-blindness which had occurred as the result of disease of a special area of the brain, namely, the left angular gyrus in right-handed people.

Our knowledge of the congenital form is of very recent date. The credit of reporting the first case belongs to Dr. W. Pringle Morgan,[2] who in the BRITISH MEDICAL JOURNAL of November 7th, 1896, made the first communication on this subject. Dr. Pringle's report was a brief one, confined simply to a statement of the facts of the case, without any further comment than that it was, in his opinion, an example of a congenital form of word-blindness. Dr. Pringle in sending me a copy of this short paper was good enough to say in a letter enclosed with it: "It was your paper[3]—may I call it your classical paper?—on word-blindness and visual memory published in the *Lancet*, December 21st, 1895, which first drew my attention to this subject, and my reason for publishing this case was that there was no reference anywhere, so far as I knew, to the possibility of the condition being congenital."

To the *Lancet* of May 26th, 1900,[4] I contributed a paper containing a report of two other cases of congenital word-blindness. In that paper I did not confine myself simply to a mere record of the facts of the two cases, but I analysed in detail all the symptoms and gave a full explanation of them, based on our knowledge of acquired word-blindness, regarding which I had made several previous communications. I have never claimed to have reported the first case of congenital word-blindness, but I do claim that this paper published in 1900 was the first attempt in medical literature to analyse and explain the symptoms in detail, to place the diagnosis on a scientific basis, and to show that the difficulties encountered in teaching these children to read could be overcome by patient and persistent training.

Since this communication there have been numerous cases reported in this country, in America, and on the Continent, but with one exception nothing has been added to the further elucidation of the subject, beyond what I stated in my *Lancet* article on May 26th, 1900. The exception to which I refer is the paper[5] by Dr. C. J. Thomas, Assistant Medical Officer, London County Council, which appeared in the *Ophthalmic Review*, August, 1905. In this paper Dr. Thomas called special attention to the fact that congenital word-blindness may assume a family type and that a hereditary tendency is probable. The present example of four members of the same family with congenital word-blindness is a brilliant confirmation of the correctness of Dr. Thomas's observation.

For information regarding the educational history of the members of the family under discussion, I am greatly indebted to Mr. James Heard, of Calderhead School, where the whole family, consisting of eleven children, had been educated, and who personally brought the affected members to see me. Mr. Heard informed me that there was no difficulty experienced in the education of the first seven members of the family, but that the eighth, ninth, tenth, and eleventh—all boys—experienced the greatest difficulties in learning to read. He also said that in his long experience as a teacher he had never before met with anything like the difficulties encountered in attempting to teach these four boys to read, and that he was greatly puzzled how to account for it, as in every other respect the boys seemed so intelligent. Dr. W. Lewis Thomson, Assistant Medical Officer of Health for Lanarkshire, to whom he had mentioned the remarkable case of the four boys, at once recognized the true nature of the difficulty. Dr. Thomson, being an old pupil of my own, was thoroughly conversant with the nature of congenital word-blindness, and at once recognizing that the four boys were typical cases of this condition, kindly arranged that the children should be sent to see me. I saw them at the Eye Infirmary on March 22nd, accompanied by their mother and the schoolmaster, who gave me valuable information about their past history.

1. G., 12 years of age, the youngest member of the family, had been at school for more than seven years, having joined it in January, 1900. His mother states that his general intelligence was good, and that he was quite as smart in every way as the other members of the family. The schoolmaster informed me that since going to school the greatest difficulty had been experienced in teaching him to read. The children at his school were not taught in "the look-and-say" system, but in the old method, learning first the letters of the alphabet. After seven years at school George could not read by sight even a child's first primer.

On examining him with the letters of the alphabet I found he knew most of them, but not all. He did not recognize *p*, *v*, *b*, *d*, *f*, and *g*. On testing his power of reading I found that he was quite unable to read by sight even a child's first primer composed of monosyllabic words, but was only able to pick out a word here and there. On a whole page of a child's first primer he could only recognize by sight five words—it, is, to, can, and not. He recognized nearly all the words if they were spelt out to him, and he recognized most of them if allowed to spell them out himself. But when I forbade him spelling them aloud or even spelling them silently, by forbidding him to move his lips, he could only recognize the five words given above, and was quite unable to read by sight alone any single sentence in this child's first primer.

If allowed to spell out each word letter by letter and thus appeal to his auditory memory, he could read the most of them; but if confined to the recognition of the words by sight, he could recognize only a very few of the simplest and most common words. His stock of visual words and memories was thus extremely limited, and that after being over seven years at school.

He has made much better progress in arithmetic. He reads fluently numbers up to hundreds of thousands and can do sums in addition, subtraction, and multiplication. He has thus made much greater progress with his arithmetic than with his reading, although even in this department his master informs me he is below the average.

His auditory memory and general intelligence are good, and he can readily learn anything taught in the way of oral instruction. He repeated several verses from memory with great fluency and without a single mistake, which he had to learn by heart the week before as part of his school work. He recognizes at once and names all kinds of objects and pictures shown to him. He has learned to write well. He cannot write to dictation, but copies correctly. His vision is practically normal, and his general health is good.

2. H., aged 14 years has been at school for nine years. The greatest difficulty has been experienced all through those nine years in teaching him to read. He should now have passed all the standards and have been in the supplementary class, but is only in Standard III. It has been this difficulty in learning to read which has kept him back, as otherwise he is a smart and intelligent boy. He gets on well with his arithmetic, and is at present doing the compound rules, which he does fairly well. His auditory memory is good, and he can learn by heart easily what is imparted to him by word of mouth. He writes well, and no difficulty was experienced in teaching him either arithmetic or writing.

With regard to his learning to read, the schoolmaster informs me that the greatest difficulty with him was experienced during the first three years, during which so little progress was made that it seemed for a time that the difficulty would prove insuperable. During the last two years, however, he has made substantial progress, and is now learning to read. When I tested him with the reading book of Standard III, I found that he could read slowly and laboriously if I allowed him to spell out the words. He knew all the letters, but very few of the words by sight, only some of the monosyllabic and most familiar ones. However, even in this respect he was improving and gradually increasing his stock of word memories, which was still very limited, but much larger than that of his younger brother.

3. J., aged 18 years, was at school for seven years, and left when 14 years of age. He has now left school for four years, and has been working as a miner. His schoolmaster informs me that throughout his whole school career there seemed to be an insuperable difficulty in his learning to read, and at the end of the seven years he left school without being able to read even the child's first primer. What struck the schoolmaster, however, as most extraordinary was that with regard to his arithmetic he made good progress, and had no difficulty in keeping up with the other boys in this department, and before he left school had gone through all the compound rules, practice, and simple proportion.

His auditory memory was good, so much so that he learned his reading books by heart from hearing others go over them, so that when he got a start he could repeat considerable portions by heart. He learned to write quite easily, and could copy fairly well, but of course could not write to dictation.

The most interesting point in J.'s career was that any progress made in reading had been accomplished during the last four years, after he had left school. He has thus practically taught himself. He is a great football enthusiast and his mother informs me that since leaving school he has got the *Referee* every Monday and Friday, which gives detailed accounts of all the football matches. Every night, his mother states, after his work, he would spend a large part of the evening in poring over this newspaper and attempting with the help of

others to spell out the results of the matches in which he was interested. At first he could do this only very imperfectly and laboriously with the help of others, but now he can do this without help. On testing his power of reading with a child's first primer I found that he could only read about one half of the words, without spelling them, the other half he could read if allowed to spell them out letter by letter, so that he could not read fluently even the child's primer. When I examined his power of reading with an ordinary book, I found that he recognized by sight very few words of more than one syllable, but has to spell them out letter by letter. Such monosyllabic words as, the, of, was, to, in, his, and, etc., he recognized at once. When I examined his ability to read football news, I found he could do this much better, as he could recognize by sight a much greater number of words. Such terms as goal, goalkeeper, forwards, backs, runs, dribbling, etc., and the names of the various clubs he could recognize by sight at once. By persistently poring over the football news for the last four years, he had acquired a comparatively good visual vocabulary of football terms and hence he could always make something of the accounts of football matches, although still with great difficulty and spelling out a considerable number of words.

4. M., aged 16 years, was nine years at school, and left it one and a half years ago. He has since then been working as a miner. I have not been able personally to interview him, as he has refused to allow himself to be examined, so that I can speak of him only from the information supplied by his schoolmaster, his mother, and brothers. The schoolmaster informs me that after nine years at school M. left it without being able to read. He practically made little progress beyond learning the letters of the alphabet. His general intelligence and auditory memory were good, and, like his older brother J., he learned his reading book by heart from hearing others repeat it, so that, if he got a start, he could read off a good portion of the lesson from memory. He made fair progress in arithmetic, and when he left school was working at the compound rules. He learned to write quite easily and copied well, but, of course, could not write to dictation. Since leaving school, his mother informs he, he has never made the slightest attempt to learn to read and never looks either at book or newspaper. At present she says he can read none.

In my first paper,[4] in 1900. I reported 2 cases of congenital word-blindness. In 1902[6] I reported other 2 cases, and at the Oxford Meeting of this Association in 1904[7] I reported a fifth case. Since then I have seen other 3 cases, in addition to the 4 reported in this paper, thus making 12 cases of pure congenital word-blindness seen by me since 1900.

As these other cases, however, presented no new features I have not recorded them. Since knowledge of this subject has gradually been diffused amongst opthalmologists, a steadily-increasing number of cases has been recorded both at home and abroad, so that reports of such cases have no longer the charm of novelty. The only striking point about the 3 other cases, which I have seen since 1904 was that 2 of them had been seen by ophthalmic surgeons and glasses prescribed, in the belief that some trifling refractive error was the cause of the difficulty experienced in teaching these chlldren to read. In one case the child had been seen by two different ophthalmic surgeons, each of whom had prescribed glasses. The boy had a slight refractive error, but a careful consideration of such cases and analysis of the symptoms would soon make it clear that the difficulty was not ocular but cerebral. The point which at once aroused my suspicion as to the true nature of the case was that the difficulty did not extend to arithmetic, in which he made good progress. Now, had the difficulty been an optical one, it would have been quite as great with figures as with letters. In each of the 4 cases enumerated in the present paper the difficulty was confined to learning to read, and they were all fairly good at arithmetic. This fact alone should always excite attention, and also affords a strong presumption that the cause of the difficulty is not ocular but cerebral.

In my book[8] on letter, word and mind-blindness, I have shown from the study of cases of acquired word-blindness, that the visual memory for words and letters is completely independent of that for figures, and hence in congenital word-blindness it is not surprising that whilst the visual memory for words may be very defective, that for numbers may be perfectly normal. In all my papers on congenital word-blindness I have called special attention to this point, as being helpful in the diagnosis. Too much importance, however, must not be assigned to it, as cases have been reported where the difficulty extends to both figures and words. Nor should this surprise us, since we know that the cerebral areas utilized for the storage of the visual memories of words and figures though distinct are close together, and hence may be simultaneously involved.

Another point in the diagnosis of these cases, is that the difficulty of reading is always the same, no matter how large the type is. The size of the letters makes no difference whatever to such patients, as it would do if the difficulty in reading were due to ocular defect. Again, if the surgeon analyses the symptoms carefully, it will be seen that in most cases the patient has little difficulty in recognizing the individual letters, as would be the case in a purely ocular defect, but his chief difficulty is in recognizing the words by sight, without spelling them out letter by letter. In short, the difficulty consists in storing up the visual images of the words, owing to some defect in the cerebral centre for the visual memory of words, which is situated in the left angular gyrus in right-handed people.

In the diagnosis of such cases also attention must be paid to the general intelligence of the patient. Congenital word-blindness is a local affection of the brain, and such patients, as a rule, are as bright and intelligent as other children. In the 4 cases under consideration the boys in other respects were quite as intelligent as the other seven members of the family. Such cases must be carefully distinguished from those where there is, in addition to difficulty in learning to read, a general lack of intelligence and general failure of the mental powers. In this latter group the difficulty in learning to read is due to a general lack of development of the higher cerebral centres, and should not be mistaken for congenital word-blindness, which is an affection of a special cerebral area in an otherwise normal and healthy brain.

The 4 cases of congenital word-blindness recorded in this paper present no new aspects if taken individually, but the record of 4 consecutive cases occurring in the same family is unique, so far as I am aware. It affords the strongest confirmation of the important observation made by Dr. C. J. Thomas in the paper[5] previously quoted, that congenital word-blindness frequently assumes a family type, and that a hereditary tendency is probable.

The four boys affected were the youngest members of a family of eleven, and the seven older members all learned to read without experiencing any abnormal difficulty. The striking point about the cases of the four boys is their close resemblance to each other, showing that the cerebral defect in each case was very similar. In other respects than the great difficulty experienced in learning to read, these four boys were quite as intelligent as the other members of the family. They all learned to count fairly well. Their memory, except for the visual memory of words and letters, was good. They all learned to write easily, and could copy correctly and well. It is evident that their cerebral defect was a purely local one, and also very similar in each case, in short, that it was strictly confined to the cerebral area for the visual memory of words and letters, the left angular gyrus, and did not extend at all beyond that.

In my Oxford paper[7] I said, "if there be any abnormality within this area, due either to disease, to injury at birth, or to faulty development, it is easily conceivable how such a child should experience abnormal difficulty in learning to read. Any condition diminishing the number of cerebral cells within this area, or perhaps interfering with the blood supply would diminish the power of retention of the visual images of words and letters." The fact that we have here four consecutive members of the same family with an affection of a special cerebral area makes it tolerably certain that the condition is not due to cerebral disease, nor is there any history of difficulties at birth. We are therefore inevitably led to the conclusion that the defect is due to faulty development of this special area, which when once it had begun in the eighth member of the family, was repeated in the ninth, tenth, and eleventh. The probability is that in most of these cases the defect is one of development rather than due to the effects of disease.

With regard to the treatment of cases of congenital word-

blindness, in a letter to the British Medical Journal, November 21st, 1896,[9] commenting on Dr. Pringle Morgan's case, I said that in all probability the difficulty in learning to read in such cases could be overcome by persistent and persevering training. The opinion expressed at that early date has been amply confirmed by subsequent experience, and in all my subsequent communications on the subject of congenital word-blindness I have insisted strongly upon the fact that the children suffering from this affection can be taught to read if it is set about in the proper way.

In every case which I have met with up to the present, the children have been taught to read, and my experience has been borne out by that of others. Of course, let it be remembered that this statement applies to pure cases of congenital word-blindness where there is no other cerebral defect and where the brain is otherwise normal and healthy. We must recognize the fact, however, that such children can be taught only with great persistence and perseverance. I have elsewhere reported[7] a case of acquired word-blindness due to disease, where the patient was taught again to read after years of steady persistent teaching. All the centres involved in speech are on the same side of the brain, and if one of these areas is destroyed by disease, or is congenitally defective, a corresponding area on the opposite side may be educated to perform its function. In these cases of congenital word-blindness it is highly probable that the right angular gyrus takes up the function of the congenitally defective left angular gyrus, and hence the much greater difficulty in teaching them to read by sight, as they require for that purpose to use a part of the brain which does not usually discharge that function.

I have, therefore, insisted on the fact that all these children should be taught alone and not in a class along with other children with normally developed brains. The contrast between their own difficulty and the comparative ease with which other children learn to read is a constant source of discouragement both to themselves and to their teachers. The task is abandoned as hopeless, and such children often leave school without being able to read, as in the case of the two elder boys recorded in this paper. The case of the oldest boy is specially instructive. He left school, after being seven years there, without being able to read. He could not then even read the simplest child's primer. Since then he has educated himself by four years' steady persevering effort, and can now read a little, although very imperfectly as yet. A powerful motive for perservering effort was afforded by his enthusiasm for football and his strong desire to be able to read the reports of the football matches in the newspapers. He has mastered to a great extent the vocabulary of football terms, and can read these football reports fairly well. This shows what can be done by steady application even in apparently very hopeless cases. His case contrasts with the second oldest boy, who, after nine years at school, left it without learning to read, and having made no further efforts is still in that condition. The two youngest boys have made some progress, although very unsatisfactory, after seven and nine years' school work. I believe, however, that these two youngest boys will yet be taught to read and that their progress will now be much more rapid, as arrangements have now been made to teach them not in class but individually. I always advocate a number of short reading lessons every day rather than one long one. It is only by the very frequent repetition of the visual impressions that we can hope for the retention of the visual word memories in the brains of these patients. Hence the best method is to give them short and frequent reading lessons during the day without anything leading to exhaustion. At the outset I have often found great assistance in teaching these patients to read by building up the words with block letters, and thus deepening the visual impressions by associating them with the tactile ones.

Cases of congenital word-blindness vary in degree, and hence also the difficulties experienced in teaching them will vary also. I think, however, it will be found that in very few of these cases is the difficulty insurmountable. It is conceivable that if the angular gyrus on each side of the brain were greatly damaged or congenitally defective then the difficulty might be insuperable, but such bilateral local defects are extremely rare. The most important lesson to be drawn from our past experience of cases of pure congenital word-blindness is that they can nearly always be taught to read although the difficulties encountered may be great, and at first seem insuperable. In making this statement I use the term "pure word-blindness"—that is, cases in which the brain of the patient is otherwise normal, and hence the intelligence and general mental powers of the patient good.

Such cases must always be clearly distinguished from those in which inability to learn to read is accompanied by a general lack of intelligence and general failure of all the mental powers. In such cases the difficulty in learning to read is not due to a purely local condition, but to a general lack of cerebral development, and hence are not included in the hopeful statement made about pure cases of congenital word-blindness.

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DISCUSSION.

Mr. Holmes Spicer (London) thought there was a great likelihood of overlooking cases of word-blindness, especially where they were associated with errors in refraction. He had seen a case two years ago in which there was a high degree of mixed astigmatism and a considerable amblyopia. He had corrected the error in refraction, and had comforted the parents by telling them that the patient could not see because he never had proper glasses. He had heard of the case yesterday, and was told that the boy although of full normal intelligence yet could not read at all, and he thought one explanation probably was that he was suffering from congenital word-blindness.

Mr. J. Elliot Square (Plymouth) reported the case of a coachman of about 50 years of age who had never been able to read. His mistress had done her best for him, but had been unable to succeed. He was not able to read the names of streets, and so made mistakes in new neighbourhoods; but though frequently sent to pay bills in the town, he never brought back the wrong change.

Mr. Sydney Stephenson (London) mentioned the case of a girl, 14 years of age, who suffered from congenital word-blindness. Her mother was unaffected, but of the eight members of her family four suffered from the same condition (three girls and one boy). Dr. Hinshelwood's case, therefore, was not quite unique, although most interesting.

Mr. Cyril Walker (Bristol) commented on the great similarity of all the recorded cases and expressed surprise that minor degrees of word-blindness seemed to be relatively infrequent. He alluded to one example he had seen in a boy of about 10 who had perfect vision with correction, but was slow in naming the letters. His capacity for arithmetic was above the average. He could read or perhaps guess at words he had recently heard pronounced, but the assistance of his auditory memory for words was only very transient.

CLINICAL OBSERVATIONS ON SPRING CATARRH.

By Lieutenant-Colonel H. Herbert, I.M.S.

This is an analysis of 39 cases seen in Bombay in the course of about two and a half years. Only 7 of the patients were females. Cases were seen in adults up to 40 years. The cases at the more advanced ages were mild and not very characteristic, and some of them gave only short histories. In one youth aged 21 years vision had become much reduced through invasion of the cornea, the disease having begun in early childhood. The patients were of all races, including Europeans. Seasonal variation in Bombay is not marked. The patients had little information to give in this respect. But on looking up the dates on which the patients first applied for relief, May, the hottest month, was the only month without any cases, and most occurred in July, the wettest month.

The accepted basis of diagnosis needs widening. Many palpebral cases are liable to be mistaken for trachoma or

chronic simple conjunctivitis. The tarsal conjunctiva may present only injection, fine papillary roughness, slight thickening and loss of transparency, with or without small, scattered, pale, follicle-like elevations. A complaint of itchiness, or in young children of constant rubbing of the lids, is, as is well recognized, strongly suggestive. Another very useful indication in these cases is the complete absence of follicles, or the presence of only very few minute normal follicles, in the lower fornix. In trachoma I believe it is true that the fornix is practically never thus free from involvement. At least the distinction has proved a very serviceable one. In trachoma, if there are no follicles and no lymphoid ridge in the lower fornix, there is some degree of retraction or lines of scar tissue to be seen.

Thirdly, there is usually in spring catarrh no discharge to be seen, but if the upper lid be held everted for a minute and then released, this exposure is sufficient to produce in ten minutes or so a scanty, thin, filmy exudate on the tarsal conjunctiva. A similar membranous film may be reduced by exposure in cases of acute conjunctivitis, but not, I believe, in cases of conjunctivitis at all likely to be mistaken for spring catarrh. In the least irritative forms and phases of spring catarrh, however, repeated exposures may be needed for a very scanty formation of exudate. It forms most rapidly and freely in the more obviously active and irritative cases—not necessarily cases with large vegetations. The diagnosis may be clinched by examining the membranous discharge for eosinophiles. These cells are found unevenly distributed, but in enormous numbers. I believe that this finding is quite conclusive in the cases where the diagnosis of spring catarrh is in question. It is important to take freshly-formed exudation, because the eosinophile cells break up rapidly, and the free granules are generally not stained by Leishman's or other similar stains. They may, however, be well seen if the specimen be simply stained with eosin and then very lightly counter-stained with weak methylene blue. In computing the proportion of eosinophiles, epithelial cells should be ignored. It is the proportion to the total wandering cells that is so striking. And one must not mistake the nuclei of broken-up eosinophiles for lymphocytes.

In one case where one eye was practically normal exudation, obtained with difficulty from this eye, contained only a low proportion of eosinophiles, while that from the affected eye contained the usual characteristic excess. Such observations, if repeated, would tend to show a local origin of the disease. In another case mentioned below, classed as spring catarrh, but extraordinary in several respects, there were practically no eosinophiles in the discharge. And in another case, also mentioned below, the proportion of these cells varied greatly.

The palpebral exudate can be obtained quite readily in the ocular type of the malady. It may be maintained that there is no purely bulbar spring catarrh. In my experience the tarsal conjunctiva is practically never of quite normal smoothness in ocular spring catarrh; there is at least some slight papillary roughness covering the upper portion of the upper tarsus. This small point may serve in the diagnosis of doubtful limbus swellings.

Fluorescein-staining points, mentioned by me at the Swansea meeting of this Association four years ago, were numerous and characteristic in some limbus thickenings. They were not always confined to the definitely thickened portions of limbus. It appears always worth while to instil fluorescein in cases of doubtful limbus swellings. Occasionally, instead of the more usual bright greenish-yellow superficial spots, minute buried buff-coloured points were seen after the use of the stain. The stain had coloured the contents of minute epithelial vesicles. These vesicles are commonly less visible unstained, as whitish points, and are so minute as to necessitate the use of the corneal loupe for their enumeration.

Blood counts were made in 22 of the cases. Only the proportion of eosinophiles to total leucocytes was noted. Eosinophilia was slight or moderate in degree. The percentage varied from 3·5 to 17·4. In three patients re-examined after considerable intervals there was variation in the eosinophilia corresponding with changes in the condition of the conjunctiva. But in comparing different cases there was no general correspondence between the abnormality of the blood and the degree of conjunctival proliferation. This may possibly be explained by implication of other mucous membranes. The nasal mucous lining often appeared a little thickened and coated with an excess of mucus, and there was sometimes a complaint of slight chronic catarrh. Fresh mucus taken after syringing the nose sometimes contained eosinophiles. Two adult women gave some history of asthma. One of these patients was said to have had eosinophilia of over 40 per cent. during an attack of asthma, though with the eye affection we found only 14 per cent. The association with asthma might be expected to be commoner were spring catarrh more often an affection of adult life.

There were two examples of spring catarrh concurrent with other conjunctival affections. One patient passed through an attack of Morax-Axenfeld conjunctivitis while under observation. Several examinations of exudation for eosinophiles were made in this case, but the examinations were not sufficiently accurately recorded for me to be able to state definitely that the Morax-Axenfeld conjunctivitis lowered the percentage of eosinophiles in the discharge. Such observations are obviously important as bearing on the pathology of the disease—whether it be due to the action of a local parasite or the result of a general systematic condition. In the other case there were palpebral trachomatous remains (lymphoid and scarring) with undoubted ocular spring catarrh.

One case, though classed provisionally as spring catarrh, was distinct from the ordinary type. There were limbus and corneal thickenings with numerous typical fluorescein-staining spots, but an extraordinary absence of injection and irritation (photograph shown). And the lids presented translucent follicles (one examined microscopically) instead of opaque vegetations. The usual palpebral exudate could not be obtained by exposure, and traces of mucus got from the lower fornix contained practically no eosinophiles.

Treatment.—A trial was given to salol, a saturated solution in almond oil, instilled six times a day. It was commonly used in one eye and adrenalin in the fellow eye. The results were not uniform. Sometimes one eye improved the faster, and sometimes the other, and in other cases neither medicament did any good. Failure is perhaps to be anticipated in the cases where, as I think, the eye affection is only part of a more diffused malady. The use of salol in conjunctival affections was suggested to me by Dr. Surveyor as a remedy without surface action, but acting as a bactericide when split up into its components in the tissues.

DISCUSSION.

Dr. J. F. Carruthers (Guernsey) found difficulty in criticising Colonel Herbert's paper on spring catarrh, as in his experience the disease was very rare. He could not recall having met with a case in the last four or five years.

Mr. D. R. Bardi remembered having seen a couple of cases of spring catarrh recently in Professor Fuchs's clinic in Vienna, and among other symptoms Professor Fuchs relied on the appearance of the conjunctival swellings as more mosaic-like than in trachoma, and on the fact that expression of the follicles from trachomatous lids was easier than from the swellings of spring catarrh.

Mr. Sidney Stephenson (London) alluded to a class of case in which a skin affection coincided with spring catarrh. These cutaneous affections were examples of so-called "summer prurigo" or "solar eczema," and it was probable that the causes that produced the conjunctival affection also produced the skin diseases in question. Diagnosis was difficult only when one lid alone was affected.

Mr. Richardson Cross (Bristol) said that trachoma certainly seemed rare in the West of England. He had seen one typical case of spring catarrh in a boy of 15 always worse in the spring and hot weather. The peculiar plaque on the lid, the milky fluid surface, and the characteristic appearance close to the cornea in the palpebral opening made the diagnosis certain. He was improving but was not yet quite well. Another case he had seen was in a gentleman of 35 or 40. The tarsal appearances were not typical, and the affection was not specially worse during the spring. The opinion was given that the patient was suffering from spring catarrh, but he felt doubtful as to the diagnosis.

Mr. J. Herbert Parsons (London) thought that the experience at Moorfields was that spring catarrh was rare in England. Doubtless some cases were missed and diagnosed

as trachoma. Colonel Herbert appeared to base his diagnosis largely on the presence of eosinophiles in the secretion. It was doubtful if this was absolutely pathognomonic; possibly causes of eosinophilia—asthma, intestinal parasites, etc.—were not always eliminated.

Reply.

Colonel Herbert thought that the disease was probably commoner than suspected, as mild cases passed unrecognized. The character of the cells in the discharge afforded apparently conclusive evidence.

FATAL CASE OF ORBITAL THROMBOSIS.

BY

Edward E. Smith, L.R.C.P., L.R.C.S.E., Hyde.

and

A. Hill Griffith, M.D., F.R.C.S.EDIN., Ophthalmic Surgeon, Manchester Royal Infirmary.

The following is the account of the case from notes by Dr. Smith:

J. L., aged 25 years. On Saturday morning, February 24th, had been working on the roof of a house in a draughty situation (between two chimneys). On arriving home at noon had to lie down on account of pain in his eyes; during the afternoon his nose bled; he had been blowing it pretty hard; patient had been subject occasionally to epistaxis. Went to bed in the evening, and at 1.30, Sunday, February 25th, asked his wife to put him a cold water bandage on left eye because of the aching and throbbing; obtaining no relief therefrom, had hot fomentations applied and a mustard bran poultice to the back of his neck, and his feet put into mustard and hot water. Stayed in bed all day Sunday, and remained there all day Monday, frequently renewing the hot fomentations. The pain and swelling in the eyes gradually increased; could not sleep on account of the pain. On Tuesday, February 27th, had intense pain in forehead which caused him to cry out from time to time, "Oh, my head." During afternoon commenced to ramble a little. I saw him about 6 p.m., and found the skin over the right malar region red. There was no pneumonia. The left eyeball was prominent, the eyelids oedematous, and the conjunctiva chemotic; patient complained of pains in eye and intense frontal headache. Three years ago patient had been treated by a local medical man for a discharge from the left ear which had existed since childhood, and which had been quite cured. I gave him a hypodermic injection of morphine, and sent him 10 grains of phenacetin to be given first, and a mixture containing 3 grain doses of quinine, to be taken every four hours, and ordered the application of cotton-wool over the reddened area (thought perhaps erysipelas was threatening). Wednesday, February 28th, headache easier, other symptoms unchanged, but redness of skin disappearing; towards evening patient began to ramble again. Thursday, March 1st: In morning left eye more prominent and more fixed, right eye becoming affected. Redness over malar region gone. Dr. Hill Griffith saw patient about noon. Ear examined, no perforation, but existence of a scar. Over left mastoid slight tenderness on pressure and some oedema extending downwards some little way along the left sterno-mastoid and across the nape of the neck to opposite side, which it was thought might be due to the application of the mustard poultice as the skin over the nape of the neck was a little sore. Nose: For some time past patient had complained of stuffiness in left nostril; there was some hypertrophy of middle turbinate but no discharge. Urine: No albumen. Ophthalmoscope: Normal fundi. Diagnosis: Orbital and sinus thrombosis. Treatment: Small hourly doses of tincture of aconite and local applications of iced cloths to eye changed every few minutes. March 2nd, Friday: Patient rambling more or less all day. At times complained of difficulty in breathing, which caused pain to shoot up into the head whenever he took a deep breath. At night delirium worse. Saturday, March 3rd: Symptoms going steadily worse. Cheyne-Stokes breathing. Patient became more and more drowsy. Dr. Griffith saw him about 4 p.m. when he was comatose, and though shouted at took no notice. Prognosis: Would probably die that night, might live till morning. During night wife noticed that left arm was quite limp, left leg drawn up. Right arm twitched. At 4.30 breathing more difficult and irregular. Died at 5 a.m. Immediately after death swelling of left orbit subsided. An autopsy could not be obtained.

Remarks.—The diagnosis of sinus thrombosis was made with certainty from the fact that protrusion of the second eye took place, and that there was oedema of the mastoid region. One of us (Dr. Hill Griffith) in 1884 published a very similar case in vol. iii of the *Ophthalmic Review*. In this case death took place suddenly on the seventh day within a few hours of the protrusion of the second eye. A *post-mortem* examination revealed complete orbital and sinus thrombosis, but no other lesion within the cranium, and no disease of the middle ear. We have put this case on record because it seems to be a rare condition, and we should be glad to hear of the experience of members present at this meeting.

DISCUSSION.

Mr. J. Herbert Parsons (London) could not add much to the discussion from his own experience. His colleague, Mr. Percy Flemming, had seen several cases at University College Hospital; he informed him that the ordinary textbook statement of distension of the retinal veins was inaccurate. He also found that the first sign of involvement of the opposite sinus was paralysis of the sixth nerve of that side with defective abduction. The failure of the retinal veins to become dilated was what might be anticipated from the free anastomoses of the orbital veins with the angular and with the pterygoid plexus. Only when these communications were blocked to a considerable extent was venous congestion of the fundus found. This sign was therefore of diagnostic importance in deciding between purely orbital conditions and thrombosis of the cavernous sinus.

ON THE TREATMENT OF ALTERNATING SQUINT.

By R. J. Coulter, M.B., F.R.C.S.I., Ophthalmic Surgeon, Newport and Monmouthshire Hospital.

[Abstract.]

The first case Dr. Coulter recorded was that of a boy, aged 14, who commenced to squint when he was 4 years of age. His refraction was right +3.5 and left +2.75, and the vision of both eyes was perfect. An attempt was made to restore binocular vision by orthoptic treatment, but no fusion was possible. After an advancement and tenotomy good fusion and stereoscopic vision was obtained. He reported 4 other somewhat similar cases. He had notes of 4 other cases in which he had failed to restore binocular vision of such a quality as to keep the eyes straight, but he had never failed to obtain fusion of stereoscopic pictures after correcting the deformity by operation.

In dealing with alternating squints he considered the best course was to correct the deformity by operation, and as soon as possible to start training with the amblioscope or some other form of stereoscope, and that the most suitable age for undertaking such treatment was between 12 and 16 years of age.

DISCUSSION.

Dr. Maxwell agreed with Dr. Coulter in thinking that alternating squints yielded better results from treatment than did fixed squints. Diverging squints were usually alternating, and such cases after parallelism had been restored resulted very often in binocular vision. Dr. Maxwell found the toy called the plastogram the most sensitive tool for binocular vision.

VESICULAR AFFECTIONS OF THE CORNEA.

By W. T. Holmes Spicer, M.A., M.B.Cantab., F.R.C.S., Ophthalmic Surgeon, St. Bartholomew's Hospital.

[Abstract.]

The corneal epithelium is very soft and delicate, exposed to injury, liable to suffer from cooling, evaporation, and dryness, and receives nutrition through very indirect channels, and is only loosely attached to Bowman's membrane. In spite of these drawbacks it retains its clearness and health up to extreme old age; this is in a great measure due to the perfection of its sensitiveness. Sensation in the cornea is not complex like that of the skin, but is a pain reaction only; all harmful stimulation of the cornea, whether by touch or drying or from excessive light gives rise to sensations of pain only.

The epithelium is easily detached either in one or more of its layers, or the whole of it can be easily separated from Bowman's membrane. In reptiles which periodically cast off their epidermis the epithelium of the cornea is cast off too, and the periodic detachment which occurs in recurrent bullous keratitis may be a kind of tissue memory of the time when it was customary to shed the epithelium periodically. Casting off of the epithelium as a whole is seen in various acute diseases—panophthalmitis,

purulent conjunctivitis, keratomalacia, neuro-paralytic keratitis, and others; and also after use of cocaine or the application of various irritating chemicals. Local detachments are also of common occurrence. Examples were given of both general and partial exfoliations.

The protective mechanism acts in two ways—by the pain which interference with the surface gives rise to and by the influence which the healthy nerve has on the nutrition of the cornea—trophic influence.

In normal eyes wide differences exist in the corneal pain reflex in individuals. Where ulcers are found the pain reflex is often defective. In one eye in which an ulcer is present with defective reflex the other eye frequently has a defective pain reflex also; such eyes, as would be expected, are especially liable to suffer from ulcers. In addition to general defective sensation, local defects of sensation of portions of the corneal surface occur, and in these parts epithelial injuries and diseases are also likely to occur.

In herpes zoster of the fifth nerve there is disease of the Gasserian ganglion leading to anaesthesia of the cornea, and hence to the liability to injury. In some cases, instead of surface affections, deep or interstitial keratitis, iritis, cyclitis, and diminished tension occur—that is, in addition to the anaesthesia, some influence of an irritative kind or a cessation of normal influences passes outwards along the nerves leading to the deep changes within the eye. If this be true of the main trunk of the ophthalmic nerve, it may also be true of the small terminal branches, an inflammation of the nerves themselves may set up irritation at their periphery. Some influence of this kind is probable because of the peculiar behaviour of some ulcers of this group, among which are included febrile herpes, dendritic ulcers in their various forms, and filamentary keratitis.

Febrile herpes in the skin is well known; it occurs about the lips, about the eyelids, and in other places on the face; sometimes during the attacks about the lids groups of vesicles appear on the cornea, and sometimes they appear in febrile conditions without participation of the skin—febrile herpes of the cornea. Examples were given of the association between skin herpes and corneal herpes, in which the vesicles sometimes assumed a stellate form. An example was also given of a patient who had suffered from many recurrences of a dendritic ulcer, and who still had the scar of a dendritic ulcer on his cornea, getting an acute attack of febrile herpes on the nose, eyebrow, and upper lip, and a large crop of corneal vesicles, many of which had the stellate form.

Filamentary keratitis was considered to be a variety of the herpetic form, the filaments being formed by the twisting into a rope by the lids of shreds of torn bullae, the tension of the rope on the rest of the epithelium detaching more of it until the filament hung down like a little thread from the surface.

Dendritic ulcers are seen in two forms: the one starts by a broad base from the limbus or beyond it and extends as a fine stem across the cornea, giving off buds on each side; the other starts as a central spot in the cornea, giving off small branches all round, like the rays of a star—the stellate ulcer. Evidence of their herpetic nature is seen sometimes in their earliest state, more frequently in the stellate than in the proper dendritic form, when the site of the future ulcer is seen to be covered with ballooned epithelium not taking on a stain, and after a few hours casting off the epithelium and leaving the well-known shallow groove; also at the ends of the dendritic ulcer separate vesicles are not uncommonly seen which may or may not coalesce into the main ulcer.

Examples were given of very extensive dendritic ulcers of an acute type, which overran the whole cornea in a few days, and were difficult of recognition. The treatment of dendritic ulcers was then discussed. Relapsing bullous keratitis was next considered, and the unsatisfactory nature of its treatment was remarked on. The treatment of the attack should be met by carefully removing all shreds of epithelium and securing rest by atropine and compresses. To prevent relapses pure carbolic acid, absolute alcohol, 2 per cent. of perchloride of mercury, and the actual cautery had been used without preventing relapses. Benefit had followed in one case in which an iridectomy had been done; another case was known to have been benefited by it.

Treatment by strong dionine was advised, as it had had a very marked effect in three cases of relapsing superficial punctate keratitis, and the author urged the free removal of the epithelium at the site of the bulla down to its basement membrane. It was also thought very necessary to improve the health as far as possible, because many of the cases who suffered from this disease were in very poor health, and recovered after restoration to normal vigour. Superficial punctate keratitis was next discussed. It was not considered to belong to this group, but was thought to be an acute catarrh of the whole conjunctiva, which would be found to have its own organism.

DISCUSSION.

Dr. Cropper (Jerusalem) called attention to a condition in bad cases of trachoma, with much corneal infiltration by trachomatous tissue during process of cure. He recalled a case of a girl in Palestine with the above, whose eyes, after expression and "brossage," were much improved. It was then noticed that the cornea was attacked by grey infiltration, which, as is well known, usually proceeds to cover the whole cornea, and results in total blindness, being called xerosis corneae by some authors, though not part of the process known as xerosis conjunctivae. There was no true ulceration of the cornea, but only slight abrasion of the surface. Scraping and the application of pure carbolic acid proving of little use, the actual cautery was used, after which a very gratifying result was obtained, the cornea healing up and remaining clear. Owing to the almost uniformly bad results in these cases, it was hoped that the above treatment would encourage others to adopt similar measures.

Mr. Ransom Pickard (Exeter) stated that in a series of cases of relapsing bullous keratitis after scratches of the cornea there had been much pain during and after the healing of the wound. The bulla so exactly coincided with the original traumatism and the preliminary marginal infiltration so resembled the infiltration of an ordinary septic ulcer that it suggested to him that during the healing micro-organisms became enclosed beneath the epithelium. It seemed worth while, in scratches by obviously septic causes—for example, a baby's finger-nail or a twig—to treat the abrasion by scraping or the application to it of strong antiseptics. In one case of relapsing bullous keratitis the bullous condition was superimposed upon an acute non-vascular interstitial keratitis, which was apparently, by its appearance and the patient's history, of rheumatic origin. Ulceration in rheumatic skin affections was, in his experience, unknown, though he had known softening in erythema nodosum in a case of chronic rheumatism without actual breach of surface, so that this case afforded a contrast between a similar affection occurring in the eye and the skin respectively.

Dr. W. H. de Silva stated that he frequently saw atypical forms of keratitis dendritica which were malarial in nature, and which, unless the underlying condition was treated, were very intractable. He agreed with Dr. Reeves that some of these cases, at any rate as far as the tropics were concerned, were malarial in character.

LEPRA OPHTHALMICA IN CEYLON.

By W. H. de Silva, M.B., C.M., F.R.C.S.E.

[Abstract.]

The Leper Asylum in Ceylon now contains 500 cases, and of these 101 patients suffered from eye symptoms. Of these, 23 were reported as suffering from lepra tuberculosa, 33 from lepra anaesthetica, and 45 from lepra mixta. The most important lesion in lepra tuberculosa was a tuberculous episcleral growth which usually started on the outer circumcorneal region, and it took months to involve the cornea, while the pupil became irregular and showed a tendency to be dragged towards the nodule. The average duration of these cases was nine years. The vision remained remarkably good, and in 5 only was it much affected. Lepra anaesthetica had an average duration of fourteen years; the patients were older and the disease lasted longer, one patient being 87 years of age, and he had suffered from it for forty-five years. Most of the corneal complications were due to lagophthalmos, the result of facial paralysis. The commonest specific lesions were found only in lepra tuberculosa, but the percentage was small. In lepra anaesthetica there was no primary

lesion in the eyes. The few cases in which cataract was noticed did not give a higher percentage than the same class of people in Ceylon generally. He gave details of 17 typical cases.

PATHOGENESIS OF GLAUCOMA AND THE RATIONALE OF ITS TREATMENT.

By THOMSON HENDERSON, M.D.,
Nottingham.

[ABSTRACT]

THIS was a preliminary communication on the subject. The author held that the causal factor of glaucoma existed in a primary obstruction and closure of the pectinate ligament, due to sclerosis of the fibrous structures about the filtration area, and that all other changes were secondary to this. He then described the anatomy and physiology of the parts involved. The hindrance to the aqueous outflow did not arise from the peripheral anterior synechia so frequently met with in glaucoma, which he looked upon as secondary only, but it was caused by the closure of the interspaces of the pectinate ligament in consequence of the fibrosis of the cells of its connective tissue stroma and the formation of a homogeneous membrane around these fibrous bundles leading to the endothelial cells being first brought into contact, and then welding together the fibrous structures. The iris in addition was not only a diaphragm, but an absorbing surface accessory to the pectinate ligament, and when the latter was obstructed the iris had to do the whole of the drainage. When the pupil became dilated, its area became lessened and the crypts near the pupil became closed, thus the blocking of the angle of the anterior chamber was a consequence of the acute iritic oedema, and not the cause of the glaucoma. The oedema of the ciliary body relaxed the suspensory ligament, thus allowing the lens to become more globular and consequently causing shallowing of the anterior chamber. By modifications in these processes, acute, subacute, and chronic glaucoma were explained. The reasons why myotics caused diminution in tension was because the crypts on the surface of the iris became open and the aqueous was able to find its way out, mydriatics did the reverse of this. After an iridectomy, the stump of the iris showed no signs of healing, and even years afterwards the appearance of the cut edges was as if the operation had been done *post mortem*. Thus the operation opened up permanent channels by which the fluid could drain away, and this would always be effective unless the iris tissue were too atrophied and degenerated.

DISCUSSION.

Mr. J. HERBERT PARSONS (London) thought that perhaps too much stress was laid upon the absorptive function of the iris in this theory. There was no doubt that the ligamentum pectinatum was thickened and compressed in many of these cases, but it was doubtful if this was a primary cause of glaucoma and not rather a secondary phenomenon. Suggestions of this nature were chiefly important as affording hypotheses for experimental investigations, by which alone Mr. Parsons thought the pathogenesis of primary glaucoma would be elucidated.

PROLAPSE OF THE IRIS IN SIMPLE CATARACT EXTRACTION.

BY A. C. ROPER, F.R.C.S.E. (Exeter).
Surgeon to the Exeter Eye Infirmary.

[ABSTRACT.]

MR. ROPER read a paper on this subject and said that at the Exeter Eye Infirmary it had been the practice for thirty years to do the simple operation and only to do the iridectomy in exceptional cases. The late Mr. Bankart, whom he (Mr. Roper) succeeded, was an unswerving champion of the simple operation. He described the operation as he usually performed it, and said that if on the third or fourth day prolapse of the iris took place and was extensive he should remove it, but that if it were only slight he should leave the cure to Nature, and possibly excise the cystoid scar later if it were causing irritation. He described a typical case, and stated that he had seen no case of irido-cyclitis or suppurative infection following a prolapse.

DISCUSSION.

Mr. DEVEREUX MARSHALL (London) said that the simple operation for cataract extraction was frequently now performed at Moorfields. One or two of the staff seldom did the combined operation, and he himself more often than not extracted the lens through the intact pupil. He, however, would never leave an iris unless it went back perfectly, as such cases nearly always prolapsed within a few hours, and unless he felt pretty certain that it would keep in place; he always did an iridectomy before finishing the operation. In spite of the greatest care, however, an occasional prolapse did take place. What he considered the greatest advantage of the simple operation was the fact that capsule was far less likely to get drawn up in the wound as the replacing of the iris swept all such tags back and kept them free from the wound.

Dr. HILL GRIFFITH (Manchester) asked, with reference to the $\frac{6}{6}$ results, whether Mr. Roper actually measured the distance? He and his colleagues at the Royal Eye Hospital had practically all returned to the combined operation.

Mr. R. J. COULTER (Newport, Mon.) had always seen less prolapse after peripheral incisions than after those which were in the cornea. He had no recollection of having seen late prolapses, but would prefer to excise them as soon as possible.

Mr. BREWERTON (London) considered that the late date—seventh and ninth day—that prolapse of the iris occurred was most extraordinary. Mr. Roper was hardly fair to himself to include in iris prolapse cases in which the iris was merely agglutinated to the back of the wound. The chief danger from prolapse of the iris was that lens capsule was commonly also prolapsed; the absence of serious consequences in the list of cases reported was remarkable, as probably prolapse of the iris after extraction was one of the most fertile sources of sympathetic ophthalmia. He would like to ask Mr. Roper only one question: What would he do to a patient with only one eye, and that eye suffering from cataract?

Mr. J. ELLIOT SQUARE (Plymouth) thought that they should all occasionally perform the simple operation, even though they generally extracted with an iridectomy, for cosmetic if not for other reasons. A lady with a very light-blue iris moving much in society would not care to go about the world with a large coloboma.

Mr. ROPER, in reply, reaffirmed the statement at the end of his paper that he had never seen a case of sympathetic iridocyclitis following simple extraction, though he had seen many cases of prolapse. He had been for twenty-five years at the Eye Infirmary, and during that time nearly 500 cases of extraction, most of them simple, would have passed under his observation for testing or some other reason—cases done by Mr. Bankart, the President of the Section, or by himself. What interested him most was the generally-expressed criticism on the incision which he practised, and which, in his hands, as in Mr. Bankart's, certainly gave better results than the peripheral one. He did not suppose that any one present would alter their incision on account of what he had stated, and he was quite unconvinced by what had fallen from other speakers. With regard to the amount of astigmatism which his cases had, it was generally from 1 D. to 2 D., an average of 1.5 D., and almost invariably in an axis of 150° downwards and outwards. In a number of the country cases it was not worth correcting. Mr. Brewerton had asked him what he would do in the case of a patient with only one eye. He had had such a case two or three years ago, where the other eye had been excised, and he had the courage of his opinions and did the simple operation. On the fifth night the struggles occasioned by a nightmare caused a prolapse, which was excised the next day. The case was discharged with V.=$\frac{6}{9}$, and was so tabulated in the figures before the meeting; but she came up a fortnight ago, having lost her spectacles, and he found that she read every letter of $\frac{6}{6}$. Were his figures, which were made up to last April, to be brought up to date, he would have 3 cases of $\frac{6}{6}$ following prolapse instead of 1, and 1 case less in the $\frac{6}{9}$ column (that is, about 20 per cent. of $\frac{6}{6}$ and 14 per cent. of $\frac{6}{9}$).

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

RETROPHARYNGEAL ABSCESS.

As one who has taken a great interest in this subject, I read with pleasure Dr. Pinches's article in the British Medical Journal of September 28th. In a paper which I published in the *Middlesex Hospital Journal* of March, 1906, I endeavoured to show that the commonest cause of retropharyngeal abscess was suppuration of the lymphatic glands in the retropharyngeal tissue, which might be septic or tuberculous, or a combination of the two, and that as a sequel of spinal caries it was much more rare.

Waterhouse points out that the retropharyngeal gland belongs to a group which is active during infancy, but undergoes spontaneous atrophy towards the close of that period. He says they are rarely met with after the third year. In a case in which I operated at the Children's Hospital, Newcastle-on-Tyne, in March, 1905, by an external incision, I failed to find pus, but, on making a freer opening, was enabled to remove a glandular mass which was caseating in the centre.

I stated in that paper that the most feasible explanation appeared to me to be, that from septic conditions of the nasopharynx the glands became infected and suppurated, but by the time the cases were seen and operated on the glands had completely broken down, and therefore their exact nature was not usually determined. If this is correct, it explains many of the points noted by Dr. Pinches and others; for example, the statement of Mr. Waugh that in his experience cases of retropharyngeal abscesses are unknown in children who had previously had the tonsils removed. This, according to the glandular theory, would be due to the fact that tonsillotomy is not usually done before the age of 3 years, and at that time the glands have atrophied. Again, Dr. Pinches says:

> It has been held that the organisms obtain an entrance by means of some abrasion of the mucous membrane, this abrasion being due to trauma caused by a fish bone, a small pointed fragment of bone, very hot liquids, etc., but although these must be regarded as certain causative agents of the condition, it seems that in most cases it results from inflammatory affections of tonsils, etc.

Leaving out of the question that if these abscesses are most frequent, as Dr. Pinches asserts earlier in his paper, in the first year of life, most of the causes of trauma given are out of the question; if the anatomists are correct that for the first two or three years of life there is a retropharyngeal gland or glands receiving lymphatics from the naso-pharyngeal mucous membrane, then no abrasion would be required, but any septic condition of nasopharynx would cause a lymphangitis followed by adenitis, and, if the poison was acute enough, suppuration.

Dr. Pinches says that the statement that the suppuration is due to breaking down of lymphatic glands is extremely doubtful, because the abscess is usually lateral in position. In my case, however, the swelling was to the right of the middle line, and yet it was proved by operation to be glandular. The lateral position of the abscess, therefore, cannot exclude glandular origin. In conclusion, may I ask, is it not time for the textbooks on surgery to recognize that the common cause of retropharyngeal abscess is not cervical caries but septic conditions of the nasopharynx? During the last few years I have seen six cases of retropharyngeal abscess due to the latter cause and not one due to caries.

W. H. Vickery.
Consulting Surgeon to the Children's Hospital, Newcastle-on-Tyne.

CHEIRO-POMPHOLYX FOLLOWING PARTURITION.

I lately saw a case of cheiro-pompholyx in a young woman about a fortnight or three weeks after her third confinement. She told me that about the same time after each of her confinements she had had a similar attack. I have not before noticed a case in connexion with parturition, and think it may perhaps be worth noting. The connexion is not quite clear. If due to lowered vitality one would expect her to develop it after influenza, for instance, which is not the case.

Douglas Macdonogh,
Osborne House Park, N. L.R.C.P. and S., D.P.H.

TWO CASES OF UMBILICAL FISTULA.

The two following cases occurred in my practice at the same time:

A girl, aged 5 years, suffered from tuberculous ulceration of the intestine. Some time before her death the umbilicus became red and painful; for the relief of the pain her mother applied linseed poultices. This caused the surface to become broken and there escaped a large quantity of faeces, and the fistula which formed kept open till her death. The ulcer had evidently become adherent to the omentum and peritoneal wall, and finally perforated externally.

A man, aged 36, was the subject of chronic valvular disease of the heart, with much dropsy of legs, pleural and peritoneal cavities. He had been tapped many times during the period of two years in which he was under my care. A month before he died, although the abdomen was not very distended with fluid, the umbilicus became inflamed and bulging, and finally the tissues gave way, and he parted with 4 quarts of ordinary ascitic fluid. This opening did not close, and acted as a sort of safety valve for the accumulation of fluid, and obviated the necessity for further tapping.

Knutsford, Cheshire. Forbes Jas. Alexander.

REPORTS OF SOCIETIES.

MEDICAL SOCIETY OF LONDON.

J. K. Fowler, M.A., M.D., F.R.C.P., President, in the Chair.

Monday, October 28th, 1907.

Femoral Hernia and the Bladder.

Mr J. D. Malcolm, in describing a case of injury of the bladder and one of exposure of the same organ and many operations for femoral hernia, quoted statistics from Moynihan and also from Ansinn, showing that as a complication of hernia cystocele had been identified more often in connexion with inguinal hernias than femoral, but that in women it was more likely to be encountered in cases of the latter form of hernia. There were three varieties: intraperitoneal, in which a part of the bladder was within a peritoneal sac; extraperitoneal, in which it protruded uncovered by peritoneum; and paraperitoneal, in which it was dragged outwards at the side of a sac which was partly formed by peritoneum covering the wall of the bladder. Mr. Moynihan had also referred to a form described by Hermes as operative cystocele, in which the bladder was pulled into the canal in the course of surgical treatment and was thus exposed to injury. Both Mr. Malcolm's cases were of the last kind and in each case the rupture was through the right crural canal of a young woman. In the first case, in which the bladder was wounded, although the canal was very open, he had difficulty in finding the sac. On operation something intervened which seemed to him to be an unusually thick layer of subperitoneal fat. As a matter of fact, it was the bladder. The patient had passed urine immediately before the operation, and no escape of urine from the wound was noticed. It might be thought that an incision through the bladder wall should expose an easily-observed cavity. It did appear at one time that a cavity had been opened and a probe was used, but, as he expected it to enter the peritoneal sac, he pushed it upwards and outwards, and so failed to recognize the true state of affairs. Again, they might expect that a firm structure like that of the bladder wall would command attention; but in his second case, when he examined the parts, knowing exactly what they were, the bladder wall was so soft that it might easily have escaped detection by touch. In the first case, not being able to define the parts, he asked the anaesthetist to allow the patient to become subconscious, so that she would strain. A hernia then descended to the outer side of the tissue which he had been cutting, and pressure sent it back with a characteristic gurgle. In the first case, some five hours after operation, the bladder was found full of bright red fluid, and he immediately recognized that the structure which had puzzled him so much during the operation must have been the bladder, and that it was wounded. As soon as possible the abdomen was explored through the middle

line, but the peritoneal cavity was shut off from the groin wound, and therefore the second incision was at once closed. The wound in the groin was then opened up, and the exposed parts, including the bladder, which had been freely opened, were thoroughly washed with a weak antiseptic solution. In arranging for drainage, he discovered that the ligatures around the base of the hernial sac had been displaced by the manipulations and that the cavity of the peritoneum had become continuous with that of the lateral wound. The incision in the middle line was therefore reopened, an injury to the bladder, over 1 in. long, was found and repaired in layers by means of catgut sutures, and the peritoneum was adjusted with silk Lembert sutures. Both cases eventually made a good recovery. No description that he had seen indicated how very soft and easily overlooked the bladder wall might be, and he would urge that point strongly upon the attention of those who had not met with the complication under consideration. An important lesson to be derived from his first case was that the surgeon, in undertaking a second operation for the treatment of an accidentally-wounded bladder, ought to assure himself that the peritoneal cavity was closed after as well as before the local condition was treated. The ligature on the base of a hernial sac was not applied with a view to its withstanding much manipulation or distension of the wound; and if he had not fortunately discovered that the necessary treatment at the second operation had displaced that ligature in the case in which he wounded the bladder, it was practically certain that the patient would have lost her life.

Mr. EDMUND OWEN described a case of the same order, operation being undertaken for the radical treatment of a reducible femoral hernia of the right side in a woman. At operation the wall of the sac was found to be thick. It was opened and observed to be empty. Having found the neck, Mr. Owen passed the tip of his right index finger into the neck of the sac, whilst his house-surgeon tied the neck with a trustworthy silk suture. He then closed the femoral ring, which was only a quarter of an inch across, by a strong silk stitch, which he passed by a small aneurysm needle. The patient died on the second day after the operation, blood meanwhile having been withdrawn from the bladder. The *post-mortem* examination showed that there had been a leakage of blood into the peritoneum lining the pelvis. and that the bladder, which was large and thin and flabby, was spread out on either side against the front wall of the pelvis to within ¾ in. of the femoral rings; it was seer, too, that a small piece of it had been caught in the ligature which had been placed around the neck of the sac. There was a ragged opening in the part of the bladder which was nearest to the right femoral opening, and the loop of ligature, which had evidently been placed on the sac and also upon the small pouch of the bladder, had parted company from them and was lying free near the femoral ring. The parietal peritoneum was peculiarly loose, and that fact, together with the large size of the bladder, made an accident peculiarly easy.

Mr. LANGTON said that out of the 250,000 cases of hernia he had seen in the last forty-three years he had come across one case in which he had unwittingly made a small aperture into the wall of the bladder, from which a small amount of urine escaped. He recognized what had happened and closed the aperture.

Mr. BARKER said he had a case of crural hernia of the bladder, but it was recognized at the time and the organ was returned.

Mr. WATSON described a case similar to that recorded by Mr. Owen.

Mr. JONATHAN HUTCHINSON, junior, said that in operating for femoral hernia any abnormal thickening on the inner side should always raise the suspicion that it might be a protrusion of the bladder.

Mr. WARREN LOW referring to the *post-mortem* examination made on Mr. Owen's case considered that the ligature was lying loose because it had been pulled away by the muscular structure in the bladder wall.

Mr. H. J. CURTIS exhibited a set of diagrams explanatory of the condition.

Mr. CARLESS described a case in which he had wounded the bladder and had operated a second time because blood had been drawn off by the catheter, the abdomen was distended, the temperature was up and the pulse was running. He reopened the wound and made an incision to the middle line dividing Poupart's ligament and found a gap in the bladder wall which he repaired. He also found that the ligature of the sac was loose, due, he thought, to the pressure of the urine.

After Mr. KELLOCK had pointed out how necessary it was to exercise care because it had been shown that an ovary, the broad ligament, the caecum and the bladder might be found in the sac of a hernia, Mr. MALCOLM and Mr. OWEN replied.

LIVERPOOL MEDICAL INSTITUTION.

F. T. PAUL, F.R.C.S., President, in the Chair.

Thursday, October 24th, 1907.

CASES AND SPECIMENS.

DR. W. B. WARRINGTON gave an account of the clinical features of a patient suffering from *Acute Hodgkin's disease* who died within two months of the onset of the disease. The spleen was considerably enlarged, the glands only slightly so. There was high fever, diarrhoea, and marked anaemia, and violent delirium preceded death. The microscopic examination of the glands showed the typical structure of lymphadenoma as described in the writings of Reed, Andrews, and others.

Mr. R. W. MURRAY related two cases of *Extroverted bladder*, in which he had transplanted the uterus into the rectum. In one of the cases he had, ten years previously, performed a plastic operation whereby an adequate covering for the exposed mucous surface of the bladder had been made, but as the absence of a sphincter to the bladder rendered the patient's life miserable, it was decided to transplant the ureters into the rectum. The patient died on the eighth day after the operation from ascending ureteral infection. In a second case a similar operation was performed with some success. After operation the patient, a child of 4½ years of age, was able to retain his urine for 4½ hours. For two months all the urine was discharged into the rectum, but recently urine had escaped anteriorly from the right ureteral surface of the bladder. These cases were brought forward to emphasize the high rate of mortality following upon such operations, which he thought probably amounted to 50 per cent.

Mr. R. C. DUN agreed with Mr. Murray that the rate of mortality following implantation of the ureters into the rectum or sigmoid flexure was a very high one. Of his two cases, one patient died of shock in twenty-four hours after the operation; the other patient lived two years and then died of diphtheria. The child was only 7 years old at the time of his death, but could then hold his water for an hour. In a third case of extroversion the speaker had performed the first part of Lilienthal's operation, but this had resulted in the patient's death. Mr. R. C. Dun reported a case of *Uric acid calculus* successfully removed by operation from a child 6 years old. The symptoms had been indefinite—slight pain in the hypogastrium and haematuria. These symptoms were not aggravated by movement. While under observation the haematuria was so slight that it could only be detected by microscopic examination of the urine. There was no enlargement of the affected kidney. An *x* ray photograph taken by Mr. Thurstan Holland very clearly demonstrated a calculus in the right kidney. Mr. Dun drew attention to the rarity of this condition in children, and to the indefinite nature of the symptoms in the case under consideration. He emphasized the importance of radiography as an aid to diagnosis.

THE PERSONAL FACTOR IN DIET.

Dr. CHAS. J. MACALISTER read a paper on the Personal Factor in Diet, in which he commented upon the great variations which existed in the dietetic requirements of individuals. He referred to his experiences among the boys of a large industrial school, and pointed out that collective dieting, although suitable enough for the majority, proved that there was a small minority of people who could not live healthily on conventional lines. Having spoken, on the other hand, of the danger of arriving at conclusions as to what was good for all humanity because a few people thrived on some specialized lines of diet, he pointed to the frequency with which metabolic diseases occurred, and that in many cases they resulted from the introduction of foods which

although suitable for people having perfect metabolic capabilities, were harmful to those in whom they were imperfect. Attention was directed to the complex and mixed character of the human diet, and to the fact that the amount of animal and vegetable food required by different people varied considerably, some needing much meat, others very little, and that there were some who should not take any at all. With reference to these latter, he mentioned a case which had come to his notice two years ago of a gentleman who by instinct and habit was a pure vegetable feeder, and in whom there was a well-marked pair of adventitious mammillae. He was a strong, athletic man, a particularly fine swimmer, and full of physical and mental energy, and he certainly thrived and still throve without taking any flesh of any description. The polythelia, together with the metabolic peculiarity present in this case, had suggested to Dr. Macalister the possibility of a reversion to some ancestral type of vegetable feeder which might be present in this and kindred cases. He referred to the normal condition of polythelia present in the embryo, and to the possibility that its persistence might be associated with other developmental peculiarities, rendering the individual different in his metabolic powers from those in whom more perfect conditions had been attained to. He thought the appendix was another vestigial organ, functionless in the wholly developed, but possibly useful to those perhaps less perfect people in whom it was long and well developed, sometimes resembling the organ as seen in the herbivorous anthropoid apes, and he suggested that some cases of appendicitis might result from the constant introduction of unsuitable fuel into the furnace of the economy.

Dr. T. R. Bradshaw said that the theory that special idiosyncrasies in diet might be explained on the ground of development was quite new, and he was not prepared to discuss it. The practical outcome of the paper was to confirm the adage, "What was one man's meat was another man's poison." The accepted views on dietary were not satisfactory. The physician who laid down rules for diet was too apt to be guided by his own likes and dislikes. Chittenden's experiments to show that the accepted minimum of food was too high was confirmed by clinical observation. He quoted the case of an elderly lady with pyloric stenosis who was liable to kinking whenever the stomach was distended. For the past six years she had lived on about a pint of liquid food a day, with the addition of a few biscuits, and had maintained her nutrition, and was able to take gentle exercise.

Dr. W. Carter remarked that the differences in the constitutional build of men were recognized by the older physicians, who classified them into bilious, phlegmatic, nervous, sanguinary, etc., and treated them both dietetically and medically according to the subdivision into which they ranked them. Dr. Macalister, in his interesting and suggestive paper, had given an indication of what might prove to be a reliable and scientific basis for a more correct classification. He drew attention to the observations of Mr. W. North, communicated to the Royal Society by the late Sir J. Burdon-Sanderson. Mr. North said that the gist of the whole matter was that they had to deal with a machine which had a marvellous power of accommodating itself to the work put upon it, which rendered the problem so complicated that the hope of finding any explanation of the phenomena observed was somewhat distant. One man would do an amount of work upon a given diet which to another man would be simply impossible. If the signs given by Dr. Macalister as possibly indicating a partial reversion to an earlier stage of evolution were found, on further investigation, to be reliable, we should have a valuable clue for the dietetic treatment of many cases.

ROYAL SOCIETY OF MEDICINE.

Therapeutical and Pharmacological Section.

At the first general meeting of the Therapeutical and Pharmacological Section on October 22nd, Dr. Burton Brown, the President, having given an account of the defunct Therapeutical Society, Dr. Robert Hutchison opened a discussion on the scientific treatment of dyspepsia, and emphasized in particular the need for more accurate classification of cases of dyspepsia, if progress was to be made. In his opinion, although diet was of use in the treatment of dyspepsia, the most efficient means was to be found in drugs, especially bismuth and the alkalies. Ferments he seldom prescribed. The most difficult cases to treat were those where there was motor insufficiency; of the benefit of electrical treatment he was still doubtful.

Nottingham Medico-Chirurgical Society.—At a meeting on October 16th, the first of the session, Dr. L. W. Marshall, President, in the chair, Dr. H. Ashby (Manchester) read an address on some cases of unexplained fever in infants and children. Pointing out that feverish attacks in childhood presented a perfect mosaic of characters of which no two patterns were exactly alike, he suggested that many cases of the type under discussion were really due to bacterial action; bacteria produced toxins and toxaemia, and this led to increased metabolism and pyrexia. When convulsions occurred the tetanic contractions added to the temperature. Some cases of fever in infants ran a course of fourteen days or more, and were accompanied by indefinite gastro-intestinal symptoms, such as slimy stools. Such cases were probably due to the *Bacillus coli* taking on bad ways, and giving rise to toxins which were absorbed from the alimentary tract. Cases occurred similar to those described by Holt of New York and Dr. John Thomson of Edinburgh, where pyuria appeared after the subsidence of the fever, and these were traceable to a "coli-pyelitis" or "coli-cystitis." The urine was slightly cloudy, strongly acid when passed, and free from albumen. On standing it became alkaline, thus arresting growth of the *B. coli* in it. Such cases occurred practically only in girls, and infection took place directly by the urethra, and not through the intestine. Obscure feverish attacks in older children were sometimes associated with neurotic conditions. Others had been put down to absorption of sugar and starch toxins, others to uric acid. Others, again, were found to have gastric insufficiency with chronic intestinal catarrh, and Pfeiffer's "gland fever" was due to passage of bacteria from the naso-pharynx. (This address will shortly be published in full.)

Chelsea Clinical Society.—At the opening meeting on October 22nd Dr. John H. Daurer, the newly-elected President, gave an address on Paying Beds in London Hospitals. London, he said, was in this in many respects far behind the United States and many of our Colonies. He pleaded strongly for the adoption of three important principles in this country. These were: (1) That no hospital should be without its wards for the reception of those who are able to pay for their maintenance and treatment, and that there should be guaranteed scales of payment. (2) That in equity and common justice to the medical profession, if payment was obtained from patients for their maintenance and nursing, then also a proportionate charge should be made to them for medical attendance. (3) That all patients in the paying wards should have the right of being attended and operated upon by their own or any other medical man they may select. The number of patients who could pay from £40 to £200 for an operation was extremely limited, while the class that could spend from £5 to £20 was enormous. The fees from this class were absolutely lost to the profession. Unable to pay the fees necessary in an ordinary nursing home, they all drifted to the hospital and were attended for nothing. He gave a full account of the methods in vogue at the British Hospital at Buenos Aires, and also at the General Hospital at Winnipeg. In British Columbia, too, the principal source of income to the medical men was derived from paying patients in the public hospitals, where, too, the major part of their work was done. The London hospitals, on the other hand, as at present conducted, were impoverishing the medical profession. They took from the outside practitioner his patients, and handed them over to their own staffs to attend unpaid. In conclusion, he reiterated his conviction that the time had come when the governors and supporters of London hospitals should follow the example set elsewhere, and (1) permit a portion of each hospital to be reserved for the reception of paying patients; (2) allow the medical men attending such patients to accept fees; and (3) consent that patients who paid in whole or part for their maintenance and treatment should be entitled to select their medical attendants. These concessions would be a veritable Magna Charta of rights and liberties to the medical profession and a boon to the public. Our colonists and others had obtained them, so the profession in England should strive to do so also.

REVIEWS.

THE BRITISH PHARMACEUTICAL CODEX.

THE publication of the *British Pharmaceutical Codex*[1] marks a new departure in the production of formularies of medicines. Hitherto the *British Pharmacopoeia* has been the only work of the kind published in this country "by authority," and the many useful books which supplement its information possess no more authority than they can achieve for themselves by their merits and the extent to which they make themselves indispensable. The present book, however, while equally unofficial in the sense of having no statutory authority making its formulae binding on compounders of medicines, is published by authority of the Council of the Pharmaceutical Society and represents the work of a committee of experts; it is inevitable, therefore, that it should carry more weight than the product of any private enterprise, and no less so that it should be expected to reach a very high standard of excellence in the comprehensiveness and accuracy of its information and the care with which its formulae have been constructed or selected. We have already referred to the production of the book,[2] and now that it has appeared it remains to consider how far it fulfils justifiable expectations, and what features it possesses that may commend it to the medical profession. The text of the book takes the form of a series of monographs on drugs and chemicals, with formulae for all kinds of galenicals grouped under their respective headings; the general plan is thus similar to that of the *Pharmacopoeia*, but the number of formulae and of monographs is much greater, and the scope of the latter wider, than in the official book. The information given with regard to drugs and chemicals includes the source, the physical and chemical characters, tests for genuineness and purity, practical notes on the best forms in which the substance can be ordered for administration, and a brief statement of its therapeutical uses, and, in many cases, of its exact pharmacological action. The information as to the best means of exhibiting any given drug will be of undoubted value to the prescriber, who is often much at a loss for just such practical hints as are here given. There will be some difference of opinion as to the appropriateness of therapeutic notes in such a work; they will probably be found convenient by medical men, and it may be hoped that the condensed form in which they are given will not tempt those using the book for pharmaceutical purposes to wander into the field of prescribing. The fact that Dr. W. E. Dixon, Professor of Pharmacology at King's College, London, was a member of the committee that produced the book may be taken as an indication that this part of the work is both reliable and up to date. The galenical formulae include not only large numbers which are unofficial, but even entire classes unrepresented in the *Pharmacopoeia*, such as elixirs, pastes, compressed tablets, parogens, etc.; most prescribers are in the habit of ordering some such unofficial preparations, and if the *Codex* comes to be accepted as the authority for all such formulae there will be a great gain in the uniformity with which prescriptions will be dispensed, while many useful formulae will obtain wider application and use than they now possess. Prescribers will welcome the appearance of practicable non-proprietary names for many substances at present on the market under a great variety of fancy names, each one the property of a particular firm; the method here followed is to describe the article under the name which is introduced for general use, giving the various trade names in a footnote. Thus, hexamethylene-tetramine appears as formamine, a name that can be applied to any one of the eleven proprietary articles enumerated in the footnote; since all such names appear in the index with a reference to the monograph on the chemical substance which they represent, every assistance is give to the practitioner who wishes to prescribe such an article without demanding the product of a particular maker. The publication of the *Codex* cannot fail to have an important effect in promoting that uniformity in the composition of medicines which is one of the chief reasons for the existence of a pharmacopoeia. For this result to be realized to the full the book must, of course, be employed by the prescriber as well as the pharmacist; and the comprehensive and practical nature of its contents is such that probably most medical men will desire to possess it.

[1] *The British Pharmaceutical Codex.* An imperial dispensatory for the use of medical practitioners and pharmacists. By authority of the Council of the Pharmaceutical Society of Great Britain. London: The Pharmaceutical Society. 1907. (Med. 8vo. pp. 1434. 12s. 6d.)

[2] BRITISH MEDICAL JOURNAL, July 27th, 1907, p. 225.

OPHTHALMOLOGY.

THE book Mr. ANGUS MACNAB has devoted to the study of various forms of *Ulceration of the Cornea*[3] is useful, for so much has been done of late years by bacteriologists in discriminating the various forms of organisms met with in corneal and conjunctival diseases, that it is very convenient to have the facts clearly and concisely stated in a single volume. The first chapter deals with the examination of the cornea, and a detailed description is given of the methods of bacteriological research on which so much stress is laid. Simple lesions of the cornea are next described, such as abrasions, contusions, and foreign bodies on the cornea; the treatment is discussed, and it is specially insisted that "cocaine should be absolutely avoided"; this, of course, is due to the well-known effect it has of destroying the corneal epithelium, and thus favouring the spread rather than the healing of these lesions. This, however, does not apply to its use by the surgeon to anaesthetize the cornea previous to the removal of a foreign body or in the performance of any other operation on the eye. Ulcerations due to the pneumococcus are described in Chapter III, and after that atypical hypopyon keratitis, due to various and mixed forms of organisms, is discussed, together with the appropriate treatment. Diagrams are given of certain conditions, among them being the ulceration due to the aspergillus. Mooren's ulcer, or rodent ulcer of the cornea, has a chapter to itself, and then follows a description of bacillary ulceration, and of ulceration secondary to acute conjunctivitis. The ordinary phlyctenular ulcer is termed "eczematous ulcer," and is compared with interstitial or parenchymatous keratitis. Chapter IX deals with neuroparalytic keratitis, and with this is included keratomalacia and dendritic ulcers; no special organism has as yet been found to really account for the latter. Chapter X gives a list of the common organisms met with in cases of corneal ulceration, whilst the last chapter describes the operation of excision of the lacrymal sac, Saemisch's section, and the method of removal of material from an ulcer for examination. The volume is one which will certainly be found useful by ophthalmic surgeons, and well describes the present state of our knowledge regarding this important group of cases.

The Clinical Use of Prisms and the Decentring of Lenses[4] are subjects about which a good deal of confusion exists in the minds of many ophthalmic surgeons, and real gratitude has been felt by many for the small book, first published eighteen years ago by Mr. E. E. MADDOX. It has now reached the fifth edition, and has been greatly improved and enlarged. It contains even now only 200 pages. It is divided into eighteen chapters and an appendix, and really covers all the ground as far as clinical work goes. The chief additions are due to descriptions of new instruments, prism vergers, the duant, and the spirit level prismeter, and a new method of measuring hyperphoria in near vision. The last page in the appendix is termed the "Workman's Page," and it is introduced to assist the optician when puzzled by the diverse methods of prescribing prisms adopted by ophthalmic surgeons. The book is even more useful than its predecessors. It is the best we know on the subject.

HARTRIDGE'S *Refraction*[5] is a book which every student of ophthalmology knows, and if imitation is the sincerest form of flattery, the author may feel proud that since his work was first published in 1884, the number of books which have appeared on the subject, many obviously indifferent imitations of the original, is phenomenal. The book has now run to fourteen editions in twenty-three years. It is needless to say more than that the present edition is

[3] *Ulceration of the Cornea.* By Angus Macnab, B.A., M.B., Ch.B. F.R.C.S. London: Baillière, Tindall, and Cox. 1907. (Demy 8vo pp. 210; 20 illustrations. 6s.)

[4] *The Clinical Use of Prisms and the Decentring of Lenses.* By Ernest E. Maddox, M.D., F.R.C.S.Eng. Fifth edition. Bristol: John Wright and Co.; and London: Simpkin and Co., Ltd. 1907. (Cr. 8vo, pp. 217. 5s. 6d.)

[5] *The Refraction of the Eye.* By Gustavus Hartridge, F.R.C.S. Fourteenth edition. London: J. and A. Churchill. 1907. (Cr. 8vo, pp. 273. 109 illustrations. 5s.)

exactly like the previous ones, except that certain new matter has been added which does not appreciably alter the size or appearance of the volume. No one who wants to have a standard book on the subject can do better than obtain a copy.

The Ophthalmoscope: A Manual for Students,[6] by G. Hartridge, has been before the public since 1891, and although perhaps hardly so well known as his work on refraction, yet it is a book which well fulfils the object with which it has been written. Books on this subject have been multiplied considerably during the last few years, but this is one of the early ones, and has held its own in spite of much competition. It is too well known to want any words of praise; it suffices to say that the present edition has been thoroughly revised. The very small amount of additional matter which appears enhances its value and makes it more complete. It contains numerous diagrams and representations of ophthalmoscopic appearances, some of which are coloured.

A small book on *Squint Occurring in Children*,[7] by Browne and Stevenson, is an essay representing the teaching of Mr. Browne for some years past, and is, as he states, an expansion of an address delivered by him before the Liverpool Medical Institution in 1902. It treats only of concurrent convergent squint in childhood, and he regards it as an account of squint reduced to its simplest expression. In reading through the essay one is certainly struck with its simplicity, and squint itself is a very simple matter if the book gives all that it is necessary to know. We do not think that its value is great, for there is little in it that is not known to junior students, and could as well be arrived at by reading a textbook. Appendix II, consisting of the after-history of squints treated without operation, is the only part written by E. Stevenson, and this consists of but four pages.

A British edition, by Mr. Claud Worth, of the *Manual of the Diseases of the Eye*, by Dr. Charles H. May of New York, and published by Baillière, Tindall, and Cox, was noticed in the British Medical Journal of June 16th, 1906. We have now received a fifth edition, bearing only Dr. May's name on the title page, and published in New York.[8] In the preface, which is dated August 1st, 1907 (the volume reached us early in the same month), Dr. May states that the work has been carefully revised, several old illustrations replaced by better, and one new plate showing the fundus in diabetic retinitis and in amaurotic family idiocy added. The book is of handy size and is a good textbook.

Diseases of the Eye,[9] by Mr. J. Herbert Parsons, is a new book intended for students. It is arranged carefully, so as to lead the beginner from the anatomy and physiology of the eye to the more important diseases to which it is subject. It contains 654 pages, and is illustrated by upwards of 300 cuts and plates, those showing some of the more important ophthalmic conditions being coloured. The discussion of elementary optics and physiological optics is more elaborate than usual in such a textbook, but the author is convinced that the true appreciation of these things "is the only sure basis of correct diagnosis and successful treatment." The numerous diagrams and the clear way in which the text is written make these chapters more attractive than is often the case. A very short chapter is then given to the neurology of vision. The second section consists of 80 pages, and is devoted to a description of the examination of the eye. The third section, which comprises the greater part of the book, discusses the diseases of the eye, commencing with the conjunctiva, taking each structure of the eye in succession. It must suffice to say that the descriptions are lucid and to the point, while the illustrations, both the black-and-white and the coloured, are excellent. There is a somewhat inadequate paragraph on colour blindness; but possibly the author thinks that the examination and detection of this condition is too technical to be considered fully in a book of this sort. The fourth section deals with errors of refraction, and the principles of retinoscopy are fully explained. In the fifth section disorders of motility are considered, while the sixth section describes the diseases of the lids, lacrymal apparatus, and orbit. There are three appendices; the first describes the preliminary investigation of the patient, and notes in a systematic manner the points to be observed when examining the eye. The second consists of therapeutic notes, and gives formulae for various applications and their uses. The third gives the requirements as regards vision for the admission of candidates to the public services. The book is well got up, and will take its place among the best textbooks for students.

A most elaborate book on *Eye Injuries and their Treatment*[10] has been written by Dr. Maitland Ramsay of Glasgow. Although it consists of only 200 pages, it is a large book, well printed on good paper, and contains 25 plates, most of which are coloured. The text is based on lectures delivered by the author in connexion with a post-graduate course, and were at the time published in whole or in part in various medical journals. They have now been rewritten and published together. They are clinical lectures, and theories are not discussed more than is necessary. The introductory chapter contains a general consideration of injuries, and the way in which the surgeon is to examine injured eyes. Plate 1 is a very fine photogravure illustrating a dissection of the orbit to show the anatomical relations of the structures in it. Plate 2 shows the organisms met with in the healthy conjunctiva, and explains the precautions taken for the prevention of ocular sepsis. After this is a chapter on superficial injuries, with a coloured plate showing three eyes with ulceration of the cornea. Each chapter is devoted to a particular class of injuries, and each is illustrated by several beautiful drawings of the conditions described. Plate 16 shows Hirschberg's sideroscope, while the next shows how the patient and apparatus are arranged in order to take an x ray photograph. Plate 19 illustrates the method of localizing foreign bodies within the eye. Chapter X deals with ocular therapeutics, and the following chapter gives general directions regarding eye operations. The final chapter consists of formulae in use at the Glasgow Ophthalmic Institute, and is essentially a reprint of a hospital pharmacopoeia, directions as to the sort of cases for which each of the remedies is used being added. We know of no other book on the subject so elaborately got up, and although it embraces but a small part of ophthalmic surgery, it is none the less useful. It is not possible for any one to learn his clinical work from books altogether, but there is no doubt that this volume will assist any student considerably.

The first half of the first volume of the second edition of the well-known treatise on operations on the eye, by Professor Wilhelm Czermak[11] has been issued under the editorship of Professor Anton Elschnig, of Prague; the second half of the first volume, together with the second volume, which will complete the work, will, the publishers promise, be issued this autumn. This first fasciculus consists of two parts: the first, general, deals with instruments, asepsis, the preparation of the patient, the arrangement of the operating room, and so on. It contains 98 illustrations. The second, or special part, is devoted to operations on the lids, the conjunctiva, and the tear ducts, and contains special sections on the operative treatment of trachoma and symblepharon, and on the removal of foreign bodies. A great number of operations are described, and the illustrations, which in this part number 50, really elucidate the text. The treatise is very systematically arranged. It appeals to specialists, and if the standard of the first fasciculus is maintained will be indispensable to them.

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[6] *The Ophthalmoscope: A Manual for Students.* By Gustavus Hartridge, F.R.C.S. Fifth edition. London: J. and A. Churchill. 1907. (Cr. 8vo, pp. 167; 68 illustrations and 4 plates. 4s.)

[7] *Squint.* By E. A. Browne, F.R.C.S. Edin., assisted by E. Stevenson, M.D., M.Ch. London: Baillière, Tindall, and Cox. 1904. (Cr. 8vo, pp. 74; 5 illustrations. 2s. 6d.)

[8] Wm. Wood and Co., pp. 400; 362 illustrations, 22 plates. 2 dols.

[9] *Diseases of the Eye.* A Manual for Students and Practitioners. By J. Herbert Parsons, D.Sc., M.B., B.S., F.R.C.S. London: J. and A. Churchill. 1907. (Demy 8vo, pp. 674. 10s. 6d.)

[10] *Eye Injuries and their Treatment.* By A. Maitland Ramsay, M.D. Glasgow: James Maclehose and Sons. 1907. (Roy. 8vo, pp. 235. 18s.)

[11] Czermak-Elschnig. *Die Augenärztlichen Operationen.* Zweite, verbesserte und vermehrte Auflage. Wien: Urban and Schwarzenberg; 1 Band, 1 Hälfte. (Crown 8vo, pp. 328, with 148 illustrations. M.10; price of the two volumes circa M.40.)

HANDBOOKS FOR NURSES.

THE number of books specially written for nurses is so large that the struggle for existence among them must be keen. Accordingly, the appearance of a ninth edition of the *Manual for Hospital Nurses*,[12] by Mr. E. J. DOMVILLE, Surgeon to the Royal Devon and Exeter Hospital, is evidently a case of the "survival of the fittest." The manual is a small, neat volume, which can easily be carried in the pocket or reticule, but this small size is attained by a careful elimination of the unessential. Mr. Domville has not even allowed himself the luxury of the usual preface or introduction, but plunges at once *in medias res* with a short, pithy dissertation on the nurse's duties as regards herself, her superiors, and her fellow-nurses. We have sought in vain for one of the almost inevitable platitudes in this part. The bulk of the book is, of course, taken up by the consideration of the nurse's duty to her patients, under the headings of ordinary cases, accidents and emergencies, operations, and special cases, and the most minute care has been exercised to omit no detail with which a thoroughly-trained nurse ought to be familiar. The appendix contains a very complete glossary of medical terms, further instructions in the application of various remedies, sundry tables, and the essentials of sick-room cookery. We hope a future edition will contain an index and a section dealing with the nursing of infants and young children; but, with these exceptions, the book is a model of completeness and conciseness.

Professor REGISTER'S book on *Practical Fever Nursing*[13] suffers from a defect appertaining to other works of a like nature that have appeared during recent years. There is too much "medicine." While agreeing with the author that it is desirable that nurses should have some clear knowledge of the symptoms and pathology of disease, we think it beyond their province to discuss questions of diagnosis, prognosis, and medical treatment. Perhaps, however, in the United States, the nursing profession works under different conditions from those which obtain in this country; for we gather that Professor Register allows his nurses to share the medical treatment of his patients, even to deciding as to the advisability of prescribing such drugs as chloral, morphine, and atropine. We could forgive the Professor all this if we were satisfied with that part of his book which deals with nursing proper; but we are not. There is not sufficient insistence upon the importance of particular symptoms and the necessity of reporting them to the physician. The chapter devoted to the general principles of fever nursing is good, though much of what is stated therein is repeated in subsequent chapters. But the accounts of some of the diseases are sadly lacking in detail, especially from the nursing point of view. For instance, nothing whatever, anywhere in the book, is said about nasal feeding, a daily procedure in many cases of scarlet fever and diphtheria; the nursing of tracheotomy and intubation is very cursorily dealt with; and no warning is given as to the occurrence of sudden heart failure in diphtheria. It is on account of many such omissions as these that we feel compelled to say that the book is not what the author planned it to be—"a working textbook completely covering the field of practical fever nursing."

NOTES ON BOOKS.

THE *London University Guide* issued by the University Correspondence College (32, Red Lion Square, W.C.), contains condensed information as to the matriculation, intermediate, and degree examinations in all faculties but medicine, and as to the Preliminary Scientific (M.B.) Examination Part I, which is all an intending medical student requires before he joins a medical school. The volume also contains lists of special subjects at various examinations, and advice as to textbooks which seems to be intended for the benefit of students of this particular college.

[12] *A Manual for Hospital Nurses and others Engaged in Attending on the Sick.* By Edward J. Domville, L.R.C.P., M.R.C.S., etc. London: J. and A. Churchill. 1907. (Roy. 16mo, pp. 150. 1s. 6d.)

[13] *Practical Fever Nursing.* By Edward C. Register, M.D., Professor of the Practice of Medicine in the North Carolina Medical College, etc. Philadelphia and London: W. B. Saunders Company. 1907. (Med. 8vo, pp. 356, illustrated. 12s.)

The *Pharmacopœia of University College Hospital*[14] for 1907 is in the form of a very handy pocketbook of useful information. Of its 92 pages only 36 are taken up by the formulae of medicines used in the hospital, and this portion is rendered more useful by being interleaved with blank pages. The remainder of the book includes notes on urine analysis, microscopic examination of blood, treatment of cases of poisoning, solubilities, doses, and other information of use to the medical man, whether engaged in hospital or private practice.

Professor ESMARCH'S[15] ambulance lectures have reached a twenty-first edition in Germany, and we notice with satisfaction that H.R.H. Princess Christian has given the English public another—the seventh edition—of her translation into English. These facts show that the book supplies a want in both countries, and as it has been translated into twenty-seven other living languages there can be no doubt as to its merits and its appropriateness to the purpose for which it is intended. We have no doubt that the new edition, in which there are several additions and improvements taken from the last German edition published last March by Professor von Esmarch, will be as well received as its predecessors.

The fourth volume of the *Transactions of the Medico-Legal Society* cover its proceedings during the session 1906-1907, and contains in all some nine papers and discussions. The papers include an interesting record of twelve years' experience as a London coroner, by Dr. Wynn Westcott, and some narrations of cases of fatal poisoning by strychnine, potassium bichromate, and oxalic acid.

We noticed in June, 1906, the appearance of Dr. Thomas Johnstone's English translation of the second edition of Professor Kraepelin's lecture on clinical psychiatry, and we have now received a copy of a French translation by MM. ALBERT DEVAUX and PROSPER MERKLEN of the same German edition.[16] It contains a preface by Professor Dupré, of Paris, in which the opinion is expressed that the most valuable parts of the book are the clinical studies of katatonia, of depression and stupor, and of intermittent pyschoses in which there are alternations of excitation and depression; the five lectures on dementia praecox are mentioned with special approval, and in conclusion Dr. Dupré expresses his entire concurrence with Kraepelin's opinion that too little is known about the etiology and pathogeny of mental diseases to render it possible to make a satisfactory classification.

Mr. THOMAS MATHISON has issued a revised edition of his *Popular Guide to the Income Tax Schedules*,[17] a pamphlet containing a good deal of simple information on the subject of income tax returns, appeals, and repayments. He explains how incomes are classified for tax purposes and offers a number of hints as to the making of returns and the manner in which overcharges can be avoided. Like many other "popular guides," however, the book is by no means free from inaccuracies. One of these is a statement, thrice repeated, that a partner claiming exemption or abatement may be separately assessed. This is an error which appears to have arisen from an imperfect understanding of the provisions of the Finance Act, 1907. Again, in an appendix of forms of account prepared by the author for the use of taxpayers, there is included an account for professional men which contains a serious blunder. On one side of the account "Cash Receipts" are to be entered, yet among the deductions to be shown on the opposite side are "Bad and Doubtful Debts." It is obvious to every one having an elementary knowledge of book-keeping that the effect of crediting in the account cash receipts and not gross bookings is automatically to provide for bad debts, as sums not paid are never brought in as a receipt at all.

[14] *Pharmacopoeia of the University College Hospital, 1907.* Edited by Reginald R. Bennett, A.I.C., Pharmacist to the Hospital. London: Truscott and Son, Ltd. (Pp. 92. 2s. 6d.)

[15] *First Aid to the Injured.* Six Ambulance Lectures by Dr. Friedrich Esmarch, Professor of Surgery at the University of Kiel. Translated by H.R.H. Princess Christian. Seventh edition. (Smith, Elder, and Co., London. 1907. Pp. 138; 46 illustrations.)

[16] *Introduction à la Psychiatrie Clinique.* Par le Professeur Emil Kraepelin. Traduit sur la seconde édition allemande par MM. Albert Devaux et Prosper Merklen. Préface de M. le Dr. Dupré. Paris: Vigot Frères. 1907. (Roy. 8vo, pp. 453. Fr. 12.)

[17] *Mathison's Popular Guide to the Income Tax Schedules, with Specimen Forms and Full Instructions.* The Agency for the Recovery of Income Tax, Brighton. (Paper cover; pp. 23. 6d.)

THE MEDICAL SERVICE OF THE TERRITORIAL FORCE.

ADDRESS BY

SIR ALFRED KEOGH, K.C.B., M.D.,

DIRECTOR-GENERAL, ARMY MEDICAL SERVICES.

SIR ALFRED KEOGH, K.C.B., Director-General of the Army Medical Services, on October 26th addressed a conference of medical men of Yorkshire, Northumberland, and Durham at the Philosophical Hall, Leeds, on the subject of the medical arrangements under the new territorial army scheme.

Dr. J. E. EDDISON, of Leeds, presided.

Sir ALFRED KEOGH said that Mr. Haldane had, in relation to territorial army medical affairs, given him what he might almost call a free hand, and he could not use that free hand better than by giving the same freedom to his own profession. He was anxious to consult them and not to teach; he came to learn whether the proposals he intended to put forward were reconcilable with the conditions of the profession generally and with the duties of civil life. He was aware that a considerable number present had probably devoted no attention whatever to the great question of the relation of the science and art of medicine to the science and art of war. That subject had been very thoroughly studied and thoroughly worked out in the armies of the Continent. In England, probably on account of our greater security, the profession had not devoted very much consideration to the question. There were, however, amongst them a large number of volunteer medical officers who had given much time to the subject, and many of the things which he would have to say were thoroughly well known to them.

The whole organization of the national army for home defence had had to be considered, and before putting forward a scheme for the medical service it had been necessary to wait until matters which must very largely influence that scheme had been settled. In the meantime he had been in communication with large numbers of medical officers of volunteers all over the country. He had consulted many members of the profession, and he had endeavoured to meet their wishes in every possible way. While he asked them to accept the scheme he put forward, it might be modified in any way that was thought proper. He was not going to dictate to his profession.

Sir Alfred Keogh then showed and described the accompanying diagram of the medical service provided for the Expeditionary Force drawn up by Lieutenant-Colonel Bedford, R.A.M.C. Sir Alfred Keogh said that the importance of maintaining the field hospitals empty was great, and many disasters had been due to the fact that medical units, in consequence of their not being empty, had not been able to go forward with the troops. The medical profession regarded that work as humanitarian, and would agree that the proper medical units must be up to the fighting line to succour men as soon as possible. But he held that the main duty of the medical officer and the main duty of the medical sevice throughout the army was, first of all, to remember that upon them depended in large measure the maintenance of the fighting strength of the army in the field both by preserving its health and by exercising the greatest possible supervision over the wastage. He was accustomed to tell the medical officers of the army that they should not forget that in the field there was always a very great avoidable wastage. It might surprise some of his hearers to learn that in the first year of a campaign the wastage was as high as 70 to 80 per cent. of the fighting force. He did not think it was thoroughly understood how large a part of that was due to preventable disease, and it was by the work of the medical profession and the medical profession only that the strength could be maintained.

In war there were really always two armies in the field. There was the effective army, the fighting arm, and the army of the non-effectives, the men who from disease or injury had fallen out of the ranks and had been handed over to the medical officers who were the men responsible for the whole of the non-effective army. It was said sometimes, "O don't bother about invasion; when they come we will all come in, you will get plenty of doctors when war breaks out," but did not all that he had displayed in the diagram mean some training, did not it require that they should from time to time keep up to date in those matters, that every medical man in the country should know what the Royal Army Medical Corps did when it went to war? What was the relation of the medical profession to the science and art of war? Briefly put this was the relation—the maintenance of the fighting strength of the army.

The department of sanitation in the field was absolutely independent of the hospital department, and a trial of the system in Ireland and elsewhere had been so far satisfactory as to encourage continuance on those lines.

Sir Alfred Keogh then described the constitution of the sanitary organization of the regular army, which may be gathered from the following statement and the accompanying diagram.

THE SANITARY ORGANIZATION OF THE REGULAR ARMY.

SANITARY EDUCATION.

A School of Army Sanitation has been founded at Aldershot.

At this school the following classes are formed:

(*a*) Officers' classes of not more than 25 officers. The course should last four weeks and an examination be held at its termination. The lectures will embrace the whole of the subjects mentioned in the manual of sanitation.

(*b*) Classes for regimental non-commissioned officers and men to form regimental sanitary sections for instruction in the disposal of excreta and refuse, in camp cleanliness, and in sanitary police duties, to fit them to perform these duties on active service. One non-commissioned officer and eight men per regiment, battalion, or brigade of artillery, will be trained. A class will not exceed 45 non-commissioned officers and men.

(*c*) Classes consisting of not more than 25 non-commissioned officers and men, general duty section, Royal Army Medical Corps, to be instructed in practical sanitation in the field and in the duties of water sterilization.

Officers are examined, and those who gain 50 per cent. of the marks will be recorded as "passed." Those who gain 75 per cent. will get a special certificate in sanitation.

In addition throughout the garrisons general officers commanding-in-chief arrange for at least one annual course of lectures in sanitation for officers. The lectures are given by the command sanitary officer, or by a selected officer of the Royal Army Medical Corps. All officers who can be spared attend these lectures.

A manual of sanitation has been prepared and has been

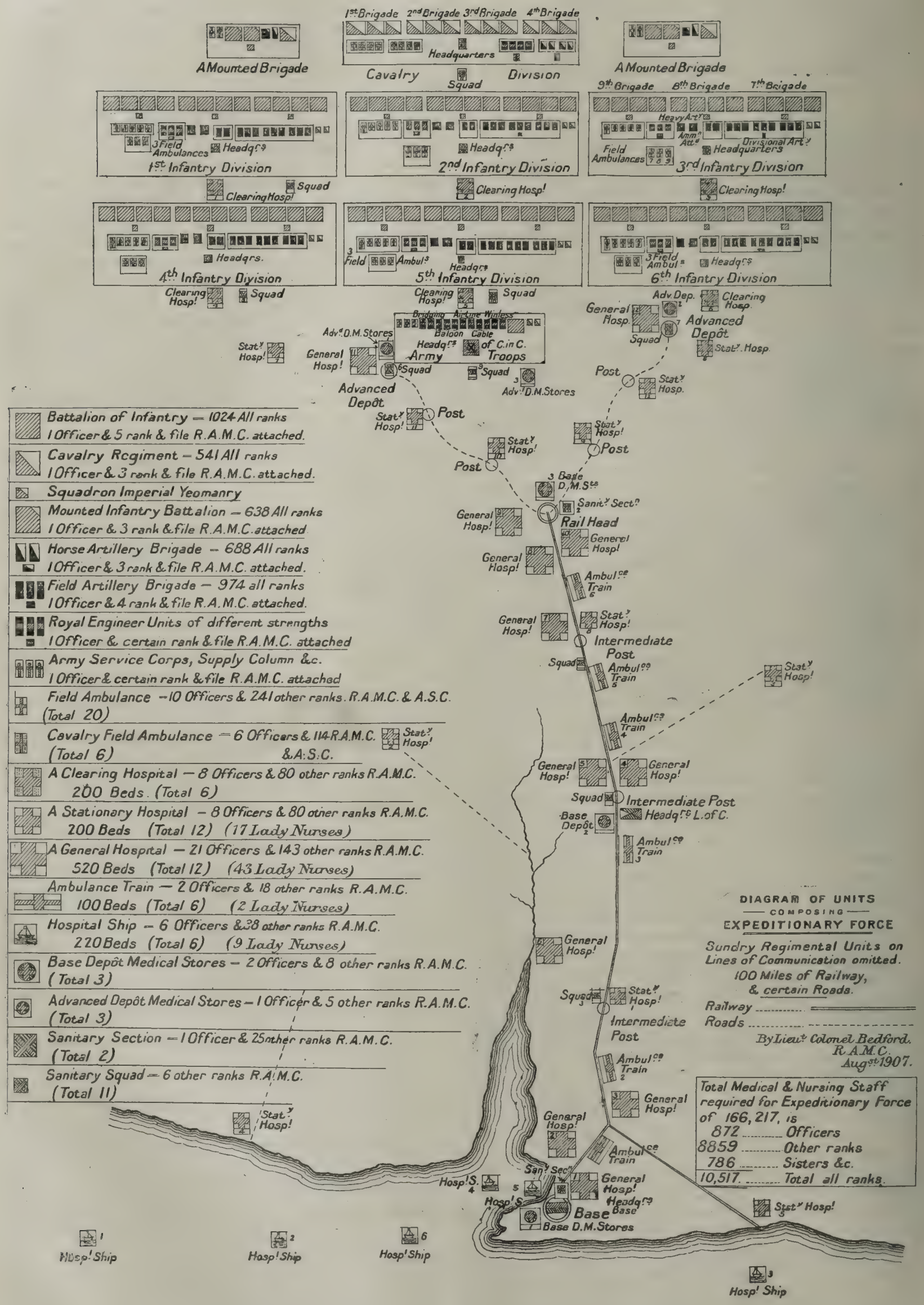
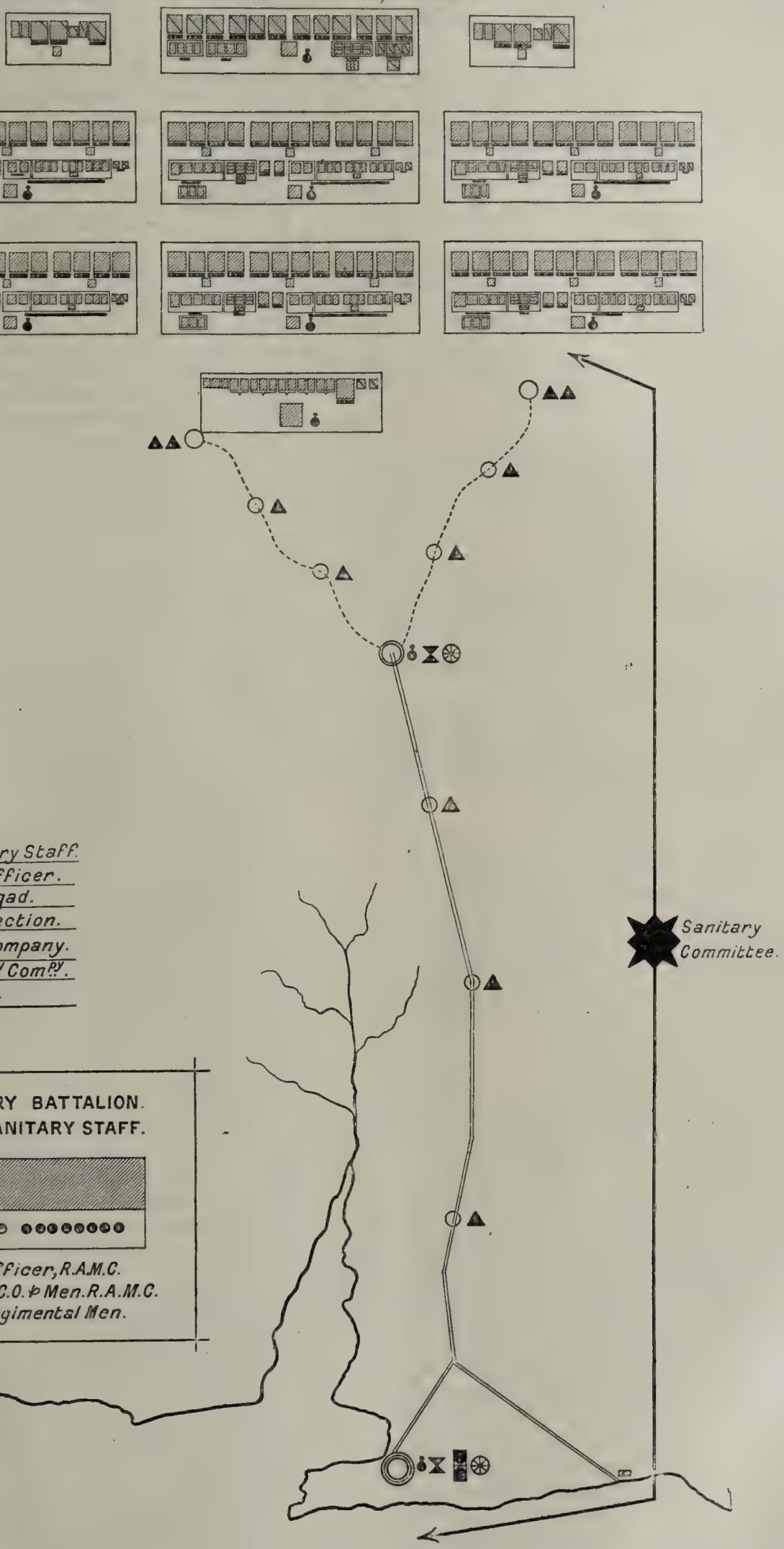

A Mounted Brigade
1st Brigade 2nd Brigade 3rd Brigade 4th Brigade
Headquarters
Cavalry Division
Squad
A Mounted Brigade
9th Brigade 8th Brigade 7th Brigade
Heavy Artʸ
Ammⁿ Attᵍᵉ
Divisional Artʸ
Field Ambulances
Headquarters
3rd Infantry Division
3 Field Ambulances
Headqᵗˢ
1st Infantry Division
Clearing Hospᵗ
Squad
2nd Infantry Division
Clearing Hospᵗ
Clearing Hospᵗ
Headqrs.
4th Infantry Division
Clearing Hospᵗ
Squad
3 Field Ambulˢ
Headqᵗˢ
5th Infantry Division
Clearing Hospᵗ
Squad
3 Field Ambulˢ
Headqᵗˢ
6th Infantry Division
Clearing Hospᵗ
Squad
Adv. Dep.
Clearing Hosp.
General Hosp.
Advanced Depôt
Squad
Statʸ. Hosp.
Bridging
Air-line
Wireless
Balloon
Cable
Advᵈ D.M. Stores
Statʸ Hospᵗ
General Hospᵗ
Headqᵗˢ Army Troops of C. in C.
6 Squad
3 Squad
3 Advᵈ D.M. Stores
Advanced Depôt
Statʸ Hospᵗ
Post
Post
Statʸ Hospᵗ
Statʸ Hospᵗ
Post
Statʸ Hospᵗ
3 Base D.M.Stᵉˢ
Sanitʸ Sectⁿ
Rail Head
General Hospᵗ
General Hospᵗ
General Hospᵗ
Ambulᶜᵉ Train
General Hospᵗ
Statʸ Hospᵗ
Intermediate Post
Squad
Ambulᶜᵉ Train
Statʸ Hospᵗ
Ambulᶜᵉ Train
General Hospᵗ
General Hospᵗ
Squad
Intermediate Post
Headqᵗˢ L. of C.
Base Depôt
Ambulᶜᵉ Train
General Hospᵗ
Squad
Statʸ Hospᵗ
Intermediate Post
Ambulᶜᵉ Train
General Hospᵗ
General Hospᵗ
Ambulᶜᵉ Train
Hospᵗ S.
Sanitʸ Sectⁿ
General Hospᵗ
Headqᵗˢ Base
Hospᵗ S.
Base
Base D.M.Stores
Statʸ Hospᵗ
Hospᵗ Ship
Hospᵗ Ship
Hospᵗ Ship
Hospᵗ Ship
Statʸ Hospᵗ
Battalion of Infantry — 1024 All ranks
1 Officer & 5 rank & file R.A.M.C. attached.
Cavalry Regiment — 541 All ranks
1 Officer & 3 rank & file R.A.M.C. attached.
Squadron Imperial Yeomanry
Mounted Infantry Battalion — 638 All ranks
1 Officer & 3 rank & file R.A.M.C. attached
Horse Artillery Brigade — 688 All ranks
1 Officer & 3 rank & file R.A.M.C. attached.
Field Artillery Brigade — 974 all ranks
1 Officer & 4 rank & file R.A.M.C. attached.
Royal Engineer Units of different strengths
1 Officer & certain rank & file R.A.M.C. attached
Army Service Corps, Supply Column &c.
1 Officer & certain rank & file R.A.M.C. attached
Field Ambulance — 10 Officers & 241 other ranks. R.A.M.C. & A.S.C.
(Total 20)
Cavalry Field Ambulance — 6 Officers & 114 R.A.M.C. & A.S.C.
(Total 6)
A Clearing Hospital — 8 Officers & 80 other ranks R.A.M.C.
200 Beds. (Total 6)
A Stationary Hospital — 8 Officers & 80 other ranks R.A.M.C.
200 Beds (Total 12) (17 Lady Nurses)
A General Hospital — 21 Officers & 143 other ranks R.A.M.C.
520 Beds (Total 12) (43 Lady Nurses)
Ambulance Train — 2 Officers & 18 other ranks R.A.M.C.
100 Beds (Total 6) (2 Lady Nurses)
Hospital Ship — 6 Officers & 38 other ranks R.A.M.C.
220 Beds (Total 6) (9 Lady Nurses)
Base Depôt Medical Stores — 2 Officers & 8 other ranks R.A.M.C.
(Total 3)
Advanced Depôt Medical Stores — 1 Officer & 5 other ranks R.A.M.C.
(Total 3)
Sanitary Section — 1 Officer & 25 other ranks R.A.M.C.
(Total 2)
Sanitary Squad — 6 other ranks R.A.M.C.
(Total 11)
DIAGRAM OF UNITS
COMPOSING
EXPEDITIONARY FORCE
Sundry Regimental Units on Lines of Communication omitted.
100 Miles of Railway, & certain Roads.
Railway
Roads
By Lieut Colonel Bedford. R.A.M.C. Augst 1907.
Total Medical & Nursing Staff required for Expeditionary Force of 166,217, is
872 Officers
8859 Other ranks
786 Sisters &c.
10,517 Total all ranks.

DIAGRAM OF

SANITARY SERVICE WITH AN ARMY IN THE FIELD.

BY LT. COL. M. W. RUSSELL, R.A.M.C.



issued to all concerned. Instructions and examinations will be primarily based upon this manual.

EXAMINATIONS OF COMBATANT OFFICERS IN SANITATION.

After the 1st March, 1908, all lieutenants will be required to pass an examination in sanitation before promotion to the rank of captain. A lieutenant may be examined without having attended a course of lectures.

INSTRUCTION BY REGIMENTAL OFFICERS.

Officers of companies, squadrons, etc, will give instruction to their non-commissioned officers and men in sanitation.

INSTRUCTION OF MILITARY OFFICERS AT THE STAFF COLLEGE.

At the Staff College a course of 12 lectures on sanitation will be given annually by a specially-selected officer of the Royal Army Medical Corps.

INSTRUCTION OF CADETS AT THE ROYAL MILITARY ACADEMY, WOOLWICH, AND AT THE ROYAL MILITARY COLLEGE, SANDHURST.

At the Royal Military Academy and Royal Military College a course of ten lectures will be given annually, either by the resident medical officer, or by a specially deputed officer of the Royal Army Medical Corps. The cadets of the senior division only will attend these lectures.

An examination in sanitation, based upon the official manual, will be included, after the 1st March, 1908, in the final examinations of cadets in the senior division.

SANITATION IN WAR.

Every battalion is furnished with the establishment mentioned above, and establishments are provided for sanitation at the base of operations as well as at important posts on the lines of communication, where the conditions of life more closely approach those of a civil community.

SANITARY INSPECTION COMMITTEE.

On mobilization being ordered a Sanitary Inspection Committee will be formed for service in the field, consisting of a combatant officer as president, a field officer, Royal Engineers, and a field officer, Royal Army Medical Corps, as members. The committee will act under the orders of the general officer commanding-in-chief.

The duties of this committee will be—

(*a*) To ascertain that sanitary appliances and materials of all kinds required for the army are forthcoming, and that an adequate reserve is maintained.

(*b*) To assist general officers and the Medical Service in their efforts to maintain the health of the army by co-ordinating not only the work of the different military branches, but also the military and the civil sanitary organizations of the country or area occupied.

(*c*) To initiate schemes of general sanitation, and to serve as a board of reference for the solution of sanitary questions.

(*d*) To visit and inspect stations occupied by troops, to advise local authorities regarding necessary sanitary measures, and to further in every way the maintenance of satisfactory sanitary conditions. They will report to head quarters any measures they consider necessary, but which they cannot arrange for locally.

The diagram prepared by Colonel M. W. Russell, Deputy Assistant Director-General, showed the actual disposition of the various units of the sanitary service with an army in the field—that is to say, an expeditionary force. The intention was to model the sanitary department of the medical service of the territorial force upon the same lines as that of the regular army. The diagram as applied to the territorial force would represent the oganization of a single army mobilized to resist invasion; there might, of course, be several such armies mobilized in different parts of the country at the same time.

The Sanitary Committee for War, which forms part of the scheme, was very important to the army. After every campaign there was always a commission of inquiry to find out where things had gone wrong. The reports published about the medical service and so on always seemed to make it quite clear that there was room for improvement. He now proposed that instead of holding Royal Commissions after a war, or sending them out in the middle of a campaign after things had gone wrong, it should go out with the troops at the beginning. The Committee would consist of responsible gentlemen, and they would be required by their advice to prevent those things for which formerly the army had been held to blame. If there was a foreign campaign during his period of office he would like to flood the fighting force with civil and military sanitarians, as this was a matter of such enormous importance to the country.

What was the organization of the medical profession for home defence? Mr. Haldane proposed to maintain the expeditionary force in a state of constant efficiency, and, when that force had to go abroad, to ensure that there should be in the country a well-organized army consisting of citizens who would undertake the responsibility of defending the country in case of invasion. It was quite clear the medical profession must be organized to carry out the same duties as were provided for in the overseas army. What was the actual position? In 1898, during the Cuban war, the Americans mobilized in Georgia, Florida, Pennsylvania, and Virginia an enormous volunteer army, and in five months that army had 20,000 cases of enteric fever. The British army had 40,000 cases of enteric fever in three years in South Africa. The profession in America was very much disturbed about the great prevalence of enteric fever in their volunteer army formed in 1898, and the American army was very active in that matter. There was an especial danger for volunteers in this respect. The volunteers came from their homes throughout the country, and it was quite easy to see that epidemic disease would soon break out if the most careful supervision were not exercised. Even without epidemics, if there were 70,000 men—and that was not a large force—encamped near Leeds, they would have in two or three days nearly 2,000 sick—ordinary sickness. If they glanced at the volunteer force it would be found that there were serious gaps in the organization, and the scientific system which Mr. Haldane had brought into existence was designed to fill these gaps. If the medical part of the organization were examined, it would be seen that with each battalion there were four or five or six medical officers, but there was not a single hospital in the volunteer army. Where were the 2,000 sick to go to? Some would get well and go back, and some would have to go home. But what would become of the vast majority? There were no hospitals to take them. Worse than that, there was not such a thing as an officer specially employed in sanitation only in the whole of the volunteer force. Sanitary science had its origin in the British army, and Great Britain had always taken first place in the world in sanitation. Surely it was not right that the citizen army should be absolutely bereft of a body of men whose duty it should be to maintain the fighting strength of the army in the field. He thought it was the duty of everybody who was responsible for those things to make an effort to remedy the defect. He recognized perfectly well that a large number of members of the profession who would gladly assist in time of trouble, and who would gladly assist in time of peace if they could, had been excluded from the volunteers in consequence of the rules and regulations which had been in existence. He recognized that if a man joined the volunteers with the object of learning tactics and strategy he must go up every year, and must do certain specific duties to learn his new profession. But this principle did not

apply to the medical profession. What was wanted was to utilize the knowledge which medical men had in civil life. It was the height of folly to ask a member of the profession to go into camp for a certain number of days to learn surgery and medicine. There were few of the leading physicians and surgeons in the volunteer army, because as a matter of fact they were precluded by the existing rules regarding what was termed "efficiency," and yet they were perfectly efficient. But by the establishment of the hospitals which would be necessary for the territorial force, it would be possible to employ a number of gentlemen as pure physicians and surgeons, and the necessity for their going into camp does not arise.

Again, nothing had been done with regard to sanitation. The medical officers of health were very busy men, and it was certain in time of invasion they would be glad to place their great knowledge and experience at the service of the army, but there was no arrangement for doing so, and it was time the army woke up in respect to this. Under Mr. Haldane's scheme the country was divided into certain areas, and he wanted to suggest that, as in every army in the world, the medical profession should combine and form one great organization, one great corps—a corps reflecting, as he thought it should reflect, the organization of the regular medical service on the lines he had laid down. It would then be possible to devise a system by which, when the regular army was out of the country and the regular medical service away, each individual would be able, in case of invasion, to slip into a place similar to one formerly filled by a regular officer. Every one of those areas would be supervised by administrators and sanitary officers. There should be in each of the areas a principal medical officer whose duty would be administration, that is, to co-ordinate the various branches in that area, and in peace to make the necessary medical arrangements for camps, manœuvres, etc.; also a sanitary officer to supervise sanitation in the district. He recognized that many medical men could not go into camp, being prevented by the exigencies of practice or even family affairs. But an opportunity would be afforded for other medical officers to take their places. Arrangements should be made, whenever a volunteer corps assembled, for it to have a medical officer. He intended to ask medical officers of health to join the new corps and in time of war they could arrange to relieve one another in their military duties. They would give technical advice to general officers commanding and to the principal medical officers. They would supervise generally the sanitation of camps in their own area, in the vicinity of their own homes, and in their own county. In an army of 70,000 there must be sick people. If the authorities knew that Leeds, Newcastle, and Sheffield had the personnel of great hospitals ready—not civil but military hospitals—these would be places to which they could send sick and wounded in case of invasion. In connexion with this he was anxious that the physicians and surgeons in the great centres in that area should become what he called, for want of a better term, "*a la suite*" members of the territorial army. The term was well known on the Continent, but an English name ought to be found. He did not propose that these eminent physicians and surgeons should come out in time of peace, but they should be ready to act in time of invasion in and near their own towns. If the country were invaded there would be great distress amongst the civil population. The profession would be heavily burdened with work, the whole country would be suffering, and the contribution he asked the medical profession to make to a suffering country would be to burden themselves still further. He knew that in time of invasion all members of the profession would come out, but he asked them to join the organization in time of peace. Therefore he proposed to invite the members of the great schools and institutions in Leeds, Newcastle, and Sheffield to join the territorial medical corps as members who in time of peace would not be required to do anything whatever, but who in time of war would be required to assist the sick and wounded of the territorial force. He wanted to form the hospital staffs, and he wanted to know that the surgeons and physicians of Leeds would join the organization. In order to make the conditions easier, he asked for more names than were actually necessary, so that reliefs could be arranged. He wanted the names of the experts. He wanted the hospitals to be dignified institutions, consisting of the leaders of the profession in the different branches. He did not want to interfere with private practice or civil institutions, because civil institutions would have a great deal of work to do. It would be mere folly for him to come forward and ask men to join to proceed to any part of the country. Instead of sending the hospitals to the sick he proposed to send the sick to the hospitals, and he wanted to know where the hospitals were to be. Was there to be one at Leeds, Sheffield, and Newcastle respectively? The number of the troops to be raised in that area was known, and the number of medical units that should be raised was known. The whole country could easily be mapped out and the sick sent to the great centres from certain defined areas.

He had no one else to appeal to but his own profession, for there was no one else who could do the work. He asked them whether the system commended itself to them, or whether it did not. He asked them whether they could form these hospital staffs and the sanitary branch, and whether they should not form one great corps, studying in time of peace the great medical and sanitary questions which arose in war. There were many difficulties and many details which had not yet been worked out. He did not think Great Britain was one whit behind any country in Europe in its capacity for organization, but there was a great deal to be done.

He had to apologize for putting himself forward in that way; but he had the honour to be the head of the military medical service in this country, and he would be very proud to think that anything he suggested would be taken up by his profession. He could not go everywhere throughout the country, but he had gone to certain central places, and he had chosen places where were situated the head quarters of his own corps. When the medical profession had organized the corps and had developed it he hoped every year to go round to the centres where the work was being actively undertaken, and he proposed to hold conferences with those who were interested in the matter, and with all who had joined, so that they might endeavour to remedy any faults which might be found. His desire was that the profession should regard him as absolutely at its disposal in the matter.

The discussion which followed took the form of questions, and in answering them Sir Alfred said every battalion would have two medical officers and no more, and one officer would be bound to go into camp every second year unless he had good reasons for not going. If he had good reason, his place could be filled from the general body of the medical corps. In each area there would be a territorial army medical school. The head quarters of the R.A.M.C. would be raised to the status of a school where officers would be able to get the "*p. s.*" certificate. He also proposed that the principal medical officer should have a regular medical officer as a staff officer, and each corps school should have an adjutant from the regulars. If a medical officer wished to remain with his regiment he could do so, or, if he preferred, he could join the R.A.M.C. field unit. The huts or buildings or tents for the hospitals would be provided. He wished to find one cavalry field ambulance and six infantry field ambulances in this area. These ambulances would have all their own transport. In future all commissions would be to what he hoped would be called the Royal Territorial Medical Corps. An officer of the corps desiring to be posted to any battalion could go to that battalion and stay as long as he liked. If he wished to transfer to the sanitary department, or to join a hospital unit, or to go to the many staff openings, he could do so as opportunity occurred. Sanitation was a most important duty. Regimental stretcher bearers were matters for the commanding officers of battalions, and would not be interfered with by this scheme.

On the proposition of Surgeon-Colonel Draper, seconded by Colonel Wilson, a vote of thanks was accorded to Sir Alfred, and a vote of thanks was also passed to the Chairman.

The appended tables give full particulars of the proposed training, pay, and allowances of officers, non-commissioned officers, and men of the Royal Territorial Medical Corps.

TRAINING OF THE ROYAL TERRITORIAL MEDICAL CORPS.

Rank.	Obligatory.			Voluntary.	
	Recruit Training.	Subsequent. Training.	Subsequent. Course of Instruction.	Training.	Course of Instruction.
Officers of Units, including Quarter-Masters	I.—A minimum of 30 attendances at drill, of which half must be performed before the annual camp. II.—The annual camp of his unit, unless excused by the General Officer Commanding, Territorial Division, or (*a*) attend an appropriate course of instruction in a Territorial Army Medical School, or (*b*) selected military institution. (8 days* in each case.) NOTE.—An officer who has not served as such in the Royal Navy or Regular Forces, or who has not attended the 14 days' course mentioned in column 5, must within the first 2 years of his service attend an 8 days' course at a Territorial Army Medical School or selected military institution, and obtain a satisfactory report after examination, or pass the examination and obtain the certificate without attending the course. In addition to annual requirements he must, if appointed to a Field unit, obtain a certificate that he rides sufficiently well to perform his duties,	15 attendances to be performed before the annual camp (optional for Field Officers) Annual camp.—Officers of Field units must do at least one annual camp in three.	When officers do not train in camp they must go through the course laid down for hospitals or at the Territorial Force Medical School. (8 days.*)	Attending for 14 days or 40 attendances the "Course" at the Training School, Royal Army Medical Corps, the Dépôt, Aldershot, at a selected military hospital, or at a Territorial Force Medical School (for *p.s.*).	—
		The Officer in Charge and Quarter-Master of General or Stationary Hospitals train in military hospitals or Territorial Force Medical Schools (8 days *)	—	—	Course of Territorial Force Medical School. (8 days.*)
		Sanitarians and other specialists, such as those holding the Diploma in Public Health, or a recognized hospital appointment, and who are not attached to combatant, or belong to medical units, may (not compelled to) come up every third year for either the annual camp or for a school course. (8 days.*)		—	—
Regimental Officers.	The annual camp. NOTE.—An officer who has not served as such in the Royal Navy or Regular Forces, or who has not attended the 14 days' course mentioned in column 5, must within the first 2 years of his service attend an 8 days' course at a Territorial Army Medical School or selected military institution, and obtain a satisfactory report after examination.	Annual camp. Before promotion to Major he must repeat the course mentioned in column 2.	—	As above.	—
Sergeants	—	As above.	—	As above.	—
Rank and file ...	42 attendances at drill and instruction, of which one-half must be performed before the annual camp, should the recruit attend camp, or should the recruit not attend camp the whole 42 attendances should be completed before the hospital course (which can be taken instead of the annual camp) is commenced.	(*a*) 10 attendances at Head-quarters and annual camp, or (*b*) course at a hospital, other selected institution or Territorial Army Medical School in lieu of camp, or (*c*) for selected men, the course at a hospital, other selected institution, or Territorial Force Medical School and the annual camp, and no attendances at Head-quarters.*	—	—	As above. *See* Paragraph 301 (xv), Volunteer Regulations.
	The annual camp or military hospital course. (8 days*)	Members of the Nursing, Cooking, and Clerical Sections appointed to field units must do at least one annual camp in three. Members of the General Duty Section should not train in hospital more than once during each period of engagement (4 years).		—	As above *See* Paragraph 301 (xv), Volunteer Regulations.
	Training of the Territorial Medical Transport.				
Officers	8 attendances at mounted drill and 8 attendances at foot drill at a medical training centre (school), which must be performed before the annual camp. If not a medical man he must be certified as being trained in first aid. The annual camp of his unit.	15 attendances at instruction (of which 8 at least should be out-of-door drills) to be performed before the annual camp. Annual camp.	One 15 days' course of instruction before promotion to the rank of Captain.	—	—
Staff-Sergeants and Sergeants (transport)	—	As above.	—	—	—
Rank and file (transport)	20 attendances at mounted drill (riding and driving), 8 attendances at foot drill, which must be performed before the annual camp. Recruits must also be certified as being trained in first aid. The annual camp of his unit.	As above.	Before promotion to Sergeant should undergo a 15 days' course of instruction.	—	—

* By the 8 days' course is meant a course of 8 days, not necessarily consecutive, or 24 attendances, of which not more than three in 1 day may count and of not less than 1 hour's duration each, at a suitable military or civil hospital, Territorial Army Medical School, or other approved institution.

SCOPE OF SUBJECTS.—*Officers.*

Rank.	Subject.	Scope, and under what Regulation.	By Whom Instructed.	Examination.	Note.
Officers, including Quarter-Masters on first appointment.	Drill	Squad and company, and Section II., Royal Army Medical Corps Manual * Each officer should also make himself acquainted with Section I. of the Manual.	Under the direction of the Commanding Officer, who will employ the Adjutant and other officers and staff as he may think fit.	When the Officer Commanding is satisfied as to the officer's efficiency he will perform the duties of a company officer.	—
	The annual camp (8 days)	The period in camp should be solely devoted to Field work. and not to set drills. The work should comprise instruction in Field unit work, such as that required in a Field ambulance, convoy duty, marking out camps, preparing camping grounds, selecting watering places, instruction in the new water cart, purification of water, camp conservancy, pitching tents and marquees, and work of a like nature.	Under the direction of the Officer Commanding the unit.	—	—
	Courses of instruction in a Territorial Army Medical School (8 days)	JUNIOR COURSE. TO INCLUDE 1. Drill. 2. War establishments of Field units (War Establishments). 3. Organization of Field units (Manual, Royal Army Medical Corps). 4. Army Regulations—Discipline and duties of a company officer (King's Regulations). 5. Sanitation and other duties in camp, barracks, and on the line of march. ("Combined Training"; "Manual of Sanitation"; "Military Hygiene," by Lieut.-Colonel R. Caldwell, F.R.C.S., R.A.M.C., is recommended.) 6. Military Law, as applicable to other officers of the Territorial Army.	Under the direction of the Commanding Officer, Territorial Force Medical School.	Under the direction of the General Officer Commanding.	These are the subjects in which an officer will be examined before promotion to the rank of Captain. The examination may be passed at any time after the officer has completed 18 months' service, or before that time if in the interests of the Service.
		SENIOR COURSE (TECHNICAL SUBJECTS). 1. Army medical organization in peace and war ... 2. Sanitation of towns, camps, transports, and all places likely to be occupied by troops in peace and war, epidemiology and management of epidemics ... ... 3. (*a*) The medical history of the more important campaigns, and the lessons to be learnt therefrom .. .. (*b*) A knowledge of the Army Medical Services of the more important Powers ... ... (*c*) The laws and customs of war, so far as they relate to the sick and wounded ... ... 4. Military Law, as applicable to other officers of the Territorial Army ... ... (Appendix VIII. B, King's Regulations.)	Under the direction of the Commanding Officer, Territorial Force Medical School.	Under the direction of the General Officer Commanding.	These are the subjects in which an officer will be examined before promotion to the rank of Lieutenant-Colonel. The examination may be passed at any time after the officer has completed 3 years in the rank of Major, or before that time if in the interests of the Service, The examination in Military Law may be passed at any time after the officer attains the rank of Captain.
		FOR QUARTER-MASTERS. 1. First aid as laid down for the recruit if not a medical man (*see* Manual).* 2. Sanitation and other duties in camp, barracks, and on the line of march. ("Combined Training"; "Manual of Sanitation"; "Military Hygiene," by Lieut.-Colonel R. Caldwell, F.R.C.S., R.A.M.C., is recommended.) 3. Army Forms, preparation of requisitions and vouchers for issue, receipt and repair of stores, etc. 4. Mode of packing and loading Field equipment and baggage. 5. Laying-out camps. 6. Care of equipment, etc.	Under the direction of Commanding Officer, Territorial Force Medical School.	Under the direction of the General Officer Commanding.	A Quarter-Master who has not served as such for 1 year in the Regular Forces, or has not passed the examination at the termination of a course held at the Training School, the Dépôt, Aldershot, or at a selected military hospital, will be required to qualify in these subjects within 2 years of his appointment.

* The next edition of this book will be known as "R.A.M.C. Training."

SCOPE OF SUBJECTS.—*Officers (continued).*

Rank.	Subject.	Scope, and under what Regulation.	By Whom Instructed.	Examination.	Note.
	Course of instruction at a selected military hospital (8 days).	If an officer elects for the 8 consecutive days' course, he will be attached to a company, Royal Army Medical Corps, and receive instruction in hospital administration, as well as the subjects enumerated for a Territorial Force Medical School course, according to his seniority. If the attendances are intermittent, he will not be attached to a company.	Under the direction of the Officer in charge of the hospital.	By a Board of Officers, under arrangements of the General Officer Commanding.	
	Course of instruction at the Training School, Royal Army Medical Corps, the Dépôt, Aldershot (8 days).	The 14 days' course compressed	Under the direction of the Commandant, Training School, Royal Army Medical Corps, Aldershot.	By a Board of Officers, under arrangements of the General Officer Commanding.	
	14 days' training, or 40 attendances at a Territorial Force Medical School (for *p.s.*).	The training will include a more extended course of instruction in the subjects enumerated for the 8 days' course, according to the seniority of the officer.	By the Officer Commanding.		
	14 days' training or 40 attendances at a selected military hospital (for *p.s.*).	If an officer elects for 14 consecutive days' training, he will be attached to a company, Royal Army Medical Corps, and receive instruction in hospital administration, as well as the subjects enumerated for a Territorial Force Medical School course, according to his seniority. If the attendances are intermittent, he will not be attached to a company.	Under the direction of the Officer in charge of the hospital.	By a Board of Officers, under arrangements of the General Officer Commanding.	
	14 days' training or 40 attendances at the Training School, Royal Army Medical Corps, the Depôt, Aldershot (for *p.s.*).	As at present	Under the direction of the Commandant, Training School.	By a Board of Officers, under arrangements of the General Officer Commanding.	

Non-commissioned Officers and Men.

Rank.	Subject.	Scope, and under what regulation.	By Whom Instructed.	Note.
Recruits ...	Drill (squad drills should not exceed 10 attendances, and no two consecutive squad drills can be held in one evening).	Progressive in squad, company, stretcher, hand seat drill, drill with country carts and G.S. wagons, railway wagon drill, pack-saddle drill ... ... — Section II., I. to IX., Manual.	Under the direction of the Officer Commanding, who will employ the Adjutant and other officers and staff as he may think fit.	When a man not classified as a recruit joins the Royal Army Medical Corps Territorial Force, or when a recruit is considered proficient in these subjects, he will be regularly posted to a company, and during the remainder of his attendances he will be perfected in these subjects under the direction of his company commander.
		Preliminary remarks, anatomical and physiological outlines, bandages and bandaging, fractures and apparatus, dislocations, sprains, wounds, dressing of wounds, antiseptic treatment, cases of emergency and their treatment, surgical instruments and appliances, contents of haversacks, and panniers, etc — Section I., Manual.		
	The annual camp or hospital course (8 days).	*Annual Camp*.—The period in camp should be solely devoted to Field work and not to set drills. The work should comprise instruction in Field unit work, such as that required in a Field ambulance, convoy duty, marking-out camps, preparing camping grounds, selecting watering places, instruction in the new water-cart, purification of water, camp, conservancy, pitching tents and marquees, and work of a like nature.	Under the direction of the Officer Commanding.	Arrangements will be made to instruct, if necessary, "men not classified as recruits" in the subjects of the 1st year's training.
		HOSPITAL COURSE A.	—	Not more than 3 attendances of 1 hour's duration each can be made in one day.
		1. *Nursing Section.*—		
		(*a*) Practical work. (*b*) Instruction in infectious diseases, medicine for external and internal use, prevention of common diseases, duties of privates employed as ward orderlies, elementary sick cooking, and for non-commissioned officers only, duties of senior non-commissioned officer (wardmaster) and of non-commissioned officer employed as steward ... ... — Manual, Section I, 13, 14, 18. Standing Orders, Section 13 (exclusive of III), Appendix 2. Section 11 (exclusive of V, VI) and Section 12.		

		2. *Cooking Section.*— (*a*) Practical work. (*b*) Duties of cooking section, prevention of common diseases, and for non-commissioned officers only, duties as compounders and non-commissioned officer employed as steward ... ... — Standing Orders, Sections 11, 12, 14, Manual, Section I, 18. 3. *Clerk Section.*— (*a*) Practical work. (*b*) Duties as clerks (statistical, orderly-room), instruction in compilation of returns, registration, mode of conducting correspondence, indents, prevention of common diseases, and for non-commissioned officers only, duties as compounders and non-commissioned officer employed as steward ... ... — Standing Orders, Section 15. 4. *General Duty Section.*— (*a*) Practical work. (*b*) Duties of General Duty Section, prevention of common diseases and syllabus as for recruits, and for non-commissioned officers only, duties of compounders and stewards ... ... — Manual, Section I, 18. Standing Orders, Sections 11, 12.		
Subsequent years.	10 attendances at Head-quarters.	These must be made at Head-quarters for theoretical instruction by lecture or demonstration, according to the section to which each member belongs. All non-commissioned officers and men will also be exercised in drill in order to maintain their knowledge of the same.	Under the direction of the Officer Commanding, who will employ the Adjutant and other officers and staff as he may think fit.	—
		HOSPITAL COURSE B.		
	Hospital course (military) (8 days).	1. *Nursing Section.*—Operations, nursing of helpless patients, observation of the sick, management of wards ... ... — Manual, Section I, 10, 15, 16, 17. 2. *Cooking Section.*—Practical cooking. 3. *Clerk Section.*—Practical clerical duties. 4. *General Duty Section.*—Management of wards, duties of privates of General Duty Section ... ... — Manual, Section I, 17. Standing Orders, Section 13.	Under the direction of the officer in charge of the hospital.	Non-commissioned officers above the rank of corporal will, if trained in a military hospital, be instructed in the duties of stewards and, if qualified, in the practical duties of dispensers.
	Course at a selected institution (8 days).	Especially applicable to nurses and cooks. They should devote their time to practical work under the instruction of the staff of the institution.	Under the direction of the staff of the institution.	—
	Course at a Territorial Army Medical School (8 days).	A suitable course of instruction will be given upon the lines arranged under A and B, according to the section to which the non-commissioned officer or man belongs.*	Under the direction of the Officer Commanding.	—
	Course at the Training School, Royal Army Medical Corps, Aldershot (8 days).	The 14 days' course compressed.	Under the direction of the Commandant, Training School, Royal Army Medical Corps, Aldershot.	—
	14 days' training or 40 attendances at a selected military hospital, Territorial Force Medical School, at the Training School, Royal Army Medical Corps, Aldershot, or at a suitable civil institution.	The training will include a more extended course of instruction in the subjects enumerated for the 8 days' course.	By the Officer Commanding or staff of a civil hospital.	The detail of the 14 days' course at the Training School dépôt is under consideration.

(*a*) General Duty Section, 3 annual camps out of 4 annual trainings compulsory.
(*b*) Nursing, Cooking, and Clerical Sections, 1 annual camp out of 3 annual trainings compulsory.
* (*c*) The Clerk Section can only train in camp or in military hospitals.
(*d*) When trained in camp special attention will be given to Field training generally. Sections II, X, XI, XII.

1. The Nursing Section, in continuing their special work as learnt in hospital, will apply the same under conditions in the field.
2. The Cooking Section will pay particular attention to 38, Section II, Manual.
3. The Clerk Section will perform general clerical duties as occur in the field.
4. The General Duty Section will pay special attention to tent pitching, sanitation of camp, water supply.

PAY AND ALLOWANCES.

Officers.

Rank.	Daily Rates of Pay during Training.	The following Additions to Daily Rates of Pay will be given in Peace only. When Mobilized, the Territorial Force will conform to the Regular Army in all respects.			Forage for Horses at Field Training.	§Outfit Allowance under Certain Conditions.	Furniture Allowance at the Rate of Half Lodging Allowance will be issued when Furnished Quarters are not provided. This includes Camp.
		*Field Allowance when Under Canvas.	†The Rates of Lodging Allowance are as follows.	‡Mess Allowance.			
	£ s. d.	s. d.	s. d	s. d.			s. d.
Colonel	2 5 0	7 6	5 6	4 0	Yes.	£20 on first appointment.	2 9
Lieutenant-Colonel	1 10 0	6 0	4 6	4 0	,,		2 3
Major	1 3 6	4 6	4 0	4 0	,,		2 0
Captain	0 15 6	3 6	3 0	4 0	,,		1 6
Lieutenant	0 14 0	3 0	2 3	4 0	,,		1 1½
Quartermaster Lieutenant	0 9 0	3 0	2 3				1 1½
Quartermaster Captain	0 10 6	3 6	3 0	4 0	,,		1 6
Quartermaster Major	0 13 6	4 6	4 0				2 0

* When not under canvas, quarters or lodging allowance will be provided.
† At schools of instruction, if quarters are assigned, fuel in kind and the money allowance at army rates in lieu of light will be issued; also half lodging allowance to cover the expense of providing furniture, if unfurnished quarters are occupied. If not assigned quarters, money allowance in lieu of lodgings, fuel, and light will be allowed. When in camp, the necessary fuel and light will be supplied. The daily fuel and light allowance varies, according to ranks, from 1s. 10d. the highest winter rate, to 5d. the lowest summer rate.
‡ Mess allowance will also be drawn at schools of instruction.
§ Under conditions very similar to those now in force for volunteers.

Non-commissioned Officers and Men.

Rank.	Daily Rates of Pay During Training.	*Camp Messing Allowance paid to the Commanding Officer, and to be Expended in Improved Messing.	Government Rations.	Corps Pay.	†Separation Allowance.
	s. d.	s. d.		s. d.	
Warrant officers	5 6	1 0	Yes	—	—
Quartermaster sergeant	4 6	1 0	Yes	—	—
Staff sergeant	4 3	1 0	Yes	—	—
Sergeant	2 8	1 0	Yes	1 0	—
Corporal	2 1	1 0	Yes	0 8	—
Private	1 2	1 0	Yes	4d. to 8d. according to classification	—
Bugler	1 2	1 0	Yes	4d. to 8d. according to classification	—

* This is in lieu of the 3d. messing allowance of the Regulars. † The question of rate of this allowance is still under consideration.
When attending schools of instruction, warrant officers, non-commissioned officers, and men will draw daily rates of pay, corps pay, with 1s. messing allowance, and Government ration or allowance in lieu—6d.

FOURTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

[From our Special Representative.]

(Continued from p. 1162.)

The Work of the Sections.

The Care of Infants.

Dietrich gave a detailed account of the advances made, and especially the organization of the Berlin institutes. He pleaded for mother's milk in the feeding of infants whenever this was found to be possible, and discussed the difficulties which had been met with in those establishments which had set themselves the task of carrying out the normal feeding of infants.

Taube said that while breast-feeding was the physiological method of rearing children, fashion and work had led to a degeneration of the female breast, and indirectly to an increased mortality of infants. The importance of making provision for the care of infants was proved by the fact that poverty and high mortality went hand in hand, and that the most dangerous time of life was during the first six months. During the first month the causes of death were chiefly marasmus and atrophy, including syphilitic atrophy, leading to convulsions and lung affections. During the second month, over 50 per cent. of the deaths were due to affections of the intestinal canal. The greater number of marasmic infants could not be saved under any circumstances. In order to improve the conditions, he proposed that the working classes should be better fed, that the mothers should be taken care of before their confinements, and that an improvement in the knowledge of cookery, and a relieving of married women of part of the work they have to undertake should be carried out. He considered that breast-feeding could be increased by certain means, such as had been adopted in most of the infants' and mothers' homes, and that when it was found impossible to keep the infant exclusively on the mother's milk, *allaitement mixte* should be resorted to. Cow's milk was deteriorated by the action of heat, and for this reason it was imperative to offer the poorer classes at a cheap price a good milk kept cool in proper apparatus. All illegitimate infants should be under the supervision of the local authorities, and visited by salaried medical men and paid trained ladies. This had been carried out in Leipzig with good results.

Szana discussed the subject from the experience gained in Hungary, where he claimed that the problem had been solved. The Hungarian State undertook the care of destitute infants in the public interest. If the parents or others notified that those in charge were in want, the infants were admitted into institutions, and inquiries were made after such admission. He dealt with the importance of admitting the infants at as early an age as possible, since the later the admission the more marked was the deficit of weight, as compared with the average weight, and children with deficient weight died much more readily than those whose weight at the time of admission was at or about the average. He described the Hungarian method of supporting the mother and infant, and said that when it was conscientiously carried out the death-rate of the legitimate and illegitimate infants became equal. The death-rate of infants nursed by wet nurses had proved to be somewhat higher than that of infants fed by their own mothers. It was found, however, that no deaths took place among the infants of the wet nurses who suckled a second child as well as their own.

Keller also spoke on this subject and a fair discussion followed.

The Medical Inspection of School Children.

The medical inspection of school children was discussed by a number of speakers. Johannessen said that his experience of school doctors in Norway was highly satisfactory. The local authorities formed health commissions, and medical men were appointed presidents or chairmen of these commissions, and were given very wide powers. He also dealt with the conditions in Finland, Sweden, and Denmark.

Stephani considered that it was essential that the doctor should be recognized as a member of the school staff, so that he might be able to control the hygienic condition of the school, both in the interests of the teachers and of the pupils.

Goeppert spoke of his experience of medical inspection of school children by a part-time officer. The system had worked well in determining the capability of work of the pupils and also in the struggle against tuberculosis, but it was not so successful in the prevention of infectious diseases, and had proved practically a failure in guarding the bodily interests of weakly pupils.

Mathieu dealt with overwork in schools, and thought that in many cases the hours were too long, and that the pupils were given too much work to prepare for the following day.

Czerny discussed the same subject, and came to the conclusion that symptoms of overwork in normal children had not been proved to exist, that those usually regarded as the indices of overwork were really the result of the overheating and faulty ventilation of the schoolrooms, that it was only in psychopathic or nervous children that the signs of overwork were noticed, and that the best prophylaxis was a properly-directed education during the school years and even before, so that the children would realize their duty, and subject their will to those in authority, be they parents or teachers.

Bürgerstein believed that from the hygienic point of view holidays were indicated, when there were grounds for believing that diminished resistance could be most effectively regained by a pause in the work, or when climatic or meteorological factors were unfavourable. The best division of the year for mid-Europe would be: Beginning from September 1st, the term should last for three and a half months, followed by a Christmas holiday of two weeks' duration; then a term of about three months' duration and an Easter holiday of two weeks; then a third term of about three months, and holidays, during the hot months of July and August. Eulenburg considered that the present regulations of holidays, allowing for a total of from eighty to ninety days in the year was satisfactory, but did not think that it would be wise to lay down rules as to the exact date or length, as this would depend on climatic and other conditions.

Cohn said that he regarded the school as the best place for the teaching of the doctrine of hygiene to the young. The rising generation would then improve and become more resistant to the dangers of life, and would raise a healthier and stronger second generation. He proposed that the hygiene lessons should be given in the form of short, easily-understood lectures held at the beginning or end of the day's lessons.

Bernhard spoke on the bad effects of the faulty feeding of school children in Berlin. In many cases breakfast and midday dinner were either quite insufficient or even wanting altogether. It was the duty of the local authorities to see that this defect was remedied.

The Supply of Reliable Milk for Infants.

Weber considered that if the milk supplied were free from pathogenic micro-organisms it would be better for the infant, not breast-fed, to drink this unboiled; but as this was not the case, and as milk frequently contained tubercle bacilli, it became necessary to heat milk in a proper way. Provided that the milk were fresh, and that there were no bacterial products in it, it was possible to sterilize it by heat without so impoverishing it that it would become unsuitable as infant food. It was too early to decide whether the suggestion made by von Behring that certain chemical substances which possess bactericidal properties, but are said not to influence the character of the milk, should be used instead of heat.

Reiss considered that the existing regulations of the local authorities did not guarantee satisfactorily distinction between nursery and ordinary milk. It was, therefore, desirable that some method should be introduced by which nursery milk could be identified with regard to its quality. A police regulation recently introduced in Darmstadt limiting the bottling of nursery milk to the farms seemed to solve the difficulty, provided that the farms were under adequate inspection. He believed that an improvement in the quality of nursery milk could only be assured by the adoption of regulations of this kind.

Teeth of School Children.

The German Association for the Care of Health in Schools introduced a resolution, which was adopted, to

the effect that the municipalities, school doctors, and governing bodies in schools should be requested to consider the establishment of dental inspection for school children on the ground that caries of the teeth was one of the most widely-spread affections, that its harmful effects were great, and that proper treatment of the mouth was most desirable, especially in childhood.

Fatigue.

Arising out of a discussion on fatigue through work, the fourth Section passed the following resolution:

> Since the capability for work varies not only individually according to the constitution, age, sex, and mode of life, but also in the same individual at different periods of life, a permanent skilled control must be kept in all manual or intellectual industries, including business occupations, and also occupations in which workmen are exposed to special dangers; this should be carried out in such a way that a proper allowance would be made for the individual capability for work.

Prevention of Accidents.

HARTMANN said that efficient supervision of industries was indispensable, since this was the only way to enforce rules and regulations. During the past year nearly 650,000 accidents had taken place in the Berlin industries and agricultural occupations. Museums of contrivances proved to be useful in guarding against accidents were valuable means of instructing the masses. Such museums had been established in Vienna, Zürich, Amsterdam, München, Charlottenburg, Paris, New York, Stockholm, Luxemburg, Reichenberg, Graz, and Buda-Pesth.

PONTIGGIA spoke of the results of the systematic preventive measures adopted in Italy for the last twelve or thirteen years. It was only since 1898 that any laws on this subject had been in existence. Before this, however, societies for the prevention of accidents had been formed. The results of these voluntary societies and of the State assistance was to be seen in the marked diminution in the number of accidents caused by motors, machines, transmitting engines and elevators. The number of accidents in other classes of working occupations had unfortunately not diminished owing to the want of care and precaution of workmen. BORGMANN spoke of the prevention of injurious effects of industrial trades. An inspector, besides possessing a knowledge of hygiene, should be fully informed on technical points. It was, therefore, well to employ persons who had been educated technically, as was done in most countries. Individual observations should be assisted by instruction on the results of investigations and experiences in this direction, a duty which should be carried out by the State. Compulsory notification of industrial poisoning was important. GLIBERT considered that the Belgian plan of separating the technical and medical inspection was wise. While the medical men must have a full knowledge of the industrial diseases, the technical men should know all about the details of the work itself.

PACH spoke of the conditions which applied in Hungary, where compulsory sickness and accident insurance, compulsory notification of industrial and agricultural accidents, industrial inspection, Sunday rest, and the care of youthful workers and lying-in women had done much in protecting her working population. It would be wiser to introduce sickness insurance for home workers and domestic servants, to employ medical inspectors in the industries continually, and to induce the sick clubs to contribute to the statistics of industrial intoxications and disease.

In the discussion HOLZMANN urged that the inspectors should be medical men, and HAHN that they should be full-time officers, and should have medical training. SOMMERFELD agreed with this view, but thought that industrial inspectors should be required to consult nerve specialists freely, and FRIEDRICH said that he approved of medical men who had also received training at industrial technical schools being inspectors, but insisted that industrial hygiene should be a compulsory subject at all technical schools.

LEGGE reported on the excellent way in which the English system of several medical inspectors and technical inspectors working together had answered during his nine years of office as His Majesty's Inspector of Factories. HARTMANN advised the organization of an industrial hygienic department in the State Public Health Board.

Ankylostomiasis.

LOEBKER said that the disease was due to the presence of large numbers of sexually ripe ankylostomata in the small intestine in man. Infection took place either through the mouth, in which case encapsuled larval forms caused it, or through the skin, the larvae devoid of their capsules passing through. The second method of infection had been established by Loos and others, and was of importance for persons who walked about barefoot. The disease was endemic in tropical and subtropical countries, where the worm was indigenous, and the diagnosis was only to be made with certainty by microscopical examination of the faeces. Spontaneous cure might take place, but as a rule it was necessary to give ethereal extract of male fern or thymol, both of which were active, but not free from dangers.

BRUNS, who dealt with the condition as it occurred in miners, said that endemic ankylostomiasis differed from the miners' disease by biological differences in the parasite and by the climatic differences of the tropics and of the mines. Miners' worm disease had originally been imported into Germany from Italy. He spoke of the so-called "healthy worm carriers," who were a source of danger in mines, and dealt with the methods of recognizing and arresting epidemics of worm disease in mines or shafts of mines, and also with the method of the spread of the infection.

MALVOZ reported in a paper read for him by DELBASTAILLE on the spread of the disease in Belgium and the prophylactic measures taken, giving some interesting particulars of the results obtained in the miners' dispensary in Liége.

The Prevention of Dust in Trades.

CZIMATIS said that the removal of dust meant that it should be collected and conducted by apparatus to a place where it could not do any harm. Ventilation and the use of respirators must be regarded as accessory or emergency means of protecting the workmen, and not as the normal means of getting rid of dust. The employment of protective dress, and of arrangements for changing clothes, washing, and bathing, were important as additional means. Special legislative measures were necessary only to lay down the simplest principles. It was highly desirable that dangers connected with the inhalation of dust and the measures to be taken to avoid such consequences should be freely published in the press.

JEHLE considered that in order to prevent damage to health by the inhalation of dust it should be sucked up at the place where it was produced; as failure of a suction apparatus was not only a source of danger but harmful to the reputation of other apparatus; the installation should be left entirely to those who had been fully trained. Microscopical examination of dust should always be made before the requirements of a special industry were determined. The insurance institutions for workmen exposed to various forms of dust should keep separate statistics of affections depending on the inhalation of the different kinds of dust.

RECHNAGEL spoke of the methods of determining the various grades of danger from dust in the various industries.

LASSAR and HERZBERG pleaded that the institution of bathing establishments for the masses was a necessary part of practical hygiene and should occupy a more prominent position in public interest. Open-air baths, where swimming could be taught; public baths for the masses, school swimming baths, village bathing establishments; baths for soldiers, for workmen, for the patients of the sick insurance societies, and, in fact, for all sorts and conditions of men, should be in existence. The principle that every person should take a bath once a week was a maxim of hygiene. No w.c. should be built without having a lavatory attached where the hands could be washed. Accommodation for washing and bathing at railway stations was urgently needed by the travelling public. Most of these wishes were embodied in resolutions and passed by the Section.

Industrial Lead Poisoning.

TELEKY dealt with the Austrian laws regarding lead, and suggested that regulations for each industry, such as lead and zinc mine works, white-lead works, paint factories, etc., should be so worded

as to apply to the special forms of lead which were handled in each. He believed that the value of the work of the certifying surgeon was much overrated, since it was impossible for a general practitioner to act independently from the workmen or from the owners. There ought to be industrial medical inspectors, who might be assisted by medical men working in public health, but who were not in general practice. White lead could be replaced by harmless products in most industries; he instanced silk dyeing as a striking example, in which it had been possible materially to diminish lead poisoning by the introduction of substitutes for white lead.

Sommerfeld believed that white lead could be replaced in paints, and thought that this doctrine should be taught in all advanced educational technical schools.

Mosny spoke of the conditions in France, and suggested that compulsory notification to the authorities should be carried out, that regulations should be drawn up by hygienists and practical workers, after full consideration of the obligations of the employers and workmen and of the nature of the special lead product in the factory. When the regulations proved to be inefficient, legislative measures should be adopted to rectify the shortcomings. Medical and technical inspection and the keeping of a register of industrial lead poisoning cases should be enforced.

(To be continued.)

BRITISH MEDICAL BENEVOLENT FUND.

At the October meeting of the Committee only eight applications for help were received. To seven of the applicants grants amounting altogether to £67 were voted in relief, the eighth case being postponed for further inquiry. Appended is a short abstract of the cases assisted:

1. Lic. Med., T.C.Dub., aged 60, who practises in London. Is in temporary difficulties resulting from an accident. Four children, but none able to help. Recommended by Dr. F. T. Roberts, Vice-President, and by Dr. Dundas Grant. Voted £10.

2. Daughter, aged 23, of late M.R.C.S., L.S.A. Income £6 a year. Has been attending invalid mother, recently deceased, and proposes to train as a nurse. Recommended by Mr. A. W. Stocks. Voted £5.

3. Daughter, aged 67, of late M.R.C.S. Has maintained herself since the age of 17, but is now unavoidably in arrears with her rent. Recommended by Dr. W. A. Satchell, Vice-President. Voted £10.

4. Daughter, aged 32, of late M.R.C.S., L.S.A. Has supported herself by nursing, but is now incapacitated by extensive bone disease for which three operations have been performed. Slight help from friends and endeavours to earn a little money by needlework. Relieved three times, £29. Recommended by Dr. Hyla Greves. Voted £12.

5. Daughter, aged 57, of late M.R.C.S. Quite unprovided for at father's death many years ago and has been unable to support herself for the last few years owing to constant ill-health. Relieved three times, £36. Recommended by Mr. A. Pearce Gould, Vice-President. Voted £12.

6. Widow, aged 46, of L.R.C.P., L.R.C.S.Edin. No income; three children just self-supporting. Practically incapacitated by chronic rheumatism. Relieved thirteen times, £132. Recommended by Professor John Chiene, C.B., and Sir A. R. Simpson, Vice-President. Voted £12

7. Daughter, aged 57, of late M.D.Lond. No income; lets lodgings; eyesight failing. Relieved twenty-four times, £184. Recommended by Dr. Walter Rosser, Honorary Local Secretary. Voted £6.

INFANTILE MORTALITY.

In the last twelve months our knowledge of the conditions associated with a high or low death-rate among young children has been increased by the publication of two important statistical works. The first—Dr. Prinzing's treatise on medical statistics[1]—devotes a careful chapter enriched with numerous comparative tables, to the subject; while the second—a monograph, by Drs. Saltet and Falkenburg, issued by the Statistical Bureau of Amsterdam,[2] is devoted exclusively to the study of infantile mortality, with special reference to the kingdom of Holland.

Drs. Saltet and Falkenburg are quite conscious of the difficulties attending a research of this kind; possible sources of fallacy are clearly indicated, and the conclusions drawn are expressed with a modesty and caution not invariably found in writings on this question.

We propose to epitomize some of the information communicated in these works, but would strongly advise all interested in this serious problem to consult the originals.

I. Influence of Diet.

The Berlin statistics of Böckh and Hirschberg are grouped by Saltet and Falkenburg in five sections (Table I). The information contained in the second columns was obtained by inquiry at the censuses of 1885, 1890, 1895, and 1900. Of course, the figures under E in columns 1 and 2 are not comparable, and in calculating the general death-rate the cases are assumed to have been distributed through the groups in column 1 in the proportions indicated by the first four figures of column 2.

Table I.

—	Children between 0–1 year returned in the Census.	Mean No. of Deaths, 0–1 year.	Deaths per 1,000, 0–1 year.
Census of 1890:			
A. Breast-fed	20,812	1,545	74.2
B. Animal milk	16,620	8,308	499.9
C. Substitutes	352	200	568 2
D. Mixed nourishment ...	1,517	912	601.2
E. Unknown	11	1,808	—
Total	39,312	12,773	324.9
Census of 1895:			
A. Breast-fed	16 633	1,048	63 0
B. Animal milk	16,918	6,714	396 9
C. Substitutes	218	197	903.7
D. Mixed nourishment ...	3,474	812	233.7
E. Unknown	73	2,120	—
Total	37,316	10,891	291.9
Census of 1900:			
A. Breast-fed	12,584	873	69.4
B. Animal milk	19,507	7,143	366.2
C. Substitutes	977	298	305 0
D. Mixed nourishment ...	4,718	1,133	242.5
E. Unknown	1,473	2,096	—
Total	39 259	11,543	294.0

Summarizing these results we obtain:

Table II.

Deaths per 1,000	1890-1.	1895-6.	1900-1.
Breast-fed	74.2	63.0	69.4
Animal milk	499.9	396.9	366.2
Others	594.5	268.0	251.3
All children	324.9	291.9	294.0

The authors emphasize the fact that the information obtained from the mother is probably often incorrect, and that the results of the census and death-registration returns are perhaps not strictly comparable.[3]

Similar results were obtained by Groth in Munich,[4] but the somewhat complicated and indirect method adopted in his research is not entirely satisfactory.

A very important investigation is that of Briege and Sentemann.[5] With the help of the midwives (who received a small fee for their services) a list was made of

[1] *Handbuch der medizinischen Statistik.* Von Dr. F. Prinzing. Fischer. 1906.

[2] *Kindersterblichkeit, besonders in den Niederlander.* Von Dr. R. H. Saltet and Dr. Ph. Falkenburg (Statistische Mitteilungen, veröffentlicht vom Statistischen Amt der Stadt Amsterdam, No. 19). 1907.

[3] Note especially the enormous differences between the death-rates in column C (Table I) for the three periods.

[4] *Münch. med. Wochenschrift*, 1904, No. 21.

[5] *Centralbl. f. allgem. Gesundheitspflege*, 1906, vol. xxvii, part 1.

all children living in Barmen on August 15th, 1905, and born between August 15th, 1904, and August 14th, 1905. The midwives were given cards, upon which they were required to give details as to the length of time the infants were suckled, reasons for its discontinuance, and the kind of nourishment received by the children which were not breast-fed.

On August 15th, 1905, 78 per cent. of all children living (under 1 year old) were breast fed; 922 mothers did not suckle their children

48 (5 2 per cent.) on account of their occupations.
558 (60 5 per cent.) on account of absence of milk.
51 (6.5 per cent.) on account of unwillingness.
224 (24.1 per cent.) on account of illness.
7 (0.8 per cent.) on account of death.
18 (2 per cent.) on account of a second pregnancy.
18 (2 per cent.) on account of other causes.

TABLE III.—*Barmen Figures.*

	Income of Father.			
	Breast-fed.		Bottle-fed.	
	Up to 1,500 Marks.	Over 1,500 Marks.	Up to 1,500 Marks.	Over 1,500 Marks.
Living on August 15th, 1905 ...	2,820	361	662	208
Dead in first year...	205	23	209	26
Deaths per 1,000 living	73	64	316	125
	71.7		270 1	

From inquiries made in Amsterdam it appeared that 14.4 per cent. breast-fed and 30.4 per cent. bottle-fed children die in the first year, and the death-rates from intestinal affections are 4.5 per cent. and 11 per cent. respectively.

II. Influence of Prosperity.

Households in the cities of Dordrecht and Rotterdam and forty rural districts were classified (by means of the house tax and articles-of-consumption tax, *Verbranchssteuer*, in four groups:

4. Rich.
3. Well-to-do.
2. Moderately well-to-do.
1. Poor.

The following tables give the results:

TABLE IV.

Class.	Number of Households.	Number of Births.		Death-rate in First Year.	
		Total.	Per Household.	Total.	Per 100 born living.
		Dordrecht.			
1	313	1,803	5 76	315	18 03
2	283	1,607	5 68	268	17.35
3	113	558	4 94	76	14 02
4	77	320	4.16	23	7 37
		Rotterdam.			
1	2,565	14,351	5 59	2,288	16.44
2	798	4,021	5 04	584	15.01
3	404	1,690	4.18	225	13.85
4	205	858	4.19	84	10.07

TABLE V.—*40 Rural Districts.*

Class.	Number of Households.	Number of Births.		Death-rate in First Year.	
		Total.	Per Household.	Total.	Per 100 born living.
1	1,962	10,175	5.18	1,105	11 24
2	1,978	10,070	5.09	1,036	10 68
3	634	3,013	4.75	261	9 13
4	111	500	4 50	54	11 02

Prinzing[6] finds for Prussian statistics that of every 100 born alive there die in the first year of life:

Agricultural... ...	Independent	14.8
	Day labourers and servants	19.7
Industries and crafts	Independent	15.2
	Skilled workmen	16 2
	Unskilled workmen ...	17.9
Commerce, independent, and shopkeepers ...		15.2
Officers, officials, professional classes		10.5
Whole population		17.2

It is obvious that this classification is by no means sharp, the groups being very heterogeneous, but there is fair agreement with the more exact investigation of Tables IV and V.

III. General Death-rate and Infantile Death-rate.

In Holland, although both the general and infantile death-rates have diminished, the fall in the latter has not kept pace with that of the former.

TABLE VI.

Period.	Deaths per 10,000 Living Children from 0-1 Year Old.	Deaths per 10,000 Living Over the Age of 1 Year.
1845-54	2,390=100 0	206=100.0
1855-1864	2,306=96.5*	200=97.1*
1865-1874	2,493=104.3	188=91.2
1875-1884	2,162=90.5	162=78.6
1885-1894	1,942=81.3	151=73.3
1895-1904	1,656=69.3	127=61.6

* Expressed in terms of the 1845-54 figures as units.

IV. Relationship between the Summer and Autumnal Maxima and Meteorological Conditions.

Saltet and Falkenburg have collected an enormous mass of data, occupying nearly forty pages of their book, bearing on the monthly infantile death-rates in all parts of Holland, and the temperature variations at certain meteorological observatories. Perhaps a more satisfactory method of attacking the problem than the one adopted is that employed by Greenwood and Thompson in their study of the monthly returns of acute rheumatism;[7] but in any case the question is one of extreme difficulty, and the authors express their opinion with scientific caution. They say:[8]

While Maastricht shows the highest temperatures in the months of June to September, the infantile mortality in Limberg is lower during June and July than in North Holland, Groningen, and Utrecht. In August and September the infantile mortality of Limberg begins to attain a higher level. The maximum, however, is reached in October, when the mean temperature of Maastricht is below that of Flushing. In North Holland, on the other hand, with its relatively lower temperature for the period June to September, the infantile mortality for June and July is the highest among the five provinces compared. We shall, of course, extend this comparison, but in the meantime enough has been said to show that in Holland provinces with high summer temperatures do not necessarily exhibit a high infantile death-rate.

. . . Also, then, a chronological comparison of the infantile death-rate and temperature as here effected in the case of Zeeland and the city of Groningen only yields a negative conclusion. If in isolated cases a parallelism is observed, in the majority no direct relationship between temperature and infantile mortality can be detected. This is by no means to say that we have proved infantile mortality to be independent of meteorological conditions. On the contrary, our diagrams are the best proof of a connexion between the state of the air and the mortality of young children. But it is not the height of the temperature which regulates this mortality. As we have already indicated, there is, in our opinion, some likelihood that it is the temperature variations—diurnal or interdiurnal—of summer which exert an unfavourable influence. Material bearing on this point is not in existence, and cannot, we think, be obtained from the temperature-frequency records which a meteorological institute is able to supply. In this place we can only mention the theory which associates the summer mortality of infants with the presence of large numbers of insects which act as carriers of disease. As, up to the present, there are no positive data, we are not able to pursue the subject.

A wide field for research is open here for a zealous investigator of the future.

[6] Op. cit., p. 301.
[7] *Journal of Hygiene*, April, 1907.
[8] Op, cit , 81, and 85-6.

We have said enough to make clear the interest and importance of these recent works; we only wish we could think that the numerous politicians and popular writers who pose as authorities on questions of this sort will make themselves acquainted with the books under review.

ROYAL COMMISSION ON VIVISECTION.

Third Report.

(*Continued from p. 1165.*)

The Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till the evening of Thursday, October 3rd.* We continue our abstracts of the evidence.

Evidence of the President of the Royal College of Surgeons of England.

Mr. Henry Morris, whose evidence occupies about 18 pages of the Blue Book, said he had been desired by the Council of the College to give evidence before the Commission. The Council had passed the following resolution:

> The Council of the Royal College of Surgeons of England express the opinion that the Act of 1876 is sufficient protection against any abuse of vivisection, and earnestly hope that the progress of surgical science will not be hindered by further restrictive legislation.

Mr. Morris said that experiments on animals in relation to aseptic surgery and the healing of wounds had, in his opinion, been of most material advantage. Other forms of investigation had been essential, and it was impossible to separate the advantages derived from each particular source. It was by means of experiments on animals whilst studying the phenomena of inflammation that Lister ascertained many very important and fundamental facts. Thence he went on to the study of the blood, more especially the coagulation of the blood, thrombosis, etc. The facts ascertained in both these directions formed the basis of his subsequent work on the treatment of wounds. It was after Pasteur had shown that putrefaction, like other fermentations, was caused by microbes growing in putrescible substances, that the problem how to protect wounds from bacteria presented itself to Lister. Lister himself demonstrated in his experiments on lactic fermentation that there must be different kinds of bacteria having different functions. The witness went on to say that Pasteur's works might be classed in three series—three great discoveries:

> (1) That each fermentation is produced by the development of a special microbe; (2) that each infectious disease is produced by the development within the organism of a special microbe; and (3) that the microbe of an infectious disease, cultivated under certain detrimental conditions, is attenuated in its pathogenic activity—from the virus it has become a vaccine, and as a vaccine is used for protection and cure.

With regard to (2) and (3) experiments were essential. Pasteur discovered by experiment that infectious diseases were produced by different microbes. Lister constantly improved his methods of wound treatment, with the most remarkable results, in the prevention of septic diseases, as well as of certain diseases which at first he had not looked on as due to the entrance of bacteria, such as erysipelas and tetanus. Koch showed, entirely by experiments on animals, that there were two great classes of bacteria—namely, those that could not grow in the living tissues, the non-pathogenic bacteria; and those that were able to grow in the living tissues, and, growing there, produce various forms of disease. He further showed that the troubles which arose in connexion with wounds might, on the one hand, be due to the absorption of the chemical products of the growth of one or both of these kinds of bacteria in the discharges of the wound; or, on the other hand, to the entrance of pathogenic organisms into the tissues, and their growth in the body. In this way, he demonstrated the occurrence of septicaemia in mice, due to small bacilli; septicaemia in rabbits, due to cocci; pyaemia in mice, due to micrococci, and many other things of the same kind. Septicaemia in man and the cause of septicaemia in man had also been demonstrated and proved accurately by the experiments on mice and rabbits. The discovery was arrived at by cultivating the organisms found in the discharges or the blood of men suffering from septicaemia or pyaemia. Koch laid down three great postulates: The first was that one must discover the micro-organism which was the cause of the disease—the coccus or bacteria, as the case might be—in every case in which the disease existed. Then, by making a pure culture, separating it from everything else, and making the pure culture of this particular organism, one introduced it into an animal, and it produced the disease there; and then there would be found in the blood and tissues of that animal the same organism as that found originally in the individual who was attacked by the disease. The third of these necessitated experiments on animals. Based on these postulates, the discovery was made of the bacteriological origin of a great variety of diseases, both in man and in animals—for example, tubercle, tetanus, diphtheria, all sorts of wound infections, such as septicaemia, pyaemia, sapraemia, erysipelas, and infective gangrene, as well as gonorrhoea, plague, cholera, pneumonia, and so on. The whole of the aseptic and antiseptic methods of the treatment of wounds was the outcome of this knowledge of the micro-organisms in the putrefactive discharges being the cause of the disease. The discovery of the causes of these diseases had led to the early and precise diagnosis of them, and to a more intelligible and effective manner of treatment than was previously possible. In the prevention of the spread of diseases and in hygienic science advances had been made, owing to experiments on animals, which could not have occurred had such experiments been prohibited. Further, the study of bacteria, and their effects on animals under various conditions, led Pasteur to open up the whole question of immunity. His discoveries had proved of great benefit both to animals and human beings, in proof of which it was only necessary to name anthrax, swine erysipelas, and rabies. The experimental study of pathogenic organisms had also led to the discovery of protective and curative serums of proved value and of great importance in treating a number of diseases, the most striking instance being diphtheria. The marvellous improvements made since the Royal Commission of 1876 in the treatment of wounds and in our knowledge (*a*) of proper disinfection, (*b*) of the sterilization of dressings and instruments, (*c*) of the action of antiseptics on wounds, and (*d*) of the behaviour of various substances used as ligatures, when buried in the tissues, were due to the precision and clearness with which the nature, the virulence, and the habitats of the various pyogenic organisms had been made out. The old plan of ligaturing was very frequently disastrous, because it entailed the application of a silk thread to a vessel, and this was left projecting from the wound. Suppuration was very common in those days, and in the process of separation of the ligature and the ligature coming away secondary haemorrhage frequently occurred. Improvements were being sought, and various methods were employed; and then it went on to the employment, through Lister's experiments, of buried ligatures, using various material, such as ox-aorta gut, catgut, and silk, which were tied and the ends cut short, and left to be surrounded and grown into or absorbed by the tissues. That was a matter of the very first importance in connexion with doing away with the liability of suppuration of wounds and of secondary haemorrhage. By getting an immediate union of the wound, these things round the vessels, cut short and left in the tissue, became buried and shut out from all liability of doing harm, which ligatures, hanging tail-like out of the wound, so often caused. These ligatures, which could be safely left in the wound, were ascertained by experiments on animals. Mr. Morris went on to say that since the danger of septic troubles had been removed many operations which used to be looked upon as too dangerous to be undertaken, except as a last chance of saving life, were now performed with absolute safety; many new and important ones, which were formerly never dreamed of, had now become matters

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of successful and almost daily performance. Finally, whereas the mortality, even after quite simple operations, was at one time so appalling that the patients were often deterred from submitting to, and the surgeon from performing them, operations of considerable magnitude were now undergone with the confidence which came from knowing that the mortality was, in many instances, but a fraction of a unit per cent. To-day the abdominal cavity of man was opened, every organ within was inspected and palpated for diagnostic as well as for operative purposes, the wound was closed, and the patient recovered from the effect of the anaesthesia, and took a completely uneventful course towards convalescence. This course was very commonly without pain, without mental shock or distress, without discomfort of any kind beyond some anaesthesia sickness, some flatulence, and the weariness of lying still. Within ten or fourteen days after such an operation the patient had generally quite recovered. Experiments on animals had assisted to that result through the rapid healing and the healthy condition of the wound from the very start to the finish; whereas, before it was known through experiments on animals what the causes of putrefaction and suppuration were and how to prevent them, the majority of these wounds suppurated. Asked if the pain suffered by animals under an operation would be the same or greater or less than that suffered by man, the witness said that, allowing that an animal was equally susceptible to pain as man, there would be the same immunity from pain and suffering, provided the aseptic condition after making the wound was kept up. The remainder of the *précis* put in by Mr. Morris was not read, but is printed in the minutes of evidence, where it occupies three pages. It deals with experiments on animals in relation to our knowledge of shock, and how to prevent it; experiments on animals in relation to the bacterial origin of certain diseases, and the immunizing and curative influence of culture serums, illustrated by: (*a*) Diphtheria, (*b*) tetanus, (*c*) hydrophobia, (*d*) anthrax, (*e*) glanders, (*f*) Graves's disease, and experiments on animals in relation to cancer research. In regard to this disease, Mr. Morris said that up to 1902, cancer had been studied almost exclusively from the clinical aspect, and by pathological, histological, and chemical examinations of the dead cancerous tumours. The result had been that our ignorance as to the cause and origin of cancer at the beginning of the twentieth century was almost as profound as ever before. Hence the importance of studying living cancer tissue by transplanting it from animal to animal; and mice were selected as the subjects of the great majority of the experiments, because the disease occurred spontaneously and frequently in them. To keep the tumour-tissue alive, and to provide a sufficient and continuous supply of it, large numbers of inoculations were essential:

(*a*) Because many of these inoculations failed entirely; (*b*) because in many instances the tumours which arose and for a short time grew in mice, subsequently atrophied and disappeared; (*c*) because of the small amount of tumour-tissue obtainable from each mouse; (*d*) because the step by step investigation of the changes which took place at the site of inoculation entailed the sacrifice of a large number of animals at every stage; and (*e*) lastly, because the investigation of the secretions and body fluids of cancerously affected as compared with unaffected animals required the use of a large number of mice.

If it were asked what, up to the present time, had been learnt or confirmed by all these experiments, the answer was:

(1) Positive knowledge had been gained that this mouse tumour, which was identical in nature with the human mammary tumour, grew by an inherent growth of its own, and was not due to a change in the tissues themselves of the animal into which it was engrafted. (2) That cancer would, and did, not so very infrequently, disappear spontaneously. (3) That the animals in which cancer had grown and then disappeared were immune to fresh inoculation. (4) That a mouse could be rendered immune by the injection into its body of some of the blood of a healthy or an immunized mouse.

These inoculation experiments were practically painless; neither was pain suffered by the animal in which the transplanted tissue grew even into a large tumour. It was only in the exceptional cases in which the tumour ulcerated that any pain occurred, and as that condition rendered the tumour useless for further experiment, the animal was at once killed. Evidence as to the painlessness of these growing tumours was afforded by the activity of movement, sleekness of coat, the general healthy appearance of the mice, their indifference to pinching or pressure of the tumour, which was not innervated, and further, by the fact that when they had been kept in separate compartments of the same cage, they had eaten through the partition, mingled with one another, and a litter of young ones had been the result. Every cutting operation in these investigations was performed under complete anaesthesia, and precautions were always taken to secure asepticity and immediate healing of the wound. Inoculation experiments had been undertaken to a very limited extent on horses, dogs, rats, rabbits, frogs, and fish. Only in the case of the rat and dog had inoculations been followed by the development of the disease, and to these the same remarks apply as in the case of the mouse. Any limitation placed upon the number of inoculations, whether in mice or in other animals, including anthropoid apes, to which resort might ultimately be necessary, would have a disastrous effect on the further development and the prosecution of cancer research in this country. It was at present impossible to determine how far the contrast between the success obtained in mice and the failure in other animals, was due to the discrepancy in the number of inoculations made. As a member of the Executive Committee of the Imperial Cancer Research Fund from its outset, he had had frequent opportunity of witnessing the complete absence of suffering in animals the subjects of these cancerous tumours, and of observing the extreme care and attention given to all the animals, both in London and at the farm. Mr. Morris went on to speak of experiments on animals under Certificates B and C, referring to the localization of the motor centres in relation to brain abscess, brain tumours, and brain injuries, and to the operation of trephining for these conditions. He did not wish to imply that much had not been learnt as to the localization of function from clinical observation apart from experiments on animals; but he did not think it could seriously be contested that the extent and rate of acquisition of our knowledge of this subject, its precision, and the confirmation of what had been otherwise learnt, had been most important results of experiments on the brains of animals. After giving other examples of the effect of animal experiments on the development of surgery, Mr. Morris referred to the desirability of retaining the power on the part of lecturers on physiology of giving demonstrations to classes. He thought these exhibitions were of very great importance in teaching classes. It was very important to retain the power that still existed on the part of physiologists to give a certain small number of demonstrations to classes which were learning the functions of the body; for instance, to know what the action of the heart was like and what the action of the intestines was like, and the effect of influencing the organs through irritation or section of different nerves. He could say from personal experience how one was impressed by the sight for a few minutes of a thing of that sort, which no amount of reading or verbal descriptions or lectures would ever have given. Among the questions put to some of the witnesses in 1876—he thought to Sir James Paget and Dr. Pavy himself—one had reference to a certain regulation which was printed in the College of Surgeons' *Calendar*, in the regulations relating to the education and examination of candidates for the Fellowship. It was there stated that a course of practical physiology must be attended at a recognized school, and questions were asked as to what practical physiology was. In the *Calendar* of the College since 1874 there was the following note:

By this is meant that the learners themselves shall individually be engaged on the necessary experiments, manipulations, etc., but it is not hereby intended that the learners shall perform the vivisections.

He explained that although they expected candidates to have seen the experiments, they did not expect them to perform them themselves. That regulation was still necessary for the Fellowship, but not for Membership. In reply to Colonel Lockwood, Mr. Morris said on very, very few occasions were there any experiments on animals, perhaps only on four or five, or at the most half a dozen, in the course of a winter session. The men attending the lectures would be informed

at the end of a class that at the next lecture, or the next time of meeting, there would be this or the other shown upon a living animal. The Inspector could go in at any time, and the object of keeping anybody else out would merely be in conformity with that section in the Act which provided that these things were not to be for public exhibition. But if Colonel Lockwood were to go and say, "I am very much interested in seeing this experiment," he felt sure there was not a lecturer in London or in the country who would not allow him to come in and witness it. In reply to Colonel Lockwood, who urged that other people might say, "It is quite true that you went, and you saw the experiment; but the man, of course, knew you were coming, and so he conducted it more humanely than if you had not been present," Mr. Morris said he did not think anything of the kind. The Commission must take his opinion for what they thought it was worth; but he felt satisfied that there was not a single lecturer in the country who would vary his experiment because there happened to be a member of the Commission or a member of the Antivivisection Society, or of one of the antivivisection societies, present. On the Chairman pointing out that it was really a question of the amount of anaesthesia that Colonel Lockwood was aiming at—whether the anaesthetics were always applied fully, so as to ensure the absence of pain—the witness said he believed most certainly that they were. He should think the truth was that there was probably a waste of anaesthetic—that more was given rather than too little. In the experiments he had seen more was given than he would give to a human being; an amount which would entail danger in the human being. In reply to further questions he said he had never made an experiment. The operation that he was the first to do was done quite irrespective of any experiment upon animals; that was the cutting of a stone out of a kidney. But that was not the case with regard to cutting a kidney out of the body, because Simon of Heidelberg, who was the first to do that, made a deliberate set of experiments for the express purpose of knowing various things before he submitted a patient to the operation. He, of course, knew what the effect of the loss of a kidney by disease (a slow process) was; but he wanted to know what the loss of a kidney, by being taken suddenly away, would be, and until he knew that he did not feel at liberty to perform the operation of cutting the kidney out. But the kidney which he proposed to remove was healthy, and the operation was deliberately planned for the removal of a healthy kidney from the human body. The tube running from the kidney to the bladder, which had been accidentally cut in the course of previous operation, had its end sticking out of the flesh. The consequence was that the poor woman was constantly suffering from the annoyance of urine trickling down her side or down her front, and she implored for relief from this by having her kidney removed. Accordingly, Simon made experiments, first on dogs and other animals, and then he applied the results to this living patient. Asked if he had ever witnessed any cruelty on the part of a demonstrator, he said: No, absolutely none, nor any levity on the part of those who witnessed them. Asked if he looked upon morphine as an anaesthetic sufficient to prevent pain in a living subject, he said: No. He did not think it ever was the only anaesthetic used. If an experiment were to be done on an animal where as little anaesthetic as could be should be given, morphine would be a very valuable adjunct administered before the administration of the chloroform. But he would not look upon it as a complete anaesthetic, even given in great quantity. He had seen an animal kept under chloroform, he supposed, for two hours at a stretch, but he had often seen a living human subject kept for as long a time. He should think the longest time he had ever seen a human subject under anaesthetics was four and a half hours, for the treatment by complete compression of an abdominal (aortic) aneurysm. In reply to further questions, he said he thought the present Act was amply protective against cruelty to animals, and sufficiently free and liberal for the due prosecution of proper scientific and physiological inquiry. There was one respect in which he would like to see greater freedom. He would certainly like to see the thoroughly-trained first aids in the laboratory permitted to do such very slight and mechanical operations as the injection of a small quantity of serum. It was a great waste of time, and a great hardship upon the director, to have to do all that simple routine work. What he meant was that the licence should cover Certificate A for the assistants. It was only Certificate A he was referring to. In reply to further questions, he said he would certainly object to the exclusion of dogs from experiments; he thought it would be a very material hindrance to science. Asked by Sir William Church if he thought that an animal which received a poisonous dose of morphine or opium was in a condition to feel pain up to the time that death occurred, he said he did not think so. They suffered no pain. On its being put to him that when he told the Commission that morphine was not an anaesthetic he meant that if used as a perfect anaesthetic the animal would not survive, he said, Yes. Asked if he objected to the use of vivisection for the purpose of obtaining manual skill, he said he did not think it was necessary. In reply to Sir William Collins, he said the Council of the College which he represented was content with the Act as it was. He was sure they would regret curtailment in the way of privilege to perform experiments. But he thought they would equally regret to see any curtailment of the proper and due protection of animals. Asked as to anti-tetanic serum, he said he thought he had used it only in three cases. He had had very few cases of tetanus; they were not common cases in this country. It was not successful. It was a long time ago, and they were all advanced cases, too late for the successful employment of treatment. In regard to anthrax, he said that in the last three cases of anthrax at St. Bartholomew's Hospital they had relied upon the serum treatment only, with speedy recovery of all three patients. Asked if Lawson Tait was one of the champions of the aseptic treatment, he said, Yes. He knew Tait was opposed to vivisection, but that would not influence him much. In reply to Sir Mackenzie Chalmers, he said that when an anaesthetic was administered disappearance of consciousness long preceded disappearance of movement. Really intellectual consciousness would go first; then the consciousness of pain would go long before the capacity for movement went. The movements might be purposive in this way, that they would be made to claw off the thing over the mouth, or made to kick away a hand or any restraining force over the knee. A person knowing nothing about anaesthetics seeing an operation for the first time would think the patient was conscious, and would think he was suffering horribly. Some individuals did not struggle at all; they went off very quietly. It depended upon many causes. It always used to be thought, especially at Guy's, that people who had taken alcohol and people who had syphilis were amongst the most troublesome under chloroform, that they resisted the most. He meant people who had had syphilis comparatively recently. One of the tests often employed—it was a rough test—by a teacher showing a witness learning the administration was to touch the conjunctiva with the finger. Surgeons knew that a patient might be absolutely insensitive to the touch of the conjunctiva with the finger and yet give a very considerable writhe directly the operation was about to commence or was commencing round the anus. That probably was the last part of the body, as far as one knew, to answer to the anaesthetic. Asked as to the order in which full consciousness came back (consciousness and sensation), he said he could not answer that in a precise way, but the return of consciousness was sometimes very much delayed. Patients resisted the touch of the hand long before they were conscious; they resisted the moving of a limb, or putting it into a certain position. Yet there was no sensation of pain. The sense of pain would come back, perhaps, sooner than the sense of consciousness; a patient would feel a prick of pain sooner than he would be able to hold an intelligent conversation. But the power of motion came back long before the sensation of pain. Asked if there was any appreciable interval, he said it would vary. How long a patient would be before he appreciated pain might be judged of by those rare and most unfortunate accidents which had occurred with regard to hot-water bottles. A nurse, perhaps, had put a hot-water bottle against the patient's side or limb, and he lay against it perhaps for an hour or two, until, when the misfortune was discovered, there was a very considerable

burn, which might end in a very considerable slough. There was a considerable interval before the patient would make an effort to move away from a hot-water bottle which was producing such damage, although the patient was capable of making movements. Asked as to the amendments of the law, he said he thought the enactments as to anaesthetics might be safely left as they were under the Act. The Act specifically stated that curare must not be used as an anaesthetic alone. He did not think that any further restrictions on that head were required. In regard to local anaesthetics, he thought it possible that there might be cases where an injection of cocaine or urethane into the theca of the spinal cord might take the place of a general anaesthetic. He had not in his own practice used local anaesthetics, but there had been many cases of surgical operations of moment reported as having been quite successful under an injection of eucaine and cocaine. In reply to further questions, he said that abdominal surgery had been enormously advanced by experiments on animals, and he would go so far as to say that there were many operations, such as the extirpation of the kidney, which he did not think any prudent surgeon would have undertaken if it had not been for the knowledge which had been gained by experiments on animals. In reply to further questions, he said he had a great opinion of Pasteur's anti-rabic treatment, but he knew nothing about the Buisson baths. If a patient of his was bitten by a dog that he believed to be mad, he would certainly advise him to undergo Pasteur's treatment. In reply to Mr. Tomkinson, who asked if he thought that, administered with chloroform or ether and other real anaesthetics, there might not be a danger of the animal being powerless through the effect of curare, and yet the anaesthesia would be imperfect at the time, he said he did not think so at all. He thought from the way in which he had always seen and had always heard that chloroform or ether was administered, there was not the least fear of that. He thought that complete anaesthesia was always aimed at most carefully, and secured. Asked with regard to Dr. Crile's experiments whether the results, from any point of view, were at all commensurate with the severity of such operations on the observation of shock or the effect of shock, he said he hardly felt that he could form a just opinion about that. He did not like many of the experiments that were performed, but he would not like to express a definite opinion. He would hardly be prepared to say that they were not desirable to have been made once, but he certainly thought that such things ought not to be repeated for the sake of repeating them. Asked if he could express any opinion whether from the moral point of view it would be justifiable to inflict really painful experiments for possible results in search of alleviating human suffering or the prevention of it, he said that was a matter upon which each individual would have his own opinion. As a great lover of dogs, and as a person very desirous of saving animal suffering, he would still say that he thought that from the moral aspect it was quite justifiable.

ASSOCIATION OF CERTIFYING FACTORY SURGEONS.

ANNUAL MEETING.

THE Council of this Association having accepted an invitation to hold the annual meeting this year in Leicester, it took place at the Grand Hotel on October 25th.

Dr. J. BRASSEY BRIERLEY, the President, took the chair, and was supported by a good attendance of certifying surgeons from all parts of the country.

After adoption of the minutes, the HONORARY SECRETARY (Dr. W. F. Dearden) read the annual report, which showed the membership to be 339, a similar number to that of the previous year. In the statistical return it was shown that members of the Association accounted for 233,597 out of a total of 390,869 examinations for certificates of fitness in the whole country during 1906, and that the general percentage of rejections was the same for members and all certifying surgeons, though those for physical incapacity were as 0.9 per cent. to 0.8 per cent. Rejections were most numerous among female young persons of 13 years of age (1.34 per cent.) and least among males of 14 and 15 years (0.51 per cent.). It was pointed out that the Notice of Accidents Act, 1906, which came into operation at the beginning of the year, owed its existence in its present form to the exertions of the Association, in conjunction with the British Medical Association, in resisting the original intention of the Government to make medical investigation subject to the decision of the local factory inspector. The Act as passed would mean an increase of investigations instead of a diminution. An arrangement had also been entered into with the British Medical Association to take joint action with a view to obtaining some alteration of the "sixpenny fee," at present paid for examinations at the surgeon's rooms. The Home Secretary had promised to receive a joint deputation from the two Associations with respect to this subject, but so far had not been able to find time for the interview. In accordance with a promise given to the member for Greenwich (Mr. Jackson), in answer to a question, the Home Secretary instituted an inquiry as to the extent to which large employers took advantage of this cheap certificate. The result of this inquiry had not yet been published. The subject of medical inspection of school children had been under discussion by the Council, and the attention of the President of the Board of Education had been drawn to the many advantages to be gained by placing this work in the hands of factory surgeons. The trouble of making new appointments would be avoided; the examination would be made by men of experience in this class of work; there would be no overlapping between two sets of medical examiners; a child would be under the watchful eye of the same medical man between the ages of 5 and 18. The Board had promised to give careful consideration to the various points raised. The duties placed upon the certifying surgeon under the new Compensation Act were described and commented upon, the smallness of the fees allowed coming in for particular criticism. The action of the Council in the matters referred to was highly approved, and the report was ordered to be printed and circulated.

Dr. C. F. Bryan (Leicester) was elected President for the year. Dr. W. F. Dearden was re-elected Honorary Secretary, and Dr. T. Watts Honorary Treasurer. Dr. A. Scott, Dr. H. C. Manley, and Dr. W. H. F. Oxley were re-elected as Honorary Corresponding Secretaries for Scotland, Ireland, and the Metropolitan District respectively.

The annual dinner took place in the evening, among the guests being Mr. G. C. Franklin, ex-President of the British Medical Association; the Mayor-elect of Leicester (Mr. A. Smith), Dr. T. M. Legge, Chief Medical Inspector of Factories; and Mr. A. Redgrave, Superintending Inspector of Factories.

CONTRACT PRACTICE.

CLUB CONTRACTS.

IN June, 1906, all the medical men in practice in Upper and Lower Gornal and Gornal Wood notified their club secretaries that after Christmas, 1906, the fee per member would be 4s. per annum instead of 3s. as formerly paid. A strong effort was made by a dozen of the clubs interested to import another medical man to do the work at the lower figure, and a surgeon living some three miles away agreed to settle in the district, and accept the work on the clubs' terms. This outsider at first consented, and then refused to meet the medical men, who had meanwhile received notice from the twelve clubs that their services would not be required after Christmas. About six weeks before Christmas this same outsider applied for a post elsewhere as outdoor assistant, although at the time he was under a promise to accept the appointment offered him by the clubs. At a meeting of the Medical Committee of the associated clubs, documentary evidence was produced which convinced the members that the outsider meant "to leave them in the lurch," and at the same meeting, when the local medical men had the valuable assistance of Mr. Messiter of Dudley, it was pointed out that this or any other outsider who might settle in the district and undersell his neighbours would not receive professional recognition. The opposition of the clubs fell through, and the increased fee of 4s. was agreed to. The local medical men were united and loyal to their promise, hence their success. They are much indebted to the British Medical Association and to Dr. Codd, Honorary Secretary of the South Staffordshire Division, for arranging for the insertion of a Warning Notice, and other assistance in the struggle.

LITERARY NOTES.

The *Liverpool Medico Chirurgical Journal* for July contains an interesting paper on achondroplasia or chondrodystrophia fetalis by Dr. H. H. Clarke, Physician to the Liverpool Hospital for Consumption. In a short historical introduction he says the disease has certainly existed from a very early period. It was the custom in Ancient Egypt to place in the tomb of a defunct worthy an effigy of himself. The effigy had to be as like the deceased as possible, as it was believed that any departure from the truth might render impossible the return of the soul to its former abode. Hence deformities and physical blemishes were reproduced without "remorse or mitigation," to use the words of Malvolio. In the necropolis attached to the School of Memphis there was found the tomb of a man named Knoumhotpon, who was apparently of some importance—possibly chief cook or perfumer or master of the wardrobe to King Pharaoh. The effigy shows a man with a trunk of normal length, but stunted legs, which were besides greatly curved. This, Dr. Clarke says, was certainly a case of chondrodystrophia fetalis. The gods Ptah and Bes were also examples of the disease, for the Egyptians admitted these dwarfs into the circle of divinity—Bes to preside over arms and wearing apparel, Ptah over fire, heat, and life. Bes is generally represented with a large head, a protruding tongue, and a pendulous belly. The limbs, especially the femur and humerus, are stunted, and the normal curves are exaggerated. Most of the statues of pigmies preserved in the museum have the same proportions. A bronze statuette in the Louvre representing Silenus also closely resembles this type of disease. Most of the dwarfs recorded in history appear to have been of this type.

The 200th anniversary of the birth of the illustrious naturalist, George Louis le Clerc de Buffon, fell on September 7th. He was born on that day in 1707 at Montbard in Burgundy, and it was there that he spent most of his time. He was a *grand seigneur* in the fullest sense, but withal one of the most indefatigable workers of whom there is record. He rose at five, and every hour of the day was apportioned with monastic exactitude. He was not an early riser by nature, and his account of his efforts to overcome the charms of bed is amusing. He enlisted the help of his valet, Joseph, who was in his service altogether sixty-five years. "One day," he says, "dissatisfied with myself, I called and promised him an *écu* (about half a crown) every time that he got me out of bed before six. The next day he did not fail to awake me at the appointed time. I cursed him. He came the next time and I threatened him. When he was giving me my breakfast I said to him, 'My poor fellow, you have gained nothing and I have lost my time. You don't care either about my anger or my threats.' The following day he came at the time agreed upon, and insisted that I should get up. I begged him to leave me alone and told him I would send him about his business. This time, however, he did not let himself be intimidated, but forced me to get up. This went on for a long time, the half-crown which he pocketed being a compensation for my irritability in the morning." One morning Joseph failed to induce his master to get up. Not knowing what else to do, he suddenly pulled the clothes down, emptied a basin of ice-cold water on Buffon's chest and ran out of the room. He was recalled soon afterwards and went in trembling. Buffon, however, said without anger, "Give me my things, but in future let us try not to quarrel. It will be best for both of us. Here are your three francs which you have certainly thoroughly earned this morning." Buffon used to say that to Joseph he owed three or four volumes of his *Natural History*. As soon as he was dressed he would go alone to the furthest end of his gardens, which was a considerable distance from the house, taking care on the way to shut the gates of each terrace so as to keep out intruders. A secretary was waiting for him, and he began work at once. He often dictated while pages at a stretch. Sometimes he made notes on a number of small pieces of paper of all shapes and sizes, but all carefully numbered; these were copied by his secretary. At 9 he breakfasted on bread and water. Even whilst dressing—and he was very point device in his attire—he did not lose a moment, making notes of any thoughts that occurred to him. After breakfast he continued at work till 2 o'clock, when he took his principal meal. Always abstemious, towards the end of his life his dinner consisted of a little broth and two fresh eggs. He ate little meat, preferring fish, and took a good deal of fruit at dessert. He drank little wine, and never touched coffee or liqueurs. After dinner, which lasted an hour—sometimes two—he left his guests and went to his room, where he took a short nap. Then he walked for some time alone in the park or on the terrace of the castle nearest his room. At 5 o'clock he went back to work and did not leave off till 9. He then went down to the drawing-room, where he spent the evening. When travelling he was always absorbed in thought. In the evening he took notes which he afterwards put in order. Often when with his guests in the drawing-room he would leave them to work out an idea which struck him. The legend is that he would put on ruffles before writing, and for this, according to the *Chronique Médicale*, to which we are indebted for these particulars, there appears to be more foundation than there is for many legends.

To the *Pacific Medical Journal* for September, Dr. Albert S. Ashmead, late foreign medical director, Tokyo Hospital, Japan, contributes an article on the relation of insects and fish to leprosy. Incidentally he gives some interesting information as to leprosy in Japan. He says that from Persia and India the disease spread to China and Japan in fire-worshipping days. The Buddhist religion has a sect called the Hotke, especially caring for and giving consolation to lepers. Lepers in Japan are outcasts. They wander over the face of the Empire friendless, lawless, starving, without shelter. In this social solitude they were reached by the Buddhist faith, comforted, fed, controlled, and administered by it. Under the influence of that creed arose the whole system of customs and traditions governing leprosy. The all-pervading salutary rule of the Buddhist religion is illustrated in the following legend:—Chibaken, in the south of the empire, is a sort of Mecca for the lepers. It is related that over a thousand years ago there lived in that place a youth of 21, who was stricken with the disease. He was loathsome to behold and his physical condition repelled all his friends. In this sad plight he dragged himself to the Temple of Naruto Fudo, praying to be cured of his horrible disease, and to show his good faith vowed that he would abstain from food for twenty-one days. After the expiration of twenty days and in the middle of the twenty-first Fudo appeared in the flesh to him and graciously kissed the poison from his sores. Thus the young man's health was restored. In gratitude he became a Buddhist anchorite and eventually a shining light in the church. Fudo is said to be a double being, a combination of God and Buddha, and is represented in many temples with three faces and a body standing phœnix-like in the middle of a blazing fire, showing him to be the representative of a divine element of purification, for fire is to them the emblem of purity, and the most familiar remedy among Japanese lepers is the white-hot puncture needle. In the province of Sanuki, on a peninsula about 700 miles south of Yedo, we find a great multitude of these pariahs and lepers, the Japanese generally believing that the lepers who betake themselves to the immediate protection of Konpira, whose shrine is there, will be cured through his tender mercy. This superior being is at the same time God and Buddha. The climate of Sanuki is remarkable for its mildness, the province being nearly encircled by the sea. Almost all the lepers in the empire at some time of their lives gravitate toward that holy region, where they make a stay of greater or less duration. It was a medical teaching of the Buddhists that a leper should not remain stationary in the place in which the disease originated. Hence the roamings and disappearances of the lepers. Most of the leper laws of Japan are Buddhist traditions, as unchangeable as the laws of the Medes and Persians. The Japanese firmly believe in Konpira's power to cure leprosy, and to this popular belief, as well as to some others of Buddhist origin, is due the flocking of lepers to his shrine, and, to some extent, the segregation of the wretched multitude. He is the patron of lepers and takes care of them in every way. If a leper is robbed in Sanuki he will compel the thief to restore his booty. Many other leper traditions are handed down from Zoroaster's times. It is estimated that there are in Japan over 100,000 lepers, mostly in the southern part of the empire, but distributed in various proportions over the whole country.

Doctors, it is notorious, are often bad patients; they know too much and can picture to themselves possible complications, unsuspected by the happier layman, which may make even a simple illness formidable. The same circumstance tends to make them, in Chief Justice Bowen's famous phrase, too "conscious of each other's unworthiness." This characteristic was hit off with good-natured satire by Du Maurier in one of his *Punch* pictures where he shows a sick physician being urged by his anxious wife to send for one of his colleagues. The suffering doctor replies, "Well, you see, we go in for thinking each other quacks!" The profession of disbelief in the resources of medical art—as practised by others—is at present the badge of a tribe of highly-superior physicians whose names are flying about *per ora virom*. But medical scepticism was probably never more emphatically expressed than by Lieutaud (1703-80), first physician to Louis XVI. Being near his end, his confessor, who was anxious to snatch the brand from the burning, plied him with a battery of questions as to his faith in the mysteries of religion. The dying man at last roused himself to reply with his last gasp: "I believe in everything, except medicine!"

The last words of persons dying of disease, as most people who have stood by a deathbed know, are generally as vague as Falstaff's babble o' green fields. Mercifully consciousness is very often benumbed to the point of coma before the final "agony," and of many it may be said that they

> Craving nought nor fearing,
> Drift on through slumber to a dream, and through a dream to death.

Often, doubtless, the half-conscious mutterings of famous people when they are about to pass behind the veil are dressed up for posterity in a style which passes into legend and finally into history. Nevertheless we may cite, without guaranteeing their authenticity, a few instances of the last words attributed to doctors. Taking them as historical, however, we see the ruling passion strong in death of Albrecht von Haller, who with his last breath whispered, *L'artère bat, l'artère bat encore, l'artère ne bat plus!* Nothnagel, too, who died alone in his room, noted his own symptoms to the last. A letter to his assistant is said to have ended as follows: "Written late on the evening of July 6th just after experiencing these severe attacks. . . . died of calcification of the arteries." Traube also made observations on himself to the very end. Locock expressed a wish to be present at the *post-mortem* examination on himself, and among Cuvier's last recorded words is a remark, as his fingers twitched involuntarily, "Charles Bell is right: *Ce sont les nerfs de la volonté qui son malades.*" Dyce Davidson, Professor at Aberdeen, died immediately after saying to his class, speaking of the next meeting which was never to take place, "4 o'clock on Monday, gentlemen, 4 o'clock." Several have taken their leave with a blessing to those around them. Astley Cooper's last recorded words are "God bless you and good-bye to you all!" He had previously said to his physicians, Bright and Chambers, "God's will be done: God bless you both!" adding, "You must excuse me but I shall take no more medicine." Benjamin Brodie was heard to mutter: "After all, God is very good." The saddest of all recorded last words are probably those of Oliver Goldsmith, who, when asked by his physician if his mind was at ease said, "No, it is not!" On the other hand William Hunter's mind seems to have been full of bright thoughts at the moment of death, for he said: "If I could hold a pen, what a book I could write!" Rabelais's *Je vais chercher un grand peut-être*, though characteristic, rests on evidence as doubtful as most other stories of the famous monk-physician. Pasteur and Darwin, though not belonging to the medical profession, are venerated by it as teachers. Darwin's last words were: "I am not the least afraid to die." Pasteur was offered a cup of milk, and, being unable to swallow it, murmured, "I cannot." He passed away with one hand in his wife's, the other grasping a crucifix. Lastly, we may be allowed to mention the last words of Mirabeau, which are said to have been addressed to a doctor. He wrote on a slip of paper which he gave to his physician, the philosopher Cabanis, the single word, "*Dormir.*" Another account, which may be an expanded version of this, is that after begging for an anodyne, he said reproachfully to the doctor: "Were you not my physician and my friend? Did you not promise to spare me the suffering of such a death? Must I go away carrying with me the regret of having confided in you?" This is rather a long and rhetorical speech for a dying man.

MEDICAL NEWS.

THE German Society for the Repression of Syphilis has decided to establish a home for children suffering from hereditary syphilis. The scheme has been received with sympathy by the State and municipal authorities.

THE discussion on the complications of pneumonia, commenced in the Medical Section of the Royal Society of Medicine on October 22nd, will be resumed next Tuesday, at 5 p.m., by Dr. W. Hadley, who will narrate the experiences of the London Hospital; it is expected that similar accounts will be given by speakers from other hospitals in London.

THE RIGHT HON. SIR HERBERT MAXWELL, Bart., F.R.S., has been elected Chairman of the Council of the National Association for the Prevention of Consumption and other Forms of Tuberculosis in the place of the late Sir W. H. Broadbent; Dr. C. Theodore Williams, M.V.O., has been appointed vice-chairman.

ON October 26th, H.R.H. Princess Henry of Battenberg opened the new children's block recently erected in connexion with the hospital at Rugby. It contains two wards, each of seven beds, for boys and girls respectively. Other improvements have been made at the hospital, including the enlargement of the dispensary and the addition of a separation ward for men.

AN INSTITUTE OF CRIMINOLOGY AT BUENOS AIRES.—An Institute of Criminology has been established in connexion with the National Penitentiary, Buenos Aires. The work of the institute will be divided among three sections: (1) Criminal etiology, dealing with the determining causes of crimes. (2) Clinical criminology, the province of which will be the manifold manifestations of criminal tendencies, and the physio-psychical characters of criminals. (3) Criminal therapeutics, in which the means, social or individual, of prophylaxis and repression of criminality will be studied. It is intended that these sections shall supplement each other so that the phenomena of criminology will be studied as a whole. The work of the institution will have the benefit of the active assistance of the director of the penitentiary, Don Antonio Ballvé, and of Señor Horacio G. Areco, a pupil of Lombroso, Morselli, and Aschaffenburg. The Institute will be under the direction of Dr. José Ingegnieros, Professor in the University of Buenos Aires. The results of the various researches will be published in the *Archivos de Psiquiatria y Criminologia*, of which Dr. Ingegnieros is the editor.

A CHINESE HOSPITAL IN NEW YORK.—A hospital for Chinese patients, with a staff of Chinese doctors and Chinese nurses, under the supervision of an American physician, is to be established in Chinatown, New York. The estimated cost of the building, which is £5,000, is guaranteed by a committee of Chinese merchants. For the last three years, we learn from the *Boston Medical and Surgical Journal*, the Chinese merchants of New York have supported a hospital without the necessary authorization from the State. The institution was recently visited by two legal representatives of the Medical Society of the County of New York, who were informed by the superintendent that there were fifteen physicians on the staff, all of whom had received certificates from the Chinese consul. The consul, it appears, believed that he was acting within his rights when he gave these certificates, which have now been recalled by him, and the doctors will go before the Medical Board to pass their examinations in due form. The hospital, which is a substantial four-story building, is being remodelled, and will be used until a suitable site can be found for the new institution. The Chinese merchants who support the hospital are said to be doing their best to fight the opium habit, and they are the only people who can do it. The whole question has been put before the State Board of Charities, the authorities in Washington, and the District Attorney of New York, and they have all decided to leave the matter in the hands of the County Medical Society, which will see that the hospital is conducted on proper lines. There are now two or three qualified Chinese practitioners in New York who can carry on the work until the others receive their certificates from the Board.

British Medical Journal.

SATURDAY, NOVEMBER 2ND, 1907.

THE MEDICAL CURRICULUM—GERMAN AND BRITISH.

When a man born and educated in another country, after working among us and sharing to the full our national life for thirty or more years, gives us the results of his experience and observation, we come as near to enjoying that gift of the fairies of which Burns sang as is possible in this imperfect world. The profession is therefore indebted to Sir Felix Semon for the parallel between English and German education which he drew in his address to the Manchester Medical Society, and readers will forgive its somewhat unusual length when they realize the enormous mass of detail with which he set himself to deal. We have the temerity to think that it might even have been improved if it had been made longer—by the addition of the three words "and a "contrast" to the subtitle; for, apart from the general similarity in the subjects of study and the final object, there is more of contrast than parallel about the German and the British systems of educating candidates for the profession of medicine. From beginning to end the German scheme is far more logical and coherent, and even more practical, than ours. We are glad to find that Sir Felix Semon's parallel leads him to a conclusion very much the same as that which we have ventured to draw from a study of the present condition of medical education in this country alone. This conclusion is that its two main defects are to be found, first, in the preliminary or school education of the boy who is to become a medical student, and, secondly, in the unfortunate accident by which the extra year added to the curriculum in 1892 has been appropriated by the teachers of the intermediate subjects. With regard to the first point, any attempt to remodel our public and secondary schools on the German system is not to be thought of. It may be true that the English boy works too little, but this may conceivably be remedied without demolishing a system of education which has been gradually evolved and is a reflection of the genius of a people always disposed to set more store by the formation of character than the acquisition of knowledge. Sir Felix Semon fully recognises this, but at the same time he justly points out that in considering the medical curriculum the fact that the lad who has passed the German school leaving examination is better equipped with an actual solid knowledge of the subjects he has been taught must be taken into account. There would be more in this were it not that the subjects are very much the same, for it appears that the great majority of German medical students pass to the university from a Gymnasium, that is to say, a high school, where the instruction is based on the old-fashioned classical course. If the average German boy who is to become a medical student went to a Real-gymnasium, the German equivalent of a modern side, he would start his medical studies with the advantage of more thorough training in physics and chemistry, but, as he does not, the difference would seem rather to be in the severity of the mental training he has gone through than in the particular value to him of the greater store of knowledge he has acquired.

Sir Felix Semon is on the side of those who believe that, in both the German gymnasium and the English public school, too much time is given to the classics, but we will not be led into the discussion of this vexed question, which always raises much wrath in celestial breasts, for the real contrast he draws is between the regulations for the medical curriculum in this country and in Germany. The minimum length of the curriculum in Germany is theoretically six years, but practically, owing to the requirements as to military service, it is not more than five years and a half; in the United Kingdom it is theoretically five years, but practically, as recent statistics show, it is more nearly seven, for the mean length of the curriculum of men who qualified in 1906 was 6 years 11.3 months.

Sir Felix Semon points to certain conspicuous faults in the prescribed British curriculum which are brought into strong relief by his parallel or contrast. The chief of these is that, while in this country of the five years three are allotted to the preliminary and intermediate, and two only to the practical subjects, in Germany two and a half years only are given to physics, chemistry, botany, zoology, anatomy, and physiology, including physiological chemistry, and from this period must practically be deducted the six months of compulsory military service in the ranks. As in this country, great importance is attached to the practical study of anatomy, to which the student must give a considerable part of his time in each of the five sessions which make up the first two and a half years; physiology he begins in his second year, and it is expressly laid down that the teaching and examination in physics and chemistry shall have particular regard to the requirements of the future physician, that in botany special attention should be directed to plants which are medically important, and that in zoology the examinations should be limited to the fundamental principles of comparative anatomical physiology. There can be little doubt that these provisions have been introduced into the German regulations in order to counteract the tendency, which has been so marked in this country, for the teachers of the preliminary sciences to give courses of instruction and to conduct examinations without due regard to the ultimate object with which their students go to them, namely, to prepare for the practice of medicine. Having passed an examination in these preliminary and intermediate subjects the student is required to devote two and a half years to medicine and surgery, to attend many special clinics, and to take out practical laboratory courses in a number of subjects, including hygiene, bacteriology, pharmacology and forensic medicine. At the end of the second period, that is to say, at the end of five years from the commencement of medical studies, he may present himself for the State examination. So far there is no very striking difference in the conception of this part of the curriculum in the two countries, although the German course is more comprehensive in its recognition of the importance of specialities such as ophthalmology, laryngology, and diseases of children; but after passing the State examination the German student is now compelled, before he receives a licence to practise, to devote another year to clinical study as an assistant in one of the hospitals recognized for that purpose.

It comes to this, then, that in Germany, by the addition of this "practical year," two and a half years nominally, but in practice little more than two years, are allotted

to the preliminary and intermediate subjects, and fully three and a half years to clinical work. In this country with a curriculum which theoretically extends only to five years, three under the regulations of the University of London are devoted to the preliminary and intermediate subjects, and two only are required to be given to clinical work in all its branches. What wonder, then, that the curriculum of the average British student extends to seven years? The question will arise whether the time is not come when the facts should be recognized and the duration of the curriculum officially extended; before imposing such a regulation, however, it will be necessary to consider whether some improvement may not be brought about by a readjustment of the present curriculum, and particularly by reducing the length of time given to the preliminary and intermediate subjects, which might probably be accomplished were the teaching of the preliminary sciences to medical students better organized and more efficiently conducted, with full recognition of the fact that they are preparing for a special professional career; this appears to be the view held by so experienced a teacher of an intermediate subject as Professor Starling, who, in his address to the Medical Faculty of the University of London as a candidate for election as one of its representatives on the Senate, states that at the present time the courses of instruction in most of the preliminary and early medical studies "are determined without any regard to the uses to which the "student will be required to put the knowledge gained "in the early years of the curriculum. The ordinary "student who is to be a general practitioner, ought not "to be required to spend time on the acquisition of "knowledge which he will never use; . . . . the whole "of his studies should have a distinct bearing on, and "lead up to, the knowledge of the human body and its "control in disease. With a curriculum on these lines "it would be possible for the large majority of students "to pass the Intermediate M.B. Examination at the "end of the second winter session, as has been recommended by the Faculty, thus allowing the minimum "of two and a half years (a period all too short) for the "study of medicine, surgery, obstetrics, and pathology. "A change in this direction would be of benefit not "only to the medical but also to the scientific training "of the London student, and would therefore tend to "an actual raising of the standard of the degree."

There are many other interesting suggestions and criticisms in Sir Felix Semon's address, but those to which we have here directed attention, the scope and duration of the teaching which should be given in the earlier subjects and the inadequate nature of the clinical instruction, appear by far the most important.

SURGERY OF THE VASCULAR SYSTEM.

A SERIES of original memoirs on the surgery of the vascular system, including four papers read at a symposium held by the Philadelphia Academy of Surgery, all of which are published in the September number of the *Annals of Surgery*, affords a useful review of the extensive research that has recently been made on this subject in the United States, and also a good basis for a judgement of the possible clinical utility of this branch of surgical work. The subject should be one of great interest to British surgeons from the facts that the treatment of vascular lesions, both traumatic and pathological, has for a long time been so much influenced by the teaching of John Hunter, and that the new methods of more direct and mechanical treatment were in the middle of the eighteenth century anticipated by two English surgeons, Hallowel and Lambert, who were the first to close by suture a wound in a large artery.

Careful study of these interesting and suggestive papers cannot fail to lead to some distrust of the value from a practical or clinical point of view of the plans discussed. The proposed methods of vascular and, for the most part, arterial surgery, such as lateral suture, end-to-end union by suture or mechanical agent, resection of large vessels, and arterio-venous implantation, have been subjected to a large amount of experimental research, with decidedly brilliant results. As might naturally be expected, however, the success obtained from careful and elaborate manipulation of the sound tissues of healthy animals has not been found so striking and so frequent in the results of clinical work on diseased or injured vessels.

The first of the series of papers, one on ligature of the ductus arteriosus by Dr. John C. Munro of Boston, may be regarded rather as an anatomical exercise than as a contribution of really practical utility. The author considers with favour the somewhat startling proposal of direct surgical intervention in cases of patency of this fetal duct. His views on this question have not, he states, been hastily conceived. He has demonstrated the technical possibility of ligature of the duct on the cadavera of newborn children, and has long felt that such operation is justifiable on the living. The subject is discussed very fairly and candidly, and to many readers it may seem strange that, in spite of the serious difficulties and dangers mentioned in his paper, Dr. Munro regards his suggested plan of treatment as one ever likely to be carried out in actual practice. He states that he has tried in vain to inspire the pediatric specialist with his views. His unresponsive colleague need not, we think, go beyond Dr. Munro's own paper in quest of good reasons for his opposition. In the first place there is the difficulty of diagnosis. To attempt, Dr. Munro writes, to disentangle the confusion of signs that attach to the various congenital defects of the heart would be folly. Patency of the duct, moreover, is often associated with other cardiac defects. Most writers on the subject have found hypertrophy and dilatation of the heart, and the pulmonary artery may exceed the aorta in diameter. It is doubtful if the condition under consideration be often the direct and only cause of death, as in 25 recently collected cases half the patients lived to puberty. The operation proposed not only for a radical cure of the defect, but also for clearing up an unconfirmed diagnosis, is certainly one of exceptional gravity, as it necessitates slitting the sternum in the middle line, exposure and opening of the pericardium, and also of the right pleural cavity' and a cautious and probably prolonged dissection among the large vessels at the base of the heart. The subject of such treatment of patent ductus arteriosus would in most instances be a young and probably undeveloped child suffering from pulmonary atelectasis and serious respiratory disturbances.

In a paper on Arteriotomy for Thrombosis and Embolism the reader's attention is directed to a plan of treatment which, though feasible and relatively safe in theory, is shown to be of doubtful value. The author reports two cases of arterial occlusion, in one by a traumatic thrombus, in the other by an embolic clot, in which arteriotomy and removal of the obstruction failed in consequence of renewed coagulation of the blood. It is pointed out that direct removal of a thrombus or an embolus by arterial incision can be readily practised without danger of secondary haemor-

rhage. Whether the renewal of a thrombus after this removal can be prevented by resection and anastomosis or implantation which has so often proved successful in the laboratory, cannot, the author states, be definitely settled at the present time. That thrombosis is likely to occur also after end-to-end anastomosis of a divided or resected vessel is shown by Dr. Sweet, who finds that such result cannot be prevented by absolute asepsis or by nice and careful manipulation.

In connexion with these two papers on the operative treatment of arterial thrombosis, reference may be made to a recent contribution[1] on this subject by Mr. Sampson Handley, of the Middlesex Hospital, who on good grounds regards end-to end arterio-venous anastomosis as an unpromising practice in cases of threatening gangrene due to occlusion of the popliteal artery, but holds that an attempt at removal of the obstructing body is in such cases the most rational treatment. In a reported case of attempted operative removal of an embolus lodged at the bifurcation of the abdominal aorta, we find reference made to similar difficulties to those mentioned by the two American surgeons. The extent of the vascular occlusion could not be definitely made out, and the renewal of coagulation could not be overcome. The methods employed in this case were, as the author himself acknowledges, capable of improvement, but it is obvious that the conditions were very unfavourable to success, and direct arteriotomy might, under the circumstances, have been a rash step.

In the last two papers Drs. Frazier and Gibbon discuss endo-aneurysmorrhaphy, or what is known to American surgeons as the Matas operation, which aims at closing by suture the openings of the blood vessels in the aneurysmal sac and of obliterating the sac by approximating its walls, thus avoiding the injury to the soft parts caused by extirpation of the aneurysm. This method, which has met with little favour from surgeons on this side of the Atlantic, has, it is stated, been applied to 34 cases by twenty-one American surgeons with encouraging results in regard to freedom from secondary haemorrhage and gangrene. Matas has developed his method to a considerable extent, obliterating the aneurysm in some cases and in others, those of fusiform aneurysm, for instance, constructing a new vessel from the sac. This plan of treatment, the merits of which have still to be settled, is not free from difficulty and danger. The removal of adherent clot from the interior of the sac may cause as much injury to the surrounding soft parts as extirpation of the sac by dissection, and, as is shown in a case recorded by Dr. Frazier, the operation when practised on an aneurysm at the root of a limb may be attended by serious haemorrhage and result in gangrene. The advocacy of this complicated and difficult treatment seems to indicate that amongst American surgeons there is a distrust of the operation of dissecting out the sac, now so popular in this country and on the Continent, which method, Dr. Gibbon points out, by the injury inflicted on the surrounding tissues greatly interferes with the establishment of the anastomotic circulation, and often leads to gangrene.

[1] British Medical Journal, September 21st.

The Alvarenga Prize of the College of Physicians of Philadelphia, for 1907, has been awarded to Dr. W. Louis Chapman, of Providence, for an essay dealing with post-operative phlebitis, thrombosis, and embolism. The next award of the prize, value 180 dollars, will be made in July, 1908. Essays intended for competition must be received by the Secretary of the College on or before May 1st next year. They may deal with any subject in medicine, but must not have been previously published. Each essay must be marked with a motto, and be accompanied by a sealed envelope, having on its outside the same motto, and inside the name and address of the author.

THE TERRITORIAL ARMY MEDICAL CORPS.

The speech which the King delivered to the Lord Lieutenants at Buckingham Palace on Saturday seems to have given to the idea of a Territorial Army a reality which it has hitherto lacked. His Majesty invited his hearers to form those county associations which are to watch over the destinies of the Territorial Army. "To "you," he said, "are now delegated the duties of raising, "equipping and maintaining the portion of this force, "the Imperial Army of the second line, which lies "within the shores of this Kingdom. It is," he continued, "intended that the Territorial Army shall "receive that complete military organization without "which no army is competent to take the field."

In the task thus formally placed before the country by the Sovereign the medical profession is called upon to take its share, and it is satisfactory that the Secretary of State for War and the Director-General of Army Medical Services have already taken the profession into their confidence by telling it what is wanted and asking for advice as to how the object in view is best to be attained.

We publish elsewhere in this issue a report of the address on the organization of the Royal Territorial Medical Corps given by Sir Alfred Keogh, K.C.B., at Leeds, last week, and are able to attach to the report copies of the official tables showing the nature of the proposals for the training of officers, non-commissioned officers, and men for the field units of the corps, and also a table of pay and allowances.

Sir Alfred Keogh made it plain that the problem to be solved was to organize an efficient medical service in three closely related but to a certain extent independent parts. First of all the service must provide for the force actually in the field, medical officers, non-commissioned officers, and men for the battalions, and the staff of divisions, and for the lines of communication. The governing principle in providing for an expeditionary force (regular army) is that there shall be such an organization behind the medical units in the front that they shall be kept constantly free from sick and wounded, and constantly ready to receive fresh casualties; this is done, as may be seen from Lieutenant-Colonel Bedford's diagram (page 1244), by transferring invalids as rapidly as possible from the battalions to the field ambulances, from the field ambulances to the clearing hospital, from the clearing hospital either to a stationary or a general hospital, the actual details of this last part of the pilgrimage being partly determined by circumstances, and the distance of the front from the base. It is proposed to apply the same principle to the several armies which the territorial force would be called upon to form if the regular army had been sent out of the country as an expeditionary force, or in case of invasion. For all this part of the service the existing volunteer medical organization affords the basis, and, with certain modifications and additions indicated in Sir Alfred Keogh's address, can be adapted to modern requirements.

The second point is with regard to the organization of the general hospitals to which sick and wounded eventually find their way and remain until they die, or recover sufficiently to return to the ranks or their homes. At present there is no such organization for the territorial force in existence, for the volunteers have had no such hospitals. It is to be understood that by general hospital in this connexion is intended not a structure but a personal staff. The object which the Director-General has in view is to organize medical and surgical staffs in

sufficient number for such general hospitals, one or several in each of the fourteen areas into which Great Britain is divided for the purposes of the territorial force. He is appealing to hospital physicians and surgeons in the great centres to give in their names as willing, in the case of mobilization of the territorial army, to undertake the charge of a certain number of beds in such a hospital; head quarters of the medical service of the regular army would be responsible for the provision of buildings, huts, or tents, and the necessary administrative officers to carry on the general management of the hospital, the provision of foods and drugs, and the registration of patients. The position of a physician or surgeon in such a hospital would be exactly analogous to the position which he occupies in a civil hospital where he is concerned solely with the treatment of patients and not with administration. Each such officer would only be expected to visit the general hospital at stated times; he would, of course, require the services of a house-surgeon or house-physician, and we believe that it would be preferable that he should be asked to nominate this officer on mobilization. The attempt to keep in time of peace a roll of junior men willing to take positions of this kind would, we apprehend, be extremely onerous, and involve an amount of correspondence altogether disproportionate to any probable advantage. The officer responsible for the proper treatment of the patients would be the physician or surgeon, and to him might properly be left the duty of selecting his resident assistant.

The third point in the organization is the establishment of a sanitary service. Here again the Director-General proposes to organize the territorial army in each division of the kingdom upon the same principle as the sanitary service for the army in the field recently organized for the regular forces. This system is illustrated by a diagram drawn by Lieutenant-Colonel M. W. Russell, R.A.M.C., Deputy Assistant Director-General, which we are permitted to reproduce (p. 1245). As will be seen, the plan contemplates a sanitary unit with each battalion and a sanitary officer with each division; there would be sanitary squads immediately in the rear of the main force, other sanitary squads along the line of communication, and at the base there would be a sanitary company and a laboratory. In addition there would be on the lines of communication, but as we understand with a roving commission, a committee of sanitary experts, who in the case of the expeditionary force would be partly military and partly civil, and in the case of the territorial army would be composed of members of the Public Health Service, that is to say, medical officers of health who are asked to co-operate in numbers sufficient to make it possible to arrange a fairly long list, so that any individual officer might, even in time of war, be frequently relieved from his military duties to take up again his civil functions.

At the meetings to which the scheme has so far been submitted volunteer medical officers have been largely represented. They are more particularly concerned with the first leg of the tripod on which the scheme rests, and it seems to have commanded their general approval. With regard to the second, the general hospital staffs, we believe that the response will be sufficient, or more than sufficient, although many details remain to be worked out, and peculiarities of local circumstances may, perhaps, prevent absolute uniformity of organization; but this part of the scheme is still in a plastic state, and it is, we think, certain that it will be considered and criticized in a sympathetic spirit. As to the attitude of medical officers of health to the sanitary part of the scheme we have as yet no indication, but we observe that the Director-General is shortly to address a meeting of the Society of Medical Officers of Health. No doubt, as officers of public authorities, they are not in a position to give the required undertaking with the same individual freedom as other members of the profession. We feel confident, however, that they will be patriotically desirous to give their expert assistance to the nation in its hour of need, and it can hardly be doubted that the county and municipal authorities will be ready to agree to the necessary arrangements.

It must be recognized that the scheme makes a serious call upon the patriotism of the profession, but the truth is that the whole scheme for a territorial force makes such a call upon all citizens. In counting up the *pros* and *cons*, it must be remembered that the only apparent alternative is universal compulsory military service, and what that means to men training for the medical profession Sir Felix Semon, by an interesting coincidence, describes on another page of this issue.

THE NOTIFICATION OF BIRTHS ACT.

THE question of adopting, or otherwise, the Act regarding the compulsory notification of births, passed last session, is now being actively considered in many parts of England, and there are indications that if medical men in the various centres bestir themselves they may escape from the anomalous position which this Act has created for them. An encouraging example is supplied by Gateshead; in this important town it will be noted, on turning to the SUPPLEMENT, that the Town Council, acting through its Health and Sanitary Committee, has come to a definite arrangement on the subject with the medical profession as represented by the Gateshead Division of the North of England Branch of the British Medical Association. In virtue of this arrangement the Town Council has decided not to adopt the Act, and medical men in the locality, through the Division, have undertaken to do all they can, if desired, to obtain voluntary notification of births within thirty-six hours. At Manchester steps of a corresponding nature are being taken. That is to say, the Sanitary Committee of the Corporation has been approached by a deputation representing the medical profession, and the difficulties which the adoption of the Act will impose, especially in regard to the revelation of professional confidences, have been clearly set forth. The general public has also been taken into confidence by the Medical Guild, which, in a long letter published at page 1271 of this issue points out the strong practical objections to notification being made compulsory on the part of medical men. In this case the issue remains to be seen, but as the deputation received an exceedingly sympathetic reception at the hands of the Committee charged with the settlement of the question, there seems little doubt that the result will, in some degree at any rate, be of a favourable character. It is to be noted that in the case of Gateshead, medical men had the advantage of having two active members of the Division, Dr. Stewart and Dr. Todd, on the Town Council, and it was on their advice that the Council determined before taking any action in the matter, to ascertain the feeling of medical men respecting the Act. True reform, of course, lies in repeal of the penal and compulsory clauses applicable to medical men in the Act, but meantime by way of compromise voluntary notification such as that in view at Gateshead, seems a not unhappy suggestion, and might doubtless be obtained in any town in which there is a strong lay feeling in favour of early notification. The experience of Gateshead, as well as general knowledge

of men and affairs, seems to indicate that in any place in which it is proposed to attempt to forestall the harm threatened by the Act, it would be well for medical men to take influential members of the Town Council into their confidence, and discuss with them privately the probable working of the Act before approaching the Council formally.

SLEEPING SICKNESS.

Dr. Hearsey's report on the hygiene and demography of the British Central Africa (Nyasaland) Protectorate, which is included in the recently-issued Colonial Office report on that country, is of special interest as giving the latest information with regard to the present geographical distribution of sleeping sickness, its movements, and their connexion with the chief routes of labour traffic. Hitherto both North-Eastern Rhodesia and the Nyasaland Protectorate have been free from infection, though how long this will continue remains to be seen. As regards the Lake Tanganyika region sleeping sickness is reported as existing all along the west coast north of lat. 7 deg. S., in association with *Glossina palpalis*, and imported cases have occurred at Ujiji on the east side of the lake, though the southern and south-eastern shores have until now remained exempt. West of Lake Mweru, at several places, imported cases exist, though the southern limit of the true endemic area lies considerably to the north of this. Relying on the presumed existence of a large traffic between Lakes Tanganyika and Nyasa (which, however, does not exist), the Liverpool School of Tropical Medicine issued a memorandum in May last predicting the early invasion of the southern shores of Lake Tanganyika and the northern borders of Nyasaland, but this prediction has fortunately not been realized. Where the danger undoubtedly exists, however, is in the large traffic from Karonga on the north-west shore of Lake Nyasa, southwards through Kasama and Fort Rosebery to the territory of the Tanganyika Concessions and the mining districts in Northern Rhodesia generally. It has been ascertained that large numbers of natives travel by this route. Still more urgent is the danger for a stretch of 150 miles from Kazembe to lat. 12 deg. S., both *Glossina palpalis* and *G. morsitans* being prevalent. The most likely points of invasion of North-Eastern Rhodesia are at the north-eastern corner of Lake Mweru, and at the ferries across the Lualapa River south of this lake, where 20 000 natives are said to pass annually. Having in view the above facts, and a statement emanating from the Liverpool School that "in practice every negro with enlarged neck glands "must be suspected of being affected with sleeping "sickness," a Government medical inspection post was established at Karonga, and the passing natives systematically examined; while, at the same time, special attention was directed (1) to determining the incidence of enlarged cervical glands in apparently healthy natives of the different districts; and (2) to mapping the geographical distribution of the various species of tsetse fly. Dr. Hearsey tabulates the results of the examination of the glands in 5,439 cases (it is not stated what blood examinations were made), and is of opinion that the statement of the Liverpool School given above needs to be modified, since at least 8 per cent. of healthy natives have enlarged cervical glands without obvious cause. With regard to tsetse distribution, *Glossina palpalis* is not (or, rather, has not yet been) found in Nyasaland; *G. fusca* occurs in the neighbourhood of Chiroma and the Karonga district, and *G. pallidipes* also in the latter region, while *G. morsitans* inhabits various districts which are indicated on an accompanying map. This map is not published in the Colonial Office Report, nor is the nosological return, nor the table of European invalidings and other important returns made by Dr. Hearsey. It is one of the absurdities of our system that it should be left to a Colonial Office lay official to judge of the relative importance for printing of purely technical papers.

NURSING UNDER THE METROPOLITAN ASYLUMS BOARD.

The question of the "degradation" of matrons in the hospitals and asylums of the Metropolitan Asylums Board was mentioned at the meeting of the managers last Saturday, and evoked a statement on the subject by Mr. J. T. Helme, the Chairman. If we interpret him correctly, no change has been proposed which specially affects matrons as apart from other officers. The Board, it appears, has drawn up for submission to the Local Government Board a draft of a new order which it is proposed shall be substituted for that by which the Board's service is at present controlled. In this draft the existing principle of classing officers as either principal or subordinate is abandoned, and it is arranged that each institution shall in theory henceforth be, as now in effect, under the control of one officer, to whom all other individuals employed therein, lay or medical, shall be subordinate. This order will only apply to new appointees. If the intentions of the Board are thus correctly and fully represented, the plaint raised on behalf of the nursing world, to which attention was drawn last week, seems to fall to the ground, for under the new order future matrons in the Board's service will be in precisely the same position as matrons in ordinary hospitals—that is to say, they will do their work subject to the general control of the representative of the Board, and on due cause and on due notice be dismissible by the body which employs them without reference to any other outside authority. The idea of abolishing the terms, "principal" and "subordinate," as applied to variously employed officers, appears to be sound, for it will eliminate the possibility of certain anomalies such as have arisen from time to time, and the existence of which was one of the strongest grounds for the complaint put forward some two years ago by assistant medical officers of the Board. As things were, and still are, an assistant medical officer, being classed by the Board as a subordinate, is, on paper at any rate, liable to have his orders upset and interfered with by any principal officer, a category which includes stewards, chaplains, and schoolmistresses, as well as matrons, although the senior assistant medical officer, in the absence of his chief, represents the latter, and as such is practically responsible to the Board for the general conduct of the institution.

HIGHLAND FOLK MEDICINE.

According to the writer of an interesting article in the *Scotsman* of September 28th, "wise women" and "folk-doctors" are fast becoming extinct in the Highlands owing to the diffusion of knowledge and the opening up of ways of communication. There are still, however, a few who practise, and not a few of the older folk who believe in them. One of the first things the "doctor" looks for is any peculiar mark. Thus the position of moles is supposed to show the patient's temperament; teeth set wide apart indicates that the owner may be expected to make a safe recovery from his illness, while on the other hand close-set teeth show the patient to be miserly and melancholic, and more difficult to cure. Whether the difficulty arises from the miserliness or the melancholia must be left to conjecture. The disease suspected is "named" as if it were a refractory member of Parliament. Then a

woollen thread is wound round a horn spoon three times, and the ends placed together. The spoon is passed three times round the hook from which pots are suspended in the kitchen. If the thread falls off in the process, it is certain that the patient does not suffer from the disease named. Another and another is "named" until the thread stays on; this settles the diagnosis. This method recalls the practice of exorcisers, who would call out a list of demons by name till the right one was found by a process of exclusion. The diagnosis made, the "doctor" proceeds to "apply the "usual remedies," which, in one case known to the writer, was the eating of a cooked mouse; the unsuspecting patient actually did eat a mouse mixed up with his food, and recovered. Heart disease requires a special ritual of diagnosis. The patient is made to kneel on the floor near the fire; a sieve, on which is a large bowl filled with water, is placed on his head. Into this bowl molten lead is poured through iron, as through the finger-hole of a scissor blade, and it is thought that one of the pieces of lead is sure to assume the rough shape of a heart. If this supposed shape has in it a scallop or hole, heart disease is certain, and the lead has to be melted again and poured into the water, over and over again, until a neatly-shaped piece bearing some resemblance to a heart is produced, with no hole and no scallop; then the patient is considered cured. It is somewhat curious that the writer makes no reference to the variant of this method that used to be practised in Shetland, as described by Scott. Readers of *The Pirate* will remember the spell wrought by Norna by pouring melting lead into water and selecting any fragment that bore a resemblance to a heart. This was worn by the patient round the neck. When a disease does not yield to the usual specifics, as in cases of "general debility" believed to be brought on by witchcraft, three stones are to be taken from underneath a bridge, and marked "head," "heart," and "limbs' respectively; these are put into the fire till red-hot, and then dropped into water, which the patient is to drink in pretty large doses. The object of this treatment is to reach every part of the body, and so make recovery sure. Wens are not common in the north, and very few "doctors" care to attempt their removal. For warts there are many popular so-called remedies in the Highlands. For instance, they may be rubbed with water found lying on a flat stone in the graveyard, or with pig's or eel's blood; they may be spat upon every morning before breakfast time; they may be rubbed against a snail, which is then hung by a cord to a tree; as the snail "dries" the warts disappear. Another plan is to make the patient go to the seashore at new moon and wash his warts in mud and sea water. The belief in the power of the Evil Eye continues strong in some parts of the Highlands to this day. Scrofula is believed to be curable by a visit from the seventh son of the same father and mother on seven successive days before the patient partakes of food; the affected part is washed with water taken from a well facing the north, and during the process some incantation, which neither "doctor" nor patient would divulge, is repeated, the ceremony being concluded by spitting on the water. The seventh son has also the power of the "magic foot"—that is, when anything goes wrong with a person's toes, he is able to effect a cure by simply standing on them. This treatment must be severe when the seventh son happens to be a heavy man. Sore eyes are believed to be cured by the wearing of earrings; this explains why men may sometimes still be seen wearing them. These "cures" are fast falling into desuetude, a proof that, as we have repeatedly said, the true cure for superstition and quackery is the production, by the gradual spread of knowledge, of an intellectual atmosphere in which belief in such things cannot live.

DENTAL SURGERY IN ANTIQUITY.

IN a recent number of the *Rivista Italiana di Odontoiatrica* Professor Galli states that, on carefully examining a skull dug up in the necropolis of an Etruscan city, he found marks of old dental work in the shape of four golden capsules or crowns; two of these covered natural teeth, and had the other two as a bridge between them. Galli is convinced that his discovery shows the work of ancient Etruscan dentists; they also filled decaying teeth very well, and their crown and bridge work had stood the test of ages. This discovery, though interesting, is not original. Signor Ernesti Mancini contributed to the *Nuova Antologia* of July 16th, 1905, an illustrated article on dentistry in antiquity, to which reference was made in the BRITISH MEDICAL JOURNAL at the time. Cicero, in his treatise *De Natura Deorum*, ascribes the invention of tooth-drawing to Aesculapius, third of the name. The first mention of dentistry is found in Hippocrates, who in several parts of his writings has a good deal to say about toothache. Long before the dawn of Greek civilization, however, dentistry seems to have reached a high degree of perfection. From the Phoenicians the art found its way to the Etruscans. At the International Congress held in Rome in 1900 Professor Guerini exhibited several specimens of dental art which proved that something very much akin to bridge work was practised in ancient Italy so efficiently that it has lasted thirty centuries. Artificial crowns have also been found in Etruscan tombs. Artificial dentures go back to a remote antiquity. Dr. Deneffe states that in the museum of the University of Ghent there is a set of artificial teeth found in a tomb at Orvieto with jewels and Etruscan vases; he gives their date as from five to six thousand years before Christ. In a collection of antique surgical apparatus made by Dr. Lambros there is an artificial denture found in a tomb at Tanagra, near Thebes, which is believed to belong to the third or fourth century before the Christian era. Teeth stopped with gold have been found in Greek tombs. In the Temple of Apollo at Delphi there was, according to Erasistratus, a nephew of Aristotle and physician to Seleucus Nicator, King of Syria, *circ.* 354 B.C., a leaden instrument which was used in the extraction of teeth; obviously an instrument made of lead could have been used only for loose teeth. In the Laws of the Twelve Tables made by the Roman Decemvirs in 450 B.C. it was expressly forbidden to bury or burn gold with dead bodies, except when used for wiring the teeth. In the construction of false teeth recourse was had by the ancients to bone and horn; sometimes human teeth were employed. Benzoni found in some mummies artificial teeth made of sycamore. In the first century of our era false teeth were very common among the Romans. The name of a fashionable dentist is enshrined in a line of Martial:

> Eximit aut dentem Crescentius aegrum.

Elsewhere he ungallantly twits a lady with removing her teeth as she takes off her clothes at night. He says rude things of the teeth of two other ladies:

> Thais habet nigros, niveos Licania dentes.
> Quae ratio est? Emptos haec habet, illa suos.

Dentistry shared in the decay of the arts during the Middle Ages, and we read that when St. Louis died in 1270, although he was only 55, he had but one tooth in the upper jaw. French surgeons, notably Ambroise Paré, took a leading part in the revival of dentistry. Louis XIV's dentist used only instruments of gold in operating on the teeth of his august patient. From the time of Paré onwards the higher dentistry was in the hands of surgeons, extraction being left to barbers and quacks. Artificial dentures in the sixteenth and seventeenth centuries seem to have been intended rather for show than for use. It is recorded of Mdlle. de Gournay —Montaigne's *fille d'alliance*—that she took out her

teeth when she wished to eat, and replaced them when she wished to talk. It is surprising to hear that the humble, necessary toothbrush did not come into general use till towards the end of the eighteenth century.

THE DANGERS OF ELECTRICITY.

That remarkable person, the West End physician of the halfpenny press, is turning his thoughts in a new direction; he is now a well-known medical specialist versed in nervous diseases, and gravely alarmed as to the effect upon the public health of the extensive use of electrical force in London. On all occasions his views are to be treated with respect, but in this instance they are the more impressive because, contrary to his rule, he describes not the subjective sensations of the hypothetical patients by whom his waiting room is thronged, but his personal feelings and experiences on mounting an electric tramcar or train. These are remarkable; to reach the top of the tramcar is for him, it appears, a positive effort, and when he has attained this giddy height he feels his heart beating rapidly, and as the car proceeds on its way he experiences far more anxiety and irritation than when travelling in any other way. These results, it is indicated, are due to a mysterious something, a kind of new "effluve," which emanates from an electrically-driven apparatus of any character. Having an immense amount of respect for authority, our instinct, of course, would be to accept these views as accurate, but unfortunately we have an unpleasant suspicion that the real explanation may be simpler, that our dear old friend, the West End physician, is beginning to feel the strain put upon him by the halfpenny papers; he may even be getting old, and possibly might get rid of the particular trouble he describes either by mounting the steps of a car more slowly, or restraining himself in indulgence in food and nicotine. It must be admitted, however, that he does not stand entirely alone, for the *Daily Mirror* has unearthed another gentleman who indicts electricity in somewhat similar fashion. In this case it is a telephone operator, who relates that after being at the switchboard for three or four hours he gets into a highly nervous and irritable state. This disclosure is still more interesting, for it seems to throw a light on the extreme irritability noticeable in some persons who use the telephone for even much shorter periods. On the other hand, it is to be remembered that not dissimilar feelings are known to be experienced by persons who use neither telephones nor electric cars. Such a simple circumstance as the fact that offices are built nowadays in three or four floors has been stated on good authority occasionally to result in a rapidly-beating heart to persons who seek these offices quickly, and instances are on record with which extreme nervousness and irritability have developed in persons engaged in nothing more modern than literary composition. On the whole, therefore, it would seem too soon to regard this great discovery as an assured fact. Nevertheless, the case as presented is so strong that the matter should be further investigated; and in view of its importance and by way of "control" even one of those cruel vivisection experiments on dead cats and other animals which have been so touchingly described from time to time by various prominent persons would almost seem to be justified, and would certainly in the circumstances be highly appropriate. Meanwhile, even if there be no harmful emanations from electrical machinery, increase in the use of electricity is certainly adding materially to the number of accidents entailing serious injury and loss of life. A return relating to last year showed that accidental contact with live rails caused seventy-seven injuries and sixteen deaths, while an inquest held a week or two ago indicated that the public is becoming unhappily alive to the ready alternative to the razor and the rope, the poison bottle, river and pond, which is offered by electrical apparatus of a powerful kind.

SCHOOL HYGIENE IN LONDON.

The report of the Medical Officer to the Education Committee of the London County Council for the year ending March 31st last deals, like previous reports, with a large number of subjects concerning the health of the teachers and children in the elementary schools. There have been a number of special examinations in such matters as height and weight, physically defective children, tuberculosis, infectious diseases, fatigue, tonsils, and adenoids. All these and many more subjects discussed by Dr. Kerr require special study, and we will examine them separately. It is certain that the law requiring the medical inspection of school children has not been made too soon. Dr. Kerr appears to understand the great influence which hygiene will have upon the physical and mental condition of the children in the schools, and he dwells upon the necessity there is that students in training colleges should receive instruction in hygiene without further delay. Probably Dr. Kerr speaks from sad experience, and nobody knows better than that officer how much assistance may be given in the work of medical inspection by teachers with a knowledge of personal hygiene.

DIET AND METABOLISM.

We are accustomed to see differences of opinion on questions into which prejudice enters so largely as are those concerned with what we shall eat and drink, but such divergences were never more openly pronounced than at the recent International Congress of Hygiene in Berlin, at which, as will be seen from the brief report published recently, a discussion took place on the question of the amount of proteid food necessary for health. Thus, Rubner would make a distinction between the results of laboratory experiments and the rules applicable to the masses of mankind; while allowing that from the laboratory point of view an average of 57 grams of proteid might suffice to maintain an adult weighing 70 kilos in weight and working capacity, he contended that all forms of proteid were not alike, 37 grams of potato albumen being equivalent to 81 grams of bread albumen, and that meat was the best, being palatable, sufficient, and assimilable; he concluded that a working man required on an average 131 grams of albumen, 118 grams being the minimum. Forster thought that fats could not be utilized to a full extent so long as the body was kept on a minimum of proteid, instancing the difficulty of refattening animals which had been underfed, but he seems to confound utilizing fat with storing it; he also pointed out that wheat contains all that is needed to feed pigeons, but if extracted with dilute acids it no longer suffices, even although the extracted matter is added to the treated wheat, indicating that these substances can only be utilized when combined; carbon is an important element of diet, yet the addition of powdered charcoal would not render our food more nutritious. Hindhede advocated the use of very small quantities of albumen, and said that he had been able to keep his family in health on food which cost him about three halfpence a head per diem for years; on this diet his wife could ride her bicycle from 80 to 100 kilometres daily, and Caspari agreed that violent athletic exercise was possible with a very small intake of proteid. Vegetarianism is making rapid progress amongst the people in Germany, but so far gets little encouragement from leading physiologists, who stick to beef and beer and the dietaries sanctioned by such authorities as Pettenkofer and Voit.

DANGERS OF THE UTERINE SOUND.

THE uterine sound is getting out of fashion, as it may convey septicaemic or gonococcal infection, whilst its value as an instrument for diagnosis has greatly fallen since the manner of exploring the pelvic organs by bimanual palpation has become widely practised. One danger has often been discussed in medical literature—namely, perforation of the uterine wall by the tip of the sound, an accident so often followed by no evil symptoms that it has been urged that in many cases the sound has not perforated the uterus, but has passed into the canal of the Fallopian tube. Dr. A. Rieck of Altona has recently published a case,[1] which should be remembered, as the patient's life was endangered by haemorrhage, whilst the sound certainly entered the tube, but under an exceptional though definite and well-known condition. A doctor treated a woman, aged 28, for what appeared to be early abortion with repeated haemorrhages. He could define a swelling of the size of a small apple to the left of the uterus, and passed a sound to aid in the diagnosis of what appeared to be a small myoma, yet might possibly prove to be a placental fragment retained in the uterine cavity. The sound passed straight upwards for a little over 3 in., but when turned towards the left it passed onwards for nearly 7 in. without a check. Collapse rapidly set in. Abdominal section was performed and an interstitial tubal sac, buried in a haematocele, was excised from the left side of the uterus, and removed with the corresponding tube and ovary. The bleeding proceeded from a rent in the upper part of the sac, which had been caused by rupture some time before; then a haematocele developed, stopping the leak. The sound had undoubtedly been pushed through the rent, so that the leakage recurred; indeed, at the operation the peritoneum was found full of blood, and convalescence was slow. The point, however, on which Dr. Rieck lays stress is the fact that the sound clearly passed into the uterine end of the left Fallopian tube and along the canal for about ¾ cm. before it entered the cavity of the interstitial sac. He admits, of course, that this case was quite exceptional, as by "catheterization of the Fallopian tube" we understand that the sound passes along the canal of a normal or not appreciably diseased or malformed tube. Dr. Rieck quotes Ahlfeld's experience, where the sound was passed ten times along the tube, and when abdominal section was performed on the next day no trace of any perforation of the uterus could be detected. Unfortunately, the sound was not passed during the operation. Strassmann believes that in some alleged cases the sound had really perforated the muscular coat of the uterus and heaved up a few inches of the serous coat and adjacent peritoneum. A theory much contested in Germany ascribes to catheterization of the tube a temporary paralysis of the musculature of the uterine and tubal walls, but there remains no ocular proof that the sound ever entered the canal of the tube in cases brought forward in support of this view. There can be no doubt that in the great majority of alleged cases the true injury was perforation of the uterine wall.

THE HIGHER TRAINING OF NURSES.

THERE are persons in this country who have had opportunities of watching the result of the modern system of training nurses, and who have been driven to the conclusion that in many cases the nurses have had more quasi-medical education than is altogether good for them. That the modern nurse is in every way vastly superior to the Sairey Gamps and Betsy Prigs of the past is of course admitted by all. Nevertheless it can scarcely be questioned that the modern system tends in some measure to produce nurses of a type which approximates more to an imperfectly educated practitioner of the healing art than to a ministering angel of the sick room, with the special training, discipline, and tenderness required for that most responsible and noble office. The tendency is perhaps more marked in America than here; it is not surprising, therefore, that it is from Boston, which is said by jealous rivals to regard itself as the intellectual centre of the universe, that we hear of an instance in which the vaulting ambition of nurses has o'erleaped itself. Two years ago a school for the training of nurses was established at Cambridge, Massachusetts. It was modelled on a school at the Waltham (Massachusetts) Hospital, which has, it is said, been conducted for many years with great success. The idea was that nursing should be regarded as a liberal profession, and that candidates should, accordingly, go through a four years' curriculum for which they should have the privilege of paying. The school was opened in October, 1905, with eight students. The charges for tuition were £30 for the first year, and £15 for each of the succeeding years of the course. In 1906 only six pupils applied for admission, and although this year the number has advanced to seven the school has decided to close its doors. Of the twenty-one students enrolled since the opening of the school, nearly one-half (according to the *Boston Medical and Surgical Journal*) were unable to pay the fees at the proper times. The course was then shortened to three years and six months, the price of tuition being correspondingly reduced, but these concessions failed to attract pupils. Our contemporary hints that even the Waltham Hospital School has of late found a difficulty in getting pupils; hence the plan of charging nurses for their tuition has in general been discontinued. The failure of these endeavours to raise the educational standard of nurses seems to show that nursing has not yet reached the status of a liberal profession to which it is worth while to pay to gain admission. The *Boston Medical and Surgical Journal* is disposed to think that the limit of the training of nurses has been reached, and that the wave of enthusiasm for more elaborate teaching has begun to recede. There are not wanting signs of a similar ebb on this side of the Atlantic.

MR. HOWARD MARSH, formerly surgeon to St. Bartholomew's Hospital, and since 1903 Professor of Surgery in the University of Cambridge, has been elected Master of Downing College in succession to Dr. Alex Hill, who had held the post since 1888. Professor Howard Marsh is the sixth Master of the College, which was founded in 1800, and appears to have got into working order about 1805. Professor Howard Marsh will retain the Chair of Surgery in the University, but is relinquishing private practice.

A MEETING will be held at the Royal College of Physicians of London on November 12th, which all members of hospital staffs and all volunteer medical officers in the London district will be asked to attend, in order to discuss with the Director-General, Sir Alfred Keogh, questions arising in connexion with the organization of the medical service of the territorial force The chair will be taken by Sir Richard Douglas Powell, President of the Royal College of Physicians, who will be supported by Mr. Henry Morris, President of the Royal College of Surgeons. At a meeting of the Incorporated Society of Medical Officers of Health, to be held at 7.30 p.m. on Friday next, November 8th, at 1, Upper Montague Street, Russell Square, Sir Alfred Keogh will read a paper on disease prevention in the territorial army, and will describe the proposed scheme for placing medical officers of health in relation to it. Volunteer medical officers are invited to attend the meeting.

[1] Ein Fall von interstitieller Tubenschwangerschaft durch die Uterus und Tubensondierung, *Zentralbl. f. Gynäk.*, No. 35, 1907, p. 1049.

Leeds.

THE MEDICAL SERVICE OF THE TERRITORIAL ARMY.

It will doubtless be felt by all those who were present at the address which Sir Alfred Keogh, the Director-General of the Army Medical Service, delivered to the members of the medical profession of Yorkshire, Northumberland, and Durham assembled at Leeds on October 26th, that no more important meeting had ever been held in the Philosophical Hall. Among those present were many hospital physicians and surgeons, medical officers of the volunteers and yeomanry, and representatives of the general practitioners of the three counties. Dr. J. E. Eddison, who presided, said that this was the first time in the history of the country that the leaders of the Army Medical Service had come to explain their views and consult with the profession at large, and he felt sure this would be attended with the happiest results. Sir Alfred Keogh then explained the outlines of the scheme which had received the sanction of the authorities. Again and again he emphasized his view that the scheme might require modification and that he was coming direct to the members of his own profession, not to lecture to them or to expound any cut and dried scheme, but with the earnest desire to consult them and to find out what the profession in the various centres was prepared to do. A full report of the address will be found at p. 1243, but it may be mentioned here that it was listened to with rapt attention and with manifest approval; the general feeling was that a scheme for making the best use of the skill and experience of medical men was on a fair way towards realization, and that if it was within the power of any man to secure the sympathy, co-operation, and loyal support of of the medical profession that man was the Director-General.

Manchester and Salford.

NOTIFICATION OF BIRTHS ACT.

On Wednesday, October 23rd, a deputation from the Manchester and Salford Joint Divisions waited on the Sanitary Committee of the Manchester Corporation to explain reasons why the city should not adopt the Early Notification of Births Act. The deputation consisted of Drs. T. A. Helme, Milson Rhodes, Prowse, and Worswick.

Dr. Helme said that the medical profession fully recognized that in many respects the Act would be beneficial. He pointed out, however, that it contained provisions which were extremely unjust to medical men. For instance, it compelled the medical attendant, under a penalty, to notify all births occurring in his practice, though no fee was to be paid for so doing. That, however, he emphatically stated was not the ground on which the deputation asked the committee not to adopt the Act in Manchester. A far more serious objection, which would affect the public as much as the profession, was that it compelled the medical attendant to divulge the secrets of the sick room. He mentioned a case in point—where a young unmarried girl in a respectable family was confined, and where notification would have caused the greatest distress to the family besides leading to no public good. For the medical attendant to have gone straight from such a case to notify it to the Corporation would have been a most cruel breach of professional confidence. Dr. Helme's practice in obstetrics convinced him that in such matters there should be no tampering with the confidence that exists between patient and doctor, which has always been regarded as sacred. On this ground only he asked the Committee to delay the adoption of the Act.

Dr. Milson Rhodes, who is justly regarded as an authority on the problems of infant mortality, strongly supported Dr. Helme. He said that not infrequently doctors were called to attend patients of the class alluded to where there could be no public gain from notification, where patients had been brought from a distance, and where it was almost certain that fictitious names would be given to the doctor. He asked the Committee to delay the adoption of the Act until some amendment could be obtained which would obviate any breach of confidence by the doctor.

Dr. Niven, the medical officer of health, asked if it was at all likely that the Act would be amended soon, and a member of the Committee also asked if the profession had opposed the passing of the Bill in Parliament. Dr. Helme explained that the Bill had been strongly opposed, and in fact had only been carried by a trick of political manœuvring and further that fresh steps would be taken to obtain an alteration as soon as possible.

Dr. Prowse then read a resolution carried unanimously by the joint Divisions, setting forth the points urged by the previous speakers. The Committee seemed to agree that the matter of professional confidence was a serious one, and promised to consider the appeal carefully.

It may be noted that one of the Manchester daily papers—the *Daily Dispatch*—in giving a short report of the deputation, puts as its headline, "Doctors' Secrets; Confidences that may be broken by Act of Parliament." It is quite correct to say "*may be* broken," but if we may prophesy from the expressed sentiments of many members of the profession in Manchester, "*will be* broken" would be quite wrong. The following letter from the Medical Guild, which has been published in the newspapers, expresses the very general feeling that no honourable medical man will be guilty of such breach of professional confidence as the Act attempts to impose.

THE NOTIFICATION OF BIRTHS ACT: THE GOVERNMENT, THE PUBLIC, AND THE MEDICAL PROFESSION.

Sir,—Towards the close of the session a Bill for the earlier notification of births was pushed through the House of Commons. According to this Act, it will be the "duty of the father of the child, if actually residing in the house—and of any person in attendance on the mother—to give notice in writing to the medical officer of health—by prepaid letter or postcard—within thirty-six hours after the birth." From this it is clear that the medical man in attendance will be called upon to notify the birth, and a later section imposes the penalty of 20s. "unless he had reasonable grounds to believe that notice had been given by some other person."

To such an enactment the following objections have been taken by the medical profession:

1. That it imposes a violation of professional confidence. It is just in those cases where a medical man is in attendance that such violation is totally unnecessary, and nothing can be gained by earlier notification, the medical attendant being fully as competent to give advice and instruction as any servant of a public authority.

2. The early interference during the puerperium by official visitors, with their inquisitorial methods and usual long list of official questions, would be seriously detrimental to the health and wellbeing of the mother. Moreover, any entry into the house for such purposes is absolutely illegal.

3. The Act imposes, under a penalty for non-performance, public duties upon a small section of the community, against their will, without fee or reward.

These objections were brought before the promoters of the Bill, but, failing to gain any promise of relief, steps were taken to block the Bill. Lord Robert Cecil undertook to bring forward an amendment freeing the medical attendant from the duty of notification, and, as the Government professed to accept the amendment, the block was removed. In spite of this understanding, many members of the Government voted against the amendment, which was accordingly lost, and the Bill was passed in its original form.

A notable point brought out by the deputations which waited upon the Right Hon. John Burns and the proposer of the Bill was that the public mind as well as the official mind is thoroughly imbued with the idea that the medical profession is the spoilt child of the State, protected and supported by it, and that for that protection the profession gives nothing and ought to give much. It cannot be too strongly insisted on that the profession of medicine owes nothing to the State. Any man, woman, or child may undertake the cure of the sick "habitually and for gain." One has only to look at our streets to see the many unqualified "specialists"—cancer curers, rupture specialists, chest specialists, eye specialists—or to the advertising columns of our newspapers with their blatant advertisements of "cures of disease." It has even been held that a registrar may accept the death certificate of such people. The State has acquiesced in the establishment of a *Medical Register* and Council of Education "for the benefit of the public," but their cost—the cost even of the Crown nominees on the Council—falls upon the private members of the profession.

What, then, is our position? On the adoption by the local authority of the Act, it will become our duty to notify all births. At present the father of the child shares the responsibility, but, from our experience of infectious disease notification, that will fall into abeyance.

Against doing this we have the strongest objection. From early ages—witness the Hippocratic oath—it has been the most honoured and the most honourable tradition of the profession that "nothing a medical man may have seen or learnt while in attendance on the sick shall be divulged." This rule is observed in every civilized country throughout the world and is enforced by the Courts who punish its infraction with heavy penalties. To convert the medical attendant into a State detective is not good policy, and his acquiescence in such a rôle being thrust upon him would not meet with his patients' approval. For the sake of the public and for our own conscience sake such an infringement of professional secrecy must be resisted It is not to be borne that a doctor shall go from the lying-in chamber, where an unfortunate woman trusting his professional honour may be seeking to hide her shame, to send a "post-card" (vide the Act) to his local authority whose duty it would then be to send its officers to the house.

We have appealed to the House of Commons not to force upon us so odious a duty and in vain; we have met with a scornful rejection of our pleas; we have been outmanœuvred—"jockeyed" was the expression—and defeated. Now we must act for ourselves, remembering that we are fighting, not for gain, not for any personal advantage, but for conscience sake. With this only in mind the general meeting of the Medical Guild has passed unanimously the following resolutions:

1. That in the opinion of the Medical Guild the clause in the Notification of Births Act that compels medical men under a penalty to notify births occurring in their practice is an unjustifiable interference in their confidential relations with patients, and while the Guild does not go to the extreme of advising its members to break the law, it cannot help feeling that the notification of birth by a medical attendant would, under certain circumstances, be a breach of professional confidence of which no honourable medical man would be guilty.
2. That the Guild is further of opinion that the political manœuvring by which the above-mentioned clause was retained in the Act (though the Government professed to accept an amendment to remove the clause as far as it affected medical men) was unworthy of honourable statesmanship.

C. G. L. SKINNER, President,
D. OWEN, Chairman,
J. H. TAYLOR, Hon. Sec. Medical Guild.

Oct. 24th, 1907.

COMPLAINTS AGAINST SANITARY INSPECTORS.

For a considerable time past complaints have been made of the officious interference with practitioners by the Manchester sanitary inspectors in cases of infectious disease. The complaints have generally been laid before the medical officer of health, but his replies have not always been thought satisfactory, nor has the practice been stopped. It has been by no means uncommon for inspectors with no medical qualification to examine the throats of patients under medical care, to criticize the doctor's diagnosis, and even to give instructions as to clothing directly opposite to those of the doctor. One doctor writes to the *Manchester Guardian* that an inspector actually ordered a patient back to bed though the doctor had pronounced him free from infection, and had requested the authority to disinfect the bedroom. Recently some most flagrant cases have occurred which convinced the Medical Guild that it was high time to take the complaints to the highest authority. Accordingly a deputation was appointed, and arrangements made for its reception by the Corporation Sanitary Committee on Wednesday, October 23rd. The deputation consisted of Dr. T. A. Helme (President of the Lancashire and Cheshire Branch), Dr. Prowse, Dr. Worswick and Dr. Taylor.

After a few introductory remarks by Councillor Dr. Chapman, Dr. Prowse said that the object of the deputation was to ask the Committee to issue fresh instructions to their sanitary inspectors. For some time past complaints had been made of undue interference by the inspectors with patients suffering from infectious disease, and under the care of medical men. It was quite a common thing for the inspectors to enter the bedrooms of patients, both male and female, and to cross-question them even when they were too ill to be disturbed. Several instances of this were given. In one case an inspector sat on the edge of the bed of a female patient for upwards of an hour asking questions. In another case a patient was subjected to cross-questioning to such a degree that there was but little doubt in the mind of the medical attendant that the subsequent course of the illness was very unfavourably affected.

Dr. Worswick mentioned an instance in which he was attending a doubtful case of scarlatina. An inspector went to the house, and, seeing that the mother of the patient was unwell, put some questions to her about her throat, and reported at the Town Hall that he thought her to be suffering from scarlatina. Dr. Worswick himself had seen the woman, and had pronounced her to be simply suffering from slight influenza. A few days after, while Dr. Worswick was still attending, another doctor, who had previously been discharged by the family, went to the house armed with a note from the medical officer of health, and demanded to be allowed to examine the woman. Such interference with a family doctor was simply intolerable.

Dr. Taylor said that the deputation felt that they were engaged in a somewhat odious task in having to make complaints, but the inquisitorial methods adopted by the officials were alienating both the people and medical men. In Manchester to-day every imaginable method was adopted by the people, owing to their dread of the inspectors' visits, to conceal especially two forms of infectious disease—puerperal fever and scarlatina—so much so that, with all due deference to the medical officer of health, little reliance could be placed on his statistics of these two diseases. There were far more cases of these two diseases than the health authorities dreamt of. The people of Manchester were not Hindus with superstitious ideas about disease, and the authorities would have to recognize that in a civilized community inquisitorial methods would inevitably fail. Further, the meddling interference of the inspectors with what was properly the business of the medical man was causing the greatest dissatisfaction in the profession. "We want," the speaker said, "to help you in your good work; we think we can help you; we even think that you cannot well do without our help; but I tell you quite plainly that the action of your officials is only calculated to arouse resentment, and with human nature as it is, resentment will not tend to helping. We ask you, then, to give strict orders to your inspectors on no account to enter the bedrooms of patients under medical care. The medical attendant will be quite willing to convey any necessary information from the sick room. Secondly, no inspector should be allowed to pass any opinion on diagnosis or treatment. [Hear, hear from the Committee.] Remarks about proper food and clothing are included in treatment, and all this is the doctor's business, who will not submit to any interference from unqualified persons. Lastly, no inspector should be allowed to examine any person in an infected house or to express his opinion that they are suffering or not suffering from infectious disease, as long as a medical man is attending at the house. That again is solely the business of a qualified man, not of an unqualified inspector. It might be, after all, that the inspectors had only erred in allowing their zeal to outrun their discretion, but the fact still remained that if the co-operation of the people and the medical profession were desired at all, their personal feelings would have to be more consulted in the future than in the past."

Dr. Niven was understood to dissent from the request that inspectors should not be allowed to examine other persons than the patient in an infected house, even when a medical man was attending.

After Dr. Helme had briefly thanked the Committee for the reception accorded to the deputation, the Chairman said that the Committee had not been aware of any such causes for complaint, and the statements made would receive their best attention.

Lancashire.

REPORT ON A STAMMERING CLASS.

DR. F. G. HAWORTH, medical officer, has recently presented to the Education Committee of Darwen a report on a stammering class conducted by Mr. W. A. Yearsley, which contains some points of interest. Dr. Haworth, accepts Mr. Yearsley's classification of the cases into stammerers and stutterers. In stammerers the impediment, when fully developed, is accompanied by improper respiration and vocalization, manifested in the inability to produce articulate sound accompanied by an abnormal mental and emotional condition which arises from a lack of co-

ordination of mental and vocal processes. The stammerer rarely exhibits any pronounced spasmodic or convulsive action of the vocal apparatus; he may distend his lips, roll his eyes, or distort his features almost beyond recognition in his vain attempts to give utterance to his thoughts, but these contortions are slow and mild in comparison with the spasmodic physical efforts of the stutterer. This type of speech hesitancy is not an indication of lack of intelligence, but a lack of co-ordinating power. In stuttering, on the other hand, there is a vicious attempt at utterance accompanied by spasmodic action not only of the organs of speech, but frequently of the whole body, which is violently convulsed and contorted. The stutterer rarely hesitates through inability to produce articulate sound; he generally begins his sentence with a painful and rapid repetition of the initial syllable, and the facial muscles become agitated; there is cutaneous congestion of the face, the respiration is spasmodic and abnormal, and the effort to connect his syllables into words is indicated by violent and excited physical movements. In his agitation he slaps, kicks, pinches himself, stamps his feet, bites his lips or tongue, and exhibits signs of his difficulty being caused or accentuated by lack of nervous control. That stuttering is a nervous complaint is indicated by the fact that its sufferers are of a sensitive and nervous temperament. Improper respiration and vocalization, combined with an abnormal mental and emotional condition, are the direct causes of stammering, and lack of nervous and physical tranquillity are responsible for the more pronounced agitation attending the efforts of the stutterer.

Causation.

In the examination of 800 cases Mr. Yearsley distinguished 40 per cent. as hereditary, 29 per cent. from association and mimicry, 15 per cent. from illness, and 16 per cent. from shock and fright.

In the class under consideration, which numbered 45 (38 males and 7 females), the cause was heredity in 22.2 per cent.; from association and mimicry, 53.3 per cent.; from nervousness, 13.3 per cent.; from illness, 4.4 per cent.; and fright or shock, 4.4 per cent.; the cause was unknown in 4.4 per cent. The proportion of cases of heredity to association was reversed; this may have been due to the smaller number of cases under calculation, but Dr. Haworth thinks that it is probably a more correct estimate of the etiology than that given in Mr. Yearsley's figures. A child whose parent stammers is likely to be more affected by association than by heredity, since from his earliest moments he is exposed to the sounds of defective speech utterance instead of the rhythmic flow of correct language. This means much in the after-treatment of stammering, and points to the value of segregation as far as possible, or, where this is not feasible, to correcting the sufferer and keeping up reading exercises. Mr. Yearsley found in his 800 cases that 397 began to stammer between the ages of 4 and 7 years. 227 from 7 to 9 years, 134 between 9 and 12 years, and 42 between the ages of 12 and 20 years. In the class now considered there were 9 aged from 4 to 7 inclusive, 10 from 7 to 9 inclusive, 17 from 9 to 12 inclusive, and 2 aged 13 years. Dr. Haworth argues that if heredity were the principal factor, the sufferer would be more likely to acquire the defect during his earlier years.

Treatment.

In training a pupil to cultivate a habit of calm self-possession over his nervous and physical functions, and to correct his improper mode of respiration and vocalization, it is necessary to keep him systematically drilled to the strict performance of the methods employed by a daily régime extending over a period of several weeks. Mr. Yearsley brings about his results, which Dr. Haworth describes as perfect, by a course occupying four hours a day and six days a week for six weeks.

To ensure a correct method of management of the breath in speaking, the respiratory exercises, which occupy thirty minutes morning and afternoon, are divided into chest, diaphragmatic, and abdominal breathing, and are designed to strengthen and bring under better control the various muscles concerned in speaking. The pupils are next drilled for two hours and a half a day in a course of vocal gymnastics, first by articulating the vowels on a natural tone, then by exercising the vocal organs on an explosive utterance. They are afterwards drilled in the rising and falling inflection of each vowel sound by commencing the sound with an effusive utterance, rising to the full pitch of the voice, then by beginning with explosive force and gradually sinking to a low tone again. Each vowel is then separately articulated on a prolonged natural tone, the idea being to cultivate the economical expenditure of breath during articulation; some of the pupils can, after a course of training, keep up a firm volume of sound on any of the vowels for a period of thirty to forty seconds on inhalation. For another thirty minutes morning and afternoon the class is instructed in a combination of vocal, breathing, and physical exercises, to enable the pupil to observe strict uniformity in respiration, and to follow the elocutionary exercises with rhythmical precision.

Dumbbells, which are manipulated during articulation at 80 movements to the minute, are intended to improve the physique, and to build up the motive power or physical energy necessary to effect a cure. The mental activity is awakened to the necessity of co-ordinate action between the respiratory, vocal, and physical efforts, so that perfect harmony instead of discord reigns. The last half-hour, morning and afternoon, is devoted to reciting and reading in company; the reading is done syllable by syllable, by metronome measure, at the rate of eighty strokes a minute, so that the first two weeks are taken up in the re-establishment of the normal use of the organs of speech; during the next two weeks the aim is to encourage the application of the principles relating to these exercises, and to test the pupils in their ability to give individual demonstrations in respiration, voice production, and physical and mental tranquillity. The last two weeks are taken up in the gradual perfection of the principles underlying these exercises, the pupils are trained to deliver written speeches, and to recite in a slow measured and deliberate manner.

The average age of both boys and girls was 9 years. The average height and weight of the girls was somewhat greater than those of the boys. Boys 9½ years old should stand 4 ft. 2¾ in. and weigh 4 st. 8 lb.; the actual height of the boys in the class was 4 ft. 2 in., and the weight was 4 st. 3¼ lb., so that they came up to a fair standard of the average healthy child. Girls at the same age measure 4 ft. 2¾ in. and weigh 4 st. 4 lb., whereas the average height of the girls in the class was 4 ft. 3¼ in., or rather higher than the average, and weighed 4 st. 5 lb., being exactly 1 lb. more than the mean for the same age. The respiratory range of the boys before taking the course was 2.12 in. and afterwards 2.87 in., showing an increase of 0.75 in.; the increase in the girls was 1½ in., or double that of the boys, which is accounted for by the fact that in females the breathing is essentially chest, and the tendency undoubtedly is to an increase in that part, whereas in boys it would be to enlarge the abdomen; this shows the value of the gymnastic part of the course, as a great improvement in the physique took place; in every instance the pupils acquired ease and regularity of speech and all lost the habit of stammering, but there is no doubt the habit of stammering will be resumed unless some control is exercised by the parents and school teachers.

West Yorkshire.

Bradford Sewage.

An inquiry was formally opened in Bradford on October 22nd by the Local Government Board to consider the application of the Bradford Corporation to borrow £955 000 for the purpose of carrying out a scheme of sewage treatment at Esholt. The scheme has, on account of its magnitude, aroused the greatest interest, and, because of its enormous cost, a considerable amount of opposition from a certain section of the ratepayers. This endeavour to perpetuate the condition of affairs which at present exists at the Frizinghall Works should be strongly denounced. These works have been considerably increased in size during recent years, and are surrounded by a very large population. The disgusting smells arising from them are a source of constant annoyance. The Esholt estate was purchased in 1906, with the consent of

the Local Government Board, for the treatment of the whole of the Bradford sewage. We trust that, in the interests of public health, no material deviation will be allowed from the scheme as originally proposed.

Bristol.

THE ROYAL INFIRMARY.

THE controversy between the Committee and the honorary staff still remains unsettled, and forms the chief topic of interest in clubs and places where men congregate. What will be the outcome of it cannot be conjectured, but there is a growing feeling that matters must not be pushed to the end, and some steps must be taken to prevent such a disastrous conclusion as the resignation of the staff. Both sides are determined on their course of action; the Committee appears to be bent on passing the rule; the staff is equally determined to resist it, and resign if necessary. As yet no intermediary has come forward to propose a conference, though there have been rumours of certain prominent citizens having been approached. Whoever undertakes it will not have an enviable position to fill, for a compromise seems difficult. Meanwhile, the Committee of the Infirmary has met; but, as its proceedings are not made public, it is impossible to say what took place. All that is known is that a subcommittee was formed to discuss the matter, and that the meeting was adjourned for a fortnight—that is, till November 5th. The constitution of the Subcommittee is peculiar, for it appears to be composed of the whole Committee without the medical representative, which leads to surmises that only one side of the question can be properly discussed. It is unnecessary to say that the constitution of the subcommittee does not meet with approval either in medical or lay circles, and various conjectures, many of too absurd a nature to be true, are drawn. To this must be added the line taken by at least one of the local daily papers, which has refused to insert any more correspondence on the question, and makes no reference in its columns to what is the general topic of conversation.

Unfortunately many of the public do not seem to be able to grasp the main features of the trouble, and believe that the infirmary staff object to the passing of a rule which puts the granting of leave to hold dual appointments in the hands of the Committee. That this is not so is clear to all who have followed the details or read the circulars through. It is the holding of no other medical appointments which is the question, and that at present is the only issue.

The Bristol public are beginning to see how serious a matter the resignation of the staff will be. Already there is a talk, if not more, of subscriptions not being renewed, whilst the consequent disappearance of the students, which would inevitably follow, and the harm done to the medical school and University College is viewed with alarm. Further, many subscribers fear the possible, but not very probable, introduction of unknown medical men to the posts at the infirmary, rightly saying that those who have been elected in the past have come forward openly in answer to a public advertisement, with testimonials from eminent members of the medical profession, certifying their ability and character. They are not prepared to have a staff of men unknown as regards professional skill or social standing thrust upon them, still less do they approve of the rumour that these members of the substituted staff are to be paid. They are not prepared to be paid themselves, nor do they care to have the infirmary subsidized by any one.

If the Committee is riding for a fall, it is taking the best course to attain that end. Delay will only make the position of the staff more secure, for the more widely the matter is talked about and generally known, the more unreasonable does the unnecessary and uncalled for action of the Committee appear.

The expressions of sympathy that the staff receive from all sources is a matter of satisfaction, and they have only to stand fast in their position to gain their wishes.

Scotland.

ROYAL MEDICAL SOCIETY, EDINBURGH.

PROFESSOR C. S. SHERRINGTON of Liverpool delivered the inaugural address of the 171st Session of the Royal Medical Society on October 25th in the Society's Hall. Dr. A. M. Drennan, the Senior President of the Society, occupied the chair, and among others present were Sir A. R. Simpson, Professor Chiene, Professor D. Noël Paton (Glasgow), and Colonel Warburton. Professor Sherrington's address was on "Inhibition," and was illustrated by lantern slides. The Chairman moved, and Sir A. R. Simpson seconded, a vote of thanks to the lecturer.

ROYAL VICTORIA HOSPITAL FOR CONSUMPTION AT EDINBURGH.

On October 25th the Right Hon. A. J. Balfour, M.P., was the chief speaker at the inauguration of additions to the Royal Victoria Hospital for Consumption at Craigleith, Edinburgh. The President of the Court of Session (Lord Dunedin) presided, and there was a large company present. After a few words from the Chairman, Dr. R. W. Philip gave an account of the history of the institution, the President of the Royal College of Physicians (Dr. C. E. Underhill) spoke in commendation of the work of the hospital, and Dr. Leslie Mackenzie, Medical Member of the Local Government Board, indicated what the Local Government Board had done in the matter of giving information as to the treatment of tuberculosis by local authorities. Thereafter Mr. Balfour spoke of what had been done in regard to the treatment of tuberculous diseases in less than thirty years, of the methods of treating those who had been attacked by the tubercle bacillus, of the necessity for early treatment, of the clamant need for helping the poor by providing early treatment in such an institution as this, and providing ample possibilities for the treatment of all who required this. After the Very Rev. Dr. MacGregor, St. Cuthbert's, had moved a vote of thanks to Mr. Balfour and Sir Alexander Kinloch, and a similar compliment to the Chairman, Sir Alexander Christison, Bart., President of the institution, presented Mr. Balfour with a silver key with which to open the new buildings.

GLASGOW.

Presentation to Dr. John Carswell.

On the invitation of the Lord Provost and Mrs. Bisland a numerous company of friends met in the City Chambers, Glasgow, on October 24th to witness the presentation of a cheque for £415 and a silver salver to Dr. John Carswell. The salver bore as an inscription:

> Presented in token of their regard for his personal qualities, and in recognition of his services to the community as a member of the town council and other public and philanthropic Boards, and of his eminent services to the special department of medical practice to which he has devoted his life.

In making the presentation, the Lord Provost dwelt upon the valuable services rendered by Dr. Carswell in connexion with the work of the Health Committee and with the movement for the better housing of the poor. Dr. Carswell had been prominent in the difficult work of the reformation of the inebriate, and recently more especially with the movement for treating acute mental cases in special wards of general hospitals without the sufferers undergoing the stigma of removal to an asylum. It was the irony of fate that Dr. Carswell, who had been the means of keeping so many doubtful cases of insanity out of asylums, should himself have been the victim of a savage assault by a patient of this description. It was, indeed, this recent event which had been the main element in bringing them together. Sir John Batty Tuke and Dr. Oswald also spoke. The former expressed the sympathy of the medical profession for Dr. Carswell, and urged that those who dealt with mental cases should be protected by law from vexatious actions such as had recently been instituted against Dr. Carswell. He congratulated the authorities in Glasgow on being the first to take the proper steps to reduce the number of the insane by providing for the early treatment of mental cases. Dr. Oswald touched upon the alleged increase of insanity, and expressed himself as being optimistic as far as Glasgow was concerned. The work of the municipality and the School Board was

ensuring a brighter and more healthy environment, which would result in the reduction of the cases of insanity. Dr. Carswell suitably responded.

Ireland.

The Tuberculosis Campaign.

Her Excellency Lady Aberdeen has forwarded to the various general clinical hospitals in Dublin a circular, in which she suggests the establishment of tuberculosis dispensaries in Ireland similar to those which have been worked with good results elsewhere. She asks the Boards to consider the feasibility of devoting a morning once a week or once a fortnight exclusively to the treatment of consumptive patients, thus providing, in co-operation with each other, a daily dispensary for the treatment of tuberculosis in Dublin. The hospital treatment would be provided for by medical examination, dispensing of medicines and disinfectants, selection of cases suitable for any form of hospital treatment. A register of the cases treated could be kept, and an arrangement made whereby district nurses or properly-informed health-visitors could be entrusted with the duty of following up the patients in their own homes. Arrangements would be made for home nursing, the periodic washing and disinfection of clothes, the provision of grants of food, and guidance in all matters relating to tuberculosis.

Lunacy in Ireland.

Distribution.

The Fifty-sixth Report of the Inspectors of Lunacy for Ireland for the year ending December 31st, 1906,[1] has just been issued, and shows that on January 1st, 1906, there were 23,365 lunatics under care, of whom 19,057 were in district asylums, 160 in the criminal lunatic asylum at Dundrum, 818 in private asylums, 3,215 in workhouses, and 115 in single care. On January 1st, 1907, the numbers were 23,554, of whom there were in district asylums 19,306, in Dundrum 162, in private asylums 845, in workhouses 3,128, and in single care 113. These figures show a total increase of certified lunatics of 189 for the year as compared with the increase of 369 for the previous year, the increase for 1906, with the exception of the year 1893, being lower than that of any of the past twenty-one years. As in England and Wales, there has been in Ireland during the past twenty-six years a steady diminution in the proportion of lunatics treated in workhouses, the percentage of such cases having fallen from 27 per cent. in 1880 to 13 per cent. in 1906.

Relative Increase of Insanity in Ireland.

In 1880 the proportion of certified lunatics to the estimated population was 250 per 100,000, or 1 in every 400, and from that time the proportion has steadily increased to 537 per 100,000 in 1906, or 1 in every 186. This shows a considerably higher proportion of certified insane in Ireland than in England and Wales, which latter on the corresponding date was 354.8 per 100,000 of population, or 1 in every 282 persons. Outside of these cases there is, of course, as in England and Wales, a considerable reserve of uncertified cases recorded in the Irish census returns as lunatic or idiot, and from a table furnished by the inspectors we see that, as in England and Wales, these "idiots and lunatics at large" have been undergoing steady diminution, the number of lunatics at large having fallen from 1,602 in 1861 to 596 in 1901, and the idiots in the same period from 5 675 to 3,272. To a small but recognizable extent, therefore, the increase in insanity in Ireland is seen to be due to the certification of lunatics and idiots formerly permitted to be at large. But even taking cognizance of this factor the great increase of total insane to population in Ireland since 1887 is suggestive of an actual increase in insanity. Unfortunately from the information contained in this Blue Book it is impossible to gain even an approximate idea of the actual increase of insanity, no tables being given of the rate of occurrence of fresh admissions to asylums.

Admissions.

During the year 3,524 were admitted into district asylums and 257 into private asylums and institutions, or a total of 3,781, which is 239 less than the number for the preceding year. Of the total admissions 2,971 were first admissions. With regard to the admissions into district asylums, in 1,590 the attacks were first attacks within three and in 394 more within twelve months of admission, in 626 not first attacks within twelve months of admission, and the remainder were either of more than twelve months' duration on admission (588), or of congenital origin (119), or of unknown duration (207). No table is furnished as to the duration of the attacks in the 257 private admissions. The total admissions were classified as to the forms of mental disorder into:

Mania of all kinds, 1,837.
Melancholia of all kinds, 1,248.
Dementia of all kinds, 253.
General paralysis, 58.
Acquired epilepsy, 130.
Congenital or infantile defect, 168.
Not insane on admission, 22.
Monomania, 9.
Other forms of delusional insanity, 56.

The cases of the last two categories belong to the private asylums, as the classifications of "monomania" and "delusional insanity" have not been adopted by the district asylums.

A noteworthy feature of this list is the small proportion of general paralytics admitted into Irish asylums, forming only 1.5 per cent. of the total admissions, whereas in England and Wales they formed for the five years 1901-5 no less than 6.8 per cent. of the admissions.

It is impossible to give any complete summary of the assigned causes of insanity, as the tables of probable causes refer in the case of the district asylums to the admissions, and in the private asylums to the patients remaining in these institutions at the end of the year, a plan which effectually blocks any collation of their results or comparison of the two classes of patients. With regard to the district asylums, however, we see that alcoholic intemperance was assigned in 337, or 9.5 per cent. of the admissions, venereal disease in 38, puberty and change of life in 77, old age in 147, various bodily diseases and disorders in 232, previous attacks in 355, and moral causes in 254. Hereditary influences were ascertained in 953, or 21.3 per cent., and congenital defect existed in 124.

Discharges and Deaths.

During the year 1,304 were discharged as recovered from the district asylums and 77 from private asylums, giving recovery-rates on the admissions of .37 per cent. from district asylums and 30 per cent. for private asylums, offering an unusual contrast between the two types of institutions. There were also discharged as relieved from the district asylums 432 and from the private asylums 57, and as not improved from the district asylums 79 and from the private asylums 36. During the year there were in district asylums 1,457 deaths, giving a death-rate on the average number resident of 7.6 per cent., and in private asylums there were 58 deaths, giving a death-rate of 7 per cent. The report contains no table setting forth the causes of death in the private asylums. The district asylums furnish full information, and it appears that 445 deaths were due to cerebro-spinal diseases, including 54 deaths from general paralysis; 667 to thoracic diseases, including 370 from pulmonary tuberculosis; 91 to abdominal diseases; 141 to general diseases, including 46 deaths from tuberculosis; 101 to diseases of bone and joints; 3 to suicide, and 5 to accident. The deaths from tuberculous diseases thus amounted to 416, or over 28 per cent. of the total deaths in district asylums. The Inspectors, in commenting on this high death-rate from tuberculous disease, point out that, contrary to expectation, the death-rate from phthisis was lowest in the colder north, Belfast County Asylum giving a tuberculous death-rate on total deaths of 6 per cent., whereas Cork, Limerick, and Ballinasloe Asylums, situated in the south, south-west, and centre, gave rates of 41 per cent., 36 per cent., and 33 per cent. respectively.

[1] Fifty-sixth Report of the Inspectors of Lunacy (Ireland) for the Year ending December 31st, 1906. Dublin: Alex. Thom and Co., Abbey Street. 1907. (Price 1s.)

India.

The Rats of Calcutta.

In a small pamphlet, recently noted in the Journal, Dr. W. C. Hossack gives a short description of the different varieties of rats found in Calcutta. This and other work

has been collected together, and is now published as a memoir of the Indian Museum.[1] In view of the close connexion of rats with plague, such a study as this is of importance not only from the zoological, but also from the medical, point of view. Four species of rats were found: (1) *Mus decumanus*, (2) *Nesokia bengalensis*, (3) *Mus rattus*, and (4) *Nesokia bandicota* (var. *Nemorivagus*). Of these, the first two are by far the commonest, the last being rare. According to Dr. Hossack, the rat chiefly concerned with plague in Calcutta is the *Nesokia bengalensis*, the Indian mole rat, a point which is distinctly important in the prophylaxis of the disease. The memoir deals exhaustively with the various zoological features of these different rodents, good tabulated lists of the synonyms that have from time to time been used for the same animal, and directions for measuring and otherwise diagnosing the one from the other being given.

[1] *Memoirs of the Indian Museum*, Vol. I, No. 1. An Account of the Rats of Calcutta (text). By W. C. Hossack, M.D. Published by order of the Trustees of the Indian Museum. Calcutta: Printed at the Baptist Mission Press. July, 1907. Price 1 rupee 8 annas.

SPECIAL CORRESPONDENCE.

PARIS.

The Continental Anglo-American Medical Society.

THE annual meeting of the Continental Anglo-American Medical Society was held in Paris on October 18th. Dr. Coldstream (Florence) was in the chair, and eighteen other members were present. The Honorary Secretary presented his report, and announced that it was proposed to expend the money originally collected to present a testimonial to the late Honourable Alan Herbert, M.D. (to celebrate his promotion to Officier in the Légion d'Honneur) by placing a brass tablet to his memory in the chapel of the Hertford British Hospital. The Honorary Secretary announced that he would resign his office at the next annual meeting, thus giving time to those who were willing to take office to send in their names that the members might vote for his successor. The following were elected to fill the vacancies on the Executive Committee: Dr. G. Sandison Brock (Rome), Dr. Maguire and Dr. Warden (Paris), and Dr. A. Hugh Gibbon (Naples). Five new members were elected. There were no less than eight motions down for discussion on the business paper. It was decided that henceforth Paris, France, Italy, and Egypt, should each have three members on the Executive Committee, and other countries with more than two members one each.

It was agreed that in future the honorary secretary should hold office for three years, and not be eligible for re-election for six years.

Dr. Robinson announced that the motion which dealt with the proposal to hang up a notice in the various offices of the Wagon-Lits Company and at Thomas Cook and Sons (announcing that the Anglo-Saxon travelling public might obtain in the office a list of fully-qualified English and American physicians resident and practising on the Continent of Europe and North Africa, Egypt, Algiers, and Canary Islands, these companies being supplied by the society with lists of members for distribution to those asking for it) had fallen to the ground. Before this motion was placed on the agenda of the meeting Dr. Robinson wrote to Professor Osler, who, after consultation with Sir R. Douglas Powell and Sir Dyce Duckworth, replied "that there could be no possible objection to such a notice, and it would certainly be a great help and convenience to the travelling public." The Wagon-Lits Company, however, when approached on the subject asked £500 per annum for putting up such a notice in their thirty principal agencies. Thomas Cook and Sons, after inquiring from their numerous agents, replied that they found it "impossible to file the list of members, because the list is not a complete list of qualified men, but merely a list of such of them as are members of the Society." It will therefore be to the advantage of the Society and of the travelling public if all duly qualified and eligible British and American practitioners join the Society. With regard to notices in the *Daily Mail* and *New York Herald*, it was agreed that the publication of lists of members in the public press was out of the question, and that the lists for distribution to the profession and to patients travelling should not mention the diplomas of members, their published works, or their specialities.

It was also decided that in the election of new members five black balls should be considered sufficient to exclude a candidate. Dr. Warden questioned the right to refuse membership to an eligible candidate because five members voted against him. Dr. Cormack said that in several French medical societies the rule was that no medical man was eligible for membership unless he had been two years in practice, and until his name had been for twelve months on the candidates' list, during which time a special committee made inquiries and reports on the applications. A hearty vote of thanks to the Chairman brought the meeting to a close.

At the annual dinner on the same evening Mr. Frank H. Mason, United States Consul-General in Paris, who was in the chair, proposed the toast of "The Society"; it was acknowledged by Dr. Coldstream. Dr. Douty gave the toast of "The Guests," coupling it with the name of Professor Tuffier, recently appointed Surgeon to the Hertford British Hospital. Professor Tuffier, in reply, expressed the pleasure with which he had accepted the appointment.

CORRESPONDENCE.

"HOB-NAIL" LIVER AND ALCOHOL.

SIR,—Will you allow me to seek information through your pages on the following subject?

Doubts as to the prevalency of alcohol as a cause of liver cirrhosis have been from time to time expressed by pathologists, but the orthodox doctrine still rules.

Dr. Branthwaite, H.M. Inspector of Inebriate Reformatories and Retreats, has recently again called attention to the extreme rarity of both the diagnosis during life and the detection after death of this disease among the inmates of the above-named institutions. I can add my own testimony to his, that, in the two State Inebriate Reformatories of which I have special knowledge, there is a remarkable absence of cases showing any symptoms or physical signs of any disease popularly and professionally attributed to alcohol.

A hypothesis, purporting to be explanatory of these facts, has been suggested to the effect that inmates of reformatories and retreats are so constituted as to suffer, especially in their nervous systems, from the alcoholic poison; and either do not imbibe enough of it to destroy their livers or other organs, or receive the stress of the poisonous effect on their brains. It is, however, the case that all definite nervous affections, such as "neuritis," are as rare as cirrhosis among these persons, and that many of them drink as deeply, or more deeply, than numerous individuals who die with typically cirrhosed livers. This hypothesis seems scarcely satisfactory, and requires much more support from facts for its acceptance.

Some of your readers with concurrent experience of both clinical and pathological work may be able to throw more light on the question (which I think should be more of a "vexed" one than it is at present), "Is alcohol the paramount cause of hob-nail liver?"

During my own hospital experience I saw with Dr. Hebb, in the *post-mortem* room, some typical cases of cirrhosis where alcohol played no part; and I have just heard of the death from that disease in Westminster Hospital of an old patient of mine who had lived as an "incurable" there from childhood to womanhood. She was the subject of arthritis deformans of an extreme degree, and took no alcohol. She died with dropsy and a hob-nail liver which was lighter than her enlarged spleen.

The above-mentioned facts, lately brought vividly to my notice, and the following account of the *post-mortem* examination made on the engine driver who was killed in the recent accident near Shrewsbury, are the immediate exciting causes of my sending you this letter, in the hope of gaining information. The newspapers of October 24th, related that the *post-mortem* examination of the above-mentioned engine driver's liver showed the man to have been "not intemperate, but not a teetotaler." Whether this report be accurate or not, the case serves as a striking example of the widespread assumption that the naked-eye appearance of the liver is a good criterion of the drinking habits of its possessor.

New light seems to be wanted on the whole question of the relation of alcohol-drinking to any pathological condition of the liver whatever.—I am, etc.,

London, Oct. 25th. H. B. Donkin.

THE INHERITANCE OF PULMONARY TUBERCULOSIS.

Sir,—It is rather a disadvantage having to carry on a controversy at intervals of a month, during which entirely different matters have occupied one's mind. I would suggest that it is desirable that Messrs. Brown and Pope should publish their data, so that it may be possible to criticize the basis of their assertions.

In their letter of August 31st they wrote of my paper:

> Here we find 1 in 10 of the total offspring to be tuberculous, but only 1 in 21 of the parents.

They held this to be incorrect because:

> Amongst the married and widowed population, according to the Census returns, the proportion of deaths due to tuberculosis is greater than among the total population.

Their reason against the difference seemed to me absurd, for, as I pointed out, the whole of the mortality of infancy and childhood is practically excluded from the pulmonary tuberculosis death-rate. They now write somewhat grudgingly: "His explanation of this fact is no doubt correct." But in their former letter they denied that it was a *fact* at all, and, as we shall see they indirectly deny it again, I shall be much surprised if, when more complete data are forthcoming, we do not find the incidence-rate of tuberculosis among all offspring far greater than the incidence-rate among married adults who are parents, and *are weighted with the number of their offspring*. Messrs. Brown and Pope quote a line from my letter in which I use the words "*adult* population." The context of my letter showed, I think, quite clearly what was intended, that is, that I was comparing the incidence-rate in a population all the parents of which had reached adult life, and all the offspring of which were supposed to have died or completely passed through the danger zone. Messrs. Pope and Brown say that in the Crossley data, many of the offspring were not adult. Of course they were not, but in making the statement they failed to see what I understand by trying to make "complete" family histories. The "general sample" is supposed to represent histories of families which in both generations have passed through the danger zone. Messrs. Pope and Brown assert that my estimate of 1 in 10 is too low. Is this really so? Is it their view that among those who have reached the danger zone (say, who are over 16 years of age practically) 1 in 10 is "very wide of the mark, being much too low a proportion" for the incidence in this country of pulmonary tuberculosis? If these words mean what they say, 1 in 4 or 5 would be what we should have to expect, that is, on an average one member of each family suffers from tuberculosis. This is out of all proportion to the actual numbers given by the *completed* families of the General Family Histories in my possession. But if we increased from 10 to 15 or even to 20 per cent. the incidence in the offspring, it would not widely modify my result, that is, that the parental inheritance lies between 0.4 and 0.6.

In the next place we come to questions of fact. Messrs. Brown and Pope in their first letter asked if a correction should not be applied to the number of tuberculous offspring of non-tuberculous parents. I replied, "No," because the first row of my table is obtained from considering the parents of tuberculous offspring and not the offspring of non-tuberculous parents. We have, therefore, the complete record, except in as far as parents of individuals of average age 25 to 29—say parents of about average age 50—are likely to develop tuberculosis. This is stated quite clearly on page 11 of my memoir, as I said in my letter. Messrs. Pope and Brown repeat their assertion in a modified form, apparently being absolutely unconscious that the number of tuberculous offspring of non-tuberculous parents must be identical with the number of weighted non-tuberculous parents of tuberculous offspring, which have been obtained with but slight need for correction—that is, the correction due to attacks of tuberculosis at about 50 or after.

The second point of fact is summed up in the question of the manner in which the offspring of tuberculous patients were found. Were they determined from the offspring of tuberculous patients or from the brothers and sisters of tuberculous patients? My letter was written away from home on my holiday, and without being able to refer to the actual calculations. I find on examining the material that Messrs. Brown and Pope are here correct, and I apologize to them for contradicting them on this point. But having done so, I must point out to them that the process was perfectly valid, for the ratio of non-tuberculous to tuberculous offspring of tuberculous parents was not determined from this result, but from an estimate of the percentage of such offspring based on Dr. Thompson's records. In other words, the Y of the table on my page 10 covers absolutely the correction to be made in this respect. Examining Dr. Thompson's book, what he has exactly done is certainly not obvious. In reading it when writing the paper I thought he had followed out the children of his tuberculous patients, but his wording may equally suggest that Messrs. Pope and Brown's view is correct, and that he has taken the mothers and sisters of tuberculous patients up to the end of their family history. In this case my ultimate 50 per cent. requires reconsideration. I should be only too grateful to any of your readers who would forward to me particulars of the families of parents one or both of whom were tuberculous, and of which the history of the offspring is completed, that is, the offspring are all dead or have reached 50 years of age. What I should like to know would be the number of offspring, ages at death or living ages over 50, and whether or not they died of pulmonary (or other form of) tuberculosis. We should then be able to ascertain how far I have exaggerated the percentage in assuming that half the family of a tuberculous parentage is ultimately tuberculous.

Messrs. Pope and Brown do not apparently attempt to fill up their fourfold table by estimating the tuberculous element in the offspring of tuberculous parents, but by considering the tuberculous element in the parentage of non-tuberculous children. To do this is an exceedingly difficult matter, because we must be very cautious that our non-tuberculous children are fairly drawn from the two categories: (1) families with tuberculous brothers and sisters, and (2) families without such members. It is, I believe, undoubtedly a safer way to take the complete history of the offspring of tuberculous individuals. Now my critics are apparently sore because I doubted the completeness of their family histories, but under the circumstances I am justified in asking how they have obtained "complete" family histories. Clearly not from sanatorium patients, for most sanatoriums have not been long enough in existence for the offspring of patients to be completely recorded with respect to their tuberculous history, even if the medical men kept in touch with their patients' offspring. If they mean that quite apart from sanatorium patients they have been forming family histories of the general population, so that they may form an idea of the percentage of tuberculous and non-tuberculous parents of non-tuberculous offspring, I certainly congratulate them, if they have already collected data enough to determine this point. Personally, I have been collecting family histories for a number of years, and should hesitate yet to make any absolute definite pronouncement. Also I must remind them that in determining their ratio of tuberculous to non-tuberculous parents of non-tuberculous offspring, they must be careful by no form of direct or indirect selection to exclude the non-tuberculous offspring who have tuberculous brothers and sisters, for such are obviously included in my fourfold table.

If we accept for a moment the numbers asserted by Messrs. Brown and Pope to hold for the parentage of non-tuberculous children, we reach at once several startling results, which may be true for the United States, but will want proof for this country:

(*a*) One parent in ten is tuberculous, or for every five families taken at random there is one tuberculous parentage.

(*b*) Of the offspring of such tuberculous parentages only one child in six will be tuberculous.

Against (*a*) I note that it involves practically the non-selection of parents; whereas it is, I think, certain that a larger percentage of tuberculous than of non-tuberculous individuals die before marriage, refrain from marriage, refrain from parentage, or die before full parentage; (*a*) is thus only an indirect reassertion of their original statement as to tuberculous percentages in offspring and parents. Against (*b*) I state that even incomplete family histories

how a larger proportion than 1 in 6 tuberculous offspring of tuberculous parents.

Finally, I may note two other points which flow from my own Family Records (General Sample of the population). I find 36 cases of one or both parents dying of phthisis; the number of children in these cases per family who have survived to 50 without tuberculous attack or have suffered from it is about 4, and the number of these who are tuberculous is 41 per cent. This is very different from the 16 or 17 per cent. suggested by Messrs. Pope and Brown. Further, there are a number of deaths recorded from causes which were almost certainly tuberculous, but are described in a layman's language which does not admit of certain classification. I will add that my 36 tuberculous parentages occur in a random sample of more than 600 families, or the tuberculous parentage in these records occurs once in 16, and not once in 10 cases as my critics suggest.

My second point is that I have delayed writing this letter till I could ascertain the contents of Burckhardt's paper. Fischer I have not been able to consult, as the Library of the Royal College of Surgeons is closed. But Messrs. Pope and Brown quote Burckhardt with approval in the same letter in which they do me the honour of laying stress on the value of my contributions to the theory of inheritance. I think I am warranted in asserting that there is nothing in Burckhardt's memoir which will throw the least light on the present controversy. There is not a single datum as to the age of his tuberculous and non-tuberculous patients, and accordingly not the least evidence whether or not they or their relatives had passed through the danger zone. Further, there is not a single datum as to the number of relations in any non-limited grade possessed by the patient, except the naive statement that the average number of brothers and sisters of a tuberculous individual is *two*, and the average number of his children *two*. The average size of a tuberculous fraternity or "sibship" in England is 5.7, and of the family of a tuberculous parentage 5 3, about four members of the latter living long enough to pass through the danger zone or to be attacked by the disease!

There is no evidence at all in Dr. Burckhardt's paper as to the completeness or incompleteness of his records, and many statements are made which would clearly not be made had the writer had adequate statistical training. Only when we approach the number of grandparents affected do we get anything like "completeness" in Dr. Burckhardt's data; and therein we find that of 250 tuberculous individuals 13 per cent. had tuberculous grandparentages, but of 250 non-tuberculous individuals only 3 per cent. had such grandparentages. Even here it is only the ratio of these percentages which has any significance, as we are not told the ages or numbers in the groups of the grandchildren, nor to what extent the non-tuberculous individuals had tuberculous sibships or cousinships, which is, of course, vital when we are considering whether the grandparentages led or did not lead to tuberculous offspring. Dr. Burckhardt, who concludes that there is no evidence that a tendency to consumption is inherited, dismisses this preponderance of tuberculous grandparentages of the tuberculous with the remark that the tuberculous had a better memory than the non-tuberculous for family disease! If he could not find 250 non-tuberculous individuals who did know what their grandparents died of, he was hardly in the position to settle the problem of the inheritance of tuberculosis.

Dr. Burckhardt's paper appears to me essentially the type of paper which we are striving to replace by rational statistical methods; that my critics should hold it up as demonstrating anything at all is, I fear, not a hopeful sign of how they are themselves approaching the problem.

The immediate need is summed up in the request for absolutely complete family histories of the offspring of tuberculous individuals. Records which are incomplete, but in which one offspring is tuberculous, show 30 per cent. tuberculous; records which are complete under the like circumstances show 50 per cent. Records which are complete and make no selection as to any offspring show 41 per cent. tuberculous, but this percentage does not include a number of cases which were most probably tuberculous, but are screened under lay terminology. It may serve a useful purpose if I add that my family records show that of the offspring of insane parents an average of 4 lived to reach 50 or to become insane before that age. Of such offspring 44 per cent. showed signs of insanity, this record again excluding cases noted as "tumour of the brain," "paralysis," and also the possibility of senile dementia after 50, the former being not sufficiently definite for classification. I would suggest that when we have absolutely complete family histories recorded under adequate medical supervision, and providing a full age and kin roster, we shall find that insanity and "consumptivity" are much alike from the standpoint of heredity, and that the offspring of tainted parentages who have passed the danger zone or been attacked within it will prove to be nearer 50 than 40 per cent., and far in excess of my critics' 16 per cent.—I am, etc.,

KARL PEARSON,
Biometric Laboratory, University College, London.

October 28th.

THE REFERENDUM.

SIR,—I was very pleased to read Dr. Fothergill's letter on this subject, as it saved me attempting a task which he has performed very much better. Dr. Walker's letter, though most reasonable from the Council's point of view, needs close examination.

The first proposition, that the Representative Meeting is not worthy of its name, he supports by facts containing some, but not the whole, of the truth. The Representative is not *merely* "elected at a business meeting"—he is usually present at *all* meetings of the Division. The difficulty of finding suitable Representatives will be removed by the payment of expenses provided for in the Charter, which Dr. Walker asks us to delay. The want of definite instruction is due largely to the way in which work is sent down from head quarters, for the management of which the Council is responsible.

The second proposition, that the business of the Annual Representative Meeting is not properly conducted, may be true. If so, it is only necessary that the Agenda should be drawn up and circulated earlier, and the discussion on all points so submitted more strictly limited. Or, alternatively, the Annual Representative Meeting may be separated from the annual meeting, when Representatives can give their whole time and attention to it.

As to the third proposition, concerning the true functions of the Association, I believe the Representative Meeting is just beginning to get a suspicion of an idea as to the real needs of the profession. We *do* want an open type of "professional-unionism" (I would rather coin a word than borrow a bad one). It is the one thing we do want, and, I honestly believe, are willing to pay for. To have every one of the objects Dr. Walker derides conducted by the Association will be more for the "honour and interests of the profession," than to have them conducted, or, rather, not conducted, as at present.

The fourth proposition may be answered by a question, Why should the wishes of a majority of the Association (which can be definitely ascertained under the Charter) be subject to revision?

The fifth proposition I can only answer from experience of my own Branch. The country districts do send Representatives to the Annual Representative Meeting; they send *none* to the Council. This is in spite of the fact that the only country member who made a decent showing at the last Council election put in more work canvassing, both personally and by enthusiastic supporters, than any two of the elected Councillors put together.

No, sir, we are at a standstill; and the Council's last move, if their views are adopted, will keep us there. Let us have the Charter without delay, and get on with our business, which is to make the Association a powerful, organized, and useful body for every member of the profession—a thing it is not now, and never can be, under its present archaic and rusty machinery.—I am, etc.,

Manchester, Oct. 27th. R. G. MCGOWAN.

SIR,—I hope that every member of our Association will give the best attention to Dr. Walker's able letter in the BRITISH MEDICAL JOURNAL of October 26th, p. 1184, on this subject. From my own experience, I can say that Representatives in the metropolitan area are elected much in the way he describes, and in the JOURNAL of October 19th Drs. Brassey Brierley and Broadbent pointed out that the same held good in the Lancashire and Cheshire district, so that it must be obvious that the

true representative value of our present Representative Body must be of a very meagre character.

In one thing only I disagree with Dr. Walker, and that is in his condemnation of "trades-unionism." I am convinced that this must be the policy of the profession in the future, and therefore necessarily that of its chief representative, our great Association.

With regard to Dr. Fothergill's letter, I must honestly confess I cannot follow his reasoning. He has stated it at considerable length, but to me, at least, it seems altogether fallacious. To take his arguments seriatim:

1. If 75 per cent. of a society choose to leave their business to the remaining 25, who alone elect representatives, I fail to see how these representatives can claim, except by a fiction, to represent the 75 per cent. who stand aloof.

2. Why is it an error to state that the 75 per cent. are apathetic with regard to the affairs of the Association if they will not trouble to attend Divisional meetings? Or, if not apathetic, why assume that they are more in favour of the policy of the Representative Body than of that of the Council?

3. If the assertion that only 10 per cent. of the total membership of a society attend on the average be true, it proves, if it proves anything, only that there are very few societies the members of which take a healthy interest in their own business.

4. Surely it is a stupendous assumption that if, at a meeting where 20 are present, 15 vote "Yes" and 5 "No," then, if 200 were present, 150 would vote "Yes" and 50 "No"! Would the same hold good if only 3 were present and 2 voted in the affirmative and 1 in the negative?

5. I should think it impossible by any such ratio to estimate from a small meeting the opinion of the total membership.

6. Under the Companies Acts, if all the various conditions are complied with, this would be legally correct, and members might be sure that their brethren would be bound by them, whether they approved or not.

7. It is true that to give true representation on the ruling body each member must represent the same number of constituents, but the present Representative Body, in my opinion, is further removed from this ideal than the present Council.

Again, with regard to Dr. Fothergill's imaginary distinctions between the members of the Representative Body and of the Council, is there any real distinction, except that the latter are elected by from 40 to 50 per cent. of their constituents, and the former by only 10 per cent.?

But although I protest against Dr. Fothergill's logic, I must confess that, logic or no logic, the side he is upholding is nearly sure to win. What can be expected from this Referendum? It is an appeal to the same Divisions who returned the present Representative Body, who, to be consistent, must reject the Referendum, as it is too much to hope that the Divisional meetings before which the Referendum will come will be differently constituted from those that elected our present Representatives.

I cannot help thinking that if the present intentions of the Representative Body become stereotyped in a Royal Charter, the last state of the Association will be worse than the first. In the old days there was danger from a small clique forcing on us their illconsidered schemes at the annual meetings, and our only safeguard was the old Council, which had some power to protect our interests. If, however, the Representative Body in its present shape become the sole authority, our fate will then be in the hands of a somewhat larger clique, little more truly representative of the whole Association than was the smaller one of the past, and there will be no Council with the power of shielding us in any way.—I am, etc.,

London, N.E., Oct. 26th. MAJOR GREENWOOD.

SIR,—I have just read Dr. Fothergill's letter in the JOURNAL of October 26th, and am amazed at some of the striking inaccuracies and illogical assumptions which he perpetrates in his endeavour to refute Dr. Broadbent's contentions in his letter of October 12th. As Dr. Fothergill's "fallacious reasoning" may lead some members astray in coming to a conclusion in their consideration of and their vote on the Council's Referendum, it may be well to draw attention to some of his arguments.

As regards his "general statements" Nos. 1, 2, 3, he labours to prove that "in any society or similar body," only 25 per cent. take an interest in its doings, while "the average attendance of even the 25 per cent. of members actively interested in a society is never beyond 10 per cent. of the total membership." That may be true, and, as far as I know, is true of Division meetings, yet in the Edinburgh Medico-Chirurgical Society the average attendance is at the least 40 to 50 per cent. of the total membership of town members. In Nos. 4, 5, and 6 he makes such an illogical assumption that it is only necessary to refer to it without offering any criticism, as it is a *reductio ad absurdum* on the face of it. Why he propounds No. 7 it is difficult to say. Dr. Fothergill then with these premisses deduces *x*, *y*, and *z*, which he very erroneously calls facts. In short, he asserts that "the Representative Meeting voices by its 124 members the opinion of 4,000 members, or 20 per cent. of the Association." By what reasoning or arithmetical juggling does Dr. Fothergill reach this conclusion? Assuming that 10 per cent. is the average attendance at Division meetings (I would say that 5 to 10 members is about the average), and assuming that 100 members is the average number of a Division (again I would say 40 to 70 is a more correct number—see *Year Book*, 1906), the very highest number which the 124 Representatives can voice is 1,240, including themselves. Where are the 4,000? I certainly join issue with him in the conclusion which he draws, "in view of statements 1 to 6, that we are doing not so badly after all, especially considering the peculiar ties on a medical practitioner's time which prevent him attending a meeting, however willing to do so." Medical men can find time to attend medical and other scientific meetings when it suits them. If Dr. Fothergill is satisfied with the attendance at Division meetings, I can assure him that there are many men, quite as enthusiastic as he is for the welfare of the Association, who are very much disappointed and chagrined at the meagre attendance at those meetings.

Just one word more on the contrast which he draws between the Representative Body and the "representative" Central Council, in his somewhat drawn-out and laboured endeavour to belittle the latter body. In (*b*) he says "Representatives at the Representive Meeting *can* be elected nine months before they take office, etc." But are they? On looking over the *Year Book* I find that the great majority of the Annual Division Meetings are held in May or June, exactly one to two months before the Annual Representative Meeting. His other propositions on both sides are on a par. As regards the last paragraph of his letter, I would remind him that a Division once constituted is autonomous, while in the second half of the first sentence surely he has omitted the word "not" between "Council" and "been"; otherwise the sense of his argument is lost.

I have only to add that I quite approve of the sentiments expressed in the letter of Dr. A. Walker which also appears in the JOURNAL of October 26th, partly from my own experience as a Deputy Representative at the May meeting, and partly as Secretary of a Division since the date of the new constitution.—I am, etc.,

Edinburgh, Oct. 26th. MICHAEL DEWAR.

THE WORK OF IRISH DISPENSARY DOCTORS.

SIR,—The Medical Relief Section of the Joint Poor-law Committee resolved on February 24th, 1906, to send a circular letter to each dispensary doctor in Ireland, asking him to keep an accurate record of all his Poor-law work for the ensuing year.

This circular I issued in May, 1906, and in it he was especially asked to note as follows:

Please note every visit paid to a Poor-law patient (A) at night, (B) by day. Every case prescribed for at the dispensary.
The number of bottles dispensed daily.
The number of miles travelled daily on Poor-law service, approximately.
Night work to be reckoned between sunset and sunrise.
Confinements. How many hours detained.
Number of dispensaries you have to attend, including *locum tenens* work.
Number of vaccinations, counting each operation.
What holidays you get during the ensuing year.

I have now sent out a further circular asking each doctor to let me have a return of these particulars. We are particularly anxious to have the first of them answered, as it has been our experience that the record of red and black tickets issued to them and published in the annual report of the Local Government Board, and by which the amount of their work is judged when they ask for a reasonable salary, only represents about one-fourth of the actual work done by them.

In the hurry of work we fear the hard-pressed dispensary doctor often fails to enter in the dispensary register the numerous attendances of patients on one black ticket or his many visits on a single red one; and yet if these books were carefully kept and the figures published in the annual report of the Local Government Board, it would throw a new light upon the extent of his labours.

I have also asked for particulars of the number of ratepayers and their dependents attended on tickets, because the Irish Poor-law doctor, unlike his English brother, must give gratuitous relief to persons who would consider it an insult to be called paupers.

May I hope that those of your readers who can do so will furnish us with the information we seek for in furtherance of their interests?—I am, etc.,

T. H. MOORHEAD,
Honorary Secretary, Medical Relief Section,
Errigle, Cootehill, Oct. 29th. Joint Poor-law Committee.

TREATMENT OF WOUNDED IN FLEET ACTIONS.

SIR,—As one interested in the above subject, but prevented from being present at the discussion held in the Naval and Military Section of the British Medical Association meeting of this year, may I be permitted to refer shortly to the suggestive paper read by Fleet Surgeon Gaskell on that occasion and published in your issue of August 31st?

With practically all the first part of the paper I am in complete accord, and think the suggestion that first-aid instruction should be laid down on more definite lines particularly useful.

Fleet Surgeon Gaskell's remarks in connexion with the provision of a sterile, non-inflammable "fighting kit" are also of particular interest to me, since I was, I believe, the first to propose such a supply of sterile clothing, in a paper read before the Naval and Military Section in 1901. At that time those of my brother medical officers who spoke to me on the subject appeared to look upon it rather as a subject for chaff than as a suggestion to be seriously considered, and it was particularly gratifying to see that the Japanese found that treatment based on similar lines was not only practicable but useful. About two years ago I sent a paper to the Director-General of the Medical Department of the Navy, in which I made the further suggestion that a "fighting kit" should be supplied to all exposed in action, and that this should be not only sterile but non-inflammable. Where I differ from Fleet Surgeon Gaskell, however, is that the idea in my mind was not to supply a sort of armour-plate protection against fire, but to lessen the severity of burns by preventing the ignition of clothing, which Japanese experience had shown to be the chief factor in their production. I cannot help thinking that the flannel masks which he proposes to serve out would be regarded with scant favour by gunnery officers, or, indeed, by the gunlayers themselves.

It is, however, more particularly on the question of the proper station for medical officers during action that I join issue with Fleet Surgeon Gaskell. That an armoured station such as he describes, situated amidships and above the protective deck, would be an ideal one there is no question, but I very much doubt its practicability. A room large enough to contain 6 per cent. of the ship's company and adequately armoured for thorough protection would weigh very many tons, and in these days, where every effort is being made to mount heavy guns as high as possible, would probably add seriously to the difficulties of the constructors. In addition, as Fleet Surgeon Bassett-Smith pointed out, the construction of recent ships with unpierced compartments would at once do away with its usefulness. Nor are Fleet Surgeon Gaskell's suggestions with regard to ships already built any more practicable. Every one will agree with him that it would be an excellent plan to have large spaces cleared away down below to serve as medical stations, but the question is, How is it to be done? The struggle for space below the armoured deck is too well known to need further reference; and although it might be possible to provide such spaces while the ship is under construction, I fear that, when completed, it would be out of the question.

The further proposal is made that these cleared spaces should be capable of approach from the magazines, and that the armoured hoists should be enlarged to permit of the passage of a stretcher. I believe I am correct in stating that the principle underlying the construction of magazines is that they should be entirely cut off from the rest of the ship. Furthermore, the proposed alteration of the hoists, even leaving out of the question the impossibility of utilizing them for wounded while needed for their own legitimate function, would add enormously to their weight and expose the magazine to the danger of back-flash or shell explosion above.

Finally, Fleet Surgeon Gaskell suggests that stretcher parties should be stationed in casemates or other armoured spaces on the gun deck.

To say nothing of the fact that there is only room in these spaces for working the guns, the stretcher parties, when locked up here, would be useless and might just as well be below. I can picture the feelings of any gunnery officer to whom the suggestion is made. In the *Cressy* my stretcher parties had orders to lie flat down behind the engaged casemate until required, and this plan, or something equivalent, appears to me to be the best.

To conclude, I should like to quote the opening paragraph of my paper already referred to: "In naval warfare all arrangements for the succour of the wounded must be subject to the condition that they do not in any way impair the efficiency of the ship as a fighting machine." I submit that this is the spirit in which at all times to approach the question, and to recommend measures which might seriously impair the fighting power of the ship is only to retard progress in this particular direction, since attention is withdrawn from points in which such progress might legitimately be made.—I am, etc.,

F. W. A. CLAYTON, M.D., M.R.C.P.Edin.,
Fleet Surgeon.

DIRECTION OF ABDOMINAL INCISIONS.

SIR,—I should like to point out to Mr. Phillips one or two matters which he has overlooked while criticizing Mr. Maylard's very interesting paper.

Far from it not mattering in the least what direction the skin incision takes, Kocher lays down that in every part of the body there is one direction which the "cleavage lines" of the skin take, and that the incision ought always as far as practicable to take this direction also. In the abdomen they are mostly transverse.

Surely it is an entire misreading of Mr. Maylard's paper to say that he regards the division of the nerves as of no moment. As Professor Kehr points out when advocating his "wave incision" in his *Gallenstein-operationen*, the nerves to the rectus muscle run in the lineae transversae, and the muscle consequently can be divided transversely between these without doing serious damage to its nerve-supply.

The incision with dislocation of the rectus outwards is no doubt an excellent one and gives good access, especially in women in whom the abdomen is lax and who are not very muscular. Indeed, in one case I had to drain through this incision for a fortnight; but the rectus slipped into its place when the tube was withdrawn, and the woman has since borne a child without any appearance of hernia at the operation site; but I could imagine that in a very muscular man it would be much more convenient to divide the recti transversely, which Mr. Maylard's cases show can be done with every prospect of good union.

Dislocation of the rectus is only practicable below the umbilicus; above the lineae transversae would make it so difficult that I have never seen it attempted.

As regards the suturing which Mr. Phillips advocates, surely it is quite unnecessary and even harmful to suture the edge of the muscle to the middle line. The sutures if at all tight would tend to cause atrophy of the muscle fibres gripped between them, and the pull of the muscle brings it into its proper place close to its fellow without any aid from sutures. What did strike me about Mr. Maylard's paper is the great proportion of septic cases

amongst those he quotes without any apparent reason and without any adequate explanation. This is surely much more than is usually seen nowadays, and, if so, the results might have been very much better than they were.

The paper seems to me to be most instructive, and though we need not follow it either altogether or in part it is well to know, on occasion, what we may do without serious ill effects.—I am, etc.,

Morecambe, Oct. 21st. B. Whewell Hogarth, M.D., B.S.Lond.

PROSPECTS OF PROMOTION FOR MEDICAL OFFICERS, ROYAL NAVY.

Sir,—In the Educational Number of the British Medical Journal, very little information is given with reference to the chances of promotion of medical officers of the Royal Navy to the higher administrative ranks of inspector-general and deputy-inspector-general.

The King's regulations and Admiralty instructions allow of 19 such officers, not more than 5 to be inspector-generals, but for a long time the number has been 17, of which 5 are inspectors and 12 deputy inspector-generals, so it may easily be understood how few fleet-surgeons can hope for promotion from a list of 133.

It may be said, What is the use of promoting officers to the higher list when there is no employment for them? But billets could easily be found, and should be, for such officers at the naval dépôts at Chatham, Portsmouth, and Devonport, and at the gunnery and torpedo schools at Portsmouth.

In 1903, fleet paymasters were given promotion to quite a new rank on the Active List, that of paymaster-in-chief, of whom there are 12, and there is no difficulty in finding employment for them; in fact, they are doing the same duties that were performed before 1903 by fleet-paymasters.

Another argument used is that the Treasury stands in the way, but the Treasury was good enough to yield in 1903 in the case of the paymasters, and a few years before that in the case of engineer officers when the list of inspectors and chief inspectors was increased, or, as they are now known, engineer captains and engineer rear-admirals.

The figures for the respective branches at present are:—Fleet-surgeons, 133; deputy inspector-generals, 12; inspector-generals, 5; fleet-paymasters, 106; paymasters-in-chief, 12; engineer commanders, 302; engineer captains, 20; engineer rear-admirals, 10; and the corresponding ranks R.A.M.C.—lieutenant-colonels, 207; colonels, 31; lieutenant-generals, 10.—I am, etc.,

October 29th. Retired.

DRUNKENNESS IN WOMEN.

Sir,—The degeneration of the race attributable to alcohol has become so serious that there is a duty on the medical profession to deal with the problem.

The London police magistrates have pointedly commented on the very marked increase of drunkenness in women. I would suggest that the profession should consider what has been the after-effect of alcohol on the female constitution and habits when administered in the following cases:

1. In painful menstruation.
2. During labour.
3. During lactation, to increase the flow of milk.
4. During the depression that so often accompanies the menopause, and, assuming these after-effects to be deleterious, how they may best be combated and, if possible, prevented.

It is desirable that a consensus of opinion of those best able to form one may be elicited.—I am, etc.,

London, W., Oct. 28th. J. Fletcher Little.

PUBLIC VACCINATION.

Sir,—If not too late, I would suggest to public vaccinators not to submit to a reduction in fees too meekly. In the Eton Union, a reduction of 25 to 30 per cent. was proposed by the guardians but we (the public vaccinators) had a meeting, and Dr. Meggs of Slough having drawn up an excellent statement, we to-day interviewed the guardians, and a motion was carried allowing the old rate of fees. The same was done at Staines some time ago.—I am, etc.,

Uxbridge, Oct. 29th. J. S. Ferris, M.B.Lond.

THE PATHOLOGICAL HISTOLOGY OF BERI-BERI.

Sir,—With reference to Dr. Hamilton Wright's observations in your issue of October 19th on our paper on the histological changes in the kidney in beri-beri, the point to which we desired to direct particular attention was the occurrence of *intra*-tubular haemorrhages (not inter-tubular, as stated by Dr. Wright)—that is, haemorrhages into the lumina of the tubules.

We have again looked through Dr. Wright's papers on beri-beri, and have failed to find any mention of this. Dr. Wright notes the frequent presence of "a moderate degree of glomerular nephritis," "a slight degree of interstitial change," that "the glomerular and tubular epithelium is slightly cloudy," "the glomerular epithelium of the kidneys and that of the convoluted tubules are decidedly cloudy and exhibit slight fatty degeneration. The vessels of the glomeruli are moderately congested," etc.; but no reference is made, as far as we have been able to find, to haemorrhages, either inter-tubular or intratubular. As regards Dr. Wright's monkeys, we think it is not certain that they all were suffering from beri-beri.—We are, etc.,

London, W.C., Oct. 29th. R. Tanner Hewlett. W. E. de Korté.

AUGMENTATIONS IN THE ARMS OF MEDICAL MEN.

Sir,—Unless you think the interest in this subject (vide Journal, April 13th, 20th, May 18th, June 1st, 1907) has disappeared, you may, perhaps, care to add another instance which has just come under my notice.

The recipient, in this case, was Dr. Thomas Wharton, the discoverer of "Wharton's duct." The *National Dictionary of Biography*, in its notice of this distinguished man, says:

> Wharton was one of the very few physicians who remained in London during the plague of 1665. His services were recognized by a promise to the first vacancy as Physician-in-Ordinary to the King. When, however, a vacancy occurred and he applied for the appointment, he was put off with a grant of honourable augmentation to his arms, for which he had to pay Sir William Dugdale £10.

In confirmation of this, Burke (*General Armoury*) says:

> To Thomas Wharton, M.D., celebrated for his practice during the plague in London, King Charles II granted, in consideration for his eminent services in attendance upon the Foot Guards, an honourable augmentation to his paternal arms, namely, a canton or.

Papworth's "Ordinary" gives the same information.—I am, etc.,

October 28th. Arma Virumque.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Weldon Memorial Prize.

Friends of the late Walter Frank Raphael Weldon, M.A., D.Sc., formerly Linacre Professor of Comparative Anatomy and Fellow of Merton College, having offered a sum of about £1,000 for the foundation of a Prize, with a view to perpetuate the memory of Professor Weldon and to encourage biometric science, the University has accepted the said sum, and has decreed the establishment of the prize upon the terms and conditions expressed in the following regulations:

1. The prize shall be called the Weldon Memorial Prize. It shall be awarded every three years, and shall consist of a bronze medal and of a grant of money, being nine-tenths of three years' income of the endowment.

2. The electors to the prize shall be the Vice-Chancellor, the Linacre Professor of Comparative Anatomy, the Waynflete Professor of Pure Mathematics, and three persons appointed by the Hebdomadal Council, who shall hold office for six years and shall be re-eligible

3 The electors shall have power to appoint, if they think fit, a judge or judges to assist them in awarding the prize.

4. The prize shall in no case be awarded to the same person a second time.

5. The prize shall, subject to the provisions of Clause 4, be awarded without regard to nationality, sex, or membership of any university, to the person who, in the judgement of the electors, has, in the six years next preceding the date of the award, published the most noteworthy contribution to biometric science, in which either (1) exact statistical methods have been applied to some problem of biology, or (2) statistical

theory has been extended in a direction which increases its applicability to problems of biology. Biology shall, for the purposes of this clause, be interpreted as including zoology, botany, anthropology, sociology, psychology, and medical science.

6. If no contribution of sufficient merit shall have been published during the preceding six years, the electors shall, at their discretion, either direct the investment of the accrued income in augmentation of the capital of the endowment or assign the grant of money (without the medal) to some person who shall undertake to carry out some biometric investigation approved by the electors.

7. Eight per cent. of the income of the endowment shall be set aside every year to form a fund which shall be employed for paying honorariums to judges or for promoting the investigation of biometric problems, as the electors may direct.

8. The electors shall have power to make subordinate rules or by-laws for the purpose of carrying these regulations into effect; and Convocation shall have power to alter the regulations from time to time in such manner as it shall deem expedient, provided that the main objects of the foundation, as expressed in the preamble to this decree and in Clause 5 of these regulations, are always kept in view.

UNIVERSITY OF CAMBRIDGE.

IN a list of various appointments published in the issue of this JOURNAL for October 26th, the word "elector" was misprinted as "elected" in two instances, thus representing Drs. Langley and Gaskell, who have been respectively elected to the Board of Electors to the Professorship of Anatomy and the Downing Professorship of Medicine, as having been elected to those chairs themselves.

UNIVERSITY OF EDINBURGH.

GENERAL COUNCIL.

THE statutory half-yearly meeting of the General Council of the University of Edinburgh was held in the Examination Hall of the University on October 25th, Principal Sir William Turner presiding. Dr. Norman Walker proposed the re-election of Dr. Joseph Bell and Dr. R. Mackenzie-Johnston as Assessors to the University Court. Dr. Francis D. Boyd seconded, and the motion was unanimously adopted.

The Convener of the Business Committee and the Principal referred to the conference that had taken place between the courts of the Universities of Edinburgh and Glasgow in regard to the draft ordinance for degrees in arts. The Convener said he was sure that meeting welcomed this new policy of intercommunication and conference between Edinburgh University and other Scottish universities in regard to legislation.

The Council approved of the action of the Business Committee in appointing a Subcommittee to further the matter of providing chairs of modern languages, the Principal remarking that action meant the raising of £20,000.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

Old Students' Association.—At the annual general meeting of the Old Students' Association at University College, Dr. Tempest Anderson was elected President of the Association for the year 1907-8. Mr. George A. Aitken was elected Treasurer, and Mr. E. Denison Byles, B.Sc., Secretary. The annual dinner of the Association will be held on Thursday, December 5th. Dr. Tempest Anderson will preside. The new wing that has recently been added to the College will be completed by that time, and will be open to inspection. Former students of the College who desire to be present should communicate with Mr. George E. Aitken, at 42, Edwardes Square, Kensington, W.

ARMSTRONG COLLEGE, NEWCASTLE.

WE have received the *Calendar* of Armstrong College, Newcastle-upon-Tyne, for the session 1907-8. The college forms an important part of the University of the North of England; the degrees of Durham in science and letters, and its diplomas in engineering, naval architecture and mining are open to students of the college. The courses of instruction in all natural sciences, mathematics and engineering are very practical and complete, and the chemical, physical and engineering laboratories are among the finest in the country. In addition to the biological laboratories at the college, the marine biological laboratory of the Northumberland Sea Fisheries Committee at Cullercoats is available for the students. The agricultural department has been subsidized by the counties of Northumberland, Durham, Cumberland, and Westmorland, and is recognized by the Board of Agriculture. The department directs the Northumberland county agricultural experimental station and carries on a dairy research station for the Durham County Council. The college is an incorporated society registered under the Companies Acts, the executive is vested in a council consisting of the Warden of the University, who is President, and forty-six other members elected partly by the Governors, partly by the Corporation of Newcastle-on-Tyne, and partly by the county councils of Northumberland and Durham. The Principal is Sir Isambard Owen, D.C.L., M.D. The *Calendar*, price 1s., post free 1s. 4d., can be obtained from Andrew Reid and Co., Newcastle-on-Tyne and London.

UNIVERSITY OF ST. ANDREWS.

MR. ANDREW CARNEGIE, Lord Rector, has promised to add £2,000 to the £10,000 he had already given for the completion of the university library.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The Calendar.—We have received the *Calendar of the Royal College of Surgeons of England* for the current medical year. It contains in the report of the Proceedings of Council (which, we may note, includes the annual meetings of Fellows and Members) references to the question of admitting women as Fellows and Members, the direct representation of Members on the Council, the Central Midwives Board, vivisection, and the address of the President and Vice-President to Lord Lister on his 80th birthday. All these matters were noted in the JOURNAL at the time of their occurrence.

Meetings of Fellows and Members.—The annual meeting of Fellows and Members for 1907 will be held on Thursday, November 21st, at 3 p.m.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST EXAMINATION.—J. Macrae, H. L. de F. Garland, H. Chatterjee, K. C. Nazir, Kathleen Reed, T. Hardie, J. R. Fleming.

SECOND EXAMINATION.—B. J. Hattam (with distinction), W. M. Thomson, H. C. Bankhole-Bright, H. E. K. Fretz, C. J. Arthur, U. J. Bourke, C. K. Carroll, J. W. Robertson, W. G. Forde, Adeline M. Watts (four-years course).

THIRD EXAMINATION.—W. T. Lawrence, Millicent V. Webb, W. G. Forde, M. A. Mulrain, S. R. Bhagwat, W. Grant, S. Rozdon, I. R. MacLeod, D. R. D. Gupta, H. S. W. Roberts, C. W. Kay, J. J. Huston, M. Remers, Helen Y. Campbell, C. H. Heppenstall, F. M. Vajifdar.

FINAL EXAMINATION.—S. P. Gogte, O. A. McNichol, C. Berry, S. K. Sen, L. W. Bradshaw, Helen Y. Campbell, H. J. Williams, C. A. Ritchie, A. L. B. Best, F. B. Elwood, L. Murphy, C. Nyhan, S. T. White, W. P. Dillon, O. M. Groves, A. Saldanha, P. T. Rutherford, R. A. McLennan, G. Smith, B. R. Naidu, C. S. Mudali, C. R. Merrilees, G. S. Williamson, D. D. McNeill, R. W. Duncan, Claribel F. van Dort, J. S. R. Weir, S. R. Soneji, W. Damms, H. F. Collins, J. A. H. Muller, V. S. Sanzgiri, J. Miller.

D.P.H. (*Both Parts*).—W. H. E. Brand, D. Bell, J. Hunter, H. J. Norman, A. C. B. McMurtrie, J. Ritchie, W. A. Wilson-Smith, Alice M. Burn, Agnes J. Gardner, Rose Hudson, Ethel Wiseman, J. McKenzie, S. M. Hodiwalla, T. R. Smith.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

Election of Officers.—At the Stated Annual Meeting of the Royal College of Physicians of Ireland held on Saturday, the following officers were elected for the coming year:—*President*—Dr. Joseph M. Redmond. *Vice-President*—Dr. Conolly Norman. *Censors*—Dr. Conolly Norman, Dr. John Murphy, Dr. Jellett, and Dr. R. T. Smith. *Representative on the General Medical Council*—Sir John W. Moore. *Representatives on the Committee of Management*—Dr. Walter G. Smith, Sir John W. Moore, and Dr. James Craig. *Treasurer*—Dr. H. T. Bewley. *Registrar*—Dr. James Craig. *Librarian*—Mr. R. G. J. Phelps.

Election of Fellow.—Dr. James Spencer Sheill was elected a Fellow of the College.

TRINITY COLLEGE, DUBLIN.

THE following candidates have been approved in the subjects indicated:

PRELIMINARY SCIENTIFIC.

Physics and Chemistry.—P. D. Long, S. A. Lane, R. Grandy, Francis V. Agnew, F. R. Dougan, R. J. R. Mecredy, C. Rutherford, W. Frier, H. J. Brown.

Botany and Zoology.—A. E. Malone, J. M. S. Gericke, R. Johnson, C. F. Judd, A. A. Louw, W. Frier, E. T. Jameson.

INTERMEDIATE MEDICAL.

Part I.—D. L. M'Cullough, E. M. Maxwell, C. W. M'Kenny, R. H. Mathews, H. H. James, W. E. Adam, J. Gardiner, H. Fleming, W. M. Johnstone, S. R. Richardson, F. J. A. Keane, V. W. T. M'Gusty, R. V. Dixon, G. W. Scroope.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—H. J. W. Barlee, *†C. F. Curtis, †H. W. B. Danaher, *†A. G. Gamble, *†C. G. Grey, †H. A. Parker, *†P. D. Pickles, *†W. P. Pinder, *†W. W. Stacey, *†E. Wharton.

MEDICINE.—†F. M. Cunningham, *A. R. Hardy, *H. E. Middlebrooke, *†G. W. Simpson, *†J. V. Steward, W. H. Tomlinson, *† E. Wharton.

FORENSIC MEDICINE.—A. R. Hardy, J. V. Steward, H. B. Waller, E. Wharton.

MIDWIFERY.—F. M. Cunningham, G. J. Eady, E. Gandy, W. H. Tomlinson, E. Wharton.

* Section I. † Section II.

The diploma of the Society has been granted to Messrs. H. J. W. Barlee, A. G. Gamble, C. G. Grey, and E. Wharton.

OBITUARY.

THOMAS MICHAEL DOLAN, M.D.Durh., F.R.C.S.Edin., J.P.

It was with profound sorrow that we had to announce in the Journal of October 26th the death of Dr. Dolan of Halifax. Dr. Dolan was first attacked with illness in February last, and remained for some months in a precarious condition. In August, however, he appeared to have improved so much that he undertook some professional work. This happy state did not, however, last long, and he passed away on October 22nd, in the 64th year of his age.

Dr. Dolan was born at Cashel, co. Tipperary, in 1844, and was educated at Ushaw College, Durham, and Dublin. He was a medical student at Dr. Steevens's Hospital in the latter city, taking the diplomas of L.R.C.P., L.R.C.S.Edin. and L.S.A.Lond. in 1866. In the same year he settled in private practice in Halifax, where he remained to the end of his days. He took the F.R.C.S.Edin. in 1879, and the M.D.Durh. in 1883.

Thomas Michael Dolan, M.D.

Dr. Dolan was a type of man not, we are proud to say, uncommon among the general practitioners of this country, and influenced in a remarkable manner every one with whom he came in contact. His horizon was not limited; through his writings, his articles in the medical journals, and essays on various subjects, his name was known both in Europe and America. In an appreciative article written by Dr. P. Lorédan in *L'Encyclopédie Contemporaine* for August, 1901, his versatility of mind is extolled, and a prediction made that his influence on medical literature would be still further extended. Perhaps this prognostication has not quite been realized; but he remained in touch with all the great problems presented to the medical profession up to the end of his life.

Dr. Dolan's career will always be linked in the minds of those who knew him well with the progress made in the administration of Poor-law hospitals. In this Journal for September 14th last an account was given of the presentation made to him by the officers and staff of the Halifax Union on the completion of thirty-eight years' service as medical officer to its workhouse. In the speech made by Dr. Dolan on that occasion will be found a record of the great and prolonged efforts he had made on behalf of the suffering poor and his endeavours for the amelioration of their condition.

Dr. Dolan's contributions to medical literature were of the most diversified nature. He was one of the pioneers in the study of hydrophobia, and published a treatise in 1877 which Sir Joseph Fayrer reviewed in *Brain*, and of which he said, "It is by far the most complete work on the subject I have seen, and I am very glad to find it has been, as it deserved to be, so successful." Dr. Dolan was also a competitor for an international prize on the subject of hydrophobia offered by Mr. V. F. Bennet-Stanford in 1879, and the adjudicators, Drs. Brunton, Dickinson, and Ferrier, considered the contribution of such value that they recommended that a sum of £50 should be specially raised and awarded to the author. In 1881 Dr. Dolan obtained the prize of £100 offered by the Equitable Life Assurance Company of the United States for the best essay on "Life Assurance." In 1882 he was awarded the Boylston prize of 300 dollars for his essay on "Sewer Gas: its Physiological and Pathological Effects on Animals and Plants—an Experimental Inquiry." In the same year he obtained the Fothergillian gold medal of the Medical Society of London for his essay on "Whooping-cough: its Pathology and Treatment"; and in 1883 he gained the prize given by the Medical Institute of Valencia, in Spain, for his essay on "Heart Disease."

In 1887 Dr. Dolan published a valuable series of papers on "The Poor-law Medical Service; its Past, Present, and Future," in the course of which he reviewed the history of the service from the time of the passing of the Poor-law Amendment Act of 1834–5.

From 1885 to 1895 Dr. Dolan was the editor of the *Provincial Medical Journal*, and from 1896 to 1900 editor of the *Scalpel*. Both these medical journals had in their day a very considerable circulation and a wide reputation, and in addition Dr. Dolan was a frequent contributor to the British Medical Journal, the *Lancet*, and other medical papers.

Dr. Dolan took a very active interest in the British Medical Association, and at one period was a member of its Central Council; at his death he was vice-president of the Yorkshire Branch.

The writer of this narrative is not imbued with any spirit of uncritical laudation, nor does he wish to assert that Dr. Dolan was devoid of imperfections. Unfortunately, these are but too palpable in all men. His writings were, perhaps, not of that order that one might call "epoch-making." But it is obvious that in that gradual but certain evolution to scientific precision in medicine which is so marked a feature of the day the writings and the personal influence of Thomas Michael Dolan contributed no mean part.

J. M.

HENRY STOLTERFORTH, M.A.Cantab., M.D.Edin., J.P., SENIOR PHYSICIAN CHESTER INFIRMARY.

By the death of Dr. Henry Stolterforth the medical profession in Chester has lost one of its most prominent representatives, and the town a citizen whom on many occasions it had honoured by appointment to public positions of responsibility. Dr. Stolterforth was of German origin, but the third Englishman of his name, and the second to adopt the profession of medicine. Born in 1836, he received his higher general education at the University of Cambridge; after graduating M.A. in 1863, he became a medical student in Edinburgh, and received the M.D.Edin. five years later. He then joined his father in practice in Chester, and obtained at an early period appointment on the staff of the Chester Infirmary; his duties on the medical side of this institution he continued to perform until quite a recent date. Dr. Stolterforth took an active interest in the public life of Chester, and in 1887 became a member of its Town Council. A few years later he served a term of office as Sheriff, and in 1898 was elected Mayor. On this occasion he gave an interesting account of the connexion of his family with Chester. His grand-

father settled there towards the end of the eighteenth century, having lost all his near relations in Germany during an epidemic of small-pox. In Chester he started a school, but did not become a naturalized Englishman until the early years of the nineteenth century, when he came in to some property. At that time naturalization was a matter of much difficulty, and the first Stolterforth had to procure the passage of an Act of Parliament, and to undertake not to leave the shores of England for at least seven years.

Of Chester institutions the one with which his name was more particularly identified was the Society of Natural Science and the exceedingly successful Grosvenor Museum; to its foundation Dr. Stolterforth materially contributed, and in several of its departments he did much work, his special subject being diatoms. He was keenly interested in higher education, and among other offices was Chairman of the governing body of the Schools of Science and Art and Technical Schools, and of the Higher Education and Free Library Committees of the Town Council; he also represented the Corporation on the King's School and the Queen's School in Chester, and on the Senate of the University of Liverpool, and the Dee Fishery Board. In politics he was a consistent Liberal, and at sundry times of much service to that party in Chester. His personality was marked by a courteous and kind manner, an external quality which correctly represented his true character. Of late years Dr. Stolterforth had not engaged in general practice, but he remained to the end a member of the Chester and Crewe Division of the Lancashire and Cheshire Branch of the British Medical Association. He was placed on the Commission of the Peace in 1891, and was a regular attendant on the Bench. His funeral took place on October 8th, the flags on the Town Hall and other public institutions being flown half-mast high on the intervening days. Dr. Stolterforth leaves a widow, who was the daughter of the late Mr. John Price.

THE death is announced, at Whitehall, Pembroke, the residence of his daughter, on October 16th, of Dr. GEORGE SIMON. Dr. Simon, who was in his 70th year, was an undergraduate of King's College, Aberdeen, and became M.R.C.S. in 1858, and M.D., King's College, Aberdeen, in 1859. In the same year he became Assistant-Surgeon on the Army Medical Staff, and was promoted Surgeon-Major in 1874, being placed on the half-pay list in May, 1883, with the honorary rank of Brigade-Surgeon. During the course of his military career Dr. Simon served for many years with the 32nd Foot and the Royal Field Artillery, being when placed on the half-pay list in charge of the barracks at Bradford. On retirement he was appointed Medical Officer of the Whittington Barracks, Lichfield, and remained there until some six years ago.

DR. ROWLAND WIMBURN CARTER, of whose military career some account was given in our issue for October 26th, settled—on his retirement from the army, in the year 1884, with the rank of Deputy-Surgeon-General—at Southsea, and took a considerable part in the work of its various medical charities. Up to the time of his death he was Consulting Surgeon of the Weymouth and Dorset County Royal Eye Infirmary, and for many years acted as anaesthetist to Weymouth Royal Hospital, assisting likewise in the work of the Princess Christian Hospital and Sanatorium. He took a particular interest in everything connected with anaesthetics, and was the inventor of a cleverly-constructed apparatus for administering ether at a definite temperature. On this subject he made several contributions to medical literature, including a paper on the Administration of Chloroform in the BRITISH MEDICAL JOURNAL in 1893; on Chloroform Anaesthesia in the same JOURNAL in the following year; and on the precise and scientific Administration of Chloroform and Ether, in the *Transactions of the Society of Anaesthetists*, in 1895.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Victor Emanuel von Severin, Surgeon to the Nikolai Children's Hospital, St. Petersburg, and formerly Assistant to the late Professor E von Bergmann in the Franco-German war, aged 66; Dr. A. Sevestre, Physician to the Bretonneau Hospital, Paris, and formerly to the Enfantes Assistés and the Enfants Malades, a recognized authority on children's diseases, to the literature of which he contributed largely, aged 64; Dr. Domenico Capozzi, Professor of Medical Pathology in the University of Naples, aged 76; and Dr. Edward Hitzig, Professor of Psychiatry in the University of Berlin, and a leading authority on mental and nervous diseases, aged 69.

PUBLIC HEALTH

AND

POOR-LAW MEDICAL SERVICES.

DIRTY MILK: SENTENCE OF IMPRISONMENT.

THE Medical Officer of Health for the City of Westminster (Dr. Francis J. Allan) has made the following report to the City Council on the recent case in which a milkseller was sentenced to six months' imprisonment:

"On September 24th Inspector McNair saw Edward Hughes, of 6, Shard Square, S E., hawking milk in a hand-can in Earl Street. He found that he had also a churn on a barrow with about an imperial gallon of milk in it. The milk had a quantity of sooty particles floating on the surface, and a considerable quantity of filthy-looking matter in the bottom layers. The inspector having informed me, I examined and condemned the milk as unfit for human consumption, and directed him to take it before the magistrate, who ordered its destruction. A sample was taken, and after standing a few hours the milk gave off an offensive smell. The sediment, on microscopical examination, was found to consist of vegetable and other débris, fine grit, hairs, fibres of clothing, etc.

"The process by which the cream is separated results in a considerable proportion of the impurities being removed; presumably, therefore, the contamination found in this milk must have occurred subsequently. The nature of the sediment suggests the street or a stable-yard as its source, and possibly it may have been introduced by the dipping in the churn of the hand-can from which the milk was sold. This would be placed on the ground while the man was serving from it, and on again being dipped into the milk, any matter adhering to it would be washed off and remain in the churn. The Medical Officer of Health of Southwark informs me that the man from whom Hughes bought the milk, and from whom he hired the barrow, at that time sold milk to people in the street.

"Hughes, having failed to appear at Westminster Police-Court in answer to a summons, was arrested on a warrant. The hearing was adjourned to October 16th to enable Hughes to produce as a witness the man from whom he bought the milk, but at the adjourned hearing no evidence was offered in defence, and the magistrate (Mr. Horace Smith) convicted Hughes under Section 47 of the Public Health Act, 1891, and inflicted the maximum penalty of six months' imprisonment with hard labour."

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL ARMY MEDICAL CORPS.

REVISED RATES OF PAY.

THE following revised rates of pay of senior Royal Army Medical Corps officers serving in India have been sanctioned by the Secretary of State for India: (1) Majors, after twenty years' total service, if promoted to the rank before the date of the new Royal Warrant, and if considered qualified, to draw the same rate of pay as lieutenant-colonels, namely, 1150 Rs. per mensem, or 900 Rs. if in receipt of a staff salary. (2) Lieutenant-colonels promoted to that rank on or after the date of the new Royal Warrant, after three years' service as such, to draw the same rate of pay as lieutenant-colonels specially selected for increased pay, namely, 1250 Rs. per mensem, or 1000 Rs if in receipt of a staff salary.

Medico-Legal.

SYNCOPE OR FRACTURE OF THE SKULL.

A COMPENSATION case involving incidentally a decision as to the precise cause of death of a man aged 26 was tried in the Sheffield County Court on October 24th. The contention of the plaintiff was that the deceased must have been struck by a screw in working a particular rolling mill, and thereby sustained a fracture of the skull. The defendants maintained that death was not due to an accident at all, but to chronic Bright's disease and syncope. The deceased had been at work up to the time of his death, and his fellow-workmen saw no accident happen, but had noticed that the deceased perspired abnormally. The contention of the plaintiff rested on the

evidence of a medical man who saw the body immediately after death, having been summoned to the works when the deceased was reported to have fallen down. He found some contusions at the back of the deceased's head and also on his left temple, and made a diagnosis of fracture of the skull, because from the ear there was a slight effusion of fluid which he was certain was cerebro-spinal fluid. The police-surgeon, who made a *post-mortem* examination by order of the coroner, found no fracture of the skull, but did find the kidneys diseased, and believed that the immediate cause of death was syncope due to long-standing renal disease. He does not seem to have had his attention directed to the fact that a diagnosis of fracture of the skull had been made upon the ground that cerebro-spinal fluid was believed to have been noticed issuing from the ear. Counsel for the defence maintained that a fracture might be so minute as only to be detectable on microscopic examination. A verdict was eventually given for the plaintiff, judgement being based upon the view that legally it was a matter of indifference whether the deceased had an accident, or fell owing to the existence of disease.

A POLICE CALL.

At Hungerford (Berks) County Court, Dr. Walter Dickson, of Hungerford, sued P.C. Broad, of the Wilts County Constabulary, stationed at a neighbouring village named Frosfield, for a guinea for professional services rendered, plaintiff's case being that, acting upon the instructions of a messenger sent by the policeman, he attended a man who had an hour previously cut his throat. Plaintiff stated that he was not the medical attendant of this man, and that he treated him entirely upon the instructions of the police. It was urged on behalf of plaintiff that the constable was liable in one of two capacities—either primarily, as principal employing the doctor on his own responsibility, or as agent for an undisclosed principal. The defendant denied the responsibility, and also repudiated the suggestion of the solicitor for the plaintiff that the county was behind him in the case. He stated that he was requested by the wife of the patient to send for the doctor, and in this he was supported by two witnesses, who deposed to hearing the request made. This the woman emphatically denied. His Honour said it could not be possible to come to any other conclusion on the evidence before him than that the woman was mistaken in saying she did not ask the constable to get a doctor. A mistake had undoubtedly been made inasmuch as the messenger did not inform the doctor that the woman had asked the constable to summon him, although the constable told him to do so. The solicitor for the plaintiff urged that where a man contracted with a person as an undisclosed principal he could select whom he would sue. His Honour held that the constable was not liable, either as principal or as acting for an undisclosed principal.

CERTIFICATION OF ALCOHOLIC DEMENT.

Perplexed.—As the sister with whom the demented widow lives receives money for the maintenance of the latter from the trustees, it is clear that she is in the position of one who is keeping (presumably with profit to herself) a person of unsound mind, and therefore the widow should, if "certifiable," be placed under certificates. The sister of the widow cannot sign the petition, but, in the absence of another near-of-kin, the trustees (or one of them) had better do it.

REPUDIATION OF LIABILITY BY A FIRM.

B. H. W. writes that he was called to see a man who had met with an accident at work. Two other doctors had been sent for, and arrived before him, but the patient's friends wished that he should attend to his injuries. On his arrival, he examined the patient with the other doctors, and all came to the conclusion that amputation was necessary. As the spokesman of the three doctors present, he told a member of the firm, who was also there, what was necessary, and that the latter in reply said that the firm wished everything to be done that was possible, and that no expense was to be spared. Later he performed the necessary operation with the assistance of the other doctors. Afterwards, when he sent in his claim for payment to the firm, liability was denied, and he was told that the firm had given instructions to the other doctors, who arrived first, and who had already been paid. He wishes to know if he is not entitled to a fee.

*** Our correspondent should consult his solicitor, but if the facts are exactly as stated by him, and the other doctors have been paid and can witness to the above facts, it is difficult to see what defence the firm could have.

HOSPITAL AND DISPENSARY MANAGEMENT.

ROYAL EDINBURGH ASYLUM.

The annual report of the Committee of this well-known private asylum and of Dr. T. S Clouston, its Physician-Superintendent, is always interesting reading, but that for this year particularly so, as last May the asylum celebrated its centenary, and on that account the report very suitably contains a brief historical account of its origin and progress by Dr. Clouston, and, as frontispiece, an excellent reproduction of the portrait by Raeburn of Dr. Andrew Duncan, the philanthropic physician to whose efforts its foundation was due. Those interested in the history of the care of the insane will find this essay of value.

On January 1st, 1906, there were 884 patients on the asylum register, of whom 4 were absent on probation, and on the last day of the year there were on the register 837, of whom 6 were on probation. The total cases under care during the year numbered 1,269, and the average number daily resident 863.1. During the year 385 cases were admitted, of whom 297 were first admissions. The total number is less by 47 than the average of the preceding five years, the private cases being 7 more and the rate-paid patients 54 less. All of the patients except 6 sent to asylums from the Edinburgh Parish Council were received at this asylum, and it is satisfactory to note that the number was 28 less than the average number sent from that parish for the previous five years. Of the total admissions, in 114 the attacks were first attacks within three, and in 53 more within twelve months of admission; in 78 the attacks were not-first attacks within twelve months of admission, in 128 whether first or not of more than twelve months' duration on admission, and 12 were of congenital origin. They were classified as to the forms of mental disorder into: Mania of all kinds, 133; melancholia of all kinds, 133; dementia, 39; general paralysis, 55; acquired epilepsy, 12; and cases of congenital or infantile defect, 13. As to the probable causes of the insanities in the admissions, alcoholic intemperance was assigned in 85, or just over 22 per cent., the definite form known as alcoholic insanity ranking as high as 18 per cent. among the male and 10 8 per cent. among the female admissions Syphilis was assigned in only 11, notwithstanding the fact that there were 55 general paralytics admitted; periodic causes, puberty, old age, and the menopause in 100; mental and moral causes in 2; previous attacks in 101; hereditary influences (direct, collateral, or both) in 102 or just under 27 per cent.; in 190 no cause could be ascertained, and the remainder were distributed over various bodily diseases and disorders. The noteworthy features of the two tables from which these figures are taken are the high proportion of general paralytics, forming no less than 14.2 per cent. of the total admissions, and the small number of cases in which syphilis was assigned as cause. A further point worthy of notice is that Dr. Clouston found only 35 out of the total admissions in really good bodily health. A high recovery rate was thus not to be expected, and we note that only 88 were discharged as recovered during the year, giving a recovery rate on the admissions of 23 per cent., the lowest since 1841. There were also 156 discharged as relieved and 48 as not improved, mostly to Bangour Village Asylum. During the year 140 died, the largest number of deaths so far recorded at this asylum, giving the high percentage death-rate on the average numbers resident of 16.2.

The deaths were due in 74 cases to cerebro-spinal diseases, with no less than 31 deaths from general paralysis. Dr. Clouston states that in the last report of the Board of Lunacy for Scotland the proportion of deaths in Scottish asylums from diseases of the nervous system to every 1,000 of the average numbers resident for the thirty-four years 1870-1904 was stated to be 33 4. At the Royal Edinburgh Asylum it was 41 for the same period, but during the last five years this proportion had been 65 8 per 1,000, and during the year 1906 it rose to 85.7 per 1,000, or two and a half times the mortality of the Scottish asylums from this class of diseases. There were also 28 deaths from chest diseases, including 10 from pulmonary consumption and 38 from abdominal and general diseases, including 14 from senile decay, 2 from suicide, and 1 from general tuberculosis. The deaths from tuberculous diseases thus give a proportion upon the total deaths of 7.8 per cent., a satisfactorily low rate. Dr. Clouston, however, discusses this question of the asylum mortality from consumption at considerable length.

Dr. Clouston has maintained in former years that the mortality from consumption at the Royal Edinburgh Asylum was below the average rate of similar institutions in Scotland and England. In 1901, however, a request was made by the Scottish Board of Lunacy that the presence of any lesion or disease of any kind found after death or detected during life should be noted among the contributory causes of death in every case. Since then the Pathologist of the Royal Edinburgh Asylum has noted every evidence of unhealed tubercle detected, and this has been included in the returns sent to the Board In the last Scottish Blue Book the results for the five years 1901-5 are published, the calculations being made, not on the number of deaths, but on the average numbers resident. Dr. Clouston was much exercised on finding that the Royal Edinburgh Asylum returns gave a ratio of 3.5 per cent., as compared with the 1.5 per cent. for all other Scottish asylums. In his present report Dr. Clouston examines this question and points out the fallacious results of the comparison; and doubtless he is in the right when he says that an institution with a special pathologist and a large proportion of *post-mortem* examinations will be likely to show more tubercle than those which have no such official.

SOMERSET AND BATH ASYLUM, WELLS.

The annual report of the Somerset and Bath Asylums Committee upon their two asylums at Wells and Cotford contains the annual report for 1906 of the Medical Superintendent of the

Wells Asylum, Dr. G. Stevens Pope. From this we see that on January 1st, 1906, there were 750 patients in residence, and that on the last day of the year there were 775, the average number resident during the year being 765 and the total cases under care 949. During the year 199 cases were admitted, of whom 175 were first admissions. In 80 the attacks were first attacks within three and in 24 more within twelve months of admission; in 46 not-first attacks within twelve months of admission; in 35 the attacks, whether first or not, were of more than twelve months' duration, and the remaining 14 were of congenital origin. The admissions were classified as to the forms of mental disorder into: Mania of all kinds, 100; melancholia of all kinds, 50; secondary and senile dementia, 21; general paralysis, 8; acquired epilepsy, 4; and cases of congenital or infantile defect, 16. As to the probable causation of the insanities in these cases alcohol was assigned in 22 or 11 per cent., venereal disease in 3, old age and the menopause in 36, previous attacks in 44, epilepsy in 9, various bodily diseases or disorders in 31 and "moral" causes in 39. Hereditary influences were ascertained in 44 or 22.1 per cent. and congenital defect in 12. During the year 56 were discharged as recovered, giving a recovery rate on the admissions of 29 6 per cent. (a marked fall from the recovery rates of 1905 and 1904, which were 50.8 and 50.2 respectively), and 18 as not improved. There were also during the year 100 deaths, giving a death-rate on the average numbers resident of 13 07 per cent., the highest total death-rate so far recorded at this institution. Doubtless this high death-rate was largely due to the numbers of senile cases, no less than 31 deaths being due to senile decay, and 16 more succumbing to other affections being over 60 years of age. In 40 cases death was due to cerebro-spinal disease, including 11 deaths from general paralysis and 17 from other forms of organic brain disease; in 21 to chest diseases, including 11 deaths from pulmonary consumption; in 6 cases to abdominal diseases; in 1 to enteric fever, and 1 to Graves's disease. Only one serious casualty had to be recorded during the year; the general health is stated to have been satisfactory, neither mechanical restraint nor seclusion were employed in the treatment of the patients, and the condition and management of the asylum were very favourably reported upon by the Lunacy Commissioners, who drew particular attention to an improved system of keeping case records introduced by Dr. Stevens Pope.

NOTTINGHAM CITY ASYLUM, MAPPERLEY HILL.

ON January 1st, 1906, there were 790 patients in this asylum, and at the end of the year there remained 786, giving an apparent decrease of 4. As, however, 20 out-county patients who had been boarded out in this asylum were removed during the year, there was an actual increase in the patients belonging to the district served by this asylum of 16. Dr. Evan Powell, the Medical Superintendent, states that although there is year by year a somewhat startling increase in the asylum patients, the increase of the total number of lunatics in the city, that is, inclusive of those maintained at home or in the workhouse, is very small, amounting for the five years ending January 1st, 1906, to only 12, whereas the increase in the asylum for this period was close on 100. If this continues, Dr. Powell says, the time will come when the whole of the City insane, imbecile, and senile cases will be consigned to the City Asylum.

During the year 150 were admitted, of whom 129 were first admissions. Of the total admissions, in 87 the attacks were first attacks within three and in 16 more within twelve months of admission; in 33 not-first attacks within twelve months of and the remainder, whether first attack or not, were either of more than twelve months' duration (9) or congenital cases on admission. They were classified as to the forms of mental disorder into: Mania of all kinds, 33; melancholia of all kinds, 43; dementia, 19; delusional insanity, 12; general paralysis, 25; acquired epilepsy, 13; and congenital or infantile defect, 5. As to the probable causes of the insanities in these cases, alcoholic intemperance was assigned in 35, or 23.3 per cent. (24 per cent. for males and 22 4 per cent. for females); venereal diseases, 11; previous attacks, 27; periodic causes, 9; various bodily diseases and disorders, 31; and moral causes, 23. Hereditary influences were ascertained in 21, and congenital defect existed in 5. During the year 52 were discharged as recovered, giving a recovery rate on admissions of 36.87 per cent., 3 as relieved and 19 as not improved.

During the year there were 80 deaths, giving a percentage death-rate on the average numbers resident of 10.07. The deaths were due in 40 cases to cerebro-spinal diseases, including 21 deaths from general paralysis; in 23 to chest diseases, with only three from pulmonary tuberculosis; in 6 to abdominal diseases, and in the remainder to general diseases, including 6 from senile decay. Two inquests were held during the year, in each case a verdict being returned in accordance with the medical evidence. The general health was good throughout the year, notwithstanding a great accumulation of chronic bed-ridden cases in the female infirmary, and a considerable overcrowding in the asylum, to which defect the Commissioners direct attention in their report.

THE Master and Wardens of the Society of Apothecaries have issued invitations to a dinner at the hall of the Society on November 19th to meet the Lord Mayor.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
EDITOR, 2631, Gerrard. GENERAL SECRETARY AND MANAGER, 2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

T. H. R. asks whether tea or coffee (weak) is the more suitable beverage at breakfast for a person who has subacute gout and is constipated.

ERIN is suffering from an attack of dermatitis of the hands, the only possible cause of which appears to be the use of lysol. He asks whether this effect is known, and what is the best treatment of the condition.

INCOME TAX.

PROTEST writes: (*a*) Supposing a man's income to be £400 a year, half earned and half unearned, he would be entitled to an abatement of £160, leaving him £240 to pay tax on. On how much of it would he pay at 1s. and on how much at 9d.? (*b*) If his income is £300 £150 from each source) he would have to pay on £140 only, but at 9d. or 1s., or £70 at 9d. and £70 at 1s.

*** The question raised by our correspondent is dealt with in Section 19 of the Finance Act, 1907, which provides, in effect, that the allowance for abatement shall be deducted from the earned income as far as possible, and only from the unearned income to the extent to which the earned income is insufficient to cover the full allowance. In the cases put, therefore, the assessments would be: (*a*) £200, less £160—that is, £40 at 9d. and £200 at 1s. (*b*) £150, less £150—that is, *nil* at 9d. and £150 less £10 (balance of £160)—that is, £140 at 1s.

ANSWERS.

HOME FOR DIPSOMANIAC.

S. H. H. might apply to the secretary of the home at Hancox Whatlington, Battle, Sussex (Church of England); of Victoria House, Thundersley, Essex (Salvation Army), or of Dalrymple House, Rickmansworth (for gentlemen). These and all the other best retreats are licensed under the Inebriates Act and inspected by Government. The necessary papers for signature will be sent on application. The patient must apply in person "voluntarily" for admission, and the signature of a justice of the peace, two friends of the patient, and the patient are necessary. This can all be effected quite privately. The inebriate is then obliged by law to remain in the retreat for the time specified, and can be brought back if he escapes.

THE CHILD-BEARING AGE.

WILTS.—The rule, of course, is that women seldom have children after about 45 years of age, or after the menopause, but there are a good many exceptions on record. Dr. Dixon Mann quotes, in his *Forensic Medicine*, one well-authenticated case of a woman who was delivered at 55 years of age, and another of a woman who aborted at the age, it was believed, of 72; he also quotes cases of conception several years after the cessation of menstruation in women aged 49, 50, and 59.

Motor Bicycles.

Dr. Hugh Powell (Pittville, Cheltenham) writes: In reply to "Motor Cyclist" (British Medical Journal, October 26th, p. 1194) I have ridden a motosacoche some 1,400 miles without either spring forks or spring handles, and do not notice much in the way of vibration. If your correspondent finds much vibration, I should recommend the spring handles in preference, as they affect the stability of the machine less. Of course there is vibration, but practically unnoticeable, unless driving at twenty miles an hour for any length of time. I have had one or two runs of about sixty miles on my machine and never felt "shaky" at the end of them. Should "Motor Cyclist" wish for any details of running expenses, etc., I shall be pleased to answer him if he will write.

The Climate of Canton.

X.—During the months from March to October the climate of Canton is moist, warm, and rather trying. During the winter months the weather is bright, dry, and pleasant. The diseases most prevalent are malaria, dysentery, and smallpox. Canton, however, is not more liable to these ailments than other cities in the same latitude. Malaria can be prevented with care, and dysentery, of the usual type, checked if treated promptly and early. The European quarter of Canton is situated on the island of Shameen, having the Canton river on one side. A small arm of the river surrounds the remainder, separating the Shameen from the native quarter. Professor W. J. Simpson, M.D., F.R.C.P., has written a useful book entitled *The Maintenance of Health in the Tropics*, and Lieutenant-Colonel G. M. Giles has a larger work on *Climate and Health in Hot Countries*, also of great practical value. Both books are published by John Bale and Son, 85, Great Titchfield Street, Oxford Street, London, W.

Treatment of Keloid of the Face.

Mr. George Pernet (London) writes: The case referred to by "Keloid" is no doubt one of hypertrophic scarring resulting from the suppuration following the burn. A severe case of this kind was successfully treated by me by means of repeated local injections of thiosinamin. The patient was a woman. The treatment requires to be perseveringly carried out. "Keloid" will find an account of this case in the *British Journal of Dermatology*, vol. xviii, 1906, p. 251. Another case I treated in the same way will be found in the same journal, vol. xiii, 1901, p. 185. That was a young woman with hypertrophic scarring about the bend of the elbow following a burn. The limb was flexed at right angles by the bands, and could not be extended. Local injections of thiosinamin perseveringly carried out resulted in a cure, the patient being able after the treatment to extend the limb to its full extent of her own accord. "Keloid's" patient being very young, there might be difficulty with the thiosinamin injections, especially as they are in some cases rather painful. The x rays act very beneficially, too, and might be more readily applicable in a case of the kind, although here again, the age would perhaps prove a difficulty. But children differ very much in this respect.

LETTERS, NOTES, Etc.

A Case of Leaking Aneurysm of the Popliteal Artery.

Mr. D. Dutta (Calcutta) writes: The following case may be of interest as an illustration of the difficulty of diagnosis in the above condition.

On May 25th, a Chinaman was admitted into the General Hospital, Kuala Lumpur, complaining of an ulcer, of about fifteen days' duration, on the outer side of the left foot, swelling of the left calf, and inability to walk.

The history of the case is very obscure. The patient came from an out-of-the-way district of China, and no one could understand his dialect. All that could be got from him was that some four months before admission to hospital, he noticed swelling around the left ankle, which spread very little downwards on the foot, but extended steadily upwards till it reached the ham, beyond which it did not go. The time occupied by the extension of the swelling from the ankle to the ham was roughly fifteen days. The pain in his leg increased with the progress of the swelling, and ultimately rendered locomotion impossible. The tactile sensation was not impaired on the calf, but anaesthesia was almost complete on the outer side of the left foot around the ulcer. Some fifteen days before admission to hospital, that is, three and a half months after the onset of the swelling, he noticed a small boil on the outer side of the left foot above the little toe. It broke and resulted in an ulcer which spread steadily till it covered about two-thirds of the left foot on the outer side. There was a sero-purulent discharge, microscopic examination of which, conducted by Dr. William Fletcher, M.B., District Surgeon of the General Hospital, excluded leprosy. There was very little swelling of the affected foot, but the calf of the left leg was swollen to at least twice the size of the other leg which was sound. The swelling extended up to the ham, where it ceased rather abruptly. The skin over the swelling was hard, dirty, and scaly, from the long-continued application of some native medicines.

The swelling was tense and there was deep fluctuation, the softest part being in the popliteal space. There was no pulsation in it. The diagnosis was sloughing phagedaena. Dr. William Fletcher, the district surgeon, decided to have the ulcer scraped, and the abscess opened and drained. In the course of scraping the ulcer, I found gangrene in the deep structures on the outer part of the left foot. I scraped away a little over one-third of the whole foot to remove the dead tissues. This done, I made an incision about 3 in. long in the softest part of the supposed abscess in the leg. To my surprise, I found clots of blood (some organized) coming out. I made a counter-opening lower down, and squeezed out over a litre of clots of blood, mostly organized, in the lower part of the leg, leaving a big open space between the muscles and the deep fascia of the leg. I passed a long probe upwards till it reached the limit of the swelling at the ham, made an incision here, and passed my finger into the wound thus caused, to feel the popliteal artery. I felt instead a tumour on the artery of about the size of a duck egg, which was pulsating, and which allowed blood to gush out at each beat of the heart. Having thus obtained the diagnostic criterion of an aneurysm I proposed the amputation of the thigh to the district surgeon. He having agreed to this, I amputated the thigh by Farabeuf's method a little above the middle part of the femur on May 26th, 1907.

The patient had fever on the fourth day after operation. The wound was then dressed, and there has been no rise of temperature since. The wound has mostly healed up, and the patient will soon be fit for discharge from hospital.

The Treatment of Scabies.

Surgeon E. K. Johnstone, M.D., L.R.C.S.Edin., U.S. Army, writes, from the Military Camp, Yosemite Valley, California: As a military surgeon, I am, of course, quite interested in the question as to the best mode of treating scabies. I have used balsam of Peru with excellent results, never having had, so far, a single case in which I found albumen in the urine following the application. However, my procedure is a modification of the usual method. I do not paint the entire surface of the body; an area showing no signs of the parasite I leave untouched, which area or areas I paint later, after the bath. This I have done from the first, on account of recollecting a case in which a child who was "gilded" to represent Cupid in a Venus tableau, on the occasion of a Revolutionary fête in Paris at the close of the eighteenth century, succumbed in a few hours. I am addressing myself to you on this subject as I have not observed that any of your correspondents have made use of this modified form of treatment. I should be glad to hear of any practitioner who may have done so and met with the untoward result that we have been warned to look out for if we paint the whole surface of the body at one time, as recommended by the British Army surgeons.

A New Use for the Camel Bot-Fly.

Mr. Middleton, of Serampore, Bengal, has sent us a leaflet on *Oestrus camelus*, a fly found in different parts of India, which attacks camels and lays its eggs in the nostrils of those animals. The larvae pass up into the maxillary and frontal sinuses, living by sucking the juices there, till eventually they are discharged, when just about to become pupae, on to the ground. In some instances individuals penetrate the brain, setting up meningitis, and so causing the death of the camel. So far those details are interesting, though not peculiar; but then the author startles us by the statement that the characteristic feature of the larvae is the presence in them of certain medicinal properties far more remarkable in curing cases of what he terms *Epilepsia* than the best drugs hitherto used. The directions for producing and administering this panacea are given as follows: "Dry the larva in the sun, divide it into three parts, and give one part in the form of a pill on an empty stomach for three consecutive mornings. This is the dose for an adult." The author does not state if he has tried his remedy on himself, but he apparently has on some less fortunate individuals, said to have been suffering from epilepsy, and of course, as one would expect, has cured them thoroughly. He trusts his paper may cause the *Oestrus camelus* to find its place in the list of names in the animal Materia Medica. We sincerely hope it may not, and readers will agree that further comment is unnecessary.

West African Medical Service.

Anonymous writes: In your issue of June 29th and in previous issues are to be found anonymous letters from members of the West African Medical Staff relative to grievances from which that body suffers. As a member—and a senior member—of that staff, I wish to protest against such letters, all of which more or less cast reflections, quite undeserved, on the authorities at the Colonial Office. Of these authorities I have had some experience. On all occasions I have found them most courteous and sympathetic, glad to listen to complaints, and anxious to redress them as far as possible. Have these authorities ever been informed that we as a body have complaints? I have reason to believe not. How, then, are they to redress grievances the existence of which they do not know? We grumble, we growl, we write anonymous

letters, and neglect taking the only steps we should take. Let the members of the staff have a little more courage, a little more "spunk," and not be afraid openly to approach the Secretary of State. If they do it respectfully and in the proper manner he will be the last to blame them. He does not want any body of his officers, least of all the medical body, to labour under a sense of being unjustly treated. And let there be an end to these anonymous letters with this one, to which I must, perforce, attach a nom-de-plume, lest I be accused of wishing to curry a favour.

DIARRHOEA MORTALITY AND ITS CAUSES.

DR. ARTHUR TODD-WHITE (Leytonstone) writes: I was greatly interested in Dr. Musgrave Craven's letter on this subject, for on September 15th, 1900, you published a suggestion of mine as to the cause of "summer diarrhoea." As this view is greatly supported by my experience this year, I venture to recall it; I maintain that summer diarrhoea is due not to heat, fruit, etc., decaying refuse, etc., but in nearly all cases to fall of temperature at night. During August the night temperatures were not much below the day, and hardly a patient came with diarrhoea. About ten days ago the evenings became very cold; in some places the temperature was down to freezing, whereas the day temperatures were higher than those in August. I have had cases of diarrhoea nearly every day this month until the last two days, Saturday and Sunday; this latter is accounted for by the fact that the last three nights here have been much the same in temperature as the days. The fact that the poor suffer from diarrhoea more than the rich supports my view: The children of the poor, and especially babies, are taken out (shopping, etc.) or allowed to go out in the late evening with little attempt to protect them against the lowered temperature. The children of the well-to-do, on the other hand, are more warmly clad, and are not much out-of-doors after dark. If decaying vegetable matter, etc., is the cause of diarrhoea, why does it attack an odd case here and there, and not all the people in contact with it? There must be some predisposing cause. Two of my patients distinctly attributed their diarrhoea to riding home on the top of electric trams after 7 p.m. without overcoats. The fruit or plum season is considered to be a cause of diarrhoea, but babies don't eat plums in any great quantity, and the plum season is also the season of the year when as a rule there is the greatest difference between day and night temperatures. Given a poor neighbourhood, I do not think it is the general experience that the cases of diarrhoea all come from the dirty part of it; the cases are pretty evenly distributed. The point of my observations is that if people could be persuaded to wrap themselves and their children up on cold evenings, even if it has been a hot day, the mortality from diarrhoea would probably be reduced to about one-third.

ACETONAEMIC CONDITIONS IN CHILDREN.

DR. THEO. MARTIN CUTHBERT (Newport, Salop) writes: In the discussion upon the acetonaemic conditions of children in your issue of September 28th, page 822, Dr. Sutherland is reported as saying that "he had obtained his best results, in cases of recurrent vomiting, by massage, rest, and overfeeding, a large quantity of *fat* being given in the diet." In his book on *The Treatment of Disease in Children* he mentions that "an attack of acid intoxication may arise in children (1) without any known cause, as in 'periodic vomiting,' 'recurrent vomiting' and 'cyclic vomiting,'" and later on he says: "The preventative treatment of many of these cases of acidosis presents great difficulty, because of our ignorance of the exciting cause. This applies more especially to cases of periodic vomiting. With a history of previous attacks, one may reasonably advise the avoidance of any excess of *fat* or proteids in the diet, etc." Surely this is a direct contradiction. If I have misunderstood Dr. Sutherland, I shall gladly apologize; if not, I shall be extremely obliged to Dr. Sutherland if he will help me out of my dilemma.

THE EARLY NOTIFICATION OF BIRTHS ACT.

TOTTENHAM writes: With regard to the controversy that has arisen over the Early Notification of Births Act, may I be allowed to compare the medical with the legal profession? It is a well-known fact that between doctor and patient and solicitor and client there exists a sacred secrecy. Now doctors are to notify births and the professional secrecy is invaded by law. Some time ago a patient of mine sued a public company for damages for injury sustained from a defect in their property. He was given damages and expenses—to include my fees, value £2 3s. 6d.—without the case going into court. I wrote to his solicitor when sending a statement of the injuries asking him to see that my fees were paid when the case was settled, as his client had gone away leaving no address, and received a reply to the effect that he would attend to my request. After waiting some months I wrote again and asked whether or not the case had been settled, but received no reply. A second letter was treated similarly in spite of the fact that I enclosed a stamp for reply. I wrote again and asked why no notice had been taken of my letters. This time I received a reply stating that the case had been settled, but that I should have to look to my patient for my fees. My patient had moved away and I have heard no more of him. I put the matter into the hands of a firm of solicitors and they referred it to the Incorporated Law Society. My claim against my patient's solicitor, who, after promising to act in my interests, neglected to do so, was investigated, but I was informed that the society could do nothing unless both parties agreed to their ruling, which, naturally, the solicitor refused to do. That solicitor might very easily have informed me that the case had been settled and so have given me a chance of getting my fees. He did not because, I presume, he would have been infringing the secrecy between solicitor and client, although he was asked to see my fees paid. Why this difference in the two professions? The answer is: Solicitors make their laws and have their own interests only at heart. The medical profession is very poorly represented in Parliament and the only object of the public (including Parliament) is to get as much out of the doctors as they can with as little remuneration as possible. The fixing of a minimum fee in each district and the abolition or stricter supervision of out-patient departments in hospitals are the chief remedies for the present miserable financial and social status of the doctors.

FINGER PRINTS AS SUBSTITUTES FOR SIGNATURES.

THE finger-print method of identification has, we learn from the *Medical Record*, been extended to commercial uses by the Postal Savings Bank of the Philippines at Manila. This bank has recently issued a series of stamp deposit cards on which are spaces for stamps of different values to be affixed. When the depositor has stamps to the value of one peso on the card it is exchanged at the bank for a deposit book showing the amount to his credit. Opposite the lines for the owner's signature and address is a square ruled off for the reception of his thumb print, so that, even if illiterate, depositors may readily be identified.

THE MARCH OF EDUCATION.

DR. DOUGLAS MACDONOGH (London, N.) writes: The following instances of the advance of education, medical and otherwise, under the Board schools showeth thus: A woman, a few days ago, told me her father "walked the hospitals," but he never got his "*plumage*." I concluded, therefore, he could not have been plucked, but what became of him I did not inquire. Personally I think it sounds rather better than diploma, and, perhaps, quite as expressive and appropriate. Another young woman, a few days ago, asked me if oil of *Jupiter* would be good for her back. Still another told me her boy had the *intermediate* fever, and, later on, the harmonium on the chest, and after that she said he looked like a floored rabbit, which I was not surprised at, the harmonium alone being quite sufficient to floor any one without anything intermediate whatever. A man yesterday told me he had sciatica very badly in his leg, but now it had gone up his spine, over his shoulder, and into his arm.

THE DOCTOR AS BABY DEALER.

GEORGE MACDONALD once asked in touching verse:

Where did you come from, baby dear?

The following dialogue, which we take from the *St. Louis Medical Review*, supplies an answer somewhat different from that of the poet: Boy: "Please I want the doctor to come and see mother at once." Doctor's servant: "Doctor's out. Where do you come from?" Boy: "What! Don't you know me? Why, we deal with you; we had a baby from here last week."

A TOPOGRAPHICAL PROBLEM.

THE following is taken from an American journal: "Where was he struck by the automobile?" asked the coroner. "At the junction of the dorsal and cervical vertebrae," answered the surgeon. "Will you please point that out on the map?" asked the coroner, indicating one that hung on the wall.

A NEW TELEOLOGICAL THEORY.

A YOUNG Iowa doctor is credited with the interesting discovery that the ankle is placed between the foot and the knee in order to keep the calf away from the corn.

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The Bradshaw Lecture

ON

THE PLEURAE: PLEURAL EFFUSION AND ITS TREATMENT.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, NOVEMBER 5TH, 1907.

BY

SIR JAMES BARR, M.D., LL.D., F.R.C.P., F.R.S.E.

SENIOR PHYSICIAN, LIVERPOOL ROYAL INFIRMARY; VISITING PHYSICIAN, HAYDOCK LODGE AND TUEBROOK ASYLUMS.

MR. PRESIDENT AND GENTLEMEN,—We have met to-day to do honour to the memory of a distinguished member of this College, a memory which has been thus perpetuated by the foundation of this lectureship. Until recently Dr. William Wood Bradshaw was nothing more to me than a name, and even now I know very little more of his personality than what I have gleaned from some old medical directories, and from the first Bradshawe lecture, delivered by the late Dr. George Vivian Poore, August 18th, 1881. I might, therefore, be allowed to suggest to the members of the Censors' Board, or to some of the historians of the College, that they might usefully while away a little of their spare time in writing historical and fairly laudatory sketches of the benefactors of the College. This might encourage others to hand down their names to posterity accompanied by some substantial sums of money.

Whatever may happen in the future, it is to you, Sir, that I owe my selection, and to you I tender my best thanks for the honour which has been conferred on me, and for this opportunity of discussing a medical subject before such a distinguished audience.

THE PHYSICS OF THE PLEURA.

I have chosen the pleura as my text for this lecture, and in doing so I am fully cognizant of the original work which you have done and the brilliant lustre which you have shed, not only on the pleura, but also on all the diseases of the chest. The somewhat abstruse questions connected with the physics of the chest you have made clear, and your *schema* of the mechanism of the respiration and the circulation in the chest is the best with which I am acquainted.

Diseases of the pleurae, and pleural effusion, have engaged my attention for years, and I think I may fairly claim to have taken some part in the recent advancement in their treatment. It would be absolutely impossible to do adequate justice to such an important theme in the course of one lecture, so I shall content myself with some practical points which I hope will give you something to think about. Perhaps I should first consider the significance which I attach to the word "practical," as different values are certainly associated with it, and the Britisher is especially apt to estimate its importance by the pecuniary results. Personally, I think every problem worthy of our attention should be probed to the bottom, and in my experience the so-called practical men are often the greatest bunglers, while the theoretical physician is the best practitioner; I am therefore anxious to link myself with the latter however much I may weary you with details, and no matter how unnecessary or impractical these details may be considered.

As you yourself, Sir, have rightly said,[1] "It would be impossible truly to comprehend the manifold incidents and conditions of asthma, emphysema, pleuritic effusion, and pneumothorax without a working knowledge of those statical and dynamical conditions of respiration in health," and therefore I need offer no apology for following such a lead. I must again quote from your expressive language:[2]

> When we regard the position and connexions of the pleura, its extensive endothelial surface, the conditions of negative pressure in which that extended surface is ever maintained, its richness in lymphatics (indeed the pleural cavities have, with other sacs of the kind, been regarded as lymphatic spaces), we cannot wonder that it should frequently become the seat of disease, nor that it should be one of the chosen sites for the manifestation of lesions from blood contamination. Few are the autopsies after adult age in which one fails to find some imperfections in the pleura, few are the cases of septic or pyaemic poisoning in which this membrane is not actively involved.

In addition to its rich supply of lymphatics, the pleura is a fairly blood-vascular membrane, which becomes very evident during an attack of pleuritis. The blood vessels are distributed in the subserous layers. The arteries belong to the systemic system, and are innervated by the sympathetic nerves. The pleura pulmonalis is supplied by the bronchial arteries, and the pleura parietalis receives its supply from the internal mammary and the intercostal arteries. The return current is carried away by the azygos veins. The valves in these veins are very imperfect, and hence when you get high venous pressure in the right auricle and venae cavae, such as arises in tricuspid stenosis, the pressure is transmitted back to the venous radicles in the pleura, and you are apt to get pleural effusion; this is especially likely to occur if at the same time there be a fall in the arterial pressure. The innervation renders the vessels very susceptible to the influence of adrenalin, and of course you are all aware of the use which I have made of this drug in the treatment of serous effusions.

In health there is a slight negative pressure in the pleura owing to the elasticity of the lungs, which even in expiration are in a state of elastic tension and therefore exert traction on the thoracic walls, and, as you have pointed out, there is a tendency for the thoracic walls to recoil in the opposite direction. I propose to enter rather fully into this subject, as it is in my opinion of much more importance in the treatment of pleurisy than a good many of the drugs in the *Pharmacopoeia*. The following is copied from Starling's article in Schäfer's *Physiology*:

> We have already seen that, even in conditions of expiration, the lungs are still in a stretched condition, and therefore exert a pull on the thoracic walls, until they are allowed to collapse by puncture of the wall. The amount of this elastic force has been measured by connecting a mercurial manometer with the trachea in the dead body, and then puncturing the thorax. Measured in this way it amounts to between 2 and 5 mm. Hg. According to Donders, however, this is less than the actual pressure in the living body, owing to a loss of elasticity by the lungs. Donders calculated the elastic pull of the lungs in the expiratory condition as about 7.5 mm. Hg. After an ordinary inspiration this is increased to 9 mm., and after the deepest possible inspiration to about 30 mm. It is evident that these figures also represent the negative pressure in the thoracic cavity under the same conditions.
>
> During ordinary respiratory movements there are slight changes of pressure in the alveoli and tracheal air. In inspiration the pressure in the trachea is from −2 to −3 mm. Hg, in expiration about +2 mm. Hg. By connecting the closed trachea or air passages with a manometer we may measure the total possible force exerted by the respiratory muscles in drawing air in or expelling air from the lungs. These pressures amount to −30 to −74 mm. Hg in inspiration, and to from about +62 to +100 mm. Hg in expiration (Donders).

This is all very well as far as it goes, but, in my opinion, there are many little refinements necessary when making such observations in the human being. A good many of the recorded pressures would depend on the amount of obstruction to the inflow and outflow of air through the tube in the trachea. The method which I adopt can be practised by any one on himself without having a tube tied in his trachea. What is required is a little intelligent practice, so as to convert the mouth, the nares, and the intrapulmonary cavity into one aërial space having as nearly as possible the same pressure throughout. When taking the pressure in the cavity during oral breathing the mouth is open and the shut nares connected with a manometer. When the pressure is taken during nasal breathing, one or both nostrils are open, and the tube of the manometer lies in the shut mouth. In the observations it is absolutely essential that all respiratory movements be performed by the thorax alone, and that the mouth and nares be held in absolute repose. Any sucking or other movement by the mouth or nares destroys the uniformity of the cavity; of course, there is a second line of obstruction at the glottis, and the variations in pressure must be greater beyond the obstruction than in the mouth and nares, but this obstacle cannot readily be removed in the human subject. I give you the following observations made on myself, because I can vouch for their accuracy, and

I think my lungs are still fairly elastic. I know many who would give a better record, and many who would give a worse. These, however, will suffice for the object I have in view. The lower pressures have been made with a water manometer, and the higher with a mercurial; as mercury is 13.6 times heavier than water, it is easy to convert the readings into water or mercury as you prefer.

Millimetres of Water.

1. Quiet oral breathing: insp. − 5 to − 8; exp. + 3 to + 5.
2. Deep oral breathing: insp − 24 to − 34; exp. + 20 to + 30.
3. Quiet nasal breathing, 2 nostrils: insp. − 10 to − 16; exp. + 6 to + 10.
4. Quiet nasal breathing, 1 nostril: insp. − 16 to − 22; exp. + 12 to + 16
5. Deep nasal breathing, 2 nostrils: insp. − 40 to − 60; exp. + 30 to + 40.
6. Deep nasal breathing, 1 nostril: insp. − 180 to − 200; exp. + 160 to + 180.

Müller's Experiment. — Expanding the chest after deep expiration with the mouth and nostrils closed, − 80 mm. of mercury.

Valsalva's Experiment. — Forcible expiration with the mouth and nostrils closed after deep inspiration, + 100 mm. of mercury. 1

If you follow the teaching of most textbooks which dea with this subject you may infer that the elasticity of the lungs was a constant dragging force trying to separate the two layers of the pleura, and with such a constant force in action of even 6 mm. to 9 mm. of mercury one might naturally expect to find some evidence of its existence. As a matter of fact there is no traction but perfect equilibrium, as the elasticity of the lungs is counterbalanced by the intrapleural tension, which is equal in force and opposite in direction—the former is positive and the latter negative. The elasticity of the lungs tends to separate the pleural surfaces, and the intrapleural tension, which depends on the elasticity, holds them together. When the lungs are stretched in inspiration the elasticity is increased, and so also is the intrapleural tension by an equal amount.

In the maintenance of this intrapleural negative tension there is a factor in the elastic recoil of the chest walls which has been omitted or not clearly appreciated by physiologists, but which you, Sir, have plainly shown to exist, so[3]

that in quiet inspiration there is no inertia or elastic resistance of the chest walls to be overcome, but that on the contrary the thoracic elasticity is a reserve force of appreciable power constantly tending to enlarge the thorax, and therefore acting in favour of inspiration.

Moreover, owing to the comparative rigidity of the chest walls and the tension of the diaphragm, the external surface of the pleura is protected from the atmospheric pressure—it is like a membrane lying on the inner surface of a metal ball—and so the two surfaces of the pleura are pressed together, and both layers are pressed against the internal surface of the thoracic walls by the atmospheric pressure within the lungs.

The elasticity of the lungs and the elastic tension or recoil of the chest wall maintain a negative pressure within the pleura, or an intrapleural tension, equal in amount and opposite in sign or direction to that of the elasticity of the lungs, so long as there is no fluid in the pleura sufficient to overcome the elasticity, or as long as the pressure within the lungs, minus their elasticity, does not exceed the pressure of the atmosphere.

Let us take Donders' figures of 7.5 mm. of mercury or 102 mm. of water as equivalent to the elastic pull of the lungs during the expiratory period, therefore it would require a fluid pressure all round the lung equivalent to 102 mm. of water, or a depth in the sac equal to this all-round pressure, in order to abolish the elastic pull of the lung. Any further collapse of the lung would be caused by an increase in the fluid without any positive pressure in the pleura except that of the liquid. When in pleural effusion the intrapleural tension becomes positive—that is, higher than the atmosphere—the lung must be completely collapsed. If the intrapulmonary pressure exceeds that of the atmosphere by 102 mm. of water (a condition which exists in my chest during expiration through one nostril), then the intrapleural negative tension is abolished, and any further rise in the intrapulmonary pressure would keep the surfaces closely glued together, so that the external layer of the pleura might be laid freely open without any risk of air entering the sac. We have seen that great intrapulmonary pressure only occurs when there is some obstruction to forcible expiration such as using only one nostril, or in Valsalva's experiment. It therefore follows that the best way to expand a collapsed lung is to increase the intrapulmonary pressure until you have restored the elasticity of the lung, and then increase the intrapleural negative tension.

Owing to these marvellous provisions of Nature the two lubricated pleural surfaces can move freely over one another, but any force which separates them must be greater than the atmospheric pressure in the lungs; during inspiration this is less than the atmosphere, and during expiration rather more. Moreover, the warming of the air in the lungs from 57° to 98° F. would make it expand about one-twelfth of its bulk, and this would increase the pressure in the alveoli. It thus takes at least an atmosphere (about 760 mm. of mercury) to separate the two pleural surfaces, and when the surfaces are separated by fluid it must have been secreted at a greater pressure than the atmosphere. Thus any traction from the elasticity of the lungs can have no effect in separating the two pleural surfaces, but any effect is transferred to the walls of the thorax, seeing that there is often a difference of pressure on the two sides of the thorax. In the intact chest you never could lower the intrapulmonary pressure sufficiently to separate the two pleural surfaces, but in Müller's experiment you can lower the intrapulmonary pressure sufficiently to make its dragging effect readily felt on the walls of the thorax.

If you attach the smooth surface of a worn sixpence with a little vaseline to the bottom of a metal piston of a syringe the sixpence can be easily moved about over the flat surface of the piston, but even when the nozzle is down and the sixpence only suspended by the lubricant (the object of which is to get rid of the air between the piston and the sixpence), you can draw the piston up to the top of the syringe with the nozzle blocked, and thus make a large, though imperfect, vacuum without detaching the sixpence. You can thus see that the elasticity of the lungs is Nature's method for keeping the two lubricated surfaces close together and enabling them to move freely on one another, and not for separating them, as is often supposed.

Sir William Macewen, F.R.S., in his admirable Cavendish lecture on some points in the surgery of the lung,[4] says:

Experience shows that the lung is maintained in full expansion by the molecular cohesion existing between the two serous surfaces of the pleura, and the capillary attraction exerted by a thin layer of serous fluid existing between the two moist membranes. Although this molecular force may not be considerable at any given point in the pleura, yet, when it is remembered that it is distributed over the entire surface of the periphery of the lungs, its cumulative effect is very great and amply sufficient for the purpose. . . . Molecular cohesion is usually illustrated by the phenomena shown when two sheets of bright polished plate glass are brought into intimate contact; they cohere, and the truer the surfaces the more perfect the cohesion. Not only do they hold one another together against the action of gravity, but in addition they sustain a considerable weight. This must be attributed to a reciprocal action between the two surfaces, and can have nothing to do with atmospheric pressure, as the experiment succeeds in a vacuum. When, however, the surfaces of the glass are moistened and they are pressed together the cohesion becomes more perfect, and the resistance to separation much greater. If, instead of using water, the surfaces were covered with some fluid whose surface tension was better adapted for the purpose, the cohesion would become still greater.

In the first place, I should like to add my meed of praise to this excellent lecture. It is the best paper on the subject I have ever read. His surgery is excellent, and, whatever be the forces at work, he recognizes the necessity of keeping the two pleural surfaces in close apposition. Where he sticks to facts there is no ground for complaint, but when he wanders from the region of fact into that of theory we must not allow even this great authority to stand between us and the truth.

He has got a very faint conception of what molecular cohesion really means, and his illustrations have nothing whatever to do with molecular cohesion, but are merely examples of surface tension and atmospheric pressure. The first essential for molecular cohesion is that the molecules must be in contact, and it is absolutely impossible for such contact to take place between two surfaces which are separated by a thin layer of fluid. A layer of less than a thousandth part of an inch in thickness would

be quite sufficient to prevent molecular cohesion. Chemists and physicists may tell us that molecules are free to move about among one another, but in solid bodies they do not move very far, and contact is essential for cohesion. In the case of the pleura the surfaces glide over one another very easily, and the only difficulty is in the separation of the surfaces. If there were molecular cohesion all movement would be prevented, and the only thing approaching this condition is what Sir William Macewen calls compressive adhesion.

Professor Donnan tells me that the surfaces of two pieces of steel have been cut so true that when they were brought into perfect apposition a much greater force than would be accounted for by atmospheric pressure was required to separate them. This is molecular cohesion; nothing like it occurs between any surfaces in the body. If you had molecular cohesion over such a large surface as the hip-joint, the junction would be so perfect that it would be much easier to smash the shaft than rotate the head of the bone the hundredth part of an inch.

Edward Weber reckoned the atmospheric pressure on the hip-joint at 20 kilos, about 44 lb., but I think it must be rather more, as the average surface must be at least 4 sq. in., which would give 60 lb. However, a pressure of 40 lb. to 60 lb. would readily explain all the cohesion phenomena of the joint mentioned by Sir William Macewen.

It is quite conceivable that you might get molecular cohesion "when two sheets of bright plate glass are brought into intimate contact," and in this case they would virtually become one sheet. It is, however, highly improbable that such necessarily true surfaces could be found in plate glass; and, moreover, Sir W. Macewen says that when "the surfaces of the glass are moistened and they are pressed together the cohesion becomes more perfect, and the resistance to separation much greater." This at once disposes of the idea of molecular cohesion, and we have now to consider what holds the surfaces together. Sir William Macewen says:

> Not only do they hold one another together against the action of gravity, but in addition they sustain a considerable weight. This must be attributed to a reciprocal action between the two surfaces, and can have nothing to do with atmospheric pressure, as the experiment succeeds in a vacuum.

Here, I am afraid, his experiment is at fault. It is not an easy matter to produce a vacuum, even with a Sprengel pump. The pressure of the atmosphere is roughly 15 lb. to the square inch; supposing you reduce the pressure by 14 lb., there will still be 1 lb. left to the square inch, and it is not often that you will get experimentally a more perfect vacuum than that. Under these conditions you have a pressure of 1 lb. to the square inch plus the slight force of surface tension holding the lower plate close to the upper, and the influence of gravity dragging them apart. It is, therefore, simply a question of mathematics. If the weight of the lower plate plus the attached weight exceed 1 lb. to the square inch, the plates will separate, otherwise they will remain in contact.

I have made a good many experiments on surface tension, and on the effects of atmospheric pressure, but I shall only trouble you with a few which bear on the subject which we are discussing. The surface tension of a serous effusion having a specific gravity of 1025 will support about 6 grains to the square inch. A transudate of a specific gravity of 1010 will support about 3 grains to the square inch, while the normal thin serous fluid of the pleural cavity may be an excellent lubricating material, but its surface tension will not support more than 2 grains to the square inch; therefore, as a force in holding the two pleural surfaces together, it is scarcely worth computing.

I have referred to the experiment of the sixpence attached with a little vaseline to the bottom of the metal piston of a syringe. The same event occurred when I substituted a ¼-oz. weight and ½-oz. weight; but when I used a 1-oz. and a 2-oz. weight each of them dropped off when the vacuum exceeded a certain degree. The cohesion does not continue when the influence of gravity exceeds the atmospheric pressure plus the surface tension in the partial vacuum. To further test the force of the atmospheric pressure in holding surfaces together, I used different metal weights, and finally took a 56 lb. weight, coated one of its rough surfaces with a layer of vaseline, and then laid on this a polished bookshelf. I then struck the bookshelf so as to drive out the excess of vaseline, and bring the two surfaces as closely together as possible. I steadily raised the bookshelf and the 56 lb. remained attached, and I thus carried it round the room. I next interposed a sheet of paper coated on both sides with vaseline between the weight and the bookshelf, and still the 56 lb. remained attached while it was thus carried about. In these experiments the two surfaces could be moved easily over one another. I do not suppose that any one will imagine that the surface tension of vaseline is capable of supporting 56 lb.; but to clear up any doubt in the matter I shall tell you of an experiment which, so far as I am aware, has never been carried out. Take a block of marble of 1,000 lb. weight, having a perfectly smooth polished surface of about 1 square foot in area; the under surface must be rough, and rest on a hard irregular surface, so that a column of air may be below the greater part of the under surface. On the smooth upper surface, spread about an ounce of vaseline; then apply a strong, rigid, perfectly-smooth metal plate of rather more than a square foot in size, strike the metal plate with a sledge hammer so as to bring the two surfaces into close apposition. Then slowly and steadily raise the metal plate with a pulley, and the block of marble will follow it. If anything will show the force of the atmospheric pressure this should. You may ask me how I know that this experiment will succeed. I know that the atmospheric pressure is about 15 lb. to the square inch, and if you only oppose that with a weight of 7 lb. to the square inch you leave a good margin for the success of the experiment.

In punctured wounds of the thorax the pleural surfaces are often not separated. The writer on intrapleural tension in Clifford Allbutt's *System of Medicine* says:

> Where the wound is a small one and only a puncture, though the lung be injured the air as a rule does not find access to the pleura, but crosses the pleura and reaches the subcutaneous tissue. The reason of this is very difficult to find, but of the fact there is no doubt.

I do not know if any of you have encountered a man who was making indiscriminate use of a knife. I have, and for a short time I got the worst of the conflict. If you should meet such an individual you can deal with him as you think best, but if you find him making a lunge for your chest I would strongly advise you to let your breath out before he does it for you. In this way the knife or dagger has another inch to travel before it reaches your chest, and you establish a positive pressure within your thorax which prevents the two pleural surfaces from separating. After the injury keep the wounded side as much as possible in a state of expiration, and do not on any account take a deep inspiration.

I know a medical man who opened both pleurae in a patient within a few days of each other for empyemata, and the patient recovered. I am afraid he did not know much about the elasticity of the lungs or he would not have shown such temerity. He thinks that the pleural surfaces were extensively adherent, and thus collapse was prevented. The increased intrapulmonary pressure during expiration tends to expand the collapsed lung and to obliterate the actual cavity.

Mr. Arthur Edmunds has recorded[5] some very interesting observations on a case of pneumothorax in a child when the chest was laid freely open. He also made many illustrative experiments on cats. In the child and also in the cats the respiration became triphasic.

> The first phase was an inspiratory effort; this filled the lung on the sound side with air; the lung on the affected side collapsed. The second phase was an expiratory effort, and during this time the affected lung was seen to fill with air, and to struggle in its effort to expand against the remaining bands of adhesions. The air which filled this lung was forced over from the healthy lung, as it was unable to escape to the exterior owing to the closure of the glottis. In the third phase the glottis opened, the expiratory effort continued, and air passed to the exterior from both lungs. The passage from the second to the third phase was marked by a distinct grunt. The three phases may be briefly termed inspiration, distribution, expiration.

When the air enters the pleural cavity from the lung the exit is usually not so free as the inlet, so the intrapleural tension, both in inspiration and expiration, becomes positive, and so the lung collapses, and does not get a chance of expanding again unless the perforation heal and the air get absorbed. After withdrawing serous fluid from the pleura I frequently produce an artificial

pneumothorax, but I am careful not to produce any positive intrapleural pressure.

In cases of pleural effusion of course the pressure is as the depth of the liquid, but when the lung is free to float the intrapleural pressure does not become positive until the elasticity of the lung is overcome. The heart becomes somewhat displaced, as you, Sir, have pointed out, even before the pressure becomes positive, being drawn over by the greater negative pressure in the other side of the chest. Then with the further increase in the liquid the pressure becomes more and more positive and displaces the other organs. With the substitution of the fluid air for the liquid effusion you can more easily regulate the pressure. In empyema the pressure is frequently higher than in simple effusions, and when the tension is very high you may have the pulsations of the heart communicated to the liquid, giving rise to a pulsating empyema.

We have seen how the lung is kept expanded by the negative tension within the pleura, and the greater and more active the inspiration the greater the negative pressure, but not unfrequently, especially in many wasting diseases where the demand for oxygen is not great, this negative pressure may fall to a very low ebb or may disappear, so that partial atelectasis of one or both lungs, or almost complete atelectasis of one lung is not at all uncommon. This is especially apt to occur in young flat-chested individuals with pliant chest walls. Perhaps I have seen a greater number of these cases than has fallen to the lot of most men, for the simple reason that for many years I have been on the look-out for them. These cases are frequently overlooked because there is usually a negation of subjective chest symptoms, and so the lung is often allowed to remain so long collapsed that it never completely expands, and afterwards the deficient expansion of one side of the chest is supposed to be the result of some old pleural effusion of which the patient has no recollection. When these cases are discovered in the early stages they are usually mistaken for pleural effusion—an error which is apt to remain uncorrected if an exploring needle be not inserted into the chest. I show you the skiagraphs of a couple of cases which were tapped in several places with a negative result, and afterwards such diagnosis as sarcoma of the lung, unresolved pneumonia, etc., arrived at. My opinion that the conditions were simply due to atelectasis which could be removed by respiratory gymnastics was at first received with credulity, but the subsequent improvement in the cases and the nonfulfilment of the grave prognostications proved the correctness of my views. I have seen this condition occur in typhoid fever, infective endocarditis, pyaemia, etc. In one severe case of typhoid fever an energetic consultant came to the conclusion that a mistake had been committed, and that he had to deal with a case of empyema, but he had to acknowledge his own mistake when he found the pleura quite empty. I had subsequently the opportunity of explaining the correct nature of the condition, which in this instance was cured by making the patient lie on his other side. In the following case I made a mistake myself:

My colleague, Mr. R. A. Bickersteth, had removed some tuberculous glands from the right iliac fossa in a youth who was under the care of Dr. Steeves. A few days after the operation the boy got an oscillating temperature, and although there was no respiratory distress it was found that the right side of the chest was quite dull. I was asked to see the patient with those gentlemen, found the right side of the chest absolutely dull from base to apex, absence of respiratory murmur, and no vocal phenomena. I rapidly came to the conclusion that the right pleura was full of fluid, which I thought should be drawn off, although there was no urgent necessity for interference. The following day Mr. Bickersteth made several punctures, but found nothing. I was again asked to see the boy, and then arrived at the correct solution of the problem. The youth got perfectly well under a course of respiratory gymnastics.

In exhausting diseases, when the patient has lain for a long time in one position, a partial atelectasis is apt to take place, which is often mistaken for hypostatic congestion of the lung. Under fairly similar conditions a true congestion of the lung frequently takes place, but the two states are easily differentiated. In advanced cases of mitral stenosis collapse of numerous lobules in the posterior surface of both lungs is a matter of frequent occurrence. In these cases the oxidizing surface is greater than that demanded by the small quantity of blood passing through the lungs. Such cases usually pass on to more or less permanent collapse with brown induration of the lungs. Apart from cases associated with mitral stenosis, atelectasis, partial or complete, when early recognized, is very amenable to treatment; but when long neglected more or less permanent damage to the lung results, just as occurs when the lung has been long collapsed by a pleural effusion.

With care atelectasis is easily differentiated from pleural effusion even when the dull percussion is absolute and the respiratory and vocal phenomena absent. In atelectasis of one lung the affected side is smaller than the other, the ribs are closer together and more sloping, the costal angle more acute, the diaphragm raised, the dull percussion barely reaches the middle line in front, while the sound lung passes beyond the mesial line, the heart is either not displaced or slightly pushed over by the sound lung. Forcible rubbing of the affected side, acting through the lung reflex of Albert Abrams, causes some expansion of the lung and clears up the percussion note. This is also accomplished by forcible expiration, or better by Valsalva's method. Every one who has attended a case of parturition knows how a vigorous child expands its lungs, and in the treatment of atelectasis in the adult you cannot do better than imitate Nature, minus the howl.

Etiology of Pleurisy.

The question of the etiology of each particular case of pleurisy should be settled as far as possible, as it is a most important point both for treatment and prognosis. I suppose every case is due to some micro-organisms or their toxins; even those cases following injury or cold have only thus been rendered vulnerable. This also applies to those cases associated with some chronic illness, such as granular kidney, or those due to extension from the pericardium or peritoneum. The vast majority of cases are tuberculous, but a considerable number are rheumatic, or due to pneumococci, streptococci, staphylococci, the *Bacillus coli*, typhoid bacilli, and the influenza bacilli, etc. Many of these organisms are readily found in the serous effusion, but not so with the tubercle bacillus. It is often difficult in any given case to decide whether it be tuberculous or not. If you find any evidence of tuberculous disease in the lungs, or tubercle bacilli in the sputum, you may consider the question settled. Failing this direct evidence you should add a little citrate of sodium to the fluid withdrawn to prevent coagulation, then centrifuge, and examine the sediment for leucocytes, tubercle bacilli, and other micro-organisms. If the case be tuberculous the cells will be mostly lymphocytes, whereas if the pleuritis be due to other micro-organisms, the polymorphonuclear cells will predominate. Even in undoubted tuberculous cases you generally fail to find the tubercle bacilli, and the injection of the fluid into the guinea-pig is a very slow and often impracticable test. A blood count often assists, as in tuberculous pleurisy there is no leucocytosis, whereas in that associated with other processes there usually is. A haemorrhagic effusion is usually associated with tuberculous or malignant disease. A specific gravity of 1018 is generally put down as the dividing line between a transudate and an exudate, but it does not always hold good, as in some undoubtedly inflammatory cases I have found the specific gravity of the fluid as low as 1006.

Cases of dry pleurisy are frequently tuberculous, though not necessarily so. In such cases there is a small effusion of plastic lymph, which is gelatinous in appearance and consistence, and contains a large number of cells with a relatively small amount of fibrin. This effusion quickly organizes, and joins the two pleural surfaces together. In tuberculous cases accompanied by effusion there is not much fibrin, and even the cellular elements may be small in amount. In pneumococcal pleurisy there is usually a large amount of fibrin whether there be much fluid or not. Those cases associated with streptococci, staphylococci, and *Bacillus coli* are frequently purulent or sero purulent, and contain a large number of cells, and in the case of the *Bacillus coli* the fluid is very offensive. In cases of transudation the liquid contains a few endothelial cells and not much fibrin, and the specific gravity is below 1018. There are many cases, such as those arising in chronic Bright's disease, when the effused fluid is a mixture of a transudate and an exudate.

I am not going to weary you with symptomatology or diagnosis—as I shall take it for granted that you know as

much about those subjects as I do—so we will now pass on to treatment.

Treatment.

Cases of dry pleurisy require very little treatment except some counter-irritation, a diaphoretic, a purgative, and perhaps a sedative to relieve pain, or some strapping of the chest to limit the amount of movement.

I wish to take this opportunity of emphasizing the principles which underlie my methods of dealing with effusions into the pleural cavities. At the present time this is the more necessary, as I find that I have got a few imitators, who have never seen me treat a case, but who think the whole method consists in withdrawing more or less of the effused fluid and injecting a little adrenalin solution. I am not surprised when I hear that they do not attain the success which I may say almost invariably follows my efforts.

In the treatment of pleural effusion the question often arises, When should you withdraw serum? This is rather an important question, and one which is more easily asked than answered. You know that if the effusion be not very great it often gets absorbed after the febrile stage passes off, with or without any special medication. Many devices have been advocated to hasten the absorption, with more or less success. Being naturally of a conservative frame of mind, I do not care for meddlesome interference with natural processes, consequently I sometimes give Nature a longer chance than is perhaps advisable. The effusion is a natural process, which, if it continue till after the inflammation has subsided, lessens the risk of pleuritic adhesions; it also keeps the collapsed lung quiet, which is very desirable if there be any active tuberculosis in the lung. A very large proportion of cases of pleurisy are tuberculous, and the early withdrawal of fluid causes vascular turgescence of the lung, often hastens the dissemination of the tubercle bacilli, and kills the patient. Before I began the substitution of one fluid for another by the introduction of air into the pleural cavity, I was much more chary of early tapping than I am at present. I can now remove the whole of the effusion, even in tuberculous cases, at an early stage with perfect impunity. A considerable number of deaths have followed the complete withdrawal of effusion in elderly persons with rigid chest walls. The danger in such cases arises from establishing too great a negative pressure which leads to hyperaemia and oedema of both lungs; this can be obviated by the introduction of air. I now recommend the complete withdrawal of the effusion in all cases, but before any great negative pressure is established, and before the patient feels any discomfort, I stop the siphon and introduce about an equal quantity of air to the amount of fluid which I have withdrawn. I then re-establish the siphon and complete the withdrawal of the effusion. When all the liquid is withdrawn I inject 4 c.cm. of adrenalin solution (1 in 1,000) diluted with 8 or 10 c.cm. of sterile normal saline; and, if I think it necessary, I introduce more sterile air, so as to make the total amount equal to half or three-fourths of the bulk of the fluid withdrawn; the larger quantity of air is introduced in tuberculous cases. By this method the patient suffers no discomfort except from the slight thrust of the trocar. I prefer the siphon to the aspirator because you can readily regulate the force of the suction, and as your tube only reaches to a receptacle on the floor practically your negative pressure never exceeds 1 lb. to the square inch; this force is greatly exceeded by the aspirator, and the greater the negative pressure the greater the risk of secondary hyperaemia or oedema. It is an advantage to introduce a manometer in the air tube as you can thus avoid producing any positive pressure in the pleura. Of course all aseptic precautions are taken. (I now exhibit my apparatus for this treatment.*)

The adrenalin solution is introduced to contract the blood vessels and lessen the secretion. According to Schäfer, Elliott, Brodie and Dixon, adrenalin only acts on unstriped muscular fibre which is innervated by the sympathetic; the pleural vessels belong to the systemic system and are thus innervated, but its effect is not very prolonged, consequently you cannot expect it to lessen the secretion for any great length of time if there be a great negative pressure in the pleura. Although I had very good success from its use before I commenced the introduction of air, I soon recognized the limits of its usefulness. When you remove four or five pints of serous fluid from the pleura there is a potential or actual cavity left which cannot be filled by a drachm of any fluid. Such a cavity cannot exist in the human body with a surrounding atmospheric pressure of 15 lb. to the square inch. It is filled by: (*a*) The carbonic acid gas which escapes from the serous fluid; (*b*) by the more or less expansion of the collapsed lung; (*c*) by the return of the mediastinal contents which were pushed or drawn to one side, and the further expansion of the other lung; (*d*) by increased quantity of blood in the chest; (*e*) by elevation of the diaphragm; and (*f*) by falling in of the chest wall. All these events may not suffice to fill the cavity if the amount of fluid withdrawn have been very great, and the lung be so collapsed and bound down that it cannot expand. In this case the negative pressure is very great, and under such circumstances it would be absurd to expect adrenalin or anything else to permanently check the secretion. When the use of adrenalin is supplemented by the introduction of air, the negative pressure is lessened or abolished, and the lung gradually expands as the air gets absorbed. By this combined method you can operate early in any case, even during the febrile stage, and under no circumstances should you allow the fluid to accumulate to such an extent as to completely collapse the lung; you should tap before the patient suffers any respiratory distress. By the removal of the effusion you often remove an enormous number of micro-organisms, and by the introduction of sterile air you substitute a light innocuous fluid for a heavy and deleterious one.

Dr. W. Ewart of London has recently been injecting adrenalin solution into the pleural fluid preparatory to drawing it off, and he has had good success in thus stimulating the absorption of the effused fluid.

I always like to treat the individual rather than his disease, consequently I try to avoid routine, and I make such modifications in treatment as will suit each individual case. When the pleurisy is practically cured you will find plenty of scope for ingenuity in trying to restore the function of the lung to its pristine vigour. I have no time to enter into the numerous respiratory exercises which I from time to time recommend, but there is one which each of you can try on himself, the marked effect of throwing one serratus muscle into and the other out of action. You can also study my observations on the conditions of intrapulmonary pressure in the different stages of respiration. The function of a physician used to consist in prescribing drugs and giving some directions about diet, but fortunately these days have passed for ever. I have not told you anything about drugs, though I am a firm believer in their efficacy when appropriately used, as I have not got any specifics for pleural effusion. There is one drug, common salt, which you should as far as possible eliminate from the diet, especially in cases of serofibrinous pleurisy, on account of its high osmotic equivalent. When you hear men telling you that they gave 10 minims of something or other three times a day, and the fluid disappeared as if by magic, you can envy such credulity, but it is impossible to admire it. Like a good many of my countrymen, I am rather critical, and have not sufficient faith where the action of drugs is concerned. If you say to an Irishman, "I hope the medicine has done you good," you will not infrequently get such a reply as: "Well, thank God, it has done me no harm, anyhow." That is about the value which I attach to drugs which are given to cause absorption of a serous effusion in the pleural cavity.

When there is a large quantity of effused fibrin, such as occurs in pneumococcal pleurisy, decalcifying agents such as lemons, citric acid, the citrates of ammonium, potassium, and sodium, may be used. However it will be well to reserve the use of these drugs until the acute stage of the accompanying pneumonia has passed, as the lime salts are exceedingly useful in that disease.

In order to hasten the solution and absorption of the effused fibrin I see no objection to the introduction of trypsin into the pleural cavity. I am engaged in investigations with reference to the limitation or prevention of pleural adhesions. With this object in view I am at present injecting into the pleural sac liquid paraffin, which has a lower specific gravity but a higher surface tension than the normal lubricating fluid. The results of my observations will be given at a later date.

* Manufactured by R. Sumner and Co., 5A, Lord Street, Liverpool.

I shall now give a short account of the history of the introduction of adrenalin and air into the pleural cavity. In August, 1902, I saw regularly, in consultation with Dr. Chisholm, Mr. F. T. Paul, and Mr. R. A. Bickersteth, a lady who was suffering from secondary cancerous deposits in the pleura with effusion. The fluid had to be withdrawn every four days, and it reaccumulated so quickly that she had scarcely a day free from distress in breathing between the aspirations, and I saw that this state of matters could not continue long. Necessity is the mother of invention, and I began to consider how to lessen this secretion. I came to the conclusion to try an injection into the pleural cavity of the suprarenal extract, and I fixed upon Parke, Davis and Co.'s adrenalin chloride, 1 in 1,000, as being a sterile preparation. I empirically fixed 1 drachm, or 4 c.cm., as the amount to be injected, and after the fifth aspiration this quantity was used. There was no further secretion, consequently no further tapping, and the old lady spent the remainder of her life in perfect comfort, as far as the chest was concerned. In her memory her husband contributed £12,000 to establish the Liverpool Cancer Research Fund.

Since this case I have injected 1 drachm of adrenalin solution into every pleura which I tapped, and in only two cases have I had to draw off the fluid a second time. Soon after I began this method—to which no one has laid a prior claim—I commenced in addition the introduction of sterilized air to replace the fluid which I had withdrawn. I was led to adopt this procedure by the distress frequently caused to the patient by any attempt to withdraw all the serum; by the usually rapid reaccumulation, especially when there was any negative pressure left in the pleura, or there was a large potential or actual cavity owing to the lung being so collapsed or bound down that it could not expand; by the great risk of collateral hyperaemia and oedema of one or both lungs, especially in those persons with rigid chest walls; and by the fact that in tuberculous cases there is apt to be a rapid dissemination of tubercle through the lung when the pleural pressure is removed. As four-fifths of the air is nitrogen, which is only slowly absorbed, this air pad tends to prevent or lessen pleural adhesions. Since I began the substitution of air for serum I have been able to withdraw the whole of the liquid with perfect impunity.

I exhibited my first and second apparatus for the introduction of adrenalin and air into serous cavities at the Liverpool Medical Institution on November 5th, 1903, and the following week there was a notice of my apparatus in the proceedings of the Medical Institution published in the weekly medical journals.

In the BRITISH MEDICAL JOURNAL of March 19th, 1904, I published a clinical lecture on the Treatment of Serous Effusions, in which I fully described my method and apparatus for treating effusions into all the serous cavities. At that time the idea of injecting sterilized air was quite original so far as I was concerned, and some of the leading members of the medical profession to whom I spoke on the subject had never heard of any such practice, but I afterwards found that some others, to whose writings I shall presently refer, had been in the field before me.

In the *Edinburgh Medical Journal* of November, 1886, Dr. Theobald A. Palm published an account of 3 cases in which he allowed air to be sucked into the pleural cavity after aspiration. One case recovered after one tapping, another after two, and the third case took an unfavourable course, and in the course of some months the patient died.

On April 24th, 1888, M. Potain communicated to the Academy of Medicine, Paris, a successful case of pyopneumothorax treated by the injection of sterilized air after the removal of the liquid. His object was to keep the lung compressed until the pleuro-pulmonary fistula had healed, and to prevent the reproduction of the liquid.

In Italy several papers appeared between 1888 and 1902 on the introduction of air into the pleural cavity by Drs. G. Lava, G. Cavallero, S. Riva-Rocci, and Professor Forlanini.

About or before 1900 Professor Ayerza and his pupil, Dr. Bungé of Buenos Aires, treated cases of acute and chronic tuberculous pleurisies by the abstraction of the liquid and the injection of oxygen gas. They used oxygen as a specific medication against the tubercle bacilli, but as oxygen is more readily absorbed than nitrogen, in no case did the pneumothorax last longer than fourteen days. Recently Professor Forlanini has advocated the treatment of phthisis by the repeated introduction of oxygen gas into the pleural cavity so as to maintain an artificial pneumothorax and thus rest the lung. About a century ago a somewhat similar treatment of phthisis was carried out in Liverpool by the late Dr. Carson and Mr. Robert Bickersteth. They produced pneumothorax by an external opening into the pleura, but they soon gave up the practice.

At the Société Médicale des Hôpitaux de Paris (May 23rd, 1902) MM. Vaquez et Quiserne reported two cases of chronic pleurisy successfully treated by aspirating the liquid and injecting in each case 3 or 4 litres of sterile air. One case had been previously aspirated twelve times, and the other five.

In the *Gazetta Medica Italiana*, March 3rd, 1904, there appeared a communication on thoracocentesis with the introduction of sterilized air after the method of Professor Forlanini, by Dr. Antonio Pisani. He records the case of a child of 9 years of age from whom he removed 1,600 c.cm. of fluid, which had probably been in the pleura for eleven weeks. During the operation he insufflated 1,000 c.cm. of air filtered through cotton-wool slightly impregnated with formaldehyde. At the end of the operation part of the air was removed by aspiration.

In the *Lancet*, November 10th, 1906, there is an editorial reference to a case reported at a meeting of the Société Médicale des Hôpitaux de Paris on October 12th, 1906, by M. Dufour and M. Foix. They successfully removed a large chronic pleural effusion and injected sterile air.

Dr. W. Ewart has recently allowed filtered air in a Woulfe's bottle to be sucked in by the chest. In my original apparatus I used a large Woulfe's bottle, but I drove in a measured quantity of filtered air by a falling column of sterile water of a few inches in height. This, in my opinion, was a perfect apparatus, but it was too cumbersome to carry about.

This systematic treatment of pleural effusion by the combined method of the complete withdrawal of the liquid, and the introduction into the pleural sac of adrenalin and sterile air,* which I may fairly claim to have originated, will, I hope, be more appreciated as it becomes better known. The adrenalin solution is better diluted with two or three times its bulk of normal saline solution.

EMPYEMA.

This is one of those numerous diseases which the surgeons have taken under their own special care, but they have done nothing to advance its treatment—I presume because physics seem to have formed no part of their education. In the case of a child with elastic chest walls you could not easily mismanage a case of empyema. A considerable number of cases get well in spite of treatment. When a surgeon has to deal with a purulent effusion in the chest, about the only idea which he can get into his head is free drainage, and forthwith out comes a piece of rib and in goes a large drainage tube; he expects it to suck up the liquid from the most to perhaps the least dependent part of the cavity, utterly reckless as to whether the collapsed lung ever expands again or not. Dr. Otto Grünbaum has devised a useful appliance for assisting the lung to expand in these mismanaged cases, but I do not know of any surgeon who has taken it up. Mr. Arthur Edmunds, to whose valuable work I have previously referred, insists on the anaesthesia being very light when operating on an empyema, so as not to abolish the pleuro-laryngeal reflex, and thus the vocal cords are enabled to play their part in maintaining the pressure within the lungs.

If I were a surgeon and had to deal with such a case I would use a local anaesthetic, such as eucaine; or, if thought necessary in any particular case, light general anaesthesia as recommended by Mr. Arthur Edmunds; I would make a free incision in a very dependent spot, about the eighth or ninth intercostal space, in a line with the lower angle of the scapula. If the ribs were close together it would be well to take out a long piece of one rib and then make a very free incision into the pleura. An assistant should firmly compress the side so as to drive the purulent matter out and allow as little air as

* I have in a few cases used oxygen, but as a rule I prefer air, because it is more slowly absorbed.

possible to enter the chest during the operation. A strip of gauze may be inserted in the wound to keep it open, but no tube should be introduced; I would then apply a large piece of sterile oiled silk over the wound to act as a valve, so as to allow the fluid to escape and no air to enter. Large aseptic dressings should be applied over the valve. The affected side may be well strapped to prevent movement. I would make the patient lie on or towards the affected side, so as to lessen movement and encourage drainage, prevent him taking any deep inspirations, and tell him to make deep nasal expirations, so as to expand the affected lung and drive the purulent fluid out of the pleural cavity. He should be instructed to inspire through the mouth and expire through the nose. I would also make him frequently practise the Valsalva method, or blow through a small tube. If the pus be very offensive or not draining well, the patient can be treated in a continuous bath and then no dressings will be required.

In these cases the pus is usually fairly liquid, is neutral, or may even be slightly acid in reaction, contains some peptone and a ferment which seems to have the power of idigesting fibrin, and thus the lung is not likely to be rreparably collapsed or bound down by adhesions; there is, therefore, a fair chance of success if the operation be adopted early, and after-treatment intelligently carried out.

The variety of micro-organisms in the pus should be ascertained, and an appropriate vaccine, after the method of Sir A. E. Wright, should be used. Even the stinking empyemata from the *Bacillus coli* often do very well. Tuberculous cases are the most troublesome, and usually when the fluid becomes purulent there is a mixed infection. Cases of pyopneumothorax are best treated by drawing off the fluid and filling the cavity with sterile air or oxygen. Where the empyema is loculated the surgeon may remove a piece of the rib and use a drainage tube if he choose; he cannot do much harm. Unfortunately, Estlander's operation is often necessary, partly owing to early mismanagement of the cases. There must be some effort made to place the treatment of this disease on a more scientific basis than that on which it at present stands.

I have spoken strongly about the surgeons because I feel strongly, and I am anxious that they should remove this blur from their escutcheon. The old wheeze about the physicians not handing the cases over soon enough is now played out. There is still, however, plenty of work for the physicians; prevention is better than cure, and I think in the future their work should lie more and more in that direction. Our aim should be to protect the individual from the ravages of disease and the onslaught of the surgeon, and make the very existence of that individual less and less of a necessity.

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CEREBRO-SPINAL MENINGITIS COMPLICATED BY PARTURITION.

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The following case of cerebro-spinal meningitis during pregnancy is interesting from more than one point of view—the age and condition of the patient; the sudden onset of cerebro-spinal meningitis when the patient was in labour (whilst at the same time she declared that she did not know what was the matter with her and would not admit she was pregnant); its rapid course, leaving no time for any very active treatment to be of any service; the look of the patient, the character of the petechial and herpetic eruptions, without head symptoms, and the persistent vomiting, which, being in this case associated with pregnancy, did not command the amount of attention that under other circumstances it would have received.

M. W., who was in a neighbouring town up till Christmas, 1906, then returned home to a street in a working-class locality of Belfast. She was aged 13 years and 9 months, her mother giving the age in evidence at the Coroner's Court as 14 years on May 23rd, 1907. She was admitted on March 5th, 1907, to the maternity department of the Ulster Hospital for Diseases of Women and Children as being in labour. She had always been a strong, healthy girl, well developed, and had never menstruated.

The history of the case as reported to me was that on March 5th, about 2 a.m., the patient was seized with violent pains in lower part of back and abdomen, accompanied with vomiting; the pains were paroxysmal, and she became so ill that a doctor was sent for about 4 a.m. He prescribed and gave some instructions to give her some relief, and later on returned, accompanied by another medical man; on consultation both agreed that the patient was in labour, but this she denied, protesting against anything of the kind. Her mother expressed her astonishment, as she never thought such a thing possible, owing to her age and appearance; the patient absolutely refused to give any information regarding her condition to any one.

The patient was admitted to the Ulster Hospital at noon, when the temperature was 101°, the pulse 100, full and bounding, strong uterine contractions occurred at intervals of about ten minutes; there was no vomiting, there was slight mucoid diarrhoea, the cheeks were slightly cyanosed; there was herpes about the nostrils and mouth but no rash at this time, the tongue was furred but moist, the pupils reacted normally; she had a wild, frightened appearance, was quite conscious, and complained of no pain in the head. The vagina was moist and dilatable, the os very slightly dilated, and the presentation vertex but very high up in the pelvis.

The patient remained in much the same condition until 2 p.m., when the pains became almost continuous, the breathing was very rapid and distressed, the cheeks and lips more deeply cyanosed, the pulse rapid and irregular. I was at this stage summoned by telephone to see the patient, who was reported as being in the maternity ward and in labour. Almost immediately I had a second message to say patient was in a state of collapse, and replied to give a hypodermic of strychnine. I went immediately, and found the patient in bed lying on her right side; the legs were flexed on the thighs and the thighs on the abdomen, and the forearm on the arm; she was conscious, pupils slightly dilated and equal, the face cyanosed, the breathing rapid and difficult, and the pulse quick and irregular; she was to all appearance in labour, was nervous and frightened-looking, but did everything she was asked.

I had her turned on the left side and made a vaginal examination; the passage had the feeling as if contracting on the finger, the rugae being well defined, the os, which was slightly dilated, admitting the tip of my finger with difficulty. I was able to make out the presentation a vertex, with the left hand on the abdomen I could feel the uterus hard and contracting. Her attitude and appearance did not harmonize in my opinion with the stage of labour, and I felt that there might be some lesion in the chest. On examining the chest I arrived at the opinion that there was well-marked congestion of both lungs; the heart was rapid and irregular, but I was unable to make out any valvular lesion. I was unable to procure a sample of urine. Neither the face nor extremities were oedematous. She was very sensitive to the touch (hyperaesthetic). The breasts were well developed, the secondary areola was well marked, and on pressure fluid exuded through nipples. The fetal heart sounds were heard very indistinctly, but I observed some dark spots over the lower part of the abdomen and thighs. I learned that these had developed since her admission to hospital; they were dark in colour, irregular in shape and size, some flat, others raised like a small blister, and on pressure the colour did not disappear; these, with her look and condition, suggested cerebro-spinal meningitis. She very quickly got worse, though still remaining perfectly conscious, complaining only of the uterine contractions and pain in the back; there was no pain in the head, but great pain and difficulty in swallowing, and heavy breathing. Death supervened about 3.50 p.m.

The patient's condition was so serious when I first saw her that I felt no obstetrical interference would prove of any service, or obviate a fatal result to either mother or child. Rapid dilatation of the os and removal of the fetus might have been attempted, but I felt that had I

endeavoured to do anything of the kind death would have followed even more quickly, and I question whether I could have saved the child had it been alive. Removal of the fetus by Caesarean section might have been adopted, but I doubt very much if the child could have been saved.

Post-mortem Examination.—The body was that of a stout, well-built, well-developed small woman. No marks of any kind on the body other than the dark, spotted rash (as described) over the abdomen and thighs. The examination was made on the evening of her death, but rigidity was already well marked. The membranes of the brain were congested and the blood vessels full of blood, and there was a greater quantity of serous fluid than ordinary in the cranial cavity. The brain was natural in appearance, but there was more serous fluid than normal in the ventricles, and the blood vessels were congested. The spinal cord was not examined, as the evidence of cerebro-spinal meningitis was so manifest. The pleurae were congested, and the pleural cavity contained more serous fluid than natural. The lungs were dark and markedly congested. The pericardial cavity contained more serous fluid than normal. The heart was slightly enlarged; valves healthy; *ante mortem* clot present. The peritoneum was congested, and spotted all over with black spots of various sizes and different shapes, as if a quill pen had been dipped in ink and shot over a sheet of blotting paper. There was more serous fluid than normal in the pelvic cavity. The uterus was enlarged, extending up close to the xiphoid cartilage—in other words, the size corresponded with a uterus at full term; peritoneum over it was congested and contained dark spots. On opening the uterus a full-term male child was removed; it was a well-developed, healthy-looking infant; the skin was healthy and without any spots or marks of any kind. The placenta, membranes, and cord were normal in size and appearance. The mesenteric glands were congested, which has been shown lately in Germany to be important from a diagnostic point of view, a point confirmed by Professor Symmers. The liver was enlarged and full of blood. The gall bladder was full of bile, and mucous membrane covered with dark spots. The spleen was enlarged and full of blood. The kidney, suprarenal capsules, and pancreas were congested. The stomach contained a little food, with some dark, grumous matter which was evidently the medicine the doctor had prescribed that morning; there were dark spots over the mucous surface, which was also congested. The small intestines were congested and contained very little undigested food; Peyer's patches were congested, and the walls of the intestines were spotted. The large intestine was congested and almost empty; the walls were spotted. The bladder was empty; its mucous surface was covered with small dark spots. As this case occurred in the earlier stages of the epidemic, I regret that bacteriological examinations were not made.

THE ORIGIN OF THE FACIAL NERVE.

BY N. BISHOP HARMAN, M.A., M.B.CANTAB., F.R.C.S.ENG.,

OPHTHALMIC SURGEON TO THE BELGRAVE HOSPITAL FOR CHILDREN; CHIEF CLINICAL ASSISTANT, THE MIDDLESEX AND MOORFIELDS HOSPITALS; LATE EXAMINER IN ANATOMY, NATURAL SCIENCES TRIPOS, CAMBRIDGE UNIVERSITY.

AN editorial in the BRITISH MEDICAL JOURNAL of last September[1] draws attention to some most interesting clinical observations on this subject. For many years after Sir Charles Bell no one had any doubt that the innervation, both nuclear and peripheral, of the whole facial musculature was from what we know as the seventh nerve; the latter was demonstrable by the simplest of dissections, and the former appeared to be true when microscopic investigations were made. Later observations of obscure clinical cases showed that paralyses of ocular muscles were sometimes associated with more or less paresis of the orbicularis palpebrarum, and also that affections of the tongue musculature were associated in some cases with paresis of that sheet of muscular anastomosis known as the orbicularis oris. In 1887 Mendel[2] attempted, by those experimental methods which had been utilized to great advantage by Gudden, to demonstrate that these coincident paralyses of facial and ocular or glosso-pharyngeal muscles depended upon certain anatomical facts; that the facial musculature was not a unity, and its nerve supply did not spring from one source, the seventh nucleus; he asserted his experiments showed that "the frontalis and orbicularis palpebrarum muscles, although peripherally supplied by the facial nerve, are 'eye muscles,' and form the oculo-facial group whose central innervation is the oculo-motor nucleus." Later workers following his idea, similarly cut off the orbicularis oris muscle from the seventh nucleus and attached it to the twelfth.

The work of Mendel has been widely accepted; it has been taught by most English anatomists, and it appears in all the latest textbooks. In fact, the theory does not appear to have been contested until June, 1903, when I had the good fortune to demonstrate to the Ophthalmological Society a series of embryological researches which showed that Mendel's hypothesis was scarcely possible; but that contrarily, the facial musculature was a morphological unity, and that its nerve supply, both nuclear and peripheral, had always been throughout the vertebrate line from the homologue of the facial nucleus. The papers read before the Ophthalmological Society appear in the *Transactions* of 1903[3] and 1904,[4] and these are based on work published in 1899 in the *Journal of Anatomy*.[5]

Briefly these researches may be summed up as follows: In the early vertebrates there is no facial musculature. With the development of eyelids and nictitating membrane, first observed in the sharks, the nearest available musculature is adapted for the service of these new eye appendages; this musculature is the muscles of the spiracle (the spiracle is the first gill-cleft behind the eye, and has its representative in man in the ear tube). In those sharks which have a small development of eyelids the filching of the spiracle muscles is of the smallest; in those sharks where the eyelids and nictitating membrane are highly developed, nearly the whole of the spiracle muscles have gone over to the service of these appendages, and the spiracle has become atrophied, and only remnants of the muscles proper to the lost gill can be traced. In these sharks I traced the development of the spiracle musculature in a series of embryos; it was that common to every gill, and in more developed embryos the growth of the new eyelid musculature from the spiracle musculature was followed. In all these fish the nerve supply could be traced from the conjoined nucleus of seventh and fifth, a nucleus known to anatomists as the "facial complex."

The progressive growth of the stolen spiracle muscles in the service of the face can be traced to their full development in the facial muscles of man. From earliest to latest conditions they are arranged in two layers, superficial and deep; and there is always a most marked intercommunication of the many "muscles" of the face, in fact the facial musculature is not made up of so many distinct muscles, but of two sheets of muscle which have many slips, and to these slips we give, for convenience of distinction, names, for example, orbicularis palpebrarum, levator anguli oris, orbicularis oris, etc. The incorrectness of this separative nomenclature cannot be better shown than by citing the orbicularis oris, which has been demonstrated by no less a distinguished anatomist than Professor Alexander Macalister[6] to be nothing but the interlaced endings of the levator labii superioris, depressor labii inferioris, levator anguli oris and buccinator muscles, and not a separate entity at all.

Mendel's hypothesis requires the overthrow of these anatomical facts as to the ancestry and lineage of the facial muscles and nerve in three points: (1) The splitting of muscle sheets which are a morphological unity into arbitrary areas. (2) The shifting of a primitive nerve supply. (3) The shifting of nerve cells from a cranial nucleus of one order to nuclei of quite a different order.

On these three points:

1. That the first is not true can be further demonstrated by the curious phenomenon to which I have called attention as "nose-blinking"[7] In 20 per cent. of human subjects the slightest blinking of the eyelids produces simultaneous contraction of the levator labii superioris alaeque nasi, an action demonstrated by Flourens as early an 1842 to be under the sole influence of the facial nucleus. The phenomenon shows that Mendel's hypothetical "oculo-facial" and "naso-facial" muscle groups are still a unity.

2. If there is one thing that is constant in anatomical relations it is the nerve supply of a muscle; be that

muscle never so displaced from its original position, or be it even separated into parts so that one part remains dorsal and the other migrates to a ventral position, the primitive nerve supply is found to remain. The constancy is so marked that anatomists confidently reverse the process of search and discover the primitive origin of an obscure or anomalous slip of muscle by tracing its nerve supply. Mendel's hypothesis requires the overthrow of this stability of nerve supply.

3. The work of Gaskell[8] has shown that cranial nuclei are of various orders; they are of three orders homologous with the nuclei easily demonstrated in a spinal segment. There are: (1) Ventral median nuclei of large cells giving rise to somatic efferent nerves; (2) lateral nuclei of smaller cells giving rise to visceral efferent nerves; (3) dorsal connexions of afferent nerves. As I have shown embryologically, the facial musculature is derived directly from the spiracle musculature; it is a "visceral" muscle, it had in its earliest inception a "visceral" innervation arising from the facial complex nucleus, a "visceral" nucleus which belongs to the second order of nuclei of Gaskell's classification. Mendel would shift the original innervation from its original visceral nucleus to the third and twelfth nuclei, which are of the large-celled ventral somatic order, and quite different in medullary position and anatomical character. Such requirements as these three are so revolutionary that they would require the most definite proofs before they could be accepted, and these proofs have never been found; as Gowers[9] writes: "For evidence of these hypotheses (of Mendel) we have still to wait."

It may be asked: Why has Mendel's hypothesis held the field so long? The reasons are not far to seek: (1) The primitive origin of the facial musculature was unknown; (2) the hypothesis formed a most plausible explanation for many otherwise obscure cases of paresis. It did not, however, explain all difficult phenomena, for example, the curious congenital anomaly of "jaw-winking" or synergic movement of mouth and eyelids first observed by Gunn[10] in 1883; but once the primitive origin and nerve supply of the facial musculature was demonstrated, the meaning of this oddity was apparent, and I could bring conclusive evidence to show that the phenomenon was a reappearance of a remote ancestral habit.[11] The features of these cases of jaw-winking have been most admirably illustrated in a recent number of the Journal by Mr. Beaumont of Bath.[12]

In my first paper read to the Ophthalmological Society I called attention to the work of Edinger,[13] in which he had described the facial nucleus in a manner different to that usually held. As students we were taught to regard most of these cranial nuclei as so many plums in the medullary pie, which, were they big enough, we could extract with our thumbs as easily as did little Jack Horner pull out a plum from another pie! Some are truly isolated clumps of cells—for example, the fourth and sixth, and these are simple because they supply, in man, a single slip of muscle. The greater number of them, however, are chains of nuclei, as we recognize easily enough in the case of the ninth and tenth nuclei; and Edinger similarly describes the seventh nucleus as forming a chain of nuclei extending some distance in the medulla, and not forming, as too many erroneously believe, a single clump. It is the longitudinal position of the nucleus which is the clue to these coincident paralyses of eye muscles innervated from the third nucleus and the orbicularis palpebrarum from the seventh, or of the muscles supplied by the twelfth and of the so-called orbicularis oris of the seventh. A lesion in the region of the third nucleus may involve the neighbouring dorsal part of the seventh, or one in the region of the twelfth nucleus may affect the not far distant ventral and inferior portion of the seventh nucleus.

The editorial in September put the position excellently so far as observations from clinical cases go. On the one hand there is Mendel's hypothesis with a host of cases explained on that hypothesis by Tooth, Turner, Beevor, Taylor, Jackson, and others; on the other hand there are more recent cases of van Gehuchten, Marinesco, and particularly that of Parhon and Minea, where a paresis of the upper facial muscles was proved to be due to a lesion of the dorsal part of the seventh nucleus and where the third nucleus was healthy.

The clinical observations leave the matter in a balance of probabilities: One set of clinical cases can be set over against another set. For most it is not possible to verify clinical observations of this kind at first hand, for the cases are rare. But in the anatomical researches I have given there is an absolute basis of fact—that is, there is a series of observations which it is possible for any one to examine for himself at any time, and so far as our clinical work is concerned the demonstration of anatomical facts is the only basis of rational medicine.

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SUBCUTANEOUS INJECTIONS OF AIR AS A MEANS OF RELIEVING CERTAIN PAINFUL MANIFESTATIONS.

By ALFRED S. GUBB, M.D., M.R.C.S., Etc.,
AIX-LES-BAINS AND ALGIERS.

Some years ago Dr. Cordier, the well-known Lyons surgeon, read a paper before the Société des Sciences Médicales on the therapeutical application of interstitial injections of air. His plan having been brought to my notice in the course of a consultation with Dr. Curtillet, the Director of the School of Medicine at Algiers, I have since employed it in a number of cases, with results that may be deemed worthy of being placed on record.

The method suggested itself to Dr. Cordier at the time when elongation of nerves was in vogue as a means of relieving the pain in obstinate cases of neuralgia, more particularly in sciatica. It occurred to him that it might be possible thus to produce elongation of the finer nerve ramifications where they leave the subcutaneous tissues to enter the derma proper. He had hoped in this way to introduce a new mode of treating certain skin diseases; in this he was disappointed, but incidentally he discovered a means of affording relief in painful manifestations of which sciatica may be taken as the type.

His plan was to distend the tissues by the insufflation of air beneath the skin, and the purely mechanical action of the distension was proved by the fact that the results were approximately the same whether plain air, oxygen, hydrogen, nitrogen, or carbonic acid gas was employed. The only difference observed was in the comparative rapidity with which they underwent absorption. With the experience of many hundred injections, he states that the injections are perfectly innocuous, that they require no special apparatus or appliances nor even any special operative dexterity, and that in a whole series of painful affections they yield results often very satisfactory and sometimes really remarkable.

The procedure is simplicity itself. The pumping apparatus is supplied by an ordinary rubber bulb provided with an elastic reservoir such as is used for Paquelin's thermocautery, a length of rubber tubing in which is inserted a glass bulb filled with sterilized cotton and an iridio-platinum needle. The latter is sterilized just before use by heating in the flame of a spirit lamp. The fingers of the operator and the skin of the patient must of course also be sterilized. It is well to have an idea of the cubical capacity of the bulb in order to know how much air has been introduced.

Having taken these preliminary precautions, the needle is plunged through the skin over the seat of the pain, then, after waiting a few moments to see that no blood exudes, showing that the needle has not entered a blood vessel, the insufflation is commenced. This should be done gently, very slight pressure sufficing to overcome the elasticity of the skin. A rounded swelling forms round the seat of puncture, and when the air reaches a vascular or nervous sheath it rapidly spreads along it, and secondary swellings may form at a distance. These secondary ramifications are specially apt to form in the limbs, where the sheaths are more numerous. The skin at first becomes blanched, but this soon gives place to a pronounced redness which persists for some hours. The air takes several

days to undergo complete absorption, and under the influence of muscular contraction travels far and wide, so that the characteristic crepitation of "surgical emphysema" may be felt at spots distant from the seat of the original injection. No pain whatever is experienced, even when comparatively large quantities of air are injected, at most a sensation of distension, "pins and needles" or pin pricks. Cutaneous sensibility is at once diminished, the skin becoming more or less numb.

The needle having been withdrawn and the puncture sealed by a drop of collodion, the next step is to massage the part. The subcutaneous air must be alternately dispersed and brought together again, especially over the painful spots. This massage is an indispensable part of the procedure, and must be conscientiously carried out, indeed patients should be directed to repeat the process daily as long as any resonance remains.

The procedure is applicable to the relief of pain due to all forms of neuralgia and neuritis. The only precaution is to vary the quantity of air injected according to the anatomical structure of the part. For instance, we may inject 200 or 300 c.cm. of air in the gluteal region, while over the thorax from 10 to 30 c.cm. will be enough. In the neuralgic pain that follows extensive zona it is best to make several small injections, one over each painful spot. In intercostal neuralgia one small injection behind near the vertebral column should be made, and another in front, about 2 in. from the middle line.

In the treatment of sciatica the injections should be made in the lumbar region, on the outer side of the thigh and on the supero-external part of the leg, round about the head of the fibula, as well as over any painful spots in the lower part of the leg and the dorsum of the foot, to be followed in every instance by systematic massage.

The only forms of neuralgia which I have not so far ventured to treat by this method are those of the face, though there is no obvious reason why, in cases that prove refractory to the action of analgesics, it should not be employed. In this situation, however, 3 or 4 c.cm. of air should suffice.

In no instance has any mishap attended this mode of treatment, although it has now been practised many thousand times, so that it may safely be affirmed to be devoid of risk. Nervous patients, especially women, occasionally complain of a feeling of constriction in the neck when the air finds its way into that region, but the sensation is very fugitive and never amounts to serious inconvenience.

My personal experience includes 11 cases of sciatica, several of them being severe and of some months' standing, and in only one case did the result fall short of my expectation, the patient being a highly neurotic elderly woman, who came to Aix-les-Bains for the treatment of arthritis deformans and acute sciatica. Even in that case some relief followed each injection, five in all, but the pain recurred a few days later. I have often found it necessary to repeat the injections, but never more than three times, except in the case just referred to.

I have also treated several cases of neuritis of the brachial plexus, 2 in the acute stage, and very marked relief, which was maintained so long as the muscles were kept at rest, was afforded. Tempted by the absence of pain some of the patients resumed the use of the arm and provoked a return of the pain, though in a milder form.

Dr. Anastaze, of Affreville, has kindly placed at my disposal notes of several cases incorporated in an essay on the subject, which are interesting, inasmuch as they are derived from various sources:

CASE I.

Girl, aged 18 had suffered from sciatica for two years; walking was almost impossible; the muscles of the right thigh were atrophied. Attacks of severe pain often supervened at night. No history of gonorrhoea, malaria, or syphilis. She had been in hospital for three months under Dr. Moreau, and most antineuralgic remedies had been administered without affording relief. The sciatic nerve was then stretched (by flexion) without any result. Dr. Curtillet, under whose care she then came, decided to try injections of air by Cordier's method. Some 2,000 c.cm. of air was injected into the gluteal region on the affected side, and at once the patient said she felt much better; she passed a more comfortable night, and on the following day she was able to walk. The improvement continued; she was kept in hospital for three weeks until the air was completely absorbed, by which time she was well enough to return to her work.

CASE II.

Young woman, aged 24, who came in with symptoms of dry pleurisy. Injections of air were made at both ends of the costal arch—500 c.cm.—and the pain, which had resisted subcutaneous injections of morphine, at once disappeared.

CASE III.

Man, aged 45, under the care of Dr. Binet, had suffered from sciatica for seven years. Could only walk with the greatest pain and difficulty. Massage, counter-irritants, and the administration of analgesics having failed to relieve, Cordier's method was resorted to. A first injection of air was made in 1905, not followed by massage, and no relief was experienced. He returned early in 1906 and injections of air were made over two of the painful spots, one over the point of exit of the nerve, the other on the outer side of the thigh. The parts were then well massaged for a quarter of an hour. The patient was at once relieved, and although he had been carried to the hospital he was able to walk home. There has been no recurrence of the sciatica.

CASE IV.

Man, aged 28, had been under treatment for severe sciatica for six months at the Municipal Infirmary without benefit. One injection of air determined immediate relief, and he was able to return to his work.

CASE V.

Man, aged 39, admitted to the Civil Hospital under Dr. Vincent. April 22nd, 1903, with sciatica on the left side. Had been suffering for several months from more or less severe lumbar pain. The pain was paroxysmal, and was increased by movement, extending down into the leg and foot. Had been unable to leave his bed for several weeks previous to admission. On admission he could scarcely drag himself along by the aid of crutches, and was unable to sit down. On April 23rd two litres of air was injected an inch or so below the gluteal fold, and this penetrated the connective tissue of the whole limb, even to the toes. The patient complained of a slight burning pain. Five minutes' massage. The next day he was able to get up, and could walk with comparative ease. Within a fortnight the pain had entirely disappeared without any other injection, and he was discharged cured on May 7th. The patient was seen some time later, and had not had any return of the sciatica.

CASE VI.

Mr. S., officer in the army, aged 48, had been disabled by sciatica for two months. He had undergone every kind of treatment without benefit. He was quite unable to walk about the house, and had to be carried upstairs. A first injection of air was made by Dr. Cochez in the gluteal region (about half a litre), followed by energetic massage to bring the air over the painful spots. He was at once able to get up, walk, and even go upstairs, to his extreme surprise. The following day the pain, though much less severe, was still present, so massage was resorted to daily. A week later a second injection was made over the three painful spots, one in the gluteal region, another on the outer aspect of the thigh, and a third on the posterior surface of the calf. Some 1,500 c.cm. of air was injected in all, followed by massage. No immediate improvement followed, but three or four days later he was able to go out on horseback. The injections were repeated on three other occasions at a week's interval. Five weeks after the first injection he reported himself as quite cured, and he has since had no return of the affection.

CASE VII.

Madame J., aged 42, had been suffering for several months from severe intercostal neuralgia following an attack of left dorsal and abdominal zona. The pain was intense, hampering respiration and preventing sleep. No treatment had done her any good. In May, 1906, she was advised by Dr. Curtillet to undergo the treatment, and on May 25th Dr. Cochez made a first injection of air at the angle of the left scapula, about three-quarters of a litre being insufflated. This was followed by energetic massage and the patient said she felt much improved. She passed a good night, but after a day or two the pain recurred though in a milder form. A second injection was made a fortnight after the first, this time in two spots, one at the angle of the scapula, the other in front, under the left breast. Half a litre of air was injected in front and three-quarters of a litre behind. Ten minutes' massage. This time the pain disappeared for good and when seen a month later the patient declared herself in perfect health.

CASE VIII.

Madame Z, aged 55, addicted to the use of ether, had sustained a severe burn over the back of the right forearm. Cicatrization took a long time, and, later on, the scar became covered with a bullous eruption followed by the formation of scabs. At the same time she complained of severe pain in the scar. The pain became extremely severe, and, although every conceivable treatment was tried, no measure of relief was experienced. It was therefore decided to try what the injection of air would do. An elastic ligature was applied above the elbow and half a litre of air was injected below it by Dr. Cochez, the air being made to travel all over the forearm by massage, more particularly beneath the scar. A few hours later the pain became less severe, and the patient passed a better night. Massage was repeated night and morning for

several days. The scabs covering the scar were shed, and did not re-form. The scar itself became smooth and looked less angry. In view of these results the injection of air was repeated once a week, and the patient made steady progress towards complete recovery. She described herself as quite well after two months' treatment.

CASE IX.

The patient, aged 44, a confirmed alcoholic, presented suppurating perforating ulcers on the soles of both feet, associated with severe pains. He was admitted to the service of Dr. Saliège, where Dr. Aboulker injected two litres of air into the right leg, followed by energetic massage. The ulcers on both feet were dressed antiseptically. The pain on the right side subsided at once, and twelve days later the ulcer on that side had quite healed, the other ulcer having remained in the same state. Encouraged by this result, the treatment was repeated on the other side, and the success was equally rapid and well marked. The patient was seen a year later, and said he had had no return of the pain.

These cases extend the scope of the treatment, and the almost uniform success that followed the injections suggests the propriety of employing the treatment for the relief of other painful manifestations than those referred to here.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

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PROCEEDINGS OF SECTIONS.

SECTION OF PATHOLOGY.

Professor ROBERT MUIR, M.D., F.R.C.P.E., President.

A DISCUSSION ON PERNICIOUS ANAEMIA AND ALLIED CONDITIONS.

OPENING PAPER.

By WILLIAM HUNTER, M.D.Edin., F.R.C.P.Lond.,
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THE SPECIFIC INFECTIVE NATURE OF ADDISON'S ANAEMIA: ITS COURSE AND TREATMENT.

INTRODUCTORY.

THE officers of the Section have given a wide range to the discussion by the title they have selected for its subject. By this title they have—as I think wisely—left it quite open to those taking part in it to contribute whatever class of observations—etiological, clinical, anatomical, haematological, diagnostic, prognostic, or therapeutic—that may serve to throw any light on the real "pathos" of the severe disease termed "pernicious anaemia." For in truth there is much "pathos" connected with every aspect of this remarkable disease; with the confusion and controversy connected with its earlier identification and observation by English and German observers respectively—without its equal in the history of any disease; still more pathos connected with the nature of the disease itself—its pathology, its clinical features, and pernicious course.

To be struck down sometimes quite suddenly in the midst of perfect health by a fell disease, mysterious in origin; to have strength sapped day by day by symptoms that possess, it is stated, no distinctive features, but are merely the result of the anaemia; to be suddenly restored to health, in many cases in the most marvellous manner—so much so that the patient often states he has never felt so well in his life; and then, after a period of three, six, or nine months, to be again suddenly reduced in a period of a few weeks to a condition of the most extreme bloodlessness and weakness such as no other disease displays; throughout these remarkable vicissitudes to be deprived even of the comforts of hope by having your anaemia termed "progressive and pernicious"—such represents some of the pathos which must be taken account of in determining the true character of this most remarkable disease and its relations to other allied conditions of anaemia which, however closely resembling it in one or other of its features, differ from it profoundly in their total clinical characterization, especially in respect of their fatality. (See Chart 1.)

In dealing with the disease such as is here outlined, what avails it to tell either yourself or your patient that, desperate as is his anaemia, mysterious as is its source, it nevertheless does not essentially differ pathologically from other simpler forms of anaemia, such as "tapeworm anaemia," which can be cured in a few weeks; that it is simply due to the malignant direction taken by his blood formation, and to a reversion of his blood to an embryonic type; that its chief feature is a megaloblastic degeneration of his red cells, "the discovery of which in his blood often requires great patience, careful searching over several slides of blood with the aid of an oil immersion" (Ehrlich)?

Such an explanation is, indeed, a pathological one, inasmuch as it adds immeasurably to the "pathos" of the disease. But by itself it avails nothing, either to the patient or to the observer. Even if true, the problem still remains to explain why, in his particular case, the blood-forming powers of a man formerly healthy should so suddenly and completely have gone to pieces in the first instance, why they should so marvellously recover themselves in a few months, and why they should again, without cause, revert to their embryonic type.

I desire, then, to emphasize here, at the outset, more than has hitherto been done in connexion with the pathology of this disease, the importance of prognostic considerations in gauging the real pathos—the true pathology—of these anaemic conditions. I am therefore glad that the general title selected for our discussion is wide enough to include considerations of *Prognosis* and *Treatment*, as well as the narrower ones of *Morbid Anatomy* or *Haematology* usually associated with the title of pathology. The number of representative workers on anaemia present to take part in this discussion is a guarantee that all aspects on the subject will receive adequate attention:

The character and significance of the bone-marrow changes by Professor Muir, whose studies are, in my judgement, the most extensive and most conclusive on the subject; the blood changes, by Professor Lorrain Smith, whose original observations regarding the changes in the volume of the blood form the most important contribution regarding the blood changes during the past ten years; by Dr. Lovell Gulland and Dr. Melland regarding the morphological changes of the blood, to which, following Ehrlich (1892), so many observers attach a too exclusive importance; Dr. Robert Hutchison regarding the anaemias of childhood; Professor Ferguson and Dr. Boycott regarding ankylostomiasis anaemia; Professor Walker Hall on general metabolism in pernicious anaemia.

THE UNITY OR PLURALITY OF ADDISON'S ANAEMIA.

I may best contribute to the purposes of the discussion by confining myself more particularly to the great problem of the unity or plurality of that condition first described by English observers under the title of "idiopathic anaemia"—a problem which continues to divide observers into two great and hostile camps. My own observations on the subject extend over twenty-one years of work, and may be grouped under two headings: (1) The character of the observations on which the conclusions were based, as described by other observers (1888–1903); and (2) the character of the conclusions formed, summarized by myself. For and against the individuality of this admittedly most severe and fatal of all forms of anaemia, I shall illustrate and summarize by the aid of lantern slides of the observed lesions, curves and charts, and series of schematic tables.

The character of the observations have been in succession experimental, anatomical, clinical, chemical, diagnostic, and finally etiological, bacteriological, and historical. The pathological observations of the last seven years, regarding the significance attached to the infective lesions subsequently to be described, are based

upon a general pathological experience extending over 1,000 *post-mortem* examinations, and the clinical observation of some 50 cases of the disease.

The results have satisfied me that Addison's anaemia is not only a remarkable form of anaemia, but a remarkable specific infective disease with characteristic etiology, mode of onset, clinical features, and course; and it should be separated off, once and for all, from all other forms of anaemia in the manner indicated in the accompanying diagram (Scheme II).

With the assistance of other schematic tables I trace the history of pernicious anaemia from the early records of Addison of an idiopathic anaemia without discoverable cause, no distinctive pathology, and without symptoms other than those due to the anaemia itself (Period I, 1855–71)—through the school of Biermer, when the etiological factors were put down as poverty, chronic discharges, puerperal conditions, and so on, in addition to all the ordinary causes of anaemia, with "predisposition" as a support to any or all of these. The anatomical changes were stated to be of no pathogenetic significance whatever, although the haemorrhages and the bone-marrow changes were noted by many writers; and the symptoms dismissed as having no special features and little diagnostic value (1871–88), so that the affection came to be regarded merely as a secondary form liable to be superposed upon any ordinary anaemia, if the factors producing the primary disease were sufficiently active and powerful (Scheme I).

Next by the aid of the schematic table (Schemes II and III) I summarize my own observations and conclusions (1885–1903), showing, as it appears to me, that the disease is a specific entity; that the *primary etiological factor* is a *specific haemolytic infection* giving rise to a specific infective glossitis, gastritis, and enteritis, with sepsis of the alimentary tract as a potent predisposing factor; that the *pathological edifice* raised upon these foundations is special, constant, and pathognomonic, and comprises lesions in the gastro-intestinal area, haemolysis occurring in the portal circulation and evidenced by pigment changes in the liver and kidney, and haemolytic changes in the urine; changes in the bone marrow, denoting increased haemogenesis; that the *symptoms* are characteristic and can be arranged in haemolytic and gastro-intestinal groups, which are inseparable from the pathological conception of the disease, and are surmounted by groups of symptoms referable to toxaemia and anaemia respectively (Scheme III).

I shall refer to the confusion of the issue which has resulted from the writings of Ehrlich (1838–92), according to whom the essential changes are blood changes—*megaloblastic degeneration*—and the disease presents no clinical features other than those dependent on the poverty of the blood—a haematological conception of the pathology and symptomatology of the disease which has too much dominated the work of observers since 1892, and has tended greatly to mislead by drawing attention away from the clinical features and course of the disease, which are far more characteristic of the disease than the morphological changes presented by the blood.

I shall then demonstrate with the help of lantern slides the changes, naked-eye and microscopical, that accompany the lesions of the gastro-intestinal area, as shown in the tongue, stomach and intestine, comparing and contrasting them with the appearances in similar situations in cases of other forms of anaemia, cancer, and the like.

ANAEMIA IN GENERAL.

The whole subject of anaemia may be likened to a forest, or rather continent of unknown size: some of it more open, with little undergrowth, clear overhead, and easily traversed (simple anaemia); other parts of it much overgrown with rank luxuriant vegetation, rendering exploration difficult (severe anaemia); and lastly, other portions so shrouded by mists of historical controversy, so full of thick growth and of hidden pitfalls, that it seems almost impossible to penetrate them, or even find out their precise boundaries and extent—where they begin or where they end (Addisonian anaemia).

Before asking you to enter, to stumble about in a mist of historical controversy, to get entangled in thick undergrowth of pathological research (the difficulties of "haemolysis" or the pitfalls of "megaloblastic degeneration"), and to be bewildered by diagnostic and prognostic signposts, and always floundering in deep waters of etiology let me draw your attention to some of the general landmarks of the forest, and pathways selected by observers to penetrate it.

At the one extreme of these anaemic conditions may be placed the anaemia of haemorrhage—"traumatic anaemia" and at the other admittedly stands the condition known to most observers as "pernicious anaemia"—historically known to English observers under the title of "Addison's idiopathic anaemia," and to German observers as the "primary," "essential," "cryptogenetic" form of "progressive pernicious anaemia" (see Scheme I).

Addisonian Anaemia.—Whatever views may be held by observers as to this anaemia, all are agreed that it represents without exception at once the severest, the most fatal, the most mysterious form of all blood diseases; and to prevent any confusion arising as to the anaemia I speak of, I shall in the remarks I have to make refer to this as "Addisonian anaemia."

Progressive Pernicious Anaemia.—For a similar reason I shall avoid the use of the title "progressive pernicious anaemia" or "pernicious anaemia," except in its historical relation. For that title is now given indiscriminately to various forms of anaemia in virtue of certain features common to all, but without any regard to the two characters of "progressiveness or perniciousness" which ought to characterize any anaemia so called. At one end of the scale it is given to "tapeworm anaemia," which has nothing progressive or pernicious about it, and can be got rid of by a few doses of an anthelmintic; and at the other to Addisonian anaemia, which all observers agree is most mysterious in origin and most pernicious in its characters, and generally progressive in its course.

Primary and Secondary Anaemias.—By way of further clearing the ground, I shall avoid the use of such terms as "primary" and "secondary," so often applied to two great classes of anaemia. For all forms of anaemia are really secondary; and the term "primary," even when employed clinically, conveys little real meaning when it includes as its two chief forms an anaemia so simple and easily curable as chlorosis on the one hand, and so severe and most fatal as Addisonian anaemia on the other.

Megaloblastic and Normoblastic Anaemias.—I shall also strictly avoid the most recent classification of anaemia, suggested (on purely haematological grounds) by Ehrlich, 1893, namely, into "normoblastic" and "megaloblastic" anaemia respectively; the former characterized by the presence or preponderance of normal nucleated red cells (normoblasts) and by, it is stated, its simpler character and more favourable course; the latter by the presence of abnormally large degenerated nucleated red cells (megaloblasts), by its severer character, and, it is stated, by its more pernicious course (see Scheme IV).

For the net result of such a classification is, as is admitted, to change the historical character of the already loose combination of anaemias termed "progressive pernicious anaemia," and create an extension of and new criteria for "progressive pernicious anaemia" such as Biermer never contemplated, and in his last words on the subject (1886) directly repudiated. The etiology of the "*real pernicious anaemia*" was, he stated, quite unknown.

THE ETIOLOGICAL PROBLEM OF ADDISONIAN ANAEMIA.

The problem which the disease has continued to present throughout its whole history was never more clearly stated than in the words of its first observer, Dr. Combe (1822), in the first case recorded in any language—one replete from beginning to end with accurate observation of etiology, clinical features, and morbid anatomy—namely:

> A well-marked instance of a very peculiar disease which has altogether been overlooked by any English author with whose writings I am acquainted. Unfortunately, however, such is the allowable diversity of opinion on most medical subjects, that it is very possible that the following case (disease) may be viewed in different lights, and receive different appellations; and while some may be disposed to regard this anaemia as constituting a morbid state *sui generis*, others may consider the defect in red circulatory mass (so extreme that every organ in the body, with the exception of the spleen, was deprived of its red blood) as an accidental and occasional circumstance denoting some peculiar change in the assimilative powers, the primary stages of which we have been unable to detect. Doubtful myself which of the two opinions may be the most correct, I shall do a little more than state correctly the

phenomena of the case, and minutely the appearances presented on dissection. One remark only I may at present offer—that if any train of symptoms may be allowed to constitute *anaemia* a generic disease, the following may be considered an example of it in its *most idiopathic form.*

No less definite was the attitude assumed by Addison. In his earliest communications (1849) as in his later (1855) there was from first to last no obscurity as to the precise limits of his knowledge, the relation of his observations to those of others, or the exact view which he took of this anaemia. The chief feature in this disease which arrested his attention was its occurrence

without any recognizable cause whatever, apart from the other causes of the anaemic state, and without any organic lesion that could properly or reasonably be assigned as the cause of such serious consequences.

Such has been its problem. So many and various have been the answers given to it, so involved has been its history and interpretation, that I have found it only possible to present the results clearly to others by the accompanying schemes, showing the history of the observation and interpretation of

Period 1. "Addison's anaemia" (1822-71).
" 2. "Progressive pernicious anaemia" (1871-88). (See Scheme I.)
" 3. The observation and interpretation of Addison's anaemia by the writer.
(*a*) Its haemolytic nature, toxic cause, and gastro-intestinal site, and clinical features (1888-90).
(*b*) Infective etiology (1890-1900). (Schemes II and III.)
" 4. "Progressive pernicious anaemia," Megaloblastic Anaemia, by Ehrlich and various observers (1888-1900). (Scheme IV.)

Period I (1822–71).

The position assigned to this anaemia by its first English observers—Combe (1822), Addison (1855)—in the first period of its history is described by them in the following terms:

Etiology.

Anaemia in its most idiopathic form (Combe, 1822).

Apart from the usual causes or concomitants of the anaemic state (Addison).

Addison's anaemia is idiopathic, primary, essential, without any symptoms during life, and without any lesions after death, which cannot be explained as directly due to the anaemia (Pye-Smith, 1883).

Pathology.

With regard to the pathology, such cases show with equal constancy fatty degeneration of the heart, numerous but small internal haemorrhages and slight passive exudations, but no lesion, which cannot be ascribed to the primary anaemia.

Cases showing changes in the red marrow (Pepper and Cohnheim) must be separated from those of idiopathic anaemia (Pye-Smith, 1883).

Symptoms.

Without any symptoms during life which cannot be explained as directly due to the anaemia (Pye-Smith, 1883).

Period II (1871–88).

The subordinate position assigned to it in the second period of its history (1871-88) in the clinical and anatomical group "*characterized by fatty degeneration of the circulatory apparatus*," described by Biermer under the title of "Progressive Pernicious Anaemia," and subsequently interpreted by Quincke (1876), Eichhorst (1878), Immermann (1879) and all subsequent German observers, especially Ehrlich (1892) and Schaumann (1894 and 1898), as not a disease at all, but a mere group of symptoms due to many causes, is diagrammatically represented in the accompanying Scheme I.

Period III (1888–1900).

A. *Writer's Interpretation.*—The *Unity and Specific Infective Haemolytic nature of the disease.*

The position assigned to Addison's anaemia in the group of severe anaemias by the writer since 1888—as the outcome of the various studies he has given to the subject during the past twenty-one years—is represented diagrammatically in the following Scheme II; and the character of the observations is represented and detailed in the following Scheme III.

The result is to satisfy him that Addison's anaemia is in truth a very remarkable disease, of a *specific infective haemolytic nature*, in which both clinical observations and necropsy reveal definite haemolytic and infective processes as a constant feature of the disease, and in which a very definite series of points can be got out of the history throwing light on the mode of origin of the disease, and the source of the infection in the alimentary tract and of the lesions of the tongue, stomach, and intestine connected with it.

The glossitic, gastric, and intestinal infective lesions which, either singly or associated, are connected with the disease are demonstrated in the series of specimens which I have in the museum and in the series of lantern slides which I now throw on the screen.

B. *Ehrlich's Interpretation.—The Plurality and Myelogenous origin of Addison's anaemia and of other forms of anaemia which he terms "megaloblastic anaemias."*—During the same period the position assigned to Addison's anaemia by Ehrlich (1892), Schaumann (1894, 1898), Grawitz (1896 and 1901), many English (Stockman, 1895; Gulland, 1900) and American observers, is an even more subordinate one than that given to it by the first German observers of progressive pernicious anaemia. This position is shown in Scheme IV.

It will be seen that what they term the primary, essential, cryptogenetic form of "progressive pernicious anaemia" is relegated by them to a subordinate position; and the degree of information possessed regarding it as the outcome of the extensive haematological observations of the last fifteen years, to which Ehrlich, German observers, and most English and American observers attach special importance, is thus described in Ehrlich and Lazarus's work (1899):

The form of anaemia in which not a single point can be got out of the history to throw any light on the origin of the disease—in which both clinical observation and necropsy fail to reveal any changes in the organs to which this severe disease can be referred.

The Writer's Interpretation.

Explanation of Scheme II.

Infective factors play a great part in the production of anaemia, both in aggravating the effects arising from other causes, and still more in producing independent effects. Acute general infections, such as those of fevers, or chronic infective conditions such as tuberculosis, all produce anaemia of varying degrees; but the infections here had in view are more especially those connected with the gastro-intestinal tract.

The infective factors operating within this tract may be divided into three classes: (*a*) Putrefactive, (*b*) septic, (*c*) specific.

A. *Putrefactive Infection.*—Under this title may be included the effects produced by the action of those organisms responsible for the putrefactive and fermentative changes which normally occur within the intestinal tract. This includes especially the *Bacillus coli*, and, in the case of children more particularly, the *Bacillus lactis aërogenes*. The intestinal disturbances in children, so commonly associated with the varying degrees of anaemia, are in many cases associated with, and probably due to, a large increase in the number of these two classes of organisms, to be found not only in the intestine but also in the stomach, sometimes almost in pure culture, still more abundantly in the duodenum, and still more enormously in the ileum.

In the case of adults the effects of putrefactive change in the production of anaemia are most commonly seen in connexion with constipation. The anaemia is of the chlorotic type; its chief feature is insufficiency of haemoglobin.

B. *Septic Infection.*—The term "septic" here employed is confined for convenience to the two chief pyogenic infections, staphylococcus and streptococcus. By far the most important of these is the streptococcal infection.

1. As a cause of "oral sepsis," "septic gastritis," and "septic enteritis." The importance of septic infection as a great factor in the production of anaemia of every degree of severity cannot be too greatly emphasized. Its importance arises from the fact that it is so commonly overlooked, especially in connexion with neglected septic lesions in the mouth ("oral sepsis"). As the writer has shown, this sepsis and its effects are not confined to the mouth, but extend to the stomach ("septic gastritis"), to the intestine ("septic enteritis"), and to the colon ("septic colitis").

In the case of the stomach and intestine, the effects are mainly functional, and arise from varying degrees of catarrh. When severe and long-lasting, they may lead to

deeper-seated changes in the mucosa; for example, subacute and chronic gastritis, enteritis, and colitis.

2. As a cause of "*Septic Anaemia.*" The effects of "oral sepsis" are, however, much more severe and widespread, and affect the blood directly; for the sepsis connected with foul gingivitis, especially when associated with deposits of tartar, and suppurative inflammation round necrosed roots, is a sepsis in direct contact with open wounds, the absorption from which must be considerable; although it may be slight in amount at any one time, its accumulative effect upon the blood, over many years, must be great.

So important are these effects that the writer has been led to designate by the special name of "septic anaemia" the form of bloodlessness arising from this cause.

In its slighter manifestations this anaemia is exceedingly common as a factor aggravating other forms, and if it be present its oversight gives to many apparently simple anaemias their unusual severity and their apparent intractability to ordinary measures of treatment. In its

SCHEME I.

PERIOD II. (1871-88).

THE EARLIER OBSERVATION AND INTERPRETATION OF "PROGRESSIVE PERNICIOUS ANÆMIA" (BIERMER, 1871).

"The clinical picture presented by the disease shows no special features; these are only results of the anæmia and can therefore be met with in other forms of anæmia. The disease cannot be diagnosed from the clinical features alone." (*Eichhorst*, 1878.)

CLINICAL FEATURES.

PATHOLOGY.

"*Anatomical changes:* none of these are peculiar to the disease, they are merely results of the anæmia. The diagnosis can only be made on a combination of the clinical and pathological features. Only one form of the disease can be recognised during life, namely, that in which certain small spherical red corpuscles are constantly found in the blood; these are to be regarded as red corpuscles, atrophied and arrested in development. This form of the disease appears to be traceable to disease of the blood-forming apparatus. All other changes in the red corpuscles described by observers—variations in size and shape, amœboid movements, &c.—are only the results of anæmia in general, not of this particular form of anæmia. The proof, that certain forms of the disease may depend primarily upon disease of the bone marrow, is not yet forthcoming, since one can regard these *Marrow changes* (which after all *are not constant*) as results of the anæmia. And, similarly, there is no sufficient proof, that one particular form of the disease may arise primarily from nervous disturbances." (*Eichhorst*, 1878.)

"*Pigment Changes*, neither constant nor pathognomonic." (*Quincke, Immermann*, 1876-83.)

"No pathogenetic significance whatever." (*Müller*, 1877. *Eichhorst*, 1878.)

ALL ORDINARY CAUSES OF ANÆMIA.

(1871-88.)

Atrophy and Gastritis.
Fenwick, 1877.
Austin Flint, 1871.
Nothnagel, 1879.
Litten, 1887.
Schumann, 1875.
Henry & Osler, 1886.
Kinnicutt, 1887.

Ulcer.
Zahn, 1882.
Litten, 1880.

Cancer.
Quincke, 1883.

(*Many Writers.*)
Especially Quincke, 1876-1880.
Immermann, 1875. *Fenwick*, 1877.
Müller, 1877. *Mackenzie*, 1878.
Eichhorst, 1878. *Coupland*, 1881.
Bramwell, 1877.

Hæmorrhages. (*Most writers.*)

Bone Marrow Changes.
Pepper, 1875.
Eichhorst, 1891.
Cohnheim, 1876.

Bad Air.

Bad Surroundings.

Bad Food, Diarrhœa, Vomiting and Malnutrition. (*Many observers.*)

Gastric Fermentation.
Sandoz, 1887.

Ankylostomum.
Sahli, 1883.

Bothriocephalus.
Reyher, 1886.
Runeberg, 1888.

Neurotrophic Lesions.
Sasaki, Banti, 1881.

ETIOLOGY.

(*Protection placed around Addison's Anæmia*).

Wilks, 1857. *Pye-Smith*, 1875 and 1883.

Lebert, 1858.
Trousseau, 1860.
"WITHOUT DISCOVERABLE CAUSE."
Addison, 1855.
Wilks, 1857.

Bad or Insufficient Food.

Puerperal Conditions.

POVERTY.
Biermer, 1871.

Chronic Discharges.

Chronic Diarrhœa.

(*Underpin to support above*).

Above causes insufficient. *Some other pathological factor* necessary to explain the unusual hæmolysis characteristic of Addison's Anæmia (*Hunter*, 1888).

"PROGRESSIVE PERNICIOUS ANÆMIA." (BIERMER, 1871.)

"A spontaneous origin without clear etiology is the exception." (*Biermer.*)

"The result of the present further observations (on 11 cases) serves to confirm the view expressed in my former—that pernicious anæmia, like anæmia generally, is the product of very various morbid processes and represents the highest form of anæmia. Etiologically there appears to me to be no ground whatever for separating pernicious anæmia from other forms of anæmia (1877, p. 17).

"Pernicious anæmia is essentially a clinical picture." (*Quincke.*)

"The chief merit of Biermer's work—the great and invaluable service he has rendered—is that it *brought together* into one common group and under one title a number of different forms of anæmia possessing certain characteristic features in common (1878, p. 31). One cannot emphasise too much Biermer's statement, '*A perfectly spontaneous origin without clear etiology is one of the rarities.*'"

"From the etiological standpoint there are as many forms of progressive pernicious anæmia to be distinguished as there are causes to be found. It is absolutely necessary that we should hold fast to this statement if we desire to be clear as to the degree and character of the services Biermer has rendered to the subject" (1878, p. 31). (*Eichhorst.*)

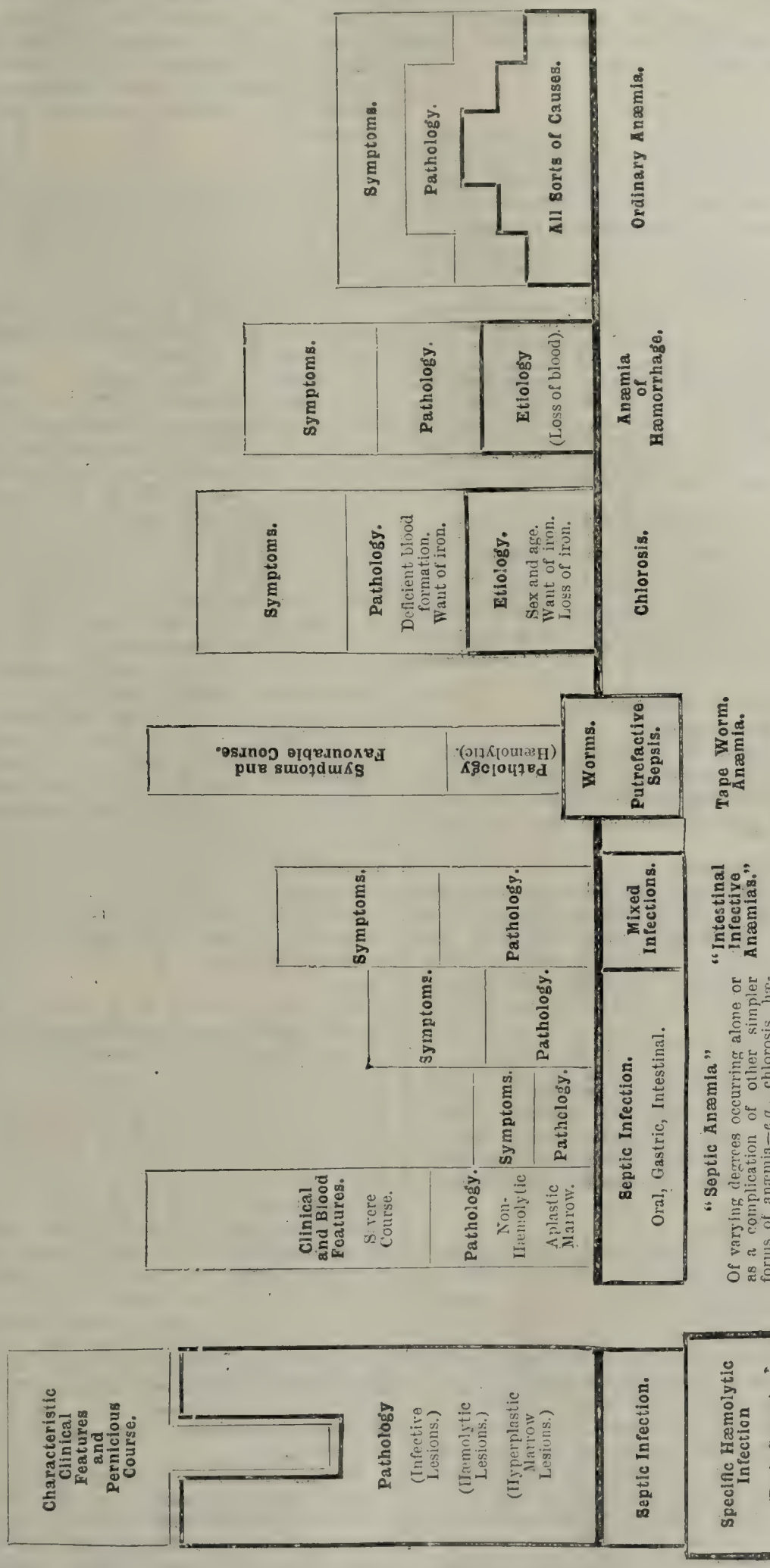
"It is a fact that progressive pernicious anæmia attacks especially poor, overworked people. I have not found a case in the literature where the disease has attacked a person living in good circumstances of life (1878, p. 30). . . . One has to distinguish between primary, essential, idiopathic forms (the smaller group) and secondary deuteropathic and symptomatic forms (the larger group) (1878)."

"In the latter a feature is the *gross disproportion* between the causes and the effects . . . in short, a *kind of predisposition* is essential to the development of the disease (1891). . . . Secondary progressive pernicious anæmia can be produced by *mental overstrain* and *excessive psychical efforts* alone. In many cases *bad home surroundings*, *bad air* (in factories), *deficient food* (potatoes, coffee) are the cause. Sometimes the disease develops during *pregnancy*, or after *parturition*, without any special complication having occurred. Sometimes *diarrhœa*, *vomiting*, repeated *nose-bleeding*, or *discharges* of any kind—*e.g.*, chronic ulcers of the leg—are causes. Also exceptionally it can develop after *enteric fever* and *syphilis*; Atrophy of Stomach (*Fenwick*, 1877). Gastritis (*Nothnagel, Osler*). Cancer of Stomach (*Quincke, Eisenlohr*, 1877)."

severer forms it can give rise to a degree of anaemia equalling that of pernicious Addisonian anaemia, and hitherto generally grouped with it. It is, however, sharply distinguishable from pernicious Addisonian anaemia by its pathological, haematological, and clinical features, and is essentially due to deficiency of blood and intestine which favours the contraction of the specific (haemolytic) infection responsible for the disease, and which favours its continuance after its contraction. The typical mode of development of this disease is an antecedent history of oral, gastric, or intestinal trouble associated with sepsis for some years previous to the

SCHEME II.

ETIOLOGICAL RELATIONS OF ADDISON'S "IDIOPATHIC ANÆMIA" TO OTHER FORMS OF ANÆMIA (HUNTER).



formation usual in the chlorotic type. (See *Lancet*, 1903, and British Medical Journal, 1905.)

3. *In relation to Addisonian anaemia*, septic infection plays an important part in the development of this disease, *although, however severe it may be, it is unable of itself to produce it.* It is, however, a potent antecedent condition creating the unhealthy condition in the stomach onset of the disease, and with or without any special sign of non-haemolytic septic anaemia. This is more or less suddenly followed by a rapidly-developing and *haemolytic anaemia* (with lemon colour, sometimes by jaundice) out of all proportion to the severity of any symptoms or lesions connected with the alimentary tract.

C. *Specific Infections.*—In addition to the foregoing

factors, specific infections are from time to time present in the intestinal tract, which either alone or, as is more frequently the case, aided by the above-mentioned infective factors, powerfully affect the blood and produce anaemia of varying degree. The most severe form of anaemia—that is, Addisonian anaemia—owes its origin to such a special infection.

In a proportion of cases—as large as 20 to 25 per cent.—the contraction of its haemolytic infection can be traced to the influence of severe drain poisons.

TYPES OF ANAEMIA.

After the foregoing consideration of the etiological factors concerned in the production of anaemia, the types may conveniently be considered in connexion with three forms of anaemia, representing the chief types met with:

1. *Chlorosis*—often termed a primary form of anaemia, but in reality secondary—the purest form of all anaemia, owing its origin to the operation of a number of factors, slight in themselves, but of a non-infective character.
2. "*Septic Anaemia*"—a form of anaemia hitherto not sufficiently recognized, but recently differentiated by the writer, owing its origin to the existence of sepsis in connexion with the oral, gastric, and intestinal tract—one of the commonest forms of anaemia, frequently complicating and greatly intensifying all other forms, sometimes so intense that it itself constitutes one of the severest forms of anaemia, resembling in its intensity the severest of all—Addison's anaemia—and hitherto generally grouped with this form of anaemia, but differing from it in its pathology, in the character of its blood changes, and in its prognosis.
3. *Addison's Anaemia*—"Pernicious Infective Anaemia"—a chronic infective disease of infective origin of specific nature, in which sepsis is a most important antecedent and concomitant factor, but has grafted on to it an intense haemolysis, which marks it off sharply from septic anaemia; characterized throughout by a mode of onset, a characteristic group of clinical features, a clinical course, and a prognosis (resistance to treatment) sharply distinguishing it from septic anaemia.

THE WRITER'S CONCLUSIONS.

Infective Nature.

Not merely a special form of anaemia, but a definite specific, haemolytic, *infective disease*, localized to the alimentary tract—with characteristic mode of onset, clinical features and course, haemolytic and infective lesions.

Symptoms.

So far from the *anaemia* being the sole feature of the disease and the cause of all its symptoms, there are at least three other groups, *haemolytic*, *gastro-intestinal*, and *toxic*—no less striking and characteristic, and far more instructive than the actual anaemia—caused not by the anaemia itself but by the infective agencies underlying the disease.

In my experience they are to be found in combination in every case of Addisonian anaemia; they are all related to one another, although sometimes one or other may be specially prominent; and they have one marked feature in common, namely *periodicity*—the same feature which, as already seen, characterizes the activity of the local lesions presented by the tongue. (Stomach and intestine.)

Etiology.

The conclusion come to by Biermer so largely accepted by nearly all later observers—namely, that all ordinary causes of anaemia are potential causes of this disease, if only they are severe enough—has, in my experience of the disease, neither clinical nor pathological basis. (1) The disease cannot, in my experience, be produced by ordinary anaemia-producing factors, *not even by sepsis*, however severe, and cases of this kind can be successfully excluded, both during life and after death, by the absence of the characteristic groups of symptoms and pigment changes I have described. (2) According to my observations, not one of the many causes above described are capable, however severe, singly or collectively, of producing the whole features and lesions of Addison's anaemia. Consequently not one of them can be regarded as the real cause of that anaemia. The great majority of these so-called "causes" are really symptoms and effects of the infective processes underlying the disease. The etiological superstructure built upon Biermer's foundation represented in the following schemes (Schemes I and IV) must therefore be removed.

My endeavour has been to expose more and more the bed-rock of haemolysis underlying Addison's anaemia (1888 1900).

The result has been not only to expose this but to reveal two sets of infective factors, (1) a *specific* (haemolytic) *infection* whose site and lesions (the tongue, stomach, and intestine), approximate time of contraction, and probable source I have, I think, been able to lay partly bare; and (2) while doing this to lay completely bare a great stratum of *septic infection* traversing the foundations of Addison's anaemia and forming to a large extent the foundation of those forms of severe anaemia ("*Septic Anaemia*") which often clinically resemble Addison's anaemia (see Scheme II).

Mode of Origin.

A history of antecedent oral, gastric, or intestinal trouble, associated with *sepsis*, extending usually over many years, more or less suddenly followed by a rapidly-developing *anaemia* marked by haemolysis (*lemon colour* or *jaundice*)—such is, in my experience, the typical mode of development of Addison's anaemia.

It is this history that leads me to inquire minutely into the character of the tongue and gastric symptoms at the very outset of the illness.

A history of "sore tongue" (infective glossitis) coincides approximately with the onset of the severe anaemia and its accompanying haemolysis, so that in some cases with a clear history the patient can date the onset of his disease from a particular month when this glossitis was first noted. The source of this haemolytic and glossitic affection which thus, comparatively speaking, suddenly comes on is connected, when the history can be clearly obtained (25 per cent. of cases), with an *exposure to drain poisons*. The haemolytic infection once taken root in the mucosa and substance of the tongue, in the mucosa of the stomach, and in some cases in the mucosa of the intestinal tract, is extraordinarily persistent, healing up in one part for a time, then spreading to another. These variations in activity (as often seen during life in the tongue) are attended by an aggravation of all the features of the disease—namely, anaemia, haemolytic changes (in the urine), glossitic, gastric, or intestinal symptoms, and toxic (febrile and nervous) disturbances.

These facts, so far as I am concerned, place this anaemia among the group of *Infective Diseases* as firmly and securely as the pathological lesions, clinical features, and clinical course of scarlet fever place it amongst recognized infective diseases; or the features and clinical course of typhoid fever (even prior to the actual discovery of its bacillus), separated it from other apparently allied fevers such as typhus, and placed it in the group of specific infective disease.

The labour given to the study has during the past twenty years not only been repaid by the variety of problems successively presented—it has had an important practical outcome, the benefits of which extend far beyond the limits of this particular condition. For as the direct outcome of my study of the etiology of this disease, I have been led to recognize and attach an entirely fresh significance and importance to one of the commonest and most overlooked forms of infection in the body—that which I have entitled "*Oral Sepsis*"; and to bring this into etiological relation not only with this and other severe forms of anaemia, but with a wide range of septic infections met with in medicine, conditions which I have designated "*Medical Sepsis*."

The daily experience of many—both patients and doctors—and the literature of the last seven years show the enormous practical benefits which have been derived from this "direct sequel and outcome" (as one observer has rightly termed them—Grawitz, 1901) of the experimental investigations which I have undertaken in connexion with this disease.

My experience satisfies me that this outcome cuts as deeply into the pathology and treatment of severest forms of anaemia and medical sepsis as the adoption of antisepsis has cut deeply into the pathology and treatment of surgical sepsis; that, irrespective of any controversy which it has created, it is destined to influence conception and practice with regard to blood diseases and medical sepsis as profoundly as the assertion of "pythogenic origin" of typhoid fever by Murchison first—long prior to the discovery of the typhoid bacillus—determined our measures for the prevention of all sorts of other infections communicable through drain sources.

SCHEME III.

THE OBSERVATION AND INTERPRETATION OF ADDISON'S ANÆMIA (HUNTER, 1885-1903).

Period 1. "Its Unity, Hæmolytic Nature, Gastro-Intestinal Site, Toxic Cause, and Toxic Clinical Features." (1885-1890.)
Period 2. "Its Infective Origin and Lesions." (1890-1903.)

iv.

Pallor, Weakness, Dyspnœa,

ANÆMIA.

General Symptoms:

Palpitation, Irritability, &c.

Fever, Headache, Perspirations, Drowsiness, Languor, Feelings of intense weakness.

iii.

Toxæmic Symptoms (1889).

Nervous Symptoms, Pains, Numbness and tingling, Ataxia, Peripheral Neuritis, Mental disturbances.

Atrophy, Gastritis, Catarrh, "Infective gastritis" (mucoid vomit containing Streptococcus longus) (1899).

Gastric Disturbances and Lesions (Frequency).

STOMACH.

Stomatitis (Frequency) (1890-1900).

Infective Glossitis (1889-1900).

Symptoms (Frequency). **Lesions** (Frequency).

MOUTH.

i.

Glossitic, Gastric, Intestinal Symptoms:

A group denoting *the site* of the infective lesions underlying the disease.
Varying in intensity from time to time; insufficient of themselves to account for the anæmia; and not to be accounted for by any mere weakness resulting from the anæmia; but important as marking the existence of infective trouble in the portions of the alimentary tract affected.

ii.

Hæmolytic Symptoms:

Lemon Colour, High colour of urine, Urobilinuria, Varying in intensity at different periods (1889).

CLINICAL FEATURES.

(Four Groups.)

MODE OF ONSET.

ANTECEDENT HISTORY.

Sepsis (Oral and gastric). Drain poison infection (Sore tongue).

Atrophy, Enteritis, Catarrh, "Infective enteritis" (1900).

A relative, but no absolute increase of putrefaction (1889).

Ptomaines (1889).

Chemical changes.

Intestinal Disturbances and Lesions (Frequency).

INTESTINE.

Urobilinuria, Lemon colour, Bilious attack.

Polychromia of Bile.

Pigment Lesions.

LIVER.

Lesions (Frequency).

GASTRO-INTESTINAL AREA
The site of the disease (1888).

Symptoms (Frequency).

PORTAL CIRCULATION (Spleen, Gastro-intestinal Capillaries, Liver).

HÆMOLYSIS (Experiments) (1885-90.) — Constancy and Pathognomonic Importance of Pigment changes in Liver and Kidney (1888), Hæmolytic changes in Urine (1889).

BLOOD. (Degree and Character of Blood Changes) (Not distinctive).

Hæmogenesis.

Bone Marrow Changes. Secondary to the disease—denoting increased activity in blood formation. *Hunter*, 1888. *Mott*, 1890. *Muir*, 1894.

PATHOLOGY.

"Oral sepsis" (Frequency and importance) (1890-1907). as a Cause of (1899)

"Septic gastritis" (mucoid vomit containing Streptococcus longus). and of

SEPTIC INFECTION (1900).

"Septic Enteritis" (Streptococcus longus).

Chemical change. A relative, but no absolute increase of putrefaction. Aromatic sulphates (1889).

ETIOLOGY

Specific infective Glossitis (Streptococcal) (1901). With striking clinical and pathological features (1900-7).

SPECIFIC HÆMOLYTIC INFECTION Drain poison infection (1889-1907).

Special chemical changes (Ptomaines, 1890).

Hæmolytic lesions (1888).

Pigment. Special in amount and constancy (1888).

"A SPECIFIC INFECTIVE (HÆMOLYTIC) DISEASE." (Hunter.)

EXPLANATION OF SCHEME III.

Pigment Changes.—Constant and pathognomonic—of great pathogenetic significance—denoting haemolysis as a constant and special feature of this anaemia, produced by toxic agents absorbed from the gastro-intestinal tract. The bone-marrow changes denote excessive regenerative activity, secondary to the haemolysis of the disease.—(Hunter, 1888.)

Dr. Hunter's observations dispel some illusions. They demonstrate that, strictly speaking, pernicious anaemia has a *place apart from secondary anaemias* due to wasting diseases, repeated blood loss, or disease of the organs of nutrition. When in such cases the anaemia becomes, as we were wont to say, "pernicious," this is not, according to his view, by any normal sequence of events, but by the intervention of a new factor—the supervention of a malignant process of blood destruction which accelerates the fatal issue. In support of his contentions Dr. Hunter details the results of many experiments upon the effects of haemolytic agents. . . . Certainly he has succeeded in making out a very strong case for his view, which, more than any other yet advanced, would seem to harmonize best with the clinical facts of this remarkable malady.—(Editorial article, *Lancet*, 1888.)

In my opinion these observations (now recorded) bear out strongly the views, and strongly support the conclusions arrived at in Hunter's recent studies regarding the haemolytic nature of the disease. To my mind these studies have very definitely shown that *the essential features of pernicious*

EXPLANATION OF SCHEME III.—Continued.

anaemia are excessive destruction of blood corpuscles, the seat of the disintegration being the portal system, more especially that contained within the liver and spleen, the process seeming to commence by a liberation of haemoglobin in the spleen which is carried to the liver to be disposed of. The marrow changes are secondary to the disease, with a reversion to the embryonic type.—(Dr. Mott, 1889.)

Dr. Hunter's clinical, chemical, pathological, and experimental investigations, carried on over a series of years, have added more to our knowledge on the subject than those of any individual worker since Eichhorst's valuable treatise of 1878. —(Dr. (Sir) Stephen Mackenzie, 1891.)

For coherence and reasonableness of doctrine, there has been no more satisfactory exposition than that given by Dr. William Hunter in his numerous essays upon this disease in particular and upon the subject of blood destruction in general. It cannot be doubted that his contention for the *specificity of pernicious anaemia*, as a disorder consisting in haemolysis, so far affords a satisfactory explanation of the phenomena. It has further enabled us to eliminate from the category of pernicious anaemia many anaemias which are strictly secondary, closely as they may simulate the primary disease in clinical features, blood changes, and visceral lesions. Nor is it warrantable to include within the class such cases as those of fatally progressive anaemia, associated with the presence of intestinal parasites, unless it can be shown that they depend on the same kind of haemolysis that underlies the primary malady.—(Dr. Sidney Coupland, 1898.)

Whether or not pernicious anaemia is a distinct pathological entity is still a much disputed question. Henry (1887, also 1889) takes the ground that it is the final stage of several forms of symptomatic anaemia and of chlorosis, a view similar to that held by Quincke, Osler, Eichhorst, and Coupland. Hunter is one of the strongest of the more recent supporters of the *independence of the disease*, and has done much to establish these views. He shows very conclusively that such conditions as the presence of intestinal worms, atrophy of the gastric mucous membrane, and malignant disease, to all of which the disease has been ascribed, are repeatedly met with in cases presenting none of the appearances of pernicious anaemia; and, conversely, that cases of pernicious anaemia are repeatedly seen in which no such changes are to be found. These facts in connexion with the clinical symptoms, but especially with the characteristic conditions of the blood during life, and the equally pathognomonic change in the liver after death, justify the belief that the disease is an independent one, due to some cause not operating on other forms of anaemia. The nature of this cause is a subject still very obscure.—(Dr. Crozier Griffith, 1890.)

It would seem to be a just conclusion to regard pernicious anaemia as *a truly independent affection*—probably due to the entrance into the portal circulation from the intestine of some certain haemolytic agent—the origin of which is unknown, but that it is possibly of the nature of a ptomaine.—(Dr. Griffith, 1891.)

Dr. Hunter is confirmed in his observations by the writers whose analyses he quotes, and also by others who have since found a great quantity of iron in the liver. . . . The important stride recently made is, then, that we have discovered that there is a great increase of iron in the liver in pernicious anaemia, and that this is very probably due to the fact of increased destruction of haemoglobin (red corpuscles) somewhere in the portal system or its annexa. *We have thus learnt the probable seat of the disease.* . . . In favour of the view that the origin of the blood destruction is in the stomach and intestines, the frequency of gastro-intestinal symptoms is urged by him (1890). . . . To see if any support can be lent to this view from the presence of such symptoms during life, I have carefully collected (1890) all the reports of cases in Guy's Hospital since the time of Addison. . . . An analysis of these cases (29 in number), showing that vomiting and diarrhoea are very common in pernicious anaemia, to a certain extent supports the view that the seat of the blood destruction is in the wall of the gastro-intestinal tract.—(Dr. Hale White, 1890.)

Dr. Hunter has, by a series of very interesting investigations, made it probable that in the cases observed by him we are dealing with a *chronic autointoxication*. He believes that the absorbed toxins lead to a destruction of blood and deposition of iron in the spleen and liver, and this observation of Hunter has since been confirmed by others.—(Professor Ewald, 1895.)

Bone-Marrow Changes.—The condition of the bone marrow even taken alone, would indicate *an increased regenerative activity*. . . . Moreover, if we examine the condition of the liver, we find it is exactly in the case in which the liver contains most pigment that the bone-marrow changes are most advanced, and the disease has run the most prolonged course.

Taking all the facts, we cannot but conclude that these five cases form a group of examples of the same disease, and that in all the changes in the marrow are of similar nature, and secondary to the disease. . . . It would appear that when the increased demand has lasted for some time there is a return to a sort of embryonic condition in which nucleated red corpuscles of larger size are formed; and it is probable that they are formed in such numbers or of such size that they do not lose their nucleus in the normal manner, which undergoes degeneration (megaloblastic degeneration). The reversion is not a primary pathological condition, but a process compensatory to the long-continued drain. (Professor Muir, 1894.) These changes are chiefly of the nature of degenerations, and are to be referred principally to direct toxic action, and they can be produced experimentally by the injection of micro-organisms, especially pure cultures of staphylococcus.—(Muir, 1901.)

Inasmuch as we have no other explanation for the megaloblastic transformation of the bone-marrow than *the presence of some toxic substance*, we will assume the cause of the megaloblastic reaction to be the formation of toxins which have the capability of influencing the marrow in *a specific manner*.—(Lazarus, 1899.)

To the mind of the writer this latter theory approaches most closely *the true solution of the question of pathogenesis*, namely, that of *the absorption of a toxic substance, probably of intestinal origin, which acts on the circulating blood, producing haemolysis*, and through the circulation *also on the marrow*, resulting in a *faulty hyperplasia*. That *this toxin is a result of gastro-intestinal infection*, as suggested by Hunter, *seems not improbable*. There are other evidences of a toxic substance circulating in the blood—notably the symmetrical lesions found at times in the spinal cord—which practically all investigators agree are the result of a toxin, and not of the anaemia *per se*, as they are not found in even the severest types of secondary anaemia. With a circulating toxin —for example, ricin—there is destruction not only of red cells in the circulation, but also of some at least in the marrow. The marrow responds in this emergency with nucleated red cells of normoblastic or megaloblastic type, depending upon the extent of the destruction.—(Bunting, U.S.A., 1905, and August 10th, 1907.)

Conclusion.—Pernicious anaemia is *essentially a haemolytic disease*, the haemolysis being due to some as yet unknown poison comparable in its effects upon the blood and blood organs to the action of toluylenediamin—whether autointoxication remains to be determined.—(Warthin, U.S.A., 1902.)

Pernicious Anaemia.—Evidence is accumulating in favour of Hunter's view that *pernicious anaemia is due to excessive blood destruction produced by toxic substances absorbed from the gastro-intestinal tract.*—(Cabot, U.S.A., 1903.)

Dr. Hunter has arrived at very definite and clear conclusions regarding the real nature of pernicious anaemia. . . . We must refer our readers to the text of his paper for his close and searching criticism of recent literature, on pernicious anaemia, merely remarking that the criticism appears to us to be sound. . . . The great advance made mainly by Dr. Hunter's investigations has been in the direction of revealing the true nature of Addison's "idiopathic" anaemia. By his researches on haemolysis and his observations on the clinical and pathological characters of this form of anaemia Dr. Hunter has given an explanation of the diseaee which is thoroughly in accord with modern scientific haematology. . . . Addison's anaemia is a definite entity, specific, infective, haemolytic, presenting characteristic local lesions (especially a peculiar form of glossitis). . . . There is no gainsaying the advantage of arriving at so definite a conclusion, and we must hasten to recast our nosology accordingly. For the practical outcome of such considerations is the total reversal of the situation as it was when Biermer wrote (1871) on "progressive pernicious anaemia." . . . Now we learn that the only condition entitled to be termed "pernicious anaemia" is just that which was neglected by those observers, and thus it alone possesses a single and well-defined etiology. It is in the demonstration of this definite character that so much is owing to Dr. Hunter, and we doubt not that by following up his line of inquiry much will be gained, not only in the direction of clearness of conception, but in the treatment of this grave disease.—(*Lancet* Editorial, 1903.)

SCHEME IV.

LATER OBSERVATION AND INTERPRETATION OF "PROGRESSIVE PERNICIOUS ANÆMIA" (1888-1900).

Period 1. 1871-1888.
Period 2. 1888-1900.

"The clinical picture is solely dependent on the degree of anæmia; specific symptoms independent of the want of blood scarcely occur. All the clinical features depend on the poverty of blood, including the fever and nervous symptoms." (*Lazarus & Ehrlich*, 1900.)

"The clinical picture presented by the disease shows no special features; these are only results of the anæmia and can therefore be met with in other forms of anæmia." (*Eichhorst*, 1878.)

CLINICAL FEATURES.

Megaloblastic Degeneration (*Ehrlich*, 1892).

"The essential changes are blood changes" (*Ehrlich*).

Marrow Changes. *Rindfleisch*, 1890. *Muir*, 1894.

PATHOLOGY.

Intestinal Disturbances and Lesions.

Intestinal Putrefaction, Intestinal Auto-Intoxication. *Hunter*, 1888-90. (*Many Writers.*) 1890-1900. *E. Grawitz*, 1901.

Bothriocephalus. *Schaumann*, 1894. *Schaumann and Tallquist*, 1898. *Schaumann*, 1900. *Schapiro*, 1888. *Ehrlich & Lazarus*, 1900. *Wiltschur*, 1893.

Altered Digestion, Altered Absorption. *Stejskal & Erben*, 1900. *von Morazewski*, 1900.

(1888-1900.)

Gastric Disturbances and Lesions.

Atrophy and Gastritis. *Rosenheim*, 1888. *Mader*, 1890. *Holt*, 1891. *Nonne*, 1893. *Eisenlohr*, 1892. *Grawitz*, 1896. *Ewald*, 1895. *Martius*, 1897. *Ehrlich & Lazarus*, 1900.

Toxic Enterogenous Origin.

Hunter, 1888-1890.
(The Gastro-intestinal site of the disease).
Schaumann, 1900.
Grawitz, 1900.

"As the result of these observations I consider the doctrine of the enterogenous origin of *pernicious anæmias* (*sic*)—as built up on the observations of different authors—to be one of the most practical advances in the domain of practical hæmatology." (*Grawitz*, 1901.)

ALL ORDINARY CAUSES OF ANÆMIA.

(1871-88.)

Atrophy and Gastritis. *Fenwick*, 1877. *Austin Flint*, 1871. *Nothnagel*, 1879. *Litten*, 1887. *Schumann*, 1875. *Henry & Osler*, 1886. *Kinnicutt*, 1887.

Ulcer. *Zahn*, 1882. *Litten*, 1880.

Cancer. *Quincke*, 1883.

(*Many Writers.*) *Especially Quincke*, 1876-1880. *Immermann*, 1875. *Fenwick*, 1877. *Müller*, 1877. *Mackenzie*, 1878. *Eichhorst*, 1878. *Coupland*, 1881. *Bramwell*, 1877.

Hæmorrhages. (*Most writers*) *Stockman*, 1895.

Bone Marrow Changes. *Pepper*, 1875. *Eichhorst*, 1891. *Cohnheim*, 1876.

Bad Air.

Bad Surroundings.

Bad Food, Diarrhœa, Vomiting and Malnutrition. (*Many observers.*)

Gastric Fermentation. *Sandoz*, 1887.

Ankylostomum. *Sahli*, 1883.

Bothriocephalus. *Reyher*, 1886. *Runeberg*, 1888.

Neurotrophic Lesions. *Sasaki, Bunti*, 1881.

ETIOLOGY.

"Primary, essential, cryptogenetic form of Pernicious Anæmia. Not a single point in the history to throw any light on the origin of the disease." (*Ehrlich and Lazarus*, 1899.)

"WITHOUT DISCOVERABLE CAUSE." *Addison*, 1855.

Bad or Insufficient Food. Puerperal Conditions.

POVERTY. *Biermer*, 1871.

Chronic Discharges. Chronic Diarrhœa.

(*Underpin to support above*).

"Predisposition." Something more than above causes.

"Under conditions not yet fully ascertained."

Eichhorst, 1891. *Ehrlich & Lazarus*, 1900. *Grawitz*, 1900. *Schaumann*, 1900. *Stockman*, 1895.

"PROGRESSIVE PERNICIOUS ANÆMIA." (Biermer, 1871.)
"MEGALOBLASTIC ANÆMIA." (Ehrlich, 1892.)

Professor Grawitz, "Die Pathologie des Blutes" (1896-1901).

"The view that absorption of toxic products from the digestive tract is the cause of primary anæmia is represented chiefly by W. Hunter on the ground of clinical and experimental observations. According to Hunter, there occurs in pernicious anæmia a *destruction of red corpuscles in the capillaries of the portal vein*—probably *produced by the absorption of toxic substances from the stomach and intestine*—possibly as the result of bacterial action." (1896.)

"I consider the difference of pernicious anæmias from simple forms of transitory anæmia is due to the malignant direction taken by blood formation."

"That there are many points still dark in this difficult subject is certain—notably the *extraordinary persistence and progression of the disease* after, *to all appearance, the cause is removed.* As is known Ehrlich (Verhandlungen des Verein für Innere Medicin, 1899, p. 227) refers this to the anatomical changes in the bone marrow as evidence either of megaloblastic degeneration or failure in regenerative function." (1901.)

Professor Ehrlich and Dr. Lazarus (1899):—

"The famous address by Biermer (1871), in which the name 'progressive pernicious anæmia' was first used, forms the starting point for our description of the disease. . . . Under this symptom-complex Biermer thus *groups together* essential, idiopathic, primary conditions of anæmia with those of known etiology and pronounced secondary character. . . . *The essential changes* which define progressive pernicious anæmia *are blood changes.* According to Ehrlich the blood of typical cases of pernicious anæmia differs from that of simple anæmia in showing, more or less numerously, red corpuscles which exceed the normal in size, whereas in simple anæmia only red corpuscles are met with whose diameter is normal or smaller than usual. The appearance of megalocytes in the blood, as also the appearance of their nucleated precursors the megaloblasts, show that *the regeneration of the blood is no longer following its usual physiological course*—it is following a type never found under normal circumstances in adults, a type resembling that found in embryonic life (p. 91). These distinctions are so important and far-reaching that it becomes necessary to separate the megalocytic and megaloblastic anæmias from the normocytic and normoblastic, *even if this division does not correspond clinically with Biermer's division of pernicious anæmia from other forms of anæmia.* We come, then, to the result that we are here concerned with the conditions characterised by the features described by Biermer and Ehrlich. But *we must continuously keep in mind that we have not to speak of a disease sui generis*, but a frequently occurring group of symptoms met with in very different conditions of disease (p. 92). . . . In diagnosis the point of greatest importance is to discover megaloblasts in the blood. Their discovery often requires great patience. A positive result—the presence of undoubted megaloblasts in conjunction with an increase of megalocytes—is *proof positive of the existence of pernicious anæmia*; since it demonstrates without doubt that the *blood formation in the bone-marrow is following a type which is abnormal for adults.*"

Dr. Schaumann, "Pernicious Anæmia in the Light of Modern Toxic Hypothesis," (1900):—

"As regards the term 'pernicious anæmia,' I hold the same views as Immermann, Quincke, Lichtheim, Müller, and the other authors who consider that the disease is not an etiological unity but only a symptomatic group which can be produced by causes of all kinds. I regard, therefore, as pernicious anæmia not only the so-called idiopathic, or primary, or better, cryptogenetic cases where the disease develops without any recognisable cause, and apparently spontaneously, but also those in which a definite etiological cause for the anæmia is to be found. Among such causes are the following: (1) Intestinal parasites; (2) gastro-intestinal disturbances of all kinds; (3) pregnancy and puerperium; (4) repeated hæmorrhages; (5) infective processes (syphilis, malaria, enteric fever); (6) intoxications (carbonic-oxide poisoning). If I have to define my position in a few words—I consider that we must regard as pernicious anæmia those cases of severe anæmia which correspond to the clinical picture described by Biermer and possess the blood condition described by Ehrlich, irrespective whether such cases occur in individuals previously healthy, or in those already affected with disease, and irrespective whether the anæmia runs a fatal course or not (p. 233)."

COMMENTARY ON SCHEME IV.

The *megaloblastic criteria* here laid down are wide enough to include at times the simple anaemia of lead poisoning, and of severe but easily curable tapeworm anaemia on the one hand; and to exclude many cases of severest Addisonian anaemia on the other. For, as is admitted by Ehrlich, "the discovery of megaloblasts often requires great patience." In my experience they may be absent from the blood altogether for long periods, during which other features, to which I attach real significance, show that the disease is still persisting. If this be the outcome of the megaloblastic criteria, no less perplexing is the result of the *normoblastic criteria*. For these group together such widely divergent forms of anaemia as those of loss of blood and chlorosis at the one end of the scale; of malignant disease and fevers in the middle; and of the forms of anaemia approaching in severity and almost in their fatal course that of Addisonian anaemia, forms which I have associated with sepsis, and have termed "septic anaemia." This particular cytological road, first opened up by Ehrlich (1880-88), and definitely divided up by him (1893) into great avenues—entitled "normoblastic" and "megaloblastic" respectively—has for the last ten years or more been the one selected by most observers by which to penetrate the anaemic forest.

Little wonder that roads so easy to traverse should have attracted so many observers coming to this subject since 1893, and should have led them to conclude that here at last were the paths by which to penetrate into the anaemic forest more deeply than by any other. Like every young observer, I selected this path at the outset of my work (it had not then been laid out, and had not flowers connected with it); and I spent three years (1885-88) in travelling along it, hoping it would lead me through. No one spent more time on endeavouring experimentally and otherwise to gauge the true significance of microcytes and poikilocytes and megalocytes, the parts played by loss of blood, defective blood formation, increased blood destruction (or "haemolysis," the title I in my first paper in 1888 first gave this process); their significance in relation to the anaemic process, their distribution among the various blood organs.

My interest in this class of observation finally ceased about the end of 1887, when I found that I could produce the whole degree of anaemia and the whole series of corpuscular changes presented in pernicious anaemia experimentally in a few days—almost in a few hours—by large doses of blood-destroying agents. And it is interesting to note that the most recent observations of Bunting (1905) show that by similar agents megaloblastic degeneration can be rapidly induced in a few days.

The problem presented by the blood changes which already, in 1886 (Gold Medal Thesis Univ. of Edin., 1886), I had concluded to be a chemical one, became more and more from that time an etiological one, as its first observers (Combe, 1822, and Addison, 1855), on clinical grounds, rightly surmised it to be.

As it happens, I was invited (but was unable to attend) to take part in the great discussion on anaemia at Wiesbaden in 1893, in which Ehrlich laid down his broad generalizations regarding normoblastic and megaloblastic anaemias, which, as already pointed out, have so profoundly influenced the work of younger observers since that period.

It has been a matter of deep interest to me, therefore, to watch the extraordinary fascination which this path of observation has had since 1893. Acquainted as I was with the literature, I was myself unable to gather from it in what direction this new road was leading, till, in 1899, Ehrlich and Lazarus published their joint work on *Anaemia* at the time I had in preparation my own work on *Pernicious Anaemia*.

The divergence between the two lines of work—the haematological, pursued by Ehrlich and his followers, and the experimental, pathological, clinical, and etiological, pursued by myself—was most startling and complete; so much so that it determined the form which I finally gave to my own book—namely, essentially that of a reproduction in chronological order of my own published work.

For simultaneously with my own conclusions (1890-1900) that Addisonian anaemia deserved more and more to be recognized and *marked off* from other forms of apparently similar anaemia, not merely as a "remarkable anaemia," but as a "*remarkable infective disease*" with definite mode of onset, clinical features, course, and pathological lesions—the conclusion led up to by Ehrlich's haematological line of work, emphasized by Schaumann, was that all sorts of anaemia required to be more and more *grouped together*, that—

Pernicious anaemia was not a disease *sui generis*, but a mere group of symptoms met with in very different conditions of disease.

And Addison's anaemia is dismissed curtly in a single sentence as having nothing distinctive about it, as failing to reveal anything in its mode of onset, clinical features, or *post mortem*, to throw any light upon it.

These results are thus described by Ehrlich and Lazarus (1899) and Schaumann (1900). (See Scheme IV.)

It will be seen from this what an extraordinary extension has thus been given to the title "pernicious anaemia"—what an addition is thereby made to the already large, ill-defined, and ill-conditioned family termed "Progressive Pernicious Anaemia"—by this creation of a new family group with a new name termed "Megaloblastic Anaemia," even although it is admitted this megaloblastic anaemia *does not correspond clinically with* Biermer's division of pernicious anaemia from other forms of anaemia.

I regard this extension as the most retrograde step taken in connexion with the pathology and etiology of Addison's anaemia since Biermer, in 1871, while giving a clinical and anatomical account in all respects applicable to Addison's Anaemia, stated that all sorts of causes could produce it; and subsequently, in his last word on the subject (1886), himself repudiated this view by emphatically asserting that the cause of the *real pernicious anaemia* was up to that time (1886) quite unknown.

CONCLUSION.

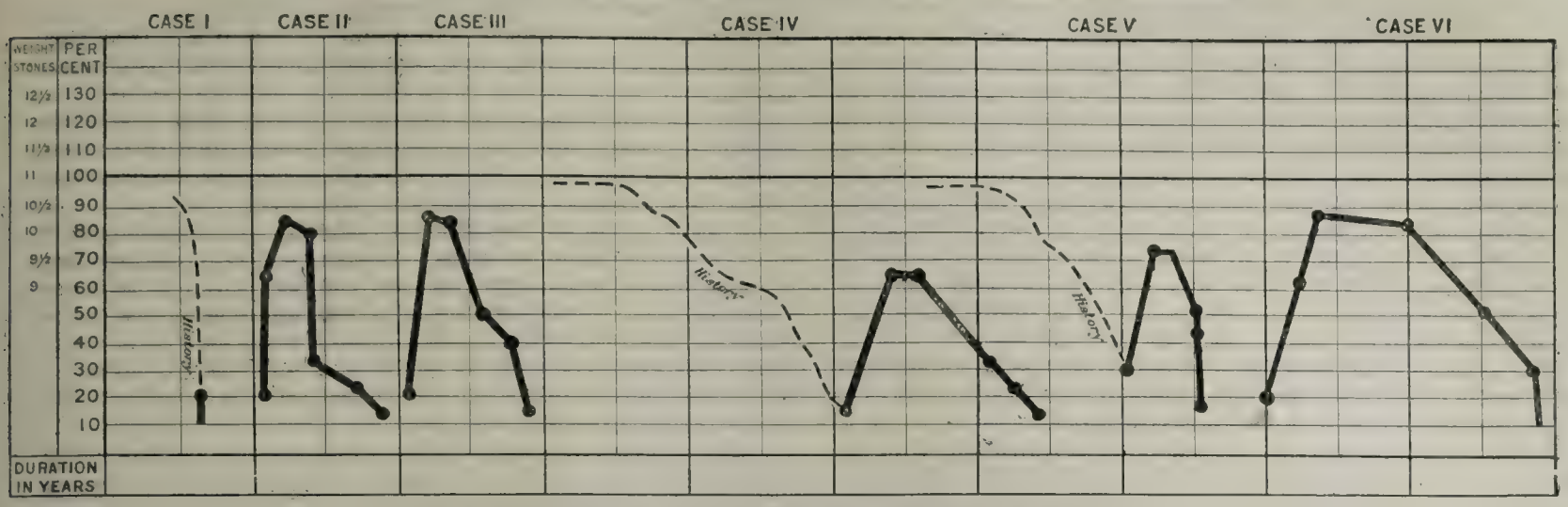
The whole subject of the historical development of this disease may be concluded by the following opinions (1903) of one of its earliest observers, acquainted alike with its origin and its latest developments, the late Sir William Gairdner of Glasgow, who writes as follows (1903):

I feel personally much *edified* by your two papers in the *Lancet* (1903), the last of which I have just read. The dim and distant beginnings of my own knowledge of the subject extend back to the time when I was doing "Periscope" (Reviews) for the *Edinburgh Monthly Journal of Medical Science;* and somewhere away back in the late Forties (1849) there is to be found an abstract of Addison's paper on suprarenal disease which brings in the "Idiopathic Anaemia" idea. And although in my *Clinical Medicine* in 1862 I have alluded to several cases which I believed, and believe, to be of this kind, the elaborate memoir of Biermer (that is, Müller—1877) found me unprepared to do more than look with vague astonishment on the vast superstructure he had erected (see Scheme I), and which I was disposed to attribute to local predominancy in his field of observation of what I held to be a rare and very peculiar disease. I now see exactly what it really was—that the peculiar German faculty of working up *casuistic* in forms determined *a priori*, led Biermer astray as it has done many others. All that I have seen personally since then makes generally for your view of the case; although I have not seen quite enough to lead me to generalize on this subject, and am not likely now, in retirement at 79 years of age, to do any more upon the subject.

The name of "Addison's Anaemia," had it been adopted generally in this country and on the Continent, would have saved a world of trouble, as the provisional name of "Bright's disease" did in its day, and does to some extent even now. I wish I could say I had taken note of the *glossitic* phenomena you describe, but I am afraid I am of the number of those who have passed over things very much within view, and shall now have no opportunities of repairing my omissions. If you can make that point—that is, the *glossitis*—clear as being of the frequency you describe, you will have won your case as against all gainsayers.

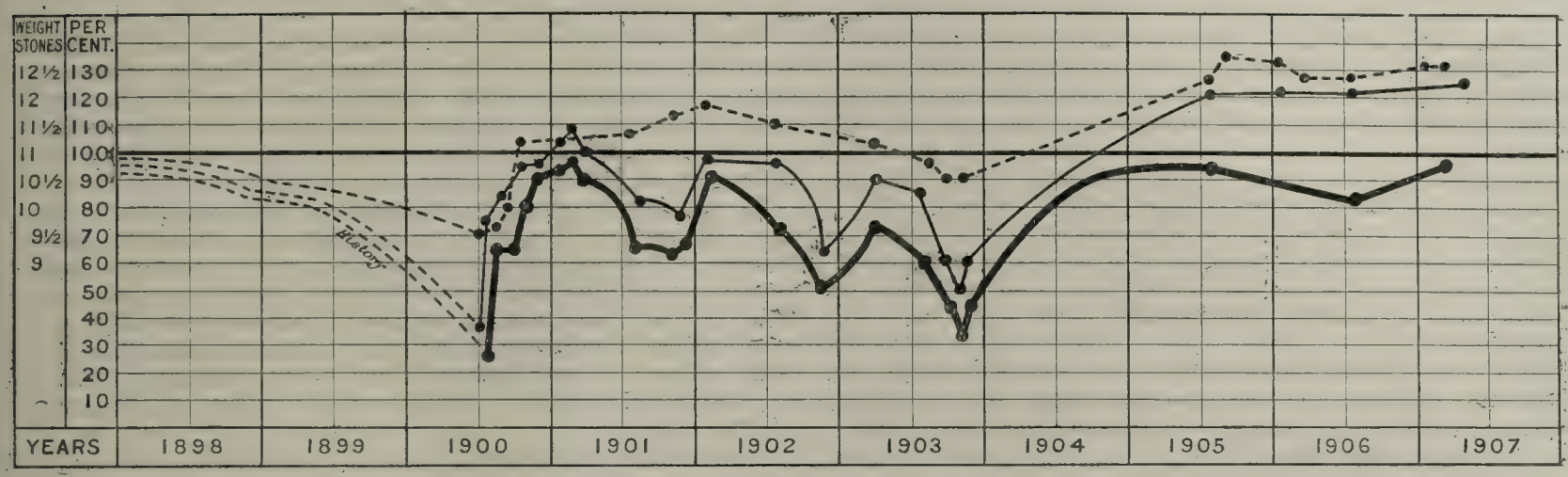
The "case" here referred to is the same case that divided English and French physicians sixty years ago in connexion with the identity or non-identity of typhoid and typhus fevers. The latter asserted that "typhoid and typhus fever, are one and the same disease . . . present not only analogy but the most perfect resemblance. . . . The deepest darkness prevails regarding the cause of typhoid fever. . . . The causes of typhoid fever are wrapped in the greatest obscurity" (1840). In 1850 Sir William Jenner finally decided the matter once and for all by showing that "typhoid and typhus fevers are equally distinct diseases—by difference in symptoms, course, duration, lesions, and *cause*"; and Murchison supplemented (1858) these observations by bringing typhoid fever into relation with drain poisoning.

CHART 1.—*The Natural History of Six Cases of Addison's Anaemia.*



Interrupted line = History prior to coming under observation.
Dark line = Percentage of red corpuscles up to fatal result.
Case I = Acute course (three months).
Cases II, III, IV, V = Subacute course (recovery, with relapse).
Case VI = Chronic type (two years).

CHART 2.—*The History of a Case of Addison's Anaemia Successfully Treated for Seven Years.*



Percentage of red corpuscles = Dark line.
,, ,, haemoglobin = Thin line.
Body weight = Interrupted line.
The case is fully recorded in *Trans. Roy. Med. and Chir. Soc. London*, 1901.

So with regard to this remarkable blood disease—"Addison's anaemia"—the surmise of its first English observers, that it was a *separate disease sui generis*, has in my observation and judgement proved to be the correct one. But each attempt to keep it apart has been met by a series of observations of German workers having for their object, as they expressly state, to *group together* (see Schemes I and IV) this disease with other forms of anaemia under the title of "progressive pernicious anaemia." The process by which this has been done is correctly described by Sir William Gairdner in the above striking commentary, namely, that of working up *Casuistik* into groups determined *a priori*. This was done in the first instance by Biermer (1871)—the particular condition he emphasized *a priori* being "fatty degeneration of the circulatory apparatus due to many causes," and followed up by Quincke (1876)—the particular condition he emphasized *a priori* being that "all sorts of causes" *must* be held responsible for Biermer's anaemia; and, *therefore*, any pathological differences observable in particular cases must be subordinated to this etiological generalization.

At the time—1892—when the writer's investigations in 1888 regarding the destructive haemolytic nature and toxic cause and gastro-intestinal site of the disease were "profoundly influencing" the work and conception of English and American observers, and were being generally recognized as the "strongest argument in favour of the independence of the disease that had yet been advanced," as *separating* more and more Addison's anaemia from other forms of anaemia, even from "progressive pernicious anaemia" (see Scheme III), the line of cleavage between English and German work was once more made even more marked by Ehrlich's work (1892), emphasizing "megaloblastic degeneration" as a feature of certain forms of anaemia, and (again *a priori*) as "*the special feature* of progressive pernicious anaemia, *even if this does not correspond clinically with Biermer's pernicious anaemia*" *(sic)*.

The extraordinary confusion thus created by the persistent attempt of the past ten to twelve years to connect particular forms of anaemia with particular morphological changes in the blood could not receive better illustration. The essential changes of Addison's anaemia are no more blood changes than is the fever or diarrhoea the essential change in typhoid fever; or any particular manifestation of scarlet fever—for example, angina, rash, or desquamation—the essential change in that disease. To so regard them is to miss the whole striking clinical, pathological, and infective characterization presented by this disease.

ITS COURSE AND TREATMENT.

The treatment of this severe disease is greatly influenced by the view taken of its pathology. Next to the profound degree of the anaemia, the two most prominent features presented by the blood are:

1. The extraordinarily severe and pernicious character of the blood destruction—haemolysis.
2. The no less striking powers of recovery.

Both these features are more marked than in any other form of anaemia. It is not uncommon to find a patient's blood reduced from the normal standard to 20 or 30 per cent. in the course of a few weeks, accompanied by all the clinical evidences of intense blood destruction, namely, high colour of urine, urobilinuria, lemon colour, biliousness, and occasionally jaundice. No less striking is the rapid recovery of the blood when the haemolysis is arrested. The percentage of corpuscles and haemoglobin often arise from 20 to 30 per cent. up to 80 or 90 in the space of a month or two—in some cases, in the writer's experience, in the course of three to four weeks. (See Charts 1 and 2.)

This remarkable power of recovery is a natural feature of the disease and its most hopeful one. From the point of view of treatment, however, it is often misleading, since the particular treatment in use at the time of its occurrence is wrongly credited with having produced it—with having cured the disease. It misleads, moreover, in

another way with unfortunate results; for so remarkable is the recovery that doubt is cast, both by the doctor and the patient, on the accuracy of the original diagnosis. The patient feels and looks so well that he resumes his ordinary occupations and habits of life and gives up all treatment. There follows, in a period varying from six to nine months, the usual relapse, fatal in about three-fourths of the cases. In a certain number, however, recovery again takes place, although more slowly and less complete in character; the patient remains well for another period of three to six months, when a second relapse occurs. Even this is survived by a few, and the writer's experience satisfies him that, under suitable treatment, this number is steadily increasing (see Chart 2).

The above features of the disease are very striking and constant. They have an important practical bearing:

1. On the importance of early diagnosis.

2. On the importance of continuous systematic treatment and management of each case, both prior and subsequent to the first severe invasion of the disease.

In the writer's experience the disease can be diagnosed with certainty in its early stages, prior to the first severe attack, by the following features:

(1) *Glossitic, gastric, and intestinal symptoms*, accompanied by (2) *haemolytic symptoms*—lemon colour, biliousness, with or without jaundice (generally referred to "congestion of liver"; (3) *febrile and nervous disturbances*—the former often referred to "influenzal attacks"; and lastly (4), in these early stages, if examination of the blood be made, by a remarkable degree of *anaemia*, out of all proportion to the severity of any symptoms present, the corpuscles often being found reduced by 30, 40, or 50 per cent. in the course of a few weeks in a patient who has only felt "out of sorts" and is still at work. This is, according to the writer's observations, *the Stage of Onset* of the disease; it lasts from three to twelve months, or in some cases even longer. (See Chart 1, Cases I, IV, V, and Chart 2.)

The Stage of Invasion is marked by a severe aggravation of all the foregoing features—alimentary, haemolytic, febrile, and nervous, and by so pronounced a degree of anaemia, and such severe blood changes, that the nature of the disease is for the first time suspected.

The course of the disease from this time onwards is that already described—of longer alternating remissions and relapses, with shorter periodic remissions occurring with great regularity at intervals of every three or four weeks; the chief feature of these relapses being the recurrence of gastric or intestinal symptoms.

The course of the disease is therefore not that of an anaemia, but of a chronic febrile infective disease, with characteristic symptoms and course; the success in treatment is directly proportional to the recognition of this fact. The earlier the diagnosis is made, and the sooner the antiseptic measures hereafter described can be carried out, the more successful the result. The writer's experience of the last seven years satisfies him that the prognosis of the disease has been materially altered for the better; and that with early recognition and suitable treatment this disease, while always grave, need not necessarily be either progressive in its course or pernicious in its result. (Chart 2.)

The treatment to be adopted to this end includes not merely the administration of blood tonics, such as arsenic, or the combating of individual symptoms, especially those of gastric and intestinal nature, or the adoption of a particular régime of diet. If these measures could individually or collectively check the disease it would long ere this have lost the character of perniciousness which so fatally distinguishes it.

Treatment includes a general management of the case, with close observation of all its features, especially of its gastric and intestinal symptoms, of its fever, and of its haemolytic symptoms, extending not merely over the period of acute illness, but also for many months and even years subsequent to the first remission (Chart 2).

According to the course pursued by the disease three types may be distinguished—acute, subacute, and chronic.

The *acute* form is very severe, and, fortunately, is the rarest. It terminates in its first attack, the course of the disease from first to last being only from three to six months (Chart 1, Case I).

The *subacute* forms, slower in onset, milder in course, recover from the first severe attack in a most remarkable way, but relapse after some six to eight months, and end fatally, the course of the disease from first attack being a year to a year and a half, and about one and a half to two and a half years from first symptoms (Chart 1, Cases II, III, IV, V).

The *chronic* forms recover, not merely from the first attack, but also from the second, and sometimes even from a third, the total duration of the disease from first to last being two to three years (Chart 1, Case VI).

A fourth type of the disease—which the writer would fain hope will become more common as the result of the antiseptic and antitoxic treatment recommended by him—is represented very recently by two cases who have continued to enjoy good health now for seven years after their first attack. One of them has had 100 per cent. of corpuscles and 120 per cent. of haemoglobin for the past three years (Chart 2).

During Acute Attacks.—The symptoms in severe cases are those of an extremely severe acute febrile disease, added to those of severest anaemia. The characteristic symptoms are the fever, often reaching 102°, 103°, or even 104° F., sickness, vomiting, or diarrhoea, very severe general disturbance—headache, drowsiness, sometimes semi-unconsciousness. These are accompanied by a marked lemon-coloured, almost jaundiced, appearance, and by marked urobilinuria.

When these severer symptoms subside, they continue in a milder and modified form, sometimes for two or three months at a stretch, varying slightly at intervals of two or three weeks and accompanied by a slight irregular fever, ranging from subnormal in the morning to 99° or 100° F. in the evening.

Gastric discomfort, often marked by retching and sickness, forms one of the most distressing features of the disease, and is entirely independent of the character of the food or medicine given. According to the writer's observations, this sickness usually occurs in the early morning on awaking and before food is taken. In severe cases, in the later stages of the disease it may occur at any time, and often does so two or three times a day over many weeks.

This fact is an important one; for it is often referred, quite erroneously, both by patient and doctor, to the food or medicine, and this leads to unnecessary changes. The sickness is due partly to infective inflammatory lesions of the mucosa of the stomach, such as I have now demonstrated to you, which tend of themselves to heal up after a time, and partly to toxaemic influences.

The toxaemic character of this vomiting is best evidenced by the remarkably sudden way it subsides when the acute character of the disease passes off, as it often characteristically does with great suddenness. The patient who has been lying at the point of death, oedematous all over, delirious, vomiting nearly everything he takes, suddenly takes a turn for the better, gets a "crisis." He wakes up conscious, calls for food and drink, takes everything (even beefsteak and porter) without distress, and makes a rapid recovery.

Antiseptic Treatment.—The conclusions arrived at by the writer as to the infective nature of this disease, and the part played by sepsis in connexion with it, have suggested new lines of treatment with regard both to its prevention and possibly even to its permanent arrest.

The course of the disease is marked not only by slight variations from time to time, but usually by one or more periods of distinct improvement, lasting sometimes many months, in some cases even a year or two—sometimes occurring independently of treatment, but without doubt greatly due to the beneficial effect of arsenic.

The special feature of this anaemia, however, is its great tendency to relapse, inexplicable on the view held by many that it can be produced by the ordinary causes of anaemia, if only severe enough. For these relapses occur without sufficient cause to account for them, sometimes indeed after the slight causes alleged to have produced it in the first instance have been removed. This tendency to relapse is, according to the present writer's observations, in reality due to the remarkable persistence of the specific haemolytic infection underlying the disease, since it is always accompanied by a recrudescence of the lesions in the tongue, stomach, or intestine, which he has described, and by the glossitic, gastric, or intestinal symptoms connected therewith.

The great liability to relapse may, however, be due to the fact that—the important part played by oral, gastric, and intestinal sepsis not having been recognized—the patient has hitherto been left, not only with his specific haemolytic infection, but also with the local sepsis which originally facilitated the contraction of this infection, and favours its continued persistence. When he first drew attention to this matter in 1900, the writer expressed the hope that this had been the case. His subsequent experience satisfies him that it has been, and that the prognosis of this disease can be materially affected by a line of treatment he then recommended, based upon the above considerations. This line of treatment aims at:

1. The complete removal by local antiseptic measures in the case of the mouth and by use of internal antiseptics in the case of the stomach and intestine, of the oral, gastric, and intestinal sepsis associated with the disease.

2. Special local antiseptic treatment of the infective glossitis present, supplemented by measures for raising the antitoxic power of the blood by a serum treatment, as he then suggested (1900). (Chart 2.)

DISCUSSION

Dr. G. Lovell Gulland (Edinburgh) said: We are all probably agreed that the exciting causes of pernicious anaemia may be very various, but there must be some underlying condition which is common to them all, since the effect of different causes on the blood, marrow, and other organs is so similar, and apparently so much bound down by definite rules. We are accustomed to regard the disease as the reversion in some sort to an embryonic condition, and I take it, from all that I have read and heard of the views of others, that the general belief is that pernicious anaemia is caused by a blood-destroying toxin, which, after the normoblastic process of regeneration is exhausted in the endeavour to repair the destruction, causes the organism to call upon the megaloblastic process, and thus brings about a blood of somewhat embryonic type. I have been led of late to re-examine my own views on this subject, and have come to the conclusion that we have no very sufficient grounds for assuming this destruction of red corpuscles. I am, of course, perfectly well aware that the anaemia, the presence of iron in the liver and elsewhere, the occasional presence of urobilin in the urine, and other effects of like nature, are regarded as evidence of the destruction of red corpuscles; but it must be borne in mind that none of these have been known to be present until the disease is well established, and that we have no knowledge of them as occurring in the long-standing chronic process, which, I believe, goes on in nearly every case for some months, or even years, before the condition is recognized. It seems to me to be possible that we may have to deal rather with a process of inhibition than of destruction; that the hypothetical toxin may act rather by temporarily or permanently interfering with red corpuscle formation in the normal way than by destroying red cells, and that this process is more likely to occur in people who have some congenital or acquired weakness of the bone marrow. I have of late come across many instances in which two or more members of a family have suffered from the disease, and at such long intervals that any possibility of direct connexion other than an inherited weakness might reasonably be excluded. There is every reason to think that the various hygienic faults on which Biermer originally laid stress as causal factors may produce the bone-marrow weakness as much as the debility of other systems. But to return to the possibilities of inhibition. It is pretty definitely known that the toxin of pernicious anaemia exerts an inhibitive influence on the development, or at least on the appearance in the blood of the neutrophile series of cells. The relative lymphocytosis, which is so common a feature in pernicious anaemia, and which continues not only during the acute stage but also during the remissions, is in reality a leucopenia of polymorph neutrophiles, although there are usually plenty of myelocytes in the marrow. This gives us evidence in this direction; and the familiar influence of x rays on the granular series of cells in myelocythaemia shows us that this is not an isolated instance in that particular. I have recently had the privilege of examining, with my friend Dr. Goodall, the material for his research on embryonic haematogenesis, and he finds that in the early state of embryonic life the red corpuscles are all nucleated and are all of megaloblastic type; as was well known, of course. At a certain stage in development a new set of nucleated red corpuscles appear, which do not at first carry haemoglobin, but which, however, after a time become the precursors of the normoblastic series of cells. In his view, these erythroblasts, as he calls them, are derived from the primitive megaloblasts, and he considers that megaloblasts are again produced from these erythroblasts, and so from these again normoblasts are derived. But the facts appear to me to be capable of another interpretation. It is, of course, a commonplace that the red corpuscles of vertebrates other than mammals are nucleated, and the occurrence of nucleated red corpuscles so early in embryonic mammalian life seems to me pretty definite evidence that these primitive megaloblasts are really homologous with the nucleated red cells of lower vertebrates. I would venture to suggest in the most tentative way that possibly the erythroblasts without haemoglobin of Goodall and others are not derived from the primitive megaloblasts, but directly from mesenchyme cells, and may therefore be regarded as peculiar to mammals in which the megaloblastic type of blood formation is embryonic only, and is outgrown later in life. Of course, we all know that in every mammalian marrow a certain number of megaloblasts are to be found, but it seems possible that these are present, not with any direct relation to the normal blood-forming process, but as a survival from embryonic life, or, if one cares to put it so, pre-mammalian life. If one assumes, then, that the toxin of pernicious anaemia inhibits normal blood formation, the demand on the part of the organism for haemoglobin carrying cells must start these cells, usually quite inactive, into activity, and produce the megaloblastic type of blood formation and clinical blood picture. We know, of course, that it is only after this process is well under way that the familiar symptoms of pernicious anaemia arise. The red cells produced in this way are not well suited to the needs of the mammalian organism, and it is the products of their destruction which appear as iron in the liver, and urobilin in the urine. The increase in the amount of red marrow in the disease may be due either to slowness of formation of red cells of the megaloblastic type, or to the fact that its cells when formed have a shorter life in mammalian blood than normal blood cells. In different cases of pernicious anaemia the amount of toxin inhibition must vary greatly. There are some cases which die in their first attack with a highly megaloblastic blood; others which have two or three remissions, and during these remissions acquire a practically normal blood with a normal number and a normal appearance of red cells; and, of course, bloods and marrows are found which fill up every interval between these two possibilities. Evidence is not wanting that actual blood destruction does not of itself produce pernicious anaemia. One has seen scores of patients with chronic repeated haemorrhages whose blood, and in the end, whose marrow, presented no resemblance whatever to those of pernicious anaemia. Chronic septic anaemias, chronic cancerous anaemias, do not produce the megaloblastic type, and Bunting has recently shown that experimental haemorrhage cannot be made to produce a pernicious anaemia. His valuable work on ricin and saponin shows also that toxic influences produce conditions closely allied to pernicious anaemia, and his experiments are perhaps the best answer, be it interpolated, to Hunter's assumption that the blood destruction, which he postulates in pernicious anaemia, takes place in the portal system. These remarks, which circumstances have prevented me from elaborating more fully, are not intended to express a new theory of the disease, or to be regarded as my own views. They are thrown out tentatively in the hope that they may draw forth an expression of opinion from the pathologists present at the discussion as to the possibility of such an explanation of pathogenesis.

Dr. Charles H. Melland (Manchester) said: My contribution to this discussion is intended to take the form of a demonstration of some of the features of the clinical pathology of the blood. Dr. Hunter, in describing the clinical features of the disease, has laid stress upon the gastro-intestinal symptoms and the presence of glossitis as characteristic and diagnostic; but though these may be present in many cases, there are still many

in which they are absent, and we have to rely for our clinical diagnosis wholly upon the examination of the blood. He has referred to the unscientific nomenclature of Biermer, under which numerous other severe anaemic conditions are grouped with the true pernicious anaemia—conditions such as are due to carcinoma, repeated haemorrhages, and the like, which, as I shall show, present blood conditions quite distinct from pernicious anaemia,

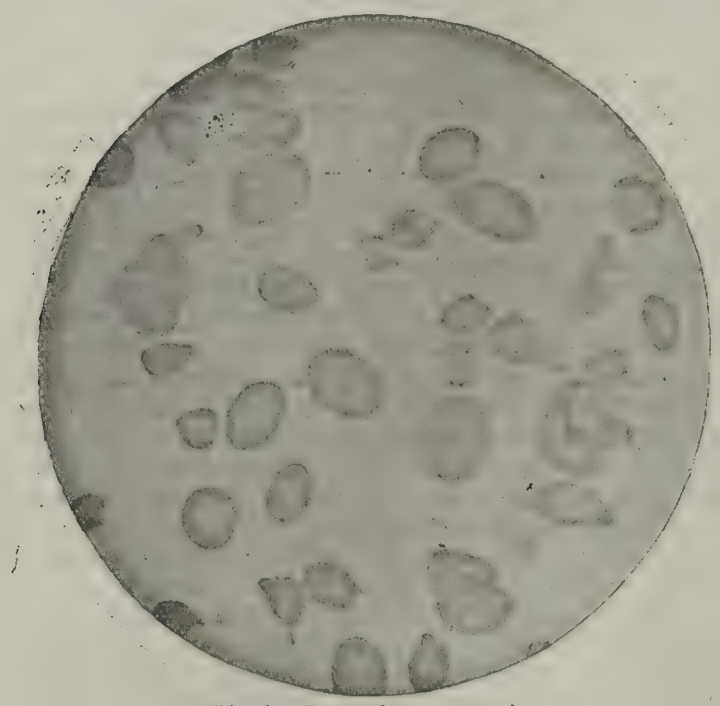


Fig. 1.—Pernicious anaemia.

though in their other clinical features they may closely resemble it. Here (Fig. 1) is a microscopic field from a typical case of pernicious anaemia. The changes in the character of the red corpuscles are most striking and easily recognized. Almost too striking, indeed, for there are many cases of the disease in which the changes are much less marked. The red corpuscles were much diminished in number, down to 1,325,000 per c.mm., and the haemoglobin was 32 per cent., giving a haemoglobin index of 121 per cent. per corpuscle. The outstanding features in the red corpuscles, in addition to their great diversity in size and shape, are the large average

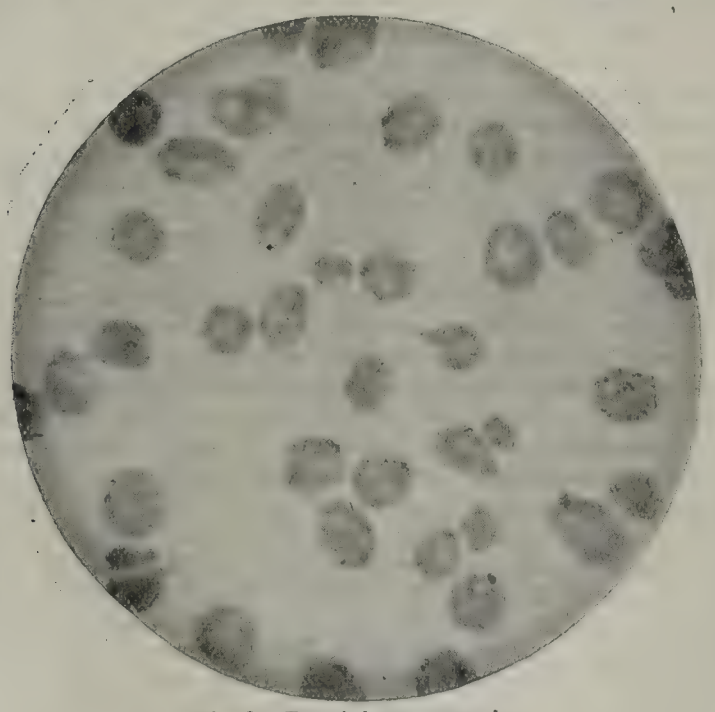


Fig. 2.—Pernicious anaemia.

size and the almost complete absence of any with the correct rounded form of the normal corpuscle. Here (Fig. 2) is another field of the blood from another case of pernicious anaemia. The changes in the corpuscles are not quite so startling; the diversity in size and shape is not so extreme. But on careful examination it is found that the distinctive features are fully represented. There is the great diminution in the number of red corpuscles, down to 1,450,000 in the c.mm.; the haemoglobin is reduced, but to a less degree, down to 50 per cent., giving a haemoglobin index of 172 per cent. There is the large average size of the red corpuscles which is of such importance, though few of those in the field are large enough to be classed as megalocytes, and the relative fewness of corpuscles of normal size and rounded shape (cf. Fig. 4). In addition there are two red corpuscles which show the presence of basophilic granules, stained by methylene blue, in their protoplasm, and this condition of "granular degeneration," though not absolutely limited to pernicious anaemia, is much more marked in it than in the other severe anaemias which are liable to be confused with it.

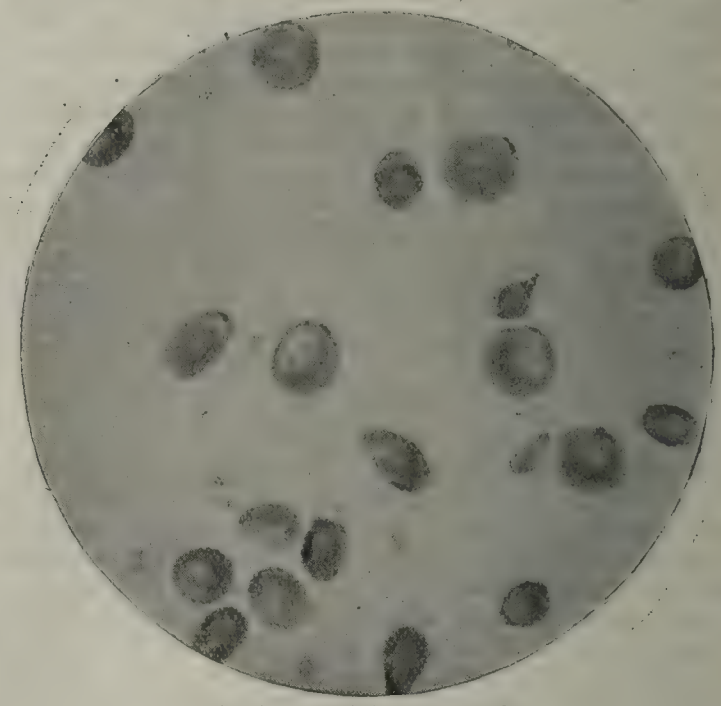


Fig. 3.—Pernicious anaemia.

Here (Fig. 3) is yet another case of pernicious anaemia. The appearance of the corpuscles is again quite characteristic; there is no need to labour the description. They were diminished to 1,980,000 in the c.mm. (a fortnight previously they had been only 1,575,000), the haemoglobin was 43 per cent., and the haemoglobin index 108 per cent. In this case there were no gastro-intestinal or glossitic symptoms, and the diagnosis had to be made from the blood alone, but there was a slight continuous pyrexia of between 99° and 100° F., which was quite conceivably an expression of the chronic infection on which Dr. Hunter insists. I

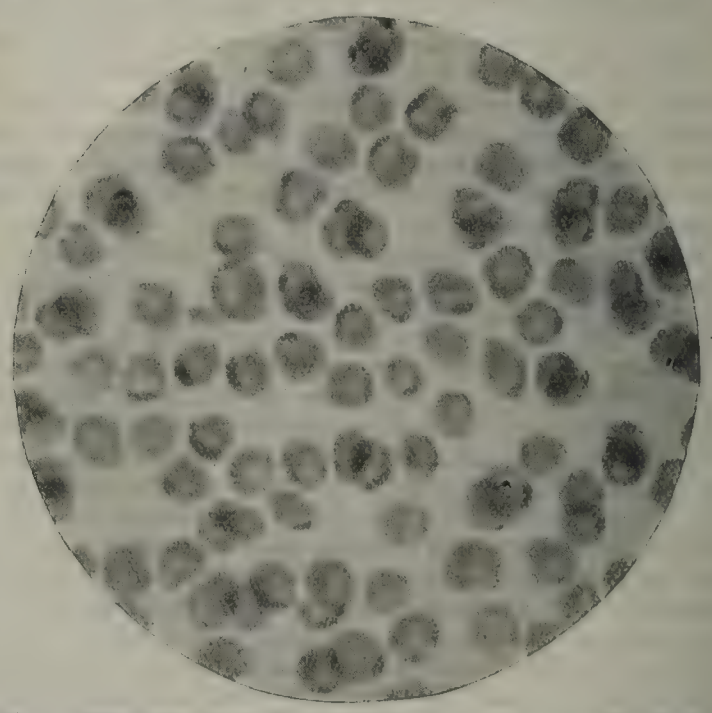


Fig. 4.—The same case of pernicious anaemia as in Fig. 3, after treatment. Characters of the red corpuscles practically normal.

have introduced this slide mainly for the purpose of giving you an opportunity of comparing the corpuscles in it with those of the next slide (Fig. 4), which are practically normal corpuscles in size, shape, number, haemoglobin content, and staining characters. The field is, in fact, one selected from the blood of the same case of pernicious anaemia after two and a half months' treatment. The number of red corpuscles and the percentage of haemoglobin were perfectly normal, and you will see that there is nothing in the character of the corpuscles as seen in the stained film to suggest any abnormality. And with regard to this case it is of particular interest that, although I have had her under observation for four years,

since then she has shown no signs of relapse, and continues perfectly well.

To compare with these slides of pernicious anaemia I will now show you some from other cases of severe anaemia, which in other clinical features closely resembled pernicious anaemia. Fig. 5 is from a man with carcinoma of the cardiac end of stomach. The signs of carcinoma were obscure (but confirmed by

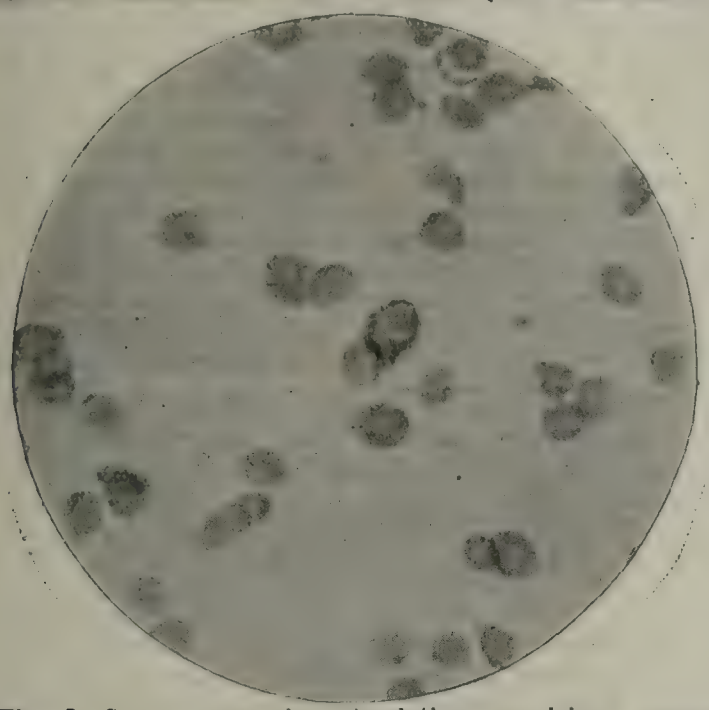


Fig. 5.—Severe anaemia, simulating pernicious anaemia clinically, due to carcinoma of cardiac end of stomach.

autopsy), and he had been sent down to the university examination as a case of pernicious anaemia. The photograph shows how unlike that of pernicious anaemia the blood was. The red corpuscles were reduced to 3,240,000 per c.mm., but the haemoglobin was still further reduced down to 20 per cent., so that the index per corpuscle was only 30 per cent., very different from the 100 per cent. or over which the corpuscles contain in pernicious anaemia. The corpuscles are here seen to be small, with only moderate degrees of irregularity in size and shape. (Compare with Fig. 1, 2, or 3.) There is a single nucleated red corpuscle present, a normoblast. I have laid no stress upon the

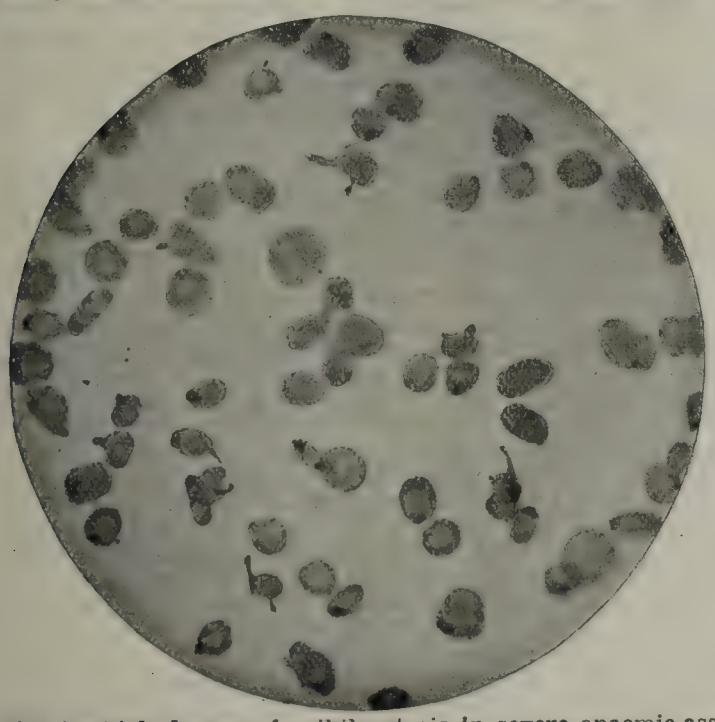


Fig. 6.—High degree of poikilocytosis in severe anaemia associated with rheumatoid arthritis.

presence or absence of nucleated red corpuscles in the diagnosis of pernicious anaemia. Normoblasts may be found in considerable numbers in many forms of severe anaemia from various causes, and even the presence of a considerable proportion of megaloblasts is not absolutely conclusive, since they may be found in still larger numbers in leucocythaemia and in that curious (and probably allied) condition which has been named "leukanaemia"; and, further, we may come across cases of pernicious anaemia with all the characteristic changes in the blood, but with few or no nucleated red corpuscles, normoblast, or megaloblast.

Here (Fig. 6) is a blood with a high degree of poikilocytosis, such a degree of irregularity in shape as would at first sight suggest pernicious anaemia; but on further examination it is to be noted that, although there is great irregularity in shape, there is not much diversity in size, and that the average size of the corpuscles is smaller than normal. This bears out the blood count, which gave 2,570,000 red corpuscles to the c.mm., and haemoglobin = 28 per cent., a haemoglobin

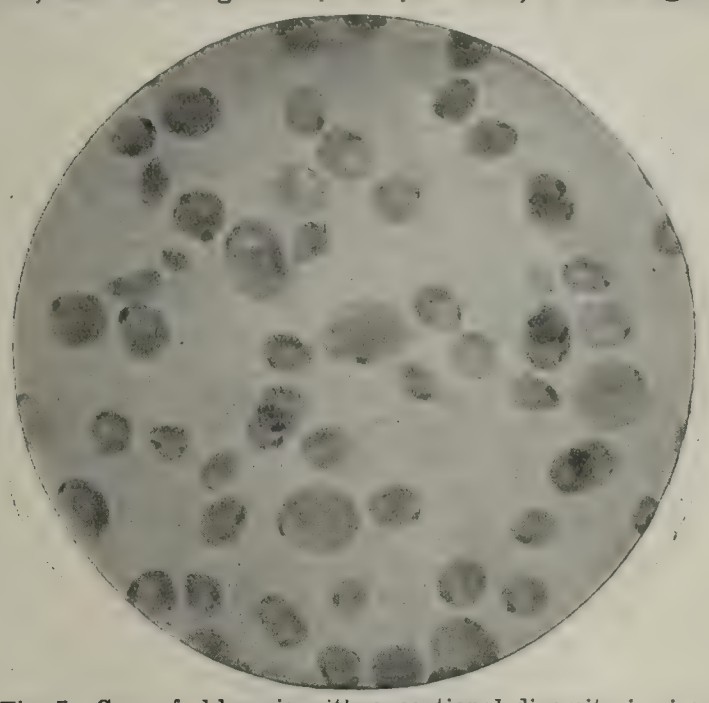


Fig. 7.—Case of chlorosis with exceptional diversity in size of the red corpuscles and presence of a number of megalocytes.

index of 74 per cent. only. There is a single corpuscle, which is much larger than the rest, and might pass for a megalocyte, but its size is apparent and relative only, as compared with the small corpuscles around it, and on comparison with healthy corpuscles it is found to be but little above the normal. The case was one of severe secondary anaemia associated with rheumatoid arthritis, and got rapidly well on plain iron treatment. Mere irregularity in size and shape of the red corpuscles, however well marked, is not sufficient to constitute a case of pernicious anaemia. Nor is the presence of even a considerable number of megalocytes such as seen in Fig. 7,

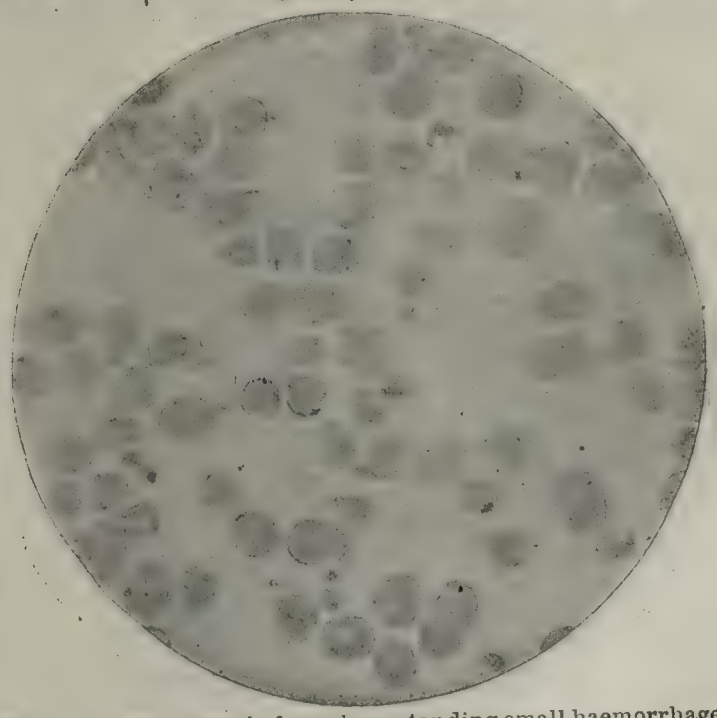


Fig. 8.—Severe anaemia from long-standing small haemorrhages from the bowel.

sufficient. In this field there are a number of genuine megalocytes, not merely relative or apparent, but distinctly larger than any met with in normal blood. Yet on examination the average size of the corpuscles is seen to be smaller than normal, the red corpuscles were reduced to 3,130,000, and the haemoglobin reduced further to 40 per cent, giving an index of well below 100 per cent. (64 per cent.). And although there is such marked difference in size of the corpuscles, there is but little diversity of shape, and a large number possess the normal rounded contour which is so exceptional in pernicious anaemia, where oval or pear-shaped forms are the rule. The case was a simple straightforward chlorosis,

which rapidly got well with appropriate treatment. I show it as rather a curiosity: it is quite exceptional to get such diversity in size, especially to get such large numbers of genuine megalocytes in anaemias of the chlorotic type. It is more usual to get such a picture as the next (Fig. 8). This is from a patient who had been losing small quantities of blood from the bowel over a long period. He was intensely anaemic, but not wasted, and had a good deal of

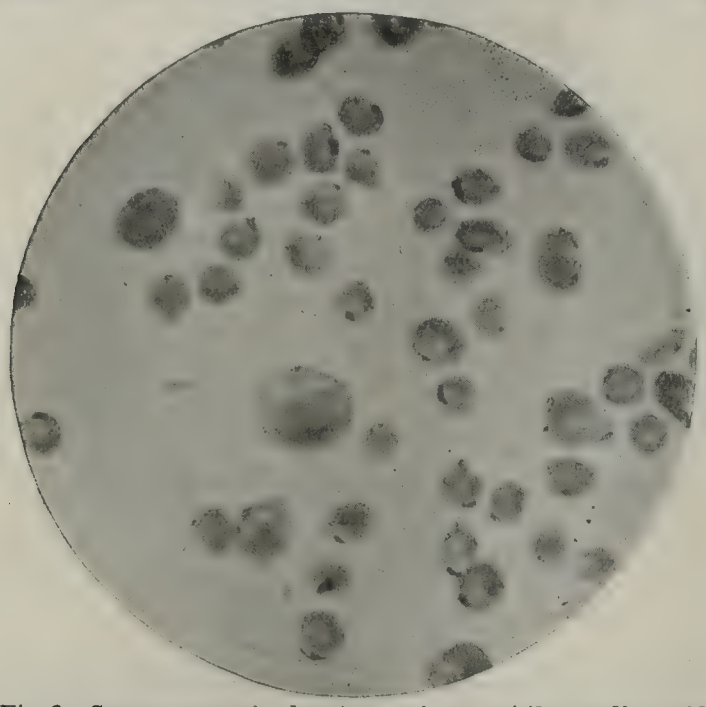


Fig. 9.—Severe anaemia due to carcinoma at the cardiac orifice of the stomach.

the yellowish pallor seen in pernicious anaemia. His haemoglobin was down to 28 per cent., but his red corpuscles were not proportionately reduced, being 2,700,000 in the c.mm., so that the haemoglobin index was barely above 50 per cent. (52 per cent.). The first glance at the slide, with its small, regular, washed-out looking corpuscles, is sufficient to show how unlike the blood of pernicious anaemia it is, and there is no need for me to dwell upon the other points of difference. Other cases of severe secondary anaemia generally show similar characters. Here (Fig. 9) is the blood from one of the most marked secondary anaemias I have ever seen, a man with

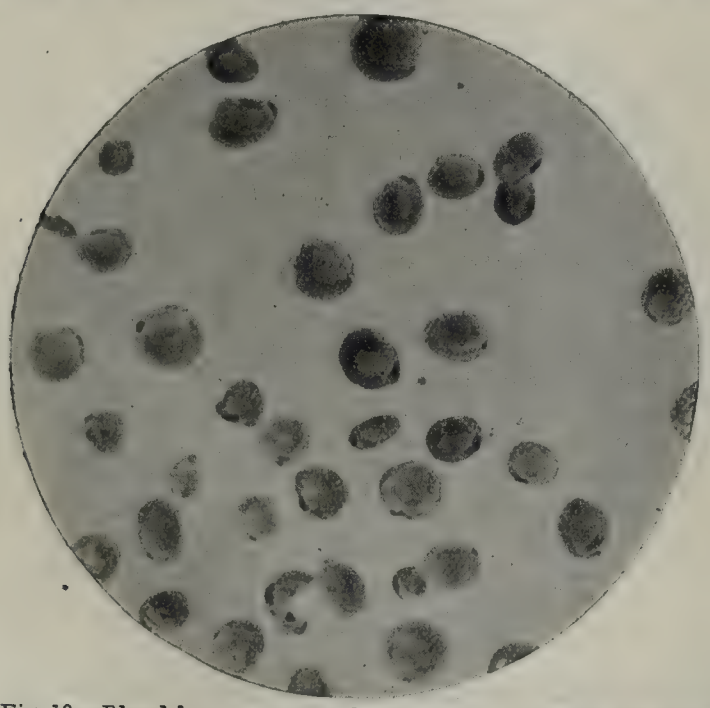


Fig. 10.—Blood from a case of leukanaemia, showing the degree of irregularity in size and shape of the red corpuscles.

carcinoma at the cardiac orifice of the stomach. His haemoglobin was down to 18 per cent., and his red corpuscles to 1,560,000. The corpuscles are seen to be on the average decidedly smaller than normal, and they show a fair degree of uniformity in size and shape, with one exception, however: there is a single megalocyte in the field which is distinctly larger than any of the large corpuscles in Fig. 1. But one megalocyte does not make a pernicious anaemia, and a comparatively short survey is enough to bring out the points of difference. The last slide I have to show you is from a case of the disease which has been named leukanaemia. (Fig. 10) The essential features of the disease are a considerable degree of anaemia and changes in the red and white corpuscles suggestive of leucocythaemia, though without any notable increase in leucocytes. At the time at which this film was taken there were 1,540,000 red corpuscles in the c.mm., and the haemoglobin was 36 per cent., giving an index of 113 per cent. The average size of the corpuscles, in keeping with this high haemoglobin index, is large. There are a few corpuscles larger than normal, but marked megalocyte formation was absent, and although a fair number of irregularly-shaped corpuscles were present, there was not the widespread irregularity in size and shape which is met with in pernicious anaemia and shown in Figs. 1, 2, and 3. Still of all the cases that I have shown you, the blood in this case, with its high haemoglobin index, approaches most closely to that in pernicious anaemia, and in some cases that have been recorded the diversity in size and shape has been so marked that observers have been of opinion that they had to do with a combination of leucocythaemia and pernicious anaemia.

Dr. A. GORDON GULLAN (Liverpool) said: During the past year several cases of pernicious anaemia have come under my close observation, and in three the condition was so marked, the symptoms so intense and acute, and the result of treatment so remarkable that I feel sure they will be of interest. The cases showed the characteristic picture of a distinct clinical entity. In regard to the etiology, it is noteworthy that these cases demonstrated the presence of a definite lesion in the alimentary tract, which might be—and I think I may say was—the source by which infection, whether microbic or toxic, entered the system.

In Case I—a clerk, aged 47—ulceration along the margin of the gums was very marked. There was a fairly large ulcer on the lower lip, and the mouth was foul, and teeth bad In Case II—a professional man, aged 45—the disease had been coming on insidiously for a considerable time. For several years he had suffered from constipation and mucous colitis, which was followed by chronic glossitis and an irritable tongue, about which he had complained for two years. Then came gradually-increasing debility and anaemia, with, later, a rapid development of all the symptoms. Case III—a schoolmistress, aged 44—had always been rather pale, but became more so in April, 1906, when she consulted her doctor, who gave her a haematinic mixture for anaemia; as the pallor, however, developed, she was sent for a holiday into the country at Christmas. The manifest symptoms of the disease then showed themselves, and were accompanied by persistent and constant vomiting, chiefly in the morning; at a later period ulceration was noticed at the margin of the gums. It is an important fact that all the acute symptoms of her illness date from the onset of this gastric disturbance.

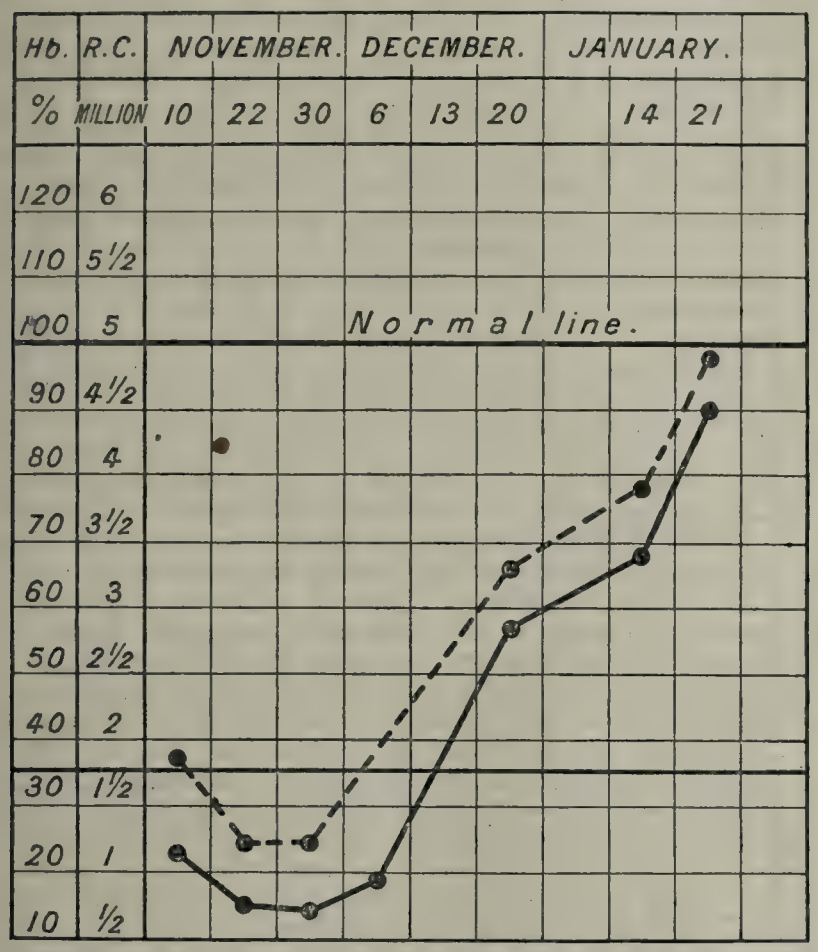
In these cases the clinical features were typical and the condition of the patients most critical. Case I was admitted into the Stanley Hospital, after a month's illness, with signs of great prostration and oedema of the feet and ankles.

CASE I.

He was a well-developed, well-nourished man, extremely anaemic, conjunctivae pearly with yellow subconjunctival fat. His skin was dry and of a decidedly yellow tint; he was breathless and faint, and suffered from palpitation on the slightest exertion, and his respirations when at rest numbered 24 per minute. The heart showed signs of dilatation. Cardiac impulse was imperceptible, and the deep cardiac dullness extended 1 in. beyond the nipple line. The sounds at all areas were distant and fetal in character, the first sound at the apex being accompanied by a localized faint blowing systolic bruit. The red blood corpuscles numbered 1,200,000 per c mm. The other most noticeable feature was the state of the patient's mouth, and my house-physician records: "Mouth is in a highly septic state; there is an indolent ulcer on the lower lip and ulceration along the margin of the gums." The patient was at once put on a mixture containing ♏ix, and later ♏xii, of liquor arsenicalis per diem, and given a mouthwash which was used frequently, and he was confined to bed. Nevertheless, he rapidly became worse; his temperature was very irregular, constantly above normal, ranging between 99° and 102° F., and on one occasion reaching 103° F. His skin became much more yellow and darker in tint, the mucous membranes were bloodless, and, though the septic condition of his mouth had improved, some bleeding from the gums occurred and some blood was passed in one of the stools. Moreover, a few small petechiae appeared on the cheeks and chest, and some haemorrhages were found in each retina. Thirteen days after admission he was in a most critical condition—indeed, we believed him to be dying. His blood count showed only 700,000 per c.mm. red corpuscles, 6,500 white corpuscles, and haemoglobin 25 per cent., the colour index being 1.6. Blood films showed several nucleated red corpuscles, many megalocytes and poikilocytes, and some well-marked microcytes

(Eichhorst's corpuscles). The spleen, which formerly was normal, had during this time increased in size, and now extended three fingerbreadths below the costal margin; it was firm and not tender. Troublesome vomiting and retching occurred.

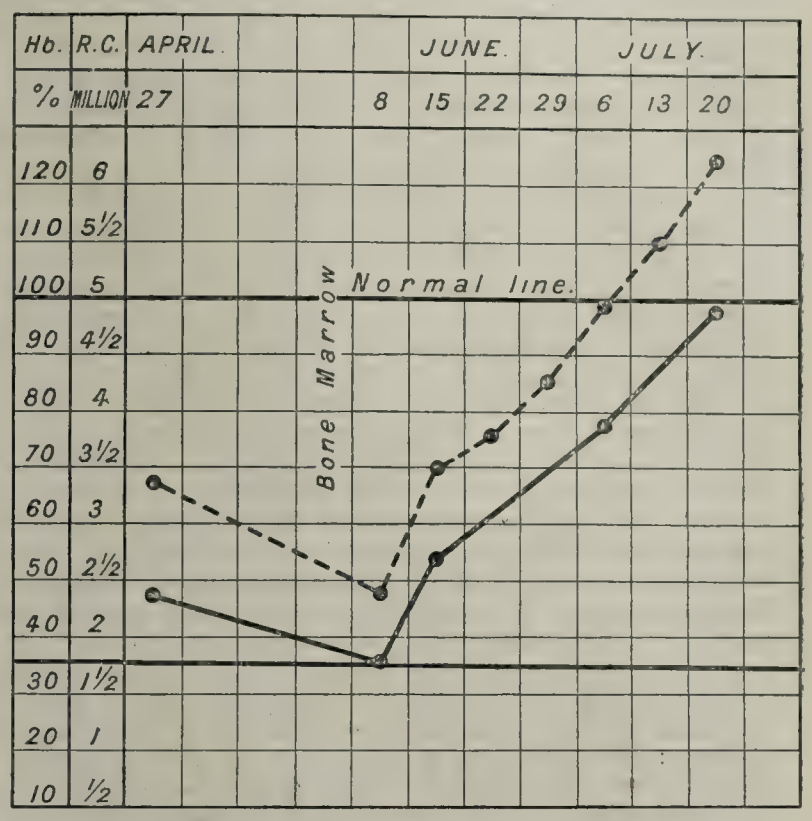
I then ordered him 1 oz. of fresh red marrow to be given raw, spread between two thin pieces of bread and butter three times a day. The liquor arsenicalis was stopped, and instead a mixture containing liquoris arsenici et hydrargyri iodidi ♏ iv and calcii chloridi gr. x was ordered thrice daily, the latter drug with a view to checking the haemorrhagic tendency. The effect was most striking, the



retching and vomiting soon ceased, and the patient declared he "felt better." At first, however, his colour did not improve, and after eight days the red corpuscles were 670,000 and white 12,000 per c.mm., and haemoglobin 25 per cent., the colour index being 1.8. The following week the red corpuscles had risen to 992,000 per c.mm., and then a very rapid improvement in his colour took place. At the end of the next two weeks (four weeks from commencement of marrow treatment) the blood count was —red corpuscles 2,850,000, white corpuscles 11,000, haemoglobin 68 per cent., the colour index being 1.16. Only a few nucleated red corpuscles were found in the blood films, but the megalocytes and poikilocytes were still well marked. Three weeks later the red corpuscles numbered 3,480,000, the white had fallen to 8,500 and the haemoglobin was 78 per cent., the colour index being 1.12; the blood rapidly approached the normal, and the patient, who had "felt quite well" for several weeks, shortly afterwards left hospital with a blood count of 4,600 000 red corpuscles, 7,800 white corpuscles, and haemoglobin 100 per cent., the colour index being 1.07.

Case II.

This patient was a male, aged 45, a master in a public school. He had for a number of years suffered at intervals from mucous colitis, which ceased two years ago and was followed by chronic glossitis. Otherwise he had enjoyed excellent health up to the early part of 1906, when after some months of extra mental work and anxiety he became short of breath, pale, and languid. As he was in London in April, 1906, he consulted a surgeon, who detected no organic disease, but, recognizing that his blood was anaemic, had it tested. The report was—red corpuscles 3,800,000, white 7,400 per c mm., and a complete count of the different forms of white was made, but unfortunately there appears to have been no estimation of the Hb., and the red corpuscles are not recorded to have been altered in shape. He returned to his residence in the country and underwent a course of iron without any great benefit, and the condition of the tongue remained extremely irritable. Notwithstanding treatment his anaemia developed, accompanied by intense malaise, debility, and a yellow tint of the skin up to April, 1907; when, pernicious anaemia being suspected, the blood was again examined and found to be typical of that complaint—that is, high colour index 1.42, red corpuscles 2,385,000, and haemoglobin 67.5 per cent. I saw him in consultation with his doctor (Dr. Scott of Newton Abbot) on May 26th, 1907. He was then a well-built man, sturdy frame, rather inclined to obesity. He was very pale, his mucous membranes extremely anaemic, and his skin was a distinct lemon-yellow colour. His heart was weak in action and dilated. His tongue was pale, glazed and fissured on dorsum, with small ulcers at tip and on the under surface. The blood films showed marked alteration in shape and character of the red corpuscles, some large red cells with a single nucleus; many megalocytes, poikilocytes, and microcytes were present. His doctor was pushing the arsenical administration most thoroughly, and had gradually increased the dose up to a maximum dose of 64 minims of the liquor



arsenicalis per diem. This treatment, with rest in bed, improved his tone, but had evidently very little effect on the quality of his blood, and, finally, as he showed signs of arsenical poisoning—that is, redness of the eyelids and throat, diarrhoea and sickness, with some eczematous eruptions on the elbows—it had to be stopped. Bone marrow, which I advised, was, however, continued, and the appearance and condition of the patient rapidly improved. His yellow tint of skin faded, his mucous membranes became pink, his pallor of face was replaced by a flush such as I had never seen in him before, and his blood count and haemoglobin steadily and quickly rose, till on July 20th his haemoglobin was 125 per cent., and his red corpuscles 100 per cent., the nucleated red corpuscles not having been seen in his blood films for some weeks. His heart is now gradually regaining its tone, and he is able to walk without any palpitation or dyspnoea. This patient has taken as much as 3 oz. of raw marrow three times a day, and not till quite recently (July 20th) has it been reduced to 1 oz. thrice daily.

Case III.

My third case, M. B., a spinster aged 44, schoolmistress, I saw with Dr. Glynn Morris, and I am indebted to him for the notes on the case. Her history is as follows: From Easter to Christmas, 1906, her health had gradually failed, and she had become so anaemic that she was ordered into the country for rest, and arsenic and iron were prescribed. Here the persistent vomiting already noted occurred, and all the acute symptoms developed. On her return six weeks later she was suffering from severe dyspnoea and palpitation on the slightest exertion. Her mucous membranes were very anaemic, her skin was yellow, conjunctivae white, and there was oedema about her feet and ankles. Another feature was that her ribs and tibiae were tender on pressure. Although she was kept in bed and the arsenic increased to 30 minims per diem, her condition became steadily worse. The sickness persisted and her temperature was very irregular, varying between 100.5° F. and 103° F. Her pupils were dilated, and she had retinal haemorrhages. She became so intensely anaemic that all hope of her recovery was given up. She was then placed upon glycerine extract of bone marrow (Armour's), 1 drachm three times a day, with the result that her sickness ceased, all her symptoms abated, and her colour began to improve, so much so that in the course of a few months she was able to walk without palpitation or dyspnoea. Now her blood is still slightly anaemic, but all the other symptoms have disappeared, including the lemon tint of skin and the tenderness of the bones.

These cases can undoubtedly be claimed to be those of "temporary recovery" and that recovery has undoubtedly been due to the effect of the administration of bone marrow. Whether the result will be permanent is at present doubtful. Or whether the bone marrow will have to be continued for the rest of the patient's life in larger or smaller amounts yet remains to be seen. Case I went back to his work, which he performed with comfort for a period of nearly six months, but he has only recently been readmitted into hospital for a recurrence of the complaint which developed apparently very quickly. Bone marrow evidently acts (1) as a very rapid haemogenetic factor, possibly, as has been stated, by stimulating the bone marrow; or (2) it acts by virtue of some inherent internal secretion which it contains which acts as an antitoxic substance to the toxins produced in the portal circulation, thereby neutralizing the poisons which destroy the blood cells, or, secondarily, as a stimulant to the tissues, thereby assisting them in resisting the septic process at the site of absorption. In support of this latter supposition are the following facts: (1) The rapidity of its action as shown in Case I, who felt better the day after he had taken bone marrow. (2) It appears from the effect of this treatment in Case II, that the larger the dose the more quickly is it effectual. (3) The disappearance of all the symptoms—malaise, debility, yellow tint of skin, etc.—as well as the alteration in the quality of the blood. The patient feels better, and is better, notably as regards dyspnoea, general strength, and in the force of his pulse, even before the corresponding change in the blood is reached. (4) Is it too much to surmise, or is it not an admitted fact that many persons suffer from the intestinal lesions which produce the toxins that are so harmful in pernicious anaemia, but their bone marrow is active enough to produce a sufficient internal secretion (an antitoxic substance)? When, however, the reverse is the case, this disease results. The alimentary toxins are not alone to blame, but also the ineffective internal secretions of the bone marrow. (5) Assuming this surmise to be correct, it at once explains the beneficial action of arsenic in cases of this disease: the drug is a stimulant to all protoplasmic cells, including the marrow cells, and hence it stimulates the production of the marrow internal secretion. (6) Lastly, in those cases where the bone marrow of the patient does not respond to the arsenic, namely, does not produce sufficient internal secretion, if raw bone marrow is given by the mouth in sufficient doses, and is retained, we may hope for good results, as the deficient internal secretion is made up to its normal level, and the marrow is able to do its work efficiently. I bring these views before this meeting, which includes among its members men whose names rank as the highest authorities on the blood dyscrasia, and I know only too well that my few cases are not conclusive; but I would emphasize that other clinicians, Professor Frazer,[1] Drs. Barrs,[2] Danforth,[3] Drummond, and Stengel, have had equally striking results with the internal administration of bone marrow in cases of pernicious anaemia. Much has yet to be done to prove that bone marrow produces this internal secretion, but, after careful consideration, it seems to me to be the only logical hypothesis by which we can explain the striking results obtained. Those who oppose this view will at once ask how it is, if this view be correct, that bone marrow does not immediately cure every case of pernicious anaemia, and in reply I wish to draw their attention to the effect of the administration of other internal secretions, for instance, thyroid when given internally does not cure every case of athyroidism—notably some of those of a cretinoid nature; and the administration of suprarenal extract, though beneficial in many cases of Addison's disease, yet when given in the advanced stages has no curative effect.

Professor LORRAIN SMITH, M.A., M.D. (Manchester), said: In pernicious anaemia there are three groups of pathological changes: (1) Those connected with the blood and bone marrow; (2) changes in the gastro-intestinal mucosa; (3) sclerosis of the posterior columns of the spinal cord, chiefly in the dorsal and cervical segments. Experimental study of the disease has so far failed to show that progressive pernicious anaemia can be produced. Hence great importance attaches to conditions simulating pernicious anaemia, namely: (1) Bothriocephalus anaemia, (2) malaria, (3) tumour of the bone marrow. The investigation of the blood changes by the carbon-monoxide method shows that in pernicious anaemia there is great destruction of the total amount of haemoglobin, while the volume of the blood may be normal, subnormal, or increased in amount. The average of 7 cases examined showed that the total amount of haemoglobin was reduced to about 50 per cent. of the normal, the lowest being 28 per cent. of the normal. One case examined over six months showed a certain independence in the changes in haemoglobin and volume. The examination of the blood by the haemoglobinometer in cases where the volume is varying may be misleading in any definite case if we draw conclusions regarding the total amount of haemoglobin.

Dr. ROBERT HUTCHISON (London) said: I have been asked to speak on this subject from the point of view of the anaemias of childhood, and it is to this aspect of the subject that I shall confine the few remarks I have to make. Now the striking fact about the anaemias of childhood is that amongst them pernicious anaemia is hardly found at all. This, Sir, is a remarkable circumstance, no matter what view one holds as to the etiology of this disease. If one remembers on the one hand the great destructibility of the blood in childhood and the ease with which comparatively severe anaemia is produced by trivial causes, and on the other hand the narrow margin for new blood formation which the child possesses, owing to the fact that the red marrow normally fills the entire length of the long bones, one would expect anaemia of the pernicious type to be frequent in early life rather than rare. The fact that such anaemia does not occur would lead one to suppose that, for some reason or other, the specific haemolytic toxin postulated by Dr. Hunter to almost never operative in childhood. It is of interest is note that the other great bone-marrow type of anaemia—namely, myelogenous leukaemia—is also almost unknown in early life. This rarity, however, is probably apparent and not real, and due to the fact that many cases of so-called acute lymphatic anaemia, which is comparatively common in early life, are really examples of myelogenous leukaemia in which granulation of the myelocytes has not had time to develop. This suggests the question, May there not be a similar masking of pernicious anaemia in early life? May the specific toxin which produces that disease in the adult perhaps so overwhelm the blood-forming powers of the child as to prove fatal very rapidly, and before the clinical picture which we speak of as pernicious anaemia has had time to develop? This, of course, is a mere hypothesis, and I am bound to confess that I can recognize nothing clinically which would correspond to such a suggested pathology unless some of the rapidly fatal cases of purpuric anaemia occasionally met with in children, which seem to be of toxic origin, are of such a nature. At all events, I feel sure that the immunity of children to anaemia of the pernicious type is a fact which deserves more consideration from pathologists than it has yet received.

Professor I. WALKER HALL (Bristol) said: Investigations into the general metabolism in pernicious anaemia have yielded somewhat discordant results. These variations appear to be too pronounced to be ascribed to individual factors, and suggest rather that the "symptom-complex" of pernicious anaemia is the expression of the reaction of the tissues to more than one type of irritant. The total metabolism thus does not reflect any unanimity in the cases examined, nor throw any suggestive light upon the causative factors. It is to the intermediate metabolism, therefore, that we must look for further indications, and in this regard we are still awaiting progress in the developments of tissue chemistry. There are, however, several features which stand out from the results of the investigations already made, and it may be advantageous to shortly review them, in order to ascertain the direction to which they point for further work. Considering the processes of oxidation as a whole, these do not appear to be materially altered. The blood contains a diminished amount of oxygen, and this necessitates additional labour on the part of the tissue cells in order to obtain the oxygen they require. This over-effort may result in an exhaustion which predisposes to fatty changes. It is significant that sugar and starches are well tolerated. Although in the anaemias associated with animal

[1] BRITISH MEDICAL JOURNAL, 1894, vol. i, p. 1172.
[2] Ibid., 1895, vol. i, p. 358.
[3] *Chicago Clinical Review*, October, 1895.

parasites there is distinct evidence of protein decomposition, due, most probably, to toxic causes, in pernicious anaemia there is no abnormal disintegration of protein. On the other hand, retention of nitrogen is a common finding. How far this retention is due to disturbance of the renal functions is not yet determined, but it is manifest that renal changes play a part in this retention, and that the changes deserve recognition during treatment. The metabolism of purin bodies is approximately normal. Here again, however, we are met with marked individual retentions, and evidence suggestive of renal changes. Amongst the mineral substances, chloride retention is usual; in some cases, however, marked losses occur. The reasons for the changes are not yet apparent. With regard to the processes of digestion and absorption, we find distinct subacidity, or absence of HCl, and diminished secretion of pepsin. These secretions exhibit close relationships with the anaemia, being increased or diminished as the anaemia improves or changes for the worse. Both the bile and the faeces contain more than the normal amount of urobilin. The faeces contain an excess of nitrogen, the loss ranging from 6 to 21 per cent. It is a moot point whether this loss is due to deficient absorption, or to an excess of secretions, and infiltrations of leucocytes, etc. There is considerable evidence to show that it does not arise from "atrophy of the intestinal wall." The absorption of fat is not good. In many cases there is an increase of faecal fat, and the fatty acids vary from 52 to 72 per cent. Müller observed some peculiar crystals in the faeces, which turned an intensely brown-red colour when treated with Lugol's solution. A feature of the blood in pernicious anaemia is the general increase in the residual nitrogen. In some cases the globulin exhibits a marked decrease. The fat content is unaltered. Erben observed that the originally yellow serum acquired after standing for a little time a beautiful green colour. The deepening of the colour of the urine is not yet satisfactorily explained, but the presence of haematoporphyrin has been recorded by Taylor, and haemoglobinuria by Schmidt. More irregular is the percentage of urea N to the total nitrogen. The cases reported present figures varying from 67.9 to 85 per cent. The ammonia N is consistently increased, and may reach up to 8.1 per cent. The amino-acid nitrogen requires to be investigated upon newer lines; the older figures are hardly worth quoting. Creatinin is always low. Indican is generally increased, the increase being attributed to intestinal conditions and to putrefaction changes in the extravasated blood. The total sulphur is variable. Albumoses have been demonstrated in the urine by Laache and von Noorden and Schmidt. Glycosuria is very rare. The occurrence of lactic acid requires further investigation by reliable methods. The distribution of iron in pernicious anaemia varies considerably and is difficult of explanation. *Post mortem*, it may be found deposited in the liver and kidney, or in the liver, or in the kidney alone. It will be obvious that from the standpoint of general nutrition, we are at present waiting some classification of the cases hitherto included under the one term, pernicious anaemia. I do not wish to overstep the limits of this section of the subject, but I should like to mention that I have recently met with a few cases which presented the clinical picture of pernicious anaemia during life, while the autopsy revealed a condition of advanced tuberculosis limited to the mesenteric glands, or to the mesenteric glands and liver.

Dr. Bushnell (Brighton) said: During the past nine months we have studied four cases of pernicious anaemia at the Sussex County Hospital from the bacterlological point of view. At the same time we recognize that an aplastic factor in anaemia production may as well exist as neoplastic factors in other tissues. The treatment of the disease is so hopeless that we felt justified in isolating micro-organisms (on two occasions streptococci) from the patients' mouths, testing them biochemically and culturally, and administering a bacterial vaccine therefrom, guided by the opsonic indices of the patients to these organisms. We present our results to you at this early stage in the hope that this treatment may receive a more extended trial.

Dr. Frank Pope suggested that some cases of very acute anaemia in childhood terminated in chloroma, and quoted a case in which the iron deposits were found to be collections of bacteria surrounded by a casing of ferruginous pigment. The case was reported by himself and Dr. Ernest Reynolds in the *Lancet* of May, 1907.

Professor James M. Beattie (Sheffield) said he concurred in the view that abnormal blood destruction was an essential change in pernicious anaemia. In view of the pigment deposits in the organs, and also as a result of comparison with other conditions, the bone-marrow changes could not be regarded as primary. Other such conditions were met with in bothriocephalus anaemia, pernicious malaria, and saponin poisoning, in all of which a megaloblastic change might be present.

Professor Muir (Glasgow) said: The various interesting questions in the pathology of pernicious anaemia centre round the two main changes—namely, the accumulations of haemosiderin in the organs and tissues, and the changes in the bone marrow. The coexistence of these is so constant that any pathology of the disease must afford an explanation of them. The subject of the blood-derived pigment has been fully treated by Dr. Hunter, and I may say that I agree with him in his view that there is a great destruction of red corpuscles in pernicious anaemia. Whether such destruction is in itself sufficient to produce the fatal anaemia is, however, another question, to which reference will be made later. There is also considerable evidence in support of his view that the blood destruction is chiefly related to the portal circulation. In the great majority of cases the gross iron accumulation is practically confined to the liver. On the other hand, we do meet with cases where the spleen and kidneys show the change in an equal degree, and such an occurrence must be considered as something more than a mere accident; probably the result of an unusual distribution of the haemolytic process. This latter distribution I believe is more likely to be met with in younger subjects where the disease has run a somewhat rapid course, though it is not confined to them. The change in the kidneys closely resembles what may be met with in long-standing cases of haemoglobinuria, a considerable proportion of the haemoglobin being broken up and retained in the kidney cells, though, of course, haemoglobinuria does not occur in pernicious anaemia. My observations on the accumulations of pigment which result from haemorrhage or from the injection of foreign bloods into the tissues of animals show that the spleen and kidneys share in the pigment accumulation to an equal extent with the liver. Some of the iron-containing pigment in pernicious anaemia may be the result of minute haemorrhages, as Stockman has supposed, but the distribution of the pigment and the want of evidence in many cases of the occurrence of haemorrhages are against the acceptance of his view as the full explanation. No doubt the pigment may be increased in this way, and no doubt in other diseases, for example, leucocythaemia, we sometimes meet with very large accumulations of pigment, probably due to this cause or to rapid haemolysis. In malignant malarial fever there may also occur in the organs a large accumulation of iron-containing pigment, in addition to the melanin ordinarily met with. There is, of course, nothing specific with regard to the accumulation of the liver in pernicious anaemia, but the degree of the change, its distribution, and the regularity of its occurrence are, in my opinion, only explainable on some such view as Dr. Hunter has put forward. The changes in the bone marrow have received much attention, especially in later years. Observations which were published by me more than twelve years ago convinced me at that time that the marrow changes could not be regarded as the essential lesion in pernicious anaemia but were essentially of secondary nature. I may remark that the case of Rindfleisch, published shortly before that time, and also one of my own cases appear to me now to be exceptional as regards the condition of the marrow. In both cases the great majority of the cells in the marrow were megaloblasts or gigantoblasts, some of which measured 30 μ or even more in diameter. I have not again seen a case where the marrow showed so extreme a change. The presence of megaloblasts is invariable, but very often they are not very numerous, and I think that in many cases a leucoblastic reaction must also be regarded to be present. If the marrow changes are secondary, they may be due either to the blood lost *per se* or they may be in part due to toxic action. Formerly I inclined to the first view, but my subsequent observations and the results of other investigators would seem to point to toxic action being involved.

I doubt if there is any evidence that long-continued loss of blood, say by repeated haemorrhages, does produce a similar change in the marrow, although there is here some difficulty with regard to the period of time; but we have other examples of direct toxic action bringing about the megaloblastic change. We have, first of all, the case of bothriocephalus anaemia, where the general anatomy is described by Schaumann as similar to that of pernicious anaemia. Again, in a certain proportion of cases of malignant malarial fever the marrow, as described by Ewing, may show the megaloblastic change; and we have also the striking example of the action of saponin as described by Bunting, the intravenous injection of minute quantities of this drug bringing about the megaloblastic change in a comparatively short period of time. We have thus distinct evidence that toxins which produce lysis of the corpuscles in the circulation also act on the corpuscle-forming cells in the marrow, may lead to an alteration in them, and bring about the so-called megaloblastic change. I consider that the entrance of megaloblasts into the circulation is probably to be interpreted in the same way as the appearance of myelocytes, that is, that it represents an escape from the marrow due to the action of toxic substance on the delicate structural arrangement of that tissue, as I have described in a previous paper. In other words the appearance of these cells is ratner the result of damage than of the nature of a reactive phenomenon. I scarcely think the relatively low proportion of polymorphonuclear leucocytes is a matter of very great importance, except as indicating an abnormal condition of the marrow; it is met with in other kinds of anaemia. I may say that in the striking case of aplastic anaemia which I communicated to this Section in 1900 there were no megalocytes or megaloblasts in the blood, and there was a great scarcity of the polymorphonuclear leucocytes. After all, in pernicious anaemia the most important question is not whether the marrow changes are due to blood loss or to toxic action (in all probability both are concerned), but whether or not they are of secondary nature. This is of essential importance in relation to the further elucidation of its pathology and the possibility of therapeutic measures. Periods of improvement and relapses are well recognized as common in the course of the disease, but occasionally one also meets with very rapid improvement, where the number of red corpuscles increases almost as rapidly as may be seen after a severe haemorrhage. Cases of this kind, which unfortunately are very rare, seem to me only explainable on the view that some toxic agent has been eliminated from the system, for the time being at least. They are also of great importance as indicating that the bone marrow probably is still functionally capable when the toxic body is removed; and that such is the case is also supported by the facts known with regard to bothriocephalus anaemia. It would appear that the latter condition is due to some specific toxin formed by the parasite, and probably some toxin of corresponding nature holds in the case of pernicious anaemia. The various pyogenic organisms are well known to bring about a condition of anaemia, but this is of the secondary type. It is more likely that there is some definite bacterial poison produced by an undiscovered organism which brings about the haemolysis and the marrow changes in pernicious anaemia. The various lesions which have been described in the alimentary canal are by no means constant, and probably serve only as a point of entrance for the particular organism concerned. Some of the lesions observed, moreover, are of much more recent origin than the disease itself. The search for a particular haemolytic bacterial toxin seems the most probable line of fruitful research in the further elucidation of the disease. If such a toxin be the true causal agent, it would appear that the chronic nature of the disease would be favourable to the production of an antitoxin. As this does not seem to occur, it is possible that the toxic body does not belong to the ordinary group of toxins.

Dr. HUNTER, in reply, said: I congratulate the Section on the number and value of the contributions that have been made in the discussion by representative observers. Professor Muir has dealt with the important subject of the relation of the bone-marrow changes to the haemolysis. His observations give strong support to the toxic cause of the disease and its special character. Among other numerous contributions to this subject during the past ten years the work of Professor Lorrain Smith and Dr. Haldane deserves special attention more than any other haematological work of recent years, and their work emphasizes the remarkable differences between this anaemia and all other forms of anaemia. With regard to megaloblastic degeneration as the essential cause and nature of this anaemia, I have dealt with that in my opening paper.

In connexion with the foregoing discussion the following paper was read.

ANAEMIA IN ANKYLOSTOMIASIS.

By ARTHUR E. BOYCOTT, M.D.,
Assistant Bacteriologist, Lister Institute.

THE anaemia of ankylostomiasis has often been called pernicious with the implication that the symptoms, course, and pathological anatomy of the disease are practically identical with those of idiopathic progressive pernicious anaemia, and that the two conditions are different only in that in the one case the cause is known and removable, while the other remains at present cryptogenetic. The two diseases, however, show abundant points of distinction in almost every part of their natural history, and ankylostoma anaemia can be called pernicious only in a very general sense. Some of the chief points of difference may be considered in order.

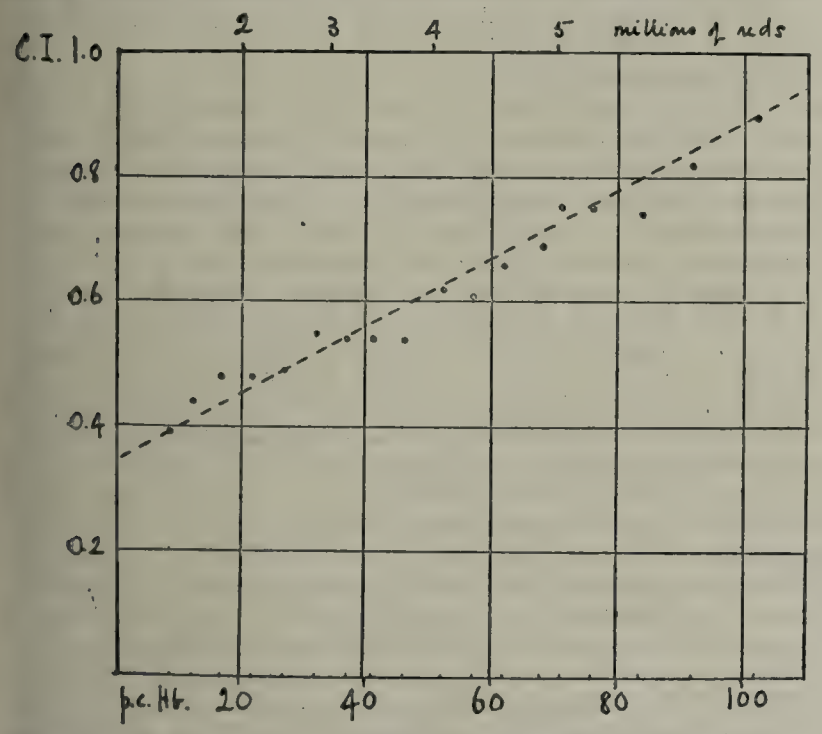
That the nematode worm ankylostoma may produce a grave form of anaemia has been known for more than fifty years. It is, however, only quite recently that medical men have realized that this anaemia does not only occur in special limited outbreaks, such as that among the workmen at the St. Gothard Tunnel, or in a few localities in the tropics such as Egypt, but is a factor, second perhaps only to malaria, in producing chronic ill-health and industrial inefficiency throughout the warmer parts of the world. The pitiable state to which an entire population may be reduced through unrecognized and untreated ankylostomiasis is shown very well in the reports of the Porto Rico Commission. In Porto Rico fully nine-tenths of the agricultural population suffer from a more or less profound degree of ankylostomiasis, and about half of them appear to have 50 per cent. or less of haemoglobin. The same condition of affairs doubtless obtains in many other places, and is probably largely responsible for the idea that the natives of hot climates are normally anaemic. In Western Europe, the prevalence of the disof ease is limited by the occurrence of those conditions temperature, moisture, and oxygenation which so closely control the life of the parasite, but in those places where favourable circumstances prevail, its effects may be as severe as in the tropics. Taking the world as a whole, then, ankylostomiasis is one of the commonest disorders. Pernicious anaemia, on the other hand, is comparatively a very rare disease. Its cause is unknown.

Though not immediately germane to the subject, two points of general pathological interest may here be mentioned as finding particularly striking illustrations in ankylostomiasis. In the first place, we have two nematodes (*A. duodenale* and *A. americanum*) which are zoologically clearly different specifically, and to some minds even generically; they are both widely spread all over the world, both inhabit the same host, and both produce identically the same disease. This is in somewhat striking contrast to the specificity of host which is generally found among animal parasites, and it also introduces difficulties in an etiological classification and nomenclature of disease. In the second place, only a certain, rather small, number of those infected with ankylostoma ever suffer at all from any anaemia. This phenomenon is now well known in several infective diseases, but it finds a striking macroscopical illustration in the present case. Be it noted, too, that these healthy carriers of ankylostoma are in a true state of specific infection, as evidenced by the eosinophile reaction of their leucocytic apparatus. With the exception of the skin affections which mark the point of entrance of the larval worm into the body, occasional attacks of urticaria, and a certain degree of mild abdominal pain and discomfort, the symptoms of ankylostomiasis are practically identical with those of the idiopathic disease, and are referable to the anaemia in both cases. In one particular, however, we find an interesting point of difference. The degree of anaemia

indicated on the scale of the haemoglobinometer bears a different relation to the severity of the symptoms in the two diseases. It is, for example, not uncommon for a patient with ankylostoma anaemia of a degree showing 30–40 per cent. in the haemoglobinometer to be regularly engaged in fairly severe manual labour. I have, for instance, seen a Cornish miner working regularly, though not, of course, without some distress, with only 36 per cent. of haemoglobin, and Ashford noted the same thing in Cuba. A case of pernicious anaemia with the same percentage of haemoglobin would be practically prostrate.

The degree of anaemia is in general in proportion to the number of worms present. Marked exceptions to this rule, however, occur, and on the whole it appears that the frequency with which infection is repeated forms a more determinative factor. If patients are removed from the possibility of fresh infections, they will commonly greatly improve without anthelmintic treatment, though they will seldom reach a complete cure within any reasonable time. A certain amount of improvement may also take place even while reinfections are occurring. There is, indeed, a general tendency towards a natural cure, a state of affairs very different from the progressive intensity with which pernicious anaemia reaches a fatal termination. The time between infection and the onset of definite anaemia is naturally very difficult to determine. I have seen one case who was apparently only exposed to infection for four days; it was six months before he became noticeably ill. As regards the pathological anatomy of the blood, the distinctions found here between idiopathic and ankylostoma anaemia are fundamental.

1. With regard to the histology of the blood film, it is generally agreed that the essential point in pernicious anaemia is that many of the red cells are too big and contain too much haemoglobin; the colour index is therefore about 1 or higher. Now, in ankylostomiasis there may be a fair number of red cells which are distinctly larger than normal, but most of these appear to be deficient in haemoglobin and there is a much larger number which are too small; the colour index is therefore low. This is not only the regular rule for any individual case, but if a number of examinations are made it can be shown that the colour index varies with the degree of anaemia, so that, as the percentage of haemoglobin falls, the colour index recedes further from unity. This is illustrated in the accompaning chart prepared from the figures given in the appendix to the *Report on Anaemia in Porto*



Rico, by B. K. Ashford, W. W. King, and P. G. Ingararidez (1904); the authors give more than 500 counts on 61 cases before and after anthelmintic treatment, and these have been analysed and grouped according to the percentage of haemoglobin found.

The following table of colour-indices accumulated from various authors shows that in pernicious anaemia the colour index does not vary very much with the grade of anaemia; the figures of Cabot and Houston are contradictory, but those of the latter were obtained by more accurate methods, and they indicate that if anything the colour index rises as the anaemia becomes more intense.

Percentage of Haemoglobin.	Ankylostoma (Ashford).	Pernicious (Cabot).	Pernicious (douston).	Pernicious (da Costa).	Bothriocephalus (Rosenquist).	Chlorosis (Houston).
20	0.46	0.74	1.39	0.89	1.62	0.43
20 30	0.49	0 88	1.33	0.87	1.18	0.52
30-40	0.55	0 94	1.34	1.00	1.26	0 56
40-50	0 54	0.93	1.29	1.10	1.03	0.64
50-60	0.67	0.90	—	—	—	—
60-70	0.67	1.00	—	—	—	—

As regards most of the other histological details, the differences between pernicious and ankylostoma anaemia are for the most part quantitative rather than qualitative. The red cells vary in size, shape, and staining reactions in both conditions, and nucleated reds are found in both. But anisocytosis is much less marked in ankylostoma anaemia, and the abnormal red cells depart from the normal size, for the most part being too small; the poikilocytosis and polychromasia of ankylostoma anaemia are seldom very prominent, and nucleated red cells are quite uncommon, though megaloblasts have been found by several observers. In my own series of cases I have only seen two or three normoblasts in numerous examinations of the blood of 14 cases showing less than 50 per cent. haemoglobin. In more severe grades of anaemia Ashford and others have found normoblasts fairly commonly, and megaloblasts not infrequently.

The eosinophilia of ankylostoma infection is of course a prominent detail in which the blood of ankylostomiasis differs from that of pernicious anaemia, but the details are outside the scope of the present discussion.

2. The volume and total oxygen capacity of the blood has been determined by the method of Haldane and Lorrain Smith, in three cases of ankylostoma anaemia, with most important results. The details are as follows:

Case.	Total Oxygen Capacity of Blood.	Per Cent. of Haemoglobin normal=100.	Percentage Oxygen Capacity of Blood.	Total Volume of Blood in C.cm.	Weight in Kilos.	C.cm. of Blood per 100 Grams Body Weight.	C.cm. of Oxygen Capacity per 100 Grams Body Weight.
I	500	44	8.1	6,170	72	8 6	0.700
VI	480	47	8 7	5,520	60	9 2	0 800
VI	445	41	7.6	5 860	60	9.8	0.740
X	375	49	9.1	4,070	53	7.7	0.700
Average ..	—	45	8.4	5,405	—	8 8	0.735
Average of healthy men	—	100	18.5	—	—	4.5	0.830

It appears from this that the volume of the blood in these cases was very nearly twice that found in normal men, and that the total oxygen capacity was only about one-tenth less than normal. It is evident, therefore, that the condition is essentially one of hydraemic plethora, the apparent anaemia being almost entirely due to the diluted condition of the blood, and the total amount of haemoglobin in the body being practically normal and the total number of red cells a good deal in excess of the normal.

For comparison's sake the following table is given, showing the average results obtained by Lorrain Smith for other anaemias:

	Percentage of Haemoglobin.	Cubic Centimetres of blood per 100 Grams Body Weight.	Cubic Centimetres of Oxygen Capacity per 100 Grams Body Weight.
Normal men	100.0	4 5	0.83
Anaemia from haemorrhage	33.0	6 5	0 39
Pernicious anaemia	26.5	8 6	0 40
Ankylostomiasis	45.0	8 8	0 73
Chlorosis	40 0	10 8	0.79
Normal women	93 0	5.3	0.92

The contrast between pernicious anaemia and ankylostomiasis here is very clear. In pernicious anaemia and anaemia from haemorrhage there is a real deficiency of haemoglobin, while in ankylostomiasis and chlorosis there is practically nothing except a great dilution of the blood and an alteration in the haemoglobin content of the indi-

vidual red cells. This is doubtless the explanation of the point already mentioned—namely, that the patient with ankylostomiasis shows much less marked symptoms of anaemia than one with a pernicious anaemia showing the same percentage content of haemoglobin.

The mechanism of the production of this apparent anaemia is obscure. The estimations of the total oxygen capacity of the blood show that it can hardly be due to multiple small haemorrhages. It is said, too, that in fact ankylostoma does not suck blood, but feeds on the mucous membrane; there is, however, no doubt that the worms often, though not as a rule, contain blood. To this small abstraction of blood may perhaps be attributed the small deficiency found in the total oxygen capacity of the blood. The same comparison of total blood volume and total oxygen capacity in anaemia from haemorrhage and from ankylostoma strongly suggests that the haemolytic and anticoagulating principles found in extracts of ankylostoma are of no great practical import. At present, indeed, we can no more define the mechanism of the production of the hydraemic plethora of ankylostomiasis than we can explain the causation of the similar condition in chlorosis. The interdependence of the two cardinal abnormalities is also obscure. The diminution of the colour index might well be a sequel to the dilution of the blood in compensation for the deficient amount of haemoglobin sent through the lungs in unit time. On the other hand, if the primary error is in the red cells which are turned out by the bone marrow in numerical excess but in qualitative defect, the blood may be diluted to avoid the difficulties of an increased viscosity. As far as chlorosis is concerned, the fact that in a rapid cure the red cells may rise considerably beyond the number proper to a unit volume is rather strong evidence that the primary fault is not in the generation of red cells. A similar phenomenon seems to occur during the cure of ankylostomiasis, and if the conclusion drawn from this be correct, we have to look to factors which have no immediate connexion with the oxygen-carrying power of the blood to explain the mechanism of the production of the hydraemic plethora. We have no knowledge which will enable us to connect the toxic effects of ankylostoma with any such factors.

DISCUSSION.

Professor ALEX. R. FERGUSON (Cairo) said: The opportunities of studying the blood in ankylostomiasis in Egypt occur at a rather late stage of the disease. It is quite common to find, when the patient comes under observation, that the red corpuscles are reduced to 1,750,000 per c.mm., and that the haemoglobinometer gives an average reading of 23 to 25 per cent. The anaemia in ankylostomiasis is due to different factors, and the effects on the blood must be regarded as due to their mingled action. The factors which concern us in this discussion are (*a*) haemorrhage and (*b*) intestinal sepsis. It is the influence of the latter which I wish to emphasize, as it appears to me sometimes to confer on the anaemia of ankylostomiasis special characters which closely simulate that idiopathic progressive anaemia which we are discussing. The sites of attachment of the *Ankylostoma duodenale* become sooner or later minute septic foci, and in cases where these exist in large numbers the influence of septic absorption from the intestinal tract produces its effects on the blood. Although it is true that the majority of cases of ankylostomiasis, so far as the red blood corpuscles are concerned, follow the chlorotic type, there remain a certain proportion in which the characters of the blood approach to those of progressive idiopathic anaemia. In these cases nucleated red corpuscles are found of both types, though it must be said that the occurrence of megaloblasts is rare. Megalocytes of striking size are, however, frequently met with. In such cases, also, a variation in form of the red corpuscles, though falling far short of the degree of poikilocytosis met with in idiopathic anaemia, assists in the simulation of this disease, so far as the blood is concerned. In every case of ankylostomiasis examined I have found an active myeloid transformation occurring in the femur. One feature of this red, vascular, and highly cellular tissue is the multiplication of nucleated red cells which may be observed in it. A considerable number of these are of megaloblastic type. The presence of iron, either free or in very unstable combination, is in these cases easily demonstrable in the liver, and sometimes in the kidney and spleen.

SECTION OF TROPICAL DISEASES.

JAMES CANTLIE, F.R.C.S., President.

A DISCUSSION ON THE HAEMOFLAGELLATES.

OPENING PAPER.

By E. A. MINCHIN, M.A.,
Professor of Protozoology, University of London.

THE zoologist studies living creatures for their own sake, working at their structure, life-history, and habits with a view to establishing their place in Nature, and their affinities and relationships with other organisms. The medical man is interested in them only in their relationship to disease; any other point of view is outside his sphere of interest; his object in studying them is to discover methods of preventing them from gaining access to the human body, or of extirpating them, without detriment to the health of the patient, when they have established themselves in the body. Expressed briefly, the physician's object is either prevention or cure. If an organism is harmless, not detrimental to health, it is not of direct interest to the medical man, though it may be of indirect interest to him, as affording useful analogies for the study of harmful forms.

In spite of the great differences in the two points of view, there are perhaps several points at which the spheres of the naturalist and the physician are in contact—certainly one, namely, the study of the life-cycle and development of the parasites. This is a study of the utmost importance to the zoologist, since nothing throws more light on the affinities of any creature than its development; it is also of importance to the medical man, because a knowledge of the life-history, and more particularly of the means by which the parasite invades the human body, enables the medical man to devise means for preventing the parasite from attaining its object. In other words, such knowledge gives the medical man a clue to methods of prevention which are proverbially better than cure.

I propose, therefore, to confine myself chiefly to giving some account of the life-history of these organisms, but first I must begin by explaining what is meant by the term "Haemoflagellates."

The Haemoflagellates comprise, in the first instance, a number of organisms which belong to the class Flagellata of the Protozoa, that is to say, which have as organs of locomotion one or more flagella, and which are further characterized by being parasites in the blood of vertebrated animals. Here belong, in the first instance, the two genera *Trypanosoma* and *Trypanoplasma*. *Trypanosoma* has an undulating membrane, along the edge of which runs a flagellum, which projects freely at one end. *Trypanoplasma* has an additional free flagellum besides the one which borders the undulating membrane. Species of *Trypanosoma* are found parasitic in every class of vertebrates, and a certain number of the species are notorious as the cause of deadly diseases in man and beast. *Trypanoplasma*, on the other hand, is only known in fishes, and does not appear to be particularly harmful.

Strictly speaking, the genera *Trypanosoma* and *Trypanoplasma* include all the Haemoflagellates, that is to say, the flagellates parasitic in blood. But it is impossible in a natural classification to separate these two genera from certain others clearly allied to them, comprising forms found parasitic in the digestive tracts of insects; such are the genera *Herpetomonas* and *Crithidia*. The forms placed in these genera resemble *Trypanosoma* in their general appearance and in having a single flagellum, but are distinguished by the absence or rudimentary condition of the undulating membrane. The majority of the species of *Herpetomonas* and *Crithidia* are found in blood-sucking insects, a circumstance which is highly suspicious, and points to their being, perhaps, only stages in the life-history of trypanosomes; but there is at least one of them which is undoubtedly an independent species, not connected with any forms occurring elsewhere. This is *Herpetomonas*

muscae-domesticae, occurring in the common house-fly. It is the type species of the genus *Herpetomonas*.

It is very doubtful, in the present state of our knowledge, whether the peculiar blood parasites known as spirochaetes should be included amongst the Haemoflagellates or not. Many authorities still support the older view that these organisms are bacteria belonging to the section Spirillacea. The more modern view, first advocated by Schaudinn, is that these organisms are Protozoa, allied to the Haemoflagellates, and resembling minute trypanosomes in structure. Schaudinn founded this view, however, upon a form which was probably a true trypanosome of small size and not a spirochaete. In the spirochaetes of human and avian relapsing fevers it has not been possible to demonstrate the characteristic structures of trypanosomes, and their position must be considered at present very doubtful.

The Haemoflagellates may be considered, therefore, for the purposes of the present discussion, as comprising the genera *Trypanosoma*, *Trypanoplasma*, *Herpetomonas* and *Crithidia*.[1] But it is necessary to say a few words about the forms comprised in the genus *Trypanosoma*. It is not only possible, but highly probable, that this genus includes forms which, though externally similar, have two distinct lines of ancestry and descent. In the first place it is possible to derive a *Trypanosoma* form from a *Trypanoplasma* by loss of the flagellum which is not connected with the undulating membrane; then the free flagellum of the trypanosome represents the morphologically posterior end. In the second place a *Trypanosoma* form may arise from a *Herpetomonas* by shifting backwards the origin of the flagellum; in this case the flagellum of the trypanosome is morphologically anterior. The occurrence of *Herpetomonas*-forms in the developmental cycle of many species of trypanosomes may be interpreted as an indication of descent from a *Herpetomonas*-like ancestor. Hence two species of *Trypanosoma*, though structurally similar, may have totally distinct pedigrees. This is not merely a matter of speculative interest. If trypanosomes have such different lines of descent, they may have inherited from their respective ancestors equally distinct modes of development, so that we should be prepared to find in this genus distinct types of life-cycle, and we should not assume that the mode of development found in one species must necessarily be the pattern or model, so to speak, for the whole genus.

Life-cycles of Haemoflagellates.—As the simplest type of life-cycle we may take that of the *Herpetomonas* of the common house-fly.[2] The parasite lives in the intestine of the fly and becomes encysted in the hind-gut. The cysts pass out of the gut, and, being dropped about in all sorts of places, some of them contaminate the food of other flies, and are accidentally swallowed by them. In this way the cysts pass into the digestive tracts of other flies and there germinate, setting free the parasite, which at once commences to feed and multiply. By this simple, direct method the infection passes from one fly to another. We may call this the casual or contaminative method of infection. It is of very common occurrence amongst protozoan parasites of all classes.

In all other known cases, with one exception, the infection is conveyed from one vertebrate host to another by the intermediary of some blood-sucking invertebrate animal. The single exception may be dealt with at once and dismissed. It is the case of dourine, a disease of horses caused by *Trypanosoma equiperdum*. It is well known that this disease is transmitted by contagion during coitus, an interesting fact as showing that trypanosomes, or at least some trypanosomes, have the power of traversing mucous membranes.

The invertebrate animal which transmits the infection of Haemoflagellates differs according to the habitat of the vertebrate host. In aquatic vertebrates, such as fish, amphibia, tortoises, etc., it is a leech; in land vertebrates, especially birds or mammals, it is some arthropod, usually a biting fly or mosquito. With regard to the exact method of transmission but little is known, and I propose now to review the facts briefly.

In the first place we must distinguish between what may be termed direct and indirect transmission. In direct transmission the bloodsucker takes up the parasite with its food from an infected man or animal and gives it back again to another when next it feeds, without the parasite having undergone any change or development. The transference of the parasite from one host to another by this method is as mechanical and direct as if it had been effected with two stabs of a needle, or by inoculation with a hypodermic syringe. In the trypanosomes of mammals, particularly those carried by tsetse flies, such as the nagana disease of horses and cattle and the sleeping-sickness of man, only direct transference of the parasites has been demonstrated with certainty up to the present.

In indirect transmission the parasite, after being taken up by the bloodsucker, persists for some time in the latter, and undergoes a series of changes constituting a definite developmental cycle, before being given back again to a new vertebrate host. A well-known example of this type of development is the transmission of the malarial parasite by a mosquito. It is known that the parasite is taken up by the mosquito in a feed of blood from a sick person; that the parasite goes through a complicated cycle of development in the mosquito; and that finally the parasite is given back again by the mosquito to another person, passing down its proboscis with the saliva when it punctures the skin in order to draw blood. Hence the transmission of the malarial parasite takes place by the indirect method, and is of a type which may be termed *inoculative*, since the parasite, taken up by the mosquito through the proboscis, is given back again through the proboscis, being inoculated into the new host.

Examples of transmission of Haemoflagellates by the indirect inoculative method are known to occur. For the Haemoflagellates infesting fish and other aquatic vertebrates the transference has been worked out by Brumpt,[3] who has shown, in the case of the trypanosome of the eel, for instance, that the parasites are taken up by a leech and undergo definite development in the intestine of this invertebrate, finally passing forward into its proboscis, and thence into another eel at a subsequent feed of the leech. Brumpt[4] has further shown that, as in the case of the malarial parasite, a close relationship exists between the parasite and the species of invertebrate that transfers it, and that in any leech, except the particular species required, the parasite either does not develop at all, or only undergoes a part of its development, and in either case no transmission of the infection takes place, the whole process being abortive. In the case of the little owl the infection has been worked out by Schaudinn,[5] who has described a very complicated developmental cycle in the digestive tract of the bloodsucker, in this instance a gnat of the genus *Culex*.

Indirect transmission of the inoculative type has been much sought for in the trypanosomes of mammals, but has not yet been proved to occur. The trypanosomes have, indeed, been seen to undergo a certain amount of change in the digestive tract of the invertebrate bloodsucker, but it has not yet been proved that after undergoing developmental changes the parasite is given back again to a new vertebrate host. In the transmission by tsetse flies of trypanosomes of nagana and sleeping sickness it was not found possible to demonstrate, either by observation or experiment, any mode of transmission but the direct mechanical one. In carrying on these investigations it has been observed incidentally by all who have been engaged in this work that the tsetse flies caught wild may contain other species of trypanosomes, probably taken up by them from wild animals, and quite distinct from the disease-producing forms. In the case of one of these species I was able to make an observation to which I am inclined to attribute some importance in the transmission of the trypanosomes, and to which, therefore, I will briefly refer.

At Entebbe the dusky tsetse fly, *Glossina palpalis*, is commonly found to contain in its digestive tract vast swarms of a trypanosome which Novy has named *T. grayi*. I found that in some flies the parasite occurred in the hindmost section of the digestive tract, and there became encysted in a manner very similar to the *Herpetomonas* of the common fly. There can be no doubt whatever that the cysts formed in this way are

[1] The curious genus *Trypanophis*, parasitic in the digestive tract of marine Hydrozoa (*Siphonophora*), has also been referred to the Haemoflagellates, but it is not of importance for the questions discussed here and need not be mentioned further.

[2] Prowazek, *Arb. k. G. Amt.*, 20, 1904, p. 440.

[3] *C. R. Soc. Biol.*, 60, 1906 p. 162.

[4] Loc. cit., p. 160.

[5] *Arb. k. G. Amt.*, 20, 1904, p. 387.

destined to be cast out with the faeces of the fly; the question is—what becomes of them afterwards? It has been stated that in *Herpetomonas* the cysts contaminate the food of other flies, and so infect them. The tsetse fly, however, is a blood-sucker, and appears to feed exclusively in this manner; it seems impossible, therefore, that it could ever infect itself by swallowing accidentally cysts dropped by another fly. My suggestion is that the cysts are intended to infect the (as yet unknown) vertebrate host of *Trypanosoma grayi* by contaminating its food, and that, when swallowed accidentally by the vertebrate host, the cysts germinate in its intestine, producing probably *Herpetomonas*-like forms which pass from the intestine into the blood and produce a trypanosome infection. All this is as yet only a suggestion, and requires proof, but is put forward as a working hypothesis. As I have already shown, it must not be assumed that the developmental cycle of trypanosomes must always be of one type. We must be prepared, I think, to find the development and life-history following quite different courses in different species. In order to make this clear I will say a few words about the possible origin of Haemoflagellates.

The view has been put forward by Léger and others that the ancestors of Haemoflagellates were forms similar to *Herpetomonas* and *Crithidia*, and were parasites of the digestive tracts of insects; and that by the acquisition of blood-sucking habits on the part of their insect hosts, they became introduced into the blood of vertebrates and acquired thus a double developmental cycle with change of hosts. The difficulty in the way of this theory is that the invertebrate host is not necessarily an insect, but may belong to very different classes of the animal kingdom; it may be a leech, or it may be an arachnid, a tick. Hence, the only feature that can be said to be constant in the life cycle is the possession of a vertebrate host. I offer a suggestion that the Haemoflagellates were primitively parasites of the digestive tract, not of invertebrates, but of vertebrates. I need hardly say that many flagellates parasitic in the digestive tract of vertebrates, including man, are well known, and recently Léger [6] has described a species of *Trypanoplasma* occurring in the digestive tract of a fish, *Box boops*. We may suppose that the hypothetical ancestor of the Haemoflagellates lived and flourished in the intestine, and that its life-cycle was similar to that of *Herpetomonas muscae-domesticae*—that is to say, that it formed cysts in the gut which passed out with the faeces, and were accidentally swallowed with food by new hosts. So far as is known, that is the method by which the intestinal flagellates of man or other animals are transmitted from one host to another at the present day.

The next stage in evolution would have been the penetration of the walls of the intestine by the parasites and their consequent entry into the circulation. When they were once in the blood they found themselves in spaces from which there was no means of escaping by natural channels. Hence, in order to infect new hosts, the parasites must do one of two things:

1. They might pass back again into the intestine of the vertebrate host, in order to become encysted there, and so pass out to the exterior, as before. This is not known to occur in any case, but I wish to point out the possibility of this mode of infection occurring, or at least having occurred, and I will call it Stage I in the evolution of the life-cycle.

2. The parasites could be taken up from the blood by a blood-sucking invertebrate of any kind, in the intestine of which they would become parasitic, ultimately producing in this new situation the cysts which they formerly produced in the gut of the vertebrate host. I will call this Stage II in the evolution; it is the contaminative type which I believe to occur in the life-cycle of *Trypanosoma grayi*.

When a parasitic relationship had become set up between the flagellate and the invertebrate host, the third stage of evolution would be that the parasite would penetrate the organs of the invertebrate and reach its proboscis or salivary glands, there producing minute forms which could pass back by inoculation into the vertebrate host. Hence encysted forms would be unnecessary and would cease to be formed, and we should have the inoculative type of infection established.

The fourth and final complication of the life-cycle would be brought about by the parasites penetrating the ovaries of the invertebrate host, and so passing through two generations of the latter, being given back by the inoculative method by the offspring of the invertebrate which originally took them up. In this way would come about germinative or hereditary infection, well known to occur in *Piroplasma* but not known with certainty in Haemoflagellates.

I must, finally, say a few words about the *Herpetomonas* of the house-fly. The fact that this parasite has no vertebrate host might be regarded as supporting the view that the Haemoflagellates were originally parasites of the guts of invertebrates. But it has been pointed out by Prowazek that the house-fly is probably descended from blood-sucking ancestors, and is to be regarded as a form which originally had, but has given up, the blood-sucking habit. Prowazek suggests that its *Herpetomonas* parasite was acquired by its blood-sucking ancestors, and was originally a form with an alternation of hosts, vertebrate and invertebrate. When the fly ceased to suck blood, however, the flagellate remained as a parasite of the fly alone, and is to be regarded as a form stranded and left behind, as it were, by changes in its life-conditions over which it had no control, like marine animals left behind in inland lakes by elevation of the land. Hence *Herpetomonas muscae-domesticae* does not disprove the suggestion that the ancestral Haemoflagellate was a parasite of the vertebrate intestine.

It has been my object to point out that from a consideration of the evolution of these parasites there is the possibility of the existence of at least four distinct types of life-cycle in the Haemoflagellates, and I hope I have shown incidentally that the weaving of phylogenies is not a mere brain exercise, but may be of practical value in suggesting to those working at these problems the different possibilities to be kept in view.

[6] *C. R. Biol. Soc.*, 58, 1905, p. 511.

DISCUSSION.

Professor Ziemann (Cameroons) said: In connexion with the remarks of Professor Minchin, I should like to draw attention to one fact of epidemiological and practical interest. In 1904 I proved that the fresh trypanosome infections amongst animals in Lower Guinea are met with only in the rainy season.[1] In the dry season I made many blood observations in animals without finding a single parasite. My observations show also that probably the greatest number of the fresh trypanosome infections must have been produced by the young blood of the the blood-sucking flies which come out in the rainy season. Moreover, as in malarial countries the index can be made out by palpation of the spleen, so in trypanosome-infected countries the trypanosomal index can be made out (in animals) by palpation of the lymphatic glands, and when these are found swollen, one may conclude that trypanosome infection of man is to be met with in the district. The animals examined may be cattle, sheep, or goats, the last two named preferably, as the cattle, owing to their wild nature, are difficult to get at. Time does not permit me to refer to the peculiarities of the trypanosome met with in Lower Guinea, but it is different from the *T. brucei* and the *T. evansi*. I should like also to mention the extraordinary small number of trypanosomes in cases of sleeping sickness in Lower Guinea, the failure of atoxyl to produce lasting benefits, and to speak about spirochaetes in cattle, and the prevalence of yaws in the Cameroons.

Dr. Balfour (Khartoum) pointed out sources of error in insect examination as evidenced by the discovery of *Crithidia* when looking for an extra-corporeal stage of the haemogregarine of jerboas in fleas, and by Christopher's discovery of what was probably coccidial cyst when searching for a similar stage of the haemogregarine of Indian jerbils in lice. Similar cysts had also been found in fleas in the Sudan. One authority mentioned finding of a typical *Herpetomonas* in *Tabanus socius*, the commonest fly of the Nile, and one which might possibly be the carrier of the trypanosome of the camel, at least in certain parts of the Kordofan provinces. Dr. Wenyon was now working on this subject, and would also endeavour to work upon Dr. Sambon's interesting theory as regards the life-cycles of trypanosomes in tsetse flies. Evidence was brought forward to show that in the Sudan at least Stomoxys under natural conditions probably did not act as a carrier of trypanosomiasis.

[1] *Centralbl. f. Bakteriologie*, February, 1905.

CLASSIFICATION OF THE BLOOD-INHABITING PROTOZOA.

HAEMOPROTOZOA (Sambon, 1906).

Oökinete: Encysts	Produces sporozoites in secondary capsules or spore bags	HAEMOGREGARINIDAE	One genus	*Haemogregarina*, Danilewsky, 1886.
Oökinete: Encysts	Produces naked sporozoites	PLASMODIDAE	Two genera	*Plasmodium*, Marchiafava and Celli, 1885. *Laverania*, Grassi and Fe etti, 1889.
Oökinete: Remains free	Elongates and breaks up into numerous sporozoites	SPIROSCHAUDINNIIDAE	Three genera	*Leucocytozoon*, Danilewsky, 1889. *Spiroschaudinnia*,* Sambon, 1907. *Treponema*, Schaudinn, 1905.
Oökinete: Remains free	Divides by longitudinal fission into two similar forms which again divide repeatedly until minimal forms or sporozoites are produced	HAEMOPROTEIDAE	Two sub-families: HAEMOPROTEINAE, One genus	*Haemoproteus*, Kruse, 1830.
			TRYPANOSOMINAE, Four genera	*Babesia*, Starcovici, 1893. *Leishmania*, Ross, 1903. *Trypanosoma*, Gruby, 1843. *Trypanoplasma*, Laveran and Mesnil, 1902.

* The new generic name *Spiroschauainnia* is here proposed for the blood spirochaetes, which differ greatly, both morphologically and biologically, from the free-living form *Spirochaeta plicatilis*, on which Ehrenberg established the genus Spirochaeta.

Lieutenant-Colonel G. M. GILES (late I.M.S.) said: With reference to Dr. Balfour's query as to the house-fly, I may say that the hypopharynx of the house-fly is prolonged into a short but distinctly pointed projection, and though not capable of piercing the sound skin, will give a distinct and painful prick to a raw surface. Between it and Stomoxys there are only differences of proportional development of parts. Cases of a trypanosoma disease in equines undoubtedly originate in Kumassi in West Africa, but Glossina has never been found there, though there are Stomoxys in swarms. If I might venture to criticize Dr. Sambon's proposed classification, I might say that, excellent as it appears to-day, we have names enough already without coining new ones, and I would submit it would be better to wait until we have a more sure basis of knowledge of complete life-history.

Dr. LOUIS SAMBON (London) maintained that in the transmission of sleeping sickness *Glossina palpalis* acted as a true alternative host and not merely in a mechanical way, as suggested by Colonel Bruce and Professor Minchin. He did not deny the occasional possibility of mechanical transmission, but he did not believe that was the usual mode of propagation under natural conditions. That it had succeeded experimentally proved nothing. Malaria and all other protozoal diseases of the blood could be transmitted in that way. The strict limitation of sleeping sickness to the stations of *Glossina palpalis* showed that the fly acted as a necessary definitive host. Five years ago he had shown that the sporozoits of *Trypanosoma gambiense* may present sexual differentiation in the blood of long-standing cases. Koch, Prowazek, and others had shown that the trypanosomes multiply and acquire marked sexual characters within the stomach of the fly. There was, therefore, undoubted evidence of a sexual cycle. Bruce, Koch, Minchin, and others had invariably failed to reproduce the disease by inoculating the blood from the fly's gut, notwithstanding the presence of very numerous and vigorously active trypanosomes. This proved that the forms in the gut of the fly were gametes that must undergo a special development, and were unable to reproduce by schizogony. Koch had found numerous trypanosomes and no traces of blood in the clear fluid contained in the bulb of the proboscis. These were the forms ready to be inoculated into a fresh vertebrate host; they showed that the trypanosomes did not leave the body of their insect host by way of the intestine, as suggested by Professor Minchin, but were returned to the vertebrate host by way of the proboscis. Brumpt and Léger had shown that the trypanosomes of fish went through a sexual cycle within the body of leeches, and that each species of trypanosome had its specific leech host. Prowazek had worked out the sporogony of *Trypanosoma lewisi* in the rat louse *Haematopinus spinulosus*. If in these cases there was a true sporogony homology to that of the malaria parasites why should a similar mode of development be denied to the trypanosome of sleeping sickness? The speaker thought there could be no further doubt as to the part played by *Glossina palpalis* in the transmission of sleeping sickness. It acted as a true alternative host, and the parasites ingested by the fly were passed on to the larva which in the Glossinae developed within the body of the parent until it had practically reached the pupa stage. The flies on issuing from their pupa cases were probably already infective. The experiments so far carried out to prove the rôle of the fly in the transmission of sleeping sickness were contradictory and in many other ways unsatisfactory. Further investigations were urgently needed. The subject was of the greatest importance, because obviously it was impossible to formulate efficient prophylactic measures against the dread disease, unless there was a correct knowledge of the means and modes of its propagation.

Sir PATRICK MANSON (London) said: The phylogenesis of parasites requiring two hosts dates, in my opinion, from ancestors which in the history of evolution antedate the differentiation of the arthropods from the vertebrates. Parasites evolve *pari passu* with their hosts, and, when these hosts diverge into species, genera, and families, adapt themselves to the altered conditions. Some eight or ten years ago I undertook to write a work on tropical medicine. At first the task was relatively easy; but in the progress of time, and in consequence of the advances of tropical medicine, the number of organisms, especially of those haunting the blood with which I had to deal, became in subsequent editions so great that the work was almost overwhelming. In my trouble I asked Dr. Sambon to help me in arranging the Haemoproteidae in a way that might help and guide the medical man. The result is the classification at the head of this page, which, you will observe, is based not on external organs, such as flagella, but, in the case of families, on the behaviour of the oökinete in the formation of sporozoites, and, in the case of genera, on the size and shape of the gamete.

REPLY.

Professor MINCHIN said: I should like to make a few remarks, in conclusion, upon some of the points that have been raised in the discussion. With regard to Dr. Sambon's remarks upon the transmission of human trypanosomiasis, I consider that the direct mechanical transmission of trypanosomes by the proboscis of a biting fly is not incompatible with the transmission being effected by a particular species of fly. It must be remembered that these biting flies have powerful salivary secretions, and it is conceivable that a particular species of trypanosome may have acquired the power of resisting the action of the saliva of a particular species of fly, but not of other biting flies. With regard to the observations of Prowazek upon the development of *Trypanosoma lewisi* quoted by Dr. Sambon, I should like to remark that sexual differentiation of trypanosomes in the digestive tracts of biting insects has been observed by many observers, including myself, but that does not prove the infection to be of the inoculative type; it is quite conceivable that after sexual union of the gametes the zygotes might become encysted, and pass out of the digestive tract with the faeces, and spread the infection by the contaminative method. It is noteworthy that Prowazek never obtained inoculative infection with the louse, in which he observed the sexual forms of the parasite. With regard to Brumpt's observations upon the transmission of fish trypanosomes in leeches, it should be noted that Brumpt does not mention the occurrence of sexual phenomena in trypanosomes studied by him; and it has been suggested to me by my friend Dr. J. D. Thomson, of the Lister Institute, that possibly the facts discovered by Brumpt may constitute in reality a case of deferred mechanical transmission, with multiplication of the parasite, and not a case of true indirect or cyclical development, the chief characteristic

of which is a process of syngamy or sexual union. With regard to the observation of Gray and Tulloch, cited by Dr. Sambon, that trypanosomes were found in the salivary gland of the tsetse fly, I should like to point out (having been present when they made this observation) that what these authors termed the salivary gland of the fly was in reality the proventriculus. With regard to the remarks made by Sir Patrick Manson, I think he is rather severe on zoologists in accusing them of making complications. It is Nature who is responsible for the complication, and not naturalists. Sir Patrick Manson, while introducing a new classification of "Haemoprotozoa," complained of classifications being altered so frequently by zoologists. But what is a classification? It is merely a formula for summing up the state of our knowledge, and, as our knowledge advances, our classifications necessarily change. When our knowledge has attained finality our classifications will also be final. With regard to Dr. Sambon's classification, which Sir Patrick Manson has introduced to us, it is difficult to criticize it in a brief space, but my impression of it is that it cuts across the natural relationships of the organisms in question, and it must be regarded as a classification framed rather to suit medical convenience than to express natural affinity. And I may point out that the name *Schaudinnia* is inadmissible, being preoccupied for a genus of sponges. Sir Patrick Manson has adopted a novel method of solving the phylogenetic problems presented by these parasites. He suggests that when a parasite has its life-cycle divided between a vertebrate and an invertebrate host, it was probably originally a parasite of the common ancestor of both hosts. This, if true, would take the ancestry of these parasites back to immeasurably remote periods, certainly to pre-Cambrian times. The fact, moreover, that some species of trypanosomes, for instance, divide their life-cycle between a vertebrate and a leech, others again between a vertebrate and an insect, raises great difficulties in the way of accepting Sir Patrick Manson's view. In criticizing my suggestions with regard to the evolution of trypanosomes, Sir Patrick Manson states that, in his opinion, the change from parasitism in the digestive tract to parasitism in the blood would be a step too great, a change too violent, for any parasite to perform. In reply I would point out that the one thing known for certain concerning the majority of trypanosomes and other "Haemoprotozoa" is that their life-cycle consists of alternating gut parasitism and blood parasitism—the one in an invertebrate, the latter in a vertebrate host.

PRACTICAL NOTES ON THE TREATMENT OF BLACKWATER FEVER.

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I DO not propose here to enter at any length into the pathology of blackwater fever, or to give a detailed description of the clinical symptoms beyond what is necessary to enable us to get a general idea of the lines upon which treatment should be based. My object is to give a few practical hints as to the treatment of this disease, for I have observed that while, in most papers on this subject, many pages are devoted to speculations on the etiology, the treatment is generally dismissed in about half a page. And after all, when a young medical officer is called in to see his first case of blackwater fever with its train of alarming symptoms, his first question is, not what is the cause of this condition, but what is he to do to keep the patient alive, and I know from experience the difficulties and anxieties entailed.

And first as to the *course* of the disease. It will almost invariably be found that a previous history of repeated attacks of malarial fever is to be obtained. They may be very slight, they may be called bilious attacks, but the result is the same; the individual gets into a condition of marked anaemia and cachexia. Then, one day, after he has been feeling out of sorts for some days, he suddenly gets a shivering fit, which may be very slight or very marked, his temperature rises, and an hour or two afterwards he passes the dark-coloured urine to which the disease owes its name. Or in the course of what appears to be an ordinary attack of malarial fever, after he has been under treatment for several days, he has a rigor and the same symptom supervenes.

Two types of the disease should, I think, be recognized—namely, the severe and the mild. In the former the symptoms are characteristic, and should not be mistaken. The skin is markedly jaundiced, sometimes being of a bright lemon colour, is very often moist, and the perspiration has a disagreeable odour. The tongue is furred and yellow, and there is great thirst. The stomach is very irritable, and this is one of the prominent features of the severe attack. Vomiting is constant, the vomited matter consisting of bile-stained fluid, or sometimes pure bile. In some cases the slightest attempt to take anything by the mouth, even a teaspoonful of water, produces intense and distressing retching.

There is often constipation, and the first stool passed is frequently very black and offensive. There is generally great depression and restlessness. The urine is black and porter-like. In the worst cases it is syrupy, and rolls slowly from side to side of the vessel, leaving a thin red film. At this stage it is almost solid albumen.

Microscopic examination shows haemoglobin in the form of granular masses or tube casts. A few blood cells may generally be found, as well as renal epithelium.

There is one feature in connexion with the urine to which, so far as I know, little attention has been drawn, and that is, the *quantity*. It will be found that during the stage of haemoglobinuria there is a very large *increase* in the quantity of urine passed, which diminishes as the urine clears.

Now, during the stage of haemoglobinuria we have in bad cases constant vomiting going on; very little fluid is retained and absorbed, and we have as a result of the draining away of the fluids of the body through the urine an actual diminution of the volume of the blood, which is seen in the shrunken appearance and the small thready pulse. It is very important to bear this in mind as regards treatment, for where there is a tendency to suppression the want of fluid and the lowering of the blood pressure is one of the greatest difficulties in restoring the action of the kidneys.

The liver is very often enlarged, and there is tenderness in the epigastrium and along the margin of the ribs. The spleen may or may not be enlarged and tender; it very often is. The temperature is rarely high, 102° to 104°.

The course of the attack in the worst type is very rapid. In from twenty-four to thirty hours the urine begins to improve in colour, but as it improves it diminishes in quantity until at last complete suppression sets in. The vomiting continues persistent and intractable, finally consisting of dark green, almost black, shreddy particles, resembling the "black vomit" of yellow fever; the action of the heart gradually becomes more rapid and feeble; the temperature, which generally falls after the first onset, begins to rise; the patient falls into a comatose condition, and succumbs at the end of the third or fourth day. In favourable cases, however, about the second day the urine, which, as I have pointed out, always diminishes to some extent as it clears, becomes increased in quantity, the tongue clears, the stomach loses its irritability, the temperature remains low, the skin is moist, and we have the pleasure of seeing our patient slowly, very slowly in most cases, gradually taking a new grip of life after a struggle which has been severe both for him and his medical attendant. But even in these cases we are not always out of the wood. I remember a case where I had successfully got the patient through all these stages, and I was congratulating myself on having another recovery to my credit, when I was called to see him one morning, and found him wildly delirious with a temperature between 108° and 109°. I got it down, and kept it just above normal for some days by sponging with iced water, but eventually he died, through the dresser in charge letting it get a little too high while I was away.

In another case, persistent and intractable hiccough set in, and the patient died of exhaustion. In still other cases, although the urine remains plentiful, the blood destruction appears to have been too great to allow of reaction taking place, and the patient becomes weaker and weaker, and eventually succumbs from exhaustion.

The *mild* attacks are distinguished from the above principally by the character of the urine, and by the absence of marked gastric symptoms. The patient suddenly passes a quantity of high-coloured urine, becomes

slightly jaundiced, there is very little nausea, and the urine clears in a few hours. In these mild attacks there is occasionally a certain amount of difficulty in distinguishing them from attacks of jaundice with bile-coloured urine. The reddish colour of the thin film produced by moving the vessel from side to side, the brown pigment in the deposit, and the presence of albumen in haemoglobinuria should, however, prevent any mistake of this kind being made.

Diagnosis.—The diagnosis of a typical case of blackwater fever is easy, as the symptoms are characteristic once you have seen a case. But I have not infrequently known other diseases diagnosed as blackwater fever, and this is especially the case among young medical officers of the West Coast of Africa, who have a tendency, when they first see a case with high-coloured urine, to diagnose blackwater fever. For example, I have known acute nephritis with haematuria mistaken for blackwater fever. The smoky urine, the presence of red cells, the absence of the brown deposit, and of haemoglobin granules and casts, the absence of gastric and hepatic symptoms, should be sufficient to prevent this mistake being made. Sometimes bilious remittent fever with high-coloured bilious urine has been mistaken for it. In the latter, however, there is bile pigment, no brown deposit, and no haemoglobin granules. I have seen one case of jaundice returned as blackwater fever. The perpetrator was a young officer who had never seen a case, but the patient, beyond bilious urine and a yellow skin, showed not a single sign of blackwater fever, and the urine continued high-coloured for some weeks.

It is important that these mistakes should not be made, because a history of blackwater fever is very misleading to medical officers who may have to attend the patient subsequently; it has a very bad moral effect on the patient, as this disease is so dreaded, and it is very prejudicial to the whole of his future life on the coast.

Prognosis.—An attack of blackwater fever is in many quarters considered as equivalent to signing a patient's death warrant, but the prognosis is not so universally unfavourable as it is generally supposed to be. Every case of blackwater fever is undoubtedly serious, but if the case is treated early, and, above all, if careful nursing is available, a considerable proportion of cases recover. In the nursing home, out of 24 cases admitted 8 have died, giving a death-rate of 33 per cent. Most of these cases were of a very serious nature. Out of 9 cases which occurred in connexion with the railway construction there have been 2 deaths. In my own practice I had at one time 18 consecutive cases without a death, and then 3 deaths in succession. It is evident, therefore, that we may hope for a considerable proportion of recoveries, and the mortality may be taken as varying from 20 to 30 per cent. Prognosis should, however, always be guarded. A previous history of alcoholic excesses, kidney disease, or syphilis, is very unfavourable, and signs of suppression, with uraemia, persistent hiccough, great restlessness, etc., are very dangerous symptoms.

Etiology.—And now a word as to the *nature* of the disease. The pathological appearances after death are invariably those of malaria *plus* an excessive blood destruction—that is to say, we find in the internal organs the black pigment which is associated with malaria, *plus* the yellow pigment which is the result of excessive haemolysis.

I may briefly state, without entering into any of the reasons for or against it, that in my opinion—and it is one which I expressed many years ago—the group of clinical symptoms known as blackwater fever is due to a special condition of the blood produced by repeated attacks of malaria—a condition in which, possibly through the long-continued strain on the blood-producing organs, there is a lowered vitality of the red blood cells, the connexion between the haemoglobin and the stroma is weakened, and then some exciting cause produces a sudden haemolysis, with the resulting phenomena of blackwater fever. The exciting cause is in some instances undoubtedly quinine, in others I believe it is due to chill (as is seen in what is known as paroxysmal haemoglobinuria in temperate climates), and in others, again, I believe that it is due to the absorption of toxins from the intestinal canal. After the haemolysis has taken place, we have to deal with a foreign substance in the blood—namely, dissolved haemoglobin, a body which in that form is irritating, and produces various secondary clinical symptoms, jaundice, gastric irritability, bilious vomiting, congestion of the liver, high-coloured urine, and sometimes secondary nephritis, all of which are due to Nature's efforts to get rid of it. It is essential to recognize that it is primarily a blood change, and any suggestion that it is an affection of the kidneys is in my opinion absolutely erroneous, and is based on a totally wrong impression of the pathology. One might as well say that the blue urine which is seen after the administration of methylene blue is due to a kidney affection. In the one we have a harmless substance (in medicinal doses) in the plasma, in the other an irritating one, and both are equally excreted by the kidney. It is quite true that one may have a secondary nephritis as the result of blackwater fever, but this is a very different thing to attributing the disease to an affection of the kidney.

There may be in addition certain toxins produced, but that the various symptoms are principally due to the free haemoglobin is shown by the fact that the phenomena of the paroxysmal haemoglobinuria which is seen in cold climates are the same, though lesser in degree, and that the severity of the symptoms in blackwater fever increases with the amount of blood destruction. In the cases with slight haemoglobinuria, for example, the gastric symptoms and the jaundice are much less than in those where the urine is thick and syrupy. In haemoglobin which has been produced by comparatively small doses of quinine, the gastric symptoms may be almost entirely absent.

It is evident, then—and this is a point which I wish to emphasize—that by the time we see a case of blackwater fever the mischief is already done, the blood destruction has taken place, whatever the cause may be, and the time for treatment directed against the cause is past. We must remember that the haemolysis takes place suddenly (the time can very often be fixed by the rigor), it does not *continue* to take place, and it rarely recurs unless in those cases where it is brought on by a repetition of the exciting cause, such as quinine, exposure to cold, etc. If ever a definite cause is discovered for blackwater fever, as we all hope may be the case, I think I may safely venture to predict that it will be found of value more from the point of view of prophylaxis than of the treatment of the actual condition.

Treatment.—We have, then, two factors to deal with, first a loss of blood which in some cases is enormous, and secondly, the presence of this foreign substance dissolved in the plasma, and our endeavours must be directed towards assisting Nature to eliminate these products and towards keeping the patient alive until this is done and until the loss of blood is compensated for. Many drugs have been vaunted; one man pins his faith to chloroform, another to boracic acid, a third to tannic acid, a fourth to salicylate of soda, and another cracks up Cassia O'Beariana. I have tried them all, but in my experience just as many cases get well without them as with them. As I have already indicated, the time for specific treatment is past. Bearing this in mind, the indications for treatment are obvious, but unfortunately there are, owing to the nature of the symptoms, often great difficulties in carrying them out.

The first indication is to *get rid of the morbid products* by means of the various excretory organs of the body. Nature is already doing its best in this direction. The kidneys are excreting the haemoglobin as fast as they can, and are being subjected to a severe strain in the effort; the liver cells are dealing with the dissolved haemoglobin, as may be seen in the hepatic cells loaded with yellow pigment; the stomach is endeavouring to get rid of the products of the excessive action of the liver; and the sweat glands are also assisting in getting rid of the poison. But these very endeavours tend to make our task more difficult, for the vomiting is so excessive that it becomes itself a morbid process, and closes up to us the principal channel by which food and remedies can be given.

The first step which I invariably take is to see that the intestinal canal is thoroughly emptied. Of all purgatives, the one which experience has shown to yield most benefit is calomel, and it should be freely given, 5 to 10 grains, preferably the latter, at the commencement of an attack. I consider that this should be done as a matter of routine in all cases, whether constipation is present or not, and

almost invariably a large quantity of black, foul-smelling faeces will be got rid of. It relieves the liver, and no doubt has a certain antiseptic action on the intestinal canal. If given with a very little water it will be retained, or, at any rate, a sufficient quantity to have some action on the liver. Should the bowels not act freely within a short time it is as well to give an effervescent saline, and if this is vomited, to have recourse to a large enema of soap and water with a little castor-oil added.

Our next endeavour must be to aid elimination by the skin and kidneys, and we must pay special attention to the tendency on the part of the latter to give way under the strain to which they are subjected, and must endeavour to prevent suppression taking place. It is here that we find our greatest difficulty. How are we to administer diaphoretics and diuretics with the stomach in such an irritable state that every teaspoonful of water is brought up? In the milder cases, where this irritability does not exist, nothing can be better than the simple old diaphoretic mixture of liq. amm. acetatis and sp. aeth. nitrosi, with the addition of acetate or nitrate of potash. It appears to me to be sound treatment to endeavour to render the blood as alkaline as possible, and thus dissolve the large quantities of black pigment with which the different organs are loaded. But in severe cases, where vomiting is constant, the stomach must be *left entirely alone*, and the sooner efforts to introduce food and drugs by the stomach are given up, the better it will be for the patient. In such cases I begin the day by administering every morning a very large enema of warm water, generally with a certain amount of sodium chloride in it, so as to form a normal saline solution. The quantity must be large, as large as the patient can contain without distress—quarts, if possible; and if it is injected slowly and high up with a long, soft rectal tube, it is astonishing how large an amount can be given. A good deal of this is soon ejected, but there is no doubt that a considerable amount is absorbed. It acts beneficially in two ways. First, it washes out the lower part of the intestinal canal, and thus prepares the way for the nutrient and medicinal enemata of which I shall speak shortly; and, secondly, that portion which is absorbed acts as a diuretic by adding fluid to the blood. This is a very important item in the treatment when no fluid is being given by the mouth, and the large enema may be repeated during the day. Diuresis may also be assisted by adding digitalis to the nutrient enemata and by the rectal administration of alcohol. A large sinapism to the loins is of service in lessening the congestion of the kidneys. In one case I used dry cupping with benefit.

It is recommended that normal saline solution should be slowly introduced into the connective tissue of the thigh or abdomen; but it is a very slow process to get any quantity of fluid absorbed in this way. It has no advantage that I can see over the method which I am about to describe—namely, intravenous injection of normal saline solution. I have now used this in several cases. In the first the patient was moribund, and, while the injection had an extraordinary stimulating effect, it was only temporary, and he died a few hours afterwards. In the other cases the operation was done earlier and recovery took place.

In all cases of severe haemoglobinuria the volume of the blood is much diminished, and the addition of 1 to 2 pints of normal saline solution to the blood not only acts directly by stimulating the heart, but, by increasing the blood pressure, tends to produce diuresis. I believe that in many cases of haemoglobinuria the suppression of urine is not only due to the mechanical blocking of the renal tubules and to the secretory powers of the renal epithelium becoming exhausted, but to this diminution in the actual volume of the blood. In all cases, then, where there is intense gastric irritability, a failing pulse, great restlessness, and diminishing urine, do not hesitate to give an intravenous injection. The effect on the patient is immediate; his pulse improves, he gets brighter and more talkative, and in an hour or two there is an increased secretion of urine. The process is a simple one; but perhaps I may be permitted to describe it briefly for the benefit of those who may be isolated in the "bush."

I use a glass reservoir, which is carefully sterilized and filled with normal saline solution at a temperature of about 100° F. The most convenient way to prepare the solution is to dissolve two soloids of sodium chloride (Burroughes, Wellcome and Co.) in a pint of boiled water, and these should form part of every medical officer's equipment in West Africa. There should be a stop-cock or a clip (bulldog forceps will do very well) in the course of the tube, at the end of which a small cannula with a rounded end should be carefully tied. In the absence of a special cannula I used one out of an aspirator case. One of the large veins at the bend of the elbow is selected, the skin carefully cleansed, and the vein dissected out. A ligature is passed under the vein and tied, the vein is opened above this, and the cannula inserted. Another ligature is then tied round the vein and cannula, and the saline solution allowed to enter the circulation. When sufficient has been injected the cannula is withdrawn, the second ligature is drawn tight, and the operation is complete. As a rule a pint will be sufficient, but the pulse must be watched, and more can be injected if necessary. Chloroform is not required, as in bad cases the senses are blunted and there is little pain.

So far as excretion by the skin is concerned, I do not advocate giving hypodermically or otherwise pilocarpine, phenacetin, or similar drugs. They have a somewhat depressing action, and it will be found that with the treatment I am describing the skin remains moist. The patient must be kept warmly, but not oppressively, covered, and draughts avoided.

Our second indication is to *counteract the malarial element* in the attack, and this involves the question of whether we are to give quinine or not. On this point there is considerable diversity of opinion. It will depend to a large extent as to whether there is evidence of active malarial infection. If malarial parasites are found in the peripheral circulation, I think it wise to give one dose at any rate, watching the effect on the urine, and if there is any recurrence of haemoglobinuria, the quinine should not be repeated. If there is any history of the attack having been caused by quinine it should, of course, be withheld. The safest method is the hypodermic, and the neutral hydrochlorate is the best salt. Five to eight grains may be given in this way. Another very useful method is the administration by rectum. Fifteen grains of hydrochlorate can be dissolved in bovril and given as a nutrient enema. Quinine does not make a good mixture with a milk enema.

Methylene-blue has been recommended. I have tried it once, but it has the great disadvantage of masking the colour of the urine.

The third indication is to *support the strength* while the poison is being eliminated. In the milder cases food may be given in small quantities, and frequently by the mouth, in the form of Brand's essence of beef, sterilized milk and soda, thin arrowroot, bovril, and similar foods. A little brandy or champagne at intervals is beneficial. Where vomiting is a prominent and distressing symptom, once more *leave the stomach alone.* The strength can perfectly well be supported for several days by rectal feeding. After the large enema has been given in the morning, I allow the patient to rest for a little, and then commence nutrient enemata, giving them every two hours through the day. I have generally given small enemata, 2 to 4 oz., but larger ones, say 7 to 8 oz., if they are thrown high up and very slowly with a long rectal tube, will often be retained. They can then be given at longer intervals and disturb the patient less. Peptonized milk and egg is one of the best forms of food to give in this way. Fresh milk is rarely obtainable in West Africa, and in its absence sterilized milk in bottles may be used, or, failing that, unsweetened condensed milk. As a more stimulating enema, bovril and Brand's essence are valuable, and ½ oz. of brandy may be added with advantage.

I would, however, give a word of warning. It is very tempting when the heart is failing to keep pouring in alcoholic stimulants such as brandy, but I believe that there is a very distinct danger of over-stimulating the heart. The result is that after a time it refuses to react to the stimulus and collapse takes place; 6 to 8 oz. in twenty-four hours is as a rule sufficient. Drugs can be added to the nutrient enemata such as digitalis, amm. carb. or strychnine. In the later stages I have often given strychnine hypodermically, in the hope of keeping the heart going, until Nature would be able to reassert itself, but I cannot say that I have seen it do any permanent good in such cases.

The next indication is to *alleviate any distressing symptoms*. The most prominent of these is the vomiting. A large sinapism to the epigastrium gives a certain measure of relief, but rarely arrests it. I have found the ordinary sedative drugs, such as bismuth, oxalate of cerium, etc., of very little use. Minim doses of pure carbolic acid in a little water appears sometimes to soothe the stomach, and morphine or opium is sometimes useful. Small pieces of ice to suck do good sometimes, but in one or two cases I have seen it aggravate the vomiting. The best thing is what I have already insisted upon—leave the stomach alone; do not go on teasing it by pouring in a lot of drugs in a vain attempt to soothe it. But there is an expedient which will be found of great service, and will often afford marked relief for a considerable time, and that is to wash the stomach out. By this I do not mean to use the stomach tube, but to give the patient as much water as he can drink, and let him vomit it. The constant feeling of nausea and the retching seem very often to depend upon the presence in the stomach of a small quantity of irritating bilious matter, which the patient is unable to bring up, and if this is washed out along with the water, two or three hours' relief may often be obtained. And occasionally a copious draught of water has a curious result—it stops the vomiting entirely. I have seen cases where unceasing and distressing vomiting ceased entirely after the administration of a couple of tumblersful of water.

The great thirst may be alleviated by allowing the patient to wash out his mouth with water acidulated with fresh lime-juice, or by painting the tongue with a mixture of glycerine and citric acid. In cases where fluid can be retained I allow the patient to drink plenty of fluid, water or barley-water.

For the restlessness and depression little can be done; they will disappear as the haemoglobin is excreted. The dull aching pain in the back may be sometimes relieved temporarily by friction with a liniment containing opium.

Occasional sponging of the body with tepid water with a little eau-de-Cologne or Florida water and fresh lime-juice in it will be found very soothing. Frequent bathing of the hands and arms is extremely refreshing.

For the sleeplessness which is generally present I give a hypodermic injection of morphine, if absolutely necessary, and I have not seen any harm result from it. Bromides are somewhat depressing.

I must mention a drug which has recently assumed some prominence—namely, Cassia O'Beariana, first described by Dr. O'Sullivan Beare in East Africa, and for which a specific action has been claimed. As originally used, it was given in the form of a decoction in large quantities, a teacupful every two hours, but Dr. Beare claims that the fluid extract well diluted with water has the same effect. The explanation of its action appears to be that it is a means of introducing a considerable quantity of fluid into the body, and if it has a sedative action on the stomach, as it would seem to have, it is undoubtedly a preparation of some value; but it is very doubtful if it has any specific action.

There are one or two general directions which experience has shown to be of considerable value, and which the newcomer may find useful. Keep the patient's spirits up, and do not let him become demoralized. Most patients are very frightened at the disease, and if you can persuade him that he is sure to get better, you have taken him a long step in the right direction. Remember that the patient watches every change in his doctor's face, and always let him see a cheerful, smiling, encouraging countenance. A nervous, excitable, fussy doctor does a lot of harm. Do not discuss his temperature before the patient, and if possible do not let him see his urine. I once found a nurse with all the specimens carefully arranged in bottles and labelled on a table in full view of the patient, who became more depressed each time that he looked at them.

If possible the patient should be removed to a nursing home, where he can get the benefit of trained nursing, which is half the battle. If not, the medical man must stick to his patient, making his food himself, looking after every detail, and leaving nothing to the native servants. These may appear to be very minor details, but they are all-important in the conduct of a critical case of blackwater fever.

The after-treatment is, of course, directed against the anaemia. Arsenic in large and increasing doses, with iron and cinchona, are undoubtedly beneficial. The patient should at once be removed to a non-malarious climate.

Prophylaxis.—It will be evident that the prophylaxis of blackwater fever resolves itself into that of malaria. The use of the mosquito net, the habitual use of quinine, and strict attention to personal hygiene will do much to prevent that dyscrasia which, as I have shown, is the invariable precursor of an attack of haemaglobinuria. A patient of mine who had had blackwater fever five times passed his last period of seventeen months' continuous residence without a single attack either of malaria or blackwater fever, which I attribute to the fact that he took a daily dose of 5 grains of quinine.

Lastly, a word as to the after-effects of blackwater fever. Should a person who has had this disease return to the coast, and how would it affect the question of life assurance?

In my experience a single attack of blackwater fever can be completely recovered from and leave no permanent ill-effects. In such cases I see no reason why the individual should not return to the coast nor why his life should not be accepted by an insurance office. But he should have a lengthened residence in a temperate climate, the anaemia should have completely disappeared, his kidneys should be unaffected, and, above all, there should be no idiosyncrasy as regards quinine. If he is unable to take quinine for any reason he should not return to the coast. In the majority of cases I do not believe that there is any personal predisposition to a recurrence of the disease if the individual rigidly adopts the prophylactic measure already indicated.

In those rare cases where quinine invariably brings on an attack, or where a man has had repeated attacks, it is needless to say that he should not return to the coast, and that if he does his life should be unhesitatingly rejected for purposes of life assurance.

SOME FURTHER OBSERVATIONS ON THE CELL CHANGES IN DOURINE AND SLEEPING SICKNESS.

By F. W. Mott, M.D., F.R.S., and Helen G. Stewart, M.B., Ch.B.

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It is now eight years since the changes in the nervous system in sleeping sickness were first described,[1] and it will be remembered that at that time the actual cause of the disease was undetermined. Since then Castellani and Colonel Bruce have demonstrated the presence of the *Trypanosoma gambiense* in the cerebro-spinal fluid whenever the specific symptoms of sleeping sickness become apparent. At the present time we are not in a position to state in what way the trypanosome produces the changes which we see in the brain *post mortem*, for, although the trypanosome is demonstrable in film preparations of the cerebro-spinal fluid and the juice of glands removed *intra vitam*, it can be found but rarely in histological preparations of the tissues.

Early in the year a full account of the changes in the nervous tissue in dourine and sleeping sickness was published,[2] hence it is not necessary to enter upon them again. In those papers particulars were given of tissues kindly sent for examination by Dr. Lingard, the Sleeping Sickness Commission, and others, and it is sufficient here to say that sections cut in paraffin, 3 μ in thickness, and stained with Giemsa's fluid from the same material have been used in this further investigation. We consider that the best method of describing the abnormal cell appearances is by means of illustrations with explanatory text of the same.

The first illustration from a dourine gland, Plate I, A, B, C, shows curious cells apparently encapsuled. Photomicrograph A shows two of these cells with division of the nucleus into two crescentic forms. Photomicrograph B shows one of these cells more highly magnified. Photomicrograph C, still more highly magnified, shows one of these cells either cut in half or else it has divided, but the crescentic nucleus is again showing evidence of

[1] British Medical Journal, 1899, vol. ii, p. 1666.
[2] F. W. Mott, *Archives of Neurology*, vol. iii.

division. In some respects these cells exhibit appearances like the proliferation of cartilage cells.

In the case of dourine, the cell types shown to-day are taken from sections made from the glands of two dogs which were inoculated nine months before death with 5 c.cm. of the blood of a horse suffering from the secondary (plaque) stage of dourine, and the injected blood was known to contain the *Tryp. equiperdum* in large

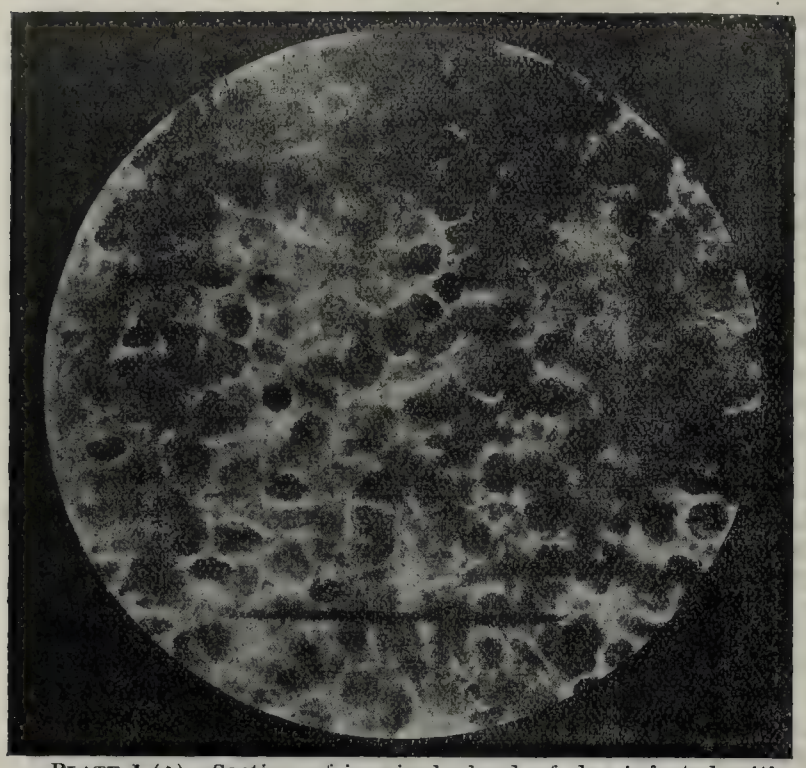

PLATE I (A).—Section of inguinal gland of dog infected with *T. equiperdum*, 5 μ in thickness, stained with polychrome and eosin. (× 720.)

numbers, although trypanosomes were never at any time found by Dr. Lingard in film preparations made during life from these animals. In the glands of these dogs different methods of staining have enabled us to show some changes which, we believe, have not yet been noted, and which may, therefore, be of interest to investigators who possess the advantage of being able to examine fresh material in the form of hanging-drop and film prepara-

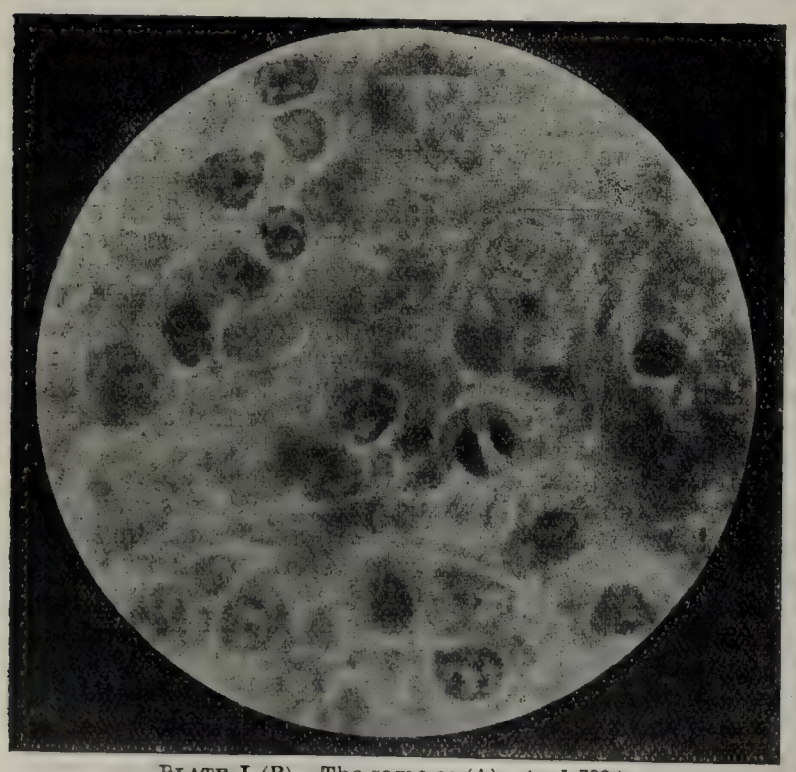

PLATE I (B).—The same as (A). (× 1,320.)

tions, since only in that way can any definite conclusions be drawn from the occurrence of unusual cell forms in the tissues.[1]

In Plate II a low-power view of a dourine gland is shown, in which it will be seen that the lymph spaces are filled with large vacuolated cells. In some of

[1] In view of this fact it is interesting to note that since this paper was written a short account has been received of a new species of trypanosome discovered in the blood of an Indian bullock at Singapore by P. Scott Falshaw, with notes by Professor Lingard, in which cell forms resembling those occurring in these tissues are shown in blood-film preparations, within red corpuscles and lying free in the blood plasma.

these cells granules occur which stain blue with a modified Giemsa's stain. Under a high power many of them appear as structureless chromatin particles, or even small masses of pigment, but in some cases the inclusions show well-marked and distinct characters. They consist of a nucleus, a cell protoplasm with a staining reaction of a slightly different shade from that of the cell in which they are contained, and also, in the majority

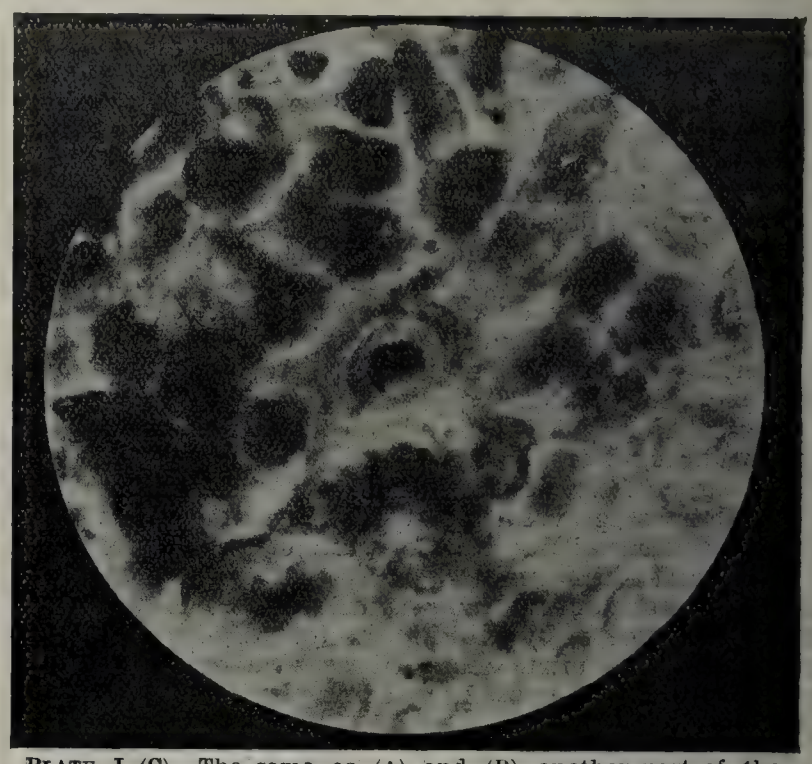

PLATE I (C).—The same as (A) and (B), another part of the section. (× 1,500.)

of cases, a small chromatin body resembling a micronucleus, which is seen either as a minute round dot or as a short rod-shaped particle. These inclusions vary in size from a mere circular point to well-defined cells of about 3 μ in diameter.

Other inclusions which have been noted within these

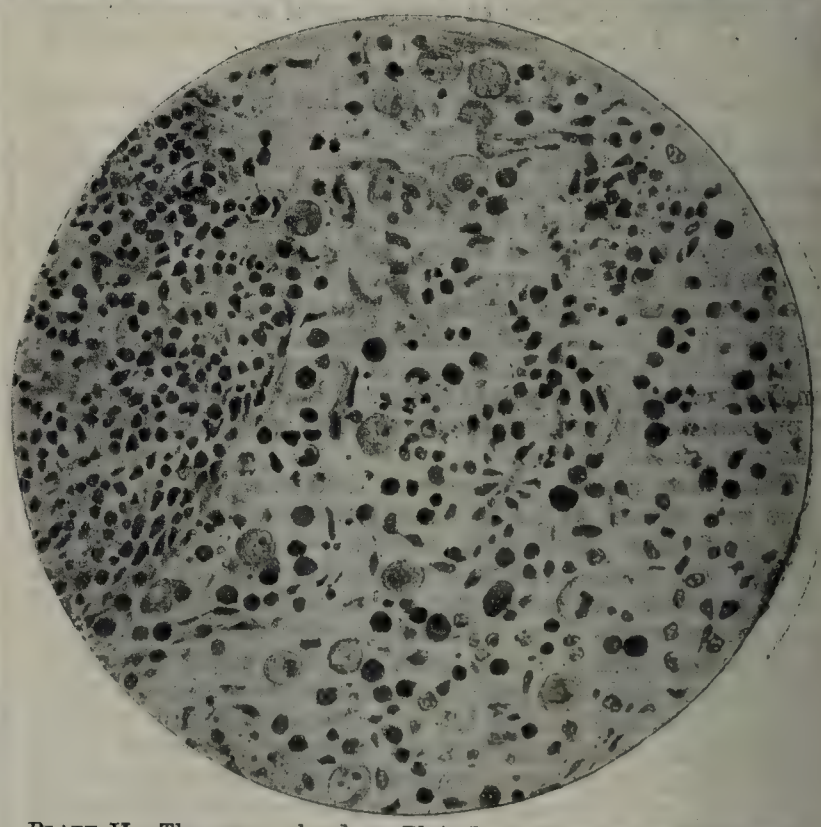

PLATE II.—The same gland as Plate I. Section 3 μ in thickness, stained with Giemsa's stain. (× 300.)

large vacuolated cells are elongated protoplasmic bodies with two or more nuclei. In Plate III examples of both forms are shown. Fig. A: A large cell with an elongated degenerating nucleus contains two cell inclusions, one having a round, the other a rod-shaped micronucleus. Fig. D shows a similar large cell with one of the elongated bodies mentioned above included in its protoplasm. A third cell type is met with as an inclusion in these tissues, consisting of a crescentic chromatin body with some pink-staining protoplasm attached to the concave margin. All three of these types are also found free in the substance of the gland in larger numbers than within the cells, and

A. B. C. D.

PLATE III.—A, Cell from dourine gland, containing two smaller cell bodies. B, Cell from infiltration round cortical vessel in sleeping sickness, showing cell bodies of similar size and shape. C, Cell from sleeping sickness gland. D, Cell from gland (dourine), showing a crescentic body. (× 1,000.)

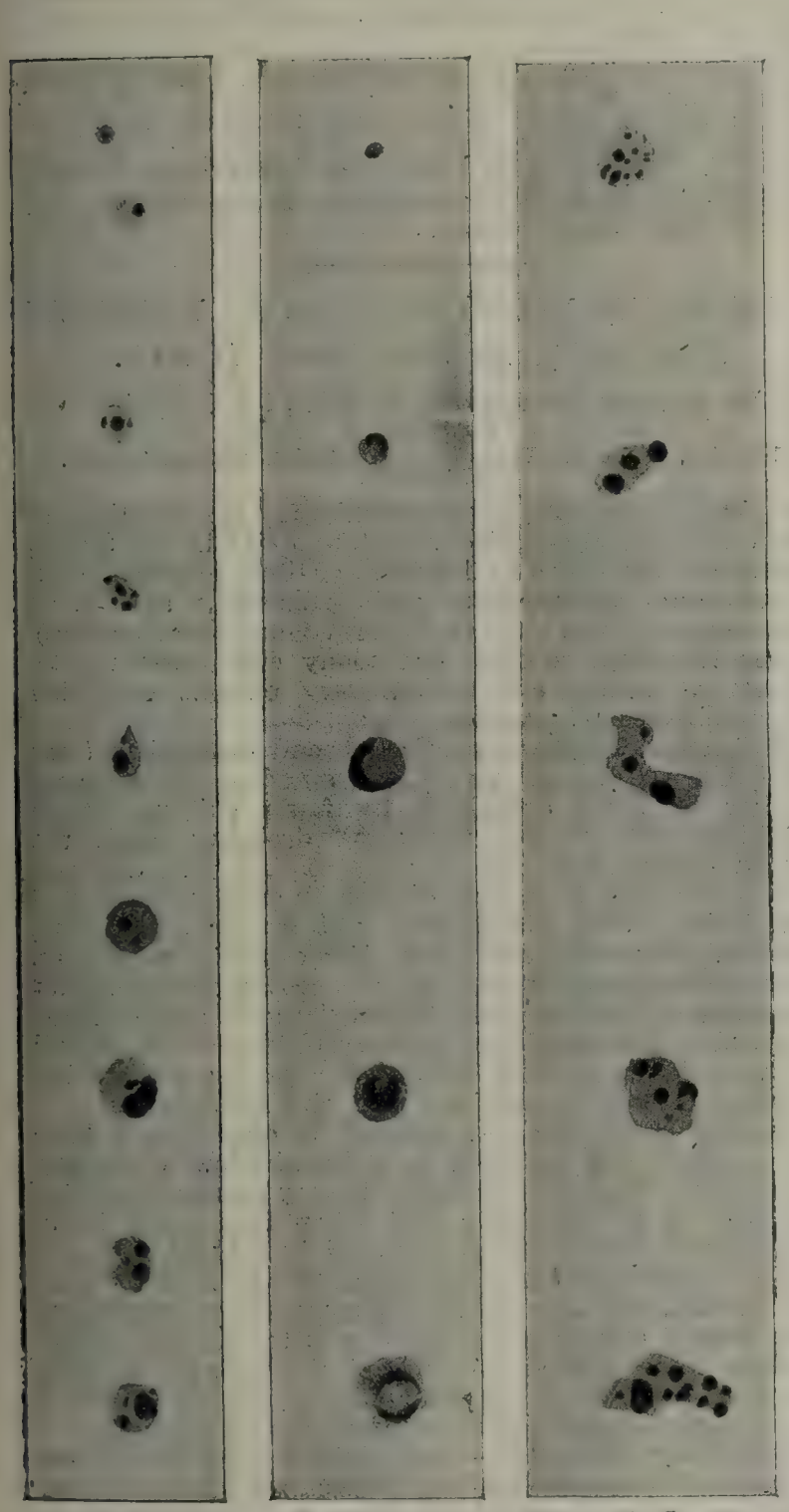

Fig. 1. Fig. 2. Fig. 3.

PLATE IV.—Cell forms found free in the gland in dourine. (Experiment, Dog III. × 1,000.)

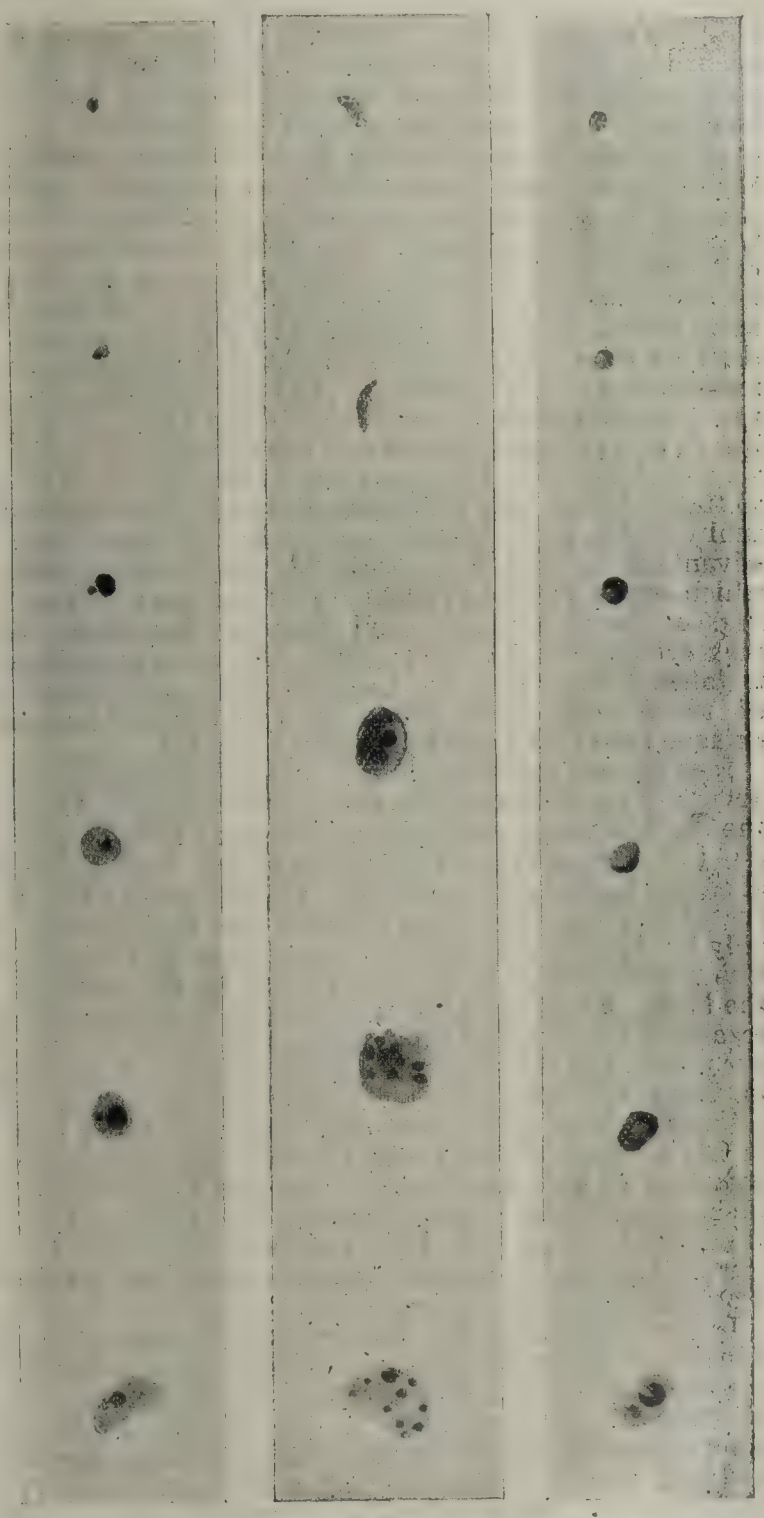

PLATE V.—Cell forms from gland and cortex in cases of sleeping sickness. (× 1,000.)

it would appear that those taken up by, or developing in, the cells in many cases undergo degeneration, and thus account for the chromatin particles which can be seen in so many instances.

In Plate IV the various forms and sizes of these minute cells are depicted, the three main types being shown in the three columns, and all these occur in considerable numbers in the sections of experimentally-inoculated tissue. The small circular protoplasmic bodies with a nucleus, and in many cases also a smaller chromatin particle or micronucleus, vary in size from about 1 to 5 μ in diameter, and almost invariably possess a large amount of protoplasm in comparison with the size of their nucleus. Cells of this type with a diameter of more than 5 μ have not been noted, and at that size division appears to take place.

The fourth cell of Fig. 1, Plate IV, shows a cell in which such division appears to have occurred, two nuclei and two micronuclei being well shown. While in the smallest of this first series the cell is regular and round in contour with usually a blue-staining protoplasm, the sizes above 1.5 μ begin to stain violet and pink, and the outline of the cell may be irregular. The crescentic bodies with rather less protoplasm are found free in the gland in

varying numbers in different sections, mainly in the region of the germinal areas, and can be seen to be of all sizes, from minute rings up to definite crescents, measuring about 5 μ in diameter, and division forms of these occur, such as is shown in Fig. 2 of the plate. Free in the gland tissue also are such elongated multinucleated bodies as are shown in Fig. 3 of this plate, and to this type the elongated form occurring as an inclusion in Plate III probably belong. All the above types have also been seen in the posterior nerve roots and ganglia in a case of *mal de coit* in a stallion, but in smaller numbers than in the experimental tissue.

The presence of these bodies in the tissues of dogs inoculated with the *Tryp. equiperdum* became of double interest when somewhat similar forms, both free and as inclusions, were found to exist in the glands and the infiltration around the vessels of the cortex in the tissue of sleeping sickness cases. Examples of these cells as they occur free in the lymph channels of the glands and the perivascular lymphatics of the cerebral vessels are shown in Plate V. All these types are slightly smaller, on the average, than the similar cells seen in dourine cases, but the difference is only apparent when a number of cells are measured. In most of the glands of sleeping sickness which have been examined both inclusions and free small cells have been fewer in number than in the experimental dourine cases, which would be expected from the more chronic nature of the disease in these tissues, but in sections of a gland removed *intra vitam* the crescentic forms occur in large numbers. In the infiltration around the cortical vessels the small cells are fairly numerous, but in this situation inclusions have only been noted in tissues of 3 cases. It seems possible that this may be due to the fact that they are most likely to occur where the infiltration is more marked, and hence are seen to most advantage around the vessels of the internal capsule, which tissue was not available in all our cases. Plate III, Fig. B, shows a plasma cell with two inclusions, each measuring about 3 μ in diameter. Figure C on this plate is taken from a sleeping sickness gland and shows one of these large cells which has obviously burst and extruded the small cell forms seen around it.

It is not our intention, for we are not in a position, to draw any conclusions from these observations. Whether the bodies noted are minute abnormal lymphocytes or due to endogenous cell formations, as has been suggested of cancer inclusions, or whether, on the other hand, they are resting or protoplasmic forms of the trypanosome can only be determined by the examination of fresh tissue. The investigation of the life-history of the parasite in the tsetse fly, in the human body, and in cultures of the organism outside the body, unfortunately is not within our power, and we can only offer the results of this paper to those who are working at the subject under more favourable conditions. It is suggestive that Major Rogers, in his account of the forms in which the specific causal organism of kala-azar is found, depicts a small cell-form such as we show in these tissues, and that the familiar plasmodial forms of the Leishman-Donovan bodies resemble in some measure some few of the nucleated protoplasmic masses figured above.

In the *Lancet*, May 4th, 1907, we were interested to note that Salvin-Moore and Breinl described what seems to be a somewhat similar cell form to that shown in row 1 of Plate V as occurring in the spleen, lungs, and bone marrow of rats inoculated with the *Tryp. gambiense*, and they regarded them as being a resistant form of the trypanosome. We should like to mention that no such inclusions or free cells have been found in tuberculous tissue, although both glands, nervous and other tissues, have been examined for them in numerous cases. The curious budding of the nucleus and extrusion of a knob of protoplasm seen in tuberculous glands has also been noted in some of these tissues, and the inclusion of full-sized lymphocytes within plasma cells occurs in these glands, as in tubercle and cancer.

In conclusion, we may briefly summarize our results as follows: In the glands of two dogs inoculated with dourine and in the posterior nerve roots of a case of *mal de coit* occurring in a stallion, as well as in the glands of the cellular infiltration which occurs round the cerebral vessels in sleeping sickness, cells may be observed which mainly conform to three types:

(*a*) Small cells, varying in size from 1 to 5 μ, with a deeply staining nucleus, rather small in comparison with the amount of protoplasm. Not rarely these cells contain also a small chromatin particle, which may be circular or in the form of a short rod.

(*b*) Crescentic chromatin bodies, with more or less protoplasm attached to their concave border. The size of these bodies also varies from minute rings to cells with a diameter 4 μ or more.

(*c*) Elongated protoplasmic bodies, with three or more nuclei, which may be thin and pointed at the extremities, or appear as irregular masses of protoplasm, and contain numerous chromatin bodies of very varying size and shape.

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A PECULIAR BLOOD CONDITION, PROBABLY PARASITIC, IN SUDANESE FOWLS.

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SEVERAL months ago, when investigating the spirillosis of fowls which had been discovered[1] to exist in the Sudan, and which appears to be due to a spirillum identical with *S. gallinarum* of Marchoux and Salimbeni,[2] and to be transmitted by the bites of the fowl tick (*Argas persicus*), I was surprised to find that many sick fowls in the Khartoum market exhibited a very curious condition affecting the red corpuscles.

Symptoms.—The fowls so affected, and especially if the condition was at all severe, presented symptoms very similar to those exhibited by fowls suffering from spirillosis. There was the same drooping head, the ruffled feathers, the somnolent aspect. In both diseases, if this condition be a true disease, there is anaemia and emaciation, while diarrhoea is not uncommon. Here, however, the resemblance ends. The course of the illness, the temperature curve, and the *post-mortem* findings differ markedly in fowls suffering from spirillosis and in those exhibiting this peculiar corpuscular change which, as will be seen, I am strongly inclined to regard as of parasitic origin and possibly associated with tick infestation.

General Observations.—I may say at once that I have never found the condition in a healthy fowl or in any other bird's blood, and this despite very numerous examinations. It is noticeable that when few of the intra-corpuscular bodies are to be found in a blood film, the general condition of the fowl may not be far removed from the normal, but there is usually some slight emaciation, and nearly always some sign of illness. The native vendors know this sign, and cast the birds out of their coops, leaving them to fend for themselves. When many bodies are present their illness is very severe.

If recovery takes place—and this is frequently the case when the birds are well fed and housed—the bodies wholly disappear from the peripheral blood and do not recur in it. On the other hand, they appear to increase as the disease progresses in severity, and in fatal cases often occur in very great numbers for many days prior to death.

The natives recognize the condition, and associate it with the presence of the larvae of *Argas* ticks, which are, I think, always found clinging in masses to the bare surfaces under the wings of the unfortunate birds. Further, the vendors are very glad to hand over the sick fowls for observation. As they no longer look properly after a bird affected in this way, I think it likely that they lose most, if not all, the chickens which they neglect.

I have mentioned the anaemia, which is evidenced by pallor of the comb and the emaciation. These are always

observed. The latter is often so severe that on palpating the breast of a sick bird no vestige of the pectoral muscles can be found, and the keel of the sternum can be felt throughout its entire extent. As regards the temperature curve, the normal temperature of a fowl is usually stated to be 108° F. In healthy Sudanese fowls, the temperature taken in the rectum seems to vary slightly, but it is nearly always somewhere between 107° and 108° F.

In an affected fowl (Hen No. 20), which, when it came under observation on January 19th, was extremely ill, the rectal temperature taken at midday stood at 103.2° F. The bird improved in its general condition, and a gradual but nearly steady rise of temperature took place till on January 31st, and again on February 4th, the curve reached 108° F. All this time numerous bodies were present in the films, there being a large multiple infection of the corpuscles. The temperature fell to 107° on February 5th, continued at this till February 7th, and then there was a sudden collapse and an equally sudden fall of temperature. On February 8th the record was 105° F. On the following day death occurred, the *ante-mortem* temperature being 98.8° F. The end was preceded by convulsions.

In a comparatively mild case which recovered the temperature ran a fairly steady course, between 106° and 107° F., and finally rose to normal.

It has so far been difficult to get a bird at the very beginning of the "disease," and hence further observations as regards the temperature are required.

Blood Condition: Stained Films.—It is convenient, in the first instance, to consider the appearance presented by a stained film. The Leishman and Giemsa stains or Borrel blue and eosin, all answer well as tinctorial agents, and the blood may be stained as for the malarial parasite. Perhaps the last-named method shows the structure of the bodies best, and it specially emphasizes what appears to be the contained chromatin. It is at once seen that the bodies are situated in the extranuclear portions of the red blood corpuscles. They may be close to the nucleus—so close, as to touch it—or they may be quite at the rim of the corpuscle, or occupy a half-way position. Sometimes I have even seen what seems to be a gap in the envelope of the corpuscle, so that there is the appearance of a little bay, the sides of which take on the chromatin staining which is characteristic of the bodies about to be described. There may be only one of these in a corpuscle, and this is frequently the case, or there may be as many as seven; Two, three, or four are commonly present. In these multiple cases the bodies may be close to each other or widely separated. They are very protean in form, and less so in size. As regards size, the smallest stained bodies, usually ring or flame shaped, measure about 1.5 μ. The largest, which are often found in the lungs and bone marrow, are often 3.5 μ in their greatest diameter. A few measure as much as 4 μ. It will be seen that we have "coccoid" or solid spherical forms; "ring" forms, enclosing a vacuoloid space, and which I believe are really spheres; similar "ring" forms which look as though a membrane stretched half-way or wholly across them; "ring" forms with central dark-staining portions; signet-ring shapes; flame-shaped forms, closely resembling piroplasmatas; irregular forms; somewhat star-shaped forms; tiny cruciform shapes; and broken forms, which suggest a sporing condition. One of the preparations shown yesterday was derived from the peripheral blood of hen No. 20. As stated, there was a large number of bodies in its peripheral blood when it came under observation, and the bird was extremely ill. It smelt foully and exhibited tremors and marked anaemia. It was put in a comfortable cage, given bedding and plenty of food and water. As a result it improved, and though it was not easy to be certain on this point, I believe the bodies diminished in number while this improvement was maintained. At least, this was the impression derived from a daily examination of the peripheral blood.

There can be no doubt that towards the end of life a marked increase in the number of bodies took place, and this was associated with the remarkable fall in temperature already recorded. The bodies were for the most part spherical and of the "ring" form, but at different times all the forms mentioned were to be seen.

On several occasions what seemed to be undoubtedly free forms were seen. These in shape, size, and staining reaction exactly resembled some of the pear-shaped or flame-shaped intracorpuscular bodies. Towards the end of the illness there were appearances suggesting a breaking up of the spherical bodies into tiny "spores" and a discharge of these "spores" from the corpuscles. It has to be noted that these bodies do not, as a rule, take on what may be termed the classical staining so characteristic of haematozoa, coloured by one of the Romanowsky methods. The typical blue colour is rarely presented, though I have seen something approaching it in the case of the piroplasma-like forms. The staining reaction rather resembles that of the corpuscular nuclei, though it is not quite the same, and in many cases, as indicated, there are appearances which suggest the presence of chromatin occurring either as a single dot at the pointed end of a flame-shaped form or as a series of dots arranged usually at fairly definite intervals round a spherical or diamond-shaped body; or sometimes, but rarely, scattered irregularly about a spherical form, the majority being ranged round its periphery. By artificial light these dots show the true chromatin-red colour. In addition to the chromatin dots there are masses and streaks of the same material, for the most part occurring at the periphery of the spherical forms or at the rounded and thicker end of the tiny flame-shaped forms. Indeed, in some of these the chromatin appearance is exactly like what is met with in certain of the more characteristic piroplasmata, *P. bigeminum* or *P. canis*, for example. The infected red corpuscles do not present any abnormal appearance. On employing Ruge's modification of Ross's method[3] for malarial parasites, and thereby dissolving out the haemoglobin from the corpuscles, the bodies can be seen lying near the nuclei, and it is noticeable in many cases that they have taken on the stain much more intensely than the nuclei. Their shape and general appearance is well shown by this method, which, as will be seen later, is an argument in favour of their being true blood parasites. That these bodies are really situated within the corpuscles there can be little doubt. Careful focussing shows them, at least as a rule, not to be epicorpuscular, and this is also seen to be the case when the fresh blood is examined. The appearances there presented will now be considered.

Fresh Films.—On making a good film of the blood the bodies are readily recognized. In freshly-shed blood they are invariably of a spherical form, and look not unlike young malarial parasites. Each body appears of a lighter colour than the corpuscle, has a well-defined margin, and presents a somewhat granular aspect. It focusses with the corpuscle, and is apparently embedded in the extranuclear substance. There is no sign of pigment. I have looked in vain for true motility, both at room temperature and when using a warm stage at 108° F. The nearest approach to it has been a slight oscillatory motion. Once, and once only, there has been seen what might have been a free, pear-shaped, motile form, but one is apt to be deceived by some of those bodies mentioned by Nuttall and Graham-Smith in their latest paper on Canine Piroplasmosis.[4] Still, this body looked like a parasite, and swam freely in the plasma and against the blood current under the cover slip. It was eventually lost to view under a mass of corpuscles, and it is possible it was derived from the skin or feathers.

The intracorpuscular bodies are unpigmented and very resistant. Thus, I have kept a fresh film for three days at room temperature, and yet been able to demonstrate the bodies. In some cases, indeed, the haemoglobin had oozed out of the corpuscles, but the spherical bodies still remained *in situ*, apparently unchanged. As a rule, however, when the blood is kept the bodies become more granular, and also appear to increase in sizes. I have seen a condition resembling a spore formation result, though this may really have been a disintegration. Again, the bodies sometimes seem to escape from the corpuscles and lie free and motionless in the plasma. I have seen very distinctly a body causing the envelope of the corpuscle to bulge out as if it were just about to escape from it. Though watched for a long time, nothing further happened. I have also observed a free spherical form indenting the corpuscular envelope, as though endeavouring to obtain an entrance, and I have once been witness of what was possibly the invasion of a corpuscle by such a body. Certainly it either entered its substance or passed beneath it. Unfortunately I was called away from the microscope at the critical moment, and, though I quickly returned, the field had either

shifted or the corpuscle in question had become crenated. In any case I did not see the body reappear within the corpuscular substance. As a matter of fact, however, all efforts to discover any definite cycle of events illustrating a life-history have so far failed. The blood has been taken at night, but this procedure has not aided us or revealed anything new. Attempts have been made to crush the corpuscles, but, in the absence of a porcelain ball-mill, this is a very difficult thing to do, and has been void of any useful results. As in the stained blood, so in the fresh—there is no evidence of the infected corpuscle having undergone change. A common measurement for the unstained bodies is 2 to 8 μ in either diameter.

Post-mortem Findings.—Post mortem there is no gross lesion visible. Indeed, beyond an occasional increase in the pericardial fluid and a possible renal congestion, there is nothing to account for death. Liver, spleen, intestine, kidney, heart, lungs, brain, and bone marrow have all been frequently inspected, but beyond the blood condition nothing marked has been found on naked-eye examination. Microscopical examination of the liver, spleen, kidneys, and lungs, however, evidences a condition of congestion suggesting backward pressure, but I am not yet prepared to enter into a discussion of what has been found. One is naturally none too familiar with the normal histology of the organs of the fowl, and there has not been time to study it properly. The bodies are found in smears from heart's blood, spleen, kidney, lungs, and bone marrow. In the case of hen No. 20, large forms were noticed in the lung and marrow smears. "Spore," or what looked like "spore" forms, were also present, in some instances lying free alongside the nuclei of disintegrated corpuscles. In the bone marrow there was an appearance suggestive of the absorption of some of the bodies by the large phagocyte mononuclears. It is difficult to say whether the contained bodies are the same as those met with in the blood, but they resemble the latter in shape, size, and staining reactions. As Dr. Wenyon pointed out, the conditions somewhat resembled what is seen in leucocytes containing the Leishman-Donovan parasites.

Nature of Condition Discussed.—We have now to ask ourselves, "Are these bodies haematozoa or are they not?"

In a preliminary note sent to the BRITISH MEDICAL JOURNAL in December, 1906, but which did not appear until March 30th of this year, I stated that there was no doubt as to the protozoal nature of these bodies; that I believed they might eventually be classed as piroplasmata; and that the larvae of *Argas persicus* probably played a part in the infection. A long study of the fresh blood had led me to this conclusion, and Captain Olner, of the Sudan Veterinary Service, who had done much blood work under Dr. Theiller in Pretoria, agreed with me as to their parasitic nature. Further investigations have somewhat shaken my belief, but I would still say that, whatever these peculiar bodies may eventually turn out to be, I think that they are more like haematozoa than anything else, and that if they are haematozoa, they either belong to a new class or genus or are to be regarded as the piroplasm of the bird. With the first part of this statement Dr. Wenyon, Protozoologist to the London School of Tropical Medicine, who is at present attached to these laboratories, and has seen all my specimens and many of the diseased fowls, expresses himself in accordance. From the very beginning one considered if these bodies were evidence of corpuscular vacuolation or degeneration the result, let us say, of the anaemia induced by tickbite, were due to extrusion of nuclear substance, or were the after-effects of a spirillosis which observation has shown to be common in the Sudan.

The appearances in the fresh blood, the results obtained by the modified Ross's method of staining, the general arrangement of the stained parasites in the corpuscles, and the possible formation of tiny spores, are all in favour of a haematozoal infection. So is the association of the bodies with a definite disease, their disappearance on recovery, their numerical relation to the severity of the complaint, and the absence of any gross lesion *post mortem* to account for a fatal issue. To some extent these facts would also favour the condition being merely a degeneration of the corpuscular substance. Vacuoles, however, cannot be stained, while the recently-discovered Cropper's bodies[5] in human blood can only be partially stained, and that with great difficulty. The bodies in the fowl's corpuscles are easily coloured by any of the methods mentioned. Against the haematozoal theory may be urged the lack of blue staining of the protoplasm, but I have seen cases of bovine piroplasmosis in the Sudan where the same held good, and indeed, some of these bodies are exceedingly like certain of the small piroplasm forms found in what has been called "Egyptian fever of cattle."

If the condition were post-spirillary, it would probably be of the nature of a degeneration, and, though coccoid bodies have been found in the blood after relapsing fever in man, very little is known about them, and they occur free in the plasma. In this connexion, however, one fact of interest may be mentioned:

A hen recovered from spirillosis, and was put in a cage which had contained a fowl suffering from the condition under discussion. It was liable to be attacked by ticks and their progeny, and indeed ticks were fed on it in connexion with work on spirillosis. About eight days after its recovery from spirillosis I was surprised to find for the first time many of these curious intracorpuscular bodies in its blood. It again became sick and drowsy, and harboured these bodies for a month. They gradually lessened in numbers, however, and eventually entirely disappeared, and the bird has remained quite well for nearly three months. During the attack the temperature kept between 106° and 107° F., but rose to normal after recovery. Is it, then, possible that the condition is intimately associated with spirillosis?

I have now had an opportunity of showing these bodies to several authorities in this country—namely, Sir Patrick Manson, Professor Nuttall, Colonel Leishman, Dr. Sambon, Dr. Daniels. They are all inclined to agree that they are of a haematozoal nature. Professor Laveran, who has also seen the preparations, has, however, made an interesting suggestion. He directed my attention to a paper[6] by him on a very curious condition found by Kruse in the erythrocytes of frogs (*Rana esculenta*) captured in the neighbourhood of Paris. This condition he regards as due to a bacillary invasion of the red blood corpuscles resulting in a kind of vacuole formation presumably due to a digestion or absorption of the haemoglobin. In the spaces so formed rod-shaped bodies, which he has named *Bacillus krusei*, are found lying singly, in pairs, in great numbers, or even in small masses like short interlacing threads. Professor Laveran's suggestion—and it is merely a suggestion—is that the condition in fowls may be due to a somewhat similar state of matters, the invasive agent in this case, however, being a micrococcus.

This is a very interesting and suggestive supposition, but I am inclined to think that it is negatived by the appearances presented by the fresh blood, which, of course, Professor Laveran has not seen. Moreover, it is difficult to understand how it could fully explain all the various conditions which have been observed in stained preparations, and more especially the chromatin dots and staining of the edges of the vacuoloid spaces, unless indeed this is the result of basophilic degeneration.

It is evident that research on this curious and interesting condition is far from complete; but I think it better to record what has been done, as it may lead others to carry out investigations for the purpose of discovering if these bodies are to be found in the blood of fowls in other parts of the tropics, and such other work may aid in solving a problem which I confess is still somewhat perplexing. In two out of four experiments inoculation of infected blood subcutaneously into healthy fowls has been successful in reproducing the blood picture and the accompanying diseases. One bird thus infected recovered, while the other died after an illness lasting several weeks, and after the bodies in its peripheral blood had undergone an enormous increase prior to death. Cultivation experiments in sterile citrate solution have given some indication of what may possibly be a kind of spore formation, and the same thing has been found in blood taken from the alimentary tracts of ticks (*Argas persicus*) and bed bugs (*Cimex lectularius*) which had been fed on infected fowls. Whatever the condition may eventually turn out to be, it is evident that the illness induced is of very considerable importance in a land where there is a large trade in fowls and where these birds and their eggs form specially valuable articles of diet, as indeed is the case in most tropical countries.

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DEVELOPMENT OF PIROPLASMA CANIS IN THE TICK.

By Captain S. R. Christophers, I.M.S.

In a preliminary note in the *Indian Medical Gazette* I described in the tick *R. sanguineus* (Latreille), fed on dogs infected with *Piroplasma canis*, the club-shaped bodies of Koch and some other appearances described by this author in the case of *P. bigeminum*. A little later, in a preliminary note in the British Medical Journal (January 12th, 1907), I gave a description of developmental stages of *P. canis* leading up to the formation of swarms of sporozoit-like bodies in the salivary glands of the nymph and adult of the second generation. Since then many gaps have been filled and certain errors of interpretation have been corrected, with the result that the cycle of development can be followed concisely and clearly. A complete description of all the forms observed would occupy too much space in this report, but a summary may be given.

Parasites not differing from ordinary forms in the peripheral blood when in the gut of the tick enlarge and form round or oval bodies 4 μ to 5 μ in diameter, in which the chromatin still resembles that of the original *Piroplasma* of the blood. Before they have reached their full size these bodies often show irregularities, but the long processes described by Koch do not seem a necessary part of development.

After reaching the size noted an achromatic line appears, giving rise to some peculiar appearances wrongly interpreted by me in my first note. This line divides the parasite approximately into halves, one containing the chromatin mass and the other no chromatin. The halves eventually separate, except at one point, and the portion without chromatin swings round to become the tail of a club-shaped body, the half with chromatin forming the anterior portion. The club-shaped body, at first somewhat irregular in shape, takes on as it becomes more mature the appearance of a vermicule, and develops a peculiar apparatus at the anterior end. The club-shaped bodies then sooner or later leave the gut and are found about the ovary and oviducts.

It was somewhat of a surprise to find that this development which takes place in the gut of the adult tick also takes place in the gut of nymphs fed on infected dogs. My experiments have not yet proved that infection can be transmitted otherwise than hereditarily, but there can be little doubt from the microscopical appearances that infection taken in by the nymph can be transmitted by the adult, a fact which somewhat confused my earlier interpretations of the cycle of development. Later work has made it quite clear that club-shaped bodies may arise as a result of development of the forms seen in the blood either in the gut of the adult or in that of the nymph. In the adult they find their way to the ovaries and oviducts, where they may sometimes be seen in swarms, and finally embed themselves in the ova. In the nymph they wander indiscriminately into the tissues and embed themselves in the protoplasm of the embryonic tissue cells which are already beginning to shape the future adult. Whether in the ovum or in a tissue cell, the club-shaped body swells up and becomes a characteristic round body, which for convenience of description and because it offers certain analogies with this stage of the malarial parasite I have called the "zygote."

The zygotes quickly undergo a great increase in size, reaching eventually as much as 25 μ. In their growth they exhibit some changes in the chromatin of a very peculiar nature. Eventually they split up into a number of bodies which I have for the time termed "sporoblasts"; and these again subdivide to form bodies very closely resembling *Piroplasma* in the blood, which, since they are found collected in the salivary glands, I have called "sporozoits."

Thus far, supposing fertilization to take place prior to the formation of the club-shaped bodies, for which there is a certain amount of evidence, *Piroplasma* in the main outlines of its development resembles the malarial parasite, but in certain details and in the relation of the parasite to the tissues of the host there are some striking differences.

Only in a few cases do zygotes, as in the malarial parasite, go through division into sporozoits in the cell originally invaded. Much more commonly the sporoblasts become separated by the division of the rapidly-growing embryonic cells, and possibly also by their own movements, so that the sporozoits when formed are more or less disseminated through the tissue.

In the developing adult parasites are commonest in the embryonic tissue which will eventually form the salivary gland, and when sporozoits are formed these are already *in situ* in the cells of the salivary acini; but it is quite common for parasites to invade other embryonic cells than those which will eventually become salivary cells, and possibly in this case the sporozoits reach the gland by their own movements. The final result is the packing of many of the salivary cells with thousands of sporozoit forms. In a previous publication I called attention to the fact that the nymphal and adult glands contained forms which appeared to be of different types. This difference is, however, not a fundamental one, and is due only to the fact that in the salivary glands of the nymphs I had then examined the process of subdivision into sporozoits was not complete. In my previous note I described, from a wrong interpretation of the nature of the "sporoblasts," what seemed to be two cycles leading to the formation of sporozoits, but it is clear that one cycle only exists as described. Stated briefly, the hereditary cycle of *Piroplasma* is as follows:

A parasite in the gut of the adult tick enlarges and becomes a motile, club-shaped body, which then leaves the gut and penetrates an ovum, becoming in the substance of this a zygote. The zygote increases in size and breaks up into sporoblasts which are found disseminated in the tissues of the larva. In the glands of the nymphs immature sporozoits have collected. In the glands of the adult are found mature sporozoits.

Development in the nymph to adult infection is identical. Club-shaped bodies are formed in the gut. They leave this, penetrate the tissues, embedding themselves in cells and becoming zygotes. Owing to the growth of the embryonic tissue, the sporoblasts into which the zygote breaks up tend to become disseminated among the cells. Many of these invaded cells later form the salivary gland—a structure which occupies a large portion of the body of the infected tick. The sporozoits thus find themselves *in situ*. Many parasites, however, invade embryonic cells which do not eventually become salivary tissue, and the sporozoits then probably reach the gland by their own movements.

A FURTHER NOTE ON BILHARZIA (SCHISTOSOMUM) DISEASE IN CYPRUS.

By George A. Williamson, M.A., M.D.Aberd., D.T.M. (Liverpool).

At the Manchester meeting of the British Medical Association in July, 1902, I reported a case of bilharziosis from Cyprus, believing it to be of interest from the point of view of geographical distribution of disease; and in the British Medical Journal of December 25th, 1902, Sir Patrick Manson gives notes of a case from the West Indies, beginning thus: "With the exception of Mesopotamia, Cyprus, and Mauritius, bilharzia disease has hitherto been supposed to be peculiar to Africa."

Further cases here have now come under observation which justify the statement that in one part of Cyprus at any rate, the disease is common.

The 1902 case occurred in a policeman from the village of Morphou in the North-West of Cyprus, and no other cases came under my notice (although in 1906 my colleague at Nicosia had a patient from a village on the north coast of the island) till March of this year, when I met with three persons affected, all from Morphou.

This finding of every case connected with this particular village suggested strongly its being a focus of the disease; so, obtaining a day's leave, I devoted it to visiting the village with the idea of investigating, as fully as the very

Table Showing Result of Examination at Morphou and Syrianokhori on April 6th, 1907.

No.	Patient and Village.	Age.	Blood in Urine Microscopically.	Blood in Urine Evident to Eye.	Bilharzia Ova in Urine.	Occupation.	Habits.	Length of Time Affected.	Date of First Appearance of Blood after Bathing or Fishing, etc., in River.
1	M. T., of Morphou	45	+	In very small quantity	+	Shoemaker	Used to fish for eels and to bathe in Syrianokhori river	15 years	Uncertain, about 6 months.
2	P. P., of M.	19	+	—	+	Carpenter	Used to fish and bathe in S. river	7 years	Slightly over a month.
3	D. J., of M.	30	+	—	—	Ploughman	Used to bathe himself and water his animals in S river; at 5 or 6 years of age used to wash in the S. river	About 25 years	A few months.
4	J. C., of M.	13	+	— at time of examination; + generally, according to account given by patient and his father	+	Schoolboy	Began going to S. river to bathe just before winter, 1906-7	1½ months	A few (2 or 3) months.
5	Y.H.M., of Syrianokhori	13	+	—	+	Schoolboy	8 years ago began to bathe in S river and to water vegetables from the river	7 years	About 1 year.
6	C. N., of S.	12	+	+	+	Schoolboy	6 years ago began to bathe in S. river	4 years	About 2 years.
7	J. C., of S.	9	+	+	+	Schoolboy	3 years ago began to bathe in S. river	2 years	About 1 year.
8	L. H. T., of S.	9	—	—	—	Schoolboy	5 months ago began to bathe in S. river	—	—
9	P. B., of S.	8	—	—	—	Schoolboy	Last summer began to bathe in S. river	—	—
10	P. S., of S.	7	+	—	+, very few	Schoolboy	Last summer began to bathe in S. river	Did not know he was affected	—
11	T. K., of S.	40				Ploughman	Used to bathe in S. river as a child, and when 10 years old had haematuria lasting 4 years at least		
12	X., of S.*	—	+	—	+	Schoolboy			

* The notes of this case have been misplaced, so further details are not available.

short time allowed, the circumstances of its prevalence there.

On inquiry it appeared the villagers were perfectly well acquainted with the disease, which they considered an inflammation of the kidneys due to exposure to the cold water in the river bed at Syrianokhori (a village two miles away) in those persons who go up there to fish.

Four persons came for examination, all being Morphou villagers, and all stating that at one time or other they had had haematuria; in the urine of three of these bilharzia ova and blood corpuscles were found on microscopical examination, while in the fourth there were blood corpuscles microscopically, but no ova, although probably a more prolonged search would have shown the presence of ova also.

On going to Syrianokhori School, and examining the children there, the following result was obtained: Out of eight pupils present, the urine of seven was examined (the eighth was unable to pass water at the time), and five children had urine containing ova and blood.

Inspection of the neighbourhood showed water of two kinds:

1. Marshes drying up in early summer.
2. River with holes in its bed, which, even at the end of summer, contain enough water to bathe in.

Several of the patients stated they never went to the marshes, only to the river during the summer, so the marshes may be exonerated from the charge of conveying infection.

In Morphou village the inhabitants state that infection occurs *solely* amongst those frequenting Syrianokhori to bathe, wade, fish, water animals, or otherwise expose their skins to the water in the river bed, and during my short stay no case could be found among the females of either village, they not frequenting the river in the same way as the males do. Persons living in Syrianokhori village, and not going to the river bed, stated that they never became infected, and no case of infection among such persons was known in the village.

In all the patients (including the 1902 and the 3 seen in March, 1907) a history of exposure of the body to the water of the river bed was obtained, and this appeared to be the only point connecting them together, thus strongly suggesting the mode of infection being by entrance of the miracidium through the skin.

Reference to the table shows some interesting points:

(*a*) Case I, an illness duration of fifteen years, and Case III one of over twenty years.

(*b*) Case IV, suggesting a period of two or three months between exposure to infection and presence of blood in the urine evident to the eye.

(*c*) Case X, showing infection of patient without his knowing it, owing to non-appearance of blood evident to the eye.

In the BRITISH MEDICAL JOURNAL of July 18th, 1903, Dr. James Petrie, speaking of bilharziosis in Zululand, says: "One man I met told me that he had been cured of the disease by taking small doses of santonin every morning for some weeks, and since then I have often tried this remedy and generally with success." This drug failed when tried on a patient here who was admitted to hospital, and in whose case the only other treatment attempted was washing out the bladder with boracic lotion and exhibition of boracic acid and infusion of buchu internally.

Microscopical examination of the ova with a $\frac{1}{6}$ lens shows the anterior end of the miracidium pointing, in the great majority of instances, to the spine end of the shell, although in a very few cases I have observed the opposite disposition of parts. I do not know of any observations on this detail, and am not aware of its significance, if any.

In all cases examined the ova had the terminal spine of *Schistosomum haematobium*, and inquiry did not suggest the presence of rectal symptoms that might be caused by *Schistosomum mansoni*.

In describing at the Manchester meeting the first case seen in Cyprus I said, "I do not claim a cure for this case, as of course the adult worms in the portal system are beyond reach of attack and doubtless the man will again come under my care for similar symptoms." Strange to say, he never complained of haematuria again, although on his leaving the police force last year examination of his urine showed still the presence of ova and blood microscopically.

In connexion with the foregoing description of the incidence of the disease in Cyprus, I would venture to ask for discussion on two points: (1) What form of prophylaxis can be suggested where, as here, the river bed is frequented for fishing, watering animals, irrigation of vegetables, etc., that is, for purposes connected with the daily occupation of the villagers? (2) What can be done in the way of treatment where haematuria and a certain amount of lassitude are practically the only symptoms?

SOUTH AFRICAN DISEASES.

By Lieutenant-Colonel C. Birt, R.A.M.C.,
Queen Alexandra Hospital, S.W.

The following notes are based on a study of South African diseases which have come under my observation during the last eight years.

Enteric fever is an ailment which looms largely in South African mortality lists. While in Harrismith, Bloemfontein, and Pretoria I examined the bodies of 187 patients who had succumbed to this fever. Death was caused by toxaemia in 34 per cent., pneumonia 29 per cent., perforation 17 per cent., haemorrhage 6 per cent., asthenia 6 per cent., syncope 4 per cent., acute nephritis 2 per cent., and rarer complications 2 per cent. The enteric bacillus was isolated during life or *post mortem* 46 times. The cultures were identical morphologically and biologically with European strains. This was to be expected, as there is no difference in the clinical aspect of the fever from that seen north of the equator. Recent research by blood culture and the bacteriological examination of dejecta has shown that the typhoid bacillus may inhabit the bile passages and intestinal canals of healthy people, and that it may cause an insignificant illness only, which is often mistaken for influenza, diarrhoea, bronchitis, tonsillitis, "simple continued fever," etc. I have collected 59 South African temperature charts of a short initial pyrexia lasting a few days, followed a week or so later by a relapse pursuing a typical typhoid course. I have also 32 showing two to ten days' fever without a subsequent relapse, proved to be enteric by Widal's reaction.

"Typhoid carriers" and the subjects of these unrecognized abortive attacks constitute the great danger to the health of the community. Kaffirs are very prone to typhoid infection. In 70 per cent. of 135 Kaffir necropsies I found enteric lesions past or present. Moreover, the stage of ulceration in 56 indicated that the average duration of the fever had been eight weeks, while the average time they had been under treatment was nine days only. It may be said that in the milder forms of the disease the South African native does not apply for medical aid. It is the onset of complications, most frequently pneumonia, which compels him to do so. During the enteric season, there must be a certain number of them "typhoid carriers" or sufferers or convalescents from the infection who are continually polluting the soil and water. It seems impossible that any vlei or spruit can escape contamination at that time of the year.

Besides flies, ants may be active agents in scattering infective matter. Ants were readily attracted by typhoid-agar cultures left exposed in the laboratory at Pretoria, and they conveyed the bacillus on their legs to fresh agar plates on which they were allowed to run.

The result of Sir A. E. Wright's extensive investigations on the preventive value of typhoid vaccination shows that the incidence is lessened by one-half in the inoculated. Should the vaccinated contract enteric I found their chances of recovery doubled. While the mortality of 947 uninoculated typhoid fever patients was 14.25 per cent., that of 263 inoculated enterics was only 6.8 per cent. In the latter the fever was shorter, milder, and relapses four times less frequent. Kuhn's comprehensive statistics, published in the *Deutsche militärärztliche Zeitschrift* of April 24th last, also testify to the merits of typhoid vaccination in reducing the incidence and mortality of the fever among the troops in German South-West Africa.

Therapeutic inoculations in the course of infections are now being widely employed. In 1893 Fraenkel treated with success 57 cases of typhoid fever by means of subcutaneous injections of killed cultures of the bacillus. Richardson recently has obtained encouraging results in 22 by a similar method. Minute doses of the vaccine should be used—not larger than one-fiftieth of that given for preventive inoculation.

Paratyphoid infections are uncommon. Paratyphoid bacilli were met with twice only. Paratyphoid A occurred in the spleen of a man in whose intestine enteric-like lesions existed. A paratyphoid bacillus of a new variety was grown in pure culture from a subperiosteal abscess of the tibia consequent on a typhoid-like illness. Paratyphoid fevers cannot be distinguished clinically or by *post-mortem* appearances from typhoid fever. Absence of a Widal reaction with Eberth's bacillus or a positive reaction with a paratyphoid bacillus is no sure test that the ailment is not enteric. Thirty-eight cases, the blood of which diluted thirty times failed to clump typhoid emulsions, were subsequently proved to be typhoid fever.

Dysentery and diarrhoeal diseases which were widely prevalent during the war, still cause nearly one-quarter of the total number of deaths in Johannesburg. Shiga's bacillus was the infecting agent in 26 out of 55 cases examined in Pretoria. These included 10 cases of infantile diarrhoea, in 7 of which Shiga's bacillus was isolated. Amoebic dysentery was noted once only.

Multiple liver suppurations were found in 28 dysentery necropsies out of a total of 58. Three cases from which Shiga's bacillus was isolated were greatly benefited by antidysenteric serum injected *sub cute*. S. E. Lewis used it with success in 6 instances in Pretoria. Shiga, Rosenthal, Lüdke, Kruse, Vaillard and Dopter, Kraus and Doerr, Skschivano, and Stefansky have established its worth. It has now been administered many hundred times. It is claimed that its efficacy equals that of diphtheria antitoxin.

Probably Fraenkel's pneumococcus is the microorganism which causes the heaviest mortality in South Africa, at any rate among the coloured population. The Kaffir is very susceptible, especially on first arrival at towns. He is infected by the spray produced in the act of talking, coughing, etc., by the crowd of fellow occupants of his kraal who themselves have acquired immunity yet scatter virulent pneumococci broadcast. In 12 per cent. of 135 autopsies on Kaffirs death was due to primary pneumonia, and in 10 per cent. of 224 necropsies on whites. But while 20 per cent. of whites died of pneumonia secondary to enteric fever, no less than 50 per cent. of blacks succumbed to Fraenkel infection while suffering from typhoid. It is obvious that enteric patients should be safeguarded from this secondary invasion.

Streptococcic diseases are common. Empyemata and abscesses containing this microbe are of frequent occurrence. Erysipelas is more prevalent than in England.

Staphylococcic ulceration of the skin known as "veldt sore" may be mentioned. One point to be remembered by surgeons is that it is not safe to operate during a dust storm. From this cause I have seen suppuration ensue under a technique which otherwise uniformly resulted in primary union of the wound.

Dr. P. D. Strachan of Philippolis has shown that Mediterranean fever is endemic in many districts of the Orange River and Cape Colonies, where goats provide the milk supply. I have observed the specific agglutinative reaction in bloods of 87 patients suffering or convalescent from this disease, which he has been so good as to send me. In 6 the *Micrococcus melitensis* was obtained in pure culture. The goats on certain farms where the fever occurred have been proved to be infected.

Tubercle is responsible for about one-sixth of the total mortality among Kaffirs. Nathan Raw divides human tuberculosis into two types—the human type, including phthisis pulmonalis, secondary ulceration of the intestines, and tuberculous laryngitis; the bovine type, comprising acute miliary tuberculosis, tuberculous peritonitis, meningitis, tubercle of glands, joints, and bones. It is noteworthy that in all the necropsies on tuberculous Kaffirs, 11 in number, the infection was of the bovine type.

Scurvy is an important disease to recognize, since it is often the cause of sudden death. It is frequently confounded with beri-beri. Sponginess of the gums is not always present. In 16 cases which I examined after death, distension of the heart with large *ante-mortem* clots was present in all, haemothorax was observed in 4.

and haemopericardium in 3. Haemorrhagic effusions in the muscles of the lower limbs were constantly noted. The blood and splenic tissue of 7 examined bacteriologically proved sterile.

Bilharzia is endemic in the Northern and Western Transvaal. I have notes of 78 cases which have come under my observation. The incubation period in one-fifth of these was a month or under. In one-third it was two or three months, and in one-third from three months to a year. In the remainder it was over a year before symptoms appeared—in many brought into prominence by the hot Indian climate. Only about 10 per cent. have recovered after harbouring the trematode five to eight years. The remainder who contracted the disease 1900-2 still pass ova. They are mostly in robust health, however. None of the serious complications which occur in Egypt has arisen among them. In two Kaffirs who died from other causes I discovered rough brown areas resembling sandpaper on the mucous membrane of the bladder due to a layer of ova. In one there was also papillomata. Several worms were obtained from the prostatic plexus of veins. A specimen of the female in the gynocophoric canal of the male was secured.

Seven of the sufferers affirm they never bathed in South African vleis or spruits; 2 assert also they neither bathed nor drank water from spruits. It seems probable that the infection is conveyed directly through the mouth, though feeding experiments on a baboon and dogs proved negative.

Tapeworm is very commonly met with among the natives.

Malaria is not endemic in Harrismith, Bloemfontein, or Pretoria. Four cases from Komati Poort came under my care. The benign tertian parasite was present in great numbers in the blood of all of them.

A hitherto undescribed actinomyces or streptothrix was grown in pure culture from the empyema of a man who was taken ill in Ladysmith. The peculiarity of the streptothrix was that it stained like the tubercle bacillus, and was mistaken for it when his sputum was first examined.

MEDITERRANEAN FEVER IN SOUTH AFRICA.

By Lieutenant-Colonel C. Birt, R.A.M.C.,
Queen Alexandra Hospital, S.W.

In the *South African Medical Record* of February 10th, 1906, a physician residing at Richmond, Cape Colony, asked for suggestions for the treatment of the following case:

> Aged 45, no previous illness. Continuously high intermittent fever for six weeks. No delirium. Bowels sluggish. Very severe sudden cramps in the lumbar region. Legs kept flexed. Progressive weakness. Nothing can be made out in connexion with the heart, lungs, kidneys, or spleen. Complains of nothing but lumbar pain.

That patient was suffering from Malta fever. His serum, diluted 100 times, clumped the *Micrococcus melitensis*. It is due to the untiring efforts and keen insight of Dr. P. D. Strachan, of Philippolis, Orange River Colony, that the true nature of such fevers, which have been observed by several practitioners for many years in certain parts of South Africa, has been recognized.

Mediterranean fever is caused by the *Micrococcus melitensis*, discovered by Colonel D. Bruce, F.R.S., in 1887. The illness may last a few days only, or it may persist for years. I have examined the body of a man who died on the 624th day of the disease, and have obtained the *Micrococcus melitensis* from the blood of another patient on the 642nd day of the fever. In exceptional instances this micro-organism may inhabit the human body for long periods without giving rise to illness.

The fever itself is often unaccompanied with marked symptoms. The tongue may remain clean and there may be but little malaise. Constipation frequently occurs. In other attacks lumbar and sciatic pains are severe. Sweating is marked, swelling of joints, bursae, and tendon sheaths neuritis and orchitis may supervene. Epistaxis, purpura, renal and meningeal complications and abscesses may come on in serious cases. Dr. P. D. Strachan's latest publication on the prevalence of Mediterranean fever in South Africa appeared in the *South African Medical Record* of December 10th, 1906. This communication will be the standard work of reference for all future investigators in the epidemiology of the infection in Africa. He gives an analysis of 138 cases which have occurred in his practice. In 21 per cent. there were no symptoms, lumbago was noted in 63 per cent., joint effusions in 19.5 per cent. Orchitis in 9.4 per cent. of the attacks amongst men. The clinical picture of the South African malady is, therefore, essentially the same as that of the Mediterranean. Bacteriological examinations prove that the infections are identical. Dr. Strachan has sent me capsules of blood of 87 patients—58 in the course of fever and 29 convalescents. Most of the tests were carried out in the laboratory of the Queen Alexandra Hospital, London. Hence the delay in transit caused some diminution in the agglutinins. Nevertheless 30 of the febrile cases agglutinated the *Micrococcus melitensis* when diluted 20 to 100 times; 20 reacted in 100 to 1,000 fold dilutions, and 8 in 1,000 to 12,000. The blood serum of 20 of the convalescents reacted in dilutions of 20 to 100, and of 9 in dilutions of 100 to 1,000.

One word is here necessary regarding the value of the agglutination test in Malta fever. It is essential to make use of a recently-isolated culture or one grown on a medium which does not induce auto-agglutinability or sensibility to the agglutinins of normal blood. I have found that emulsions of growths on glucose-nutrose agar of +25 reaction (Eyres scale), though isolated more than a year, are still satisfactory. When emulsions of old laboratory cultures on ordinary agar are made with physiological salt solution no clumping may be apparent, yet a minute trace of human serum from any source may agglutinate the micrococci completely. Hence it is incumbent on the bacteriologist to control his emulsion by testing it with normal human blood. A reliable culture is usually unaffected by, and is never completely clumped by, a tenfold dilution of blood serum derived from healthy people or from those suffering from any disease except Malta fever. Nor are traces of a reaction observed in a twentyfold dilution. Therefore agglutination of the *Micrococcus melitensis* by a serum diluted twenty times is diagnostic of Mediterranean fever, past or present. Of all serum tests it is the most reliable, since we are not embarrassed by "coagglutinins" which may complicate the diagnosis of typhoid and paratyphoid fevers. Thus, during the course of a typhoid infection, the body may elaborate coagglutinins for the paratyphoid bacillus and vice versa. In my experience emulsions killed by heating to 55° C. for one hour, with 0.5 per cent. phenol added afterwards, are more generally useful than suspensions of the living micrococci. With the former I have not observed the occurrence of "agglutinoids," which I have occasionally encountered when the latter have been employed. That is to say, while the lowest dilution of the serum failed to clump the living micrococci, the higher dilutions agglutinated them, notwithstanding that the serum was in less amount.

The eighty-seven individuals who supplied the samples of blood which agglutinated the *Micrococcus melitensis* had been infected with that microbe without doubt. Thanks, however, to the absence of germicidal action of human blood on the micrococcus I have been able to obtain pure cultures of this micro-organism from six of the small capsules of blood which had undergone the journey from Philippolis to London. These growths are identical morphologically and biologically with the Mediterranean strains. It is hardly surprising that this should be so. For in all probability the disease was carried to Africa by means of infected goats imported from the Mediterranean. Dr. Strachan has recorded that many of his patients were in the habit of adding unboiled goat's milk to their coffee. He, Major J. M. Buist, and I, have observed agglutination of the *Micrococcus melitensis* by the milk and blood of goats which were living on farms where Malta fever prevailed. This indicated that these animals had been infected with the coccus. Moreover, amongst the troops quartered in South Africa I have never discovered a case of this infection which had not been contracted in the Mediterranean. My investigations have been carried out in Harrismith, Bloemfontein, Pretoria, and England. The absence of this fever in the army in South Africa is explained by the fact that goat's milk does not enter into the dietary of the soldier.

In Cape Colony blood serums which have given positive reactions have been sent from Murraysburg, Richmond, Kenhardt, Barkly West, and Hanover. In the Orange River Colony the fever has been demonstrated by the

same means in Philippolis, Fauresmith, Senekal, and Boshof. Major J. M. Buist has proved its existence in Middleburg, Transvaal. It has been recognized clinically at Belfast and Zoutpan. It is probable that it prevails at Kimberley and at the Victoria Falls.

Sir Almroth Wright prepared an antitoxin ten years ago by immunizing a horse with the micrococcus. Its influence on the infection was not always beneficial. My own personal experience of it, while suffering from the fever contracted by accidental inoculation, was not such as to make me enthusiastic in extending its use. A more hopeful method of specific treatment appears to be the subcutaneous inoculation of minute doses of *Micrococcus melitensis* vaccine. By this means we stimulate the tissues to elaborate protective substances at the site of injection. The Mediterranean Fever Commission greatly diminished the output of *Micrococci melitenses* in the milk of infected animals by a series of therapeutic inoculations of *Micrococcus melitensis* vaccine.

Staff Surgeon S. T. Reid has employed the method with success in the treatment of 9 cases of Malta fever. Fleet Surgeon Bassett-Smith has had an experience of it in 61 cases, and advocates its use when the fever is protracted. Dr. Strachan has informed me that he obtained good results in three chronic attacks. I myself have employed it in two with benefit. We are therefore justified in adopting this treatment in a disease which is remarkably intractable to empirical remedies.

COMPLICATIONS FOUND IN CHRONIC CASES OF SPRUE.

By Charles Begg, M.B., C.M.,
Bath.

I have still as strong a faith as ever in the efficacy of yellow santonine in the treatment of sprue, but during the last few years, while dealing with the chronic cases seen in this country, I find that a certain proportion of them are only benefited, and after a time relapse. This has led me to make more careful examinations for possible complications, and the object of this paper is to draw attention to this hindrance to treatment.

Sprue being, as it is, an invasion of the mucous membrane of the intestinal canal by microbes causing a chronic form of destructive inflammation, it is easy to understand that organs which are connected with that canal by ducts are liable to suffer by direct extension of the process; thus the most common complication is pancreatitis. My experience leads me to believe that few chronic cases escape. It may exist in all degrees of severity from the very slightest, only to be detected by a careful analysis of the faeces and urine, and the deduction to be drawn from the presence of the pancreatic reaction of Cammidge, to the severe type, where the organ is so thickened by growth of interstitial fibrous material that it can be palpated if careful search be made for it.

It is important to note that advanced cases of disease of the pancreas present a wonderful clinical likeness to cases of sprue. The failure of the pancreatic digestion leads to the passage of large, bulky, colourless motions of acid reaction, great, often rapid emaciation, distended abdomen, anaemia, and tongue symptoms follow.

Pancreatitis is, however, rarely primary. It is either malignant or secondary. This organ lies so well protected that it is not specially liable to disease. Extension of intestinal inflammatory processes is the common cause, and therefore sprue patients are very liable. Treatment may have killed the microbe of sprue and still the distressing symptoms may continue if the patient has developed a sufficient degree of pancreatitis, and if we are to be successful we must be alive to this fact. I think we can obtain evidence of this condition of things by careful examination. In active sprue liver dullness is diminished except in cases where the process has implicated the gall duct, when there is a possibility of finding an enlarged organ, but such condition would be associated most probably with tenderness to pressure and a degree of jaundice enough to indicate the complication.

To the trained observer the feeling of the gut through the abdominal wall is characteristic in sprue, and in marked contrast to that felt in the distension from any other cause. In sprue the doughy feeling and great bulk of undoubted intestine, combined with the clear flatulent note all over, differs vastly from the hyperflatulent resonance of a distended abdomen, into which we can by manipulation press the hand and palpate freely, recognizing only the difficulty due to gas between us and any organ. Then in the state of the tongue and mouth the trained eye will note a difference. Aphthous patches are seldom the form taken in sprue, or ulcers distinctly caused by irritation from rough edges of teeth, but just what we would expect from the enfeebled vitality of the patient. It will also be found that there is a history at least of attacks of fever, which is not the case in sprue. I have seen several cases lately which raised most interesting questions as to the true nature of the case.

I saw a lady in consultation September, 1906, who had been ill for nine years. She presented an almost perfect clinical picture of sprue; weight 5 st. 4½ lb.; profound emaciation; large pasty motions, acid reaction; frequent sore tongue, but I was able to point out that the liver dullness was normal; that you could palpate the abdomen and grasp a mass occupying the position of the tail of the pancreas; that there was a history of pain and tenderness in this position, and frequently she had elevations of temperature. There was sugar in the urine, and the interesting point was that the lady had never been in any tropical country known to produce sprue. Only Egypt and Madeira had been visited and the Continent generally. In this case Dr. Cammidge's conclusions from an analysis of faeces and urine was as follows: "The result of this investigation suggests disease of the pancreas as the cause of the symptoms from which the patient is suffering. The well-marked pancreatic reaction in the urine, the presence of a pathological excess of urobilin, and the somewhat high proportion of fat in the faeces all point in this direction. The marked excess of fatty acid over neutral fat in the faeces, the diminished amount of stercobilin without any trace of bile pigment in the urine, while there is a pathological excess of urobilin, suggest that the liver is also at fault. The faeces have not at the present time the characters generally considered a characteristic of sprue, for in this condition there is no stercobilin and the total fats are very much in excess of what has been found in this case. There is also not, as a rule, the disproportion between neutral fat and fatty acids found in the specimen under consideration. There is no evidence of malignant disease of pancreas and I think the most probable diagnosis is chronic inflammatory mischief of the pancreas and most likely in the liver also."

(Signed) P. J. Cammidge.

At the date of writing this the patient is making progress towards recovery, but the interesting point for us is that without careful examination such a patient might be mistaken for a case of sprue. Then, again, I have seen several cases where sprue was supposed to be the cause of an illness which came on *after* the patient had settled down in this country. Two illustrations will suffice.

A lady returned to England from residence in China where she had always had good health. Subsequent to the fatigue of house hunting she developed slight diarrhoea and soreness of the mouth. Since that date till I saw her in 1906 this condition had persisted, with intervals of comparative health, and she presented a very fair appearance of a case of sprue when I saw her, but I found the spruelike motions alkaline in reaction and very offensive, liver dullness normal, the tongue was swollen and had several aphthous sores. There had been frequent and sharp elevations of temperature and history of cough, and there was pain in the region of the appendix both to pressure from surface and to P.V. examination. On analysis the conclusion was that "there is evidence of disease of the gastric intestinal tract and deficient action of liver. The state of the faeces is similar to that met with in sprue but might also be due to tuberculosis of the intestine and mesenteric glands. There is no evidence of disease of pancreas."

I cannot help regarding such a case, for all its clinical resemblance to sprue, as one of chronic appendicitis.

The only other case I will add is one seen recently. Three and a half years after he had left India (where he had always enjoyed good health) he was struck down with his present illness in July, 1905. Dry constant cough followed in September, 1906, by a diarrhoea which has reduced him at the date of writing from his normal weight of 12 st. 4 lb. to 9 st. 10 lb., and the reduction can still be measured week by week. The general clinical picture looks like sprue, but here again we have to deal with a normal liver, and the palpation of the abdomen is of the non-sprue type I have tried to describe. It is worth mentioning that nineteen years ago his left nipple was excised on account of a hard growth, and that he has never felt well since, but developed various nervous feelings, dread of being alone, etc. An analysis brought an opinion that "everything pointed to there being active degenerative change in the pancreas, probably of inflammatory origin, some interference with the liver function, catarrh of the intestines, probably of microbic origin, absence of occult blood against any ulcerated surfaces as would probably be the

case in malignant growth, and the negative result of the diazo reaction, while by no means conclusive, suggests that it is not due to tubercle.

Is it not more likely that such a case will turn out to be malignant or tuberculous than a case of sprue, where the germs have lain latent for three years and a half? But the reason of my introducing such cases into my paper is to emphasize the necessity for care in diagnosis on account of the close resemblance such cases have to sprue.

The complication second in frequency is, I should say, chronic appendicitis. This cul-de-sac may be likened to a stagnant backwater in a river difficult to keep clean, and must form an ideal spot for the cultivation of any kind of microbic life. It also must give at least partial protection to the microbe from the action of the best-intentioned germicide. Much has been written to explain the great liability of this part of the gut to inflame, and in sprue it must be specially liable, and my experience is that we must never neglect to make a very careful examination of this region in all cases, specially because should such a complication exist surgical interference must be called in. A case may begin as sprue, and under treatment cease to show any longer the characteristic signs. Stools become dark in colour and alkaline, liver normal, but the patient does not regain health as he should. There will be attacks of pain, perhaps of temperature, and if we are not alive to what may be the matter valuable time may be lost.

I recently saw a lady in consultation who had been looked on as a case of sprue for six years. She was anaemic, thin, complained of diarrhoea, mouth ulcerated. Whatever may have been the state of things in the past, the present condition to my mind was clear—namely, chronic appendicitis. I judged both from the recent history and as the result of a careful examination, details of which I will not burden the paper with. At operation an appendix with ulcers on its inner surface and walls ¼ in. thick was removed, also the right ovary, which was the size of a Tangerine orange. The patient is now well.

The third complication is involvement of liver and gall bladder. In the slighter forms the only result is some interference with the secretion; and in the severer forms, especially where gall stones or stricture hinder the flow of bile, the condition again demands surgical interference. If we are on the watch, it is not difficult to diagnose. More or less jaundice, tenderness, or pain in the hepatic region, and the size of the organ, all guide us.

These three are the most important complications met with. I have also seen diabetes in an elderly subject which remained present many years after all signs of sprue had yielded to treatment. The presence of sugar in the urine in cases complicated by pancreatitis has already been noticed. One case always had a urine of a specific gravity of 1040, with great thirst, but I was never able to find sugar, although the case terminated in death by coma.

Abscesses, both perityphlitic and perirectal, have been met with and delayed recovery till detected and dealt with. Death followed the opening of a most extensive perityphlitic abscess, which gave vent to enormous quantities of most offensive pus, and, in spite of the extreme emaciation of the patient, escaped detection for some time.

Anaemia can hardly be classed as a complication of sprue, but has to be reckoned with when considering treatment, and it is interesting to note that in at least two cases seen recently the report of the blood analysis led the observer to suggest that the case was one of commencing pernicious anaemia, and there was a history of nose bleedings and slight febrile attacks.

DISCUSSION.

Dr. James Cantlie (London) said: Recently I have tried ipecacuanha in severe cases of sprue with marked benefit. Where the stools are loose, bulky and fermenting, the tongue tender and ulcerated, and especially with an increase of temperature, ipecacuanha exhibited, in the same fashion as in cases of dysentery, acts almost like a specific. When the patient is very wasted and feeble, I hesitate to give ipecacuanha in the ordinary form in case the starvation entailed for some hours combined with vomiting might cause collapse; in such cases, therefore, I give ipecacuanha sine emetine, that is, ipecacuanha from which the emetine has been extracted. The drug in whatever form should be given for at least four days, commencing with 20 grains the first and second days and 15 grains on the third and fourth. When the ordinary ipecacuanha is used it is well to give 15 to 20 minims of tincture of opium a quarter of an hour before administering the specific drug; this precaution against vomiting need only be followed during the first two days, as sprue patients seem to withstand the emetic tendency in an astonishing manner. The further treatment of sprue consists of a liberal but not a mixed diet. Milk is useless and detrimental. Beef finely minced, or, better still, pounded, and lightly cooked, should form the staple diet; eggs (five or six a day) are most beneficial; liver soup as a change (six chicken livers cut up and made into soup with 1½ pints of water, reduced by boiling to 1 pint, and thickening with ordinary stock); jellies; barley water as a drink—are some of the initial materials for the diet. As the patient improves, vegetables, such as stewed celery or seakale or vegetable marrow, may be added. The patient should when very weak be fed every hour, or every two or three hours, according to strength; and it may be necessary, when the patient is almost *in extremis*, to be content with beef-juice, beef-tea, beef-jelly, given every fifteen or thirty minutes. A sprue patient is generally a starved being, and death is often due to inanition, food being withheld in the belief that it cannot be digested or absorbed. Feed the patient liberally (the diarrhoea is a secondary matter), for a scorbutic state is almost always induced when a rigid and meagre diet has been followed for a considerable period.

Dr. Cammidge (London) had had the opportunity of examining the urine and faeces from 14 cases diagnosed as sprue, and in 6 of these obtained evidence suggesting that there was some pancreatitis in addition to the intestinal disease. All 6 gave a well-marked "pancreatic" reaction when their urine was examined by the method described by the speaker in the British Medical Journal of October 28th, 1905. The faeces were acid in reaction, and not only was there a large excess of unabsorbed fat, varying from 70 to 40 per cent., in the stools, but the unsaponified fats were in considerable excess of the saponified fats as a rule. In those cases where the urine gave no "pancreatic" reaction, on the other hand, the proportion of fat was usually less, and the saponified fats generally exceeded the unsaponified. Stercobilin was found in all the specimens of faeces investigated, and was usually abundant, although the stools in most instances appeared colourless to the naked eye. The fact that in 5 out of the 6 cases in which there was evidence of pancreatic trouble a considerable pathological excess of urobilin was found in the urine suggests that there was some disturbance of the biliary passages and liver ducts, for the speaker had found an excess of urobilin in the urine to be a constant accompaniment of cholangitis, whether due to gall stones in the ducts or to the extension of a duodenal infection. The pancreatitis accompanying sprue in about 50 per cent. of cases would appear to be due to the spread of an inflammatory change along the bile and pancreatic ducts, but why this should occur in some instances and not in others is not clear. It is possible that the anatomical variations in the relations of the pancreatic ducts to the duodenum and to each other, so well described by Opie, may have something to do with it.

THE CLIMATE OF CEYLON.

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[Abstract.]

Ceylon, the "Eden of the Eastern Wave" and the premier Crown Colony of the British Empire, is an island in the Indian Ocean, lying between 5° 54′ and 9° 51′ N. latitude and 79° 42′ and 81° 55′ E. longitude. In size it is about equal to Belgium and Holland. From north to south the island has a length of 270 miles, and its extreme width from east to west is 137 miles. The whole island has an area of 25,481 square miles. In the journey from the sea to the hills one passes through every variety of climate and scenery. The population is nearly 4,000,000. An area of nearly 4,000 square miles of the interior of the island, towards the centre and the south, is covered by mountains, while the northern and north-central parts form a great plain from sea to sea. To the south-east and

north the hills break off abruptly, but on the west and south-west the country between the mountains and the sea is hilly and undulating. Across the central plateau, from north to south, runs a dividing range of mountains, whose highest peak, Pidurutalagala, reaches an altitude of over 8,000 ft. Rising to a lesser height is the world-famed Adam's Peak, on the summit of which is the footprint worshipped by the Buddhists and Mohammedans alike.

The mean annual temperature taken from sixteen stations extending through all parts of the island shows 76.3°, varying from 58.3° at Newara Eliya (the sanatorium of the island near the centre) to 82° at Jaffna in the extreme north. The climate varies considerably in different parts of the island both as regards the temperature and the rainfall. In the lowlands the climate is tropical, but in the mountains, in the interior, it is found equal to many parts of Europe. The highest recorded temperature for the last thirty-five years was at Anuradapura, 103.7°; and the lowest record was at Newera Eliya, 28.2°.

The climate of Ceylon is chiefly influenced by what are known as the monsoons. There are two of these, the south-west and the north-east. Monsoons make a great difference to the velocity of the winds. The south-west monsoon generally commences about the last week in May or the beginning of June, and is accompanied by thunder, lightning, and storms. This is the time that the sun is exerting its influence over the wide plains of India. The heat during this time is not felt so strongly, owing to a constant breeze from the sea and also owing to the atmosphere being cooled by the moisture due to the rains. The winds and rains are mostly felt in the western half of the island. The north-east monsoon is really the north-east trade winds, or, as one medical wag declared, the trade winds for the profession, indicating its unfavourable influence on the general health. This monsoon is also accompanied by storms and rains, but not so marked as in the case of the south-west monsoon. The eastern half of the island is more affected by this monsoon than the western half. During this monsoon there is a large amount of chest complaints, and as the rains cease, malaria shows itself.

Sir Allan Perry, in his administrative report for 1905, states that for the purposes of discussing the incidence of malarial fever, the island may be divided into halves, the eastern and the western. The western half of the island receives most rain with the south-west monsoon and the eastern half with the north-east, and malaria is most rife in these halves after the respective monsoons.

The wind of the north-east monsoon is very light in the north of the Bay of Bengal; in the south it blows more steadily, and is strong to the south of Madras. The south-west monsoon is the one that is most recognized in Ceylon. Its approach is ushered in with distinct changes in the atmosphere, and is usually the monsoon that is utilized for planting purposes. During this monsoon, too, the general health of the island as a whole is better than during the north-east.

In September and October the winds are variable, shifting to all quarters from the south-west by north and east to south-east.

The south-western parts are moist and temperate, and the mountain regions cool and bracing. Together they constitute the "wet region," a tract with a rainfall of 60 in. and more during the two monsoons. It is rather abruptly demarcated from the flat arid plain known as the "dry region," which occupies the remainder of the island and has a rainfall of under 60 in. The average daily range of temperature throughout the island is about thirteen degrees, the greatest range being at Diyatalawe (this being one of the driest places in Ceylon), 17.9°, and the smallest at Galle, of 6.7°. At Newera Eliya the lowest temperature is generally during the months of November, December, and January, when the average is about 57.1° per month; the highest during the months of March, April, and May, when the average is 60.6°. The coolest and the hottest months in Colombo and Jaffna are approximately the same, though the average temperature is much higher, the coolest months having an average of 79.4° and the hottest of 82.3.°

Solar Radiation.—The average excess of insolation over the corresponding maximum shade temperature is about 56°.

Nocturnal Radiation.—Average depression of mean nocturnal temperature below minimum shade temperature, 5.9°.

Atmospheric Pressure.—Average mean pressure is about 28.738.

In Colombo there is a barometric fall from January, 29.874, to July, 29.799, and then a slight rise till December. At Newera Eliya the lowest readings are in June, 23.998; it rises gradually up to December, when it is 24.059; there is a drop in January, and the highest level is reached in February, 24.064. The advantage to be derived from these readings is in their relation to the weather, as these changes are hardly perceptible to the human system. At high altitudes, owing to the diminution of pressure and a relative increase of blood pressure, there is a tendency to haemorrhage and also to tax the heart. But at the elevation of 5,000 ft. or 6,000 ft. this is hardly felt by a person in fair health.

Newera Eliya will not be suitable for one suffering from heart disease or diseased blood vessels with a tendency to haemorrhage.

Hygrometry.—Average mean vapour tension in decimals of an inch is 0.758. The lowest vapour tension was registered at Newera Eliya, 0.411.

Cloud Proportion.—The average proportion of cloudless sky was about 5.6 for the whole island; the highest near Newera Eliya, 6.7, and the lowest at Anuradapura, 4.5. As a rule the cloudiest months in the island are October, November, and December, and the least cloudy February, March, and April. The cloudiest months are also the coolest months.

Rainfall.—Average annual rainfall for a large number of years is about 72.86 in. The rainiest months in the year are October, November, and December, and May and June. The largest rainfall is in the west central parts of the island and the lowest in the southern and north-western coasts. Newera Eliya has the largest rainfall during June and July (12.70 in.) and the lowest during January, February, March, and April (4.15 in.).

At Diyatalawe (the military sanatorium) the driest months are February, March, June, July, and August, the wettest October and November, with an average rainfall of 10.83 in.

At Kandy (the capital of the Cingalese kings) the driest months are January, February, and March, with a rainfall of 4.23 in. At Jaffna, in the extreme north, practically the only wet months are October, November, and December. The nine dry months have only an average rainfall of a little over 1 in.

Heat of the Sun in Ceylon.—The highest sun temperatures recorded in England do not differ very much from those of our hill stations, Newera Eliya and Diyatalawe, but their excess above the temperatures of the air would seem to be much less. The air temperature itself is in most low country stations 20° to 30° higher.

Duration of Sunshine.—The greatest intensity of the sun is, however, only one of the distinctive actions of the sun. Of great importance, both to the tourist in search of health and the resident in Ceylon, is the greater frequency and duration of sunshine. It will be found on comparison with the south of England or the south of France that the number of hours per day of sunshine is much greater here.

Hottest and Coolest Months: Annual Variation.—Air temperature continues rising from January to May in most of the stations in Ceylon, and comes down from May to December. In Colombo it is about 79.1° in January, and goes up to 82.4° in May, and slowly goes down till it is 79° in December. At Newera Eliya it is 56.6° in January, goes up to 60.8° in May, and 57.4° in December. At Diyatalawe 64° in January, 70.1° in May, and 64° in December. The south-west rains set in towards the latter part of May, which coincides with a fall in the air temperature. There is an appreciable drop in November and December, coinciding with the rains of the north-east monsoon. The first drenching fall of rain sends the temperature down, and, although it may show a slight rise again with the interruption of the rains, yet it never attains the same intensity as during the warm and dry months preceding the south-west monsoon. As in India, so in Ceylon, the latter part of April and early part of May are the warmest weeks.

Influence of the Climate on the Constitution.—A study of the comparative mortality which prevails in some European countries and Ceylon tends to show that residence here has an adverse effect upon Europeans under ordinary conditions of life. But this adverse effect is

almost least marked in Ceylon in comparison with other tropical countries. This is plainly seen by a study of the statistics. The death-rate for all races in Ceylon for the last twenty-five years was about 26 per 1,000 living, whilst for the Europeans it was only 18.3.

The object of my paper is to invite the attention of the medical profession here to the advantages possessed by Ceylon as a winter resort. Apart from the attractions offered by Ceylon to the tourist, it will be found of great benefit to those suffering from bronchial troubles—chronic bronchitis, early phthisis, gout (except in the old and enfeebled), Bright's disease, etc.

Besides these, Ceylon offers special advantages to that class of patients who require absolute rest from business and other worries, owing to the long sea voyage and the complete change of environment and scenery, with absolutely novel climatic conditions, which such a trip ensures.

The best months to spend in Ceylon are December, January, February, and March, and a sea trip from the Continent during these months will enable the passenger to have a quiet passage, both with regard to the sea as well as the temperature.

Demonstration.

Dr. Radcliffe Crocker made some observations on the cases of tropical skin diseases which had come under his observation from time to time. He drew attention to the similar appearances, as far as clinical features are concerned, of tropical ringworm from various parts of the world, but the cultures were not identical. Frequently tropical ringworm in this country completely die away in the winter, and recrudesce in summer. With regard to the difference between tropical and home elephantiasis, in the tropical variety the trunk lymphatics were blocked, and the skin smooth and unchanged; while in streptococcic elephantiasis the surface was very markedly affected with granulation growths, warts, and other epidermic thickenings. He concluded by giving briefly the clinical history of some of the cases, of which he exhibited water-colour drawings.

ANATOMICAL STUDIES OF THE RECTUM AND SIGMOID FLEXURE IN RELATION TO THE CAUSES AND TREATMENT OF MUCUS IN THE STOOLS, ASSOCIATED WITH INTESTINAL FLUX.

By James Cantlie, M.B., F.R.C.S.,
London.

We have many empiric explanations of intestinal flux—that is, of departures from the normal in the matter of faecal evacuations. Several of the bowel troubles, such as dysentery, are alleged to be due to specific infections, to malignancy, to the presence of worms, to intestinal indigestion, and to biliary or pancreatic derangements. There remain, however, many ailments associated with rapid shedding of the mucous lining of the gut which have never been seriously studied, and which lead to conditions simulating dysentery and colitis.

What is a Normal Faecal Motion?

A normal evacuation is one which sinks to the bottom of the pan of water into which it is passed. When the whole or any part of a motion floats in water, either on or immediately below the surface, the portion of the evacuation so floating is due to a departure from the normal. The cause of the lightness of the part of the stool which floats is due to fermentation, owing to either bacterial or chemical changes in the bowel.

The Causes of Abnormal Motions.

The physical causes of abnormal evacuations are met with in one of three situations:

1. In the peri-intestinal environment.
2. In the wall of the intestine itself.
3. Within the lumen of the bowel. These are not discussed in this paper.

As regards No. 1, peri-intestinal lesions causing alteration in the contents of the bowel may be termed mechanical for the most part. I have seldom met with a case of mucous casts of the intestine being passed at stool without being able to determine a mechanical or anatomical cause for the condition. Women are liable to pass mucous casts of the intestine more frequently than men. The cause in the case of women will most usually be found in the pelvis: A retroverted uterus, an inflamed left ovary, thickening of pelvic tissues the result of chronic inflammation, a fibroid tumour of uterus, ovarian cysts, hypertrophy of uterus or a gravid uterus will, as a rule, be found present in such cases. One frequently finds that parturition removes the tendency to pass mucous casts; the insertion of a uterine support by correcting a faulty position of the uterus has frequently the same effect. Even serious cases of intestinal flux, so severe as to be erroneously regarded as chronic dysentery, muco-colitis or sprue, I have seen relieved and cured by replacing a retroverted uterus and the insertion of a support.

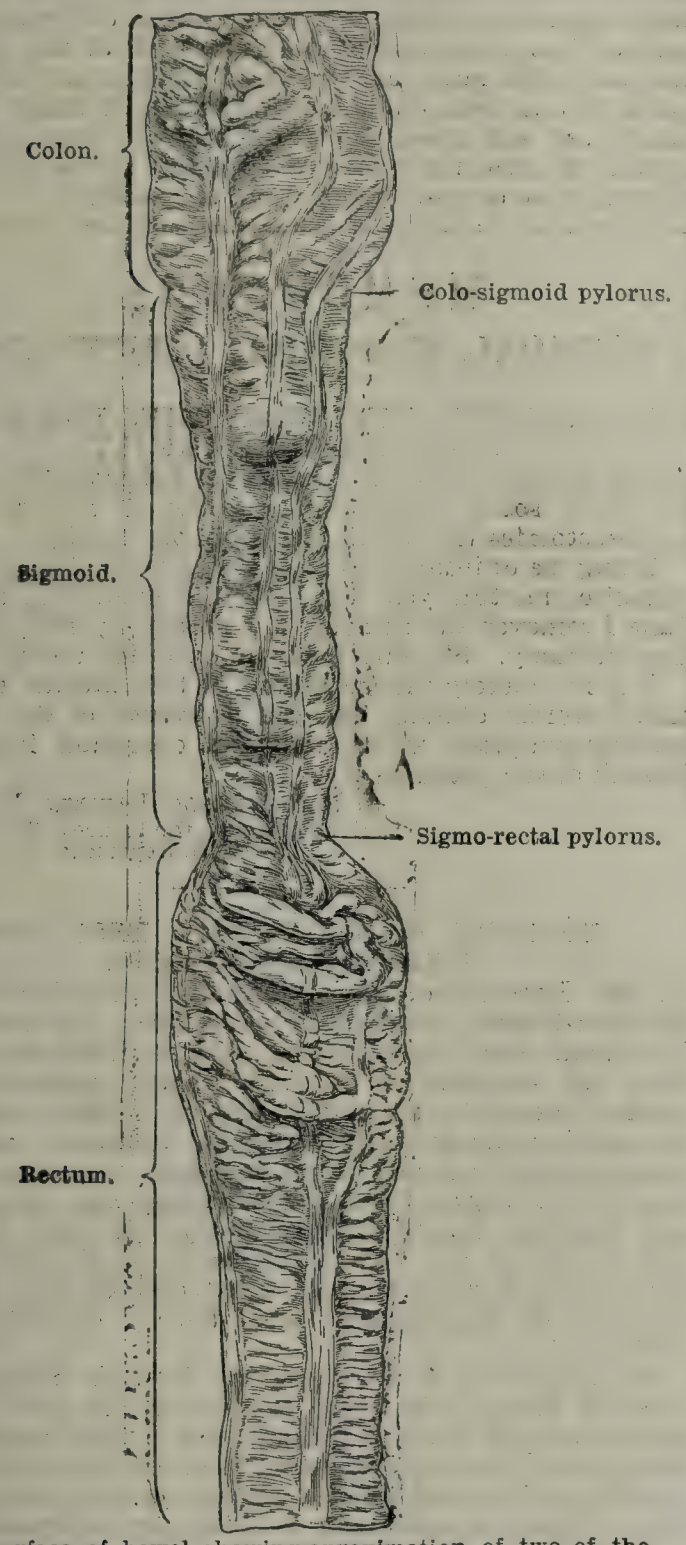
In men I have known tumour of the left kidney or of its neighbourhood, an enlarged prostate, and an aneurysm of the left iliac artery set up intestinal flux with the presence of much mucus in the stool. So convinced am I that tubular mucous casts of the intestines or excess of mucus in stools are due to causes external to the wall of the bowel that, when I fail to diagnose an anatomical cause, I put it down to want of clinical acumen.

With reference to No. 2, alterations in the intestinal wall are a frequent cause of diarrhoea, muco-colitis, fermenting stools, and conditions similar to dysentery. In determining the features of this cause it is necessary to study more carefully the anatomy of the sigmoid flexure. I was led to a study of the sigmoid flexure by the frequency with which I found a painful area in the left iliac region corresponding to the sigmoid flexure, which can usually be found rolling below the finger on deep examination of the left iliac fossa. Although there is a general feeling of pain when this portion of the gut is examined in cases of dysentery, acute and chronic, in colitis, chronic tropical diarrhoea, and sometimes in sprue, the most acute spot of pain is at the outer edge of the left rectus abdominis muscle, in a line drawn horizontally inwards from the left anterior superior spine of the ilium. The constancy of this symptom led me to an inspection of the junction of the rectum and sigmoid flexure by the sigmoidoscope, and to a closer anatomical study of this region of the bowel.

With reference to the anatomy of the sigmoid flexure—its clinical, physiological, and pathological significance—a mere abstract of my observations on this point are given here. *Post-mortem* and clinical examinations of the lower 18 in. of the intestine, which includes the rectum, the sigmoid, and the lower end of the descending colon, show that the lumen of the lower part of the bowel presents various dilatations and narrowings of constant and precise character and position. (1) The lower 4 in., as high as the insertion of the levator ani, is narrow in normal conditions and surrounds the finger when introduced like a glove. The mucous membrane of this portion is longitudinally plicated and pink in colour in life. (2) The upper 4 in. of the rectum—that is, between the insertion of the levator ani and the lower end of the sigmoid—is sacculated, capable of wide distension, and with the mucous membrane thrown into folds which run transversely athwart the bowel; the natural colour is a dull red. (3) The junction of the rectum and sigmoid flexure is marked by a narrowing of the bowel caused by an increase of the circular muscular fibres at this point. The mucous membrane is here tightly bound down to the deeper tissue and the colour is a bright red during life. This aperture I have designated the lower or "sigmo-rectal pylorus." [The term "pylorus" signifies merely "a gate," and we exclusively associate the term with the aperture between the stomach and duodenum. Here, however, is an aperture at the sigmo-rectal junction as distinctly "a gate" or pylorus as in the case of the gastro-duodenal aperture, and performing similar functions.] (4) Above the lower or sigmo-rectal pylorus the sigmoid flexure tract is entered, which gradually narrows until the upper end of the sigmoid is reached, where (5) an upper or "colo-sigmoid pylorus" is encountered with the same condition of mucous membrane due to the same cause—namely, an increase in the circular muscular fibres of the intestine. (6) The lower widely-dilated portion of the descending colon is now reached, with its folds of mucous membrane arranged transversely. In the mucous surface of the intestines of old people especially, immediately

above the two gates mentioned, there is frequently to be found a brown pigmentation, as if due to old haemorrhages in this region, caused, no doubt, by large constipated motions bruising the narrow gates as they pass, or in consequence of congestion narrowing the apertures and presenting obstruction.

In the intestines of old people (women), again, the "gates" at the upper and lower ends of the sigmoid flexure may have completely disappeared owing to chronic accumulations of masses of retained faeces. The function of these "gates" is a physiological necessity in the matter of rectal mechanism. They are the



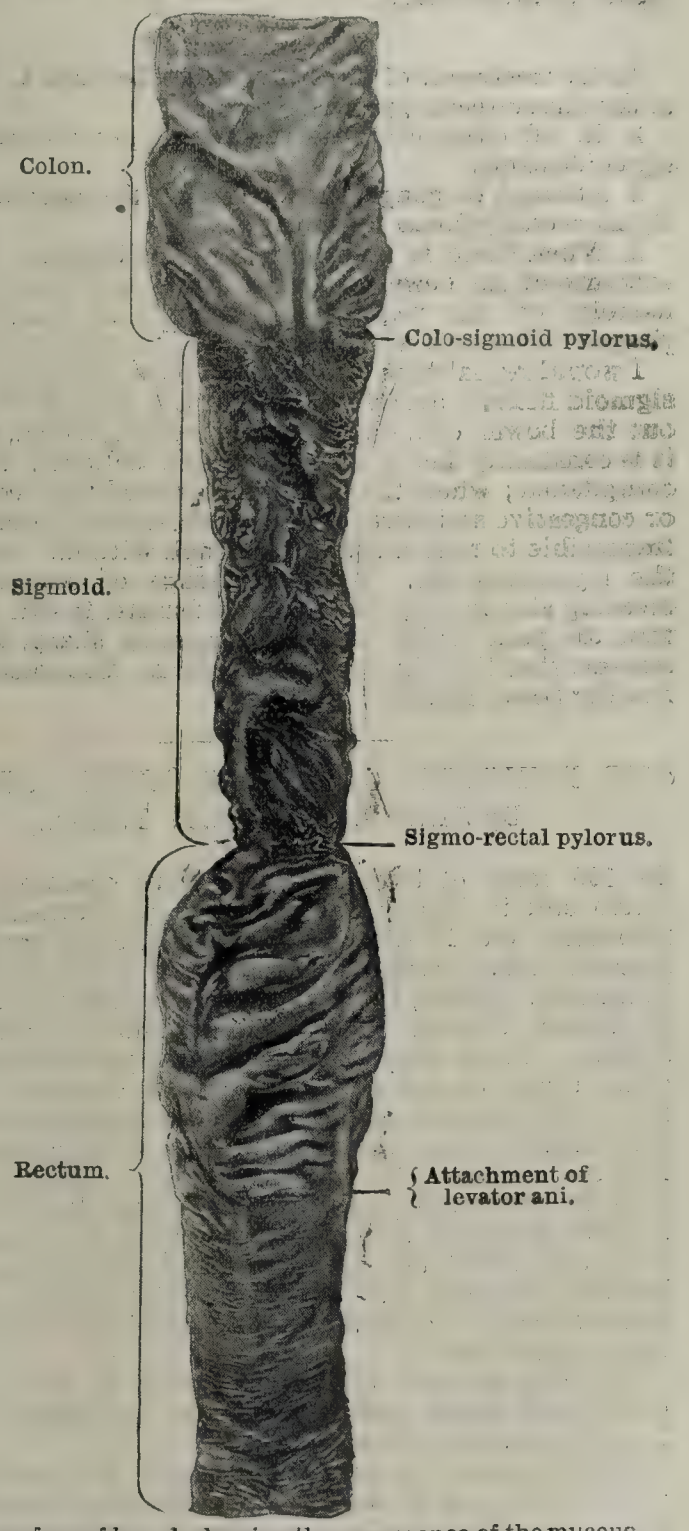
Outer surface of bowel, showing aproximation of two of the longitudinal bands of muscular fibres at the colo-sigmoid and at the sigmo-rectal pylorus.

sphincters which preside over the mechanism of regulation associated with the periodical evacuation of the bowel. Without these the faeces would accumulate in the upper part of the rectum and induce a desire to go to stool. This may be resisted by calling the external and internal sphincter ani muscles into play, but the pyloruses at the upper and lower ends of the sigmoid flexure stay the contents of the bowel on their way to the rectum, mould them into shape, and act as unconscious retention sphincters. There are many other anatomical and physiological points with which I have concerned myself lately, but they would take too long to mention here.

The Clinical Importance of the Pyloruses of the Sigmoid.

I have found that many intractable forms of intestinal flux—as in chronic dysentery, chronic muco-colitis, diarrhoea, and continuation of diarrhoea after typical sprue signs and symptoms have disappeared—are associated with general narrowing of the sigmoid, and especially of the lower pylorus of the sigmoid. A view of this aperture is readily obtainable by the sigmoidoscope, and the narrowness of its calibre is capable of almost exact diagnosis by the attempt to pass catheters, oesophageal tubes, or rectal bougies through it whilst the sigmoidoscope is held in position. Without this instrument no one can be certain that a long tube has gone up into the sigmoid flexure.

The presence of stricture at the lower sigmoid pylorus—the sigmo-rectal—is a common feature in chronic cases



Mucous surface of bowel, showing the appearance of the mucous membrane and the situation of the upper and of the lower pylorus of the sigmoid flexure.

of intestinal flux; above this narrow opening, as in the case of urethral stricture, the mucous surface is kept irritated or inflamed. Here mucous catarrh occurs, which extends upwards into the descending colon to a variable distance, and mucus in the stools is the result. According to the amount of this retention so do the signs and symptoms vary. If slight, the result may be merely a mucous cast; if more severe, blood may occasionally stain the mucus; or if very pronounced, a colitis may ensue or an autointoxication of chronic character. My plan of treatment, therefore, is to examine the bowel per rectum by sigmoidoscope in all cases of chronic intestinal flux whatever their nature. Examination by the finger alone is useless, except in the grosser lesions, which attack the lower four or five inches of the rectum. Early high examination by the sigmoidoscope in all cases of intestinal flux would conduce to early diagnosis of

commencing cancer of the sigmo-rectal pylorus, the situation where cancer of the lower part of the bowel usually commences. Cancer along the alimentary canal from mouth to anus attacks by preference those parts where a narrowing occurs—the lips, throat, upper and lower ends of the oesophagus, pylorus of stomach, ileo-caecal aperture, upper and lower sigmoid pyloruses, at the insertion of the levator ani and at the anal orifice. The frequency of stricture, both simple and malignant, at the junction of the sigmoid and rectum is an everyday clinical feature; and the reason of this part being the seat of a lesion of the kind is consistent with the clinical records of the alimentary canal generally in regard to this disease.

Treatment.

As for treatment of intestinal flux when due to stricture of the sigmo-rectal pylorus—

1. In all cases examine the bowel per rectum by the sigmoidoscope.
2. Attempt to gauge the calibre of the aperture of the sigmo-rectal pylorus by soft tubes.
3. When there is no evidence of malignancy, treat the stricture of the bowel as one treats a strictured urethra, namely, by the passage at intervals of bougies (oesophageal tubes suit well) of gradually increasing calibre.

I would repeat that attempts to pass tubes through the sigmoid flexure even in health for the purpose of washing out the bowel, etc., can be rarely accomplished, although it is constantly being attempted and believed to be accomplished; when the bowel is narrowed from congestion or congestive stricture of the sigmo-rectal pylorus, it is impossible to pass anything through without the help of the sigmoidoscope. By the passage of bougies of increasing size through the sigmoid flexure, it will be found that the pain, which at first is usually sharp, gradually lessens, that the diarrhoea and mucus disappears, and a healthy bowel results.

ONE HUNDRED CASES OF LIVER ABSCESS.

By James Cantlie, M.B., F.R.C.S.,
London.

Of 100 cases of liver abscess I have operated upon in China and in England, during the past fifteen years, 82 recovered and 18 died. The patients came from China, Manila, Annam, Singapore, the Straits Settlements, Malay Peninsula, Ceylon, India, Egypt, Somaliland, West Coast of Africa, Nigeria, West Indian Islands, Brazil, and Mexico. I have also operated on three patients for abscess of the liver who had never been out of England. According to the situation of the pus, I classify hepatic abscesses into suprahepatic, intrahepatic, and infrahepatic or subhepatic. Of the 100 cases dealt with, 47 were suprahepatic, 50 intrahepatic, and 3 subhepatic. The suprahepatic abscesses seldom give a history of dysentery, nor have any bowel lesions been found *post mortem*. Intrahepatic abscesses are always associated with, and probably caused by, dysentery. Subhepatic abscesses are not due to dysentery.

The pus in most hepatic abscesses is sterile, a fact I established some twelve years ago, but which has only lately been generally accepted.

The operation I prefer (*a*) *when pus is deep seated over or in the right half of the liver*, is evacuation by siphonage, the siphon tube being introduced through a cannula. Search is made first by the needle of an aspirating syringe—in length not more than 3¼ in., so as to avoid wounding the inferior vena cava. Where the pus is localized a large trocar and cannula is introduced transthoracically; the trocar is withdrawn, and a drainage tube, 12 in. long, stretched on a long steel rod, introduced through the cannula to the bottom of the cavity. The cannula is then withdrawn over the tube whilst it is still stretched, the steel rod by which it is stretched is also withdrawn, and a long rubber tube fitted to the drainage tube protruding from the side by means of a short glass tube. The siphonage is kept up until the pus ceases to flow, or until bile appears in the discharge. The original tube is then removed from the side, and a shorter and smaller tube substituted. The wound is gradually allowed to close. (*b*) *When the pus is superficial*—that is, close beneath the right ribs, an advanced condition a hepatic abscess should never be allowed to attain—the trocar and cannula and siphonage may be used, or the abscess may be cut down upon by a scalpel. The removal of a piece of rib may or may not be necessary. If the knife happens to enter the lowest point of the abscess cavity, removal of a piece of rib is unnecessary; but if not, it is well to do so. (*c*) *When the pus is in the left half of the liver*—a rather rare occurrence—do not attempt to confirm the diagnosis by introducing an exploratory needle, nor use the trocar or cannula, but cut down upon the liver through the abdominal wall and evacuate the pus in the usual way. In 90 of the 100 cases I have operated upon I employed the trocar and cannula and siphonage method of treatment; and from a long experience I look upon this method of treating deep-seated liver abscesses of the right half of the organ as not only the most easy of performance (an important point if one is single-handed, as one is in many tropical countries) and most successful, but the only justifiable operation when the pus is deep-seated in the right side, that is, three or more inches from the surface.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

SIX SUCCESFUL HYSTERECTOMIES FOR FIBROID DISEASE IN ONE FAMILY.

In the British Medical Journal of February 13th, 1904, I published some remarks on a series of five successful hysterectomies for fibroid disease in one family.

It may be of interest to state that a sixth sister, aged 46, consulted me this year for a similar condition, and last June I removed the tumour and uterus by subperitoneal hysterectomy. She also made an excellent recovery.

It is not merely the frequency of this uterine affection that is worthy of note, but the character of the tumour causing symptoms which rendered operation imperative in each of the patients.

J. Macpherson Lawrie, M.D.,
Senior Physician, the Princess Christian Hospital, Weymouth.

TÖPFER'S REAGENT AS A TEST FOR HYDROCHLORIC ACID.

In the Epitome of the Journal of October 5th the Summer-Fischer method of estimating the free, combined, and total hydrochloric acid in fluids withdrawn from the stomach is referred to and praised. This method depends upon the use of Töpfer's reagent—dimethyl-amido-azo-benzol—as an indicator, and this reagent is also referred to in two such important recent works as Emery's *Clinical Bacteriology and Haematology* and Vaughan Harley and Goodbody's *Chemical Investigation of Gastric and Intestinal Diseases by the Aid of Test Meals*, as the simplest and most delicate test for the presence of hydrochloric acid, free or combined with proteid.

An important fact concerning Töpfer's reagent has escaped mention in these works—namely, that it gives a positive acid reaction (changing to a pink colour) with lactic acid and other organic acids, even in considerable dilutions. I have obtained a positive reaction with a solution of 1 part of lactic acid in 30,000 parts of water. This fact, of course, completely destroys the utility of Töpfer's reagent as an indicator for estimating hydrochloric acid, and renders great care necessary in using it as a qualitative test, confirmation of a positive result by the use of other tests being essential. Inasmuch as most clinical investigators adopt tests described in the textbooks without themselves confirming them, it seems advisable that this fact concerning Töpfer's reagent should be more widely known.

R. C. Elmslie, M.S., M.B., F.R.C.S.
Pathological Laboratory, St. Bartholomew's Hospital.

The Government of Greece, following the example of that of Italy, has made the sale of quinine a State monopoly, with the object of cheapening its price, and, where necessary, distributing it gratuitously to the poor. Any profit that may be derived from the sale of the drug will be applied towards the sanitation of malarious districts.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

PATHOLOGICAL AND CLINICAL SECTION.

J. T. J. MORRISON, M.Sc., M.B., F.R.C.S., in the Chair.

Birmingham, Friday, October 25th, 1907.

Perforated Duodenal Ulcer.—Mr. FRANK BARNES showed a case of perforated duodenal ulcer in a man of 60 who had suffered from vague temporary pains at intervals for the last three or four years. For the past twelve months he had not been at his work—that of a carter—owing to a broken leg which had delayed union until three weeks before admission to hospital, when he returned to work. During these three weeks he had indigestion and pains at the umbilicus. He was taken violently ill with pains in the epigastrium and right side, and three hours later he was removed to hospital. He vomited once just before admission. On operation free fluid and gas escaped on opening the abdomen in the middle line above the umbilicus. A perforated duodenal ulcer was found 1½ in. from the pylorus on the anterior surface of the gut admitting a goose-quill. This was inverted and closed by Lembert sutures, and the peritoneal cavity dried out with gauze mops. The wound was drained by tubes and gauze.

Infective Endocarditis.—Dr. FOXWELL showed specimens from two cases of infective endocarditis: one a woman of 24, who had had rheumatic pains for a year, with loss of flesh during the last nine months, followed later by shivering attacks and repeated epistaxis; the other a man of 23 who had had dyspnoea on exertion during the last four months. In neither was there any history of acute rheumatism; the man had had pneumonia twice, and the woman four miscarriages at six to eight weeks each. The complaint of each was chest pain for one or two weeks. In the woman the apex beat was in the fifth space, 1 in. outside the nipple line; there was a double mitral murmur; the liver and spleen were each 2 in. below the ribs; later all three organs considerably increased in size. The man's apex also beat in the fifth space 1 in. outside the nipple line; there was a double aortic murmur; the liver and spleen were 2 in. below the ribs; later all three organs became considerably smaller, and the man improved, though the temperature remained pyrexial (98° to 100°). The man died of a large haemorrhage into the left lateral ventricle, the woman from an embolism in the basilar artery. Bacteriological examination of the blood on three occasions in each case gave negative results. After death cultures from the aortic valve and spleen of the man showed a pure growth of *Bacillus coli*. No growths were obtained from cultures from the mitral valve and spleen of the woman. In both the kidneys showed great congestion, with some patches of round-celled infiltration; the man's kidneys also showed much fibrosis and degeneration of the tubular epithelium; they weighed 17½ oz. The man's heart weighed 18 oz., and its pericardium was universally adherent; there were also considerable pleural adhesions, only the aortic valve was diseased. The woman's heart weighed 12 oz.; besides those on the mitral there were one or two small vegetations on the aortic cusps. Dr. Foxwell remarked that the etiology of these, as of most cases of progressive endocarditis, was obscure. All the affected valves showed some old thickening, and in the man, at any rate, there was arterio-sclerosis and chronic renal degeneration. He, too, had evidently suffered severely from pleuropneumonia and pericarditis; perhaps the endocarditis was due to a revivification of an old pneumococcal nidus. The rheumatic pains of the woman were probably due to the endocarditic poison—an accompaniment, rather than symptomatic, of the cause. But, so long as the blood gave no indication, treatment seemed hopeless, as the varieties of possible germs were too numerous to try the effect of serum treatment, though in a chronic case seen in private Dr. Foxwell had endeavoured, but failed, to get this accomplished.

Gangrenous Sigmoid Colon Removed from a Case of Acute Volvulus under Spinal Anaesthesia.—Mr. GEORGE HEATH: The specimen shown was the entire sigmoid colon in a state of gangrene and enormously distended. The patient was a man, aged 37, whose symptoms had set in suddenly thirty hours before operation. There was enormous abdominal distension, complete intestinal obstruction, with vomiting of faeculent matter, and much gaseous eructations. The condition of the patient practically forbade a general anaesthetic; 0.05 gram of tropacocaine was injected between the third and fourth lumbar vertebrae. Analgesia was complete for more than forty-five minutes, a few drops of chloroform being given towards the close of the operation. The entire sigmoid was excised, a Paul's tube being tied in the upper end of the large intestine. The intestine removed was completely gangrenous, and there was free gas and bloody foul-smelling fluid in the abdominal cavity. The patient stood the operation extremely well, but died afterwards from acute toxaemia.

Exophthalmic Goître with Cirrhosis of the Liver.—Dr. MILLER showed macroscopic and microscopic preparations from a case in a female, aged 21. Clinically the patient showed the characteristic symptoms of Graves's disease. She was operated on shortly after her admission to the General Hospital. Both superior thyroid arteries were ligatured, but the patient died twenty-six hours afterwards with symptoms of acute thyroidism. *Post mortem* the heart was found considerably enlarged; there was dilatation of the cavities and hypertrophy of the left ventricle. Both lung showed hypostatic congestion and oedema, with some bronchopneumonic consolidation. The spleen was enlarged, soft, and congested. The suprarenals were both enlarged, and appeared to show glandular activity. The brain showed hyperaemia with some flattening of the convolutions. The thymus gland was considerably enlarged, measuring 4 in. in length and extending downwards over the pericardial sac. The thyroid gland measured 3¾ in. in length; both lobes were nearly equally enlarged, as also the isthmus and the pyramidal process. Microscopically, the gland showed alveoli, irregular in size and shape, with papilliform projections into their lumen. The cells lining them were columnar, and frequently markedly enlarged and sometimes multinucleated. There was a complete absence of colloid material, but the lumen was not infrequently occupied by cells thrown off. The liver was somewhat reduced in size, pale, with an irregular surface. On section it showed an irregular cirrhotic change with fatty infiltration. Microscopically it showed a polylobular cirrhosis irregular in its distribution. The fibrous tissue was very cellular, frequently invaded the substance of the lobules, and contained numerous small bile ducts. The kidneys were somewhat congested with a swollen cortex; microscopically they showed marked cloudy swelling with irregular cirrhotic change, the fibrous tissue being very cellular in character. The chief interest of the case is in the presence of cirrhosis of the liver and kidneys along with Graves's disease. From the age of the patient it would seem improbable that the cirrhosis was due to the one of the more common causes of that condition. In all probability it was connected in some way or other with the condition of the thyroid, although cirrhosis of the liver is not a common condition to find in such cases.

Cysts of the Intestinal Wall.—Dr. MILLER showed a specimen from a case of acute miliary tuberculosis in a child 5 months old. The last two feet of the ileum showed several soft gelatinous nodules about the size of a small bean, freely movable in all directions, and bulging into the lumen of the intestine, and also beneath the peritoneum. Microscopically these walls consisted of the muscular wall of the gut, which completely surrounded them, indicating their development between the muscle layers. They were lined by a single layer of columnar epithelium, with papilliform processes. The cells had the characters of these covering the intestinal villi. The chief interest of the specimen consists in the rarity of the condition.

Acute Lymphatic Leukaemia.—Mr. MILWARD showed specimens from a case of acute lymphatic leukaemia. They consisted of the lower end of the left femur, and two blood films from a boy aged 4 years, who had died in the Children's Hospital. A month before death he had fallen down, and the following day complained of his left knee hurting him. A few days later it became swollen, and he was taken to the out-patient department a fortnight after

the initial symptoms had commenced. The knee was then considerably swollen and painful; but as no other symptoms were present, he was treated for traumatic synovitis and sent home. A week later the knee was worse, being very tensely swollen round the lower femoral epiphysis, and the boy looked anaemic and ill. He was taken into hospital under Mr. Heaton, and the knee was explored with a needle, a few drops of blood only being withdrawn. Six days after admission the right knee was also found to be swollen, and there was a small tense tumour on the left temple fixed to the bone. The temperature, which had hitherto been normal, was now rising, and on the following day Mr. Milward opened both knee-joints and the cranial tumour. They were all found to contain dark clotted blood. The boy collapsed and died a few hours after the operation. Both knee-joints were found to be entirely disorganized and the left joint was destitute of cartilage. The epiphysis of the femur was almost entirely eroded away. Only a limited *post-mortem* examination was allowed. On examining blood films taken aseptically at the time of operation from the joint cavity and *post mortem* from the medulla of the femur, they were found to contain a large number of unaltered red cells and an almost equal number of large mononucleated white corpuscles, resembling large lymphocytes but showing extensive vacuolation. A few polymorphs and eosinophiles were also present. The blood in every case had a subperiosteal origin, and the case was at first considered to be one of infantile scurvy. The examination of the blood films revealed its true nature.

REPORTS OF SOCIETIES.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

S. J. GEE, M.D., F.R.C.P., President, in the Chair.

Tuesday, November 5th, 1907.

DISCUSSION ON THE COMPLICATIONS OF PNEUMONIA.

DR. HADLEY, in reopening the discussion on the complications of pneumonia, explained a collection of statistics from the London Hospital which showed that the disease was three times more common in men than in women, that the mortality increased with age, that the mortality was greater in females than males. In nearly half the complicated cases the complications were antecedent conditions, which were especially fatal, such as alcoholism, cardio-vascular changes, and chronic nephritis. In the latter the death-rate was over 80 per cent., while in the case of chronic lung conditions the mortality was only about 30 per cent. As to pericarditis, there was but little chance of recovery unless it were frankly diagnosed, and the pericardial sac opened or aspirated. In children the enlargement of the pericardium was directly backwards. Many of the cases of supposed abscess of the lung which recovered were really interlobar empyema opening into a bronchus. The symptoms of meningitis were so commonly caused by toxaemia that care was required in its diagnosis. Abdominal pneumonia had to be definitely recognized, as in the form of peritonitis and colitis. The tympanites due to a toxic paralysis affected the intestine as well as the stomach. Most cases of arthritis in pneumonia were in patients below 10 years. In cases with defective resolution there was usually a history of alcoholism. As to inoculation, the chronic cases were the most adaptable, but any protection that might be conferred must be very short, as one attack seemed to predispose to another.

DR. NORMAN DALTON explained statistics from King's College Hospital, and referred especially to 11 cases reported to have ended by lysis; in 9 of these the temperature was remittent, from the first suggesting a latent complication or secondary infection. Of the remaining two in one the apparent lysis was due to a true relapse.

DR. A. M. GOSSAGE, in explaining statistics from the Westminster Hospital and from the East London Hospital for Children, said that pneumonia was as common under the age of 10 as above it; moreover, the diagnosis was more difficult in children under that age. The complications of pneumonia were more common in childhood, and the death-rate of complicated cases was much higher in children. Under the age of 1 the death-rate seemed to be largely due to toxaemia, but another factor was the complication of bronchopneumonia with lobar pneumonia.

DR. A. LATHAM, in explaining statistics from St. George's Hospital, ascribed the greater frequency of pneumonia in males to greater exposure. Of 125 of the cases, in only 30 was the knee-jerk either sluggish or absent. The nasal and abdominal respiration curves did not precisely correspond with the thoracic curve. One case of treatment with antipneumococcic serum was observed, and in it there was rapid recovery. Cases were referred to in which antidiphtheritic serum had been injected; in some of these the temperature fell almost immediately.

DR. H. A. CALEY brought forward statistics from St. Mary's Hospital. The mortality was relatively high in all hospital statistics, probably on account of the frequency of antecedent alcoholism in hospital patients. His statistics showed the predominant importance of pericarditis and empyema. The sooner an operation for empyema was performed the better the prognosis as regards life and duration of the illness. Pericarditis was only a rare cause of heart failure, but it was a very fatal cause, and was often associated with myocarditis. There were only 2 cases of infective endocarditis among the 437. There was evidence of myocardial change in about a third of the cases. Dilatation of the right ventricle might be mechanical, but toxaemia, pyrexia, and defective oxygenation were also factors affecting both the left and right ventricles. A case of pneumonia with delayed resolution was referred to in which rapid and striking recovery followed the injection of antipneumococcic serum.

DR. S. WEST said that the alteration in the pulse-respiration ratio was often even more marked during convalescence than during the actual attack. The knee-jerks disappeared about the seventh or eighth day. It was possible that the pneumococcus which produced lesions in different parts of the body was not the same variety of organism that produced pneumonia.

DR. N. TIRARD thought the mortality from complications was not so high as had been sometimes thought. Haemoptysis in pneumonia was a favourable prognostic.

DR. J. FAWCETT brought forward statistics from Guy's Hospital. Of 15 cases with serous effusion, only 3 required tapping, and the amount of fluid removed was small. There was no case of chronic pneumonia.

DR. BUTLER HARRIS described 2 patients with slow pneumonia treated with a vaccine obtained from cultures of their own pneumococcus with favourable results; also a case of staphylococcus pneumonia with erysipelas treated advantageously with a serum from the *Staphylococcus albus* obtained from the patient. In all such treatment of pneumonia it was essential that the vaccine should be from the organism of the individual case.

DR. LANGDON BROWN ascribed the infrequency of metastatic deposits to the relative paucity of the cocci in the blood stream and the low mortality in the young to their greater resisting power.

DR. HECTOR MACKENZIE replied.

LEEDS AND WEST-RIDING MEDICO-CHIRURGICAL SOCIETY.—At a pathological meeting held on November 1st, Dr. W. C. CHEETHAM in the chair, Mr. A. S. GRÜNBAUM detailed some experiments with a pathogenic yeast. By feeding mice on a yeast isolated from a case of mammary cancer pulmonary, bronchial, and intestinal infection was produced. He was unaware of any previous record of alimentary blastomycotic infection. Marked proliferation of pulmonary cells was found in the lung. The bronchial gland tissue had largely melted away without obvious necrosis or inflammatory reaction. The intestinal lymphatic glands were greatly enlarged, and, like the other organs already mentioned, full of blastomycetes. Specimens showing hepatic fibrosis by peritoneal infection and the formation of an adenomatoid condition in the active mammary gland by intramammary injection were also shown and described. Mr. J. I. TREGELLES FOX read a paper on the site and rôle of the sigmoid flexure in connexion with a new theory, according to which the human alimentary canal consists of five retort-like divisions exhibiting analogies and homologies of structure and function.

Sheffield Medico-Chirurgical Society.—At a meeting held in the Society's room in the University on October 10th, the President (Dr. George Thomson, Retford) delivered his inaugural address on Physiologic Therapeutics for the Normal and Undegenerate. After thanking the members for his election and expressing hopes for a successful session, he referred to the pleasant relations existing in Sheffield between the consultants and general practitioners. He regarded such meetings as the best way of avoiding misunderstanding between medical men. He had no intention of delivering a technical discourse. Not having been a consistent note-taker, he was not able to give an account of the interesting cases he had seen, but he would discuss the subject of physiologic therapeutics which the profession were allowing such amateurs as Sandow and Mrs. Eddy to exploit. The intellectual and wealthy classes would no longer be satisfied with treatment which consists of a box of pills, medicine, and liniment. Were medical men excluded from treatment by suggestion? Must they give no attention to mechano-therapy? He thought that many sensible people bore animosity against the profession on account of their neglect of such matters. Medical men had finally to take up balneology after it had been exploited by quacks. The same applied to prophylaxis, personal hygiene, sick nursing, thermotherapy, climatology, and electrotherapy. Though it seemed a great deal of extra knowledge to acquire, yet it was necessary. How useful it was to be able to fall back on climatology—otherwise, "a change of air," and how many things had to be taken into account in prescribing a climate? The abnormal and degenerate received much attention from police, philanthropist, and scientist, but much less was done for the normal and regenerate; but fortunately Nature stepped in to slaughter the abnormal, leaving room for the normal. What had medical men to do with the normal? They had to look after their own health, remembering that the best workmen need most play, and got it. The modern specialization of all work tended to make it dull and to increase the need of a holiday. The medical man needed a holiday to prevent him getting into a rut. He should get one even at some sacrifice of his income. It would pay in the long run. Personally, he strongly advised an afternoon's golf once a week. It was the one pastime in which the novice got more strokes and more variety than the expert. For the annual holiday he advised the greatest possible change from the daily bolstering up of the degenerate—Nature's stern reality, the Alps. He prided himself on his knowledge of how to play as well as how to work.

Glasgow Medico-Chirurgical Society.—At a meeting on October 18th Dr. Walker Downie,* President, in the chair, Dr. David Couper showed a case of *Pemphigus vulgaris* in a girl, aged 3. After the preliminary itchiness, the eruption appeared suddenly in the back and legs. The neck, head, and arms and sides of trunk were next affected. The palms of the hands and soles of the feet were not affected. The axillary, cervical, inguinal, and femoral glands were enlarged and tender. Fluid from the vesicles contained polymorphonuclear leucocytes and *Diplococcus epidermidis albi*. Blood films showed slight leucocytosis but no eosinophilia. Dr. J. Stoddart Barr and Dr. John Rowan reported on the result of an investigation the objects of which were to determine (1) whether the condition known as optic neuritis occurred with any frequency in cases of simple purulent otitis media, when there was no evidence of intracranial or vascular complications; (2) whether, short of an actual optic neuritis, vascular changes in the fundus of the eye of a less marked character were common in such cases. In the 100 cases examined, all of purulent otitis media, mostly of the chronic variety, were taken consecutively without selection; the examination of the eyes either immediately preceding or following that of the ears. A second and third examination of many of the patients was made at intervals of several months, with the object of comparing the conditions with those seen at the first examination. Of the 100 cases 72 showed more or less vascular engorgement in one or both fundi amounting in 6 cases to distinct optic neuritis. By eliminating all cases in which eye strain, errors of refraction, etc., might be the cause of the vascular changes the number was reduced to 27. There were therefore in the 100 cases 6 which showed vascular changes in the fundus amounting to well-defined optic neuritis, and 21 showing vascular changes which, while short of optic neuritis, were, in the opinion of Dr. Rowan, the ophthalmic surgeon, abnormal. It was further demonstrated that suppurative ear affections associated with these vascular changes were specially severe and persistent as shown by their course compared with others. The practical lessons deduced from their investigations were (1) that a case showing these vascular changes in the fundus should be closely watched, and their existence should be regarded as an additional reason for the early performance of the radical mastoid operation; (2) on the other hand, if the vascular changes show a tendency to clear off, especially with improvement in the ear condition, or if the fundus is normal to begin with and remains so, a favourable response to conservative treatment may be with more confidence looked for. In conclusion, the importance of the routine use of the ophthalmoscope in cases of suppurative middle-ear disease was emphasized.

* In our issue of October 19th the name of the President was incorrectly given.

Society for the Study of Disease in Children.—At a meeting on October 18th, Mr. R. Clement Lucas in the chair, a paper on the simulation of some of the symptoms of *Primary Amaurotic Idiocy*, by Dr. E. C. Williams (Bristol) was read. The patient was a girl aged 15 months; for three months she had been gradually failing to take notice of objects, and had been getting weaker. She died nineteen days after admission, from oedema of the lungs and heart failure. *Post mortem*, a cauliflower growth the size of a walnut was found springing from the pituitary body; microscopical examination showed it to be a round-celled sarcoma. There was also a small similar growth in the parietal region. The case resembled primary amaurotic idiocy in the paralysis of the greater part of the body and the muscles of the neck, in the diminution of vision leading to absolute blindness, and in the marasmus and fatal termination. It differed in that it did not present the characteristic fundal changes, and in its more rapid progress. The following were among the exhibits:—Mr. Sydney Stephenson: (1) A case of *Associated movements* of the upper eyelid and jaw. There was slight ptosis on the left side, and when the child moved the jaw, the lid of the unaffected eye showed rhythmical movements upwards and downwards. An unusual feature in the case was that the movements affected the eye which had no ptosis. (2) A case of *Tuberculosis of the iris* and ciliary body with reference to Calmette's ophthalmo-reaction. In his experience, there was no reaction in people who were not the subjects of tuberculosis, though it had been referred to by various authors. (3) A case of *Congenital ptosis* in a girl aged 2 years and 10 months. The superior rectus was divided into two parts, the outer was stitched into the upper eyelid, and the knot tied on the skin surface of the latter (Motais's operation slightly modified). Mr. George Pernet: (1) A case of *Lupus vulgaris* of the face due to inoculation by a fingernail, the result of an accidental scratch. The Chairman alluded to three cases which had been under his care. One man scraped his knuckle by striking a man in the mouth, another man was bitten on the forefinger, and the third case followed circumcision (2) A case of *Generalized alopecia* in a Mongolian idiot was also shown to demonstrate the good growth of hair on the scalp, as the result of persevering local treatment and the exhibition of thyroid extract. Mr. Lockhart Mummery: A case of *Infantile paralysis*. The child lost the use of all its limbs during an illness some months previously. Since then he had recovered the use of his arms, but the flexor action of the fingers of the right hand was not quite normal. There was very slight extensor power in the right thigh, but none in the left limb. The adductors on both sides were completely paralysed. Mr. Hugh Lett: A case of *Synostosis* of the upper ends of the radius and ulna. Both arms were involved, and skiagrams showed that the radius and ulna were united by bone for about an inch at their upper ends. The right radius was much curved. The right arm was in a position of nearly complete pronation, the left arm midway between pronation and supination. Flexion and extension of the elbow-joints were perfect. Dr. Langmead: A case of *Osteogenesis imperfecta*. The

child was born after an easy labour, when it was seen that the legs and arms were sharply bent. Amniotic dimples were seen on both legs and on the right thigh. The post-anal dimple was well marked. Skiagraphs showed eleven fractures in the bones of the upper and lower extremities with a good deal of callus. The bones appeared of the normal density. There was no evidence of syphilis, and the other children were all well and healthy. There was no hydrocephalus. Dr. C. W. CHAPMAN: A case of *Congenital heart disease* in a boy, aged 5 years. The only symptom he had was some shortness of breath on exertion. There was no cyanosis and the fingers were not clubbed. He was exceptionally well developed. Probably there was pulmonary stenosis with a patent interventricular septum. Dr. GEORGE CARPENTER agreed with the diagnosis. He did not agree that there was no right-sided hypertrophy, and suggested that an *x*-ray examination would settle the point. It was not uncommon for cases of congenital heart malformation to give no physical indications of their infirmity until an initial attack of bronchitis or bronchopneumonia, from the onset of which cyanosis and other signs often dated; mild varieties of narrowing of the pulmonary artery were not incompatible with long life. Dr. CAUTLEY remarked that the patient was a good illustration of the fact that in these cases the prognosis depended on the general health of the child and the circulatory effects, rather than on the loudness and distribution of the murmur.

HUNTERIAN SOCIETY.—At a meeting on October 23rd, the following were among the exhibits:—Dr. ETTLES: Slides and specimens from 2 cases of *Sarcoma of the choroid*. The first was a melanotic oval-celled neoplasm springing from the layer of large vessels; it extended as a pyramidal mass into the vitreous chamber. The retina was detached completely in the usual funnel-shaped manner. The ocular tension was normal. The operation was performed seven years ago, and the patient, then a man of 52, remains in good health. The second case, also a melanotic sarcoma, was more advanced. The anterior chamber had disappeared, the lens was applied to the cornea, and the iris by long-continued pressure was embedded in the cornea, so that the posterior margin of the iris was continuous with the posterior surface of the free cornea. Perforation of the sclerotic had taken place at the equator, at the point of emergence of one of the vorticose veins. The contents of the orbit were removed with the eyeball, but unfortunately local recurrence was rapid. Dr. LANGDON BROWN: A *Ruptured aneurysm* of the pulmonary artery. The ductus arteriosus was patent, and the right ventricle much hypertrophied. He suggested that owing to the patency of the ductus arteriosus, the pressure on the right side of the heart was greatly increased, and this led to arteriosclerosis which in due course was followed by aneurysm. Dr. THEODORE FISHER asked whether pressure was more than a predisposing cause in atheroma. Some parts of the aorta were more liable to atheroma than others, and one was the spot where the ductus arteriosus joins the aorta. Dr. W. A. MILLIGAN: (1) An *Unreduced intussusception* removed from a child of 7 months. The child had been operated on twelve hours before death, and an intussusception reduced. The question raised was whether there had been a recurrence or whether the original intussusception had not been completely reduced. (2) A specimen showing a *Calculus in both ureters*, removed from a child of 4½ years. There was double pyonephrosis. (3) A tumour removed *post mortem* from the right lumbar region of a child aged 6 years. It was retroperitoneal, and by pressure had produced a *hydronephrosis*. Microscopical examination had not been completed, but the tumour was probably sarcomatous. Mr. HUGH LETT: Two ureteric calculi which lay in the upper half of the ureter. In both cases they were successfully removed by operation. Mr. H. M. RIGBY: (1) A skiagram showing two shadows in the course of the ureter; he advocated the parasacral incision for removal of calculi from the lower 2 in. of the ureter. He had operated successfully on 5 cases by this method. (2) A specimen removed from an old woman with fracture-dislocation of the shoulder joint. The fracture passed through the anatomical neck of the humerus. It was found impossible to reduce the dislocation, and replace the head of the bone, so it was removed. Dr. A. C. JORDAN: Skiagrams of a calculus in the lower part of the ureter, to show how much more clearly the calculus might be demonstrated with a small diaphragm than with a large one. Mr. BARNARD: (1) A part of the small intestine excised for gangrene, due to strangulation by an omental band adherent to the appendix. (2) Specimen from a successful case of resection of the sigmoid flexure, for carcinoma of the fungating papillomatous variety. (3) Specimen from a successful case of resection of part of the ileum for sarcoma. (4) Specimen from a successful case of resection of part of the transverse colon for a myxofibromatous papilloma which had produced a chronic intussusception.

MEDICO-LEGAL SOCIETY.—At the first meeting of the session on October 29th Mr. Justice WALTON, the President, in the course of an inaugural address, pointed out the claims which the Society should have upon the attention and interest of members of his own profession in particular. Just as in the case of medical members, he hoped lawyer members would contribute to the usefulness and interest of the meetings by favouring the Society with cases within their experience which had been tried in the courts, and in which interesting medical and surgical questions had had to be considered. He did not for a moment suggest that the Society should sit as a kind of medico-legal court of appeal upon the decisions in the courts or the findings of juries. In so far as there was a demand for extrajudicial courts of appeal, he felt sure that it would always be amply and ably satisfied by the daily, or at all events by the evening, press. Dr. W. H. WILLCOX followed with a paper on the Medico-Legal Importance of Wounds Produced by Firearms, illustrating his remarks with specimens, photographs, and diagrams. Mr. Justice WALTON said he was glad to hear Dr. Willcox's remark that it was the expert's duty to give the scientific facts and leave the conclusions to be drawn by the judge and jury. In his opinion, the interests of justice were promoted by having expert witnesses on—both sides.

REVIEWS.

TROPICAL MEDICINE.

A FOURTH edition of Sir PATRICK MANSON'S well-known manual on *Tropical Diseases*[1] has just appeared. Though the third edition was only published in 1903, the advance made in this branch of medicine has been so rapid as to call for much revision and considerable enlargement. The author in his preface explains that although he has endeavoured to confine the book to its original dimensions, a material addition to its size has become inevitable, but that notwithstanding this, he trusts that it may still be found to fulfil its original purpose of conveying adequate information in a reasonably small compass. A perusal of its pages will soon convince the reader that this object has been attained. The general groundwork is the same, the binding, print, and type being retained; the number of pages, including the index, is now 896, while the illustrations are much more numerous and of better quality than in the previous editions. For this addition, which adds greatly to the value of the manual, the author is chiefly indebted to Signor Terzi, whose work in this special line is of unequalled excellence. Looking at the different items in detail, and specially turning attention to what is new, the reader will find much to interest him. The chapter on malaria is not very much changed, but, of course, that on trypanosomiasis has had to be entirely rewritten, the chapter on sleeping sickness disappearing as a separate entity and taking its place under this heading. All that is known on tsetse flies is included here in a smaller type, a similar plan being adopted with ticks in the chapter on relapsing fever—a very useful plan, and very convenient to the student. Passing by kala-azar and yellow fever, the chapters on which are both brought thoroughly up to date, what may be termed the first radical change in the book appears—namely, the separation of blackwater fever from

[1] *Tropical Diseases: a Manual of Diseases of Warm Climates.* By Sir Patrick Manson, K.C.M.G., M.D., LL.D.Aberd., Fellow of the Royal College of Physicians, London; Fellow of the Royal Society; Honorary D.Sc.Oxon.; Lecturer in the London School of Tropical Medicine; Physician to the Seamen's Hospital Society, etc. With 7 coloured plates and 241 plain figures. Fourth edition, thoroughly revised and enlarged. London, Paris, New York, Toronto, and Melbourne: Cassell and Co., Ltd. 1907. (Cr. 8vo, pp. 896. 12s. 6d.)

malaria and the classification of it as a disease by itself. This is probably somewhat premature, and might have been deferred until some one has found parasites of the genus Babesia (the new name for piroplasma) or some other parasite in such cases. In the chapters on plague and Malta fever recent researches are recorded, and the importance of the parts the flea plays in the dissemination of the former and the goat in the dissemination of the latter are duly noted. Pellagra is for the first time included in the manual, and this addition is certainly to be commended. Lathyrism might also with advantage have been mentioned. The third and fourth sections are little altered, but the fifth, dealing with animal parasites and associated diseases, is considerably enlarged and improved. Perhaps the most important point here is the idea that the lateral-spined and the terminal-spined bilharzia eggs are the products of different species of worm. A more thorough and searching examination of the adult worms will have to be made, however, before this can definitely be settled. An appendix on the protozoa of the blood of vertebrates, by Sambon, brings the book to a close. This gives a very complete list of the many different protozoal parasites found in the lower animals. We cannot, however, agree with his new classification, and do not think that it will be accepted by protozoologists. Viewed as a whole, then, the book keeps up the high standard of excellence attained in previous editions. As a manual it is unequalled; and, containing as it does the lifelong experiences of its illustrious author, it should form the *vade mecum* of the tropical student for many a year to come. The best gauge of the popularity of a book is the rapid appearance of new editions, and in the present instance this shows conclusively how highly the book is esteemed and valued by those to whom it is addressed.

In the *Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India* (New Series, No. 28),[2] Christophers describes the sexual cycle of *Leucocytozoon canis* in the tick (*Rhipicephalus sanguineus*, Latreille). The first part of the *Memoir* gives a useful and instructive account of the life-history of this tick; the second part describes the development and different stages of the parasite. Briefly stated, these are as follows: When the gut contents of ticks are examined immediately after they have left their hosts, encapsulated forms of the parasite no longer contained in the leucocytes are seen. Twenty-four hours later the parasite is free from its capsule and as a vermicule has embedded itself in the protoplasm of the gut cells. Some are males, some females; they conjugate, and the resulting body is an oöcyst, which eventually assumes the appearance of a large amoeboid body with voluminous protoplasm. It soon breaks up into sporozoits, the number being usually from 12 to 14; for the most part, when liberated they find themselves already in the lumen of the gut. How these forms again re-enter the dog is not quite clear, as the adult female tick does not again suck blood, and Christophers has been unable to find them in the eggs or the nymphs.

A report on the work of the Medical Laboratory at Léopoldville from 1900 to 1905 by Dr. Broden[3] has recently appeared. It deals chiefly with blackwater fever and trypanosomiasis, the only other matters touched on being the intestinal parasites of negroes, though there is a note on tsetse flies. Much of the work has appeared already in pamphlet form during the last few years, and has been noted from time to time. In the chapter on the haemoglobinuria of the Congo the series of illustrative cases are interesting but not out of the common, and the author, though he looked for a specific parasite, has, like many who have gone before him, failed to find one. The trypanosome work was largely of a routine nature; perhaps the most interesting part of it is the history of the first case of trypanosomiasis observed by Dr. Broden in a European, especially as it was in all probability a real instance of recovery. A Protestant missionary as far back now as 1900 was bitten on the foot by some sort of insect, and after this developed fever and an erythematous rash; it was not until February, 1903, however, that the author found trypanosomes, and so made the diagnosis clear; since then he has had the further advantage of being able to follow the case up to the comparatively late date of August, 1906, when at that time the patient was well, had lost all fever, and for all practical purposes may be said to have been cured. The notes on trypanosomiasis and sleeping sickness in the native show that the disease on the Congo is the same as in Uganda, where it has been accurately and minutely described in the Royal Society's Reports.

The official reports by the chief medical officers concerned, on the sanitary condition of the German colonies for the year 1904-5,[4] were issued recently in a volume. The report for the previous year was reviewed in this Journal, August 18th, 1906, p. 366, and in this report Oberarzt Kudicke reports from German East Africa that malarial diseases prevail extensively amongst the natives during childhood, diminishing as the age advances, while adults are comparatively free. "The examination of the school children (microscopical examination of a drop of blood obtained by a finger-prick) affords, therefore, the readiest means of obtaining a general view of the malarial condition of a locality." German East Africa is under twenty-four medical officers assisted by thirty-four subordinates; 1,412 Europeans and 15,390 natives received medical aid. Dr. Kudicke impresses on us the importance of draining and other procedures to prevent the breeding of *Anopheles* in stagnant waters during the wet season, when every ditch and puddle becomes infested with brood-swarms of this mosquito. Interesting cases are reported with details. One puzzling case of fever, followed by recovery after thirty-nine days of treatment, was diagnosed as Malta fever, although the *Micrococcus melitensis* was not found, from the wave-like character of the temperature curve. No malarial parasites, in fact, were found in this case, only a few "polychromatophilia"; the spleen was greatly enlarged; quinine had no effect. Haemoglobinuria, often transitory, was found to be not infrequent after quinine. It was best prevented by giving the medicine in small doses (0.1 gram) every two hours instead of in larger doses less frequently. The various reports form interesting reading, as the sanitary officers are not tied down to any special form of report. Ankylostomiasis, dreaded as "safura" by the natives, was successfully treated by thymol, in doses of ½ gram up to several grams daily, until no traces of the ova of the *Ankylostomum duodenale* could be found in the faeces. Sleeping sickness is not widely spread, but exists in isolated localities. One such was found in the southern part of the Victoria Nyanza, where on a small island Dr. Feldmann found the *Glossina palpalis*, and he writes as follows: "After Wurtz's biological investigations, and those made by the expedition—Drs. Dutton, Todd, and Christy—sent out by the Liverpool School of Tropical Medicine, on the identity of the trypanosoma of Gambia with that of the Uganda we can no longer speak of two separate diseases here; accordingly I replace in my report the expression 'sleeping sickness' by the term 'trypanosoma.'" The same writer examined 500 natives, but found trace of the parasite in only three, and they seemed healthy subjects. "The disease in fact exists only under certain conditions, as shown by Bruce and his fellow-workers, and these conditions exist in the districts mentioned." There was not much small-pox in German East Africa. Over 28,000 persons were vaccinated with lymph procured from Dresden, but calf-lymph is now being obtained in the colony. The most interesting report next to that mentioned is the one on German New Guinea, which is reported to be not so malarial as was supposed. Extensive tables and charts accompany the text. The remaining reports are from the Caroline, Marian, and Marshall Islands, and Samoa.

[2] *Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India.* New Series, No. 28.—The Sexual Cycle of *Leucocytozoon canis* in the Tick. By Captain S. R. Christophers, M.B., I.M.S., Superintendent of the King Institute of Preventive Medicine, Madras. Issued under the authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Calcutta: Office of the Superintendent of Government Printing, India. 1907. (Med. 4to, pp. 16; 1 plate. 12 annas=1s. 2d.)

[3] Société Belge d'Études Coloniales. *Rapport sur les Travaux du Laboratorie Médical de Léopoldville de 1900 à 1905.* Par le Dr. A. Broden, Directeur du Laboratoire de la Société Belge d'Études Coloniales, a Léopoldville. II. Bruxelles: Hayez, Imprimeur des Académies Royales de Belgique. 1903. (Demy 8vo, pp. 196.)

[4] *Medizinal-Berichte über die Deutschen Schutzgebiete* Deutsch-Ostafrica, Kamerun, Togo, etc., für das Jahr 1904-5. Herausgegeben von der Kolonial-Abteilung des Auswärtigen Amts. Berlin: Mittler u. Sohn. 1907. (Med. 8vo, pp. 270. M. 7.50).

LAVERAN and MESNIL's well-known book, published some three years ago, has just been translated into English by NABARRO, under the title, *Trypanosomes and Trypanosomiases*.[5] The translator has added much new information found out subsequent to the publication of the French edition. Purely to translate a book is one thing, bringing it up to date and enlarging it another thing. In the former the original authors' views are given for what they are worth; in the latter the translator becomes an editor, and must be held responsible for what is added. Dr. Nabarro takes upon himself this responsibility, and has adopted the useful plan of enclosing in square brackets all his own observations and any other additions taken from other sources. In some ways this makes the book rather tedious to read, as it is necessary constantly to look back to see whether the text under observation is enclosed in brackets or not. Still every credit must be be given to Dr. Nabarro for the clever way in which he has incorporated the new with the old, and the labour he must have spent in looking up the many new references and special work must have been enormous. The original French edition is the standard work on this interesting subject, the only complaint to be made against it being the tendency to create more species than are perhaps necessary. The more important of the new sections added are on the spirochaetes, the Leishman-Donovan body, trypanosomiases of Uganda and adjacent parts of East Africa, the pathological anatomy of dourine, the changes in the brain and other organs in sleeping sickness, the treatment of the trypanosomiases, and the trypanosomes of tsetse flies. From a purely medical point of view the treatment of trypanosomiasis is now the most absorbing matter. The chapter on this subject brings the work up to date with the exception of the combined treatment by atoxyl and mercury quite recently devised by Nierenstein and others in Liverpool, and described in our columns by Sir Rubert Boyce (BRITISH MEDICAL JOURNAL of September 14th, 1907, p. 624). The translator sounds, we think, the proper note in speaking of atoxyl when he states that it is undoubtedly an advance on the older methods of treatment but is not a specific. If the trials of atoxyl and mercury on human individuals are as successful as those on animals suffering from trypanosomiasis, then we have in this method an advance on older methods. The chapter on the trypanosomes of the tsetse flies is another very important addition, containing as it does Novy's critical study on the presence of those and allied parasites in the gut of tsetse and other flies. His investigations have already upset many preconceived ideas, and Novy, with McNeal and Torrey, in their most recent paper upon the Trypanosomes of Mosquitos and Other Insects, maintain their earlier view that the mosquito flagellates are not stages of intracellular parasites, but are parasites peculiar to the insects. This should strike the death knell to Schaudinn's halteridium development, a too hasty piece of work, which very nearly upset all our ideas of the protozoa, and threw the classification into hopeless confusion. The English edition of *Trypanosomes and Trypanosomiases* may be described as a compendium of knowledge which no student of the subject should be without. Dr. Nabarro is to be congratulated on his translation and on his untiring efforts which have brought this mass of scientific material into the compass of a very readable book.

Blood Examination and its Value in Tropical Disease[6] is the title of a little handbook of 34 pages by Dr. CLAUD F. FOTHERGILL. The methods of examining the blood taught at the London School and their application to a series of cases selected from the records of the Seamen's Hospital are described. These cases are interesting and well fulfil Dr. Fothergill's purpose of demonstrating the value of blood examinations in the diagnosis of tropical ailments. Clinically so many of those diseases resemble each other, or are mixed up with each other, that a blood examination is the only means of making the diagnosis certain. It is in this that the real value of the practical teaching of the tropical schools resides—that is to say, in the education of the student to distinguish the different parasites, not only from each other but also from the various artefacts for which they are so frequently mistaken. Dr. Fothergill's little book shows close application, and if it should act as a stimulus to other students to follow his example it will have served a very useful purpose.

[5] *Trypanosomes and Trypanosomiases.* By A. Laveran, Membre de l'Institut et de l'Académie de Médecine, Paris. and F. Mesnil, Chef de Laboratoire à l'Institut Pasteur. Translated and much enlarged by David Nabarro, M.D., B.Sc., D P.H.Lond, Member of the Royal College of Physicians, London; Assistant Professor of Pathology and Bacteriology, University College, London; Scientific Assistant in Pathology at the University of London; Royal Society Commissioner for the Study of Sleeping Sickness in Uganda, 1903. With coloured plate and 81 figures in the text. London: Baillière, Tindall, and Cox, 8, Henrietta Street. Covent Garden. 1907. All rights reserved

[6] *Blood Examination and its Value in Tropical Disease.* By Claud F. Fothergill, M.R.C.S., L.R.C.P., B.A., M.B, B.C.Camb, Guy's Hospital and the London School of Tropical Medicine. With a Preface by Major Ronald Ross, F.R.S, C.B., Professor of Tropical Medicine, University of Liverpool, etc. London: Henry Kimpton; and Glasgow: Alexander Stenhouse. 1907. (Cr. 8vo, pp. 41. 2s. 6d.)

DISEASES OF THE NOSE AND THROAT.

AMONGST theatrical managers it is commonly said that the best critic of a production is the pay box. With certain reservations the same may be said of medical books. The classical work of Sir Morell Mackenzie on *Diseases of the Throat and Nose*, in striking contrast with most medical manuals, continues to command an increasing premium. Mr. PARKER is fortunate in having had placed at his disposal for use in his book on *Diseases of the Nose and Throat*[7] the finely-executed drawings in Mackenzie's work. This is by no means the only reason why Mr. Parker's book should ingratiate itself with students of laryngology. It is the outcome of many years of teaching at the hospital founded by Mackenzie, and it does honour to the memory of a great master and a great teacher of his art. The book is divided into six sections. The first section deals with the methods of examination of the upper respiratory tract and the methods of local and operative treatment. The general tone of the book is in great measure set in the second section, which is devoted to the complications of the upper respiratory tract in relation to general medicine, an important feature which should certainly appeal to all readers, special and general practitioners alike. Every year the important bearing which laryngoscopy and rhinoscopy have upon general medicine is becoming better understood. The British Medical Association has not been backward in diffusing this knowledge in the selection of subjects for special discussion in the Section of Laryngology at the annual meetings. A reference to the volumes of the JOURNAL affords ample evidence of this. To mention only recent meetings at Swansea, at Oxford, at Leicester—the upper respiratory tract as a source of systemic infection—the relationship of nasal disease to asthma—and laryngeal tuberculosis, respectively, were discussed. These and similar discussions, together with the introductory papers, form valuable aids to general medicine. The utility of a knowledge of laryngoscopy must have been forcibly borne in upon readers of the recent discussion at Exeter on the differential diagnosis of tuberculosis, syphilis, and malignant disease of the larynx, published in our columns on October 12th. A study of the book before us should certainly place the reader in a better position to meet the difficulties we have indicated. The remaining four sections are devoted to diseases of the nose, the naso-pharynx, the oro-pharynx, and the larynx respectively. The book is well illustrated with many new and original drawings and photographs, the illustrations to which we have referred representing less than a third of the total number. The index, so far as we have had occasion to test it, is very complete, and this adds to the value of the book for ready reference.

Dr. A. MÉNIER has brought within the limits of a handy volume a considerable amount of practical information about *Diseases of the Nose*.[8] In addition to the matter usually to be found in a treatise on this subject there are chapters dealing with conditions, both of special and general importance, which scarcely receive attention in some of the larger and more pretentious volumes on rhinology. Taking these in order we would specially mention the chapter on Difformités du Nez. The author has evidently devoted time and thought to the study of the more extreme cases from the standpoint of surgical

[7] *A Guide to Diseases of the Nose and Throat and their Treatment.* By Charles A. Parker, F.R.C.S.Edin. London: Edward Arnold. 1906. (Demy 8vo, pp. 624. 18s)

[8] *Traité des Maladies du Nez.* Dr. A. Ménier. Paris: A. Maloine. 1907. (Cr. 8vo, pp. 661. Fr. 12.)

treatment. The various rhinoplastic operations devised for the relief of these pitiable cases are well described and illustrated with explanatory figures. Under the title "dermatoses vestibulaires" are grouped many small things, which give rise to much trouble in the mind of the patient, and, at times, of the practitioner, such as sycosis, furuncle, impetigo, eczema, and the varieties of acne. A large number of formulae are given, which will be much appreciated. Other special chapters which we would mention are one entitled "troubles de l'olfaction," dealing with anosmia, hyperosmia, parosmia, and another on "l'hypochrondrie nasale," with which the book concludes. The text is supplemented by numerous illustrations. The ravages and disfigurements produced by syphilis are illustrated by photographs of the more characteristic preparations in the museum of the Hôpital Saint Louis. Lupus, before and after treatment, is well demonstrated by five full-page plates contributed by Dr. Leredde. There is an excellent table of contents, which is well arranged and well indexed. Professor S. Duplay has written an introduction, and Dr. A. Castex has contributed a preface to the work of his *ancien assistant*. The book will be found to be a useful manual, and we can fully endorse the words of Dr. Castex: it is *très moderne et très complet*.

A DICTIONARY AND A SUPPLEMENT.

Dr. Gould's name is as much a classic in medical lexicography as that of Samuel Johnson in the domain of the ordinary dictionary. Reviews of his great *Illustrated Dictionary of Medicine, Biology, and Allied Sciences*, and of his *Student's Medical Dictionary*, have already appeared in the Journal. He has lately issued the *Practitioner's Medical Dictionary*,[9] a volume of handy size and bound in flexible leather which contains the marrow of the big book. Not that it is a mere abstract; it is described in the preface as in every respect and detail new. Its object is said to be to supply the practitioner with trustworthy definitions of such medical words and terms as he may meet in his reading of standard textbooks, monographs, and medical journals. The author has winnowed the new crops of words that have been sprung up in the last ten or twelve years, keeping only what he looks upon as good grain. At the same time he has retained all the best of the old. The features of the *Illustrated Dictionary* that make it so convenient for reference have been retained. The tabulation and systematic classification of correlated terms has been continued, but the eponymic terms have been scattered in their proper order throughout the alphabet. It is claimed that in no other work will so many be found; we regard this as a particularly useful characteristic of the work, for nothing is more mystifying to the average reader than diseases indicated by the name of a man of whom he may never have heard. The most helpful illustrations of former volumes have also been retained, and a considerable number of new ones have been added. Dr. Gould states that over 200,000 copies of his dictionaries have been distributed among the profession throughout the world. This is a striking testimony to their value in view of the number and repute of the rival works in the market. The *Dictionary* seems to us to fulfil its purpose admirably, giving just what the practitioner requires. There is, if anything, a little too much—but this, if a fault, is a fault on the right side; and it is easy, at any rate, not to read what one does not want. We commend it to all who require a dictionary of moderate size, up to date, and sufficiently full for all practical purposes.

The *Supplement to the Illustrated Dictionary of Medicine*,[10] into which all the new names and words invented during the ten years previous to publication have been garnered, is itself a volume of goodly size. How rapidly the vocabulary of medicine is expanding may be gathered from the fact that in ten years over 30,000 new terms have been devised. As Dr. Gould points out, it is doubtful if such an increase has ever been seen in any other science. Among these are the names of a number of proprietary remedies, such as "teremorrhu," "testaden," "vutru," etc., and of such out-of-the-way infirmities as "myriachib" of Siberia, and "lata" of Java, which it appears correspond to the "jumpers" of Maine and Canada. Then we have such marvels of word-building as "hepaticocholecystostcholecystenterostomy," which is considerately defined as the formation of an anastomosis between the gall bladder and hepatic duct on the one hand, and between the intestine and the gall bladder on the other. A few such deinotheres of medical terminology of themselves go some way to make a considerable book. A special advantage of this *Supplement* is that it may serve as an addendum to most other dictionaries as well as to Dr. Gould's own. He has made use of the opportunity to include some things omitted in the original edition (1894) of the *Illustrated Dictionary of Medicine*, and has added a number of words already dead or dying which the student may come across in his historical reading. We venture to express regret that such illiterate forms as "ventro-suspension," "ventro-fixation," and "dilation" should have found admission to a dictionary otherwise of sound literary quality.

[9] *The Practitioner's Medical Dictionary.* An illustrated Dictionary of Medicine and Allied Subjects, including all the words and phrases generally used in medicine, with their proper pronunciation, derivation, and definition, based on recent medical literature. By George M. Gould, A.M., M.D. London: H. K. Lewis, 136, Gower Street, W.C. 1907.

[10] *A Dictionary of New Medical Terms*, including upwards of 38,000 words and many useful tables, being a Supplement to *An Illustrated Dictionary of Medicine, Biology, and Allied Sciences*. By George M. Gould, A.M., M.D. London: Baillière, Tindall, and Cox, 8, Henrietta Street, Covent Garden. 1905.

NOTES ON BOOKS.

A volume recently received contains the *Transactions of the Hunterian Society* during its eighty-seventh session—that which concluded last year. The papers printed in it include the annual oration on recent surgical methods in the treatment of certain forms of paralysis, delivered by Mr. A. H. Tubby; and a full discussion on syphilis, which was introduced by Mr. Jonathan Hutchinson, and occupied two meetings of the Society. Another interesting paper is an address containing some reminiscences of the Hunterian Society, also by Mr. Jonathan Hutchinson. It contains some charming verbal sketches of certain notables of the middle of the last century.

Dr. A. G. Welsford has written a volume entitled *Wintering in Rome*,[11] which appears to be an English edition of a very similar if not actually identical essay *Rome as a Winter Resort*,[12] published last May in Rome. It contains four chapters, the first on the climate of Rome, the second on Rome as a residential city, the third on the health of Rome, and the fourth on Rome as a health resort. Rome once, over half a century ago, had a considerable reputation as a health resort, which was lost because people used to get what was called "Roman fever," and consumptives who were sent there in considerable numbers did not do particularly well, owing partly to the liability to chill in fine bright weather, when that first cousin to the English east wind, called in Rome the "tramontana," prevails. Dr. Brock of Rome contributes an interesting introduction, in the course of which, if we understand him aright, he expresses the opinion that Roman fever was either typhoid fever or malaria, and we would suggest as a third possibility influenza. He is able to state that malaria has been banished, and that typhoid fever does not prevail to any greater extent, if to so great an extent, as in other large cities. The water supply of Rome is indeed so excellent that epidemics ought to be impossible, and such cases of the disease as occur must be attributed either to faulty domestic sanitation or personal contact. As to Rome as a health resort, Dr. Welford maintains that cases of consumption which derive benefit from the climate of the Riviera also do well in Rome, while its serious intellectual attractions may be accounted more conducive to health than the kind of life often followed on the Riviera.

Those to whom graphic methods of recording clinical observations especially appeal may be attracted by a chart constructed by Dr. S. M. Hebblethwaite, of Leeds. In effect, it is an ordinary clinical chart, with the addition at the side of graduated figures referring to pulse and respiration, so arranged that, by using respectively ink and red and blue pencil, a graphic record may be kept of the variations in pulse, temperature, and respiration. On the back of the chart there are some outline figures for recording points in physical examination. It is published by the Scientific Press, Limited.

[11] *Wintering in Rome.* By A. G. Welsford, M.D., B.C.Cantab. Second edition. London: The Health Resorts Bureau. 1907. (Cr. 8vo, pp. 127. 2s. 6d.)

[12] *Rome as a Winter Resort.* By A. G. Welsford, M.D.Cantab. Rome: *La Speranza* Publishing Office. 1907. (Demy 8vo, pp. 110.)

ROYAL COMMISSION ON VIVISECTION.

THIRD REPORT.

(*Continued from p. 1260.*)

THE Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till the evening of Thursday, October 3rd.* We continue our abstracts of the evidence.

Evidence of Major Leonard Rogers, I.M.S.

Major Rogers, in his evidence which occupies about ten pages of the Blue Book, stated that he was a Fellow of the Royal College of Physicians of London and Professor of Pathology at the Medical College, Calcutta. He considered that our present knowledge of the physiological action, and of the antidotes of snake poisons, was founded entirely on the results of experiments on animals. The most important early experiments were those of Sir Joseph Fayrer and Sir Lauder Brunton on cobra venom, which showed that the cobra venom killed by producing paralysis of the respiratory centres, and had subsidiary actions. They found that by carrying on artificial respiration they could keep animals alive even up to twenty-four hours after paralysis of respiration had taken place. There had been a few cases on record in which that method appeared to have saved the lives of human beings who had been bitten by cobras. Unfortunately, it only worked if the amount of venom was only just a lethal dose; if the cobra injected several times a fatal dose it was not possible to recover the patient by that method. The viperine class of poisons had a totally different action from that of the cobra class. It was first shown by Professor C. J. Martin that one of the snakes in Australia caused intravascular clotting, and he suggested that this was probably the physiological action of the viperine class, and it was afterwards shown by Lamb in Bombay that Russell's viper caused death in that way. Four years ago the witness, with Dr. Waller, in the Physiological Laboratory of the London University, tested Russell's viper of India, the rattlesnake of America, and the African puff adder. He found that, in addition to the intravascular clotting, paralysis of the vasomotor centre was also produced, and that this was the chief cause of death. He also found that the venom could be counteracted to a considerable extent by drugs, especially adrenalin, which contracted the vessels and so counteracted the fall of blood pressure. Calmette of Lille and Sir Thomas Fraser independently found, as the result of repeated inoculation of cobra venom into animals such as horses over a period of eighteen months that they were able to produce a powerful serum in the blood of the infected horses, which had a specific action against the cobra venom; so that after injection of the cobra venom into an animal it was possible to save its life by the injection into a different part of the body of a proper dose of the antivenin. In some experiments done by the witness he found that the results were very much better if the antidote was injected intravenously. The serum made from cobra venom did not act against the venoms of the viperine class, and had only a slight action against other colubrine poisons, such as the krait or the hamadryad. Therefore, although the antivenin had a decided protective influence, it was not practically of very great use, because one seldom had both the antivenin and the syringe on the spot; and even if one had them, much larger doses were required than were usually given. A number of cases had been reported where it had apparently had a good effect. He worked first at the sea-snake poisons in Calcutta in 1901, when he found that their venom had the same action as the cobra venom. Sir Lauder Brunton suggested that he should test the value of the method he had previously proposed of a local application of permanganate of potash by incising the seat of the bite, or the injection of venom and rubbing in the crystals. The first thing he did was to test the action of permanganate of potash on a number of different venoms, as it was previously only known that it destroyed cobra venom. He tested it against all the Indian colubrine poisons, the krait venom, the hamadryad and the banded krait, and the sea snakes, and also against Russell's viper of India, the rattlesnake of America, and the African puff adder, and he found that mixing a strong solution of permanganate of potash with any of these venoms would destroy the venoms in almost the same weight as the permanganate of potash. It appeared to act by oxidizing these substances, which were all albumoses, into a harmless substance. He used rabbits and cats in his experiments as nearly as possible under the conditions in which the permangate of potash would be used; but the animals were chloroformed. A measured dose of cobra venom was then given in accordance with the weight of the animal—so many times a fatal dose. The injections were made a little above the foot; snake bites were on the hand or foot as a rule. After the measured time had elapsed, varying with the different experiments, a ligature was applied above the seat of the injection, where an incision was then made with a small lancet—such as was now being sold in India—and at the seat of the injection within thirty seconds he found that there was always a small, blood-stained effusion, which was of practical importance, as it showed the exact seat of the venom; a few permanganate crystals were then poured into the wound, and rubbed in until the wound was completely blackened. This took one or two minutes. The ligature was then immediately removed, on the supposition that the poison had been destroyed by the application of the permanganate of potash. The cats were allowed to come round, and kept from five days to a week. They appeared to suffer no pain. As the result of the experiments he found that after the injection of ten times a fatal dose of cobra venom he could save the animal by operating thirty seconds afterwards. He had now worked up to getting a recovery in the case of a cat not treated until half an hour after the injection of a double lethal dose. Similarly, he tested with Russell's viper as a type of the viperine class and got recoveries up to five times a fatal dose, which was more than any viper he knew of could inject. The method had been successfully applied to human beings. With the printed instructions supplied with each lancet he asked to have reports sent to him, and he had received a number during the last three years, which he found it necessary to classify in two different classes. In judging of the action of any remedy in the case of snake-bite there were a great many fallacies to be avoided. The patient might not have been bitten by a poisonous snake, or he might not have received a fatal dose; it was owing to this that so many remedies had been brought forward as cures for snake-bite which had been found experimentally not to be efficient. In order to get absolutely accurate figures he had taken in his first class (numbering 14) only cases in which the snake had been killed and identified as a poisonous one. Many years ago, as the result of Fayrer's work, the Government of India supplied coloured plates of different poisonous snakes to all the dispensaries in India. The snake was killed and brought to the dispensary and identified by the assistant surgeon, who had been trained and had these coloured plates at his disposal. The fangs were quite definite, and, again, in nearly all the cases he had got a definite note if there were two definite fang marks, punctures which would not be produced by anything but a poisonous snake. Of 14 cases where the snake was killed and identified, 9 were cobras, 3 Russell's vipers, and 2 kraits. Among these there was one death—a woman, who was brought to the hospital eleven hours after the infliction of the bite, when she was quite moribund. In that case no treatment could be expected to have any effect. If the cobra injected its full quantity of ten times a fatal dose, symptoms occurred within half an hour. In a good many of these cases the ligature had been applied by natives before they were brought for treatment. He had four cases in which the ligature was applied at once. One difficulty was that, even after a cobra had bitten a native, they very often would not kill it. A number of cases in the other series (numbering 34) were certainly bitten by cobras, but, as the snake was not killed, he put them in that class. Six of these were fatal; 1 was not treated till nine hours afterwards, and 3 others from four to

* London: Printed for His Majesty's Stationery Office by Wyman and Sons, Limited, 109, Fetter Lane, E.C. And to be purchased, either directly or through any bookseller, from Wyman and Sons, Limited, 109, Fetter Lane, Fleet Street, E.C.; and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin, 1907.

six hours after; but one observer reported 3 cases treated two hours after; which died. That was the only record of any case which had failed that he knew of; but the same observer reported 20 successful cases. The treatment described was undoubtedly established as the result of experimental work on animals. About 20,000 fatal cases were reported every year in India, and 10,000 of these occurred in Bengal alone. The witness went on to say that he did not think that a large number of deaths not due to snake poison were put down in the returns. He would think it was more likely the other way, because he knew from experience that over 90 per cent. of deaths were returned as fever. He had himself met with cases in which cases of snake-bite were recorded as fever. It was more likely that the deaths from snake-bite were underestimated than overestimated. A very large proportion, certainly 75 per cent., of bites by admittedly-poisonous snakes were fatal in the human subject. Even if symptoms had supervened recovery might occur. He had made a series of control experiments with the ligature without injection, and a series with the ligature with injection; the ligature delayed death, but it never prevented death. Asked how many cases of bite from a poisonous snake he had himself seen in human beings, he said one. In that case the remedy was applied by him in a few minutes, and the patient had no bad symptoms; that was in Calcutta. Since these results had been published the Government of India were widely distributing the lancet in every village in several provinces. Over 7,000 lancets had been sold by one firm in Calcutta. Practically every European going shooting took one. It was only three years ago since those results were published, and it was only last year that the Government had taken it up extensively. It was too early yet to say whether it had had any effect upon the mortality returns. In reply to further questions he said Calmette's and the permanganate method should be combined. The permanganate method was practically applicable to every kind of snake. Calmette's antivenin was useful only for cobra. An antivenin had been made for Russell's viper recently, but was useful only against that venom. But if the permanganate treatment was being used to destroy all the venom remaining locally at the seat of injection, the antivenin was much more likely to save life, as it would have to act against a much smaller amount of venom. There was as yet no polyvalent serum. They were making one for both cobra and Russell's viper at the Pasteur Institute at Kasauli. The serum was prepared by injecting the measured doses of the venom obtained from the snakes and then dried. In the dried condition it could be kept for thirty years or more without losing its strength. Then measured quantities of this were injected, beginning with much less than a fatal dose, and gradually increasing it until many times a fatal dose could be injected into the animal; and this caused the production of the antidote in the horse's blood. Practically the mortality of snake-bite depended on the amount of venom injected; therefore all figures would be more or less fallacious. He should say that there was very little individual idiosyncrasy. If snake poison was injected intravenously it would cause death in ten to fifteen minutes, or even less. He had not himself tried the effect of permanganate of potash on scorpion poisoning, but it had been found equally effective in Egypt. He had found the permanganate of potash very useful in preventing tetanus which was exceedingly common in Calcutta. Permanganate of potash had also been used at his suggestion in cases of leopard bites, which were usually very fatal; in severe cases it had prevented serious results from blood poisoning. He also suggested that it was worth trying in hydrophobia, and one of the medical officers in the South of India had used it in a number of cases of dogs which had been bitten by mad dogs, and a number of them had apparently been saved. There was an idea in India that snake charmers produced immunity by swallowing snake venom; but Professor Cunningham fed a goat for two or three years on large quantities of venom; he gave very large quantities, and he subsequently tested that goat with just enough to kill an ordinary goat, and it died in the ordinary time; so that it might be taken as quite certain that immunity was not produced in that way. He thought snake charmers immunized themselves by small inoculations. He thought they often got little scratches, and got a little venom injected in that way. In reply to further questions, he said chloride of lime and gold chloride were found by Cunningham to destroy snake venoms, but they were not nearly so practicable apparently as the permanganate; the gold chloride was exceedingly expensive while the chloride of lime was unstable. He could not say absolutely whether carbolic crystals had been used. Proceeding, the witness said rinderpest had attracted the attention of the Indian Government as far back as 1881. They had a bacteriological laboratory under their own supervision entirely for studying diseases of animals. From November, 1898, and all through 1899, he was in charge of the laboratory. The Government of India wished the methods of inoculation against rinderpest used in South Africa tested to see how far they were applicable to the conditions of India. There were two chief methods. One was the bile method of Professor Koch, which had done great service in the early part of the outbreak in South Africa, but which was at that time being discarded in favour of the method of Turner and Kolle, which consisted in injecting a small quantity of virulent blood containing the infection in one side of the animal, and at the same time injecting in a separate place a measured quantity of the antirinderpest serum, the strength of which had been previously ascertained. By this method it was possible to produce a mild attack of the disease which would protect the animal for the rest of its life. This method was very successful in South Africa, but it did not work very successfully in India. The reason for the difference was that in South Africa the disease was a new one, so that all animals were equally susceptible: consequently it was possible to regulate the dose of serum so accurately as to produce a mild attack of the disease in 90 per cent. of the animals, and yet not to have more than a half per cent. of fatal cases. In India, on the other hand, where rinderpest had existed very many years, the susceptibility of animals varied very greatly, so that it was impossible so to regulate the dose of serum as to get the results which were obtained in South Africa. He found that he could get over this difficulty by using a large dose of serum to start with at the same time that the blood was injected, so as not to lose any animals, and then to any animals which did not react, he could safely give a second dose of virulent blood, and then he nearly always got a reaction with permanent immunity. This he called the reinoculation method. It had been tested in the Philippine Islands, and was now being recommended there as preferable to all other methods of obtaining permanent immunity. In India, however, the method of simply injecting the serum alone was most generally used because the more complicated reinoculation method required more skilful observers than were generally available. At the end of his year's work he made arrangements for turning out 100,000 doses of serum a year. He also himself inoculated a large number of animals in actual outbreaks. In two districts he inoculated over 500 animals that were in the same sheds with other infected animals, and at the same time he had notes of all the other animals similarly exposed to infection which were not inoculated, because the villagers did not agree to it. These were all subsequently reinvestigated at the end of two months, and it was found that not one of the 500 animals which had been inoculated had developed rinderpest later than four days after the inoculation—that was to say, within the incubation period of the disease. It might be said, therefore, that no animal which was not already infected subsequently developed the disease after inoculation in that outbreak. On the other hand, of about an equal number of animals similarly exposed to infection and not inoculated, one-half developed the disease, and half of those died, making a mortality of 25 per cent. of the uninoculated animals. These results were so conclusive that the Government of India arranged to turn out 100,000 doses of serum a year. Many thousands of inoculations had been done year by year since, and the results had been so satisfactory that last year a second laboratory was sanctioned in the south of India because the one laboratory was not sufficient to make enough serum. After doing inoculations in the districts to which he had referred he had applications from the natives to go back and do more in each place, although at first

many of them had refused to have it done. These applications were all from the poorer village class; the ordinary agricultural labourer. They were mostly Hindus, but a good many Mahommedans as well. Asked if the animals from which they got the blood—those in which they artificially produced rinderpest—suffered very much, he said they certainly must suffer. The disease was more nearly like typhoid than any other human disease; the animals got ulceration of the intestines, and a high temperature, 104° or so, and soon became drowsy; when they got to that stage he did not think they suffered much, but they got violent diarrhoea and running from the nose. As soon as they had fully developed the disease they were bled to death. In that way the blood was got for injecting, and the animal was put out of pain. It was only within the last six years that the method had been introduced. There were several million cattle in a single district, so that one could not expect at present a marked effect on the whole of the cattle in India; but there were figures showing a very material reduction of mortality in particular localities. Asked what was the recognized administrative method of dealing with cattle plague in India, he said it was practically impossible to do anything. The veterinary staff in India was exceedingly small; there was one veterinary officer for a whole province. Preventive inoculation would be a thousandfold preferable to stamping out, as saving an enormous number of animals which otherwise would have to be sacrificed. Stamping out by killing the cattle would be impossible in any Hindu community. Asked about the working of the Kasauli Institute, he said that originally private subscriptions were raised in order to start a Pasteur Institute so that the treatment of hydrophobia could be carried out in India. The Government took it up, and he believed they gave a contribution equivalent to the amount which they had been spending on sending Europeans to Paris to be treated, and in that way the Kasauli Institute was started. The results were considered to have been so valuable that within the last year a second Pasteur Institute had been started in the South of India on account of the enormous area which had to be covered. The figures were practically identical with those of Paris; the results had been very favourable. Hydrophobia was quite common in India. A large number of natives attended the Institute at the present time. The Pasteur treatment was carried out there.

(To be continued.)

ASSOCIATION OF PUBLIC VACCINATORS OF ENGLAND AND WALES.

ANNUAL MEETING.

THE annual meeting and dinner of the Association of Public Vaccinators were held at the Hôtel Métropole, Leeds, on Friday, October 25th, and were well attended by members of the Association from all parts of the country.

At the annual meeting the members were disappointed by the absence, through illness, of their retiring President (Dr. Climson Greenwood), who has done so much, in co-operation with the Secretary (Mr. Charles Greenwood) to promote the welfare and extend the usefulness of the Association of Public Vaccinators.

Dr. Arthur Drury, Public Vaccinator for Halifax, who has been an active champion both of the cause of vaccination as a matter of public policy and of the interests of public vaccinators, was elected President.

Dr. W. E. DE KORTÉ, of the King's College Bacteriological Laboratory, London, contributed a paper on Jennerian Vaccination, and dealt with the scientific aspect of the subject. The principle established by the experiments and discoveries of Pasteur, Burdon-Sanderson, and Duguid—that the virulence of an organism can be lessened by passing it through the body of an animal of another species—was held to be the principle of Jennerian vaccination. There was no evidence that one disease was able to confer immunity from another disease, but there was abundant evidence that immunity could be induced by the use of an attenuated virus, as shown by the experiments quoted. Dealing with the important question of the relationship of cow-pox to small-pox, it was contended that Jenner's view that vaccinia is but small-pox modified by transmission through the cow is absolutely correct and quite consistent with the results of recent research. The arguments of Dr. Charles Creighton regarding the action of the specific agent of vaccinia were freely discussed and refuted. A very interesting account of the theories of immunity and the histological changes in variola and vaccinia followed. It was shown that there are no observable differences in the minute changes occurring in the skin in each case. The address concluded with an account of the etiological agent of small-pox and vaccinia. Dr. de Korté adopts the view first advanced by Funk and since investigated by himself, that the causative organism is a comparatively large protozoon, the "sporidium vaccinale," which can be easily seen. He believed that the motile granules which constitute so great a portion of calf lymph are spores freed by this sporidium. It is quite certain, he avers, that given a sample of calf lymph the more sporidia and spores present the more active will be the lymph.

Drs. BATESON (Bradford), COPE (London), FERGUSON (Burnley), and BRADSHAW (Liverpool), took part in the discussion.

A short address was given by Dr. A. E. COPE (London) on the Saving of Child Life by Vaccination. The subject of infant mortality was now receiving great attention on every hand. There never had been, so far as he (Dr. Cope) knew, any single thing which had done so much to save child life as the introduction of vaccination by Jenner. The antivaccinators alleged that the saving of child life credited to vaccination was due to sanitary improvements; but the saving of deaths from small-pox began with the commencement of vaccination, and sanitary improvements could not be said to have begun until the middle of last century. Even since the introduction of modern sanitation other infectious diseases of a similar class were not found to be similary affected. Dr. Cope quoted a table from Dr. Watts, of Glasgow, which showed that during three periods, of five years each, before 1800 the deaths from small-pox were respectively 19.5, 18.2, and 18.7 per cent. of the total deaths; in the subsequent periods up to 1812 the deaths were 8.9 and 3.9 per cent. Small-pox in the first periods contributed nearly 20 per cent. of the total deaths, but in the twelve years after the introduction of vaccination the number was reduced to 4 per cent. Dr. Watts was surprised to find that the total deaths of children were not reduced. Measles increased and whooping-cough increased in certain proportions so as to keep up the death-rate amongst children. He (Dr. Watts) wondered if the reduction of deaths from small-pox had led to the increase of deaths from measles and whooping cough. Dr. Scott Tebb had actually taken up this statement and adopted it as an argument against vaccination. The greatest benefactor to child life in the last century in regard to infectious diseases was Jenner. The antivaccinator was now seeking to deprive the people of this means of saving life.

The PRESIDENT, Dr. JAYNES (London), Dr. PALMER (Mansfield), and others took part in the discussion.

A hearty vote of thanks was passed to Dr. de Korté and Dr. Cope, and their papers will shortly be published by the Association.

ANNUAL DINNER.

The dinner was marked by great cordiality, and by a toast list of somewhat unusual length. Whatever the objections to the latter feature, it certainly led to the deliverance, by persons of widely different experience, of speeches of much interest, having practical bearings on the medico-political problems now confronting public vaccinators.

The PRESIDENT, in proposing the toast of the Association of Public Vaccinators, spoke of the objects of the Association, which were twofold. First, the protection and promotion of the interests of its members; and second, the defence of vaccination against unscrupulous attack. Hitherto it had seemed to be an idea which had permeated the country that the medical profession should take no interest in its own interests. Recent activity in this Association and the British Medical Association pointed to a new era in this respect. The Order of the Local Government Board regarding vaccination fees contained matter of moment and importance to every medical practitioner, because a State department had chosen to assess the value of a medical

man's services in such a manner that it would be possible to require a medical man to pay a visit, vaccinate under definite regulations and restrictions, subsequently visit again and pay further visits if necessary for the sum of half a crown! To the credit of many Boards of Guardians this had not been adopted as reasonable remuneration. In many cases it was not the cab fare for one single journey. Regarding the defence of vaccination Dr. Drury suggested that the Association should record its hearty thanks to Mr. Arnold Lupton, M.P., for the splendid manner in which he had served their cause in the House of Commons. Shrieks of laughter greeted his solemn attempts to foist upon the House his absurd arguments, the latest of which was that since the passing of the Act of 1898 there had been an increase of 5,000 deaths from cancer. Mr. Lupton amused the House by attributing this increase to the substitution of glycerinated for humanized lymph! That was a type of the antivaccinator's arguments.

Dr. Napper (Cranleigh) and Dr. J. C. Bradshaw (Liverpool) responded to this toast in speeches characterized by a vein of considerable humour.

The toast of "The Visitors" was proposed in suitable terms by Dr. A. T. Bacon, the President of the West Riding of Yorkshire Branch, and was coupled with the names of Mr. A. Willey, Chairman of the Leeds Board of Guardians; Dr. Kaye, Medical Officer of Health for the West Riding of Yorkshire; Dr. Cowburn, Medical Officer of the Temple; and Dr. Wardrop Griffith, Professor of Anatomy, Leeds University.

Mr. Arthur Willey (Chairman of the Leeds Board of Guardians), replying for "The Visitors," made a stirring speech on the importance of unity in the medical profession. He assumed that vaccination was a national necessity. In all such questions they had the faddist and the crank, who for the mere purpose of self-advertisement would be in opposition. The present constitution of the Local Government Board, really a unit, was not satisfactory. He believed the medical profession would outlive the sentimental feeling of cheapness. There ought to have been something better in the shape of unity in the profession on this question of fees. In Leeds the guardians called before them the public vaccinators. They had a circular which appeared to be most reasonable in its terms and true in its propositions. Apart from that he felt that behind them there was not the solidarity of the profession as a whole to back up the recommendations of the Association or to back up the feelings which he himself had on this question of remuneration. There was really nothing to have prevented the medical profession, if properly united, from saying, "We will not undertake your duties at all unless you are prepared to pay us a reasonable fee." He believed if the question were explained to the whole of the ratepayers of this country they would condemn this policy of cheapness.

Dr. Kaye, in responding, alluded to the close relationship of the work of public vaccinators to preventive medicine generally, as represented by the public health departments, and expressed his conviction that sooner or later the local machinery of vaccination must be placed under the control of the sanitary authorities. Dr. Cowburn and Professor Wardrop Griffith also responded in felicitous terms.

Dr. Ferguson, of Burnley, proposed the toast of "The British Medical Association," and expressed the satisfaction with which many like himself had observed the recent activity of the Association for the good of the profession.

Mr. J. Smith Whitaker, the Medical Secretary of the Association, in responding to the toast, dwelt on the cordial co-operation that had recently been found possible between the Association of Public Vaccinators and the British Medical Association, and upon the part played by the British Medical Association in respect of such matters. The remarks of the President as to the dual functions of the Public Vaccinators' Association applied equally, *mutatis mutandis*, to the British Medical Association. It was beginning to be more and more realized within the profession that the maintenance of an adequate standard of remuneration and of other conditions of medical employment was a legitimate function of an association such as the British Medical Association; and while there still appeared to be some differences of opinion on that point within the ranks of the profession, in his experience he had found no doubt on the matter among representatives of the general community, who fully recognized the propriety of such work. It was also the duty of the Association, on behalf of the profession, to act frequently as a kind of expert adviser of the community on questions of hygiene and the like. It was of the first importance that in all their action they should keep these two functions properly distinct, and let no confusion arise in their minds or in the minds of the public as to the capacity in which they were acting on any particular occasion. They had the right to represent to the community, for example, that the profession was firmly convinced that vaccination was necessary for the public protection. They also had the right, if medical practitioners were employed by the State for the purposes of vaccination, to demand that they should be adequately remunerated and placed in other respects under proper conditions. It was to the public interest that this should be done. But they had no right to demand, and the British Medical Association had most carefully abstained from demanding, that any work such as vaccination should be undertaken for the sake of giving employment to medical practitioners. It was important that public vaccinators and members of the British Medical Association present should clearly understand the nature of the support which it was within the power of the British Medical Association to render. In a question of employment by local authorities, such as vaccination, the most effective support would usually be given by local action, and the only difficulty in the way of giving such support at present was the still incomplete state of the local organization of the profession through the Association. For instance, in Leeds, for reasons into which it was unnecessary to enter, the Division had hitherto been very inactive and had received very little support from the local practitioners. The consequence was the state of affairs described by Mr. Willey—namely, that when an important question affecting the employment of a section of the profession was before the guardians, the Division remained inactive, and, so far as he could ascertain, the local public vaccinators had not thought of applying to the Division for support. They must realize, however, that that was purely a local weakness. Instances were given of action that had been taken in other places, such as Halifax and Southend, where success had been achieved through the efforts of a strong and active Division representing the united local profession. The machinery was all there; it rested with the local practitioners themselves in each district to say whether it should be put into active working order and fully employed.

The remaining toasts were that of "The President," proposed by Dr. A. E. Cope, and "The Officers," proposed by Dr. Bateson (Bradford), and responded to by the Secretary (Mr. Greenwood), both being received with the greatest cordiality.

The programme of speeches was lightened by songs admirably rendered by Mrs. Drury and Mr. John Needham.

DR. KERR ON THE MEDICAL INSPECTION OF SECONDARY SCHOOLS AND TRAINING COLLEGES.

In his Report for the year ended March 31st, 1907, the Medical Officer to the London Education Committee reports upon the results of medical inspection of secondary schools and training colleges, it having been resolved in April, 1906, that arrangements should be made for periodical medical examination of pupils in the Council's secondary schools. Dr. Kerr writes:

> The medical superintendence of the schools, hygiene of buildings, and general matters is done by the permanent office staff. As the majority of the pupils are girls in their teens, the individual handling of these girls is done by medical women, except in special cases where they desire further consultation. Each pupil is separately examined on entering the school, and a regular medical report form filled up. This is kept at the school in a "Doctor's Book," but it will be preferable later to have a card system. It adds considerably to the working capacity of the pupils, especially in the case of girls, and prevents illness, if they can have access to lay any matters which they desire before the medical officer. A regular consultion day is there-

TABLE I.—*Boys and Men in Secondary Schools and Training Colleges.*

Name of Secondary School or College.	No. of Visits to School.	No. on Roll.	No. Examined.	Two or More Defective Teeth.	Defects of Vision.			Throat or Nose.	Hearing.	Discharging Ears.	Heart.	Lungs.	Anaemia.	Physique.	Clothing.	Nutrition.	Want of Cleanliness.	Speech.
					Suitable Glasses.	Unsuitable Glasses.	Signs of Eye Strain.											
Paddington Technical	6	63	61	33	1	2	13	9	1	—	4	1	4	3	1	—	—	5
Hackney Downs (late Grocers)	8	426	73	50	7	4	11	12	8	4	5	3	3	1	1	2	1	8
Total	14	489	134	83	8	6	24	21	9	4	9	4	7	4	2	2	1	13
Day Training College	16	121	91	33	24	12	6	3	1	—	10	—	—	—	—	—	—	—

TABLE II.—*Girls in Secondary Schools and Training Colleges.*

Ages last birthday	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	31	
Number examined	4	5	1	66	137	98	83	46	17	9	33	33	56	44	22	6	2	1	604
Curvature of spine	1	2	—	14	47	27	3	11	2	1	4	4	8	5		1	1	1	138
Anaemia	1	—	—	7	21	12	2	6	1	1	1	1	2	2	4	1	1	—	62
Serious defect of vision ...	—	—	—	2	4	—	—	1	—	—	—	1	—	2	—	—	—	—	8
Heart trouble	—	—	—	1	—	2	—	—	—	—	—	—	—	—	—	—	—	—	3
Deafness, etc.	—	—	—	1	3	2	—	—	—	—	—	—	—	—	—	—	—	—	6
Throat troubles	—	—	—	3	2	2	—	—	—	—	—	—	—	—	—	—	—	—	7

TABLE III.—*Girls.*

Name of School or College.	No. on Roll.	Visits Paid.	Number Completely Examined.	Defect requiring Improvement in—									
				Backs.	Eyes.	Throats.	Hearts.	Ears.	Glands.	Teeth.	Lungs.	Lack of Cleanliness.	General Physique.
Secondary schools—													
Eltham	67	5	46	24	8	1	—	2	2	16	—	—	9
Fulham	225	12	135	51	22	18	1	8	3	32	—	8	9
Hackney	190	10	112	68	15	45	3	3	8	54	(?) 1	30	17
Kentish Town	237	10	100	47	20	25	7	1	—	39	—	4	14
Kingsland	185	7	64	51	18	26	7	2	2	24	(?) 1	15	21
Manor Mount	100	4	29	17	4	2	2	1	1	8	—	—	17
Paddington	133	5	76	16	10	9	3	—	1	22	—	4	2
Peckham	233	12	83	34	18	4	—	6	4	28	—	20	8
Stockwell	228	7	87	40	10	7	2	9	6	20	—	5	7
Southwark	116	11	82	33	25	21	5	2	1	38	—	17	14
Sydenham	118	7	63	47	15	6	1	4	3	22	—	1	14
Total	1,932	90	837	428	175	144	31	38	31	313	(?) 2	104	132
Percentages	—	—	—	50	20.9	17	3 7	4.5	3.7	37 4	—	12 4	15
Training Colleges—													
Avery Hill	159	9	63	21	18	1	4	2	—	16	—	—	13
Graystoke Place	147	14	98	38	26	1	3	2	—	35	—	1	23
Southampton Street													
(*a*) 2 year	180	28	141	27	36	6	6	—	1	70	1	1	7
(*b*) 3 year	80	—	75	21	24	10	3	1	—	42	1	—	6
Total	566	51	377	107	104	18	16	5	1	163	2	2	49
Percentage	—	—	—	28.4	27.6	4.7	4	1.3	—	43.2	—	—	13

fore arranged about once in six weeks, when any pupil may see the doctor in regard to any trouble affecting their work, such as headaches, neuralgia, sore-throat, sleeplessness, or over-fatigue, which would otherwise generally be allowed to run on unrelieved. The parents were present in many cases, and appreciated the doctor's examination of their children. Head teachers are quite unanimous in regard to the fundamental importance of this work in these schools where the physical condition of the children is considerably below the type of high-school girl, to which most of them have been accustomed. They feel the great help of medical examinations. They have altered time tables, arranged special classes, and made individual arrangements to suit particular pupils according to the doctor's advice.

Pupil teachers have to be certified for the Board of Education, and they must be passed only if it can reasonably be ex-

pected that they will eventually qualify as teachers in accord with the teachers' superannuation rules, which last urgently require overhauling and exactly defining. The Council has eight pupil teacher centres with 1,700 students and the system of medical supervision for secondary schools is also applied to these centres.

For Training College students the Board of Education requires an entrance certificate of fitness and at the beginning of each year of study a certificate that the student is in such health as to be able to continue the course of study. But quite apart from these legal requirements, the experience already gained has demonstrated the value of medical superintendence.

Males.

Dr. Brincker examined the boys at the Paddington Technical School and some of those at Hackney Downs Secondary School. He found the schools quite sanitary, and the general physique of the boys much better than those of boys in elementary schools. Dr. Brincker made the following notes concerning these boys:

Vision.—28 per cent. were defective, 10 per cent. already had glasses, but in nearly half these appeared unsuitable. The other boys had never had glasses. Many apart from failing to pass vision tests, showed signs of eyestrain, for example, headaches, conjunctivitis, blinking or smarting of the eyes, or swollen eyelids.

Hearing.—One or both ears were found defective in 7 per cent. boys and in nearly half of these there was aural discharge present.

Cardiac and Pulmonary Signs.—Heart symptoms were present in nine boys (7 per cent.), three of these having a rheumatic history, and four others showing rapid pulse and cardiac dilatation with hypertrophy of muscle, associated with irregular and rapid growth. Chronic bronchitis was present in 3 cases, and 1 case was apparently old and arrested phthisis without active symptoms.

At the Day Training College at Offord Road, where the students are picked men without defects of a serious nature, a general ignorance of how to expand the thorax by deep inspiration was observed in making measurements of the basal girth of the chest.

The dental conditions which exist in the secondary schools and training colleges are no better than those found in elementary schools. Of the 134 boys examined at Paddington Technical School and at Hackney Downs, 62 per cent. had two or more decaying teeth. In many cases there were spongy gums, and in two there were suppurating conditions (pyorrhoea alveolaris). Among the men students at Offord Road neglect of the mouth was general, and several cases had suppurating conditions, the foulness in some being almost as offensive as ozaena.

Table I shows the results of the examination of boys and men in these schools.

Females.

Since September, 1906, Dr. Annie Gowdey and Miss Campbell have examined and made detailed reports on 1,350 girls in the secondary schools and training colleges. Although the children were specially prepared for medical examination, in the secondary schools 12 per cent. showed lack of cleanliness either of skin or hair, or both, quite apart from any neglect of teeth. About 15 per cent. were below the average nutrition, and 24 per cent anaemic. Headaches were complained of by 20.5 per cent., and in many cases without obvious cause, but in others anaemia, defective vision, stomach troubles, and reading late at night were noted. Exaggerated movements, corrugated foreheads, insomnia, and somnambulism were met with. Several cases of overstrain were reported. Similar conditions were noted in training colleges, although the standard of personal cleanliness was much higher.

In the secondary schools and training colleges Miss Campbell found that out of 604 scholars examined, 138 showed definite lateral curvature (Table II). Definite osseous deformity which did not admit of correction was presented by 7 of these girls. Their ages were about 12, 13, 15, 20, and 22. In all the other cases the deformity could be made to disappear by placing the patient in particular attitudes of body and limbs. In the majority one shoulder was higher than the other; in half the cases this was the right. The angles of the scapulae were prominent, and there was a double curve, the waist being higher on one side. In a few cases the whole spine was convex laterally. The girls were mostly drawn from the elementary schools, and their average standard of physique was not high. As they had all been examined medically previously many defects had already been remedied. Of the 138 girls with spinal curvature, 10 were above, 91 were average, and 37 were below the average physique. Anaemia was present in 50 per cent. of the cases and very pronounced in some, of whom 8 (6 per cent.) showed decided listlessness and want of energy. Seriously defective vision was noted in 8, and deafness or discharge from the ears in 6, enlarged tonsils and adenoids being present in 7. As regards corsets, the ordinary corsets were worn by 47, rational stays with few or no bones by 75, while 16 wore none. The chest development was poor in nearly all these girls.

With regard to general physique, this varied considerably in the colleges. The highest standard was observed in the two-year department at Offord Road, where the students are drawn from the country, and are either not attempting a university degree or have failed to satisfy the requirements of more advanced colleges elsewhere. At Avery Hill and Graystoke Place, where the academic aims are more ambitious, the average physique was much lower in comparison.

The most striking fact brought out by the medical inspection seems to be ignorance of the ordinary elementary rules of health. With these girls a course of hygiene should take a leading and prominent position in the school. The overloaded literary and academic nature of the curriculum will no doubt ere long be remedied, and more rational studies substituted.

The average standard of physique is low (see Table III). Cleanliness of the teeth, hands, nails, skin, and hair much neglected.

LITERARY NOTES.

It was stated in this column of the British Medical Journal of October 26th that there is a probability of the *Index Medicus* being discontinued, and that in view of this contingency it has been suggested that the card system of the Concilium Bibliographicum might be extended so as to cover the ground of medical literature. Reference was made to the fact that a similar plan was tried in Paris some time ago, but did not find adequate support. Dr. Marcel Baudoin writes to point out that during the period of occultation of the *Index Medicus*, which lasted from 1900 to 1903, its place was supplied by the *Bibliographia Medica*, published in Paris under the auspices of the Institut de Bibliographie, of which our correspondent was the directing spirit. On the reappearance of the *Index Medicus*, the *Bibliographia Medica*, finding its occupation gone, joined the snows of yesteryear. In 1906 it was followed by the Institut de Bibliographie, which, as Dr. Baudoin reminds us, was the first effort in that direction. The failure of two such meritorious enterprises is not encouraging to further adventures of the same kind. Yet the value of a general index to current medical literature is beyond question, and the need of such a guide through a labyrinth ever growing in vastness and in complexity must necessarily make itself felt more and more by workers who wish to follow the course of medical thought, and are not content to take their references at second-hand.

In the introductory address recently delivered at the London School of Tropical Medicine by Sir Lauder Brunton, of which we have received a reprint, he mentions an interesting suggestion made by Mr. Hankin that the story of the Pied Piper of Hamelin is a legendary account of an epidemic of plague. The Pied Piper came from abroad, and at his first visit killed off the rats in Hamelin; not having received his promised fee, he came back and killed off all the children. It has long been observed that great mortality among rats is apt to precede outbreaks of plague. The virulence of the disease is capable of great variations. At first it seems too feeble to attack man, but it can attack small animals such as rats. By passing successively through numerous rats it becomes more and more virulent; it attacks man. Major Leonard Rogers told Sir Lauder Brunton that in the Kamoan Hills, in India, a form of plague is more or less indigenous, but that the natives, as soon as the rats begin to die, desert the villages and keep away for months. In Bombay and in Hong Kong the plan now adopted is to treat any house in which a dead rat is found as "plague-infected," and to evacuate it and disinfect it with crude petroleum. Sir Lauder Brunton points out that though in

some parts of India there is a great prejudice against taking life of any kind, this is not universal, because in some parts goats are offered to Kalee, the goddess of destruction. He suggests that if the Brahmins could persuade the natives that the sacrifice of a rat as often as possible to Kalee would avert pestilence, rats would very soon be destroyed and plague would be at an end.

With the death of Galen scientific medicine passed into mysticism, and thence inevitably drifted into superstition and magic. Naturally in this state of things quackery of all kinds was rife. One of the most notorious of the quacks of antiquity was Alexander of Abonoteichos in Paphlagonia, who flourished in the reign of Antoninus, and especially during the plague which devastated the Roman Empire from 164 A.D. till the death of Marcus Aurelius. Lucian gives an account of this impostor, compared with whom most of our modern quacks sink into insignificance. Alexander sent a message to the people throughout the provinces and cities of the empire, assuring them that if they would only have faith in him they would be safeguarded not only against plague but against fires and earthquakes. The people believing in him wrote his name on their doors as a warning to the plague and other evil things to keep away. Alexander in his youth had been the pupil of an itinerant doctor who belonged to the school of Apollonius of Tyana. From him he learned to concoct love philtres, to practise magic, and to make the sick imagine themselves well. He was evidently a forerunner of Mrs. Eddy; but the foundress of Christian Science has not yet reached his sublimity of impudence, for, as far as we are aware, she has not hitherto undertaken to protect her devotees against earthquakes. After his teacher's death Alexander joined another adventurer, with whom he went to Macedonia. There they cleverly took advantage of the belief then prevalent that Apollo and his son Aesculapius had come to Pontus, settled in Abonoteichos, and there founded a new oracle. A temple was built in which Alexander figured, attired in a white cloak and a purple tunic, as the bearer of a message from the gods. The people, though they knew that he was of low origin and anything but virtuous life, believed him to be Aesculapius. From every part of the world credulous folk hurried to witness his miracles; the streets were crowded with the halt, the blind, and the dumb, eager to be healed by the god. Alexander had the wit (which is the secret of the modern quack) to give new names to well-known remedies. He drove a roaring trade, his income being estimated at £3,000 a year, a big sum in those days. Many of the leading personages of the day went to visit him, and the Emperor himself paid him honour. Lucian tells how Alexander, who had granted him a special audience, held out his hand, as his custom was, for the visitor to kiss. Lucian, however, bit it so hard as to disable it for some time. The prophet affected to treat the affair as a practical joke, but when Lucian was leaving the country Alexander used his influence to induce the captain and crew of the ship in which he sailed to throw the unbeliever overboard. This fate Lucian escaped, owing to some compunctious visitings which unnerved the Asiatic captain. Alexander died of natural causes at an advanced age, loaded with wealth and honours, and after his death coins were struck in his honour, a few of which are still extant. This is the apotheosis of quackery. The only moral reflection that meets the case is the immortal exclamation of Autolycus: "Ha! Ha! What a fool Honesty is! and Trust, his sworn brother, is a very simple gentleman!" As long as this remains true—and that will be as long as the human race lasts—it is to be feared that neither Royal Commissions nor laws will eradicate quackery, for its roots lie too deep and firm in the constitution of the human mind to be eradicated by such measures.

Medical historians tell us nothing of the general practitioner, and yet it is from the life of the general practitioner that one can gather what the practice of medicine really was. For this purpose old ledgers, account books, and notebooks are invaluable. In a recent issue of *La France Médicale* an account is given of an old Strassburg doctor of the eighteenth century founded on reminiscences left by him for the information of his family. Jean Jacques Doldé was born in 1717 on the frontier of Poland, although his family came originally from Alsace. His father combined in himself the avocations of surgeon, physician, apothecary, and bath man. In his shop young Doldé learnt surgery and got some knowledge of herbs, and in 1736 set up as a surgeon on his own account at Thorn. A few months later he removed to Dantzig whence he went to Stockholm; there he remained three years in the employment of a surgeon, at the same time acting as assistant to Dr. Nordenheim, Physician to the Queen. In 1740 he went to Riga and after a time to Königsberg where he practised as a surgeon and followed the courses of the Faculty of Medicine in the University. One of the professors took a fancy to him and sheltered him under his own roof; by means of his protection Doldé hoped to get himself admitted Doctor of Medicine. His benefactor, however, died, and not having money to continue his studies, he went back to Riga, and afterwards to St. Petersburg, where, thanks to the patronage of the German Embassy, Kau-Boerhaave, Physician to the Empress, and the surgeon Salzer, he was able not only to live but to pursue his studies. He was by nature a wanderer, and Simmerling, a fellow student with whom he had become intimate, taking it into his head one day to go to Strassburg to learn midwifery, induced Doldé to accompany him thither. This was in 1747. After a number of adventures they reached their destination. At Strassburg Doldé studied anatomy and operative surgery, as well as midwifery. In 1748 he went to Paris, where he worked for a few months under the physicians of the Hôtel-Dieu and the Charité, following at the same time the courses of Astruc and Winslow. He returned to Strassburg on foot, and studied all the winter. A Swiss friend then took him to Basel, where he finished his studies, and from that university in November, 1750, he obtained the coveted doctor's degree with a thesis on Colostrum. He returned to Strassburg and, while waiting for patients, continued to attend lectures. The Strassburg doctors, however, becoming jealous, cited him before the civil power for practising medicine without having acquired the right of citizenship. He had therefore to matriculate in the College of Medicine, and in 1755 was admitted to citizenship. At Strassburg he remained for the rest of his life. Though he had striven so doggedly to acquire knowledge, his life was one of struggle to the end. As women would not trust themselves in the hands of a single man, he married a poor girl, and it need hardly be said begat a large family. We see him moving from one house to another in the eager search for patients. His practice, such as it was, was acquired with much difficulty, and was always insufficient for the needs of his family. He says himself:

> One must have been a practitioner of Strassburg to know how sad and wretched is the practice of the medical profession in that town. At the New Year I used to ask myself with terror how the year would end, as I had no secure position, confidence in God being my sole possession. It is impossible for me to tell the cares which sometimes vexed my wife and myself when we went to bed at night. Suffice it to say that the Strassburg practitioner who has only his practice to live on has many hardships to endure, all the more that there is no harmony at Strassburg among the doctors, and that more than one of them would willingly part with one eye to make his brethren blind.

Doldé made no name, and added nothing to the sum of knowledge; he was simply an honest man, believing in God and struggling against the evils of life more by dint of hard work and patience than by brilliancy of endowment. Yet his life, though in a worldly sense unsuccessful, was not a failure. In twenty years he brought up ten children, of whom eight survived him. To the very end of his days he had to visit his patients in the old streets, climbing to the higher stories where dwelt the poor whom he relieved. He died in his 73rd year, on December 2nd, 1789.

We learn from the *Montreal Medical Journal* that there are no fewer than seven medical periodicals published in English and three in French in the Dominion of Canada, where the whole medical population does not exceed 7,000. Hence the influence of each is limited and local, and authors who wish to bring the fruits of their labours before the profession are obliged to seek for the means of doing so in the journals of Great Britain or of the United States. The Canadian Medical Association has recently adopted a new constitution, which embraces all the local and provincial medical societies. It is about to become a national body, and will, it is hoped, enter upon a wide field of usefulness in all matters pertaining

to the profession and the public health. It is felt that the transactions of such a body should be recorded, but at present there is no organ in existence which could adequately fulfil this function. Hence the Association has determined to create one for itself, and at the last meeting a Committee was appointed to report upon the feasibility of the project. This Committee is composed of Dr. J. F. Young and Dr. F. N. G. Starr (Toronto), Dr. Murray Maclaren (St. John), Dr. O. M. Jones (Vancouver), Dr. John McCrae and Dr. Andrew Macphail (Montreal), all of whom have had experience in the publication of medical journals; indeed, four of them are actually so engaged. Whether the scheme decided upon will be a fusion of all the existing journals, or whether two or three of them will combine, or whether the Association will found a new journal for its own purposes are questions that will doubtless receive the fullest consideration.

THE MIDWIVES ACT.

The Payment of Medical Men Summoned to Assist Midwives.

At an inquest on the body of a newly-born child, held by Mr. Troutbeck at the Wandsworth Town Hall last week, it appeared that the midwife who was in attendance, finding that the child began to turn blue about three hours after birth, gave the father a note to take to a doctor; the note was written on the form prescribed under the Midwives Act, and contained the statement, "Requires medical assistance on account of cyanosed baby." Two medical practitioners were applied to, but did not respond, and after one of these gentlemen, who was present at the inquest, had made a statement, and had replied to certain questions, the coroner summed up as follows: The case, he said, revealed a very undesirable condition of things. As they all knew, the Midwives Act was passed in order to ameliorate the conditions under which women were attended in their confinements, but, as might have been expected, all these Acts in their actual working were found to be accompanied by difficulties that had not been foreseen. Under the Midwives Act the midwife had no power to call in a doctor or pay the fee, nor was there any public fund out of which a fee could be paid, unless it was a Poor-law case. Practically it amounted to this, that a doctor might be called up and never be paid at all for his services. That was wrong. He knew there was a feeling that doctors were supposed to attend a case at any time, but they had to earn their living. They were not public servants, and they were entitled to their fee. He had not the slightest doubt that they would meet any effort made to end the difficulty. It was a serious difficulty, and one that ought to be considered, for he was afraid it was a difficulty that might frequently occur. The result might be that in many cases lives might be lost that might otherwise have been saved.

INDIAN SANITARY REPORTS.

The Punjab.

The report of the sanitary administration for 1905 includes a thorough review by the provincial government of the excellent report submitted by the Sanitary Commissioner, Lieutenant-Colonel C. J. Bamber, D.P.H., and the sanitary engineer, Mr. C. E. V. Goument, to which are appended the usual statistical tables. The early months of the year were cold and wet, the hot season unduly prolonged, and the monsoon rains scanty. The prices of food grains were higher than usual. The birth-rate was 44.4, an advance on that of 1904, and the death-rate exceeded it, being 47.5, the highest provincial rate of the year. Infantile mortality was 234 per 1,000 births. More diligent verification and prosecution are rendering registration more accurate. Malarial fevers, cholera, and small-pox were less intense than usual, and the mortality of the year would have been very moderate but for plague, which caused 334,897 deaths, or 16.65 per 1,000 of population. The aggregate was rather lower than that of 1904, and the Government considers that the events of the year furnish some faint grounds for hoping that a natural subsidence of the disease is within sight. Females died of plague in larger numbers than men, and infants and old people were relatively exempt. Large towns have been comparatively immune. Explanations are suggested for these circumstances on the rat theory. Evacuation, disinfection, and rat destruction are the measures chiefly resorted to for prevention, and the people are said to accept their value; 83,593 persons were inoculated without mishap, but the effects of the proceedings were not ascertained. Over 18,000 deaths were caused by the earthquake in Kangra. The record of sanitary work is good. The Sanitary Board met four times, and important schemes of water supply and drainage were considered and approved, grants-in-aid being with the sanction of Government made in many instances. A scheme of rewards for village sanitation has not been as successful as was expected. Useful public works tending to improve public health were constructed by private individuals, costing Rs.113,877. On the whole, the report indicates substantial progress.

MEDICAL NEWS.

An "At Home," to which members of the medical profession will be welcomed, is to be held at the Mental Nurses' Co-operation Rooms, 115, Edgware Road, on Wednesday, November 27th, from 4 p.m. to 7 p.m., in order to make the objects of the Co-operation better known.

At the annual meeting of the Pathological Society of Manchester on October 9th Dr. J. J. Cox was elected President for the coming year. The other principal officers appointed were: Drs. W. Milligan and R. T. Williamson, Vice-Presidents; Dr. A. Sellers, Treasurer; and Mr. C. Roberts, Secretary. Auditors and a committee of eight were also elected.

The Pharmaceutical Society of Great Britain will hold its first evening meeting for the session at 17, Bloomsbury Square, London, W.C., on Tuesday next, at 8 p.m. There will be a discussion on the *British Pharmaceutical Codex*, and recent additions to the museums and library will be on view. Medical friends of members and student-associates will be welcomed.

A Eugenic and Moral Education Society is to be formed at a meeting at Caxton Hall, Westminster, on Friday next, at 3 p.m., under the presidency of the Earl of Lytton. The objects of the society will be to impress upon parents and teachers the necessity of bringing up children in a pure and simple knowledge of the moral and physical laws which govern life, and to raise the standard of public opinion on eugenic and moral questions.

Since the reconstitution of the University of London the interest in the proceedings of Convocation has declined so much that on several occasions during the last year or two a sufficient number of members have not attended to permit business to be conducted. This happened on October 8th, and the chairman had to adjourn. The adjourned meeting will be held on Tuesday, November 19th, at 5.30 p.m.

Dr. D. J. Cunningham, Professor of Anatomy in the University of Edinburgh, presided over the dinner of the Edinburgh University Club of London last Monday, which was largely attended. Professor Cunningham, in proposing the toast of "Alma Mater," observed that the encouragement of original research was perhaps easier in new colleges and universities than in the old with their traditional methods; but he was glad to say that the output from Edinburgh, owing to the many young workers who had been enlisted, was very considerable. Dr. G. Ogilvie proposed the health of "The Chairman" in a humorous speech full of reminiscences of the University some thirty odd years ago.

Crocodiles and Sleeping Sickness.—Professor Koch, who has apparently now completed his local study of sleeping sickness, has been interviewed on his way home by a correspondent of the *Lokalanzeiger*. He related that he had spent his eighteen months in East Africa on one of the Sesse islands, in Lake Victoria Nyanza, with a sergeant of the German Army Medical Staff as his sole white companion. Throughout their stay there they had seen only three Europeans, two of them being medical men from Vienna, and a third an official of the German Government. Professor Koch had much to say about the special object of his journey, but the only novel point in his remarks concern the habits of the *Glossina palpalis*. He appears to have found reason to believe that its natural victim is the crocodile, and that something towards abolishing sleeping sickness might be done by destroying crocodiles or removing the bushes and undergrowths where they lurk on land. The *Glossina* gets between the plates covering the crocodile's skin, sucking the blood where the epidermis is comparatively thin.

British Medical Journal.

SATURDAY, NOVEMBER 9TH, 1907.

ANAEMIA AND ADDISON'S ANAEMIA.

ALTHOUGH true pernicious anaemia, Addison's anaemia, is a rare disease, we venture to assert that the report of the discussion on the subject in the Section of Pathology at the Annual Meeting this year, published in this issue of the JOURNAL, is deserving of the careful study of every medical man, and especially, perhaps, of those who are engaged in general practice. The disease itself is uncommon, though perhaps not so uncommon as is generally supposed, yet, to adopt the simile of Dr. William Hunter, who introduced the discussion, the clinical pathologists who set forth to map out the area properly belonging to this disease have on the way done much to elucidate the topography of other areas in the forest of anaemias.

Anaemia is one of the commonplaces of everyday practice, and cases are apt to be dealt with in a somewhat perfunctory manner by the exhibition of an iron mixture or pill. Dr. Hunter, attacking the subject first purely from the pathological side, has, by a combination of pathological with clinical observation through many patient and laborious years, succeeded in throwing into this dark forest an amount of light which not only illuminates the etiology and treatment of Addison's anaemia, but also makes more plain to us the essential nature of many other forms of anaemia. He has rendered a great service to clinical medicine by establishing on a firm basis the view that certain of the more severe forms of anaemia, including Addison's, are due to infective processes, and, therefore, to be treated not by the administration of haematinics, but by the removal of the septic or other infective conditions to which they are primarily due. For Dr. Hunter Addison's anaemia is a chronic febrile infective disease with characteristic symptoms and course. Addison's original conception, therefore, of the condition as a specific disorder distinguishable from all other forms of anaemia is vindicated, but we have now gone forward so far as to be able to assert that it is not a disease "without any recognizable cause whatever." It has been Dr. Hunter's particular merit to show that the septic processes in the mouth, stomach, and intestines, due to infection by staphylococci or streptococci, the latter being the more important, may lead to pronounced and severe forms of anaemia which can only be effectually treated when this view is accepted and acted upon. In addition to these pyogenic infections, he recognizes the occurrence of specific infections in the alimentary tract which produce anaemia of varying degree, either when they act alone, or, as is more frequently the case, when they are aided by a pyogenic infection which, by its powerful effect on the blood, paves the way for the specific process. Among these specific infections the most severe is Addison's "idiopathic anaemia," a definite specific disease, with a characteristic mode of origin, clinical features, lesions, and course. Its cause is to be found in a specific haemolytic infection, seated in the tongue, stomach, and intestine, producing definite lesions which include the gastritis and atrophy of the stomach first described by the late Dr. Samuel Fenwick, and the various lesions found in the mucosa of the intestine hitherto regarded either as accidental or as the result of the anaemia itself. Dr. Hunter states that these lesions are always to be found if sought for, and are of an infective character, but that they are difficult to find on account of the extreme bloodlessness of the patient at the time of death. He attaches special significance to the lesions presented by the tongue during life, the close observation of this glossitis affording most valuable diagnostic and prognostic information both as to the incidence of the disease and as to variations in its progress. These lesions on the tongue are identical in their original character, and in their later effects with those present in the mucosa of the stomach and intestine. As they can be observed and closely studied during life, and best of all in the earlier stages of the disease, when they are attended by inflammation, sometimes of a very severe character, they deserve the closest attention of all medical men. The pathological problem is thus greatly widened and simplified. Instead of being confined to points of technical interest—connected with the observation and interpretation of the blood and haemolytic changes, and the bone-marrow changes—it is now possible for every doctor to contribute observations regarding the character and incidence of glossitis in this disease, its relation to the haemolysis (lemon-colour jaundice, urobilinuria, etc.) and its relation to the other clinical symptoms—gastric and intestinal, febrile, nervous—which are far more characteristic of the disease than any individual blood change. Such observations on the part of doctors, if recorded, as it may be hoped they may be, will soon furnish the material which will enable special students of the disease to test how far the new interpretation put upon this hitherto overlooked and neglected condition of glossitis is justified.

The disease was regarded by its first English observers as "a very peculiar disease," a "very remarkable disease," and a "most mysterious form of disease," and Dr. Hunter confirms their clinical intuition, asserting that a fuller study of its pathology and clinical features, with all the advantages which modern methods afford, renders it possible to distinguish it from other forms of severe anaemia as sharply as typhoid fever is distinguished from other forms of continued fever or enteric disturbance. We have therefore moved very far from the position taken up by Biermer in 1871, and since maintained by German writers, that all causes of anaemia are, if severe enough, possible causes of this disease, which they maintained was not a disease at all, but a mere group of symptoms having many causes. The German observers, from Biermer, who invented the title "progressive pernicious anaemia," to Ehrlich and Schaumann, have fastened attention upon the blood changes, and they have endeavoured to force the clinical facts into a mould constructed from the blood observations. Dr. Hunter has once more successfully defended the doctrine—not infrequently, as we have ventured to assert, vindicated by British medicine in the past—that in forming a true conception of the pathology of a diseased condition we must bring into the picture all the facts, etiological, clinical, pathological, and therapeutical. When this is done, the idiopathic anaemia of Addison stands out as a distinct thing, and the note written by the late Sir William Gairdner four years ago, with all the facts before him from Addison's first paper, which he abstracted for the *Edinburgh Monthly Journal of Medical Science* in

1849, onward, will be read with peculiar interest. His commentary will be found illuminating, for it points to a habit of thought which is a common cause of confusion, and one which has characterized the discussion of the phenomena of this disease to an exceptional degree since the adoption of Biermer's term "progressive pernicious anaemia," as synonymous with Addison's "idiopathic anaemia."

The speakers who followed Dr. Hunter made valuable contributions to the subject, and we may call attention to the conclusions of Professors Muir and Lorrain Smith based on their study of the bone-marrow and blood changes respectively, leading them to the conclusion that real pernicious anaemia, that is to say Addison's anaemia, is an independent disorder to be distinguished from all other forms of anaemia. In connexion with Dr. Hunter's view, the importance of the observations of Dr. Boycott and Professor Ferguson regarding the anaemia associated with ankylostomiasis will not escape attention; that anaemia has often been spoken of as pernicious although, as Dr. Boycott shows, there are abundant points of distinction to be found in the results of the blood examination alone. Professor Ferguson recorded the new observation, the presence at the sites of attachment of the worms in the intestine of numerous septic foci, and emphasized the importance of this intestinal sepsis which confers upon the anaemia special characters closely simulating the idiopathic anaemia of Addison. These observations strongly corroborate Dr. Hunter's view of the importance of sepsis in the production of those severe anaemias which resemble but are to be clearly distinguished from Addisonian anaemia.

To the sufferer himself the matter of chief importance is the prognosis of his disease. To him the very name which has become current "progressive pernicious anaemia" is a cruelty, and fortunately the substitution of the term "Addison's anaemia" is not a mere piece of euphemy, but connotes an actual change in the way in which the disease is regarded and treated. Dr. Hunter in his opening remarks showed how the principles of treatment flowed naturally from the view of its etiology and pathology which he advocated, and illustrated the success which attends the application of treatment founded on these principles in the first attack of the disease, before the patient's powers of blood formation have been exhausted by previous attacks, by the cases he describes, extending now over seven years. In so doing he rightly insisted on the importance and the possibility of early diagnosis founded on careful observation of all the signs and symptoms, for the diagnosis must not rest solely on a consideration of the blood changes, but on the total group of clinical features; they are characteristic while the blood changes taken alone may easily mislead.

THE MEASUREMENT OF MENTAL FATIGUE.

The great importance of an accurate method for the measurement and mathematical expression of fatigue and the several directions in which such a method would be of value are so obvious that they hardly require pointing out. A few, however, may be mentioned. In normal subjects a reliable method would facilitate psychological research, for the results of every psycho-physical experiment are qualified and, until it can be estimated, must be vitiated by fatigue; and on the practical side an exact knowledge of the fatigue incurred during school tasks by different subjects at different times would be of the utmost value to pedagogical practice. In abnormal subjects the employment of the same method would undoubtedly furnish definite differential criteria in many cases, for example, as between the early stages of general paralysis and simple neurasthenia, and, in particular, between the traumatic neuroses and simulated illnesses, and would further be of use as a guide to treatment and prognosis.

Unfortunately, so numerous and involved are the components of the simplest-appearing mental process that no method so far devised can lay claim to give exact results. The aesthesiometrical method, introduced by Griesbach and employed since by many others, has been proved to show no invariable relation between the extent of sensibility and the degree of fatigue, and Mosso's ergograph—which, since its inventor demonstrated that the curves of muscular work were largely influenced by mental fatigue, has been used as a measurer of the latter—has been found to give results so complicated by other powerful influences that it is impossible to draw from them any definite conclusion for this purpose. In ergographic experiments it appears to be impossible to dissever and estimate the relative values of the central nervous and the muscular and peripheral factors, and it is even maintained by Mlle. Ioteyko in a noteworthy contribution[1] that the whole of the fatigue shown in ergographic curves is peripheral in origin. To avoid these difficulties Kraepelin introduced his method of measuring mental fatigue by the continuous addition of columns of units, thus reducing to a minimum the time required for the recognition, comprehension, and association of ideas, and making the muscular effort involved in writing a negligible quantity. Even this apparently simple process, however, is found to be exceedingly complex, as will appear from a perusal of the studies of Kraepelin and his pupils, published in German under the title of "The Work Curve" in a collected form in Wundt's *Festschrift-philosophische Studien*,[2] or of the exposition of this work in French by Dr. N. Vaschide in the *Revue de Psychiatrie*.[3]

Adopting Kraepelin's method, Dr. Wilhelm Specht of Tübingen University made careful experimental studies in healthy subjects and cases of traumatic neuroses, and published the result of his investigations in 1904,[4] and a full and excellent translation, by Dr. Thomas Johnstone, of Dr. Specht's extremely valuable paper appeared in the *Journal of Mental Science* for July, 1906, and July, 1907. As we have said, the method consists essentially in the continuous addition of numbers of one place for definite periods. By comparing the number of figures added each minute these amounts can be graphically represented in a chart—the amount of work done being recorded on the ordinate and the time periods on the abscissa—giving a work-curve whose fluctuations follow definite laws. Necessarily, as the work continues, the favourable results of practice and the unfavourable results of fatigue both increase and tend to affect the course of the curve in opposite directions, and, obviously, unless the effect of practice be known, the amount of fatigue cannot be calculated. Now, as the effects of practice are much more lasting than those of fatigue, the introduction of pauses in the course of the work should have a marked effect upon the output of work immediately following the pause. And this is found to be the case. In work periods of five minutes each,

[1] J. Ioteyko, Les Lois de l'Ergographie, étude Physiologique et Mathématique, *Ann. d'Electrobiol. et de Radiol.*, Nos. 3 to 5. 1905.
[2] Kraepelin, Die Arbeitscurve, Wundt's *Festschrift-philosophische Studien*, Bd. xix.
[3] N. Vaschide, La courbe du travail intellectuel d'après Kraepelin, *Rev. de Psychiat.*, May, 1905.
[4] W. Specht, Ueber klinische Ermüdungsmessungen, *Archiv. f. d. Gesamte Psychologie*, Bd. iii, Hft. 3, 1904.

separated by a five-minute pause, not only is the output in the first minute after the pause greater by amounts varying between 3.5 per cent. and 25.4 than that of the last minute before the pause, but it is almost invariably greater than that of the first minute of the first period. Assuming, then, that during the pause complete recovery from fatigue occurs, the gain of the first minute of the second period over the first minute of the first period might be taken as expressing the gain due to practice. This, however, would be incorrect. An analysis of all curves of healthy subjects shows a marked drop in the first period from the first minute to the second, and it has been ascertained that this fall is due not to the fatigue incurred by the work but to the failure of the powerful voluntary initial impulse (*Antrieb*) with which the subject starts off, and which rarely lasts more than one minute. This impulse must therefore be discounted, and for this reason the personal coefficient of practice of the subject is found by stating the increase of the first minute of the second period over the second minute of the first period as a percentage of the latter. This coefficient of practice is, of course, only an approximation to the truth, for, as we have said, this calculation assumes that recovery from fatigue is completed in the pause, and also that the first minute of the second period is free from impulse. For clinical purposes, however, it is sufficiently correct, for, as Dr. Specht points out, the object is less to make an accurate arithmetical determination of the personal liability to fatigue in each case than to obtain a standard of comparison by which to measure the work done by patients.

Using this "coefficient of practice" as a workable basis, the fatigue is estimated as follows: In each case two series of observations are made; the first series of periods of ten minutes interrupted by five-minute pauses between the fifth and sixth minutes, and the second series of ten minutes each without a pause. On the days without pauses the total work done in the second five minutes will show a decrease on that of the the first five minutes. The coefficient of practice being known from the days with pauses, a simple sum in proportion will show what total amount of work at the end of the second five minutes of the days without pauses might have been expected had it been exclusively influenced by practice, and the difference between this sum and the actual total accomplished will show to what extent the total output has been reduced by fatigue; the difference, expressed as a percentage of the work which might have been expected, being termed the "coefficient of fatigue."

Needless to say, the process is a good deal more complicated than appears from this brief description, the influence of voluntary impulse which appears as a rule at the beginning and towards the end of the work and of "momentum"—a kind of *vis inertiae*—being difficult of estimation. Nevertheless, and notwithstanding the criticisms of Z. Treves,[5] it appears fairly evident that this method is one which will afford a good deal of valuable information when used for comparative purposes, even if absolute value cannot be attached to the numerical results.

In the concluding portion of his work, the translation of which appeared in the *Journal of Mental Science* for July of this year, Dr. Specht gave the results obtained from the subjects of traumatic neuroses. Briefly, these showed that the patients' liability to fatigue was extraordinarily increased, that they had very little power of recovery, and that their capacity for work was very much reduced. On the other hand, their capacity for practice did not seemed to be much impaired, but the traces of practice disappeared with striking rapidity, their power of retaining practice being exceedingly small.

A further point of great importance requires mention. The traumatic neuroses are pre-eminently the sources of vexatious litigation, and where so much is frequently malingered, the question naturally arises as to how far the results of this method may be affected by intentional simulation. To decide this question, Dr. Specht carried out a series of experiments on the wilful simulation of abnormal fatigue. These experiments proved conclusively that it was impossible, even with an accurate knowledge of the laws which govern the course of the work, to simulate abnormal fatigue without betraying the intention by gross disproportion between the comparative values. Thus, not only is it possible to exclude simulation from the results, but the method in itself is a valuable means of unmasking a malingerer.

This method of Kraepelin's has been subjected to stringent criticism, notably by Z. Treves,[6] who has asserted, first, that Kraepelin's fatigue curve, a straight line descending rapidly to the abscissa, is at variance with all analogous curves recognized by physiology; and, secondly, that it is impossible to separate the effects of practice from those of fatigue, these factors being virtually but the two inseparable anabolic and katabolic phases of the same underlying phenomenon.

This latter objection, if it were true, would manifestly invalidate the whole deductions as to the amounts of fatigue shown by analysing these curves; but, in the face of the evidence as to the demonstrably different durations of the effects of fatigue and practice, it cannot be upheld, and by this method a most fruitful line of experimental study is opened up, not only as to the measurement of fatigue, but—and perhaps even more certainly—as a means of calculating variations in the power of voluntary attention. For this reason Dr. Johnstone's admirable translation of this paper will be of distinct service to workers in this country who have had no opportunity of consulting the original.

[5] Z. Treves, Contributo critico-sperimentale allo studio del fenomeni soggetivi di fatica nel lavoro volontario, *Rev. di Patol. Nerv. e. Ment.*, May, 1905.

[6] Loc. cit.

THE PROPOSED MEDICAL INSTITUTE AT SOUTH KENSINGTON.

THE election which is about to take place of a representative of the Medical Faculty on the Senate of the University of London is exciting much interest, and will be productive of a keen contest. The candidates, to take them in the order of their appearance in the lists, are Dr. E. H. Starling, Jodrell Professor of Physiology in University College; Dr. Norman Moore, Physician to St. Bartholomew's Hospital; and Mr. F. C. Wallis, Surgeon to Charing Cross Hospital. The interest excited is due to the fact that, as will be seen from the letters published elsewhere, a matter of principle, which will have an important influence on the future of medical education in London, is involved. It will be remembered that a scheme of concentration of preliminary and intermediate studies, in which most of the schools of the metropolis were to take part, was originally proposed soon after the reconstitution of the University had been carried into effect. The scheme was approved by the Medical Faculty; but later on several schools definitely announced that they intended to continue to teach the preliminary and intermediate subjects independently, and would therefore take no part in the proposed concentration. It is clear that

every school has a right to determine its own policy in this matter, and it is essential to a clear understanding of the present position to realize that the question of the concentration of the preliminary medical studies in the whole of London is dead; this being so, the further discussion of such a scheme is waste of time.

The real point before the Faculty at the present moment is whether the University should with the fund at its disposal build an institute for the teaching of the preliminary and intermediate subjects at South Kensington, at which accommodation would be provided for students from those schools which, in accordance with the original policy of the University, desire to give up, or have already given up, the independent teaching of these subjects. There can be no doubt, first, that the sum of money which has been collected was collected for this purpose; and, secondly, that there is a demand for such an institute. It therefore does not seem desirable that the University should make an attempt to obtain powers to enable it to use this money for an institution of a different character; it would, in fact, be something like a breach of faith not only with the donors but with the schools indicated. It is argued that as the amount so far subscribed is not sufficiently large to finance the more ambitious scheme, therefore a smaller scheme on the same lines should also be abandoned. The logic of this is not very obvious unless those who use this argument are prepared to prove that the fund is not sufficiently large to establish an institute, smaller indeed, but yet large enough to enable the university to fulfil its undertaking to those schools which accepted the proposal to give up the teaching of the preliminary and intermediate studies. That the fund is even at present large enough for this purpose seems to be proved by the fact that there are medical schools in London which have put up excellent laboratories for from £30,000 to £40,000; there can therefore be no doubt that, as Dr. Turney states in his letter, the £70,000 available would be sufficient to build and equip an institute of moderate but adequate size. This would be a reasonable way out of the present difficulty. Provided that the institute is not a large one, it would not interfere with those schools which desire to continue their elementary teaching, whilst it would satisfy the schools which do not, and put an end to the present controversy of which the profession is thoroughly tired.

The proposal for the establishment of an institute for higher teaching and research, which Dr. Waller puts forward in his letter published elsewhere in this issue, is admirable, but has only an indirect bearing on the question at issue. The public appeal made on December 18th, 1903, by the Chancellor and other officers of the university, was for gifts to render possible the establishment of an institute of medical science for the teaching of physics, chemistry, biology, anatomy, and physiology; we do not understand, therefore, how Dr. Waller comes to speak of provision for research as "the best portion" of the scheme. The scheme which he has in mind cannot be that contained in the appeal in response to which the money already collected was subscribed. Dr. Norman Moore in his address says that a revision of the medical curriculum must soon take place, since it is clear that at present insufficient time is left for clinical work, and that the relations of the preliminary and intermediate studies to medical observation and to medical practice require reconsideration. This is an opinion which we suppose every one will endorse, but he goes on to argue that the endowment of professors connected with an institute at South Kensington would tend to maintain the present proportions of the several subjects. Why this effect would follow Dr. Moore does not state, though the implication appears to be that the establishment of a new institute would create new vested interests; but is this so? Would it not rather have the opposite effect: would it not tend at once to diminish the number of independent schools teaching these subjects; and sooner or later, and probably sooner rather than later, diminish the number of teachers of these subjects? At the same time it may be fairly anticipated that the teaching and the facilities for teaching would be improved and increased, and that therefore students under these better conditions would gain the necessary minimum of knowledge in a shorter time.

THE MEDICAL INSPECTION OF SECONDARY SCHOOLS AND TRAINING COLLEGES.

It will be seen by the report of the medical officer to the London Education Committee just issued that public opinion has not been aroused one moment too soon with regard to the necessity for the systematic teaching of hygiene in training colleges and other institutions where students are trained to become teachers. Nothing is more notable in the report than the stress laid by Dr. Kerr on the importance of introducing hygiene into the school curriculum. For a long time this has been realized by the Education Committee of the London County Council, which has helped in no small measure by giving the preference, when selecting teachers, to those who have passed in hygiene. It has also established courses of lectures on hygiene by doctors, with practical demonstrations by the instructors in physical exercises, it having been decided to modify the scheme of teaching for the examinations in theory and practice of physical exercises. Here again the London Education Committee evidently means to force teachers gently but firmly to attend these lectures, for we observe that Dr. Kerr says: "As there are many opportunities open to "teachers of obtaining instruction in hygiene, attend-"ance at the lectures has not been made compulsory, "or a necessary qualification for admission to the "examinations. A word of warning should therefore "be given. The lectures which are to be given are very "simple, but quite out of the usual line of the ele-"mentary physiology book or introduction to hygiene, "and so specialized on points concerning school "hygiene and the knowledge that it is necessary "teachers should have, that there is very little hope "of any one doing even a fair paper who has not "attended these lectures, the material of which cannot "be gathered from books alone." The syllabus of these lectures is that used ten years ago for lectures to teachers in Bradford, which was since been slightly abbreviated, modified, and approved by a Committee of the Incorporated Society of Medical Officers of Health as suitable for medical men who may be required to lecture to teachers. In our opinion this idea of uniformity of teaching is one of the essentials of success. Whether a series of twelve to fourteen lectures from a syllabus ten years old "slightly modified" can embody a wide enough aspect of hygiene is another matter. It may serve better for meeting the case of existing teachers than certificates obtained from South Kensington or the Sanitary Institute; but when hygiene is made a compulsory branch of study for students in training colleges they will have to be taught to look upon the subject in a broad-minded way, understanding that a wide knowledge of hygiene means vastly more than mere physical improvement,

because with this physical regeneration is closely bound up moral improvement, resulting in such qualities as self-respect, humanity, orderliness, duty to one's neighbours, and so on. Every praise is due to the London Education Committee for dealing with the difficult question of existing teachers as regards hygiene. The conditions found among students in the Training Colleges are, as will be seen from the article on this part of Dr. Kerr's report published at p. 1353, most disquieting; everything points to the conclusion that medical inspection will have to be carried out hand in hand with hygiene in these Colleges as is done so admirably in Bulgaria. At present the teachers of elementary schools, drawn as they are from the elementary school class, and emerging from the elementary schools, are as sickly and unfit as the children they teach. This tends to unhealthy-toned schools, and if a large proportion of the teachers and children are ailing the best work cannot be produced. Under the system in Bulgaria of daily medical inspection of the students, the unhealthy are singled out for treatment, while less work is expected of those who are temporarily debilitated. The consequence is that by the end of the training course men and women sound in mind and body are turned out to teach in the schools and give the classes they are in charge of a healthy tone. It is melancholy reading in Dr. Kerr's report to see that of 2,052 candidates for junior scholarships, 712 were referred back or absolutely rejected on medical grounds, proving as it does that the children's brains are being exploited at the expense of their health.

ALCOHOLISM AND HOBNAIL LIVER.

THE discussion which has been aroused as to the relation of hobnail liver to alcohol was apparently started by the too dogmatic statement of a so-called pathological expert, his evidence being taken to imply that a child whose death was being inquired into had been permitted to take excessive quantities of alcohol by its parents. More recently, at the inquest which followed the terrible railway accident at Shrewsbury, a medical witness was reported as expressing an opinion upon the sobriety of the engine driver from the *post-mortem* appearances of the liver. Such views have naturally led to the protests which we have published from Dr. H. B. Donkin and others. As a standard authority on naked-eye *post-mortem* appearances, we may quote Dr. Johannes Orth's *Compend of Diagnosis in Pathological Anatomy*, a translation of which was published in English in 1878 Dr. Orth wrote: "The "most common cause of this form of interstitial "hepatitis, which extends uniformly over the whole "organ, is usually considered to be the intemperate use "of alcohol (gin-drinkers' liver). This is not necessary. "Most drunkards do not have a cirrhotic, but a fatty, "liver, and many persons with cirrhosis are not in the "habit of dram drinking." Dr. Hebb's letter, published in this issue, expresses what is, we believe, the general experience of pathologists on this question, but Dr. Branthwaite, and incidentally Dr. Hebb, raise another point of great interest and importance. Although alcohol may not be the exclusive cause of cirrhosis of the liver, it is generally believed to be at least its most common cause. The directness of this relation is challenged by Dr. Branthwaite, who states that during his experience, which has brought him into intimate contact with something like 8,000 habitual drunkards, he has never met with a single case of cirrhosis of the liver or seen a case of haematemesis apart from two due to stomach lesion, or been called upon to treat hepatic dropsy. Dr. Mott and Mr. Bevan Lewis have told us that in asylums, where all parties are agreed that a more or less considerable percentage of the inmates have been intemperate, cirrhotic livers are seldom seen. It is true that it is possible to account for the absence of cirrhosis of the liver from asylum *post-mortem* rooms by assuming that persons predisposed to mental instability become insane long before the abuse of alcohol has had time to set up interstitial hepatitis, but such an explanation does not fit the facts brought forward by Dr. Branthwaite. His statement, perhaps, does not prove that cirrhosis of the liver does not occur among inebriates, as it merely affirms the absence of symptoms with which cirrhosis of the liver is commonly associated; Dr. Branthwaite's connexion with the individuals who have passed through his hands was, we suppose, more or less transitory, and cirrhosis of the liver may be for a long time latent. Mr. Marshall suggests that alcohol may only give rise to cirrhosis when it is combined with syphilis. Those forms of hepatitis which are distinctly related to syphilis are so well known, and have such characteristic naked-eye and microscopical appearances, that there ought to be no risk of confounding them with the type to which alcoholic cirrhosis belongs; but it is possible that there may be a parasyphilitic condition which may favour the occurrence of interstitial inflammation in the liver, as appears to happen in the spinal cord. But such speculations are very vague, and sadly need evidence to support them. Marshall's hypothesis is indeed only limiting to a single disease the theories of Scagliosi and Ramond, by which cirrhosis is attributed to a combination of alcohol and bacterial poisons, alcohol being supposed to render lesions induced in the liver by the poisons of specific infections persistent. Another theory advanced to explain the want of direct connexion between alcohol and cirrhosis is that gastric or gastro-intestinal catarrh is the necessary link, certain poisons being produced as the result of such inflammations, which are carried to the liver and determine hepatitis. A certain amount of support to these theories has been obtained by experiments on animals.

THE TREATMENT OF LARYNGEAL TUBERCULOSIS

A. JURASZ,[1] in a paper on this subject, remarks that primary disease of the larynx is extremely rare, but it is a complication of about 30 per cent. of all cases of pulmonary tuberculosis. The prophylaxis, as far as the laryngeal condition is concerned, depends on whether the complication arises by direct infection from the tuberculous sputum adhering to the walls of the larynx or through the blood or lymph vessels. In the latter case a result can only be achieved by curing the pulmonary disease, and thus removing the source of infection. Direct infection is more common; the larynx can be protected by dissolving the tenacious sputum by means of alkaline inhalations and expectorants, and by disinfecting the secretion in the respiratory tract, chiefly by antiseptic gaseous or volatile inhalations, as sodium phenol-propiolate, balsam of Peru, oil of turpentine, or menthol. In the prevention and treatment of laryngeal tuberculosis he places rest first. The patient is only to be allowed to whisper, encouraged to suppress his cough as much as possible, and to avoid all conditions which irritate the larynx. The diet must be regulated, and hard, sharp, and solid food stuffs should not be taken. During the first stage of the disease there is thickening, limited or diffuse, of the mucous membrane with or without some excoriation of the epithelium. No energetic local treatment should be undertaken in this stage, but antiseptic inhalations and insufflations of boric acid, iodol, orthoform, europhen and pyoctanin do good while astringent substances generally do harm. Much harm is often done by painting with lactic acid or by applying caustics. When the infiltration is more extensive and the posterior wall of the larynx and interarytenoid fold are thickened and projecting, the best treatment is to curette all the

[1] *Deut. med. Woch.*, June 4th, 1907.

affected tissue and to apply a strong solution of lactic acid (from 30 to 80 per cent.) to the raw surface. Not infrequently, although the wound heals up under a scab, a recurrence takes place and the procedure has to be repeated. The galvano-cautery may also be used. The modern treatment by sunlight is said to yield good results, and the same is claimed for Bier's passive hyperaemia. Ulcerative processes may be dealt with by means of the various inhalations and insufflations mentioned above, or when they prove obstinate or extensive, by removal with curette or galvano-cautery. The removal of the affected parts is sometimes the simplest and most rapid way of easing the pain; in other cases the application of Bier's hyperaemia acts completely and rapidly. Local anaesthetics may be applied, and among these he mentions morphine, cocaine, novocain, and alypin. For laryngeal dyspnoea there is no doubt that tracheotomy is by far the best mode of treatment. The operation, by affording rest to the affected parts, often acts beneficially on the process. It may be that in future tracheotomy will be employed more frequently than it is at present.

YAWS AND SYPHILIS.

De Beurmann and Gougerat[1] argue that although yaws and syphilis resemble one another in that they are both contagious and inoculable and are due to specific causes, yet they are two separate and distinct diseases. They point out that the geographical distribution is different. Syphilis exists almost throughout the world inhabited by man; yaws is confined to the tropics and neighbourhood in Asia, Africa, Oceania, the Antilles, and in the hot parts of America. Further, yaws may disappear from a country and syphilis remain, as has happened in British Guiana. Both syphilis and yaws are contagious and inoculable, and no race of mankind is immune to them, but their mode of origin is somewhat different. Yaws, unlike syphilis, is not generally of venereal origin. Yaws attacks especially children, syphilis adults. Yaws, like syphilis, cannot be inoculated through an intact epidermis, but the slightest abrasion is sufficient to allow of inoculation in both diseases. Yaws appears to be more contagious than syphilis, and may become endemic, and give rise to epidemic outbursts. Yaws is always acquired, and when occurring in the newborn has never shown itself before the twentieth or thirtieth day after birth, as this period is necessary for the incubation of the disease. Another difference between these two affections is that yaws is more readily conveyed from one person to another by an intermediary than is syphilis. The incubation period of yaws, unlike that of syphilis, is variable. In syphilis the seat of infection is marked by the appearance of a primary chancre; in yaws such a primary sore is not constant, and when present is more commonly found on the foot, arm, or leg, than on those parts commonly involved by a syphilitic chancre. The initial lesion of yaws does not differ much from the lesions which appear later; in syphilis the primary chancre is quite different in character to secondary and tertiary manifestations. The primary lesion of yaws is like a hard boil surmounted by a crust, under which ulceration occurs, granulations projecting like a cauliflower; in some cases this primary lesion persists throughout the course of the disease. The secondary stage in both yaws and syphilis is announced by the occurrence of general symptoms; in syphilis these may be, however, very slight, and even pass unnoticed; in yaws they are usually marked, and the patient is troubled with a pronounced malaise and by rheumatic pains; a further distinction between syphilis and yaws at this period is that in the latter when the general symptoms of the secondary stage have set in a branny desquamation of the skin occurs; this does not occur in syphilis. The secondary eruption of yaws is different from that of syphilis, and consists of a small conical elevation surrounded at its base by a ring of erythematous skin and surmounted by a yellowish subepidermic nodule formed of caseous material; this nodule increases in size for fifteen or twenty-five days, then remains stationary for some weeks, and gradually resolves, leaving behind a pigmentation, which disappears slowly. Sometimes, but rarely, the nodules ulcerate, and leave cicatrices identical with the scars resulting from vaccination. As regards seat of eruption, in yaws any part of the body may be affected, but the seats of election are the parts around the natural orifices, the genital region, parts which are uncovered and exposed to injury, especially the limbs and feet. On the trunk and limbs the eruption affects especially the flexures of the skin—the axilla, point of elbow, popliteal space, and groin; on the hairy skin it is rarely found, but is common enough on the face and neck. Further differences between syphilis and yaws are that in the latter the secondary eruption is monomorphic, there is no alopecia, no mucous lesions and no iritis, and glandular enlargement is not always present; further, in yaws visceral lesions do not occur. In yaws each cutaneous eruption is of the same character as the first, and is accompanied usually by general symptoms, such as slight fever and rheumatic pains; in syphilis general symptoms do not accompany each outbreak of eruption. Yaws gives rise to no lesions which are analogous to the gummata of syphilis. Owing to the absence of visceral and of cerebro-spinal lesions, the prognosis of yaws is much less grave than that of syphilis, its duration is shorter, the recurrence of symptoms less frequent, and its termination generally favourable. The death of a patient affected with yaws is almost always due to an intercurrent malady. Mercury usually, but not always, proves effectual in the treatment of yaws; and postassium iodide is also of great benefit. According to Manson, a general tonic treatment by iron, arsenic, and quinine is most important in the treatment of yaws. Histologically, the lesions of syphilis and yaws show considerable difference. In the former they display an infinite variety in structure; in yaws the lesion is always papillomatous, with marked keratinization, enormous elongation of the papillae, an infiltration which is much less dense than occurs in syphilitic lesions, a more inflammatory reaction, and an absence of cellular degeneration. As a definite proof of the duality of syphilis and yaws, the authors mention the fact that syphilis has been successfully inoculated on a patient afflicted with yaws. Both syphilis and yaws are the result of infection with spirochaetes—in the former with the *Spirochaeta pallida* of Schaudinn, and in the latter with the *Spirochaeta pallidula* of Castellani. The spirochaete of yaws is excessively thin with thready ends, and varies in length from 7 to 20 μ; according to Blanchard, it possesses no flagella. It reacts to staining reagents in the same way as the spirochaete of syphilis; it is found in the papules and in the enlarged lymphatic glands, but is not found in the urine, the blood, or the cerebro-spinal fluid. It cannot be cultivated. Microscopically, however, it is quite impossible to distinguish the *Spirochaeta pallidula* from the *Spirochaeta pallida*.

[1] *Revue de Médecine*, May 10th, 1907.

PUBLIC VACCINATORS' FEES.

In various parts of the country difficulties have arisen in arriving at an agreement as to the adjustment of the fees for vaccination between Boards of Guardians and their public vaccinators. The very low minimum fixed by the Local Government Board has, in many instances, been taken as a reasonable standard, and in

rural and scattered districts much hardship will thus be inflicted. In those unions where the contracts have not been signed the matter is now in the hands of the Local Government Board, which reserved to itself the right to "fix" the fees in all cases where an agreement had not been arrived at before October 1st. In all such cases the public vaccinators should at once make sure that the special difficulties of their cases and the points which they believe have not been sufficiently considered by their Boards shall be properly placed before the Local Government Board. Reports of recent meetings of Boards of Guardians in the press make it clear that remarkable notions exist in the minds of many members of these Boards on the subject of the remuneration of medical men. An example of this appears in the *Tavistock Gazette* of October 18th. In this issue the Chairman of the Board of Guardians is reported to have said that "by-and-by the two "bodies—that Board and the Rural District Council— "should combine and that they should have one officer "for carrying out the two sets of duties. . . ." If this appointment was "properly advertised" the "rising "members of the profession would apply in such num- "bers that their only difficulty would be to select a "good man." He believed that they "would save "several hundreds a year and pay a man well." It appears that the Tavistock Union covers an area extending over 248 square miles and contains twenty-five parishes. The fees paid to public vaccinators, of whom there are eight in the Union, now amount to £190 a year. If the £70 now paid as salary to the medical officer of health, whom the chairman proposes to displace, be added to this sum, there is a total of £260, out of which "several hundreds a year" can be saved. It cannot be assumed for a moment that any contribution towards this saving could be squeezed from the payments at present made for Poor-law work to the district medical officers. Commenting on this scheme, the *Tavistock Gazette* of the same date suggests that this economic scheme is a "sensible "remedy," and that the Guardians and Rural District Council should "import some rising members of the "profession into the district" if the present officers decline the new tariff. Under these circumstances it is not surprising that the public vaccinators of the Tavistock Union have been unable to agree with their Board on the question of rumuneration. Rising members of the medical profession will no doubt be waiting impatiently for the decision of the Local Government Board, by whom the fees will now be fixed, so that in the event of such decision not giving satisfaction to the disaffected public vaccinators they can make a rush for this attractive sphere of labour.

THE DANGERS OF FLANNELETTE.

A REPORT recently issued by the Manchester and Salford Sanitary Association contains an interesting account of an inquiry with regard to the inflammability of flannelette, which fabric, it is to be remembered, differs from ordinary calico or cloth only in having a nap raised upon it by a special treatment. In the performance of the experiments detailed much ingenuity seems to have been exercised by Mr. W. Thompson, F.I.C., in endeavouring to determine precisely the flammability of the material as produced by different makers and in varying condition as regards newness, finish, weight, and thickness. Disregarding these points, there are certain outstanding conclusions which apparently may be drawn from the report as regards flannelette of all ordinary characters. The first of these is that there is a great difference in the inflammability of flannelette when warm and when cold. In other words, flannelette which is hot and dry catches fire much more quickly than the same fabric under ordinary circumstances. This is of importance, because it is so often by standing to warm themselves in front of the fireplace that children get their nightdresses alight. A second point is that a distinction must be drawn between the nap of flannelette and the essential fabric; the nap burns with extreme readiness, but the flame goes out of its own accord without affecting the fabric itself in any way. Such burning is therefore practically harmless, and when accidental might serve to warn the wearer of the danger run. In this respect, therefore, flannelette might seem to have an advantage over calico, but it is to be remembered that worn flannelette soon loses its nap, and after a short time is on a par with ordinary calico. Than the latter, flannelette burns somewhat less readily, though in either case the actual time required to set the fabric alight seems to be rather longer than might have been expected. From three to five seconds of actual contact with a flame is necessary. Once alight, however, the flame spreads rapidly, an ordinary piece of flannelette, when previously dried and heated, burning horizontally from the centre of a 10 in. circle to the circumference in between 30 and 40 seconds. The report as a whole is somewhat unhappily drafted, for it might carelessly be read as giving a clean bill of health to flannelette, and as proving that the labour of those who, in common with the British Medical Association, are endeavouring to place its use on a sound basis was one of supererogation. This, however, is far from being the case; the dangers of flannelette, evidenced as they are by many hundred inquests on children, are beyond dispute. Their source lies in the very virtues of the fabric themselves. When comparatively new it protects the wearer from cold to a degree comparable with flannel, while it has the advantage of not shrinking, and of being much cheaper. To the housewife of the poorer classes it is, therefore, a valuable material, and it has been proved that by proper treatment the fabric can be rendered uninflammable without either altering its appearance, its essential nature and utility, or increasing its cost to more than a nominal degree.

AVERAGE FEE OF A POOR-LAW MEDICAL OFFICER.

SINCE the publication of an annotation under the above heading in a recent issue we have received communications from several correspondents which go to show that Dr. Percy Rose was unfortunately incorrect in supposing that his average rate of payment for each case was less than the amount usually allowed for such work. One of our correspondents has recently applied for an increase of his salary of £100, pointing out that at present he receives an average fee of "3d. per bottle of "medicine dispensed, leaving nothing for visits or "clerical work." Our correspondent appears to have thought it quite useless to specify professional skill as something worthy of recognition. This application was refused on the ground that "the Finance Committee "looked on the appointment as a general one in- "cluding vaccination." In another case three medical officers made application for increases of salary. One of these was granted an increase from £31 to £40. Both the other applications were refused, although our correspondent showed that in return for £100 he had 5,600 consultations, and dispensed at his own expense 6,000 bottles of medicine a year. One member of this Board of Guardians did venture to express the opinion that 4d. was an inadequate fee for a professional man, but the majority agreed with a member who thought £100 a year was "a nice nest egg for any one." In this case, also, the vaccination appointment was used as a lever to compel men to undertake the work of the parish doctor for utterly unfair and inadequate rates

of remuneration. This is a method of sweating the profession which is far too popular with Boards of Guardians throughout the country, and if the profession stands to lose as a result of the recent legislation concerning vaccination, it behoves it to see that at least the Boards are compelled to pay reasonable rates for services rendered in other directions.

THE SOMALILAND PROTECTORATE.

The Somaliland Protectorate is peculiar among the many British oversea possessions in showing a climate with a very high mean temperature (with a shade maximum of 114° F.) and a rainfall of about 7 in. only, while in summer the coast becomes a true desert. This dry condition of the climate, according to the Colonial Office report on the country, is the chief factor in the good sanitary state of the Protectorate, and checks any serious outbreak of disease. Nevertheless, in spite of the extraordinary heat and dryness, the spread of malaria reported at the end of the previous year in March, 1906, has been followed by still further increase; and while there were only 9 cases in 1904-5, 117 occurred in the following year, and 539 in the present. The sources of origin were persons arriving from East Africa and Burmah. No natural breeding grounds for mosquitos exist, and there should be no malaria if only rudimentary precautions as to drainage, etc., were adopted; but the matter is serious unless the work in connexion with the removal of the surface breeding grounds is taken in hand. A considerable amount of care is necessary to prevent the importation of infectious diseases, especially from the rice ports of India and the date-exporting centres along the Persian Gulf. The Somalis absolutely disregard disease, and their universal practice of travelling to a fresh locality when attacked by illness adds greatly to the chance of spreading epidemics. Fortunately, there have been no cases of plague. It is worthy of note that, in spite of the tremendous heats of summer, sunstroke is practically unknown. Berbera is the only town with a water service, and here there are a general hospital, an isolation hospital, and a quarantine station. The population varies enormously; there are usually only about 3,000 to 4,000 Somalis living there in the summer, but in winter the population rises to some 30,000.

INFLUENZA AND CHILDBED.

This grave subject has been discussed by several eminent French obstetricians at the reading before the Obstetrical and Gynaecological Society of Paris of a memoir on the relation of influenza to inflammatory complications of the puerperium. The author, Dr. Wallich,[1] has found that, when influenza is severe, diagnosis from puerperal septicaemia and mammary lymphangitis is relatively easy. On the other hand, the advent of a mild attack after labour may puzzle and worry the doctor, though in such a case the too-familiar evil clinical symptoms, heralding childbed fever, will be wanting. It is when infection occurs about the third or fourth day, and when at the same time none of the parties concerned in the case know of any source of infection, that diagnosis becomes difficult. Slight cough and feverishness are characteristic, but the cough may be almost absent in a mild seizure. The temperature, he finds, is a bad guide, for high curves, such as are so frequent in puerperal septicaemia, are not rare in influenza during the puerperium, but Wallich has noted very sharp rises and falls, recalling the temperature chart of a typical case of inflamed breast. The pulse, however, seems rarely if ever so unfavourably modified as in an average case of puerperal sepsis, where it becomes both quick and weak before the rise of temperature, and in instances in which the patient recovers it remains quick and weak for some time after the fever has passed off. In influenza during the puerperium the frequency of the pulse does not increase to an alarming extent. Dr. Champetier de Ribes agreed with Dr. Wallich as to the diagnostic value of this negative symptom, and Professor Pinard thought that a study of the pulse in any puerperal complication was most important, as by its character the gravity of infection could be appreciated. Professor Doléris differed to a certain degree from Dr. Wallich. The latter had put all his cases on quinine, a drug which makes the pulse slower, and Doléris had found that there were several clinical features by which undoubted cases of influenza could be distinguished from puerperal sepsis without any special reliance on the pulse. Dr. Lepage considered that the character of the pulse concerned prognosis rather than diagnosis. Dr. Bouffe de Saint-Blaise held views still more opposed to those of Wallich. He had observed important variations in the pulse in cases of influenza independent of childbed, and had also noted that in the milder forms of puerperal infection the pulse was very little accelerated. This discussion on the pulse was highly instructive. The obstetrician and surgeon are already aware that the pulse is always more modified in sepsis and in peritonitis of any type than in parenchymatous inflammations such as parametritis and stitch-hole abscess. Wallich did not consider that weaning was necessary when a patient suffered from influenza in the puerperium, yet he admitted that one infant suffered from multiple abscesses. His treatment—diet, quinine, and purgatives—never seemed to interfere with the secretion of milk.

[1] Grippe et suite des couches. *Annales de Gynéc. et d'Obstét.*, October, 1907, p. 616.

The King has granted to Sir Frederick Treves, Bart., Serjeant-Surgeon, Thatched House Lodge as a residence. The house is one of the three lodges in Richmond Park.

The foundation of the Royal Society of Medicine will be celebrated by an inaugural dinner at the Hotel Cecil, London, on Tuesday, December 3rd, at 7.30 p.m.

In the title of Sir Felix Semon's address at Manchester the word "medical" was accidentally omitted by the copyist, and the omission was not observed in the proof; the title should have been, "English and German Medical Education: a Parallel."

The Fitz-Patrick lectures before the Royal College of Physicians of London, announced to be given by Dr. Pye-Smith on November 7th and 12th, have been unavoidably withdrawn; they will be replaced by two lectures on contributions from history and literature to the study of precocity in children, to be given by Dr. Leonard Guthrie on December 3rd and 5th at 5 p.m.

The anniversary meeting of the Royal Society will be held, according to custom, on St. Andrew's Day, November 30th. The Council will propose that Professor John Rose Bradford, M.D., shall be elected foreign secretary; among the members of the Council proposed are Professor J. Cossar Ewart, Professor David Ferrier, and Dr. A. D. Waller. The Buchanan medal has been awarded to Mr. W. H. Power, C.B., F.R.S., Principal Medical Officer to the Local Government Board in England, for his services to sanitary science.

Bristol.

THE ROYAL INFIRMARY.

DURING the present week a manifesto has been issued by considerably over 200 general practitioners of the city and neighbourhood to the Governors of the Bristol Royal Infirmary. It states that the signatories view with dismay the unfortunate difference which has arisen and which has been intensified by the adoption of the rule at a small meeting of Governors on September 24th, points out that the question the Governors are asked to decide is whether members of the staff are to be "limited, trammelled, and restrained" in the practice and study of the details of their work by rules to which they unanimously object, or shall work under rules which they themselves help to formulate and agree to accept. To show that the past action of the staff has not adversely affected the institution, a passage from a speech of the President delivered on February 5th of this year is quoted:

> Changes are unfortunately always unavoidable in such a large institution. Suffice it to say that none of our older friends have left us, they have simply been elected to consultant positions; whilst the younger generation has fully justified the confidence of the Committee, and are certainly fully maintaining the very high repuation which our staff has always held in the medical world. Whilst I am referring to our medical staff, I desire to again express the appreciation of their labours. I feel assured I rightly interpret your wishes as Governors in giving unstinted thanks to all these gentlemen. When you remember that on our staff there are no less than thirty-one gentlemen occupying in many instances distinguished and in all cases important positions in the medical world who are giving their services absolutely free, you will realize the large personal sacrifices which must necessarily be involved.

The signatories ask, if this was the opinion of the President and Governors in February, why is the proposed restriction so arbitrarily and so insistently thrust on them now? Both the Committee and the staff, the manifesto points out, are volunteer workers in the cause of humanity, and neither is justified in an attempt to overrule the other, and it cannot be expected that the staff, as liberal, independent, and highly-educated men, can do otherwise than resist such an attempt. It has been made clear that the staff are not adverse to reasonable limitations, and no difficulty would have occurred had the discussion been conducted as one between parties on equal terms.

> The reputation of your infirmary has always stood high in the medical history of this country, and a disruption such as is now threatened cannot but be disastrous to this ancient reputation.
>
> Hitherto we have had entire and complete confidence in the skill and honour of the honorary and consulting staff of the Royal Infirmary when trusting to them the affairs of our patients; but even if their places can be filled by others, is it to be expected that we can put the same reliance in members of the profession whose skill as well as character is to us an unknown quantity? or that, accepting their appointments under such circumstances, we should meet them in consultation or recognize them in any professonal way?

The manifesto concludes with a request that the Governors will attend the meeting when called and vote against the rule in its entirety.

One word of comment may be made on the quotation from the President's speech. He refers to the staff having "justified the confidence of the Committee." It cannot too clearly be set forth that the staff is not responsible to the Committee, and to prove this the following rule may be cited:

> The continuance of the members of the honorary medical and surgical staff in their respective offices shall depend on the proper and efficient discharge of their several duties, of which the Governors shall be the judges.

This clearly defines the obligation of the staff and the Governors, so should any member of the staff neglect his duties, it is the Governors who should call him to order, not the Committee. Both the Committee and staff are appointed by the Governors, each for specific duties, and each is responsible to those who appointed it.

The large number of names appended to the manifesto is significant, and clearly proves that the action of the staff is supported by the medical men of Bristol and the neighbourhood. If the Committee had received a mandate from the Governors to limit the holding of dual appointments, the matter would be on another footing; but no such mandate has ever been given, and in all probability a large number, if not the majority of the Governors, do not wish to interfere with the working of the institution, which so far has been harmonious and peaceful. It seems as if the Committee desired to take the power of control into their own hands from the Governors, who have in the past had a voice in such matters.

There is no need for any new rule, and the question would never have been raised had not the Handel Cossham Hospital been built. There is no instance on record of any physician or surgeon of the infirmary seeking a post at the general hospital, so the rule appears to have been made with a view of preventing any one of the infirmary staff serving on that of the Handel Cossham Hospital. This is a conclusion which is forced upon the observer by the sequence of events.

The good name and reputation of a hospital depend far less on the efficiency or business capacity of its Committee than on the talent and skill of the staff. Look where one likes, in London or the provinces, who knows a hospital for good or bad by its Committee? It is the work of the honorary physicians and surgeons that makes the good name of the institution, and the reputation of the Bristol hospitals has in the past been made by such men as Budd, Prichard, Swayne, Long Fox, Beddoe, Symmonds, Greig Smith, and Markham Skerritt.

On the question of the practice elsewhere, in London or the provinces, an advertisement of a recent publication which gives the names of its contributors is enlightening. Out of a large number of authors, ninety of them hold more than one hospital appointment, and one as many as three. The towns in which these are held are London, Edinburgh, Manchester, Liverpool, Glasgow, Birmingham, Dublin, Aberdeen, Belfast, and Newcastle. The medical men connected with the Bristol Infirmary are not allowed to exercise the same privileges as their brethren in other towns.

Manchester and Salford.

POLLUTION OF MANCHESTER AIR.

IN face of the fact that at least one-third of the deaths in Manchester are from diseases of the respiratory organs, anything relating to the polluting matters in the atmosphere is of importance. At the recent Gas Exhibition in Manchester, Mr. R. H. Clayton, the President of the Chemical Club, gave some remarkable analyses of the smoke emitted from domestic chimneys compared with that from factory chimneys. To those who have not studied the question the difference is somewhat surprising. The special characteristic of domestic smoke is that it is loaded with tarry oils and ammonia. These occur only in very small proportion in factory smoke, which is almost pure carbon. The great difference is, of course, owing to the fact that domestic smoke is produced at a much lower temperature. The innocent appearance of the domestic chimney is largely due to the fact that the tarry oils, when hot, form an almost colourless vapour, and also because domestic smoke is diluted with a much greater proportion of air than factory smoke. Analyses of Manchester air and of the deposits on the air filters at the Midland Hotel show very conclusively that the polluting matter in the air approximates very closely to domestic smoke. Even allowing for the enthusiasm of the advocates of gas fires, there can be little doubt that the effect of constantly inhaling the vapours of tarry oils and ammonia must be extremely deleterious to the respiratory organs, far more so than inhaling the carbon from factory chimneys. And yet the latter are under the strictest surveillance, while the far more injurious domestic chimney is left to pour out its poison fumes without restraint.

MUNICIPALIZATION OF HOSPITALS.

At the annual dinner of the Manchester Statistical Society, held on October 23rd, Sir William Sinclair made some pointed remarks about the position of the Manchester hospitals. He said that almost every Manchester and Salford hospital was badly involved in debt, the cause of this being that the hospitals were supported by only a very small class. He said it was simply shameful that the well-to-do public paid very little towards the

burdens of their poorer brethren. It might be called rank socialism, though he was not a socialist, but he thought that those who could afford it ought to help to bear the burdens. The burden ought to be distributed, and he thought the hospitals ought to be maintained by the municipalities. If the municipalities took the burden up and threw the appointment of medical men open to competition, the hospitals would then get the best men in the State. At the present time he thought this was notoriously not the case.

The Dreschfeld Memorial Fund.

In accordance with the decisions reached at the meeting in Manchester on October 16th and reported in our columns in the following week, the committee formed to raise a fund to perpetuate the memory of the late Dr. Dreschfeld's work as a physician, teacher of medicine, and man of science, has now issued an appeal. As already stated, it has been decided that the most appropriate form of memorial will be the endowment of a scholarship in the Medical School of the University of Manchester, but part of the fund will be devoted to placing a portrait or bust of Dr. Dreschfeld in the university. Subscriptions should be sent to the honorary secretary and treasurer, Dr. E. M. Brockbank, Northern Assurance Buildings, Albert Square, Manchester. We are asked to state that a report of the proceedings of the committee will, on the completion of the memorial, be sent to all subscribers.

Birmingham.

The Hospital Funds.

The Hospital Saturday Fund has this year reached the large sum of £20,000, and this amount has been the goal at which the Executive Committee has aimed for many years. The actual collections in the factories and workshops amounted to £19,975, or £741 more than the total sum received last year from all sources. With the bank interest of £85 added, the total sum was £20,060. This increase is chiefly attributable to the extension of the weekly system, to the additional contributions received this year from firms subscribing for the first time, and to the increasing appreciation of the splendid work done by the convalescent homes at Llandudno and Great Barr, and the assistance given to rheumatic and consumptive cases to obtain special treatment at Droitwich and St. Leonards. For the eighteenth time the Executive Committee of the Fund have voted £10,000 towards the free work of the hospitals and other charitable institutions. This sum has been divided between twenty-three institutions, and the amounts which the chief recipients this year have obtained are: General Hospital £3,150, Queen's Hospital £2,100, General Dispensary £1 040, Children's Hospital £800, Women's Hospital £500, Jaffray Suburban Branch Hospital £400, Eye Hospital £350, Orthopaedic Hospital £300; while the Lying-in Charity, Skin and Urinary Hospital, and the Moseley Hall Convalescent Home for Children have received £200 each. The vote of £10,000 to these institutions cannot at the present time be increased on account of the uncleared debt upon the Women's Convalescent Home and the cost of maintaining this and the other homes. During the coming year an exhibition will be held at Bingley Hall towards the extinction of this debt.

Sunday, October 27th, was reserved for the collection of the Hospital Sunday Fund, and up to the present the returns amount to £4,950. There is every indication that the Hospital Sunday collections this year will yield a satisfactory total. The parish church of Moseley headed the list with £350, while four other churches collected over £200 and six over £100. This is the forty-ninth year in the history of the Fund, and the fourth since the new arrangement was made respecting the allocation of the proceeds, whereby each charity benefits every year. A third of the collection is now given to the General Hospital, and another third to the Queen's Hospital, and the remainder divided in varying proportions among fifteen other charitable institutions. The amount of work done by the medical charities is immense, as is shown by the fact that during last year, in the general and special hospitals, the dispensary, and Nursing Society, over 275,000 cases were treated.

Queen Alexandra Sanatorium, Davos.

At a meeting in support of the fund for the Queen Alexandra Sanatorium at Davos, Lord Balfour of Burleigh said that the object was to provide accommodation for English-speaking patients of small means suffering from curable forms of pulmonary disease. Out of the fund already raised a site had been purchased, but some £15,000 more was required. Sir Oliver Lodge proposed a resolution commending the scheme to the sympathy and support of the public, and it was decided to open a fund in Birmingham.

West Yorkshire.

Bradford and the Notification of Births Act.

At a meeting of the Health Committee of the Bradford Corporation, held on October 16th, a resolution in favour of adopting the new Act was agreed to. As pointed out in the address given by the Chairman of the Bradford Division at its first meeting this session, "carrying out this Act necessitates the violation of professional secrecy on the part of medical practitioners," and ought, if possible, to be resisted. This is at present no easy matter. The Act is adoptive, and if it is to be enforced in Bradford the resolution of the Health Committee must be ratified by the City Council. In this connexion the report of the deputation appointed by the Manchester and Salford Joint Divisions to interview the Sanitary Committee of the Manchester Corporation urging reasons why the Act should not be adopted,[1] is of great interest. The Bradford Division might take similar action and interview its Health Committee on the subject. If concerted action could be taken locally in the Divisions all over the country it might be possible to compel the introduction of an amending clause to the Bill in the next session of Parliament. Considering the extraordinary circumstances in which the Bill was rushed through the House of Commons this action would be justifiable.

Harrogate's Sanitary Problems.

The question of the disposal of sewage is greatly exercising the minds of sanitarians in the West Riding at the present time, owing to the rapidly increasing populations in the great cities of the Riding. Harrogate, which is chiefly a residential and health resort, has good reasons to be immaculate from a sanitary point of view. The Harrogate Corporation has recently desired to borrow £36,500 for the completion of the main sewerage scheme of the borough. The Local Government Board is withholding its sanction because more sewage is being turned into the north outfall works than the works are capable of dealing with, and the Corporation is asked to produce a supplementary scheme showing how this can be obviated. Some efforts are being made in this direction, and it is hoped that the necessary sanction will be given to carry out the scheme in its entirety.

Ireland.

Tribute to Sir Charles Cameron.

The Public Health Committee of the Corporation of Dublin has presented a very beautifully illuminated address to Sir Charles A. Cameron, Medical Officer of Health. It congratulated him on the success of his efforts to improve the state of public health in Dublin. It is not often that public health authorities compliment their medical officers of health.

Proceedings against a Dentist Company.

Last week, before the Master of the Rolls, in Dublin, the following important case was heard and decided:

The Attorney-General at the relation of Kevin E. O'Duffy *v.* "Henry J. Bradlaw, Surgeon Dentist, Limited"—Henry J. Bradlaw, Izidore J. Bradlaw, John Alexander, Philip Bradlaw Phillips, William Collier, Thomas G. Goepell, John J. Blakely, and Francis Chandler. The plaintiff complained that the defendants conspired, together with one William Robert Alexander, to deceive the public and to injure and defraud persons registered under the Dentists Act, 1878, by forming the defendant company. The company had been extensively

[1] British Medical Journal, November 2nd, 1907.

advertised in Dublin and throughout Ireland as surgeon-dentists, and that Henry J. Bradlaw was a person entitled to take and use the title of surgeon-dentist, whereas, according to plaintiff's case, neither Henry J. Bradlaw nor any other member of the company was entitled to be so described. Accordingly plaintiff asked for an injunction restraining the defendant company from advertising for custom under the description of surgeon dentist, or any other description calculated to induce the public, or persons dealing with the defendant company, to believe that such business was conducted or carried on by a person or persons registered under the Dentists Act, 1878, or specially qualified to practise dentistry: an injunction restraining the directors and members of the company from unlawfully using the title dentist, and for other relief. In their defence the conspiracy to deceive the public by the formation of the company was denied. The company, it was set out, was formed pursuant to the Companies Acts, and that the seven defendants (other than Izidore J. Bradlaw) who signed the Articles of Association, were all at the date of the registration duly registered as dentists under the Dentists Act, 1878. They said they had no knowledge of John Alexander or William Collier, who were named as defendants. The defendant, I. J. Bradlaw, pleaded that he never took any part in the promotion, formation, or registration of the defendant company, never was a shareholder, and took no part in the carrying on of the business. The further defence was raised that the statement of claim disclosed no cause of action, as it did not allege that any public right had been interfered with, or that any public wrong had been committed, and that it did not allege any damage had, in fact, resulted from the acts complained of. A separate defence was filed on behalf of the defendant Philip Bradlaw Phillips, in which he denied the alleged conspiracy, or that he had taken any part in connexion with the company. He was willing that his name should be removed from the list of shareholders, and he submitted himself to any order the Court might make.

It appeared from a notice that had been served on the plaintiff that on October 26th, 1907, the defendant company had registered their business under the new title of "Henry J. Bradlaw, Limited," the words "surgeon-dentists" having been omitted.

After a prolonged argument by a heavy Bar,

The Master of the Rolls, in giving judgement, said that at the time the action was instituted the directors and shareholders of the defendant company were, as stated by an eminent judge in another case, an audacious fraud upon the public. The names and style and title of the company was a false representation, and was scattered broadcast through the land. His Lordship would not discuss the advertisements, but the clear-cut impression on any man who read them was one amounting to practical certainty that an individual named Henry J. Bradlaw was to be the real operator. It was not necessary for the relator to prove that any one incurred loss. Mr. Bradlaw might be an excellent worker—as good, perhaps, as any medical practitioner who had not been instructed in dentistry—but the Act of Parliament was clear on the point as to his right to describe himself as a surgeon-dentist. He granted the injunction asked for, restraining the defendant company from describing their business in such a way as to lead the public to believe that their business was carried on by a person, or persons, registered under the Dentists Act, 1898. He also granted an injunction, restraining the defendant company and its members from using the title dentist, either alone or in combination with any other word or words in the memorandum of association, or any returns or documents filed pursuant to the Companies Acts with the Registrar of Joint Stock Companies. The relator would be allowed his general costs of the action, but so far as they had been increased by charges of fraud in the formation of the company, the defendants would be entitled to relief, as against the relator. Mr. Phillips would not have to pay costs incurred against his amended defence.

Proposed Inebriate Home for the North of Ireland.

A project of great interest and importance was broached by Dr. Norman Barnett at the meeting of the local Diocesan Synod held on October 31st; this was to convert the present county gaol at Downpatrick into an inebriate home. The building has been empty for some time, and is lying idle. Dr. Barnett had obtained plans showing the alterations that would be necessary. Such an institution would supply a much-needed want. The only home in Ireland is at Ennis, in the south.

Women's Health Association: Belfast Branch.

On October 29th Lady Aberdeen attended a meeting in the City Hall, and explained the objects of the Women's National Health Association of Ireland. The Lord Mayor (Lord Shaftesbury) presided, and the meeting was one of the largest and most representative that has been held in the city for some time. Dr. P. R. O'Connell, High Sheriff, and Dr. King Kerr, Chairman of the Public Health Committee, supported the resolutions approving of the scheme, and Sir John Byers, one of the Honorary Secretaries, seconded a vote of thanks, proposed by the Lord Lieutenant, to the Lord Mayor for presiding.

One of the branches of this Association is the Tuberculosis Exhibition, which will visit various places throughout Ireland; it is at present in Dublin, where Professor Osler gave an opening address. It is hoped that it will come to Belfast about the end of this month, when it is expected that Sir R. Douglas Powell may attend. The project has been taken up most heartily and promises to be a great success.

Health of Belfast.

Annual Report of the Superintendent Medical Officer of Health.

Dr. Bailie has lately issued his Annual Report on the Health of Belfast. He reminds the Corporation that he was only in office for two and a-half months of the time under review, and that his report is deficient in details, which he hopes to be able to give in future reports. He also draws attention to the difference in the system of notification of births and deaths in Belfast and in England and Scotland. This difference makes it impossible to prepare a proper classification of deaths or births.

The Annual Report itself is well bound and printed, and of a size in keeping with the dignity and importance of the health of a town of 366,220 population, with 11,355 births (rate of 31.0) and 7,379 deaths (rate of 20.1) in the year. There are 180 pages, a good index of four pages, and numerous charts and tables showing the total number of deaths at various ages, death-rates from all causes, the deaths from zymotic diseases in the various districts, and many other subjects; there are also some excellent maps showing the local incidence of scarlatina, diphtheria, and typhoid. On the whole, the impression given by a general perusal of the report is excellent, and Dr. Bailie deserves the thanks of all who take an interest in the public health of the city. It is confidently to be expected, now that a beginning has been made, that the Public Health Committee and Dr. Bailie will persevere in their labours to bring the town into line with other large communities, and that each year the difficulties which have weighed so heavily on the inhabitants in the past will disappear; the report throughout mentions such obstacles.

There are many points of interest in the report; on pp. 11 and 12 an estimate is made of the population; the figures of the Registrar-General are given, but other calculations furnish the much larger total of 394,778, or of 388,159. It is evidently hopeless to arrive at any figure which will be accepted by every one. The pages dealing with typhoid fever are very valuable, showing, amongst other matter, how the origin of an epidemic may escape detection till an immense amount of disease and many deaths have been caused. An unsuspected dairy, where the dairyman had as little suspicion of the vehicle of the poison as the unfortunate buyer, was ultimately found to be contaminated. It is satisfactory to see from table No. 14 that the death-rate from the disease is falling, but still somewhat intermittently. The rate in 1906 was 2·4, the lowest for the last twenty years. There were 233 cases of diphtheria, an increase of 42 over last year, with 41 deaths. In the present day, with the serum, Dr. Bailie very rightly says that this number could be easily reduced if all suspicious sore throats were at once brought under medical supervision. By an arrangement between the City Council and Professor Symmers, the exudate can be promptly examined free of charge at the College laboratory; and as there is an excellent public fever hospital, nothing has been left undone to expedite the proper medical treatment of the disease; the public must be educated to recognize its duty in calling in medical advice at once. An epidemic apparently spread from one mild unnoticed case in a school.

The usual toll of 331 deaths from whooping-cough and 376 from diarrhoea, mostly children, once more raises the question whether there is any way of preventing this deplorable loss of life among the young; at present it seems that nothing but warnings are possible—warnings that the class who suffer most severely never know of or never heed.

There is also much information about common lodging-houses, alcoholism and physical deterioration, prosecutions under the Sale of Food and Drugs Act, house

cleansing, bacteriological examinations by Professor Symmers of cockles gathered on the shores of the lough and other subjects; a succinct account also is given of the water supply. On pp. 146-154 a somewhat detailed statement of the accounts of the public baths is given; it might have been more to the purpose to have supplied the accounts of the Public Health Department.

Altogether, however, one cannot but have the liveliest satisfaction in seeing this report; it is an earnest that the authorities are determined to rise to their high duty, and that the recent large demonstration and widespread outcry and the sittings of the Special Commission will have a permanent effect.

Scotland.

Edinburgh Royal Infirmary.

At the weekly meeting of the managers of the Royal Infirmary of Edinburgh on Monday, November 4th, Edwin Bramwell, M.B., F.R.C.P., and F.R.C.P.E., was unanimously appointed an Assistant Physician. There were five candidates.

Care of Defective and Feeble-minded Children.

The first annual meeting of the Association for the Care of Defective and Feeble-minded Children took place last week in Glasgow. About a year ago the Association rented a house in Kirkintilloch and fitted it up for the reception of twenty-five girls who are trained in housework and laundry work, and it is hoped that by these measures they may be able to maintain themselves to some extent, and thus run less risk of falling into evil ways. During the short space of time that the home has been open it has been abundantly shown that there is great need of such an institution to help these defective and feeble-minded on leaving school. The results are so beneficial that the Association adopted a resolution moved by the Lord Provost that funds be obtained to purchase the present buildings, to provide an endowment, and extend the present accommodation by making similar provision for boys. The sum required is £2,500, and £1,000 has already been promised, provided that the remainder is obtained. To some extent the training work is hampered by the fact that there is no statutory power to retain such feeble-minded children under the charge of the Association against the wishes of the parents, and a resolution to this effect was moved by Dr. Macpherson, H.M. Commissioner in Lunacy, and adopted by the meeting.

Cape Colony.

Insanity in 1906.

From the Annual Report for 1906 of Dr. W. J. Dodds, the Inspector of Asylums for the Colony of the Cape of Good Hope, we see that the total number of the registered insane on December 31st, 1905, was 1,892 and on December 31st, 1906, 1,958, giving an increase for the year of 66, as compared with the average annual increase for the last ten years of 95.8. Dr. Dodds supplies a table showing the increase in the numbers of registered insane in the colony since 1880, but inasmuch as this increase has been governed by the accommodation available, the information given cannot be accepted as a measure of the increase of lunacy. Dr. Dodds further furnishes an interesting table of the ratios to population of certified insane in Cape Colony in 1904, as compared with similar ratios in England and Wales and other British colonies. The proportion in 1904 in Cape Colony was 1 certified insane person in every 1,359 of general population, as compared with the 1 in every 285 of England and Wales. The ratio of the white insane to white population was 1 in 678. Further, the ratio of white insane born in Africa to white population born in Africa was 1 in 944, whereas the ratio of white insane born elsewhere than in Africa to white population born elsewhere than in Africa was 1 in 336. The exceedingly low total ratio of insanity in this colony is thus seen to be largely due to the small amount of certified insanity in the native population, the ratio of the insane other than European to the population other than European being 1 in every 1,994.

With regard to the white population, the above statistics would seem to show that insanity is much less common amongst the descendants of the older settlers than amongst the remainder of the white population, but as the information given concerns the total insane, and not the proportion to population of occurring insanity, this inference cannot be justly drawn.

During the year 445 in all were admitted, of whom 235 were white and 210 coloured. Of the total admissions, 393 were direct admissions (205 white, 188 coloured); and of the white admissions 113 were born in the colony, 5 in other parts of South Africa, 45 in England and Wales, 12 in Scotland, 8 in Ireland, and the remainder in other European countries. Owing to a lack of uniformity in the tables returned by the medical superintendents of the several institutions, it is impossible to collate the information given as to the types of mental disorder among the admissions and the probable causes of the insanities. During the year 142 were discharged as recovered, giving a recovery-rate on admissions of 36.13, the recovery-rate for Europeans being 42.93, and for the coloured insane 28.72 per cent. There were also discharged as relieved 30, and as not improved 18. Also there were 163 deaths during the year, giving a total death-rate on the average numbers resident of 8.7 per cent., or 7.2 for the Europeans and 10 for the coloured patients. The deaths were due in 49 cases to cerebro-spinal diseases, including 21 from general paralysis; in 42 to chest diseases, including 20 from pulmonary consumption; in 27 to abdominal diseases; and in 45 to general diseases, including 23 from general tuberculosis. The noteworthy features of the deaths are that of the 21 patients dying from general paralysis 18 were Europeans, and that of those dying from tuberculous diseases 41 were coloured people, forming 41 per cent. of the total deaths among the coloured patients. An outbreak of typhoid fever from which 6 patients died occurred at Fort Beaufort Asylum, but otherwise the asylums appear to have been free from zymotic disease.

The accommodation provided seems to be in need of considerable extension; but Dr. Dodds speaks in somewhat pessimistic vein of the possibility of this, and in the meantime, to quote the report,

> Insane patients are being detained for long periods in gaols, and instead of preaching early treatment of the insane and speedy resort to asylums while yet the disorder is in a remediable stage, the authorities have to use all their influence to keep insane patients in their homes, or anywhere, rather than have them sent to asylums where there is no room for them.

New South Wales.

Compulsory Notification of Pulmonary Tuberculosis.

We learn from the *Australasian Medical Gazette* that Dr. W. G. Armstrong, the City Health Officer for Sydney, in his annual report states that the working of the City Council by-laws for the compulsory notification of pulmonary tuberculosis has been in every way satisfactory. No friction has arisen between the City Council and the medical profession on the subject, and no cases have come to light in which any injury or hardship appears to have been inflicted on phthisical persons through the operation of the by-laws. The practical experience thus gained, he says, is a very strong point in favour of making this disease notifiable in all large centres of population throughout New South Wales. It has shown that notification is practicable at a very small expense. It is urged, therefore, that the compulsory notification of pulmonary tuberculosis throughout New South Wales should not be long delayed.

Medical Examination of School Children.

Systematic examination of the pupils attending the schools in the metropolitan district of Sydney is, we learn from the *Australasian Medical Gazette*, now in progress, and valuable data are being collected. Particular attention is being paid to weight, height, age, sight, hearing, and general health, and weighing and measuring apparatus are being employed to secure accuracy and uniformity. It is not proposed to obtain the records from every school, but to secure them in various contrasted centres, so that comparisons

may be instituted between the pupils at towns like Moss Vale and Bowral, on the southern tableland, with those on the northern, the western plains, and in the large population centres. The children at Broken Hill, where the air is largely impregnated with fumes from minerals, are expected to exhibit certain physiological features vastly different from those who dwell in the pure oxygenized air of the mountains, or those in the crowded cities. In addition to these tests, arrangements have been made for the periodical medical inspection of the metropolitan public schools as regards their hygienic condition —light, ventilation, and drainage. Children are also being examined who appear to be physically or mentally defective, or who exhibit signs of certain ailments or defects, such as breathing through the mouth instead of the nose, continuous discharges from the ears or nose, skin affections, etc.

Ceylon.

THE PUBLIC HEALTH IN 1906.

THE report of the Principal Civil Medical Officer and Inspector-General of Hospitals of Ceylon for the year 1906 is a very voluminous but singularly interesting document. Ceylon is a vast territory with a population of some four millions, and presents, from the point of view of preventive medicine, a series of problems of extraordinary complexity. The amount of material dealt with in this report is so large that if in places the arrangement seems a little faulty there is obvious and adequate excuse. Every one has heard of the "spicy breezes" that "blow soft o'er Ceylon's isle," but the following passage is a curious commentary on this fancy of the old missionary hymnist:

> The causes which contributed to the ill-health of the inhabitants of Ceylon during 1906 were drought, floods, the failure of the paddy crop, infectious diseases, and malaria. Rain was short during the first and second quarters of the year, and the south-west monsoon was late arriving. Malaria of a virulent type broke out in many parts of the island in consequence of the want of rain to flush out the puddles and small collections of water in which mosquitos breed; the want of water favoured the development of intestinal disorders owing to the presence of pollution in the meagre water supplies. The failure of the paddy crop was due to the drought, and the fact that the cultivators were incapacitated by illness for work: in many districts the long drought was followed by floods, after which deterioration occurred in the health of those living in the flooded neighbourhood. Cholera and small-pox visited many districts, and in some towns enteric fever was rife.

After reading this we can hardly agree that "every prospect pleases, and only man is vile." Sir Allan Perry gives in this report a very vivid picture of this tropical island, subject to all the ills of a capricious climate, with a population mostly ignorant and poverty stricken, a prey to malaria, small-pox, enteric fever, dysentery, ankylostomiasis, cholera, and leprosy, as well as tuberculosis, syphilis, and most of the other ills against which preventive medicine organizes its warfare in temperate climates, while as a background to the picture there is the constant fear of the importation of plague. Against all this array of preventable disease the Government maintains a medical service, and has provided a number of special and general hospitals in various parts of the country. There are dispensaries organized by the Government and by the Planters' Associations, and a system for the free distribution of quinine, but the report makes it clear that these various agencies are not yet perfectly co-ordinated, and that the excellent and self-sacrificing work that is being done is done under difficulties, largely owing to lack of funds and equipment. Thus with respect to leper hospitals Sir Allan writes:

> I am convinced that accommodation in the island is utterly inadequate, and that if the leper ordinance is to be properly carried out a very considerable increase in the amount of accommotion is necessary.

Again in regard to ankylostomiasis, we read—

> It is a matter of impossibility to check the spread of this disease so long as the conservancy arrangements regarding the disposal of sewage, and in many cases the water supply of the estates remain as they are.

Again, of the only lunatic asylum in the colony we are told that "at one time during the year, 678 persons had to be crushed into the space allotted to 378," and to this overcrowding the "high asylum death-rate" is attributed. The Colombo General Hospital also "requires to be rebuilt; it is old and insanitary. The operating room is a relic of the preantiseptic period. . . . The kitchen is inadequate, insanitary and unsuitable."

The heavy responsibility of preventing the introduction of plague is entrusted to a special committee which meets once a fortnight. This committee's object is to "prevent the introduction of the disease without hampering the merchants and travelling public with unnecessary and vexatious quarantine rules." It is much to the credit of the vigilance and energy of the committee that the island has been kept free from any case of the disease during 1906 at the cost of only two ships stopped and a vigorous campaign against the rats of Colombo.

A point of considerable interest to medical officers of health and general practitioners in this country is the comparative rarity and the low mortality of measles in Ceylon. Whereas in this country measles is becoming no less common, and annually more fatal, a comparative statement of the principal diseases in Ceylon for five years shows in 1902 only 196 cases with two deaths, and in 1906, 55 cases with one death. We venture to say that there is no area in England comprising a similar population (about 4 millions), which could show equally favourable figures for this disease.

Amid all this fighting against actual disease, research and education have not been neglected in Ceylon, and in this connexion a word is due to the work of Dr. Castellani, who is in charge of the clinic for tropical diseases, and of the De Soysa Bacteriological Institute. The former institution was only opened on October 1st of last year, and Dr. Castellani begins his report with a quotation from this JOURNAL,[1] as follows: "The Government of Ceylon deserves the highest praise for the scientific spirit it has shown, and we can only hope that the success of the present experiment may encourage it to extend the system further."

Dr. Castellani's report is sufficient evidence that the hope then expressed has already been fulfilled. Apart from all the rest of the pathological and educational work done in these two institutions, their existence has been more than justified by the completion of Dr. Castellani's demonstration that syphilis and parangi are distinct pathological entities, and his isolation of the *Spirochaeta pertenuis* as the cause of the latter disease.

SPECIAL CORRESPONDENCE.

VIENNA.

Retirement of Professor Politzer.—Inebriety Statistics.—Old-age Pensions for Country Doctors.

WITH the new winter term, which began on October 1st, Professor Adam Politzer, whose name and clinic are known to all otologists throughout the world, retired from his post as Director of the Vienna Clinic of Ear Diseases, after forty-six years of strenuous and indefatigable work. His farewell lecture was attended by hundreds of the most eminent men in the profession. All his former and present assistants were present, and also representatives of numerous foreign otological societies in Europe and America. In his lecture Politzer once more dwelt on the importance of exact diagnosis of ear disease, especially amongst the poorer classes of the population. He compared ear trouble in its fatal incidents with tuberculosis, and emphasized the necessity of teaching the intending country practitioner and the student of surgery the leading facts of otology. After a short review of the progress made in this department within the last few years, Politzer bade his audience a graceful farewell. Amongst other honours accorded to the retiring Professor was the honorary membership of the American Medical Association. Politzer is succeeded by Professor Urbantschitsch, who has till now been director of the ear department of the Vienna Polyclinic, where his lectures, delivered in English and German, were well attended. His chief province of research was the chronic catarrhal condition of the ear, and his publications on this subject are very numerous. Politzer's first assistant, *Privat-docent* Dr. Gustav Alexander, has been appointed successor to

[1] BRITISH MEDICAL JOURNAL, July 21st, 1906, p. 162.

Professor Urbantschitsch at the Polyclinic. His name, too, is well known amongst the English students in Vienna, and his lectures are very often crowded. His principal works deal with the anatomy and pathology of the internal ear, both of men and animals. He is a bold and successful surgeon, and a scientist of very high reputation.

Since 1894 statistical data have been obtainable as to the prevalence of drunkenness in Vienna and Lower Austria. The following figures are taken from the official report to the Austrian Antialcohol Society: Whilst in Vienna in 1894 there were 784 notorious drunkards, in 1899 the number was 1,282, and in 1906 they numbered 2,336. In the country the corresponding figures were 1,556, 1,280, and 813, thus showing divergent conditions prevailing in the city and the country. As a means of classifying drunkards as distinguished from occasional drinkers, only those were reported who more than once had a collision with the police. The proportion of drunkards to the population is 1 to 740 in Vienna and 1 to 980 in the country. In Vienna there were 10 per cent. female drunkards, as against 7 per cent. in the country. Forty per cent. of all the habitual drunkards were inmates of public asylums or workhouses, representing a cost to the country of £40,000 yearly. Whisky, gin, and rum are responsible for the majority of cases, only 9 per cent. indulging too freely in wine, and only 1 per cent. in beer; in the country—which is, by-the-by, well known for its good wines—25 per cent. of the alcoholic excess was due to wine.

The Austrian Diet has recently passed a law by which the county and district medical officers who are paid by the Diet are entitled to old-age pensions. This is marking the dawn of a new era; at last the profession has succeeded in making the authorities understand the needs of modern life. The law provides that after a service of thirty-five years the doctor may retire on a pension of £70 a year; if his retirement takes place earlier, he receives a proportionate amount, beginning with 40 per cent. after ten years' service. If retirement is due to disability contracted in performing his duty, the full pension is granted. The widows and children also receive pensions on a sliding scale, but amounting to not more than £60 a year at the utmost. Although these figures are low enough, it must be borne in mind that it is only a beginning, and we may hope that when the necessity of making careful provision for members of the profession has been made a *conditio sine quâ non* the pensions will be increased to a decent figure.

CORRESPONDENCE.

THE REPRESENTATION OF THE MEDICAL FACULTY ON THE SENATE OF THE UNIVERSITY OF LONDON.

SIR,—Three senatorial election addresses—of Professor Starling, of Mr. Wallis, and of Dr. Norman Moore—that is, of a physiologist, of a surgeon, and of a physician—are now in the hands of members of the Faculty of Medicine.

The physiologist promises to support (1) a more accessible degree; (2) increased time for clinical subjects; (3) concentration of preliminary and early medical studies in a small compact school at South Kensington. There is no allusion in his address to an institute of medical science, nor to the scientific requirements of the medical schools.

The surgeon (1) appeals to the Faculty to reaffirm its previous decisions against the establishment of a third centre for preliminary [and intermediate] medical education at South Kensington; (2) directly contradicts the statement that money has been collected for this specific purpose alone, or that agreements have been made by the University with certain medical schools to establish such a centre, and proposes to establish and endow an institute for higher teaching and research in close touch with the teachers and the courses of instruction at the various schools.

The physician is of opinion that the foundation at South Kensington of an institute for research in physiology, pharmacology, and those parts of biology related to pathology, is in the highest degree desirable, but that it is undesirable to erect a centre for the teaching of the preliminary and intermediate parts of the curriculum.

That is to say, that the foundation of an institute of physiology and allied sciences at South Kensington is recognized by the surgeon and by the physician to be desirable in the interests of medical science in London, whereas it is not mentioned by the physiologist.

The state of matters at the University is as follows: "Concentration" as advised five years ago by the Faculty of Medicine and adopted by the Senate, was contingent upon the collection of upwards of £300,000 (the actual sum named in the authorized scheme amounted to £375,000) and is recognized to be impracticable, inasmuch as the total sum subscribed amounts, it is said, to only £70,000.

That first scheme, as a whole, is impracticable, and it does not matter at all whether any candidate pledges himself either for or against it. Bnt the best portion of the scheme—provision for research—remains eminently practicable, and is recognized to be in highest degree desirable by the great majority of teachers in London, inclusive of many distinguished teachers whose names are on the list of Professor Starling's supporters.

The question whether or no an Institute of Medical Science (in the sense of a school of preliminary and intermediate medical studies) shall be established at South Kensington is settled by the financial position. The question before the University has become whether or no an Institute of Medical Science (in the sense of an institute for higher teaching and research) shall be founded at South Kensington. Of the three senatorial candidates now before the Faculty, two, namely, Mr. Wallis and Dr. Moore, have expressed themselves in its favour, and at the recent senatorial election the elected candidates, Dr. Caley and Mr. Leonard Hill declared in their joint address that "the promotion of higher learning and research is more essential to the prestige of the University of London than provision for, and the regulation of, routine teaching, and we are therefore in favour of developing within the University advanced lectures, courses of study, and laboratory facilities for research work in the several branches of physiology, pharmacology, and allied subjects on lines similar to those at present existing in connexion with the Physiological Laboratory of the University." Professor Starling has not yet expressed any opinion.—I am, etc.,

Physiological Laboratory, University of London, South Kensington, November 4th. A. D. WALLER.

SIR,—In Mr. Wallis's election address the suggestion is made that an institute for research in the medical sciences should be erected, and that the £70,000 which has been subscribed and the site which has been offered should be allocated to its establishment and endowment. Dr. Norman Moore expresses his approval of such an institute, but does not say from what funds it should be provided.

The money referred to was subscribed and the site offered for an institute of medical sciences in which medical students were to be taught. To attempt to divorce teaching and research is, at the best, a very doubtful policy, for the bulk of research in the medical sciences, both in this country and abroad, has been done by teachers in the laboratories attached to their schools. But a policy which proposes to use this money to build an institute at which only research and "higher teaching" are to be carried on is more than doubtful; it is an attempt to pervert funds from the object for which they were subscribed, an attempt which, if successful, is likely to prevent the public from opening its purse to the London University in the future.

There is a definite demand from certain schools of the University for a small centre at South Kensington, and the £70,000 subscribed for this purpose is more than sufficient to build and equip it. Such a centre would not interfere in the least with the autonomy of the Charing Cross Hospital Medical School, as Mr. Wallis seems to fear, or with any other school which wishes to teach its own students in the preliminary and intermediate subjects. It would, of course, also be a centre where research and higher teaching would take their natural place, as at other universities.

Under these circumstances, Sir, I trust that the Faculty will not lend its support to any such proposals as those of Mr. Wallis, which can only be regarded as likely to hamper the development of certain schools of the University.

In regard to the urgent need for the rearrangement of the curriculum, and the allocation of more time for clinical studies, Professor Starling is no new convert. He has already put the case so strongly in his address, and in previous utterances, that the Faculty may elect him with confidence to represent its known views on these points.—I am, etc.,

London, W., Nov. 6th. H. G. TURNEY.

SIR,—I have received a letter from one of the members of the staff of the London School of Medicine for Women containing a statement to which I think wider publicity should be given than it has at present obtained. The letter runs as follows:

"I have had handed to me a letter, written by one of the teachers of the L.S.M.W., in which is the following quotation from a letter written by a member of the Senate: 'It is suicidal policy for your colleagues to vote for concentration. The whole movement is being engineered from University College, and it is University College which has succeeded in blocking the incorporation of your school. They want to cater for women themselves now their preliminary science and intermediate science are under separate management, and of course they naturally do not want your handicap removed. The L.S.M.W. Incorporation Committee of the Senate is still in existence, but, for the above reasons, it has not met for more than eighteen months. If Starling is returned, I do not suppose it will ever meet again; you will be told that the third institute will meet your requirements.'"

I do not know the name of the author of this letter "written by a member of the Senate," but since it was written with a view to influencing the votes of all the teachers of the School of Medicine for Women at the approaching senatorial election, it cannot be regarded as a private document.

The whole statement from beginning to end is a deliberate invention.

Incorporation of academic institutions in the University is, and has been for the last eight years, the policy of University College. My colleagues and our representatives on the Senate earnestly desire to see the incorporation of the School of Medicine for Women carried out as one step in this policy, and have taken no part in blocking the incorporation. My colleagues have no desire to attract women students from the London School of Medicine for Women. Women are not admitted to the anatomy course at University College, so that it is not possible for women medical students to obtain a complete course at the College. I myself am extremely interested in the incorporation of the Women's School of Medicine, and look forward to this School, after incorporation, being the university centre for women medical students. If I am returned I shall make it one of my first duties to inquire into the reason for the discreditable delay which has occurred in the carrying out of the negotiations with the School.

I challenge the writer of the above letter to acknowledge in public the authorship of the statements which he has circulated in private, and to state what grounds or authority he has for making these statements. It would be interesting to know if he has employed his ingenuity in writing similar letters, with modifications suitable to local requirements, to members of other medical schools.

It is surely deplorable that such underhand methods should find their place among tactics employed in an election of the University of London.

I am sending a copy of this letter to every member of the Senate of London University.—I am, etc.,

ERNEST H. STARLING.

University of London, University College, Gower Street, London, W.C., Nov. 4th.

St. George's Hospital and the University.

SIR,—Mr. F. C. Wallis, in his election address to the members of the Faculty, writes:

> There is a further impression that agreements have been made with certain medical schools to establish such a third centre at South Kensington. This impression is without foundation. In fact, no assurances, either written or oral, have been given, and the University has incurred neither legal nor moral obligations in this respect.

Mr. Wallis has been misinformed. The above statement is incorrect.

In 1905 the University authorities opened negotiations with regard to the transference of the preliminary and intermediate portions of the curriculum from St. George's Medical School to the University. The question was carefully considered by the Medical School Council and the governors of the hospital. The undersigned were deputed by the hospital authorities to discuss the questions at issue with the delegates of the University. We were instructed to take no steps unless we were assured that a third centre was to be erected in the immediate future in the near neighbourhood of the University.

The University delegates, amongst whom was the Principal, assured us that the erection of a third centre was the settled policy of the University, and that this policy had been recommended *nemine contradicente* by the Medical Faculty.

On this assurance negotiations were continued. Subsequently it was arranged that:

1. Our students in the preliminary and intermediate studies should be transferred, together with our teachers in these subjects, to University College and King's College.

2. As soon as the third centre was established our students should be transferred to it.

3. St. George's Hospital should guarantee the payment of £500 per annum to the University for a term of years.

We asked that our teachers should also be transferred to the new centre as soon as it was built, but the University delegates were unable to concede this point.

When the Hospital authorities learnt that an attempt was being made to persuade the University to repudiate its obligations, the Treasurer addressed a letter to the Vice-Chancellor. In this letter a clear account of the negotiations and of the University's undertaking is given. The letter was sent and acknowledged nearly six months ago, and we would call the attention of the members of the Faculty to the fact that we have received no denial nor repudiation of its contents from the Vice-Chancellor.

This letter was subsequently published in the medical press,[1] and we are at a loss to understand how it has escaped Mr. Wallis's observation.

The undersigned carried on all the negotiations, and we pledge our word that St. George's Hospital would never have given up the teaching of preliminary and intermediate studies if we had not been assured by the delegates of the University that the erection of a third centre in the immediate neighbourhood of the Imperial Institute was the settled policy of the University. The University delegates were thoroughly aware that this point was the fundamental one in the negotiations.

We would, therefore, appeal to the members of the Medical Faculty not to give their votes in the forthcoming election in support of any candidate who urges the University to repudiate its obligations.

A. WILLIAM WEST.
Treasurer of the Hospital.

ARTHUR LATHAM,
Formerly Dean of the Medical School.

FRANCIS JAFFREY,
Formerly Dean of the Medical School.

G. A. BUCKMASTER,
Formerly Lecturer on Physiology in the Medical School.

Nov. 4th.

THE REFERENDUM.

SIR,—In a scattered Association like ours there is much difficulty in discovering the true opinion of its members. The link which binds us together is practically the slender one of the JOURNAL, and it says much for the ability and usefulness of that organ that it can fulfil such a function. Hence it follows that the JOURNAL is the medium most effective for an exchange of opinion. In this great crisis in our history we depend on its columns to reach the ear of the majority of our members who either will not, or cannot, attend our meetings. I sincerely trust these columns will not be used to gratify personal spite, or to indulge in party polemics.

Much as I disapprove of the forcing methods of our leaders in the Representative Meeting, I cannot but admire the zeal and self-sacrificing energy with which they have served the Association. I am quite at one with them in

[1] See BRITISH MEDICAL JOURNAL, July 6th, 1907, p. 60.

desiring to make the Association more useful and attractive to the numerous body outside of its membership. My sense of admiration, gratitude, and agreement does not blind me, however, to the fact that they are too ambitious in their policy, and too impatient of restraint in their methods of accomplishing it. They are aiming at a scheme of colossal magnitude beside which the commercial activity of a rival journal will appear a pigmy, a scheme of defence and offence, of insurance, of benevolence, of politics, of traffic in livings, and what-not, which will need a staff rivalling a Government department. And all this is being done without the knowledge, or at least assent, of three-fourths of the members. I make the assertion boldly that three-fourths of our members do not understand the drift of them. It is admitted that 10 per cent. is the average attendance at the Division meetings. That would represent some 2,000 members (not 4,000, as Dr. Fothergill makes out). Assuming the majority in favour of the Charter was two-thirds—a liberal allowance—then it follows that 1,333 members have decided the policy of 20,000. It is most fallacious, in our Association at least, to argue that the majority of the members attending will correspond to a similar proportion of the absentees. If there had been certainty that the subject voted on had been studied and understood by the majority of the members, and the importance of their presence had been reasonably brought home to them, then it would have been less unfair and less dangerous to bind the whole Association to a policy approved only by 6 or 7 per cent. of its members. Seeing that the scheme must involve a great increase in our subscription—in these hard times a serious matter—the leaders are likely to have an unpleasant surprise if they are successful. Notwithstanding Dr. McGowan's jaunty assurance that we are willing to pay for "professional unionism," as he calls it, I am very doubtful of the ability to pay, even if they were willing, of thousands of our struggling brethren, the very men who need it.

It may be contended that these provisions of the Charter are not open to discussion. We are told, by those who regard themselves as experts on form and precedent, that we must confine our criticism to the matters included in the Referendum, and that the Council has committed the Association irrevocably to everything else. To this proposition I refuse individually to assent. The Charter is still in the draft form, and it would be far wiser to amend it than to bring about a wholesale secession, or face opposition in the application for it before the Privy Council. Either or both of these contingencies are possible in the present temper of some sections of the Association, owing to the forcing tactics adopted and the unreasonable hostility manifested to the Central Council. I am sceptical about the correctness of the ruling against discussing the provisions of the Charter generally, but, even on the matters included in the Referendum, we have ample ground for urging delay.

Few of our members understand that the Charter practically supersedes the Central Council. It deprives it of the only thing which makes it worth election, namely, its revising function. I omitted from my letter of October 26th a piece of evidence regarding the business methods of the Representative Meeting. I now take leave to present it to my fellow members. On the morning of July 27th, at Exeter, a supplementary agenda was put in our hands containing fifteen brand-new resolutions, which had not been published in the JOURNAL, or discussed at Division meetings. They came—and I wish to emphasize the fact—from two Divisions, both Metropolitan, nine from Wandsworth (Dr. Fothergill's Division), and six from Hampstead (Dr. Armit's). By what rule did these resolutions receive admission to the agenda of business, and be treated exactly as if they had been advertised and discussed? Members who have been reading their JOURNAL will have noticed in the SUPPLEMENT of September 7th Dr. Fothergill's proposals. We all love a compromise. Dr. Fothergill offers one. Let all advertised resolutions be free from the danger of a Referendum, and all resolutions "sprung on the meeting" (his own description), if so directed by the Council at a meeting held within twenty-four hours, be referred to the Divisions. How generous! Legitimate business must not be revised, illegal motions may with difficulty.

Note the consideration here shown towards the Council. During the progress of the Representative Meeting, the Council must meet and decide on the important question whether it will permit a resolution "sprung on the meeting" to be made binding on the Association, or for ever hold its peace. Resolutions "advertised" may in such circumstances be deferred till the next Representative Meeting, when, if carried again, they will become "decisions of the Association," and not liable to a Referendum. If such a set of proposals are accepted, the Association will not get any self-respecting member to take office in the Council.

Some means must be found to get at the true mind of the Association. A plebiscite of the whole of the members might be taken on the Charter, especially its provisions as to "professional unionism." Meanwhile the members should insist on delay in applying for the Charter until we are better prepared, and on the preservation of a revising body to protect them from the hasty schemes of the Representative Meeting.—I am, etc.,

Edinburgh, Nov. 4th. A. WALKER.

SIR,—Every well-wisher of the Association must welcome criticism so frank and so obviously inspired by a desire for its welfare as is the letter of Dr. A. Walker. It is an admirable exposure of the weak points of the Representative Meeting, and the case he makes out for its improvement needs the attention of all careless or indifferent Divisions (including the three he represented under difficulties at Exeter). But he misses the important point that the Representative Meeting is the substitute—poor it may be and capable of much improvement—for the old annual meeting, whose powers were, to say the least, vague, and whose deliberative and representative value was *nil*. Begin with that fact, and Dr. Walker's letter becomes a very good argument for the improvement of the Representative Meeting but not for its abolition.

Dr. Walker gives us no alternative policy, so one must assume that he would prefer the good old days when the Council had full sway. But does he not know that that policy brought the Association to the verge of revolt? Is he not aware that it was a mere toss-up whether a rival association should be formed to do the work the Association was neglecting? That such a dangerous rival was not set up was due to a few who had faith in the elasticity of the Association and in its power to do all that could be legitimately required of it. No member with a knowledge of the recent history of the Association can deny that with all its faults the Representative Meeting has at any rate succeeded in creating a new interest in the Association.

Under the Charter as now drafted some of the improvements Dr. Walker asks for will be effected. The Representative may be elected by the voting papers Dr. Walker seems so fond of, but which, to my mind, will not invest the Representative with as much force as that obtained from a meeting of the active members of the Division. The Representative, too, will be an *ex-officio* member of his Branch Council, which will bring him into touch with the other representative and official members of the Branch. In his criticism of the meeting Dr. Walker overlooks that by far the greater part of the business consists of motions issued in April and the annual report of the Council which appears two months before the meeting. I quite agree, and indeed have more than once protested, that business which is more than routine and requires an expression of opinion should not come before the meeting before it has been considered by the Divisions.

I must again emphatically protest against the assumption, which seems to me ridiculous, that the Council is more representative than the Representative Meeting. Take the facts. I have myself been present at every Representative Meeting, have never been elected by less than one-fourth of my constituents, and have always insisted on having distinct instructions on all matters of principle on the agenda. There must be many other Representatives who could say the same thing or something like it. But granting that many are elected by a miserable minority of their constituents, they must in nearly every case be elected by *some*, and to these few they must be known. But what of the Council? Last year in the United Kingdom there were only two contested elections, most of the members of Council being returned in a way which speaks far more eloquently of the apathy of our members than does the method of election in the Divisions. If you take these

uncontested elections as a sign of content with the present representatives on the Council, why not assume the same thing in reference to the small attendance at the Division meetings? A practical test of the representative quality of the Council may help to convince Dr. Walker. As President of this Branch, which is not the least active in the Association, I have been present at the meetings of four Divisions recently, and I have taken the trouble to ask whether those present knew who were their Representatives on the Council. In an aggregate attendance of about sixty I found two who could tell me correctly. In twenty years (and probably in a much longer period) there has only been one contested election in this Branch. If my readers apply the same test to their own Branches I think the result will surprise them. The fact is that before the reorganization of the Association, the members of Council were put on mainly for their professional standing or their official connexion with their Branch. Since the reorganization any interest in the election of members of Council (such as it was) has been transferred to the election of members of the Representative Meeting, except in the Metropolitan Counties and the Lancashire and Cheshire Branches. There is, of course, no need for the Council to be composed of Representatives at all, as that body has recognized by not taking a Referendum on the Ordinance which transforms it into the executive body of the Representative Meeting with the power of Referendum. By doing this they have agreed that we cannot afford to have two legislative bodies, with the accompanying friction, in the Association, and it is to be expected that after this merely time-wasting Referendum is over they will settle down to the enjoyment of that position of power and respect in the Association which must inevitably be occupied by the body selected as the best business and executive men in the Association.—I am, etc.,

Gateshead, Nov. 4th. ALFRED COX.

SIR,—Dr. Fothergill, in his interesting and very long but not very convincing letter in the JOURNAL of October 26th, has carefully evaded the other issue I put forward, which I thought of quite equal importance to the fixity of the constitution of the Central Council, namely, to preserve the right of the individual member, quite apart from his position as a member of a Division or Branch. No doubt Dr. Fothergill and his friends would like this subject kept in the background and not discussed at all after the events at Exeter, for with their usual astuteness they made use of the opportunities at hand.

Look at the way the annual general meeting of members was dealt with at Exeter. It is understood that the Representative Meeting cannot be held until the proceedings commence by the annual business meeting taking place, even in a kind of dumb show. And this is how it was done: There was no Chairman of Council present to take the chair, nor even the Treasurer of the Association, with the result that it was adjourned until, I believe, the Monday or Tuesday, so that if one or a number of members had attended at the first meeting for some special purpose they would have had to wait until the adjourned meeting was held. And why was this adjournment? This is answered by what actually took place on the Tuesday. It suited the active party, and enabled them to effect such a *coup* as was never exceeded in the annals of the Association, and never will be, namely: a Treasurer was elected in opposition to the one which had been nominated by the Central Council! This transaction will never be forgotten by those who were present, and especially the two gentlemen who were nominated.

Well, now, does it not look rather curious that the same party should make such an exceedingly powerful use of the annual meeting of members to effect their own purpose, and yet they should have it on the card in the draft Charter that it should be abolished? And why is this? They see that it can be made a powerful weapon if required by a clique, as was exemplified by themselves, and so they have taken good care that their opponents shall never have this power. They are fencing themselves in and round about, so that they can effect their own purposes without let or hindrance!

Hence the long letter of Dr. Fothergill in defence of the election of the Central Council as per Charter, and not a single word in defence of the abolition of the privileges of members at the annual business meeting! As he has said nothing in favour of maintaining it we must conclude that he is in favour of abolishing it, as his friends are.—I am, etc.,

Manchester, Nov. 2nd. G. H. BROADBENT.

The Opinion of the British Medical Association.

SIR,—It is somewhat unfortunate that the present discussion has so largely resolved itself into a debate as to which is the more representative body in the Association without a fundamental definition of that which it is desired to represent—the opinion of the British Medical Association. The Association may be said to consist of three—in part overlapping—groups: members who wish for a good medical journal, members who are keenly interested in the scientific possibilities of the organization, and members who are keenly interested in the economic and political relations of the profession. The opinion of the British Medical Association on any question is a resultant of the twenty thousand various opinions of the individual members on that question, and what one is entitled to present to the public as the recognized opinion of the Association is a conventional result arrived at in some way provided by the constituted mechanism.

Prior to 1907 the mechanism was the fortuitous concourse of the Annual General Meeting and the Council, consisting of Branch Representatives who were elected without any constitutional responsibility to their constituents on individual questions. At the new constitution this mechanism was definitely replaced by a new grouping of members in such Divisions that, as far as possible, any member who wished had the possibility of attending their meetings made as practicable as local opinion thought necessary, and by the Representative Meeting, consisting of members who are constitutionally required to represent the known opinion of their group. Which of these mechanisms is the more likely to give the more accurate statement of the resultant opinion of the members? That is the question of which we are substantially engaged in discussion. On theoretical grounds there would be little difficulty in coming to a decision, but we must always test the most perfectly designed mechanism by its work in practice, and this test was applied to the old mechanism when it was overthrown by the new, and at present we must attempt to judge of the work of the new. This, it is urged, has failed in so far as the members of the Representative Meeting are appointed by a minority, and that a small one, of their respective Divisions, and that, in effect, their opinions are not authoritative. That the appointment is actually made by a minority of the constituency may be admitted; but it is still made by the tacit consent of the whole, for surely any member who felt keenly enough on any question to make him resent being misrepresented would, to prevent such a calamity, attend the meeting which is held at his own door, and surely the critics of the present authority of the representative mandate will hardly go so far as to assert that if the Division elections were made by voting paper the Representatives who are at present appointed would not be returned by much the same proportion of votes as are now cast in a disputed election to the Council.

The fact that the local group is relatively small surely makes it likely that a more reasoned and homogeneous opinion is ready to be expressed, and also that any man of the group is more likely to know the general feeling of his colleagues than if the groups were larger, and I cannot but think that Dr. Walker's constituents were most unfortunate, if his acquaintance with the opinion of his professional neighbours was limited to the scanty constitutional information which he states was put at his disposal. For these and other reasons too numerous to state in detail I cannot resist the conclusion that, with all its defects, the system of Divisions and Representative Meeting does give a reasonable approximation to what can be presented as the opinion of the British Medical Association, and that any larger grouping with the necessarily increased difficulty of attending meetings would give a less accurate rendering.

The detailed questions on which the voting is taking place centre in the purely economic question of the most efficient size of the Council, a reduction of which involves the regrouping of the Branches and of the arrangements

for closer interworking between the legislative and the executive organizations. So far as the discussion has gone it seems that the main objection urged against any regrouping is that the Branches are to be destroyed. But—and I speak as a member of a grouped Branch—I should be loth to admit that my Branch had no end in life save to elect a member of the Council, and it seems to occur to me that I have heard of Branches which have done useful scientific work and of others which made effective play in local professional economics, and so long as this is so the question for each Branch will not be that of its continued existence but the most effective local organization for those purposes which awake its interests.—I am, etc.,

Dundee, Nov. 4th. R. C. Buist.

COUNTRY MEMBERS OF THE BRITISH MEDICAL ASSOCIATION.

Sir,—The various letters to the Journal upon the subject of the Referendum and Dr. Larking's paper as printed in the Supplement of November 2nd have suggested to me that it is time that some one should say a word in defence of the very large class of country members, who seem to be standing a very good chance of being left out in the cold. I could wish that some worthier champion than myself had been found to do this, but perhaps there may be others to back me up. Most of the letters appear to be from town members who have, perhaps, a short train or tram ride from their own homes to the meeting places of the various Branches and Divisions. But do they stop to consider what it is to be in the country with very poor train service, possibly none at all within reasonable distance? How would they feel if to attend a meeting meant leaving home and practice for half a day, perhaps even having to stay away for the night? Would they be so regular in attendance if your Manchester members, say, had their meeting-place at Crewe or Shrewsbury, or your London members at, say, Winchfield or Aldershot? And this means leaving no one in charge of the practice, as the next doctor may be 5 to 10 miles away. It seems to me very unfair to accuse us wholesale of apathy and lack of interest. There must be many men who would like to do something and who take the deepest interest in the work of the Association, but who under the present constitution are quite powerless, owing to inability to attend meetings. Making all members of the Association members of the Division in which they live was a step in the right direction; but we must, like Oliver Twist, ask for more. As a concrete instance I will take my own case. I have been a member of the South Carnarvon and Merioneth Division of the North Wales Branch for six years, and during that time there has been no Division meeting nearer than 15 miles. This summer the North Wales Branch annual meeting was held at Machynlleth. I went in hope of meeting other members and hearing questions of importance and interest discussed, but the time was mostly spent in listening to papers that were of great medical interest, but would have been better printed in the British Medical Journal and read at home. Besides, most of the audience had to leave to catch the train before the papers were finished.

I know that in the country districts everyone cannot be considered, and the meetings should be held where it is convenient for the majority, but it is decidedly annoying to be called apathetic and indifferent. Is there any great difficulty in having the resolutions to be proposed printed and sent to the members, so that they can vote by letter if not able to attend the meetings? As things are now the country members have practically no share in the business or conduct of the Association, and almost the only object in belonging to it at all is to receive every week the valuable Journal. With Dr. Larking's paper I agree mostly, but I cannot with him "think it is a mistake to give a vote to a man who, by failure to attend meetings, has not heard the questions argued from both sides of view." The questions could hardly be argued more fully than they are in the columns of the Journal. It is hard to be disfranchised because one happens to live where it is not possible to attend meetings. I am hoping and trusting that before long all this may be altered, and we may have some practical interest in the business of the Association. Until then it is useless to think of a united profession every member of which will belong to the British Medical Association. I hope that our town members will bear in mind the position of their country brothers, and not condemn them wholesale for their apparent lack of interest. I hope this letter will induce some influential member to champion the cause of the apparently apathetic country member.—I am, etc.,

Aberdovey, Nov. 3rd. F. S. Jackson.

THE GENERAL PRACTITIONER AND THE ASSOCIATION.

Sir,—I am not, and have never been, a general practitioner; my position of virtually complete detachment leaves me personally unaffected by the disadvantages and disabilities under which the bulk of the profession labour; but I am fully cognizant of the widespread discontent which exists among great numbers both of those within and those without the Association. The latter class have no right to find fault with the Association; they ought to join and make their voices heard. They do, however, grumble, and ask what is the Association doing to improve their lot? With one of these men during the last few days I have had a talk. He said, "It is no doubt very easy to be satisfied with things as they are when one is earning £5,000 a year, or holding a comfortable service or Government post, easy to forget the seamy side of professional life when absorbed in scientific experiment or research. The men who ought to lead forget us, not so much from selfishness as from preoccupation in the pressing business of their own lives." General practitioners are more and more becoming alive to the fact that whilst the State demands from them a higher standard of qualification, obtained at greater sacrifice than is demanded in other professions, the law affords them no protection and no real privilege whatever.

Practitioners find that the bread is taken out of their mouths by fraudulent quacks who plunder the poorer classes and leave them often with empty pockets, to seek the gratuitous services of qualified men under one or another form of charity. Practitioners know that the working classes are robbed annually of a vast sum by quack medicine vendors, many of whom make of this traffic a cloak for illicit practice, and they realize that, whilst they are thus deprived of legitimate income, the law allows the infliction upon the simple public of an amount of suffering far outweighing in importance the loss they themselves endure.

General practitioners, as I can testify, are gradually appreciating the fact that the case for medical law reform needs only full statement, backed by the incontrovertible evidence available, in order to claim the attention of our legislators and force them to action. Dr. Arthur E. Larking, in his paper published in the Supplement of November 2nd, suggests that satisfaction may, among other things, be found in the fact that "the Association has drafted the Medical Acts Amendment Bill." "It is," he says, "a most important matter, and will when passed be a great blessing to our profession. It would be hopeless to attempt to pass a Bill of this kind unless supported by a great Association like ours." No one will dispute the last statement, but it would have been much more satisfactory if Dr. Larking could have told us that there existed under prevailing circumstances the remotest probability of such a Bill being taken up by the present or any succeeding Government. No private member could carry through such a measure; it is doubtful whether he could gain a hearing for it. If a medical member introduced it, it would be destroyed at once by its enemies as a mere trades-union dodge. If the Association will bend its energies to the public demonstration of the case for medical-law reform it will soon become evident that success is in view. General practitioners who now hold aloof will then flock in, add their personal weight to that of their fellows, and by their subscriptions and donations will provide the funds needed to carry the matter onwards to a triumphant close.—I am, etc.,

November 2nd. Henry Sewill.

ALCOHOLISM AND HOBNAIL LIVER.

Sir,—In your issue of November 2nd Dr. Donkin draws attention to the prominence usually given to alcoholism as a cause of cirrhosis, and incidentally refers to my often repeated doubt as to the existence of relationship between the two conditions.

Without attempting to express any definite opinion as to real causation, I may perhaps be permitted to con-

tribute a brief outline of my experience. For the last twenty-five years I have confined my attention to matters relating to the treatment and control of habitual drunkards, during which time I have treated, or been brought into intimate contact with, something like 8,000 cases. These have included persons of both sexes, and members of all classes from the wealthy and well born to the drunken prostitute. About a third of this number have been "periodic" drinkers, or persons whose mental instability has rendered them incapable of drinking large quantities of alcohol, but the remainder have consumed from one to three bottles of spirits each day for periods varying from five to twenty years. During the whole of my experience I have never met a single case of cirrhosis, I have never seen a case of haematemesis apart from two due to stomach lesion, and I have never been called upon to treat hepatic dropsy. Congestive liver enlargement and disturbed function have often been met with in heavy drinkers when first admitted to treatment, but a few weeks of abstinence, with due attention to diet and hygiene, has invariably restored to normal both size and function.—I am, etc.,

Home Office, S.W., Nov. 4th. R. Welsh Branthwaite.

Sir,—The relation of alcohol to cirrhosis has been maintained for generations, though, if I remember rightly, the first recorded case of "hobnailed" liver was ascribed to the too free imbibition of water.

While it is possible there may be some direct relation as to the cause (alcohol) and the effect (cirrhosis), in view of certain facts it is difficult to be sure. These facts divide themselves into two categories:

1. Cirrhosis occurs in humans who have never been addicted to alcohol.

2. Cirrhosis occurs in lower animals (cattle and horses).

That it is due to some toxin is probable; for example, J. A. Gilruth,[1] who has made observations on the cirrhosis occurring in cattle and horses, finds that it is the result of eating ragwort (*Senecio jacobea*). Adami some ten years ago wrote on the subject of cirrhosis of cattle in Canada and its possible cause, a micrococcus.

I have seen a good many cases of cirrhosis of the liver without definite history of alcoholic excess, and in the present year have made *post-mortem* examinations on two typical examples of hobnail liver in which the use of alcohol could be definitely excluded. Conversely, I have assisted at several autopsies on persons dying at an advanced age who have confessed to having been drunk more or less daily for forty or fifty years, and whose viscera were passed as perfectly normal.

The way alcohol is abused by the profession in regard to etiology is amusing; any condition for which no ostensible reason can be adduced is assigned to alcohol, if syphilis or tuberculosis be not available, though gonorrhoea is recently coming to the front. Now I have seen several cases of large fatty liver in persons dead of pneumonia, persons who had been lifelong teetotalers; this condition of liver was in premicrobic times held to be proof positive of chronic alcoholic excess. I might give other examples of the same conception. Thus it seems to me that the direct relation between alcohol and cirrhosis has not yet been proved; indeed, a very little sophistry would be required to demonstrate that so far from alcohol being the cause of cirrhosis, cirrhosis is the cause of alcoholism. But in the present state of our knowledge I am willing to agree to the proposition that cirrhosis may be due to the action of certain toxins, of which alcohol may be one.—I am, etc.,

London, W.C., Nov. 4th. R. G Hebb.

Sir,—Dr. Donkin's interesting letter in the British Medical Journal of November 2nd raises the important question whether cirrhosis of the liver is not due more to syphilis than to alcohol. This point was suggested not long ago by Dr. Byrom Bramwell,[2] who remarked, "Why is it that one man who drinks gets cirrhosis of the liver, while another man who drinks does not? It is not improbable, I think, that in some cases the explanation is to be found in the fact that the man who gets cirrhosis of the liver has had syphilis." There is no question that syphilis produces interstitial hepatitis; it is also well known that all syphilitic lesions are aggravated by alcohol, and that latent syphilis may be aroused to activity by alcoholic excess. It is, therefore, reasonable to assume that most cases of cirrhosis of the liver are due to the combined effect of alcohol and syphilis. It is also important to note the frequency with which the liver is affected in hereditary syphilis, so that some cases of cirrhosis of the liver in adult life may be the result of the action of alcohol on a liver previously affected by late hereditary syphilis ("syphilis héréditaire tardive").—I am, etc.,

London, W., Nov. 1st. C. F. Marshall.

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1 See New Zealand Agricultural Department Reports.
2 *Clinical Studies*, vol. i, 1903.

MEDICAL EDUCATION.

Sir,—May I, as one who had "the misfortune of being born south of the Tweed," but the good fortune of receiving his medical education north of that river, be allowed to dissent from certain statements contained in the otherwise excellent address delivered by Sir Felix Semon at Manchester on October 16th, and reported in your issue of November 2nd? The remarks to which I take exception are such as one would expect to be made in the sanctum of some London hospital, and not within a city so proud of its university as is Manchester. Sir Felix Semon, during his long sojourn in England, seems to have restricted his study of the means of obtaining a medical qualification solely to London, and has neglected the fact that there are eight universities in England, outside the capital, where students are trained and receive degrees in medicine and surgery. It is as easy for a student to obtain a university degree in England as it is in Scotland, and the means are practically the same. Sir Felix Semon evidently does not know when he speaks of "marked injustice" that in order to obtain the "coveted title of M.D." in Scotland a candidate must have been in practice for two years, and present a written thesis, in addition to passing an examination in clinical medicine which lasts eight hours, and includes an examination in the use of the laryngoscope, ophthalmoscope, and all the latest methods of clinical research and diagnosis. In my opinion, the reason why so many English students take the conjoint qualification is that they do not understand the means of securing the various qualifications when they begin their curriculum and content themselves with an inferior preliminary examination which debars them from obtaining a university degree. (A uniform preliminary examination is as much needed as a "one-portal" qualification.) This is the main reason why some Scottish students take the Scottish Conjoint qualification.

With much of Sir Felix Semon's address I cordially agree, especially in regard to the time wasted on the preliminary scientific subjects, and the efforts that are made to make the student a highly-trained physiologist.—I am, etc.,

November 5th. M.D. Edinburgh.

THE AVERAGE FEE OF A POOR-LAW MEDICAL OFFICER.

Sir,—I read with interest the annotation[1] on Dr. Percy Rose's experience as district medical officer of West Ham.

I quite agree that it is indeed high time that the average rate of pay for district medical officers should be ascertained. I feel confident that when it is it will prove that there is no other work undertaken by the medical profession which is so disgracefully remunerated, and that it will reveal sweating of a nature that few members of the profession, other than Poor-law medical officers, are aware of.

From my own experience of seventeen years I am confident that my rate of payment works out at about half that of Dr. Percy Rose, and I believe it is much the same for all the district medical officers of this union.

I consider that this is one of the questions which richly deserves the attention and support of the British Medical Association as soon as it has "got its house in order" under the new régime.—I am, etc.,

Wm. Barker Bale,
Medical Officer No. 1 District, Stockport Union.

Stockport, Nov. 3rd.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

Sir,—Now that children in elementary schools are to be examined medically on entry I think the profession

1 British Medical Journal, October 26th, p. 1178.

should express an opinion upon the amount of remuneration that is to be paid for the work. I suppose in most boroughs the medical officer of health will be responsible, with assistance where the numbers need it. This will mean that in many places the medical officer of health will have to be a whole-time official, and I think that it would be only reasonable to make the salary paid at least equal to a fee of 2s. 6d. for each examination of each child. This would apply to the ordinary entry examinations and also to special examinations of eyes, throat, mentally and physically-defective children. The lowest joint salary for such work should be £600 per annum, and provision should be made for periodical increases in the salary.

All officers appointed under these new appointments might well have half the total salary paid through the county councils, and should be given fixity of tenure. From the very comprehensive wording of the Act all these requirements can, I think, be made by the Education Department. The grouping of rural districts will be more difficult, but if vaccination were included there seems no reason why this opportunity should not be seized for beginning the foundation of a public health service with whole-time appointments throughout the country.—I am, etc.,

A Medical Officer of Health.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Board of the Faculty of Medicine.

The Board of the Faculty of Medicine has co-opted J. S. Fairbairn, M.A., B.M., Magdalen College (F.R.C.S., M.R.C.P., etc.)., as a member of the Board for the statutable period of two years, from November 1st, 1907.

Professorship of Engineering Science.

In a Congregation held on Tuesday, October 29th, the form of Statute establishing a Professorship of Engineering Science was promulgated, and the Preamble thereof approved on a division (placet, 152; non-placet, 20).

UNIVERSITY OF CAMBRIDGE.

R. C. Punnett, M.A., Fellow of Caius College, has been re-elected to the Balfour Studentship for one year.

A grant of £50 from the Balfour Fund has been made to W. E. Agar, Fellow of King's College.

The following degrees were conferred on October 24th:

M.D.—H. F. Tod, Trinity.
M.B.—R. G. Elwell, Trinity.

Amended forms of certificates in Practical Midwifery have been issued by the Special Board for Medicine for students who commence medical study after October 1st, 1907.

Appointments.

H. H. Clutton, M.A., M.C., of Clare College, has been appointed an Elector to the Professorship of Surgery, in place of the late Mr. Timothy Holmes.

The following Examiners have been appointed for the First and Second M.B.:

Elementary Physics.—C. T. R. Wilson, M.A., Sidney College.
Elementary Chemistry.—R. H. Adie, M.A., Trinity College.
Elementary Biology.—A. E. Shipley, M.A., Christ College.
Human Anatomy.—Dr. Duckworth, Jesus College; Dr. Denyer, Queen's College.
Physiology.—J. Barcroft, M.A., King's College; Dr. Noel Paton, B.Sc., Glasgow University.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

An ordinary quarterly Comitia was held at the College on Thursday, October 31st, the President, Sir R. Douglas Powell, in the chair.

Membership.

The following gentlemen were admitted members of the College: Maurice Alan Cassidy, M.A., M.B.Cantab., L.R.C.P.; Charles Wilberforce Daniels, M.B.Cantab.; Samuel Ernest Dore, M.D.Cantab., L.R.C.P.; John Prescott Hedley, M.A., M.B.Cantab., L.R.C.P.; Reginald Charles Jewesbury, M.A., M.B.Oxon., L.R.C.P.; Herbert Wm. George Macleod, M.D.Edin.; George Basil Price, M.D.Lond., L.R.C.P.; Robert Frazer Standage, L.R.C.P.: Harold Waterlow Wiltshire, M.A., M.B.Cantab., L.R.C.P.

Jenks Scholarship.

The Jenks Scholarship was awarded to William Henry Price Saunders of Epsom College.

Licences.

The Licentiateship of the College was granted to 112 gentlemen.

Communications.

The following communications were received:

1. From the Secretary of the Royal College of Surgeons, reporting proceedings of their Council on July 25th and October 10th.
2. From the Secretary of State for India, forwarding copies of reports by the Indian Governments on the suggestions of the College with regard to plague measures in India made to Mr. Brodrick in 1905, and of a dispatch by Mr. Morley to the Government of India of July 26th, 1907, on the same subject.
3. From the Chairman of the Home Office Committee on the London Ambulance Service, inviting the College to appoint a Representative to give evidence before the Committee. The invitation was accepted, and, on the nomination of the President, Sir Wm. Church was appointed to represent the College.
4. From the Clerk of the Privy Council, forwarding a copy of a note received from the Austro-Hungarian Ambassador, in which the British Government is invited to send Representatives to the Sixteenth International Congress on Medicine, to be held at Buda-Pesth in 1909. The nomination of Representatives was deferred until some future Comitia.

Accounts.

The audited accounts for the year ending September 29th last were laid before the College.

Fellowship.

On the motion of the Registrar, Daniel Colquhoun, M.D.Lond., and George Edward Rennie, M.D.Lond., who were elected Fellows on April 25th, residing in New Zealand and Australia respectively, were admitted *in absentia*.

Restoration of Membership.

An application from Charles E. P. Forsyth, M.B.Aberd., was considered for the second time, and the Membership which he resigned in April, 1906, was restored to him, as he is now practising in accordance with the by-laws.

Imperial Cancer Research Fund.

On the nomination of the President, Dr. Andrewes was elected a member of the Executive Committee of the Imperial Cancer Research Fund, in place of the late Sir William Broadbent.

Committee of Management.

Dr. Frederick Taylor, who retired by rotation, was re-elected a member of the Committee of Management

Dr. Wm. Ewart moved the following resolution: "That the question be considered of the expediency of securing some permanent reproduction, by photography or otherwise, of the most valuable among the ancient deeds, documents, and art treasures, the property of the College, with a view to their perpetuation in the copy in the event of loss or destruction of the originals." The matter was referred to the Library Committee to consider and report on to the College at a future Comitia.

Reports.

The following reports were received:

1. From Sir William Church and Dr. Heron, who represented the College at the International Congress on School Hygiene in August last.
2. From Dr. Michael Grabham, who represented the College at the Centenary Commemoration of the Geological Society in September last.
3. From the Committee of Management, dated October 7th, with the following recommendations:
   a. That Mr. Edmund Owen be appointed visitor to the Examinations of the Egyptian School of Medicine for the examinations to be held in December next.
   b. That Giggleswick School, Settle, Yorkshire, be added to the list of institutions recognized by the Examining Board in England for instruction in chemistry and physics.
   c. That Wyggeston School, Leicester, which is already recognized by the Examining Board for instruction in chemistry and physics, be also recognized for instruction in biology.

   The recommendations were adopted.
4. The quarterly report of the Finance Committee, dated October 17th, was received.
5. The quarterly report of the Examiners for the Licence on the results of the July examinations was received.

UNIVERSITY COLLEGE, ABERYSTWITH.

On November 1st Mr. Asquith formally opened the Edward Davies Chemical Laboratories, recently erected and equipped as a department of the University College of Wales, Aberystwith. It was in 1903 that Mrs. Edward Davies, the Misses Davies, and Mr. David Davies, M.P., of Llandinam, jointly promised to contribute £20,000 towards the project, in memory of the late Mr. Edward Davies, formerly one of the College treasurers. The Council secured a suitable site on an eminence commanding the town, known as Buarth Mawr, and a substantial structure of simple Georgian style has been erected.

The day was made an occasion of much local rejoicing. A procession left the College shortly before noon for the new laboratories (about half a mile distant), consisting of a detachment of undergraduate volunteers, the members of the Students' Representative Council, men students, the College staff and Court of Governors, the staff of the Theological College, head masters and mistresses of Welsh intermediate schools, old students, the Mayor and corporation, members of

Parliament, special guests, and the donors. The route was lined with spectators. The alumni wore their academic robes. Within a reserved space in front of the building, after a verse of the College song had been sung, Mrs. Davies formally presented Lord Rendel with the deed of gift, and the architect handed a key to Mr. Asquith. The handle was a representation of the College coat-of-arms surmounted by a Welsh harp, and the reverse side bore an heraldic shield. Mr. Asquith then unlocked the door of the main entrance and, accompanied by Lord Rendel and numerous guests, inspected the interior of the structure, and completed the ceremony with the formula, "I have the honour and pleasure of declaring the laboratory open."

Luncheon was subsequently served in the New Market Hall. Lord Rendel gave the toast of "Mr. Asquith," whom he described as a statesman, scholar, and a tried friend of Wales. The toast was most enthusiastically received. Mr. Asquith, in responding, paid a tribute to the splendid self-sacrifice of the Welsh people as regards educational matters. On the motion of Sir John Williams, the right hon. gentleman was thanked for his address.

TRINITY COLLEGE, DUBLIN.

THE following candidates have been approved at the examinations indicated:

INTERMEDIATE *(Part II)*.—H. H. James, W. E. Adam, V. W. T. M'Gusty, H. Fleming, W. H. Hart, D. J. Stokes.

FINAL *(Part I)*.—*D. J. Miller, *E. J. H. Garstin, *A. K. Cosgrave, W. A. Nicholson, R. J. Attridge, W. H. Sutcliffe, H. S. Sugars, E. B. Bate, J. E. M'Causland, J. D. Murphy, R. D. FitzGerald, H. S. Millar, F. R. Sayers.

* Passed on high marks.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

SUPERSESSION.

FAIR PLAY writes that being a newcomer in the district, he occasionally acts as *locum tenens* for a brother practitioner who pays him four guineas a week for his services but on the condition that under no circumstances will he accept any patient so seen as his own. Our correspondent complains of this arrangement, and illustrates it by quoting the case of a lady, a patient of his colleague, whom he had seen in this way and who has since asked him to attend her, and has told him that whatever his decision may be she will under no circumstances return to her former medical adviser. "Fairplay" says: "May I ask you if the conditions laid down for my doing his work are fair, and am I correct in attending patients who refuse to go back after I have tried to persuade them as to the right course? Of course, I should advise my professional brother by letter or by word of mouth as to any patients who come to me in such a way. It seems to me that any man in the district could ask me to take their work on such conditions, and that I should gradually debar myself from all chance of succeeding in making a living."

*** Our correspondent cannot have his bread buttered on both sides. He was not bound to take the position of a paid substitute, but as he did so he must fulfil the conditions under which he was engaged. It would be a breach of good faith if he were now under any circumstances whatever to accept as his own patients people to whom he has been introduced in his capacity of substitute for his colleague.

Medico-Legal.

POLICE CALLS.

DR. W. DICKSON recently sued a police-constable at the Hungerford County Court under circumstances thus stated by the judge; that a man named Brake cut his throat; that a neighbour called a police-constable, who saw Mrs. Brake, who told him that she wanted a doctor; a messenger was found, who told the doctor that he had been sent by the police-constable, without mentioning the fact that Mrs. Brake had told the police constable to call a doctor. The counsel for the plaintiff submitted that he was entitled to judgement on these findings, because the constable was acting as an agent for an undisclosed principal. The judge would not accept this interpretation, and in giving his decision said that he had to decide whether the constable was liable; he could only be liable as principal or as acting for an undisclosed principal; if he had simply told the messenger to go for a doctor, he would have been acting as agent for an undisclosed principal, but the messenger had stated that the police-constable told him to go for a doctor for Mrs. Blake; the police-constable could not be made liable because the messenger gave the wrong message; if the constable had sent for the doctor not disclosing who the principal was, or had himself sent for the doctor, he might have been liable as an undisclosed principal; the judge found that he was not so liable.

At Greenwich County Court recently, before His Honour Judge Willis, K.C., Dr. J. P. O'Hea, of Catford, sued Mr. Woof, of Bromley Road, Catford, for one guinea and a half. The claim was for medical attendance to defendant and two friends after a motor car accident which occurred in the middle of the night at South End, Catford. Plaintiff, who was called by the police, said that defendant was a man of means, and he did not consider it fair to look to the Police Fund for payment. For the defence it was stated that Woof and his friends were attended subsequently by their own doctors, at their own homes. His Honour held that the constable calling plaintiff acted as defendant's agent, and gave judgement in plaintiff's favour for the amount claimed and costs.

UNREGISTERED DENTISTS.

AT Old Street Police Court, London, on October 31st, three dentists were prosecuted by the London and Counties Medical Protection Society for using styles and titles implying that they were registered dental practitioners under the Dentists Act. The Society was represented by Mr. G. H. Young, solicitor.

Evidence was given by Dr. Hugh Woods, Secretary of the prosecuting Society, as to visiting the business premises of the respective defendants. Mr. Hanreck exhibited at his shop, which was also a hairdresser's, the name, "H. Hanreck, Surgeon-Dentist"; above the door, and inside, "G. Hanreck, Practical Dentist." Lechem, who is a chemist, exhibited the words, "Surgeon-Dentist," but Weinberg only exhibited a frame with the word "Dentist," and a quantity of teeth in the window.

Mr. Robinson, defending Hanreck, said the signs were put in during the time of his client's father, who was a registered dentist, and had been left there since his death in 1889. He had no idea he was infringing the Act.

Lechem, defending himself, said he was qualified in Vienna and Berlin, and thought the qualifications were sufficient in England.

Mr. A. J. David, barrister, defending Weinberg, submitted that the use of the word "dentist" alone was no suggestion that the plaintiff was registered.

Mr. Cluer overruled the point. He fined Hanreck and Lechem each the full penalty of £20 under the Act, and further ordered them to pay three guineas costs each. Having regard to the fact that Weinberg had been carrying on his business since 1872—before the passing of the Dentists Act—the magistrate imposed a fine of £10, with three guineas costs.

VALUE OF PARTNERSHIP DEBTS.

ALBINO writes: A. and B. are partners, and A. intends to buy B.'s share, together with the book debts, at 15 per cent. reduction. Should fees due from an insurance company for examining cases and money due from an industrial school be classed as book debts, or should they be treated differently and divided equally between the partners?

*** All money due at the time of the sale for professional work, and not paid, must be included under book debts. It is not usual to reckon under this category debts of more or less uncertain value.

A. K. B. T.—In estimating the value of a practice by taking the average receipts during the last three years, all professional receipts during that period must be included. It matters not whether those receipts were the payments for work done during those three years or for work done anterior to that period. In every practice, especially in those of long standing, a considerable portion of the receipts is made up out of the payment of book debts of past years.

PAYMENT FOR POLICE CALLS.

LUX writes that some six weeks ago he was called by the police to attend a woman and her daughter, who had been murderously attacked by the woman's husband with a hatchet. He spent an hour or an hour and a half in dressing the wounds and injecting strychnine, etc. The patients were then sent to hospital and recovered, and last week the man was brought up at the police-court and sent for trial at the assizes. Our correspondent was not called at the police-court, nor does he expect to be at the assizes. He asks: (1) Can I recover a fee for this attendance? (2) If so, from whom is it recoverable? (3) What would be a fair fee to ask for under the circumstances?

*** (1) Our correspondent is certainly entitled to a fee for his attendance. (2) As to who should pay, if the husband is able to do so he should certainly be called upon; if not, application might be made to the police authorities. (3) In the metropolitan police district the fee for each case, if the attendance was at night, would be 7s. 6d., or a special fee of one guinea for both might be allowed.

PUBLIC HEALTH.

ISOLATION HOSPITAL DIFFICULTIES.

One of the difficulties liable to arise in the working of isolation hospitals, which forms an important part of public health administration in England, is illustrated by a complaint which reaches us with regard to a patient sent in by one of the neighbouring practitioners, being induced by the hospital nurse to cease to consult the doctor who had sent her in, and attend after her return home at the surgery of the visiting surgeon to the hospital. The case had been reported as one of diphtheria, and antitoxin serum had been injected before sending the patient to hospital, but the nurse told her she was not suffering from diphtheria nor ever had been, and based on this opinion of hers the advice to change her doctor. So far as we know, the visiting surgeon was not aware of the nurse's interference, as in that case he would doubtless have refused to treat the patient so recommended; but the doctor who had sent her in, being naturally annoyed, wrote a letter of complaint to the Hospital Committee, in which, after describing the nurse's conduct, he spoke of it being a case of touting, "held by the Medical Council to be infamous conduct, and punishable by removal of the offender's name from the *Medical Register*." The Hospital Committee thereupon instructed their clerk to write that the action taken by the nurse was against their wishes, and that she certainly should not have instructed or influenced the patient in the way complained of. They very properly took no notice of the suggestion of infamous conduct, etc., repeated twice in the complainant's letter, and there for the present the matter ends. If the facts have been correctly reported to us, we think it is to be regretted that the visiting surgeon treated the case at his surgery without perhaps making full inquiry as to where she had previously been treated, and that the complainant in his letter to the Committee went far beyond the bounds of his just complaint against the nurse's conduct.

OBITUARY.

FRANCIS WOODHOUSE BRAINE, F.R.C.S.

We record with much regret the death of Mr. Woodhouse Braine, one of the early pioneers of anaesthesia in this country.

Born in 1837, Francis Woodhouse Braine came from an Oxford family, his father being a well-known general practitioner in Mayfair. Little record has been kept of his early life, but in 1854 Braine joined the medical school of St. George's Hospital, and became M.R.C.S.Eng. four years later. At his hospital his ambitions and proclivities led him towards surgery, and he occupied the posts of House-Surgeon, Surgical Registrar, and Demonstrator of Anatomy; but under the influence of Mr. George Pollock, whom he helped at his operations, Braine gained experience in anaesthetics. After a few years of general practice the opportunity occurred which determined the trend of his life's work. Mr. Potter, who had devoted himself with enthusiasm to the practice of anaesthetics in 1864, met with the misfortune of losing a patient under chloroform. He never gave another anaesthetic, and offered his practice to young Woodhouse Braine. Here was his chance, and although to accept it meant relinquishing his surgical ambitions, he took Mr. Potter's house in Maddox Street, and started as a pure anaesthetist. At this time he and Mr. Clover were the sole exponents of the art, and Woodhouse Braine soon acquired name and fame with a lucrative practice in this branch. In 1861 he had become L.R.C.P., and six years subsequently took the Fellowship of the sister college. Woodhouse Braine was one of the first in England to commence the use of nitrous oxide, which in those early days was manufactured at home and carried about in large bags. One of his earliest hospital appointments was to the Dental, now the Royal Dental Hospital of London. He remained on the staff for a quarter of a century. In 1872 the authorities at Charing Cross Hospital determined to appoint a special officer to administer anaesthetics, and offered the post to Woodhouse Braine. This honour was accepted; the position enabled him to be one of the first lecturers on the uses of anaesthetics, and for eighteen years he carried on this hospital work. His only other hospital appointment was to St. Peter's Hospital for Stone, an institution to which he was attached for sixteen years, and which he was Consulting Anaesthetist at the time of his death. Various societies were indebted to him for strenuous work, and particularly the Medical Society. During his tenure of office as Secretary he arranged the move to the Society's present house in Chandos Street; in token of appreciation of his services he received a medal from the Society and was elected a Vice-President. The Odontological Society also *honoris causâ* added his name to its roll of honorary members. In 1893, when the Society of Anaesthetists was founded, Woodhouse Braine gave his unstinting support to the movement and served for two years as President.

In his special branch of practice he was conspicuous as a thorough-going advocate of ether, and was among the first in this country to extend the use of this anaesthetic which he gave habitually in succession to nitrous oxide. More a man of action than a writer, Woodhouse Braine has left comparatively few papers, although those which he contributed to our columns and those of other journals dealt rather with practical than theoretical aspects of anaesthesia. But there was another side to the character of Woodhouse Braine; he was in every sense a keen sportsman. Under the *nom de guerre* of "Frank Stanley" he took part in swimming matches at a time when swimming was little recognized; he hunted twice a week and threw himself into any game of skill with that energy and keenness which characterized all he undertook. All who came in contact with the man felt the subtle influence of his kindly personality and few who when in trouble sought his advice and aid came away without sympathy and the shrewd counsel of a man of the world. Of fine physique and untiring activity, he never admitted his inability to pursue active life, and it was this refusal to accept his physical limitations which caused him to overtax his powers and contributed to his death. Many will mourn Woodhouse Braine and none more than those who were associated with him in his work as an anaesthetist.

WILLIAM GEORGE WEAVER,

FORMERLY HONORARY SURGEON, ROYAL BUCKS HOSPITAL.

Though continued ill-health had somewhat diminished the circle of his friends, there are many persons in Bourne End, Aylesbury, and elsewhere, who will hear the news of the death of Dr. William George Weaver, of St. John's Wood, with much regret. Dr. Weaver's family hailed from Herefordshire, but his father had settled and married in Tasmania, and Dr. Weaver was born in that Colony. Nevertheless, though he regarded himself as a Tasmanian, the greater part of his life had been passed in the home country, to which he came in the late Seventies to take up the study of medicine. He joined the medical school of Westminster Hospital, his career as a student being one of marked distinction, for year after year in each annus medicus he won most of the prizes open to him, and was also appointed a Prosector of the Royal College of Surgeons. Later on, after serving the hospital as a resident medical officer both on its medical and surgical sides, he was appointed an Anaesthetist to the hospital, and in the school Assistant Demonstrator of Anatomy. At this period he anticipated an uninterrupted career in England, but the illness of his father made a visit to Tasmania desirable, and for a few years he practised his profession in Hobart Town. He then returned to England and married, settling in practice at Bourne End. In this place he remained for some five years, but reasons of health connected with his family led to his moving and re-establishing himself in the drier locality of Aylesbury, where he early received appointment on the staff of the Royal Buckinghamshire Hospital, and acquired a very extensive practice. His career in this town, as also at Bourne End, was of a most successful character, but after some six or seven years symptoms of renal trouble showed themselves, and eventually he decided to give up practice altogether. He then took a house in St. John's Wood, making that his head quarters, but spending the less clement months of the year at different health resorts. Last winter he had one or more attacks of a hemiplegic character, and though he recovered sufficiently to be able to get about until quite recently, he continued to lose ground steadily in other ways. His death, which occurred at the early age of 48, took place in London, but his remains were removed for interment to Bath, a locality with which, through his wife, he had a family connexion. During the period of his active career, Dr. Weaver took considerable interest in ambulance matters, and for several years was an Examiner and Lecturer to the St. John Ambulance Association. He is survived by his wife, but leaves no children.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

J. C. M. asks for information with regard to the treatment of "port-wine" marks by radium emanations.

ARAMAIC would be grateful for information as to the subject of embalming the dead by the Jews at any time of their history.

A QUESTION OF EUGENICS.

Dr. B. DUNLOP (Woodford Green) writes: What is the biological effect on a community of the policy which (as a remedy for the poverty of the lower stratum of society) advocates that the richer—that is, the cleverer, stronger, and more industrious—workers should be taxed to help to keep the poorer workers? Does it not tend to diminish the better workers and to multiply the less capable, and thus to foster degeneration of the community?

FEES FOR LIFE ASSURANCE EXAMINATIONS.

DEVON RURAL writes: The London, Edinburgh, and Glasgow Assurance Company have forwarded me a fee for 7s. 6d. for filling up a medical referee's report (including analysis of urine) for £100 policy. Is this fair and decent remuneration? In sending my receipt I announced my intention of making it my final transaction with them unless they see the error of their ways. Does any other company expect so much for so little?

HOMES FOR IMBECILES.

A. C. S. desires to find an institution for a feeble-minded boy of 13, not certifiably imbecile; the parents could pay about 10s. a week.

*** "A. C. S." is recommended to apply to Miss Kirby, Secretary, National Association for the Feeble Minded, Denison House, Vauxhall Bridge Road, S.W. A newly opened home at Uxbridge might be suitable for the case.

ENQUIRENS asks for a home for a cretinous boy aged 9.

*** "Enquirens" is informed that a cretinous imbecile might be received at the Earlswood Asylum (Secretary, Mr. H. Howard, 36, King William Street, London Bridge, E.C.), or at Magdalen Hospital School, Bath (Mr. E. Newton Fuller, Clerk to the Trustees, 5, Old King Street, Bath).

HYGIENE IN THE ROYAL NAVY.

T. W. T. asks for information respecting the following: (1) Books on naval hygiene; how carried out on ships, arsenals, and in naval hospitals. (2) Books on the working of the nursing department of a naval hospital. (3) Books on ambulance on board ships and other naval establishments. (4) Rules and regulations of naval health corps.

*** (1) There is no modern book on naval hygiene published. Macdonald's *Naval Hygiene*, 1881, is quite out of date. Chapter xxxv of the King's Regulations and Admiralty Instructions will, however, give a good deal of information. (2) There is no book published on the working of the nursing department of a naval hospital. The regulations for naval nursing sisters could be obtained from the Medical Director-General, 18, Victoria Street, S.W. (3) There is no special book on ambulance on board ships. (4) There is no naval health corps. We would recommend our correspondent to peruse the reports of the proceedings of the Naval and Military Section at the annual meetings of the British Medical Association during the last few years: BRITISH MEDICAL JOURNAL, second volume, 1901, p. 453; 1902, p. 1018; 1903, p. 397; 1904, p. 379; 1905, p. 376; 1907, p. 503.

ANSWERS.

PATERFAMILIAS.—The composition of goat's milk varies in a marked manner with the race of the goat; it is also much influenced by food. In the case of healthy infants the practice is often to allow them to suck direct from the goat, so as to prevent any possibilities of microbial contamination. In the case of delicate infants it may be necessary to modify the goat's milk, so that its composition may more nearly approach that of human milk. In Paris the amount given is determined by the weight and not the age of the child; thus, a child weighing 4 kilograms would be given 500 grams of mother's milk, or its equivalent, in twenty-four hours. It is usual to modify the goat's milk in the following proportions: 65 to 70 grams of milk made up to 125 grams by boiled water sweetened to 10 per cent.; it may be necessary to use still more water, but in any case it is most essential that the milk should be fresh.

ACETONAEMIC CONDITIONS IN CHILDREN.

DR. G. A. SUTHERLAND (London, W.) writes: The contradiction which Dr. Martin Cuthbert has found in my writings undoubtedly exists, and to his courteous request for an explanation I gladly accede. The question under discussion is, Should fatty foods be given to the subjects of acidosis (periodic vomiting)? On chemical grounds the answer is in the negative, because the abnormal acids are supposed to arise from the faulty metabolism of fats. This was the view commonly held when I made the first statement. On clinical grounds the answer is in the affirmative, so far as my limited experience goes, and in the freedom of discussion at Exeter I made the second statement, which was to that effect. I cannot enter on the subject more fully here, but do not wish to appear dogmatic on a subject of which we really know so little.

DERMATITIS CAUSED BY LYSOL.

FLEET-SURGEON V. G. THORPE, R.N., writes, in reply to "Erin's" query:

From personal experience I know that certain skins are peculiarly sensitive to lysol, which undoubtedly will set up an acute intractable dermatitis, especially affecting the dorsal surfaces of the hands. The treatment I have found most efficacious is the application of guaiacol ointment (guaiacol ℥j, lanoline ℥j) following the use of hot fomentations or an arm bath of warm boric acid solution. The inflamed surface, having been smeared with the ointment, is then powdered with equal parts of calomel and zinc oxide. The result is a tenacious, pliable coating to the skin, under which healing takes place. As an alternative the glycogelatine of zinc, as described on page 447, *Quain's Dictionary of Medicine*, article "Eczema," may be used, but I think guaiacol gives better results. Ointments of ichthyol, salicylic acid, zinc and sulphur, etc., proved useless in my own case. In addition, calcium lactate internally in 10-grain doses twice a day for four days, followed by an interval, markedly hastens a cure.

TERRITORIAL ARMY MEDICAL CORPS: TITLES OF OFFICERS.

SURGEON-MAJOR (RETIRED).—The terms of the notification published last week leave no doubt in our mind that it is intended that officers of the Territorial Army Medical Corps should have simple military titles and not compound titles, such as Surgeon-Captain, Surgeon-Major, etc. This view is confirmed by the statement repeatedly made that the intention is to model the Territorial Army Medical Corps on the Royal Army Medical Corps.

LETTERS, NOTES, Etc.

A REPUTED CURE FOR THE OPIUM HABIT.

THE Secretary of the Society for the Suppression of the Opium Trade, 181, Queen Victoria Street, E.C., offers to supply to medical men free samples of *Combretum sundaicum*, the plant referred to in the article entitled A Reputed Cure for the Opium Habit, published in the JOURNAL of October 19th, p. 1086.

CIMICIFUGA IN CHOREA.

DR. J. J. MCINERNEY (Abertillery) writes: I had recently under my care a bright, intelligent little boy, 10 years of age, who had an attack of acute rheumatism complicated by a very severe type of chorea. The rheumatism subsided under appropriate treatment in a few weeks. The chorea was more difficult to treat. The patient was put on liquid extract of cimicifuga, 20 minim doses being administered every four hours in a tablespoonful of water. The result was striking, and far exceeded my best anticipations. In about ten days the choreic symptoms commenced to abate, the power of speech returned—the patient could not speak a word during the severity of the attack—and the chorea has now completely disappeared, the patient being about and doing well. This case was treated without the administration of a single dose of arsenic, although it is held by all medical authorities, and laid down as a golden rule in textbooks of medicine, as the primary, if not the only successful, treatment of chorea.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

An Address

ON

THE PATHOLOGY OF THE LIVING.

DELIVERED BEFORE THE ASHTON-UNDER-LYNE DIVISION OF THE BRITISH MEDICAL ASSOCIATION AT THE OPENING OF THE WINTER SESSION ON OCTOBER 18TH, 1907.

BY B. G. A. MOYNIHAN, M.S., F.R.C.S.,

HONORARY SURGEON, LEEDS GENERAL INFIRMARY.

MR. PRESIDENT AND GENTLEMEN,—When I had the honour of receiving your most cordial invitation to open the winter session of this Division of the British Medical Association, the thought came to me that I might perhaps be able to interest you by an endeavour to show in what manner our knowledge of the pathology and treatment of abdominal diseases had been modified and enlarged by the work of the surgeon. Those among us who can carry their minds back twenty years or thereabouts will remember that practically all the knowledge we then possessed of the diseases having their origin within the abdomen was based upon clinical observations of the symptoms and signs which the patient displayed during life, and the pathological evidence revealed upon the *post-mortem* table. At the present time, however, as a result of the enormous increase in the number of abdominal operations, a third and most fertile source of information has been disclosed to us. During the conduct of such an operation not only are the parts immediately concerned in the operation laid bare, but other organs also are exposed to our scrutiny and investigation, with the gradual result that we have been enabled to construct a pathology of the living as contrasted with the pathology of the dead. It is of the value of this pathology of the living and of its influence upon our powers of diagnosis and of treatment that I wish more especially to speak to-night.

I can well remember the time when the risks of an abdominal operation were very considerable. When I was first a resident in the Leeds Infirmary there was a long period in which approximately two-thirds of all the patients died after abdominal section had been performed upon them. The record of a year's work was not then a chapter of great surgical achievements; it was a martyrology. This was, in part, due to the large proportion which the desperate, the "too late," cases of obstruction and similar troubles bore to the total number of operations; in part, also, no doubt, to the fact that in surgery, as in all the arts, the hand of the beginner is heavy. It was in those days not an uncommon experience for the surgeon who recorded the discovery of certain pathological states during the operation to be held up to good-humoured derision by his colleagues, or the residents, when the *post-mortem* examination disclosed a state of affairs supposed to be entirely at variance with these. It never seemed to occur to us that the *post-mortem* evidence was perhaps of far less value and significance than that which had been furnished during the life of the patient. Yet it is an unquestioned fact that there is not seldom a greater change in the naked-eye changes of the parts within the abdomen after death than there is in the expression of the face. The features of a man in health change greatly when death comes, and these changes have their counterpart elsewhere.

The knowledge gleaned upon the operation table has shown that at least no small part of the *post-mortem* room pathology is in value insignificant as compared with the pathology of the living. This is, indeed, only what might reasonably be expected. If a patient is suffering from a certain disease, say of the stomach or gall bladder, it is of greater import and of greater service to us to see the exact pathological conditions present at the moment of his illness than it could be to see the same parts months or years afterwards, when unalterable changes, extensive advances, and perhaps a terminal infection, have been added to that early simple condition which first disturbed the patient's health. It is more important for us to know the pathological conditions which cause a patient's present sufferings—a pathological change which is, perhaps, remediable—than it is to know the fullest particulars of that unhindered morbid change which has at last caused death. Our chief purpose is to heal the living.

A point in reference to the value of *post-mortem* pathology is, it seems to me, too constantly overlooked. The evidence furnished in a series of years in the *post-mortem* room of a general hospital upon any subject is of enormous value; that no one disputes. But the value is necessarily a limited one. To take an example: In a recent discussion[1] Dr. Hale White briefly reviewed the cases in which gall stones had been found on *post-mortem* examination during twenty-five years at Guy's Hospital. Within this period 11,031 autopsies had been performed, and gall stones were found in 333 cases. There are probably few hospitals where so many *post-mortem* examinations are made as at Guy's, and it is doubtful if there is one where they are made with greater care or accuracy. Yet the first thought that occurs to one is that the accumulated experience of all these years at this great hospital is very meagre. The total number of cases in which gall stones or their complications are found is small, a great deal smaller, for instance, than the number of cases that have been operated upon by a few individual surgeons. In mere quantity, that is to say, the entire *post-mortem* experience of this great hospital in twenty-five years is less than the experience of a single surgeon during, say, five or ten years. In actual value the former cannot be compared with the latter. For however carefully the anamnesis of the dead patient may have been taken, his personal contribution to our knowledge is a final and completed thing, amenable to no revision. The surgeon, on the other hand, happily, is able to co-ordinate the details of the patient's history, amplified and more closely scrutinized, if need be, after the operation, with those morbid changes of which the operation has made him fully cognizant. If a single observer had been present at every autopsy at this hospital during all these years (an impossible assumption) his experience would have a less solid foundation in essential facts and observations than that of many surgeons who are now daily engaged in the treatment of patients suffering from this disease. It seems to me indisputable that the evidence which can be adduced from the *post-mortem* records of any hospital, however long the period chosen, in respect of gall-stone disease, of diseases of the stomach, or of the pancreas, or intestines including the appendix, is inconsiderable in quantity and insignificant in value when compared with that which is now available upon the operation table. (For it is, I think, reasonable to assert that patients do not commonly die in hospital as a result of the diseases from which they suffer protractedly during life. The occurrence of an autopsy in hospital upon a patient who has died of calculous obstruction of the common duct may be a rare event—one case in forty years at Guy's Hospital.) In my own work such a case is now seen upon the operation table on an average once in ten days. The death in hospital of a patient who has at any time suffered from gall-stone disease is evidently rare, for in twenty-five years at Guy's Hospital only 333 cases were seen. In six years I have myself seen a larger number than this of patients who were so seriously troubled by this disease that operative treatment was necessary, and Drs. W. J. Mayo and C. H. Mayo, of Rochester, have together operated upon over 1,500 cases. Again, I could quote more than one eminent physician who considers that death from haemorrhage in cases of gastric or duodenal ulcer is extremely rare, because in all his hospital experience no such case had been known. Yet a little reflection will show that it is hardly to be expected that such cases would be admitted to hospital. Neither haemorrhage nor perforation occurs except in rare instances when the patient is under treatment in hospital. Within the last twelve months I have seen three patients suffering from chronic ulcer, in two cases in the duodenum, in one in the stomach, who, while awaiting operation, bled to death before they could be admitted into hospital. It is, therefore, hardly necessary to point out that opinions, at times so confidently expressed, which are based only on *post-mortem* experience, which take no account of the sufferings or of the morbid changes in the living, and which show no acquaintance with the risks and results of operative treatment, can make no claim upon our acceptance nor any serious demand upon our consideration.

DISEASES OF THE STOMACH AND DUODENUM.

But my chief purpose is not merely to endeavour to adjust the relative values of the evidence derivable from the dead and from the living, but to attempt to show what are the contributions which have been made by the surgeon to the science o medicine by his study of the pathology of the livingf Let me take the diseases of the stomach first. The. work of the surgeon has, I think, shown that chronic ulcer of the stomach or of the duodenum is a far more common disease than was formerly believed, and that a very large number of the protracted or recurring cases of indigestion are due to its presence. It is no long time since most of the symptoms due to ulcer were attributed to vices of secretion, to excess or deficiency of hydrochloric acid in the gastric juice, and so forth. But exploration of the abdomen has shown that the part played by these factors in the type of case I have mentioned is so small as to be almost negligible. With regard to duodenal ulcer, it is hardly an exaggeration to say that nothing was known of its symptomatology, and very little could be done for its relief until the surgeon had realized its frequency, and had shown in what manner the patient could be cured. In the text-books, or special medical works on the subject, duodenal ulcer is considered an infrequent disease, and one very difficult of recognition. Both Riegel[2] and Ewald[3] give such meagre descriptions of duodenal ulcer that it is quite certain that the characteristic clinical picture of this malady is unknown to them, and the opportunity of co-ordinating the anamnesis with the living pathology in a case of duodenal ulcer has probably not occurred to either of them. The work of the surgeon has shown that duodenal ulcer is a common disease; I have myself operated upon 160 cases. In my last published paper I showed that the proportion of gastric to duodenal ulcers in my own cases was exactly as 2 to 1. Yet since then the proportions have altered, and recently I have operated oftener for duodenal than for gastric ulcer. Many of the ulcers which were supposed to be pyloric or in the stomach close to the pylorus we now know to be in the duodenum. To tell exactly whether an ulcer is gastric or duodenal is not always quite easy; a careful examination of the whole area must be made, and the venous ring which usually marks the site of the pylorus defined. By multiplying these careful examinations we have come to realize that duodenal ulcer, at least in the cases that come to the surgeon for treatment, is almost, if not quite, as frequent as gastric ulcer. And little by little the clinical picture has become complete, and a diagnosis of ulcer can now be made with reasonable certainty from the anamnesis alone. This is usually the story the patient tells: After food is taken the patient is free from pain, the period of an hour or two which follows a meal is the best time in the day. At a time varying from one and a half to four hours after the meal a sense of uneasiness is noted in the upper part of the abdomen. A burning, gnawing sensation develops, and there is a bitter taste in the mouth, with, it may be, eructations of food or gas, bitter and acid in taste. The pain, which gradually increases, may be relieved, often considerably, by belching or by pressure. As it increases in severity it strikes through to the back, to the right of the middle line, and it may radiate round to the right side of the chest. As all patients discover for themselves, the taking of food relieves the pain, so that many carry a biscuit in their pockets, or take milk, a dose of an alkaline medicine, or some form of food, as soon as the uneasiness develops. In several cases upon which I have operated the pain has been more severe than this—has been, in fact, indistinguishable from a mild form of hepatic colic; the patient describes the pain, which comes constantly two or three hours after food, as a "colic" or a "spasm." It is not improbable that a spasm of the pylorus is actually present, for such a condition may subsequently be seen during the course of an operation. The pain, it will be noticed, comes on at a time when the patient should be beginning to feel hungry for his next meal; for this reason the term "hunger-pain" which I suggested in a former paper, seems quite appropriate. The interval of relief after a meal varies chiefly according to the character of the food taken. The more substantial the food, the greater the interval of relief. The appetite is generally good; in fact, often better than the normal if stenosis has not developed. It is not unusual for a patient to say, "I've a good appetite; I can take anything, and I never vomit." If he has given a history of pain, as I have described it, one may be confident that he has duodenal ulcer, without stenosis. Investigation by test meals will show no stasis and perhaps, but by no means always, some hyperacidity.

After a time—a few weeks, a month or two—the symptoms may gradually improve, and even disappear, to reassert themselves after a longer or shorter interval. The patient will then speak of having "attacks" of a certain duration, coming capriciously, leaving spontaneously. In the intervals of these attacks he may be perfectly well, suffer absolutely no discomfort, enjoy food, and gain weight. The attacks are more frequent and more severe in cold weather than in warm. A "chill" is often assigned as a cause of a certain attack, and attacks seem specially apt to come in times of stress and worry. The recognition of duodenal ulcer is most necessary, for it is, I feel sure, a far more serious disease than gastric ulcer, and it is, moreover, one which, in my judgement, should always be treated by operation. I often see and operate upon cases of duodenal ulcer which have been variously diagnosed as "chronic gastritis," "acid dyspepsia," "hyperchlorhydria," etc. But a slender acquaintance with the pathology of the living is all that is needed to connect the clinical history outlined above with a condition of chronic ulceration in the duodenum.

Another, and I think incomparably the most important, result of the surgical work upon the stomach, is concerned with the relationship between chronic ulcer of the stomach and cancer. It is a very remarkable coincidence that several surgeons of large experience have noticed that when the anamnesis of the cases of gastric cancer is studied a clear history of chronic ulcer in the stomach is given by more than half the patients. A medical friend of mine to whom I mentioned this fact wanted to know the evidence which led me to the conclusion that an ulcer had been the cause of these early symptoms. My reply is, that if a patient now consulted me, giving the same history of his present sufferings as the cancer patient gives me of his sufferings of ten or twenty years ago, I would advise surgical treatment in the confident expectation of being able to demonstrate a chronic ulcer as their cause. And here let me incidentally say that as a cause of symptoms the ulcer which cannot be demonstrated does not exist, in my opinion. If an ulcer justifies operation it is an ulcer which can be seen and felt and displayed, to the conviction of the onlooker. Unless a definite ulcer can be seen during an operation there is, in my judgement, no indication for the performance of gastro-enterostomy. If this operation is done for the relief of symptoms dependent upon no demonstrable organic cause the patient will have no relief, and the operation will be thereby discredited.

In cases of carcinoma the removal of the stomach has furnished a few specimens which demonstrate the undoubted connexion between ulcer and cancer. The evidence of the development of cancer in chronic ulcer is from the clinical side as clear as it can be in the majority of cases; the pathological evidence is, of course, more difficult to obtain, because it must almost necessarily be based upon investigations of specimens removed during life. For by the time cancer of the stomach has proved fatal, and the specimen is obtained on the *post-mortem* table, the ravages of the disease are so extensive that all evidences of its origin in an ulcer may be wholly obliterated. But evidence is fast accumulating which will finally and completely dispel any doubts which are still felt as to the direct influence of ulcer in the genesis of cancer. The arguments in favour of the surgical treatment of all chronic ulcers of the stomach and duodenum are already sufficiently strong. No other treatment than that which the surgeon offers can do more than relieve the patient to some extent of his sufferings when once a chronic ulcer is established in the stomach; for if the ulcer lying near the pylorus heal, its cicatrix, while steadily undergoing contraction, is causing a constant mechanical interference with the movement of the stomach. Relief from the misery which this entails is offered only by mechanical means, and no operation in surgery gives more satisfactory results than gastro-enterostomy in

such circumstances. The mortality of this operation is very small; its results are extremely good. But the argument for surgical treatment becomes enormously strengthened when we are convinced of the fact that a large proportion, probably a majority, of the cases of cancer that develop in the stomach are due to the grafting upon the base of an old ulcer of a malignant process. Surgery, then, offers in cases of chronic ulcer not only a relief from present sufferings but an immunity from the possible onset of a disease of a far more terrible character. I hope I may be allowed to insert here, perhaps a little irrelevantly, a plea for the earlier submission to the surgeon of cases of cancer of the stomach. It is simply lamentable to look through the records of the cases of cancer that have been referred to me or to other surgeons for treatment. In the very great majority the disease is too far advanced for anything but a palliative operation, and in no inconsiderable number is the patient so utterly exhausted by his disease that the mere thought of operation is repellent. If only the patients who suffer from cancer of the stomach could be seen at an early stage by the surgeon there is no reason why the results of operative treatment should not be at least as good as they are in cases of mammary cancer.

It is, I submit, only by early exploration of possible cases of carcinoma of the stomach that the knowledge will be gained, by comparison of the symptoms with the pathological conditions then disclosed, which will equip us with the power of early positive recognition of this disease. At this moment the most expert clinician in the world cannot make an early diagnosis of cancer of the stomach. If, then, patients suffering from this disease are to have any hope of cure it is undeniable that the diagnosis must be made by inspection of the parts during life. I think there can hardly be a more promising occasion for the study of the pathology of the living than that afforded in the case of carcinoma of the stomach.

Diseases of the Biliary Passages.

The work of the surgeon in the diseases of the gall bladder and bile ducts has also been most fruitful in knowledge. In the early days of gall-bladder surgery but little was known as to the signs and symptoms which arose from the presence of stones in any part of the bile tract. The symptoms which are taken to indicate the presence of stones were in fact symptoms called forth by the severe complications to which those stones gave rise. Jaundice, to mention but one symptom, was looked upon as a necessary manifestation before an unequivocal diagnosis of cholelithiasis was justified; yet jaundice is a very infrequent symptom of gall stones, and is not present in by any means all the cases in which a stone is lying even in the common bile duct. During the course of operations upon the stomach, appendix, intestines, or pelvic organs the gall bladder can be examined, and at times stones are found therein of which there was no previous knowledge. By close inquiry after the patient has recovered certain symptoms are elicited which can then with confidence be attributed to the gall-bladder disease of which positive knowledge is now possessed. By such methods, varied in kind, we have acquired the knowledge which is indispensable to an early diagnosis of stone. Accordingly we know that the most frequent manifestation of cholelithiasis is "indigestion," pain after food, coming on usually an hour or so after a meal, great discomfort or cramp in the epigastrium, a feeling of insufferable distension relieved by belching, great flatulence. The pain is sometimes colicky in character. If these symptoms are severe and recurrent, elicited by certain articles of diet and not by others, a diagnosis of gall stones may be safely made. Such a history is always obtained in those cases of advanced disease which are so frequently found on the operation table. In a case of choledochotomy operated upon on the day I write this paper the history given by the patient and by the medical man is that the first "attack" occurred two and a half years ago. In that attack the patient was jaundiced. When I elicited the anamnesis I asked directly, "How many years before this attack had you suffered from indigestion?" The reply came at once, "Oh, I have had *that* trouble for over thirty years." The history I drew from the patient of "that trouble" was the clearest evidence of the presence of stones in the gall bladder; and at the operation the small thickened, shrunken gall bladder, full of stones and buried in adhesions, was clearly to be held responsible for those faults for which a perfectly healthy stomach had so long been blamed. Jaundice, as I have said, is a very uncommon symptom in cholelithiasis. In my own cases jaundice at any period has been noticed in less than 25 per cent. Jaundice, which Courvoisier called the "cardinal symptom" of calculous obstruction of the common bile duct, may now and again be wanting. A few months ago I removed a stone as large as a billiard chalk from the common duct of a man who was not jaundiced and who never had been jaundiced, and I find that of 31 cases of choledochotomy performed by me during this year, in 7 jaundice was not present at the time of the operation. Yet in 6 of these cases the diagnosis of common duct obstruction was confidently made, because of the rapid succession of attacks of pain, accompanied by shivering and sweating (a rigor, in fact), in a patient who was rapidly losing flesh.

It is a disgrace to our diagnostic acumen to admit it, but it is nevertheless the fact that the impaction of a stone in the common duct is not a rare event. When we have thoroughly learnt our work we shall be able to recognize the presence of gall stones before this serious and tardy complication of an otherwise simple disease has developed. In almost all common duct operations the adhesions are very numerous, and the gall bladder shows evidence of severe and long-standing disease—chronic cholecystitis, with thickening and sclerosis of the walls of the gall bladder, to a degree which may make the organ difficult to discover, or even impossible to recognize; fistulae may be present between the gall bladder and the intestine, the common duct may be so dilated as readily to admit two or three fingers. When the duct is opened it may contain many stones, pus, or offensive bile, and the hepatic ducts may be filled with stones or black tenacious mud. Stones which I have removed have been as large as a walnut, and in one case over 550 stones were numbered, and several thousands were left uncounted. Yet we are gravely told on high authority that a patient with a stone in the duct should not be submitted to operation because he is likely to recover if left alone. This opinion is based upon the fact that in forty years only one case of common duct stone was found on the *post-mortem* table at Guy's Hospital. To deduce such an opinion from such a fact seems to me to be a shining example of a certain inaccuracy of thought which may come from a too exclusive devotion to the pathology of the dead. The most wholesome corrective for such an error is the close study of the pathology of the living. And unless an opinion is based in some measure upon the knowledge so acquired it must always be accepted with some abatement.

We are often told that gall stones may exist for years in the gall bladder without causing symptoms. I do not believe for one moment that this statement is accurate; it is only another of those legacies of error which were first bequeathed to us in the days when none but the dead could disclose the secrets of pathology, and which have since been handed down reverently from one generation to another. The truth is rather that those inaugural symptoms which are caused by the stones as they lie in the bladder are not generally recognized. Because jaundice has not been observed, the complaints of the patients are put down to "neuralgia of the stomach," or are complacently ascribed to some other equally vague "disease." Whenever gall stones are discovered accidently during the performance of an abdominal operation, such as hysterectomy, a history of symptoms attributable to them can in my experience always be obtained, though it is perhaps rare for an organic cause for them to have been previously recognized. So when a necropsy discloses gall stones it is assumed, with no reason, that because jaundice or other positive symptoms are not recorded the stones have done nothing to excite recognition. I feel confident that it is not accurate to say the gall stones frequently cause no symptoms; it is, on the contrary, quite certain that they frequently, if not constantly, cause symptoms which we are not educated to recognize. From the dead no account can be obtained of their previous sufferings, but from the patients who by accident disclose their stones to the eye of the surgeon much has been, and far more may be learnt. From them we may glean much knowledge of the pathology of the living.

DISEASES OF THE PANCREAS.

It is as a result of the work of the surgeon upon the biliary apparatus that our knowledge of many of the diseases of the pancreas has been born. It was in 1896 that Riedel[4] gave the first detailed description of chronic pancreatitis. He had noticed that in certain operations performed for cholelithiasis the head of the pancreas was considerably enlarged and was very indurated; its condition was, in fact, very similar to that found in cases of primary malignant disease. Riedel described in full 3 cases; in 2 the patients recovered after operation, and the pancreatic enlargement gradually disappeared; in the third case the patient died, and the microscopic examination of the gland showed that the tumour was due not to carcinoma, but to chronic interstitial inflammation. But until Mayo Robson's paper in 1900[5] this subject did not attract general attention, nor was the clinical importance of chronic pancreatitis adequately recognized. It was therein demonstrated that many cases formerly regarded as examples of primary carcinoma of the gland were in fact cases of chronic inflammatory induration due to the irritation and infection of gall stones at some time present in the common duct. The discrimination of carcinoma from chronic pancreatitis became at once a matter of the highest importance, for it was clearly recognised that the inflammatory condition was amenable to surgical treatment, whereas cancer of the gland was, and still is, a hopelessly incurable disease. The differential diagnosis remained in all cases difficult, and in some impossible, until Cammidge discovered that the urine afforded important evidence in this connexion. The value of Cammidge's test in cases of pancreatic disease has caused much discussion, and I can only here record the fact that in many doubtful and difficult cases, both before and after operation, it has given me great help.

The fact that the common bile duct is always in close proximity to the head of the pancreas, and that in approximately two-thirds of all cases it actually runs within the substance of the gland, and that the mucous membranes of the common duct and of the pancreatic duct are continuous at the diverticulum of Vater, account for the frequency of the association of pancreatic disease with an infection of the common bile duct due to stone. The inflammation of the pancreas will persist so long as the irritation and infection are continuously excited by a gall stone; but—and herein lies a serious factor—when once the pancreatitis has progressed beyond a certain stage, it may persist even after the stone which first caused it has passed or has been removed. Gifford Nash[6] and others have related cases in which glycosuria due to pancreatic disease has subsided as soon as the infection of the bile passages was relieved by drainage. In a case of my own, however, a case seen with Dr. Stuart of Settle, chronic pancreatitis due to stones in the common duct was found; the stones were removed, and the patient made a good recovery, and remained well for more than a year. Glycosuria then developed, and the patient died of diabetic coma. The sclerosis of the gland which followed upon the chronic inflammation had doubtless involved the islands of Langerhans. Chronic pancreatitis in its early forms no doubt passes often unrecognized; it is relieved by the treatment of the cholangitis which has caused it. In the later stages, however, when surgical intervention has been too long delayed, the condition is one which may prove of the utmost gravity.

DISEASES OF THE LARGE INTESTINE.

There are several conditions involving the small intestine to which I should have wished to refer, but time and space forbid. I will ask your attention for one moment, however, to a remarkable result of a study of the living pathology in the large intestine. In a paper read last year before the Clinical Society of London[7] I drew attention to certain simple conditions, some hitherto undescribed, in which the mimicry of malignant disease in the large bowel was complete. In operating for supposed carcinoma of the colon, resection of the growth is, if possible, performed. The examination of the specimen subsequently may reveal no evidence whatever of a malignant growth. A hyperplastic tuberculous tumour, a dense inflammatory deposit in the serous covering, or the formation of many false diverticula with inflammation in and around them, may be found. Such conditions are clinically not usually to be distinguished from malignant growths, and, but for their removal by the surgeon, might have waited long for recognition. Yet they are all innocent conditions, which, when removed, do not recur. Since the case of mimicry of carcinoma by the development of false diverticula, which is recorded in my paper, I have performed colectomy on a second case, and have seen a third in which a fistula had formed between the bowel and the bladder. Indeed the formation of a vesico-intestinal fistula seems to be one of the tendencies of a perforated false diverticulum; a search through the literature has shown that it is far more common than was supposed. In cases where a hard growth in the intestine is accompanied by the passage of flatus and faeces by the urethra, a diagnosis of carcinoma seems irresistible, yet the probability is that "the growth" would be simple, and that the cause of the fistula would be a false diverticulum, which had burrowed its way through all the coats of the bowel, and thence through the wall of the bladder which had become adherent. These mimicries of malignant disease are found, of course, not seldom in the stomach, but their existence in the large intestine is not generally recognized.

TUBERCULOUS PERITONITIS.

A further illustration of the advantages of a study of the living pathology is afforded in respect of tuberculous peritonitis. Of the three varieties of this disease, the ascitic, the fibrous, and the suppurative, the former alone lends itself to successful surgical treatment. The first case in which surgical treatment was adopted was the historical one operated upon by Sir Spencer Wells in 1862. The patient was a female, aged 22, who was believed to have an ovarian tumour. She had been twice tapped, on one occasion 18 pints having been drawn off; the fluid reaccumulated, and operation was advised. The abdomen was opened and myriads of tubercles were found studding the peritoneum. The fluid was emptied away and the abdomen closed. The patient recovered after a sharp attack of peritonitis.

After this it rapidly became the custom to operate upon many cases of tuberculous peritonitis with effusion. It was thought to be enough to open the peritoneal cavity, to empty it, and to close the abdominal wound without drainage. After such treatment the patient's recovery was much hastened, and the success of the operation was often very remarkable. A variety of explanations was offered as to the reason for the undoubted effect of so simple a measure. But a closer inquiry into the histories of patients treated in this way showed that the ultimate result was not fully satisfactory; in a certain number of cases the peritoneal affection recurred, and a second or even a third or a fourth operation had to be done. As a result chiefly of the work of J. B. Murphy and W. J. Mayo, we have been brought to realize that the simple emptying of the peritoneal cavity is not enough. They have shown that tuberculous peritonitis is always secondary to a local infection (which however may itself be secondary to disease elsewhere), and that the operation must include, if permanent success is to be ensured, the removal of this local source of infection. This source, which can usually, though not always, be demonstrated, may be the appendix, the pelvic organs in the female, or the intestine, and it is curious that in my last three cases an example of each of these primary infections was encountered. After the fluid is emptied away a search for the primary focus of disease is made, and this must be removed. The results of such treatment are much better than ever before.

I think it is evident that the opportunity for an early pathological examination in these cases of ascitic tuberculous disease is capable of revealing the origin of the infection in the appendix or the Fallopian tubes, whereas a later examination upon the *post-mortem* table could only show the universal havoc wrought by a disease that had been allowed to go on unchecked to a fatal termination. The pathology of the dead in such a case is little or no help to the treatment of the living. But by operating at an early stage the pathological processes are observed at a time when they are so limited in extent as to be removable.

In this very imperfect recital of a few of the results which have come from the work of the surgeon I hope I have said something to convince you that the study of

morbid conditions within the abdomen during the progress of an operation has materially increased our capacity to make a more certain and an earlier diagnosis, and has accordingly equipped us with more efficient therapeutic power. It is, I submit, by a close study of the anamnesis followed by a careful investigation of the parts implicated in the disease, *during the life of the patient*, that the surest foundations for accurate diagnostic power can be built. The surgeon, after hearing the detailed story of an illness has not to wait until death comes to the patient before he can lay bare those pathological processes which have given rise to all the symptoms. He can see and handle the organ or organs affected at the time they are exciting the sufferings of the patient; not at the time, months or years later, when all bounds have been overstepped by the unchecked extension of the disease, in parts laid waste by a late infection. At the time when symptoms are being caused, the pathological changes are open to examination; *that* is the advantage which comes from a study of the pathology of the living. So far as abdominal diseases are concerned, he is the best diagnostician who spends much of his time in the operation theatre. The lessons there to be learnt are far greater in number and far outweigh in value those that can be learnt in the *post-mortem* room, in so far as they bear any reference to the treatment of the living.

I would, therefore, urge upon all those engaged in practice the desirability of following their patients to the operation table whenever opportunity occurs. The lessons there to be learnt will in practice be of a value beyond all reckoning, and interest in the daily work will be thereby quickened to an unaccustomed degree.

References.
[1] *Clinical Journal*, 1907, xxx, 273. [2] *Diseases of Stomach*, Saunders's translation, p. 614. [3] *Diseases of the Digestive System*, 1907, p. 198. [4] *Berl. klin. Woch.*, 1896, xxxiii. 1 and 25. [5] *Lancet*, 1900, ii, 235. [6] Ibid., 1902, ii, 1192. [7] *Edinburgh Medical Journal*, 1907, i, 228.

THE SACCULAR THEORY OF HERNIA.*

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Before dealing with the subject of this communication, I wish to express my sincere regret that death has recently removed from our ranks one who by his writings has done so much to broaden our views and advance our knowledge regarding the cause and the treatment of hernia. Needless to say I refer to the late Jonathan Macready, whose *Treatise on Ruptures*, the outcome of a wide clinical experience, has long been regarded as the standard work on this subject in the English language.

In directing atttention to what Mr. Hamilton Russell has named the saccular theory of hernia, I am perfectly well aware that there is nothing really new in the arguments I propose to advance in favour of this theory, but I do believe there is something really true in the statements I am about to make in support of it.

Inguinal, femoral, and umbilical hernia are so much more commonly met with than the other varieties of abdominal hernia that I propose to confine my remarks to them, but wish it to be clearly understood that I believe the saccular theory offers the only satisfactory explanation of the occurrence of all abdominal herniae which have not a definite traumatic origin.

Oblique Inguinal Hernia.

Though inguinal hernia is a very common complaint, has a wide geographical distribution and a very ancient origin—in fact, it is far from improbable that an inguinal hernia first appeared in one of the children or grandchildren of Adam—we are still far from agreed as to its exact causation, and, consequently, still further from agreement as to the best way of curing it.

Every medical man has been taught—and probably medical students are still taught—that there are two distinct types of oblique inguinal hernia: hernia occurring during infancy and childhood, in which the sac is of congenital origin, and the hernia of adult life, in which the sac is said to be almost invariably acquired. This is the orthodox faith maintained by the writers of all surgical textbooks and generally accepted by the medical profession throughout the world.

Though every man should long hesitate before changing his faith, it is well, in surgical matters at all events, not to rely too implicitly on authority, but to think for oneself, and from time to time to carefully review the evidence upon which our faith rests, and to consider the rules which should guide our surgical conduct.

If the evidence on which the orthodox teaching respecting the etiology of inguinal hernia rests be thus considered, it will, I think, appear somewhat remarkable that the theory of an acquired inguinal hernia sac should have met with such general and lasting approval.

As we have to distinguish between an acquired and a congenital hernia sac, it will be well at the outset to understand clearly in what respect they resemble or differ the one from the other.

The difference between a typically acquired sac, such as occurs when a ventral hernia follows upon a laparotomy, and a typical congenital sac, as seen in the inguinal region when the bowel descends into a sac formed by the unobliterated processus vaginalis testis, is, however, sufficiently obvious to render further comment in this respect unnecessary.

It has long been recognized that the frequent occurrence of inguinal hernia during infancy is due to the presence of a preformed sac, a defective obliteration of the processus vaginalis testis, and the type of sac most commonly met with in infants and young children is exactly the same type as that most commonly met with in adult life, namely, a sac entirely separate from the tunica vaginalis. I wish to emphasize this point because there appears to be an impression in the minds of many medical men that the usual type of hernia sac in infants is one in which the bowel descends into the tunica vaginalis. So far from this being the case, a hernia involving the tunica vaginalis is only met with in about 18 per cent. of all cases.

From clininal experience, then, we know that during infancy and childhood two distinct varieties of the same type of congenital hernia sac are seen: the complete sac which involves the tunica vaginalis, and the incomplete sac which is entirely separate from the tunica vaginalis, the latter being much the more common of the two. In the adult, also, two distinct varieties of the same type of hernia sac are seen: the complete sac which involves the tunica vaginalis, and the incomplete, the latter being much the more common of the two. The general relationship of the sac, whether complete or incomplete, to its coverings is remarkably constant, and similar both during infancy and adult life. In the diagram, *a* and A are both obviously

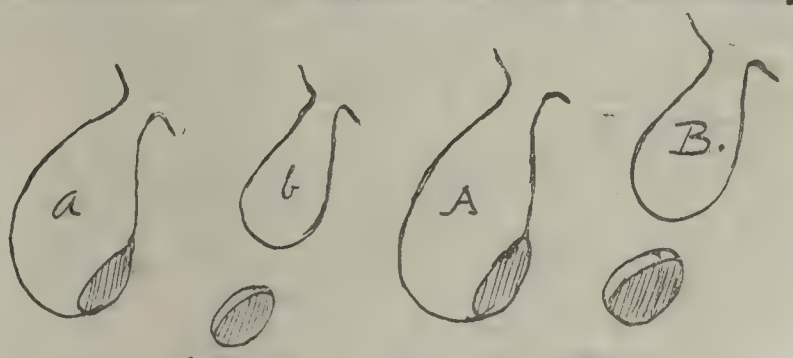

Fig. 1.

of congenital origin; *b*, the typical hernia sac of infancy, is also undoubtedly of congenital origin; B, the typical hernia sac of adult life, it is whose origin excites so much interest. It is to this type of sac, the sac of the so-called acquired hernia, that I wish particularly to direct attention. It surely has been the experience of all hospital surgeons to operate for inguinal hernia, possibly a strangulated hernia, which has suddenly and for the first time appeared, and at the operation to discover that the sac includes the tunica vaginalis. In such a case, though the hernia appeared for the first time during adult life, there can be no doubt that a preformed sac had been present since birth.

I have on several occasions operated on adults in whom an inguinal hernia had appeared for the first time and become strangulated. The sac was entirely separated from the tunica vaginalis, had a relatively long narrow neck, and there was no extravasation of blood outside the sac or other indication to suggest that the hernia sac had

* A paper read in the Section of Surgery at the Annual Meeting of the British Medical Association at Exeter, 1907.

been suddenly acquired. Surely in these cases it is clear that the bowel had descended into a peritoneal diverticulum which had existed since birth.

Recently I operated upon a man, aged 29, for the radical cure of an oblique inguinal hernia which he had first noticed four months previously. The sac was of moderate size, separate from the tunica vaginalis, and presented no characteristics whereby one could distinguish it from an ordinary hernia sac. The mother of this patient subsequently told me he was ruptured when a baby. Now in this case it is evident that the bowel had, after twenty-eight years, again descended into a preformed sac, and yet, apart from the history of a hernia being present on the same side during infancy, this sac would, I believe, have been regarded by most surgeons as having been acquired.

It is thus evident that in a fair proportion of cases in which an inguinal hernia appears for the first time during adult life, the sac is of congenital origin and not acquired, and as in the remainder of the cases the sac presents exactly the same general appearance and has the same relationship to the surrounding structures as in cases in which it is preformed, the inference is obvious, namely, that in these cases also the sac is of congenital origin. Further evidence in support of the saccular theory is obtained from the results of operative treatment. Experience has fully justified the assurance with which in children a radical cure of the hernia can be promised after an operation which essentially consists in the complete removal of the sac. Evidence is also rapidly accumulating which goes a long way to prove that in adults also a radical cure of the hernia is brought about by an operation which aims at little more than the complete obliteration of the sac. The results obtained by Professor Kocher and others who adopt his method of operating compare very favourably with the results obtained by surgeons who practise more elaborate methods, devised with the intention of filling a gap in the inguinal region rather than aiming at complete obliteration of the sac.

During the past few years I have practised the same method when operating upon infants or adults for the radical cure of inguinal hernia. I always open up the inguinal canal and have the sac pulled taut in order to apply the ligature to the neck of it at the highest possible level. The aponeurosis of the external oblique is subsequently united by overlapping; the inguinal canal is thus narrowed and strengthened and its original obliquity restored. The after-results obtained have been most gratifying, more especially as the vast majority of the adult patients have been men who subsequent to the operation have engaged in hard manual labour and wear no truss or support of any kind.

If the primary cause of inguinal hernia in the adult were due to muscular weakness in the inguinal region, it is surely unlikely that either of the operations I have mentioned would be likely to result in a permanent cure of the complaint.

Inguinal hernia is such a common affection that if it really is the case that the essential factor in its production is the presence of a preformed sac, an unobliterated portion of the processus vaginalis testis, then we would expect to find evidence in the *post-mortem* room of the patency of this process in a certain number of persons who during life never suffered from hernia.

In 200 consecutive and in no way selected *post-mortem* examinations kindly made for me by Dr. Nathan Raw at the Mill Road Infirmary upon persons in whom there was no history or evidence of hernia, a potential hernia sac was found in 47, and in these 47 bodies 68 diverticula were present. Of the diverticula 13 were inguinal, 52 femoral, and 3 umbilical. In 16 cases more than one diverticulum was present, and in one case an inguinal and a femoral diverticulum existed on either side. In most of the cases the unobliterated portion of the processus vaginalis testis was about 1 in. in length, and the opening at the internal abdominal ring so small as barely to admit a large probe; in others the opening was sufficiently large to admit the little finger.

From the results of these *post-mortem* examinations it is obvious that the presence of a potential hernia sac in the inguinal region does not mean that the individual in whom it occurs must necessarily suffer from a hernia. Why is it, then, that the bowel descends into these peritoneal pouches in some persons and not in others?

Granted the existence of a patent funicular process in

Potential Hernia Sacs Found in 200 Consecutive Post-Mortem Examinations.

Number.	Sex.	Age.	Potential Hernia Sac.
1	Male	48	Double inguinal and right femoral.
2	,,	61	Double inguinal.
3	,,	46	Left femoral.
4	,,	57	Right femoral.
5	,,	39	Right inguinal (contained omentum).
6	,,	55	Left inguinal (contained omentum).
7	,,	42	Left femoral.
8	,,	29	Right femoral.
9	,,	44	Double inguinal and double femoral.
10	,,	30	Right and left femoral.
11	,,	63	Right and left femoral.
12	,,	62	Right femoral.
13	,,	32	Left inguinal.
14	,,	45	Right femoral.
15	,,	60	Right femoral.
16	,,	61	Right and left femoral.
17	,,	44	Right femoral.
18	,,	64	Right femoral.
19	,,	33	Right and left femoral.
20	,,	54	Right femoral.
21	,,	22	Right and left inguinal.
22	,,	63	Right femoral.
23	,,	44	Right and left femoral (small opening).
24	,,	64	Right and left femoral (small opening).
25	,,	28	Right and left femoral.
26	,,	31	Right femoral.
27	,,	44	Left femoral (small opening).
28	,,	24	Right femoral.
29	,,	56	Right and left femoral and umbilical.
30	,,	55	Left femoral.
31	Female	40	Right femoral.
32	,,	14	Right and left femoral.
33	,,	62	Left femoral.
34	,,	54	Right femoral.
35	,,	33	Right femoral.
36	,,	60	Right and left femoral.
37	,,	47	Left femoral (contained omentum).
38	,,	56	Umbilical (contained omentum).
39	,,	30	Left femoral (small opening).
40	,,	43	Right femoral.
41	,,	30	Right femoral.
42	,,	37	Left inguinal.
43	,,	44	Right femoral.
44	,,	62	Right femoral.
45	,,	7	Right and left femoral (small opening).
46	,,	68	Right femoral and left inguinal.
47	,,	18	Left femoral.

Case 46 had also a large umbilical hernia. In Case 29 the umbilical sac contained a small piece of omentum.
These cases were examined at Mill Road Infirmary; list completed June 15th, 1906.

Two Hundred Bodies Examined.

In 47 bodies 68 peritoneal diverticula were found. The average age of these 47 persons was 44½ years; 30 were males and 17 were females. In 16 instances more than one diverticulum was present.

30 Males { 1 Umbilical. 11 Inguinal (4 double). 34 Femoral (11 double). } Average age, 47½.

17 Females { 2 Umbilical. 2 Inguinal. 18 Femoral (3 double). } Average age, 40.

The youngest person was 7 years of age, the oldest 68.

the inguinal region, I would suggest that the occurrence or not of a hernia largely depends upon two factors—the size of the opening at the internal abdominal ring and the strength of the muscles guarding it.

It is unnecessary for me to enter into anatomical details as to the formation of the inguinal canal and the attachment of the internal oblique and transversalis muscles, which together with Poupart's ligament form a sphincter-like structure guarding the canal. When the processus vaginalis is patent, provided the opening at the internal abdominal ring is small and the muscles guarding it powerful, then the probability of a hernia occurring is slight. If, on the other hand, the internal opening is large and the inguinal sphincter weak, the probability of a hernia occurring is considerable. The frequent occurrence of inguinal hernia during infancy would thus be explained.

The frequency with which inguinal hernia first appears about the age of puberty I would account for by the increased amount of exercise usually indulged in at this period, and the muscles which under ordinary conditions are able to guard the internal opening are suddenly overtaxed, and the bowel enters the inguinal canal. The escape of the bowel will, of course, largely depend upon the size of the internal opening.

When a hernia appears later in life, it may be even in old age, the same reasoning would hold good. Though the processus vaginalis testis has been to some extent patent since birth, no hernia has appeared because the opening at the internal abdominal ring was never large, and the inguinal muscles well able to guard it, but with declining years the weakened muscles gradually yield, and the bowel or omentum passes through.

Instances have been recorded in which an inguinal hernia has for the first time developed during or after a long illness, and under these circumstances it appears to me far more reasonable to explain such an occurrence in the way I have suggested, than to suppose the bowel to have forced the parietal peritoneum in front of it.

After all, what need is there to suppose that the sac of an oblique inguinal hernia is ever acquired when we know that during intrauterine life a peritoneal diverticulum normally exists in this region, and from clinical experience and *post-mortem* evidence that this diverticulum frequently persists throughout life? So confident am I of the correctness of my contention that I would go a step further and say that in a person born with a completely obliterated processus vaginalis testis it is impossible for an oblique inguinal hernia to occur.

Direct Inguinal Hernia.

It is unfortunate that this hernia is usually described in connexion with the oblique variety, for it belongs to an entirely different class of hernia. All authorities on the subject are agreed that a direct inguinal hernia is in fact a hernia through the lowest part of the linea semilunaris. Consequently its etiology should be considered in common with hernial protrusions occurring in other parts of this aponeurotic line.

Macready says: "When hernia occurs in the linea semilunaris, it is usually below the umbilicus. The majority of these herniae are close to the pubes, where they receive the name of direct hernia. In two cases seen at the London Truss Society the hernia was above the level of the navel. The two patients were boys aged $1\frac{9}{12}$ year and 6 months respectively. In both the protrusion was about the size of a Tangerine orange, was reducible, and situated on the right side. The aperture in the elder boy was just below the costal arch and as large as a sixpenny piece. In the younger child the opening was more oval and placed lower down."

Considering the early age at which the hernia appeared in these two patients, it is extremely probable that the primary cause of the protrusion was a local congenital defect in the fibrous structure of the abdominal wall. I mention these causes merely to show that there is evidence in favour of the belief that in the upper part of the linea semilunaris hernia may be due to some local congenital weakness, though, as far as I am aware, there is no proof that a preformed sac has ever been demonstrated in this region.

Direct inguinal hernia is essentially a hernia of adult life, the majority of cases first appearing in males between the ages of 40 and 50 years. Macready, however, mentions 13 cases in which the hernia first appeared in young men between 16 and 25 years of age.

A peculiarity of direct inguinal hernia, which I believe has some indirect bearing on its etiology, is the marked tendency there is for it to become double; this occurs in no less than 55 per cent. of all cases.

More direct evidence in favour of the saccular theory, as applied to this class of hernia, is contained in the writings of Macready. In the chapter on direct inguinal hernia he says:

> Some have supposed that, whether the descent takes place gradually or suddenly, the viscera enter a preformed sac. In support of this, Englisch has recorded the occasional presence of peritoneal pouches in the space between the hypogastric and the epigastric arteries. Englisch examined 300 bodies, and found peritoneal pouches in 6 of them. In certain cases a direct inguinal hernia had formed on one side, and a peritoneal diverticulum was present on the other. When it is remembered that in double hernia the two protrusions are seldom equal, but that one precedes and has larger dimensions than the other, there is strong probability that Englisch is correct in his conjecture, and that in some instances the viscera occupy these preformed sacs.
>
> In 100 cases of direct inguinal hernia, Hesselbach noticed and drew the condition of the aperture in the posterior wall of the canal. In 8 it occurred as a narrow split, in 13 as a small round hole, in 29 as a segment of a circle, and in 50 no trace of the posterior wall could be discovered.
>
> It is evident that as a direct hernia develops it enlarges at the expense of the internal wall of the canal and that it encroaches on each side, but principally in the direction of the epigastric artery, until the whole of the posterior wall of the canal between the artery and the rectus muscle has disappeared.

If, as certainly seems probable, the primary cause of the hernia is the presence of a congenital opening in the direction of the fibres of the conjoined tendon, through which a peritoneal diverticulum has passed, this would explain why it is the hernia does not usually develop until after middle life, when some failure in muscular tone is to be expected, and the "corporation" has a most objectionable, but equally undeniable, tendency to increase.

Umbilical Hernia.

Hernia at the umbilicus occurs with equal frequency in male and female children, the hernia in the vast majority of the cases appearing during the first year of life.

It is generally agreed that the bowel passes through the opening at the umbilicus which gave passage to the fetal vessels, and it is sufficiently obvious that the hernia sac in these cases is almost certainly preformed, owing to the process of peritoneum at this point not being completely obliterated.

In the adult the hernia also protrudes through the umbilical opening, and in every case upon which I have operated the margins of the opening were clearly defined. The coverings of the hernia are, apart from its size, identical in the child and in the adult, and as we know that congenital peritoneal diverticula occur in this position, particularly at the upper part of the umbilicus, it seems reasonable to suppose that both in the child and in the adult the hernia sac is preformed.

In considering the advent of umbilical hernia I would adopt the same line of argument as when discussing oblique inguinal hernia. The two important factors in the production of the hernia are:

1. A peritoneal diverticulum at the umbilicus.
2. Increased abdominal pressure.

If the diverticulum has a large abdominal opening, the probabilities of a hernia occurring during infancy are considerable. If the abdominal opening be only of moderate size, then increased abdominal pressure, from whatever cause, may be necessary in order to bring about a hernial protrusion. It is therefore quite possible for a person born with a peritoneal pouch at the umbilicus never to suffer from hernia, but with increasing years and an acquired increase in the abdominal girth the originally small diverticulum is stretched and the bowel may enter it.

I would thus account for the frequency with which an umbilical hernia is met with in women, more especially stout women who have borne children. Given the preformed hernia sac, we have in these persons two important factors added—namely, increased abdominal pressure during pregnancy, together with the stretching of the anterior abdominal wall, which would widen the abdominal opening of any existing pouch.

It would be interesting to know, but extremely difficult to ascertain, what proportion of women suffering from umbilical hernia were ruptured during infancy.

Femoral Hernia.

Though the sac of a femoral hernia is almost invariably found to occupy a position between the femoral vein and Gimbernat's ligament, cases have been recorded in which it has been seen in other situations.

It has been found over and external to the femoral vessels. Partridge, in the *Transactions of the Pathological Society* for 1847, relates a case of double femoral hernia in which both sacs were outside the femoral vessels. The left sac contained the sigmoid flexure; the caecum and vermiform appendix were in the right sac. The accompanying figure, which is copied from Macready's *Treatise on Ruptures*, shows three sacs—one in the usual position of a femoral hernia, a second peritoneal sac had traversed Gimbernat's ligament, and a third protruded over and to the outer side of the femoral artery.

These three peritoneal diverticula appear to me to have a very important bearing upon the etiology of femoral hernia. Macready tells us that

> the specimen was taken from the body of a woman between 40 and 50 years of age, who had a rupture for several years. The hernia is in the usual situation. The abdominal entrance of both the other pouches was narrower than the fundus, and both were surrounded by fat which had been partly removed by dissection.

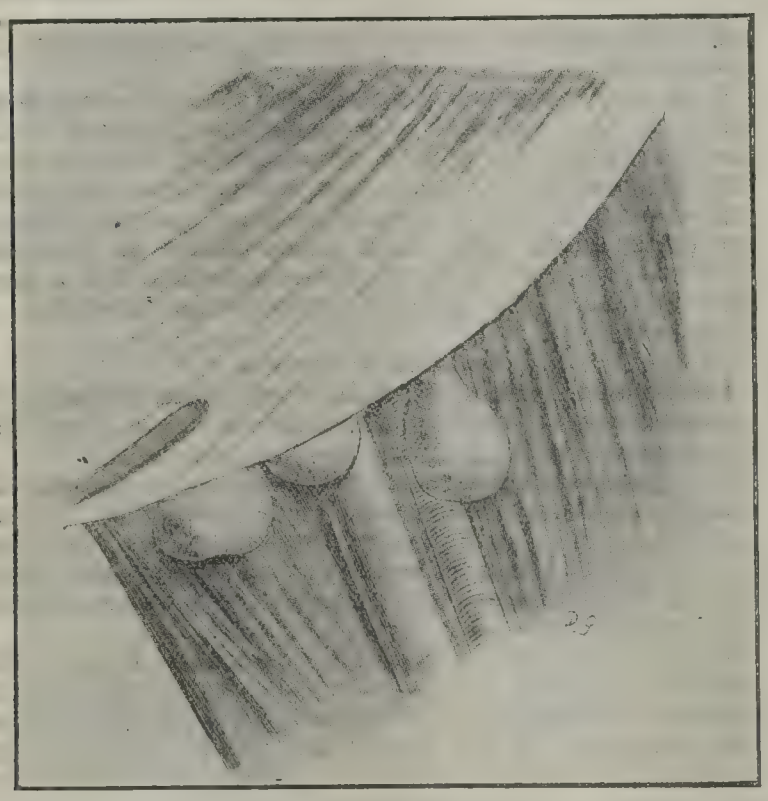

Fig. 2.

How are we to explain the formation of these three peritoneal diverticula?

Surely one of two explanations must be true—either all three sacs had been acquired, or, as appears more probable, all three were of congenital origin. The fact that three diverticula were found in such close proximity is in favour of the developmental view, and this view as to their origin receives support from their shape, for it is distinctly stated that the abdominal entrance of both these pouches was narrower than the fundus. Had these diverticula been produced by the bowel pushing the peritoneum in front of it, then the mouth of each sac would have been wide.

It might be argued that all three diverticula were acquired, that is to say, all three at one time were hernia sacs, but in two of them the neck and mouth of the sac had become narrowed, having undergone a natural cure. The objection to such an explanation is that clinical experience has never yet furnished a single instance in which an undoubtedly acquired hernia sac has undergone a spontaneous cure.

The evidence, then, is strongly in favour of the congenital origin of two of these sacs, and as it is extremely unlikely that an acquired hernia sac would be formed between two existing peritoneal diverticula, we are compelled to believe that, in this instance at all events, the femoral sac was also preformed.

Macready, in referring to persons seen at the City of London Truss Society during the years 1888, 1889, and 1900, mentions 21 cases in which femoral hernia was met with in males under 15 years of age, and 42 cases in which femoral hernia was noticed in females under 15 years of age. In accordance with orthodox teaching, all these 63 hernial sacs had been acquired; but, considering the age of the patients, and remembering that in five instances the hernia first appeared between the ages of 1 and 5 years, it is far more probable that the bowel had descended into a preformed sac.

The younger the person the greater is the probability of a hernia sac being due to some developmental defect, and in this connexion I will quote from an article in the *International Textbook of Surgery*. W. T. Bull and W. B. Coley, writing on femoral hernia, say:

> This variety is always acquired, and is seldom met with before maturity. It may occasionally, however, occur in children. One of the writers has operated upon 14 cases under the age of 14 years, one of these being a double femoral hernia in a male child aged 2 years.

Contrary to the opinion expressed by the writers, these cases appear to me to afford strong, though of course not conclusive, evidence in support of the saccular theory as applied to femoral hernia.

The frequency with which femoral diverticula were found in the 200 bodies examined at the Mill Road Infirmary was surprising. Of the 68 diverticula no less than 58 were femoral, 14 of them being bilateral. They invariably occupied a position corresponding exactly to that of a femoral hernia, and in shape closely resembled the inguinal pouches, having a narrow mouth and lumen, which would make it appear more probable that they were produced by some force pulling the peritoneum outwards, rather than by a pushing force from within. The fact that in the 47 bodies more than one diverticulum was present in 16 instances strongly suggests a developmental origin for both the inguinal and femoral pouches, and this view is strengthened by Case No. 9, in which a double inguinal and double femoral sac existed.

I would direct attention to the facts that so many of the femoral sacs were bilateral, and that in Case No. 45, a girl aged 7 years, a femoral diverticulum was present on both sides of the body. These femoral pouches are either all of congenital origin or all have been acquired; no compromise can be accepted. If they are all of congenital origin and occur with such frequency as the tables indicate, and are so often found in the position which the sac of a femoral hernia normally occupies, then why suppose the sac of a femoral hernia is ever acquired?

I would remind surgeons who held to the orthodox teaching that, if their view be correct, then these pouches must have been acquired by the bowel pushing the parietal peritoneum in front of it. Consequently we are asked to believe that amongst 47 persons no less than 58 femoral herniae must at one time have existed, and that quite unknown to the individuals concerned—a suggestion which, to say the least, is extremely improbable.

It is a well-known fact that femoral hernia occurs with far greater frequency in women than in men, and, granted that a femoral sac occurs with equal frequency in both sexes, I would suggest that a hernia is more likely to occur in women, mainly for two reasons:

1. Because in females the lateral expansion of the pelvis which takes place about puberty would tend to widen the mouth of a peritoneal diverticulum in the femoral region.
2. On account of increased pelvic pressure during pregnancy.

This suggestion receives support from the fact that femoral hernia appears with greatest frequency between the ages of 21 and 45 years, the child-bearing period.

The results obtained after operating for the cure of femoral hernia favour the view that the primary cause of the hernia is the presence of the sac, for if the sac were acquired owing to the weakness of the abdominal wall, recurrence of the hernia after operation should very frequently take place, as for anatomical reasons it is extremely difficult to strengthen the abdominal wall at this point. Yet we know that satisfactory results have been obtained after excision of the sac alone, and better results still when the sac has been invaginated and transplanted, without any attempt being made to reinforce the abdominal wall at the site of the hernia.

How to account for the presence of peritoneal diverticula in the femoral region is, I admit, a difficulty. For my own part, I favour the explanation offered by Mr. Hamilton Russell, of Melbourne, which is that early in fetal life, when the bud-like processes appear from which the lower limbs are developed, a little pouch from the pleuro peritoneal cavity is produced by the branches of the femoral vessels assuming a tortuous course, and so dimpling the peritoneum at this point. In this connexion it is interesting to note that in femoral, sciatic, and obturator hernia the sac is in close relationship with blood vessels leaving the abdominal cavity.

Conclusion.

Where absolute demonstration is impossible our opinion should be guided by what is most probable, and it seems to me that if, in view of the facts I have stated, the etiology of femoral hernia be considered in the light of common sense, the saccular theory offers the only satisfactory explanation.

The etiology of abdominal herniae is not merely of academic interest, but has an important bearing upon the question of treatment. A surgeon who believes that the chief factor in the production of the hernia is the presence of a preformed sac, would, in operating for a radical cure of the complaint, adopt less complicated measures than would be adopted by one who believes that the muscular and aponeurotic structures of the abdominal wall are primarily at fault.

Direct evidence as to the exact manner in which a hernia sac is formed in the femoral or other regions is not obtainable, "but the conclusion forced upon the mind by an unbroken train of circumstances pointing in the same direction is often more forcible than positive direct testimony, for witnesses may be mistaken, deceived, or deliberately false, while circumstances 'cannot lie.'"—(G. P. McNeill on Evidence.)

It appears to me that circumstantial evidence in favour of the saccular theory of inguinal, femoral, and umbilical hernia is so strong, so convincing, that I have every confidence in obtaining a verdict in favour of this theory from the general body of the medical profession.

PRELIMINARY NOTE ON A SIMPLE OPERATION FOR UNCOMPLICATED OBLIQUE INGUINAL HERNIA IN YOUNG ADULTS.*

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"The natural power of recovery is often so great that all that is needed is but to remove any unfavourable condition."—Mackenzie (Burnley): *Caledonian Medical Journal*, July, 1907.

Mr. President and Gentlemen,—Last month on mentioning the subject of this paper to a physician he remarked, "I thought you surgeons had said all there is to say about hernia"; yet Rigby,[1] in his review of recent literature on hernia, commences with the following sentence: "It seems extraordinary that a definite decision has not yet been arrived at as to the origin of the hernial sac."

The *rationale* of the operation which I wish to bring to your notice this evening depends upon the following hypotheses:

1. That for practical surgical purposes all oblique inguinal hernias are primarily due to a congenital or preformed sac.
2. That in young adults suffering from oblique inguinal hernia the valvular action of the muscles guarding the internal abdominal ring will regain its normal action if the cause of the dilatation of the canal be removed.
3. That if the neck of the sac be efficiently dealt with, it is quite unnecessary to interfere with the remaining portion in the inguinal canal or scrotum.

Two years ago I made various dissections of the inguinal region in the cadaver, and, as a result, devised a simple operation, the steps of which are the following:

Operation.

An incision is made half an inch above and parallel to the *middle* third of Poupart's ligament, the centre of which corresponds to the position of the internal abdominal ring. This incision exposes the external oblique muscle, which is incised in the direction of its fibres and

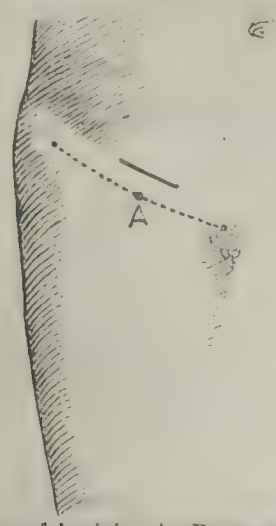

Fig. 1 shows relation of incision to Poupart's ligament. A, The middle of Poupart's ligament.
Figs. 2, 3, 4, and 5 (actual size) show different stages of the operation.

retracted, thus exposing the lower portion of the internal oblique muscle and the upper portion of the cremasteric. The fibres of the latter are divided in the same direction

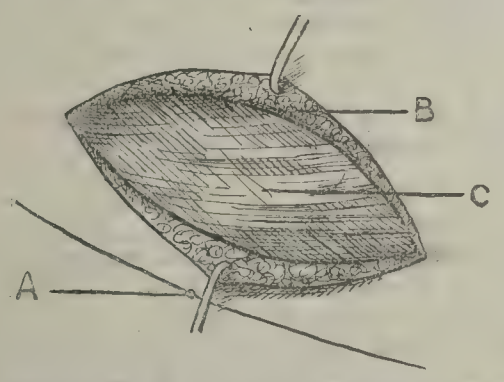

Fig. 2.—A, The middle of Poupart's ligament; B, retracted skin, fat, and fascia; C, external oblique muscle.

as those of the external oblique muscle. The lower edges of the internal oblique and transversalis muscles are then retracted upwards and outwards, and the transversalis

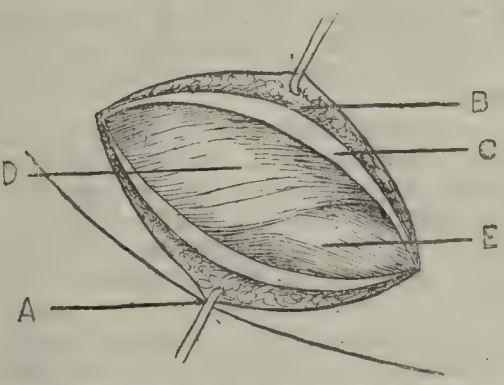

Fig. 3.—A and B as above; C, external oblique muscle retracted; D, fibres of internal oblique musele; E, fibres of cremasteric muscle. (The ilio-inguinal nerve is not represented in the drawing.)

fascia exposed. This fascia is dealt with in the same manner as the external oblique and cremasteric muscles. The neck of the sac is thus exposed at the *internal* ring.

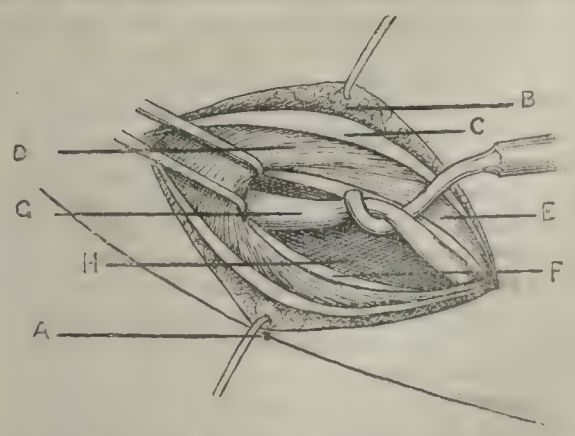

Fig. 4.—A, B, and C as above; D, internal oblique muscle retracted upwards, after cremasteric muscle has been split; E, split cremasteric muscle; F, split infundibuliform fascia; G, neck of sac freed from cord; H, position of cord which is not represented.

* Read at a meeting of the Edinburgh Medico-Chiurgical Society on November 6th.

It is freed from the cord, opened, and divided. The neck is ligatured and fixed to the under surface of the abdominal wall, above and external to the internal abdominal ring, the rest of the freed portion being cut off. This concludes what is sometimes termed the "first stage" of the operation.

The second stage consists in suturing the split fibres of the external oblique by the overlapping method and closing the skin incision. In some cases the fibres of the

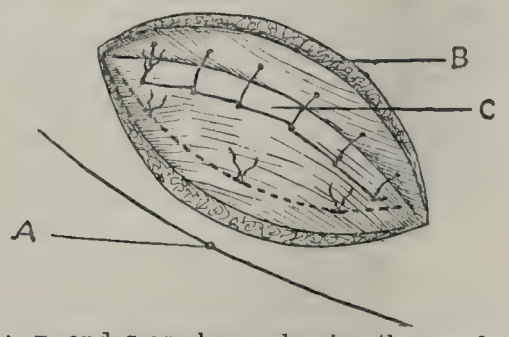

Fig. 5.—A, B, and C as above, showing the overlapping of the divided external oblique muscle. The dotted line shows the lower edge of the upper fibres drawn under the lower fibres and retained by three interrupted mattress sutures, the upper edge of the lower fibres fixed by a continuous blanket suture.

cremasteric muscle are drawn together with a single stitch, but in the majority they will fall into apposition naturally.

It will be noted that the internal oblique and transversalis muscles are left untouched, also that the sac, with the exception of a small portion at the internal ring, is left *in situ*.

The reasons for my belief in the hypotheses on which the operation is founded are as follows.

Anatomy of Hernia.

With regard to the first—that for practical surgical purposes all oblique inguinal hernias are primarily due to a congenital or preformed sac—it is necessary that we understand exactly what is meant by the word "congenital" when used in relation to inguinal hernia. Originally the term was confined to that variety of hernia in which the sac was in direct communication with the tunica vaginalis; modern textbooks, however, include under this heading not only the variety mentioned, but also the varieties termed funicular, infantile, encysted, and interstitial. Any one who has had the opportunity of operating on a fairly large number of inguinal hernias in children will have recognized that only a minority of the cases dealt with come under the heading "congenital" as originally defined.

Stiles,[2] in a consecutive series of 360 cases in children, found that in only 5 per cent. did the sac communicate with the tunica vaginalis; other writers on inguinal hernia in children have noted similar results. Russell[3] maintains that the term "congenital," which, he says, "has been the source of endless obscurity and confusion in the past," should be confined to those cases in which the hernia is present at birth. Without further elaboration of this point, it will be sufficient to say that I believe all oblique inguinal hernias to be due to a preformed sac, whether partial or complete.

As already indicated, most authorities now admit this to be the case in children. What proof is there that it is not so in adults also? The textbooks divide oblique inguinal hernias into congenital and acquired, but when we search for a definite statement which will lead us to recognize the acquired variety we are grievously disappointed. Murray[4] says he has been quite unable to distinguish between the congenital and the so-called acquired inguinal sac, for the very good reason that, in his opinion, they are one and the same thing.

Russell[3] for eight years has advocated what he now terms the "saccular" theory of hernia, and has stated his opinion that this theory will be either universally accepted or universally rejected in the near future.

Stiles[2] in 1904 wrote: "It is more than probable, therefore, that the majority of oblique inguinal hernias which are met with during adolescence and in young adults are essentially congenital."

Recent papers by other authors (Bull and Coley,[5] Clogg[6]) admit the probability of a preformed sac in adults.

Keith[7] opposes Russell's theory, but brings forward no evidence to show that the preformed sac is not the essential cause of that variety of hernia we are at present discussing. Murray,[4] on the other hand, produces positive evidence in support of the saccular theory. Lockwood[8] and Langton[9] draw attention to the fact that in many instances a preformed sac is present without there being any evidence of hernia.

The condition found in a patient, 30 years of age, on whom I operated is of interest in this connexion.

The operation just described was performed for an oblique inguinal hernia on the right side. Owing to the laxness of the canal on the left side the internal ring was cut down upon, although no signs of hernia had ever been present. A patent tube of peritoneum about an inch long was exposed and removed. Lockwood[8] mentions a similar case.

An inguinal hernia which develops on the opposite side to that already operated on is probably due to a condition similar to the above.

Some surgeons believe that if a hernia in a young adult develops suddenly that is proof that there is a preformed sac; but if, on the contrary, the hernia manifests itself slowly, it is acquired.

This second deduction is, in my opinion, unwarranted. There is no reason why a hernia should not appear by degrees, even although there is a preformed sac. It is just as likely that the slow development of the hernia is due to the fact that the contents have to dilate the preformed sac, whose lumen may be small, as that the contents have to push a process of peritoneum in front of them, thereby forming a sac.

If we look back we find that discussions in the past centred round the question of rupture *versus* dilatation of the peritoneum. When the former was finally disproved, all interested turned their attention to the possible causes of dilatation, taking it for granted that, because rupture was disproved, therefore the alternative—dilatation—was correct. By no means a sound deduction.

If the "saccular" theory be admitted with regard to oblique inguinal hernia, the same principle which guides us in the operative treatment in children holds good in adults.

The second hypothesis is that in young adults, suffering from oblique inguinal hernia, the valvular action of the muscles guarding the internal abdominal ring will regain their normal action if the cause of the dilatation be removed.

It will, I think, be admitted that the weakness of the muscles in the region of the inguinal canal must be due to one of two causes—either a delay in their development or a weakening of normal muscles due to prolonged and increasing dilatation of the canal by the contents of the sac.

With regard to the former, writers on inguinal hernia in children have drawn attention to the fact that usually the muscular development in the inguinal region is exceedingly good. I maintain that this is also true of young adults in whom hernia is of recent appearance. One finds that even in children who at birth are muscularly poorly developed, and in whom both umbilical and inguinal hernias are present, the muscular weakness rapidly disappears as the child grows older. The second source of weakness is the important one in adults, and will become more and more pronounced as the patient grows older. After a certain time the muscles in the inguinal region become so altered that return to the normal is impossible. In long standing cases in elderly men I admit that it may be necessary to perform that part of the radical cure usually known as the "second stage" of the operation, but in the majority of young adults it is not only unnecessary but harmful. No drawing together of the conjoint tendon and Poupart's ligament, however complicated the procedure, will ever be as efficient as Nature's method; and further, if this part of the operation is successfully carried out, it will prevent the normal valvular action of the internal oblique and transversalis muscles.

Those who have operated on recurrent cases of inguinal hernia, previously treated by "radical cure," will have noticed that the parts involved have lost all semblance to muscle structure, and have become a mass of fibrous tissue. If any one doubts the efficiency of the valvular action of the muscles at the internal ring, let him, if he has not already done so, when operating on an inguinal

hernia in a young adult, pass his finger through the ring' when the patient is straining (should the opportunity occur). He will feel the vice-like manner in which the finger is gripped by the contracting muscles.

The present Professor of Systematic Surgery in Edinburgh has for long taught that the strength of the abdominal wall depends upon its mobility. Seaver[10] advocates exercises which strengthen the muscles guarding the internal ring as a method of treatment for inguinal hernia instead of operation. I believe in this method, provided that the neck of the sac be first dealt with. A patent funicular process will always be a source of danger, and it must be remembered that hernias frequently occur in young adults whose muscular development is excellent. It is quite possible that the sudden appearance of a hernia in a young adult during excessive exertion is due more to faulty muscular co-ordination than to actual muscular weakness.

I now pass to the third hypothesis, that if the neck of the sac be efficiently dealt with, it is quite unnecessary to interfere with the remaining portion in the inguinal canal or scrotum.

In dealing with that variety of hernia originally termed congenital, one has to divide the sac in the vicinity of the testicle. The level of this division varies with different surgeons.

In other varieties some surgeons purposely leave the lower portion of the sac *in situ*. Barker[11] divides the sac half an inch below the external ring, leaving the scrotal portion, the open end of which he ligatures. Maclauren[12] divides the sac at the same level. Neave,[13] in concluding a paper on hernia, says: "Sometimes it is better to leave the sac *in situ*, and only clear and divide the neck." Kocher[14] says if there is much matting the sac may simply be left alone as Wölfer recommends.

If a thickened and adherent sac can be left *in situ* surely there can be no harm in leaving the less abnormal ones. The first case in which I left the whole sac, having divided and ligatured the neck, was one on which I operated eighteen months ago. I have recently examined the patient and could not now tell that the sac had not been removed.

All the writers of the present day who advocate operation based on the saccular theory, emphasize the fact that the essential point of the operation is the complete removal of the sac. Clogg[6] says: "It is difficult to believe that they (herniae depending upon the presence of a congenital sac) can be cured in any other way than by removal of this sac." I hold that obliteration of the neck of the sac is sufficient.

Why first attack the region of the external ring when it is really the internal ring we wish to get at? The only reason I can see for this is that, in the past it has been considered essential to dissect out the sac, or at least the greater portion of it.

If we closely analyse the operations at present in use we are struck by the fact that they have only one thing in common—namely, obliteration of the neck of the sac at the internal ring. Further, we note that in recent years the tendency has been to make the skin incision at a higher level than has been customary in the past, but, as far as I know, there is no operation in which the internal ring is cut directly down upon without interfering with the parts below, although the aim of all is eventually to get at the internal ring.

In the past too much importance has been given to the technique of the numerous operations in vogue and too little to the principles involved.

Last month, on looking through some of the older literature on the subject, I found that Bennett[15] in 1893, having described the operation he recommends for inguinal hernia, mentions an operation somewhat similar to the one suggested this evening, but he limits its use to small bubonoceles, and even then only in exceptional circumstances. In slight cases of incomplete inguinal hernia he says it is "as a rule unwise under ordinary circumstances to make any attempt at effecting the radical cure at all." He apparently takes it for granted that the sac in those cases is acquired. The incision is made over the most prominent part of the swelling; but if the hernia extends to the external ring he incises over that point in preference, strongly objecting to any division of the anterior wall of the canal.

Results of Operation.

I have purposely entitled this paper a preliminary note as I have only performed the operation during the last eighteen months, and therefore sufficient time has not elapsed to allow of definite statements being made regarding the ultimate results, nor can I bring forward a large number of cases. The results up to the present, however, confirm my belief in the theories on which the operation is based, and are so satisfactory that I have thought it advisable to make this preliminary communication. I have performed the operation 16 times—9 times in male adults whose ages varied from 19 to 40, the average age being 28; 5 times in male children; once in a woman aged 28; and once in a girl of 11. In 3 male adults local anaesthesia was used. I have either seen or obtained recent reports from all the patients; in every case the results are satisfactory. Without detailing the cases, I will mention four of the earlier ones.

J. D., aged 24, developed a right inguinal hernia three years ago. He wore a truss until he was operated on a year and four months ago. He plays golf, dances, etc., and has had no trouble since the operation.

A. S., aged 35, developed right inguinal hernia after running a race a little over a year ago. His work as a butcher involved lifting heavy carcasses, which did not improve matters. He was operated on ten months ago, got up in three weeks, and left hospital a week later. Since starting work, eight weeks after the operation, there have been no signs of recurrence.

J. W., aged 26, developed a left inguinal hernia after an attack of pneumonia eight years ago. He wore a truss at intervals until operated on ten months ago. He was up in three weeks, and started his work as a grate-fitter four weeks later. The part operated on is now, to quote his own words, "as sound as a bell."

J. F., aged 30, suffered from an oblique inguinal hernia on the right side, and had a patent tube on the left, although no hernia had ever been present. He was operated on eight and a half months ago. In six weeks he started light work as a "checker," and in another fortnight was playing three or four rounds of golf a week after working hours. Three and a half months after leaving hospital he renewed his work as attendant at the Step Rock, St. Andrews. He bathed daily, equalling his previous records for swimming short distances; "trick diving such as somersaults, back dives, etc., presented no more difficulty than before." The following month he swam from the Step Rock to the pier, a distance of over a mile. At present he is perfectly sound.

Notes of the after-progress of the other cases are similar to the above.

Although this operation was primarily devised for young adults, I have also used it in children. Dr. Tuke of Dunfermline, to whom I spoke of it some time ago, has operated in this manner on eight cases, three adults and five children, all of which have done well. He has kindly allowed me to mention his results, and states his opinion that it is the ideal operation in children. It is difficult to state the age limit at which it would be inadvisable to employ this method. The decision rests on the possibility of the power of the muscles to regain their tone, rather than on the actual age of the patient.

In future, even in complicated cases, I intend to begin by exposing the internal ring and, if necessary, enlarge the incision downwards later.

The operation is easily and quickly performed. It can readily be done under a local anaesthetic, much more so than the operations usually employed, the nerves involved being under direct control.

Other advantages are that the patient need not be confined to bed for more than ten days or a fortnight. Once union of the overlapped external oblique has taken place, the sooner the internal oblique and transversalis muscles are brought into play the better; not only so, but the greater their development the less chance there is of a recurrence. In patients in whom the muscular development in the inguinal region is questionable, definite exercises should be started during convalescence. The incision is further away from possible contamination than that usually employed, this is specially important in children; but, on the other hand, the parts are smaller in children, and, therefore, at first the operation is more difficult.

Complications due to extensive dissections of the sac and manipulations or displacements of the cord, are avoided, nor has hydrocele developed in any of the cases operated upon.

The overlapping of the external oblique, a method originally introduced by Lucas-Championnière,[16] forms a firm pad over the internal ring without interfering with the action of the underlying muscles. Fixation of the

neck of the sac is unnecessary in children, but I have always done so in adults to prevent the possibility of any semblance of pouching at the internal ring.

If it be granted that oblique inguinal hernia in adults is primarily due to a preformed sac, then, from the clinical evidence we have in children, the operation which will deal with the sac with the least damage to the canal is what we must aim at. The operation I have suggested appears to me to carry out the above requirements in the simplest manner possible. Murray[7] says, "Clearness of purpose and simplicity of method should be our aim." I think you will admit the simplicity of method. I can only hope that I have succeeded in making my purpose clear.

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THE MORBID ANATOMY AND PATHOLOGY OF INFANTILE AND ENCYSTED HERNIA.

WITH A NOTE ON ACCIDENT OF TAXIS.

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In this paper I purpose setting forth a view as to the morbid anatomy and pathology of infantile hernia, which in important respects is at variance with that which surgeons have come to regard as firmly established, and which is associated with the name of its author, Mr. Lockwood. Needless to say, this is not an undertaking that I should enter upon lightly nor without the pressure of very strong conviction; and if I should succeed in throwing an additional ray of light upon what is admittedly a very obscure subject, Mr. Lockwood, who probably realizes its obscurity better than anybody else, will be the first to recognize whatever is well founded in my reasoning. My experience of infantile hernia is limited to two cases that I have met with on the operation table.

Case I.

A man aged 33; Alfred Hospital, May, 1902. Left inguinal hernia. The initial incision in the groin laid open a serous bag, which was found to be continuous with the tunica vaginalis testis. The posterior wall of the bag was incised to expose the structures of the cord and the hernial sac. The sac was separated from the cord up into the abdomen in the usual way after incision of the external oblique. The operation differed in no way from that which I habitually perform, except that both layers of the front bag were incised before the cord and hernial sac were reached, and that the incision of the external oblique necessarily involved incision also of the upper part of the front bag, which was thus virtually disregarded. The operation consisted in simple removal of the sac, after free exposure of the canal by means of incision of the external oblique.

Case II.

A man aged 30; Alfred Hospital, November, 1906. In this case the hernia was right-sided, and the hernial sac bulged more markedly into the front bag when this was opened. In other respects the operation was identical with Case I.

Infantile hernia is a variety of inguinal hernia that has had a somewhat eventful history. It was first described by Hey, of Leeds, in 1764, and the pathology of it was the subject of the wildest and most erroneous theoretical speculation, until Lockwood in 1886 very carefully reviewed the subject by the light of much thought and no inconsiderable amount of research, and published his views in a paper entitled, The Morbid Anatomy and Pathology of Encysted and Infantile Hernia.[1] I shall offer no apology for commencing with a brief elementary description of the anatomy of infantile and encysted hernia, in order to show the great value of Mr. Lockwood's contribution to our knowledge of this subject, and to make clear the relationship of infantile and encysted hernia, which he was the first to demonstrate.

The anatomy of these two forms of hernia is simply shown in the diagrams A, B, C, Fig. 1. The essential arrangement of the serous membranes is that of a hernial sac, which lies behind a long prolongation upwards from the tunica vaginalis; in B the sac is represented as bulging more markedly into the cavity of the serous membrane in front of it, with a slight tendency for its lower end to become enveloped, while in C the bulging and enveloping has been pushed to an exaggerated degree, so that the sac not only bulges into the front bag of serous membrane, but is actually enveloped by it to a large extent. Thus it is evident that C is merely a variant of the anatomical peculiarity that is displayed by A and B. A represents a typical case of infantile hernia, C encysted hernia. I have never seen a case of encysted hernia, and I doubt if it has even been seen in the exaggerated degree in which I have depicted it. In operating upon a case of infantile hernia, A, the surgeon will necessarily cut through three layers of serous membrane before the herniated bowel is exposed, namely, the front and back layers of the anterior bag, and the front wall of the hernial sac. In operating upon a case of encysted hernia, like C, on the other hand, after having opened the front layer of serous membrane, he will find what appears to be a hernial sac,

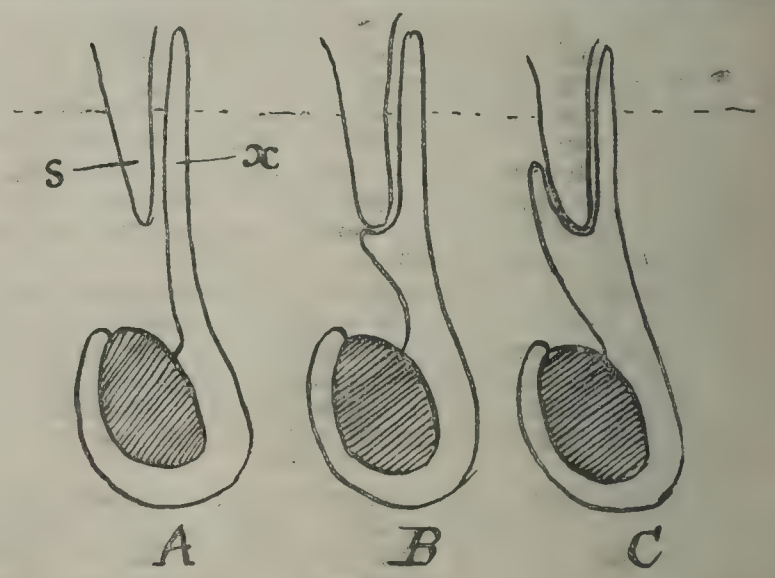

Fig. 1.

pendent and loose in the cavity. He will, of course, have to cut through just the same number of layers of serous membrane to reach the bowel as in operatin upon A, but the naked-eye appearances will obviously be quite different; so different, indeed, that until Mr. Lockwood elucidated the subject, C was classed as a separate class of hernia under the title "encysted."

I have said that the wildest theories were indulged in to explain the occurrence of encysted hernia, and all presupposed the view, which we now, many of us, believe to be completely mistaken, that the typical mode of causation of hernia is that of becoming "acquired"; which means that sac and hernia together are pushed out through the inguinal canal by intra-abdominal pressure overcoming a weakened abdominal wall. Without going into further detail, suffice it to say that Mr. Lockwood made short work of all such theories by showing clearly that the sac is a congenital structure, and undoubtedly is developmentally associated with the descent of the testis. Furthermore, as the result of most careful research, he concluded that the sac is an abnormal structure that owes its origin to the tractive power of the gubernaculum testis. I may, perhaps, reproduce in his own words the conclusions at which he arrived as the result of his research; they were:

(*a*) That the London museums contain no specimen of encysted hernia such as is usually described.

(*b*) That the various specimens designated by that name belong to the infantile variety.

(*c*) That the latter owe their origin to the tractive power of the gubernaculum testis.

There the matter has remained. Mr. Lockwood's views gained immediate acceptance, and it was right that they should, for assuredly no investigator has either before or since studied the subject with such laborious care. My own opportunities for studying the matter have been limited to the two cases that I have described. Yet this

scanty experience has thrown a flood of light upon the subject that emboldens me to reopen the question as to whether Mr. Lockwood's view of the etiology of infantile hernia is not susceptible of amendment in certain of its details. My two cases were identical in character and anatomical arrangement; they were, I think, undoubtedly of the nature of infantile hernia, and yet for reasons I shall point out, they certainly did not originate in the way described by Mr. Lockwood. This fact has opened up some very interesting considerations. I shall have to suggest that a curious mistake has been made as to the nature of the various parts concerned in infantile hernia. Turning to Fig. 1, A, I would specially fix attention on the two chief structures there displayed, the sac *s* and the long process extending upward from the tunica vaginalis, which has been regarded as the funicular process, but which I will call for the present *x* (because I am convinced that it is not the funicular process). Mr. Lockwood's view is that *x* is the funicular process closed only at one point high up near the internal ring, leaving the remainder of the funicular process and tunica vaginalis open; the hernial sac he takes to be an abnormal structure pulled down by action of the gubernaculum testis, which is still to be recognized connecting the sac with the testis. The view I am putting forward is that the sac is a perfectly normal funicular sac, that the connecting bond between the sac and the testis is presumably the usual one resulting from obliteration of that portion of the funicular process; and, finally, that there is only one abnormality in the whole arrangement—namely, the long prolongation *x*, which is the result of a developmental accident to the tunica vaginalis.

My argument will be divided into three sections, which will briefly deal with—

a. The *a priori* improbability in Mr. Lockwood's explanation.
b. The evidence afforded by my own two cases.
c. The relationship between infantile hernia and other well-recognized forms of hernia which the new view establishes.

A. *The A Priori Improbability in Mr. Lockwood's View.*

It is curious that this does not appear to have attracted notice. The theory presupposes the occurrence of two distinct developmental happenings: (1) The closure of the funicular process at its upper part only, and (2) the appearance in the canal of an abnormal sac. When, however, we look for the relationship between these two occurrences, and ask ourselves why they should appear coincidentally in this way, the answer does not appear to be very evident. It is perfectly true that the funicular process may be obliterated at one spot only, leaving a very large tunica vaginalis, but this arrangement has been in my experience excessively rare. It is also perhaps true that a sac altogether independent of the funicular process may appear in the inguinal canal, but such an occurrence is probably still more rare than the other, for I do not think I have ever seen such a case. Now, if these two abnormalities do occur simultaneously it is absolutely inevitable that there should be some causal relationship between the two; their association cannot by any stretch of imagination be accepted as a mere coincidence. On the latter assumption, their concurrence in even a solitary case would be a coincidence of a most extraordinary nature; but for us to suppose that they should habitually coincide with such regularity as to constitute a recognized variety of hernia is obviously out of the question. And yet I am unable to find the slightest shadow of a causal relationship whatever between the two. When we once begin to analyse the matter in this way we shall, if I mistake not, have it suddenly borne in upon us that there must be something wrong, some source of error in Mr. Lockwood's explanation that does not appear at the first blush, but which ought to be revealed on closer examination.

B. *The Evidence Afforded by my Two Cases.*

I have already given a sufficiently detailed description of these two herniae, which were practically identical in character. Both were met with in young men operated on at the Alfred Hospital in May, 1902, and November, 1906; they were respectively left and right sided. In both the anterior serous bag (tunica vaginalis and its prolongation upwards) was opened straightway by the initial incision in the groin; in both the hernial sac was exposed by incision of the posterior wall of the tunica vaginalis; in both the hernial sac presented the appearance of an ordinary funicular sac, having a perfectly normal relation with the structures of the cord; and in both the process of separation and removal of the sac after its exposure differed in no way from that ordinarily practised. The fact that the upward prolongation of the tunica vaginalis (the process *x*) was not the funicular process is proved in two ways. In the first place, it is rendered certain by the position of the upper extremity, which was outside the external ring, on the surface of the external oblique; and, secondly, by the fact that it was opened immediately by the initial incision, thus proving that it could not have been inside the coverings of the cord. Either of these two characteristics would alone suffice to render it certain that the process was not the funicular process. What, then, was it, and how was it formed? In the operation on my first case, the etiology of this condition seemed to be perfectly obvious; the testicular portion of the processus vaginalis had been caught and anchored to the abdominal wall, just outside the external ring, and the subsequent descent of the testis had caused it to be drawn out into the long process, which thus simulated the funicular process. In a published address on the subject of hernia[2] this case is described and illustrated by two diagrams, showing what I conceive to be the pathological basis of the condition.

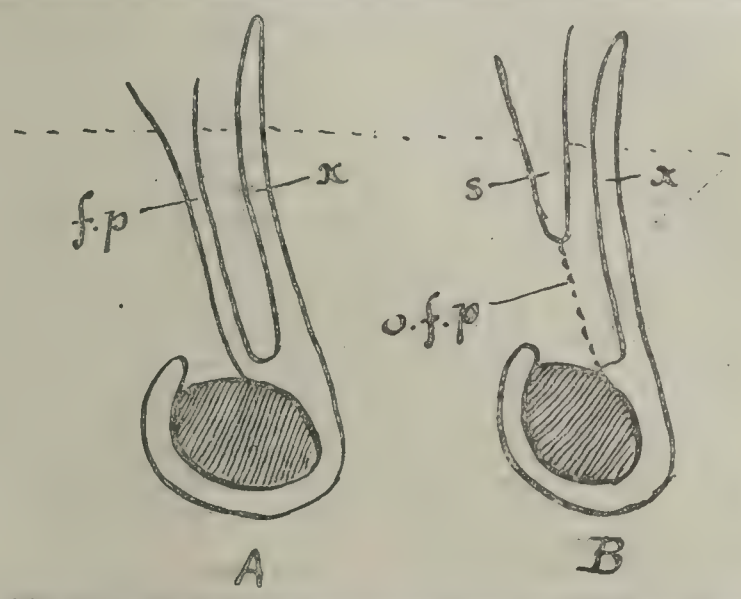

Fig. 2.—In A the funicular process is shown in its original state; B shows the result of obliteration of the lower portion: *f. p* = funicular process; *s* = sac; *o, f, p* = obliterated portion of funicular process.

These diagrams I reproduce here. (Fig. 2, A and B.) It will be seen that the formation of the sac and the obliteration of a portion of the funicular process has taken place in a way that is very frequent, and that there is only one unusual occurrence that has imparted the peculiarity to the hernia, and this is the anchoring of a part of the tunica vaginalis to the abdominal wall. As I have expressed it elsewhere, a developmental accident has resulted in the serous membrane being "caught" or "hung up," and this is the sole cause of the singular arrangement that is presented.

Now I am aware that the specimens in the London museums that Mr. Lockwood has examined so carefully may not present anatomically identical characters with my two cases. No mention is made by Mr. Lockwood of the precise situation of the upper extremity of the process *x* in relation to the abdominal wall. I can quite conceive that in a museum specimen this point might perhaps not be clearly shown, and unless the explanation that I am suggesting had chanced to present itself to the mind of the observer, the importance of the point would probably escape notice. I am going to assume, however, what I am certain must be the case, that the upper extremity of the process *x* will sometimes be found inside the inguinal canal—in such a situation, therefore, that it will be found impossible to tell that it is not the funicular process. My reasons for believing that such an arrangement will be occasionally found will be best understood after consideration of the third section of my argument.

C. *The Relationship between Infantile Hernia and Other Well-recognized Forms of Hernia which the New View Establishes.*

Sacculation of the funicular process is a matter of frequent occurrence, and it is undoubtedly the result of what is apparently a developmental accident, the serous

membrane being caught up or anchored by the abdominal wall in the process of development, so that a sacculus is formed. When the sacculus lies between the peritoneum and the abdominal wall, a hernia passing into it will be a properitoneal hernia; when the sacculus lies between the layers of muscle in the abdominal wall, an interstitial hernia will be presented; when the sacculus lies superficial to the abdominal wall, still another variety of hernia, recently named "hernia inguino-superficialis," will result; this last form is probably the most frequent of all. All these varieties of hernia are frequently, but by no means necessarily, associated with imperfect descent of the testis. Now, it will be evident at once that the view I am putting forward with reference to my two cases is that they are really variants of the last variety of hernia. As in the case of hernia inguino-superficialis, the processus vaginalis has been anchored outside the external ring, but superficial to the external oblique aponeurosis. In operating upon cases of imperfectly descended testis in which the testis is retained close to the external ring, it is a matter of frequent observation to find the processus vaginalis spreading outwards in the form of a sacculus on the surface of the external oblique aponeurosis. It is clear that its presence in this situation is the result of a developmental accident, and that the non-descent of the testis is closely associated with it.

Both testis and serous membrane have been caught and fixed in their abnormal position as the result of a developmental accident, but that they are not mutually interdependent we know by clinical experience; it is quite possible for the serous membrane to be caught or hung up in this way without any interference with the descent of the testis. It is clear that when this occurs in the case of a portion of the tunica vaginalis, the serous membrane must be drawn out into a long process such as is presented in cases of infantile hernia. Moreover, this occurrence, as I have described it, will not in any way affect the course of events in respect of the true funicular process, which will lie behind it. Should an ordinary funicular sac be formed in the usual way, and a hernia descend into it, the phenomenon of infantile hernia will be presented to the operating surgeon.

Now, the two cases that I have described were both of them variants of hernia inguino-superficialis, because the upper extremity of the process x lay superficial to the abdominal wall. One may, I think, reasonably assume, however, that there must be occasionally cases of infantile hernia which are variants in like manner of the interstitial and properitoneal forms of hernia. In such cases all the appearances would be identical with those presented by my two cases, with the sole exception of the position of the upper extremity of the long process x. In the one case corresponding to interstitial hernia this would, I imagine, be traced to between the abdominal muscles; in the other corresponding to properitoneal hernia it would pass right through the length of the inguinal canal, to lie in the subperitoneal tissue. In this last case the simulation of the true funicular process would naturally be specially misleading.

To put the matter in another way, which also serves as a convenient recapitulation of the whole subject, I would state it as follows: Infantile hernia stands in close relationship to the forms known as interstitial and properitoneal hernia and hernia inguino superficialis in the following way. All four varieties depend on sacculation of some portion of the processus vaginalis, the sacculation being obviously due to developmental implication of the process in the musculature of the abdominal wall. For the production of infantile hernia it is only essential that the part of the processus vaginalis implicated shall be the tunica vaginalis testis and not the funicular portion, and usually the testis descends completely, although Mr. Lockwood has met with an interesting case in which the testis was retained. In the other three forms of hernia the part of the processus vaginalis implicated will be the funicular, as distinguished from the testicular portion of the processus vaginalis, and the character of the hernia will be unaffected by the behaviour of the testis as regards its descent or non-descent into the scrotum.

An Accident of Taxis.

It would appear that certain recorded cases of infantile or encysted hernia that disclosed a very curious state of affairs during operation, and which have established themselves firmly in the literature of infantile hernia, may be misleading. The typical case of the class to which I refer is that of M. Méry (1701), which has furnished the subject of an interesting note on infantile hernia by Mr. Macready that appeared in the BRITISH MEDICAL JOURNAL of March 26th, 1892. One of the objects of Mr. Macready's contribution was to call attention to the fact that this case of M. Méry's was the first case recorded of infantile hernia, contrary to the general belief, which ascribes priority in the matter to Hey of Leeds (1764). The case is so interesting that perhaps I may be permitted partly to transcribe it from Mr. Macready's article.

Case of a man, aged 70, with large right inguinal hernia, strangulated, and apparently gangrenous. M. Méry incised the coverings of the hernia, and no sooner were they divided than a blackish fetid fluid escaped, leaving a large cavity, "in which I saw the testis sound and naked." He expresses his astonishment at this, and then his still greater astonishment on seeing in this open cavity *un intestin aveugle*, healthy and not tense, instead of being gangrenous, as he anticipated. "This *intestin aveugle*, from the groin to the bottom of the tumour, was separate from the membranes of the scrotum, but it was so closely united to the ring of the abdominal muscles that, despairing of overcoming its adhesion without rupturing it, I proposed to M. Petit to leave it and to content ourselves with dilating the rings; of this he did not approve. I then separated this supposed intestine from these parts of the muscles and returned it to the belly. I perceived that in returning it to the abdomen it was still adherent to the peritoneum." The patient died. At the *post-mortem* examination a mortification of that part of the ileum which had been strangulated was found with a rupture of two-thirds of the circumference of the gut and extravasation of faeces. The gangrenous part was nowhere adherent. After careful examination of the parts in the groin, "I found," he says, "I had been mistaken, and that the part which I had taken for *un intestin aveugle* was only the peritoneum prolonged in the form of a cul-de-sac into the scrotum. In ordinary hernia the prolongation of peritoneum (sac) is always found united to the membranes of the scrotum on the one side, and to those of the testis on the other; but, on the contrary, in this hernia it (the sac) was entirely separated from the one and the other."

Mr. Macready remarks that this case appears to admit of only one interpretation, namely, that it was a case of infantile hernia, and it certainly would appear to do so; no other interpretation would have occurred to me had it not been for the following experience in my own practice:

A man, aged 31, admitted to the Alfred Hospital, November 9th, 1905, with strangulated right inguinal hernia. Unsuccessful attempts at reduction had been made prior to admission. An operation was performed. On opening what appeared to be the hernial sac dark fluid escaped and coils of deeply engorged intestine were seen. The "sac" reached to the bottom of the scrotum, and the testis was found lying in it. Pendent from the upper part was a second sac, lying loosely among the coils of strangulated bowel, and having no connexion with the coverings of the hernia, except at its neck, where it was attached to what was apparently the front part of the circumference of the neck of the main "sac." This second sac contained omentum which was evidently not strangulated. Close examination disclosed the explanation of this curious condition, which was as follows: It was the result of an accident of taxis. Just above the neck of the original sac the peritoneum had been torn, and through the rent the strangulated intestines had escaped and come down by the side of the sac, causing it to appear pendent among the coils. What at first appeared to be the sac of the hernia would therefore be one of the coverings of the cord, doubtless the infundibular fascia. The operation was accomplished by laying open the canal by incision of the external oblique; the intestines were returned, and the funicular sac removed after separation and return of the omentum; the rent portion of the peritoneum was included in the ligature. That the sac was an ordinary funicular sac, containing omentum from birth, I have no doubt whatsoever. I found on examining the left side a similar funicular sac containing omentum there, and after an interval of a week I removed that also. Recovery from both operations was uneventful.

The points of similarity between the case I have described and that of M. Méry are very marked; there are, of course, points of difference, but even if we were to assume for a moment that they were actually identical in nature, it would be quite reasonable to look for quite considerable diversity in the accounts of the different observers. All surgeons who have been in the habit of closely examining varieties of hernia during operation will know that to observe and to interpret accurately is by no means an easy matter, and that even much practice and experience will not secure immunity from occasional moments of perplexity. It is remarkable that cases such

as I have described are so few in surgical literature; they can, I believe, almost be counted on the fingers of one hand. That they should be practically unknown at the present day is not remarkable, because the taxis is employed to a relatively slight extent as compared with former times. We must also remember that our predecessors in whose hands such cases were more likely to be met with could not have the practice and training in examining herniae that we have, seeing that their opportunities were entirely confined to cases in which strangulation was present. I think, therefore, that there is good ground for a very reasonable suspicion that some of the most notable cases of infantile hernia that have acquired an established position in our records may not have been genuine cases of infantile hernia at all, but may have been produced, as in my case, by an accident of taxis.

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An Address

ON

THE USE OF FILIGREES OF SILVER WIRE IN THE CURE OF HERNIAE USUALLY CONSIDERED INOPERABLE.

Read before the Norwood Division of the British Medical Association.

By LAWRIE McGAVIN, F.R.C.S.Eng.,

Surgeon to the Seamen's Hospital Society; Lecturer on Clinical Surgery, and Teacher of Operative Surgery in the London School of Clinical Medicine.

Gentlemen,—In thanking you cordially for the honour you have conferred upon me in asking me to address you, I must confess that when some time since your Secretary approached me with the suggestion that I should deal with the subject of Filigree Implantation, I felt some diffidence in appearing before you. I thought the subject, although to my mind one of considerable importance, might not present itself in a particularly interesting light to you; if, therefore, this should be so, I trust you will bear with me, for the sake of those who suffer from the condition which I propose to consider, while I endeavour to lay before you a method of curing, in the truest sense of the term, those cases of hernia which have hitherto appeared, to surgeons and physicians alike, to be beyond the range of legitimate surgery. The cases to which I refer may be classified as follows:

1. Those of repeated recurrence after operations generally known by the misnomer of "radical cure."
2. Those of such dimensions that the probability of firm union of the deeper tissues is open to grave doubt.
3. Those in which there is a chronic condition present tending to the constantly repeated increase of intra-abdominal tension; such, for example, as chronic bronchitis, asthma, constipation, urethral stricture, etc., especially where these are the concomitants of old age and feeble muscular development.
4. Those cases in which the hernia is the direct result of loss of some portion of the abdominal wall, in consequence of accident or the operative removal of tumours.
5. Those simply of hernia in patients beyond the age at which it is reasonable to hope for a cure by the ordinary methods.

Now, if you will consider for a moment the question of the recurrence of hernia, and the factors upon which it depends, you will, I think, agree with me that, putting aside all other contributory causes, the chief reasons of the reappearance of a hernia are the employment of unsuitable methods of operation, the occurrence of deep suppuration, and the undue curtailing of the period of convalescence in the recumbent position.

With regard to the two latter points I need say little; they are usually avoidable, and, provided the method of cure is suitable to the needs of the particular case, the accident of recurrence should be a very rare event. Few of us, however, have finished our hospital career without having seen recurrences after operation which led us to wonder who the optimist could have been who invented the immoral term "radical cure," and how many unfortunates have been condemned to wear trusses of all shapes and sizes, in an endeavour to control a protrusion which marked the site of a "radical cure" of former years! I do not propose to tax your patience by a dissertation on the dull subject of the application of trusses to herniae, but I would maintain very emphatically, that an operation for the cure of hernia which requires the subsequent application of a truss to prevent its return, can in no sense lay claim to the term "radical cure." I am personally very much opposed to the use of trusses in all but perfectly inoperable cases; and by inoperable I mean those which, from their huge dimensions, preclude the possibility of returning the hernial contents to the abdomen, those in which some diathesis such as haemophilia is an absolute contraindication, and those in which the patient steadfastly refuses to undergo any cutting operation. It is most disappointing for a surgeon to have to undertake the attempt to cure a hernia whose coverings have been thinned out, matted together, and histologically altered by years of truss pressure. Such cases have long since passed from the stage in which the ordinary operative methods might be expected to result in a true cure.

If I might be permitted to offer you advice on this point as a surgeon, it would be never to apply a truss in any case that is operable, for by so doing you will vitiate the chance of cure by operation in subsequent years. Do not presume that a case is inoperable simply because of the size of the hernial orifice; modern surgical methods have brought within reach many cases which from their size alone are certainly not within scope of the older operations. Lastly, do not make use of the term "radical cure"; it is misleading alike to patients and to their friends; but if you do use the term, let it be reserved for cases of hernia (excluding femoral hernia) in young and healthy subjects, and for those which may be submitted to the method which I am here to introduce to your notice—namely, that by the implantation of a prepared filigree of silver wire.

I do not wish to trouble you with statistics of the frequency of recurrence of hernia; the tendency to this unfortunate accident is sufficiently well known to all of you; but I wish to draw your attention to one or two points which may help to further explain the reasons of such an occurrence.

The question as to which layer of the abdominal wall is the chief delinquent in the formation of a hernia is still, I believe, *sub judice*. At one time it was supposed to be the peritoneum that held this unworthy position, but, as I have elsewhere pointed out, this theory is erroneous. The peritoneum has no influence in the production of a hernia where it is backed up by sound abdominal wall, nor of a recurrence where the sac has been efficiently removed. Some writers have laid stress on the importance of accurate union of the fibrous aponeuroses of the rectus muscles in median hernia, and have split, fashioned them into flaps, and overlapped them, apparently with little result. But few, however, have assigned to the musculature its full importance. Those of you who will cast back in your memory and endeavour to call to mind any case of hernia which you have seen submitted to operation, either inguinal, umbilical, or ventral, will, I think, realize that in no case have you ever seen muscular tissue (excluding, of course, the cremaster muscle) forming part of the coverings of a hernial sac. A hernia in its descent will always choose the most inelastic structures through which to force its path. These it will pick out and patiently stretch, almost as if it knew it would not have to do so a second time. Muscle fibres, being composed of very highly organized and elastic material, refuse obstinately to be permanently stretched. They may be pushed to one side and allow less important structures to give way to pressure, but they will not stretch and cover a hernial sac. Where are examples of this to be seen? Firstly, in the median line, where the recti muscles, being forced apart, permit a hernia to pass *between* them; secondly, in the hypertrophied bladder of stricture and prostatic enlargement, where the muscular fasciculi, although hypertrophied, allow the sacculated mucous membrane to pass *between* them; thirdly, in cases of ventral hernia following wounds, where only the cicatrix stretches, the muscle never forming part of the sac. The reasonable inference to be drawn from these facts is—that it is upon the musculature of all other structures that the duty of withstanding the extrusion of the abdominal contents devolves. If only the recti muscles could be kept in close contact with each

other and in good condition, or the internal oblique and transversalis muscles with Poupart's ligament, hernia, whether inguinal or median, would be a perfectly curable condition by the ordinary method of operation. Unfortunately this is not the case. In the young the conditions are often ideal, especially in congenital cases, in which, as you know, the prognosis is exceptionally good. But what of the old, the corpulent, the wasted, and the effeminate? Quite apart from their occupations (which may be those of glass-blowing, wind instrument playing, or navvying, to mention three of the worst employments predisposing to hernia), their muscles are altered in structure; there is a marked development of intermuscular fibrous tissue, causing feeble action of the muscles; there is evidence of fatty degeneration, causing friability at operation; there is wide separation of the recti muscles, preventing their apposition; or, in the case of inguinal hernia, there is recession of the arched margin of the internal oblique and transversalis muscles from Poupart's ligament. In these poor people no ordinary form of operation presents the least hope of permanent cure; some other means must be employed than that of using bad material to close a wide gap.

Now what are the methods which have been devised for the cure of herniae inoperable by the ordinary means? Some of them are ingenious if unsuccessful. Briefly, I may mention the following:

I. The overlapping of the already stretched tissues in the form of flaps cut in various directions, with a view to strengthening the abdominal wall at the site of hernia.

II. The covering of the gap by the transplantation of a musculo-fascial flap raised from the tissues in the vicinity.

III. The use of wire staples for the purpose of pegging down the conjoined tendon and Poupart's ligament to the pubic ramus.

IV. The implantation of some form of solid body to fill the gap, and act as a permanent bar to the extrusion of the abdominal contents.

I.

The first of these methods has, I believe, met with some success at the hands of certain American surgeons; it is not, however, equally applicable to all varieties of hernia, and has the disadvantage that confidence is being placed in structures which have already proved themselves untrustworthy. It much resembles the placing of two bad sentries to guard a post where one has already failed, in place of utilizing one good one.

II.

The second method finds its best exemplification in the endeavour to cure hernia at the femoral ring by the superposition of a flap taken from the pectineus muscle and fascia. It has not proved satisfactory in my own experience, nor, I believe, in that of other surgeons; but it must be admitted that femoral hernia has yet to be submitted to the test of filigree-implantation, and, I fear, without much prospect of success, the anatomical relations in this part being probably adverse to its use.

III.

Under the third heading there is little to say; the use of staples, which a rarefying osteitis must in time loosen, seems to me to lack the basis of sound surgery, and, although I have no personal experience of the method, the reports of other operators appear to bear out this supposition.

IV.

Coming to the question of the use of perforated metal plates, woven wire gridirons, and lastly the filigree which forms the subject of this paper, it may be said that the earlier forms of apparatus were unsatisfactory. Many of their introducers were compelled to remove them owing to the irritation and discomfort they produced by their excessive rigidity; some were removed on account of suppuration; and in explanation of the failure of these forms of apparatus, I would point out to you the factors which are essential to the acceptance by the living tissues of large masses of foreign substance in their midst.

First, asepsis is of paramount importance; cases there are in which suppuration has occurred without vitiating the result, but so far as I know, this can only be said of the special form of filigree to which this paper refers. Secondly, the most perfect pliability is necessary in order that the apparatus shall at all times and in all positions yield to the bodily movements. Thus, most of the rigid gridirons, having stout frameworks supporting heavy wire trellis, were so uncomfortable that they had to be removed; this, of course, applies equally to the perforated metal plate. Thirdly, the most perfect freedom of vascular anastomosis through the apparatus must be possible, otherwise it will become to a large extent encysted, and, therefore, imperfectly fixed, and so form a source of irritation and suppuration.

The problem of how to induce the tissues to accept such a foreign body as was desired, and to enter into a permanent partnership with it was satisfactorily solved in 1903 by Dr. Willard Bartlett of St. Louis, who pointed out the fact that pliability of the apparatus was one of the chief essentials to success. At that time I was much interested in the cure of so-called inoperable hernia and recurrent hernia, and I immediately put his method, which he had devised and described, to the test of practical application. So satisfactory have I since found it that I propose to make no apology for thrusting upon your notice a subject which I have dealt with already on several occasions in the medical press during the past three years. The benefit conferred upon the sufferers from hernia by this method, at the hands of other surgeons as well as my own, will amply justify the apparently commonplace nature of the subject.

The construction of the filigree is a very simple matter, and until recently I made my own as I required them; I have now, however, arranged with Messrs. Down Brothers for their manufacture, as I have found it convenient to modify slightly the original pattern when used for inguinal hernia. For simple ventral hernia the method is as follows:

A board of soft wood, such as the back of a cigar box, is taken, and on it is laid a sheet of white paper. On this is marked out the size and shape of the filigree required. Supposing, for example, that this is to measure 6 in. by 3 in., a pin is stuck into the board at each of the four corners of the plan. The distance between the two pins of either side is then divided off into eighths of an inch by pencil marks or compass, and at each of these marks a pin is inserted. A reel of pure silver wire, No. 28 standard wire gauge, is now taken in the hand and a turn or two is made round the pin at the left hand bottom corner of the plan. The wire is then carried across the second pin from the bottom of the opposite side. Passing round but not encircling it, it is drawn tight and carried back to the left-hand row, where it passes round the third pin from the bottom. Thus it zigzags from side to side till it reaches the last pin of one of the rows, when it is carried across to that of the opposite side, and the journey back again is made in exactly the same manner till the pin on which the wire was originally wound is again reached. The two ends of wire are now neatly twisted together and cut off short.

A single strand of wire about a foot long is cut off from the reel to form a midrib for the filigree. One end of this is twisted on to the centre of the last strand of the filigree just completed, and a pinch with a pair of dissecting forceps makes it firm. The wire is now carried round each point of crossing of the strands of the filigree, which of course lie along the centre of it, and as it is drawn tight each turn is given a pinch to fix it. On arriving at the last strand a turn is made in the same way, and the excess of wire is cut off. The filigree is now complete, and on removing all the pins will be found to be a perfectly symmetrical structure, allowing of pliability in every direction. The little twisted portion at the left-hand bottom corner of the plan, where the filigree was begun, may be turned in towards the midrib of the filigree by means of a pair of dissecting forceps, in order to avoid any chance of discomfort from the projection of the rough end.

Filigrees for the cure of inguinal hernia are made in exactly the same way, but the outline of the plan is different. In my earlier cases of inguinal hernia, I was met by the difficulty of fitting a filigree of the same width at either end into a space which is much smaller at the pubic than at the iliac end. I therefore modified the original pattern by making it trapezoid, usually ¾ in. wide at the pubic, and 1½ in. at the iliac end. Again I found it difficult to defend the entire length of the inguinal region in the male, owing to the presence of the cord; the portion of the canal external to the internal abdominal ring being always undefended and often weak. I have, therefore, for

male cases, had the filigrees prepared in two portions, the inner of which shall defend the canal between the internal ring and the pubes, and the outer that portion of the inguinal region external to it.

Before dealing with the operative technique of filigree implantation, I should like to say a few words to you about the necessity of taking every possible precaution to secure the most perfect asepsis. I need hardly remind you that no form of operation in surgery requires such care in this respect as that in which foreign bodies have to be introduced into the living tissues, and especially into fascial structures. In comparatively recent times the attempt to introduce these foreign substances, whether for the closure of deficiencies in the cranial vault or of gaps in the abdominal wall, or for the fixation of fractured bones, yielded results so unsatisfactory, that many surgeons abandoned the attempt. At the present time, however, these methods have become routine practice, simply through the realization that success can only be commanded by surgical cleanliness of the most rigid order. Where we are dealing with large masses of filigree this is especially the case, for the interference with the tissues is so great, and the oozing of serum, fat, and blood is so marked, that infection of the wound is doubly dangerous. If, therefore, I urge upon you precautions which seem excessive, it is this fact, coupled with my own experience of the operation, which must be my excuse.

Briefly, the skin must be thoroughly prepared; there must be no eczema of the umbilicus or intertrigo of the groins, so common in stout women. There must be no discharge from the umbilicus, no acne, no psoriasis or other form of dermatitis present, and the patient should be in otherwise good health. The question of rubber gloves is at present a vexed one, but those surgeons who do not use them must forgive me if I advocate them in the strongest possible terms. Possibly one may run little risk in discarding them in certain other operations; but I am convinced that the surgeon who attempts to place a foreign body in the living tissues without their use should either be able to carry out his manipulations without putting his fingers in the wound and without touching the foreign body with his ungloved hand—a matter practically impossible with so delicate a structure as a filigree—or he should leave the case severely alone. Again, I would inveigh against those operators who, when opening an abdomen, a joint, or the cranial cavity, wear neither cap nor mouth-guard, but heedlessly rub heads with the dresser over the part, and, bearded and moustached, recklessly pant, puff, and splutter into the wound as they announce the result of their manipulations or grumble at the absence of instruments or the rottenness of ligatures. Filigree operations, like most others, should be carried out practically in silence if we wish to command success and assist rather than retard the progress of surgery.

The filigree itself should be placed for five or ten minutes in sufficient ether to cover it, as only in this way can the grease conveyed to it unavoidably by the workman's hands be removed. From this it should be lifted by sterilized forceps, and placed in actively-boiling soda solution till required, when it is lifted straight from the sterilizer into the wound. The amount of stripping up of tissue required to form a satisfactory bed for the filigree has already been alluded to as producing a large amount of oozing of blood and fat, many of the victims of umbilical hernia being corpulent and full-blooded women; every precaution against this complication must therefore be taken. It is my custom to give calcium chloride in half-drachm doses for the two days previous to operation, for prevention of the former; only careful handling of the superficial fascia and extraperitoneal fat will overcome the latter.

In my own opinion few ligatures are sufficiently trustworthy to be placed in the tissues in the vicinity of a filigree. Silk I have long since discarded; catgut prepared by ordinary methods is no better; possibly that prepared by Moskowitz's iodine method, if carefully handled and personally supervised, is moderately safe, but I prefer to employ when possible only that prepared by van Horn and Sawtell, and since I first used it I have had no trouble in these cases.

Lastly, there is the question of drainage. The temptation to drain in the case of very stout patients with large deep wounds is great, but to those who contemplate performing the operation I would say, avoid it, especially in cases of inguinal hernia. There is a certain danger in closing the wound by sutures of any sort, that infective material may be carried into it from the skin, and for this reason, unless there is much tension, I always use Michel's clips closely set. They ensure a very close apposition of the lips of the wound and do not pierce the skin; they must, however, be removed at the end of the seventh day,* as they are inclined to produce a minute slough from pressure if left too long *in situ*.

The technique of the operation varies according to the situation of the hernia. In the case of ventral or umbilical hernia, the incision is carried in an ellipse round the base of the tumour, and the sac and any loculi isolated as speedily as possible. The abdomen is then opened in the middle line some distance above the mass, and two fingers are introduced to ascertain if any bowel or omentum is adherent to the wall of the abdomen. The peritoneum is incised throughout the whole length of the wound on one side or other of the mass, and the hernial ring being everted, the sac is turned inside out and evacuated. Any excess of omentum is removed, and the whole cutaneo-peritoneal sac being completely excised, the peritoneum is closed by a continuous catgut suture. The fibrous sheath of the rectus muscle is now opened in the whole length of the wound on either side, and the hand being introduced between the muscles and the posterior layer of their sheaths, the former are gently separated from the latter as far as the point of entrance of the vessels and nerves into these muscles. At times difficulty may be encountered from the presence of the lineae transversae, these bands being attached to the sheath in front and behind; these attachments must be carefully snipped through with scissors. Similar treatment is now accorded to the anterior surface of the muscles, so that they can now be drawn towards each other. The next step is to approximate the edges of the posterior layers of the sheaths as far as possible, by sutures of stout catgut.

Any oozing having been checked by hot saline lotion, the bed is ready for the filigree, which is lifted from the sterilizer into the wound, the lips of the latter being widely retracted for its reception. The above is a modification of Bartlett's original method of placing the filigree upon the peritoneum. It is often very difficult indeed, especially in old-standing cases, to strip the latter from the posterior layer of the sheath; it often results in much oozing, and in the tearing of holes, with consequent loss of time in suturing. I therefore now place the filigree between the muscle and its posterior sheath; it is equally efficient, much more easily performed, and forms a more resistant bed for the filigree. Nothing now remains but to draw the muscles as far as possible together over the filigree, stitch the fat together if in a very thick layer, and close the wound with the clips I have mentioned.

In the case of inguinal hernia the wound must be larger than usual, and the aponeurosis of the external oblique muscle must be split almost to the anterior superior spine. The cord is freed and the sac dissected out in the usual manner, but instead of being transfixed and ligatured (which produces an inconvenient and knotty mass), it is excised and the edges are neatly sutured together. The inner or pubic section of the filigree is now laid upon the peritoneum deep to the conjoined tendon, and having the pubes to its inner and the internal abdominal ring to its outer end. The conjoined tendon is then sutured to Poupart's ligament by Bassini's method over it. The internal oblique and transversalis muscles must, as a rule, be incised from the internal ring outwards, and separated from the peritoneum sufficiently to allow of a large enough bed being prepared for the outer filigree, which is laid upon the peritoneum in the outer two-thirds of its length, and upon the cord in the inner third. The inner end of the outer thus comes to lie over the outer end of the inner filigree for about an inch, the cord being interposed between them. In this way it is possible to defend the whole length of the inguinal canal. The incision in the muscles is now accurately closed; the aponeurosis is united in the ordinary way and the skin incision is closed by Michel's clips.

The manner of dealing with such a hernia as is found at times at the site of an old appendicectomy is much the same as that for median hernia. The inner loops of the

* Since the above was written I have shortened this period, and now remove the clips on the fifth day.

filigree will in this case lie between the rectus muscle and the posterior layer of its sheath, which must be opened this time from the outer margin, while the outer loops will lie upon the peritoneum (after excision of the sac and suturing of the edges) and deep to the transversalis fascia. A case of implantation which I have recently had under my care was of this nature, and as it is admirably illustrative of the method, I will give you the details, which I have not hitherto published.

The patient, an unmarried lady, was sent to me by Dr. Croucher of Eastbourne with the following history: Three years ago she underwent appendicectomy at the hands of a well-known London operator. The wound healed by primary union, but shortly afterwards the scar began to stretch, and soon a prominent hernia resulted. She then underwent an operation for this but without success, for the hernia in a few months was as bad as ever. She again went to her surgeon, but he gave it as his opinion that no further operation could be done owing to the friability of her muscles.

When I first saw her she was quite an invalid, unable to take any exercise on account of the dragging pain in her abdomen. She was sallow, thin, and easily tired. The scar of the previous operations was stretched and thin like tissue paper, through which the movements of the bowel were markedly obvious. On exertion the scar bulged in rather an alarming manner, and on deep palpation three fingers could be introduced between the separated muscles; nausea was produced by this examination, and coils of bowel could be felt adherent to the scar. The muscles felt to me in excellent condition, and I therefore advised the use of a filigree.

In October, 1906, therefore, Dr. Hewitt giving the anaesthetic, I excised the scar completely, the incision measuring 9 in., and found the ileum firmly adherent to the inner edge of the wound, at a point 12 in. from the ileo-caecal valve. There were some old caecal adhesions, and these were divided, the tags being removed. The peritoneum was closed by a continuous suture, and I then opened the sheath of the rectus muscle in the whole length of the wound. The fibrous edges of the oblique muscles were freshened till sound muscle fibres presented, and were carefully detached from the peritoneum. All oozing being arrested, I laid in a filigree of silver wire, 6½ in. in length and 3 in. in breadth across the centre, having eight loops to the inch on either side. The rectus was then drawn from its sheath over the filigree as far as possible to meet the cut edges of the oblique muscles and fixed by interrupted sutures of stout catgut, and the anterior layer of the rectus sheath being united to the external oblique aponeurosis, the skin incision was closed by the use of Michel's clips, no drainage being employed.

The present condition of the patient is in every way satisfactory; there is no pain or discomfort from the presence of the filigree; on coughing or straining there is no bulging; the area of the filigree on palpation, is hard and resistant and feels almost leathery, but permits freely of every abdominal movement.

Since this, my tenth case, was done, I have had occasion to implant a filigree in a case of epigastric hernia; and in two cases of lateral ventral hernia of gigantic size I have employed filigrees of 8 in. and 9 in. by 4 in. respectively. These will be published shortly with the case already related, so I need not weary you with them. I feel justified by the results of these 13 cases in endorsing the favourable reports of the operation given by Willard Bartlett of the 7 cases operated upon by him.

It may be asked what are the special advantages of these filigrees, and wherein do they afford a better prospect of cure than does the ordinary operation?

In the first place they are time-savers. The amount of time consumed in the accurate closure of a large ventral hernia in the ordinary manner is a serious matter in a stout patient, and if the method of weaving in silver wire is attempted at the time of operation (a method followed by at least one well-known surgeon at the present time), the operation becomes a very protracted one. Secondly, they enable us to remake the abdominal wall, even when it is impossible to make the muscles meet completely, the condition which has been present in every one of my cases. Thirdly, the amount of forcible manipulation required, the repeated pricking of vessels, and especially the tension to which the muscles must be subjected where suture is relied upon, are all points which render the occurrence of primary union less probable than when a ready-made filigree is used. Fourthly, the essential factor which compels a cure is the refusal of the wire to stretch.

The one great difficulty which has faced surgeons at all times has been the persistent and uncontrollable tendency of fibrous tissue to stretch when stretching was not desired, or to contract against repeated dilatation. In the case of hernia, therefore, a cure could always be guaranteed if the tendency to stretch could be overcome. This has fortunately become possible by the use of the filigree. The manner of its construction, unlike that of the perforated plate, permits of the growth through its meshes, of the young fibroblasts and angeioblasts which go to the formation of the new layer of fibrous tissue; and thus is produced, in a short time, such an impenetrable and inelastic mass of fibrous tissue and silver wire that nothing can pass it. As in all varieties of hernia it is only the intermuscular portion of the abdominal wall that gives way to pressure, it is clear that if this portion is inseparably incorporated with the filigree no further stretching is possible.

I have been asked what would be the effect of fracture of the filigree, whether there is any possibility of total absorption, and what would be the effect of the filigree in the event of a subsequent pregnancy.

Fracture I believe to be improbable; it is possible that the midrib might give way, as it lies in an axis transverse to that of abdominal flexion, provided that such flexion were sufficiently acute and sufficiently frequent; but even then the accident would not affect the power of the filigree, as this strand is solely for the purpose of retaining the loops temporarily in position; indeed, one form of filigree used by Bartlett is made without any midrib at all.

Absorption of the wire is, I believe, practically impossible, for, provided that it is composed of unalloyed silver, no further action takes place than that of blackening of the surface of the metal by oxidation.

With regard to the question of pregnancy, I am as yet unable to speak with authority, no case having yet been recorded in a patient who has undergone the operation of implantation. The enlargement of the pregnant abdomen, however, is one in which the lateral muscles are capable of enormous extension, and indeed are those chiefly concerned in the stretching necessary to accommodate the growing uterus. Were this not so, we should see median ventral hernia following childbirth far more frequently than we do. I therefore believe that not only will the filigree in no way interfere with the normal course of pregnancy, but that in pregnancy after implantation, it will be found a trustworthy guardian of the hernial site, in spite of the enormous strain put upon it.*

I have further been asked what size of filigree can safely be buried in the tissues? I believe there is no limit to the size, other than that imposed by the costal margins and the pelvis, and this is, I think, borne out by the gradually increasing size of the filigrees which I have been able to employ in recent years.

The last question I would deal with is that of suppuration. What is to be done in the event of such a mishap? It is obvious that the entire removal of a large filigree might prove a very difficult matter, and might open up a large tract of as yet uninfected tissue. Now, Gentlemen, I cannot say that my cases show an unbroken record of asepsis. In spite of every precaution, two of the number suppurated—one an inguinal hernia, very slightly indeed, and the other an umbilico-ventral, very profusely. The latter, my second case, done two years ago, in which the filigree measured 8 in. by 4 in., was that of a very stout woman in whom drainage was employed for very persistent oozing. I may say that both these cases eventually healed perfectly, and are to-day in perfect health, their filigrees being as efficient as if nothing had happened. Although one can never view suppuration as an unmixed blessing, I cannot help feeling that the experience gained in these two cases has gone a very long way towards confirming my faith in the method which I have had the honour of presenting, I fear in a somewhat imperfect manner, to your notice.

* One month after this paper was read, I had occasion to employ a filigree in a patient who was in the fifth month of pregnancy. She has recently been confined, and the case, which appears to entirely bear out the above remarks, will be published in due course.

WE mentioned some time ago that Count Vetter von der Lille, formerly President of the Lower House of the Austrian Parliament, was studying medicine. He took his doctor's degree at the University of Vienna on November 6th. Count Vetter von der Lille is over 50 years of age. We congratulate him on his having been found *dignus intrare in nostro docto corpore*, and we are glad to welcome so distinguished a recruit to our ranks.

SEVENTY-FIFTH ANNUAL MEETING
OF THE
British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF PATHOLOGY.

Professor Robert Muir, M.D., F.R.C.P.E., President.

THE ESTIMATION OF FAT IN FAECES.

By I. Walker Hall, M.D.,
Professor of Pathology, University College, Bristol; Pathologist to the Bristol Royal Infirmary.

The part played by fat during intestinal digestion and absorption is gradually receiving the recognition its importance deserves. It appears to exert considerable influence upon the intermediate processes of protein metabolism and upon the elimination of certain mineral substances. Hence, in addition to its insufficient emulsification and subsequent loss in the faeces in pancreatic diseases, and the value of the "fat absorption" quotient in the feeding of children, the metabolism of fat is being investigated from the newer standpoint of the mineral exchanges. These factors are to some extent responsible for a more general use of the determination of the faecal fats. The methods for such estimations practically all involve the drying of the faeces. For this procedure a fume cupboard is necessary, while to carry out the process effectually consumes considerable time and occasions an extended use of the chemical balance.

The value of a shorter method is manifest. Hecht[1] takes about 10 c.cm. of the stool (obtained by pressing the faeces into a burette with a wooden spatula), then transfers it to a flask containing 300 c.cm. of water and a fragment of KOH. When the solution appears clear, 100 c.cm. 96 per cent. alcohol are added, and the mixture heated. After the addition of HCl, the fluid is extracted with ether in a specially-devised apparatus, and the percentage of fat read off from a scale marked on the glass. It is obvious that only very approximate results can be expected by his method. I have therefore worked out the details of the following process, and have found it of much use in preliminary research work and for ordinary clinical investigations. It enables a rapid classification of the material, indicates any necessity for carrying out the longer methods, and consequently saves much time and expense of laboratory apparatus and upkeep, without detracting from the closer examination of special cases. There is nothing to prevent its performance in a ward laboratory or practitioner's surgery.

It aims at the estimation of the *total quantity* of the fat in the faeces, since this is now considered a more accurate result than the *percentage amount* of separate portions. Each step has been worked out by comparing the results with similar estimations by the older methods.

1. Administer a known quantity of fat in the food. Prescribe fluid extract of haematoxylin before and after the period concerned.

2. Transfer the entire stools to a mortar. Add normal KOH solution and stir until all lumps have disappeared. Make up to 500 c.cm. with distilled water. Shake well.

3. Take 50 c.cm. and heat for twenty minutes.

4. Add 50 c.cm. 95 per cent. alcohol. Heat for twenty minutes.

5. Add strong HCl until markedly acid. (Any reliable indicator may be used.)

6. Heat for twenty minutes. Filter. Evaporate down to 50 c.cm.

7.	or	7.
Take 5 c.cm. and determine the percentage in a "milk" centrifugal tube, just as in an ordinary estimation of fat in milk. Multiply the result by 5.		Take 20 c.cm. in a Schmidt-Werner tube, and make a Schmidt-Werner estimation. After calculation from the dried residue of the aliquot portion of the ethereal extract, multiply the result by 25.

If the process is interrupted at 3, then the amount of fat extracted approximates that of the fatty acids. This result, deducted from the quantity yielded by the whole process, yields, according to a number of comparative estimations, an approximate amount for the neutral fats. No definite claim is made for these figures. The method cited has been varied in many ways by the introduction of various fat solvents at all the stages, but their presence has introduced disturbing factors of pigment, etc., so they have been discarded.

Reference.
[1] *Muench. med. Woch.*, 1906.

DISCUSSION.

Dr. P. J. Cammidge (London) said: The difficulty in the application of the method described by Dr. Walker Hall appears to me to be that it is rarely feasible to put a patient on delimnated diet in private practice; and that, as a rule, for diagnostic purposes it is necessary to take a single average specimen for analysis. That the taking of such an average specimen does not as a rule give rise to misleading results is shown by the results of over 300 analyses made by a method I described at the British Medical Association meeting at Leicester in 1905. In this a small average specimen of the faeces is dried to a constant weight, a process which, using only a small amount of the stools, only takes a short time. This is weighed into two Stokes-Schmidt tubes, and the contents of one tested with hydrochloric acid. Both are extracted with ether, and from a determination of the fat content of a sample from each, the total fat, free fatty acid, and neutral fats, as well as the combined fatty acids, can be calculated. My results show that by the data thus obtained we can determine whether there is a normal or abnormal digestion and absorption of fats, points which are clinically of great diagnostic value. I shall have much pleasure, however, in trying Professor Walker Hall's method, and comparing the results with those I have found of so much clinical use in my own work. A shortening of the time occupied in the process of analyses such as this process offers is greatly to be desired.

SOME MOTILE ELEMENTS SEEN IN CERTAIN CEREBRO-SPINAL FLUIDS.

By Frank C. Eve, M.D.Camb., M.R.C.P.Lond.,
Physician to the Royal Infirmary and to the Victoria Hospital for Children, Hull.

By the kindness of Professor Grünbaum, of Leeds, I was able to see the cerebro-spinal fluid of one of his chimpanzees affected with cerebral syphilis. Attached to some of the red corpuscles were minute filaments showing active streaming movements, and resembling in some ways the living *Spirochaeta pallida.*

Having under my care a patient with unusually clear clinical evidence of cerebral syphilis, I examined the cerebro-spinal fluid and found the same filaments in the perfectly fresh fluid abstracted and collected with very careful asepsis. These were absent in three other cerebro-spinal fluids examined about that time.

Next, by the kindness of Dr. Merson, the cerebro-spinal fluids of ten general paralytics were examined, and in one of them the same motile filaments were found, but in most of the fluids there were small (2 to 5 μ) hyaline globular bodies, actively motile, and often having stumpy filaments (Fig. II). In one case the centrifugalized fluid was teeming with these bodies, which I then looked upon as some protozoal extraneous contamination.

These globular bodies were of very various shapes, resembling dumb-bells, decanters, etc., but they had this common feature, that they were always composed of one or more globular hyaline bodies united by a short filamentous isthmus and often possessing one or more motile filaments, which were sometimes branched. (See Fig. II.)

The filamentous bodies, on the other hand, were nearly always attached to red or white corpuscles, and were in very active lashing movement. This movement very much resembled the appearance of the long slender pennants which are flown on occasion from the masthead of a man-of-war when under the influence of a stiff and very choppy breeze. Sometimes the lashing movements were even more active, like those of a conger-eel fresh landed in a boat. It was scarcely possible to resist believing that they were alive, and struggling purposefully to get away from the corpuscle to which they were attached. However, on the rare occasions on which they did become detached their movement of translation was little or nothing.

The nature and relationship of these bodies would have remained mysterious had I not been lucky enough to witness their development from a white corpuscle which had been kept under intermittent observation for several days. Evaporation was prevented by vaseline round the cover-glass. The cerebro-spinal fluid (from a case of tuberculous meningitis, I fancy) had been centrifugalized, and kept under the microscope for a day.

A somewhat swollen and degenerate leucocyte was then observed to possess a coarse finger-like process of hyaline material projecting from its surface and waving slowly about. Other spherical knobs of the same material had also been extruded (Fig. I, 1). After a quarter of an hour's absence I was astonished to find that the finger-like process had changed into a very long motile filament—the longest I had seen (Fig. I, 2). Similarly the other knobs and fingers grew into motile filaments (Fig. I, 3 and 4). Later all the filaments became beaded, and thereby shortened; and eventually after twenty-four hours the large filament, now greatly diminished in length and motility, shook itself free and drifted slowly away, still feebly lashing (Fig. I, 6). The other smaller filaments when beaded and detached became the motile globular bodies (Fig. II) whose nature had mystified me up to this time. The same changes were witnessed in other leucocytes on a smaller scale, and less perfectly in blood. In red corpuscles also similar but finer motile filaments were sometimes seen, originating generally from the tips of the crenations (Fig. III). Several methods of staining the filaments were tried unsuccessfully. The activity of the movements was but little affected by the warm stage.

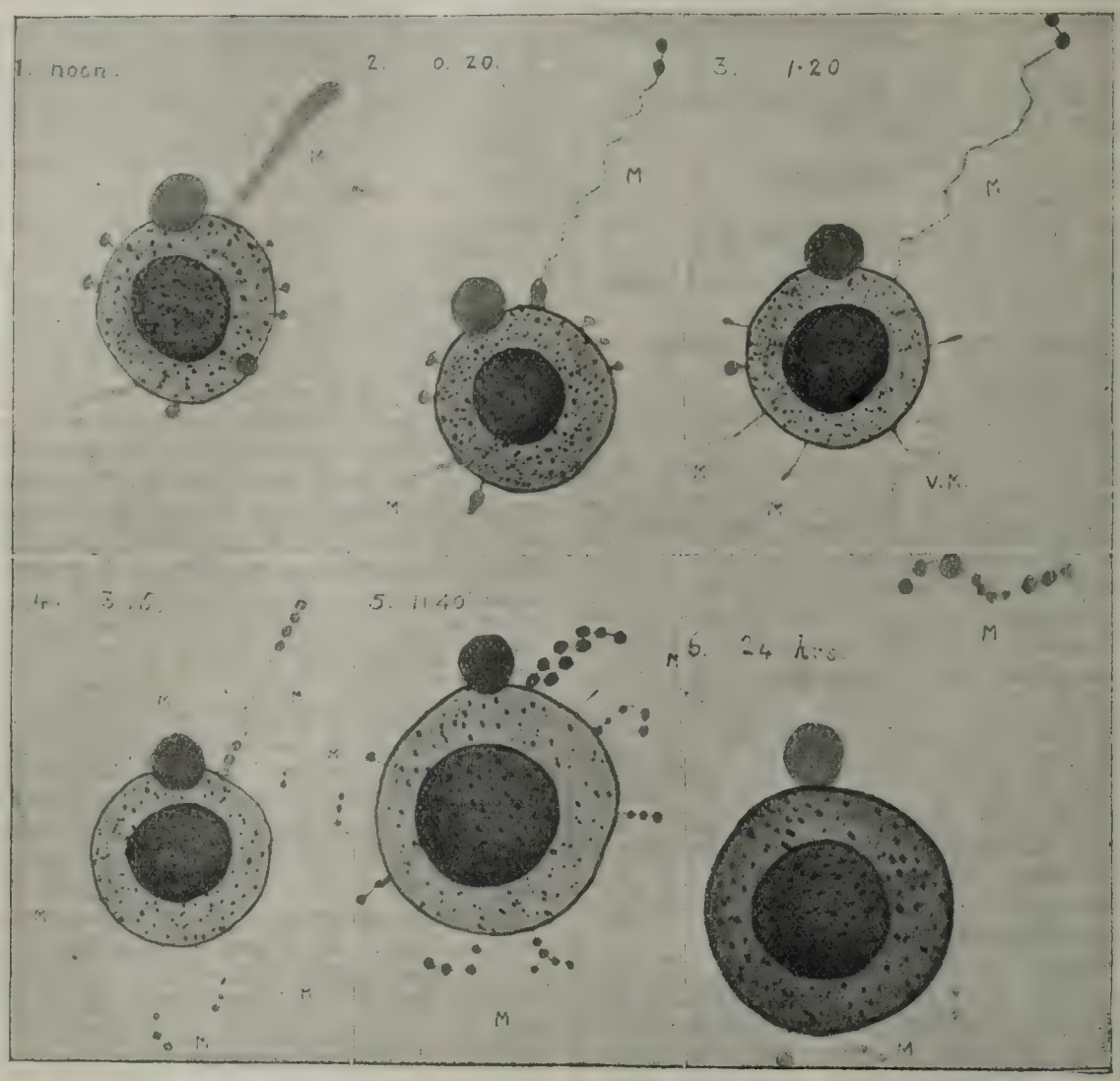

Fig. I.—Stages in the degeneration of a leucocyte in meningitic cerebro-spinal fluid. The six stages are from the same corpuscle observed during twenty-four hours. They illustrate the mode of origin of the motile filaments and motile hyaline bodies which are often present in pathological cerebro-spinal fluids. The leucocyte and its nucleus will be noticed to have swollen during observation. The letter M signifies that the filament was actively motile. The transformation from Stage 1 to Stage 2 occurred during a twenty minutes' absence of the observer.

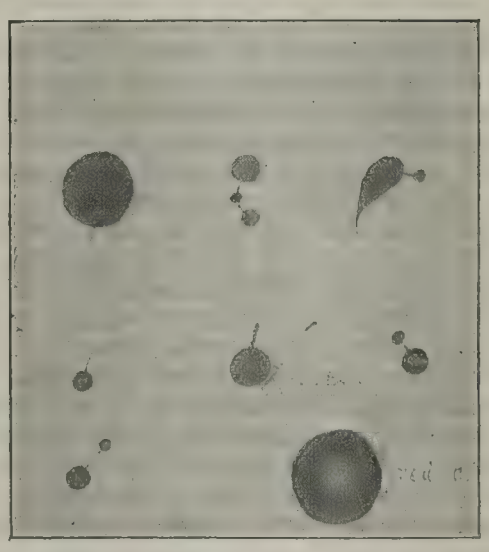

Fig. II shows various forms of globular hyaline bodies, all actively motile, occurring in pathological cerebro-spinal fluids and resulting from the degeneration of leucocytes. The red cell gives the scale for this and for the other figures.

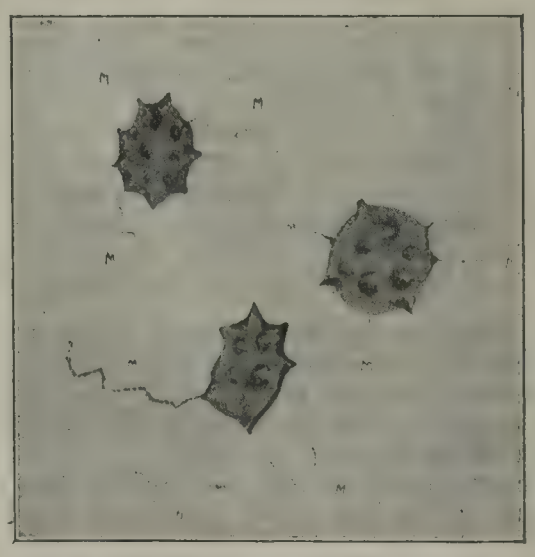

Fig. III.—Similar motile filaments developing from crenated red corpuscles. The detached filaments showed little or no movement of translation.

Appearances in all cases drawn at the time, under oil immersion $\frac{1}{12}$ Oc. 3. The fresh fluid was sealed under a cover-glass with vaseline, aseptically.

CONCLUSIONS.

1. In certain pathological cerebro-spinal fluids, when examined fresh under an oil immersion, there may be seen minute filaments with very active, lashing movements, simulating spirochaetes. (Hence the assumption with which I started, that any such motile filaments to be found in cerebro-spinal fluid must be spirochaetes, is an unfounded one.)

2. These may be seen to originate from the degeneration of leucocytes, which extrude finger-like processes, which become long filaments, which in turn run into rows of spherical beads. (Fig. I, 1-6.)

3. These three stages are to be regarded (presumably) as surface tension effects, the first two stages being in unstable and the last in stable equilibrium.

4. The motility of the filaments, though very lifelike, may possibly be explained as the resultant of the Brownian movement of a number of beads on a string, each bead trying to oscillate independently.

5. Motile globular bodies consisting of one or more spheres variously linked by filamentous junctions are often seen in cerebro-spinal fluids, sometimes in large numbers (Fig. II). These originate in the same way as the filaments.

6. The occurrence of these filaments and motile globular bodies may prove worthy of note clinically when found in quite fresh cerebro-spinal fluid, as they may then afford evidence of cell degeneration *intra vitam*, or be an index of degenerative changes in the central nervous system.

ON PERITHELIOMATA AND ENDOTHELIOMATA AND THEIR POSITION IN ONCOLOGY.

By P. G. E. BAYON, M.D Genoa,
Late Pathologist Seamen's Hospital.

GREAT in number and varied as the names of growths already are, I am most definitely of the opinion that at

present they are not sufficient to classify according to morphological or even histogenetic and clinical criteria any but the minority of tumours, innocent and malignant. At the same time we all know oncological nomenclature is immensely vast in proportion to the knowledge of ultimate etiological factors, and yet clearness of conception is not entrammelled so much by these two antagonistic properties of nomenclature, but much more by the fact that often and often different workers call different things the same name, and as a compensation one worker may call identical things different names, having been led astray by superficial observation.

To give a rough example, we often mention epitheliomata not only without ever having any positive proof that the growth takes its origin from epithelium but also without having an absolutely clear and definite idea of what in conclusion epithelium really is. Every definition of epithelium returns always to the original consideration that epithelial cells are simply cells in a certain position and in a certain disposition and relation to each other. It is therefore simply a topographical expression. We are perfectly unable to distinguish a separate epithelial cell from any other individual cell, though no doubt efforts have been made to persuade the histologist of the contrary. These efforts have given rise to the unlucky expression "epithelioid" as applied to design cells which help to form the tubercle—but have nothing whatever to do with epithelium. We ought not, therefore, according to the postulate of von Hansemann, to give the name "epithelioma" to a growth if we cannot prove its origin from cells in an epithelial position, and if they do not unite and combine again in an identical way to the tissue from which they appear to have taken their origin. If we follow this postulate we reduce the number of the epitheliomata very considerably and consider as genuine epitheliomata some growths which have been looked upon from quite another standpoint.

A tentative attempt in this direction has been made by Borst in his *Geschwulstlehre*, where he distinguishes two big groups—fibro-epithelial growths and undeveloped forms of epithelial growths. In fibro-epithelial growths he includes warts, which, however, according to the definition given above would be more aptly termed epitheliomata, as from a morphological standpoint connective tissue has no great part in their composition. This name has, however, so long been made use of as synonymous with a carcinoma of the body surface that it is perfectly out of the question of its ever being adapted to any other purpose. This is but a small sample of the difficulties encountered in nomenclature. Little interest is taken in the subject, and what attention is given to it is given grudgingly and superficially. And yet the matter is of paramount importance; so long as, being misled by totally unappropriate names, we hopelessly jumble up together absolutely different histological entities and separate things which have a common origin, and this not purposely, but through want of clearness, so long will our knowledge as to the ultimate causes of malignancy only be attained at the cost of endless painstaking and, in part, avoidable work. This, however, is beside the point: I only wish to explain why before coming to the subject I have thought it necessary to give a definition of apparently simple expressions such as "epithelium" and "endothelium."

As endothelial cells (endothelium) I believe we can only and exclusively consider the cells lining the lymphatics and blood vessels, as these appear to have a definite origin from the mesenchyma and have differentiated to such a point as to lose all relation to epithelium, as is also the case with connective tissue, which in conclusion originally develops from epithelial elements. On the other hand, the cells lining the pleural, pericardial, and abdominal cavity take their origin at such an early embryonal stage that their differentiation from epithelial elements has not had time to progress very far. Their reaction to inflammatory and irritative causes has up to the present not allowed us to group them definitely with epithelial cells, but there appears to be every reason to believe that they do not take part in the proliferation of the connective tissue and also that in this particular instance they take up a position for themselves, even to the point of producing serous substance, according to Borst's observation. If, therefore, we could really prove that growths take their origin from these cells, we would have more reason to group them with carcinomas than with endotheliomas, with which they have only a distant relationship. Better still would it be to make a separate group of them, if we do not desire to follow an unwritten law, which decrees that epithelial growths, or such as appear to develop from epithelial elements, are to be considered carcinomas and all malignant connective tissue growths as sarcomas.

Regarding now the presence of a perithelial layer of cells, it must be admitted from the very beginning that the consideration of perithelium as a special class or quality of cells has in no case met the approval of any histologist, as far as I know; moreover, that opinions vary very much indeed as to what and how far layers of cells disposed round vessels in various organs deserve to be called by a special name. Perithelial layers of cells have, however, been demonstrated in the vessels of the brain and cord; similar but not identical layers of cells are visible round the vessels of the carotid and coccygeal body. The vessels of the hypophysis, of the adrenal bodies, of the mammary gland, the salivary gland and testes, show a perithelial layer of cells; but in all these cases they have up till the present no definite embryological or physiological position; and though Borst considers it a doubtful proceeding to name a complete class of growths after a mystical element, on the other hand it cannot be denied that the name is very expressive, and describes very aptly a special and peculiar class of growths. Ribbert does not admit the use of the expression "perithelioma," not even in the case of growths peculiar to the carotid body, because he considers that the position of the cells round the vessels is no proof of the fact that they originally took their departure from the perithelial cells. In any case perithelium is again a purely topographical expression, and as such I believe that we have a right of making use of it from a morphological point of view to designate growths such as I have put under the microscope, and which I will describe later on. I may mention here that other names for this class of growths are "angiosarcoma plexiformis," "endothelioma perivascularis," and then "angiosarcoma peritheliale" or simply "angiosarcoma."

Following up the arguments I have already mentioned I call an endothelioma simply and exclusively such growths as appear to take their origin from the endothelial layer of cells of blood vessels and lymph sinuses. What I call take their origin is simply a figurative expression; I mean that the section under the microscope shows masses of cells which being grouped round a blood vessel show no other elements but cells which are either identical in shape, size, position, and staining properties to cells of the endothelial layer or in cases where they differ in any of these qualities I can prove clearly and conclusively transitional stages to undoubted endothelial cells. This is the case of the simultaneous growth of the parotid I have under the microscope. To call any other growth but such an endothelioma is a misnomer. Between the endothelial layer of the blood vessels and the growth proper there is no layer of different cells, there is complete continuity and contiguity. As it is so often that one meets with descriptions of growths which are accused of taking their origin from this and that cellular element, I consider it cannot be too clearly defined what one understands by "seeing" the growth develop, say, from the sweat glands, etc., so that the reader may be enabled to judge whether it is not more probably the growth invading the sweat glands and causing them to proliferate. As a perithelioma I consider first of all growths very similar in structure to the carotid body and which have been seen to begin from the usual position of the carotid body—that is, the bifurcation of the carotids, and spread upwards. These growths are rare, and I have two specimens under the microscope, one of which is of interest because I found it among some old slides purporting to be the strumous glands taken from the neck of a child in an out-patient's department. On comparing it with the other specimen of an undoubted parotid tumour they are found to be identical. In this group I would like, however, to bring, simply from a morphological and no other standpoint, also all those growths that present a radial disposition of cells around blood vessels, even if it cannot conclusively be shown that they originate from the perithelium. This expression, I repeat, is purely a morphological one, for we might as well break away from the conception that we know any-

thing definite about the real origin of any but the smallest minority of growths. I am also demonstrating under the microscope two specimens of such growths, one taken from the elbow of a young man of 27, and the other from the groin of a girl aged 25. In both cases the disposition of the growth cells around the vessels is very marked indeed, and their appearance so peculiar that I believe that they are well worthy of a special name, instead of the vague expression sarcoma, for which no satisfactory definition can be found. Von Hansemann considers that the disposition round the vessels is due to the growth cells being more easily nourished in that position; other parts are seen to necrose. This is often but not always the case.

Is there clinically any relationship between such morphological appearances and the degree of malignancy? From what one may gather from literature, and as far as my personal observation goes I have not been able to find any sharp or clearly-defined difference. It is true that metastases are not at all frequent with such tumours. Infiltrative and rapid expansive growth are in many cases the only symptoms of malignancy we are able to detect; on complete and thorough operation no recurrence appears to take place. But a careful examination of several growths which commonly go by the name of sarcomata has shown—especially if the growth is not far developed and of recent origin—in several parts either an endothelial or perithelial disposition of the tumour cells such as I have described; so often have I succeeded in finding this morphological peculiarity that I have decided to put the question: What proportion of sarcomata show this appearance in any part, and are such parts to be considered as early stages of development? The answer of this question appears to me to have a definite bearing on what von Hansemann calls "anaplasia"; with this expression he means the changes from a morphological and histological point of view which have taken place in a definite class or species of cells, increasing their activity in such a way that they acquire a capacity for independent existence which they did not possess. In some cases this fundamental change has in course of time influenced the appearance to such a degree as to be easily detected; in others it can only be deduced from the relation to other cells—for example, through their proliferation into deeper layers, production of metastasis, and invasion of lymphatics. So far as I can see anaplasia is, however, a somewhat altered and modified expression for metaplasia, and though we often hear about the well-established phenomenon of metaplasia, it can most definitely be proclaimed that there exists at this moment no conclusive proof of the fact that a carcinoma cell is ever anything else but a carcinoma cell, from the very beginning of its existence in the human or animal body. The same may be said of sarcoma, though with sarcoma a certain amount of circumstantial evidence exists which renders its origin from pre-existent apparently normal cells possible; this, I repeat, is not the case with carcinoma. Von Hansemann has, moreover, tried, as far as I can make out, to bring anaplasia in relation to malignancy by saying that malignancy is proportionate to anaplasia, and though malignancy is a vague expression, and apparently dependent on very many factors, yet we can see that these growths which show but little anaplasia are also but moderately "malignant." Of course the converse may be stated to be erroneous, but for the present we have to grope our way in this intricate pathway the best we can.

I may mention here that among the growths which I might call of a definite cell type—that is, growths which show a very small degree of anaplasia—the hypernephroma or growth peculiar to the adrenal body is to be considered in the first place. It is also scarcely malignant, and when it does "turn" malignant, microscopical appearances show quite as clearly that a sarcoma or carcinoma has got implanted on to the innocent growth; in fact, this interpretation is easier to prove than the one generally admitted, namely, the presence of transitional shapes between the innocent tumour cell and the malignant growth elements; in fact, the typical appearances of the malignant cells make often and often a sharp contrast with those of the original growth.

The conclusions I have drawn from the study of endothelial growths and peritheliomata are that the name "endothelioma" ought to be exclusively reserved for those growths which really show similarity in disposition, position, and general morphology to genuine endothelium, and this is solely and alone the lining membrane of blood vessels and lymphatics; that from a purely morphological standpoint it is admissible to make use of the expression "peritheliomata" to design a peculiar class of growths.

In the first case we can require complete proof, as far as possible under the circumstances, of the origin of the growth, as we have to deal with an embryological and histological unity, the endothelial lining of the vessels. In the other case, with the exception of growths of the carotid body, we have to do with a somewhat indefinite cellular element; we therefore can only require a simple morphological expression, "perithelioma," so as to mark the principal peculiarity in appearance of the growths.

Growths appearing to take origin from the lining membrane of the pleural, pericardial, or abdominal cavity cannot with exactitude be considered as endotheliomas; they ought to be classed by themselves. The same applies to growths peculiar to the hypophysis, thyroid, and so-called parathyroid glands and adrenal bodies, which might have a special name given them in view of their absolute peculiarity and impossibility of bringing them satisfactorily under any other classification, as they are but a repetition of the cells of their point of departure. Moreover, I have concluded that though, now as before, I have detected no reasons for altering my opinion that carcinoma is carcinoma from the very beginning, I cannot uphold an equally radical standpoint regarding sarcoma. I hope in time to accumulate sufficient evidence to allow clinical application of these purely morphological observations.

DISCUSSION.

Dr. B. H. SPILSBURY regarded the peritheliomata and endotheliomata as essentially similar, if not identical, tumours histologically. The layer of structureless hyaline which in peritheliomata lay between the endothelium lining the vessels and the tumour cells, and which alone served to distinguish these tumours from endotheliomata, varied considerably in thickness, and could in some cases be distinguished only with great difficulty. To sarcomata the endotheliomata and probably the peritheliomata were closely related and showed a tendency to change into the former class. Thus, in a single tumour the appearances might in places be indistinguishable from those of a sarcoma. The change of an endothelioma into a sarcoma was illustrated by the development of a melanotic sarcoma from congenital pigmented naevoid tissue in the skin, a pigmented endothelioma sometimes forming one stage in the development of the sarcoma. This possibly accounted for the alveolar structure of some melanotic sarcomata of the skin.

Dr. BAYON, in reply, said he had not seen, heard, or read that endothelial cells were ever capable of producing genuine pigment. He could not, therefore, consider such a growth as a real endothelioma. Early stages of carcinoma were such as, from a clinical point of view, had only been noticed during a few weeks or months.

A SPOROZOON IN AURAL POLYPI.

By JAMES M. BEATTIE, M.A., M.D.,
Professor of Pathology, University of Sheffield.

AT a meeting of the Association held in Toronto last year I brought before the Section of Pathology some notes on a sporozoon which I had found in a nasal polypus, and which corresponded in all important details with one described by O'Kinealy and named by Minchin and Fantham the *Rhinosporidium kinealyi*. Recently I have had the opportunity of examining some aural polypi sent from the same district in India from which the nasal polypus came, and in these the same parasite was present, so that the name *Rhino*sporidium must be abandoned.

In these aural polypi the younger and developing forms in the spore-morulae are very numerous, but all the stages described by Minchin and Fantham [1] and by myself [2] in the nasal polypi can be made out. By a new method of staining, the spores in the spore-morulae have been more clearly differentiated, and in each of them a bright red

staining chromatin granule or possibly nucleus could be made out.

In the small cysts with an undifferentiated granular mass of protoplasm there is a pale, somewhat irregular nucleus and a bright-red-stained chromatin granule or nucleolus. In some of the larger cysts this chromatin granule becomes broken up into a number of smaller granules, which are scattered through the still undifferentiated protoplasm. In the cysts where development of spore-morulae is taking place the young pansporoblasts are seen to be irregular masses of protoplasm at first, without any definite cell wall, and showing, either at the centre or towards one end, a red-stained granule. In some, in addition, a smaller similarly stained granule is present, and the general appearance is much that of the Leishman-Donovan body. As development proceeds, a cell wall is formed round the pansporoblasts, and their protoplasm becomes divided up into from four to fifteen or sixteen rounded spores. In each of these spores in the fully-developed spore-morulae a central "nucleus" is present. Generally one of these "nuclei" is larger than the others and resists decolorization much longer.

In specimens stained by Richard Muir's[3] method for "differential staining of granules in tissue cells," the outline of the spore-morulae is well defined, and near the centre, or often towards one side, a single rounded bright-red spot is seen.

By modifying this stain and combining it with iron-haematoxylin the spores are well differentiated, and in each the "nucleus," bright red in colour, can be made out. One of these, however, is generally larger than the others, and, by careful decolorization, can be seen to correspond with the granule referred to in using Muir's method. The presence of this single or this larger granule is so constant that one is tempted to ask, Does it correspond with the blepharoblast of the Flagellata, or is the spore containing it a special generative one, and can it be compared in function to the micronucleus of the Infusoria? Personally I can give no answer, but simply suggest the possibility in the hope that further work, by those who have material at their disposal, may be stimulated and may help to throw some light on the development and means of transmission of this parasite.

For staining purposes good results are got by the iron-haematoxylin method (Heidenhain), but more details are brought out by the following method:

1. Stain by Richard Muir's[3] alcoholic eosin method, omitting the methylene blue.
2. Place in a 2 per cent. iron-alum solution for fifteen minutes.
3. Transfer to a 0.5 per cent. watery solution of haematoxylin for fifteen minutes.
4. Wash and then decolorize carefully after the manner of Heidenhain.
5. Stain for about one minute with 0.5 per cent. alcoholic solution of *Licht-grün* (Grübler), and mount in Canada balsam after dehydration and clearing.

REFERENCES.

[1] Minchin and Fantham, *Quart. Journ. Micr. Sci.*, London, 1905, vol. xlix, p. 521. [2] Beattie, *Journal of Pathology and Bacteriology*, Edin. and London, June, 1906, p. 270. [3] Muir, ibid., p. 373.

MYCOSIS FUNGOIDES:

ITS RELATIONSHIP TO INFECTION AND TO MALIGNANT NEW GROWTH.

BY

F. G. Bushnell, M.D. and A. W. Williams, M.D.

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A portion of a tumour of a patient, S.M., 53 years old, suffering from mycosis fungoides, admitted on February 20th, 1907, under the care of Dr. E. Hobhouse, at the Sussex County Hospital, was removed during life for examination in the Ralli Laboratory.

The patient, a widow, occupied as a nurse attendant, had been attended by Dr. Branfoot during the previous ten or twelve years on three separate occasions for a scaly dermatitis of general distribution, the last of which cleared up more slowly. For the past twelve months a slight scaly eruption, chiefly on the face and arms, had persisted. In December, 1906, patient noticed small tumours on the abdomen below the umbilicus, which spread to the sides, back, arms and legs. At first these were small and dull red in colour and covered with skin, grew very quickly, skin "broke and discharged." She had been in bed since December, 1906, and grown much thinner. She had been married twenty-five years, was without children, had no miscarriages. Her husband was healthy; family history good but indefinite. The following notes were taken by the house-physician, Mr. Anderson:

Condition on Admission.—Temperature, 100° F.; pulse, 110; respirations, 22. Patient thin. Skin of right side of face and head is seat of dry scaly eruption and thickened and reddened. Legs, skin dry and scaly and thickened, inner aspect of thighs raw and bleeds easily, skin thickened. Outer side of thighs free. Inner aspect of groins and labia are raised into red raw tumours, smooth and varying in shape, some rounded, some oval, neither hard nor soft, not tender or painful, except when rubbed, discharging thin watery and blood-stained serum. Arms, as legs, with four or five tumours on each side. The body is covered with similar masses, most of which have ulcerated and are suppurating. One below and to right of umbilicus is 4 in. by 3 in., has raised overhanging margins. It is raised about 1 in. off the surface of skin; surface is cupped and base forms a broad pedicle. Neck is similarly involved. The skin is red and glistening between tumours. The inguinal glands can be felt. The mouth, throat, and nose are free. The circulatory, respiratory, genito-urinary, and alimentary systems showed nothing of note. Urine, acid; 1025; no albumen; no sugar; no blood.

Progress and Result.—February 28th: *X* rays to abdomen. March 3rd: Growths and skin cleaner, growths flatter; is losing strength; crepitations more numerous. March 26th: Growths discharging freely, but not enlarging; patient weaker. April 8th: Oedema of legs, feeble state, profuse discharge. April 11th: Died of exhaustion.

The necropsy by Mr. Anderson showed no metastases in viscera. The tumours on section extended to subcutaneous tissue.

Histo-pathology—The growth on examination was that of an "infectious granuloma." The papillary layer of the skin contains large numbers of mononucleated cells. These are 6 to 10 μ, and deeply staining in areas of dermatitis, and 9 to 12 μ in diameter, with one large lightly-staining nucleus, with several deeper-staining chromatic particles (nucleoli). The cytoplasm is clear or finely granular, acidophil or neutrophil. Over tumour these cells tend to be arranged in columns. They are not disposed especially about coil glands and hair follicles. The cutis and subcutaneous fat in superficial planes show diffuse mononuclear cell infiltration. Giant cells are seen, but are scanty; one contains eight pale-staining nuclei. There is no fibroblast or fibrous bundle formation. Most cells polymorphous, with rounded or indented nuclei, and plasma cells are numerous. Polynuclears are not frequent. Large areas are degenerating and show karyorrhexis and pyrrhosis. The collagen and elastin are broken up, especially near epithelium, by cells, and in places elastin is basophilic (elacen). A fine fibrillary meshwork enclosing round cells simulates lymphosarcoma.

The epithelium shows numerous downgrowths, giving the sections an alveolar appearance, and "cell nest-like" bodies containing wandering cells are seen. The downgrowths arise from a canthosis of prickle cells. There is parakeratosis and desquamation of stratum corneum. In places the prickle cells are pressed on and atrophied, and had disappeared.

The vessels are thin walled, but haemorrhages are not frequent. They are blocked in some places with round and polynuclear cells. There are numerous dilated capillary or lymph spaces in the granulation tissue and even in the fat.

The Blood Count.—This was made on March 4th, and showed: Erythrocytes, 3,200,000 per c.mm.; leucocytes, 11,800; haemoglobin, 60 per cent. A differential leucocyte count among 509 cells showed: Polynuclears, 85; lymphocytes, 11; large lymphocytes 4; eosinophils, 0.7.

Bacteriology.—Sections showed no spirochaetes, but some streptococci and micrococci and a few short Gram-positive bacilli. The tumour, examined after application of pure carbolic acid to the surface, and the blood, grew a white staphylococcus. The patient's opsonic index to this coccus was 1.3 on April 4th, 1907, and 1.1 on April 9th to the same, and to a "pus" coccus from a case of chronic bone necrosis.

No vaccine treatment was adopted, as the patient was obviously dying. With all possible precautions inoculations were made on 16 media from the tumours and skin of the cadaver within a few hours after death. The organisms obtained were staphylococci, streptococci, *B coli*, *B. pyocyaneus*, and many varieties of bacilli, some sporing.

The relation of mycosis fungoides to the infectious granulomata is seen in (1) the diffuseness and absence of capsule formation of the growth; (2) the presence of lymphoid cells which resemble the proliferating cells of lymph follicles, of plasma cells, and of mast cells, as seen in the granulomata; (3) the numerous thin-walled vessels; (4) the necrosis of large areas of growth.

The relation of mycosis fungoides to sarcomatosis is seen in (1) the rapidly fatal course, when once evolutionary tumour formation supervenes (the duration of the disease being ten or twelve years in our case, and the evolutionary stage four months—a "malignant granuloma)"; (2) the bulk of the tumours, and the arrangement of cells and fibres as in lymphosarcoma; (3) the presence of metastases in

brain, kidneys, adrenals, retroperitoneal glands, dura mater, liver, and spleen in recorded cases; (4) the close relation that exists between leucorrhoea, infectious follicular vaginitis, balanitis, and lymphoid sarcomata of bitches, and its parallel in this disease and the diffuse character and malignant course of the lymphomata (lymphocythaemia). Here it may be noted that persistent dermatitis is the precursor of "Paget's disease" (carcinoma of breast, scrotum, vulva and umbilicus), and that lobulated warty condylomata of dogs arise from irritation.

There is a clear resemblance of mycosis fungoides, despite its inflammatory structure, to "infectious sarcomata" of dogs. The latter is characterized by the presence of uniformly large, round, pale staining mononucleated cells with nucleoli, not arranged as alveoli, but in cords or diffuse areas; the blood vessels are moderately developed. The surrounding tissue is displaced outwards, and is free from signs of inflammation. Large areas may necrose. It is highly infectious, produces metastases, and the transference of living cells is necessary to secure growth.

According to English observers, transplanted cells perish in three to five days, and the tumour grows from the tissue of the host. American workers claim that transplanted cells are observed in active mitosis in twenty-four hours, and from them the growth develops. Spontaneous disappearance of the tumours occurs, and regressive changes are seen also in mycosis fungoides and in sarcomata in man.

[We regret we were unable to repeat Mr. Cheatle's (negative) experiment of transplantation of portions of the tumour into animals.]

The staining methods used were acid orcein, Unna Tanzer, polychrome methylene blue, polychrome methylene blue and neutral orcein, polychrome methylene blue, Leishman, eosin methylene blue, Giemsa, Gram, Weigert, Ziehl-Neelsen, Pappenheim, Ribbert's modified Mallory, and Heidenhain.

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PERICARDIAL CALCIFICATION.

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A FEW months ago Dr. Blatchford presented the department with a specimen illustrating pericardial calcification. It produced no symptoms during life, and, as there were a large number of thick intersecting ridges of bony hardness, I thought possibly some might show ossifying material. I have, however, examined a large number of sections taken from various parts of the specimen, but find no microscopical evidence of bone cells. Most of the specimens I have found described of this nature are in French and German literature, and few cases of as marked degree as this are mentioned in the English medical press, so that by bringing this case before your notice I thought it might be useful to any of you interested in the subject to know where such a specimen was to be found.

Clinical History.—X., a fish hawker, aged 68, was admitted into the Bristol County Asylum on January 7th, 1906, with melancholia and suicidal tendencies, and died the following year on February 16th. There was no history of any previous illness, and on admission, beyond general feebleness and signs of emphysema, no organic trouble could be detected. He eventually died of pneumonia. At the autopsy, in addition to the pericardial changes, there were several small abscesses on the arms and legs.

Brain.—The vessels at the base showed commencing atheroma, and the grey cortical matter was atrophied. There was also a thin layer of recent blood clot on the inner surface of the dura mater, in the right orbital region.

Lungs.—Both were emphysematous, and on the right side lower lobe and a portion of the upper lobe were in a state of pneumonic consolidation.

The *liver*, *spleen*, and *kidneys* were very hard, small, and their capsules were thickened.

Posterior. A, Cut into heart muscle, showing calcareous infiltration.

The illustrations show a fairly accurate representation of the heart with the adherent pericardium. The aorta, which is opened up, shows no marked macroscopical changes, but a few small nodules of a whitish colour are seen shining through the endothelium. The coronary arteries are thickened at their orifices, and a rod passed through one of the vessels shows its rigidity, but the aortic valves appear to be healthy. In the heart, which is of about normal size, the only portion of the ventricles free from a calcareous covering is an irregularly circular part about 2 in. in diameter, situated at the left anterior and inferior angle of the specimen; it comprises the apices of the left, and, to a less extent, of the right, ventricle. Here there is a thin fibrous coating of pericardium. The heart muscle, as seen from the openings which have been made into it, is infiltrated by the calcareous material. The auricles are normal and free, and both mitral and tricuspid valves are apparently healthy. Both layers of the pericardium are welded together, and form an irregular calcareous casing to the heart. In its thickest part this covering is as much as ¾ in. in thickness, but it varies considerably in this respect. There is a marked ridge of stony hardness running around the interauriculo-ventricular groove with a prolongation downwards on either side. Behind also a number of well-marked nodules are scattered over the surface of the left ventricle.

Such is a brief history of the case, the most remarkable feature of which is the fact that although the condition must have existed for many years and that only about 3 sq. in. of heart muscle was available, no signs of cardiac disease were evident.

There is one other example of calcareous pericardium in the Infirmary museum which resembles this in some respects. There is an almost complete ring around the auriculo-ventricular groove with prolongation downward in the posterior interventricular furrow. In its dry state it is in parts ½ in. in thickness. This is from a man aged 50, who died from pyaemia in 1879, and who had also calcareous plates in his bronchi.

Medical literature is not very full of cases so advanced as this one. I have been able to find two somewhat similar. Drummond reports the case of a man, aged 43, whose pericardium was extensively calcified, being an inch thick in places, and he was able to perform his work until three weeks before his death. Variot also reports a very similar case where the apex was the only portion free from

Anterior. B, Cut into heart muscle, showing calcareous infiltration. C, Portion of heart uncovered by calcified material.

calcareous plates, and the man enjoyed good health until he developed a fatal pleurisy which killed him in three weeks.

EXPERIMENTAL CHEMOTHERAPY IN TRYPANOSOME INFECTIONS.*

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The treatment of trypanosome diseases has of late years become one of the most important problems in medicine. Destruction of the parasite-carrying flies and limitation of intercommunication among natives are measures which seem very difficult to carry into effect. Accordingly the greatest hope of success appears to lie in specific chemotherapy. On this account it is highly important to study the action of trypanocidal drugs under experimental conditions. In this way alone will it be possible to obtain a solid theoretical basis for the treatment of the disease occurring under natural conditions.

Following Lingard and Bruce, Laveran and Mesnil[1] were the first to demonstrate the striking, but unfortunately only temporary effect of arsenious acid on nagana infections in mice and rats. In this, as in so many other departments of medical science, Ehrlich has opened up quite a new field. The original investigations of Ehrlich and Shiga,[2] along with Weinberg, resulted in the discovery of *trypan-red*. By means of a single injection of this compound it was possible to sterilize completely the tissues of a mouse infected with mal de Caderas trypanasomes. That is to say, one possessed now for the first time an agent of known constitution, a single dose of which sufficed to cure permanently an animal affected with a disease which when untreated was rapidly and certainly fatal. The newest phases of trypanosome therapy are:

1. The introduction of atoxyl, for which we have to thank Thomas[3] of the Liverpool School of Tropical Medicine. At present this compound is certainly the chief basis of the treatment of sleeping sickness; and even if, as the latest results show, it does not by itself completely suffice, nevertheless it is the foundation for the combined therapy.

2. The investigations of Ehrlich,[4] which followed the discovery by Ehrlich and Bertheim of the constitution of atoxyl,

* The author's work quoted in this paper was done during the tenure of a Carnegie Research Fellowship.

and which have as their object the finding of synthetic derivatives which are characterized by an increased trypanocidal action and decreased animal toxicity as compared with atoxyl itself.

3. Further research with compounds of the trypan-red series by Ehrlich and Weinberg[4] and by Mesnil and Nicolle.[5]

4. Combined treatment:

(*a*) The workers in Ehrlich's laboratory have proved by their experiments that this is the most efficient form of treatment, and that it rests on a sound theoretical basis.

(*b*) Moore, Nierenstein, and Todd[6] have obtained very favourable results by using sublimate in succession to treatment with atoxyl.

With this short reference to the historical aspect, I pass on to some results which I have obtained in my work under Professor Ehrlich's guidance, or which I have verified, during the past two years, and which will be published in detail later on. At the same time I shall discuss shortly the bearing of the facts on general questions of treatment.

In my experiments on the chemo-therapeutic agents which are efficient in the treatment of experimental trypanosome infections, the trypanosome strain principally employed was nagana. As a result of long-continued passages through white mice, the virulence was so great that, twenty-four hours after the injection subcutaneously of a $\frac{1}{50}$ c.cm. of blood containing abundant trypanosomes, scanty parasites could already be found on microscopic examination of the blood of the infected mouse. The trypanosomes then increased progressively in numbers, and death occurred on the third day. Out of several thousand animals used for the propagation of this strain not a single one has shown any deviation from the normal course of the disease. Accordingly, the high virulence and the regularity of the infection made it very suitable for testing the effect of chemo therapeutic agents. These, so far as at present known, fall into three distinct chemical groups.

(*a*) *The Benzidin Dyes.*—The first discovered synthetic trypanocidal substance, trypan-red, belongs to this group. Its action in mice infected with mal de Caderas parasites is quite certain; the nagana trypanosomes are, however, much less susceptible; they are, to use Ehrlich's expression, *trypan-red-tenax*, and a definite cure seldom results. A large series of substitution-products of trypan-red have been investigated by Ehrlich and Weinberg. Some of these—for example, amido-trypan-red, diamido-trypan-red, oxy-trypan-red—have been found to be superior to trypan red in the treatment of nagana infections. Mesnil and Nicolle, following Ehrlich's lead, have introduced a number of blue and violet members of this class. In the case of one of these compounds, trypan-blue, formed by the synthesis of 1 molecule of tetrazotized tolidin with 2 molecules of amido-naphthol-disulphonic acid, I have confirmed the authors' results and found, as they claim, that it is much superior to trypan-red in the case of mice infected with nagana, and that complete cure follows a single injection in a certain number of instances.

(*b*) *Basic Triphenyl-methane Dyes* —Wendelstadt's[7] experiments with malachite-green first of all drew attention to this group. Ehrlich and Franke[4] have shown that the most active member is the simple tri-amido-triphenyl-methane dye—parafuchsin. A single injection of $\frac{1}{1000}$ gram of the HCl salt into a 20-gram mouse twenty-four hours after inoculation banishes the trypanosomes from the blood for from seven to ten days. Complete cure very rarely results, however. The prophylactic action of this compound is very important. Ehrlich has shown that animals which have been fed for a few days with biscuit mixed with 0·35 per cent. by weight of parafuchsin-base in the form of the readily-resorbed oleic acid salt, and then inoculated and fed further with the dye for another week, almost never become infected.

In an experiment which I carried out on these lines 11 mice were fed with parafuchsin for six days before inoculation and for from seven to nine days afterwards. In 10 of them the blood remained permanently free of trypanosomes (see Table I); in only 1 trypanosomes appeared—six days after cessation of the parafuchsin feeding—and death followed as usual. The great advantage of the feeding method is that the bowel contents act as a continual store, and so keep the tissues saturated with the therapeutic agent In the case of the human subject parafuchsin is quite harmless, as doses of several grams a day cause no bad symptoms. It deserves a trial as a prophylactic agent for men or animals passing through infected districts. Treatment should be begun at least three days beforehand, and should be continued while passing through the region and also for some time afterwards. Parafuchsin is preferable to the benzidin dyes, in that it does not cause the skin to become dyed.

(*c*) *Arsenical Compounds.*—The service rendered by Thomas in introducing atoxyl has already been spoken

TABLE I.

Five Mice. Nos. 1–5.	Five Mice. Nos. 6–10.	No. 11.	Controls.
1 day ↓ 6 „ — Parafuchsin feeding.	1 day ↓ 6 „ — Parafuchsin feeding.	1 day ↓ 6 „ — Parafuchsin feeding.	(*a*) (*b*)
7 „ inf.	7 „ inf.	7 „ inf.	1 day inf. inf.
8 „ – ↓ –	8 „ – ↓ –	8 „ – ↓ –	2 „ + +
14 „ – ↓ –	16 „ – ↓ –	16 „ –	3 „ +++ +++
80 „ –	80 „ –	17 „ – ↓ – 21 „ –	4 „ dead dead
		22 „ +	
		23 „ +++	
		24 „ dead	

In this and the following tables:
+ = scanty parasites in the blood; up to 3 or 4 in a field with a Zeiss "D" objective, and ocular No. 2.
++ = Parasites up to 10 or 15 per field.
+++ = Parasites uncountable.
– = No parasites.

of. Ehrlich and Bertheim have settled the constitution of this substance.

They showed that it was not, as had always previously been positively asserted, an anilido-derivative of arsenic acid, but that it was the sodium salt of para-amido-phenyl-arsenic acid, a very active chemical compound which is capable of forming numerous synthetic combinations. Hundreds of synthetic products have been prepared, and as a result of biological experiment the acetyl derivative and the paroxybenzaldehyde compound have been found to be the most efficient therapeutic agents, so far as is at present known, in the treatment of nagana infections in mice. I have made experiments to compare the efficiency of atoxyl and of these two compounds, and have used a large number of animals for this purpose. With regard to the dosage, $\frac{1}{300}$ gram is the largest dose of atoxyl in the form of a subcutaneous injection which will on the average be borne by a 20-gram mouse. The acetyl-atoxyl derivative contains 29 per cent. of arsenic, that is, 5 per cent. more than is in atoxyl itself, and the paroxybenzyliden compound contains 24 per cent.; nevertheless these substances are at least ten times less toxic for mice than atoxyl itself, a dose of $\frac{1}{30}$ gram being well borne. Further, animals which have borne well the first large dose of these atoxyl derivatives can usually tolerate a repetition on four or five consecutive days. Very striking is the fact that the synthesis of the relatively non-poisonous paroxybenzyliden-atoxyl compound can occur in the animal body itself. Mice which have been fed for several days with biscuit mixed with 5 per cent. by weight of paroxybenzaldehyde will tolerate one or even more injections of $\frac{1}{100}$ gram of atoxyl, which is a certainly fatal dose for our normal mice (see Table II). A curious side-effect of these

TABLE II.

			Control.
	1 day		1 day*
	2 „		2 „
1 day	3 „		3 „ ill.
2 „	4 „		4 „
3 „	5 „		5 „ dead.
4 „	6 „	*	
5 „ Para-oxy-benzaldehyde feeding	7 „		
6 „ *	8 „	*	
7 „	9 „		
↓	10 „	*	
22 „	11 „		
50 „ alive and well.	↓		
	16 „		
	50 „	alive and well.	

* = $\frac{1}{100}$ gram atoxyl injected subcutaneously.

atoxyl-derivatives is that the treated mice very frequently become like Japanese dancing-mice. This condition is not accompanied by any other derangement of health, and has been seen to persist in animals which have been under observation for a year. So far as I have seen, large animals do not

exhibit such symptoms. The superiority of the two atoxyl derivatives over atoxyl itself is well shown in the following table (III):

TABLE III.

Chemo-therapeutic Agent.	Results. Cured.	Recurrences.	Blood never rendered free of Parasites	Total	Per Cent. Cured.
Atoxyl $\frac{1}{300}$ to $\frac{1}{150}$ gram ..	5	38	21	64	8
Acetyl-atoxyl or paroxybenzyliden-atoxyl $\frac{1}{300}$ to $\frac{1}{150}$ gram	31	2	0	33	93

The animals were inoculated with nagana trypanosomes, and twenty-four hours later, scanty parasites being present in the blood, they received a single injection. Of 64 animals which tolerated a dose of $\frac{1}{300}$ to $\frac{1}{150}$ gram of atoxyl, 5—or not quite 8 per cent.—were cured, while in a third of the mice the blood was never rendered free of trypanosomes. The insufficiency of atoxyl by itself is also shown in the clearest fashion by the results of Mesnil and Nicolle in the case of mice, and by the Liverpool School[6] in the case of nagana-infected rats, where, out of 113 animals, only 3 have been cured. On the other hand, with $\frac{1}{300}$ to $\frac{1}{50}$-gram doses of acetyl-atoxyl or paroxybenzyliden-atoxyl a complete cure occurred in 31 out of 33 animals, or 93 per cent. Accordingly, with a single injection of these atoxyl derivatives it is possible to effect a practically certain cure of an animal twenty-four hours after inoculation. *In vitro*, in a 1.5 per cent. solution of the sodium salt of acetyl-paramido-phenyl-arsenic acid (=1 per cent. of the free acid) the trypanosomes retain their motility for hours.

The next point to be settled was *the effect of delaying the therapeutic intervention till forty-eight hours after inoculation*—that is, till twelve to eighteen hours before death, when the blood is swarming with parasites. Eight animals received under these conditions $\frac{1}{40}$ gram of the paroxybenzyliden compound. In every instance the blood was found to be free of parasites on microscopic examination twenty-four hours later; but in no case was a permanent cure effected. Recurrence took place in from eight to seventeen days, and death quickly followed. Thus it is clear that the effect of treatment is directly dependent upon the length of time which has elapsed between the inoculation and the moment of intervention, or, in other words, on the number of parasites in the blood. Under these conditions, however, by means of injections of the atoxyl derivatives alone, repeated three to five times, 12 out of 22 animals—that is, 55 per cent.—were cured. Especially worthy of mention are the very favourable results which I have recently obtained in treating infections on the second day by an injection of $\frac{1}{40}$ gram of acetyl-atoxyl and then by atoxyl feeding (biscuit mixed with 0.125 per cent. by weight of atoxyl) begun on the following day and continued for ten or eleven days. Of a series of 11 animals treated in this way, 10 were permanently freed of trypanosomes, and only 1 had a recurrence. When one regards the virulence of the strain and the advanced stage of the infection, this last result is the most successful ever obtained so far. As will be shown later, the method of combined treatment gives better results than injections of the atoxyl derivatives alone in such advanced infections. It may be remarked here that none of these animals was held to be cured unless its blood remained free of parasites during a period of observation extending over at least six months after cessation of treatment. With regard to the length of the free interval between treatment and a recurrence, it may be mentioned that in the case of our very virulent nagana strain a second recurrence once took place after the unusually long period of fifty-three days after the first recurrence, which had been treated by repeated injections, the last of which was made thirty-nine days before the second recurrence.

CHRONIC INFECTIONS.

It may be noted that, as a rule, the trypanosomes retain their virulence unimpaired, in spite of their having been, as a result of treatment, for a long time latent in an animal's tissues.

Thus, for example, in 1 mouse a second recurrence took place 41 days after the first recurrence, which had been treated, and 69 days after inoculation; the animal was not further treated, and died in 4 days. In 4 mice, however, out of several thousand therapeutic experiments, the disease became chronic as a result of treatment. One of these animals, which was not further treated, remained alive for three months with varying numbers of trypanosomes in its blood.

It is an interesting fact that all of these chronic cases followed treatment with a basic triphenylmethane dye. Chronic infections have also been frequently seen to follow inoculation with trypanosomes which had been mixed with parafuchsin solutions *in vitro*.

DEVELOPMENT AND BEHAVIOUR OF CHEMO-RESISTANT STRAINS.

In cases where, as the result of treatment, complete sterilization is not effected, the parasites may disappear from the blood for a time. Later on, a recurrence takes place. On repeating the treatment the parasites can again be banished from the blood, but usually reappear once more. Finally, as is well known, the animals may succumb to the infection in spite of further treatment. Is this result due to an alteration in the parasites or in the host? This question was settled for the first time by Franke and Röhl[4] in Ehrlich's laboratory.

In the case of mice infected with nagana, and treated by parafuchsin-feeding, they showed that the parasites from an animal in which the trypanosomes no longer were affected by parafuchsin-feeding, when inoculated into a normal animal gave rise to an infection which did not respond in the least to treatment with parafuchsin, either in the form of feeding or of injection. Thus, it was clear that the trypanosomes had undergone a profound alteration in their biological characters, a *parafuchsin-resistant strain* had been developed.

Starting with the normal nagana strain, and after many passages in which the animals were always fed with atoxyl on the appearance of scanty parasites in the blood, I obtained an atoxyl-resistant strain. The resistance was such that a therapeutic dose of acetyl-atoxyl ($\frac{1}{40}$ gram) injected twenty-four hours after inoculation did not delay the course of the infection; and even this dose injected at the time of inoculation and repeated twenty-fours later, scarcely prolonged life for forty-eight hours. (See Table IV) This strain had preserved its normal

TABLE IV.

	Normal Nagana strain			Atoxyl-resistant Strain.				
	inf.	inf.		inf.	inf.*	inf.*	inf.	
1st day..	+*	+	Control	+*	+	+*	+	Control.
2nd ,,	—	++		++	++	++	++	
3rd ,,	—	Dead		Dead	+++	+++	Dead	
4th ,,	—				Dead	Dead		
150th ,,	—							
	Cured							

* = $\frac{1}{40}$ gram acetyl-atoxyl injected subcutaneously.

animal virulence. It is an interesting fact that, although atoxyl feeding alone is inferior to a single injection of the atoxyl derivatives in the treatment of mice infected with the normal nagana strain, nevertheless the resistant parasites are in many instances banished from the blood for a time as the result of feeding with atoxyl, but a cure has not been observed.

Results already published by Ehrlich[4] have shown that considerable chemo-resistance may be developed in the course of several weeks as a result of treatment. The details of the following case in a horse are of interest in this connection, and have not hitherto been published. (See Table V.)

A horse was inoculated intravenously with dourine parasites from a mouse, and was treated by intravenous injections of acetyl-atoxyl. A recurrence took place fourteen days after inoculation, 2 grams of the drug having been administered. Mice were subinoculated, and the resistance of the trypanosomes was tested by treatment of infected mice with acetyl-atoxyl. The result showed that there was only a minute increase in resistance. (Table V.—I. Recurrence.) Eighteen days later, after the administration of 24.5 grams of the drug in all, the strain when cultivated in mice showed itself highly

TABLE V.

Horse.

7	XI	Inoculated with dourine (from mouse) intravenously.
10	,,	Scanty parasites in blood; fever (39° C.). 1.0 gram acetyl-atoxyl intravenously.
17	,,	1.0 gram ditto.
22	,,	Fairly numerous parasites in the blood; resistance tested, v. below I. 2.0 grams acetyl-atoxyl intravenously.
25	,,	2.0 grams ditto.
28	,,	2.5 grams ditto.
1	XII	3.5 grams ditto.
4	,,	5.0 grams ditto.
7	,,	7.5 grams ditto.
10	,,	Fairly numerous parasites in the blood; resistance tested, v. below II.

I.—Recurrence, Third Mouse-Passage.		II.—Recurrence, Seventh Mouse-Passage.	
Inf.	Inf. Control.	Inf.	Inf. Control.
1 day –	–	–	+
2 days +*	+	+*	++
3 ,, –	+	+*	+++
4 ,, –	++	+++	+++
↓ –	+++	+++	+++
9 ,, –	+++	+++	+++
10 ,, –	Dead	Dead	+++
11 ,, –			Dead
12 ,, –			
13 ,, –			
14 ,, +*			
15 ,, –*			
165 ,, – Cured			

Two other animals of each series similarly treated gave the same result.

* = injection of $\frac{1}{10}$ gram acetyl-atoxyl.

Controls with the original dourine-strain were cured by a single injection of $\frac{1}{10}$ gram of acetyl-atoxyl on the appearance of scanty parasites in the blood; the untreated control animals died in 5 to 7 days after inoculation.

resistant. (Table V.—II. Recurrence.) On the other hand, the parasites may still remain sensitive to the drug after repeated doses. For example, a mouse infected with nagana was ultimately cured after the third recurrence and seven previous injections, the whole treatment being with atoxyl derivatives.

I have also obtained a *trypan-red resistant strain* and a *trypan-blue resistant strain.* Since these drugs are not so well resorbed from the alimentary canal, the resistance was developed in the following way: at first doses were injected so small that they merely prolonged the course of the infection without rendering the blood free from parasites. In the subsequent passages the doses were gradually increased (see Table VI). Further, an atoxyl-resistant strain was rendered resistant to trypan-blue and then to parafuchsin, so that finally the strain was highly resistant to all three agents; it possessed a *triple resistance.*

OTHER PROPERTIES OF CHEMO RESISTANT STRAINS.

The resistance is not merely a specific one towards the particular substance used to develop it, but a positive increase of resistance, more or less pronounced, yet always notable, toward other compounds of the same group. Thus the atoxyl-resistant strain is resistant to acetyl-atoxyl and to the paroxybenzyliden compound; the trypan-blue resistant strain is resistant to trypan-red and toward trypan-violet (the diamido-diphenyl-urea compound of Mesnil and Nicolle), and so on. On the other hand, the development of resistance toward one group causes no increase in the resistance toward compounds of the other groups, as Table VII shows. Thus the parafuchsin-resistant and the trypan-blue-resistant strains respond in the normal way to acetyl-atoxyl. Such a result can only be explained on the basis of Ehrlich's theory, according to which toxic action depends on a direct chemical relationship between the toxic agent and particular atom groups of the protoplasm, the *chemo-receptors.* Langley's[8] recent work has led him also to a similar conception.

TABLE VI.—*Development of Trypan-blue-Resistant Strain.*

No. of Passage.	Dose of Trypan-blue, injected twenty-four hours after inoculation.	Result: Progressive Increase of Trypanosomes and Death:
1 July 6th, 1906 ..	$\frac{1}{500}$ gram	5 days after inoculation.
2 ...	$\frac{1}{500}$,,	5 ,, ,,
3 ...	$\frac{1}{400}$,,	4 ,, ,,
4 ...	$\frac{1}{300}$,,	5 ,, ,,
5 ..	$\frac{1}{250}$,,	6 ,, ,,
6 ..	$\frac{1}{200}$,,	Killed on fourth day; abundant trypanosomes in blood
7 ...	$\frac{1}{200}$,,	5 days after inoculation.
8 ...	$\frac{1}{200}$,,	Killed on fourth day; abundant trypanosomes in blood
9 ..	$\frac{1}{200}$,,	4 days after noculation.
	Untreated control	
15 August 18th, 1906	$\frac{1}{200}$ gram simultaneously with inoculation	4 ,, ,,
16	$\frac{1}{150}$ gram simultaneously with inoculation	4 ,, ,,

Control Showing Effect of Trypan-blue in Infection with Normal Strain.

—	(a) Inf.	(b) Inf.	(c) Inf.	(d) Inf.	Control Inf.
1 day	+ T.B. $\frac{1}{250}$	+ T.B. $\frac{1}{250}$	+ T.B. $\frac{1}{300}$	+ T.B. $\frac{1}{300}$	+
2 days	—	—	+	+	++
3 ,,	—	—	—	—	Dead
↓ 6 ,,	—	—	—	—	
7 ,,	—	—	—	+	
8 ,,	—	—	—	+	
9 ,,	—	—	+	++	
10 ,,	—	—	+++	Dead	
11 ,,	—	—	Dead		
12 ,,	—	+			
13 ,,	—	++			
14 ,,	—	+++			
15 ,,	—	+++			
16 ,,	—	Dead			
150 ,,	— Cured				

T.B. = Trypan-blue.

COMBINED TREATMENT.

As a consequence of the principle that the different trypanocidal agents attack the trypanosomes by combining with different chemo-receptors, one obtains a key to the best means of treating severe infections, namely, by combining the most efficient representatives of the different groups:

Animals were treated in this way at a period twelve to eighteen hours before death. They received 3 to 5 $\frac{1}{10}$-gram doses of acetyl-atoxyl and 1 to 2 $\frac{1}{200}$-gram injections of trypan-blue; 23 out of 33 animals were cured, that is, 69 per cent. The superiority of combined treatment is most clearly shown, for example, in the following series of experiments—26 animals were treated for the first time on the second day; they received $\frac{1}{10}$-gram of acetyl-atoxyl; 16 of these were then treated further with the same compound, but in spite of that 3 had recurrences which no longer responded to acetyl-atoxyl. That is to say, an atoxyl-resistant strain was present, and this was further conclusively proved in one instance by testing subinoculations. One of the three was not further treated and died; the other two each received a single injection of $\frac{1}{200}$-gram of trypan-blue at a time when their blood was swarming with trypanosomes. In both instances cure was effected. This striking result points to a special sensitiveness of the trypanosomes to trypan-blue under the given conditions. Altogether 17 out of 25 animals of this series (= 68 per cent.) were cured by the combined treatment with acetyl-atoxyl and trypan-blue; and

TABLE VII.

Strain Resistant to—	Behaviour toward Chemo-therapeutic Agents.						
	Acetyl-para-amido-phenyl-arsenic Acid.	Benzidin Group.			Triphenyl-methane Group.		
		Trypan-blue.	Trypan-red.	Trypan-violet.	Parafuchsin.	Döbner's Violet.	Ethyl Violet.
Atoxyl	Resistant	Not resistant	Not resistant	Not resistant	Not resistant	Not resistant	Not resistant
Trypan-blue	Not resistant	Resistant	Resistant	Resistant	Not resistant	Not resistant	Not resistant
Parafuchsin	Not resistant	Not resistant	Not resistant	Not resistant	Resistant	Resistant	—

TABLE VIII.

Original Infection with a Mixture of the Trypan-blue-resistant + the Atoxyl-resistant Strains. Eighth Passage through Normal Mice.	Treated by Injection of—	Result of Treatment.	Subinoculation after Treatment of the Original Infection; Behaviour of the Trypanosomes in the Subinoculated Mice toward Injection of—	
			Trypan-blue.	Acetyl-atoxyl.
1. Mouse	Trypan-blue	No effect on the course of the infection.	Resistant.	Not resistant.
			*** The trypan-blue-resistant strain is present in pure culture in the subinoculated animal.	
2. Mouse	Acetyl-atoxyl	No effect on the course of the infection.	Not resistant.	Resistant.
			*** The atoxyl-resistant strain is present in pure culture in the subinoculated animal.	

this, too, in spite of the fact that atoxyl-resistant parasites were proved to be present in two cases.

Permanence of Acquired Chemo-resistance.

Chemo-resistance once acquired persists unchanged for a long time when the resistant trypanosomes are passed through normal untreated animals. Thus, the atoxyl-resistant strain is still resistant after 140 passages through normal mice over a period of fourteen months. This is a striking example of the transmission of acquired characters.

Experiments on Immunity and on the Behaviour of Infections with Mixtures of Resistant Strains.

Experiments of this kind were also made by Professor Ehrlich and myself, and showed that the chemo-resistant strains undergo a profound biological alteration.

A mouse inoculated with the parafuchsin-resistant strain, and cured with acetyl-atoxyl, possesses an active immunity, which is shown by the fact that on reinoculation with the same strain the disease does not develop immediately. Under these conditions the immunity phase lasts ten days; but if one employs the atoxyl-resistant strain for the reinoculation, then the disease develops immediately; there is in this instance no immunity.

In agreement with this is the fact that when one treats an infection with a mixture of two resistant strains by means of a chemo-therapeutic agent towards which one of the components is resistant, then the other component disappears from the blood, but the one resistant to the drug used develops unchecked, and can in this way be isolated in pure culture, as is shown in Table VIII. The two elements remain quite separate, and after repeated passages can still be isolated; that is to say, a strain with double resistance does *not* arise from an infection with a mixture of two resistant strains. (See Table VIII.)

Clinical Bearing of the Foregoing Facts.

These facts regarding the development and properties of chemo-resistant strains have led Ehrlich to emphasize two points as being factors of the highest importance in the treatment of trypanosome diseases: (1) In the first place, complete sterilization of the tissues of the patient must be effected in a short time by energetic treatment. Especially to be avoided is the initial administration of small doses which are then often repeated and gradually increased. In this way chemo-resistant strains are likely to develop. In those cases reported by Kopke[9] where death from trypanosomiasis ultimately occurred in spite of energetic treatment with atoxyl, the result is probably to be ascribed to the fact that even in the largest doses atoxyl is not sufficiently efficient, and that, finally, atoxyl-resistant strains had developed. (2) In the second place, where treatment with atoxyl is ineffective, the resistance of the trypanosomes to the drug must be tested in animal experiment. The presence of a resistant strain would be the indication for the immediate administration of a trypanocidal agent of a different type. Especially to be recommended is combined treatment from the very beginning, employing the largest possible doses of the most efficient agents of the different groups. For this purpose a very hopeful combination would be para-amido-phenyl-arsenic acid, or suitable derivatives, along with subcutaneous injection of sublimate in large doses and feeding with parafuchsin.

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DISCUSSION ON PHAGOCYTOSIS.

OPENING PAPERS.

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PHAGOCYTOSIS AND BACTERICIDAL ACTION.

Metchnikoff's theory of phagocytosis is one of the greatest conceptions of modern biology. Combated at the outset by many of the leading pathologists of the time it has steadily gained ground, and the main theses are now almost universally accepted. No description of infection, inflammation, or immunity which omitted to give a due consideration to phagocytosis would at the present time be considered as adequate.

If time permitted, it would be interesting to dwell on the ideas presaging this theory—the favourable nature of the inflammatory reaction (Boerhaave and John Hunter), the pus laudabile, the diapedesis of the leucocytes, especially in inflammation (Waller, Cohnheim), their capacity to take up small foreign bodies (Max Schultze), then the hypothesis that the leucocytes and certain other cells are the means of affording protection to the animal body, by attacking and destroying microbial invaders (Metchnikoff).

The nature of the processes involved in the mechanism of phagocytosis has been, and indeed is at the present time, the subject of much inquiry and controversy.

Metchnikoff and his pupils, while upholding the cell as the most important factor in the process of protection, could not long overlook the part played by the body fluids. The work of Nuttall and others on the bactericidal action of normal serum, and Pfeiffer's demonstration of

the bacteriolysis of the cholera and typhoid bacilli by immune serums in the absence of cells, formed the basis for the humoral theory which attributed the chief rôle in immunity to the destructive action of the body fluids, serum, or plasma on the microbes, the phagocytes playing merely a secondary unimportant part, or perhaps no part at all. It was conceivable, indeed, that the body might be capable, apart from the phagocytes, of ridding itself of the completely bacteriolyzed bacilli by excretory processes. The evidence in favour of this bactericidal action of the serum was so conclusive and the fundamental experiments were so striking and easily confirmed, that for some time the phagocytic theory was overshadowed.

That an immune serum loses its bactericidal property by heating to 56° C., but is capable of being reactivated by fresh normal serum, peritoneal exudate, etc., is a fundamental observation which was first made by Metchnikoff and Bordet. The bactericidal action of the immune serum, then, is due to the combined activity of two substances—the one thermostable, the immune substance fixateur, substance sensibilisatrice, amboceptor, as it has been variously designated; the other thermolabile, the alexin or complement. The same double nature has been demonstrated in the case of normal serum by Moxter, Wechsberg, and others.

According to Metchnikoff, the bactericidal action of the body fluids does not play an important part in the living animal under normal conditions. The blood plasma does not behave like the serum in this respect. The bactericidal substance has its origin in the leucocyte, and is set free by its death during the process of clotting, or, in the case of the living animal, the phagolysis is produced by injurious influences, such as an excessive dose of bacilli injected experimentally. This question is still an open one as to whether the blood plasma contains alexin or free complement. The belief that serum contains more bactericidal substances than plasma is largely based on the observation that a quantity of serum (for example, of the rabbit) which corresponds to only a small fraction of the plasma in the whole body, is capable of destroying a much greater number of germs than would constitute a lethal dose if injected directly into the blood stream. Important also was Levaditi's demonstration that when cholera vibrios are injected into the blood, if sufficient precautions are observed to avoid injury to the leucocytes, no conversion of the vibrios into the granular form takes place outside the phagocytes. Gengou's failure to obtain bacteriolysis with plasma prepared in paraffined tubes, in which case the leucocytes were undamaged, also gave a strong support to the view that extra-corpuscular bacteriolysis is a phenomenon secondary to phagolysis.

On the other hand, a number of workers, and quite recently Lambotte and Stiennon (1906), believe that, unlike Gengou and others, they have been able to obtain, without destruction of the leucocytes, a plasma which has bactericidal properties equal to those of the serum obtained from the same blood after coagulation.

It soon became apparent that the bactericidal action of the body fluids did not furnish a complete explanation of the resistance offered by normal and immune animals. As one example out of many in which the humoral theory did not fit the facts, the case of immunity against such organisms as the streptococcus, the pneumococcus, and the staphylococcus, may be instanced. No bacteriolytic activity could be demonstrated in the immune serums corresponding to these cocci, notwithstanding that the injection of such serums, even after the destruction of their thermolabile constituents, was capable of conferring immunity. A reaction therefore set in against the purely humoral view, resulting in the almost universal adoption of the phagocytic theory, which has grown by a process of natural evolution under Metchnikoff's guidance into a form which adequately explains many of the facts of immunity.

Two forms of activity in relation to phagocytosis have been attributed by Metchnikoff and his school to the thermostable immune substances: (1) a "stimulin" action, (2) a "fixative" action.

1. As was shown by Pfeffer, motile organisms of low organization are repelled by certain substances (negative chemiotaxis), attracted by others (positive chemiotaxis), and the same is found to be true of leucocytes. When a highly virulent microbe is injected into a normal animal the leucocytes do not show any great disposition to move towards or to attack the invader, which seems to repel or at least not to attract the phagocytes; in other words, the bacillus has a negative chemiotaxis towards the leucocytes. In an immunized animal, on the other hand, no sooner does the virulent organism find an entrance into the body than the leucocytes crowd to the site of infection, surround the invaders, and, if the immunity is sufficient, englobe and destroy the enemy. That this effect is due to something in the plasma or serum, and not to properties of the leucocyte acquired by education or otherwise, is shown by injecting some of the blood plasma or serum of the immune animal into a normal animal, in which case the leucocytes of the new animal, thus passively immunized, behave in the same manner as did those of the actively-immunized animal. Further proofs of this derived from other work will be dealt with later. Substances which thus appear to heighten the activity of the leucocytes by acting directly on them have been designated by Metchnikoff "Stimulins."

2. In his second view the serum is conceived as acting primarily, not on the leucocyte but rather on the microbe, on which a change is produced, so that it no longer repels but rather attracts the phagocyte; in other words, its negative is converted into a positive chemiotaxis.

These views of Metchnikoff's were largely based on work by himself and his pupils Bordet (1895 and 1897), Savtschenko and Melkich (1901), Levaditi (1901), and Savtschenko (1901), Tarassevitch (1902).

THE INFLUENCE OF SERUM ON PHAGOCYTOSIS.

It would be impossible to detail or even to refer to the chief of the earlier contributions bearing on this subject of the influence of the serum on phagocytosis. I have already in a former paper given a brief *résumé* of some of the more important. For the sake of continuity of argument I must refer in the briefest terms to a few.

Denys and Leclef (1895) and Denys (1897) showed in the case of the streptococcus, and Mennes (1897) in the case of the pneumococcus, that the increased bactericidal action of the immune blood was due to phagocytosis, which did not depend on a change in the leucocytes, but was due to a property of the serum, for the leucocytes of the immune animal when put into normal serum were no more active than normal leucocytes. Markl (1903) submitted plague bacilli to the action of heated immune serum, which was then removed by washing and centrifugalizing. The bacilli having been treated in this manner when injected into an animal were found to behave in the animal body exactly like bacilli which had been injected along with immune serum. He therefore concluded that the immune serum had a direct influence on the bacilli. When bacilli of low virulence are injected, extracellular bacteriolysis plays an important part, whereas where highly virulent bacilli are employed in the experiment phagocytosis is the only agency at work in their destruction. Many of Markl's experiments were repeated and confirmed by the writer.

Fresh interest has been given to these questions, especially in our own country by the work of Wright and Douglas, who by a modification of the beautiful method devised by Leishman have made a number of observations emphasizing the importance of the serum in the mechanism of phagocytosis, and showing for the first time in an unequivocal manner that normal serum, as compared with indifferent fluids—such as normal salt solution—has a powerful action in preparing bacteria for phagocytosis, even in cases where no bacteriolytic or bactericidal action is apparent. The substance in serum which produced this action was found by them to be thermolabile, and was designated by them "opsonin." In the case of furunculosis, tuberculosis, etc., Wright and Douglas showed that the injection of vaccines made from the appropriate micro-organism is followed by an increase in the opsonic power of the blood. The fascinating method and the interest of the subject have attracted many workers. The fundamental observation that normal serum as compared with other indifferent substances opsonizes the microbes has been repeated and confirmed by many. Much critical investigation, however, will be necessary before the establishment of the claims made as to the value of the method for clinical use. Bulloch and Atkin (1905), Hektoen and Ruediger (1905), and others confirmed and extended these results.

About the same time Neufeld and Rimpau (1904) described in antistreptococcic and in antipneumococcic serum substances which they named "bacteriotropic"

substances, or "bacteriotropins," which are thermostable, and which promote phagocytosis, not by stimulating the leucocytes but by acting directly on the microbes.

Leishman (1905) attributed a stimulin action to thermostable substances in the serum of enteric and Malta fever cases, and in the immune serums obtained by treating animals with the causal organisms of these diseases.

Dean (1905) found independently that in certain immune serums, for example, in antistaphylococcus, in antidysentery, and in antityphoid serums, there are present thermostable substances which by their action prepare the homologous organism for phagocytosis—that is, act like opsonins. On the basis of Ehrlich's theory, a small quantity of this substance ought to be present in normal serum, and on this being put to the test such a substance was demonstrable.

This result taken along with certain other experimental data seemed to indicate that the thermostable substances of normal and of immune serums were probably identical. It was further shown that when submitted to a temperature of 60° C. both immune and normal serum suffered a sudden diminution in opsonic power. This change occurs in the first few minutes of heating, after which further loss takes place slowly. It was not overlooked that these results suggested that the sensitizing action of the serum might be due to the combined action of two substances, the one the essential substance, thermostable, the other thermolabile—the one of the nature of the substance sensibilisatrice or amboceptor, the other of the nature of an alexin or complement.

Wright and Reid (1906) found that in the serum of patients suffering from tuberculosis there may be present a considerable amount of thermostable opsonin. Macdonald (1906) found that immune antipneumococcic serum had varying degrees of thermostability, and Rosenow (1906) holds that the pneumococco-opsonin is quite resistant to heat.

Löhlein (1905) has endeavoured to show that phagocytosis can take place in the absence of serum when the leucocytes and the microbes are suspended in salt solution only, especially when longer periods of action—say, one or two hours—are allowed. I have done a number of experiments in this direction, and have found that, as a rule, the phagocytosis is trivial with salt solution as compared with serum, a result which, I believe, is in accordance with the experience of most observers.

A number of workers have investigated phagocytosis by employing an immune serum obtained from an animal which has been previously injected with the erythrocytes of another species—Savtschenko (1902), Tarassevitch (1902), Levaditi (1903), Gruber (1903). Such a serum is, as a rule, agglutinating and haemolytic for the homologous red blood cells, but Neufeld and Töpfer (1905), Barrett (1905), and Hektoen (1906) hold that the thermostable haemotropic substances or haemopsonins are distinct from agglutinins and amboceptors, because a serum may be lytic and agglutinating for the homologous erythrocytes, but not haemotropic or opsonizing. Keith (1906) admits an amboceptor-like action, but postulates a special thermostable opsoniphoric group to account for the phagocytosis which takes place with the heated serum in the absence of complement.

The chief difficulty in accepting the differentiation of haemotropin from haemolysin is, as it appears to me, that the same substance acting in different concentrations may be capable of producing an effect sufficient in the one case for phagocytosis, in the other for haemolysis. Though such work may give valuable indications in regard to the phagocytosis and bacteriolysis of microbes the absence of the factor of virulence, of the importance of which I shall speak later, makes it unjustifiable to completely transfer all the deductions obtained from the one field to the other.

Muir and Martin (1906 and 1907) have undertaken a very complete study of the combining properties of the thermolabile opsonins of normal serum and of the thermostable opsonins of immune serums.

In the case of the thermolabile substances of normal serum they have shown that various substances or combinations of substances which absorb complements also absorb opsonins. Red-blood corpuscles, bacilli, and serum when combined with their corresponding antibodies — namely, haemolytic and bacteriolytic amboceptors and precipitins—in absorbing complement are found at the same time to have absorbed opsonin. The normal thermolabile opsonins, therefore, belong to the group of complements, and, like these, have no specific properties in their combining affinities. They found a great reduction in the staphylococcic opsonin on treating normal rabbit's serum with the tubercle bacillus, a result in agreement with the work of Simon, Lamar, and Bispham (1906), and Yorke and Smith (1906), and at variance with that of Bulloch and Western (1906), a divergence probably dependent on a more complete exhaustion of the serum by the use of a larger amount of tubercle bacillus. On the other hand, an immune staphylococcus serum treated with a like amount of tubercle bacillus showed no reduction in its opsonizing action for staphylococci. Similarly other powerful complement absorbers, such as sensitized erythrocytes or bacteria, have no effect on the thermostable immune substance.

The thermostable immune opsonins possess the comparatively specific characters of antibodies generally. It is left an open question whether it is an agglutinin or an immune substance, though Muir and Martin believe that certain facts point in favour of the former. They conclude that the thermolabile opsonin of normal serum and the thermostable opsonin of immune serum are two distinct classes of bodies.

Neufeld and Hüne (1907) have extended the investigation commenced by Neufeld and Rimpau and Neufeld and Töpfer. From the results obtained with normal and immune serum in the case of the staphylococcus, the typhoid bacillus, and certain members of the paratyphoid bacillary group, they conclude that the bacteriotropins and the bacterio-opsonins are distinct bodies, that the bacteriotropic action of immune serum has nothing to do with the opsonic action, which is dependent on the presence of complement and small quantities of normal amboceptor.

In admitting that amboceptor and complement are capable of acting on the bacilli, so that these, though not killed, have been so far damaged that they can be taken up by the leucocytes, Neufeld and Hüne appear to me to have given away their case for a separate bacteriotropic substance. For if amboceptor and complement are capable of producing the effect in the one case, why not in the other?

Dean (1907), in a second paper, dealt with the influence of dilution of the serum, an important question into which time does not permit me to go at any length here. I should like, however, to indicate that the adoption of a method based on dilution and on the estimation of the point in a series of dilutions at which a serum ceases to give evidence of a distinct opsonizing action, as compared with a normal serum, would lead to a great improvement in the accuracy and consequent value of the results. Such a method is very laborious, but I am hopeful that it may be possible to simplify the necessary processes. It was found, as had been anticipated, that the phagocytic index obtained by mixing appropriate dilutions of a heated immune serum with a fresh normal serum is greater than results from the two substances acting separately.

In the case of certain normal serums — guinea-pig and rabbit—previously investigated for amboceptor and complement by Wechsberg and others in relation to the extra-corpuscular bacteriolysis of the typhoid bacillus, a parallelism can be demonstrated to exist between that function and opsonization. The normal amboceptor can be complemented by fresh serum in regard to both functions. An anticomplement serum, when mixed with a fresh normal serum alone, or in a mixture containing heated immune serum, throws out of action the thermolabile substance, whereas it does not appear to influence the thermostable substance.

That there is amboceptor in normal serum, and that this is concerned in the process of opsonization, has further been confirmed by certain experiments of Ledingham's (1907), who found that heated normal serum which has been in contact with tubercle bacilli, after the removal of these by centrifugalizing, has acquired the property of greatly inhibiting the opsonic action of fresh normal serum not only towards the tubercle bacilli, but also towards the *Staphylococcus pycgenes aureus*.

This phenomenon is due, he believes, to there being given off from the bacilli into the heated normal serum receptors, which combine with the normal amboceptors. This receptor-amboceptor combination, acting in the same way as the similar combinations referred to under Muir and Martin's work, withdraws the complement from the fresh serum and thus inhibits opsonization.

Levaditi (1907), in a series of communications, along with various collaborators, published about the same time as Dean's, arrived at practically the same conclusions. I shall not deal with them here, but shall merely refer briefly to one or two of his experiments.

It has been shown that the aqueous humour of the rabbit does not contain complement. Levaditi, on testing it, found that in it there was practically no opsonin. The fluid which is thrown out into the anterior chamber in two or three hours after the first puncture may contain appreciable quantities of complement or none. In two cases where this aqueous fluid of second formation was tested, the one, rich in complement, was also rich in opsonin, the other, poor in complement, was also poor in opsonin. A like parallelism was found in the case of oedematous fluid.

PHAGOCYTIC ACTIVITY OF THE POLYMORPHONUCLEAR LEUCOCYTE.

As already indicated, Denys and Leclef demonstrated clearly both *in vitro* and *in vivo* that in the case of animals immunized against the streptococcus the immunity was due to increased phagocytosis which had its origin from a change, not in the leucocytes, but in the serum. This view that the leucocyte is in a sense an indifferent factor has been widely confirmed, notably recently by Wright and Douglas and many of those who have followed their work, and is in the main probably true. It is proper, however, to refer to a few observations which show that under certain conditions the leucocyte may be a variable factor.

Ledingham (1906) found in certain cases of myelogenous leukaemia that the serum may have quite a normal opsonic content as tested with normal leucocytes, but a markedly subnormal one if tested with the patient's own leucocytes. On the other hand, in a case of chronic lymphatic leukaemia the polymorphonuclear leucocytes were much more actively phagocytic than normal leucocytes. He also found, in collaboration with Bulloch (1906), that during the period of hyperleucocytosis produced by an injection of cinnamate of soda, a hyperleucocytosis accompanied by rise of complement but not of opsonin. These cells had much less phagocytic activity than normal leucocytes.

Rosenow (1906) holds that the pneumonic leucocytes are more actively phagocytic than normal leucocytes, a property which seems independent of the action of the serum. They are more resistant to heat, and when heated to the thermal death point and resuspended in serum they are more actively chemiotactic for pneumococci, which tend to collect round the dead leucocyte just as if by a form of agglutination of the microbes towards the leucocyte.

THE VIRULENCE OF THE MICROBE.

The virulence of the microbe is a factor of the highest importance in relation to phagocytosis and bactericidal action.

Pasteur, Leclef, and many others have shown that virulent microbes are more resistant than avirulent to the action of normal serum. Bordet, Pfeiffer, and Kolle pointed out that more immune serum is necessary to bacteriolyze a virulent than an avirulent typhoid or cholera bacillus. According to Pfeiffer and Friedberger (1905) this may be due to virulent bacilli possessing either more receptors or receptors which have a stronger combining affinity. The influence of virulence on phagocytosis was very thoroughly studied by Marchand (1898) in the case of the streptococcus.

Marchand found both in test tube experiments and in the living body that the leucocytes readily englobed the avirulent, but refused to touch the virulent cocci. By various ingenious experiments he arrived at the conclusion that this was not due to a secretion from the microbes, but depended on some physical condition associated with virulence. The organisms might be boiled, put in acid, alkali, or alcohol, and still comport themselves as virulent microbes. He therefore declines to accept the view of a negative chemiotaxis. The indifference of the leucocyte towards the virulent organism is not due to any paralysis of its functions.

Notwithstanding Marchand's opinion it is possible that the toxic particles are capable of surviving this treatment and are active towards the leucocyte in a chemical sense.

More recently Hektoen (1906) and Rosenow (1906) have investigated and emphasized the importance of the relation of virulence to phagocytosis in the case of the streptococci and the pneumococci.

In this connexion an interesting observation was made by Löwenstein (1906), who found in a case of genito-urinary tuberculosis that the leucocytes of the pus in the urine refused to phagocytose the tubercle bacillus also present in the urine, but readily under parallel conditions took up other strains of tubercle bacilli. He believes that this state of affairs was not due to the leucocytes or to the bacilli alone, but to a definite relation which the one had to the other.

Bail and Rubritius (1907) found that in the case of the typhoid bacillus there is a marked difference between bacilli derived directly from the animal body and those which have undergone artificial cultivation. There are slight morphological changes perhaps analogous to the capsule formation observed in the streptococci by Bordet (1897), in the anthrax bacillus by Sobernheim (1899) and others, but the most striking difference lies in the fact that the "animal" bacilli, unlike the culture bacilli, are refractory to the bacteriolytic action of the serum. Into the "aggressive" theory of Bail I cannot enter here, although it may have some relation to the question of opsonins. Indeed, Pettersson (1905) suggests that the opsonins may be identical with the antiaggressins. The question may well be left till the position of the aggressins as actualities is more securely established, for the investigations of Wassermann and Citron (1905), Doerr (1905), Kraus (1906) and others seem to show that they are probably identical with endotoxins or with free receptors or free toxic particles which may be obtained from bacilli by the action of serum and salt solution, or by autolytic processes. That such free receptors may inhibit bacteriolytic action we have ample proof from the work of the authors quoted.

It may be of interest to refer briefly here to certain experiments which I have carried out recently on the question of the virulence of the typhoid bacillus to its phagocytosis, a continuation of the work to which I have referred. These experiments will be published in full elsewhere.

In comparing the phagocytic index obtained with a particular serum in the fresh state and after heating, it was found that in certain cases the index was higher with the heated than with the unheated serum, as had been shown by Leishman—for example, in testing a normal human serum the ratio of the indices might be so:

$$\frac{\text{Phagocytic index of heated serum}}{\text{Phagocytic index of unheated serum}} = \frac{3}{1}$$

This I will designate the "reversed ratio." In other cases the ratio was always in the opposite direction, the heated serum giving a very low count, which is what one finds generally, and is therefore a "normal ratio," for example:

$$\frac{\text{Phagocytic index of serum heated}}{\text{Phagocytic index of serum unheated}} = \frac{1}{5}$$

It soon emerged that the former type of ratio occurred only with old laboratory cultures, the latter with several strains recently isolated from the blood of patients.

Presumably, then, it was a question of virulence, and on testing a number of strains of both types on guinea-pigs a definite correspondence could be determined. It was only, therefore, the avirulent strains that gave a higher index with heated normal serum. Indeed, the results have been so uniform that I believe by ascertaining the ratio one can state fairly definitely whether one is dealing with a virulent or an avirulent race. It was also shown by experiment that these recently isolated virulent strains were extremely refractory to the bactericidal action of serum, as was first noted by Pfeiffer and Kolle. In the case of some strains, even though they had been cultivated on artificial media for several generations, it appeared that the resistance was similar in degree to that observed by Bail and Rubritius in the case of their "animal" bacilli. It is therefore probably unnecessary to assume, as they do, that to obtain such bacilli they must be taken direct from the animal body.

On the other hand, the old laboratory avirulent strains were susceptible to the bactericidal action of serum. Now this bactericidal (bacteriolytic) action of the serum might act in several ways to produce the effect of the reversed ratio.

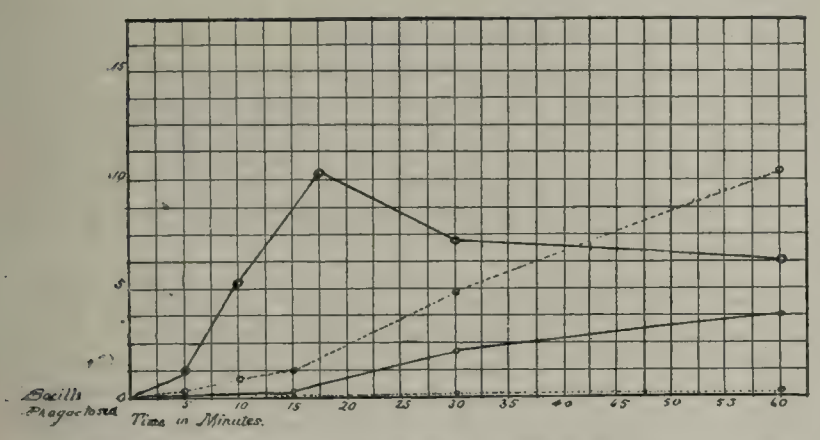
(1) It might reduce the number of bacilli outside the leucocyte, so that in the case of the unheated serum there would be fewer bacilli within its field of action for the leucocyte to englobe; or (2) it might bacteriolyse the bacilli outside the leucocyte, bringing them into a finely granular or invisible state, in which condition they might be taken up by the leucocyte to the exclusion of more or less intact and countable organisms. (3) In this finely-divided state the bacilli might have a certain toxic action on the leucocyte, thus hindering phagocytosis; or (4) it might, by aiding the process of internal bacteriolysis or digestion, reduce the number inside the corpuscles. That the last is an important factor was proved by several series of experiments, allowing different times for the phagocytosis to occur.

I will quote the ratios obtained in one series, done at 37° C.

	20 Min.		15 Min.		10 Min.		5 Min.	
	Vir.	Avir.	Vir.	Avir.	Vir.	Avir.	Vir.	Avir.
Heated serum ...	1	4.7	1	1.8	1	1	1	1
Unheated serum	20	1.0	10	1.0	8	1	6	4

In shortening the time the reversed ratio is changed to a normal ratio in the case of the avirulent organism, because there is no time within the five minutes for intracorpuscular bacteriolysis to occur.

The result of an experiment carried out at a rather lower temperature, so that the processes might occur more slowly, and thus be more easily followed, is shown on the Chart. It will be seen that in the case of the avirulent



Upper uniform line represents phagocytosis of avirulent typhoid bacilli in the presence of unheated serum.

Upper dotted line represents phagocytosis of avirulent typhoid bacilli in the presence of heated serum.

Lower uniform line represents phacocytosis of virulent typhoid bacilli in the presence of unheated serum.

Lower dotted line represents phagocytosis of virulent typhoid bacilli in the presence of heated serum.

organism, where unheated serum is used, there is a sudden rise followed by a slow fall; whereas, in the case of the heated serum, there is a steady rise. In the case of the virulent, the phagocytosis is much less marked, but there is a steady rise in the case of the fresh unheated serum, whereas with the heated serum the phagocytosis remains very low. We may deduce, then, that the cause of the phenomenon of reversed ratio is an *increase* in the intracorpuscular bacteriolysis due to the action of the serum. The microscopical appearances observed are in agreement with this view.

The explanation thus afforded enables one to discount certain results at first obtained, which appeared to show that the bacteriolytic and opsonizing function of a serum did not correspond in the case of the typhoid bacillus. So far as my experiments at present go, they show a very good general correspondence between the two functions. A serum which gives a good bacteriolysis gives a good opsonization, and the converse; and that a bacillus which is difficult to bacteriolyze is also difficult to opsonize, and its converse, are all found to hold good. Too exact a correspondence must not be demanded, for the limitation of the methods must be borne in mind. The scales of measurement in the two are not identical. There is a difference in the relative delicacy of the methods in recording the degree of change produced on the microbe.

In testing a serum, therefore, if one were to take a highly virulent typhoid bacillus, one might arrive at the conclusion that the serum contained no typhoid bacteriolysins, but that it did contain typhoid opsonins, whereas by using a bacillus of lower virulence the presence of both lysins and opsonins could be demonstrated. That the bacteriolytic and bacteriotropic functions run parallel can be best shown by employing for the tests bacilli of both types.

The stronger a serum is in relation to the bacillus, the greater is the tendency for it to produce the reversed ratio. By selecting, therefore, a bacillus of such virulence that it gives a normal ratio with normal serum, one can form a rough estimate of the strength of stronger serums by observing the tendency to approach or reach the reverse ratio. Such a procedure may prove a useful adjunct to other methods of ascertaining the bactericidal action of typhoid serum.

In the discussion of such a question as this nothing could be more out of place than dogmatism. At the same time, the bulk of the evidence, as sifted from the literature and derived from my own experiments, drives me to the conclusion that the opsonizing action is due to two substances—the one thermostable, the substance sensibilisatrice or amboceptor; the other thermolabile, the alexin or complement. The thermostable substance is the essential one, and it may act alone, but its activity is increased by the presence of free complement. The amboceptor is present in relatively small quantities in normal serum, hence the apparent thermolability of the opsonin in normal serum, whereas in the case of an immune serum the amboceptor is present in a larger amount, and perhaps with heightened specific properties, and plays a predominant part, and though heating results in a loss of activity this is only partial. In both cases the loss is due to destruction of complement.

The reason why one type of organism, such as the typhoid bacillus, is bacteriolyzed by the action of these substances, whereas another, such as the staphylococcus, though prepared for phagocytosis, shows no bacteriolytic effect, probably depends not on any fundamental difference in the substances in the serum which produce the effects, nor in their method of action, but from a difference in the physical or chemical nature of the microbe itself.

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II.—THOMAS HOUSTON, M.D., and J. C. RANKIN, M.D.

THE OPSONIC AND AGGLUTINATIVE POWER OF BLOOD SERUM IN CEREBRO-SPINAL FEVER.

ALTHOUGH many contributions have been published within recent years confirming the work of Sir A. E. Wright in reference to tuberculous and staphylococcic invasions, the general application of the opsonic method to the diagnosis and study of other infections has not met with the attention it deserves. In the case of micro-organisms susceptible to the opsonic action of the serum, this method is an invaluable one for studying the nature of such micro-organisms, and, in addition, provides us with a means of definitely deciding whether a given micro-organism is or is not actively engaged in an infection.

The Belfast epidemic of cerebro-spinal fever gave us an opportunity of studying the meningococcus and its relation to the disease by this method.

A. *The Meningococcus in its Opsonic Relations.*

The determinations referred to below were done in the usual way originally described by Wright and Douglas, that is:

(*a*) Washed corpuscles were obtained as follows: Several drops of blood from the finger were received into several cubic centimetres of 0.8 per cent. salt solution containing 0.25 per cent. of citrate of soda. The mixture was shaken and the corpuscles separated by centrifugal action. The supernatant fluid was removed with a pipette, and the deposit furnished the leucocytes for the determination, the upper layers containing as they did a large number of white cells.

(*b*) The serum of the patients and of the controls was obtained by allowing small quantities of blood to clot in Wright's capsules and centrifugalizing to separate the serum.

(*c*) The best emulsion was prepared from a fresh 6 to 8 hours' growth of the meningococcus on chapasgar[1] by mixing some of the growth with 0.8 per cent. salt solution. The emulsion was always freshly prepared.

By means of capillary pipettes furnished with rubber teats equal parts of the following were taken:

Washed corpuscles Emulsion of meningococcus Serum of patient	These were drawn into the capillary pipette with a bubble of air dividing each equal part.

The above were thoroughly mixed on a slide and reaspirated into the capillary tube, the end was sealed, and the pipette placed in the incubator for fifteen minutes. With a second pipette a precisely similar operation was carried out, except that the control serum was substituted for the patient's serum. In these determinations two controls were as a rule used for each determination.

Immediately after the fifteen minutes in the incubator had expired blood films were made from the contents of the tubes, and these were stained by Leishman's stain. The micro-organisms in 50 polymorphonuclear leucocytes of the preparations were then counted, and the relation between the results gave the opsonic index.

In working with the meningococcus several difficulties presented themselves: It was found that subcultures grown for *twenty-four* hours contained numerous degeneration forms which stained indistinctly, and for this reason accurate opsonic determinations were not possible. This difficulty was got over in the following way: Professor Symmers had kept a large number of strains of the meningococcus alive by daily subculture on chapasgar, and he provided us with a growth in the thirty-fifth generation which grew actively when transplanted on ordinary agar slopes. This growth was kept alive by daily subculture on chapasgar, and a six to eight hours' growth on chapasgar or agar was used to make the test emulsion. The emulsion was made in the usual way with salt solution, and was found to contain very few degeneration forms. It appeared quite uniform, and in the control preparations made with normal serum the cocci rarely occurred in aggregations of more than 2 or 8, and nothing resembling a clump was ever observed in the control preparations.

In working with other strains more recently isolated it was found that the emulsion was hardly so good, the cocci frequently occurring in tetrads, and a few small clumps were occasionally seen. This tendency of the coccus to form small aggregations, however, soon disappeared when the growth was subcultured several times on chapasgar. The ease with which the meningococcus emulsifies when grown on this medium is remarkable; we have not worked with a coccus that emulsified so perfectly, with the exception of the *Micrococcus melitensis*. By the way in which the culture emulsified we on several occasions suspected that the culture was either contaminated or was not a culture of the meningococcus, and this suspicion on further examination proved correct.

The opsonic power of normal serum with reference to the meningococcus was found to be extremely low when contrasted with its opsonic power for other micro-organisms. For instance, if two emulsions are taken of the same density, one containing the meningococcus and the other a staphylococcus, it will be found that the preparations made with the emulsion of the meningococcus show much less phagocytosis than those made with the staphylococcus. So marked is this characteristic of opsonic preparations containing the meningococcus that on this property alone we would have a strong suspicion that a coccus was a meningococcus, as we have never seen such a low phagocytosis in preparations with any other micro-organism.

For this reason it was necessary to use a rather thick emulsion, in order that the control preparations might show a distinct phagocytosis. On the other hand, the serum of many of the cerebro-spinal cases had an exceedingly high opsonic power, so that in many of the preparations the leucocytes were packed so full of cocci that accurate counts became impossible. In order to obtain approximate counts in such cases the following rule was adopted: The preparations were generally counted by two observers, and the number of cocci in fifty leucocytes determined. Leucocytes packed with cocci were given credit for fifty cocci, although in several instances the cocci ingested might considerably exceed this number. In preparations with such marked phagocytosis there was always present marked agglutination of the cocci lying free of the leucocytes. It might, therefore, be said that the figures obtained do not altogether represent the opsonic action of the serum, but are also the result of agglutination and subsequent opsonic englobement. From a study of the preparations, it would appear that masses of agglutinated cocci may occasionally be phagocytosed, but not so frequently as one would expect, as the cocci in the leucocytes were for the most part free and distinct, and not aggregated in clumps; in fact, a very high agglutinative power seemed often to be accompanied by a lesser degree of phagocytosis. We regard the opsonic and agglutinative reactions obtained in this way as imitations of what may be supposed to occur in the blood stream and tissues of the patient, and the amount of phagocytosis, however it may be brought about, as a more or less accurate measure of the power the serum and leucocytes have of dealing with the cocci.

In the preparations degenerated, swollen, and broken-up cocci were frequently seen inside the leucocytes, and in contrasting these englobed cocci with those lying free and agglutinated in masses, it would appear that this degenerative change occurred for the most part inside the leucocytes, showing, we think, that phagocytosis (in the case of the meningococcus at least) is a stage in the destruction of the cocci, or that they are devitalized to a greater extent after phagocytosis has taken place.

Another interesting character of the meningococcus developed while we were working with the coccus isolated from one of the first cases of cerebro-spinal fever occurring in Belfast. This coccus had been subcultured about 150 times, and was about five months old. We found that at this time the leucocytes in preparations made with this coccus took up more cocci than they had formerly done when the coccus was more recently isolated. Thus, in using an emulsion of approximately the same density, whereas the earlier preparations showed from 25 to 50 cocci in 50 leucocytes, the later preparations showed from 200 to 300 cocci in 50 leucocytes. At first this coccus agglutinated in a very marked degree with the serum from the cases of cerebro-spinal fever, but shortly after we had noticed the rise in the count of the englobed cocci in the control preparations, we found that this coccus was no longer agglutinated by serum from

[1] This medium (chapasgar) consists of one part raw ascitic fluid and two parts of 3 per cent. agar with Chapoteaut's peptone. Professor Symmers has found that this combination is a very suitable medium for isolating and growing the meningococcus. (Symmers and Wilson, BRITISH MEDICAL JOURNAL, June 22nd, 1907, p. 1478.)

cases of the disease, and finally it gave a normal opsonic power and no agglutination with serum which in preparations containing a more recently isolated coccus gave a high opsonic power and marked agglutination. This observation is exceedingly interesting, as it shows that the meningococcus, by prolonged growth, may entirely lose these important properties. This result seems on a par with the fact that has been pointed out by Flexner, that the meningococcus, by prolonged growth on artificial media, may sooner or later lose its pathogenic properties.[1] In order further to inquire into the nature of this result, we did a number of experiments with heated cocci, heating them for various times at 60° to 65° C. The preparations made with these cocci were rather difficult to count, owing to the fact that the heated cocci lose to a certain extent their staining properties; it was, however, clearly shown that the heated cocci, when treated with normal serum, were far more numerously phagocytosed than when unheated. In this connexion it may also be noted that degenerated cocci are much more numerously englobed than fresh undegenerated cocci. If several subcultures of the meningococcus be made on ordinary agar slopes, the coccus gradually becomes smaller, and finally ceases to grow; such substructures containing these small degenerated cocci are unsuitable for doing opsonic determinations for this reason.

In the tables occurring in this paper the columns headed "agglutination" require some explanation. In making the opsonic determinations in the usual way it was at once observed that many of the preparations containing the patient's serum showed marked agglutination of the meningococci, while the controls throughout the whole series never showed any (the determinations were, as a rule, made with two separate controls). In order further to test the absence of agglutination with non-infected serum a number of different normals (eleven in all) were at different times used as controls, also serum from cases infected with tubercle, typhoid, pneumococcus, staphylococcus, and *Micrococcus melitensis*, as well as several samples of rabbit's and guinea-pig's serum. In no case was there any agglutination observed with such serums. It would, therefore, seem that this method of agglutination as a test for meningococcic infection is perfectly satisfactory and gives results which are practically free from error. In other words, the opsonic method in the case of the meningococcus provides us with two distinct indications to determine the presence or absence of infection—first, the opsonic index, and second, the presence or absence of agglutination. In these columns + stands for an unmistakable agglutinative reaction, + + indicates dense clumps, and + + + an exceedingly powerful effect.

In the following account the word "reaction" refers to the double effect generally observed in opsonic preparations containing the serum from cases of cerebro-spinal fever, namely, a high opsonic index combined with marked agglutination of the meningococci lying free of the leucocytes.

B. *The Reaction of the Blood Serum from Cases of Epidemic Cerebro-spinal Fever to the Meningococcus isolated from these Cases.*

TABLE I.—SYNOPSIS OF THE RESULTS OBTAINED BY THE EXAMINATION OF CASES BY THIS METHOD.

Day of Disease.	Number of Determinations	Number giving Positive Reaction.	Number giving Negative Reaction.	Percentage of Positive Results.
1st	1	0	1	0
2nd	12	3	9	25
3rd	11	3	8	27
4th	13	2	11	15
5th	5	3	2	60
6th to 133rd	130	125	5	96.1

The numbers in this table refer to determinations, some of the cases were examined several times.

Of 114 different cases of epidemic cerebro-spinal meningitis 40 were examined during the first five days of the disease, 10 o these were positive and 30 were negative. Of the 74 cases examined from the sixth day onwards, 4 were convalescent for some time and 70 were suffering from the disease. Of these 70, 68 gave a positive and 2 gave a negative reaction, that is, of all the cases examined after the fifth day of the disease, 97.1 per cent. gave a positive double reaction.

A consideration of Table I shows:

1. That during the first five days the double reaction may be absent, and therefore during this period the method cannot be relied upon as a certain means of diagnosis. Many of the fulminant cases die before their blood has developed the agglutinative and opsonic powers which it almost invariably possesses in cases which survive the first five days.

2. From the sixth day onwards, with a very few exceptions, it will be seen that the serum of the cerebro-spinal cases showed a high opsonic power and a marked agglutinative power when brought into contact with a meningococcus that had been isolated from any of the Belfast cases. The combination of this agglutinative effect and high opsonic power therefore furnishes in this disease a specific test of great value in diagnosis. The low opsonic power always found in normal or non-infected serum, so that even when moderately thick emulsions were used two or three cocci were the maximum found in any leucocyte, and the uniform absence of all agglutinative effect in all preparations containing such serum, forms a striking contrast with the high opsonic and agglutinative effect found in all preparations containing the serum from cases of the disease on or after the sixth day, and from several cases before that date, such preparations always showing leucocytes packed with cocci, and also dense clumps of cocci not ingested. In fact, the picture is so characteristic, that a diagnosis could in the majority of cases be made by simply mixing some washed corpuscles, serum from the patient and emulsion of meningococci, and incubating the mixture for a short time without the use of any control. Usually opsonic determinations for purposes of diagnosis require most careful and accurate counts, while in the case of this disease a glance at the preparation is often sufficient.

The few exceptions in which the above reactions were not found may be noted:

(*a*) XLVI.—This case gave on the seventh day an index of 1.8 and no agglutination. The patient was extremely ill and died on the fourteenth day of the disease. No lumbar puncture was done.

(*b*) LX.—This case gave on the ninth day an index of 0.52 and no agglutination. The patient died on the twelfth day of the disease. No lumbar puncture was done.

(*c*) LXXXV.—This child was diagnosed before admission into hospital as a case of the disease. It was said to be twenty-three days ill, but had no symptoms of the disease at the time of the blood examination, and the diagnosis at this time was thought to be doubtful. Later on the typical symptoms developed, and the meningococcus was isolated from the spinal fluid by lumbar puncture. On the fifty-fifth day the blood was again examined, and gave a marked reaction. This was probably a case of relapse.

(*d*) Case XLIV gave no reaction on the sixth day of the disease, but on the eleventh day gave an index of 5.8 and slight agglutination. This case was a mild one, and was convalescent on the twentieth day of the disease. No lumbar puncture was done.

(*e*) Several cases that afterwards turned out to be some other disease, such as typhoid, pneumonia, tubercle, hydrocephalus, or mania, were also examined by this method with negative result. These are not included in Table I.

The reactions of the convalescent cases examined are interesting.

TABLE II.—THE CONVALESCENT CASES EXAMINED.

Number of Case.	Duration of Illness.	Duration of Convalescence.	Index.	Agglutination.
LXXXVIII	25 days	1 day	4.3	—
X	11 days	4 days	21 1	+ +
XCIX	35 days	4 days	4 4	—
XCI	20 days	8 days	1 2	—
XCVII	27 days	10 days	1 6	—
CI	59 days	23 days	16.6	+ +
CVI	37 days	31 days	2.00	+ +
CV	47 days	47 days	0 76	—

[1] Flexner, Contributions to the Biology of *Diplococcus Intracellularis*, *Journal of Experimental Medicine*, vol. ix, No. 2, March, 1907, p. 126.

As a rule, it would appear from Table II that the reaction very soon disappears when the disease subsides. It persists longer in cases, such as CI, that have been very ill for a long period.

The effect of heating the serum of some of the cases of cerebro-spinal fever was tried. The following table gives the results of this experiment.

TABLE III.—SHOWING THE EFFECT OF HEATING THE SERUMS FOR TWELVE MINUTES AT 60° C.

Number of Case.	Unheated Serum.			Heated Serum.		
	Count in 50 Leucocytes.	Index.	Agglutination.	Count in 50 Leucocytes.	Index.	Agglutination.
S (control)	39	1	—	10	1	—
LIX	1,153	29.56	+ +	70	7	+ +
XXVII	266	6.8	—	21	2.1	—
LXXXVIII	195	5.0	—	34	3.4	—
CII	848	21.7	+ +	54	5.4	+ +

From this it would appear that heating the serum destroys to a large extent the opsonic power, but has much less effect on the agglutinative power. We have also noted that serum kept for some days loses the opsonic sooner than the agglutinative power. Thus, in a serum kept for several weeks we get a well-marked agglutinative and only very slight opsonic effect. By this method we tested several of the therapeutic serums on the market—namely, Kolle's, Ruppel's, and Burroughs and Wellcome's. These were found to have an opsonic power below that of fresh normal serum, and had no agglutinative power at all. Burroughs and Wellcome's serum seemed to produce a slight agglutinative effect, but this serum did not mix well with the washed corpuscles, as it seemed to agglutinate even the red blood cells. These results correspond with the clinical experience of their use in the present Belfast epidemic, as Dr. Gardner Robb, who had charge of the fever hospitals, has observed no good effects from the use of these serums.

The opsonic and agglutinative power of the cerebro-spinal fluid was determined in a number of the cases. Table IV details the results and contrasts the opsonic and agglutinative power of the lumbar puncture fluid with that of the serum of the patient taken at the same time.

It will be observed from this table that the cerebro-spinal fluid has always a much lower opsonic and agglutinative power than the blood serum of the same patient taken at the same time. It would seem probable that in this fact we have an explanation, in part at least, of the persistence of the disease when the blood has acquired a very high opsonic and agglutinative power. A serum reaction that in fifteen minutes can completely agglutinate or bring about the phagocytosis of all the cocci in the mixture used in doing the opsonic determinations would, we think, quickly eradicate the cocci from the system, provided the serum could act freely upon all the cocci. This the serum is evidently prevented from doing by the local conditions that exist in the cerebro-spinal cavity. The protective properties of the cerebro-spinal fluid are quickly exhausted, and there is not a free communication between the exhausted fluid and the blood serum. This, too, affords a reasonable explanation of why lumbar puncture benefits some of the cases in a marked degree. The cerebro-spinal fluid, exhausted of its protective properties, is drained off and its place supplied by an exudate containing a fresh supply of opsonins and agglutinins. To take an example, Case LXXXVII's blood had an opsonic index of 17.5 and a marked agglutinative power; the cerebro-spinal fluid had an index of 1.6 and no agglutinative power. After lumbar puncture a very marked clinical improvement was observed.

C. *The Value of this Method in Distinguishing Different Cocci.*

In the presence of an epidemic it will always be possible by this method to decide whether or not a coccus isolated from a case is a true meningococcus. Several pathologists are of opinion that some strains of meningococci may be Gram-positive. This test would, we believe, definitely settle this contention. In this epidemic two Gram-positive cocci isolated from the blood by Dr. W. J. Wilson and one from the cerebro-spinal fluid proved not to be meningococci when tested by this method, although at first sight they closely resembled it in appearance. Table V is an example of the application of this method to determine the nature of a doubtful coccus.

This method of examining the blood of cerebro-spinal cases, and of distinguishing various cocci isolated from cases of the disease, having been tested by over 200 determinations and found exceedingly satisfactory and definite in its results, we endeavoured, as far as was possible, to investigate the following interesting questions:

1. Are there different strains of meningococci?
2. Is true epidemic cerebro-spinal fever always due to the same strain of meningococcus?

The first of these questions can, we believe, from the results detailed below, be definitely answered in the affirmative. We mean by this that cocci isolated from the cerebro-spinal fluid of cases of meningitis having the cultural and staining characters usually ascribed by pathologists as characteristic of the meningococcus may

TABLE IV.—CONTRAST BETWEEN THE OPSONIC AND AGGLUTINATIVE POWER OF THE BLOOD SERUM AND CEREBRO-SPINAL FLUID.

Case.	Day of Disease.	Date.	Blood.		Fluid.		Remarks.
			Index.	Agglutination.	Index.	Agglutination.	
LXXII	39th	May 20th	0.93	+	0.82	—	First lumbar puncture (negative).
XXXIII[1]	22nd	May 20th	5.1	+ +	0.28	—	First lumbar puncture (negative).
XCII	30th	June 10th	12 2	+ +	0.48	—	Second lumbar puncture (positive).
XXVIII	64th	June 11th	35.8	+ + +	4.1	+	Second lumbar puncture (negative).
XCVI	33rd	June 11th	14.5	+ +	2.1	+	Second lumbar puncture (positive).
CI	47th	June 17th	21.0	+ +	6.3	+	Second lumbar puncture (positive).
LXXXIX	26th	June 17th	35.3	+ + +	0.3	—	First lumbar puncture (negative).
LXXXVII	24th	June 19th	17.5	+ + +	1.6	—	First lumbar puncture (negative).
XXXIII[2]	57th	June 24th	10.0	+ +	—	—	Second lumbar puncture (positive).
LXVII	17th	June 25th	17.0	+ +	0 8	—	Second lumbar puncture.
CVII	87th	June 26th	6.8	+ +	0.8	—	First lumbar puncture.
III	57th	July 2nd	1.6	+	0.2	—	Second lumbar puncture (positive).
XCVIII	39th	July 4th	9.8	+	0 7	+	First lumbar puncture (positive).
CIII	52nd	July 5th	9.8	+	1.6	—	First lumbar puncture (negative).

TABLE V.—ILLUSTRATING THE METHOD OF APPLYING THE OPSONIC TEST TO A DOUBTFUL COCCUS.

Name.	Tested with Meningococcus.			Tested with Doubtful Coccus.		
	Count in 50 Leucocytes.	Index.	Agglutination.	Count in 50 Leucocytes.	Index.	Agglutination.
Y. (control)	65	1	—	533	1	+ ?
H. (cerebro-spinal case)	827	12 7	+ +	465	0.87	+ ?

The doubtful coccus made a rather clumpy emulsion, and only a rough count of 50 leucocytes was made. The results, however, very definitely show that the doubtful coccus was not a meningococcus.

differ in very essential properties — namely, in their opsonic and agglutinative reactions.

Through the kindness of Dr. F. E. Batten, Physician to Great Ormond Street Children's Hospital, we were enabled to investigate this problem. We understand that during the earlier months of the year several cases of meningitis were admitted to Great Ormond Street Children's Hospital. Some of these cases were acute, and resembled clinically cases of epidemic cerebro-spinal fever, while the others might be classed as cases of typical posterior basic meningitis. We obtained blood from two of these cases. The following are the results of our test experiments with the serum:

TABLE VI.—SHOWING THAT THE SERUM FROM TWO CASES OF POSTERIOR BASIC MENINGITIS IN GREAT ORMOND STREET DID NOT REACT TO A BELFAST COCCUS.

Name.	Count in 50 Leucocytes.	Index.	Agglutination
X. (control, April 17th)... ...	69	1	—
M. (control, one day old) ...	45	1	—
D. (Great Ormond Street; one day old)	44	1	—
M. (Belfast case)	290	4.2	+
N. (Belfast case)	1,162	16 8	++
H. (Belfast case)	1,253	18.1	++
R. (control, May 7th)	17	1	—
B. (Great Ormond Street) ...	18	1	—
H. (Belfast case)	100	5.8	+
S. (Belfast case)	311	18.2	++
W. (Belfast case)	648	38.1	+++
R. (Belfast case)	352	20.7	++

It is thus evident that the serum from the two cases of meningitis in Great Ormond Street gave no reaction with cocci isolated from Belfast cases which reacted well with the Belfast cases of epidemic cerebro-spinal fever.

We also received from Dr. Graham Forbes two Gram-negative cocci corresponding in cultural and staining characters with meningococci, which had been isolated from two of these cases in Great Ormond Street.

Examples of our experiments with these cocci are given in Table VII.

We sent Dr. Alice Taylor meningococci and serum from the Belfast cases, and she informed us that she had obtained similar results to those detailed in Table VII, and also that the Gram-negative cocci isolated from the Great Ormond Street cases gave a high opsonic index, and an agglutinative reaction with the serum of the Great Ormond Street cases. It is therefore evident that:

1. The meningococci of the Great Ormond Street cases react with the blood of these cases, but do not react with the blood of the epidemic cases in Belfast.

2. The meningococci from the Belfast cases react with the blood of these cases, but do not react with the blood of the Great Ormond Street cases of meningitis.

There are, therefore, at least two races of meningococci

TABLE VII.—CONTRASTING THE ACTION OF THE SERUM FROM BELFAST CASES ON TWO GRAM-NEGATIVE COCCI ISOLATED FROM CASES OF MENINGITIS IN GREAT ORMOND STREET WITH ITS ACTION ON BELFAST COCCI.

	D's coccus from Great Ormond Street, used in these Determinations.			B's coccus from a Belfast case used in Determinations below.		
	Count in 50 Leucocytes.	Index.	Agglutination.	Count in 50 Leucocytes.	Index.	Agglutination.
X. (control)]	33	1.0	—	64	1.0	—
A. (Belfast case) ..	31	0.94	—	322	5 03	++
R. (Belfast case) ..	36	1.0	—	1,261	19.6	+++
H. (Belfast case) ...	34	1.0	—	224	3.5	+
	D—y's coccus from Great Ormond Street used in Determinations below.			B—y's coccus from a Belfast case used in Determinations below.		
	Count in 50 Leucocytes.	Index.	Agglutination.	Count in 50 Leucocytes.	Index.	Agglutination.
R. (control)	99	1	—	30	1	—
S. (Belfast case) ...	98	0.98	—	1,024	34.1	+++

differing entirely in their opsonic and agglutinative reactions.

The blood from a case which Dr. Fowler of Edinburgh believed to be a typical case of chronic posterior basic meningitis was tested by us, and gave no reaction with a coccus isolated from a Belfast case. The coccus, however, from this case was not tested by this method.

The second question—namely, Is true epidemic cerebro-spinal fever always due to the same strain of meningococcus?—now occupied our attention. Through the kindness of Dr. Alexander Johnston, Superintendent-Physician of Ruchill Fever Hospital, Glasgow, we obtained five specimens of blood from five of the epidemic cases of cerebro-spinal fever under his charge. From all of these cases a meningococcus had been isolated by lumbar puncture. The following are the results of a test experiment done with a coccus isolated from one of the Belfast cases:

TABLE VIII.—GIVING RESULTS OF TESTING THE SERUM OF FIVE GLASGOW CASES WITH A BELFAST COCCUS.

Name.	Age.	Day of Disease.	Index.	Agglutination.
X. (control)	—	—	1.0	—
W. (Glasgow)	14	13th	7.8	++
F. (Glasgow)	$1\frac{8}{12}$	14th	6.5	++
L. (Glasgow)	22	8th	9.4	+++
P. (Glasgow)	$1\frac{4}{12}$	17th	5 07	+
K. (Glasgow)	21	18th	6.0	++

It is evident from Table VIII that the blood of the Glasgow cases of epidemic cerebro-spinal fever react in the same way as the Belfast cases do when tested with a coccus isolated from a Belfast case.

Through the kindness of Dr. John Thomson and Dr. Claude Ker of Edinburgh, we obtained the blood of two of the epidemic cases in the City Hospital for Infectious Diseases, Edinburgh.

Table IX gives the result of our test examination, which shows that the blood of the Edinburgh epidemic cases, as well as the Glasgow cases, reacted in the same way as the blood of the Belfast cases did to a coccus isolated from a Belfast case.

TABLE IX.—GIVING RESULTS OF TESTING THE SERUM OF TWO EDINBURGH CASES WITH A BELFAST COCCUS.

Name.	Count in 50 Leucocytes.	Index.	Agglutination.
X. (control)	33	1.0	—
J. (Belfast case)	113	3.4	+
W. (Belfast case)	230	7.0	+
B. (Belfast case)	101	3.06	+
I. (Edinburgh case)	256	7.7	+ +
II. (Edinburgh case)	306	9.2	+ +

We are also informed by Dr. Alice Taylor, to whom we sent some samples of serum from the Belfast cases, that a coccus obtained from Lanarkshire gave a high opsonic index and agglutinative effect with the serum of the Belfast cases, but not with the serum from the Great Ormond Street cases.

With the object of further testing the identity of the coccus of true epidemic cerebro-spinal fever we obtained from Germany four different cultures of, it was stated, undoubted *Diplococcus intracellularis* of Weichselbaum. Our study of these Gram-negative cocci introduces again a point that we have already alluded to in the beginning of this paper. We found that a meningococcus after being subcultured for about five months, lost its power of reaction to the serum from the cases of cerebro-spinal fever, and that coincident with this change the number of cocci ingested by the leucocytes in the control preparations was much higher than when the coccus possessed the power of reaction. We think it extremely probable that any meningococcus which shows this high phagocytosis when acted upon by normal serum will be found to have lost its opsonic and agglutinative reactions. The test emulsions were made of approximately the same density, and the counts of the various controls varied from 16–80 in 50 leucocytes. When the coccus ceased to react it was at once noticed that with approximately the same density of emulsion the control count had risen to between 200 and 300 cocci in 50 leucocytes.

In other words, if in an opsonic experiment with normal serum and a meningococcus that has been kept on artificial media for some months, we find that the phagocytic count is five or six times greater than that which occurs with more recently isolated meningococci we may infer that this meningococcus has lost its power of reaction with the serum from cases of cerebro-spinal fever.

Three different cultures of meningococci were sent to us from Hamburg through the kindness of Dr. Thomas Carnwath and Dr. Trautmann. Dr. Trautmann stated in his letter that these were undoubted strains of the *Diplococcus intracellularis* of Weichselbaum.

Therefore, two of the cocci sent from Hamburg—namely, H. (1785) and H. (1)—react to the serum of the Belfast cases in exactly the same way as a Belfast coccus reacts. Coccus H. (1722) appears to have lost its specific properties, for reasons already mentioned. A fourth coccus sent from Berlin gave a high phagocytic count in preparations made with normal serum, and did not react with the serum of the cases of cerebro-spinal meningitis. It was for this reason believed to have lost its essential properties.

Through the kindness of Dr. Simon Flexner of New York, we received several specimens of blood from cases of epidemic cerebro-spinal meningitis in the Municipal Hospital, Philadelphia, and also several cultures isolated from cases in the New York epidemic.

The following table gives the results of our last examinations of the specimens of blood received from the Municipal Hospital, Philadelphia:

TABLE XI.—GIVING THE RESULTS OF TESTING THE SERUM OF FIVE CASES FROM THE MUNICIPAL HOSPITAL, PHILADELPHIA, WITH A BELFAST COCCUS.

Name.	Day of Disease.	Count of 50 Leucocytes.	Index.	Agglutination.	Remarks.
X. (control)	—	81	1	—	—
E. Z. (Philadelphia) ..	47th	260	3.2	+++	Convalescent.
C. B. (Philadelphia) ..	65th	133	1.6	+++	Dying in convulsions.
P. D. (Philadelphia) ..	32nd	34	0.4	+	Contaminated with a bacillus.
Q. (Philadelphia) ..	—	178	2.2	+++	Contaminated with a bacillus.
L. B. (Philadelphia) ..	73rd	122	1.5	++	Convalescent.

It will be seen from Table XI that, although all these specimens, with the exception of P. D., gave an exceedingly well-marked agglutinative reaction, their opsonic power was little—about normal. The explanation of this is to be found in the fact that these specimens were at least fourteen days old before the examination was made. We have already pointed out that the opsonic power is much more unstable than the agglutinative, and that it is destroyed to a large extent by heat, and also falls off rapidly by keeping.

Two of the cultures brought by Dr. Flexner from New York were also examined by us. Our experiments with these cocci are given in Table XII.

The evidence that we have detailed above is, we think, sufficient to show that the cases of epidemic cerebro-spinal fever which have occurred within recent years on the Continent, in America, in Glasgow, Edinburgh, and Belfast are all due to a meningococcus having the same agglutinative and opsonic reactions; that a meningococcus isolated from any case of true epidemic cerebro-spinal fever will react in the characteristic way described in this paper with the blood from any of the cases of this disease.

On the other hand, at least one variety of Gram-negative coccus, corresponding closely in cultural characters with the true meningococcus, is capable of producing

TABLE X.—TEST EXPERIMENTS WITH THREE CULTURES OF MENINGOCOCCI RECEIVED FROM DR. TRAUTMANN, HAMBURG.

With emulsions of approximately the same density,

H. (1722) gave	H. (1785) gave	H. (1) gave	
310	52	40	cocci in 50 leucocytes

when acted upon by normal serum in an opsonic experiment.

(a) Experiment with (H. 1722).

	No. of Cocci in 50 Leucocytes.	Index.	Agglutination.
X. (control)	310	1	—
F. (Belfast case)	302	0.9	—
M. (Belfast case)	264	0.85	—

(b) Experiment with H. (1785).

	Determinations with Coccus H. (1785).			Determinations with a Belfast Coccus.		
—	No. of Cocci in 50 Leucocytes.	Index.	Agglutination.	No. of Cocci in 50 Leucocytes.	Index.	Agglutination.
X. (control)	52	1	—	42	1	—
D. (Belfast case) ...	786	15.1	+++	818	19.2	+++

(c) Experiment with H. (1).

	Determinations with Coccus H. (1).			Determinations with Belfast Coccus.		
	No. of Cocci in 50 Leucocytes.	Index.	Agglutination.	No. of Cocci in 50 Leucocytes.	Index.	Agglutination.
X. (control)	40	1	—	42	1	—
M. (Belfast case) ...	490	12.2	+++	520	12.3	+++

Table XII.—Test Experiments with Two Cultures of Meningococci brought from New York by Dr Simon Flexner.

	Determinations with Flexner (mg).			Determinations with Flexner (610).			Determinations with a Belfast Coccus.		
	No. of Cocci in 50 Leucocytes.	Index.	Agglutination.	No. of Cocci in 50 Leucocytes	Index.	Agglutination.	No. of Cocci in 50 Leucocytes.	Index.	Agglutination.
M. (control) ...	16	1	—	18	1	—	20	1	—
F. (Belfast)... ...	463	28.9	++	4.14	23 0	++	5 24	26.2	++
Z. Philadelphia ...	20	1.2	+++	24	1.3	+++	24	1.2	+++
B. (Philadelphia)...	—	—	—	—	—	—	30	1.5	++

Table XII shows that the cocci from New York—namely F. (mg) and F. (610), react in the same way as a Belfast coccus reacts with the blood of the Belfast cases and the blood of the Philadelphia cases.

meningitis. This coccus, for the present, may be styled the coccus of posterior basic meningitis, or of Still's disease. It differs entirely from the true meningococcus in its opsonic and agglutinative reactions.

Summary of the points of interest in this communication:

1. The opsonic method is of great value in the diagnosis of suspected cases of cerebro-spinal meningitis.
2. The method described in this paper is a most satisfactory way of testing the agglutinative reaction of cases of cerebro-spinal meningitis.
3. The opsonic power of normal serum for the meningococcus is extremely low.
4. The meningococcus may lose its power of reaction by prolonged growth on artificial media
5. The cerebro-spinal fluid has in all cases investigated a much lower opsonic and agglutinative power than the blood serum from the same case.
6. In convalescent cases the typical reaction of the serum disappears very quickly.
7. The serum of cerebro-spinal cases when exposed to heat, or kept for some time, loses its opsonic power but retains its agglutinative power.
8. This method should prove of value in estimating the potency of any proposed therapeutic serum for this disease.
9. The true epidemic cases of cerebro-spinal fever are always due to a meningococcus having the same opsonic and agglutinative reactions.
10. The Gram-negative coccus isolated from the Great Ormond Street cases is probably the coccus of posterior basic meningitis, and differs from the true meningococcus in its opsonic and agglutinative reactions.

We are greatly indebted to Professor Symmers, in whose laboratory this investigation was carried on, for the facilities he placed at our disposal, and for providing us with suitable cultures of the meningococcus. We wish to express our sincere thanks to Dr. Gardner Robb, Physician to the Fever Hospitals, and also to his house-physicians, Drs. William Patton, Ernest H. M. Milligan, and W. T. Leighton, for the great trouble they took to provide us with suitable material for this research.

We are also indebted to Drs. F. E. Battin, Graham Forbes, and Alice Taylor, of London; to Drs. John Thomson, Claude Ker, and Fowler, of Edinburgh; to Dr. Johnston, of Glasgow; to Dr. Simon Flexner, of New York; and to Dr. Carnwath and Dr. Trautmann, of Hamburg.

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A METHOD OF RECOGNIZING THE PRESENCE OF SPECIFIC SUBSTANCES IN BLOOD SERUM INFLUENCING PHAGOCYTOSIS, AND ITS DIAGNOSTIC APPLICATIONS.

The present state of our knowledge concerning the specificity of the substances in blood serum influencing phagocytosis—or "opsonins," as they have been called—is limited and unsatisfactory, as little investigation has been carried out in this direction. Such experiments as have been described have been lacking in details. Some observers have reported experiments to show that there is a specific opsonin for every organism. They do not state whether their tests were made on serum of healthy or of infected persons.

The general principle of such experiments has been to digest serum with various organisms and to show that the phagocytic index obtained therewith is reduced for each of such organisms, but remains normal for any other. Speaking from my own experience, tests made in this way on serum are unsatisfactory, as it is difficult to absorb all the active substances with any practicable quantity of washed bacteria. I have added to normal serum about half its bulk of tubercle powder and failed to get lower indices to tubercle than 0 45, 0.53, and 0.60. Yet one observer, in the single saturation experiment which he reports, obtained indices of 0.10 for pneumococcus and 0.13 for staphylococcus on testing serum for these organisms after successively digesting it with a thick suspension of the coccus. The nature of the suspensions is not stated, but cultural by-products might readily account for an inhibition of phagocytosis, as I have experimentally found to occur.

With but little to support it, the almost incredible theory has been widely adopted that in normal serum there exist these specific "opsonins" for each organism. Such an idea is subversive of all our formed opinions regarding antibacterial substances. That these are specially elaborated in response to an infection and vary in their degree of specificity (cf. bacteriolysins and agglutinins) is of course well known.

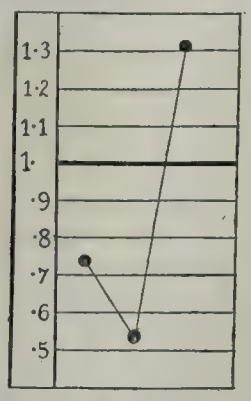
With knowledge gained from previous experiments of mine with diluted serums, I decided to perform a number of absorption tests, using diluted serum so that there should be no difficulty in ensuring complete absorption if desired. It was observed that if one dilutes serum of a healthy person with saline to a point where the phagocytic index begins to fall away, testing it against any bacterium A, and then adds to the diluted serum in powder form, so as not to upset the degree of dilution, a small amount of a washed bacterium B, no matter what this latter is, one finds the index to bacterium A drop, and, depending on the amount of B added, it may reach vanishing point. Were specific opsonins present in normal serum for bacterium A, the index should theoretically be unaffected by the addition of washed bacterium B. If one repeats this test, using the serum of a patient suffering from an infection due to bacterium A, and ascertains the indices similarly obtained for A, providing that A and B are not the same, one finds that the index is not reduced to the same extent as with the healthy control serum, but a certain reduction takes place. It is evident, then, that the infected individual's serum contains some substance which is not present in the healthy person's, and is of a specific character in respect of bacterium A, while there is a substance common to both healthy and infected serums acted upon by bacterium B, whatever that is. In other words, there is a general antibacterial substance or "opsonin" common to both serums, and a specific antibacterial substance or "opsonin" peculiar to the infected serum, and the specificity is of course relative to the infection.

To give a practical illustration of this proposition, one tested the phagocytic indices for tubercle of a healthy person and a tuberculous patient. The tuberculous patient gave an index of 0.73 as against the healthy control. Diluting each serum with saline to a sixth of its strength diminished the resulting count for the healthy serum and that for the tuberculous still more, so that the relative counts for the diluted serums showed an index of 0.53 for the latter. On adding to the tubercle suspension some *Bacillus coli* in dry powder, the results of the further tests showed the amount of phagocytosis still more reduced in both cases, but the healthy person's serum was then found to give a relatively much more diminished and actually lower count than the tuberculous one's. The patient's index then obtained on comparing the diluted serums acted on by the *Bacillus coli* was 1.31. The average counts for the control had been 35 5, 22.5, and 8 bacteria per thirty cells in the normal, the diluted, and the treated serum preparations respectively; those for the tuberculous person had been 26, 12, and 10 5 respectively (see Table I). It is apparent, then, that the *Bacillus coli* had absorbed something from both the serums—that is to say, the general opsonin—but that the tuberculous person's serum contained something which had not been affected by it—that is to say, the specific opsonin for tubercle. This result would have corresponded had there been substituted any organism other than tubercle for the *Bacillus coli*. The serum in the presence of a non-tuberculous infection does not act in this way, and, if the infection is general or severe, it not infrequently happens that the relative index as against the control is still more reduced. On comparing, then, simultaneously the serums of a healthy and an infected individual submitted to this test one

obtains what I call a *specific absorption index* with infected serum higher than the phagocytic index obtained in the ordinary way with untreated serum.

TABLE I.—*Tubercle Absorption Test.*

Serum.	Healthy.		Infected.	
	Counts.	Index.	Counts.	Index.
Untreated ...	35.5	1.0	26	0.73
Diluted 1 in 6 ...	22.5	1.0	12	0.53
Ditto + *B. coli* ...	8	1.0	10.5	1.31



The Table shows the counts obtained in tests with *B. tuberculosis* of serum of a healthy control and of an infected individual, the serum being (1) untreated; (2) diluted with saline; (3) diluted and treated with *B. coli*. The indices are calculated as against the counts of the control in each instance. The chart reproduces in graphic form the indices of the infected serum in the same order.

The reaction affords, then, a means of recognizing the existence of specific substances in an infected serum, and at the same time of enabling one to state that such specific substances do not exist preformed in normal serum; they, however, appear in healthy serum as the result of an inoculation of a corresponding organism. There is, therefore, reason to believe that in respect of their specificity the "opsonins" are analogous in their occurrence in the blood to the other antibacterial substances with which we are familiar. It is apparent that the occurrence of a specific absorption index affords a means of diagnosis of the existence of a specific bacterial infection, and I have taken the opportunity of applying it as a diagnostic test in so far about 150 instances. Its value in this direction must depend on the constancy of its occurrence. As the outcome of my experience with it, however, I feel confident in putting it forward as a method which is not exceeded in reliability by any other. The results are so distinctive usually as to leave no room for dubiety. It demands, however, a considerable expertness in the technique of estimating the phagocytic index if errors from this source are to be avoided.

After making a large number of comparative tests, the procedure I now adopt and recommend is as follows:

Instead of adding as powder the absorbing bacterium to the test suspension, it is simpler to make up a very thick suspension of it in saline and dilute the serums with this, and as standards for comparison one uses the serums diluted to the same extent with 0.9 per cent. saline in place of the undiluted serums. One prepares suspensions of leucocytes and of the bacteria to be tested as in Wright's method. This bacterial suspension, it should be specially noted, should be of medium strength, giving counts preferably—in the case of tubercle, for instance—of not fewer than 40 and not more than 70 to 80 bacteria per 30 cells with normal serum. With a suitably marked pipette one draws up 5 volumes of saline and 1 volume of serum and mixes these thoroughly on a glass slide; one repeats the mixture, using in turn the thick suspension of the absorbing bacterium in place of the saline. This procedure is carried out with the serum of a perfectly healthy control person and with the serum to be tested. Experience has shown this dilution of 1 in 6 to be the best average proportion. Phagocytic preparations are then made in the ordinary way, using equal parts of the three elements, the leucocytes, the bacteria, and the prepared serums.

What organism one uses for the absorptive action matters not at all in principle. For choice one takes an organism which does not stain readily, and is so distinct in character as not to be mistaken in the film for the bacterium tested for. I advise employing *Bacillus coli* for tubercle estimations and *Bacillus tuberculosis* for all other estimations. Each of these has the advantage that it is hardly seen in the appropriately stained film.

The counts having been made for the diluted and for the treated serums of the control and of the patient respectively, one thus obtains two sets of figures which are compared side by side. The counts of the treated serums show naturally much reduced figures. If the patient's serums give indices as against the corresponding control, varying but slightly in each test, the diagnosis of an infection by the particular organism tested for may be excluded. If the patient is infected, the index of the treated serum shows a well-marked relative rise. The actual extent varies with the technical differences (the strength of the two bacterial suspensions in particular), and probably with the actual amount of antibacterial substance present. Even primarily low indices may present a very extensive relative rise, primarily high indices rarely do.

A study of the indices I have obtained in the tests applied in (*circa*) 150 instances to cases of tuberculous, staphylococcal, and *B. coli* infections, as also to a large number of normals and of diseased individuals not suffering from these infections, shows that the comparative rise of the specific absorption index above the normal index is rarely less than 0.2, and is usually very striking. The lower results were mostly got in earlier tests before the technique was perfected. A specific absorption index was obtained in all cases of undoubted staphylococcal and *B. coli* infections, and in all tuberculous cases with the following exceptions:—3 cases of cervical adenitis; 1 case of hip-joint disease; 1 case of ankle-joint disease and previous multiple osseous tuberculosis (all these cases had failed to show the diagnostic negative phase after inoculation of Tuberculin R.); also 5 cases of tuberculous peritonitis, and 1 case of inoculation tubercle on the hand and elsewhere secondarily in a man who had been infected when cutting up the belly of a foal which had died from tubercle (these latter cases had not been tested by tuberculin injections).

With the exception of these cases, which I believe to be instances of bovine infection, no other tuberculous cases failed to give the reaction. Taking the *normal* cases, one finds slight divergences between the two indices, never exceeding, however, 0.1 in either direction. This, then, one may take as the margin of technical error, and it is well within the minimum limit afforded for substantiating a diagnosis. The divergences among the *other than healthy* individuals are sometimes striking, but are all in a downward direction when they exceed the 0.1 margin. This is characteristic of severe infections, and is explained by the fact that serums in such cases fall away much more rapidly in their phagocytic power when diluted with saline (still more so when, as in these tests, a bacterial suspension replaces the saline) than do the serums of healthy individuals. Since adopting the newer procedure which I have above recommended and contrasting the indices of the treated serums with those of the diluted instead of the undiluted serums, these variations have been greatly reduced, and at the same time allowance is made for varying capacity for dilution in the serums of controls. A representative series of results obtained is shown in Table II.

TABLE II.—*Absorption Index Tests.*

	Untreated.	Absorption.	Difference.
TUBERCLE. *Uninfected.*			
1. Normal	0 83	0.81	— 0.02
2. Normal	1.03	1.06	+ 0.03
3. Syphilis	0.64	0.5	— 0.14
4. Pneumonia...	1.0	0.87	— 0.13
5. Acute rheumatism	1.02	0.67	— 0.35
6. Acne	0.85	0.73	— 0.12
Infected.			
1. Glands	0.64	1.41	+ 0.77
2. Kidney	0.93	1.53	+ 0.60
3. Elbow...	0.65	0.96	+ 0.31
4. Hip	1.20	1 80	+ 0.60
5. Phthisis	0.92	1.44	+ 0.52
6. Normal, forty-eight hours after 0.002 mg. T.R.	1.50	2.14	+ 0.64
STAPHYLOCOCCI. *Infected.*			
1. Acne	0.9	1.25	+ 0.35
2. Furunculosis	0.67	0.91	+ 0.24

The first column shows the indices of the untreated serums; the second the absorption indices after treating the serums by dilution and addition of *B. coli* in the tubercle tests, of *B. tuberculosis* in the staphyloccocal tests; the third shows the resulting rise or fall.

The applicability of the test to the diagnosis of disease has been dealt with. It may, then, be readily seen that the test may be applied equally to determining whether a given bacterium is a source of infection in a disease of uncertain etiology, presuming that the blood contains antibacterial substances as the result of infection. One is able in this connexion to state that the blood reaction to infection with staphylococci is the same, whether due to the *Staphylococcus pyogenes aureus* or *albus*. Accordingly, either of these types may be employed in making the phagocytic preparations to test for the existence of staphylococcal infection.

I have taken the opportunity also when afforded of employing the test to determine whether the blood in tuberculous infections showed any distinction in its reaction to tubercle bacilli of human and of bovine type. The surmise that such difference might exist first arose in the course of my work on phagocytic index estimations, on its being observed that a small proportion of cases of indubitable tuberculosis did not respond to the inoculation of Tuberculin R. by showing a negative phase in the way that the great majority did. It was further observed that such cases did not respond to treatment in the way that other similar cases did under therapeutic inoculations of Tuberculin R, this, too, in spite of the fact that as far as their phagocytic index gave evidence the result should have been satisfactory. It was also found as a corroborative feature that such cases as failed to show a negative phase after inoculation of Tuberculin R. also failed to give any evidence of specific infection when tested by the absorption method I have described. Only more recently has the opportunity been available of applying the test, and using tubercle bacilli of actual bovine origin, the plan which seemed to offer the most promise as a means of settling what previously could only be a matter of speculation.

As a preliminary observation it was decided to test three typical cases—one of phthisis (which is commonly assumed to be of human origin) which had given a marked negative phase after tuberculin inoculation; a case of chronic multiple osseous tuberculosis of many years' standing which had failed to show a negative phase when recently inoculated with tuberculin; and, lastly, a case of very intractable tuberculous glands in the neck which, when tested some months previously, had given no negative reaction, and had not been inoculated recently. The case of phthisis tested previously by the specific absorption method had given a positive result, the other two tested in the same way had failed to do so.

The results of the experiment showed that the indices to human tubercle were higher than those to bovine tubercle in the supposed cases of the latter infection, while the opposite was the finding with the phthisis patient. As regards the absorption indices it was found that the phthisis case showed a specific reaction to human but not to bovine tubercle, while the two other cases gave a specific reaction to bovine tubercle. Of these latter two the case recently inoculated with tuberculin gave a specific reaction also to human tubercle, as was to be expected, the other case did not. These results appear in Table III.

TABLE III.—*Normal and Absorption Indices of Cases tested with Tubercle Suspensions of Human and Bovine Origin.*

	B. Tub. Hom.		B. Tub. Bov.	
	Norm.	Absorp.	Norm.	Absorp.
1. Phthisis	0 92	1.44	1.19	1.19
2. Mult. osseous tub. rec. inoc. with T.R.	1.24	1.40	1.10	1 44
3. Tub. cervical Adenitis ...	1 17	1.15	0.95	1.45

The normal and absorption indices of the cases are shown in the first two columns as tested with *B. tuberculosis* of human type; in the second two columns with that of bovine type.

This group of tests gave clear indications that the blood reactions to infection with tubercle of human and of bovine origin are of a quite distinctive character. So far I have had the opportunity of applying the method in a dozen instances, and the results have confirmed this view. Among these are a number of tuberculous abdominal affections which were thought likely to furnish instances of bovine infection. It has been found, however, that they were not all derived from that source, 3 out of 8 cases examined being infected with human tubercle. The other bovine infections were cases of cervical adenitis.

It is probable that in this variable origin of tuberculous infections will be found the explanation of the failure to produce improvement in certain tuberculous patients with ordinary tuberculin treatment, and also of the error of about 10 per cent. recorded by Struthers Stewart and myself[1] in the diagnostic reactions to tuberculin inoculations in undoubted cases of tubercle.

To Professor Chiene, in whose laboratory this work was carried out, and to numerous members of the staffs of the Royal Infirmary and Sick Children's Hospital, Edinburgh, who have supplied clinical material, I gratefully acknowledge here my indebtedness.

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ABSORPTION FROM THE PERITONEAL CAVITY.

IN the Laboratory of Experimental Pathology connected with Cornell Medical College in New York, we have recently occupied ourselves with the question of absorption of particles injected into the peritoneal cavity of rabbits and guinea-pigs.

We have used mainly typhoid bacilli, and to a less extent other bacteria and inert particles, such as lamp-black and indigo.

No matter what the substances used, there is an immediate rush of the particles through the lymphatics of the diaphragm, along the anterior mediastinal lymphatic trunks into the circulation, whence the particles are rapidly deposited in the various organs in such a way that they are not washed out on bleeding the animal to death.

Even in five minutes after intraperitoneal injection of a large dose of typhoid bacilli—approximately 5,000 millions—blood drawn from the ear shows that there may be as many as 100 000 of bacilli in each cubic centimetre of the blood. In this immediate rush into the circulation the particles appear to be in a free condition and not enclosed in phagocytes.

In connexion with this work we have also studied the phagocytic activities of the cells in the peritoneal cavity. It appears that after injection of particles the large mononuclear hyaline cells of Kanthack play the part of macrophages, and take up the particles with extraordinary rapidity. In a few minutes the macrophages have become crowded with the particles. In the normal peritoneal cavity there are few polynuclear cells, and those which are present are mostly eosinophiles, which as phagocytes are very inert. It is not until later that polynuclears come in and act as phagocytes.

For the sake of simplicity I shall confine my remarks to rabbits treated with typhoid bacilli. Immediately after injection, therefore, practically all the local work of phagocytosis falls upon the macrophages, which, however, almost entirely disappear from the peritoneal fluid, and are deposited in large masses upon the surface of the omentum, as may be seen by microscopical examination. In preparing the omentum for microscopical examination, we spread a small piece over a slide, allow it to dry and stain with eosin-methylene-blue. Very clear preparations can be obtained in this way.

The omentum is found to intercept enormous numbers of the bacilli and prevent them from reaching the diaphragm. A large number of these intercepted bacilli are free, and numbers of them are contained in the macrophages deposited on the surface.

But besides the macrophages deposited *on* the omentum there are other macrophages which belong to the omentum and which also take up immense numbers of bacilli. These phagocytic cells of the omentum are specially prominent in the rabbit, forming, together with small lymphocytes and blood capillaries, large clumps—the milky spots of Ranvier. Such macrophages of the milky spots are of all shapes and sizes, but all give the impression of mobility. They are also found occurring singly in the connective tissue of the meshwork, where they form long trailers, as we call them—the clasmatocytes of Ranvier. Wherever these cells are found, whether in

[1] Stewart and Ritchie, *Edinburgh Medical Journal*, May, 1907.

the milk spots or in the meshwork, they become filled with bacilli almost immediately after injection, and it seems most probable that they are wandering cells which are only partially fixed in the omentum, and send out long protoplasmic processes through the lining endothelium.

These processes, waving free in the peritoneal cavity, pick up the bacilli and probably withdraw them into the omental tissue, where the process of digestion begins. It is true we have not so far any direct proof of this theory, but it seems to be the only possible explanation of the phenomena observed. Although the fixation of these cells in the omentum is probably only partial, they may be called fixed macrophages, as opposed to the deposited macrophages.

With regard to the digestion of bacilli by the macrophages, it appears that the fixed cells of the milky spots have a much greater digestive power than the deposited macrophages. Even in a few minutes after injection the bacilli in the fixed macrophages often show signs of change. They swell up and lose their affinity for the basic stain. This degeneration of the bacilli, although often noticeable also in the deposited macrophages, usually takes place much more slowly, and often does not occur at all until considerably later—after the arrival of the polynuclear cells.

It is noteworthy that in four to six hours after injection, unless the polynuclears have arrived in considerable numbers, the bacilli contained in the macrophages often proliferate very markedly, and form what we have called centres of secondary multiplication. It seems probable that such centres of secondary multiplication indicate a victory for the bacilli and the ultimate death of the animal owing to insufficient reaction. To enable the macrophages to digest the bacilli effectively an early and marked polynuclear reaction is necessary. The question then arises as to whether the phagocytosis is greater in the immunized animal than in the normal one. Our rabbits were all actively immunized by repeated injections of killed cultures. It has not been found possible to reduce the results to figures and speak of an opsonic index, but generalizing from a large number of observations it seems certain that the macrophages of the immunized rabbit take up considerably more bacilli than those of the normal one.

Moreover, we are inclined to suppose that the increased resistance of the immune rabbit is almost, if not entirely, due to its increased phagocytic activities. Very much to our surprise we have found that the immune animal has no greater bacteriolytic power than the normal one. That is to say, if we inject the same dose of bacilli into a normal and an immune rabbit, and four or six hours later sacrifice both rabbits, and estimate the number of bacilli left alive in the organs, we shall, on an average of several animals, find quite as many if not more living bacilli in the immune as in the normal rabbit, although the normal rabbit will probably be very sick, and the immune one show no signs of distress. In each case, however, a large proportion of the bacilli will have been destroyed.

The interpretation which we have put upon this phenomenon is as follows: In the normal rabbit phagocytosis is comparatively weak; a large proportion of the bacilli are destroyed extracellularly, and the liberated endotoxins are discharged into the blood current, from which they can be readily absorbed by certain cells—probably chiefly cells of nerve centres—which are of vital importance to the organism. On the other hand, in the immune animal the proportion of bacilli destroyed extracellularly is much smaller. Most of the destruction occurs in the interior of the phagocytes, and the endotoxins are consequently liberated into the plasma of the macrophages, which may suffer individually, but collectively are not of vital importance to the organism. This theory assumes that a treated animal does not become more resistant to the action of endotoxins; and all our experiments have tended to confirm the observations of Pfeiffer and others that there is little or no increased resistance to the endotoxins on immunizing an animal.

Whether our interpretation is right or wrong, it is certainly very astonishing, and contrary to all our preconceived notions, to find that the actively immunized animal is not more bacteriolytic than the normal one. Bail has noted the same with the passively immunized animal. It is also interesting to note in this connexion that whereas the serum of a normal rabbit is strongly bactericidal for typhoid bacilli, yet the serum of a highly immunized rabbit will not kill any typhoid bacilli at all *in vitro*.

Whether this principle applies *in vivo* as well as *in vitro* it is difficult to say, but our experiments seem to indicate that it does to some extent, and we are inclined to suppose that the body fluids of the immune animal are not so bactericidal as those of the normal one.

Admitting therefore that the danger to the animal is chiefly due to extracellular destruction of the bacilli, the immune animal has a double advantage over the normal. In the first place the extracellular destruction by the body fluids is not so great, and in the second place the phagocytic activities are much greater. Now we have found that with the normal rabbit there are two critical periods at which the rabbit may die. It may die in about two hours from the effect of the endotoxins liberated at once, or if the rabbit survives this period it may die in about twenty-four hours of general infection. Now let us suppose that four bacilli are a fatal dose for a normal rabbit, but do not affect an immune one.

1. IIII normal. Three are killed extracellularly and 1 phagocyted	Death in 2 hours.
2. IIII normal. Two are killed extracellularly, 1 phagocyted, and 1 left alive and free	Sick in 2 hours; death in 24 hours.
3. IIII immune. One killed extracellularly, 3 phagocyted	Not sick in 2 hours or later.

The extracellular destruction is rapid, but the intracellular slow. I have now given the main points of our observations as regards phagocytosis in the peritoneal cavity, and may also mention that on no surface of the peritoneum other than the omentum does there appear to be any deposition of macrophages or bacteria, nor are there any macrophages belonging to such surfaces, as we find them belonging to the omentum.

It appears, therefore, that the omentum plays the chief part in the protection of the peritoneum against bacterial invasion, being able to intercept the bacteria to a great extent mechanically on account of its position and structure, and also physiologically on account of its lymphoid properties. The importance of this interception is obvious when we consider that those bacteria which reach the diaphragm are almost instantaneously absorbed and carried via the lymphatics into the circulation. Possibly, if there is a gradual dribbling of bacteria into the peritoneal cavity, as might occur after perforation of the intestine, the omentum may practically intercept all of them, but small doses of bacteria injected into the experimental animal are not altogether intercepted. We have used doses of *B. coli communis* as low as $\frac{1}{200000}$ of a culture—approximately 100,000 bacilli—and ten minutes later demonstrated the presence of 3,000 or 4,000 bacilli in the blood and liver. It appears to us, so far as we can judge, that there is no path by which absorption into the system can take place, except through the lymphatics of the diaphragm. Even in five minutes after injection of lampblack the anterior mediastinal lymph nodes appear quite black to the eye, and sections of such lymph nodes show that the particles are practically all in a free condition.

Even such large objects as chicken red cells find their way into the nodes, though somewhat more slowly, and about one hour after injection there are large numbers of them lying free in the afferent sinuses. After five to eight hours the chicken cells in the nodes are almost all enclosed in macrophages, which often present a most extraordinary appearance.

In conclusion, I may remark that we have found no differences in the affinities of macrophages for various kinds of particles. They will englobe bacteria of all kinds just as readily as inert particles or chicken red cells, and Metchnikoff's idea that the principal rôle of the macrophages is to take up animal cells and particles, while the polynuclears (microphages) take up bacteria, seems to us to be altogether erroneous.

DISCUSSION.

Dr. BUSHNELL (Brighton) said: A question which is of practical import to decide is the part played by leucocytes in the phagocytosis of bacteria. It is necessary to deter-

mine whether they play merely a passive rôle, taking up anything that may be prepared for them by opsonins in the serum or even ingesting any substances offered to them, or whether they exert a selective function of feeding comparable to that of the amoebae. In other words, to what stage of functional development have they attained? May the process go on in the absence of serum? Are opsonins essential in all cases where micro-organisms are ingested by leucocytes, or is the process merely accelerated by their presence (as in the catalytic action of ferments in chemical reactions, whereby the process which goes on very slowly is accelerated by the presence of a catalyser)? I have studied the subject of leucocytosis by a comparison of the phagocytic powers of leucocytes from a myelocythaemic patient with those of healthy human beings. The results show that there is a distinct and practically constant diminution of the powers of phagocytosis of this patient's leucocytes to staphylococci and to tubercle bacilli when estimated under similar conditions as compared with those of various workers in the Ralli Laboratory. Phagocytosis of staphylococci and tubercle bacilli, in the presence of the patient's serum, of our serum and of saline solution was studied, and the results obtained are given in the tables I show. The counts were checked by Dr. A. W. Williams, Mr. Osborne, and by myself. The only possible source of fallacy, and one which can be neglected, is that the suspension of leucocytes obtained from myelocythaemic blood is thicker than that from healthy blood. In future similar suspensions of both will be used. The observations we made were as follows: The phagocytic index of polynuclear leucocytes (well washed) from a patient with myelocythaemia (spleno-myelogenous leukaemia) for staphylococci in the presence of a *normal* serum was constantly *less* than that of the polynuclears of workers in the laboratory (Ho. 2.3 and 3.5). The phagocytic index of the patient's polynuclears for staphylococci in the presence of *her own* serum was *less* (1 to 2.4 and 3.1) than that of polynuclears from healthy persons. The index of "spontaneous phagocytosis" of the patient's polynuclears for tubercle bacilli in the presence of *normal saline* was constantly *less* (1 to 2 5) than that of a mixture of "healthy" polynuclear leucocytes. Again, the patient's myelocytes had constantly *less* phagocytic powers than her own polynuclears in the presence of her own serum (1 to 2.9) and of normal serum (1 to 2.8). (The "opsonic index" of the patient's blood serum for staphylococci and tubercle bacilli did not differ greatly from that of the workers in the laboratory.) It is clear, then, that leucocytes from various sources present varying powers of spontaneous and induced phagocytosis, and thus may be attributed probably to a depressed functional activity. It may be surmised that the rapid turn out of polymorphonuclear cells and myelocytes in myelocythaemia results in an inferior article in this respect, and that quantity rather than quality obtains. Other observations support the belief that healthy leucocytes possess marked spontaneous powers of ingestion, and that this function is a well developed one: (1) Inert particles, as carmine, etc., are known to be taken up freely by washed leucocytes. (2) Phagocytosis is also largely increased by presenting to the leucocytes a thick suspension of bacteria-yeasts, etc., rather than a highly diluted one. (3) Sir A. E. Wright and others have recorded spontaneous phagocytosis of tubercle bacilli in salt solution, the greatest ingestion being in a 0.6 per cent. solution which progressively decreased and almost disappeared in a 1.3 per cent. solution. (4) Tunnicliffe and Davis find that phagocytosis of bacilli from healthy mouths, and influenza bacilli are as active in the presence of normal salt solution as in the presence of serum and that the numbers ingested vary not only with the time to which the organisms are exposed to the leucocytes, but may even be greater with saline solution than with serum. As dead bacilli gave similar results to living, intracellular multiplication of bacilli can be discounted. (5) Again, in suspensions of washed leucocytes and bacteria one can usually find a leucocyte containing a large number of organisms, whereas most of the cells apparently under the same conditions do not contain any bacteria. Indeed, some bacteria are nearly always taken up under such conditions. (6) In meningitis it is very common to find here and there a leucocyte in the exudate containing many meningococci, while most of the cells do not contain cocci, though identical in morphology with those that do. Other evidence could be adduced which appears to show that leucocytes have differences in phagocytic and digestive powers. In carrying out the vaccine treatment of bacterial diseases controlled by the estimation of the opsonic indices of the patient at the Sussex County Hospital, we have observed in the last three years that a distinct difference in the indices can be obtained by various observers carefully working on the same stained preparations, even when 100 leucocytes are counted. This is accounted for partly by the fact that certain leucocytes may be or may not be included containing numbers of bacteria well above the average. The conclusion is that the functional powers of leucocytes are not a negligible quantity, and must be taken into careful consideration in the diagnosis and treatment of many diseases.

Dr. J. Charlton Briscoe (London) said: I shall divide the subject of this communication into two parts. The first deals with the cells which act as phagocytes and the second with the origin of the opsonin. The phagocytes are divisible into the free and wandering cells, the most important of which are to be found in the blood and the fixed cells. The polymorphonuclear leucocytes are the chief phagocytes in the blood; the eosinophile cells take a quite inconsiderable part in this act, the small mononuclears practically no share, and the large mononuclears an intermediate position. Arneth[1] has divided the polymorphonuclear neutrophiles into five classes, basing his division on the form of the nucleus. Class 1 has a single nucleus, Class 2 apparently two nuclei, and so on, Class 5 having five more or less distinct nuclei. Working with staphylococcus and *Bacillus coli*, and employing Wright's method for estimating the opsonic index, I have calculated the average number of organisms taken up by these various forms of cells. The leucocyte emulsion was taken from three individuals, and the blood serum from five. Two of the latter had received therapeutic inoculations of staphylococcus or *Bacillus coli* vaccines. In all these estimates the cells which fall under Class 3, that is, which have the nucleus more or less completely divided into three parts, contain a greater average number of organisms than those of any other group. Thus the average number found per cell in Class 1 was 3.6; in Class 2, 4.89; in Class 3, 6 65; in Class 4, 5.31; and in Class 5, 5 14. The large lymphocytes took up an average of 4 organisms. Arneth finds that the polymorphonuclears in the normal blood occur in the following percentages: In Class 1, 5 per cent.; in Class 2, 35 per cent.; in Class 3, 41 per cent.; in Class 4, 17 per cent.; and in Class 5, 2 per cent. Dr. Grell, whose thesis I had the advantage of seeing, obtained somewhat different percentages, finding that Class 3 contained 51.88 per cent. of the total. Arneth considers that a leucocyte is originally a cell with a single nucleus, and its age corresponds with the complexity of the nucleus. Those cells, therefore, in Class 3 may be considered to be in the prime of life. If the average number of cells in each class be multiplied by the average number of organisms ingested by a cell in the same class, we find that, taking Arneth's proportions, nearly half of the total number of ingested organisms are taken up by cells in Class 3, and more than four-fifths by those cells in Classes 1 to 3: In Class 1, 3 19 per cent.; in Class 2, 30.39 per cent.; in Class 3, 48.41 per cent.; in Class 4, 16.03 per cent.; and in Class 5, 1.95 per cent. In this connexion it is interesting to note that when a leucocytosis occurs, especially in cases of infection, an increased percentage of those cells which fall under Classes 1 and 2 is found. The body is therefore preparing a supply of those leucocytes which are most actively serviceable to act as phagocytes. With regard to the fixed cells of the body, I have worked chiefly with the cells found in the alveoli of the lungs, and those mononuclear cells found in the peritoneal cavity after an injection of some fluid such as salt solution. These cells cannot be termed accurately "fixed cells," for those on the peritoneal cavity are moving in fluid, and some of the larger cells found in the lung alveoli seem to be normally free or only attached to the basement membrane by a thin pedicle. Both *in vivo* and *in vitro* these two varieties of cells show marked phagocytic properties in the presence of red blood corpuscles, or micro-organisms

[1] Arneth, *Die Neutrophilin Weissin Blutkörperchen*, Jena, 1904.

which are sensitized by an opsonin. *In vitro* this activity is distinctly less than that of the polymorphonuclear leucocytes, but *in vivo* it is as great or greater. This difference may be attributed to two causes—first, the slower amoeboid movement exhibited by these mononuclear cells; secondly, their greater susceptibility to changes of environment. Centrifugalization appears to diminish or entirely deprive them of their function as phagocytes, whereas it does not affect the polymorphonuclears to the same extent. Certain cells of the spleen, the cells lining the bladder, and to some extent the endothelial cells lining blood vessels are phagocytic under the same conditions. These fixed cells can therefore act as phagocytes, and may be of considerable importance in guarding certain portals in the body against infection. As with the polymorphonuclears the most active phagocytosis occurs in the cells of medium size, the smallest and largest being inoperative. The question of the source of the opsonin is more complicated. This substance would doubtless be included by Metchnikoff and his school as one of the cytases, and should therefore owe its immediate origin to death or injury of phagocytes, either polymorphonuclear or mononuclear. It would be impossible to deal with the work done on this subject in this communication. I shall, however, shortly put forward some points against the above view, that is, that opsonin arises from the death or injury of phagocytes. I showed in an article published in Orth's *Festschrift*[2] that complement exists in the normal fluid of the peritoneal cavity of guinea-pigs and rabbits—complement for the amboceptor of the immune substance for cholera vibrios and pigeons' corpuscles. This normal fluid contains an insignificant number of cells of any sort; those which are present being small mononuclears and eosinophile cells, the destruction of which could not give rise to such a complemental activity as is actually present. The following experiments, carried out on the peritoneal fluid and blood of rabbits, were undertaken in order to determine the condition of the opsonin in the body. The method employed was as follows:

Some fluid was drawn off from the peritoneal cavity, allowed to clot, and subsequently diluted with a volume of citric acid and salt solution, equal to the original volume taken. A second quantity of fluid was withdrawn and mixed at once with an equal volume of the same solution to prevent clotting. The blood was treated in a similar manner. In 10 experiments, 5 with the blood and 5 with the peritoneal fluid, I found that where the blood or peritoneal fluid was not allowed to clot, organisms were taken up by the polymorphonuclear cells *in vitro*—employing the technique for opsonin estimation—to only half or less than half the extent to which they were ingested when the fluid had been allowed to clot previously and had been subsequently diluted. No doubt the citric acid has a certain inhibitory effect on phagocytosis, because a few more organisms were ingested when the clotted serum was mixed with a volume of sodium chloride, 1·2 per cent. As the same proportion of citric acid was present in each case, the experiment is not affected. (The blood serum is also about twice as strong as the peritoneal fluid in opsonic content.) The opsonin is, therefore, like the complement, present in the normal peritoneal fluid, which contains practically no phagocytes, and is influenced by clotting.

I next tried injecting organisms suspended in a similar solution into a vein, or the heart, after excision, and comparing the amount of phagocytosis with that which occurred when the experiment was performed with similar quantities of leucocyte emulsion, serum from blood taken about thirty minutes previously, and organisms in the same suspension fluid, *in vitro*. In each case very few cocci or bacilli were ingested by the leucocytes from the vein or heart. The leucocytes from the experiments *in vitro* contained six to fourteen times as many as those from the vein or heart. In some experiments where clotting took place the leucocytes from the clot contained two to five times as many organisms as those obtained from the surrounding fluid blood, but only about half as many as were found in the leucocytes in the experiments *in vitro*. These experiments are not yet completed, but I consider they indicate that opsonin does not exist as such in the body fluids, but in some preceding form which might be termed an opsinogen, and that clotting is an important factor in altering this state. There are several analogies in the body. I was led to this line of investigation by the following considerations: While treating a case of septic endocarditis, I frequently found that the opsonic index could be maintained between 1.5 and 2, but no improvement occurred. Secondly, the cases which show most improvement under therapeutic injections of vaccines are those in which the lesion is localized—that is, in such cases as localized staphylomycoses, etc. In the neighbourhood of these lesions there is necrosis and fibrin formation; blood plasma passing over this would come into contact with fibrin ferment. Thirdly, in a case of pulmonary tuberculosis which I am treating by injections of vaccine controlled by the opsonic index, after a small trace of haemoptysis, the blood having clotted, about half the tubercle bacilli in the sputum were seen inside alveolar cells or leucocytes. The same phenomenon has been observed in the sputum of this patient on the occasion of his having some catarrhal infection in which numerous diplococci were found in the alveolar cells and polymorphonuclear leucoocytes. At other times the bacilli are found free, just as in other cases of pulmonary tuberculosis. Fourthly, after injecting guinea-pigs immunized to pigeon's corpuscles, with salt solution, the immune body can be obtained in the urine, and after injecting a normal guinea-pig with the serum of an immunized animal the immune substance can be similarly detected. The conclusion to be drawn from this last experiment is that the immune substance (set free as a result of the injection, in the one case) is a foreign substance, and is therefore excreted. Probably, therefore, it does not exist in that form in the immunized animal, but requires something in the nature of clotting or contact with necrotic tissue before it is set free. This may have a bearing on the pathology of septic endocarditis, where in spite of a high opsonic index organisms are found in increasing numbers in the blood.

Professor BEATTIE (Sheffield) said substances injurious to bacteria are present in inflammatory exudates in the peritoneal cavity and are related to the increase of polymorphonuclear leucocytes, but this is not proof that these leucocytes are the producers. Certain reactions seem to point to the mononucleated cells (endothelial of omentum, etc.) being the producers. Further, in citrated blood phagocytosis is greater in twelve hours than two, and still greater in twenty-four than twelve. Where does this agent which assists phagocytosis arise? The only conclusion seems to be that it comes from the cells, either by a secretion or by phagolysis, which is diminished, but not by any means stopped, by the citrate of soda.

Dr. DAVID LAWSON (Banchory, N.B.) said: There is only one point to which I ask your attention—namely, a consideration of the varying amount of protective substance present in the blood of a person, as indicated by those changes which take place in the level of the opsonic index in response to the inoculation of a suitable vaccine. In thinking over the phenomena of the negative phase three possible explanations suggested themselves. First, for the time being there may be a diminution in the amount of opsonin produced; secondly, the amount produced may be normal, but with an increase in the phagocytosis more opsonin than usual may be used up; or, thirdly, elimination of opsonins by the excretory organs may explain the fall. With a view to determining the third point, an investigation was undertaken at the Banchory Laboratory about ten months ago, the work being done by Dr. James Miller, and it is with his approval that I bring these facts under your notice now. The work occupied over four months to carry out, and the result went to show, amongst other points: First, that tuberculo-opsonic substances are eliminated in estimable amounts in the urine of patients suffering from pulmonary tuberculosis; secondly, that the amount present in the urine of an uninoculated person is for the most part less than that found in the same person's blood; and, thirdly, that in fully 40 per cent. of the instances in which systematic observations were made during the negative phase the amount present in the urine varied inversely as the amount present in the blood, thus suggesting that increased elimination, to a certain extent at least, is associated with, if it does not altogether explain, the fall in the opsonic content of the blood during the negative phase. Fourthly, opsonic substances are eliminated in the sweat of tuberculous patients. It was intended to publish the record of this investigation soon after the work had been completed, but, in so far as the fallacy of

[2] Charlton Briscoe. Origin of the Complement in the Peritoneal Cavity, Orth's *Festschrift*, 1902.

spontaneous phagocytosis had not been eliminated, it was afterwards considered undesirable to do so. Further investigation, however, having remedied this defect, and that without materially modifying the conclusions arrived at, it is now proposed to publish the paper at an early date. A practical clinical point has suggested itself in connexion with the elimination of opsonins through the sweat glands. The old-time method of treating the sweating of phthisis was by means of the exhibition of atropine. For some years past there has been a tendency to abandon that line of treatment, on the ground that sweating, by excreting toxins, freed the system of their presence and to that extent was desirable. But as against that fact there is the well-known experience that in cases of acute tuberculosis where failure to control sweating takes place, an unfavourable result nearly always accrues. The explanation, then, may lie here. Profuse sweating is associated with a profound lowering of the opsonic content of the blood serum. If that is so, then it appears to be our duty, by resuming atropine treatment, or some such line, to control the sweating of phthisis to the full extent of our powers.

Professor Muir (Glasgow) said: In connexion with the discussion on this subject there are certain preliminary points to which attention may be directed. In the first place, we are perhaps too apt to consider that the action of *all* the substances in a serum must conform to the scheme of receptors worked out by Ehrlich and now generally recognized. In the second place, there has been too great a tendency to distinguish substances simply according to the effects which they produce; it is quite probable that the same substance may produce two different effects when tested on two different organisms, for example, opsonic action in one case and bactericidal action in another. And in the third place, the two factors, namely, variations in combining affinities, and variations in the sensitiveness of bacteria to complements after combination has occurred, have not been sufficiently kept in view. With regard to the first point, it is often assumed, as a result of reasoning from analogy in the case of haemolysis, that complement only enters into combination through the medium of an immune body or its natural homologue, and although the co-operation of an immune body and complement has been demonstrated in the case of bactericidal action on the anthrax bacillus by certain normal serums, this must not yet be accepted as indicating an invariable rule. As a matter of fact, so far as my experience goes, emulsions of all bacteria and also minute organic particles of various kinds have the power of absorbing complement. It is accordingly only reasonable to suppose that the complement thus absorbed may by itself have an effect on the organisms, such as rendering them susceptible to phagocytosis or producing their death. It is well known that normal serum has practically no bactericidal effect upon the *Staphylococcus aureus*, and it might be assumed from this that the bactericidal substances of the serum did not enter into combination with it. It can, however, be shown that an emulsion of the staphylococcus will remove the bactericidal substance from the serum as tested against the typhoid bacillus, and accordingly the result mentioned is due not to want of combination but simply to non-sensitiveness of the staphylococcus to the action of bactericidal complement. Theoretically, however, the absorbed complement may produce some change in the bacterium, although not leading to its death—a change, for example, which may render it susceptible to phagocytosis. Intracellular destruction of bacteria probably takes place in an analogous manner to the extracellular, and possibly the digestive powers of leucocytes from different animals vary considerably. This is a matter, however, on which we have little information. Our knowledge at present chiefly concerns the extracellular destruction *in vitro* and the conditions which regulate the ingestion of the bacteria by the cells. Further information is, however, much needed regarding what we may call the intracellular bactericidal properties of the leucocytes. The leucocyte may be practically an indifferent factor so far as ingestion of the bacteria is concerned, but it must not be assumed that leucocytes from different animals have the same digestive properties towards various bacteria. The investigations which I have carried out along with Dr. Martin show that the labile opsonins of normal serum can be taken up by a great many different organisms when the test is made on one particular bacterium; in other words, there is a want of specificity. They are also taken up by "complement absorbers" and hence we have placed them in the group of "complements," using this term in the bio-chemical sense. It is quite likely that the small trace of thermostable opsonin which Dr. Dean has demonstrated in normal serum may act as an immune body, leading, that is, to the linking on of the complement; but I consider that the absorption of the greater quantity of thermolabile opsonin is probably of the nature of a direct union of this substance with the bacteria. As hinted above, it is probable also that this direct union may in certain instances lead to a bactericidal effect. As we have shown in our last paper, the thermostable opsonin in an immune serum is of an entirely different character. It differs in being specific in nature, in the generally recognized meaning of the term. We have failed to find that it is taken up by any other organisms, and we have also found that a variety of substances or combination of substances which remove complement, have no effect upon it. We have accordingly placed it amongst the true antisubstances. The opsonic action of an unheated immune serum will, therefore, depend upon the conjoint action of the two classes of opsonic substances. These two substances may act quite independently, or the one may aid to a greater or less extent in the absorption of the other; that is, we may have an example of action after the type of immune body and complement. It is not possible, however, to arrive at a definite conclusion on this point by comparing the results of the opsonic action of the substances separate and in conjunction. For example, on the supposition that the two substances act separately, we cannot assume that the phagocytic count when both are present will be the sum of the two counts when each acts separately. We have shown by absorption or subtraction tests that immune body does lead to the absorption of opsonin as well as opsonin. But we cannot apply the immune body + complement scheme to the whole of opsonic action. For, in the first place, there is strong evidence that the normal labile opsonin may enter *directly* into combination with the bacterium; and, in the second place, we know that the immune opsonin can *by itself* bring about the opsonic effect. And further, Dr. Martin and I found that a heated antistaphylococcus serum with marked opsonic action contained very little immune body as indicated by the absorption of complement test. We accordingly did not consider there was sufficient evidence for concluding that the immune opsonin had the constitution of an immune body; if it has this constitution in some cases, then it is a modified type, as it has also an active or zymotoxic group.

Dr. Dean, in reply, said: The Section is to be congratulated on the valuable contributions made by several of those taking part in the discussion. I would like especially to refer to the work of Houston and Rankin, which seems to me of great importance as clearly providing a means of differentiating between the causal organism of cerebro-spinal and posterior basic meningitis, and for the first time proving these two diseases are separate pathological entities. But having already had a long discussion, I will not detain you any longer, but will now close the discussion.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

RED LIGHT AND IODINE PAINT.

I should like to point out a fact about the use of iodine which is not generally known. If iodine is painted on the human skin in the dark and only a red light such as is given by an ordinary photographic lantern is used there will be quick absorption. The skin will be neither discoloured nor blistered, even under prolonged use. I believe I am the first to discover this method, and have used it for ten years at least.

The part painted should be immediately covered up, as exposure to any white light fixes the iodine in the skin.

London, S.W. J. Dunbar-Brunton, M.B.

REPORTS OF SOCIETIES.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

J. O. AFFLECK, M.D., President, in the Chair.

Wednesday, November 6th, 1907.

VALEDICTORY ADDRESS.

THE PRESIDENT, in a valedictory address on The Present Position of Medical Science, after paying tribute to the value of modern methods of investigating disease, said that older lines of investigation to the trained and careful observer afforded information of the highest importance. Diseases of the blood, chest, heart, ductless glands, and many other organs, stamped themselves unmistakably on the countenances of the sufferers. The study of "the physiognomy of disease" should be begun early, and included more than mere perception. Every page, every sentence, every word in Nature's book of disease should be closely studied, for Nature presented object lessons in every disease. He then discussed "clinical impressions," which he defined as views presented to the mind of the physician as to the condition of the patient and his prospects of recovery or death. Such impressions were often difficult to define; they were often, however, of the highest importance, since they might indicate lines of treatment which alone might lead to recovery. Again, the "psychical factor" should never be neglected. The influence of mind on disease was well recognized. Mental lethargy and depressions often required to be combated by the physician, since they alone might stand between the patient and recovery. It should never be forgotten that the patient scrutinized his doctor's face as carefully as the latter did his patient's, and that hope, courage, and the wonderful solace derived from sympathy might be born by a look.

HERNIA IN YOUNG ADULTS.

Mr. GEORGE CHIENE read a paper on an operation for uncomplicated inguinal hernia in young adults, which is published in full at p. 1389.

EXHIBITS.

Mr. COTTERILL showed: (1) A large lympho sarcoma of the chest wall, which he proposed to treat by the *x* rays. (2) A patient who had suffered from an orbital angioma, causing marked proptosis; ligature of the common carotid artery had resulted in a cure. Mr. ALEXIS THOMSON: (1) A child with spontaneous fracture of the lower end of the femur, probably the result of osteo-myelitis fibrosa. (2) A child who two years ago had met with a green-stick fracture of both bones of the forearm; no union had occurred, so that the limb was practically useless. Mr. STILES: (1) A patient who had been operated on three times for recurrent malignant disease which had originally appeared on the floor of the mouth; the tongue, the lower jaw, the hyoid bone, the glands in the anterior triangle of the neck had all been removed. (2) A patient, aged 80 years, after operation for sarcoma which arose in the antrum of Highmore.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Sir HENRY SWANZY, P.R.C.S.I., President, in the Chair.

Friday, November 1st, 1907.

LIGATURE OF THE INNOMINATE ARTERY.

SIR THOMAS MYLES read a communication on this subject, and described the case of a male patient, aged 29 years, who suffered from a right subclavian aneurysm. He gave the reasons why he was led to reject treatment by Syme's method of opening the sac, followed by ligature of the artery on the proximal and distal sides, and also the treatment by distal ligature alone in favour of ligature of the innominate artery. The chief of these was that the most frequent cause of failure in previous attempts—namely, secondary haemorrhage induced by sepsis—could now almost certainly be prevented. Most of these operations had been carried out in the preantiseptic era, while Mr. Coppinger's case, which was brilliantly successful, was performed with strict antiseptic precautions. He then discussed the methods of approach to the artery, finally selecting a median incision in the lower part of the neck, the ligature being accomplished without either division of the sterno-mastoid, resection of the inner end of the clavicle, or trephining the sternum. In addition to securing the innominate he placed a double ligature on the right common carotid dividing the artery between. He expressed the opinion that in carrying out this step he left too short a distance between the two ligatures, and that to this the eventual failure of the operation was due. At first the subsequent progress of the case was very favourable. The wound healed by first intention, the pain caused by the aneurysm disappeared, and the patient felt very well. The pulsation in the aneurysm, however, persisted. About ten days after the operation a large subcutaneous haemorrhage occurred, which was treated by reopening the wound and securing the bleeding vessel, which could not be identified. Subsequent haemorrhages, however, took place, necessitating further operations, which for a time checked the bleeding. The wound now began to suppurate, the haemorrhages continued to take place, and, finally, the patient died about a month after the first operation. The *post-mortem* examination showed that the source of haemorrhage was the carotid artery, from which one of the ligatures had slipped.

Mr. WILLIAM TAYLOR said there were, after all, only two reasons why success should not attend the effort to ligature the innominate artery—first, failure in the establishment of the anastomotic circulation of the brain; and, secondly, sepsis. One ought to be able to control the latter, and therefore should be able to control the secondary haemorrhage. Yet they all knew how possible it was for some septic infection to creep in, and in Sir Thomas Myles's case it was just possible that there may have been some source of infection in the bottom of the wound in the deep structures. Barwell had drawn attention to the fact that death in such cases almost invariably arose from secondary haemorrhage, and had stated that if ever he came to ligature the innominate artery he would ligature the vertebral artery as well as the innominate and carotid.

Sir THOMAS MYLES, in replying, stated his belief that the cause of failure was that the ligature on the common carotid had slipped.

LIVERPOOL MEDICAL INSTITUTION.

Mr. T. H. BICKERTON, Vice-President, in the Chair.

Thursday, November 7th, 1907.

AN UNUSUAL CASE OF ATAXIA.

DR. F. S. HEANEY showed a case of ataxia presenting an unusual combination of symptoms and some difficulty in diagnosis.

The patient, a painter aged 52, developed a spinal curvature in the dorso-lumbar region when 2 years old, presumably as the result of caries. The curvature had caused no symptoms, and the patient had never had syphilis. Ataxia, Rombergism, absence of knee-jerks, numbness of the feet, and diminution of pressure sense over the lower extremities appeared six months ago. There were no Argyll-Robertson pupil phenomena, no lightning pains, and no interference with the fields of vision or with cutaneous sensation. Muscle power and sphincters were normal. Cutaneous reflexes were normal, the plantar being flexor in type. The only alterations in his condition in the last six months were a transient left ankle clonus and a recent slight return of right knee-jerk.

The differential diagnosis between tabes, combined system degeneration, and recurrence of spinal caries with focal myelitis and posterior column degeneration was discussed, the exhibitor deciding in favour of the last diagnosis.

Dr. T. R. BRADSHAW said the present condition, apart from the history, would justify a diagnosis of tabes, and often in cases which were obviously specific no history of infection could be obtained. The Argyll-Robertson pupil was only observed in about 80 per cent. of cases of tabes. If the knee-jerks returned again he would suggest that the ataxia was due to a neuritis possibly caused by lead (there was a history of lead colic) producing a condition analogous to alcoholic pseudo-tabes.

KROENLEIN'S OPERATION.

Mr. R. J. HAMILTON gave a short description of Kroenlein's operation, and showed a successful case in which this operation had been done for a tumour surrounding the optic nerve, and causing considerable proptosis. The tumour was a spindle-celled sarcoma, and measured

1¼ in. by ⅛ in. The results were: an eye with good vision, perfectly free movements, and very little scarring in the temporal region—the seat of the incision.

Dr. K. Grossmann remembered being consulted by the same patient, who had been told at an eye hospital that the proptosis was due to one-sided exophthalmos, and recommending an operation. At that time a hard tumour could be felt between the lower outer orbital margin and the eyeball, and it was an open question whether it could not have been removed by a simple incision along the lower margin of the orbit. He considered that Kroenlein's operation was suitable for cases of retro-ocular tumour which could not be removed from the front without severe damage to the eyeball.

The Orthodiagraph.

Mr. C. Thurstan Holland showed and explained the working of the Levy-Dorn orthodiagraph, which had been in use at the Royal Infirmary since last June. This pattern allowed of the patient being examined either lying down, standing, or sitting. It was pointed out that the lying down position was undoubtedly the best, and for this the exhibitor had found the instrument devised by Professor Moritz the more reliable and the easier to work. Tracings of hearts at different ages were passed round.

An Elongated Meso-Caecum.

Mr. Douglas-Crawford read a note upon two cases associated with elongated meso-caecum.

1. Volvulus of the caecum in a woman, aged 39, the torsioned mass lying above the umbilicus on the left side. Early operation resulted in a successful untwisting of the mass, and the patient made a good recovery.

2. Malignant caecum in a man of 35. The "lump" lay in the right lumbar region, moved freely with respiration passing up behind the liver, and down as far as the iliac crest, but not reaching the iliac fossa. The mass was excised and later the faecal fistula closed, but only after a lateral anastomosis had been effected between the ileum and the transverse colon. The patient was perfectly well one year after the excision of the growth.

The Roth-Drager Anaesthesia Apparatus.

Dr. F. M. Gardner Medwin gave a demonstration of the Roth-Drager oxygen-chloroform apparatus, with a short note and report on 25 cases. The advantages of the apparatus were regular doses of known quantity and the easy control of the concentration of atmosphere. It was compared with other mechanical apparatus and stated to be of great value in serious cases when ether narcosis was contraindicated. The cases reported were all serious ones and mostly of long duration. They all showed complete absence of cyanosis and in cases where ether had caused profuse salivation and venous engorgement the apparatus was particularly useful. One case of empyema, although the patient was unable to lie down and coughed up pus continually, after a few breaths of free oxygen easily bore the gradual exhibition of chloroform and was able to lie down and take the anaesthetic quite easily.

Dr. Fingland said that the method of administering oxygen with chloroform was suggested by Dr. Nicholson, of Liverpool, some years ago, and that his apparatus was figured in the British Medical Journal in 1896. Dr. Nicholson's theory was that the lessened blood pressure produced by chloroform, and the corresponding slowing of respiration and circulation interfered with the elimination of carbonic acid, and caused its accumulation as an active toxin, which condition would be prevented by the administration of oxygen with the chloroform vapour. But Dr. Fingland was of opinion that the effect of the admixture of oxygen with the chloroform would be to inhibit to some extent the combination of chloroform with the red corpuscles of the blood, and by this means remove the real danger of chloroform narcosis. After referring in detail to several points of the Roth-Drager apparatus, he suggested the more extensive use of ether by the Rochester method of administration as possessing the advantages of a safe and natural anaesthesia.

Dr. F. W. Bailey thought that the length of time required for induction and the difficulty which would be probably met with in the case of full-blooded, strong workmen, and the complications of the apparatus would prevent it coming into general use in hospital practice, while its cumbersomeness and want of portability would make it difficult to use in private practice; and, furthermore, he saw difficulties in the way of using for mouth operations. The administration of anaesthetics could not be reduced to "rule of thumb."

Mr. Newbolt said Dr. Medwin had used the apparatus many times in major operations on patients under his care. He was convinced that it was a most efficient way of administering chloroform. Patients appeared to suffer less from shock, and their condition was better than when chloroform was given by one of the usual methods. He was not certain whether the oxygen caused some slight bronchial irritation, and suggested that it should be warmed before being inhaled.

ROYAL SOCIETY OF MEDICINE.

Surgical Section.

J. Warrington Haward, F.R.C.S., President, in the Chair.

Tuesday, November 12th, 1907.

Operation for Goître.

Mr. James Berry read a paper on 274 additional cases of goître treated by removal. More than three-fourths of the patients came from country districts, and of those who came from London or other cities many had lived in the country and in places where the water supply was of doubtful purity. Many of the operations were for encapsuled tumours, and it was not suggested that drinking-water could have any effect in the production of these. The reasons for operation were dyspnoea in 64·5 per cent.; deformity, 12 per cent.; discomfort and deformity, mostly with minor degrees of dyspnoea, 17 per cent.; malignancy, papilliferous tumours, etc., 3.6 per cent.; suspected malignancy, dysphagia, and increase in size, 2.5 per cent. The author pointed out that no degree of dyspnoea was too severe to permit of operation for the removal of the goître, and it was, indeed, the commonest and most urgent indication for it; in his opinion the dyspnoea was always due to direct pressure on the trachea, and not to irritation of the recurrent laryngeal. Of the 274 cases, 203 were encapsuled tumours, 106 solid adenomata, 94 cystic adenomata, 2 pure cysts, and 1 hydatid; of 71 non-encapsuled, 26 were parenchymatous, 28 adeno-parenchymatous, and 17 papilliferous and malignant. Haemorrhage into the softer forms of adenoma was common, and often caused severe and sudden, or even fatal, dyspnoea. The results of operations for innocent tumours had been very satisfactory, the mortality being very little more than 1 per cent., and the complications negligible. In seven operations undertaken for malignant goître three patients died, and in three others recurrence took place; the outlook in these cases was gloomy in the extreme. No cases of genuine exophthalmic goître were included in the series, and the author believed the advisability of removal for true Graves's disease was open to grave doubt. The operation performed was in 208 cases some modification of enucleation, and in 59 extirpation, partial or complete. In most operations it was best not to remove that portion of the goître which lay next to the oesophagus, recurrent laryngeal nerve, and side of the trachea.

Mr. Warrington Haward referred to the technical excellence of the results as indicated by the perfect scars exhibited by the numerous patients shown. He would like to know why chloroform was employed to the exclusion of ether.

Sir Victor Horsley said that, whilst he agreed on the propriety of postponing operative measures in the parenchymatous enlargements in young people, he thought adults benefited but little from medicinal remedies, and that dyspnoea was not the only indication for the knife. Some of the encapsuled and outlying tumours were really parathyroidal. Apart from true Graves's disease, many even of the adenomatous tumours were associated with neurasthenic symptoms, which disappeared after operation.

Mr. Spencer referred to cases of exophthalmic goître under his care which had benefited from division of the isthmus and removal of small portions of both lobes. With regard to cases of goître in middle-aged and old people, he thought the only way to secure any improvement in the figures relating to malignant cases was to operate before there was even definite suspicion of malignancy, and not necessarily to wait for dyspnoea.

Mr. Paterson said that he had recently attended a symposium on goître at Rochester, U.S.A., and had heard

American surgeons advocating operation in Graves's disease. Charles Mayo reported 110 cases with 10 deaths; 50 per cent. were "cured," 25 per cent. were partially relieved, and 25 per cent. were unsatisfactory. The anaesthesia employed was ether by the open method.

Mr. BERRY replied briefly.

CLINICAL SECTION.

AT the meeting on November 8th, Sir THOMAS BARLOW, Bart., President, in the chair, the following were among the exhibits:—Mr. J. HUTCHINSON, jun.: (1) A man, formerly suffering from *Trigeminal neuralgia*, who had been treated, but unsuccessfully, by intracranial neurotomy of the second and third divisions of the fifth nerve, for whom he had then excised the lower part of the Gasserian ganglion, with relief of the pain. Mr. BALLANCE criticized the treatment.—Dr. BERTRAM L. ABRAHAMS: A man, aged 43, the subject of *Myopathy* for seventeen years. The legs first became weak, subsequently the arms. There was definite wasting of the muscles of several regions, but hypertrophy of the deltoids and serrati magni, and, to a less degree, of each biceps, infraspinatus, and rectus abdominis. There was no response to electricity in the deltoids; otherwise the electrical reactions were normal. The erect posture was only maintained by violent lordosis. The gait was straddling, and the patient walked entirely on his toes, the heels never touching the ground. Dr. Abrahams considered the case most nearly allied to Erb's juvenile form of muscular atrophy. Dr. H. BATTY SHAW exhibited a woman, aged 41, who, having formerly been the subject of exophthalmic goître, had lately suffered from *Myxoedema*, ascites, and albuminuria. In 1903 the abdomen was twice tapped, and 20 pints of ascitic fluid were withdrawn on each occasion. She had taken 15 grains of thyroid gland daily, and all the symptoms had been thereby much improved; but she was subsequently away from the hospital for two years, not taking thyroid, and the symptoms returned. She had now for two weeks taken the remedy and was again better. Dr. PARKES WEBER, Dr. HERRINGHAM, and Dr. A. E. GARROD discussed the case, and another case of the kind by Dr. Pasteur in the thirty-third volume of the Clinical Society's *Transactions* was mentioned. Mr. T. H. OPENSHAW: A man, aged 27, the subject of *Recurrent dislocation of the shoulder*, the result of epileptic fits since 1896. The joints had been dislocated fifty times a year. Rest, operations by injection into the joint, removal of cartilage from the joint surfaces, and division of the pectoralis major had proved ineffectual in preventing dislocation. Then the insertion of the subscapularis was detached from the humerus and fastened to the deltoid in both shoulders, and no dislocation had since occurred. The movements of both arms were fairly perfect. Mr. Openshaw had done the operation three times, with a permanent cure in each case, the cases having been watched for six years, two years, and sixteen months respectively. Mr. HUTCHINSON, jun., stated that in many cases of ordinary dislocation the subscapularis was torn. Dr. W. P. HERRINGHAM: (1) A male, aged 17, suffering from *Neuritis* of the right brachial plexus, probably resulting from arthritis of the shoulder-joint. For a fortnight the patient had fleeting pains in his ankles and elbows, swelling of the right wrist, but no endocarditis. Treated with salicylate of soda he lost the swelling of the wrist, and became free from pain; fourteen days subsequently wasting of the deltoid was noticed, pain below the shoulder recurred, with anaesthesia in areas involving almost every root in the brachial plexus. The lesions spread, and reaction of degeneration was observed in many muscles around the joint. In reply to Dr. SIDNEY PHILLIPS, Dr. HERRINGHAM said the trouble was probably a perineuritis. Mr. HUTCHINSON, jun., had seen a peripheral neuritis start in fracture of the olecranon. Dr. HERRINGHAM: (2) A male, aged 40, who had *Pigmentation with enlarged spleen and leucopenia* (? splenic anaemia). He had been a gymnasium instructor, who until two years ago had had robust health. His symptoms were pigmentation, loss of weight, weakness, and vomiting in periodic attacks. The body was particoloured, spleen enlarged; the blood showed an average of 4,500 red cells, and a colour index of 0.93, but a persistent leucopenia, the leucocytes being nearly always below 3,000 and once only 1,700. The differential count was natural. The man had greatly improved in strength, and had had no vomiting since admission to hospital, but the condition of his blood remained unchanged. He had been treated with liq. arsenicalis in 10-minim doses. Dr. R. MURRAY LESLIE: Two cases of *Congenital heart disease in adults*. One was a girl, aged 23, who had had cyanosis and clubbing of fingers from birth. She was intensely cyanosed, and had subnormal temperature. The heart was enlarged to the right, and there was probably a patent ventricular septum, with other abnormalities. The second patient, a woman, aged 30, with pulmonary stenosis for the last twenty years, and liable to attacks of giddiness and breathlessness, also had cyanosis and clubbed fingers, with livid nails. The right ventricle was enlarged, with a loud, harsh, systolic murmur, loudest in the pulmonary area. She had pulmonary stenosis and some patency of the septa. Although in her fourth decade, she appeared to be in better health than ever. The red blood corpuscles numbered 9,630,000 per c.mm. Dr. PARKES WEBER said that the enormous increase of the red cells might be diminished by oxygen inhalation.—Dr. J. FAWCETT read a paper on *Pneumothorax treated by aspiration under the x rays*. The patient was a man, aged 22, admitted into Guy's Hospital with pneumothorax of the right side, and much dyspnoea. As his condition was unchanged after nineteen days, he was placed on his back on the couch in the *x*-ray room, and a trocar and cannula were inserted into the pleural sac in the sixth or seventh interspace. The lung being seen to be compressed towards the spine, the trocar could be passed so as not to touch the lung. The cannula was then connected by tubing to a sterilized partially exhausted bottle; the lung was at once seen on the *x*-ray screen to expand, and when the lung was fully expanded the cannula was withdrawn and the puncture sealed. The lung at once acted perfectly to the respiratory movements, and twelve days afterwards the man was discharged well. He had since continued well, and was at his regular work. Dr. P. WEBER thought recovery from pneumothorax was usually so good that he did not advise an operation. Dr. SUTHERLAND had successfully aspirated a man of 25, but found that Sir W. Gairdner greatly objected to the operation. The treatment should only be adopted where the patient suffered greatly, as from dyspnoea. Dr. FAWCETT replied.

LARYNGOLOGICAL SECTION.

AT the first meeting of this Section on November 1st, Dr. J. BARRY BALL, the President, in the chair, the following were among the communications:—Mr. ALEXANDER TWEEDIE: A microscopic specimen of a localized *Pulsating growth* of the middle turbinal which had given rise to recurrent severe epistaxis. Mr. F. A. ROSE: A chicken bone removed after nearly forty-eight hours' *Impaction in the larynx*. It had caused neither dyspnoea nor cough. Mr. HAROLD BARWELL: A man on whom *Thyrotomy* had been performed one year and nine months before for tuberculous laryngitis; the larynx remained soundly healed, and the lung disease was quiescent and in an early stage; there had been aphonia for fifteen months before operation, but the voice had now returned. Dr. STCLAIR THOMSON: A woman, aged 40, in whom extensive tuberculous laryngitis had become healed after tracheotomy and galvano-cauterization. Dr. FURNISS POTTER: A tumour removed from the naso-pharynx fifteen weeks after operation for adenoids; it was considered that it consisted of blood-clot with a remnant of the adenoid vegetation. Dr. PETER ABERCROMBIE made a further report on a case of *Cellulitis of the neck* shown before the Laryngological Society in January, 1907; the case had proved to be one of epithelioma of the right side of the epiglottis, half of which had now been removed. Mr. DE SANTI thought that a more extensive operation should be performed. Dr. F. SPICER: A case of *Ulceration of the left cord* in a man, aged 40, who had been treated for hoarseness in 1903; there was a general opinion that the disease was malignant, and further exploration was recommended. Mr. CLAYTON FOX: A case of crusting in the nose without atrophy of the turbinals.

MEDICAL SOCIETY OF LONDON.—At a clinical meeting on November 11th, Dr. KINGSTON FOWLER, President, in the chair, the following were among the exhibits:—Dr. G. F. STILL: A case of *Cleido-cranial dysostosis* in a boy aged 6 years with a widely open anterior fontanelle, the

clavicles were deficient in the outer part, so that the shoulders could be approximated anteriorly in a remarkable manner. Dr. F. J. Poynton referred to a case shown by Dr. Sprigge, in which the fontanelles had closed, but in which the clavicles were absent. Dr. T. D. Savill: A case of juvenile *Tabes dorsalis* in a lad aged 18, whose father contracted syphilis a year before the boy was born, and who was now suffering from advanced tabes dorsalis. Mr. Hugh Lett: A woman aged 32, with *Melanotic sarcoma*. Six years ago the disease began as a small speck on the front of the left forearm. There were at the present time seventy-two tumours, each of which began with twenty-four hours' pain, which disappeared when the tumour developed. With some there was a considerable amount of subcutaneous haemorrhage. Dr. A. F. Voelcker pointed out the parallelism of such cases with chloroma. Dr. F. J. Poynton: A case of *Precocious development* in a male child aged 3½ years. When 12 months old he grew fast, and pubic hairs and sexual development were noticed. The voice was deep. No suprarenal tumour was to be felt. The patient was emotional, and had an excellent memory. Dr. A. F. Voelcker: A case of *Enlarged liver* in a boy aged 10½, who suffered from jaundice in 1902. The liver was now felt 4 in. below the costal margin, with a firm rounded nodule on the under surface near the gall bladder. The diagnosis of hydatid cyst was discussed. Dr. F. S. Palmer: A case of primary progressive myopathy of the facio-scapulo-humeral (Landouzy-Dejérine) type in a boy aged 15 years. There was well-marked myopathic facies; the cheeks and lips were flaccid, and both lips had a thickened appearance. Brissaud's sign of apparent lengthening of the neck was well marked. Dr. C. W. Chapman: A case of malignant disease of the oesophagus in which marked benefit had been obtained by the use of a short tube. The patient was a man aged 56, with an obstruction 11½ in. from the mouth, for the relief of which intubation was carried out. By the use of the tube the patient was able to swallow food and milk with comfort, whereas before fluids took some time in finding their way to the stomach, and the patient was conscious that an obstruction had to be passed. Mr. Kellock, in discussing the case, suggested that the obstruction might be caused by a tumour pressing on the oesophagus; and Dr. Chapman, in replying, said that that view of the case had been recognized.

West London Medico-Chirurgical Society.—At a clinical meeting on November 1st, Mr. Richard Lake, President, in the chair, the following patients were shown:—Dr. Arthur Saunders: A boy, aged 6, with *Chronic disseminated myelitis*. The patient was attacked with scarlet fever a year ago; this was followed a fortnight later by the onset of paraplegia with anaesthesia of the legs and lower part of the trunk. His condition has remained practically stationary since that time.—Dr. F. S. Palmer: A boy, aged 15, with *Primary progressive myopathy* of the facio-scapulo-humeral type. No nervous disease in family. Five brothers and two sisters living and well. The patient was quite well until eighteen months ago, when he first complained of fatigue and weakness in the arms and shoulders; at the same time it was noticed that the facial muscles were weak. The wasting and weakness had been steadily progressive.—Dr. Blair: A youth with congenital absence of iris. In the right eye the iris was entirely absent, and the lens deficient at its lower edge, with a small anterior pyramidal cataract. The left eye had practically the same defects. His father and sister had somewhat similar congenital anomalies of the iris.—Dr. Seymour Taylor: Man, aged 34, with *Perforation of the aortic valve*. The patient had had lead colic on two occasions, and has a typical blue line on the gums. While lifting a heavy weight he experienced severe pain in upper zone of the chest, a choking sensation in the throat, and faintness. There was a diastolic thrill all over the front of the chest, and a loud diastolic musical murmur all over the chest, back and front; also over the upper half of each humerus.—Mr. McAdam Eccles: A man, aged 45, with *Charcot's disease* of the left knee. Signs of locomotor ataxy for three years; the pupil reaction was only present on the left side. The joint became largely distended with fluid in three days, and without pain. Fifteen ounces of fluid were aspirated from the joint and a plaster case applied. While this was on no re-collection of fluid took place, but on its removal the joint became distended in the same time as before.—Mr. Aslett Baldwin: (1) A woman, aged 29, on whom *Excision of the rectum* for carcinoma had been performed by an abdomino-anal method. Admitted with complete intestinal obstruction of ten days' duration, colotomy was performed on her. Later the abdomen was reopened and the attachments of the rectum divided as high as the sigmoid flexure. The anus was dilated, and the bowel and growth forced out through the anus, forming an intussusception. This was cut off externally and the bowel united by circular suture and returned. The sigmoid was attached a short distance above the anus. The patient had perfect control and normal action of bowels. (2) A case of lengthening of the left leg and extensive naevus of left half of body. A venous naevus occupied the left side of the trunk and most of the left thigh, leg, and foot. The left leg was 2½ in. longer than the right, and the left foot was ½ in. longer; but the left calf measured 11½ in. in circumference, whereas the right measured 13 in. Varicose veins were also present in the left leg. (3) *Carcinoma of right breast* in a man, aged 30, first noticed about ten months ago; it had been ulcerated about a month. There were two secondary growths in skin near the primary one; numerous hard and enlarged glands in the axilla. A microscopical section of one of the secondary growths showed typical scirrhous carcinoma. (4) A girl, aged 4, with enlargement of the right scapula, first noticed two months ago. The lower end of the right fibula was markedly thickened, and nodules could be felt on the metacarpal bones and phalanges of the right hand. There appeared to be no pain or tenderness.

North London Medical and Chirurgical Society.—At the opening meeting on October 10th, the President (Dr. Alexander Morison) took the chair, and gave a short introductory address. Medicine, he said, was justly termed a noble profession, but it was not a very lucrative business. Let medical men work intelligently, steadily, and silently, and not stand before the public as monuments of unrequited worth. The best security for the practitioner of medicine was the assiduous cultivation of a knowledge of his profession by means of such a Society as that which had brought them together, a hospital such as the Great Northern Central in which they were assembled as a centre, and the hourly opportunities afforded by private practice. The majority of patients could appreciate and remunerate intelligent attention, and the power to heal was a very saleable commodity. It was intended to make the meetings of the Society as clinical as possible, and he hoped each member would regard himself as a responsible factor in gathering recruits to their ranks. A number of cases and specimens were then shown, then a case of cerebro-spinal meningitis which had recovered under treatment by a vaccine prepared from the patient's own organism. It was shown by Mr. R. M. Gunn, a house-physician at the hospital.

Ulster Medical Society.—At the opening meeting of the session on November 7th, Dr. John McCaw, of Belfast, having been installed in the presidential chair by Dr. D. P. Gaussen, his predecessor, delivered an address on tuberculosis in childhood and its relation to cow's milk. Statistics, he said, showed that in the medical out-patient department about 5 per cent. of all cases were tuberculous. Among surgical out-patients the percentage was 40; in the medical wards there was about 10 per cent. and in surgical 48 per cent. The latter were chiefly lesions of glands and abscesses, and bone and joint disease. It was extremely rare to find a case of pulmonary tuberculosis following the adult type. These, and other statistics, as well as the findings of the recent Commission on Tuberculosis, all tended to prove that in children the disease was, in all probability, of bovine origin.

Sir James Digges La Touche, K.C.S.I., and Sir Shirley F. Murphy will be the guests of the Irish Medical Schools' and Graduates' Association at their dinner on Wednesday, November 27th, at the Hotel Cecil, London, W.C.

A medical automobile club has lately been founded in Vienna. The object of the club is to facilitate the purchase and hiring of automobiles, and to provide for their maintenance in good working order at a fair rate.

REVIEWS.

THE BLOOD-MAKING ORGANS.

DR. KONRAD HELLY'S volume dealing with the haematopoietic organs[1] forms a part of the second (German) edition of Nothnagel's System of Special Pathology and Therapy, and is introductory to the study of the group of diseases known generally as the anaemias, placed under the subeditorship of Professor Ehrlich and Dr. Lazarus. Dr. Helly, whose name is well known in the field of haematological investigation, shows himself to be not only a worthy exponent of the special views propounded by Professor Ehrlich, but also to be a writer well qualified, both by reason of his own investigations and his wide literary knowledge, to give a personal and impartial verdict of the views put forward by other investigators.

Dr. Helly has divided his subject into two parts. The first contains a discussion of the histology and physiology both of the lymphatic glands, including isolated lymphatic tracts, and of the spleen, and sections dealing with the pathological histology of these tissues, including the consideration of such processes as atrophy, hyperplasia, inflammation (granulomatous and otherwise), cyst-formation, lymphomatous development, and the invasion of lymphatic tissues by various primary and secondary neoplasms. The second part—much more extensive, taking up fully three-fourths of the volume—is devoted to the consideration of the minute anatomy, functions, and pathology of the bone marrow. This tissue, which has occupied the attention of many investigators of recent years, has hardly been treated as thoroughly in textbooks on systematic medicine as the importance of the many problems connected with it deserves. So far as we are aware, no such effort as Dr. Helly's has yet been made to correct this fault, and we commend to all investigators his valuable summary of work dealing with the subject. This tissue will be found to be dignified not only with all the anatomical trappings of a definite parenchyma, connective tissue, reticulum, and vascular supply, but also with well defined pathological characters which if, as Dr. Helly impresses us, not of an obvious naked-eye nature, are none the less by microscopic and histo-chemical manipulations rendered clear. By these means it is possible not only to recognize atrophic and hyperplastic changes, but the more special alterations incidental to anaemia, leucocythaemia, myelomatosis, and sarcomatous development. There is little wonder that pathologists have been slow to take up this new field of special study, so deterrent is the wide range of the literature relating to the subject; but there is another and much more fundamental reason, namely, the limitation which is found to hedge in all considerations of the minute histological points of difference amongst the white corpuscles of the blood; more especially is this the case when we consider in extravascular sites the group of cells known under the generic term of "granulocytes"—that is, those cells which, irrespective of their size, nuclear configuration, and protoplasmic peculiarities include small granules of varying size, which present different tinctorial reactions, these differences not being always of pathological moment, but, as Dr. Helly admits, occasionally due to vagaries of technique.

Dr. Helly, in an elaborate discussion, pays the closest attention to the views held to explain the genesis of the two very distinct types of cells represented in the blood, and included under the term "granulocytes and lymphocytes." Comparatively easy as it is to distinguish these groups when they occur in blood films, the difficulties may be almost insuperable when an effort is made to trace in such a tissue as the bone marrow, spleen, or other lymphatic tissue the same types of cell. The tissue myelocytes and tissue lymphocytes, though preserving some of the features of the circulating types, present distortions of others, the nuclei much more frequently show mitoses even irregular in type, the protoplasm is changed quantitatively and qualitatively, and in the case of the granulocytes, the reader will, we suspect, find some cause for quarrel with Dr. Helly, for with all the care he has taken to give clear pronouncements, the description of the non-granular representatives of the myelocytes is inadequate. A few well-chosen diagrams would help in this direction, or even a little lettering in the coloured plates would have enabled the reader to understand the picture Dr. Helly wishes to convey.

He has adopted Ehrlich's well-known views of the specificity of the granulocytes and lymphocytes: the marrow is the seat of formation of the former and the lymphatic collections, including the spleen, of the latter. When clinical and pathological observation fail clearly to establish this view, Dr. Helly musters experimental and histological inquiries to show that granulocytes never do originate in any place other than the marrow; whenever they appear in other parts of the body this is due to a diffusion (*Ausschwemmung*, *Verschleppung*) of the same from the bone-encased marrow. There is no possibility of a metaplastic development in any lymphatic tissue of granulocytes from local lymphocytes, nor by analogy with the occurrence of vestigial growths of suprarenal tissue in the testicle or of muscular fibres in rhabdomyomata of the kidney is it permissible to think that the granulocytic conversion (*Umwandlung*) of the splenic and lymphatic tissue is due to the survival and ultimate proliferation of dormant embryological forerunners of the myelocyte which, owing to developmental irregularity, are included in these tissues. Such myelocytic development must be due to a "colonization" as opposed to a metastatic growth of alien cells. Although the arguments advanced by Dr. Helly, in the present incompleteness of our knowledge, almost command conviction on the part of the reader, we cannot help but state our hesitation to accept the view that the mere incident of birth should be held to fix a limit to the further exhibition of cellular metamorphoses which are acknowledged to occur during antenatal existence. The genesis of the various forms of leucocytes is but one of many important problems which Dr. Helly discusses; and in conclusion we would call the attention of the reader to other points which are equally well presented to his notice, such as the author's recommendation of the clinical use of the term "sublymphaemic leucocythaemia" when referring to some of the members of the group of diseases known as lymphadenoma, the distinction of lymphomata from lymphosarcomata, and the necessity for considering the spleen as nothing more than a "regional lymphatic gland of the circulation," as Dr. Helly puts it, as opposed to the ordinary lymphatic glands which are interposed in the lymphatic circulation.

Dr. Helly tells us that comparatively little work has been done to establish any functional relation between the spleen and bone marrow; this, however, happens to be one of matters considered in an important monograph by Dr. KURT ZIEGLER.[2] The experimental part of this monograph consists of a study of the changes in the blood picture and in the tissues, especially the haematopoietic ones, which follow upon the exposure of the spleen alone or of the spleen and bones or lymphatic glands of the mouse, guinea-pig, and rabbit to the influence of Roentgen rays. A relative and absolute reduction of lymphocytes was found to occur constantly; this was associated with an increase in the polymorphonuclear cells. Probably the earlier manifestations of this change were due to an inflammatory reaction; but in the opinion of the author the subsequent maintenance of the change is due to a particular interaction of the spleen and marrow, the discussion and proof of the existence of which forms the main thesis of the work. Although the lymphatic glands showed some changes, these can be excluded from discussion in favour of the more obvious and more extensive changes met with in the spleen and marrow. Heinecke and the author in conjunction with Krause have already shown that it is possible so to regulate the exposure of the spleen to the Roentgen rays that there shall occur a total or partial destruction of the follicles of the spleen, due to necrotic destruction of the lymphocytes entering into their formation, without damaging the stroma or blood vessels of the spleen or even the skin and muscle of the abdominal walls. Dr. Ziegler repeated these results, but was further able to show that new cells are formed in the spleen subsequently to the exposure to the Roentgen rays and that these cells showed mitoses and presented characters such as are met with in myelocytes; further, the

[1] *Die haematopoietischen Organe in ihren Beziehungen zur Pathologie des Blutes.* Von Dr Konrad Helly. Wien: Alfred Hölder. 1906. (Super royal 8vo, pp. 205, 1 illustration and 1 coloured plate. M. 5.20.)

[2] *Experimentelle und klinische Untersuchungen über die Histogenesis der myeloiden Leukaemie.* Von Dr. Kurt Ziegler. Jena: Gustav Fischer. 1903. (Roy. 8vo, pp. 125; 2 lithographic plates. M. 4.60.)

marrow was shown to have undergone a myelocytic hyperplasia and myelocytes to have entered the blood stream so as to produce a veritable myelocythaemia; in other words *experimental myelocytic leucocythaemia was produced and was developed as a result of changes taking place in the spleen which were instrumental in provoking activity in the marrow.* Dr. Ziegler gives a full account of the blood pictures obtained during life and the histological changes met with after death in 3 cases of human myeloid or myelocytic leucocythaemia, and though the agencies causing the necrosis of the lymphatic tissues are unknown to the author unless infection or trauma is to be considered to be capable of originating such change, yet Dr. Ziegler claims that, given this necrosis of spleen tissue, changes will be met with in other organs closely parallel to those found in experimental myelocythaemia. Space prevents us from following the author in his discussion of the various theories as to the origin of leucocytes, but obviously he is an ardent disciple of Paul Ehrlich. Our criticisms already made with respect to Dr. Helly's means of detecting non-granular samples of myelocytes apply here too; the reader will find great difficulty in recognizing myelocytes in Figs. 6, 9, and 70.

Dr. Ziegler concludes with a practical suggestion. It is well known that splenectomy in myelocytic leucocythaemia is extremely fatal, and Dr. Ziegler suggests that if by judicious use of the Roentgen rays the spleen can be deprived of its myelocytic content, leaving it a merely indifferent lymphadenomatous organ, the blood at the same time being restored to more normal conditions, it would then be possible to perform splenectomy without any immediate harmful results, and in conformity with his experimental results the source of one material capable of provoking the myelocytic development in the marrow would be removed, and presumably the leucocythaemia would not recur.

MEDICAL NOVELS.

It has repeatedly been pointed out that it is a good thing for doctors to find relief from their strenuous life in the riding of a hobby, or in that highest form of recreation, change of work, especially if that work be literature. At all times there have been doctors who have successfully wooed the muse, and it is a little surprising that men whose profession gives them so many opportunities of seeing life in all its varieties do not more frequently record their experience in the form of novels. Of course we have some, as Smollett and Goldsmith, among the greatest, but there is room for more. Has not Carlyle said that it is every man's duty to utter that which is in him: "Produce! Produce! Were it but the pitifullest infinitesimal fraction of a Product, produce it in God's name!" Few have the time to do this, and many have not the inclination; all the more warmly, therefore, should we welcome those who put the knowledge of human nature they have gained by their special study and practice into artistic shape for the benefit of the humble but (to the author at least) necessary "general reader."

We have for some time had on our table three novels by members of the medical profession which would have been reviewed earlier but for the pressure on our space of matter of sterner stuff. Taking them in the order of their coming the first place belongs to *A Jury of the Virtuous*,[3] by Patrick Hood, a pseudonym which we understand veils the personality of a lady doctor. We congratulate her on the success which she has achieved in a new direction. The convict in fiction is not always an attractive or even interesting figure, but the ticket-of leave man who plays the part of hero in her story is an exception. Moreover, the story is interesting in itself, since it tends to prove that the hardest part of a convict's punishment comes after his release. Richard Ransome, after three years' imprisonment for forgery, finds himself at the age of 26 practically alone in the world, repudiated by his family and friends, and cut off from society. An old friend of his father's takes him in hand and Richard goes to live with him. The inevitable result follows: Richard and his host's daughter fall in love, and the match, being from the point of view of society, impossible, the lover leaves England, and travels for some time as secretary to a rich American. Meanwhile a rival does all he can to ruin him at home, and finally sets out to find and kill him; but at the last moment repents and advises Richard to return to England and marry Hertha, who is ready to forget and forgive all. Sir John, Hertha's father, withdraws his opposition, and all ends happily in one sense. But the "Jury of the Virtuous," or, in other words, Society, does not forget "a man's past" so readily, and we are left to conclude that Richard and Hertha, popular and respected as they are, will have to content themselves with each other's society, since they will be admitted to no other. This is the moral of the book: let a man strive ever so hard to retrieve the social ruin entailed by a crime that is found out, he can never, in the eyes of the world, live down his past. In the words of one of the characters:

> Nothing is the matter. . . . Only this fellow has a past, you see. Other fellows must show that they draw the line somewhere. . . . It isn't that one cares, only one must let other people think one does.

The author has a distinct sense of style, and the book is in a literary sense far above the standard of the novels which achieve popularity at the present day. She also shows much skill in the drawing of character. Poor Richard, proud and sensitive, ill in mind and body and with nerves "like sweet bells tangled, out of tune and harsh," keenly alive to any slight yet too ready to take offence at a word or a look, and suffering intensely all the while from the shame and misery of his past, is a fine study. So is old Sir John—honest, kind-hearted, the typical Englishman. Hertha is a somewhat novel type of heroine, a girl who manages to lead the life of a country gentleman on her father's estate, and is, nevertheless, all that is most charmingly feminine. A good deal of stress is laid on the fact of her being essentially "modern," which perhaps explains the phenomena of her combining the parts of hockey girl, society lady, and graduate in science with equal success. The love story of Miss MacLick and Dr. Templeton, an old maid and confirmed bachelor, which runs through the book as a sort of undercurrent to the main plot, is lightly and prettily told. It is perhaps somewhat difficult to account for the fascination Alexandra MacLick has for two men like Dr. Templeton and the American, Reuben Shout, since she is a kind of bachelor in petticoats; but she and Hertha might stand for the two types of "advanced woman"—the old "new woman," with dress and talk alike carefully copied from that of the men, and the "modern girl," with her athletics and scattered learning. The weakest part of the book lies in Richard's crime, since we are asked to believe he forged a cheque in order, to use his own words, to "rag" another man, as a kind of practical joke. Except for this, the book is thoroughly good and well worth reading. Though written with a purpose it has nothing in it of the problem novel.

Fortune's Fool,[4] by Dr. F. E. Wynne, is a story which should be specially interesting to doctors, especially those who have gone through the hard experience of assistant in a contract practice. It describes the career of a young Irish gentleman, who studies medicine against his father's wishes and in a fit of infatuation marries a nurse at the hospital where he holds an appointment. This is the first step in his downward course, for Isabel turns out to be, to use her own words, "a regular bad lot." She had expected that her marriage would make her a "county lady," but finding herself instead the wife of a struggling practitioner, she seeks to drown her disappointment in drink. She drags her husband down from being assistant in a midland colliery practice to the depths of a "sixpenny practice" in a northern seaside resort. Here, whilst she is in alcoholic coma, her husband puts an end to her life by injecting morphine. In a state bordering on distraction he sets out to walk to his home in the West of Ireland, but dies of pneumonia and exhaustion as he reaches his goal—*felix opportunitate mortis*, for in the meantime he had been denounced by a crazy fellow-countryman whom years before he had helped to cheat the hangman. There is a good deal of power in the writing, and the interest is maintained throughout; indeed, we may say that it is one of the few novels that have appeared in recent years which we have read from cover to cover. Dr. Wynne gives a terribly vivid picture of the seamy side of professional life—"shop-doctoring" and contract practice. Lionel is

[3] *A Jury of the Virtuous.* By Patrick Hood. Published by Hurst and Blackett, Limited. London; pp. 368.

[4] *Fortune's Fool.* By Dr. F. E. Wynne. Published by Brown, Langham and Co., 78, New Bond Street, London. Pp. 311. Price, 6s.

too much of a prig to be altogether a sympathetic character, but the different stages of his downfall are finely worked out, and the end is really tragic. He is interesting inasmuch as he is unlike the usual run of novel heroes. He has strange views on right and wrong, and regards murder as a thing at times both right and necessary. There is a certain moral deficiency in him: he is weak and emotional, and withal curiously and boyishly innocent. "One simply fulfils one's destiny" is his creed, and he is one who might indeed say of himself, "O, I am fortune's fool." The book illustrates the ineffectiveness of mere intellect without character.

The Way of War[5] is a novel with a very definite purpose, and, unlike the majority of such productions, it is both interesting and powerful. Of late years we have heard a great deal about the unprotected state of our East Coast, and here Mr. Scot, who is, we believe, an Edinburgh physician of considerable distinction, gives us a striking picture of the fate that might overtake us in the case of invasion. Not content with showing the utter lack of means of defence, and insisting upon the urgent necessity for providing some sort of protection by forts and naval dépôts along the coast, he paints in vivid language the folly of weakening our one source of strength, the navy, and denounces the criminal want of interest displayed by the Government and by the nation in the defence of their country. Speaking of the unprepared condition for war of Edinburgh and the surrounding districts, Mr. Scot says:

War has come upon us with the rapidity of an earthquake and as unexpectedly. . . . How we cursed the Government which, by its blind stupidity and credulous folly, had brought us to this pass. When that weak administration assumed office their war-cry was "economy," but their acts of retrenchment had been ill-judged. With singular want of foresight they had starved the great departments concerned with the defence of the country, and had seriously curtailed those wise preparations for war which, in very truth, make for peace. They had not seen or realized that, in order to secure that permanent peace which we all desired, it was not sufficient that the navy should be strong, nor even so strong as to be able to meet any probable hostile combination; it was necessary that its strength should be so overwhelmingly great that any attack on it would be realized to be an act of pure madness.

This is the moral which the story is intended to point. The plot is worked out with great skill and ingenuity, the whole action taking place within a week. The story opens in a ward of the Edinburgh Royal Infirmary, where the ravings of a German spy, dying of pneumonia, and the papers found after his death amongst his things, arouse the suspicions of Captain James Webb, of the Royal Army Medical Corps, and Sister Louie Reval. That lady has a brother, an officer in the navy, who is spending his sick leave in Germany, with the object of getting the plan of the fortifications of Kiel. From the papers found on the spy it is discovered that Frank Reval is being watched by the German Government, and is in serious danger. Webb goes to Kiel to warn him, and from that point the story is a series of stirring adventures and hairbreadth 'scapes. Reval discovers that the Germans are preparing to invade Scotland within three days, and manages to steal the dispatches containing their plan of action, of which the following is a summary: The Channel Fleet having been cruising in the North Sea, the Atlantic fleet being off the coast of Portugal, and the Home fleet not ready for sea, the German fleet was to sail for the Firth of Forth, and waiting till the Channel Fleet had put into Rosyth to coal, blow up the Forth Bridge, so that the English ships would be cut off from the open sea by the débris. Edinburgh would be then at their mercy, and they could effect a landing before the other British fleets could come up. Reval photographs the dispatches, and, disguised as his *fiancée's* maid, manages to smuggle the films through to London in time to warn the Admiralty of the intended invasion. The Germans find their carefully laid plans frustrated, and at the battle of Largo Bay are totally defeated, and their fleet dispersed. The story is well told, the adventures follow thick and fast, and the interest and excitement are kept up to the very end. The love story of Frank Reval and Marie Lenhartz is very daintily handled, and Marie, with her gay courage and practical common sense, is a charming heroine. Some of the scenes are wonderfully dramatic; for instance, when Reval in a restaurant at Kiel sees a party of German naval officers drink to the success of the invasion, and then break their glasses. The description of the ruins of the Forth Bridge and the sudden attack of the German men-of-war at night is very fine. We commend the *Way of War* to all lovers of a stirring story, and we would especially invite the attention of members of Parliament, especially those of the Labour party, to the serious teaching conveyed in so interesting a manner by Mr. Scot.

[5] *The Way of War.* By Hew Scot. Published by John Long, 13 and 14, Norris Street, Haymarket, London; pp. 316.

To those novels written by doctors we add two dealing with matters more or less medical. Of the author of *Roger Dinwiddie*[6] we know nothing, but from internal evidence we conclude that he is not a doctor. The book might almost be described as the story of a quack's career, if there is such a thing as a spiritual empiric in the same sense as the term is used in relation to medicine. Roger Dinwiddie sets up in practice, with a brass plate, in Gower Street, like any ordinary doctor, but with this difference—that he professes to cure souls, not bodies. He is not a clergyman, and seems to hold no form of creed, but treats the soul as a physician treats the body—as he expresses it, "scientifically."

> Agriculture, manufacture, literature, in barbarous times empirical, tentative, wasteful, often hopelessly mistaken, have at last called in the aid of true science. Shall religion alone lag behind?

This is his doctrine and "true science," according to him, consists in the recognition of the fairly obvious fact that different religions suit different temperaments, and that it is wisest to follow the one that suits one best! He is very broad-minded, this spiritual consultant, and proves his impartiality in regard to sects and systems by sending one patient to join the Salvation Army, and ordering another to enter a religious order. With the exception of these two cases, however, the doctor's treatment appears to consist in mere vague talk and advice, which could scarcely give relief to the blindest believer in Christian Science. The story consists chiefly in accounts of the various patients who consult Dinwiddie for their "soul sickness" and his methods of treatment, but a thin thread of plot runs through the book. The doctor falls in love with one of his patients, a lady journalist, who nearly ruins him by attacking him anonymously in the newspapers, and refuses to have anything to do with him till there is nothing left for her to do but marry him or starve. The doctor, however, describes her as "that part of me which I lost when I came to the material world, and which I have been seeking ever since." He does not rest till he wins her, and all ends happily. The public by this time having tired of their former idol, Dinwiddie and his wife emigrate to try soul curing in "fresh woods and pastures new." The story is foolish, and the folly of the thing is made more apparent by the feeble style and the crude manner in which it is told. With proper handling the main idea might have supplied the material for a good character study; but of character drawing there is practically nothing, the soul doctor and his *clientèle* being nothing more than puppets, and rather improbable puppets at that.

Mrs. Phelps Ward is well known in the United States as an opponent of vivisection. From this the nature and moral of her story of *Trixy*[7] may be inferred. The heroine is a little white performing French poodle, whose owner, a cripple boy called Dan Badger, earns his living by exhibiting her marvellous tricks to the public. Trixy, who is almost human in her intelligence, is stolen for vivisection. Being locked up near the laboratory with other animals used for experiments, she helps a black spaniel to escape. Caro, the spaniel, returns to his home, where he has been mourned as dead for two years. His mistress, Miriam Lauriat, is horrified at his mutilated condition, and, finding it to be the work of Dr. Olin Steele, an eminent vivisector, to whom she is on the point of being engaged, she promptly throws him over. Trixy herself is rescued by a lawyer named Surbridge from the vivisectors just as she is about to be operated upon, and restored to Dan. The two take up their abode permanently under Miriam's roof, and Miriam consoles herself with

[6] *Roger Dinwiddie, Soul Doctor.* By A. M. Irvine. Published at Clifford's Inn, London, by T. Werner Laurie. Pp. 343.

[7] *Trixy.* By Elizabeth Stuart Phelps Ward. Published by Hodder and Stoughton, London; pp. 299.

Surbridge. The discomfited Steele dies through poisoning himself in inoculating a guinea-pig, haunted by visions of the animals he had "sacrificed . . . to a physiological caprice," and deserted by all save his faithful dog, and his scientific friends, who, with the charity characteristic of the antivivisectionist, are said to be actuated not by pity for the dying man, but merely by interest in his disease. As a protest against vivisection the book is decidedly feeble. Mrs. Ward describes in lurid language the sufferings of the vivisected animals, and the deteriorating effect vivisection has on the men who practise it, but her words do not convince. They do not ring true. Moreover, she has fallen into the common error of painting her villains too black. The vivisectors are all scoundrels of the deepest dye. Even Steele, who at the beginning of his medical career is filled with loathing for vivisection, is rapidly degraded when he begins to practise it, and "a curious indefinable likeness" becomes developed between him and his fellow vivisector, Dr. Bernard, of whom it is said that if taken away "from the protection of his position and put in the slums . . . the average police officer would have picked him out as the type of a defective bent towards crime!" This is how she describes the typical vivisector:

> His face . . . was brutal. He had the eyes of an inquisitor, lowering and shifty. To an ordinary citizen his was a face to be dreaded. It was the type that was common in the sixteenth century. It was broad, flat, and surmounted by a rebellious fiery mane. But if his face would inspire dread, his hands gave the layman a nameless apprehension.

We know the face, with "the eyes of an inquisitor, lowering and shifty," and all the rest of it. But we have seen it, not in the laboratory, but on the platform at antivivisection meetings, and among the audience at gatherings where Lister is denounced as a "brute." On the other hand, the halo with which Mrs. Phelps Ward encircles the heads of the antivivisectors is like the calves of the Hamlet which Pip (in *Great Expectations*) wished were more probable. The heroine, Miriam, who gives herself up to philanthropy and is said to be adored by all with whom she came in contact, is, in Wordsworth's phrase—

> A creature . . . too bright and good
> For human nature's daily food.

A girl who "brought home . . . an old woman who had never seen the city or been on a railroad before; installed her in the big guest room . . . brought the old lady to the table with the family, and required the servants to wait on her for a week," must have been a disturbing element in a quiet family. It is easy to understand how it was that she could not get on very well with her aunt, Mrs. Jeffries, who lived with her, and who, by the way, is the best drawn and only sensible character in the book. When Trixy is lost, Miriam "at the first announcement of Dan's calamity . . . would have closed her house at the seashore and moved back to town. But Mrs. Jeffries, who had no moods, few whims, and inexorable habits, could see no reason why the household should leave the coast four weeks too soon because a boy in the slums had lost his dog." Neither, we confess, do we; but no antivivisectionist worthy of the name would ever hesitate to sacrifice the comfort of a fellow-creature for the gratification of what Sir Peter Teazle would have called his noble sentiments. Besides the lack of humour, which is also a badge of the tribe, Mrs. Phelps Ward has a remarkable style. Of a person who was puzzled and stopped speaking, she says: "On the palette of her sentence the words ran together like gamboge and Prussian blue, and became a puzzled silence, which was a new colour!" Elsewhere we are told that "by this time the pallid sun had been gulped by massing clouds, and a dark storm was imminent." We are not surprised, therefore, that Dr. Steele, after reading some extraordinary verses written by Miriam, "returned the proof-sheet to her," or that he said to her "perplexedly," "I don't understand it. It is graceful, but I don't think I know what you mean." With the omission of the "graceful" we may say the same of Mrs. Ward's book.

NOTES ON BOOKS.

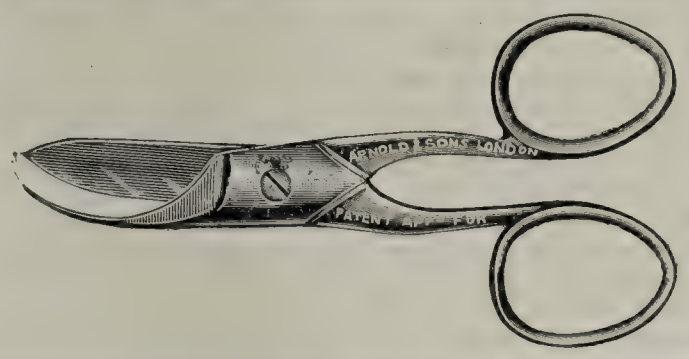
The thirty-second volume of the *Transactions of the Edinburgh Obstetrical Society* covers the work done during the session 1906-7. It contains some sixteen papers and discussions, many of them being well illustrated, but it is, perhaps, not inappropriate that the two which are on the whole the most attractive should be those of the President himself, Dr. J. W. Ballantyne. One of these is an able discussion of the contents of that old-world treatise on obstetrics known as the "Byrth of Mankynde," compiled by Raynalde in the sixteenth century; the other is a forecast of the immediate future of obstetrics, in rather an original guise, being an imaginary conversation with No. 1940 on the Time Exchange. No. 1940 is President of the Edinburgh Obstetrical Society thirty-three years hence, and gives an interesting account of what has happened in the obstetrical world in the interval, the last few words of the conversation giving a hint that the unseen speaker is a woman.

The sixth and seventh volumes of the *Practical Medicine Series* for 1907, the general editor of which is Dr. G. P. Head, of Chicago, deal respectively with pediatrics and orthopaedic surgery and with general medicine, and on the analogy of the series for last year the three remaining volumes of the ten which are annually issued may be expected to deal respectively with therapeutics, preventive medicine, climatology, and forensic medicine; with physiology, pathology, bacteriology, and new words; and with skin, venereal, nervous, and mental diseases. The series as a whole has not yet attracted as much attention in England as it perhaps deserves; its intention is to give an abstract in ten volumes each year of the latest additions to existing knowledge on each of the subjects treated, these covering the whole range of medicine and surgery. As such, the series constitutes a kind of yearbook of a more elaborate character than usual, and one likely to be of most use to those who are already fairly well up in each subject. The editors of each volume seem to have been carefully chosen, and for the most part to have made their selections with discretion, while illustrations are freely used. The book is published in America, the sole agents for its sale in Great Britain being Messrs. Gillies and Co., of Glasgow.

MEDICAL AND SURGICAL APPLIANCES.

Scissors for Taking Out Sutures.

Mr. Edward Marten Payne (Blackburn) writes: The usual method of taking out a suture is for the surgeon to seize it with a pair of forceps held in the left hand and draw it up into a loop, which he cuts through with a pair of scissors held in the right hand. This method is often attended with difficulty and inconvenience, especially if the surgeon is without assistance and the suture is awkwardly situated, as the operator feels the want of a third hand to keep the neighbouring tissues or organs in a convenient position. To obviate these difficulties I have designed a special form of suture scissors. The anterior portion of the lower blade is fine and needle-like, curved upward, and terminates in a fine point. The upper blade is stouter than the lower, and



has its cutting edge curved reciprocally to it. In using the instrument, the loop of the suture is easily caught up by the sharp lower blade and cut by the upper blade of the scissors, manipulated by the right hand of the operator, leaving the left hand at liberty to adjust the tissues. The makers are Messrs. Arnold and Sons, West Smithfield, London, E C.

The inaugural meeting of the 154th session of the Society of Arts will take place at the Society's house, John Street, Adelphi, on Wednesday next at 8 p.m., when Sir Stewart Colvin Bayley, K.C.S.I., will give an address. On Friday, November 29th, at the same hour, Dr. J. S. Haldane, F.R.S., will give the first Shaw Lecture on the hygiene of work in compressed air (diving, caisson work, tunnelling, etc.), and on Wednesday, December 4th, Sir Edward W. Brabrook will read a paper on old-age pensions. The Cantor Lectures, by Mr. Conrad Beck, on the theory of the microscope, will be given at 8 p.m. on Mondays, November 25th, December 2nd, 9th, and 16th.

THE ROYAL COMMISSION ON TUBERCULOSIS.

COLLATERAL INVESTIGATIONS.

VOLUME III of the Appendix to the Second Interim Report of the Royal Commission on Tuberculosis[1] is a collection of supplementary reports on matters concerning the experimental investigation of human and bovine viruses.

CULTURAL CHARACTERS OF THE BACILLI.

Drs. A. S. and F. Griffith, who have isolated and cultivated the bovine viruses used in the experiments, recommend the use of an egg medium for the raising of primary cultures. This medium is also very useful for reviving very old subcultures—for example, it has yielded a growth when inoculated with a subculture 597 days old, and animal experiment showed that the strain thus raised had not suffered any diminution in virulence for rabbits. For the comparisons of the growth characters of the bacilli the media employed have been serum or glycerin-serum, glycerin-agar, glycerinated potato, and glycerin broth. By the use of glycerin-serum different bovine viruses are found to exhibit three distinguishable types of growth.

In the first, no growth can be observed until the second or third week, when discrete colonies make their appearance. In some cases the colonies remain small and discrete, in others they continue to grow, and the amount of growth at the end of six weeks may equal or exceed that on the corresponding pure serum. In this first series the distinguishing features are the initial delay on glycerin-serum compared with the steady uniform increase on pure serum and the absence of any considerable variation between the strains which exhibit this type of growth.

In the second, growth takes place from the outset, and up to the end of the second week is similar in appearance to that on serum alone, and about equal in amount. The amount of growth finally produced at the end of the third or fourth week varies in different strains.

In the third, growth during the first week is more abundant than on pure serum, and progressively increases, becoming, at the end of the fourth week, from two to four times as much as on serum. The characters of the growth also differ markedly on the two media; that on serum is grey and uniform, with, in many cases, scattered raised colonies on the surface; while that on glycerin-serum is whiter and moister, with a more irregular and often wrinkled surface.

On glycerin-agar the results are in accordance with those on glycerin-serum, and the same differentiation of the viruses can be made.

On glycerinated potato growth is very variable, but in the main corresponds with that on glycerin-agar.

Viruses which grow more readily on glycerinated media generally grow more rapidly on broth, and produce a thicker translucent pellicle with opaque patches.

A consideration of the results on the differential media shows that bovine bacilli can be arranged in a more or less complete series, beginning with a bacillus which grows badly on all the differential media, and ending with one which grows relatively well.

Dr. Cobbett, who has investigated the cultural characters of the tubercle bacilli obtained from man, finds that human tubercle bacilli may be divided into two cultural groups, namely:

1. All those strains the growth of which in early cultures is little, if at all, aided by glycerin.
2. Those which grow much more luxuriantly on media to which glycerin has been added.

He suggests that a "rough but useful" method of forming a preliminary opinion as to the cultural characters of a given strain is to sow it on serum and glycerin-serum and to compare the two growths after three weeks. If the glycerin-serum culture is decidedly the better of the two the strain will certainly belong to the second group; if the pure serum culture is the better or not markedly inferior, the strain will belong to the first group. But these tests, Dr. Cobbett explains, will not apply to old cultures or to those which have become accustomed to glycerinated media. To a certain extent, and with possible qualifications which Dr. Cobbett discusses in detail, there appears to be a correspondence between cultural characters and virulence.

Mr. H. J. Hutchens, assistant to Dr. Cobbett, publishes a long report on the cultural characters of human tubercle bacilli, and arrives at the following conclusion:

The cultural characters of many of the strains which I have recorded in this report corresponded in every respect to the German "Typus humanus"; others, again, were identical in every detail with their so-called "Typus bovinus." Filling up the gap between the typical Typus humanus and the typical Typus bovinus a large number of strains of bacilli have come under my observation, which exhibit characters intermediate between the two.

THE BROTH REACTION TEST.

In 1903 Theobald Smith described a simple method of distinguishing bovine from human tubercle bacilli by observing the changes of reaction in the broth upon which the organisms were grown. Dr. A. S. Griffith, with the object of forming an independent opinion as to the value of this method, has taken a large and representative variety of human and bovine strains, and has tested them on the lines recommended by Smith. As a useful point in the technique adopted by Dr. Griffith, it may be noted that the samples of broth to be tested were withdrawn from the culture flasks either by means of a siphon fitted into the neck or by a side tube issuing from the bottom of the flask. Dr. Griffith's investigations have shown that:

When virulent tubercle bacilli, whether of human or bovine origin, are grown on the surface of glycerin-broth the acidity of the medium is gradually diminished, the final acidity being less than the initial; the diminution is variable in amount, and has in general been greatest when the growth was scantiest. On the other hand, when slightly virulent tubercle bacilli are grown on the surface of glycerin-broth the acidity of the medium is at first diminished; then as the pellicle increases in thickness the acidity gradually rises again, the final acidity being higher than the initial.

Dr. Griffith is therefore able to confirm Smith's general statement that slightly virulent human bacilli cause first a diminution and then an increase in the acidity of the medium, and that there are strains of bovine bacilli which steadily diminish the acidity of the broth. But his results do not support Smith's conclusion that the differences observable point to a difference in physiological properties. We cannot, Dr. Griffith remarks, neglect variations in reaction attributable merely to differences in amount of growth; and, although he has not found the change in reaction to be in every case strictly in accordance with the amount of growth he has been able to note some correspondence between the two. The differences are, in his opinion, "differences in degree and not in kind, and are attributable to variations in saprophytic power which have been shown to exist on other media."

Another factor, duration of growth, requires consideration.

The growth of the bovine tubercle bacillus stops much sooner than that of the human bacillus; yet both at first react in the same way, and if, as has occurred in three cases, the human bacillus ceases to grow when the pellicle formed is still thin and translucent, the change in reaction is not different from that produced by a virulent bacillus growing at the same rate. Moreover, when virulent strains grow well and produce moderately thick pellicles, the diminution in acidity is not so great as when thin membranes are formed. . . . In fact, in many instances, the diminution in acidity has been only a very slight one, and in one instance when the growth was specially abundant the final reaction was 4 per litre more acid than the initial. It seems to me that these experiments at any rate prove conclusively that there are strains of tubercle bacilli possessed of high virulence, which have the power, equally with the slightly virulent bacillus, of producing acid out of glycerin.

Dr. Griffith has also made a comparative study of the changes in reaction produced in glycerinated litmus milk by human and by bovine tubercle bacilli. On this medium tubercle bacilli grow very well, and form pellicles indistinguishable in character from those produced by the same bacilli on glycerin broth.

The sequence of changes produced in the colour of the medium during the growth of the bacillus is very characteristic. At first, as the inoculated material slowly increases in area, the milk acquires a deeper blue tint; then, as the pellicle expands and thickens, the original colour of the medium is regained and gradually changed to a bright red; and, finally, the milk clots. This type of reaction is exhibited by all the slightly virulent organisms, when luxuriant growths are obtained; occasionally, when the growth has failed to cover the surface or is thinner than usual, the milk has become red, but has remained unclotted. Virulent tubercle bacilli up to a certain stage bring about exactly the same changes in the colour of the medium; the colour is at first

[1] Second Interim Report of the Royal Commission appointed to inquire into the relations of human and animal tuberculosis. Part II. Appendix. Vol. iii. *Additional Investigations of Bovine and Human Viruses.* By Drs. L. Cobbett, A. Stanley Griffith, and F. Griffith. Pp. 261.

changed into a more intense blue, and then gradually to pink or red; none of the virulent tubercle bacilli have, however, clotted the milk. . . . Further experiments with this medium are being made; for example, the influence on the reaction of varying percentages of glycerin and of some of the sugars. The results so far obtained, however, show that the medium does not differentiate tubercle bacilli into two classes, and in this respect they are in agreement with those obtained by the use of glycerin-broth.

The Modification of Bovine Bacilli.

Drs. A. S. and F. Griffith have found that by subculture on glycerinated media an increased luxuriance is obtained with all the viruses. Ultimately a type of growth is produced which is practically the same for them all.

This is an opaque, warty, or slightly wrinkled layer, distinctly better than that obtained with the most easy-growing viruses of Class III.

The increased capacity to grow on glycerinated media is retained by the bacilli after their passage through animals such as the calf and rabbit, but the influence of glycerine produces no diminution in their virulence for these animals

Modification by animal passage has also been attempted in several species of animals. Chimpanzees, baboons, and monkeys, although very highly susceptible to the action of the bovine bacillus, were chosen for passage experiments on account of their near blood relationship to man. In order to approximate as nearly as possible to a natural mode of infection, the bacilli were introduced by feeding with culture or with infected milk. The passages were continued by culture isolated from the preceding animal, in order to encourage the more saprophytic bacilli to increase; and with the same object the cultures were in several cases grown on media containing glycerine. With one exception the culture recovered from the last animal in each series showed no change in cultural characters, and in all instances the virulence for rabbits remained unaltered. In dogs, which are much more highly resistant animals, modifications both of cultural characters and of virulence were, in some instances, produced. The interpretation of these results is discussed. Passage experiments with pigs, bovines, and guinea-pigs produced no change of cultural characters or virulence. In reviewing their results Drs. A. S. and F. Griffith remark:

These passage experiments, so far as they have gone, show that the bovine tubercle bacillus is very retentive of its special cultural characters and high virulence. The results with dogs are suggestive, and the passage experiments are being continued in order to ascertain whether the dog can modify the bovine tubercle bacillus.

Early Dissemination of Bacilli.

In experiments on calves, killed at short intervals after subcutaneous inoculation, Dr. Cobbett has shown, by inoculating guinea-pigs with the tissues and blood of these animals, that human bacilli of low virulence for the bovine are rapidly disseminated throughout the body of the bovine. Drs. A. S. and F. Griffith have conducted similar experiments with the object of ascertaining whether a similar distribution takes place after subcutaneous inoculation of highly virulent tubercle bacilli, not only in the calf but in other species of animals; and in 5 of their experiments they employed bacilli of low virulence for the bovine. Their observations were made on eight different species of animals—namely, the monkey, calf, pig, cat, rabbit, guinea-pig, rat, and fowl. Their results have shown that:

Tubercle bacilli are distributed over the body of an animal within twenty-four hours after subcutaneous inoculation, and this dissemination occurs in every species inoculated, whether the bacilli are virulent or only slightly virulent for that species. . . . Seeing that in all species of animals the blood stream plays so important a part in the immediate distribution of tubercle bacilli over the body, the variations in the anatomical distribution of the disease which have been observed in different species after subcutaneous inoculation can best be explained on the hypothesis that different tissues vary in their susceptibility to tuberculosis.

As the bacilli are speedily disseminated by the blood stream, it is naturally to be expected that they should be present in the muscles, and Drs. A. S. and F. Griffith report several experiments in which they have actually demonstrated the presence of bacilli in these tissues.

Additional Reports by Dr. Cobbett.

Dr. Cobbett also contributes several scientific discussions on points which are extremely interesting, but, owing to the intricate and highly technical character of the argument, cannot be adequately represented in a brief summary. The stability of virulence exhibited by human tubercle bacilli in artificial culture is dealt with, and there is a thoughtfully written article on the minute non-progressive tubercles occurring in calves injected with human bacilli found incapable of producing a progressive infection in the bovine. Other subjects receiving consideration are the variation in the capacity for resisting tuberculosis among individuals of the same species, the influence of lactation, and the influence of the dose of bacilli introduced. There is also a valuable note on congenital tuberculosis. In the course of Dr. Cobbett's experiments six calves were born of mothers artificially infected with highly virulent bacilli of human origin, and three of these were born tuberculous.

A REPORT ON AN INVESTIGATION INTO THE CONDITIONS APPERTAINING TO THE TEACHING OF PRACTICAL MIDWIFERY TO STUDENTS.

[By Our Special Commissioner]

History of the Proposed Changes.

For many years past teachers in this and other countries have realized that the present regulations affecting the student who desires to present himself for examination in obstetrics and gynaecology have been insufficient to ensure that he will become an efficient obstetrician. The proof of this failure is to be found in the high mortality among lying-in women attended in their own homes, while the mortality in hospitals has, concurrently with the introduction and development of antisepsis and asepsis, steadily fallen to its present low level. Some very striking statistics on this subject were published by Otto von Herff in the *Muench. med. Woch.*, of May 21st, 1907. Whether the state of affairs is better or as bad in this country must remain an open question, but there can scarcely be a second opinion that an improvement is desirable, and it was with this end in view that the General Medical Council appointed a special Students' Practical Midwifery Committee on May 25th, 1905. The reference of this Committee was to inquire into the operation of the rules regarding the midwifery practice required of candidates for medical qualifications.

The Committee circularized thirty-eight teaching institutions, requesting information on a number of points in connexion with the subject. Only one institution failed to reply. In its report presented to the General Medical Council on May 28th, 1906, the Committee, after giving a summary account of the replies received, reviewed the situation, and stated that while the average student attends more than the required 20 cases, some attend far less (the minimum being seven); that in twenty-three medical schools students are allowed to attend labour cases before they have acquired any knowledge of medicine and surgery, and that the "personal supervision" which is required by the regulations is scarcely carried out at all in the majority of the schools. The Committee recommended that before he attend the 20 cases of labour each student should receive adequate theoretical medical, surgical, and obstetrical instruction, and should have held the post of clinical surgical dresser as well as clinical medical clerk, should give his "undivided attendance" to the practice of a lying-in hospital or the lying-in wards of a general hospital, and should have obtained a certificate from the authorities of the hospital, that he is competent to undertake the conduct of an ordinary case. It was determined to send these recommendations to all the licensing bodies and medical schools in the United Kingdom.

On May 30th, 1907, the Committee reported again to the Council that the Royal Colleges of Physicians and Surgeons, with the Conjoint Board in England, and also three universities and three medical schools had replied. It should be pointed out that the Colleges, which have not to face any of the difficulties of providing the material or

making the necessary arrangements, approved of all the suggestions. London University was not yet in a position to express any opinion, Oxford would not endorse the expression "undivided attendance," and Glasgow also wished to modify this matter slightly. Of the medical schools, Guy's did not consider that it would be possible to arrange for the students to give monthly attendance in an indoor lying-in ward; Middlesex regarded the difficulties of this practical instruction as insuperable at present, and University College suggested some modifications.

The Committee then, through its Chairman, Sir John Williams, moved certain modified recommendations. After a considerable debate, the Council agreed on the following:

1. Every student, before commencing the study of practical midwifery, shall be required to have held the offices of clinical medical clerk and surgical dresser and to have attended a course of lectures on surgery and midwifery.

2. Every student shall be required either:

(*a*) To have regularly attended the indoor practice of a lying-in hospital or the lying-in wards of a general hospital for a period of three months; and after having received therein practical instruction in the conduct of labour, under the personal supervision of a medical officer, to have conducted 20 cases of labour under official medical supervision; or

(*b*) To have conducted not less than 20 cases of labour subject to the following conditions:

That he has during one month given regular daily attendance upon the indoor practice of a lying-in hospital or the lying-in wards of a general hospital or Poor-law infirmary having a resident medical officer recognized for that purpose by any of the Licensing Bodies; and that he has therein conducted cases of labour under the personal supervision of a medical officer of the hospital or infirmary, who shall, when satisfied of the student's competence, authorize him to conduct outdoor cases under official medical supervision.

3. No certificate that the student has conducted the above-mentioned 20 cases of labour should be accepted unless it is given by a member of the staff of a lying-in hospital, or of the maternity charity of a general hospital, or of a dispensary having an obstetric staff recognized for that purpose by any of the Licensing Bodies, or of a Poor-law infirmary having a resident medical officer so recognized.

4. That the attention of the Licensing Bodies be called to the necessity, in the public interest, of instituting clinical and practical examinations in midwifery and gynaecology in connexion with each of the qualifying examinations.

The inclusion of the maternity wards of the Poor-law infirmaries as places where students should receive instruction in practical midwifery, was proposed by Dr. Langley Browne and seconded by Dr. Lindsay Steven.

The Council has therefore determined to give the student the alternative of receiving a three months' course in hospital or of giving his full time for one month at a lying-in hospital, the lying in wards of a general hospital, or of a Poor-law infirmary. It would seem that, at all events as far as London is concerned, the General Medical Council believed that a sufficiently large number of beds existed in the hospitals and infirmaries to render it possible for every student to obtain one of the two courses.

Having regard to the many difficulties which seemed to beset the effective carrying out of these recommendations, an inquiry was undertaken, in order to ascertain the conditions in the lying-in and general hospitals and Poor-law infirmaries of the metropolis with regard to this subject.

Before giving an account of the results of the inquiry, it will be convenient to review the conditions which exist at present in London. It is extremely difficult to estimate the number of students who attend the indoor and outdoor midwifery practice of the hospitals at present, but approximate figures may be arrived at by considering the number of men who pass a qualifying examination in midwifery in London yearly. In 1906 592 candidates presented themselves for examination in midwifery and gynaecology at the Conjoint Board, and of these 368 passed; 203 men presented themselves at the London University for the midwifery and gynaecology portion of the M.B. examination and 126 passed, while 52 presented themselves for examination in the subjects mentioned at the Apothecaries' Society, and 36 passed. Of the total of 847 candidates, deductions must be made for those who had already presented themselves on previous occasions and for those who passed the examination as a second qualification. During the year some 473 men registered their names on primary qualifications of the three examining bodies mentioned. It may therefore be assumed that at least 500, and possibly 600, men would require to be trained in all the subjects of a final qualifying examination each year.

An inquiry into the arrangements existing or in preparation at the twelve large metropolitan teaching hospitals elicited the following figures:

Name of Hospital.	No. of Students Attending the External Obstetric Department Yearly.	No. of Beds for Normal Cases of Labour.
St. Bartholomew's	75	0*
Charing Cross	12—15	0
St. George's	24	0
Guy's	72	0
King's College	12—14	0*
London	104	9
St. Mary's	24	
Middlesex	12—18	0
Royal Free	24	
St. Thomas's	40—50	?
University College	30—40	0
Westminster	4—12	0
Totals (maximum)	472	?9

In the hospitals marked thus * preparations are being made to open a normal labour ward. The number of beds at King's College Hospital will be 10, while at St. Thomas's Hospital a ward has already been set aside, but has not been opened for want of funds.

It was stated, however, at several hospitals that many of the students go elsewhere—to Queen Charlotte's Hospital, Dublin, for example. It is therefore necessary to recognize that the total number of students who do their "cases" as given above is smaller than the number who present themselves in London for final examination, and that in order to render London self-supporting in this respect, at least 500, and probably 600, students should be trained in midwifery each year. For the sake of argument, since the two estimates agree so closely, it may be well to assume that 550 students have to be catered for.

At present, the student who possesses a varying amount of theoretical obstetrical knowledge goes to his cases either with some one who has already passed through his course or else alone, and although his doubts and misgivings must be great at times, there is but little doubt that this first responsibility does him a great deal of good for his future career. The returns of the external charities, however, show that his treatment is, on the whole, satisfactory, and at all events during his student days, the care which he exercises keeps his patients' lives comparatively safe.

In order to introduce in London the changes which have been proposed, certain conditions must either exist or be procured. The essentials may be summed up as follows:

1. Lying-in wards in hospitals and infirmaries which shall contain a sufficient number of cases to admit of 550 students receiving at least one month's course of practical instruction.

2. Suitable arrangements for the student to spend his month to his own advantage, and not to the detriment of the environment.

3. Sanction of the authorities for the utilization of the Poor-law infirmaries for this purpose.

4. The possibility of the resident medical officer undertaking the duties of teacher.

I.—Provisions Existing at Present for Practical Instruction in Midwifery.

There would appear to be a difficulty in deciding what number of midwifery cases each student should attend. In Germany the student has to deliver four women himself in the presence of a teacher or his assistant This is included in his office of "Praktikant" or clerk

which extends over some five semesters, and includes medical clerking, surgical dressing, and obstetrical and gynaecological clerking. In France the number of cases which the student has to deliver in the lying-in wards is not prescribed by the authorities, but the teacher has to be satisfied of his competency before he signs the card of admission, which has to be presented to the examining boards. Formerly, two cases were considered to be enough in Germany, but as the student sees his colleagues delivering other women, and as bedside teaching is freely carried out, even this small number may be sufficient, provided that the "clinic" is a fairly large one. Since the number of cases available in London is limited, let it be assumed that arrangements should be made for each student to deliver three women himself. This would require that 1,650 maternity cases would be available each year. But since the cases cannot possibly be equally distributed, it will be necessary to inquire whether the supply each month at each ward is sufficient to meet the requirements of the students.

Lying-in Hospitals.

Of the four large lying-in hospitals in London, Queen Charlotte's, the General (York Road), the British (Endell Street), and the City of London (City Road), only the first-named receives students at all. The three others train midwives and maternity nurses, and the same has to be said of some other smaller institutions, such as the Clapham Maternity Hospital. Queen Charlotte's Hospital is now prepared to receive fourteen students a month. The arrangements made for these students include quarters at a convenient distance from the hospital, and an adequate number of labour cases, on which instruction will be given by obstetricians of repute.

General Hospitals.

A glance at the figures given referring to the great teaching hospitals will suffice to show that the majority of these institutions are incapable of assisting in carrying out the suggestions. The inquiry failed to elicit what number of beds will be placed at the disposal of the students at St. Bartholomew's Hospital. It is possible that the arrangements may be sufficient to instruct all the students of this hospital, and in the absence of more exact information, this will be assumed. At King's College Hospital, when the new hospital is opened, there will be a ward with ten beds for normal midwifery. Assuming that about 50 students of this hospital require to attend a course of practical midwifery each year, and further that each bed is filled twice a month, each student would have 5 patients, a number which must be considered ample. At the London Hospital, arguing from the same basis, the students would barely have 2 cases apiece. Providing that it was considered necessary to have 3 cases for each student, only 72 students could be trained in this hospital, and therefore 32 would have to go elsewhere.

In this way, at the first two places mentioned in the recommendations of the General Medical Council—namely, the lying-in hospitals and the general hospitals—Queen Charlotte's could take 14 a month (that is, 168 per year), St. Bartholomew's 75, King's College 50, and the London Hospital 72, making a total of 365 a year, and leaving 185 still to be provided for.

This estimate must be regarded as too favourable, since in practice it is found that cases cannot be admitted with clockwork regularity each fortnight, and there is little margin.

Poor-law Infirmaries.

In the metropolitan area there are 32 Poor law infirmaries. Of these 12 have resident medical superintendents and maternity wards, 1 has a maternity ward but no resident medical officer (Hampstead), and in 19 cases the maternity wards are placed in the workhouses of the unions. As will be pointed out later on, the latter cannot be included among the facilities available, and it therefore remains to examine the 12 infirmaries with special departments of their own.

The number of 19 students a month would yield a yearly total of 228, thus covering the surplus left over above. It may therefore be accepted that if the material were utilized to its full extent, all London students could receive a course of practical indoor instruction for one month each. This, however, deals only with bare numbers and does not make allowance for the arrangements, which have to be discussed under the second heading.

Table showing the number of maternity beds, the number of cases, and the maximum number of students who might be trained at each institution monthly, provided that all other difficulties were got rid of. (The estimates were arrived at by the Medical Superintendents in consultation with our Commissioner.)

Name of Infirmary.	No. of Beds.	No. of Cases	Estimated Number of Students who might be Instructed Monthly.
St. George's-in-the-East ...	7	53	2
Hackney	13	111	2
Mile End	3	74	0
Fulham	12	170	2
Kensington	10	150	3
Shoreditch	8	108	2
Hammersmith	10	63	1
Croydon	8	100	2
Greenwich	10	78	0
Woolwich	12	30	0
Whitechapel	6	150	3
Lewisham	14	100	2
	113	1,187	19

II.—Arrangements in the Hospitals, Infirmaries, etc.

It has already been stated that the Queen Charlotte Hospital authorities have made ample and adequate provision for students, and are fully prepared to undertake the instruction of the fourteen students a month. It appears that these arrangements have been made entirely for the purpose of carrying out the second alternative of the General Medical Council's recommendations, and that there is no intention of offering students a three months' course. If such a course were given, a proportionate deduction from the number of students who are trained would have to be made.

With regard to the arrangements in St. Bartholomew's Hospital, as has been stated, these are in progress and are not complete, and in the absence of any details it must be assumed that here they will be designed to meet the needs of 74 students. At King's College Hospital, too, the arrangements will only be made when the new hospital at Camberwell is built, and again it must be assumed that everything will be satisfactory. At the London Hospital good lodgings and a free table exists, and the maternity ward will doubtless possess all the requirements for teaching. The opinion, however, was expressed that the size of the ward would render it unlikely that the six students who would have to be in daily attendance during the whole month would find sufficient to do unless the daily attendance (save on days when a confinement was in progress) became a perfunctory looking in for ten minutes and then returning to their quarters, to spend the time as each student thought best.

The Maternity Departments of the Infirmaries.

In view of the fact that so little appears to be known of the inside of the Poor-law infirmaries, the permission of the guardians was sought to visit the wards with the medical superintendent. The permission was readily given in eleven cases, was given on second consideration by the Shoreditch Guardians, and no definite reply was received from the Hackney Guardians. The courtesy and kindness of the medical superintendents in rendering this inquiry as easy as possible are gratefully acknowledged and our best thanks offered to them in this place. All the infirmaries save one were visited, and the opinions of the medical superintendents were elicited, as well as the details of the arrangements and management of the maternity wards, where these were situated in the infirmary. The single exception mentioned was that of the Marylebone Infirmary, which was visited during the absence of the Medical Superintendent. Our Commissioner was informed that no maternity ward existed, but it

was unfortunately not found possible to arrange a meeting with the Medical Superintendent.

The arrangements found in the thirteen infirmaries which possess midwifery wards will now be described.

St. George's-in-the-East.—This infirmary is situated near Wapping Station. The building is old, and great difficulties were experienced in transforming the former unsatisfactory wards into places in which modern methods of treatment and nursing could be carried out with a reasonable amount of efficiency. The lying-in ward contains seven beds, and each bed has its cot. The cubic space exceeds the allotted 1,000 cubic ft. per bed by a fair margin. The walls and flooring have been adapted to the needs of modern times, by dint of hard begging on the part of the Medical Superintendent and ultimate recognition of necessities by the guardians. Dr. Bowlan takes his duties very earnestly, and is justly proud of having done so much out of very poor material. The ward is extremely well kept, and strict regulations, carried out in an intelligent manner, have secured him a run of cases during the sixteen years since he has been at the infirmary, with only one death from puerperal fever. The instruments are fairly up to date, and are well kept, the apparatus used in connexion with the department is of good pattern, and the ventilation, lighting and warming of the ward are as good as could be introduced into a structure of the age of that under discussion. The chief defect of the department lies in the fact that up to the present there is no labour ward. This, however, is being remedied, and a satisfactory ward is being fitted up, which will serve the purpose well. With regard to the number of cases admitted, it must be pointed out that while the average number is 53 a year, they come in irregularly, a whole month passing at times without a single labour. The numbers annually admitted is increasing slightly. It must be admitted that it would be somewhat risky to undertake to instruct two students each month in view of this fact. Dr. Bowlan does not regard the suggestion with approval, on the ground that he has already more than any one man could possibly carry out; that he does not like the idea of having to teach at night time, after a very busy day; and, lastly, that as his infirmary has not been regarded as well enough equipped to train nurses for the Central Midwives Board certificate, he does not think that it could be considered satisfactory for medical students. It must therefore be stated that this infirmary should fall out if the infirmaries are to be included.

Mile End Infirmary.—The medical superintendent, Dr. J. H. Brooks, stated, before showing the maternity ward, that he could not claim to possess a real department at all. He showed a room with four beds, one of which was utilized as the labour bed and the remaining three as lying-in beds. The room is airy, bright, and perfectly kept, but it is merely a room, and has no arrangements which one is accustomed to find in a modern maternity ward. Dr. Brooks does not feel justified in guaranteeing that even one student could be taught, as not infrequently a month passes without a single labour; he further owns that he does not consider it wise to introduce students into an infirmary for this purpose, and that he, as medical superintendent, has no leisure to give to teaching. His results extend over about 1,000 cases without a single death from puerperal fever.

Whitechapel Infirmary.—The department here has been arranged in a very old structure, but renovation, good equipment, and ingenious adaptation have turned it into a very creditable one. The labour room contains 2 beds. It is spacious and well fitted up. Porcelain washing accommodation, electric lighting, Lawson Tait beds covered with special mackintosh mattresses, and satisfactory heating arrangements are all found. The lying-in wards are divided into two parts—first, a smaller outer ward with 3 beds, in which the patients stay for the first three days *post partum*, and second, an outer convalescent ward with 11 beds. Here, too, the air space is sufficient, the beds and bedding are good and the place is kept in an excellent way. The fireplace is old fashioned, and an open fire is a tempting place for the nurse to throw soiled dressings, etc., into instead of sending everything down to be destroyed in the destructor or disinfected in the Washington Lyon apparatus. Regulations exist that nothing may be burned in the ward. The sister's room, the kitchen, and the small room where bed pans are flushed by a special apparatus, are all so arranged that no inconvenience of any sort can be felt in the ward. The defect of this department is that there is no bathroom exclusively set aside for it, the patients having to use a bathroom in common with another ward, in which, however, no cases of even the mildest infective nature are admitted. Training is carried out here for midwives under the regulations of the Central Midwives Board. Dr. Larder would like to undertake the instruction of students in midwifery, and, as he and his senior assistant are already engaged in teaching midwifery, he feels competent to undertake the duties. The drawbacks, however, in connexion with the proposed scheme are: First, that the offer to train a certain number of nurses in midwifery is a great attraction to nurses, and without this attraction he might have difficulty in securing as ample a supply of good nurses as he now obtains; secondly, he realizes that he has very little time to undertake extra duties. The results in his department have been good, no death from puerperal fever having occurred in a series of well over 1,000 cases. He was able to show that the incidence of ophthalmia in the infants was very low.

Hampstead Infirmary.—Dr. Claud Taylor, the Medical Superintendent, does not reside on the premises, but in spite of this fact, an application was made to the guardians to permit an official visit being paid to the maternity wards, which, however, was refused. It is therefore impossible to report on the accommodation, but, from details received, it seems that there are 6 beds, and an average of about 25 cases yearly. The Central Midwives Board does not accept the training at this infirmary to admit candidates for the certificate, but the department is utilized as a minor training ground for nurses. The mortality from puerperal fever during the last eight years is 0. This would cover some 200 cases.

Fulham Infirmary.—The department in this infirmary contains twelve beds, and deals with from 150 to 200 cases a year, the average working out at 170. Dr. Parsons, the Medical Superintendent, stated that the number of admissions had recently tended to decrease. Training for the Central Midwives Board certificates is at present given. The lying-in ward is not a modern building, but, in spite of structural shortcomings, it would be extremely difficult to find serious fault with the arrangements and with the way the ward, etc., is kept. Peculiar in shape on account of a dome-shaped roof, the ward is roomy, and each of the beds has about 1,200 cubic feet air space. Lawson Tait beds, with tidy, convenient little cots, up-to-date ward appliances, exceptionally large windows, well-kept walls, and good flooring are to be found. The floor and the lower part of the walls of the waterclosets and lavatories are tiled, and are kept in perfect order. The flush and pans are good. The bathroom is satisfactory, but a wooden rim to the porcelain bath seems to be a disadvantage. The sister midwife in charge sees that all soiled things are immediately removed from the ward and placed in convenient receptacles outside, either to be disinfected or destroyed in the special apparatus kept for the purpose. The labour ward is fairly large, is well ventilated, and contains two beds. All the accessories are of a recent pattern and the instrument cupboard, made of metal, with glass doors, as well as the instruments contained, bespeak of careful handling and scrupulous aseptic cleanliness. Dr. Parsons is certainly to be congratulated on the appearance and equipment of his maternity department. He is of opinion that it is important for the conduct of his infirmary to continue to train nurses for the Central Midwives Board, as this enables him to obtain a good supply of satisfactory nurses. If medical students were trained, he would be compelled to relinquish the training of nurses. He feels that his time is far too fully occupied to undertake any fresh duties, and, further, that he is personally less inclined to undertake to teach midwifery than he would be to teach surgery or pathology. The conscientious way in which Dr. Parsons obviously carries out his present duties would doubtless deter him from undertaking any new task which might cause him to relax his efforts in the interests of his patients or of the guardians in other directions, and it must therefore be argued that it would be an unwise innovation to attempt to include this

infirmary in the recommendations. During his nine years of office, in which time over 1,500 women have been delivered, no death from puerperal fever has occurred.

Kensington Infirmary.—In this infirmary the nurses are trained for the Central Midwives Board, and the idea of substituting medical students for the nurses could not even be considered until the contracted arrangement, which has still nearly two years to run, has expired. Dr. Potter is one of the senior Medical Superintendents of the Metropolitan Poor Law, and has always prided himself on his maternity work. His department contains ten beds in each of two wards, but one of these is always closed for thorough disinfection while the second is in use. He finds that the one ward is ample to take his cases, which number from 130 to 150 a year. The wards are very large and well built. No fault could be found with the beds, bedding, ventilation, heating and lighting, even although in some minor details the arrangements are not absolutely modern. The wards are excellently kept. The mattresses are stuffed with wood fibre, and are refilled for each patient. The bathroom is fairly good structurally, but any deficiencies in this respect are nullified by the care exercised in keeping everything absolutely clean. The water closets are also good. A convenient ward kitchen supplies the wants of the department. The labour ward contains two beds and is well arranged. The instruments are not kept here but in the operating theatre, and are brought up to the ward and sterilized as occasion requires. The instruments have seen considerable wear, are somewhat old-fashioned, and might even be replated with advantage. But, in spite of an occasional dull surface, they appear to be well cared for, and there are no dangerous places with worn-off plating or other defects which would call for serious objection. As is the case in the majority of the infirmaries, the department is entirely separate from the rest of the institution. Dr. Potter would welcome students into his infirmary, and would like to have the duties of instructing them in practical midwifery. He realizes that many difficulties exist, but considers that they might be got over, though with some trouble. His nurses pay for midwifery training, which would place him on a different footing from those infirmaries where the training is given as an inducement for the nurses to join. Unfortunately, he was not in a position definitely to state whether he had lost any cases from puerperal fever during his twenty-seven years of office, and he explained that it would take a considerable time to go over all his records to find out. He could not recollect any.

Shoreditch Infirmary.—In this infirmary there are 8 lying-in beds, and the number of admissions, which now stands at about 108, is gradually going up. The minimum number of admissions stands at one in ten days. The ward is good as far as size and equipment is concerned. The air space is ample, exceeding the prescribed 1,000 cubic feet for each patient. The water-closets are good, but a defect was found in the fact that in order to get into the bathroom one had to go through the kitchen. The bath and accessories are, however, first class. The labour ward contains two beds. The walls are good, the flooring smooth and well kept and the accessories, including the instruments, in good order and of satisfactory pattern. As has already been stated the guardians at first withheld permission to visit the wards, but later gave this permission, on the distinct understanding that under no circumstances would they entertain the idea of permitting the training of students in the department. At present nurses are trained for the Central Midwives Board gratuitously. Dr. Froggatt, the Medical Superintendent, regards it as of importance in the interests of the infirmary to retain this training. Further, he considers that it would be hard on the midwife, or rather nurse aiming at becoming a midwife, to rob her of one of the few institutions at which she can obtain her training. During his five years of office no death from puerperal fever has taken place, and Dr. Norton, who was medical superintendent before him, speaks for three further years. Thus no death took place from puerperal fever among some 800 patients.

Hammersmith Infirmary.—Adjoining the prison at Wormwood Scrubbs a new infirmary has been erected within recent times, and has now been opened for a little over a year. In many respects this infirmary is a model one. The maternity department is separate from the rest of the building, and consists of a ward with 10 beds and an equal number of neat little cots, a labour room with 2 beds and water-closet, bathroom, kitchen, sisters' room, etc., all of a modern type and in every respect worthy of any institution. The arrangements are so new that it is not necessary to describe any details; 63 cases were admitted during the last year, and the admissions are increasing in number, correspondingly with the decrease in the department at the Fulham Infirmary. There are arrangements for the training of nurses for the Central Midwives Board, and this presents a difficulty with regard to the introduction of the course of instruction for medical students. It was estimated that twelve students might be instructed each year, but on the whole it was thought that the difficulties of administration would stand in the way. Dr. Jenkins, the Medical Superintendent, has a very great deal of work on his shoulders, and, as is the case everywhere in the Poor-law service, his staff of assistants is quite inadequate in point of numbers to carry out the work as he would wish it to be done. No death from puerperal fever has taken place since the infirmary has been opened.

Croydon Infirmary.—Although an old building, and in many respects far from perfectly constructed, it would be difficult to imagine a more pleasant-looking or more perfectly-kept department than the maternity at this infirmary. The whole is situated away from the rest of the infirmary, and is strikingly capacious and well planned. First, there is a ward, called the "recovery ward," in which women who have been confined are kept. The air space allotted to each bed is about 1,300 cubic feet, the beds and bedding are excellent, the walls smooth and clean, and the only approach to a defect that might be cited was the open grate, to which, however, exception could scarcely be taken, since every care is exercised to prevent dust, and nothing is allowed to be burned in the wards. The closets are excellent, and the places for flushing out the bed pans quite efficient. The labour ward, too, is highly satisfactory in every respect, and the instruments, kept in a good cupboard, are modern and in good condition. The "waiting-room" contains eleven beds, and here the patients are placed before their confinements, and sometimes after they have passed into the second week *post partum*. At the outer end of this ward is the bathroom, which is quite satisfactory. The bath is of porcelain, and is in good condition. Not a speck of dust could be detected anywhere, and Dr. Wilson must be congratulated on possessing an extremely good maternity department. The regulations with regard to soiled things, etc., suffice to keep the wards aseptic. During twenty-two years, among some 2,200 cases, only one death from puerperal fever (sapraemia) has taken place. No visitors are admitted into the wards, there being a good hall where relatives and friends can see a patient if necessary. Dr. Wilson would feel capable, and is even willing personally to undertake to instruct students in practical midwifery, but he realizes that there are so many disadvantages in connexion with the scheme that he is forced to express himself against it. He has more work to do than he and his assistant can possibly carry out, and ought not to undertake any fresh duties. He trains his nurses for the Central Midwives Board, and would be sorry to give this up. In spite of the statement that he could teach two students, one must claim exemption for this infirmary also.

Greenwich Infirmary.—In this infirmary the maternity department contains a lying-in ward with ten beds, a labour ward with two beds, a small but well-kept bathroom, and fairly good offices. The structure is old and has many defects, but in the course of the last few years much has been done to remedy some of these, and improvements are gradually being introduced. During his term of office as Medical Superintendent, Dr. Burney has not lost a single patient from puerperal fever. He admits 78 cases yearly, the number keeping comparatively steady. Sometimes a whole month passes without a single labour case. He trains nurses for the Central Midwives Board, and would not give up this training. He stated that it would be impossible to guarantee to take even one student a month for instruction, and thought that it would be highly unfair to expect a medical superintendent, whose time is more than fully occupied to undertake any fresh duties, and especially to be prepared to get up in the middle of the night to teach on a normal case of labour. His

assistant medical officer is a competent lecturer on midwifery; but he, too, could not be expected to take on any fresh duties, even if the General Medical Council should accept the assistants as teachers. From every point of view this infirmary cannot be included among the number of institutes which might be utilized for the purpose under discussion.

Lewisham Infirmary.—The department here is excellent. The labour ward is a large room with six windows and three beds. The walls are enamelled, the flooring in thorough condition, the furniture of an aseptic pattern, and everything scrupulously clean, bright, and tidy. The stove or fire-grate is not in keeping with the ward, and may be regarded as the sole serious defect. Opposite this, the lying-in ward, containing fourteen beds, with a cubic space of 2,000 cubic feet a bed, is also satisfactory. Each bed is supplied with a swing cot, the beds themselves are of the Lawson Tait pattern, and the bedding excellent. The tables are provided with aseptic glass tops, and everything appears to have been done to render the ward and its surroundings as modern and safe as possible. The bathroom has a fire-glazed porcelain bath, which, however, has not proved satisfactory. The floor is cement and the walls tiled, and the whole is excellently kept. The water-closets are satisfactory, but the bed-pan flushing apparatus does not seem to be so. All the regulations with regard to the disinfection of linen and the destruction of dressings are rigidly and strictly carried out. Opposite the ward is a general ward for medical cases, but no case with any discharge of any kind is admitted into it. In this way it has been found practicable to employ one sister for the two departments, but the midwifery nurses are not allowed to go into the opposite ward. The results obtained in the ward justify this arrangement. Save in his first year, when a source of infection was discovered and two or three patients died of puerperal fever, no death has taken place from infection since Dr. Toogood has been Medical Superintendent. This would mean that he has had a run of some 1,200 cases without a death, while his total record must stand at 3 cases in 1,300. He thinks that two students might be instructed each month. The minimum admissions during the month are three, while the average is eight. He expressed the opinion that the teaching would entail more work than he had time to give, and also that from a personal point of view, he did not anticipate that the trouble it necessitated would be adequately repaid. He trains for the Central Midwives Board, but would not mind giving this up in favour of medical students. He suggested that he could utilize the students when they had nothing to do in the maternity wards in other parts of the infirmary.

Woolwich Infirmary.—Although there are 12 beds in the department, the number of admissions had remained stationary for the past thirty-three years at 30 cases per annum. Each of the two wards contains 6 beds and is bright and well kept. The labour ward is also quite good. It is a rule in the infirmary for all senior probationer nurses to go through the ward and to be trained in midwifery. From all points of view, no idea of utilizing this department could be entertained. Dr. Boulter, the Medical Superintendent, is opposed to the scheme.

Hackney Infirmary.—In spite of an application to the guardians, which was acknowledged, and repeated attempts to learn the results of their deliberations, the permission sought to visit the wards officially was neither refused nor accorded. In the absence of this permission, naturally no inspection could be made, and the available data are therefore limited to what Dr. Gordon, the Medical Superintendent, kindly supplied. The department was being rebuilt, and would contain thirteen beds, and three beds in the labour ward; 111 cases were attended during 1906. Three weeks had elapsed on one occasion without a birth taking place, but the average of from 2 to 3 cases each week was fairly well maintained. He had had special experience from his student days onwards in obstetrics, and this had remained his favourite subject. He trained nurses for the Central Midwives Board certificate, and regarded this as important work. However, he would welcome students for the purpose. During his twenty-five years of office he had only lost one patient from puerperal fever, about twenty years ago. This would yield a death-rate of 1 in about 2,700.

From the above statements it therefore appears that, at all events, it would be necessary to delete St. George's-in-the-East, Shoreditch, Croydon, as well as Mile End, Greenwich, and Woolwich, from the list of the infirmaries at which students could receive practical instruction in midwifery, and it would also be wiser to exclude Fulham Infirmary. This would reduce the numbers from 228 students who might be trained to 132—a number which is not quite large enough to fill up the deficiency left from the hospitals.

It should be mentioned, again, that the puerperal fever mortality at the Poor-law infirmary maternity wards is very low. Naturally, cases which were admitted with sepsis as puerperal fever cases are not included. In the 11 infirmaries at which inquiries in this direction have been made, 5 out of 16,650 patients—that is, 0·03 per cent.—died from infection, while, if the Kensington figures are excluded on the ground that they were given from memory alone, we still have 12,600 cases with 5 deaths, or 0.04 per cent.

As has already been stated, the maternity wards of eighteen of the unions are situated in the workhouses. In a few cases the buildings are in the immediate neighbourhood of the infirmaries, and even in the same enclosures, and the medical superintendents serve as medical officers to the workhouses. It might be thought that the maternity departments of these institutions should be included with those situated in the infirmaries, but inasmuch as the Medical Superintendent is merely an officer in the workhouse, and the Master is the head of the department, a distinction must be drawn. If he should impose regulations, interfere in any way, or adopt an obstructive attitude toward the student, there would be no possible remedy under the present arrangements.

Since the General Medical Council specifically mentions infirmaries and not workhouses in its recommendations, the latter places have been rigidly excluded from the inquiry.

General View of the Proposal.

On discussing the matter with the Medical Superintendents of the eighteen infirmaries not possessing maternity wards (Marylebone Infirmary had to be excluded, as has previously been stated), it appears that while five thought that it might be feasible to introduce practical instruction for students into the Poor-law infirmaries, the remaining thirteen regarded the difficulties as excluding the scheme. Two or three did not regard themselves as personally capable of undertaking the teaching of midwifery to students, after many years of service under the Board, during which time they had not carried out any duties of this kind. The fact that the medical superintendents are nowadays men who have held hospital appointments, who are highly qualified, and who have carried out hospital or institution work all their lives is in itself a guarantee of their professional capabilities, apart from the question whether the guardians who appoint them are capable of judging them from this point of view. It must be admitted that, although these men go through exactly the same preliminary kind of training as do the teachers at the large hospitals and medical schools, and although they are undoubtedly good clinicians, they need not have the gift of imparting their knowledge to others. However, even in this respect they have some experience, since every medical superintendent carries out teaching and lecturing to nurses. It may therefore be stated that, from the point of view of the teachers, the position might be considered satisfactory. Next one has to form an idea of the way in which the proposed training of the students would be carried out in order to be able to form an opinion as to whether the scheme is feasible or not. In the first place, the General Medical Council's recommendations would have to be considered by the Privy Council, as at present a regulation exists which excludes the utilizing of the Poor-law infirmaries for the teaching of students. Provided that this stage were got over, the Local Government Board would have to authorize the guardians to open their doors to the students. Lastly, the guardians would have to agree to the proposal. Should all these real obstacles be overcome, it would be necessary for the administration of each infirmary included in the recommendations to make arrangements for quarters for the students outside, but in the immediate neighbourhood of the infirmaries. A messenger would have to be engaged to call the

student at night or day time, when a labour was in progress. This messenger would be paid by the student, who would also have to pay fees for attending the course, part of which presumably (as is the case in the fever course at the Metropolitan Asylums Board Hospitals) would go to the guardians and the lion's share to the medical superintendents. The student would be called to the cases, as each took place, and would deliver the patient under the direct supervision of the teacher. On days during which no birth took place, the student would have to learn about the management of the puerperium. This might, if very thoroughly done, occupy about one hour of his day, and for the rest he would be without real occupation, surrounded by temptations of various sorts, with no one who would have time to see that he did not get into mischief, and yet he would not be able to go far away from the infirmary, as one of the few available cases might come in and be taken in labour at any moment. Most of the medical superintendents saw in this state of affairs a difficulty, especially with regard to the relationship between the student and the nurses. The type of nurse has improved very vastly during the past decade or two, but among a large number of persons there must always remain some who would yield to the temptation of a quiet flirtation. It must be realized that the medical superintendent would have little real authority over a refractory student. Another difficulty would have to be met should the exigency arise that a student, or even two, attending a department for the prescribed month and paying the recognized fees were left with no or only one case, as then the course would resolve itself into a mere waste of time.

Summary of the Objections.

The objections to the inclusion of the infirmaries may be briefly summarized as follows:

1. The medical superintendents are already overworked and could not undertake any extra duties.
2. The training of nurses for the Central Midwives Board or otherwise would have to be done away with. This is of importance, not only because it would tend to lower the standard of nurse at the infirmaries, but also because the midwife is an increasing necessity to the poorer classes, and the only way to safeguard their work and thus the lives of the parturient women of the poorer classes is to train her to be as efficient as possible. To take away from her a number of places where she can receive sound training would be to deteriorate her as a whole.
3. The difficulties to be overcome are out of proportion to the number of students who would receive benefit from the tuition, at all events for several years to come.
4. The dangers of allowing young men to have the run of the infirmaries without adequate supervision, as has been stated above, cannot be ignored.
5. There is no guarantee that all of the students would receive sufficient instruction during one month.
6. A number of medical superintendents would not undertake the night work entailed in the teaching, apart from not having time to teach during the day without neglecting other duties.

For these reasons it becomes evident that the General Medical Council should reconsider the question whether the Poor-law infirmaries are to be included or not. If not, they will have to face the problem that at present only Queen Charlotte's Hospital and the London Hospital have accommodation for this purpose, while in the course of some time St. Bartholomew's Hospital and King's College Hospital will be able to offer an additional number of beds for the teaching of students. If London is to be put on a sound footing with regard to midwifery instruction, arrangements must be made in a number of other places for the equipment of maternity wards where purposeful administration would get rid of the difficulties and dangers which beset some of the existing departments.

Alfred Henry Spurrier, Esq., L.R.C.P., has been granted the Royal permission to accept the insignia of the Second Class of the Order of the Brilliant Star of Zanzibar, conferred upon him by the Sultan of Zanzibar in recognition of valuable services rendered by him.

ROYAL COMMISSION ON VIVISECTION.

Third Report.

(*Continued from p. 1352.*)

The Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till the evening of Thursday, October 3rd.* We continue our abstracts of the evidence.

Antivivisectionist Testimony.

Evidence of the Rev. John Page Hopps.

Mr. Page Hopps (whose evidence occupies about ten pages of the Blue Book) was asked if he appeared as a witness on behalf of the Social Purity Alliance, and said he thought so; that was what he understood. He was minister of Little Portland Street Chapel, and a Unitarian. He was not in any way an authority on the subject of vivisection, but he had been informed by those who asked him to attend that the Commission was open to receive personal impressions and opinions as to the ethical bearings of vivisection upon public safety and public morals, and upon those who practised vivisection. As to matters of fact he had very little to say; his were only inferences based upon facts, and he must not be personal. The practice of vivisection, he supposed it was granted on all hands, undoubtedly produced a fascination for it which, in some cases, had confessedly risen to joy, and even to the perception of supposed religious sanctions. That might explain the dangerous suggestion made by one practitioner, that the hospitals ought to be supported, because "their inmates are made use of otherwise than for treatment"—a highly significant and sinister suggestion, which had very properly called forth from the other side the suggestion that the vivisector "is never safe to be trusted with a hospital patient on an operating table and a tray of knives at his side." He did not say that was his opinion; he only said he noticed both those statements. Asked for references, he said he would be glad to supply them later on. With regard to statements made by others, he simply pledged his honour that he had seen them. It was well known that in Continental hospitals experimental vivisection of patients was common. The revelations of the *Deutsches Volksblatt* concerning the conducting of dangerous experiments purely for practice, and the inoculation with contagious diseases of young children and pregnant women, were not likely to be soon forgotten. One distinguished surgeon in Vienna frankly told the correspondent of the *Morning Leader* that in most free hospitals "patients are made use of in the cause of science," adding, "Tests must be made on somebody, and patients in charity hospitals are generally the only available subjects." Asked who the Austrian surgeons were who had stated those views, he said he was quoting from the *Star* of January 27th, 1899. On its being pointed out to him that the evidence related to Vienna—which was not germane to their inquiry—he said he gave it for what it was worth. What was human nature was human nature in Austria or in this country. In reply to Sir William Church, who said he surely must realize that papers like the *Star* and many other papers were not very particular as to the truth of statements which they made, and would extract from a person's speech or writings a sentence which might bear a very different meaning from that which it bore in the original statement of the speaker or author, he said he was very well aware of that. Asked whether there was any evidence that the medical man in Vienna who made these statements had ever practised vivisection, he said he knew no more than he quoted. Proceeding, the witness said that as to the ethical effects of vivisection upon the community, it was surely reasonable to suppose that the example set by such highly-placed men as adorned the medical profession would be followed by others not so highly placed (he was speaking then of English practitioners) and perhaps not inspired by such beneficent intentions. Of course it would be said

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that vivisection was justified because it had its uses in relation to the treatment of human beings. As to that he said nothing, except to remark that the medical profession was by no means unanimous as to it, and to add this doubt of his own—whether observations made during the special and artificially produced agony or distress of a dog on a dissecting table might not mislead when applied to a man in his bed? What must be the ethical effect upon a man who revelled in the disgusting work, who called the ideal vivisector an "artist," and said:

The vivisector must approach a difficult vivisection with joyful excitement. He who shrinks from cutting into a living animal, or approaches an experiment as a disagreeable necessity, will never be an artist in vivisection.

It might at all events be said of the vivisector's work that, if a necessity, it was a painful necessity, and that the natural inference of it was the blunting of the fine moral sense. It might be said that this was the vivisector's business. That was not so. The operator helped to create the atmosphere in which a powerful and beneficent, or possibly a formidable and maleficent, profession worked. The remedy for most of our maladies was not to be found in the carcass of a cat but in the soul of a man. How could a man bear to carry through the tortures indicated unless he acquired the necessary insensibility to, or forgetfulness of, the inflicted pain? The great Dr. Abernethy's testimony had not been invalidated by time:

Vivisection has the direct effect of deteriorating the moral sense, and, once the moral sense is destroyed, it is impossible to foresee the consequences.

The operator might be so absorbed in his study as to be oblivious of the disgusting details; but that made no difference, except as a grave suggestion as to what was happening to the operator. It had been very properly decided in this country that cruelty to animals was an indictable offence. Why? Surely because it was an offence against public decency and public morals to inflict torture. Suggestions as to the ethically bad effects of vivisection upon the operator were only inferences, but of recent years there had been sufficient facts to warrant them. Only last year a professor—Professor Metchnikoff, at King's College, May, 1906—reported in the *Journal of Preventive Medicine*, August, 1906, asserted that "in questions of health morality should not attempt to lead hygiene, but should rather follow her," a very sinister suggestion which went a long way towards justifying the statement that these questionable pursuits led to questionable doctrines, if not questionable ethical practices; and, in the case of this professor, one was hardly surprised at finding him highly interested in syphilitic experiments with chimpanzees and baboons, with his eyes upon "the beginners in prostitution," and a commendation of the application to these beginners in prostitution, of the chimpanzee and baboon experiments, as "an advantage to them as well as for the men having intercourse with them." Apart from this directly ethical view, the justification of vivisection was based upon sheer selfishness. What law of God or Nature justified this treatment of our poor relations? What right had an "artist in vivisection" to assume that these creatures were at his disposal for torture? The cutting up of one baby might save the lives of thousands of other babies, and the torture of one for an hour might save thousands from suffering for years. But that would be no answer that society would accept. The killing of the cheapest baby would be murder, and its deliberate slaughter for any reason would be voted damnable. Did not the whole thing turn, after all, upon the animal instincts which, at all the lower stages, suggested mere crass selfishness? Before they talked so freely of the "lower animals" it might be well for them to consider whether they were in a position to judge as to what their relative places in Nature really were. Man's arrogance and masterfulness, always selfish and usually cruel, wanted repressing, not encouraging; and, in that repressing, they must be willing to forego knowledge gained through the cowardly exploiting of weaker creatures. Asked if he was acquainted with the rules and regulations laid down by the law with regard to experimentation on animals, the witness replied that he thought that, on the whole, he knew the Act. He was perfectly familiar with the fact that there were regulations, but, surely, it was always an open question whether those conditions were complied with. Broadly speaking, the law required that the animal to be experimented upon should be made unconscious. He doubted whether it was done. He was not aware that in all cases the law required the animal to be killed; if so, he thought that would rather strengthen some parts of his statement in two ways: In the first place, by the suggestion that the animal was terribly injured beyond hope of recovery, and by the fact that the creature was entirely deprived of its existence. Asked what his reasons were for doubting that the animal was unconscious the whole time, he said he had read thousands and thousands of pages with regard to that, and had come in general to that conclusion. He did not know offhand the details of how a licence for performing an experiment on an animal was obtained. He had not taken up the position that all experimentation upon animals and that all deprivation of animal life by man for any purpose whatever was immoral. In reply to further questions, he said he certainly should revel in experiments himself if he were a vivisector. Every man loved the details of his profession. Asked what object he thought these people had in vivisection, he replied that he could imagine the delight there must be to the anatomist, for instance, in the dissection of the body. If he could do it, and loved it, he would delight in it for his own sake. Asked if he thought people vivisected without a special object, he said:

Yes, most assuredly; I should myself if I were a vivisector. I should experiment for the love of it.

Proceeding, he said he thought it was human nature. Asked as to the passage he had quoted from Abernethy, he said he could not say if he wrote it before or after the time when anaesthetics were used in experimentation. Asked if he considered that man had a right to use the lower animals for his convenience and for his food, he said for his convenience almost assuredly; for his food he had doubts. He was not a vegetarian. He would go for the total abolition of vivisection. Asked as to his statement that there was a spirit arising which would lead to experimentation upon man in hospitals, he said he thought that was very natural. In reply to Colonel Lockwood, witness said all his knowledge of experiments was secondhand. In reply to Sir William Collins, he said his position was that of an abolitionist, not only because vivisection was ethically bad, but he doubted its efficiency, its utility, and the possibility of its being misleading. He thought vivisection should be prohibited by law. He should have to consider a good deal as to all kinds of ethically bad things. For instance, lying was ethically bad; he did not know whether it should be prohibited by law; it was such a big question. Asked why he selected this one of many ethically bad things for prohibition by law while others would remain permissible, he said it was ethically bad on various public grounds. Take the case of a doctor. He had a reverence for the medical profession; every year he preached a sermon in favour of doctors, but he should be very sorry to have attending him, if he were ill, a doctor addicted to vivisection. Asked if he thought that a more stringent prohibitive law than that which at present existed would be liable to be evaded, he said he thought so. He believed that the provisions of the law were evaded now. Asked by Sir John MacFadyean if his views as to the morality of vivisection were not based on certain conceptions which he now had as to what the word "vivisection" actually covered in practice, he said, Yes; it was not upon what was actually going on that his view was based. He did not confine himself to what was vivisection as practised to-day. Asked with regard to his use of such expressions as "horribly tortured," "revelling in this disgusting work," "the artificially produced agony in a dog," what information within his own possession had led him to conclude that any experimentor in this country was in the habit of torturing or artificially producing agony in a dog, the witness replied that if he had thought that he should have been asked for references to justify him in those statements, he would have brought his pile of books and publications, from which he could have quoted. Asked if he held to those expressions as being correct he said "Certainly"; from his readings and conversations he felt justified in making the statements. Asked to extract for the information of the Commission from this huge mass of material some half-dozen cases in

which he thought that the author's account of the experiments justified their being described as "horrible torture," he said he had not restricted himself to the practice of vivisection in this country. Asked if he meant that man was never justified in inflicting pain upon an animal, except for that individual animal's good, he said he did not say that. Asked if he thought that man was justified, for the mere purpose of improving the quality of his animal food, in subjecting male animals to the severe vivisectional operation known as castration, he replied in the negative. The examination proceeded as follows:

Although you have never seen it done, with the imagination that you possess you must be able to figure to yourself how exceedingly painful an operation it is when done without anaesthetics. Do you think it is justifiable?

Did you say for the animal's good?

I did not say that.

I thought you did.

I said that it was done for man's good—to improve the quality of his food.

I should not like the man who did it.

It is not a question of the man who did it? Will you answer the question?

But there might be hundreds of questions of that kind, and I should give that sort of answer to them all.

But I do not know what the answer is. Do you think it is justifiable?

No.

I want to see whether you are perfectly consistent. Do you invariably ask for bull beef when you send to the butchers for beef?

Never. I did not know that there was any difference.

You will find the difference if you ask for it once and get it. Do you not think that it is very inconsistent in you, merely for good digestion or taste?

But I do not.

But you spoke elsewhere of foregoing advantages derived from vivisection; why should you not set your face against this cruelty?

I should, decidedly. If a butcher told me, Here is one bit of meat got through this operation, and here is another, I should say, I will have neither of them.

That is hardly going far enough. Ought you not to ask for bull beef, for instance?

I did not know there was such a distinction. I am not such a connoisseur, such a gourmand, in the matter.

That is because you have always eaten the good sort, which is got by a painful method?

No, because I shrink from eating meat at all. I take no interest in the manner. I am almost persuaded to be a Christian in regard to that.

But you are not quite consistent?

I admit it; I am not.

In reply to Mr. Ram, he said he did not deny that knowledge could be obtained by vivisection, but it was not lawful. In reply to further questions, he said he did not know what happened under anaesthetics. Asked if he thought it wrong for a surgeon to kill an animal painlessly in order that he might examine it after it was dead, he said he thought it was. Asked if it was wrong to kill animals painlessly in order that their hides might be turned into leather, he said that again was a doubtful question. On its being pointed out that he was wearing a pair of very well-soled shoes, he said, "We were all inconsistent." He did not think it wrong to drive a horse in a cab, but it would be wrong to drive a man if he did not like it. So far as he could get into the mind of a horse, the horse had no opinion upon it; the man had. That answer was all he cared to give. In reply to further questions, he said he would abolish the present Act and pass an Act forbidding vivisection. Asked if he thought that would stop it, he said he was afraid not. He would disallow the farmyard operations which took place by the thousand every day on colts and young stock of all sorts. In reply to Mr. Tomkinson, he said his main object was to diminish the sum of animal suffering, but it was not only that. His statement indicated other reasons—to diminish the danger to the vivisectors, for instance. Asked if he admitted that it was necessary to destroy rats and animals of that sort, he said, Yes. Asked by Sir Mackenzie Chalmers what was his test of what was ethically right or wrong, he said his own conscience, his education, and his general spiritual condition. He agreed that it was merely a question of individual judgement. Asked to define vivisection, he said he could not define it except by taking the dictionary meaning of the word, "Cutting up an animal alive." There were endless grades of objection from what was almost unimportant up to deviltry. Asked about feeding experiments, he said he knew nothing about them. They were very improperly called vivisection. It was pointed out to the witness that there was no such term as vivisection known to the law; the existing law of England dealt with experiments upon animals. He was then asked if he had ever read the Act, and replied that he must have read it. Asked as to experiments on animals with a new suggested snake-poison cure, and as to experiments on rats with regard to new cures or new modes of prophylaxis of plague, he said the trouble with him all the way through was that he did not trust the operators. He would go a great deal further in relation to being practically careless about vivisection if he could trust his fellow creatures more. Asked if he had made any inquiries in laboratories or from people who carried on experiments, he said he did not know them. His knowledge was derived entirely through reading and conversation, not with anti-vivisectors only. Asked if he had ever made any practical inquiry into the conduct of individual people as to whether they used full anaesthesia or not, he said he had had no opportunity of doing so. In reply to further questions, he said he would not like to go rabbiting, but he certainly would not prohibit it by law. Asked if, therefore, he thought it ethically less wrong to kill or maim for sport than for the advancement of knowledge, he said that was not so, because many other considerations which made habitual vivisection dangerous and cruel were there left out. Asked if he knew that every horse in England that was not kept for breeding purposes was castrated, he said he did not know that. He was very sorry to hear it. He would rather take his chance of the horse. Asked if he would prohibit the operation of gelding a horse, he said he would leave all those matters to the common law of cruelty to animals, and judge every case on its merits. Asked by Sir William Church why he felt so doubtful of the honesty of experimenters upon animals, he said he did not feel any more doubtful about their honesty than he did about that of other classes of human beings. He did not trust, in the present stage of social development, any order of men with doubtful powers. He did not mean that those gentlemen deliberately broke the law. Asked if had not given evidence that day on what he thought was the case on many points without having made any inquiries as to whether it was so really, he said he could not say that; he did not admit that at all.

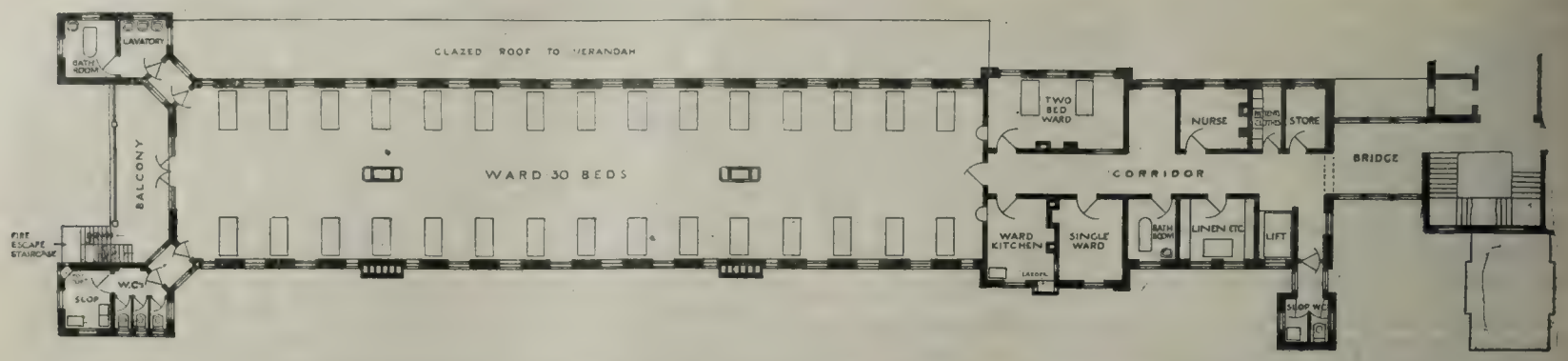
LEICESTER INFIRMARY.

In a previous number[1] we gave an account of the laying of a memorial stone in the block of new wards at the above institution, and we can now record their satisfactory and rapid completion and their final opening on November 5th by Her Royal Highness the Princess Louise and the Duke of Argyll.

The block is of three floors, and on each floor is a ward and offices identical in plan. Their construction can best be understood by reference to the annexed plan, which shows the long ward for 30 beds, each bed being placed between windows. The sanitary arrangements are in two detached towers, the space between being filled by a balcony entered by folding doors from the ward. Advantage is taken of these to provide an iron staircase from the second floor to the ground as an emergency or fire exit.

The corridor uniting the block with the main staircase gives access at its sides to a double-bedded ward, one single-bed ward, a ward kitchen, additional bath room, linen room, stores, ward laboratory, room for patients' clothes, and w.c. accommodation in a detached turret, and access is gained for patients by a lift large enough to accommodate a bed. The only difference between the floors is that a glass-covered verandah runs the whole length of the south-west side of the ground-floor ward. In this, which is of ample width, open-air treatment can be carried on. The block is not continuous with the main building, but the corridors to the respective wards run through covered bridges, a free air space being left between each bridge and the one above. The block will contain ninety-nine beds, and the medical staff believe that the wards are second to none. The architect is Mr. S. Perkins Pick, F.R.I.B.A., of

[1] British Medical Journal, 1907, vol. i, p. 529.



Leicester Infirmary: south-east wards; first-floor plan. (Plan kindly lent by the Architect.)

Messrs. Everard and Pick, Leicester, who has thoroughly appreciated the essentials of what is necessary for a hospital ward, both on the grounds of perfect sanitation and also of convenient administration.

The occasion of this opening was made quite a gala day by the citizens of Leicester. Streets were gaily decorated and Her Royal Highness, after receiving an address at the station from the Corporation, duly read by the Recorder, Mr. Marston Buzzard, K.C., made a short progress through the town, and was then entertained at luncheon by Sir Edward Wood, Mayor of Leicester and Chairman of the Board of Governors of the Leicester Infirmary. The only regrettable incident in a memorable day was the unfortunate absence of the noble President, the Duke of Rutland, who was suffering from a rather severe attack of indisposition, which happily had already taken a favourable turn. The Duchess of Rutland was present, and the duties which would have fallen on the Duke of conducting Her Royal Highness over the building and introducing her to the assembled Governors were most efficiently and genially fulfilled by Lord Churchill of Rolleston Hall, who was accompanied by Lady Churchill. About 200 guests were entertained, and at the conclusion of the luncheon the MAYOR explained that six years ago it was decided to spend £50,000 in making the infirmary an up-to-date hospital. More than that amount had already been spent, and when the new nurses' home was completed Leicester would have an institution as healthy in its sanitation as in its environment. He recalled the fact that Her Royal Highness had eighteen years previously visited Leicester to open the Children's Hospital, and referred to the well-known interest taken by His Majesty the King and all the members of the Royal Family in any undertaking which had for its object the alleviation of suffering.

The DUKE of ARGYLL responded, and the company adjourned to the infirmary buildings, where the Princess followed, and was received by the Mayor, the Chairmen of Committees of the Board of Governors, the Senior Physician (Dr. Frank Pope), the Senior Surgeon (Mr. Charles J. Bond), the Bishop of Leicester, the Lady Superintendent (Miss Gertrude Rogers), the Architect, and the Chaplain, who were all individually presented to Her Royal Highness. A procession was formed and proceeded to the lower or George Oliver Ward, where, after declaring the building open and receiving a beautifully-chased and jewelled silver key from the architect, Her Royal Highness received purses containing £5 and upwards for the new nurses' home, the amount obtained in this way being over £600. Lord CHURCHILL thanked Her Royal Highness in the name of the Governors, and expressed pleasure that Sir Edward Wood, who was Mayor of Leicester on the occasion of the Princess's visit eighteen years previously, was now again in that honourable position.

The DUKE OF ARGYLL responded, and the Princess visited the first floor, or Samuel Odames Ward, and there opened a bazaar in aid of the building fund.

The plans for the new nurses' home have been passed, and the work will be put in hand immediately. It will stand to the south-west of the infirmary, and will consist of a main building four stories in height. The ground floor will contain two spacious sitting rooms for sisters, nurses, and probationers, a library, a "quiet" room, house matron's sitting room, and small kitchen, but meals will be taken in the main building as a rule. A special feature of the plans is the provision of a large room which will be used for recreation, lectures, musical and other entertainments, and for instruction. This room, together with the hall which it adjoins, is connected to the rest of the building by glass-covered corridors, forming a winter garden. The three upper floors are to be devoted entirely to bedroom accommodation, 100 separate bedrooms being provided. Each room will have a fireplace, and the building is so planned that every room at some time of the day will receive direct sunlight, all facing east, south, or west. Ample lavatory and bath accommodation is provided. In connexion with the extension of the infirmary the laundry has had to be enlarged at the cost of about £1,500.

To sum up, the remodelling works in connexion with the infirmary during the last six or seven years and their respective costs are as follows:

	Blocks.	*Cost.*
Completed	Victoria Memorial Wing (operation theatres and surgery)	£12,500
	New out-patient block, drainage, and boiler house	40,000
	New South-East Wing and Laundry ...	20,000
In hand ...	New Nurses' Home	20,000
		£92,500

Of this large sum, all but £10,000 is paid or promised. It is hoped that the Bazaar will produce about £3,000, so that the sum to be still found is small in comparison with what has already been raised. In addition there will be some rémodelling work in connexion with the south-west wing and an isolation block is also imperatively required. It is possible that an expenditnre of about £15,000 in addition to the amounts mentioned above will be needed before every portion of the hospital can be considered complete.

It may naturally occur to some that possibly it might have been a better job to have pulled the whole down and rebuilt, but in the opinion of both Board of Management and Medical Staff this is not so. The completed building will contain nearly 300 beds, and experience shows that a modern hospital of that size would cost nearly £200,000, or double the Leicester expenditure. Thus the work of the hospital could not have been carried on during the rebuilding as easily as has been the case; and thirdly, by spreading the rebuilding over a considerable period business men have been induced to make several donations instead of one. Industrial conditions in a manufacturing town do not permit of men, even those in possession of good incomes, withdrawing much capital from their concerns at one time, though they are willing to repeat donations after a due interval.

The inhabitants of Leicester may be congratulated on the possession of a fine hospital, and the last words of this report must be in praise of the Mayor and Chairman of the Board of Guardians (Sir Edward Wood), who has not only been the most liberal donor to the funds, but has supervised every detail, has listened patiently to the smallest suggestions made by the medical staff, and amidst his arduous business and official labours, and in spite of the most severe family bereavement, has devoted an amount of time to the work of the Infirmary which has alone made possible the results achieved.

Since the above was written we have learned that the result of the bazaar has been to add over £4,000 to the Building Fund.

MEDICAL STUDENTS IN AUSTRIAN UNIVERSITIES.—The total number of students in the seven universities of Austria-Hungary during the last summer semester was 21,504. Of these 2,760 were matriculated students of the medical faculties; among these were 112 women. In addition to the matriculated students there were 324 students who attended special courses.

THE MEDICAL SERVICE OF THE TERRITORIAL FORCE.

Conference in London.

A Conference was held in the Hall of the Royal College of Physicians of London on November 12th to discuss the medical arrangements for the territorial army. The chair was taken by Sir R Douglas Powell, the President of the Royal College of Physicians.

The Staffing of Military General Hospitals.

Sir Alfred Keogh, K.C.B., Director-General of the Army Medical Service, in addressing the meeting, described the constitution of the medical and sanitary services of the regular army, illustrating his remarks by the diagrams and tables reproduced in our report of his address at Leeds,[1] but dealt especially with the provision and staffing of general hospitals. The staffs of these hospitals would, he said, consist of physicians and surgeons of civil hospitals, who would be responsible for medical and surgical treatment of patients admitted, but not for administration, which would be conducted by special officers having administrative experience. The terms "general" and "stationary" hospitals were established by long military usage, but both were, in fact, general hospitals in the civilian acceptation of the term, the only difference being that the military hospitals called "general" were larger than those called "stationary." For the present it was only contemplated to establish "general" hospitals for the territorial force. In the past nearly all the great physicians and surgeons of the country had been excluded from the Volunteer Medical Service because the War Office had long ago decreed that no one could belong to the medical volunteers unless he did a certain amount of annual training in camp. It was not necessary for hospital physicians and surgeons to go into camp to learn medicine and surgery. The adoption of the principle of asking individuals to perform in time of war in the United Kingdom work identical with that which they performed in civil life rendered it unnecessary to impose conditions as to military training in times of peace. Of course, if a medical man desired to perform duties of an administrative character in the volunteer army he must be trained in administration. Further, a sanitary officer of the territorial force would have something to learn, for the conditions in war were not the same as those he was accustomed to in civil life. Sir Alfred Keogh said it was proposed to ask the physicians and surgeons of London hospitals to assist in the work. The scheme for the territorial force provided for four general hospitals in London. Every hospital should contain one administrator, one registrar, and one quartermaster, who must be trained annually. In addition to those three officers, who would deal with the administration, there would be physicians and surgeons. It was desired to have more physicians and surgeons on the list than would be required, so as to secure the utmost elasticity as regards the assumption of duties in time of war. Therefore the number of physicians and surgeons attached to a hospital would be larger than that required in time of invasion. The Army Medical Service would undertake to provide huts or tents or buildings for these hospitals, complete with all necessary equipment. All that was asked of hospital physicians and surgeons was to join the territorial medical service, and to hold themselves in readiness to come out in time of invasion.

The Need for Scientific Organization.

Mr. Haldane said he saw round him many old friends, with some of whom it had been his privilege to work side by side ten years ago, when they were trying to organize the higher education of London. The struggles of those days culminated in the passing of the University Act of 1898, which laid the foundations on which they were still building. They talked in those days of the value of science and of scientific organization, and they were there at the present time to speak of those methods in connexion with another work. Sir Alfred Keogh had told them of the organization for the medical side of combatant operations; it was a far more serious matter than it seemed to those who had not reflected upon it. It was not mere reflection, however, that had brought them together in that Conference, but it was the result of bitter experience that prompted them to make an earnest appeal to the medical profession. He could not rival Sir Alfred Keogh in the admirable description he had given of the great advances which science was making in the development of the medical side of army organization, but he could appeal to them on more general grounds. They were endeavouring to work out a conception which seemed perfectly definite. The army was like a large machine in which some of the wheels were worn out and some were missing. They had found that not half of the work which that machine ought to be able to do could be got out of it—not because the machine was too small, but simply because its parts were not properly fitted into one another.

In war one of the great truths was that nothing effective could be done unless preparations were made in time of peace, and, further, that all preparations in time of peace must be based on the assumption that they were required for war and for nothing else than war; otherwise, when warlike operations had to be carried out they would find themselves face to face with difficulties that they had not realized. The army was a collection of formed bodies of men subdivided again into smaller formed bodies, which operated and were effective according to the training and preparation which had been put into their organization. Thus a battalion of 1,000 trained men was far more potent than the same number of men acting individually. The secret of success was to train and form men into one corporate whole, so that they could act with far more power than they could individually. That showed itself in every detail in army organization. To form one of the divisions of the territorial force meant an enormous amount of previous preparation, for the men had to be trained to work together so that they were prompted by a common purpose that united them. Every part of the mechanism of such a division and every one of its operations must be studied. When they moved such a division in the field or by rail there was an immense amount of skilled scientific work to be done. Every part of such an operation must be studied in peace time. They had now wakened to the fact that wastage of a division in war was as much to be studied and prevented as anything else; therefore the Director-General had dwelt on that new phase of the scientific element in army medical organization which aimed at preventing wastage by reducing sickness. That function was as real as the carrying in of wounded in the field, and it could only be accomplished by careful supervision of details. Those facts showed what an enormous business the preparation of an army for war was, and how long it must take.

The basis of their plan was to have an expeditionary force ready, better organized than they had ever had and much stronger. That force was to be trained and prepared for acting at a distance. The country was responsible for the maintenance of order among four hundred million people scattered over most of the globe, and that required a very special force. People talked of the small army that was needed, but they forgot that it was not merely the defence of the shores of this island that they were concerned with, but it was the holding together of the Empire as a whole. The preservation of peace and good government in every part of the Empire and the guarding of its frontiers required a force that could operate at a distance. A force that was to operate in that manner must be and was far larger than even Germany or France found it necessary to maintain. When that force left our island shores, which were guarded to a great extent by the navy, it followed that we required something to protect the country and the conception was that there should be a citizen army to defend these shores not only organized far more completely than the old auxiliary forces but framed exactly on the pattern of the expeditionary force, so that when that went abroad the citizen force would be ready to take its place. But if it was to be relied on it must be a real force, and it was therefore necessary that no detail in its organization should be left incomplete. In the case of the regular army they required a regular organization not less perfect than that which Sir Alfred Keogh had described.

The medical profession was now asked to help in that work in the citizen army. It could not be done on the regular military professional basis; it must be carried out by the patriotism of the citizens themselves. The State provided the organization, found the material, and

[1] British Medical Journal, November 2nd, 1907, p. 1243.

took care that people should not be out of pocket for doing their duty to the country. They now appealed to men of science to help them with scientific organization. The work of medicine and surgery was inadequate unless it was of the highest type, so they had to come to the heads of the profession and ask them to join in order that the task might be accomplished. He had been closely connected with the medical profession; he had had relations who had held important positions in it, and he knew that there was no body of men in the country more keen to take up this question of national defence than the medical profession. Medical men, even when they retired and could look for a time of leisure, gave examples of patriotism, and such an example was seen in Sir Frederick Treves, whose devotion to public work bearing on army organization was so well known that it seemed to be his special preference. Continuing, Mr. Haldane said that he believed that in coming to them for help in that new departure he would be making an appeal which would not be made in vain. It was a great task, and one which would not be accomplished for several years, for they were trying to build up an army for home defence such as Switzerland possessed. They were seeking to perfect the organization of that work, and they were trying to put at its foundations scientific principles. They came therefore to those who possessed those special qualifications that were needed and who had that special knowledge without which it was impossible to act. In the past the War Office had held itself far too much aloof from the public, and what was true of the War Office was true of the army. They were trying now to bridge over the chasm between the nation and the army by means of the citizen force, and as part of that process they had come to the medical profession with their plans, and sought its co-operation.

Resolutions.

Mr. Henry Morris, President of the Royal College of Surgeons of England, moved the following:

> That this meeting having heard with great interest the proposal for the formation of a territorial medical service sympathises with the objects in view, approves of the proposal, and pledges itself to support the scheme.

He said that he had pleasure, as President of the Royal College of Surgeons of England, in moving the resolution, although he freely admitted that he was one of those referred to by Sir Alfred Keogh in his address at Leeds, who had not devoted any great amount of attention, if any, to the important question of the relation of the science and art of medicine and surgery to the science and art of war; nevertheless, he had followed and read Sir Alfred Keogh's views in manuscript and in print, and, after having had the advantage of hearing the very lucid, interesting, and important speech that afternoon, it seemed to him that there was nothing that had been suggested, or was likely to be suggested, by the Director-General of the Army Medical Service to which the medical profession could not, and ought not, to accede. The territorial force must have a properly organized medical service, compact, consolidated, and co-ordinated, so as to be ready for active service. It must be prepared in good time, and must be kept in good training. Nothing was asked from the medical profession which was not being asked of other classes of citizens in this country. Those at the helm at the War Office were leaving the scheme for medical service to be devised very largely by the medical profession itself. The policy adopted was a nation's policy, and not the policy of any one party, and that was the policy to adopt if the proposed force was to be based on permanent foundations.

Dr. Pye Smith having seconded the resolution, it was put to the meeting and carried unanimously.

Sir Frederick Treves then moved the following:

> That the President of the Royal College of Physicians and the President of the Royal College of Surgeons be jointly requested to form a small Committee to consider and inform the Director-General of the Army Medical Service how the proposals for the territorial medical service shall be best carried into effect.

He said that the plan brought the civil side of the medical profession into much closer touch with the Army Medical Service. He thought that the civil profession would find the study of the machinery of the Army Medical Service remarkably interesting, and he was certain they would be impressed with the methods of dealing with large sanitary questions and with disease *en bloc*. The present appeal was for the offer of service, and an appeal of that kind had never yet been put in vain before the members of their noble profession.

Surgeon-Colonel P. B. Giles, V.D., in seconding, said that the scheme came from the medical profession. Some years ago the British Medical Association had appointed a Committee of its members possessing practical experience of the needs of the volunteer medical service, and the report of that Committee having been adopted by the Association, had been transmitted to the War Office, and had been taken over by it with little alteration. The profession conceived it, the Director-General of the Army Medical Service had nursed it, and Mr. Haldane had promised to supply it with the money needful to bring it to perfection.

On being put to the meeting the resolution was carried unanimously, and the Conference then terminated.

Oxford.

At a meeting on November 6th, in the University Museum, Oxford, presided over by the Vice-Chancellor, Sir Alfred Keogh, who was introduced by Professor Osler, described the scheme for the medical and sanitary service of the territorial force. In concluding his address, Sir Alfred Keogh said that it was intended to arrange for the organization of a general hospital should necessity arise at Oxford, and hoped that it would be called the Hospital of the University of Oxford.

The Vice-Chancellor, in proposing a vote of thanks to Sir Alfred Keogh, said that the University would give the scheme every support it could. The proposal was seconded by Dr. Brooks, and carried unanimously.

The Society of Medical Officers of Health.

On November 8th Sir Alfred Keogh read a paper to the Incorporated Society of Medical Officers of Health on Disease Prevention in the Territorial Army, and described the scheme for placing medical officers of health in relation to it. The scope of the scheme was explained in our report of Sir Alfred Keogh's address at Leeds. Sir Alfred Keogh appealed to medical officers of health to enrol themselves in the medical corps of the territorial force, to take into consideration the problems to be solved during active operations in their own home areas, and to be ready, should the emergency arise, to place their knowledge and experience at the disposal of the authorities commanding their divisions of the territorial force. He asked for no conditions of service except the obligation to assist in the event of war at home, and in that case the service rendered would be paid service. If in time of peace, in connexion with manœuvres in any area, a medical officer of health desired to spend a day or a week with the division of the area to which he belonged, the regulations would, he hoped, be so framed as to admit of this. The sanitary department would have non-commissioned officers and men detailed to join the battalions for the technical duties of water sterilization, disinfection, and the disposal of excreta and refuse; it would also have non-commissioned officers and men detailed to camps, and these men would be educated at the head quarters of the Royal Army Medical Corps, which would be constituted schools of instruction, one or more in each county.

Colonel Lane Notter, Chairman of the Council of the Royal Sanitary Institute, said that it was absolutely necessary that there should be a body of men well acquainted with sanitary work to carry out the duties of the sanitary service of the territorial force, and there were no men so capable of rendering such assistance as medical officers of health.

After a short discussion a resolution cordially approving of the scheme and promising to give it the fullest consideration was adopted, and it was understood that a small committee would be appointed to confer with the Director-General in arranging the details of the scheme.

Dr. George Reid, who was in the chair, in proposing a vote of thanks to the Director-General, remarked that this was the first occasion on which there had been anything of the nature of a conference between the representative of a Government department and public health officers. He believed that nothing but good could result from the new departure.

The motion was carried by acclamation.

SCHOOL HYGIENE IN LONDON.

Dental Conditions.

Under the heading "Dental Conditions," the Medical Officer to the London Education Committee dwells upon the unsatisfactory condition of the elementary school children. The more carefully the children are examined the greater the amount of destruction and disease revealed. Dr. Marion Hunter, in reporting on infants at the time of admission to school, gives the following instances of the dental conditions actually existing:

Out of 700 only 20 had no obvious decay, 205 had two, 152 from three to five, and the rest more, teeth in a carious condition. The following are individual instances:

Boy, aged 5 years 1 month, had not one tooth, merely offensive stumps.
Boy, aged 3 years 7 months, had 7 teeth out and 5 stumps remaining.
Boy, aged 4 years 9 months, had 11 stumps.
Boy, aged 4 years 9 months, had 14 stumps.
Boy, aged 4 years 8 months, had 17 stumps.
Girl, aged 5 years 2 months, had only 2 teeth left.

Dr. Kerr says: "With such dreadful oral conditions and the constant absorption of septic material the chances of healthy childhood are small for most of these infants, although the popular idea seems to be that milk teeth do not matter."

During the year dental care has been instituted for children over 10 years of age in the schools for the deaf. This is a matter of especial educational importance in connexion with the teaching of articulation. The teachers have to come into close contact with their pupils, and foul or septic conditions of the mouth are often intolerable. The attention confined to children over 10 should, however, be extended to all ages. The observations made in the schools were carefully checked by Mr. C. Edward Wallis, who voluntarily examined many children at the Michael Faraday School, and who is able to compare them with the children of the Council's two industrial schools at Mayford and Feltham. The boys are younger at Mayford, and the importance of beginning young is emphasized by the greater care these boys seem to take of their teeth. From the work at Feltham, where there are usually about 540 boys and about 125 annual admissions, some idea can be obtained of the amount of treatment required to keep mouths in order.

The first step is the inspection of the mouths. A large number of necrosed teeth were found *in situ*, and as a result alveolar abscesses, gingivitis, inflamed tonsils, and enlarged glands were prevalent. Having selected those to be treated, from 15 to 20 were seen at each weekly visit, and all teeth so diseased as to be incapable of being rendered healthy and efficient for the purposes of mastication and maintaining the proper growth of the jaws were removed in order to improve the condition of their mouths and consequently the general health as speedily as possible. At first the time was almost wholly given over to extractions. No anaesthetics were given or required. As far as possible all were removed at one sitting, and the boy then told that so long as he kept his mouth clean he would have no further teeth out. The removal of the septic teeth alone produced a great improvement in general health, from diminution of the cases of sore mouths or throats, tonsillitis, and enlarged glands. The teeth requiring stopping were then taken in hand, and only 15 boys, but often not more than 12, could be managed at a visit. Assuming that 15 to 20 are seen every morning and afternoon, from 75 to 100 children will, as a rule, be dealt with weekly, or 6,000 to 8,000 yearly, by a dentist working all the time.

The secondary schools and training colleges show dental conditions among their pupils which, considering their age and status, are no better than the conditions of neglect and offensiveness found in the elementary schools. Hitherto the futility of mere examinations without treatment in dental cases has made the employment of school dentists scarcely a matter of practical politics. The experience of the last three or four years in Germany has, however, altered this. Professor Jessen, of Strassburg, has worked out a scheme for school dental care, which was taken up by the municipality, and is now being adopted as a pattern throughout Central Europe.

It is obvious that dental caries is the most widespread affection among the population, and as a result the working capacity, and even earnings, of large numbers of the population is seriously affected. Dr. Kerr insists that dental hygiene must be taught in school, but adds that "Continental experience shows that examinations and teaching are useless unless followed by the practical measures of inculcating and enforcing cleanliness among the children, and providing remedial treatment. Most of these children will be neglected if left to private enterprise. The affection is so insidious and so widespread that it should be met by public provision. There is no way of dealing with money in the interests of public health which will return so enormous a gain to the population for the small expense required as this matter of school dentistry. Dentists never touch this class of child, and there is here no competition between the private practitioner and the public servant. The children at Strassburg, as we saw when there, come gladly and come voluntarily. They bring each other to be relieved."

At present there is not hospital accommodation in London for more than about 200 cases weekly—say 10 000 annually—but at least ten times this accommodation would be required to relieve even a part of the children whom school dentists would select as requiring it. Probably dentistry would be best practised as part of the work of the school clinics which are suggested. The operations would be of the simplest nature, extractions or fillings, no regulation cases or special operations being undertaken. The limited variety in the nature of the work, and the class of officer required, almost demand that the dentists should be part time officers, rather than full-time. An assistant medical officer who has also practical dental experience is highly desirable now to make observations and inquiries, and prepare information for the Council, when it comes to consider this very important subject.

UNITED KINGDOM POLICE SURGEONS' ASSOCIATION.

The annual meeting of this Association was held at 6, Catherine Street, Strand, Dr. J. F. Craig, of Birmingham, and subsequently Mr. Walter Roughton, in the chair.

Report of Council.

The report of the Council was read as follows:

In presenting to the members of the Association their thirteenth annual report, your Council have in the first place to refer to the subject of medical witnesses' fees, which has now for some years been engaging their attention.

As agreed upon at the Birmingham meeting last year, application was made to the Home Secretary to receive a deputation on the subject of the unsatisfactory working of the Order made by his predecessor in 1903. Your Council regrets to have to inform you that their request was refused, as was also a similar request made on behalf of the British Medical Association. The injustice complained of will therefore have to go on for the present without apparently any remedy being possible.

The provision of a proper ambulance service in all our large cities and towns is a matter of great importance to police surgeons. Your Council observes with pleasure that the City of London police authorities have organized a very efficient motor ambulance service, as reported in the British Medical Journal of October 26th, and they trust that the example thus set will be followed in other large cities and towns, and more especially in the Metropolitan Police District, where the need for such a service is even greater than in the City of London.

Your Council has to record with great regret the death of our most distinguished honorary member, Mr. Timothy Holmes, who occupied for twenty years the post of Chief Surgeon to the Metropolitan Police, and died on September 8th, aged 82.

The Treasurer's accounts have been audited, and show a balance in favour of the Association of £46 10s. 11d.

(Signed) Wm. Powell, W. W. Whitehouse, } Honorary Secretaries.

Fees to Medical Witnesses.

The following resolution was moved by Dr. Kinnear, seconded by Mr. Nelson Hardy, and carried:

That the Honorary Secretary be instructed to write to the Secretary of the Coroners' Society asking if his Society would be willing to arrange a conference with a few of the members of the Police Surgeons' Association to discuss the insufficiency of the present fee of one guinea for making a *post-mortem* examination and written report.

It was moved by Dr. CRAIG, seconded by Dr. KINNEAR, and resolved:

That the Home Secretary be again approached on the matter of receiving a deputation on the subject of medical witnesses' fees, seeing that his request for more specific cases has been carried out.

LITERARY NOTES.

A LIST recently drawn up by Dr. Sticker shows that the number of publications dealing with cancer that have appeared since 1902 is 3,395. Of these, 1 960 are German, 607 English, 549 French, 113 Italian, 70 Russian and Polish, 37 Scandinavian, 22 Spanish, 16 Dutch, 9 Hungarian, 7 Portuguese, 3 Japanese, and 2 Greek. Thus Germany has in the last five years produced more literature on the subject than all other countries put together.

Amongst new books shortly to be issued by Messrs. J. and A. Churchill are *A Manual of Prescribing*, by Dr. C. R. Marshall, of Dundee University; and *The Functional Inertia of Living Matter*, by Dr. D. Fraser Harris, of St. Andrews University. The work is the outcome of many years of study and experimentation. The same firm will also publish a revised edition of *Waring's Bazaar Medicines of India*, on which Lieutenant-Colonel C. P. Lukis, I.M.S., of Calcutta University, has been for some time engaged.

Messrs. John Wright and Co., of Bristol, have nearly ready for publication *An Index of Treatment*, edited by Dr. Robert Hutchison, physician to the London Hospital, and Mr. H. Stansfield Collier, surgeon to St. Mary's Hospital. The work is intended to provide the practitioner with a complete guide to treatment and in a form convenient for reference. The list of contributors is long and thoroughly representative of modern medicine; it includes such well-known names as those of Sir T. Clifford Allbutt, K.C.B., Dr. Rose Bradford, Dr. G. A. Gibson, Mr. J. E. Lane, Dr. A. P. Luff, Dr. Thomas Oliver, Mr. Edmund Owen, Dr. R. W. Philip, Dr. Risien Russell, Sir James Sawyer, Professor Saundby, Dr. Eustace Smith, and Professor Stockman.

At the third Esperanto Congress which was held at Cambridge in August, 1907, two special meetings of medical men were held. At these meetings sixteen were present, representing England, France, Germany and Poland. Professor Dor of Lyons was elected president, and Dr. Whitaker of Liverpool, secretary. Resolutions were unanimously passed that it was desirable that the International Esperantist Scientific Association founded during the Congress should establish a medical department to draw up dictionaries; and that for this purpose "The Method Gem" proposed by the French Medical Esperantist group, and invented by M. Rousseau, apothecary at Levallois-Perret editor of a *Pharmacological Dictionary* in ten languages, which will soon appear, should be adopted. The production of a medical Esperanto journal was also discussed, and Professor Dor was commissioned to approach one of the Paris journals, to ascertain the terms and conditions for a special Esperanto edition. The International Esperantist Scientific Association, having now officially undertaken special scientific publications, M. D. Saussure, the general secretary, is preparing circulars to be sent to the different scientific Esperanto societies, requesting their help and explaining the plan by which he intends to work. A special meeting of the members of the Red Cross Society was held during the Congress. Lieutenant Bayol, who was the first among the members of that Society to use Esperanto, was unable to be present, but he was represented by Dr. Artigues, a medical officer of the French army, who read a report showing the steady progress of Esperanto during one year in societies whose aim is to help the wounded. In France the movement is especially active. The Society of Frenchwomen for the Succour of the Wounded in War enthusiastically adopted Esperanto, and a committee, of which General Priou is president, was formed for the promotion of Esperanto among societies for helping the wounded. Similar movements are to be set on foot in Germany and Spain.

Among the anthropological essays recently presented to Dr. Edward Burnett Tylor in honour of his 75th birthday, and published by the Clarendon Press, is one entitled, "Folk Lore in the Old Testament," by Dr. J. G. Frazer. Speaking of the precept, "Thou shalt not seethe a kid in its mother's milk," he says the surprise of the modern reader on finding this among the solemn commandments given by God to Israel is increased by an attentive study of one of the three passages in which the command is recorded; for the context of the passage seems to show, as some eminent critics from Goethe downwards have pointed out, that the injunction not to seethe a kid in its mother's milk was actually one of the original Ten Commandments. Dr. Frazer proceeds to say that among pastoral tribes in Africa at the present day there appears to be a widely spread and deeply rooted aversion to boil the milk of their cattle, the aversion being based on an idea that a cow whose milk has been boiled will yield no more milk, and that the animal may even die of the injury thereby done to it. As an example he mentions that the milk and butter of cows form a large part of the diet of the Mohammedan natives of Sierra Leone and the neighbourhood; but "they never boil the milk, for fear of causing the cow to become dry, nor will they sell milk to any one who should practise it. The Bulloms entertain a similar prejudice respecting oranges, and will not sell them to those who throw the skins into the fire, 'lest it occasion the unripe fruit to fall off.'" Thus, he says, it appears that the objection to boil milk is based on the principle of sympathetic magic. Even after the milk has been drawn from the cow it is supposed to remain in such vital connexion with the animal that any injury done to the milk will be sympathetically felt by the cow. Hence to boil the milk in a pot is like boiling it in the cow's udders; it is believed to dry up the fluid at its source. On the opposite side of Africa the same superstition is met with among pastoral peoples. Dr. Frazer thinks that the Hebrew command, "Thou shalt not seethe a kid in its mother's milk," was probably directed against miscreants of this sort, whose surreptitious joys were condemned by public opinion as striking a fatal blow at the staple food of the community. We can therefore, he adds, understand why, in the eyes of a primitive pastoral people, the boiling of milk should seem a blacker crime than robbery and murder. For, whereas robbery and murder harm only individuals, the boiling of milk, like the poisoning of wells, seems to threaten the existence of the whole tribe by cutting off its principal source of nourishment. According to Dr. Frazer, that may be why, in the first edition of the Hebrew Decalogue, we miss the commandments, "Thou shalt not steal" and "Thou shalt do no murder," and find instead the commandment, "Thou shalt not boil milk."

The *Journal of the Association of Medical Women in India*, the first number of which appeared in September, is intended to "serve as a medium for the exchange of ideas on all subjects of interest to medical women." We learn from the introductory article that "a student, say of the Royal Free Hospital, London, associates the loss of one's 'British Med' (*sc.* Journal) with tendency to go off one's head." The writer goes on to say:

Be that as it may, numbers join the British Medical Association, I believe, whose sole concrete advantage from it is the regular receipt of what its recipients at least consider the best medical journal of the world.

As imitation is said to be the sincerest form of flattery, we cannot help being pleased to know that an Indian Association of Medical Women having been formed, its first corporate act apparently has been to found an organ on the model of the BRITISH MEDICAL JOURNAL. We wish the new association and its journal all success.

CONTRACT PRACTICE.

THE LONDON AND MANCHESTER ASSURANCE COMPANY.

T.—The London and Manchester Assurance Company (Medical Aid) is a friendly society with a medical aid department for the benefit of its members. It pays the doctor at the rate of 4s. a member per annum, but is open to the objection that it admits members to the medical department without medical examination and irrespective of age. Some years ago it employed agents to canvass for members, but this practice, we believe, has been discontinued for some time. It is no worse and no better than many other similar companies, and we would recommend our correspondent to consult the report of the Medico-Political Committee on Contract Practice, published as a Special Supplement to the BRITISH MEDICAL JOURNAL of July 22nd, 1905.

THE PLAGUE.

Prevalence of the Disease.

India.

During the weeks ended October 5th, 12th, and 19th, the deaths from plague in India numbered respectively 9,643, 9,277, and 9,338. The Bombay Presidency continues the most severely plague-stricken district, the number of deaths in this Presidency alone amounting to 7,301, 6,712, and 7,323 during the weeks in question, or almost three-fourths of the whole plague death-rate for India during these periods. In other parts of India the returns for the weeks ended October 5th and 12th (the returns for the week ended October 19th are not to hand) were: Bengal, 59 and 66; United Provinces, 118 and 115; Punjab, 311 and 349; Rajputana, 74 and 182; North-West and Frontier Province, 0 and 11; Central India, 191 and 275; Central Provinces, 699 and 535; Hyderabad State, 111 and 240; Mysore State, 547 and 578; Madras Presidency, 168 and 162; Burmah, 63 and 53.

Australia.

Queensland.

Brisbane.—No case of plague occurred in the town of Brisbane between July 26th and October 5th. A sailor suffering from plague was landed on September 16th at Brisbane from a ship which had sailed from Newcastle and Sydney; the patient died.

Cairns.—During the week ended September 21st and 28th and October 5th the fresh cases of plague numbered 0, 3, and 4, and the deaths from the disease 0, 2, and 2 respectively. The total number of cases reported since the commencement of the present outbreak at Cairns amounts to 9, 4 of which have proved fatal.

South Africa.

Neither at Cathcart nor at King Williamstown have any fresh cases of plague been reported between August 31st and October 21st. The last cases of plague left the hospital at Cathcart on October 12th.

Mauritius.

During the weeks ended October 17th, 24th, and 31st the fresh cases of plague numbered 19, 12, and 11, and the deaths from the disease 13, 10, and 7 respectively.

France.

Dunkirk.—A sailor taken to the Dunkirk hospital was on October 22nd found to be suffering from bubonic plague.

INDIAN SANITARY REPORTS.

Eastern Bengal and Assam.

The report for 1905 is the first record of sanitation in the newly-constituted province which comprises the valleys of the Brahmaputra and Surma, with their intervening and bounding hills and the fourteen districts of Eastern Bengal, Gangetic and deltaic, which have been detached from the province of Bengal and added to that of Assam. The population of the new province is 30,961,459. It includes a great diversity of physical conditions, races, and social life. The year was an unhealthy one, presenting characters closely resembling those which prevailed in Bengal. The monsoon rainfall was heavy, and severe floods occurred in the vicinity of the large rivers which traverse the province. The birth-rate was 39.37 and death-rate 35.06, comparing unfavourably with past years. Registration is still very incomplete, and efforts are being made to improve it. Malarial fever was severe, especially in the Gangetic district of Rajshaye, in which waterlogging, due to changes in the course of rivers, is common. The mortality caused by kala-azar was lower. Captain James investigated this disease during the year, and considers that it is not a malarious fever, but doubts whether it is caused by the Leishman parasite. Cholera prevailed severely in the plain districts and lower reaches of the Brahmaputra Valley. The disease was, it is considered, intensified by the floods. Only 6 cases of imported plague occurred. Bowel complaints were in excess, especially among the garden coolies. The mortality from small-pox was below the average. In the Kamrup district the disease occurred chiefly among the Mahapurushiyas, who refuse to accept vaccination for religious reasons. Municipalities devoted 41 per cent. of their income to sanitation. The sanitary state of the town of Dacca, the capital of the province, is reported to be very bad. A Sanitary Board has been constituted, and various water supply and drainage schemes are under consideration. The report has been compiled by Major E. C. Hare, Sanitary Commissioner.

MEDICAL NEWS.

An Italian Society of Radiology was founded on the occasion of the Second Congress of Physiotherapy recently held in Rome.

The Town Council of Zurich has established a dental clinic where school children are to be treated free of charge. The clinic is under the direction of a dentist who receives a salary of £200, rising to £280 a year.

It was announced at the International Congress of Psychiatry and Neurology, held recently at Amsterdam, that arrangements had been made for an International Institute for the Study of Causes of Mental and Nervous Affections. The King of Italy has offered the use of a villa near Lugano, but the Institute will later be transferred to Zurich.

The next general quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland will be held at 3 p.m. on Tuesday next at 11, Chandos Street, Cavendish Square, W., under the presidency of Dr. P. W. MacDonald. The discussion adjourned from the annual meeting upon Dr. Albert Wilson's paper on the Psychology of Crime will take place after some remarks by Dr. Wilson and after he has shown some furthur illustrative cases. Dr. Robert Jones will make some remarks on the International Congress on School Hygiene recently held in London, at which he was a delegate. Dr. F. W. Mott, F.R.S., will give a short account of the International Congress of Neurology held last September in Amsterdam, and to which he was a delegate.

The London County Council has supplied us with a copy of the by-laws made under the Employment of Children Act, 1903, and is desirous that particular attention should be called to them so far as they affect the employment of young children by medical practitioners. There can be so few medical men in London who employ persons under the age of 14 years that it seems scarcely worth while to detail the regulations affecting them. In general terms they forbid the employment of a child liable to attend school full time for more than a number of hours which varies with the number of days that the schools are open during any given week. On Sundays a child cannot be employed at all, except between 7 a.m. and 1 p.m., and then for a period not exceeding three hours. On days when the school is not open it cannot be employed before 6 a.m. or after 9 p.m., or for more than eight hours in any one given day.

Some twelve years have passed since the foundation of the Caxton Convalescent Home, at Limpsfield, and now, for the first time in our recollection, an urgent appeal is being made for assistance towards its support. The Home is intended to give a chance of recruiting health and strength after sickness or nervous breakdown to those engaged in the printing trade, a class of men who commonly lead a strenuous and somewhat trying kind of existence. What this Home does for many of them is sufficiently evidenced by the numerous letters from those who have been admitted to it, copies of which are attached to the appeal. Subscriptions may be sent to the Secretary, Mr. E. J. Carr, 33, Chancery Lane, W.C.

Animated Photography in Medicine.—The practical value for teaching purposes of cinematographic representations of the signs and symptoms of patients suffering from nervous diseases was demonstrated by Dr. Campbell Thomson at the opening meeting of the Middlesex Hospital Medical Society on November 7th. The films were prepared by the Urban Trading Company for animated photography, and enabled Dr. Thomson to demonstrate in the most vivid manner the points in the differential diagnosis of nervous complaints. The reproduction of the intentional tremor in disseminated sclerosis was most interesting, the spilling of the water from the tumbler when the patient attempted to drink affording a most realistic picture.

Medical Mayors.—Among the mayors who took up office on November 9th are the following members of the medical profession: Lieutenant-Colonel R Anderson, R.A.M.C. (Bury St. Edmunds), Dr. G. W. Eustace (Arundel), Dr. G. P. Francis (Brecon), Dr. Robert Gourlay (Oldham) re-elected, Dr. G. H. Lodge (Rotherham), Dr. R. A. Prichard (Conway) re-elected, Dr. C. Dudley Somers (Aldeburgh), Dr. J. W. Thomas (Neath), and Dr. R. D. Thomas (Welshpool). The elections of Dr. Caton, Lord Mayor of Liverpool, and Dr. J. Pearson, the Mayor of Bootle, are referred to elsewhere.

British Medical Journal.

SATURDAY, NOVEMBER 16TH, 1907.

HOSPITALS FOR THE TERRITORIAL FORCE.

THE speech which the Secretary of State for War made at the conference on the medical service of the territorial force, held at the Royal College of Physicians of London on November 12th, will be read with sympathetic interest by all home members of the medical profession. Mr. Haldane has appealed to the nation as a whole to take a more living interest in the organization of the defence of these realms, and to make the army a part of the national life to an extent never before realized. He has now appealed to the members of the medical profession to give their assistance in a certain definite and specific way.

The conception of the territorial force is that it shall be our second line of defence, the navy being the first; that of the regular army that it shall always be ready to furnish an expeditionary force outside these islands, whether for offence or defence. A nation in arms, a levy *en masse*, is not an army. An army is a whole consisting of many parts, each having a certain definite relation to every other; it is not a mere collection of fighting units, it cannot be improvised, but must be the result of long and careful preparation. This is, of course, no new doctrine; Napoleon used to say that he looked upon the actual campaign as a holiday after the long and harassing labour of preparation. It is estimated that under existing conditions there will be in an army of 70,000 men 2,000 sick at the end of the first day, and that the average wastage of a force in the field is 70 per cent. in a year. One of the problems which has to be faced by the War Office—and Mr. Haldane clearly recognizes that it is one of the most important problems—is how to diminish this rate of wastage, which, as every one knows, is due far more to disease than to wounds. To diminish it there must be an organization which shall be the analogue of the organization which exists for dealing with disease and accident in civil life. We must have the general practitioner—the man in the fighting line ready to go anywhere where his patients are to be found, we must have a system of hospitals and means of transporting patients to them, and we must have a sanitary service. Mr. Haldane lays it down that the organization for checking the wastage must be founded on scientific principles, and he therefore appeals to the medical profession as the body possessing that special knowledge without which it is impossible to devise or to carry out an efficient medical and sanitary system for the territorial force.

The conference at the Royal College of Physicians was directed especially to that part of the organization which is concerned with the provision of adequate staffs for the hospitals which will be established, equipped, and provided by the War Office. In this respect the attendance at the meeting was representative—the President of the Royal College of Physicians was in the chair, the President of the Royal College of Surgeons moved the principal resolution, and among those present were representatives of the senior and junior staffs of all the principal hospitals in London. The meeting was quite unanimous in recognizing the obligation placed upon the medical profession as a whole and upon hospital physicians and surgeons in particular. The two Presidents were requested to appoint a Committee to go into details with the Director-General, and we have no doubt that it will be comparatively easy to evolve a scheme for staffing the four military general hospitals which will be required for London.

On November 8th the Director-General had an opportunity of addressing the Society of Medical Officers of Health with regard to the scheme for the sanitary service of the territorial army. Speaking generally, the idea is to enlist the co-operation of medical officers of health in the sanitary organization necessary for the Division of the territorial force in each area. It is believed that by forming a sufficiently large roster it will be possible to prevent the calls upon any individual medical officer of health, even in the case of invasion, from being unduly onerous; the scheme was, we are pleased to observe, received in a most sympathetic spirit, and it was arranged to appoint a committee to elaborate details. So far, therefore, as the medical and sanitary service of the territorial force is concerned, matters seem to be in good train, and we can only hope that the county associations may be as successful in enlisting the sympathies of other sections of the public.

GUARDIANS AND PUBLIC VACCINATORS.

UNDER the headline "Sweated Doctors," the *Liverpool Post* and *Manchester Guardian* of November 4th published extracts from letters addressed to the Conway Board of Guardians by their public vaccinators, Drs. J. L. Kendrick Davies, R. A. Pritchard, and Price Morris. The guardians had proposed that these officials should accept a reduction amounting to a third, if not a half, of the payment hitherto received. The public vaccinators' replies were to the effect that they declined these terms, the acceptance of which they contended would be a violation of the ethics of an honourable profession. The Conway Board of Guardians, on receiving these replies, decided to reconsider the question, and it is to be hoped that the commendable frankness and dignified stand of the public vaccinators may lead to a mutual agreement.

From reports of the proceedings of Boards of Guardians in different parts of the country it is quite clear that very many guardians have not the remotest idea of the duties imposed on public vaccinators, and that in many instances they have given insufficient consideration to this aspect when deliberating upon the amount of remuneration. Numerous Boards have made offers which have been declined, and on a further consideration of the merits of the case, have rescinded those resolutions and so amended the offers that public vaccinators have been able to accept the terms. More deplorable than the general want of knowledge of the simple circumstances of the case has been the amount of positive misrepresentations by speakers in discussing the expense of vaccination. Many instances of this are reported, of which the following is an example. The *Midland Mail* of October 12th, in an account of the meeting of the Market Harborough Board of Guardians, reports:

"The Chairman further explained that the doctor "received 1s. in respect of the birth of every child in "his district, whether it was vaccinated afterwards or "not. He did not do anything for that. . . ." Mr. Gardiner, a member of the Board, speaking in favour of a reduction, is reported to have referred to "the 1s. "obtained in each case when a child was born," and added, "There were a great many exemption certificates, "and in respect of those children the doctors receive 1s. "for doing nothing." Mr. Grant (another member) asked whether that shilling could be taken off. The Chairman replied that it could not.

Public vaccinators do not receive 1s. for every child born in the district. They do not receive a single farthing in cases where an exemption certificate has been obtained, and in no case whatever is a fee granted "for doing nothing." The foregoing misrepresentation of the facts has been repeated at the meetings of other Boards of Guardians, and doubtless votes in favour of reduction have been obtained by these tactics.

The *Yorkshire Gazette* of October 26th contains a report of the meeting of the Helmsley Board of Guardians which throws further light on the views held on the subject of the remuneration of public vaccinators. Mr. Wood is reported to have said that "The public vaccinator for Helmsley had other public "appointments, and he should take the good with the "bad, as farmers had to do." This is a suggestion that one department of State medical service might properly be sweated at the expense of another department. Another member (Mr. Pearson) is reported to have said that members were trying to "drive a hard bargain," and that "they could not get cattle drovers to go to "Harome twice for 4s."

When guardians are prepared to offer terms to medical men which cattle drovers would not accept, and when such misrepresentations are made as have been quoted, the question may properly be asked whether such men are fit and proper persons to have the settlement of the remuneration referred to them by the Local Government Board. It is also obvious that the petitions and complaints of such guardians regarding the cost of vaccination were not such as merited the consideration which had been given to them by the Local Government Board. In the Order recently issued more regard appears to have been given to these petitions and complaints than to the findings and recommendations of the Departmental Committee, which carefully considered the whole question in a fair and impartial manner. The Local Government Board appointed the Departmental Committee to inquire into the subject of vaccination expenses. The Order subsequently issued by the President of the Local Government Board makes no attempt to give effect to the recommendations of that Committee concerning the status of the public vaccinator, without which it was concluded that no reduction should be made below the minimum fee then in force, "*so far as it applies to the "primary vaccination of infants under 12 months of age.*" This represents the bulk of the work of the public vaccinator. Hundreds of public vaccinators have had to submit to reduction, in many cases as much as 50 per cent., in direct contravention of this recommendation. In other ways the Order completely ignores the conclusions of the Departmental Committee. It cannot, therefore, be contended that the Order is based upon or warranted by the deliberations and findings of the inquiry on which such Order is supposed to be based, a supposition which appears to be the prevailing notion entertained by Boards of Guardians.

THE TEACHING OF MIDWIFERY IN LONDON.

In our issue of June 8th last we commented on the new requirements of the General Medical Council. We had in a former issue shown that with the present hospital accommodation, teaching of the kind required could not be given in London. We discussed the possibility of adding to that accommodation by utilizing the Poor-law infirmaries; and some of our remarks, we regret to say, seemed to have given pain to some of the medical officers attached to those bodies. We stated then that we had not full information before us. We have since asked a special commissioner to investigate the subject. We need not quote from his report, which is published at page 1435, but will only say that we think the evidence he has brought together justifies the six propositions in which he states the objections to using the Poor-law infirmaries as at present administered for teaching practical midwifery. If, however, the lying-in beds could be provided in one central building, a lying-in hospital nearly as large as Queen Charlotte's would exist. Queen Charlotte's is prepared to teach 14 students a month—168 per annum. The Poor-law lying-in wards, if centralized, could be used to teach about 12 students a month. But at present a regulation exists which prevents Poor-law infirmaries from being used for the purpose of teaching, and this would have to be set aside by the Privy Council. Such a centralized Poor-law building is at present not even in the air.

The London medical schools have at present their choice, so far as we can see, between three courses: (1) To provide in each hospital within the next five years an adequate number of lying-in beds. No hospital at present does this. Only one of the teaching general hospitals at present has any lying-in beds accessible to students. (2) To provide in London a lying-in hospital large enough to enable about 28 students a month to be admitted and practically instructed. This would be a costly undertaking—more difficult than the diversion of some beds that now accommodate the diminishing number of patients whose ailments are such as do not require the surgeon. The provision of a *large* hospital would give its chiefs greater facilities for observing and recording obstetric facts. With a *large* hospital there would be work enough for *two* teachers. No man can be at his best who has to work both day and night. If a man is to teach midwifery properly by day, he must have his sleep at night; and if he is to teach at night he must have undisturbed rest in the daytime. A lying-in hospital run on such lines with competent well-paid teachers would be a great benefit to the women of England. (3) If these things cannot be done, the only thing will be for the London Schools to state in their prospectuses either that they do not teach midwifery, or that practical midwifery is to be learned only by a few, the opportunity of doing so being either to be purchased by a special fee, or given as a prize to the more capable and industrious students. They will have to say that to learn midwifery the student must go somewhere else, just as he does for the study of insanity, or infectious fevers. They have about four years now in which to decide.

THE BIRTHDAY HONOURS.

No honour bestowed by the King has given more sincere pleasure to the medical profession than the K.C.B. conferred on Dr. Clifford Allbutt. Few men can look back upon a finer record, whether as a hard-

working physician in a great centre of activity such as Leeds, or in the dignified office of Regius Professor of Physic in the University of Cambridge; both in the earlier and more recent stages of his distinguished career Sir Thomas Clifford Allbutt has earned the confidence, esteem, and respect of his fellows. The like honour is conferred upon Dr. G. T. Beatson, surgeon to the Western Infirmary, Glasgow, and Lieutenant-Colonel (Honorary Colonel) Glasgow Companies Royal Army Medical Corps (Volunteers). Sir George Beatson has not only brought the Glasgow companies to a high state of efficiency, but has taken a leading part in developing the medical organization of the auxiliary forces. He was a member of the Volunteer Medical Service Committee of the British Medical Association which drew up the report upon which the scheme recently put forward by Mr. Haldane and Sir Alfred Keogh has been based. Colonel Francis Lawrance Stephenson, M.B., late Woolwich Companies, R.A.M.C. (Vols.), has been nominated a Companion of the Bath. Dr. W. H. Allchin, upon whom the honour of knighthood has been conferred, is Consulting Physician to the Westminster Hospital, a member of the Medical Consultative Board to the Admiralty, and one of the representatives of the Royal College of Physicians of London on the Senate of the University of London, in the reconstitution of which he rendered important services. Dr. W. J. Thompson, who also receives the honour of knighthood, qualified in 1888. He is M.D.Dubl., 1895; F.R.C.P.I., 1902; and Physician to Jervis Street Hospital Dublin. He is also one of the physicians on the staff of the Lord Lieutenant, and is one of the committee engaged in dealing with the prevalence of tuberculosis in Ireland. The distinction of the Companionship of the Order of St. Michael and St. George is conferred upon Dr. Robert Millar Coulter, Deputy Postmaster-General of the Dominion of Canada, and Dr. Arnold Theiller, Government Veterinary Bacteriologist, Transvaal. Among those on whom the dignity of Privy Councillor has been conferred is Sir Charles Tupper, G.C.M.G., C.B., formerly High Commissioner for Canada and Prime Minister of the Dominion. Sir Charles, who took a leading part in Canadian politics for many years, having been President of the Privy Council of Canada, and at various times Minister of Inland Revenue, of Customs, of Public Works, of Railways, and Canals, and of Finance, was originally a member of the medical profession. He is a Doctor of Medicine of the University of Edinburgh. He was born in 1821, and has been called the "Grand Old Man of Canada."

A COMMITTEE FOR THE STUDY OF SPECIAL DISEASES.

THE collective study of diseases has not so far yielded very striking results, but that is perhaps due rather to the difficulties of the subject chosen for investigation than to any defect in the method itself. A Committee for the study of special diseases, which has its head quarters at Cambridge, has for some time been in existence. It is composed of men either engaged in practice or in scientific research, and has for its object a systematic investigation of some of the more important diseases, the pathology and treatment of which are as yet undetermined. Rheumatoid arthritis has been selected for special investigation, and an exhaustive study of it is being made from all sides. For the next two or three years the investigation will be confined to this and allied diseases. At the end of this period another disease will be chosen and studied on similar lines. Those members of the Committee who are in private practice report to a centre any case of the disease that may come under their care. For this purpose printed forms are provided so that systematic records of each case may be preserved. That there may be no breach of confidence, cases are recorded under a reference number of initials and not under the patient's name. That the disease may be more thoroughly investigated a small hospital has been opened by the Committee in Hartington Grove, Cambridge. Patients suffering from rheumatoid arthritis or allied diseases are received at the request of their medical attendant. During their stay a careful examination of their case is made in order to discover any possible cause for the onset and progress of the disease with a view to its rational treatment. When the patient leaves the hospital the doctor who has sent the case receives a report of the observations made, and is asked to report the progress of the case from time to time. We have received Nos. 3 to 9 of the first volume of the *Bulletin* of the Committee, which is full of interesting matter. It contains reports on the etiology and onset of some 200 cases of rheumatoid arthritis by Drs. T. S. P. Strangeways and J. Barnes Burt, who also contribute a study of skiagrams of the hands of 100 cases of so-called rheumatoid arteritis and chronic gout; on the treatment of the disease by Bier's method of passive congestion, by Dr. A. W. Wakefield; a study of joints from cases of rheumatoid arthritis and chronic gout by means of skiagrams and dissection of the affected parts, by Dr. Strangeways; a paper on the morbid histology of some cases of rheumatoid arthritis, by Dr. G. W. Nicholson; an inquiry into the value of the opsonic index, by Drs. M. P. Fitzgerald, R. I. Whiteman, and Strangeways. The report for the year 1906 says the Research Hospital has been a success in every way. Since it was opened in the previous year fifty-eight patients had been admitted for observation; the number of beds is four. So far no attempt has been made to treat the patients to any great extent, the attention of the workers being confined to a systematic study of each case, and it is stated that the patients have been most eager to assist the observers in their studies in every possible way. The patients, who were of every class of life, have all expressed their gratitude for the attention they received. As showing the wide interest taken in the work, it is stated that patients were sent from Bournemouth, Glasgow, Hull, London, Manchester, Nairn, Norwich, Portsmouth, and Strathpeffer. The year's work recorded in the *Bulletin* is analysed, and the following is a summary of the results: In regard to etiology and onset, in a certain proportion of the 200 cases selected as typical examples of the disease, a most striking family history was obtained; the statement of the majority of observers that the disease is more common in the female than in the male is fully borne out; there is no evidence that the disease is likely to attack an individual at any particular age. Attention is particularly directed to cases in which there was a history of very sudden onset, to those giving a history of exposure to damp or chill, to those giving a history of mental anxiety, and to those immediately following an attack of influenza. In regard to the joint first attacked, a particularly interesting point brought out was the relative frequency with which the onset begins in the hands in the two sexes, the actual percentage being 26·9 in the female as compared with only 7.3 in the male. The study of the *x* ray appearances of the diseased joints as compared with the actual changes seen on dissection is thought likely to lead later on to important results. The paper on the reliability of the method for determining the so-called opsonic index is considered to be perhaps the most important of the whole series. It is the outcome of an attempt to utilize the method in cases in the Research Hospital; the unsatisfactory results obtained showed the necessity for a careful inquiry into the value of the method. This study involved a very considerable labour, and a hope is expressed that the figures published will induce those working with the opsonic index to consider carefully the "indices" they are recording, and to weigh well the question whether they are trustworthy.

DAKHYL *v.* LABOUCHERE.

"What is a quack?" asked Mr. Justice Darling in the case of Dakhyl *v.* Labouchere. "A quack," answered Sir Edward Clarke, who appeared for the plaintiff, "is a boastful pretender to medical skill." He went on to say that there was another possible meaning of the word "quack" which he recognized. A man might have all the medical skill in the world, and yet he might be a quack if he pretended to cure people of diseases by remedies which he knew had no efficacy at all. Having heard all the evidence, the jury came to the conclusion that *Truth* was justified in describing Sir Edward's client as a quack. Consequently Mr. Labouchere had judgement with costs. It may be remembered that this case was before the courts on a former occasion, when a special jury awarded the plaintiff £1,000 damages. As notice of appeal was given we refrained from commenting upon the verdict at the time, but we are now at liberty to express our astonishment at the result of the first trial. The plaintiff's own admission and the evidence given by some of the witnesses called on his behalf are sufficient to show that as a medical practitioner he must be placed in a class apart. The exact designation of that class has now been accurately determined, thanks to the courage and perseverance of the proprietor of *Truth*. The facts of the case ought by this time to be fairly well known. The plaintiff, who was born in Syria, studied medicine in France, and eventually became M.D. of Paris. Having practised there for some time, he became identified with the notorious Drouet Institute in London. While he disclaimed responsibility for the methods of treatment adopted at the institute he appears to have been quite willing to "consult by correspondence" at a salary of £30 a month. He revised and amended the list of queries to which applicants were asked to reply, and prescribed for the patients in the light of the answers received. In some cases the patients obtained a measure of relief, in others the treatment was absolutely futile. In one case, which he had attempted to treat by correspondence, the patient's condition was found on examination to be such that nothing short of an operation could have done any good. That the plaintiff had a profound contempt for the laws and customs of the profession is manifest when we read that he stated upon oath that "he did not know he was not "entitled to be on the *Medical Register*," and that "he "did not think it was wrong or unprofessional to "advertise." These facts and many others having been proved, it is small wonder that the plaintiff failed to enlist the sympathy of the jury. It is necessary to deal specifically with one contention put forward on behalf of the plaintiff, namely, that inasmuch as he was M.D. of Paris, he was a qualified practitioner and entitled to be so treated. This view is, of course, entirely fallacious. To concede the truth of any such proposition would be to admit that any man holding a foreign degree may come to this country and set up in practice and claim recognition as a member of the medical profession. There is no country in Europe, least of all perhaps France, where such a claim would be admitted. It must also be remembered that it is not the use of the gentle art of advertising which necessarily proclaims the quack. Certain kinds of advertisement which offend against the ethics of the profession may in the legal sense be harmless in that the advertiser does not pretend to skill which he has not, or boast of his power to cure every patient. Nor does it necessarily follow that because a man possesses a medical diploma he cannot be a quack. We should be glad to find that the public looked upon every "practitioner" whose name is not on the *Register* as a quack; but in the light of the definition above given it is obvious that others might be included. When any man holds himself out as competent to effect a cure in every case, or to cure his patient of any and every disorder by means of drugs, and without personal examination, he seeks to prey upon the gullible members of the community and writes himself down an impostor. Part of the stock-in-trade of the quack is his readiness to seek to bring discredit upon the medical profession as a whole. A large percentage of the cures which he attributes to his wonderful remedy or wondrous skill are alleged, in blatant advertisement, to have been brought about after practitioners of repute had tried and failed. Small wonder, then, if the medical profession should feel grateful at finding that the vain pretensions of at least one of these gentlemen have been exposed in a court of justice. We are confident that this feeling of gratitude will be shared by those of the community who have a reasonable share of common sense. There are obvious reasons why the profession seldom or never takes the trouble to expose the vain pretensions of the quack, and the absolute worthlessness of his so-called remedies and modes of treatment. In the first place it is impossible to disguise the fact that there are numerous people who will do anything rather than consult a doctor. Persons of this class would remark, with a sneer, that the profession must needs oppose those who are spoiling the market, and continue to believe in quacks who spend thousands a year in advertisement. Another reason why the unprofessional practice of medicine may be treated with contempt is that, broadly speaking, the result of such treatment is of a negative character. We may smile at, while we do not agree with, the "poet" who wrote:

> This quack to Charon would his penny pay,
> The aged ferryman was heard to say:
> Return, good friend and live for ages more
> Or I must drag my useless boat ashore.

No; our friend the quack is usually too cautious to advise any treatment or prescribe any drug which may do harm. It suits him just as well to recommend that which is innocuous. If his pill or dose prove ineffective he can with safety say to his patient: "You fell into "the vulgar error of not taking enough of it."

SOME OBSTACLES TO MEDICAL PROGRESS.

At the opening of the French Congress of Medicine held in Paris in October the President, Professor Debove, delivered an address in which he reviewed the various stages of medical progress and showed the happy influence of exact observation and rigorous experiment. He pointed out at the same time that progress was hindered by manifold causes. One of the worst obstacles, he said, was that we allowed ourselves to be seduced by theories. Theories were good things in their way; they enabled men to correlate facts; they satisfied by giving a plausible explanation; they induced workers to make new experiments in order to confirm or refute them. It should be recognized, however, that they had often blinded investigators who had too much paternal tenderness for the offspring of their brain. Presented with art, they had disordered the judgement of many generations. Too often, indeed, people considered the intensity of their conviction as a proof of truth, forgetting with what facility the human mind deceived itself. It had often been repeated that it was faith that saved; on the contrary, it should be said that faith deceived. It was never safe to be content with believing; it was necessary to discuss and reject everything that was not proved by scientific argument. What moral, asked Professor Debove, was to be drawn from all this? That theories were necessary, but that they must always be distinguished from facts and never regarded as truths. He went on to say that another

frequent cause of error was the abuse of literature. A number of doctors were very literary, and spoke and wrote well. It must be remembered that M. Debove was speaking of his own country, where the art of composition is taught in schools, and where a man's literary and oratorical faculties are developed by the system of competitive examinations which are the gateways not only to a diploma but to all appointments. Of course, the power of expressing ideas clearly and effectively is a great advantage, and it is a pity that it should be so rare among the members of the profession in this country. But there is some compensation in Professor Debove's opinion, implied if not expressed, that literary art is often cultivated in France at the expense of more solid attainments. He says that many systems which have had their day of success would never have attracted attention if their authors had not had a literary power which hid the want of soundness in their doctrine. It must not be imagined, he said, that something had been discovered when a more or less happy metaphor had been found or a neologism invented, nor should we believe that we refuted experiments by discourses. The learned societies lessened the disadvantages referred to by wholesome criticism; for this reason they had increased and multiplied. He added, however, that many scientific societies had become very exclusive aristocratic clubs, to which people were ambitious to be admitted less for the opportunities of publishing their work than for the increase of their notoriety and influence. Admission, therefore, was reserved for a small number of elect. This particular obstacle to progress has been more operative in France than among ourselves, but even here societies have sometimes degenerated into coteries.

THE VALUE OF THE OPSONIC INDEX.

IN the *Journal of Experimental Medicine* (September 21st, 1907) Dr. Charles E. Simon, of Baltimore, discusses the technique of opsonin determination and the significance to be attached to the results obtained. In his opinion the essential objection to Wright's method, and the one which all workers on opsonins realize, is referable to the difficulty, if not the impossibility, of obtaining uniform emulsions of bacteria. With staphylococci this difficulty is relatively small, but with various other organisms it is greater, though variable in degree; whilst with the tubercle bacillus it is "almost, "if not entirely, unsurmountable." Dr. Simon states that he has worked with extracted and non-extracted tubercle bacilli, with emulsions in 0.1 per cent. and 1.5 per cent. saline solution, but has never yet seen an emulsion which was free from clumps. With other organisms other difficulties enter into consideration. With the colon and typhoid bacilli, for example, there is usually a profound degree of destruction, with fragmentation and lysis of the organisms, and, in consequence, a loss of reaction to stains even in normal blood; hence a count of the organisms actually demonstrable in the leucocytes must give rise to erroneous conclusions. Even with staphylococci, specimens are met with every now and then in which the staining is very defective and may be entirely absent; under such circumstances an estimate would, of course, lead to most misleading deductions. Dr. Simon readily admits that the introduction of the bacterial vaccines marks an important advance in rational therapeutics, but he is by no means convinced that Wright's opsonic index furnishes the desired guide to dosage. As the result of his own work he finds that in the majority of cases which Wright has suggested as suitable for vaccine treatment, provided the doses are small, as advised by Wright, and administered with an interval of one or two weeks between each, the treatment may be carried out, without detriment to the patient, in the absence of any determinations of the opsonic index. Dr. Simon has never seen any "negative" phases, under such conditions, which could not be explained as being due to unavoidable errors of technique. If, however, the attempt at immunization be pushed by materially increasing the frequency or amount of the doses, there is obviously a greater danger of doing harm, and under such circumstances Dr. Simon considers that "even so coarse a guide as the index is "better than none." Under these conditions of dosage he admits that a genuine negative phase may occur, and he feels confident that undesirable results might be avoided by using lower doses to begin with and controlling them by the index. As an improvement on Wright's method of estimating the opsonic content of the blood, Dr. Simon suggests that more accurate information may be obtained by diluting the blood in varying proportions and by determining the percentage of actively phagocytic cells in the resulting preparations. In this way he arrives at what he calls the "percentage, "index," as contrasted with Wright's "bacillary index.' As the result of his investigations, for the details of which the original article should be consulted, Dr. Simon draws the following conclusions: "(1) The "determination of Wright's index of the opsonic content "of the blood and other fluids of the body is open to "serious, and in part unavoidable, errors, and should "be abandoned in its present form. (2) Conclusions "based upon the determination of the opsonic content "of the blood, according to Wright's method, are "accordingly not uniformly reliable. (3) The per-"centage index is a valuable check on Wright's "bacillary index, but likewise does not furnish an "adequate idea of the opsonic content of the blood, "unless carried out with progressive dilutions to the "point of opsonic extinction. (4) The opsonins of "normal blood serum are not specific. (5) The "specificity of the opsonins in 'immune' serums has "not been satisfactorily established, but appears "probable. (6) An opsonic immunity in the sense of a "continued high opsonic content of the blood does not "exist. (7) In the blood and exudates of infected indi-"viduals substances may be present which exercise an "inhibitory effect upon phagocytosis."

A MODERN ASYLUM.

EVER since 1884 the Asylum Committee of the County Councils for Leicestershire and Rutland have been compelled to board out patients in other asylums in increasing numbers, and three or four years ago the Lunacy Commissioners, having firmly refused to pass plans for remodelling the old asylum, it was decided to erect a new asylum on a more extensive site. This work, begun three and a-half years ago, has now been completed, and the new asylum with a present accommodation for 688 patients, was formally opened on October 31st. It has been built at Narborough, about five miles south of Leicester, on a plateau of high ground, the asylum estate comprising over 186 acres. The actual cost in buildings and land has not so far been accurately determined, but the Committee is hopeful that it will not be found to exceed the estimated sum of £261,000 sanctioned by the two councils. Although the asylum affords at present accommodation for only 688, it has been constructed so that ultimately provision will be made for 912 patients, and the cost will therefore work out somewhere about £300 a bed. The asylum has been so designed as to admit the maximum of sunshine and air into all the principal rooms, and provision has been made for separating the male and female patients respectively into six classes on the male side and eight classes on the female side, thus permitting of the great desideratum in the modern treatment of mental disorders—that is

accurate classification according to the type of patient—sick and infirm, epileptic, chronic, recent, or acute. Like most modern asylums, the buildings extend over a considerable area, and are in the form of separate two-story blocks connected by glazed cross-ventilated corridors. The drainage, ventilation, heating, and illumination have all been carried out on modern methods of proved efficiency and economy, and the whole asylum appears to have been excellently designed from the point of view of convenience and consequent economy of working.

ROOTS AND TERMINATIONS OF CRANIAL NERVES.

In a recent communication Professor Huguenin makes some observations regarding the sensory fibres of the glossopharyngeal and vagus nerves and the taste fibres of cranial nerves in general which, if they prove correct, will be of considerable practical interest. He asserts that many of the sensory fibres of the glossopharyngeal and vagus nerves do not pass to the dorsal or sensory nucleus and the fasciculus solitarius, but that they turn downwards in the spinal root of the fifth nerve and accompany the fibres of the latter nerve to the cells of the substantia gelatinosa of Rolando. He accepts the opinion of Wallenberg that the taste fibres of the fifth nerve end in the uppermost part of the fasciculus solitarius, and apparently he agrees with Duval in assigning a similar termination to the taste fibres of the facial nerve; he further suggests that the taste fibres of the glossopharyngeal nerve and those which pass to the vagus from the lower part of the pharynx also have their central terminations in the solitary bundle. If his opinions are well founded clinical support ought to be forthcoming, and it is possible that Professor Huguenin's statements may lead to the recognition of physical signs which have not yet been sufficiently appreciated.

THE CUMBERLAND INFIRMARY.

Carlisle and Cumberland are both to be congratulated on the bold step which, under the inspiring influence of Dr. Henry Barnes, it was resolved to take at a special meeting of the Governors of the Cumberland Infirmary on November 6th. This, when put into practice, will provide the county and its capital with what it has long required—a central hospital in all respects on a par with corresponding institutions elsewhere. The alterations which it is now resolved shall be undertaken will entail, it is estimated, a gross expenditure of some £25,000, and include the following improvements: A new pavilion, containing a male ward of 12 beds and a children's ward of 24 cots; a new kitchen block and a modern laundry; reorganization of the heating and hot-water service; improved arrangement for out-patient work and addition of ophthalmic and *x*-ray departments; a nurses' home, and disuse as sleeping apartments of the subterranean chambers at present occupied by the domestic staff. This infirmary has been doing splendid work in all its departments, but those responsible for its efficiency have been labouring for years past under great disabilities. It speaks much for the spirit prevailing in the infirmary, and amongst those who take part in its administration, that so many good bricks have been turned out with so very little straw. No one of the enterprises which have now definitely been undertaken is a proposal of to-day or of yesterday; they have been seen to be necessary for long past, but as the financial condition of the institution was very unfavourable, it was impossible to take the matter in hand. During the last few years, however, since Dr. Henry Barnes became Chairman, there has been a great improvement, He was acclaimed at the meeting as a genius in the collection of subscriptions, though he himself attributed the success of his efforts less to his own skill in begging than to the worthiness of his cause; but in any case his reign as Chairman has been singularly happy in its outcome. He has reorganized the finances of the institution and improved many of its methods, with the result that expenses have been reduced, efficiency augmented, and an approximation to balance established between income and expenditure. More important still in the present connexion is, that he has infused something of his own energies and enthusiasm into all those directly and indirectly connected with the institution, or in other words, all inhabitants of Carlisle and those elsewhere who can boast themselves Cumbrians. The net result is that at the meeting to which reference has been made, although the Committee in its caution only put forward a £20,000 scheme, which still left much to be done, the meeting took fire, and with a full recognition of the increased cost resolved that everything deemed necessary by the Committee should be put in hand, all present practically pledging themselves to join in raising the money.

WORTHING AND ITS HEALTH REPUTE.

In our last two issues has appeared a warning notice respecting Worthing and the medical officership of health of that favourite seaside town. The circumstances which have led to the insertion of this notice afford an excellent object lesson in the short-sightedness of the authorities of some health resorts and like localities, and of the dangers run by medical men who accept the short-time appointments possible in the present state of the law. Worthing forms part of what is known as the West Sussex Combined Sanitary Area, one which includes some fourteen sanitary districts, and it entered it on condition that the whole-time medical officer to be appointed should reside in Worthing itself. The stipulation was accepted by the other districts concerned and Dr. A. G. R. Cameron was appointed at the beginning of 1905. There is ample evidence that throughout the period that has since elapsed he has proved himself a business-like, intelligent, and thoroughly able officer. Apart from a good deal of internal evidence to this effect, there is strong, direct proof in the fact that at the present conjunction he is supported by twelve if not thirteen out of the fourteen sanitary authorities to whom he is responsible, and that at a very full meeting of the medical men in Worthing resolutions deploring any change in the arrangements were unanimously adopted for transmission to the Town Council. It is perhaps unnecessary to point out that medical men are expert critics of the way in which the sanitary work of a town is performed, and that in a seaside resort such as Worthing they must be greatly interested in its efficiency and the consequent good fame of the town. Dr. Cameron's capability being established, it may be difficult to understand that any trouble should have arisen; but this summer, at a general meeting of the authorities of the combined districts, a desire was indicated on behalf of Worthing to withdraw from the combination, and at a later date this desire was made clear. All this, it is to be noted, was done behind Dr. Cameron's back, and but for private notice from a friendly member of the Town Council it is open to question whether he would ever have heard of the matter until the time came next January for his reappointment. Regarding this as a side issue, but one not without importance to medical men, the real wisdom and motive of the action which, in default of a strong expression of opinion on the part of the town at large, the Municipal Council of Worthing is likely to take remain to be considered. If Worthing desired to have a medical officer entirely to itself, nothing could be said against it, provided it were prepared to face the necessary expenditure of £500

or £600, instead of £126, which it at present pays, except that it is rather questionable whether it can fairly withdraw so quickly from the arrangement into which it has entered with Dr. Cameron and its fellow authorities. But it is quite clear from its actions that this is not the case, for it is endeavouring to reshuffle the cards and establish a new combination. Hence it must inevitably be concluded that the real object is to get rid of Dr. Cameron, the reason for such desire lying not in his inefficiency, but in the very honesty and care with which he has performed his duties. In short, if the townspeople probe the matter to the bottom, as they should, they will certainly conclude that the movement against Dr. Cameron has its origin in the pique or damaged interests of some member or members of the ruling body, or of persons who, though not on the present council, are able to make their influence felt upon it. The interests of a town such as Worthing imperatively demand that its sanitary affairs should be in the hands of a medical officer of the highest class. No town in the nature of a health resort can expect to flourish if it cannot give a good account of itself when cross-examined on matters hygienic, and in the case of Worthing its famous outbreak of typhoid fever, though so many years have passed since its occurrence, has not been forgotten, and it needs but a whisper that grave fault is to be found with the fashion in which the Town Council is administering its sanitary affairs for its reputation to suffer.

MEDICINE IN THE NEWSPAPERS.

We have often had occasion to call attention to the extraordinary inaccuracy in regard to medical matters which is displayed in most newspapers. "Cures" for cancer and consumption are announced with a lightness of heart before which that of the unhappy Minister of War who in 1870 announced that France was ready for war pales into insignificance. New discoveries of the most amazing character succeed each other with vertiginous rapidity, and having served their purpose are quickly forgotten. There are certain papers that—in regard to vivisection for instance—can play the part of Ananias well enough. But they are very inferior performers to their American analogues. In the *Times* of November 11th Dr. W. W. Keen, the distinguished surgeon of Philadelphia, gives an example which is almost entitled to be described as the record lie. Over a year ago, he says, he read a paper on the treatment of chloroform poisoning by massage of the heart before a surgical society in Philadelphia. He related a fatal case of his own, and collected from European literature over a score of cases in which the manœuvre had been tried. The next morning he received a telephonic message from a notorious New York newspaper to the effect that the editorial staff understood he had made a great discovery and could bring back the dead to life. Dr. Keen replied that he had made no discovery, but only used a method already used over a score of times; that his efforts to restore his patient to life had been unsuccessful, and that he wished that nothing should be said about the matter. An hour later he received another message asking whether his patient had recovered or died. He replied that he had died two years before and was still dead. Two days later he was astonished to receive from a friend in New York a copy of the newspaper bearing the date on which the two conversations occurred; it must, therefore, have been printed within two or three hours after these conversations had taken place. It contained an article with great scare headlines about a "Wonderful Discovery—The Dead Brought to Life," etc., and an "interview" with the patient, who, as they had been distinctly told, had been dead for over two years. Surely journalistic invention never reached a sublimer height than this. As Dr. Keen says, an interview with a man who had been dead two years would have made Ananias take off his hat to the writer.

THE PROPOSED MEDICAL INSTITUTE AT SOUTH KENSINGTON.

The numerous letters which we are called upon to publish in this issue with regard to the election of a representative of the Medical Faculty on the Senate of the University of London at least afford evidence that the affairs of that University excite a degree of interest among the teachers in the medical schools of London considerably in excess of that which existed before the reconstitution, which it must be admitted has so far in many respects disappointed the hopes of those graduates who by their efforts and their votes contributed to bring it about. We do not propose again to discuss the merits of the matter at issue, but in order to set ourselves right with our readers, and in reply to Drs. Waller and Little, we would point out that the appeal to which we referred last week was that issued on December 18th, 1903, bearing the signature of the Chancellor, the Vice-Chancellor, and the Principal of the University, and the Honorary Treasurers of the Appeal Fund. The only reference to research in this appeal is in a paragraph which urged that "a great advantage of carrying out "this scheme would be that the hospitals, being "relieved of the necessity of providing the space "required for the teaching of the preliminary scientific "subjects, would henceforth be able to devote all their "resources to the care of the sick and to research into "the causes of disease, to an improved knowledge of "which future advances in medical and surgical "treatment must be due."

OVARIOTOMY ON A REPUTED MALE.

Near Douarneuez in Brittany there lived in 1905 a lad, aged 15, a fisher boy by vocation. He had sailed in the fleet of smacks so familiar to the tourist on the coast of Brittany for three years, delighting in his work, and had neither the appearance nor any of the tastes of a girl. His voice, considering his age, was rather deep. Early in 1905 he was seized with abdominal pains. Dr. Jacqs examined him and found that there was double cryptorchism and hypospadias; the penis, however, was well developed, as was the empty scrotum, which bore a very marked raphe. Dr. Chauvel of Quimper[1] detected an abdominal tumour; certain symptoms indicated appendicitis. Several very severe attacks of abdominal pain occurred, and the tumour increased rapidly in size. On April 20th Dr. Chauvel operated. A large colloid cystic sarcoma was exposed; it had ruptured shortly before operation, and much blood lay in the peritoneal cavity. The pedicle was small, and was found to include the right Fallopian tube. The left tube and ovary were perfectly normal. The tubes ran as subperitoneal cords downwards, to be lost behind the bladder. No trace of a uterus could be detected, and the pelvis was of the male type. Convalescence was slow, and symptoms of recurrence were observed in September. Death occurred on October 8th, 1905, and no *post-mortem* examination was allowed. Dr. Chauvel thinks that the attacks of pain early in 1905 were associated with menstrual changes. There could be no doubt that the patient was a female.

The winter session of the General Medical Council will begin on Tuesday, November 26th, and the chair will be taken by the President, Dr. Donald MacAlister, at 2 p.m.

[1] Sarcome kystique de l'ovaire chez un hermaphrodite d'aspect masculin: Laparotomie: Survie de 5 mois ½. *Annales de Gynéc. et d'Obstét.*, October, 1907, p. 605.

Ireland.

Irish University Education.

Mr. Augustine Birrell was the principal speaker at the opening meeting of the Catholic University College Literary Society, when he delivered an address on the Irish exodus. The subject gave ample opportunity for discursiveness, and, as was expected, he referred to the question of higher education in Ireland. He delivered himself in these terms:

All I will say is that I believe that that question can be, ought to be, and, please God, will be, solved in the next session of Parliament. I know no cause to which I would more willingly devote my life, and I know no cause in which I would more willingly suffer political extinction, than the cause of securing for the Irish people that higher education which justice demands that they should have, which it is imperatively necessary that they should have if they are to discharge the important duties already imposed upon them, and the still more important duties which cannot long be withheld from them. This battle will be a hard fight. Opposition there will be, I doubt not, both in Ireland and in England. to any such measure as I hope to be able to propose; but I believe—

A Voice: What about Bryce's Bill?

Mr. Birrell: Well, I won't discuss that point now. All I can say is that I want to have a plain—

A Voice: It is always the next session.

Mr. Birrell; Well, unless I can have full Irish support it won't be next session, or the session after that, or the session after that. It can only be done by general support, by sympathy, and by feeling. I, at all events, pledge myself to do the very best that mortal man can do in this next session of Parliament, and if I fail, why then, gentlemen I can promise you this—that you will be troubled with me no more.

Mr. Birrell has not, as did his predecessor, taken the public into his confidence as to what his scheme is. It is certain that he does not approve of the Bryce solution; but it is no less certain that, so far as the Roman Catholic claims go, there must be a separate college under Catholic management, or a university as Catholic as Trinity is Protestant. The bishops would be quite satisfied with a college in the Royal University or a university of their own; but there is a great body of the laity who look upon such a solution as full of danger to higher Catholic education in Ireland. There is, moreover, the ever-threatening obstacle of the Nonconformist body in England, which will need much persuasion before it consents to the deliberate endowment of sectarian education. On the whole, however, although it would be opposed to all precedent in modern times, it may be that a Catholic university would serve best to satisfy the demand of the hierarchy, and would perhaps put an end to the painful sectarian controversy that has so long existed. But even this will not close the larger question, for, as we pointed out last year, there is a movement in Belfast and Cork for the conversion of the Queen's Colleges there into universities. Some Belfast leaders have long declared their desire to be cut adrift from the Royal University for reasons which they do not hesitate openly to declare; and since there is an opposition party in that city which will not agree to what they believe would be a university under Presbyterian clerical control, the conditions are sufficient gravely to complicate Mr. Birrell's task. The announcement that he will try to accomplish a settlement next session is interesting, but it is perhaps too sanguine to hope that he will succeed.

The Antituberculosis Campaign in Ireland.

Last week lectures were delivered at the Tuberculosis Exhibition in Dublin by Dr. F. J. Dunne; Professor Mettam, of the Veterinary College; Miss Guy, of the Royal Victoria Hospital for Consumption, Edinburgh; and Sir Charles Cameron. They were largely attended, and the Countess of Aberdeen was present. The exhibition was closed on Friday, and on that evening a large meeting was held in the lecture hall of the Royal Dublin Society, under the presidency of His Excellency the Lord Lieutenant.

Sir Shirley Murphy delivered an address on the control of milk and food supplies and certain other conditions affecting tuberculosis. He strongly advocated the veterinary inspection of all cows, and that all infected animals should be branded, so that no one would buy them. That would get rid of the question of compensation. What was to be done with the meat? There was only one remedy, and that was inspection by a public authority; but this could not be done in towns unless public slaughterhouses were established.

Dr. A. K. Chalmers (M.O.H. Glasgow) urged the inspection of cowhouses, milkshops, and dairies, and the need of taking every precaution to guard against the contamination of milk. Local authorities should be able to earmark insanitary farms, and have power to prohibit the sale of milk therefrom. There should be annual licensing of byres, inspection of cattle, compulsory notification of udder and teat affections, and examination of cream. Animals suffering from udder diseases should be slaughtered.

Other speakers were Mr. W. L. Micks (Member L.G.B.), Sir John William Moore, M.D., Sir Charles Cameron, Dr. Magee Finny, Mr. Russell, M.P., Mr. W. Murphy, and Mr. Barbour.

The Tuberculosis Exhibition having closed in Dublin will now be transferred to Belfast, and in succession to Londonderry, Cork, Limerick, and other towns in Ireland, where a similar programme will be followed for the instruction of the public. There is no doubt that there has been a great awakening in Ireland on the subject of tuberculosis, and the greatest credit is due to Lady Aberdeen for the enthusiasm which she has aroused in regard to the remedying of the present state of things. The suggestions made are of the most varied character, and there is a great danger that the scheme of improvement may be so overweighted that it may be practically a failure. People suggest plans which, if carried out properly, would saddle the ratepayer with a terrible burden, and proposals of this kind are sure to arouse keen opposition in the House of Commons. If sanatoriums and dispensaries are to be erected all over the country the expense of construction and maintenance must reach a prodigious sum. After all, these would only be useful for dealing with the results of many conditions and processes which would still remain, filling the wards constantly. The question will need the most careful handling, and it must certainly be considered whether any general establishment of sanatoriums is the best plan, or whether attention should not be largely directed to the removal of the causes of tuberculosis which are now in operation. We think with Sir Shirley Murphy and Dr. Chalmers that the main assault should be made upon cows and milk, and we have no doubt that very soon the result would be a considerable diminution in the number of cases which seek admission to hospitals only too late for successful treatment.

Women's National Health Association of Ireland.

The inaugural meeting of the Belfast Branch was held on November 8th in the City Hall, and there was a very large and representative attendance. Sir John Byers, in response to a call from the Chairman, Lady Shaftesbury, explained the proposed work of the Committee—namely, that of arousing public opinion, of promoting the Tuberculosis Exhibition, and of studying the question of the heavy infant mortality, and the milk supply. Subsequently a representative Executive Committee was appointed, with Lady Hermione Blackwood as Chairman and Dr. Marion Andrews as Secretary; Dr. Elizabeth Bell is also a member.

Registration of Deaths in Belfast.

The Public Health Committee of Belfast, which has been in communication with the Registrar-General and the Chief Secretary of Ireland on the subject of notification of deaths to the Corporation of Belfast, has now received a final letter from the Chief Secretary on the subject. The letter indicates full recognition of the importance of the Corporation as the sanitary authority being fully apprised concerning deaths within its area, and states that it is proposed next session to endeavour to introduce legislation with a view to the application to Ireland of Section 28 of the Births and Deaths Act of 1874. Hence the Chief Secretary suggests that the proposed deputation to him on the subject is superfluous. The section in question imposes on registrars of deaths the duty of transmitting to the sanitary authority particulars concerning all deaths occurring within its area.

Scotland.

Clinical Teaching in Glasgow.

The question of clinical teaching has recently been attracting considerable attention in Glasgow among medical men, and from time to time letters bearing upon the subject have appeared in the public newspapers. The question turns upon the point whether the Western Infirmary is able to afford adequate clinical tuition for all the students attending the University, or whether the other infirmaries should take part in this clinical tuition. At the present time there is no restriction upon the students to prevent them from receiving their clinical tuition outside of the Western Infirmary, but as a matter of fact almost all the University students go to the Western Infirmary. In the opinion of many of those who have published their views this attendance at the Western Infirmary is inexpedient. It is urged that the Western clinics are too large to permit of the individual tuition required to ground students thoroughly in clinical work. It is thought that by restricting each teacher to twenty-five students, and distributing the clinical teaching among all the Glasgow hospitals more satisfactory clinicians would be produced. The supporters of such a scheme realize that the Western Infirmary is in a very strong position. It is adjacent to the University, and the staff includes all those professors who have to teach clinical subjects. The natural aim of any student would therefore be to obtain his clinical tuition as far as possible from these teachers, who would afterwards be his examiners. To obviate this initial difficulty, the supporters of the distribution scheme propose that all the clinical teachers in Glasgow be appointed clinical examiners whether they are attached to the Western Infirmary or not. They point out that a similar arrangement is in force with the examination for the triple qualification, and has been found to work quite satisfactorily. The further objection that the other hospitals are not suitable, owing to their topographical position, is met by the suggestion that special cars should be run at suitable hours direct to the various hospitals, which would to a considerable extent overcome the difficulty of distance. It is pointed out that the women students are at present taught in the Royal Infirmary. To these arguments the following answers are made by those who support the present system. The fact that teachers are examiners does not prevent the students from attending clinical teachers who are not examiners. This is seen in the present distribution of students on the medical side of the Western Infirmary. The physicians number four, and two of them are clinical examiners. Yet one of the non-examining physicians has a class of over fifty men, while the other physician restricts his class to twenty-five men, and has absolutely no difficulty in obtaining this number of students. On the surgical side the present distribution is not so satisfactory. In the clinic of one university teacher who is *ex officio* an examiner are found two-thirds of those attending clinical surgery. The remaining five surgeons, despite the fact that one of them is an examiner, only account for a bare third of the students. Evidently here all that is required is some plan whereby a more even distribution of students will be obtained. If some plan of redistribution with restriction of numbers were put into force it would be quite easy to have each surgeon teaching a clinic of twenty-five men without going outside the Western Infirmary. To obtain a similar result for the medical side would necessitate building at least one new ward, but the funds for this have already been obtained. Some scheme of this kind, whereby the clinical teaching would be more evenly distributed among the Western teachers, is much more likely to be carried through than the alternate scheme of distributing the clinical teaching among the other hospitals, with all the changes which this would involve in the way of additional examiners. It is urged that such an increase in the number of clinical examiners would make it difficult to maintain a uniform standard of clinical examination. Perhaps a simple solution of the difficulty would be to appoint, as has been done in the Arts Faculty, an adviser of studies, who would assist the student to map out his studies on a proper plan. It would then become a comparatively simple thing to arrange for each student to attend several clinical teachers in succession. In this way the clinical teaching would be fairly distributed, and the student would have the great practical advantage of seeing the practice of several men.

Honour to Colonel G. T. Beatson, M.D., C.B., V.D.

General satisfaction has been felt in the West of Scotland that the King has been pleased to confer the honour of K.C.B. upon Dr. G. T. Beatson, M.D., C.B., V.D. Few medical men in the West of Scotland are so well known as Dr. Beatson. He is a visiting surgeon to the Western Infirmary, and is senior surgeon to the Cancer Hospital, Glasgow. His work on cancer is well known. Dr. Beatson is widely known by the interest which he takes in ambulance work, and his book upon the subject is a recognized textbook. He is Chairman of the Council of the St. Andrew Ambulance Association. An enthusiastic volunteer, Dr. Beatson has been associated with the Glasgow companies of the Royal Army Medical Corps (Vols.) since its inception. Under his command it has gradually been strengthened till now it is one of the largest and most efficient detachments of the corps. During the South African war Dr. Beatson took a leading part in sending out to the front the Scottish National Red Cross Hospital.

Manchester and Salford.

Ladies and Public Health.

In view of the work which lady health visitors may have to do in the future, both under the Notification of Births Act and possibly in connexion with the medical inspection of school children, it is interesting to note what is already being done by voluntary effort. On Tuesday, November 5th, the Mayoress of Salford (Mrs. Frankenburg) invited a large number of ladies to her home at Kersal to hear addresses on the work of the Ladies' Public Health Society; the meeting was presided over by Mrs. Knox of Bishop's Court.

It was explained that Manchester and Salford are divided into districts, each with a lady superintendent, "who works for love." Under each superintendent there is a health visitor, who is paid a weekly wage of 16s. She has to reside in her district and to spend at least six hours daily in visiting homes in the poor working-class quarters. Her wage is partly contributed by the corporations and partly by voluntary subscriptions, and, to some extent, she has to work in conjunction with the medical officers. Amongst other duties, she gives instruction in the rearing of children, looks after disinfection, notifies cases of consumption, and generally educates in matters of hygiene. She also invites women to attend mothers' meetings, where the subjects of child-rearing and health are discussed. Very little money is given to the people, so that no lady can say that she cannot afford to take part in the work, though at present the Society is in need of lady superintendents. Several of the speakers claimed that the Society was doing good work in ameliorating the evil conditions under which large masses of the people were living. One of the speakers described the Society as preaching "the gospel of carbolic," referring to the practice of the visitors of distributing soap and other cleansing materials. One of the health visitors gave a description of her daily round. She said that at some houses she was welcomed, but at others a great deal of patience was needed before any help would be accepted at all.

It would be a very ungracious thing to criticize a society that has such noble ideals and that is undoubtedly doing such good work among the poor, but one would like to be assured that the lady superintendents and health visitors themselves are properly qualified to undertake the teaching of others. We are told that the visitors are usually drawn from the class of people among whom they labour and that this, combined with their methods, and the fact that they wear no uniform, gives them more influence with the working women than any uniformed inspector could obtain. This may be quite correct, for uniformed inspectors in Manchester at the present time are in no good odour, owing to the inquisitorial methods in which they have been encouraged by the authorities. Neverthe-

less, unless there is some good guarantee that the health visitors have been properly trained themselves, they may do as much harm as good. We are further told that the greatest tact is used in all cases, but the statement that the visitors notify cases of consumption to the authorities somewhat gives one pause. At the recent International Congress of Hygiene it was generally recognized that the time was not ripe for notification of consumption to be made general. Some time ago the medical men of Manchester stated their objections to such notification, and if the health visitors are going to take on themselves to notify cases which medical men hesitate to notify, and which the visitors are not qualified to diagnose, they may unconsciously do great injury to working families. Such notification ought to be hedged about with every precaution, and one would be inclined to think that for health visitors to notify consumption under any circumstances would be to exceed their duty. There have recently been loud complaints about sanitary inspectors exceeding their duty, and one instance of this was where an inspector notified as suffering from scarlatina a woman who was stated by a medical man to be suffering from influenza.

Manchester Port Sanitary Authority.

The reports of the Port Sanitary Authority often afford some interesting facts as to the food supply. We learn that in October 218 vessels were inspected and insanitary conditions found in 85. Over 8 tons of food materials had been condemned and destroyed as unfit for food. This included a large quantity of tinned tomatoes which the medical officer described as the worst he had ever seen. The contents of some of the tins were found to be completely decomposed, in some cases contaminated with lead and tin, while many of the tins had actually been "faked" so as to seem fresh. On the whole, the medical officer thinks that the consignments of tinned foods from America are now more carefully packed than formerly; but still, now and again, consignments of old tins arrive, the contents of which are often unfit for food. It had been discovered that some consignments which had apparently been tampered with had been sent round from London, but the evidence was not sufficient on which to take legal proceedings.

Glasgow University Club.

The second annual dinner of the Glasgow University Club, Manchester and District, will be held at the Midland Hotel, Manchester, on Tuesday evening, November 26th, at 6 o'clock. If any graduates in the district who may not have received notice will communicate with the Honorary Secretary, Dr. Richmond, 176, Drake Street, Rochdale, he will be pleased to supply them with entrance forms and tickets. Sir James Barr will preside.

Liverpool.

The Association of Honorary Medical Officers of Liverpool Medical Charities.

During the past few months an Association of the Liverpool Medical Charities has been formed for the discussion of matters relating to the policy of the hospitals which in any way may affect the position of the honorary staff. If deemed necessary the Association will take steps to advance or protect the interests of the members and of the profession generally, in their relations to the hospitals. The annual subscription is five shillings, and all honorary medical officers of any Liverpool charities are eligible for membership, subject to election by the Council. The great majority of the members of the hospital staffs have already joined, and it is confidently expected that the few who have not yet become members will do so before long. The next meeting of the Association will be held on Friday next (November 22nd) at 8.30 p.m. in the Medical Institution, when two discussions will take place: (1) On the attendance of members on patients occupying private wards, and (2) on the territorial army scheme as affecting the honorary medical officers of the general hospitals.

Election of a Surgeon to the Royal Infirmary.

The election of a Surgeon to the Royal Infirmary, in place of Professor Rushton Parker, is fixed to take place on Wednesday. The candidates are Mr. R. A. Bickersteth and Mr. W. T. Thomas, the two surgeons to out-patients.

The Lord Mayor.

On November 9th, Dr. Richard Caton, M.D., F.R.C.P., Consulting Physician to the Royal Infirmary, and Emeritus Professor of Physiology in the University of Liverpool, was unanimously elected Lord Mayor. It is nearly a hundred years since the office of Mayor of Liverpool was held by a medical man, and it must rarely happen that a physician of Dr. Caton's academical and professional eminence is elected to such a post. Dr. Caton has been Chairman of the Housing Committee for the past year.

The Mayor of Bootle.

The new mayor of Bootle is also a medical practitioner, Mr. James Pearson, Surgeon to the Bootle Borough Hospital, having been unanimously elected to that office.

Bristol.

The Royal Infirmary.

The general practitioners' manifesto, to which reference was made last week, has been sent to the Governors of the Royal Infirmary and published in the local press. It has thus had a wide circulation, and the general impression is that such a document, so universally signed and so clearly defining the opinion of the general practitioners of the city and neighbourhood, must have considerable influence with the Governors. One hundred and seventy-three medical men residing in Bristol and fifty-six living in the neighbourhood have put their names to the manifesto. The staff of the General Hospital were not asked to sign it, though they have on more than one occasion expressed their sympathy with their colleagues at the Royal Infirmary.

The policy of the Committee appears to be one of delay, possibly in the hope that the warmth of feeling on the question will diminish. The meeting of the strangely-constituted Subcommittee that was to have been held on November 5th was postponed. The Committee of the infirmary met on Tuesday for routine business and to make appointments on the resident staff, but not to discuss the main question at issue, as that is relegated to the Subcommittee, or, in other words, the Committee without the staff representatives. This Subcommittee met after the meeting of the Committee, and as the Committee do not meet for another fortnight, no report can be submitted till November 26th, two months after the date when the staff made their emphatic protest against the new rule. Such procrastination is remarkable.

The delay may be accounted for by the fact that the Committee are trying to find a graceful way to give in without loss of dignity, or perhaps of suggesting a compromise. The latter is a vain hope, for the staff, backed by the profession almost to a man (and woman) have no intention of discussing anything but the prohibiting rule. The delay cannot but have a harmful effect on the institution, and the sooner the question is settled the better for all.

Letters continue to appear in the local press, but few of the correspondents seem to grasp the meaning of the rule as proposed. It cannot be too clearly stated that the rule seeks to prohibit the staff from holding any appointment whatever except a professorship or lectureship at a university, college, or school.

West Yorkshire.

West Riding Guardians and Vaccination.

Some time ago the Dewsbury Guardians suggested fees to the public vaccinators which the Local Government Board has stated are below the minimum it is prepared to sanction for that union. The guardians have now adopted a resolution instructing their clerk to prepare contracts with the public vaccinators appointed on the terms agreed upon, and to forward them to the Local Government Board with the intimation that the guardians can not depart from their decision. This inflexible attitude on the part of the guardians is worthy of a better cause, but there is little doubt they will eventually have to unbend.

The North Bierley Guardians, as has previously been stated, have adopted a somewhat similar attitude. They have now intimated to the public vaccinators that unless contracts are immediately signed they will advertise the posts and obtain new officials. The public vaccinators have collectively signed a letter of appeal to the Local Government Board. The only way of meeting the attempts of guardians to intimidate individual medical men by the threat of depriving them of their appointments is by combination. The public vaccinators can rest assured that the Divisions of the Association in the West Riding are thoroughly alive to the importance of maintaining adequate fees for the work done, and will leave no stone unturned in their endeavour to assist them in obtaining justice; but the Association can only act for those public vaccinators who are members.

Birmingham.

THE CHILDREN'S HOSPITAL.

A SPECIAL Court of Governors was held on November 4th, at which it was declared that the erection of a new children's hospital was a matter of urgent necessity. In view of the fact that the hospital is held on a lease which has only twelve years to run, it was deemed inadvisable to incur any great expense in structural alterations to the present building. The in-patient department of the hospital is situated in a different part of the city to the out-patient department, and this causes at times great inconvenience, and also unnecessary expense. The present in-patient department has been developed from a private house, which has been added to from time to time, but is now far too small for the increased amount of work. Parts of it are very old and badly ventilated. The nurses have to be lodged in three different parts of the building, and also in a neighbouring house. The site of the old hospital is very small and it has been found impossible to extend it. The hospital must be entirely rebuilt, for it would be money misplaced to try to add to the patchwork of buildings which now exists. The question as to whether the new hospital should be placed in the country was considered; but it was considered that there were many disadvantages in this, and it was stated that hospitals so situated had a tendency to develop into mere convalescent homes rather than institutions for the treatment of urgent cases. The difficulty of the medical staff in visiting such a hospital would be very great. It has been decided to buy a new site, consisting of 13,234 square yards, in the Ladywood Road close to Five Ways, which is not too far away from the centre of the city. The cost of the site will be about £15,000. It is sufficiently large to permit of a hospital being erected to provide 120 beds, and to contain the out-patient department also; whether all this can be accomplished at once depends upon the response of the public to the appeal which will be made.

THE HEALTH OF BIRMINGHAM.

The Medical Officer of Health for the city (Dr. J. Robertson) shows, in his report for the third quarter of the year, that the birth-rate was 28.1 per 1,000, and the death-rate 12.5 per 1,000. The birth-rate is the lowest yet recorded in any third quarter, and the death-rate is 7 per 1,000 below the average during this quarter in the last ten years. The death-rate in the third quarter was 17.4 in 1906, 15.6 in 1905, and 18.8 in 1904, and 19.5 for the last ten years. This represents about 950 deaths fewer than would have occurred if the average death-rate for the third quarter had been maintained. This great reduction is mainly due to the small number of deaths from epidemic diarrhoea and enteritis. The death-rate from the seven principal zymotic diseases was 1.59, as compared with 5.97 in 1906 and 3.72 in 1905. This rate is the lowest recorded, the previous smallest being 2.1 in 1894. The death-rate from measles was below the average, but the number of notified cases of scarlet fever was considerably above the average, and the number of deaths a little above the average for the third quarter in the previous ten years. The mortality-rate from diphtheria and typhoid fever was much the same as in the corresponding quarter of 1906.

SPECIAL CORRESPONDENCE.

PARIS.

Serious Disorder among Medical Students and Closing of the Faculty of Medicine.—The Care of Soldiers' Teeth.—The Chamber of Deputies Vote of £1,000 for Purchase of Radium.—Formation of International Urological Association.—Charity Benefits of the Pari-Mutuel System.

SERIOUS disorders occurred at the Faculty of Medicine on November 8th and 9th, when Professors Prenant and Nicolas, newly appointed respectively to the Chairs of Histology and Anatomy, were to give their inaugural lectures. On each occasion the large amphitheatre was crowded to the utmost with students, and the arrival of the dean with the new professor and some of his colleagues was immediately the signal for a perfect hurricane of shouting and blowing of horns, while quantities of carrots, tomatoes, corks, cabbage stalks, and eggs were thrown at the professors, who under this fusillade were forced to retreat. The students then poured out into the street and made a bonfire of books, etc., and proceeded to march off in a body, but were broken up into small parties by the police and thus separated. The reason for these disturbances is the disapproval felt by the students that the two new professors who have been elected to the vacant chairs come from Nancy, instead of being chosen from among the Paris *agrégés*. While they consider it right that the professors of anatomy and histology should not be allowed to have private practice, they hold that candidates for the chair should have been told of this decision before they had specialized in these subjects and not at the time of the election. The Council of the Faculty met on Monday morning to consider the situation, and as a result of their deliberations M. Briand, the Minister of Public Instruction, has closed the Faculty of Medicine till December 31st, the end of the first trimester of the academic year. Examinations, however, will be held for those students who, unless they pass their examination before December 1st, will be forced to do two years' military service.

The Under-Secretary of State for War has recently issued a circular regarding the care of soldiers' teeth. During 1903 1,845 soldiers entered hospital on account of their teeth, and their treatment amounted to 18,639 days off duty. The surgeons examining conscripts will in future make notes on the condition of the teeth and mouth of each soldier, and these will be re-examined every three months. By this means it is hoped that many days' sick list may be avoided, and that the hygienic habits and care of the teeth thus learnt will benefit the soldier's neighbours and relatives after they have finished their time with the colours. A special course of instruction in stomatology will in future be given at the Val de Grâce Military Hospital.

The Chamber of Deputies, on November 5th, on the motion of M. Thivrier, made an addition of £1,000 to the Budget of Public Instruction for the year 1908, in order to purchase radium for the official laboratories, which as yet have none, the deputies thus showing their recognition of the need of bringing the scientific outfit up to date. On the demand of Professor Cazeneuve, deputy, the Chamber also voted a credit of £760 for the installation of a third chair of clinical obstetrics; the new chair will be for the instruction of midwives.

An International Urological Association has been formed at a general meeting of delegates from most European countries and America, which was recently held under the presidency of Professor Albarran at the Necker Hospital. A triennial congress is to be held, the first being in Paris in October, 1908. The permanent Committee of the Association is: President, Professor Guyon (Paris); Vice-Presidents, Mr. Reginald Harrison (London) and Professor Israel (Berlin); General Secretary, M. Desnos (Paris). Professor Albarran will be the President of the 1908 congress.

The Assistance Publique and Charities have benefited to the extent of £240,522 (6,013,053 francs) from the racing season which has just closed. The money laid out in betting at the Pari-Mutuel during the past year has exceeded all previous records, the total amount reaching 300,652,075 francs (over 12 millions sterling), from which the above percentage £240,522 is deducted for charity.

CORRESPONDENCE.

IS A ROUND-TABLE CONFERENCE POSSIBLE?

Sir,—As one who may any day find it necessary to resign his membership of the British Medical Association, and who during a period of twenty-two years has taken a pretty active interest in its work, will you grant me space for a sort of death-bed counsel?

It is really deplorable to see our great Association divided as it is at present, and it must be evident to nearly every one that the profession is bound to suffer from this division. One party talks of an "autocratic" Council; another refers to the unrepresentative character of the "Representative" meeting. Your correspondence columns are full of letters, some courteous, others abusive. Where Branches are active opinion favours the Council; where they are inactive the Divisions are solid for the side of the Representative Meeting. Feeling in some places runs high; in others the members are totally indifferent.

My object in writing this letter is to suggest to the Association as a whole—as I suggested to the Council when I addressed it for the last time—that what we want, in the present temper of the Association, is conciliators, not controversialists.

If the strife goes on feelings will not grow less bitter, and a victory to either side will be dearly purchased at the cost of a disruption.

There are cases where it is a duty to stand out to the end, and, if necessary, to go down with the flag flying. But is this such a case? Surely after all we are each of us actuated by one desire, the good of the medical profession, and though we may follow different roads we all have this one aim.

Might not a truce be called? Let the matter be taken out of the hands of the gladiators of each side, and entrusted to something of the nature of a round table conference. One almost wishes we could ask Mr. Lloyd-George to preside. But there are plenty of men of affairs in our profession who are committed to neither side in this controversy, and on one of such the negotiators could agree.

I know that some at least of what I may call without offence the "progressive" party are like myself apprehensive of the future, and are ready to meet their opponents at—in Lord Rosebery's words—some wayside inn. The members of the Council are not really the hopeless reactionaries their more declamatory opponents represent them as, nor are the majority of the advance party the reckless iconoclasts they appear to some of the members of the Council.

The Directors of the Railway Companies and the Amalgamated Societies of Railway Servants seemed only a little more than a week ago further apart than do the two sections of our Association to-day.

Surely we, too, might find a *via media*.—I am, etc.,

Edinburgh, Nov. 11th. NORMAN WALKER,
Chairman of the N.W. Edinburgh Division;
Direct Representative for Scotland,
General Medical Council.

THE REFERENDUM.

Sir,—There is so much force in Dr. A. Walker's criticism of the weak points of the Representative Meeting that it is a pity he should weaken his own case by any misrepresentation, however unintentional. I am at a loss in the first place to understand what he means by the term "leaders in the Representative Meeting." There are no leaders, and cannot be any in a meeting of delegates appointed with equal rights and authority. But perhaps he means the majority of the Representative Meeting, and if that is the case there is nothing more to say, except that no public body in this country formulates its policy in any other way than by the rule of the majority.

I particularly object, however, to Dr. Walker's assumption that "the leaders" or the majority of the Representative Meeting desire to carry out at once "a scheme of colossal magnitude . . . of defence and offence, of insurance, of benevolence, of politics," etc. This is certainly not the case, and most of us who take an interest in the Association know quite well that the adoption of only one or two of these schemes would be at present a serious financial strain. But that the time will come in a future generation when it may be desirable to adopt some of them would surely not be denied even by Dr. Walker himself. Then why should we tie the hands of our grandchildren, or even of a less remote posterity?

It is too late to argue that the Charter is undesirable; its desirability has repeatedly been affirmed by the Representative Meeting and also by the Council. Why should we deliberately attempt to restrict its provisions? We cannot amend the Charter when once we have it; therefore, in the name of common sense, let us have it as comprehensive as possible. The more comprehensive, the more elastic it is, the more useful it will surely be. To have all the provisions that Dr. Walker alludes to in Clause 2, Subclause 2, binds no one to subsequently support their adoption as the policy of the Association. The clause is purely provisional. This point has been repeatedly explained, but when so acute a reasoner as Dr. Walker apparently misunderstands the position, I feel no apology is necessary for reiterating it for the information of members who less carefully study the question.

As regards the subjects of the Referendum, I should like to take this opportunity of drawing the attention of the members generally to the Council's suggested amendment to Ordinance 17 (*b*). It is unfortunate that the Divisions have to vote a bald "Aye" or "No" on the resolutions referred to them, as, whatever opinions any person may hold as to the value of the whole of the Council's amendment to this resolution, there will hardly be any doubt that the last sentence of the amendment introduces a very valuable provision, which, whatever the voting may be, would, I think, be accepted by the Representative Meeting. I quote the Council's amendment:

> The Council at their said meeting may either approve the resolution or refer it back to the Representative Meeting for reconsideration, indicating clearly their reasons for so doing. If the resolution be again sent back unaltered, or altered, in the opinion of the Council, in an unsatisfactory manner, the Council may then determine on a Referendum. *The like procedure shall also apply to any decision of the Representative Meeting, other than a resolution.*

If this part of the Council's amendment had been a provision of the Articles of Association, we should probably have had a Referendum on other points than those selected by the Council, and, as Dr. Fothergill has pointed out, it would have been possible to reconsider negative as well as positive decisions of the Representative Meeting. For instance, a resolution I myself brought forward at the special meeting in May was lost by one vote. It was not "a resolution" within the meaning of the Articles and no Referendum could be taken on the decision of the Representative Meeting. Yet surely one of the principal objects of a Referendum is that the Council may ascertain the opinion of the Association on decisions of the Representative Meeting adopted by a narrow majority.

I sincerely trust that whatever the result of the Referendum may be, the Representative Meeting will be able to amend Ordinance 17 (*b*) on these lines.—I am, etc.,

Birmingham, Nov. 11th. E. D. KIRBY.

Sir,—When a debate on general principles tends to become particular as well as personal and recriminatory it is a question whether all that can be said has not been said and therefore the time has arrived to stop and take the vote. I would, however, request permission for a final reply to one or two points raised by contributors in consequence of my letters.

My last communication, in your issue of October 26th, was intended to show as concisely as possible facts as to (1) the actual active interest taken by lay members in their societies, (2) the probable number of members interested in the activity of our Association; and then to discuss the relative representative character of the two bodies in the Association, as to which there seems to be diametrically opposite opinions.

Seeing that these briefly-stated *facts* as to other societies were compiled after numerous inquiries in various directions, it is to be regretted that Dr. Dewar, without seemingly any inquiry of his own, should within twelve hours of seeing his JOURNAL hasten to condemn every one without exception as "fallacious reasoning." Had he taken a little more time he might have modified his opinion, and would no doubt have removed the many objectionable expressions which do not help the discussion and are certainly not arguments. I cannot accept

Dr. Dewar's offer of the word "not" to turn one of the sentences into nonsense, nor must I allow facts to be considered deductions.

It might have been stated more fully how it had been estimated that 4,000 are brought into touch with the present work of the Association through the Representative Body. There are 18,796 members in Divisions. All Divisions have three to ten meetings in a year, and all these members receive notices. We will, however, take it that each Division has four meetings a year. Ten per cent. of a Division's membership is the attendance at each meeting, but in the majority of Divisions these meetings are not held only at one place. Only 5 per cent. of the membership attend every meeting; the other 5 per cent. can be taken to differ in personnel with such meeting. Thus we have 5 per cent. (or 940 members) of the 18,796 at all meetings. Add to this 5 per cent. multiplied by four meetings (that is, 20 per cent.) which gives 3,759 members. These two totals give 4,699 members, but I prefer to understate it at 4,000. I should add that the statement that there are about 150 Divisions is a clerical error for 250; to be exactly correct, counting the Colonies, there seem to be 247.

But taking Dr. Dewar's 1,240 members (or Dr. Walker's 2,000 members as being more correct in his opinion), what does that mean? The Association five years after its foundation (1837) had 940 members; the new constitution five years after its adoption has 1,240 (2,000 : 4,000) members attached to and interested in it. Surely this is an encouraging contrast in favour of the Representative Body.

Dr. Dewar is content to pin his demolishment of twelve points of contrast between the two bodies in the Association on item (*b*), wherein it was said that Representatives *can* be elected and trained nine months before they take office (the Central Council *cannot*). He says the annual meetings of the Divisions are held in May and June. What have these facts to do with each other? Of course, if Divisions do not avail themselves of the possibilities of the constitution, they have only themselves to thank if their Representatives are in the pitiable state of ignorance that Dr. Walker says he was in with regard to Dr. Dewar's Division and its wishes. They should not crowd into one meeting held in May the instruction of their Representatives on topics which have been published weekly from January onwards.

Dr. Greenwood has no authority for saying metropolitan Representatives are elected and instructed as Dr. Walker says he was. One desires to avoid quoting individual instances in discussing general principles, but I can safely say that the Wandsworth Representative had definite instructions (after discussion in committees and subsequently in Division meetings) on all points where the central office had issued the papers in time; and where this had not been done and bulky reports had been sent us just before the Representative Meeting he had direct mandates, copies of which were forwarded to the head office for the agenda, to oppose discussion of all resolutions on policies on which the Divisions had not been consulted. If one Division can do this, why not all?

The seven statements in my last letter are not arguments, but facts borne out by experience in other societies. If a member is actively engaged in a certain direction he has no time to spare for other interests, but he should not be deemed apathetic about them in consequence. Providing a due quorum is assured, an estimate of the opinion of the members of any society can be formed from considering the ratio at the voting.

It is a point that should be noticed that the present activity of the Association and the attempts to make the Representative Body a good working machine are most appreciated in districts where the hardships of medical life seem the greatest.

I quite agree with Dr. Greenwood in his estimate of the uselessness of the present Referendum for the reasons he gives, and I pointed this out in my letter of June 2nd last.

Dr. Walker's comments on my suggestions in the Supplement of September 7th as to taking a Referendum are so inaccurate, and based on misquotations so flagrant, that I can hardly believe he has read the article recently, and must therefore be drawing on his memory. This also applies to his nine so-called brand-new Wandsworth resolutions. Members will do well to disregard his criticism.

That the Representative Body, as also the Central Council, is capable of great fundamental improvements no one will deny, but cannot the two camps now combine to obtain the Charter, and subsequently to elaborate in the By-laws a trustworthy and workable interpretation of it, which will allow of our society becoming an association in more than one direction and for one purpose?

For the "stay-at-homes" to accuse the pioneers of cliquism and of a desire to ruin the Association seems wrong; for those who have tested the constitution under which we live and have found it wanting should, acknowledging their motives are pure, be trusted and supported. I hope this will be the case in voting on the Referendum.—I am, etc.,

London, S.W., Nov. 11th. E. Rowland Fothergill.

COUNTRY MEMBERS OF THE BRITISH MEDICAL ASSOCIATION.

Sir,—I have read with great interest Mr. F. S. Jackson's letter on the above subject, and I entirely agree with all he says.

During the years that I was in country practice after leaving London, an occasional annual meeting was the only chance I had of seeing my fellow-members, country work quite debarring attendance at any local meeting.

It is unfair to accuse a country practitioner of apathy because he does not attend meetings—as unfair as it is to have left him so long undefended.

As regards country members, the working of the present constitution of the British Medical Association is a failure. A fair trial of the dream of the Nineties has been given, and I think most will agree with me that the system of personal voting only at Divisions is untenable. Why cannot a member unable to attend a meeting be allowed to vote by letter on the business matter on the agenda? Such a plan can do no harm, give little additional trouble, and greatly increase the good feeling between town and country members.—I am, etc,

Paignton, Nov. 11th. Griffith C. Wilkin.

THE REPRESENTATION OF THE MEDICAL FACULTY ON THE SENATE OF THE UNIVERSITY OF LONDON.

Sir,—I think many members of the Faculty of Medicine who have followed the literature issued during the present senatorial contest must, like myself, regret the tone of some of the letters, and the recklessness with which such charges as "repudiation of obligations," "underhand methods," "deliberate invention," etc., have been made.

Professor Starling's contribution to your last issue seems to me particularly regrettable. Apparently a quotation from a private letter reached Professor Starling at third or fourth hand. The quotation which he makes looks like an extract from a confidential correspondence between friends. It is alleged to have been "written by a member of the Senate," but Professor Starling states that he "does not know the name of the author." Is he sure that he has not been imposed upon, and may not the authorship be totally different from that which he assumes? The delay which has occurred in carrying out the negotiations for the incorporation of the London School of Medicine for Women, and which Professor Starling himself styles "discreditable," has no doubt led to many surmises, of one of which this quotation may be a far-off reflection. Such a surmise may quite naturally have been based on the fact that a large representation of University College is found to exist on the Committee which deals with the incorporation of the London School of Medicine for Women. But on such slender evidence as he appears to possess, reaching him in such devious ways, Professor Starling is surely unjustified in rushing into print with vague charges of "underhand methods," and a general challenge to the Senate.

A further instance of hasty recrimination is afforded by some paragraphs of the letter from certain members of St. George's Hospital, which follows the communication which I have just mentioned, and in which the candidates opposing Professor Starling are accused by implication of "urging the University to repudiate its obligations," and a statement in Mr. Wallis's address is bluntly characterized as "incorrect." Mr. Wallis has since issued a circular to the Faculty in which he produces incontestable evidence of the accuracy of his statement, based as it appears to

have been on previous inquiry. Surely it was equally open to Professor Starling, who, in his election address, states that "the University is in honour bound," "by agreements with certain medical schools," and to the signatories of the St. George's letter, who make these serious charges of "repudiation of obligations," to ascertain the facts before publishing these irresponsible accusations.

Is it too much to hope that in future contests in the Medical Faculty the candidates will be content with a clear exposition of their policies, and will avoid the acrimonious tone which has characterized Professor Starling's letters both at this and at the May elections to the Senate?—I am, etc.,

November 11th. JUSTITIA.

*** The following is the text of Mr. Wallis's fly-leaf referred to by our correspondent:

Dear Sir, or Madam,—A clause in my address:

> "There is a further impression that agreements have been made with certain medical schools to establish such a third centre at South Kensington. This impression is without foundation. In fact, no assurances, either written or oral, have been given, and the University has incurred neither legal nor moral obligations in this respect,"

has been stated by representatives of St. George's Hospital, in a communication which I have just received, to be incorrect; and the claim is made that the University is under obligations to that school to establish a third centre at South Kensington. This claim was also made by Professor Starling in his address to the Faculty of Medicine.

The information upon which I wrote that clause was derived from unimpeachable sources. I have since written to the Vice-Chancellor, enclosing a copy of my address, in which this clause was marked, and asking him to inform me if that presentment of the case was right or wrong.

In reply I have received a statement, signed by Sir Arthur Rücker, of which a copy is appended. So authoritative a pronouncement must surely be regarded as final, and I think it only just that the members of the faculty should be apprized of the complete accuracy of my statement.

I resent the implication of urging "the University to repudiate its obligations," which, on the highest authority, I am informed do not exist.

I am, faithfully yours,

F. C. WALLIS.

107, Harley Street, W.
November 8th, 1907.

November 6th, 1907.

I have no recollection of making any pledge, either to the authorities of St. George's Hospital or to any one else, that the University would establish an Institute of Medical Studies at South Kensington.

This negative evidence is supported by the fact that I have always had it vividly before my mind that no such institute could be established unless the necessary funds were raised, and that it would, therefore, have been impossible for me to have given a pledge which I well knew the University might be unable to fulfil. I am certain that, had I been asked for such a pledge, I should have replied that it was the intention of the University to carry out the scheme, provided, and provided only, that adequate funds could be raised.

(Signed) ARTHUR W. RÜCKER,
Principal.

SIR,—I have no intention of attempting to influence the approaching election of a representative on to the Senate. Nor have I anything to make known of the course which will be recommended to the Senate in regard to the Institute of Medical Sciences, for I am not a member of the Advisory Committee. I address you as one of the treasurers of the Appeal Fund, and I do so on account of the somewhat vague impressions which appear to prevail regarding the use to which the money which has been collected may be applied. The Fund was collected for a certain definite purpose, and as the Advisory Committee contains a considerable proportion of lawyers among its number, it is not in the least likely to advise the application of the Fund to any other purpose than that for which it was given or bequeathed. Nor is the Senate more likely than the Committee to desire to apply the money in any manner which may be questioned.

As a matter of policy, I cannot conceive anything which would be more injurious to the interests of the University at this present moment than an attempt to use money which was collected for one purpose to another purpose, however meritorious that purpose might appear to be.

In conclusion, I cannot but express my deep disappointment that £70,000 (and a site) collected for the purposes of medical education should be declined by the very bodies whose deplorable financial position should have made them only too glad to welcome such help.—I am, etc.,

London, W., Nov. 9th. HENRY T. BUTLIN.

SIR,—The letter from the authorities of St. George's Hospital Medical School which appeared in your issue of November 9th calls for an answer from me.

I do not remember any assurance being given that a "third centre" was to be erected in the immediate future in the near neighbourhood of the University, or that we were told that the question as to whether any steps should be taken by the Medical School depended upon our answer. Had I been aware that such a fundamental pledge was asked for I should almost certainly have remembered it.

Further, the representatives of the Medical School must have been aware that such a pledge could only be binding if endorsed by the Senate. No steps were taken by them to that end. I have before me a memorandum of what took place at the conference on April 6th, 1905, corrected and signed by one of their number. It is the only authentic record of the meeting agreed to by both sides. Neither in this nor in the agreement made between the University and the School is there the slightest reference to any such condition.

I have also looked through the voluminous correspondence which passed between us, and the only passage I can find in any way bearing upon the subject is in a letter from Dr. Latham, dated July 19th, 1905, in which he said:

> In joining University and King's College we wish it to be clearly understood that we desire to have our students at a centre nearer to the University as soon as one is established.

It will be observed that this remark neither claims nor assumes that the University had bound itself to establish such a centre; and, as a matter of fact, in a letter written by me to Dr. Latham the next day I said:

> It is so uncertain when the Medical Institute may be started at South Kensington that it is difficult to foresee what may happen.

I venture, then, to assert that it was not a condition of the agreement between the University and St. George's Hospital Medical School that a "third centre" should be established at South Kensington. The exaction of such a pledge was not included in the formal record of the conference, signed by a representative of the school, nor was it included in the conditions of the agreement accepted by the school.

It appears to me that your correspondents are on the horns of a dilemma. A verbal pledge was either given or was not given. If it was not given, *cadit quaestio*. If it was given, why did they not ensure its insertion among the other conditions set forth in the minutes of the conference, and in the agreement with the University? It is to me incomprehensible why, if they believed a pledge had been asked and given, they did not take the only step which could make it binding.

Our position, on the other hand, is simple and intelligible. We did not know that anything was being left out of the minutes and the agreement, because we did not know that there was anything more to put in. The idea that a pledge had been given that a third centre would be erected in the immediate future in the near neighbourhood of the University never crossed my mind till the letter of April 22nd, 1907, to which your correspondents refer, was received. Had we been asked in unambiguous terms to give such a pledge, I, for one, should certainly have refused.

I very much regret that a misunderstanding should have arisen with regard to negotiations which were throughout conducted in the most friendly spirit; but, in view of the above facts, a charge of breach of faith cannot possibly be maintained against the Senate if it decides that, under present conditions, the centre cannot be established. I say this without prejudice to what the decision may be.

The reply to the letter from St. George's Medical School, to which reference has been made, was postponed till the situation had become clearer, but I am sorry that, partly in consequence of this, the misunderstanding has been discussed in public instead of in private.—I am, etc.,

ARTHUR W. RÜCKER, Principal.

University of London, S.W., Nov. 12th.

SIR,—I should be much obliged if you would publish the enclosed letter, which I have addressed to the Principal of the University of London.—I am, etc.,

London, W., Nov. 12th. ARTHUR LATHAM.

St. George's Hospital Medical School
(University of London),
Hyde Park Corner,
London, S.W.

Dear Sir Arthur Rücker,—

In view of the extract from a letter of yours which has been sent round to the Faculty of Medicine by Mr. F. C. Wallis, it appears that the authorities of St. George's Hospital have been thought by you, and perhaps by others, to have accused you personally of a breach of faith.

I hasten, on behalf of my colleagues and myself, to assure you that we have never held nor expressed such a view. Throughout our negotiations with the University we were treated by you with the greatest courtesy and consideration, and in a way entirely honourable to yourself and the University.

Our standpoint is in no way personal, neither have we any grievance against the University. Our contention is that if, under pressure from certain quarters, the Senate should depart from its intention of erecting a teaching centre at South Kensington, such a change of policy would involve a breach of faith on the part of the University towards us.

This contention is, as we have already stated, founded upon what we know to be true—namely, that we were assured that the erection of the centre was the settled policy of the University; and, upon this assurance, we were not interested in the transference of our students to King's and University Colleges, but to the third centre, and therefore all our arrangements were made with the University itself; whereas the authorities of the Westminster Hospital Medical School—who, as you will remember, did not wish to send their students to South Kensington—made their arrangements directly with King's College, and not through the University.

We fully understood that for the erection of the Institute two conditions were necessary; first, that schools of the University should be willing to send their students to it; and secondly, that sufficient funds should be collected to build it. In both of these points the response fell short of what was hoped for. The sum of money originally mentioned was not subscribed, and several schools did not agree to come into the scheme.

The response of the public was, however, commensurate with that of the schools, and our point is that a site has been offered and a sufficient sum has been collected for the erection of an Institute large enough for those schools which have accepted, or are willing to accept the overtures made by the University.

I beg to remain,
Yours very truly,

November 10th, 1907. ARTHUR LATHAM.

PS.—In order that we may remove any possible misapprehension as to your personal position in this matter, I am sending a copy of this letter to the medical press.

SIR,—We have stated that in our opinion the negotiations between this hospital and the University have left the University under the obligation of devoting the funds collected for this specific purpose to the establishment of an institute of medical studies at South Kensington.

Mr. F. C. Wallis, in a letter addressed to members of the Faculty on October 8th, expressed a contrary opinion, and quoted an extract from a letter written by the Principal of the University. In this letter the Principal writes:

> I have no recollection of making any pledge, either to the authorities of St. George's Hospital or to any one else, that the University would establish an institute of medical studies at South Kensington.

We did not ask for a pledge, and we have never said that the Principal or any one else gave us a pledge that the University was committed to the establishment of such an institute under every conceivable circumstance.

What we have said is that we were assured that:

1. The University had adopted the establishment of such an institute as its *settled policy*.

2. The University was appealing for money for this purpose.

No doubts as to the prosecution of this policy were expressed to us by the Principal or by any other representative of the University.

We therefore regarded it, and still regard it, as a definite understanding that if sufficient money were collected the policy of the University would be carried out. The Principal further writes:

> I am certain that had I been asked for such a pledge I should have replied that *it was the intention of the University to carry out the scheme provided, and provided only, that adequate funds could be raised.*

We welcome this declaration from the Principal of the University, as it entirely confirms our contention.

The authorities of the University were aware, before our negotiations were completed, that most of the schools wished to continue their own preliminary and intermediate teaching. Since that time there has been no essential change in the attitude of any school. The only question now is whether sufficient money has been collected to enable the University to carry out its policy. This question can only be answered in the affirmative.

A valuable site has been offered, and over £70,000 collected—a sum adequate to build and equip an institute of the size required by the schools which wish to take advantage of the University's offer, and to leave £20,000 to £30,000 for endowment.

In view of this, the obligation of the University is clear; whilst those who urge the University to devote the money to other purposes appear to us to urge the University to repudiate its obligations.—We are, etc.,

A. WILLIAM WEST,
Treasurer of the Hospital.

ARTHUR LATHAM,
Formerly Dean of the Medical School.

FRANCIS JAFFREY,
Formerly Dean of the Medical School.

London, S.W., Nov. 12th.

SIR,—I would ask why the University should build and equip an institution at South Kensington for St. George's and St. Thomas's when the other hospitals, which have built and made successful their science schools, have to maintain them unaided by Government or University grants.

The Preliminary Scientific students (1906-7 University *Calendar*) of St. George's number 2, of St. Thomas's 7. Is the University to build and equip an institute for these 9? If the 9 stay two years and are charged £20 a year, the University may expect an income of £360 a year. Even if Middlesex joined in with its entry of 13 or 15 University students the proposal is a preposterous one.

Do St. George's and St. Thomas's propose that the University should prepare students for the examinations of the Conjoint Board? Are the large hospital schools so simple as to believe that such an institute with an entry of 9 to 23 will not try to expand, and, aided by University endowment, attract students away from them?

The University must adequately pay the professors of such an institute, say, at the rate of—zoologist, £300; botanist, £300; chemist, £500; physiologist, £500; anatomist, £500. This means an expenditure of over £2,000, excluding demonstrators, servants, and upkeep.

Do St. George's and St. Thomas's schools think it just that the University should pay some £3,000 a year and spend £70,000 in building on a site worth £70,000 for their nine students who will give the University an annual income of £360? Are St. George's and St. Thomas's schools prepared to pay to the University the difference *plus* the interest on the capital sunk, or do they expect the other schools to see them endowed to this extent in order that a pledge may be fulfilled which does not exist? The delegates who gave the supposed pledge to St. George's had neither the power nor the right to speak in the name of the University. The Principal of the University repudiates the existence of any such pledge. Let St. George's produce the minutes of the Senate wherein is chronicled the appointing of these delegates and the nature of the pledge which they gave. The teaching institute is out of the question; let us accept the research institute, the only possible way of saving the Beit donation and the site.

The total number of University students at Guy's, St. Bartholomew's, "The London," and St. Mary's is 634 (*Calendar*, 1906-7); at University and King's Colleges 165. Why have these two Colleges resolutely and persistently fought for the Institute at South Kensington against the unanimous wishes of the four great hospital schools? Do not these numbers point the way to an answer?

University and King's Colleges have been the apostles of incorporation. While preaching incorporation they have sought endowments, not for the University at large

but for themselves, and to exert an influence upon medical education not commensurate with their real importance. Professor Starling advances himself to be an apostle of incorporation. Mr. Wallis points out that University College and Hospital have already six direct representatives on the Senate. Their power, direct and indirect, is, in my opinion, a present menace to the free development of the University on broad and equitable lines. The time of the Senate has for the last six years been sacrificed largely to the fetish "Incorporation," and to the vain struggle after bureaucratic power.

Professor Starling preaches another doctrine which I have at heart—the adaptation of the preliminary science teaching to the special needs of medical education. At the same time he asks that these sciences should be taught in institutes divorced from contact with clinical medicine and placed under university control. In my opinion the great opportunity of medical educationalists in London lies in the intimate association of the clinical and science sides at the medical schools. The crystallization of the present system into university institutes, with vested interests controlled by men of science separated both in sympathy and aim from clinical work, is the worst thing that could happen to medical education in London. I look forward to seeing the scientific and clinical training interwoven throughout the whole five years' curriculum, and the present practice of preparing the students for examinations in isolated departments replaced by a saner course of instruction.—I am, etc.,

London, E., Nov. 12th. LEONARD HILL.

P.S.—The University has an institute, ample in equipment and endowment, ready for such schools as wish to concentrate, namely, University College. The Preliminary Scientific class (*Calendar*, 1906–7) numbers 10 at this Institute, so there is ample room there. The professors are eminent and highly paid, the two qualities demanded by the supporters of the South Kensington Institute scheme. A new physiological laboratory is to be built there at the cost of £10,000. This Institute is separated from University College Hospital not only by a roadway, but by the authority of the University.

SIR,—Your leading article of November 9th contains the sentence, "We do not understand how Dr. Waller comes to speak of provision for research as the best portion of the scheme" (for the establishment of an institute of medical science for the teaching of physics, chemistry, biology, anatomy, and physiology), and Dr. Turney writes in the BRITISH MEDICAL JOURNAL and in the *Lancet* "that a policy which proposes to build an institute at which only research and higher teaching are to be carried on is an attempt to *pervert* funds from the object for which they were subscribed."

Space does not allow me to set forth at length a policy which you were good enough to allow me to present in your columns some years ago (May 4th, 1901); I hope, however, that I may be permitted to explain briefly the point that you have not understood, and that Dr. Turney has misunderstood.

The original concentration scheme, defective as it was, did contemplate provision for research. Both editions of the appeal by the Senate for funds to endow an institute of medical sciences very properly included "research" among the objects of the proposed institute; the second edition (1905) contained the following paragraph:

> The physiological laboratory for advanced students established in the University in February, 1902, has now passed out of its experimental stage. As shown by the annual reports to the Senate, the laboratory has fulfilled its purpose as a post-graduate school of research and teaching, and is now sufficiently developed to afford suitable working facilities in branches of physiology that are common to the Faculties of Science and Medicine. The work of the laboratory will be continued, and the laboratory will thus constitute a research department in association with the Institute of Medical Sciences.

I can assure you that my proposal to utilize what I regarded as the best portion of the scheme, so far from being an attempt to pervert funds from the object for which they were subscribed, is, in my opinion, the last remaining means of preserving to the Medical Schools of London an Institute of Medical Science on the valuable plot of land that the University is still entitled to claim on their behalf. And obviously I do not dream of proposing what certainly is a fundamental modification of the original scheme without also proposing to refer again to original subscribers and trustees, of whom few or many or all or none might withdraw their support from any modified scheme. Whether a "modified" scheme is to be regarded as an amendment or as a direct negative of the original scheme is at present an open question.

May I be permitted to repeat the concluding paragraph of the statement of policy published by me in the columns of the BRITISH MEDICAL JOURNAL more than six years ago (May 4th, 1901):

> At the present juncture a sum of £50,000 would be more than sufficient to provide for an efficent central institute that should be the organ of research and of advanced teaching, and the *école normale* by which teaching in the medical schools would be fashioned and co-ordinated.

Much water has flowed under the bridge since that was written. The policy then untried has now been on trial for five years, and although on a small scale and hidden under the bushel of "Concentration," it has so far proved successful. What the future may be depends in large measure on the opinion of the Faculty of Medicine of the University.—I am, etc.,

A. D. WALLER.

Physiological Laboratory, University of London, Nov. 11th.

SIR,—In your editorial in your last issue, page 1361, you write: "We do not understand how Dr. Waller comes to speak of provision for research as 'the best portion' of the scheme" (of concentration), and you declare, and Dr. Turney in a letter in the same issue supports your view, that "the establishment of an institute for higher teaching and research has only an indirect bearing on the question at issue." Dr. Turney, indeed, states that the proposal to utilize the money hitherto subscribed, for a research institute, is "an attempt to pervert funds from the object for which they were subscribed."

May I point out to you that the original appeal, which came before the Senate in October, 1902, was approved by it in a minute dated February 25th, 1903, and was authorized for publication in a minute of November 18th, 1903, contains the following recommendation which forms the basis of that appeal:

> The Faculty of Medicine would desire to see ample accommodation of every description at the proposed Institute of Medical Sciences, not only in regard to space and equipment, but also to the Teaching Staff, *together with the best possible arrangements and facilities for research in the various branches of study.* The Faculty believes that the funds could be disposed in the most advantageous manner according to the following scheme, and that this scheme would provide for a Teaching *and Research* institute worthy of what it is hoped and believed will become one of the greatest of modern universities. [The italics are mine.]

It was in response to this appeal that Mr. Alfred Beit's first donation of £25,000 was made (acknowledgements of Senate, minute dated March 29th, 1905), and his second gift of £25,000 was made for the same purposes as the first.

In February, 1905, a modification of the committee dealing with the appeal was made, and in a minute of February 21st, 1905, the Senate empowered the new Committee to collect funds

> to build and endow an institute of medical sciences under the control of the University, and in general accordance with the scheme adopted by the Senate, February 25th, 1903.

On June 27th, 1905, the *second* appeal (the form from which you quote) was approved by this Committee, but it does not appear to have ever been submitted to the Senate for authorization; it made no provision for research, and in that degree contravened the instruction of the Senate (quoted above), and it contained other misrepresentations against which protests were made from time to time, so that it was finally withdrawn from circulation by resolution dated March 14th, 1907. Thus the original and most authoritative appeal, in response to which at least five-sevenths of the money now in hand has been collected, expressly mentions Research as of equal importance with the Preliminary and Intermediate Medical teaching; and Dr. Waller is right in his contention that research "formed a portion" of the scheme, and it is no perversion to apply the money to this purpose. Further, Mr. Alfred Beit's executors apparently would not object to the £50,000 with which they are concerned being so applied.

You, and Dr. Turney also, advocate the utilization of the

£70,000 in hand in establishing a third centre "to enable the University to fulfil its undertaking" to provide Preliminary and Intermediate Medical teaching for those schools which have given up or wish to give up their courses in those subjects. But you omit to mention that the University *has* fulfilled this undertaking, and *has* provided courses at University and King's College centres, at which students from St. George's and Westminster have attended for two years. The accommodation available at these two centres is such "as to admit with comfort a yearly entry of 100 medical students" at each of these centres.[1] As the curriculum in these subjects occupies three years, it follows that accommodation exists at these two centres, taken together, for a stationary number of 600 students.

At the present moment the total number of students attending the preliminary and intermediate medical studies at these two centres, taken together, is under 100. It will be seen, therefore, that the margin between the present attendance and the maximum which can be comfortably received—600—will more than suffice for the possible accession of the students from St. Thomas's Hospital, the only school which remains outside concentration while expressing a wish to concentrate. The Senate of the University has some business men upon it, and is hardly likely to deem it necessary to sink £70,000 in providing a centre to suit the prejudices of an individual school which happens not to like the accommodation, already provided by the University, which I have demonstrated to be ample.—I am, etc.,

London, W., Nov. 12th. E. Graham Little.

Sir,—Dr. Waller is concerned for the continuance of provision for physiological research in the University of London at South Kensington. In this he has the sympathy of myself as of all others who are interested in the scientific advancement of medicine. I believe that the scheme for a small teaching institute of medical studies at South Kensington, if carried out, would double the efficiency of the laboratory over which Dr. Waller presides, by bringing it into touch with the allied medical sciences, and by providing it with workers whose faculties and interest were continually stimulated by contact with young and inquiring minds. The institute which I contemplate would not be worthy of the University did it not regard research as an essential part of its functions.—I am, etc.,

Ernest H. Starling.

University College, London, Nov. 13th,

A PROTEST.

Sir,—Only a few weeks ago my name was mentioned in the daily press in connexion with the trivial ailment of a distinguished personage, and yesterday again I found to my extreme regret that a private visit I had paid to an old acquaintance had been utilized to inform the world that I had gone to Windsor Castle. The two instances just named do not stand alone. For years past I have from time to time read in the papers that I had been going North, or that I had been seen at the first night of a theatre, or that I had been in attendance on some illustrious personage or other, statements which often enough were amplified with cullings about my career from *Who's Who*, etc.

It needs no assurance for those who know me, that never in my life have I been a party directly or indirectly to statements of such an advertising character, but, knowing the world, I foresee the danger that if they are repeated time after time, even well meaning people will at last begin to shake their heads, and to think that it could hardly be accidental that it was always the same member of the profession whose name was thus brought before the public. Hitherto I have been silent, or have at the utmost requested in private letters the editors of some of the papers which have bestowed upon me so unenviable and undesired a notoriety, to abstain from mentioning my name in future in their papers. One knows but too well that if one writes a public disclaimer unkind persons are inclined to interpret this in the sense that, not satisfied with the puff primary, one added of one's own accord the puff secondary.

Now, however, that the nuisance has become really intolerable, I wish to state once for all that I most strongly object to the mentioning of my name in the lay press, and that if I knew a way to discountenance the unwelcome attentions of reporters I would gladly avail myself of it.—I am, etc.,

London, W., Nov. 13th. Felix Semon.

DIRECTION OF ABDOMINAL INCISIONS.

Sir,—In reply to Dr. Hogarth's letter in your issue of November 2nd, may I say:

1. The direction of the skin incision is no doubt important for aesthetic and other reasons; my contention is that it can have no influence whatever in preventing a ventral hernia.

2. My view that Mr. Maylard belittled the importance of not dividing the nerves to the rectus muscle seems to be borne out by his own words:

> The conclusion is, I believe, purely theoretical, for so long as the sheath of the rectus can be regarded as intact, a paralysed segment of the muscle will neither cause nor predispose to hernia.

3. I can hardly believe that a couple of fine catgut stitches used to fix the edge of the rectus muscle to the inner edge of its sheath can have any grave results during the few days the catgut exists, but their use is not essential in using the incision which I recommend.

I share Dr. Hogarth's interest in Mr. Maylard's paper, but although "it is well to know, on occasion what we may do without serious ill effects," it is also necessary to have definite opinions as to the best way of doing our operative work, and Mr. Maylard's arguments do not appear to me to justify the routine adoption of the transverse incision in abdominal surgery.—I am, etc.,

Bradford, Nov. 7th. James Phillips.

THE TREATMENT OF SUPPURATIVE OTITIS WITHOUT A RADICAL OPERATION.

Sir,—Dr. Milligan, in the course of his interesting address on suppurative otitis, referred to certain methods of treatment that I advocate, and remarked that, "provided that the septic process is confined to the cavity of the tympanum and to its mucosa, the results from such a method of procedure should be satisfactory."

But I have published a series of consecutive cases which show that this treatment is successful in cases where the disease is not so limited. In many of my successful cases there has been caries of the walls of the middle ear; in others there have been cholesteatomatous deposits; and in a few cases of definite meningeal irritation there has been recovery after otectomy. I have portions of two cochleae, the persons from whose ears they were extracted having been seen recently in excellent condition.

It is suggested that such cures are not permanent—how can one claim a permanent cure in anything?—but I am in touch with many of my old patients, and it is my experience that when once the adult ear has been thoroughly disinfected a recurrence is not often met with. In the case of children, there is undoubtedly need for occasional supervision, as any cold may start a running from the ear, which, of course, is easily infected. Such trouble is by no means absent after a radical operation, which is sometimes talked about as if it were certain to cure the disease. But I have had more trouble with patients upon whom the radical operation had been performed than with any others.

Patients have before now been told by otologists that an otectomy would make them deaf. Dr. Milligan now assents to the fact I have long insisted upon, that the hearing is often much improved after removal of the membrane and the two larger ossicles.

I find also some comfort in the remarks of Dr. A. L. Whitehead, who said that the wave of enthusiasm for the radical operation was passing away, and that credit should be given to those who had helped to repress this excessive operative enthusiasm. I do not suppose that anything I have written has had much effect, but, at any rate, I have suffered in a good cause.

At the Otological Congress in 1899 the President, when summing up the debate on this subject, remarked upon the isolated position of "a gentleman from Coventry."

Time will complete the vindication of my attitude, and before many years are past otologists will, I think, generally admit that most cases of otorrhoea will yield to

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[1] British Medical Journal, September 22nd, 1906, p. 717.

intrameatal treatment. The earlier such treatment is commenced the less often will any operative treatment be required.—I am, etc.

Coventry, Oct. 25th. F. Faulder White.

ALCOHOLISM AND HOBNAIL LIVER.

Sir,—As the medical superintendent of an inebriate retreat, may I say that in twelve years' experience of the treatment of alcoholism—acute, chronic, and periodic—I have never had a patient suffering from cirrhosis of the liver? I think Dr. Branthwaite's experience will be borne out by all who have had to do with inebriety and its treatment.—I am, etc.,

J. W. Astley Cooper.

Buttermere, Cockermouth, Nov. 10th.

THE TERRITORIAL ARMY MEDICAL CORPS.

Sir,—Before the new medical military scheme, recently unfolded by the Director-General, comes into operation, it would be well to consider the status of existing volunteer officers and officers of the Army Medical Reserve, who are in charge of troops and military hospitals.

In view of this, I wish to point out that although under military discipline, and subject to great responsibility, they have no authority whatever, and are regarded by the R.A.M.C. as mere stop-gaps, with contemptuous toleration. An officer in the Army Medical Reserve holds a commission, which as far as words go confers powers of discipline and command, but which in practice is really not worth the vegetable parchment on which it is written.

Under these circumstances I strongly advise those interested to make sure that as members of the new organization they will possess when on duty all the rights, privileges, and powers of the R.A.M.C. I speak from experience in saying that if these points are not insisted on and conceded friction and humiliation are unavoidable.

The uniform of the Territorial R.A.M.C. ought to be identical with that of the R.A.M.C., with a "T" on the shoulder strap for a difference. The abolition of silver buttons and lace would do away with the galling possibility of being regarded by a grateful public as "only a volunteer!"—I am, etc.,

October 27th. Late M.O. in Charge.

CANVASSING FOR CLUBS.

Sir,—It is, I think, time that measures were taken in regard to the attitude of the medical profession to friendly societies; not only on the subject of proper remuneration, but more especially on account of the wholesale canvassing that takes place in connexion with them. The societies generally (at least in Scotland) offer prizes to the members who get the largest number of additional candidates, and in some cases it is the tent surgeon who purchases and awards the prizes.

I may be wrong in supposing that such an action can be taken to mean canvassing for the benefit of the tent surgeon, and if so I shall be glad of a correction.

I have myself had to suffer the annoyance of having some of my patients canvassed, and canvassed repeatedly and persistently to join the juvenile tent of one of these societies in my neighbourhood. On remonstrating I find that such a practice is universal and am informed that "Our aim is not to increase the doctor's list, but to add to the membership of the order, and you are the only one who has ever interpreted our action in any other light."

It may not be their intention to increase their doctor's list, but the fact remains that the doctor's list is increased, and that by means of canvassing other people's patients.

Is it, may I ask, consistent with the aims of the British Medical Association for members to support and encourage such societies?—I am, etc.

A. P.

The new medical school in the Philippine Islands was formally opened on June 10th, and at the present time (we learn from the *Boston Medical and Surgical Journal*) fifty-four young men and one young woman are studying medical science "on American lines." The medical department of the Santo Tomas University has made efforts to improve the facilities which it offers in order to meet the stress of competition. A new dissecting room has been planned, and the laboratory accommodation has been increased.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF OXFORD.

Radcliffe Prize, 1907.

The Master and Fellows of University College have reported to the Vice-Chancellor that they have awarded the prize to Arthur Edwin Boycott, D.M., Fellow of Brasenose College.

The Examiners reported that the work of Alexander George Gibson, M.A., B.M., Christ Church, entitled him to honourable mention.

Second Examination for the Degree of B.M.—Certificates.

In and after Trinity Term, 1908, in addition to the certificates already required, every candidate must also produce a certificate (No. 11) showing that he has attended a course of practical instruction in the administration of anaesthetics in a hospital approved by the Medical Board.

Examiners in Medicine.

In a Congregation held on Saturday, November 9th, the names of the following persons were submitted to the House as Examiners in Medicine:

In Human Anatomy.—A. H. Young, M.B.Edin.
In Physiology.—J. S. Edkins, M.B.Camb
In Pathology—E. W. A. Walker, D.M., Fellow of University College.
In Forensic Medicine and Public Health.—T. M. Legge, D.M., Trinity College.
In Medicine.—J. R. Bradford, M.D.Lond.
In Surgery.—Howard Marsh, M.A., M.C.Camb.
In Obstetrics.—T. W. Eden, M.D.Edin.

Degree Days.

The degree days in the present term are: Thursday, November 28th, at 10 a.m.; Thursday, December 5th, at 10 a.m.

UNIVERSITY OF LONDON.

Meeting of the Senate.

A meeting of the Senate was held on October 23rd.

Forthcoming Resignation of Principal.

Sir Arthur Rücker having intimated his desire not to retain the office of Principal beyond the age of 60, and therefore to resign in September, 1908, a resolution expressing the Senate's regret at the announcement and recording its appreciation of the great services he has rendered to the University was unanimously adopted.

Resignation from the Senate.

Dr. Lauriston E. Shaw, one of the Representatives of the Faculty of Medicine on the Senate, has resigned; his successor will be appointed at a meeting of the Faculty of Medicine on November 21st.

Reappointment.

Dr. P. H. Pye-Smith has been reappointed Representative of the University on the General Medical Council.

King's College.

Special Lectures in Physiology.

Dr. Otto Rosenheim will give a course of three lectures on the borderland of animal and vegetable chemistry (proteins, lecithins, pigments, etc.) in the physiological theatre of King's College on Monday, November 25th and December 2nd and 9th at 4.30 p.m. These lectures are free to all internal students of the University of London, all medical students in the London medical schools, and medical practitioners on presentation of their cards.

Graduates' Union.

The University of London Graduates' Union has been formed to keep the graduates and teachers in touch with the University by bringing together those engaged in all forms of educational work, and to support the development of university teaching and research in London. One means to this end is the publication of a periodical entitled *The London Graduate*. The subscription to the Union, of which Sir Thomas Barlow is President, is half a crown; it may be sent to the Secretary, 8, Collingwood Avenue, Muswell Hill, N.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A quarterly meeting of the Royal College of Physicians of Edinburgh was held on Tuesday, November 5th, Dr. Underhill (President) in the Chair.

Admission to the Fellowship.

The following members were admitted by ballot to the Fellowship of the College: Frederick Norton Menzies, M.D., M.R.C.P.E., London; Theodore Charles Mackenzie, M.B., M.R.C.P.E., Aberdeen; and George Douglas McRae, M.B., C.M., M.R.C.P.E., Edinburgh.

Admission to the Membership.

James Hunter Harvey Pirie, M.B., Ch.B., Edinburgh, was admitted to the Membership of the College after examination.

Admission to the Licence.

The Registrar reported that since the last quarterly meeting of the College fifty persons had obtained the Licence of the College by examination.

School of Medicine of the Royal Colleges.

The Secretary laid on the table the annual statement by the Governing Board of the School of Medicine of the Royal Colleges in terms of the constitution. The report indicated that the number of classes during the Winter Session, 1906–7, was 39, and during the Summer Session, 1907, 43; and that the number of students during the Winter Session was 1,048 and during the Summer Session 961, both so far as could be ascertained, as certain lecturers had not made returns.

Hill Pattison Struthers Bursary.

The Hill Pattison Struthers Bursary in Anatomy and Physiology, which is in the gift of the College, was awarded after examination to Mr. John William Hitchcock.

Wood Bursary Award.

The Wood Bursary, of the value of £60 per annum and tenable for three years, which is in the gift of the College, was awarded after examination in Latin, Greek, Mathematics, and English to Mr. George Baikie Shepherd.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE elections held on November 4th in the Faculty of Physicians and Surgeons of Glasgow resulted in the appointment of the following gentlemen as office-bearers for the ensuing year: President, Dr. John Glaister; Visitor, Mr. D. N. Knox; Treasurer, Dr. W. G. Dun; Honorary Librarian, Dr. J. Lindsay Steven. There were also elected as Councillors, in addition to those who are Councillors in virtue of their office, Dr. Robert Perry, Dr. Neil Carmichael, Mr. E. C. Clarke, Dr. Ebenezer Duncan, Mr. J. Walker Downie, and Dr. John Barlow.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

NOTICE has been given of an alteration of some importance in the regulations respecting admission to the Fellowship. Hitherto candidates have been divided into two classes—those who are graduates or Licentiates in Surgery of over ten years' standing, and those who have held such diplomas or degrees for less than that period. In the case of the former no examination has been imposed in anatomy and physiology, as apart from surgery; the test which has been imposed in their case being known as Grade 2. After the date mentioned Grade 2 will cease to exist, and all candidates alike will have to pass under the scheme known as Grade 1. This entails examination in anatomy and physiology and histology and surgical pathology, as well as in systematic, clinical, and operative surgery. The alterations will take effect from January 1st, 1910.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations undernoted:

SECOND PROFESSIONAL.—J. J. Barry, F. J. Graham, P. Grace, R. H. Hodges, W. H. Murray M. O'Brien, H. C. Smyth, J. P. Shorten.

THIRD PROFESSIONAL.—S. J. Barry, A. J. Bennett, G. E. Beggs, H. F. Blood, T. C. Casey, Miss C. Daniell, J. C. L. Day, E. C. Deane, E. Dundon, H. Hunt, F. M. Harvey, S. W. Hudson, L. C. Johnston, J. O'L. Murray, J. Menton, M. C. O'Hara, J. J. O'Connell, R. Power, W. F. Russell, C. D. K. Seaver, I. Scher, H. B. Sherlock.

FINAL.—*C. W. Green, *M. D. Healy, *J. McNamara, H. C. Carden, W. J. Connolly, A. Curry, B. Foley, G. A. Francis, E. H. F. Gilligan, G. J. M. Martin, E. Montgomery, W. St. L. Moorhead, P. J. Murray, C. McQueen, M. H. O'Sullivan, J. T. Rearden, G. F. Shepherd, P. D. Walsh

* Honours.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.

WITH reference to an announcement in the BRITISH MEDICAL JOURNAL of September 28th, p. 855, to the effect that "Dr. W. S. A. Griffith has become Physician-Accoucheur with Dr. H. Williamson as his assistant," we are requested to state that the Gynaecological staff of St. Bartholomew's is as follows: Dr. Champneys is the Physician-Accoucheur to the Hospital, Dr. Griffith has been appointed Physician-Accoucheur with charge of out-patients, Dr. Williamson has been appointed Assistant Physician-Accoucheur.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

AFRICA GENERAL SERVICE MEDAL.

THE KING has been pleased to approve of the Africa General Service Medal, with clasp, inscribed "N. Nigeria, 1906," being granted to the forces which (*a*) Under the command of the late Lieutenant F. G. Blackwood, East Surrey Regiment, and Captain R. H. Goodwin, R.G.A., took part in the operations against the Satitu rebels, near Sokoto, from February 14th to March 11th, 1906, both dates inclusive. (*b*) Under the command of Colonel A. W. G. Lowry Cole, D.S.O., Northern Nigeria Regiment, West African Frontier Force, took part in the operations against the Emir of Hadeija, from April 16th to 24th, 1906, both dates inclusive. Officers, soldiers, and others already in possession of the Africa General Service Medal will receive the clasp only. The grant of the medal and clasp, or clasp only, to officers of the regular and auxiliary forces will be confined to those who had official sanction to be present.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

BRANCH SURGERIES.

C. S. S. writes: A., who is in practice at X., would like to know whether there is any objection to his starting a branch surgery at Z. There are already three practitioners resident in Z., which is five miles from X.

*** We should feel better able to form an opinion if we knew precisely what A. proposes to do at his branch surgery; for example, does he intend to have a telephone and go when required, or only to see patients at certain hours on certain days? While the practitioners at Z. have no right to complain of fair competition, A. must expect his action to be resented, and if his purpose in establishing a branch surgery is merely for advertisement, and there is no real opening for another practitioner, we think there would be grave objection to his taking the step he proposes.

SUPERSESSION.

G. E. K. writes: A. is family practitioner to C., and on one occasion when ill requests B., a neighbouring practitioner, by letter to attend C. This B. does, and A. later sends her half her fees. Nine months afterwards and seven months ago C. calls to ask A. to visit a lady staying with her. A. is away for a short holiday, and C. then calls on B. and requests her to see the lady without mentioning the fact that A. is out of town. B. asks no questions, but attends the patients for ten days. She says nothing to A. on her return, and has never mentioned the matter, although A. and B occasionally meet. Should not B. have communicated with A. immediately on her return?

*** As B. was originally introduced to C. by A., she should have mentioned the fact that she had been called to the house again, although there does not seem to be any question of supersession in the case, as the lady who was staying with C. was a stranger to both A. and B.

PERPLEXED writes: A. and B. are practitioners in the same town. A. attends a confinement for B. in his absence. Some months later A. is called to see the child, and on explaining to the parents his position is informed that they do not intend to employ B.'s services again, and, if A. still refuses to attend, they will call in C. Under these circumstances, is A. justified in attending the case?

*** If A. attended the case at the request of B., he is not justified in taking over the case without B.'s full sanction. It is much better that the case should go to C. than that medical men should feel that they are liable to be superseded by colleagues who have acted as their substitutes.

Medico-Legal.

DAKHYL *V.* LABOUCHERE.

THIS case, which was heard by Mr. Justice Darling and a special jury during five days last week, was brought to a close too late for insertion in our last issue. The action was brought by Mr. Hanna Nassif Dakhyl, M.D., of the University of Paris, against Mr. Henry Labouchere for damages for an alleged libel in *Truth*. The case was first tried before the Lord Chief Justice and a special jury, when a verdict was entered for the plaintiff for £1,000. This verdict, however, was set aside by the House of Lords, and a new trial was ordered. The defendant admitted publication, but said that, so far as it consisted of statements of fact, the paragraph was true, and so far as it consisted of expressions of opinion it was fair comment on a matter of public interest.

Sir Edward Clarke, K.C., and Mr. Macnaghten appeared for the plaintiff; Mr. Shee, K.C., Mr. Eldon Bankes, K.C., and Mr. Hugh Fraser for the defendant.

According to counsel's opening statement the alleged libel was contained in the following paragraph which appeared in *Truth* in April, 1903:

> Sundry inquiries have reached me during the last week or two respecting one Dr. H. N. Dakhyl, of Holland-road, Kensington, who appends to his name the symbols B.Sc., B.A., M.D., Paris, etc., and describes himself as a specialist for the treatment of deafness, ear, nose, and throat diseases. Possibly this gentleman may possess all the talents which his alleged foreign degrees denote; but, of course, he is not a qualified medical practitioner, and he happens to be the

late physician to the notorious Drouet Institute for the Deaf. In other words, he is a quack of the rankest species. I presume he has left the Drouet gang in order to carry on a practice of the same class on his own account, and probably he is well qualified to succeed in that peculiar line.

Counsel explained that the ordinary definition of quack was a "boastful pretender to medical skill." If it were true to say that of his client, he was unfit to practise anywhere; if it were false it was a grave libel. Another meaning which might be given to the word was that a quack was a person who, although he had medical skill, pretended to cure people of diseases by remedies which he knew had no efficacy and were not calculated to affect the disease. Coming to the plaintiff's history, counsel stated that he was a native of Syria, where he was born in 1856. From 1873 to 1875 he was a student at the Greek College of the Holy Sepulchre. In 1876 and 1877 he became a director of schools at Beyrout, and in 1878 Professor of Greek at the University of St. Joseph. In 1881 he was Professor of French and Arabic at the Medical College at Beyrout. In 1891 he went to the hospital attended by Dr. Martin at Mount Carmel, where he acted as clinical assistant In 1897 he took the degree of M.D. in Paris, and practised there as a specialist in throat, ear, and nose diseases from 1899 to 1901. In 1901 he joined the Drouet Institute, which was then advertising largely in *Truth*, and in June, 1901, he became Medical Director of that institute, the work of which consisted largely in treating patients by correspondence. He remained there for a year, but was not responsible for the methods adopted. In 1902 he left the institute to practise on his own account. At this point counsel proposed to adduce evidence that the plaintiff was a skilful person; that he treated a large number of persons with care, skill, and success, and that he cured people by correspondence.

Mr. Justice Darling said that he could not allow rebutting evidence to be called first.

The plaintiff, on being called, gave evidence as to his studies and qualifications.

In cross examination, he said he did not know he was not eligible to be on the *Medical Register*. He said he knew nothing about the Drouet Institute when he joined it. Although *Truth* had published advertisements of the institute, it did not do so at the same time that it was attacking the institute. He agreed that if a plaster was put on behind the ear the medicaments would be absorbed and would enter the circulation. It would thus resolve fibrous tissue if it were not organized, and so was better than the lancet. To one patient who was suffering from otorrhoea, tinnitus, otitis media, and eustachitis he sent Dr. Drouet's genuine papier anticatarrhal, ear antiseptic gargle and sedative, of which the price was 19s. 9d. He considered the methods of the Drouet were quite professional, and he left it because of the bad reputation it had received from *Truth*. He said that all the English army was treated by correspondence. He used to diagnose by correspondence since he left the institute, but had ceased to do so since he heard the remarks of the Chief Justice at the previous trial. When he said in a published pamphlet, of which 1,200 copies were printed, that "all my diplomas have been gained in medical schools of the highest reputation, such as Paris, as shown by their registers," he referred to University College Hospital, where his name was registered as a scholar, and where he attended two or three months. He was given a certificate of attendance.

In re-examination, he said that the questions sent to patients were so framed that true answers must inform the physician of the real condition of the patient. He had never heard of a case in which his treatment was injurious.

A number of witnesses were called on the part of the plaintiff A foreman labourer, whose son had been deaf for nine years, got medicines from the Drouet Institute, the use of which he said, cured his son. In cross-examination, he admitted that the use of the snuff which was sent caused the boy's nose to bleed every day until the doctor at the institute said it must be stopped.

Mr. Bankes intimated that it was not part of the defendant's case to say that no cures had been effected.

Colonel Mark Mayhew said that by personal treatment the plaintiff had cured him when he was so deaf that he could not hear a gun go off.

Miss Nettie Bishop spoke of having been relieved by Dr. Dakyl of deafness following scarlet fever.

[Mr. Bankes having put a question,]

Witness: I cannot hear.

Mr. Bankes: Is it the fact that you cannot hear me unless you see my lips moving?—No; I do not go by lips.

Mr. Bankes: You do not hear when I turn my head, but you can hear when you can see my face?

Dr. Hirschberg, M.D. of Paris, and Dr. Roubleff, head physician of a medical and surgical home at Paris, gave evidence that treatment by correspondence and advertising were lawful in France.

Mr. Shee in opening the defendant's case, said that when *Truth* said that the plaintiff was not qualified, it did not mean that he was unskilled; it had always admitted that he was an M.D. of Paris, and that he had cured a number of people, especially those he saw personally. "Not qualified" meant non-qualified in England. Whether he was a quack was a matter of opinion, and he would ask them to say that no man shaped himself more like a quack than the plaintiff. He acted so when at the institute and when he left it. He had a hundred cases to deal with each day, and accurate diagnosis and prescription became a mere farce. What were a hundred or two hundred cases out of a business that could pay £9,000 or £10,000 a year for advertisements? Why were no English doctors called who had sent patients to the plaintiff? In addition to the adoption of such methods of treatment, counsel would contend that the pamphlets issued by the defendant showed he was a quack.

Mr. Arthur Henry Cheatle, F.R.C.S., Aural Surgeon at King's College Hospital, in the course of his evidence, said that diagnosis by correspondence was unsafe and unreliable. Plaster behind the ear was useless in a case of deafness. In cross-examination he said that he did not suggest that the plaintiff's remedies were mischievous, as they were not in sufficient quantities.

Mr. Charles Alfred Ballance, M.V.O., M.S., F.R.C.S., and Dr. Herbert Tilley, gave evidence to the like effect.

A number of witnesses were then called who had been treated by correspondence, and who said that they had received no benefit. One man named Woodhead was treated by the Institute, and afterwards went to see Dr. Macleod Yearsley, who found the left ear full of polypi. For such a condition the treatment suggested was absolutely useless.

Sir Victor Horsley said he had read the questions sent out by the Drouet Institute, and was of opinion that, even if they were fully answered, it would still be impossible to treat the patient. Treatment by correspondence was a dangerous practice, and any doctor conducting his practice by correspondence would certainly be brought before the General Medical Council. In cross-examination, he said that treatment by correspondence was likely in many cases to result in harm to the patient.

The Judge: Suppose any one told you that by applying a plaster to the back of the ear the ingredients used would pass through the bone to the inner ear like a shot, what would you call him?—Sir Victor Horsley: I should call him a quack.

The plaintiff, recalled by the Court, said that the Drouet Institute did not now carry on business in London. It was closed between the hearing in the Court of Appeal and that in the House of Lords.

Counsel having addressed the jury,

Mr. Justice Darling, in his summing-up, asked, Was there any libel in describing the Drouet Institute as notorious, and notorious in a bad sense? It did all that it could to make itself notorious in some senses, but the question was whether what the jury had heard about its methods made them think it was notorious in a bad sense. The defendant said plaintiff was a quack and that it had been proved. The defendant must prove that it was comment and that it was on a matter of public interest; if he satisfied the jury of that the plaintiff must satisfy them that it was not fair and honest. After directing attention to the evidence, his lordship said, What did they call a system which was capable of sending to men and women medicine that would do them no earthly good—sending medicine to persons who could not be benefited except by an operation? What was said of it was that it was a system which was not likely to produce good results and which would not be adopted by a man, no matter what was his skill, who was careful in the practice of the profession.

The jury, having deliberated in private for fifteen minutes, returned a verdict for the defendant. Judgment was entered accordingly.

*** We have been asked to publish the following notice relating to this case:

"Dakhyl v. Labouchere.

"The name of 'Dr. Cheetham' in association with Drouet Institute having cropped up and been mentioned to me by patients, I beg to say, as the only medico of that name in practice in London that I am not, and never have been, connected in any way with any of the parties, and send this disclaimer to remove what impression my patients and the general public have received against my strictly ethical career for sixteen years at this address.

Forest Gate, E. "S. W. Cheetham."

WORKMEN'S COMPENSATION ACT.

At the Shoreditch County Court recently Dr. C. F. Ponder sued a publican for 4 guineas for attendance on defendant's barmaid, who had been injured through the explosion of a bottle. The defendant denied liability, but admitted that he had sent on the bill to the insurance company with whom he was insured under the new Act, under the impression that the company would pay it. The case was heard by Deputy Judge Brooks, who said it was evident the defendant had the mistaken idea that the insurance company was liable for doctors' bills under the new Act, whereas legally it was not, but thinking that, he had apparently in the first place accepted liability. There would be judgement for the plaintiff, with costs.

CANCELLING OF MIDWIFERY ENGAGEMENTS.

M.D. writes that a lady who had engaged him for her confinement lately intimated an intention to break the engagement

and to be attended by another doctor. He asks whether he can claim his usual fee, and if not, what proportion of it is usually paid.

*** An engagement properly entered into by two persons cannot be legally determined except by mutual consent. On the authority of Hochster *v.* De la Tour (2 E. and B., 678), our correspondent could demand at once his full fee, and even sue for it before his patient's confinement; but the usual custom in the profession, when notice is given well before the expected confinement, is to consent to the determination of the engagement.

ESTIMATION OF VALUE OF PRACTICE.

FORCEPS asks: (1) When a junior partner wishes to take over the remainder of a practice, what is the usually accepted method of estimating the value of same? (2) Is the purchase value estimated from the net or gross receipts? (3) What would be a fair price in a principally working-class practice? (4) Has a further sum to be added for the goodwill of the remaining share?

*** (1) It is usual to estimate the gross annual value of the remainder, taking the average gross receipts for the last three years. (2) Always the gross receipts. (3) One year and a half's purchase would be a fair price. (4) No.

F. O. G. writes that he is about to buy out his present partner and take in another. He is advised that he ought to take an assignment of the share of the outgoing partner, and so become possessed of the whole practice before selling a share to the incoming partner. He does not wish to do this, and asks for advice.

*** The answer must depend on his original partnership deed, and he should act on the advice of his solicitor. If he is going to select the new partner and negotiate with him without any reference to his late partner, no doubt the advice is sound; but many partnership agreements allow the outgoing partner to sell his own share, stipulating only that the purchaser of the same shall be acceptable to the other partner or partners.

OBITUARY.

THE announcement of the death, on October 26th, of Dr. C. E. PRESTON, of Erving Terrace, Morecambe, has been received with the deepest regret in that locality. Dr. Preston, who at the time of his death was in his 38th year, graduated B.A. at London University in 1891, and afterwards entered Aberdeen University as a student of medicine, and received the degrees of M.B., Ch.B. in 1898. For some time he served as Assistant Medical Officer at Manchester Royal Infirmary, and gained experience in private practice with Dr. McCallum, of Kendal. At Morecambe he took up his residence some five years ago, becoming Medical Officer of the Craig Convalescent Home, and playing likewise an active part at the Victoria Cottage Hospital. He married a lady who, like himself, was a Wesleyan and of corresponding literary and musical tastes, and the two together were prominent members of the West End Chapel congregation and choir. He was a widely-read man, with a most attractive personality, and in the comparatively short time he was at Morecambe had acquired a large circle of keenly appreciative friends, by whom his early and quite unexpected disease is exceedingly regretted. His death took place in Ireland, where he had travelled in haste on receiving news that his child, who was on a visit with its mother to a relative, was believed to be suffering from enteric fever. A few days after his arrival Dr. Preston himself fell ill, and after a short illness died, as is believed, from the same complaint.

THE LATE CAPTAIN DREDGE, I.M.S.—An old acquaintance writes with reference to the accidental death of Captain JAMES ALLEN DREDGE, I.M.S., briefly mentioned in the JOURNAL of October 26th, as follows: Captain James Allan Dredge, I.M.S., who was only 34 years of age, came home on furlough three months ago, and in the afternoon of the accident was about to mount a young hunter when the animal broke away, throwing him and fracturing his skull. The end came in a few hours, but he was quite conscious for some time before death. Captain Dredge was the eldest son of Mr. James Dredge, of Melrose, Glastonbury, and spent his school days at Blundell's, Tiverton. He studied medicine at St. Bartholomew's, where, after passing the examinations, he remained some time as resident surgeon. Thence he proceeded to Netley, and finally to India in the Indian Medical Service in 1897. After a varied experience in Bangalore, Edwardsabad in the Punjab, China (medal), Belgaum and Trichinopoly, he was finally posted to Bangalore as Staff Surgeon. He then looked quite a boy, but a very short acquaintance proved that he was already a man of wide experience, and imbued with a zeal which augured well for his future. Without experience it is difficult for any one to realize the mental and physical strain which a staff surgeon's duties involve in a large cantonment and sanatorium like Bangalore. But as far as it was possible for any man singlehanded to carry them out, the work was done in the most efficient manner by Captain Dredge. All his patients alike, from the General Officer Commanding to the humblest official, received his best in time and attention. This cheerful, earnest man was always on duty. But withal he was a good rider and a good shot, and found time for various field sports. Nor did he allow the usual official discouragement to undertaking it to disgust him with private practice, but, on the contrary, gave great promise of success in it. Indeed, Captain Dredge will be as much missed by his private as by his official patients. But what shall we say of the loss which has with such appalling suddenness befallen his young wife and their three infant sons? Of one thing, at least, Mrs. Dredge may rest assured, and that is that this great grief is not entirely her own, but is shared by a very large circle of sympathizing friends.

PUBLIC HEALTH.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Essex.—The annual report for 1906 of Dr. Thresh contains, as usual, the statistics of the administrative county and a number of interesting details bearing upon the health of Essex. The population of the administrative county for 1906 is estimated at 971,611. The birth-rate was 25.8 as compared with 27 for England and Wales, and 28 5 the mean 1890-1904 for the county. Corrected to the standard of England and Wales, the corrected birth-rate is lowest for East Ham, 22 08, while in the rural districts it is 28.08 The uncorrected death-rate was 12.2, and when corrected for age and sex distribution it was 11.9. This is very satisfactory compared with the death-rate of 15.4 for England and Wales. The corrected urban rate was 12.3, and the rural 11.2. Of the large towns, the highest rates (corrected) were given by Barking (13.36) and Colchester (13 28) and the lowest by Ilford (10.68), but in all the districts the rate was low compared with the rest of England. The infantile mortality-rate in urban districts was 122, and in rural 95. After the age of 15 years the death-rates in town and country were almost identical. The infantile mortality-rate for the whole administrative county was 115, that for England and Wales 133. The number of deaths recorded from cancer was 730, giving a death-rate of 0.75. The mortality from cancer has steadily increased, the death-rate for 1871-80 being 0.48, 1881-1890 0 54, and 1891-1900 being 0.66. When corrected for age and sex distribution the rate is higher in the urban (0.808) than in the rural (0.701) districts. In the Dunmow and Halstead districts the mortality from cancer was twice as high as in the remainder of the county. The deaths from tuberculosis show a continuous diminution, being 0.75 from phthisis (0.785 in the urban and 0.654 in the rural), and from other tuberculous diseases 0.446 in the urban and 0.337 in the rural districts. There is no public sanatorium in the county. Not a single case of small-pox was notified during the year. Scarlet fever was extensively prevalent, 4,434 cases being notified. The mortality-rate was 2.1 in the urban and 2.4 in the rural districts, both higher than in the previous year. There were 1,869 cases of diphtheria with 242 deaths, a death-rate of 0.25. As has now almost invariably become the case, the cases per 1,000 of population were much higher in the urban (2.07) than in the rural (1.5) districts. Dr. Thresh draws attention to the gradual and continued decrease in the prevalence of typhoid fever. Only 366 cases were notified in the administrative county with 53 deaths, a rate of 0.06. The diminution is especially prevalent in the "Thames area," the death-rate from this disease showing a continuous decline from 0.28 in 1891-1900 to 0.08 in 1906. The death-rates from measles, whooping-cough, and diarrhoea were respectively 0.18, 0.2, and 0 9. The second part of the report deals with questions of sanitary administration in the individual districts, which consist of thirty-two urban and eighteen rural districts. Summaries of the reports of the individual medical officers of health are given in an appendix.

Monmouthshire.—Monmouthshire has no county medical officer of its own, but the county council are just now considering the advisability of appointing one. In the meantime one of the Rhymney members (Dr. T. H. Fed ood, Fellow of

the Royal Sanitary Institute) has collected the reports supplied by the various medical officers in the county, and from these he has prepared a review of the sanitary condition of the county throughout the past year, which was presented to the county council meeting held at Newport. Dealing with the excessive infantile death-rate, Dr. Redwood states that the figures vary from 185.3 for Abertillery to as low as 45.7 and 46.8 at Abergavenny and Pontypool Rural. He suggested that midwives should advise mothers to feed their babes on the breast at regular intervals, and show them the proper way to wash and dress them, and that health visitors should be appointed to give practical advice on the feeding and management of young children, and in domestic hygiene generally. He recommended that girls in the higher classes in elementary schools should be taught the fundamental rules of health and domestic economy. Under the heading of Sewerage and Drainage he states that in many districts improvements have been effected, but eight districts discharge the whole of their sewage, and four part of it, into rivers and brooks. The Western Valleys main sewer would prevent this in several instances. He drew the serious attention of the county council and district councils lying along its course to the condition of the Afon Llwyd, which is practically an open sewer, and about which nothing as yet appeared to have been done. House and other refuse was generally disposed of by tipping on to waste grounds or into hollows or disused quarries. Improvements had been carried out as regards the water supply in some districts, but Dr. Redwood was strongly of opinion that the county should take early steps to obtain possession of the excellent gathering grounds recommended in their expert engineer's report on the proposed county water scheme in order to prevent some outside authority snapping them up. Housing accommodation had much improved in most rural districts, and the number of houses was sufficient, but their condition was in many cases bad. There was serious overcrowding at Risca, and in some instances, such as New Tredegar, owing to high rents. In seven districts house accommodation was described as satisfactory and sufficient, in eight improved to a greater or lesser degree, and to the remainder more or less unsatisfactory. The report was adopted, and Dr. Redwood was thanked for his services.

HOSPITAL AND DISPENSARY MANAGEMENT.

SALOP AND MONTGOMERY ASYLUM.

LIKE many other county asylums in England and Wales, this asylum for the counties of Salop and Montgomery and for the borough of Wenlock is much in need of extension. The total sleeping accommodation of the asylum is for 330 men and 421 women, but we see from the annual report for the year 1906 of Dr. D. F. Rambaut that on January 1st, 1906, the asylum contained 364 males and 438 females, 802 in all, giving an excess of 51 patients over the sleeping accommodation, as returned to the Board of Lunacy. In addition to these numbers, however, 25 male patients were at that date boarded out in Forden Union workhouse, 20 female patients in Abergavenny Asylum, and 20 males in Cotford Asylum. On the last day of the year the numbers in the asylum had dropped to 758, or 7 over the provided accommodation, but in addition to the numbers boarded out at Abergavenny and Cotford Asylums and Forden workhouse there were 44 boarded out at Morpeth Asylum. From the committee's report it appears that the question of acquiring additional land for the purpose of extending the institution is under consideration.

The total number under care during the year 1906 was 1,049, and the average numbers daily resident, excluding the Forden cases, was 786. During the year 222 were admitted, as compared with 230 in the year 1905. Of these in 79 the attacks were first attacks within three, and in 30 more within twelve months of admission; in 54 not-first attacks within twelve months of admission and in the remainder the attacks were either of more than twelve months (57) or of unknown duration (2). They were classified as to the forms of mental disorder into: Mania of all kinds, 81; melancholia of all kinds, 45; dementia, 32; general paralysis, 9; epileptic insanity, 10; delusional, confusional, and alcoholic insanity, 23, and cases of congenital defect, 22. As to the probable causes of the insanities in the admissions, alcoholic intemperance was assigned in 18, or slightly over 8 per cent., syphilis in 3, previous attacks in 47, old age in 18, epilepsy in 12, stresses of various kinds in 31; in 54 no cause could be assigned, and the remainder are distributed over other usually cited causes.

During the year 84 were discharged as recovered, giving a recovery-rate on the admissions of 39.25 per cent., 14 as relieved, 57 as not improved or removed under contract, and 111 died. The deaths, which give the high percentage death-rate on the average numbers resident of 14.12, were due in 30 cases to cerebro-spinal diseases, including 8 deaths from general paralysis; in 42 cases to chest diseases. including 18 deaths from pulmonary consumption; in 5 cases to enteritis, and the remainder to general diseases, including 15 deaths from senile decay, and 2 from tuberculous disease other than pulmonary tuberculosis. Over 18 per cent. of the total deaths were thus due to tuberculous disease. Only one inquest was held during the year—on a man dying from cerebral apoplexy.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—

EDITOR,	GENERAL SECRETARY AND MANAGER,
2631, Gerrard.	2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

ANAESTHESIA asks: In operating on piles under local anaesthesia, where should the injection be made in order to dilate the sphincter painlessly, or has this to be done under a general anaesthetic?

THE PROPHYLAXIS OF PHTHISIS IN BOYHOOD.

A MEDICAL correspondent desires to hear of a school for a boy, aged 10, in which the ordinary curriculum is subordinated to the culture of health and physical development, and where the boys can get outdoor exercise during the sunny parts of the day. The boy in question has a family history of consumption. We should be glad to receive information about such schools, and possibly eventually to publish a list.

PRECIPITATE MICTURITION.

M. asks for advice in the treatment of the following case: A strong healthy man, 74 years of age, 16 st. weight, who has led an active life, has suffered more or less for the past three years from frequent and precipitate urination, but only while in bed. During the day when walking about he does not require to pass water more frequently than about every three or four hours, but on going to bed he has to get up four or five times every night, and sometimes more frequently. If he lies on his back in bed, the calls are more frequent and urgent. He says he sometimes must get up in great haste, after being only five minutes in bed, and then has nothing to pass, and sometimes has to strain a great deal to get even a little to pass. During the day, though he does not pass water more frequently than he used to do, when the call to micturate comes, he has to respond at once, as he cannot control the process of micturition as he used to do. Believing there was too great sensitiveness of the sphincters or of the passage, I have relied principally on opium and belladonna, but without any benefit. He takes sparingly of liquids, no beer, a little whisky each day. The urine is natural.

HAIR DYES.

GOZO writes: I am often asked by my lady clients which is the best and most harmless hair dye, and I am always at a loss to answer it properly. An answer will oblige.

*** We have referred this question to Mr. George Pernet, who writes: The matter is not so simple as your correspondent appears to think. In the first place, such dyes (vegetable) as walnut juice, henna and reng (indigo), used *secundum artem*, according to the shade required, are practically harmless. But, on the other hand, chemical hair dyes of known—or, as is more usually the case, of *unknown*—composition need to be used with great caution. Everything depends on the state of the scalp to be dealt with. Advertised hair dyes, whether applied by the patient or the hairdresser, sometimes lead to very severe dermatitis difficult to quell. Again, what will suit a case at one time may on another occasion lead to a most severe inflammatory reaction.

In a recent case under my observation the dermatitis lighted up in the scalp spread all over face, neck, bust, down to the finger tips, as a result of a dye applied to a lady's hair by a hairdresser. "Gozo" would be well advised not to recommend any of the advertised hair dyes, especially those of unknown composition. If he will stick to the three vegetable dyes mentioned he cannot go far wrong. But I may add, the whole subject is one that would require a good deal of space to go into thoroughly.

ANSWERS.

Motor Bicycles.

Dr. R. C. Macdonald (Canibsay) writes: In reply to query by "Cyclist," vibration is practically non-existent on a cycle like the 3½-h.p. Triumph, with Smith spring-seat pillar. Skidding is abolished by Palmer or Brooks studded tyres.

Fees for Life Assurance Examinations.

Dr. W. H. Rowthorn (Rotherham) writes: In the Journal of November 9th, p. 1380, "Devon Rural" writes complaining about a fee of 7s. 6d. for examining for £100 policy for the London, Edinburgh, and Glasgow Assurance Company, and asks if any other company expects so much for so little. I would draw the attention of the profession to the fees of the Royal Liver Friendly Society, and cannot do better than give them in their own words:

"2s. 6d. for each examination you make for amounts of assurance under £50, and 5s. for sums of £50 and over, which in no case will exceed £200. For visits to proposed members no travelling expenses will be defrayed by the Society, unless permission to incur same has been previously obtained from the Committee of Management. Postal expenses incurred in connexion with the business of the Society can be charged in the usual quarterly account."

Those who desire to see the progress of this Society should consult the *Liverpool Courier* of Thursday, May 30th, 1907. In this will be seen a half-page illustration of their new offices, under the heading of "A Stately Edifice for the River Front." In the description of it the land is stated to have been purchased from the Corporation for £70,000, the revenue from rates will be about £7,000 or £8,000 per annum, and the estimated cost of the whole something like £350,000. The income for 1906 was over £900,000, and the accumulated funds stand at over £2,700,000. The amount saved last year was £180,000, and the amount paid in claims last year was over £370,000. The Society has paid in claims since its commencement a total of over £6,000,000. According to these figures it will be seen that the new offices can be paid for within two years out of the amount saved per annum. The medical profession is well known as being unbusiness-like in its transactions, and when we consider the enormous amount contributed to this palatial structure by doctors who have saved the Society thousands of pounds by doing work at an inadequate figure, I feel that a better name than "The Doctors' Monument" cannot be found.

LETTERS, NOTES, Etc.

The Alabone Treatment.

Dr. Hugh Woods, General Secretary (the London and Counties Medical Protection Society, Limited), writes: Objection has been taken by Mr. E. W. Alabone to paragraph 158 of the Annual Report of the London and Counties Medical Protection Society, Limited, for the year 1906, on the ground that it conveys the impression that Mr. E. W. Alabone has converted his practice in the treatment of consumption into a company. Mr. E. W. Alabone wishes it known that this is not so. Will you kindly allow me to convey this information to your readers?

Laveran and Mesnil's "Trypanosomes et Trypanosomiases."

Dr. David Nabarro (University College Hospital Medical School) writes: I thank you for your laudatory remarks upon, and kind appreciation of, my work in connexion with the translation and amplification of Laveran and Mesnil's book on trypanosomes which has recently been published. There is, however, one criticism in your review to which I should like to reply. Your reviewer states that "The chapter on this subject (namely, the treatment of trypanosomiasis) brings the work up to date, with the exception of the combined treatment by atoxyl and mercury quite recently devised by Nierenstein and others in Liverpool. . . ." It is quite true that I have made no mention in the text of this mode of treatment, the reason being that Moore, Nierenstein, and Todd's preliminary note (consisting of only fifteen lines on p. 161 of vol. i, Part I, of the *Annals of Tropical Medicine and Parasitology*) was all that had been published upon the subject at the time my chapter on treatment was passed for printing. My desire to make the book as complete and up to date as possible induced me to add the gist of the very brief note of Moore and his co-workers, and I have done this in the form of a footnote on p. 422.

Average Fees of Poor-law Medical Officers.

A correspondent from whose letter we quoted under the above heading takes exception to our remark that he "apparently thought it useless to specify professional skill as something worthy of recognition"; and adds that, though omitting to mention it in his letter to us, he pointed out to his Board that "the 3d. included professional advice, lengthy examinations, etc."

Treatment of Mucous Colitis.

Dr. G. Angus Wright (London, W.) writes: A patient aged 38, a multipara, had borne her last child twelve years ago. The perineum was practically absent, causing prolapse and retroversion. She had lived in India for some years, but never contracted any tropical disease. Returned home twelve years ago. She was quite well until three and a half years ago, when she began to feel tired and languid, and to suffer from constipation. About this time considerable pain was felt in the left loin, and some mucus was passed at intervals with the bowel evacuations. A year ago the condition became much worse: severe dragging pain in the left lumbar region with great tenderness on pressure—localized—poor appetite, and frequent sickness. The bowels were constipated, and could only be relieved by enemata, as all purgatives aggravated the pain. The condition improved under different drugs until March, when the patient had a severe strain, bringing on the symptoms in a worse form. Large flakes, looking like membrane, were passed, but on examination they proved to be mucus. In May I began the administration of acetozone (benzoylacetyl peroxide), 5 grains to the pint, a wineglassful three times a day. There was not much change for a fortnight, but after that she improved rapidly, and at the end of six weeks was free from pain and no mucus was passed. She has remained well since. The tissues had all become very lax and flabby, but returned to their normal condition. Whether that was due to the acetozone or to the improved condition of health I am unable to say, but the improvement was rapid. The treatment adopted previously consisted of different intestinal antiseptics; irrigation was also tried, but aggravated the condition. I may add that I do not consider the case to have been one of "colitis sinistra," such as is sometimes met with in conjunction with prolapse.

Caesarean Section on a Monkey.

Dr. Küstner of Breslau (*Zentralbl. f. Gynäk.*, November 2nd, 1907, pp. 1389 to 1392) reports a case where Caesarean section was necessary, owing to dystocia following ventrifixation, and another in which labour was obstructed by hydatid cysts in the pelvis. He also relates a third performed on a rhesus monkey, which recovered and became pregnant after the operation. The animal had been impregnated by a large baboon, and the fetus, being of the sire's proportions, could not be delivered at term. We may note that a hybrid between a male macaque (*Macacus cynomolgus*), a moderately-sized monkey, and a female mandril (*Cynocephalus mormon*) a large blue-faced baboon, was born in the Zoological Gardens, Regent's Park, in October, 1878. As the dam was the larger species there was no difficulty in parturition. Küstner's rhesus monkey was taken with very strong pains at term. On the following morning Caesarean section was performed. The abdominal incision was made through the linea alba, and the uterine wound passed through the anterior wall of the uterus vertically. The fetus, as expected, was dead. It bore a haematoma on the forehead. The placenta, not quite the same as the human in character, was separated. Although the uterus was flaccid, no bleeding occurred. Its walls were closed with a continuous catgut suture; superficial wire sutures were applied to the abdominal wound. Strange to say, the animal suffered from a long and severe rigor shortly after the operation, yet on the next day gambolled about her cage and devoured cherries as though she had never submitted herself to the obstetrical surgeon. At the end of a fortnight the wire sutures were removed; the abdominal wound had healed by first intention. About eighteen months later this interesting monkey became pregnant by a macaque (*Macacus cynomolgus*). That species is closely allied to the rhesus, and is of about the same size. The second hybrid was born at term, and was delivered alive. The mother and child did well.

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N.B.—It is against the rules of the Post Office to receive letters at *Postes Restantes* addressed either in initials or numbers.

Clinical Lecture
ON
SOME TYPES OF CONJUNCTIVITIS.

Delivered at the Ulster Hospital, Belfast.

By H. H. B. CUNNINGHAM, M.D., F.R.C.S.I., M.R.C.S.Eng.,

Ophthalmic Surgeon, Ulster Hospital for Children and Women, Belfast; late Chief Clinical Assistant, Royal London Ophthalmic Hospital.

Introductory.

The conjunctiva, the mucous membrane lining the inner surfaces of the eyelids, whence it is reflected on to the globe of the eye, of which it covers the anterior third, may be described as consisting of three portions, the palpebral, the fornices, and the ocular; the latter may be subdivided into scleral and corneal. The palpebral conjunctiva lines the inner surfaces of both upper and lower lids, at the edges of which it is gradually transformed into the epithelium of the skin; it is closely attached to the tarsal plates, and thence passes into the fornices, where it is reflected from the lids on to the eyeball; they consist of some small folds placed parallel to the length of the lids; this arrangement allows the eye to move freely in all directions, irrespective to a great extent of the lids. The scleral portion extends from the fornices to the limbus, whence it passes into the corneal conjunctiva; it is very loosely attached to the subjacent sclera, and on the cornea the membrane resolves itself in the anterior epithelium of that structure. Near the caruncle is a fold of the membrane, the plica semilunaris, which corresponds to the membrana nictitans present in birds and many quadrapeds. Histologically the conjunctiva consists of two portions, the epithelium and the substantia propria. The character of the epithelium varies in different positions, the palpebral portion consists of a laminated cylindrical type in two layers, of which the cylindrical cells are superficial; at the fornices three layers are found, and in the scleral portion the epithelium is gradually becoming stratified, being definitely so at the limbus. Acinous mucous glands (Waldeyer's glands) are found along the convex border of the tarsal plates, analogous glands (Krause's glands) in the fornices. Goblet[1] cells are found in all parts of the conjunctival epithelium, but especially in the fornices and scleral portions; their presence is of the utmost importance, for it is due to their secretion moistening and so protecting the conjunctiva and cornea that we are enabled to remove the lacrymal gland without any ill effects. The substantia propria is of an adenoid type—that is, it consists of fibrous connective tissue containing many lymphocytes, especially in its superficial layers; it is this fibrous layer which is closely connected to the tarsal plates, and into it the posterior lamella of the levator palpebrae superioris is inserted. The blood supply is derived from the palpebral and from the anterior ciliary arteries.

Pathology of Conjunctivitis.

As in all forms of inflammation there is a dilatation of the lymphatics and of the conjunctival blood vessels, with exudation of serum and diapedesis, leucocytes, lymphocytes, and plasma cells are found in abundance, the lymphocytes normally present in the substantia propria of the conjunctiva are largely increased in numbers; this structure being of loose connective tissue is easily distended with exudation, thus causing the chemosis so frequently seen. The epithelium itself is swollen, thus accounting for the loss of transparency so often noticed; the goblet cells are increased in numbers, especially in the chronic types of inflammation; indeed, new tubular glands are even formed. The secretion exuded varies in consistence, from the aqueous fluid seen in ephiphora resulting from a reflex stimulation of the lacrymal gland to thick muco pus or even pus; this discharge contains, in addition to the lacrymal secretion, plasma exuded from the blood vessels, mucus from the goblet cells and acinous glands, and a varying number of leucocytes and pus corpuscles.

Classification.

As I only intend to discuss a few types of conjunctivitis to-day, I will not attempt a classification of the various forms of this disease.

Catarrhal Conjunctivitis.

Catarrhal conjunctivitis may be divided into acute and chronic. The causes of the acute variety may be divided into predisposing and exciting. The former consist in the main of a lowering either of the local vitality, as by a cold or presence of a foreign body, or of the general vitality, from defective hygienic surroundings, and insufficient or unwholesome food, this latter cause being met principally in the class of patients who come to hospital for treatment. The exciting causes are several micro-organisms, of which the bacillus discovered by Koch in Egypt in 1884 and by Weeks in New York in 1885 is by far the most common. This bacillus, usually called the Koch-Weeks bacillus, is a short fine rod, which is difficult to grow in culture; it is non-motile, stains faintly with aniline dyes, and is decolorized by Gram's method. The bacillus attacks all ages, but most frequently the young; it causes a muco-purulent conjunctivitis which is highly contagious. Handkerchiefs, towels, etc., are the usual media of contagion, and when one member of a household is attacked by this disease, usually every other member is subsequently affected. It is this disease which sometimes breaks out in schools, and is then known as school ophthalmia. The pneumococcus also gives rise to epidemics, usually among the young. Gelpke described a form of the kerosis bacillus as the *Bacillus septatus* in an epidemic of this disease. Among other micro-organisms found streptococci may be mentioned; a pure culture is seldom obtained, and in those cases in which it is found the prognosis is usually not good, as in the following instance:

A. F., aged 2, was brought to hospital with a history of the left eye having been sore and inflamed for the previous three weeks, subsequent to the appearance of a dry eruption on his face. Two other children in the house had had "colds" in their eyes recently; there was no family history of syphilis or of tubercle. There was slight oedema of the left eyelids, and some glueing of the lids in the mornings; there was a large swelling in the region of the left parotid gland, which had lasted for three weeks, and a number of enlarged lymphatic glands in the posterior triangles of the neck; there were no pediculi. He was treated on the lines to be indicated presently. Three days later there was chemosis, marked oedema of the lids, muco-purulent discharge, and the eruption on the face had become purulent in places. Four days later the enlarged glands were in a similar condition, the eruption on his face was less and cleaner, the oedema of the lids was a little decreased, but they were still reddened, the chemosis had increased, the muco-purulent discharge was increased and free, there was a hypopyon half filling the anterior chamber, the cornea was cloudy and contained a large central septic ulcer, and, in short, the eye was lost. The pus taken from this case gave a nearly pure culture of streptococci.

The symptoms of this condition vary in severity; a history is usually given that the sufferer caught a cold in the eye, or caught it from another child, both eyes being affected at once, or one shortly after the other; the child complains of more or less photophobia and burning of the lids; there is some epiphora, and the sight may be dimmed by shreds of mucus floating on to the cornea; the lids may be stuck together in the morning with tears and muco-pus pent up inside. The lids are sometimes oedematous, the ocular conjunctiva is injected, hence the name "pink eye." Chemosis is frequent, and on everting the lids the palpebral conjunctiva is seen to be markedly injected, flakes of muco-pus floating about in the tears; the quantity of this and the amount of injection vary with the severity of the inflammation; this condition may be complicated by the presence of corneal ulcers or iritis, as in the following case:

M. M., aged 3 months, was brought to hospital with the usual symptoms detailed above, which had commenced a week previously; ordinary treatment was adopted; four days later the child was better and could open her eyes a little herself, though the edges of the lids were sore. The child was not seen for six days, when there was an exacerbation of the disease in the right eye, and in addition in the left there was diffuse suppurative keratitis, with a central septic ulcer. Again, she was not brought back for ten days, when the condition was very similar. Four days later she was better, the ulcer had healed, and she could open her eye herself a little; three days later she was almost well.

This condition usually lasts for a week or a fortnight, but cases are frequently met with in which there is definite rhinorrhoea.

A. C., aged 3, was brought to hospital with a history of sore eyes for the previous three weeks; he had mild symptoms of the complaint, coupled with double otorrhoea, and with

rhinorrhoea. He was seen regularly, and the condition slowly improved. Three weeks later the rhinorrhoea and otorrhoea both ceased, and he could open his eyes slightly. A fortnight later, he had no photophobia, could open his eyes easily himself, and was almost well.

The treatment of this complaint is simple. I am in the habit of ordering for use at home boracic lotion to bathe the eyes frequently, with the application of boracic ointment to the inner sides of the lids night and morning, and of performing myself what Darier calls "savonnage"—that is, brushing the everted lids with either argyrol or protargol once a day or less frequently, according to the severity of the symptoms; some surgeons use a solution of silver nitrate, but I reserve this powerful caustic for those cases which will not react to the above treatment. The following cases illustrate the result of treatment of this condition:

E. S., aged 10, was brought to hospital complaining of sore eyes for a week; both palpebral and ocular conjunctivae were inflamed, and muco-pus was floating in the sac; she was ordered boracic lotion and ointment for home use, and savonnage was performed; her attendance was very irregular, still the same treatment was continued, and in five weeks she was quite well.

S. B., aged 12, was brought to hospital with a history of having had sore eyes for five weeks. The conjunctiva was injected, the corneae clear, and muco-pus was present in the sacs; there was also photophobia. He was ordered boracic lotion for home use, and the lids were painted with argyrol; this treatment was continued for four visits, and he was quite well in three weeks.

Chronic catarrhal conjunctivitis may result from a preceding acute attack which has not resolved, or from the irritation of a foreign body; it is frequently seen in children dating from an attack of measles; in adults it is often seen in patients whose occupation exposes their eyes to constant irritation by injurious gases, particles of dust, smoke, etc.; in the aged it is frequent. Darier[2] mentions an alcoholic type. In whatever manner started, the most frequent cause of the continuation of this complaint is an error of refraction, especially astigmatism. Various bacteria are found in the conjunctival sac, but there is one form of micro-organism, the bacillus discovered independently by Morax and by Axenfeld in 1896, a diplobacillus decolorized by Gram's method and difficult to grow in culture, which gives rise to a definite type of chronic conjunctivitis, known sometimes as "chronic angular conjunctivitis." The subjective symptoms of this affection are very definite: an aching of the eyes, a feeling of heaviness in the lids and of sand in the eyes, which becomes more marked towards evening; the lids are glued together in the morning, and the patient will say that he has to bathe the eyes in order to open the lids. Objectively there is no swelling of the conjunctiva; the fornices and palpebral conjunctiva are injected; there is, if anything, diminished secretion. In angular conjunctivitis the edges of the tarsal plates are injected. This condition does not, as a rule, resolve spontaneously, but goes on to involve the edges of the lids, causing loss of the cilia and in elderly people it will cause eczema of the skin of the lower lid, which in its turn will set up ectropion. The treatment may be divided into general and local. In the first place, we must remove the patient into better hygienic surroundings, or protect his eyes by means of goggles from the effects of dust, etc., and prescribe suitable glasses for any error of refraction; locally, an astringent lotion such as alum, tannin, or zinc sulphate, is used to bathe the eyes, and a simple ointment is placed inside the lids night and morning. The following case is a typical example:

L. B., aged 15, came to hospital complaining of sore eyes of two months' duration. She had suffered from sore eyes on and off for some years; there was always more or less blepharitis, the eyelashes were deficient, especially in the lower lids, and there was a leucoma adherens in the left eye, which was amblyopic; there was constant unilateral convergent strabismus, with an angle of about 20 degrees, the right eye being the fixing eye. The conjunctivitis in the right eye was complicated by a fresh ulcer on the cornea. Atropine was instilled into the right eye; both eyes were constantly bathed with boracic lotion, and boracic ointment smeared on the edges of the lids. In three weeks the ulcer had quite healed, and the blepharo-conjunctivitis was distinctly less. A month later, as the conjunctivitis was still present, the refraction was examined under atropine, when hypermetropic astigmatism was found. Glasses were therefore ordered, and six weeks later the inflammation was considerably reduced. A mercurial ointment was now substituted for the boracic, and a month later the inflammation had quite resolved.

Phlyctenular Conjunctivitis.

Phlyctenular ophthalmia, also called eczematous conjunctivitis or lymphatic conjunctivitis, is a condition occasionally seen in adults, but most frequently in the children of the artisan class, most of them either definitely tuberculous or showing the so-called strumous diathesis, but in those cases at this hospital in which the opsonic index for tubercle was taken it was found to be normal. Many of these children suffer from tuberculous glands in the neck, and there is frequently a family history of consumption. Coming to the individual case, we usually find that the child spends most of her time indoors, sleeps in a room with several others, ventilation at night is not approved of, and frequently she and soap and water are not on the best of terms. The food these children get is not always the most nourishing; they drink quantities of tea but very little milk, and fat in its various forms they eschew. No definite bacillus has yet been indicated as the cause of phlyctenular ophthalmia, though several have been found. The phlyctenule appears as a small elevation on the limbus conjunctivae usually, and consists of a round-celled infiltration situated immediately beneath the epithelium, which is raised over it and thinned; the invading cells consist of uninuclear and multinuclear leucocytes, small at the periphery but increasing in size towards the centre of the nodule; giant cells have been found by Leber[3] and Wintersteiner. It thus commences as a solid nodule, from which the surface epithelium and part of the nodule, having undergone necrosis, are cast off, thus forming a superficial ulcer. Von Michel,[4] however, states that vesicles and even pustules are actually formed, and the ulcer results from necrosis of their outer wall. The actual cause of the phlyctaena is thought to be the reaction of that part of the tissue to the toxins of the tubercle bacillus, and it is ascribed to an endogenous, as opposed to an ectogenous, origin. The symptoms vary in severity considerably; subjectively there is photophobia, frequently very marked, as in case L. J. mentioned below, where there was so much blepharospasm that it was with the utmost difficulty I was able to examine the condition of her eyes. Lacrymation may be more or less profuse, but there is no muco-purulent secretion, as a rule, so the lids do not stick together in the morning; usually the child keeps her hand or a handkerchief over her eyes, stays at home and remains indoors, and preferably in a dark corner. Objectively a small red projection is seen on the limbus conjunctivae surrounded by a zone of injected conjunctival vessels, occasionally a yellowish point can be seen in the centre of the red projection; the nodule may be a few millimetres away from the limbus, or it may be actually on the cornea. Instead of one phlyctaena there may be several minute ones (miliary phlyctenulae) around the edge of the cornea, or several larger ones on the limbus. These elevations break down and form ulcers, which usually heal in the course of a week or two, the patch of conjunctivitis resolving at the same time, and the epithelium growing over the ulcer, no trace of it is left. But this is followed by a subsequent attack, perhaps before the previous one has quite cleared up, or shortly after. These attacks recur for some years, sometimes till adult age, thus making the disease trying to the patient and practitioner alike. In more severe forms, where there are several phlyctaenae on the conjunctiva or on the cornea, each attack is much prolonged, and is much more difficult to treat. The case of L. J. is an example. She has been under constant treatment for some months, both as an in-patient and as an out-patient, and though much improved she is not quite well. The corneal complications I do not intend to discuss to-day.

The treatment of this condition must be general as well as local, therefore one advises the child to be out of doors all day; in a severe case one prescribes dark glasses, to counteract the photophobia, plain, wholesome food, plenty of milk and fat in some form or other, and the administration of cod-liver oil, locally frequent irrigation of the eye with warm boracic lotion, and the application of yellow oxide of mercury ointment. If the case is severe, it is better to content oneself with boracic ointment at first till the severity of the attack has diminished a little. These measures are usually quite sufficient to bring about a cure. If the cornea is involved, atropine must be instilled in addition.

M. C., aged 13, came complaining of sore eyes on and off for

the past two years, in spite of treatment. Six years ago the eyes were similarly affected. The present attack has lasted for a month; the child keeps indoors all day; there is marked conjunctivitis and photophobia, but no rhinorrhoea. There is no family history of tubercle, but of ten stillborn children. The eyes showed large phlyctenulae. She was treated in the usual way, and recovery was complete in a few days.

A. C. came with all the symptoms of a severe chronic catarrhal conjunctivitis, complicated by the presence of a septic ulcer on the left cornea. She gave a history of sore eyes for the previous year, but they had probably been in this condition for a longer period, as most of the cilia were missing, and some of those present were distorted. She was treated with boracic lotion, atropine, and fomentations, with the result that in three weeks the ulcer was healed and the conjunctivitis much lessened, but then some phlyctenular ulcers were seen on the outer side of the limbus of the left eye, thus showing the nature of the previous ulcer. A week later these ulcers, three in number, were markedly raised up from the surface of the conjunctiva and gave the appearance of tubercles rather than phlyctenulae. The treatment as indicated for this condition was continued. A week later these ulcers and swelling had resolved, but several miliary phlyctenular ulcers were now seen on the inner side of the cornea of the same eye. The treatment was persevered with, and the whole condition of the eyes vastly improved. A month later the refraction was examined under atropine, when compound hypermetropic astigmatism was found. Glasses were ordered, and up to the present her eyes have kept very free from inflammation.

L. J. came to hospital last year complaining of sore eyes of some considerable duration; she had intense photophobia and lacrymation; the blepharospasm was so marked that it was with great difficulty that I was able to inspect the cornea even with retractors, and a nurse to hold the child. There was marked injection of the palpebral and ocular conjunctiva, and an ulcer on each cornea; she was treated without effect by ordinary measures for three weeks as an out-patient, then for the next month she became an in-patient, where the treatment combined with cleanliness, fresh air, and good food, had a most beneficial effect in reducing the conjunctivitis and the accompanying photophobia and lacrymation; the corneal ulcer healed also. Then she was discharged, wearing dark glasses, owing to there still being some photophobia. Three weeks later she returned with the symptoms almost as marked as in the first instance, and also a large granulating ulcer on the left cornea. Again out-patient treatment for nearly three weeks made very slight improvement, so she was admitted, but even then the condition resisted obstinately all our remedies, both local and general; she was given cod-liver oil, syrup of phosphate of iron, syrup of iodide of iron, and virol, alternately with no benefit; locally, atropine, both in solution and in ointment, was applied, hot and cold bathing, dionine by itself and in combination with the previous drug, but all to no purpose; finally, adrenalin solution was applied by itself; this turned the scale, and in a fortnight the eyes improved considerably, so that after two months' sojourn in the hospital it was possible to send her to a convalescent home; now she has very little photophobia, no lacrymation, in fact is almost well, but is still using dionine for the corneal nebulae.

Ophthalmia Neonatorum.

This is a purulent type of conjunctivitis found in the newborn, in which the conjunctiva shows a marked papillary development, and in which there is seldom any signs of scarring on recovery. The cause of this complaint in the great majority of instances is that micrococcus described by Neisser in 1879, and known as the *Diplococcus gonorrhoeae;* it is easily stained with methylene blue, and is decolorized by Gram's method. This micrococcus is unique in being able to penetrate intact epithelium, hence the importance of early and careful treatment. The other micro-organisms concerned are the pneumococci, streptococci, *Bacterium coli*, and others. The usual mode of infection is that during the birth of the child some vaginal secretion gets into the palpebral sacs, but definite cases of ante partum infection have been reported at times, and recently by Sidney Stephenson and Rosa Ford[5] and by G. D. Robinson,[6] in some of which apparently the infection took place through intact membranes.

The symptoms commence on the second or third day, rarely on the fourth; the lids become swollen, and may be markedly oedematous, there is inflammation of both palpebral and scleral conjunctiva, usually some chemosis, but not, as a rule, marked; there is free purulent discharge. On examining a case one usually notices the swollen lids glued together by a yellowish dried discharge adhering to them; on separating them a quantity of the discharge wells up from the palpebral sacs, the cornea is clear at first, but in untreated cases it is soon attacked. The treatment consists in the main in cleansing the palpebral sacs, and keeping them free from collections of the discharge. A useful lotion to use is 1 in 5,000 mercury perchloride, but it must be noted that one does not depend on the antiseptic properties of the lotion so much as on the mechanical effect of continually irrigating the eyes; this should be done every hour, or two at the least; then every day one performs savonnage with 2 per cent. silver nitrate. In this complaint prophylaxis is of the utmost importance. The majority of pregnant women have a vaginal catarrh, so antiseptic injections immediately before parturition form the first step, then after the child is born the closed lids are wiped with a clean rag, and then after its first bath the eyes are carefully cleansed with boracic lotion, and then a drop of 2 per cent. silver nitrate solution is dropped on to each eye; this is the method advocated by Credé, who reduced the percentage of cases in Leipsig Lying-in Asylum from 10.8 to 0.1 or 0.2.

N. F., aged 14 days, was brought to hospital on account of a cold in her eyes, which did not get well. There was free purulent discharge; the lids were not much swollen; both palpebral and ocular conjunctiva was markedly injected. In the right eye the cornea was clear, but in the left there was a large central ulcer on the cornea, which had perforated, and the eye was already lost, being in a condition of panophthalmitis. The eyes were treated as indicated above, and now the conjunctivitis has quite resolved. The right eye is quite clear and well, but the left eye, although the conjunctivitis has resolved, is in a state of phthisis bulbi and is rapidly shrinking, there being very little sign of the cornea left.

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A CRITICAL STUDY OF ORGANIC PREPARATIONS OF SILVER IN THE TREATMENT OF CONJUNCTIVITIS.

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Since the introduction of argyrol and protargol there has been among clinical observers a great difference of opinion regarding their efficacy in diseases of the conjunctiva. Many have described them as being superior to silver nitrate; but others, like Dr. Pooley of New York, have regarded them as "bland, harmless, and inefficient."[1]

During the past year a series of experiments have been performed with these preparations and with silver nitrate to ascertain their relative bactericidal powers. One realizes that in a laboratory it is impossible to reproduce exactly the conditions found in Nature; but as the same methods were used with each substance the results have at least a comparative value. The organism used was *Staphylococcus pyogenes aureus*, because it was easy to identify and because it gave results that were remarkable for their consistency. A small number of experiments were performed with the *Streptococcus pyogenes brevis*, the pneumococcus, and the gonococcus, but the results obtained were not nearly so consistent as those obtained with the *Staphylococcus pyogenes aureus*.

Quantities of argyrol and protargol were bought from a wholesale chemist and were submitted to a gravimetric analysis. The percentage of silver was ascertained by incinerating the substance, heating with nitric acid, dissolving in water, and then precipitating the silver with hydrochloric acid and weighing the precipitate. As a result of two estimations with each preparation, it was found that argyrol contained 17.01 per cent. and protargol 7.03 per cent. of silver. These figures are to be compared with 66 6 per cent. of silver present in silver nitrate. The manufacturers state that these preparations deteriorate when kept long in solution. We had noticed that bottles in which the solutions had been kept for some weeks gradually acquired a coating of silver oxide. To avoid any errors from faulty solution or from deterioration the solutions were carefully made according to the methods described by the manufacturers, were kept in dark glass bottles, and were always used before the third day.

An emulsion was made of a three days' growth on agar-agar of *Staphylococcus pyogenes aureus*, and was then filtered

through a plug of glass wool placed in a sterilized filter funnel. One half c.cm. of this emulsion was added to 9½ c.cm. of solution of such strength that the 10 c.cm. solution was of the required dilution. The solution was then shaken up to ensure thorough contact with the organisms, and at intervals of five, ten, and twenty minutes two loopfuls were taken and smeared over the surface of agar-agar slants. These were put into an incubator at a temperature of 37.5° C., and were examined every twenty-four hours for ten days. Control experiments were made with an equal volume of distilled water, and a growth was always obtained on the first day.

SILVER NITRATE.

As a result of fifty experiments it was found that a 0.0039 per cent. solution killed the organism in five minutes, and a 0.0019 per cent. solution killed it in ten minutes, but a 0.0009 per cent. solution did not kill the organism even after a twenty minutes' exposure.

TABLE I.—*Experiments with Silver Nitrate. Solutions of various strengths were used. When no growth was seen the tube was incubated until the tenth day.*

Number of Experiments.	Strength of Solution.	Duration of Exposure.	Result.
	Per cent.		
1	0.125	5 min.	No growth.
1	—	10 min.	No growth.
1	—	20 min.	No growth.
2	0 0625	10 min.	No growth.
2	—	20 min.	No growth.
1	0 0312	10 min.	No growth.
2	—	20 min.	No growth.
1	0.0156	5 min.	No growth.
1	—	10 min.	No growth.
1	—	20 min.	No growth.
1	—	20 min.	Few small colonies on 2nd day.
3	0.0078	5 min.	No growth.
3	—	10 min.	No growth.
2	—	20 min.	No growth.
1	—	20 min.	A few colonies on 3rd day.
4	0.0039	5 min.	No growth.
3	—	10 min.	No growth.
1	—	10 min.	A few colonies on 2nd day.
4	—	20 min.	No growth.
2	0.0019	5 min.	Growth on 1st day.
1	—	5 min.	A few colonies on 2nd day.
3	—	10 min.	No growth.
3	—	20 min.	No growth.
3	0 0009	10 min.	Growth on 1st day.
3	—	20 min.	Growth on 1st day.

PROTARGOL.

Forty-nine experiments were performed, when it was found that a 1 per cent. solution killed the organism in five minutes, and a 0.5 per cent. solution in ten minutes, but a 0 25 per cent. solution even after a twenty minutes' exposure did not prevent a growth appearing on the first day.

ARGYROL.

After the organisms had been exposed to 50 per cent. solutions for one, two, three, and twelve hours, a growth was obtained on the first day, but after a twenty-four hours' exposure no growth was present even on the tenth day. Thus, a 50 per cent. solution required about twenty-four hours to kill the organism.

TABLE II.—*Experiments with Protargol in Percentage Solutions of Various Strengths.*

Number of Experiments.	Strength of Solution.	Duration of Exposure.	Result.
	Per cent.		
1	1.000	5 min.	No growth.
1	—	10 min.	No growth.
1	—	20 min.	No growth.
1	5.000	5 min.	No growth.
1	—	10 min.	No growth.
1	—	20 min.	No growth.
1	2 500	5 min.	No growth.
1	—	10 min.	No growth.
1	—	20 min.	No growth.
3	1 000	5 min.	No growth.
1	—	5 min.	A few colonies seen on 1st day.
3	—	10 min.	No growth.
3	—	20 min.	No growth.
4	0 500	5 min.	Growth on 1st day.
3	—	10 min.	No growth.
1	—	10 min.	Few colonies on 2nd day.
4	—	20 min.	No growth.
3	0 250	5 min.	Growth on 1st day.
2	—	10 min.	Growth on 1st day.
1	—	10 min.	Growth on 2nd day.
3	—	20 min.	Growth on 1st day, but colonies few.
3	0.125	5 min.	Growth on 1st day.
3	0.125	10 min.	Growth on 1st day.
3	0 125	20 min.	Growth on 1st day.

TABLE III.—*Experiments with Argyrol in a 50 per cent. Solution.*

Number of Experiments.	Duration of Exposure.	Result.
1	1 hour	Abundant growth on 1st day.
1	2 hours	Growth on 1st day.
1	3 hours	Growth on 1st day.
2	12 hours	Growth on 1st day, but fewer colonies.
3	24 hours	No growth.
2	48 hours	No growth.

PREVIOUS EXPERIMENTS.

The bactericidal powers of these preparations have recently been investigated by Drs. Marshall and Neave,[2] and by Dr. Derby.[3] They also experimented with the *Staphylococcus pyogenes aureus*, but their methods differed. Drs. Marshall and Neave used the ordinary thread method and inoculated broth, whilst Dr. Derby mixed two loopfuls of growth in two cubic centimetres of the solution under examination, inoculated blood serum, and after twenty-four hours caused the water of condensation to again flow over the solid media. From the published records of their investigations we give below the strengths of the solutions and the durations of the exposures necessary to kill the organism.

Silver Nitrate.

0.0015 per cent. for 5 min.
0.0011 per cent. for 10 min. (Marshall and Neave).
0.5 to 2 per cent. for 2 to 5 min. (Derby).
0.0039 per cent. for 5 min. } Present investigations.
0.0019 per cent. for 10 min. }

Protargol.

0 025 per cent. for 10 min. (Marshall and Neave).
2 to 4 per cent. for 3 to 5 min. (Derby).
1 per cent. for 5 min. } Present investigations.
0 5 per cent. for 10 min. }

Argyrol.

50 per cent. for 24 hours (Marshall and Neave. Present investigations).

These results vary according to the methods employed, but they conclusively show that as a bactericidal agent silver nitrate is very strong and is superior to protargol, whilst argyrol has only very faint bactericidal properties.

Action on Intracellular Organisms.

In conjunctival infections the germs such as the Koch-Weeks[4] bacillus and the gonococcus are often intracellular and more or less deeply embedded in the tissues, consequently the bactericidal agent will not be efficient unless it has power to penetrate the tissues.

Accordingly an attempt was made to compare the combined diffusible and bactericidal properties of protargol and silver nitrate.

After immersing a one day's growth in a 0.5 per cent. solution of silver nitrate for ten minutes all the organisms were killed, but when a ten days' growth was exposed to a 1 5 per cent. solution for the same time a growth was obtained on the first day, so that the solution had not penetrated the growth deeply enough to come into contact with all the cocci. We are aware that the action of the silver salts on the cocci in an agar-agar growth is very different from that on germs in living tissue, but the results obtained in the following series of experiments are so marked as to warrant some deductions being based on them. From a culture on agar-agar a large number of tubes were inoculated, and when the growths were three days old the tubes were filled with solutions of protargol and silver nitrate. After certain periods the solutions were poured off, and a flow of sterilized water was run over the growths, from the thickness of which agar-agar slants were inoculated. Altogether over 70 experiments were performed, with the following results:

Silver Nitrate.

A 0.5 per cent. solution killed the organism in thirty minutes, a 0.75 per cent. solution killed them in twenty minutes, and a 1 per cent. solution required ten minutes to kill them.

Protargol.

A 5 per cent. solution and a 10 per cent. solution failed to kill the organisms in 30 minutes, but a 20 per cent. solution killed them in that time. A 30 per cent. solution killed them in 20 minutes.

Since the cocci were killed in twenty minutes by a 0 75 per cent. solution of silver nitrate and by a 30 per cent. solution of protargol, it would seem that in combined penetrating and bactericidal powers silver nitrate is about forty times stronger than protargol, but in the former series of experiments, where the antiseptic fluid came as much as possible in contact with the cocci, these were killed in ten minutes by a 0.5 per cent. solution of protargol, so that the bactericidal power alone of silver nitrate is 263 times that of protargol. We may thus conclude that protargol has greater powers of diffusion, but these do not sufficiently compensate for the superior bactericidal powers of silver nitrate.

In regard to argyrol, as it had previously been found to be almost inert a culture was immersed in a 50 per cent. solution for twenty-four hours, and from it a growth was obtained on the first day. On several occasions the culture was immersed for forty-eight, seventy-two, and ninety-six hours, but no subculture could be obtained.

Staining of the Tissues.

It has long been recognized that one disadvantage of using silver nitrate is its tendency to stain the cornea and conjunctiva. Stephenson[5] has reported a case where the scleral conjunctiva had become stained by using for several years, for darkening the eyelashes, a preparation which contained nitrate of silver. It was claimed for the organic preparations of silver that they did not stain the conjunctiva, but since they have been extensively used several cases of argyrosis have been reported. We have seen a slight staining of the conjunctiva in a boy who had been using drops of a 15 per cent. solution of protargol for about three weeks. De Schweinitz[6] reports a case of dacryocystitis which had been treated with protargol. The lacrymal sac was excised, and on sections being made these were found to be stained with protargol. We have not seen staining of the conjunctiva by argyrol, but the most marked case of argyrosis we have ever observed was due to this drug. A woman, aged 45, had been suffering from dacryocystitis for a considerable time. A lacrymal probe was passed, and apparently a false passage was made, because on injecting a 20 per cent. solution of argyrol into the sac the solution was scattered through the adjacent tissues. Now, after a period of two years, there is very marked argyrosis extending from ½ in. to 1 in. along the left lower eyelid.

Table IV.—*Experiments with Silver Nitrate Solutions and Growths of Staphylococcus Pyogenes Aureus.*

Number of Experiments.	Strength of Solution.	Age of Growth.	Duration of Exposure.	Result.
	Per cent.			
1	0.0312	3 days	30 min.	Growth on 1st day.
1	0 0625	3 days	20 min.	Growth on 1st day.
1	0 125	3 days	20 min.	Growth on 1st day.
1	0.25	3 days	20 min.	Growth on 1st day.
2	0.5	1 day	10 min.	No growth.
3	—	3 days	10 min.	Growth on 1st day.
2	—	3 days	20 min.	Growth, but few colonies.
1	—	3 days	20 min.	No growth.
3	—	3 days	30 min.	No growth.
2	0.75	3 days	10 min.	Growth on 1st day.
1	—	3 days	10 min.	Growth on 2nd day.
1	—	3 days	10 min.	No growth.
3	—	3 days	20 min.	No growth.
1	—	3 days	20 min.	Few colonies on 3rd day.
4	—	3 days	30 min.	No growth.
4	1.0	3 days	10 min.	No growth.
2	1.0	3 days	10 min.	No growth.
2	—	3 days	20 min.	No growth.
2	1 5	3 days	20 min.	No growth.
2	—	—	30 min.	No growth.
1	1.0	6 days	10 min.	Growth seen on 1st day.
1	1.5	10 days	10 min.	Growth seen on 1st day.

Table V.—*Experiments with Solutions of Protargol and Growths of Staphylococcus Pyogenes Aureus.*

Number of Experiments.	Strength of Solution.	Age of Growth.	Duration of Exposure.	Result.
	Per cent.			
2	5	3 days	10 min.	Abundant growth.
2	—	3 days	20 min.	Abundant growth.
2	—	3 days	30 min.	Abundant growth.
1	7.5	3 days	10 min.	Abundant growth.
1	—	3 days	20 min.	Abundant growth.
1	—	3 days	30 min.	Abundant growth.
2	10	3 days	10 min.	Abundant growth.
2	—	3 days	20 min.	Growth less abundant
2	—	3 days	30 min.	Growth less abundant
3	20	3 days	20 min.	No growth.
1	—	6 days	60 min.	No growth.
1	—	6 days	60 min.	Moderate growth.
1	—	6 days	90 min.	Few colonies seen on 1st day.
3	30	3 days	20 min.	No growth.
1	—	3 days	30 min.	No growth.

Pain accompanying Use.

It is usually stated that protargol is less painful than silver nitrate, and if solutions containing the same percentage of the compound be used the statement is true. Protargol, however, is used in 5 to 20 per cent. solution, and silver nitrate in 0.5 to 2 per cent. solutions, and probably a 0.5 per cent. solution of silver nitrate is of the same therapeutic value as a 20 per cent. solution of protargol. We have tried these two solutions, and have found that they cause about the same amount of pain. In our own eyes the discomfort caused by the silver nitrate continued for twenty-five minutes, and that caused by the protargol for thirty-five minutes.

Argyrol in a 20 per cent. solution is quite bland and even soothing to the irritated eye. Stevens,[7] however, has reported a case in which severe pain throughout the distribution of the fifth nerve followed each application of a 20 per cent. solution of argyrol.

Four different freshly prepared solutions were tried with the same result. We had not met with such an idiosyncrasy.

Lotions.

In the treatment of conjunctivitis a large number of lotions containing antiseptic or astringent drugs have been employed, either alone or as adjuvants to the treatment with silver nitrate and its preparations. Thus alum, zinc sulphate, boric acid, carbolic acid, permanganate of potash, chinosol, corrosive sublimate, and tannic acid have all had their periods of enthusiastic advocacy by ophthalmologists. The great variety of therapeutic agents used suggests that no one of them has much superiority over the others, and that the benefit derived from their use is due not to the drug but to the vehicle in which it is contained, and is obtained through the mechanical removal of organisms and inflammatory products rather than through any bactericidal action.

A large series of experiments was performed with twenty-four-hour growths on agar-agar of *Staphylococcus pyogenes aureus*. The tubes were filled with various solutions for measured periods, and then the solutions were poured off. A gentle stream of sterilized water was then run over the growth, from which agar-agar tubes were inoculated, and incubated for ten days at a temperature of 37.5° C.

The following results were obtained:

Carbolic acid in a 1 in 20 solution killed the *aureus* in twenty minutes, but not in a 1 in 40 solution.

Corrosive sublimate in a 1 in 500 solution killed the *aureus* in twenty minutes, but not in a 1 in 1,000 solution.

Alum, and zinc sulphate in a saturated solution did not kill the *aureus* in twenty minutes.

Chinosol did not kill the *aureus* in a 1 in 5 solution after twenty minutes.

Potassium permanganate in a 1 in 400 solution killed the *aureus* in twenty minutes, but not in a 1 in 800 solution.

The lotions most generally employed in the dispensary of the Glasgow Eye Infirmary are boracic acid lotion, tannic acid lotion, belladonna lotion, and MacKenzie's lotion.

Tubes containing twenty-four hours' growth of *Staphylococcus pyogenes aureus* on agar-agar were filled with these lotions and allowed to remain for twenty-four hours. The only lotion which killed the organisms even after that prolonged exposure was MacKenzie's lotion; the other lotions seemed to have very little effect on the organisms, as a subculture was easily obtained on the first day. Thus MacKenzie's lotion, which is essentially a 1 in 4,000 solution of corrosive sublimate, has greater bactericidal powers than a 50 per cent. solution of argyrol.

As the boracic acid, tannic acid, and belladonna lotions are ordered to be diluted before use, their bactericidal properties must then be only infinitesimal. The feeling of relief which follows their use must be due to the mechanical removal of accumulated discharges, which continually irritate the eye, rather than to any destruction or inhibition of the growth of the pathogenic organisms.

Koch-Weeks Conjunctivitis.

The influence of instillations of argyrol and protargol on the course of conjunctivitis due to the Koch-Weeks bacillus is shown by the results obtained in a series of 40 cases where both eyes were affected. In 20 cases a 5 per cent. solution of protargol was dropped into the right eye night and morning, and in the other half of the cases a 20 per cent. solution of argyrol was used in a similar fashion.

The conjunctival sacs of the left eyes were more or less thoroughly washed out. Thus twenty patients were told to use boracic acid lotion four times a day, ten were given normal saline solution as a lotion, and in the remaining ten cases the conjunctival sacs were irrigated daily with about two pints of normal saline solution. Film preparations of the conjunctival discharge were examined periodically, and it was found that the duration of the attack as measured from the onset of the symptoms until no Koch-Weeks bacilli could be discovered varied from ten to thirty days, the average being fifteen days. In each group of cases the duration of the attack was practically the same, so that the form of treatment applied did not affect it. When protargol was used it irritated the eye, especially in children, and no compensatory advantage could be discovered. One case is worthy of remark.

A girl, aged 5, was brought to the dispensary suffering from acute conjunctivitis in the right eye of four days' duration. The discharge was profuse, and the conjunctiva was very hyperaemic but no swelling of the eyelids was observed. The mother was given boracic acid lotion, and a 5 per cent. solution of protargol to be dropped into the eye night and morning. She instilled the drops for two days, and on the third day she returned with the child, whose eyelids were markedly swollen and oedematous. A film preparation of the discharge was made and compared with the film made three days previously, when it was seen that the Koch-Weeks bacilli had actually increased. Sydney Stephenson[8] has shown that if the conjunctiva be brushed with a 2 per cent. solution of silver nitrate, and the discharge be examined twelve hours afterwards the bacilli will be less numerous; but if the discharge be examined twenty-four hours afterwards they will be found in much greater numbers. The preparations of silver nitrate which possess strong bactericidal powers injure the conjunctiva as well as destroy the bacilli, consequently the bacilli which have escaped coming into contact with the silver salt meet with less resistance from the conjunctiva, and have greater opportunities of entering its tissues.

After using argyrol the discharge diminished more rapidly than in the eyes which were simply bathed, the patients experienced a greater degree of comfort, and in young children the blepharospasm ceased first in the eye treated with argyrol. The following case illustrates its action:

December 5th, 1906. Mrs. B. consulted me about her baby, aged 10 months, who was suffering from acute conjunctivitis of five days' duration. The discharge was purulent and very profuse, the conjunctivae were very much injected, and the eyelids were slightly swollen. The eyes were equally affected. In the tenement in which the patient lived most of the children had had sore eyes. Bacteriological examination revealed the presence of the Koch-Weeks bacilli. Treatment commenced. A 20 per cent. solution of argyrol was dropped into the right eye night and morning. The left eye was irrigated with 2 pints of normal saline solution twice daily.

December 12th, 1906. The eyes are almost alike. The discharge is less, the conjunctivae are less injected, and the bacilli are less numerous.

December 15th. In the right eye the discharge is less than in the left one, and is more fibrinous in character. The patient opens this eye more readily. The discharge is less in the left eye than on previous date. Bacteriological examination shows that the bacilli are now comparatively few, but equally numerous in both eyes.

December 18th. Discharges ceased in both eyes; no bacilli can be found.

We conclude that in conjunctivitis due to the Koch-Weeks bacilli the duration of the disease is not shortened

Table VI.—*Cases of Koch-Weeks Conjunctivitis Treated with Various Therapeutic Agents.*

	Eyes.	Agent.	Average Duration.
First twenty cases	Right	Protargol 5 per cent.	15.5 days.
	Left	Boracic acid lotion	16 days.
Second twenty cases	Right	Argyrol 20 per cent.	14 days.
	Left, 10	Normal saline lotion	15 days.
	Left, 10	Normal saline irrigation	13 ays.

by the mode of treatment; that protargol, on account of its irritating properties, often does more harm than good; whilst argyrol, being bland and mildly astringent, is beneficial, in so far as it lessens the patient's discomfort, and that all the treatment necessary for this form of conjunctivitis is keeping the conjunctival sac as clean as possible by washing it out frequently with normal saline solution.

Morax-Axenfeldt Conjunctivitis.

In the treatment of conjunctivitis due to the Morax-Axenfeldt diplobacilli, protargol and argyrol proved to be quite inefficacious. Argyrol in a 20 per cent. solution was dropped into the eyes twice daily in 10 cases, and in each case the treatment was continued for about a month without any noticeable improvement.

Protargol in a 10 per cent. solution was used in a similar fashion also in 10 cases, but after three to four weeks' treatment the organisms were still present in the conjunctival sac.

A series of 35 cases were treated with solutions of zinc sulphate dropped into the eyes night and morning.

When solutions were employed in the strength of 1 grain to the ounce the diplobacilli could be found in the conjunctival sac for about six weeks.

Ten cases were treated with solutions of the strength of 4 grains to the ounce. After the first week of treatment the patients generally felt their eyes more comfortable, and after the third week the bacilli could not be detected in the smears taken from the conjunctival sac. The details of this series of cases are shown in Table VII.

In the remaining 15 cases solutions of the strength of 8 grains to the ounce were used, when it was observed that the average duration of the presence of the organisms was

Table VII.

No.	Patient.	Eye.	Time of Disease.	Symptoms.	Diplobacilli.	No Diplobacilli on—
1	Man aged 22	Right Left	One week Two weeks	Slight Slight	Few Few	24th day. 23rd day.
2	Man aged 44	Right Left	About 3 months About 3 months	Very slight Very slight	Few Few	20th day. 20th day.
3	Man aged 28	Right Left	6 weeks 7 or 8 weeks	Slight Slight	Many Many	21st day. 24th day.
4	Girl aged 14	Right Left	5 days 10 days	Severe Severe	Very many Very many	19th day. 19th day.
5	Boy aged 12	Right Left	3 weeks 2 weeks	Severe Slight	Very many Many	18th day. 18th day.
6	Woman aged 23	Right Left	4 weeks 4 weeks	Slight Slight	Many Many	20th day. 17th day.
7	Man aged 30	Right Left	5 weeks 5 or 6 weeks	Moderate Slight	Few Few	23rd day. 19th day.
8	Girl aged 13	Right Left	12 days 12 days	Very severe Very severe	Many Many	16th day. 18th day.
9	Girl aged 10	Right Left	10 days 8 days	Slight Slight	Few Few	13th day. 15th day.
10	Boy aged 12	Right Left	12 days 12 days	Moderate Moderate	Many Many	18th day. 21st day.

Table VIII.

No.	Patient.	Eye.	Time of Disease.	Symptoms.	Diplobacilli.	No Diplobacilli on—
1	Woman aged 35	Right Left	5 days 5 days	Severe Less severe	Many Many	8th day. 10th day.
2	Man aged 22	Right Left	1 month 3 weeks	Slight Slight	Few Few	10th day. 10th day.
3	Boy aged 13	Right Left	2 weeks 3 weeks	Moderate Slight	Many Many	14th day. 11th day.
4	Girl aged 6½	Right Left	2 weeks 2 weeks	Severe small ulcer Severe	Very many Many	15th day. 12th day.
5	Man aged 20	Right Left	6 months 6 months	Slight Slight	Many Many	14th day. 16th day.
6	Woman aged 30	Right Left	1 week 1 week	Moderate Moderate	Many Many	16th day. 16th day.
7	Man aged 30	Right Left	3 weeks 2 weeks	Severe Severe	Many Many	16th day. 13th day.
8	Man aged 22	Right Left	7 days 10 days	Slight Slight	Few Few	14th day. 14th day.
9	Man aged 26	Right Left	2 weeks 3 weeks	Slight Slight	Few Few	19th day. 19th day.
10	Man aged 56	Right Left	5 months 5 months	Moderate Moderate	Few Few	17th day. 15th day.
11	Boy aged 12	Right Left	1 week 2 weeks	Severe Severe	Many Many	10th day. 12th day.
12	Boy aged 10	Right Left	12 days 14 days	Severe Moderate	Very many Many	12th day. 11th day.
13	Boy aged 16	Right Left	4 days 7 days	Slight Slight	Few Few	10th day. 10th day.
14	Woman aged 32	Right Left	3 weeks 2 weeks	Moderate Moderate	Many Many	12th day. 12th day.
15	Girl aged 15	Right Left	10 days 10 days	Severe Severe	Many Many	13th day. 13th day.

only 13.5 days. The pain caused by a solution of this strength is not excessive, and only in one or two instances did patients complain of it.

Further details of this series of cases are given in Table VIII.

In the examination of many of the films numerous cocci could be seen after the diplobacilli had disappeared, so that zinc sulphate seems to have a specific action on the Morax-Axenfeldt diplobacillus.

While these observations were being made we received a small quantity of a new preparation called "nizin," which is a sulphanilide of zinc. Five cases of "Morax-Axenfeldt conjunctivitis" were treated with a 6 grains to the ounce solution, but after continuing the treatment for a month the bacilli could still be seen in the smears. We conclude that protargol and argyrol are not beneficial in this condition, but that zinc sulphate quickly cures the disease, and that the most brilliant results are obtained with an 8 grains to the ounce solution.

Butler,[9] in describing his experience with this disease in Jerusalem says. "I do not think that in Palestine a weaker solution of zinc sulphate than 1 per cent. is of much use, and I have used 2 per cent. with great advantage."

A woman, aged 48, consulted Dr. Fergus at his clinic in December, 1906. She had subacute conjunctivitis in both eyes, of about four weeks' duration. Her doctor had treated her with protargol used as drops night and morning. Her condition became more troublesome, and when she came to the Eye Infirmary her conjunctivae were deeply injected, and somewhat swollen. A bacteriological examination was made, and the Morax-Axenfeldt bacillus was found in great abundance. The protargol was stopped, and a solution of zinc sulphate ordered instead. In about three weeks her eyes had recovered.

As a case of acute conjunctivitis due to the Morax-Axenfeldt bacillus cannot be diagnosed clinically from a case due to the Koch-Weeks bacillus a bacteriological examination is necessary. The above case shows the necessity of making such an examination before beginning treatment.

One cannot but agree with the opinion expressed by Dr. Fergus[10] that in an ophthalmic clinic an oil immersion lens is just as necessary a part of the apparatus for diagnosis as is the ophthalmoscope.

Gonorrhoeal Ophthalmia.

We have not had a sufficient number of cases of conjunctivitis due to the gonococcus to allow of a thorough investigation of the therapeutic value of the organic preparations of silver. In some of the recent textbooks of surgery we are informed that the proper treatment for a fresh attack of urethral gonorrhoea is to cause an abundant diuresis by giving plenty of bland fluids and so wash out the urethra frequently, and, further, that no local treatment is necessary.[11]

We treated gonococcal infections of the conjunctival sac on the same principles. The mothers were given normal saline solution as a lotion, and were told to bathe the eyes every half-hour. Then twice daily we irrigated the conjunctival sac with 2 pints of normal saline solution. In 5 cases we had under treatment irrigation was performed in the right eyes, and bathing with normal saline lotion and instillations twice daily with 20 per cent. solutions of argyrol were used for the left eye. In all of the cases both eyes were equally affected.

When irrigation was done only once a day both eyes made the same progress, but when the irrigation was performed morning and evening the irrigated eye recovered more rapidly. In performing irrigation we used a siphon tube of soft rubber with a glass nozzle. When the water had a fall of 2 ft. the cases did not seem to do so well, possibly because the force of the water opened up the inflamed tissues, and so facilitated the entrance of organisms. The best results were obtained when the water had a fall of 1 ft. only, and that pressure of water was quite enough to permit of the thorough cleansing of the conjunctival sac.

Our experience thus leads us to think that gonorrhoeal ophthalmia in infants would be best treated by irrigating the conjunctival sac every two or three hours with 2 pints of normal saline solution at a pressure of 1 ft. of water.

Staphylococcic and Streptococcic Conjunctivitis.

Conjunctivitis due to the *Staphylococcus pyogenes albus* and *aureus*, and to the *Streptococcus brevis* and *longus* is not a very common condition. Poulard saw only 9 cases in two and a half years,[12] and Inglis Pollock in an examination of 362 found only 8 due to the staphylococci.[13]

We have had only 4 cases, and these were treated by irrigation in one eye, and by instillations of a 20 per cent. solution of argyrol in the other. The irrigated eyes improved more rapidly than did those treated with argyrol. The following case is worthy of note:

A girl, aged 5½, had acute conjunctivitis in both eyes of three days' duration. The bulbar and palpebral conjunctiva was swollen and injected. The eyelids were oedematous. In the smear numerous groups of staphylococci were found. Irrigation with normal saline solution was done every morning, and the mother was told to bathe the eyes every hour with (normal saline) lotion. After the treatment had been continued for seven days the discharge had disappeared, and an agar-agar tube was inoculated from the conjunctival sac with a negative result.

The eyes treated with argyrol were three or four days later in becoming cured of the condition, but the argyrol lessened the discomfort and blepharospasm.

I have pleasure in acknowledging my great indebtedness to Dr. Fergus, who gave me every possible facility for making full use of the large amount of material at his clinic. I have also to thank Dr. Inglis Pollock for the liberty of working in the Pathological Laboratory of the Glasgow Eye Infirmary.

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AN INVESTIGATION

INTO THE

FREQUENCY AND SIGNIFICANCE OF OPTIC NEURITIS AND OTHER VASCULAR CHANGES IN THE RETINAE OF PATIENTS SUFFERING FROM PURULENT DISEASE OF THE MIDDLE EAR,*

WITH THE RESULTS OF THE EXAMINATION OF THE EYES AND EARS IN 100 CONSECUTIVE CASES.

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In entering upon this investigation, our objects were to determine (1) whether the condition known as optic neuritis occurs with any frequency in cases of simple purulent otitis media, where there is no evidence of intracranial or vascular complication; (2) whether, short of an actual optic neuritis, vascular changes in the fundus of the eye of a less marked character are common in such cases.

Already Politzer and Barker have referred to the occasional occurrence of optic neuritis in simple purulent ear disease, and Tenzer and Espenschied have recently reported on its frequency in cases of otitic intracranial complications, and also mention that vascular changes of a minor character sometimes occur in uncomplicated cases, passing away, however, with the cessation of the active aural mischief. No systematic examination, however, seems hitherto to have been made to determine the frequency of these changes.

The 100 cases, which were all cases of purulent otitis media, mostly of the chronic variety, were taken consecutively without selection, the examination of the eyes either immediately preceding or following that of the ears.

* Read before the Glasgow Medico-Chirurgical Society, October 18th, 1907.

The aural examination included: (1) A brief history of the ear affection; (2) the testing of the hearing distance by a watch normally heard 36 in. off; (3) the application of Rinne's and Weber's tests, when the age of the patient permitted, a tuning-fork of about 300 vibrations being used; (4) the state of the middle ear, especially the tympanic membrane and tympanic cavity, noting carefully such points as the presence and situation of a perforation, the amount and character of the discharge, the presence or absence of granulation tissue or of cholesteatomata. The results of this examination are given in Table I, to which we refer you. A second and third examination of many of the patients were made at intervals of several months with the object of comparing the conditions with those seen at the first examination.

The examination of the eyes was conducted in the following manner: Patients with an obvious eye condition, such as leucomata, cataract, etc., were excluded. For the distant vision Snellen's, and for near vision Jaeger's well-known test types were used; then the refraction was noted by the shadow test, and this checked by direct estimation. In this way many low degrees of ametropia were noted, when for all practical purposes the eyes might have been passed as emmetropic. The eye movements and the responses to light and accommodation were carefully noted. The ophthalmoscopic examination was always made without the examiner having any idea whether one ear only or both were affected, so that an unprejudiced examination might be made.

The second and third examinations were also made on the same basis, with the addition that the improvement or otherwise of the ear condition was not mentioned till the ophthalmoscopic examination was completed. Cases with errors of refraction were not excluded, as to exclude them might have interfered with the sequence of cases.

By this means the examination of the eyes was quite independent of that of the ears, and so was made entirely "without prejudice."

Dr. Rowan having last year examined the eyes of 500 school children (that is, 1,000 eyes), was thus able to compare these results with those of our 100 cases, and was much struck with the greater frequency with which vascular changes occurred in the later series. This result is all the more striking, as one naturally expects to find vascular changes more frequently in children who are straining their eyes at school than in a series of cases which includes adults as well as children.

The records of these examinations are preserved in a tabulated form, but smaller tables have been prepared, so that the results may be presented in a simpler and briefer way.

I.

As regards the first aim of our investigation—that is, to ascertain the frequency of optic neuritis in simple uncomplicated purulent ear disease—at our first examination optic neuritis was found, in a pretty well defined form, in 4. Of these, 2 did not, unfortunately, appear for further observation, although one of them was an acute case and had symptoms suggestive of mastoid empyema. The other 2, which were followed up, were examined more than once; one of them showed at the second examination, four months later, a slightly more marked change in the eyes, with no improvement in the state of the ear; the other came ultimately to the radical operation, and when examined some weeks after the operation the neuritis was beginning to pass off. In addition to these 4 cases observed at the first examination, 2 were found at the second examination to have developed optic neuritis; one of these was eventually operated upon after having suddenly developed urgent symptoms, and an extradural abscess was discovered over the sinus, after which the optic neuritis began to pass off.* In the other case the ear condition showed no improvement, while frontal headache, which had been long complained of, had become lately much more frequent and severe.

II.

The second object of our investigation was to determine if vascular changes in the fundus, short of optic neuritis, were found in purulent middle-ear disease with any frequency. This, we consider, yielded results of some importance. These changes, which we have termed vascular engorgement, include fullness, and, in many cases, tortuosity of the veins, with, in other cases, a somewhat full and pinkish optic disc.

In deciding as to the value to be attached to these changes we divided the cases into two groups: (1) Cases in which both eyes, for all practical purposes, had normal refraction (that is, were emmetropic)—these numbered 54; and (2) those in which there were errors of refraction (that is, ametropic) of varying degrees in one or both eyes—these numbered 46. In Table III you will find in Class I the results of the first eye examination, including the whole 100 cases. In Class II you will find the results in 60, which were examined a second time, and you will also find the results compared with the first examination not only of the eye but of the ear. Class III gives the results of a third examination, including 22 of these 60 cases, where also a comparison is made with previous eye and ear examinations.

*October 18th, 1907. Optic neuritis completely passed off; vision perfect in both eyes—that is, $\frac{6}{6}$ and J.1; mastoid cavity quite dry.

TABLE I.—RESULTS OF THE EXAMINATIONS OF THE EARS OF 100 PATIENTS.

Sex.		Age.		Cause.		Symptoms.		Ear Affected.	
Males	52	Under 15 years	35	Scarlet fever	13	Otorrhoea	100 cases	Both ears	30 cases.
Females	48	Between 15 and 30	45	Measles	8	Impaired hearing	99 ,,	Right ear	40 ,,
	100	Over 30	20	Whooping-cough	1	Earache	28 ,,	Left ear	30 ,,
			100	Pneumonia	1	Tinnitus	36 ,,		130 affected ears
				Erysipelas	1	Giddiness	24 ,,		
				Accident	1	Headache	43 ,,		
				Foreign body	1				
					26				
In 71 per cent. the disease commenced under 15 years of age.								*Evidence of past suppuration in 25 ears.*	

Hearing.				Tuning-fork Tests.
2 inches and under	82 ears	Granulations or polypi	Present in 50 ears	In 33 cases in which one ear alone was affected, the other being *normal*, Rinne was negative, and Weber referred to the affected side in 30 cases.
Above 2 in. and under 12	28 ,,	Cholesteatoma	6 ,,	
12 in. and over	12 ,,	Perforation in membrana flaccida	5 ,,	
Too young	5 ,,	Nipple-shaped perforation	1 ,,	
Not given	3 ,,		62 ears	
	130	Chronic otitis media purulenta in	123 ears	
		Acute ,, ,, ,,	7 ,,	

TABLE II.—REFRACTION OF THE 100 CASES.

Examination of 200 Eyes: 108 Emmetropic (Both Eyes), 3 (One Eye).

The Refraction of the Ametropic Eyes was as follows:

Hyperm.	Hyperm. Astig.	Myop.	Myop. Astig.	Mixed Astig.	Refraction not Stated.
26	27	10	5	19	2, i.e., one case

Emmetropic	111
Ametropic	87
Not given	2
Total	200

TABLE III.

Class I.—100 Cases. Results of First Eye Examination.

		Number showing vascular changes :—	Normal.
Division I.—Emmetropics	54	39, or 72.2 per cent.	15
Division II.—Ametropics	46	33, or 71.7 per cent.	13
	100	72	28

Class II—60 Cases. Examined Twice (Ears and Eyes).

		Normal.	1st Exam. of Eyes (vascular changes).	2nd Exam. of Eyes.	2nd Exam. of Ears.
Division I.—Emmetropics	34	7	27	14 unchanged	10 unchanged or worse. 4 improved.
				2 improved	1 healed for six months. 1 no change.
				11 worse	9 unchanged or worse. 2 improved.
Division II.—Ametropics	26	6	20	13 unchanged	9 unchanged or worse. 4 improved.
				4 improved	2 improved. 2 unchanged.
				3 worse	3 unchanged or worse.
	60	13	47		

Class III.—22 Cases. Examined Three Times (Ears and Eyes).

		Normal.	2nd Exam. of Eyes (vascular changes).	3rd Exam. of Eyes.	3rd Exam. of Ears.
Division I.—Emmetropics	14	1	13	6 improved	6 healed or improved.
				4 unchanged	3 improved or healed. 1 no change (radical advised).
				3 worse	2 unchanged or worse. 1 radical a year before.
Division II.—Ametropics	8	2	6	5 unchanged	2 unchanged. 2 recently operated upon. 1 radical a year before.
				1 improved	1 unchanged.
	22	3	19		

TABLE IV.

A.—Cases showing distinct vascular engorgement at the 1st Examination : 20	Progress of the Ear condition subsequent to the 1st Examination : 15% healed or improved. 85% unchanged or required radical.
B.—Cases showing normal fundi at 1st Examination : 13	61.5% healed or much improved. 38.4% unchanged or required radical. *NOTE.—In 40 per cent. of the 38.4 per cent. the treatment was completely neglected.*

TABLE V.

EYE.	EAR.
Condition of the fundi at the 2nd Examination compared with the condition of the 1st Examination :	Progress of the Ear condition as shown at the 2nd Examination :
27 unchanged.	19 unchanged or worse. 8 improved or healed.
6 improved.	3 improved or healed. 3 unchanged.
14 worse.	12 unchanged or worse. 2 improved.

Of the 100 cases 72, including the cases of actual optic neuritis previously referred to, showed more or less vascular engorgement in one or both fundi, generally in both. These were about equally divided between the emmetropics and the ametropics, which is a rather striking circumstance, and suggests a common cause to be looked for outside the eyes. Because, if errors of refraction accounted for these changes, one would have expected a much higher percentage in the ametropic eyes than in the emmetropic. In many of these 72 cases, however, the changes were so comparatively slight that it was thought right, after careful scrutiny, to eliminate a considerable number, especially of the ametropics, and they were thus reduced to 27—23 belonging to the emmetropics and 4 to ametropics. These showed vascular engorgement of the fundus which, in the opinion of Dr. Rowan, could not possibly be accounted for by errors of refraction or by eye-strain. It will be noticed that only 4 cases out of the 46 ametropics are included in the list; but, as a matter of fact, there were many more presenting changes which were suspicious yet not considered sufficiently pronounced to be included, taking into consideration their errors in refraction. Of these 27 cases we were only able to follow the course of 20, as 7 of them were lost sight of.

There were, therefore, in the 100 cases 6 which showed vascular changes in the fundus amounting to pretty well-defined optic neuritis, and 21 showing vascular changes which, while short of what might be termed optic neuritis, were not compatible with the normal condition.

What is the significance of these changes? Let us take the 20 cases showing undoubted engorgement of the fundus, and compare the progress of the ear conditions

with that of 13 cases which at the first eye examination showed normal fundi. In only 15 per cent. of the 20 cases had the ear condition recovered or showed distinct improvement after several months of conservative treatment, while the remainder showed no improvement, and, indeed, half of them ultimately came to the radical operation. On the other hand, of the 13 cases showing normal fundi at the first examination, in 61.5 per cent., as compared with 15 per cent. in the 20 cases, the ears were found after some months of conservative treatment practically healed and dry, while the remainder showed no improvement. These facts seem to indicate as far as they go that in those cases where vascular engorgement was found at the first examination the purulent ear disease was of a specially virulent character. This is strongly emphasized by the fact that, out of 12 which required the radical mastoid operation, 10 showed vascular engorgement or distinct optic neuritis. Another instance of the significance of vascular engorgement is shown in one of the cases where the vascular changes were distinct though not amounting to actual optic neuritis. In this case the radical operation was carried out a few days after the eye examination, and three or four weeks later purulent lepto-meningitis developed with a fatal ending.

It is right to say that two of our cases showed normal fundi at the first examination, but at the second they gave indications of slight vascular engorgement, although complete cessation of the ear discharge had taken place in both under ordinary treatment. We have, so far, no satisfactory explanation of these two rather anomalous cases.

While the number of cases here dealt with is scarcely sufficient upon which to base dogmatic conclusions, it cannot be said that the inquiry has been unfruitful. It has shown (1) that vascular changes in the fundus of the eye are far from being uncommon in purulent disease of the middle ear, that in 6 out of the 100 there was optic neuritis, and in 21 there were vascular changes, abnormal in character, but short of optic neuritis; (2) that the ear affections associated with these vascular changes in the eye were specially severe and persistent, as shown by their course, compared with others; (3) that, therefore, the presence of these vascular changes in the optic discs would seem to give an unfavourable character to the prognosis of purulent middle-ear disease—in short, it is a danger signal not to be ignored. The practical lessons deducible from these are (1) that a case showing these changes in the fundus should be closely watched, and their existence should be regarded as an additional reason for the early performance of the radical mastoid operation; (2) if, on the other hand, they show a tendency to clear off, especially with improvement in the ear condition, or if the fundus is normal to begin with and remains so, we may with more confidence look for a favourable response to conservative treatment.

There are other important points in connexion with these examinations, such as the ages of the patients, the average duration of the purulent disease, the condition of the air in relation to the bone conduction, as well as the probable *rationale* of the vascular changes in the fundus. These may, however, fall to be considered on a future occasion.

In conclusion, we beg to express the hope that this limited investigation and its results may stimulate the general use of the ophthalmoscope in cases of purulent disease of the middle ear.

A VACCINATION institute has been established at Seoul in Corea, and is already in active work.

AT a meeting of the supporters of the National Hospital for the Paralysed and Epileptic, Queen Square, on November 19th, it was decided to take steps at once to raise a sum of some £10 000 in anticipation of the jubilee of the institution two years hence. It is desired to commemorate the occasion by making certain structural alterations in the existing buildings. These have long been seen to be necessary, and will not increase the general expenditure on maintenance. The out-patient department is too small, the attendances now being over 40.000 a year, and the accommodation for nurses is unsatisfactory. A new lift and a physical exercise room are also required. The land necessary for the extension is already in the possession of the hospital, and if the money were in hand the building could be commenced forthwith.

SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

Held at Exeter, July 27th, 29th, 30th, and 31st, and August 1st and 2nd, 1907.

PROCEEDINGS OF SECTIONS.

SECTION OF DENTAL SURGERY.

JOHN MCKNO ACKLAND, M.R.C.S., L.D.S.Eng., President.

PRESIDENT'S INTRODUCTORY REMARKS.

THE RELATION OF DENTAL SURGERY TO GENERAL MEDICINE.

IT was with many misgivings that I accepted the position of President of this Section, following, as I do, men of such standing in our speciality; and, but for the fact that I felt sure I could rely on your indulgence in bearing with my many shortcomings, I should not have been in this chair to-day.

For many years I have held a strong opinion that a Section in Dental Surgery should be formed in connexion with our Association, and so long ago as February, 1889, I wrote a letter to the JOURNAL pointing this out, and at the same time referring to the fact that nearly all our international medical congresses had their dental and oral sections. The letter received considerable support from many members; on the other hand, some thought that it rather tended to divide the dental profession into those with and those without medical qualifications; but I maintain that the division, if it take place at all, occurs when a man belongs to the British Medical Association, not at the formation of a Dental Section, and although the Section did not become an accomplished fact for some years after—not until 1903—it came then at a most opportune time, in that it acted as a counterblast to the movement, then receiving some support, of separating dental surgery from the medical profession and placing it on its own foundation, whatever that may mean, for it seems to me impossible to sever it from medicine or surgery as a whole.

There are more than a hundred members of our Association practising dental surgery, and over 150 more men outside, but with qualifications entitling them to join; and that dental surgery is a branch, and a by no means unimportant branch, of the healing art is being more and more recognized.

This is but the third meeting at which our Section has been held, and it is only necessary to glance at the records of the other two to see how very distinctly our speciality has established its claim to a section.

Dr. William Hunter, Mr. Rickman Godlee, and Mr. Edmund Owen have each of them demonstrated the close relation of oral pathology to questions that at first sight appear almost incredible. It is in the field of pathology that those who treat the body and those who have charge of one of its cavities meet on the common ground of scientific interest, and it is as important for those who treat the part to be cognisant of the whole as for those who treat the whole to possess a knowledge of the pathology of each part.

The teeth are living portions of the body, composed of highly-differentiated tissues, and are in intimate relationship with the vascular, nervous, and lymphatic systems. They share in a special manner with the well-being of the whole as well as in its diseases. It necessarily follows

that those who have not only a knowledge of the teeth, their structure and diseases, but of their various relationships to the organism as a whole, are best able to deal with those cases where dental and oral diseases are so intimately connected with general diseases—whether as cause or effect.

It would be difficult to imagine a more important subject than that of dental and oral sepsis; its far-reaching effects can hardly be over-estimated. Septic conditions of the mouth favour the occurrence of tuberculous infection by lowering the vitality and power of resistance, and I venture to think that in the open-air treatment of phthisis too much stress cannot be laid on the fact that each patient should have sufficient masticating power, and that the mouth, through which, of course, all food has to pass, should be in a healthy and aseptic state. We must remember that the human mouth is a perfect breeding-ground for pathogenic organisms, for have we not the temperature, moisture, and an endless supply of nutrient material? Though Koch's bacillus, apart from its presence in actual sputum from the lungs, is seldom found—a fact due mainly to its weakness in the struggle for existence amongst endless foes—the bacterial flora of the mouth contains pathogenic as well as non-pathogenic organisms. Miller, of Berlin, says that organisms bred in the mouth do not necessarily perish in the stomach, and it is certain that normal gastric juice does not destroy the virulence of the tubercle bacillus when swallowed by careless or weak patients with the sputum.

The nutritional treatment of phthisis must depend upon two factors:

1. The presence of appetite.
2. The power to assimilate the food taken.

Septic mouths, coated tongues, local suppuration of the gums, pyorrhoea alveolaris, suppurative periodontitis, all destroy the desire for food by their effect on the mucous membrane of the tongue and fauces, chiefly by impairing taste, but also by infection of the stomach and intestines; and in dealing with these cases of anorexia attention to the teeth and mouth is most important.

In apparently healthy persons the pneumococcus, the *Micrococcus tetragenus*, staphylococcus, and other bacilli have all been found; these organisms may all gain entrance to the system by inhalation, swallowing, through abrasions or wounds of the tissues of the mouth, or through exposed and necrosed tooth pulps.

It is not claimed that hygienic care of the mouth will remove all these organisms, but it will greatly lessen their number and so diminish the chances of infection; but whatever may be said as to specific septic infection taking place through the mouth and teeth, there can be no doubt as to the existence of secondary anaemia associated with a lowered vitality and poorness of the whole alimentary tract, as a direct result of this buccal infection. In the treatment of phthisis even the milk consumed may be free from the tubercle bacillus, and we may have a strictly aseptic food supply, but surely all these precautions are a snare and a delusion if the patient, in swallowing his food, conveys with it to the stomach the bacteria proved beyond a doubt to exist—by Miller, Goadby, and others—in this septic condition of the mouth; and until greater attention is paid to the mouths of consumptive patients the percentage of recoveries must be considerably lessened and delayed in spite of the costly buildings and great institutions springing up all over the country. Surgical cleanliness of the mouth and teeth can be obtained by proper surgical treatment, but this alone is useless unless certain rules for the preservation of the mouth in a healthy state are observed.

We must not lose sight of the potency of mouth-breathing as a common contributory cause of phthisis. This may be produced by carious teeth and tender septic gums rendering mastication impossible, the child being afraid to close its jaws to avoid possible and painful contact of the teeth, and then we get adenoids and enlarged tonsils and the gradual development of a V-shaped maxilla and permanent disfigurement of an otherwise intellectual-looking face.

The Erasmus Wilson lecture at the Royal College of Surgeons, delivered this year by Mr. Kenneth Goadby, on pyorrhoea alveolaris, was most interesting; the subject was most carefully and thoroughly discussed by one eminently fitted for the task. The most casual observer cannot fail to be impressed by the way in which this subject of dental and oral sepsis and its important bearing on many general diseases is gaining ground.

Some interesting observations on this disease were made before the Odontological Society, as the result of experiments carried out in the laboratory at Guy's Hospital by Dr. Harold Simms. A variety of theories of the causation of this disease have been suggested; some regard it as entirely constitutional, others as purely local with occasional systemic manifestations, but the opinion seems to be gaining ground that in pyorrhoea single influences, either local or constitutional, are not alone sufficient, but there is a working together of both of these, and probably the constitution is of more importance than is usual in other infective diseases.

We have, too, the relationship between chronic lymphadenitis and diseased teeth, and are, at any rate, warned of the possibility of serious general infections breaking through the lymphatic barriers, already lowered in resisting power by the repeated attacks of the commoner products of oral bacteria; and it must not be forgotten that the study of the relation between oral sepsis and general disease is still in its infancy, as is proved by the obscurity that still hangs around the etiology of cervical lymphadenitis.

It must be obvious that in all operations about the throat and nose the condition of the oral cavity should of necessity receive the utmost attention.

The important part played by the teeth in the mastication of food, and hence in the nourishment of the body, is being more and more recognized. For many years the services have adopted stringent rules for the examination of the teeth as a part of the medical examination of all ranks, and the experiment is being tried of appointing qualified dental surgeons at some of the larger dépôts. Statistics prove that numbers of recruits have to be rejected on account of dental defects.

In every walk of life it is a matter of common observation that the teeth are becoming worse and worse, and I can imagine no more important subject for discussion in our Section than that chosen for this meeting. Those of us who are attached to hospitals must come across cases not only of the want of teeth, but of absolutely septic and foul mouths, and the wonder is not that many of the patients are poorly-nourished and emaciated, but that many of them are able to exist at all.

Professor Osler, in an article in the *Lancet* a short time since, made the following remark: "If I were asked to say whether more physical deterioration was produced by alcohol or by defective teeth, I should unhesitatingly say defective teeth."

It has been said that Devonshire is a particularly bad county for teeth; but in Norfolk and other counties, where lime salts abound and where stone is common, I am given to understand the teeth of the inhabitants vary little from those of the people of other parts.

But the time at our disposal is limited, and I am most anxious to curtail my remarks as much as possible, and so allow for a free discussion on that most important subject of the causes, effect, and treatment of dental disease in children. All of us engaged in dental, and not a few in general, practice must be struck with the rapid way in which the teeth of children are deteriorating; in fact, one may safely say each generation is worse than the preceding; and as I have already tried to show what an important bearing this must have on the general health and well-being of the individual, I am sure you will agree with me that the subject demands our greatest attention; its importance cannot be over-estimated.

If anything will lend additional weight to this almost national question, it is the fact that we have men of such eminence in their respective spheres coming to bring the subject before us, and I sincerely trust that the discussion may be a good one and help us to arrive at some practical result, whether it be in the feeding and care of the mother or of the infant.

The formation of this Section has already been justified, and I can conceive of no greater good that can possibly result from its deliberations than even one step in the right direction in dealing with this pressing matter. As this Section increases in numbers and importance, and contributes to the scientific development of our speciality, so shall dental surgery attain its proper position in the professional and public esteem.

DISCUSSION ON THE CAUSES, EFFECTS, AND TREATMENT OF DENTAL DISEASE IN CHILDREN.

OPENING PAPERS.

I.—Geo. F. Still, M.A., M.D.Cantab., F.R.C.P.Lond.,

Professor of Diseases of Children, King's College, London; Physician for Diseases of Children, King's College Hospital; Assistant Physician to the Hospital for Sick Children, Great Ormond Street.

THE MEDICAL ASPECT OF DENTAL CARIES IN CHILDHOOD.

Caries of the teeth in children is a subject which must interest every medical man who has to deal with diseases of childhood, for dental caries is an important cause of ill health in children, and, I venture to think, a cause which is too often overlooked. Moreover, there is a converse fact which is not less important, that ill health in the child is responsible for many cases of dental decay.

But this subject is one which concerns not only the dentist and the medical man, but the nation at large. Childhood is the period at which growth and development, physical and mental, are at their greatest activity, and when, therefore, it is most essential that the tissues should be properly nourished. If it be true, as it certainly is, that dental caries interferes with the proper assimilation of food, then any widespread prevalence of dental decay in childhood is a menace to our national physique.

As to the frequency of dental caries in this country amongst children at the school age, there is very general agreement; the statistics of most observers show that 30 to 90 per cent. of school children have some decayed teeth. I have made a small series of observations on this point myself with the kind assistance of Dr. C. S. Singer and Dr. R. Todd, amongst children under 12 years of age brought to hospital for treatment of other conditions.

In all 354 children were examined; out of 226 between the ages of 5 and 12 years, 187—that is 82.7 per cent.—showed carious teeth, while out of 128 between 2 and 5 years of age, 50—that is, 39 8 per cent—showed caries. Of the 226 children between the ages of 5 and 12 years, 55 had not less than six teeth carious or missing, many had seven or eight decayed teeth, some ten to fifteen; and amongst the children less than 5 years old four or five carious teeth were not uncommon, and some had nine or ten.

It is clear that dental decay is extremely prevalent amongst children, and the question arises, How far does dental caries at this age cause any mischief beyond local pain and discomfort? It were much to be desired that parents as well as medical men should realize how much interference with the health of a child may, and too often does, result from dental caries, and this although there may never have been the slightest toothache. The commonest evil from decayed teeth in children is disorder of digestion, and digestive disorder in childhood means far more interference with nutrition than it does in adult life, for in childhood nourishment is required not only for the maintenance of structure already built, but also for the building of new structure, and failure of digestion means failure of nourishment. Hence it comes about that wasting is one of the commonest symptoms of digestive disorders in childhood, and this disorder may be, and often is, dependent upon caries of the teeth preventing thorough mastication. Common enough is such a case as this:

M. A., aged 6 years, has been "getting thin" for several months, she has lost her appetite, and "her stomach is getting large," a history suggestive enough of abdominal tuberculosis; but examination shows no sign of tubercle anywhere; there is only one tooth, a very carious molar, remaining more or less whole in the upper jaw, where all the rest of the teeth are only decayed stumps; in the lower jaw there are also several decayed teeth. The child, has, in fact, no wherewithal to carry out that mastication which is so important for the digestion of solid food.

It is unnecessary to multiply instances of this kind—they are only too common; I will only repeat what I wish specially to emphasize, that interference with nutrition is one of the commonest results of caries of the teeth in children, and one perhaps which is most likely to mislead both parents and medical men; the child who is wasting may be dosed in vain with this drug and that, when the one thing needful is treatment of decayed teeth.

It has been said that the child is an inveterate food bolter: very often he is, but not always from sheer perversity; the reason may be caries and tenderness of teeth, and the result of swallowing food unchewed may be not only impairment of nutrition but also colicky pain in the abdomen. A boy of 11 years was brought to me for pains in the abdomen; his appetite was said to be very bad; there was nothing abnormal to be found in the abdomen, but examination of the mouth showed that thirteen of his teeth were carious. The dental condition was improved as far as possible by a dental surgeon and some alkaline mixture was given, after which the pain in the abdomen rapidly diminished.

Failure of appetite I have already mentioned incidentally as one result of the disturbance of digestion due to carious teeth; it is a common symptom of dyspepsia in childhood and one which causes no little anxiety to parents, and I think often puzzles the medical man by its obstinacy. There are many causes for failure of appetite in childhood, but certainly amongst them must be reckoned caries of the teeth. In connexion with disordered digestion from dental decay I must mention also the anaemia which some children show when they have extensive caries of teeth. Is this also the result of impaired nutrition from disturbed digestion? or does it mean some chronic poisoning? Excellent work has been done on the bacteriology of dental caries by Mr. Goadby and others, but I think more investigation is wanted of the chemistry of the mouth in dental caries. Dr. William Hunter has drawn attention to the effects of oral sepsis on the blood; certainly the foully offensive smell of the breath in children with extensive decay of teeth makes it difficult to believe that they can escape septic absorption altogether, and it may be that the anaemia to which I have referred is one result of such absorption. I have spoken of the digestive disorder which is associated with dental caries as if it were due only to mechanical disability of mastication, but it seems at least possible that there may be other factors. Any one who has tested the secretions about carious teeth knows that they are often distinctly acid. It may be that products of acid fermentation mixing with the food retard digestion, or it may be that other products of oral decomposition which are constantly being swallowed by these children set up some gastro-intestinal disturbance. However this may be, there is no doubt that decayed teeth afford a nidus for bacteria which may interfere with the child's health either by their local effect—for instance, by producing some form of stomatitis or gingivitis, and the latter is very common amongst children with decayed teeth—or by their passage into neighbouring lymph glands, or even by producing some general blood infection.

This brings me to a very important question—the relation of caries of the teeth to tuberculous infection of the lymphatic glands in the neck. Tubercle bacilli have been demonstrated in carious teeth; carious teeth are often associated with enlarged, sometimes with undoubtedly tuberculous, glands in the neck; it has been assumed, therefore, that decayed teeth are a source of tuberculous infection of glands in the neck. Now, this is a proposition of extreme practical importance; and whilst I would not for a moment deny the existence of such a relation, I think there is great need for careful investigation to ascertain how often such infection occurs. Smale and Colyer, in their work on *Diseases of the Teeth*, quote Odenthal's observation that of 987 children examined 70.7 per cent. (697) showed glandular enlargement, and more than half of these had carious teeth, whereas of nearly 29 per cent. (267) who had no glandular enlargement only 5 showed carious teeth.

Caries of the teeth is, as I have shown, extremely common in children, and enlarged glands in the neck are also extremely common, but it must be remembered that pharyngeal conditions, adenoid hypertrophy, and tonsillar enlargement, are probably responsible for much of the glandular enlargement, and it is no easy matter to distinguish in all cases between these various sources of irritation. We want more information as to the proportion of cases in which glandular enlargement is directly due to the teeth, and also as to how often the glandular infection

from decayed teeth is of tuberculous nature. Even if it could be proved that tubercle bacilli never make their way directly from a carious tooth to a lymphatic gland, it would still, I think, be almost certain that decayed teeth in children are indirectly responsible in no small number of cases for tuberculous infection of glands. Whatever causes swelling of glands in a child, whether it be the catarrh of whooping-cough or measles causing the mediastinal glands to swell, or a catarrh in the naso-pharynx causing the cervical glands to swell—whatever the cause may be, it converts those glands into a *locus minoris resistentiae*, and, especially in the child of tuberculous family, is a powerful predisposing cause of tuberculous infection of those particular glands. For this reason I hold that decayed teeth are a very real danger to the child whose family history or whose own past history shows a tuberculous tendency.

There is another direction in which caries of the teeth seems to be responsible occasionally for more or less serious trouble in childhood, namely, as a cause of certain nervous disorders. I refer particularly to habit-spasm and epilepsy. With regard to the former, there is no doubt that some slight local irritation, for instance, blepharitis, a sore nostril, or eyestrain, is often the starting point of habit-spasm in a child; it might, therefore, be expected that dental worry, whether it be the eruption of the second teeth or the discomfort of a decayed tooth, might also start a habit-spasm. I cannot consider here how this comes about, whether by increase of general nervous excitability, or by initiating muscular contractions which, at first voluntary and purposive, soon become habitual and involuntary, but I will only say that I have known very rapid improvement to occur in facial habit-spasm after the dentist had dealt with carious teeth, and that the onset of habit-spasm occurs much more often during the second dentition than at any other time in childhood.

As to the relation of dental worry to epilepsy, I cannot do better than refer to Ramskill's case (quoted by Smale and Colyer): A boy of 13 was having fits at intervals of one to three weeks. Just before each attack he put his hand up to his face and complained of face-ache. Extraction of a carious molar was followed by complete cessation of the fits up to the time of the report, which was four months after removal of the tooth. Sir William Gowers also mentions two cases, in which epilepsy in childhood seemed to be related to toothache. Mr. J. G. Turner has also mentioned the case of a child in whom epileptic attacks were greatly reduced in frequency by extraction of dirty and decayed teeth.

There is one more nervous disorder to which I must refer, for it is one in which the part played by dental caries is too often forgotten—namely, headache. My own experience leads me to think that dental caries is by no means an uncommon cause of headache in children. Whenever a child is brought to me complaining of very frequent or daily headache, especially if the headache is very erratic in its onset and disappearance, coming and going quickly, perhaps more than once a day, I suspect the possibility of its being due to teeth, and sometimes the complete success of dental treatment has justified my suspicion. The headache in these cases is not necessarily localized like a neuralgia: it may be general, or referred to the whole frontal or vertical or occipital region, so that so far as the child's complaint goes there may be nothing to suggest the need for examination of the teeth; moreover, if there has been toothache at all, there may be none at the time when the headaches occur, so that toothache may not be mentioned.

With regard to the causes of dental caries in childhood, there are several important practical questions to be considered: Is it due to neglect of the toothbrush? How far is it dependent on diet? How far upon the general health of the child?

For my own part, I believe that all three causes play their part, and that in one case one factor, in another another, plays the chief part. Of the importance of daily cleansing of the teeth I have not the least doubt, but I am sometimes impressed with the utter failure of most scrupulous cleanliness to prevent dental caries in children. I see children who from their earliest years have had their teeth cleansed twice daily, and yet have several decayed teeth; on the other hand, I see children at hospital, who have never used a toothbrush in their lives, with a perfect set of teeth. I do not know what proportion of boys in our upper-class public schools clean their teeth daily, but presumably a far larger proportion than amongst the poorer children, of whom, according to some inquiries which I have made, considerably more than 50 per cent. of those at the school-age have never cleaned their teeth. From this point of view it is noteworthy that in one of our great public schools, according to Smale and Colyer, 87 per cent. of the boys, with an average age of $13\frac{7}{12}$ years, had carious teeth—a proportion fully as great as among the children of the poor. There is also a curious fact which decomposing food débris hardly seems to account for—namely, the difference in the distribution of caries at different ages. In children from 2 to 5 years old, in my own series of cases, the incisors were affected in three-fourths of the cases; in children from 5 to 12 years old the incisors were affected in less than one-fourth of the cases.

I mention these facts only to emphasize the point I wish to make—that lack of cleanliness is not the only factor in dental decay, and, indeed, there is, I think, proof of this, if any were needed, in the black enamel-lacking condition of the primary teeth in some children before they have emerged completely from the gum. This happens sometimes in rickety children, and, no doubt, means very imperfect formation of enamel, so that the dentine is very rapidly exposed to bacterial invasion; this may result from malnutrition in very early infancy, for it seems probable that the enamel of the temporary teeth does not reach its *full* development until some time after birth. But I strongly suspect that there are also congenital differences in potentiality of tooth development, just as there are in potentiality of growth in stature—so that it is natural to one child to have thick enamel and to another to have thin, just as one child has fine hair and another coarse; and if this be so it is at least conceivable that there may be an inherited tendency to form thin or imperfect enamel, so that in certain families there may be a special liability to early caries, as has been thought by some dental authorities.

The occurrence of dental caries specially with rickets suggests that the nutrition of a child during the first year of life may have a potent influence in determining the occurrence of dental decay in the permanent teeth. When one sees how profoundly the growth and development of a child may be influenced by improper feeding and by the gastro intestinal disorders which result from it, one can hardly doubt that the development of the teeth, and so their power of resistance to caries, must also be influenced thereby.

It is obvious that in the rickety child caries sometimes occurs too early to be due to any local effect of the food; but when caries occurs later, whether in rickety or non-rickety children, the possibility of direct or indirect effect of diet has to be considered. This important practical point calls for more consideration than I can give it here; but I would suggest that the influence of diet is chiefly indirect, that whatever causes digestive disturbance favours the onset of dental caries. Look at the furred tongue, notice the heavy odour of the teeth, see the aphthae which sometimes occur in the mouth of the child with disturbed digestion—surely all these are indications of a state of mouth which must favour the growth of bacteria and the occurrence of acid fermentation which may erode the enamel.

There is no doubt that the acid fermentation of sugar has a destructive effect upon enamel, but I very much doubt whether sugar taken in the form of sweets has so directly a harmful effect as is commonly supposed, for the sugar is very quickly washed away by the saliva. I found that fourteen minutes after two large chocolate-with-sugar sweets had been dissolved in the mouth the saliva did not show a trace of sugar with Pavy's solution. Starchy food, on the contrary—such as biscuits, bread, and potato—remains in every crevice, and may cause acid fermentation in prolonged contact with the teeth. Excess of sugar and starch and the taking of either between proper meal times are common sources of indigestion in children, and may thus indirectly favour the onset of caries.

Lastly, the all-important question of prevention and treatment has to be considered; and here the physician must needs go delicately, lest he be hewn in pieces by the dental expert. We have heard much recently of dental inspection in schools and the need for dental

supervision of school children; but I would emphasize the fact that the mischief is present in a large proportion of children *before* the school age. My own observations showed that 39.8 per cent. of children between 2 and 5 years of age had decayed teeth, and it is not at all uncommon to find dental caries in children between 2 and 3 years old. Evidently the prevention of dental caries must date from earliest infancy. The most important step in this direction is proper feeding in infancy. Moreover, if, as seems almost certain, any disturbance of nutrition occurring during the first two or three years of life may, according to the time at which it occurs, influence the development of the primary or the permanent teeth and render them specially liable to decay, then the importance of proper feeding and prevention of digestive disorders at this age becomes still more apparent.

I would have every mother see that her child's teeth are cleaned morning and evening, especially the latter, from the time of their eruption, doing it first with a soft rag and some borax solution, and later teaching the child to use the toothbrush for himself. Already there are signs of healthier habits; recently I asked a little girl, aged 9, from the East End, whether she had ever cleaned her teeth, expecting the usual puzzled negative. I suppose I looked incredulous when she said "I cleans them twice a day," for she added by way of explanation, "we goes to 'ealth classes."

With regard to treatment let me say this much: I am frequently seeing children with extensive caries of teeth, whose health is suffering partly from indigestion, partly no doubt from chronic poisoning from the foulness of their teeth. I send them to a dentist, and I am told that he advises leaving the teeth alone as they are first teeth. Now, I am well aware that there are reasons which make it desirable not to remove primary teeth if it can be avoided; but I have wondered sometimes whether the dentist realized how much the child's health and nutrition were suffering at this important period of life owing to the presence of these teeth. I must leave it to the dental expert to decide whether it is possible to save the tooth by stopping it, or whether he can only get rid of the caries by extraction, but I am convinced that one or other procedure ought to be adopted far more often than it is in connexion with the temporary teeth. Moreover, I think that if parents would take their children regularly two or three times a year to a dentist for inspection the primary teeth could often be saved by timely stopping before the extent of the caries makes this procedure impracticable. There is an unfortunate idea current amongst the laity that there is no need to take much notice of decay of the first teeth, whereas in reality decayed teeth at that period are perhaps even more harmful than at a later age, for nutrition is more easily disturbed, and its disturbance means more interference with general development, glandular enlargement is much more likely to result, and probably decay in a temporary tooth not only destroys the present tooth, but favours the occurrence of caries in the coming permanent tooth.

II.—Edmund Owen, F.R.C.S.Eng.,

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THE CAUSES, EFFECTS, AND TREATMENT OF DENTAL DISEASES IN CHILDREN.

Causes.

One of the chief causes of dental disease in children is faulty feeding. I do not make this statement with hesitation and express the hope that you will agree with it: I am *sure* that you will.

It is a most unfortunate thing that at the present time so many mothers are unable or unwilling to suckle their children. And whilst they are groping about in the dark for some likely material with which to fill the feeding-bottle the children are apt to perish; whilst of those who live, not a few have teeth which are slow in making their appearance and quick in crumbling away or undergoing bacterial decay. One food after another is tried, and the child's alimentary canal, which even at that tender age is not destitute of physiological judgement, rejects them all. "Look at him," says the nurse, "he was a splendid child when born, and now he is reduced to a shadow!" His fontanelle delays its closure, and as he increases in age his legs become bandy, his chest falls in, and the ends of his diaphyses are found to be enlarged. And if his fat, his muscles, and his bones are failing from want of nourishment, is it likely that his *teeth*, which are still hidden away in the alveolar recesses, are the only tissues to escape? Nature herself seems to be ashamed of them; she delays bringing them forward, and when at last they come through the gum they are often found faulty in shape, in appearance, and in power of resistance. In other words, the child is rickety. Rickets, in all probability, is due to the absorption from the alimentary canal of products of decomposition of unsuitable food, and the blood is, in consequence, deficient in nutritive qualities. The harder a tissue the greater is the demand which it has to make for mineral substances for its development; and thus, in the rickety child the teeth and the skeleton suffer most. The milk-teeth being, for the most part, formed before the child has acquired the rickety taint, may come through full of promise, but the teeth of the permanent set stand only a poor chance of reaching histological perfection.

In the course of the blind search for food, the one thing that strikes the semi-intelligent, anxious mother as essential is that the milk be "sterilized." There is a charm about that word. It seems to promise her that the child thus fed will be rendered proof against tuberculosis and scarlet fever, and every other disease which might be conveyed by milk. And it almost suggests to her that a child is safer thus brought up than by a wet-nurse, because her milk could not conveniently be "sterilized."

I am going to insist, then, that all these advertised, sterilized foods are bad for children's teeth; and, further, that if a child must be brought up on cow's milk, the milk should not be dealt with in any way likely to destroy or change that living something in the milk which is essential for the healthy development of the child.

If only the child survives the bottle-age its food generally improves, for, as the mother puts it, "he is fed upon what we have ourselves"; that is to say, he is given meat-juice, vegetables, and fresh foods which contain the living something. Doubtless it would be better for him if the meat which he ate were freshly killed and had not passed six weeks or more in cold storage; but, at any rate, his diet is improved. Enamel and dentine, the two hardest materials in the body, need the most nutritious, the freshest food obtainable, and the boy is getting some of it now.

When examining ancient British skulls one can scarcely fail to be struck by the appearance of the teeth. Incisors and molars have been worn down flat by the hard foods of the time, but they are not diseased. In many teeth the enamel has been ground off till the dentine is deeply exposed and, in its turn, a good deal rubbed away. But there is no decay; and for the most part the lower jaws are square and show good muscular markings, because those ancient people had to use their jaws. The condition of the teeth proves that. Would those teeth and those jaws be showing to-day such splendid anatomy if the owners had been reared on sterilized milk, patent foods, and doughy bread made of American flour? The idea is laughable, and the moral is clear.

There can be little doubt that the bread which English children now eat is not as good for supplying the elements of enamel and dentine as was the bread of a generation or two ago. The American flour, which is so largely imported, is the finest of the fine to suit the demands of the householder, who has been taught to expect it to be pure white, and for this it has to be deprived of much of its most valuable material. I submit that the best flour for bread is that made of wheat coarsely ground between the old-fashioned millstones. I would like to go back to the bread which I knew as a boy in East Anglia—bread with a hard, brown crust, and with crumb of a delicate nutty tint and flavour. The baking of this bread was done in brick ovens which had been heated by burning faggots, the loaves being put in upon the glowing ashes. Even when cut across and exposed to the air for several days these loaves would remain fresh, sweet, and delightful. The children of the time to which I refer were given a hard crust of this bread to suck at as the time for weaning began to draw near, and there could be nothing better for the physiological stimulation of the jaws, the gums, and the embedded teeth. But upon much of the bread which is now supplied it is difficult to find a decent crust,

and children are brought up on paps and patent foods' and on messes which have been evolved in a laboratory under the guidance, and for the benefit, of the advertising vendor. This state of affairs is all wrong. But I trust that no one will consider my condemnation of it as an opening for the discussion of tariff reform and protection, which the Chairman would, I know, promptly deem out of order. Still there are ways in which those subjects may have a direct bearing upon the prevention of dental disease as well as of imperial decay.

Except that oatmeal porridge is rich in minerals, I very much doubt if it is a good food for children—a little of it, yes; but when it is the chief food the child is apt to find with it insufficient work for his teeth and jaws, the result being that his jaws are ill-developed, and that the crowding teeth prove soft and friable. What, I would ask, is the general condition of children's teeth in Scotland and the North of England at the present time?

For this faulty feeding it is difficult to say on whom the blame should be laid. It is of no use finding fault to-day with mothers and nurses; they are not here, either. What have you, medical men and dental surgeons, to say on the question?

The manufacturer of drugs—the mere tradesman—has of late taken upon himself to teach medical men how to prescribe, and the makers of patent foods dictate to the profession as well as to the public as to how children ought to be fed. And the public and the profession are equally content thus to be taught and to be led! Imagine, if you can, the ancient British mother bringing up her child on the patent foods of to-day; or, looking back a mere hundred years, say if you think children's teeth have as good a chance of being soundly developed now as then. These are days of quackery—quackery in foods, quackery in diets, quackery in religion, and, perhaps I might also say without offending either party, quackery in politics. Sterilized milk, patent foods, crustless bread made of defective flour or baked in gas ovens, foreign meat out of a cold storage, and tinned "etceteras," are ill-adapted for furnishing enamel which will be proof against the combined attack of lurking acids in the mouth and of the irrepressible micro-organisms which are swarming between closely-packed teeth of badly-developed jaws.

EFFECTS.

The general surgeon meets with two specially disastrous effects of dental disease, the more serious of them being the acute septic inflammation of the bone and periosteum which starts from the incubation of virulent germs in a carious tooth. As a result of this the Haversian vessels are plugged, and the damaged piece of the jaw is apt to necrose. Abscess forms, and the child runs the risk of fatal pyaemia. The presence of a painful swelling about the jaw should at once cause a close inspection of the teeth to be made, and even in these days of praiseworthy conservatism in connexion with dental troubles there should be no hesitation about extracting the offending tooth. The fact of the patient being unable to open his mouth is no longer to be regarded as an excuse for delay; if the forceps cannot be introduced into the mouth the tooth must be removed by an elevator. After the extraction everything may quietly settle down.

Another serious effect of dental disease is inflammation of the cervical lymphatic glands. If the infection is a quiet one the lymphoid elements of the gland are able to imprison and destroy the micro-organisms, and no great harm may ensue; but if the germs come swarming down in hordes, the lymph elements give up the unequal struggle, and suppuration takes place, perhaps down the whole cervical chain. The tissues around the glands are also involved, and an acute suppuration may occur large out of all proportion to the original lesion. Behold, how great a matter a little fire kindleth!

In some of the cases of glandular infection, either because of the power of resistance of the child or of the feebleness of the strain of the micro-organisms concerned, the glands are merely enlarged; there is no threatening of suppuration. But the disturbance of their nutrition has lowered their vitality, and rendered them an easy prey to the bacilli of tuberculosis. I am of opinion that many cases of cervical tuberculosis are originally due to a carious tooth having rendered the lymphatic glandular tissue the *pars minoris resistentiae*.

I would like to ask how the dental surgeon looks upon those cases of dental caries with a threatening of osteomyelitis or of cervical adenitis. Some dental surgeons, I know, speaking generally, make it almost a boast that they rarely extract a tooth. Such a one, I suppose, priding himself upon the possession of conservative principles, sets to work to clean and fill the diseased tooth. I suppose that I must not go so far as to say that a man is better without principles, as I might be misunderstood, but I will say that it is a thousand pities if this child's health and appearance should in any way be prejudiced by the fact that his dentist holds certain conservative views with an unyielding tenacity.

TREATMENT.

As regards treatment, I have practically nothing further to say than may be found in the few suggestions which are scattered in my short paper. Prevention of dental disease in children is a better study than its treatment, and in my opinion the so-called "high civilization" of the present day is responsible for most of our dental troubles. I suppose that it is impossible for us to go back to the customs and the foods of those uncivilized and ignorant, but happy people who wandered over the Devonshire moors, and through its primaeval forests, in a suit of light blue paint; and in this cathedral city the mere suggestion of the advantages of such retrogression seems almost an impiety. But I may at least be permitted to sigh for those romantic times when Devonshire was sending out her splendid sailor sons to meet the Armada—to those happy days when American-ground flour, Chicago beef, foreign meat-essences of very doubtful origin, and Swiss foods and condensed milk were still unknown; to the days before the baker had undergone that process of commercial education which revealed to him the fact that flour could be whitened by alum, and that pastry could be made "light" by baking-powder. If it should be argued that, at any rate, these things are sold at such a price as to place them within the reach of the poor and ignorant, I will not deny it. Indeed, that is one of the chief reasons for my lamentation!

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ETIOLOGY AND PATHOLOGY OF DEFECTS OF THE TEETH OF CHILDREN.

FOLLOWING the lines sketched out by our Committee, I shall discuss hypoplasia, caries, ulcerative stomatitis, and oral sepsis, and if I appear to spend over-long describing small points, it is because closer investigation does but serve to confirm and particularize the baneful possibilities of diseases of teeth in early life, of which, indeed, a broad general view leaves no doubt, and to show how easy, insidious, and minute are the beginnings of trouble.

Hypoplasia of teeth—that is, imperfect development—may affect the whole tooth or its component tissues, but is most conspicuous as affecting the enamel. The forms of hypoplasia may be conveniently classed as:

- Hypoplasia of general malnutrition.
- Hypoplasia of local malnutrition: Infective inflammatory hypoplasia; Traumatic hypoplasia.
- Hypoplasia of congenital syphilis.
- Congenital hypoplasia.

Hypoplasia of general malnutrition is by far the commonest and most important form. The hard tissues of teeth, once formed, are incapable of renewal or repair, and the cells of the enamel organ, once injured, frequently fail to regain their full formative activity. Hence, teeth will bear a permanent record, both as to age and duration, of any marked state of ill-health occurring during their development. It is owing to this fact that we are able to ascribe hypoplasia of this class to malnutrition, since inquiry as to history almost invariably elicits bad feeding or illness synchronous with the developmental period of the hypoplasic part. Hypoplasia of malnutrition most commonly affects the coronal half of the central incisor, either upper or lower, a little less of the lower lateral, perhaps the tip of the canine, and a full half of the first molar; but the upper lateral is variable, sometimes affected almost equally with the upper central, at others escaping altogether. These are exactly the parts developed during the common period of infant malnutrition—the first two years of life. The illustration (Fig. 1) is from a lower jaw. The characteristics of this form of hypoplasia are:

(1) Symmetrical incidence on the parts of all the teeth developed during a certain period; (2) abrupt transition to normal along a horizontal line; (3) except in the first stage of enamel hypoplasia (H_1), a rough surface.

The degrees met with vary from a want of perfect formation, which leaves the enamel dull white or dull brown (H_1), to almost complete absence of enamel over the affected part.

The lesser degrees of actual deficiency in enamel substance are marked by pits arranged in horizontal bands, and often situated in the developmental fissure lines of the tooth (Fig. 2). In incisor teeth these latter are two and vertical, and Mr. C. S. Tomes remarks in his *System of Dental Surgery* that teeth showing permanent traces of these grooves are more susceptible of dental caries. In temporary teeth these pits are often remarkably sharply cut. In the next stage the pits have run together into grooves, and in some cases grooves and ridges succeed one another in a manner suggestive of acuter and intercurrent depressions of vitality, such as might be consequent on summer diarrhoea of infants (Fig. 3). In some rare cases the developmental fusion lines persist as well-marked vertical grooves on the hypoplasic part (Fig. 4).

The next stage is marked by irregular deposition of thin layers and nodules of enamel whose actual surface may be smooth and polished, or rough and dull, according to the state of health at the time of formation, but which leave a general rough surface to the tooth (Fig. 5). Almost entire want of enamel may be met with. Microscopically, the fibrous character of the enamel is well marked in the dull patches. A vertical section of a hypoplasic tooth shows contour bands of stained, ill-formed enamel, succeeded, where the enamel organ has not suffered too severely, by normal enamel (Fig. 6); but where the enamel cells have been too far injured no further enamel is laid down, and only the terminal portion of badly-formed enamel is found, overlapped by the normal enamel of a succeeding healthy period (Fig. 7). Concentric with the enamel contour lines, lines of ill-formed granular dentine mark a synchronous maldevelopment. From teeth such as these last I have raised by the use of phloroglucin and HNO_3 a layer of irregular but in places considerable thickness, which on vertical section shows the fibrous structure of enamel, and represents in the form of uncalcified tissue the last effort of the injured enamel organ (Fig. 8).

Hypoplasia of malnutrition is found both in temporary and permanent teeth, but far more commonly in the latter. Among temporary teeth it is commonest in the canine and molars and apparently rare in incisors, conforming again with the general idea of an early extrauterine cause. In the case, however, of the incisor teeth (Fig. 9) intrauterine malnutrition must have been at work.

The relation between this form of hypoplasia and infant feeding is very close, since practically in every case one can get a history of bad infant feeding. All sorts of "infant foods" seem to be causative, and the plumpness or even tranquillity of the baby appear to be no certain criteria of health. Cow's milk seems to be the least injurious, but I am uncertain, qua the evidence of the teeth, as to the value of sterilized cow's milk. We may be closing the door to early tubercle, diphtheria, etc., but providing for its later opening when hypoplasic teeth decay and rapidly lower the child's vitality and resistance. I believe this view of the connexion between teeth and infant feeding is that generally held, though usually expressed in terms of the sequent caries instead of the antecedent hypoplasia.

Cases of symmetrical hypoplasia affecting both the bicuspids, the second, and even the third permanent molars are also seen, indicating a more prolonged or later begun period of malnutrition, and in some cases of late or prolonged malnutrition the roots of the teeth seem to have suffered.

Malnutrition of dental caries or of foul teeth are obvious later causes, and, though the clinical history may be our only guide, I think I have definitely fixed one or other as the cause in many cases. In one case where hypoplasia affected the bicuspids and second molar, as well as the incisors, canines, and first molars, I found an early history of breast feeding but accompanied by diarrhoea and fretfulness; the mother's mouth had for years been foul; after weaning, porridge twice a day and continued diarrhoea. This was the only discoverable error, and no illness was remembered. I think Dr. Voelcker is right when he says porridge should only be given twice a week, otherwise its branny part acts as a chronic irritant.

The relation between hypoplasia and rickets is an interesting point. Not every rickety child shows hypoplasic teeth, nor does every individual showing hypoplasic teeth present definite signs of rickets. Hypoplasia of temporary teeth is in general uncommon, but I am inclined to think it rather common, though not overwhelmingly so, in rickety children. There is in the Royal College of Surgeons Museum the skeleton of a slightly rickety child showing hypoplasia of the temporary canines; and the best example of hypoplasic temporary teeth I have, which includes first and second molars, the temporary centrals and laterals, came from a child with a well-bossed skull who had been "treated for rickets," and who had a history suspicious of congenital syphilis. Among older people showing symmetrical hypoplasia, but presenting no obvious signs of rickets, a history of diarrhoea and frequent bronchitis in infancy is often to be obtained, while others present obvious signs of rickets.

In the Museum of the Odontological Society are to be found rickety skulls (monkeys and lions) showing hypoplasia of both temporary and permanent teeth, and on the other hand some which show remarkably good teeth. Yet the obvious community of origin both in time and cause points to a close connexion between rickets and generalized hypoplasia of teeth. Perhaps hypoplasia of teeth may be taken as marking an inclination to, or the actual early stage of, rickets; fully-developed rickets only becoming apparent later, when an inflamed intestine can no longer deal with its, perhaps normal, bacterial inhabitants, and toxaemia ensues; the hypoplasic period would then last as long as the rickets continued, and might precede its actual appearance. On such a theory intrauterine hypoplasia would only show a predisposition to rickets unless some maternal toxaemia could be shown.

Hypoplasia of illness—especially the specific fevers—may be classed as a special form of hypoplasia of general malnutrition, though possibly due to circulating toxins. It is found as a single horizontal band affecting the parts of the teeth in process of formation at the time of illness; except for its permanency, it is comparable to the white lines on the nails, of similar origin. Fig. 10 is from a case of whooping-cough of three weeks' duration at the age of 3, exactly the time indicated by the hypoplasic band. Measles and scarlet fever are the more usual causes.

Hypoplasia of local malnutrition is of inflammatory origin, and is complicated by the mechanical effects of inflammatory pressure. Infective inflammatory hypoplasia may be due to deep aphthous or other ulceration—which is the probable origin of the irregular hypoplasic patches and pits on temporary teeth, and of some on the permanent teeth—or to extension of inflammation from round a septic temporary tooth.

Interference with nutrition, or actual destruction of the tooth organ leads to hypoplasia varying from H_1 to entire necrosis. A patch of H_1 is often seen on the labial surface of an incisor corresponding to the position of the root of the temporary tooth, which lies anteriorly to its developing successor. The permanent canine is less frequently affected, on account of its more remote position of development. The pre-molars, on account of their inclusion between the roots of the temporary molars, are commonly, and often severely, affected (Figs. 11, 12, 13). Hypoplasia of this form may affect several teeth in the same mouth, but, on account of its asymmetrical distribution, is readily recognizable as of local origin.

Teeth more severely affected by this form of hypoplasia present irregularly-situated lesions corresponding to the place of incidence of the inflammatory process (Fig. 14). The enamel is defective in quantity, stained, rough, and dull, and various degrees of hypoplasic or mechanical deformities are found. By mechanical deformities I mean a bending or telescoping of the calcified on or over the uncalcified part by pressure of inflammatory exudation. Under the microscope this bending or telescoping is marked by a contour line of curved dentine tubules, sometimes accompanied by interglobular spaces, recording interference with nutrition, as well as mechanical distortion (Figs. 15, 16, 17). Several such lines may be seen in the same tooth, marking successive exacerbations of the inflammatory process. The bending is usually inwards, but in lower incisors seems to be outwards. Probably most cases of so-called dilaceration are of this origin.

So-called mercurial teeth may be a form of generalized inflammatory hypoplasia, but I have never had an opportunity of observing a case, and it is difficult now to realize that mercury was ever given in such doses and so persistently as to produce the results which have been credited to its exhibition.

Traumatic hypoplasia is a variant of inflammatory hypoplasia, the inflammatory process being non-infective and of a reparative nature, the extent and persistence of the inflammation depending on the severity of the injury. Fig. 18 shows an injury from a fall at the age of 3, and Fig. 19 shows the result of an injury to the developing tooth at the age of 9 months.

Hypoplasia of congenital syphilis is well known under the title of Hutchinson's teeth, but I think a lesser or a wider spread degree of hypoplasia may be taken as suspicious of congenital syphilis. Mr. G. B. James and myself examined the teeth of a considerable number of congenitally-syphilitic families, and we were struck by the fact that in a large number of individuals all the teeth were small and wanting in contour though the enamel was of good finish, a fact which distinguishes congenital syphilis from hypoplasia of malnutrition (Figs. 20, 21). In one case only one tooth was affected (Fig. 22). We were able to confirm an observation of Darier's that the first permanent molar may show in place of a well-formed cusp a small knob of enamel projecting from an underdeveloped crown, the whole being of good finish. (Figs. 23, 24). The same appearance is seen on the canines in this mouth. To me it seems probable that the lesion is of toxic origin—the enamel organ and perhaps the whole organism has a bad start in life, and cannot fulfil its proper function. Dr. Still has recorded what he believes to be a case of congenital syphilitic lesion of the temporary teeth.

Congenital hypoplasia is a rare condition. I believe the series I described, affecting five generations, is the only known example. It affects temporary and permanent teeth, and is transmitted only by abnormals. The teeth are defective chiefly in enamel, but also in entire bulk. (Figs. 25, 26, 27, 28). It is in general symmetrical, but in one case the upper canine of one side is markedly more affected than that of the other, thus affording a parallel to the single congenital syphilitic tooth.

The effect of congenital syphilis and congenital hypoplasia is to lessen the incidence of caries by simplifying the shapes of the teeth; but of the other forms to increase its incidence by affording rough surfaces for lodgement of food, and to extend its ravages by reason of the imperfect calcification of the tissues, especially so in the dentine where caries rapidly spreads along the lines of interglobular spaces.

Caries.

Dental caries is a disease of early life, and in young teeth—that is, newly erupted teeth—spreads rapidly; six months may be sufficient utterly to destroy the crown of a young tooth. This is due to the more watery nature of newly formed, young dentine.

Though the BRITISH MEDICAL JOURNAL for May 25th, 1907, says the causation of dental caries is yet a moot point, I venture to assert that there is no disease in which both cause and prevention have been more clearly demonstrated.

By experiment and by clinical observation the origin has been found to be stagnation of carbohydrate food. By their action on this certain ever present mouth-bacteria produce acids (lactic chiefly) which dissolve the enamel and open a way into the dentine. When the dentine is reached the acid formers decalcify it, and other germs, grouped as "liquefiers," complete the destruction.

This briefly is dental caries, and there can be no mistaking the path of prevention. Surgically-clean teeth cannot decay—no bacteria, no caries; no pabulum, no caries; and the nearer we approach to this ideal the less caries we shall find.

But observation and reason have also shown accessory causes—crowded dental arches and mouth breathing, ill health, rough surface of hypoplasic teeth, possibly heredity and climate, though these all sink into insignificance before the great root factor, oral stagnation, or only act by rendering its occurrence more certain.

The more injurious carbohydrate foods are the agglutinative starchy foods and the monosaccharides. The former because they cling to the teeth and so allow time for fermentative changes—the latter on account of their more ready fermentability as compared with the polysaccharides. Mr. T. G. Read further finds that roller-ground flour more readily allows of acid fermentation than stone-ground.

The ordinary white bread of to-day is, in fact, an ideal food for the production of dental caries. It is soft and induces no effort of mastication, smooth and fine ground so as to be useless for mechanical cleansing, wanting in nucleins whereby it loses its inhibiting power over bacterial growth, and, worst of all, extremely agglutinative. The same may be said of practically all biscuits and of porridge.

But this unfavourable account of our foodstuffs is no warrant of despair. The lessons of pathology—no bacteria, no caries; no pabulum, no caries—are fully borne out by clinical experience. Among my patients, children whose teeth are thoroughly cleansed daily with toothbrush and antiseptic toothwash are remarkably free from caries, and my impression is that the proportion of carious teeth among our child patients at the Royal Dental Hospital has markedly diminished since we have distributed our pamphlet on the care of teeth to each patient.

Now I must refer to some of the actual conditions found in children. The four upper temporary incisors and sometimes the four lower are not infrequently found decayed down to the gum edge at a very early age—as early as 2½. Naturally this would occur in hypoplasic teeth, and might then be of rickety origin; but the condition is by no means indicative of rickets, being more frequently found in otherwise healthy children; probably the sugar-bag or early starchy food accounts for most cases. The first permanent molar, the largest and most important tooth of the molar series, deserves special attention. It may erupt as early as 5½ years of age, and under the ordinary conditions of neglect is soon attacked by caries. Owing to its early appearance it is but too often neglected as a temporary tooth. Its size and position behind the five temporary teeth should prevent such an error. One effect of caries of temporary teeth—injury to permanent teeth by spread of inflammation, I have already alluded to; this is sometimes referred to as an infection by the temporary tooth, but there is no actual transmission of caries from one tooth to the other.

The effects of dental caries in the way of abscess, of providing reservoirs for putrid material and bacteria, and of rendering the teeth too painful for use in mastication are now well recognized, but I fear the extent of the possibilities are often belittled. I wish to draw no alarmist picture, but reasonable possibilities should not be ignored.

Thus the occurrence of the diplococcus of pneumonia, the bacillus of diphtheria or of influenza, in the mouth afford reasonable presumption for supposing that an unclean mouth may be the starting point of pneumonia, diphtheria, or influenza, or even of epidemics of these diseases, and the same may be presumed of measles and scarlet fever, and in the personal particular of acute rheumatism. The large and apparently diverse group of diseases characterized by anaemic blood changes, febrile symptoms, and pus formation must obviously bear the same relation to a septic mouth as to infected ulcers in any other part of the body, but it is very generally forgotten that practically every child at some time of its life, and for no inconsiderable period, carries about in its mouth a possible source of infection. German investigators have given the percentage of children exhibiting dental caries as high as 98 per cent., but it should be clearly understood that a carious tooth is not in itself a channel of infection—it acts as a reservoir for cultivation of bacteria, and by means of abscess or peridental ulceration accompanying its later stages of destruction. Beyond these immediate results dental caries in children (or at any age) must by impairing nutrition and by lowering vitality and resistance favour the incidence of practically every disease to which the human organism is subject. The disease on which attention is just now focussed is tubercle, and it is almost entirely in this manner that dental diseases aid its spread. Direct infection via teeth is non-proven, but general resistance is lowered by impaired nutrition and a "local seat" is provided by chronically inflamed glands.

To dental malnutrition combined with unaccustomed lateral pressure on the eyeball during convergence and

Fig. 2.—Showing horizontal bands of pits.

Fig. 9.—Hypoplastic temporary teeth. The incisors are defective in the entire crowns, showing an intrauterine origin.

Fig. 4.—Marked persistence of normal fusion lines in hypoplastic part of teeth.

Fig. 3.—A series of horizontal grooves.

Fig. 1.—Hypoplasia of malnutrition in child aged 7 showing typical distribution.

Fig. 5.—Irregular deposition of layers or nodules of enamel.

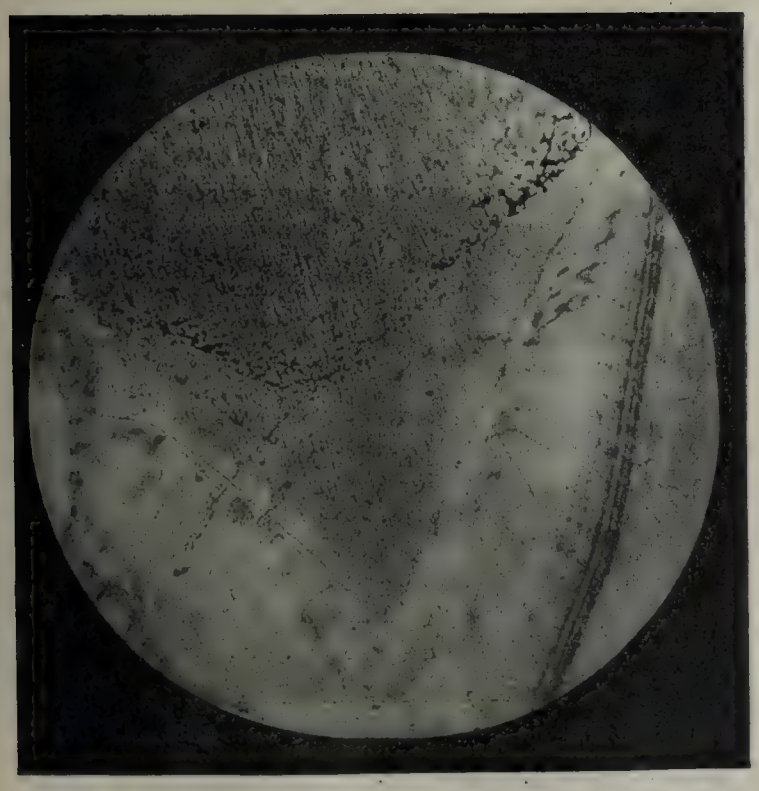

Fig. 6.—Contour line, *a*, of hypoplastic enamel succeeded by normal enamel. In the dentine is a corresponding contour line, *b*, of defective dentine.

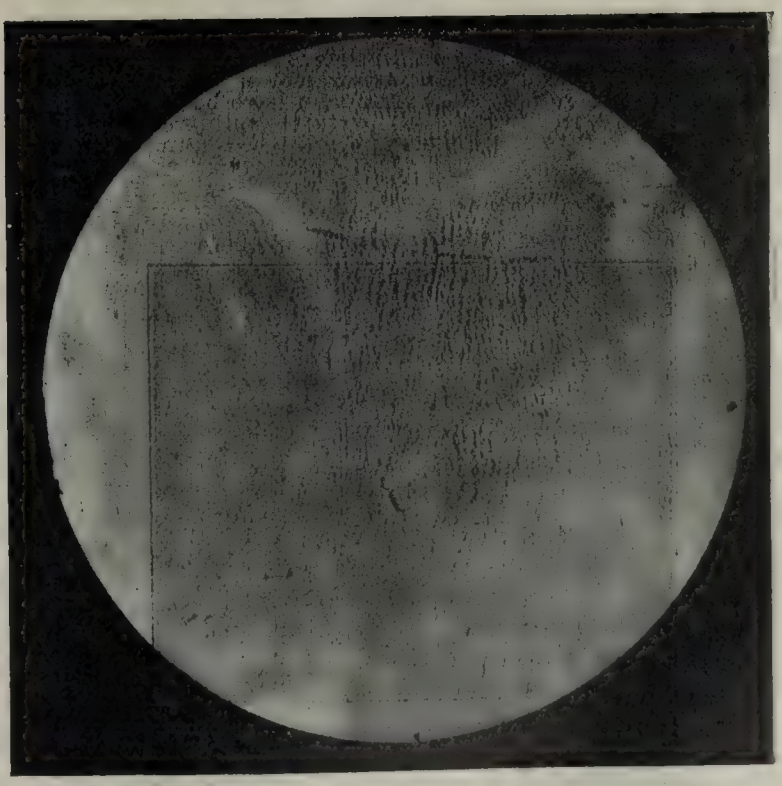

Fig. 8.—Uncalcified enamel from the surface of hypoplastic enamel (× 160).

Fig. 11.—Shows dead temporary tooth and injured tooth of succession (first premolar) in process of sequestration as a necrosis; aged 8.

Fig. 12.—Right side of last skull, showing early eruption (? necrosis) of second premolar sequent on abscess of temporary tooth (R.D.H. Museum).

Fig. 7.—Several contour lines of defective dentine, *b*, each ending close to the terminal part of a line of defective enamel, *a*. Each dark-stained layer of hypoplastic enamel is slightly overlapped at its termination by the fully-formed enamel of a healthy period, but the enamel-forming cells of the part have been so injured that they have ceased to function. From a multi-grooved tooth. There have been successive periods of acute ill-health.

Fig. 13.—Shows necrotic remnants of second premolar retained in jaw, killed by abscess of temporary tooth; aged 9 (R.D.H. Museum).

Fig. 10.—Shows a horizontal band on the lower teeth, due to whooping-cough. Aged 3. The uppers show a similar band of enamel, defective only in quality (dull white).

Fig. 14.—Mechanical and hypoplastic deformities of premolars due to septic inflammation (gum-boils) round their temporary predecessors.

Fig. 15.—Shows curve of dentinal tubules, *b*, and slight granular appearance at the line of bending.

Fig. 16.—Shows the same at point of telescoping, on one side accompanied by granular ill-formed dentine.

Fig. 17.—Several lines marking successive exacerbations of inflammatory process.

Fig. 18.—Hypoplasia of injury. Due to fall ; aged 3.

Fig. 20.—Hypoplasia of congenital syphilis. Two sisters. The upper shows well-marked Hutchinsonian teeth, the lower a degree of hypoplasia which is at least suspicious of congenital syphilis.

Fig. 22.—Shows one tooth only affected, the left upper central incisor ; none others were affected in upper or lower jaw. (From an interstitial keratitis case of Mr. G. B. James.)

Fig. 19.—Due to fall; aged 9 months.

Fig. 21.—To contrast syphilitic hypoplasia with that of malnutrition and normal.

Fig. 23.—Shows smooth knobs on hypoplastic molars and canines. (From a similar case of Mr. G. B. James.)

Fig. 24.—Lower jaw of the same case.

Fig. 25.—Hereditary hypoplasia. Temporary set in fifth generation.

Fig. 26.—Two other permanent sets of the fourth generation.

Fig. 27.—Vide *Trans. Odont. Soc. Gt. Britain*, March, 1907.

Fig. 28.—Permanent set in fourth generation. The right upper canine is far better formed than the left.

accommodation on commencing school life, it seems reasonable to ascribe some share in the production of myopia—a condition which suddenly becomes common at about the first book-reading age. Possibly, again, nocturnal enuresis may own no other origin but dental disease.

I think I have drawn no alarmist picture—in fact, I have but called attention to the obvious, that is, to the frequency of dental disease in children and to its inevitable results alone or in combination, and if these results cover an extremely wide field they are absolutely in accord with the logic of pathology.

The treatment of hypoplasia, caries, and oral sepsis may conveniently be considered as preventive, and immediate or active. Preventive treatment of hypoplasia, which is at the same time the first part of the preventive treatment of caries, consists in securing to the organism proper and regular nourishment practically from conception till the teeth are complete at the 20th year. Early hypoplasia of temporary incisors is probably a maternal fault. After birth vicious infant feeding (including that form in which the mother's milk is poisoned or starved by her own bad teeth) is the one great cause of hypoplasia, and, later, of malnutrition of caries.

Infant feeding I must leave to the physician, and to them we must look for the greater part of the prevention of hypoplasia. Prevention of caries consists practically in cleanliness. Of course, removal of such accessory causes as hypoplasia, crowded dental arches, etc., is of great importance, but these may all exist harmlessly if perfect cleanliness be observed. Surgically clean teeth cannot decay. To secure cleanliness attention must first be paid to the food. This should consist of bread, harder, drier, and less agglutinative than the white bread at present in use; of fibrous meat, and of polysaccharides rather than monosaccharides. As a check on a "dog-biscuit diet," it may be noted that in animals with teeth of persistent growth a curve in the tooth removes the formative pulp from the line of pressure—in man the pulp is in the direct line of pressure, and practically only the crown formed at eruption. Dilute acids are useful as cleansers, and the use of vinegar in pickles, etc., has no deleterious effect, since it has a selective action on cementum and dentine and none on enamel. Toothbrush and antiseptic mouth wash cannot be dispensed with. If in some mouths they are needless as preventives of caries they are needed in all as preventives of oral sepsis, the preventive treatment of which is exactly the same as that of dental caries.

Of actual treatment of hypoplasia there is none except to make the rough places smooth.

Carious teeth may be filled in the early stages, and parents may be comforted to know that drilling out temporary teeth is nothing like so painful as drilling out permanent teeth. Later when the pulp is exposed or dead, and especially if there be an abscess, no treatment but extraction suffices. I think I may claim to appreciate more strongly than most the evils of early extraction, yet I unhesitatingly advise extraction whenever a tooth is so carious that it cannot be rendered painless and aseptic. In practice this rule applies to all the temporary teeth, and to the first permanent molars whose root apices are finished at the age of 10. We are thus treating at the same time both caries and oral sepsis, and the results are extremely gratifying. Children rapidly recover from the effects of oral sepsis—which is in them of an acute nature—and the healthy gums are soon far more efficient organs of mastication than the tender septic teeth.

Ulcerative stomatitis—by which I mean a disease characterized by a necrotic ulceration of the gum-margin which in some cases is repeated, as a print from a negative, on the contiguous cheek—will, I hope, be discussed by Mr. Goadby. It is common in children and in less acute stages presents clinical features resembling pyorrhoea alveolaris, while in adults acute cases of pyorrhoea alveolaris sometimes present the clinical appearances seen in acute ulcerative stomatitis of children, which may point to an identity or only to the supervention of one disease on the other.

In its treatment minute and frequent local cleansing is all-important, and temporary teeth should be unhesitatingly extracted when loose. Pot. chlor. may be dispensed with if local treatment be thorough. The teeth and gums should be sponged, dabbed, and rubbed with a lotion: ℞. Sod. bic., ac. carbol. āā gr. x, glycerin ℥j, aq. ℥j. Strong carbolic leaves a slough which requires constant washing to prevent becoming foul and reinfecting the tissues. Necrosis and cicatricial closure of the mouth may follow. I have had success in one such case by stretching and retaining the space gained by wearing a mouth prop constantly at first, later at night only.

The prevalence of dental disease in children and its deadly results are sufficient to justify its inclusion as a State question. British statistics give 86 per cent. of children as affected by caries, German as high as 98, and in certain American (New York City) schools 33 per cent. of the scholars needed dental operations to render them fit for school attendance. In public health it may well take its place with bad housing, feeding, and clothing, as one of the root factors of degeneration.

Education of parents and children as to the beauty and importance of teeth, and practical instruction in cleansing the mouth by specially-trained nurses, would form an inexpensive basis for prevention. It would not be difficult to draw up a *précis* for use by teachers, nor to instruct a careful nurse in practical cleansing. Parental neglect of personal hygiene, in which should be included teeth, might be made a punishable offence, at any rate in children attending rate-supported schools, just as neglect of education now is. Expense will be at once urged, inasmuch as some means of cleanliness must be provided before a law against uncleanliness can be enforced. But I think it probable that after the first grand sweep up, when preventive education has had time to work, the dental expenses will be but small. A nurse to teach, toothbrushes and mouth-washes we may always need to supply; actual dental operations I should practically limit to extraction as being in general more conducive to permanent cleanliness and functional use of the mouth than attempts at conservation by fillings. This may seem a drastic generalization, but it is the result of long hospital experience. Dental clubs might be started to supply the deficiencies later if needed, but the very fact of a clean functional mouth will diminish the later incidence of caries.

DISCUSSION.

Dr. Edmund Cautley (London) attached great importance to the hereditary predisposition as a potent cause of malnutrition of the teeth and subsequent liability to dental decay. The delicate, tuberculous, syphilitic, or alcoholic woman was unlikely to have a healthy child with absolutely sound teeth. Her diet during pregnancy and lactation was of great consequence. After the child's birth there seemed little prospect of improving the temporary teeth by diet, but the development of the second teeth was undoubtedly influenced thereby. Anything, whether unsuitable diet or illness during early life, might interfere with nutrition and affect the development of the permanent teeth and render them liable to change. The white bread of the present day was more digestible than the coarse bread of former times, and probably more nutriment was absorbed from it. Subsequently to eruption, the decay of the teeth depended upon fermentation in the mouth due to bacteria, and could only be guarded against by thorough cleanliness. Digestive disturbances undoubtedly helped to cause caries, but caries more frequently caused disorders of the alimentary tract and even blood affections. It was just as important that dental surgeons should send their cases to physicians for treatment of the general health as it was that physicians should send the children to the dentists for dental treatment. It was important that useless decayed temporary teeth should be removed.

Dr. J. A. Sutherland (London) did not find himself in agreement with the last speaker, particularly as regards the food question, which he regarded as most serious. He was inclined to consider the effect of food upon the teeth as of less importance than the effect of foods upon the stomach, thereby promoting disease of the teeth from fermentation and other changes in the stomach.

Mr. K. W. Goadby (London) differed a good deal from those speakers who were inclined to ascribe an important rôle to gastric fermentation in the production of dental caries. The general phenomena of dental caries were well known, and the gradual removal of the lime salts of the tooth due to acids engendered by fermentation had for a long time been recognized. Why, then, should the effect of the stomach be called in aid? And if gastric and

gastro-intestinal disturbances influenced the teeth, what was the agency and what were the methods by which such diseases operated? If the statement could be substantiated by detail of the method of operation, well and good; but, so far as he was aware, there were no experiments or observations extant which showed that any alteration of the saliva or buccal secretions took place which influenced dental caries. Mr. Turner had referred to the fermentation of carbohydrates, polysaccharides and monosaccharides, and had cited the latter as most easily fermentable, the former as most resistant; but another large class of carbohydrates, the disaccharides, required mention. Maltose, the disaccharide formed by the action of hyaline on starch, was easily fermentable by mouth bacteria, whereas cane sugar took much longer; thus 10 c.cm. of neutral glucose or maltose solution gave an acid reaction in five to six hours, whereas cane sugar, even with an organism attacking it, took twenty-four to forty-eight hours to produce the acid reaction. Lactose was another sugar which was somewhat refractory to mouth bacteria. The importance of these facts in relation to sweetmeats and sugars generally was obvious, and required no further comment. Another point by no means sufficiently emphasized was that the common diseases of the mouth which might influence the health of the child required to be divided into those attacking the hard dental tissues or teeth and those which involved the soft parts of the mouth, such as the gums and mucous membrane; these latter were by far the most toxic; the factors concerned in dental caries rather opposed the formation of toxin (acidity), so that dental caries was important rather from the mechanical destruction of the masticatory efficiency, and its promotion of gum inflammations was a secondary matter. In determining, therefore, the influence of a diseased condition of the mouth upon the general condition of the physiology of the body, it was necessary to determine if the mouth condition was one or the other or a combined condition of caries and inflammation. That mouth inflammations, pyorrhoea, had a marked influence in pregnancy was certain; in one case especially a pregnancy complicated with pyorrhoea was followed by very slow recovery, subinvolution, etc. Preceding and during a subsequent pregnancy the pyorrhoea was treated by inoculation with vaccine, and the second pregnancy was not only followed by rapid recovery, but the child was in every respect better developed. The inoculation of vaccine during pregnancy had no deleterious effects, even up to the eighth month. Ulcerative stomatitis in children and pyorrhoea alveolaris in adults had a similar bacteriology, as far as one could judge at present, while the character of the discharges were histologically the same. There was little doubt that the two diseases were manifestations of the same infecting agent.

Dr. A. W. BAKER (Dublin) was able, from personal observation, to confirm Mr. Turner's statement as to a traumatic origin of hypoplasic teeth, and also had seen several cases in which whooping-cough could be assigned as a cause, and wished to add influenza as a factor. Hypoplasic teeth were not, as a rule, more prone to caries, as it was in mouths which exhibited these damaged teeth that caries was most frequently arrested. He was doubtful about the occurrence of unilateral syphilitic teeth, as he had frequently observed unilateral markings in cases where there was an absence of any syphilitic history. With regard to anaemia being caused by caries, he was inclined to think that perhaps anaemia was frequently responsible for a sudden onset of caries in unusual sites, and in such instances had referred the cases to their physicians, who confirmed his observations.

Mr. R. DENISON PEDLEY (London) said: When we seek for causes of the destruction of the teeth we are not confined to the skulls of prehistoric man. There are people living from whom we seek our types of healthy mouths and teeth free from decay, and they lead us to believe that in civilization and all that the word implies the causation of dental disease may be found. A Japanese woman lives in fresh air, has the simplest food, and the loosest of raiment. Such living ensures good temporary teeth. The child is fed *naturally*, and is also brought up under natural conditions, having therefore the best conditions for healthy, permanent teeth. How different is the condition of a working woman in our present civilization! Nurtured in poor air, partaking of artificial food, and often going to the factory to earn her daily bread. Her children are brought up under similar conditions. Here we have the foundation of poor temporary teeth. Her infant is not nourished on natural food; and, subjected to the mother's environment, the foundation is laid for defective permanent teeth. As pointed out by my brother, Dr. Pedley[1] of Rangoon, when the children of Eastern people are brought into the towns and fed on European diet, the teeth commence almost at once to decay. There is a selective influence we know, and weak children in the East die more rapidly than in the West; but Dr. Cunningham,[2] the anatomist, has stated that even the children of the poor—except when suffering from disease engendered by vice, namely, syphilis, etc.—have a tendency to be born healthy. As for effects, the main one is lower vitality, and all that it engenders. Once the vitality is lowered in child or adult, a very wide door is opened for many diseases to enter. The best constitutional treatment is natural food, wholesome environment. As local treatment hard foods need not be carried to extremes, but bones should be given to exercise the jaws. Extraction of temporary teeth is to be practised whenever the child cannot eat, the nerve is exposed, or the pulp chamber a septic mass; but much can be done in the early treatment by perfect cleanliness and the local application of nitrate of silver or lunar caustic. Systematic treatment from the schools must be a national affair. Diseases of the teeth, like other diseases, must be sought out, and not left to declare themselves.

Mr. W. R. ACKLAND said: There appears to be agreement that the first two or three years of child life are most important in regard to the teeth—but mainly of the second set, the condition of the first being already fixed. That being the case, the responsibility rests more with the parent, the nurse, and the doctor than with the dentist, who does not see them. The medical profession must educate the mothers and nurses as to dietary and cleanliness. I find that children are constantly given milk biscuits or sweets in bed after the teeth have been cleaned, which is very pernicious. From my own observation of cases I believe carbolic tooth powder to be harmful. I should like the views of others. I see children in a healthy village with all the local conditions favourable to decay, such as want of cleanliness, etc., and yet the teeth do not decay. I therefore have come to the conclusion that their resisting index in regard to decay is high owing to their surroundings.

Dr. G. B. BROWN (Bacup) stated that the teeth of the agricultural labourers' children in Lancashire were, according to his own personal observation, much better than those of the dwellers in towns. He also described a stained condition of the teeth of workers in certain factories, which were predisposed to decay, owing to the effects of zinc sulphate. The decay was almost tidal in character in these cases.

Mr. C. EDWARD WALLIS (London) said: I wish first of all to make a few remarks on the relations between dental disease and epilepsy. As Dental Surgeon to that part of Darenth Asylum in which are gathered together a large number of epileptic children I have had unusual opportunities of making investigations on this subject. Up to two years ago these children had had no dental treatment or supervision of any kind, and at that time, as now, a careful detailed record of the incidence and severity of fits had been, and is, recorded in a book devoted to that purpose. When appointed to this institution, I made a careful examination of the teeth of these children and found a large amount of dental caries, though I am bound to say that on the whole these children display better teeth and jaws than the average members of the same class of the community as seen in public elementary schools. Since my appointment to this institution, now nearly two years ago, these epileptic children have been treated in the drastic way so ably advocated by Mr. Goadby and Mr. J. G. Turner—that is to say, these children have been freed from every cause of dental reflex irritation, so that now, as regards their dental condition, they are quite healthy. Following on this I have made careful inquiries into the incidence of fits now as compared with the period before the initiation of dental treatment, and I am bound to say that the diminution in the number and severity of fits as shown by these records is practically inappreciable It seems to me, therefore,

[1] BRITISH MEDICAL JOURNAL, July, 1906.
[2] Interdepartmental Committee on Physical Deterioration.

that we must exercise some degree of caution before we can regard as proved what Dr. Still has told us of the teaching of Dr. Ramskill and Sir William Gowers on the intimate relationship between dental disease and the incidence of epileptic fits. Next I wish to make a few remarks on the relation between dental disease and physical development. For a considerable period last year I was engaged in making a detailed examination of the mouths and teeth of the children in a representative London County Council school—namely, the Michael Faraday school in Walworth. I designed certain charts for the purpose, which not only displayed the exact condition of the teeth but also recorded the physical development of the children as shown by height and weight, and carefully going over these charts and comparing the amount of dental disease with the height and weight, and compared with that of the average of the children born in the corresponding year, I found that in the vast majority of cases those with the worst teeth showed a proportionally bad physical development. Next I endeavoured to find the relationship, if any, between the worst dental cases and their intellectual attainments as shown by their position in the school. For the purpose I selected the worst cases of oral sepsis, and sent their names to the head master of the school asking him to let me know the position of these children as compared with the average ones—that is to say, those born in the same year. Mr. Marshal Jackman, the head master, to whom I applied, gave me every assistance, and supplied me with the information, with the result that I found that in nearly every case these children were below the average, several of them being as much as two standards below their proper position. These observations seem to me to show clearly the necessity of proper attention to the dental condition of the children if we desire to improve their physical and intellectual condition.

Mr. Sidney Spokes (London) said: With respect to the incidence of hypoplasia, I published some years ago statistics which satisfied me that amongst children who were better fed during the first three years of life there were fewer cases than amongst the very poor who were found in parochial schools afterwards. The records also showed that in the majority of cases the upper lateral incisors escaped, thus proving that the calcification of the canine commenced before that of the lateral. In the case of the more rarely-found hypoplasia of the temporary teeth, it has seemed to me that the excessive vomiting of pregnancy sometimes met with might be a possible factor. With regard to the modern fashion of white bread, if it is true that the baker is able to obtain a larger number of loaves from a sack of flour ground with steel rollers, it seems hopeless to expect him to encourage the use of bread made from stone-ground flour. With regard to treatment, Dr. Still and others complain that dental surgeons are averse from the removal of decayed teeth. I think I may assure them that amongst those of us who take a wider view of disease than the saving of one or even many teeth provides, there is a strong feeling in favour of extraction whenever there seems a probability or even a possibility of danger to the general health of the patient. At the same time it is only right to say that in many cases the temporary teeth may be made safe and functional by "stopping," and in the case of superficial decay by the use of nitrate of silver. I agree with the view expressed, I think by Mr. Turner, that the dentine of temporary teeth is, as a rule, far less sensitive than that of permanent teeth, and this permits of the extraction necessary for inserting "stoppings." As to prevention, I have long held that the greatest mischief is done during sleep, and the teeth should at least be sent to bed clean. The early discovery and prompt treatment of decay can only be secured by systematic periodic examination with dental mirror and probe, and if the teeth can be kept under control until adult age is reached, it is frequently found that the tendency to decay is very considerably modified.

Mr. F. Coleman (London) said: The subject of children's teeth brought forward at this meeting opens up such a large subject that I should like to confine my remarks to a few points. The subject of the feeding of children has been fully gone into both by Mr. Edmund Owen and others. In young children up to the age of 8 years or so living in poor districts and under bad hygienic conditions the lymphatic glands are frequently found enlarged in association with carious teeth. How many of these lymphatic glands were tuberculous or ultimately became so it would be interesting to know; however, most of these patients were referred to a physician after their mouths had been put into a fair condition of healthiness. I found that among young children attending at a London hospital the cervical lymphatic glands were enlarged in over 90 per cent. of the cases, and were almost invariably palpable. Dr. Still mentioned habit-spasm in which irritation of the nose, eyelids, blepharitis were associated with carious teeth. I should like to throw out the suggestion whether the irritation of the nose and eyelids may not have been due to a staphylococcic infection from the mouth through scratching these parts after the child has previously put his fingers into the mouth. I am quite in agreement with Mr. Owen, Mr. Turner, Mr. Goadby, and others as to the importance of extracting all carious teeth causing pathological changes in the tissues around. In fact, it is doubtful how far the saving of pulpless teeth should be carried, seeing how invariably the tissues around them are in a diseased condition—for example, chronic periostitis, osteitis, sinuses, etc.

Mr. J. F. Colyer (London) said: In my small contribution to the discussion of this important topic I am going to confine myself mainly to the question of treatment. With the various speakers I entirely agree that much may be done by periodical visits to the dental surgeon and timely filling of cavities, etc. Speaking from a general point of view, the tendency, I think, has been for the general practitioner to underrate and the dental practitioner to overrate the value of the teeth. The most important point to keep in view is that children's mouths must be rendered functional, and if that is done they will probably be kept clean. First, then, I would insist upon the importance of proper nasal breathing. Oral breathing tends to persistent gingivitis of the gums in the front of the mouth, with the sequelae—caries, suppuration, etc. In the past the part played by oral breathing in the production of a dirty mouth has been underestimated; but of the important part nasal breathing plays in rendering the mouth functional there can be but little doubt. I might mention in this place a sign of mouth-breathing that is often overlooked—I mean a slight gingivitis of the gums covering the incisors, the gums at the back of the mouth being healthy. I regard this sign as almost diagnostic of mouth-breathing. With regard to conservative treatment, much may be done by filling providing the pulp of the tooth is not exposed. In cases where the pulp cavity is exposed I am inclined to think that extraction is nearly always the better line of treatment. Indeed the only instances when one is inclined to adopt conservative treatment are in the cases of second deciduous molars in children under the age of 6—in other words, in cases where the first permanent molars have not erupted. I fully appreciate the fact that the large majority of practitioners do not agree with such radical treatment, but the impossibility of thoroughly treating pulp chambers in children and all too frequent subsequent suppuration incline me to the opinion that by extraction we are more likely to ensure the mouth being rendered functional. The cases, however, which demand most serious consideration are those so commonly seen in hospital practice, where child after child is brought for treatment with the majority of the deciduous molars hopeless wrecks. If the first permanent molars are in position, the best treatment seems to be the removal of all the deciduous molars. This has the advantage of removing all sources of sepsis and of isolating the first molar—a point, to my mind, of the greatest importance when one considers the value of this tooth in mastication. I do not hesitate to remove sound deciduous molars if their antagonists have been removed. Perhaps I can make my view more clear by giving one example. Suppose the right maxillary deciduous molars and the left mandibular molars are unsaveable and their removal is called for, then the remaining teeth—namely, the right mandibular and the left maxillary molars—are rendered functionless and can serve but little good purpose; indeed they will harbour food, and so prevent the mouth being kept naturally clean. The removal, then, of all deciduous teeth not functional is called for if we hope to render the mouths of children clean. It will be urged that such treatment robs the child of masticating power, but such teeth are useless as far as the function of mastication goes, indeed they render the first permanent

molars functionless, because a child with tender teeth "bolts" its food and cannot chew. It will be urged that the removal of the deciduous molars allows the first permanent molars to come forward, and so cause in the future crowding of the anterior teeth. With regard to this I would point out that such travelling forward of the permanent teeth occurs mainly in mouths where the growth of jaws is interfered with by want of function either due to insufficient mastication or lack of nasal breathing. From observation—but I express myself guardedly in this respect—I am inclined to think that if by removing the deciduous molars you can render the first molars functional, the growth of the jaw will be stimulated, and room made for the development of the second and third molars, with no forward pressure from these teeth, and, with the first molars occluding correctly, there will be little if any forward movement. But granting that the treatment of extraction suggested does cause a moving forward and subsequent crowding, the removal of four teeth will easily alleviate the condition. One has to weigh in the balance the loss of four teeth against the constant presence of oral sepsis and all its sequelae. In my opinion the former far outweighs the latter. Still further, one must always remember that even if the deciduous molars were retained with the object of preventing the moving forward of the molars, it is more than possible that the removal of both to relieve crowding would be required, as in such an individual some interference with the development of the jaws would probably have taken place. In children, where the first molars have not erupted, the removal of the sound antagonistic teeth should be retained until the permanent teeth have erupted, but no hesitation should be made about the removal of deciduous teeth that cannot be rendered aseptic. In cases where the deciduous teeth are decaying on all surfaces, such as occurs from the sucking of sugar bags or the constant presence of an easily fermentable carbohydrate on the surfaces of teeth, a considerable improvement can be obtained by careful regulating of the diet and cleansing of the teeth combined with local treatment of the teeth. For the latter purpose no drug acts better than nitrate of silver, and this should be applied to all the carious surfaces at least once a week until the denture shows signs of hardening. The arrest of the condition can also be applied by the regular use by the parents of spirits of wine and an alkali. I do not think that the public fully appreciate the important part diseased teeth play in physical deterioration. The outlook is, however, not so black as some would lead us to believe; the deterioration has been rapid during the last forty years, but now we are beginning to look for and find causes, and adopting more rational treatment, I believe the improvement will be just as rapid. It is a deterioration and not a degeneration.

Mr. J. H. Gibbs (Edinburgh) said that in the Physiological Department of the University of Edinburgh Professor Schäfer had initiated an investigation into the influence of diet on the nutrition of rats. In general the result was to show that an improper diet produced in these animals most striking changes in practically all the organs excepting the teeth, which macroscopically and microscopically might be said to have suffered no detriment. Hence the question was raised as to the proportion of improperly-fed children who showed evidence of this in their teeth later on. The speaker was at one time inclined to believe that the proportion was a large one, but possibly this was not so. When one came across patients with well-formed dental tissues one was not so likely to ask questions as to the early life of the patient. Possibly some members who were attached to children's hospitals might find it of interest to collect evidence on this question.

Mr. Bennett, whilst in agreement with much that the reader of the paper had said, to the effect that hypoplasia resulted in the production of fissures, and was an active cause of dental caries, thought that by far the most important factor in the production of caries was local acidity. He disagreed with the practice of wholesale removal of teeth for the relief of caries. He considered it was the province of the modern dentist to save the teeth, and to spare no effort to discover by research the exact causes of decay, to find means to restore the teeth to usefulness, and by instruction to parents to give more attention to the cleansing of the teeth of their children. In very young children it might be advisable to apply to the teeth for the purpose of neutralizing any acid a paste of precipitate of chalk 5 or 6 parts to 1 of gum tragacanth, this to be rubbed with the fingers between the teeth at night time, and brushed away in the morning.

Mr. Lewin Payne (London) said that he wished to refer briefly to three points in the subject under discussion. In the first place, the greatest stress should be laid on the importance of investigating and treating the mouth and teeth of children very early in life. Whilst much had been accomplished and was still being carried out in inquiring into the teeth of school children, statistics had abundantly proved that in most cases by the time a child had reached the age of school life the mischief had begun and in many cases was well advanced. To deal with this question at all effectively it was necessary to consider not merely the condition of the mouth in infancy, but also the whole history of the intrauterine development of the teeth. Then in connexion with hypoplasia of the teeth, to which Mr. Turner referred somewhat fully in his opening remarks, it was well to emphasize the essential difference between the hypoplasia of the so-called "stomatitic" or "mercurial" tooth and the hypoplasic teeth of syphilitic and acute inflammatory origin. In the one case the tooth had its enamel defective to a greater or less extent, and ordinarily the dentine was involved only to a slight degree, whilst in general form and shape the tooth might be well developed; but in the case of the true syphilitic tooth one found a tooth not only structurally defective with regard to its dentine and enamel, but in its whole form and shape that of a stunted, ill-developed tooth of feeble implantation. He believed that in the case of the so-called "stomatitic" tooth the trouble arose from a general condition affecting the tooth subsequent to the commencement of calcification, but prior to the complete formation of the tooth. The stratified manner in which these teeth were affected, with lines in different teeth corresponding with the dates at which calcification proceeded, seemed to indicate that this was so. That the "stomatitic" tooth was not confined to the permanent series could be proved by the specimens of temporary teeth to be seen in the Dental Section of the annual Pathological Museum. In regard to treatment, Mr. Payne said temporary teeth had been far too much neglected in the past. They required the same amount of attention as the permanent series of teeth. Reference had already been made to the tendency of dental surgeons to carry conservative principles too far, and there was little doubt that a more radical treatment would in many cases be far more beneficial to the child. In conclusion, he urged that the functional activity of both jaws and teeth should be maintained if possible, but that in any case the mouth should be kept free from oral sepsis.

Mr. Russell Barrett said: I have nothing much to say on this subject, as everything has already been said by previous speakers. I was particularly struck with the fact that neither of the readers of the papers made any allusion to the condition of the mother whilst the child was *in utero*. The development of the fetus must of necessity have a great influence on the temporary teeth, and if the temporary teeth are imperfect and decay early, the permanent teeth are bound to suffer. To my mind, the cause of caries in children's teeth is nearly always due to improper feeding, especially in the first two years of life. At the Royal Dental Hospital of London Mr. Turner and I, on making inquiries from the mothers, nearly always found that the children with especially bad teeth had been artificially fed. The treatment of caries in children has been a great difficulty, and for years I have practically only striven to save the second deciduous molar. We were taught that the retention of the temporary teeth was of great importance in avoiding irregularities of the permanent teeth, and I cannot quite forget that teaching. Although I quite agree with Mr. Colyer that the extraction of diseased teeth is very necessary under certain circumstances, still I cannot go as far as he does in advising the wholesale extraction of temporary teeth. It must be very difficult to find a child of 3 or 4 years of age who has only the four incisors in both jaws, and I still think that a number of diseased temporary teeth can be properly filled and saved.

Mr. James Milligan (Manchester) said: While natural feeding of infants by the mother is desirable for the sake

of dentition, still we must recognize that a large proportion of mothers are physically unable to provide the human milk, and they are driven to adopt some other form of nourishment. Mr. Owen mentioned that the sterilization of cow's milk destroys a living something which is essential to the well-being of an infant. What this substance or germ is we do not know; but if sterilized milk must be used, then some other organic ingredient should occasionally be given to the child, such as ripe orange juice; this may be administered midway between meals, so that the acid may not coagulate the milk too rapidly in the stomach. The first factor present in the production of dental decay in young children is often the septic surface around the point of eruption of a milk tooth. A surface over an erupting temporary tooth should always be cleaned with an alkaline preparation, such as hydrate of magnesia. While the task of treating the teeth of school children is almost insurmountable, we have a more favourable field in preventing decay in younger children by attention to healthy feeding and cleansing. Children may be given fruit, such as apples, as soon as all the temporary teeth are erupted sufficiently for good antagonism; the acid in such fruit is cleansing to the enamel, and does not have a solvent action on it.

Mr. G. A. Peake (Cheltenham) was entirely in agreement with the methods of treatment outlined by Mr. Turner and Mr. Colyer, and he was of the opinion that most dental surgeons also shared these opinions. One instance of a family who appeared remarkably prone to dental caries had for a long time puzzled him. The teeth were frequently decaying, and the saliva was always viscid and slimy. Only one of the family did not show the tendency to caries, and he was for the most part engaged away from home at school and coaching. Eventually it appeared that the entire family were in the habit of eating biscuits instead of bread at practically all their meals, with the one exception of the boy. Evidently the biscuits were responsible for the carious condition of the individuals' mouths.

Mr. J. M. Ackland (President) said the slides they had seen in connexion with this discussion were most excellent, and had served in an especial manner to demonstrate the ravages caused by hypoplasia and decay in children's teeth. He quite agreed that all teeth that could not be rendered thoroughly aseptic and stopped, and so made fit for use, should be extracted; but he was not able to follow those who advocated wholesale extraction of sound as well as unsound temporary teeth, when they run the risk of a mouth not being itself aseptic. He considered that to leave a child—say, of 4 or 5—edentulous must be to lessen that child's chances in many ways; and further, from the want of use, the gums would be less likely to develop, and so raise many difficulties when the permanent teeth came to be erupted. This question of the deterioration of the teeth was a very serious one, and would have to be faced sooner or later. There was little doubt that many cases of gastritis were due to diseased teeth and faulty mastication. The object of the dental surgeon should be to see not only that the teeth themselves were sound, but that the mouth itself was kept in a clean and proper condition. There was little doubt that as civilization had increased teeth had deteriorated, and one result of the use of highly-prepared flour instead of the old-fashioned whole-meal, stone ground stuff was seen in defective teeth. Again, the mouth could not be kept aseptic unless they had nasal breathing. With regard to the feeding of infants, no artificial food could ever take the place of the natural, and here in a great measure lay the root of the evil. He was surprised to hear so little said about the feeding of the mother during the state of pregnancy and whilst suckling the child.

Reply.

In the absence of Dr. G. F. Still and Mr. Edmund Owen, the other openers of the discussion, the President called upon Mr. J. G. Turner to reply to the discussion. Mr. J. G. Turner said that the discussion appeared to have raised two main questions: the food of children, and the method of treatment of carious deciduous teeth and the inflammation of the mouth arising therefrom. Regarding treatment, he still adhered to the axiom stated in his paper, namely, that whenever a temporary tooth could not be rendered painless and aseptic, such a tooth should be extracted. Mr. J. F. Colyer had also suggested that a tooth that had ceased to function should be removed, especially when there was a possibility of its causing lodgement of food and imperilling a permanent tooth. With this he was in entire agreement, as a functionless tooth at once became a dirty tooth. At times, however, such a tooth might bite against the gums, and so to some extent function, then it might not be a dirty tooth. There was no difficulty in feeding a child, even when all all the temporary teeth had disappeared and only the first molars remained; such a child was in infinitely a better position than a child with even three or four roots of temporary teeth. Experience justified the treatment advocated, and the subsequent development of the child was improved by measures at first sight, perhaps, appearing drastic; but, as Mr. Colyer said, it was a question of cleanliness *v.* appearance, or even some slight ultimate alteration of the permanent teeth, and the question of cleanliness far outshadowed any other consideration. He had maintained that the development of the teeth *was* associated with the maternal feeding from the date of conception. It was also, no doubt, a fact that sterilized milk without any fresh diet could produce a condition favourable to hypoplasia. Mr. Gibbs mentioned Professor Schäfer's experiments, and it was strange that though the animals were very ill, their teeth were not affected, but it was often the case with animals suffering from rickets the bones were altered, but the teeth did not suffer. The other line along which the discussion had developed—the relation of diseases of the stomach to carious teeth—showed that there was a suspicion. perhaps more in the minds of many physicians, that derangements of the stomach caused dental caries; but how was this obtained? Was it due to eructation of acid? If so, the quantity eructated must be very large—large enough, in fact, to produce profound pathological changes in the pharynx, as mild acids, such as existed in lemonade, etc., acted as deterrents to bacterial growth, and so dental caries. Was it due to alterations in phagocytosis? If so, the neck of the tooth only would be affected, and caries of the crowns of teeth was the most common position for decay. Was the salivary secretion altered or the salivary glands affected? If so, in what manner, in what degree, and how did such hypothetical alteration affect dental caries? The onus of proof of such general statements rested with those who made them, especially with our knowledge of the process and pathology of dental caries. Finally, he was inclined to regard the anaemia described by Mr. Baker as secondary to the mouth affection.

NOTES ON SOME CASES OF NEURALGIA.

By W. R. Ackland, M.R.C.S., L.D.S.,
Bristol.

I am bringing to your notice a few of the cases of neuralgia, or referred pain, that come under one's notice in an ordinary dental practice.

It will be noted that most of them exhibited other reflex symptoms as well. Still, the cause of the patient seeking my aid was the neuralgia; the connexion of the other troubles was not suspected in most cases. For convenience I have divided them into three classes: (1) Those in which the pain in one tooth was referred to another; (2) neuralgias and remote affections due to dental irritation; (3) pains in the teeth due to affections of other parts.

Class I.

I make but the briefest reference to those cases we meet with every day in which the pain is referred by the patient to one tooth when the cause is obviously another.

I simply sum them up by saying pain caused by one tooth may be referred to any other tooth of the same side, but it never crosses from one side to the other. It may be referred, for instance, from the lower jaw to the upper, or from the upper to the lower of the same side, or from one tooth to another in the same jaw of the same side; and in these latter cases, in my experience, the pain is generally referred forward. There is no doubt in my mind that the localization of pain by the patient is greatly helped by the tongue finding a cavity, and by the irritation of food entering that cavity.

I note that in many cases where the patient complains of the wrong tooth the decay in the offending tooth is

interstitial and has not reached the stage where the crown breaks in and the tongue finds the cavity. In fact, the patient has not suspected its existence.

CLASS II.—NEURALGIAS AND REMOTE AFFECTIONS DUE TO DENTAL IRRITATION.

CASE I. *Supraorbital and Infraorbital Neuralgia and Photophobia.*—This was in a man aged 30. Occurred on right side, and coincided with exposed nerves in upper lateral incisor, canine, and first molar. The bicuspid region was occupied by septic stumps. Treatment of the teeth cured both the neuralgia and the eye symptoms.

CASE II. *Supraorbital and Ocular Neuralgia Accompanied at Times by Photophobia and Amaurosis followed by Discolorization of the Iris, which lasted Fifteen Years.*—The patient was a female, aged 32. The side affected was the left, and the dental condition was as follows: Artificial crowns on incisor, canine, and first bicuspid roots; the right eye was normal, the iris blue or grey; the left iris was of a browny or muddy shade, and its movements were sluggish. The teeth whose roots were crowned had apparently decayed rapidly at the age of 15 through overcrowding and irregularity. From that time the patient was subject to occasional bad bouts of neuralgia and eye trouble. The stumps were ultimately crowned, and as no local troubles made their removal an obvious necessity, they were retained for some years even after she became my patient. Periostitis finally attacked them and I removed them. From that time there has been no neuralgia, and, what is most remarkable, the muddy iris gradually cleared up, and to-day, ten years later, there is no difference between the two eyes whatever, though, as far as I can gather, it had been an obvious characteristic for fifteen years or more.

CASE III *Neuralgia (Supraorbital and Infraorbital) accompanied by Swelling of the Optic Disc.*—This deserves special mention because the patient was a well-known member of the profession, Mr. Pagan Lowe of Bath, who kindly allows me to mention his name. The neuralgia followed the crowning of an upper lateral incisor, and immediately subsided when the crown and root were removed. Mr. Pagan Lowe consulted a colleague who discovered the commencing optic neuritis. The vision was reduced from D. 5 to D. 9, and only two rows of letters were readable. Within an hour or two of the extraction the vision returned to its original condition.

CASE IV. *Neuralgia (Supraorbital, Infraorbital and Ocular) accompanied by Myopia.*—Boy, aged 14. The impairment of vision was sufficient to apparently spoil his chances for the army. The official limit is, I believe, $\frac{6}{24}$ and he had only $\frac{6}{36}$. The patient's teeth had been neglected and he had exposed nerves in incisors and bicuspid region. I took him in hand without any knowledge of the eye trouble and set his teeth in order. The sight improved, the neuralgia disappeared, and he got into Sandhurst.

CASE V. *Cases of Otalgia are common, but one accompanied by impairment of hearing* is well worth recording. The patient, a man, aged 37, came to me with a badly decayed lower wisdom tooth (right side) which I removed, and the earache disappeared. A few days later he came to me on purpose to tell me that he had been under treatment for deafness of that side, which had also disappeared.

CASE VI. *Neuralgia in Superior Laryngeal and Hyoid Area* (I refer to Head's segmental areas) *accompanied by throat pain and inflammation extending over two years.* The patient was a female, aged 29. Her medical man discovered a sinus leading apparently to a buried right lower wisdom tooth. He sent her to me to have it extracted and a cure followed.

CASE VII. *Neuralgia in Temporal, Mandibular, and Mental Areas, accompanied by most terrible Depression*, occurred in a sister of the foregoing, caused apparently by impaction of lower wisdom teeth against the roots of the second molars. First the symptoms occurred on the left side, and after an interval we had all the trouble over again on the right. There was no sign of the wisdoms, but their position was clearly defined by the *x* rays. Extraction of second molar on left and wisdom on right relieved.

CASE VIII. *Fronto-nasal Neuralgia with Tenderness to Cold Air in Breathing through Right Nostril.*—The patient, a man about 50, had apparently lost all his teeth, and the gums looked healthy. However, after a few attempts, we got a radiograph which seemed to show the apex of a canine root. I should like to note that I injected the gum freely with a local anaesthetic all around the suspected area, and was enabled to dig for the root quite painlessly and deliberately, and with little haemorrhage.

CASE IX. *Gustatory Neuralgia*, caused by impacted lower wisdom.

CASE X. *Neuralgia over Clavicle*, caused by lower bicuspid.

CASE XI. *Neuralgia down Arm and in Leg*, due to lower molar. This patient, a female, was suffering from neuritis. She thinks that the neuralgia caused by the tooth went as far as her knee, but I only have her impression to go upon, and I know of no other case.

CLASS III.—DENTAL PAINS DUE TO AFFECTION OF OTHER PARTS.

CASE I. *This was a Case of Tic Douloureux or Neuralgia Major.*—The patient was a dock labourer aged 38, a steady fellow as far as I could make out, and of very powerful physique. He came to me at the Bristol Royal Infirmary; apparently one sound tooth after another had been extracted till the right side of both jaws was edentulous; of course the pain was just as bad as ever. I found the attacks, which had been pretty frequent for about four years dated from an accident in which he fell and cut the back of his head on a railway metal. There was a nasty scar across the right occipital area. After trying various drugs in vain, we found that antipyrin and T. gelsemium formed the combination which gave him relief. We were considering the question of removal of the ganglion, but the man disappeared. I subsequently found that Anstie, in his book, *Neuralgia and Its Counterfeits*, mentions a similar case, in which the great occipital nerve was probably injured, as I suspected in this.

I have noted many cases in which toothache has been caused by a catarrhal condition of the antrum, and I read a paper on the subject some years ago before the Odontological Society of London. In the original case which I recorded I was myself the sufferer. During the progress of an obstinate nasal catarrh—in the thick muco-purulent stage—I got pain along the teeth of one or both upper jaws (according to the condition of the nasal mucous membrane of the sides), which was made worse by the forcible use of the handkerchief. The exacerbation induced by the blowing gradually subsided to the level of the old gnawing ache along the teeth. Remembering the distribution of the nerve filaments to the upper teeth, which takes place in the antral walls, it was easy to deduce that the catarrhal inflammation, if it invaded the antrum, was likely to irritate them. The mucous membrane had swelled and made the antral orifice into a sort of valve, which yielded only to the increased pressure of blowing, and hence the increase of pain caused by using the handkerchief.

It is worthy of note that in certain diseases of the eye, such as chronic glaucoma and iritis, the teeth of the upper jaw of that side may become tender, but I have no experience of such cases.

DISCUSSION.

Mr. F. J. BENNETT regarded the majority of cases of implication of the eye in dental affections as either toxic or due to the spread of inflammation by continuity of tissue, and in the majority of the cases cited by Mr. Ackland it was difficult to negative such a suggestion.

Mr. COLYER (London) said he would like to read the paper carefully before expressing any definite opinion. He thought that the relation between teeth and eyes was more often septic than reflex. He referred to pain of a persistent character over the malar region due to a local septic periodontitis between the second and third molar teeth. Reference was also made to the persistent neuralgia due to osteitis following the removal of septic teeth.

Mr. J. G. TURNER (London) said the neuralgia of the edentulous was the same as neuralgia of septic osteitis. In bad and persistent cases there might be swelling of parts to which neuralgia was referred. There might be an analogy here to change of colour in the iris, or to deafness due perhaps to reflex hyperaemia of the middle ear.

Mr. A. W. BAKER (Dublin) mentioned a case of acute paroxysmal uterine pain brought on any time a tooth was touched, and entirely cured by the removal of the tooth.

Mr. K. W. GOADBY (London) cited a case of swelling of the optic disc associated with catarrhal inflammation of the antrum of Highmore.

Mr. RUSSELL BARRETT said he had seen a case of proptosis cured immediately on the removal of a tooth.

Mr. F. COLEMAN (London) said: Iritis following retention of upper roots which were subsequently crowned, appears comparable to Mr. Howard Marsh's cases of suppuration in joints traced to crowned septic roots which cleared up after the removal of these roots. The relation of myopia to carious teeth is difficult to explain in Mr. Ackland's case. Pain in the ear from carious lower molars may have a developmental origin; part of the internal ear and mandible are developed from the first branchial arch, the fifth nerve of which is the segmental nerve of this arch; these cases may be compared to the pain over the anterior abdominal wall in the region of the umbilicus from an inflamed appendix, the pain being referred to the segmental region in which the appendix is developed. He related a case of pain and tenderness in region of antrum following a nasal catarrh; it was evidently due to the extension of the inflammation from the nose to the antrum; this trouble cleared up with the clearing up of the nasal catarrh. In this case there was no dental cause for the tenderness over the antrum. This case presented points much like Mr. Ackland's case.

Mr. W. R. ACKLAND, in reply, said: Mr. F. Bennett could scarcely explain the case I quoted of Dr. Pagan Lowe, which got well in half an hour, on the toxic theory. I am greatly interested in Mr. Goadby's case, which showed the connexion between antral suppuration and optic disc disturbances. Mr. J. F. Colyer complains that I did not give reasons for holding that these cases are reflex, but neither does he for holding the toxic theory; and as I had previously pointed out, it would be difficult to explain some

cases on this basis. Still I do admit the muddy iris was probably toxic in origin. Dr. Head certainly holds strongly the reflex theory. Mr. Turner wondered what was the cause of swelling which took place frequently in the referred areas. Mr. Milligan thought perhaps the pain in the case of a tooth which got tender during neuralgia required a similar explanation. May it not be due to the sympathetic nerves or vaso-dilators?

DIFFICULT ERUPTION OF THE THIRD MOLAR.

By Arthur W. W. Baker, M.D., F.R.C.S.I.,

M. Dent. Sc., Hon. Causâ, Univ. Dubl.,

University Examiner in Dental Surgery.

The difficulties that attend the eruption of the third molar, more particularly in the lower jaw, are frequently presented to the notice of dental surgeons, both in hospital and private practice. As our ideas with regard to the etiology and treatment of these cases are largely based on the observations of the late Mr. Salter, I think, perhaps, that a brief expression of his views will best place our present standpoint before you. I quote from his work on dental pathology and surgery:

The frequent disproportion that exists between the size of the teeth and the jaws which hold them not only produces an irregularity of the teeth in the front of the mouth, but often leaves so small a space for the last molar, the dens sapientiae, that its advent is postponed or may be perverted for a long period, and the repeated efforts at evolution become the cause of much suffering and even serious illness. In these cases the wisdom teeth, especially those of the lower jaw, have so little room that the front cusps of the teeth are frequently the only parts which are visible, the remaining portion of the tooth being covered by the mucous membrane where it passes up the ascending ramus and is reflected to the jaw and cheek; the imperfect room for the wisdom teeth, thus holding them back in their bony bed, also perverts their direction of growth and dislocates them. The painful symptoms which attend the cutting of the upper wisdom teeth when there is insufficient room are trivial to those which occur in similar conditions in the lower. In the upper jaw the wisdom teeth when misplaced are usually either directed backwards or outwards or in both directions combined. When the tooth points backwards, every time the mouth is closed its crown comes in contact with the mucous membrane about the base of the coronoid process. When the direction is outwards, which is more common, the tooth projects into the cheek, and when the jaws are brought together a portion of the mucous membrane in this region is nipped and pinched; this causes much pain, the surface ulcerates and is extremely tender. The submucous tissue becomes infiltrated and stiff and hard as well as painful. Beyond this the symptoms occasioned by the wisdom tooth in the upper jaw very seldom extend, and the removal of the tooth is always followed by complete and immediate relief.

That the foregoing account, in the vast majority of cases is correct, I am quite prepared to admit, but two cases have come under my notice where the symptoms cannot be explained completely by Mr. Salter's hypothesis and which suggest that we attach too much importance to overcrowding and consequent pressure in the production of pain in these cases, and that we are still lacking information as to the causes which impel a tooth to the surface. Precise knowledge on this last point would in all probability modify our views and practice. In illustration of what I have said I propose to place before you the particulars of the two cases to which I have already referred.

Case I.

A couple of years ago a young woman, aged 24, was sent up from the country to the Dental Hospital in Dublin about the end of July. She was complaining of pain and difficulty in opening her mouth; this it was thought might be due to the condition of the right lower second molar, which was the seat of abscess. As all the teeth were extensively decayed, and the patient intended getting in artificial teeth, they were all removed under an anaesthetic. The patient then went back to the country till the middle of October, when she returned to the hospital, and I saw her for the first time. She then complained of severe pain, and a good deal of swelling could be observed in the region of the socket of the second right lower molar. As there had been an abscess here, I came to the conclusion that the conditions then present were most likely due to some necrosis of the socket; it was accordingly syringed out carefully, the patient given a mouthwash containing an antiseptic, and advised to wait. At the end of two months she returned complaining of pain and difficulty in sleeping. On examining the socket of the second right lower molar carefully with a probe, I detected something which could only be enamel. The patient was at once placed under gas, and with an elevator I dislodged the unerupted wisdom tooth. This gave complete relief to all her troubles in a short time. Here, although the second molar had been removed, the wisdom tooth failed to erupt; it was scarcely overdue, not crowded out, and in a perfectly normal position.

Case II.

The second case was that of a young gentleman, aged 20, who came to me in November, 1899, complaining of a severe form of neuralgia. He stated that he became affected first about two years previously after an unusually early bathe at Easter. At first the pain was of an intermittent character; coming on about every third day, it would gradually increase in intensity and then die away. The pain then came on with intervals of about an hour between the attacks; he had occasionally pain at night. A year later the pain came on in more intense paroxysms but of shorter duration. He improved for a time when under treatment with electricity by a doctor in the country, but shortly before coming to me the pain returned with greater severity than before. His troubles usually began in the morning, after waking, by any muscular movements of the jaw; he got through his breakfast with difficulty, but improved towards the middle of the day. Light touches rather than heavy ones on the jaw at certain points were sufficient to bring on a paroxysm; after the paroxysm was over he could touch these spots with impunity. One of these spots was the protuberance in the lower jaw where the wisdom tooth afterwards erupted. The patient was always able to foretell a paroxysm by a feeling of dryness and stiffness of the lips and a sensation of tingling down his arms and legs.

The pain was referred to all the usual sites—infraorbital, supraorbital, parietal eminence, just in front of the ear and along the body of the lower jaw. The patient stated that it generally commenced in the left upper canine and travelled backwards to a spot in front of the ear, but occasionally appeared in the other foci I have mentioned. I examined this patient very carefully and took models of the left halves of his upper and lower jaws; the first and second molars both of the upper and lower jaws had been removed. By comparison with his other teeth, and from what he told me, they must have been fairly sound; they were extracted with a view to relieving his neuralgia; the remaining teeth were unusually well-formed and apparently quite sound.

I must confess that I was completely at a loss to account for his neuralgia, and quite overlooked what was probably the real cause. The signs and symptoms pointed to an affection of the second and third divisions of the fifth nerve, and as far as I could see there was nothing to account for it. A consultation with his medical adviser revealed nothing of any importance; we were driven to a diagnosis of neuralgia, and tried various remedies without relieving our patient to any appreciable extent. About six months after I had first seen him the left lower third molar began to appear, when by freely lancing the gum I afforded him some relief; I subsequently removed a tough flap of gum over the tooth, and hoped that it would enable it to erupt without further trouble. Finally, however, during my absence on a summer holiday, my assistant extracted the tooth.

In November, 1900, this patient returned to me, and I find the following note in my casebook: For about a month after the extraction of the lower wisdom tooth he was free from pain, but three weeks ago it returned in the upper jaw. To-day the upper lip was swollen and dry, the gums painful on pressure; most of the upper teeth were painful on percussion, pain on light pressure up the side of the nose. Bowels at present constipated, foul tongue; changes of temperature do not seem to affect him much, but any sudden movement of muscles on the left side brings on pain, therefore when talking he keeps the muscles of the left side curiously rigid.

I lost sight of this patient again for some time, but eventually he turned up and informed me that he still suffered from neuralgia, but I fancy not quite so severely as formerly. The upper wisdom tooth was erupted as far as its masticatory surface. He declined my suggestion to remove it, preferring to keep his neuralgia to parting with his last molar, although it was practically useless to him.

I think that there can be little doubt but that the eruption of the wisdom teeth was the cause of the pain in this case, and, viewing it by the light of recent experience, a skiagram of both jaws in the first instance might have located the source of the trouble, but eight years ago *x* rays had not the place in our armamentarium that they have to-day when their indications may be safely relied upon.

I also feel that I may be very justly censured for not recognizing the possibility of the wisdom teeth being the *fons et origo malis*. But I would urge that the age of the patient—namely, 20—did not point to the teeth being unduly retarded, as the wisdom teeth may erupt any time between the 18th and 25th years. By this I mean that if

my patient had been 10 years older, the fact of the wisdom teeth not being there, without any history of their removal, would have led me to suspect that some cause, such as malposition, was delaying their eruption. Also the distribution of the pain pointed more to the upper jaw than the lower, and while I was aware of the possibilities of the lower wisdom teeth in the direction of painful eruption, the rarity of a similar condition in the upper jaw practically put it out of court. Moreover, as all the other molars had been removed there was no obvious mechanical difficulty in the way of the wisdom teeth erupting.

In conclusion, I would urge that in our textbooks too much stress is laid upon the occurrence of crowding as a factor in the difficult eruption of wisdom teeth, for in both these cases the second molars had been removed; and, further, that the suggested treatment of these cases—namely, the removal of the second molar in place of the wisdom (I refer to the lower jaw)—is of doubtful benefit to the patient, unless, of course, when for mechanical reasons it is impossible to remove the wisdom tooth without the preliminary extraction of the second molar. Malposition of the tooth was not a condition in either of these cases, and in a case which I have reported elsewhere I have shown that it is quite possible to have suppuration and a burrowing abscess in connexion with an overdue bicuspid which had no teeth posterior to it to hinder its eruption, and where the position of the tooth was perfectly normal.

While I feel that this communication is imperfect, inasmuch as I am unable to suggest an alternative explanation to that of crowding and pressure, still I think it is better to point out where our present theories do not agree with the phenomena before us, and so clear the ground for further investigation.

DISCUSSION.

Mr. Colyer (London) was in complete agreement with Dr. Baker that misplaced third mandibular molars were not always due to crowding but to some other deeper cause. He referred to specimens in the museum of the Odontological Society, one of a gorilla with two supernumerary teeth in the ascending ramus, and one from the human subject with the third molar emptying in the sigmoid notch on the one side and well up in the ascending ramus on the other side. He thought the explanation might be found in an abnormal continuation backwards of the tooth band.

Mr. Lewin Payne also referred to the point which Dr. Baker had emphasized regarding the frequency of severe pain in these cases without any apparent signs of mechanical obstruction, and he quoted a case of painful eruption of a wisdom tooth occurring in the mandible of an elderly patient where no other molars were standing. Two unsuccessful attempts to remove this tooth had already been made. Its crown, almost completely covered by the gum, was pointing obliquely forwards with its root implanted in the ascending ramus of the jaw. At the operation it was found necessary to first take away the outer wall of the socket, and even then the removal of the tooth was only effected after prolonged and strenuous manipulation. It was interesting to note the difference in the amount of pain usually experienced in difficult eruption of lower as compared with upper third molars. Although the upper third molar was frequently displaced and impacted, it was rare for its eruption to cause much discomfort, but in lower third molars serious pain was frequently observed. An important cause of this difference was to be found in the structure and vascularity of the jaws. In the maxilla on the one hand, where plenty of loose bony tissue with a free blood supply was found, trouble rarely arose; but at the junction of the rami of the mandible, where bone is dense and the blood supply limited, severe pain and suppuration are common accompaniments of impacted wisdom teeth.

Mr. J. H. Gibbs (Edinburgh) was very much interested in this subject, as he had had opportunities of seeing many cases during the past few years. He fully agreed that pressure, owing to the presence of the second molar, was not an important factor in the cause of the condition. Most of his cases had occurred in women and in the better ranks of society. He preferred a general anaesthetic, and considered that the after-treatment was of great importance.

SOME ANATOMICAL RESULTS OF EFFICIENT MASTICATION.

By F. J. Bennett, M.R.C.S., L.D.S.

Although it is true that any degree of mastication may be called efficient which suffices to prepare the food for the stomach, yet it has long been recognized that in the various races of man, in proportion as attrition has become less so defects have become greater, both in the jaws and teeth, and that use has in some way a protective action upon them. Time only allows of the briefest glance at this important subject, but I propose to show you a few specimens which present some of the characteristics of use, and to point out in what way they have been advantageous.

One of the most common results upon the jaws of efficient mastication is a large and well-shaped arch, and I suggest that it is brought about in the following way: By adult life all the grinding surfaces of the molar teeth have become bevelled, the lower ones on their outer and the upper ones on their inner surfaces, this result being due to the oblique manner in which the back teeth are erupted. As a consequence, when the opposing teeth meet they do so at such an angle that only the inner cusps of the upper and the outer cusps of the lower teeth become engaged in biting. This results in an excess of wear on corresponding parts of the teeth; in one measurement I found the wear had shortened the tooth so that the height remaining was 7 mm, as against 4 mm. on the opposite side of the tooth. As a result of this slope in the surface of the teeth an oblique thrust is given in every act of biting; and just as it is easier to thrust outwards a closely-fitting arch than to thrust it inwards, so we find the upper arch driven out more than the lower arch is driven in. In short, the lower jaw in such cases acts as an inclined plane to the upper jaw. We may therefore wisely copy Nature's plan when we use an expansion plate to widen the arch, and also grind down so much of the teeth as will give this obliquity, then the expansion will be permanent. The dental arch is not only finely developed where attrition is present, but it is better maintained throughout life, by hard wear the overlapping front teeth come to meet edge to edge, so that we rarely see that trying condition of middle life—the protruding upper incisor.

The various stages by which the altered shape of the teeth is brought about as the result of attrition is well shown in specimens such as may be seen on the table or thrown on the screen. By making a vertical section through the three molar teeth we may gauge the relative wear of each, and, knowing the age at which the first molar erupts, we may say that the excess of wear over the second molar represents six years' wear.

Passing from one to the other of the teeth in such a series one can see the gradual alteration from the developmental form to that of the acquired pattern, the result of use. There is first a smoothing-off of one or two of the cusps, then a gradual loss of the ridge and furrow. Then a laying bare of the dentine, so that what was an inaccessible fissure becomes an easily cleansed spot in an island of enamel, until by further wear dentine alone, or even secondary dentine, forms the hollowed-out surface of mastication. One notes further the perfect apposition of the worn enamel edge of one tooth with that of the next, so efficient in preventing fragments of food from being driven on to the gum. The three teeth, when seen *in situ*, seem to form one flat or hollow surface, polished by friction like the continued scouring of a rock. Such teeth may justly be called "grinders."

In viewing such specimens one is struck with the entirely altered shape which the teeth have come to acquire by the process of wear, and a question which naturally suggests itself is this: If this modified condition is more favourable to the health and preservation of the individual, why are not the teeth developed in this shape? To this one may safely reply that the teeth as developed partake of an ancestral form, in which cusps and fissures were beneficial. The habit of attrition, remote as it is, is yet too recent to have become fully inherited. In many races, however, a modified type has actually become established, in which the teeth have broader and flatter surfaces, and with but slightly-marked fissures, and thus from the very start their teeth are less

liable to disease. The beneficial effects of attrition may be seen also in the wearing away of caries and in defectively-formed teeth. In teeth which show signs of efficient mastication there is usually present, unless modified by the use of the toothbrush, a free deposit of tartar, not limited in place to the back of the lower front teeth, but, speaking generally, surrounding the necks of all the teeth upper and lower, occupying all those positions not subject to the friction of the tongue, lips, or of cheeks. It is present at a fairly young age in the temporary as well as in the permanent teeth. At that critical period when the teeth are but half erupted and the food is especially prone to lodge, we see its especial value. Compare it, for instance, with those present-day conditions in which the erupting molars are surrounded with a white line of decalcification following the gum margin. Thus the universal presence of tartar in all unprotected portions of the teeth, fissures, and crevices which have been swept away by wear into easily-cleansed surfaces seem to complete the equipment of Nature's defence.

It scarcely requires mentioning that all wearing down of the teeth of necessity implies efficient muscular and bony development and a vigorous vascular supply to the salivary and other glands of the mouth. When one sees how vastly improved these teeth have become through

Section of incisor tooth: the dark markings are cavities occupied by a *post-mortem* parasitic growth.

efficient though unconscious use, and compares them with the teeth of the present day, which by equally unconscious want of use show every sign and mark of deterioration, one can scarcely avoid the question, Can we not by a conscious effort on our part seek to restore the teeth to their more vigorous and active condition? With the examples which we have in almost every other part of the body of the beneficial effect of regular muscular training, can it be doubted that well-devised exercises will yield less benefit if applied to the jaws and muscles of mastication?

It will be noted that I have made no allusion to any increased power of resistance to disease possessed by teeth subject to attrition beyond that due to polish, to easily-cleansed surfaces, and to tartar. No allusion to any intrinsic change or improvement in dental tissues themselves when exposed by wear, for I doubt if such improvement exists, and from the following evidence: Certain of these specimens which you see on the table represent the finest types of development and efficiency both of teeth and jaws, and undoubtedly were so during life; even now to the casual glance they are without flaw. In reality they are riddled with parasitic growth. This *post-mortem* effect is revealed by close observation with the naked eye, but more readily under the microscope.

These specimens were found buried in the earth, the bodies having been subject to the very simplest method of burial—merely placed in the ground in contact with the earth, where they remained a long but unknown period, subject no doubt to many disintegrating influences previous to that of the special parasite whose destructive effect is now seen. And the point I wish to make clear, as it bears on the subject of my paper, is that the parasite has entered that very portion of the dentine, namely, that worn down by attrition, which some observers consider more resisting than elsewhere. I therefore conclude that the primary dentine undergoes no increased calcification as a result of attrition, for had it been so the *post-mortem* growth would have selected a more ready spot for entrance into the dentinal tubes.

IRREGULARITIES OF THE TEETH IN ANIMALS.

By J. F. Colyer, M.R.C.S., L.D.S.,
Dental Surgeon, Charing Cross Hospital.

Probably no part of our work as dental practitioners requires more judgement than the treatment of irregular position of the teeth. In the past our treatment has been to a great extent empirical, due to the fact that we have been sadly lacking in a knowledge of the underlying factors at work in the production of these conditions. It is satisfactory, however, to note that more attention is being given to this important question of etiology, and we may therefore hope that in the future our treatment will tend to become more rational and less empirical. With the object of ascertaining whether the irregularities of the teeth in animals would throw any light upon the problems we have to solve I have examined the series of specimens contained in the museum of the Dental Section of the Royal Society of Medicine, and, although the number of specimens is small, it is sufficient to show that irregularities of the teeth in animals probably fall into well-defined groups, and that with more material to work on some valuable facts may be obtained.

Fig. 1.

Irregularities due to Persistence of Deciduous Teeth.

The persistence of a deciduous tooth leading to irregularity of the permanent tooth is met with in the animal kingdom, and would seem to occur with greatest frequency in the Ungulata. It is interesting to note that the first illustration in the *Transactions of the Odontological Society* is a portion of the mandible of a fossil rhinoceros, showing an irregular position of the premolars due to what appears to be a persistent deciduous tooth (Fig. 1). In the Canidae and animals with long canines the deciduous canine may persist, due no doubt to the slight abnormality in the direction of eruption of the permanent tooth. In Equidae persistence of the deciduous incisors is often met with, and leads to irregularity, which may range from slight crowding to a most complex arrangement of the teeth. The maxilla is a more frequent seat of trouble than the mandible; this may, perhaps, be accounted for by the fact that the maxillary teeth have to take a more curved course in eruption. A pretty example of a misplaced right fourth maxillary premolar due to the persistence of a deciduous molar occurring in a red deer (*Cervus elephas*) is shown in Fig. 2.

A crowded arrangement of the teeth due to want of room is to be met with in many classes of animals. In the small carnivora the mandibular incisors often show an irregular arrangement. In the Equidae crowding of the incisors is a well-marked type of irregularity; it is usually associated with the presence of retained deciduous or supernumerary teeth. In the specimen shown in Fig. 3 there are two retained deciduous teeth and two extra permanent incisors. The permanent I_2 and I_3 right and left have erupted, but the supernumerary and persistent

deciduous teeth have prevented the eruption of the central incisors.

A crowded arrangement of the incisors may be present independently of retained or extra teeth, and this condition would appear to be more common in the mandible than in the maxilla. The teeth generally assume a position in which the second incisors lie posterior to the first and third. I have been unable to satisfy myself as to the cause of the crowding; in one case, however, there seemed

Fig. 2.

to be a distinct narrowing of the mandible in the incisor region. A point to be noted in connexion with this irregularity is that the teeth assume this position even though there is ample space behind the third incisor, the developmental position of the teeth influencing the arrangement in the mouth more than the spreading action of the tongue. Crowding of the incisors is occasionally seen in certain of the monkeys. The skull of a *Cercopithecus* is shown in Fig 4. The anterior teeth, upper and lower, are considerably crowded. In the maxillae a condition exists very similar to that

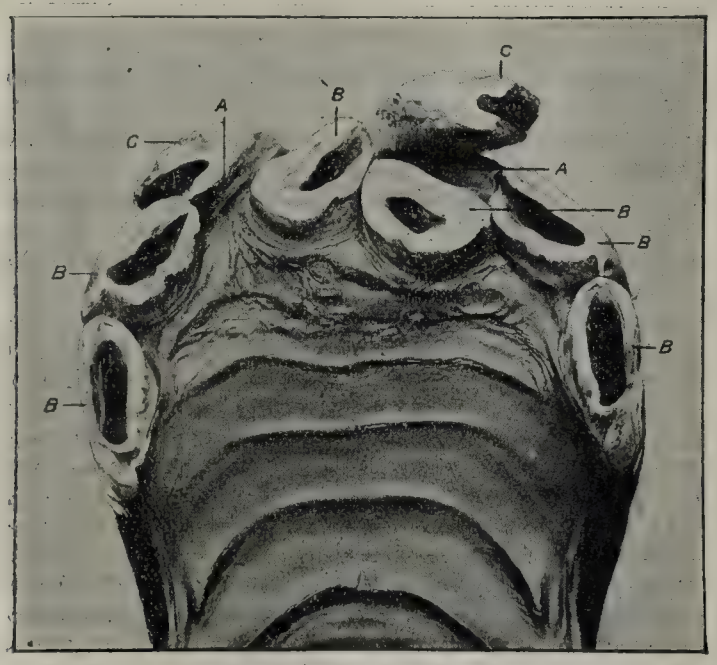

Fig. 3.—From a specimen in the possession of Mr. Rinthrop, showing eight permanent incisors and two persistent deciduous incisors. *A* Impacted permanent incisors; *B*, permanent incisors; *C*, persistent deciduous incisors.

often seen in man; the root of the central incisor lies near that of the lateral, and the canine has its root directed towards the median line, and is also covering the lateral root; the lateral incisor itself has the crown tilted so that the cutting edge is looking forward. In the mandible the crowding of the incisors is also similar to that seen in man, the laterals erupting in a plane posterior to the centrals.

A crowded arrangement of the premolars is often seen in carnivora, especially the Canidae. Fig. 5 is an illustration of a brown bear (*Ursus arctos*), and it shows well-marked crowding in the premolar region. If this skull be compared with that of a bear possessing a long muzzle, it will be noticed that the teeth do not vary in size in anything like the ratio of the length of the muzzle. In the different varieties of dogs this point is very clearly demonstrated, the short-muzzled varieties having the premolars often considerably crowded. This question of irregularity in relation to breed is a peculiarly interesting one, and would, I am sure, well repay careful and systematic investigation.

In the Ungulata an irregular arrangement of the premolars is comparatively rare, and in the examination of nearly 500 horses' skulls I only met with two examples,

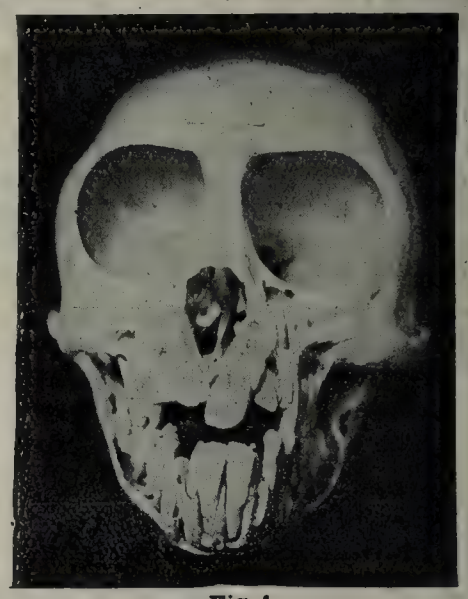

Fig. 4.

both of which were in the maxilla. The irregularity took the form of a slight rotation of the tooth as shown in Fig. 6.

Want of space in the premolar region is, however, much more common than the actual presence of irregular teeth would have one believe. In the Equidae and other Ungulata with a large covering of cemental tissue, the approximal surfaces of the successional teeth undergo a certain amount of absorption, and in this way room is made in the arch. An example of this is shown in the specimen illustrated in Fig. 7. The right mandibular teeth are slightly irregular, and an examination of the teeth shows that the third pre-

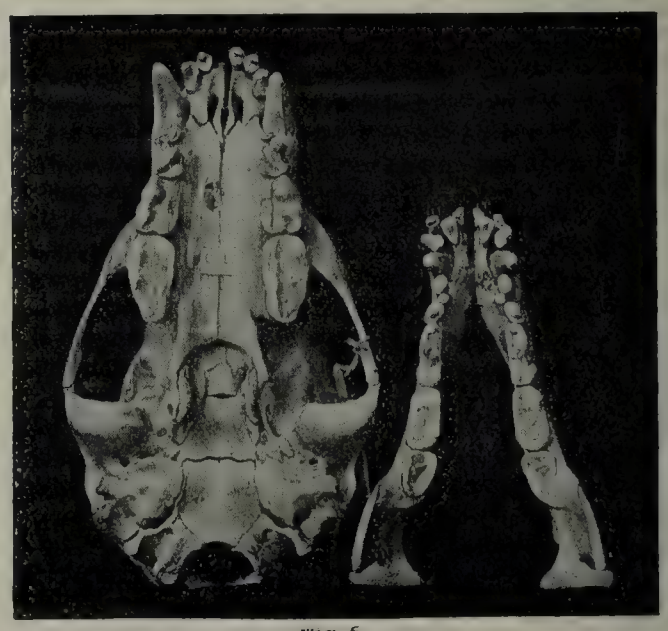

Fig. 5.

molar in erupting has caused absorption of the posterior aspect of the second premolar, and the fourth premolar erupting subsequently to the third premolar has caused absorption of the posterior aspect of the latter tooth. An examination of Fig. 5 also shows that in the region of the misplaced teeth there has been absorption of tooth tissue. Occasionally the amount of room required is considerable, under such conditions the last tooth to erupt is thrown internal to the arch.

UNDUE PROMINENCE OF THE SUPERIOR TEETH.

A condition similar to "superior protrusion" is occa-

sionally met with in the lower animals. In veterinary practice it is known as "parrot mouth" (Fig. 8).

In the horse the teeth normally meet edge to edge, but in the "parrot mouth" the maxillary teeth considerably

Fig. 6.

overlap the mandibular, the upper teeth being well curved inwards and the lower arranged in a straighter line than in the normal. Judging by the few specimens seen the cause of the deformity would appear to be due to a dwarfing in the growth of the mandible. In one specimen

Fig. 7.

examined with respect to the occlusion of the molars and premolars the mandibular teeth occluded posterior to their normal position as is often the case in "superior protrusion." This condition of "parrot mouth" in the horse is well worthy of further study more especially from the point of view of breed.

Fig. 8.

As far as one can ascertain, undue protrusion of teeth is rare in other types of animals. Mr. C. S. Tomes mentions a case occurring in a dog, the three or four immediate ancestors not presenting the peculiarity. A most interesting example occurring in a fox has been brought to my notice by Mr. R. Fairfax Reading, of Sydney. The skull is shown in Fig. 9, and has been photographed by the side of a normal one. The condition here shown would appear to be due to an arrest in development of the mandible anterior to the mental foramen; the occlusion of the

Fig. 9.

molars is normal but that of the premolars abnormal, the mandibular teeth occluding posterior to their correct position; the mandibular canines also occluding posterior to the maxillary. In the living state the lower lip would probably have closed posterior to the maxillary incisors

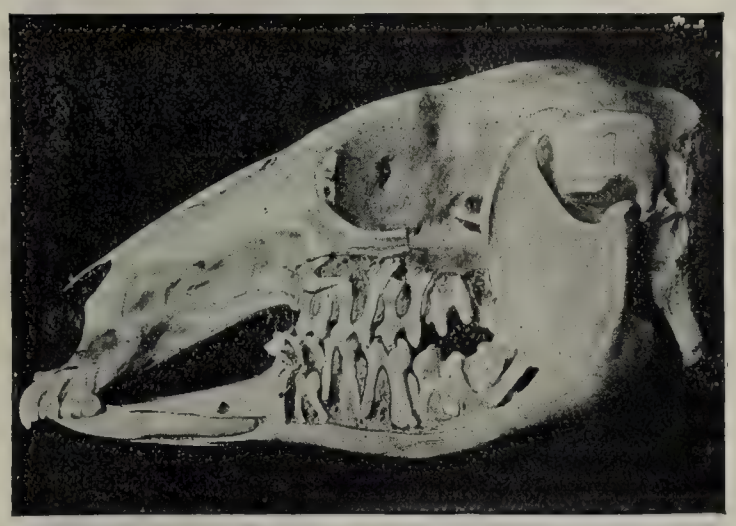

Fig. 10.

and so accentuated the protrusion by throwing forward the upper teeth—the photograph seems to indicate that the position of the premaxillae is abnormal.

Complete Displacement of Teeth.

The complete displacement of a premolar would seem to be a well-defined irregularity in the animal kingdom.

Fig. 11.

In a wallaby (*Macropus mastersis*), shown in Fig. 10, a left maxillary molar is completely displaced, the tooth lying almost horizontally above the roots of the teeth *in situ*, the crown being directed forwards. In the skull of a monkey, shown in Fig. 11, the second premolar is

external to the arch in the region of the first molar; a space exists in the arch between the first molar and the first premolar, so that either the deciduous molar never appeared or the premolar, in moving into its irregular position, caused the absorption of so much of the roots of the deciduous molar, and consequently its disappearance from the mouth.

A unique specimen illustrating this displacement of premolars is seen in Fig. 12. The skull is that of the patas monkey from West Africa (*Cercopithecus*

Fig. 12.

patas), and the four second premolars are misplaced, having erupted external to the arch, the upper two above and the lower two below the roots of the deciduous molars, which are still in position. In the foregoing specimens there is nothing in the skulls to indicate any nutritional disturbance during the development of the tooth. In the specimen of the yellow baboon (*Cynocephalus babuin*) shown in Fig. 13 there are signs that there was nutritional disturbance during the period of tooth development, since the teeth show in several places well-marked hypoplasia. The right first deciduous molar is still in place and the first premolar is situated above it, lying in an oblique direction. The premolars that are in place are smaller than normal, and the enamel is hypoplastic,

Fig. 13.

considerable spaces existing between the maxillary first molar, second premolar, and first deciduous molar, and the mandibular first and second premolars.

Complete displacement of an incisor is occasionally to be met with. The museum of the Society contains two excellent specimens, one is that of a *Cercopithecus mona* in which the left maxillary incisor is misplaced, and the other, that of a bear, in which the left maxillary first incisor is situated in the floor of the nose.

The Effect of Rickets on the Position of the Teeth.

The effect of rickets on the position of the teeth is well shown in lions and tigers. The incisors are usually considerably misplaced, especially the outermost one, and in the mandible the fourth premolar is forced well outwards (Fig. 14).

That this abnormality should occur with some regularity in rickety lions and tigers is interesting, but I am unable to offer any explanation. A thickening of the tooth sacs has been shown by Mr. Bland-Sutton to be

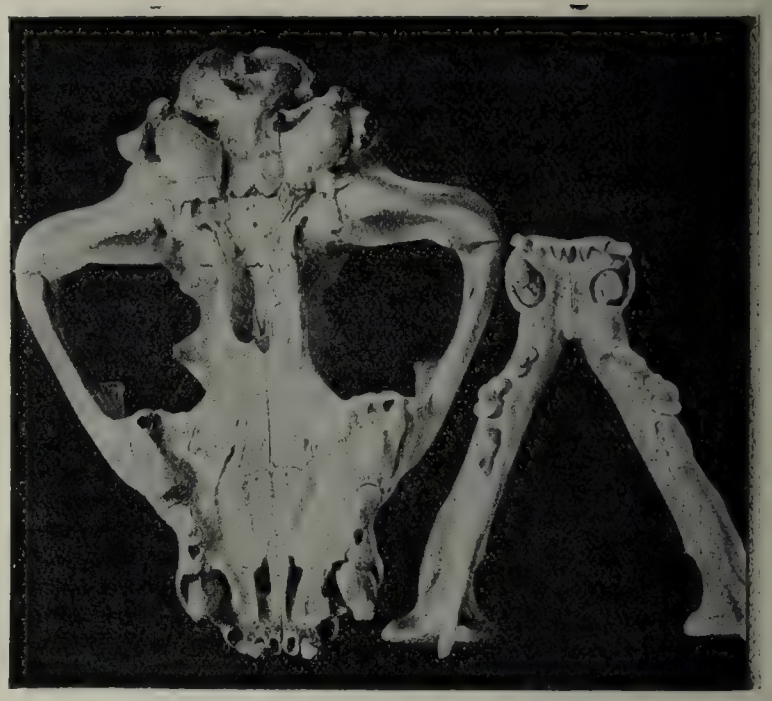

Fig. 14.

present in rickety animals; that possibly may account for the displacement of the teeth.

In conclusion, although the material one has been able to place before you is somewhat meagre, it is, I think, sufficient to show that the subject is worthy of a thorough and extended investigation.

SARCOMATA OF THE JAWS.

By H. A. T. Fairbank, M.S., F.R.C.S., L.D.S.

For the purposes of this paper I have collected from various sources 140 cases of sarcoma of the jaw. No case has been included in this series unless the result of the microscopical examination of the tumour was definitely stated in the report of the case. A very large number of cases have been omitted for want of this information.

Etiology.

Sarcomata are commoner in females than in males, as opposed to carcinomata, which are more frequently found in men. In this series there are 81 females and 50 males; in the remainder the sex is not stated.

The jaws are affected by sarcoma at all ages, though most commonly before 20, and this holds good for most varieties of these tumours. Of the commoner types of growth, the fibro-sarcomata occur somewhat later than the others. Among the rare tumours the endotheliomata and the sarcomatous "composite embryoplastic odontomes" (Eve) occur still later, at an age when carcinomata are more frequently met with.

In three cases of endothelioma, in which the date of occurrence was known, the ages were 45, 52, and 62 respectively. Of eight cases of sarcomatous odontomes, seven occurred between the ages of 30 and 70; in the eighth case the age is not given. The following table shows the age incidence of all varieties of sarcoma taken together:

From	0	to	10	years	20	cases
,,	10	,,	20	,,	37	,,
,,	20	,,	30	,,	17	,,
,,	30	,,	40	,,	21	,,
,,	40	,,	50	,,	12	,,
,,	50	,,	60	,,	16	,,
,,	60	,,	70	,,	8	,,
Over	70	years			2	,,

The youngest case, one of melanotic sarcoma, was 1 month old when the tumour appeared; the oldest, one of myeloma, was 71. Forty per cent. of the cases were under 20 years of age.

As with sarcoma in other situations, chronic irritation plays an important part in the etiology. Naturally one looks to the teeth and periodontal membranes for the source of the irritation in this region. The fact that in

only ten cases out of the 140 in this series is mention made of previous trouble from caries or pyorrhoea, need not deter us from deciding that the teeth are not infrequently the cause of new growth. Many of the tumours are found to have commenced in close relation to a tooth. In some an artificial denture has been worn with difficulty for some years.

Pathology.

All varieties of sarcoma are met with in the jaws. By far the commonest growth is the myeloma, or giant-celled sarcoma. In my series the growth was:

Myeloid...	In 57 cases.
Round-celled	,, 17 cases.
Spindle-celled	,, 14 cases.
Fibro-sarcoma	,, 14 cases.
Mixed-celled	,, 12 cases.
Embryo-plastic odontome... ...	,, 8 cases.
Endothelioma	,, 6 cases.
Melanotic	,, 4 cases.
Chondro	,, 4 cases.
Myxo	,, 2 cases.
Alveolar	,, 2 cases.

In five cases two distinct tumours were present; they were all myelomata. Towards the end of last year Sargent showed a young girl at a meeting of the Medical Society, with three tumours, one on either side of the lower jaw and one in the upper, all apparently myeloid in type. This patient's brother had had two similar tumours removed from his lower jaw.

In three cases a benign tumour had been removed previously from some other part of the mouth. In one it was an epulis, in another a fibroid tumour, in the third a fibroid tumour and cyst. In one case an ordinary epulis had been removed fourteen years previously from the region in which the sarcoma was growing. As to the site of the tumour, the two jaws appear to be equally affected (71 in each). The two superior maxillae are equally prone to the disease, but in the mandible the left side is twice as commonly affected as the right. If the cases over 40 years of age are taken alone, the number of tumours in the upper jaw is nearly twice as many as in the lower: Upper 26, lower 14. In middle and old age, therefore, carcinoma and sarcoma both show a preference for the upper jaw.

Myelomata are always endosteal in origin. In the upper jaw they arise in the alveolus or in the facial wall of the antrum, where this joins the alveolar process. In the lower jaw they arise in the alveolus or in the body of the jaw below the level of the teeth. The so-called malignant epulis has its origin in the alveolar margin, which is always involved to a greater or less extent. In both jaws the commonest site for these myeloid tumours is the region of the bicuspids and molars, particularly the second bicuspid and first molar, and somewhat less frequently near the incisors. Of the other common varieties the round, spindle, and mixed celled, and the fibro-sarcomata all may arise either in the centre of the bone or under the periosteum. In the upper jaw the growth is often so extensive by the time the case is operated upon that it is impossible to say where it had its orgin. The lining membrane of the antrum, in the lower part of this cavity, seems to be a favourite site, and some commence in the incisor region of the bone. In the lower jaws the region of the first molar is the commonest seat of the growth, whether endosteal or periosteal.

The sarcomatous embryoplastic odontomes are most frequently found in the lower molar region. Of the 8 cases in this series 6 occurred in the lower jaw. Of 4 melanotic cases 3 were in the lower jaw, 2 being in the bicuspid-molar and 2 in the incisor region.

Endotheliomata are also more common in the lower jaw; they grow from the mucous membrane. They are rarely met with on the alveolar processes, being more frequently seen on the palate and still more frequently in the parotid gland. These palatal tumours are not included in this series.

The myeloid tumours grow much like a cyst or innocent growth, tending to keep a more or less spherical shape, though bulging where the resistance of the surrounding tissues is weakest. In the lower jaw, for instance, the outer table is displaced long before the inner, and this is found to be the case in the ramus as well as in the body of the bone. When the alveolar border is destroyed the growth fungates and tends to overlap the surrounding gum, only slowly spreading in the periosteum. There seems to be no tendency for the growth to fungate through the periosteum on the outer side of the jaw when the outer table has been perforated. The more malignant types of endosteal growth, particularly the round celled, invade the periosteum more rapidly, though even they are checked to a slight extent by it. Myelomata may bulge into the antrum without invading its walls to any great extent, and may be shelled out of this cavity. The round-celled growths, on the other hand, invade its walls rapidly, so that the complete removal of the tumour involves the sacrifice of the whole bone.

The periosteal tumours spread with equal rapidity in all directions over the surface of the bone, and extend down the sockets of the teeth, the bone itself being slowly eaten into by the growth, which, in the case of the lower jaw, may entirely surround it, before the centre of the bone is invaded. A point of great importance is the way these tumours invade the surrounding tissues, particularly the muscles inserted into the bone. The inferior dental canal is a track along which a growth may find it easy to extend, as is shown in a specimen of myeloma in Guy's Hospital Museum (No. 1092). Keen of Philadelphia has drawn attention to a similar extension upwards towards the frontal sinus along the infundibulum in large tumours of the upper jaw.

As to the relative malignancy of the various types the myelomata are undoubtedly the least malignant; in fact, Bland-Sutton no longer classes them among the sarcomata. The round and spindle celled are the most malignant, and those which tend to undergo fibrosis hold an intermediate position. Some of these latter may, however, take on rapid growth, particularly after operative interference, such as extraction of teeth or unsuccessful attempts at removal of the tumour.

Glandular infection is rare, particularly when the upper jaw is the seat of the disease. It is by no means rare to find enlarged glands in the submaxillary or carotid region in cases of myeloid growths, yet these glands never show any secondary deposits, and the enlargement is purely inflammatory. Of the 57 cases of myeloid sarcoma 9 are said to have had enlarged glands, and in 10 it is definitely stated that there were no glands to be felt. In the other types of growth inflammatory enlargement of glands is also found; but, as already stated, actual malignant infection of the glands is rare and occurs late in the disease. In only two cases in this series was infection of the glands proved by microscopical examination. Time will not permit the discussion of the symptoms, diagnosis, and prognosis, but a few words may be said about the treatment and the results of the operations performed for the removal of the tumours in this series.

Before an operation is undertaken an endeavour should always be made to diagnose the variety of growth which has to be dealt with. Is it a myeloma, or is it one of the more malignant growths?

The former calls for complete removal of the growth and the bone in its immediate neighbourhood by sharp spoon or gouge, and only rarely calls for the excision of the whole or greater part of the jaw in which it is growing. The latter, the more malignant types of growth, call for wide removal of bone around the growth and formal excisions. When the growth is fungating into the mouth or nose a small portion may be removed for microscopical examination, but it is not advisable to make an exploratory incision for this purpose. The majority of myelomata, when an exact diagnosis is possible, may be safely removed without making an external incision. In the case of other growths, or when a large portion of the upper jaw is to be removed, an incision in the skin is necessary. In the case of the lower jaw Butlin advises removal through the mouth when the growth is situated towards the front of the horizontal ramus, and the use of an incision through the skin only when the growth lies far back in the mouth, or is in the ascending ramus.

There seems no doubt but that, with the exception of the myeloid growths, the results of operations for the complete removal of these tumours are far from good. Of the myelomata recurrence is noted in 12 cases, mostly a few months after the operation. In one case the recurrence took place two years after the operation, in another three and a half years, and in a third, six years after removal of the growth. Many of the cases were reported too soon after the operation for information on this point to be of

any value. In 8 cases no recurrence had occurred in two years and upwards. The longest time noted without recurrence was fifteen years. Of the other cases only 9 are reported as being alive and well after one year or more from the time of the operation, and only 3 after two years or more. Five cases died as a direct result of the operation, and 19 others died within a year. Of these 19, in only 1 was the growth myeloid in type.

I have to thank my senior colleagues on the surgical staff of Charing Cross Hospital for their kindness in allowing me to make use of the notes of cases under their care.

Mr. F. J. BENNETT proposed, and Mr. J. F. COLYER seconded, a cordial vote of thanks to the President, Mr. J. McKno Ackland, for his duties as President, and expressed the cordial appreciation of the members of the Section of the arduous labours Mr. Ackland had performed as Chairman of the Arrangement Committee at Exeter, and his extremely kind hospitality. The meeting then terminated.

Shortly after the close of the sectional business a telegram was received from the French Stomatological Association, the text of which was as follows:

To the Dental Section, British Medical Association,
Exeter.
Bien cordiaux remerciements et voeux pour la Stomalogie Anglaise.

CHOMPRET.

SECTION OF PATHOLOGY.

Professor ROBERT MUIR, M.D., F.R.C.P.E., President.

THE RELATION BETWEEN THE THYROID AND PARATHYROID GLANDS.

By DAVID FORSYTH, M.D., M.R.C.P., Lond.,

Assistant Physician and Pathologist, Charing Cross Hospital; Senior Physician to Out-patients, Evelina Hospital for Children.

[PRELIMINARY COMMUNICATION.]

THE discovery twenty years ago of the essential lesion in myxoedema seemed likely to bring our knowledge of the thyroid function near to completion. To day the solution of the problem is no nearer, and in some respects is more remote. This unsatisfactory state is due to various causes, one of the most important having been the recognition of the parathyroid glands. These small bodies were from the first supposed to be in some way connected with the thyroid, and until the relation could be discovered, further advance in our knowledge was necessarily impeded. Originally described by Sandström in 1880,[6] and regarded by him as mere rests of embryonic tissue—structures of little or no importance—they passed almost entirely unnoticed until 1892, when Gley,[3] basing his contention on the results of their operative removal, claimed for them a vitally essential function. This belief has been widely accepted, and has received the support of numerous investigators both on the Continent and in this country, with the result that Sandström's interpretation sank into comparative obscurity. In 1905, however, Vincent and Jolly published a series of experiments,[8] the results of which threw serious doubt on the trustworthiness of past experimental work. Their attempts to remove the glands were carried out with exceptional care, and as their methods were freed from many of the fallacies that detract from the conclusions of their predecessors, their results are of special value They held that it could not be truly said that the parathyroids were essential to life, and, without asserting their thyroidal nature, they believed that the glands appeared capable of functionally replacing the thyroid to a certain extent. These opinions obviously brought Sandström's embryonic theory to the foreground once again.

The investigations on which the present paper is based began with a series of operations on rabbits and cats (thyroidectomy, parathyroidectomy, and thyroparathyroidectomy) but the difficulties encountered were found to be so great that this line of research was put aside until a detailed study had been made of the comparative anatomy and histology of the organs in man and other animals. This has been done during the past three years, and more than 50 human subjects and over 70 different species of animals and birds have been dissected and the glands in their cervical regions subjected to microscopical examination. The results obtained throw sufficient light on the relation between the thyroid and parathyroid to warrant us, in my opinion, in forming a definite conclusion on the matter. Before submitting this to your consideration this morning it will be necessary to review very briefly the position of the two theories already mentioned.

The evidence in favour of the vitally essential nature of the parathyroids is derived from operations on animals, and is to the effect that removal of the thyroid alone produces at most a chronic condition of ill-health, dragging on for months or years, while parathyroidectomy alone kills within a few days, the animal showing acute nervous symptoms. The value of this testimony depends entirely on the possibility of completely removing either of these glands without doing injury to the other. Vincent and Jolly, after attempting the operations on many occasions, stated that, "except in very favourable cases . . . . the operation is an impossible one," and with this statement, sweeping though it is, I am wholly in accord for the following reasons:—I have found that neither in man nor in animals is the number of parathyroids constant, and that the number varies in the same species. For example, three specimens of the green monkey (*Cercopithecus callitrichus*) had one, eight, and four parathyroids respectively. Their position is no less variable, and they may be remote from the thyroid gland, or buried out of sight in one of its lobes. Sometimes they are bound up in the capsule of a lymphatic gland or accessory thyroid, and pass unrecognized by the naked eye. They may be microscopical in size, met with only by accident when sectioning other glands. These points have not been recognized in the past, yet they bear directly on the operations of thyroidectomy and parathyroidectomy; and when further it is stated that there is no certain means of identifying a parathyroid except by the microscope, it will be apparent that an operation cannot be claimed as successful until a laborious microscopical examination of every gland from jaw to thorax has established the point. Unfortunately, there is no evidence that this precaution has been taken in the experiments already published, and conclusions based on them are open to serious doubt.

Sandström's embryonic theory, though resting on less insecure foundations, lacks the support of much evidence necessary for its acceptance. Before admitting that the parathyroids are merely embryonic thyroid tissue, we may fairly ask for positive information on the following points:

1. The histological identity of parathyroid and embryonic thyroid tissue.
2. The transformation of parathyroid tissue into thyroid tissue, existence of types intermediate between the two, and a greater prevalence of parathyroid tissue in early life.

These two postulates have not been confirmed. Welsh[9] states that parathyroid is strikingly dissimilar to embryonic thyroid tissue, and Verdun[6] and Groschuff[3] experienced no difficulty in distinguishing between the two. There is limited evidence that parathyroid tissue may under abnormal conditions assume some of the features of the thyroid, but its normal conversion has not been proved, intermediate types have not been traced, and, though Rogowitsch[5] believed there was a partial change to adult thyroid structure with advancing age, extended observations on the point are wanting.

We must conclude, therefore, that while the vitally-essential theory is supported only by evidence open to serious objection, the embryonic theory has not been proved, and competent observers are agreed that parathyroid tissue is not the same as embryonic thyroid tissue.

The view I wish to put forward differs from both the above. It is to the effect that the parathyroid glands are not embryonic, but possess active powers of secretion; that the product of this secretion is a colloid material indistinguishable from thyroid colloid; and that the histological differences between parathyroid and thyroid are referable to differences in the vigour of secretion and lymphatic drainage in the two glands. In other words,

that the parathyroids and the thyroid are functionally the same. The principal evidence in support of this view will be submitted as briefly as possible.

The gross anatomical features of the parathyroids point to the thyroid as the organ to which they bear an intimate relation. In man they are invariably found in the same compartment of the deep cervical fascia as is the thyroid; the large majority lie in intimate relation to this gland,

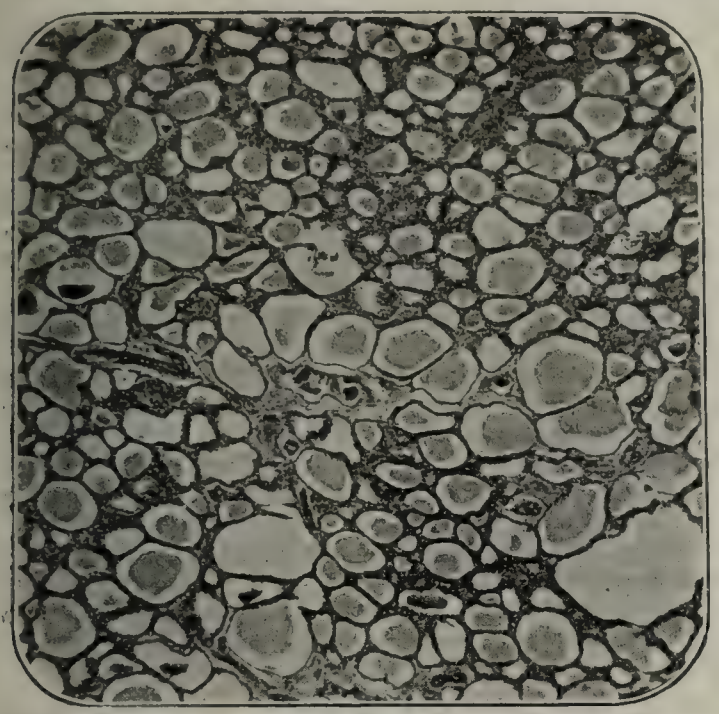

Fig. 1.—Thyroid of two-spotted paradoxure (*Nandinia binotata*), showing vesicles with small amount of intervesicular glandular tissue.

many in direct contact, some sunk in its surface, or even deeply buried. Their commonest situation is round the point of entry of the inferior thyroid artery, and this is also the commonest site of accessory thyroids. In this neighbourhood the thyroid gland, smooth and regular over most of its surface, is quite commonly drawn out into peaks and prominences, varying from a globular bulge to a pedunculated lump of thyroid tissue almost severed from the parent gland. The complete separation of such a process implies the formation of an accessory thyroid, and it is to be specially noted that where the

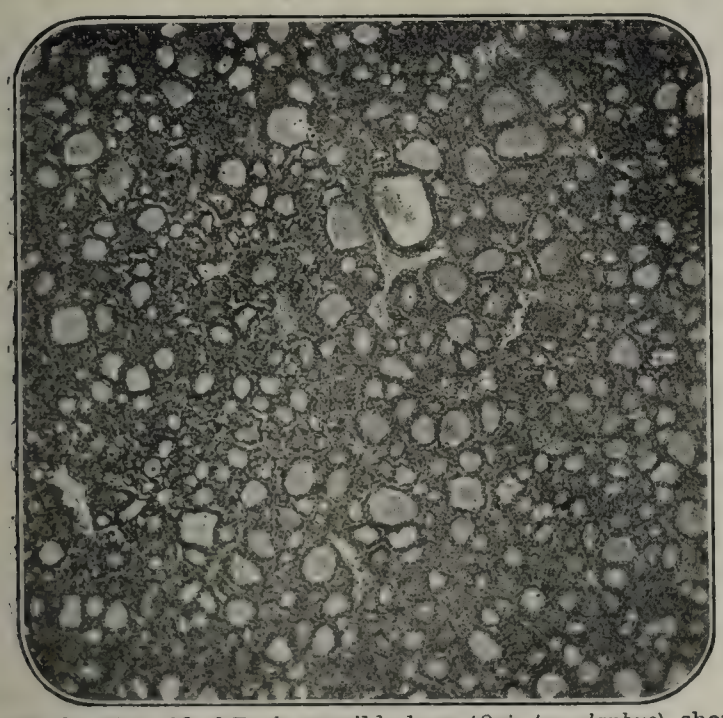

Fig. 2.—Thyroid of Barbary wild sheep (*Ovis tragelaphus*), showing vesicles with considerable amount of intervesicular glandular tissue.

thyroid is most prone to detach wholly or in part nodules of its substance, there parathyroids are commonest. Further, evidence has already been published to show that they are most numerous in the first years of life, diminishing with advancing age.[2]

In dealing with the histology of the glands I have demonstrated elsewhere[2] that the two types of cells—the chief and the oxyphile—described in the human glands by Welsh[3] really represent two stages of activity of one kind of cell. During rest the clear protoplasm of the so-called chief cell fills with oxyphile granules, which are later extruded, run together to form drops of colloid secretion, and drain away by the lymphatics of the gland. This colloid is indistinguishable physically and microchemically from thyroid colloid. The above changes may be observed in animals other than man.

The parathyroids, then, are not mere embryonic structures, but possess an active function.

The essential histological resemblances and differences

Fig. 3.—Thyroid of European beaver (*Castor fiber*), showing few vesicles but much intervesicular glandular tissue. The central mass, which is isolated by connective tissue, presents the commonly accepted features of a parathyroid, yet is identical in structure with the surrounding thyroid.

between thyroid (embryonic and adult) and parathyroid must next be considered. The tissues are alike in the arrangement of their connective tissue, blood vessels, and lymphatics, but differ in their epithelial elements. In both there is an enveloping capsule, from the deep surface of which pass trabeculae branching and uniting to divide the interior of the gland into compartments polygonal in section. In both the blood vessels and lymphatics accept the support of this stroma. The points of distinction lie in the contents of each compartment. In the parathyroid

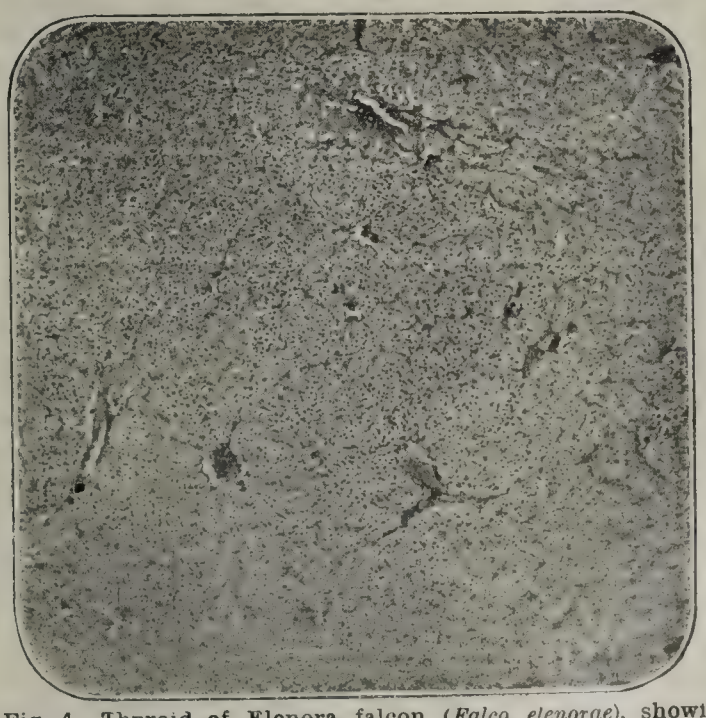

Fig. 4.—Thyroid of Elenora falcon (*Falco elenorae*), showing complete absence of vesicles, the colloid secretion being collected in irregular lymphatic spaces. (All four figures represent the same degree of magnification.)

these are usually solid masses of polyhedral cells in varying stages of active secretion, but often the collection of a drop of colloid forces the cells apart, and the radially-exerted pressure of this secretion, together with the mutual lateral pressure of the cells and the resistance of the walls of the compartment, lead to the appearance of a vesicle lined by regular cubical or columnar epithelium. Often, however, the lining membrane is in places more than one cell deep, and on these occasions the cells of the outer layers retain their polyhedral form.

In the embryonic thyroid polyhedral cells not yet functioning are massed together to fill each compartment; but with the assumption of secreting powers they are compelled to group themselves around the drops of colloid, thus forming thyroid vesicles lined by regular cubical, columnar, or pavement epithelium. Frequently there remain outside this lining layer clumps of polyhedral cells (the interstitial cells described by Baber[1]), and often the whole content of a compartment retains its primitive arrangement. Variations in the appearance of the individual cells dependent on activity and rest can often be observed.

It will be realized that the greater the number of interstitial cells in a thyroid the more closely it will approximate in appearance to parathyroid tissue, and, conversely, the more numerous the vesicles in a parathyroid the more nearly will it resemble thyroid tissue. As a rule, there is no difficulty in distinguishing between the two structures; but not a few instances were met with in both mammals and birds where the thyroid possessed, in part or wholly, the features of a parathyroid, and intermediate types between the two were comparatively common.

[Photomicrographs were then thrown on the screen showing stages in the transformation of a parathyroid into vesicular tissue resembling a normal thyroid.]

Vesicle formation in isolated parathyroids is comparatively common in the human gland, and has been described by many. The process was observed in the following mammals: A parathyroid of a white collared mangabey (*Cercocebus collaris*) contained cells whose arrangement raised just a suspicion of an acinar grouping. An African civet cat (*Viverra civetta*) showed an undoubted tendency in the same direction. A feline gennett (*Genetta felina*) possessed a parathyroid with one or two perfect vesicles filled with colloid.

Direct continuity between an undoubted parathyroid and its adjacent thyroid was observed in a large number of instances. The relation obtained in a black ape (*Cynopithecus niger*), green monkey (*Cercopithecus callitrichus*), feline gennett (*Genetta felina*), Malayan paradoxure (*Paradoxus hermaphrodita*), side-striped jackal (*Canis lateralis*), grey parrot (*Psittacus erithacus*), West African lovebird (*Agapornis pullaria*), long-eared owl (*Asio otus*), and oyster catcher (*Haematopus ostralegus*).

[A second series of illustrations showed a typical thyroid and parathyroid followed by the thyroids of a two-spotted paradoxure (*Nandinia binotata*), Barbery wild sheep (*Ovis tragelaphus*), green monkey (*Cercopithecus callitrichus*), European beaver (*Castor fiber*), white-backed piping crow (*Gymnorhina leuconota*), fat tailed desert mouse (*Pachyuromys duprasi*), and Elenora falcon (*Falco elenorae*).]

These photographs pass by stages from a typical thyroid to a thyroid without any vesicles and indistinguishable from a parathyroid. Other animals examined in which the thyroid possessed distinct parathyroid features were a spotted hyaena (*Hyaena crocuta*), African civet cat (*Viverra civetta*), and collared fruit bat (*Cynonycteris collaris*).

Finally, it must be pointed out that should an isolated glandular body found near the thyroid prove to possess thyroid and parathyroid characteristics equally marked, it will not be possible to identify it, either as the one or the other. Such bodies were found in a Malayan bear (*Ursus malayanus*) and a four-horned antelope (*Tetraceros quadricornis*).

[A photomicrograph of the latter gland was shown, the central parts being typically parathyroidal, but the cortical areas were made up of rows of vesicles, and the transformation seemed to be spreading more deeply.]

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DISCUSSION.

Dr. BAYON (Greenwich) said he would like to draw attention to the cases of congenital myxoedema published, where no traces of thyroid tissue, even in serial microscopical sections, were found. The parathyroids were present, apparently normal, and showed no signs of increased or diminished secretion.

Professor MUIR commented on the importance of the parathyroids. Severe symptoms were produced by removal of the parathyroid which were not produced by removal of the thyroid.

Dr. FORSYTH, in reply, questioned whether the serious symptoms described as following parathyroidectomy were due to ablation of the parathyroids. According to Vincent and Jolly these symptoms were due to associated injury to the thyroid.

THE PLACE OF THE SPIROCHAETA PALLIDA IN THE DIAGNOSIS OF SYPHILIS.

By ALEX. MACLENNAN, M.B., C.M.Glas.,

Surgeon to Out-patients, Western Infirmary; Extra Honorary Surgeon, Royal Hospital for Sick Children, Glasgow.

I THINK the time has now come when the presence of the *Spirochaeta pallida* may be accepted as diagnostic, though it has not yet been proved to be the cause of syphilis. The reason for this discrepancy, I hold, is that the *Spirochaeta pallida* does not represent the whole life cycle of the organism, but only a part of it. The failure to demonstrate the organism where the infective agent of syphilis must be present can only be explained by supposing that the organism then exists in a different form.

The well recognized disproportion between the numbers of the spirochaetes and the intensity of the disease[1] has given rise to some comment. The failure, therefore, to demonstrate the spirochaete is merely negative, and does not influence the diagnosis at all.

The discovery of other forms of organisms is, to my mind, of greater moment, but these have not been sufficiently defined to be of diagnostic importance.

I would refer members specially interested in this subject to the propositions I have already advanced[2] as to the part played and the position occupied by those more or less indefinite forms of life. I believe that these forms may occupy a much more important position in the life-history of the parasite of syphilis than even the *Spirochaeta pallida*, but a discussion of the rôle played by these organisms is not within the scope of my present paper.

For clinical purposes the demonstration of the organism in a smear preparation is easy of application, though sometimes it entails considerable search. When the spirochaetes exist in profusion the method is most successful, and in the early stage of the primary sore, before the secondaries come out, a certain diagnosis may be made after finding the *Spirochaeta pallida*. The presence of a single spirochaete does not of necessity make a diagnosis of syphilis, but on account of the ease with which the spirochaetes are destroyed the presence of one specimen is of more significance than the demonstration of a single bacillus in a questionable tuberculous lesion. I would even go as far as to say that the recognition of a single undoubted *Spirochaeta pallida* in a smear from a probable syphilitic lesion would place the diagnosis beyond question.

Regarding the ease with which the spirochaetes are destroyed, it might be permissible to mention that glycerine kills these organisms very quickly,[3] so that the public-spirited antivaccinator need not trouble himself about the awful risks run by the vaccinated.

In the absence of staining reagents, the smear may be examined fresh and the spirochaetes found in the living state.

To differentiate such living spirochaetes is difficult, and, according to Schaudinn, impossible. On the other hand, Eitner[4] thinks that the examination of the organism in the living state renders its recognition more certain. With this latter observation I am unable to agree.

The difficulty in the employment of the spirochaete in the diagnosis of syphilis is to diagnose the *Spirochaeta pallida*.

To recognize a typical specimen when lying side by side, say, with the *Spirochaeta refringens* is not difficult, but when atypical forms are met with, and when especially the preparation shows the fine, somewhat closely-curved type of *refringens*, the matter requires some discrimination.

The technique of staining films is now so perfect that the preparation of the specimen takes only a few minutes and can be done "while you wait" without unduly taxing the patience.

The discovery of the *pallida* in such smears influences treatment very considerably. If it be accepted, as I hold

it ought to be, that the presence of the *pallida* is diagnostic, then the institution of energetic treatment is mandatory.

In practically all primary sores the presence of the *pallida* may be substantiated. As a rule these sores do not require such confirmatory evidence, though, as pointed out by Fournier, there is no certain sign or signs by which a diagnosis can be made. Therefore, the vast importance of such an aid to diagnosis as finding the *Spirochaeta pallida* is apparent.

In the secondary lesions, along with others, I have found difficulty in demonstrating spirochaetes in film preparations. In the secondaries, the spirochaetes exist in the deeper layers, and to reach them haemorrhage is produced, which scatters and washes them away, so that the examination is vitiated. In the congenital rashes the spirochaetes are present more plentifully, and their demonstration is correspondingly easier.

In the tertiary lesions spirochaetes have been repeatedly found, and successful inoculations have been carried out[5] from tertiary lesions, but for diagnostic purposes they are a negligible quantity.

The vast amount of work done to render the spirochaetes visible in section after impregnating, etc., the tissue with silver, has advanced the matter in two directions, and has added another means of diagnosis in disputed cases, and in those unsuitable for examination by smear preparations. It has shown that syphilis and spirochaetes are almost invariably associated, and it has shown the sites preferably occupied by the spirochaetes—namely, glandular epithelium and connective tissue.[6]

The demonstration of the *Spirochaeta pallida* by this method has been repudiated, but without entering too much into detail, I would advance the following points as substantiating the verity of the silver spirochaetes:

1. The similarity of silver spirochaetes to nerve fibrils, etc., is merely apparent. The spirochaetes are found where no nerve fibrils exist, for example, granulation tissue, Wharton's jelly, and above all in the blood.

2. The increased size of the silver spirochaetes compared with those stained is due to the fact that the silver spirochaetes are not stained with silver, but are coated by particles of that metal, and further, all other organisms so treated are similarly enlarged (Orth).[7]

3. Nerve fibrils are not distributed in the tissues as are the silver spirochaetes.

4. Acetic acid, soda and salt solutions have no obliterative action upon silvered nerves or elastic fibres, but they cause the immediate disappearance of silver spirochaetes (Bab[8]).

5. Silver spirochaetes are not found in non-syphilitic tissues.

6. Silver spirochaetes have been shown in sections of tissue from which previously stainable spirochaetes had been expressed.

7. Silver spirochaetes have been affirmed to be maceration products, yet syphilis gives rise to sclerosis—anything but maceration.

8. Successful inoculation experiments have been made with spirochaete-infiltrated tissue and the resulting lesion has revealed the presence of spirochaetes by the smear as well as by the silver method (Bertarelli, Benda, Thomasczewski, and many others[9]).

The silver method is eminently suited for demonstrating spirochaetes in congenital lesions, and is of great importance from the diagnostic point of view in determining the cause of death of the ovum during pregnancy.

The facts set forth in papers by Bab, and Blascko and Benda, together with the discussion following have amply substantiated the view that the silver spirochaetes are real spirochaetes, and have completely knocked the ground from beneath Saling and his followers. Month by month the links in the chain of evidence regarding the association of spirochaetes with syphilis have been forged and the matter is established. There is a certain amount of scepticism which is meritorious, but when carried too far it interferes materially with progress, and this, I think, aptly applies to the subject here treated. The cultivation of the spirochaetes has been carried out in the rabbit's eye through five generations, and finally inoculation into the monkey has produced syphilis (Bertarelli[10]). The discovery of the *Spirochaeta pallida* by the lamented Schaudinn is, therefore, to be regarded as one of prime importance, and it is now receiving the recognition it deserves.

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NOTE ON THE SPIROCHAETE OF YAWS (SPIROCHAETA PERTENUIS).

By Aldo Castellani, M.D.,

Director of the Clinic for Tropical Diseases, Colombo.

In February, 1905, an extremely delicate spirochaete—or spirillum, as I believed at that time—was observed by me in a case of yaws. Schaudinn's discovery of a spirochaete in syphilis, published soon after, induced me to work at the subject in a systematic manner. My first results were published in the *Journal* of the Ceylon Branch of the British Medical Association (June 17th, 1905), when I named the spirochaete I had observed *Spirochaeta pertenuis*; a communication was also made at the meeting of the British Medical Association, Leicester, July, 1905. The results of my further investigation appeared in the British Medical Journal (November 24th, 1905); *Deut. med. Woch.* (February, 1906); *Archiv f. Schiffs u. Tropen-Hygiene* (January, 1907); *Journal of Hygiene* (July, 1907). My results have been confirmed by Wellman (*Journal of Trop. Med.*, December 1st, 1905), Powell, (British Medical Journal, November, 1905), Borne, Martin, Rivas, and others.

*Morphological Characters of the Spirochaeta Pertenuis.**

The *Spirochaeta pertenuis* is an extremely delicate, motile, spiral shaped organism; its length varies from a few microns to 18 and 20 microns, and even more. It is extremely thin; some individuals are, however, thicker than others.

The yaws spirochaete is stained with difficulty. Good results are obtained by Leishman's method, provided the alcoholic solution is allowed to act for five minutes and the subsequent admixture with distilled water for half an hour to several hours.

Giemsa's stain gives also good results. Using either of these methods the spirochaete stains purplish; occasionally a few chromatoid points may be seen in the body of the organism.

The extremities are often pointed, but forms may occasionally be met with presenting blunt extremities, or one extremely blunt and the other pointed; this is possibly due to the manipulation of the films. In a few individuals one of the extremities may present a rather large pear-shaped expansion, or a loop like formation. The number of waves varies (6 to 20 and more), but they are generally rather numerous, uniform, and of small dimensions. Occasionally a portion of the spirochaete shows numerous narrow uniform waves, while the rest of it has no waves at all. Sometimes two spirochaetes may be attached together or apparently twisted one over the other.

As regards the minute histological structure, I have not so far been able to detect an undulating membrane, though the presence of such an undulating membrane has been admitted by other observers (Blanchard). Occasionally in preparations stained by Loeffler's method of flagella staining it has seemed to me that some of the organisms present an extremely delicate flagellum at one

* In the British Medical Journal, November 26th, 1905, I suggested the name *Spirochaeta pallidula* for the yaws spirochaete. According, however, to the laws of nomenclature the correct name is *Spirochaeta pertenuis* which term I had used some months previously (*Journal* of the Ceylon Branch of the British Medical Association, June 17th, 1905).

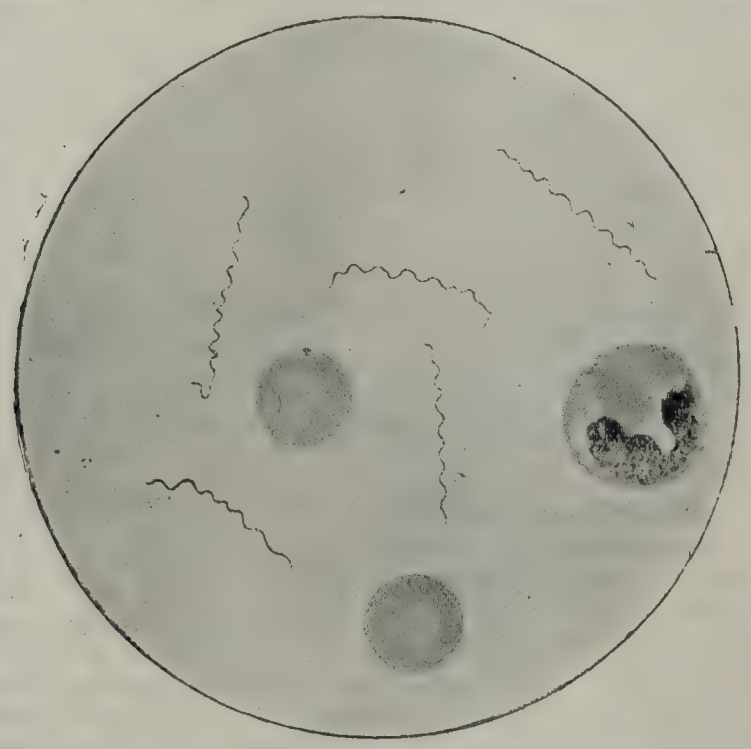
end. According to my results, therefore, the organism should be considered a treponema rather than a spirochaete. Further investigation is necessary, however, to settle this point.

From the description I have given it will be seen that the yaws organism shows morphologically a great resemblance to the organism of syphilis. In fact, I was for a long time of the opinion that the two germs differed biologically rather than morphologically.

According to Blanchard, Mesnil, and others, however, slight morphological differences can be made out. Martin, in a recent very interesting publication in the *Deut. med. Woch.*, states that the yaws spirochaete is even more delicate and more difficult to stain than the *Spirochaeta pallida* of Schaudinn. Rivas states that the *Spirochaeta pertenuis* is thinner than the *Spirochaeta pallida* and has narrower waves.

I do not think that too much importance should be given to slight morphological details; the two organisms are certainly two different species, as syphilis and yaws are two different diseases. That yaws and syphilis are two different diseases has been proved beyond any doubt by the experimental researches of Charlouis in man, and of Neisser and his co-workers and myself in monkeys.

Charlouis as far back as 1881 proved that yaws patients could be successfully inoculated with syphilis. Powell described two cases of syphilis supervening on yaws.



Spirochaeta pertenuis. (Film from a framboetic papule of a monkey inoculated with yaws.)

Recently Neisser and his co-workers in Java, and, soon after, myself in Ceylon, have been able to demonstrate that monkeys inoculated with syphilis do not become immune for yaws, and vice versa. Moreover, I have applied to yaws the Bordet-Gengou reaction (see *Journal of Hygiene*, 1907), and have been able to prove that yaws-antigen and yaws antibodies are totally different from syphilis-antigen and antibodies.

Comparing Table I with Table II, it will be seen that the incidence of the *Spirochaeta pertenuis* is practically constant in the eruptive elements, both in man and in inoculated monkeys. In the ulcerated lesions the *Spirochaeta pertenuis* is found fairly frequently, but is generally mixed with coarser spirochaetes (*S. acuminata*, *S. obtusa*) and various bacteria.

In the monkeys I have experimented with (*Cercopithecus priamus*, *Macacus pileatus*) the eruption does not, as a rule, become general as in man; notwithstanding this we must admit that in monkeys also we have to do with a generalized infection, as is proved by the presence of the *Spirochaeta pertenuis* in the spleen and lymphatic glands.

Is the Spirochaeta Pertenuis the Specific Cause of Yaws?

The following facts are in favour of the *Spirochaeta pertenuis* being the specific cause of yaws:

1. In the non-ulcerated papules, in the spleen, in the lymphatic glands of yaws patients, as well as inoculated monkeys, the *Spirochaeta pertenuis* is the only organism present. No other germ can be demonstrated, either microscopically or by culture methods.

2. The extract of yaws material containing the *Spirochaeta pertenuis*, but—so far as our present methods of investigation permit us to say—no other germs, is infective to monkeys.

3. The extract of yaws material from which the *Spirochaeta pertenuis* has been removed by filtration becomes inert, and monkeys inoculated with it do not contract the disease. The full particulars of these investigations may be found in my publication in the *Journal of Hygiene*, June, 1907.

CONCLUSIONS.

Yaws is to be considered a form of spirochaetosis, or better, perhaps, treponemosis. The specific agent of the disease is, according to all probability, the *Spirochaeta*, or, more correctly, the *Treponema pertenuis*.

As for the incidence of the *Spirochaeta pertenuis* in patients suffering from yaws and in monkeys experimentally inoculated, the results of my investigations are collected in the following two tables:

TABLE I.—*Incidence of Spirochaeta Pertenuis in Yaws Patients.*

Material Investigated.	Number of Cases Examined.	Number of Cases in which Positive Results were obtained.
Primary lesion	6	6
Unbroken papules of the general eruption	76	73
Ulcerated papules of the general eruption	76	52
Blood of the general circulation ..	20	*nil*
Spleen blood	5	3
Cerebro-spinal fluid	6	*nil*
Lymphatic glands	11	6

TABLE II.—*Incidence of the Spirochaeta Pertenuis in Monkeys Inoculated with Yaws.*

Material Investigated.	Number of Monkeys Examined.	Number of Monkeys in which Positive Results were obtained.
Primary lesion at the point of inoculation	16	15
Framboetic papules which appeared some time after the primary lesion	3	2
Spleen juice	4	3
Bone marrow	4	1
Blood of the general circulation ..	15	*nil*
Smears from liver	4	*nil*
Lymphatic glands	6	3
Brain substance	4	*nil*
Cerebro-spinal fluid	4	*nil*

NOTE ON A BACILLUS FOUND IN A CASE OF GANGRENOUS APPENDICITIS.

By ALDO CASTELLANI, M.D.,
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VARIOUS organisms, as is well known, may be found in appendicitis—the colon bacillus, the *Streptococcus pyogenes*, the pneumococcus, the typhoid bacillus, etc. As a small contribution to our knowledge of the bacteriology of the disease, I venture to publish some observations I have made on a case of gangrenous appendicitis. The patient began suffering from vague abdominal pains in September, 1906. The patient did not seek medical advice. On November 3rd a typical appendicular colic set in, and an operation was advised by his medical attendants. On the 4th the operation was performed. The appendix was found to be gangrenous. The organ was removed under strict aseptic conditions and placed immediately in a

sterile Petri dish; a small portion, cut with sterile scissors, was smeared at once by myself on three ordinary agar plates, as well as on three MacConkey's medium plates. The plates were incubated at 35° for twenty-four hours and then examined. The plates prepared with MacConkey's medium presented, besides several red colonies (*coli* and *coli*-like bacteria), very many white ones. The white colonies were far more numerous than the red ones. Seventeen of the white colonies were further investigated; they were found to be all of the same organism, of which I give here a brief description:

Morphology.—A rather short rod, 2 to 4 microns in length, closely resembling the Kruse-Shiga bacillus. It is not motile, and I have never been able to demonstrate flagella. Brownian movement not very marked. It is easily stained by the ordinary aniline dyes, but not by Gram.

Cultural Characters: Broth.—Diffuse turbidity, no formation of pellicle. After some days a little sediment is present.

Pepton Water.—Growth less abundant than in broth. Diffuse cloudiness, no pellicle.

Agar.—Growth similar to that of Kruse-Shiga bacillus. Surface colonies roundish and delicate; much more delicate than those of many strains of *coli*.

Gelatine.—No liquefaction. Colonies roundish, very delicate.

Action of the Various Sugar Media:—

Lactose.—No production of acid; no gas.
Saccharose.—No formation of acid or gas.
Mannite.—No production of acid or gas.
Saccharine.—Neither acid nor gas formation.
Glucose.—Acid and gas.
Maltose.—Acid and gas.
Glycerine agar.—No gas formation.

Litmus Milk.—The medium becomes gradually acid, and is generally clotted after ten to fifteen days.

Serum, *Serum-agar*, *Blood-agar.*—The growth in these media does not show anything characteristic.

Indol formation.—Trace only.

Pathogenicity.—Soon after isolation the germ was very virulent; ¼ c.cm. of a 12 hours' old broth culture was capable of killing guinea-pigs if administered subcutaneously; $\frac{1}{10}$ c.cm. was sufficient to kill the animals if given by intraperitoneal inoculation. After several transplantations the germ lost much of its virulence.

Agglutination.—The organism was agglutinated up to a dilution of 1 in 120, by a sample of the patient's blood, which had been collected a few hours before the operation. The various strains of *coli* isolated were agglutinated only up to a dilution of 1 in 30. Further researches with the patient's blood were not possible, as the case ended fatally shortly after the operation. The bacillus is agglutinated occasionally by strong typhoid serums, up to a dilution of 1 in 25. It is not influenced by paratyphoid serums, either of type A or of type B; nor by dysentery and paradysentery serums. This bacillus, which is non-motile, does not ferment mannite, saccharose, lactose, while it produces acid and gas in glucose and maltose and coagulates milk, represents one more strain of that large group of organisms occupying an intermediate position between the paratyphoid, the dysentery, and the colon bacillus.

In view of the fact that the germ when isolated was very virulent, was present in much larger numbers than the colon bacillus, was agglutinated by the patient's blood in much higher dilution than the colon bacillus, I am inclined to believe that it may have had part in the causation of the illness.

THE MYOCARDIAL LESIONS OF THE RHEUMATIC INFECTION.

By Carey Coombs, M.D.Lond.,
Demonstrator of Pathology, University College, Bristol: Assistant Physician and Curator of the Museum, Bristol General Hospital.

The present paper is mainly concerned with the earlier acute phenomena of rheumatic myocarditis, rather than with the residual lesions of later years. While acknowledging indebtedness to the work of Poynton, Lees, Fisher, Aschoff, and others, I may confine myself for the present to my own observations.

First, let me briefly refer to the *macroscopic* changes. The ventricles are dilated so that the transverse diameter of the heart is increased, and the lungs displaced to either side, the lower lobe of the left lung being actually squashed. The auriculo-ventricular rings are stretched in common with the rest of the ventricular wall, and their area affords a rough estimate of the degree of dilatation present. Firm pericardial adhesions—mediastino-pericardial adhesions in particular—tend to aggravate and to perpetuate this dilatation; but the myocardial atony will of itself make considerable stretching possible—as, for example, in the case of a boy of 7, who, with an almost imperceptible endocarditis, and a scarcely more definite pericarditis, had a mitral orifice readily admitting three whole fingers.

In many instances hypertrophy is present also; and, as of dilatation, so of this also it may be said that residual lesions of the serous layers, especially pericardial adhesions and sclerosis of the aortic values, are associated with the more extreme degrees of hypertrophy, but are, nevertheless, not essential to its establishment. This is brought out by a survey of the autopsy records of the hospitals connected with University College, Bristol, kindly placed at my disposal by their several staffs. In these records are 89 cases of rheumatic carditis under 16 years of age. In 51 of these the weight of the heart and the age of the patient were both recorded. An analysis of these shows that in patients with pericardial adhesions the age averaged 11, and the weight of the heart 15 oz.; in patients with well-marked valvular sclerosis the age was 14½, and the heart's weight 12 oz.; in those with established lesions of both serous layers the age was 15, and the weight 30 oz (this figure is raised by the inclusion of a heart weighing 40 oz); while in those with early lesions of the serous layers the age averaged 11½, and the heart's weight 10 oz. In the latter group is included a boy of 8, whose heart weighed 11 oz., although the lesions of the pericardium and endocardium were negligible as far as mechanical interference with the work of the ventricles was concerned. The left ventricle wall was ½ in. at its thickest part and the right ventricle ¼ in. Such instances of hypertrophy occurring in the presence of myocardial poisoning without any obvious mechanical cause are paralleled, I think, by the hypertrophied heart of beer drinkers, and by the analogous condition met with in some cases of beri-beri. It seems paradoxical to suggest that the myocardium can hypertrophy to compensate for the dilatation due to its own damaged and atonic state; yet it is difficult to suggest any other explanation. The amount of inflammatory exudation into the myocardium itself is quite insufficient to account for the increase in weight and bulk.

The actual naked-eye appearance and consistence of the heart muscle are but little altered. In one case I have seen, besides the small, fatty areas noticeable in the papillary muscles and columnae carneae, there was an irregularly-rounded, white area near the apex of the left ventricle; microscopically this proved free from fatty change, but comparatively unstainable by ordinary methods, and it was probably a small, anaemic infarct.

The *microscopical* changes I have found in an examination of seven hearts—one an adult whose case I shall emphasize presently, the remainder children—are as follows:

In the *parenchyma* the only reliable phenomenon is fatty change. The other alterations described—loss of striation, thickening of fibres, enlargement of nuclei—are so open to misinterpretation, and to imitation by artefacts, that I have decided to ignore them for the moment. For staining the fat I have used Sudan III and Herxheimer's Scharlach R. acetone solution; the latter gives definite and beautiful results. The fibres are, as Poynton has shown, less severely affected than in diphtheria, yet they are sometimes greatly altered. Sections along the fibres show irregularly quadrilateral areas of fatty change scattered through the myocardium; the earliest globules appear at the poles of the nuclei and form fine rows of spherical or oblong beads along the fibrils, growing and coalescing to form large globules, the largest of all being always at the centre of the cell. Transverse sections of cells show the same centrifugal spread of the change. Fat is seen earlier and in greater quantity at the edges of the muscle bundles than at the centre; in other words, those cells which are in most intimate contact with the capillary blood vessels are the first and most altered. Again, those parts of the heart muscle which suffer the greatest change are under the pericardium and under the endocardium of the papillary muscles; it is said that these are the most vascular parts of the myocardium.

The *interstitial* changes are no less important and much more distinctive than those of the muscle cells. Small

areas of perivascular leucocytosis are seen, but such foci may occur in other infections, as well as in passive oedema of the heart wall; the leucocytes are for the most part polymorphonuclear in type. What is characteristic and, I believe, specific for the rheumatic form of carditis, is the formation of "knötchen," or submiliary nodules such as Aschoff described. In four of my cases they were always situated in the connective tissue of the heart wall, more especially in the subendocardial and subpericardial tissues, and in the immediate vicinity of the medium-sized and smaller arteries; in some instances this latter association was so intimate that the nodule actually seemed to arise from the adventitia of an arteriole; and in one spot there were nodules directly continuous with inflammatory changes in the arterial wall itself. In another section an artery, cut longitudinally, was in immediate relation with a chain of several nodules barely separated from each other. In shape the nodules were round or fusiform, and consisted of a central zone of closely-packed large cells, surrounded but scarcely penetrated by leucocytes. The larger cells appear to be characteristic of rheumatic carditis, for I have not been able to find them in cases of malignant endocarditis, pyaemia with myocardial abscess, and septicaemia with aortitis.

This observation confirms that of Aschoff and Tawara in similar cases. The characteristic cells are spindle-shaped or oval when examined flat; they are very large,

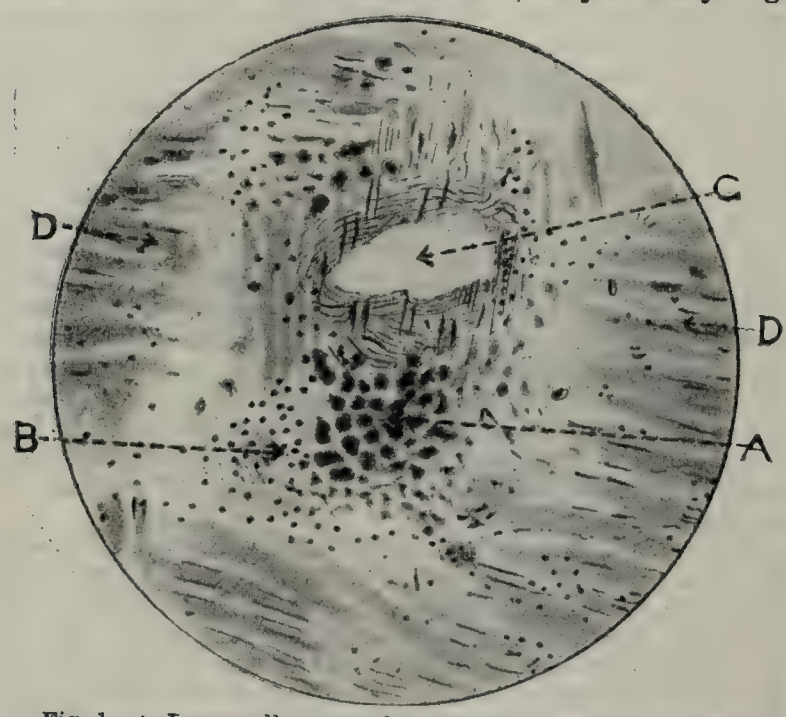


Fig 1.—A. Large cells grouped together to constitute submiliary nodule. B. Small-celled infiltration at periphery of nodule. C. Arteriole in close relation with nodule. D. Cardiac muscle. Eyepiece, 2 Leitz; objective, $\frac{1}{6}$ in. Leitz.

though considerably smaller than the average giant cells of tuberculosis. A rough measurement would suggest as the maximum length about ten times the diameter of an erythrocyte. There is often more than one nucleus, sometimes one large one and two or three smaller ones arranged in a chain along the long axis of the cells. The nuclei stain deeply with Weigert's iron haematoxylin at the periphery, and in sharply defined dots at the centre, the rest being so clear as to give the cell an almost vacuolated appearance. The cytoplasm is relatively small in amount; it stains rather deeply, but uniformly, with thionin, and is coloured about the same shade as the muscle-cells with van Gieson's stain. Their appearance suggests that they are the product of a connective-tissue proliferation in response to an irritant, but this is only a guess. In the nodule they are arranged in more or less regular whorls. In one heart I found these cells in the centre of a small streak of cicatricial tissue, a hint as to their ultimate destiny.

Lesions of the blood vessels remain to be mentioned. I have noted endarteritis and periarteritis, each extending into the media; the close relation between the vessels and the "knötchen" has already been alluded to. At the root of the aorta, about the coronary openings, little white patches are generally visible; these prove on section to be areas of subendothelial inflammation with small celled infiltration, proliferative and fatty changes—an observation rendered significant by the fact that this part of the aorta derives its blood supply from terminal twigs of the coronary arteries.

In conclusion, it may be of advantage to indicate the importance of these lesions by considering them under the following headings:

1. I have elsewhere[1] shown that the signs of cardiac disease met with in rheumatic children are in 75 per cent. of the cases referable to ventricular dilatation and its corollary, mitral incompetence. It is, I think, straining at a gnat and swallowing a camel to suppose that tiny pinhead granulations on the valves are responsible for the signs of mitral insufficiency and to ignore the very considerable stretching of the mitral ring.

2. Further, my analysis of 89 autopsies shows that in 46, or over 50 per cent., the serous lesions were quite inadequate to account for death; in these, therefore, and probably in many of the other 43, the myocardial lesions must be held responsible. If the rheumatic virus can so poison the cell as to interfere with the metabolism of fat, much more must it affect the specialized function of contractility.

3. That reinfection (or recrudescence of a latent infection) may play an important part in the disturbance of compensation in chronic rheumatic valvular disease is suggested by the following case:

A youth of 21, who was known to have suffered from aortic incompetence, the result of previous rheumatic attacks, was admitted to the Bristol General Hospital with indefinite febrile symptoms and slight pyrexia.

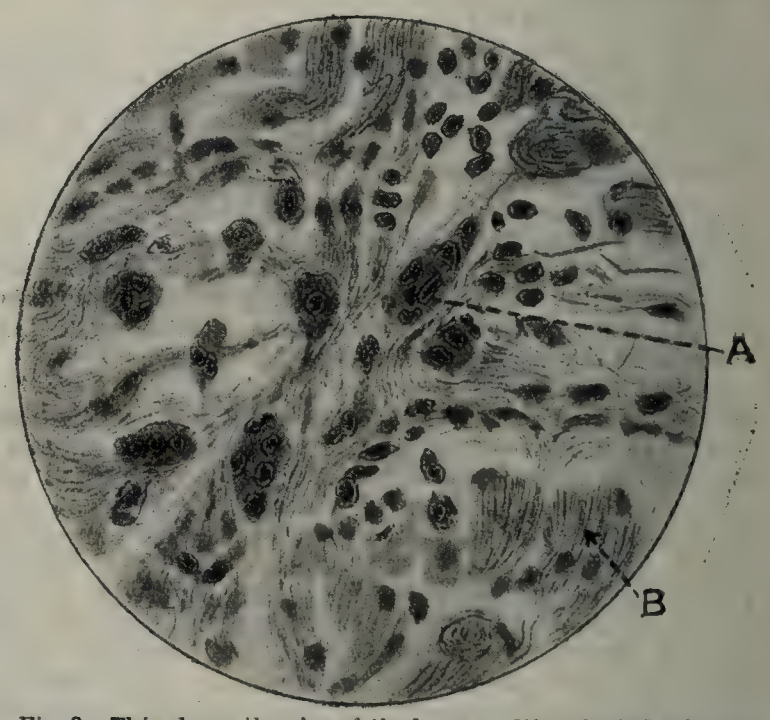


Fig. 2.—This shows the size of the large multinucleated cells (A), which are found in the centre of the submiliary nodules; they are almost as large as the muscle cells (B) lying at the periphery of the field. Eyepiece, 4 Leitz; objective, $\frac{1}{12}$ in. Leitz.

After a few days he died quite suddenly of syncope. *Post mortem* I found aortic and mitral sclerosis, with a tiny recent ulcer on the mitral valve, and an obliteration of the pericardial sac by adhesions. Section of the muscle showed changes identical with those already described as belonging to the acute carditis of childhood; fatty change of the same distribution, with "knötchen" in fair number.

The frequency with which cases of chronic valvular disease exhibit bouts of inexplicable pyrexia during life, the fact that of 76 cases of chronic valvular disease (excluding those associated with advanced aortic atheroma) 39 showed evidence of acute endocarditis or pericarditis, and the discovery of acute myocarditis in this patient, lead me to institute further inquiries into this matter.

In conclusion, I have much pleasure in expressing my thanks to the staffs of the Bristol hospitals for allowing me to use their records and material, and to my chief, Professor Walker Hall, for his encouragement and criticism.

DISCUSSION.

Professor BEATTIE said: Similar leucocyte exudations have been found in experimental cases, but these mainly of the nature of lymphocytes. As to the specific character of the large cells described by Dr. Coombs, similar cells are seen in other inflammatory conditions.

[1] *Bristol Medico-Chirurgical Journal*, September, 1907.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

THE OPEN-AIR TREATMENT OF ACUTE PNEUMONIA.

With reference to Dr. Rennie's article on the open-air treatment of acute pneumonia, I had my attention forcibly drawn to the benefit of fresh air in this disease on the North-West Frontier of India in 1897-8.

In that part of India there is frequently, in the cold weather months, a severe infectious type of acute pneumonia with a high mortality.

The infectious character may be gauged by the fact that it is advisable to change the orderlies attending on the sick at least every forty-eight hours, otherwise they are liable to contract the disease. In one native regiment an epidemic of this disease occurred, and the cases were treated in a large well-built ward with two stoves with fires day and night. The ventilation was very good in the day, but at night, as the temperature often fell to 32° F. or lower, the men, contrary to orders, shut up the windows and doors, and in consequence the ventilation became defective. The mortality amongst these cases was high. Owing to want of accommodation I had to choose between tents or an old broken-down disused barrack; tents are difficult to ventilate, as the men can close every available air inlet, so I selected the latter, the doors of which did not fit, the windows were broken, and there was in consequence a very free current of air throughout the entire building. The charge was most marked, though I have not the records with me and do not remember a death occurring in this barrack, which, at any rate according to our former ideas, was not an ideal place in which to treat pneumonia. The men themselves quickly noticed the difference, and, in spite of having no fires and less comfort, asked to be treated in this building.

The prognosis in acute pneumonia appears to depend on whether the heart can hold out against the toxins and the extra work due to consolidation of the lung. The former I believe to be the main factor, as many of these severe infectious cases die from heart failure long before the extra work due to consolidation of the lung could have had any effect, death occurring in two, three, or four days.

Since my experience on the frontier I have always treated every case with abundance of fresh air, and believe it acts most beneficially. With regard to medicines, I have tried most of those usually recommended, but except hypodermics of strychnine when the heart is failing I have never been able to satisfy myself that they did any good, pneumonia being an infectious disease which runs its course, the result depending on the intensity of the infection in the same way as in any other acute infectious disease. One is apt in this disease to attribute recoveries to certain drugs and imagine one has hit on a specific, but the next epidemic proves that the inference was a fallacy.

Alcohol I regard as I do a spur to a tired horse; it stimulates temporarily, leaves the heart and the patient more exhausted, and has to be frequently repeated; doubtless many cases recover in spite of large doses of brandy.

P. Carr-White, M.B., F.R.C.S.Ed.,
Major, I.M.S.

EXTRAUTERINE FETATION: OPERATION: RECOVERY.

As cases of extrauterine fetation are not too common, I venture to submit notes of the following case. On June 13th I was asked to see Mrs. J., aged 38. She had been fourteen years married, and had only had one child (a boy), now 13 years old. She had never had any miscarriages, but there was a history of endometritis some years ago. About two months before I saw her she consulted a doctor on account of a swelling on the right side, which was very painful, and because she was constantly vomiting. She then went to bed, where she remained until I saw her. Four or five days before I saw her she felt something suddenly "give" on her right side; she got very faint, and the pain became very severe.

On my arrival I found the patient in an extremely weak condition, blanched, and suffering great pain in the right iliac region, where there was an irregular swelling about the size of the fist, dull on percussion and very tender. The pulse was very rapid and small. The cervix was soft, the os patulous, admitting the end of the finger, the uterus tilted forward and somewhat to the left; an ill-defined and very tender swelling could be felt in Douglas's pouch. This swelling could be more easily felt from the rectum. The breasts were enlarged and tender. The last menstruation dated from four and a half months previously. A diagnosis of ruptured ectopic gestation was made.

The abdomen was opened on June 14th; the fetus was easily discovered, lying amongst the small intestines, with a good deal of clotted blood around it. There was no sac to be seen. There were a good many adhesions between the fetus and coils of small intestine, but these, for the most part, were easily broken down. The cord was tied and divided and the fetus removed. The placenta was firmly adherent, deep down in the pelvis, and appeared to be attached to the right cornu of the uterus (or, possibly, between the layers of the broad ligament). As some difficulty on account of haemorrhage was experienced in trying to separate it, it was thought advisable to leave it. After clearing away all clots a glass drainage tube was put in, leading down to the site of the placenta, and the wound closed in the ordinary way. After three days the glass was replaced by a rubber tube. It was syringed daily with boracic acid solution at first, and later with a weak solution of mercury perchloride. On two occasions—the eleventh and fourteenth days after the operation—troublesome haemorrhage occurred, the first time to a rather alarming extent; it was stopped by taking out the tube and plugging with cyanide gauze soaked in adrenalin solution. The temperature throughout was never above 101.6°. There was a good deal of discharge from the tube for the first three or four weeks, small shreds of placental tissue coming away; it gradually diminished, and in about another month had almost ceased. The wound was completely closed on September 3rd. She has menstruated normally once since the operation, and is now in excellent health.

Herbert Smith, M.R.C.S.Eng.,
Honorary Medical Officer, Jersey Infirmary and Dispensary.
St. Heliers.

POISONING BY BELLADONNA.

A woman, aged 60, suffering from chronic rheumatic arthritis, sent her daughter to consult a local chemist, who prescribed a mixture and a bottle of liniment. The daughter, who was illiterate, confused the two bottles and gave the patient a teaspoonful of the liniment to drink. This was about 8 p.m. Shortly after taking the drug the old woman became faint and was put to bed. She got gradually worse, and when I saw her at 1 a.m. she was quite unconscious and almost moribund; the pulse was intermittent and scarcely perceptible; the lower jaw was rigid, the pupils widely dilated, and the breathing very feeble, with gurgling in the throat. Not having been told anything about the drug which had been administered, I was rather at a loss to account for her condition. However, on cross-examination, the daughter gave me the above history, and produced the bottle of liniment, which I had no difficulty in identifying as lin. belladonnae meth.

As the respiration and circulation were so feeble I decided that strychnine was my only hope, and accordingly gave $\frac{1}{30}$ grain of strychnine sulphate hypodermically. This acted promptly, and there was a marked improvement in twenty minutes; the throat was more responsive to tickling with a feather, and the respiration and pulse much better. In half an hour I repeated the dose, after which the improvement became very marked. I was then able to administer strong tea and induce vomiting by tickling the throat. The improvement steadily continued, and at 5 a.m. the patient could be roused and was able to turn over in bed. Having administered strong tea two or three times and induced vomiting after each drink of tea, some very strong tea was given, and then a little whisky at intervals, and at 7 a.m. I was able to leave the patient, who made a speedy recovery.

I wish to emphasize the fact that the strychnine had quite a marvellous effect in restoring the respiration and circulation, although I really thought at the time that the patient was beyond human aid.

The bottle in which the poison was dispensed was the orthodox hexagonal 2 oz. green; but the proper red

"poison" label was not put on, the word "poison" being merely written rather indistinctly along the edge of the label. This of course was useless where the person was illiterate, whereas the red label, if pointed out by the chemist, might have helped her to distinguish between the bottles.

Claremorris. CONNOR MAGUIRE, M.D., D.P.H.

ETHER ANAESTHESIA BY THE OPEN METHOD.

DURING the past three months I have been making an extended trial of the administration of ether by the open method. I am bound to admit that though perfectly well aware that this was the method in use in the United States of America and in Canada, I did not consider it likely that its results could be compared with those produced in England by the closed methods which have been in vogue for the past thirty years; but I have now to record that the type of anaesthesia induced by ether vapour without the rebreathing into a bag inhaler has in this trial proved much superior to that yielded by any other method or anaesthetic with which I have previously been acquainted.

Under the open method the secretion of mucus is decidedly less, laboured breathing and strong abdominal movement are replaced by a type of respiration which, though audible and thoroughly efficient, does not involve an ample excursion of the abdominal wall, and is well suited for operations upon that region, the tendency to venous congestion is abolished, and the after-sickness is less both in frequency and duration.

These differences in the clinical effects of ether, as compared with its administration by closed methods, allow full advantage to be taken of its most valuable quality, to which I have often drawn attention—namely, that it more perfectly blunts the passage of nerve stimuli than any other anaesthetic, and thereby abrogates the occurrence of the reflex laryngeal spasm which proves so troublesome a complication at certain stages of the operation under chloroform and its mixtures.

Not only can adults be satisfactorily anaesthetized *ab initio* when required by ether on an open mask without undue delay, but there can be no question as to the very great safety of the method when proper precautions are taken to prevent exposure to cold, nor as to the ease and simplicity with which anaesthesia may be maintained.

Ether and its vapour are inflammable; the cautery and naked lights must not therefore be brought within 1 yard of the evaporating liquid.

London, W. H. BELLAMY GARDNER.

UNCOMMON INJURY OF TIBIA AND FIBULA.

WHEN looking after the practice of my friend and neighbour, Dr. Huston, Tynan, co. Armagh, I received an urgent message on September 2nd to attend J. S., aged 12 years. When playing hide-and-seek with other children at a friend's house in a hay loft, the child fell through a trap which was covered over with hay into stables below, a distance of about 12 ft. The foot was inverted, there being an angular deformity of about 20 degrees from within outwards about 5 in. above the malleoli; the inner margin of the foot was uppermost, as well as the corresponding portion of the shaft of the tibia. There was a bruise on the outer aspect of the leg corresponding to the apex of the angle formed by the bent bones; the relations of the ankle-joint appeared intact. I suspected that I had to deal with a fracture of both bones; on following down the crest of the tibia, the finger, on reaching the site of the injury, was deflected in an outward direction and returned to the centre line on the inner surface of the shaft which was now placed uppermost. No crepitus nor irregularity of continuity were noticed during this procedure. I next proceeded to spring the fibula, after relaxing the calf muscles, without eliciting crepitus. I then grasped the limb above and below the site of injury, and likewise failed to get crepitus, whereupon I ventured to exert more force in an attempt to disengage any impaction of bones, if such existed; and, to my surprise, I was conscious of the bones straightening out, until all appearance of the bend was obliterated and the limb restored to its normal appearance and position: yet no crepitus was felt and no complaint made by the patient. When I had the limb in a satisfactory position I forcibly rotated the foot and felt for the head of the fibula, which unmistakably rotated in response to the forced movements of the foot. I then came to the conclusion that I had to deal with an unusual state of affairs—namely, a true bend of both bones without a fracture—without, at any rate, complete fractures—and expressed this opinion to those around. I put on Cline's splints, and the child expressed herself as feeling comfortable. She was removed home in a carriage, and next morning my friend (Dr. H.) took charge of the case. His report to me was that on the following day, for purposes of examination, he removed the splints morning and evening. The limb was in a satisfactory position; he could not elicit any crepitus at either examination, and the patient had little or no pain; she was freely moving the "splinted" limb about in bed in a few days.

After discussing the case with me, he agreed with the opinion I had formed of the nature of the injury, and informed me that about two years ago the child had her nose deflected by a press falling on the side of her face. He then suspected a fracture, but on manipulating the injured organ he replaced it without detecting any crepitus. She is apparently a normally-developed child, and there is neither history nor evidence in the osseous system of rickets. There could have been no impaction, as I would necessarily have disengaged it in straightening out the bones and restoring the limb to its normal position; and, further, I felt the head of the fibula rotate under my fingers in response to forcible foot movements. Is it a case of green-stick fracture occurring in such an unusual position and in a patient aged 12 years? I think it hardly likely, but I admit it is difficult to form a positive diagnosis without the aid of the *x* rays, or possibly by the formation of callus at a later stage. Up to the present, three weeks after the accident, there is no callus.

Caledon. R. D. PATTERSON, F.R.C.S.I.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ESSEX AND COLCHESTER HOSPITAL.

A CASE OF VESICAL CALCULUS.

(Reported by E. CHICHESTER, M.B.Lond., Honorary Surgeon.)

THE patient in the following case, a boy aged 16, was admitted, complaining that he was unable to hold his water for long, that it dribbled away, and that he had smarting pain in the urethra when he did pass any quantity. He was a small, stunted boy for his age, and seemed partially imbecile. He had been gradually getting worse for some months.

State on Admission.—His urine was alkaline, and contained small quantities of pus and albumen; no renal casts.

I examined him under an anaesthetic, and found that he had a large stone in the bladder. He was kept in bed at first and the bladder washed out, with a view to improving the cystitis. At first the condition of the bladder did improve, but the pus never entirely cleared up, and before long began to increase in quantity again. His temperature went up, ranging as high as 103°, and a profuse and intractable diarrhoea set in.

Operation and Progress.—Seeing that further delay was dangerous, I decided to operate, though he was very feeble and his general condition decidedly bad. On October 27th, 1906, I opened the bladder by the suprapubic method. The bladder wall was very thick, and on incising it the stone was found to occupy most of the cavity of the viscus, the remaining space being filled with very foul muco-pus. The stone was removed, not without difficulty, the bladder washed out, and a rubber drainage tube inserted. The cut edges of the bladder wall were then sutured to the cut edges of the sheath of the rectus, and the upper parts of the skin incision brought together.

Result.—Recovery was very prolonged, but otherwise uneventful. After the major portion of the wound had healed a small fistula was left, which for a long time refused to heal. Eventually it was induced to close by getting the boy up, evidently the result of bringing his abdominal muscles into play.

Remarks.—The stone, a loose phosphatic one, weighed immediately after operation, 1 oz. 2½ dr.; it was oval in shape, and on sawing it in two I found that its nucleus consisted of an ordinary black pin. Curiously enough, the whole length of the pin was exposed in the section. On being taxed with it, the boy confessed that he had passed a pin, head first, into his urethra on Guy Fawkes Day, 1905. The pin, therefore, had been in his body 356 days, and the stone must have taken something less than 356 days to form—a point worth putting on record, I think. The accompanying photograph, kindly taken for me by the House-Physician, Mr. E. Glenny, gives a good idea of this pin-centred stone, though the pin itself throws somewhat of a shadow.

DURHAM COUNTY HOSPITAL.

A CASE OF CHORION-EPITHELIOMA: HYSTERECTOMY: RECOVERY.

(Reported by D. G. Hunter, M.B., Ch.B., House-Surgeon.)

The patient in the following case, a woman aged 40, was admitted on May 14th, 1907, suffering from metrorrhagia of five months' duration.

History.—She had been married twenty-one years, had had nine healthy children, and never any menstrual trouble until two years ago, when, after an accidental haemorrhage at eight months, her periods became irregular and excessive. Between August, 1905, and Christmas, 1906, she had six "floodings" which were painless, unaffected by rest in bed, and associated with progressive debility. On Christmas Eve, 1906, she passed a large hydatidiform mole, but would not consent to curettage. Thereafter haemorrhage continued till the end of February, abated entirely during March, while during April and until admission it never ceased. There was never any pain or abdominal tenderness, but she sometimes had discomfort in the lumbar region, and often leucorrhoea, which, however, was absent after Christmas, and had never been fetid.

State on Admission.—She was very weak and looked ill. There was moderate haemorrhage, while on bimanual examination nothing was found except slight enlargement of the uterus, which was quite mobile, but somewhat tender. There was no evidence of pulmonary involvement. Upon dilating the cervix free haemorrhage took place, and thereafter a considerable amount of soft greyish material was curetted away, with much blood-clot and some thickened mucous membrane. Microscopic examination proved it to be as was suspected, a case of chorion-epithelioma.

Operation.—Vaginal hysterectomy was performed a week later by Mr. A. M. Vann, M.R.C.S., Surgeon to the Hospital, and the patient made an excellent recovery. On section the interior of the uterus was found to be occupied in almost its entire extent by an oval mass measuring 4.3 cm. in length and from 2.0 cm to 2.8 cm. in thickness. It was attached to the uterine wall laterally, but had no attachment to the fundus. Its general appearance was somewhat similar to that figured in the British Medical Journal of August 24th, 1907, but without the involvement of the fundus noticeable in that case. The histological appearance presented nothing of note.

Remarks.—Nearly five months have elapsed since the operation, and the patient, who has gained 13 lb. in weight during the last ten weeks, appears to be and feels in excellent health. Though it is somewhat early to claim the case as a cure, everything is at present hopeful; while, in consideration of the comparative rarity of this condition, and especially of its early recognition as such, it has been thought advisable to put the case on record.

I am indebted to Mr. A. M. Vann for permission to publish these notes.

COLONIAL HOSPITAL, GIBRALTAR.

(Reported by L. D. Parsons, M.B., Ch.B.Edin., Assistant Surgeon.)

The following case illustrates a common Portuguese saying to the effect that the Portuguese are a very hardy race. While I was seeing out-patients at the hospital on May 27th, a workman, M. P., aged 32, a mason, who was working on the roof of the building, fell from the scaffolding, a height of 30 ft., on to the cemented *patio* below, at 11.45 a.m. I heard the dull, heavy thud, and a sound like a fracture of a bit of wood.

State on Examination.—The man was immediately carried into the consulting-room, and was found to be insensible, bleeding from the right ear and both nostrils, with a contused, irregular wound over the left frontal bone, fracture of first and second metatarsal bones, and flattening of the plantar arch due to rupture of ligaments. There was subcutaneous effusion of blood over the outer side of the left foot reaching to a point 2 in. above the outer malleolus.

Progress.—The patient was conveyed to the surgical ward, and under an anaesthetic (chloroform) his injuries were dressed. Later on he had ¼ grain of morph. sulphate. He became very noisy and restless till 2 a.m. the following morning. On the 28th he was quiet till 6 p.m., when he became noisy and violent, like a patient suffering from mania. He had ¼ grain morph. hypodermically, and 10 grains of pot. brom. and 10 grains of chloral hydrate. He was restless during the night when awake, and his temperature was 101.4° F., and remained up the following day and evening to 100.6° F., dropping to normal on the 30th. He now became somewhat conscious of his surroundings, but not fully so. During his violent excitement he removed the bandages from his head and the splint from his foot. There was a good deal of ecchymosis around his eyes and forehead. He now began to complain of great pain around the back of his head which continued for four or five days. He improved very rapidly after June 1st. The ecchymosis round the eyes cleared up, the wound on his forehead was practically healed (it had been dressed with iodine lotion 1 per cent.), and he began to ask for more to eat, his diet hitherto being 3½ pints of milk during the twenty-four hours.

Result.—His progress was uninterrupted, and he was discharged on June 15th at his own urgent request, although his fractured foot was not quite recovered. He, however, was able to bear his weight on it.

Remarks.—This man had some of the symptoms of a fractured base. I should mention that the pupils were throughout normal in size and in reaction to light. I am inclined to think that the man must have landed on his left foot and then pitched forward on to his head. It is a wonder he was not killed immediately considering the height of the fall and the surface on to which he fell.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

SOUTHERN BRANCH: GUERNSEY AND ALDERNEY DIVISION.

At a clinical meeting held on November 8th, Dr. Corbin in the chair, the following case was read by Dr. Aikman:

Q. E. D. was born in 1875. Her father died in 1888 of phthisis following pleurisy after one year's illness. Mother alive and well. She noted a protrusion of the vagina in 1893, but did not seek advice until 1898, when there was a proposal of marriage. She had then a large cystocele with an unbroken hymen. The cystocele retired at night when she had been in bed, but returned as soon as she got up. A consultant's opinion was taken and marriage was advised, to note the result of a pregnancy. Her first child was born in February, 1900, but the cystocele returned so soon as she got about after a long rest. In October, 1900, the abdomen was incised after the manner for suprapubic cystotomy, and the exposed bladder was tied up to the rectus abdominalis. She had a second child in September, 1903, but the bladder remained in perfect position. In 1905, she had some endometritis and some piles. In January, 1907, she complained of sacral pain; weight, 7 st. 3 lb., which after treatment improved to 7 st 8¾ lb. On February 17th she had a dilated stomach, with splashing and pain in the region, to which blister No. 1 was applied. She was much relieved, and asked to have another blister, which on March 1st she applied—No. 2. She felt so much better after her blisters that she was allowed to repeat them on March 12th, 25th, April 1st, 8th, 23rd, and June 1st. On June 2nd she weighed 7st. 8 lb. The region of the appendix had been frequently examined without eliciting any definite tenderness

but on June 30th she had an attack of appendicitis with fever ranging from 102° F. in the first week, and maintained at half a degree above the normal until the abdomen was opened on August 18th. The caecum was found deeply congested, but no lymph surrounded it, and the appendix was easily hooked out. There was a stricture so close to the caecum that its peritoneal wall had to be stripped back to get a stump. The stump was invaginated, and the peritoneum stitched over it. The wound was closed and healed without event; the temperature dropped to normal on the second day after operation, and the referred pain disappeared. The appendix when removed was much distended, and when cut into gave out clear mucus. There was a small tumour at the root, and the whole was sent to the Clinical Research Association for report.

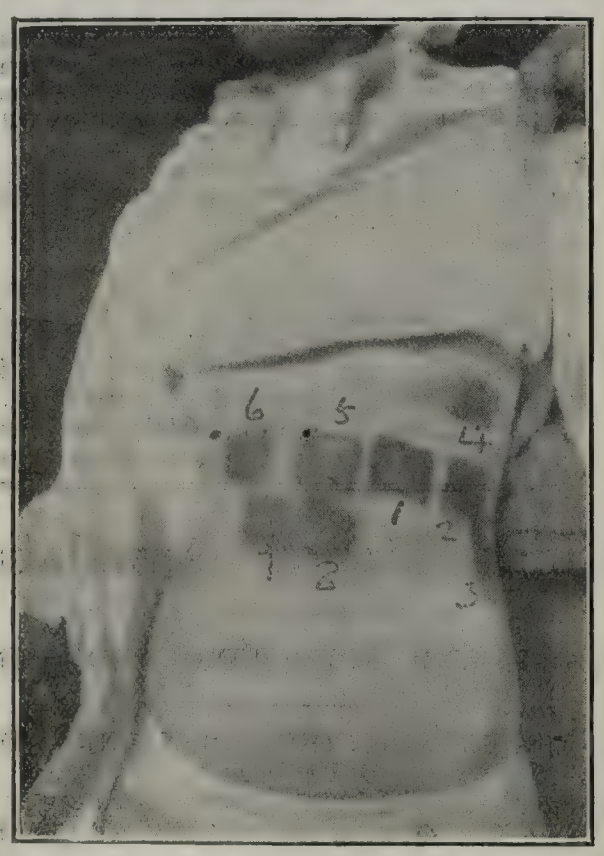
The following communication was received from it:

This appendix is somewhat unusual in that the basal portion was apparently infiltrated with a malignant growth. This had the characters of a columnar-celled carcinoma, and was invading the muscle layers. It had no connexion whatever with the mucous membrane, and was very suggestive of a growth invading the appendix from the caecum. The rest of the appendix showed catarrhal inflammatory changes and thickening of the muscle coats. If this report did not coincide with the clinical aspect of the case, we should be glad to hear from you, as it appears to be somewhat surprising.

Dr. Aikman sent a report of this case to Dr. Head, as the best authority on the subject of referred pain. In his reply the latter said:

"An unperforated appendix within which secretion is dammed up is exactly the condition which produces referred pain, but it is usually situated over some part of the eleventh and twelfth dorsal areas. In Sherrer's statistics 1 in 30 cases of appendicitis exhibited referred pain.

Looking at the photograph, it was seen that the first blister was applied by the patient to an area which was within



the range of the ascending branches of the tenth dorsal nerve, while the second and third blisters corresponded to the eleventh and twelfth dorsal. The later blisters run at once into the region of the tenth, and even the ninth, dorsal, and then wander back to the region of the tenth, the intestinal, and on to the eleventh dorsal. Did this course indicate an invasion of the appendix from the caecum, or the reverse? There was one other point of interest—the patient weighed 7 st. 3 lb. on January 11th, she increased to 7 st. 8¾ lb. on April 23rd, and weighed 7 st. 8 lb. on June 2nd. Had any member noticed that in the early stage of malignant disease the patient put on weight? Dr. Aikman said it was suggested to him some years since, and he thought that he had found it to be the rule. This patient left the nursing home weighing 7 st. 1½ lb. on September 13th, and on October 31st weighed 7 st. 7 lb. There was still evidence of a dilated stomach, but the referred pain was gone (see British Medical Journal, June 21st, 1907, p. 1469). A discussion ensued in which several members joined. Dr. Robinson had seen weight gained in malignant disease under treatment by trypsin. Dr. Benson introduced the need of accommodation for convalescents, whose noise disturbed the seriously ill; it was unanimously resolved to forward the following minute to the Board of Health:

> That in the view of the members of the British Medical Association in Guernsey it is desirable that a day ward or wards be provided for convalescent patients to avoid the disturbance of the seriously ill by the noise of playing children, and that while the members recognize the pecuniary and other difficulties which must surround the provision of a perfect isolation hospital for a small island which is liable to as many acute diseases as the greater mainland, we suggest that this matter should receive careful and early attention.

Diphtheria and Antitoxin.—Dr. H. Draper Bishop, M.O.H., read a paper on this subject. After commenting on the variations of dosage recommended by different authorities in the early days of antitoxin, when while some considered 10,000 units a very heavy dose others recommended 20,000, or even 30,000, units, as in the hospitals of the Metropolitan Asylums Board, he pointed out that antitoxin was not then so concentrated as now, and that the patients suffered much from the administration of so large a bulk of serum. The advantage, however, seemed to be rather with the lower dosage than the higher in these hospitals, although those where the higher dosage was practised received patients from a somewhat better class, and therefore presumably earlier in the disease. Two axioms were well known—(1) that children require as large, or even larger, doses than adults; and (2) that the earlier in the disease the injection is given the better the prognosis. In view of the highly-poisonous effects of the toxin, he considered that the rule should be not only to inject early but to give the maximum dose at once, not dividing it for subsequent administration unless it was subsequently found that the necessary amount had at first been under estimated, except in the case of laryngeal diphtheria, in which the sequelae of faucial and nasal attacks did not often occur, and the toxic symptoms, after relief by antitoxin or tracheotomy, were not, as a rule, marked. It was difficult to estimate the degree to which membrane had spread to the bronchial tubes by ordinary methods, but the harder the pulse the greater the extension. In these cases he believed in giving antitoxin in divided doses, say 4,000 units at first followed by 2,000 or 4,000 more in six or twelve hours as symptoms demand, not waiting to perform tracheotomy until the patient was very ill, and he instanced a case of his own in illustration of this opinion. If it were certain that the patient had not been ill more than a day, and the symptoms were slight in an adult, he would be content with 2,000 units, but for a child, probably 4,000, increasing the dose with each additional day of illness before treatment and in relation to severity of symptoms, the special points being colour of face (whether whitish-blue, with darkish lips, etc.), dilatation of pupils (if excessive being of unfavourable import), presence or absence of nasal discharge, albuminuria, knee-jerks, faint haemic cardiac murmurs, or specially a rapid and irregular pulse, and perspiration with a relatively low temperature being severe symptoms. Toxic effects were frequently rapid when there was a highly anaesthetic throat, sanious nasal discharge, and eroded lips. Other things being equal, a high temperature with perspiration was not unfavourable. It was impossible to convey exact impressions as to grouping of these symptoms and relative dosage, but 12,000 should be a maximum and 8,000 units a heavy dose. With regard to immunization of those exposed to infection, evidence pointed to the fact that it was not of the lasting character of vaccination for variola, but in certain cases might be desirable, where there was short contact, such as the visit of a clergyman or lawyer. Older writers regarded second attacks as rare, but this did not now seem to be so. Sometimes he had seen one take place within a few months of the first, causing a wonder whether there was so much immunity under antitoxin treatment as was the case before it came in vogue. But even if true, this was a small matter compared with its great benefits. In the succeeding discussion, wherein all members considered the paper of great value, Dr. Wallace referred to the similarity between post-diphtheritic paralysis and the late apathetic and somewhat paretic condition of the later stages of Addison's disease, and on this view had had good results in an attempt to eliminate the toxins by diuretics and diaphoretics coupled with the exhibition of adrenal extracts.

REPORTS OF SOCIETIES.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

R. Marcus Gunn, F.R.C.S., President, in the Chair.

Thursday, November 14th, 1907.

Interstitial Kebatitis and Acquired Syphilis.

Mr. J. Herbert Fisher, before reading a paper on four cases of interstitial keratitis from acquired syphilis which he had personally observed, expressed his surprise that so few instances of interstitial keratitis from acquired syphilis had been brought before the Society. This was the more regrettable, seeing that Mr. Jonathan Hutchinson, when vacating the presidential chair, had especially directed the attention of members to this subject as one upon which information might usefully be collected. The textbooks dismissed the subject with very brief reference, and gave no authoritative statements as to frequency, date of onset, severity, and prognosis of the disease. After reading notes of his four cases, and alluding to one of corneal inflammation which rapidly followed the primary inoculation of syphilis on the lower eyelid, the author expressed his opinion that interstitial keratitis from acquired syphilis was generally a tertiary manifestation; that it appeared usually to attack only one eye; and that the infiltration frequently limited itself to a portion only of the cornea; that the keratitis, as far as it went, was identical in clinical appearances with that due to inherited disease, and that the statement which had been made by Nuel, that it was usually secondary to irido-choroiditis, was by no means universally accurate. He also read notes of a case of interstitial keratitis in the child of a mother who had herself inherited syphilis, and who had in consequence suffered from kerato-iritis with choroiditis and deafness. The question of the transmission of syphilis to the third generation was raised upon this case. Assuming the husband of a woman who had inherited syphilis to have acquired syphilis, the point was raised whether she was more or less likely than a wife free from inherited taint to bear syphilitic children to him. Other practical points of discussion were raised, and members were invited to contribute their experiences, in hope that evidence might in time be obtained which would be of guidance both to ophthalmic and general surgeons in answering the questions which might be addressed to them as to the advisability of marriage by patients who were the subjects either of inherited or of acquired syphilis.

The Pectinate Ligament.

Mr. Thomas Henderson (Nottingham) read a paper on the anatomy of the so-called ligamentum pectinatum iridis and its bearing on the physiology and pathology of the eye. He stated that the so called pectinate ligament was a part of and belonged to the sclera. The principle on which it was constructed was perfectly simple, being exactly the same as that which obtained in the fibres of the neighbouring tissue in which it lay, as an open network, composed of non-sclerosed interlacing fibres, which were in direct continuation with the circular and longitudinal bundles of the sclera surrounding the venous sinus of Schlemm's canal. The circular fibres were made out in tangential and transverse sections of the pectinate ligament, while the longitudinal fibres were seen in radial sections. The criterion of a true radial section was that it showed the anatomical connexion and continuation, often suggested but hitherto never yet demonstrated, of the hyaline layer of the ciliary body with the posterior limiting layer of the iris. Arising as a continuation of the innermost lamellae of the cornea, the pectinate ligament could be divided into (1) a small outer or scleral portion, where fibres at the posterior end of Schlemm's canal became lost in those of the sclera; and (2) an inner, larger, or ciliary division, which could be still further subdivided into (*a*) a portion which pierced the scleral ring to give attachment to the meridional fibres of the ciliary muscle; (*b*) a part which passed internal to the scleral ring to terminate in the connective tissue stroma of the circular portion of the ciliary muscle. None of the fibres of the ligament turned round into the root of the iris, as was described, but this appearance was the result of an oblique section, and emphasized again the importance of studying only true radial preparations. The iris root was attached to the circular bundles of the ligament at a point just posterior to the scleral ring, which attachment to the ligament was quite a different matter to fibres of the ligament being said to bend round into the iris, which they did not. He considered that the term "ligamentum pectinatum iridis" was thus not only altogether inappropriate, but also wrong and misleading, as in man it was neither a comb like structure, nor was it a ligament to the iris. On this account, and because of its retiform and cribriform structure, and further, on account of it being a ligament in the true sense of the word to the two portions of the ciliary muscle, the the term "cribriform ligament of the ciliary muscle" was much more appropriate. This ligament showed a most marked histological difference in its structure and nature at different periods of life. In youth it was cellular, while as age progressed it became more and more fibrosed. It was this physiological sclerosis in excess that he considered was the fundamental *causa causans* of primary glaucoma, in the causation of which two factors must be separated—the one constant, the other accessory. The first and constant factor was sclerosis of the filtration network and a consequent diminished outlet. The second and variable agent was vasomotor in nature, and it was this which determined the acute attack, in which there was superadded to the first an inflow out of proportion to the available and already reduced channels of exit from the eyeball. Viewed in this light, the whole phenomena of glaucoma, clinical and pathological, could be explained. A closer study of this sclerosis of this filtration network gave a clear view of the process of development and stages of formation of connective tissue, with definite histological proof that white and elastic tissue was not a direct conversion of the cell protoplasm, but was derived indirectly from alteration and transformation of a homogeneous substance which was itself the product of cellular activity. The alveoli of the filtration network were connected with the lymph spaces of the cornea and sclera, whose fixed corpuscles were brought into direct association with the endothelial cells of the anterior chamber. It was in consequence of this anatomical continuity that the cornea, by diffusion, received its nourishment from the aqueous. This fact would explain a great deal, and would have the utmost bearing on the pathology of corneal diseases.

ROYAL SOCIETY OF MEDICINE.

Pathological Section.

S. G. Shattock, F.R.C.S., President, in the Chair.

Tuesday, November 19th, 1907.

Avian and Human Tuberculosis.

A communication on this subject was made by Messrs. S. G. Shattock, C. G. Seligmann, L. S. Dudgeon, and P. N. Panton, and dealt with a large and varied number of feeding and inoculation experiments, together with the application of the "opsonic" test as a means of studying the relationship between the avian and the human tubercle bacillus. As in the case of the human disease, a point of departure was obtained by taking a typical example of pulmonary phthisis, so in that of the avian a "typical" case was one in which, with or without ulceration of the intestine, there was tuberculosis of the spleen and liver, the lungs being uninvolved. This might be selected as a standard of the avian disease, since it was the usual form which fatal tuberculosis assumed in the bird. The authors then gave an account of different forms the disease might take in birds, drawn up from the *post-mortem* examinations carried out at the Zoological Society's Gardens during the last few years. It was still a common belief that avian tuberculosis was contracted from a human source—namely, from the ingestion of sputum expectorated by the phthisical. The birds used in all the experiments of the authors were pigeons. It was, they found, quite impossible to produce tuberculosis in pigeons by the administration of tuberculous sputum. In one series of experiments the sputum was made into a paste with bread; in another, peas were stirred in sputum and administered almost daily, one of the birds being so fed for nine months. In no case was there any

macroscopic or microscopic infection of the intestine; all the viscera were invariably normal. A further series of pigeons was inoculated (by injection) with tuberculous sputum made into an emulsion with sterilized salt solution. Of these, two showed, on being killed after seven weeks, a slight local lesion; two killed after ten and eleven weeks, showed none. Four guinea-pigs injected from the same sputum, died with advanced tuberculosis. Another series of pigeons was inoculated (by injection) with a suspension in salt solution, of the tuberculous organs of guinea-pigs which had been infected by means of human sputum. In birds killed up to six and a half weeks a local abscess or necrotic lesion was all that was found; in birds killed later no lesion was present at all. These results brought out a retrogression instead of a progression of the infective process, the most pronounced local lesions being those of the earlier dates. In a further series of pigeons regular feeding was carried out with the tuberculous spleens and livers of various other birds, as many as 17 of the latter being used. In 5 pigeons so fed (killed after 12, 17, 20, 24, and 33 weeks) there was extensive intestinal tuberculosis, accompanied in two with disease of the abdominal viscera. In view of the fact that bacilli may be transferred to the mesenteric glands through an intact intestinal mucosa, the authors, in order to see whether inert particulate material might be similarly transferred, fed young rabbits with charcoal biscuit. In one such experiment the animal was fed for forty-six weeks, and consumed about 6 lb. of the finest wood charcoal. On microscopic examination considerable collections of charcoal were found in the deeper parts of the follicles of the Peyer's patches, and small foci of the substance in endothelial cells in the glands of the mesentery; none had reached the spleen or the bone marrow. The authors had thus succeeded in reproducing experimentally in the intestinal tract the common pigmentation occurring in the bronchial glands of healthy persons from the inhalation of carbon. The authors next gave the results of inoculating pigeons with salt suspensions of the tuberculous organs of other birds. In the birds killed at earlier dates a local lesion was found; in those killed at later dates visceral tuberculosis was found in addition, of the spleen more particularly. Similar suspensions of avian tubercle were used as injections in the case of a series of guinea-pigs. The results showed that the infective process, although it might produce a local lesion and a secondary involvement of the neighbouring lymphatic glands, did not extend to the abdominal or thoracic viscera, although the time allowed in some of the experiments was twenty-two weeks. A further point worthy of remark was that, instead of an advance in the infective process, a retrogression took place when the animals were kept for the longer periods. In both these ways the results differed from those which followed the similar injection made upon the guinea-pig with human sputum. The Rhesus monkey was readily infected by the ingestion of human sputum, but the authors had been unable to produce any disease by the administration of avian tuberculous material. They next recorded a series of observations upon the reduction of phagocytosis that occurred when different samples of the serum of a tuberculous patient were saturated with the human and avian bacilli, the cells used being the washed corpuscles of normal human blood. These showed that the "opsonin" was extracted as fully by the human as by the avian bacillus, that is, that no differentiation was thus brought out between them. The authors, however, regarded the differences shown by feeding and inoculation as indicating that the bacilli were not identical, in spite of the negative evidence in the other direction afforded by the phagocytic results. Two of the authors (S. G. Shattock and L. S. Dudgeon), in carrying out observations with melanin, had found, amongst other things, that the "tubercular opsonin" was removed from tuberculous serum by saturation with melanin, and they regarded this as showing that little stress, in this case, could be laid upon the result first mentioned as a proof of pathogenic identity. The mechanical removal of the "opsonic" substance by finely suspended material was a factor requiring to be taken into account. The question of the convertibility of the human into the avian bacillus was next discussed. The authors' experiments in this direction did not show any such transformation. They inoculated pigeons with human tuberculous sputum, and afterwards inoculated guinea-pigs with the local lesion produced, and with the spleens of these birds. In no case did the spleens of the pigeons show any sign of disease. Nevertheless all the guinea-pigs inoculated with these spleens developed general tuberculosis. In one case the pigeon was allowed to live eight weeks. The human bacillus in these experiments, transferred to the bird's spleen, was thus subjected to the action of the cells and juices of the bird, even for eight weeks; yet when inserted into the guinea-pig it produced, not the local disease set up by the avian bacillus, but the full disease that follows the introduction of the human micro-organism. The authors did not accept Nocard's deductions in this matter. Nocard's experiments of placing cultures of the human bacillus, in collodion capsules, into the peritoneal cavity of birds, and afterwards finding that they had a reduced virulence towards the guinea-pig, were criticized by pointing out that the bacillus so forced to grow would poison itself by its own products, and that in this way its virulence would naturally be reduced. It was significant, moreover, that the so-called avian bacillus thus evolved had not proved pathogenic to the bird on intraperitoneal injection, except in one instance, and that it would still kill guinea-pigs when injected intraperitoneally. The authors did not hold that avian tuberculosis arose from a human source. Birds could not be experimentally infected by feeding them with sputum, whilst they were infected by feeding them with tuberculous avian material, They concluded, therefore, that the human and the avian tubercle bacilli were not identical; they were at present sufficiently differentiated to rank as two micro-organisms.

SOME EXPERIENCES WITH THE TUBERCULIN OPHTHALMIC REACTION.

Mr. L. J. AUSTIN and Dr. O GRÜNBAUM gave a brief summary of the evidence upon which v. Pirquet concluded that the formation of a papule within twenty-four hours after inoculation depended upon the interaction of the virus and a property of the inoculated, which he termed "allergie." They pointed out that v. Pirquet had shown that on applying a 25 per cent. solution of tuberculin to the scarified skin of a patient suffering from tuberculosis the papule appeared within twenty-four hours. This reaction was only of diagnostic value when applied to young children, for most adults developed a papule, whilst it failed in tuberculous subjects shortly before death. Calmette had transferred the site of inoculation from the skin to the conjunctiva. This investigator placed one drop of an aqueous solution of a precipitate obtained by adding 95 per cent. alcohol to tuberculin, in the eye. The development of a conjunctivitis within twenty-four hours was asserted to be proof positive that the patient was suffering from tuberculosis. Mr. Austin and Dr. Grünbaum had tried this test on 70 cases; of these they believed 20 to be tuberculous, and the reaction proved positive in 18. Of the two in which reaction failed, one may be accounted for by the fact that the test was carried out within a few days before death. Negative results were recorded in 52 cases, and amongst these were 15 cases of bronchitis, 8 of typhoid, 3 of pneumonia, 3 of acute rheumatism, 2 of chlorosis, 3 of diabetes mellitus, 2 of chronic arthritis, 2 of empyema, 2 of hysteria, and many other single cases of various diseases. They concluded that the tuberculin ophthalmic reaction promised to be a most valuable method of diagnosing obscure cases of tuberculosis, but that, like all other tests, it was not infallible.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a meeting held on October 24th, the PRESIDENT (Dr. G. Thomson) in the chair, Mr. A. CUFF read notes of the following cases: (1) Foreign body in bronchus in a child aged 3, which had accidentally inhaled a small cartridge case; this entered the right bronchus, and was there localized by the *x* rays and removed through a low tracheotomy wound, being dislodged by a Killian's sharp hook and coughed up. (2) A case of foreign body in the oesophagus in a child, aged 5, which swallowed a halfpenny; this was localized in the oesophagus opposite the second dorsal vertebra by the *x* rays. An attempt was made to remove it with a coin catcher. The metal part, however, broke off and remained in the gullet. An oesophagotomy was performed and the

coin secured but not the broken part of the coin catcher. The wound healed well but the metal part of the coin catcher caused great trouble. The child had a high temperature with rigors, which did not cease after the missing piece had been passed per anum. The abdomen was opened, but the only abnormality discovered was enlargement of the mesenteric glands. The child subsequently completely recovered. (3) *Resection of thyroid* for acute dyspnoea. A man, aged 18, had been treated with iodide of potash for a goître. The gland suddenly increased in size, causing profound dyspnoea. He was brought to the Sheffield Royal Infirmary in such acute distress that his doctor was hesitating whether to do tracheotomy in the cab. A high tracheotomy was performed and a catheter passed down below the obstruction, with, however, only partial relief. A hemi-thyroidectomy was performed under local anaesthesia. The wound healed without any complication in spite of the presence of the tracheotomy wound. The exhibitor thought that the textbooks rather overrated the danger caused by the presence of the latter.—Dr. Henry showed two cases of *Congenital syphilis*. One of these was a boy with Hutchinson's teeth, interstitial keratitis, gumma of scalp, rhagades around the mouth, and a liver enlarged to below umbilicus; there was syphilitic osteo-arthritis of both knees, with much enlargement of the epiphyses of femur and tibia.—Mr. P. E. Barber, in a paper on the *Artificial feeding of children*, said the best substitute for human milk was herd, not single cow's milk, and showed how it could be modified so that not only fats, carbohydrates, and proteids, but also the caseinogen and lactalbumen were in the right proportions. This latter point was of great importance, as excess of caseinogen was often the cause of trouble. The mixture which approximated most nearly to human milk was: Whey 18 drachms, milk 6 drachms, cream 1 drachm, and 1 teaspoonful of sugar. He did not approve of barley water as a diluent. As substitutes for fresh milk, there were condensed milk, which, when sweetened, contained so much sugar that it was impossible to obtain the right proportions, and when not sweetened presumably contained some antiseptic. Humanized brands of milk could be obtained which were borne very well, and some very cheap. When babies were unable to deal with the curd of modified milk it was necessary to peptonize it. The child could be taken off the peptonized milk by gradually shortening the time for peptonization. There was much to be said on either side as regards sterilization. He condemned the proprietary foods as likely to produce rickets. He laid great stress on the examination of the diapers in order to find out whether the child was properly digesting fats and proteids. Dr. Barnes admitted that many children did very well on milk unmodified or simply diluted, but where there was any alimentary disturbance some modification was necessary. He advised the American system, and gave his experience at the infirmary. Its advantages were (1) simplicity, and (2) great elasticity, enabling symptoms to be treated by variations in the proportions of fat and proteid. He admitted that it was impossible in some cases to begin with a full proportion of proteid. He condemned patent foods because they were either very bad or very dear. He strongly advised boiling the milk, because pure milk was very difficult to obtain, and he thought the danger of diarrhoea was much greater than that of scurvy-rickets. Dr. Harold Leader thought that infants' stomachs were incapable of discriminating between small differences of percentages. Most children did very well on unmodified milk or on milk simply diluted with barley water. The milk should be boiled in summer. He condemned patent foods as they were so much abused, especially by hospital patients. Dr. Naish entirely agreed with Mr. Barber. He condemned the American method because it took no notice of the difference between the percentages of casein and lactalbumen in human and cow's milk. This explained why, in the American system, it was often impossible to commence with a full proportion of proteid. He deprecated boiling the milk, because, although the risk of scurvy-rickets was very small, he was strongly of the opinion that children fed on boiled milk alone could develop rickets.

Glasgow Medico-Chirurgical Society.—At a meeting on November 1st, Dr. Walker Downie, President, in the chair, Dr. G. Burnside Buchanan showed an infant on whom he had operated for relief of an *Imperforate anus* when two days old. There were no signs of intestinal obstruction. The child was very small, and the skin dry and wrinkled. There was an anal dimple ¼ in. deep. The blind end of the anus was found 1 in. from the surface, and there was no cord of dense tissue between it and the skin. The rectum had to be separated for 3 in. from the perineal surface before the end could be brought to the edge of the wound. Eight weeks after operation the child was very well.—Dr. Arthur J. Ballantyne showed: (1) A case of *Syringomyelia*, with eye symptoms, chiefly unilateral. The general symptoms began in the left arm, and were still more marked on that side. There was drooping of the upper lid, contraction of the pupils, and exophthalmos on the left side. The left pupil did not dilate in the shade, on sensory stimulation, or on application of cocaine. Both optic discs were pale, the left more so than the right, and there was well-marked contraction of the visual fields for white and colours, also more marked on the left side. Nystagmoid movements could be elicited in the left eye. All the other ocular functions were normal. (2) A case of *Albuminuric retinitis*, with vascular changes, in a man aged 36, with contracted white kidney. The chief interest of the case lay in the presence of four small globular aneurysms in the course of one of the retinal arteries. These disappeared under observation in the course of four or five months. Blood pressure was persistently high throughout.—Dr. T. K. Monro reported a case in which degeneration in the spinal cord was associated with *profound anaemia*. The patient, a compositor, aged 28, had not felt quite strong since he had rheumatic pains in his knees a year previously, but it was in August, 1906, that a serious failure of health took place. His legs were stiff and weak, and, indeed, he had frequently fallen. In November, 1906, he became subject to occasional attacks of pain in the stomach, and it was found after admission that blood corpuscles were present in the stools, but otherwise there were no symptoms of gastric ulcer. The knee-jerks were lost, and there was well-marked ataxy in the legs, but sensation was unimpaired. A blood examination gave the following results: Reds, 2,042,000 per c.cm.; whites, 6,400 per c.cm.; Hb., 15 per cent.; colour index, 0.3. Differential count: polymorphonuclear, 77.6 per cent.; small mononuclear, 18.1 per cent.; transitional, 1.8 per cent.; eosinophile, 1.8 per cent. One normoblast was seen. The temperature was irregularly febrile. Under treatment by iron, arsenic, and calcium, the blood underwent great improvement, but the general condition deteriorated, and death took place on March 12th, 1907. The autopsy (made by Dr. Charles Workman) revealed early atheroma of the aorta, hypertrophy of the left ventricle, pyaemic abscesses in the two kidneys, and a large chronic ulcer about the middle of the small curvature of the stomach. The marrow in the shaft of the femur seemed normal on naked-eye examination. Microscopic examination (made by Dr. Mary B. Hannay) showed sclerosis of the posterior columns of the cord, most marked in the lumbar region, and also very slight sclerosis of the pyramidal tracts. Marrow from a rib was found to be poorer in cellular elements than a normal specimen. Dr. Monro took the view that the degeneration of the cord, and in great measure the anaemia also, were due to a toxin evolved or absorbed in connexion with the chronic ulcer of the stomach.—Dr. A. Bankier Sloan read notes of a case of *Diphtheritic paralysis*. The infection was of great severity. The fauces and nose were extensively involved, and there was profuse epistaxis and ecchymoses; 72,000 units of antitoxin were given. Severe paralysis ensued, affecting the heart, pharyngeal muscles, larynx, palate, and probably also faucial and some skeletal muscles. Artificial feeding was necessary for thirty-nine days, rectal feeding being necessary for twenty-two days, and nasal feeding for seventeen days. Severe albuminuria and general oedema were present. Dr. Sloan insisted on the much greater frequency and severity of paralysis after severe attacks of diphtheria. Statistics were shown corroborating this assertion. Dr. Alex. MacLennan showed a small *Fibro-adenoma*, about the size of a hazel nut, removed from the left breast of a woman aged 29. Microscopic sections were shown. The tumour had been present for two years, and was of interest in that there was no doubt about the diagnosis.

Nottingham Medico-Chirurgical Society.—At a meeting on November 6th, Dr. L. W. Marshall read his presidential address on Children's Work in Medicine. After a brief historical survey, he pointed out that children's ailments need be made no speciality in the "popular and evil sense of the word." The work did not deal with an organ, but with the entire organism at its most interesting period of development. Arguing from this fact, and the universal lament of the student that the medical schools did not provide at all adequately for his instruction in this topic, so that he was left to search for knowledge "on his own" after qualifying, Dr. Marshall urged strongly that attendance on the practice of a children's hospital should be compulsory for every student, and that children's diseases should be taught in every medical school by some one who, by his earnestness and enthusiasm, was fitted for the task—not by one who was asked to sandwich it in between other subjects which were to him of more interest, and with which he was more at home. The student should begin his clinical work in the children's ward, for there was no better training ground for adult work, and the man who had children's work at his fingers' ends started with the best possible equipment for the difficulties of general medicine and general practice. It must not be assumed that children were miniature men and women; their ailments had been well called "the grammar of disease," and should be studied first, for child life was exempt from none of the diseases of adult life, though childhood did modify them in proportion to the stage of development reached. To view life as one great entity of which the infant was the stepping stone was to give to work in connexion with children's diseases new force, as well as more interest and much pleasure to the worker. The nutrition, feeding, and hygiene of child life were also very important if disease were to be avoided and a sound constitution acquired. Possessing no intuitive knowledge, the human parent needed guidance as to the care of her offspring, and such instruction ought to come from the general practitioner rather than from lady visitors who obtained their knowledge only from pamphlets. Nursery hygiene did not begin and end with feeding, and those who had to teach others must themselves have some practical knowledge of the subject. If, therefore, medical men were to teach others, they must first of all be instructed efficiently themselves. In all things Nature should be followed rather than forestalled, and education in the technical sense should not begin before the seventh year. The commoner neuroses of childhood were attributable more to errors in rearing than to heredity, and teething had primarily very little to do with convulsions. The malnutrition often spoken of contemptuously as "only rickets" was, directly and indirectly, responsible for more deaths than any other cause, and hence should claim our serious attention. The widespread existence of this scourge might well be attributable, in part, to our own apathy and indifference in the study of infant life and its requirements.

Manchester Medical Society.—At a meeting on November 6th, Dr. S. Moritz, President, in the chair, Dr. Ernest S. Reynolds, in some remarks on the diagnosis of epilepsy, pointed out the difficulties which occasionally arose in distinguishing between epilepsy and the syncopal attacks of mitral stenosis, certain forms of migraine, Ménière's disease, and hysteria. Dr. Alan McDougall, in a paper on the *colony system* of treating epileptics, said that to live congenially a man must be not much unlike his neighbours; and that an epileptic whose malady was at all severe could be like his neighbours only if they, too, were epileptics. The congenial surroundings of a colony gave the confirmed epileptic the best chance of ceasing to have fits, but even in the cases where no diminution of the frequency took place, most epileptics were far happier at a colony than they could be at home. The colony system aimed at developing the character of the epileptic by making him live a life as similar as was practicable to the lives lived by normal people; it treated the epileptic as a citizen rather than as an invalid. Occupation was found for all the colonists; each took some useful part in the work of the colony, work was not done for work's sake, but because it required to be done. Epileptics who could earn their living at home were best kept at home; but dangerous epileptics should be certified and sent to asylums, and all others got their best chance of living a congenial life by residing at a colony. Dr. Charles H. Melland gave an account of (1) a case of *Amœbic abscess of the liver*. The patient had had malaria and dysentery in India. He was invalided home, and when, on his return, he started with periodic rigors and attacks of fever, malaria was diagnosed, and he was at first given large doses of quinine, and later arsenic. This went on for many months. On his coming under the author's care he was in an extremely weak and emaciated condition. The blood examination, repeated on several occasions, failed to reveal malarial plasmodia or any other evidence of malaria, such as an excess of large mononuclear leucocytes or pigmented leucocytes. There was, however, a well-marked polynuclear leucocytosis of 20,000, suggestive of suppuration, and an exploration of the liver in the 7th space in the right anterior axillary line revealed the presence of pink pus, in which a single amoeba was discovered. The discovery came too late to save the patient's life, as he failed to survive the operation for the evacuation of the pus. The case demonstrated the fatal error of diagnosing a case as malaria without a proper blood examination. (2) A case of *ulcerative endocarditis*. The patient was under care for nearly six months, but on two occasions was discharged as cured. From the beginning he had a systolic murmur, heard as well at the base as at the apex of the heart, but beyond this he had from first to last no definite symptoms pointing to any serious heart lesion. There was no rheumatic history. He had pyrexia at times, sweating, pleurisy, and abscess at the base of the left lung, acute nephritis, profound anaemia, and diarrhoea; but it was only at the last, when he developed purpura, enlargement of the spleen, and a general septicaemic condition, that a diagnosis could be made. At one period, during the formation of the pulmonary abscess, he developed an enormous leucocytosis. After death the pulmonary valve was found wholly replaced by granulations. No other valves were affected. The main points of interest were: (*a*) The curiously chronic course and long duration; (*b*) the apparently complete recovery on two occasions; (*c*) the absence of symptoms pointing to any serious cardiac lesion; (*d*) the limitation of the lesion to the pulmonary valves.

South-West London Medical Society.—At a meeting on November 13th, Dr. A. Dumville Roe, President, in the chair, Dr. Francis Hare, in a paper on the *dietetic treatment* of certain diseases in the well-nourished and corpulent, said that as each of the four main varieties of dietetic treatment—vegetarianism, the modified vegetarianism of Haig, the Salisbury meat diet, and Chittenden's reduced diet—were successful in the same disorders, it followed that there was some essential factor common to them all. Rejecting theories which attribute these disorders to purins, toxins, or reflex action, he contended that the one factor which fulfilled all necessary conditions was that to which he had applied the term "hyperpyraemia," or a condition of the blood in which the circulating carbonaceous material was in excess of the capacity of the organism for physiological disposal. Each of the main forms of dietetic treatment acted in its own way to reduce this "hyperpyraemia." In connexion with migraine and asthma, it was of great importance to distinguish between "prepotent" and "post-potent" conditions. In the latter, the safety-valve action of the paroxysms came into action only when the physiological needs of the body had been satisfied; in the former the action was premature, and conditioned by a relative and not a real excess of carbonaceous material; hence many such cases are conspicuously affected by malnutrition. "Post-potent" cases were invariably cured by restriction in diet; "prepotent" less frequently. The President considered that due attention to diet was of great value in the treatment of many diseases, of which he quoted cases from his own experience, and congratulated the lecturer on having been so far successful in placing the subject on a scientific basis. Dr. Harry Campbell gave a summary of his investigations into the probable diet of the prehistoric ancestors of man, showing that man was largely carnivorous at the time when he discovered the art of cooking his food. He adduced this fact as an *a priori*

argument against vegetarianism. Dr. Mercier expressed his concurrence with Dr. Hare's practice. He had found that the consumption of fat—especially in the form of butter—was a potent cause of migraine, and that patients suffering from paroxysmal headaches could always be relieved but not often cured by restriction of diet. Dr. Colbeck, who expressed his indebtedness to Dr. Rabagliati as a pioneer of treatment by diet, gave some facts as to the diminished power of coagulation possessed by the blood of patients suffering from dietetic excess; he referred also to rickets, catarrhs, and fibroses as resulting from similar causes.

Hunterian Society.—At a meeting at the London Hospital on November 13th, Mr. Rowland Humphreys, President, in the chair, the following were among the cases shown. Mr. F. S Eve: A man of 69 with a *Tumour of the testicle* of three months' duration. There was no enlargement of the inguinal or lumbar glands, and the patient was free from pain. The tumour was considered to be malignant. Mr. H. M. Rigby: (1) A man upon whom he had performed *partial gastrectomy* for carcinoma of the pylorus eight months previously; the patient was in excellent health, and had no dyspepsia. There were no signs of recurrence. (2) A man with *Aneurysm of the superficial femoral* artery. Three months previously the superficial femoral artery had been tied 3 in. above the aneurysm. There was a little superficial gangrene of the skin of the heel, but the aneurysm was cured. Dr. F. J. Smith: A man with *Lead paralysis* of the scapulo-humeral and antebrachial type. He had had symptoms of lead colic for fifteen years; there was some blurring of the discs, and a well-marked blue line on the gums. Dr. Hadley: A man with *Fibrosis of the lung*, consequent on pneumonia in May this year. The possibility of the case being one of unresolved pneumonia or tuberculosis was considered. No evidence of tuberculous infection had been found. Dr. F J. Smith: A girl with *Adherent pericardium*, Broadbent's sign being well marked. The patient also had very large rheumatic nodules. Dr. Langdon Brown remarked on the great value he placed on the presence of Broadbent's sign.

North of England Obstetrical and Gynaecological Society.—At a meeting at Sheffield on November 15th, Dr. E. O. Croft (Leeds), President, in the chair, Mr. R. Favell described a case of *Hypertrophy of the labia majora* in a syphilitic patient, aged 28, who had one child, nine years ago. There had been no abortions She gave a history of a lump in the external genitals for the last eight years. Soon after her confinement a year previously, she had noticed some small hard lumps about the anus, which never quite disappeared. Five years ago one of these tumours was the size of a hen's egg, and within the last six months others had appeared. The largest growth, the size of a small cocoanut, was in the left labium majus. Both labia were excised, and microscopic examination showed a loosely-wooven fibrous tissue structure, with inflammatory reaction especially around the vessels.—Mr. A. Cuff showed *Calculi removed per vaginam* from the left ureter of a patient who suffered from symptoms of stone in the kidney. A radiograph located them 2 in. above the entrance of the ureter into the bladder.—Dr. M. H. Phillips exhibited a uterus containing a submucous fibroid undergoing sarcomatous change. It was removed by abdominal section from a nulliparous patient, aged 50, in which menorrhagia had been present for nine years. There had been intermenstrual bleeding and an offensive purulent discharge for fourteen months. On admission the temperature was 101°, and small sloughs were detected in the vaginal discharge. The cervix uteri was patulous, and the uterus was the size of a four months pregnancy. Exploration of its cavity revealed a friable growth, which microscopically proved to be sarcomatous. The cervix was therefore stitched and removal of the uterus and appendages carried out by abdominal section. Five weeks after the operation the patient died suddenly from pulmonary embolism, and the autopsy revealed septic thrombi in the internal iliac veins and an embolus in a branch of the right pulmonary artery. There was no peritonitis.—Dr. Percival E. Barber (Sheffield) mentioned the case of a woman, aged 34, who had had one child three years ago. Two weeks after an abortion bleeding began, and was accompanied by a febrile condition. The uterus was enlarged and the cervix patulous. Suspecting chorion-epithelioma, a scraping removed by the blunt curette was examined microscopically, but did not confirm the suspicion. As the patient was becoming progressively worse, abdominal section was performed, but her condition did not justify an attempt at the removal of the uterus being carried out Recovery, however, gradually took place, and the patient became perfectly well.—Dr. W. E. Fothergill (Manchester) mentioned two cases illustrating the value of *Schuchardt's paravaginal incision*. In the case of a single woman, aged 38, with a large submucous fibroid, the uterus extending to the umbilicus, abdominal section was contraindicated on account of an extremely offensive discharge in a debilitated patient. The removal of the tumour was rendered possible per vaginam by an incision into the left ischio-rectal fossa, and extending backwards to a point ½ in. behind the anus. In the second instance, also in a single woman with a very narrow vagina, hysterectomy for a myomatous uterus was performed after a preliminary incision.—Mr. R. Favell also reported 4 cases of ectopic gestation.

Harveian Society.—At a meeting on November 14th, Dr. Sidney Phillips, President, in the chair, Dr. James S. Corner, in a paper on the pathology and treatment of *Cerebral vascular lesions*, reviewed the older theories as to the pathology of cerebral haemorrhage, and suggested that haemorrhage was probably always preceded by thrombosis, that the two conditions could rarely be distinguished clinically, and that this distinction was not necessary, as the same treatment—namely, stimulation—gave the best possible results. The following mechanism of cerebral haemorrhage was suggested: A small patch of yellow softening, the result of thrombosis, occurs in the neighbourhood of a median-sized artery, destroying the vitality of the artery at that point, which then gives way. Arterial tension is necessary to the circulation of arterio-sclerotic patients, and reduction of pressure involves danger of thrombosis. The lesions found in the brains of arterio-sclerotic patients were described. In regard to treatment, the alkaline citrates were recommended as prophylactics. In the syphilitic cases the best results were obtained by getting the patient under the influence of mercury before potassium iodide was administered. Stimulants, including alcohol and strychnine, should be given in all cases, as they tended to limit the thrombosis and to open up the collateral circulation. Early feeding was essential; lumbar puncture often produced rapid improvement, as much fluid as possible being withdrawn. The patients should be got out of bed as early as possible, and early passive movements, especially to the shoulder, should be ordered.

Society for the Study of Disease in Children.—At a meeting of the Society on November 15th, Dr. George Carpenter in the chair, Dr. G. H. Lock read a paper on a case of *Rheumatic hyperpyrexia* in a child aged 6. A year previously it had had an attack of chorea; on September 10th, 1907, she had left lobar pneumonia, which terminated by crisis on the fifth day; two days after the crisis the choreiform movements returned. On September 20th there was pain in the left hip, and the temperature rose to 100° F. Subsequently other joints became involved, and the case was a typical one of acute rheumatism, with chorea. On the third day the temperature rose to 107° F.; in spite of treatment by ice-pack and graduated bath, death occurred on the fifth day, the temperature just before death being 110° F. The severe choreic movements ceased only with death.—Dr. Eldon Pratt read the notes of a case of: (1) *Fractured lower jaw* in a child aged 4. The child had been kicked by a horse, and the fracture was vertically through the symphysis. It was treated by a dental splint. Union was firm at the end of fifteen days, and a perfect result was obtained, there being complete absence of any deformity. (2) *Vaccinia*. The patient was a baby, who was vaccinated when 6 days old in four places on the left arm. Six days later all four places had taken well; ten days later there was extensive ulceration over the arm, measuring 3¾ in. by 4¼ in.; the surrounding skin was much inflamed, and there were pocks of autoinoculation near the left axilla and over the right ribs. The whole of the body, face, and

limbs were covered with a diffuse papular rash. The condition rapidly subsided under boracic fomentation.—Dr. GEORGE CARPENTER showed a boy of 11 with a *Tuberculous tumour* of the pons verified by Calmette's ophthalmo-reaction. Subjective symptoms commenced in August; optic neuritis and ophthalmoplegia externa appeared at the end of September. He was now leading a fatuous existence, and had continuous incontinence of urine and faeces. He could answer questions rationally, and called out if he wanted anything. Headache was now rarely complained of, sickness had disappeared, the knee-jerks were absent, he lay curled up in bed, and, although blind from choked discs, was contented.—Dr. POYNTON showed a case of *Oedema* persisting since birth in a male child, aged 2 years. Swelling of the feet had been noticed since birth, varying in amount; eyelids had been swollen in the mornings; there was well-marked swelling on the dorsum of each foot, with slight pitting on hard pressure. The urine was normal in quantity, with a faint trace of albumen and a few degenerative epithelial cells and scattered leucocytes; no casts or crystals. He thought that there was some renal fault of congenital origin.—Dr. SUTHERLAND showed a girl of 7 months whose feet had been swollen since birth; the sole was tense and hard, while the dorsum was soft and pitted on pressure. Marked blueness of the feet and hands followed exposure to cold, though the hands were not oedematous. There was no evidence of renal or cardiac disease. The child had suffered for some weeks from lichen urticatus.—Mr. R. WARREN showed a case of *Congenital dislocation of the hip-joint*, in which the *x* rays showed that the head of the femur was absent and the neck was smaller than usual.—Mr. HUGH LETT showed a case of *Acute arthritis* of the hip-joint in a boy of 11, treated by irrigation and drainage. The patient had recovered, with perfect movement in the joint.—Dr. CLUTTERBUCK showed a case of *Intention tremor* in a child of 5½ years. Labour when it was born had been tedious; there was no history of syphilis; there was coarse intention tremor of the hands and marked inco-ordination of the lower limbs. The knee-jerks were increased and Babinski's sign was present; the child had never had convulsions; there were no changes in the fundi.—Mr. A. H. TUBBY showed a case of *Constriction of the thigh* by the umbilical cord.

SOCIETY OF ANAESTHETISTS.—At the first meeting of the session on November 1st, Dr. R. J. PROBYN WILLIAMS, President, in the chair, Dr. A. M. H. GRAY, introduced by Dr. DUDLEY BUXTON, read the notes of a case in which death occurred during the administration of an anaesthetic. The patient, a man aged 44, was admitted for sudden acute epigastric pain, and an exploratory laparotomy was performed eight hours after onset of symptoms. Progressive cyanosis was noticed, and chloroform and oxygen were administered. The cyanosis became more marked, Cheyne-Stokes breathing set in, and the patient died as the abdomen was being sewn up, nothing abnormal having been found. At the autopsy an aneurysm about the size of a walnut was found in the ascending aorta, communicating by a small opening with the pericardium, which contained about half a pint of recent blood clot. It was difficult to say whether death had been accelerated by the chloroform, as some who saw the case did not think there was sufficient blood in the pericardium to have caused death by pressure. Dr. B. H. SPILSBURY said that in cases of death from rupture of the heart very little blood was found in the pericardium. Dr. DUDLEY BUXTON said the increasing cyanosis, unrelieved by oxygen, pointed to some intrathoracic condition. Chloroform, by quieting the circulation, should have been advantageous to the patient, but by its slight interference with respiration was probably a contributing cause of death. Dr. SILK inquired whether a local anaesthetic would have been better. Dr. GRAY, in his reply, thought local anaesthesia would have been preferable. Mr. HARVEY HILLIARD read a paper on a case of status lymphaticus in which death occurred during the administration of an anaesthetic, Dr. B. H. SPILSBURY reading the notes of the necropsy. Discussion was postponed till the next meeting, at which Dr. McCardie will read a paper on status lymphaticus. Mr. KIRKBY THOMAS showed a Carter Braine's arm-rest modified with the idea of securing greater adaptability.

REVIEWS.

ENCEPHALITIS.

THE study of acute and subacute non-suppurative inflammation of the brain is attended by some considerable difficulty, but in a volume entitled *Die Encephalitis*[1] Professor OPPENHEIM and Dr. CASSIRER give a comprehensive summary of what is known on the subject, viewed in the light of their own experience. From the chapter on etiology it would appear that the brain is probably liable to the same inflammatory changes as other organs, for since the demonstration of the influenza bacillus in the brain other bacteria which cause inflammatory changes have been isolated from encephalitic areas.

As predisposing factors the authors assign to alcohol and chlorosis prominent places, but they maintain that head injury, without directly involving the brain substance, will produce a tendency to encephalitis. Various pathological forms of the disease have been described, but the best known is the haemorrhagic type, where small areas of haemorrhage caused by rupture of a vessel or by diapedesis are seen respectively surrounding an arteriole or capillary. Surrounding the haemorrhage is a zone of cellular infiltration consisting of lymphocytes, mononuclear and polymorphonuclear leucocytes. The latter occur in varying numbers, are never a marked feature, may even be entirely absent. A zone of newly-formed neuroglial cells is found circumjacent. Large amoeboid cells have been noted by various authors and are called by Friedmann epithelioid; but Nissl and others look upon them as changed plasma cells. The vascular changes resemble those of inflammation in other organs; but while the transudation in suppurative encephalitis is said to be serous, an amorphous, fibrinous exudate, according to Friedmann, is characteristic of the simple form of encephalitis.

The authors call attention to the fact that encephalitis occurring in the course of an infectious disease, such as influenza, rarely develops until the fastigium has been reached; it may commence days, weeks, and, in rare cases, even months after convalescence from the original infection.

The diagnosis of primary encephalitis presents many difficulties. The polioencephalitis haemorrhagica superior of Wernicke, characterized by ophthalmoplegia, may be simulated by tumour, haemorrhage, or softening. For the most part, acute encephalitis, clinically, conforms less to the last-mentioned conditions, for the patients are usually younger, possess normal vessels, and are without valvular disease. The paralysis occurs only after such general symptoms as rise of temperature, headache, vomiting, etc., and not suddenly, without previous warning, as in the apoplectic affections. The coma in encephalitis is also less deep, and the pupillary and other reflexes can generally be obtained. Lumbar puncture has been used as a means of differential diagnosis. Stadelmann found the cerebro spinal fluid blood-stained and under high pressure in three cases. It has also been stated that, whereas in cases of softening mononuclear cells are found in the cerebro spinal fluid, polynuclear cells occur in encephalitis, but it is doubtful whether this is a constant feature. The symptoms in acute encephalitis and meningitis may be identical, and the authors state the difficulties of diagnosis as follows:

> Finally, it cannot be doubted that a symptomatic picture of encephalitis may be produced by a toxic and infectious cerebral disease without demonstrable lesion. The encephalitis occasioned by uraemia, acetonaemia, and allied conditions should offer little difficulty of diagnosis to a careful observer, who would discover the exact cause of the toxaemia and its correlation with the symptoms.

The authors draw attention to a symptom complex resembling meningitis without corresponding anatomical changes, as described by Schulze, Kohts, Seitz, Lepine, Mills, etc., and more recently in the very instructive cases of Krannhals. Strumpell also mentions cases of acute and severe cerebral disease of primary origin, in which a diagnosis of meningitis was made with confidence, and yet at the autopsy no evidence of it was found. Krannhals's observations on this pseudo-meningitis were made after

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[1] *Die Encephalitis.* Von Prof. Dr. H. Oppenheim und Priv. Doz. Dr. R. Cassirer in Berlin. Zweite Umgearbeitete Auflage. Wien: Alfred Hölder. 1907. (Sup. roy. 8vo, pp. 133, M. 4.60.)

the conclusion of the influenza epidemic of 1889-90. All seven of his cases were acute and showed symptoms almost exclusively confined to the nervous system. Somnolence proceeding to coma, headache, delirium, rigidity of the muscles of the neck, rigors, general or one-sided convulsions, tachycardia, conjugate deviation of the eyes and rise of temperature. In only one case was the temperature subnormal, and that in an alcoholic patient. In the greater number of these cases the diagnosis was meningitis, while at autopsy nothing abnormal was discovered but congestion, oedema, and some lividity of the membranes.

. . . . This may possibly be an abortive form of cerebro-spinal meningitis or a pure toxic condition, but it would be at any rate justifiable in these cases to consider the question of a diagnosis of acute encephalitis.

The treatment recommended is largely symptomatic, such as quiet, rest in bed, subdued light and diaphoresis. The wet pack has been found useful for the irritability, but where much mental unrest is present, narcotics become necessary. Calomel in large doses has been advised by some authors with a view to disinfecting the intestines, and beneficial results have been claimed. Potassium iodide has been used with success by others, and Oppenheim recommends inunction with a colloid unguentum argenti.

The pathological changes are illustrated by figures in the text, and there are two excellent coloured plates showing encephalitic areas in the brain substance. A table of charts showing the course of the temperature and pulse in a case of haemorrhagic encephalitis is also given.

The name of Professor Oppenheim is sufficient guarantee for the excellence of any work on neurology, and the joint authors are to be congratulated upon this very comprehensive work on a difficult and somewhat obscure neurological subject. All that is important in relation to the literature of the subject is contained in this volume, combined with an extensive discourse covering the whole ground in a scientific and eminently practical manner.

TEXTBOOKS OF GYNAECOLOGY.

Over a year has gone by since the first volume of the fourth edition of Dr. Pozzi's deservedly popular *Traité de Gynécologie* appeared and was reviewed in the British Medical Journal. The second volume,[2] though as satisfactory as the first, does not contain so many subjects still under debate. It includes chapters on inflammation and tumours of the ovaries, tubes, vagina and vulva, extra-uterine pregnancy, diseases of menstruation, and the surgery of the perineum. The author writes judiciously about the surgical treatment of inflammatory diseases of the appendages. He is not enthusiastic about resection of the ovary, and admits that ignipuncture, which he once advocated, has so often proved unsatisfactory in his own experience that he has almost abandoned it. Dr. Pozzi does not consider that the uterus should always be taken away when the appendages are amputated. It forms part of the pelvic floor, and therefore must not be lightly sacrificed. When adherent pyosalpinx is removed, total hysterectomy may be demanded, else a pedicle of infected tissue will be left in the peritoneal cavity; in these grave cases Pozzi teaches that both vaginal and abdominal drainage are imperative. When the appendages adhere so closely to the uterus that the uterine tissue is lacerated during their separation, so as to involve the dangers of haemorrhage and infection of clot, Pozzi considers that subtotal hysterectomy is quite sufficient. The surgery of ovarian tumours need not detain us; much has been added to the chapter on tuberculosis of the vulva, vagina, and cervix, and we must make mention of the thirty-sixth chapter, a useful summary of our knowledge up till last year of leucoplasia and kraurosis vulvae. Dr. Pozzi describes and illustrates Forgue's abdominal operation for the cure of vesico-utero-vaginal fistula and other innovations in plastic surgery. The passages on ectopic gestation have been well revised, and much is said of Couvelaire's excellent work which has thrown so much light on the histology of tubal implantation of the ovum. Some of Couvelaire's fine illustrations adorning his *Etudes Anatomiques sur les Grossesses Tubaires*, a treatise which every gynaecologist and pathologist should study, have been reproduced in this volume. The most practical question associated with tubal gestation is, after all, the treatment of early rupture of the sac, a common accident seldom overlooked in these days. In the chapter on pelvic haematocele, "of which extrauterine pregnancy is the most frequent cause" (p. 1088), Dr. Pozzi admits that if the collection of blood when first discovered be well limited and firm, expectant treatment is justified (p. 1092). He disbelieves in the absorption of large haematoceles, and advocates speedy operation when signs of haemorrhage are noted; it is true that he refers to "grave" haemorrhage, but a little further back he teaches that an unruptured tube diagnosed before the fifth month ought to be removed. Thus he is not so conservative as Champneys and Veit. In conclusion we must congratulate Dr. Pozzi on his fourth edition, and both he and his colleague M. Jayle, have shown great judgement in the addition of references.

This *Handbuch der Gynäkologie*, vol. i,[3] is the first instalment of the new issue of the valuable system or collection of treatises, strangely called a "handbook," first published under the direction of Professor Veit exactly ten years ago. The list of contributors is, as might be expected, somewhat modified, and the subjects included in this volume do not correspond precisely to those which made up the first volume which appeared in 1897. The change is of some importance, as the purchaser may desire to know what authority has undertaken to write on any given subject, and may not care to purchase or borrow from a library all the volumes of one edition. We may as well, therefore, note that whilst, as in the 1897 edition, there is an essay on asepsis, etc. (Franz), and another on prolapse and displacements (Küstner), the treatises on diseases of the vagina and malformations of the genital tract have been replaced by the series of articles on uterine fibroids, which are to be found in the second volume of the older edition. R. Meyer writes on the pathology of fibro-myoma, Veit on their clinical features and on palliative treatment and vaginal operations for their relief, Schäffer on electrical treatment, and Olshausen on abdominal operations and on fibroids associated with pregnancy. Some of our readers, awaiting the appearance of the remaining volumes which will contain writings of experts on very important questions, will be interested to know that the contributors to the complete *Handbuch*, besides those already given, are Anton, Bumm, Döderlein, Fromme, Kleinhans, Koblanck, Menge, Pfannenstiel, von Rosthorn, Sarwey, Spuler, Stoeckel, and Winter. The various essays in this volume deserve to be read rather than criticized. Franz of Jena contributes the first paper, The Prevention of Infection in Gynaecology. He writes clearly and in good taste. The few drawings are instructive, and the sketches explaining the protection of the field of operation are especially commendable. We need hardly say that there is more than one drawing of a hand wearing a rubber glove, and that the author strongly advocates that article of surgical clothing. Küstner's article on displacements and prolapses is adorned with some good original coloured drawings of the Alexander-Adams operation. We congratulate Dr. Küstner on laying stress on after-histories in all kinds of plastic operations for prolapse and retroflexion. Unfortunately the judgement and impartiality of different writers who have published statistics can hardly be uniform. Thus where a big percentage of "no recurrence of the displacement" is reported, we are not informed as to the patient's discomfort, which may be unrelieved, although the uterus remains in its right position—"right" at least according to the operator's ideas. After reading any essay on the subject, especially one so impartially written as Dr. Küstner's, the reader must feel that the right way to cure prolapse and retroflexion has not been discovered. The paragraphs on pregnancy in all its relations to displacements and to operations planned for their remedy are most instructive. Meyer's sketch of the pathology of uterine fibroids is of high merit, especially in regard to the good illustrations

[2] *Traité de Gynecologie Clinique et Opératoire.* [Treatise on Clinical and Operative Gynaecology.] Par S. Pozzi, Professeur de Gynécologie à la Faculté de Médecine de Paris. Quatrième édition, revue et augmentée avec la collaboration de F. Jayle. Vol. II. Paris: Masson et Cie. 1907. (Demy 8vo, pp. 1,498. Fr. 15.)

[3] *Handbuch der Gynäkologie.* Herausgegeben von J. Veit, Halle. Zweite Auflage. [Handbook of Gynaecology, edited by Dr. J. Veit. Second completely revised edition.] Erster Band. Wiesbaden: J. F. Bergmann. 1907. (Imp. 8vo, pp. 846. 16s. 9d.)

of the histology of myoma. Two questions immediately suggest themselves when the eye catches the word "fibroid" in a work of this kind; Professor Veit himself replies to the first, the question of treatment. There is no radical cure, he insists, save by operation, and the prognosis of hysterectomy or myomectomy is the better the earlier it is undertaken. Cardiac disease has some definite though ill-defined relation to uterine fibroid independently of bulk and anaemia, and, further, in Dr. Veit's opinion, the urinary tract is subject to prejudicial changes, as is the lower part of the alimentary canal. Palliative measures, it is allowed, have their uses, and on that account an essay on electrical treatment by Dr. Schäffer is included in this volume. Such uses, according to that writer, are very limited, since hysterectomy has become a relatively safe procedure. He would confine it mainly to the "metritic" class of cases, where the myoma is small, yet haemorrhage marked, cases where total hysterectomy has been too rashly advocated. The second question, associated so closely with the word "fibroid," is the choice of operation. As might be expected, Professor Olshausen is in favour of subtotal hysterectomy.

On account of the trifling probability that a subject on whom amputation has been practised will suffer from cancer, I consider that it is wrong to substitute total hysterectomy for amputation on that account.

He adds that he has come across bad after histories, complications due to injuries of adjacent parts in the course of panhysterectomy, just as several British writers have noted, and he also agrees with several of our countrymen that the preservation of the ovaries is no trifling matter, as statistical evidence has shown, and that an ovary should on no account be sacrificed on the ground that it simplifies the process of removal of the fibroid uterus and shortens the entire operation. Lastly, Dr. Olshausen is as cautious as he was ten years since in his views about the conservative operation—myomectomy by enucleation. No doubt it is an ideal procedure, but fibroids and operators vary greatly, and in any one instance much depends both on the fibroid and on the operator.

The third edition of Dr. HERMAN'S *Diseases of Women*,[4] a deservedly popular textbook, is distinguished by the free revision of paragraphs concerning pathological conditions which must be understood on account of their frequency or gravity. The practitioner cannot fail to come across cases of urethral caruncle and uterine cancer, and it is necessary that he should clearly understand what is meant by chorion epithelioma. The author has also edited his chapters dealing with pain, especially in regard to the hysteria and neuroses. Our readers will remember how Dr. Herman introduced the discussion on the "So-called 'Ovarian' Pain; its Causes and Treatment," at the Oxford meeting of the Association. After reading the author's teachings given in brief in the new issue of the textbook, the reader may profitably study Dr. Herman's original and very complete review of the subject in the second volume of the JOURNAL for 1905, p. 1055. For abdominal operations, the writer still maintains that the incision through the parietes should be closed by a single set of stitches. As in the last edition, he warns the reader that an "ovary" in a hernial sac may prove to be a testicle; but though he refers to Chambers's now rather ancient case, he, as before, omits all mention of Neugebauer's statistics. The overlooking of hermaphroditism, recognized subsequently by another, is discrediting to the practitioner. Dr. Herman, as before, wastes no pages over different methods of performing perineorrhaphy, which seem to have but one feature in common—an impossibility of being demonstrable by words and diagrams. His own operation is relatively simple, and, we understand, is popular with practitioners, whilst the well-known drawing at p. 728 is, relatively speaking, fairly intelligible. Dr. Herman still teaches his readers that vaginal hysterectomy is the best procedure in cancer of the cervix. Of Wertheim's operation he speaks with caution, refers to that authority's monograph published in the JOURNAL in 1905 (vol. ii), and gives no drawings, not even details of the steps of the operation. No doubt Dr. Herman was right in not describing a method only practicable for a very skilful expert.

In the preface to his *Textbook of Diseases of Women*,[5] Dr. CLARENCE WEBSTER warns the reader against the concentration of attention on a local pelvic condition without regard to wider physical and psychical relationships. Pascal, the author continues, has a chapter in his famous book, entitled "Man's Disproportion," alluding, we believe, to the *Connaissance générale de l'homme*, the fourth article in the first part of his *Pensées*. Dr. Webster considers that the term "disproportion" might justly be applied "to the mechanical school of gynaecologists who have done so much harm by their failure to give to the various symptoms related to the pelvis their proper proportional values." The author fairly adheres to this good principle of warning the learner against the professional licence of the specialist. The textbook is of the familiar American type, good binding, excellent print, and instructive illustrations being its most marked features, and a large number of the drawings are new, and were prepared under Dr. Webster's direction. Much, of course, is of necessity matter familiar in all similar works. In the passages on surgical technique we see that the author is not relying on second-hand information, and we do not find fault with him because he devotes over fifty pages to that subject and over two hundred to such essentially introductory matter as the anatomy of the genital tract, the physiology of the female, and neuroses and allied morbid conditions not purely pelvic, case taking, and therapeutics. The chapter on ectopic gestation is specially important, since the author is a leading authority on the causation of that condition. He teaches quite plainly, like a man convinced, his well-known theory that tubal gestation is due to decidual reaction in the tubal mucosa, "a reversion to an earlier mammalian type, either in structure or in reaction tendency." As a corollary to Kossmann's well-known teaching, Dr. Webster ascribes primary ovarian pregnancy to decidual reaction in Müllerian relics in the ovary. For it has long been shown that what, for the sake of clearness, may be called tubal tissue is often found within the limits of the ovary. Further, however, Dr. Webster will not go.

There is no proof whatever that ectopic pregnancy begins its development on any other than Müllerian tissue. Primary development on the peritoneum has never yet been established.

Like Couvelaire, another authority on the histology of the parts and structures concerned, he rejects the doctrine that inflammatory changes cause the implantation of the ovum on the tubal mucosa. Dr. Webster clearly distrusts expectant treatment. He advocates operation as soon as diagnosis is established, even in the earlier stages when the gestation is confined to its original side in the ampullar or infundibular portion of the tube or in the ovary. He implies that the detection of the haematocele of tubal abortion should always determine the surgeon to operate. Turning to his teaching on haematocele as such, the reader will find that although Dr. Webster admits that the exact position of surgical procedure in recent cases has not been definitely fixed, he considers that it is extremely likely that in the future operative measures will be adopted in all cases of intraperitoneal haemorrhage "whether the cause be known to be ectopic gestation or not." Some living authorities will not be entirely in agreement with Dr. Webster, especially since he admits that in the so-called (*sic*) tubal abortion "frequently only a localized mass may form." The author does not give a very definite opinion on the radical operations devised by Ries, Wertheim, and others for the extirpation of a cancerous uterus and its connexions. He describes an operation of this type at full length, but without drawings, and warns the reader that it is tedious and requires considerable time. The remote results seem, in his opinion, too small to be of value. He simply states that Taussig has collected reports of 255 Wertheim operations, with a mortality of 17 per cent. The value of such statistics, however, is not high when we remember that they are mainly made up of long series out of the practice of the most expert specialists. Dr. Webster is in accord with

[4] *Diseases of Women; a Clinical Guide to their Diagnosis and Treatment.* By George Ernest Herman, M.D.Lond., F.R.C.P., Consulting Obstetric Physician to the London Hospital, etc. London: Cassell and Co., Limited. 1907. (Demy 8vo, pp. 916; 265 illustrations. 25s.)

[5] *A Textbook of Diseases of Women.* By J. Clarence Webster, B.A., M.D.Edin., F.R.C.P.E., F.R.S.E., Professor of Obstetrics and Gynaecology in Rush Medical College in affiliation with the University of Chicago, etc. Philadelphia and London: W. B. Saunders and Co. 1907. (Super roy., 8vo, pp. 712, pp. 30; 372 text illustrations and 10 coloured plates.)

the majority of his contemporaries respecting the treatment of fibroids.

The custom, so long prevalent in the profession, of encouraging women with fibroids to be patient, and to wait in the hope that the menopause may bring them relief, has been responsible for much unnecessary morbidity and premature death.

He concludes from the standpoint of malignancy in association with fibroids, that total extirpation of the uterus is more scientific than the "subtotal" operation. Altogether, this work is a fairly satisfactory treatise, although many of us would rather so original a writer confined himself to original work.

In November, 1905, we had occasion to review the first edition of Dr. Ashton's *Practice of Gynaecology*,[6] and recommended it as a textbook well suited to the post-graduate student. It is very complete; the author lays great stress not only on details of operations, but also on after-treatment and palatable dietary for the convalescent, and Mr. Altender's drawings of the steps of plastic procedures are clear. A considerable proportion of the drawings have been removed and replaced by a larger number better executed. The text has been thoroughly revised, yet not quite a score of pages have been added. Amongst the additional passages are some good paragraphs on chorion-epithelioma and on washing out of the colon. Dr. Ashton is no advocate of extensive dissections in association with abdominal hysterectomy for uterine cancer, and even when the cellular tissue of the pelvis is involved a radical operation is, in his opinion, useless. He further teaches that if the disease has advanced beyond the uterine structures it develops more rapidly, as a rule, after hysterectomy than when palliative treatment is employed, and consequently the radical operation under these circumstances hastens the death of the patient. No doubt there is too much dissecting upwards in these days, when it is downwards that free removal of parts adjacent to the cancer is needed; in other words, it is more important to take away the upper part of the vagina and surrounding connective tissue than to spend time in perilous dissection of glands around the iliac vessels. The textbook is designed, as its title denotes, for teaching the "practice" of gynaecology, but it is to be regretted that the author, like most other writers of works on diseases of women, does not lay more stress on results and on the relative importance of an urgent plastic operation like the repair of a complete laceration of the perineum, as compared with a new plastic procedure for prolapses. We must, on the other hand, admit that Dr. Ashton's strongest point is his descriptive power applied to the teaching of plastic surgery, a branch of our art which, unfortunately, is not easily to be learnt even by attendance at a hospital.

The fact that Professor Penrose's *Textbook of Diseases of Women*[7] has reached a fifth edition is sufficient evidence that it is appreciated at least by some people, and absolves us from the necessity for detailed criticism, the more so as we noticed the second edition in our issue of October 29th, 1898. At the present time there are two classes of readers of books on gynaecology. There are specialists, who chiefly want to know the best way of doing the operations of which the practice of gynaecology so largely consists; there are also general practitioners who want information as to the diagnosis and treatment of the minor diseases of women, in which operations are either not required or are of doubtful value. The first class, the specialists, will be very pleased with Dr. Penrose's book. His directions as to operations are clear and good; but the general practitioner will be disappointed. Dr. Penrose seems to have so concentrated his attention on surgery that he has hardly thought about anything else, and he copies errors that in the minds of gynaecologists who look for evidence before they accept theories, have long since been exploded. Thus he says (p. 119). "anteflexion becomes pathological when the bend in the cervical canal is sufficient to impede the escape of menstrual blood or other uterine discharges." His own diagrams show no obstruction and no retention of discharges. No specimen has yet been produced to refute Matthew Duncan's assertion that anteflexion produces no more obstruction than a bend in the river Thames. Then we have the old fanciful statements of twenty and more years ago concerning laceration of the cervix—how it causes vertical headache, sterility, reflex nervous disturbances, neuralgias, reflex nausea and vomiting, "cataleptic convulsions and neurasthenia" (p. 154) The most serious misstatement is that "cancer of the cervix is most likely to originate in an old laceration." Those who have studied the early stages of cancer find that it hardly ever begins in a laceration. Dr. Penrose is a surgeon, not a pathologist.

[6] *A Textbook on the Practice of Gynaecology, for Practitioners and Students.* By W. Easterly Ashton, M.D., LL.D., Professor of Gynaecology in the Medico-Chirurgical College, and Gynaecologist to the Medico-Chirurgical Hospital, Philadelphia. Third edition. London: W. B. Saunders and Co. 1906. (Royal 8vo, pp. 1097. 27s. 6d.)

[7] *A Textbook of Diseases of Women.* By Charles B. Penrose, M.D., Ph.D., formerly Professor of Gynaecology in the University of Pennsylvania, Surgeon to the Gynocean Hospital, Philadelphia. Fifth edition. Philadelphia and London: W. B. Saunders and Co. 1905. (Demy 8vo, pp 550; 226 illustrations. 16s.)

PHYSICAL TREATMENT OF HEART DISEASE.

In *Physical Methods in the Treatment of Heart Disease*,[8] Dr. Dampier-Bennett gives a critical description of the various physical methods which have been employed for the treatment of heart disease. The methods of Oertel, Schott, and others are now well known to the profession, and their relative value has become fairly well recognized by those who have had actual experience of their use. In the little work before us the reader will find a good account of the methods themselves, supplemented by a running commentary embodying the experience of a writer who is by no means inclined to take anything for granted, but displays a refreshing degree of common sense in the advice that he gives as to the application of baths, gymnastic exercises, massage, etc. The baths at Nauheim and their imitations elsewhere are discussed, and due emphasis laid upon the necessity for faith on the part of the patient in order to ensure success. The use and abuse of hot and cold baths respectively are incidentally considered, and the advice given as to overuse of either is worthy of consideration by other than cardiac patients and their advisers. As to the exact effects produced by saline effervescent baths, it must be noted that experts are not agreed as to the relative influence brought to bear upon the nerves and upon the blood vessels of the skin respectively. In discussing massage and regulated movements in cases of heart disease, the author points out various conditions under which their use must be advised with caution. His objection to superficial massage of oedematous limbs is somewhat surprising, unless it be intended to apply to advanced cases only. The use of electricity is touched upon, and the fallacies attendant upon the old-fashioned electric bath are duly pointed out. Whether any real benefit has resulted from the use of high-frequency currents does not appear. Some remarks upon the need for respiratory exercises, and the modes in which they may be applied, should be noted. In a chapter dealing with diet for patients with heart disease, the writer expresses strong views, and gives his reasons for them, and the reader may gather some useful hints in dealing with difficult cases. The author's abhorrence of hard-boiled eggs and his commendations of fermented milk will not be shared by all his patients. A rather discursive chapter on drug treatment concludes the work; it contains a good description of the physical aspect of the confirmed opium eater and some suggestive remarks on arterio-sclerosis. Without accepting all the writer's views upon the subject, we can cordially commend this compact little book to all who may be called upon to treat heart disease by physical methods, and who desire to approach the subject from the standpoint of common sense.

LIGHT AND X-RAY TREATMENT COMPARED.

The main value of *Light and X Ray Treatment of Skin Diseases*[9] consists in the data it gives us for comparing the two therapeutic agencies mentioned in its title. The results gained by the authors in their practice are of so varied a character that a simple summary is out of the question. Even among patients suffering from the same

[8] *Physical Methods in the Treatment of Heart Disease.* By Arthur G. Dampier-Bennett, M.R.C.S., L.R.C.P. Bristol: John Wright and Co.; and London: Simpkin, Marshall and Co. 1907. (Cr. 8vo, pp. 111. 3s. 6d.)

[9] *Light and X-Ray Treatment of Skin Diseases.* By Malcolm Morris, F.R.C.S.Ed., and S. Ernest Dore, M.D.Cantab. London: Cassell and Co., Limited. 1907. (Pott octavo, pp. 184. 5s.)

disease, such for instance as lupus vulgaris, the results of one particular method of treatment are not uniform, so that it is often impossible to say finally whether in all of the same class of cases the Finsen light or *x*-ray treatment is the more beneficial. In lupus vulgaris (in all save superficial cases), and also to some extent in rodent ulcer, the authors favour a combined method of treatment. In lupus they make a preliminary use of *x* rays in order that secondary conditions such as ulceration may be removed, and follow on with the Finsen treatment, but in rodent ulcer the violet rays, when applied at all, are applied first. In lupus erythematosus, in spite of the fact that some leading authorities regard the efficacy of radiotherapy in the treatment of this disease as fully established, the authors incline to the opinion that *x* rays are uncertain, and can scarcely be considered an advance on the older methods. They seem to have obtained the best results with high-frequency currents and the Finsen treatment, the former in subacute and the latter in chronic cases. The general impression left on the mind, less by reason of their explicit statements than by the records of cases in their own practice, is that so far as the authors' experience is concerned the result of *x*-ray treatment is rather less encouraging than might have been expected, while with the Finsen light the results are more successful than those with which that method is now usually credited. The book is a useful addition to the rapidly increasing literature dealing with the therapeutic agencies introduced into dermatological practice during recent years. There has been no attempt to make out a case for this or that form of treatment, but the advantages and disadvantages of every method are faithfully set down, and failures when they occur are frankly confessed.

NOTES ON BOOKS.

Before the recent disastrous earthquake, Jamaica was rapidly becoming a favourite resort for tourists in search of either health or pleasure. When time has dimmed the recollection of that calamity, there is no doubt the tourist traffic to that lovely island will revive, and then Mr. Leader's little work, *Through Jamaica with a Kodak*,[1] will be found extremely useful. Written in an amateurish and unconventional style, and containing many personal trivialities that a more practical writer would well have omitted, it nevertheless contains more information likely to prove of service to the visitor than many more pretentious volumes. Especially useful is a list at the end of the book of excursions from Kingston, giving the chief places of interest in the island, their distances, and the manner of reaching them, with the expense entailed. The numerous photographs with which the book is embellished, even if most of them are of diminutive size, are clear and well selected, and give an added interest to the little work.

[1] *Through Jamaica with a Kodak.* By Alfred Leader. Bristol: John Wright and Co.; and London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1907. (Demy 8vo, pp. 225, 129 illustrations and a coloured map. 6s.)

MEDICINAL AND DIETETIC PREPARATIONS.

Dugong Oil.

We have received from the Agent-General for Queensland some samples of dugong oil, which have been sent to this country with the object of ascertaining whether there is any likelihood of the oil being added to the *Pharmacopoeia*. The Agent-General adds that it has been used for many years in Queensland for tuberculous disease, and has been found efficacious in the treatment of consumption. The oil is obtained from one of two species of halicore, sebaceous animals inhabiting the rivers and bays of Northern and Eastern Australia and many of the East Indian islands. Two samples were received and have been submitted to examination; one oil was bright, but gave a small deposit of solid matter (stearin) on keeping; the other contained a large amount of solid matter, rendering it quite opaque. For examination the clear portion was used in the first case and the mixture of solid and liquid, after shaking up, in the second. The figures obtained were:

	Clear Oil.	Mixed Solid and Liquid.
Specific gravity	0 914	... 0.913
Saponification value ...	193 300	... 200 300
Iodine value	65.900	... 69 000
Acid value	1 500	... 0.300

These figures agree fairly well with the only others that appear to have been recorded previously for dugong oil. The oil has only a slight taste, which is peculiar but not unpleasant and not fishy. No indication was obtained of the presence of bile salts or of albumen, results that were to be expected, as it is not a liver oil but is obtained from the blubber. The value of cod-liver oil is generally attributed to its great assimilability, and this appears to be largely due to the presence of special fatty acids in combination. For a complete knowledge of the fatty acids of dugong oil a much larger sample and a fuller analysis would be necessary, but some indication is given by the iodine value. The iodine value of good cod-liver oil is about 170; the much lower figures obtained for dugong oil, 66 and 69, show that the combined fatty acids are very different from those of cod-liver oil, and it is therefore hardly to be expected that the former would possess the same high degree of assimilability. No doubt it might prove a useful form for administering fat, but there is no evidence that it would show any peculiar value. Dugong oil was obtainable in London over twenty years ago, but has never come into wide use as a substitute for cod-liver oil.

Phenolphthalein.

In spite of the large number of laxatives already in the field, phenolphthalein, which has only recently been employed in this way, has already obtained great popularity, and is prepared for the purpose under many fancy names. Messrs. Oppenheimer, Son, and Co., 179, Queen Victoria Street, E.C., have submitted to us samples of their "cocoids" of laxoin, the latter name being the one selected by them for phenolphthalein. These "cocoids" are small chocolate tablets containing respectively 1 and 2 grains of the drug, and provide a very agreeable form in which this laxative can be administered, and particularly suited for giving to children.

Synthetic Suprarenin.

The wide range of usefulness of the active principle of the suprarenal gland, and the highly satisfactory results that have attended its employment, have placed it within a short time of its first introduction in the front rank of accessories of minor surgery and local therapeutic agents. The large demand for it that has in consequence arisen has not only resulted in a number of processes being devised for its extraction from the glands of animals, but also in a full investigation of its chemical nature. The researches that have been carried out have enabled chemists to speak with some certainty as to its constitution, and the important step has now been taken of preparing artificially a substance having the chemical structure assigned to this body, and proving that it exercises an identical physiological action. This artificial product, which is a crystalline substance, has been placed on the market by Messrs. Meister, Lucius, and Bruning of Hoechst-am-Main, and 51, St. Mary Axe, London, under the name of "synthetic suprarenin." We have received from this firm a sample of 1 in 1,000 solution of the hydrochloride; it is a colourless, faintly acid solution, showing the colour and other reactions of the pure active principle from the glands; two drops applied to an abraded portion of the skin quickly caused blanching of the area on which it was placed. This salt and the borate of suprarenin are supplied in sterilized solutions containing 0.9 per cent. of sodium chloride.

Calmette's Tuberculin Test.

On June 17th of this year Professor Calmette presented to the Academy of Sciences a communication in which he detailed some observations with a special tuberculin which he employed for diagnostic purposes. It is dropped into the eye, and causes in those affected with tuberculosis—wherever the lesion may be located—a conjunctival reaction, which does not occur in the non-tuberculous. To avoid the irritating effects of glycerine on the conjunctiva he employs a solution in sterilized distilled water of dried tuberculin precipitated by alcohol. The reaction occurs from three to five hours after dropping the solution in the eye, and consists in an intense congestion of the palpebral conjunctiva, which subsides after twenty-four to thirty-six hours. Already this new form of the tuberculin test has been largely used by several physicians in the Paris hospitals, who report favourably of its value and delicacy as a diagnostic agent in tuberculosis; and Mr. Sydney Stephenson recently gave an account of its value in ophthalmology in this Journal (October 19th, p. 1038). The reaction is said to produce but little pain or discomfort and no ill effects on the eye. The preparation, a sample of which has been supplied to us by Mr. Martindale, of New Cavendish Street, is sent out in small sealed tubes with directions for use. We have given it a trial in some 20 cases with satisfactory results.

ROYAL COMMISSION ON VIVISECTION.

Third Report.

(*Continued from p. 1443.*)

The Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till the evening of Thursday, October 3rd.* We continue our abstracts of the evidence.

Antivivisectionist Testimony.

Evidence of the Rev. Lionel Smithett Lewis, M.A.

Mr. Smithett Lewis, whose evidence occupies about eight pages of the Blue Book, said he had been deputed by the Church Antivivisectionist Society to present views to the Commission. He said he spoke entirely on the ethical question, except in so far as he gave some evidence of the statements he made. Asked as to the Church Antivivisectionist Society, he said the total clerical members in the last report numbered 375, and the total lay members 496, making 871 in all. In a *précis* he summed up his views as follows:

(1) Before we argue as to whether an act pays, we must first consider whether it is right. (2) Power of enjoyment shows the intention of the Creator that the possessor should be happy. (3) Power of enjoyment is the most dominant feature in man and beast. (4) Pain is intended to give warning that continuation of an act will prevent well-being and enjoyment; that is, pain is intended to preserve the *individual*, to promote his ultimate enjoyment. (5) An action involving temporary pain inflicted on another may secure to the sufferer greater physical good than would otherwise accrue. (6) An action involving temporary pain inflicted on another may secure to the sufferer greater moral good than would otherwise accrue. (7) It is immoral (because contrary to the primary intention of pain) to inflict pain unless it is honestly believed that the pain will procure, at least in part, the moral or physical good of the individual sufferer. (8) The right to take life does not imply the right to make living unendurable. (9) To control one's aversion from causing suffering, and to inflict temporary pain on another for the sake of future gain for the sufferer ennobles; to inflict pain on another unless this motive is present is cruel, and hardens and degrades the one inflicting it; to profit knowingly by pain inflicted on another where this motive is absent makes the person benefited a coward. (10) Because we see suffering all around us, to think that we may blindly inflict it is both foolish and impious. It is as if a great surgeon performed an operation for the benefit of the sufferer, and a mischievous ape who had witnessed it attempted to imitate his action without his knowledge. (11) The dog or cat, etc., gives up its wild nature because it has learned to trust man; and this trust is betrayed, and by an act of treachery, when the victim is placed upon the vivisectional table. (12) He had tried to prove that vivisection by its nature is a perversion of the intention of pain (and therefore immoral), cruel, and cowardly, and that, furthermore, it is treacherous. That being so, while he might painlessly sacrifice the lives of many animals to save one valuable human one, he would not have one mouse painfully vivisected to save the greatest of human beings nor the life dearest to him. (13) The logical outcome of experiments on animals is experiments on man. The right to perform such has been claimed and carried out. A race of medical men hardened by vivisection is a public menace. The rights of animals rest on exactly the same foundation as the rights of man—justice and mercy. The temptation to a man who has hardened himself to make experiments on animals which were not for the good of the sufferer, to make experiments on human patients which are not for the good of the sufferer, must be very great. He has blunted his moral sense by inflicting pain in a way which was exactly opposite to the intention of pain. He has broken down the one safeguard which separates humanity from cruelty. Without the knowledge of God he is impiously claiming the power of God to inflict pain where he sees fit.

Asked by Sir William Church if he thought they were authorized in killing rats and mice at all, he said certainly, when it was necessary; but the death should be instantaneous. He saw no sin, when people were absolutely convinced that plague was spread by rats, in their being killed. He did not think it wrong to kill an animal for food. He had never objected to an animal being killed for the sake of investigating the production of disease. He objected to its being kept alive in suffering, which was quite a distinct thing. In reply to Sir William Collins, who, in reference to paragraph 12 of the *précis*, said the witness appeared to draw a distinction between painful and painless vivisection, he said he thought that under the present safeguards it was impossible to know what were painful vivisections and what were not; and when one considered what happened in slaughter-houses, which were so much more open than laboratories (and in every case where a man had animals within his power), what things could go on there—certainly in a closed laboratory—he thought the risk was enormous of having vivisection carried on at all. But if it were possible to be sure that an animal was completely under anaesthesia, and was destroyed for certain before it recovered, then he should have no more objection than he should to killing an animal for food. But he would not hand himself over to vivisectors under those circumstances, and therefore he would not have any animal handed over to them. He would not trust any body of men of any calling with full power behind closed doors, especially in the case of those who could not speak for themselves. If it was possible to get painless vivisection he would not disapprove of it; it was the infliction of suffering to which he objected. Asked if he doubted that there was painless surgical operation, he said that personally he had never known a peson who was operated on (he believed the right word was "aseptically") who had not felt pain afterwards. Asked if he doubted that under anaesthetics a surgical operation of considerable magnitude might be performed, and the patient would subsequently state that he had felt no pain, he said he was there to answer ethical questions; he did not come to give scientific evidence. If the questioner asked him if he believed that there could be complete anaesthesia of human beings, he replied that of course he did, the same as any other reasonable person 12 years old would probably admit. In reply to further questions by Sir William Collins, he said he did not say that the rights of animals were of the same magnitude as the rights of man; he said that they rested on the same foundation. Jeremy Bentham said of the rights of animals:

> The day may come when the rest of the animal creation may acquire those rights which never would have been withholden from them but by the hand of tyranny.

He was not quite sure of the next word, which was copied for him, for he could not read the transcriber's writing.

> The French [he thought it was] have already discovered that the blackness of the skin is no reason why a human being should be abandoned without redress to the caprice of a tormentor. It may come one day to be recognized that the number of the legs [again he was not quite sure that was the word; he thought it was], the callosity of the skin, or the termination of the os sacrum are reasons equally insufficient for abandoning a sensitive being to the same fate. . . . The question is not, Can they reason or can they talk? but, Can they suffer?

That was taken from the works of Jeremy Bentham, published under the superintendence of his executor, John Bowring, vol. i, pp. 142-3, in a note. It was on the subject of An Introduction to the Principles of Morals and Legislation. We had not yet attained to that stage in the evolution of morals, but we had attained to it very much more than when that was written. For instance, it was practically in the Victorian era that people realized that an animal was entitled to wages for its work, was entitled to food and shelter, and if a man neglected those the law of the land would deal with that man. Asked on what moral principle he would differentiate between the legitimate sacrifice of animals for food, and possibly also for clothing and for convenience, and yet forbid it for the purpose of advancing knowledge or for an endeavour to improve medical treatment, he said the great distinction that he drew was that they had the right to take life when necessary, but to torture an animal or to make living miserable was a perversion of the intention of pain. It was perfectly clear to him that pain was given for the preservation of the individual. The infliction of suffering in a manner contrary to the intention of pain was a perversion of a power, and therefore a wrong and nothing could make it right. Asked by Sir John McFadyean if he thought it immoral on the part of farmers, for the purpose of improving the quality of beef and mutton and pork, and

* London: Printed for His Majesty's Stationery Office by Wyman and Sons, Limited, 109, Fetter Lane, E.C. And to be purchased, either directly or through any bookseller, from Wyman and Sons, Limited, 109, Fetter Lane, Fleet Street, E.C.; and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin, 1907.

others who owned animals habitually to submit them to a very painful operation, he said he had not the slightest doubt that in many cases that operation was performed when it need not be, and, knowing what human nature was, there was not the slightest doubt that it was very often cruelly performed. His principle was that one had no right to inflict suffering unless it were at least in part for the good of the being upon whom it was inflicted. So far as he knew, it seemed to him that many animals led a much happier life because that operation had been performed than they would have otherwise. If he could be convinced that that was not the case, he would simply oppose it absolutely, because he could not alter principles to fit facts. Asked if he seriously contended that the intention to benefit the horse or the ox or the pig that was unsexed by that operation had ever entered into the farmer's mind, he said it might not have entered into the farmer's mind, but there was some one above the farmer, and that was the public; and there were many things which were permitted, whatever the original inflictor's intention might be, because the public could see that it was not without good to the being upon whom it was inflicted. Asked if he discriminated between the lower animals and man in connexion with the operation of unsexing, he said it should not be done, of course, except for the person's good. In reply to further questions, he said he was not only an antivivisectionist; he attacked all cruelty. Asked if he had ever attacked this particular form of cruelty before, he said it had not been brought to his mind. He had thought of it for about twelve months or so, and he had not got very much knowledge. On its being put to him that these operations involved much more pain than all the operations conducted by vivisectors, he said that was a matter of opinion. Asked if he would doubt it if he were told that there were 10,000,000 animals on which castration or ovariotomy was performed in full consciousness every year, he said that of course he should want to know at what age it was performed; whether the animal suffered really at that age. If the animal suffered, certainly it ought to be compulsorily under anaesthetics; and if anyone said that there were not enough anaesthetics to do so, he had not the slightest doubt that when the demand came the supply would come also. Asked if he was a vegetarian, he said he was not. On its being pointed out to him that he could hardly deny that he shared in an advantage attained by the unsexing of pigs and rams and bulls, unless he habitually asked for bull beef from his butcher, he said what he had in his mind were such things as this: Supposing he was suffering from diphtheria, there was nothing in the world that would induce him to use or have used on him antitoxin, because he believed the production of antitoxin to be a sin. Vivisection was permitted, to his mind, for two reasons: partly because people feared death, and partly because they feared suffering, and they turned to what he considered unlawful means in panic. But they need not cease to do a lawful thing. It was lawful to eat meat; it was, therefore, their bounden duty to see that the animals were killed as painlessly as possible. And if the facts as to the unsexing of animals were correct, it was also their bounden duty to do their best to see that those animals were operated upon under anaesthetics; but until that was done, because it was the vitiating of a lawful deed, he did not think they were compelled not to eat meat at all when it was part of their nature to eat meat. Asked if he considered it his bounden duty to abstain from eating the meat of castrated animals because it was undoubtedly better meat, he said that if the meat itself was absolutely the product, then he should consider it his duty; but there would be meat whether that cruelty—if it were cruelty—were performed or not, and that made a very great difference. He had animal teeth given him to eat meat, and he was not going to abstain from eating that meat because somebody else had prepared it in a wrong way. What he would do was to try to get that wrongful preparation of the meat stopped. In reply to further questions as to field sports, he said animals must be killed, but how anybody could take pleasure in going and killing anything was simply past his understanding. Asked as to pheasant shooting as carried on at the present time, he said that nothing would induce him to take part in it, any more than he would go to a butcher's shop and slaughter a beast for his food. There were many offices of life that had to be performed. As long as pheasants were in the world, and were an article of food, it was no more cruel to kill a pheasant by shooting it than it was to kill cattle in an abattoir. The use of the whip and the spur on horses was justified, because to be unrestrained and to have one's way completely was bad for everybody. Asked whether in the case of an animal which was not lazy, and was going at eight miles an hour, and the driver desired him to go at ten miles an hour, the use of the whip or spur was justified, he said if the horse was going as well as it could the man had no right to inflict punishment. In reply to further questions he said the horse was a servant; it was paid wages to do certain work, and if work was not demanded from that horse which it was unable to do there was no cruelty in inducing it to do it. Asked by Sir Mackenzie Chalmers if he suggested any legislative changes, he said he was told he was to keep himself absolutely to moral evidence. He might say, however, that the Society itself was pledged to try and obtain the total abolition of vivisection. Personally, he had explained that he wanted the total abolition of pain. He did not believe there was any antivivisectionist living who would object to an animal being experimented on and destroyed without any suffering. Asked what, having regard to the conflicting moral views that had been expressed before the Commission, he suggested as an objective test for the Commission to apply, he said he considered they could abundantly see that the intention of pain was to preserve the individual, and therefore, unless that partly entered into the infliction of pain, pain ought not to be inflicted. The medical profession were not specialists on the moral question. This was not their province; and he would refer to the great thinkers of the world—Shakespeare, Browning, Tennyson, Johnson, Voltaire; in the law, Lord Chief Justice Coleridge, Lord Brampton. Besides those great thinkers, he had the opinions of two Bishops of Durham, Drs. Westcott and Moule, Cardinal Manning, and Bishop Mackarness of Oxford, Bishop Moorhouse of Manchester, Bishop Harold Browne of Winchester, as moralists strongly condemning vivisection, and if he wanted a guide for morality he would go to those. If he wanted a guide for utility he would go to doctors. He would not allow his own child to have antitoxin administered to it to save its life. The thing was wrong in itself; it would not exist in the world if it had not been for vivisection. In reply to further questions, he said he was an antivaccinator. He could not see how anybody could be an antivivisector without being an antivaccinator—that was logical. Asked if they were justified in applying a chemical remedy in cases of snakebite, though it was derived from experiments on animals, the witness said, Certainly, because it was not the product itself of vivisection. The thing itself had been misused, in his opinion; it should have been tried on animals or people who had been already bitten by snakes, by the act of Providence—by accident. Asked if one was justified in trying a new remedy on a human being and rejecting the old ones in order to find out whether the new remedy was a good one, he said, Certainly not if the doctor thought there was any chance with the old one; but when the doctor knew there was not, then let him make his trial if he thought he had a more powerful remedy, if he could get the consent of the person. One of the things about inflicting experiments on animals was that they could not speak, and did not know that it was being done. In reply to Mr. Tomkinson, who said it had been stated to the Commission that rinderpest had been practically guarded against by experiments upon a very few animals, he said he did not think they had the slightest right to do that. Referring to the 13th paragraph of his *précis* ("The logical outcome of experiments on animals is experiments on man. The right to perform such has been claimed and carried out"), he said he did not know whether he ought to substantiate that. He had got the materials there. They were experiments carried out in asylums and hospitals in Germany and America, and some in this country. As an instance the witness cited Ringer's *Handbook of Therapeutics*, New York edition, pages 585–9, 590, 591, published by Wm. Wood and Co. He believed that, after the antivivisectors made a great stir about it, an expurgated edition was issued, when some of the experiments were objected to

because of the outcry; but Dr. Sidney Ringer, Professor of Therapeutics in University College, London, tried the poison with salicine. He read the passage:

Poisoning with Salicine.—In conjunction with Mr. Bury, I have made some investigations concerning the action of salicine on the human body, using healthy children for our experiments, to whom we gave doses sufficient to produce toxic (poisonous) symptoms. Our first set of experiments were made on a lad of 10. . . . He was admitted with belladonna poisoning, but our observations were not commenced until some days after his complete recovery.

The witness wanted to dwell upon that "some days after his complete recovery." One would have thought that he ought to have been sent to his parents. Then:

Among the effects recorded during this experiment are "severe frontal headache, so severe that the lad shut his eyes and buried his head in his arm," "became very dull and stupid, lying with his eyes closed," "complained of tingling like pins and needles," and other symptoms indicating severe depression.

He believed these experiments were made in a hospital.

In Case II the experiments were made on a lad who had recovered from pneumonia, "his temperature having become normal ten days previously." After he had this drug the symptoms included "vomiting, dullness, deafness, laboured breathing, spasmodic movements, and quickened respiration and pulse."

The report concluded with these words:

We must confess we felt a little relief when the toxic (poisonous) symptoms, which became far more marked than we had expected, abated.

That was one example. There was another case which was reported in the British Medical Journal of January 7th, 1882, page 5. That was a report of a lecture by Mr. Jonathan Hutchinson, and was the case of a man kept in a shocking state of eruption; to use the words of Jonathan Hutchinson, "he was in a miserable condition from pain and irritation." The man was kept purposely uncured for a few days in order that the students might see that the disease would not cure itself. Then afterwards, to use Jonathan Hutchinson's words, he waved the magician's wand and the man was cured. It was unjustifiable that a man should be kept in a miserable condition from pain and irritation. The witness further cited a case of a man who, after experimenting on cats—the first of which died in twenty minutes and the second in thirty-three minutes—and other animals, went on to say:

We have made some observations clinically. To 18 adults—14 men and 4 women—we ordered 10 grains of the pure nitrite of sodium.

That was a report by Dr. Ringer and Dr. Murrell in the *Lancet* of November 3rd, 1883. After trying it on the cats, the first of which died in twenty minutes and the second in thirty-three minutes, they then tried these experiments on human beings, and there were the most painful results to read of what the people came back and said who suffered from an experiment which was the direct result of vivisection apparently. The Chairman said he was afraid that these cases could not be gone into at this length. He understood that the witness's general principle was that vivisection might lead up to experiments on mankind. They had already had a great many of these cases introduced on statements made in papers, and when they had come to have the actual persons before them who were present to tell them what really took place, the effect of the whole account had given quite a different complexion to the particular passages quoted; and as this was not germane to vivisection, but was only being used as an illustration of what experiments upon animals might lead to, he thought they could not have it in detail, because they could not have it in such a shape as would involve their having to investigate all these cases themselves. The witness proceeded to say that Dr. Johnson had warned them that vivisection would lead to that sort of thing, and Lecky and some of the great thinkers of the world told them that it was one of the great dangers of vivisection that a man who got callous to pain, and did not inflict it for the good of the sufferer, would not be over-particular when he went straight from the vivisectional laboratory to the bedside of a hospital patient.

INDIA IN 1905.

The Report of the Imperial Sanitary Commissioner.

The Gaols.

The inmates of gaols, a large proportion of whom have been subjected to the influences affecting health in town and country, reflect the conditions governing public salubrity better than soldiers, whose life is spent under special circumstances. The Sanitary Commissioner points out that close upon half a million persons pass through the prisons of India every year, and considers this a favourable opportunity of diffusing sanitary education. The ingoing tide of prisoners implies great risk of importing infective disease into prison, and the importance of adopting measures to prevent this continual importation is evident. Suggestions are offered to this end. In view of these considerations, the prison statistics of 1905 are satisfactory. The mean daily strength of prisoners was 91,917, an advance of 1,564 on 1904. The sickness-rates were low, and the death-rate 19.23—only 1.62 higher than that of the exceptionally healthy preceding year. The highest rate was 32.96, in Eastern Bengal and Assam, and the lowest 15.79, in the Central Provinces. The mortality of central prisons containing long-term prisoners was lower there than that of district gaols. The chief causes of sickness were, as usual, ague, dysentery, abscesses, ulcers and boils, diarrhœa, and chest diseases; and of mortality, phthisis, dysentery, and pneumonia.

There was a decrease in intermittent and remittent fevers. Quinine prophylaxis is in general use, and drainage of pools in the vicinity. There was a decided fall in the dysentery admission-rate, but a slight rise in the death-rate. The diarrhœa-rates were the lowest on record. Influenza was widely diffused, causing a rise in admissions from deaths from chest diseases, but pneumonia was less prevalent and fatal. There was a considerable rise in the incidence and mortality of phthisis, which was much higher among prisoners of over three years' residence. The need of special preventive measures is obvious. Anaemia and debility gave average results. There were 31 cases of small-pox with 4 deaths, 66 cases of plague with 46 deaths, 10 cases of cerebro-spinal fever with 9 deaths (a considerable decrease), 64 cases of enteric fever with 15 deaths, and 73 cases of cholera with 40 deaths. Of these, 30 cases with 10 deaths occurred in the Rajamundry Gaol, Madras. Provincial details indicate that overcrowding took place in many gaols. The statistics of the Andaman penal settlement are not included in the above notes. The prison population was 14,348—more than one-seventh of the whole. The admission-rate was 1,898, the constantly-sick rate 68, and the death-rate 38.96. Malaria is very rife, and dysentery and phthisis very fatal, the death-rates of these diseases being 13.03 and 6.48, against Indian rates of 3.01 and 3.19.

European Troops.

The strength of the European Army of India was 71,343, and the number of arrivals 15,178. Troops marching averaged 1,999, and on service in the Aden Hinterland 349. The rates of admission, constantly sick, mortality, and invaliding were 834.3, 52.3, 10.05 and 21.24—all the lowest on record. Venereal diseases, ague and simple continued fever were, as usual, the chief causes of sickness, and enteric fever and hepatic abscess of mortality. The admission-rate of the Aden Field Force was 988.5, and the death-rate 8.60. Influenza was severe in all but the Southern India groups. Only 10 cases of cholera with 9 deaths occurred, but there were 99 cases of small-pox with 1 death. There was a great reduction in the prevalence and mortality of ague. The prophylactic administration of quinine, which has become a general practice, no doubt contributed to this result. The same remark is applicable to native troops and prisoners. The best method of administration is discussed at length, and preference is given to Koch's plan of giving 15 grains on two consecutive days of the week. Anti-mosquito measures have been employed with benefit in many stations. There was also a decline of mortality from malarial remittent fever. There was a striking rise in admissions from simple continued fever, due to the more extended use of the microscope for diagnosis. Only 4 cases were diagnosed as Malta fever in four different stations. The rate of admissions from enteric fever fell from 19.6 to 16.1, and the death-rate from 3.76 to 2.99. This abatement is attributed to the

"prophylactic measures now in force." Recent researches regarding the bacteriology of the disease, the presence of bacilli in blood, urine, faeces, bile, sputum, and cerebro-spinal fluid, infection by water, milk, food, contact and fomites, soil, dust, and flies, bacillary diagnosis, agglutination tests, and the methods and value of prophylaxis are detailed and discussed at great length and with much intelligence. Special attention is devoted to the subjects of "bacilli-carriers" and the proneness of children to undergo mild attacks and thus acquire immunity. Some observations are recorded indicating the advantage of antityphoid inoculation. These discussions, which cover 30 pages of the report, cannot fail to have a stimulating and useful effect on the medical executive. From plague there were 13 admissions and 4 deaths; 7 of these occurred at Aden. Of 46 admissions from beri-beri, 25 also occurred at Aden and 10 at Cawnpore. There were 415 cases of dengue—48 in Madras and 354 in Rangoon. From *Bilharzia haematobia* there were 22 admissions, against 63 in 1904 and 318 in 1903. There was a decline in admissions and deaths from phthisis, but a slight rise from pneumonia—due, probably, to the increased prevalence of influenza. There was a slight rise in dysentery admissions and deaths, and a slight fall in hepatic abscess. The casualties caused by alcoholism, heatstroke, and suicide were about the average. There was a considerable reduction in admissions from venereal disease, the rate being 153 7, against 198 5 in 1905 and 385.5 in 1894-1903. This substantial abatement is partly owing to alterations in classification and practice, but is held to be largely real. The death-rate of officers was 9 04, of women 10 96, and of children 38.80—all in favourable contrast with preceding years. The facts recorded for the year are, on the whole, eminently satisfactory.

NATIVE TROOPS.

The strength of the Native army was 125,712, of which 12,299 were marching or on manœuvres, and 6,357 on service or employed outside of India. The admission-rate (607.1) was slightly higher than that of 1904, but the constantly sick and death rates (23.2 and 8.09) were the lowest on record. The invaliding rate (9.02) was also well below the average. The chief causes of sickness were ague, dysentery, chest diseases, venereal diseases, simple continued fever, and pneumonia, and of mortality pneumonia, remittent fever, and phthisis. The death-rate of the China garrison was 4.56, of the Somaliland Field Force 3.81, of the Aden Column Field Force 2.88, and of the Sikkim-Tibet Field Force 33.52, 7 out of the 12 deaths being returned as remittent fever. The sickness and mortality of troops stationed on the hills are found to be higher than of those stationed on the plains, but stations above 5,000 ft. sea-level give lower rates than those below 5,000 ft. There was a decline in admissions from influenza, which was less prevalent than among European troops or prisoners. There were only 11 cases of cholera with 7 deaths, and 77 cases of small-pox with 1 death. Curiously, this disease was more prevalent but less fatal in the European Army. Ague admissions fell to 171 per 1,000, less than half the mean for the decade 1891-1900. Remittent fever was rather more prevalent, but less fatal. As in the European Army, there was a marked rise in admissions for simple continued fever, probably for the same reason. There were 130 admissions and 35 deaths attributed to enteric fever—a great increase. The rates were 1.1 and 0.28, against 16.1 and 2.99 in the European Army. Goorkhas, as usual, furnished most cases, 83 from 9 regiments against 47 from 35. The case mortality is higher in the native than in the European army (27 against 19). On the other hand, there were many more cases of Malta fever (43, with 1 death) reported from the native army. The diagnosis was based on clinical and in most cases bacteriological grounds. The drinking of unboiled goat's milk was blamed in many instances. There were 79 cases of plague with 46 deaths—a decided decrease—and only 1 case of cerebro-spinal fever. There was a marked abatement of scurvy. The disease was almost absent in the Somaliland and Aden forces. There was a satisfactory fall in phthisis even among Goorkhas, and the death-rate of pneumonia was also lower. The dysentery-rate was less and the diarrhoea-rate higher than in 1904. There were only 19 cases of hepatic abscess, with 1 death against 152 and 83 in the European army. There was a slight fall in admissions for venereal diseases, which are eight times more numerous among European troops. There were only 15 admissions, with 2 deaths, from beri-beri. The admissions for Guinea-worm numbered 609; none in the European army. On the other hand, there was not a single admission for bilharzia in the native army.

VACCINATION.

No information is given regarding the arrangements for vaccinating which obtain in the several provinces. The outturn of work was considerably larger, and there was a marked rise in the number of revaccinations, which depends greatly on the prevalence of small-pox. The number of successful vaccinations amounted to 34.79 per 1,000 of the population, and it is estimated that 43.83 per cent. of infants were protected, against 42.46 in the preceding year. There was no material change in the number of operations performed by each vaccinator and the cost of vaccination. The percentage of success in primary vaccination was 97.20, and in revaccination 74.20. Animal lymph is now largely resorted to, and the material is used pure or mixed with glycerine, chloroformed glycerine, lanolin, or vaseline. Dépôts have been established in all provinces for manufacture and distribution. A scheme has been sanctioned in Bengal for the education of vaccinators. Improvement is also evident in the work done in native states and dependencies. No facts are recorded regarding the relation of small-pox prevalence and mortality to vaccination.

SANITARY ADMINISTRATION AND WORK.

No change appears to have taken place during the year as regards sanitary legislation or administration. This section of the Sanitary Commissioner's report is a summary of provincial sanitary reports, which in many respects are not drawn up on similar lines, rendering general comment difficult. The information presented gives evidence of considerable sanitary activity, more especially as regards water supply, drainage, and conservancy. The septic tank system is on trial in many places, and the utilization of sewage in agriculture is being resorted to with advantage. In the Bombay Presidency sanitary effort is in abeyance on account of the large expenditure necessitated by the prevalence of plague. The functions of the sanitary Boards vary in different provinces, in some being purely consultative, whereas in others some degree of executive power is granted by the local Government. In the Punjab the Board is authorized to sanction grants in aid to local bodies for sanitary purposes after due inquiry as to the propriety of the work and the solvency of the municipalities.

MISCELLANEOUS.

Interesting information is given under the head of "general remarks" regarding the "Red Sea pilgrim traffic." Pilgrims are now permitted to embark from Bombay only. Restrictions have been lightened, but inspection strengthened. Small-pox continues to cause considerable loss of life both in outgoing and incoming vessels. It is reported that the health of the pilgrims in the Haj was "perfect throughout the season," and that the sanitary condition of both Jeddah and Mecca has greatly improved within the last few years.

Recent work on Malta fever is detailed at some length, including the important observations made by the Mediterranean Fever Commission. The excellent and increasing work done by the Pasteur Institute at Kasauli is quoted; 1,145 persons were treated with only 7 failures. A new Pasteur institute is being organized for Southern India at Coonoor.

The improved arrangements at the Central Research Institute at Kasauli and the King Institute of Preventive Medicine at Guindy, near Madras, are described, and it is stated that increased facilities have been granted to officers of the Royal Army Medical Corps and Indian Medical Service for study in bacteriological laboratories. Reference is also made to special inquiries which are in progress in India with respect to typhoid fever, dysentery, and malaria. A standing committee has been appointed for the purpose of "investigating and advising on the incidence of enteric fever in India and its prophylaxis." The subject of kala-azar continues to engage the attention of Rogers, Christophers, Patton, and others. The probability of the communication of this disease and of Malta fever through the agency of blood-sucking insects is gaining strength.

THE SIXTH INTERNATIONAL MOTOR EXHIBITION.

The Sixth International Motor Exhibition organized by the Society of Motor Manufacturers and Traders, Limited, in connexion with the Royal Automobile Club, which concludes this week at Olympia, has proved more popular and better attended than any of its predecessors. It has been characterized by a reduction in the number of low-priced cars, with, however, as compensation a rather lower price for the high-grade makes. Several firms have made a special attempt to meet the needs of the medical profession by building cars of moderate horse power, in which the chief aim has been to eliminate the possibility of breakdown. The most striking novelties were Sir Oliver Lodge's igniter, the "Valveless" cars exhibited by Messrs. Crawshay Williams, Limited, Ashtead, Surrey, and the combined gear-box and live axle shown by Messrs. Darracq. These and the cars which had run in the Pekin to Paris and other races attracted the chief attention.

Sir Oliver Lodge's Igniter.

Much interest was shown in the ignition system of Sir Oliver Lodge, Principal of the University of Birmingham. It is designed to take the place of the ordinary intensity coil, a current of low voltage being transformed into a lesser ampère current of very high voltage, and, unless under the stress of actual use upon a motor car it is found to develop some unforeseen element of weakness, it seems likely to supersede every variety of coil at present in use by motorists. It is somewhat difficult without diagrams and without entering into technicalities to describe its peculiarities fully, but it may be possible to briefly set out the essence of the principle by which it differs from all others. It may be premised that Sir Oliver has by no means rushed it upon the market; it is some years since he first proposed the principle, and it has been tested in actual use upon gas engines, though it is only now for the first time offered for sale for motor cars.

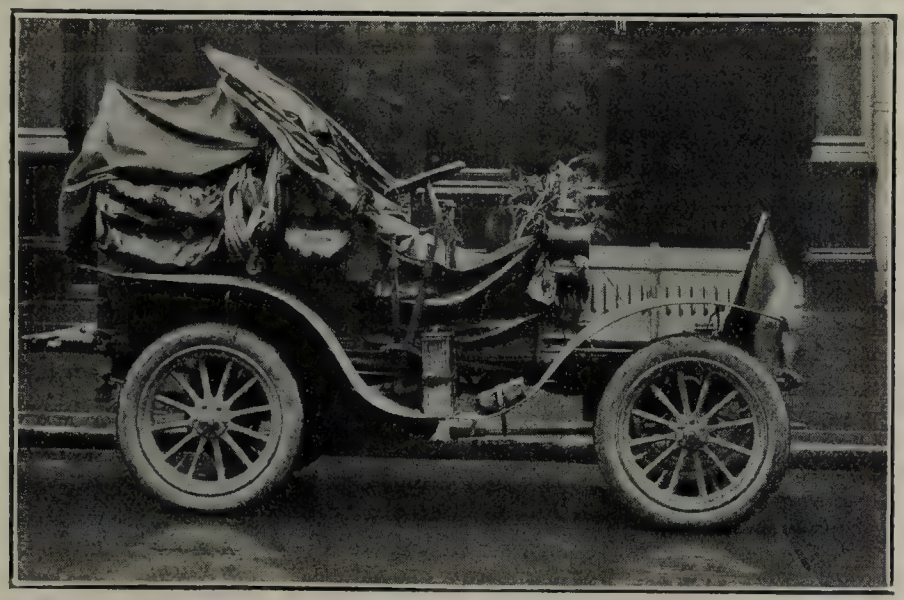

Fig. 1.—One of the two small 10-h.p. De Dion-Bouton cars which so successfully accomplished the wonderful journey from Pekin to Paris.

What electricians call a "surge" current has long been employed, and is, indeed, indispensable; by this is meant the use of a condenser which to some extent stores the energy and lets it go with a rush. The condenser is constructed of insulated layers of tinfoil, and acts somewhat, but not exactly, as a Leyden jar acts. This condenser has hitherto been used only upon the low-tension current, the high-tension current being distributed straight to the sparking plugs. But in Sir Oliver Lodge's plan what are virtually two Leyden jars are employed at the two ends of the high-tension circuit, which is interrupted by them, and has no direct continuous course to the sparking plugs whatever; it is employed to charge the Leyden jars only, but it has also a spark gap across its two terminals. The Leyden jars are not in the usual form, but consist of flat glass plates coated with tinfoil on each side. The tinfoil on the sides farthest from the secondary wire are in their turn connected, the one with the interior of the sparking plug, the other with its exterior. Besides this, their main connexion, they are connected with each other by an imperfect conductor—that is to say, by one of considerable resistance.

When the secondary high-tension current occurs the Leyden jars become charged, and ultimately, though of course the whole time consumed is infinitesimal, a spark jumps across the spark gap. At the same moment a spark jumps across the gap in the circuit beneath the glass plates—that is to say, between the lower tinfoils, and here the gap is between the ordinary points of a sparking plug. Hence it is an induced, and not a direct, current which makes the spark in the sparking plugs. The great peculiarity and the great advantage of this arrangement is that the sudden violent discharge will have nothing to say to routes which are open but are of tolerably high resistance. Thus it appears to take no notice of the so-called "leak" of high resistance between the two lower tinfoils, but jumps the spark gap of the plugs instead. Every motorist has been troubled at times by misfires due to a dirty sparking plug, dirtied upon its insulation by oil or carbon or both; the ordinary high-tension current is quite willing to take this route, though the conduction be not very perfect. But with Sir Oliver Lodge's ignition the very dirtiest sparking plugs will fire; even if the gap between the points be filled up with carbon and oil, as was shown at the exhibition. And a sparking plug immersed in water will give a perfect spark. It seems as if the sudden discharge must go quick, and the quickest thing is to jump the gap, even though it could struggle through other routes.

Such, in a rough way, is the principle involved—namely, the employment of a sudden Leyden jar discharge. It is almost needless to say that the details of construction have been most carefully worked out, and that ingenuity and originality are shown in various details, too numerous for enumeration here.

The invention was shown by Lodge Brothers and Co., 14, New Street, Birmingham.

De Dion-Bouton.

Among the best-known makers who were exhibiting cars likely to prove serviceable to doctors in their professional work were the De Dion-Bouton, Limited (10, Great Marlborough Street, W.). On their stand was one of the 10-h.p. cars which accomplished the Pekin to Paris journey. No attempt had been made to alter the car in any way, and on its lamps it still carried the bouquets with which it had been decorated on its arrival in Paris. Among the many models exhibited on the stand was the new 12–14-h.p. four-cylinder car, which, with double phaeton and side entrance body, will be offered to the public for £425. The new model will have high tension magneto ignition without advance lever, dispenses entirely with battery and coil, has a new patent automatic carburettor, and all the well-known features of the older pattern four-cylinder models. It combines the advantages of pace, reliability, and flexibility, and is also very quiet in running. A number of the older models were also exhibited, including "the durable 8-h.p." with expanding clutch gear, for £206, which has proved very popular among the profession; the 8 h.p. for £273, and a number of higher powered cars.

Humber.

The Humber, Limited (Beeston, Notts, and Coventry), make a well-equiped car for £270, which they describe as the Coventry Two-seated Doctor's car. It is fitted complete with leather hood and wind screen, and has already proved its popularity. A number of other moderate-power cars were also to be seen on this stand. Several minor improvements have been made this season. The commutator has been raised and placed in a vertical position, to avoid the uneven distribution of oil and consequent occasional misfiring, which occurred in the older models. The gear-box has been cast in one piece, a gate change speed has been introduced, and two sparking plugs have been fitted to each cylinder.

Valveless Cars.

The "valveless" cars appear to fulfil many of the conditions demanded by medical men. A car of this pattern built for experimental purposes won the Kent hill climb in 1903, and has been used for four years by a general practitioner. It is a 20-h.p. car, and with standard body and accessories is sold for £395. It has a two-cylindered engine, and both cylinders share a common combustion chamber, inlet pipe, airtight crank case, inlet port, exhaust port, and sparking plug. The two pistons move up and down together, operating separate crank shafts, each with its own fly-wheel, which revolve in different directions, being geared together by teeth cut on disc webs. It is so arranged that explosion takes place at every revolution, instead of at every other revolution as in the ordinary engines. It is claimed that the simultaneous opposite movement of the fly-wheels destroys vibration, while the peculiar construction of the large combustion space makes the car an exceptionally good hill-climber. The car is handsomely finished off, and, if the results already obtained are any guide, should prove popular.

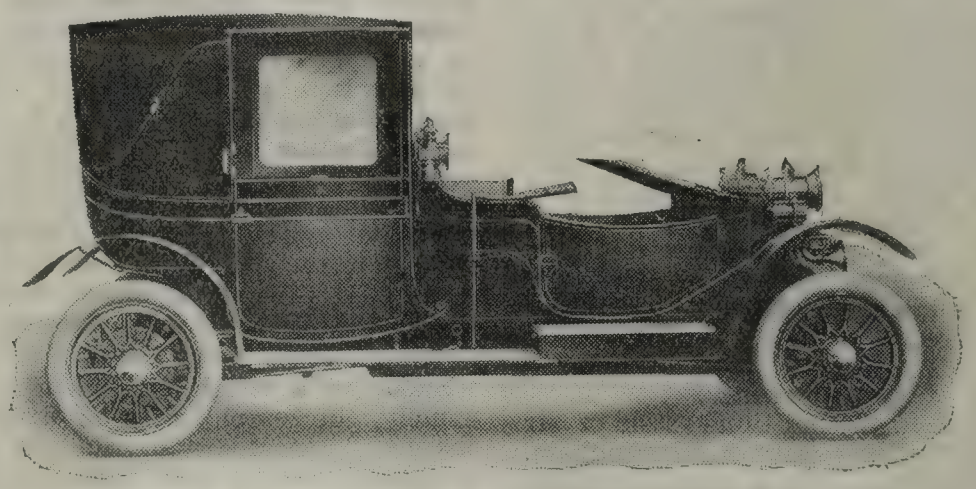

Fig. 2.

Gobron-Brillie.

The Société Commerciale des Automobiles Gobron-Brillie (173, Piccadilly, W.) exhibited a number of high-powered chassis, all characterized by the double-piston cylinder used by the makers. During the first week of the show their £500 chassis had not been delivered, but the great feature of the larger cars was the quiet and absence of vibration of the engines even when these were allowed to race. The car starts without jar and seems excellent in every way. An important detail in the construction is the fact that there are two clutches, in one of which the facing is metal to metal, in the other metal to leather.

Rover Company.

The Rover Company (Meteor Works, Coventry) showed a number of low-power cars, and exhibited the Albert Brown trophy, won on an 8-h.p. Rover, and the International Tourist Trophy for 1907, won by the 20-h.p. model. The company offers a 6-h.p. one-cylinder two-seated car, with hood and screen, for £150, or with wire wheels, cheaper body, and smaller tyres, for the astonishingly low price of 100 guineas. The 8-h.p. one-cylinder coupé, well upholstered in a colour scheme of green and black, found many admirers. A canopy will be fitted to this model without extra charge. It should be noted that the change-speed lever on the 8-h.p. model is now removed from the steering column to the side.

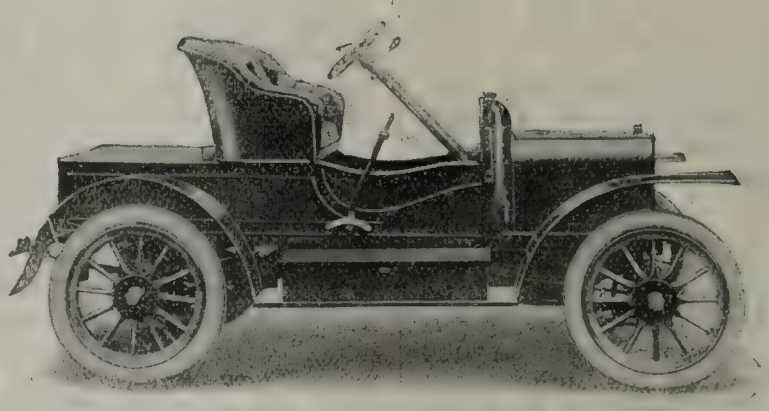

Fig. 3.—Rover Car, two-seated body.

Darracq's Gear-Box and Live Axle.

Messrs. Darracq's (Walnut Tree Walk, Kennington, S.E.) combined gear-box and live axle in one casting, and the mechanism by which they have made it possible to remove the box containing the change-speed gears and differential by simply unscrewing four bolts, attracted considerable attention. It is not even necessary to jack up the wheels. The gear-box has been used for three years on the Darracq racing cars, but it is being applied for the first time this year on ordinary cars.

Panhard.

Most of Messrs. Panhard and Levassor's (14, Regent Street, S.W.) cars shown were of too high a power to be suitable for any form of routine work, but exception must be made for the 8 to 11-h.p. three-cylinder landaulette. The body seems rather heavy for a car of that power, but fitted with a smaller body this well-known and reliable chassis will unquestionably prove as popular in the coming season as in the past. The smoothness of running owing to the three-cylinder engine makes this one of the most comfortable small cars on the market.

Lanchester.

Among the Lanchester exhibits (The Lanchester Motor Company, 311, Oxford Street, W.) is a 20-h.p. four-cylinder car, which has been found especially convenient for town practice. The Lanchester cars have a reputation for silence. The main alteration this year is the fitting of a Simms-Bosch high-tension magneto, which has been rendered necessary by the faster running of the vertical engine recently adopted.

Colin Defries (Porthos).

The originality of the Porthos car shown by Messrs. Colin Defries (2, Denman Street, Piccadilly, W.) attracted much favourable comment. Quite apart from the ingenious arrangement of the carburettor, by means of which it has been found possible to secure a perfect mixture with cold air, the new construction of the live axle was noteworthy. An ordinary fixed axle supports the weight of the car, but the drive is communicated to the road wheels by a sleeve over the axle. This system ensures a very strong axle. In addition to these points of fundamental importance there are two details of considerable interest. One valve tappet is utilized as a plunger in the oil pump, avoiding gearing, and at the same time adapting the flow of oil to the pace of the engine. Another tappet operates an air pump, which supersedes the exhaust pressure in the petrol tank. The use of air for this purpose is a real improvement. The petrol is not dirtied; there is no fear of moisture getting into the tank, and neither the pressure pipe nor the jet become choked.

Argyll.

The interest that would otherwise have attached to the excellent little 14 to 16-h.p. Argyll car (Argyll Motors Limited, Alexandria, N.B.), which with side entrance and Cape hood is offered for £375, and by its silence, flexibility, price, and generally smart appearance, has made itself popular, was turned rather towards the magnificent 40-h.p. chassis exhibited on the stand. This is of live axle type, and has a specially-designed gear-box, which differs considerably from the well-known Argyll pattern.

Renault.

It is not necessary to say much about the £380 8-h.p. two-cylinder Renault car (Renault Frères, Limited, (19, Newman Street, Oxford Street, W.), for this or a closely similar model has won general recognition in the popularity of the taximeter cab. The 14–16-h.p. West Aster, the chassis price of which is £345, is fitted with the well-known Aster engines, for which the makers claim that it needs little attention to keep in running order.

Grégoire.

The Grégoire cars shown by Messrs. Osborn and Co. (6, Great Marlborough Street, W.) included a number of models suitable for medical men. On the stand was the car that ran third among the two-cylinder competitors in the principal race in France for small cars, averaging 58 kilometres an hour. The makers claim to cater for the class of work required by medical men, and devote special attention to making their cars strong, reliable, and simple. The most popular model is an 8-h.p. two-cylinder car, which, complete with the body, is sold for 190 guineas. Other models of this firm are the 8 to 10-h.p. two-cylinder chassis, price 220 guineas; 10 to 14-h.p. four-cylinder chassis, price 280 guineas; and the 10 to 14-h.p. four cylinder chassis, price 370 guineas.

Adler.

The Adler small car, which was first shown at the annual exhibition of the British Medical Association, is of 9-h.p., and has a two-cylinder engine with automatic inlet valves. Care has been taken to make the car quiet and reliable, and the fact that Messrs. Morgan and Co. (127, Long Acre, W.C.) are exhibiting it is a guarantee of the soundness of its construction. It is interesting to notice that the wheels of the car have pressed steel spokes, capable of resisting a lateral pressure of 2,533 lb. without suffering any alteration, while at the same time they are not heavier than if they were of wood, which they resemble in appearance.

British Automobile Syndicate.

The British Automobile Commercial Syndicate (97 and 98, Long Acre, W.C.) exhibited a number of Spyker and Zedel cars. One of the latter—a 10 to 12-h.p. four-cylinder—was fitted with doctor's brougham body, and priced at £375. This body is noticeable because it entirely encloses the driving-seat and gear lever, and completely protects the driver from the weather. It is also fitted with a special luggage case behind the body. The Zedel appears very suitable for medical work. It has a very compact gear-box; the arrangement of the radius rods is peculiar, being attached to the sleeve of the cardan shaft, and in this are almost if not quite unique. There is a carburettor specially designed to ensure the complete vaporization of the petrol, which passes up a long pipe from the jet to the inlet pipe. The only fault apparent in this well-designed chassis was the smallness of the wheels.

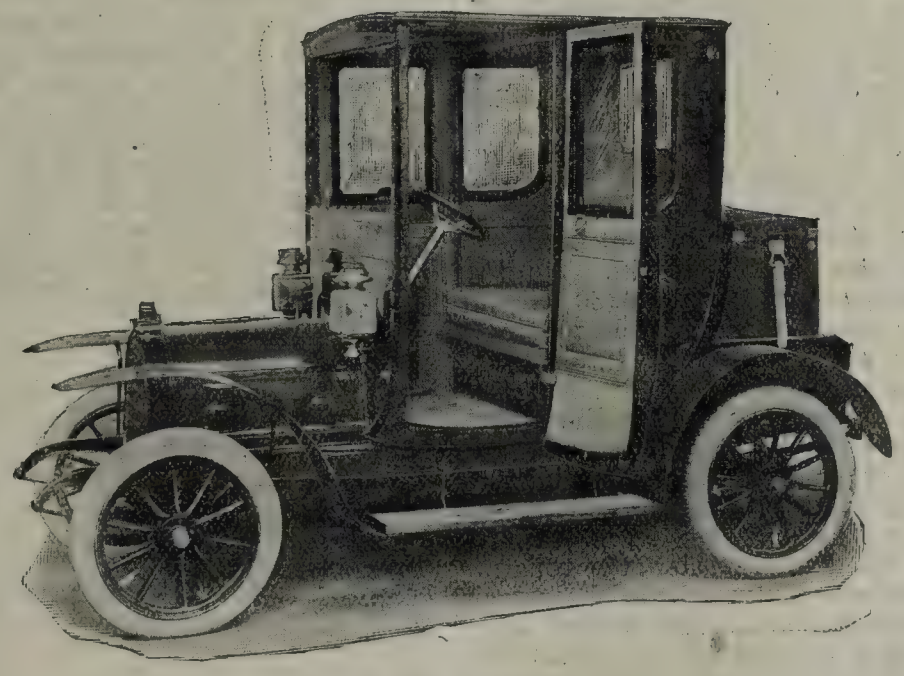

Fig. 4.—The Zedel Car.

Large Cars.

Considerations of space make it impossible to do more than mention some of the many points which attracted motorists. The 40 to 50-h.p. Rolls-Royce (Rolls-Joyce, Limited, 14 and 15, Conduit Street W.) known as the Silver Ghost, which has recently completed a 15,000 miles run under the auspices of the Automobile Club, had three cylinders dismantled and the parts which were open to inspection were critically scrutinized. Prince Borghese's 40-h.p. Itala, which won he Pekin-Paris race, also aroused great interest. Among the larger cars should be mentioned the 30-h.p. six-cylinder Napier chassis, which has been reduced to £575 and was fitted with a Cape-cart hood with an ingenious mechanical arrangement for extending it, the 70 to 90-h.p. Gobron-Brillie chassis, priced at £1,550, the most expensive in the show, and the English-built Mercédès, which is so similar to the foreign that most of its parts are interchangeable, the chief differences being that it is fitted with a multiple disc instead of with a coil clutch and a modified arrangement of the pumps and magneto.

Tyres.

A notable feature of the show was the large number of non-skid and non-puncturable tyres.

The most striking departure from ordinary types was the solid tyre exhibited by the Elastes Company (79 and 80, York Street, Westminster, S.W.). A preparation consisting of a mixture of glue, glycerine, and chromate salts is forced hot into the inner tube and there left for about ten days to solidify. At the end of that time the tube contains a firm, compact mass having a greater resiliency, though a less tensile strength, than indiarubber. Two tyres were shown which had been driven 3,000 and 5,000 miles respectively and were still in good condition for the road. The preparation seems serviceable, and interferes little, if at all, with the running of the car, while it should prove invaluable to men who are willing to make some small sacrifice of pace to secure absolute reliability in their tyres. The makers claim that the life of an outer cover is very materially increased, for its proper tension is always maintained. It is possible to use it when very much more worn than is prudent when the inner tube is inflated with air, while there is of course no tendency for weak places to be subjected to the pressure of the air.

The De Nevers tyre aims at producing the same effect as the Elastes, but by the use of rubber alone. The tyre is of solid rubber, the outside of which is cut into segments, and is, we were informed, largely used by the medical profession. It appears to have reduced non-skidding to a minimum, and one testimonial states that the writer had travelled over 8,000 miles without having any difficulties with his tyres. On the same stall there was an exhibition of the K. T. tyre. This combines the principle of the pneumatic and solid, and consists of a rubber band which projects through a perforated steel rim into a number of large india-rubber studs surrounding an air space. Among other advantages claimed for the tyre is the fact that, owing to its better grip of the road, to the absence of suction, and to other reasons, there is a saving of 15 per cent. in the power that is used. It is difficult to see how it can get out of order; puncture is clearly impossible, as the separate air spaces in each stud are encased in great thicknesses of rubber. There is sufficient room between the studs for them to take firm hold of the ground. They thus eliminate skidding with ordinary cars and even with motor omnibuses reduce it to a minimum. Proof of reliability was afforded in the exhibition of tyres taken from a ton and a half car after a run of 6,000 miles which were still far from worn out.

Side by side with these varieties of solid and cushion tyres were several devices to prevent puncture and side-slip in the case of pneumatics; the Sirdar Rubber Company (34, Baker Street, W.) had on show a specially vulcanized inner tube fitted into place without preliminary inflation. It is claimed that all risk of nipping is thus avoided, and the trouble caused in fitting the ordinary make of inner tube greatly diminished. The company also exhibited a studded non-skid cover, in which washers had been specially fitted to the studs to prevent their being driven into the canvas or dropping out as a result of wear. Varieties of this insertion of washers were very common. The Sampson Company exhibited what was described as a "lock fish-hook washer" with the same object. The price of the tyres made by this company has recently been reduced. The Scott non-skid wheel alternates the steel and rubber studs, and has been found to give good results. The Hutchinson cover consists of a leather band, with conical steel studs countersunk into leather plaques.

The usefulness of detachable wheels and rims was shown by the number of devices exhibited. The Stepney wheel (Stepney Spare Motor Wheel, Limited, Stepney Works, Llanelly) is too well known to need description. The Ajax Detachable Rim Company (Arthur Street, Small Heath, Birmingham) offer a detachable rim of great simplicity which can be fitted to existing wheels. By unscrewing three winged nuts the new spare rim and tyre are fitted on to the wheel, and when the three spare nuts have again been screwed home, the operation is complete and permanent, the whole process taking less than three minutes. Messrs. Moseley's detachable tyre (David Moseley and Sons, Limited, Ardwick, Manchester) is held in position by the flange of a rim rendered removable by means of a right-handed and left-handed turn-buckle screw which can be released without any trouble by a tommy-bar. The cover and the inner tube are then free, may be replaced by the spare parts, and the flange refitted within a few minutes. Among other similar devices was one exhibited by the Dunlop Company (14, Regent Street, S.W.).

The Michelin Tyre Company (49-50, Sussex Place, South Kensington, S.W.) showed a very pretty piece of apparatus for inflating tyres from a three-cylinder engine. It may be fitted to any car having three or more cylinders, and consists of an arrangement whereby atmospheric air, in no way contaminated by the exhaust gases of the cylinders, may be pumped into the tyres. The cost of the equipment is £12 15s., and an obvious luxury, in view of the many excellent devices for tyre inflation already on the market. Among those shown was an admirable little electric pump working off an ordinary electric light main, and certain to prove useful for garage work, while for owners of private cars the carbon-dioxide cylinders supplied by the United States Liquid Air and Oxygen Company are likely to be found convenient. The value of these labour-saving devices lies especially in the fact that they almost certainly increase the life of a tyre, as few people will give the time or take the trouble necessary to secure adequate inflation if the tyres have to be blown up by hand.

Several stands contained exhibits of different kinds of vulcanizing apparatus. After elaborate experiments with electricity, Messrs. Harvey Frost and Company (39, Great Eastern Street, E.C.) have found it impossible to get a satisfactory electric heater, and their very interesting appliances all depended on steam for their efficacy. An electric vulcanizer was, however, shown by the New Motor and General Rubber Company (374, Euston Road, N.W.), and demonstrations of vulcanizing by electricity by means of an apparatus, costing 25s., worked by a four-volt accumulator and a platinoid resistance. As far as one could judge from the demonstration, the repairs were executed with ease and were permanent in character. At any rate the apparatus seems well worth a trial, and its portability should strongly recommend it. The Self-Sealing Rubber Company (Ryland Street, Birmingham) gave demonstrations of a material especially valuable for cuts and injuries to the outer cover. It consists of a solution containing carbon-disulphide, and ten minutes after application becomes perfectly hard, vulcanization being subsequently effected simply by exposure to the air.

Lubrication.

A great deal of attention has been given in this year's show to problems of lubrication. Thus, most of the more important cars employ some type or other of force-pump to supply the oil under pressure to the working parts. The Porthos make of car has an ingenious arrangement whereby one of the valve tappets is utilized as a pump to distribute the oil throughout the bearings. Failing an arrangement of this sort, one of the simplest types of pressure feed lubricators is the Noakes. The pressure is not derived in the usual way from the exhaust, but air is pumped into the oil tank by means of the tyre pump, thus avoiding the clogging of the pipe, which is troublesome when exhaust gases are used. A pressure gauge is provided, and 20 lb. pressure is sufficient to empty the tank completely. The sight feed glasses are filled with water, through which the oil is forced under pressure to the bearings, and by this arrangement the drops can easily be seen. The flow of oil to the bearings is regulated by valves, which after adjustment automatically lock themselves in the required position. The lubricator, a sketch of which is here given, can be fitted to any car. The selling agent is Mr. W. O. Fair, of 3, Great Winchester Street, E.C.

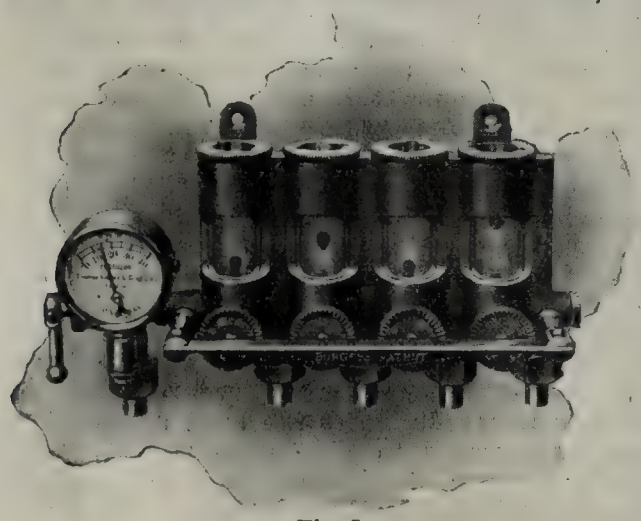

Fig. 5.

SCHOOL HYGIENE IN LONDON.

Examination of Infants.

Under the head Examination of Infants, the Medical Officer to the London Education Committee in his report gives the results of the medical examination of infants by Dr. Niall in fourteen schools, varying from the slum areas of Vauxhall and North Lambeth, through artisan areas of Lambeth and Kennington to the vastly different districts of Brixton and Norwood. Information, as far as the teachers could furnish it, was obtained regarding the district, parents, amount of female labour, defects. Any children presenting obvious defects were brought out, but they were never stripped. This method gives results which considerably understate the true facts. Of 5,340 children in attendance 14.9 per cent., nearly 1 in every 7, was picked out as requiring detailed examination.

Two neighbouring schools, Walnut Tree Walk (9 3 per cent.), and Lollard Street (26.7 per cent.), presented the lowest and highest number defective. The latter is in a poor district, many of the mothers being wage earners and their children neglected. A great number of the children are in a dullards' class, and 47 per cent. of these have some defect often caused by dirt conditions.

Of the children with obvious defects the percentages were:

—	Percentage of Children in Attendance.	Percentage of all the Children with Defects having Particular Defect.
Vision...	2.9	19.8
Hearing	1.2	7.7
Physique	4.1	27.5
Speech defects	0.78	5.25
Mental defects	1.4	9.75
Tonsils and adenoids	4.7	31.5
Enlarged cervical glands ...	2.1	14.5
Discharge from ears	0.5	3.5

In five schools of Hammersmith and Fulham Miss Janet Campbell inspected the new admissions to the infants' departments, together with a few older children, and actually recommended 196 out of 909 examined to have some form of medical treatment. Of the 104 newly-admitted infants at Campbell Street, Mr. Elmslie noted 46 as having defects requiring remedy.

The age of new admissions varies much with the district, as pointed out by Dr. Marion Hunter, in reporting on six Wandsworth schools. She classified them as poor, medium and better class schools, and worked out the average ages of the newly-admitted children presented to her as $3\frac{9}{12}$, $4\frac{5}{12}$, and 5 years old.

At the October examination for midwives of the Central Midwives Board there were 461 candidates, of whom 386 passed, the percentage of failures being 16.27. Of the successful candidates 192 received their training in hospitals, 38 in workhouse hospitals and infirmaries, 35 in maternity charities, 10 in trained nurses' institutes, 16 in district nurses' societies and associations, 6 in nurses' homes, 5 in mothers' homes, 13 in missionary institutions, 3 in benevolent institutions, and 68 under private tuition.

LITERARY NOTES.

Carlyle is cited by some antivivisectionists as a supporter of their cause—from the ethical side, it is to be supposed, as he professed to hold modern science in contempt. As is the case with others of the same way of thinking, his tenderness for beasts does not seem to have tended to make him particularly sympathetic in regard to the sufferings of his fellow creatures. In the diary of William Allingham, just published, there is the following entry:

Carlyle was entirely against the use of any sort of sedative and anaesthetic drug. The smallest dose of an opiate made him feel poisoned. He held chloroform in surgical operations to be a mistake; "the pain a *natural* accompaniment, and has its use." The only medicine he believed in was blue pill.

It is, to use a phrase of his own, "significant of much" that a man whose lamentations about his disordered liver must often have made life a burden to those about him, thought pain a good thing—for other people. He appears to have held the view expressed by the Rev. Lionel Smithett Lewis, in his evidence before the Royal Commission on Vivisection, that an action involving temporary pain inflicted on another may secure to the sufferer greater physical and moral good than would otherwise accrue. But we find it difficult to imagine the prophet of the Silences under the surgeon's knife without chloroform.

In a lecture on the mosquito as a sanitary problem recently delivered at the New York Academy of Medicine by Dr. Edward A. Ayres, he said the mosquito had destroyed more human beings than are living in the world to-day, and that in addition to being the agent responsible for malaria and yellow fever, it was probable that it stood in the same causative relation to beri-beri, which has cost thousands of Asiatic lives. He went on to say that he had coined a word for the class of diseases caused by the mosquito: he proposed to call them "homosquitic." We cannot honestly say that we think this product of Dr. Ayres's etymological invention "a most singular and choice epithet"; rather should we call it in the words of the learned Holofernes "too odd, as it were, too peregrinate." Is any new word really wanted to denote mosquito-borne diseases?

Medical writers know the difficulty of following the dying advice of the Oxford scholar, "Verify your references." They will therefore sympathize with the writer of the following letter, which is quoted by Grant Duff in his *Notes from a Diary, 1886-8*:

Byrne writes under to-day's date (May 24th, 1888): "Do you recollect the hunt I had for the correct version of Oxenstjerna's saying about 'the little wisdom with which the world is governed'? Six various readings I had before me, each one endorsed by an extremely respectable authority, and your *Geflügelte Wörter* told me the original authority for it was Lundblad's *Svensk Plutarch;* so I searched, first at the Bodleian. No! No Lundblad there. Then at the British Museum; some portions of the work, but not the one I wanted. Then, through a Swedish friend, in the Library at Upsala: no Lundblad at all. At last he ran it to earth in the Royal Library at Stockholm, and the correct version turns out to be *different from every one of the six above referred to*, and to run as follows: *An nescis, mi fili, quantilla prudentia regitur orbis?*" (*Svensk Plutarch II.* Stockholm. 1826, p. 95).

The hunt was long and troublesome, but there is a certain amount of *certaminis gaudium* which, when one is not pressed for time, affords some compensation; but the rapture of the final victory, especially the discovery that the saying was generally wrongly quoted, must have been unspeakable.

We have received the first number of the *New Quarterly*, edited by Mr. Desmond MacCarthy, and published by J. M. Dent and Co. The first article is by Lord Rayleigh, who discusses the question, How do we perceive the direction of sound? Among the other articles are The Last Elizabethan, by Mr. G. L. Strachey, which is a review of the poems of Thomas Lovell Beddoes, doctor of medicine and poet, of the new edition of whose works mention was made in this column three or four weeks ago. The Hon. R. J. Strutt asks himself the conundrum, Can we detect our drift through space? He leaves the question unanswered, but does not think it unanswerable. Mr. T. Sturge Moore discourses on Charles Baudelaire, the unwholesome author of *Fleurs du Mal*, but throws little light on a personality which is a subject for the medical psychologist rather than for the literary critic. Mr. G. A. Paley writes on biology and politics; the gist of his argument is contained in the following sentence:

The study of biology first brought home to us the necessity of conflict if progress was to be made; that was the first effect of the Darwin doctrine on political theory. But this view has been seen to be crude and false. In society the same end can be attained by encouraging the better kind of parent to leave numerous offspring as would be reached if the cruel principle of unrestricted competition was allowed to work the destruction of weaker and undesirable individuals.

The number concludes with an article of exceptional interest, The Note-books of Samuel Butler, author of *Erewhon*. Altogether the *New Quarterly*, if we may judge from the first number, is an important addition to our periodical literature. A feature which should especially commend it to students is the beautifully legible type in which it is printed.

Mr. Edmund Owen tells the following remarkable story in the *St. Mary's Hospital Gazette* for November 6th. We think it best to give it in his own words:

A medical friend told me this story after dinner. Somewhere about 1861 he was paying a visit to Stafford, where he happened to meet an old fellow student, who said he would like to go to the jail and see the cell in which Palmer was confined previous to his execution for the Rugeley murder. As the Mayor of Stafford was a medical friend, they had no difficulty in paying the visit. After this he wished to see the place where Palmer was buried. Palmer had been "cast naked into a hole," and covered up with quick-lime.

As my medical friend was walking away from the jail he said to the other that he fancied he had something on his mind. "Yes," was the reply, "Palmer never ought to have been a medical man, and if he had not been one he would not have committed that murder." Then he went on to unburden himself, saying that he and Palmer knew each other as medical students, Palmer being at St. Bartholomew's Hospital and the other at a school which I (the writer) need not mention. Palmer was an idle youth, consorting with racing people and "following the turf." The other was much younger, and, though very industrious, was pleased at being taken notice of by so senior and experienced a man as Palmer. Palmer had unsuccessfully tried, on more than one occasion, to pass the Preliminary Examination in Arts, which consisted in a superficial knowledge of Celsus and Gregory. One day Palmer asked his friend if he would personate him at the Examination, and he agreed to do so. This time Palmer's name appeared in the list of successful candidates.

I asked my friend what his friend got for the job, and he replied that there was no bargain made, but that Palmer in return gave him Watson's *Lectures on Physic*, in two volumes.

When I expressed myself as greatly interested in this little bit of Palmer's history, my friend said: "The story is absolutely true, but don't you be trying to find out who the man was who personified Palmer." Why, indeed, should I? Though I know the name of his school I keep it to myself, and I daresay that I could find out who it was if I wished to. But I don't. I listened carefully to the story because I thought it would interest readers of our *Gazette*. And, having written out the account, the question arises in my mind as to whether at the present time there is much "personification" at our examinations. I do not think that there is, but I don't know.

The following passage from the *Storia do Mogor*, or history of the Moguls, by Niccolao Manucci (vol. ii, page 301), which has been recently translated by Mr. William Irvine and published in the Indian Text Series at the expense of the Indian Government, throws some light upon the reasons that led Indian surgeons to turn their attention to the best means of restoring lost noses, for if this was a common mutilation practised upon prisoners of war in a country where practically peace was nowhere long preserved, the demand for such services would be great, and, as he tells us in another place, large fees were sometimes offered for the successful restoration of the lost feature:

At the commencement of the war, when the men of Bijapur caught any unhappy persons belonging to the Moguls who had gone out to cut grass or collect straw or do some other service, they did not kill them but cut off their noses. Thus they came back into the camp all bleeding. The surgeons belonging to the country cut the skin of the forehead above the eyebrows, and made it fall down over the wounds on the nose. Then giving it a twist so that the live flesh might meet the other live surface by healing applications they fashioned for them other imperfect noses. There is left above between the eyebrows a small hole caused by the twist given to the skin to bring the two live surfaces together. In a short time the wounds heal up, some obstacle being placed beneath to allow of respiration. I saw many persons with such noses, and they were not so disfigured as they would have been without any nose at all, but they bore between their eyebrows the mark of the incision.

INFECTION AND IMMUNIZATION BY THE INTESTINAL ROUTE IN EXPERIMENTAL TUBERCULOSIS.

IN the June number of the *Annales de l'Institut Pasteur* MM. Calmette, Guérin, and Breton describe the results of their experiments on guinea-pigs, which show that these animals can be readily infected with tuberculosis by feeding, and that the introduction into the alimentary tract of bacilli deprived of their virulence will, under suitable conditions, confer a considerable degree of immunity. Many investigators have found that attempts to infect guinea-pigs by feeding have resulted in a large percentage of failures, but this, the present authors consider, must be attributed to a faulty technique. Positive results, they maintain, will be obtained without fail if their own method be adopted. They take a potato culture of bacilli about thirty days old, emulsify it very finely in an agate mortar, and then mix it with a mucilaginous decoction of linseed. This liquid has the same consistency as saliva, and maintains the finely-divided bacilli in a state of perfect suspension until they arrive at their destination in the intestine. The mixture is introduced directly into the animal's stomach by means of an oesophageal tube. By this method of infection the lesions produced are principally situated in the lymphatic glands and the lungs, whilst the spleen and the other abdominal viscera are hardly ever affected; but disseminated lesions are sometimes found in other situations, such as the testicles or the joints, and the lymphatic glands connected with the trachea and bronchi are very frequently involved. Infection was produced with such marked constancy that the authors thought it necessary to ascertain the reason for the irregular results obtained by some observers who had endeavoured to infect guinea-pigs by feeding with emulsions of tuberculous tissue or with pure culture. For this purpose special experiments were devised, the result of which was to make it clear that failure to obtain the bacilli in a finely-divided state was the main obstacle to success. When the bacilli are included in fragments of tissue or consist of solid clumps of culture, infection by feeding, in the experience of M. Calmette and his collaborators, only rarely takes place.

Tubercle bacilli killed by heat or maceration in alcohol and bacilli which have been deprived of their envelope of wax and fat are known to be toxic for the guinea-pig, and the writers have found that such bacilli, when administered by feeding in a dose of from 20 to 35 cg., cause the death of an adult guinea-pig in from two to five days. With smaller doses the animals became emaciated and cachectic, and succumbed within a few weeks. But "the same bacilli, if treated with different chemical substances, or killed by heat, may, when they are absorbed by the digestive tube in minimal doses separated by sufficiently long intervals, confer on the guinea-pigs a marked resistance against virulent infection." In the experiments which the authors cite they generally used doses of 1 or 2 cg. For the preparation of the bacilli they recommend the following methods: "(*a*) The maceration of the bacilli for ten days in the incubator at 37° in 10 per cent. saline solution; (*b*) the maceration of the bacilli in Gram's iodine solution; (*c*) heating for ten minutes at a temperature of 100°." They find that the ingestion of a "minimal dose" of bacilli heated for ten minutes at 100°, followed, forty-five days afterwards, by a second dose of equal amount heated for ten minutes to 65°, secures a still more manifest power of resistance, and is sufficient to enable a certain number of guinea-pigs to tolerate with impunity, at the end of two months, the absorption by the digestive tube of a dose of virulent tubercle bacilli which was always fatal to the control animals.

In the July issue of the same journal MM. Calmette and Guérin give an account of some feeding experiments which they have conducted upon bovines. Doses of 50 mg. of virulent bovine bacilli were administered on four successive occasions, at intervals of five days, to two calves. The animals were subsequently tested with tuberculin several times, and always gave a well-marked reaction. They were killed at the end of six months, and showed extensive disease of the mesenteric glands. This result is contrasted with the fate of six calves which only received one dose (50 mg.) of the same culture. When tested with tuberculin a month afterwards, only one of them reacted, and when the test was repeated at the end of the second and the end of the third months, none of the animals gave a positive reaction. Seventy-five days after the first feeding these six animals were given a second dose, consisting of 100 mg. of virulent bovine bacilli, and when they were tested with tuberculin one, two, and three months afterwards, the reaction proved negative in every instance. Since then they have been kept for nearly a year in close contact with six animals suffering from manifest tuberculosis. So far none of them react to tuberculin, whereas five out of the ten controls, which have been exposed to the same conditions, have already given a positive reaction. Other experiments are also quoted in which the administration of a single dose, varying from 50 to 250 mg., has been followed by complete recovery, and the animals have subsequently exhibited a marked degree of resistance against fresh infection. These results have been obtained with adult bovines as well as with calves. The authors have also found that the ingestion of tubercle bacilli, heated at 70° C., or of living bacilli of equine origin, will, if repeated on a second occasion after an interval of about forty-five days, confer on the bovine a definite power of resistance, demonstrable by the fact that the animals fail to react to tuberculin after they have been treated with doses of virulent bacilli, which invariably produce this reaction in the controls. As to the duration of this immunity they are not yet able to express a definite opinion. Their animals are still under observation, and further experiments are in progress.

MEDICAL NEWS.

THE annual dinner of the Harveian Society will be held at the Imperial Restaurant, Regent Street, at 7.30 p.m. next Thursday, Dr. Sidney Phillips (President) in the chair.

THE spring course of post-graduate lectures in Berlin will begin on March 2nd and end on March 28th. Further particulars can be obtained on application to Herr Melzer, Langenbeck Haus, Ziegelstrasse 10, Berlin.

THE late Mrs. Sarah Elizabeth Reed Parry, of Hereford, who died on October 16th, left £200 each to the Hereford General Infirmary, Hereford General Dispensary, and the Victoria Eye and Ear Hospital in the same city.

A CONFERENCE of members of the medical profession to discuss the question of establishing an out-patient department of a restricted and consultative character in connexion with the Infants' Hospital, Vincent Square, Westminster, S.W., will be held at the hospital on November 29th, when the chair will be taken by Dr. F. J. Allan, M.O.H. Westminster, at 4.30 p.m.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 6, Catherine Street, Strand, London, W.C., on November 8th, Dr. de Havilland Hall in the chair. The accounts presented showed that the sickness experienced in the month of October had been abnormally light and give good reason for the hope that, notwithstanding the somewhat heavy claim account experienced during the summer months, the business of the whole year will show a margin in favour of the Society. The sickness claims, though numerous, have been for the most part of short duration, but several additions have been made during the year to the list of those who in all probability are permanently incapacitated. On the other hand, one or two of these chronic claims have ceased, through the death of the members. Many of the members, especially among those who joined the Society at its starting in 1884, have now reached the age when any serious illness may easily prevent a man from ever resuming his professional work, and even mild attacks may incapacitate him for a considerable time. Against this risk a large reserve has been accumulated, but so far the sickness experience of the Society in respect of the older members has been well under the expectation, while the younger members have drawn rather more than their share. The net result has been a substantial margin in favour of the Society. Prospectuses and all further particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

British Medical Journal.

SATURDAY, NOVEMBER 23RD, 1907.

THE UTILITY OF THE ANNUAL MEETING.

With this issue is completed the publication of the scientific proceedings of the British Medical Association at its annual meeting at Exeter this year, and no one who has read the papers and the accounts of discussions with any care will be disposed to deny that it was in many respects one of the most useful meetings that has ever been held. It is a matter of satisfaction that it has been possible to complete the account of it at a comparatively early date, for those who took part in, or were present at, any of the discussions, or who read papers, have been able, while matters are still comparatively fresh in their minds, to see how the statements made look in the guise of print, and those of our readers whose work or inclination unfortunately kept them from the meeting altogether are able to get as clear a conception of what passed as any printed statement can give.

It has sometimes been suggested that the scientific proceedings of the Association should be published in a volume of transactions as in the case of other societies; but volumes of this sort tend to find their way to bookshelves unread, and to be opened, if ever, merely perhaps in search of some reference. To publish the scientific work done at the annual meetings in that form would really be to deprive the members of the Association of a more valuable source of practically useful information. Published as they are now, in the body of the Journal, however much they may add to the labour thrown upon those responsible for its weekly production, the transactions do not interfere materially with its ordinary contents, since the publication of extra pages for this purpose has been authorized, and the information conveyed becomes immediately available. Even a cursory reader of the Journal must thus get a flashlight glimpse, a periscopic view, of current scientific thought which he could obtain in no other way; while if he pleases, of course, he can read the papers carefully and get a real knowledge of what is going on. And this is in all cases desirable, for it would be a mistake to suppose that the papers read and the discussions held, however formidable their titles, are not of real interest to every practitioner of medicine. The way in which the work of the meeting is arranged, indeed, ensures that this shall be the case. The work of each Section is in charge of a Committee, which changes every year, and sets to work long before the meeting to decide what subjects shall, if possible, be principally discussed, and to accept or refuse the papers which are offered; and the general tendency of all these Committees is to endeavour to secure that all work done at the meetings shall be of as living and practical an interest as possible. They are, of course, by no means opposed to papers which are of an entirely original character and convey totally new thoughts and ideas, if these seem to be in any degree well argued and sustained, but for the most part their desire is to choose the subjects which for the moment seem most likely to afford opportunity for the expression of well-considered opinions and experiences and originate discussions which will shed real light on the way in which views in various directions are developing among those engaged in each department of medicine.

In the transactions of each Section, therefore, there must inevitably be something which must be directly useful to the general practitioner who desires to do the best for his patients, and even to those, if there be such, who, so far as treatment is concerned, are quite content with their existing knowledge, but nevertheless are so far alive to their own interests as to wish to be in a position to answer questions likely to be put by their patients. For in these days there is nothing new in medicine which does not get into the general newspapers, and as to the bearing of which on his own case a medical practitioner is not liable to be cross-examined by one of his own patients, and the more important such a patient is, the more likely is a query to come from him.

On this ground alone it is almost essential that every practitioner should be abreast of the times in his knowledge, while more conscientious workers, such as are the vast majority of our readers, naturally desire to be in a position to form opinions for themselves on the value of the various plans suggested to them for the treatment of their patients.

The general practitioner, in short, is bound to remember, even if everybody else forgets, that while specialities are many, the human body is a single and indivisible whole. No speciality could live long which did not get his approval, and the greatest authority, either in a surgical or in any other direction, could not carry out any given treatment more than a few dozen times if the general practitioner did not give his assent to its continued utilization. Equally bound, therefore, is every man in general practice to acquire a general knowledge of what is going on in the various departments of medicine; and unless he is prepared to place himself blindfold in the hands of any given specialist whose services when required may happen to be available, he must know something at least of the light in which the procedures proposed are viewed by other members of that special fraternity. The leading articles which from time to time appear in this Journal should be of considerable help to him in this respect, as also are its general contents, but still more vivid is the light thrown by the records of the discussion at these meetings of such topics by men who are working at them, or who are prominent as advocates or opponents of the treatments under consideration.

At these annual meetings, in short, many views receive their quietus and no longer trouble the profession, while others are brought more prominently forward and placed upon a recognized footing. The work of some of the Sections may seem to be devoted to subjects far removed from the necessary ken of ordinary practitioners, and in this connexion the Section of Electricity suggests itself; but even in this Section will be found papers which have a direct bearing on the everyday work of medical men, while those who read the papers of a more purely technical character can get a clear conception of the style in which work is now being done by a body of men who are justly asking for the confidence and support of the profession at large, and claiming the power of being able to offer it the most valuable assistance.

Another useful point in the way in which the work of the Sections is arranged is the custom of ensuring that

a physician or a surgeon, or a man in general practice, as the case may be, shall take a definite and formal part in some discussions which are primarily of a specialist character. In this issue itself a good case in point is supplied by the singularly interesting discussion in the Section of Dental Surgery on the causes, effects, and treatment of diseases of the teeth in children. Pure pathology is another subject which often appeals but little to those whose work is chiefly clinical, but here again the discussion on anaemia in the Section of Pathology not only threw much light on a subject which must interest all practitioners, but led to an appeal to them for assistance in clearing up the etiology and relationships of pernicious anaemia. Attention may also be directed in the Section of Gynaecology and Obstetrics to the discussion on uterine cancer. The eventual reduction in the terrible mortality from this disease lies perhaps more in the hands of general practitioners than in those of gynaecologists, and in no way can the general practitioner gain a better insight into the result of present treatment or place himself better in a position to advise his patients whether they should submit to operations proposed, than by reading the accounts of personal experiences given during the course of the discussion by various gynaecologists of established repute, or learn more rapidly the fashion in which he himself may contribute to bring about a more desirable position of affairs.

The Section of Tropical Diseases is also one which at first sight may seem to have but little interest for general practitioners, and an experience last winter is worth recording in this connexion: A chance meeting with a comparatively young practitioner of the highest qualifications, but practising in a somewhat out-of-the-way locality, brought about a conversation on the value of annual meetings and of recording their transactions. The medical man in question said that a year or two ago he had attended a meeting for a day but had never been again, and never read the accounts of what happened. In one Section which he entered they were discussing opsonins, and in another tropical diseases. He did not know what an opsonin was, and did not want to, and he did not live in the tropics, so he went away. What he wanted to learn about, both at the meeting and in the Journal, was diarrhoea, the treatment of which amongst his patients frequently bothered him. It was a considerable surprise to him to learn that opsonins, whatever real value is to be attached to their study, enter so largely into modern practice that he would find himself very much at sea in discussion with other practitioners if he did not get some sort of idea of the meaning of the term "opsonic index," and he was similarly surprised to learn that the discussion in the Section of Tropical Diseases had thrown a good deal of light upon diseases encountered in England, and in particular upon some forms of diarrhoea. Discussions in this Section in past years, and some of those which took place at the recent meeting would, it may safely be affirmed, have been of material assistance to this practitioner who was so scornful of their value to him, for it turned out on inquiry that he had amongst his patients a fair number of former residents in tropical countries, and that some of his cases of diarrhoea were among persons with such a history behind them. It may be said, in short, that there is very little indeed which takes place at these meetings from which any and every practitioner could not get a useful hint, and for this reason the prompt publication secured for the records of the work done at them is of great utility.

MEDICAL EXAMINATION IN INFANT SCHOOLS.

"The medical inspection of infants is likely soon to "assume great importance. It is at these ages that "slight defects or diseases have such a profoundly "modifying influence on the future, and it is of especial "importance to have children examined at the ages of "3 to 5 years to detect the beginnings of diseases, such, "for example, as tuberculous bone and joint diseases, "which if not caught early result often in producing "permanent injury or crippling." With this opening sentence, with which we are in thorough sympathy, Dr. Kerr, in his report for the year ended March, 1907, begins his short account of an examination of fourteen schools made by Dr. Niall to ascertain roughly what medical inspection of infants means and what it is likely to lead to.

With the staff at disposal detailed examination is almost impossible, but certain facts have been clearly proved. The most striking is the effect of environment on the children. The slum children who have survived at the age of 5 are as a rule sturdier and quicker than the more carefully-nurtured children who have not been exposed to hard climatic conditions. The latter appear to suffer in much larger numbers from anaemia, nasal obstruction, glandular troubles, and from dullness and backwardness. It is because the children of the well-to-do artisan, the clerk, and the small shopkeeper are often overclothed, coddled, and unexercised, that they contract enlarged tonsils, adenoids, and anaemia. On the other hand, semi-starvation and home neglect, as demonstrated by the children examined in Lollard Street, where 26.7 per cent. were defective, are important factors in producing unhealthy conditions. That a great many of these children are dullards is proved by the large number below the average mental ability in Grade II B of this school, which has been formed into a dullards' class, and which contains no less than 47 per cent. with some defects. Dr. Kerr points out the great importance of medical inspection for children like these, checking as it will at the outset such lesions as corneal ulceration, marginal blepharitis and early ophthalmia and otitis. The conditions in Walnut Tree Walk School strengthen this view. Here through careful supervision by the head teachers, with whom the other teachers co-operated, the parents had been seen and persuaded to have the defects from which their children suffered remedied. Hence the comparatively low percentage of defectives at this school.

Dr. Kerr attributes a great number of the cases of diseases of eyes, nose, and ears in the schools to dirt conditions which the parents in many cases do not choose to remedy. He considers that the remedy for these dirt inflammations in debilitated children in slum schools is, in many cases, their removal to a different environment, such as a residential country school. This, of course, at present is impossible to carry out, and the immediate remedy is the introduction of hygiene into all training colleges and schools. If the hygienic conscience of the teachers is once aroused they may be trusted to use their influence upon the children and through them upon the parents. There has been much discussion as to the wisdom or unwisdom of receiving infants of three years and upwards at school. We agree with Dr. Kerr that it is vitally important to examine children as early as possible, so as to detect the beginnings of disease. On the other hand, medical officers of health argue that infectious diseases would be considerably reduced if the children were excluded

from school until they were older. Against this must be put the fact that children play together in the streets, and that infectious diseases would be spread in that way.

It is also argued that these infants cost the State large sums of money, while the education they receive is so unsuitable that it seriously harms them. There has been an endeavour in the past to force work out of undeveloped or non-existant organs. We have seen babies forced to do needlework, writing, and drawing to the injury of their eyes, their spines, their nerves and their brains. Gradually an improvement is being effected and needlework has already been eliminated. If these children were excluded from school some other provision must be made for them by the State. Many of the mothers are out at work and if the infants were kept at home it would mean that the elder sisters would have to miss school in order to mind them. They could not remain in the streets so that kindergartens or crèches would have to be provided at a large expense. The most sensible plan, then, is to create school conditions which will benefit instead of harming these small children. It is a fact that in a number of infant departments those diabolical inventions known as galleries still exist. Here rows upon rows of babies are made to sit for hours in cramped positions doing mechanical lessons with beads and bricks and chalks, copying exactly some teacher who probably holds the position because she has failed to qualify for a higher standard. These teachers and the conditions of the infants' schoolrooms are a slur upon the educational system of the country. We have repeatedly pointed out that far more important than the university professor, who is commonly looked upon as the most important personage in the educational world, is the teacher of infants. The wise handling of undeveloped children is of paramount importance.

When the body is deformed and undeveloped by cramped positions, when the sight is injured by fine work, and the brain during its growing period is strained and weakened, it is too late to undo these evils by passing the child on to more and more qualified teachers. We hold that the most careful attention should be given to the selection and special education of infant-school teachers. How many of the women in charge of these departments really understand the child brain? how many realize the importance of coarse movements and the danger of fine work, the necessity of free movement as opposed to cramped, unnatural positions? That they should consent to be in charge of an infant department in which galleries take up most of the floor space is a very bad sign, for no matter how suppressed and downtrodden the teacher may be, no competent person could conscientiously hold office without protesting so persistently that the conditions must be remedied. Now that a medical department exists at the Board of Education, it is to be hoped that this most important question will be gone into.

The best investment of public money will be to provide for the leisured training of specially-selected women as teachers of infant schools, the proper equipment of these schools with small movable tables and chairs in an adequate-sized room, and careful medical inspection of the children. Thus, instead of passing into a class for dullards, and probably ending in a school for defective children, a physically and mentally healthy class of children will be passed into the boys' and girls' departments, and may be expected to turn out useful citizens instead of peopling our prisons and workhouses.

THE DIURNAL COURSE OF EFFICIENCY.

"To everything there is a season, and a time to every "purpose under the heaven"; but, two thousand odd years after the writing of these words by the great Jewish thinker, we are still in doubt as to the best time to get and the best time to lose, the best time to keep and the best time to cast away, and the question how man is so to apportion his daily life as "to make "his soul enjoy good in his labour" is still left, in his individual capacity, to his good sense and experience and, in his collective labours, to the forces of outward circumstance. Yet, as in external Nature, there is everywhere rhythm—epochal, cyclical, seasonal, and diurnal—so there are doubtless periodic fluctuations, rhythmically-occurring high and low tides of man's racial and individual capacity, and if so a knowledge of these fluctuations should be of great practical service.

Concerning the larger periodic fluctuations, Buckle in the *History of Civilization* and Quetelet in *Sur l'Homme* have both treated in broad fashion of the influences modifying the conduct of the human race, and many other writers—notably Tarde,[1] Leffingwell,[2] and Havelock Ellis[3]—have described the connexion between seasonal and other periodically-recurring changes and conduct, mainly of aberrant kind. Considering the importance of the subject, however, it is somewhat surprising to find how comparatively recent are the works upon daily fluctuations, and what scant agreement there is amongst investigators. This is very well brought out by an exceedingly interesting work on the normally recurring variations of ability at different periods of the day by Dr. H. D. Marsh;[4] he summarizes the results of practically every other writer on this subject, and gives also an account of his own long and comprehensive investigations and experimental studies of daily variations in pulse, temperature, muscular power, and in the simple and more complex mental activities. With regard to the so-called vital activities, heart and lung functions, and body temperature, Dr. Marsh's observations show that these tend to vary alike, beginning with a minimum about 5 a.m. and increasing to a maximum about 5 p.m. Women and children were found to reach an earlier maximum, and at a higher rate, and this was found to hold good throughout practically the whole subsequent series of experiments, motor and mental; that is, they tend to expend themselves more energetically than men in the things in which they are intimately interested. As to the cause of this diurnal rhythm in vital functions, Dr. Marsh considers that in man, as in the lower animals, the recurrent rhythm of night and day and the consequent habitual alternation of activity and rest are probably the all-important factors, and he quotes in support of this the experiments of Galbraith and Simpson[5] upon monkeys, which showed that a reversal of their condition of life by means of night illumination, night feeding, and darkened days produced a complete reversal of the diurnal temperature wave. We read this opinion with considerable regret, even though we may be bound to admit the reasonableness of so prosaic a conclusion. We recall the pleasure with which we read in the textbook of the late Sir Michael Foster that the diurnal

[1] G. Tarde, *Les Lois de l'Imitation*, 1894
[2] A. Leffingwell, *Illegitimacy and the Influence of Seasons upon Conduct.*
[3] H. Ellis, *The Psychology of Sex*, 1902
[4] H. D. Marsh, The Diurnal Course of Efficiency, *Archiv. of Phil., Psychol., and Scientific Methods*, N. 7, July, 1906. New York: Science Press.
[5] Galbraith and Simpson, Conditions Influencing the Diurnal Wave in Temperature of Monkey, *Journ. of Phys.*, 30, 1, 20; *Proc. Physiol. Soc.*, 1903.

curve of temperature was "apparently independent of "all immediate circumstances, the hereditary impress of "a long and ancient sequence of days and nights;" that there was a daily curve of bodily metabolism "which "was not the product of the day's events;" and as to the cardiac rhythm, that we were not in a position to say how far this was "the result of cosmical changes, "the reflection as it were in little of the cycles of the "universe," or how far it was the outcome of the inherent vibrations of the cardiac molecules. Also who that has read R. L. Stevenson's *Travels with a Donkey* can forget his description in A Night among the Pines of the "one stirring hour unknown to those who dwell in "houses, when a wakeful influence goes abroad over the "sleeping hemisphere, and all the outdoor world are on "their feet.... At what inaudible summons" he asks, "at what gentle touch of Nature, are all these sleepers "thus recalled in the same hour to life? Do the stars "rain down an influence or do we share some thrill of "Mother Earth below our resting bodies? Even "shepherds and old country folk, who are the deepest "read in these arcana, have not a guess as to the "means or purpose of this nightly resurrection. "Towards two in the morning they declare the thing "takes place; and neither know nor inquire further."

Somewhat akin to, and probably engendered by, a belief in this nightly and mysterious influence, is the widely prevalent idea that deaths most commonly take place about this hour. It has been generally accepted, and is indeed stated in the handbooks commonly used by lecturers on home nursing, that the vital functions are at their lowest at 2 a.m., but since reading Dr. Marsh's book we have made diligent but unavailing search for the ground on which this venerable belief rests. In his own inquiries as to the grounds of this belief Dr. Marsh met with a like reward, and so, to determine the facts, he himself tabulated and expressed in curves the 36,000 records of deaths which occurred in New York City in 1901. From these records he excluded deaths caused by suicide or accident, those of children under 1 year of age, and those in which the hour was omitted from the medical certificate. There remained, after these exclusions, 23,439 records. In analysing the curves, whether of all classes combined, or of male deaths and female deaths taken separately, or of the deaths from zymotic diseases, a striking feature common to all groups had to be explained. This was that at noon and at midnight there occurred an enormous fall in the number of deaths. The only satisfactory explanation which Dr. Marsh could find was, as Kant said, that "man is by nature lazy." In New York State the physician must state the hour of a patient's death, as "at —— —.m.," but at 12 o'clock the words "noon" or "midnight" must be written in full, for the sake of clear distinction, and rather than trouble to do this the doctor, he says, will either leave the place blank or make the record for the closely preceding or succeeding hours. Omitting this constant feature of a fall at 12 o'clock, the curves showed that for all classes the highest rate of death occurred at from 2 p.m. to 6 p.m. and the lowest from 7 p.m. to 12 p.m. The maximum for ages 1 to 5 was before 9 a.m.; for ages 6 to 25 from 7 a.m. to 11 a.m.; for ages 26 to 45 from 3 p.m. to 4 p.m., and for the following ages from 5 p.m. to 6 p.m. These results therefore proved that the highest death-rate occurred about 5 p.m., that is, at the time of what Dr. Marsh subsequently shows to be the time of greatest psycho-physiological efficiency, and in any case, as he says, the early morning idea is effectually exploded.

Turning to the author's results with regard to motor activities and the course of mental efficiency we are from the numerous sources of complication on debateable ground. The motor tests employed had regard not only to strength but to speed and accuracy and contained also the result of prolonged observations made on manual labour in factories. As to strength it was found that the early morning power was relatively low, there was fairly rapid rise till 11 a.m. when there was a backward tendency till 1 p.m. and after that a gradual ascent to the maximum at between 3.30 and 5.30 p.m. As we have already said, in women the rises in this curve tend to occur earlier and this is still more marked in children owing to their greater liability to physical exhaustion. As to rate and accuracy of movement there was found to be a marked deficiency at the extremes of the day, but broadly speaking there was more accuracy efficiency towards the morning end and rate efficiency towards the evening, these tendencies becoming more marked in proportion as the tests for accuracy were made more complex and the rate tests more simple.

The practical importance of such studies lies in the broad indications they may afford as to the best working hours for different classes of people grouped according to sex and age with respect to the character of work, bodily or mental, required of them. Unfortunately owing to the very comprehensive nature of Dr. Marsh's investigations—including within its scope tests of attention, discrimination, memory, fatigue, arithmetical calculations, the translation of foreign languages and observations upon school examinations—and still more to the fact that the subjects necessarily varied in age, sex, and the conditions under which they were tested, Dr. Marsh has been unable to draw such definite conclusions as would be of practical use, for example, in directing school curricula. Nevertheless certain indications emerged from his miscellaneous material which are worth noting.

As regards the simpler mental operations, the experiments showed that those involving the use of motor elements tended to follow in speed the motor type of maximum whilst in accuracy the morning hours were most favourable. In the more strictly mental and complex activities there was a similar inclination to the morning hours both in rate and efficiency. This statement, however, requires qualification, for throughout the whole series of mental tests the output of the early morning hours was found to be markedly below the maximum and even of the mean for the day. This early morning inefficiency has been attributed by the author and many other writers to the influence of sleep. It has now been well established that profound sleep only occupies the first hour or two of the resting period, and that afterwards there is a gradual ascent in cerebral activity to the awakening hour. On awaking, however, there is not the abrupt change which one might expect, but for the first two or three hours a gradual passing off of the inertness imposed by sleep and a gradual ascent to higher levels of efficiency. This process, due to the summation of internal and external stimuli, and termed by the author "warming up," must be effected, and the practical inference may be drawn that either the work day should be lengthened at the end and shortened at the beginning, or that early rising, permitting of the "warming up" before serious work is attempted, should be more sedulously cultivated. As to the value of the midnight hours, Dr. Marsh has searched through hundreds of biographies and obtained the chosen hours of some one hundred and sixty authors. Of these only nine, or 6 per cent., were after-midnight workers; but nearly all of them stars of the first magni-

tude: Balzac, Byron, Coleridge, De Quincey, Jeffrey, Poe, and Schiller; and as night workers (7 to 12 p.m.) seventeen, or 12 per cent., including Alfieri, Blake, Francillon, Hood, Samuel Johnson, Sheridan, and Southey. As whole-day workers (6 a.m. to 12 p.m.) there were Bulwer-Lytton, Wilkie Collins, Madame de Staël, Hogg, Keats, Landor, Longfellow, Petrarch, Rabelais, Shelley, Thoreau, and Wordsworth. Amongst morning and night workers were Burns, Goldsmith, Nathaniel Hawthorne, Sidney Smith, and—ironical juxtaposition!—F. W. Robertson and Plato. By far the greater number of authors, however—fifty-five, or 34 per cent.—were morning workers; but the list, when compared with the others, shows that the imaginative class, the poets and novelists, predominated amongst the night workers, and historians, clergymen, critics, journalists, and philosophers, the intellective class (to use Dr. Marsh's term), formed the larger proportion of the day workers. For want of information many of the greatest names have been omitted from the list, but on the whole the evidence is in support of Elia's praise of the midnight taper, indispensable for the "fine shapings, the true "turning and filing"; and even if it be true that amongst the morning workers are to be numbered Dickens, Dryden, Emerson, Goethe, Kant, Virgil, and even Milton—whose Morning Hymn in Paradise was thus not penned, as Lamb wagered, at midnight—the list of night workers suffices to prove that amongst our most priceless possessions are to be numbered the

> Things that were born when none but the still night
> And his dumb candle saw his pinching throes.

However this may be, the fact of a diurnal rhythm in bodily and mental efficiency seems to be well established, and there can be no question that its further study under uniform experimental conditions will yield results of great practical importance. Doubtless the individual worker will always shape his daily toil according to his own experience and particular needs and circumstance; but in collective work of all kinds, whether in school or in the factory, and in appraising the results of every kind of bodily or mental test, this daily rhythm must be taken count of.

HOME HEALTH RESORTS.

A curious little sidelight on the progress of the crusade against tuberculosis has been thrown by a recent correspondence in the *Daily Telegraph*. Those who contributed to it were for the most part persons who, in the slang of health resorts in Switzerland and elsewhere, are commonly termed "lungers." Indeed, many of the letters were signed by variations of this term. The correspondence as a whole was notable for the amount of common sense displayed by the writers, and for the proof which it offered of the value of sanatoriums as educative as well as curative institutions. A good many of the writers had had experience of sanatorium treatment in their own persons, both abroad and in England, and had clearly grasped what the medical profession itself has only quite recently recognized—namely, that in dealing with a case of phthisis which is suitable for open-air treatment at all, neither the temperature and general quality of the air nor the habitual atmospheric pressure are points of primary importance in the selection of a place for treatment. Open air and plenty of it is, in short, the beginning, the middle, and the end of the whole thing. Bright sunlight and a rarefied atmosphere, such as are to be found in mountain districts during the winter, may of course conduce to a general feeling of well-being and contribute to make a period of cure more pleasant, and may possibly even make the improvement appear more rapid. Against this, however, there is a decided offset in the increased difficulties which such a patient has to meet when he returns to ordinary life. In all cases where patients have lived for months under conditions of open-air existence it is not easy for them to live comfortably in the customary conditions, as regards ventilation, of an ordinary household, and the difficulties they encounter are materially increased when they have undergone their cures in specially endowed climates. It is one thing to learn to sit and sleep and take gentle exercise in places where the air is still and cold, but quite another to do the same thing in localities where the prevailing weather is by no means habitually clement, and where there are as many windy and wet days as fine and dry. But to get accustomed to an open-air life under the latter condition is not materially more difficult, and in most cases is much more permanently useful. The idea of going abroad, in short, has in the past been greatly overdone, and not alone in connexion with the treatment of phthisis. It has been equally the case in respect to chronic diseases of all varieties, and the fault lies largely with the authorities of health resorts in England, who have not offered any facilities for treatment, except during a few months of the year, and have not endeavoured in the winter time to attract invalids at all. This, however, we are glad to say, is now being altered, and some of the best-known health resorts, such as Matlock, are now specially catering for a winter clientèle and taking every step necessary to secure the comfort and well-being of invalids. This is as it should be, and it may be hoped that the practice will spread.

A CHRISTIAN SCIENCE CURE.

In the British Medical Journal of September 21st reference was made to a correspondence then going on in the *Daily Telegraph* on Christian Science. In commenting on some of the letters we ventured to express surprise at a diagnosis of "entero-membraneous-"mucous-colitis" said to have been made by a well-known London specialist, and also by "the greatest "authority on this disease in Europe." A letter from the patient, Mrs. W. M. Playfair, appeared in the Journal of September 28th, promising to supply the names of the physicians referred to. This promise she has since fulfilled, and she has furnished evidence that a London physician who saw her in June, 1903, and again in 1904, found that she was suffering from mucous colitis. The "greatest authority on this disease in Europe" turned out to be Dr. Maurice de Langenhagen, who practises in the summer at Plombières, and who, we are sure, would be the first to repudiate the greatness thrust upon him by Mrs. Playfair. There appears to have been some misunderstanding in regard to our remarks upon the case. We gather from Dr. de Langenhagen's letter that Mrs. Playfair somehow gave him the impression that the name of mucous colitis or muco-membranous colitis was unknown to us. What we hinted was that the name used by the lady to describe her affection, "entero-membraneous-mucous-"colitis" was a remarkable specimen of medical nomenclature. In Dr. de Langenhagen's letter we find the source of the confusion. He states that he treated Mrs. Playfair at Plombières in 1903 and 1904, and that she was then suffering from "an intestinal catarrh, "which we call in French medical language 'entéro-"'colite muco-membraneuse,' or in English muco-"membraneous or membranous colitis." By a slight mixing of the component elements of the term the lady produced what Mrs. Malaprop would call a "nice "derangement of epitaphs," which seemed to warrant the suspicion that she had somehow been mistaken as to the name given to her disease. But there was no

intention on our part of conveying the idea that her testimony was untrustworthy. The letters of her physicians leave no doubt that up to 1904, at any rate, she was, in their opinion, suffering from mucous colitis. Dr. de Langenhagen states that in that year her symptoms were "greatly improved by the previous "treatment," and adds that she had besides "neuro-"rheumatic pains (or, at any rate, called so, in the "absence of positive signs of myelitis) in the vertebral "column and the lower limbs." We are informed that she continued to suffer in the same way till July, 1905, when she was cured. We congratulate her on this happy ending of her long illness. We accept her statement of the fact, but we think that her explanation of the cure, which she attributes to Christian Science, is open to question. The notes of her case show that she was a nervous subject, as sufferers from this disease often are. In Dr. Hale White's article on mucous colitis, in *Allbutt's System of Medicine*, vol. iii, 1907, p. 817 *et seq.*, there is the following passage: "The reader who wishes to picture to himself "a patient suffering from this disease should "have in his mind a chronic dyspeptic woman "of a depressed turn of mind . . . though the "malady may also occur in the busy, energetic, "nervous subject. . . . They rarely have buoyant "spirits and not infrequently suffer from great depres-"sion of mind, taking a gloomy view of life and "exaggerating the importance of trifles." We have no personal knowledge of Mrs. Playfair, but from the history of the case we are inclined to think that she may—not unnaturally—have brooded over her illness. The withdrawal of the mind from such anxiety about oneself is, according to our view, the essence of Christian Science, and it is easy to understand that, after the morbid condition of the intestine had begun to improve, she was able, under the influence of a new and encouraging belief, to work out her own salvation. How much the nervous system may be concerned in the cure of mucous colitis is shown by a case quite recently reported by Dr. Vince in the *Gazette Médicale de Nantes*. A lady described as "very arthritic and nervous, but very "positive, very vigorous, and a sportswoman," had suffered for four months from muco-membranous enteritis, which showed no sign of yielding to treatment. The patient was very ill, and lost weight to a considerable extent. One day a fire broke out in her room; though much frightened she kept cool. Two days later pain, constipation, and the passage of membranes ceased. The cure was complete and permanent. Can Christian Science do better than this? In conclusion we have only to say that we have never wittingly charged the adepts of the cult with consciously trying to deceive people. That they deceive themselves we hold to be unquestionable; it is not fraud, however, but foolish credulity, that we impute to the devotees of Mrs. Eddy.

"WAS A DOCTOR REQUIRED?"

UNDER this heading the *Western Morning News* reports a recent discussion at the Stonehouse Board of Guardians on the subject of the payment of a doctor's fee who was called in by the midwife in attendance in a case of prolapse. Dr. Waterfield, one of the guardians, opposed the payment, on the ground that when the Local Government Board Order directing that a medical man should be called in was issued he understood that the guardians were to pay a guinea or half-guinea when there was danger in the confinement and the case was essentially one that required a medical man's skill to ensure a successful termination. He had been in Stonehouse something like twenty years, and in the whole course of his experience—and he had had a great many midwifery cases—he had never been called in for such a trivial case as prolapse. The old-fashioned woman, who was supposed not to know her work, would never have thought of calling in a doctor for such a case. He protested against money coming out of the rates for such a trivial thing. Apparently Dr. Waterfield has never seen the rules of the Central Midwives Board, which direct the midwife, in case of any abnormality occurring during labour, to fill up a form requiring the attendance of a medical practitioner, and rendering her liable to be reported to the Central Midwives Board if she neglects to do so. Dr. Waterfield apparently prefers the action of the old Sairey Gamps in such matters to that of the new certified midwife; but his attempt to put back the hands of the clock in this matter comes rather late in the day. He is, of course, entitled to hold his own opinion as to what are or are not trivial abnormalities, even though, as he admits, prolapse might have resulted in the death of the child; but as no such discretion is left to the midwife by the rules under which she works, it was her bounden duty to fill up the form, and the doctor, having attended on her request, is entitled to be paid his fee. We trust that on reflection Dr. Waterfield will see that his action in the matter was not such as could be approved by the members of his own profession.

THE LATEST "DEATH-BLOW" TO VACCINATION.

THE recent epidemic of small-pox in Metz was a source of great delight to the antivaccinators in this country. It was confidently expected and anticipated that this occurrence would deal another of those numerous "death-blows" to vaccination from which Jenner's discovery has so often recovered during the past century. The *Vaccination Inquirer*, the official organ of the Antivaccination League, of May last, said: "The "argument from Germany has gone. There has been "small-pox in Metz since last July, and that fact alone "would have killed it." Reasoning of this kind may be readily seized upon and assimilated by the credulous few, who regard the *Vaccination Inquirer* as a reliable authority, but will not carry much conviction to others. We have already given some particulars of the outbreak, but, in order to see to what extent the argument from Germany has "gone," further inquiry has been made, and the reply from Dr. Eyles, Medical Officer of the District, is as follows: "The "first cases appeared in the middle of July, 1906, in "the suburb of Ban St. Martin, being introduced from "Differdingen (Grand Duchy of Luxemburg). The last "case was notified on 7th May, 1907, in Metz. During "this time 166 persons were attacked of whom 39 died. "Regarding the severity of this disease, on the whole it "was very severe in the case of unvaccinated persons. "As to those who had been vaccinated, one can only "remark that the longer the time which had elapsed "since the vaccination the worse was the attack. The "exceeding importance of vaccination as a preventive "against attacks of small-pox is shown by the fact that "not a single soldier of the large garrison, nor a single "child attending school who had been successfully "vaccinated was attacked. The recruits, be it noted, "are all strictly revaccinated on entering the army. A "considerable number of children were attacked, who, "however, had none of them been vaccinated, or, at all "events, successfully vaccinated. These children were "either not yet liable to be vaccinated, or had arrived "in this place unvaccinated or had hitherto escaped "vaccination on account of illness, or by escaping "detection. The epidemic ceased when once the whole "population (with few exceptions) had been thoroughly "vaccinated—no small task. As, however, in the case "of adults compulsory vaccination was not possible (on "account of the state of the law), the doctors went from "house to house and vaccinated every person who did "not refuse. Only an insignificant percentage refused."

From this it will be seen that the disease was introduced into Germany from over the frontier. Dr. Eyles's interesting particulars leave little doubt as to whose arguments have been "killed" by the small-pox epidemic at Metz.

THE DOCTOR IN POLITICS.

THERE are doctors at the present day who play a considerable part in politics; we need only name MM. Combes and Clemenceau in France, Dr. Jameson at the Cape, and Professor Baccelli in Italy. For years Rudolf Virchow led the Opposition in the Prussian Parliament; and Sir Charles Tupper, whom the King has just delighted to honour, was Prime Minister of Canada and for more than thirty years a leading member of the Parliament of the Dominion. But the part played by these men on the political stage had nothing to do with their profession. There have been doctors, however, whose profession enabled them to play a less conspicuous but still considerable part in politics. Perhaps there never has been a doctor who ruled the titular rulers through, as many confessors are said to have done, the royal consciences in their keeping. Baron Stockmar is, perhaps, the nearest approach to a medical adviser whose functions extended beyond the care of the body. But some doctors have been useful as intermediaries between chiefs of parties. It is generally believed that Sir Henry Holland, whose knowledge of the opinions and feelings of the ruling classes, not only in this country but throughout Europe, was remarkable, exercised a good deal of indirect influence in this way. Dr. Robert Ferguson, it is said, did much service to Palmerston as a gatherer of political gossip. Palmerston said of him when he died that he had lost not only an able physician but a personal friend. In Lord Edmond Fitzmaurice's *Life of Lord Granville* we find Dr. Quin, a fashionable homoeopathic practitioner, playing a similar part. He appears to have been commissioned by Disraeli to sound Lord Granville as to his willingness to join his Administration. In a letter dated February 26th, 1868, Lord Granville writes: "My dear "Quin,—A thousand thanks. Your note was the "first intimation of the important events. It is an "immense thing for Dizzy, with all the obstacles in "his way, to have accomplished. If Dizzy speaks to "you again about me, you had better say that you have "communicated with me; that I am much flattered by "his good opionion; that I have a great admiration of his "personal qualities; and that his courtesy to me in all "matters of business and in our social relations would "make it agreeable to me to be brought into con"nexion with him; but there are many reasons which "would oblige me to decline his Administration, and "would make me of little use to him were I to do "otherwise." Sometimes the doctor has been used unconsciously as a source of political information by a keen-witted journalist. The announcement of the second Lord Lytton's appointment as Viceroy of India at a time when the Government was keeping the matter a secret is one of the great feats of Delane. The story goes that the famous editor was sitting at dinner next to an equally famous physician, who happened to mention that Lord Lytton had consulted him that morning as to the fitness of his constitution to withstand the Indian climate. Delane wisely asked no questions, but drew his inference from what he heard, and the next morning the *Times* announced the appointment of Lord Lytton as Viceroy of India. We give the story for what it is worth, but we can scarcely conceive a physician so experienced and so faithful to the highest standard of the ethics of his profession as the one in question retailing gossip about a patient at a dinner table, especially to a journalist. Whether true or not, however, it points the moral that the doctor should take care not to let any fact, however trivial, learnt from a patient who consults him escape his lips.

THE LEGEND OF THE QUEEN-DOCTOR.

IT is told by Raleigh that when writing his *History of the World* in the Tower he was disturbed by a noise in the street. He looked out and saw two men quarrelling. Then the officers of the law came on the scene, and Raleigh heard various versions of the incident told by eye-witnesses, all differing from his own impression of what he had seen. This led him to reflect on the futility of trying to write the history of the world when it was so difficult to arrive at the truth as to an occurrence which had happened under his own eyes. It is also told that when Sir Robert Walpole was ill and asked to have something read to him, he excluded history, as he knew that was all lies. The "higher criticism" strives to eliminate the legendary element from ancient records, but with very questionable success. One feels that this must be so from the apparent impossibility of killing a fable even in these days when newspapers chronicle the very smallest beer of history. The Queen of Norway is said to keep a book of newspaper cuttings relating to the King and herself, which she has labelled "Things we have neither said nor done." If the Queen of Portugal keeps such a book, the stories about her possession of a medical degree must occupy a considerable space. The other day the British public was privileged to read in more than one of its most respectable newspapers a tale of an accident to a workman who was conveyed to Evesham Cottage Hospital, where it was found that his left thigh was fractured and the right ankle severely sprained. The reporter goes on: "The Princess (Louise) and Queen "Amelia of Portugal yesterday motored to the hospital. "Queen Amelia, who is a qualified doctor, herself "inspected the broken limb and rearranged the bed." We are sorry to destroy a legend which from frequency of repetition has come to be almost an article of faith with a large section of the public. Regard for truth, however, compels us to state that it is not the fact that Her Majesty the Queen of Portugal holds the degree of doctor of medicine or any medical qualification. We feel it our duty to do this all the more because we were to some extent responsible for setting the legend in circulation. The real facts may be gathered from the following paragraph which appeared in the BRITISH MEDICAL JOURNAL of February 1st, 1896, p. 291, under the heading, A Queenly Student: "We recently mentioned that "the Queen of Portugal has for some time shown a "pronounced taste for the study of the healing art, and "has been pursuing her studies with great assiduity, "with the view to taking a degree. We are authorita"tively informed that this is not the case. The Queen "devotes a large portion of her mornings to philan"thropic labours among the poor children of Lisbon, "and takes a great interest in visiting her dispensary "established in Lisbon for poor children, of which we "published an account in the BRITISH MEDICAL JOURNAL "of April 20th, 1895. Her Portuguese Majesty was, we "are informed, so much pleased with the report of the "dispensary which we published that she had copies of "the BRITISH MEDICAL JOURNAL containing it carefully "kept in 'capas.' Her Majesty, however, has never "even thought of studying medicine, still less of pass"ing examinations, and her whole interest in the sub"ject is one of pure philanthropy." The source from which the information was obtained excludes all possibility of error. But we have no doubt the legend will continue to live; it is so much more interesting than the plain truth.

CLINICAL INSTRUCTION IN POOR-LAW INFIRMARIES.

IN the article on the teaching of practical midwifery, published in the JOURNAL of last week, it was stated —p. 1440—that at present a regulation exists which excludes the utilizing of the Poor-law infirmaries for

the teaching of students. We find on further inquiry that the use of the word "regulation" goes a little beyond the facts. In 1884 the Guardians of Kensington were approached by a medical school to grant the use of their infirmary for the purpose of affording medical instruction to a limited number of students. The guardians being in doubt as to their powers in the matter, referred to the Local Government Board for its sanction, if such could be given. It seems that at one time Poor-law asylums were permitted, by the Metropolitan Poor Act, 1867, to be used to instruct students in the care and treatment of the insane; but this power was expressly repealed by a clause in a subsequent Act of Parliament in 1869. After the matter had received a great deal of attention from the advisers of the Local Government Board, a reply was sent to the Kensington Guardians to the effect that the Board was not aware of any statutory authority for such an arrangement as that proposed, which would involve the attendance of persons at the infirmary for a purpose unconnected with the relief of the poor. The scheme would be opposed to the intention of the Legislature, as the provision in Sec. 29 of the Metropolitan Poor Act, 1867, which authorized the use, for purposes of medical instruction, of asylums provided under the Act, was repealed by 32 and 33 Vic., cap. 63, sec. 20. Moreover, apart from the legal question, there are, in the opinion of the Board, objections to such an arrangement as that suggested, and the Board therefore did not feel that it could give its consent to the proposal of the Kensington guardians. Since then other applications in a similar direction have been made—for example, by the Oldham guardians in 1899 and by the Cambridge Medical School in 1900. The answer has been that no regulations have been framed regarding facilities for the teaching of clinical medicine and surgery in Poor-law infirmaries, as the view of the Board has always been that there is no statutory authority for such an arrangement. On the other hand, there appears to be no statutory prohibition and no prohibitory order issued by the Local Government Board, though the Board is not prepared to sanction such an arrangement when its sanction is asked; whether its sanction is necessary is a matter upon which we are not prepared to express an opinion.

AMERICAN MEN OF SCIENCE.

Professor J. McKeen Cattell, of Columbia University, has recently published[1] the results of a statistical inquiry into the distribution of American men of science. The names of a large number of workers in twelve departments of science were formed into groups, each group being submitted to ten first-rate exponents of the particular science, by whom the names were arranged in order of merit. A classification, determined by the mean places obtained from the ten judgements, was then made, and the different lists were united to form a set of 1,000 leading men of science. The geographical distribution of the 1,000 was found to be very irregular, the birth-rate varying from 108.8 per 1,000,000 of population in Massachusetts to 1.4 in Louisiana. Some of the author's general remarks on the economic conditions of scientific research are highly judicious. He says: "A surgeon may ask "for an operation for appendicitis as large a fee "as his patient is willing to pay; but should he "after years of research discover a method of pre- "venting appendicitis altogether, he would receive no "payment at all, but would, on the contrary, give up "all future fees for the operation. The surgeons who "by risking their lives discovered how to suppress yellow "fever have received no return for their great work." Although the material collected is of interest, its statistical analysis is hardly sufficient. Judged by the standard of English biometric work, Professor Cattell's treatment of a peculiarly complex problem is very superficial. He asserts that "the theory of errors "commonly applied to the exact sciences is too crude "for psychology, and probably for the sciences in "which it is used." This may be true, but Professor Cattell's paper contains no evidence that he is well acquainted with the mass of English and German work on this subject which has been published in the last ten years, especially that of Pearson, Czuber, and Bruns. Pearson's important memoir, On the Mathematical Theory of Errors of Judgement and on the Personal Equation,[2] contains many observations and inferences germane to the present inquiry. The author has, however, ignored this paper, and is hardly entitled to say that "there is here measured for the first time, I think, "the accuracy or reliability of judgement." It is also unwise to state that material of so complex a nature and so incompletely analysed affords a valid argument against the view of Galton, Pearson, and others, that mental characters are subject to a high degree of hereditary transmission.

[1] A Statistical Study of American Men of Science. by J. McKeen Cattell, Professor of Psychology, Columbia University (reprinted from *Science*, vol. xxiv, pp. 658-65, 699-707, 732-42).

[2] *Phil. Trans. A.*, pp. 235-299.

Professor Koch has had conferred upon him the dignity of an Active Privy Councillor, with the title of "Excellency."

The Director-General of the Army Medical Service will visit Exeter on December 4th for the purpose of holding a conference with the medical profession in East Devonshire and the adjacent counties with regard to the organization of the territorial army medical corps. On the following day Sir Alfred Keogh will visit Plymouth, when he hopes to meet the members of the medical profession of West Devonshire and Cornwall.

A meeting was held at Chester on November 13th for the purpose of promoting a memorial to the late Dr. Everett Dutton of Chester, in connexion with the Tropical School of the University of Liverpool. It was decided that the memorial should take the form of a professorship in some subject connected with tropical disease. A Committee was formed, with the Mayor as Chairman, and the Town Clerk and Mr. G. P. Miln as joint secretaries.

The Committee of the German Medical Association for the Repression of Quackery was commissioned at a meeting held at Münster to collect and classify advertisements about proprietary remedies appearing in the daily newspapers, and bring them before the legislative authorities. For this purpose the German medical societies have been invited to collect all material of this kind published in the newspapers within their districts between January 1st and March 31st, 1908, and send them to the office of the German Medical Association in Leipzig.

Dr. J. W. H. Eyre informs us that he has received a communication from Professor Arnaldo Trambusti, Professor of General Pathology at the University of Palermo, stating that he has put forward the suggestion that Malta fever should henceforward be called septicaemia of Bruce (*setticemia del Bruce*). Professor Trambusti hopes that this suggestion will meet with the approval of the British medical profession, and that a name which involves an unjust slight on the island of Malta and the Mediterranean coast will be discarded in favour of one which records the name of an illustrious member of the British profession, to whom medicine is indebted for the discovery of the specific agent.

Bristol.

Settlement of the Difficulty at the Royal Infirmary.

The differences between the staff and Committee of the Royal Infirmary are settled. The objectionable rule has been withdrawn, and both sides have been able to agree on some less drastic ones.

The sudden collapse of the campaign on the part of the Committee, it must be confessed, came as a surprise, as it had issued through its Secretary what can only be described as a fighting circular, and yet, within a few hours of this being in the hands of the Governors, its commander-in-chief was asking for terms.

To complete the history of this memorable and momentous controversy it is necessary to go back to Wednesday, November 13th. On the morning of that day the Governors received a printed circular, composed of a letter signed by Mr. Budgett, the Secretary of the Royal Infirmary, and an extract of the minutes of the Committee meeting of October 22nd, the meeting at which the Special Committee was appointed to consider the question. The issue of this circular on Wednesday prevented a notice in last Saturday's Journal.

In the light of what subsequently happened it may be as well to state that this circular must have been prepared, printed, and addressed without the knowledge of the Special Committee. That it was so prepared, printed, and addressed without the knowledge of the President it is difficult to believe. It is hardly conceivable that the Secretary took upon himself to write an aggressive circular, have it printed, addressed, and posted to 3,000 Governors without the sanction and approval of the President, and yet only a few hours after the President repudiated his Secretary and the circular and sought an interview with a member of the staff.

As regards the circular, it is hardly worth while to take much notice of this document, for, as just shown, the President threw it over almost before the Governors had been able to digest it; but to make the story complete a brief account of its contents may be given. In matters of this sort, when party feeling runs high, no one must complain of hard knocks and sharp retorts, and therefore no objection is raised to the petulant and sarcastic tone of Mr. Budgett's letter, though dignity and weight were lost through it. How flat it fell has been noticed; indeed, Mr. Budgett's November squib was very damp, gave a short fizzle, and went out.

The letter refers to the "circulars and anonymous communications" sent to the Governors, and published in the local press "all more or less by parties whose personal and professional interests are supposed to be involved." In passing it may be said that no anonymous communications were sent to the Governors by the medical profession; on the contrary, the one letter they did send had about 250 signatures. The little sneer contained in the words "supposed to be involved" is hardly worth noticing except to justify the previous remarks. The letter goes on to state that the Special Committee "who are making exhaustive inquiries and taking such steps as are necessary, hope to have their draft report ready during the next few weeks for submission to the General Committee before publication to the Governors." All this is rather ridiculous. On Wednesday at 9 a.m. the Governors are told by the Secretary that they may expect a report in a few weeks, but less than an hour after the President comes forward bearing an olive branch, to make terms with the staff. Evidently one member of the Committee did not require to make "exhaustive inquiries" or to wait a few weeks to report to the Special Committee. He appears simply to have taken the matter into his own hands and consulted his complaisant and docile Committee only when everything had been settled. From a further paragraph it is satisfactory to learn that the Committee are anxious to deal with medical men in a sympathetic and kindly spirit. This perhaps accounts for the docile manner in which the Committee without being consulted previously accepted the President's overtures to the staff.

The extract from the minutes appended to this remarkable letter throws little light on the question, except with regard to the appointment of this much-neglected Special Committee. It will be remembered that it was composed of all the members of the Committee except those specially interested—that is, the medical men. What, however, is amazing is the statement by one of the medical men that such action was "judicious and judicial." As most of this is now ancient history, it would be flogging a dead horse to say anything more, though how either of these adjectives could be applied to such proceedings is not easy to understand.

This letter and extract from the minutes was published on November 13th, and the same morning, as mentioned above, the President asked one of the staff to meet him. At the conference the President agreed to withdraw the objectionable rule, and proposed certain others, which were to be submitted to the staff. The next day the staff considered them, making some alterations, but before returning them to the President brought them to a meeting of the general practitioners of Bristol that happened to have been called for the evening of Friday. This meeting was fairly well attended, and much interest was evoked by the recent change of affairs, not unmixed with considerable satisfaction that the main point at issue had been gained. A resolution was proposed by Dr. Brasher, and seconded by Dr. Rogers, agreeing with the amended draft rules, which were briefly as follows: That no member of the staff shall undertake any union or club appointment, or engage in pharmacy; that the medical and surgical staff shall not hold appointments at another general hospital, but that assistant-surgeons and physicians may hold one post at a special hospital, that the physicians shall practise medicine, the surgeons surgery (that is, not engage in family practice), and that the special physicians or surgeons shall practise their speciality only. The only objection taken arose from the fact that these rules would exclude members of the staff from being on the Handel Cossham Hospital, but as the staff had agreed to accept this, the general practitioners thought it best to be generous in their victory and agree with their colleagues. It seems a pity, however, that a magnificent hospital like the new one at Kingswood should be debarred from having any member of the infirmary staff as a physician or surgeon, and it is the more regrettable (as it is commonly said) that personal motives have influenced this restriction.

These amended rules were agreed to by the President and submitted to the Special Committee the following morning, November 16th. They still have to be brought before the General Committee on November 26th before being presented to the Governors. No difficulty is now expected in respect of their confirmation. Only one other matter need be recorded. On Friday, November 22nd, the rules are to be brought before a meeting of the Bath and Bristol Branch for consideration.

The controversy will long be remembered in Bristol. The fight extended over many weeks, and has been a sharp one, and, though it threatened at one time to inflict considerable damage on a much-valued institution, it has ended in a complete vindication of the action of the staff and a signal victory for the medical profession. It has in a few weeks done more good than could be effected in years of quiet. It induced the members of the staff of the Royal Infirmary to act together, to put aside personal feelings, and fight, and present a united front to an uncalled-for aggression. It has welded together the profession of the district, and been a forcible lesson to them that unity is strength. And last, and by no means least, it has taught the public many facts about the working of medical charities on which it displayed ignorance in its communications to the press—and the by no means unimportant fact that hospitals can only be managed efficiently and properly by considering the wishes of their honorary medical officers.

Leeds.

Formation of a Yorkshire Association of Graduates of the University of Edinburgh.

For some years a strong feeling has existed in the minds of the numerous graduates of the University of Edinburgh who are resident in various districts of Yorkshire that

they should form themselves into an association, as have the graduates of that University in other large centres and as have the graduates in the West Riding of the sister Universities of Aberdeen and Glasgow. Largely on the initiative of Dr. J. G. Moffat of Keighley, some informal discussions were held, and on July 4th the Association was formed. Dr. J. E. Eddison, Emeritus Professor of Medicine in the University of Leeds, was elected President, and it was arranged that the Association should hold its first annual dinner in Leeds, and that Sir William Turner, K.C.B., Principal of the University of Edinburgh, should be invited as chief guest on the occasion. This inaugural dinner was an event of great importance, and went off with the greatest success. Under the chairmanship of Dr. Eddison, the members of the Association and many guests, amounting in all to a company of about eighty, dined at Powolny's Rooms on the evening of October 31st. In proposing the toast of "The University of Edinburgh," which was associated with the name of the chief guest, Dr. Eddison, who was even more than usually felicitous in his remarks, dwelt on the advantages of there being such societies, pointing out that they tended to foster the kindly feelings which all men must have for their Alma Mater, and to maintain and renew ancient friendships. His reminiscences of his years in Edinburgh—and those who did not know it before were probably surprised to learn that Dr. Eddison went as a student to Edinburgh so long ago as in 1859—were full of interest. His description of his early and embarrassing experiences in the dissecting room was exciting the unbounded merriment of his audience when he struck another chord by a sudden and graceful reference to a friendly and sympathetic voice which fell on his ear just when he was feeling at his worst, for every one knew that the "Well now, sir, what can I do to help you?" must have proceeded from no one but the honoured guest of the evening, and they were not slow to show by their hearty acclamations that Dr. Eddison's experience was not exceptional. In responding to the toast Sir William Turner modestly spoke more of the University than of himself. He referred to the growth of societies in connexion with the University, mentioning that the first to be formed was in London. This was followed by similar and successful societies in Birmingham, Manchester, Liverpool, Newcastle, and Sheffield, and he confessed that he was beginning to wonder what Leeds was doing when he heard of the movement of which the present gathering was the expression. His connexion with the University extended over the long period of fifty-three years, for it was in the year 1854 that, on the recommendation of Sir James Paget, he became demonstrator of anatomy under John Goodsir. It was sixty-one years since he entered on the study of medicine, for it was in the year 1846, the year in which anaesthesia was introduced into general surgical practice, that he became apprentice to a practitioner in Lancaster. Sir William drew an interesting contrast between the work of medical men at that time and during recent years, not only in its scientific aspect, but in respect of the legal enactments under which it was carried on. Prior to the Medical Act of 1858 most of the licences to practise were recognizable only over comparatively limited areas, and even when this anomaly was swept away by the legislation of 1858 it was many years before unwarranted manifestations of jealousy on the advent of a man with a Scottish degree in any neighbourhood in England completely died out, and he could even call to mind prosecutions initiated by the Society of Apothecaries, whose members under the Act of 1815 had the exclusive right of vending drugs, and directed against the holders of degrees who until a more recent date had no such privilege. While pointing out that now the holders of degrees had equally with the members of the Society of Apothecaries the right of selling drugs to their patients, Sir William earnestly expressed the hope that the time was not far distant when medical men all over the country would give up dispensing their own medicines except in remote districts, and that in all instances it should be made abundantly plain that the fee was based not on the value of the medicines, lotions, or pills provided, but on the professional advice which was tendered. In a reference to the newly-inaugurated University of Leeds, which was fortunate in being able to absorb a large and successful medical school begun in 1830, Sir William drew a picture of the favourable influence of a university on the various classes of the community in the midst of which it was situated in forming public opinion on the various questions of the day, whether these related to labour and capital, to education, to the defence of the country, or to the many social questions which should interest all who dwelt in large cities. "Man does not live on *wool* alone," said Sir William, evidently forgetting—and who will blame him for he has not been in Leeds since 1868—that wool is not now, even if it ever was, the staple commodity of Leeds. Let us, however, substitute for "wool" or add to it all kinds of iron, and almost everything that is manufactured from iron, from steam ploughs and locomotive engines to screw-nails and boot rivets, leather and boots, ready-made clothing, colour-printing, stationery, all kinds of school furniture, and the products of many other industries, and we must still agree with Sir William that on these alone man does not live. All who were present were interested to learn that Sir William had been able in the afternoon to spend some time in looking over the medical school buildings of the University of Leeds, along with Dr. Eddison, and under the guidance of the Dean, Professor A. E. Grünbaum, and Professor Wardrop Griffith, and to hear from his own lips—what those who had accompanied him in his visit had already gathered—that he was most favourably impressed by what he saw. The toast of "The Association" was submitted by the chief guest before he sat down, and was responded to by Dr. Rabagliati, of Bradford, who pleaded for a more full recognition of philosophy in our universities. The toast of "The Guests" was proposed by Dr. Gilmour, of Burley-in-Wharfedale, and was replied to by Mr. T. Pridgin Teale and by Professor Grünbaum, the latter, with the manifest approval of the meeting, eliciting a second speech from the Chairman by proposing his health—a toast which, it was understood, had been autocratically elliminated by the Chairman himself.

The writer of this paragraph—himself a Scottish graduate and a member of one of the already existing Yorkshire associations of Scottish graduates—would venture respectfully to congratulate the members of the great University of Edinburgh on the launching of this new Society—a Society which can be productive of nothing but good, and to which every one will wish all the success which it deserves.

The Leeds Post-graduate Course at the Leeds Public Dispensary.

The promoters of this course of post-graduate instruction have after full consideration resolved to increase the sphere of their labours. Up to now the instruction has taken the form of lecture demonstration courses, each course consisting of about sixteen meetings. The nature of these has already been indicated from time to time in this column, but it may again be mentioned that the aim throughout has been to make the meetings partake much more of the nature of practical demonstrations than of set lectures, and to ensure this it was determined that the class should consist on each occasion of not more than twenty. Three such courses have been held, and it is in consequence of the large measure of success with which they have been attended that the Committee of Management has come to the determination to extend the course. The arrangements for 1908 are as follows:

1. During the summer term, May to July, there will be the same kind of lecture demonstration course which has up to now been held. The usual proceeding followed on the occasion of these meetings has been an informal talk about the nature of the cases to be exhibited followed by a demonstration and discussion of the cases, of which a good selection was always obtained.

2. During the two winter terms there will be once a week a clinical demonstration on various kinds of cases. In this there will not be any attempt made at the grouping of cases, at least such grouping will not be a feature of the meetings. Full opportunity will be afforded for discussion.

3. The third feature of the scheme is the institution of short courses of lectures and demonstrations, each course consisting of four to six meetings, on special subjects of interest. The nature of these will be in a measure-

dependent on the expressed wish of those attending the other courses. The following short courses have been arranged to be held during the three terms of 1908, and others may be added if requested:

1. Organic nervous diseases.
2. The development, structure, and functions of the heart in relation to its anomalies and diseasee.
3. Rheumatism and allied affections in childhood.
4. Laryngology.
5. The ophthalmoscopic examination of diseases of the eye.
6. Diseases of the male urinary organs.
7. On anaesthetics and their administration.

Manchester and Salford.

Swinton and the Notification of Births Act.

The opposition to the adoption of the Notification of Births Act is clearly gaining strength in the Manchester district, and it is becoming evident that, even if adopted, the Act will be to a great extent a failure, as it will not have the willing co-operation of medical men.

The deputation of medical men which waited on the Swinton and Pendlebury District Council on November 11th to oppose the proposed adoption of the Act, hardly anticipated that it would learn something of the inner history of the Act, but it appears that the Clerk to the Council, Mr. W. T. Postlethwaite, LL.B., had a hand in drafting the compulsory clauses of the Act. It is, however, only right to acknowledge that apparently he thought that provision was made in the Bill for the payment of a fee for notification, for in a circular which he issued to medical men in August he distinctly says that "authority is given in the Bill to pay for such notification." In the meantime, pending the passing of the Bill, the Swinton Council, as the circular stated, had resolved to pay a fee of sixpence to midwives for each case, but the Council "did not like to offer such a small sum to medical men," and so appealed to their humanitarian feelings to notify without a fee until the Bill became law. It now appears that the Council will be surcharged for paying the fee to midwives, and the clerk himself must feel that he, like the medical profession, has been deceived by the way in which the Bill was manœuvred through the House of Commons. It is necessary, however, to say that, so far as the deputation in question was concerned, there was no mention by any of its members of the question of fees.

The deputation consisted of Drs. O'Grady, Owen, Phipps, Williams, Herbert, and George. Dr. Owen said that the profession in the district was unanimous in its opposition to the Act, its great objection being that the statute compelled doctors to do a most dishonourable thing—namely, to divulge professional secrets. A solicitor in a court of law was protected, and could refuse to say anything about the confidential relationships between himself and his clients, but doctors were not so protected. The violation of professional confidence which the adoption of the Act would create would probably lead to crime, in that in some instances it would induce concealment of birth.

Dr. Phipps said he did not think that the lady health visitor could enter a house against the will of the tenant.

The Clerk said that was never suggested.

Dr. Williams declared that the adoption of the Act would mean that the doctors must either divulge professional secrets or become law-breakers. If a working man was prosecuted for not notifying a birth, the doctor must be prosecuted as well. They could be fined 20s. and costs, or if, as was most likely, they chose to be passive resisters, they could be sent to prison. The doctors, however, did not want to be at variance with the local authority. They objected to the Act because it was a piece of class legislation directed against them. The framers of the Act apparently did not think the citizens could be entrusted to notify the birth within the specified period, and therefore fixed the responsibility on the doctor, which was most unfair. This was the one blemish in the Act, and he appealed to the Council not to adopt it on that ground.

Dr. Herbert agreed that the work of the health visitor was of great benefit, but thought that the doctors could assist her by notifying places where her visits were desirable, without the Act being adopted. The objection was to notifying all births and to doing so under compulsion.

The Clerk then gave some interesting facts about the history of the Act. He said that he himself had had much to do with the framing of the Bill. If it did not originate, it received great impetus from the Lancashire Association of District Councils, of which he was Secretary. After being dealt with there, it was referred to the National Association, the Executive of which suggested that he should take charge of the matter. When the Bill was about to be introduced into Parliament, the difficulty arose as to how the notifications were to be made, and as he had been active in the matter, it was referred to him to make a suggestion. He at once suggested that the provisions of the Notification of Infectious Diseases Act of 1899 should be followed, where the responsibility was placed on two persons—the head of the family and the medical attendant. Everyone would sympathize with the desire of the doctors not to divulge professional secrets, but the notification had to be made to a professional man, the medical officer of health, and professional secrecy was thus guarded as far as possible. If the Act were adopted he would suggest that the notification should not be in the form of a post-card, but that it should be enclosed in a stamped addressed envelope, and if, on the note, the doctor said that the visit of the lady health visitor was not desired, the only two persons concerned would be the doctor and the medical officer. The Council was already committed to the employment of a lady health visitor, and there ought to to be early notification where her attendance was desirable. Hitherto they had offered to pay for these notifications, but in face of the Act, the Council could not continue such payments.

Dr. O'Grady advocated the postponement of adoption of the Act for twelve months. The object was to check infantile mortality. At present births were notified within six weeks, and the excessive mortality was mostly among infants beyond that age. He suggested that efforts should be made to secure that girls, just before they left school, should be taught some elementary ideas of the treatment of the commoner children's ailments. He had been in practice in the district for twenty-seven years, and the people were "no forrader" in dealing with these things.

Councillor Mills said he admired the attitude of the doctors on this matter of professional secrecy, but thought they would have great difficulty in persuading any authority not to adopt the Act. He strongly advocated that the parent, not the doctor, should be the person responsible for the notification.

Councillor Lindley said the medical profession was surrounded by much etiquette and had the strongest trade-union in the country. He did not see, however, that it could be a breach of etiquette if the notification were done in the way suggested by the Clerk, for in cases in which it was thought inadvisable for the lady visitor to attend it could be so stated.

Dr. Owen said that the doctors objected to the task being imposed on them, and thought that the onus should be placed on the parents only.

Councillor Buck, who had given notice to move that the Act be adopted, said that after listening to the deputation he did not think that the Council would change its attitude. If the Clerk's suggestion were adopted, the notification would be sealed, simply giving the number of the house and street where the birth had occurred, and would be sent to the private residence of the medical officer, and the lady visitor need not attend, if an intimation to that effect were given by the doctor.

Dr. O'Grady thanked the Council for receiving the deputation, which then withdrew.

The Council then considered the motion for the adoption of the Act. Several councillors thought that out of courtesy to the deputation they ought to defer the matter, and ultimately it was resolved by 11 votes to 6 to postpone it for a month.

We can only hope that the *Swinton and Pendlebury Journal* is mistaken in saying "there is that in the attitude of the Council that makes the postponement appear little more than a concession to good feeling."

There are several obvious objections to the suggestion made by the Clerk about the method of notifying. First, it may be said that if the health visitor is not to go to any particular case, notification of that case is a mere waste of time. Secondly, there is no guarantee, and not even a probability, that many medical officers of health would always carry out the request not to send the health visitor. Thirdly, the Clerk seems to have a very crude idea of what is meant by professional secrecy if he thinks that secrets are things that may be told to some one else, even if that some one is a medical officer. One cannot think that that is what lawyers in general mean by secrecy; at any rate, it is not what doctors mean. Again, it is a curious *non sequitur* to argue, as the Clerk and some of the Council did argue, that they must adopt the Act because they have already appointed a health visitor. But that appointment was made before the Act was passed, and the Council's circular about fees shows that it was mistaken about the provisions of the Act. They were, in fact, in an inordinate hurry to anticipate the Act before they knew either what it was or even whether it would ever be passed at all, and to argue that they are now bound to continue what was begun in too great

haste, amounts to this, that the doctors must suffer for the Council's hasty action. One can hardly think that can be the Council's idea of justice. Lastly, one wonders how it comes about that the framing of a Bill that so seriously affects general practitioners should have been put into the hands of district council officials who apparently had such vague notions as to what could be justly expected from the medical profession. It would seem as if the Councils realized that the people would object themselves in many cases to notify births. Had they such a poor opinion of medical men as to think that they might quietly impose the odious task on them? Possibly they never thought at all of this aspect, for, as Dr. Owen correctly said, the Act was a piece of hasty ill-considered legislation. But it is quite evident that they will have plenty of time to think now before they can make the Act, in its present form, a success, at any rate in Swinton. For though the Swinton doctors cannot but admire the candour of Mr. Postlethwaite in confessing to having been the suggestor of the obnoxious clause, they nevertheless think that his clause is the one dark blot on a Bill that started in good intentions.

HEALTH OF LANCASHIRE.

From the annual report of the medical officer of health for the county of Lancashire we learn that the birth-rate for the county is the lowest yet recorded, being 24 99 per 1,000, which is 2.1 per 1,000 below the rate for England and Wales. Lytham had a rate of only 15.8, Morecambe 15, and Grange-over-Sands 12, while in some of the cotton districts and coal-mining districts the rate was as high as 37 per 1,000. In those districts the ratio of young married couples is comparatively high. "Several of the medical officers," says Dr. Sergeant, "believe that the custom of marrying at a more mature age than formerly, though resulting in fewer children being born, yet they grow up strong and healthy, and not likely to fall victims to wasting diseases or diarrhoea, so common in childhood." The death-rate for the county in 1906 was 14.62 per 1,000, which, with the exception of the year 1905, is the lowest on record. The death-rate for children under 1 year of age was 139 per 1,000 births, against 155, the average of the last ten years. Very high rates occurred, among other places, at Longridge 219, Barrowford 181, Padiham and Oswaldtwistle 180, whereas at Thornton the rate was only 59, Grange 41, and Fulwood 28. Dr. Sergeant regrets that in so many places the high infant death-rates continue the same year after year, and that so little should be done to check wanton waste of life. He thinks that "authorities ought to regard a rate exceeding 100 deaths under 1 year per 1,000 births as a calamity which is capable of being removed by the adoption of well-known methods of sanitation." The report also states that there are now only five small districts which have no hospital accommodation, the population amounting to under 30,000, but there are still as many as fifty-five districts which possess no disinfecting appliances.

West Yorkshire.

THE BRADFORD DIVISION AND THE MEDICAL SECRETARY.

NEARLY fifty members of the Bradford Division met together on Thursday, November 14th, at 8 p.m., to listen to an address given by Dr. J. Smith Whitaker, Medical Secretary to the Association, entitled "1804 to 1907: What has the Association done for the Profession?" The address was most interesting, and was listened to with great attention. It was followed by a Divisional supper at 9.15, after which Dr. Whitaker answered some questions put to him by several members present. When these had been disposed of, the gathering again went into "festive mood," and were entertained with numerous songs by members of the profession, the amount of vocal talent the Division could produce being a revelation even to its members. Songs were charmingly rendered by Drs. Aiken, Baldwin, Carroll, Martin, O'Brien, and Drs. Eurich and A. W. Taylor kindly acted as accompanists. The members did not separate until nearly midnight, when a vote of thanks to the Chairman, Dr. Horrocks, was proposed by Dr. Walker, seconded by Dr. J. J. Bell, and carried unanimously. The good fellowship and friendly feelings produced by social meetings of this kind are of inestimable advantage, and encourage the growth of an *esprit de corps* which greatly assists the solution of professional difficulties.

Scotland.

WOMEN GRADUATES AND THE PARLIAMENTARY VOTE.

THE Extra Division of the Court of Session at Edinburgh on Saturday, November 16th, adhered to Lord Salvesen's judgement finding that women graduates had no right to vote at the election of a member of Parliament for the Scottish universities.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.

The Registrar-General for Scotland reports that the number of deaths registered in October as due to cerebro-spinal meningitis was less than the number registered in any month of this year. The largest number of these deaths was in March—179, and since then there has been a steady decrease. In April there were 177, in May 143, in June 82, in July 61, in August 48, in September 44, while those in October were 29. Of the 29 deaths from this disease registered during the month, 19 were registered in Glasgow, 6 in Edinburgh, 2 in Leith, and 1 each in Paisley and Greenock.

THE GIRGENTI HOME.

The sixth annual report of the Certified Inebriate Reformatory for Glasgow is not an easy document to criticize. It tells us so little in so many pages. We learn that the Managers have submitted to the Government a draft Bill amending the Inebriates Act (in what particulars we are not told), but as the Government has not taken any action on the lines indicated by the draft Bill, the Corporation has decided to close the institution. The average number of inmates under detention in the home during the year 1906 was, quarter by quarter, respectively, 44, 44, 39, 41. There were 24 attempts at escape during the year, and two inmates now remain at large. This is a far higher percentage of escapes than occurs in an English reformatory. The fact must militate against good internal discipline, while it seems to point to very inadequate means of control. The Managers ingenuously explain that the escapes are due to their having no proper walls, but surely if walls or fences are necessary in order to duly control those committed to their care, they should provide them. It would appear as though conditions in the reformatory required amendment as well as the Inebriates Act. The system of "licensing out" obtaining at Girgenti seems to be applied without due selection of cases, since three of those licensed out during the year relapsed. One inmate was licensed out six months after admission, which appears to have allowed a large proportion of time of committal to be served outside the institution. The average age of all inmates admitted during the year was mournfully low, 27; the youngest inmate was only 21. Such cases, if sane, should be capable of improvement. Dr. Cunningham, medical officer to the institution, states that out of a total of 130 patients who have been in the institution, 17 have been weak-minded, and of "borderland" cases he now has 3 under treatment. His opinion appears to differ from that of the medical officers of most other inebriate institutions, in that he believes those cases classed as chronic inebriates to be almost impossible to cure. In his own cases he seems to think the incurability due to the physical condition of his patients, the majority of whom "suffer from physical conditions the result of disease or accident." The list of diseases given by Dr. Cunningham as having occurred throughout the year are very much the same as those from which the inmates of other reformatories suffer, but it is not generally maintained that bad physical health is in itself a bar to cure. Other medical men seem disposed to think that the one essential is a fair degree of mental soundness. Dr. Cunningham's patients, it would even seem, are mentally somewhat above the average. Under the heading, Social Condition, Dr. Cunningham divides his patients into married and single. This classification would, perhaps, be more illuminating were it not for the fact that a very large number of the women in reformatories, whether married or single, are of bad moral character or known prostitutes. Dr. Cunningham last year

administered the atropine treatment in combination with quinine and other drugs to 22 of his patients. He now reports that the whole number have relapsed, and pronounces the treatment, so far as his patients are concerned, a failure. A few of the Girgenti inmates seem to have done very well. It is a matter of regret that the managers have not obtained the results they appear to have expected in the first instance; but should they conclude on this account that there is no other use for the institutions which even now fulfil so many other functions besides the "reformatory"?

Montrose Royal Infirmary.

The Board of Management of the Montrose Royal Infirmary considered, on November 5th, a proposal for a new departure put forward by the medical staff and approved by the House Committee. It was to the effect that the medical staff should in future be allowed to charge fees to those of their private patients whom they sent into the infirmary. The adoption of the minute by the General Board was formally moved and seconded, but by an amendment, which was eventually carried by a majority of 12 to 3, the Board declined to entertain the proposal. In support of the amendment, and against the proposal, it was urged that if the latter were accepted there would be a great temptation to the doctors to send to the infirmary patients who were able to pay professional fees, and that the underlying idea was to turn a benevolent institution into a kind of nursing home. If this were done, the support of the public would be withdrawn. The institution, it may be noted, is one which has 45 beds, including 10 in a separate block for infectious cases. The total number usually occupied is 22, and, this being the case, it appears that it would be possible to admit paying patients without interfering with the main objects of the institution; and it is suggested that if the fees charged were sufficient to cover maintenance expenses the plan might even benefit the institution, as well as make it more generally useful to the general public. There are plenty of precedences for making use of the spare accommodation of a benevolent institution in this way, but if the step were taken it would be much better to extend the power of treating paying patients in the institution to all medical men in the neighbourhood rather than to limit it to the three or four who are members of its ordinary staff.

Ireland.

A "Belfast University."

At a meeting of the Students' Medical Association, Queen's College, Belfast, Dr. Benjamin Moore, Professor of Bio-Chemistry in the University of Liverpool, delivered an address on Universities, Ancient and Modern. He indicated the evolution that holds in many humanistic institutions, and argued that it should hold in their teaching colleges and universities. Tracing the history of these institutions from the ages of Greece and Rome through the Middle Ages, he referred to the youngest—Liverpool, Manchester, and others—as illustrating the principle which he had enunciated. He discussed the defects of the Royal University in Ireland and the demand of the Roman Catholics for a sectarian university, and said that the solution of the difficulty lay in the creation of a strong, liberal, and broad Belfast University. President Hamilton, in moving a vote of thanks to the lecturer, said that it was remarkable that within a few months two independent outsiders, Lord Kelvin and Professor Moore, had made such pronouncements on the question of a local university. At the same meeting Dr. Warnock read his inaugural address as incoming President on Science in Medicine.

The Forthcoming Tuberculosis Exhibition in Belfast.

The final arrangements have now been completed for this Exhibition. Sir R. Douglas Powell has kindly consented to give the opening lecture on November 22nd, and on each subsequent evening a lecture or demonstration by medical men and others will be given for the fortnight during which the Exhibition stays in the city. It will be held in the old Town Hall, granted by the City Council, and promises to be a great success; much enthusiasm has been thrown into the preparations.

Cork Branch of the National Association for the Prevention of Consumption.

At the annual meeting of the members of the Cork Branch of the National Association for the Prevention of Consumption, held under the presidency of Dr. Cremen, the Lord Mayor and High Sheriff were present, and there was a large attendance of the medical profession, as well as of the general public.

The Chairman read the annual report, and recorded that steady progress had been made for the past four years to lessen the ravages caused by consumption in the city and county of Cork. The educational work of the Branch had been carried on systematically, lectures on consumption having been delivered in several towns in the county, as well as in the city, by Dr. Moore of Queen's College. A large number of pamphlets and posters on the subject had been distributed to hospitals, schools, factories, and places of public resort. Acting on the suggestion of the Branch, the Public Health Committee recommended that a bacteriologist should be appointed for the examination of expectoration in suspected cases of consumption, and also of milk and other foods suspected of being tuberculous. The Council had not yet confirmed the recommendation of the Committee, but it was hoped they would do so at an early date, as the importance of such an appointment could not be over-estimated. The Branch's recommendation that the Corporation should, as a tentative measure, make consumption a voluntarily notifiable disease, had not met with the success expected, for during the year there had been only 30 cases out of at least 1,200 notified. Dr. Cremen hoped that a resolution proposing a modified system of compulsory notification would be passed. Typhus fever had been practically stamped out of the city and county by various sanitary measures, any or all of which would have been of little avail without notification; so it would be with consumption. To the credit of Cork and its Superintendent Officer of Health it was one of the first towns in Ireland to adopt this system of compulsory notification of infectious diseases, with the best results, and if it now adopted some modified form of compulsory notification in pulmonary consumption Dr. Cremen thought there was little doubt that a marked decline would follow. Referring to consumption as being due principally to bad housing, bad food, and alcoholism, and the opinion that the proper housing of the poor was the most important step in its treatment, he said that whilst agreeing with the necessity for having good houses, he could not satisfy himself that in Cork that cause was at the root of the evil, as the Corporation of Cork had expended £90,000 in providing over 500 labourers' dwellings, and in clearing away congested and unhealthy areas, yet 260 deaths, or about one-sixth of the total number of deaths during the year 1906, were due to this disease. The provision of open-air spaces in the form of small parks was what Cork needed most, so as to give lungs to the city and breathing spaces to the mites of the slums to play in. Another necessary equipment to carry on the campaign against this white plague was proper hospital accommodation. Hospitals for the advanced cases were required as well as curative sanatoriums. Cork was soon going to have its own sanatorium, which would afford accommodation for 71 patients, and, on the basis of giving three months' treatment to each patient, about 300 could be treated in the year. Of this the Branch might be justly proud, having by its own unaided efforts succeeded in getting a guarantee of £5,400 a year for the erection and maintenance of this hospital for early or curable cases of consumption for the poor of the county and city; admission was to be absolutely free. The following propositions were carried unanimously:

That in the opinion of the Cork Branch of the National Association for the Prevention of Consumption it is a matter of urgent importance (as stated in the Local Government Board circular dated August 12th, 1907) that no precaution should be omitted to guard against the spread of disease through milk of tuberculous cows. That, to this end, the general order with respect to dairies, cowsheds, and milk shops, of which a draft has been issued by the Local Government Board, should, as soon as possible, be put into force; and, further, that some special provision should be made whereby the sanitary authority of an urban district whose milk supply is largely drawn from a rural district or districts outside its jurisdiction could ensure the strict observance of this order.

That we, the Cork Branch of the National Association for Prevention of Consumption, approve of (1) a modified

form of compulsory notification for consumption, as suggested by the Local Government Board in their annual report for 1905-6 and approved by the medical officer of health of this city. (2) That provision be made for the hospital treatment of advanced cases of pulmonary tuberculosis.

Hong Kong.

SANITARY REPORT FOR 1906.

THE general report of the Principal Civil Medical Officer and the Medical Officer of Health for the year 1906 has been issued.

Area.

The Sanitary Board's jurisdiction extends to the island of Hong Kong, which has an area of 29 square miles, and to that portion of territory on the mainland between the shore and the first range of the Kowloon Hills, with a sea frontage of about 13 miles and an area of about 16 square miles. Old Kowloon, with an area of about 2¾ square miles, has been in British occupation since 1861, but New Kowloon was leased in 1898 only, as part of what is known as the New Territories. The remainder of the New Territories is not under the jurisdiction of the Sanitary Board. The City of Victoria, built on the northern shore of the island of Hong Kong, has a frontage to the sea of nearly 5 miles, and is separated from the opposite mainland of Kowloon by the harbour, which is rather less than a mile and a third wide opposite the centre of the city, and widens out to somewhat over three miles at its widest part, contracting again at Lyemun pass on the east to little more than a quarter of a mile in width.

General Sanitary Condition.

In the city of Victoria upwards of fifty houses were resumed by the Government and demolished with a view to reducing surface crowding; the total area covered by these buildings was 29,502 square feet. Antiplague measures have been carried out by the Sanitary and Public Works Departments; a large number of houses have been rendered as ratproof as possible by filling up rat-runs with cement and repairing the ground surfaces in houses; open spaces in the rear have been provided to 125 existing houses. Antimalarial measures have been continued, and during the year the draining of nullahs to the extent of 2,877 ft. has been carried out. A considerable improvement has taken place in the scavenging of lanes.

Climate.

The highest mean monthly temperatures were registered in June, 82.4° F., July 82.9° F., August 83.2° F., and September 81.0° F. The humidity of the atmosphere was greatest in the months of February, 87 (relative percentage); April, 88 (relative percentage); and May, 86 (relative percentage). The total rainfall for the year was 77.79 in.; in September there were 30.59 in., in May 11.58 in., and in April 9.79 in. The total number of hours of sunshine was 1,936.3, the highest being in June, August, and September, namely, 246.5, 281.2, and 233.4 respectively.

Population.

The population of the Colony, exclusive of the New Territories, at the census taken on November 20th, 1906, was as follows:

Non-Chinese civil community		12,415
Chinese:		
City of Victoria (including Peak and Stonecutters' Island)	174,937	
Villages of Hong Kong	17,032	
Old Kowloon	52,331	
New Kowloon	17,836	
Floating population	42,744	
Mercantile Marine	2,508	
Total Chinese population ...	———	307,388
Army		4,537
Navy		4,698
Total population of the Colony		329,038

At the census taken in 1901 the civil population of the Colony, exclusive of the New Territories, was 283,975, so that the increase in the civil population during this period has been 17,992, exclusive of New Kowloon and the rest of the new territories. The civil population is essentially a male adult one; the proportion of males at the last census was 70.1 per cent of the total civil population.

Births.

The births registered during the year were as follows:

	Males.	Females.	Total.
Chinese	684	344	1,028
Non-Chinese ...	161	132	293
	845	476	1,321

This gives a general birth-rate of 4.04 per 1,000, as compared with 3.41 per 1,000 in 1905 and 3.3 per 1,000 in 1904.

Deaths.

The deaths registered during the year numbered 8,379. The death-rate was therefore 25.06 per 1,000. These deaths include 842 from plague; the death-rate was largely augmented by the typhoon of September 18th, 1896, and by the burning of the steamship *Hankow*. The total number of deaths amongst the Chinese community was 8,087.

Death-rates during the past Five Census Years.

	Non-Chinese.	Chinese.
1881	18.22	24.45
1891	18.20	24.18
1896	19.91	24.75
1901	20.50	23.77
1906	14.02	26.41

The total number of deaths which occurred amongst the non-Chinese resident civil population was 244, and allowing 1,452 for the non-Chinese floating population, this gives a death-rate of 22.76 per 1,000 for the resident non-Chinese civil population.

Diseases.

Respiratory Diseases.—The total number of deaths from these diseases for the year was 1,632, of which 55 were among the non-Chinese community, leaving 1,577 among the Chinese population. The death-rate among the Chinese from respiratory diseases was 5.1 per 1,000, and that from phthisis alone was 2.6 per 1,000. The deaths from phthisis amongst the Chinese were 9.8 per cent. of the total deaths amongst that community.

Malarial Fever.—The total number of deaths from malarial fever during the year was 488, of which 13 were non-Chinese, 9 being from the civil population and 4 from the troops.

Since 1899 antimalarial measures have been carried out and the report contains a table setting forth the results of these efforts by a comparison of the number of admissions to the Government Civil and Tung-Wa Hospitals of patients suffering from malarial fever:

Table (Summary).

Years.	Average Admissions.	Average Deaths.
1897-1901	1,036	136
1902-1906	531	81

The case-mortality was much greater in the Tung-Wa Hospital than in the Government Civil Hospital, owing to the fact that the great majority of cases admitted to the former hospital were moribund on admission. The figures showing police admissions to hospital for malarial fever have fallen from an average of 32 per cent. of the strength for the five years 1897-1901 to an average of 13 per cent. of the strength for the past five years, and to an average of 10 per cent. of the strength during the past three years. The total number of deaths from malaria occurring during the year was 448; a comparison of the yearly averages shows that from 1897-1901 the average was 552, and from 1902-06 the average was 354. From a table showing the seasonal incidence of the deaths from malaria it is seen that the largest average number of deaths occurred in the months of October and November. The rainy season extends from April to September, so that the malarial season corresponds roughly to the wet season of the year. Hygiene is now taught systematically in all the schools in the colony, and special attention is paid to the teaching of the mode of conveyance of the infection of malaria, and the manner in which the mosquito breeds.

Beri-beri.—There were 561 deaths due to this disease, of which 6 only were among the non-Chinese community.

Notifiable Diseases.

Typhoid Fever.—The number of cases was 66, as compared with 90 in 1905 and 129 in 1904. The European

cases numbered 43, of which 15 were imported. The Chinese cases numbered 12, while 11 cases occurred amongst the other races in the Colony. Five of the European cases, 7 of the Chinese cases, and 3 of the other non-Chinese cases died. "In most of the cases of typhoid fever that occur in this Colony, the infection is probably contracted by eating salads of raw vegetables which have been grown in Chinese market gardens, where it is customary to water and manure the plants with diluted human excreta, both urine and night soil. Residents in the Far East should carefully avoid such articles of food as watercress, lettuce, etc., in view of this danger of contracting typhoid fever, cholera, or intestinal parasites, all of which diseases may be conveyed in this manner."

Small-pox.—Of the total 192 cases of small-pox, 4 were imported cases; of 161 Chinese cases, 137 died; 1 of the European cases and 3 of the other non-Chinese cases also proved fatal. The number of vaccinations for the year was 7,450.

Diphtheria.—Thirteen cases were notified; the 9 Chinese cases and 1 Portuguese child died. All the cases of diphtheria, with the exception of 1, occurred during the last three months of the year.

Puerperal Fever.—Thirteen cases were certified, one being a Japanese and the remainder Chinese. Eight of the Chinese cases died. The scheme inaugurated in 1905 for supplying trained Chinese midwives to attend the poor in their own homes has proved most successful. Two of these midwives were employed at the beginning of the year, and in August the number was increased to four. They have attended 188 confinements during the year, and exercise a general supervision over the infants during the first year of life, advising the mothers as to the manner of feeding, etc. The midwives are under the general supervision of Dr. Alice Sibree, who is called to all complicated cases, and during the year attended 20 of the above number.

Plague.—There was an unfortunate recurrence of plague during the year 1906, the total number of cases recorded being 893. Five of these cases occurred in Europeans, while 9 were Indians, 3 Portuguese, 2 Japanese, and 1 each Parsee, Malay, Filipino and Eurasian, leaving 870 Chinese cases. The death rate among the Europeans was 40 per cent., while among the Chinese it was 96 8 per cent. It is to be noted that the hours of sunshine for the first three months of the years were considerably below the average.

Types of the Disease.

Bubonic.	Septic.	Pneumonic.
817	65	11

Expressed as Percentages.

Bubonic	=	91 5
Septic	=	7.3
Pneumonic	=	1.2

In addition to the general report on the health of the Colony, special reports are added, for example, report on plague in 1906, report on the rat and rat fleas found in Hong Kong, reports of the various Government hospitals and Tung-Wa Hospital, reports of the Government Bacteriological Department.

Orange River Colony.

Public Health Legislation.

Very soon after the conclusion of the war in South Africa it was evident to those most competent to form an opinion that the sanitary requirements of the Transvaal and of the Orange River Colony must be looked after by a competent Public Health service. Medical officers of health were accordingly appointed not only by the central governments of each of these colonies but by many of the municipalities. These officials found that they had varying duties and powers not only in the two colonies but in different parts of the same colony. In the Orange River Colony the towns and villages possessed wide powers, under the municipal and village management laws, for the making of sanitary regulations, but there was little or no central control. This chaotic condition of affairs could hardly make for successful administration, so that we are glad to learn that one of the last acts of the Legislative Council of the Colony was to pass an "Ordinance to Consolidate and Amend the Law relating to the Public Health." This Ordinance, which contains 118 sections, is based to a certain extent upon the English Public Health Acts with additions and emendations suited to the particular circumstances of the Orange River Colony.

Many sanitary requirements which are an absolute necessity in English towns would be quite out of place in most of the towns and villages in the Colony. Among those which are included there do not appear to be any to which exception can be taken as being either unnecessary or even as premature. On the other hand, those who are responsible for the framing of the Ordinance have made themselves conversant with the difficulties attending public health administration in this country, and have sought to overcome those difficulties in the Colony. For example, power of entry is given to the officers of a local authority for the purpose of ascertaining whether there is any nuisance upon particular premises, and a medical officer of health has power to enter and inspect any house or premises in which he has reason to believe infectious disease exists. Every local authority must, if required by the Governor, appoint a medical officer of health and a sanitary inspector, and neither of these officers can be removed from office except with the sanction of the central authority. The definition of a dairy is wide, and is made to include any farm, farmhouse, cowshed, milk store, milk shop, or other place from which milk or the product of milk is supplied, or in which milk is stored or kept for the purpose of sale. The definition of a dairyman is equally wide, and he cannot evade the dairy regulations like the English milkseller in country districts by claiming that the Dairies, Cowsheds, and Milkshops Orders do not apply to those who make butter or cheese, or even to those who sell milk in small quantities to their neighbours or workpeople.

The sections of the Ordinance having reference to the notification of infectious disease follow very closely those of the Infectious Disease (Notification) Act, 1889. To the diseases notifiable under the Act are added plague, cholera, leprosy, tuberculosis, chicken-pox, dysentery, and Malta fever. Power is given either to the central authority or to the local authority to add to the list of diseases compulsorily notifiable any other infectious disease. The local authority appears to have an entirely free hand in this respect, and is not required to obtain the sanction of the central authority before increasing the number of notifiable diseases. It will be interesting to know to what extent this power will be used or abused. The certificate of notification is required to be sent in the case of urban districts to the local authority, and in the case of rural districts to the resident magistrate or special justice of the peace. All such certificates have to be sent once a month to the medical officer of the central authority, but no provision has been made for bringing the certificates under the notice of the local medical officers of health. Power is given to the central authority to compel the local authorities in urban districts to provide suitable appliances for disinfecting, and in rural districts these may be provided at the cost of the central authority. Local authorities may require the vaccination of all persons who have been in contact with a case of small-pox or of suspected small-pox, a fine of £5 or imprisonment for a month being the penalty for refusing to comply with this requirement. In the event of a local authority neglecting to perform this duty, the central authority may carry it out at the expense of the local authority.

The penalty for persisting in selling food which is unfit for human consumption ought to have a deterrent effect. The maximum fine upon a first conviction has been fixed at £50, but upon a second conviction within twelve months the Court may order that a notice of the conviction shall be affixed to the premises of the accused person for a period of twenty-one days, and a further fine may be inflicted upon any person who removes or obliterates the notice. Among the sections of the Ordinance which refer to food supplies there is one which very properly provides that any meat or food of any kind shall be conveyed in vehicles which are in a thoroughly cleanly and wholesome condition.

Extensive powers are given to the central authority with respect to the provision of water supplies. An urban authority must provide and maintain a sufficient supply whenever the central authority notifies that the existing supply is insufficient, and, water having been provided,

the occupiers of premises within a certain distance of the mains may be compelled to lay it on to their premises.

In addition to specific duties which are cast upon the central and local authorities, very wide powers are given to the former in the direction of framing, altering, or repealing regulations with respect to a variety of purposes, including the drainage and proper construction of dwelling houses, the control of dairies, slaughter-houses, eating-houses, laundries, and public baths and wash-houses. It was, no doubt, prudent on the part of the Legislative Council to defer definite legislation on these and kindred matters, for time alone will show the precise lines that should be followed. The Ordinance has been conceived in a broad and enlightened spirit, and if the central authority carry it out in a proper manner, it cannot fail to be of the greatest benefit to the inhabitants of the Orange River Colony.

India.

THE HEALTH OF CALCUTTA.

THE report submitted by the health officer, Dr. J. Neild Cook, D.P.H., for the year 1906 is full of interest. The area reported on consists of two parts—a central or urban, bounded roughly by the old Mahrata ditch, and a circumferential or suburban, consisting of a series of municipalities surrounding the city proper. Both areas have now been placed under the same municipal government. The former is more crowded but better sanitated in respect of water supply, drainage, conservancy, and general cleanliness; the latter is less crowded, but more backward as regards sanitation. The latter is also more rural than the former and constitutes a transition between the town and the district beyond. The birth-rate of 1906 was 17.7 per per 1,000. Its lowness is due to the fact that the male population exceeds the female by 2 to 1. Calculated on the population of females between the ages of 15 and 45, the rate is 100.2 against 111.1 in England. Defective registration is held to account for the defect. The suburban rate is somewhat higher than the urban. The number of stillbirths was 6.1 per 1,000 of total births. The death-rate was 35.7 against a quinquennial rate of 36.1. The suburban rate was higher than the urban (42.7 against 32.8). Cholera mortality was high and the suburbs suffered more than the town (3.9 against 2.5), the surrounding district presenting still higher figures. Religious festivals appear to have caused the outbreak. The bacillus was found in the water at Kalighat where the pilgrims bathed. Dr. Cook is disposed to attribute the conveyance of the disease largely to flies. Small-pox was severe in the town—less so in the suburbs. Better means of segregation and conveyance of the sick are needed. Vaccination was vigorously resorted to, but as the law allows twelve months to elapse between birth and vaccination, young children succumb largely to infection. The health officer considers that the period might and ought to be shortened. Plague deaths amounted to 2,606 against 7,372 in 1905. The urban mortality was also considerably higher than the suburban. The highest mortality was in the district where grain dépôts exist. Rat destruction was resorted to on a considerable but evidently quite inadequate scale. A special report by Dr. T. F. Pearse, special plague officer, indicates the difficulties in carrying out preventive measures in Calcutta. The inhabitants are either passive or hostile, and the problem of prevention is one of almost unsurmountable gravity. Fevers and bowel complaints were about the average. Both are more severe in the suburbs. Attempts to destroy mosquitos by larvicides have been disappointing, and drainage is considered a more effective protection against malaria. Enteric fever and cerebro-spinal meningitis occur to some extent in Calcutta, but to what extent it is not easy to discover. Dr. Cook draws pointed attention to the great mortality caused by tuberculosis, and earnestly urges the necessity of resort to special preventive measures. He also dwells on the large infantile mortality, amounting to 341 per 1,000 births. He attributes it to (1) the insanitary conditions of the dwelling, (2) insufficient nutrition of the mother combined with manual labour, (3) bad midwifery, and (4) improper feeding and inadequate clothing of the infant. He enters into considerable detail on these subjects, and advances sound recommendations with a view to remedying the lethal conditions indicated. The record of sanitary work done by the health department is elaborate, and indicates well-devised and well-directed energy.

SPECIAL CORRESPONDENCE.

PARIS.

Presentation of Charcot's Library to the Salpêtrière Hospital.—Proposed Hotel Keepers' Sanatorium for Use of Travellers.

AN interesting ceremony took place on Tuesday, November 19th, in the Clinic Charcot. In the presence of M. Briand, the Minister of Public Instruction, Dr. Jean Charcot handed over the library of his famous father to the Administration of the Assistance Publique. The library, which was slowly collected by Professor Charcot, and contains works in all languages on diseases of the nervous system, is now permanently housed in the Salpêtrière Hospital, in the actual bookshelves and surrounded by all the consulting-room furniture and ornaments amidst which Charcot lived and worked. In addition to the Minister and Dr. Jean Charcot there were present on the platform M. Mesureur, the Director of the Assistance Publique; Professor Raymond, Charcot's successor in the clinical chair of diseases of the nervous system; Professors Bouchard, Marie, Brissaud, Déjerine, Segond, Madame Jean Charcot, Madame Jeanne Charcot, Madame Raymond, and many old pupils and friends of Charcot. Dr. Jean Charcot, in making the gift, said that it was not without a pang that he separated himself from these souvenirs, among which he had grown up, and which he had seen his father collecting and adding to, searching among the bookstalls on the quays, where he was well known, but he thought his father would have approved his action, seeing that he himself had sought other outlets for his energies. Professor Raymond thanked the Minister for coming and Dr. Jean Charcot for his gift, which, when it was originally offered to the Faculty of Medicine to be placed in the Salpêtrière, had been refused owing to lack of funds. The money, however, was offered by the Assistance Publique, and the library would always be open to workers from France and abroad. On Charcot's death his son refused a large German offer for the valuable library, and proposed that it should form part of the clinique which his father founded and made famous. M. Mesureur also thanked Dr. Jean Charcot for his act of filial piety. The Assistance Publique was glad to be associated with the State in the matter of teaching, for with its numerous hospitals and organizations for the relief of the poor, it really formed a large school of medicine. M. Mesureur expressed hope that the State would give further help to different clinics which were in want of funds, and thus increase the renown of medical teaching in France. The Minister added a few words of thanks to Dr. Jean Charcot for his abnegation in the higher interests of science and of the university, and hoped that his example would be followed in others. After the distribution of medals to some of the nurses and the gardener of the Salpêtrière, the library was visited by all present.

A largely-attended meeting of the Hotel-keepers' Association was held in Paris last week, when, amongst other business, it was proposed that the Paris hotel-keepers should build a sanatorium for the use of their clients attacked with infective or other serious disease while in Paris, the accommodation in hotels in cases of serious illness being quite inadequate. Practical means of realizing this project are to be considered and brought before the next annual meeting of the Association.

BERLIN.

The "Berliner klinische Wochenschrift."—Practical Measures to Discourage Alcoholism.—Statistics of the Beelitz Sanatorium.—Professor Koch's Return to Berlin.

PROFESSOR C. A. EWALD has announced his intention of retiring from the editorship of Berlin's celebrated medical journal, the *Berliner klinische Wochenschrift* on January 1st, 1908. Keenly as Ewald's loss will be felt in an undertaking at the head of which he has now been for full

twenty-seven years, no one will grudge him the well-earned rest from one—not the least arduous—of his manifold professional labours at an age when rest still means enjoyment of strenuous intellectual life. Professor K. Posner, who since 1889 has been co-editor, will continue to edit the journal, and will have the assistance of Dr. Hans Kohn.

The municipality of Charlottenburg, near Berlin—perhaps the most advanced among German town-governing bodies in matters relating to public hygiene, has lately been devising and carrying into effect all kinds of practical measures for combating the drink habit and alcoholism. In the municipal workshops, gasworks, etc, large airy rooms are provided for those workmen who are unable to go home for their meals, where they can prepare (or warm up) their own provisions, or buy simple food at low prices. Strong liquors are forbidden on the premises, but light beer and various non-alcoholic drinks can be bought, while hot coffee is distributed gratis. In some of the Charlottenburg public squares, little pavilions for the sale of hot and cold milk have been erected and their number will gradually be increased. Special, and wherever possible, individual attention is given to the treatment and after-treatment of pauper dipsomaniacs. The Poor Commissioners watch over each case after its dismissal from the asylum; they superintend the former inebriate's entrance into a society of total abstainers, paying the entrance fee and the monthly subscription as long as he is unable to do so himself, thus remaining in touch with him. Female inebriates, it may be mentioned, are practically non-existent, or are at any rate a negligible quantity, in Germany. Pamphlets and concise and telling placards for hanging on the wall have been distributed to schools, orphanages, to the offices where births and marriages are registered, and other public places. These examples will suffice to prove that the township of Charlottenburg is sparing no effort to keep itself on the crest of what the German Emperor, speaking to the British journalists, called "the present great antialcoholic wave in Germany."

Instructive statistical figures may be found in this year's report of the Beelitz Sanatorium for male and female patients, published by the Prussian National Insurance Office; 1,450 men and 734 women were treated and dismissed during the year 1906-7, the average length of stay having been 50.9 days for men, and 45.2 for women. In 94 per cent. of these cases (1,370 men and 687 women) the treatment was pronounced to have been successful—that is, this number were considered fit for work in the sense of the German law regarding insurance for the disabled. Of these 1,370 men and 687 women, 59 per cent. and 55 per cent. respectively were dismissed as cured, and of the remainder by far the majority had attained 70 per cent. wage-earning capability, at the lowest estimate. In 6 per cent. of the cases admitted treatment proved ineffective. Two men and nine women, after a few days' stay, were found to be in excellent health, and were at once dismissed. More than 50 per cent. of the men suffered from nervous diseases, chiefly neurasthenia, the most frequent cause being overwork, though loose living and the temptations of the town were responsible in many cases. Of the women, about 25 per cent. suffered from anaemia, 30 per cent. from general nervous debility. The best results were attained in the case of anaemic young girls. Of these, fully 90 per cent. were dismissed cured.

On Sunday evening, November 17th, a complimentary dinner was given to Robert Koch in the beautiful hall of the new Hotel Adlon, Unter-den-Linden. Gaffky, Koch's successor as Professor of the Institute for Infectious Diseases, was at the head of the Committee, which included a large number of Koch's most distinguished colleagues and former pupils, such as v. Leyden, Waldeyer, Senator, Loeffler, Cornet, K. Fraenkel (to give a few of the names), and also official persons, such as the Prussian Cultus-Minister Holle and several of the heads of his Department, Secretary of State Dernburg (only lately returned from the German African Colonies), Oberburgermeister Kirschner, several of the City Councillors—several hundreds in all. The Cultus-minister, who sat next to Koch, made the first speech, welcoming Koch back to Berlin, and ending in a "Lebe-hoch" for the German Emperor. Then Gaffky rose to propose the toast of the evening. He spoke of the dangers to which Koch, a man of 63, had again and again exposed himself (accompanied always by his intrepid wife) in the service of science. A second Antaeus, he said, Koch seemed to draw fresh strength and energy from each contact with new work. Secretary of State Dernburg then expressed in warm words the thanks which the Colonial Office owed to Koch. Finally Koch, in his well-known calm and simple manner, returned thanks for all the honour done him by the distinguished company assembled; but he could accept only a part of it. A great share was due to his faithful, strenuous co-workers, of whom one at least—Stabsarzt Kleine—was present They had gone through the same dangers and difficulties as himself, and without their aid his success would have been impossible. He begged his friends not to overvalue his merits; he had simply done his duty, no more. He raised his glass to science, to German science, in honour of which they had assembled on this festive occasion. His last, "Vivat, Crescat, Floreat!" was drowned by loud acclamations.

CORRESPONDENCE.

IS A ROUND-TABLE CONFERENCE POSSIBLE?

SIR,—I entirely agree with Dr. Norman Walker "that what we want in the present temper of the Association is conciliators, not controversialists."

Holding this view very strongly, in September last I addressed identical letters to the Chairman of Council and the Chairman of the Representative Meeting. In these letters I proposed that they and two others—one chosen from the Council the other from the Representatives—should either dine with me in London, or, better still, spend a week end with me at Exeter, and discuss whether some agreement could not be come to. When I made this proposition I hoped that the literature connected with the proposed Referendum need not be circulated; but as the Council had already published their views the Chairman of the Representative Meeting did not think that the answer to it could be delayed.

I still think that such a meeting is very desirable, and I should be very glad if my proposal could be carried out. It seems to me that it would not be difficult to settle the points of difference, and to find the "via media," which Dr. Norman Walker wishes, even if there were no Mr. Lloyd-George to preside at the conference.—I am, etc.,

HENRY DAVY,
President.

Exeter, Nov. 17th.

SIR,—As one who has also taken a somewhat active interest in the work of the Association, may I strongly support Dr. Norman Walker's appeal for an arrangement by mutual agreement of the questions at present agitating the minds of its members. Victory gained either by the Representative Body or by the Council will, I believe, be dearly bought. Our Association cannot afford to lose any of its members; all the worthy members of the profession in the country must be included within its fold. Will the points at issue wreck the Association? I do not think for one moment they will. But in some directions the Association will be weakened, and it will take a long time for it to recover from the discord introduced into its working. Let there be a give and take. How can this be arranged? Only, as Dr. Walker suggests, by a round-table conference. A few of the moderate supporters of both parties in conference could, I believe, settle the whole question in a very few hours.—I am, etc.,

JAMES METCALFE,
Honorary Secretary of the Bradford Division.

Bradford, Nov. 16th.

SIR,—As a member who has only taken an active interest in the Association since our new Constitution, and as a new member of the Council last year, I sincerely support the hope of Dr. Norman Walker that a round-table conference is possible, and I am sorry I was not successful with a similar proposal at the Council meeting at Exeter, before it was decided that the present Referendum Report should be sent to the Divisions. The difficult question arises, Who should be the members of the conference?

I would suggest that a certain number of the Organization Committee should meet five members appointed from each of the two parties which we know exists, and if they

meet in the true spirit of concillation, they will be astonished how little difference there is between them. They will learn that neither has a wish to annihilate the other, and they will recognize that both Branches and Divisions are necessary for our Constitution.

I am sure if this is done they will be able to effect a good practical compromise over the more contentious questions in the draft Charter, which can then be presented to the Divisions and the Representative Meeting in such a character as to receive the full approval of the whole of the Association.—I am, etc.,

London, S.W., Nov. 19th. G. E. HASLIP.

THE REFERENDUM.

SIR,—In my letter which appeared in the BRITISH MEDICAL JOURNAL of the 9th instant under the above heading there is an error, for which I am entirely responsible, in the last sentence of the first paragraph, as the word "they" ought to have read "the latter," as Dr. Fothergill was not present at Exeter. The sentence would then read as follows:

No doubt Dr. Fothergill and his friends would like this subject kept in the background, and not discussed at all, after the events at Exeter, for with their usual astuteness the latter made use of the opportunities at hand.

I regret any inconvenience or unpleasantness the mistake may have caused Dr. Fothergill, but I maintain as much as ever the serious mistake it would be if the Annual General Meeting of members were abolished by the Charter.

I might say that the word "clique" is not used in any disrespectful sense, but simply to indicate the active party of members who are so keenly pushing the Charter, which of course, in their view, is for the benefit of the Association and of the profession in general.—I am, etc.,

Manchester, Nov. 18th. G. H. BROADBENT.

SIR,—Every thinking man will agree with Dr. Norman Walker that, whatever the result of the Referendum, the scheme of the Charter must rest for a time—namely, until a more general agreement exists. Meanwhile we may take stock of some facts or principles which have emerged:

1. The Central Council is not merely an Executive Committee, but deliberative and administrative. As such it will come to possess a formal veto upon the Representative Meeting. Even if wholly elected by it, the Council must possess the power to alter or suspend its resolutions—that is, essentially a veto. Also, if it were purely "executive," it would be unnecessary; the Standing Committees (which are at present rather apt to transgress) would suffice. Moreover, such a Council could have no weight with either Parliament or the public.
2. There seems no reason why the Representatives of Branches should not sit and vote with the Representatives of Divisions, the card vote having been practically discarded. If also the Central Council were to be elected so as to come into office in October, there would be little possibility of "two opposing camps."
3. "That the Representative Body is capable of great fundamental improvements no one will deny." A Business Committee is essential, holding office from one Annual Meeting to the next, elected in part by the Central Council and in part by the Representatives.

To return to where I began—the suspension of an immediate decision: The minority in a voluntary association does not revolt like a conquered tribe—it disappears. We have to consider, to some extent at least, the minority, and likewise the silent member. He may say to himself, What has been *done?*—with all this discussion.—I am, etc.,

London, W., Nov. 19th. GEORGE CRICHTON.

SIR,—I think the taking of the present Referendum has opened the eyes of many members of the Association for the first time to the results which will arise from the passage of the draft Charter as regards the governance of the Association.

We ought to have understood before, no doubt; but I think very few of us have understood that the Council was to become the mere slave and tool of the Representative Meeting, without any functions but executive ones and the power of taking a Referendum. When the Council does summon up its courage to take a Referendum, it will no doubt be told, as in the present instance, that it is acting unconstitutionally, and so no functions will be left to it but that of humbly carrying out its master's behests.

Many of us can see no reason why the Council should be thus slighted. Its members, elected by the Branches, are fully as representative of the Association as the Representatives of the Divisions. Its members are, as a rule, men of far more experience than the Representatives, many of whom have no experience whatsoever.

But the members of the Council like reforms to take place cautiously and slowly; they have a Conservative spirit, and so the Radicals who at present lead the Association have marked them with a black mark and they are to have all power taken from them.

If the British Empire were to be governed by one Chamber, I believe most of us would prefer that it should be governed by the House of Lords; and, in like manner, if the British Medical Association is to be governed by one chamber, many of us would prefer that it should be governed by the Council. Without, however, wishing to be retrograde, is it yet too late that both the Conservative and Radical elements in the Association should be properly represented, and that both the Council and the Representative Meeting should have their proper share of government? The Charter is as yet a draft Charter, and revision must be still possible. I would urge the members of the Association carefully to reconsider this point before it is too late.—I am, etc.,

Northampton, Nov. 10th. PEVERELL S. HICHENS.

SIR,—I had not intended to trouble you with another letter, but I am tempted to make a few brief replies to one or two of my critics. The kindly way in which some of them write would seem to show that Dr. Norman Walker's suggested round-table conference might be of use. First, where did Dr. Cox find a word in favour of the "abolition of the Representative Meeting" in my letter? Amendment, in the direction of making it truly representative, is my contention. Dr. Cox has, I venture to say, a unique experience in his constituency in the matter of attendance and instructions. It is the case that no quorum dares to be fixed for Division meetings, or many, perhaps most of them in some districts, would not be able to transact business. I have been at a meeting as an invited guest where the chairman and secretary were the only representatives of a society numbering seventy-two members. Even if the attendance were up to the meagre 10 per cent. standard, how can one pretend to know the mind of the remaining nine-tenths? Dr. Buist sympathizes with my Division in selecting a delegate who cannot in these circumstances interpret the minds of his constituents. Does he claim this prophetic vision? I certainly do not.

In reply to Dr. Kirby's courteous letter, allow me to assure him that in using the word "leaders" I do so in no offensive sense. Leadership is inevitable, and I have the utmost respect for the men who command so much influence in our Association. That they are responsible for the decisions arrived at no one can deny, and the policy of the Association is in their hands. I am quite aware that the colossal scheme, as I call it, sketched out in the second clause of the draft Charter, is permissive, but, if the subclauses are not a mere waste of printer's ink, they are meant to be realized as soon as can be. If it be clearly understood that they will not be attempted till our finances are reasonably equal to the strain, and if our members generally understand what is proposed, then there could be no objection to them. Their successful prosecution is another matter.

With reference to Dr. Fothergill's letter, I can assure your readers that the supplementary agenda he repudiates is in print, with nine Wandsworth resolutions or amendments, and that his letter of September 7th was before me when I quoted from it. I leave your readers, after consulting it, to say whether he is right in describing my comments as inaccurate.—I am, etc.,

Edinburgh, Nov. 19th. A. WALKER.

THE UNIVERSITY OF LONDON AND ST. GEORGE'S HOSPITAL.

SIR,—Sir Arthur Rücker, in the letter which appeared in your columns on November 16th, stated that he was not aware, at the time of our negotiations, that any steps

taken by St. George's Hospital were dependent upon the assurances given us by the University delegates on the question of a third centre. If he will reflect he must see that unless we had been principally concerned about the third centre, our negotiations with the University would not have taken place. At the date of our negotiations neither King's College nor University College were incorporated with the University. If we had been content to transfer our students to these Colleges, obviously we should have negotiated with them direct. Westminster Hospital was not interested in sending its students to the third centre and therefore negotiated direct with King's College. We asked the Chairman of the University delegates, Sir Henry Roscoe, to give us the terms of the arrangement between Westminster Hospital and King's College. Sir Arthur Rücker immediately intervened and said that such information could not be given, that Westminster Hospital was not interested in the third centre, and that therefore its negotiations with King's College were on a different footing to ours.

To show how much the question of a third centre entered into our negotiations, may we remind Sir Arthur Rücker of a further point? Just before one of our conferences it was suggested to us that rooms were available at the Imperial Institute to house the students of St. George's Hospital and St. Thomas's Hospital at once. We asked the University delegates whether this was so, and the question was discussed. The suggestion of the St. George's representatives that we should make a start at once in the Imperial Institute was negatived, mainly on the ground of lack of space; but the fact that it was made is sufficient to show what a leading part the third centre played in our negotiations.

Sir Arthur Rücker asks why we did not include in our "agreement" the fact that the University had decided to pursue the policy of erecting a third centre for medical studies at South Kensington. In view of the fact that the University was publicly appealing for money for this purpose, any suggestion from us that this should have been included in the record of our conferences would have been an impertinence. As a matter of fact our "agreement" referred only to the payment of lecturers and the payment of fees. If no money question had arisen we should have had no "agreement" at all. We waived the question of a formal legal document in response to a suggestion to this effect received in writing from the University on July 28th, 1905. We did so the more willingly because we had previously written to the Principal as follows:

> In joining University College and King's College we wish it to be clearly understood that we desire to have our students at a centre nearer to the University as soon as one is established.

It is true that the Principal wrote saying that it was uncertain when the third centre might be started, but no one ever ventured, at that time, to suggest the possibility of the third centre never being started at all. Events have shown that we should have been wiser if we had insisted at the time in having a legal document embodying the whole question drawn up, but this does not in any way diminish the moral obligations of the University.

It must, we think, be obvious to any impartial person that we at St. George's Hospital were convinced at the time of our negotiations that the University intended to pursue its avowed policy, and that we were legislating for the immediate and not the distant future. Both Sir Arthur Rücker and we regret the misunderstandings which appear to have arisen. There can, however, be no misunderstanding about the following facts:

1. The University appealed for money to establish a third centre.

2. On the strength of this appeal St. George's Hospital sent its students to King's College and University College, pending the erection of a third centre.

3. Sufficient money and land have been acquired by the University to meet the requirements of the schools which are willing to support the University's policy.

May we add, in conclusion, that we do not understand the position of the Principal of the University in this matter. As soon as the authorities of St. George's Hospital learnt that there was the least suspicion that the University would be urged to go back upon its avowed policy, the treasurer wrote to the Vice-Chancellor pointing out our position. This letter was sent and acknowledged six months ago. No official reply, however, has reached us even now. In spite of that, the Principal of the University has communicated an opinion on the questions at issue to a political party within the Medical Faculty. We would ask, therefore, whether in this unfortunate controversy the Principal represents the University, or whether he represents the University delegates of whom Sir Henry Roscoe was chairman, or whether he is expressing his own opinion?—I am, etc.,

A. William West,
Treasurer of the Hospital;

Arthur Latham,
Formerly Dean of the Medical School;

F. Jaffrey,
Formerly Dean of the Medical School.

November 18th.

THE PRACTICAL TEACHING OF MIDWIFERY.

Sir,—The part of your Commissioner's report which refers to the St. George-in-the-East Infirmary contains some errors which I would feel obliged for space to correct.

While I advocated that in matters appertaining to the sick no distinction ought to be made between Poor-law infirmaries and general hospitals, and said that I thought that both the public and Boards of Guardians, speaking generally, were much to blame for the little sympathy and support extended to Poor-law Medical Institutions and their officers, I distinctly stated that St. George's-in-the-East had an excellent Board.

No application has been made to have this Infirmary recognized as a training school for midwives, and, therefore, no inspection of it has been made on behalf of the Central Midwives Board. But I mentioned to your Commissioner that I had, in my private capacity, applied to the Central Midwives Board for recognition as a teacher, and had met with a refusal. And I simply pointed out the absurdity of the thing—that a body of eminent medical men (the General Medical Council) should consider me competent to teach medical students, whereas that most august body, the Central Midwives Board, should refuse to sanction me as a teacher of pupil midwives.

I told your Commissioner that I felt quite competent to teach medical students, but that I did not want them here, inasmuch as I wished our nurses to reap the benefit. And to teach both students and nurses would be impossible with so few cases.—I am, etc.,

London, E., Nov. 18th. Marcus Marwood Bowlan,
M.B., B.S.Durh., D.P.H.Camb.

THE TERRITORIAL ARMY MEDICAL CORPS.

Sir,—There is much in the new scheme which is good; no doubt in time alterations will be made as experience shows that they are necessary. I should like to know:

1. What will be the position of the present regimental medical officers who elect to remain with their corps? Will they be eligible for promotion to surgeon-major and surgeon-lieutenant-colonel? It should be remembered that for many years these officers have rendered gratuitous professional services to their country, and have attended camp at considerable expense to themselves. Practically all commanding officers are strongly in favour of the regimental system, and I note that in the Household Cavalry the regimental medical officer still remains, and, in my opinion, is likely to remain.

2. Will officers of the Territorial Army Medical Corps be given preference over civilians with regard to military medical appointments, such as charge of dépôts, etc.?

3. Cannot the outfit allowance be increased? £20 will just cover the cost of service dress, but if an officer is to wear mess dress and to be presented at Court, his kit will cost him about £50. I consider that the uniform of a territorial corps should be as like the R.A.M.C. (Regulars) as possible. The letter T. worn on the shoulder-straps would be sufficient to show the difference, as suggested by your correspondent, "Late Medical Officer in Charge."

4. What will be the payment for the examination of recruits? It has been a puzzle to many why the yeomanry medical officer should get half a crown for each man examined, while his colleague the volunteer medical officer gets *nil*.

5. Will horses be provided at the public expense for all medical officers entitled to be mounted?—I am, etc.,

November 18th. X.

SIR,—I think the views enunciated in the letter from "M.O. in Charge" should receive serious attention from those in authority, before the new medical scheme comes into operation in March next.

In my experience of barrack life, I can endorse all the facts stated by "M.O. in Charge" referring to the position in which the volunteer medical officer finds himself regarded by the officer of the regular R.A.M.C. As "M.O." says, he is regarded merely as a stopgap, and even then with contemptuous toleration.

If this new scheme is to be a success, all this must be a thing of the past, and he must hold the same status, rights, and privileges of the regular R.A.M.C. In fact the civil surgeon holds a better position, as he is not a paid official, but is giving his time and money from purely patriotic motives to the service of his country, in a great many instances at great inconvenience to himself. This being so, he deserves every consideration from the State. As "M.O." states, the uniform should be identical with the R.A.M.C., with a territorial badge on shoulder-strap for a difference, all silver buttons and ornaments being done away with. I do not think any extra cost of this new uniform would be considered by those wishing to join the force. I think all these particulars should be in the hands of the medical officer commanding each district as soon as possible, for the information of intending recruits.—I am, etc.,

November 20th. HOSPITAL SURGEON.

THE ROYAL SOCIETY AND A TEST FOR COLOUR-BLINDNESS.

SIR,—There is now scarcely a civilized country with the exception of our own which has not adopted a lantern test for colour-blindness. It will be remembered that when I, as a young man, pointed out that a lantern test was a necessity and that colour-blind persons could pass the wool test with ease, incredulity is a mild term for the way in which my statements were received. Now I could get no society, medical or scientific, which would examine my facts, though the Board of Trade, as practical men, had recognized the truth of my statements and had appointed me as their adviser and on the International Code of Signals Committee. I could never get the Royal Society to examine any of my cases or facts though they appointed a Committee on account of my paper.

The reader can imagine my feelings when I had my appointment at the Board of Trade taken away from me through the Royal Society, without having any opportunity of demonstrating I was right. Though I persevered at the subject year after year it was not till fifteen years afterwards that the Ophthalmological Society appointed a committee which examined my cases and agreed with the facts which I had pointed out so long before. The following conversation will show the attitude of official science in this matter. A well-known man of science, connected with one of our older universities, and who has devoted a considerable amount of time to the subject of colour blindness, a short time back addressed me as follows: "Do you still believe that colour-blind people can match wools?" "Yes," I replied, "and the Ophthalmological Society have examined some of my cases and agree with me." "They simply did not know how to apply the test properly," he retorted. "It is the case of a man and his tools. Now, if I had examined those cases I should have recognized them at once." But he absolutely refused to examine any of the cases.

The Royal Society, as well as recommending the wool test, said that it was not necessary to have a medical man or expert to conduct the examination. I will say with regard to this that I showed an ordinary dichromic (red green blind) to one of the two chief German experts on colour blindness, and he was three hours before he could detect him, and only then when I pointed out the method of detection. This was at his own laboratory, and he had all his magnificent apparatus at his control. This will appear incredible to the reader, but a stupid normal-sighted person is much more likely to be rejected by the ordinary tests than a clever colour blind.

My object in writing this letter is to propose that the British Medical Association or the medical societies should have committees before which alleged new facts could be demonstrated, and that other men shall not be placed in the difficult position that I was—of being condemned without having an opportunity of proving my case.

It is a curious fact that I have never had any fair adverse criticism; it has always been vague and general, or absolutely denying some easily ascertained fact. In many cases my opponent has a few years afterwards brought out the same fact himself without mentioning my name.

An incident of his career, related by Sir George Darwin at the meeting of the British Association at Cambridge in 1904, particularly impressed me. He said that when he was a young man he wrote a paper for the Royal Society, and decided that if it were rejected he would not touch science again. This paper was referred to Lord Kelvin, who called upon him and told him that his paper was not in accordance with the principles of matter. They discussed the paper for some time, and ultimately Sir George Darwin convinced Lord Kelvin that the paper was in accordance with the principles of matter, and it was published. We learn two important things from this story: First, that even a man of Lord Kelvin's ability is not able to judge of a paper on his own subject by reading it; and secondly, the immense importance of a personal discussion on an abstruse question.—I am, etc.,

Hendon, N.W., Nov. 15th. F. W. EDRIDGE-GREEN.

THE PROBOSCIS OF THE HOUSE-FLY (*MUSCA DOMESTICA*).

SIR,—In the report of the discussion on Professor Minchin's paper on the Haemoflagellates in the issue of the BRITISH MEDICAL JOURNAL of November 9th, p. 1323, Lieutenant-Colonel G. M. Giles is stated to have said:

With reference to Dr. Balfour's query, I may say that the hypopharynx of the house-fly is prolonged into a short but distinct pointed projection, and, though not capable of piercing the sound skin, will give a distinct and painful prick to the raw surface. Between it and *Stomoxys* there are only differences of proportional development of parts.

Colonel Giles, in making the above statement, is probably confusing some other Muscid with the real house-fly (*Musca domestica*), because it is a mechanical impossibility for the hypopharynx of *M. domestica* even to touch the surface from which it is absorbing fluid food. I have already described the proboscis of *M. domestica* in detail in the first part of a monograph on this insect.[1] From that description it will be seen that the hypopharynx is united by a groove arrangement to the overlapping labrum-epipharynx, which is longer than the hypopharynx. The proximal half of the hypopharynx is attached to the concave labial sclerite, forming the labium-hypopharynx; distally it becomes free from the labial sclerite and lies in the groove of the latter attached to the labrum-epipharynx. Broadly speaking, the hypopharynx lies in a tube which is the anterior portion of the pharyngeal channel, but it does not reach to the end of this tube, which would be necessary for it to even touch the skin. As I said, it is mechanically impossible for this to take place. Even if the lateral grooves of the labrum-epipharynx became disengaged from the lateral edges of the hyphopharynx and the former turned on its proximal hinge-like attachment, as it is able to do under pressure, the tip of the hypopharynx would not be able to reach the skin on account of the rigidity of the sides of the labium-hypopharyngeal sclerite and the discal sclerites articulated to the distal end of the same.

This is a small matter, but to my mind is one which should not go uncorrected, as it is apt to become associated with a popular misconception that house-flies "bite," which is due to the confusion of *Stomoxys calcitrans* with *M. domestica*.

Although the parts of the proboscis of *Stomoxys* can be homologized with those of *M. domestica*, I do not agree with the view that the proboscis of either of these insects is a modification of the other, nor do I think that flies possessing probosces similar to that of *M. domestica* have been derived by a modification of a

[1] *Quarterly Journal of Microscopical Science*, vol. li, p. 403, et seq.

blood-sucking proboscis. I believe that the evolution of the two types has proceeded along divergent lines, no doubt from the same ancestor. There is no strong evidence in support of the theory that *M. domestica* has been derived from a blood-sucking ancestor.—I am, etc.,

The University, Manchester, Nov. 14th. C. Gordon Hewitt.

SUBCUTANEOUS INJECTIONS OF AIR.

Sir,—Dr. Alfred S. Gubb's paper on Subcutaneous Injections of Air as a Means of Relieving Certain Painful Manifestations has interested me very much, and I congratulate him on his results. I agree with him that the action of the injection is purely mechanical, but I believe that it is exerted not on the finer nerve ramifications, but on the lymphatic circulation of the affected nerve trunk. This belief is supported by the results of injecting saline solution directly into the nerve trunk in sciatica as recorded by Lange,[1] myself,[2] and others, and also by the favourable results obtained by stretching the nerve, needling, slitting the nerve sheath, and dividing encircling adhesions at the sciatic foramen.

In acute sciatic neuritis the nerve is swollen by congestion and infiltration, and so becomes subjected to compression as it passes through the sciatic foramen. This compression leads to partial or complete obliteration of the lymph channels, and after the swelling has diminished on the subsidence of the neuritis, the pressure within the lymph capillaries below the seat of obstruction is insufficient to reopen the closed channels. It is easy to realize how such a condition will hinder the elimination of waste products and cause the dull pain of chronic sciatica, and favour the recurrence of acute attacks.

The action of the saline injection is probably twofold. By diluting the lymph it enables it to pass more easily through the obstructed channels, and by raising the pressure at the seat of injection it opens up these channels, or possibly tears new ones between the nerve bundles, and this is probably the effect which the subcutaneous injection of air has. As compared with the injection of saline solution the injection of air is easier but has the disadvantages of being less direct in action, of causing a large swelling which takes some days to disappear, of requiring massage for some days following each injection, and possibly, in spite of precautions, causing air embolism.

For details of the method of injecting salt solution I would refer to my paper, which also contains the report of what I believe to be the first case of sciatica treated by the injection of large quantities of saline solution.

Case ix of Dr. Gubb's series is of great interest to me, as it supports a belief which I have held for a long time, that the indolence and pain of chronic ulcers—for example, varicose ulcers—are due to lymph stasis. I am on the look-out for an opportunity of treating a series of such cases by saline injections into the infiltrated area round the ulcer.—I am, etc.,

Glasgow, Nov. 14th. Archibald G. Hay.

ALCOHOLISM AND HOBNAIL LIVER.

Sir,—It is not generally known that certain animals suffer from hobnail liver, which is indistinguishable both to the naked eye and microscopically from that occurring in man and usually associated with alcohol. I have seen this condition frequently in cats and moles.—I am, etc.,

Pharmacological Laboratory, Cambridge, Nov. 19th. W. E. Dixon.

DISEASES OF TWINS.

Sir,—Will you kindly permit me to make use of the columns of the British Medical Journal under the following circumstances:

On re-reading Francis Galton's "History of Twins," published in his work *Inquiries into Human Faculty*, it occurred to me that, as he has proved the greater strength of Nature over nurture in this investigation, the same material slightly modified would be able to conclusively establish the relative importance of the factors of individual constitution and specific invading organisms in the production of disease.

Accordingly I had, as a beginning, 200 circulars and addressed return envelopes printed, and subsequently dispatched a little over 50 of them to test the kind of response I was likely to meet with. I had replies from over 40 per cent., and although I took the precaution of sending only to general practitioners of more than ten years' standing, the evidence obtained was decidedly disappointing. I had imagined—as twin births are said to occur once in about every ninety maternity cases—that most practitioners who had been in practice for a few years would have had some experience on this subject, even allowing for the fact that twin children frequently die.

To my surprise no less than 45 per cent. of my replies stated that no experience had so far been obtained; 8 to 10 per cent. apparently do not practise midwifery, or discourage it, and have not attended twins at any later age period, and only 45 per cent. have had any experience, however meagre. Of these most appear to have had a few maternity cases, though the answers are not always clear on this point; in addition 25 per cent. have once attended twin children and 30 per cent. once adults. I am not quite certain whether one of these latter did not attend adult twins twice.

The number of replies is, of course, far too small to make any generalization upon the matter. A practitioner may possibly be unaware that he is treating a twin when the pair are separated. Still, allowing for this, the scarcity of material is remarkable. The explanation may possibly be due to an error in assuming that hospital statistics, drawn from the poorest citizens, apply equally to all classes.

In any case, it is evident that I must appeal to a much larger circle of medical men than can be done by any method of private correspondence in order to obtain the necessary information. Would any of your readers, therefore, who have in their possession evidence on the points mentioned below kindly communicate with the writer, whose address is appended?

Twins, if they are true twins, are usually of the same sex, and are most frequently either much alike or much unlike.

1. Of like twins of the same sex at any age period, have you any medical experience of their suffering simultaneously or independently from like or unlike diseases in like or unlike (separate) surroundings?
2. Of unlike twins of the same sex at any age period, have you any medical experience of their suffering simultaneously or independently from like or unlike diseases in like or unlike (separate) surroundings?

Please name specifically all diseases referred to, as this point is very important.

Any additional information on the subject would be welcomed, and all remarks will, of course, be treated confidentially.

I would be greatly obliged if Continental journals would insert this letter in their issues.—I am, etc.,

J. Lionel Tayler.

8, Adys Lawn, St. Paul's Avenue, Willesden Green, London, N.W., Nov. 18th.

SOME MOTILE ELEMENTS SEEN IN CERTAIN CEREBRO-SPINAL FLUIDS.

Sir,—The paper under the above heading, delivered by Dr. Frank C. Eve before the Pathological Section of the British Medical Association at Exeter, which appeared in the British Medical Journal of November 16th, is of great interest; to myself more especially, as I have noticed apparently similar bodies in the circulating blood and cerebro-spinal fluid of cases of general paralysis of the insane during the routine examination of these two fluids for the presence of diphtheroid organisms.

The first occasion on which they were noticed was in May, 1907, when 10 c.cm. of blood was withdrawn from the basilic vein of a case of general paralysis during the occurrence of epileptiform seizures. The blood after withdrawal showed a tendency to rapid coagulation. Films stained by Leishman's method showed the presence of an enormous number of well stained bodies of various shapes, both circular and elongated, the central part stained a lightish purple and the margin sharply defined. A hanging-drop preparation was at once made of the blood, which had already been pipetted into a bouillon flask. This showed the presence of numerous small globular and elongated transparent bodies, the majority

[1] *Münch. med. Woch.*, December 27th, 1904.
[2] *Glasgow Medical Journal*, May, 1907.

of which were floating free in the fluid. These on close observation appeared to be distinctly though slowly amoeboid, and several possessed a long, motile filament. A stained preparation made from the broth culture showed several of these bodies with the filament intact. Like Dr. Eve, I thought at first that I was dealing with some form of protozoal organism. The bodies were easily noticeable in the broth culture after several days' incubation at 37° C.; but there was no apparent increase in numbers, and all efforts to obtain a culture either aërobically or anaërobically were unsuccessful.

I also noticed in the broth culture several crenated red blood cells with one or more filaments attached to the tips of the crenations, and in the stained preparation small globular bodies stained pink, both with and without a filament, suggesting in appearance that they were small fragments which had become detached from the red cells. Similar bodies were found in the blood of one or two other cases of general paralysis.

I have also observed similar bodies on one or two occasions in the cerebro-spinal fluid withdrawn by lumbar puncture from cases of general paralysis. Unfortunately this fluid was never obtained without accidental admixture with blood, though usually in such small amount as to be detected only by the aid of the microscope. So far as my recollection serves me, the number of the bodies present in the fluid appeared to bear a direct relationship to the amount of blood present.

After reference to Dr. George Buckmaster's book on *The Morphology of Normal and Pathological Blood* (London: Murray, 1906) I relinquished, for the time being, further work on the subject, as I came to the conclusion that the bodies I had observed were probably some peculiar forms of blood platelets, the origin of which has been so much disputed.

Dr. Eve's observation that his bodies can be seen to originate from the leucocytes in certain pathological cerebro-spinal fluids is interesting in connexion with one of the theories as to the formation of blood platelets by fragmentation from red or white corpuscles.

That curious bodies similar to those described by Dr. Eve can be found occasionally in the blood and cerebro-spinal fluid of cases of general paralysis I can endorse from my own observations, but their mode of origin and significance are obscure. Whether they are evidence of degeneration of the cellular elements or are merely artefacts remains to be decided, but the subject is worthy of further consideration.—I am, etc.,

J. P. CANDLER, M.A., M.B.Cantab, D.P.H,
Assistant Pathologist, London County Asylums, Claybury.
November 19th.

WE are asked to remind Fellows and Members that the inaugural dinner of the Royal Society of Medicine will take place on December 3rd, and, as very few seats remain, those who desire to be present should make immediate application to the Secretary, 20, Hanover Square, W.

ON November 22nd Professor Adalbert Tobold, of Berlin, one of the German pioneers of laryngology, completes his 80th year. He celebrated the golden jubilee of his graduation as Doctor of Medicine on March 13th, 1905. He has presented his valuable collection of wax models of diseases of the throat to the Kaiser-Friedrich Museum.

THE members of the International Committee in the United States, have issued a statement that the International Committee formed to collect funds for the monument to Lamarck has up to the present time received subscriptions amounting to about £1,000. A further sum of £200 still remains to be raised.

THE Society of Apothecaries of London, as one of the Ancient Guilds of the City, gave a dinner in its hall at Blackfriars on November 19th in honour of the newly-elected Lord Mayor and Sheriffs. Dr. George Wilks, of Ashford, Kent, Master of the Company, presided, and about 120 members of the Society and guests were present. The senior and junior Wardens are respectively Dr. Parker Young, outgoing Master of the Society and member of the Central Midwives Board, and Alderman Sir Thomas Crosby, a member of the Senate of London University, and ex-Sheriff of the City of London. The guests included, besides the Lord Mayor and his sheriffs, the Presidents of the Royal College of Physicians and the Royal College of Surgeons respectively, the Chairman of the Central Midwives Board, Mr. Helby, Chairman of the Metropolitan Asylums Board; Sir F. Banbury, one of the members for the City of London; and the Right Hon. George Hothfield.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN Ordinary Council was held on November 14th, Mr. Henry Morris, President, in the chair.

Diplomas.

Diplomas of Membership were issued to 87 candidates found qualified at the recent examination, and two diplomas of the Licence in Dental Surgery.

The diploma of Fellow has been conferred upon Robert Henry Bott, Lieutenant I.M.S., of St. Bartholomew's Hospital, who has now complied with the by-laws in regard to the Fellowship.

Primary Examinations for the Fellowship.

A letter from the Deans of the Medical Faculties of the Universities of Leeds, Liverpool, and Sheffield, suggesting the desirability of altering the times of the year at which the Primary Examinations are held, was referred to a committee for consideration.

The Bradshaw Lecture.

This will be delivered by Mr. Rickman J. Godlee on December 6th, at 5 p.m., on the Prognosis and Treatment of Tuberculous Disease of the Genito-Urinary Organs.

Court of Examiners.

The vacancy on the Court occasioned by the expiration of Mr. C. T. Dent's term of office, will be filled up at the next meeting of the Council on December 12th.

Gift of Books.

One hundred and thirty duplicate volumes were presented to the Boston Medical Library.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been admitted after approved examination to the Membership of the Royal College of Surgeons, and have received also the Licence of the Royal College of Physicians:

W. S. Anderson, M. T. Ascough, W. T. Briscoe, A. Burroughs, M. Camacho, J. R. C. Canney, J. A. Clark, R. M. Coalbank, J. L. Cock, G. G. Collet, W. W. Cook, R. Crawford, N. C. Davis, G. H. Davy, E. J. de Verteuil, R. L. E. Downer, G. W. Dryland, N. A. Eddlestone, E. P. Evans, F. P. Fisher, A. E. Foerster, A. E. G. Fraser, T. K. Glynn, P. H. G. Gosse, M. Greer, J. E. Hailstone, J. P. Hastings, H. J. Henderson, E. B. Hinde, F. G. Hitch, E. Le Roy Hodgins, M. J. Holgate, F. H. Holl, J. G. Ivers, R. Jamison, W. M. Jeffreys, R. Knowles, P. Lang, A. N. Leeming, K. A. Lees, W. H. Leigh, R. McC. Linnell, H. N. Little, E. W. Lowry, R. J. P. McCulloch, J. A. Master, W. L'E. Mathews, M. H. E. R. Montesole, Colonel H. Montgomery, B. Moore, H. H. Moyle, A. T. Nankivell, W. F. Neil, D. North, E. E. T. Nuthall, B. H. Palmer, J. Parkinson, D. G. Pearson, D. G. Perry, C. H. L. Petch, A. G. Peter, L. L. Phillips, M. Phillips, E. S. Phipson, M. D. Price, M. J. Rattray, C. M. Rigby, C. F. Robertson, L. P. Sanders, A. E. Saunders, S. M. Saunders, G. B. Scott, R. B. S. Sewell, F. M. Smith, P. L. Stallard, R. H. E. Stevens, K. H. Stokes, H. D. Thomas, G. G. Timpson, S. N. Tiwary, A. J. Turner, G. W. Twigg, R. W. S. Walker, G. D. H. Wallace, A. L. Walters, R. Willan, R. T. Williams, G. E. Wilson, A. L. Yates, A. P. Yonge.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved for the Diploma in Public Health:

J. W. Bullen, Major, R.A.M.C.; E. J. Day, F. C. Drew, D. P. Johnstone, Captain, R.A.M.C.; G. A. Moorhead.

TRINITY COLLEGE, DUBLIN.

THE following candidates have been approved at the examination undernoted:

FINAL MEDICINE *(Part II)*.—*W. S. Thacker, *G. F. Graham, F. R. Seymour, B. A. H. Solomons, E. C. Stoney, E. J. H. Garstin, J. B. Jones, H. J. Keene, W. H. Sutcliffe, W. Knapp, J. H. Waterhouse, A. E. Wynne.

* Passed on high marks.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

THE RIGHT TO A PRESCRIPTION.

M. A. A. writes: A patient brought his child for advice to a medical practitioner in dispensing practice, and after a few weeks' treatment the practitioner took the child to a consultant at the request of the father. No prescription was

written at the consultation, and only a slight addition suggested to the previous treatment. Two months afterwards the father asked for a copy of the prescription, for which the practitioner demanded a fee; this the father refused to pay, and contended that he had the right to have a copy without payment. The following questions are submitted to us: (1) Was the doctor within his rights in demanding a fee? (2) If a prescription had been given at the consultation, would the doctor still be within his rights, two months having elapsed? (3) To whom does a prescription given at a consultation belong?

*** We think it will make it clearer if in our reply we alter the order in which these questions have been put to us: (3) A prescription given or sent by a consultant to the practitioner in charge belongs to the patient; (1) the practitioner would not be justified in demanding a fee for the prescription, or for a copy of it; (2) as in the present case no prescription existed, the request should have been met by a statement to that effect, but by offering to give a copy of the prescription on the payment of a fee the position is weakened, and the practitioner is in this dilemma: that if there is a prescription agreed to at the consultation, the patient, or the patient's father, has a right to a copy; and if no such prescription exists, there can be no question of giving a copy on the payment of a fee.

Medico-Legal.

A MEDICAL BOYCOTT.

A SOMEWHAT unusual case was recently heard at Kalgoorlie in which a charge of conspiracy was made against certain members of the medical profession. The action was brought by Dr. R. M. F. Cameron against Drs. H. O. Irwin, A. W. Connolly, F. L. P. Sawell, and W. A. S. Bridgeford, to recover £2,000 damages for alleged conspiracy to injure him in his profession. The case is reported at length in the *Kalgoorlie Miner* of September 26th and following days. To state the issue quite shortly, it appears that it is the practice of the mine managers at Boulder to deduct 1s. a week from each miner's wages in order to provide medical attendance. In each mine there is posted a list on which appear the names of the practitioners by whom each desires to be attended. It appears that in the district there were certain practitioners who were guilty or had been suspected of abortion. The defendants agreed together among themselves not to consult with these persons, and further decided that they would boycott any one who did associate with them. At the time of this arrangement a Dr. Anderson was in practice at Kalgoorlie, but he would not fall in with the arrangement and refused to undertake not to consult with the persons indicated. In 1906 the plaintiff came to Kalgoorlie and entered into an arrangement with Dr. Anderson to which the defendants objected, and consequently they would not consult with the plaintiff. This, he alleged, had caused him damage. In addition to this the defendants (with the exception of Dr. Bridgeford) had signed and sent to the Chamber of Mines a letter pointing out it would be a disadvantage to a miner to have the plaintiff as his doctor, inasmuch as none of the signatories could see him in consultation. For these injuries the plaintiff claimed damages. The defendants by their defence disclaimed all intention of injuring the plaintiff. A large number of witnesses was examined on either side. In the event the jury returned a verdict for the plaintiff with damages assessed at £200.

PUBLIC HEALTH, AND POOR-LAW MEDICAL SERVICES.

A UNION OF PUBLIC HEALTH AUTHORITIES.

A MEETING of representatives of various sanitary committees of county, borough, and other councils throughout the country was held at Caxton Hall, Westminster, on November 15th, to discuss a project which originated in Newcastle, and has been fathered by the sanitary committee of that city. Altogether some 600 invitations seem to have been issued and 80 were accepted. The object of the meeting was explained by Mr. W. H. Newton, the Chairman of the Sanitary Committee of Newcastle Corporation, who said that all sanitary committees throughout the country had a common object in view—the promotion of the public health. The latter was of such paramount importance that it ought to be separated from other work and specialized; and to secure its performance to the best advantage a bond of direct union between all sanitary authorities throughout the country should be established. Such a union would not be opposed to any of the existing institutions, but would help those which, while having generally corresponding objects in view, had not specialized in public questions. The existence of such a union would infuse a new spirit into local government, and supply an important link in the public health service, and secure unity of aim and co ordination of effort. The functions of the body to be created would be consultative, advisory, and educational on matters of public health. He concluded by moving a resolution approving of—

> The establishment of a union of the sanitary authorities of England and Wales for the purpose of promoting the public health interests of the nation; and that the said union shall have for its immediate objects—(*a*) To secure as far as may be practicable, harmony of interest and uniformity of action among sanitary authorities in general on matters relating to the public health; (*b*) to stimulate and concentrate effort for the purpose of effecting necessary sanitary reforms, whether for the public weal or for the benefit of individual sanitary districts; (*c*) to encourage and promote the study of practical hygiene, and to educate opinion with respect to the national as well as the local importance of public health work in general; (*d*) to consider the different conditions and circumstances, general or local, whereby disease is liable to be caused to man, and, as far as may be, to obtain their removal.

During the discussion which followed, an amendment emanating from Liverpool was brought forward, it being urged that the proposed association would have no power not possessed by bodies already in existence—some six in number—which represented respectively municipal corporations, borough councils, county councils, urban and rural district councils, and Port sanitary authorities. What was really required, it was suggested, was that the Local Government Board, as the supreme health authority of the country, should be strengthened. To this end a special department should be created at the Local Government Board, its duties being to deal with all questions relating to public health, and to such department representatives of local authorities should be appointed. The amendment obtained a good deal of support, among the arguments put forward being one that it would create a body not unlike the Advisory Committee of the Army Medical Council. It was also contended that the Association proposed to be brought into being by the resolution would tend to weaken the influence of those already existing and confuse the Local Government Board and Parliament when dealing with questions of public health. In the end, however, the resolution was adopted by a large majority, Dr. H. E. Armstrong, of Newcastle, and the Chairman being appointed as a Provisional Committee to draw up a constitution for the new body which was christened forthwith "The National Union of Public Health Authorities."

OBITUARY.

SIR CHARLES FREDERICK HUTCHINSON, M.D., J.P., ex-M.P.

WE regret to have to record the death of Sir Charles Frederick Hutchinson, who recently passed away after a long and painful illness. He was the son of a very successful Nottingham doctor, Dr. Richard Scholes Hutchinson, and was born in January, 1850. Brought up in a medical environment, he naturally took to medicine as his profession, and after being at school at Elstree and Uppingham, began his medical studies at Edinburgh, where he took the M.B. degree in 1872. He proceeded to the M.D. degree in 1874, and became M.R.C.S. in 1873. After concluding his medical curriculum at Edinburgh he studied in Paris, Berlin, and Vienna, and for a time filled the post of Physician's Assistant at the Manchester Royal Infirmary.

He settled down in practice at Scarborough, where he was medical officer of the Royal North Sea-Bathing Infirmary, and for several years had a successful career. In the early Eighties he contributed some interesting articles to the medical journals, among which we may mention one on the treatment of erysipelas by tincture of iodine, which appeared in the BRITISH MEDICAL JOURNAL in 1882. He also published papers in the *Lancet*, the last being on dry dressings for internal cavities, which appeared

in 1886. At Scarborough he was a popular and prominent citizen, and took an active part in public affairs. For some years before he finally retired from practice he spent the winter months at Monte Carlo, where he practised as a physician, and in the summer he returned to his old patients and some consulting practice at Scarborough. His love of public work and his devotion to politics led him to retire altogether from the profession some eight years ago. He settled down at Mayfield in Sussex, where he had an ideal country home. In 1900 he contested the Rye Division of the county as a Liberal, and was badly beaten by Colonel Brookfield, the sitting member; but in 1903, at the by-election caused by Colonel Brookfield's retirement, he won an unexpected victory, which attracted much attention at the time, and made him a very acceptable speaker on Liberal platforms. During the three years he sat in the House of Commons he did very useful work both on Committees and in the House itself. He took great interest in the British Medical Association, and was always ready to help in its political work both by his voice in the House of Commons and by his advice. He early recognized the importance of the teaching of hygiene in elementary schools, and did much to advise the Education Department on these and kindred matters. He was not a frequent speaker, but was businesslike and always humorous. His fresh, boyish, good-natured humour was most valuable on the platform, and he spoke frequently in all parts of the kingdom up to the election of 1906, when he lost his seat. His defeat was a great disappointment to him and to his friends, for he had grown to love the House of Commons, and he greatly missed the work. His political services were recognized by the honour of knighthood early this year, and he was made a Justice of the Peace for the county of Sussex some years back. About twelve months ago his health began to fail, and, although he rallied in the early autumn, he soon grew worse, and, in spite of special treatment in a nursing home in London, he died on November 15th. He married in 1880, and had one son. Much sympathy will be felt with Lady Hutchinson in her bereavement.

The death took place in October, at Leyburn-in-Wensleydale, Yorkshire, of Dr. John Parker Lightfoot. On the termination of his school career, he entered King's College, London, and became an Associate, and afterwards joined its medical school, obtaining in 1892 the diplomas of M.R.C.S. and L.R.C.P. A year or two later he settled down in practice at Leyburn, and at the time of his death held appointment as Medical Officer of Health and as Medical Officer and Public Vaccinator of the East and Bedale districts of the Leyburn Union, being also in charge of its workhouse. A young and active man himself, he played a considerable part in the outdoor life of the locality, and, being always ready to assist in any social or philanthropic enterprise which might be afoot, was everywhere welcome, while from his hands as a medical man the poor felt always sure to receive conscientious attention and kindly treatment. His own health latterly had, however, not been good, and on this account at the time of his death he had practically made up his mind to abandon practice in England and start afresh in New Zealand, believing that its climate would be likely to suit him better. His fatal illness was of comparatively brief duration, being ushered in by a seizure of an apoplectic character. Dr. Lightfoot, who at the time of his death was still under 40, was married and leaves a wife and four children, with whom much sympathy is felt.

HOSPITAL AND DISPENSARY MANAGEMENT.

SUNDERLAND INFIRMARY.

The annual report of Sunderland Infirmary for the year ending midsummer, 1907, shows a considerable growth in the number of surgical in-patients, and a slight falling-off in the number admitted on the medical side, as compared with the year 1905. The average daily number of in-patients was 177, as compared with 184 in 1905, and the average cost per bed occupied was £53 6s. 11d., as compared with £49 14s. 11d. in the earlier period mentioned. On stimulants, the average expenditure on each patient was 3 3d. The scheme for the establishment of a children's hospital seems to be progressing favourably, over £15,000 having now been subscribed to the building fund.

WEST RIDING ASYLUM, WAKEFIELD.

In his Annual Report for 1906, the Medical Superintendent of this large county asylum, Dr. Bevan Lewis, reports that there were 1,847 patients in residence on January 1st, 1906, and 1,896 on December 31st, 1906. The total number under care during the year was 2,424, and the average number daily resident 1,877. During the year 577 were admitted of whom 458 were first admissions. The nature of the admissions, Dr. Bevan Lewis says, remains unaltered, the same prevalence of senile, decrepit, and paralytic cases being maintained as in former years. In 241 the attacks were first attacks within three, and in 75 more within twelve months of admission; in 144 not-first attacks within twelve months of admission; in 54, whether first attacks or not, of more than twelve months duration on admission, and the remainder were either congenital cases (39), of unknown duration (23), or not insane (1). They were classified as to the forms of mental disorder into—Mania of all kinds, 186; melancholia of all kinds, 209; dementia, primary, secondary, senile, and organic, 96; general paralysis, 39; acquired epilepsy, 7; cases of congenital or infantile defect, 40; and not insane, 1. As to the probable causes of the insanities, alcohol was assigned in 148 or 25.6 per cent., venereal disease in 34, previous attacks in 148, puberty, old age, and the menopause in 62, accident or injury in 20, privation and starvation in 25, various bodily diseases or disorders in 131, "moral" causes in 158, and in 10 no cause was assigned. Hereditary influences were ascertained in 166, or 25.6 per cent., and congenital defect existed in 40. During the year 230 were discharged as recovered, giving a recovery-rate on the admissions of 39.86 per cent, or, excluding transfers, of 41.74 per cent., 74 as relieved or not improved, and 1 as not insane.

The deaths, which numbered 223 and give a death-rate on the average numbers resident of 11.88 per cent, were due in 75 cases to cerebro-spinal diseases, including 32 deaths from general paralysis; in 113 to chest diseases, including 37 deaths from pulmonary consumption and 47 from pneumonia; in 22 to abdominal diseases, with only 1 death from colitis; and in 13 to general diseases. Altogether the deaths from tuberculous diseases numbered 45, or 20 per cent. of the total deaths. Coroners' inquiries have always been invited at this asylum in cases of any sudden death, fatal termination to surgical operations, or doubt as to cause of death, and 7 cases were subject to such inquiry during the year, in all cases a verdict being returned of death from natural causes. During the June quarter a severe epidemic of influenza prevailed throughout the building associated with a fatal form of pneumonia, thus explaining the high death-rate from pneumonia mentioned above. Apart from this outbreak the general health was satisfactory. The pressure for accommodation is severely felt at this asylum and plans have been approved for a building to accommodate 120 male epileptics.

As in former years much scientific work has been carried on by the staff, including research work by the pathologists, Miss M. Dobson and Dr. Maude Smith, and electro-therapeutic treatment has been conducted by Dr. Birt.

The Idiot and Imbecile Department at the Stanley Hall Home continues its good work, and vacancies so seldom occur that a list of applicants has to be kept, from which admissions are taken in rotation.

A great number of cases has been treated at the outdoor department—so many, in fact, that some anxiety has been felt as to the possibility of coping with the increase, but arrangements are being made whereby the other asylums of the Riding may be able to relieve the existing strain at Wakefield. The majority of these patients are the subjects of incipient melancholia, neurasthenia, and epilepsy, but many other nervous ailments are encountered. The work is extremely successful and should find imitation elsewhere.

On past occasions we have alluded to Dr. Bevan Lewis's systematic treatment and prevention of asylum dysentery by the regular administration of aperients, and we need only say here that this treatment is continued with entirely satisfactory results.

KESTEVEN COUNTY ASYLUM.

On January 1st, 1906, there were 358 patients in this asylum and on the last day of the year there were 371. The total cases under care during the year numbered 416 and the average number daily resident 375. During the year 58 cases were admitted giving, Dr. J. A. Ewan, the Medical Superintendent, says, the smallest admission-rate in the past decade. Of the 58 admissions only 33 were chargeable to the county, the remainder being either private cases or received under contract from the Soke of Peterborough.

With the exception of 6 all were first admissions. In 16 cases the attacks were first attacks within three and in 9 more within twelve months of admission; in 8 not-first attacks within twelve months, and the remaining 24, whether first attacks or not, were of more than twelve months' duration on admission. They were classified as to the forms of mental disorder into: Mania of all kinds, 28; melancholia of all kinds, 15; dementia of all kinds, 10; general paralysis, 2; acquired epilepsy, 1; and congenital or infantile defect, 2. Amongst the probable causes of these insanities alcohol was assigned in 3, or little more than 5 per cent., venereal disease in none, previous attacks in 10; puberty, old age, and change

of life in 8; various bodily diseases in 3, and "moral" causes in 20. Hereditary influences were ascertained in 26, or 44.8 per cent. During the year 13 were discharged as recovered, giving a recovery-rate on the admissions of 37.14 per cent., 3 as relieved, and 1 as not improved. During the year there were 28 deaths, giving a death-rate on the average numbers resident of 7.46 per cent. The deaths were all from natural causes, being due in 4 cases to cerebro-spinal diseases, including 3 deaths from pulmonary consumption, in 5 to abdominal diseases, and in 3 to senile decay. The general health was good on the whole, and the only epidemic disease appears to have been influenza, which twice visited the asylum during the year.

EARLSWOOD ASYLUM, REDHILL, SURREY.

The very extensive alterations and reconstructions which have been now in process for over four years at this large charitable institution for imbeciles have entailed considerable anxiety to the Board of Management; the alterations are only half completed, and the annual report for the year 1906, recently received by us, contains an earnest appeal to the charitable public for financial assistance. From the report of the Medical Superintendent, Dr. Charles Caldecott, we see that on January 1st, 1906, there were 451 patients in residence, and that on the last day of the year there were 456. The total cases under care during the year numbered 504, and the average number daily resident 454. During the year 53 cases were admitted—males 36, females 17—of whom 51 were first admissions. The asylum receives patients either by election solely, by election and part payment, or by payment solely, and of the whole 1906 admissions 19 were admitted by election, 10 by election and part payment, and 24 by payment alone. As to the ages of the cases admitted, 31 were under 14 years of age, 11 between 15 and 20, and 11 over 20 years. In 7 males and 2 females the type of imbecility was "Mongolian," 1 male and 1 female were cretins, and 6 were epileptics. From inquiries into their family histories, it was ascertained that in 11, or 20.7 per cent., one or other of the parents was imbecile, in 4 the parents were the offspring of consanguineous marriages; in 14, or 26.4 per cent., there was a family history of phthisis, and in 2 of parental alcoholism. Other assigned causes were shock, fright, trouble, ill health, or injury to mother in 11, difficult or instrumental labour in 4, and 3 were prematurely born. Only 4 appear to have been the subjects of infantile convulsions, in 4 more the imbecility dated from severe illness, and in 5 from falls when young; in 3 no cause could be assigned, and 6 were epileptic. During the year 31 were discharged as relieved; there were 17 deaths, giving a percentage death-rate on the average numbers resident of 3.75; they were due in 5 cases to tuberculous disease (general tuberculosis 2, tuberculous peritonitis 1, and pulmonary tuberculosis 2); 2 to epilepsy, and 1 to abscess of brain, 2 to pneumonia, 2 to heart disease, 2 to non-infective enteritis, 1 to gall stones, and 2 to senile decay. To tuberculosis in some form were thus due 29 41 per cent. of the total deaths. The general health was satisfactory during the year; a few cases of influenza and chicken-pox occurred, being the only epidemic diseases in the institution; and there were no casualties of any importance, the latter a very gratifying record, evidencing great care on the part of the staff, as the 43 epileptic patients had in all 3,968 fits during the year. During the year 178 patients were usefully employed in the workshops, farm, or in the institution, the value of the work done in the shops amounting to £1,224 4s. 11d., and the farm showing a profit for the year of £172.

WEST SUSSEX COUNTY ASYLUM, CHICHESTER.

The annual report of the Medical Superintendent of this asylum shows that there were 750 patients in residence on January 1st, 1906, of whom 531 were West Sussex cases and 14 private cases, and that on December 31st, 1906, there were 768, of whom 544 were West Sussex cases and 16 private cases, giving a total increase of 18 for the year but of only 13 for West Sussex county. The total number under treatment during the year was 912, and the average number daily resident 767.

During the year 162 cases were admitted, of whom 140 were first admissions, 46 being out-county cases. In 41 the attacks were first attacks within three and in 29 more within twelve months of admission; in 30 they were not-first attacks within twelve months of admission; in 55, whether first attacks or not, the attacks were over twelve months' duration on admission, and 7 were congenital cases. Of the total number, 110, or 68 per cent., were of a chronic or incurable nature, and in only 34, or 21 per cent., was recovery deemed probable. The admissions were classified as to the forms of mental disorder into: Mania of all kinds, 62; melancholia of all kinds, 67; secondary and senile dementia, 9; primary dementia with stupor, 1; general paralysis, 11; acquired epilepsy, 4; and cases of congenital or infantile defect, 8.

As to the probable causes of the insanities in these cases, alcohol was assigned in 16, or 9 8 per cent., venereal disease in 10, old age, puberty, and the menopause in 27, previous attacks in 30, "moral" causes in 23, epilepsy in 6, and, with the exception of 11 in whom no cause could be ascertained, the remainder were distributed over the other usually cited bodily diseases and disorders. In 60, or 37 per cent., hereditary influences were given as predisposing cause, and congenital defect existed in 20.

During the year 43 were discharged as recovered, giving a recovery-rate on the admissions of 28 85 per cent., 21 as relieved, and 4 as not improved. During the year 76 died, giving a death-rate on the average numbers resident of 9.9 per cent. The deaths were due in 33 cases to cerebro-spinal diseases, including 13 from general paralysis; in 30 to chest diseases, with 9 from pulmonary consumption; and in 13 to general diseases, including one case of death from sulphonal poisoning. An inquest was held on this last case, the verdict being given as follows: "That the cause of death was coma, from the effects of a poison called sulphonal which she administered to herself whilst of unsound mind, but with no intent to kill herself, and do further say that such sulphonal was obtained by the said deceased by her retaining as much as she could when sulphonal was administered to her in proper doses medicinally; and do further say that she so accidentally killed herself; and do further say that no blame attached to the asylum staff in the matter." An inquiry was also held on this case by the Lunacy Commissioners, who agreed with the verdict given at the coroner's inquest. Another inquest was held on a patient admitted from Colchester Infirmary with a cut throat, the verdict being in accordance with the medical evidence. Beyond a severe epidemic of influenza, the general health was good throughout the year, only four major but non-fatal casualties had to be recorded, and neither mechanical restraint nor seclusion had to be employed.

The Lunacy Commissioners visited the asylum in November, but their report is not incorporated in the annual report.

JAMES MURRAY'S ROYAL ASYLUM, PERTH.

At this private asylum on January 1st, 1906, there were 128 patients, and on the last day of the year there remained 123. The total cases under care during the year numbered 162, and the average numbers daily resident 127.39. During the year 34 cases were admitted, of whom 29 were first admissions. In 5 the attacks were first attacks within three and in 7 more within twelve months of admission; in 11 not-first attacks within twelve months of admission and in the remaining 11 the attacks, whether first or not, were of more than twelve months' duration on admission. They were classified according to the forms of mental disorder into mania of all kinds 10, melancholia of all kinds 15, delusional insanity 6, dementia 2, and confusional insanity 1.

As to the causes of the insanities in the admissions, these were ascertained, Dr. A. R. Urquhart, the Medical Superintendent, says, more or less precisely in nearly every case. Alcoholism was assigned in 4, venereal disease in none, old age and the climacteric in 4, physical stress in 4, and mental strain and worry or mental shock in 9. With regard to this latter factor, Dr. Urquhart says "Mental stress is frequently alleged as the cause of insanity, as the cause of intemperance, but my experience is that the inevitable complement of mental stress is innate or congenital defect." An insane heredity existed in 14 of the admissions, a neurotic heredity in 8, and an alcoholic heredity in 4. Previous attacks had occurred in 8, and 2 were the offspring of consanguineous marriages. As to the probability of recovery Dr. Urquhart states that of the 34 admissions 20 were in a hopeless condition owing to advanced degenerative changes of vital organs or congenital defect, and only 10 were in good bodily condition on admission. During the year 11 were discharged as recovered, giving the recovery-rate of 32.06 per cent. on the admissions as compared with the 54.29 per cent. of the previous year. There were also 12 discharged as relieved and 7 as not improved. During the year also 9 died, giving the death-rate on the average numbers resident of 7.06 per cent. These deaths occurred in 3 cases in patients suffering from general paralysis, and in 1 each from heart disease, senile decay, senile gangrene, pulmonary consumption, general tuberculosis, and influenza.

The general health was very good throughout the year with the exception that two epidemics occurred, one of diarrhœa which affected many of the patients and staff in July and August and one of influenza from which 2 died. The asylum was twice visited by the Commissioners in Lunacy during the year, who stated that the institution was maintained in the highest state of efficiency.

Under the will of the late Lady Brampton, it is understood that the Hospital of St. John and Elizabeth, in St. John's Wood, N.W., will benefit to the extent of over £100,000. It has 110 beds, of which about 66 are usually in occupation. Patients are admitted irrespective of religious belief, but the administration of the hospital is mainly Catholic. There is no restriction as to the length of time during which they may remain under treatment, any inmate being allowed to stay in as long as there seems to be any prospect of real benefit. The number of admissions last year was 251. There is no out-patient department.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—

EDITOR,	GENERAL SECRETARY AND MANAGER,
2631, Gerrard.	2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

HOLDING THE KING'S HEAD DURING SEA-SICKNESS.

S. D. C. writes: It is said that in Kent there are two manors, granted by Edward I, by the curious tenure of holding the king's head in the event of his being sea-sick. Can any local member, versed in antiquarian lore, state which these two manors are?

ANSWERS.

PRECIPITATE MICTURITION.

AN OCTOGENARIAN M.D. writes: As it is only at night that "M.'s" patient experiences this inconvenience, I think were "M." to direct his patient to sleep in a long, pure-wool nightshirt, wearing also in cold weather flannel pants and night socks, taking care to have the feet warm when going to bed, and the bed warmed by the use of a hotpan, he would procure much relief. I speak from personal experience. If I wear a calico nightshirt, and get into a cold bed, I am disturbed in a very short time; but, by sleeping in flannel, etc., am, as a rule, undisturbed till morning.

P. M. writes: "M." should pass a catheter after the patient has micturated. The amount of residual urine will measure the seriousness of the case. Prostatic enlargement or stricture will probably be revealed, or the case may be one simply of atony of the bladder. Strychnine or some tonic, with occasional catheterization will probably be the best treatment.

H. M. D. recommends "M." to consult Mr. H. T. Herring's *The Sterilization of Urethral Instruments and their Use in Some Urinary Complaints* (London: H. K. Lewis. 1903. 5s.)

LETTERS, NOTES, Etc.

CATHETER LUBRICANT.

DR. GEORGE H. R. DABBS (London) writes: I wrote to you some time since about a catheter lubricant, and quoted a formula of my own which it is needless to repeat. Mr. Martindale has most obligingly corrected my bad chemistry by providing me with a lubricant which involves my formula so far as it is pharmaceutically involvable! His version, entirely satisfactory, is: Cocaine 1 per cent., atropine 1 per cent., adrenalin $\frac{1}{10}$ per cent., and castor oil (not almond oil, as in my edition).

HONOURS FOR MEDICAL SERVICES.

MR. C. B. WILLIAMS of Bath sends us the following extract from the *Ency. Lond.*, vol ix, p. 714, relating to his ancestor, which gives an early example of the recognition of medical services by the King of England: "Williams, of Eltham, Kent, created, November 2nd, 1674. Sir Edward Williams, the seventh baronet, succeeded his father, Sir Edward, July 12th, 1804. This baronet is descended from the ancient family of Williams of Tallylyn in Brecknockshire, which was so serviceable to King John against his rebellious barons that he gave them, for an addition to their arms, as a high mark of his esteem, a stag bearing the crown of England between his horns. Sir Thomas, the first baronet of this family, was so created in consequence of his services to Charles I. He was Physician to Charles II and his brother, James II. Motto: 'Virtus incumbit honori.' Family seat, Guernalt Lodge in Brecknockshire."

FLIES AND DISEASE.

J. W. M. sends us a letter dated from Colon, Isthmus of Panama, which appeared recently in a Scottish newspaper, following on one written by our correspondent on this subject. The writer from Panama states that the universal belief there is that if mosquitos and flies are kept away there is no fear of sickness. He continues as follows: "Without exception, every house is screened with gauze wire, and it is almost impossible for a mosquito or fly to enter, with the result that the percentage of sickness is reduced by one-half. A butcher's shop is like a large 'meat safe.' You view the meat (leather would be a better name) through the gauze wire, and, after you make a purchase, it is handed to you through a double-screened pigeon-hole. They use gauze wire here because it is always summer, but in our climate, where we only have a week or two hot weather, mosquito netting or butter-cloth at 3d. a yard would answer the purpose. With a glue-pot and six yards of this netting or cloth, a handy man or woman could screen every window in the average house, and by hanging a curtain of the same material in the passage or hall, have comfort throughout the whole summer, and much better health." J. W. M. wishes to point out that Colonel M. D. O'Connell (ret.) in his letter (BRITISH MEDICAL JOURNAL, October 26th, p. 1195) omits to mention the dragon-fly as an enemy of mosquitos. Mr. Hudson, in his interesting book on South America, says in one chapter that whenever a dragon-fly appears mosquitos disappear as if by magic.

SYNTHETIC CHEMISTRY AND BIOLOGY.

A PASSING reference to artificial indigo in an article on page 1173, in which it was stated that artificial indigo had replaced the native product, has brought us two letters of protest expressed in rather strong terms. One of our correspondents, Mr. K. N. MacDonald of Edinburgh, desires it to be understood that synthetic indigo is only one of the constituents of natural indigo, and has been proved by practical experience to be much inferior to natural indigo in dyeing qualities, and not to produce the "bloom" and "handle" so characteristic of the natural product. Another correspondent, Mr. Alex. W. Playne of Stroud, asserts that while chemists claim that 6 lb. of artificial indigo are equal to 10 lb. of natural, the real truth is that there is as much colour in 10 lb. of real indigo as in about 13 lb. of the synthetic 100 per cent. material. The artificial indigo, he states, is now only used in small quantities for sky-blue shades by those owners who are their own dye-masters or have trustworthy foremen.

SOME EPITAPHS.

WE take the following from a number of specimens of "queer epitaphs" given in the *Chicago Medical Recorder:*

"Stranger, approach this tomb with gravity;
John Brown (Dentist) is filling his last cavity."

"Beneath this stone our baby lays,
He neither cries or hollers;
He lived just one-and-twenty days,
And cost us forty dollars."

"Sacred to the memory of James R——, who died Aug. 6th, 1800. His widow, who mourns as one Who can be comforted, aged 24, and possessing Every qualification for a good wife, lives at —— Street in this village."

The last reminds us of the famous epitaph on a tradesman which concludes with the significant intimation:

"Submissive to the heavenly will,
His son keeps on the business still."

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A Clinical Lecture
ON
ACUTE GENERALIZING PERITONITIS AND ITS TREATMENT.

Delivered at the Bristol Royal Infirmary.

By T. CARWARDINE, M.S., M.B., F.R.C.S.,
Honorary Surgeon.

The treatment of acute generalizing peritonitis has recently undergone marked improvements in methods and results. Fifteen years ago the recovery of a patient with generalized peritonitis was regarded with such wonder that the few isolated cases were instantly reported in the medical journals. To-day the event is becoming such a common one that a considerable proportion of such cases may by judicious treatment, both at the time of operation and afterwards, be saved to the community. You have recently had the opportunity of seeing several such cases, and it may be profitable to consider the principles by which good results may be obtained.

I use the term "generalizing" to cover all those cases of rapidly spreading peritoneal infection, usually from a primary focus, which come under the care of the surgeon with increasing frequency. A surgeon may not be strictly accurate if he speak of "general" peritonitis, for his opportunities of exploring the remote peritoneal recesses at the time of operation are necessarily limited.

The common sites of origin of such spreading peritonitis are the vermiform appendix, the uterine appendages, and the gastro-duodenal region, by reason of infection or perforation.

The Abdominal Pools.

Within the peritoneal cavity there are certain potential spaces which may become converted into pools by accumulation of fluid therein. Which of these spaces is primarily involved depends upon the site of origin, the effect of gravity, and the guiding direction of the viscera and omentum, both static and peristaltic. When the trouble originates in the pelvis, whether from infection from the uterine appendages or from the vermiform appendix when situated in the pelvis, the conditions are much the same. The accumulation of the infective fluid occupies the true pelvis; the omentum becomes fixed to the diseased focus, and tends still further to localize the fluid by forming an omental roof between the fluid and the rest of the general peritoneal cavity above. In the case of the left uterine appendages there is some little tendency for the fluid to extend upwards to the left. But in pelvic collections generally there is a greater proclivity for any extension of the fluid to pass upwards and to the right, having the omentum and ascending colon to the inner side, until it forms a pool of overflow in the right lumbar region. Thence, with greater extension, the lower abdomen becomes involved, with a very distinct tendency for another pool to form in the left lumbar region, but in front of the descending colon. In diffuse peritonitis arising from the vermiform appendix, much depends upon the individual position of that variable structure. If the appendix be in the pelvis, the course is similar to that already described; and, in fact, in many cases it is almost impossible to distinguish whether peritonitis arises from a pelvic appendix or from the uterine appendages until the abdomen is opened. But if the appendix be situated above the brim of the pelvis, the first infection is in its neighbourhood, wherever situated, and the area tends to be localized by that first line of defence, the omentum. There is no definite rule as to the direction of extension subsequently. The majority of such collections rapidly spread into the pelvis, and unless this be remembered, and particularly if the pelvic collection form a separate loculus, it is apt to be overlooked and give rise to serious complications. In some cases the fluid collects in the right lumbar region, and here, also, it tends to form a distinct pool separated from the pelvic one by the distended caecum, which may become adherent to the parietes. In the rarer cases in which the appendix is naturally situated to the outer side of the ascending colon, a large primary collection may form in the right loin. In these, and also in those in which there is a retro-caecal appendix, the recognizable abscess may be purely subphrenic at first; indeed, appendicitis is one of the commonest causes of subphrenic abscess.

A third important origin for acute generalizing peritonitis is in perforating lesions of the stomach and duodenum, and in infective peritonitis arising from the gall bladder. In any of these the infection of the peritoneum may be general from the first; but this is more common in the case of perforation of a gastric ulcer, owing to the sudden escape of undigested food and gastric secretions. The question is only one of degree, for the majority of perforated gastric ulcers lead to some local peritonitis at first. In perforations of the stomach there are certain favourite sites for the accumulation of fluid which demand attention. If the ulcer be on the anterior wall, there will be fluid in this locality; and there is often at the same time a collection in the pelvis, representing the fluid which has gravitated, and which must be dealt with If the ulcer be situated on the posterior wall, then the fluid will be found primarily in the lesser sac of omentum, from which it may escape into the greater sac through the foramen of Winslow. Either at first or later on there is a disposition for fluid to accumulate in the right renal pouch, which has a capacity of about a pint, or in the splenic region. As bearing upon the importance of draining these areas of any accumulation therein, or of inserting drains to anticipate the reasonable probability of such collections forming there, I need only remind you of the frequency of an overlooked abscess in the splenic region as an ultimate cause of death in otherwise successful operations for perforated gastric ulcer.

Concerning perforated duodenal ulcer there is a greater tendency here for the condition to be localized and obscure at first, and there is better opportunity for protective adhesions to form, and, as the duodenum is only partially covered by peritoneum, any ulcer in the uncovered portion perforates into the retroperitoneal cellular tissue, and gives rise to subphrenic abscess. But note one important point: diffusing infections arising from the duodenum tend to pass downwards in the lumbar region so as to lead to the erroneous diagnosis of appendicitis, and the patient may complain of pain and tenderness in the region of the appendix. This mistake may be made whether the infection take place through the right lumbar peritoneal pool or through the cellular tissue behind the peritoneum. It may be very difficult at times to distinguish peritonitis arising from the appendix from that arising from the duodenum.

The same tendency to limitation of the peritonitis to the right lumbar region occurs when it originates from the gall bladder, but there is not such great difficulty in differential diagnosis, for not only will the history help, but cholecystitis is usually present, with superficial and localized extreme tenderness.

Now, picture to your mind any of these cases. There is, first of all, the infective focus, whether it be a sloughing appendix, infective appendages, or a perforating ulcer. Around this is a collection of fluid, commonly called an abscess; and, in the diffusing cases of which we are speaking, there is an irregular halo of peritoneal exudation, to which I will specially draw your attention. This is sometimes very abundant, and tends to occupy the peritoneal pools already referred to, and I have found by experience that the serous collections beyond the area of pus formation are deserving of the greatest respect. It is now my practice, if, after liberating a purulent collection, I am in doubt as to whether there be a serous collection in any of the favourite pools, to pass a swab, held by long sponge forceps, into any likely recess for exploratory purposes and for liberation of any serum by adequate drainage. One might be open to the criticism in this procedure that there would be likelihood of seriously damaging the more healthy parts of the peritoneum; but, in the diffusing cases to which we refer, an increasing experience shows the fallacy of such argument. It is the more likely that such exploration will be productive of good by the discovery of and provision for the drainage of the stagnant pools. Moreover, if they be not discovered at the time, the probabilities are they never will be, and the patient will succumb to residual peritonitis.

Accordingly, the practice which I should commend is to drain the serous collections as well as the purulent ones, and, if there be any apprehension of subsequent infection of any proximate favourite site, to anticipate this by putting a drainage tube into that area, the

favourite pools being pelvic, right and left lumbar, and right and left subphrenic.

Abdominal Drainage.

Now as to the direct application of these principles to certain special instances. In perforated gastric ulcer I pass a tube to the region of perforation; if there be any fluid in the pelvis a suprapubic drain is inserted; and in all cases, whether fluid be found there or not, I prefer to drain the right renal pouch, and particularly the splenic region, by transfixion through the loin (Fig. 1). In perforated duodenal ulcer the right lumbar region is drained, and if there be much extension of fluid a tube is passed through the right iliac region into the pelvis. In collections which are purely pelvic I usually pass two tubes to the bottom of the pouch of Douglas, insert a large piece of oiled silk beneath the small intestines and omentum, which are meanwhile retracted upwards by the left hand in the abdomen, and then place some iodoform gauze between the oiled silk and tubes (Fig. 3). This applies to suppurative pelvic peritonitis, whether arising from the appendix or the appendages. The advantage of passing two tubes, like a double-barrelled gun, is that they can be utilized for subsequent irrigation of the pelvis, the one being an inlet and the other an outlet. I prefer to pass these in apposition, for if this be not done they tend to be separated by intra-abdominal pressure, lymph, and adhesions, so that the irrigating fluid will not pass from one tube to another. For this reason drains passed through the right and left iliac regions respectively (Fig. 2) are not so satisfactory. In pelvic cases abdomino-vaginal drainage is very dependent and satisfactory (Fig. 5); but it has the distinct and inconvenient disadvantage of sometimes leaving a persistent fistula discharging into the vagina. Hence I much prefer, after adequate experience of both, the double-barrelled ventral drainage, with subsequent irrigation (Fig. 3 and Fig. 4, *c*). For the same reason also I prefer this double-barrelled drainage of the pouch of Douglas to abdomino-vaginal drainage through the right iliac region associated with a short tube in the left iliac region (Fig. 5).

Drainage in Various Types of Generalizing Peritonitis.

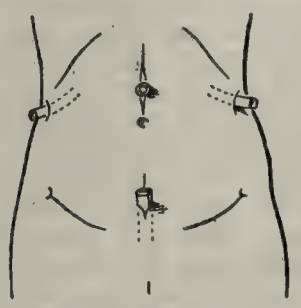

Fig. 1.—Perforated gastric ulcer (drainage for).

Fig. 2.—Bilateral pelvic drainage.

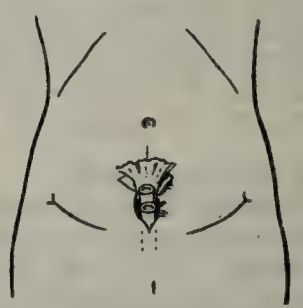

Fig. 3.—Double-barrelled pelvic drainage.

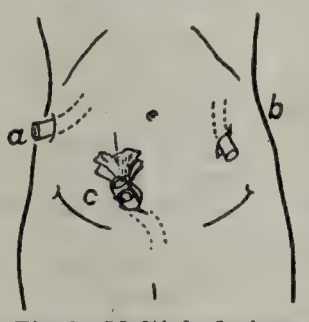

Fig. 4.—Multiple drainage for general peritonitis.

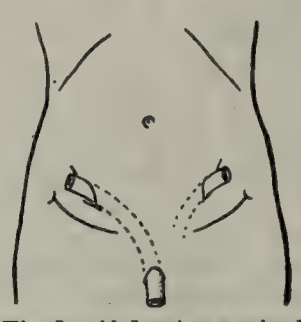

Fig. 5.—Abdomino vaginal drainage.

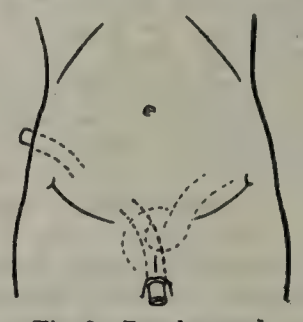

Fig. 6.—Lumbar and pelvi-rectal drainage.

There are certain cases of appendicitis in which, in the later stages, there are two localized abscesses—the one in the right iliac or lumbar region, the other occupying the pouch of Douglas. Such I drain in the right loin, and by passing the finger over the brim of the pelvis burrow into the pelvic collection, inserting two tubes therein (Fig. 4, *a* and *c*), or else drain them separately, the former in the right iliac region, the latter through the vagina or rectum (Fig. 6).

In a more generalized case of diffused peritonitis, involving the lower abdomen and pelvis and both flanks, I would first liberate the fluid from the lower abdomen, then pass a sponge-holder and swab into the right lumbar region, whence one might liberate as much as a pint of sero-pus from the hypochondrium, either above or below the liver. Then I would pass a long pair of artery forceps into the loin, high up and far back, making the points prominent, incising on to them, and on their withdrawal bring a large piece of drainage tube through the loin by that means (Fig. 4, *a*) A similar procedure would be adopted in the left loin (Fig. 4, *b*). Then I would pass two adjacent large tubes into the bottom of the pelvis, and above them a piece of iodoform gauze, which is prevented from sticking to the uplifted intestines and omentum by a large piece of nicely-adjusted oiled silk (Fig. 4, *c*). You will note my predilection for rubber drainage tubes, and although gauze has its advocates for abdominal drainage, and I have given it a good trial, I am not in favour of it, for its capillarity is destroyed as soon as it is sodden, and I have often observed that it acts as a dam rather than as a drain, its removal being followed by a free discharge of pent up pus. Moreover, it soon becomes very adherent, its meshes become impregnated with coagulated lymph, and its early removal is very tedious and painful.

Recent Improvements.

There are two recent improvements in the treatment of these cases which deserve more than passing notice—the Fowler position and the Murphy treatment. The former consists in placing the patient in the upright sitting position as soon as possible at the time of or immediately after operation, so that the peritoneal exudation may gravitate to the lower abdomen, where drainage is provided for, away from the more dangerous epigastric areas. The method was published by Dr. George Ryerson Fowler of Brooklyn in 1900. A few years later, in 1904, Dr. Murphy explained his methods at a meeting of the American Medical Association, by which he had obtained a large percentage of recoveries; and although many surgeons had carried out his procedure from time to time the greatest credit is due to him for establishing a rational line of treatment for a condition which was formerly so hopeless.

In the Murphy treatment the proceedings are adopted in conjunction with the Fowler position. The principles involved are: (1) Rapid removal of the focus, with little disturbance of the peritoneum, and closure of the hole in the gut; (2) drainage — (*a*) suprapubic, (*b*) through the operation incision; (3) rapid operation, preferably through the rectus, and no sutures are put in; (4) no food is given by the mouth for two or three days; (5) continuous saline infusions by the rectum, which are administered by means of an irrigator and short vaginal nozzle having several lateral openings. They appear to reverse the lymph current in the peritoneum, to increase the peritoneal flow, to stimulate the heart and kidneys, and cause a greater eliminative excretion of urine. The object is not to cause the bowels to act, but merely to keep a supply of a few inches of saline fluid always in the rectum. Consequently, as a rule, the top of the fluid in the irrigator should not be more than 4 to 6 in. above the level of the anus. Milk or other suitable nutriment may be added. I regard this continuous rectal infusion as one of the most valuable suggestions of recent times. From 12 to 20 pints of fluid may thus be absorbed in the first twenty-four hours; the patient assumes a natural lively expression, and the tongue becomes moist. One has only to contrast the appearance of the patient under these measures with that under the former treatment—the dry tongue, restlessness, insatiable thirst—to appreciate its value. With all the main features of this treatment I agree, but scarcely with that of as little disturbance of the peritoneum as possible; for one has become bolder in that respect, as already stated, and I have every reason to be satisfied with the results.

After-Treatment.

The patient will now require watchful attention for some weeks to detect and treat any of the many varied complications which may arise. The first of these is excessive distension, usually most marked in the epigastrium, with a tendency to vomit. This must be vigorously treated by turpentine enemata, two or three times a day if necessary, by the regular use of a rectal tube, and by gastric lavage if necessary. By the time the excessive distension is subsiding, there may be indications of considerable septic absorption, in the dry brown tongue, dry wounds, and fetor of the discharges. This is best treated by the administration of calomel and salines, by irrigation of the pelvic peritoneum with a weak solution of tincture of iodine decolorized by a few drops of 1 in 20 carbolic acid, and by the insertion of a little iodoform, aristol, or calomel into the septic focus.

The wounds have a great tendency to become dry, and I am convinced that wet antiseptic applications are better than dry or sterile ones, and I find iodoform gauze to be much more satisfactory than cyanide gauze. Lastly, the discharges are enticed into the dependent parts, and the drainage tubes left out in order from above downwards, those in the pelvis remaining until all foul discharge has ceased and there is no danger of the wound closing over a pelvic collection. Then it is necessary to keep an ever-watchful eye on the areas of possible remote infection. Chiefly one must watch, and if in doubt explore with a syringe, for any subphrenic or hepatic abscess, or for empyema. Though more common on the right side, left subphrenic abscess or empyema may occur after appendicitis, but left-sided remote trouble is more common after perforated gastric ulcer. There are other complications, such as thrombosis of the left femoral vein, septic pneumonia, intestinal obstruction, or ventral hernia, which will require appropriate treatment; but if all go on well the patient usually becomes markedly emaciated at first, followed during convalescence by excessive fattening, and for some time dietetic discretion is desirable, owing to the intestinal matting brought about by the peritonitis, but which is fortunately largely recovered from in the course of time.

I have ventured to bring this matter before you as one of extreme surgical importance. Statistics cannot convey the same solid convictions as experience; but you have seen some of the results, and will probably agree with me that the statement that more than half of the cases of widely-generalized peritonitis can be saved is a moderate estimate.

Recent Literature.

Generalized Septic Peritonitis:
Annals of Surgery. 1906, vol. i, 231 and 314.
Ibid., 1905, vol. ii, 75 and 316.
Ibid., 1905, vol. i, 944.
British Medical Journal, 1907, vol. i, 1483.
Ibid., 1906, vol. i, 862.
Ibid., 1905, vol. ii, 1116.
Pneumococcal Peritonitis:
Annals of Surgery, 1904, vol. ii, 698.
Jensen: *Archiv für klinische Chirurgie*, 1903, vol. lxx, 91.
Von Brüns: *Beiträge zur klinische Chirurgie*, 1903, vol. xxix, 57.
Puerperal Peritonitis:
Annals of Surgery, 1907, vol. i, 203.

THE DETERMINANTS OF ABORTION AND HOW TO COMBAT THEM.*

By JAMES OLIVER M.D., F.R.S.Edin., F.L.S.,
Physician to the Hospital for Women, Soho Square, London.

Before discussing those conditions which tend to cause abortion it is imperative that we should have some clear notion of the meaning of this term, and as it is practically impossible for a human fetus of less than twenty-eight weeks to maintain an independent existence, I define abortion as the act whereby an immature and non viable product of conception is dislodged from the maternal body. It is clearly a uterine phenomenon. A child expelled from the uterus at any time after the twenty-eighth week of gestation may be reared; the birth of such will not at present concern us.

In accepting this definition it behoves us to note in passing the somewhat injudicious and misleading use of such expressions as *tubal abortion* and *missed abortion*. By the latter it has been customary to designate those cases in which the product of conception, perishing as a rule at an early stage of its existence, is not forthwith expelled from the uterus, but continues its sojourn in this organ for weeks, or even months, after the time that we naturally looked for its expulsion. The abortion is unduly delayed, but it will most assuredly be effected, and such a phenomenon should not be designated a missed, but merely a postponed, abortion. Not infrequently the fertilized ovum becomes arrested in the Fallopian tube and proceeds to develop therein. Lodged here, the oösperm is always seriously handicapped and most disadvantageously circumstanced. With a keen struggle it occasionally attains maturity, but more usually it perishes at an early stage of its existence, and as no provision is made for its natural escape from the mother's body it may for an indefinite time remain concealed therein and be to all concerned a missed abortion. If, again, the fetus should chance to arrive at maturity outside the uterus, delivery cannot be effected except by surgical intervention, and veritably this constitutes a case of missed labour. "Tubal abortion" is not, and never can be, a commendable designation, since it is only available for use after the abdominal cavity has been opened, and even then it may seldom, if ever, be truly applicable.

Until, comparatively speaking, recently, our knowledge of oölogy was very meagre, but now it has been satisfactorily demonstrated that the ova are corpuscles derived from the superficial germ epithellum, and that they become embedded in the substance of the ovary by a process of involution of the primitive germ mass. The nucleus of a corpuscle swells out, and constitutes the germinal vesicle with its contained nucleolus or germinal spot. The cytoplasm around the nucleus increases more or less markedly in amount and forms the yolk, whilst the peripheral portion of the yolk becomes differentiated into a cell wall, the zona pellucida or vitelline membrane. With the age of the ovum this membrane becomes more and more dense and resistant. The Graafian follicle is a vascular capsule formed by the connective tissue stroma of the ovary. In its early days it is lined by a single, but afterwards by two or more, layers of cells. These cells, which are derivatives of the connective tissue corpuscles, constitute the membrana granulosa, and secrete a fluid which accumulates and determines eventually the rupture of the Graafian follicle. In the human female more especially the escape of the ovum from the ovary depends almost entirely upon the activity of these cells At the time of dehiscence the fimbriated extremity of the Fallopian tube is guided to and grasps the ovary at the seat of rupture, and thus the ovum is conveyed to the uterus.

It is not yet agreed whether the menstrual discharge is, as I maintain, a secretory product, or, as is usually believed, an outpouring of blood from capillaries the continuity of which has been broken up by a more or less extensive destruction of the uterine mucosa, and the relationship of this phenomenon to ovulation is as perplexing as ever. Undoubtedly the two phenomena are correlated, but ovulation may occur independently of menstruation, and the former cannot in any sense be considered the cause of the latter. During lactation, and whilst menstruation is thereby held in abeyance, conception may and does occasionally take place, and again, superfetation may occur during the evolution of an ectopic pregnancy. This happened recently in a case under my care; the second fertilized ovum had passed by the undisturbed tube to the uterus, and was developing therein.

In estimating the normal duration of gestation in the human female, or the stage of pregnancy reached in any given case, we are accustomed to make our reckoning from the date of the cessation of the last menstrual period. In accepting this dogma we are naturally induced to ask whether the ovum with which we are immediately concerned belonged to the menstrual period from which we date our reckoning or to that which in the ordinary course of events would have succeeded this. On this point we are not yet agreed, but after a most careful scrutiny of clinical facts, I have come to the conclusion that the ovum corresponding to a past menstrual period is already too mature to respond to the influences of a spermatozoon. For the fulfilment of fertilization the ovum must not only attract the spermatozoa at a distance, but must on the near approach of one of these bodies throw out a cone-like process, and through this so called cone of attraction

* Read before the Walthamstow Division of the British Medical Association.

coalition and fusion of the germ and sperm elements are effected. If the ovum is too mature, then the vitelline membrane is so dense and unimpressionable that the necessary cone of attraction cannot form, and fertilization is therefore impossible. In the case of the hen it is well known that if the eight or ten eggs laid consecutively after one copulation are hatched there is every prospect of five or six producing chicks. The ova of these eight or ten eggs were no doubt all practically exposed at the same time to the spermatic influence, but it is more than probable that they were not all equally responsive, and from analogy we are justified in assuming that the more mature ova were less attractive to the spermatozoa and less impressionable than those which were younger. Again, the strict Jewess is, and invariably has been, as fertile as her Gentile sister, even although the observances of the former are such as to preclude her from indulging in sexual intercourse until the eighth day after the cessation of menstruation, the day on which ablution may be practised. Under such circumstances it is impossible for us to believe that the ovum belonging to a past menstrual period could ever be fecundated, and we are compelled to admit that quite independently of menstruation dehiscence of an ovum may be determined. If this be not so, then the normal duration of gestation in the case of the strict Jewess must always be fourteen days or thereabouts longer than in a Gentile woman. Moreover, the uterus, after displaying its usual periodic function, gradually and probably in three or four days regains its quiescent state, but until equilibrium is again restored the organ is incapacitated for meeting the requirements of a fertilized ovum, and if by chance such should reach the cavity of the uterus, it is unlikely that it will be detained therein. During menstruation and the three or four days preceding and succeeding this phenomenon, the uterus is already dominated by a physiological influence, and it is unable to respond to the stimulus of an active oösperm. It is also more than probable that during these same days the correlated ovum is irresponsive, and that fertilization is thereby rendered impossible.

When conception does occur menstruation is thereafter usually held in abeyance, and although the ovum which is fertilized is not, as is generally believed, that belonging to a past menstruation, yet, on clinical evidence, we are justified in reckoning the duration of pregnancy in any given case from the date of the cessation of this menstrual period. Of the existence of an ordinary uterine pregnancy we are seldom suspicious until or unless a menstrual period has been missed, and this suspicion cannot be substantiated by physical examination until about fourteen days later. The egg which contains a human embryo of twenty-eight days is rather less than 1 in. in diameter, and prior to this its presence in the uterus causes no appreciable enlargement. About this time, however, if a satisfactory bimanual examination can be made, the experienced observer is, as a rule, able to detect physical signs which he is accustomed to associate with those indicative of early utero-gestation. If fecundation occurred most usually just before a menstrual period, it is very evident that we could seldom diagnose the existence of a uterine pregnancy until two menstrual periods had been missed. Again, in operating upon early cases of tubal gestation with no history of amenorrhoea, we find often abundant proof that impregnation must have taken place five or seven days after the completion of an ordinary menstruation. In my opinion, therefore, it is not the ovum of a past menstrual period but a younger and more readily responsive ovum which is invariably fertilized, and I am further of opinion that the extrusion of such from the ovary is determined largely, if not entirely, by the mere presence of vigorous spermatozoa in the female genital tract. A woman without experiencing any sexual feeling may become pregnant, and conception has resulted not only in animals but in the human female when, with due care, seminal fluid has been deposited in the genital canal from a syringe. Towards the spermatozoa the ovum should display a positive chemiotaxis, and this it is which determines the coalition and fusion of these elements.

Let me recall some of the changes which a healthy ovum placed under the most advantageous circumstances should evince both before and after fertilization. At the outset we must remember that we are concerned with an organic mass which is the product of two vital bodies, one of which is derived from a male and the other from a female parent, and that this product may be expelled from the uterus before it has arrived at maturity, in consequence, it may be, of some physico-chemical disturbance, attributable either to the sperm or the germ element. Not infrequently it happens that an ovum which is not quite healthy becomes fecundated, and what is true of the ovum is likewise true of the spermatozoon, and this element, too although fit for fertilization, may nevertheless be in a diseased condition. The hydatid mole may be due to some aberration of this kind. In order that the process of ontogenetic differentiation may proceed uninterruptedly and be completed, the segmentation nucleus must not contain merely germ plasm, but a germ plasm so endowed that it will not fail in its purpose. If the quantity is too rapidly exhausted or the quality is not of a certain standard then embryonic development may cease at any time, and sooner or later thereafter the immature or disordered product of conception will be dislodged. In some of the Lepidoptera which reproduce by parthenogenesis we witness a phenomenon of this kind, as it often happens that all the eggs laid by an unfertilized female do not develop. When the eggs which have failed to produce young are examined we may note that development has not in all been arrested at the same stage; the impulse to development was imparted, but the power to complete it was wanting. It is very evident, therefore, that the growth of nuclear substance, which is neither unlimited nor uncontrolled, is regulated by physico-chemical influences of an intrinsic as well as an extrinsic nature, and that although segmentation has been begun, it nevertheless does not follow that it will proceed uninterruptedly.

The mature human ovum is a minute piece of protoplasm about $\frac{1}{150}$ in. in diameter. When a spermatozoon approaches a young and vigorous egg the surface nearest this sperm element becomes elevated and forms a small cone, and at this spot the spermatozoon coalesces with and is eventually drawn into the ovum. No such cone of attraction is formed unless the germ and sperm elements have an affinity for and act and react upon each other. As soon, however, as contact is effected, this ovum is thereafter insensitive to, and is incapable of being influenced by, other spermatozoa, no matter how near they may be, and nuclear division commences immediately. One spermatozoon only is necessary for fertilization, but it is quite possible that two spermatozoa may occasionally run the race equally and reach the cone simultaneously, and thus two fetuses in one amniotic sac may be accounted for, but it is generally alleged that fusion of an ovum with more than one spermatozoon results in the production of a monster.

The fertilized ovum before it arrives in the uterus becomes possessed of a membrane—the chorion—and the entire surface of this membrane is furnished with processes or villi. During the first three weeks these bodies are non-vascular, but towards the end of the third week of pregnancy the allantois rapidly develops, and thrusts its blood vessels into all the villous processes of the chorion, and the ovum now becomes possessed of a universal placenta. Through the agency of these villi in their non-vascular as well as their vascular condition, the embryo during the first six weeks of its existence derives its nourishment from the uterus by osmosis, and it is by osmotaxis alone that the oösperm in its early days is not only detained but retained in the uterus. There exists neither a decidua reflexa nor a decidua capsularis.

About the seventh week of pregnancy the chorion is destined to undergo a further most remarkable change, whereby the universal placenta becomes superseded by one of a discoid form. This transformation entails the annihilation of about two-thirds of the villous processes of the chorion, whilst the remaining third, being those destined to participate in the evolution of the true placenta, are stimulated to greater activity and increased growth. As the metabolism of the embryo can no longer be effected by osmosis alone, chemiotaxis now comes into play, and henceforward the development and growth of the fetus is dependent more upon the chemiotactic than the osmotactic irritability of the placenta.

Wherever the gestation sac of a full-time ectopic pregnancy may be located, the placenta evolved under such disadvantageous circumstances is not essentially

different from that formed normally in the uterus, and we are justified in believing that the endometrium is not of itself such an all-important structure in the development of an ordinary pregnancy. To the direct stimulus of a vital oösperm the uterus in its entirety responds in a very definite and specific manner. The vascularity of the organ is markedly increased, and the nerve as well as the muscular energy is greatly augmented, whilst the organ as a whole becomes enormously enlarged. Reactionary changes similarly induced in other structures—to wit, the Fallopian tube or ovary—are of a pathological rather than a physiological order. After a full-time parturition the uterus by a process of dissolution will in five or six weeks return to its original state, and time after time the evolutionary and dissolutionary changes consequent upon gestation and parturition may be displayed by the uterus without derangement of this organ resulting therefrom. On the other hand, the structure which once harbours vicariously an oösperm becomes thereby irreparably damaged.

The villous processes of the chorion by osmotropism and chemiotropism transit to and from the embryo the products of metabolism. The uterus in turn must respond efficiently to these irritabilities—that is, the fetal and maternal structures must act and react harmoniously upon each other. If, for example, when the time arrives for the true placental villi to be differentiated from those which must cease to function the atrophic process instead of being restricted to the usual two-thirds of the chorionic invades the placental area also, then sooner or later the embryo perishes, and forthwith the correlated changes in the uterus become modified. Hyperatrophy of the chorionic villi is a cause of postponed or missed abortion. We witness a parallel phenomenon in superinvolution of the uterus after parturition. Here the dissolutionary changes are not arrested when they should be, and, transcending the usual amount, they produce atrophy of the organ. All the true placental villi are not equally endowed; those located at the periphery or circumference of the disc are less vigorous and active than those occupying a more central position. For this reason the placenta is thicker in the centre than at the circumference. When, therefore, there is a disposition to an imperfect implantation of the villi, or a tendency for the already formed placenta to recede from the uterine wall, it is towards the periphery of the disc that in the first instance this untoward event is most likely to occur.

From intrinsic and obscure causes on the part of the oösperm the developmental energy of this body may at any time, and more especially during the early days, become exhausted, and under such circumstances the uterus, unless inhibited in some remarkable manner—as happens in cases of postponed abortion—will not long continue in a transitional state, but will tend to rid itself speedily of its contents and revert as quickly as possible to its quiescent state. Concerning those innate conditions of the germ and sperm elements which may be accountable for the evolutionary power of the oösperm giving out before development is completed we know practically nothing. Syphilis may be a factor, but in my opinion this as a cause of intrauterine death is greatly overrated. Some seem to conclude that if in a case of habitual abortion potassium iodide is administered and the fetus is carried to maturity syphilis must have been the deleterious agent. To reason thus is hardly permissible. It would be if it were proven that potassium iodide could not possibly be of service except where there was a syphilitic influence or taint. The relationship of cause and effect is not always easy to substantiate, and in cases of this kind we must not overlook the fact that potassium is a very important element, and much of the good which results from the administration of potassium iodide may be due more to the base than acid. Besides potassium, magnesium and phosphorus are also very important constituents of the germ plasm, and a deficiency of any of these may affect adversely the development and growth of the embryo. Lead is a powerful protoplasmic poison, and through the germ and sperm elements, as well as by its action upon the uterine tissues, this metal may be a determinant of abortion.

Lodged in the uterus, a developing ovum arouses the activity of the whole organ, but in addition there is a well-marked local response, which is limited to a definite area of the uterine mucosa, and which implicates more especially the capillary vessels contained therein. This, the decidua serotinal area, corresponds in extent with and is opposite that portion of chorion the villi of which are destined to participate in the formation of the permanent placenta, and during a period of seven and a half months a coaptation of these two corresponding surfaces must be well maintained, otherwise the life of the embryo may be endangered. After the sixth week of pregnancy it is more than probable that neither the endometrium in itself nor the utricular glands play any very important part in the mere process of gestation, seeing that a thoroughly efficient placenta—one differing apparently in no respect from that evolved in the uterus—may be formed in some structure outside the uterus, provided only the maternal vessels concerned in its production maintain their integrity and supply those materials which the growing embryo requires and demands. If we view gestation merely in so far as it admits of the processes of metabolism being carried on in the fetus, we must acknowledge that the all-important and essential change in the maternal tissues is that which concerns the behaviour of the blood vessels. An effective response on the part of these is, of course, only possible if they are functionally vigorous and advantageously circumstanced.

Fibroid neoplasms in the uterus do not usually militate against the occurrence of conception, but they tend undoubtedly to hinder and interrupt the process of gestation. The further these growths are located away from the endometrium the less likely are they to exert a prejudicial influence. The endometrium which restrains a submucoid fibroid is, as a rule, ill-adapted for the evolution of such vessels and sinuses as are necessary for the formation of the placenta; consequently fibroids which encroach upon the uterine mucosa are not infrequently responsible for the existence of a state of sterility or the habitual occurrence of abortion. Of the conditions which determine the placental site we are still ignorant, and it sometimes happens that, in spite of the fact that the cavity of the uterus is occupied by a large fibroid polypus, or even a foreign body like an intrauterine stem pessary, gestation begins; and in the former case it may occasionally proceed to maturity.

A short time ago I saw, with Dr. Cook, of Store Street, a patient who three weeks previously had been delivered of a full-time child, and whose uterus was occupied by a somewhat pedunculated fibroid, which was tending to slough. This I enucleated per vaginam. But the interest attaching to the case is that three years before I had seen this same patient, with Dr. Cook, immediately after a full-time confinement, as she was thought to have inversion of the uterus; but on careful examination we decided that the physical signs were due to a fibroid polypus engaging the internal os. On this occasion we urged operation, but the patient would not then consent.

Fibroids which do not encroach upon the endometrium may provoke abortion when, instead of responding, they resist the influences of gestation and interfere with the necessary expansion of the uterus.

Under ordinary circumstances the placental chorion and the decidua serotina are not structurally continuous, the relationship is merely that of cohesion through very close contact. In so far as the embryo is concerned this is attained through the sensitivity of the chorionic processes and the hydrostatic pressure of the amniotic fluid, which begins to accumulate as early as the third week of pregnancy; the part played by the uterus depends upon the inherent tone of this organ, which should enable the uterine wall to oppose efficiently and offer a moderate amount of resistance to the irritable villi and allow at the same time of the expansion of the uterus co-ordinately with the gradually increasing ovum. If the uterine tone becomes more or less markedly impaired then the wall of the organ instead of opposing and resisting will tend to recede from the contact of the placental villi, and under such circumstances an imperfect coaptation of the fetal and maternal surfaces will probably result. The maintenance of the integrity of the rapidly enlarging serotinal vessels depends greatly upon the vital support afforded them by the uterus and the embryonic mass conjointly, and whatever tends to divorce these two structures from each other is apt to cause the badly supported vessels to rupture.

External haemorrhage is not only the most important but the most common premonitory symptom of abortion and although it may be induced in a variety of ways,

atony of the uterus is its most frequent cause. Under such circumstances it may appear as early as the sixth week of pregnancy, about the time when the serotinal vessels begin to undergo rapid enlargement in response to the stimulation of the placental chorion. Calcium and potassium are two very important constituents of the muscular substance of the uterus, and on account of some deficiency of these or the presence of some toxic material the tone and responsive power of the organ may be so impaired that blood may be extravasated and may escape externally. When haemorrhage thus results we should endeavour if possible to reinstate the uterus by removing deleterious materials and supplying those which may be deficient, and with this object we may administer potassium iodide, calcium chloride, potassium chlorate or bicarbonate, and the like. When the muscular energy of the uterus is impaired there is often enfeeblement of the nerve energy also, and with the above we may give strychnine, arsenic, digitalis, and phosphorus in some form.

Pain is the other all-important prodromal symptom of abortion. It may be noted when the uterus, in consequence of intrinsic or extrinsic changes, does not adequately respond to and fails to expand correlatively with the developing ovum. During utero-gestation the evolutionary phenomena connected therewith involve not only the uterus and vagina but also the broad ligaments, the pelvic fasciae, and the pelvis generally, and anything which interferes unduly with the harmony of the reactionary changes in these structures may provoke abortion. Apart from the presence of fibroid neoplasms, it is sometimes the substance of the uterus itself which is at fault. The whole organ, or a part of it only, in consequence of some defective co-ordination may fail to keep pace with the requirements of the growing ovum. When incoordination is very marked the shape of the uterus may be anomalous, and under such circumstances it may be difficult to determine whether the product of conception is lodged in the Fallopian tube or uterus. Again, the uterine tissues themselves may be responsive enough, but they may be restrained by the remnants of an old pelvic peritonitis, by some sclerotic change in the recto-vesical fascia, or more rarely by an unduly resistant and too extensive utero-vesical pad. If the adhesions due to an attack of pelvic peritonitis are of fairly recent production, or even if old, if they contain but little connective tissue then the evolutionary changes connected with gestation may invade and so soften these pathological products that a uterus which in the unimpregnated state was somewhat anchored in the pelvis may expand *pari passu* with its contained product of conception, and this may be carried to maturity. In the same way sclerosed tissues in the pelvis may also soften, as fibroids in the substance of the uterus often do. When, however, the expansion of the pregnant uterus is unduly interfered with from any of the aforesaid causes, then the irritability of the organ is more or less markedly increased, and we must in the first instance endeavour to lessen this irritability by the administration of such remedies as hydrobromic acid, the bromides, phenazonum, conium, and, if need be, opium or morphine; but during the first eight or ten weeks of pregnancy opiates should if possible be avoided, as they lessen the sensitivity of the placental villi.

Abortion, again, not infrequently results from physical or mental shock, or a combination of both influences. During utero-gestation the uterus is in a state of unstable equilibrium, the changes proceeding in it may readily be inhibited and arrested, and the muscular activity of the organ may not only be unduly aroused, but may be reduced. Moreover the serotinal vessels are so dilated and thinned that a breach in their continuity may readily be provoked. The impressionability or sensitivity of the uterus is a very variable quantity—not only in different individuals, but even in the same individual at different times. Sometimes, when it is desired to produce abortion, the greatest difficulty may be experienced in bringing about this result, whilst at other times it may be difficult to prevent abortion recurring habitually. When the pregnant uterus is adversely affected by shock, physical or mental, the evidences of any untoward disturbance may be revealed at once, but in the majority of cases there is a latent period, a period varying from one or two hours to four or five days, during which the patient is unaware that any prejudicial influence is at work. After the tenth or twelfth week of pregnancy, the uterus may be injured directly by a blow on the lower abdomen, and abortion may more or less quickly ensue, but mechanical injury more usually acts indirectly, the concussion disturbing, it may be, the molecular state of the organ, or causing the immediate rupture of one or more of the functionally active maternal vessels. The blood thus extravasated may never make its escape externally; it may remain pent up between the fetal and maternal structures, and constitute a concealed haemorrhage. Of such an accident pain is, as a rule, the only symptom, as the haemorrhage is seldom great enough to cause any alarming disturbance. The pain is due to irregular tension of the uterus, a tension which is in a sense salutary so long as it does not excite undue contraction of the organ, and cause thereby a more extensive separation of the fetal and maternal structures, since it tends to lessen the possibility of a further haemorrhage. When confronted with a case of this kind, we must avoid the administration of any drug likely to cause either undue contraction or relaxation of the organ. Absolute rest is the best treatment. In the majority of cases, whatever the cause may be, when a breach in the continuity of one or more of the serotinal vessels takes place, some of the extravasated blood finds its way to the external genitals, and in such cases treatment should be neither routine nor haphazard, but scientific if possible. The disturbance from mental shock exerts its influence through the vasomotor nerves, and inhibits either the tone of the uterus or the processes going on in the organ, and of such external haemorrhage is invariably the sequence.

Necrosis of the amnio-chorion is a very rare cause of abortion, and it determines this event by allowing the amniotic fluid to escape.

From our point of view (that is, the clinical) degenerations of the placenta are of no interest.

A CASE OF TUBAL ABORTION.

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DURING the past seven months I have met with 3 cases of early ectopic gestation in my own private practice. Each of these has been successfully operated upon, but only the last presents special features making it worthy of record. As Bland-Sutton remarks in the latest edition of his textbook:

> Tubal abortion has become a subject of importance. When attention was first drawn to the accident, many observers regarded its occurrence as questionable or of great rarity; now the condition is well recognized, and in the practice of some observers it is reported to be the most frequent mode by which tubal pregnancy terminates (Cullingworth and Taylor). In our (Bland-Sutton and Giles) very long series of cases the proportion of tubal abortion to rupture of the tube is as 1 to 4.

HISTORY OF PRESENT CASE.

On May 14th, 1907, Mrs. R., a primipara, aged 32 years, walked up from her house to my consulting rooms, a distance of three-quarters of a mile, about 8 p.m., to get advice concerning certain irregular pains and haemorrhages from which she was suffering. She did not consider her troubles serious, and it was only in deference to the wishes of her friends that she consented to seek advice at all.

She stated that she had been regular about every twenty-six days for the past three years. She had had a child fourteen years ago. She was unwell on March 9th last as usual, but to her surprise again became poorly for four days on March 29th. On the third day after she was better—that is, on April 5th—coitus took place. This, I should say, is the important date on which impregnation was effected.

She showed just a slight sign of being poorly on April 24th, but this was so little as to be scarcely noticeable. On April 28th, the day before the expected period, coitus again took place, but she was not unwell on April 29th. On the morning of May 2nd, however, after coitus, she was seized with severe bleeding (bright red) which lasted over half an hour, and quite soaked her nightgown. Later on in the day she got up "feeling all right, and went about her washing and ironing as usual." From May 2nd she began to get "squeamish" at various periods of the day, but had no actual vomiting. On May 11th, while going to the local grocer's, she started to come unwell, and felt as if a flooding were imminent, this being accompanied by great weakness, which, however, passed off on her resting at home.

At 6.30 a.m. on May 13th, after a cup of tea, she had a severe attack of vomiting, and "then black, nasty-looking blood came, soaking the nightgown and sheet." She, however, got up later and washed them. Though feeling weak, she had no pain and the bleeding had stopped. On May 14th she went about "feeling weak and languid," but without pain or bleeding. In the evening she came to me as stated above.

From the history so far related no very clear guide as to the exact cause of her symptoms was evident. On examination her breasts showed no signs, and there was no apparent softening of the cervix with its old laceration, but there certainly was an enlarged tender right tube, without, however, any undue pulsation being noticeable. There was a little bleeding after the vaginal examination. Although signs and symptoms were not very positive, I concluded that this was probably a case of extrauterine pregnancy, and sent the patient home to bed, telling her she would require to be operated upon the next day, and that I would see her early in the morning, but to get her husband's consent in the meantime. It was fortunate that I did so, for serious internal bleeding, attended with severe attacks of pain, came on during the night, causing such collapse as to render the diagnosis unmistakable. Next morning she was lying curled up on her right side, complaining of much pain over the right iliac fossa, while there was peritoneal distension and a temperature of 101° F. Rapid examination revealed a tender mass round the right Fallopian tube. I gave her a small dose of morphine to quiet her restlessness and pain, and had her quickly removed to the private hospital, summoning two medical men to meet me there with a view to immediate operation.

Operation.

The patient was in a very low state, being absolutely bleached. On opening the abdomen, it was found to be full of blood, which passed out of the wound, and I removed clots in fistfuls, having previously seized the right tube, which was surrounded by a large mass of clot. The tube itself was quite empty, having completely extruded its contents through the fimbriated end. It was quickly removed, the left tube and ovary freed from adhesions, and the abdomen rapidly sewn up, as the patient's condition was desperate.

After-History.

She was speedily got to bed, the foot of which was kept well elevated all night. By the morning she had rallied considerably. Her temperature before operation was 100.2°, and it reached that level on two successive evenings only, thereafter soon becoming normal. She had a remarkably easy and uneventful recovery, without vomiting or pain, and left the hospital in four weeks "feeling splendid," though still somewhat anaemic.

Bearing in mind that the patient was probably not more than a month pregnant (the dates of coitus being known) it is remarkable what an enormous quantity of blood was poured out from the open end of the affected tube, the width of which was no greater than that of an ordinary fountain pen. It was difficult to account for this till I thought of the explanation offered by Mr. Bland-Sutton:

> It is important to remember that a gravid mole-containing tube will, after discharging the mole through its coelomic ostium, return to its normal size exactly like the uterus after labour. In regard to this, the student should remember that if any one unacquainted with the remarkable properties of unstriped muscle were shown a fetus at term in the amnion, and the uterus in which it developed an hour later, he would have his credulity sorely tried to be persuaded that the amnion and contents had been housed in the centre of the uterus. We make this observation because some thoughtful men, thoroughly familiar with the behaviour of the uterus, fail to comprehend that a similar state of things happens with the Fallopian tubes.

Recent opinions are somewhat at variance in regard to the periods at which tubal abortion is possible. According to Bland-Sutton, it can only occur during the first two months after fertilization; when the ostium is occluded (commonly by the sixth week, but it may be delayed to the eighth) the blood cannot escape without rupture of the sac, but Clarence Webster maintains that it may take place later if the fimbrial end be closed only with recently formed weak adhesions.

In 32 cases reported by Mackenrodt abortion occurred during the first month in 8 cases, during the second month in 19 cases, during the third month in 4 cases, and during the fourth month in 1 case. In 29 cases reported by Orthmann it occurred in the first month in 13 cases, the second month in 10 cases, the third month in 4 cases, and the fourth month in 2 cases. In most cases, according to Orthmann, the ovum is completely expelled. Here he again differs from Bland-Sutton, who states that incomplete tubal abortion is more common than the complete form.

Except to free the opposite Fallopian tube from adhesions, I deliberately left it, in contradistinction to the practice of several surgeons in this city, who always remove both tubes when either is affected by tubal pregnancy. On this point I may fittingly quote the emphatic declaration of Bland-Sutton, who places the final words in italics, that "a series of investigations on an abundant supply of material, teaches us that a healthy Fallopian tube is more likely to become gravid than one which has been inflamed."

The possible causation of tubal pregnancy is always interesting. Bland-Sutton states that "concerning its cause or causes nothing is known," but Clarence Webster maintains that while "mechanic factors might be associated with ectopic pregnancy, there was no proof that they were the ultimate factors in its causation." He has "demonstrated the existence of the decidual reaction in the tubal mucosa in all cases of tubal pregnancy, and advanced the view that the fertilized ovum could develop only on tissue capable of undergoing a genetic reaction. Normally, in the human female, this reaction, occurring as the result of fertilization, takes place in the mucosa of the uterus. Its occasional occurrence in other portions derived from the Müllerian tract—that is, Fallopian tube—is to be regarded as a reversion in these tissues to an earlier mammalian type, either in structure or in reaction tendency."

HYSTERECTOMY AND APPENDICECTOMY PERFORMED ON A PATIENT AGED 74: RECOVERY.

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The following case exhibits several points of interest, the most remarkable being the soft vascular condition of a fibromyoma of the uterus more than twenty years after the menopause.

History.

The patient was a healthy-looking, well-nourished woman, aged 74, who had complained of indigestion for five or six years and for twelve months had suffered from increasing abdominal distension and constipation. Examination revealed a well-marked flatulent enlargement of the abdomen and a tumour continuous with the uterus and apparently within the right broad ligament. It was rounded in shape, not tender, large enough nearly to fill the pelvis, and firmly fixed, but I thought that the fixity was in part due to its size and position. It seemed to be a soft solid or a thick-walled cystic growth. There was no history of any serious illness and the other organs were healthy, with the exception that there was a trace of albumen in the urine, the specific gravity of which was 1014 to 1016 and its quantity was normal. Menstruation was regular and free, but not excessive at any time, and its cessation, at the age of 53, was not accompanied by noticeable symptoms.

In a younger woman a fibromyoma uteri, firmly held down by the broad ligament, would have been recognized without hesitation, and the continuation of the periods until the age of 53 years was in favour of the view that a fibroid tumour existed at that time. But it was difficult to understand how a tumour of this nature could give rise to trouble which did not become urgent until the patient's age was 74, unless it was undergoing a malignant or degenerative change. Without some such alteration of structure an enlargement of a fibromyoma long after the change of life is, I believe, unknown, and yet the symptoms seemed to be due to increasing pressure on the bowel. For these reasons I thought that the mass was probably a semi-solid ovarian cystoma or possibly a uterine tumour, the nature of which was obscure. It followed that an attempt should be made to remove it, and my chief doubt was as to whether its excision was possible.

Operation.

An exploratory operation was advised, and I opened the abdomen in the Samaritan Free Hospital on January 25th, 1907. The tumour appeared to be a fibromyoma within the broad ligament, but it was quite as soft and full of blood as such a growth usually is in a woman 30 years younger than this patient. Considering the symptoms of increasing mischief, the vascularity of the growth, and the apparent ease of the operation, I decided to perform a total hysterectomy. The tumour, which was closely attached to the right side of the uterus, was enucleated through an incision along the top of the broad ligament, and when the gap thus made was being closed, after the uterus and tumour were removed, it was seen that the small intestine was adherent to a portion of

the peritoneum which had covered the tumour. It was obvious that the new disposition of the parts would cause a dangerous traction on the adherent coils of gut, and that a gradual shrinking of the growth must have had the same effect. I therefore separated the adherent coils, and found that the vermiform appendix was completely hidden by them. There was no sign of a recent inflammation, but there was a round black concretion, measuring about $\frac{3}{16}$ in. in diameter, within the appendix, close to its junction with the caecum, and the adhesions were evidently due to an old appendicitis. All the small intestine was released, and the appendix, which had received much of its blood supply through the severed adhesions, was removed.

After-History.

After the operation the patient gave no real occasion for anxiety during the first week of convalescence, although the bowels caused some discomfort and there was still a trace of albumen in the urine. On the eighth day the patient was so well and the wound appeared so firmly healed that, contrary to my usual practice, I removed all the sutures. During the following night part of the incision gave way, and when the patient was being put under an anaesthetic with a view to inserting fresh sutures the whole wound broke down. The exposed coils of intestine showed no sign of inflammation or tendency to form adhesions, and the wound, after being reunited, healed throughout without suppuration, all the sutures being left in position fourteen days and some sixteen days.

Except for a slight bronchitis and a painless swelling of one leg of about three days' duration, there was little further trouble, and the patient recovered her strength in a very satisfactory way. It was noted, however, that as she moved about and took nourishment more freely the amount of albumen in the urine increased, but not to any great extent.

The patient left the hospital five weeks after the first operation, and some months later Dr. James Hitchcock informed me that she was to all appearances well and exceedingly pleased with the improvement in the bowel condition, in the general health, and in the power of getting about; but there was an increase of the albumen in the urine, which has continued, and there are now also numerous hyaline casts. The quantity of urine is good, and the patient is at present visiting friends in the country.

Description of Tumour.

The tumour was very soft, almost round, and measured about 5 in. in its greatest diameter. Mr. Darwall Smith has kindly examined a section of it, and he reports that the structure is that of a fibromyoma, which shows very little sign of degeneration. Here and there a few cells have become indefinite in outline, but otherwise the appearances are typical. There is no indication of a sarcomatous change.

The evidence seems to justify the conclusion that in this case the tumour had begun to diminish in size before it was first discovered, and therefore the symptoms could not be due to pressure from its enlargement. The shrinking of a large fibromyoma uteri is often associated with discomfort and even with much pain, as it becomes hard and impinges on the pelvic brim, and also when it becomes small enough to fall into the pelvis and press upon the sacral plexus, upon an ovary, or upon an inflamed Fallopian tube. But a tumour within the broad ligament, and which, as in the case under consideration, had probably always been within the pelvis, could hardly cause increasing pressure as its size diminished—at least, so long as it remained soft.

There is, however, another way in which the shrinking of a uterine tumour may cause trouble—namely, by dragging on parts which have become adherent to it. As I interpret the phenomena above recorded, the symptoms were due to a traction on the adherent intestines induced by the gradual diminution in size of the new growth—an explanation which could not possibly have been given before the operation. The absence of a history of appendicitis may have been due to forgetfulness, but extensive inflammatory mischief may arise from this cause without attracting much attention. It was really fortunate for the patient that an exact diagnosis was impossible, for I doubt if I would have recommended opening the abdomen for the relief of adhesions in a patient so old, and without the operation her discomfort must have increased.

The patient's age is interesting. I think she is the oldest upon whom a hysterectomy for fibromyoma has been performed and recorded. Otherwise the age is not remarkable. I have long been impressed by the great success which attends even very severe operations in healthy old people if asepsis is attained.

The condition of the urine is very important. A slight degree of albuminuria should not be considered to contraindicate an operation which seems otherwise advisable. When the albuminuria depends on the condition of the kidneys it undoubtedly adds to the danger, and an aggravation of the renal mischief may follow the operation; but, as a rule, immediately serious consequences only follow if septicaemia develops. Apart from septic mischief, even extensively damaged kidneys have a reserve of excreting power equal to very great emergencies.

The most unusual pathological condition in this case was the state of the tumour, which was quite unique in my experience in a patient so old. As a rule, a fibromyoma shrinks soon after the periods cease, and its remains often undergo a calcareous change.

For example, on June 8th, 1903, I removed a uterus containing a tumour the size of a large orange which caused pressure symptoms in a patient aged 54, whose periods had ceased three years earlier. The tumour was so hard that it was difficult to cut it with a knife. The patient recovered. In another case I was informed that a fibroid uterine tumour developed until the patient's abdomen was as large as that of a full-time pregnant woman. When her age was 48 she was exceedingly ill from profuse haemorrhages and symptoms of blood poisoning, so that for four months her life was despaired of. She very slowly recovered, and her size diminished until the tumour did not show externally. When the patient's age was 60 years, the abdomen again enlarged, and I was asked to see her. On June 13th, 1903, I successfully removed two dermoid ovarian tumours, and the uterus with a fibroid which measured 5 in. in diameter. The outer part of the latter was so calcareous that, when it was incised, the knife broke through the tissues with a crackling noise rather than cut them.

Again, on November 16th of last year, I successfully removed an ovarian tumour deeply imbedded in the broad ligament of a patient aged 72. In front of the uterus there was a kidney-shaped tumour, about 4 in. in length, lying loosely in adhesions. It was evidently an old fibromyoma, and it was so hard that I had considerable difficulty in breaking it with a hammer. The hard part was all near the surface, the central portion being tough and leathery in consistence.

Small atrophied fibroids lying, like this one, harmlessly near the uterus, are not very uncommon in old women. In fact these cases show the conditions to be expected as patients advance in years, and the only explanation I can suggest of the softness and vascularity of the tumour found in the first case above recorded is that the growth was so near to the cervix and to the uterine vessels, and so completely outside the muscular tissue of the uterus that its nourishment was reduced less than usual by the changes associated with the cessation of menstruation, whilst the fact that the growth was completely within the broad ligament would also facilitate its nourishment and thus delay the normal degenerative changes. The explanation is probably in part also to be found in the unusual youthfulness and vitality of the patient.

THE CORRELATION OF THE OVARIAN AND UTERINE FUNCTIONS.*

BY

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A CONSIDERABLE body of evidence has been adduced in support of the hypothesis that the uterus is dependent upon ovarian influence for the maintenance of its structure and the discharge of its functions, and that the removal of this influence at any time during reproductive life causes the uterus to atrophy, besides producing a profound effect upon the entire metabolism of the organism. Some writers, on the other hand (for example, Blair Bell), contend that it is the uterus which is of prime importance, and observations have recently been cited pointing to the conclusion that this organ exercises a control over the growth and activity of the ovaries. Others, again (for example, Bond), adopt the view that the ovaries and uterus are to a very large extent interdependent upon each other.

The clinical evidence brought forward by surgeons after removal of the uterus and ovaries in the human subject

* Read before the Royal Society, London, May 30th, 1907.

has supported to a great extent the experimental evidence of the existence of such an interrelation. The modern tendency to conserve these organs as far as possible during surgical interference has been brought about largely by the belief in the dependence of the one organ upon the other. Important work bearing upon this subject has been published recently by Zweifel (1899), Mandl and Bürger (1904), Bond (1906), and many other surgeons.

It is the purpose of this paper to record a series of experiments dealing with these questions, and to state the conclusions which we have reached regarding them.

Influence of the Ovary upon the Uterus.

A brief summary of the experimental evidence adduced upon the existence and nature of the ovarian influence has been recently given in a paper by Marshall and Jolly (1907), who cite observations showing that the uterus undergoes undoubted degenerative changes after the removal of the ovaries. Further evidence, which is in accord with this conclusion, has been independently reached by Carmichael (1907). For accounts of the literature reference may be made to these papers.

Since, however, certain of the conclusions arrived at are still matters of controversy,* it has been thought worth while to place on record the results of further experiments upon rabbits, dealing, first, with the effects of ovariotomy in full-grown adults at different periods after the operation, and secondly, with the effects of the same operation in young animals.

It has been suggested that the changes occurring in the uterus may be due to an interference with the blood supply to that organ, in the removal of the ovary. The uterus in the rabbit, as in the human subject, has an independent vessel of supply derived from one of the pelvic vessels, and it is inconceivable that any operation undertaken with care for the removal of the ovaries, situated as they are high up in the abdominal cavity, could interfere with this vessel. Care was also taken in our experiments to avoid injuring the anastomotic branch of the ovarian artery, which passes along the Fallopian tube to join the uterine.

For this purpose in several of the experiments a lateral incision was made over the ovary on each side, so as to obtain better access and interfere with the mesovarium as little as possible by traction, a condition which is unavoidable in removal of the ovaries by a mesial incision. Thus all dangers of fallacy from vascular interference were avoided

A mesial incision was often unsatisfactory for the removal of ovaries, in that the upper pole of the ovary may be left behind in dividing its superior attachment, considerable traction being required to expose the organs freely.

In the following experiments fully-grown rabbits were used:

Experiment 1.—The ovaries were removed by a mesial incision, and the animal killed after an interval of three and a half months. Sections showed that the uterine stroma had undergone considerable fibrosis and was reduced in amount. The glands had almost entirely disappeared. The superficial epithelium was, however, fairly normal but degenerated in places, some of the cells being vacuolated. The muscular wall did not show much degeneration, but was somewhat thinner than usual. Superficially the uterus, whose size was carefully noted at the time of operation, was perceptibly smaller.

Experiment 2.—The ovaries were removed by a mesial incision, and the animal killed three and a half months subsequently, as in the preceding experiment. The glands and epithelium did not show the same degree of degeneration as in the previous case. Some fibrosis was, however, clearly discernible throughout the stroma. The muscles appeared to be not well developed, but otherwise were fairly normal.

Experiment 3—The ovaries were removed from a pregnant rabbit by two lateral incisions. Two days afterwards the rabbit aborted. After five and a half months the rabbit was killed. The uterus appeared very pale and atrophic looking. Mammary tissue was almost non-existent. Adipose tissue was superabundant. Sections through the uterus showed that the mucosa was very thin and also fibrotic, the nuclei of the stroma being few and far between, excepting in the immediate neighbourhood of the epithelium, just below which they were much more numerous. The glands were represented by mere traces. The epithelial cells were somewhat degenerated, not taking on the stain so well as normally. There were very few blood vessels.

Experiment 4—The ovaries of a rabbit were extirpated by means of two lateral incisions a week after parturition. The animal was kept alive for five and a half months, during which time it received twenty-two injections of commercial ovarian extract, made to determine whether this would have the effect of arresting the uterine degeneration. The extract was injected intraperitoneally, one injection on an average being made every week. It was found, however, that whereas sometimes the injection appeared to result on the following day in a congestion of the mucous membrane of the external generative organs the atrophy of the uterus was in no way prevented. Sections showed a very thin fibrotic mucosa, and a thin muscular coat. As in the preceding case, the glands had almost disappeared, and many of the epithelial cells were vacuolated and obviously degenerate. In the cervix the changes were not so pronounced, the epithelial cells being nearly normal in appearance.

Experiment 5—The ovaries were removed by two lateral incisions. The rabbit was killed six and a half months subsequently. Very pronounced changes had taken place. The uterine stroma was extremely fibrotic and contained no glands. The epithelium was much attenuated, the nuclei having failed to take up the stain to the usual extent. A few very small capillaries, however, could be still seen in the stroma. The muscle fibres were much broken up. The cervix had not undergone the same amount of degeneration, but some of the epithelial cells appeared vacuolated.

In the following two experiments very young immature rabbits were used:

Experiment 1—The ovaries were removed on May 29th. The rabbit weighed 660 grams. On August 8th it weighed 1,640 grams. On March 20th the rabbit was killed after first being weighed. The weight was 3,450 grams, the animal being fully grown and in perfect health. The uterus was found to be absolutely infantile, being no bigger than a rat's. Sections showed that the muscular wall was almost totally undeveloped. The mucosa was somewhat thicker, but fibrous throughout. The lining epithelium was, however, present.

Experiment 2—The ovaries were removed from a very small rabbit on June 5th. The animal weighed 740 grams. On August 8th it weighed 1,450 grams. On March 20th it was killed after being first weighed. The weight at that time was 2,080 grams. The rabbit was quite fully grown and very fat. The uterus, as in the preceding experiment, was very small, being not so large as an adult uterus after the removal of the ovaries some months previously, as shown by our first series of observations.

These experiments show that the removal of the ovaries at an early period of life, while arresting the development of the other generative organs, has no effect on the growth and general health. The weights as given above compare favourably with those of unoperated rabbits and with those of animals in which the uterus had been removed (see below).

Influence of the Uterus upon the Ovaries.

Although the bulk of evidence brought forward clinically seems to show that the uterine functions fall into abeyance after removal of the ovaries, a considerable number of cases have been reported in which menstruation has persisted after oöphorectomy. Pozzi (1905) has recently recorded several such cases, but the uterus in the majority contained a uterine fibroid or other pathological condition.

The explanation of such cases has always been a difficult one, but it has probably led to the ideas now held by some surgeons that the uterus is capable of performing its functions independently of the ovaries, and even that the functions of the ovaries themselves depend largely on the presence of the uterus and its secretions.

Zweifel and Abel, in a communication to the German Gynaecological Congress (1899), in tracing the after-histories of cases of hysterectomy, found that when the body of the uterus was removed entire atrophy of the ovaries always followed, so that menopausal symptoms set in similar to those occurring after oöphorectomy. In 3 cases, however, in which a portion of the uterine mucous membrane was conserved, menstruation persisted and menopausal symptoms were absent. Doran (1905), after following up the after history of 60 cases of subtotal hysterectomy, is inclined to support Abel and Zweifel, in that the uterus should be removed above the cervix, in order to prevent sudden artificial menopause, while he also cites 2 cases where menstruation persisted after removal of the body of the uterus and both ovaries, the cervix being left behind. Mandl and Bürger (1904), in an exhaustive monograph on the effects of hysterectomy with and without the ovaries, hold that in those cases in which the ovaries are left behind there is a gradual cessation of ovarian function due to atrophy or degeneration of the ovaries. Holzbach (1906), however, states that, as a rule, the ovaries do not degenerate after hysterectomy, and that

* See the latter part of the present paper, where recent theories upon the nature and importance of the uterine influence are discussed.

where such degeneration does occur it is probably due to the interference with the nervous connexions consequent upon the operation of removal. Blair Bell (1906) holds that the theory of the internal secretion of the ovary is inconclusive, and that the clinical facts go to show that menstruation is due to a uterine secretion, and the menopause due to its absence, while he supposes ovulation itself to depend on the circulation of this secretion, which he calls "uterin." He mentions that there have been many cases in the Royal Infirmary at Liverpool in which ordinary menstruation continued after the removal of the ovaries, and makes further statements pointing to the conclusion that the ovaries invariably atrophy after the removal of the uterus.

Bond (1906), on the other hand, believes that the ovarian secretion is influenced by a saline secretion from the endometrium, the two, however, acting antagonistically to one another, so that prevention of the uterine secretion by hysterectomy favours hypertrophy of the ovary. Bond's view, therefore, is diametrically opposite to that of Blair Bell. Bond records two experiments on the results of hysterectomy. In one of these the entire uterus of a rabbit was removed, and the animal killed after five months. Both ovaries were found to be normal. In the other experiment the left uterine cornu only was extirpated, and the rabbit killed after five months. The ovaries in this case also were in no way atrophied. Bond expresses the belief that the prevention by previous hysterectomy of the secretion of the saline fluid by the endometrium of the anoestrous uterus favours the overgrowth of luteal tissue in the ovary.

Stress has also been laid upon the well-known fact that whereas the corpora lutea of the ovary continue to undergo development for a considerable period of time if pregnancy supervene after ovulation, this hypertrophy soon ceases in the absence of pregnancy. Bond records an experiment on a rabbit in which the ovary after being grafted to an abnormal position contained a somewhat aberrant "corpus luteum of pregnancy" in association with a gravid uterus. Such observations are regarded by him as affording evidence of an internal uterine secretion (differing from that elaborated by the anoestrous uterus) acting on the ovaries and so inducing a growth of luteal tissue. It must be remembered, however, that the occurrence of pregnancy exercises a profound effect over the whole maternal organism, and not merely upon the condition of the ovaries.

Certain other authors have adopted views which imply a dependence of the ovaries upon some function of the uterus. Thus Loewenthal (1884) appears to have held that ovulation occurs as a result of a stimulus in some way set up by the uterine changes of the pro-oestrum. Moreover, Heape (1900) has expressed the belief that oestrus (which depends normally upon the presence of the ovaries) "is possible only after the active changes due to pro-oestrum have taken place in the uterus," but this statement clearly applies to normal animals.

Excepting for the two experiments of Bond, which have just been referred to, no experimental work appears to have been published upon the effects of hysterectomy on the ovaries. The following experiments, therefore, notwithstanding the fact that the results reached were negative, are not without importance.

Experiment 1.—On April 8th the uterus was removed entire from a very young rabbit which weighed 420 grams. On August 8th the weight was 1,640 grams. The rabbit was killed on November 11th after being weighed. The weight was then 2,060 grams, the animal being apparently fully grown. The ovaries were well developed, having increased greatly in size since the operation. On histological examination they were found to be normal, containing numerous growing Graafian follicles, and showing no signs whatever of degeneration.

Experiment 2.—On April 8th, the uterus of a very young rabbit was removed, excepting the cervix. Weight, 390 grams. On August 8th the weight was 1,640 grams. On November 11th the rabbit was killed. Weight, 1,940 grams. The ovaries were normal in every way.

Experiment 3.—On May 2nd the uterus was removed entire from a young rabbit. Weight, 650 grams. On August 8th the weight was 1,660 grams. The rabbit was put with the buck at intervals and noticed to copulate. On January 20th it was killed when quite full grown and in perfect condition. Weight, 3,020 grams. The ovaries were extremely well developed and contained numerous discharged follicles.

Experiments 4 and 5.—In each experiment the uterus was removed from a very young rabbit, excepting the cervix, and the rabbit killed after several months (in the one case after eight months and in the other after ten months). Oestrus was noticed in both cases after the animals had reached maturity. The ovaries in both cases were normal, those of one animal containing large follicles, and those of the other (which had been with the buck) recently ruptured follicles.

Experiment 6.—The uterus was removed entire from a very young rabbit on May 17th. Weight, 470 grams. In August the animal was observed to be ill, and on August 28th was killed. The ovaries had undergone development since the operation and were normal in histological appearance.

Experiment 7.—The uterus and Fallopian tubes were completely removed from a young rabbit on December 9th. The rabbit was killed on April 3rd, when the ovaries were found to be normal and to contain many follicles.

In four experiments on rats the uterus was removed entire in the month of July. Two of the rats were killed in January, when the ovaries showed no indications of degeneration. The other two were killed in April, the ovaries being large in size and containing many protruding follicles. On the other hand, marked uterine degeneration has been recorded in rats after the removal of the ovaries for shorter intervals of time (Marshall and Jolly, 1907).

Further, in the case of a ferret in which the uterus was removed, the histological appearance of the ovaries was normal after three months, when the animal unfortunately died. The interval which had elapsed, however, was probably too short to admit of the deduction of definite conclusions.

It may be concluded as a result of these experiments that the growth and development of the ovaries are in no way dependent upon the presence of the uterus. Such a conclusion is no doubt in opposition to some of the clinical evidence, but it is one which on phylogenetic grounds might be expected, since the uterus is an organ which came into existence comparatively recently in the course of vertebrate evolution, whereas the ovary is common to all Metazoa.

It has been shown, further, that oestrus and coitus may occur after the complete removal of the uterus. Whether under such a condition the other generative organs undergo any of the changes which normally characterize the pro-oestrum was not determined, since such changes are in any case difficult to detect in rabbits.

It was likewise impossible to determine definitely whether there was any increase of ovarian activity consequent upon hysterectomy (such as one would infer if Bond's theory of an antagonistic uterine secretion were correct), but we failed to discover any clear indication of its existence.

Summary of Conclusions.

The results obtained by these experiments lead us to summarize our conclusions as follows:

1. The removal of the ovaries in young animals (rodents) prevents the development of the uterus and Fallopian tubes. These remain in an infantile condition. The subsequent growth and general nutrition of the animals seem to be unaffected.

2. The removal of the ovaries in adult animals (rodents) leads to fibrous degeneration of the uterus and Fallopian tubes (most marked in the mucous membrane). The animals' subsequent health and nutrition remain good.

These observations, for the most part, support the evidence obtained clinically in the human subject after surgical operation.

3. The removal of the uterus in a young animal has no influence in preventing the further development of the ovaries. These are capable of ovulating and forming corpora lutea after adult life has been reached.

4. The removal of the uterus in an adult animal does not give rise to any degenerative change in the ovaries if the vascular connexions of the latter remain intact.

These latter observations do not support the contentions of those surgeons who advocate subtotal hysterectomy, believing that the functional activity of the ovary is in some way dependent on the presence of the uterus.

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MOVABLE KIDNEY FROM A SURGICAL STANDPOINT.

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During recent years attention has been called with increasing frequency to the harmful effects of unduly movable kidneys upon the general well-being of the individual. It has long been known that movable kidney may cause local pain and discomfort, and in some cases even the acute attacks known as Dieti's crises. Such a kidney is often very tender, and, according to its position, may simulate renal calculus, an inflamed gall bladder, or appendicitis. Further, the drag of the kidney upon the duodenum and colon not infrequently gives rise to dyspeptic symptoms of a very intractable character. Many cases of dilated stomach without obvious pyloric obstruction appear to be caused by a movable right kidney having produced kinking of the duodenum. In a recent autopsy at the General Hospital, Birmingham, this condition was found, and no cause other than the dropped right kidney was discovered to account for a markedly dilated stomach. The duodenum was sharply kinked just beyond the pylorus. Several times I have fixed the kidney for gastric dilatation of many years' standing, with very satisfactory results. As a rule, in these cases there is little or no vomiting, but great delay in the passage of food through the stomach and much flatulence. No history of preceding ulceration is obtainable, and no pyloric thickening can be felt. In America the association between movable kidney and menstrual disturbances, especially dysmenorrhoea, has been emphasized.

Apart, however, from those symptoms which are more or less readily explicable on mechanical grounds, it is gradually becoming more clearly recognized that movable kidney may produce more general and far-reaching disturbances. The frequent association of profound neurasthenia, persistent headaches, depression, and even insanity, with undue mobility of one or both kidneys, has led to the supposition that there is a close relationship between these symptoms and the renal mobility. Dr. Suckling of Birmingham has insisted upon this relationship for many years, and has advocated the necessity for keeping the kidney in its proper place by means of a suitable belt, and when this fails, by nephropexy. Latterly this view has been strongly supported by many American and Continental writers, and increasing experience tends to prove that very often marked relief and frequently complete cure follows fixation of the kidney when undue mobility of that organ is associated with profound disturbance of the nervous system which medical treatment fails to relieve. The most probable explanation is that renal mobility leads to the accumulation of toxins in the blood by interfering with urinary excretion, and that these toxins act deleteriously upon the nervous system and nutrition generally. Knowing, as we do, how easily the functions of the kidneys are affected by the quantity and quality of the blood flowing through them on the one hand, and by the resistance opposed to the escape of urine on the other hand, it is not difficult to understand how profound disturbance of urinary secretion may be caused when they are unduly mobile. The continual change of position must frequently interfere with their circulation and cause temporary obstruction to the escape of urine.

I do not, however, in this paper intend to discuss the indications for operation when the kidney is movable, or the pathological explanation of the symptoms caused by it, but to confine myself to certain points connected with its operative treatment based upon an experience of nearly 70 cases.

Morbid Anatomy.

A typical movable kidney, as seen during operation, presents certain well-marked features. The true capsule is thickened and has a mottled appearance, due to the presence of opaque, yellowish-white patches of varying size. These patches indicate areas of greater thickness, and to them are attached adhesions, often of great strength. The perirenal fat is usually scanty, and its place is taken by adhesions which surround the entire kidney. The adhesions are sheet-like in appearance, with denser bands leading to the opaque patches on the true capsule. They extend between the true capsule and the fascial capsule outside. Usually the adhesions are quite loose and allow the kidney a wide range of movement within its fascial capsule, though the latter is dragged after the kidney in its more extensive excursions. The true capsule is never very adherent to the renal parenchyma, and where adhesion exists it is irregular and generally found beneath the opaque areas. The kidney pedicle is very much elongated, and the kidney can generally be pulled right out on the loin without causing any undue tension upon it. It is unusual to find the pelvis of the kidney dilated, and when this does occur it is apparently due to the kidney having become fixed in an abnormal position and a temporary kinking of the ureter converted into a permanent one. So long as the kidney can move freely, hydronephrosis is not produced. It is rare for the suprarenal capsule to drop with the kidney, and I have only once seen it. On that occasion it was firmly attached to the upper and inner aspect of the kidney, and showed evidences of chronic inflammation. Sometimes the adhesions between the colon and kidney are very dense, and their separation is effected with difficulty.

The adhesions are not always confined to the immediate proximity of the kidney. On several occasions in which the peritoneum had been accidentally opened from the loin I have seen sheet-like adhesions within the peritoneal cavity closely resembling those surrounding the kidney. Once or twice also, during an abdominal section, I have observed these adhesions, and in every case the kidney was very movable. In one case, where the kidney could almost be pushed into the pelvis, the appendix, ascending colon, gall bladder, and pylorus were involved in thin, sheet-like adhesions for which no other satisfactory cause was discoverable than the mobile kidney. The constant presence of these adhesions furnishes striking proof of the amount of perirenal irritation caused by undue renal mobility.

Treatment by Belts.

Some years ago Dr. Suckling devised a belt to keep the kidney in position, and its use is attended by great relief in many cases. This belt has since been patented by Messrs. Salt of Birmingham, and is too well known to need description. Frequently, however, the belt fails to cure or even to relieve. This is partly due to the depth of the kidney from the surface, rendering it difficult to provide satisfactory support without the pressure of the pad being irksome. Another reason for failure is discovered when operating. Not infrequently it is found to be impossible to restore the kidney to its normal position until the adhesions to its lower pole have been divided. These adhesions may be so strong and dense as to effectually prevent the kidney from being pushed into place by any external pressure. When it can be readily slipped beneath the ribs a belt may be tried, but many failures are met with.

Treatment by Operation.

Very many different operations have been devised for the fixation of a movable kidney, and this in itself is striking testimony to the difficulty experienced. The frequency with which the kidney comes loose again has not unnaturally caused a prejudice against operation in the past, and, more important still, accounts for many of the failures to obtain relief of symptoms. This is unfortunate, because the failure is apt to be regarded as due to an error in attributing the patient's symptoms to the movable kidney rather than as a surgical failure to fix it.

There are several reasons why it has been found difficult to fix movable kidneys successfully and permanently. The renal parenchyma is soft, and sutures passed through it tear out easily, so that the capsule alone can be utilized for purposes of support. The muscles of the back are too yielding, and will not withstand the drag of a kidney fixed to them; further, by their own contraction, they tend to push the kidney away from them, and so strain the supporting stitches. The strain thrown upon the supporting sutures during the retching that is so common after operation is enormous, and is, I believe, the cause of so many kidneys being found loose again so soon as the patient assumes the erect position. I am firmly convinced that no method by which the kidney is sutured to the muscles of the back will give satisfactory results. Another difficulty has been

experienced in connexion with buried sutures; those such as catgut, which are absorbed in the tissues are apt to soften and yield too soon, while the permanent suture materials, such as silk, frequently give rise to troublesome sinuses. To avoid these troubles, the kidney capsule itself has been cut into strips which have been made to serve as sutures, and some of the tendons of the back muscles have been utilized for the same purpose. The results, however, have not been altogether satisfactory.

The operation devised by Goelet was a distinct advance upon former methods. In his operation the kidney is supported by two silkworm-gut sutures passed beneath the kidney capsule, taken through the external arcuate ligament, and brought out through the muscles of the back on to the surface of the loin, where they are tied over a roll of gauze. These stitches are allowed to remain in for three weeks, at the end of which time the new adhesions which form round the kidney become sufficiently firm to keep it in place. The stitches are very strong and prevent the kidney from tearing loose during the early vomiting. As an additional support, Goelet packed the space below the lower pole of the kidney with iodoform gauze, which was left in for several days.

The operation described below is a modification of Goelet's. I have now performed it 70 times, and so far as I can ascertain the kidney has remained in place in every instance. Most of the cases have been examined from time to time after operation by Dr. Suckling, and he informs me that he has never found the kidney down again.

Method of Operating.

The skin of the loin is prepared in the usual way and rubber gloves are used. The loose fat in the loin has a very low resisting power and unless rigid aseptic precautions are taken suppuration occurs and convalescence is prolonged. The patient is turned on the side so that the loin to be operated upon is uppermost, while the space between the ribs and iliac crest is increased by introducing a sandbag or rubber air-cushion under the lower loin. The incision commences just above and a little behind the tip of the twelfth rib (Fig. 1). It is

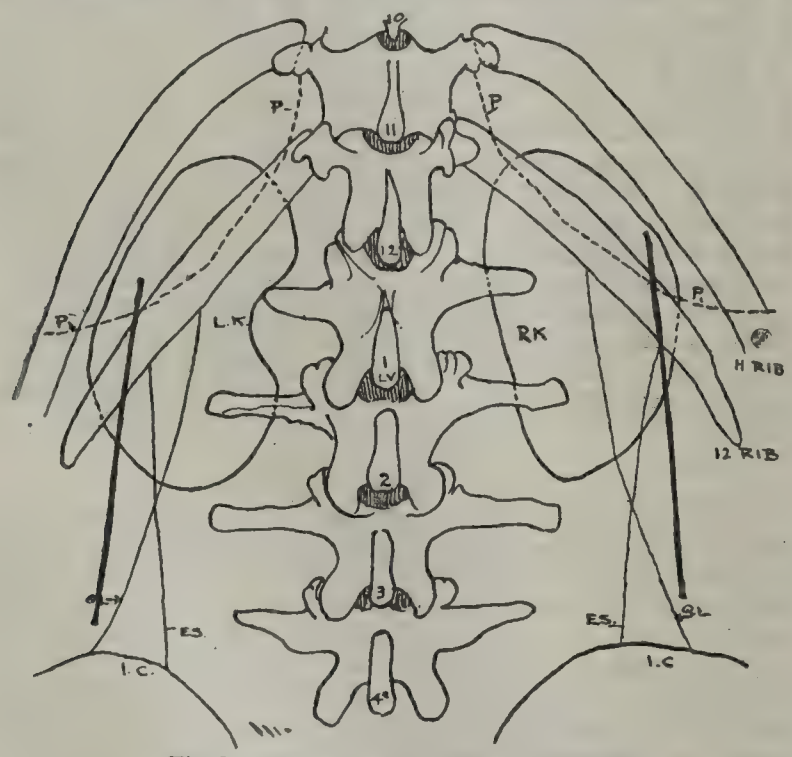


Fig. 1.—Diagram to show line of incision.

carried almost vertically downwards to the crest of the ilium and is about 3 in. to 3½ in. in length. This incision runs parallel with the outer border of the erector spinae muscle. The fibres of the latissimus dorsi muscle are identified and separated in the line of cleavage. The lumbar fascia is next divided from the twelfth rib to the iliac crest along the outer border of the erector spinae. The fingers are then inserted into the wound and its margins as widely separated as possible. In the space thus opened up is seen the anterior layer of the lumbar aponeurosis covering the perirenal fat, and internally the outer part of the quadratus lumborum muscle, which extends beyond the outer edge of the erector spinae. At the upper part of the wound the last dorsal nerve and the first lumbar artery running along the lower border of the last rib are identified and protected from injury. The anterior layer of the lumbar aponeurosis is next divided along the outer edge of the quadratus lumborum between the twelfth rib and the crest of the ilium. When incising the lumbar aponeurosis care must be taken to avoid injuring the ilio-hypogastric nerve, which crosses the line of division in its lower part. The kidney surrounded by its fatty capsule is now exposed. With the margins of the wound widely retracted, the kidney can with a little coaxing be brought out on the loin. It is covered with sheet-like adhesions, often of great density, extending from the true fibrous capsule to the perirenal fascial capsule. It is rarely possible to strip these adhesions and the attempt to do so may cause separation of the true capsule from the kidney cortex. They are better divided with a pair of scissors curved on the flat, the blades of the scissors being kept close to the kidney. It is essential that the kidney should be completely freed from all adhesions and left attached by its pedicle only, otherwise they may exercise a downward drag and militate against the success of the operation.

Two incisions are now made through the kidney capsule. The first extends from the upper pole along the convex border as far as its centre; while the second, commencing at the same point as the first, is carried to the back of the hilum. The triangular area of capsule thus marked out is raised and left attached by its base, which extends from the convex border to the hilum. Use is made of it for purposes of support, as described presently. Two stout strands of silkworm-gut are now passed beneath the capsule in the way described by Goelet. The upper of these enters near the centre of the convex border, passes beneath the capsule for about ½ in., is brought out and re-entered in the same direction a little lower down. It is brought back in the same way a little behind the convex border. By passing the suture beneath the capsule twice in series in this way a very much stronger hold is obtained, and it is less likely to tear through. The second stitch is passed in exactly the same way, but nearer the lower pole (Fig. 2). The free ends of the silkworm-gut sutures and the apex of the loose triangular piece of the capsule are clamped with pressure forceps and the kidney replaced in the loin. The loose fat and fascia covering the anterior surface of the upper part of the quadratus lumborum is stripped off and dragged away, so

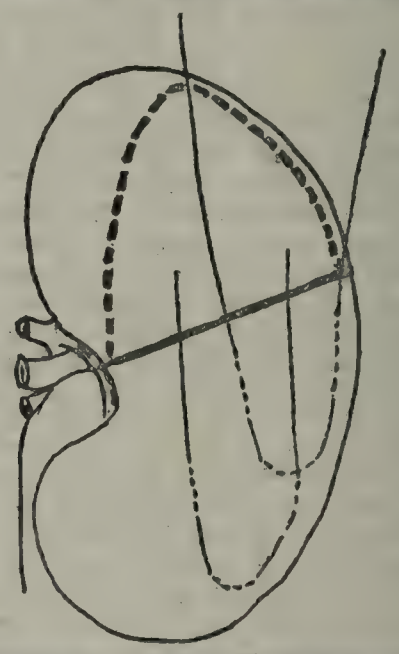


Fig. 2.—Diagram to show position of silkworm-gut sutures and the way in which they are passed. The dotted lines mark the incisions in the capsule to form the suspension loop.

that the back of the kidney, when fixed in position, will lie against the muscle itself. This ensures the formation of firmer adhesions between the kidney and muscle.

All is now ready for the final fixation. A pair of closed Spencer Wells forceps is forced through the muscles of the eleventh intercostal space immediately behind the tip of the twelfth rib, and made to project below the rib in the wound. The forceps pass between the rib and the pleura. By using blunt forceps and keeping the points close to the rib there is no risk of wounding the pleura, and this accident has never happened in my hands. The blades of the forceps are now opened, and the apex of the triangular piece of loose capsule, already described, seized. The forceps, with the blades closed, are then withdrawn. The kidney is pushed up from below by

fingers in the wound until the fixed base of the denuded area is on a level with the lower border of the twelfth rib. The loose strip of capsule is then drawn taut, and fixed by means of fine silk to its own base. For additional security a second silk stitch fixes it to the intercostal muscle at the place where it emerges above the twelfth rib. In this way the kidney is suspended by a loop of its own capsule, which passes completely round the rib. This loop gives excellent support, and enables one to fix the kidney accurately in a position as nearly normal as possible.* A long-handled needle is then passed through the skin of the back about 1 in. above the top of the incision, and brought out in the wound. It passes behind the twelfth rib and through the ligamentum arcuatum externum immediately below it. The eye of the needle is threaded with one of the free ends of the upper silkworm-gut suture already passed beneath the capsule of the kidney and the needle withdrawn. The needle is again passed through the skin at the same level, but about ¾ in. in front of the first puncture, and the remaining free end of the upper suture withdrawn. The free ends of the lower stitch are drawn to the surface in the same way, but are made to emerge about ¾ in. nearer the wound than the upper. The stitches are then pulled tight and

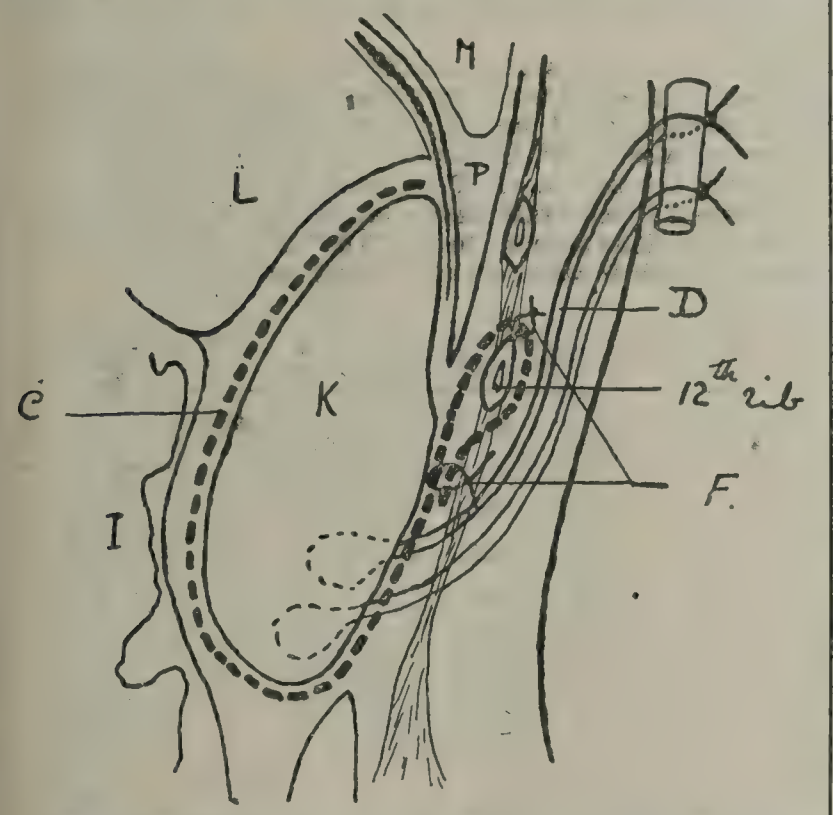


Fig. 3.—Diagram to show arrangement of suspension stitches. K, Kidney; C, kidney capsule; P, pleura; M, lung; L, liver; I, intestines within peritoneum; D, silkworm-gut sutures passing through muscles and fasciae of back to surface, where they are tied over a roll of gauze well above the wound; F, fine silk sutures fixing loop of kidney capsule.

tied over a roll of iodoform gauze. The roll of gauze rests on sound skin above the wound. At first I brought the supporting stitches out through the top of the wound, and the gauze pad lay on the upper part of the incision. The pad, however, becoming soaked with serum, and later hard, caused considerable irritation. By placing it altogether above the wound this is avoided (Fig. 3).

The fixation is now complete. As a rule, no vessels require ligature, and drainage is unnecessary. If, however, there is much oozing, a strip of iodoform gauze is placed below the kidney and brought out between the skin sutures. It is removed in forty-eight hours. The wound is closed by through-and-through silkworm-gut sutures, or, if thought desirable, the lumbar aponeurosis and latissimus dorsi may be stitched separately with catgut. In order to diminish as far as possible the large space that is left below the kidney a large pad of wool is laid on the abdomen just internal to the anterior superior spine and fixed by means of a spica bandage.

The skin stitches are removed at the end of a week, but the supporting stitches are left in for three weeks. The patient is kept in bed for a month, and then provided with a light belt or an elastic webbing bandage applied in the form of a spica to be worn for six months.

* I am indebted to Mr. Jordan Lloyd for demonstrating to me the practicability of utilizing the last rib for purposes of support.

Convalescence.

It is surprising to find how little shock is caused by the operation, considering the extensive manipulations to which the kidney is subjected; it is far less than that caused by exploring a healthy kidney for stone. Clearly the constant change in position of a movable kidney causes its nerves to become much more tolerant of manipulation. Post-anaesthetic retching is frequently troublesome and more prolonged than usual. Flatulence is also a constant trouble, and seems to be aggravated by temporary paralysis of the colon. This is induced by the separation of adhesions between the kidney and colon. I now make a practice of giving a large simple enema on the second night after operation, and this gives the patient marked relief. There is usually some pain at first, and it may be necessary to give morphine the night of the operation. I have, however, found that aspirin, 10 to 15 grains, often affords marked relief, and it is well to try this before resorting to morphine.

In most of my cases recovery has been uneventful. In a few, however, the temperature has risen between the seventh and tenth day, and a little later a quantity of turbid serum has escaped from the wound. Evidently this was an accumulation of fluid in the space below the kidney, which came to the surface after the skin sutures had been removed. The presence of such a collection is indicated by a slight convexity of the loin and an ill-defined fullness just inside the anterior superior spine. Usually but little trouble is caused, and after discharging freely for twenty-four hours the sinus rapidly closes. Only in one case has the discharge persisted for more than two or three weeks, and in this case it ceased about ten weeks after operation. I have had no cases in which a permanent sinus has resulted, or which required subsequent operative interference. In two cases active suppuration occurred. These were evidently infected at the time of operation, but after a more tardy convalescence ultimately did very well.

Results of Operation.

Recovery from the operation has occurred in every case except one. This was a man who was operated on during an attack of acute mania whcih necessitated his control by two keepers. As he was rapidly wasting and becoming weaker it was decided not to postpone operation. He bore the operation very well, and for three days appeared to be progressing favourably, with a normal temperature and slow pulse. On the third day he vomited bile once or twice, but apart from this and a reluctance to take food there was nothing to cause anxiety. On that day he was sensible for the first time for over a week, and conversed with his wife quite cheerfully. On the fourth day he became collapsed and died without apparent reason. The autopsy showed nothing to account for his death. Of the rest, recovery has been complete, and, so far as can be ascertained, the kidney has never come loose again.

I have rarely operated upon both kidneys at the same time, for the reasons that it adds to the risk and that fixation of one kidney is usually sufficient to cure the symptoms. Where both kidneys are movable the worst one is dealt with and the effect of this observed. In one or two instances only, where relief of symptoms has only been partial, does a second operation on the other kidney appear necessary.

The benefit resulting to the patients from fixation of the kidney has been highly gratifying, many of them stating that they have not felt so well for years. When it is remembered that in most of them the symptoms had extended over years, in spite of all ordinary treatment, and that they were mental and physical wrecks, these results are all the more striking. That it was not the rest alone that produced the improvement is proved by the fact that in several the Weir Mitchell treatment had previously been tried and failed, and that they are now leading an active life without relapse. Headaches, depression, intractable dyspeptic troubles, and neuroses of various kinds have disappeared; further, in almost every case the weight has increased. Of course, time is essential to effect all this, and I am accustomed to point out beforehand that it is unfair to judge of the effects of the nephropexy for six months. From my experience of these 70 cases I am convinced that where persistent functiona disturbances of the kind referred to are found in com

paratively young people in association with movable kidney, the latter should be fixed.

The anatomy of the operation described has been revised by Professor Arthur Robinson, and to him my best thanks are due for his valuable assistance.

A NOTE ON CRYOSCOPY OF URINE.

By W. R. GELSTON ATKINS, B.A.,
DEMONSTRATOR OF CHEMISTRY, TRINITY COLLEGE, DUBLIN.

WHEN an appreciable quantity of any pathological product is present in urine the depression of its freezing point below that of pure water does not give a correct indication of the functional activity of the kidney excreting it with relation to the elimination of the normal products of metabolism.

The depression of freezing point of water is proportional to the number of gram-molecules of dissolved substances in it, and is independent of the nature of those substances for non-electrolytes. It is for this reason that it is legitimate to use the depression as an indication of the work done by the kidney in eliminating the dissolved substances against the osmotic pressure produced by them, for this pressure is also proportional to the number of gram-molecules in solution.

V. Koryani and others have shown that the value of the depressing of freezing point Δ does not fall below 0.9° C. unless an unusual quantity of fluid has been taken. From this we conclude that a kidney producing urine which freezes at −1.27° C., for example, is functioning sufficiently to maintain health. But this conclusion may be quite wrong if it happens that a large quantity of a pathological product is present.

Sugar (glucose) is the substance most commonly met with in quantity, so it alone will be considered here. Suppose that in the above specimen of urine freezing at −1.27° C., 5 per cent. of glucose be found. This amount of glucose, if dissolved in pure water, would lower its freezing point by a definite amount, and the presence of the other substances in no way interferes with this. Accordingly, if we wish to determine whether the kidney is excreting waste products efficiently, we must find out the depression produced by the normal waste products alone: in other words, it is necessary to subtract from the depression as determined the depression produced by the quantity of glucose.

This was found by experiment orlginally, but can now be easily calculated from the following equation:

$$M = \frac{S}{L} \times \frac{K}{\Delta}$$

In this M represents the molecular weight of the dissolved substance, and s the weight of it in L grams of solvent; Δ is the depression of freezing point of the solution below that of the pure solvent, while K is a constant depending upon the solvent. A full explanation of the equation would be out of place here, but may be found in any book on physical chemistry, such as Walker, Lehfeldt, Ostwald, or Reychler. Now for moderate concentrations for $\frac{S}{L}$ we may, without serious error substitute $\frac{p}{100}$ the fractional amount of s present, then

$$M = \frac{p}{100} \times \frac{K}{\Delta}$$

For water, K = 1870, and the molecular weight of glucose $C_6H_{12}O_6$ is 180; accordingly the depression produced by 5 per cent. of glucose dissolved in water can be calculated.

$$180 = \frac{5}{100} \times \frac{1870}{\Delta} \therefore \Delta = 0.56° \text{ C.}$$

That is, 0.112° C. for every 1 per cent. of glucose, which agrees well with the value 0.104° C., the mean of several concordant experimental determinations.

So it is clear that the depression produced by the normal products of metabolism contained in the urine is 1.27° C. − 0.56° C. = 0.71° C., a value which is much too low. Thus this kidney, which would have been able to eliminate the quantities of solids occurring in ordinary metabolism, is unable to elimnate them in addition to the glucose. The difference must be accumulating in the blood, namely, solids sufficient to depress the freezing point from −0.71° C. to −0.90° C. or more, and in addition probably some sugar, for there is no reason why all the sugar should be excreted while all the urea and other normal products are not. This accumulation will cause the blood to freeze below its normal point −0.56° C., gradually lowering it to −0.60° C. and beyond, till death ensues. Such a conclusion could not be drawn from one determination alone, but requires the weighing of any other facts that may be known, such as whether the other kidney is badly diseased, not developed, or has been removed by operation.

For example, a specimen sent for examination contained 1.87 per cent of glucose, and froze at 1.17° C. Calculation showed the depression produced by the glucose alone to be −0.19° C., so the freezing point of the specimen, as far as the amount of normal products eliminated was concerned, was −(1.17° C. − 0.19° C) = −0.98° C. This value, though low, is above the limit, and, taking into consideration the large volume of urine eliminated by diabetic patients, it would probably be safe to conclude that the kidney was functioning well.

Another specimen contained 7 per cent. glucose, and froze at −2.11° C. The depression produced by the glucose was calculated to be −0.73° C., so the "corrected" value of the freezing point was −1.38° C. What has been said of glucose holds equally well for any other pathological product.

For convenience a table is added showing the depression of freezing point of water by various quantities of glucose, given to the nearest hundredth of a degree, and based on the value $\Delta = 0.104°$ C. for a 1 per cent. solution. The figures in the region of 10 per cent. are slightly too high, as for great concentrations the law is not strictly correct; these deviations amount to only 0.02° C. at 6 per cent., and increase slightly with the concentration.

Table showing Depression of Freezing Point by Various Quantities of Glucose.

Glucose per Cent.	Δ	Glucose per Cent.	Δ
	° C.		° C.
½	−0.05	5½	−0.57
1	−0.10	6	−0.62
1½	−0.16	6½	−0.68
2	−0.21	7	−0.73
2½	−0.26	7½	−0.78
3	−0.31	8	−0.83
3½	−0.36	8½	−0.88
4	−0.42	9	−0.94
4½	−0.47	9½	−0.99
5	−0.52	10	−1.04

With regard to the technique of freezing-point determinations of urine and blood, those who claim to make these measurements in twenty minutes are liable to encounter an error, not very serious where urine is concerned, but of relatively great magnitude when blood is being examined. When, in order to determine the scale-reading corresponding to 0.00° C., the bulb of the Beckmann thermometer is placed in a well-stirred mixture of ice and water, the mercury quickly contracts and comes to rest at, say, 1.35 after a few minutes. But this is not the true zero, for on allowing the thermometer to stand for some time, with constant stirring, the zero will be found to have risen to 1.37 or thereabouts. This occurs because the large and very thin glass bulb contracts appreciably, but more slowly than the mercury; accordingly the mercury thread is gradually forced up. This rise was observed to be 0.02° C. in three Beckmann thermometers examined, and ceased to be appreciable after, roughly, one hour. These thermometers had only been exposed to the ordinary air temperatures of the laboratory for some months previously; but in the case of thermometers which have been exposed to any considerable temperature the error would be much more serious.

The effect is, of course, to cause the freezing point of the blood, δ, to have too low a numerical value, if the zero rises in the interval between its determination and the

determination of δ. Thus a specimen which has a true freezing point, −0·61° C., indicating an advanced state of disease, may appear to have a value δ = 0.58° C., a normal value, if the zero has shifted 0.03° C, a by no means unlikely amount in warm weather.

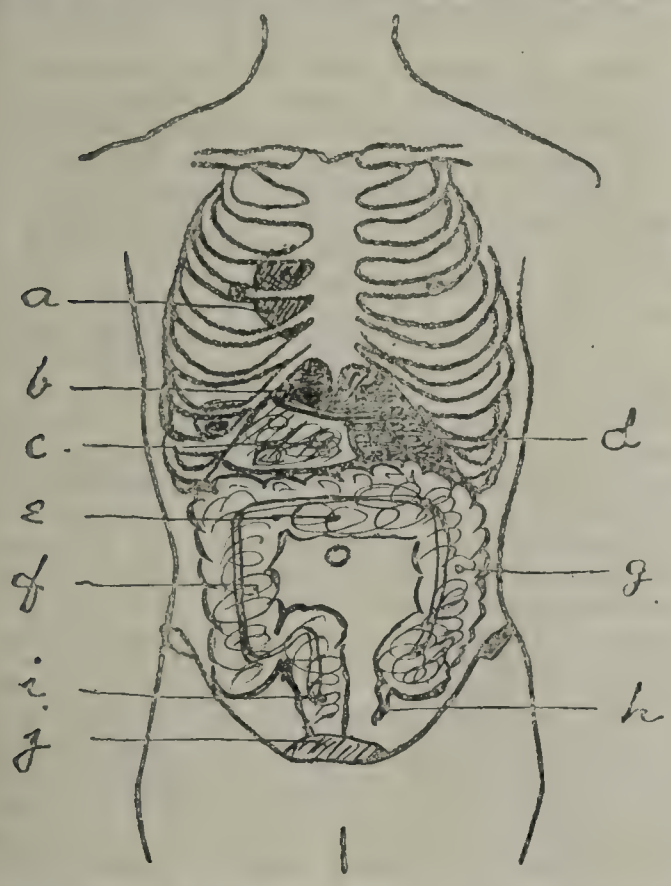
SUPPURATIVE APPENDICITIS IN A PATIENT WITH TRANSPOSED VISCERA.

By HAROLD HEBBLETHWAITE, M.R.C.S Eng.,
BURLEY-IN-WHARFEDALE.

Instances of transposition of the viscera are sufficiently rare to be of interest, and the following notes on a case of appendicitis in the left side are worthy of record on account of the rarity of the condition and the lack of symptoms pointing to the severity of the disease.

A tall, thin, fair-complexioned boy, aged 16. With the exception of mild attacks of the usual exanthemata had never had any illness worthy of mention, and to the day prior to my seeing him had been at school, apparently in good health.

On physical examination it was at once seen that the position of the internal organs was abnormal. The heart apex was felt in the fifth intercostal space, 1½ in. to the *right* of the sternum, and the heart dullness was all on the right side. The



Transposition of viscera (Kelly's vermiform appendix). *a*, Heart; *b*, liver; *c*, stomach; *d*, gall bladder; *e*, transverse colon; *f*, descending colon; *g*, caecum; *h*, vermiform appendix; *i*, rectum; *j*, bladder.

liver could be palpated on the *left*, and the resonance of the stomach elicited on the opposite side. The heart sounds corresponded to the unusual position, the second sound being loudest in the second *left* interspace.

On May 17th, 1906, he returned from school complaining of sickness and pain in the abdomen. On examination the following day the abdomen was tense but not very tender; the bowels were constipated and he had vomited a portion of his breakfast; the temperature was 100·5° and the pulse 70. He said that he did not feel very ill, nor did his looks indicate any severe condition. In twenty-four hours, however, the pain returned and the abdomen was distended. Both flanks were very painful on pressure but distinctly more on the left side. The probable transposition of the appendix into the left iliac fossa led me to suspect that organ to be the cause of the trouble. Mr. Moynihan, of Leeds, in consultation, agreed with this opinion, and we treated the case on expectant lines with a view to an operation when the acute symptoms passed off. For the first forty-eight hours the patient was not allowed any food, and for some days after only egg albumen solution and very light food, the bowels being acted upon by glycerine or simple enemata. During the next fortnight the symptoms somewhat abated, and occasional pain on the right side, as of peritonitis, was relieved by turpentine stupes; the general malaise did not quite subside; there was occasional vomiting; the temperature was subnormal and the pulse 60 to 70. Deep-seated pain was produced by pressure on the left iliac region, and there was a want of resonance on percussion.

An operation was performed by Mr. Moynihan on June 12th, ether being the anaesthetic. A preliminary incision 5 in. long in the central line, to locate the appendix definitely, revealed an unexpected condition. The whole peritoneum showed signs of old peritonitis; the intestinal coils were adherent, and numerous bands were felt. These were broken as much as possible before closing the wound. The abdominal viscera were found to be transposed. A second incision extending from a point 3 in. to the left of the umbilicus downwards and inwards for a distance of 7 in. to the central line was then made. On opening the peritoneum it was found that the left iliac region was occupied by an abscess containing foul pus; the appendix was in a gangrenous state, and a perforation of the caecum communicated with the abscess. A counter opening was made in the loin, two large drainage tubes were inserted in the wounds, and the cavity left to drain.

The patient rapidly recovered from the shock of the operation. The temperature, which had been subnormal for nearly three weeks, rose to 100.5° on that evening. It kept afterwards about 99°, and slowly sank to normal.

The abscess cavity was irrigated twice daily with sterilized water and peroxide of hydrogen. Faecal matter appeared in the dressings until the end of July, and the sinus finally healed in the last week of August.

Points of interest in the case are: First, the very slight inflammatory symptoms preceding so large a collection of pus; secondly, the absence of any history of previous illness to account for the extensive adhesions over the whole peritoneum, and the rapid and complete healing of the perforation from the sloughing appendix.

The Science Committee
of the
British Medical Association.

REPORT CIII.

THE HALDANE-SMITH METHOD OF ESTIMATING THE OXYGEN TENSION OF ARTERIAL BLOOD.

By W. A. OSBORNE.
(From the Physiological Laboratory, University of Melbourne.)

[Abstract.]

The theory of the method depends upon the fact that both oxygen and carbon monoxide form dissociable compounds with haemoglobin. If haemoglobin be subjected to a mixture of both O_2 and CO, the haemoglobin will be distributed according to a law which may be expressed in the form of an equation:

$$\frac{p_{CO}}{p_{O_2}} = K \frac{C_{COHb}}{C_{O_2Hb}}$$

where p_{CO} and p_{O_2} are the pressures of carbon monoxide and oxygen respectively, C_{COHb} and C_{O_2Hb} the concentrations of carboxyhaemoglobin and oxyhaemoglobin respectively, and K a constant.

If the amount of haemoglobin unattached to either O_2 or CO be negligibly small, as it is in the experiments in question, we may write this equation as follows:

$$\frac{p_{CO}}{p_{O_2}} = K \frac{a}{100-a}$$

where *a* is the percentage saturation of the haemoglobin with CO. In the experiments of Haldane and Smith an animal breathed a definite percentage of CO in air giving therefore p_{CO}. The percentage saturation of the blood was determined by a colorimetric method. The constant K can be calculated if we know the curve of dissociation of carboxyhaemoglobin in the presence of a fixed pressure of oxygen. In these experiments of Haldane and Smith the blood of the animal was found to contain less carboxyhaemoglobin than if the blood was shaken *in vitro* with the same gas mixture. If the experiments were correct, and no purely physical explanation of the fact forthcoming, and if it be granted that the lung does not do work by keeping CO out, then we must assume that the lung does work by forcing oxygen into the blood against pressure. From these experiments of Haldane and Smith calculated that the arterial blood of man contained oxygen at a pressure of 38·5 per cent. of an atmosphere.

In criticizing these researches it can be shown:

1. That the colorimetric method cannot give reliable results, as it violates two fundamental laws of colorimetry.

The two fields of colour are given by cylindrical lenses, which are some distance apart instead of being uniform, and separated by a theoretical partition. Moreover, it has been shown that variations in the quality of the light during the colour comparisons do not affect the two readings *pari passu*, so that varying values may be found for a blood partially saturated with CO and of constant composition.

The curve of dissociation of carboxyhaemoglobin in presence of air determined by the colorimetric method is a rectangular hyperbola giving a value to K = 0.0032. But Hüfner, by means of his spectrophotometer, obtained a different curve, which is also hyperbolic and giving a value to K = 0 0064, or double that obtainable from Haldane and Smith's curve.

2. That no account has been taken in Haldane and Smith's calculations of the action of the counter diffusion of gases which was first demonstrated by Wretschko in 1870. A repetition of Wretschko's experiments was made in which CO_2 and O_2, each containing the same percentage of CO, were allowed to diffuse into each other in a closed system which ensured that the quantities of CO_2 and O_2 diffusing in unit time would be approximately equal. It was found, in accordance with Wretschko's experiments, that the CO_2 during the diffusion heaped up the CO in the direction of its diffusion. One can, therefore, state that in the lung the outward drift of CO_2 hinders the absorption of CO more than the inward drift of oxygen helps the absorption of CO.

The conclusion arrived at is, therefore, that Haldane and Smith were not justified in concluding from their experiments that the lung was a secreting organ doing work by forcing oxygen inwards, and in consequence raising the tension of the oxygen in the arterial blood above that in the alveolar air.

A criticism is also given of Haldane's later form of gas analysis apparatus, and some possible sources of error described.

Towards the expenses of this research a grant has been made by the British Medical Association, on the recommendation of the Science Committee of the Association.

REPORT CIV.

A CLINICAL METHOD FOR ESTIMATING THE COAGULATION TIME OF THE BLOOD.

By J. P. McGOWAN, M.A., M.B., B.Sc.,
ERNEST HART RESEARCH SCHOLAR.
(From the Laboratory of the Royal College of Physicians, Edinburgh.)

In applying the method to be described the following apparatus are required:

Capillary glass tubes of certain dimensions.
A pricker.
A file or glass knife.
A flame for fusing the capillary tube.
A thermometer.

In case of accurate scientific determination, a chamber regulated to the temperature required for the observation.

The bore of the capillary tubes is 1.5 mm., is uniform throughout, and the length of the tubes is about 6 in. The tubes are blown by a skilled glass-blower to as near the above dimensions as possible, and cost 2s. per 100. The other requisites require no explanation.

To Test the Coagulation-rate.

The hands are thoroughly washed with soap and water, and then held below the tap to wash off the last traces of soap. They are then dried on a clean towel. The minute from which the coagulation time is to date is then noted down, as well as the temperature of the room. With the watch marking seconds close at hand, the observer waits till the seconds hand is about ten seconds from the minute noted down. A rag is then bound tightly round the finger, and when the seconds hand reaches the exact minute, the finger is given a good sharp stab with the pricker. The capillary tube is then seized and applied to the drop, inclining it or keeping it horizontal according to the flow of blood, thus maintaining a continuous column in the capillary tube. About 4 in. of the tube can easily be filled in 10 seconds from the moment of pricking. The column of blood is then allowed to run down the tube to such a distance that it will not be injured by applying heat to the end into which the blood was received. This end is then fused (alternatively it may be closed with sealing wax or paraffin). The fusion keeps the column of blood steady, and care must be taken not to seize the tube between the sealed end and the end of the column of blood nearest it, otherwise the expansion of the air causes a movement of the column. The tube is then laid down with the thermometer beside it, and at the end of each minute a file mark is made on the capillary tube ½ in. or less from that end of the column of blood remote from the sealed end of the tube. This piece of the tube is then broken off, care being taken in breaking it to keep the two ends of the glass approximated. The two ends of the glass are then drawn apart, and the first stage of coagulation visible to the naked eye is shown by a minute thread of fibrin stretching between the two broken ends. When this is reached the other parts of the tube are similarly broken to confirm the first observation. A further confirmation can be got by holding up the capillary tube to the light and noticing that when coagulation has reached the stage of the formation of the thread, the column of blood in the tube, instead of having the regular contour it had before, has a ragged, irregular, whitish outline.

Points to be noted are that the hands must be clean and free from soap. The pricker must be cleaned after each prick with clean water; the finger must be similarly treated, and blood must not be drawn twice from the same prick. These latter precautions are necessary to avoid sucking up formed fibrin ferment into the tube with the blood and thus increasing the coagulation-rate. The only other point is with regard to the breaking of the tube. The tube must be broken and yet the ends kept together, otherwise the fibrin thread may be broken. One can suspect that this has happened by the blood column bulging out at the broken ends, as contrasted with the almost concave appearance one gets when the blood is fluid. If the thread has been broken, another piece should immediately be broken from the tube, a proceeding also undertaken, as noted above, for corroboration when the fibrin thread has been got.

I have done a good number of series of consecutive coagulation tests on myself. These were done in the evening. The time for the first appearance of the fibrin thread in all of them ranged from 7 to 9 minutes, the bulk of the readings being at 8 minutes. Of these series I shall give one, consisting of 8 consecutive readings done in my rooms from 8.3 p.m. to 9 18 p.m. (1¼ hours):

My finger and the pricker were washed in a tumbler of water and dried on a clean rag, and the capillary tube was fused in an ordinary fishtail burner. The temperature of the room ranged from 16.5° C. at the beginning to 17.5° C. at the end of the observations. Coagulation times in this series: First = 7 minutes; second = 8 minutes; third = 7 minutes; fourth = 9 minutes; fifth = 8 minutes; sixth = 8 minutes; seventh = 8 minutes; eighth = 8 minutes. Four other normal individuals gave at the same time the following readings: No. 1 = 6 minutes; 2 and 3 = 7 minutes; 4 = 8 minutes (twice).

I next give readings taken in the morning (9 a.m. to 11 a.m.) of 5 normal individuals with myself as control. The temperature of the room was 15° C.:

A = 10 minutes; B = 9 minutes; C = 11 minutes; D = 11 minutes; E = 11 minutes; myself = 11 minutes.

It will be seen that the coagulation-rate is much slower in the morning than in the evening, and Bürker, confirmed by Buckmaster, states that according to the time of day, amount of exercise, or kind of food, the coagulation-rate may be as low as 5 minutes or as high as 14.5.

The object of this note has been to demonstrate the possibilities of this method for clinical purposes. For clinical purposes, the providing of an apparatus for keeping the blood at a uniform temperature seems to be superfluous, as from all my readings done at room temperature, which varied from 15° C. to 20° C., there was no change in the coagulation-rate corresponding to elevation or lowering of temperature within these limits. This might be expected, considering that the blood is drawn at 37° C., that glass is a non-conductor of heat, and that the coagulation time is so short. It might be a factor to be considered in the case of bloods of long clotting time. In such cases a control with the observer's blood could be done and the result expressed as an index. This control would also correct any error from differences in roughness of the inner surface of the glass tubes in different samples of glass.

This method can also be used for the determination of

the time of complete coagulation by breaking pieces off until, on pulling the two ends apart, the whole column of blood is pulled out from the broken-off piece. The separation of the serum from the clot can also be observed in these tubes and the differences in time of separation noted.

MEMORANDA:
MEDICAL, SURGICAL, OBSTETRICAL.

CASE OF RIGOR MORTIS IN A STILLBORN CHILD.

The following case occurred in my practice in August last:

Mrs. M., aged 22, a thin, active woman, not very well nourished, and who had only returned from fruit picking a few days before, was attended by me in her third confinement on the evening of August 28th. It was premature. She did not expect for another month. She had felt the child moving vigorously about eight hours before its birth. She had an easy and straightforward time, and was in labour about four hours. I was with her about one hour.

The child, a female, when born was dead and in a state of well-marked rigor mortis, the legs and arms were flexed and quite rigid, the child seemed to be well nourished, and did not appear to be of more than eight months' development. Her first child was born alive. The second was born dead. I could get no particulars of that. Her husband is a weakly man, with synovitis, probably gonorrhoeal, of his knee-joint.

Iron Bridge, Shropshire. D. W. Whitfield.

INTENSE HEPATIC CONGESTION IN AN INFANT.

The occasional occurrence of cirrhosis of the liver in children warrants the publication of the following case: An infant, aged 5 weeks, in apparently good health from birth, died suddenly without any obvious cause. There was no history of cough, rash, feverishness, sickness, diarrhoea, or convulsions, and at death there was oozing from the nose bright red frothy blood. I conducted a *post-mortem* examination by order of the coroner, Dr. Danford Thomas, and the results were as follows: The body was well nourished and weighed 9 lb. 12 oz; the brain, stomach, and heart were normal; there was intense general congestion of both lungs; the liver weighed 6½ oz., there was a large subcapsular haemorrhage, and the liver substance was friable and deeply congested. At the inquest a verdict of "Death from natural causes" was returned.

From the results of the autopsy two important questions arise—Where, and when, did the congestion originate? I feel confident it did not begin in the lungs, because of the absence of the symptoms mentioned above. It is well known that a slight inflammation of one lobe of the lung in a child gives rise to unmistakable symptoms, such as cough and feverishness, and these, if present, would have attracted the mother's attention. I think the pulmonary congestion was secondary to the hepatic. As the child was only 5 weeks old, breast-fed, and the mother was a woman of temperate habits, alcohol must be ruled out of court, and I have no hesitation in stating that, from the evidence, the congestion of the liver must have originated *in utero*, cause unknown. It is probable that, had the infant lived long enough, typical cirrhosis of the liver would have developed.

London, W. John Alcindor, M.B.Edin.

TREATMENT IN OCCIPITO-POSTERIOR CASES.

This subject came into prominence in the Journal during the discussion on Meddlesome Midwifery some time ago, but was only mentioned as a case in point in favour of instrumental labour. I have had a run of these cases lately, and thus wish to give my experience and draw, if possible, the experience of other practitioners.

Diagnosis.—One may be able to diagnose the presentation by vaginal examination if the os is dilated and the membranes ruptured, but my experience is that these cases give much trouble before either of these happens. I made a diagnosis in most of my cases by the character of the pains—sharp and short—combined with abdominal palpation and non-engagement of the head in the pelvis. In several of my cases I was called in several days before confinement for pain, and diagnosed false pains; but as the pains continued in spite of treatment I came to the conclusion, after abdominal palpation, that the presentation was occipito-posterior. I found that, on vaginal examination during these pains, there was no alteration in the os and no bulging of the membranes. I was taught that early rupture of the membranes happens in these cases, but it did not in the majority of my cases; in fact, I have had to rupture to apply instruments.

Treatment.—I have tried pushing up the forehead to bring on flexion, and rotation of the occiput, but have never had a successful case. The pains are so very short and the intervals so long that one cannot keep the hand in the vagina till the next pain comes. A medical friend of mine said he always put up his hand and turned the head. I have no experience of this, and would be afraid of twisting the child's neck. The treatment I adopted in all my cases was early instruments. I have waited on certain cases twenty-four hours to get a dilated cervix, and at the end had to dilate with the fingers and apply instruments. Some of my cases had the lower uterine segment dilated, and all that was wanted was to pull the head down on to it. There is no doubt that considerable force must sometimes be used to displace the head from the spine of the ischium, but afterwards the instrumental part is easy. The head tends to rotate after this, and I do not reapply the instruments, and have had no bad results from not doing so. I have delivered several primiparae without reapplying, without even the slightest tear of the perineum. Hospital treatment may differ from general practice, but I fail to see where it can do so in the interests of the patient. The patient very soon gets exhausted; vomiting, temperature, and quick pulse give warning that it is time artificial labour was commenced, even before full dilatation of the cervix. In conclusion, I think 50 per cent. of occipito-posterior presentations which commence as such remain so.

Anniesland. Joseph Stark, L.R.C.P.Edin.

A CASE OF GALL STONE IN THE COMMON DUCT.

The patient in the following case, a sick nurse by occupation, sought admission to the Victoria Hospital on January 2nd, 1906, with distinct signs of gall stones, and with a history of having passed a small-sized stone per anum with faecal matter. On January 15th, 1906, it was decided to explore the gall bladder; accordingly the patient was anaesthetized with chloroform, and a vertical incision in the abdominal wall was made from the costal cartilage of the eighth rib (right) down to the level of the umbilicus in the mammary line. The gall bladder was exposed, and on exploration it was found to contain no stone. The cystic and the hepatic ducts were then explored, with a negative result. The common bile duct was then manipulated between the index finger and the thumb, and a small stone was felt. An incision was made and the stone removed. The incision in the common bile duct was sutured with fine silk. The patient made an easy recovery, and was discharged from the hospital on the forty-second day after operation. The patient is at present in very good health, and has exhibited no signs of any more gall stones since the operation, and is attending to her usual occupation of sick nursing. The weight of the stone was 7 grains, and the size about that of a pea.

Victoria Hospital, Bangalore. T. V. Armugam, M.B., C.M.

A SUGGESTION FOR A BONE BOBBIN OR BUTTON FOR ENTERORRHAPHY.

The following description explains a suggestion for a decalcified bone bobbin or button for enterorrhaphy, which is on the principle of and was suggested to me by the boxwood drum commonly used for testing eye knives. It combines the rapidity of the Murphy button, the principle involved in Maunsell's operation, the cheapness of all decalcified bone apparatus, and the certainty that within half a minute or less the contents of the bowel shall be shut off from the general peritoneal cavity; it

holds the parts firmly in position for Lembert's suture, and if necessary the parts of the bobbin can be slipped apart when once the stitches are in place.

1. The male or smaller part of the button is slipped into the upper end of the intestine and the larger part into the lower, each end of the gut being then roughly occluded by a single stitch taken crosswise.

2. The upper end of the bowel is then thrust down into the lower segment, care being taken to have enough slack in either end to intussuscept the bowel well. The bowel now on the button and being held by an assistant, a row of Lembert's sutures is inserted in the usual way.

3. Finally, the suture closing the ends of the bowel is cut by a sharp cataract or other knife passed through the bowel, this minute hole being close by a single stitch.

The bowel is thus joined together by Maunsell's method, but much more expeditiously. If thought advisable the two halves of the button can be slipped apart and pushed on past the sutured portion. Where time is of great moment, by locking the two ends of the button firmly, union might as easily be got as with Murphy's button, though this is, of course, inadvisable.

Such a thing as a *post-mortem* examination being almost unknown in this country, I have not had an opportunity of trying this on the dead body.

Jerusalem. J. CROPPER, M.D., B.C.

DIPHTHERIA OF THE GLANS PENIS FOLLOWING CIRCUMCISION.

THE following will be of interest when considered along with Dr. Russell O'Brien's case in the JOURNAL of October 5th, p. 908:

A boy aged 3 years was admitted to hospital on September 22nd with faucial and severe laryngeal diphtheria requiring tracheotomy. He had been circumcised about four weeks previously. The glans penis was inflamed, as was the skin around it. The external urinary meatus was covered with a thick yellowish discharge; and on an ulcerated patch, about the size of a threepenny-piece, on the left side of the root of the penis there was a thin, whitish-grey membrane. An almost pure culture of Klebs-Loeffler bacilli was grown from this. The membrane disappeared in three days after injection of antitoxin (16,000 units), and the balanitis had subsided on September 30th. R. P. BEATTY, M.D., T.C.D.

Grove Hospital, Tooting, S.W.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

THE GENERAL HOSPITAL, BIRMINGHAM.

A COMPLICATED CASE OF UTERUS BICORNIS.

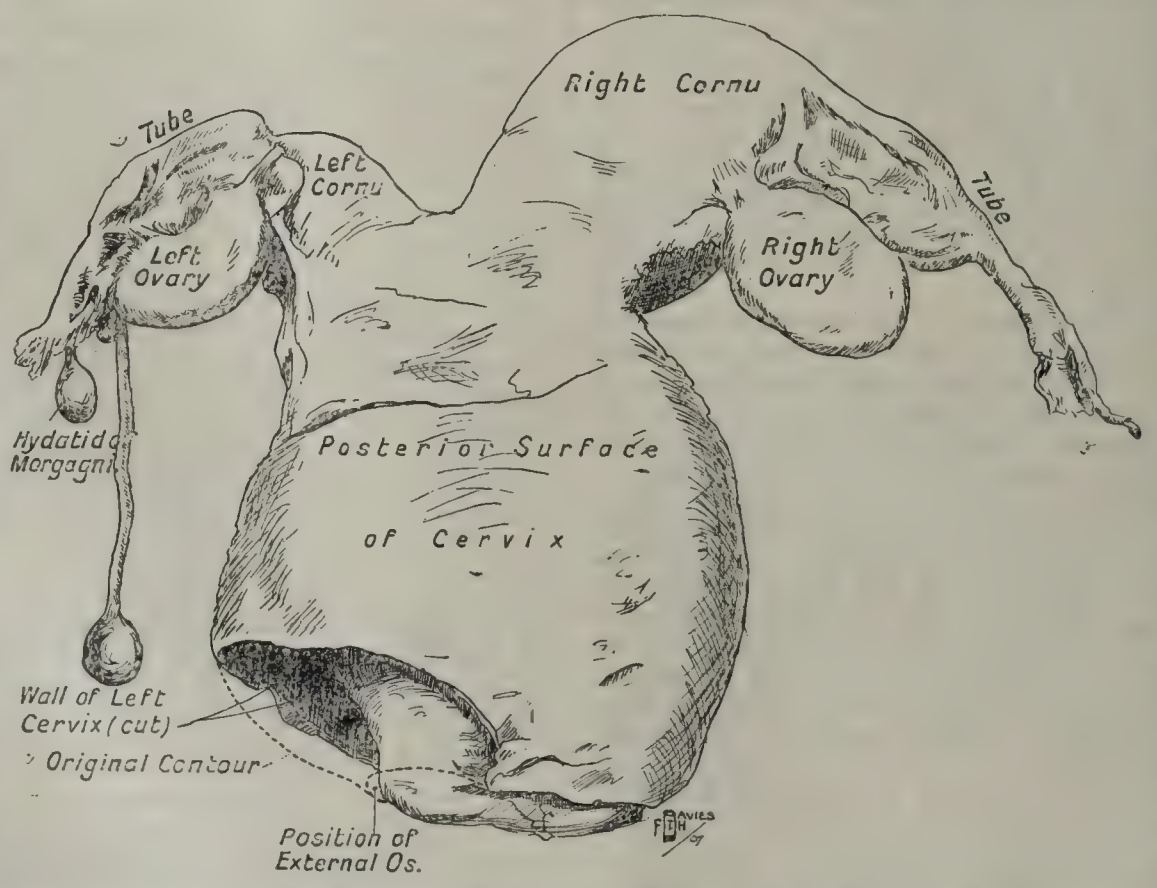
(Reported by G. P. MILLS, M.B., B.S.Lond., House-Surgeon.)

THE patient in this case, a girl aged 16, was admitted as an emergency case with acute abdominal pain, thought to be due to appendicitis.

History.—She was perfectly healthy until she began to menstruate four months previously. There was then slight pain in the lower part of the abdomen and a free loss. She had menstruated regularly every twenty-eight days since; the flow had always been considerable, but there had been increased pain on each occasion. At her fourth period the pain was so severe as to cause faintness, and she was in bed for a few days. The fifth period began thirteen days before admission, and the pain was so severe that she was immediately confined to bed, where she had remained ever since. Besides the abdominal pain she had a "shooting pain down the back passage." The pain was continuous, but varied in severity, and was usually worse at night. She vomited twice when the pain commenced (thirteen days ago), but had not done so since. Her bowels had only been opened once since the pain began.

Condition on Admission.—She was a healthy-looking girl of good complexion, but poor muscular development. The secondary sexual characteristics were just developing. She had no pain, and did not appear to be acutely ill. The temperature was 98.4°. Pulse 76, good in volume and force, and respirations 24. The tongue was clean and moist. The abdomen was not distended, was quite soft, and moved on respiration. An oval swelling about the size of a hen's egg was detected in the right iliac fossa. Its long axis was horizontal, and it was smooth and clearly defined. It could be moved easily about 1 in. up and down, but there was no movement laterally. It was hardly at all tender. On examination by the rectum a smooth rounded mass was found pressing from before backwards, rendering passage of the finger difficult. It was about the size of a cocoanut, and felt like a tense but elastic bag of fluid. It was not particularly tender, could not be felt from the abdomen, but appeared to be continuous with the tumour in the right iliac fossa. The hymen was intact, but perforate, and a large mass could be seen bulging down into the vagina. The vagina was examined under anaesthesia; the cervix uteri was found rather to the left of the middle line and continuous with the tumour, from which the uterus likewise seemed inseparable. The external os was crescentic in shape, the posterior end of the crescent being median in position, and the other end curving outwards and forwards from it. The pelvic and abdominal tumours were felt to be obviously continuous. A diagnosis of unilateral haematometra with right haematosalpinx was made.

Operation.—Laparotomy was undertaken by Dr. Thomas Wilson, an incision being made from the umbilicus to the pubes and the pelvis explored. There was found to be a uterus bicornis duplex and a right haematometra, owing to absence of an external os in connexion with the right horn. The tumour felt in the right iliac fossa was this right horn distended by its menstrual contents, but there was no haematosalpinx. An attempt was made to remove only this distended horn; but it failed owing to distortion of the parts by the tumour; hence the whole double uterus was removed.



Result. — The patient made an uneventful recovery, and left hospital twenty-one days after the operation.

REMARKS.—The drawing of the specimen here shown, which was made after its removal, shows the condition of the parts. The right horn now, of course, is much smaller relatively than at the time of operation. I desire to thank Mr. Heaton and Dr. Thomas Wilson, under whose care the patient was, for their permission to publish these notes, and to Dr. Davies for kindly making a drawing of the specimen.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

ULSTER BRANCH.

Belfast, Wednesday, November 13th, 1907.

H. T. A. Warnock, F.R.C.S.I., in the Chair.

President's Address.—The President took for the subject of his inaugural address Irish Health Resorts. He made some preliminary remarks about tuberculosis, pointing out that the cause of its prevalence and the corresponding high rate of its mortality in Ireland, as compared with England and Scotland, had not been satisfactorily accounted for. A good deal had been heard about bad food, bad drink, badly built and badly-ventilated houses, etc., but to his mind the chief causes of this unhappy prevalence of the disease were, first, the emigration of the constitutionally sound, and, secondly, the unsuitable food—not the bad or insufficient food—upon which the bulk of the people subsisted; their bodies in consequence, as compared with those of their neighbours across the Channel, whose dietary was different, were so poorly nourished that they were unable to resist the attacks of the destructive microbe. Accordingly, he was inclined to attribute the high death-rate from this cause partly to such greater prevalence of predisposing conditions, and partly to the return to their old homes in this country of those who had emigrated and contracted the disease elsewhere. With regard to this point he could speak from experience, and he was sure that most of those present could do the same. Some of the recent speakers and writers upon this subject had blamed the Irish climate, and while Professor Osler and others had spoken favourably of it, some had not done so, and had laid stress upon its variability, its dampness, its harsh and biting north-east winds, its moist and relaxing south-west winds, and so on; but if there was one thing of which their beautiful if distressful country might be proud, it was her climate—the finest and most equable in the world, except, perhaps, those of Singapore and New Zealand, which were both too far away to compete with them. Moreover, as the topic of home industries was so much in the air, he should like to say something upon the subject of Ireland as a health resert. The President proceeded: While the British Isles are situated in the third zone of surface, or between the lines of 68° for the whole year and 32° for the coldest month, we find that the isothermal line which passes through the North of Ireland passes south of London, and that the corresponding line which passes through Kerry actually passes south of Constantinople, thus showing how much more favourably situated we are than either Great Britain or much of the Continent of Europe. With regard to rainfall, while, of course, the amount varies widely in different parts of the country, it occupies on the whole an intermediate position between England and Scotland, the mean rainfall of the former being 33 85 in., and of the latter 47.65 in. as against 38.27 in. in Ireland. I may add that I am quoting from Mill's return of last year. With regard to sunshine, we have not been able to secure any accurate records; but, speaking roughly, we have about the average amount for a temperate climate. The prevailing winds are north-east and south-west, the latter sometimes boisterous but never cold, the former never so trying as they are in Scotland and England. We have no elevated plateaus, it is true, but we have innumerable seaside and some inland health resorts. It would occupy too much time to describe all these, or indeed any one of them in detail, but we will just glance at the most striking features of a few of them, which we may take to be more or less typical of the remainder. Beginning with the district of Kingstown, Killiney, Greystones, and Bray, we find there a mild, dry, winter climate, comparing favourably with those of Ventnor and Hastings, the mean winter temperature being 44 3° and the mean annual rainfall under 25 in. Farther south we come to Tramore in Waterford with its magnificent stretch of sandy beach extending over three miles; and farther south still to Queenstown, which is too well known to require description, and has long been recognized as a suitable winter health resort. It is beautifully situated in the midst of most magnificent scenery, is comparatively dry, having a rainfall of only 33 in., with a mean winter temperature of 44°, and a spring temperature of 50°, and it is well protected from north and east winds. What has been said of Queenstown may with equal truth be stated of Glandore, Glengarriff, and Parknasilla, with the addition that in their case the scenery is, if possible, more varied and more beautiful, the rainfall being somewhat greater. Kilkee, on the coast of Clare, has a bracing air, possesses a fine strand, and affords excellent bathing. We now pass on by Miltown, Malby, Achill, Mullarany, and Westport, all surrounded by the most charming and varied scenery, and come to Bundoran, which is to the north very much what Kilkee is to the south. Here the air is very bracing, and the bathing is good, while of recent years accommodation and sanitation have been materially improved. It possesses a good water supply, and has a newly-constructed sewerage system. There are in it good hotels, amongst them the Great Northern, situated on a hill overlooking the sea, having golf links, tennis courts, and bowling greens attached to it, and commanding a splendid view of the Leitrim, Sligo, and Donegal mountains. A little north of Bundoran is Rossnowlagh, with its long, hard, sandy beach, a place which, owing to the extension of the Donegal railway, is becoming every year a more favourite resort. Then we have Donegal, Killybegs, Carrick, Malinmore, Ardara, Portnoo, Burton Port, Gweedore, Dunfanaghy, where the late Dr. W. M. Smyth, whose portrait—thanks to the munificent donor of this institute, Sir William Whitla—adorns the beautifully artistic memorial window, lived, laboured, and was beloved: Rosapenna, Port Salon, Buncrana, and Moville, all well situated, and all surrounded by magnificent scenery. They are all, moreover, mild in winter, and are more or less protected from the east winds in spring, while each of them possesses its own particular attraction. Donegal has its sulphur spa; Killybegs has its magnificent harbour; Carrick, Ardara, Burton Port, and Gweedore have their excellent fishing; Dunfanaghy has its cliffs; Portnoo, Rosapenna, Port Salon, and Buncrana, in addition to their natural beauties, have their popular golf links; Portrush offers bracing air, good bathing, golf, and its neighbouring geological freak, the Giant's Causeway. Nor must I omit Bangor, practically a suburb of Belfast, and those beautifully situated villages, Newcastle, Kilkeel, Warrenpoint, and Rostrevor, to the last of which I send my patients when the Donegal breezes become too strong for them. It will thus be seen from this hurried survey that we have a great variety not alone of picturesque scenery and of outdoor amusements, but also of climatic conditions—from the dry, clear, inspiring air of Kingstown and its vicinity, situated near enough to Dublin to enable its residents and visitors to enjoy the attractions of the metropolis, to the soft, soothing, and balmy air of Queenstown and Glengarriff, through the ever-attractive and bracing, arbutus-growing Killarney to Kilkee, through wild Connemara, with its comfortable hotels, and with its lakes and streams filled with fish, to the more bracing Bundoran, through the grand and majestic highlands of Donegal to the still more bracing Portrush, and back to Belfast, the busy centre of those highly developed and ever-improving industries, of which Ireland may well feel proud, fortunate in being situated close to that ozone-charged coast line "where the mountains of Mourne roll down to the sea."

Unfortunately in Ireland we are not rich in spas, and the few of which we can boast are so badly developed that it seems as if we did not ever deserve to have more. Lisdoonvarna possesses both sulphuretted and weak chalybeate waters. The sulphuretted water contains:

	Grains per Gallon.
Potassium chloride	0.399
Soda carb.	7 161
Sodium chloride	3 108
Zinc carb.	6 125
Magnes. carb.	4 027
Magnes. sulph.	0 420
Silica	0 952
Lithium	Traces

Sulphuretted hydrogen, 5 553 c.cm. per litre.

Lucan is beautifully situated near Dublin, with a good hotel in which baths are fitted up. The waters are care-

fully bottled and sold to the public, and there seems to be a growing demand for them.

Analysis by Professor Reynolds.

	Grains per 1,000 Parts of Water.
Calcium	3 272
Magnesium	1.433
Sodium	13 495
Potassium	1.675
Lithium	Traces
Alumina with traces of iron ...	1 008
Carbonic acid	38 101
Sulphuric acid	5.534
Chlorine with traces of Iodine ...	4 830
Sulphur or alkaline sulphydrate ...	0.380
Silica	1.105

Lucan Spa.

Sulphuretted hydrogen ... 8.17 c.cm. per litre
Carbon dioxide ... ... 41.60 ,, ,,
Sulphuretted hydrogen ... 2.71 in. per gallon, according to Sir C. Cameron.

Ballynahinch, situated within seventeen miles of Belfast, possesses a valuable water, rich in gaseous constituents, and yielding on analysis per 1,000 parts of water (Dr. Andrews):

Bicarbonate of calcium	0 1049
Bicarbonate of magnesium	0.4620
Sulphate of magnesium	0 0175
Chloride of magnesium	0 0037
Chloride of sodium	0.0163
Sulphide of potassium	0 0044
Sulphide of sodium	0 0012
Silica	0 0012
Organic matter	0.1042
Sulphuretted hydrogen ...	3.35 in 1,000 volumes
Carbonic acid	70.00 ,,
Nitrogen	19.50 ,,

Donegal Spa was at one time so famous that the former owner built a house over it, and also brought two handsome white marble baths from Italy, which were in regular use until about forty years ago, the water being artificially heated. The water itself is of much the same character as that of Lucan, Lisdoonvarna, and of the Old Sulphur Well at Harrogate, but, according to Sir C. Cameron, it is richer in lithia and sulphuretted hydrogen, containing as much as 8.29 in. of the latter per gallon. There are several other spas of a weaker nature—namely, Swanlinbar, Tralee, Castleconnell, and the warm spring of Mallow (temperature 70°), the only warm spring in Ireland.

Mallow.

Hydrochloric acid ...	0.17 in 1,000 volumes
Sulphuric acid	0 18 ,,
Lime	0.77 ,,
Soda	0.29 ,,
Carbonic acid	0.60 ,,

It was found to contain 93.5 parts of nitrogen and 6.5 oxygen.

The best-known and most largely-frequented sulphuretted spa in England is Harrogate, and the water of the Old Sulphur Well there yields on analysis:

	Grains per Gallon.
Potassium chloride	64.701
Sodium chloride...	806.180
Sodium sulphide	15.479
Lime carbonate	12.375
Lime sulphate	0 082
Calcium chloride	81.735
Magnesium chloride	55.693
Silica	0 246

Sulphuretted hydrogen 0 581 in. per gallon.

It will thus be seen that while this water is richer than ours in some salts—namely, the chlorides of potassium, sodium, calcium, and magnesium—it is poorer in others, notably in the carbonate of soda and in the carbonate and sulphate of magnesia, and also that it is much poorer in sulphuretted hydrogen. The relative amounts of this gas contained in the waters mentioned being

Harrogate (Old Well) ...	0 531 in. per gallon
Lucan	2 78 ,,
Lisdoonvarna	1 48 ,,
Ballynahinch	2.55 ,,
Donegal	8 29 ,,

A vote of thanks to Dr. Warnock was moved by Mr. FULLERTON, seconded by Sir JOHN BYERS, and passed by acclamation.

Triple Pregnancy.—Dr. MARION ANDREWS reported a case of triple pregnancy prolonged to the forty-second week, with single placenta and three sets of membranes.

The patient was a primigravida, aged 37, with a tuberculous family history, and a personal history pointing to Graves's disease two years previously. Her last period ended on April 19th, but labour, instead of coming on about January 24th, did not begin till thirteen days later—that is, on February 6th. Three male children were born dead. The placenta was adherent over its whole surface, and had to be removed manually. It was then found to be single, with three cords and three separate membranes, pointing to a uniovular origin. Pregnancy, except for the extreme distension, and the puerperium were practically normal.

Operation for Ovarian Cysts during Pregnancy.—Dr. MARION ANDREWS also related a case of operation for ovarian cyst during pregnancy on a patient who had had a kidney removed during a preceding pregnancy.

The patient, aged 32 years, had had her right kidney removed on account of haemorrhage during an attempt at fixation four years previously while in the fourth month of her fifth pregnancy. She went to term, and had had three full-time children since without suffering any inconvenience. She was pregnant for the ninth time when I first saw her, with a large cyst on the right side. I removed this, and although she maintained she was only in the seventh month of her pregnancy, a full-time male child was born four days later. Both mother and child left hospital well a month later.

Tuberculous Kidney.—Mr. ANDREW FULLERTON showed three tuberculous kidneys illustrating the use of the catheterizing cystoscope, and read notes of the cases from which the specimens were removed. The first case was that of a gentleman aged 47 years who had suffered for twenty years from tachycardia, which he attributed to dyspepsia. His medical adviser attributed his infection with tubercle to the low diet used in the hope of combating the tachycardia. The symptoms were pain in the right lumbar region, which disappeared for weeks at a time; frequency of micturition was only present, and then to a slight degree, when the pain was on. The ureters were catheterized, and it was found that the urine from the right side was pale, and contained pus and tubercle bacilli, while that from the left was of good specific gravity, and free from albumen and pus. The bladder was unaffected except in the neighbourhood of the right ureter, where redness and small polypoid excrescences marked the position of the flow of irritating urine. The kidney, which was small, was removed, and was found to be in an early stage of tuberculosis. The pelvis and ureter were not enlarged or thickened; small ulcers were easily seen on these parts. The apices of the pyramids were eroded, and replaced by carious material, which also occurred in other areas throughout the substance of the organ. Numerous small tubercles were scattered over the exterior of the organ, and on section it was seen that the tuberculous process was more marked at the poles. The patient made a good recovery, but a month later the track of the drain tube, which had healed, broke down and became a sinus. This was scraped. A few weeks later the patient developed tuberculous epididymitis, which necessitated the removal of the right testicle. Complete recovery, has, however, taken place, and patient is in excellent health at present. The second case was that of an apparently robust woman aged 36, who came to hospital suffering from what was supposed to be a floating kidney in the right side. The organ was found to be freely movable and somewhat enlarged. The patient complained of very little pain and no frequency. She stated that the urine scalded during micturition. The ureters were catheterized, and the bladder examined with the cystoscope. The right orifice was dilated, and there was a good deal of dull redness around. Urine came in drops, with no propulsive force from the right side. On the left the efflux was normal, and the ureteral meatus healthy. The urine from the right side was alkaline, specific gravity 1005, and contained pus and albumen. That from the left had a specific gravity of 1015, was acid in reaction, and contained neither albumen nor pus. A trifoliate ulcer was seen behind and to the outside of the left or presumably healthy orifice. A few weeks later a number of ulcers had appeared in the trigone and posterior wall of the bladder. These were typical tuberculous ulcers. No tubercle bacilli were found. The right kidney was removed, and the patient made an uneventful recovery. She was examined four months later, and all

the ulcers seen at the previous cystoscopy had disappeared. She had had since the operation tuberculin injections. She remained in perfect health so far. The kidney was a stage further advanced than that of No. 1. The ureter was considerably thickened; more erosion had occurred. There were separate abscesses filled with caseous material in the substance of the kidney, and pyonephrosis was present to a slight degree. Case III was a young lady, aged about 25, who had no urinary symptoms except smarting during micturition. She had lost a little flesh, and was languid and "seedy." There was no frequency. The right kidney could be felt. The cystoscope showed dull redness around a dilated right ureteric orifice, but an otherwise healthy bladder. The urine from the right side was slightly acid, specific gravity 1005, and contained pus, albumen, and tubercle bacilli. That from the left was acid, specific gravity 1020, and contained neither albumen nor pus. Tuberculin injections were used at regular intervals by Dr. Houston for four months. At the end of that time she was again cystoscoped, when it was found that the disease had made considerable progress, red patchy areas having appeared towards the apex of the bladder on the right side. The kidney was removed, and showed marked pyonephrosis. The ureter was much thickened, and the whole organ was considerably enlarged. The patient made a good recovery, except for the track of the drainage tube, which became a tuberculous sinus, necessitating curettage. She still has slight smarting during micturition, but has put on nearly 1 st. in weight, and is in better health than for years previously. She was cystoscoped six months after the operation, and a few discrete tubercles were to be seen at the apex of the bladder. All these patients have been treated since the operation with tuberculin after careful observation of the opsonic index. According to Mr. Fullerton, the lessons to be learnt from this and similar cases are as follows:—(1) A patient may be suffering from tubercle of the kidney and yet appear in robust health. (2) The injection of tuberculin will probably not stay the disease unless the offending organ be removed. (3) The drainage tube is a source of danger; although the tube was only kept in position for forty-eight hours in Case I the track broke down and became a sinus. The same thing occurred in Case III. (4) It is possible that curettage may disseminate the disease. In Case I the testicle became affected a few weeks after this procedure, and the disease did not apparently extend down along the vas deferens. (5) That well-marked tuberculous ulcers can and do heal if suitable treatment be carried out early. (6) That the prognosis of tuberculous disease of the urinary organs is not so hopeless as it formerly was since the introduction of the cystoscope for diagnosis and the surgeon's art with the assistance of the pathologist for treatment. Professor Sinclair, while admitting the great value of this method of diagnosis, was not inclined to agree that every tuberculous kidney should be at once removed, but would generally prefer to try constitutional treatment first for a time.

Radical Cure of Hernia.—Dr. Thompson (Omagh) read a short paper on a new method of performing a permanent cure in cases of inguinal femoral hernia. In the past five years he had operated on about 40 cases without a fatal result, but with a return of the inconvenience in some instances. He had noticed that the same result followed the operation by other surgeons, and he believed the cause was largely due to an error in the operation. He advocated the non-anchoring of the sac stump, and stated that in all his recent operations he returned the stump after operation through the distal wound and into the abdomen, closing the pillars of the ring in the usual way. He also cut the sac right across within about 1 in. of the ring, leaving the lower portion in the canal to the side of which it was sutured. This method of operating simplified the proceeding very considerably, and seemed to him to give much better results. Anchoring the stump was a clumsy and unnecessary proceeding, and clearly tended to increase the danger of a hernial relapse. Cutting through the sac, also, close to the ring greatly lessened the trouble connected with its separation, and was in every way, he thought, advantageous and to be commended. Professor Sinclair favourably criticized Dr. Thompson's suggestions, but feared that by leaving the lower portion of the sac in the wound a hydrocele might be developed within it. He agreed in the advantage in certain cases of returning the cut stump of the sac within the abdomen, but was not sure that the change proposed in the operation would be always successful. He, however, considered the suggestions valuable and worthy of careful trial.

Neuro-Paralytic Keratitis.—Dr. Cecil Shaw showed two cases of neuro-paralytic keratitis. In one case the patient, a woman of 48, gave a history of five years' constant suffering from severe neuralgia on that side of the face before the cornea was involved. The other patient, a man of 32, had suffered from some obscure nerve lesion causing weakness of the leg on the same side.

Adenoids in Eye Disease.—Dr. Killen drew attention to the necessity of examining the nose and throat in eye patients. He had observed frequently symptoms of asthenopia, especially accommodative asthenopia, in children and young people of school age to be associated with plugging of the nasopharynx with adenoids. Some of the cases showed no error of refraction, yet the patient held his book as close in reading as a myope of high degree, and soon became too tired to continue his lesson. Other cases had errors of refraction with eye symptoms out of all proportion to the ametropia, the patients being usually otherwise in perfect health. He would be glad to know of the experience of other oculists in regard to adenoids and eye troubles, and would advise an examination of the naso-pharynx in obscure cases of ciliary spasm and paresis and of muscular troubles of the eyes in children. As a rule, the symptoms disappeared after removal of the adenoids. He examined all suggestive cases with his fingers, and was astonished how many had adenoids.

Tuberculous Tumour of Iris.—Dr. Killen also showed a case of large tuberculous tumour of the iris, the diagnosis of which was unquestioned by a number of very experienced oculists—in fact, by all who had examined the case at a meeting of a medical society some months ago. The patient was a young man of 18, and the case had been under treatment for one year by Dr. R. C. McCullagh and the exhibitor. At one time the single tumour involved two-fifths of the iris and anterior chamber, and there were small grey nodules in the iris above it. During the last few months, under tonics and cod-liver oil, the small nodules had quite disappeared, and the large tumour, which at one time threatened to perforate the sclero-corneal junction, had gradually become smaller, and the remains of it appeared now to be represented by a little scar tissue. Mr. Cunningham and Dr. Cecil Shaw made remarks on their experience of these cases.

Notes of Cases.—Dr. Calwell read notes of a case of Stokes-Adams disease, and showed specimens and tracings. Dr. W. J. Maguire read notes of a case of sudden death in a child, the result of the status lymphaticus, and described the *post-mortem* findings. Mr. Robert Campbell read a note on the treatment of acute intestinal obstruction. Mr. Fullerton and Dr. A. B. Mitchell criticized his remarks.

BIRMINGHAM BRANCH.

At the second meeting of the Birmingham Branch, held on November 14th, Dr. Simon, President, in the chair, Mr. Jameson Evans showed a series of cases in which the lacrymal sac had been removed for purulent and tuberculous dacryocystitis. In two cases the operation had been undertaken as a prophylactic measure against ulceration of the cornea and as a preliminary to cataract extraction. The insignificance of the amount of lacrymal secretion after removal of the lacrymal sac was a notable feature in all the cases. Dr. Arthur Loxton showed two cases of inveterate acne which had been successfully treated with Wright's antistaphylococcal vaccine. In the one there had been, in addition to the ordinary acne pustules, a livid swelling the size of a split pencil nearly an inch long across each cheek. These swellings consisted of granulation tissue, and on puncture yielded only a thin serum. The acne pustules had disappeared and the livid wheals had flattened down to the level of the cheek. The second case had shown originally a large number of small abscesses of the skin of the size of small hazel nuts. For two years all varieties of treatment had been adopted without benefit. From the time of the first injections improvement was manifest, except when the patient suffered from a sharp attack of influenza, when a relapse occurred. Treatment in each case consisted of injection of ½ c.cm. to 2 c.cm. of mixed dead staphylococcal vaccine as obtained from the Lister Institute, repeated every fifteen days. About sixteen injections were

employed in each case. No estimate of the opsonic index was made. Dr. LOXTON expressed the opinion that for cases of superficial staphylococcal infection such as acne, sycosis, furuncle, it was not necessary to estimate the index. If treatment were commenced with small doses and the cases watched no serious accident could occur. If other observers were of the same opinion the field of usefulness for this method of treatment would be considerably extended. Dr. Loxton advocated concurrent antiseborrhoeic treatment, because if the current views of the pathology of acne were correct the inoculation with vaccine could not be expected to remove the comedones. Dr. T. SYDNEY SHORT read a paper on atonic dilatation of the stomach.

REPORTS OF SOCIETIES.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Dr. E. H. TWEEDY, President, in the Chair.

Friday, November 15th, 1907.

PRESIDENT'S ADDRESS.

DR. HASTINGS TWEEDY, after some preliminary remarks, said the Section had not of late years received the support it deserved, and seemed to lack the vitality of the past. He did not think the explanation was to be found in gynaecology having lost power to interest, or that as an art it had made no appreciable advance within the last decade. As instances of the radical changes effected within the last four years, he said rubber gloves were now universally worn not alone in abdominal but also in vaginal operations. The rinsing of the cleansed hand in methylated spirit, and the partial filling of the gloves with similar fluid enabled them to be readily slipped on, and secured an almost aseptic condition of their contained fluid contents, even after they had been worn during a two-hours' operation; thus injury to the glove was not fraught with fear of septic infection through oozing of its fluid contents. Much of the elaborate ritual formerly considered necessary in hand washing was now superfluous. Skin maceration in the neighbourhood of the field of operation was prevented by painting the surface over with a saturated solution of picric acid in spirit. This solution was also of great use when applied to papillary erosions of the less chronic type. In vaginal surgery the field of operation had been rendered more sterile by the clipping of a strip of boiled Bilroth tissue across the perineum to shut off the anal region, whilst the bags which enclosed the legs were now connected with an abdominal apron which prevented the operator's hands being contaminated in the event of his having to pause in the midst of an operation to make a bimanual examination. The large semilunar incision of Strassman provided a rapid and ready method of separating the bladder from the cervix, and performing extensive operations through this route. For vaginal fixation the older T-shaped incision was to be preferred, but here again an improved technique was adopted in that the peritoneum was now insinuated between the vaginal wall and the fixing sutures of the uterus. The technique for the cure of cystoceles and rectoceles had been much improved—in the former by tucking up the bladder and rolling it inwards on itself with fixing catgut sutures, and in the latter by joining again the fibres of the levator muscle and pelvic fascia. The vaginal operation for cancer of the uterus was much more extensive than formerly. Pus tubes were dealt with in a way that almost ensured a safe recovery. If very acute the abscess could be opened by entering the abdomen through the posterior fornix, and directly draining through this hole. If a relapse took place the pus was rendered less septic, and the case might be considered alone amenable to the more radical operative procedures. In this eventuality he strongly advised the splitting of the uterus in two halves, the insertion of the whole hand into the abdominal cavity, the breaking down of adhesions, and the forcible dragging out of the diseased tube with its attached half of the uterus, the clamping of the tubes outside the vulva, the pushing the clamps into the abdomen, and the insertion of iodoform gauze between them (Landau's operation). Atmocausis had enabled many haemorrhagic cases to be cured that formerly would have required removal of the uterus. Through the abdominal route pus tubes could be removed with greater safety than formerly by the plan of splitting the uterus down the centre, and removing them together with that organ. Tubes affected with interstitial salpingitis were resected and their lumens made patent. Ovaries were freely resected rather than sacrificed. Raw surfaces were covered over with peritoneum. It was now a matter of indifference (so far as the primary operation was concerned) as to whether the uterus was removed with or without its cervix. Both operations had become easy and safe in their performance, whilst unpleasant after-symptoms had been obviated by the non-removal of the ovaries. In spite of this advance the operation was less often done than formerly because of the advantages offered by myomectomy as now performed. The uterus could be split in two halves, the myomas enucleated from its walls, and the organ again stitched up after the manner which obtained in Caesarean section. Operative treatment for cancer of the uterus had been revolutionized. Formerly, if the organ was fixed, could not be readily pulled down, or had its cervix badly eroded, surgical relief was unobtainable. It was pleasant to contemplate that gynaecologists were no longer deterred from relieving the suffering woman, even though prolonged immunity from the disease could not be promised. The three-layer method of suturing the abdomen had made it possible to operate without any fear of a subsequent hernial formation, and the subcuticular skin suture threaded through a leaden plate placed on the wound throughout its entire length had made scar deformity a negligible factor. Antistreptococcus serum (polyvalent variety), if administered in suspected cases before symptoms developed, provided a prophylactic agent against many forms of sepsis. Fowler's position, too, was employed from the first in these cases, and Mr. Moynihan's enthusiastic advocacy of continuous rectal irrigation on the appearance of the earliest symptoms of abdominal sepsis had in all likelihood provided another valuable therapeutic agent. He concluded by trusting he had shown that gynaecology had not stood still, but that its advance had been as great in recent years as throughout any period of its existence.

EXHIBITS.

Dr. ALFRED SMITH exhibited two fibro-myomatous uteri with ovarian cyst attached. One generally associated with fibroid tumours of the uterus, he said, certain degenerations of the ovary, but he did not think he had seen—certainly not in two consecutive cases like those exhibited—ovarian cystomas associated with fibroid tumour. The PRESIDENT said there was no reason why a cyst should not grow in a woman who was already afflicted with myoma, yet he did not remember ever having seen them attached before. Dr. PUREFOY said that a few weeks ago he had removed a dermoid cyst with which was associated a fibroid uterus. On the suggestion of Dr. ROWLETTE, one of the tumours exhibited was opened, and proved to be a dermoid.

The PRESIDENT exhibited a uterus removed by Wertheim's operation in which the amount of adjoining tissue taken away was greater than any he had ever seen. Wertheim said the ureter should not be disturbed from its bed. In at least one-third of his (Dr. Tweedy's) cases the cancer had got below the ureter, which had to be lifted in order to dig the cancer out. It was becoming a common thing with him to put a bullet forceps under the ureter and then to lift it up with the forceps while he took away the cellular tissue beneath. He had frequently had the ureter lying out of its bed through its whole extent, and yet he had never had a leakage or a fistula, which showed that there was a great deal too much respect paid to the ureter.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

The Nature of Epilepsy.

AT a meeting on November 26th, Dr. S. J. GEE, President, in the chair, Dr. A. E. RUSSELL read a paper on *Epilepsy*, in which it was submitted that the old theory, that epileptic and many other convulsive attacks were explicable on the hypothesis of a sudden failure of the cerebral circulation, was worthy of reconsideration.

That such a failure was competent to produce unconsciousness and convulsions had been proved experimentally by Kussmaul, Tenner, and many others, while the phenomena of Stokes-Adams disease and heart-block afforded clinical evidence in the same direction. Evidence of such failure in epilepsy was scanty, but indisputable cases were on record in which the heart underwent transient arrest, and cases were also brought forward in the paper. Opportunities of making observations were scanty, because it was impossible to predict when a fit might occur, and because the period of cardiac inhibition was of necessity very short. An attack of ordinary syncope (faint) offered both analogies and contrasts to the epileptic fit. Intermediate cases occurred in which it was difficult or impossible to make a diagnosis. The causation of cardiac inhibition in epilepsy might be sought in the marked vasomotor and cardiomotor instability, which was a feature of the disease. Cases were quoted in which both vagal and vasomotor symptoms were combined. The similarity between infantile convulsions and epilepsy was very marked. It was submitted that the same explanation held good for them, and it was noteworthy that the cardiac and vasomotor systems in the child were very sensitive, as seen, for instance, in the phenomena of fright. On the hypothesis of cardiac inhibition as the precipitating factor of the fit, recovery followed on the escape of the heart from inhibition. If the hypothesis was correct it should afford a satisfactory explanation of the various phases of the fit, and it was submitted that this was the case. Evidence was brought forward to show that the cerebral manifestations of uraemia might be due to a condition of increased intracranial tension, with resulting cerebral anaemia. The difficulty of correlating cerebral anaemia with Jacksonian epilepsy was discussed. Evidence that cerebral anaemia existed both in status epilepticus and in the epileptiform seizures of general paralysis was advanced. Dr. Ferrier said that cerebral anaemia, by causing nutritional disturbance, might produce epileptiform convulsions had no doubt been established. It was long ago observed that there was spasm of the vessels associated with the epileptic fit although the heart might go on regularly. The vasomotor regulation of the brain was very rudimentary, variations in it were passive conversely with those of the skin, and evidence went to show that vasomotor spasm of the surface would probably produce flushing of the brain. Stoppage of the heart was probably merely a sign that the epileptic fit had begun. If the heart inhibition were an essential factor there would probably be a more definite relation between heart disease and epilepsy. Tumour of the brain might be the cause of ordinary epileptic attacks. In the irritability of the brain due to artificial stimulation there was rather hyperaemia than anaemia of the cortex associated with the epileptic irritability. As to uraemic convulsions, was it not probable that the essential element in them was a toxic effect, as in absinthe epilepsy? The essential factor in epilepsy must be a defective nutrition of the brain cortex. Dr. C. E. Beevor said although fits could be produced by artificially producing cerebral anaemia, he did not think that all epileptic fits were due to such a cause. An epileptic fit might be produced by strong electrical stimulation of the brain cortex, and in this case the heart was not affected. Similarly, in the fits without loss of consciousness from tumour of the brain the heart could not be implicated; as the tumour grew there might be loss of consciousness, as in an ordinary epileptic fit, but still due to the tumour. In *petit mal* the loss of consciousness did not cause the patient to fall, hence it could hardly be due to cardiac inhibition. The disease must be due to some irritation of the cortex, and the cortex in epileptics must itself be superexcitable. Experimentally this superexcitability was easily produced by prolonged stimulation. He could not agree that the heart was the source of the epileptic state. Dr. Gossage also held that cerebral anaemia could not be a cause in all cases, and thought cerebral congestion was sometimes a cause of epileptiform seizures. In the case of fits due to cerebral anaemia, as in bradycardia, a considerable time must be required, say twenty seconds, and such an interval would make the evidence of cardiac inhibition conspicuous, and yet an arrest of fifteen seconds might occur without a fit. Dr. Biernacki, arguing from the point of infectious diseases, thought that the syncopal state in children was sometimes associated with the onset of convulsions, but much cardiac failure might occur without loss of consciousness. Dr. Lindsay Steven considered vasomotor spasm was a factor in the causation of epilepsy that had not been sufficiently considered. Dr. E. F. Buzzard pointed out that in the cases of brain disease associated with vasomotor spasm that had been brought forward there were no convulsions. Dr. Russell replied.

Obstetrical and Gynaecological Section.

Pubiotomy.

At a meeting on November 14th, Dr. Herbert Spencer, President, in the chair, Dr. Thomas Wilson, in a paper on *Pubiotomy*, said that in the intermediate degrees of pelvic contraction with a conjugate diameter between 2¾ and 3½ in., efforts to obtain a living child had been made by the induction of premature labour, and by some method of widening the bony pelvis. The most favourable large statistics of the results of induction of premature labour showed that not more than 50 per cent. of the children so born were alive at the end of the first year. In this country symphysiotomy had never come into general favour, in spite of the improved subcutaneous method described by Herman at the Obstetrical Society in 1901. The division of the symphysis endangered many important structures, including the bladder and urethra, as well as the important plexuses of veins in the neighbourhood. As an alternative, division of the pubic bone by means of a wire saw was first recommended in modern times by Gigli in 1893. Following on his recommendation the operation had been put into practice on the Continent in a large number of cases, with results on the whole very satisfactory. Two methods of performing the operation had been devised, the open and the subcutaneous, of which the latter was by far preferable. Pubiotomy appeared to present all the advantages claimed for symphysiotomy, while avoiding some of its more serious disadvantages. Haemorrhage was less in the former operation, and the danger to the bladder, and especially to the urethra, was diminished. With an equal degree of separation of the bones, the amount of widening of the pelvis had been proved to be the same in each operation, and the indications for employment were the same in both. The President said he had no personal experience of pubiotomy or of symphysiotomy, preferring the alternative operations of induction of labour and Caesarean section. He thought that Dr. Wilson had not sufficiently emphasized the dangers of the operation. Injuries of the bladder and vagina and thrombosis were not uncommon accompaniments, and if not fatal, involved considerable risk. He did not think a rest of sixteen days in bed was sufficient for the proper consolidation of the bone. Dr. Wilson's case occurred in a patient with a pelvis of almost normal size, and though he did not question the justifiability of the operation in this case, the special dangers of laceration of the vagina would be much greater when the pelvis was considerably contracted. Operators seemed to be divided in opinion upon the question of immediate or deferred delivery; but he thought it would be unjustifiable to submit a patient to the pains of labour after the bone had been divided unless she were kept continuously under an anaesthetic, which itself involved risk. Although the mortality of pubiotomy was not high, it probably was at least as high as induction of labour and Caesarean section, and involved dangers which appeared to be unavoidable, and disabilities to the mother, which were not met with in the alternative operations. Dr. Macnaughton-Jones said that, like the President, he had never had recourse to symphysiotomy. At Heidelberg Professor v. Rosthorn had given him the details of a case in which uncontrollable and fatal haemorrhage had occurred after pubiotomy. When he was in Freiburg in 1906, Professor v. Krönig had performed 30 cases without a death, and had lost two children. On the other hand, Franqué, up to March, 1905, had operated 43 times, with 12 deaths and the loss of three children. Dr. Griffith referred to the great difficulty there was in discussing and comparing records of the operations of pubiotomy and symphysiotomy, owing to the different views held by different operators as to the condition which justified the operation. His own experience was confined to symphysiotomy, and he was of opinion that pubiotomy presented no real advantage, while symphysiotomy was

simple and required no special instruments. The difficulties, in his opinion, were not in the operation but in the proper choice of cases for which it was suitable. Those operators who, like the late Dr. Varnier, declined to use forceps, premature induction of labour, and any other means than symphysiotomy for every case of even slight difficulty, obtained a large number of good results both as regards mothers and infants, but this was a line of practice that did not appeal to English obstetricians. He hoped the time would come when it would be generally recognized that the treatment necessary in cases of obstruction at the brim was not to be determined by the length of the conjugate unless in extreme degree of contraction. In these cases Caesarean section was the only method, but in all the common, slight, and moderate degrees of contraction, the length of the conjugate, while a very important factor, was never the determining factor. It was no uncommon experience to see a woman spontaneously delivered with a conjugate of about 3¼ in., without danger to herself or her baby, while in other cases, with a conjugate ½ in. longer, the difficulty and danger might be great, this depending first on the size of the child's head, a favourable position of the head in relation to the obstruction, the mouldability of the head, and the power of the uterus; and it was in the correct judgement of these difficulties that the obstetrician of experience would be able to differentiate and select those few cases to which, in his opinion, the operation should be confined. Dr. C. HUBERT ROBERTS wished to add his testimony to that of Dr. Griffith with regard to the importance of endeavouring to estimate the size of the fetal head in contracted pelvis, and not merely depend on the actual bony measurements of the pelvis itself. As to pubiotomy and symphysiotomy, he thought that possibly these operations had sprung into favour abroad largely on account of the falling birth-rate. The latest statistics of Pinard, in the *Annales de Gynécologie et d'Obstétrique* for September, 1907, showed this very forcibly, and in France, at all events, it would seem that the induction of abortion and premature labour in contracted pelvis had been given up. Hence the frequent performance abroad of such operations as pubiotomy and symphysiotomy, especially the latter. Dr. Roberts had performed subcutaneous symphysiotomy once at Queen Charlotte's Hospital, with good results to mother and child. He had no experience of pubiotomy. Dr. THOMAS WILSON replied.

LIVERPOOL MEDICAL INSTITUTION.—At a meeting on November 21st, Mr. FRANK T. PAUL, President, in the chair, Drs. TAYLOR and MCKENNA gave a demonstration of colour photographs of skin diseases taken by the new Lumière process. Dr. MCKENNA said that to photograph diseases affecting the skin was to put any process of colour photography to a severe test, and in this the Lumière process had not been found wanting, for it faithfully reproduced the most delicate gradations of colour with an accuracy never attained by the artist's brush. Their main difficulty had been to obtain definition. Since an adequate supply of autochrome plates had been procurable in this country the weather conditions had been much opposed to successful photography. As a result their exposures had to be prolonged, and they had not found it possible to work with a smaller aperture than F.8. Their shortest exposure had been forty-eight seconds, and their longest twenty minutes; but they had great hopes that when the light improved again it would be possible to obtain photographs not only perfect in colour but rich in detail. The photographs shown illustrated various forms of eczema, psoriasis, scabies, syphilitic eruptions, and tertiary ulcerations before and after treatment, lupus and tuberculosis cutis, acne vulgaris, medicinal eruptions, and sycosis. Photographs and photomicrographs in colour were also shown, and the method of their production explained, by Dr. W. C. ORAM and Dr. K. GROSSMANN. A patient who suffered from paraplegia due to an intramedullary lesion and who had been treated with some success by the removal of a local accumulation of fluid was shown by Dr. W. B. WARRINGTON and Mr. K. W. MONSARRAT. The patient, a young man, was able to walk across the floor of the lecture theatre with the aid of crutches. Two patients in whom union of previously ununited fractures of the humerus had been obtained by means of implantation of bone were demonstrated by Mr. RUSHTON PARKER. A discussion, of which an account appears elsewhere, was also held on the Notification of Births Act.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—At a meeting on November 14th, the following were among the cases shown:—Dr. T. OLIVER: A man, aged 53, with symptoms suggestive of *Thoracic aneurysm*, but without any visible bulging or impulse. There was well-marked tracheal tugging and inequality of the pulses and pupils. Skiagraphy showed marked dilatation of the upper part of the descending thoracic aorta. Dr. GEORGE MURRAY: (1) A boy, aged 9, suffering from *Post-diphtheritic paralysis*. In addition to the paralysis of the palate there was slight internal strabismus and affection of accommodation together with weakness of the legs and loss of patellar reflex. (2) A woman, aged 32, with a *Wandering spleen*. The patient was admitted after a severe attack of abdominal pain and was then found to have a curiously-shaped tumour in the right iliac fossa. During the course of some days the tumour gradually found its way into the left hypochondrium and was recognized as the spleen. Mr. RUTHERFORD: A patient with severe cellulitis of hand and arm undergoing successful treatment by Bier's method. Mr. J. W. LEECH: Eight patients after operation for *Ruptured gastric ulcer*, and 1 after duodenal perforation, being the 9 recoveries from a series of 12 cases operated upon. The time after perforation varied from five and a half hours to forty-eight. All were on the anterior wall. In 3 there was limited extravasation only, the remainder were examples of general peritoneal flood, and the details of treatment varied correspondingly. The first operation was performed in January, 1905, and the last in October, 1907, and all the patients were in good health and free from stomach symptoms. Mr. G. GREY TURNER: (1) A patient, aged 24, after repeated fracture of the patella. The patella was sutured in June, 1907; at the end of six weeks while walking the patient fell and broke the bone in the same place; the operation was repeated and the joint was now perfectly restored. Dr. D. W. PATTERSON: A case of *Tertiary syphilis* limited to one hand. The patient was a woman, and the condition had existed for four years. There were healed ulcers and brawny indurations producing contraction of the fingers. Mr. J. D. WARDALE: A case of retrobulbar neuritis in a young man, one of a family in whom the males descended from the mother's side were nearly all affected. Mr. H. SMURTHWAITE: A case after operation for subdural abscess and lateral sinus thrombosis. At the first operation the mastoid was cleared, and about 1 drachm of pus evacuated from beneath the dura. Next night, after a rigor, the lateral sinus was exposed and found to contain pus. Recovery was uneventful. Dr. GEO. MURRAY read a short communication on wandering spleen, based on the case which he showed earlier in the evening. Speaking of treatment, he suggested the use of the *x* rays to reduce the size of the organ, followed by the use of a padded belt to retain it in position. Operative treatment, if called for, should take the form of fixation rather than excision. Mr. G. GREY TURNER showed a spleen, weighing 4¼ lb., which he had removed on account of the inconvenience caused by its great mobility. The patient made a good recovery. Mr. W. G. RICHARDSON, in a paper on the advantages of temporary gastrostomy in the treatment of ruptured gastric and duodenal ulcer, advocated this proceeding as a quick and safe method of dealing with the ulcer and likely to diminish the mortality, while adding greatly to the comfort of the patient during convalescence.

MIDLAND MEDICAL SOCIETY.—At a meeting on November 13th, Dr. JUSTIN MCCARTHY, President, in the chair, Mr. LEEDHAM-GREEN showed a woman, aged 16 years, who was brought to the Queen's Hospital on June 5th, having been accidentally shot in the abdomen with a saloon rifle. On examination a small wound was seen, just to the left of the umbilicus, where the bullet had entered. The patient's condition was amazingly good. She suffered neither pain nor tenderness in the abdomen, the muscular walls of which were relaxed and the liver dullness present. About half an hour after the time of the injury the abdomen was opened. The peritoneal cavity was found to be full of fluid and clotted blood, and a large vessel in the great omentum was seen to be bleeding freely and was secured. A faint faecal odour, indicating a perforation of the large

intestine, was noticed. The small intestine was found to be pierced in six places, and the descending colon in one. These were rapidly sutured, and in a final examination before closing the abdomen a wound across the mesentery of the small intestine was discovered which cut off the blood supply to some 6 in. of bowel. The portion of bowel affected was pale, cold, and flaccid, showing that its circulation was gravely imperilled. As it was improbableth at the patient could stand the shock of an enterectomy at this stage of the operation, it was decided to assist the circulation of the damaged bowel by means of a graft from the great omentum, which was wrapped round the injured bowel and fixed by a few fine sutures. The patient made an excellent recovery and was able to leave the hospital in three weeks. Mr. George Heaton showed a man who had a large soft elastic swelling situated just above the left knee joint on the inner side of the thigh. The tumour had been diagnosed clinically as a sarcoma and amputation of the thigh advised. But the patient was unwilling for this to be done. It was soft, elastic, did not pulsate, and extended into the popliteal space, and had been growing some three months. A piece of growth removed for microscopic examination showed it to have a definite fibrous capsule and to consist of young fibrous connective tissue with a large amount of naevoid tissue and in parts mixed with fatty and myxomatous tissue. Clinically the growth seemed to be sarcomatous, but the microscopic appearances seemed to negative this view. It was stated that the patient would be shown again at some future meeting. Mr. Nuttall showed a stomach on which gastrojejunostomy had been performed for gastric ulcer, death being due to perforation of a second ulcer. Mr. Jameson Evans showed microscopic sections of a congenital tumour of the eyelid. In the main it was lipomatous in structure, but it was also somewhat vascular, many of the large blood-vessels showing perivascular thickening In certain parts markedly dilated lymph spaces were noticeable, whilst in other parts the number of nerves were decidedly in excess of the natural supply of the region involved.

Glasgow Medico-Chirurgical Society.—At a meeting on November 15th, Dr. Walker Downie (President) in the chair, Dr. G. H. Edington showed a patient, aged 8, the subject of *Pyopericardium*. The pericardial condition had arisen in connexion with an abscess of the right thigh. Both lesions were due to infection by *Staphylococcus aureus*. After a diagnostic puncture in the fifth interspace, 1½ in. from the left border of the sternum, pericardotomy was performed through the triangularis sterni with resection of a portion of the fifth cartilage. The drainage tube was removed on the eighth day, and the wound was soundly healed four weeks later. The exhibitor drew attention to the anatomical relation of the left pleura to the chest wall, and referred to the work of Delorme and Mignon. He concluded that in this case the pleura was probably situated far out from the sternum, as it was not visible at the operation and no pleuritic trouble had followed the diagnostic puncture. Recovery was uninterrupted, and the heart was now apparently perfectly healthy. Dr. A. A. Young showed 3 cases of very severe injury to the foot: (1) Fracture of both malleoli; (2) fracture of fibula, with displacement of the foot backwards; (3) compound dislocation of the astragalus. In this case the astragalus was removed, as it was separated from its ligamentous attachments. In all cases very little deformity remained, and function had been very completely restored. This the exhibitor considered largely due to early massage. Dr. W. R. Hunter showed the liver from a case of cirrhosis in a child of 9. The rarity of the condition and its etiology were discussed.

Leeds and West Riding Medico-Chirurgical Society.—At a meeting on November 22nd, Dr. Jas. Allan in the chair, Dr. J. F. Dobson read notes of a case of successful resuscitation of a child apparently dead from *Chloroform syncope*. The abdomen was opened and the peritoneum stripped off the diaphragm, and the heart, motionless and flaccid, was massaged through the diaphragm until beating recommenced. Professor Grünbaum, in discussing the case, drew attention to the length of time a child's heart remained excitable. He had seen, in two cases of autopsy, hearts removed six and ten hours after death prove excitable when placed under suitable conditions.—Mr. A. L. Whitehead, in a paper on the operative treatment of middle ear disease in children, urged the value of early incision of the tympanic membrane in acute otitis media, for the relief of pain, to arrest the spread of inflammation, and to prevent an acute attack from becoming chronic. He also emphasized the importance of thorough examination and surgical treatment of the nose and naso-pharynx to prevent the recurrence of acute attacks and in the treatment of chronic otitis media. Among complications intracranial abscess was comparatively rare, and temporosphenoidal almost unknown in children.—Mr. Secker Walker showed a single woman of 36 with slate-blue staining of skin of the lids of the eye. The stain could be dissolved off, and was not due to coloured sweat. It had been present eight years, and was a little darker in colour at her menstrual periods.—Mr. E. S. G. Fowler showed an anencephalic monster with deficiency of cervical and most dorsal vertebral arches, associated with hydramnios. It had been born at about the seventh month and presented transversely.—Mr. W. Thompson showed an *Odontome*, which took origin from the root of a wisdom tooth of a youth aged 17 years. It formed a tumour projecting from the angle of the lower jaw, a little larger than a Barcelona nut. It had been growing for two years.—Dr. T. Wardrop Griffith showed a case of a child 2 years of age who presented right *Hemiplegia*, the leg, arm, and lower part of the face on the right side being affected. There were slight and almost continuous rhythmical movements of the affected limbs. There was a partial third nerve palsy on the left side. Under the use of mercury some temporary improvement took place, but there appeared now to be some slight involvement of the right third nerve as well. These symptoms seemed to point to some lesion involving or pressing on the left crus cerebri, and subsequently involving the crus on the right side. Though the gradual onset was suggestive of neoplasm there was no vomiting nor optic neuritis.—Cases and specimens were also shown by Dr. A. Bronner, Dr. Allan, Mr. B. G. A. Moynihan, Dr. T. Churton, and Dr. J. B. Hellier.

Nottingham Medico-Chirurgical Society. — At a meeting on November 20th, Dr. L. W. Marshall, President, in the chair, Dr. Owen H. Peters, in a paper on the course and treatment of *Diphtheria*, pointed out that the introduction of antitoxin had materially modified the subsequent behaviour of the disease, apart from serum disturbances, which added a new and difficult feature to the middle of its course. In pre-antitoxin days the anaemia and general asthenia must have been very marked, and would explain the routine administration of iron. Antitoxin seemed not only to neutralize and stay the action of the toxin, but had some further alterative influence; for almost invariably from the tenth day of the disease the patient made such rapid advances in appearance and general well-being that tonics and iron were unnecessary. As a significant fact, iron was not even mentioned in the last edition of *Allbutt's System*, and it appeared that strychnine, at least for the early stages, might meet the same fate. Owing to these altered features, along with the new facts of bacteriology and the results of closer study of diphtheria in the large fever hospitals, a new school of writers had arisen. Antitoxin as a curative agent constituted, along with vaccination, perhaps the two greatest triumphs of medical science; but where antitoxin had been withheld till too late rest in bed was the only preventive or remedy available against heart paralysis, since all medicinal treatment had hitherto failed. He was surprised that J. D. Rolleston had put forward adrenalin as an efficient stimulant and preventive of heart paralysis. He thought that Dixon and others had long ago established the fact that adrenalin administered by the mouth had no effect whatever on the blood pressure, the inference being that in absorption from the alimentary canal it was destroyed or changed. He himself had given it a very fair trial, but had observed no effect, good or otherwise, even when used in double the maximum doses advised by Rolleston. The general tendency to rapid improvement after antitoxin might easily be attributed to any other remedy administered at this time.

REVIEWS.

TUMOURS OF THE NERVOUS SYSTEM.

PROFESSOR LUDWIG BRUNS appropriately dedicates this valuable monograph upon tumours of the nervous system to the late Professor Ed. Hitzig, the founder of experimental cerebral localization.[1]

In the preface to this the second edition, the author tells us that in grinding through all the literature of the last ten years he has experienced mingled feelings, for by no means a small portion of the work published is of little value. However, one important advance has been made, for it has been shown that tumours of the posterior cranial fossa and cerebellum are operable; but the greatest progress and success has been in the correct diagnosis and successful treatment by operation of tumours of the spinal cord.

In the chapter on pathology, Professor Bruns refers to the statistics of Allen Starr, who in 300 collected cases found 152 tumours, or a little more than half, to be tuberculous; now Bruns, besides the experience of autopsies in connexion with his nerve-clinic, has been physician to a children's hospital for twelve years, yet in 63 autopsies he has only met with 10 tuberculous tumours, 9 of which occurred in childhood and 1 just after puberty. Are tuberculous tumours, therefore, so common as the text-books state? With regard to syphilitic tumours the author remarks: "I have at least seen a large number of cases causing Jacksonian epilepsy and leading to paralysis with headache, but without specially marked general symptoms of tumour, promptly yield to potassium iodide." Syphilitic gumma occurs fifth in order of frequency in his list of 63 cases. He agrees with Gowers and Oppenheim that gummata may disappear completely under appropriate treatment. Tumours of the brain, in his experience, are twice as common in men as in women, and of 11,500 patients attending his nervous clinic about 2 per cent. were cases of tumour cerebri. Chapter III deals with the effects of intracranial pressure upon the production of the general symptoms of tumour, and he was the first to point out that relief of intracranial pressure would lead to subsidence of optic neuritis. He is of opinion that tumours of the brain may directly produce stupor; but other psychoses are due to the general disturbance of the brain in persons potentially insane or of an unstable temperament. Frontal tumours are occasionally mistaken for general paresis. He discusses in a full and comprehensive manner the general symptoms and local diagnosis of intracranial tumours. This chapter is valuable, because it is based upon a thorough knowledge of the experience of other authorities, combined with his own large experience of 210 cases. It may incidentally be mentioned that Bruns was the first to call attention to the ataxy occurring in frontal tumours, and he gives a very complete differential diagnosis of them from cerebellar tumours. Probably the book was already in the press before the important observations of Grainger Stewart had been made to the effect that in frontal tumour there is tremor of the hand on the side of the lesion, and an absence of the abdominal reflex on the opposite side. Beevor, in his Lettsomian lectures in the early part of the year, refers to this valuable observation. English authorities, however, cannot complain of their work not having been recognized, for Bruns speaks enthusiastically of the advances made in our knowledge of this subject by English physiologists, physicians, and surgeons.

It is interesting to note that the author calls attention to the fact that local spasm is not so useful for a correct diagnosis as local paralysis; the reasons are twofold. First, the case may be one of pseudo-tumour, a condition in which the general signs of tumour are associated with epileptiform convulsions localizing it in the central convolutions, and yet, as pointed out by Nonne, Henneberg, and Oppenheim, no tumour exists. Secondly, epileptiform convulsions may occur, owing to the tumour being situated adjacent to, but not in, the motor area. In such a case Bruns very wisely remarks that it is safer to localize the tumour in the cortex adjacent to the motor area beneath the spot which is most painful on percussion. The author's experience is based on 210 cases; he concludes that only 47 per cent. of the cases of intracranial tumour are favourable for operation, and in only 75 per cent. of the favourable cases can a local diagnosis be made, so that about 35 per cent. remain suitable for surgical intervention. In recording his experience of surgery of cerebral tumours, he says: "I have had 14 cases of cerebral tumour in which a precise general and local diagnosis was made; in only 1 case was the operation, however, successful. In 8 cases various surgical mishaps occurred—for example, haemorrhage, shock, and purulent meningitis."

The second half of the book deals with tumours of the spinal cord and the spinal column. It embraces a comprehensive survey of the symptomatology, diagnosis, and prognosis of these somewhat rare diseases. The author points out (p. 405) that it was long known that in caries of the spine a cure and restoration of conductivity of the spinal cord could take place; but it was not known until the first case of Gowers and Horsley that removal of a *tumour* long compressing the spinal cord could be followed by restoration of function. The knowledge acquired by experiment and clinico-anatomical observations of the segmental functions of the spinal cord in reference to the distribution of the roots of each segment for the innervation of groups of muscles and defined skin areas permits a correct localization of the tumour to be made. The author discusses, first, the general diagnosis of spinal tumour; and then, fully and scientifically, the segmental diagnosis and its relation to the intraspinal passage of the roots to their exit at the intervertebral foramina.

The third section of the work deals with tumours of the cranial nerves outside the skull, the peripheral spinal nerves and plexuses, neuroma and paraneural tumours.

The work is a valuable contribution to neurology; it is comprehensive, reliable, and written in a scientific spirit, always with the practical bearing that can alone come from an extensive clinical experience. Finally, it is well printed, the illustrations are for the most part very good, and there is a complete bibliography.

F. W. M.

[1] *Die Geschwülste des Nervensystems.* Von Professor Dr. Ludwig Bruns. Zweite, ganzlich umgearbeitete Auflage. Mit 64 Abbildungen im Text. Berlin 1908. Verlag von S. Karger.

VENOMOUS ANIMALS AND ANTIVENOMS.

DURING the rainy season in the autumn of 1891 a village in Cochin-China was invaded by a band of cobra serpents, and lost four of its inhabitants in consequence of their bites. A professional snake-charmer captured nineteen living cobras, and put them in a barrel, which was sent by order of the governor of the district to the Pasteur Institute at Saigon, then under the charge of Dr. CALMETTE. This was the starting-point of the work on snake venoms which has been continuously occupying the attention of Dr. Calmette and his pupils during the last fifteen years. In the present volume on venoms[2] Dr. Calmette gathers together the numerous researches which have been published in various journals, and gives a systematic account of the venomous serpents, the properties of snake venom, the preparation of antiserums, and the treatment of snake-bite in actual practice. There is also a valuable description of the many varieties of animals, other than serpents, which secrete toxic substances.

Particular interest attaches to what Dr. Calmette has to say about his well-known anticobra serum. The immunization of horses is a slow process, owing to the high toxicity of the venom for these animals, and a period of about sixteen months' treatment is requisite before they can tolerate without reaction the subcutaneous inoculation of 2 grams of dried cobra venom. When this degree of resistance has been attained they may be bled, and their serum will be serviceable for therapeutic purposes if it is found that a mixture of 1 c.cm. with 0.001 gram of cobra venom can be inoculated into a rabbit without producing any symptoms of poisoning. The dose for a human being is 10 c.cm. of liquid serum or 1 gram of dried serum dissolved in 10 c.cm. of sterilized water. But if the inoculation is not made until some hours after the person has been bitten, a hypodermic injection of 30 c.cm. should be made forthwith; or, if the patient is already showing grave symptoms of poisoning, the serum should be introduced directly into a vein, in a dose of 10 or even

[2] *Les Venins: les animaux vénimeux et la sérothérapie antivénimeuse.* Par Dr. A. Calmette. Paris: Masson et Cie. 1907. (Medium 8vo, pp. 412, 125 figures. Fr. 12.)

20 c.cm. Dr. Calmette calculates that for a man weighing 60 kilograms the minimal fatal dose of dried cobra venom is 14 mg., and that the average quantity of venom, estimated in the dry state, which a cobra inoculates with a single bite is 20 mg. Death may therefore be prevented, in favourable cases, by inoculating the relatively small amount of antitoxin which suffices to neutralize the amount of toxin present in excess of the minimal fatal dose.

It would be necessary, in the case under consideration, to inject enough serum to neutralize 20—14, or 6 mg. of venom; this means an injection, made immediately after the bite, of 6 c.cm. of serum, if the serum employed neutralizes *in vitro* 1 mg. of venom per c cm. . . . That is why, in practice, there is not generally need of more than a very small quantity of serum to increase the natural resistance of a man of average weight or of a large animal, and it is very often enough to inject 10 or 20 c.cm. into persons who have been bitten in order to effect a cure.

These calculations are interesting, but it is a little difficult to understand why Dr. Calmette estimates the average amount of venom excreted by a cobra at so low an amount as 20 mg. On page 155 he admits that an adult Indian cobra (*Naja tripudians*) can excrete more than 1 gram of venom in the liquid state, and this, when dried, would amount to very much more than 20 mg., since, as he shows on page 157, venom, when dried, retains from 20 to 38 per cent. of its weight. This raises a point of considerable practical importance, and, though we fully recognize that the use of Dr. Calmette's serum has in numerous instances resulted in the saving of life, we should have been glad if he had afforded more convincing proof that the bite of a fully virulent cobra living in its natural environment (not an animal kept for months in the laboratory) introduces into the system an amount of venom which is usually so small that the injection of from 20 to 30 c.cm. of antiserum will, if given immediately, prevent a fatal issue. Opinions may differ on this question, but every one will agree with Dr. Calmette that the first desideratum in the treatment of snake-bite is to prevent the toxin from getting into the circulation, and to destroy it *in situ*. For this last purpose the local application of potassium permanganate has been found extremely valuable in India, and there are several other inorganic chemical compounds which have proved effective in destroying the toxins of snake venom. Calcium hypochlorite and gold chloride are the two to which Dr. Calmette gives the preference.

Special praise must be given to the carefully written and excellently illustrated descriptions of the venomous serpents, arthropods, fishes, and other animals which occur in various parts of the world. The book also contains a very interesting chapter on the snake-charmers of India.

DISEASES OF THE COLON.

Mr. Mummery's small handbook on the *Sigmoidoscope*[3] and its use as a diagnostic instrument in cases of disease of the upper rectum and the sigmoid flexure, does not excite a lively anticipation that this instrument will ever come into general use. Though it may be true that it is rapidly becoming as necessary an adjunct to accurate diagnosis as the cystoscope or laryngoscope, its use except in the hands of the expert specialist, is likely to be both difficult and dangerous. It is capable, however, as is shown in this book, of giving valuable help, and the author has done good service by pointing out its indications, its limitations, and the proper methods of using it. While proving that excellent results may be obtained from sigmoidoscopy in regard to both the diagnosis and the treatment of disease of the lower bowel, he insists on the necessity of patient and constant practice to acquire the skill needed for its safe and efficient performance. This handbook, in which will be found as much instruction on technique as can possibly be given in a written form, deals in its concluding chapters with the results obtained from the use of the sigmoidscope. The instrument, the author states, has proved of the greatest value in cases of cancer of the rectum and the sigmoid flexure by revealing the presence and nature of the disease when beyond reach, and also in cases in which the growth can be felt by the finger, in favouring an early diagnosis. In the fourth chapter it is shown that by skilful application of this method of examination much addition is likely to be made to our knowledge of the somewhat obscure catarrhal and simple inflammatory affections of the lower part of the intestinal canal. The concluding chapter on colitis indicates also that, by the work of the author and other equally expert observers, properly conducted sigmoidscopy will be rendered a valuable and, it may be, an indispensable addition to ordinary methods of clinical investigation.

Dr. Joseph Okinczyc has written a treatise of considerable value and interest on the surgical treatment of cancer of the colon.[4] It is based on experience gained as assistant to Professor Hartmann in the Lariboisière Hospital. The treatise is more comprehensive than the title suggests, for the first half is devoted to a detailed discussion of the methods of examining the colon and the diagnosis of malignant growths in this part of the bowel. The information to be obtained from inspection is first considered, and then comes a long chapter on methods of palpation and the interpretation of phenomena observed. It is well urged that this palpation should be systematic, and that use should be made of changes of posture when examining the different parts of the colon. The methods of colic endoscopy are described at considerable length; the author upholds the superiority of Kelly's endoscope and of the genu-pectoral position. Some interesting radiographs are given illustrating the information which can be obtained after injecting bismuth by the rectum; the possible fallacies of the method remain to be worked out, but it appears quite likely that it will prove of considerable service. In the second half of the book the question most fully discussed is that of the comparative advantages of resection with immediate anastomosis and of resection with the formation of an artificial anus and the subsequent closure of the latter. Dr. Okinczyc considers that the question requires re-examination in view of the good results, recently published, obtained by operation in one stage. He does not pretend that for the present there is material for any final rules. Inasmuch as a very large proportion of cases when first seen present signs of obstruction, either acute or chronic, he considers that the operation in two stages remains that which is applicable in most instances. Colectomy with immediate reunion is, however, a more perfect procedure, and therefore to be aimed at if it can be made to yield good results. Early diagnosis before definite obstruction has commenced is an essential condition of success, which also depends largely on the method of suture. The author deduces from his study of methods and reports that lateral anastomosis is not well suited to the large bowel. For the first half the best method of re-establishing the channel appears to be the termino-lateral anastomosis of ileum with colon, and for the second half the end-to-end method. The book contains clinical reports of 57 cases, about half of which were treated in Professor Hartmann's clinic.

OPERATIVE OTOLOGY.

The development of otology renders it daily more difficult to treat of the entire subject usefully within the compass of the small textbooks familiar to students of only ten years ago. Professor Blake and Dr. Reik are to be congratulated on having presented so important a part of the subject as the pathology and surgical treatment in a manual which should appeal both to the student and to the busy practitioner.[5] Their success is to be attributed to the book having been kept strictly within the limitations of the title. It is essentially, as the authors state in the preface, "a surgical treatise with a view to practical utility." The chapters which, in the general textbooks on the diseases of the ear, deal with the methods of examination, testing the hearing, and kindred physiological points, do not come within the scope of the

[3] *The Sigmoidoscope: A Clinical Handbook on the Examination of the Rectum and Pelvic Colon.* By P. Lockhart Mummery, B.C.Cantab., F.R.C.S.Eng., Honorary Surgeon to King Edward VII Hospital for Officers, Assistant Surgeon to St. Mark's Hospital for Fistula and other Diseases of the Rectum, etc. (London: Baillière, Tindall and Cox. 1906. Crown 8vo, pp. 98, 19 illustrations. 3s. 6d.)

[4] *Traitement chirurgical du cancer du colon.* [Surgical Treatment of Cancer of the Colon.] By Dr. Joseph Okinczyc. Paris: G. Steinheil. 1907. (Roy. 8vo, pp. 212; 21 figures.)

[5] *Operative Otology: Surgical Pathology and Treatment of Diseases of the Ear.* By Clarence John Blake, M.D., and Henry Ottridge Reik, M.D. London: Sidney Appleton. 1906. (Demy 8vo, pp. 359. 15s.)

present work. The authors strike *in medias res*, and open with a chapter on the surgical anatomy of the temporal bone and adnexa; the structural descriptions here and throughout have been limited to those of surgical importance. Suppurative disease of the ear, together with its possible complications and consequences, naturally claim a very large share of the book—in fact nearly half. Whilst the causative conditions of the diseases amenable to surgical treatment receive emphasis, at the same time in view of the fact that the book is a treatise on the pathology as well as on the surgical treatment, some of the conditions might have been more fully discussed. For example, one disease about which there appears to be a good deal of looseness of thought as regards its pathogenesis—namely, cholesteatoma—is disposed of in a very few lines. Further enlightenment on this disease alone would have been acceptable, both to the special as well as to the general practitioner. Speaking generally, and apart from the book before us, the pathogenesis of ear disease is not receiving the attention in this country—ever foremost in morbid anatomy—which the many unsolved problems of deafness seem to demand, and which, from the increasing numbers giving up their life-work to the subject, might be expected. Half a century has passed away since Toynbee laid the foundations of modern otology; during the greater part of the intervening period there appears to have been a remarkable lack of appreciation of his patient labours. The holding of the Sixth International Otological Congress in London in 1899 may be said to have marked a renaissance in this country, and to have stimulated scientific research in otology. Unfortunately, the number engaged in research work is only too small; the reason of this is probably to be found in the temperament of the race. "The British type of mind is essentially a practical one, and is impatient to see definite and immediate fruit," as Dr. Thomas Barr remarked in his presidential address to the Otological Society in 1905, urging the Society to take steps to institute research work and establish a permanent museum of the anatomy and pathology of the science (see *Transactions of the Otological Society of the United Kingdom*, vol. vi, p. 26). The Otological Society was not slow in taking steps to give effect to their President's suggestion, and it is sincerely to be hoped that those good intentions will not be laid on one side in consequence of the Society having changed its name and entered into an alliance with the Royal Society of Medicine. On the contrary, such an alliance should be an incentive to further efforts. Reverting to the book before us, the detail of surgical procedure has been confined to that commonly accepted as applicable to the condition presented. It is a record of individual experience, and therein lies the strength of the book. Members of the Association who were so fortunate as to be able to attend the Meeting held in Toronto last year, and others who subsequently followed the publication of the proceedings in the JOURNAL, will call to mind a paper by Professor Blake on the Value of the Blood-Clot as a Primary Dressing in Mastoid Operation (BRITISH MEDICAL JOURNAL, vol. ii, 1906, p. 1387). That paper was a record of observations extending over twenty years, and displayed a mature judgement which is one of the features of this book. Whilst there must always be a difference of opinion about details of technique, the general principles expressed in the book will probably be fully endorsed by the most critical readers. To quote from the chapter on mastoiditis:

> Every case of suppurative inflammation of the middle ear, whether of the acute or chronic type, should be looked upon as probably already involving the mastoid antrum, and affording a possibility for extension, through the mastoid cellular structures, to vital organs.
>
> No person who is the victim of purulent otitis should be permitted to think that his affection is a trivial one, and all cases of otorrhoea should be carefully, scientifically, and persistently treated until healed.

These are counsels that even to-day cannot be too often repeated to the student of medicine. In speaking of the importance of removing any obstruction to the free ingress of air to the tympanum in the treatment of non-suppurative inflammation of the middle ear, emphasis is laid upon the removal of nasal spurs, deflexions of the septum, hypertrophic enlargement of the turbinals, and similar obstructions—a principle which will be supported by all who have had the opportunity of treating and closely observing such cases. We are disposed to agree with the authors of this work when they add:

> The marked effect of even apparently small digressions in these structures is sometimes surprising. It might almost be said that no abnormality in these regions is too small to deserve attention in cases where middle-ear disease has begun or is threatening.

Two features have been aimed at and consistently maintained throughout the work. One is to present the subject as simply as possible, and the other to eliminate what the authors rightly regard as an obstructive factor in scientific study—the personal equation.

THE CHEMISTRY OF THE PURIN BODIES.

PROFESSOR EMIL FISCHER has issued in a volume of some 600 pages a collection of reprints of forty-seven publications relating to work done in his laboratory. To this record, which covers twenty-four years, he has added an introduction. Although the book is highly technical, there is much that is of interest from the medical standpoint.[6] There is a very careful and complete chronological account of the discovery, reactions, and synthesis of each of the purins. Those interested in the endogenous metabolism of uric acid and the other oxypurins will find it to their advantage to consult these pages. Fischer naturally pays most attention to the synthetical methods in relation to the production of purins. He traces the means adopted for the formation of uric acid from pseudo-uric acid, and discusses the methods for producing chlorpurin, and the change of the halogen purins into the amino purins. A large number of the papers deal with the methyl purins, for it is in this field that Fischer has had his most marked successes. He points with satisfaction to the fact that caffeine and theobromin are now produced synthetically for commercial purposes. It is of interest to note that the epiguanin of Krüger and Salomon is identical with the synthetic product, 7 methylguanin. The number of possible purin compounds is positively amazing. Fischer refers to no less than 148 different compounds of purin bodies. Although this book must be considered as for reference purposes only, there is no doubt that the worker upon subjects of intermediary metabolism will find it indispensable. In cell metabolism these purin compounds play a greater part than is generally acknowledged. We cannot close this review without a tribute of respect to Emil Fischer for his truly magnificent work in this branch of chemistry, nor without an expression of thanks for the issue of the widely scattered papers in one compact volume.

SPASMODIC WRYNECK.

THE group of affections included under the name of "spasmodic torticollis" have only one symptom in common—rotation of the neck—whether, with Professor Brissaud, we regard them as mental, and therefore tics, or as reflex, and therefore spasms, with Dr. CRUCHET, whose elaborate treatise on spasmodic torticollis, etc.,[7] is now under notice. He has arrived at the conclusion that spasmodic torticollis is not an independent disease, but a combination of symptoms owing to divers causes and clothed with different clinical appearances, according to the pathogenic conditions which give rise to it. In short, in the words of Professor Pitres, who contributes the preface to the book, "There is not one spasmodic torticollis always exactly like itself, but as many kinds as there are forms of convulsions capable of occurring in the rotator muscles of the head and neck." It is clear that Dr. Cruchet set himself no light task when he proposed to classify these varieties. Whatever opinion may be held as to the correctness of his classification, we think that there is only one possible opinion as to the valuable service he has rendered to students of the subject, present and future, in recording *in extenso*, as he has in this book, all, or almost all, the cases of this disease hitherto published. If Dr. Cruchet has not discovered an unfailing remedy for this distressing group of maladies, he has at least enormously lightened the task of future investigators.

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[6] *Untersuchungen in der Puringruppe (1882–1906)* Von Emil Fischer Berlin: Julius Springer. 1907. (Royal 8vo, pp. 608. M. 15.)

[7] *Traité des torticolis spasmodiques, spasmes, rhythmies du cou, torticolis mental, etc.* Par René Cruchet, ex-Chef de Clinique de l'Université de Bordeaux, etc. Preface de M. le Professeur A. Pitres. Paris: Masson et Cie. 1907. (Roy. 8vo, 833 pages, 120 figures. Fr. 15.)

For the most part the treatment is not very hopeful, and only in the case of the symptomatic variety does it appear that surgical interference has often been of benefit.

THE FUNCTIONAL TREATMENT OF SCOLIOSIS.

Hitherto the treatment of scoliosis has been carried out on one of two principles, the active or the passive. Dr. Klapp, as the title of his pamphlet on the functional treatment of scoliosis[8] suggests, is an advocate of the latter method. Recognizing, as most of those who have studied the subject of late years have, that success depends on the extent to which mobilization of the vertebrae is possible, and admitting that the forcible methods of Schulthess and others are capable of correcting many cases, he argues with considerable force that when this has been achieved the spine remains flaccid and unable to maintain the improvement, whereas if it be possible to so train and develop the muscles that they shall be made to pull the spine straight, the power of keeping it so will be developed gradually and *pari passu* with the correction. In that case there will be no need of corsets and such-like apparatus at any period of the cure, and the general health will be the gainer. The apparatus needed for Schulthess's method is too expensive for the majority of patients. As to what kind of exercises should be used, observations on the gait of bipeds and quadrupeds show, according to Dr. Klapp, that the former move their vertebral columns but slightly in locomotion (the cervical vertebrae of birds excepted), while the latter move them freely. Moreover, scoliosis is rare among quadrupeds; only 14 cases are recorded, while it is far more common among the domesticated birds, possibly owing to their habit of standing on one leg. These considerations have induced Dr. Klapp to devise his crawling exercises on all-fours, which he first described and recommended in 1905. Stress is laid on the importance of attendance to nutrition of patients and to hygiene in general, and the author, very rightly in our opinion, insists on the necessity of devoting practically all the patient's time to the treatment of the deformity, and of allowing no other exercises but those which are intended to correct it. He recommends the application of hot air to the back as of greater use than massage. Reproductions of photographs of cases before and after treatment show, as far as such prints allow us to judge, that considerable improvement has followed Dr. Klapp's method, in some cases at least. We can only echo his wish that the diagnosis of scoliosis were more often made in its early stage, and more attention paid by teachers and educationalists generally to prophylaxis. We can recommend this little book as a useful and suggestive contribution to the study of a difficult subject.

SEA-SICKNESS.

The small book on *Sea-Sickness*[9] which Mr. Norman Barnett has presented to the profession and the public (he "hopes that it may prove of interest" to the latter, for whose benefit "technicalities have been avoided") is written to express the author's conviction that sea-sickness is due to "irritation of the terminal fibres of the auditory nerve distributed to the membrane of the semicircular canals." He says that any motion which is contrary to that usually experienced by the fluid in the canals will cause a set of symptoms similar to those of sea sickness, and he illustrates his theory by saying that the "canals constitute a sort of human spirit level," and that "any motion which will more or less violently throw the fluid against its containing walls . . . will produce symptoms referable first to our equilibrium, and then to the cerebrum, and finally to the stomach." Of the truth of this theory he expresses himself with great confidence, but his conception of the behaviour of the endolymph in the canals and his comparison of it to a spirit level are open to criticism. He appears to believe that the canals contain air as well as liquid, for if the movements of the ship can be supposed to cause the endolymph to swing about and dash upon the terminations of the nerve filaments, it is equally likely that the cerebro-spinal fluid may behave in the same way, or the brain, or the abdominal organs, or any other structure in the body which is not solid and fixed may also be disturbed by the motion, and be the cause of the symptoms. Mr. Barnett knows quite well that vertigo is not solely dependent upon affections of the semicircular canals, and in the absence of other symptoms pointing to lesions of those organs his theory can be at best a plausible suggestion. Some of the secondary arguments by which he tries to support his theory are hardly strong. For example, he says that rolling is not nearly so frequently a cause of severe sea-sickness as pitching, and gives as a reason of this that there are two vertical canals to be affected by pitching, and only one horizontal canal to be affected by rolling! The explanation is curious, but some persons complain more of rolling than of pitching, and can hardly be supposed to have the arrangement of their canals other than normal. In order to combat the vasomotor theory of Zing, we are told that "flushing and subsequent chilliness" are due to the "emotion of fear," but patients suffering from sea-sickness are not invariably "under the influence of fear"; indeed, it is often supposed that they become absolutely indifferent to what becomes of them. The author makes no attempt to explain some of the facts of sea-sickness. A passenger who has not felt the slightest discomfort on deck may turn giddy and vomit suddenly on going below to seek refuge from wind and rain or showers of spray; some persons are relieved by a tight band or belt round the abdomen. The treatment recommended by Mr. Barnett is the use of the combined bromides—a plan which has been very commonly followed, and often with success; he advocates a preliminary course of 25 or 30 grains of bromide at bedtime for two or three days before the voyage begins. A preliminary course is undoubtedly useful, but the period suggested is unnecessarily long. Hypnotics are most useful preventives, and a dose of veronal will enable most persons to cross the Channel in comfort if they lie down before the steamer leaves the harbour. On longer voyages the question of feeding has to be considered. Mr. Barnett condemns champagne, but it is often retained when nothing else will stay on the stomach; he recommends "only soda- or lime-water with a little milk." We should not have thought it necessary to warn "patients suffering from well-marked gastric ulcer" of the danger of going on "long sea voyages."

THE PREVENTION OF TYPHOID FEVER.

Professor Kirchner of Berlin has written a monograph on the present position of the crusade against typhoid fever[10] as a protest against Pettenkofer's theory that outbreaks of enteric fever are determined by special conditions of the soil, and endeavours to justify the views formulated by Koch as the result of his investigations in Trier. The danger of transmitting the disease by means of the water supply is admitted, but while it is stated that this possible source of infection must never be overlooked, it is asserted to be a serious mistake to suppose that this is necessarily the only or the principal cause of epidemics. The disease, as hospital experience abundantly shows, is frequently acquired by direct personal contact, and therefore the first object of preventive measures should be to prevent the patient from becoming a possible focus of contagion by isolating him and systematically disinfecting his excreta and clothing. This is often a troublesome matter, particularly with those persons who continue to excrete the bacilli long after they have been restored to complete convalescence. The danger is still greater and more difficult to prevent in the case of people who have ingested typhoid bacilli through living in places where the disease is prevalent, but have developed either no disease at all or symptoms which have been so trivial as to escape detection. Professor Kirchner quotes an interesting case in point. A company of musicians travelled from Trier to Bergen in Norway. Shortly after their arrival an outbreak of enteric fever occurred in the hotel where they were staying; this was attributable, it turned out, to one of the musicians who had come from a typhoid-infected locality in Trier and had brought the bacilli with him. From an elaborate analysis

[8] *Functionelle Behandlung der Skoliose.* Von Professor Dr. Klapp, Bonn. Mit 44 Abildungen im text. Jena: Gustav Fischer. 1907. (Roy. 8vo, pp. 95. M.3.)

[9] *Sea-Sickness: Its True Cause and Cure.* By H. Norman Barnett, F.R.C.S.Edin. London: Ballière, Tindall, and Cox. 1907.

[10] *Ueber den heutigen Stand der Typhusbekämpfung.* Von Professor Dr. Martin Kirchner. Jena: Gustav Fischer. 1907. (Medium 8vo, pp. 34, with 2 charts and 5 diagrams.)

of recent statistics, Professor Kirchner endeavours to show that the preventive measures adopted in Germany are meeting with an encouraging degree of success.

NURSING OF MENTAL CASES.

IN almost every asylum in Great Britain to-day the value of systematic instruction of the nurses and attendants is recognized and the training of the subordinate staff carried out by the medical superintendent or his deputies. Such training to be effective must include instruction in the nursing of cases of bodily illness, but also, and more particularly, teaching as to the nature of insanity and the meaning of its major symptoms, as it is only by means of such knowledge that mental nurses can become vigilantly observant, conscientious in the discharge of their duties, and, still more, attain to a cordial recognition of the fact that refractory and perverse conduct on the part of the patients is not an evidence of innate wickedness, but the result of the diseases under which they are labouring—in a word, to become tactful and forbearing. Further, instruction in the application of special remedial agents, electrotherapy and hydrotherapy, massage, and Weir Mitchell treatment, are all desirable, and as many asylum nurses eventually engage in private nursing, some information should be given under this head also. The training of asylum nurses is thus somewhat comprehensive, and every asylum medical officer must have found it difficult to cover all the essential points, and still more to omit the non-essential. This task has been very successfully carried out by Dr. ROBERT JONES in his *Text-book of Mental and Sick Nursing*[11] which will be found to be a valuable guide both by the instructors and the instructed. In the first six chapters the necessary physiological groundwork is given, the next three chapters contain an admirable summary of psychological processes, normal and abnormal, and the remaining and larger part of the book is concerned with the practical management of the insane in hospitals and private dwellings, special therapeutic measures, and with emergencies of all kinds. The duties of nurses of insane people are often irksome and unpleasant, leading at times to the merely perfunctory discharge of duties which require, perhaps, a greater amount of tact and resource than any other form of nursing, and the only successful means of combating such a tendency is by stimulating an intelligent interest in the individual patients amongst the nursing staff. This has been the aim of the writer of this excellent textbook, which we warmly recommend to asylum nurses and their teachers.

NOTES ON BOOKS.

THE fifth volume of Dr. BRAMWELL'S *Clinical Studies*[12] quite maintains the high level of this publication, which does honour to the Edinburgh School of Medicine, and shows to what degree of perfection methods of teaching can be brought. Of the 53 cases described and commented upon in these pages most are of considerable interest, and they are illustrated by many reproductions of photographs as well as by charts and diagrams, so that the reader is able to follow Dr. Bramwell's demonstration nearly as well as if he had had the advantage of being present at the lectures. In addition to the notes and comments on cases there are a few fragments of lectures on special subjects, such as the treatment of uraemia, of pernicious anaemia, on teaching and learning medicine, on the prevention of phthisis, on the process of compensation, on the differential diagnosis of acute irritant poisoning, and on the temperature in health and disease. The lecture on compensation points out that the process in the main rests upon the fact that the body possesses a large reserve of organic power that can be called upon whenever injury or disease affects the acting parts, but Dr. Bramwell shows that this power of compensation varies in different organs and under different conditions, and he indicates how largely prognosis and even treatment must depend upon the extent to which we can rely upon it in a given case.

[11] *Mental and Sick Nursing.* By Robert Jones, M.D., B.S.Lond., F.R.C.S.Eng., F.R.C.P.Lond; Medical Superintendent, Claybury Asylum; Lecturer upon Mental Diseases, Westminster Hospital, etc. With an introduction by Sir William Job Collins, M.D., M.S., B.Sc.Lond., M.P., D.L., J.P. London: The Scientific Press. 1907. (Crown 8vo, pp. 241. 3s. 6d.)

[12] *Clinical Studies: A Quarterly Journal of Clinical Medicine.* By Byrom Bramwell, M.D. Vol. V. With 90 illustrations. Edinburgh: R. and R. Clark, Ltd. 1907. (Roy. 8vo, pp. 418.)

MEDICINAL AND DIETETIC PREPARATIONS.

Sterilized Milk in Tins.

WE have recently had under examination samples of a sterilized milk in tins which is likely to prove useful. It is supplied by Messrs. STONE AND SON (Monument Buildings, London, E.C.) under the "Diamond Reef" Brand. It is not a condensed milk, but is guaranteed to be a pure cow's milk, preserved by sterilization only. The results of our examination are in accord with the claims made for milk. On opening the tins it was found to be in a perfectly sweet condition, and its freedom from bacteria was further indicated by its keeping properties even after the opening of the tin. Although it contained the full proportion of fat, and chemical tests showed that the cream had risen to the top, as was to be expected, there was no visible separation into two layers, and when poured out it did not cling at all to the tin. The taste of the milk left nothing to be wished for. On analysis it gave the following results: Specific gravity, 1.0321; fat, 3.45 per cent.; solids not fat, 8.64 per cent.; proteid, 2.76 per cent.; and ash, 0.7 per cent. Detailed search for preservatives failed to detect any.

Milk without Sugar.

We have received samples of the milk supplied by "Nutricia" Limited, of Zoetermeer, Holland, from which the natural lactose has been removed. This milk is supplied in closed bottles in a sterilized condition. Analysis showed it to contain: Fat 3.4, proteid 2 2, milk sugar 0.3, ash 0.3 per cent.; it is thus as rich in fat, but not in proteid, as normal milk, the average composition of which is: Fat 3.6, proteid 3.3, milk sugar 4.8, ash 0.7 per cent. A trace of saccharin was present; no other preservative was found. Being practically free from sugar, this milk may prove a useful addition to a diabetic dietary. In taste it is very similar to ordinary milk.

MEDICAL AND SURGICAL APPLIANCES.

DR. E. G. GILBERT (Tunbridge Wells) writes: Messrs. F. Davidson and Co. have recently sent me a new apparatus for raising the hips in bed, which I feel sure will prove of the greatest value in all cases where the patient is very weak and helpless. I was in this condition myself about a year ago, and one of the greatest troubles to me and to my nurses was the impossibility of preventing my slipping down the bed in consequence of the middle of the mattress under my hips sagging down to a lower level than that part of it under my shoulders. This trouble and discomfort I find is quite obviated by the use of the apparatus, which consists of an oblong wooden frame placed upon and across the bed. To that frame is attached another in such a way that the side nearest the foot of the bed can be raised to any extent, and there fixed. The space surrounded by this upper frame is filled with spring wire, like that of a mattress, for the hips to rest upon. The lower frame has a strap and buckle upon each side, by which it can be attached to the upper posts of the bed, which may often be found useful. It requires to be placed under the patient so that one side of the upper frame comes just above the hips into the hollow of the back, the opposite one crossing under the raised thighs a little over the knees.

Scissors for Taking Out Sutures.

DR. ALEXANDER DUKE (London) writes: The instrument illustrated under the above heading in the JOURNAL of November 16th, p. 1433 is not new in idea. Several years ago Messrs. Arnold made for me a very similar instrument, with the additional advantage of holding the suture to be removed when cut by the scissors part of the instrument. This appliance, consisting of three instruments combined, will be found pictured and described on page 95 of Messrs. Arnold and Sons' catalogue.

THE number of students in the St. Petersburg Medical Institute in the present semester is 250. Among these are 8 Jewesses and 30 women who have obtained medical diplomas in foreign countries.

IT is stated that Mr. Rockefeller has given £520,000 for the permanent endowment of the Institute for Medical Research founded by him in New York in 1901. The gift is said to be unconditional, the Directors being left free to carry on the work of research along any line they choose.

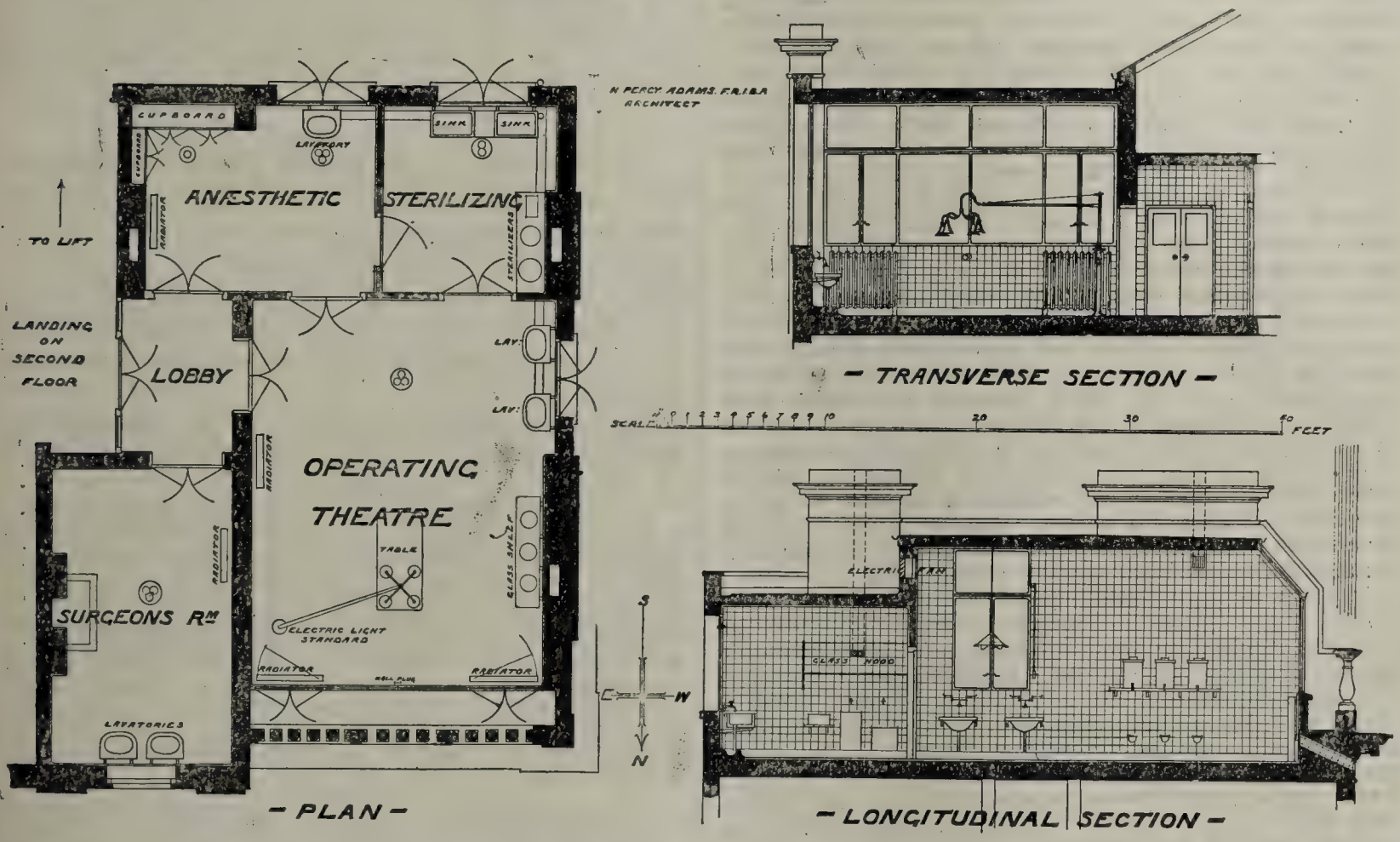
UNDER the will of the late Miss Julia Theodosia Grigg, of Birmingham, the General Hospital and the Queen's Hospital, Birmingham, each receive a sum of £2,000.

SAMARITAN FREE HOSPITAL.

The new operating theatre and rooms in connexion with it are situated on the topmost floor of the Samaritan Hospital, and are served from the lower floors by a passenger lift. The architects are Messrs. H. Percy Adams, F.R.I.B.A., and Charles Holden, A.R.I.B.A. The construction of the old walls and floors has, as far as possible, been utilized in planning the new rooms. The entrance lobby shuts off the whole department from the rest of the hospital. The doors are glazed in order to give light and to show to those who enter the lobby that the the theatre is in use, and so prevent an inopportune entrance. On the right of the lobby is the surgeons' room, fitted with two lavatories and warmed by an open fireplace supplemented by a radiator. This room may possibly be used as a recovery ward for patients. On the left of the entrance is the anaesthetic room, 16 ft. by 12 ft., fitted with a lavatory and warmed by a radiator; large cupboards for stores are fitted on two sides of this room. The operating theatre is entered directly opposite the main entrance, and is 25 ft. 6 in. long by 19 ft. 3 in. wide and 14 ft. high. The walls and ceiling are lined entirely with white glazed tiles, and the floor is terrazzo. Heating is effected by means of hot-water radiators designed with very open loops, and made to swing outwards so that they may be cleaned on both sides without difficulty. The ironwork is white stone enamelled. Fresh air flues pass direct through the external walls and are lined with white tiles and with removable gratings to allow of easy cleaning. These flues supply the air direct to the back of each radiator. The air is thus warmed before passing into the room. An electric ventilating fan is fitted into the south wall, and can be worked by a switch in the theatre. The entire north wall and part of the ceiling is of glass and iron, with all corners rounded, a portion of the window being made to open. An additional window is provided on the west side. The doors, made of polished teak, are quite flush on both sides; the handles and bolts are of gun-metal, and are constructed after the simplest possible pattern.

The fittings in the theatre consist of two lavatory basins supplied with hot and cold water services. The taps are worked by long lever handles, that can be turned off and on by the upper part of the arm. The waste pipes have a simple vulcanite plug, and are without traps, discharging direct over an open white-glazed channel placed rather above the floor level. This was done to obviate the removal of existing iron joists in the floor, but water can easily be run off the flooring into the channel. In the theatre itself there is no connexion with the main drains. A glass shelf is fixed on special brackets to hold the glass jars for solutions, and small glasses are fitted under it to receive the ends of the tubes. The lighting is entirely by electricity, a standard is fixed in the north-east corner, having four lamps directly over the operating table, which can be adjusted to any position. There is also a socket under the north window for a movable standard with horizontal light, and in addition there is a pendant with three lamps for the general lighting, and sockets are provided on all sides for use, to meet any contingency. The wiring is entirely in simplex tubing buried behind the tiling. Junction boxes are provided at every necessary point for drawing in the wires, and screw tiles, which can easily be removed, are fitted so as to cover them. On the left, beyond the anaesthetic room, and opening on its right side into the operating theatre, is the sterilizing room. This apartment is fitted with two large sinks, and has a glass and iron hood fixed over the sterilizer, with an extract flue to conduct away the gas fumes.

SAMARITAN FREE HOSPITAL.



All the side rooms have, like the theatre, terrazzo floors and tiled walls. Throughout all the rooms every corner has been rounded, and all pipes and fittings have been kept well away from the walls to allow of easy cleaning, and to give no lodgement for dust.

The Opening Ceremony.

On Saturday, November 23rd, the new operating theatre in the Samaritan Free Hospital for Women was opened at half-past four in the afternoon by Sir Frederick Treves, Bart., G.C.V.O., C.B. Sir Dyce Duckworth and many other members of the profession, as well as the staff of the hospital, were present. At the beginning of the proceedings the Rev. A. W. Oxford, M.A., M.D., Chairman of the Committee of Management, expressed to the assembled company his regret at the unavoidable absence of the President, the Right Honourable Viscount Portman, and his satisfaction that so eminent a surgeon as Sir Frederick Treves had kindly undertaken to preside at this ceremony, which, as a new theatre was so urgently needed, marked a great advance in the development of the Samaritan Hospital, which had attained the sixtieth year of its existence. Sir Frederick Treves opened his address by congratulating the governors and staff on the completion of their fine new operating theatre. During

the past thirty years the progress of the science and art of surgery had been greater than the preceding generation of surgeons could possibly have conceived. Antisepsis and asepsis had revolutionized operative surgery. To Lord Lister and his followers this change was due. There was another recent evolution in surgery—the establishment and perfection of abdominal operations. In that evolution the Samaritan Hospital had, without doubt, played the leading part. In the face of violent opposition and of threats of legal penalties, Sir Spencer Wells, fifty years ago, began to perform ovariotomy systematically. The hospital was then but a small house, apparently quite inadequate even for minor and established surgical procedures. Nevertheless, Sir Spencer Wells overcame all opposition, open or insidious. He publicly reported his proceedings and explained how, in his opinion, every step in his method was justified by his results. The interest taken in his hospital work was phenomenal, and his position was unparalleled in the history of surgery. The younger and rising generation could have no conception how surgeons flocked to the old hospital to witness Spencer Wells's ovariotomies, assembled in multitudes at societies to hear the reading of his experiences, and eagerly sought the pages of the medical press for the report of his results. Wells was worthily followed by Dr. Bantock and Mr. Knowsley Thornton, who took a prominent share in the advancement of abdominal surgery beyond the limits of ovariotomy, by Mr. Meredith, Mr. Alban Doran, and Mr. Malcolm, who continued that work, and by others who had more recently joined the staff. The original manner of treating ovarian cases in the hospital was familiar to those who were old enough to have witnessed the practice of the hospital some thirty years ago. Operating theatres were then not trusted for such cases; the ovariotomy was performed in a small room, and the patient was confided to the care of a specially skilled nurse—a type of nurse then very rare and almost exclusively reared in this hospital. The results of the earlier ovariotomists astounded the surgeons of forty years ago, but it was soon found that there was room for improvement, and the staff managed to modify their methods until some attained a percentage of 100 recoveries in their series of operations, and a higher rate could not be expected. In conclusion, the good work of the hospital would be continued in the operating theatre which he now declared open. A vote of thanks to Sir Frederick Treves was proposed by the Rev. Dr. OXFORD, seconded by Dr. PERCY BOULTON, and carried unanimously.

DINNER.

In the evening the medical staff, together with some members of the Committee of Management, and Sir Frederick Treves, Sir Dyce Duckworth, Mr. Guntrip King, the Secretary, and a few other guests, met at dinner at the Imperial Restaurant, under the chairmanship of the Rev. A. W. OXFORD, who gave an illuminating history of the very early days of the institution, when it bore another name. Later on, in acknowledging a toast to himself, he gave some account of the improvements in the internal arrangements of the institution which had been made since the time he took up the office of chairman some five years ago. In particular he alluded to the abolition of the system by which each case after operation used to be put in charge of one nurse for a very long period, and to the enormous strain which this practice put upon the nurse thus employed. He also spoke of the debt all owed to the Matron, Miss Tice. The same theme was taken up by Mr. ALBAN DORAN, who recorded the names of Parrett, Wood, Nicholson, and Margaret Phillips as those of women who, in the circumstances indicated by Dr. Oxford, had saved dozens of lives by their devoted attention to their patients. The toast to "The Guests of the Evening" was acknowledged by Sir FREDERICK TREVES and Sir DYCE DUCKWORTH, the former showing the very important part which the Samaritan Hospital, through Sir Spencer Wells, had played in the early development of modern surgery. Sir Spencer Wells had been practically at the head of an advance column, and had he been beaten possibly abdominal surgery as now understood would not yet have come into existence. He concluded by saying that if he were a young man and had the choice open to him, there was no institution to which he would rather attach himself than the Samaritan Hospital.

THE INTERNATIONAL MEDICAL CONGRESS, 1909.

THE Organizing Committee of the Sixteenth International Medical Congress, which is to be held at Buda-Pesth two years hence (1909) has issued an official announcement that the meeting will extend from August 29th to September 4th, 1909. Besides members of the medical profession, scientists introduced by the various National Committees or by the Executive Committee will be admitted to membership on payment of the subscription (£1). The wives and daughters of members who may wish to avail themselves of the advantage offered may do so on payment of one-half the ordinary subscription. Subscriptions should be sent to the Treasurer, at the office of the Congress, VIII, Esterhazy-utcza 7, Buda-Pesth, with an intimation of the Section of which the subscriber desires to be a member.

Sections.

The work of the Congress will be distributed among twenty-one sections as follows: (1) Anatomy and Embryology, (2) Physiology, (3) General and Experimental Pathology, (4) Microbiology (Bacteriology), Morbid Anatomy, (5) Therapeutics (Pharmacology, Physiotherapy, Balneology), (6) Internal Medicine, (7) Surgery, (8) Obstetrics and Gynaecology, (9) Ophthalmology, (10) Paediatrics, (11) Neuropathology, (12) Psychiatry, (13) Dermatology and Venereal Diseases, (14) Urology, (15) Rhinology and Laryngology, (16) Otology (the meeting of this Section will be the eighth International Congress of Otology), (17) Stomatology (Odontology), (18) Hygiene and Prophylaxis, (19) Forensic Medicine, (20) Military and Naval Sanitary Services, (21) Naval Medicine and Tropical Diseases.

Programme.

A full programme of the subjects proposed for discussion and of the communications to be made will be published on December 31st, 1908. Manuscripts will not be received later than January 31st, 1909, and printed copies will be sent to members of the Sections at latest on July 31st, 1909. No proofs will be submitted; it is therefore hoped that communications will be written as legibly as possible. Intimation of communications on subjects chosen by the authors must be sent to the office on or before April, 1909. Communications of which notice is received after that date can be read only after those announced before the date above indicated have been discussed.

Two or more Sections may hold combined meetings. The programmes of such meetings will be announced at latest on December 31st, 1908.

Publication.

The addresses delivered at the opening and closing meetings and the reports presented on subjects officially selected for discussion will be published in full. As regards communications on subjects chosen by individual members, only such will be published as shall have been personally made by the authors to the Congress, and the printing of which shall have been decided upon by the Executive Committee on the advice of the officers of the Sections. The manuscripts of addresses delivered at the general meetings must be handed to the General Secretary. The manuscripts of communications made to Sections and of remarks made in discussions in the several Sections must be handed the same day to the Secretary on duty in the Section.

Languages.

The Bureau of the Congresses uses the English, French, and German languages for international relations. In the general meetings other languages may be used, but only on condition that a member present translates the communications into one of the three official languages.

Official Address.

All communications relative to the Congress should be addressed as follows: Au Bureau due XVIe Congrès International de Médecine, Budapest, VIII, Esterhazy-utcza 7. On envelopes containing letters relative to the scientific work of the Congress the name of the particular Section to which it belongs should be indicated. These letters will be at once forwarded by the General Secretary to the Presidents of the Sections.

Festivities.

The programme of festivities and entertainments, and information as to the reduction in railway fares granted by companies, and as to lodgings and excursions, will be published up to April 30th, 1909.

THE *New York Medical Journal* states that, according to the report of the New York State Commission in Lunacy, the total number of insane patients in New York State institutions for the year ending September 30th, 1906, was 26,357, or about 1 for every 300 of the population. The report shows that insanity has been steadily increasing in the State since the year 1897, and that insanity is more prevalent among persons of foreign birth than among natives.

ROYAL COMMISSION ON VIVISECTION.

Third Report.

(*Continued from p. 1531.*)

The Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till th eevening of Thursday, October 3rd.* We continue our abstracts of the evidence.

Antivivisectionist Testimony.

Evidence of Miss A. L. Woodward.

Miss Woodward, whose evidence occupies about five pages of the Blue Book, appeared as a witness on behalf of the Church Antivivisection League, of which she said she was the Acting Secretary. The special point she desired to bring before the Commission was the fact that the absence of convictions was no proof that the law had not been broken, and, further, that the Act had been so administered as to make such convictions a matter of practical impossibility. Thirdly, she pointed out that a former witness was mistaken in saying that no complaints had been made of unlicensed vivisection, because such complaints had been made; and, moreover, that, so far from complaints of vivisection having been vague and general, and "nothing that one can lay hold of," as stated by another witness, they had, in some cases at any rate, been most clear and defined and circumstantial. The case which she would especially emphasize in regard to that occurred in connexion with a meeting of the Church Antivivisection League in the Technical College at Bradford on September 30th, 1898. The meeting was packed with medical students, and they had an instance in the Portman Rooms the other day of what that caused. There were also twenty-six doctors present, a whip having been sent round to over a hundred doctors in Bradford and Leeds. She was present herself. She read three statements. The first was by the Rev. Conrad Noel, who said that Dr. Kerr of Bradford, arguing against the proposal that they should work for the total abolition of vivisection—that is, of all licences granted to vivisectors, as it would only result in illegal experiments being made—stated that such (illegal unlicensed) experiments were already being performed by his fellow doctors in Bradford. He further said that the reason for these unlicensed experiments being performed was that it was necessary in the cause of science that such experiments should be made, but that Dr. Hime, of Horton Road, Bradford, was the only experimenter who carried on such researches under the necessary licence. He alone held the licence. The Secretary of the Church Antivivisection League handed him the Government returns, which made no mention of any licence held by Dr. Hime, and Dr. Hime, who was himself present, rose and admitted that it was a mistake for Dr. Kerr to have said that he held a licence. Dr. Hime did not attempt to deny that he carried on experiments. At the meeting witness told Dr. Hime the matter would go to the Home Secretary. It was put to her by the Chairman that the charge was put in quite a different way—that he had no licence. She said that she had a second statement by another person. The Chairman pointed out that a statement made by somebody to the effect that Dr. Hime operated without a licence was not a thing that they could have except from the witness who made it. The statement was sent to the Home Office. Statements to the same effect from Mrs. G. A. M. Ring, of Rawmarsh Rectory, Rotherham, and the Rev. T. P. Ring, Rector of Rawmarsh, were also read. The witness said her own written statement had been previously sent in. A good deal of correspondence with the Home Office followed. This was the final letter:

Whitehall, 11th January, 1899. Madam,—With reference to your letters of the 19th October and 1st December, 1898, drawing attention to a supposed breach of the Act 39 and 40 Vict., cap. 77, by Dr. Hime, of Bradford, I am directed by the Secretary of State to inform you that he has caused inquiry to be made, but that no case of illegal experiments on living animals has been discovered or brought to his knowledge by Dr. Kerr or by any other person.—I am, Madam, your obedient servant,—(Signed) Henry Cunynghame.

The witness proceeded to say that to require Dr. Kerr himself to come and give this evidence was a very extraordinary excuse to make. She wrote again, and very strongly, to the Home Office. A question on the subject was asked in Parliament by Mr. MacNeill (Donegal, S.), and Mr. Jesse Collings replied that the Home Secretary had caused inquiry to be made, but could not elicit any clear statement of what was actually alleged, nor any evidence of illegal vivisection being performed by Dr. Hime. There were, therefore, no steps which he could take in the matter. Mr. Collings added that it should be remembered that performing upon an animal an experiment calculated to give pain without a licence was an ordinary criminal offence which any person may prosecute. Continuing, the witness said the important part of that answer appeared to her to be the admission that the Secretary of State believed that statements to the effect suggested by Mr. Swift MacNeill were made. Therefore he absolutely disregarded the testimony of four people, two of them clergymen, and presumably men of education and accuracy. Asked if she knew whether the Secretary of State applied to Dr. Hime for an explanation, she said she had no certain knowledge. She heard so, but that was not a matter that she could prove. Asked if she knew whether any other evidence except statements by Dr. Kerr and the statement of Dr. Hime at the meeting were before him, she said she could not say. Asked by Colonel Lockwood if she heard Dr. Hime make these statements, she said that was why she wanted to lay stress upon the rowdy character of the meeting. There was a great deal of noise going on, and it was difficult to hear on account of the students with their usual proceedings. She could not swear from her own knowledge that he said that he would continue to perform them. There was the testimony of two people to it that he said he had performed hundreds, and would continue to do so. Asked by Dr. Wilson if she knew whether any inquiry was made as to whether this was in connexion with the production of vaccine lymph, she said they had no opportunity of making a legal inquiry. In reply to the Chairman, she said the fact she desired to bring before them was the conduct of the Home Office. First of all, the mistake in saying that cases of alleged unlicensed vivisection were not complained of; and, secondly, as to the past administration of the Act. The next case she had was not so flagrant an instance, but still it proved again that complaints were brought. This had reference to a lecture on physiology by Dr. Langdon-Down in University Hall, Gordon Square, on December 9th of the same year. A lady who was present wrote to them complaining that he had vivisected a frog at a meeting in connexion with the Child Study Association, a society which had a licensed vivisector for the president of one of its principal branches, and as the hall in Gordon Square was not registered for vivisection, they, in reply, advised this lady to communicate with the Home Office. She did so, and this was the reply received:

Whitehall, January 28th, 1899. Madam,—In reply to your letter of the 14th inst. drawing attention to demonstrations given by Dr. Langdon-Down in the course of a lecture on Physiology and its Relation to Child Study and Education, I am directed by the Secretary of State to say that he has made inquiry and is informed that the demonstrations you refer to were not "experiments calculated to give pain" within the prohibition of Sec. 6 of the Cruelty to Animals Act, 1876.—I am, madam, your obedient servant, (Signed), Charles S. Murdoch.

She made no complaint against the Home Office there. The point of the evidence was to show that it was quite a mistake to say that complaints of illegal vivisection were not made. She further mentioned the case of unlicensed vivisection at Burroughs and Wellcome's laboratory at Herne Hill. In that case the Home Office, instead of punishing the breach of the law, gave them a licence afterwards. With regard to complaints being vague and general and "nothing one could lay hold of," she had read with surprise that those statements emanated from Professor Thane. He had for years held the position of Professor of Anatomy at University College, and it was very difficult, therefore, to understand how he could have failed to be cognizant of a very extensively-signed memorial presented in the autumn of 1903 to the head of

* London: Printed for His Majesty's Stationery Office by Wyman and Sons, Limited, 109, Fetter Lane, E.C. And to be purchased, either directly or through any bookseller, from Wyman and Sons, Limited, 109, Fetter Lane, Fleet Street, E.C.; and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin, 1907.

the College, Mr. Gregory Foster, by the great majority of female students in the Slade School of Art, as to the very great hindrance to their studies caused by the terrible cries of the vivisected animals. If Professor Thane had really wished for information, he had every opportunity of obtaining any amount of information at first hand. The League with which she was connected based its opposition to vivisection solely on moral and religious grounds, and that being the case, they had made a special feature of their warfare against the practice that it was a system of corruption of youth. In connexion with that, she mentioned that a very short time ago she was interviewing a young man who, at the age of 14, was employed in Professor Victor Horsley's laboratory. He threw up his situation at the end of three months, saying to her that he felt that if he continued it "he would become one of the most cruel hearted devils alive." She did not know the present fate of that lad, but if he had become a thief, and if he was practising in his manhood what he learned in his boyhood at University College (and there was such a case not so long ago in the police-courts in America, where the excuse made by the criminal was that he had been taught to steal animals when a boy for a similar laboratory), she said boldly that before God and man the authorities of that college were responsible for his moral ruin and for all the evils brought by the habitual criminal upon the community at large. She had only one last point to bring forward as to the corruption of youth. She held in her hand a book used by the London School Board for pupil teachers. It took the League a hard fight of six years to get it properly expurgated. The book was by the special science teacher of the London School Board, William Furneaux. He there recommended those young people in a very atrocious experiment to irritate the exposed nerves of the victim, saying that when they did that at certain points of the experiment the animal would show signs of most acute pain, and in another case of intense pain. The passage was at page 189 of *Animal Physiology*, by William Furneaux, fourth edition, 1892. She thought those words formed a very curious commentary on the assertions as to the painlessness of vivisection, so freely made to the Commission. She wanted to add a word about the work of the League on one small point. It had been stated there that the *Shambles of Science* had been withdrawn, and it had been stated that it had not been withdrawn. The League was in a position to give a little information upon that point. Every year they had offered the first edition publicly for sale to the public at their stall at the Church Congress, and they would not have done that if they had not been very sure of what the Lord Chief Justice said. In reply to Sir Mackenzie Chalmers, who asked what experiments Dr. Hime performed, she said that she could not tell him; they were not mentioned. She had not inquired what they were; it was not her business. She brought it before the Home Secretary, whose business she supposed it was. Mr. Noel and she went before a magistrate the next morning, and asked if they could have a search warrant to search Dr. Hime's house. That was provided for in the Act, and they were on the point of getting it until another magistrate came in who was more hostile to them and refused it. They did not swear an information because they had not come to that point when the other magistrate came in. Asked if she was aware that if an offence was committed by an unlicensed person anybody could prosecute, she said she was aware that was the theory of the law, but as long as vivisection was performed in secret no private person could prosecute. Asked how the Home Secretary was in a better position to find out about an offence committed in private than any private person, she said he was in a better position to find it out because he was more likely to have his questions answered, but he could not always find it out either. It was precisely one of the strong arguments against allowing vivisection that it was incapable of regulation. Asked how she would make it better by making vivisection illegal, and if it would not go on in secret, she said to some extent, but very much less, because people would be afraid of its being found out, and, moreover, all the corruption of students would be done away with. Asked if she knew that Dr. Hime wrote to the Bradford newspapers, she said, Yes. Asked why she had not given his letter in which he repudiated the statement altogether, she said she had the letter there. She did not admit that he contradicted all the facts. Dr. Hime wrote to the paper:

Sir,—I ask your favour to permit me to reply to a statement under the above heading, which appeared in the *Observer* of March 2nd and again on March 3rd. On March 2nd it was stated that Mr. MacNeill, M.P., was to ask the Home Secretary in the House of Commons, *inter alia*, if he was aware that I had stated at a public meeting that I had "performed hundreds of vivisections, and should continue to do so," though I had no licence for experiments. I may say that Mr. MacNeill's question, as printed in the notice paper of the House of Commons, referred to "Dr. Hine's," which is transformed in your paper into "Hine." If Mr. MacNeill intended the above statement to refer to me, I repudiate it, and deny that there is one particle of truth in it. It seems to me a gross abuse of the privileges of a member of the House of Commons that, while shielding himself under the form of a question to a Minister, a member may make an utterly unfounded charge against a person who, knowing nothing of his intention, cannot take the necessary steps to have the falsehood killed when and where it is uttered. Mr. MacNeill's proceeding is not one whit justified by his statement being founded on the untrue remarks of a third party. No fair-minded person will approve the conduct of the Minister who, before replying to such a question, involving slander of an absent person, who knows nothing of the liberties being taken with his name in the House of Commons, failed to communicate with the person referred to in the offensive question.—I am, etc., THOS. WHITESIDE HIME.

Miss Woodward's letter was as follows:

Sir,—If the subject were less sad, Dr. Hime's assumption of injured innocence in his letter to you would be amusing. He must be aware that newspaper paragraphs are not always absolutely accurate. Has he forgotten that one, if not more, of the Bradford papers announced, on Mrs. Hime's authority, that on the night of the historic meeting he was ill in bed and had lost his voice, although all of us who were at that meeting can testify to his being in very good voice when he appeared at the head of the rioters? I make no doubt that what Mr. Swift MacNeill really said was that Dr. Kerr had stated that Dr. Hime was performing a great many vivisections ("a lot of vivisections" was Dr. Kerr's actual expression), and that when it was proved he held no licence, Dr. Hime made no attempt to deny the vivisections, even when informed that the matter would be brought before the Home Secretary. I do not see myself that Dr. Hime gains much by the publication of the correct version, and, if he will take the advice of an opponent, I should strongly counsel him not to perform illegal vivisections in future. The Home Office has shielded him this time in defiance of a large amount of evidence, the Home Secretary having been supplied with the written statements of four persons present. But should Dr. Hime venture in the future to torture helpless and confiding creatures, it is possible that he has not yet heard the last word as to this matter.—I am, etc., A. L. WOODWARD.

Asked if she produced any evidence of those experiments to the Home Office, she said, beyond what was said at the meeting, certainly not. Asked whether she had a copy of a memorial from the students of the Slade School of Art, she said No, she never had had a copy. She had been told of it by several people at first hand. Asked what her authority was for saying that the cries were those of vivisected animals, she said it was the students who said they were the cries of the vivisected animals. The sounds came from the laboratory, and they were the cries of animals apparently in terrible pain. On its being put to her that she knew nothing about it herself, she said she never said that she did. Asked by Sir William Collins, with reference to the book by Mr. Furneaux, if he correctly understood her to say that some change had been made as the result of a representation, she said Yes, twice. The first change was simply that he suppressed the words "intense pain" and "most acute pain." They, of course, were not satisfied with that, as he described the same operations. They suggested the entire alteration of that chapter, as, with that exception, the book was an excellent manual on physiology. Asked if she gathered that the passage in that book to which she took exception was an indication or intimation to students to practise that painful experiment, or a record of previous experiments which had been made, she said she thought, if he read it himself, he would see that there was a decided suggestion that they should practise it. The Board themselves took it as such, because they first of all, so she was told by a member of the School Board, sent for some head teachers and told them they must take care that such experiments were not practised; so that evidently they recognized the danger of its being acted on. Asked if the manual was still in use, she said she was not quite sure. The witness handed a copy of the

book containing the passage complained of to Dr. Gaskell, who said he should have thought it was simply a statement of fact as to what happened when the posterior root of the nerve was stimulated, so that it could not have been intended really that they should carry out the experiment. She replied that, if one judged by the ordinary rules of English grammar, it was the imperative mood that he used—"Irritate." Asked if she was aware that Dr. Hime was one of those who supplied glycerized calf vaccine at the present time, she said she was not aware of that fact. Asked if, when he spoke of hundreds of experiments they were not for providing vaccine, she said she could not say what he meant, but she thought it very unlikely, as she supposed no licence would be required for that. In reply to Sir John MacFadyean, who asked if he might not do it in his private capacity, she said that would be vaccination rather. That would hardly be called vivisection, although it was so, they knew. Asked by Dr. Gaskell if, when Dr. Hime spoke of the number of vaccine experiments, and said he was going to continue them, that was not simply in the preparation of calf vaccine, she said it would be very peculiar if it were so. Asked by the Chairman if she knew whether it was so or not, she replied, how could she know? She had told exactly all she knew. She only added in courtesy that she thought it was exceedingly unlikely, because vaccination was not what they ordinarily called vivisection. It ought to be, for it was much more painful, she believed, than antitoxin. Asked by Sir William Collins if she knew whether Dr. Hime, besides raising stocks of vaccine lymph, also made experiments on calves with a view to seeing whether he could get vaccine lymph by inoculating calves with small-pox, she said she knew nothing of it. Asked by Dr. Wilson about Miss Lind-af-Hageby's book, she said they had a stall at the Ecclesiastical Art Exhibition of the Church Congress. She had always been very anxious to show that the first edition had not been withdrawn. She refused to return the copies she had, and she had always had it for sale. She was very precious over them, because they were very few, and she was not anxious to part with them; but she was anxious to show the public that they could buy it, and she had it there if they wished for it. In reply to Sir John MacFadyean, she said she had sold one copy.

DEATH CERTIFICATION IN THE UNITED STATES.

Death certification has from time to time engaged the attention of the British Medical Association as a subject urgently requiring legislation in the public interest, and a very full account of the Acts of Parliament and regulations under which we are working was given in a series of articles published in the British Medical Journal a few years ago. The Acts date back to 1836 and 1874, so that a full generation of men has come and gone since the law was last formulated. It is not surprising, therefore, that amendments are needed, both to prevent crime and to render the vital statistics of the country more accurate. Civilization grows more and more complex every day, and its requirements become more exacting, if we are to keep our records accurately in face of the growing difficulties engendered by social changes. It is, therefore, almost a truism to say that the machinery by which we collect the facts on which we base the vital statistics of the nation should be overhauled at short intervals and brought up to date. Under our parliamentary system the exigencies of party warfare interfere, and there is consequently a delay often of many years, during which old and imperfect machinery has to be used, to the detriment of scientific accuracy and sometimes of public safety. A Select Committee of the House of Commons reported in this sense in September, 1893, and we still wait for the legislation necessary to place our vital statistics on a satisfactory basis, and to render the concealment of crime more difficult.

While this is our experience on this side of the Atlantic, our cousins in the United States have their difficulties too. They are, however, meeting them in a characteristically energetic fashion. The Bureau of the Census has prepared for circulation among the registration officials of the United States a pamphlet *On the Modes of Statement of Cause of Death and Duration of Illness upon Certificates of Death.* It is a document well worthy of attentive study, and is the product of the co-operation of the American Public Health Association and the Bureau of the Census. The Senate and House of Representatives have approved of the co-operation, and have by resolution commended their views to the consideration of the State authorities. The Federal Government, therefore, means to do its part in remedying "the chaotic and exceedingly unsatisfactory state" in which vital statistics now are in the great republic. The chaos is due to the lack of an accepted uniform method of stating joint causes of death and an identical form of statement by physicians and coroners. Uniform blank certificates should be used for the collection of fundamental data. "In 1900 only two states employed the same certificate of death." Things are better now, but in this pamphlet some forty forms of death certificate are given, as illustrating the variety of method in the states of the Union. In the British Empire we have one form for England, Wales, and Ireland, a second for Scotland and South Australia, while New South Wales, New Zealand, Queensland, Tasmania, and Victoria have each a special form. This is, however, an infinitely less important matter than the diversity in one country like the United States. The first step there, which is being pressed forward, is to get the whole of the states and cities of the country to act together and adopt a standard certificate of death. In more than half the States this had to be accomplished at the beginning of this year. The progress has, however, been good; in 1900 there were only ten registration states, while this year there are eighteen to twenty using the standard certificate. The organization of the registration officials of states and cities as an association for promoting improved registration methods is expected to advance matters more quickly. The two points specially referred to by the Census Bureau as regards the death certificate are the importance of putting occupation as a principal item in each death record, and the still more important and urgent need of a better system of defining the cause of death. It is to this latter subject that most of the pamphlet is devoted. It is absolutely indispensable that there should be not only for America but for all countries a uniform and precise mode of statement of the cause of death. But hitherto all attempts have failed more or less. Taking the forty-one forms given for the United States, and also those in use in the British Empire, France, Germany, Italy, Japan, Sweden, and Switzerland, the terms used to describe the cause of death nearly fill a large octavo page of small print.

It will be remembered that the Select Committee of the House of Commons reported in 1893 that there was some confusion in the minds of medical men in this country as to the meaning to be attached to the words "primary" and "secondary" in setting forth the cause of death. This confusion exists even more seriously in America, and some pages of the pamphlet are devoted to the discussion of its causes and remedies. In the standard blank certificate of the Census Bureau "the cause of death" is placed first, and below a line for "contributory" causes with duration for each. This seems simpler than primary and secondary, but it is not free from ambiguity, for some certificates use the word "chief" to qualify the cause of death; others put "immediate" in the first line, while others use the word "immediate" as more applicable to the secondary cause. In the Baltimore certificate the first line prints the "cause of death (secondary or immediate)," and follows it up in the second line with "contributory (primary)." In Boston, that centre of light and leading, the death certificate records the "chief cause and the contributory cause," while ten other smaller places require the puzzled doctor to give the "remote or predisposing cause" and the "immediate cause of death." Chicago, again, asks for the "immediate and determining," and secondly the "contributory cause or complication." Statistics collected on data so liable to variable interpretation are enormously lessened in value, and this attempt of the Census Bureau to set forth the difficulties and sources of error is a most praiseworthy piece of work. In order to show the complexity of the relations involved and the necessity for a precise understanding of the terminology to be employed in reporting causes of death, a case of typhoid fever is taken and set forth in tabular form as an object lesson. The certificate worked out from the table is set forth on the form originally employed in

Michigan, which is described as the most complete in use in America, and comparable with the Swiss certificate, which is the most complete in Europe. The record in this Michigan form would run as follows:

Disease causing Death.—Typhoid fever.
Immediate Cause of Death.—Perforation, haemorrhage of intestine.
Contributory Causes or Complications, if any.—Bronchopneumonia.
Post-mortem confirmed statements above.

In this example we get what is essential for trustworthy statistics—the exact statement of the disease causing death. Modes of death—for example, asthenia—should be omitted. They are worthless for statistical purposes, and only cause confusion. In the above form they would be caught by the immediate cause being placed in a subordinate place, and the "contributory" line would catch such a case as "old age," which is sometimes reported as the cause of death. The want of exactness and precision in the use of expressions follows us everywhere in dealing with this subject. There is no definition, it is pointed out, for the term "cause of death." It may be used to signify either (1) disease or (2) a form of violence from which wholly or partly the death of the individual results. The word "disease," too, is also ill-defined, and, according to the definitions current, would include conditions such as "dropsy," which is not a disease in itself, but a secondary condition consequent on disease.

Then in the United States they have the additional difficulty of having no authoritative nomenclature of diseases such as that of the Royal College of Physicians of London. A Committee of the American Medical Association has been appointed to remedy this defect, and in the meantime the nomenclature of the English College is recommended for use. As regards the "duration of illness," it is pointed out that the English form, with its columns for years, months, days, and hours, is the most precise, and superior to the more vague terms "acute" and "chronic" employed in the French blank forms.

Finally, this interesting publication of the Census Bureau gives a model form of death certificate, which it suggests might be adopted in 1909:

There can be no real progress in the upbuilding of a national system of vital statistics—something in which this country is at present behind all the civilized nations of the world—until some definite basis of agreement can be reached *and maintained* relative to the collection of the basis material.

A brave and frank sentence written in the spirit that will conquer difficulties and raise the vital statistics of America to a worthy place among civilized nations. As the model certificate places before us the matured results of a long study of this subject in the United States we give it below:

MEDICAL CERTIFICATE OF DEATH.

Date of Death. Month..... Day....., 19.....

I attended deceased from ..... 19.....

to ....., 19..... I last saw h..... alive on

..... 19....., and I *hereby certify* .....

that death occurred on the date above at ..... M.

The Disease causing Death [Means of Death* or Death from Violence] was:

	Duration in Years, Months, Days, or Hours.
.....	
.....	.....
.....	.....
Resulting in:	.....
or Aided by:	.....
.....	.....

Signed....., M. D.

....., 19..... Address .....

* State *how* injury occurred and whether { Accidental? Suicidal? Homicidal?

This form is a suggestion only, and is recommended for the consideration of the American Association of Registrars of Vital Statistics. It is a modification of the standard blank form now in use in many of the states of the Union, and its adoption in the suggested or some modified shape is an essential and primary step towards accurate vital statistics. It might with advantage give the occupation of the deceased. We are bound to make one other criticism. There is no provision made for the certifier to state that he has verified the *fact* of death. This point was specially recommended by Sir Walter Foster's Select Committee in 1893, and its omission is a grave defect. It should be remedied, both in the interests of public safety and in the interests of vital statistics.

THE RESUSCITATION OF THE APPARENTLY DROWNED.

THE *London Hospital Gazette* for November contains a report of a demonstration of Professor Schäfer's method of resuscitating the apparently drowned given by Mr. W. M. Fletcher, Fellow and Tutor of Trinity College, Cambridge, at the London Hospital, before a mixed audience, among which were several members of the Royal Life Saving Society. Mr. Fletcher was introduced by Mr. Sydney Holland, who said he was present when the regrettable "grind" accident occurred at Cambridge, and used the Silvester method upon a woman with some success; but she eventually died with symptoms of a ruptured liver. In conversation afterwards with Mr. Fletcher, he learnt of the Schäfer method, and subsequently invited him down to the "London" to give a demonstration of the new method.

After a brief description of the mechanism of respiration, Mr. Fletcher sketched the history of the various methods of artificial respiration. Marshall Hall, early in the last century, advocated pressure on the thorax from behind, together with rolling on the side, a method which was adopted throughout the civilized world. In 1850 Silvester drew attention to the importance of initiating inspiration. His method was to draw up the arms and press them into the chest wall, the patient lying on his back. The Royal Medical and Chirurgical Society appointed a committee, which received the Silvester method with favour, and it was adopted by the Royal Life-Saving Society and other societies. Another method, the Howard, was to apply rhythmical pressure to the lower part of the chest, the patient lying in the dorsal position. In 1889 the Royal Medical and Chirurgical Society appointed a second committee, which, after fourteen years' work, produced the report of 1903. The chief interest of the report was the record of experiments made by Schäfer. In these he drowned some thirty dogs, which were fully anaesthetized before they were drowned. From these experiments he proved that (1) the presence of water in the lungs was not serious, since it was rapidly absorbed, but its presence in the windpipe was serious. (2) During suffocation the organs of the body were enormously engorged with blood, the liver particularly; consequently, it was exceedingly tender and friable, and liable to rupture. Though he performed artificial respiration with great care upon the dogs, several livers were ruptured. (3) The introduction of water into the windpipe has the action of increasing the secretion of mucus. The Committee tried all the methods upon a living patient, and measured the amount of air expelled by each method. The report showed that all the methods were adequate, but went no further. As an afterthought Professor Schäfer saw that they were on the wrong tack, and showed that what was wanted was a number of repeated efficient breaths and not one big one—a hurdle race as compared to a high jump. Instead of taking one sample of each method, Schäfer carried out each for five minutes, thirteen times to the minute. The result was as follows:

Average Volume of One Respiration in Series lasting Five Minutes.

Marshall Hall ... ... (Rolling and prone pressure.)	254 c.cm.
Silvester ... ... (Arm traction and supine pressure.)	178 c.cm.
Howard ... ... (Supine pressure)	295 c cm.
Schäfer ... ... (Prone pressure)	520 c.cm.

(The average tidal air of a middle-sized man is 300–350 c.c n.)

Schäfer pointed out that his own method was the same as Marshall Hall's without the rolling, which he thought waste of time. He placed the patient in the prone position with a rolled-up coat under his chest. Kneeling beside the drowning man, the operator placed his hands on the lumbar region, one on each side of the vertebral column and over the last two ribs, the fingers pointing upwards and outwards. Rhythmical pressure of the whole weight of the body was then levied upon the patient fifteen times to the minute. The advantages of the Schäfer method were: (1) The prone position, enabling the tongue to hang downwards and forwards; (2) the first movement, being one of expiration, helps water out of the windpipe; (3) the simplicity of it; a weak man can do it unaided for hours, and can give instructions to assistants meanwhile; (4) the small danger of rupturing the liver. The disadvantages of the Silvester were: (1) That it is elaborate and impossible for one man to carry out alone—the printed instructions show four men; (2) several minor points had to be attended to before artificial respiration was commenced. "Was there seriously anything to be said in defence of the method other than that it was theatrical and useful for competitions?" The Schäfer method was not yet universally known, but it had been used to the lecturer's knowledge already two or three times with success—once by a pupil of Professor Schäfer's in Edinburgh upon a victim of a skating accident, and in two recent cases near Cambridge.

SLEEPING SICKNESS.

In an article giving an account of the proceedings of the International Conference on Sleeping Sickness held at the Foreign Office in June last, which appeared in the British Medical Journal of June 29th, it was stated that it had been agreed to adjourn the next meeting till November 1st. Recently it was agreed that the second conference should be postponed to a later date. This course was adopted in deference to a wish expressed by the German Government, which pointed out the expediency of waiting till Professor Koch's return from Africa should make it possible to bring the results of the researches made by him during the past eighteen months before the Conference. The exact date of the Conference has not yet, we believe, been fixed, but it will probably be held in February. The British delegates are:

Lord Fitzmaurice, the Right Hon. Sir Walter Foster, M.P., Mr. A. Walrond Clarke, of the Foreign Office; Mr. H. J. Read and Sir Patrick Manson, K.C.M.G., of the Colonial Office; Colonel David Bruce, R.A.M.C., C.B., F.R.S., Dr. J. Rose Bradford, F.R.S., and Sir Rubert Boyce, F.R.S., Dean of the Liverpool School of Tropical Medicine.

An independent Sleeping Sickness Committee has been formed in Liverpool for the purpose of collecting information as to sleeping sickness, stimulating research as to the causation, mode of transmission, and cure of sleeping sickness, and publishing from time to time communications with reference to the disease. The members of this Committee are:

Sir Alfred Jones, K.C.M.G. (Chairman).
The Right Hon. the Lord Mayor of Liverpool (Dr. Richard Caton).
Professor B. Moore, Director of the Bio-chemical Department, Liverpool University.
Professor Salvin-Moore, Director of the Cytological Department, Liverpool University.
Professor Annett, Director of Comparative Pathology Department, Liverpool University.
Professor Sherrington, Director of the Physiological Department, Liverpool University.
Dr. Stephens, Walter Myers Lecturer in Tropical Medicine, Liverpool University.
Dr. Anton Breinl, Director, Runcorn Research Laboratories.
Dr. Prout, C.M.G.
Dr. Arthur Evans.
Dr. M. Nierenstein, J. W. Garrett International Fellow, Liverpool University.
Dr. J. L. Todd of Montreal.

Corresponding Secretaries:
Professor Sir Rubert Boyce, F.R.S. (Dean of the Liverpool School of Tropical Medicine), and
A. H. Milne, B.A.Cantab.

THE WORKING OF THE MIDWIVES ACT, 1902.

We are indebted to a correspondent at Prescot, Lancashire, for a copy of circular letter and form of certificate sent out by the guardians of the Prescot Union to all medical practitioners and midwives residing within the area of the union. The guardians draw attention to the fact that they are prepared to make certain payments whenever a midwife has occasion under the Act to call in a medical practitioner within the area of the union. It will be necessary for the medical practitioner to send the guardians a written declaration that he is unable to obtain payment from the patient, but before doing so he will be expected to have taken reasonable means to secure his fee. Accompanying the declaration must be a description of the case with the treatment adopted, on a form, a copy of which we give below. The following fees will be paid—10s. 6d. for attendance on all cases of urgency and danger not requiring operative interference; 21s. when operative interference is required and has been carried out. Such fees are not cumulative. Any claim for additional fees consequent upon prolonged attendance, use of anaesthetics, etc., will be considered on its merits by the guardians. Provision is made against the exploitation of particular practitioners by a regulation that midwives are required to call in the nearest available practitioner.

The Prescot Guardians have set an excellent example which we would be glad to see followed by other authorities throughout the kingdom. The following is the form of certificate required:

Form of application for Fee.

PRESCOT UNION.

THE MIDWIVES ACT, 1902.

I HEREBY CERTIFY that at ——— a.m./p.m. on ——— 190

I was summoned by _____ a Midwife, to attend

_____ of _____

(attached hereto is the summons of the Midwife).

The conditions I found were _____

_____

which necessitated the following _____

_____

_____

_____

I hereby declare that I have failed to obtain my fee for such attendance after having taken reasonable means to do so.

	£	s.	d.
To attending case of urgency and danger without operative interference ... ... @ 10s. 6d.			
attending case requiring operative interference ... . @ 21s. 0d.			
_____			
_____			
_____			
	—	—	—

Signed _____

Address _____

Accounts to be rendered Quarterly.

_____ 190

"Was a Doctor Required?"

With reference to our note under this heading in the Journal of November 23rd, p. 1544, Dr. Waterfield sends us a report of the adjourned discussion at the Stonehouse Board of Guardians. As a result of the previous discussion a letter had been sent to the association to which the midwife in the case was attached, asking for an explanation of the circumstances under which she sent for the doctor, and intimating that the particular reason given in her note did not appear to them to be a sufficient cause for the presence of a doctor. A reply had been received from the secretary of the association to the effect that, as we have already pointed out, the midwife was bound under the rules of the Central Midwives Board

to send for medical help, and adding that there was no doubt that a prolapse of the cord should be dealt with instantly to save the life of the child. Dr. Waterfield then said that the question was, "Should the guardians pay a fee which one of their own Board did not think came under the Act?" We answer unhesitatingly that they should do so when the fee has been fairly earned, and that it is very unfortunate that a medical member of the Board should have opposed its payment. Dr. Waterfield adds that so far from preferring the old Sairey Gamps to the certified midwives, he has worked hard to establish the Queen's Nurses' Association in his locality. We readily accept his assurance on this point, but in the case under discussion it seems to us that he so managed to "dissemble his love" as to remind one of the question in the play.

From the report sent us we are unable to discover whether the doctor who attended was eventually paid his fee, and we commend to the consideration of the Stonehouse Board of Guardians for future use the regulations of the Prescot Board, which will be found in another column.

NORTH RIDING OF YORKSHIRE.

IN a paper dealing with the working of the Midwives Act read by him at a meeting of the Leeds Medico-Chirurgical Society on November 14th, Dr. W. H. Cheetham, Executive Officer to the supervising authority for the North Riding of Yorkshire, said that up to the beginning of the year 1906 altogether 79 women had been placed on his register out of a total of 146 applicants. During the succeeding twelve months, of all births in the area 1,282 were attended by midwives, the greatest number in the hands of any single midwife being 198, the next highest number being 127. In the total number of confinements there was 1 case of puerperal fever and 1 of hyperpyrexia, and in 9 the child was born dead; while difficulties during delivery led to medical aid being summoned on four occasions. During the four years in which the women had been under his observation there had been a marked improvement in the manner in which they did their work. Looking forward to the future, he said he did not anticipate any difficulty as to a sufficient supply of certified women. There were associations which were providing for the training of women in midwifery, and the North Riding County Council had established nursing scholarships in aid; probably in the course of ten or fifteen years most cases of confinement within the area, especially in the urban districts, would be attended by women. There was some doubt, however, as to whether such midwives would be able to make a living wage. At present the average fee paid for attendance during confinement was 10s.

BRITISH MEDICAL BENEVOLENT FUND.

AT the November meeting of the Committee grants amounting to £193 were made to eighteen out of twenty-two applicants.

The CHAIRMAN announced a most generous donation of 100 guineas from a member of the Committee to whom the urgent need of help was known. At this time of the year, although the applications are very numerous, practically no subscriptions are received, and the Committee appeals most earnestly for donations, so that assistance may be given to the many cases which will have to be dealt with before Christmas.

Appended is an abstract of the cases relieved this month.

1. Wife, aged 62, of L.R.C.P.Irel. Was deserted by her husband four years ago through no fault of her own, and is dependent for shelter on a widowed friend who can ill afford to help. Earns a few shillings occasionally by needlework. No children. Voted £12.

2. Daughter, aged 60, of late M.R.C.S. No income; has supported herself for some years as a mission worker, but is now incapacitated by severe neuritis. Voted £10.

3. Widow, aged 70, of L.F.P.S.Glasg. No income; allowed 3s. 6d. a week by a son. Voted £12.

4. Widow, aged 40, of L.R.C.P., L.R.C.S.Edin. Quite unprovided for at husband's death a few weeks ago. Two children, aged 12 and 10. Voted £12.

5. Widow, aged 57, of L.R.C.P.Edin., M.R.C.S.Eng. Has maintained herself since husband's death ten years ago, but is now practically incapacitated by severe rheumatism and failing sight. Three children, unable to help. Voted £12.

6. Wife, aged 38, of M.R.C.S., L.R.C.P., who is confined in an asylum. Earns small salary as a district nurse, but insufficient for the barest necessities required for herself and three children, the youngest only 2 years of age. Voted £12.

7. Widow, aged 34, of M.B., C.M.(Aberd.) No income; two children, aged 8 and 7. Is endeavouring to obtain employment. Voted £5.

8. Widow, aged 62, of M.R.C.S., L.S.A. No income; has supported herself as housekeeper, companion, etc., since her husband's death twenty years ago, but is now unable to obtain another post. Two children, unable to help. Voted £12.

9. Widow, aged 61, of M.B.Edin., who was an annuitant of this fund. No income; earns about 2s. a week by knitting. Only child very delicate and unable to help. Voted £12.

10. Daughter, aged 72, of late L.S.A. Has maintained herself for several years by taking boarders, but finds increasing difficulty in obtaining them, and at present has none. Health indifferent. Relieved once, £12. Voted £12.

11. L.R.C.P., L.R.C.S.Edin., aged 50. Is incapacitated by spastic paraplegia. No income. One child, a schoolboy. Relieved three times, £36. Voted £12.

12. Daughter, aged 55, of late M.R.C.S., L.S.A. No income; earns a few shillings a week by needlework. Slight help from friends. Health indifferent. Relieved three times, £32. Voted £12.

13. Widow, aged 51, of L.R.C.P., L.R.C.S.Edin., who practised in Staffordshire. No income, but has a small uncertain weekly allowance from friends. Seven children, of whom three are just self-supporting, the rest dependent. Relieved once, £12. Voted £12.

14. Widow, aged 66, of L.R.C.P., L.R.C.S.Irel. No income; friends unable to help; has maintained herself for several years as a housekeeper, but is now unable to obtain employment. Relieved once, £12. Voted £12.

15. Daughter, aged 45, of late M.D.Edin. Is a governess, but at present has no engagement. Relieved six times, £30. Voted £5.

16. Widow, aged 52, of M.D. Was left quite destitute at husband's death several years ago, after a long illness which exhausted all his savings. Lets lodgings with help of only child, a daughter. Relieved seven times, £84. Voted £12.

17. Widow, aged 85, of L.S.A. Was left a widow fifty years ago, and supported herself and brought up her family by keeping a school. Assisted of late years by her daughter, a widow, whose income is now so reduced that the help cannot be continued. Relieved seven times, £70. Voted £12.

18. Widow, aged 70, of M.D.Lond. No children, friends all dead. Has a small annuity, but is unable to meet unavoidable expenses. Relieved twice, £16. Voted £5.

INDIAN SANITARY REPORTS.

United Provinces of Agra and Oudh.

THE conditions of the year 1905 resembled those which existed in Bengal and Assam. The year was an abnormal one. The early part of the year was exceptionally cold and wet. The rains began late, and were scanty in the majority of districts. Harvests were bad and prices high. The birth-rate was 41.24, as compared with 46.67 in 1904, and 44.07 the quinquennial mean; and the death-rate 44.0, against 39.70 and 33.80. Infantile mortality was also in excess, being 263 per 1,000 of births, against a decennial rate of 229. Increased attention is being paid to the verification of registration records, and returns of death causes are being collected from private practitioners. There was an excess of fever mortality. No antimosquito measures were resorted to, but attempts were made to push the supply of quinine. Cholera prevailed severely in Oudh and the south-eastern districts. Bowel complaints were also in excess. The deaths caused by plague amounted to 383,802—more than double those of 1904, and the highest total reached since the disease entered the province; 6,411 persons were inoculated, and of these 8 are reported to have died of plague. Small-pox caused fewer deaths than usual. Municipalities spent 41 per cent. of their income on sanitation. The report of the sanitary engineer (Mr. D. W. Aikman) deals with a large number of important works for water supply and drainage either in existence or contemplation. Experiments are being made as to the introdnction of the septic tank system into institutions and towns. The money spent on drainage and sewerage works during the year amounted to 9½ lakhs of rupees, and the Sanitary Board, which held four meetings, considered and approved of projects and estimates totalling nearly 19 lakhs. The Government resolution concludes that the year was one of progress in sanitary improvement and effort. The report is written by Lieutenant-Colonel S. J. Thomson, C.I.E., D.P.H.

THE Town Council of Vienna has decided to call a new street in that city after Theophrastus Paracelsus.

LITERARY NOTES.

The *Progrès Médical* of November 9th is the "*numéro des étudiants.*" It contains detailed information as to the various universities and medical schools of France and its Colonies, hospitals, laboratories, courses of instruction and graduation in medicine.

Francis Thompson, the distinguished poet who has just died, began the study of medicine at Owens College, Manchester, but not finding it to his taste abandoned it for literature. The influence of his medical knowledge is seen in one of his last published works, a booklet entitled *Health and Holiness*, in which he teaches that "modern science and advanced physiology must needs be felt even in the science of spirituality." Men, he adds, begin to suspect that much has been blamed to the body which should justly be laid on the mismanagement of its master.

It is felt that the body has rights; nay, that the neglect of these rights may cause it to take guiltless vengeance on the soul. We may sin against the body in other ways than are catalogued in Liguori; and impoverished blood—who knows?—may mean impoverished morals. The ancients long ago held that love was a derangement of the hepatic functions. "*Torrit jecur, urit jecur*," says Horace with damnable iteration; and Horace ought to know. And now, not many years ago, a distinguished Jesuit director of souls, in his letters to his penitents, has hinted over and over again that spiritual disease may harbour in a like vicinage.

He quotes with approval the same authority as saying that health may be no mean part of holiness. Holiness, he says, energizes. How well he understood the effects of the mind on the body is shown by the following passage:

In our times Science has partially brought into daylight the obscure physiology of the will: we know that the will of one man may heal or quicken the body of another. We call it therapeutic hypnotism; and the long name confers scientific orthodoxy on what was a pestilent heresy. Nor only this: we know, also, the possibility of self-hypnotization; we know that a man's own will can heal or quicken a man's own self. Are not these the days of Mrs. Eddy and "Christian Science" and many another craziness which is the over-seeding of this truth? Solely as a natural matter, by its profound effect on the personality, by its quickening of the will, sanctity (then) would produce a quickening of the body.

Mr. Thompson sums up his doctrine in the statement that the remedy for modern lassitude, for modern weakness of will is Holiness.

The Medical School of Angers has decided to celebrate the centenary of its foundation, which falls this year. In addition to the customary banqueting and oratory, it is proposed to issue a handsome quarto volume containing some forty or fifty portraits, drawings of the school at different periods, and a complete history of the institution from its beginning down to the present time. The Committee appointed to organize the centenary celebrations consists of Drs. Legludic, Tesson *père* and *fils*, Thézée, Mareau, Fagot, Monprofit, and Tabuteau.

The Council of the Union Jack Club intends to produce an illustrated book next year, containing articles, stories, poems, and sketches by well-known authors and artists, in order to obtain the necessary funds for building the much-needed extension of the club. The amount required is £10,000. Among the authors who have so far promised literary contributions are Mr. Alfred Austin, Mr. Bennett Burleigh, Sir A. Conan Doyle, Mr. Maurice Hewlett, Mr. W. W. Jacobs, Mr. Rudyard Kipling, Sir Gilbert Parker, Lieutenant-General R. S. S. Baden-Powell, Mr. W. Pett Ridge, Lady Ritchie, Mr. W. Clark Russell, and John Strange Winter. Communications and inquiries should be addressed to Major H. F. Trippel, at Onslow Hall, Richmond, Surrey, who is acting for the Council of the club as honorary editor and manager.

MEDICAL NEWS.

The next meeting of the Pathological Society of Great Britain and Ireland will be held at the Pathological Laboratories of the Royal Army Medical College, Millbank, S.W., on Friday, January 3rd, at 2 p.m., and will be resumed on the following day at 10 a.m. The members will dine together on the evening of January 3rd.

A chemical laboratory has recently been established at Tananarivo in Madagascar. Besides purely scientific researches, it is intended for the analysis of foodstuffs and other purposes of practical importance.

A statue of the late Professor Tillaux is to be erected within the precints of the schools of practical anatomy of the University of Paris at Clamart. The statue is from the chisel of the well known sculptor, M. Chaplain.

Surgeon-General Sir Alfred Keogh, K.C.B., Director-General, Army Medical Department, will inspect the Volunteer Ambulance School of Instruction and present the prizes at 8.45 p.m. on Monday, December 9th, at the head quarters of the London Rifle Brigade, 130, Bunhill Row, E.C.

At a meeting of the West Kent Medico-Chirurgical Society at the Miller Hospital, Greenwich, on December 6th, Dr. Risien Russell, in the Purvis Oration, will deal with the Diagnosis between Organic and Functional Affections of the Nervous System. A *conversazione* will afterwards be held.

Professor John Ferguson, M.A., LL.D., F.S.A., will preside at a dinner of the Glasgow University Club, London, to be given in the Trocadero Restaurant, Piccadilly Circus, W., on Friday, December 6th, at 7.30 p.m. Applications for tickets should be addressed to the Honorary Secretaries, 63, Harley Street, W.

The first ordinary meeting of the Fellows of the Royal Society of Medicine will be held at the house of the Society on Tuesday next, at 5.30 p.m. The meeting, which is for the election of candidates, who, we are informed, number upwards of 100, will be mainly formal, but the President, Sir William Church, will probably give a short address.

It has been decided to hold a second Congress of Medical Practitioners at Lille in 1908. The programme of the Congress is virtually that of the former one which met in Paris—namely, the suppression of all higher certificates and of every additional diploma tending to lessen the value of the diploma of doctor; the separation of the Faculties of Medicine from the universities, and the creation of a Superior Council of Medical Teaching. The Congress will also discuss the action to be taken by the profession and the forthcoming legislative elections, with special reference to the demand from candidates of pledges to promote the improvement of practical teaching and other reforms.

The Infants' Hospital in Vincent Square, Westminster, was formally declared open last week. Its existence is due to Mr. Robert Mond, who built and equipped it as a memorial to his wife and to take the place of the institution established in 1903 at Hampstead in connexion with the Infants' Health Society. The present building has ward accommodation for 50 infants; a lecture-room and research laboratory have also been provided, it being hoped that the hospital will become a centre both for the treatment and study of the conditions in young infants connected with malnutrition.

Mr. Paul Swain, F.R.C.S., will preside at the meeting of medical men to be held at the Athenaeum, Plymouth, at 5.30 p.m. on Thursday next, when Sir Alfred Keogh, Director-General A.M.S., will speak on the arrangements for the medical service of the territorial army. The meeting will be followed by a subscription dinner at the Royal Hotel, tickets for which will be 5s. exclusive of wine. It is hoped that there will be a large attendance of members of the profession resident in West Devon and Cornwall. Should any have been overlooked in issuing the circular of invitation, they will nevertheless be heartily welcomed. Applications for dinner tickets should be made to the Honorary Secretary, Dr. A. Bertram Soltau, 1, Lansdown Place, The Hoe, Plymouth.

A letter signed by Mr. Harris, Chairman of the London County Council; Mr. Taylor, Chairman of the Education Committee of the same body; and Mr. Jay, of the Subcommittee on Underfed Children, is being circulated asking for support of various associations which make it their duty to provide underfed children in the elementary schools with extra meals. The London County Council has voted a sum for equipment and appliances for these bodies and will insure, through its Children's Care Committees, that in the selection of the children to be assisted, discrimination shall be used. The associations specifically mentioned are the *Referee* Children's Dinner Fund, of which the hon. treasurer is Mrs. Burgwin, 147, Brixton Road, S.W., and the London Schools Dinner Association, of which Lord Kinnaird, 1, Pall Mall East, is hon. treasurer. It is indicated that about £15,000 will be required during the coming winter, and that if voluntary contributions fail it will be necessary to resort to the rates.

British Medical Journal.

SATURDAY, NOVEMBER 30TH, 1907.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

THE Board of Education has issued a memorandum on the medical inspection of children in public elementary schools, which contains a detailed statement as to the policy it advises local education authorities to follow in carrying out the provisions in the Education Act of last session with regard to the medical inspection of school children. The memorandum is printed in full in the SUPPLEMENT this week, and we venture to say that it demands the most careful consideration of all members of the medical profession. The Board of Education advises that the work should be everywhere organized under the medical officer of health, and that when the actual work of inspecting the children is more than he can undertake unaided it should be carried out by special assistants working under his supervision. We may at once say that in laying down a definite detailed scheme at the present juncture, when every one feels it to be vitally important that no false step should be taken, the Board has made a serious mistake. It would have been far better advised had it consulted the medical profession, as the Army Council is consulting it on the medical service of the territorial force with such marked advantage to the movement, before adopting a narrow sectional view of a reform important enough to interest every doctor in the land and to gain his best advice and co-operation.

It is difficult to believe that the recommendation as to the qualifications which should be expected of those medical men and women who become assistants to the medical officer of health in the work of medical inspection has been considered with sufficient care and with sufficient knowledge of what has happened and is happening in other countries. The Board lays it down that preference should be given to medical men and women who (1) have had adequate training in State medicine or hold a diploma in public health, (2) have had some definite experience of school hygiene, *and* (3) have enjoyed special opportunities for the study of diseases in children. There would seem to have been a confusion in the mind of the writer of the memorandum between public-health administration and school hygiene and the special study of diseases in children. The Japanese treat the human body as a drain, and to this some would attribute their remarkable freedom from disease. In placing medical inspection of school children in the hands of sanitary authorities perhaps the Board had a confused recollection of this in mind, otherwise it is difficult to understand the special suitability of sanitary authorities for carrying out a minute personal inspection of children in relation to bodily and mental efficiency. Even the lay press is aghast at the idea of medical inspection falling into the hands of sanitary authorities, and as an illustration we may quote the following sentences from the *Times* of November 25th: "It is, unfortunately, only "too true that the arrangements thus indicated will "throw the entire conduct of the inspections, and the "provision of remedies for any evils which they may "disclose, into the hands of the very bodies whose "avoidance of their proper work as sanitary authorities "is mainly responsible for the existing sickness-rate of "the country, whose neglects and misdoings are being "exposed, week after week, in the reports of the Medical "Inspectors of the Local Government Board, and whose "election to offices the duties of which they are often "incompetent to discharge, and the importance "of which they are often unable to recognize, is almost "invariably due to their activity as party politicians of "a humble kind. It is safe to predict that such "persons, unless stimulated to activity by their party "leaders, or by an overwhelming development of public "opinion, will be as indifferent to school sanitation "as they have been to sanitation generally; and that, "if or when they are forced into a semblance of "activity, their endeavour will be to spend as little "money and to do as little work as may be com-"patible with an apparent observance of the "law."

The public will not even have the satisfaction of feeling that the eye of the Local Government Board is upon them, because medical inspection is to be directly under the control of the Board of Education. The Board having placed the work in certain hands, is not likely often to find fault with its elect, for such fault-finding would be an admission of the Board's own failure of judgement.

That an officer whose duty is purely and solely to examine school children with regard to their health and physical condition should be required to hold a diploma in public health—for how otherwise the fact that the applicant has undergone an adequate training in State medicine is to be assured we do not know—is manifestly unreasonable. It can only be imagined that such a rule was made in order to secure the control of medical inspection for medical officers of health at present in office, because surely no reasonable body of men who understood what they were doing would force doctors, already hard pressed by their ordinary course of medical training, to sacrifice a year of their time to the study of a subject which is quite outside the scope of the special work which they are to do. Far better that those young medical men who elect to take the diploma in public health, with a view to becoming medical officers of health, should devote the whole of the extra period of study to the special subject of sanitary administration than that they should give part of the time of preparation to the study of special subjects which have no direct bearing upon public health law and administration.

If it be urged that the public health authorities already have certain duties with regard to the sanitation of school buildings, that a school has been included in the definition of "house" for the purposes of the Public Health Acts, and that the Local Government Board requires every medical officer of health to report upon matters relating to the sanitary condition of all schools, it may fairly be asked whether even this duty has been satisfactorily fulfilled in the past. Since attention was first aroused by a few public-spirited writers and investigators to the existence of a serious amount of physical unfitness amongst the youth of the nation, the limited examinations of the children in elementary schools made by school doctors, where they

have been appointed, has disclosed the existence of an amount of preventable disease which has shocked public opinion. It must be attributed partly to bad home conditions, but partly also to the persistence of unhygienic conditions in the schools themselves.

If the work now falling to the lot of medical officers of health cannot be satisfactorily accomplished, how can the same officers undertake new duties far more difficult in their nature, demanding a large amount of time and study, a special knowledge of children, and an aptitude for dealing with them? The second requirement that the applicant should "have some definite "experience of school hygiene" also appears to be designed to meet the case of existing medical officers of health. It will be remarked that the recommendation applies to the present, because definite experience must mean the use of opportunities which only medical officers of health have hitherto been in a position to enjoy. While it may be admitted that a thorough knowledge of school and personal hygiene is a necessary qualification, we submit that in organizing an entirely new scheme the words "definite experience" are little better than nonsense, because up to the present only fragmentary experience is possessed, except perhaps by the medical officer to the Education Committee of the London County Council, who has been a pioneer of the movement, and has, with his assistants, given his best energies to the study of the inner working of a number of schools. The third qualification demanded is that the medical men and women who are candidates for the work of medical inspection "should have enjoyed special opportunities for the "study of diseases in children." This is an all-important qualification, but it is certainly not one to which the holders of a diploma in public health can lay any special claim, inasmuch as it is not a subject included in the curriculum for the diploma, and is one in which every general practitioner must have gained far more experience.

At any rate, the three conditions taken together, as they must be since the word "and" and not "or" is used, will, if the advice tendered by the Board of Education is accepted by the local authorities, practically ensure that the only persons who will be eligible for the new work and the new appointment will be medical officers of health or those who aspire to that position. If a young medical man has taken advantage of special opportunities for the study of children, it implies that he has devoted a great deal of time to this branch of the profession, and that he feels it to be his particular vocation; it is therefore highly improbable that he will have taken a diploma in public health. Had it been proposed after a reasonable interval—say, after two years—the qualifications of a school doctor must comprise training in the theory and practice of school and personal hygiene, including, of course, the special study of disease in children both in and out of school, it would have been a most reasonable and enlightened rule, excluding only those who did not choose to qualify for this particular branch of work, and who in any case therefore were the least likely to be suitable to undertake it. To demand the possession of a diploma in public health or an "adequate "training in State medicine," whatever that may mean, is to exclude a large proportion, probably the majority, of those doctors who feel themselves best qualified to undertake the handling of children, and who, on account of this very aptitude, will decline to sacrifice a year to the study of public health law and sanitary administration—subjects about as necessary for the proper performance of the duty of a medical inspector of school children as a certificate from the Staff College or a diploma from Mr. Tree's dramatic school. Metaphorically, perhaps, elementary school children, owing to the amount of wrangling and heartburning over their education and the extra demand made upon the ratepayers, constitute a public nuisance; but they cannot for this reason be said to come within the legal definition of that term. Apart from this special work of medical inspection, medical officers of health can give most valuable help to the movement for the improvement of the health and physical condition of school children by setting up a high standard of public health. If the vexed questions which come under the head of overcrowding, the wholesomeness of food, and the purity of water were energetically tackled by sanitary authorities and their medical officers, it is not too much to say that the shameful condition of the health and physique of elementary school children would be enormously ameliorated. *Ne sutor ultra crepidam.* Special subjects should be handed over to specially-qualified medical men and women.

THE INDICATIONS FOR OPERATION IN CASES OF INTRACRANIAL TUMOUR.

A FULL report of the discussion on this subject, opened in the Section of Medicine at the annual meeting at Exeter by Dr. Risien Russell, was published in this JOURNAL on October 26th, and is well worthy of careful study.

No one was better fitted by his knowledge and experience to open this discussion than Dr. Russell, and he recognized that it was his duty to consider in what cases operation is not advisable, just as carefully as those in which surgical intervention is indicated; and when an eminent specialist takes up this attitude towards a new departure in medicine or surgery, it must create a favourable impression. He pointed out that there is a very general idea in the profession that little good can be expected from operation for tumour of the brain, an impression which he wished to see removed. We may add that the profession would have been grateful to Dr. Russell if, like Oppenheim, he had given from his experience a complete record of all the cases of cerebral tumour, whether successful or non-successful. The distinguished Berlin professor, in his notable monograph, reviewed recently in the columns of the JOURNAL,[1] gave statistics of 27 of his own cases which had been submitted to operation during the previous three or four years. Three were cured—2 were completely cured, and 1 cured with defect; in this case six months had elapsed since the operation—that is to say, he had to record cases in 11.1 per cent. In 22 per cent. there was more or less improvement. In 55 per cent. unfortunate results happened, in spite of correct diagnosis, general and local, death occurring either at the operation or soon after from shock, haemorrhage, or other causes. He concludes that to advise surgical treatment of cerebral tumour (in spite of isolated brilliant successes) is always one of the most difficult and thankless tasks of the physician; yet he can always point to the fact that, without surgical intervention, it is usually a fatal disease. On the other hand, it must not be forgotten that there are cases in which spontaneous cure occurs—cases of pseudo-tumour and others in which an antisyphilitic treatment has yielded good results and a cure. Bruns's experience of surgical

[1] BRITISH MEDICAL JOURNAL, May 11th, 1907 p. 1124.

treatment, which is referred to in the review of the second edition of his work in this issue (page 1590), is much less satisfactory than Oppenheim's; both give a warning against lightly deciding upon operation for cerebral tumour.

Sir Victor Horsley in his memorable Address in Surgery at the British Medical Association Meeting at Toronto, 1906, upon the Technique of Operations upon the Central Nervous System, remarked upon the "vulgar error" of regarding surgical treatment as the *dernier ressort* in cerebral tumour. Those who had the privilege of hearing that address were profoundly impressed, and can fully endorse the praise which Bruns, in his recent great work, bestows upon it when he says that "only last year again Horsley brings "forward new and beautiful results; he combines in "himself the neurologist, the brain physiologist, and "the surgeon." Sir Victor Horsley insisted that success in cerebral surgery depends largely upon an early diagnosis of tumour, and upon surgical intervention before the tumour has grown too large for removal or produced irremediable changes in the nervous system, notably the optic nerves. According to Oppenheim, optic neuritis occurs in 90 per cent. of the cases. The patient probably first comes to the practitioner suffering with severe and persistent headache and, it may be, vomiting; he may not complain of any visual defect, although suffering from marked optic neuritis. Now Bruns in his recent work points out that an English critic of the first edition made sarcastic remarks upon his recommendation that an examination of the fundus oculi should be made in all cases of persistent headache; but that was ten years ago, and the use of the ophthalmoscope by the practitioner of to-day is much more general, and the importance of optic neuritis as a diagnostic sign of serious organic brain disease is becoming universally recognized. Consequently, we may expect cases of tumour will in the future come into the hands of the specialist at an earlier stage.

The results recorded by Sir Victor Horsley in the address above referred to, support Dr. Russell in his plea that the subject should be approached with less of the spirit of scepticism among members of the profession not intimately associated with this department of medicine or surgery. The record of the Queen Square Hospital of 55 cases of tumour illustrates the success of diagnosis and treatment when eminent specialists qualified by skill and experience deal with this most difficult branch of medicine and surgery.

One of the arguments against removal of cerebral tumour is *the liability to recurrence.* This depends entirely upon the nature of the growth. Experienced neurologists have little difficulty in diagnosing the existence of tumour, for only occasionally at an operation is no tumour found to exist, as in those cases of pseudo-tumour first described by Nonne and referred to by him in a communication which he made to the recent meeting of the Association of German Neurologists at Dresden. Dr. Michell Clarke, in his interesting contribution to the discussion, alluded to some cases of pseudo-tumour that had occurred in his own practice, and described the symptoms, which accorded in the main with those of Nonne's cases. Oppenheim points out that in such cases optic neuritis, vomiting, paresis of the external rectus, attacks of convulsions, and somnolence may occur, and yet no tumour be found *post mortem;* he refers the symptoms to internal hydrocephalus caused by serous meningitis. There is a little more difficulty in the localization of the tumour; even here skill and experience count for much, and in only three or four of 27 cases was Oppenheim wrong in his localization; but it is more or less of a guess what is the nature of the tumour, unless there be a tuberculous or syphilitic history. Consequently the surgeon may or may not be able to remove the tumour completely.

If the tumour, then, be not removable, has the patient's life been unduly endangered? That depends entirely upon surgical skill and experience. In the hands of such distinguished surgeons as Sir William Macewen, Sir Victor Horsley, and other specialists in brain surgery, the dangers from shock have been greatly reduced by performing the operation in two stages unless otherwise indicated; sepsis, generally speaking, may be left out of account, and we feel that there is much in favour of Mr. Donald Armour's assertion that the surgery of brain tumours is now established upon an exact scientific basis. This surgeon described as operable *any* case of brain tumour in which the growth can be wholly or partially removed with subsequent benefit to the patient. The crux of the question lies, however, in whether the surgeon's anticipation of benefit by removal or partial removal is verified by the result; for, apart from immediate danger to life from haemorrhage, shock, and collapse, the patient may be left aphasic or paralysed.

To return again to the question of recurrence. The table given by Sir Victor Horsley respecting the removal of 55 tumours occurring at Queen Square Hospital shows that, of 23 cases of glioma and sarcoma, 20 recurred within two years; but of the remaining 32, comprising cases of endotheliomata, tuberculomata, gummata, fibromata, cysts, and pituitary tumours, only two or three recurred although years had elapsed; in fact, all tumours which, unlike glioma and sarcoma, grow from the meninges, and penetrate but do not infiltrate the brain, or which are encapsuled, can be excised with good permanent result. Assuming, as we suppose we may, that the list represents a series of tumours successfully operated upon, the results are far better and much less discouraging than Oppenheim's; in any case, this operative success as regards recurrence is most encouraging. It would be interesting to ascertain, by an examination of all the available statistics, what was the proportion of deaths from operation, and what was the percentage of *complete* cures without any defects. Among the cases were eight of gummata, and the question will naturally arise, Would not these gummata have yielded to antisyphilitic treatment? Dr. Russell gave it as his opinion founded on experience that gummata are *not* absorbed in the brain in the same way as they seem to be under treatment when situated in external parts of the body, and that consequently operation for removal was advisable. Dr. Osler was of a contrary opinion, and referred to the fact that gummata were often associated with general endarteritis; it is well known that symptoms do clear up under the influence of iodide and mercury, and the general practice in the case of cerebral tumour is to try the effects of antisyphilitic treatment before resorting to operative measures, even when there is no history of syphilis. Bruns recommends this procedure, but it may be a dangerous proceeding, if persisted in too long, for permanent blindness may result; and the valuable observations of so experienced an authority as Mr. Marcus Gunn should warn the profession against the dangers of waiting until such changes have occurred in the optic nerves that relief of intracranial pressure is too late. Sir William Macewen said that such treatment should not last more than a few months. In fact, as Sir Victor Horsley said at Toronto, the operation of trephining

the skull should be practised for the purpose of relief of symptoms even when the tumour cannot be localized or cannot be removed; and the reasons for so doing were very clearly stated by Mr. Gunn, who pointed out that it was the intracranial pressure produced by the tumour which determined the oedema of the papilla, and subsequently led to the optic atrophy and blindness. Consequently it is justifiable, and even desirable in many cases, to perform what is termed a *decompression* operation. In the hands of a skilled surgeon the danger is not great, and it is often worth the risk to relieve the symptoms of severe headache and vomiting and to preserve the sight, with the hope—sometimes, in rare cases, verified—of the case being one of pseudo-tumour, or, if tumour, of its growth being arrested.

Space does not allow discussion of the important subject of localization, but we would commend to our readers' notice the admirable Lettsomian lectures on the diagnosis and localization of cerebral tumours by Dr. Charles Beevor, delivered in the early part of the year; they epitomize the unrivalled experience of the National Hospital medical staff. An important point raised by Dr. Russell was the success of operation on intracranial tumours situated in the lateral recess and the cerebellum, and Bruns calls attention to the fact that since the publication of the first edition of his work tumours situated in the posterior cranial fossae and tumours of the cerebellum are reckoned among the operable cases. This he asserts raises the percentage of operable cases 3 or 4 per cent., but he considers that the surgical dangers are increased, and he comes to the conclusion that only 14 per cent. of all tumours are favourable for removal by operation. But we must be guided in our estimate of cerebral surgery by a just consideration of the successes and failures of our own eminent specialists, who not only originated cerebral surgery, but also have done so much to perfect its technique and thus avoid the dangers of shock, haemorrhage, collapse, and the failures due to sepsis, oedema, and recurrence.

The conclusion arrived at by most of those who took part in the discussion at Exeter was that an operation might be performed with benefit to the patient in a larger number of cases if the diagnosis of tumour was made at an earlier period. The operation might be palliative to save the sight and relieve the distressing symptoms due to intracranial pressure, or it might be curative, but in either case success was much more likely to attend the efforts of the surgeon if he were called in early. The surgeon can only be called in early if the practitioner diagnoses the existence of tumour early, or if suspecting tumour, he calls in the aid of a specialist. Delay does not always arise from the existence of tumour not being diagnosed at a sufficiently early period, but perchance because the physician or practitioner has had previous unfortunate experiences of surgical intervention. The treatment of every case must be decided on its own merits, and the *pros* and *contras* must be carefully weighed; always bearing in mind that if antisyphilitic treatment is going to be tried it should not be prolonged beyond six weeks; or should be given for a shorter period, or even not at all, if symptoms urgently demand relief of intracranial pressure either by palliative or curative operation. The earlier recognition of tumour, the more correct localization of tumour, the greater perfection of surgical technique combined with a choice of palliative or curative operation, should do much to increase the success of cerebral surgery, and thus remove the pessimistic attitude of the profession towards operation in cases of intracranial tumour.

A STREET AMBULANCE SERVICE FOR LONDON.

It is now generally recognized that every large city requires a properly-organized street ambulance service for the removal of sick or injured persons from the place in which they may happen to have been injured or taken ill to their homes or to hospitals. In the case of accidents and sudden illness removal is a matter of urgency, and ought to be carried out *cito, tuto, et jucunde.* An ambulance system for the transport of invalids or of persons suffering from bodily or mental illness from their own homes to institutions in town or country is also necessary, but as a rule the removal of such cases is not a matter of urgency. At the present time, a Departmental Committee appointed by the Home Secretary is sitting to investigate the ambulance arrangements of London, and it will, we believe, find that the arrangements for dealing with infectious cases are admirable, that those for dealing with invalids or non-infectious cases are good, but that those for accident or sudden illness in streets and other public places are very much in need of improvement, and far behind those which exist in other great centres of population.

There is no existing organization within the metropolitan police district prepared to deal with accidents and casualties in the streets, gratuitously if necessary, by means of fully-equipped rapid ambulances, automobile or horse, always ready to respond to the call of the police by telephone or otherwise, such as exists in most large cities. Horse ambulances, it is said, are sometimes summoned and hired by the police for some special reason, but this must happen only very occasionally in distinctly emergency service.

For street accidents and like casualties, certainty as to the arrival of the ambulance with proper assistance at the scene of the accident or sudden illness before harm can be done by removal, or in the course of it, and rapidity of transit are the most important points. During 1906 the number of casualties in the streets within the metropolitan police district necessitating the removal of the sufferer to a hospital or infirmary was close on 11,000, the actual figures being 8,002 accidents and 2,853 cases of sudden and serious illness. Further, it appeared that of the whole number of casualties 8,077 happened within the four-mile radius from Charing Cross. This is an important point to bear in mind in considering the organization of a street ambulance service in London. Statistics show that, owing partly, perhaps, to the increase of motor traffic, the number of accidents occurring within the metropolitan area tends year by year to increase—has more than doubled within the last fifteen or sixteen years, and increased by more than one-third in the five years 1902-6. We may leave out of consideration the City proper, where the police ambulance system has recently undergone reorganization, and where wheel litters and hand stretchers are being displaced by motor ambulances, one of which is already in use. In the rest of London the street ambulance appliances consist of wheel litters and hand stretchers maintained by the metropolitan police, the wheel litters supplied and maintained through the munificence of Mr. L. Bischoffsheim, and the wheel litters and stretchers maintained at three centres by the St. John Ambulance Association. The introduction of wheel litters—which dates, we believe, from Mr. Bischoffsheim's gift in 1890—marked a very considerable advance in the manner of dealing with street accidents

and illness; but with the increase of traffic in the metropolis, and in view of the great improvements which have been made in ambulance transport in other cities the system must be recognized now to have become out of date. So large a number of accidents and casualties occurring within the four-mile radius cannot be dealt with satisfactorily without some better method of conveying injured persons than that afforded by stretchers and hand or wheeled litters. The method is not only at variance with the experience of other places—Liverpool, for instance, is provided with seven horse-ambulances, and Glasgow and its additional centres with thirty-one similar conveyances in connexion with the St. Andrew's Ambulance Association—but probably accounts for the fact that a large proportion of injured persons select, often much to their detriment, to be removed in cabs and carts and other unsuitable vehicles.

The introduction of horse and motor ambulances, with a proper system of speedily obtaining them by telephone or other signal, has become a matter of urgency; so much is, we believe, generally admitted by every one who has given any study to the question, but there is a good deal of difference of opinion as to the authority to which the street ambulance service should be confided. It has been suggested that as the Metropolitan Asylums Board already has an excellent ambulance service and has acquired much experience in dealing promptly with the removal of patients, it should be entrusted with the street ambulance service also; but the Board's service exists primarily for the removal of infectious cases, and if it were to be entrusted with street ambulance work also its equipment and staff would have to be very largely increased. It has also been suggested that under the direction of the London County Council, and possibly in association with its fire brigade, the existing unorganized provision for street ambulance in London, such as it is, might be developed and centralized. No doubt the London County Council could provide an adequate system of suitable ambulances at proper stations, but we do not believe that this plan will commend itself to those who know what actually happens in the streets when an accident or sudden illness occurs. The police are charged with the duty of maintaining free circulation and preventing obstruction of traffic; an accident immediately causes a crowd to assemble, and in such a thoroughfare as the Strand a complete block may be brought about in a few minutes; it is the duty of the police to deal with the block, and obviously the quickest way of removing the obstruction, and at the same time dealing humanely with the sufferer, is his speedy removal to a place where he can be suitably treated. The police, who are the first to be appealed to and to act in such emergencies, provide an organized means of intercommunication personally and by telephone all over the metropolitan area; as a body they hold an excellent record as "first aiders," a form of service which might easily be further developed and continued for a longer period than is consistent with the ordinary duties of a constable; they are better qualified to judge of the necessity for summoning an ambulance than the ordinary man in the street; the police force gives a distinction to the branch of the ambulance service which cannot be said to apply in the eyes of the public to services limited to the no less important duty of removing those suffering from infectious disorders; and, lastly, as the jurisdiction of the metropolitan police extends over the whole of the district (exclusive of the City), no municipality having territorial rights within this area can set aside arrangements which the police authorities consider necessary for dealing with obstruction to the traffic, amongst which accidents and casualties happening to individuals may be included. The police establishments of this country, without acquiring any special ambulance powers, parliamentary or otherwise, are acting within their rights in charging the authority or authorities under which they exercise these powers with the costs (when not otherwise recoverable) of removing obstruction from streets and public places in a decent and humane manner, and under this denomination injured and incapacitated persons come.

Arguments of this nature seem to have overwhelming force, and to make it clear that if an efficient street ambulance service is to be established in London it must be placed under the direction of the police. At present in the centre of every crowd around an accident will be found within a few moments one or more constables, and presently the sufferer is removed on a hand litter or a stretcher. It involves two, or perhaps three, police constables leaving their beat, and the litter is followed by a curious crowd of small boys and loafers. What is wanted is a system under which by resort to the telephone a horse or motor ambulance, with an attendant, can be brought quickly to the spot: the sick or injured person would then be removed speedily and safely, the crowd would melt away, and the police would be left in the discharge of their ordinary duties. At present with a wheel-litter the patient not only suffers from delay, but from the morbid curiosity and awkward sympathy of bystanders, and the position of a lady dragged through the street more or less fully exposed, as must be the case in a hand-litter, to the public gaze must cause much mental distress.

It is obvious that the services of a special trained attendant with the horse or motor ambulance, while liberating the police on local duty, will often also be of infinite service to the sufferer by preventing an aggravation of his injuries, and that the privacy of a covered vehicle will permit proper attention to be given on the way to the hospital. It has been objected that the metropolitan police district covers too wide an area, and includes districts which are still country or countrified; this is true, but is not a serious objection, inasmuch as it would not be difficult to apply a street ambulance system to one of the smaller recognized areas described about the centre of London. There is, for instance, the four-mile radius which all Londoners have been taught to recognize by the cab regulations; again, there is the area covered by the metropolitan boroughs, considerably larger, but for the most part covered by streets. Either would include the accident zone, and an efficient street ambulance service once established within, say, the four-mile radius from Charing Cross could easily be extended as population overflowed into new districts.

The requirements of a street ambulance system for London may be summarized as follows: (1) That the great accident area of metropolitan London which lies mainly within the four-mile radius from Charing Cross should be provided with motor or horse-drawn ambulances for work by the police or in co-operation with them. That the metropolitan district outside the four-mile radius, which is largely residential or rural, should for the present be dealt with by the metropolitan police so far as street accidents and casualties are concerned, on the same lines as heretofore. That the police should as far as possible be encouraged to make themselves acquainted with the methods of applying first aid. (2) That the removal of persons suffering from con-

tagious and infectious disorders should be undertaken as heretofore by the Metropolitan Asylums Board, which is in possession not only of the necessary legal powers for doing so, but also of the appliances and experience. In this way it is believed that existing ambulance provisions would be utilized without overlapping the important work of the St. John Ambulance Association and other efforts of a voluntary and benevolent character.

THE SOUTH WALES CONTRACT PRACTICE FUND.

The best recommendation of the appeal of the Contract Practice Committee of the South Wales and Monmouthshire Branch, published at page 1618, is the fact that a sum of over £1,300 has been subscribed towards the Fund by members of the Branch itself. The nature of the prolonged struggle which has been going on in South Wales between the Ebbw Vale Workmen's Doctors' Fund and those members of the Association who were its medical officers is well known, and a matter of principle of the greatest importance to the independence of the profession arises. There is, therefore, a strong obligation on the profession to continue its support to those who, acting upon the advice given to them, have resigned their means of livelihood rather than compromise the best interests of the profession in its struggle against lay organizations which seek to impose improper conditions upon its members. As Dr. Maclean says, the grants in money made to them represent the determination of their fellow members to stand by them in their fight to assert their just personal claim and those principles which are vital to the well-being and prestige of the profession. So far, the sum subscribed by members of Branches and Divisions outside South Wales and Monmouthshire only amounts to £350, and the Association at large may justly be asked to give more generally and generously to the Fund. The view taken by the Representative Meeting, which had the facts placed before it at the special session in May last, is sufficiently shown by the fact that the sum of £43 was there and then subscribed. Subscriptions may be sent either to Dr. Maclean, the honorary secretary and treasurer of the South Wales and Monmouthshire Fund, or to the Central Emergency Fund, through the Medical Secretary; in the latter case the subscriber should indicate that he intends his subscription to be assigned to this special purpose.

THE FIRE RISKS OF HOSPITALS.

From a document with which the authorities of King Edward's Hospital Fund for London have been good enough to supply us, it would appear that this Fund recently requested Sir Eyre Shaw and Captain Wells to draw up a list of recommendations as to the best methods of securing hospitals and their inmates against the risk of fire. These practically resolve themselves into an enunciation of certain general principles, for, as these two authorities point out, hospitals in the way they are built, in the nature of their sites, and in many other essential particulars, vary so extremely that it is not possible to draw up rules equally applicable to all institutions. For this reason they include in their remarks a suggestion that the Fund, when fresh schemes for hospital construction come under its notice, should endeavour to influence the authorities to make special provision for the safety of lives in case of fire or panic, and to establish some general "system" of hospital construction. In existing hospitals, what would appear to be desirable is that each should obtain for itself an opinion from a fireman of experience as to the special dangers to which it is exposed, and the manner by which they best may be met, and also pay attention to the following points. If the hospital is not in telephonic communication with a fire station, definite arrangements should be made for summoning the brigade in case of need in some other way, and if fire alarm posts are in use in the town the authorities should be asked to place one of these near the hospital for the use alike of the hospital and of the public. If there is telephonic communication, both telephone and fire alarm should be used; it may be desirable also to summon police aid by blowing a police whistle; but whatever is done in the way of giving public alarm should be calculated to avoid startling patients unnecessarily, or disturbing more than the area in which the hospital itself is situated. All members of the staff should receive some training as to the steps they should take in case of fire, and each member should know exactly how to summon external aid, and be directed to do so without waiting to see whether the hospital's own appliances are sufficient to subdue the fire; moreover, the special dangerous spots of the institution should be ascertained and made known to all concerned, and a proper exit from anything in the nature of a cul-de-sac immediately provided. Some sort of first-aid fire appliance should be in existence, and be kept in working order; the general way in which it should be used should be made known to all concerned, but certain persons should have the duty definitely imposed on them of handling it in case of an outbreak. In the selection of such persons attention should be paid to the necessity of some of them being always present in the building. In addition, some sort of general fire drill should be practised at intervals, in order to make certain that all understand the right steps to take both to arrest the outbreak and avoid panic. In some ways the latter object is the more important of the two, and all persons not specially detailed in advance to handle the fire apparatus should, after making sure that an alarm has been properly given, think less of the fire than of occupying themselves quietly in subduing any tendency to panic, and in removing any patients who may be within the danger area. Some practical hints are also included, one being to the effect that in early stages of a fire an ordinary mop and a bucket of water are often efficacious, and that in dealing with outbreaks due to electrical wires or spilt oil, sand or a wet blanket are to be preferred to water.

THE "BROWN DOG" OF BATTERSEA.

A mighty fuss has been made in certain newspapers about the "attack" made by a few medical students on the statue erected in the enlightened borough of Battersea, as the inscription states, "in memory of "the brown terrier dog done to death in the labora- "tories of University College in February, after having "endured vivisection extending over more than two "months," etc. It would have been more dignified to leave the work of art alone, and we do not seek to palliate the conduct of the students. We feel bound, however, to protest strongly against the severity with which their offence was visited by Mr. Paul Taylor, who fined each of them £5, and threatened to punish any repetition of the offence with two months' imprisonment without the option of a fine. Mr. Taylor said the erection of the memorial was perfectly legitimate; a remark which we venture to think somewhat extraordinary as coming from a magistrate. There is an offence of which he must be presumed to be aware, known as inciting to a breach of the peace. It can scarcely be denied that the statue in question, which was erected after the trial of Bayliss *v.* Coleridge, is of a provocative character, especially as it commemorates an incident which gave occasion to a verdict by which a British jury gave strong expression to its opinion of antivivisectionist methods of propaganda.

We venture to suggest to Mr. Paul Taylor that if police magistrates punished brutal assaults on the living human being more severely than they often do, they would do more service to the commonweal. But of course they would not in that way get the advertisement that a severe sentence on a few students gives them in the papers in which sensationalism is the breath of life. Whilst we are on the subject we may refer to a curious phrase which the Rev. Lionel Smithett Lewis quoted from a letter of the late Lord Shaftesbury to Miss Frances Power Cobbe, in which he called vivisection a "form of idolatry." Idolatry is, in the mouths of some fanatical persons, an expression employed merely as a general term of abuse. This, we take it, is the sense, or want of sense, in which it was used by the noble lord. If we are to look for examples of idolatry it is not in the vivisection camp that they are to be found. It is surely among the people who dress their dogs in expensive attire and feed them on dainties when human beings around them are dying for want of food; who observe their birthdays with costly entertainments; who baptize their cats; and who bury their pets, when "done to death" by luxurious living, in ground which, if not consecrated in the technical sense, appears to be regarded by them as almost equally hallowed.

SOME PROBLEMS OF DERMATOLOGY.

AT the Sixth International Dermatological Congress, held at the Academy of Medicine, New York City, September 9th to 14th of the present year, the President, Dr. James C. White of Boston, gave a brief sketch of some of the changes which had taken place in the study and practice of dermatology during the past half century, and uttered a word of caution regarding the unnecessary division of diseases and the multiplication of titles. An abstract of the address appeared in the *Medical Record* of September 21st. Many, said Professor White, were inclined to magnify the significance of slight clinical variations, to attribute to them specific importance, and to emphasize their pseudo-independence by bestowing upon them individual titles. He might have added that some had a fancy for mingling existing titles, making the unhappy patient appear to be burdened with several different diseases and reducing the notions of the student to a condition of most admired disorder. Professor White went on to say that well-established landmarks in dermatology should not be changed excepting for reasons founded on demonstrable differences in anatomy and etiology. He suggested the creation of a standing committee of the Congress to consider the subject in a broad way, composed of members from different parts of the world, and unprejudiced by past systems of schools or individuals. Among the important questions for them to consider he instanced the following: (1) What were the influences of race, geographical conditions, climate, national customs, etc., upon the evolution and type of diseases of the skin? (2) What variations did emigration induce in dermatoses? (3) What cutaneous affections should national governments regard as infective and seek to control by restriction of immigration, enforced isolation, and similar measures? (4) How far was it possible and incumbent upon national governments to control the continuance and prevalence of hereditary dermatoses by restrictions upon marriage laws? (5) Should not the influence of such a committee as he proposed be directed to induce governments to aid in the support of researches bearing upon sanitary questions of national importance? Dr. White said that all dermatologists must be greatly interested in the investigations recently carried on by scientific men in certain tropical regions. Looking back over his fifty years of study and practice in the dominion of affections of the skin, he recognized three distinct eras of advance: (1) The knowledge founded on a more careful study of the external manifestations and unbiassed interpretations of clinical phenomena. (2) A deeper knowledge of the minute anatomy of tissue changes in, and a more scientific grouping of, dermatoses. (3) The recognition of the real nature and cause of visible lesions and the essence of disease—a true system of pathology, as well the promise of attainment of the power of prevention, of establishing immunity, and of founding a broader system of rational therapeutics. It may be added that Admiral Rixey, Surgeon-General of the United States Navy, in an address of welcome on behalf of the Federal Government and the President, said: "It may never be "known how much President Roosevelt is interested "and has done for the medical profession until one "has been as intimately connected with him as I have. "I take this opportunity of saying that, in the history "of presidents, I may say rulers, there has been none "who has been more interested in its progress than "President Roosevelt. I have the deepest sense of our "obligations and personal love for the representative of "a great people who stands for justice to all, especially "to those physically afflicted." The seventh meeting of the Congress will be held in Rome three years hence, under the presidency of Professor E. De Amicis of Naples.

A CASE OF INTENTIONAL LIVE BURIAL.

THE *Indian Medical Gazette* for October reports the following remarkable case. By the courtesy of Colonel P. A. Weir, I.M.S., Inspector-General of Civil Hospitals, C.P., our contemporary was enabled to see the judgement of the Sessions Judge, Nurbudda District, in a case which recently happened in the Betul District, C.P. The judgement recites all the facts, of which the following is an abstract:—A man named Dama was tried for the murder of his wife, Indro. It appears that the woman had long been suffering from chronic dysentery, and on January 29th, 1907, her husband took her and the family away to another village. He appears to have abandoned his sick wife at this new village and returned to his own with his children, stating that he had left his wife with a bhagat or exorcist for treatment. The village authorities sent the poor woman to another village where the husband was sent for, and his wife made over to him, a cart and bullocks being lent him to take her to his home. Dama took the cart, but came back the same day saying that the wife had died on the way and he had buried her. He was ordered to report the death to the Kotwar. He did not do so, but returned to his own village, and there stated that his wife was alive and under treatment of the bhagat. On the sixth day after the alleged death of the woman, a villager saw something move in the jungle, and his cattle shied when they went near the place. The next day the villager told the Kotwar of the incident, and they went and found a grave, with the leg of a woman clearly visible. They heard the buried woman say "I am not dead," and she told the Kotwar that her husband had buried her. The woman's brother-in-law and daughter were sent for, and they lifted the buried woman out of the rough grave and gave her food. She was sent to the Badnur Hospital and lived for some twelve days longer. The accused man was sentenced to transportation for life. The extraordinary part of the story, apart from the callousness of the husband, is the fact that the poor woman must have lain in the shallow grave, covered with leaves and branches, for six or seven days without food or water, and then survived twelve days longer.

THE MEDICAL PROFESSION IN JAPAN.

ACCORDING to official statistics, 1,456 licences to practise medicine were issued in Japan in 1903. Of these 17 were granted to Japanese subjects who had obtained

foreign titles; the others were granted by the Ministry after examinations passed at home, in the Royal University of Tokyo, the other universities, and local medical schools. These figures show an increase of 234 as compared with the previous year, when 11 were granted on the strength of foreign diplomas. At the end of the year the total number of medical practitioners in Japan was 34,611, besides 706 dentists. Eighty-three were graduates of foreign faculties and universities, and 33 were foreigners. The increase as compared with the previous year was 740, including dentists. The proportion of medical practitioners to the population throughout the country was 1 to 1,348; in Tokyo it was 1 in 810. During the year in question 187 members of the profession came into collision with the law, and 102 were punished, being 12 more than in the previous year. The punishments were in 6 cases deprivation of the licence to practise, in 2 suspension for six months, in 3 for three, in 12 for two, and in 79 for one. In 71 of the cases the offences were violations of the law as to epidemics, which is very strictly administered. Of the 786 hospitals in Japan, 630 were private institutions, showing an increase of 39 as compared with the previous year. In Tokyo, Yokohama, and Kobe there are hospitals established and conducted by foreigners. One in Tokyo belongs to the Mission. There is also the well-appointed Yokohama General Hospital, with two operating theatres, and the Kobe International Hospital, both supported by foreign firms. There are foreign doctors in those three cities and also in Nagasaki, but the majority of them are in Yokohama.

THE FUTURE OF DENTISTRY.

The Royal Dental Hospital, with its connected College, held its annual dinner on November 23rd, when Mr. Lloyd Williams presided over an assembly of about 160 persons. In proposing a toast to the Institution, Mr. F. G. Hallett, one of the guests of the evening, drew attention to the alterations in the regulations recently made by the College of Surgeons in regard to its diploma in dental surgery. The reduction of the period during which a student should devote himself to mechanical dentistry from three years to two was an advantage, as it left him more time to acquire knowledge of the scientific side of his future profession. The work of the four years' curriculum was thus better distributed. In the course of his reply on behalf of the institution, Mr. Colyer remarked that in establishing a clinical laboratory and appointing a clinical pathologist it had once more taken the lead and set a desirable example to corresponding places of study. Mr. Lloyd Williams, who proposed a toast to past and present students, expressed an opinion to the effect that dental surgery was passing through a critical period, and urged all to combine to endeavour to secure its emergence in a proper position among professions. Just as in the case of surgeons, painters, and sculptors, mechanics entered largely into ther work, but nevertheless the practice of dentistry remained a profession —an art, and not a craft. The formation of a dental section in connexion with the Royal Society of Medicine was a step in the right direction. In the course of the evening it was mentioned that the jubilee of the institution will occur in 1908.

CANCER RESEARCH.

In addition to the German Central Committee for the Investigation of Cancer there are now similar committees or institutes in Denmark, England, Japan, Norway, Austria-Hungary, Portugal, Russia, Sweden, Spain, and the United States. Some of them have hospitals attached to them. In Germany, besides the Central Committee, there are four local committees—in Baden, Bavaria, Würtemberg, and the Hamburg States, whilst in some others of the Federal States the establishment of similar institutions is in contemplation. At the International Conference held in Heidelberg in 1906, an International Association for Cancer Research was founded. The German Central Committee held a meeting on November 14th at Berlin, when papers were read by Dr. Karl Lewin on the histological changes of rat cancer in transplantation, and by Dr. A. Sticker on the spontaneous cure and immunity against cancer according to the results of modern experimental research.

THE INTERNATIONAL UROLOGICAL ASSOCIATION.

At the first Congress of the German Urological Society, which, as was mentioned in our issue of October 21st, p. 1172, took place at Vienna on October 2nd and following days, Professor von Fritsch delivered the opening speech, tracing the history of urology back to the days of Hippocrates, and sketching its development in modern times. A large number of scientific communications followed, among which may be mentioned the pathology of dystrophic kidneys by Albrecht, the diagnosis and therapy of renal tumours by Kuester and von Eiselsberg, which led to a discussion in which a number of members took part; anuria by Caspar, uraemia by Lenk, nephrolithiasis by Kuemmel, Kienboeck and Holzknecht; albuminuria by von Noorden and Posner, and the cytology of pus by Posner. A number of demonstrations also took place. Another outcome of this Congress was the foundation of an International Urological Association, as mentioned by our Paris correspondent in the Journal of November 16th, p. 1460, which it is proposed should meet every third year for the purpose of discussing subjects chosen by the Committee. The first Congress will take place in Paris in 1908.

ANTIVIVISECTIONISM IN AMERICA.

As was stated in the Journal at the time, Mr. John D. Rockefeller founded an institute for research on tuberculosis in New York in 1901. It is now announced that a large farm for the rearing of cattle to be used for purposes of experiment has been attached to the institute. In consequence of this, the President of the New York Humane Society, which is said to represent the American Antivivisection Society, is said to be about to take the field, and it is thought probable that in the next session of the New York Legislature an Antivivisection Bill will be introduced. We hope the New York legislators have a better appreciation of the importance of research in the interest of the health of the people than to pass such a measure. It would tend to deprive America of the leading place which it occupies among the nations that are working for the common good, which can come only from increase of knowledge.

Lord Cromer has consented to become an honorary vice-president of the Liverpool School of Tropical Medicine. He is reported to have taken a special interest in the antimalarial operations which have been carried on with such remarkable success at Ismailia.

The Richard Middlemore post-graduate lecture for 1907 on prophylactic measures in ophthalmology will be delivered at the Birmingham and Midland Eye Hospital at 4.30 p.m. on Thursday, December 12th, by Dr. J. Jameson Evans, F.R.C.S., Surgeon to the Hospital and to the Institution for the Blind. Members of the medical profession are invited to attend.

Birmingham.

ROYAL ARMY MEDICAL CORPS, TERRITORIAL ARMY.

An address was delivered on November 21st to the members of the medical profession in Birmingham and district by Sir Alfred Keogh, K.C.B., Director-General Army Medical Staff, on the proposed Territorial Army Medical Corps. The meeting was held in the medical theatre of the University, and was attended by over a hundred medical men, who were very enthusiastic about the formation in the city of a unit of this new corps. Lieutenant Colonel W. P. Whitcombe presided, and was supported by the Dean and Professors of the Medical Faculty and by the Medical Officer of Health. A most influential Committee had been appointed, consisting of Sir James Sawyer, Sir Thomas Chavasse, Professor Gilbert Barling, Mr. Bennett May, Mr. Jordan Lloyd, Mr. F. Marsh, Professor Saundby, Dr. Simon, Dr. Foxwell, Dr. Rickards, Professor Robinson, Professor Leith, Dr. Robertson, Dr. Bostock Hill, Mr. Victor Milward, Dr. Martin Young, Dr. Nelson, Dr. Hallwright, Dr. Neal, Surgeon-Major Newton, Surgeon-Captain Haddow. The Chairman pointed out that the duties of an officer in the field ambulance would not occupy more than three hours a week. The uniform would cost about £20, and the other expenses of a subaltern need not be more than £10 a year. The head-quarter expenses would be paid by the county association. Professor Barling proposed a vote of thanks to Sir Alfred Keogh for his address, which was seconded by Sir James Sawyer and supported by Dr. Robertson, the Medical Officer of Health.

A complimentary dinner was given to Sir Alfred Keogh after the meeting, at the Head Quarters of the 1st Volunteer Battalion Royal Warwick Regiment. Lieutenant-Colonel Whitcombe presided, and among those present were General Raitt, commanding the Seventh Division; Colonel Barlow, commanding the Worcester and Warwick Infantry Brigade; Colonel Hart, Sir James Sawyer, Sir Thomas Chavasse, Professor Barling, and Professor Saundby. Sir Alfred Keogh, in replying to the toast of his health, said that in drawing up the scheme for the territorial forces the conditions under which medical men practised had been carefully considered. He explained again that beyond the care of the sick and wounded, the medical officers would have very important duties, which would affect the fighting force and the winning of battles. Modern wars would be battles of science. It would be the British engineer against the foreign engineer, and British medicine against foreign medicine.

There is no doubt that Sir Alfred Keogh will receive the whole-hearted and loyal support of the medical profession in Birmingham and district, and that everything that is possible will be done to further the scheme for the organization of the Royal Territorial Medical Corps.

INSTITUTE OF HYGIENE.

A meeting was held at the University on November 20th for the purpose of inaugurating a Midland Counties Branch of the Incorporated Institute of Hygiene. Dr. Carter was in the chair. Sir William Bennett, K.C.V.O., Vice-President of the Association, delivered an address. He said that the chief object of the institute was to promote education in personal and domestic hygiene, and it was now initiating examinations, which were to be held throughout the provinces, for the purpose of granting a certificate or diploma. A knowledge of hygiene was vitally important to the progress of the race, and the scheme had reached a stage when, if it were to win the goal it had set itself to reach, expansion was necessary; and the only means of doing this was by the establishment of branches in the provinces. It had been decided to form the first branch in Birmingham. He moved that a Midland Counties Branch of the Incorporated Institute of Hygiene be established, and that the necessary steps be taken to that end. This was seconded and carried with applause. The Midland Counties Branch is intended to carry on the work in Birmingham in a similar manner to that of London, while Birmingham will also be made a centre of examination for the certificate and diploma of the Institute. Dr. Lyster, Lecturer on Hygiene in the University, is the honorary secretary.

Liverpool.

THE NOTIFICATION OF BIRTHS ACT.

At a recent meeting of the Medical Institution, Dr. Hope, the Medical Officer of Health for Liverpool, drew attention to the Notification of Births Act, which the City Council contemplate putting into force in the city. He pointed out that one result of the low birth-rate in France was that very particular attention had been paid to the infant; in England the lack of information with regard to births contrasted with the superabundant information with regard to deaths, and seemed to make it appear that death were a more interesting and important event than birth. The rate of mortality was always high during the first year of life. In Liverpool, out of every 1,000 children born 154 did not live a year, compared with 128 for England and Wales. Legislative and administrative measures had been devised to lessen this mortality, the Midwives Act being one of the most beneficial. The Act now under consideration was an adoptive Act; a local authority might adopt it or not, but the Local Government Board could declare it in force in any area which had not adopted it.

About 24 000 births took place annually in Liverpool, of which 15,000 were attended by midwives, who, along with the medical practitioners, would be largely affected by the Act. Dr. Hope desired to ascertain whether the members of the Institution had any views as to the way in which the obligations imposed on them could best be carried out, and he exhibited a suggested form of notice. The ultimate object was to secure by means of a trained and educated staff that advice should be available for the poor mothers who, but for such action on the part of the local authority, would have no one to advise them; and it would also serve as a basis for important investigations affecting infant mortality. He anticipated that the medical man in attendance would indicate what action he desired, if any—much as he was already doing in the notification of phthisis. When the notification was received the next point to determine would be when the first visit of the visitor should be paid, and upon this the opinion of the medical profession would be valuable. The experience of the health authorities led them to the view that for about twenty-eight days after birth the infants of the poorer classes were fed at the breast, but it would in most cases be desirable to pay a visit at an earlier date than this, especially in cases of extreme poverty or where the mother was without any help. At the same time it had to be borne in mind that one-fourth of the infant mortality took place before the end of the first month, and of this one-half, or one-eighth of the whole, took place in the first week. It was clear that no scheme for visiting could have any appreciable influence on the latter. Dr. Hope pointed out that there was no special provision for paying the medical man or midwife for services rendered. Whilst he was of opinion that the omission was regrettable, it appeared to him that such payment would be covered by the clause which provided that any expenses incurred by the local authority should be paid as part of the general expenses relating to public health.

Dr. Carter said he sincerely hoped that every one would support to the utmost Dr. Hope in his efforts to check the waste of infant life in Liverpool. The startling fact that of the total number of deaths (4,137) under 1 year of age, 1,057, or more than one-fourth, took place in the first month of life, showed the importance of early information being given, so that skilled members of the female sanitary staff might visit the mothers—often very ignorant of the duties of motherhood—and when necessary give them kindly instruction in the way to rear their infants. Why should it be a breach of confidence (as had been suggested) on the part of the doctor to state within thirty-six hours after birth a fact which must of necessity be known six weeks after it?

After some further discussion the following resolution, proposed by Sir James Barr and seconded by Dr. Carter, was carried with only two dissentients:

> That in the opinion of this meeting the Notification of Births Act should be adopted by the County Borough of Liverpool.

THE COMMON HOUSE-FLY AND DISEASE.

After ten months' observation, Mr. Robert Newstead, Lecturer on Economic Entomology and Parasitology in

the School of Tropical Medicine, has presented a preliminary report to the Corporation on the habits, life-cycle, and breeding-places of the common house-fly, with suggestions as to the best means of checking its increase. In this he stated that there were certain kinds of refuse which form permanent breeding-places, and others that form temporary breeding places for the flies. The former were middensteads containing horse manure or spent hops, and ashpits containing fermenting material; the latter were collections of fermenting vegetable refuse, accumulations of manure at the wharves, and bedding in poultry pens. Breeding did not take place in middens containing excessively moist and non-fermented cow dung, patent ashbins, refuse in ashpits saturated with water, nor in human excreta lying in courts and passages. Stable middens, containing horse manure only, were found to be the chief breeding places. Here the larvae occurred in countless thousands, fostered by the heat produced by fermentation. The presence of fowls in the yard, however, always restrained their growth, as the fowls devoured the larvae and pupae with great avidity. The food of the larvae was almost exclusively moist decaying vegetable matter. Flies multiplied with great rapidity in hot weather. The whole cycle of growth from the egg to the perfect insect occupied under favourable conditions from ten to fourteen days, but at low temperatures the cycle might extend to several weeks. The part which the fly was believed to play in the transmission of zymotic diseases was attributed to its proclivity for alighting and feeding on human excreta. Mr. Newstead made a number of suggestions, of which the most important appear to be that all refuse known to form a breeding place for flies should be entirely removed at intervals of not more than ten days, and that strenuous measures should be taken to prevent the deposition of solid human excrement, especially by children, in passages or other places where flies could gain access to it.

The New Food Act.

Dr. Utting has been unanimously elected chairman of the Port Sanitary Authority and Hospitals Committee. In returning thanks for his election he drew the attention of the committee to the importance of the new Food Act. Under this Act the Port Sanitary Authority had power to seize and condemn articles of food landed on the quays if they were found to be unfit for human consumption. Hitherto the authority had no power to deal with such articles until they were actually exposed for sale.

The Royal Infirmary.

At the meeting of the Election Committee of the Royal Infirmary on November 20th, Mr. Robert Alexander Bickersteth, who was appointed assistant surgeon in 1891, and has latterly been surgeon to out-patients, was elected surgeon. Mr. W. T. Thomas, the other surgeon to out-patients, withdrew from the contest in favour of his colleague. An arrangement has been made by which Mr. Thomas will have the use of twenty beds in Mr. Bickersteth's wards until such time as another vacancy occurs, when he may be expected to go up without any opposition.

Manchester and Salford.

The University Grant.

Strong resolutions have been passed protesting against the reduction of the Government grant to the Manchester University by a large number of education authorities throughout the whole of South-East Lancashire and Cheshire. At the monthly meeting of the Manchester Education Committee, it was pointed out by Sir T. T. Shann, in moving a resolution of protest, that the proposed allocation of grant gave to Manchester University a smaller sum in proportion to the extent and character of the work it is doing than was allocated to any other university of the kingdom. At a meeting of the Court of the University, Alderman Thompson, the Treasurer, stated that there was a balance of expenditure over income for the year of £373, so that the reduction of the grant evidently came at a very inopportune time. Strong protests were made by Bishop Welldon, Sir F. Forbes Adams, Mr. A. Emmott, M.P., and Lord Shuttleworth, and on the motion of Sir Edward Donner it was resolved to send a deputation to the Prime Minister and the Chancellor of the Exchequer. Sir Edward Donner explained that of the £100,000 allocated by Government, according to a Treasury minute as nearly 90 per cent. as possible was to be divided among the Colleges, while 10 per cent. was to be kept for a reserve fund for special purposes. In the last two years £89,000 had been divided, and £11 000 kept as the reserve, which was not far from what the Treasury had decided ought to be kept. This year, however, the reserve had, for some reason, been raised to £14,000, the grants to Manchester, Nottingham, and Southampton being lessened, while that to Sheffield was increased. No satisfactory reason was given for raising the reserve to £14 000, in face of the Treasury Minute that it should be about £10,000. Much less could he discover any reason for the reduction of the Manchester grant.

In accordance with the resolution of the University Court, a deputation from the University had an interview on November 20th with the Chancellor of the Exchequer, Mr. Asquith, the Prime Minister being prevented by illness from being present. It would have been almost impossible to have had a more influential and representative deputation, consisting as it did of the Vice-Chancellor (Dr. Hopkinson), the Lord Mayor of Manchester, the Mayor of Salford, Sir F. Forbes Adams (Chairman of the University), Sir William Mather, Sir A. Rollit, Professor Schuster, Professor Dixon, and over a dozen members of Parliament, while the Bishop of Manchester and Bishop Welldon and a large number of Chairmen of Education Committees sent letters of regret at their unavoidable absence. After Mr. A. Emmott, M.P., had introduced the deputation to Mr. Asquith, the Vice-Chancellor said that in announcing the reduction of grant to Manchester, the Commissioners had specially said, "We do not mean to imply that we regard the pre-eminence of the Victoria University among the colleges as less marked than it hitherto has been." The effect of the Government grant had been to diminish private benevolence, while at the same time the expenditure had been increased, partly owing to the suggestions of the inspector, which the University had carried out.

Mr. Asquith reminded the deputation that the Treasury had given distinct notice that the grants would be revised, and that the grants now given must not be regarded as an assured source of income. He asked what class of additional expenditure was incurred in consequence of the raising of the grant two years ago?

The Vice-Chancellor gave the required particulars, and pointed out that the reserve fund of £14,000 was greater than a former minute of the Treasury had fixed, and it would be possible to retain the grant to Manchester at £12,000 without reducing the grants of any other colleges and at the same time to keep the reserve fund well up to the 10 per cent. recommended.

The Mayors of Manchester and Salford, Sir W. Crossley, Mr. A. A. Haworth, M.P., Sir W. Mather, and Professor Schuster also spoke in favour of the plea of the deputation, special emphasis being laid on the organization of educational work in the whole district around Manchester which the University had undertaken.

Mr. Asquith, in reply, repeated what had been already said by the Commissioners, that the reduction was in no way to be taken as suggesting that the work of the University was in any respect less efficient, or that there had been any slackening or falling off in any department. The Treasury Committee that dealt with the grants had carefully reviewed every one of the colleges, and had spontaneously recommended that the principle of a maximum limit to grants should be revived owing to the probability of the entry into the field of new claims from other parts of the kingdom. The Commissioners said:

> The purpose of such a principle is, of course, to prevent the large colleges from basing upon their increasing activities a claim to so large an increase in their grants as would encroach upon the sums available for the smaller and more necessitous colleges. As a college grows larger and more securely established, its opportunities of attracting students and subscribers also grow. A point is reached at which its natural power of expansion is sufficient to secure its development without any further State aid. The only matter of controversy is the precise point of development (as measured by the amount of the Treasury grant allotted) at which this stage may normally be said to have been attained. The reduction of the grant to Manchester could only be avoided either by adopting £12,000 as the new maximum limit or, if the lower maximum were adopted, by giving Manchester exceptional treatment.

Mr. Asquith added that he regarded the increase of the reserve fund to £14,000, though it was not quite clearly explained, as a corollary to the decision to impose a maximum of £10,000 grant, in order to provide a larger sum to meet the case of new colleges. In conclusion, he promised to give the most sympathetic consideration to the arguments of the deputation.

It cannot be said that Mr. Asquith's reply is wholly satisfactory, for, while he shifts the responsibility on to other shoulders, he practically says that as new colleges arise the older colleges must on that account suffer in their grants, as if the sum of £100,000 were fixed for ever, whatever new wants may arise. The only point that might seem to be against the University is that it received a warning in May last year not to depend on the grant as a fixed source of income; but surely that is a somewhat unreasonable objection, unless it had been understood all along that the grants were only emergency grants, which was not the case. There can be no fault found with the general principle of fixing a maximum. The grievance is that, notwithstanding the warning of last year, it had been generally understood throughout the country that the continuance of the grant would depend on the efficiency of the work being maintained. The further fact that the existence of the grant has lessened private benevolence ought to receive consideration.

Waves of Disease.

At a meeting of the Manchester Statistical Society, Dr. Niven, the Medical Officer of Health, gave an interesting address on the periodic rise and fall of diseases in Manchester. He showed that waves of disease occurred fairly regularly each year. One wave began in December and extended over the greater part of January, and might be taken to be the effect of raw damp weather in causing bronchitis. A second wave began near the end of February and extended over March, April, and part of May. In this period the daily range of temperature was at its greatest, and pneumonia was most common. From the middle of July to the middle of September there was another great wave due to diarrhoea. Another smaller wave occurred in November, partly owing to bronchitis caused by fogs and partly to the fact that a number of other diseases such as scarlatina, enteric, erysipelas, puerperal fever, and acute and subacute rheumatism seemed to culminate about then. It was not easy to say which was the more fatal, hot or cold weather, but it seemed as if the fatality of the warm season ought to be under more control than it was. Dr. Niven was unable to do more than surmise the causes of these waves of disease. In infectious diseases, from some cause or other—it might be from multiplication of germs, or increased susceptibility of persons to infection, or increased means of transmission—a wave commenced, which rose until such a point was reached that the number of persons protected by having passed through an attack became so great that the disease found it increasingly difficult to find susceptible subjects, and so necessarily declined. While that theory offered a sort of explanation of the waves themselves, it was no explanation at all of their occurring at regular periods of the year. Nevertheless, the facts given by Dr. Niven, if confirmed by observation over a sufficient number of years, show that there is some seasonal influence at work as yet unknown, and the address was valuable as giving a clue to the direction in which we may look for explanation.

Leeds.

Changes in the Honorary Staff of the Leeds Public Dispensary.

Though there is not any rule in Leeds against the holding of more than one honorary appointment at the different charitable institutions of the city by the same individual, there has for long been an honourable tradition among the staff of the Dispensary that any member of the staff, on being appointed to the honorary staff of the General Infirmary, should retire from service of the Dispensary if there should be any one eligible to succeed him, who, in the opinion of his colleagues, would be a suitable candidate for the position. One can call to mind in this connexion the resignation of Dr. Barrs in 1888, followed by the appointment of Dr. Wardrop Griffith; of Dr. Jacob, followed by the appointment, after a contested election, of Dr. E. F. Trevelyan; of Mr. R. Lawford Knaggs, who was succeeded by Mr. Michael A. Teale; and, more recently, the resignation of Dr. Chadwick, which was followed by the appointment of Dr. Maxwell Telling. In the case of the appointment of a physician to the institution, the number of candidates is necessarily limited, for the reason that every applicant must "be practising as a physician and not as a general practitioner." The physician and assistant physicians at the Infirmary are five in number, and so it usually happens that some or all of the honorary physicians to the Dispensary are also attached to the Infirmary. Some weeks ago Dr. T. Wardrop Griffith, who has been on the honorary staff of the Infirmary since 1892, acting on the above tradition, and also finding an increasing difficulty in getting sufficient time adequately to carry on his other duties at the University and the General Infirmary, resigned his position at the Dispensary, and at a recent meeting of the special Election Committee Mr. G. W. Watson, M.D.Lond., M.R.C.P., was appointed to fill the vacancy. It is one of the rules of the Dispensary that an honorary officer may on his retirement at the end of twenty years' service be appointed by the Committee of Management to be a consulting officer of his department. Dr. Griffith had served nineteen years, and therefore his case did not fall within the scope of this rule; but he was appointed honorary consulting physician under the special rule that it is competent for a meeting of the trustees specially summoned to appoint any officer a consulting officer, notwithstanding that he has not completed twenty years' service. Dr. Griffith, therefore, remains a member of the Faculty of the Dispensary.

Infantile Mortality at Huddersfield.

The quarterly report of the medical officer of health records the fact that the number of deaths under 1 year of age per 1,000 births was 62, which, it is stated, "compares very favourably with the figures for the previous corresponding period, and with the average number for seventy-six large towns, which was 110." As is well known, very special efforts are being made at Huddersfield to lessen the mortality in infants, and the work which was initiated and pushed on by Alderman Broadbent has attracted the attention of many authorities who are interested in this important national question. It may be pointed out that in 1906 a special Act of Parliament was secured by Huddersfield, making the notification to the medical officer of health of the births of all children obligatory within a period of forty-eight hours, and it is stated that the working of the Act has not led to friction. The official work of the sanitary authorities, which is supervised by Dr. Moore, the medical officer of health, is ably supplemented by the voluntary work of the Huddersfield and District Public Health Union. The efforts of Huddersfield will doubtless attract an increasing amount of interest in the future.

Appointments at the University.

At a meeting of the Council of the University of Leeds held on November 21st, the title of Emeritus Professor was conferred on Mr. L. C. Miall, D.Sc., F.R.S., and on Mr. C. J. Wright, M.Sc., who have recently resigned the Professorships of Biology and Midwifery. At the same meeting of the Council Dr. W. H. Maxwell Telling was, on the nomination of the Senate, appointed Honorary Demonstrator of Medical Pathology.

Dinner of Past and Present Students.

Former students of the Leeds School of Medicine may be reminded that the 29th annual dinner of past and present students will be held on Thursday, December 5th, at the Queen's Hotel, Leeds, under the chairmanship of Mr. R. Lawford Knaggs, Honorary Surgeon to the General Infirmary and Lecturer on Practical Surgery at the University. The dinner is managed by a large Committee of past and present students, and forms an excellent opportunity for the renewing of old friendships and will doubtless be largely attended as it always has been in the past.

Newcastle-upon-Tyne.

University of Durham College of Medicine.

The entries this session have been a little larger than during the last two or three years. The appointment of Mr. Frank Howson, M.A.Oxon., formerly Demonstrator of Physiology to Professor Stirling, of Victoria University, to a similar position in this College, has given great satisfaction. Mr. Howson's Saturday morning classes to school teachers are being much appreciated.

Typhus Fever.

Following the public announcement a few weeks ago by Dr. T. M. Clayton, Medical Officer of Health, of the presence of cases of typhus fever in Gateshead, there were found 3 cases of this fever in Newcastle. The patients were at once removed to the hospital on the moor and placed under the care of Dr. Henry E. Armstrong. These patients have made a good recovery, and no fresh cases have been reported. Considering the large floating population that there is always on Tyneside, the district has remained wonderfully free from typhus fever.

Beri-Beri.

Three Asiatic firemen suffering from beri-beri were recently removed from a steamer which came into the Tyne to the floating hospital at Jarrow Slake by Dr. Harker, medical officer to the Tyne port sanitary authority. The patients have done well, and no fresh cases have been reported. It is now nearly twenty years since the severe outbreak of beri-beri occurred on the River Tyne on the Chinese transport *Too Nan*, when a mutiny nearly took place on board the ship, owing to an attempt being made to send to the Newcastle Infirmary many other patients after the death of two of the sailors in that institution. To restore confidence in the officers, all the subsequent cases of beri-beri had to be treated on board ship. This was done by Dr. Wm. Slater and Professor T. Oliver. Although a large number of patients were treated, fortunately there were no more deaths.

Opposition to Sanatoriums.

A few years ago the Working Men's Trade Unions of the North of England erected a sanatorium at Stanhope for the treatment of consumptive patients at a reasonable rate. Stanhope is situated in rather a remote part of the county of Durham, not far from the moorland and where the air is bracing. The results of the sanatorium treatment have been so satisfactory, that it was decided a little while ago to erect another building for the same purpose in the neighbourhood. The Stanhope Urban Council has thought fit to oppose the movement on the ground that the present sanatorium has already driven away visitors from the district. There is still considerable prejudice in the minds of many people in regard to the proximity of sanatoriums to villages and farmhouses. When a site for the Northumberland Sanatorium was being sought for similar difficulties were met and similar prejudices had to be overcome. So strong is the opposition on the part of the Stanhope Urban Council, even to the present sanatorium, that the authorities have been requested to remove it further away from Stanhope.

Royal Victoria Infirmary.

On all sides, professional and lay, there are genuine expressions of regret at the resignation through continued ill-health of Dr. Limont, one of the physicians to the Infirmary. After having served as Senior House-Physician for a period of three or four years Dr. Limont was in 1885 appointed Physician to the Royal Infirmary. Dr. Limont's clinical classes were always well attended, and especially by men who were preparing for their final examinations. He had a wonderful gift of imparting information. In addition to holding the position of Physician to the Infirmary he also held that of Physician to the department for skin diseases. It is to his special knowledge of the requirements of this department and his good organizing powers that must be attributed the excellent out-patient department for the treatment of skin diseases in what is still called the New Royal Victoria Infirmary. The sympathy of colleagues, students and patients, is warmly extended to Dr. Limont and to his wife and family.

For the appointment of physician Dr. Thomas Beattie is an applicant, and for the vacancy in the skin department there are two candidates, Dr. R. A. Bolam and Dr. D. W. Patterson.

Miss McCall Anderson, who as matron has done so much for the Royal Victoria Infirmary, is returning to St. George's Hospital, London, much to the regret of the staff—professional and nursing. While giving this expression of the sense of their loss, St. George's may be congratulated on having been able to attract Miss McCall Anderson back to her old hospital.

West Yorkshire.

The Notification of Births Act.

At a meeting of the Town Council of Keighley held on November 19th, the Mayor submitted a recommendation of the Health Committee for the adoption of the Notification of Births Act, and it was unanimously resolved that the Act should come into force on January 1st, 1908, or such other date as might be fixed by the Local Government Board.

The Bradford Division at a recent meeting appointed a deputation to interview the Health Committee of the City Council in connexion with the Bill. The feeling appeared to be that the clauses relating to the medical profession ought never to have been introduced into the Bill, and were actually injurious to its successful working. Cases in which medical men were in attendance were not of the class that required looking after, which was the avowed reason for the adoption of the Act. The penal clauses affecting the medical profession ought to be made a "dead letter." If the attendance of any lady visitor were desired, it should be possible for the medical attendant to ask that she should be sent; in other cases she ought not to visit. The adoption of suggestions of this character by the City Council would certainly tend to the more satisfactory working of the Act in Bradford.

Halifax Workhouse and Union Hospital.

At a meeting of the Halifax Board of Guardians on November 20th, the appointment of a medical officer to the workhouse in place of the late Dr. T. M. Dolan was considered. It was resolved to appoint Dr. William Shaw of Halifax, one of the visiting surgeons to the Union Hospital, as medical officer to the workhouse, at a salary of £60 per annum. Dr. Shaw will retain the hospital appointment as before.

Ireland.

University Education in Ireland.

Mr. Birrell, during his visit to Belfast, has referred in his speeches to the importance of the question of university education in Ireland. He has visited the Queen's College, and has properly praised its excellence and general high efficiency. Although he has made no definite pronouncement, as Mr. Bryce did, it becomes more evident that the new Bill on Irish Education will not closely follow the lines which his predecessor laid down. Those who claim to have justification for their declaration say that the new scheme will provide for a University of Belfast and a University of Cork. There will remain the Dublin difficulty. That is to be met by the creation of a new College in connexion with the Royal University, or with a University constituted as the University of Dublin is in relation to Trinity College. The character of it would be essentially Roman Catholic, but it would be open to Protestants. For building and equipment a sum of £300,000 is to be provided by Parliament, but in addition an annual sum of £40,000 is to be obtained from the same source. These rumours must be taken only for what they are worth, but there appears to be some foundation for them. The interesting question is whether Mr. Birrell will be able to overcome the opposition with which undoubtedly these proposals will be met.

At a meeting of the Cork Corporation on November 23rd, Mr. T. Donovan, a member of the Council, moved:

> That, in the opinion of this Council, no settlement of the university education question would be satisfactory or acceptable that does not include the constitution of the

Cork Queen's College as a university for Munster, or at least as an independent college, with the power of conferring its degrees locally, and that the opportunity ought not be lost of availing of the munificent offer of Mr. William O'Brien, M.P., of £50,000 in support of this scheme.

Mr. Donovan added that if the proposal became law in the ensuing session of Parliament he would give a donation of £1,000 himself towards it. The Lord Mayor thanked Mr. Donovan, on behalf of the citizens of Cork, for his generous offer.

Health of Belfast School Children.

A valuable report was presented to the Public Health Committee at its meeting on November 21st by Councillors Dr. Henry O'Neill and Mr. McClure on the Second International Congress of School Hygiene in London. After referring to what is done in other countries, and giving an account generally of the Congress as it concerned Belfast, the delegates in strong terms make the recommendations that the City Corporation take over the control of both primary and secondary schools; assume the responsibility for the equipment, erection, and maintenance of the primary schools; and regulate and control the payment of the teachers of those primary schools at present under the Board of National Education. They further recommend that a special medical officer, under the Superintendent Medical Officer of Health, be appointed to supervise school hygiene in the city.

As there are 301 primary schools, with 186 school buildings, a roll call of 65 333, and an attendance of 46,375 pupils, and as many of the buildings are totally unsuited for the purpose for which they are used, the great importance of such a report is evident. Councillor Dr. O'Neill has always been a keen public sanitarian; he has advocated many reforms, though little effect seemed to be produced at the time; a wave of hygienic enthusiasm has now swept over the town, and the measures he advocated years ago are being received as if heard of for the first time. It is sincerely to be hoped that the same delay will not be experienced in the reform of what is admittedly a shame and a scandal to the town.

The Tuberculosis Museum, Belfast.

This exhibition or museum in Belfast was opened in the Old Town Hall on November 22nd. In the absence of the Lady Mayoress, the chair was taken by the Right Honourable Thomas Andrews, and the opening address was delivered by Sir R. Douglas Powell, President of the Royal College of Physicians, London. He laid emphasis on the fall in the death rate of phthisis with the advent of certain broad measures, as the abolition of the Corn Laws, and the general advance of both public and private hygiene. It was then 2 6 per 1 000 living; it is now 1.2. The discovery of the bacillus by Koch gave exactitude to the work, and made it more precise. The connexion between the prevalence of the disease and dirt, poverty, insufficient food, and overcrowding was then discussed, and Sir R. Douglas Powell concluded by expressing the opinion that compulsory notification was not practicable or desirable at present, and that the money which would be required to carry it out might be much more advantageously spent.

A hearty vote of thanks was proposed by Sir Otto Jaffe, and seconded by Professor Lindsay, M D.; and Sir John Byers proposed, and Dr. O'Connel seconded, a vote of thanks to the Chairman.

The museum has been admirably arranged, and immense pains have been taken to make it popular and instructive for the public, and it is reported that some 900 persons visited it before 5 p.m. on the first day. Lectures will be given each evening by medical men and others during the stay of the museum, which will later on go to Lisburn. Dr. McCaw lectured on Saturday, November 23rd, taking as his subject tuberculosis in children; and on Monday evening Sir Robert Matheson, Registrar-General for Ireland, was announced to speak on tuberculosis as the scourge of Ireland.

Galway Workhouse *v.* Galway Asylum.

A most regrettable controversy between the medical staffs of the Galway Union Workhouse and the Galway County Asylum situated in Ballinasloe has been occupying the columns of the local papers for some weeks.

So far as we can gather a woman named Laffey was admitted into the Galway Workhouse on February 18th, 1907, having been sent back from America. On March 4th she was transferred to the Union Infirmary with some cerebral trouble, and on April 5th, being obviously insane, she was sent under a police escort to the County Asylum, where she died six months later (October 13th).

On October 17th her brothers, who lived at the other end of the county, received a notice of her death bearing the Ballinasloe postmark of October 16th. They hurried to the asylum, only to find their sister had already been interred.

The Laffeys went to the next meeting of the guardians and made a complaint about the delay in informing them of their sister's death, and the clerk was directed to ask the Resident Medical Superintendent for an explanation. At the next meeting of the guardians a long letter was received from Dr. Kirwin, the Medical Superintendent, giving a history of the case from the admission of the woman till her death, but the only explanation offered as to the delay in notifying her death was that the Medical Superintendent was busy with contracts and a meeting of the Asylum Committee on the 14th, and that he signed the notice on the 15th, but knew nothing more about it. Had his letter stopped there nothing more would probably have been heard about it, but Dr. Kirwin went on to say that the Galway Board and their medical staff had suffered this woman while under their care to become "the most painful instance of human neglect that in his long experience he had ever seen." He proceeds to say that he reported her state on admission to the Inspectors of Lunacy, whose reply we find later was a wire, "Yes, received your telegram that Anne Laffey was suffering from bedsores," from which we gather that two telegrams were sent to the inspectors about this case. Dr. Kirwin did not wait for the meeting of the Galway guardians, but sent the letter containing these grave charges against his professional brethren direct to the press.

At the next meeting of the Galway guardians the doctors and nurses of the Union Hospital asserted positively that Anne Laffey never had a bedsore while in the Union Infirmary. That when cerebral symptoms set in she was put on a water-bed and kept perfectly dry and clean, and with the exception of one hip, where she had scratched herself with her nails there, was no abrasion upon her when she left Galway.

At the next meeting of the Asylum Committee, the viva voce evidence of the asylum attendants and doctors was given to the effect that when Anne Laffey was carried into the asylum lodge by the two constables who accompanied her and placed on the floor, her legs being tied together with string, there were five or six bad bedsores on her body, one of them on the hip being 3 in. deep and exposing the bone. She was not sent to the asylum infirmary, however, for some six weeks after her admission, where, according to the evidence, her bedsores were finally healed ere she died.

As the whole affair will be the subject of a sworn inquiry, probably of the usual futile sort, and most likely of actions for slander, we wish to make no further comment beyond stating the bare facts as reported in the local press. The statements of the officials of the workhouse and of the asylum are utterly irreconcilable. The distance from Galway to Ballinasloe is only some twenty miles, and a woman who had never had a bedsore could hardly develop five, one of them 3 in. deep, during so short a journey. One of the Galway guardians suggested that it was a case of mistaken identity, and this seems possible, as the woman never spoke after her admission to the asylum and was not identified by her relatives after her death. Such incidents are exceedingly unpleasant under any circumstances, but more so when people suspect that there is far more in the case than meets the eye of the casual reader, and it is for this reason alone we have given so much space.

Bribery at Dispensary Doctors' Elections.

The Limerick magistrates have sent for trial several persons who are alleged to have been concerned in bribing voters at a recent election of dispensary doctors in that county. This will be the second trial of persons on charges of this kind fixed for the coming winter assizes.

Cork Medical and Surgical Society.

The annual dinner of the Cork Medical and Surgical Society, which was held this year in the Imperial Hotel, Cork, was attended by a large number of members with their friends. The usual toasts were proposed and a pleasant evening was spent. Dr. A. E. Moore, Lecturer of Pathology in Queen's College, has been elected president for the ensuing year, and it is expected that many useful meetings will take place during the session just begun.

Scotland.

Dundee Medical School.

The Faculty of Medicine in the University of St. Andrews, having adopted the recommendations of the General Medical Council relative to the practical teaching of midwifery, students who have not already taken a certificate which qualified under the old regulations will be required to attend the Maternity Hospital daily for a month, and in addition to deliver twenty patients. In the final examination there will be a clinical examination both in midwifery and gynaecology. At present the students attend the Gynaecological Out-patient Department in groups of four according to a definite rota.

Dundee Royal Infirmary.

To cope with the increased work, it has been found necessary to create special appointments in connexion with Medical Diseases in Children and Diseases of the Skin, and Dr. J. S. Y. Rogers and Dr. W. E. Foggie have been promoted from the post of Assistant Physician to these departments respectively. Dr. Charles Kerr and Dr. C. W. Miller have been appointed Assistant Physicians, and Dr. A. Sydney Campbell has been appointed to a new (fourth) Assistant Surgeonship. Dr. Peter Campbell has resigned his appointment in the department for Ear and Throat, and has been appointed Consulting Surgeon.

Co-operation of Trained Nurses.

A bazaar was held last week in Glasgow to aid the funds of the sick fund of the Glasgow and West of Scotland Co-operation of Trained Nurses. The sum aimed at was £5,000, and of this £4,098 was obtained. This nursing society was started fifteen years ago. During this time it has been repeatedly enlarged. As years passed the demands made by nurses for help during sickness became more numerous. Up till last year the executive committee considered each case, and afforded suitable help from the general funds of the association; but the calls for assistance became so numerous, that it was found necessary to institute a special sick fund, to which all the nurses now contribute annually. To place this fund on a sound financial footing it was decided to raise £5,000.

Pork and Tuberculosis.

The report of the Veterinary Surgeon to the Corporation of the City of Glasgow for 1906 draws attention to the dangers arising from the present unsatisfactory conditions under which pork may be imported into Glasgow from other parts of Scotland and from Ireland. At no time are any efficient means taken to ascertain the fitness of the pork for consumption as human food. In Ireland the pigs are slaughtered on the premises of the feeders and the carcasses conveyed to neighbouring markets, or purchased by agents of large ham curing firms, by whom they are boned out and consigned to ham curers in Glasgow and the West of Scotland. During these processes no thorough examination regarding the fitness for human food takes place. In the North of Ireland all pigs sold in country markets are seen by a market official or "trier," whose duty it is to pass under review all carcasses offered for sale and determine their freedom from blemish, from injury, and freshness, but this does not include an examination for tubercle, or involve the use of a knife. Yet experience of pigs slaughtered in the Glasgow abattoirs shows that Irish pigs are frequently affected with tubercle. Though this unsatisfactory condition of affairs has been brought to the notice of the Local Government Board no powers have been obtained to ensure inspection of pork slaughtered in other parts of the country. It is obviously of the utmost importance that a uniform system of meat inspection should be established throughout the United Kingdom. In this respect the arrangements in Denmark are much more satisfactory than ours. A further point of interest in the report is covered by the statistics dealing with the prevalence of tuberculosis among animals reared in this country and those landed from abroad at the Foreign Animals Wharf. The figures show the home animal in an unfavourable light. Thus of 43,895 home cattle, 19 per cent. were tuberculous, while of 50,641 foreign cattle, only 1.21 per cent. were tuberculous.

Wales.

The Welsh University.

On November 20th Sir Thomas Raleigh, K.C.S.I., D.C.L., and other members of the Committee appointed by the Treasury to inquire into and report upon the character of the work accomplished by the University of Wales and its constituent colleges, visited the new college buildings at Cathays Park, and visited the various departments of the present college for the purpose of making inquiries as to methods of working, etc.

Territorial Army and the R.A.M.C.

There was a large gathering of medical officers of volunteers and members of the medical profession in North and South Wales, Monmouthshire, Cheshire, Herefordshire, and Shropshire at the Park Hotel, Cardiff, on November 23rd, when Sir Alfred Keogh, K.C.B., Director-General, A.M.S., delivered an address upon the scheme which the Army Council has sanctioned for providing the medical organization required under the new Territorial and Reserve Forces Act, 1907.

The Lord Mayor of Cardiff, who presided, was supported by Sir Alfred Thomas, M.P.; Surgeon-Colonel Philip E. Hill, Senior Medical Officer, South Wales Brigade; Colonel J. Gaskell, Officer Commanding 2nd V.B. Welsh; Colonel Downing, Colonel Hollies, 2nd V.B. King's Shropshire Light Infantry; Major Thompson, R.A.M.C.; Colonel Russell, D.D.G., R.A.M.C.; Surgeon J. Arnallt Jones, V.D.; Major Thompson, Officer Commanding Welsh Border Brigade Bearer Company; Surgeon Major Davies, Captain W. Sheen, Colonel E. C. Fry, Dr. J. Lynn Thomas, C.B.; Dr. W. Williams, County Medical Officer, Glamorgan, Dr. Alfred Rees, Dr. E. Walford, and Dr. Parry (Ferndale). Sir Alfred Keogh, who was briefly introduced by the Lord Mayor, said that in this country the relations between the army and the medical profession were not so close as was the case in some other places. They were all too apt to forget that it was impossible to fight and win battles unless they had a highly efficient medical service. The speaker then described the medical organization of an up-to-date expeditionary force. (See British Medical Journal, November 2nd, p. 1243, and Novembsr 16th, p. 1445.)

Colonel P. E. Hill proposed a vote of thanks to Sir Alfred Keogh for his address. This was seconded by Colonel Hollies, supported by Captain Sheen, and carried unanimously. Sir Alfred was entertained at dinner at the Park Hotel, and in replying to the toast of his health referred to the enthusiasm shown by the medical men of the Welsh Division. He was not altogether unknown to Welshmen, for he assisted in the Welsh hospital in South Africa, where he was closely associated with his friend Dr. Lynn Thomas, C.B.

Daily Disinfection of Schools.

At the monthly meeting of the Llanfrechfa District Council on November 19th, Dr. W. C. Murphy, medical officer, reported that he had made an examination of the schools in the district. At the Pontnewydd School (non-provided) he found the floors and the school furniture covered with dust, the ventilation in all the rooms bad, and the light deficient and wrongly placed in most. Slates were used, but, in his opinion, should be condemned as a means of spreading infection. He considered that the daily disinfection of schools was urgently needed. There was overwhelming evidence to show that schools played an important part in the spread of infection in diseases such as scarlet fever, diphtheria, whooping-cough, and chicken-pox. It had been conclusively proved that the dust on the floors and furniture of class rooms contained infective bacteria. It was decided to forward the report to the County Education Committee.

CORRESPONDENCE.

CONTRACT PRACTICE IN SOUTH WALES.

SIR,—At the request of the Contract Practice Committee of the South Wales and Monmouthshire Branch I venture, through the columns of the JOURNAL, to make an urgent appeal to the Branch and Divisional Secretaries and to the individual members of the Association to help us in raising a further £500 in respect of the Ebbw Vale dispute.

The history and many of the facts in connexion with the dispute are well known to many members of other Branches than our own.

For the past thirteen months we have, from funds voluntarily subscribed for the purpose, made monthly grants to our members in the Ebbw Vale district who were dismissed from the service of the Workmen's Doctors' Fund under the circumstances mentioned.

Notwithstanding other inducements offered and many difficulties these colleagues have remained true, and the grants in money made to them represent the determination of their fellow members to stand by them in their fight to assert their just personal claims, and those principles which are vital to the well-being and prestige of the profession.

That those who are most conversant with the points and position of the dispute regard its issue as important is testified to by the fact that in our own Branch we have already raised £1,325.

We gratefully acknowledge the help we have so far received from members of Branches and Divisions other than our own, amounting to a further sum of £350. I append a list setting forth some of the items of that amount, some of which have been sent to me direct, the remainder through the Central Emergency Fund. My Committee is convinced that there is a feeling widespread in the Association that we must continue to contribute to the support to our colleagues in Ebbw Vale and their dependents until such time as a satisfactory settlement is obtained. The further consideration that the status of our Association is concerned will, it is felt, weigh with the members generally.

Many of the Branches had balances in hand carried over at the time when our present Constitution was initiated, and such balances are legally available for contributions of the kind we now ask for.

I beg the permission of my fellow secretaries to make a personal appeal to them to bring the matter before the various Branches and Divisions throughout the Association at an early date.

Contributions may be sent to the Central Emergency Fund (addressed to the Medical Secretary, 6, Catherine Street, W.C.), or to the undersigned, and it is proposed to publish in the JOURNAL a list of the amounts received in response to this appeal.—I am, etc.,

(Signed) EWEN J. MACLEAN,
Honorary Secretary and Treasurer.

12, Park Place, Cardiff, Nov. 27th.

	£	s.	d.
Subscribed by Representatives in the Special Representative Meeting, May, 1907... ...	43	5	0
Contributions received from Branches.			
Metropolitan Counties	26	5	0
Yorkshire	25	0	0
South Midland	20	0	0
East Anglian	10	0	0
Dundee (with a guarantee of further £10) ...	5	0	0
Contributions (of individuals) received through Branches or Divisions.			
Members of Stockport, Macclesfield, and East Cheshire Division (per Dr. Housman) ...	8	8	0
Members of Altrincham Division (per Dr. Garstang)	7	4	6
Members of Salisbury Division (per Dr. Gordon)	7	4	3
Members of Walthamstow Division (per Dr. Shadwell)	7	1	6
Members of Coventry Division (per Dr. Snell)	5	10	0
Members of Birmingham Branch (per Dr. T. Wilson)	5	5	0
Members of Southport Division (per Dr. Harris)	4	14	6
Members of Oxford Division (per Dr. Duigan)	4	3	6
Members of City (London) Division (per Dr. Goodall)	3	2	0
Members of Winchester Division (per Dr. Godwin)	2	3	6
Contributions received from Medical Societies.			
Durban (South Africa)	15	13	0
Eastbourne	5	5	0
Lincoln	5	5	0
Walthamstow	1	1	0
Individual Subscriptions.			
Horsley, Sir Victor...	50	0	0
Shaw, Dr. Lauriston	20	0	0
Langdon-Down, Dr.	10	0	0
Anderson, Dr. Ford	5	5	0
Ballance, Mr. H. A.	5	5	0
Browne, Dr. Langley	5	5	0
Rayner, Dr. Edwin...	5	5	0
Smith, Dr. F. J.	5	5	0
Kinsey, Dr. R. H.	5	0	0
Fawcett, Mr. J.	3	3	0
Armit, Mr. H. W.	2	2	0
Day, Dr. D.	2	2	0
Douglas, Dr. W.	2	2	0
Eastes, Mr. George	2	2	0
Edmunds, Mr. W.	2	2	0
Haslip, Dr. G. E.	2	2	0
Owen, Mr. Edmund	2	2	0
Macdonald, Dr. J. A.	2	0	0
Nash, Mr. E. H. T	2	0	0

PROCEDURE OF THE REPRESENTATIVE MEETING.

SIR,—In my official position I have deliberately abstained from engaging in the correspondence in the BRITISH MEDICAL JOURNAL as to the Referendum and various constitutional questions more or less connected therewith.

I have been appealed to, however, officially to correct a misunderstanding under which Dr. A. Walker appears to be labouring, and think it right that I should do so, as the question is more one of fact than of opinion. I believe it to be not inconsistent with my official position to add a few remarks on the question of the methods of business of the Representative Meeting.

Dr. Walker appears to have been much impressed by the circulation to Representatives, immediately before the Representative Meeting, of what he calls a "supplementary agenda containing fifteen brand-new resolutions." Dr. Walker proceeds to ask by what rule these resolutions received admission to the agenda of the business, and were treated exactly as if they had been advertised and discussed.

The reply to Dr. Walker's question is that these items received admission to the Agenda by exactly the same rule by which it would have been open to Dr. Walker himself to move (if he had thought proper and had been so instructed by his Division) a resolution, without any previous notice, on the subject to which these fifteen resolutions related, namely, the Report on Ethics of Consultation.

By Article XXXI of the Articles of Association, part of the business is to consider reports of the Council, reports of Committees, and motions relating to the adoption of such reports, in whole or in part. No notice is required of such motions; and, moreover, passing from the region of fact to the region of opinion, I venture to submit, for the consideration of all who are familiar with the transaction of public business, that it is absolutely impossible to require notice to be given of amendments.

It would have been competent for the Representatives of the Hampstead and Wandsworth Divisions to move the resolutions to which Dr. Walker refers without any previous notice, just as it would have been possible for the meeting so to discuss the resolution which stood in the name of one of the Divisions which Dr. Walker himself represented, namely, the Edinburgh Southern Division. It has been the practice, and I think a useful practice, to issue to Representatives shortly before the meeting a final agenda, not only containing original motions of which notice had been given in accordance with the Articles of Association—that is to say, three months before the meeting—and reports and other matters specifically provided for by the Articles of the Association, but also including all motions received up to the date of the issue of that agenda which are in order—that is to say, including notices of motion for the amendment of reports, or for the amendment of motions of which three months' notice has been given. These last are printed for convenience purely.

It would be equally practicable for the Representatives of the Divisions concerned to move the resolutions in question without previous printing, but it is thought helpful to the Representatives to have before them in print, as far as possible, the text of all motions, including amendments, which are thought to be in order.

My attention was called shortly before the Representative Meeting to the fact that the resolutions of the Hampstead and Wandsworth Divisions had for some reason been omitted from the final Agenda, and after careful consideration, being of opinion that all these resolutions were in order, I gave directions that they should be printed to lay on the tables. The printing of them did not put them in order: they were in my judgement in order already.

Passing to the general question of principle, as to the consideration by the Representative Meeting of matters that have not been before the Divisions, I entirely agree—and I would submit for the consideration of all who have considered the business of the Representative Meeting that it has given ample evidence of agreeing—that it should act as a body of delegates—that is to say, in accordance with the instructions from its constituents. This means that it should not come to any decision in the name of the Association on a resolution, of which the Divisions have not had a reasonable opportunity of considering the *subject matter*. It does not mean, however, in my judgement, that the meeting can pass no resolution the *terms* of which have not been before the Divisions; such a restriction would be, I consider, fatal to the progress of business and entirely unknown in analogous bodies elsewhere.

Nor do I consider that the Representative Meeting should be prohibited in all cases from *discussing* even *subject matter* which has not been before the Divisions. Subjects may arise in the natural course of events which there has been no opportunity for the Divisions to consider, and which, nevertheless, it is desirable to discuss.

One useful function of the Representative Meeting is to promote, by its general discussions, the education of the Representatives by one another, fitting them on their return to enlighten the Divisions. If a new subject has come up shortly before the meeting, which there has been no opportunity for the Divisions to discuss, I think it may be of advantage for the Representatives to discuss it, but I agree that they ought not to attempt to come to a binding decision.

In this way the Representatives, under my Chairmanship, discussed the Finance Inquiry Report, which there had been no opportunity for the Divisions to discuss.

The Representative Meeting, after protracted deliberation, came to the conclusion that the opportunity ought not to be thrown away of a useful discussion on this important matter of the finances of the Association, but at the same time the meeting very carefully abstained from arriving at any decisions which should have any binding authority. New questions of principle were in all cases referred to the Divisions, while on questions of administration it was left to the Council to take such action as it might deem expedient.—I am, etc.,

J. A. Macdonald,
November 27th. Chairman of Representative Meetings.

IS A ROUND-TABLE CONFERENCE POSSIBLE?

Sir,—In Dr. Norman Walker's letter of November 16th, in which he appears in the rôle of mediator, he refers to the decisions of the Divisions on the Referendum and makes the following statement: "Where Branches are active opinion favours the Council; where they are inactive the Divisions are solid for the side of the Representative Meeting." Having looked into the returns as published, it seems to me that the Branches whose Divisions so far have mainly supported the Representative Meeting are the Lancashire and Cheshire, North of England, South Wales, Metropolitan Counties, South-Eastern and East Anglian. I ask by what criterion Dr. Norman Walker judges these Branches to be less active than those which have supported the Council.—I am, etc.,

November 26th. Elwin H. T. Nash.

Sir,—As one who has on more than one occasion raised his voice against hasty and sweeping changes being carried out in the Association I should like to give what support I can to the suggestion of a round-table conference between the two parties who seem to divide the Association. At the Council meeting at Exeter I pleaded for such a conference, but the general opinion there seemed to be that it was hopeless to expect any agreement between parties whose views were so fundamentally different. At the present time it seems to me that the outlook is more hopeful. Moderate men in both camps are getting their voices heard.

I well remember a time when the question of the registration of midwives divided the Association into two parties, seemingly irreconcilable; but when representatives of these parties met and calmly discussed their differences, they soon succeeded in agreeing on a common line of action. The strength of the Association must always lie in its comprehensiveness, and surely it is in the interest of whatever party believes itself to be the majority to avoid committing the Association to any line of action which would be likely to drive out of its ranks any considerable number of its members.—I am, etc.,

Liverpool, Nov. 26th. Thos. R. Bradshaw, M.D.

Sir,—I have read with interest week after week the discussion which is now going on under the heading, "The Referendum."

In the correspondence in the Journal of November 23rd three letters referring to a round-table conference appear which, I trust, will effectually solve the threatened trouble and prevent such an unfortunate difference of opinion arising again.

Dr. Henry Davy, the President, has, I trust, solved the matter. Conciliation must undoubtedly be the password, and no better man than our President can be found to arrange an amicable settlement. The talk of wrecking the Association is absurd.—I am, etc.,

Paignton, Nov. 24th. Griffith C. Wilkin.

THE REFERENDUM.

Sir,—This letter is written with the view of suggesting a solution of the existing relations between our Representatives and Council. My idea is that our Association will not progress smoothly nor efficiently if it be not administered by a Council acting as our House of Lords does; so I suggest that, while carefully excluding general party politics: (1) The Representatives be considered as analogous to our members of Parliament, with a Speaker, such as Dr. Macdonald and leaders of Moderates and Progressives; (2) that the Council should consider the decisions of the Representatives, debate, criticize, and advise in the interests of our profession (scientific and economically, rather than medico-politically); and (3) that a Central Committee, consisting of a small number of the Council and Presidents of the largest Branches, would resemble a Cabinet, under the premiership of the President of our Association; if that Central Committee exercises a veto, any question between it and the Representatives could be referred to the electorate, who could vote by post.

The Representative assembly largely consists of enthusiasts, swayed by discontent of the past rule of our Association. Some of them, in my estimation, are too democratic and impulsive, wanting to go too fast and without sufficient consideration and judicial insight, with deficient respect for the restraining check of older and more experienced leaders. In all civilized countries two chambers and a cabinet or ministry, have been found essential for careful government. We should copy that precedent and advance slowly, but surely, for the avoidance of any wish to rescind any recent work.

If the Divisions do not stop in time we may disgust and lose those who have laboured long and strenuously in our behalf; we must avoid being without experienced pilots. It is unfortunate that the old Council surrendered its claims as a government to former Representative meetings, and that at the eleventh hour, when too late to retrace its steps, a portion of it tries to rescind what has been done, the *fait accompli*.

The Association seems in a perilous condition; its members should sink differences and cavils and jealousies, and do all in their power to strengthen and save our

Society, which is capable—under wise guardianship—of benefiting us and our Empire so enormously. The amended Council, containing many elected Representatives, can be expected to prove a very valuable body: let us trust it.

A proper Referendum of our Association would ascertain the views and obtain the votes of the individual members; that now being engineered will be the collective opinion of Divisions, formed from a minority of general practitioners, so many of whom are prevented from personal voting. To enable members who cannot attend meetings of Divisions to share in the work they should read the agenda in our JOURNAL, or receive them from their Secretaries, express their opinions, and vote by post either to their Divisional Secretaries or to our London office.—I am etc.,

Malvern, Nov. 21st. STANLEY HAYNES.

THE UNIVERSITY OF LONDON AND ST. GEORGE'S HOSPITAL.

SIR,—I do not think it is necessary to reply at length to the letter from the authorities of St. George's Hospital Medical School which appeared in your issue of November 23rd.

Your correspondents were instructed to "take no steps unless they were assured that a third centre was to be erected in the immediate future in the near neighbourhood of the University." As I have already shown, they failed to make this clear to the University representatives. Had they done so we should at once have refused the necessary assurance. They also took no steps to include that assurance in the agreement with the University. There is, therefore, no question of a breach of faith on the part of the Senate.

They now fall back upon the general conversation which took place and in particular upon a phrase, which may have been used by one of us, to the effect that it was the "settled policy" of the University to establish a third centre. They themselves point out that we had given every proof of bona fides by raising money for that specific object. It was the intention of the University to establish such a centre. Unfortunately circumstances have arisen which in the opinion of the Senate make it impossible to carry that intention into execution. Thus no question arises of a breach of faith or of avoiding moral responsibilities. The dispute is narrowed to a difference of opinion as to whether it is possible for the University to carry out the original intention to which its "settled policy" was directed. In discussing this question it is in the first place necessary to make clear what that original intention was.

The first scheme contemplated the erection of buildings at the cost of £160,000 and an annual expenditure of £19,500. At a later date it was estimated that the cost of building and equipping the institution on a reduced scale would be £130,000 The sum raised is little more than half the reduced estimate for building and equipment. It cannot be honestly said that on this capital it is possible to establish an institute such as that for which the subscriptions were given. It would have been a real "breach of faith" with the subscribers to attempt it. If the St. George's delegates do not agree in this view, I can only regret the difference of opinion.

For the rest, I have not expressed in public any opinions on the matters at issue other than those forced from me in this correspondence. I was told that it was being stated that I was present when certain pledges were given. I handed my repudiation of that statement to Mr. Leonard Hill, and wrote to Professor Starling—who, I understood, more or less accepted the statement—to tell him what I had done. In that repudiation I was dealing with a matter of fact, not of opinion. I have therefore written this letter as a witness to facts in my personal capacity, and, having shown that the real controversy is about matters of opinion, I shall take no further part in the correspondence.—I am, etc.,

ARTHUR W. RÜCKER,
London, S.W., Nov. 26th. Principal.

THE REPRESENTATION OF THE MEDICAL FACULTY ON THE SENATE OF THE UNIVERSITY OF LONDON.

SIR,—In your issue of November 16th a letter was published from Mr. Leonard Hill in which certain statements concerning this Medical School were made.

Mr. Hill's letter was written in connexion with the recent election to the Senate of the University of London; and, in order to correct the false impression which Mr. Hill's statements were likely to produce, I sent a copy of the enclosed reply to each member of the Faculty on the eve of the election.

As, however, Mr. Hill's letter will not only have been read by those immediately interested in the Faculty Election, but by the profession at large, I should esteem it a great favour if you could give, through your columns, the same publicity to my reply.—I am, etc.,

E. I. SPRIGGS,
Dean of the Medical School, St. George's Hospital.
London, S.W., Nov. 25th.

St. George's Hospital, S.W.
November 18th, 1907.

LONDON UNIVERSITY: FACULTY OF MEDICINE.

St. George's Hospital and the University.

IN the latest issues of the *Lancet* and the BRITISH MEDICAL JOURNAL Mr. Leonard Hill asks the following question:

> "Do St. George's and St. Thomas's propose that the University should prepare students for the examinations of the Conjoint Board?"

One of the original conditions laid down in the report from the "Concentration" Committee to the Faculty of Medicine for the School of Preliminary and Intermediate Studies in the near neighbourhood of the University was:

> "That provision is made for teaching all classes of medical students, whether preparing for the examinations of the University or for those of other qualifying bodies, so that any existing School of the University should be able at once to abandon altogether the teaching of the subjects provided for at the new School."

[Report from "Concentration" Committee, Faculty of Medicine, December 13th, 1901, page 7 (*b*).]

Mr. Leonard Hill also points out that in the *Calendar* of the University (1906-7) the Preliminary Scientific students of St. George's Hospital number two. This statement in the *Calendar* is, however, a misleading one, for in 1906-7 there were no students working at the Hospital for the Preliminary or Intermediate examinations of any qualifying bodies, as all had been transferred to King's and University Colleges a year before, in October, 1905. The number of students who have been so transferred from St. George's Hospital is 33 All these would have been sent to an Institute at South Kensington had such been available.

Further, Mr. Hill suggests that the students sent to this Institute would be charged £20 per year, and concludes that the combined income from St. George's and St. Thomas's students would be only £369 per annum.

The fee paid at this Hospital by students doing Anatomy and Physiology is 30 guineas per annum; £26 5s. is charged for the Preliminary Scientific course of the University of London, and 20 guineas for that of the Conjoint Board. The sum paid in fees to the University in 1905-6 from St. George's Hospital students was over £500 instead of the £80 per annum allowed for in Mr. Hill's estimate.

Mr. Hill also assumes that a student would only stay at the Institute two years. Under the present regulations it would be difficult for a man to pass his Intermediate examination in less than three years from commencing his medical studies.

E. I. SPRIGGS,
Dean of the Medical School,
St. George's Hospital.

MR. LECKY AND VIVISECTION.

SIR,—Can any of your readers inform me from which of Mr. Lecky's writings the statement made by the Rev. L. S. Lewis came, as it is in exact contradiction in opinion to what Mr. Lecky says in his *Map of Life*? According to the report of the Vivisection Committee in the JOURNAL Mr. Lewis says:

> Lecky and some of the great thinkers of the world told them that it was one of the great dangers of vivisection that a man who got callous to pain and did not inflict it for the good of the sufferer would not be over-particular when he went straight from the vivisectional laboratory to the bedside of a hospital patient.

In Mr. Lecky's *Map of Life*, chap. iv, the following may be found:

> The fatal view of ill-considered benevolence is, that it looks only to proximate and immediate results without considering either alternatives or distant and individual consequences. A large and highly respectable form of benevolence is that connected with the animal world, and in England it is carried in some respects to a point which is unknown on the Continent. But what a strange form of compassion is that which long made it impossible to establish a Pasteur Institute in England, obliging patients threatened with one of the most horrible diseases that can afflict mankind to go—as they are always ready to do—to Paris in order to undergo a treatment, which

what is called the humane sentiment of Englishmen forbids them to receive at home!

What a strange form of benevolence is that which, in a country where field sports are the habitual amusement of the higher ranks of society, denounces as criminal even the most carefully limited and supervised experiments on living animals, and would thus close the best hope of finding remedies for some of the worst forms of human suffering; the one sure method of testing supposed remedies which may be fatal or which may be of incalculable benefit to mankind! Foreign critics, indeed, often go much further and believe that in other forms connected with this subject public opinion in England is strangely capricious and inconsistent. They ask whether the real sufferings caused by many things that are in England punished or reprobated by opinion are greater than those caused by sports which are constantly practised without reproach, and they are apt to find much that is exaggerated or even fantastic in the great popularity and elaboration of some animal charities.

I might take this opportunity of alluding also to the case of Mr. Jonathan Hutchinson of allowing his patient with skin disease to remain unrelieved for some days in order that his class might see the case before he administered a medicine which would rapidly cure it. This is a good example of what Mr. Lecky says when the anti-vivisectionist looks only to the immediate result without considering the distant consequences. I well remember the case, and Mr. Hutchinson's argument and justification on the other side, to which Mr. Lewis does not allude. It was to this effect: That this man had for a long time suffered from a skin disease, but he had found that a preparation of arsenic would in a few days completely remove it. Unfortunately it did not remove the cause, and after a time the rash returned, when again the remedy would remove it. In other cases the arsenic remedy would completely cure the disease. Mr. Hutchinson wished to show its value to his class, believing that their knowledge of it would be carried to all parts of the world, which might be the means of alleviating hundreds of sufferers, and this result would very much more than compensate for a few days' further annoyance by a man who had experienced the trouble for many years. The statement made by Mr. Lewis was only a spiteful attack on the profession, as it could not affect Mr. Hutchinson, so long known for his benevolence and kindheartedness.—I am, etc.,

Hampstead, Nov. 25th. SAMUEL WILKS.

ETHER ADMINISTRATION BY THE OPEN METHOD.

SIR,—There is no doubt that Dr. Bellamy Gardner's excellent memorandum in the issue of November 23rd on ether administration by the open method will give increased stimulus to that method of administration, and rightly so, too.

I must challenge his statement that the closed methods have been in vogue in England for the past thirty years, for, like myself, many anaesthetists, for many years of the latter portion of that period, must have practised the open method. I adopted it because I could not help being cognizant of the clinical effects obtained by this method, as mentioned by Dr. Gardner; its results are highly preferable to anaesthetization and partial asphyxiation, which are concomitant with a bag inhaler.

Although I have not made general use of the Skinner type of mask, I have used the Allis inhaler of American origin, which is to all intents and purposes an open inhaler. Its use is easily learnt by the student, who readily obtains a perfect method; and, with improved technique in ether administration, the old prejudices against its use as an anaesthetic are rapidly fading.

I had hoped to have published ere this a paper I read on the use of the Skinner type of mask as an ether inhaler at a meeting of the Lancashire and Cheshire Branch in the early part of this year, and the views therein expressed bear out all that has been so ably written in Dr. Bellamy Gardner's short note.—I am, etc.,

FRANCIS W. BAILEY,
Honorary Anaesthetist to the Royal Infirmary, Liverpool, and to the Liverpool Dental Hospital.

November 23rd.

SIR,—I have used the open method of ether administration for the past two years, but through an ordinary inhaler *without* the bag being applied. There is no doubt as to the advantage both to administrator and patient. The patient is spared the vision of that unsightly bag, and he gets, above all, a free supply of fresh air with the anaesthetic, which does away with the feeling of asphyxiation so often encountered—a condition which I am afraid is not always the patient's fault nor due to the anaesthetic. All struggling is done away with—a very important point—and the patient generally goes off as quickly as by the old method and in comfort; he also comes to in comfort, the after-effects in the way of vomiting and headache being decidedly less.

My reason for using the inhaler is that one is able to put a fair quantity of ether into the receiver, and to regulate the supply of ether without interfering with the patient getting fresh air. When the patient is fully under I turn off the receiver to about half, especially in the case of children, and thus keep him in the stage necessary for the operation. There is one, and only one, disadvantage, if I may call it so—the expense is increased, as slightly more anaesthetic is used than if the patient had rebreathed his poisoned breath from the bag. Against that is greater safety, no struggling, and certainly the gratitude of the patient if he has ever had an anaesthetic before.

The advantage of this over the old closed method is as great as having laughing gas administered in the old way without any fresh air and in the new way of air being given to the patient at the same time, and only one who has had that experience personally can judge. In the old method one seemed to swell up, and your head full of a compressed-air rivetter hard at work, or of the sound of a train rushing through a tunnel; in the new, one goes off quite as quickly and without the noises, and there is not the sensation of being asphyxiated.—I am, etc.,

R. W. HORNABROOK, M.B., M.R.C.S.,
Anaesthetist, Adelaide Children's Hospital, South Australia.

Tunbridge Wells, Nov. 25th.

SIR,—I read with much pleasure Mr. Bellamy Gardner's letter under the above title in the last issue of the BRITISH MEDICAL JOURNAL, for I can emphatically endorse all he said. In the *Lancet* of September 27th, 1905, I described a regulating apparatus of my own design for the administration of ether by the open method, which had the additional advantage that chloroform could also be administered by its means in regular, unvarying, minimal doses. In this paper I advocated the open method of etherization, and pointed out the serious results of making patients rebreathe for long periods their expired air, laden as it is with excrementitious organic matters.

If there be any virtue in fresh air, and any evil in foul air, and if the recoveries of patients from operations are expedited by fresh air, it cannot be good practice to anaesthetise them by "closed" methods, and thus add to the devitalizing action of the anaesthetic, that of partial asphyxiation and poisoning by the products of respiration. It must follow that the more a patient's vitality is depressed during an operation, the more protracted must his recovery necessarily be. If then we wish to gain the best results from surgical operations, we must, during their performance, interfere as little as possible, and for as short a time as possible, with the normal processes of life, so that the patient's vitality is depressed in the least possible degree.—I am, etc.,

HARVEY HILLIARD,
Assistant Instructor in Anaesthetics, the London Hospital; Assistant Anaesthetist, the Cancer Hospital; Anaesthetist, the Royal Dental Hospital.

London, S.W., Nov. 25th.

HYPNOTISM AS A THERAPEUTIC AGENT.

SIR,—I must confess to being one of those benighted persons referred to in Dr. Ladell's letter who view with suspicion hypnotism in all its forms. I need very much more education before I can regard it, not only as a last and doubtful resource, but as justifiable under any circumstances whatever. I fully sympathize with the young lady who preferred an operation, and I think most people would be of the same opinion. Had she preferred death itself I should say the same. The "risk" of an operation is the loss of life. The "risk" of hypnotism is the loss of reason; and I have not yet seen the man, woman, or child who would not rather part with life than reason. And what is hypnotism but the loss of certain cerebral functions, either of will-power, or of sensation, or

of special sense? I know this is unpopular in these days, but I am convinced that when the conscience of the nation (I do not refer to the antivaccinator's nor to the passive resister's conscience) is duly aroused, the artificial induction of delusions, by whatever specious name it may be called, and whether practised in the music-hall, the operating theatre, or the bedside, will be recognized as a criminal act. That it is not so already is due to the fact that the great bulk of the medical, and practically the whole of the legal, profession either ignore the existence of hypnotism or are absolutely uninformed on the subject. This position is perhaps justified by the extremely limited scope for the exercise of its action.—I am, etc.,

London, S.W., Nov. 21st. J. FOSTER PALMER.

ROYAL SOCIETY AND THE TEST FOR COLOUR-BLINDNESS.

SIR,—I can well appreciate the letter of Dr. Edridge-Green in your issue of November 23rd. I am colour blind to a certain extent, I am utterly unfit to judge colours *at a distance*, and yet I have been examined by an expert and told I was *not* colour blind. This examination took place twenty years ago, and my friend the expert and I had a hot argument about the correct method of examination to test for the defect. I am perfectly convinced many mariners are annually passed in colour test who cannot distinguish lamps at sea, and that casualties are very likely to occur from such errors is obvious. Similar defects in railway men are much more dangerous. —I am, etc.,

Uley, Gloucestershire, Nov. 25th. ARTHUR CAMPBELL.

WORTHING AND ITS HEALTH REPUTE.

SIR,—The article in the BRITISH MEDICAL JOURNAL of November 16th, page 1455, has evidently been written in ignorance of the facts of the case and under misconception of the reasons which have influenced the Town Council in its action.

Dr. Cameron himself brought to the notice of the combined authority the difficulty he experienced in performing his duties owing to the wide district and its inaccessibility, and proposed that a large expense should be incurred in providing him with a motor car and clerical assistance.

The town of Worthing is growing very rapidly. At the present time the population is fully three times what it was when the combined authority was formed. An isolation hospital for infectious diseases is maintained with the Medical Officer of Health as superintendent, and it is essential that he should be always within call. It is contemplated, under the Act passed last session, to arrange for the medical examination of the children attending the elementary schools, numbering now between three and four thousand. Under these circumstances I am of opinion that the Council acted wisely in determining that the exclusive services of a highly-qualified medical officer should be secured. It is true that it was suggested that some contiguous parishes might with advantage be included in the proposed area, but this was no necessary part of the scheme. I agree with you as to the increased cost, but I am of opinion that this would be willingly borne by the Council.

The medical gentlemen of the town have been informed by the Sanitary Committee of the Council that the opinion expressed in the resolution passed at their meeting is altogether approved, but the resolution does not agree with your version of it.

Dr. Cameron has been kept fully informed of all the proceedings, both of the Combined Authority and of the Town Council; his letters will prove this.

I may, perhaps, say that the Town Council feels strongly that in endeavouring to make arrangements at an increased cost, which should lead to more efficient supervision, it is entitled to your support and to that of the medical faculty generally.—I am, etc.,

Worthing, Nov. 20th. FRED. C. LINFIELD, Mayor.

INFANTS' SCHOOLS.

SIR,—In your leading article on "Medical Examination in Infants' Schools," in the JOURNAL of November 23rd, occur the following words:

> If these children were excluded from school, some other provision must be made for them by the State. Many of the mothers are out at work, and if the infants were kept at home it would mean that the elder sisters would have to miss school in order to mind them. They could not remain in the streets, so that kindergartens or crèches would have to be provided at a large expense. The most sensible plan, then, is to create school conditions which will benefit instead of harming these small children.

You appear to assume in your article that "many of the mothers are out at work," and that it would be necessary to replace the whole of the infants' schools by kindergartens or crèches.

The whole matter appears to rest upon whether many of the mothers are out at work or not. The percentage of mothers who have to go out to work varies greatly in different towns. In Sheffield the percentage of mothers who go out to work is very small, and if all the infants' departments in the city were closed, it would probably be necessary to replace them only by one or two crèches or kindergartens. In the large majority of cases the mothers simply send their children to school at as early an age as possible for their own convenience, and not from necessity. The estimated population of Sheffield is 455,553 (males 226,999, females 228,554), and only about 700 married women are employed in industrial work. In a recent report on measles made by me occurs the following paragraph:

> The liability to take measles and the liability to die from it both diminish as the child grows older. It is agreed that regular school lessons before 5 or 6 years of age are of no educational advantage to the child; and I think that if the age limit for school attendance were raised to 6, and a few nursery schools with small classes were provided for the accommodation of children under 6 whose mothers are unable owing to having to go out to work to look after them at home, some families which are attacked by measles under the present system would escape altogether, and the attack in the case of the child would in many cases be postponed to an age at which the chance of a fatal termination to the illness would be less probable.

According to the most recent return made up to August 30th, there are 4,867 children between 4 and 5 years of age and 1,435 under 4 years of age on the books at public elementary schools within the city. The total number of children attending school at all ages, according to the same return, is 78,662.—I am, etc,

Sheffield, Nov. 25th. HAROLD SCURFIELD, Medical Officer of Health.

THE TERRITORIAL ARMY MEDICAL CORPS.

SIR,—I agree with "Late M.O. in Charge" that we should make sure that as members of the new organization we shall possess when on duty all the rights, privileges, and powers of the R.A.M.C.; also that the uniform of the territorial R.A.M.C. ought to be identical with the R.A.M.C., with a "T." on the shoulder straps for a difference, the silver buttons and lace being abolished.—I am, etc.,

November 20th. CAPTAIN INFANTRY BRIGADE BEARER COMPANY.

SIR,—The pertinent questions raised by "X" in the BRITISH MEDICAL JOURNAL of November 23rd should be finally and fairly settled with the advent of the new organization to prevent disquieting feelings.

For instance, in this district, why perpetuate a grievance of this sort? The "approving medical officer" for the medical examination of recruits and his deputy are both civilians and paid officials of the army, whilst there are half a dozen volunteer surgeons in the same town who do similar work for their own regimental recruits for nothing, *pro bono patriae*. Is this meant to arouse their patriotism?

As to horses, the following is a personal experience. I acted as sanitary staff officer two years ago, and was told by my S.M.O. to be mounted. For the hire of the horse from a livery stable proprietor his charges were £4 4s., for its stabling and food £1 4s., for the groom in camp 15s.; costing me in all quite £6 6s. to carry out my weeks' sanitary duties; in return for which, beyond the usual corps allowances, I received nil. Such calls upon mounted medical officers should be adequately and equitably provided for in any new scheme, or medical men will fight shy of it.

These little matters had better be ventilated and adjusted now, whilst Sir Alfred Keogh is bravely assisting Mr. Haldane in ascertaining the view of the profession, than grumbling after the event, and lamenting over the

paucity of officers, and wondering why on earth doctors, of all people, do not rise to the occasion!—I am, etc.,

November 27th. Y.

THE INHERITANCE OF PULMONARY TUBERCULOSIS.

Sir,—Professor Pearson suggests that we publish the data which form the basis of our assertions. We gladly accept his suggestion. We made three assertions in our first letter, namely:

1. That a correction should be applied to the number of tuberculous offspring of non-tuberculous parents in the table on p. 10 of the memoir under discussion.
2. That it was incorrect to assume that the proportion of tuberculous and non-tuberculous offspring can be obtained from the histories of families in all of which one child at least was tuberculous.
3. That whether the incorrectness of the two assumptions above accounted for the peculiar results or not, it seems impossible to consider the table as even a rough approximation to a random sample of the general population.

One other assertion was made in our second letter, namely:

4. That it was the neglect of the third requisite for the construction of a random sample (as given in his article in your pages on the inheritance of insanity) which had caused Professor Pearson to go so far astray.

We will consider in order some of the data on which the first three assertions were based.

1. The data are to be found on page 9 of the original memoir. We take only the female histories. From these we get the following table:

Offspring.	Parents.	
	Tuberculous.	Non-tuberculous.
Tuberculous	97	499
Non-tuberculous	211	1,625

On page 11 Professor Pearson says that an allowance must be made for those of the 207 (properly 211) who "might or probably would exhibit pulmonary tuberculosis if the family history were completed." We assert that a correction should also be applied to the 509 (properly 499) to allow for those of the 1,625 non-tuberculous offspring who might or probably would exhibit pulmonary tuberculosis. Professor Pearson said no such allowance should be made, as the two numbers 107 (properly 97) and 509 (properly 499) were obtained in different ways. This we showed was not the case, and Professor Pearson now says: "The first row of my table is obtained from considering the parents of tuberculous offspring and not the offspring of non-tuberculous parents. We have, therefore, the complete record," except as regards parents. If the record were "complete," which is not the case, then there would have been no need for a correction to the 107 (properly 97) parents of tuberculous offspring.

2. Professor Pearson admits in his first letter that we were right in questioning the corrections of a certain procedure, but denied that he had followed the course that we condemned. In his last letter he withdraws this denial. This renders it needless to discuss this case any further. As to whether the correction resulting in the ultimate 50 per cent. is right or not we have expressed no opinion; we merely said that Professor Pearson's method of reaching it was wrong.

3. We asserted that the ratio of tuberculous (314) to non-tuberculous (6,346) parents was much too small, and that where the ratio of tuberculous to non-tuberculous parents of tuberculous offspring was 157 to 509 it was highly improbable that the ratio for parents of non-tuberculous offspring should be 157 to 5,837.

As data on which our assertions are based we referred (1) to certain facts contained in two papers, as to the merits of which we expressed no opinion, merely referring to the facts; (2) to United States census returns; (3) to certain unpublished series.

From Burckhardt's paper we extract the following:

250 tuberculous persons had 74 tuberculous parents.
250 non-tuberculous persons had 46 tuberculous parents.

Fischer gives:

59 tuberculous persons had 21 tuberculous parents.
360 non-tuberculous persons had 53 tuberculous parents.

We may add Kuthri quoted by Cornet, *Die Tuberculose*, p. 468:

432 tuberculous persons had 109 tuberculous parents.
108 non-tuberculous persons had 22 tuberculous parents.

Dock and Chadbourne, *Philadelphia Medical Journal*, 1898, II, p. 966:

100 tuberculous persons had 27 tuberculous parents.
100 non-tuberculous persons had 12 tuberculous parents.

Schwartzkopt, *Deut. Arch. f. klin. Med.*, lxxviii, p. 74:

160 tuberculous persons had 57 tuberculous parents.
194 non-tuberculous persons had 39 tuberculous parents.

Two unpublished series of "incomplete" histories. These are strictly random samples, having no connexion with any sanatorium records or histories. As Professor Pearson suggests our "complete series" are as yet very small, and for several reasons we do not desire to publish them at present.

(*a*) 152 families with both parents dead from known causes.
285 living offspring had 138 tuberculous parents.
347 dead offspring (non-tuberculous) had 172 tuberculous parents.
64 dead offspring (tuberculous) had 62 tuberculous parents.

696

(*b*) 159 families with both parents dead from known causes.
385 living offspring had 173 tuberculous parents.
483 dead non-tuberculous offspring had 226 tuberculous parents.
103 dead tuberculous offspring had 93 tuberculous parents.

971

We have not worked out the average ages of the surviving children, but some idea of it can be formed from the fact that considerably more than half of all the children are dead. We have the ages of all on record.

One more set of figures: Twelfth U.S. Census, 1900, vol. iii, p. xciv. Proportion of deaths from consumption per 1,000 deaths from known causes:

Conjugal Condition.	15 to 44 Years.		45 to 64 Years.		65 Years and Over.	
	Male.	Female.	Male.	Female.	Male.	Female.
Single	883.6	921 4	99.7	60 2	16.7	18.4
Married ...	592.2	779 6	327.6	178 6	80.2	41.8
Widowed ...	326.0	343.7	432 2	358.1	241.8	298.2

Of course allowance has to be made for weighting with offspring, but we do not see how any reasonable assumption as to this weighting could give such figures as are found in the last row of Professor Pearson's random sample.

As to the numerous assertions which Professor Pearson puts into our mouths without any shadow of warrant or excuse; as to the insinuation that he is not prepared to accept our statements as to the nature of our collection of histories, and as to the general tone of his letter, we prefer to say nothing now, as such matters have no bearing on the merits of the controversy.—We are, etc.,

E. G. Pope,
Lawrason Brown.

Adirondack Cottage Sanitarium, Saranac Lake, N.Y., Nov. 16th.

THE BOOK OF THE SOUTH-WEST.

Sir,—Having had many inquiries regarding the *Book of the South-West*, which was published for the annual meeting of the Association held at Exeter last July, I wish the fact to be known that I am authorized to offer a limited number of copies for sale at 1 guinea each.—I am, etc.,

John Miller,
Honorary Secretary, Printing and Publishing Subcommittee.

14, East Southernhay, Exeter, Nov 26th.

UNIVERSITIES AND COLLEGES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Annual Meeting of Fellows and Members.

The annual meeting of Fellows and members of the Royal College of Surgeons of England was held at the College, Lincoln's Inn Fields, on November 21st, with Mr. Henry Morris, President, in the chair.

ANNUAL REPORT OF COUNCIL.

The President, in a brief speech, laid before the meeting the annual report of the Council for 1907. The report contained a record of the work of the College in its various departments from August 1st, 1906, to August 1st, 1907, and referred amongst other matters to the following subjects:

The Admission of Women as Fellows and Members.

This question, the consideration of which was raised at a meeting of the Council in April, 1906, had again occupied the attention of the Council, and on February 7th, 1907, a petition from the London School of Medicine for Women was received, signed by 380 Fellows of the College, 1,500 members, and 912 persons holding other qualifications. The Council having adopted the following resolution:

> That in the opinion of the Council it is desirable that women be admitted to examination for the Diploma of Member,

decided that, before taking a poll of the Fellows and Members upon the question, the Royal College of Physicians should be approached, in order that it might be ascertained whether that College would be willing to admit women to the Conjoint Examinations. Communications upon the subject had accordingly been addressed to the Royal College of Physicians, but their final reply had not at present been received; if it were favourable a vote would be taken of the Fellows and Members of the College, the result of which would largely influence the final decision of the Council.

Direct Representation of Members on the Council.

At their meeting in December, 1906, a letter was received by the Council from the Clerk of the Privy Council forwarding, by direction of the Lord President, a copy of a Memorial from the "Society of Members of the Royal College of Surgeons" to the Prime Minister, and inviting observations thereon.

In reference to the questions raised in this memorial, the Council of the College submitted to the Lord President of the Privy Council certain observations. The memorial stated that by the provisions of the original Charter of 1800, which had never been abrogated, the whole property of the College was vested in the members, the Fellows (as such) having no legal interest in this. The College was, therefore, managed by the Council on behalf of the members, but the latter had no vote in the election of the Council. The observation of the Council on this was that the College was a body corporate with perpetual succession, and that the property was vested in such body corporate and not in the members of the corporation. There was nothing in the Charters to suggest that the resources of the College were to be utilized for the advancement or benefit of members of the body corporate individually or collectively, either in the pursuit of their profession or in any other manner, except in so far as it was to the benefit of the members themselves, as well as of the public, that the science and art of surgery should be promoted and its practice maintained at as high a level as possible. The functions of the College were academic and scientific, and were exercised by the Council for the public welfare, and not as a trust received from the members.

Another statement in the memorial was that the Members did not demand such a representation as they would be entitled to by their mere numbers; they recognized the position of the Fellows created by the Charter of 1843. Their proposals (which had been rejected by the Council) were: (*a*) That the number of the Council be increased to 32. (*b*) That 24 of these be elected as hitherto by the Fellows. (*c*) That the remaining 8 should be Members and be elected by the Members. The observations of the Council on these proposals included the following: That those Members who now sought to effect a change in the Constitution of the College would appear to desire that the Council should deal with social and economic matters concerning the interests of practitioners, with which the College, being only one of many licensing bodies, was not specially concerned. The addition of Members to the Governing body would not, in the opinion of the Council, advance the objects for which the College was founded.

A deputation of members of the Council waited on the Lord President of the Privy Council, and placed before him the views of the Council, which are printed in full in the report, amongst them being the following: "Because, in asking for eight seats on a Council of thirty-two (Clause 9 of Memorial) the Memorialists say: 'The Members do not demand such a representation as they would be entitled to by their mere numbers,'" and because, this being a point which they have always put forward, there was every probability that, as in the case of the General Medical Council, their large numbers would be made a reason for agitation from time to time for a larger representation. The experience of the direct representation of the profession on the Medical Council was not encouraging

In addition to the statement of the views of the Council, the President expressed the opinion that the granting even of one seat only to a Member would yield the present principle of representation. Even one Member "would probably be required to pledge himself to promote within the Council views held by the leaders of the Society of Members." The introduction of frequent discussions of socio-political subjects would alienate the present class of Councillors, who would in time decline to sit in the Council at all.

Egyptian School of Medicine.

Under the scheme, which will now come into force, candidates who have received the diploma in Medicine and Surgery of the Egyptian Government, after passing the required examinations and completing the curriculum of professional study at Cairo extending over four years, will be admissible to the Final Examination of the Conjoint Examining Board in England on the completion of one year of additional study at a recognized medical school and hospital in the United Kingdom, during which they will have to complete the courses required by the regulations of the Conjoint Board.

London School of Tropical Medicine.

The Royal Colleges had expressed their willingness to appoint assessors to the examinations, conducted by the London School of Tropical Medicine, of students who have followed there or elsewhere a course of instruction approved by the Royal Colleges, and to grant to such candidates as may hold the diplomas of the Royal Colleges, and who are approved by the examiners, certificates endorsed by the aforesaid assessors. The conditions of the appointment of assessors were given, and the appointment of Dr. H. H. Tooth and Mr. A. G. R. Foulerton was announced.

Central Midwives Board.

Mr. J. Ward Cousins, representative on the Central Midwives Board, reported that up to the present time there had been no attempt to amend the Midwives Act so as to provide just payment for medical men who were summoned to assist midwives in cases of difficulty and danger, notwithstanding the strong opinions expressed on the subject by the Royal College of Physicians, the Royal College of Surgeons, the General Medical Council, the Central Midwives Board, and the British Medical Association and its Branches in all parts of the United Kingdom.

Finance.

The gross income of the College for the past year amounted to £24,326, being £1,035 less than the gross income of the previous year. This decrease was brought about by a decline in the receipts from the Conjoint Examining Board. The expenditure of the College for the past year amounted to £22,648 or £382 less than the expenditure of the previous year. The balance of income over expenditure amounted this year to £1,678. That was considerably less than the amount realized last year, and fell short by some £300 of the sum which it had from time to time been suggested should be kept in view as the standard margin of income over expenditure. In this connexion it might, however, be noted that the extraordinary expenditure had been heavy, and that but for that a more favourable result would have been obtained.

The annual report of the Council having been laid before the meeting, Mr. George Brown referred to the paragraph in the report stating that the experience of the direct representation of the profession on the General Medical Council was not encouraging. He thought that was put forward without any reasons to justify it, and he described the distinguished services rendered to the profession by eminent men who had been elected Direct Representatives. He considered the paragraph was a reflection on the whole profession and on the character of the gentlemen chosen to represent the profession. It was a direct attack on a principle recognized by Parliament as just.

Mr. Joseph Smith said the paragraph was opposed to all experience; it was almost bad taste, and it was certainly harsh.

The President expressed a feeling of regret that anything like harshness or bad taste should be attributed to the College of Surgeons. If Mr. Brown and Mr. Smith would read the paragraph a little more carefully they would see that it referred solely to the subject of the finality of the number of members representing the profession.

Mr. Brown said he was glad to know that the paragraph contained no reflection on the work done by the Direct Representatives in the General Medical Council.

The President then answered certain questions propounded by Dr. Vinrace.

Dr. F. W. Collingwood moved, and Mr. H. Elliot-Blake seconded the following resolution, which was carried *nem. con.*:

> That the President and Council of the Royal College of Surgeons be asked to use their moral influence with hospital authorities to recognize Members of the College (who are also in almost all cases Licentiates of the Royal College of Physicians) as having equal rights with provincial, Scotch, and Irish graduates to become candidates for hospital appointments.

Mr. Joseph Smith moved the following:

That this twenty-third consecutive annual meeting of Fellows and Members again reaffirms the desirability of admitting Members to direct representation on the Council which as now constituted does not represent the whole Corporation.

He protested against the slur on the leaders of the Society of Members contained in the remarks by Mr. H. Morris to the Lord President of the Privy Council concerning the expediency of admitting Members to the Council. The remark in regard to a Member, if elected to the Council, pledging himself to promote the views of the leaders of the Society of Members was not a true statement. The Members did not desire to turn the College into a socio-political club, for they had the honour of the College at heart. He characterized the remarks of Mr. Henry Morris as absolutely uncalled-for and improper.

Mr. J. Brindley James seconded.

The President objected to Mr. Smith using the term "untrue" in regard to the opinion expressed by him. He considered it was unwarrantable to use such a term concerning an opinion.

Mr. Smith explained that he did not say the President had told an untruth. What he endeavoured to convey was that the leaders of the Society of Members were misrepresented.

The President declared the incident closed, and then proceeded to put Mr. Smith's resolution, which was carried *nem. con.*

Dr. W. G. Dickinson moved the following:

That this meeting regrets that the Council has omitted from their report any reference to the opinion of His Majesty's Government on the question of the representation of Members, and requests the President to supply the omission by communicating the same forthwith.

Mr. C. S. Laurence, in seconding, said the meeting wanted to know whether the Lord President of the Privy Council did or did not advise the Council of the College in a fatherly way that its best course was to apply for a charter based on right lines which would give a fair share of the management of the College to the Members.

In answer to Dr. W. G. Dickinson, the President said that as no official letter from the Privy Council Office, and no note from the Executive of the Society of Members had been received by the Council of the College as to what had taken place at the interview between the Lord President and the deputation of the Society of Members, the Council of the College did not feel called upon to supply any statement as to what occurred when the deputation of the Council was received by the Lord President. The President added that he could not and would not give any "forthwith" statement in reply to Dr. Dickinson's resolution.

Dr. W. G. Dickinson pointed out that the consent of the Lord President of the Privy Council to publish his reply to the deputation from the Society of Members of the Royal College was obtained by writing to the Lord President. (See British Medical Journal, March 23rd, p. 723.)

The resolution was carried *nem. con.*

The meeting terminated after the following resolutions had been passed:

That this meeting notes with satisfaction that the Council intends to take a poll of the Fellows and Members on the whole question of admitting women to the diplomas of the College, and this meeting further urges that a similar course be taken with regard to the proposal for direct representation of the Members upon the Council.

That this meeting of Fellows and Members of the Royal College of Surgeons wishes the Council to report as to their willingness to join the Royal College of Surgeons and its work with the University of London (so as to form an imperial University of London), and whether they will approach the Royal College of Physicians for a similar conjoint action.

That this meeting requests the Council to add a hood to the gown already worn by Fellows and Members.

Examinations.

The following candidates have been approved at the examination indicated:

First Fellowship.—M. A. Ansari, H. L. Attwater, N. W. Berry, K. J. C. Bradshaw, H. Buck, A. J. Clark, A. J. Crawford, G. V. Deshmukh, A. O. English, H. Fearnley, C. H. S. Frankau, M. D. D. Gilder, G. M. Gray, S. Hoyte, T. Killen, M. M. Kumarasamy, E. C. Lindsay, A. G. H. Lovell, A. A. McConnell, B. C. Maybury, C. Oldfield, L. C. Panting, W. R Parkinson, W. L. Pink, A. B. Porteous, E. H. Rainey, A. L. Robinson, J. G. Sauer, C. E. Shattock, R L. Spittel, C. M Stewart, T. D. M. Stout, G. G. Taylor, G. H Ussher, P. S. Vickerman, J. M. Weddell, R. P. Wilson, W. Wilson, A. E. M. Woolf.

UNIVERSITY OF OXFORD.

University Lecturer in Pathology.

E. W. A. Walker, D.M., Fellow and Tutor of University College, has been appointed University Lecturer in Pathology for three years from January 1st, 1908.

Degrees.

The Degrees of B.M., B.Ch., have been conferred on Howard Barclay Billups.

UNIVERSITY OF LONDON.

Proposed Institute of Medical Sciences.

At a meeting of the Senate held on November 20th, the Vice-Chancellor, Sir William Collins, M.D., M.P., being in the chair, a report was received from the Committee specially appointed to advise the Senate on the course to be pursued in regard to the proposed Institute of Medical Sciences. The Committee came to the following conclusions: (*a*) That, owing to the lack of adequate financial support, the scheme for the establishment of an Institute of Medical Sciences, as set forth in the original appeal, and (in a modified form) in the appeal of June, 1905, has proved abortive. (*b*) That, apart from the money difficulty, which, in the opinion of the Committee, is of itself fatal, the scheme has also become impracticable for other reasons. The Medical Faculty, which formerly reported in favour of the scheme, has now reported against it. Several of the medical schools have changed their opinions in the same sense, and some of them have made arrangements involving considerable outlay for providing more efficient instruction in preliminary and intermediate medical studies. (*c*) That, in the above circumstances, the University has no claim to the money which has been already paid by subscribers, or to the fulfilment of promises by subscribers who have not yet paid their subscriptions; and (*d*) that, in the absence of any special directions in any particular case, all subscriptions already paid ought at once to be returned to the donors (including in that term the executors or legal representatives of deceased donors) without any suggestion as to any possible application of the money to any other purpose.

The Senate resolved to communicate with the donors to the Medical Institute Fund in accordance with these conclusions, informing them that the money paid would be held at their disposal.

We have received the following letter from Sir Arthur Rücker, Principal of the University:

Sir,—I am directed, in view of recent correspondence, to inform you that on April 22nd. 1907, a letter was addressed to the Vice-Chancellor of the University of London by the Treasurer of St. George's Hospital of which the following is the concluding paragraph:

> The Board [of Governors of St. George's Hospital] is of opinion that any departure from the settled policy of the University in the matter of the erection of a third centre in the immediate neighbourhood of the Imperial Institute would be a grave breach of the contract entered into between the University and this Hospital, and they feel assured that the Senate will refuse, when all the facts are considered, to countenance any such breach of faith.

This letter was acknowledged, and since that date the Senate has fully considered the whole matter, and has arrived at the conclusions which have already been communicated to the press. These conclusions were forwarded to St. George's Hospital with the statement that, while the Senate regret any inconvenience that may be occasioned to St. George's Hospital Medical School by the decisions at which the Senate have been compelled to arrive, they cannot accept the interpretation of their action as set out in the last paragraph of the letter of April 22nd which was addressed to the Vice-Chancellor. The receipt of this letter has been acknowledged with an expression of regret at the decision arrived at by the Senate.

Representation of the Faculty of Medicine.

At the meeting of the Faculty of Medicine on November 21st, Professor Ernest Henry Starling, M.D., B.S., F.R.C.P., F.R.S., was appointed the representative on the Senate for the remainder of the period 1905-9, in the place of Dr. Lauriston E. Shaw, resigned.

Examinations.

The following candidates have been approved at the examinations indicated:

M.B., B.S. (Honours).—*R. H. C. Gompertz, B.Sc., King's College; T. S Higgins, B.Sc., University College; J. L. Lawry, London Hospital; Elizabeth H. Lepper, London (Royal Free Hospital) School of Medicine for Women; A. Richardson, University of Leeds; C. O. Stallybrass, University of Liverpool; L. H. Wootton, B.Sc., University College; A. J. M. Wright, University College, Bristol.

M.B., B.S. (Pass).—S. H. C Air, E. Alban, A. P. Bacha, L. Ball, F. J. F. Barrington, W. R. Bristow, T. E. A. Carr, H. S Chate, B.Sc., M. Cohen, W. F. Corfield, E. M. Cowell, D. W. Daniels; Eleanor Davies-Colley, E. J. de Verteuil, C. C. A. de Villiers; R. L. E. Downer, K. E. Eckenstein, M. Fawkes, C. H. Fielding, Vera Foley, A. Fothergill, E. C. Hadley, J. Hadwen, B.Sc.,

E. H. R. Harries, C. S van R. Harwood, H. Hawker, G. M. W. Hodges, E. H. Hugo, D. W. Hume, J. P. Johnson, H. T. Jones, E. H. Kettle, C. Lovell, Eleanor Lowry, Emily M. S. Meeredy, H. Nockolds, E. H B Oram, B. T. Parsons-Smith, W. Patey, J. G. Phillips, J. Ramsay, S. S. Rendall, R J. Reynolds, W. Scarisbrick, B.Sc., S. R. Shirgaokar, Marie Simpson, Eliza M. Smith, H. E. R. Stephens, R. Y. Stones, A. A. Straton, R. S. Townsend, A. G. Tresidder, H. S. Vivian, C. G. Welch, Ruth H. Western, H Whitehead, H W. Wilson, J. B. F. Wilson.

M.B., B S. (GROUP I ONLY).—C. A. Basker, Janet M Fishe, Susie E. Hill, Laura G. Powell, Mona D Roberts, F. G. Sergeant, T. G. S. Smith, J. J. Suckling, C. F. Walker.

M.B., B S. (GROUP II ONLY).—G. N. Bartlett, S J. A. Beale, A. Bernstein, J. W. Bride, H. R Davies, Clara Eglington, F. P. Fisher, C. T. Hawkins, M. J. Holgate, J. B. Martin, A. M. Pollard, E. W. Squire, H. Stott, A. L. Yates.

B S. (OLD REGULATIONS).—D. M. Hughes, University College.

* University medal.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following candidates have been admitted to the Fellowship after approved examination:

R. Counihan, R. W. Haslett, D. L. Harding, Captain R.A.M.C., M. G McElligott, G. A. Walpole

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

PROFESSIONAL SECRECY.

H. M. writes that a woman whom he has been attending for cardiac disease has died, and he has been asked by an insurance inspector to furnish a report as to the duration of the disease. This he has refused to do without the permission of the husband. He understands that that the company will withhold payment until the husband permits this report to be given. He asks what course he ought to follow, as his report is almost certain to be unfavourable to the claimant, and whether he was right in refusing to give the report when asked.

*** Our correspondent should write to the husband, at the same time informing him of the nature of the report and the effect it may have upon his claim; it is desirable to get his written consent. If the husband refuses, no information should be given; if legal proceedings follow, our correspondent may be subpoenaed and compelled to answer questions in the witness-box.

Medico-Legal.

WORKMEN'S COMPENSATION CASES.

Hernia.—Turner *v.* Lancaster and Co., Tredegar County Court, November 5th. This was a claim for compensation by a workman, who alleged that hernia was due to a strain caused by lifting a lump of coal. Dr. Shea and Dr. Greer, witnesses for the applicant, said the hernia was due to the strain; while Dr. Martin and Mr. Sheen held the contrary view, saying the hernia must have been in existence previously. His Honour Judge Owen, "for reasons satisfactory to himself, which might not be satisfactory to the medical gentlemen," found for the applicant and awarded him 7s. 6d. a week.

Cancer.—Reeves *v.* Price and Reeves, Southwark County Court, November 4th. The applicant slipped upon a plank and fell upon a man who was using a large spanner. The spanner struck the applicant's jaw. He went to hospital, where he was operated upon, a portion of the jaw being removed. He went back to work on July 29th, but went again to hospital on August 19th, suffering from cancer. After conflicting medical testimony, His Honour Judge Willis held that the cancer resulted from the blow. Award of £1 a week.

Epithelioma.—McCleary *v.* Graigola Patent Fuel Works, Swansea County Court, November 20th. This was a claim for compensation by disablement for epithelioma. A preliminary objection was taken on the ground that the certifying surgeon had failed to fill in the date of the alleged disablement on his certificate. In the result His Honour Judge Bryn Roberts sent the certificate back to the referee. On a further objection being taken to the report, His Honour adjourned the case for a month, saying that the best thing for the medical referees to do was to adhere most strictly to the rules, in which case no one could upset them

Neurasthenia.—Adshead *v.* Beyer, Peacock, and Co., Manchester County Court, November 20th. This was an application by employers to be relieved from paying compensation on the ground that the recipient had recovered. On a former occasion Dr. Judson Berry had reported that although Adshead was unable as yet to follow his employment as a blacksmith he was able to do any work which did not necessitate tight gripping with his left hand. Stiffness in the fingers would go away with working; while his only other complaint, traumatic hysteria, would disappear after a course of treatment. The employers contended that unless some order to reduce the compensation was made the illness would go on indefinitely. Judge Parry said the man was worrying himself into a neurasthenic condition, that he would never be better until he returned to work. He would continue the present rate of payment of compensation for another eight weeks, but after that he would reduce it or stop it altogether.

NURSE'S CHARGES.

"MATERNITY" wishes to know if a trained nurse, engaged at two guineas a week for a maternity case, is entitled to charge for washing and cab fares to and from her residence, no mention being made of the added charges on engagement.

*** Such charges, we believe, are usual, and not unreasonable.

VALUE OF PARTNERSHIP DEBTS.

NIGER writes objecting to our classifying (BRITISH MEDICAL JOURNAL, November 9th, p 1378) payments due from permanent appointments in the sale of a practice under the heading of Book Debts. His objections seem to be two: (1) That these appointments were originally purchased as such by the outgoing partner; and (2) that no doubt exists as to the payments in question. These objections do not seem very convincing. In the first case, appointments can no more be sold than patients, and what the purchaser buys is merely the chance of obtaining the one or the other; secondly, the certainty or uncertainty of payment has nothing to do with the meaning of "book debts." Among book debts there will nearly always be payments due from patients fully as secure as those from appointments.

THE *MEDICAL REGISTER*.

"OVERTAXED" writes that his name was accidentally removed from the *Medical Register*, and in the meanwhile he has been called in to treat a case, and finds that he will have to take legal steps to enforce payment. As a matter of fact he was not on the *Register* at the time he attended this case, but his name has now been restored to the *Register*. Is he entitled to sue for this debt?

*** As our correspondent was not on the *Medical Register* at the time the debt was contracted, it is to be feared that its recovery at law would be barred, if this defence were raised on the other side.

ROYAL NAVY AND ARMY MEDICAL SERVICES

INDIAN MEDICAL SERVICE.

GOVERNMENT RESTRICTIONS ON MEDICAL FEES.

ON July 1st the Government of India issued a notification superseding previous notifications with regard to the receipt by medical officers of the Government of fees for professional services rendered to ruling chiefs and their families or dependents, Indian gentlemen of high position in a Native State, or Indian gentlemen of high position in British India. The notification laid it down that a medical officer of the Government, before demanding or accepting from any Indian gentleman of the status defined any fee for professional services, must obtain by a confidential application, made through the local administrative medical officer, the permission of the Director-General, Indian Medical Service. The rule was not to apply in the case of fees calculated on the scale of Rs.16 a visit or in certain cases not defined Rs.32, according to recognized custom, unless the total amount thus paid for attendance on a patient or his family in any one month exceeded Rs.160.

It would appear, however, that the Government of India was not satisfied that this rule was sufficiently irritating, and in September issued the following elucidation, which it will be seen again introduces the objectionable principle of consulting the local Government before the case is sent forward to the Director-General, Indian Medical Service, and also imposes upon the Director-General the duty of consulting the Government of India should he differ from the opinion of the local Government:

THE ELUCIDATION.

With the object of further elucidating the intentions of the Government of India in connexion with the revised rules, I am to explain that they have determined:

(i) That it shall be the duty of the local Administrative Medical Officer to consult the local Government (without disclosing professional details) before forwarding the case to the Director-General, Indian Medical Service, and to communicate the views of the local Government thereon;

(ii) That the decision of the Director-General, who will consult the Government of India when he differs from the opinion of the local Government, shall be final;

(iii) That no change shall be made in the definition of the word "fees" laid down in the Home Department letter No. 9, $\frac{\text{Medical,}}{642, 651,}$ dated the 19th October, 1894; and

(iv) That the provisions of Paragraph 2 of the Government of India Notification No. 437, dated the 25th July, 1893, shall continue to be enforced.

All this mighty machinery is to be called into play if a civil surgeon or other medical officer earns in the ordinary course of his profession a single fee of over 2 guineas, or in a month a total of over 10 guineas, by attendance on or a visit to any native gentleman of high position residing anywhere in a Native State or in British territory. If the Government had wished or intended to put a stop to private practice altogether it could hardly have taken a surer step. As we have previously stated, action in this matter has already been taken by the British Medical Association, and we trust that the orders as they stand will be considerably modified, if not withdrawn altogether.

The following leading article appeared in the *Pioneer* of October 26th last shows how the action of the Government is regarded by public opinion in India:

We referred some short time back to the plain-spoken, and in our opinion justifiable, criticisms by the Home medical papers of the attitude, or rather the latest variation of attitude adopted by the Government of India on the old question of the fees to be accepted by medical officers in the service of Government for professional attendance on Ruling Chiefs and Indian gentlemen. The strong condemnation of the Government's policy in this matter expressed in those criticisms were from the standpoint of the medical profession. But on the Indian and political side the dissent and dissatisfaction are not less emphatic. There are few things an Indian prince or gentleman resents so much as interference with his private concerns, more especially in the case of matters wherein his *izzat* is at stake, and for the Financial Department or the Political Officer to step in and dictate to him and say what fee he is to pay to the doctor who has attended him or his family and done him service, or it may be saved a life, he regards as a rankling affront to himself. We are not at all disposed to quarrel with his sentiments, but whether these are to be taken as reasonable or supersensitive is not the point on which to lay stress. The main consideration is that these petty interferences to secure a small end at the price of a great deal of irritation, and occasionally at the cost of mortifying an important personage are not worth while The aim of the Financial Department is doubtless laudable, but it neglects to observe a just discrimination. It may be an excellent thing to prevent extortion and overcharging, but it is not a wise thing to attain that desirable end by regulations casting a slur on an honourable profession on one side, and putting feelings of irritation into the hearts of Indian gentlemen on the other hand It is the old blunder of over-caution and over-suspicion which has led to officers in the public service being roped and bound by a system of check and counter-check, of registering and returns in triplicate which may no doubt be effective to prevent extravagance and laxity, but at the same time have made the *daftar* work of the departments a hindrance to efficiency and a political evil. Especially invidious it is that this spirit should be manifested towards the officers of the Indian Medical Service, who do more purely gratuitous work for the people than all the rest of the Government services put together.

We may add for the information of readers not acquainted with the Indian vernacular that *izzat* signifies dignity, honour, or prestige, and *daftar* means office. In a further article published on November 2nd, the *Pioneer* has the following additional comments:

It is absurd to suggest that Ruling Chiefs and Indian gentlemen generally are incapable of protecting their own interests in this matter; as we have already pointed out, the new regulations are likely to be quite as much resented by those for whose benefit they are supposed to be made as by the members of the medical services. The loss of legitimate emoluments involved in the regulations may be serious in some cases, but the services as a whole feel much more acutely the stigma cast upon an honourable profession by the implication that its members cannot be trusted to demand reasonable fees. Even if cases of exorbitant charges have occurred in the past they must be very rare, and they can always be dealt with departmentally The record of the medical services in India is one of which any body of men may well feel proud; no class of men do more gratuitous work for the people, and none are more ready to sacrifice themselves at the call of duty. Quite recently two distinguished members of the Indian Medical Service lost their lives from blood-poisoning contracted while operating on the poor in hospital, and there are many whose lives have been endangered and whose constitutions have been shattered by sickness incurred in the execution of their hospital duties. It is men of this stamp who are to be treated "as if they were potential extortioners" Is it surprising that the whole service keenly resents the new regulations?

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES

FEE FOR AMPUTATIONS ON PAUPERS IN COTTAGE HOSPITALS

INQUIRER asks whether he can claim a fee for amputating the leg of the son (aged 8) of a pauper, who was removed to the cottage hospital for the operation.

*** We assume that "Inquirer" is a district poor-law medical officer and that the patient in question was placed under his medical care as an undoubted pauper; if these assumptions are correct our correspondent would appear to be entitled to a fee for amputation; but *even then only* if the Poor-law regulations in reference to operations were strictly adhered to, namely, that he can furnish a certificate from a registered practitioner that the operation was necessary; that it was performed in his own Poor-law medical district, and further that the usual regular reports of the case were made to the guardians in the same way as they would have been made had the patient been under treatment at home in his father's house. Should it so happen that the cottage hospital in which the operation was performed was not in the medical officer's *own* Poor-law district he can have no legal claim on the guardians for any fee, as under no ordinary circumstances can a Poor-law medical officer claim remuneration from the guardians for medical attendance on paupers out of his district.

OBITUARY.

ROBERT JOHN PATON, M.D.Edin.,

HONORARY SURGEON, NEWPORT AND MONMOUTHSHIRE HOSPITAL.

THE death of Dr. Robert John Paton on November 16th has left a big gap in the medical world of Newport and South Wales, and is the cause of great regret amongst all classes of society. His death was due to one of those accidents to which medical men as a body, and surgeons in particular, are specially prone; and in its occurrence at the age of 45, when he was still in the prime of life and at the height of his professional success, there is an element of tragedy. While operating on a case of appendicitis in the early part of October he pricked his finger with a safety pin, and when assuring himself as a last step in the proceedings of the right position of a drainage tube, he is believed to have inoculated himself with septic matter. Symptoms of blood poisoning soon set in, and for the following five weeks he made a hard fight for his life, but finally succumbed.

Dr. Paton was of Scottish origin, and a descendant of a long line of Covenanters, but was born at Mhow, India, in 1862, his father, the Rev. J. Paton, D.D., being at the time chaplain to the old 72nd Highlanders, now the 1st Battalion of the Seaforths. Later on the family settled at Dumfries, and it was in the high school of that town that he received his general education. His professional studies were carried on in the medical school of the University of Edinburgh, where in 1886 he received the degrees of M.B., C.M., and in the same year the diplomas of the Scottish Royal Colleges and of the Faculty of Physicians and Surgeons of Glasgow. The M.D. of his university he received in 1899. His connexion with Newport began about sixteen years ago; previously he had been a resident medical officer at the Crichton Royal Institution near Dumfries. In Newport he bought the practice of the late Dr. Pratt, and a year or two later was selected for appointment to the staff of the Newport and Monmouthshire Hospital, and at different times to a good many other posts in the locality. He acted as deputy both to the late and the present medical officer of health, and at the time of his death was medical officer of one of the districts of the Newport Union, and Lecturer on Midwifery to the South Wales Training Centre for Midwives. In ambulance work he likewise took an active interest, having as pupils the railway employees and the ambulance corps of the volunteer battalions of the South Wales Borderers, in which he held a commission as Captain. In his work at the hospital he took a particularly keen interest, and enjoyed an excellent reputation as an operating surgeon. He leaves a widow and one child—a daughter by his first wife.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. Henri Lucien Folet, Dean and Professor of Clinical Surgery in the Medical Faculty of Lille, Corresponding Member of the Académie de Médecine, and author of numerous contributions to medical literature; Dr. Sievetz, formerly Professor of Therapeutics in the University of Warsaw; Professor Barbosa du Bocage, Physician to the Hospital de S. José, Emeritus Professor of Zoology in the Polytechnic School of Lisbon, and Member of the State Council of Portugal: Dr Hache, Professor of Histology in the Medical School of Rheims; Dr. W. Nieberding, Professor of Gynaecology in the University of Würzburg; and Dr. Etienne Clement, Professor of Hygiene and Forensic Medicine in the University of Lyons, and author of many contributions to medical literature, aged 64.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Finger Cracks

Didymus would be grateful for suggestions for the treatment of fissures—commonly called "cracks" or "keens"—occurring on the finger-ends and round the finger-nails of a lady with a markedly rheumatic tendency, otherwise perfectly healthy and a lifelong abstainer. These cracks are worst in frosty weather, but the patient is hardly ever free from them even in summer. Though many remedies have been tried no cure has been found, and the only measure found practically useful is to keep the cracks covered with sticking plaster for the sake of comfort. The patient's father, a gouty subject, suffered in the same way all his life.

Epiphora.

A. D. would be glad to hear of a treatment for an obstinate case of epiphora in a gouty subject forty years of age. It is always very troublesome when the patient is out-of-doors, except in hot weather. In cold and windy weather a continual mopping of the eye becomes necessary. The canaliculi are patent, the mucous membrane healthy, and an error of refraction is corrected. Protargol, opium, and zinc lotions have been tried.

Sterilizers for Consumption Sanatoriums.

Dr. T. H. J. E. Hughes (Westmorland Consumption Sanatorium) writes: In an institution of 40 to 50 beds admitting cases of open tuberculosis, some more or less advanced, is a steam sterilizer the simplest, safest, and most practical and efficient method of dealing with the following articles, namely: Patients' clothing, including handkerchiefs and pockets; bedding, including mattresses and pillows; table cutlery, crockery, and glasses; and sputum and sputum bottles and mugs? May any of these be disregarded as vehicles of infection? Is there any other method at once simple, safe, practical, and effective? The question of expense is important, both as regards initial outlay and upkeep, which should be economical in labour as well. It seems possible that there is experimental evidence available.

ANSWERS.

Precipitate Micturition.

Dr. Robert G. Whitelaw (Kirkintilloch) writes: I have been attending an old gentleman for the last three months for nearly the same conditions mentioned; the calls for the catheter being always during the night-time—11 p.m., 3 a.m., 6 a.m., and 9 a.m.—with comparative ease and ability to make water during the day. I considered the hypodermic injection of morphine risky in view of the patient's age (76 years), and, after trying various remedies, much to the relief of the patient and everybody concerned I found the following treatment effectual. The patient to take no fluids after 8 p.m., to go to bed at 10 p.m., and have the bladder thoroughly emptied by catheter, after which a ¼-grain morphine suppository is inserted into the rectum, a second suppository being kept at hand and inserted by the patient should he awake about midnight with the desire to pass water. Every night and morning 1-drachm doses of uritone are given to allay irritation and facilitate the passing of urine. An occasional glycerine suppository or rectal injection will correct the tendency to constipation. Since carrying out this treatment regularly for the last three weeks my patient has had peace and comfort till the following forenoon. Of course "M." will have considered the possibilities of a calculus, a sacculated, never properly-emptied bladder, and malignant disease in the vesico-rectal region.

Depilatories.

W. S.—The powders sent consist of barium sulphide, zinc oxide, and starch, the ingredients which with minor variations form the constituents of most of the depilatories sold. The following three receipts are from the *Pharmaceutical Journal Formulary:* (i) Barium sulphide 1, zinc oxide 4; (ii) barium sulphide 1, zinc oxide 1; (iii) barium sulphide 2, starch 5, powdered orris root 1. Another formula which has been found satisfactory is: Barium sulphide 2, starch 5, zinc oxide 1.

LETTERS, NOTES, Etc.

The Degree of M.D.

A correspondent who signs himself "Prel.Sci.Lond." sends us a long letter on this subject. After recapitulating the well-known facts in regard to the disabilities under which so many medical men who have not entered a university at the beginning of their career labour, he makes the following suggestion:

To mitigate this anomaly, while doing injustice to none, I would suggest that in future none of the existing universities should be allowed to confer a degree higher than a bachelorship; that all candidates for the doctorate should be examined by chosen representatives of all the universities and colleges in each kingdom, so that then there would be only three M.D.'s in Great Britain, one for each country; and that all legal practitioners of, say, 30 years of age and five years' standing should be allowed to present themselves for examination in as many subjects as may hereafter be decided upon. All men need not of necessity work for the M.D.; the M.B. or licentiateship or membership would still be a legal qualification; but no one need then be barred from the achievement of a reasonable ambition, as is now practically the case.

An Appeal.

The following appeal has been received for publication:

We, the undersigned, wish to bring specially under the notice of the medical profession the sad case of Mr. T. H. Brocklehurst, M.R.C.S.Eng. and L.S.A.Lond., aged 64 years, now residing at Lytchett Minster, near Poole, Dorset, who, through serious illness, is *absolutely* incapacitated from doing anything, and, in the opinion of Dr. Morrice of Weymouth (under whose care he is now) and three or four other medical friends who have seen Mr. Brocklehurst, will *not* be able to continue his professional work. Mr. Brocklehurst has *no* private means, being entirely dependent upon his own earnings for the support of himself and his family. After doing *locum tenens* work for nearly fourteen years, Mr. Brocklehurst started practice at Lytchett Minster in October, 1906, and up to the time of his breakdown was doing fairly well and having good prospects. He is doing all he can to dispose of the nucleus, but up to now without any success. We may also state that Mr. Brocklehurst has eight children, four of whom are keeping themselves, the others not. Under these circumstances we have no hesitation in making this appeal to the profession, feeling sure we shall meet with a hearty and liberal response. Dr. S. Montgomery of Ashley Lodge, Upper Parkstone, Dorset, has kindly consented to act as Honorary Secretary to the fund, and any subscriptions forwarded to him will be duly acknowledged in the British Medical Journal, *Lancet*, and the *Practitioner*.

The signatories are:

Dr. S. Montgomery (Honorary Secretary), Ashley Lodge, Upper Parkstone, Dorset.
Dr. G. G. Morrice, Royal Terrace, Weymouth.
Dr. R. B Holland, Matlock Bath, Derbyshire.
Dr. C. H W. Parkinson, Wimborne, Dorset.
Dr. A. Emson, 40, High Street, West, Dorchester.
Rev. C. Robertson Honey, Alton House, Parkstone, Dorset.
Rev. H. Farley, The Vicarage, Lytchett Minster, Poole, Dorset.

Subscriptions.

	£	s.	d.		£	s.	d.
Dr. Morrice	2	2	0	Dr. Crespi	1	1	0
Dr. E. Kaye Le Fleming	1	1	0	Dr. Simmons... ...	1	1	0
Dr. Montgomery ...	5	10	0	Dr. Mary Jeremy ...	0	10	0
Dr. Lamb	2	0	0	Dr. Eleanor Bond ...	0	10	6
Dr. Parkinson ...	1	1	0	A Friend	0	5	0

The Society of Apothecaries.

In the reference to the Lord Mayor's Day dinner of the Apothecaries' Society last week a slight "derangement of epitaphs" occurred in the process of printing, and resulted in Dr. Parker Young, the late Master of the Society, and its present representative on the Central Midwives Board, being named Senior Warden, and Sir Thomas Crosby, who has recently vacated the office of Sheriff of the City of London, Junior Warden; while Lord Hothfield became the Right Hon. George Hothfield. The real Wardens of the Society for the present year are Dr. F. Gordon Brown, Surgeon to the City of London Police, and Dr. R. Bligh Wall, of Bayswater.

The Maguire Fund.

Dr R. B. Mahon (Ballinrobe, co. Mayo) writes: In sending you the concluding list of subscribers to the Maguire Fund, which is now closed, I wish to repeat my expressions of thanks to you and to the generous subscribers. The fund realized in all £63 12s. 6d., a sum ample for all present requirements.

	£	s.	d.
Amount already acknowledged	57	15	0
Miss Knox, Cranmore, Ballinrobe	1	0	0
T Houghton Mitchell, M.D., Ambleside ...	1	1	0
Major G. H. Frost, I.M.S., Bakloh, Punjab ...	1	0	0
Dr. Humble, Corfe Castle, Dorset	0	5	0
Dr. J. Mills, County Asylum, Ballinasloe ...	1	0	0
Dr. Elliott, Verulam, Natal	1	11	6*
	63	12	6
Disbursed	13	3	6
Balance unexpended to date ...	50	9	0

* Dr. Elliott, with kind forethought, wishes 10s. 6d. to go to the little boy as a Christmas present.

A Lecture

ON

WOUNDS AND INJURIES OF THE EYE-BALL, EYELIDS, AND ORBIT.*

Introductory to a Course of Post Graduate Lectures at the Royal Eye Hospital, Southwark.

By SIMEON SNELL, F.R.C.S.Edin.,

OPHTHALMIC SURGEON TO THE ROYAL INFIRMARY, SHEFFIELD, AND PROFESSOR OF OPHTHALMOLOGY, SHEFFIELD UNIVERSITY; PRESIDENT-ELECT OF THE BRITISH MEDICAL ASSOCIATION.

The subject I have chosen for my lecture is an important one. Every practitioner is liable to be called, in the first instance, to a case in which an eye has been injured, and a knowledge as to how such a case should be treated is of the utmost consequence to him. Besides this the Workmen's Compensation Act, especially the one that has come into operation during the present year, has raised in importance all injuries connected with the eye, not only as to their immediate effects but as to their more remote influence on the capacity of the injured man to return to his old employment. To his accustomed observations and treatment of such injuries it has become incumbent on the practitioner to note the account given of any alleged accident and how far the condition of the eye is in accord therewith.

The subject I have set before me is a large one, and in the short time allotted to one lecture it will be possible for me to rapidly pass in review some only of the injuries to which the eye, eyelids, and orbit are liable.

Wounds of the eyelids heal rapidly, but for this very reason, if the proper treatment is delayed, are apt to cause considerable deformity. Those wounds involving the edges of the lids demand special attention, for if deformity is to be prevented, the earliest opportunity must be taken to secure such exact apposition of the severed edges that the lid-line is properly restored. This, a simple process immediately after the injury, becomes later a matter of much more difficulty. Should this treatment have been delayed and a faulty position of the eyelids have consequently resulted, the adhesions, when possible, should be broken down and the separated portions restored to their proper position, and secured by sutures so as to reform correctly the lid margin. These are simple matters, but their non-observance leads later to deformity which is much more difficult to deal with.

Injury may be caused to the eyelids, especially the upper lid, by a hook or other object catching underneath it, as I saw in one case in which the upper eyelid was torn away, leaving only a slender attachment. The case, too, which I illustrate on the screen is that of a butcher in whom a meat-hook caught under his upper eyelid, injuring the levator palpebrae muscle, with resulting ptosis (Fig. 1).

Wounds of the Optic Nerve.

I may refer also to penetrating wounds of the orbit inflicting immediate and permanent effects on the optic nerve. I have in my mind now a case of a man who, whilst working, had the left eye blinded by the pick point of a fellow-workman. It penetrated the outer side of the orbit, wounding the optic nerve, with consequent optic atrophy, and at the same time it injured the sixth nerve, causing palsy of the external rectus. In another case—that of a boy aged 12—the prong of a hay-fork had pierced the lower eyelid of the right eye. The boy withdrew the fork himself. In this instance the optic nerve was injured, and blindness, with optic atrophy, resulted. I also saw, many years ago, a case in which a piece of wood penetrated a boy's upper lid—how deeply was not known, for another boy immediately withdrew it; but the damage done was most serious, for not only was the optic nerve injured and sight permanently lost, with atrophy of the optic disc, but, curiously enough, the whole third nerve was at the time paralysed, whilst the fourth and sixth were unaffected. The third nerve palsy, however, passed away.

* This lecture was illustrated with numerous lantern slides, a few of which are reproduced here.

Blows.

Blows on the eye can also occasion immediate and complete blindness, the injury probably being that fracture has occurred in the vicinity of the optic foramen. It is further well known that blows on the globe, such as that inflicted by a tennis ball, cork from aërated water bottle, etc, whilst leaving it outwardly intact, are liable to cause rupture of the choroid. It is, perhaps, less well known that injuries through the lower eyelid, such as a blow from a stone, may occasion a rupture or injury of the optic nerve, with haemorrhages at or near the papilla, which, when they have cleared away, reveal small multiple ruptures of the choroid, and possibly of the retina. Such a case has come to me as I write. The appearances of the fundus are similar to that just mentioned. The injury happened some years ago. The sight has been destroyed, and on the lower eyelid is a depressed scar at the place of impact of the stone.

Injuries over the eyebrow or blows on the eyeball may also occasion proptosis by haemorrhage into the orbital cavity. I remember a boy some years ago who was struck by a heavy piece of wood over the right eyebrow; haemorrhage ensued from the nose and mouth, and the eye became considerably proptosed from haemorrhage in the orbit. This gradually became absorbed, but atrophy of the optic papilla resulted.

Blows on the eye and orbit may, on the other hand, produce the very opposite condition to that to which I have alluded—namely, a depressing or pushing back of the eyeball, called "enophthalmos." I have met with at least 3 cases, and, as they are comparatively rare, I propose to give some particulars of them.

The first, a young man aged 18, was sent to me in December, 1895, by his medical attendant. A month previously a wooden cylinder, which had been revolving in a machine as rapidly as 2,000 revolutions in a minute, had broken, and one of the pieces, 7 in. square, had hit the right eye and floored him. It had cut his forehead just above the eyebrow and his face below the eye, and had also broken two teeth. He was rendered unconscious and remained so for two hours. He bled also from the nose and mouth. At his visit to me his appearance was striking, for the right eye was pushed back and was on a level posterior to the left. It suggested very much the appearance of one wearing an artificial eye (Fig. 2). There was some opacity of the lens capsule, sufficient to reduce V. with + 2 D., to $\frac{6}{18}$, and to prevent a good view of the fundus. It was ascertained, however, that the optic disc was normal. The right eye was 4 mm. behind the other, and a little lower, too.

The second was a collier, aged 24. Two years previously he had been struck over the right eye by a piece of coal. The upper eyelid had been wounded, and illustrates the point I have, earlier in this lecture, urged as to the immediate treatment of wounds of the eyelid, for there was ectropion, which necessitated a plastic operation. There was, however, distinct enophthalmos (Fig. 3). There was no irregularity of the orbital margin and no evidence of any fracture, although the surface of the orbit seemed to be more posterior than the left.

The third was that of a woman, aged 53, who consulted me in 1900. Six months before, when riding a bicycle, she had been run into and knocked down and rendered insensible. The right side of the face was struck; it was black and swollen, and there was ecchymosis of the eyelid as well as of the eye. The appearance mentioned in the first case was noticeable also in this—namely, the resemblance to one wearing an artificial eye, for the enophthalmos was well marked, and the right eye after careful measurement seemed to be about a quarter of an inch posterior to the left. The driving in of the malar bone and the flattening of the maxilla gave a very different appearance to the two different sides of the face, but the edge of the orbit was not irregular. There was loss of sensation from the orbit to the lip, but this appeared to be partially returning.

Injuries of the Cornea.

Passing now to the consideration of wounds and injuries of the eye, the cornea comes first. Among certain trades, and especially in the Sheffield grinders, the workmen are liable to get minute foreign bodies embedded in the cornea. To some this happens several times even in a day. At most of the large works certain of the workmen have become noted for their skill in removing these "motes," as they are called. Not infrequently in the streets one sees a man resting against a wall whilst a fellow-workman extracts one of these "motes" (Fig. 6). The instruments used are of various kinds—for instance, lancets, pins, needles, pocket-knife blades, and so on. Some years ago I collected several of these implements, and had them submitted to a bacteriological examination, which, however, was negative. This was somewhat surprising,

as the same instruments may be used for various purposes, not always the most cleanly. The knife would very possibly be the same used at the man's lunch, and the pin, not infrequently, is put into the mouth to wet it before being used, and is very likely kept stuck in the man's waistcoat, where it comes in contact with the dirt collected in the clothing. These small foreign bodies of steel or stone are almost insignificant, and the men remove them skilfully in the vast majority of instances, and only an increasing number of corneal specks is the consequence. If one examines carefully the cornea in a grinder it will be found to be often studded with minute opacities. Not infrequently, however, the trivial injury becomes septic, and a sloughing ulcer with hypopyon results.

Another class of corneal injuries are abrasions, healing quickly and well under ordinary circumstances, but under others, especially in colliers, they are very prone to pass into septic ulcers with hypopyon. Each year a very large number of these cases come under observation. The treatment is cauterizing the ulcer with the actual cautery, and the platinum cautery I have employed for many years is very useful for this purpose. It may be heated readily in a spirit flame. Rest in bed, perchloride of mercury lotion in some, argyrol, or iodoform in fine powder, in others, together with atropine or eserine and quinine, is the line of treatment usually successful. As far as the exigencies of accommodation permits, such cases are admitted as in-patients as early as possible. They are serious cases, and a patient is fortunate if he escapes with a leucoma, giving a good opportunity of recovering fair vision, after an iridectomy.

The injuries of the cornea I have mentioned form a goodly proportion of those seeking compensation under the recent Acts. A cloudiness of the cornea may occasion as much blindness and consequent inability to follow one's employment or to earn the same rate of wages as what, in other respects, a much more serious injury might do. If a nebula, however small, be so placed that it covers more or less the pupil, and interferes with direct vision, the diminution of sight may be very considerable. Whereas a larger and denser opacity situated more peripherally and away from the pupil may cause little or no interference at all to direct vision. It is important in all these cases to bear in mind the situation of these nebulae.

So much destruction of the corneal tissue may frequently be caused by these sloughing ulcers that staphyloma may result, and enucleation be rendered necessary. A recent case has reminded me, too, that the possibility of sympathetic ophthalmia must not be lost sight of. A man with sloughing ulceration of cornea, with hypopyon, in which extensive destruction of cornea with perforation had resulted, returned not long after leaving the infirmary with sympathetic irido-cyclitis in the fellow eye. I have used antidiphtheritic serum, which had been advocated by Darier, in a few cases, but not with encouraging results.

Clean-cut wounds of the cornea heal well, just as operation wounds do. No ill results should follow, nor should there be much interference with vision unless they encroach on the centre and over the pupil.

Quite different, however, are perforating wounds, betweeen the lips of which the iris has become prolapsed. In these it is necessary, if the case is recent, to endeavour to coax back the iris with a spatula, or, this failing, to excise the projecting piece of iris, and to free the wound of all portions as much as possible so as to promote close apposition of the edges of the wound. Even if the injury is not recent this can usually be done, though it may be less perfectly, by cutting across the prolapsed part and withdrawing any entangled portion of iris, and cutting it off with scissors.

In most of these cases cocaine as an anaesthetic suffices. As in all operations on the eye, careful aseptic or antiseptic precautions should be taken. The outer surface of the eyelids and the vicinity should be cleansed carefully with sublimate solution, and the same solution should be allowed to run freely over the surface of the eyeball. The simplest and best irrigator for this purpose is a pledget of absorbent cotton-wool saturated with the lotion, and by pressure of the hand a steady stream of lotion will freely bathe all parts of the outer surface.

Whatever has occasioned the corneal wound may have penetrated deeper, and by opening the lens capsule have caused a traumatic cataract. This may have formed quickly or slowly, accordingly as the wound in the capsule has been large or small. In some instances the opening in the capsule seems to close at once, and the area of opacity of the lens remains limited and stationary. Notably was this the case in a man I had under observation for a long period some time ago, in whose lens for something like twenty-five years a foreign body, a minute piece of steel, had been embedded without causing irritation or more inconvenience than reduction of vision to $\frac{6}{18}$ or $\frac{6}{24}$. In this instance a linear scar was noticed in the anterior capsule, and the opacity of lens was limited to the situation of the foreign body, which was well away from the direct line of sight. In all cases where the lens has been injured the indication is to keep the pupil widely dilated with atropine, but the time when operative interference is called for must depend on the conditions present in each individual case. A rapidly-swelling lens, producing increased tension of the eye, will demand the speedy removal of the cataractous lens. On the other hand, it is as a rule wise to wait for the subsidence of inflammatory indications before resorting to operative interference. Some surgeons, I believe, are willing to wait for absorption of the cataract to take place, and regard such a case as one in which the needling operation has been performed and which has subsequently been left for absorption to be effected. Progress is, however, too often tedious, and a cure can be advantageously hastened by letting out the broken-up lens through a corneal section. The prognosis may well, in many cases, be a guarded one, for the damage wrought may have been deeper and more serious than at first is apparent.

Wounds of the Sclerotic.

Wounds of the sclerotic, if clean cut, will heal quickly and well, a process which may be materially assisted by drawing the edges into apposition by a suture. I do not mean suturing of the edges of the wound direct, for I have long since discarded such a procedure, but by a suture passed under the conjunctiva on either side, which will, when tied, bring the cut edges of the sclera into apposition, as well as if they had been made direct, and without the disturbance to the sclerotic, choroid, and retina, which the use of a suture so placed would necessarily involve. Many cases, even when the wounds are large, do well. Just now I am seeing frequently an old patient as he is attending the infirmary for another purpose. Twenty years ago, when a youth, he came to the infirmary with a large wound in the sclerotic at the upper and inner part. It measured, if my memory serves me correctly, $\frac{3}{4}$ in. in length; fortunately it did not reach to the ciliary region. I happened to be at the infirmary, and saw him at once, and immediately united the edges by conjunctival sutures. For all these years he has possessed V. $= \frac{6}{18}$ with this eye. Such good results are, however, not always obtainable, and it is wise to give a guarded prognosis, for wounds of the sclerotic are very prone to lead to softening and shrinking of the eyeball. It must be remembered that a perforating wound of the sclerotic means also injury to the underlying choroid and retina, and Parsons has taught us that in the healing of such wounds the injurious effects are observed in the underlying tissues for some distance around.

Rupture of the globe, usually the result of direct violence, such as a blow from the fist, is always a serious matter. Its situation is generally typical, for it follows the line of least resistance and is to be found placed in the sclerotic at the upper part at a little distance from the cornea. Usually the interior of the eye has been disorganized, and blood will be found in the anterior chamber or in the vitreous. The lens may be shot, too, through the wound, and be observed under the conjunctiva causing a subconjunctival dislocation. Shrinking usually follows a rupture, at a variable time, and as an eye damaged in this way is a menace to its fellow, its early removal is frequently called for.

Foreign Bodies.

I pass now to say a few words as to foreign bodies in the eye. It is not uncommon to find foreign bodies, under the conjunctiva and more or less embedded in the sclerotic, which have been present for many years without causing inconvenience. This is especially the case with colliers, in whom one meets with pieces of coal lying under the conjunctiva which may have been there for many years. Interference in such cases is rarely called

for, as such foreign bodies are innocuous. Should removal be attempted they will be found more firmly fixed than was perhaps thought, and the fragment of coal will more readily break up, under the efforts for its removal, than be extracted entire. Foreign bodies are met with embedded deeply in the cornea, nearer the posterior than the anterior surface, and for which the usual methods for removal with spud or needle are ineffective. The anterior chamber may be opened before the foreign body is extracted, or the efforts for removal may succeed in pushing it into the anterior chamber. Such cases, however, can be treated successfully by passing a keratome through the cornea behind the foreign body, and using it as a background on which to work with a needle or spatula for its exposure and removal. The first instance I treated in this way occurred many years ago. A piece of broken filter had penetrated deeply into the cornea, and efforts for its removal only succeeded in opening the anterior chamber. Later, when the chamber was re formed, it was successfully treated in the way I have mentioned by placing a keratome behind it. Since then I have treated several others in a similar manner.

Fig. 1.—Traumatic ptosis (stereoscopic).

It may be asserted that when a foreign body has penetrated the tunics and entered the interior of the eye its extraction is called for. If the foreign body be a splinter of steel or iron, its removal from the anterior chamber may be effected by the electro-magnet through a corneal incision, frequently without interfering with the iris; but in others, in which it has become entangled in the iris, excision of a portion of the pupil may be required. The electro-magnet affords a ready means of diagnosing in doubtful cases the nature of a foreign body in the anterior chamber; for, if it be steel or iron, on the approach of the electro-magnet it will show movements, or, if lying free, will spring forward to the back of the cornea, and on withdrawing the magnet it may be deposited at any convenient situation for its subsequent extraction.

Fig. 2.—Enophthalmos.

Fig. 3.—Enophthalmos (stereoscopic).

The question of foreign bodies in the posterior part of the eye opens up a large field, and I am obliged to content myself here with a few general observations.

The successful treatment of such cases depends very largely on the accident being a recent one and on the accurate location of the foreign body. If a splinter has entered through the sclerotic its exact position in the background can very often be accurately made out by means of the ophthalmoscope. If, on the other hand, it has entered through the cornea and passed through the lens, breaking it up and rendering a view of the interior of the eye impossible. it is then difficult or impossible to discover its exact location. It is in these cases that the *x* rays are frequently able to render signal service (Fig. 4). Failure, however, to detect a foreign body by this means should not, I think, in all cases preclude the possibility of one being present. The patient's own account of the accident is usually not only unhelpful, but it may be most misleading. A case in point has been under my care at the infirmary at the time I write. The patient was so insistent that he saw the fragment of metal drop from his eye that the house-surgeon considered it unnecessary to have a radiograph taken. The eye became septic and on enucleating it a large piece of steel was discovered situated in the vitreous chamber.

For my part, I am still satisfied with the services of the hand electro-magnet which I long ago devised. I have extracted 400 or more than that number of splinters from all parts of the eyeball. Some of the cases have been particularly brilliant. In one instance a fragment was situated close to the optic disc. It was clearly seen by the ophthalmoscope and its exact location made out. The patient was a student at the Technical Department of the University. An incision in the sclerotic was made and the electro-magnet advanced to the point indicated, and the foreign body was extracted. This happened between eight and nine years ago, and up to the present the patient possesses perfect sight (V.=$\frac{6}{5}$), one eye being as good as the other, the ophthalmoscope alone showing a pigmented area in the retina indicating the situation where the foreign body had formerly been. Among my cases there have been several other instances of removal

of foreign bodies from the retina, which need not, however, now be considered.

For many years I, in common with others, was inclined to regard the attempted extraction of foreign bodies from the background of the eye with good vision as more open to question than since the occurrence of the excellent results I have mentioned. I have had, from time to time, a large number of instances of foreign bodies in the retina with preservation of good vision. My general experience in observing these cases over a series of years has been that the later results have not been satisfactory. In some a gradual reduction of vision has occurred, with changes in the fundus (in one case, optic atrophy) caused by inflammatory processes set up by the oxidation of the metallic fragment, whilst in others the splinter has become detached, and removal has had to be effected under less favourable conditions. Whilst, therefore, considering the conditions of each particular case, my opinion has inclined towards an early attempt to effect the extraction of the foreign body by the electro-magnet.

It is fortunate that the majority of the fragments penetrating the eye are aseptic, and thus the damage wrought by the foreign body is due to the delicate tissues implicated and the extent to which they are involved. One recognizes, however, that a certain number are septic, and an additional danger to the eye is thereby incurred.

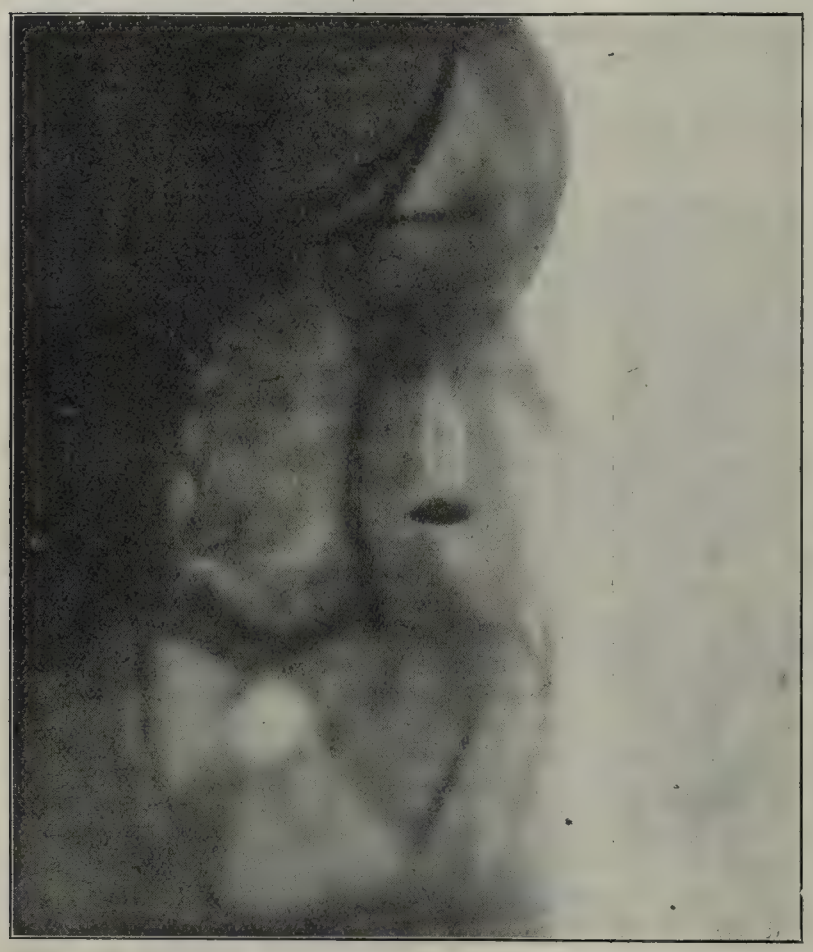


Fig. 4.—*X*-ray photograph. Piece of steel in vitreous.

The foregoing remarks are made on the assumption that the metallic fragment is magnetic, but I was able to show, in a recent paper before the Ophthalmological Society, that all steels now on the market are not magnetic. Various alloys, especially manganese steel, are finding increased employment, and the qualities of hardness and toughness possessed by them are likely to lead to their extended use. These steels, however, are not magnetic. Chromium steel, though magnetic, is less so than ordinary steel. Another alloy is that of nickel with iron. In some proportions it is distinctly magnetic, but the addition of a small quantity of manganese will make it non-magnetic. There are many points of interest as to these steel alloys which I cannot enter upon to-night. Fortunately, it is still true that the vast bulk of steel splinters penetrating the eyeball spring from steel that is magnetic, and that therefore the use of the electro-magnet is not affected, but it is necessary, especially in a large industrial city, to make inquiry in cases of accident as to the particular kind of steel it was from which the fragment injuring the eye had become detached, for it is clear that if the fragment is not magnetic the electro-magnet is of no avail. Unfortunately, this information will not always be forthcoming. The magnet will very probably be used, but failure to remove a splinter must not be ascribed to the magnet until the fragment itself has been tested and proved to be magnetic.

Before passing altogether from this subject I should like to say a few words as to gunshot injuries. It not infrequently happens that the injury wrought is of such a nature that the propriety of immediate enucleation admits of no question. On the other hand, there are instances in which the known presence of a shot in the interior of the globe would decide the treatment in an otherwise doubtful case. A few months since such a case occurred in my practice. A small shot had penetrated the eye through the sclerotic on the inner side of the globe. An *x*-ray photograph* disclosed a shot in the interior of the eye. The globe was enucleated and the shot was discovered in the vitreous chamber (Fig. 5). An interesting case came under my care some years ago, before the *x* rays were introduced. The patient was a youth, aged 16, and briefly the particulars were as follows: A pellet from an air-gun had penetrated the sclerotic on the inner side, and the vitreous chamber was filled with blood. Immediate enucleation was decided against. As the vitreous became clear enough to make an ophthalmoscopic examination a haemorrhage was observed in the situation of the optic papilla. Later it was evident that no foreign body was in the eye, and that the shot, entering through the sclerotic, had passed out on the inner side of the optic disc. Vision improved, and ultimately V.$=\frac{6}{6}$ and he read J.1.

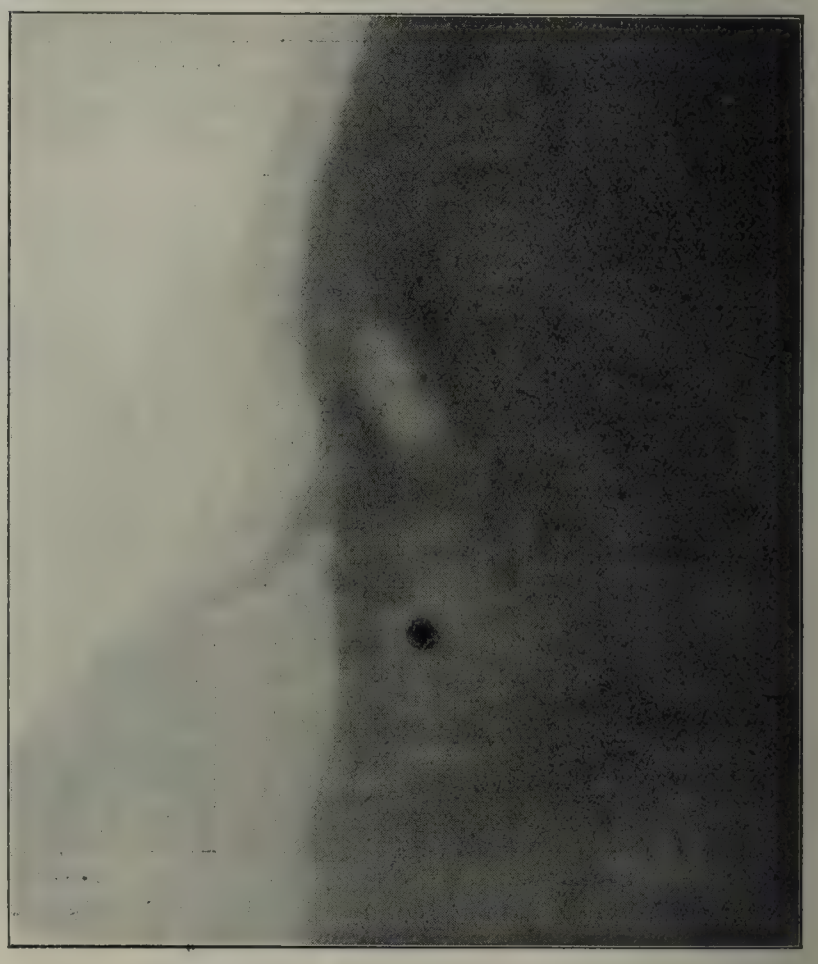


Fig. 5.—*X*-ray photograph. Shot in eye.

Sympathetic Ophthalmitis.

In conclusion, let me say a few words on sympathetic ophthalmitis. An eye which has sustained a penetrating wound must always be regarded as a menace to its fellow. This is particularly true of wounds complicated with foreign bodies, jagged and irregularly healing wounds, and especially of such injuries in the neighbourhood of and involving the ciliary region. My impression is that the immediate treatment of wounds such as has been set forth in this lecture, together with the more general use of

* I am indebted to Dr. Rupert Hallam, Medical Officer in charge of the Electrical Department of the Sheffield Royal Infirmary, for taking the skiagrams for me.

antiseptics, has lessened the number of instances of sympathetic ophthalmitis. By clearing a corneal wound even when encroaching on the ciliary region, of all entanglements of iris, an effort can be made to save, without undue risk, an eye which formerly would have been condemned and excised. I know many instances in which this conservative treatment has been carried out successfully. At the same time an eye which has been irretrievably lost had better be enucleated with as little delay as possible. There are cases on record, fortunately rare, in which, in spite of enucleation, sympathetic ophthalmitis has appeared in the other eye. I have met with at least 4 such cases in my practice, 2 were in children, one boy and one girl, and 2 were in men, each aged 26. In 3 the eyes were enucleated 16, 23, and 32 days after the accident, whilst the ophthalmitis showed itself 32, 40, and 106 days after the injury. Unfortunately only one of my cases was of the mild character described as usually present under these circumstances, for one progressed to absolute blindness, another almost so, and the third to very greatly impaired vision. The other

Fig. 6.—Workman (timekeeper) removing "mote" from fellow-workman's eye.

fortunately made a complete recovery and has been able to pursue his, or any, employment uninterruptedly for many years. In these cases it would seem as if the enucleation was too late, and with regard to some, at all events, that the disease, if latent, was present prior to the enucleation.

The freeing of a wound from iritic adhesions should be employed, even when a considerable time has elapsed since the accident. An interesting case illustrates this: Many years ago a man was under my care for a punctured wound of the right eye beyond the upper corneal edge, with prolapsed iris, caused by a packing needle. He did not come under my care for some time after the accident, and shortly after sympathetic ophthalmitis showed itself in the other eye. Fortunately it was mild in character. An operation was performed for the prolapse in the right eye, and the old wound was reopened and cleared as far as possible of all iris entanglements. Subsidence of the ophthalmitis in the sympathizing eye quickly took place. Enucleation in this case was out of the question, as vision in the injured eye was not far from normal. The result was recovery of normal vision in each eye.

It should be borne in mind, when considering the question of enucleation, that the injured eye may ultimately be the better one, and also that, when the sympathetic disease has obtained a hold, the enucleation of the offending eye may not stay or alter the progress of the disease in the fellow organ.

Recently, for the purpose of another article, I worked out carefully my records of the children who had been inmates since its foundation of the Sheffield School for the Blind.* The number was 335, and of these no fewer than 22, or nearly 7 per cent., owed their blindness to sympathetic ophthalmitis. It was interesting, but sad, to note how many of the original injuries were really of a preventable kind. The use of a fork to undo a bootlace is a common practice among children and a frequent cause of eye accidents. Three of my cases were injured in this manner.

An Address

ON

THE SCIENTIFIC USE OF EVIDENCE IN SURGICAL PRACTICE.

Delivered before the Reading Pathological Society.

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Gentlemen,—I am informed that it has been your custom for the last ten years to have an annual oration, but that your Committee impose no conditions, and thus it is that he whom you honour with the position I now occupy is left to his own devices. In these circumstances and after careful consideration I have selected a subject which has often forced itself on my attention. I allude to what I may term the scientific use of evidence in the practice of medicine. But, in order to lay this question before you in any adequate manner I must submit some introductory remarks.

The present is a time in which science has broken through its accustomed boundaries and is spreading like a flood over the whole field of human activity. And this, not because the phenomena which surround us have suddenly become scientific, but because having witnessed many marvellous discoveries and seeing that in every direction there is more beyond, that "in everything there is inexhaustible meaning," men are diligently working to find things out and see what they really are, and how they can be made to serve our own needs and aspirations.

It is strange to see how the term "science" had until quite recently lost its true meaning, and come to be limited to such subjects as astronomy, geology, and chemistry, and to have no application to brewing or the dyeing of fabrics, or to the multitudinous affairs of every-day life. Is it not often cast in our teeth that medicine itself is not a science, but merely an art? But what a chaos of thought is here disclosed! The term "science" is the English form of the Latin *scientia*, and "knowledge" is its Anglo-Saxon equivalent, and the adjective *scient* means knowing, perceiving, discerning. Thus, whenever we use the term "scientific knowledge" we lapse into tautology, as if we should talk of speedy rapidity or of ascending upwards. A moment's thought will show that "science" applies not to any object, but to the method of investigation. The pursuit of science means the effort to obtain knowledge, the search after the facts which appertain to whatever subject is under examination. There is thus nothing—from the planet Mars or the sun itself to a wart on a ploughboy's knuckle or dust on the window-sill—which is outside the field of science. Even a laugh so foolish or a remark so inane (in contempt of science) that it provoked physiological investigation, might conduce to a more scientific classification of the feeble-minded. Those who tell us either that medicine is or that it is not a science are, I take leave to say, talking mere nonsense. Was medicine not a science when it was studied by Harvey and Hunter,

* Vide British Medical Journal, November 2nd, 1907, p. 1215.

Lister, Paget, and Hughlings Jackson? can it ever be a science when practised by a man who never thinks?

A good illustration of the fact that science lies not in the object but the method, is that Principal Donald MacAlister, when he was fresh from his triumphs as Senior Wrangler and first Smith's Prizeman, gave a lecture at the London Institution on the structure of a marrow bone. Now a marrow bone is used to support a cow when she eats turnips; in the eyes of a savage it is a thing to be smashed in order that the marrow it contains may be got at, or it is a weapon to be used on the skull of an adversary, while the cook boils it to obtain "stock." But the man of science sees in it an epitome of mechanics, displaying buttresses, arches, leverage, one of the most perfect ball-and-socket joints, and the distribution of material to the greatest advantage in regard to function—an object, in short, from which an architect might learn the first principles of his craft. This address of Principal MacAlister, I have reason to know, was suggested by the method by which my predecessor at Cambridge—Sir George Humphry—taught anatomy. While many anatomists were content to state mere facts, in regard, for example, to the femur that it possessed a shaft, a head, two trochanters, two condyles, and ridges for the attachment of muscles, Humphry's attitude was more scientific; making the study of structure subservient to the study of function, he taught the mechanism of the bone, and explained how its various parts were adapted to the purposes which they served. Thus treated anatomy becomes a subject of very real interest, in the pursuit of which an intelligent student is constantly meeting with adaptations of means to ends which command his admiration, stimulate his curiosity, and imprint themselves indelibly on his memory. In this manner he finds that he can easily learn and not easily forget "his anatomy."

If we turn to the application of the scientific method to practical medicine, we may find food for reflection when we call to mind the way in which we deal with evidence. Evidence has been defined as that which makes evident and enables the mind to see truth; proof arising from our own perceptions by the senses, or from the testimony of others or from inductions of reason. Now have we all trained ourselves always to bear in mind the supreme importance, in the practice of medicine, of treating evidence in a scientific manner?

I think we must be struck by the sharp contrast which exists between the practice of medicine and of law in respect to evidence. In the eyes of the law evidence is a subject of the first importance, and the principles on which it rests have been scientifically examined; and naturally so, for a lawyer makes it his first business to ascertain all the facts and circumstances of any case in which he is concerned. Having a problem to solve, he begins by an exhaustive investigation, and thus the value of the different forms of evidence commands his closest attention. Moreover, a chief duty of a presiding judge is to see that rules, methods, and restrictions in the arrangement and presentment of evidence are observed. Lawyers are careful to divide evidence into that which is positive or direct and that which is circumstantial or indirect. Thus in one murder case the prisoner is confronted by positive evidence—he was seen to overtake his victim and to fire the fatal shot, the revolver was wrenched from his hand, and the death of the murdered man was witnessed by those who were present at the time; while in another instance no one was present except the murderer and his victim, and no positive evidence can be obtained. In such a case those who are conducting the investigation have to depend on a study of the circumstances which they are able to ascertain—that is, on circumstantial or indirect evidence. For example, a man is found murdered; prints in the snow correspond with a boot worn by a man in the village who has a club foot; it is found that this man was absent from home on the night of the murder, and that he cannot give an account of his movements; but he was seen going towards the spot where the body was found, a knife which he bought in a town in the neighbourhood two days before is found near the body, and when arrested he has the victim's watch in his pocket.

Lawyers, as I have said, have not failed to see that these two forms of evidence are entirely distinct from each other and must be kept apart, so that the value of each, in different instances, may be correctly gauged; and the necessity for the exercise of critical care as to the construction which may safely be put on the evidence in any case is fully recognized by lawyers. They know that when they have a sufficient amount of positive evidence they are on safe ground, while, as to circumstantial evidence, they see that though by its cumulative weight it often amounts to absolute proof, it may sometimes be misleading in a manner and to a degree which is hardly conceivable. Thus the jurists endeavour to ascertain the principles on which evidence rests, to detect its different forms and their relations to each other and the methods by which they can severally be most correctly utilized. It has seemed to me that the importance of this judicial and, as I think it may be justly termed, scientific treatment of evidence has not been fully recognized in our profession, although the essential likeness between law and medicine, so far as the use of evidence is concerned, must be readily apparent to all. This likeness consists in the circumstance that, unlike the theologian whose bed-rock consists of faith and dogma, or the metaphysician or the artist who, if he has the gift, may take an entirely new departure and found a new school, or the poet who may

> Pursue things unattempted yet in prose or rhyme—

lawyers and medical practitioners have to do with facts. In both cases the first step must be to ascertain what the facts really are. The lawyer and the medical practitioner no doubt use facts, when they have ascertained them, differently. The object of the lawyer in defending a prisoner is to make the facts subserve the acquittal of his client; he therefore selects, arranges, and magnifies or belittles them to this end, so that they become the basis of an ingenious or even a sophisticated presentment of the case, which he considers is that which the jury are most likely to accept. With the medical practitioner it is different. He cannot adapt the facts to his view; he cannot set up an artificial case by dwelling on some facts and ignoring others; he must take the facts as governing the whole situation. The lawyer can, in many instances, make facts his servants—the medical practitioner will always have them for his masters. If he overlooks, mistakes, misconstrues, or ignores them, mischief will inevitably follow. Now, in dealing with facts, our danger lies in the tendency there is to be superficial, instead of following the inquiry to its ultimate terms. This defect is easily explained. It is always more easy to be superficial rather than thorough. It is an almost universal defect. And we must remember that we are superficial by inheritance and tradition. In early times it was impossible to be anything but superficial—to see more than appeared on the surface. Men knew rocks by their general outline, hardness, and weight for centuries before they knew anything of their origin, structure, varieties, or distribution. And it was the same with diseases. Conceptions of them were formed entirely from their superficial aspect. It was the deformity which caught the eye in tuberculous disease of the spine, and so the patient was said to have "angular curvature." When a patient had carcinoma involving the common bile duct and turned yellow, he was said to have jaundice. Thus it was that results which caught the eye were spoken of as if they were causes; appearances produced by disease were spoken of as if they were diseases in themselves. But, crude and archaic as such an attitude appears at the present day, must we not own that it is still to be met with? We still allow ourselves to be superficial and to be dominated by first impressions and thus to fall away from the scientific attitude. In a recent address Mr. Haldane remarked that we do not think enough. He might, of course, have said (but the phrase would not have been either so forcible or so picturesque) that we are too superficial. John Hunter, you may remember, said "Don't think, go and see." Yet he was not contradicting Mr. Haldane, for he meant, Do not be content to theorize about things at first sight, but go more deeply and ascertain what lies beneath the surface; dig out the facts as explorers dig out the foundations of a buried temple.

We see how superficial we can be in the way in which we use the word "symptoms," meaning thereby a list of features by which a disease may be recognized. Ought we not to remember that, as no two cases are alike, and as individual cases present very different features in their

various stages, diagnosis by formula is fraught with chances of grave error? The symptoms of hip disease are given as a list: Lameness, pain, flexion, stiffness, swelling, and muscular wasting. But a very little experience will show that this uniformity is not met with in practice. In early cases, in which a correct conclusion is of paramount importance, there may be no pain, no swelling, and no flexion; while, if the child has been in bed for two or three days because he has limped, there may be no stiffness, because muscular spasm will have subsided.

Now, an observer who came to the conclusion that, because the list of symptoms so far was incomplete, no disease was present might fall into serious error. While, were he to discard the mechanical process of diagnosis by the list and look critically for every fragment of evidence, he might, perhaps, detect very slight apparent lengthening, and very slight yet quite appreciable muscular wasting. While in the presence of these two fragments of evidence the report of lameness would claim recognition. Arrived at this stage, the investigator would either feel justified in coming to the conclusion that disease was present or be constrained to keep his mind open until the examination had been repeated at an early date. In other cases of early disease pain, flexion, stiffness, and swelling may be all present.

But, further, as we all know, a group of symptoms which, in our unguarded moments, we speak of as typical of some particular disorder may be present in all their distinctness in some entirely different affection. If, following Mr. Haldane, we thought more, we should see that for diagnosis we must search closely for features which are distinct and exclusive—which, in other words, afford the means of distinguishing one thing from another. But have we not all seen cases of early infantile paralysis and of disease of the lumbar spine because of superficial resemblances mistaken for hip disease? I lately met with a case of infantile scurvy which was regarded as one of acute disease of the hip. A great protection against errors of this kind would, I think, be secured if we could shake off the traditional and cramped method of diagnosis by "the list" (of symptoms) and proceed by the more scientific process of collecting every available shred of evidence, both positive and circumstantial, and refrain from any conclusion until it has been all fully sifted and weighed and after we have endeavoured to bear in mind the alternative possibilities. Do we not sometimes remember afterwards that we have overlooked some point that lay outside the traditional list of symptoms, and that we have therein failed to be scientific?

A good instance of the influence of tradition in keeping us from thinking enough is seen in the fact that many still regard "fluctuation" as the all-sufficient evidence of suppuration. If asked how they would settle whether pus is present, many would say they should feel for fluctuation. This wave-like displacement of fluid, however, from one part of the cavity which contains it to another part is a physical phenomenon which can only occur under the following physical conditions: The fluid must be in sufficient quantity, say 1 ounce at least; there must be a firm background, or, on pressure, the whole mass will recede, as, for instance, in the axilla or the abdominal wall; a pliant front—in an empyema fluctuation cannot be obtained; pus must be moderately superficial—fluctuation around the kidney with brawny swelling of the loin cannot be detected. And there are two grounds, in certain cases, on which fluctuation must not be tried for. It may be very dangerous, for the pressure used in searching for it may rupture an abscess (say around an appendix, when pus would escape into the abdominal cavity) and a search for it may cause severe suffering—for example, in an inflamed mammary gland or a testis. Obviously fluctuation cannot be reasonably regarded as the evidence of matter in the general run of cases. Such a view is so crude and superficial that it is entirely unscientific. Indeed, fluctuation should be looked for in only one group of instances, namely, in large cold or chronic abscesses which lie not far below the surface and are painless, of which a good instance is a psoas abscess. For in all small acute abscesses—that is to say, in about 80 per cent. of all cases—fluctuation cannot be obtained, and its very name ought to be suppressed in this connexion. The presence of small quantities of pus may be detected by (*a*) elasticity, (*b*) pitting on pressure, (*c*) the tender spot, or (*d*) the soft spot. But, at the present day, those who have discarded tradition, and the bondage exercised by the old ideas about suppuration, and who grasp the true bearings of a case in which acute inflammation, although there is as yet no suppuration, is producing general illness as the result of absorption, together with tension and severe pain, will not wait for any evidence that pus has formed; they will interfere in order to arrest the inflammatory process at an earlier stage, so that suppuration, which has perils of its own, will be prevented.[1] No one nowadays waits for suppuration in appendicitis, septic arthritis, or inflammation of the sheaths of tendons.

A further clear instance in which we must acknowledge the truth of Mr. Haldane's *obiter dictum* that we do not think enough—that we, so to say, leave off thinking while we are still on the surface and looking merely at results, instead of going more deeply and unearthing causes—is found when we use such terms as "synovitis," "arthritis," "peritonitis," or "adenitis." Here we do no better than our predecessors, who spoke of jaundice and dropsy. Take "synovitis." This means that a joint is inflamed; that is, that we are witnessing a result, of which some half-dozen possible causes could easily be named. Can we, if we have imbibed even the rudiments of the scientific method, stop here? Does not our real work in diagnosis still lie before us? Have we not to seek out the cause on which the synovitis depends and drag it into the light in order to remove it? Only then does the old saying apply, *Felix qui potuit rerum cognoscere causas.* Yet how carefully must the search be pursued; how easily are we put off the scent! We all know that synovitis is often septic. But in a given instance we must proceed to a critical investigation as to the particular infection which it presents and we must be sure of our facts. I have repeatedly seen cases of synovitis of several months' duration in which gonorrhoeal infection was flatly denied, in which micturition was reported to be natural, and in which no appreciable gleet was present, but in which when a laboratory examination was made gonococci were found, when a catheter was passed stricture was detected, and where the synovitis cleared up when adequate urethral treatment was carried out. But if no gonococci are found there must be a further search for the cause, which may be discovered in a septic throat or even a carious tooth, some old sinus, or a cutaneous "boil." In short the scientific method will not allow us to stop short until the most complete knowledge that is attainable of every fact in the case has been secured—until we have made it as sure as we can that everything has been weighed and that nothing has been overlooked. May I not ask, again, have we not all had a feeling of chagrin, almost of terror, when, half an hour after giving an opinion in a case, we have suddenly become scientific and remembered something that was at the time overlooked? I remember a case in which after a great consultant, whose name we all revere, had diagnosed intercostal rheumatism and prescribed for it, the patient said, "By-the-bye, sir, they tell me I have got an aneurysm of my abdominal aorta"—a condition which on examination was obvious enough. How well does this case remind us how easy it is, if we do not think enough, to mistake referred pain for pain originating where it is felt.

It may be interesting to bring out the difference between positive and circumstantial evidence in medical practice by a few examples. But I may first remark that it is somewhat disturbing to find how frequently we have to depend on circumstantial evidence, for we must bear in mind that in medicine, as in the law, while (as I have already said) circumstantial evidence may be conclusive, it is yet often deceptive, even when it is pursued in the spirit of scientific thoroughness. Turning, however, to so common a case as that of fracture, we see that even within the compass of a single bone we must use for diagnosis now the one and now the other form of evidence

In fracture of the shaft there is positive evidence: the bone is felt to be in two pieces, these two can be moved on each other, there is deformity, and often there is crepitus. But in the diagnosis of impacted fracture of the neck of this same bone this positive evidence is absent. There is no mobility of one part of the neck on the other; there is no deformity of the neck to be felt, for

the bone is here so deeply placed that its outline cannot be ascertained, and there is no crepitus. Circumstantial evidence, on the other hand, may, when it is carefully made out, be conclusive; that is to say, there are circumstances which cannot be explained except on the view that fracture has occurred. Thus, after a heavy fall on his trochanter, it may be observed that the patient, who was previously sound, has an inch or more of shortening of the limb; the trochanter is, for a like amount, above its normal position and less prominent than its fellow, and there is eversion. Or take the skull: In the vault the evidence of fracture may be positive—for the fracture is often compound and visible to the eye, and the loose fragments can be moved upon each other. But in fracture of the base all is different. Neither abnormal movement, deformity, nor crepitus can be detected. Yet circumstantial evidence may clearly show that fracture is present. This is so when there is a large haemorrhage from the ear followed by the prolonged escape of a considerable amount of watery fluid, and paralysis of the facial muscles on that side. The haemorrhage and watery fluid are larger in amount than they could be unless a fracture allowed their escape from within the skull. Or take the diagnosis of a slipping semilunar cartilage in the knee. Occasionally there may be positive evidence, for during flexion and extension the cartilage may be clearly felt alternately receding and projecting in an abnormal degree, and tenderness on palpation may be detected. But in the majority of cases the evidence is wholly circumstantial. There is the history of repeated attacks of sudden pain, and perhaps locking of the knee, with sudden relief on some casual movement and a varying amount of subsequent synovitis. These attacks are all alike; always involving the same (generally the inner) part of the joint, they usually follow a twist or wrench, and they are separated by longer or shorter intervals in which the joint is apparently normal.

It is not long since we had to depend on circumstantial evidence in the diagnosis of renal calculus. Various phenomena might concur to render the presence of calculus extremely probable—pain in the loin, or extending to the testis, colic, haematuria, and urinary crystals; but no positive evidence could be obtained—the stone could be neither seen nor felt—and the case was a strong one to show how deceptive circumstantial evidence can be; for in the *post-mortem* room, or on operation, it was not seldom found that a wrong diagnosis had been made; either no stone was present, or instead of being in the kidney, it was in the ureter. Now the *x* rays afford positive evidence in at least a considerable number of cases, and every one rejoices over the change. It is, perhaps, too much to anticipate that increasing knowledge will ever supply us with positive evidence in all cases in which diagnosis has to be made, but means of avoiding mistakes have been greatly increased by the introduction of the *x*-ray method, since, in many departments of practice, it affords positive evidence and enables us to detect things or prove their absence by ocular demonstration. The ophthalmoscope, the laryngoscope, and the endoscope—and the microscope in diphtheria, tubercle, anthrax, etc.—are, of course, in the same class as the *x* rays; they are means by which diagnosis is rendered positive instead of remaining merely circumstantial, and they all alike add immeasurably to the accuracy with which diagnosis can be made. A further advance in the same direction lies in the use of surgical exploration. In numerous instances in which circumstantial evidence has been carried to its fullest limits a perilous degree of doubt may still remain. In such cases positive evidence in the form of direct inspection can be safely procured by an exploratory operation—for instance, in abdominal cases, the urinary bladder, and the joints.

To be thorough (or scientific), we must bear in mind that often both positive and circumstantial evidence are available in the same case, and we must compare their relative values. For instance, when we meet with an affection of the lip we can see it and examine it by touch, and thus obtain positive evidence as to its aspect and physical characters, and we may be led to suspect epithelioma. But we must not stop here. The scientific method impels us to look for further evidence; and if in our search we detect circumstantial evidence in the form of ulceration of the tonsils, a cutaneous rash, condylomata, or some other of the many manifestations of early secondary syphilis, the diagnosis, governed by circumstantial evidence, has become clear—it is syphilis and not epithelioma.

Now, such a case as this shows us that, if we are scientifically minded and think enough, we shall not only check circumstantial by positive evidence, but we shall sometimes find ourselves reversing the process and checking the positive form of evidence by the circumstantial. For instance, a boy of 18 has an affection of the lip which is either a chancre or an epithelioma. Now, although the lesion may look and feel like an epithelioma, the circumstance that the patient is at an age at which epithelioma is practically unknown, although not conclusive, would preponderate in a very high degree. It would, in fact, compel us to go still further, and to resort to a positive test which we might otherwise, however wrongly, neglect, namely, a microscopic examination. Or, take a lesion on the upper lip. It may, to look at and handle, be much more like epithelioma than syphilis, yet the mere circumstance that it is on the upper lip, where epithelioma is extremely rare, would indicate that it was almost certainly not epitheliomatous but syphilitic. And then instead of at once excising it, we should examine a piece of it under the microscope, or ask potassium iodide for its verdict.

This form of circumstantial evidence comes under the head of what may be termed numerical probability, and in dealing with it we must remember that when the odds (if such a term may be used) are, say, 500 to 1 against a particular view we must not accept that view until it is established by positive proof—that is, in the case I have taken, by microscopic examination.

Sometimes circumstantial evidence may deceive us by suppressing the positive evidence upon which we are accustomed to rely. A man of 60 was admitted into St. Bartholomew's Hospital with the history that his femur had broken in its upper third as he was walking across his room. A skiagram showed a small growth at the seat of fracture. Now, in a man of 60 a secondary deposit from a carcinoma is much more likely than sarcoma. The House-Surgeon and I, therefore, made a careful search, but no primary carcinoma was anywhere to be found. The patient was very old for his years and very feeble, so he was ordered a fluid diet and left for further observation. He grew more weak and died in ten days. *Post-mortem* examination showed an annular carcinoma of the oesophagus with only moderate narrowing, and no ulceration. The growth in the femur was carcinomatous. The oesophageal disease remained undetected in this case, although all were on the alert, because not one of the usual evidences of carcinoma of the oesophagus was present. No difficulty in swallowing was manifested, for, owing to his general condition, he was given a fluid diet, and he could swallow fluids easily; thus there was no regurgitation, the growth caused little irritation, and he brought up neither mucus nor any blood streaks, and he complained of no pain. This case seems worthy (beyond my present purpose) to be recorded as one in which carcinoma of the oesophagus was, so to say, entirely occult.

And now, gentlemen, I will not detain you longer than to thank you for listening to remarks many of which, I am only too conscious, contain so little that is new that they must have made you impatient, and to others which some of you may have regarded as on the border line of impertinence, as they suggested defects from which you have long since freed yourselves. But, in truth, in what I have written I have been not so much reflecting on the shortcomings of others as confessing the faults which I have observed in myself in the practice of surgery.

REFERENCE.

[1] *Clinical Essays and Lectures.* J. and A. Churchill, 1902, p. 97 et seq.

A MEDICAL department for the higher medical education of women has recently been established at Kieff. There were more than 1,000 applicants, but there is at present room only for 350. The provision for practical teaching is very limited, and a subvention from the State is not to be looked for. The course of instruction is not sufficiently complete to entitle students to more than a certificate, which will not carry with it the right to practise. It is proposed in the meantime to create only such a teaching institute as the means at disposal will allow. The president is Dr. Alexander Muratoff, Professor of Midwifery and Gynaecology at Kieff.

An Address

ON

SOME CASES OF UNEXPLAINED FEVER IN INFANTS AND CHILDREN.

Given at the Opening Meeting of the Nottingham Medico-Chirurgical Society, October 16th, 1907.

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Some one once made the rather brutal remark that "Man is the sickest beast alive"; and I suppose all of us are living witnesses to this sad fact. Man outstrips the brute in intellect; it is not much to his credit that he outstrips him also in sickness.

For centuries past man's sicknesses and their cure have been chronicled in manuscript and textbook, and we have abundant—nay, redundant—opportunities to day of looking up many a chapter on disease, or the details of how our wayward intestines may be cut into, cut up, or cut off.

All this is as it should be, provided we do not go a step further and imagine that it is possible for the textbooks to contain the whole gospel of medicine. The besetting sin of the student—and perhaps also many of those of riper experience—is to make bedside observations fit somehow or other into, or with, the classical description of textbook disease. Our book learning is very apt to produce a bias.

I sometimes see in the houses of my friends the walls adorned with texts in letters of gold and suitably framed. I always read them; I am often impressed; I sometimes think—but I don't say so—that I could suggest something better. Now, if there is any one in want of a text to print in letters of gold and hang upon his walls, I would suggest the words of John Ruskin:

> The more I think of it, I find this conclusion more impressed upon me—that the greatest thing a human soul ever does in this world is to see something and tell what it sees in a plain way.

But in every case, whether the diagnosis is clear or uncertain, we have to take into account the differences of human beings, in nervous constitution, in resistance to toxins, and in a hundred other ways, which may alter and distort the classical picture of disease which has become impressed upon our minds. Nature is ever trying experiments in the way of heredity; now she pushes into the world the unwelcome acephalous monster, then comes a genius, then, by way of another change, comes one whose third level centres turn out a disappointment, while the rest of us, who thank God daily for His good gift of mediocrity, are made up of a perfect mosaic of tendencies and characters with no two patterns in any way alike.

With all these differences we have to deal when, in the familiar words of the hymn, "Languor and disease invade this trembling house of clay."

Please don't think I have discovered a new disease called "unexplained fever"; indeed, I should strongly advise you to use the word as sparingly as possible. Call the attack "tooth fever," "gastric fever," or anything that suggests itself; for if you label the febrile attack as "unexplained," I venture to predict another practitioner will be on the doorstep within twenty-four hours.

A man may travel from the equator to the poles without his temperature varying more than a degree centigrade. It is obvious that in health there is a heat-regulating mechanism always on guard which balances heat production and heat loss. When fever occurs it is presumably due to over-heat production—that is to say, an increased oxidation of the foodstuffs takes place without a corresponding heat loss.

It is, I think, generally admitted that the common cause of fever is the presence in the blood of toxins due to bacterial action, the toxins in some way leading to increased tissue change; we can hardly, however, admit that the action of bacteria is the sole and only cause of fever. We must admit a reflex or vasomotor fever if we are to explain the rise of temperature due to catheterism, hysteria, excitement and so forth, in which toxin poisoning plays no part.

We have probably all of us been called to see an infant in severe convulsions, and during a lull in the storm have taken the temperature in the rectum and found it to be, say, 105° F. or 106° F. We have perhaps asked ourselves the question, What is the relation of the convulsions to the fever? Are they both due to the same cause, namely, toxins absorbed from a patch of early pneumonia, the onset of measles or it may be a meningo-encephalitis? Or are the convulsions reflex, due to some slight exciting cause in a neurotic infant and the temperature to the heat evolved during the tetanic contractions of the muscles? Probably the subsequent history of the case would clear up the diagnosis. In most cases I expect the high temperature is due to toxins, while the muscle convulsions are a contributing cause.

Let me pass on to cases in which the term "unexplained" is more or less justified. Most of us have, I expect, watched the progress of a feverish attack in an infant which has lasted perhaps some fourteen days or more, without being able to arrive at a definite diagnosis. The chest has been gone over daily with negative result, the possibility of influenza, meningitis, otitis, acute tuberculosis considered, and that ubiquitous cause of infants' ailments, namely, the teeth, by no means forgotten. Perhaps the attack subsides without any light being thrown on the case. No doubt such attacks have given rise in the past to such indefinite terms as "gastric fever," "brain fever," "continued fever" and such like.

Let me relate a case I recently saw in the family of a medical man who watched the case throughout with anxious care, and carefully recorded the symptoms.

An infant girl, aged 10 months, who had hitherto been quite healthy, vomited suddenly and was feverish. The temperature varied roughly from 102° to 104° F. for ten days, then took some erratic flights to the fifteenth day, when it returned to normal. Neither Dr. R. W. Marsden nor myself could discover any cause for the fever; there was no evidence of pneumonia, no influenza prevailing at the time. In the early days of the fever there were no signs of gastro-intestinal disturbance, though latterly there was some distension of the abdomen, and some slimy stools were passed. The spleen was never enlarged. The child never seemed very ill, nor was the loss of flesh very marked, but she was decidedly anaemic. The impression I think left on our minds was that the temperature was due to bacterial toxins absorbed from the alimentary canal, but as to the nature of the micro-organism there was no evidence.

I have referred to this case because I feel sure it represents an erratic but not uncommon type of feverish attack in infants, the fever running a course of fourteen days or more with some indefinite evidence of gastro-intestinal trouble, but not necessarily vomiting or diarrhoea.

We must not forget in this connexion how many opportunities the young child has of gastro-intestinal infection. It spends some of its time crawling about the floor, everything that it lays hold of goes to its mouth, it is provided by its indulgent mother with a "comforter," it is kissed and hugged by many a fond friend, besides the dangers which are connected with its food and feeding bottle.

Have I been describing a mild case of enteric fever, and called it "unexplained"? It must be admitted at once that during the first year the symptoms noted during life and the appearances after death may be very much alike both in enteritis and enteric fever. It must be admitted that enteric fever does occur during the first year, running a normal course with spots and enlarged spleen, but it must be very rare for such an attack to occur except in association with a family epidemic. Heubner describes such a case in an infant of 7 months; the attack was typical, and was traced to washing out the infant's feeding bottles with polluted water, but such a case is very unlikely to occur in a city with a good water supply.

A continued fever in an infant in which, after the end of the first week, there was no enlarged spleen and Widal's reaction negative, would be very unlikely to be enteric fever. The so-called paratyphoid fever has hardly as yet, at any rate, been established as a self-standing disease as far as its bacteriology is concerned, but it seems probable that some member of the colon bacillus group may take on bad ways and give rise to a feverish attack.

Let me now give an illustration of a sudden fever running an acute course, which is unexplained, we will say, during the early stages, but in which an explanation comes sooner or later.

Some twenty years ago I went several times to see a girl 10 months old, who was taken suddenly ill while staying at the seaside. The fever ran a course of some seventeen days, most days touching 104°, and no one who saw her could suggest a diagnosis. The chest was carefully examined, and enteric fever and tuberculosis duly considered; every one was surprised to hear that some days after the fever had terminated she began to pass pus in her urine. She made a good recovery.

A few years later I saw a paper by Holt of New York on pyelitis in infants, and then my one experience, which had been wellnigh forgotten, came back to mind. More recently Dr. John Thomson has called attention to these cases of pyelitis, and also several Continental writers, under the name of cystitis in infants. Let me give a typical case seen with Dr. Alexander of Bowdon:

An infant six months old (girl), in the midst of apparently perfect health, suddenly vomited and was feverish; the fever ran a course of some fourteen days, varying from 99° to 104°. There were several distinct rigors during the first week, the child becoming blue and shivery, but there were no actual convulsive movements; the legs were drawn up as in pain in the abdomen; vomiting occurred several times. No tender area could be detected over the kidneys or abdomen. Unfortunately no urine could be obtained at first for examination; the napkins showed no trace of any stain. A week after the temperature fell pus was noted in the urine.

It is curious in these cases that there is nothing to point to the real source of the fever at first. The urine, if obtained, is probably acid, slightly cloudy, with no trace or only a trace of albumen, but *B. coli* may be found in considerable numbers by cultivation.

This apparently normal state of the urine may easily deceive us; in one of my cases in which the vomiting and high fever were the prominent symptoms, the urine was examined several times and reported healthy; she went away to the seaside when convalescent, had another attack of fever, and then passed what was evidently pus in the urine.

In some cases the purulent urine appears early and attracts attention. In one case I was asked to see—a case of cystitis in a small girl of 9 months—the temperature had been running up to 104° or 105° F. for three to four weeks. The urine had been obviously thick most of this time. It contained pus cells, mucus, and a little albumen; unfortunately no bacteriological examination was made. The child had been fed for many months on some humanized and sterilized milk; there was a distinct line of congestion round some incisor teeth which had been cut, but there was no periosteal tenderness. She very quickly recovered when given orange juice, whey, and milk.

Much light has been thrown on these cases by the bacterial examination of the urine by Lorrain Smith. The urine of a *coli* cystitis or *coli* pyelitis is strongly acid, and contains the colon bacillus in large quantities, even in the early stages of the attack. The urine is acid on being passed, but quickly becomes alkaline and ammoniacal on standing. The colon bacillus readily grows in acid urine, but growth ceases if the urine is rendered alkaline. In many of these cases an examination of the urine by testing for albumen only is very apt to mislead; we must depend for our diagnosis on a bacteriological examination for the colon bacillus. The urine of patients who have suffered may contain the bacillus for some months, and relapses may often occur.

One point of importance remains: in many of these cases the infant has been taking for long periods sterile foods, and these may have acted in some way as a predisposing cause. Alteration in the diet, giving whey and fresh milk, with orange juice and citrate of potash, quickly brings about an improvement. From the fact that nearly all the sufferers are girls it looks very much as if the urethra was the port of entry of the colon bacillus into the urinary tract.

A similar *coli* cystitis I have seen several times in older girls, the temperatures running high and the urine more or less highly acid and purulent. In these cases in older girls the urine is less likely to be forgotten than in infants, and usually bladder symptoms are more pronounced.

Of the many other causes of fever in infants which may be unexplained at first I can only find space for a few words. We all know the difficulty of detecting a small patch of pneumonia in a child's lung when situated centrally. The same may be said with still greater force with regard to a local empyema and a purulent pericarditis. *Post mortem* examinations have revealed these lesions, I suspect, which had been undiagnosed during life.

We must remember, too, that in an attack of sporadic or epidemic cerebro-spinal meningitis, there may be a fever for a week or more with very little to suggest the real nature of the attack. There may be no marked drowsiness, the child's intellect may be quite clear; no vomiting or retraction of the neck or stiffening of the limbs; and we may perhaps look upon the case as an indefinite fever attack which would pass away without giving rise to any great anxiety. I have once at least been misled in this way, failing to recognize a sporadic case of cerebro-spinal fever in a young child in the absence of any marked cerebral symptoms during the first week or ten days.

Undoubtedly influenza will give rise to high fever and perhaps convulsions, but we are not often justified in diagnosing it, in the absence of a house epidemic.

I have said nothing as yet about acute or subacute disseminated tuberculosis as a cause of fever in infants. Perhaps we are more apt to diagnose it when absent than overlook it when present. A temperature running a course of a week or two without obvious cause naturally brings up visions of a subacute tuberculosis. Temperatures I think in tuberculosis in infants do not run high, and an evening rise of two or three degrees is more significant than a continuous high fever.

I was asked to see a while ago (with Mr. J. H. Hacking) an infant of 7 months who for three or four weeks had had an unexplained evening temperature of two or three degrees. A day or two before I saw him he had developed left facial paralysis which involved the orbicularis. He was well nourished and we could detect no cause for the fever. He seemed well enough and lively in the morning, but feverish and ill towards the end of the day; this went on for a few weeks longer without much change, when he began to show signs of a commencing meningitis. He passed into a condition of coma, and convulsions supervened before death. At the *post-mortem* examination we found several caseous patches of tubercle scattered through the brain, and one in the pons which had caused the facial paralysis, and tuberculous meningitis. Such lesions, which were pretty much confined to the brain, in an infant of 7 months gave very anomalous symptoms, and for some weeks we were at a loss to account for the fever.

There is one other type of case I may refer to which has given me on occasion much room for thought and anxiety: that is a type of case in which there has been an indefinite fever for a week or two, more or less, accompanied by a gradually progressing anaemia, and later purpura. I have three or four times seen such cases, but have never had an opportunity of watching them through or of getting a *post-mortem* examination.

The fever has run a course for several weeks, the child gradually getting more and more anaemic, then perhaps nose bleeding, vomiting of "coffee-grounds," and the passage of black stools, and subcutaneous haemorrhages have supervened. In one of the patients the liver and spleen were enlarged; all three cases seen were fatal. They are cases presumably of acute septicaemia, the blood, perhaps, being invaded with a malignant pneumococcus or streptococcus.

In the diagnosis of these varied cases of fever we stand much in need of the help of the pathologist and bacteriologist. Examinations of the blood, urine, and cerebro-spinal fluid would, I feel sure, often prevent us from falling into error, and give us the greatest help in diagnosis. But we know to our cost that the conditions under which we often work prevent our obtaining the material we desire.

Every one of us will have seen older children who are said to be subject to feverish attacks. Perhaps most of these attacks when investigated do not appear to amount to much. In the same way we are often told the child is very subject to "bilious attacks."

On the other hand, some of the cases of recurring fever met with in children are of real importance, both on account of their frequency and severity; they may seriously interfere with education and the boy's future prospects. In a typical attack the temperature quickly runs up to 104° or 105° F., continues high for some days, then gradually subsides, so that at the end of ten or fourteen days the patient is convalescent, but much weakened by his illness. A physical examination fails to find anything abnormal on the tonsils, glands, lungs, etc.; the patient probably

does not seem very ill during the attack in spite of a high temperature.

This type is, I think, fairly well recognized, there is the sudden rise of temperature without apparent cause, subsiding in a week or so; then the patient remains well perhaps for some months, and then without warning the attack recurs. The attacks generally tend to become fewer and less severe after puberty is passed, but I have known them continue till 19 years of age at least. I am inclined to think that children of a neurotic type are the ones most often affected.

Some children, it must be admitted, are more prone to fever attacks from slight causes than others. Another class of child is more prone to vomiting attacks than the ordinary child. Other children are more prone to nerve storms, or in other words to epilepsy, the exciting cause of which may defy our best endeavour. In children who suffer from recurring fever attacks it is probable their heat or vasomotor centre is unstable and easily influenced by toxins or other causes. That bacteria may enter the system through the naso-pharynx, and that the adenoid tissue of the naso-pharynx if excessive may offer a suitable ground for their cultivation is highly probable. Any unhealthy condition of things in these regions should be dealt with; though I confess I have seen cases in which the naso-pharynx has been several times harried and scarified in vain.

Then there is the "jam and bread-and-butter" theory—that is, that the attacks are due to starch and sugar toxins absorbed from the alimentary canal, and it has been asserted that abstinence in great part from these luxuries, has prevented or lessened the violence of the attacks.

But I confess I have had scant success by means of such treatment in the cases above described, for food and diet have seemed to have very little influence. Then, again, uric acid enthusiasts have had their say, and a form of diet in which proteids are but scantily represented may certainly be tried. But we have, I am inclined to think, a lot yet to learn before we can boast of much solid knowledge of these puzzling attacks.

Now, some of the feverish states we have to deal with in older children are plainly due to gastric insufficiency associated with or without a chronic intestinal catarrh. Perhaps the child has from time to time vomiting attacks with feverishness, succeeded by loss of appetite and an evening rise of temperature (101° to 102° F.), which perhaps suggests a subacute tuberculosis to the medical attendant. An examination shows a dilated stomach or one which is in a chronic condition of diastole, with decomposing contents and a constant evolution of gas. This is certainly a condition which will in some children, but not in all, cause an evening rise of temperature, and perhaps more or less wasting and anaemia. Very much the same symptoms may be produced by intestinal dyspepsia: the child loses flesh, has a poor appetite, passes pale-coloured stools with an excess of mucus, and there is an evening rise of temperature, which may go on week after week. It is in this class of case that dieting is clearly important, and when cutting down the amount of starch, sugar, and milk is undertaken, an improvement may be quickly effected. In some children the evening rise of temperature is apparently altogether out of proportion to the amount of intestinal catarrh or indigestion which appears to be present.

But yet again I am inclined to think that most of us are consulted with regard to children who for weeks and weeks may have an evening rise of temperature of a few degrees with nothing at all obvious to account for it. Some of these are children of the "neurotic type," clever children who must be doing something, and who seem to get a temperature whenever they are fatigued. Excitement, tiring muscular exertion, overwork of brain and muscle, and the temperature will go up. Naturally in all these cases we fear some tuberculous process may be in progress; one feels for an offending appendix, and, of course, carefully investigates the stools for either round or thread worms; then, having threshed out the question of the evening temperature in all possible lights, the wise practitioner packs the child off into the country for three months, accidentally breaks the much-used and treasured family thermometer, and supplies the mother with one which "all the king's horses and all the king's men" cannot make rise beyond the modest height of 99° F.

No doubt there can be too much temperature taking and weekly weighing of children who have learned by experience what a lot of anxiety their ailments give their friends; far better for them to hear nothing of disease, to lead a healthy outdoor life with varied occupations, whether they are simply neurotic and dyspeptic, or there are a batch of tuberculous glands somewhere out of sight and touch.

But I should weary you if I were to attempt to discuss all the forms of fever to which children were liable, and which for the time being we were unable to classify or explain. I have said nothing of "gland fever," or the fever which may precede for some days the outbreak of the rash of erythema nodosum. Then, again, I am mindful of the erratic fever, sometimes high, which precedes for some days the classical signs of an anterior poliomyelitis. Two children in the same house are attacked with an unexplained fever; one recovers without a bad symptom, the other, to our intense surprise, is found to have one or more limbs paralysed.

I will make no excuse for having approached the subject from the point of view of the general practitioner, mindful of the difficulties he has often thrown in his way of making a diagnosis, and the lack of opportunity he often finds in obtaining the help that the pathologist alone can give. Happy is the man who finds his pleasure in his daily round of work, and to whom the unsolved problems of the world provide alike an inspiration and a stimulus.

ON THE URINARY MUCOUS TRACT, AND NOT THE BLOOD STREAM, AS THE ROUTE OF INVASION BY PATHOGENIC ORGANISMS UNDER CERTAIN CONDITIONS.

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Every surgeon must be familiar with a certain class of cases which clinically reproduce the features usually associated with pyelitis—namely, an acute infection of the pelvis of one or both kidneys, and in which there is a curious absence on superficial observation of any adequate cause for the illness so produced: No passing of a renal calculus, no previous introduction of instruments or injury to the urethra or bladder, no antecedent attack of gonorrhoea or stricture.

Hitherto it has been the custom to explain such cases as originating in a blood infection—that is to say, organisms, it may the *Bacillus coli* derived from the intestinal canal, find their way under certain circumstances into the blood stream, are excreted by the kidneys, and in their passage through these organs give rise to the symptoms of inflammation in the pelvis of the kidney.

Although Mr. Barnard[1] in England, Leuhartz,[2] Lennander, and others on the Continent have realized the probably true explanation, yet it is still customary in this country to regard the blood stream as the primary source of infection.

There are certain facts in connexion with these cases which are very suggestive as throwing light on the real method of infection.

First, the majority occur in the female sex; all surgeons are agreed on this point.

Secondly, the trouble is especially apt to arise during the pregnant state. Now, in connexion with this last point, it is of interest to note that in an investigation into the condition of the female urethra in gynaecological cases, Dr. J. Campbell of Belfast found evidence of bacterial infection, purulent discharge, etc., in 30 per cent. of gynaecological and pregnant cases. The kind of organism varied. The *Staphylococcus albus* was present in 94 per cent. of the cases, and the gonococcus or streptococcus in the remainder.

Further, Rebland and Cumston[3] have drawn attention to pyelonephritis as a complication of pregnancy, and they associate with it the dilatation of the ureters, especially the right, which occurs in the pregnant state. The uterus, when rising out of the pelvis in the fifth or sixth month, compresses the ureter against the pelvic brim. Lohlein and Olshausen have pointed out the fact that the ureters are found dilated in women dying in labour. Cumston's interpretation of the sequence of events is that the ureteral obstruction leads to a partial

hydronephrosis, and that during this state of lessened resistance on the part of the kidney so distended, virulent organisms of the colon bacillus type find their way into the blood stream and so infect the kidneys, the colon bacillus being found in the urine in most of these cases.

In the Address in Surgery to the British Medical Association, at the annual meeting at Leicester in 1905, I brought forward evidence to show that under certain circumstances a regurgitant mucous stream does occur in the genito-urinary tract capable of conveying inert foreign particles, such as indigo, along the whole length of the tract from the urethra to the upper end of the ureter; indigo granules inserted into the anterior urethra in the male subject having been recovered from a suprapubic opening in the bladder, and in another case powdered indigo inserted into the bladder, was recovered from the upper end of the fistulous ureter, opening on the surface of the loin.

It was also pointed out that the one necessary predisposing factor is that there shall be some temporary arrest, partial or complete, in the normal outgoing flow of the natural secretion, the urine in the case of the kidney. If this arrest occurs continuously or intermittently, then the conditions are present which favour an ascending mucous stream or current in the urinary tract, and with this current the probable conveyance of micro-organisms, should these gain an entrance into the urethra or bladder.

Before putting together the evidence derived from clinical observation on the one side and from experimental investigation on the other, I wish to draw attention to a few salient features in three cases of pyelitis under my own observation.

The first is that of a previously healthy man of 40 years of age, who was seized with acute symptoms of what clinically resembled an attack of cystitis, with frequent micturition and much pain and soreness during the act, referred to the neck of the bladder. In a few days the patient became critically ill, with repeated rigors and a temperature of 104°, and much pain in the right loin. The urine at this time was acid in reaction, and contained some blood cells, pus cells, and a few granular casts. Bacteriologically the urine gave a culture of *B. coli*. The symptoms, local and general, gradually subsided during the next six days, and the patient remained fairly comfortable for three weeks, with a normal temperature and a clear urine. Then another acute febrile attack occurred, with considerable loin pain and increased urinary tenesmus, with more pus in the urine. After a gradual fall in temperature, lasting another twelve days, the urine gradually cleared up, and the patient made a good recovery.

The second case is that of a young man of 28, previously healthy, who, without any previous urinary instrumentation, gonorrhoea, or apparent cause, developed an ordinary rather transient attack of cystitis, with urinary tenesmus and ropy urine. This was succeeded in about a week by infection of the pelvis of the left kidney, which became swollen and tender, the extension upwards of the infection being ushered in by a rigor and a temperature of 103°. The symptoms subsided, but relapses occurred on three occasions, accompanied with a rise of temperature to 103° and exacerbation of the kidney pain. The urine at this time was acid in reaction, and contained pus and blood cells. Then after apparent recovery and an interval of a few weeks the rise of temperature and rigors returned, accompanied this time with pain and tenderness in the right kidney; the increased frequency of micturition also returned with pus in acid urine. The patient gradually recovered, the urine becoming normal.

The third case is that of a young woman, multipara, in the fifth month of pregnancy, who while in otherwise good health was seized with all the symptoms of acute cystitis, with a moderate degree of fever and frequent and painful micturition, and alkaline purulent urine containing also viscid mucus. Seven days later the temperature rose to 103°, the urine became acid, then nearly solid with albumen, and gave a copious deposit of pus without much mucus; the patient complained of great pain and tenderness in the left kidney region. The temperature fell gradually for two days and the pus diminished, when a further rise of temperature occurred to 102°, with an increased quantity of pus in the urine and pain in the region of the right kidney. Gradually the temperature subsided and the urine became normal, and the pregnancy went to full term, ending in the delivery of a healthy male child.

In these three cases there were distinct symptoms at the beginning of the attack, of a definite cystitis, transitory in character, but definitely preceding the kidney symptoms. This does not always occur; thus in Leuhartz's account of 80 cases of ascending infection of the kidney pelvis in adults, the bladder escaped infection in many of the cases. The patients were chiefly females, in whom the drainage and flushing of the bladder is probably more efficient than in the case of men. The right kidney was affected more often than the left. The infecting organism was definitely shown to be the colon bacillus in 66 cases, while the proteus bacillus and Friedländer's pneumococcus were found in some of the remaining cases. Moreover, in Leuhartz's cases, as in those I have previously recorded, there is no history of any preceding urethritis or traumatism from the passage of instruments.

Putting the clinical, bacteriological, and experimental facts together, it is impossible to resist the conclusion that the infection, whatever the organism may be, enters the body by way of the mucous canal of the urethra, spreads thence to the bladder, and is carried upwards along the ureters to the pelvis of the kidneys.

There are many objections to the theory which regards the blood stream as the primary source of infection, and the kidneys as secondarily involved during the process of excretion of the organisms.

First, in some, at any rate, of the cases in which the colon bacillus is the active organism there is a preliminary cystitis. Moreover, there are no general symptoms pointing to invasion of the circulation by pyogenic organisms preceding the occurrence of definite local urinary symptoms, while the absence of any foci of infection in other organs is remarkable; for if the infection is general and the organisms are brought by the blood stream to the kidneys, it is probable that some would be carried to other organs also.

On the other hand, if we regard the infective organism (the colon bacillus in most cases) as escaping from the intestinal canal and gaining access to the urinary tract by way of the urethra from the surface of the body, it may be urged that the bladder should be first affected in all cases, and that the urethra also should show some signs of inflammatory reaction.

But there are reasons for believing that virulent micro-organisms may be carried along a healthy mucous canal without overcoming the resistance offered by the epithelial cells (if healthy) lining the tube, and that such organisms may be carried upwards (isolated in, and with their growth, possibly temporarily, inhibited by the normal mucus which lines the walls of the canal) to a portion of the urinary tract in which, owing to some stagnation or reversal of normal currents, or to some loss of resistance on the part of the epithelium, or possibly to some abnormality in the character of the protecting mucus, they can commence rapid and virulent growth.

Thus, in the microscopical examination of sections of the Fallopian tube in the case of a female child who died from pneumococcal peritonitis, and in whom the symptoms pointed to the genital canal and the vagina as the route of invasion, the pneumococcus was found on and amongst the epithelial cells lining the villi of the tube, but no desquamation of the epithelium or infiltration by leucocytes, or signs of inflammatory reaction, were visible.

Moreover, there are many examples of infection in which different organisms travel along mucous canals, such as the bronchi or the intestines, and only produce their pathological effect at the site of peculiar susceptibility or seat of election, such as the lower end of the ileum in the case of the typhoid bacillus, and when this organism (as frequently occurs) is excreted by the kidneys, little or slight inflammatory reaction is present locally in the kidney.

The non-motility of the infecting organism in some of these cases of ascending pyelitis may be at first sight regarded as a difficulty on the supposition that the infection rapidly ascends the whole urinary tract, and first causes symptoms at the upper end or kidney pelvis, and in the absence of any evidence of extension of infection by contiguous growth along the ureter. But since the demonstration by the experiments recorded by myself in the Address in Surgery of the comparatively rapid manner in which inert, non-motile particles of a foreign substance are carried up the urethra and ureters, this difficulty disappears.

Moreover, this question of the mucous canal route of invasion as against the blood-stream route, in the case of organs communicating by their ducts with the exterior of the body, is one of general and not merely local interest. The gall bladder and the gall ducts come into the same category, also the pancreatic ducts and salivary ducts, and the true explanation of the manner of infection of the kidney pelvis is probably the true explanation

of the route of infection in the case of the gall ducts also.

It has hitherto been generally supposed that pathogenic organisms find their way into the blood stream from the intestinal canal and so reach the liver, and in the course of their passage with the bile along the liver ducts, after excretion, cause the symptoms referable to inflammation of those canals.

The observed facts, however, do not favour such an explanation. For instance, in all cases in which we know for certain that the organisms are conveyed to the organ in question, the liver or kidney, by means of the blood stream—in cases, in fact, in which the organ is affected as part of a generalized systemic affection—it is the cortical or secreting portion of the organ which first becomes affected and suffers most. Large or small, isolated or multiple, embolic suppurating foci form in the cortex while the excretory canals escape, or only suffer later. This is well shown in the case of the multiple abscesses of the liver occurring in the course of portal pyaemia. On the other hand, the comparative rarity of liver complications and abscesses in cholangitis and cholelithiasis is very remarkable.

I think also other experiments described in the address to which I have already alluded confirm, in the case of the gall bladder and biliary ducts, the conclusions which we have already come to in the case of the kidneys and urinary tract. Indigo taken by the stomach was recovered through a gall bladder fistula, and had evidently been carried up from the duodenum along the common bile duct, and so into the cystic duct and gall bladder.

Where inert powdered indigo is carried, pathogenic organisms can be carried also, provided that the arrest or reversal (temporary or otherwise) of the mucous current in the bile ducts is brought about from pathological causes, such as obstruction at the outlet, in the same way that it is brought about surgically in the case of the gall-bladder fistula.

Moreover, I think we may extend this theory of duct infection to other affections besides those caused by the pus-forming organisms. Take, for instance, the tubercle bacillus and the manner in which it attacks the testicle. Tuberculosis of the testicle commences in the epididymis at the upper or blind end as it were, of the genital duct, the vas deferens, and not in the body of the testis itself, where we should expect it to begin if the organism were brought by the blood stream.

Surely, too, in cases of tuberculous fistula *in ano*, the organism reaches the abraded mucous membrane from the intestinal canal and not from the blood stream, and I am inclined to think that in cases of tuberculous disease of the kidney, the bladder or the testis, the organism will eventually be shown in some cases to have ascended the mucous canal from external contamination instead of having descended it after excretion by, and passage through, the kidney. In fact, I would be inclined to put forward the following suggestion:

Infective processes originating in the excretory ducts of organs or glands or in mucous canals probably depend on these mucous canals as the route of invasion, while infective processes originating in the parenchyma or cortical portion of the same glands or organs depend on the blood stream for the entrance of pathogenic organisms.

This view is also in harmony with the observed phenomena of toxic processes. Cytotoxins circulating in the blood exert their cytolytic action primarily and chiefly on the epithelial cells of the cortex of an organ—the tubules in the case of the kidney, the secretory epithelium in the case of the liver—while the epithelium of the excretory ducts at first escapes injury, thus showing that the resisting power of the latter is at least as great as, and probably greater than, that of the secretory epithelium. Whereas in all the cases we have been considering of pyelitis, cholangitis, etc., due to mucous invasion, this duct epithelium has been the first to suffer.

In thus attempting to focus attention on the mucous canals as routes of invasion by micro-organisms I am hopeful that the importance of safeguarding the orifices of these canals opening on the surface of the body will become more manifest. Frequent bathing, rigid cleanliness, and personal hygiene will do much if regularly practised among hospital patients, indeed, among all classes of patients, to prevent infection of these canals.

It may be urged that tuberculosis of the kidney or of the epididymis occurs only in persons with a lowered resistance to the tubercle bacillus, and, in most cases, in those who are already the subjects of tuberculous disease in other organs which may serve as foci of infection. This, of course, is only saying in other words, in the language of the mucous canal invasion hypothesis, that a manufactory exists in these patients for the multiplication and liberation of the tubercle bacillus, and the pouring out of numbers of these organisms on the surface of the body by way of the mouth or the anus. Organisms so liberated may easily reach the urethral orifice, male or female, by direct contact, or by contaminated fingers, while the diminished resistance of epithelium is necessary in either case, in order that the organisms so conveyed may grow and flourish.

To return to the analogous case of the gall bladder: organisms, probably of special virulence, must first be grown in the bowel during some attack of local intestinal catarrh or indigestion. These are carried up the common bile duct, and only produce symptoms or set up a cholangitis in those cases in which the resistance of the lining epithelium has been diminished by distension, or stagnation of secretion, or by the contact of a secretion (of the bile in this case) of a chemically irritating or toxic character.

Finally, this view of the mucous canal as opposed to the blood stream route of invasion by micro-organisms suggests possibilities of treatment which are absent in the latter supposition.

The preventive methods of cleanliness and personal hygiene in the case of the external orifices have been pointed out. The question of the arrest of the growth of the organism while still in the lower portions of the urinary tract, and in the earliest beginnings of the attack, by altering the constitution of the excretory fluid—the urine in the case of the bladder—by the administration of urotropine or other urinary sterilizing drugs, is worthy of serious consideration. Moreover, the power to control the growth of the intestinal flora would doubtless very materially aid in diminishing biliary complications also.

References.

[1] *Lancet*, October 27th, 1905. [2] *Muench. med. Woch.*, April 16th, 1907. [3] *Amer. Journ. Med. Sciences*, January, 1906.

AN UNUSUAL MOTOR-CAR ACCIDENT.

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On October 26th, 1906, about 11 p.m., there was admitted to my ward in the Glasgow Western Infirmary, W. O., aged 36, suffering from a perforating wound of his left buttock caused by the shaft of a spring-van. On admission he was quite conscious, and was not suffering from any symptoms of shock. He gave the following account of the accident. While driving in a motor-car, and sitting in front on the left of the chauffeur, the car came into collision with a spring-van that had no lights, and was on the wrong side of the road. One of the shafts of the van penetrated his left thigh and buttock, and then passed through the back of the seat on which he was sitting, so that he was pinned down to the seat and could not move. To allow of his removal from the motor-car the back of the seat on which he was sitting had to be cut through, and the van shaft that penetrated his thigh and buttock had also to be sawn across.

The photograph, taken by magnesium light, shows the state of matters on patient's admission. The van-shaft with some of its harness is in the position it was in when the patient was brought in. It will be seen that it has passed through the left buttock, and that its free end, with the patient in the recumbent posture, lies along his left side as high as his left armpit, while the other sawn end reaches as far down as the foot. About 9 in. of the centre of the shaft are embedded in the soft tissues of the buttock, and these are somewhat tightly stretched over it. There was no haemorrhage and the patient made no complaint of pain, except when the leg was moved. Around the wound of entrance of the shaft there was considerable bruising of the tissues.

The removal of the shaft was accomplished by cutting through the raised bridge of skin, fat and torn muscle.

The flap thus separated was fully 6 in. wide, while the whole wound was 12 in. in length, and it was found that the tissues were more widely undermined than the external wound showed, particularly downwards along the outer aspect of the femur. The gluteus maximus was a good deal torn superficially, and its fibres, as well as the subcutaneous fat and skin, were all ingrained with dirt.

This was carefully and laboriously pared away, and the tissues were made as far as possible aseptic. The edges of the flaps were adjusted and sutured, two long drainage tubes being introduced from the lower aspect of the wound, one passing in an upward and forward, and the other in an upward and backward, direction.

The after-progress of the case was satisfactory. There was some sloughing of the edges of the wound, and on November 1st, 1906, a considerable area of skin around its lower angle had to be cut away. This was soon replaced by healthy granulation tissue, and on November 28th Dr. Arch. Young grafted the wound with portions of skin from the right thigh, applied in eight pieces over the larger raw surface, and three pieces over smaller areas at the upper angle of the original wound. The grafts did well in spite of dependent position, and within one month of the grafting (December 27th, 1906) the patient was dismissed with the wound completely healed, and with a very useful limb.

I have put the case on record as being one of an unusual character, and almost incredible. It is difficult to realize the combination of circumstances that could bring about such an accident. It seems quite clear that the motor car must have been going at great speed, as the shaft seemed to have passed through the tissues very much as a bullet would, instead of tearing a ragged and irregular wound as one would have expected.

OBSERVATIONS ON THE OPHTHALMO-REACTION TO TUBERCULIN.

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THE early diagnosis of tuberculous affections is often attended with the greatest difficulty. More especially is this the case when we have to deal with obscure lesions other than in the lungs, for example, in the abdomen and nervous system. We are often very suspicious that certain chronic conditions, associated with debility and emaciation, but without localizing or diagnostic symptoms, may be of tuberculous origin. In such cases we would welcome a simple test that would enable us to make an earlier and more certain diagnosis. In the "ophthalmo-reaction" to tuberculin we have probably just such an agent.

The oculo-reaction to tuberculin was, as is now well known, introduced last summer by Calmette, of the Pasteur Institute of Lille, as a diagnostic test for the presence of tuberculosis. That able worker in the field of tuberculosis claimed for it certain advantages over other tests hitherto in vogue. These may thus be summarized:

(1) It is absolutely safe; (2) it is so easy of application that any one can carry it out; (3) it produces no constitutional disturbance, and locally usually nothing more than a slight ocular discomfort and lacrymation; (4) it is as accurate and delicate as the hypodermic injection, if not more so.

The technique, as described by Calmette, consists in instilling one drop of a 1 per cent. solution of his tuberculin into the inner half of the conjunctiva.

With a view to ascertaining the accuracy of Calmette's claims, I have made over 100 observations, 70 with the Calmette tuberculin, 25 with the "old," and 10 with the "new" tuberculin. In from three to ten hours, sometimes rather sooner and not infrequently rather later, the positive reaction manifests itself. This consists at first of a slight injection of the conjunctiva near the caruncle, with a little lacrymation.

From first to last in the "slightest reactions" that is all that may be seen. In these light reactions the congestion is confined to the inner part of the conjunctiva, and unless it is looked for carefully it may be missed. It is, however, a quite characteristic redness, and can easily be recognized by comparing it with the normal untreated eye. The amount of reaction is most variable, and, so far as my experience goes, it does not bear a demonstrable relation to the severity of the lesion from a clinical point of view. Some of the most pronounced reactions I have seen were in cases in which there were no physical signs or clinical evidence of the presence of tubercle. We may get all degrees of inflammation, from the smallest amount of local conjunctival injection to redness extending over the entire eye, and having all the appearance of acute conjunctivitis. There is occasionally some purulent discharge, and much photophobia and swelling of the caruncle. None of these reactions, even the most severe, have given rise to any trouble, and almost all have, in a period of from two to ten days, completely cleared up. This occasional over-violent reaction is the only drawback to the test that I have observed. Perhaps it may be eliminated by giving always in the first instance a weaker solution, say a 1 in 200, as a preliminary test. Indeed, Comby seems to have found that this strength of solution was, in a large series of tests applied to children, as reliable as the stronger solution, and that in no instance did it produce any excessive reaction. My own experience tends to confirm this view, as will be seen by a reference to the summary of cases. It should be mentioned, however, that Oliver and Terras, who tried a solution of Calmette's tuberculin 1 in 150, obtained, in adults, only doubtful results.

The applicability and the delicacy of this test depends on the integrity of the eyes. Any ocular lesion, according to Comby, whether it be acute or chronic, contraindicates its employment. In my own cases only eyes that were perfectly healthy were subjected to the test. Brunetière thinks the test may be applied if one eye be intact by dropping the solution of tuberculin into the sound eye. But as the reaction, especially when slight, is only appreciated by comparison with the sound eye, it is obvious

that the delicacy of the test must be seriously impaired unless both eyes be perfectly free from inflammation. But it is possible, as Sydney Stephenson points out in a recent article in the British Medical Journal, that the test may be employed in certain eye diseases suspected to be of tuberculous origin. The reaction which follows may not only be diagnostic, but I would suggest that it may possibly be of some therapeutic value to the local condition.

The analysis of my cases brings out these facts: (1) That for the most part the claims advanced by Calmette for his test are fully justified; (2) that the test apparently reveals the presence of tuberculous lesions that are quite benign and unsuspected from a clinical point of view, as well as those that are more obvious; (3) that in those cases in which a subcutaneous injection of "old" tuberculin has given a positive or negative reaction the same result has followed the application of the ophthalmic test; (4) there seems some evidence that a solution of the "old" tuberculin may answer equally well.

The results of my observations may be thus summarized:

I. *Calmette's Tuberculin.*—The dried preparation, dissolved in distilled water, *1 in 100*, was employed in 37 cases of disease with well-marked evidence of tubercle, or that were clinically suspected to be tuberculous. These may be thus classified:

(*a*) Twenty-five cases, all *known to be tuberculous.* With two exceptions all of these reacted positively in from two and a half to ten hours. One of the two negative results was in a child with lupus, who cried when the solution was instilled; the other was a case of scrofuloderma with an extensive and extending lesion. In this latter case the test was applied to each eye with a negative result. In the majority of these tuberculous cases the reaction began in about three hours, and was usually at its height in about ten hours. Occasionally it was delayed till the second day. In about a quarter of them the reaction was severe, associated with considerable lacrymation and some exudation, and the conjunctivitis in some instances lasted for a week or ten days. As had been already noticed by some observers, I found that there was, in a few cases, a recrudescence of a disappearing oculo-reaction when a hypodermic injection of tuberculin was given.

(*b*) *Cases Suspect.*—Twelve of these were subjected to the test. It was *negative* three times—for example, pyelitis, synovitis, and tuberculous hip (quiescent for two years); and *positive* in the following: Delayed resolution in pneumonia, fistula, chronic diarrhoea, chronic bone disease, chronic cough without physical signs, fractured femur with tuberculous family history, diabetes with prolonged expiration at apex, asthma and pleurisy, and sacral abscess.

II. Twenty cases clinically tuberculous tested with a *1 in 200* solution of *Calmette's tuberculin.* The reaction was positive in all except in one case of multiple sacral abscess. This case was demonstrated to be tuberculous at a later period, as the discharge inoculated into rabbits produced typical tuberculous lesions. Twelve of these cases had previously given a positive reaction to the stronger solution (1 in 100), but the reactions to the weaker solution were equally characteristic, and in no case was it too severe.

III. Twenty cases, apparently free from tuberculous lesion, were subjected to the Calmette test (1 in 100). Of these cases, 4 gave a positive reaction, the remainder being negative.

IV. Twenty-five cases were subjected to the test with a *1 in 100 of the "old" tuberculin of Koch.* Of 14 clinically tuberculous, 12 reacted positively and 2 negatively; the remainder, which gave a negative result, showed no signs of tubercle. *Ten of the positive cases had given previously the same reaction to the 1 in 100 solution of Calmette.*

V. Ten cases treated with 1 in 100 solution of the "new" tuberculin gave doubtful or negative results, quite unlike that produced by the Calmette solution or the "old" tuberculin solution.

To ascertain if the reaction was alone produced by the preparation of Calmette, I also tried a 1 in 100 solution in distilled water of the old tuberculin of Koch on many of the same cases that had been previously tested by the Calmette preparation. This was done long after every trace of the reaction produced by the Calmette solution had disappeared, and on the eye hitherto untreated. In most of these cases the results were identical. But a solution of the "new" tuberculin of a similar strength gave me either negative or very doubtful results. In some of those cases distinctly tuberculous there was with it a minute amount of redness, but not a characteristic reaction. According to Calmette, the presence of glycerine or carbolic acid in the "new" or "old" tuberculin vitiates the test by their irritating actions. I do not believe that this is correct, for if it be considered that in the solutions I used of these preparations carbolic acid or glycerine could not have been present in more than ½ to 1 per cent., this action may be discounted. To decide the matter, however, I have instilled into many healthy eyes 1 per cent. solutions of phenol and glycerine, without evoking the slightest redness, lacrymation, or swelling of the caruncle.

This test shows that while the great majority of cases obviously tuberculous gives a positive reaction, a smaller proportion, undoubtedly tuberculous in character, fails to give any result. Mantoux has tried the test in 200 apparently healthy children, and it was only positive in 8 per cent. He points out, with reason, that latent tuberculous affections must be more frequent than this figure would seem to indicate. In dealing with children, however, the validity of the test depends on the absence of fear. If the child is afraid, and cries, the tuberculin is washed out of the eyes and no result follows. While, therefore, the ophthalmo-reaction is a valuable contribution to our means of diagnosing tuberculosis, on account of its simplicity and freedom from constitutional disturbance, it must not be interpreted, either when negative or positive, as conclusive of the absence or presence of the disease. It is, however, quite as reliable as the hypodermic injection, and my cases support this view, which is also held by Sicard and Descomps. These two writers, indeed, believe it to be more certain than the hypodermic injection or the other new test, the cuto-reaction; while Prouff, Grasset, and Rimbaud are also favourable to it.

Probably the hypodermic injection of tuberculin will often give reactions which would fail to be elicited by the ophthalmic test, because it is almost certain that hitherto the doses of tuberculin administered have been much too large. Such doses are always toxic, and are likely to be followed by reactions in the tuberculous and non-tuberculous alike, though of course the latter are not so susceptible. The subcutaneous injection of tuberculin—either the "old" or the "new" preparation of Koch—if repeated frequently enough and in graduated doses, with careful observation of the temperatures and local reactions, is a trustworthy negative and positive test. The very "slight reactions" are not infrequently overlooked, and the accuracy of the test is thus impugned. But the application of the test is troublesome, and there are several well-known risks associated with its employment. The constitutional disturbance is often very severe, and formerly, before its dose was properly adjusted, it often did a great deal of harm. Besides, the method is painful for children and often very distasteful to adults. In many instances permission to carry it out is absolutely refused. Hence the value of the ophthalmo-reaction, which promises to be as accurate while free from the disadvantages of the subcutaneous method.

The comparative delicacy of the test may be gauged from the results published by Letulle, who, in 75 tuberculous cases tested, got a positive ophthalmo-reaction in all except 3; 2 of these 3 were moribund, while the third recovered. These results are interesting. If, during a chronic tuberculosis, any antitoxin is, as one would expect it to be, developed, then the failure of the reaction in the 2 of Letulle's cases may have been due to an immunity imparted to the tissues, or else to the fact that vitality was too low to give any inflammatory reaction.

It is clear that if this test proves, on further experience, to be reliable, it will be a valuable aid to the early diagnosis of tuberculosis in obscure cases, and more especially in dealing with children. The success of modern methods of treatment depends on the early diagnosis of phthisis and other tuberculous affections. When a lesion is presenting clinically well-marked physical signs and symptoms, and its tuberculous nature has frankly declared itself, it is often too late to intervene with any prospect of success.

Undoubtedly a far larger proportion of the apparently healthy than we imagine are the victims of latent tuberculous affections. The observations made in the *post-mortem* room, or when the abdomen is opened for surgical purposes, amply bear this out, and the frequent evidence we have of bygone and completely-healed tuberculous lesions demonstrates that tuberculosis is an eminently curable disease. Any test that can help us to make our diagnosis earlier, and so to institute treatment at a stage when it would be effective, would be of the greatest importance to the physician and the public. Probably if this disease is to be stamped out, our best chance of exterminating it is to recognize it in the young and in its preclinical stage. If segregation of the tuberculous ever

becomes a practical question, might not school children who exhibited suspicious symptoms and who gave a positive ophthalmo-reaction be segregated and kept under observation?

Some rather interesting points suggest themselves from a study of my results. In a few cases not suspected to be tuberculous, but whose family history was bad, I have obtained pronounced reactions. Is it possible that this reaction not only reveals the presence of an actual lesion, but also a condition of tissue which is susceptible to the development of tuberculosis? What is the meaning of this reaction? Clearly to the conjunctiva of the tuberculous it is an irritant. To the eye of the healthy it is bland. I have been rather surprised to get a positive reaction in some cases of lupus that had been treated by the subcutaneous injections of the "old" tuberculin, from the smallest to the largest doses, till all local and general reactions had ceased. In such cases one would have expected that the tissues would have acquired an immunity to tuberculin. Are we to assume from this test, when positive, that there is always present an actual tuberculous lesion, or may we get it in the absence of a lesion in those susceptible to the disease? This point can only be settled by prolonged observation and by following the future history of those cases in which the ophthalmo-reaction has been positive. Parallel results are obtained by the cuto-reaction of von Pirquet. Here, again, the introduction of tuberculin into the skin causes in the tuberculous a characteristic lesion. The tuberculin proves itself an irritant to the skin in the same way as to the conjunctiva. Both in the case of the eye and the skin the action is an evidence of tissue resistance to tuberculin in the tuberculous. Is the tuberculin elaborated in the living tissue the same as that manufactured *in vitro?* One would expect that tuberculin instilled into the eye, scratched into the skin, or injected hypodermically, would "react" only in the healthy, for is not the reaction a sign of tissue resistance that we would expect to find better developed in the healthy than in the unhealthy? It seems apparent that tuberculin, or some other toxin developed in the tuberculous, imparts to the tissues a resistance to tuberculin, as expressed by the inflammation in the eye or skin, that is absent in the healthy. Von Pirquet holds that the reaction is due to the presence of an antibody.

Chantemesse, in a paper read at the Académie de Médecine (July, 1907), described an analogous reaction in enteric fever to a strong solution of typhoid toxin. The toxin was precipitated by absolute alcohol, and the powder obtained dissolved in distilled water ($\frac{1}{5}\frac{1}{0}$ mg. in mj). In non-typhoid cases in from two to three hours there occurred a slight redness and lacrymation, a reaction which was quite evanescent, all trace of hyperaemia disappearing in from four to five hours. But in enteric cases the reaction was much more pronounced, and at its maximum in from six to twelve hours, and remained till the following day. When very severe it even lasted for two to three days. There was hyperaemia, lacrymation, and a sero-fibrinous exudation—in all respects very similar to the ophthalmo-reaction of Calmette. No constitutional disturbance was observed. Chantemesse could not affirm whether this reaction is, or is not an early sign of enteric, but the reaction has been got in the eye of rabbits injected forty-eight hours previously with enteric bacilli.

I have to acknowledge with thanks my indebtedness to Dr. J. Montgomery Anderson, late House-Physician in the wards of Sir Thomas McCall Anderson, without whose assistance it would have been impossible for me to record those observations on the ophthalmo-reaction.

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NOTES ON 121 CASES TESTED WITH CALMETTE'S TUBERCULIN.

BY

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THE diagnostic value of the ophthalmo-reaction recently introduced by Professor Calmette, of Lille, has yet to be determined, and it is in slight endeavour to assist in this that the following observations have been made. Of the importance of the early recognition of tuberculosis, especially of the lungs, little need be said, and if this reaction succeeds in placing in our hands, as it apparently gives some promise of doing, a definite and trustworthy indication of that dread disease it will amply justify any position that it may take in the future and add to our armoury another weapon that we may use in our long combat with tuberculosis.

We desire to express our indebtedness to Dr. J. E. Squire, the Senior Physician of the Mount Vernon Hospital, who first brought this reaction to our notice some little time ago, and on whose cases in this institution it was first used, for his kindness in granting us permission to publish these results, and also for the accompanying comments with which he has favoured us.

Altogether we have attempted to obtain the reaction in 123 instances, 6 of which were in presumably healthy individuals used as controls, the remaining 117 being in individuals actually suffering from or else suspected to have pulmonary tuberculosis. In all but the first few of our observations we have used the dry form of tuberculin made into a solution with distilled water.* One drop of this solution placed in the lower conjunctival sac is quite sufficient for any doubtful case, and in several instances it has appeared to be more than sufficient, judging by the intensity of the reaction produced in six of our cases. It is, of course, necessary to first examine the conjunctiva and observe that it is healthy.

In two cases of presumably healthy individuals some slight reddening of the lower palpebral conjunctiva was noticed after two days at least had elapsed since the date of inoculation. In a tuberculous individual well-marked changes occur which are of varying intensity, ranging from a little lacrymation to the most acute injection of the conjunctival vessels accompanied by marked epiphora. In five cases the palpebral conjunctiva was noticed to redden as early as the second hour, but in two cases at least this may have been due to the irritation produced by rubbing the eye, because the degree of injection diminished shortly afterwards, but the individuals themselves denied touching their eyes. We have noticed that in many cases the first indication of any reaction was afforded by the plica semilunaris, which is situated just to the outer side of the caruncle, and the swelling and slight reddening which this undergoes occupies a fairly prominent place throughout the whole of the reaction: In one case this fold was the only part of the conjunctiva to show any signs of reaction, and in this particular individual it was evidenced not so much by reddening (present only in a slight degree) as by swelling, especially obvious when the two eyes were compared. By the fourth hour from the time of inoculation 15 more cases commenced to show the reaction, and from this hour onwards the remaining cases giving the reaction commenced to show some slight reddening, the longest latent interval between the placing of the drop in the eye and the time when the reaction was first noticed being twenty hours; unfortunately a night intervened and we were unable to note the onset of the maximum reaction. In the most severe case the maximum reaction was noticed to be present sixteen hours after the application of the test. The reaction in some slight cases lasted only two days, but in the more severe as long as a week, and even longer. The palpebral conjunctiva usually reddens before the ocular and through.

*The dry tuberculin is supplied in small tubes containing such quantity that 10 drops of distilled water give a solution which is said to be of proper strength for ordinary use, and will, of course, serve for ten observations. We have found that this solution is stronger than necessary, and appears to produce in some cases a reaction of undesirable intensity; in our later cases we diluted with 15 drops instead of 10, and have formed the opinion that this weaker dilution is more convenient, and gives equally satisfactory results.

out shows a greater degree of reaction, leading in many cases to swelling; the caruncle is usually the last place to show any sign of reaction, but in one case it was apparently the only place to show any reaction at all. The majority of the patients did not complain of any pain, but noticed some slight discomfort in the inoculated eye, best described in their own words as "it feels as if there was a little grit in my eye"; there was also a general complaint of watering of the eye, accompanied by epiphora, which lasts for a varying period and is of varying severity, corresponding usually with the severity of the reaction. In only the most severe reactions was there any purulent discharge; it was only noticed in 5 cases, but nearly all the patients giving the reaction complained either of a slight amount of discharge or else that their eyelids on the inoculated side were glued together when they awoke on the morning following the day when their eyes were inoculated. It was probably due to the fibrinous exudation which occurs normal y during this reaction and not to any purulent discharge.

Five patients complained of a little intolerance of light; they were those who gave the most severe reactions. In some cases complaint was made of a soreness at the back of the nose, which made the patient feel as if he had caught cold; in only one of these cases was there any rise of temperature, and the question naturally arises whether, before the epiphora commenced, some of the tuberculin solution diluted by the lacrymation had been washed down the nasal duct into the nose and thence into the pharynx. The fact that the soreness was first noticed in the morning of the day following the application lends a little colour to this view.

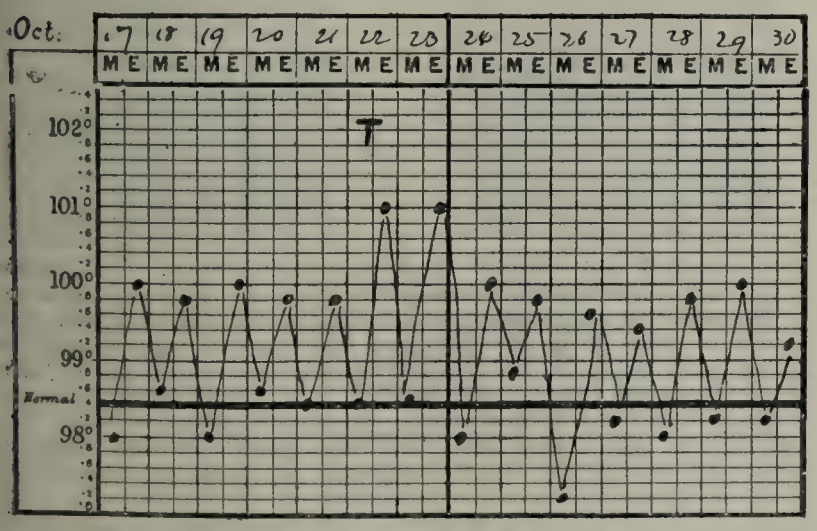
Despite the statement that there is no general reaction, 7 of the cases showed very definite rises of temperature after inoculation. In 4 the temperature went up on the evening of the day when the solution was applied, but in the others it was noticed in the evening of the following day; it was not accompanied by any headache or malaise, and these patients were not those who exhibited the greatest amount of local reaction. The temperature quickly came down to its usual level in all the cases; two of them are detailed below.

One patient after recovering from the reaction caused by the tuberculin became affected with the phlyctenular conjunctivitis to which tuberculous individuals are especially prone, but she is now making fair progress towards recovery.

Altogether we have tried the reaction in 123 persons, the majority exhibiting signs of pulmonary tuberculosis; in these the amount of lung involved and the degree of its activity varied very much; many were in a comparatively early stage of pulmonary tuberculosis and not expectorating at all, so that we could not attempt to find the tubercle bacilli; it is in cases such as these that the reaction if it prove to be reliable will be of most value.

Case I.

C. B., aged 44, male, ironworker by occupation, was admitted with a ten months' history of cough and expectoration; had pleurisy in March, 1907, but never had any haemoptysis. The

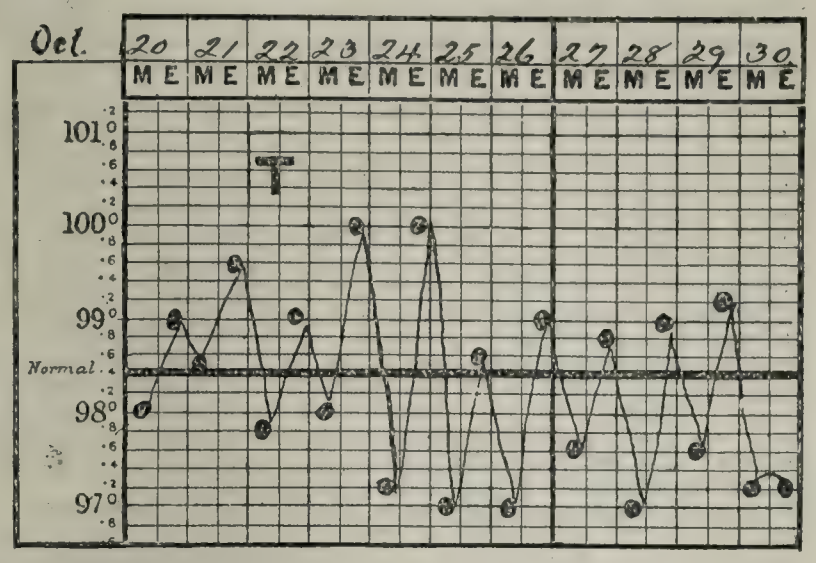


T = One drop of tuberculin placed in eye.

physical signs were dullness, with feeble breathing and prolonged expiration at right apex. Tubercle bacilli have been discovered in the sputum.

Case II.

W. C., male, shop assistant. Was admitted with a thirteen months' history of cough. Haemoptysis on one occasion, only



T = One drop of tuberculin placed in eye.

six weeks ago, and then only slight. The physical signs are impaired resonance at left apex with slight catarrhal signs at both apices.

It has been found convenient to group the cases with regard to the ophthalmo reaction into: (1) Those which gave a definite reaction. (2) Those which did not give a reaction. (3) Doubtful cases in which the subjective symptoms—for example, epiphora and a feeling of grit in the eye—were present, but in which there were no objective symptoms or only very doubtful reddening of the palpebral conjunctiva.

Out of the 121 individuals 4 were presumably healthy. Of these 2 did not give any reaction and 2 gave doubtful reactions; one of these had had pleurisy with effusion twice and the other had had a cough for the last twelve months, but neither had been submitted to a physical examination. Both were exceedingly anxious to have the reaction tried again. One case giving a doubtful reaction ten days earlier gave a definite one when inoculated again, whilst the other gave a most intense reaction with some swelling of the eyelids, the second inoculation in this case taking place eight days after the first.

Forty-three cases of pulmonary tuberculosis with very definite physical signs and with tubercle bacilli present in the sputum were subjected to the test, and in every case a positive result was obtained which was absolutely definite.

Of the remaining cases, 58 had comparatively definite signs of pulmonary tuberculosis, one lobe of lung being affected in the majority. In all these cases the disease, by observation of the temperature chart, was judged quiescent, and in none of them had any bacilli been recently found in the sputum. The results obtained were somewhat contradictory. In 36 cases definite reactions were observed; in 18 cases no reaction to Calmette's test was observed; whilst in the remaining 4 cases doubtful results were obtained. These results naturally suggest that this reaction will indicate slight degrees of activity when the temperature chart indicates none at all, but only the future with many more results will show this. One case, however, was very suggestive, since bacilli were isolated from his sputum about a month ago; but recently repeated examinations have failed to reveal any bacilli. This patient did not give any reaction. His temperature is somewhat irregular, but he suffers from attacks of malaria, which may account for it.

The remaining 16 individuals were all doubtful cases of suspected pulmonary tuberculosis without any definite physical signs, and without any expectoration or sputum from which no bacilli have been isolated. They all, however, had a suggestive history. From these 6 gave a very definite reaction, whilst 7 gave no reaction at all; the remaining 3 gave doubtful results, consisting of subjective signs only.

Summary of Results.

All definite cases with definite bacilli in the sputum gave the reaction. In cases with physical signs of pulmonary tuberculosis but quiescent as judged by temperature, some gave the reaction and some did not, and there was no obvious cause for this variation.

In doubtful cases some gave the reaction, some did not; some were indefinite, but we have for the present no definite evidence to confirm or disprove the indications of the tuberculin inoculation.

In presumably healthy individuals two reacted and two did not, but in the absence of physical examination no

evidence for or against the presence of tuberculosis in those who gave the reaction can be offered.

It is difficult to draw any conclusions as to the relation between the intensity of reaction as compared with the amount of lung involved, that is, the extent of the tuberculous lesion.

In five cases very severe reactions were obtained, and these cases presented marked differences in the physical signs. The most intense reaction of all was obtained in one of the control cases—an individual who was unaware that he had any tuberculosis, and who, because he gave an indefinite reaction when first inoculated asked us to repeat it eight days later; he refuses to have any physical examination, but he has no symptoms beyond a slight cough for the last twelve months.

A severe reaction also occurred in the case of a patient with advanced and extensive pulmonary tuberculosis, whose temperature chart is satisfactory when he does not attempt any exercise, but whose condition, judged by its irregularity whenever he attempts exertion, appears a little unstable His case, however, is complicated by the presence of a large amount of albuminuria ascribed to a tuberculous kidney. This patient has no adventitious sounds in the lungs.

Another case giving a severe reaction was that of a woman with doubtful disease at one apex and severe and persistent pleuritic pain on that side, accompanied by a friction sound; her temperature is a little raised (about 1° F.) above what it should be Since she was subjected to the ophthalmo-reaction about four weeks ago some adventitious sounds have made their appearance at the apex, and rendered the diagnosis more definite.

From these cases the difficulty in determining any relation between the amount of tuberculosis present and the degree of reaction will be apparent, and many more cases could be cited to show this.

As regards the intensity of reaction as compared with the degree of activity shown by the tuberculous disease, a similar difficulty exists for the cases with the highest temperatures, and therefore the most active tuberculosis did not show the most intense reactions.

As examples of this, the case of the presumably healthy individual may be mentioned first. In this person his temperature for the short time that he was under observation was quite normal, never rising above 98.4° F., and yet he gave the most marked reaction of all. Whether the fact that it was the second inoculation within eight days has anything to do with this or not cannot be stated. The case of the woman, already mentioned, who gave a severe reaction, also illustrates the difficulty, for she showed no marked degree of activity, her temperature being 1° F. above the proper range; out of the total number of cases on which observations were made 24 were classed as subacute cases of pulmonary tuberculosis. Of the 24 cases, 7 gave a fairly severe reaction, but 17 gave only an ordinary amount of reaction, such as the majority of the cases classed as quiescent showed. In the classification of cases with regard to their activity the temperature chart has been our guide throughout.

From the above results it seems to us that this reaction gives some promise of utility, but its reliability can only be ascertained by a much more extended series of observations on both healthy and tuberculous individuals. The chief value seems to lie in the fact that we have obtained the reaction in several cases in which the presence of tuberculosis was suspected, but where there were no definite signs of it; whether it has any value in recognizing the quiescence of a tuberculous lesion cannot be stated, for some cases judged quiescent gave the reaction, and others also judged quiescent did not.

In conclusion, we wish to express our thanks to the resident medical officers at the Northwood Hospital for their kindness in supervising some 50 patients on whom an attempt to obtain the ophthalmo-reaction of Calmette was made.

Remarks by Dr. Squire.

Those who, like myself, have not felt justified in advocating the hypodermic injection of tuberculin for diagnostic purposes in cases of suspected pulmonary tuberculosis have based their objection on the possible risk of lighting into activity a tuberculous focus in a dangerous situation. A dose of tuberculin sufficiently large to cause a general reaction not only reduces for a time the resisting power of the body—a negative opsonic phase—but may activate a latent tuberculous focus which may then get beyond control, and may also lead to auto-infection. Calmette's ophthalmo-reaction promised to obviate this disadvantage, for absorption through the conjunctiva would not infect the body to the extent of a hypodermic injection, and a purely local reaction in the eye would not appear to have the disadvantages or risks of a general reaction. I was therefore anxious to test as far as I could, first, whether the reaction with Calmette's tuberculin was purely local; and, secondly, whether the test could be relied upon to indicate the presence of tuberculosis which could not otherwise be detected and the activity or arrest of recognized lesions due to tuberculosis. The interesting report of Drs. Webster and Kilpatrick of their investigations seems to indicate that, though in the great majority of cases the reaction is confined to the conjunctiva, a general reaction is occasionally produced. As to the value of the test as an indication of the presence of active tuberculosis, the results, though they suggest that the test is reliable, are not conclusive. In those cases in which active tuberculosis was proved to be present by other methods of examination, a reaction was obtained in every instance. Of the doubtful cases, some reacted, some did not; we may, I think, conclude that when a reaction was obtained, tuberculosis was present and active; but in some, at least, of the negative cases I should hesitate to accept the absence of reaction as conclusive proof that there was no tuberculosis. Calmette's method of using tuberculin certainly seems to be the best for diagnostic purposes yet suggested.

MEMORANDA:

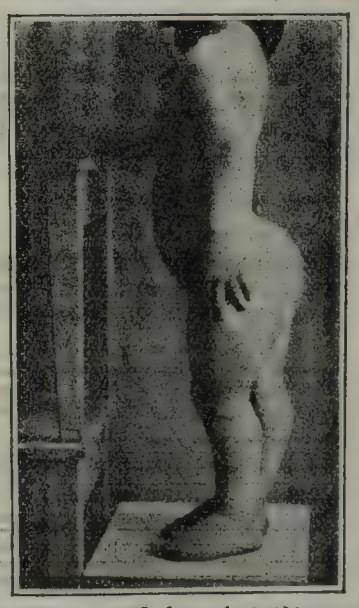
MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF ACHONDROPLASIA.

The patient here reported, a girl aged 16 years, came under my notice recently. She is one of a family of eight, all of whom, with the exception of herself and one sister, are normal. This sister, who immediately precedes the patient in point of age, is slightly under medium height, and is affected by rickety curves of the bones of the lower extremities. The patient's father and mother and other near relatives are all normal.

History.—The patient was 2½ years old before she began to speak, and was 4 years old before she began to walk, crutches being required at first to aid her in so doing. The elder sister already referred to was 7 years old before she could walk. In addition to the usual illnesses of childhood, none of which affected her seriously, the patient suffered from general ill-health. She sweated much about the head, was always feeble, and deformity of the bones began to appear about the time she first attempted to walk.

Appearance.—She is now 3 ft. 6 in. in height, markedly stunted, and of heavy build. On the other hand, she is quite



active, and her intelligence practically perfect. The head is large, and she has a decidedly "old" look. The depression of the root of the nose and prognathism are slightly marked. The hair of the head is abundant and glossy. The limbs are markedly affected. In the upper extremities the humeri, as is well seen in *x*-ray examinations, are much curved, as are likewise the radii and ulnae. The ends of these bones are much enlarged, and the "trident hand" is well marked although the fingers are a little long. In the lower extremities the curving of the femora and tibiae is pronounced, indeed it was principally on account of the deformity of the lower limbs, associated with a degree of pain in the knees, that she came to see me. There is marked lordosis, with consequent protuberance of the abdomen. The central point of the body lies well above the umbilicus, the skin is smooth and pliable, and there is a thick layer of subcutaneous adipose tissue throughout.

Remarks.—It will be noted that her physical appearance as just described corresponds very fairly with that given in the British Medical Journal in June, 1906, by Drs. Guthrie Rankin and Ernest Mackay, and I have regarded this case as being one of achondroplasia, but of a slightly less marked type than that figured by them. I am unfortunately unable to state whether this girl was born healthy, the parents' statements on this point not being sufficiently definite, but, on the other hand, I doubt the statement made in the article quoted, that rickety children are *always* healthy at birth. As in the case there reported, I feel convinced that rickets is responsible for at least some of the symptoms present in this case, and the occurrence of ordinary rickety curves in the case of an elder sister tends to confirm this impression.

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Surgeon, Elder Hospital, Govan.

A CHILD WITH MULTIPLE DEFORMITIES.

The photograph here shown is of a child born in this that city. It only lived a few hours. The mother could not explain why she had produced such a malformed being; her other children were well-formed and strong.

It had a double hare-lip and a cleft palate. The two arms were fore-shortened, the radius and ulna being only about 1 in. long, and the hand attached at a right angle to the forearm.

This same deformity I saw in a French girl, aged about 18, in Paris in 1906, selling cards to tourists, near the Trocadéro.

The swelling at the umbilicus was not dissected; perhaps others may recognize its anatomical formation.

In each leg was a condition of talipes varus.

Edward Jepson.
Durham.

THE TUBERCULIN OPHTHALMIC REACTION.

Any clinical test which offers to facilitate the early diagnosis of tuberculosis is worthy of a fair trial. Calmette's tuberculin ophthalmic test has the merit of being extremely simple and, so far as we can see at present, without ill effects. I am therefore tempted to add the results of my own limited observations to those of others who have made trial of this recent diagnostic method.

As a preliminary trial I have used the test upon 22 unquestionable cases of pulmonary phthisis, upon 1 "cured" case, and on 2 apparently healthy controls. The material was that supplied by Mr. W. Martindale of New Cavendish Street in fluid form.

Of the 22 tuberculous cases, 12 gave a positive reaction, whilst 10 gave no result. The reaction varied from a slight, though definite, reddening of the caruncula and plica semilunaris to a well-marked muco-purulent conjunctivitis. There were no general symptoms, and the local effects had entirely subsided in three days. In six hours after the application there was nothing to be seen, but within twenty-four hours the maximum effect had been obtained. The "cured" patient, who had shown no symptoms of phthisis for eighteen months, gave a negative reaction, and the 2 controls were also negative.

So far as they go, these results support the conclusions of Mr. L. J. Austin and Dr. O. F. F. Grünbaum, as expressed at the recent meeting of the Royal Society of Medicine, that the test is valuable but not infallible. These gentlemen report a positive reaction in 18 out of 20 cases believed to be tuberculous, and a negative reaction in 50 non-tuberculous cases. Dr. J. E. Squire, quoting Mount Vernon results, shows a uniformly positive reaction in all tuberculous cases, and Mr. S. Stephenson reports favourably on the results in 50 cases.

It would be interesting to learn the value of this test in the so-called pretuberculous stage of the disease, as distinct from fairly well marked cases of phthisis. In the meantime, as the test seems to be by no means infallible, it is to be hoped that undue importance may not be attached to it, as has undoubtedly been the case with the examination of the sputum for tubercle bacilli, giving rise to unfortunate delay in diagnosis and consequent treatment.

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Bellefield Sanatorium, Lanark.

A CASE OF MYOSITIS OSSIFICANS.

The annexed illustration is a photographic view of a case which came to our out-patient department recently. The patient was a non-caste boy, 10 years old, who had suffered for the past five years from a gradually increasing ossification of the muscles of the spine and back. The disease began near the sacrum and spread upwards, and as the case came under observation the spine and head were absolutely rigid, and could not be moved in the least. Branching out growths of the bone spread from the spine to the scapula. Breathing was mainly abdominal. Only liquid could be swallowed, bone could be felt on the right side of the larynx. The mother stated that there was no history in her family of any previous case of the same nature, and that she had other healthy children; also that the disease became worse in the monsoon. The boy did not appear to be wasted, and his general health was good. I judged it to be a case of myositis ossificans.

E. J. Maxwell,
B.A., M.B., B.C.Cantab.
The Salvation Army, Emery Hospital, Anand, Gujerat, India.

THE USE OF THE SETON.

I was much interested in Dr. T. W. Parry's article on Ménière's disease, and in his memorandum on the method of applying the seton.[1] The use of this instrument reminds me of a case which I had in 1895–7, the notes of which I read before the Society for the Study of Disease in Children, and published in Vol. III of the *Reports*. The case was one of cerebellar tumour, from the symptoms of which the patient made a remarkable recovery for nearly two years, such recovery being attributed to a seton applied in the nape of the neck. I rather differ from Dr. Parry in his technique. First, as to the seton, I use a ribbon of smooth shiny gum-elastic material, at least half an inch, preferably three-quarters of an inch broad. Secondly, I use an old-fashioned seton-knife, to which the seton is attached. A good fold of skin in the nape of the neck is pinched up, quickly pierced with the knife, and the seton carried right through. The whole operation only lasts a couple of seconds; the ends of the ribbon are tied together so that it cannot slip out, and it is moved to and fro daily. An anaesthetic is quite unnecessary, as also is any sterilization or antiseptic washing, beyond ordinary cleanliness, as suppuration is the aim and object of the proceeding. This is the old-fashioned and in my opinion the best way of doing it. It was from Dr. C. T. Vachell, of Cardiff, that I had the pleasure of receiving my first instruction in the use of the seton, and it seems a pity that this useful remedy is not more frequently employed.

Henfield, Sussex. Eldon Pratt, M.D.Lond.

[1] British Medical Journal, July 13th.

POISONING BY BROMOFORM.

I read with special interest Dr. Benson's contribution on this subject in the Journal of July 27th, p. 204. I had a precisely similar experience six months ago. As in Dr. Benson's case, the evil lay in the *last dose*. The mother of the child, a most intelligent woman, instantly divined the true cause of the trouble, but her confidence in bromoform remains unshaken.

I may add that for the last eight years I have been using it with unvarying success. Dispensed with tincture of senega and plenty of syrup of orange it is readily taken, and if specific instructions are attended to—that the vial is to be thoroughly shaken before its administration—no accident is likely to occur.

Halifax, N. Queensland. J. A. Langdon, L.R.C.P.Edin.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ESSEX AND COLCHESTER HOSPITAL.

STRANGULATION OF A HERNIA BY A SUPPURATING APPENDIX.

(Reported by E. Chichester, M.B.Lond., Honorary Surgeon.)

The patient in the following case, a boy aged 14 years, was admitted on December 3rd, 1904, and was seen by me immediately after his admission as suffering from an irreducible right inguinal hernia.

State on Examination.—The hernia was a large one, very tender to the touch, and there was no impulse whatever on coughing. Before his admission ineffectual attempts had already been made to reduce it. His bowels had acted the previous day after a dose of castor oil given by his mother.

Operation.—An anaesthetic having been given I cut down on the hernial sac, and on opening it found that it contained the caecum. In order to draw down the gut to get a good view of it, and preparatory to replacing it in the abdomen, the tissues at the internal ring, which constricted the neck of the sac, were incised, and immediately there was a considerable flow of thick faecal-smelling pus. On investigation this was found to come from a large abscess cavity situated between the muscles of the abdominal wall. Adhering to the mouth of this cavity, close to the internal ring, was the distal end of the appendix, which was gangrenous, and which was evidently the cause of the abscess. This was ligatured and removed, the gut being cleansed so far as possible and returned to the abdomen. The operation was completed by placing a large rubber drainage tube just inside the abdominal cavity, the greater part of the wound being left open, the external tissues being merely brought together at the upper end of the incision by one or two sutures.

Progress and Result.—The following day the boy's temperature rose to 103.5°; his breathing became very rapid, and he passed through an ordinary attack of right basal pneumonia. He very nearly died from this, but there was very little further trouble from the wound. The abscess cavity quickly diminished in size, and the whole wound quickly granulated and healed.

Remarks.—This patient had been operated on many years ago by one of my colleagues, on which occasion also the caecum was found in the hernial sac. The question of removing the appendix arose, but it was decided to leave it as there was nothing wrong with it. In recent years the hernia reappeared and evidently an attack of appendicitis had occurred whilst the caecum was in the sac. The pressure of the pus in the resulting abscess was obviously the cause of the partial strangulation, for all tension ceased as the pus ran out.

Under instructions from the presiding judge, a jury in the city of Wilkesbarre, Pennsylvania, is said by the *Medical Record* to have returned a verdict of not guilty in the case of a medical practitioner charged with failure to report births under his observation. The defence was that a busy doctor could not give his time to red-tape observances, such as reporting the time of birth, the ancestry of a child, and its name. It was contended that several visits might be required to learn the name of a child, as this was sometimes not decided upon for some time after birth; besides the Act of Assembly provided for no compensation for the registration.

REPORTS OF SOCIETIES.

MEDICAL SOCIETY OF LONDON.

Dr. Kingston Fowler, President, in the Chair.

Monday, November 25th, 1907.

Sciatica and Hip Joint Disease.

In a paper on the relation between sciatica and hip-joint disease Dr. W. Ironside Bruce contended that the origin of the pain in sciatica was in the hip-joint, and produced skiagrams showing that chronic arthritis in the hip-joint could be demonstrated by radiography, and that gouty and other chronic inflammations could be thus discovered. Out of 12 cases presenting typical symptoms of sciatica he showed skiagrams of 5 presenting articular changes; in 1 case the head of the femur was excised by Mr. P. Daniel, and showed the changes usually associated with arthritis deformans. He did not assert that all cases of chronic arthritis of the hip-joint were associated with sciatica, but he urged that if systematic examination of the hip-joint by *x* rays in intractable cases of sciatica were carried out it would be found in many cases that the sciatica was present as a symptom only of the arthritis.

Dr. de Havilland Hall considered that the method of diagnosis advocated by Dr. Bruce would be helpful in obscure cases of pain near the hip-joint extending down the thigh.

Dr. Fortescue Fox did not see why they should depart from the old belief that sciatica was nearly always a neuritis unconnected with bones or joints, but admitted that there were exceptional cases of secondary sciatica following injuries to joints.

Dr. S. Phillips referred to cases in which the exposure and incision of the sciatic nerve had resulted in immediate relief.

Sir John Broadbent emphasized the necessity of distinguishing between sciatica and disease of the hip-joint.

Dr. Poynton suggested in regard to the cases brought forward that further investigation was needed to exclude disease of the lower part of the vertebral column.

Dr. Chapman raised the question whether muscular wasting was a sure indication of joint disease.

Dr. Voelcker said that the subsequent clinical history of Dr. Bruce's cases would be interesting.

Mr. Gordon Watson asked if the patient from whom the head of the femur had been excised had a useful limb and had been cured of his pain.

The President pointed out how important it was in cases of sciatica to investigate the pelvic condition.

Dr. Bruce, in the course of his reply, mentioned that the patient in whom the head of the femur had been excised did not now suffer from pain, and possessed a limb which was fairly useful.

Intussusception in Children.

Dr. Duncan C. L. Fitzwilliams in a paper on the pathology and etiology of intussusception in children advanced arguments based upon age, sex, and seasonal incidence in support of a suggestion that a dietetic factor played a more important part in the causation of the disease than was generally admitted.

Glasgow Southern Medical Society.—At a meeting on November 14th, Mr. A. Ernest Maylard, President, in the chair, opened a discussion on the diagnosis and treatment of appendicitis. As the result of an experience of 300 cases, he said that so far as he knew there was no one symptom which could be called pathognomonic of the disease in any of its forms. Diagnosis was differential rather than direct; and not infrequently a matter of reasoning by the negative method of exclusion. Pain of some kind was constant, but very variable in its manifestations. This variation was directly due to the situation of the appendix, whether more or less free in the peritoneal cavity or placed behind the caecum or colon. As regards treatment he had never seen any reason to depart from the practice advocated by him in a paper eight years ago of endeavouring to obtain a free evacuation of the bowels by the hourly administration of sulphate of magnesium as soon as possible; though, of course, not as a substitute for operation if the latter seemed to be indicated. As regards such indications he summed up his

conclusions as follows: (1) Immediate operation is imperative so soon as it is believed that the symptoms indicate perforation into the general peritoneal cavity. (2) Operation is also imperative without delay when at the expiration of forty-eight hours there are wanting evident signs of improvement. (3) The operation of appendicectomy is advisable at the end of a week in all cases of acute appendicitis which have taken even the most favourable course. (4) Appendicectomy should be performed in all cases of subacute recurrent attacks of appendicitis. As reasons for advising operation in No. 3, it was contended that the removal of the organ at this particular period was exceptionally easy and safe, and that all possible future complications were prevented. Dr. J. K. Munro agreed that the diagnosis was mainly differential, but emphasized the importance of the mode of onset of the symptoms in an individual who, from his age and otherwise, was a likely subject for the disease. Rupture of a tubal pregnancy, perforation of a gastric ulcer, tuberculosis, and mucous colitis were among the conditions from which a diagnosis might have to be made. Fulminating cases and cases with abscess demanded immediate attention from the surgeon; but while for relapsing cases surgical treatment was clearly indicated, there were many cases in which a first attack ran a favourable course and ended in recovery. For such cases he considered that thirty-six or forty-eight hours allowed by the President to be unnecessarily short; but if after four days of appropriate treatment there was no decided improvement, he should recommend operation, though even then no abscess might be discovered. For mild cases he preferred to keep to the older method of moving the bowels by enemata rather than by saline purgatives. He further pointed out that operation, while often advisable and even indispensable, might be unsuccessful, and might be followed by grave and fatal complications. In the rest of the debate the main difference among the surgeons was as to the time of operation after the onset of the disease; while the physicians argued that internal medication was in many cases the proper treatment of the disease.

Sheffield Medico-Chirurgical Society.—At a meeting on November 7th, Dr. Thomson, President, in the chair, the following were among the communications: Dr. Henry: (1) A case of double optic neuritis, probably due to a cerebral tumour. Dr. Burgess thought that trephining for optic neuritis was not of great value in the absence of localizing signs, as when the case came for treatment the neuritis was usually on the decline. (2) Specimens from a case of carcinoma of the oesophagus which had infiltrated the cervical spine and led to spontaneous fracture and sudden death.—Mr. Graham Simpson: A *Carcinoma of the colon* removed from a woman of 21. She was admitted for subacute obstruction, and was operated on at once. A growth was found just above the ileo-caecal valve, and an ileo-sigmoidostomy was performed. She quickly recovered, and was again operated on a fortnight later, when another growth was found at the hepatic flexure. The caecum, ascending colon, small parts of the ileum and of the transverse colon were excised. The patient made a good recovery, and when shown five months later was in excellent health, having gained a stone and a half in weight. Pathologically, the interest of the case was in the fact that the two growths of the colon were of entirely different microscopical appearance, one being typically columnar-celled, undergoing colloid change; the other exactly resembling a scirrhous cancer of the breast, being made up of irregular-shaped cells distributed in lines.—Dr. A. E. Naish, in a paper on the *Treatment of Children*, laid stress on the care of the skin in febrile diseases. For this reason he condemned linseed poultices in bronchopneumonia, preferring, when necessary, a light mustard poultice for a short time. The use of cold to the head was not sufficiently appreciated as a sedative. The ice bag on the chest in pneumonia had little effect on the disease, though it might relieve symptoms. Fresh air was of the greatest value, especially in relapsing bronchopneumonia. Blood-letting should be used in cases of great cyanosis, several leeches being applied in urgent cases of phlebotomy of the external jugular. With regard to feeding in some acute diseases, cerebral affections, or severe malnutrition, he advised feeding by a stomach tube passed through the nose. Colon irrigation in cases of colitis—cold water when there was high pyrexia—should be used. In acute cases, where there was nasal obstruction, nasal syringing should be thorough. With regard to drugs, we must be sure that, at any rate, they were harmless. Simple syrups were bad for the gastritis so common in bronchopneumonia and other febrile diseases. Children were very tolerant of purgatives—belladonna (a specific for nocturnal enuresis when given in large doses) and arsenic in an anaemia and chorea when the neurotic element was predominant. Salicylates could be given in large doses. Morphine and its relations must be given in very small doses. With regard to special diseases of the alimentary canal, he divided gastro-enteritis into (1) cases due to overfeeding, to be treated by a purge; (2) the bacterial infection, the acute non-choleraic, the choleraic, and the chronic. In the acute non-choleraic, treatment should consist of a purge—castor oil—and gastric and colic irrigation. No food, but plenty of water, should be given. Hypodermic salines and later, astringents were sometimes indicated. In the choleraic type, similar treatment, with special reliance on the saline infusions, morphine and atropine was indicated. Chronic enteritis should be treated with colon irrigations of water, later by astringents and large doses of bismuth. Opium was useful where there was much tenesmus. Finally, a great factor for good was change of air. Dr. Sorley agreed that large doses of salicylates were useful and well borne. In pneumonia he preferred the jacket poultice. Dr. Williams had seen two series of cases—one treated by poultices, the other by icebags. The mortality was the same, but the latter class needed much more watching. Dr. Barnes was opposed to the use of the icebag in children as they lost heat with such rapidity. He had seen much benefit from hot baths in bronchopneumonia. He disapproved of stomach and colon irrigation in acute gastritis and enteritis, these organs being well emptied by vomiting and diarrhoea. He relied on purges—magnesium sulphate and a diet of tea and albumen water. Dr. Martin believed in poultices and did not use icebags. Mr. Graham Simpson could not agree that belladonna was a specific for nocturnal enuresis.

Medico-Psychological Association of Great Britain and Ireland.—The autumn meeting of the Northern and Midland Division was held, by the courtesy of Dr. Middlemas, at the Sunderland Borough Asylum, Ryhope, on Thursday, October 17th. Dr. Middlemas presided, and related the cases of two brothers admitted in February, 1906. The interest of the cases lay in the combination of unusual nervous symptoms with a gradually progressive dementia. The elder brother, aged 31, had, thirteen years before, had an accidental fall which gave him a great fright, but produced no immediate physical symptoms. About two years later symptoms of difficulty in walking made their appearance, and gradually became more pronounced. These symptoms consisted in marked incoordination of muscular movement, with a spastic condition of the muscles of the legs. These then appeared in the muscles concerned with speech, then in the arms, and finally in the head and neck. But at no time was there any nystagmus. The mental faculties underwent a gradual process of deterioration, ending in profound dementia. He died in January, 1907. The younger brother, aged 27, first began to show the same symptoms seven years previously. He had no accident, but he had been in the habit of sleeping in all weathers in the town park, and had frequently been chilled and soaked. The symptoms in his case took the same line of progress, and promise the same result. The muscles generally were in a spastic condition, there was marked inco-ordination on voluntary movement, the deep reflexes were much increased, and there was slight muscular weakness, but as yet no atrophy. His speech was very poor, and he was a facile, contented dement. These symptoms were demonstrated in the patient. The examination of the cord of the elder brother, made by Dr. E. Bramwell, of Edinburgh, showed the absence of disseminated sclerosis, to which disease the symptoms were most nearly related. They appeared on the whole to belong to that group named by Westphal "pseudo-sclerosis."

REVIEWS.

"NATURAL" THERAPEUTICS.

Many of our readers know that there are in Germany institutions devoted to the cure of diseases by what are called "natural" methods (*Naturheilkunde*), but the extent to which they have secured acceptance from the German public may not be so well understood; and as it without doubt marks a growing tendency with which the medical profession will have to reckon more and more, the introduction to natural therapeutics by physical and dietetic agents, which Dr. Fernand Sandoz[1] has published, acquires special interest and importance. In Germany there is a society for the promotion of these methods of treating disease, which is said to number 150,000 members, to have branches in all large and in many small centres, and to be rapidly extending its influence by means of meetings, lectures, and the publication of a journal which has a circulation of 145,000 copies! A popular encyclopaedia published by Bilz is said to have been translated into many languages, and to have reached a sale of more than a million. The movement is for the most part outside the medical profession, but a certain number of medical men have founded a society for the study of physical and dietetic therapeutics, and some of its members have abandoned the use of drugs and treat all diseases by physical and dietetic means.

Dr. Sandoz appears to be the son of a hydropath, who has long been interested in the treatment of disease without drugs; he has therefore been trained with a view to practise by these means, and has been sent to study in Germany in order to learn the methods that are there in use. This book, which is founded upon several years of study, is his graduation thesis at the University of Paris, and is dedicated to Professors Bouchard and Roger.

The author writes from the point of view of a strong believer in the methods he describes. He claims that, so far from being a system of quackery, it is a philosophic method superior to that generally followed by orthodox medicine, which, he says, has allowed itself to remain in respect to treatment in a state of gross empiricism. He holds that there can be only two methods of treating disease; first, the "pathogenic," in which an agent is used capable of attacking the cause of the disease directly, as when quinine is used to destroy the malaria microbe; the second is the "natural" method, which acts on the organism by modifying external factors, which it does by means of "excitants"; these may be (1) thermic, applied by means of water, air, bricks, or sand, and be either hot or cold; (2) mechanical, including massage, movements, vibrations; (3) luminous, as sun baths; (4) electrical, rarely indicated in the "natural" system; and (5) dietetic, chiefly quantitative, by increasing or diminishing the constituents of diet. For some reason or other, Dr. Sandoz thinks that the "natural" method to be rational needs a new definition of disease, and he discusses the definitions that have been proposed, and concludes by asking us to accept one suggested by himself, to wit, that "disease is (*a*) the strengthening or (*b*) the weakening of one or all the phenomena of life," the former corresponding to acute diseases and the latter to chronic diseases. "Natural" therapeutics introduces an alteration in the environment of the organism and produces an abnormal reaction. In acute diseases "natural" treatment is for the most part purely expectant; in subacute it may be stimulating or calmative; in chronic it is "provocative," that is to say, its object is to bring about a pathological crisis somewhat resembling an acute attack, which will then of itself tend to get well. The foundation of this doctrine is the belief that acute diseases tend to cure themselves, and in fact the author ventures to make the statement that "pneumonia always gets well" (p. 42). He goes further, and says that acute diseases if left to run their natural course produce a good effect on the organism by conferring immunity, but if their natural order and course is deranged by the administration of drugs this salutary influence on the organism is prevented, and the patient is liable to relapses or to renewed attacks, so that he condemns the use of quinine in malarial fever and influenza; he calls the cold-bath treatment of enteric fever "brutal, illogical, and unscientific," and accuses sodium salicylate in acute rheumatism of being "injurious in all cases"! We cannot help remarking in passing that the author's age and experience can hardly justify him in expressing such opinions upon the results of methods of treatment of which he must know very little. In order to give force to his argument he attributes to drugs greater power than they possess; for example, sodium salicylate is not a specific remedy for acute rheumatism as he supposes, but is a valuable aid in its treatment, as all admit who can recall the treatment of acute rheumatism before its introduction. Cases of acute rheumatism, if left to themselves, often terminate spontaneously and rapidly, nor is the short duration of most cases of this disease due to the use of this drug; indeed, it is doubtful if it has any influence at all over the duration of the disease, but it unquestionably has the effect of speedily relieving the pain.

On the other hand, Dr. Sandoz makes extensive demands upon our credulity, as, for example, when in speaking of the "natural" treatment of appendicitis (page 66), he tells us that "an abscess, or rather a swelling as large as a human head, in the right iliac fossa was absorbed under treatment" by enemata and hot fomentations. He further claims that Bier's method of treating tuberculous joints and glands by arresting the circulation is an instance of "natural" treatment; so, too, is serum treatment, although the latter does not cause a "genuine cure"—a statement for which he quotes the authority of Professor Bouchard. Professor Bouchard is made to bear a considerable burden throughout this work, to which his somewhat speculative and theoretical writings in some degree expose him, but in return he is plentifully bespattered with complimentary epithets.

Dr. Sandoz describes in detail the four great methods upon which the "natural" system is founded. The first is that of Priessnitz, who must be considered as the founder of modern hydropathy, and whose institution at Graefenberg still exists. He was a Silesian peasant, who had a natural genius for the treatment of disease, and did much good by reintroducing into medical practice the use of cold water, which in Northern Europe had been overlooked for many centuries in spite of the labours of Floyer and Currie in England, Tissot in France, and Hahn in Germany, who had advocated its employment. The second is the method of Kneipp, the Bavarian parish priest, whose sudden celebrity arose so recently that it must be in the memory of most people; his method consisted chiefly in producing a reaction by the alternate application of heat and cold. The third is the system of Rikli, the apostle of air baths and sun baths; and the fourth is the method of Schroth, who combined hydropathy with dry diet. Dr. Sandoz devoted some time to the Schroth establishment at Lindewiese, and, although he finds much to condemn in the method of treatment as conducted at present, he regards the system as of considerable value. While he admits that the sanatorium treatment of tuberculosis is a development of the "natural" method of therapeutics, Dr. Sandoz does not approve it as at present carried out. He complains of the excess of food and covering and the want of exercise. He thinks unnecessary expenditure is incurred in the provision of such places, and suggests that

> A city like Paris, possessing parks surrounded by walls, should allow their use for air baths during a certain number of hours daily, some being reserved for men and others for women. Thus citizens on their way to work could during fine weather take their air baths early in the morning. Terraces for sun baths could be easily installed on the roofs of houses in different parts of the city. In this way sanatoriums could be provided which would be no charge on the public rates and little cost to the patient, while the latter would benefit much more than they do at present from staying in one of the existing sanatoriums. Advanced cases could devote their whole mornings to the cure and work only in the afternoon. The problem of the cure of consumption could thus be solved at a minimum cost, or, rather, at no cost at all.

It may be admitted that there is some ground for the complaint that the medical profession, while employing scientific methods in the study of pathology and diagnosis, in which department during the last fifty years the greatest advances have been made, has not been equally successful or as energetic in applying the same methods to treatment; while we have been overwhelmed with innumerable drugs warranted to cure particular sym-

[1] *Introduction à la Thérapeutique Naturiste par les Agents Physiques et Diététiques.* Par le Dr. Fernand Sandoz. Paris: G. Steinheil. 1907. (Roy. 8vo, pp. 260. Fr. 6.)

ptoms, little attention has been paid to general therapeutics. The agencies employed by the "natural" method are at least as worthy of the attention of the medical profession as are drugs and although it cannot be admitted that as at present practised it is other than empirical, it is capable of rendering considerable service, and deserves more attention in medical schools than it receives. Dr. Sandoz refers to the establishment of a chair in the University of Berlin for the treatment of disease by physical and dietetic means, to which Professor Brieger has been appointed, but he comments upon the extremely inadequate installation afforded him, and suggests with truth that it would be better to provide means by which these methods could be available for the patients in each clinic, instead of specializing them in a particular set of wards.

DISEASES OF THE STOMACH.

A textbook which has reached its fifth edition, and has been translated into Russian, Italian, and Spanish, is, perhaps, beyond criticism; and we welcome the publication of Dr. A. Bernheim's version of Dr. I. Boas's *Diseases of the Stomach*,[2] through which English readers may make the acquaintance of this standard work. The author's claim for it that it is plain and practical is justified. The text is illustrated by numerous woodcuts and by some admirable reproductions of sklagrams placed at the disposal of the translator by Dr. Pfahler. Dr. Boas regards certain "pressure areas" which he has described in gastric ulcer, cholelithiasis, and gastric neuroses as of no little diagnostic importance, and he lays special stress on the significance of the amount of pain in ulcer and cancer of the stomach, which he thinks can be measured by an instrument called an algesimeter, devised by him and indicating on a scale the degree of compression of a spiral spring. We quote the following because the teaching it conveys is too often ignored: "The splash sound by itself is in no way indicative of a diseased state of the stomach," yet unfortunately serious diagnoses are often attempted upon this very fallacious sign. He is right, too, in insisting upon the importance of careful weighing of the patient as a means of testing the progress of a dietetic cure, and the following passage is worth noting:

> The acme of the era of artificial food preparations seems rather to have passed; numberless preparations recommended, or, rather, thrown upon the medical and lay public by the clamour of advertisement, are already part of history, and only a few, and these not always the best ones, have maintained themselves in the favour of the general public and the physicians.

In the directions for the use of stomach lavage Dr. Boas appreciates the limits of its indications, and adds, "The more we limit its application the less we will discredit this curative measure," a remark which is in striking contrast to the practice which is sometimes advocated here and formerly prevailed, and perhaps still prevails, in Germany. He is not very encouraging respecting surgical intervention, and has not made up his mind to admit surgeons to as large a share in the treatment of stomach diseases as their success of late years has earned for them. As usual in German textbooks, the dietaries are open to criticism from the English standpoint; we do not think it would be possible to persuade an English patient to eat 1 oz. of butter with $1\frac{2}{3}$ oz. of bread, or to swallow a soup made of 1 oz. of tapioca, $\frac{1}{3}$ oz of butter, and an egg, or to take $\frac{2}{3}$ oz. of sugar in a cup of tea. The translation is, on the whole, good, though we notice occasional idiomatic slips, such as "command of piety" for "pious duty."

Dr. Theodor Hausmann's essay on the palpation of the normal stomach[3] is a praiseworthy attempt to show what may be done in a certain proportion of cases by careful palpation with the fingers to determine the position of the pylorus and the great curvature of the stomach. In addition the author professes to be able to make out occasionally the outline of the pancreas. The method he recommends does not differ essentially from that generally taught, but he attaches some importance to the use of one or two fingers instead of the whole hand, and suggests that occasionally great advantage may be found from allowing the fingers of the right hand to remain passively opposed to the abdominal surface, and using those of the left hand over them by which to make pressure. Every one recognizes that in suitable cases it is quite possible to palpate the colon, the caecum, and under certain circumstances, if it be at all thickened, to recognize the pylorus, but Dr. Hausmann thinks the normal pylorus can be recognized by its slow rhythmical contraction, accompanied by a cooing which can be felt and heard. These contractions take place from three to ten times in a minute, and are more likely to be felt when the stomach contains food, but unfortunately they may be inhibited by psychical influences, and at most are only to be recognized in 28 per cent. of cases, even when the observer is as experienced and skilful as Dr. Hausmann himself. The other point he makes is to suggest that the navel should not be regarded as a fixed point in the description of the position of the abdominal organs but that measurements should be made upon a line drawn from the tip of the xiphoid cartilage and the symphysis and upon another transverse line uniting the anterior superior spines. With regard to the latter point there is no doubt that like the nipple the navel is subject to displacements and cannot be regarded as an altogether satisfactory landmark, yet both offer such obvious advantages in description that their use will probably be continued in spite of the soundness of the criticism.

The value of hydrochloric acid in the treatment of stomach conditions included under the wide term "dyspepsia" has been recognized by practitioners for a long time, although there has been no certainty or agreement as to the indications for its use or the method of its administration, some practitioners giving it before, others after meals, and all claiming good results. Although the discovery that hydrochloric acid was an essential constituent of the gastric juice afforded at first a satisfactory explanation for its administration; yet, since it has been recognized that the quantity required for the digestion of an ordinary meal is much greater than the doses in which it is usually prescribed, doubt has been felt as to whether its good effects can rightly be attributed to any direct participation in the process of peptic digestion, and it has been more plausibly maintained that its beneficial action is due to its stimulating effect on the secretory or motor activity of the stomach. The stimulant theory has been supported by Reichmann, Mintz, du Mesnil and others, although Riegel criticized their results on the ground that their experiments did not disclose fluctuations which exceeded those met with in normal stomachs. Pawlow states the stimulating effect of the acid to be no greater than that of water, and in this he has been confirmed by Bickel, who maintains that acid given during digestion has an inhibiting effect upon further secretion. These doubts and difficulties made us turn to Professor Leo's monograph on the theoretical and practical basis for hydrochloric acid treatment,[4] in the hope of finding in it their solution; we must confess to disappointment. Professor Leo gives a good account of the experimental researches undertaken to clear up these questions, and records certain clinical observations of his own, but we do not find that they explain why small doses (10 to 20 drops of 10 per cent. hydrochloric acid) should have acquired an indisputable reputation as an aid to digestion. As long ago as 1822 Wilson Phillip observed that the contents of a rabbit's stomach are arranged in layers according to the time at which they have been swallowed, the central portions being always the latest additions. Leo considers that this holds good for human beings as well, and refers to the work of Gruetzner for evidence of its truth in respect of solid and semi-solid food, and to that of Prym for liquids (!), the

[2] *Diseases of the Stomach.* By Dr. I. Boas The sole authorized English American edition from the latest German edition. By Albert Bernheim, M.D. Philadelphia: F. A. Davis Co. 1907. (Roy. 8vo, pp. 746: illustrated with 5 full-page plates and 65 engravings in the text. 85.50)

[3] *Ueber das Tasten normaler Magenteile. Nebst Bemerkungen zur Hochenbestimmung der Bauchorgane.* [On the Palpation of the Normal Stomach, with Remarks on the Determination of the Position of the Abdominal Organs.] Von Dr. Theodor Hausmann. Berlin: S. Karger. 1907. (Sup. roy. 8vo, pp. 33. M. 1).

[4] *Die Salzsäuretherapie auf theoretischer und praktischer Grundlage.* [The Theoretical and Practical Basis for Hydrochloric Acid Treatment.] Von Professor Dr. Hans Leo in Bonn. Berlin: August Hirschwald. 1908. (Roy. 8vo, pp. 145. M. 3.20.)

latter work having been carried out under the author's auspices. In consequence of this arrangement the peripheral layers of food lying nearest the mucous membrane get saturated with gastric juice, while those at the centre remain a long time untouched by it. This is contrary to the generally received idea, according to which the churning movements of the stomach mix the whole of the contents together. According to Leo's view, a dose of hydrochloric acid taken after a meal remains in the centre of the mass of food, and exerts its influence over a very limited area, so that he recommends the acid to be taken in small quantities with the food throughout the meal. He gives as much as 200 to 500 c.cm. of 0.3 per cent. hydrochloric acid solution in well-sweetened tea, which would be equivalent to from 100 to 250 drops of a 10 per cent. acid. He shows by a number of experiments that these quantities aid the digestion of albumen in the stomach of persons suffering from achylia. He speaks well of Pawlow's gasterine, the gastric juice obtained from living dogs, which is administered in similar quantities, but its price is somewhat prohibitive, 200 c.cm. (the dose for one meal) costing in France 7 fr.! He is of opinion that pepsine should be combined with the acid, because of the probability that the acid ingested may not come into contact with the pepsine secreted from the wall of the stomach. He strongly recommends acidol (betain hydrochlorate), which splits up in the stomach to liberate free hydrochloric acid. Smaller doses of hydrochloric acid and pepsine may be given before meals, but even then the doses are larger than we are in the habit of giving in this country, as he prescribes from ½ to 2 teaspoonsfuls of a 10 per cent. acid diluted in sweetened tea.

THE ABDOMINAL AND PELVIC BRAIN.

The publishers of this work[5] have been so considerate as to try to save us a great deal of trouble. Within the cover of the copy sent us for review was what looked like a newspaper about the size of the *Daily Mail*, folded so that a displayed advertisement was outside and at once caught the eye. The advertisement is of this work. It would fill half a page of a newspaper. The reader is told:

"It is a marvel to me."
Regular price 5 dollars. Special 30-day offer, 3½ dollars.
"The most unique, original, and comprehensive work ever published on this or any kindred subject. Profusely illustrated from original drawings. For sale by every first-class bookstore in the world."

As we have said, the thing had the size and appearance of a newspaper, and we unfolded it to see where it came from, and what it was about. But it is not a newspaper. It is eight pages of newspaper size and type, all about Dr. Byron Robinson and his books. In this old country we have a phrase about a man's "blowing his own trumpet"; and this is a thing which Englishmen as a rule like not to do, or to hear others do. But Dr. Byron Robinson does not restrict himself to a trumpet, he must have a whole orchestra: wind, strings, and percussion instruments. Let us listen to the band. Here are some phrases of the music:

"Dr. Robinson's book has blazed new paths for medical and surgical thought and practice."
"The volume is full of knowledge and ripe wisdom."
"The name of Byron Robinson has a fine ring in surgical literature."
"We may nevertheless be pardoned for any involuntary exclamations of wonder and admiration when this latest product of his scientific zeal and acumen is laid before us."
"The amount of scientific work accomplished by Byron Robinson . . . is something phenomenal."
"Byron Robinson has few peers and no masters in the field of original research. . . . He knows more about the abdomen and its contents than any man living. I might say more, but I will not disturb the greatness of those who have passed and gone."
"His students marvel at what he can accomplish."
"No other man of the whole nineteenth century has done so great anatomical work."
"With his more than Yankee curiosity for facts, and with his unlimited natural ability, it is impossible to even guess what this indefatigable worker will yet do"
"It may be said of Byron Robinson that he has made anatomy."

But the most astounding of all the statements found in this eight newspaper pages of advertisement is that Dr. Byron Robinson "abhors all kinds of press notoriety."

This introduction makes it difficult to form a fair judgement of the work. We shall most briefly describe our own impression of it by saying that it is characteristic of Chicago; or, at least, it corresponds to the idea that from other sources of information we had formed about Chicago. It is the work of a clever man trying to hustle his way to the front. He is an anatomist, and the book contains some good original anatomical drawings from dissections by him. He lived for six months in the house of Lawson Tait, watching and assisting that able surgeon and original thinker, so that he has had opportunities of learning abdominal surgery.

The chief originality is the invention of new names for familiar things. The "abdominal brain" means the solar plexus; the "pelvic brain" means the sympathetic nerves in the pelvis. The author describes in rather inflated language conditions with which most English students who have succeeded in passing the ordinary qualifying examinations are familiar. He talks grandiloquently about "visceral drainage," but most English general practitioners understand as well as he does the use of Epsom salts, which is what "visceral drainage" means. There are in this country differences of opinion about Alexander's operation, but right judgement on the matter is not helped by such a wild statement as that it requires repetition as often as a man wants his hair cut (p. 646). Of the spirit of science we find not a trace. Extremes sometimes meet oddly. Dr. Byron Robinson mentions renal neuralgia. He appears not to know that Matthews Duncan devoted a clinical lecture to "aching kidney." Anything more opposite to that great Scotsman's methods—his precise use of language, accuracy of statement of what he knew to be facts, and frank admission when he did not know—than Dr. Byron Robinson's book we cannot remember or imagine.

[5] *The Abdominal and Pelvic Brain, with Automatic Visceral Ganglia.* By Byron Robinson, B.S., M.D., Chicago, Illinois, Professor of Gynecology and Abdominal Surgery in the Illinois Medical College, etc. Frank S. Betz, Hammond, Indiana. London: A. B. Walsh and Co. (Roy. 8vo, pp. 671. 1:s.)

MEDICINAL AND DIETETIC PREPARATIONS.

Medicinal Oils in Powder Form.

We have received samples of some interesting preparations consisting respectively of castor oil and cod liver oil combined in such a way that the product is a dry powder. These preparations are made by Risiccol Ltd., 31 and 32, Budge Row, London, E.C. "Risiccol" is a fine white powder not at all suggesting castor oil; analysis showed the presence of 48.6 per cent. of the oil, and 35.8 per cent. of mineral matter, the latter consisting chiefly of magnesia, with which the oil is combined. The powder may be mixed with water, forming a milky liquid which is practically tasteless; or it can be added to porridge or other kinds of food; whichever method be followed, this most useful aperient can be administered without the objections commonly raised to its powerful and disagreeable taste. It is claimed that the full activity of the oil is retained in this dry preparation, and that a spoonful of the powder is equivalent to a corresponding spoonful of the oil. "Morrsiccol" is a somewhat similar preparation of cod liver oil. Analysis of the sample showed the presence of 36.6 per cent. of oil and 21.0 per cent. of mineral substance, the remainder consisting of oatmeal and other farinaceous matter, with flavouring, etc.; a small quantity of hypophosphite was also found to be present. When stirred with water the resulting mixture shows no signs of containing oil, and has no disagreeable taste. Another form of this powder is also supplied in which an addition of chocolate has been made to give an agreeable flavour; this makes a mixture with water which should prove attractive to children. Like "Risiccol," "Morrsiccol" is well suited for adding to foods; both preparations possess the additional advantage of presenting the oils in a state of extremely fine division.

At the recent municipal elections in the United States, seven cities in the State of New Jersey alone—namely, Trenton, Paterson, Rahway, Summit, Washington, Atlantic Highlands, and Frenchtown—chose medical men for their mayors.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

VIII.—"FEMALE MEDICINES."

None of the groups of proprietary medicines which we have hitherto dealt with in this series of reports contains anything like so large a number as the present. These preparations are put forward ostensibly for the relief and cure of painful or deficient menstruation, but in the majority of instances more or less obvious hints are given that they will be of service in averting unwelcome pregnancy, and it is impossible to doubt that they are very largely taken with this object. Certain of them, including some two or three of those dealt with below, appear to be advertised and recommended in a way which is no more objectionable than the advertisements of any other nostrums, but these are the exception, as we shall show. The media selected for advertising most of these articles, and the character of the advertisements in the same paper, are a sufficient indication of what it is desired to convey by the advertisements without using words that might lead to the interference of the police. On one page of the advertisement portion of a weekly "comic" paper before us, six of these preparations figure interspersed among seven advertisements of "surgical rubber goods," eight advertisements of photographs delicately hinted to be of the pornographic variety, together with treatises on "Manhood! How lost, how regained"; "Words of wisdom for our wives" (advertised by a rubber company); "The Malthusian" (advertised by a firm of "surgical instrument and appliance makers"), and other announcements scarcely to be found in respectable publications.

In the majority of cases, when the medicine advertised is supplied, it is accompanied by a circular recommending some "special" or "extra strong" form for obstinate cases, a higher price being charged for these "extra strong" medicines. Sometimes three or even four grades are supplied at ascending prices; several of these special forms are described below.

Many of the nostrums here reported on are pills, and in almost every case they contain one or more drugs or galenical preparations of a complex and variable nature, which it is not possible therefore to determine quantitatively with accuracy. In one or two cases also an ingredient occurs which it has not been possible to identify satisfactorily, and seeing that the makers of these articles can draw at pleasure on the animal, vegetable, and mineral kingdoms, this need be no matter for surprise. It is desirable, therefore, to repeat the caution which was expressed in an earlier article, that the formulae given must be taken in many cases as approximations only.

Towle's Pennyroyal and Steel Pills.

Prepared by E. T. Towle and Co., Ltd., 66, Long Row, Nottingham. Price 1s. 1½d. per box, containing twenty-six pills.

The following extract is taken from a circular enclosed with the box:

> The irregularities and obstructions to which so many ladies are subject, and from which they suffer great inconvenience, calls for a reliable remedy that would correct the system and assist nature in her work. Towle's Pennyroyal and Steel Pills have proved invaluable to thousands of women the wide world over, for upwards of 80 years. They are looked upon as a necessity to the proper fulfilment of a woman's duties. After suffering from various distressing complaints, and regaining strength, healthfulness, and brightness of spirits, she gladly admits that Towle's Pills are blessings in disguise. For the prevention and removal of Sick Headache, Whites, Eruptions, and Sallowness of the Skin, Depression of Spirits, Langnor, Lassitude, Hysteria, and kindred complaints, they are particularly recommended.

The directions are "2 to be taken 3 times a day."

The pills were coated with French chalk and sugar; after removal of the coating the average weight was slightly over 2 grains. Enough oil of pennyroyal was present to give a not very marked odour of the drug, and estimation of the quantity showed about 0.02 grain in each pill; iron sulphate was present, in amount corresponding to 6.7 per cent. of the official exsiccated salt. About 43 per cent. of the pill consisted of powdered capsicum, and no other active ingredient was found, the remainder being excipient and moisture. The formula is thus, approximately:

Dried sulphate of iron	... ...	14 grains
Powdered capsicum	... ...	86 ,,
Oil of pennyroyal	... ...	3 minims
Excipient	... ...	q.s.
	In 100 pills.	

Estimated cost of the drugs, for twenty-six pills, one-eighth of a penny.

Two other circulars were enclosed with the pills, one being an advertisement of

> Towle's Extra Strong Pennyroyal and Steel Pills. Specially prepared for obstinate cases. To be obtained direct from the sole proprietors only,

the smallest box of these being 4s. 6d. The other circular gives a list of specialities prepared by E. T. Towle and Co., Ltd., and includes Towle's Soluble Quinine Pessaries, "The wife's friend," double strength; Towle's Antiseptic Tablets, for syringing, etc., with other articles. A further note states:

> All kinds of surgical appliances and rubber goods kept in stock.

Dr. John Hooper's Female Pills.

These pills are stated to be prepared under letters patent granted to Dr. John Hooper in 1743; neither on the label of the box nor on the circular in which it is wrapped is the name of the person or firm now preparing them given. An additional slip or coupon is enclosed, however, promising cash prizes to the persons sending in the largest numbers of such coupons, and this is headed "Dr. John Hooper's Female Pills Co., Ltd.," while the coupons are directed to be sent to Messrs. May, Roberts and Co., 9, Clerkenwell Road, London, E.C. Price 1s. 1½d. per box containing forty-one pills.

The uses of the pills are set forth in a paragraph from which the following extracts are taken:

> These pills, by long experience in private Practice, have been found the most useful Remedy against those general Complaints the Female Sex are subject to. . . . They are the best Medicine ever discovered for Young Women of a pale, sallow Complexion, or when bilious, or afflicted with that what is commonly called Chlorosis, or Green Sickness, which two or three Boxes seldom fail of curing. They are also excellent for Palpitation of the Heart, Giddiness, Loathing of Food, bad Digestion, Pains of the Stomach, Beating of the Arteries of the Neck, Short Breath upon every little Motion, Sinking of the Spirits, a dejected Countenance, and Dislike to Exercise and Conversation. For all which Disorders they are a most excellent and successful Remedy, and are to be given from seven years old and upwards. They are also equally proper for Married Women, and ought always to be taken one month after Delivery; for they cleanse the Body, and purge off those gross Humours which, when retained, generate numerous Diseases, and render Women unhealthy all their lives. They should also be taken by Women at that period which is usually called "The Turn of Life," to prevent those Complaints which often attend them at that time.
>
> Directions for their Use.—Take Two or Three Pills every other Night going to Bed, from Ten years old to Fifteen, and those above that Age are to take Three or Four after the same manner.

Examination of the letters patent granted in 1743 showed that a patent for pills was taken out in that year by a Dr. John Hooper; in those days, however, so-called "specifications" appear to have been accepted which specified practically nothing, and no hint is given as to the composition of the pills, except that they are composed of "the best purging stomatick and antihysterical ingredients." The results of examination of the pills showed them to have an average weight of 1.2 grains, and to contain sulphate of iron (equivalent to 8.4 per cent. of the exsiccated salt), aloes, powdered senna, jalap, and canella bark, with a trace of oil of pennyroyal. A similar pill is given by the following formula:

Dried sulphate of iron	... ...	10 grains
Powdered senna	... ...	48 ,,
Powdered canella	... ...	27 ,,
Powdered jalap	... ...	17 ,,
Aloes	... ...	13 ,,
Oil of pennyroyal	... ...	2 drops
Excipient	... ...	q.s.
	In 100 pills.	

Estimated cost of the drugs, for forty-one pills, one-fifth of a penny.

* Previous articles of this series were published in the following issues of the British Medical Journal: 1904, vol. ii, p. 1585; 1906, vol. ii, pp. 27, 1645; 1907, vol. i, p. 213; vol. ii, pp. 24, 160, 209, 393, 530.

Kearsley's Original Widow Welch's Female Pills.

Prepared by C. and G. Kearsley, 42, Waterloo Road, London, S.E. Price 1s. 1½d. per box containing twenty pills.

In a circular enclosed with the box the pills are described as

A medicine known for over a century as a certain remedy for removing those obstructions to which Young Women are so frequently subject at puberty, and in regulating that function so important to female health up to a certain period of life, and which is apt to become deranged from such various and slight causes.

Then follows a paragraph devoted to

The most prominent symptoms of disturbed health from the derangement of this function.

The circular continues:

These Pills contain neither Pennyroyal nor other deleterious or irritating drug, and they may therefore be taken with Perfect Safety by all; they act on the system and general health, and are Equally Efficacious in treating the Absence, Excess, or Irregularity, as well as every other variety of derangement to which this function is liable.

Directions. Begin with three Pills on going to bed; afterwards four, and continue that number every night till the cure be accomplished.

The pills had an average weight of 3.8 grains, and were found to contain sulphate of iron (equal to 29 per cent. of the exsiccated salt), sulphur (2.7 per cent.), with powdered liquorice, powdered turmeric, maize starch, and excipient. The vegetable powders were estimated to be present in the amounts given in the following formula:

Dried sulphate of iron	120 grains
Precipitated sulphur	12 ,,
Powdered liquorice	65 ,,
Powderic turmeric	34 ,,
Excipient	q.s.

In 100 pills.

Estimated cost of drugs, for twenty pills, one-twentieth of a penny.

Dr. Davis's Famous Female Pills.

An address, but no maker's name, is given on the label; in the enclosed circular also no maker's name is given, but it is stated that the pills can be obtained from chemists and patent medicine vendors or from the proprietor, 309, Portobello Road, Notting Hill, W. The following also appears:

Dr. Davis's Famous Female Remedies have been established for over twenty-five years, and warn the public that this Establishment is not connected with any other firm, and have no other address than 309, Portobello Road, Notting Hill, London, W.

A second circular enclosed, quoted below, manifests an even greater reluctance on the part of the manufacturer to declare his identity. In this connexion it is pertinent to recall that in 1901 Henry Davis, of 309, Portobello Road, Notting Hill, was prosecuted for illegally representing himself as a qualified medical practitioner, and was fined after some severe comments from the court.[1]

The price of the pills is 1s. 1½d. per box, containing twenty-three. In the circular already quoted from, it is stated that:

Dr. Davis's Famous Female Pills have been known and acknowledged as a boon to womankind for over Twenty-five Years, they are largely recommended by Medical men as an excellent and an effective remedy for Anaemia, Giddiness, Fullness and Swelling after Meals, Loss of Appetite, Palpitation of the Heart, Debility, Depression, Weakness, Irregularity, and all Female Ailments.

The pills were found to be coated with French chalk; after removal of the coating the average weight was 2.7 grains. Examination showed the presence of sulphate of iron (equal to 16 per cent. of exsiccated salt) powdered savin (about 57 per cent.), and a bitter substance; it was not possible to determine whether a bitter extract, such as extract of gentian, had been used as excipient, or whether a small quantity of extract of colocynth was contained in the pill. If the latter, the formula is approximately

Dried sulphate of iron	46 grains.
Powdered savin	154 ,,
Extract of colocynth...	3 ,,
Excipient	q.s.

In 100 pills.

Estimated cost of drugs, in twenty-three pills, one-sixth of a penny.

[1] British Medical Journal, February 23rd, 1901, p. 476.

The circular already quoted gives prices of (among other things) Dr. Davis's Quinine Safety Cones and Dr. Davis's Compound Quinine Injection; also advice to every one whose income is small to read "Dr. Davis's Little Book for Married Ladies."

A second circular also enclosed not only does not give the name and address of the maker of the pills, but carefully avoids naming even the pills. The entire circular reads as follows:

The Most Reliable Remedy Known. For more than twenty-five years Thousands of Ladies have derived successful benefit from these Pills. Prevention is the most important question of the day, to every one whose income is limited. These pills are absolutely the most effective preventative that can be used, no other remedy can approach them, and no other medicine can produce such rapid results. The most obstinate and long-standing cases of Irregularities, Suppressions, and Obstructions incident to the female constitution gives way before this unique treatment. Extra Strong, 11s. and 22s. These Pills will not injure the most delicate constitution.

Another specimen of this circular gives the prices as "Extra Strong, 11s., Special Strength, 22s."

Dr. Davis's Famous Female Mixture.

This is described on the label as "Prepared by the Proprietor at 309, Portobello Rd., Notting Hill." The same circulars are enclosed as with the pills just described. Price 2s. 9d. per bottle, containing two fluid ounces.

Directions—One Teaspoonful to be taken Four Times a Day.

The principal ingredient found was oil of pennyroyal, of which about 0.8 per cent. was present, with 9 per cent. of alcohol (by volume), and about 4 per cent. of glycerine. The mixture also contained 0.8 per cent. of undissolved substance; this contained a trace of magnesia (no doubt employed in mixing in the oil of pennyroyal); the insoluble and dissolved substances gave evidence of the presence of extract of gossypium, but as this contains no definite active principle, and there is no standard method for preparing it, the quantity could not be determined. The whole of the drug extractive present did not appear to be derived from gossypium, but the other ingredient could not be identified with any ordinary drug, after comparison with a considerable number. A trace of some alkaloidal substance (under 0.01 per cent.) was also present.

Jefferson Dodd's Corrective.

Prepared by Jefferson Dodd, for Jefferson Dodd, Ltd., 34, James Street, Oxford Street, London, W. Price 2s. 9d. per bottle, containing 4 fluid ounces.

The following extracts are from a circular enclosed with the bottle:

Dodd's Female Remedies are recognized by the most eminent Medical Authorities in London on Diseases of Women as being the safest and most beneficial Medicines that science, skill, and long years of practice have been able to discover for the cure and relief of complaints peculiar to the Female Sex.

This MIXTURE is specially recommended to be taken with or without the FEMALE PILLS. It gives most prompt relief in all cases.

Directions.—Two teaspoonfuls to be taken three or four times a day, with one or more of Dodd's Female Pills, night and morning, until relief is effected.

Examination of the mixture showed the presence of the constituents of decoction of aloes, except saffron, together with a small quantity of chloroform; the alcohol, however, only amounted to 5.3 per cent. (by volume). A "concentrated decoction of aloes, without saffron," is largely sold as a cheaper substitute for the official preparation; the latter, however, whether with or without the saffron, cannot properly be prepared of the concentration commonly employed (1 = 4) on account of the amount of tincture of cardamoms, and the alcohol is therefore diminished in the concentrated preparation, and may consequently vary in the preparations of different makers. The following formula:

Concentrated decoction of aloes without saffron (1 to 3), 1 part;
Chloroform water, 2 parts;
Water to 8 parts (all by measure),

gave a mixture agreeing in all respects, except the amount of alcohol present, with the one under examination.

Estimated cost of ingredients of 4 ounces, nine-tenths of a penny.

Jefferson Dodd's Female Pills.

Price 1s. 1½d. per box, containing thirty-six.

In the same circular as has been quoted above these are referred to as follows:

Dodd's female pills . . . are the safest and most effectual pills for all ailments peculiar to women. In cases of Hysteria, Anaemia, Loss of Appetite, Sallow Complexion, Pains in the Limbs, Nervousness, Headache, Neuralgia, Faintness, Palpitation, Depressed Spirits, Cold Feelings, Fatigue, Functional Amenorrhoea, and all Nervous Affections they are most beneficial.

Directions.—One or two pills night and morning, or one three times a day.

The pills were found to be coated with French chalk, and after removal of the coating had an average weight of 3.4 grains. Analysis showed sulphate of iron to be present (equal to 8.9 per cent. of exsiccated salt), with aloes and powdered liquorice, the remainder being excipient and moisture. The following formula gave a similar pill:

Dried sulphate of iron	34 grains
Powdered liquorice	72 ,,
Barbadoes aloes	142 ,,
Excipient	q.s.

In 100 pills.

Estimated cost of drugs for thirty-six pills, one-sixth of a penny.

Martin's Apiol and Steel Pills.

Proprietor, William Martin, High Street, Southampton.

Price 4s. 6d. per bottle, containing forty-nine pills.

The directions on the label are as follows:

One or two night and morning, a few days before the period is due, or if passed, take for three or four days, then discontinue and commence taking a few days before the next period. Ten to twenty drops of the special essence of pennyroyal may be taken each night at bedtime in a little warm gin and water during the time the pills are being taken.

The pills were coated with French chalk, coloured pink with eosin; after removal of the coating the average weight was 3.8 grains. Iron was found to be present in the metallic state to the extent of 2 per cent.; powdered cinnamon, powdered cardamom, and aloes were also found, and about 3 per cent. of apiol; estimation of the amounts of the drugs and comparison with pill-masses prepared for the purpose indicated the following formula:

Reduced iron	10 grains
Barbadoes aloes	150 ,,
Apiol	12 ,,
Powdered cinnamon	75 ,,
Powdered cardamom	55 ,,
Excipient	qs.

In 100 pills.

Estimated cost of ingredients, for forty-nine pills, three farthings. Enclosed with the pills is a circular, which refers first to the "Special Essence of Pennyroyal" mentioned in the directions, and continues:

If the Pills are not sufficiently strong, the strongest preparation sold is Fournier's Hygienique Mixture. Price eleven shillings post free. Take a few days before the periods are due. A long walk or a good cycle ride also helps nature.

At the foot of the circular appears "Proprietor—William Martin, Pharmaceutical Chemist, opposite General Post Office, Southampton."

Fournier's Hygenique Mixture for Females (Extra Strong).

Price 11s. 0d. per bottle holding twenty fluid ounces.

The mixture was obtained from W. Martin, as above, but the name on the label is "Fournier et Cie., London, Paris and New York."

"Dose: Two tablespoonfuls to be taken three times a day half an hour after meals."

Examination showed the mixture to consist of compound decoction of aloes, with the addition of a very small quantity of iron; the amount of the latter corresponded to 0.45 per cent. of the crystalline ferrous sulphate, or two grains in a dose. A further difference between this mixture and the official decoction of aloes was that this only contained 3.9 per cent. of alcohol, against 18 per cent. in the preparation of the *Pharmacopoeia*.

Estimated cost of ingredients for twenty fluid ounces, 1s. 1d.

Dumas's Paris Pills.

Supplied by Adeline Dumas, 217, Graham Road, London, N.E.

These pills are advertised in the following terms:

"To Married Ladies.
Try the French Remedy.
Not a Dangerous Drug, but a wonderful Secret Invention.
Never Fails. Particulars Free to all Applicants.
Address,
M.D., 217, Graham Road, London, N.E."

"M.D." may, of course, stand for Madame Dumas, but it can hardly be doubted that it is intended to suggest that the "secret invention" is supplied by a Doctor of Medicine.

In a circular referring to the pills and giving testimonials, etc., they are described as follows:

"Dumas' Paris Pills.
The Combination Remedy (Protected).

What is meant by a Combination Remedy?

Dumas's Combination Remedy, The Paris Pill (Pilule de Paris) is in reality a carefully selected combination of the most powerful drugs known to Medical and Botanical Sciences, whereby a maximum certainty of producing the desired effect is absolutely assured, the explanation of this remarkable result being as follows: If any specific drug contained in the Paris Pill be not actively suitable for a particular female organization, there are other active ingredients present, which, from their varied and searching nature, are in every way calculated to at once grapple with and overcome the most obstinate case. In the face, therefore, of such a remedy as here described, it can be well understood that there need be no fear of a failure of effect.

Dumas's Paris Pills, secret, and powerful ingredients (protected by Government stamp) act with instant certainty, in all cases of Irregularities and Suppression of the Menses, incidental to females.

"Dumas's Paris Pills are sold at 4s. 6d. per box. Special and Extra Strong, 11s. per box."

Another pamphlet from the same source is—

"The Pocket Price List of Appliances (Hygienic and Surgical) to be obtained at Dumas's Laboratory and Dépôt, 217, Graham Road, London, N.E." This gives particulars of the following articles, among others: "Soluble Pessaries," "Preventive Sponge," "The 'Special' Malthus Sheath," "Dumas' Preventive Powders," and "Dumas' French Remedy (known as the 'anti-geniture,'—protected) a wonderful secret invention, for use by married ladies, for the prevention of conception."

The box of pills examined was obtained by post from the address given. It bore no name on the package or label, the entire wording of the latter being as follows:

Not to be taken in cases of pregnancy. Caution. One pill only to be taken night and morning. Alcoholic stimulants should be discontinued whilst taking the Pills.

The box contained forty-six pills; these were coated with French chalk, and after removal of the coating had an average weight of 2.9 grains. Examination showed the presence of sulphate of iron, aloes, canella, liquorice, jalap, ginger, wheat-flour, and a trace of oil of pennyroyal. Estimation of the amounts of these ingredients indicated the following formula:

Dried sulphate of iron...	38 grains
Powdered canella	22 ,,
Powdered liquorice	22 ,,
Powdered jalap	12 ,,
Powdered ginger	6 ,,
Barbadoes aloes	46 ,,
Flour	12 ,,
Oil of pennyroyal	2 minims
Excipient	q.s.

In 100 pills.

Estimated cost of ingredients for forty-six pills, one-fifth of a penny.

Monaid Tablets.

Prepared by C. I. Hood and Co., Lowell, Mass., U.S.A., and 34, Snow Hill, London, E.C.

Price 2s. 9d. per box containing fifty-nine tablets.

The following extracts are taken from a circular enclosed with the box:

Monaid Tablets.

An agreeable, convenient, and absolutely safe specific for Painful Menstruation. Knowing that women and girls generally—especially tired and worn-out mothers, girls in mills, shops, stores, and offices, girls in school and at college—suffer during the menstrual period—some of them so intensely that the monthly process is an ordeal—and also knowing that we had a remedy that would give immediate relief without producing any ill effect whatsoever, we felt it our bounden duty to make this remedy known in every city, town, village, and hamlet throughout the length and breadth of our land.

This we are now undertaking to do, not by the ordinary advertising methods, but by such methods as seem to us to be the least open to criticism in point of delicacy.

Monaid Tablets are composed of warming, soothing, comforting remedies, and do not contain a particle of opium or any of its derivatives, or any other narcotic whatsoever.

The directions are given as follows:

Dose: Four tablets with a draught of water, repeat every half hour until the pain is relieved. Generally speaking the first dose relieves, but a cup of hot water adds materially to the effect of the Tablets and should be taken with the second dose.

The tablets are described as "chocolate coated;" in reality they were coated with sugar coloured to a chocolate-brown with iron oxide. After removal of the coating, the average weight of one was 2.2 grains. They contained neither iron, aloes, pennyroyal, or any powdered vegetable drug, and no alkaloid. Oleo-resin of capsicum was present to a rather considerable extent, and almost the whole of the remaining material of the tablets consisted of a substance agreeing in all respects with caulophyllin; the two were compared by various tests, but as there are no definite reactions for caulophyllin, and it possesses no characteristic smell, taste, etc., it cannot be quite positively asserted that this was the substance present. Enough oil of caraway was present to give a slight odour, and small quantities of flour and kaolin; there was some indication of another substance, but nothing further could be identified.

Nurse Powell's Remedies.

Supplied by the Powell Remedy Co., Replingham Road, Wandsworth, London, S.W.

These are advertised in the following terms:

Free Offer to Ladies.

Our recent offer of a Free Sample of Nurse Powell's Popular Pellets met with such striking success that we have decided to repeat the offer. Ladies should write for free box, enclosing stamp for postage. Delay is dangerous; write at once and obtain relief.—Nurse F. Powell Remedy Co., Replingham Road, Wandsworth, London.

An application for a free box as advertised brought a small box containing three white-coated pills, together with a letter, from which the following extracts are taken:

Owing to their proved superiority they have now come to be looked upon as The Leading Woman's Medicine—a proof of which is that in thousands of homes to-day a box is *always* to be found, ready for any emergency which may arise. They are composed of ingredients which are Perfectly Harmless, and will not injure the most delicate constitution, nor disturb one's usual occupations, yet they Fully Carry Out All that is claimed for them. We shall be glad if you will try this sample at once, and let us know the result. In many cases this small quantity has brought about relief and health. We would ask you Not to Expect Too Much from it, however, but to obtain more and take them regularly Each Day until you obtain a beneficial result. They have cured thousands of suffering women who have been on the verge of despair, and we are confident that if you will only persevere with them, and give them a thorough trial They Will Relieve You.

The pills were stated to be 1s. 1½d. per box, and this amount was sent with a request for a box. This brought a box containing twenty-four white-coated pills, bearing on the label the words "Nurse Powell's Popular Pellets cure Anaemia, Debility, Constipation, Headache, and all Female Ailments"; the words "Poplets, Registered," were printed across the label in red ink. A circular was enclosed on which it was stated—

It should be particularly noted that the pellets are prepared in Two Forms to meet the requirements of the case. The Ordinary Pellets (Price 1s. 1½d. and 2s. 9d.) are prepared as a remedy for Nervousness, Headache, Constipation, Anaemia, Debility, Sleeplessness, Hysteria, Lack of Energy, Wind, Biliousness, Indigestion, Sick Headache, and a general run-down state of the system, and Menstrual Troubles of a slight nature. The Special Pellets (Price 4s. 6d. per box) are expressly compounded for use in all Severe Menstrual Troubles, and should be ordered for Suppression of the Menses, Irregular and Painful Menstruation, Painful Urination, Change of Life, Dragging or Bearing Down Pains, Leucorrhoea (whites), Excessive Flow of the Menses, and all kindred ailments

A box of the "special pellets" was therefore obtained; these were compressed tablets with a bright purple coating, and were labelled "Nurse Powell's Popular Pellets for all Female Ailments (Special)," and also bore the words "Poplets, Registered," in red ink across the label.

Another circular was now enclosed, from which the following extracts are taken:

Special notice!

There are many cases of female irregularities which require special treatment, and which cannot be met by the remedies which cure more ordinary ailments. This fact is well known to the Physician who has made a special study of the female system, and has his own special prescriptions which he applies to the various stages of the ailments as occasion demands.

Whilst it is quite true that Nurse Powell's Popular Pellets cure all but the more obstinate cases, we find it occasionally necessary that a stronger treatment is required. For this purpose, we supply two preparations prepared from the prescriptions of a celebrated physician, and which he relied upon to cure where every other means had been unavailing. These remedies are prepared in the form of a pill and a mixture, either of which will be found effective, but in order to obtain the very best results, by far the best method is to take the pills and mixture in alternate doses.

These exceedingly valuable preparations we recommend with the utmost confidence. They are prepared by fully qualified chemists from the purest ingredients obtainable, and most beneficial results are obtained after a few doses.

The price of these remedies is necessarily higher than the ordinary preparations, but compared with the results the cost is small.

Prices { Corrective Pills, 11s. per box; Corrective Mixture, 13s. per bot.; or the two preparations, 21s.

Supplies of both these were obtained.

In a little book sent with the earlier supply, entitled *Woman's Home Doctor*, appears the following:

Advice to Sufferers Free.

Many women are in doubt as to the nature of their ailment and the best means to obtain a cure. To all such, we offer our Experienced Advice Free if full particulars are given to us in a letter. If Nurse Powell's Popular Pellets will be of no use in your particular case you will be at once told so. Address all letters asking for advice to the Manageress, and mark them "Private" in the top left hand corner. They will then receive immediate attention and will be treated in the strictest confidence.

In sending for each of these preparations nothing was said with regard to the case for which they were supposed to be intended, but after a short interval a typed letter was received, from which the following extracts are taken:

Dear Madam,—In reply to your communication of a few days ago, we looked carefully into your case, and advised you to persevere with our remedy. It seemed to us that your ailment was similar in almost all respects to many other cases which we have had, and in practically all of these the treatment we advise has been taken with entire success, as the grateful letters we have received plainly show. . . . . With all good wishes, and again assuring you of our sympathy and aid, we remain, dear Madam, yours faithfully, The Nurse Powell Remedy Co.

As the "ordinary" pellets turned out (*after* they were bought) to be chiefly intended for indigestion and constipation they were not analysed. The other three preparations were examined with the following results:

Nurse Powell's Popular Pellets (Special).

Price 4s. 6d. per box, containing forty-five tablets. The label gives no directions for taking, but one of the circulars includes the following:

For all menstrual troubles, suppression, obstruction, and irregularity. Take two to three Special Pellets three times daily after meals, according to the nature of the case. Bathe the feet in hot water each night until regular flow is established. Then follow by one Special Pellet night and morning for three days.

The tablets were coated with sugar, dyed externally to a bright purple; the average weight after removing the coating was 2.8 grains. Analysis showed the presence of sulphate of iron, aloes, canella, ginger, oil of pennyroyal, with starch and kaolin. Estimation of the various ingredients indicated the following formula:

Dried sulphate of iron	40 grains.
Socotrine aloes	67 ,,
Powdered canella	56 ,,
Powdered ginger	8 ,,
Oil of pennyroyal	12 minims.
Maize starch	16 grains.
Kaolin	50 ,,
Excipient	q.s.

In 100 tablets.

Estimated cost of ingredients of forty-five tablets, one halfpenny.

Nurse Powell's Corrective Pills.

Price 11s. per box, containing forty-two pills.

The box bears no label, and the only indication of the identity of the article was a seal showing the initial "P" on the outer case.

Stamped on the lid of the box are the following directions: "Dose, 3—3 times daily after meals."

The pills were greyish-black, and proved to be coated with French chalk and graphite; after removal of the coating the average weight was 4.6 grains. Analysis showed the presence of sulphate of iron, aloes, oil of pennyroyal, jalap, starch, and powdered liquorice; another vegetable substance was present, which agreed in its histological characters with powdered olive stones, a material largely employed in adulterating the cheaper grades of powdered liquorice. Estimation of the various ingredients indicated the following formula:

Dried sulphate of iron	100 grains
Socotrine aloes	140 ,,
Powdered jalap	14 ,,
Powdered liquorice (adulterated) ...	80 ,,
Oil of pennyroyal	10 minims
Starch	10 grains
Excipient	q.s.

In 100 pills.

Estimated cost of ingredients for forty-two pills, one-third of a penny.

Nurse Powell's Corrective Mixture.

Price 13s. per bottle, containing eight fluid ounces.

Directions for use. Take two tablespoonfulls night and morning—after meals. Bathe the feet each night in hot water.

Examination of the liquid showed it to be of the nature of compound decoction of aloes, without saffron, with a trace of chloroform; it was, however, much darker than the official decoction of corresponding strength; no additional drug, however, could be detected, and by adding burnt sugar to the decoction made without saffron, a very similar liquid was obtained. Only 4.7 per cent. (by volume) of alcohol was present, instead of the 18 per cent. of the official decoction.

Estimated cost of ingredients of eight fluid ounces, 3d.

Sanol Cones.

This article is advertised in the following terms:

Ladies

Should send stamped addressed envelope for Full Particulars of a harmless and purely medicinal remedy for all ailments incidental to the sex. No Pills or Mixtures.

The Most Reliable Remedy ever discovered.

Address Mrs. Hilda D. Manners,
257, High Holborn, London, W.C.

Application by post to the address given brought a booklet entitled "Woman's Key to Health," and a multiple-typewritten letter, from which it appeared that the remedy in question consisted of "Sanol Cones," or rectal suppositories. In the letter it is stated that—

They act like magic, and are Ten Times More Efficacious Than Any Medicine Can Possibly Be as they undergo no change by passing through the system as medicines have to do, but act direct in their full strength and activity. . . . "Sanol Cones" are packed in boxes price 4s. 6d., and "Special" Cones (strongly recommended) price 11s. each, and are sent entirely free from all observation with full directions and a special letter of advice.

The following extracts are from the "Woman's Key to Health":

Ninety-nine out of every hundred women are afflicted with some complaint in greater or lesser degree. It is to these that rectal treatment, as represented by Sanol Cones, so strongly appeals.

Some may naturally ask, is it a fact that remedies are absorbed rapidly when introduced into the rectum? To this we answer, unquestionably so! The skin, and the mucous membrane to a much greater degree, have the singular power of absorbing substances applied to them. . . .

Compare this simple treatment with ordinary medication, which usually consists of the introduction of powerful drugs into the stomach. These drugs have to undergo an elaborate preparation in the stomach; and not only do they corrode and weaken that organ, but they are themselves often neutralised by the various juices of the stomach and intestines, and so rendered inert and useless, hence remedies as exemplified by Sanol Cones used by the rectum are more rapidly absorbed in a purer and more active state into the circulation and do their work more effectually than stomach medicines can possibly do. . . . Sanol cones are a certain, safe, and speedy Remedy for: Anaemia, Leucorrhoea, Change of Life, Hysteria, Female Weakness, Painful or Excessive Menstruation, General Debility, Depression of Spirits, Lassitude, Loss of Energy, Nervous Irritability, Suppression, and all Ailments Incidental to the Female System without taking Stomach Medicines.

A page in this booklet is devoted to "Pessaires Contraconceptifs," "or Improved Soluble Quinine Pessaries." Two boxes of cones were obtained, each one being accompanied by a letter, typed, like the first, by a multiple copy machine; the first gave directions as follows: "insert one cone up the rectum (which is the back passage leading to the bowels) three times daily," and urges the necessity of perseverance; the second recommends "sanol cascara tablets" if any inclination to constipation exists. After an interval a further letter was received, as follows:

Dear Madam,—I have been anxiously waiting to hear from you as to how the "Sanol Cones" I sent you some time ago have acted. I sincerely trust that in this case no news is good news, and that you have derived great benefit from their use.

As I think I told you before, some complaints are naturally much more difficult to cure than others, and require longer perseverance, but I honestly and truly do not believe they ever fail to benefit when used as directed and persevered with.

I assure you I should be the last to induce you to spend money unless I honestly thought and believed that the cones would benefit you; but if you are not yet cured I think it is only my duty to strongly urge you to persevere with the treatment, and if you hesitate to do so owing to the money being a consideration to you, I am willing to meet you as far as I possibly can; and will send you on a further supply of "Sanol Cones" at half the ordinary price, namely, either a 4s. 6d. box for 2s. 3d., or an 11s. box of the "Special" Cones for 5s. 6d.

I am offering you this very great reduction in price as I am most anxious that you should be restored to health as I am quite certain that you will be if you persevere steadily.

Do not be afraid of troubling me by writing me fully as to how the treatment has affected you, as I can assure you that I am quite as anxious to cure as you yourself are to be cured, and I take a special interest in your case.

Trusting soon to hear from you,
Yours truly, Hilda Manners.

A box of the "Special" Cones was also obtained, and both kinds were analysed.

Sanol Cones (Ordinary). Price 4s. 6d. per box, containing sixteen cones. The "cones" were small suppositories rounded at one end and tapering towards the other; they were of an average weight of 13.2 grains. They contained sulphate of iron corresponding to 1.5 per cent. of the exsiccated salt, quinine corresponding to 6.6 per cent. of the ordinary sulphate, and about 2 per cent. of a vegetable powder, which proved to be gentian root; the remainder consisted of oil of theobroma. The formula is thus:

Dried sulphate of iron	22 grains
Sulphate of quinine	87 ,,
Powdered gentian	26 ,,
Cacao butter	1,200 ,,

In 100 cones.

Estimated cost of ingredients of sixteen cones, under three halfpence.

Sanol Cones (Special). Price 11s. per box, containing thirty-six cones. These were similar in size and shape to the preceding, but differed in being of a green colour. Analysis showed the presence of quinine sulphate, 5·5 per cent., and powdered gentian about 4 per cent.; the base was oil of theobroma. No other medicament could be detected; the green colouring matter was small in quantity and dissolved in the fat, a similar product being obtained by colouring cacao butter with commercial chlorophyll. The formula is thus:

Sulphate of quinine	72 grains
Powdered gentian	52 ,,
Cacao butter (tinted green) ...	1,200 ,,

In 100 cones.

Estimated cost of ingredients in thirty-six cones, 3d.

I.R.S. Compound Golden Tablets.

Supplied by the I.R.S. Company (also calling themselves the Irristum Company), 145 Stockwell Road, London, S.W.

Price 1s. 1½d. per box, containing twenty-four.

"Dose—One four times a day."

These are advertised in the following terms:

The I.R.S. Golden Compound Tablets are of priceless value to all ladies. They afford relief in every instance—frequently in a few hours. Coated with Gold, prepared with drugs worth their weight in Gold, they are far superior to

Bitter Apple, Steel, and Pennyroyal, etc., and all similar preparations.

A letter was sent with the pills, which ran as follows:

Dear Madam, I am sending Tablets as requested, with every confidence in their efficacy, and I have no doubt they will very soon relieve you of all your present uncomfortable feelings; we have many patients who NEVER require anything stronger. On the other hand there are ladies upon whom liquid medicine acts more promptly; we therefore beg to enclose you particulars of our "Irristum" in its liquid form, in case you require very speedy relief, or your constitution is a very stubborn one. Take these Tablets after Meals. Assuring you of my personal and immediate attention, I am, dear Madam, Faithfully yours, THE LADY MANAGER.

The "tablets" were ovoid pills, coated with French chalk, "gilded" on the surface; the "gilding" showed the composition of so-called gold paint, containing copper but no gold. After removal of the coating the average weight of the pills was 2 grains; analysis showed them to contain sulphate of iron equivalent to 48 per cent. of the exsiccated salt, and sodium carbonate, producing ferrous carbonate on addition of water; the other ingredients were starch, gum, and moisture. The amounts of ferrous sulphate and sodium carbonate were not properly adjusted for converting the whole of the former to ferrous carbonate, but the composition was variable. One specimen showed 48 per cent. of dried ferrous sulphate, one-fourth of which was converted to ferrous carbonate on treatment with water; another gave only 37 per cent. of dried ferrous sulphate, two-fifths of which formed ferrous carbonate. The formula is thus approximately:

Dried sulphate of iron	86 grains
Dried sodium carbonate	25 ,,
Excipient	q s.

In 100 pills.

Estimated cost of ingredients of twenty-four pills, one-fifteenth of a penny.

IRRISTUM.

The "particulars of our 'Irristum' in its liquid form," referred to in the letter quoted above, were in the form of a small book, from which the following extracts are taken:

The "Irristum" medicine is an ABSOLUTELY SAFE AND CERTAIN REMEDY FOR AMENORRHOEA, CHLOROSIS, DYSMENORRHOEA, LEUCORRHOEA, ANAEMIA, AND ALL IRREGULARITIES AND OBSTRUCTIONS, EVEN OF THE MOST OBSTINATE AND STUBBORN CHARACTER, and unquestionably if one curse stands out prominently above all the other misfortunes of womankind, it is a disregard of the laws of health. The mind and the body—the mental and the physical—are so intimately and so wonderfully co-mingled in the human frame that it is impossible for the most self-denying and amiable woman to maintain that equanimity and sweetness of demeanour without which conjugal felicity is out of the question, if there exists a hidden or secret sorrow, or if the inscrutable laws of health are not fulfilling their proper functions. *Thousands upon thousands are daily suffering, and hour by hour anxiously enquiring how this great law of health is best to be regulated*, and this applies to women more than to men, in a proportion that can scarcely be approximated. . . .

"IRRISTUM" *is unquestionably one of the most priceless blessings of the nineteenth century.* . . .

"IRRISTUM" *never fails, that is the marvel of it.* On "Irristum" is stamped the seal of unequivocal success. To it women may turn with the *brightest confidence and hope*, assured of health and happiness, instead of that wretched depression of animal spirits, and possibly *life-long misery*, which accrue from a blind confidence in the *nostrums of unscrupulous quacks.* . . .

Nothing conceivable can be worse or more contemptible than for confiding and suffering women to be the dupes of plausible and unscrupulous adventurers. Not merely is it the pocket, but the paramount question of life-long health which may be imperilled; and here it is that the *never-failing efficacy, the privacy the simplicity and the rapidity of action characteristic of the "Irristum" medicine, come as a challenge to the world in this most important branch of the healing art.* . . .

We do not profess to work wonderful miracles; we only state, with *absolute confidence*, that if *you*, who read this, feel the need of such a preparation, you will never do better than send to us *at once*. It would of course be untrue to say a second bottle is *never* required. It sometimes happens that a lady has to send for another supply, but in 19 cases out of 20 the *whole* of the second one is not required. . . .

It will be sent you by return, securely packed from observation, for 4s. 9d., including postage.

Extra strong (for immediate effect), 10s.; by post, 10s. 6d. This is specially recommended to ladies who desire speedy and certain relief, and is truly described as a "marvellous preparation."

The "extra strong" preparation was obtained for analysis. A letter which was sent with it promised some tablets free of charge with a second bottle, if more were required; but these tablets were not procured. The 10s. bottle of the medicine contained six and three-quarters ounces. On the label it is stated—

This medicine is purely an EMMENOGOGUE *(sic)*, of a powerful nature, and is a SAFE and CERTAIN REMEDY for anaemia and all female ailments. Contains no abortifacient properties.

A further label gives the dose as "one tablespoonful to be taken three times a day."

Analysis showed it to be an acid syrup of phosphate of iron with quinine; it also contained 5 per cent. by volume of alcohol, which may have been added in the form of a colouring tincture; the colouring matter appeared to be cudbear. Determination of the quantities of the various ingredients gave the following formula:

Quinine sulphate	9 grains.
Ferrous phosphate	10 ,,
Dilute phosphoric acid ...	6 fl. drachms.
Sugar	3 oz.
Rectified spirit	220 minims.
Cudbear	q s
Water to	6 75 fl. oz.

Estimated cost of ingredients, twopence.

INFANTILE MORTALITY.

THE HUDDERSFIELD SCHEME.

THE principal object of the Huddersfield scheme for checking infantile mortality is to help the mother to nurse her infant herself in her own home. In order to do this the following plan is followed:

1. Notifications of birth reach the medical officer of health within forty-eight hours of the time of birth.
2. Two lady assistant medical officers of health visit the home, inquire, advise, and help.
3. The notifications are sent every Monday to voluntary workers—ladies who supervise, visit at intervals, and help in the homes.
4. If the baby does not thrive, and is not under medical care, the case is referred to the medical officer of health and appropriate action taken.

The official staff to carry out the above consists of the medical officer of health and two assistant medical officers of health, who are fully qualified and registered medical women. Nearly their whole time is given to the work in connexion with infant mortality, and the medical officer of health exercises a general direction and supervision of their proceedings. There is also a voluntary association called the Huddersfield and District Public Health Union. It is worked by upwards of 100 ladies. There is a close and intimate relation between the municipal and voluntary portions of the work.

By a special Act, which has been in operation since November 1st, 1906, the Corporation has power to require compulsory notification of births to the medical officer of health within forty-eight hours. The notifications within the time limit have been 94 per cent. of the total births. Immediately upon receipt of the notification one or other of the lady assistant medical officers of health proceeds to the address given and verifies it. If the case is one where help or advice is likely to be of use this visit affords the opportunity. Cards and leaflets of advice on the care of infants, very carefully thought out, are generally left. Wherever practicable breast feeding is urged, and if there is any difficulty in this respect help and advice are proffered. This first visit by the lady doctors is followed by repeated visits in all cases where the circumstances call for them. It is at this point that the utility of the Public Health Union comes into play. For the purpose of this association the borough is divided up into separate districts, corresponding as far as possible with the wards, but taking as a basis for a separate district the number of births; about 150 births per annum is the approximate number for one district. Over each of these districts is appointed a lady superintendent, and with her are associated a group of lady helpers, varying in number in proportion to the number of babies likely to be born; it is not reckoned that any one lady helper should have more than 15 to 20 babies on her list.

After the first visit of the assistant medical officer of health, the lists of babies are divided up into the districts

of the Public Health Union, and each week the list of babies is sent to the lady superintendent of the district. She in her turn divides up the list week by week amongst her helpers. Each baby is thus placed under the supervision of some one or other lady helper, and she is expected to keep each under observation, and do what she can for its welfare. In all cases where the child is not thriving and where no medical practitioner is in attendance, she is expected to send to the Public Health Department for aid. This does not involve any gift or charity. The visit is a visit to the baby, and for its health, and it is a rule that no dole shall be given in any shape. In cases of need the various official, religious, and philanthropic agencies of the town are communicated with, such as the Charity Organization Society and the National Society for the Prevention of Cruelty to Children and the Invalids' Kitchen. In cases of sanitary defects information is given to the proper health authorities. The visits of the lady helpers, like those of the assistant medical officers of health, are entirely optional on the part of the visited. Where a case seems to require help, and no doctor is in attendance, the lady helper asks the assistant medical officer of health to pay a visit.

Result of Work.

The infant mortality figure for the first thirty-nine weeks of 1907 has been 85; at the corresponding period last year the figure was 138, the mean of the ten years at the end of thirty-nine weeks, 1897 to 1906, was 135. The cold, wet summer was not conducive to diarrhoeal diseases, but it is pointed out that in former years similar weather has prevailed, but, as above stated, the infant mortality figure has not been nearly so low. Again, on making a comparison with other towns, it appears, from an examination of the returns of the Registrar-General, that Huddersfield had an infant mortality figure for the first six months of the current year lower by 22 per cent. than the seventy-six great towns. During the third quarter of the year, in the seventy-six towns the infant mortality figure was 110; in Huddersfield it was 62, or 44 per cent. better.

The Voluntary Public Health Union is worked without subscriptions, the expenses being merely for stamps and circulars. A demand will be made for subscriptions when required. As to the cost to the Corporation, the only expenditure has been the salaries of the lady assistant medical officers of health and a rather heavy amount of printing charges. The whole has not been equal to £400 a year.

The following particulars with regard to the constitution and scope of the Huddersfield and District Public Health Union are reproduced here, since they may serve as a guide in the establishment of similar institutions in other cities:

Constitution and Rules.

I.—The name of the organization shall be.....

II.—The Membership shall be open to all persons who are in sympathy with its aim and objects.

III.—The aims of the organization shall be:

1. To further the scheme adopted by the Corporation of Huddersfield to prevent infantile mortality, and to ameliorate the conditions of the infant life and health, by the formation in each ward of the Borough and the surrounding districts, of committees of ladies who by personal visitation at the homes will endeavour to induce mothers to nourish their infants in the manner nature intended, or, where for any reason this is impossible, assist in spreading a knowledge of the best methods of artificial feeding, and generally give advice on the care and nurture of children.
2. To co-operate with and assist the educational, health and sanitary authorities of the town and district, in all matters relating to public health.
3. To awaken the interest of the people generally in questions affecting the health of the community, to promote attention to the laws of health, including, if possible, the special requirements of consumptive cases.
4. To report to the charitable and philanthropic agencies already existent such cases as seem to call for financial help, but in no way to administer such relief.

IV.—There shall be a President, as many Vice-Presidents as may from time to time be determined, an Honorary Treasurer, and as many Secretaries as may be required. The election shall be at the Annual Meeting.

V.—The control of the Health Union shall be vested in the hands of an Executive Committee, consisting of Eleven Members (exclusive of *ex-officio* members), who shall be elected by the Union at its Annual Meeting. Casual vacancies that may arise shall be filled by the Committee.

VI.—The Committee shall meet at such times as may be necessary, and five members shall form a quorum.

Suggestions are appended as to the work of the lady superintendents and lady helpers, as already stated The borough has been divided into districts, corresponding generally with the ward divisions, but wards where the number of births per annum exceeds 200 have been subdivided. To each district a lady superintendent has been appointed, who is allowed to choose for herself four or five, or six or more lady helpers.

The plan of working is simple. There are two official lady health visitors appointed by the Corporation, and these will be the source from which the lady superintendents will receive their information. All the notifications of birth will in the first instance go to the health office and come into the hands of the official lady health visitors. They will in each case pay a first visit to the home where a birth is notified, and will leave a card of direction and advice. It will, however, be impossible for them to pay repeat visits, and here will come in the co operation of the Public Health Union and the lady superintendents and helpers. To bring this into operation it is proposed that the official visitors shall, week by week, sort out the notifications and divide them according to the districts arranged by the Public Health Union Committee. They will then send to the superintendent of each of the districts a list of all the notifications in her district. The lady superintendent, on receiving her list, will allocate to her lady helpers the babies whom she may know or consider to come best under the care of one particular helper. Then it will be the care of the helper to visit the babies allotted to her. In cases of ignorance and carelessness, if help and sympathy fail, recourse must be had to other agencies than the Public Health Union, and a reference by the lady helper to the medical officer of health should be made in such cases. In every instance where the baby fails to thrive, and is not under the care of a private medical man, the aid of the Public Health Department should be invoked promptly.

THE IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

The autumn meeting of the Irish Medical Schools' and Graduates' Association took place on November 27th, and resulted in a decision to form a Northern Branch, which will include Manchester, Liverpool, Leeds, Sheffield, and neighbouring localities.

A dinner followed in the evening, at which Sir John Moore, the President of the Association, took the chair, as at the meeting in the afternoon. The assembly, numbering about 200 ladies and gentlemen, included Lady Moore, Mr. and Mrs. David Arnott, Sir J. Digges and Lady LaTouche, Sir Shirley and Lady Murphy, Sir John Cameron, and Sir Dyce and Lady Duckworth. The event of the evening was the presentation of the Arnott Medal to Sir Havelock Charles, who was introduced to Sir John Moore by Dr. J. J. Macan, Chairman of the Council, immediately after the usual loyal toasts had been duly honoured.

When making the introduction, Dr. Macan took the opportunity of giving a brief account of the medal and its recipients. The medal, he said, was founded in 1900 by Mr. David Arnott, in memory of his father, the late Sir John Arnott, Bart., whose approved services in developing the industrial and commercial resources of Ireland were well known, and of whom it had been said that his integrity, business ability, and enterprise were equalled if not surpassed by his benevolence and philanthropy. By the wishes of the founder it was awarded annually by the Council, in its discretion, for an act of heroism, or distinguished service, or an act performed in the discharge of medical duties, either in civil life or in one of the naval or military services, at home, on the high seas or abroad, or for an achievement in medicine, surgery, or medical research. Since its foundation it had been awarded six times. In 1901, to Captain Charles Dalton, for conspicuous gallantry at the Tugela River, where he was seriously wounded while attending a wounded officer under fire. In 1902, to Dr. Brendon McCarthy, for his heroic work in assisting the late Dr. Smyth in attending to typhus cases and removing to the mainland the patients from the Island of Arranmore. Fear of infection deterred

the inhabitants from giving any assistance, and Dr. Smyth and Dr. McCarthy made several trips across a sound four miles in width in an old boat which sank on the last trip. Dr. Smyth unhappily fell a victim to the disease from which he had saved others. Another award was made later in the same year to Captain T. J. Crean, V.C., for distinguished valour at Tygerskloof in attending to the wounded under a heavy fire at only 150 yards' range after he had been himself wounded, and only desisting when he was wounded a second time, as it was then supposed, mortally. In 1904, to Mr. P. J. Freyer, for the important advances he had made in operative surgery. In 1905, to Captain Thomas Mackenzie, D.S.O., for conspicuous bravery in saving life at sea; while returning invalided for typhoid from South Africa, he rescued one of the crew by jumping overboard in a boisterous sea, in which he remained for three-quarters of an hour. In 1907, to Sir Almroth Edward Wright, for his researches in the pathology of the blood, especially with regard to opsonins. With characteristic liberality, the founder of the medal had empowered the Council to bestow more than one medal in any year when exercising the discretion allowed it, but such additional medal or medals had remained unrewarded in previous years. This year the Council had awarded it to Lieutenant-Colonel Sir Richard Havelock Charles, Knight Commander of the Victorian Order, M.D., M.Ch., R.U.I., F.R.C.S.I., Physician in Ordinary to the Prince of Wales, Fellow of the Punjab and Calcutta Universities, late Professor of Surgery in the Medical College at Calcutta, for the great improvements in the surgical treatment of disease introduced by him, and now generally approved and adopted, in regard to one very distressing malady peculiarly prevalent in Bengal. The improved technique introduced by Sir Havelock Charles had resulted not only in reduction of the mortality of the operation for its relief from at least 11 per cent. to a mere 1 or 1½ per cent., and produced far less mutilation and far more satisfactory permanent results, but had substituted healing by first intention and a rapid and easy recovery for tedious and painful convalescence. Sir Havelock Charles had himself recorded 140 successful operations without a death by his method, which was now continually practised in the places where the disease was most prevalent. The unfortunate sufferers from this malady were by these improved results encouraged to submit to operation at an earlier stage of the disease, and while a vast amount of suffering was thus avoided, the operative results might be expected to improve still further as fewer and fewer advanced cases remained to be dealt with. But Sir Havelock Charles's scientific work had by no means been confined to surgery; his report on the hospital service connected with the escort of the Afghan Boundary Commission was well known to all members of the Indian Medical Staff, and formerly, while Professor of Anatomy and Comparative Anatomy at the Medical College at Lahore, he had prepared and published a most valuable series of papers on the Craniology and Craniometry of the Punjab tribes, on the influence of function on their morphology, and on their morphological peculiarities in relation to the transmission of acquired characters. These papers were based on a large collection of skulls and skeletons, and in recognition of the great scientific value of this collection the Royal College of Surgeons of England, on his presenting it to their Museum, conferred upon Sir Havelock Charles the gold medal of the College, of which the only previous recipients in the past forty years had been Lord Lister and Sir James Paget in 1897, Sir Erasmus Wilson in 1884, and Richard Owen in 1883. In conclusion Dr. Macan said he was sure all would join in heartily congratulating Sir Havelock Charles on his name being thus associated *in perpetuo* with those of the exceptionally eminent men on the College record: "In recognition of his researches into the craniology and morphology of the tribes of India and in appreciation of his gift." He then handed the medal to the President for presentation to Sir Havelock Charles, drawing attention to the fact that its very beautiful design was of Irish origin, that it was of Irish manufacture, and that whenever possible it was made of Irish gold.

The presentation was then made by the CHAIRMAN, the recipient and his words of acknowledgement being warmly acclaimed by the assembly. Interspersed with the speeches which followed was some good music, the last item being a song given by Dr. F. T. Roberts in response to a general call. The principal officers of the Association for the present year, in addition to Sir John Moore and Dr. J. J. Macan, are Dr. Kenneth Fraser, Vice-Chairman of Council; Dr. M. T. Bulger, Honorary Treasurer; Dr. T. Hobbs Crampton, Dr. W. Douglas, and Mr. G. W. Dawson, Honorary Secretaries.

LITERARY NOTES.

THE *Proceedings* of the Royal Society of Medicine, which is divided into the following Sections: Clinical, Dermatological, Electro-Therapeutical, Epidemiological, Laryngological, Medical, Neurological, Obstetrical and Gynaecological, Odontological, Otological, Pathological, Surgical, Therapeutical and Pharmacological, are to be published monthly from November to July inclusive, and will contain the papers read at each of the Sections during the previous month and the discussions thereon, and will be so arranged that each Section can, if desired, be detached and bound separately at the end of the year. The publishers are Messrs. Longmans, Green and Co. Each Section will have an editorial representative, who is responsible for the published matter relative to his own particular Section. The Editorial Committee consists of *ex-officio* members:—The President: Sir William Church. The Honorary Treasurers: A. Pearce Gould, Dr. F. H. Champneys (Chairman). The Honorary Secretaries: Dr. Arthur Latham, H. H. Pendlebury. Representatives of Sections: Clinical, Dr. A. E. Garrod; Dermatological, Dr. J. H. M. MacLeod; Electro-Therapeutical, Dr. H. Lewis Jones; Epidemiological, Dr. W. H. Hamer; Laryngological, Harold Barwell; Medical, Dr. H. H. Tooth, C.M.G.; Neurological, Dr. E. Farquhar Buzzard; Obstetrical and Gynaecological, Dr. J. J. Macan; Odontological, A. Hopewell-Smith; Otological, Dr. W. Jobson Horne; Pathological, S. G. Shattock; Surgical, Stephen Paget; Therapeutical and Pharmacological, W. Soper. The editor is Dr. John Nachbar. The first number has already appeared and we congratulate all concerned in its production.

The *Edinburgh Stereoscopic Atlas of Obstetrics* is the title of a work on the same lines as the *Edinburgh Stereoscopic Atlas of Anatomy;* it is to be published by the Caxton Publishing Company. The work is edited by Dr. Barbour Simpson, Senior Assistant to the Professor of Midwifery in the University of Edinburgh, and Mr. Edward Burnet, with a preface by Sir J. Halliday Croom. Its aim is to provide a permanent record of things "as they are seen," to supply a complete set of types of normal and abnormal pelves, and to illustrate the mechanism of labour in a manner unapproached by any other method of demonstration, bringing out in bold relief the anatomical features of outstanding importance from an obstetrical point of view. The work will consist of four sections of twenty-five stereograms each; the first two sections will be issued immediately. It is hoped that the whole work will be completed in the early part of 1908.

Messrs. Baillière, Tindall, and Cox announce the following new works and new editions in the press and in preparation: Axenfeld's *Bacteriology of the Eye*, translated by Mr. Angus Macnab; T. Thorne Baker, *The Spectroscope, its Uses in General Analytical Chemistry;* Dr. Aldo Castellani, *Tropical Medicine;* P. J. Freyer, *Surgery of the Urinary Organs;* H. Bellamy Gardner, *Anaesthesia for Surgical and Dental Operations;* Major H. Herbert, I.M.S., *Cataract Extraction; Tuberculosis in Infancy and Childhood: its Pathology, Prevention, and Treatment*, by various authors, edited by Dr. T. N. Kelynack; Dr. J. Munro Kerr, *Operative Midwifery;* Dr. R. T. C. Leith, *Manual of Pathology;* Dr. W. Robertson, *Meat Inspection;* Mr. R. H. Jocelyn Swan, *Aids to Genito-Urinary Diseases;* Mr. Philip Turner, *The Pocket Osteology.*

A COMMITTEE has been formed for the erection of a monument to Professor Adolf Kussmaul in Freiburg, in Baden, where he was Professor of Clinical Medicine from 1863 to 1876. The Committee consists of Professor Oschoff, Dean of the Medical Faculty; Dr. Winterer, the Burgomaster of the city; Professor Bäumler, Director of the Medical Clinic of the University; Professor Naunyn, of Baden-Baden, with Professor Schüle as secretary.

The British Medical Association.

THE NEW OFFICES.

[*With Special Plate.*]

WE publish this week a special plate reproducing the architect's drawing of the elevation of the new buildings now in course of erection for the British Medical Association at the corner of the Strand and Agar Street, and a perspective drawing of the library. Plans of certain floors are also reproduced here, and from these members will be able to form a general idea of the appearance which the new building will have, and of the arrangement of the five floors which the Association retains for its own use.

Before proceeding to a description of the Association's new house, it may not be uninteresting to recall the history of some of the events which have rendered the enterprise necessary and possible. The Association as is well known, was founded by Sir Charles Hastings in 1832 as the Provincial Medical and Surgical Association, and in 1844 it took over the *Provincial Medical and Surgical Journal*, which had been established four years earlier by two members of the Association. In 1856, by a unanimous vote, the names of the Association and of the JOURNAL were changed to the British Medical Association and the BRITISH MEDICAL JOURNAL respectively. Without attempting to recapitulate a history which has on several occasions been related in the JOURNAL it may be said that the result of the first forty years' work of the Association, though very encouraging in some respects, and in particular in the interest which its work had aroused in medico-political questions, was far from satisfactory from a financial point of view. In 1871 the members numbered 4,403, the total income of the Association was £5,261, and the balance of income over expenditure was £38. In May of that year the Committee of Council, after a prolonged inquiry, resolved "that the management of the Association having been found on inquiry to be in an unsatisfactory state owing chiefly to defective organization and supervision, it is recommended that for the future the General Secretary should reside in London, and that he shall devote his whole time and attention to the management and work of the Association." In consequence of this resolution, Mr. Francis Fowke, at that time House Governor and Secretary of the General Hospital, Birmingham, was appointed General Secretary of the Association. When he took over his duties at the end of the year he found the business of the Association being conducted in two rooms at 37, Great Queen Street, for which a rent of £25 a year was paid. The BRITISH MEDICAL JOURNAL had at that time been edited for several years by Mr. Ernest Hart, who had devoted his remarkable energy and abilities to its conduct with so much success that its circulation had risen to over 7 000 copies weekly. The unsatisfactory position of the finances of the Association was, therefore, all the more disappointing. Mr. Fowke brought to the duties of his new office foresight and tenacity of purpose, and quickly introduced strict business methods into the management of the Association's affairs. With this combination of a JOURNAL conducted with enterprise and constant attention to the needs of professional readers, and of an efficient business management, the finances of the Association were soon placed on a satisfactory basis, and in 1874 increasing business required, and the financial position justified, the taking of larger premises next door at a rental of £80 a year. In 1878 the Association decided to undertake itself the printing of the JOURNAL; premises suitable for the purpose and to the then income of the Association were leased at 161A, Strand.

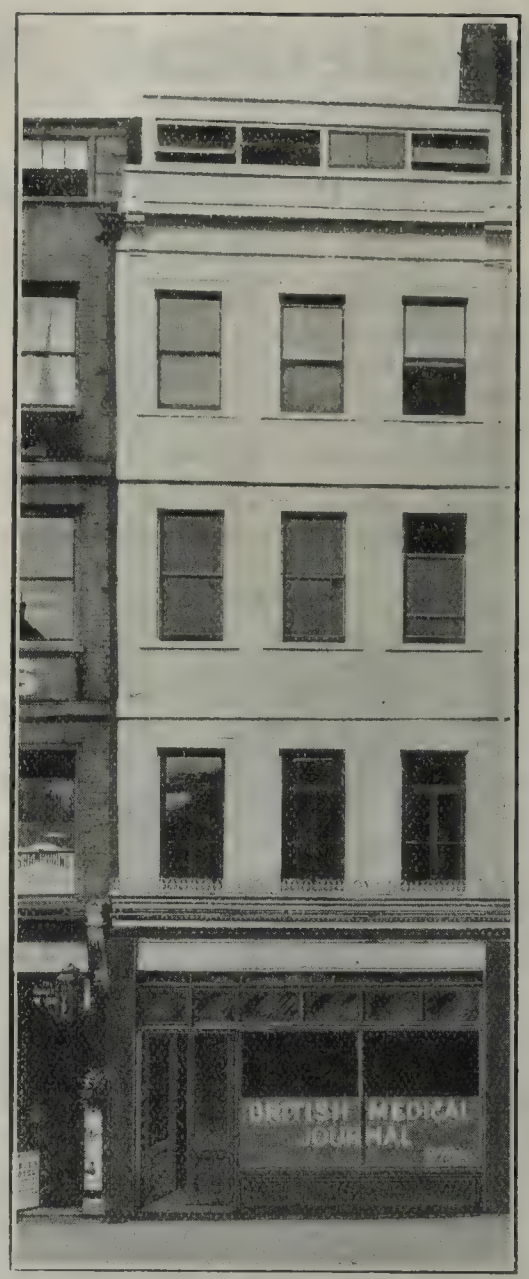
Great Queen Street. + shows one of the two rooms occupied by the Association from 1853 to 1878; ⊕ the additional accommodation taken in 1874.

The membership of the Association, the circulation of its JOURNAL, and the receipts from advertisements all now began to show rapid expansion, and each year a substantial balance of income over expenditure, varying from £1,500 to £3,500, was shown on the year's working. In 1886 an opportunity occurred of acquiring the lease of the house, 429, Strand; a sum of £4,500 was given for the lease, and a little over £5 000 was expended on furniture and on the necessary alterations of the building. In 1888 the Association was able to purchase, for the sum of £3,200, the lease of the two adjoining houses—Nos. 2 and 3, Agar Street; while in 1896, for £750, it acquired the lease of Nos. 4 and 5, Agar Street. Immediately behind 429, Strand, and the houses in Agar Street is a yard called Harvey's Court, approached from the Strand, on the north side of which were certain houses known as Harvey's Buildings. In 1894 the Association acquired its first freehold by the purchase for £4,640 of two of these houses, known as Nos. 2 and 3, Harvey's Buildings. Ultimately, in 1898, the Association—already the leaseholder of 429 Strand, and Nos. 2, 3, 4, and 5, Agar Street—purchased the actual freehold of these houses, and thus stood possessed of properties in one of the most important thoroughfares in London, with ample light and not hampered by restrictions as to immediate possession.

The net sum given for 429, Strand, 2, 3, 4, and 5, Agar Street, was £79 000, of which £41 000 was paid in cash, £38 000 being left on mortgage at 3 per cent., to be paid off by ten annual instalments, with the right to extinguish the mortgage at an earlier date if it were found convenient for the Association to do so. Subsequently the land tax was redeemed at a cost of £880. The mortgage was

completely paid off in December, 1902. The Association thus holds its freehold, having an area of 5,600 square feet, absolutely free from all encumbrances and restrictions. The frontage to the Strand is 40 feet, with a return frontage of 120 feet in Agar Street, while the depth, including that part on the north side of Harvey's Court, is 60 feet, and there is an additional entrance from the Court.

The improvement of the accommodation provided in the several houses acquired by the Association in the Strand and in Agar Street became an urgent matter in 1904. Various circumstances contributed to bring this about. The reorganization of the Association in 1902, leading to the creation of a series of standing Committees and the appointment of a Medical Secretary—who took up the full duties of his office early in 1903—placed a great strain upon the resources of the old buildings; such provision as was possible was made for the Committees and for the Medical Secretary and his staff, but it had to be recognized that it was altogether inadequate for the proper conduct of the work. The Library had outgrown its accommodation, and the room in which it was arranged, though finely-proportioned and not ill-adapted for a reading-room, was so completely unsuitable for the meetings of the Council, of Conferences, or of large Committees that it was found desirable to accept the hospitality of the Metropolitan Asylums Board, which placed its spacious Board room at the disposal of the Council for the quarterly and other meetings. The printing rooms—used not only for putting into type matter for the Journal and its advertisement pages, but also for the printing of documents for the Representative Meetings, Council, and Committees—were cramped and proved inadequate on many occasions for the latter purpose. All these deficiencies rendered some change imperative.



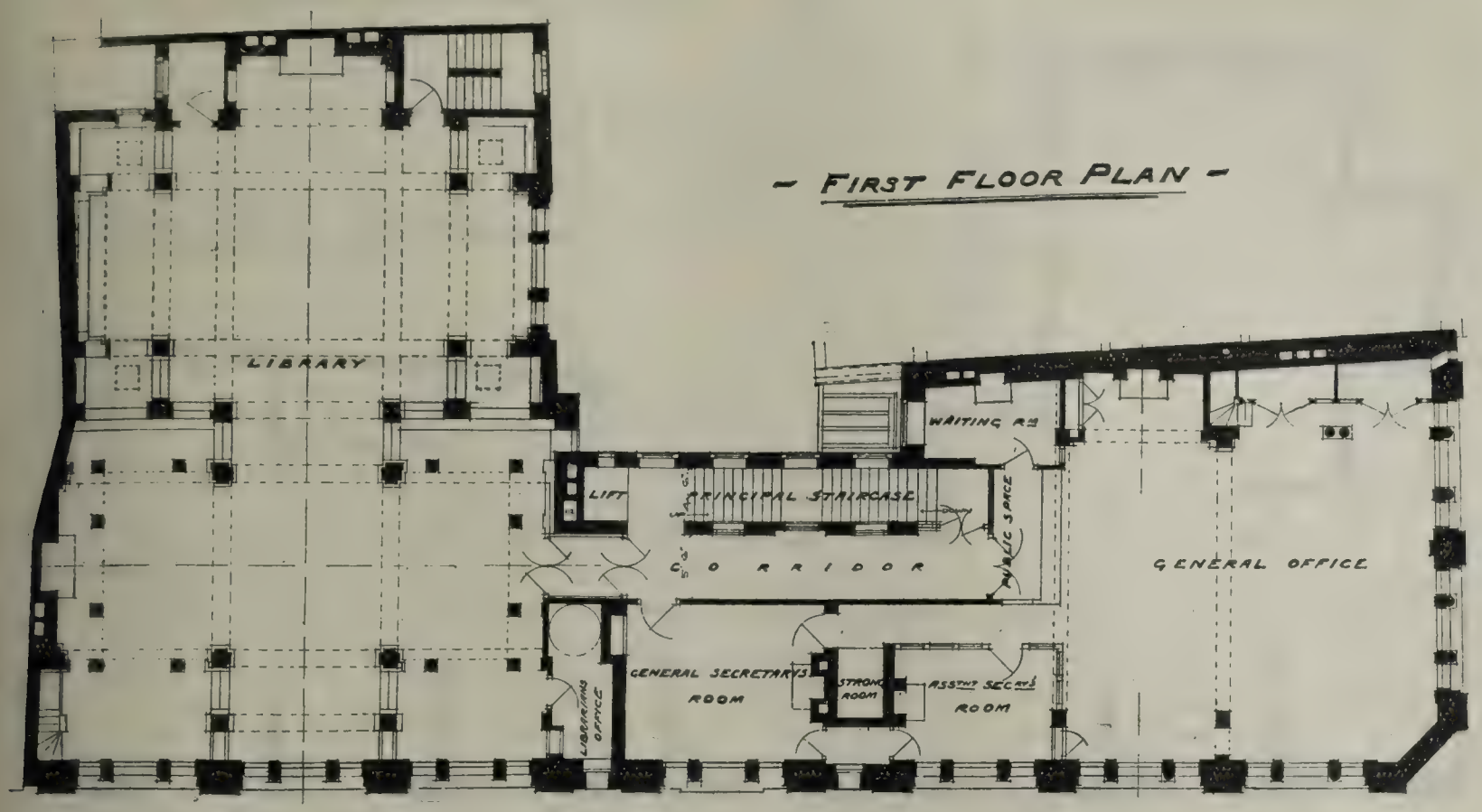
161A, Strand. 1878–1886.

The Strand and Agar Street site, showing the buildings now demolished. 1886–1907.
The dotted line shows the limit of the property in Agar Street.

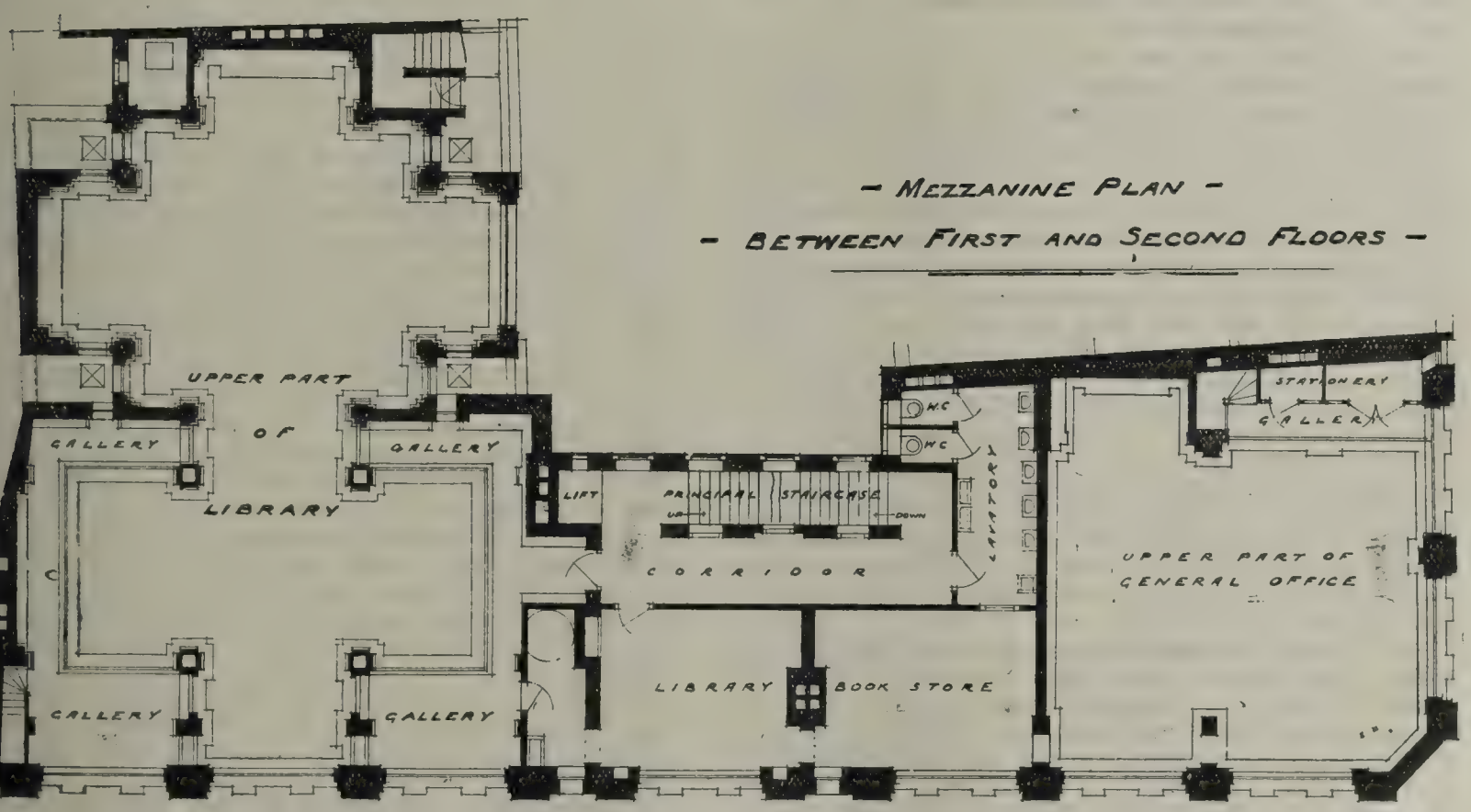
At first it was thought that it might be possible to obtain the needed accommodation by remodelling the house in the Strand and rebuilding those in Agar Street and in its rear. The matter was very thoroughly investigated by the Premises and Library Committee appointed by the Council, under the chairmanship of Mr. Andrew Clark; with the assistance of statements and estimates prepared by the General Secretary (Mr. Elliston) the financial aspects of the questions involved were very fully considered in relation to the present needs and probable future requirements of the Association. The question whether it might not be best to dispose of the site, which since the Association had obtained it had materially increased in value, was anxiously debated, but the Committee had been instructed not to carry out these plans unless another freehold site equally well adapted to the purpose could be obtained. Extensive inquiries, however, failed to bring any such site to light, and, finally, after several alternative schemes for partial rebuilding had been carefully examined, the Council—in whose hands the decision had with complete confidence been left by the Representative Meeting—on December 13th, 1905, accepted the recommendation of the Committee that the wisest, and in the end the most prudent and economical course would be to demolish the whole of the houses on the Strand and Agar Street site, and to erect on it a new building specially designed to meet the requirements of the business of the Association.

The position with regard to the financial aspects of the matter was fully stated in the report of the special Finance Committee presented to the annual meeting at Exeter; it was pointed out that the total capital expenditure on the old premises was £86,020, and that the return in rent from the part not used by the Association was £860, being 1 per cent. on the outlay. The capital which will have been expended when the new premises are erected, including site and buildings, is estimated at £130,000, and the return to be expected in rents from the part not used by the Association will probably produce 2½ per cent. on the total capital invested, and at the same time secure to members a modern and convenient home.

The preparation of the plans was thrown open to limited competition, and on April 18th, 1906, it was decided to accept the designs of Mr. Percy Adams, F.R.I.B.A., to



- FIRST FLOOR PLAN -



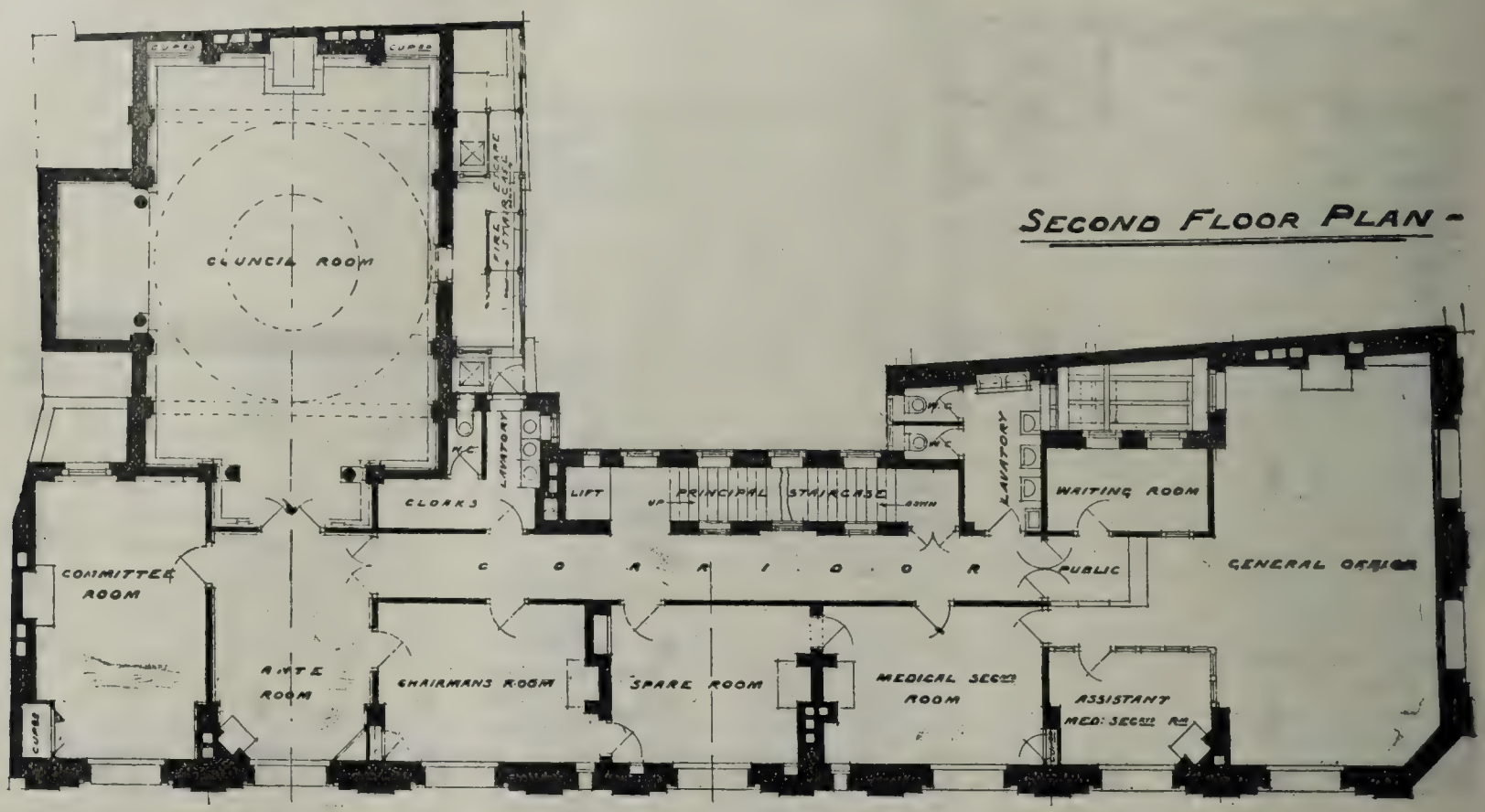
- MEZZANINE PLAN -

- BETWEEN FIRST AND SECOND FLOORS -

whom the first prize in the competition had, on the advice of the architectural assessor, Mr. William Henman, F.R.I.B.A., architect of the Birmingham General Hospital, and Belfast Infirmary, been awarded. Mr. Percy Adams is the architect from whose designs the Bristol City Library, the Hall of the Incorporated Law Society, the Royal Victoria Infirmary, Newcastle, the King's Sanatorium at Midhurst, and many other important buildings have recently been erected.

After somewhat prolonged negotiations it was arranged to exchange No. 3 for No. 1, Harvey's Buildings. This exchange, which placed the Association in possession of a continuous self-contained site having an L shaped form, the long leg extending down Agar Street into the Strand, and having a frontage in that great thoroughfare, involved certain alterations in the plans, which but for this might have been published at an earlier date. The exchange materially increased the convenience of the site and enabled the architect to make considerable improvements, especially in the library and council chamber. The contract was let to Messrs Prestige and Co. in February, 1907, the old buildings were vacated during the Easter holidays (March April), and the work of demolition was begun immediately. This was rapidly completed, and the reconstruction at once began. The walls of the new building at present surrounded by a huge screen of hoardings, have reached the second story, and the work of putting in the floors of that story is in progress. It is hoped that the buildings will be ready for occupation next autumn.

Having regard to the great commercial importance of the site it was decided that the ground floor and basements should be planned so as to be suitable for business premises, which will be let to approved tenants for the purposes of a bank, shops, etc. The main entrance to the largest of these premises will be at the corner of the Strand and Agar Street, while the entrance to the rooms



of the Association itself will, as may be seen from the drawing of the elevation, be by a doorway in Agar Street, opening into a spacious hall.

The en rance and hall on the ground floor, without being in any way extravagant, are of sufficient area to give some dignity to the entrance, and the central staircase has steps of Derbyshire stone and is arranged to meet the stringent conditions of the London County Council as to fireproofness and ease of escape in case of fire; additional access can also be obtained to every floor by an electric passenger lift of the most recent push-button type and to supervise this the porter's inquiry office is at the foot of the staircase overlooking the main entrance. On the first floor at the Strand end of the building, is the general office, 17 ft. 6 in. high, well lighted by windows on two sides; the public will enter direct from the staircase. Off the lobby, on one side is the waiting-room, and on the other the offices for the General Secretary and Assistant Secretary; these rooms are only 10 ft high a mezzanine floor 7 ft. 3 in. high being contrived above them as extra storage rooms for library books. The general office will contain large cupboards for stationery and documents reaching from floor to ceiling, the upper cupboards being reached by a small staircase and gallery.

The library is placed at the quiet end of the site, facing Agar Street. Its greatest length is 60 ft., and width 42 ft.; it is designed to accommodate (with the storage rooms) 25 000 volumes, over 10,000 of these being on the ground floor; this is about double the number of books at present possessed by the library. The whole of the bookcases and panelling will be of mahogany, and the old fittings will as far as possible be used; the upper part of the walls and the ceilings will be of plaster, and the floor of oak.

On the second floor, at the Strand end, is the Medical Secretary's department, very similar in arrangement to the general office on the first floor. On the quietest corner of the site, facing on to Harvey's Court and entered by way of an anteroom, which can be used for hanging hats and coats, is the Council Room. It will be panelled with wainscot oak, and above this will be a simple vaulted ceiling with low relief plaster enrichments, the light being from a circular ceiling skylight; ample provision has been made for ventilation. On this floor there is also a committee room 24 ft. by 14 ft., a chairman's private room, one other good committee room and lavatory accommodation for the use of members. Large additional lavatory accommodation is provided on the mezzanine floor below.

On the third floor, at the Strand end, is a large room to be used as a conversation room, and adjoining is a dressing and bath room for the use of members; the rest of the rooms upon this floor are not yet allocated.

On the fourth floor accommodation is provided for the editorial department, including a waiting room for the use of contributors, lavatories for the use of both sexes, and rooms for the storage of the Association documents and printed matter. The printing department will be on the fifth floor, which has been specially designed to carry heavy machinery and type. At the Strand end is the compositors' room for setting up the JOURNAL, nearly 50 ft. long and with a splendid top light; it will be fitted with store rooms for paper, type, washing appliances, and two small readers' room; another large room is provided for the advertisement department and for the printing of minutes and other documents for the use of the Council and Committees; this department also will have two small readers' rooms. Space is provided for one or two small printing machines, but the type of the JOURNAL is sent away to be printed. A specially-designed lift will be erected for taking the type from the compositors' rooms on the fifth floor to the entrance on the ground floor. There will be a special outside staircase as a means of fire escape from the top floor to the ground floor in Harvey's Court. This can also be used by the printing staff as additional means of access.

The whole of the building will be lighted by electricity, and the heating will be by low-pressure hot-water radiators, and in the case of many rooms open fireplaces.

Externally the lower part of the new building is faced with grey Cornish granite, boldly treated in its detail; the upper part above the second floor is of Portland stone, and the roofs will be of green Westmorland slates. The whole of the woodwork externally is of oak, which will obviate the necessity of painting The sculpture work consists of symbolic figures nearly 7 ft high, placed in recesses above the first-floor windows. The figures will represent medicine and its allied sciences, chemistry, anatomy, hygiene, medical research and experiment, and there will be a series of figures telling the evolutional scheme of man's development from primitive inchoate form to the highest perfection of manhood and womanhood.

In order to display in a graphic manner the growth of the Association's offices from a state which if not inchoate was certainly primitive, photographs have been reproduced of the first offices in Great Queen Street, the first house leased by the Association at 161A, Strand, and of the buildings on the freehold site eventually acquired at the corner of the Strand and Agar Street.

ROYAL COMMISSION ON VIVISECTION.

Third Report.

(*Continued from p. 1599.*)

The Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till the evening of Thursday, October 3rd.* We continue our abstracts of the evidence.

Antivivisectionist Testimony.

Testimony of G. H. Burford, M.B.

Dr. Burford's evidence occupies about eight pages of the Blue Book. He stated that he appeared at the request of the World League of Opponents of Vivisection. He was not a member of the League. He could give no information as to the numbers of the society, except that he had reason to believe that it was a society of some consequence. The Chairman said he understood that the point he wished to bring before them was his objection to experiments for purposes of pharmacology and the statement that experimentation might be superseded altogether without any cruelty and with as good effect by following the methods of homoeopathy. The witness replied that that practically was his position. Asked what was the method by which the homoeopathic pharmacologist would test drugs, he said that for the purpose of investigating the remedial value of a drug from the homoeopathic point of view the experimenters were always healthy human beings. Investigation on the nature and scope of drug action was carried out solely on volunteer experimenters. In many instances these volunteer experimenters were medical men and women, and so were competent to observe their own condition. The results, which were often very unpleasant to the experimenter, were recorded in part by the individual and in part by the supervisor of the treatment. The drug for investigation was taken first in small and then in larger and repeated doses, covering often weeks, months, sometimes longer. The dose to begin with was always one which would produce obvious effects upon the organism; after the patient had recovered from the effect of the first dose, a second was administered, then a third, then a fourth, usually in increasing quantities. The quantities bore no relation whatever to the quantities usually employed by homoeopaths. Besides the obvious detail produced by the action of the drug to the experimenter and to the ordinary supervisor, the experimenters repaired, during the course of the investigation, to specially-skilled observers, who each took in hand the various organs and parts of the body for which they were specially competent to speak—now the eye, now the ear, now the nose and throat, now the chest, now the abdominal condition, now the skin, and so forth. The Homoeopathic Association in this country had carried out an investigation on colchicum in that way, and the witness put in some extracts from the observations made on this drug so as to convey some idea of the character of the investigation and its thoroughness. In the course of that experiment there were five adult individuals engaged, each of whom noted day by day the different perturbations in health, and when the experiment was over all their statements were summarized, indexed, and taken as manifestations of the action of the drug on their economy. They measured the effect by observation of the temperature, the pulse, the blood pressure, an exhaustive examination of the blood character itself, and a very exact volumetric estimation of the urinary constituents passed day by day, together with the objective facts observed by the various special examiners to whom the experimenter in question was referred from day to day. There was no vivisectional procedure in so far as the researches of ordinary medical or surgical examination would apply. For instance, the eye was examined instrumentally, the ear was examined instrumentally, and certain other internal organs which could be got at were examined; but the same methods for examining a patient suffering from a drug disease were used as were customary for examination of patients suffering from an idiopathic disease. Asked what new knowledge as to colchicum had been derived from those experiments, the witness said there were various technical points brought out which he was unable to summarize at present, except that in the judgement of himself and others the knowledge of a technical character gained was worth the experiment. With reference to another experiment of a similar kind carried out recently in America on belladonna, no less than fifty-three experimenters were engaged over a period of a few years in a similar investigation. In that instance there were no new facts of any material character brought to light, but the old facts already known, or at least the more important ones, were accentuated and emphasized, and that gave them a clear idea that there was very little more to be got out of a new experiment with belladonna, even with all the modern instruments of precision. Negative information of that kind they regarded as satisfactory, although not so satisfactory, of course, as if new facts had been brought to light. Continuing, he said with regard to other remedies that many had been introduced into professional use through homoeopathic methods which previously were entirely either unknown or practically ignored. Nitroglycerine, for example, first came into use through a homoeopathic medium, and snake poisons—the crotalus snake poison, the lachesis snake poison, and the naja snake poison—had also been introduced through homoeopathic media; the action of metallic gold also owed its professional usage to the same origin. The original observations were made on metallic gold by Hahnemann a century ago, and no material addition with regard to the virtues of gold as a remedy had been made since his time. The secretion of the cuttlefish—the virtues of the sepia as a remedial agent—came through a homoeopathic source. Original observations on bichromate of potash and its value in disease were made by Dr. Drysdale of Liverpool some forty or fifty years ago; the bean ignatia came into professional use through a homoeopathic source. The honey bee, *Apis mellifica*, although investigated of late, had its action first exhaustively determined many years ago in America under homoeopathic auspices. Cactus for cardiac affections, first introduced by Rubini, came into use through homoeopathic experimentation; *Rhus toxicodendron*, a favourite remedy nowadays for rheumatism and skin diseases, also owed its introduction to homoeopathic auspices. Calcium sulphide, a common remedy nowadays for furunculosis, and nitrate of uranium, a common remedy for diabetes, had found their way into professional use through homoeopathic sources; and lycopodium, which was used for fireworks or the coating of pills, had on the homoeopathic method been discovered to have curative virtues of an important character. In reply to further questions, he said homoeopathy found that experiments on healthy human beings yielded results more ample, more direct, more fertile, and more reliable than the details obtained by experiments on animals. Asked, supposing he was making an investigation on the operation of digitalis homoeopathically, how he would do it, he said he would begin by giving digitalis in a substantial dose to a healthy adult, noticing the disturbances created upon his organism, taking his temperature and pulse, and having all his organs, so far as they could be individualized, examined by a corresponding expert; in fact, all the detail that had served the medical man for the diagnosis of a disease would be applied to the diagnosis of the drug conditions induced by digitalis; and the conditions which were produced in animals by digitalis given in this way would find more than their correlatives in a human being when sufficiently big doses of digitalis were taken for purposes of experiment. Then, after the man had been made sufficiently ill, when it was obvious that there was nothing more to be got out of the investigation so far as he was concerned, the experiment would be stopped. Probably it would take him some months to get quite well again, and all the various instrumental observations on his pulse, on the beating of his heart, on the varying size of the heart musculature during its operation, would form part of the supervisor's report; that was to say, the investigation would be carried out with the same thoroughness and the same detail as an investigation on a corresponding animal. Asked about Dr. Cushny's evidence in regard to the ocular demonstra-

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tion given by experiments of the effect of digitalis on the blood vessels in certain cases, he said he was sure Dr. Cushny spoke in ignorance of the very considerable homoeopathic literature that had accumulated since Hahnemann's time as the result of the observation of the action of digitalis on the human body. So far as the addition of modern methods of precision by instrumental appliances was concerned, it was found, in carrying out these investigations, that all the essential points as to the remedial action of digitalis could be obtained by observation on the healthy human being. In reply to further questions, he said the experiments described by Dr. Cushny added something in point of academic completeness to this knowledge, but did not add anything to our knowledge of the remedial virtues of digitalis. Asked if his answer about digitalis applied to other discoveries made by animal experimentation, he replied that, if he might say nothing material, nothing of importance to their knowledge, that answer in general, with certain exceptions, would apply. In reply to Mr. Ram, he said he had witnessed no experiments on animals since the present Act in England. With regard to the abuse of vivisection, his deduction was that the major part of the detail derived by vivisectional procedure on animals had still to be verified in its application to man; and that being the case, it would be better, in their judgement, to obtain that information at first hand from man himself, and to leave the introductory information from animals on one side, as being sometimes contradictory and occasionally very misleading. By animal experimentation, something without doubt had been obtained, and, in some respects, something very considerable, but it was not the best way of determining the remedial powers of drugs. He admitted that useful knowledge had been obtained; no medical man, he imagined, could take any other view. Asked if he had found by *post-mortem* examinations useful knowledge of the effects of the drugs he had been administering, he said: Useful in a way, but not nearly so useful as that obtained by clinical observation of the experimenters whilst the experiments were being conducted. Asked as to his statement about a man who might be in such a state that it would take him three months to get well again, he said he was a volunteer—a medical man, and doing it with open eyes. Hundreds of medical men since the time of Hahnemann had done the same thing. The man was not well yet, but that did not count in the witness's view. Asked if he would have the right to try an experiment on a man who was not a volunteer, he said as an ethical question, in his view of ethics, it would be decidedly immoral. Asked if he thought that in all cases it was wrong to try an experiment on an animal even if that animal suffered nothing whatever, but was under anaesthetics the whole time and died under anaesthetics, he said he thought the answer would depend entirely upon the specific purpose for which the experiment was conducted. If the experimenter was a competent person and was convinced in his own mind that he was doing what was right, it might be a right thing to do. Asked by Colonel Lockwood if he had any suggestions to make to the Commission as to any additional safeguards which could be provided supposing vivisection was continued, he said he thought that, prior to the experiments on animals with any new drug, experiments should be carried out on human beings—not afterwards, but before—and that any point left undecided in the experiments on human beings might then be considered possible as a fit and proper subject for experimentation on animals; but he believed that investigation with drugs on healthy human beings should in all cases precede the experimentation on animals. Asked by Sir W. Church if the principles of Hahnemann still remained as principles in homoeopathy, he replied: Not all of them, nor all in the condition in which Hahnemann left them; but the main principle of homoeopathy, the law of similars, which was the centre and pivot of homoeopathy, homoeopaths held as scientifically valid. It was admitted by them that there had been progress in medicine since. In reply to further questions, he explained that "psora" was a technical term used by Hahnemann to express the degree of pathological enlightenment at the time, or what they now considered as diathesis. His principle that there did not exist a single disease which could have a material principle for its cause had gone by the board as being not in keeping with modern knowledge; but it was not an essential part of homoeopathy. Asked if he agreed that serumtherapy was of use, he said, Yes, as a private individual he did most emphatically. Asked if that could have been arrived at without experiments on animals, he said it was quite possible that it could be arrived at in another way, and that the same properties which were utilized in serumtherapy might have been used without having recourse to animal experimentation. As an instance, he said the tuberculous virus was prepared by homoeopathists and employed by them for the treatment of consumption long before Koch's discovery. Asked by Dr. Wilson if he meant that the tubercle bacillus was discovered, he said not the tubercle bacillus, but the virtue of the material in which it was contained. The tubercle bacillus was not isolated, but the material in which it was contained. The lung substance, for instance, was prepared by homoeopathic methods, and used successfully before Koch launched his discovery. He would only quote von Behring, who would have it that all this was homoeopathy, and that Hahnemann's word "homoeopathy" should be employed to indicate it. It was the cure of a disease by a substance which it itself manufactured, and as nearly an instance of a similar remedy as could well be selected. Asked by Sir W. Church if our present knowledge of the antitoxins could have been obtained without the use of animals, he said that of course all the knowledge with regard to antitoxin had been derived through experimentation on animals. But he maintained, though, that antitoxin in its present form was not a final preparation. There were other methods of preparing virus which, in his judgement, as far as cure was concerned, were equally valid. He took tuberculin as a typical instance. In reply to further questions, he said it was triturated with sugar of milk in a mortar, and the same dose readily obtained that Professor Wright now advocated—that was, anything from $\frac{4}{1000}$th to $\frac{10}{1000}$th of a milligram. In reply to further questions, he said homoeopathic original research was heavily handicapped in this country. They had no school and no well-salaried laboratory. Asked if they had introduced a new soporific, or anything of that kind, which had been of use, he said the method of drug experimentation on human beings which homoeopathy had introduced had very largely cleared away for remedial purposes those particular labels of soporific, diuretic, and so forth. That view started by assuming that a drug had only either one property or one main property, but the results thus gained on animals with any particular drug could be enormously amplified by experiments on a human being. Therefore, they did not label drugs as diuretics, soporifics, and so forth but by their *tout ensemble*, and they endeavoured to fit in that *tout ensemble* with the case of any particular disease which might be placed before them. Wherefore homoeopathy knew nothing of soporifics, but it knew a good deal of similar conditions. They did not go in for experimental work on animals, but for the observation of objective changes on the human being at the same time as the symptomatology was being evolved. Asked as to the neutralizing of snake poison, he said he could not say that he had in his memory at present anything that had been done from a homoeopathic source. He knew that such a substance as antivenin had been discovered, but he was not competent to pass any opinion as to its use. Asked whether that could have been obtained by homoeopathic methods without the use of experimentation on animals, he preferred to reserve his judgement on that point, because he was not acquainted with the detail. In reply to Sir W. Collins, he said the views he put before the Commission were not necessarily those of the Homoeopathic School of Medicine generally, but might be taken as expressing the views of the major number of medical men practising homoeopathy in Great Britain and America. Asked if his evidence was to be taken as representing the views of the World League of Opponents of Vivisection, he said that so far as regarded the desirability of transferring the scene of action of experiments with drugs from animals to man as a general procedure, he believed so. Asked if he contested the proposition that useful drugs had been introduced into therapeutics as the direct result of experiments on animals, he said he did not contest the proposition, but he said that many more useful drugs had been introduced into general medical

practice through the medium of homœopathic experimentation on the adult healthy person. He believed that legitimate knowledge should be legitimately obtained from any source, but in case of experimentation to be conducted on a new drug for the purpose of discovering its remedial virtues, it should be conducted in the first place on a healthy human person. Asked if he took up the view that experiments on animals for a scientific purpose should be restricted or prevented, he said he believed, as the result of his observation and experience, that it would be legitimate to restrict them very heavily in one direction—that was to say, that information derived from animal experimentation with drugs could and should be obtained from experimentation on human beings. They ultimately had to come to it, because animal experimentation results had to be verified on the human being as the ultimate issue. Asked if he suggested that the cocaine, adrenalin, sulphonal, and other remedies which were said to have been introduced as the direct result of experiments on animals were not useful, or that they had not been obtained by that method, he said he would be very sorry to do anything of the kind. He did suggest that they could and should have been, obtained through the medium of human experimentation. Asked how the preparation of antitoxins would be affected by the method which he advocated, he said that in all probability the preparation of antitoxins would undergo what one might call homœopathizing, that was to say, that when homœopaths turned their attention more extensively to the subject, probably some alternative method similar to that used for the preparation of tuberculin could and would be devised. So far as diphtheria antitoxin was concerned, he was unable to give any information with regard to a better preparation after the homœopathic fashion; it had not hitherto been attempted. In reply to Sir John McFadyean, he said he believed that the conclusions based on animal experiments could not be applied by inference to a diseased condition in man. Asked if his idea of the proper method of investigating a new drug was that it should be tested in increasing doses, beginning with what they regarded as perfectly safe doses, on human beings, he said that was so. He agreed that that was an experiment, but it was moral because the individual consented. Asked if it would be immoral without his consent, he said that was his ethical position. He also held very strongly that results obtained on the lower animals might be, and often had been, misleading when applied to human diseases. Asked if it did not appear to him that he had barred out all method of investigating animal diseases and the action of drugs on animals, he said that for the purpose of investigating animal diseases it was quite possible that in the interests of the animal another system of ethics might prevail. Asked whether he thought that the method of investigating a drug intended for human use which he advocated might be extended to animals, he said he should have the same scientific objection to extending observations on human beings to animals. For a knowledge of the diseases of the lower animals, knowledge obtained from the lower animals was of course a scientific necessity. That was not unethical; he thought that position would be untenable. Asked if he suggested that those who believed in homœopathy had any special method of investigating surgical conditions and diseases, he said they had the same method that was open to the profession at large. Asked if there must not always be a slight element of danger in using a perfectly unknown drug on a human being, he said there was always an element of danger, but after some practice experimenters became more or less facile. Supposing he found a white powder in a paper submitted to him as being some material which hitherto had not been investigated, he had not the faintest idea whether it was innocuous or lethal. The first thing he would do would be to take this crude substance and considerably dilute it, say, one million times, and the records of previous experience with drugs would lead him to understand that in all probability a millionth part would not be a lethal dose. He might, therefore, with propriety begin his investigations, and then he could heighten the dose according to his judgement. In reply to Sir Mackenzie Chalmers, he said he was not a member of any antivivisectional body. Asked how the World League came to ask him to give evidence on their behalf, he said the application came through a homœopathic colleague, a member of the League. Asked for suggestions as to changes in the existing law, he said the main suggestion he would make was that when experiments with regard to the remedial action of drugs were concerned, they should in the first instance be carried out on healthy human beings. Asked if he would have it enacted by legislation that a licence should not be granted for an experiment upon an animal until a corresponding experiment had been made on a healthy human being, he said he would leave that to the discretion of the Inspector. The advisers of the Home Office should be held responsible in each instance for the vivisectional investigation on the lower animals of the properties of a new drug, and they should give their specific reasons in each case why the prior investigation on a healthy human being was not adopted. In reply to further questions, he said he thought that in the interests of science a sufficient supply of healthy human beings was forthcoming. In America the supply of medical students in the homœopathic colleges was a never-failing source of adequate material. Asked if he would say that it was justifiable to try an experiment on lower animals with a view to testing a remedy for snakebite, he said that in indicating what was useful for snakebite, homœopaths would run all over the details of the drug experiments, many thousands in number, which they had in their possession, and see which of those paralleled the condition of snakebite, and they would put their finger upon the series of experiments already made which most paralleled the condition of snakebite as indicating the remedy; it might not even be necessary to carry out any new investigation. When cholera in the Thirties swept over Europe, Hahnemann was applied to for effective remedial measures to meet the cholera epidemic. He indicated a satisfactory remedial measure from homœopathy, without additional experiments, from what had been already made. He got very much better results than the current therapy of his time, and homœopaths afterwards in London repeated them with such success that they were made the subject of a special Government inquiry. All this was ancient history. Asked if his method were still applied in India, where cholera was always present, he said it was, mainly by those people in the army with homœopathic leanings, of whom there were some; and also by such educated professional native gentlemen as engaged in homœopathy, of whom there were not many; but there were some. In reply to further questions, he said that in the majority of instances he admitted the utility of vaccination. Homœopaths held vaccination to be as striking an instance of homœopathy perhaps as could well be devised; the majority preferred to carry out vaccination in the ordinary way by subcutaneous injection of vaccine matter. Some prepared the vaccine matter according to the method he had indicated for tuberculin, and, it was said, with equally satisfactory results. Asked to take a case treated in this way and tell them what was done, he said, let them say that an ordinary small child presented himself or herself with three or four healthy vaccination vesicles; the material was taken from all these, dried, diluted, usually triturated in a mortar with sugar and milk, and when it had reached a certain degree of attenuation—how far attenuation was made depended upon the ideas of the individual—when it had reached what he considered a satisfactory attenuation, that was taken as the remedial agent. It was swallowed. When one diluted it two or three million times there was no longer objection to its being introduced into the economy through the mouth. Asked if he had any figures showing how far this vaccination by homœopathic doses which were swallowed had any effect, he said that as far as vaccination was concerned he could not produce figures on that point (although he knew that that had been done), because a good many homœopaths still preferred the ordinary way of introducing the vaccine matter into the arm. Asked by the Chairman if the swallowing of vaccine in homœopathic doses was accepted as a substitute by the authorities who required vaccination, he said, No; they wanted some local evidence of what had transpired, and they could afford them none in that way. Asked by Sir John McFadyean if he could give any reference to any experiments on human beings showing observable effects produced on human beings by giving them an undiluted dose by the mouth of vaccine matter,

he said no obvious effect. When it had been tried in that way the homoeopathic advisers maintained that the patients were immune. Asked if there was any evidence to show that it was harmful if given undiluted, he said there was none. Asked by Sir Mackenzie Chalmers if any experiments had been recorded showing any effects from these minute doses, he replied affirmatively as to prophylactic effect. Many of them in America; not in England. Asked if he thought that experiments on animals for the purpose of elucidating physiological problems were justifiable or not, he said it was still a moot point with himself; he had not made up his mind. Asked if he would agree that physiological knowledge had been advanced by experiments on animals, he said nobody could deny that. In reply to further questions, he said there was no reason why they should not avail themselves of what had been done in the past. Asked if it was ever justifiable, before trying a new operation on a human being, to try it on an animal under anaesthetics, he said he would imagine that most competent surgeons would answer that most decidedly it would be better to try the experiment on a human being and not on an animal. An experienced person would know exactly the tax that he proposed to levy on the economy before he started, which only experience could afford; and if he was simply skilled in operating on animals, he would not know the exact tax that he proposed to levy on the human economy. Asked if when a new surgical method was found successful with animals, it did not go a long way towards justifying one in trying it on human beings, he said it would; but he held that the experience and *nous* possessed by a competent operator would render unnecessary the preliminary procedure on an animal. Dr. Gaskell having asked whether, in his method of investigating the action of drugs, he would say that he got accurate knowledge of the action of drugs on different organs as a whole; he said both on the patient as a whole and then, in cases of poisoning, acute or chronic, by the *post-mortem* investigations that followed. They accepted those *post mortem* examinations and what they disclosed as part and parcel of the investigation. Investigation such as this might cover many countries and many years. Asked if he did not feel sometimes rather doubtful as to whether it was one organ or another that was chiefly affected by the drug, he said what one got in the case of poisoning by a drug was exactly parallel to what one got in a condition of disease wherein it was very often impossible, until the patient was dead, to determine the precise local seat of the mischief. Asked whether it was not better, both in that case and in the case of disease, that subsequent experiments should be made upon animals to see whether that drug did act especially upon one organ rather than another, he said that had been done so often, and so little practical information had been obtained—that was to say, the additional power which it had given with regard to the selection of remedies had been so insignificant—that it was no longer held among homoeopaths as affording any additional information of consequence. In reply to further questions, he said that one often found in cases of disease, particularly chronic disease, that one did not have to treat one organ solely and wholly. It was the organ in connexion with the environment in which it found itself, the totality of symptoms and conditions which had to be treated, not the simple outburst of one particular organ. Asked if he did not think that, whereas clinical investigation had been present to the minds of medical men for generations, a great advance had been made within the last thirty or forty years, and very much more quickly, he said knowledge had been much more quickly obtained because the armamentarium which advance in science brought with it had been much more copious than before. Asked if it had not been coincident with the method of experimentation, he said it very often grew up side by side with it. Experimental methods on animals, in his judgement, had not added any material information to that afforded by similar experiments carried out on the human subject when they had been taken as the alternative; and when no similar experiments had been carried out on the human subject, often Nature's experiments were sufficient in number of demonstration. Asked if, in regard to the tracks and functions of the central nervous system, we had not gained an enormous amount of knowledge of late years from experiments on animals in that direction, he replied in the affirmative in regard to physiological and pathological knowledge; but what was the outcome of it with regard to treatment? Asked if we had not been able to understand diseases much more in consequence of our more accurate knowledge of the tracks and functions of the nervous system, owing to experiments on animals, he said without doubt, as far as academic knowledge was concerned; no medical student even could take an opposite view. Asked if that had not enabled the surgeon to remove tumours when otherwise he would not have known where they were, he said he did not always distinguish himself in that direction. The results of brain and spinal surgery, based on vivisectional experiments, were not to be compared with the results of abdominal surgery. The most skilful abdominal surgeon of the Victorian era, Lawson Tait, publicly forswore any alliance or allegiance that he had to knowledge vivisectionally obtained. And the first ovariotomy done in England was not done on an animal, but on a human being. In reply to further questions, he said experiments on animals had advanced, without doubt, our diagnostic knowledge. In reply to a further question, he said that, on the whole, what he was inclined to was a considerable restriction of vivisectional investigations. Asked by Dr. Wilson whether he would be in favour of the illustration of physiological lectures by experimentation on animals, he said that was a moot point upon which he had not made up his mind. Asked by the Chairman, with reference to his statement that if the homoeopaths had had laboratories and sufficient funds for carrying on investigations they might have made as many discoveries as had been made in other laboratories where experiments on animals were conducted, what would be the nature of the experiments, on the principles that he had spoken of, in such a laboratory, he said experiments on human beings and the physical examination, so far as practicable, of the various systems and organs of the human beings while the experiments were going on. Laboratories would be wanted for examining the blood, the urine, the perspiration, excreta, and so on. They would have to be as extensive and as well equipped as those in use in the present day.

SCHOOL HYGIENE IN LONDON.

Enlarged Tonsils and Adenoids.

In the report of the Medical Officer London Education Committee, under the heading Tonsils and Adenoids, Dr. Kerr states that there are many children suffering from a series of remote symptoms, which increase in importance and variety with age, who begin their troubles in life as cases of "tonsils or adenoids." No teacher is fit to have charge of a class of young children who cannot give a pretty fair opinion as to whether a child is suffering seriously in this respect or not.

Mr. Cecil Rowntree, who, in reference to these points, specially examined 1 521 children (794 boys and 727 girls), aged 3 to 13, in average Islington schools, noted that the tonsils were scarcely noticeable in 58 per cent. They were distinctly enlarged in 29 per cent., and enlarged to a pathological extent which would justify operative treatment in 10 per cent., while 3 per cent. were in urgent need of operative treatment, and the glands met in the middle line during phonation. These results are shown in detail in the accompanying table, giving percentages of children at different ages with tonsillar enlargement.

Further analysis of the cases with reference to caries of the teeth showed this to be somewhat more common among children with enlarged tonsils, and showed also that the children with enlarged tonsils had probably poorer nutrition than the others. The presence of such enlargement may from mere mechanical obstruction hinder correct articulation, as is noticed even in pupil teachers; or the enlargement may cause increased efforts at breathing, resulting in mouth breathing. The accumulation of decomposing secretions on the surface and in the crypts of the tonsils it is found often leads to production of offensive material, and the surface of the tonsil itself appears to be a dangerous spot for the entrance of various organisms, leading, for instance, to rheumatism, scarlatina, diphtherial or other blood infections.

	794 Boys.													727 Girls.									
Ages	3-	4-	5-	6-	7-	8-	9-	10-	11-	12-	13-	3-	4-	5-	6-	7-	8-	9-	10-	11-	12-	13
Numbers examined	54	45	63	94	53	74	92	102	90	63	64	37	44	67	75	56	82	73	79	68	64	82
I. Normal	70	64	54	61	60	65	67	67	54	68	69	59	52	46	53	45	50	45	51	60	52	65
II. Enlarged distinctly	17	16	38	26	23	24	25	23	36	22	19	30	41	34	32	35	38	48	30	25	28	24
III. Enlarged pathologically	11	13	3	11	13	7	6	8	7	7	12	8	5	15	11	18	7	6	13	12	20	6
IV. Requiring urgent treatment	2	7	5	2	4	4	2	2	3	3	—	3	2	5	4	2	5	1	6	3	—	5

The report also states that it is rather as an indicator of other conditions in neighbouring tissues that enlarged tonsils are important. The lymphatic masses which are present about the upper part of the pharynx, and the mucous tissues about the posterior ends especially of the turbinate bones, are liable to become greatly hypertrophied, and sometimes cause much trouble from chronic irritation, whether by substances in the air, or from want of proper drainage of the surfaces, from actual deformities in development of the upper jaw, or even from want of development, due to the habit of mouth breathing having become established at an early age. Mere catarrh is apt to set up mouth breathing, and in mentally defective children is probably the chief cause in producing the excessive proportion of mouth-breathers, amounting to perhaps 50 per cent., a condition which, without other defects, is comparatively uncommon in the mentally normal children. This catarrhal condition often results in infection of the lymphatic tissues, and in children of low vitality the infection sets up chronic inflammation. Thickening of the soft palate leads to impaired tones in the nasal sounds. Discharges sometimes start pharyngitis, which gives the child the appearance of having nasal trouble and an excoriated upper lip. A remote result not uncommon is persistent conjunctival troubles and blepharitis, which requires treatment at a throat rather than an eye hospital if a cure is to be hoped for. For some reason, apart from the organs of the special senses, the existence of hypertrophied structures in this naso-pharyngeal region, adenoids especially, is associated with a peculiar mental condition of great importance educationally, sometimes called aprosexia. The nutrition of the frontal areas of the brain seems affected, whether by interference with the lymphatic drainage or in more subtle ways is not known, but these children are common. The great change of importance, however, in most cases, is the chronic thickening started in the tissues about the Eustachian tubes, often causing subsequent aural changes and very intractable deafness in later life. Sometimes during childhood the grosser form of suppuration of the ears takes place, and this is more likely to happen from scarlatina or measles in these children than in others. All the dangers of suppuration of the ears, blood poisoning, and meningitis are much more disposed to in mouth-breathers than in other children, and many lives are cut short from neglect of this condition. Even in the inspection of children sitting in their classes the majority of mouth-breathers are at once apparent. It is also obvious how they tend to gravitate to the bottom classes.

Dr. Niall has compiled the following table from notes in thirteen infant schools in Lambeth and Norwood:

Obvious Mouth-breathers with Enlarged Tonsils.

Infant Schools. Class.	Numbers.	Mouth-breathers with Enlarged Tonsils.	Per-centages.
Standard I. A....	565	26	4 6
B....	456	43	9.6
Grade III. A.	815	29	3 6
B.	585	40	7.0
C.	329	26	8 0
Grade II. A	383	7	1 8
B. and C. ...	751	27	3.6
Grade I.	818	6	0 7
Totals	4,902	204	4.2

Similarly Mr. Elmslie, in examining the newly-admitted infants at Campbell Street, found in 104 infants 13 mouth breathers, 12 having adenoids and 5 discharging ears.

INCOME TAX.

The Relief Granted by the Act of 1907.

The new provisions of the law respecting income tax have now been in force for several months, and practitioners who have complied with the requirements will benefit to a substantial extent by the reduction in the collector's demand on January 1st next. For the guidance of those who are not yet fully acquainted with the rules and procedure, we append a note on the extent of the relief and the manner in which it can be claimed.

Reduction of the Tax on Earned Income to Ninepence in the Pound.—This is the principal relief granted by the Act of the present year. It is subject to the following limitations:—(*a*) The reduction applies only to earned income; (*b*) it can be claimed only by individuals and not by companies, societies, and other bodies of persons; and (*c*) it will not be granted to any person whose total income exceeds £2,000, even though his earned income is less than that amount.

With regard to (*a*), "earned" income includes not only the profit derived from the personal labour of the individual, but also income arising from the employment of his own (but not borrowed) capital in his business. It also includes both salaries for present services and pensions granted for past services.

The restriction given in (*b*) does not debar a partner from relief, but in order to obtain it he must make a claim as an individual, stating his personal share of the partnership profits, with particulars of his other income, if any. No claim for relief can be made by the firm as such.

In view of the limitation in (*c*), it will be obvious that before relief can be granted a claimant must set out his income from all sources (whether taxed or not), in order that the Commissioners of Taxes may be satisfied that the total does not exceed the limit of £2,000.

The statement of total income is the foundation of the claim for relief, and the Act requires that it be made when the annual return of profits is made in the spring of each year. In no case can the claim be made after September 29th in the year for which the tax is charged. If not claimed in time, relief cannot be afterwards obtained by way of an application for repayment.

The reduction to ninepence in the pound is granted in addition to the exemptions and abatements in force under the old law, and therefore these allowances may be claimed as heretofore. But, where income is derived partly from earned and partly from unearned sources, the deductions for abatement and life-assurance premiums are to be made as far as possible from the assessment on the earned income, leaving the unearned income to be taxed at one shilling in the pound without deduction. The only exception to this rule is where the earned income is insufficient to cover the full allowances for abatement and insurance, when any balance may be allowed from the assessment on the unearned income.

Income Tax at One Shilling in the Pound.—This is still chargeable on all income not relieved under the provisions summarized above. Thus all unearned income (for example, rents of property and dividends on investments) and all earned income, where the total income exceeds £2,000, pay tax at one shilling in the pound.

The following summary of the times within which the

different exemptions and allowances under the Income Tax Acts can be claimed may be useful:

Exemption (income not exceeding £160), or abatement (income not exceeding £700), and allowance for life assurance premiums. . . . *At the time of making the income-tax return, or afterwards within three years of the end of the year of assessment.*

Relief to earned income under the Finance Act, 1907. . . . *At the time of making the income-tax return, but in no case after September 29th in the year for which the tax is charged.*

Objection to the amount of an assessment on property or profits. . . . *Within ten days of the date of the "Notice of Assessment"*

Appeal in cases of death, bankruptcy, or of a business changing hands, and profits falling off from some specific cause. . . . *Within three months after the end of the year of assessment.*

Appeal where loss sustained during any year. . . . *Within six months after the end of the year.*

Appeal at the end of the year in the case of new businesses. *As soon after the end of the year as is possible, if the taxpayer makes every effort he can be reasonably expected to make.*

Appeal at the end of the year where business discontinued. . . . *Doubtful, possibly within three years after the end of the year of assessment.*

(Note that the "year of assessment" ends on April 5th.)

MEDICAL NEWS.

IT has been decided by the Committee of Management of the Hospital for Women, Soho, on the recommendation of the Medical Committee, to admit qualified medical women to the practice of the hospital.

ON Wednesday next, at 8.30 p.m., Sir Almroth Wright, M.D., F.R.S., will read a paper before the Medical Society of University College, London, on the feeding of infants and invalids. Medical men are invited to attend.

IN the article on the International Motor Exhibition published on November 23rd, it was stated (p. 1535) that the price of the 10 to 14-h.p. four cylinder Grégoire chassis was 370 guineas. This is the cost of the 16–20-h.p. model, that of the 10–14-h.p. model being 280 guineas.

MEDICAL practitioners desirous of having their names placed on the London County Council list of approved lecturers to day and evening classes in first-aid, home-nursing, and infant-care, for engagement as occasion requires, should send in their applications not later than 11 a.m. on December 16th, to the Clerk of the London County Council, Education Offices, Victoria Embankment, W.C., from whom application forms and further particulars can be obtained. A fee of one guinea is paid for a lecture of about one and a half hours' duration.

THE Electro-Therapeutic Section of the Royal Society of Medicine, adopting a custom of its predecessor, the society of the same name, will hold a *conversazione* at the Queen's Hall on December 13th, from 7.30 p.m. to 11 p.m. In the afternoon of the same day and throughout the evening there will be an exhibition of electro-medical and *x*-ray apparatus, which will be shown as far as possible under working conditions. A special feature will be a display of *x*-ray tubes from the earliest to the latest patterns. Members of the medical and dental professions, and also recognized teachers of the physical sciences, will be admitted on presentation of their visiting cards.

AT a provincial sessional meeting of the Royal Sanitary Institute to be held at the Municipal School of Technology in Manchester on Friday next, at 7 p.m., a discussion on butter supply will be opened by Mr. T. Wilson, manager of the butter department of the Co-operative Wholesale Society of Manchester; this will be followed by a discussion on small dwellings, opened by Professor J. Radcliffe. On Saturday afternoon visits will be paid to the Salford Corporation model lodging house and artisans' dwellings and to the sewage purification works. Visitors can obtain tickets of admission from Professor Radcliffe at the Municipal School of Technology.

THE medical practitioners of Canning Town and the adjacent neighbourhood on November 26th presented Dr. R. J. Carey, on the occasion of his retiring from the neighbourhood, in which he had practised for over thirty years, with a silver salver bearing the following inscription: "Presented to Richard John Carey, M.A., M.R.C.S., L.S.A., by his fellow practitioners on his retirement from practice, December, 1907." Twenty doctors were present, and several of them took the opportunity of referring to the kindness, courtesy, and assistance that Dr. Carey had invariably extended to his fellow-practitioners, and all those present joined in wishing him long life and happiness. After Dr. Carey had made a suitable reply a vote of thanks was carried to Dr. Harold Beadles at whose residence the presentation took place.

ABOUT 150 ladies and gentlemen connected with the National Dental Hospital and College in Great Portland Street, W., met at dinner on November 29th, at the Trocadero Restaurant. In proposing a toast to the institution, the Chairman said that the hospital was labouring under two difficulties: lack of funds and lack of students. The latter, even if doubled in number, would still not be sufficient to cope with all the work to be done at the hospital. The authorities had found no reason to regret the step taken of admitting women students; some of them had greatly distinguished themselves by their work. During the course of the evening, Mr. C. W. Glassington, the Chairman, distributed the prizes awarded during the year, a large proportion of them being received by women.

AN appeal on behalf of the Army and Navy Male Nurses' Co-operation has been issued by Sir Frederick Treves, Chairman, and Dr. Howard Tooth, Vice-Chairman. The purpose of the society, of which we gave some account at the time of its establishment last summer, is to supply to the public well-trained male nurses and sick attendants of assured good character. The men employed have all been trained in the nursing section of the Royal Army Medical Corps, or the Sick Berth Staff of the Navy. The scheme will enable the authorities in time of war to call upon the members of the Co-operation to volunteer for active service. The appeal is addressed to those who feel that efficient male nurses should be more extensively employed in civil life, and that certain cases should not be nursed by women at all. The nurses will receive the full fees they earn less a small reduction for working expenses, and when the Society is once started it will be self-supporting; the sum of £2,000 is, however, needed to defray the initial cost of providing and equipping a suitable office and obtaining a small house where the men can lodge when waiting for a case. Subscriptions may be sent to the Honorary Treasurer, 47B, Welbeck Street, London, W.

IN opening the first general meeting of the newly-constituted Royal Society of Medicine, held on Tuesday, December 3rd, Sir William Church, Bart., K.C.B., M.D. (President) in the Chair, said that the business of the meeting was purely formal, but he wished to congratulate the Society on the amalgamation of the fifteen medical societies being an accomplished fact, a consummation which at one time he had hardly dared to expect. Since the end of the summer increased assistance had been needed and obtained in the secretarial and library departments. Statistics were given showing a great increase in the number of persons using the library under the new arrangements. After referring to the issue of the first volume of the proceedings of the sections, the President proposed that, in view of the large number of candidates for the fellowship of the Society, the by-laws affecting the election of Fellows should be suspended, and that all those candidates whose names had been received and approved by the Council previous to the meeting should be elected as Fellows. Accordingly, 129 candidates were elected *en bloc* to the fellowship. A number of newly-elected Fellows then signed the obligation book and were formally admitted. In the evening an inaugural dinner, which was very largely attended, was held at the Hotel Cecil.

A PROPOSAL for the adoption of the Notification of Births Act was before the Battersea Borough Council on November 9th. Dr. L. McManus proposed an adjournment in order that members of the borough council might confer with the district medical organizations with a view to the establishment of a working arrangement. He pointed out that the Act could not be administered without the assistance of the profession, and that unless it were very carefully and wisely administered it would prove obnoxious and tyrannical. The medical men of the district were prepared to make an arrangement whereby ordinary cases of confinement need not be notified. Of course, every suspicious circumstance would be fully reported, as it always had been, but the profession would not disclose the particulars or the secrets of the ordinary family life of their patients. The borough council could not compel them to do this. They would take full advantage of the loophole provided for their escape from the risk of prosecution, and it would be found that the attempt to administer the Act would fail. Mr. West, an ex-mayor of Battersea, said they were not prepared to submit the policy of the council to the members of a medical trade union, neither would they be threatened. The Council rejected Dr. McManus's proposal, and the question of the adoption of the Act was adjourned until November 27th, when it was adopted. There was then no discussion because of the lateness of the evening and the absence of Dr. McManus. All the Municipal Reformers present voted against adoption, and the Progressives, who are in a considerable majority, gave a solid vote in favour of the measure.

British Medical Journal.

SATURDAY, DECEMBER 7TH, 1907.

THE BRITISH MEDICAL ASSOCIATION, 1907-8.

THE next annual meeting of the British Medical Association will be held at Sheffield, and for the information of members there is published this week an illustrated article giving some account of the history, situation, and institutions of that great centre of the steel industry. But Sheffield is something more than an industrial centre, for by the public spirit of its citizens and the munificence of its merchant princes it has been enriched with parks, art galleries, museums, hospitals, and a university, while it has been endowed by Nature with the inestimable advantage of having immediately beyond its boundaries great stretches of moorland and open country where a man may roam a summer day without a glimpse of factory or mine.

From the preliminary programme published in the SUPPLEMENT it will be seen that the scientific business of the annual meeting will be conducted in sixteen sections, and that in addition to the opening address by the President for 1908-9, Mr. Simeon Snell, Ophthalmic Surgeon to the Royal Infirmary, there will be an address in medicine by Dr. Fowler, Senior Physician to the Middlesex Hospital, and one in surgery by Mr. Pye-Smith, Senior Surgeon to the Royal Hospital, Sheffield. The fact that ample accommodation for general meetings at which the addresses will be delivered, and for all the Sections can be provided within the precincts of the University itself, gives to any one who has attended an annual meeting of the Association a better idea of the vastness of the pile of buildings the University possesses in Weston Park than many pages of description. Nevertheless we shall attempt in a future issue to give some account not only of the interesting history of this the youngest of British universities, but also of the buildings in which its work is carried on.

The circumstances under which the Association is applying for a Royal Charter have frequently been stated at length, but it may be well shortly to recapitulate the main points. The Association was incorporated under the Companies Acts in 1873, and the possibility of obtaining a Royal Charter was subsequently mooted on several occasions, and was considered by the Constitution Committee of 1900-1. That Committee, which was mainly concerned with the mode of government and administration of the Association, came to the conclusion that from this point of view the definite advantages of applying for a Charter were not sufficiently apparent. After the reconstitution, the Association, as represented by the Annual Representative Meeting, desired considerably to expand the objects of the Association in certain directions, and the Council was instructed to take the legal steps necessary to obtain such alteration of the present Memorandum of Association as would give power to carry out these wider objects. When the matter was gone into, the eminent counsel consulted advised that it was exceedingly doubtful whether the requisite extension of the memorandum of association would, or even could, be granted by the High Court; and Mr. Beaufort Palmer, in May, 1905, advised that the Association, having attained to its present magnitude and having interests in all parts of the world, might apply for a Royal Charter with every prospect of obtaining it. The advantage of incorporating the Association under a Charter instead of under the Companies Acts is, to quote the words of Mr. Palmer, that "the "Association would be freed for all practical purposes "from the trammelling rules of the Courts in regard "to what is and what is not *ultra vires*, and thus, as the "undertaking develops, so could the operations be "extended without the necessity for seeking for express 'provision among the objects. A chartered corpora-"tion, even though constituted for specified objects, is "not in point of law limited by those objects." A draft charter with appended ordinances and by-laws was accordingly prepared, and has received very full consideration at the hands of the Representative Meeting. At a special session in May last, it adopted a form which has also been approved by the Council except on certain specific points as to which, as is well known, a Referendum is now being taken.

The first is with regard to the mode in which a referendum should in future be taken; the Council desires that it should have the power to refer back a resolution or any decision of the Representative Meeting to the Representatives at another meeting with an indication of its reason for so doing, and that it should only take a referendum to the Divisions after receiving back the resolution or decision unaltered or altered in a manner which appears to the Council to be unsatisfactory. The second point is as to the mode of election of the Council; one of the by-laws to the draft charter as approved by the special Representative Meeting proposes that the Council should consist of fifty-two members, thirty-one elected by the Branches, twelve by the Representative Meeting, together with, as at present, six *ex-officio* members and one officer recently retired from the Royal Navy, the Royal Army, and the Indian Medical Service respectively, to be nominated by the Council itself. The third point is the proposal to divide the Journal and Finance Committee into two separate committees, a Journal Committee and a Finance Committee.

The appearance of the report by the Council, giving its reasons for taking a referendum on these points, was followed by the publication of a report prepared and issued by direction of the Annual Representative Meeting at Exeter, giving reasons against the view held by the majority of the Council, and a report from the minority of the Council, who likewise disagreed with the views of the majority. From the animated correspondence which has since occupied so much space in the columns of the JOURNAL, it would appear that the point in which most interest is felt is the second—that is to say, the proposal to alter the present mode of electing the Council by giving to the Representative Meeting the right of electing twelve of its members, and abolishing the right at present possessed by the Council of co-opting a certain number of additional members. The proposal for a more extensive grouping of Branches for electoral purposes is a corollary to the proposed reduction of the total number of members of the Council and the introduction of members elected by the Representative Meeting. After the result of the referendum has been ascertained by counting the votes cast in the Divisions, the draft charter, ordinances, and by-laws will again, we understand, be considered by the Representative Meeting.

The question of the best form of government for the Association has not been allowed to interfere

with the full exercise of the powers which it already possesses, and a great deal of valuable work to advance or maintain the interests of the profession has recently been done, as may be read at length in the reports of the Council, of the Medico-Political, Hospitals, and other standing Committees, but we may be permitted to refer more particularly to the great value of the labours of the Central Ethical Committee, not only to the Association at large, but to individual members. The Committee has been able to accept certain principles of conduct already pretty generally recognized, it has extended or more clearly defined certain others, and it is proceeding cautiously to formulate others again upon which opinion cannot yet be said to be settled. This is very important work, and can be duly and fully recorded in the annual reports of the Committee and in the reports of its proceedings published from time to time in the SUPPLEMENT to the JOURNAL. But it is not by any means the whole of its work, nor indeed, we make bold to say, its most useful work—at any rate, from the point of view of individual members. To establish general principles is difficult, but such is the complexity of human affairs and the uncertainty of human motives, that the application of these general principles to particular cases is sometimes a still more difficult and anxious undertaking. While not hesitating when necessary to express a decided opinion upon facts brought to its notice, the Committee is often able to act in a conciliatory way, and by pointing out to both parties to a dispute that there has been a misunderstanding, or that the circumstances are such as to justify concession on both sides, to establish again that feeling of good fellowship and mutual trust and respect with which it is one of the main objects of the Association to inspire all its members.

EMMENAGOGUES IN THE NEWSPAPERS.

THE enormous extent to which quack medicines are sold at the present day, mainly through persistent advertising in certain classes of newspapers, is a grave public evil. This proposition will not be disputed save by interested or very ignorant persons, but the injury inflicted on the public no doubt varies in degree in different instances; and the article published in this issue dealing with the composition of certain of the nostrums advertised for the cure of complaints peculiar to women illustrates some of the most serious abuses resulting from the unrestricted advertising and sale of such articles.

With regard to most of the classes of nostrums analyses of which have previously been published, the train of events may be summarized somewhat as follows: The sufferer is first persuaded by advertisements, characterized by more or less ingenuity and a total disregard of veracity, that the particular symptoms from which he is suffering arise from some disease for which the medicine in question is especially suited and specific in its action; the net is cast very wide, so that the most varied complaints are all traced to some one cause chosen to suit the advertiser's particular article; wonderful tales are told to account for the possession of the secret of the marvellous cure-all in question and to convince the reader that it is something beyond the reach of ordinary medical knowledge.

Incidentally we may remark that of five much-advertised remedies for epilepsy four contained bromides; of the six headache powders examined all contained acetanilide, commonly called antifebrin, in one case combined with phenacetin and in another with caffeine. Of the seven kidney medicines five contained potassium nitrate, in some cases mixed with various well-known drugs; while one, a homœopathic remedy, consisted of sugar without any discoverable addition. Of the six obesity cures the principal ingredient in two cases was citric acid, and in two it was potassium iodide; the fifth was a sulphur and ginger lozenge, and the sixth an ointment containing ox bile. Of the seven blood purifiers three contained as their chief ingredient potassium iodide, in one case combined with quinine sulphate; two appeared to be as they professed, extracts of sarsaparilla, one was a pill of aloes, jalap, cinchona, and ginger, one contained a small quantity of some vegetable substance, probably stillingia, and the seventh was a homœopathic pilule consisting of 100 per cent. of sugar.

The reader of the advertisements of a nostrum having been induced to send stamps or a postal order to the advertiser, is supplied with something containing one or more cheap ingredients usually of little or no medicinal value, though in some cases possibly harmful; if the ingredients employed are comparatively innocent drugs in common use, they are likely enough to be injurious to some of those who swallow the nostrum, owing to their being totally unsuited to the disorder for which they are taken; in other cases in which serious organic disease exists the purchaser is injuriously affected by his recourse to the nostrum, because he is thereby induced to postpone taking skilled advice until the time for effective treatment is past or until his condition has been so much aggravated as greatly to diminish the prospect of recovery. The person who has been induced to obtain a first supply of one of these advertised quack preparations is supplied with further statements and testimonials enclosed in the package, calculated to impress him further with the conviction that his complaint, whatever it may be, is one for which the article is the only sure specific; recommendations of other preparations belonging to the same dealer are, as a rule, also included and recommended, either as subsidiary parts of the treatment or for other purposes; in this way it is no doubt hoped to keep the whole spending power of the sufferer for medicinal articles in one channel until his faith is fully exhausted. A further evil, from the victim's point of view, is the inflated price charged as a rule for nostrums; the figures we have published in earlier articles show that the actual cost of the drugs in nostrums for which a sum of several shillings is charged is often only a small fraction of a penny. This might be regarded with equanimity as the natural penalty of undue credulity, were it not that the victims are so often people of very limited means, who are in many cases denying themselves necessaries in order to spare the money for some worthless article in the hope of the promised cure which it is powerless to achieve.

Complaints peculiar to the female sex furnish a rich hunting ground for these unscrupulous quacks. It is unnecessary for their purpose to employ the large and detailed newspaper advertisements familiar in other cases; a small paragraph with some heading that will catch the eye, announcing a remedy for "all irregularities so prevalent with the sex," or, in many cases, merely implying the purposes for which it is put forward, appears to suffice; absolutely certain success is usually claimed, and in a large number of cases the prospective patient is urged to write direct to the maker. If the bait is taken the game begins in earnest; the sufferer is supplied with printed matter, often with the addition of personal letters, setting forth the virtues of the article

in question, but nearly always with the reservation that in certain obstinate cases a more powerful medicine is required, which can be supplied at a much higher price. If the stronger preparation is sent for it often comes accompanied by an intimation of a still more special one at a more exorbitant price. These "special" medicines are shown by the analyses which we publish to be usually little or no stronger than the others, but to be merely a device for extracting the uttermost payment from a peculiarly susceptible victim.

The most serious consequences, however, are quite apart from the swindling of the purchaser of these nostrums. A considerable number of them are recommended in such a way that the suggestion that they can be employed as abortifacients is very thinly veiled. How far they might be efficacious for such a purpose may be doubtful, for there is no known abortifacient which is certain, or anything like certain, in its action, but there can be no doubt that the unchecked administration to pregnant women of aloes, iron sulphate, and oil of pennyroyal—which, with purgatives and carminatives, are the ingredients of nearly all these nostrums—cannot fail to produce harmful and possibly even fatal results; while one of those most openly recommended as an abortifacient consists largely of savin. The purpose for which these preparations are expected to be taken is plainly shown by their being accompanied in so many cases with advertisements of quinine pessaries and various appliances for preventing conception, and they are thus also made the means of introducing such devices to those who may have obtained the medicines in good faith for menstrual troubles.

THE ROYAL SOCIETY AND VIVISECTION.

As is stated elsewhere in the JOURNAL, the Royal Commission on Vivisection asked the Royal Society whether it was desirous of nominating a representative to give evidence before it. The Society decided, doubtless for good and sufficient reasons, not to do so; its President, Lord Rayleigh, was, however, deputed to make a statement on behalf of the Council. This statement was presented in March and the substance of it has already been published in the JOURNAL.

The opinion of such a body as the Royal Society must carry such weight, however, that we think it may not be superfluous to recapitulate some of the chief points from the full text of the Report of the Council presented to the Society on November 30th. After declaring that the Royal Society, from its age and the position accorded to it among scientific institutions, feels its responsibility as a guardian of the general interests of science in this country, it is stated that the appointment of a Royal Commission on the subject of experiments on animals was deemed by the President and Council to be an occasion when they might ask to be allowed to lay before the Commission a statement of their views on the broad scientific bearings of the question. They proceed to point out that the main cause of the remarkable development of science in modern times has been the adoption of the experimental method of investigating Nature. From the beginning of its history the Royal Society has fostered the prosecution of experiment, not only in physical and chemical, but in biological inquiry, and its publications are full of records of the discoveries which had consequently been made. It was added: "In no branches of investi-
"gation have the theoretical and practical successes
"of experimental work been more conspicuous in
"recent years than in physiology, and its practical
"applications in medicine and surgery. In medicine,
"the careful and patient testing of the effects of drugs
"on the lower animals has not only led to an accurate
"knowledge, not otherwise attainable, of these effects
"as produced on the human body, but has greatly
"increased the number of substances now avail-
"able to the physician in the treatment of disease.
"Without this method of investigation the progress
"of pharmacology, in recent years so astonish-
"ing and beneficent, would be arrested, and diseases,
"which may in time be successfully combated, would
"continue their ravages unchecked. In modern surgery
"the application of a similar experimental work has
"been attended with brilliant success. Most delicate
"and fundamental operations on the human body have
"been made possible by the knowledge obtained from
"the treatment of animals." On this account the President and Council of the Royal Society claim that since the continued advancement of science depends so largely on the use of the experimental method, the utmost caution should be observed in any proposals for limiting the use of the method by legislation.

So much, it is said, has already been gained from the application of the method, both for the progress of physiology and for the alleviation of human suffering, that the trust is expressed that nothing will be done to hamper the legitimate employment of the method. While precautions should undoubtedly be taken against improper experiments on living animals, the President and Council feel it their bounden duty to urge that those safeguards should be so framed as not unnecessarily to interfere with the advancement of knowledge. Such restriction, it is pointed out, would not only cripple or arrest the growth in this country of an important branch of biological knowledge, but in so doing would reduce the efficiency of both physician and surgeon to mitigate or cure disease. Allusion is made to the fact that the co-operation of the Royal Society has often been sought by the Government in taking measures to arrest the spread of deadly disease, and to improve the conditions of health in distant parts of the Empire; and testimony is borne to the laborious and unselfish devotion, often in most dangerous conditions, with which the necessary researches have been carried out by physiologists and pathologists, without whose help the Society could not have given the advice asked for, and to the value of their researches not only in enlarging our biological conceptions, but in alleviating the sufferings of mankind. Coming from such a body as the Royal Society, such an expression of opinion may be taken as the last word of science on the subject.

THE PITFALLS OF LATIN QUOTATION.

OLIVER WENDELL HOLMES said the medical profession, to which he himself belonged, was the most illiterate of the three so-called learned professions. We should prefer to call it the least literate, and even with that mitigation we think the statement open to question. It is true that medical writers, if they are not carefully looked after, are apt to scratch the head of Priscian more than a little. We have more than once had occasion to cite examples, but the following, as far as we are aware, are new. A contemporary some time ago said, in its haste, of some body—we forget whether it was the General Medical Council or that of the Association—"Concilium vult decepi, and *decepi* it will be." In a pamphlet addressed to the members of the Marylebone Division a year or two ago it was plaintively stated that "we poor practitioners have *mortalia anima.*"

We were once asked by a candidate for a public service whether *torticollis* was not called after Colles of Dublin; and we have heard of another learned Theban who informed a relative of a patient who had unfortunately slipped through his hands into the Styx, that the patient had died of bradycardia, a recently-discovered disease of the heart named after one Brady, its discoverer! The latter is not, perhaps, exactly an example of bad Latin; but as Holofernes says, t'will serve. We have lately seen *anginae pectorides* in an American journal; *cystites* and the like impossible plurals are common. But doctors are not by any means the only or the worst offenders. The pedant we have just quoted cries out, it may be remembered, at a particularly excruciating barbarism, "O, I smell false Latin—dunghill for *unguem!*" But what would have been the poor man's feelings had he read, in one of the best of our evening papers, "*Militavunt non sine gloria*"? or, in the same cultured organ, the following gibe at a political opponent: "*Completely sui generis*," with the explanation considerately given: "*Sus* is a good Latin word"! What would he have said if he had seen, in a review in a newspaper which rather prides itself on its literature, *annus mirabile?* Nor is it only in English papers that this kind of "howler" is found. Not long ago a distinguished French man of letters wrote, in *Le Temps*, "*Experientia fallax, ars difficile.*" Another time the same newspaper, which is one of the most literary of France, spoke of the *vulgum pecus*. As if not to be undone, one of the leading newspapers of Spain, the *Heraldo de Madrid*, headed an article "De res Medica!" We do not know whether the late Dr. Dowie would be acknowledged by the clergy, but he is recorded on one occasion to have opposed the homoeopathic law *similia similibus*, to what we hope was one of his own invention, *Contraria contraribus*. For most of these we can give chapter and verse. But there are others which one finds in collections of such curios. Thus in the *Moeurs des Diurnales*, by "Loyson Bridet," we find such gems as *Regnum meum non est ex hoc saeculi*, attributed to the *Siècle*. We should perhaps not include flights of unclassical fancy like *Reddate Caesaro quod est Caesari; Risum contenebitis, mei amici? Nil novo sub soli; Non omnis moribor; Macteamini puer*, because no reference is given and the playful author may have invented them. But he evidently believed the newspapers capable of these atrocities; and our point is that with all our backslidings there is nothing worse to be found in medical journals, even in those of the Great Republic of the West, where citizens are apt to show their freedom in the same fashion as the emperor who declared himself to be *supra grammaticam*. The sovereign people perhaps holds that it has the same power over language as the *Grand Monarque* who changed the gender of a word by calling for *Mon carrosse*. After all, in these days of phonetic spelling and Esperanto there are few who care for such a trifling matter as spelling. Has not a particularly gratuitous error been justified by a scientific investigator on the ground of his "protozoological instinct?" We suppose the conscientious objector to the tyranny of etymology will have his way when he writes what he considers to be English. But in regard to quotation we hope he will follow the excellent advice given to a young politician by the great Duke of Wellington: "Don't quote Latin, say what you have to say, and sit down."

THE ASSESSMENT OF INTELLIGENCE IN SCHOLARS.

IN a somewhat iconoclastic but exceedingly readable book written by Mr. Harold Gorst, and entitled *The Curse of Education*, Thring of Uppingham is stated to have written in his diary that three-parts of teaching and learning in England is the hiding common sense and disguising ignorance under phrases. With this every psychologist will be in agreement. Notwithstanding recent advances in pedagogical methods, the major portion of education, so-called, consists in laboriously driving dry and often utterly useless information into the heads of unwilling school children without any consideration either of their individual aptitudes or future necessities. Mr. Gorst asserts that "facts should be regarded as poisons, to be used "sparingly and with discrimination. Every time that "a fact is imparted an idea is driven out." Doubtless this is an extreme view of the case; the useless facts called poisons by Mr. Gorst become isolated and sterile in the scholar's mind, and finally atrophy. What average length of time elapses before this happy process of obliteration is fulfilled it would be interesting to know, and we have often thought that systematic yearly re-examination of ex-pupils for, say, five years after leaving school would furnish a valuable commentary on educational systems. So far as we know, this has not been attempted in this country; but we see from a short paper by Dr. Otto Ludwig Klieneberger[1] on the testing of the intelligence of school children and students, that Rodenwald, as the result of a lengthy mental inventory of the Schleswig Cuirassiers by means of test questions, came to the conclusion that five years after leaving school scarcely anything remained of the facts so carefully instilled. Rodenwald's investigations were originally undertaken, Dr. Klieneberger states, in the hope of obtaining a normal standard for purposes of comparison with mentally defective individuals, but his results only showed that the same sum of errors which was to be expected amongst defective patients may occur amongst sound individuals—that is, that a standard so obtained was incapable of individual application to defective cases. Dr. Klieneberger himself examined the 39 children of the highest class of a primary school (*Volksschule*), two corresponding classes of a secondary school (*Bürgerschule*) with 39 scholars, and 58 university students. The subjects were examined under uniform conditions, and had to reply as promptly as possible to fifty-five test questions, reaction times being measured by a fifth-second stop-watch. A striking feature of the questions was their general simplicity, so much so that mistakes would appear almost impossible for the average boy. As examples, a few may be given here: What is your name? What is your father? How long have you been at school? When did you pass your matriculation examination? What is the price of a roll? Out of what is bread made? How does one travel to America? What is the difference between a tree and a shrub? How many legs has a cockchafer? What is the difference between a misstatement and a lie? Give examples of gratitude and courage? Paintings were also shown and the pupils afterwards told to describe the scenes represented, and sentences given in which parts of the words had been erased, the omissions to be filled up by the examinees (Ebbinghaus's method), and also words were given out of which they were to form sentences. The school children were between 13 and 15 years of age, and had been at school from six to eight years. The average age of the university students is not given. Notwithstanding the elementary character of the questions, the 58 students gave 134 incorrect answers, the *Bürgerschule* pupils 221, and those of the *Volksschule* 329. Most of the questions required mere knowledge, but some involved judgement. Naturally mistakes of judgement were more numerous than those of simple information—in the students three times as great, in the secondary scholars five times as great, and in the primary scholars five and a half times as great. As to

[1] *Deutsch. med. Wochenschr.* October 31st, 1907.

reaction time, Dr. Klieneberger found a general correspondence between accuracy and quickness of response, the reaction times for the whole series being for students 9½ minutes, for the secondary scholars 15½ minutes, and for the primary scholars 17 minutes. Great stress is laid on this last point by Dr. Klieneberger, who goes so far as to lay down a general law that intelligence and reaction time in dealing with simple questions like those quoted are in inverse relation—the shorter the reaction time the greater the intelligence, and that therefore quickness and correctness of response to the simplest questions furnish a reliable measure of the degree of intelligence. It is impossible to accept such a conclusion. A man may be the greatest philosopher, and still be in doubt about the legs of a cockchafer, may hesitate disastrously as to the way to America, or the constituents of flour, and consume at least 2 minutes 55 seconds in reciting the months of the year backwards—one of the interesting questions given. As Hughlings Jackson once said, man should be thankful for his power of forgetting, and we should not be surprised to learn that the pupils who gave longest reaction times and the greatest numbers of errors in these tests became the most distinguished in the end. Time limits in examinations often throw out the best as well as the worst, and deductive genius is seldom accompanied by an encyclopaedic memory for detail. It is interesting in this relation to know that in Japan University students may take their books of reference into the examination hall, a plan which might be followed with advantage elsewhere.

CHRONIC NASO-PHARYNGEAL DISEASE IN SCHOOL CHILDREN.

THERE are a number of children, the Medical Officer to the London Education Committee points out, who begin their troubles in life with chronic tonsillitis or adenoid growths of the naso-pharynx. In the same report, under the head "Pulmonary Tuberculosis Among School "Children," we are told that nearly three-quarters of the 1,670 children examined for that disease presented enlargement of the cervical lymphatic glands, and 43 per cent. had enlarged tonsils. Dr. Kerr concludes that in the case of the tonsils nearly all direct damage is done in early life, most being determined by influences existing in infancy. This conclusion is based on the fact that the proportion of children with tonsillar enlargement remains steady during school life, while associated conditions and sequelae are developed in the later years of childhood. It appeared that caries of the teeth was more common in children with enlarged tonsils, and showed that in all probability such children had poorer nutrition than the others. The obstruction may also hinder correct articulation, and cause increased efforts at breathing, resulting in mouth-breathing. Dr. Kerr rightly considers that every teacher should be acquainted with the symptoms which denote adenoids. The disorder produces a peculiar mental condition, which the late Professor Guye of Amsterdam described in these columns some years ago under the name of "aprosexia"; apperception is greatly lowered, and the attention cannot be maintained. Such children are numerous, and are often presented for examination as mentally deficient. The condition varies; at times they are quite sharp and intelligent, and then absent-minded, dreamy and "wool-gathering." The bad condition seems aggravated where the structures of the naso-pharynx are swollen from catarrh or damp. The character of the children is also injured by adenoids, and they become in later life timid and fearful. Mouth-breathers are much more predisposed to suppuration of the ears, blood poisoning, and meningitis than other children. Dr. Kerr points out that during breathing drill the teacher should be able to notice the existence of adenoids, and parents should be warned. A teacher ignorant of the symptoms caused by adenoids may easily be pardoned for attributing such symptoms—as the laterally compressed nose and open mouth, the veiled look of the eyes, the absence of resonance in the voice, leading to the faulty enunciation of the letters *m* and *n*, and the impossibility of fixing the attention—to mental rather than physical causes. The matter becomes morally serious when children who, free from adenoids, would be of average brightness and intelligence, are disliked and punished by teachers to whom they are a source of discouragement. There exists in a large number of schools a special class, between the infants' school and the boys' and girls' department. In this are collected a quantity of children classified as backward. They are too old to remain with the infants, and too backward to join even the lowest standard of the higher school, whom they would retard. It might not be amiss to guess that a large proportion of this particular group of children which is a slur upon our civilization, because they are admittedly deficient, and yet not bad enough to be in special schools—it might not be amiss to guess, we say, that much of their backwardness is due to such remediable causes as adenoids and diseased tonsils. If medical inspection were confined at first to the elimination only of these diseases—which, taken in time, are easily cured—a great work would be done and many grave mental and physical complications avoided. By prophylaxis and early treatment, and by that only, can we ever hope to grapple with this huge educational problem.

DOCTORS IN RUSSIA.

THE lot of the doctor who engages in contract practice in this country is not always, as our readers have ample reason to know, a happy one. But we are not so badly off as our brethren in Russia, where anarchism, ignorance, and alcoholism combine to make the reverse of an earthly paradise for medical practitioners. A correspondent of the *Journal des Débats* gives a picture of the lives of certain among them that may serve to make some nearer home more contented with their destiny. The workman in the large towns is indeed no longer under the sway of the ferocious superstitions which used to impel him to kill doctors who were trying to stamp out an epidemic. By way of compensation, however, he has learnt the use of violence and force in getting what he wants. This is said to be particularly true of the Polish workman. At Warsaw, at Lodz, and throughout the Vistula district, acts of terrorism are of daily occurrence. At present it is especially doctors who are the victims of anarchist workmen. These have conceived the happy thought of getting large compensation from companies for disabilities supposed to have been received in their service without submitting to the inconvenience of any actual injury. The procedure is very simple. Five or six of them go together to a doctor and ask for certificates of disability. The doctor examines them, finds them absolutely sound, and refuses to certify. Then they pull out revolvers, and the doctor, understanding that resistance is useless, addresses each man in turn: "What is the matter with you, my friend; a lost lung? "And you; deformation of the chest? And you; a "paralysis of the nerves of the head?" and so on. The doctor meekly signs the certificates and shows out his amiable patients, being only too happy if they do not carry away with them as souvenirs some objects of value from his consulting room. Our own Compensation Act affords facilities for tapping the pocket of the employer, but we have not yet come to the kind of thing described as prevalent in Russia. It is only fair to state that the Russian people are

reaping what its amazing Government has sown. It has always looked on doctors with suspicion as men whose minds are especially open to liberal ideas. Numbers of them have been imprisoned for alleged political offences; others have been driven into exile by the persecutions of the police. It is possible, of course, that in some cases doctors have meddled imprudently in politics, and have only to thank themselves for the consequences. But the Government occasionally gets a proof that it would do well not to drive to extremities men on whose knowledge and special skill it may at any time be dependent. Some time ago the Governor-General of Odessa ordered that a well-known bacteriologist should be expelled the city and the territory of his government for one month. On July 2nd he ought to have left the town, but on July 3rd a message was received that, owing to the occurrence of a case of plague in the district, the need of a competent bacteriologist was felt. The authorities therefore graciously signified their willingness to cancel the decree of expulsion on condition that the bacteriologist should sign a declaration that he would not be a member of any antigovernment organization. This proposal he declined to accept; all he would agree to was to sign a declaration stating that he had been arrested for reasons unknown, and that he had done nothing wrong. With this declaration the administration had to be satisfied.

THE TOXICITY OF THERAPEUTIC SERUMS.

BESREDKA proposes[1] that when a serum is intended for therapeutic use its toxic as well as its antitoxic, properties should be systematically tested and determined quantitatively. For the determination of toxicity he recommends the intracerebral inoculation of guinea-pigs sensitized by a previous dose of serum. Employing this method he finds that there is a wide range of toxicity in serums of different origins, the fatal dose varying from $\frac{1}{4}$ to $\frac{1}{128}$ c.cm. He thinks it should be made a rule that no serum ought to be used for therapeutic purposes if its degree of toxicity is above the average; and he regards all serums as above the average degree of toxicity if death or very severe disturbance is produced in a sensitized guinea-pig by a dose not exceeding $\frac{1}{20}$ or even $\frac{1}{16}$ c.cm. It is not easy to explain why horse serums of the same age, but of different origins, often differ in toxicity; all that can be said at present is that such differences do exist, and therefore the possibility of employing a highly toxic sample ought to be guarded against. The influence of time on the toxicity of any given serum is better understood, and it is clearly established that a serum is most toxic when first drawn, and that this toxicity is progressively diminished. From his experiments with the serums of horses employed at the Pasteur Institute in Paris for the purpose of yielding antitoxin, Dr. Besredka finds that on the day of bleeding the toxicity is so great that $\frac{1}{32}$ c.cm. is a fatal dose; during the first ten days afterwards there is a rapid fall of toxicity, the amount required to produce death being $\frac{1}{16}$ c.cm., with a serum eleven days old. After this period, and up to the end of the first month or six weeks, the fall in toxicity is very slow; thus a serum, forty-five days after bleeding, produces grave symptoms of anaphylaxis in a dose of $\frac{1}{16}$ c.cm., but without necessarily inducing death. After the lapse of the first two months the toxicity of the serum maintains itself for a long time at the same level, the minimum fatal dose being $\frac{1}{8}$ c.cm. Further keeping seems to have little, if any, influence in diminishing toxicity, and even with a sample thirteen years old a dose of $\frac{1}{4}$ c.cm. proved fatal. One conclusion indicated by these experiments is that no therapeutic serum, whatever its origin, ought to be considered sufficiently freed from toxicity until it is at least two months old.

[1] *Ann. de l'Inst. Pasteur*, October, 1907.

MEDICAL TYPES IN SOUTH AFRICA.

DURING the past year our contemporary *South Africa* has been issuing some pen sketches of South African types, among the more recent being an attempt to portray varieties of district surgeons. Roughly, the writer seems to have encountered three different classes of men of this order, which probably contains most of the better-known practitioners in South Africa outside the largest towns. His first type, at one time the commonest of all, is now nearly extinct. He was generally a Scotchman with a great many letters after his name, who gave the most trivial complaint a high-sounding name, and was looked upon by his patients as a Galen, Aesculapius, and complete family physician rolled into one. He commonly travelled immense distances, charged correspondingly heavy fees, and delighted in medicines so drastic that his patients, when they had swallowed his pills and potions, sometimes thought they had received even more than value for their money. He tended to do a good deal of money lending, and eventually to end his life in some large seaport, where he did not always prosper. Another and more modern type is a clever scientific, lively young man, given to controversy on any and every subject, and disposed to take sides in any fight which may be going on. He is ready to take immense interest in everything but his patients, and hence as a practitioner is not a success. As an instance the writer describes one doctor, who lost a practice of £3,000 a year by preferring the study of fossils and indulgence in sharp politico-theological combats to attentive consideration of the baby's illness and its mother's feelings. Then comes the ordinary or normal type of district surgeon who is described as an educated, competent, medical practitioner whose family and practice are equally large. He is in every respect a family man and performs the duties of his life, humdrum or otherwise, with respectable ability. Another picture drawn, but not as one of a common variety, is a greedy, money-grubbing person, who becomes surgeon to one or two large benefit societies at a low rate of remuneration, which includes the supply of medicine, and then only prescribes hot water and Glauber's salts. The sketch terminates with an expression of opinion that district surgeons as a whole should be regarded as a kind-hearted, able class of men—as entirely respectable and very useful persons, about whose deeds and conduct little that is evil can be elicited even by the writer, who signs himself "Search Light." He seems to think that not in all cases are they sufficiently well paid for their work, and indicates that in some localities, owing to the conditions under which the work has to be carried on, the competition for these appointments is far from severe. Some of the incidents in medical life recorded in the sketch may be described as a little "tall"; as, for instance, a case in which a medical man, on arriving at a house, concluded that doves were kept in it owing to the cooing which he heard, this sound being afterwards found to be produced by the heart of the patient whom he had been summoned to visit.

THE HUDDERSFIELD SYSTEM.

A FULL account is given elsewhere (p. 1658) of the report on the working for the thirty-nine weeks ending October, 1907, of the Huddersfield scheme to diminish infantile mortality. It will be remembered that Mr. Benjamin Broadbent, when he was Mayor of Huddersfield, devised a practical way of arousing interest in the infantile mortality question, by offering to every mother among the labouring classes the sum of

one guinea for any healthy well-cared-for Huddersfield baby of a year old which was brought to him. Gradually this idea was elaborated, with the result that a Huddersfield and District Public Health Union was formed. The scheme of this society appears to have been so carefully thought out and to involve so little expenditure that we have reproduced its constitution and rules in the hope that other towns in Great Britain may be fired to do similar work on equally good lines. The scheme is interesting if only to demonstrate the possibility of the smooth and successful working together of public and private bodies. We have known certain medical officers of health to resent what they called the interference of health societies, and refuse to allow them to expand, taking it as a reflection upon their own work. Happily the Medical Officer of Health of Huddersfield has not taken up this attitude, and his sympathy and co-operation must have added much to the real worth of Mr. Broadbent's scheme. By a special Act obtained in 1906 the Corporation of Huddersfield have had power to require the compulsory notification of births to the medical officer of health within forty-eight hours. That the notifications within the time limit have been 94 per cent. of the total births is due in great measure to the facilities afforded. Stamped and addressed cards are given to midwives, and on request to doctors and others from the health office direct, or through the assistant medical officers of health, or the ladies of the Public Health Union. In reviewing the marked diminution in the infant death-rate at Huddersfield since special measures have been taken, it must also be remembered to the credit of that town that while the infantile mortality rate for the first six months of the current year was lower by 22 per cent. than that of the seventy-six great towns, this has been achieved in spite of the fact that Huddersfield is an industrial centre where many women work in mills and factories, whereas many residential localities and health resorts are included in the seventy-six great towns. It was Herbert Spencer who said, "Do but "consider for a moment that the regimen to which "children are subject is hourly telling upon them to "their lifelong injury or benefit; and that there are "twenty ways of going wrong to one way of going right, "and you will get some idea of the enormous mischief "that is almost everywhere inflicted by the thoughtless, "haphazard system in common use." Huddersfield is attacking the child problem at the root, for no amount of after-care will undo the mischief done to infants in the first months of their lives. If kindred societies were established in all our towns, we venture to predict that the work of medical inspection of the future school generation would no longer be the great bogey of our social state which it is to-day.

IS ECTOPIC GESTATION BECOMING MORE FREQUENT?

At a recent meeting of the Obstetrical Society of Hamburg[1] there was a discussion on the Prevalence and Causes of Ectopic Gestation. Dr. Seeligman, who has already written a paper on injury as a cause of extra-uterine pregnancy, reported a case which, in his opinion, strongly supported his theory. He diagnosed extrauterine pregnancy, with mole-formation or rupture in a multipara aged 33, and operated, removing a tubo-ovarian fetal sac of the size of a hen's egg. The pregnancy had reached the sixth week. At the beginning of that period the patient slipped down a flight of stairs when carrying a heavy weight, and Dr. Seeligman, on the strength of previous clinical evidence, was convinced that the accident was the cause of the abnormal pregnancy. There was no history of gonorrhoeal, puerperal, or any other kind of infection. Dr. Lomer, in discussing the theory, seemed inclined to believe that ectopic gestation was absolutely more common now than it was twenty years ago. In 1883 and 1884 he worked at the Frauenklinik in Berlin, and hardly ever saw a case either on the operating table or in the *post-mortem* room. The rarity of necropsies at that date is more important than the relatively few operations, for expectant treatment was the rule in those days, except when rupture was diagnosed. Dr. Raether did not agree with Dr. Lomer's view, considering, as do most gynaecologists at present, that the apparent frequency of ectopic gestation at the present time is to be explained by our greater experience in diagnosis. Twenty years ago many cases were not sent into wards for diseases of women or submitted to the opinion of a gynaecologist. They were treated by the physician or practitioner as cases of peritonitis. Yet, on the other hand—not very consistently, as far as can be judged from the report—Dr. Raether believed that the great extension of gonorrhoeal infection over rural districts must be taken into account. He agreed with Dr. Seeligman, on the strength of his own experience, that trauma might be a cause of extrauterine pregnancy. The conflicting arguments brought forward in the course of this interesting discussion seem open to objection. Couvelaire's researches seem to show that inflammation is never the cause of the implantation of the ovum on the mucosa of the Fallopian tube. Clarence Webster attributes the implantation to the development of decidual tissue in the tubal mucosa—a change normal in the uterus but abnormal in the tube. This change, if it really occurs, may indicate an incipient degeneration of the stock amongst civilized women. As for trauma, a great deal more information about the clinical details of cases is needed before we can arrive at a satisfactory solution of the question.

[1] Report of a meeting of the Society, *Zentralbl. f. Gynäk.*, No. 32, 1907, p. 985.

AN ALLEGED CURE FOR LEPROSY.

The lepers in the settlement of Molokai and the natives of Honolulu are reported, according to the New York *Medical Record*, to be very indignant at the action of the health authorities in not permitting the trial of an alleged leprosy cure until its originator has proved his contentions. It is stated that the matter will become an issue between the races at the next election, and that an effort will be made to elect a purely native legislature. We know nothing of the alleged cure or of its originator, but if the lepers are willing to offer themselves as subjects for experiment we see no reason why the health authorities should not allow the remedy to be tried on them. We hold that, especially in the case of a disease hitherto incurable, everything offering any reasonable chance of success or even amelioration should be tried under proper conditions. This is quite a different thing from accepting as an infallible remedy a method of treatment the value of which is still doubtful.

TREATMENT OF INEBRIETY.

The Home Secretary last week promised a deputation from temperance organizations that he would appoint a departmental committee to inquire into the treatment of inebriety and narcomania. Mr. Gladstone said that the Government recognized the limitations of the Act of 1898, and the fact that there was a want of accommodation, especially for the poorer classes, and was of opinion that the time had come for a review of the working of that Act. With regard to "drink cures," while some might think that they were of the nature of

quack remedies, he thought that as their number was increasing, as a great many people were interesting themselves in them, and as a considerable number believed in them, an investigation of the drug cures for inebriety should be taken up as incidental to the inquiry. The Royal Commission on the Care of the Feeble Minded, which had taken a great deal of evidence about drunkenness, and particularly about certain classes of drunkards, would issue its report very soon after Christmas; and though that inquiry did not cover the whole of the ground he thought that it would be desirable, before expressing a final opinion as to the exact reference to the proposed committee, to see what the Royal Commission said, and whether it could make any recommendation on this branch of the subject. He thought that the framework of the tribunal should be of a lay character, but that expert medical opinion should be adequately, though not strongly, represented on the tribunal. He appreciated the immense value of the opinion of medical men, especially with regard to the pathology and psychology of the question and as to these drink cures, but he thought they would probably be the first to admit that on a practical inquiry, which would have to consider so many social and political matters, they were hardly the people to have a dominating voice.

THE CLINICAL HOSPITAL OF THE ROYAL ARMY MEDICAL COLLEGE.

In pursuance of the policy of making the Royal Army Medical College a complete college for what in the civil profession would be called post-graduate teaching, the Army Council has decided to associate Queen Alexandra's Military Hospital with the college as an integral part of the medical school. It has obtained the assistance and co-operation of certain civil consultants in medicine and surgery of acknowledged eminence, whose experience and skill will, it is anticipated, be of great benefit to the Army Medical Service, and will conduce to the efficiency of the hospital as regards both the treatment of the sick and the investigation of the various diseases incidental to military life. It is hoped also that this plan will have the further effect of fostering among the civil members of the profession a greater interest in the work of the Army Medical Service, and in those special problems with which its officers have to deal. The following appointments have been made: To be Consulting Physicians, Dr. J. Mitchell Bruce, F.R.C.P., Consulting Physician, Charing Cross Hospital; Dr. J. Kingston Fowler, F.R.C.P., Physician to Middlesex Hospital; and Dr. W. Osler, F.R.S., F.R.C.P., Regius Professor of Medicine, University of Oxford. To be Consulting Surgeons, A. E. Barker, F.R.C.S., Professor of Surgery, University College of London; A. A. Bowlby, C.M.G., F.R.C.S., Surgeon to St. Bartholmew's Hospital; and G. H. Makins, C.B., F.R.C.S., Surgeon to St. Thomas's Hospital. Queen Alexandra's Military Hospital, a new building only recently taken into use, is situated at Millbank close to the New Royal Army Medical College, the two buildings being in fact separated only by the Tate Gallery.

EGYPTIAN SCHOOL OF MEDICINE.

Mr. Edmund Owen, Chairman of the Council of the British Medical Association and of the Committee of Management of the Royal College of Physicians and the Royal College of Surgeons, has been appointed by the two Royal Colleges to attend and report on the examinations held in December by the Egyptian School of Medicine at Cairo. Under the scheme now in force candidates who have received the Diploma in Medicine and Surgery of the Egyptian Government, after passing the required examinations and completing the curriculum of professional study at Cairo extending over four years, will be admissible to the Final Examination of the Conjoint Examining Board in England on the completion of one year of additional study at a recognized medical school and hospital in the United Kingdom, during which they will have to complete the courses required by the regulations of the Conjoint Board. Mr. Owen leaves on December 10th, and will be absent from England about a month.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

The arrangements for the International Congress on Tuberculosis, to be held at Washington from September 21st to October 12th, 1908, are making good progress. Among those who have promised to deliver addresses are Dr. R. W. Philip, of Edinburgh; Dr. Theodore Williams, of London; Dr. Newsholme, of Brighton; Dr. C. H. Spronck, of Utrecht; Dr. Karl Turban, of Davos Platz; Dr. Gotthold Tannwitz, of Charlottenburg; Professor von Behring, of Marburg; Professor Calmette, of Lille; Dr. Maurice Letulle, of Paris; and Professor Kitasato, of Tokyo. Up to October 28th the Governors of twenty-three States of the Union had consented to give official countenance to the Congress. In all these States committees had been appointed, which were now actively at work.

THE BRITISH MEDICAL ASSOCIATION AND JOURNAL.

An article describing the new house of the Association now in course of erection is published at page 1661. It is illustrated by block plans in the text, and by a special plate showing the elevation in the Strand and Agar Street, and the arrangement of the Library. The short history given in this article of the local habitations of the Association since its removal to London will be read with interest by the older as well as the younger members. To the older it will recall a period when by the courage and self-sacrifice of a handful of men who had faith in its future the Association was carried through a period of difficulty and danger, and to the younger it will give some hint of the way in which the present generation has come into so goodly a heritage. The preliminary programme of the Annual Meeting in Sheffield next July is published in the first page of the Supplement for this week, and a prospectus of the British Medical Journal for 1908 is printed on the last page of the Supplement.

The Glasgow Corporation at a recent meeting decided to confer the freedom of the city on Lord Lister.

The King has conferred the Order of Merit on Miss Florence Nightingale. It is said that in a window of the chapel of Cornell University there is a picture of her with the legend, "Saint Florence Nightingale." Certainly there are few saints in the calendar who better deserve canonization than the gracious and helpful lady who ministered to our wounded soldiers in the Crimea.

Dr. Heynen, Vice-President of the Belgian Chamber of Deputies, has recently suggested that it should seriously take up the consideration of the Bill for the regulation of medical practice. This Bill was first brought forward on March 21st, 1901. Since then it has been successively referred to various Committees in November, 1902; in November, 1904; in November, 1906, and in 1907. But the Bill still remains, in a parliamentary sense, in a state of suspended animation.

General Medical Council.

[*The detailed report of the Proceedings of the General Medical Council is concluded in the* Supplement *for this week.*]

NOTES.

The University of Wales.—Medical degrees are to be instituted by the University of Wales, and the principle has been accepted that university degrees should be something materially more than mere minimal qualifications. A six years' curriculum is required, and no medical degree will be granted by the University of Wales unless the candidate is already possessed of a degree in arts or science. Not less than three years must be spent in one or more of the Welsh colleges.

Amendment of the Medical Acts.—A motion brought forward by Dr Langley Browne for the appointment of a committee to draft amendments to the Medical Acts in the direction of explicit prohibition of unqualified practice met with considerable sympathy; but it was felt that an indispensable preliminary to such action would be the collation of the enactments in force in countries other than Great Britain, for which a large amount of material already lies to hand in the Minutes of the Council and in their appendices, and in our own pages. Information as to certain countries not therein contained must be especially obtained to render the account complete. Hence the original motion was, with the consent of the Council, dropped, and another substituted, appointing a committee to collect and collate this information. It is obvious that the case for an alteration of the law in the United Kingdom would be greatly strengthened if it be shown, as it undoubtedly can, that the laws in other countries and the trend of recent legislation in other parts of the British Empire all point to definite prohibition of irregular practice.

The Coventry Dispensary.—The readers of the British Medical Journal are well acquainted with the long history of the controversy with regard to the Coventry Provident Dispensary. It will be remembered that in the end all the medical officers of the dispensary, with two exceptions, thought it necessary, acting under the advice of the profession in the locality, to resign their appointments, and that other practitioners not previously resident in the district accepted office under conditions identical with those which had led to the resignation of the original staff. In consequence of this, the members of the original staff started a new dispensary service on lines approved by the profession, and notified the fact to patients who had been on their lists. It was alleged that, in the means adopted to give publicity to the existence of the new dispensary service, the rulings of the General Medical Council on the subject of canvassing for patients had been infringed, and the medical men who accepted office under the old dispensary appeared as complainants against the original staff, who had associated themselves with the new dispensary service. It was expected that, owing to the somewhat complex issues which might arise, the consideration of the case would have taken up a considerable amount of time. It would no doubt have been maintained on behalf of the respondents that the patients of the old dispensary were, in fact, patients of the practitioners who attended them while officers of that dispensary, and that, therefore, these gentlemen were within their rights, when the change took place, in circularizing the patients on their lists. This point has, we believe, never been settled by any decision of the Council, although we have always maintained that this was the correct view of the relationship which exists between doctor and patient, and that the fact that the doctor was paid through a contract organization made no difference. The counsel for the complainants, however, did not persevere with the charge, produced no witnesses for examination, and entered only very slightly into the nature of the allegations, stating that his clients accepted the assurances of the respondents that the collector had strict instructions to apply only to patients on their lists. Hence counsel for the respondents had no opportunity to develop their defence, and the verdict of the Council, that the facts alleged had not been proved, was very speedily arrived at. Although the case was not actually fought out—and it may therefore be contended that a definite principle was not established—yet it was frankly stated by counsel for the respondents that they had made announcements both by circular and through their collector that they had formed a new dispensary service which those who were their patients under the old provident dispensary would have the opportunity of joining if they desired to continue to enjoy the services of their old doctor. The procedure adopted was definitely before the General Medical Council when it arrived at and pronounced its decision on the case, and the inference to be drawn is that the General Medical Council, if it did not formally and in actual terms recognize the propriety of this proceeding, at least did not take exception to it.

The Administration of Anaesthetics for Unregistered Dentists.—A complaint was lodged by the Irish Branch of the British Dental Association that a Licentiate of the Royal Colleges of Physicians and Surgeons of Edinburgh had knowingly assisted three unregistered dentists in Dublin by administering anaesthetics for them. The facts were admitted, but as it was the first case of the kind brought before the Council, its further consideration was postponed till the May session, when the respondent will be expected to appear and satisfy the Council as to his conduct in the interim. The case is of some importance, as it is believed that sufficient care has not yet been taken by medical men to ascertain in all cases that the dentists for whom they administer anaesthetics are upon the *Register*. Any slackness in this respect strikes at the root of the value of qualification and registration, and the matter is by no means purely a dental question.

The Education Committee.—Dr. Mackay, the Chairman of the Education Committee, informed the Council that it was in possession of a good deal of material furnished by the Licensing Bodies as to the periods at which students arrive at the various stages of their professional curriculum, and that the Committee was considering how best to present it in an instructive form. We look forward to the appearance of this report at the next session of the Council with much interest, for the previous report, dealing with the earlier stages of the student's career, was of great value.

(*To be continued.*)

THE ROYAL SOCIETY.

The Royal Society held its anniversary meeting on November 30th, the President, Lord Rayleigh, O.M., in the chair. The report of the Council stated that among the main subjects that had occupied the attention of the Royal Society had been (1) the reduction of the various observations which it had undertaken to publish, but which it had not yet been possible to issue; (2) the International Catalogue of Scientific Literature, of which the fourth annual issue had been completed, while the fifth had also been published with the exception of the volumes dealing with chemistry, zoology, and botany, which were in the press; (3) the Society's Catalogue of Scientific Papers, the preparation of the final portion of which (1883 1900) had been progressing during the year; (4) arrangements for the publication of the Society's *Proceedings*, etc.

Vivisection.

It was stated in the report that in November, 1906, a letter was received from the Secretary of the Royal Commission on Vivisection, asking whether the Society wished to nominate a representative to give evidence on its behalf. The Council decided not to nominate a representative, but informed the Commission that the President would present a statement on behalf of the Council. The

substance of this statement was published in the British Medical Journal of June 29th, 1907, page 1544.

Investigations on Tropical Diseases.

The report stated that two additional reports of the Sleeping Sickness Commission (numbers VII and VIII) were issued early in the year. The further action taken by the Society in regard to the disease, and the part which it took in the International Conference held in June have already been set forth in the Journal of June 29th and August 17th. Parts V, VI, and VII of the reports of the Mediterranean Fever Commission have been published during the year, and with the publication of Part VII the work of the Commission may be regarded as completed.

Dinner.

In the evening the anniversary dinner was held, Lord Rayleigh occupying the chair. After the usual loyal toasts the President's health was proposed by Lord Dunedin. In response, Lord Rayleigh spoke of the many ways in which the Society was called upon to help forward the cause of science and to assist the various departments of the Government in the preparation of undertakings for which scientific knowledge was necessary. For the doing of this it depended on the free advice of eminent men who were experts in the particular matters referred to the Society; and, of course, without that help it would be impossible for the Society to do what it had done. Work of that kind needed to be still further pushed. It was often said—the sentence was often quoted—that "the people perish for lack of knowledge." One interpretation of that might be taken to refer to the education of the masses of the people. He was not one to belittle the importance of that side of the matter, but he thought that the knowledge for the lack of which the people perished was rather the knowledge of others who might guide and instruct them—in fact, that natural knowledge for the improvement of which the Royal Society was founded. Lord Dunedin had referred to the functions of the Society, which consisted in bringing together men who worked in various departments. He was afraid that there he had touched on one of the difficulties they had to face—a difficulty arising out of the excessive, from one point of view—but he supposed the necessary—specialization of science in these days. They might bring the physicist and the chemist and the biologist together, but he was afraid the result was that when the physicist read a paper the chemist did not understand it, and when the chemist read a paper the physicist did not understand it, and when the biologist read a paper neither the physicist nor the chemist understood it. He was reminded of a dialogue he saw in a comic paper, in which the first speaker, A., made the remark that the day before he had heard a lecture from a professor an hour and a half long. B. inquired what it was about, and A. replied: "He did not say." The President went on to propose the health of the medallists—Professor Abraham Michelson (Copley Medal), Dr. E. W. Hobson (Royal Medal), Professor E. W. Morley (Davy Medal), Professor W. Wirtinger (Sylvester Medal), Professor E. H. Griffiths (Hughes Medal), Mr. W. H. Power, Medical Officer to the Local Government Board (Buchanan Medal).

In responding to the health of "The Visitors," the Dean of Westminster, after referring to the first dean, who was a member of the Society, Dr. Thomas Spratt, and who wrote in 1677 the history of the Society, which at that time was only twelve years old, went on to tell a story of another Dean of Westminster who was a Fellow of the Society—the eminent geologist, William Buckland. In 1848 Buckland was doing some repairs in Dean's Yard when unfortunately he struck on a mediaeval drain, the opening of which was serious in its consequences. He and his two daughters and a large number of persons living within the precincts fell sick of typhoid, or, as it was called at that time, "Westminster fever." As soon as he recovered he set himself to work in a scientific spirit to remove the offending cause, and it was said that he removed 400 cubic yards of filthy matter from the ancient drains within the precincts. Dr. Buckland then introduced the new system, for the first time anywhere in London, of pipe draining. Later on he preached on the occasion of the thanksgiving after the removal of the great scourge of cholera, taking for his text the words of the prophet to Naaman, "Wash and be clean."

Bristol.

The Royal Infirmary.

It was supposed a fortnight ago that the last words, or at least almost the last words, had been said on the differences between the staff and the Committee of the Royal Infirmary; but it seems that the latter is determined to keep the sore open. On Wednesday, November 27th, there was published in the local daily press a long report on the proposed rule dealing with the plurality of hospital appointments, the result of a Committee meeting on the day previous. Any one reading this report—that is, any one who had not followed in detail the issues raised during the past two months—would imagine that the Committee had gained every point, and that the staff had suffered an ignominious defeat. It would be perhaps going too far to say that the exact reverse is the actual state of affairs, but the omission of certain essential features in the proceedings, and the glozing over of others, gives an entirely wrong impression of what has really taken place. Accompanying this report is a copy of the amended rules, which will be presented to the Governors for confirmation, and as their substance has already been given in the British Medical Journal, it is unnecessary to repeat them, but it may be noted that the physicians are to confine themselves to "medical work." No doubt this is intended to mean the practice of medicine, as apart from surgery and midwifery, but technically "medical work" includes all branches of medicine—that is, surgery, obstetrics, etc.

The report says that no necessity now exists for further inquiry, as the honorary staff has agreed to a modification proposed by the President, though, as a matter of fact, the proposals were mutual, and the President agreed to withdraw the particular rule to which the staff took special exception. It states further that it was the intention of the Committee to give a complete list of the restrictions imposed at the provincial hospitals and infirmaries, and a few "typical" cases are added as an appendix for the information of the Governors. Why the London hospitals are not to be brought into comparison with the Royal Infirmary of Bristol is not mentioned, but it is presumably because they do not fit in with the view the President wished the Governors to take. The provincial hospitals mentioned are those at Liverpool, Sheffield, Manchester, Salford, and Birmingham. In the list that appeared in a previous manifesto of the Committee, Leeds was included; it is now left out.

Attention is directed to the fact that the recent discussion revealed that many of the Governors laboured under the mistaken impression that the power to dismiss any member of the staff for neglect of duty rested with the Committee, but the Committee points out that only a general meeting of governors can take this step. Attention to this was first called in this Journal a few weeks ago. Why the Committee now brings this into prominence again is not quite evident. No cases of neglect of duty have been mentioned, and if the authorities have any complaints to make it would be better to state them. As it would be the duty of the Committee to draw the attention of the Governors to any neglect, and it has not done so, it can only be concluded that there are no cases.

The Committee argues from the rules of the provincial hospitals that "the whole trend of hospital management is either to provide for the total prohibition of dual hospital appointments or their strict regulation, or at the least to require the Committee's sanction." It would be interesting to know at what date the rules prohibiting dual appointments at the cited provincial hospitals were made—whether they are new, as the paragraph quoted suggests, or were made many years ago.

The next paragraph deals with the prohibition rule over which the whole controversy raged. It states that this was the suggestion of the Dean of the Faculty, but it omits to mention that the Dean, in proposing it in writing, was not acting as the representative of his colleagues, two other gentlemen being on the Committee specially for that purpose; that it was his own private proposal and had not been submitted to the staff for approval, and when it was the staff would have none of it. If, as the report says, the new rule will completely "prevent the evil of undue plurality of hospital appointments," why was not the rule brought forward in the first

instance as it now reads? As a matter of fact the Committee did not understand its own rule or its scope, and it has been forced by circumstances to accept a less stringent one. Really all it has effected is to exclude the Handel Cossham Hospital from having any member of the infirmary staff as a physician or surgeon.

The last paragraph refers with satisfaction to the staff seeing the "advisability of co-operating with the Committee in initiating the new rule." Here the facts have been inverted. If it had been left to the staff no new rule would have been proposed. It was the President and his Committee that awoke to the fact that it was advisable to agree with their adversaries quickly while they were in the way, and the overtures came from the President, not from the staff, as the report would have the Governors and public understand.

The above statement read with the report will give a clearer idea of how matters have gone than the *ex parte* declaration of the Committee.

Medical Inspection of Schools.

The Education Committee, at its meeting on November 28th, had before it the question of salary to be paid to the medical inspector under the new Act. The matter had already been before the Hygiene Committee, which had conferred with the Children's Help Society, an old and much valued society, and the Chairman acknowledged the great help the Society had given the Committee, and the necessity of inspection and medical examination. On the question of salary, Professor Wertheimer said the case was one in which it was not economical to do a cheap thing, and the salary proposed was not sufficient to get a really efficient man. At certain towns in the North of England £600 was paid, and he moved that the matter be referred back to the Committee for reconsideration. Dr. Davis pointed out that it would take at least ten minutes to examine each child, and there were 8,000 of them. The inspector was to be the medical officer of the child population not only at school, but also at home according to the memorandum. Principal Henderson stated that the inspector, to examine all the children, would have to work five hours a day for 266 days, and the schools were not open for so many days in the year. The Chairman entered his protest very strongly against the Board of Education planting the memorandum upon them within so short a time of the compulsory date, namely, January 1st, 1908. The best qualified medical man might be unfitted to carry out the new class of work; it would require intense tact, or parents, teachers, local authorities, and superior medical officer would all be offended by the requirements of the new medical inspector. For the first six or twelve months they wanted a man to organize the work, to devise machinery for carrying it out. Let them impress upon the citizens that £250 was a commencing salary. It was agreed to refer the question back to the Committee.

Manchester and Salford.

Glasgow Club Dinner.

The second annual dinner of the club formed two years ago by the graduates of the Glasgow University who reside in the Manchester district was held on November 26th at the Midland Hotel, Manchester. The club numbers about seventy members, who all live within an area of forty or fifty miles around Manchester, and it includes five or six women graduates. The chair was occupied by Dr. Ballantyne, of Darwen, and there were also present Sir James Barr, the president, Professor Hunt, and Sir W. J. Sinclair, Dr. Richmond, of Rochdale (the honorary secretary), and Dr. Davie, of Failsworth (the treasurer).

The Rev. T. B. Evans, of Heywood, in proposing the toast of "Our Alma Mater," spoke of the democratizing influence of the Scottish Universities, which he said the younger English universities had learned. The Rev. W. G. Edwards-Rees, of Salford, said that though the University of Glasgow would soon be celebrating her five hundredth birthday, she still had the fire of youth in her eyes, and was ready to adjust herself to the calls of a modern age. Specializing, he said, was all very well in its way, but he felt bound to cling to the ideal of a degree being the hallmark of a full and rounded culture. Sir James Barr proposed "The Sister Universities," and, referring to the remarks of the last speaker, deprecated the idea of a man being considered to be fully educated at 21 or 22 years of age. He thought that a certain amount of specialization was necessary in these days, but, of course, it should rest on a broad foundation, and the universities must not be looked on as a "finishing school." Sir W. J. Sinclair, who is a graduate of Aberdeen, responded to the toast.

West Yorkshire.

New Wing of the Pontefract Dispensary.

Several additions to this dispensary were formally opened on November 28th. They comprised an operating theatre and anaesthetic room, the gift of the Misses Robson; the Lyon Ward, built by Mr. J. G. Lyon, and furnished by Mr. Bernard Hartley; and a convalescent balcony outside the Lyon Ward, the gift of Mr. E. L. Robinson.

Bradford Small-pox Hospital as a Consumptive Sanatorium.

The Bradford Guardians require accommodation for females who are suffering from consumption and suitable for sanatorium treatment. Bradford has been of late singularly fortunate in not having any cases of small-pox to treat, although it has a very admirable small-pox hospital. The Health Committee of the Bradford City Council and the guardians have recently had under consideration the possibility of using the small-pox hospital for cases of tuberculosis, and the medical officers of the two authorities have inspected the hospital and its appointments. The medical officer to the guardians in his report states that, in his opinion, the building could be easily adapted for use as a sanatorium for early cases of consumption, and could be made to accommodate about 20 patients. Only early cases should, however, be sent. A resident medical officer would be essential. What appears, however, to be an insuperable objection to the scheme is that if a single case of small-pox occurred in the city all the consumptives would have to be immediately cleared out of the building and sent back to their homes for an indefinite period.

Birmingham.

The Huxley Lecture.

The Huxley lecture in connexion with the University was delivered at the Midland Institute on November 27th, by Professor J. J. Thomson, Cavendish Professor of Physics in the University of Cambridge. The title of the lecture was "The Influence of Recent Discoveries in Electricity on our Conception of Matter and Ether."

Teeth of School Children.

At the annual meeting of the Governors of the Birmingham Dental Hospital on November 27th, an important announcement about the state of children's teeth was made. Through the generosity of an anonymous benefactor it has been possible to bestow attention upon the teeth of children in the elementary schools. Of the 2,733 mouths charted during the year no fewer than 2,629, or 96 per cent., had required attention. If all the children throughout the city suffer from defective teeth to this extent a very important municipal question arises, with which it is obviously impossible for a voluntary charity to cope.

The Birmingham Dental Hospital is doing a large amount of work. The number of new patients registered during the past year was 5,255, and the total number of attendances was 11,371. The statistics showed that the number of operations had been 24,039, as compared with 21,308 in the previous year, yet, in spite of the number of ordinary extractions having gone up, there was also a great increase in inlays and fitting, which indicated more attention to individual cases. The new hospital is found to be very suitable and efficient in every way, and, if supplied with more funds, the amount of relief that could be given would be much greater than at present.

FACTORY GIRLS AND DRINKING CLUBS.

As organized drinking clubs among factory girls and women have become widely prevalent in Birmingham, a conference of city employers was held a short time ago to discuss the best remedies for arresting the evil. The conference was called at the instance of the Rector of Birmingham (Canon Denton Thompson), and an influential committee was appointed, which drafted a circular letter to be sent to employers in the city and district. The organized drinking clubs are producing serious results, physically and morally, and are formed for surreptitiously getting alcoholic drinks into factories and workshops. They also enable girls to drink together in public-houses and other places after leaving work, and are very much used for celebrating birthdays, marriages, and other events, and at holiday times, especially Christmas. These drinking clubs seem to exist secretly without the knowledge of the employers, but in some factories they are carried on with the consent of the foremen or forewomen, and are even encouraged by them. The Committee has made careful inquiries, and the evidence is conclusive that these clubs do exist to a very large extent, and that they are weakening the moral character of many female workers, lowering their sense of self-respect, degrading their lives, and unfitting them for the responsibilities of motherhood. The girls and women are expected and even coerced to join the drinking clubs, and are persecuted if they refuse. Many of the girls are developing loose manners, and are getting into habits of confirmed intemperance. A meeting was held at Queen's College on November 26th, and the Rector of Birmingham in a most earnest speech pointed out some of the terrible consequences of the drinking clubs. He said:

> Many of the girls are encouraged to drink by men placed in authority over them, with results so disastrous that you have only to know something of the condition in which these young girls are sometimes found to realize it. Go to the homes in Birmingham and see the young unmarried mothers of 16 and 17, and remember that these are some of the effects, and that these effects are the result of some of the motives.

The Committee recognizes that employers cannot interfere with the liberty or control the conduct of the girls and women outside the factories, but they are determined that they should be informed that such clubs exist, and suggest that if adequate rules were placed in prominent positions in the factories, and were rigidly enforced, the evil would be considerably diminished. Notices prohibiting drinking clubs will be supplied to manufacturers for exhibition in their workshops; and it is suggested that a federation of all women workers amongst girls should be formed, which, if well organized, would be a powerful agency in preserving the moral tone among female employees.

Scotland.

TREATMENT OF INCIPIENT MENTAL DISEASE IN THE EDINBURGH ROYAL INFIRMARY.

FOR the occurrence of any change in the working of the Royal Infirmary of Edinburgh a considerable lapse of time is inevitable. For five years now the question of the institution of wards for cases of incipient mental disease has been under discussion, and hope is rising that some not too distant future will witness the initiation of the enterprise. The proposal must be regarded as in every sense most desirable. The principle that "prevention is better than cure" and the practice of preventive medicine are in ordinary hospital work very largely impossible to carry out. The warnings and threatenings of oncoming disease are endless; medical advice may, in the midst of unsuitable surroundings, be difficult or practically impossible to follow, and yet the wards of a hospital are so fully occupied with curative medicine that space for preventive medicine is practically nil. In mental cases, however, the conditions are somewhat different, the difference being due to the stigma attaching to one who has been the inmate of an asylum. This is obviously only a passing phase, and it is merely a question of decades till public opinion will think no more of a short visit to an asylum than a "cure" at Marienbad or a belief in Christian Science; but till those intervening decades are passed the possession by the Royal Infirmary of wards for such mentally-affected persons would be a boon indeed.

PROPOSED MODEL HOSPITAL FOR THE SCOTTISH EXHIBITION.

At a meeting of the managers of the Edinburgh Royal Infirmary on December 2nd, a letter was read stating that it was proposed to have a Home Nursing Section in connexion with the Women's Section of the National Exhibition to be held in Edinburgh next year. Lessons would be given in home nursing and in the use of disinfectants, and, as it was felt that the success of the Section depended on its being supported by the managers of the Royal Infirmary and similar institutions, it was requested that the lady superintendents of the Infirmary and the Convalescent House at Murrayfield should be permitted to join the Exhibition Committee, who will have charge of the arrangement. The letter was remitted to the Nursing Committee and the medical managers.

TEMPERATURE OF FISHES.

The third ordinary meeting of the Royal Society of Edinburgh was held on December 2nd, when Dr. Sutherland Simpson read a communication on the "Body Temperature of Fishes and other Marine Animals." He stated that a large number of cod, ling, coal-fish, flounders, and other species of teleostean and elasmobranch fishes caught in the Pentland Firth and in the Firth of Forth were examined, and their body temperature compared with the temperature of the sea in which they lived. It was found that in the larger fishes (cod, ling, etc.) the body temperature was slightly higher than that of the water, indicating a feeble attempt at heat regulation and a slight development of a heat-regulating mechanism, but in the smaller species there was practically no difference. Three species of the crustacea and two of the echinodermata, procured around the shores of Pan Bay in the Orkneys were also examined. These might be regarded as true poikilothermic animals, as there was no excess of body temperature over that of the environment.

Ireland.

THE TUBERCULOSIS EXHIBITION, BELFAST.

THIS exhibition has been successful beyond all expectations; numbers varying from two to four thousand have visited it daily, and a total of just short of 20,000 have been registered for the week ending November 30th. There are several sections: (1) The Statistical, under Sir John Byers, which includes all the large charts and tables of the Registrar General of Ireland, specimens of health regulations, leaflets and cards of instruction of all the large towns. (2) The Veterinary, under the charge of Mr. Ross and Mr. Gregg; this Section includes some of the finest specimens of tubercle in various organs of various animals, and some of Professor Mettam's preparations. (3) The Food Section, under Drs. Elizabeth Bell and Marion Andrews and other ladies; there were also demonstrations of sick-room cookery by Miss Roberts; two of the most interesting exhibitions were a meat safe, costing 3d., made of a plain box with a roof of perforated zinc, and some thin muslin slips, beaded at the margin, to act as a covering for milk bowls; they are pretty to look at, preserve the milk from flies, dust, etc., and practically cost nothing; these two are the invention of Dr. Bell. (4) Appliances, under Dr. Norman Barnett, comprising exhibits of various firms, photographs of Miss Sewell's garden and health scheme for towns, a contrast scheme of a plain bedroom as it should *not* be but often is, and one as it should be; some of the nurses attended and demonstrated the various points. (5) The Pathological, under Professor Symmers, which included specimens of tubercle in all organs, with illustrations and diagrams, a model of a stained slide of tuberculous sputum, etc., and, under a glass case, the instruments for Wright's method of taking the opsonic index, and inoculation. There were also a châlet, open-air shelters, revolving shelters on exhibit, and models of others.

A large number of medical men acted as demonstrators, and went round with audiences of the most varied description—clergymen of all denominations, mill girls and factory hands, shipwrights, and foundry boys—and the close attention and intelligence shown were unprecedented, and quite unhoped-for among the originators. The reason is probably that there was hardly one present who had not

lost a near relative from tuberculosis in some form. Although many—both doctors and laymen—worked hard, and deserve the thanks of the community for their labours, special mention should be made of the names of Sir John Byers, Drs. Elizabeth Bell and Marion Andrews, Dr. Norman Barnett, and the two secretaries, Drs. Houston and MacIlwaine.

Her Excellency the Countess of Aberdeen came from Dublin, and paid a private and unexpected visit on Saturday evening, when the building was crowded with working people, and at an impromptu meeting which gathered in the large hall on her departure, Her Excellency expressed her high appreciation of the exhibition.

During the course of the week Professor Sinclair lectured on surgical tuberculosis; Dr. Lawson, of Banchory Sanatorium, on some aspects of the tuberculosis problem in Ireland; Mr. McW. Davidson on stuffy rooms, their causes and remedy; Professor Mettam, Dublin, on tuberculosis in animals; Mr. Sayer on how to keep our homes healthy; and Professor Lindsay on what other nations have done. These lectures have been marvellously attended. Instead of an audience of a couple of dozen, as some even of the optimists feared, several hundreds were present, and the large hall was crowded each night.

Tuberculosis Exhibition in Limerick.

The Tuberculosis Exhibition was removed from Belfast to Limerick on November 29th, and was formally opened on November 30th. The Mayor attended in corporate state, accompanied by his sword and mace bearers, while on the platform were representative citizens of the city and country. The mayor, in his opening remarks, said that consumption was a national disease, and that the citizens of Limerick were anxious to do their part in helping to abate it. This could be done by bringing home to the people the means which science had devised for the purpose. Her Excellency the Countess of Aberdeen wished to make the exhibition a great success, and she had paid a high compliment to Limerick in giving them the first opportunity of seeing it in the south. Bishop O'Dwyer moved the first resolution:

> That the time had arrived when all public bodies and all Irishmen interested in the welfare of their country should join together and by every available means strive to lessen the ravages of that dire disease, tuberculosis, which in 1905 was the cause of 12,000 deaths in this country.

The Right Rev. Dr. Orpen seconded the resolution. Sir Alex. Shaw proposed the second resolution:

> That it is highly desirable that the disease known as tuberculosis be made compulsorily notifiable, so as to enable all local authorities to take all necessary steps for the prevention of the spread of the disease whereby they would be enabled to adopt immediate preventative measures, such as disinfection and isolation.

The High Sheriff seconded the resolution, and Dr. Holmes proposed the third resolution:

> That it is desirable that sanatoriums should be established, on approved sites, throughout Ireland for the treatment of early and suitable cases of tuberculosis, and also that some means should be provided for the care and isolation of advanced cases so as to prevent the spread of disease.

Dr. Frost seconded the resolution.

Lord Monteagle proposed the fourth resolution:

> That we are of opinion that inspection by a qualified veterinary surgeon of all dairy cows supplying milk to large towns should be compulsory, and that a like rule should apply to the meat supply, and that no cattle or sheep intended for human food should be killed outside a public abattoir.

All the resolutions were passed unanimously.

The Mayor announced that the Countess of Aberdeen would deliver an address on December 2nd.

Dr. W. Arnold Thomson of Castle Hill, Maidenhead, has been elected President of the Windsor and District Medical Society.

The report made to the forty-fifth annual meeting of the Surgical Aid Society, on December 2nd, showed a not inconsiderable falling off in the net income for the year; it was indicated, however, that this was due to the receipts in the previous period, 1905-6, having been abnormally high. The net total this year was £22,900. Altogether during the year there had been relieved, by the gift or loan of appliances, nearly 25,000 persons.

SPECIAL CORRESPONDENCE.

PARIS.

Appendicitis and Secondary Syphilis.—Mortality from Alcoholism.—Prophylaxis of Venereal Diseases in the French Army.—Professor Landouzy appointed Dean of Faculty of Medicine.—Opening of New Light Treatment Department in St. Louis Hospital.

At a recent meeting of the Société de Biologie, M. Benjamin Bord read a paper on the condition of the appendix in secondary syphilis, the stage of the disease when the lymphoid tissue shows a marked reaction. Taking at hazard 18 young females with active secondary symptoms who were in the wards of Dr. Thibierge at the Broca Hospital, he found that 12 of them had typical appendicitis; the remaining 6 did not show any appreciable clinical reaction. The appendicitis, in the majority of these cases, was of the subacute or chronic type; the onset of the attack appeared, as a rule, to have a mild character. In only 2 cases was the onset sharp, as in cases of typical acute appendicitis.

Two years ago the Académie de Médecine, in order to find out the part played by alcoholism in the general mortality in hospital practice, invited the members of medical societies to collect statistics of all deaths in their wards. M. Fernet recently communicated the summary of these statistics, and finds that during the last ten to fifteen months, among a total of over 1,500 deaths occurring in eleven different hospital services, alcohol played a part as cause of death in one-third of the cases (33.81 per cent.); it was the principal cause in one-tenth of the deaths (10.20 per cent.), it was the accessory cause in more than two-tenths of the deaths (23.61 per cent.). Among the principal fatal manifestations of alcohol, M. Fernet includes such acute affections as delirium tremens and pachymeningitis haemorrhagica, and such chronic affections as cirrhosis of the liver and cardio-vascular diseases, which bring about cerebral haemorrhage, softening of the brain, interstitial nephritis, and diffuse meningo-encephalitis. In the second class, in which alcohol played an accessory part, M. Fernet placed all cases of disease which only develop or are fatal because the patient is an alcoholic—for example, many cases of pneumonia, erysipelas, and other acute infectious diseases. The influence of alcohol on mortality was still greater in the lunatic asylums than in general hospitals. At the Asile Sainte-Anne, in the service of Professor Joffroy, 30 out of 63 consecutive deaths were among alcoholics (47.62 per cent.); in the service of Dr. Seglas, in the Hospice du Bicêtre, during the years 1904-07 the percentage was 45.60 per cent. In asylums alcohol was the cause of disease and death in nearly half the male cases, and in one-sixth of the female cases. In official statistics numbers of alcoholic deaths are classed under different organic diseases of which alcohol is the cause, otherwise it would occupy a place, with tuberculosis, among the chief causes of death.

M. Henry Chéron, the Under Secretary of State for War, has just issued a circular with regard to the prophylaxis of venereal diseases in the army. The researches of Metchnikoff and Roux in France on syphilis, and of Neisser in Germany on gonorrhoea have shown that these two affections, during the first few hours after contamination, could be prevented in a large number of cases by means of extremely easy applications. As it is considered a social duty to instruct young soldiers, army surgeons are directed, each year, immediately after soldiers join the colours, to give lectures to the non-commissioned officers and privates on venereal diseases, how they develop, their dangers for the individual and the race, their treatment, and especially their prophylaxis. They will learn it is possible to avoid gonorrhoea if the mucous membranes which have been exposed are carefully washed and disinfected with a solution of potassium permanganate; that, in the same way, it is possible to prevent the development of the hard chancre by unction with calomel ointment. A special room shall be reserved in all regimental infirmaries in which the antiseptic medicines and the necessary utensils shall be kept, and to which the soldiers who shall have been exposed to contagion can go on their return to barracks. The male nurse on duty shall have charge of this special room, and shall

be responsible for the sterilization of the cannula for washing the urethra after each time it is used. The potassium permanganate solution (1 in 5,000) is to be kept prepared and used warm. The calomel ointment (calomel 10 parts, soft vaseline 20 parts) is to be given out in small wooden boxes each containing 5 grams of ointment. Each year the commander of each army corps will send in a report on the execution of these instructions. This report will note particularly the comparative statistics of cases of syphilis and gonorrhoea during the year in question and the ten preceding years. Note will also be made of the cases occurring in soldiers who have carried out the prophylactic measures.

The Council of the Faculty of Medicine has elected Professor Laudouzy to be Dean of the Faculty of Medicine, as successor to Professor Debove, whose term is completed and who did not seek re-election. Professor Landouzy is Professor of Clinical Medicine at the Laënnec Hospital and has done much work in the fight against tuberculosis; he is well known in England, as he was one of the official delegates to the Congress of Tuberculosis in London, and has been the leader of the medical party which annually visits the different French watering places and spas.

The new department for light treatment in the St. Louis Hospital was opened officially by M. Mesureur, the Director of the Assistance Publique, a few days ago; a large number of doctors was present at the ceremony. The new department is under the direction of Dr. de Beurman, and already nearly 100 patients are under treatment.

CORRESPONDENCE.

JOINT POOR-LAW COMMITTEE: MEDICAL RELIEF SECTION.

SIR,—A month ago you were good enough to publish a letter from us relative to a circular we sent to each dispensary doctor in Ireland asking for a return of his year's work.

We regret to say that the response to our request has been most disheartening; less than 100 out of 815 have taken the trouble to reply, and of these only a small percentage had complied with our request to keep an accurate record of all Poor-law work done for twelve months. The great majority have only been able to give us estimates of attendances upon tickets, mileage travelled, and sanitary inspections. However, we know from comparison with the few accurately-kept diaries that these estimates invariably understate the amount of work done.

We would like to call the attention of the dispensary doctors in Ireland to the result if we have to compile statistics from so small a number of replies. Will not the enemy say that they have not supplied the information sought because they have little to do and nothing to complain of? We are satisfied from the records received that each ticket involves an average of 4 3 attendances, and that each red ticket involves a sanitary inspection. Many of our correspondents say that they get insanitary conditions remedied in most cases without having to report to the district council. But the few reports sent to the council are the only records they have of the vast amount of sanitary work done by them for a trifle over a shilling a day. We would ask, Is that sum the value they place upon their services to the public as medical officers of health?

From some communications we have received we think that some may have refrained from replying lest their names should be published. We need hardly say that such fear is groundless. Names of individuals will under no circumstances be allowed to transpire without their express permission.

Even the meagre returns received have brought to light many facts in connexion with the service hitherto unsuspected, and if we could induce even 50 per cent. of the dispensary doctors to take the trouble to furnish us with the new facts we ask for, we believe we would be in a position to formulate a claim on their behalf for adequate remuneration that would be irresistible.

The truth seems to be that the Irish dispensary doctor has no idea of the extent of his duties. They all come in the day's work, and are forgotten because no record has been kept. The few records that have been kept of the inspection of diaries have amazed us at the amount of unrecorded work done by the average dispensary doctor, and we once more appeal to him to help us to help him to a proper recognition of his invaluable services to the community.

In regard to our query as to the proportion of ratepayers in receipt of Poor-law medical relief, we desire to mention that every householder is a ratepayer, and his children and servants are his dependants, and that the only persons strictly entitled to the doctor's services are those to whom the guardians would grant outdoor relief.

We shall keep the list open till the end of this year, after which we shall try to make the best use we can of the material at our disposal.—I am, etc.,

T. H. MOORHEAD,
Honorary Secretary.

Cootehill, Nov. 29th.

THE CENTRAL COUNCIL AND THE REPRESENTATIVE MEETING.

SIR,—I have not closely followed the course of politics now in progress in respect to the affairs of the Association, but my interest and attention have been excited by the proposal of the Representative Meeting to divide the Journal and Finance Committee into two separate entities, and I have come to the conclusion that in this proposal a parting of the ways has been reached, so far as the old régime of conducting the Association and the new one are concerned. It seems to me, from what I have been able to gather, that the Association has a legislative body, styled the Representative Meeting, corresponding to the House of Commons, and a reference body, the Central Council, corresponding to the House of Lords. As at present constituted, the latter, just like the Higher Chamber at Westminster, still possesses powers under the Articles of Association of vetoing or pursuing any course of policy which may be suggested for its consideration. This has been further impressed upon me by the fact that the Council has issued a criticism, called the Referendum Report, in which it is shown that a majority of the members thereof are opposed to certain resolutions contained in a report submitted to them by the Representative Meeting. Among these resolutions is one introducing a new method of election of the members of the Central Council, the effect of which, if carried into execution, will be to secure one of the most important measures of reform which has ever been introduced into the constitution of the Association. Without any offence it may be said that under present circumstances the Association is governed by "permanent officials"—that is, members of the Council—who year by year are enabled to retain their seats. It is only necessary to glance down the list of names of the present members of the Central Council in order to convince oneself of the fact. Indeed, it would be interesting to have a schedule prepared indicating the number of years the various members of the Council have had this distinction conferred upon them. It is, of course, perhaps quite natural that the Council should resent any interference by the Representative Meeting with the present family arrangement. In opposing the suggested reform the Council has stated "that it is a mistaken policy to deprive the Council of the power of co-option. Co-option is often the only means the Council has of retaining the services of tried and experienced workers, whose services it is of considerable importance for the Association to retain." Surely a worse argument than this could not have been advanced. If reform in the affairs of the Association is a matter of necessity, it can only be carried through by those who are not pledged to the traditions of the past—traditions the adherence to which has rendered the question of an advanced policy a matter around which so much discussion has centred. Moreover, the argument of "old and tried" members is an absurd one, inasmuch as none of us, fortunately or otherwise, becomes younger, and however much such members may be capable of governing the affairs of the Association during their years of capacity, without new members to teach, they have no means of making provision for the continuance of their work, when their own labours have come to an end.

Furthermore, the Council objects entirely to the division of the present Journal and Finance Committee, into two separate bodies, as suggested by the Representative Meeting. This decision must, I think, have been arrived at by virtue of the same "family" considerations which have led the Council to adopt its policy of disapproval of

this resolution and others in favour of reform. Upon this question of dividing the Committee, Sir Victor Horsley has publicly stated, "I have been serving on this Committee (Journal and Finance Committee) for years, and I say without hesitation that I am convinced that the Committee is a perfect farce," a truly remarkable assertion to have made in view of the affirmation of the Central Council that "for some years the Journal and Finance Committee has been the General Purposes Committee of the Council, and has been in the habit of reviewing and advising on all matters connected with the finances and general administration." If the latter opinion expresses the true estimate of the Committee's work, how curious it is that Sir Victor Horsley should have described it as a "perfect farce." Nothing could point with more emphasis in the direction of reform than this divergence of opinion between a prominent member of the Journal and Finance Committee and the Central Council. In order, however, to remove any misconception upon this point, let the Branches of the Association throughout the country support the recommendation of the Representative Meeting to appoint a Financial Committee, whose sole duty would consist in the administration of the annual turnover of the Association, amounting to £50,000, a sum which must obviously demand the most careful watching and control. So far, on the other hand, as a Journal Committee is concerned, I do not deem this to be necessary. An editor is a law unto himself; he is responsible to the traditions of his office; no matter whether the journal which he controls belongs to himself, or whether he is the paid servant of others, an editor must necessarily have an absolutely free hand. As a trained journalist, he has had a vast experience in matters concerning which others are absolutely ignorant; and for an editor to feel that he was "controlled" by those who know nothing of his craft, a natural instinct would prompt him to limit the enterprise in his work, in consequence of having to hold such an invertebrate position. Personally I think that the sole responsibility of the Journal should be entirely in the hands of our excellent Editor, to whom we owe so much, and that, should any occasion arise for disputing his judgement, he should be answerable to the Council alone.—I am, etc.,

London, W., Nov. 29th. PERCY DUNN.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

SIR,—I leave it to the whole-time medical officers of health of the large towns to say whether or not they have time to undertake the examination of school children in addition to their other duties; but, so far as whole-time rural officers are concerned, I have no hesitation in saying that our present duties are quite sufficient without materially increasing them. At the same time, in rural districts, where the children are well-fed on plain food and live in clean, bright, airy houses, absence from school is, as a rule, due to illness, sometimes of an infectious character. Here it is self-evident that, even if the school medical inspector is in the service of the subordinates to the Board of Education, whilst the medical officer of health is under the subordinates of the Local Government Board, these two officers will have to work together, or else there will be great overlapping in the personal inspections made by each officer. Neither parents, schoolmasters, nor managers will want to see two public medical officers on the same day, both on the same errand and both paid by the same taxpayer. The best whole-time man or woman for a medical inspector of school children is probably one who is engaged in general practice or as an assistant in a manufacturing or mining district where there is a high birth-rate, and where much of his work has been amongst children, and not principally in the housing question, dairies, cowsheds, and milkshops, and such things. Such an officer, working in conjunction with the medical officer of health, would, in my opinion, most nearly meet what is now required. Whilst the general health of all the children would most strictly come under the medical inspector, its connexion with the structural condition of the schools and the manner of their use, together with any evidence of infectious disease, would be the certain bond between the medical inspector and the medical officer of health.

The general practitioner who acts as medical inspector is likely to get into trouble with the parents of the children who employ the other village practitioner, and, if he is also the medical officer of health, he will be in the position of advising his best private patient—through the sanitary authority—of the money that he ought to spend in setting right his damp or dilapidated house property, or in providing it with a proper water supply. Two months ago Dr. Macnamara said that, in the coming session, the questions of the districts of medical officers of health and their tenure of office would be dealt with. Let us hope that the tenure of office of the medical inspector of school children will not escape attention, and, in so doing, be it remembered that fixity of tenure for a general practitioner in an office worth £50 or £100 per annum, whether as school inspector or as medical officer of health, is not of the least value to him, when the village squire and his friends, who sit on the district council, whether urban or rural, are his best private patients, and pay him bills of three or four times as much as his public appointment is worth.

Whilst the public elementary school is the primary centre in the spread of infectious disease, the medical officer of health, unlike a school attendance officer, cannot demand to see the school registers and cull from them the abundant evidence which they usually manifest of the primary foci of infection in the parish. During a period of nearly twenty years I never was refused consent to examine them, but I have not the authority that a medical inspector of children will possess.

On that ground, if on no other, I claim that there should be the most intimate co-operation between the medical inspector and the medical officer of health, but it certainly is not essential that one man should combine both offices in his person. Acting as I do for a district where, for thirty-four years, its whole-time medical officer of health is regarded alike by the general practitioner, the school teacher, and the manager as a friend working hand-in-hand to check disease and thereby secure a high average attendance and a high grant, I feel somewhat qualified to speak, especially as regards rural and small urban districts. In the large towns the problem of medical inspection seems to present few difficulties. A man or a woman who has not been engaged daily amongst little children is not the man or woman that is wanted, and a resident medical officer from a fever hospital is not thereby well qualified for the position of medical inspector of school children.—I am, etc.,

R. MUSGRAVE CRAVEN.

Kendal, Dec. 2nd. Medical Officer of Health, Westmorland C.D.

SIR,—It is to be regretted that the BRITISH MEDICAL JOURNAL should make itself the mouthpiece of the small but noisy clique who have never ceased to lament their failure to secure the appointment of Dr. Kerr as medical adviser to the Education Department. The inevitable futility of their efforts was apparent to the meanest capacity. Did they for a moment think that the Education Department would, at their dictation, rescind the appointment it had made? Do they dream that the department will go back upon the carefully-considered policy which it has enunciated because of a little jaundiced criticism? If not, why pursue this undignified line of niggling criticism?

The fundamental error is in regarding the medical inspection of school children as the be-all and end-all of the matter, whereas it is but the beginning. The systematic medical inspection of the children is the essential point of departure. But those inquirers who, like Dr. Chalmers in Glasgow, have taken a broad view of the matter, and who, starting with a medical examination at school, have followed the children home, have found that the root of the evils we deplore is to be found in the hygiene of the home, and that the remedy of these evils lies with the sanitary authority. The medical inspection of school children and the supervision of the hygiene of the home cannot be divorced without violence.

The reflection upon the sanitary authorities of the country is unworthy. That there are reactionary sanitary authorities and halting medical officers of health is not to be denied. But to suggest that sanitary authorities and medical officers of health generally are inefficient is nonsense. If the medical inspection of school children leads to anything equivalent to the improvement in the health of the community which has attended the opera-

tions of the sanitary authorities of the country we shall all have very good reason to be satisfied.—I am, etc.,

Paisley, Dec. 2nd. A. CAMPBELL MUNRO, M.B., D.Sc.

SIR,—The memorandum that has just been circulated by the Board of Education on this subject has fallen like a bombshell among the medical profession, and especially among medical officers of health, who, it is suggested, should be responsible for the work and its organizaton, the Act to come into force in a month's time.

Doubtless the whole of the profession is in sympathy with the principle of school inspection, but it is clear that the subject bristles with all sorts of practical difficulties. The vast majority of medical officers of health are, like myself, engaged in active private practice, some of us holding hospital and other public appointments. The salaries we receive for our responsible and at times harrassing public-health work are not as a rule large. Whether the present special knowledge and experience of the average medical officer of health enables him to claim to be specially competent to deal with children's ailments is a very open question.

At the present time there is only a very limited number of men who have had any experience of practical school hygiene. It will, I think, be to the public benefit if the medical inspection of school children should be in intimate touch with the sanitary administration; but it is another matter to make medical officers of health solely responsible for this enormous work, even though they should be provided with assistants. In my own district the new Act will involve, on the average, at least 1,000 examinations of children every year. To examine and register all the elaborate details will, on an average, involve at least a quarter of an hour, and the work must be done in school hours—namely, that part of the day in which one has to attend to ordinary professional duties. In addition to these examinations, there will be committees to attend, annual and other reports to write, cases to be followed up, irregular calls to see quasi-infectious cases, and last, but not least, the usual exasperating correspondence with the Central Board over minor errors or misunderstandings. To undertake this work and carry on a general practice, in many districts will be manifestly a physical impossibility.

If assistants are appointed, how is a medical officer of health to exert an effective control over them, and be responsible for their work? In many districts practitioners would strongly resent acting in a subordinate capacity to the medical officer of health, and there would be endless friction. I venture to think that all medical inspectors of schools should be directly responsible to the authorities, whether they are medical officers of health or private practitioners; all school reports should be submitted to the Sanitary Committee, and this Committee should be instructed to carry out the recommendations of the medical inspector of schools as far as possible under the advice of the medical officer of health.

It would be instructive and useful if an expression of opinion could be obtained on the relative position and responsibilities of medical officers of health and medical inspectors of schools.

In the memorandum just issued by the Board of Education there is no mention of the difficult question of remuneration. The Government very naturally shirked this unpleasant duty, as they did in the Midwives Act; all Governments wish to pose as philanthropists if they can do so at the expense of individuals. The arduous work required by the Education Board demands reasonable remuneration, and it is to be hoped that members of the profession will not hastily undertake such important work for the State unless the State does its share of the work by paying a reasonable remuneration. Many local authorities will resent this new and unwished-for work, and will doubtless offer salaries quite inadequate to the high professional qualities that are necessary to perform the duties to the public benefit.

The intentions of this Act are undoubtedly excellent, and will receive the support of all sanitarians. The public and their elected representatives on municipal councils are not yet educated up to ideal methods. I believe it was Epictetus who first said it was a mistake to legislate in front of the intelligence of the people, and this expression of his wisdom has been proved on many occasions, notably in vaccination legislation. I fear the Government has on this occasion recommended more than local authorities will be induced to carry out effectually; it would have been wiser for the first year or two to have demanded a less formidable programme. The medical profession will doubtless give this subject sympathetic and hearty assistance, but it is earnestly to be hoped that as it is for the advantage of the State, the State will see that the men who carry out the work should be fairly treated, and that the responsible and complicated arrangements of this important Act of Parliament and the remuneration of school inspectors should not be left to the vagaries of local authorities, as it appears to be in the recent memorandum of the Board of Education.—I am, etc.,

Margate, Dec. 2nd. BERTRAM THORNTON.

SIR,—In your leading article of to-day's date you appear to have fallen into two errors—first, that the medical inspection of the children will to any considerable extent be actually carried out by the medical officers of health in districts which are also education areas, and secondly, that the scope of the Act will practically be limited to a physical examination at fixed periods of every school child.

As regards the first, most medical officers of health will agree that they are not specially qualified for the physical examinations, and, if they have time for this work it will be certain that hitherto they have been enjoying a luxurious life of ease, which personally I could envy. I think it may be assumed that the majority will, if possible, persuade their authorities to appoint one (or more) men or women better qualified for the work. It is obvious, however, that a considerable amount of organization will be necessary, especially when more than one inspector is appointed, and organization is, or should be, a qualification possessed by every medical officer of health. Similarly, with his experience and the staff at his command, he is probably better equipped than most medical men for the periodical reports which will be required.

As regards the second point, it is sincerely to be hoped that the work will not be confined to a mere physical examination, but that local authorities will take the opportunity afforded by the voluntary portion of the Act to exercise proper control over the infectious diseases, notifiable and otherwise, and contagious diseases. By means of systematic visits to homes where children are absent for a day or two on account of sore throat (no medical advice having been sought) a medical inspector would find many a case of slight scarlet fever or diphtheria which would otherwise have been overlooked. Surely such work, and the examination of the sanitary conditions of both schools and homes is most fitly conducted under the direction of the medical officer of health.

Personally, I cannot see what objection there can be to the arrangements made by the Board of Education so long as the medical officer of health, if not possessing the proper training, does not personally conduct the physical examination.

The chief difficulty will be to obtain the necessary skilled assistance. I had at first considered the possibility of asking every general practitioner to be the inspector for the children of his own patients; but, apart from the question of want of uniformity, the idea is impossible, since the examination is to be conducted at school, in school hours, and with as little interference as possible with the school work. I doubt if the appointment of one or more men in private practice would be acceptable to the profession, since the scope for free introductions enjoyed by public vaccinators fades into insignificance when compared with the opportunities offered by the examination of every school child in the presence of the parents on three occasions in ten years.

As regards the necessary qualifications for the inspectors, I should have put the D.P.H. in the third place. It may not be essential in the examination of a child for adenoids, but is most desirable for the other duties which will fall to the lot of the medical inspector. The difficulty will be to find this paragon.

I might also point out that it is the Act itself, and not the Memorandum of the Board of Education, that throws the work on the shoulders of the sanitary authority, since the latter and the education authority are practically one

and the same. By sanitary authority I of course mean the county or borough council, whose servant the medical officer of health is, even though he may actually only attend meetings of the Sanitary Committee of such council.—I am, etc.,

November 30th. NEMO.

MOVABLE KIDNEY FROM A SURGICAL STANDPOINT.

SIR,—In an article which appeared in the BRITISH MEDICAL JOURNAL of November 30th, entitled "Movable Kidney from a Surgical Standpoint," I described an operation for nephroptosis which I have performed seventy times. To avoid misunderstanding, I desire to state that I make no claim to have been the originator of it, though, so far as I know, it has never been previously described. The credit of first turning down a capsular flap and passing it over the last rib belongs to Mr. Jordan Lloyd, and to him my best thanks are due for a procedure which I have proved to be most successful.—I am, etc.,

Birmingham, Dec. 2nd. WILLIAM BILLINGTON.

TRAVELLING OPHTHALMIC HOSPITALS IN EGYPT.

SIR,—In your issue of October 19th, 1907, you published a favourable appreciation of the work done by the travelling ophthalmic hospitals in Egypt, but from the wording of the notice it would probably be inferred that the present great success of these hospitals (originally provided through the liberality of Sir Ernest Cassel, and now a branch of the Public Health Department of Egypt, which provides a very large and increasing proportion of their resources) was achieved in spite of, rather than as a result of, the guidance and support of the sanitary authorities of the country, that is, the Public Health Department.

This is not the case; for it has been under the fostering care of this department, guided by the peculiar experience and knowledge of the country possessed by Sir Horace Pinching, K.C.M.G. (the late Director-General of the Department), that the travelling ophthalmic hospitals have been enabled to carry on so successfully their extensive and useful work.—I am, etc.,

Cairo, Nov. 21st. A. F. MACCALLAN.

LIVERPOOL ROYAL INFIRMARY: ELECTION OF HONORARY SURGEON.

SIR,—The account of the above given by your correspondent in last week's issue of the BRITISH MEDICAL JOURNAL is not a fair representation of what took place.

A compromise was arrived at, and the following notice appeared in the local papers by arrangement:

ELECTION OF HONORARY SURGEON TO THE ROYAL INFIRMARY.—A meeting of the Electoral Committee of the Royal Infirmary was held yesterday, at the Law Association Rooms, to elect an honorary surgeon in place of Mr. Rushton Parker, retired. An arrangement having been arrived at between the candidates—Mr. Robert A. Bickersteth and Mr. W. Thelwall Thomas—certain concessions having been made by both by which their services will be retained for the infirmary, Mr. Bickersteth was elected. The arrangement is one which has given great satisfaction to the friends of the infirmary.

It is unnecessary for me to mention all the details of the compact between the Committee and the candidates, but your notice only contains some of them, and even those are expressed in unhappy—not to say invidious—terms.—I am, etc.,

Liverpool, December 2nd. W. THELWALL THOMAS.

UNIVERSITIES AND COLLEGES.

TRINITY COLLEGE, DUBLIN.

THE following candidates have been approved at the examination indicated:

FINAL MEDICAL, PART II (*Surgery*).—*G. F. Graham, R. A. Askins, W. J. Dunn, J. B. Jones, B. A. H. Solomons, T. P. S. Eves, H. D. Woodroffe, F. O'B. Kennedy, J. D. K. Roche, W. L. Hogan, H. J. Keane, A. L. Robinson, J. R. Yourell, J. H. Elliott, J. G. M. Moloney. (*Midwifery*).—G. A. Jackson. J. C. Pretorius, G. B. M'Hutchison, H. H. Ormsby. G. Halpin, W. J. Dunn, W. E. Hopkins, S. F. A. Charles, G. G. Mecredy, H. V. Stanley, D. P. Clement, T. Ryan, E. C. Lambkin, W. H. Sutcliffe, J. R. Yourell, J. E. M'Causland.

* Passed on high marks.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved at the examinations indicated:

SURGERY.—*H. M. Jones, †B. S. Matthews, *†J. F. McQueen, *J. M. Murray. *†E. H. Paterson.

MEDICINE.—†M. F. Emrys-Jones, *†L. G. H. Furber, *C. P. R. Harvey, †B. S. Matthews, †J. F. McQueen, *M. Rathbone, *†A. L. Walters.

FORENSIC MEDICINE.—J. Cree, D. E. S. Davies, C. P. R. Harvey, G. H. Rodolph.

MIDWIFERY.—J. Brierley, F. S. Hawks, J. V. Steward, F. H. P. Wills.

* Section I. † Section II.

The Diploma of the Society has been granted to Messrs. M. F. Emrys-Jones, B. S. Matthews, J. F. McQueen, G. H. Rodolph, and A. L. Walters.

OBITUARY.

HUBERT MONTAGUE MURRAY, M.D., F.R.C.P.,

SENIOR PHYSICIAN, CHARING CROSS HOSPITAL.

IT is with deep regret we have to record the death of Dr. Montague Murray, Senior Physician to Charing Cross Hospital, and Lecturer on the Principles and Practice of Medicine in the medical school attached to the hospital, which occurred on November 25th, at his residence in Manchester Square, at the comparatively early age of 52. He had been ill for some time, but the wonder is not that he died in his prime, but that, having suffered for many years from infirmities which would have made most men resign themselves to a life of chronic invalidism, he refused so long to allow his spirit and his intellectual activity to be subdued by bodily weakness. Instead of brooding over his sufferings, he went bravely about his daily work, and only those who were intimate with him knew how much he had to endure.

Hubert Montague Murray was born in London in 1855. He was left an orphan at an early age, and was brought up by two ladies who were, we believe, not related to him; indeed for the greater part of his life he had no blood relations living.

He was educated at a private school at Brighton, and, according to the testimony of a schoolfellow, the chief characteristics of the man were already evident in the boy. "Murray was always the same," he said, "high-principled, active-minded, energetic and yet cautious—qualities which brought him to the front among his fellows at all periods of his life." Yet it is with some surprise that we learn that he became captain of the cricket eleven, for his short sight must always have been a great obstacle to success in sports.

After matriculating at the London University, Murray worked for more than a year at the Sussex County Hospital, before entering at University College, London, which he chose as his Alma Mater, for he had to map out his own course, even at that early age, and pay his own fees out of a small but sufficient income. At College, as always, he was most particular as to the neatness and tidiness of everything around him, and his rooms were very different from those of the average student. Never were these feelings more marked than when he became a resident and imported into one of those dingy back rooms near Ward III of the old hospital a Turkey carpet, the disc of which now stands in his consulting room, and various other luxuries previously unknown in "U.C.H." He was a diligent worker, interesting himself specially in chemistry and physiology, doubtless because even then he felt that they should form the basis of scientific medicine. This conviction naturally deepened with experience, and he always endeavoured to keep himself abreast of progress. Starling's recent advances in the physiology of digestion were evidently under study when he left his consulting room. Although Murray did not strive very eagerly for honours either at College or at the University, his clinical zeal and acumen were early shown by the award to him of the coveted Fellowes Clinical Gold Medal.

Before he qualified in 1880 he had acted as clinical assistant to Mr. Streatfield. Later in the same year, soon after qualification, he became House-Physician to Dr. Wilson Fox, many of whose more obvious characteristics Murray shared, and for whom he always retained a warm regard. In 1882 he served as House-Surgeon to Mr. Berkeley Hill. This account of Murray's early career would be far from complete without

reference to his unstinted labours on the various committees of the Medical Society of the College, in the management of the private reading room, and in helping in and organizing any movement among the students. He was in fact a born manager and organizer, and these qualities found ample scope in later life not only in the work of the school where he was a teacher, but in religious work, in which, though reticent on such subjects, he showed an ardent zeal.

In 1883 Murray's field of action was changed by his appointment to the Medical Registrarship at Charing Cross Hospital. Here, however, the worth of the man soon made itself felt, for the hospital and school became the subject of his constant thought. Almost at once he organized, and for a long time worked, an electrical department. In 1884 he was appointed Assistant Physician in charge of children, and under his fostering care this department acquired a considerable importance. In 1903 he became full Physician. But even this long period in the out-patient department did not damp his energy or cause him to become slack in his attendance, his study of his cases, or his teaching. Three years later he became Senior Physician, and all felt that the extra duties of the office could hardly be more worthily filled. For many years his attendance at the Weekly Board was constant, his acquaintance with the working of the hospital was most intimate, and his advice upon any subject connected with it—from household management to plans for rebuilding—was always carefully considered and based upon a wide experience of affairs.

In the conduct and development of the medical school Murray's influence was still greater. He worked for it with unstinted devotion as Vice-Dean, as Dean—an office which he held five years—and later as a constant attendant at committees. He held strongly that the school must continue to teach the preliminary and intermediate subjects of the curriculum; and although he would sometimes admit that "concentration must come," he would add that the time for it had not yet arrived. He taught first as Pathologist, later he lectured on pathology and practical medicine, and finally he was appointed Lecturer on the Principles and Practice of Medicine. The last-mentioned of these posts he held up to his death. His teaching was marked by wide knowledge, great clearness of thought, power of sifting the important from the unessential, and he always kept in mind the limitations of the average man. At the bedside his scientific bent and wide knowledge made him cautious in diagnosis; but as one watched his careful investigation, skill in clinical methods, and the consideration bestowed upon the patient as well as upon the disease, one felt that everything discoverable was discovered, and that the treatment suggested was wise, and patients instinctively felt confidence in his handling of their case.

Murray did not write much, though he could wield a pen skilfully. The results of his pathological work he embodied in the editions of Green's *Pathology and Morbid Anatomy*, which he brought out in 1895 and 1900, the latter being practically a new work. He also edited the third edition of *Quain's Dictionary*.

Other appointments and fields of work can only be mentioned. He had been upon the staff of the Victoria Hospital for Children for eighteen years, for the last ten in the capacity of Senior Physician; and for many years he had acted as Examiner in Medicine in the University of London and for the Conjoint Board. He was Medical Referee to the Guardian Assurance Company.

In physique Murray was always somewhat delicate, and, as already stated, for many years past had suffered from troubles of health which would have turned many a man into a chronic invalid. To those who knew him well his energy and capacity for work were truly astonishing. He was a man who found his happiness at home, but his holidays were always spent abroad, generally in Switzerland, where his great skill in the use of the camera found full scope. Visitors at the Alpine Club Exhibitions will remember the fine enlargements he frequently exhibited. But sometimes he would visit some sanatorium or health resort for the benefit of his patients.

He was twice married and leaves a son by his first wife and a widow and daughter to mourn his loss. He was religious in the best sense and a man of the strictest integrity and sense of honour. It was impossible to know Montague Murray even slightly without liking him.

A colleague writes: All who came in contact with Dr. Murray were conscious of his keen intelligence and unsparing energy. But only those who were closely associated with him in his daily work knew how thorough his knowledge was of every detail, both of affairs requiring his personal management and of what was most likely to be of benefit to those whose interests were in his keeping. The measure of the value of a man's work is often best taken by appreciating the difficulty in filling his place. Speaking of Charing Cross Hospital alone, it can be truly said that the difficulty of filling Dr. Murray's place becomes more and more felt as the effort to do so is made. He spared himself so little that no makeshift effort can possibly suffice. His influence pervaded not only the medical school, but was manifest also in the Council of the hospital and in the management of its affairs. By force of continuous work, familiarity with the necessities of the hospital, and the most suitable methods of dealing with difficulties as they arose, had become to him matters almost of instinct. The value of a man with this faculty is quickly felt, but the attempt to fill his place, if it can be done at all, must be a matter of time and development.

DANIEL HOOPER, B.A.CANTAB., M.B.LOND., M.R.C.P.,

PHYSICIAN, SURREY DISPENSARY.

DR. DANIEL HOOPER, the senior member of the Royal College of Physicians, passed away, at the ripe age of 84, on November 24th. He was the son of Mr. Cleeve Hooper of Bermondsey, and was educated at Mr. Abbott's School at Hitchin. Thence he went to Caius College, Cambridge, where he took the degree of B.A., and subsequently became a student of Guy's Hospital. After obtaining the diplomas of L.S.A. and M.R.C.S. he took, in 1848, the degree of M.B. of the University of London, and distinguished himself by gaining first class honours in physiology and comparative anatomy, in surgery, and in medicine. In surgery he was placed third, and in medicine he obtained the second place, and was awarded a gold medal.

He became a Member of the Royal College of Physicians in 1851, and started consulting practice in the Borough, for the most part in Trinity Square, and in the house in which he died. He was attached for more than fifty-six years to the Surrey Dispensary as Visiting Physician, and for fifty-two years to the Public Dispensary successively in Carey Street, Lincoln's Inn, in Stanhope Street, and now in Drury Lane. These institutions he continued to serve until in the early part of last year he was obliged to take to his bed, to which he was confined until the final event. He was well known in the south of London, where he had at one time a large practice, and was much respected by the many old Guy's men who knew him, and by those with whom he worked at either dispensary, or in the neighbourhood in which he spent his life. He had been a widower nearly twenty years, and he leaves no family.

DR. GEORGE F. SHRADY, formerly editor of the *Medical Record*, which he founded in 1866, died in New York on December 1st, a few weeks before the completion of his 71st year. He attended General Grant in his last illness, and was also, we believe, called in consultation on the case of President Garfield.

THE Sanitary Committee of the Manchester Corporation recently reported in favour of the adoption of the Notification of Births Act; this report was considered at the meeting of the Corporation on December 4th, when it was referred back to the committee for reconsideration in connexion with the penalty clauses in the Act. The motion to refer the report back was moved by Dr. Skinner, seconded by Dr. Chapman, and carried by 58 votes to 36.

AT a meeting of the Metropolitan Hospital Sunday Fund on November 29th it was stated that the sums received as the result of the collection in places of worship this year was £42,786. This is some £1,800 less than was received from the same source in 1906. Attention was drawn to the large number of country patients treated in the metropolitan hospitals. They are estimated at 25 per cent., whereas the contributions received from the corresponding localities are very small.

SEVENTY-SIXTH ANNUAL MEETING

OF THE

British Medical Association,

AT SHEFFIELD, JULY, 1908.

FROM Exeter to Sheffield, where the Association meets next year, is a far cry in more senses than one. From the more genial climate of Devonshire to the colder skies of Yorkshire. From the dignified calm of the cathedral city to the more strenuous business life of a great manufacturing centre. From scenes of great historical interest to a city which possesses in itself but little attraction to the antiquary and historian. On the other hand, Sheffield presents attractions to those who are interested in the march of science as applied to industrial progress, particularly in those branches connected with the defence of our empire. The various processes of cutlery manufacture are of great interest, and Sheffield was one of the earliest towns to discover and engage in the art of silver-plating. A university of the most modern type and equipment, offering unrivalled opportunities for instruction in the scientific methods connected with the iron and steel industries of the country, is now one of Sheffield's greatest attractions; and worshippers of Ruskin find their "Mecca" in the Ruskin Museum at Meersbrook Park.

From the railway the traveller certainly sees the worst of Sheffield, and is apt to associate it for ever in his recollection with a vision of mean and grimy back streets, chimneys great and small, furnaces, and smoke—particularly smoke. Yet Sheffield is not as black as it is sometimes painted, and during the last year or two has achieved quite a record among large towns for sunshine. Though the character of the staple trades of the town disfigured it, the beauty of its suburbs to the west and south have always been a source of admiration to visitors, unprepared for such a contrast between the town and its surroundings. In recent years the centre of the city has undergone great changes, with marked improvement in the character of its architecture and the proportions of its streets, and the city is no longer a subject for apology on the part of its inhabitants.

The "Turret House," Sheffield Manor, where Mary Queen of Scots was imprisoned.

History.

Sheffield has developed around the confluence of five rivers—the Don and its tributaries, the Loxley, Rivelin, Porter, and Sheaf. The district immediately around and including Sheffield was from an early period known as "Hallamshire," and since the incorporation of the Company of Cutlers in Hallamshire in 1624 this has been held to include the parishes of Sheffield, Handsworth, Ecclesfield, and the Chapelry of Bradfield.

The neighbourhood of Sheffield affords some traces yet of ancient earthworks, and a few stone and bronze implements and other relics of prehistoric times have been discovered. Some important evidence of the Roman occupation has also been brought to light, particularly the remains of the Roman camp at Templeborough, near Rotherham, which was partly explored, and foundations, tiles, and other objects discovered in 1877–8. From this station or camp a Roman road proceeded by the south bank of the Don, across the Sheaf just above its junction with the former river, and through what subsequently became Sheffield across the moors to Brough, in the Hope Valley.

Though we have no evidence of any Roman encampment at the junction of the Don and Sheaf, such a situation was often chosen for the purpose, and the camp at Brough occupied a precisely similar site between the river Noe and its tributary the Bradwell brook. At all events it was at the junction of the Don and Sheaf that the Norman Lords of Hallamshire erected their castle, and there are reasons for believing that upon the same site the Saxon Earl of Northumberland, Waltheof, had his "Aula." At least as early as the reign of Henry II a castle was standing here, which was burnt down, together with the church and town, in the War of the Barons in 1266, by John D'Eyvill. Upon the same site a second castle was erected by Thomas de Furnival, who had obtained a charter for that purpose from King Henry III, and this castle remained intact until it was demolished by order of the House of Commons in 1648. Some outbuildings known as the "Castle Barns" remained until the 18th century.

The Infirmary, Sheffield, as it appeared in 1797 (Old print.)

The Manor of Sheffield.

The Manor of Sheffield, with the adjacent Manors of Hallam and Attercliffe, were held at the time of the Domesday Survey by Roger de Busli of the Countess Judith, widow of the Saxon Earl Waltheof, and a niece of the Conqueror. The second de Busli died without issue in the reign of Henry I, and in the same reign we find William de Lovetot in possession, though how he came to be so has never been satisfactorily established. With the Lovetots the lordship of Hallamshire remained for three generations, when it passed by marriage to Gerard de Furnival. By an inquisition taken after the death of Thomas Lord Furnival in the reign of Edward III it was found that his ancestors had held the Castle and Manor of Sheffield "of a certain King of Scotland" by the service of rendering yearly two white greyhounds. As Roger de Busli held of the Countess Judith, Waltheof's widow, whose daughter and principal heir married David King of Scotland, this service may have continued from de Busli's time, and have perpetuated a singular position—that of Norman proprietors continuing to hold, as from a superior, their lands at the hands of the descendants of the original Saxon lord.

William de Lovetot, father of the heiress Maud whose marriage with Gerard de Furnival brought the Sheffield estates into the latter family, founded a hospital at Sheffield in the twelfth century, dedicated to St. Leonard. The site on which it stood was just outside the town, across the River Don, and the memory of this early benefaction is still preserved in the name "Spital Hill." This hospital is said to have been dissolved in the reign of Henry VIII, and in 1587 the Earl of Shrewsbury purchased the site for £200. The hospitals of this period dedicated to St. Leonard were numerous throughout the country, and are always spoken of as "leper hospitals." They were invariably placed outside the town, as in this case, and may have been called "leper hospitals," not in the sense that they were special hospitals for cases of leprosy, but as hospitals for "lepers" or "unclean" people suffering from some skin disease or complaint which was then deemed to be contagious to their neighbours. In this sense they would be somewhat analogous to the isolation hospitals of the present day.

As Hunter remarks, the town of Sheffield, so far back as the time of the Lovetots—the close of the twelfth century—"possessed everything essential to the comfortable residence of a considerable population—a church, a corn mill, an hospital, a bridge, and the protection which the castle of the lord" (overlooking the bridge) "afforded."

Attention has often been directed to the fact that Sheffield down to the eighteenth century remained a very unimportant place, away from the great north road and the main lines of traffic, and was generally spoken of as Sheffield near Rotherham. The poll tax returns of 1379, however, show that at that date at any rate Sheffield ranked third amongst the West Riding towns in point of wealth, the order being Pontefract, Doncaster, Sheffield. It was then rated considerably higher than Wakefield and Leeds.

Six generations of Furnivals followed the Lovetots in the tenure of the Manor of Sheffield, terminating in an heiress, Joan, married to Sir Thomas Nevil, a younger brother of the first Earl of Westmorland, whose only issue, Maud, married John Talbot, first Earl of Shrewsbury. The lordship then passed in direct descent through seven

Photograph by] The Mappin Art Gallery, Weston Park, Sheffield. [*Frith and Sons, Reigate, Surrey.*

Earls of Shrewsbury, and the eighth and last earl of his line dying without issue, ultimately vested in Thomas Howard, Earl of Arundel and Surrey, ancestor of the Dukes of Norfolk, by his marriage with Alethea, daughter of Gilbert, seventh Earl of Shrewsbury. Sheffield during most of its history has been fortunate in the generosity and public spirit which have inspired the families who have in succession held the lordship of the manor—the Lovetots, Furnivals, Talbots, and Howards; and this spirit is conspicuously manifest in their lineal descendant and representative, the present Duke of Norfolk.

The Castle and Mary Queen of Scots.

Sheffield Castle was little more than a fortress; and as the town grew around it and the country became more settled, under the firm hand of the Tudors, a more suitable residence for the lords of the manor, away from the town, became desirable. Accordingly, early in the sixteenth century, George fourth Earl of Shrewsbury built the "Manor Lodge" or "Manor" in the centre of Sheffield Park. The park, which covered 2,500 acres, and in the days when Evelyn wrote his *Sylva* was celebrated for the magnificence of its timber, is now partly covered by

streets and houses, partly cultivated as agricultural land, and is also the scene of colliery enterprise. Of the Manor House hardly anything remains except one building, formerly known as the "Turret House," and later as "Queen Mary's Lodge," which was rescued from destruction and disinterred from among a block of farm buildings only thirty years ago. From the character of this building and other evidence there seems to be little doubt that it was erected about 1577, specially for Mary Queen of Scots during her imprisonment at Sheffield.

Fourteen out of the nineteen years of her captivity in this country were spent by Mary Queen of Scots at Sheffield, yet it is curious how little Sheffield has figured in history in this connexion. As the late Mr. J. D. Leader, in his admirable work, *Mary Queen of Scots in Captivity*, says: "Popular ideas connect her with Bolton, Tutbury, and Fotheringay, and yet her sojourn in those places were mere passing visits compared with the years she spent at Sheffield." If, as seems almost certain, the "Turret House" at Sheffield Manor was indeed occupied by Mary Queen of Scots, it is the more remarkable as the only building connected with her sojourn in this country which has been preserved. In her choice of a custodian for so troublesome and dangerous a prisoner Elizabeth showed her usual sagacity in selecting George sixth Earl of Shrewsbury, though it was an evil day for his peace of mind when he received that doubtful honour. Between the suspicion with which Elizabeth, his Sovereign, seemed to treat him from time to time, the dissimulation and cunning of his prisoner, and the jealousy of his wife, the Earl's life was embittered; and his estate was impoverished by the great expense to which he was put, and for which he received no adequate allowance.

Photograph by] The Town Hall, Sheffield. [*Frith and Sons, Reigate, Surrey.*

It was on November 28th, 1570, that the Queen of Scots with her retinue, including her physician, Master Castel, left Chatsworth for Sheffield Castle, escorted by the Earl of Shrewsbury and his men. It was not until April, 1573, after nearly two and a half years' close confinement in the Castle, that she was afforded a change to the more salubrious air of the Manor—a change made on the Earl's own initiative, owing to the very unsatisfactory state of her health, which roused some suspicion at Court. A little later, however, permission was given for her removal to Chatsworth, and then to Buxton, all strangers being rigidly excluded from the latter place. The hot springs of Buxton were used by the Romans, but had suffered neglect until attention was again directed to their virtues by a treatise, published in 1572, by Dr. Jones, who was Doctor of Medicine as well as Rector of Treeton. From Buxton Mary returned to Sheffield, and henceforward during the remainder of her stay there, except for occasional repetitions of her visits to Buxton and Chatsworth, and on one occasion to Worksop Manor, her residence alternated between the Castle and Manor. On September 2nd, 1584, she left Sheffield finally.

The Beginnings of the Steel Industry.

The existence of both iron and coal in the neighbourhood of Sheffield early determined the character of its industries. There is evidence that the Romans utilized the mineral wealth of the district, and at the time of the Conquest a considerable proportion of the population of Hallamshire were engaged in obtaining ore and smelting it, and in the manufacture of weapons and other implements. There are traditions that even in the time of the Romans arrowheads were manufactured in the neighbourhood, and there is specific evidence that Sheffield arrows were purchased by the Government in the days of the early Shrewsburys. The appellation of "Arrowsmith" or "Arrowhead-Smith" is occasionally found in old documents referring to local families.

When cutlery began to be manufactured in Hallamshire is not positively known. In a schedule of goods issued from the Privy Wardrobe at the Tower in the reign of Edward III, one of the articles named is a "cultellum de Shefeld," and Chaucer's Miller in the *Canterbury Tales* carried "a Shefeld thwytel in his hose." Beyond such slight references to Sheffield cutlery, there is little of a positive character bearing upon what has long been the staple industry of Hallamshire earlier than the sixteenth century; but early in Elizabeth's reign the cutlers' customs in Hallamshire were spoken of as "ancient," and ordinances referred to in connexion with the trade as "made aforetime by men of the cutler's occupation." There was, however, no real power to enforce these ordinances until the close of the following reign, when the Cutlers' Company was incorporated by Act of Parliament in 1624. The preamble of the Act declared that many of the cutlery workers refused to submit to the ordinances of the trade; that they persisted in taking as many apprentices, and for such a term of years as they had a mind, whereby it was feared that the calling would be "overthrown." Further, that, owing to the absence of proper authority, workmen "are emboldened and do make such deceitful, unworkmanlike wares, and sell the same in divers parts of the kingdom, to the great deceit of His Majesty's subjects and

scandal of the cutlers of Hallamshire." By this Act the cutlery manufacturers of Hallamshire and six miles round were created a body corporate, consisting of a master, two wardens, six searchers, and twenty-four assistant searchers. This was the executive body, and the other manufacturers were designated the "commonalty." Subsequent Acts have extended the scope of the company as to the trades concerned, and in recent years conferred the unique privilege upon the company of having its own Trades Mark Registry; but its constitution (except for the disappearance of the "commonalty") and the area of its jurisdiction remain the same.

Sheffield did not play any very conspicuous part in the war between Charles I and his Parliament. The then Lord of the Manor, the Earl of Arundel and Surrey, was a Royalist; but the sympathies of the townsfolk were unmistakably on the side of the Parliament. The old feudal influence exercised by the Earls of Shrewsbury was not enjoyed by their successors the Howards, who only occasionally resided at the Castle or Manor. Moreover, of the three most powerful resident families in the immediate neighbourhood of the town, one was represented by a minor, and the other two, the Brights and Spencers, were actively engaged on the side of the Parliament. The townsfolk seized the Castle, but were soon dispossessed by the Earl of Newcastle's troops, and the Royalists held it for some time, only capitulating to the forces of the Parliament under the Earl of Manchester after a siege in which the Earl's artillery did fatal execution on the old walls. The damage done was never made good, and the Castle continued to the end of the war to be occupied by Parliament troops.

After the termination of the Civil Wars, until the middle of the eighteenth century at all events, Sheffield seems to have stagnated and even retrogressed. The house of Shrewsbury, so far as Sheffield was concerned, had come to an end by the death of the eighth Earl, and their successors and descendants, the Howards, were not then very closely associated with the town. The Castle had been destroyed by order of the House of Commons, and the Manor, fast falling into decay, was chiefly used as a residence for the agent to the Lord of the Manor. Most of the families of first importance in the neighbourhood were forsaking their ancestral homes. There was little capital in the town, and its more or less isolated position and the difficulties of communication acted as a check on commercial activity and enterprise. Before the close of the eighteenth century matters had begun to improve, in spite of the heavy burden of taxation and interference with trade occasioned by the war with France. The Don had been made navigable, opening up communication with the coast, London, and the Continent; silver plating had been discovered in Sheffield by Bolsover; lead works were established on the river Porter; the manufacture of Britannia metal was begun by the Dixons of Cornish Place; steel melting had been discovered by Huntsman; and the first steam grinding-wheel was erected near Lady's Bridge. Such enterprise bore fruit in the more peaceful times which followed the battle of Waterloo, particularly as the introduction of steam power replaced to a great extent the water power upon which the district had formerly relied, and horse-carriage gave place to railways. As the nineteenth century advanced the number of industries carried on greatly increased. Iron forging and founding were old Sheffield industries, but the introduction of the heavy trade of the town as we know it to-day—armour-plating, ordnance, and railway material—was largely due to the initiative of Sir John Brown, closely followed by Messrs. Cammell, Vickers, Jessop, and Firth.

In 1832 Sheffield was enfranchised, returning two members to Parliament, since increased to five, and in 1843 incorporation followed. The borough became a city in 1893, and the Mayor Lord Mayor in 1897, the first Lord Mayor of Sheffield being His Grace the Duke of Norfolk. The same year, 1897, will ever be memorable in the annals of the city for the visit of Her late Majesty Queen Victoria, on the occasion of the opening of the new town hall.

The Royal Infirmary, Sheffield, at the present time.

The Great Sheffield Flood.

No account of Sheffield, however brief, could omit to record that dire catastrophe, the great Sheffield flood. It sometimes startles a stranger to be told that something or other occurred in Sheffield "before the flood," but so deep and lasting an impression was made upon the community by that event that it stands out as a time-mark in the recollection of those old enough to remember the circumstances. The writer retains a vivid recollection of the scene of the disaster, visited, when a boy, within a few days of its occurrence. The ruined houses, the banks of mud and stones, the groups of men engaged in digging out the bodies of horses and cattle, which were removed in cartloads, and, lastly, the great wedge-shaped chasm, a hundred yards wide, in the embankment of the reservoir at Bradfield. The Dale Dyke Reservoir had only been completed early in the winter of 1863–4, and on March 11th, 1864, contained nearly 700,000,000 cubic ft. of water. The embankment was about 100 ft. in height in the centre, and its thickness varied from 500 ft. at its base to a width of only 12 ft. at the top. It was thought capable of resist-

ing any pressure to which it was likely to be subjected There had been a particularly heavy rainfall, and the dam was full. It was stormy weather, and a high wind blowing down the valley dashed the water in great waves against the top of the embankment. During the afternoon the Resident Engineer of the Water Company, Mr. Gunson, had inspected the embankment and found no indication of any insecurity. A labourer crossing the embankment by chance an hour later noticed a horizontal crack. This was believed by the contractor, who was upon the spot, and had his attention called to it, to be due to the frost which had prevailed, as no water was then escaping from it. Nevertheless, he thought it advisable to open the sluice valves and allow the water to run to relieve pressure, and he sent again in haste to the engineer at Sheffield. Mr. Gunson arrived about 10 o'clock at night, and inspected the crack by the light of a lantern. Appearances were then very serious, for it had opened wider and water was pouring through it. He at once attempted to blow up the weir to lower the level of the water more rapidly. The first attempt failed, and it was while a second attempt was in progress, shortly before midnight, that the centre of the embankment gave way suddenly, and an avalanche of water, which it has been calculated would have filled all Regent Street and Waterloo Place, London, to the housetops, descended upon the homesteads and villages of the Loxley Valley, where many of the inhabitants were then asleep in their beds. Even when the flood reached the wider valley of the Don the water was deep enough to cover the lower houses, and in Sheffield, more than eight miles away, it overtopped the parapet of Lady's Bridge, and flooded the neighbouring streets to a depth of 4 or 5 ft. In half an hour the flood had passed and gone, leaving its traces down the river as far as Doncaster, and having occasioned the loss of 260 human lives and damage to property amounting to nearly half a million of money. An excellent account of this catastrophe is to be found in Dr. Gatty's edition of Hunter's *Hallamshire*; and the late Charles Reade, in his novel, *Put Yourself in His Place*, has left a graphic description of the flood, as well as of other stirring events in Sheffield in the Sixties.

Photograph by G. W. Wilson and Co. Sheffield Royal Hospital. [*Catherine Street, Strand, W.C.*

Photograph by G. W. Wilson and Co. High Street, Sheffield. [*Catherine Street, Strand, W.C.*

Medicine in Sheffield.

A visitor to a very out-of-the-way village in Derbyshire, remarking on the fact that there was no doctor within many miles, and asking what they did in case of illness, received the reply that folk in those parts mostly died a natural death. This must have been the happy condition of Sheffield prior to the middle of the seventeenth century for any evidence that can be found of any resident medical practitioner in the town earlier than this. When one of the "Lords Commissioners" was taken ill at the Manor or Castle in 1639 it was necessary to send to Doncaster for a doctor and apothecary; and in 1643 Sir William Savile, writing to the Deputy-Governor of Sheffield Castle, informs him that if he wants a chirurgeon he can get one from Barnsley. Mary Queen of Scots brought her own physician with her to Sheffield, and probably the Earl of Shrewsbury maintained a resident physician in his establishment. The Dr. Jones before mentioned as the author of the first treatise on the Buxton waters, was Rector of Treeton, not far away, and he is said to have prescribed for the Earl's gout.

During the latter half of the seventeenth century the names of several medical men occur in connexion with the town; and in the following century, of course, a considerable number of names appear, among them James of "fever powder" celebrity, and Buchan, the author of the *Domestic Medicine*. With the close of the eighteenth century came the movement for the establishment of a general infirmary.

The Hospitals of Sheffield.

The Royal Infirmary.

Those who feel an interest in the history of this institution cannot do better than consult the volume compiled, at the request of the Weekly Board, by the late Mr. J. D. Leader and the President-elect of the Association,

Mr. Simeon Snell, in commemoration of the attainment of the centenary of the Infirmary in 1897. They will there find the history of its inception and foundation, and much biographical matter concerning those who were connected with it in former times. It will suffice to state here that its inception was due principally to the efforts of two medical men, Dr. Younge and Dr. Browne, the former becoming one of the first physicians to the institution, and the latter the first Chairman of the Weekly Board. A public meeting was held in 1792, and in 1797 the Infirmary opened its doors for the reception of patients. The original building still forms the main administrative block, and the old wards, spacious and well lighted, are still in use. Additions were made in 1841, in 1873, in 1884; and in celebration of the centenary in 1897 a nurses' house, ophthalmic wards and theatre, laundry, and other buildings were erected. Two years later a new operation theatre, with every modern improvement, was added, and important alterations effected in the out-patient department. Considerable further additions are now required and an increase of beds, and it is hoped shortly to carry the project into effect. At present there are 255 beds, and between 30,000 and 40,000 patients are treated annually at the institution. There are special departments for the treatment of diseases of the eye, of the ear and throat, of the skin, and for electrical and *x*-ray treatment. By the munificence of the late Mrs. William Overend, the income derived from a sum of £10,000 is available to send patients to various convalescent homes.

The Royal Hospital.

In 1828 a "self-supporting dispensary" was first established in Sheffield, and in 1832 this was reconstituted in premises in Tudor Place. These soon proving inadequate, a private house was purchased in West Street, and converted into more or less suitable quarters. Here the work of a dispensary, without beds, was carried on until 1857, when it was proposed to add to it a hospital. Mainly through the exertions of the late Dr. J. C. Hall, this was effected, and the "Public Hospital and Dispensary," with 61 beds, was opened for the reception of patients in 1860. It was further enlarged and reopened with 105 beds in 1870. In 1890 it was decided to entirely rebuild the hospital, the late Mr. Bernard Wake assisting the project very actively. The first instalment, including the out-patient department and some new wards, was opened, and the foundation stone of a nurse's house laid, in 1895, by their Royal Highnesses the Duke and Duchess of York, now Prince and Princess of Wales. It was on this occasion that the title of the hospital was changed to the "Sheffield Royal Hospital." The completion of the rebuilding scheme only awaits the attainment of sufficient funds to carry it out, an appeal for which is now before the public. There are now 165 beds available, and over 30,000 patients are treated annually. There are special departments for diseases of the eye, the skin, the ear, nose and throat, as well as for mental diseases, deformities of the limbs, and dental cases. There is also an electrical and *x*-ray department.

The Jessop Hospital for Women.

A special hospital for women was opened in Figtree Lane in 1864, mainly through the exertions of the late Dr. Aveling, then practising in Sheffield, and subsequently one of the physicians to the Chelsea Hospital for Women. With him was associated Dr. Keeling, the respected "doyen" of the medical profession in Sheffield, who only retired from the position of acting surgeon in September, 1906. In 1878, through the liberality of the late Mr. Thomas Jessop, the hospital in Gell Street which bears his name was erected. Considerable additions were made to the hospital in 1899. There are now 72 beds, and a large maternity department, between three and four thousand patients receiving treatment annually.

The Children's Hospital.

Originally founded in 1876, in a small house in Brookhill, it now occupies a conspicuous site in Western Bank, facing the entrance to Weston Park and the new university buildings. There are four wards with accommodation for sixty cots. There is also a Branch Hospital for Out-patients at the east end of the city in the Wicker. At the two institutions upwards of 10,000 patients are treated annually.

Municipal Institutions.

There are two large workhouses within the city boundaries—the Sheffield Union Workhouse at Fir Vale and the Ecclesall Union Workhouse at Sharrow, to each of which a large infirmary is attached.

There are also three hospitals for infectious diseases under the administration of the Corporation—a central one in Winter Street, and two on the outskirts of the city in the west not far from the moorlands.

There is also the large West Riding Asylum at Wadsley near Sheffield.

Sheffield Medical Libraries.

The Infirmary, when it was opened in 1797, was evidently intended by its medical promoters to serve as a centre for the diffusion of medical knowledge, and a means of bringing together the members of the profession in the town and district. At all events, as early as 1799, there was a Medical Library attached to the Infirmary to which subscribers were admitted. Amongst the books which remained in the custody of the Infirmary Board until a few years ago were many of considerable value as examples of the work of the early presses, particularly several fine copies from the Aldine Press of Venice of the sixteenth century. These included several volumes of the works of Galen, which had once been the property of Rabelais, and contained his autograph. These rare editions are now in the care of the University. In 1834 the "Sheffield Medico-Chirurgical Book Society" came into existence, the members conducting their annual meeting in a convivial manner over the dining table. It is on record that on one occasion no less than twenty-one toasts were honoured. In 1858 the "Medical Library" was started, with a view to accumulating a permanent library; and in 1861 the "Library" absorbed the earlier "Book Society," being itself absorbed by the "Sheffield Medico-Chirurgical Society" in 1888.

Sheffield Medical Societies.

The earliest medical society of which any mention is found was called the "Medical and Surgical Society," and must have come into existence about 1819. There are no records of this Society preserved. In 1841, the "Medical Society of Sheffield" was formed "for friendly conversation and the discussion of professional subjects"; but this Society seems to have died of inanition in 1867, and two years later, in 1869, the present flourishing "Sheffield Medico-Chirurgical Society" began its career, and in 1888, as already stated, took over the older "Medical Library." The Library and Reading Room of the Society, where its meetings are held fortnightly during the winter months, is now at the University in Western Bank. The Society at the present time numbers 228 members, and the average attendance has much improved in recent years. The Clinical and Pathological evenings are especially well attended, and the use of the well-equipped University Laboratories for demonstration purposes is much appreciated. The increased interest taken by country members in the management and meetings of the Society is most encouraging. The subscription, which is a guinea a year for city members and half a guinea for country members, includes the use of the Library and Reading Room.

Sheffield Medical Schools.

Until a few years ago, at the back of a boot shop in Church Street, stood an old building which, in the early years of the last century, was erected as an anatomical museum by Mr. Hall Overend, a surgeon in Sheffield. In those days medical education, so far as the provinces were concerned, was almost entirely in private hands, medical practitioners taking pupils and giving them such instruction as they were able, preparatory to the completion of their education by the process known as "walking the hospitals" in London. In this museum, probably for some years before the foundation of a medical school in Sheffield, the best anatomical teaching available in the neighbourhood was imparted by Mr. Overend to his pupils, of whom he had many. Before the passing of the Anatomy Act of 1832, subjects for dissection could only be obtained with the greatest difficulty, and were principally the bodies of criminals who had suffered capital

punishment. Although executions were in those days of much more frequent occurrence than they now are, and men were hanged for thieving and even less culpable offences, the supply of subjects from such a source was wholly inadequate. Hence the profession of "body snatcher" became a lucrative, if somewhat risky, calling. Local tradition has preserved many stories connecting the Overends, father and son, with this traffic in dead bodies. The Museum continued to be a private affair in the hands of Mr. Hall Overend, assisted by his son, Mr. Wilson Overend, until the year 1828. On February 14th, 1828, a meeting was held at the Cutlers' Hall with a view to establishing a recognized medical school in the town, and a resolution to that effect, proposed by Dr. Knight, afterwards Sir Arnold Knight, and seconded by Mr. Hall Overend, was carried. Subsequently, however, a difference of opinion arose, and the medical profession became divided into two camps. The Overends and Dr. Corden Thompson wished to utilize the existing building or museum, which was connected with Mr. Overend's house. The other faction, headed by Dr. Knight, objected to this on the ground that the school would be subject to the caprice of a single individual, and wished to found one quite apart from Mr. Overend's private premises. Accordingly the foundation stone of a school in Surrey Street was laid by Dr. Knight on July 9th, 1828, and was opened by the same gentleman as the "Medical Institution" on July 2nd, 1829. In the meantime Dr. Thompson and Mr. Wilson Overend had obtained a license for the "Museum," and had opened it as the "School of Anatomy and Medicine" in October, 1828, forestalling the opening of the Surrey Street "Institution." Thus from 1829 to 1835 Sheffield possessed two rival medical schools. About this time the disclosures in the Burke and Hare trials at Edinburgh stimulated popular feeling against such institutions, and Mr. Overend, feeling that a medical school was not a very desirable or even safe appendage to a private house, transferred it to premises in Eyre Street. Here, on January 26th, 1835, a disturbance taking place, the mob, under the impression that some one was being murdered for the sake of the body, sacked and completely destroyed the place before it could be dispersed by the military. From that time the "Medical Institution" in Surrey Street remained in undisturbed possession of the field.

In 1888 the medical school was removed from Surrey Street to new premises in Leopold Street, opened by the late Sir Andrew Clark, and in 1897 became the medical department of University College, Sheffield, through incorporation by Royal Charter with Firth College and the Technical School. In 1905 the University of Sheffield received its charter, and the medical department was transferred to the new University buildings in Western Bank.

In a subsequent article it is proposed to deal with the University, the museums and parks, and other places of interest in Sheffield and the neighbourhood.

Medico-Legal.

A CASE OF BORACIC ACID POISONING.

At Yelverton, on November 23rd, was concluded a coroner's inquest at which, according to the *Western Morning News*, the jury was asked to decide (1) the cause of the death of the deceased, a domestic servant, aged 27, admittedly pregnant; (2) whether a powder she had taken was swallowed by her with the intention on her part of (*a*) producing an abortion, or (*b*) ending her life. The jury returned a verdict to the effect that the deceased had died from an overdose of boracic acid, feloniously self-administered, as an abortive, and that she was not of unsound mind when she did so. The deceased was ill for about twenty-four hours before her death, the circumstances, so far as they are known, being as follows: On the Saturday preceding her death she visited Tavistock with the young man to whom she was engaged, and while in Tavistock fainted. She then returned home in the evening looking very ill. On the following morning she was still ill, and vomited considerably. She stayed in bed, but refused to have medical assistance summoned. About 1.40 p.m. she was heard groaning, and a witness who went into the room was just in time to see her fall on the floor unconscious. She died almost immediately, froth coming from her mouth. Dr. Penn Milton, who made the *post-mortem* examination, found the deceased's heart extensively diseased, but before giving a certificate of death he desired that the contents of the stomach should be analysed. Dr. C. E. Bean, Public Analyst for Plymouth and Devonport, stated that he had been handed by Dr. Penn Milton the contents of the stomach; also a glass jar containing 97 grains of boracic acid; and also a glass with apparently dry milk about it, and some white particles, which proved to be boracic acid. He had analysed the contents of the stomach, and found there was no trace of metallic poison. The presence of boracic acid in the stomach was extremely small; it was a very soluble substance, and would not remain in the stomach long. In this instance the deceased had also vomited. There was no evidence of an attempted operation. He could not exactly say how much would be a fatal dose of boracic acid, but there were three known cases of it having proved fatal. Deceased probably swallowed the powder twenty-four hours before she died. In view of the evidence given at the previous inquiry, and also that of Dr. Penn Milton as to the diseased condition of the woman's heart, he was of opinion that death was due to the action of the boracic acid she took. Boracic acid had a paralysing effect upon the heart.

THE MEDICAL REGISTER.

Dr. A. George Bateman (General Secretary, Medical Defence Union) writes: In relation to the question raised by "Overtaxed" on page 1626 of your issue of November 30th, the law is quite clear upon the point. It was decided in Leman *v.* Houseley (L.R. 10, Q.B. 66) and in Howarth *v.* Brearley (19 Q.B.D., page 306) that in order to recover fees for medical attendance a medical practitioner must have been registered *at the time of the services rendered* and not merely at the time of the trial of the action for such recovery.

PUBLIC HEALTH.

THE METROPOLITAN ASYLUMS BOARD AND PHTHISIS.

The question of the provision by the Metropolitan Asylums Board of accommodation for phthisical cases was brought up again at its meeting on November 23rd. On this occasion the proposal was to the effect that if the sanction of the Local Government Board could be obtained the Southern Hospital should be opened for the accommodation and treatment of consumptive cases in early stages, and the cost be charged to the various Boards of Guardians in the Metropolis. In support of the proposal it was urged that the present was a specially opportune time for opening this hospital, for it was standing idle and costing the ratepayers £13,000 a year for upkeep. If 800 patients were admitted and the local authorities were charged four shillings a week for each of them, it would mean an income of about £8,000 a year, and the hospital could not be put to any better use than the treatment of patients suffering from consumption, a disease from which there were last year in London alone as many as 7,000 deaths. In opposition two amendments were moved, one suggesting that, in view of the statement of the Local Government Board in 1906, that there was not sufficient evidence to justify the heavy outlay involved by the establishment of a sanatorium for consumptives, the Managers were not prepared to sanction the use of its hospital for this purpose; whilst the other, which was adopted, simply negatived the motion on the ground that, in the absence of instructions from the Local Government Board in reply to the last communication of the Managers on the subject, no useful action could be taken in the matter. The Southern Hospital in question is one of which the building and equipment was completed towards the end of last year. It is at Carshalton, in Surrey, possesses grounds 136 acres in extent, and was designed for the reception of 800 convalescent cases. Seeing how recently it has been completed for a specific purpose, and in view of the policy formally adopted by the Board within the last year or two of transferring all convalescent patients, as soon as may be, from acute to convalescent hospitals, it must be admitted that, however excellent his intentions were, it is not quite clear why the proposer of the motion should have picked out this particular institution for the purpose indicated by him.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

ROYAL NAVY MEDICAL SERVICE.

The following is a list of the successful candidates at the recent examination for commissions as Surgeons in the Royal Navy:

	Marks.		Marks.
G. Carlisle	1,542	H. H. Babington	1,110
G. T. Verry	1,437	W. C. Carson	1,109
G. B. Scott	1,326	J. H. Wright	1,090
F. H. Holl	1,320	C. H. L. Petch	1,060
G. P. Adshead, M.B. ...	1,285	G. A. S. Hamilton ...	1,045
J. McCutcheon, M.B. ...	1,265		

TEMPORARY SERVICE SURGEONS IN THE ROYAL NAVY.

A. B. C.—The names of volunteers for temporary service as surgeons in the Royal Navy are registered on application to the Medical Department of the Navy, Admiralty, London, S.W., but their employment depends upon a state of emergency arising.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—

EDITOR,	GENERAL SECRETARY AND MANAGER,
2631, Gerrard.	2630, Gerrard.

☞ ***Queries, answers, and communications relating to subjects to which special departments of the*** BRITISH MEDICAL JOURNAL ***are devoted will be found under their respective headings.***

QUERIES.

CARFAX inquires what is the best treatment for prolapse of the anterior vaginal wall with incontinence of urine. Hodge's ring and solid vulcanite pessaries have been tried and found useless.

INTRAUTERINE FRACTURE: UNUNITED.

NON-UNION writes: A.B. was born some four and a half years ago, and after birth was found by me suffering from fracture of both bones of left leg at junction of lower and middle thirds. The fracture had evidently taken place weeks before birth and was compound, as at birth two small healed scars were visible where the lower fragments pressed under the skin. Untiring efforts by splinting and tenotomy were persisted with for months to obtain union, but without success; the bones are perfectly formed and the foot fully developed, but now slightly smaller than the other. The child is a fine healthy boy and has been always so, but can walk only with the help of a mechanical contrivance. I can find no literature on the subject of such injuries and wish to know if there would be a probability of union if wiring the fragments or some such measure were resorted to. Can you or some of your readers assist me?

ANSWERS.

FINGER CRACKS

DR. W. T. WILTON (Eltham) writes in reply to "Didymus": From my own personal experience I can recommend strongly the application of "Epicolloid" (prepared by Duncan Flockhart) to painful cracks at the finger-ends and round the nails. It is much cleaner than the method of applying adhesive strapping, is practically invisible, and one application will stand a good many washings, which is more than can be said for the strapping method. At the same time, of course, the hands should be washed no more frequently than is absolutely necessary.

STERILIZERS FOR CONSUMPTION SANATORIUMS.

DR. HAROLD DOWNES (Bellefield Sanatorium, Lanark) writes: In reply to Dr. Hughes, sterilization by steam is the most satisfactory method of dealing with patients' clothing and bedding. New mattresses should be put through the sterilizer before they are taken into use, as they usually contain an enormous number of bacteria. Handkerchiefs should be made of cheap material, and carried in a special bag by themselves. For sputum flasks I am in the habit of using a detachable battiste lining, which buttons inside the breast pocket; the flasks, handkerchiefs, and the bags containing them may be boiled. It is not necessary to sterilize cutlery, glass, or crockery, nor is it advisable unless one is prepared for an abnormal number of breakages. Enamelled iron sputum mugs may be boiled and half filled with carbolic or lysol solution. Sputum is best mixed with sawdust and cremated; strong brown paper bags may be used for this purpose, and these should be carried to the furnace in enamelled pails which are used for this purpose only, and regularly disinfected.

LETTERS, NOTES, Etc.

A CORRESPONDENT asks us to draw attention to the fact that the so-called Marienbad tablets which have sometimes, he thinks, been prescribed by doctors and sold by chemists under the impression that they contain Marienbad ingredients are in fact composed, as the label states, of aloes, rhubarb, podophyllin, cascara, and belladonna.

"A CHRISTIAN SCIENCE CURE."

MR. FREDERICK DIXON (London, W.C.) writes: I have read with interest your article entitled "A Christian Science Cure," in the JOURNAL of November 23rd, and I am sure you will permit me to point out that it is scarcely fair to say that Mrs. Playfair has thrust on Dr. Maurice de Langenhagen the honour of being "the greatest authority on this disease in Europe." I will not presume to say in what terms the London specialist to whom Mrs. Playfair applied, on the advice of her own local doctor, spoke of Dr. Maurice de Langenhagen, but I do presume that gentleman would naturally have sent her to the person he considered most qualified to deal with the disease. And that this person was Dr. Maurice de Langenhagen is undoubted, or he would never have subjected a lady of delicate health and limited means to the fatigue and expense of two journeys to Plombières, in two consecutive years, to undergo treatment there. Indeed, Mrs. Playfair was on the eve of a third journey when she was healed by Christian Science treatment. I have never known a Christian Scientist speak otherwise than with respect of the great men in the medical profession who, in the past as in the present, have set before themselves the conquest of disease and pain; and I think it is a pity that doctors should so commonly speak with bitterness of Christian Scientists. If Christian Scientists were knaves or fools the movement would have collapsed years ago. It is because they are neither of these things, but honourable and intelligent men and women, that your description of Christian Science as "foolish credulity" is, I venture to say, to be regretted.

TESTS FOR ALBUMEN.

DR. J. W. DUNCAN (Hockley, Birmingham) writes with reference to a mention of the salicyl sulphonic test for albumen which occurred in a review published in the BRITISH MEDICAL JOURNAL, p. 911, to state that he finds that cresylic acid may be used as a test. One to seven drops are added to an inch of urine in the test tube, and shaken for half a minute or more, when a dense white appearance is produced. The test tube is then nearly filled with tap water and again shaken; excess of cresylic acid is dissolved, but in albuminous urines the fluid is whitish, in non-albuminous clear. This test he thinks is analogous to the phenol test for albumens, and he suggests the possible use of other hydroxybenzene derivatives as precipitants for albumens.

THE OPEN-AIR TREATMENT OF ACUTE PNEUMONIA.

FLEET SURGEON writes: The memorandum of Major Carr White in the BRITISH MEDICAL JOURNAL of November 23rd, p. 1515, prompts me to state that I practise his principle so far as I can, and for years I have had no death from pneumonia, while cases with most marked and distinct physical signs abort, if one may say so, before the fourth day. Fifteen years ago I was told that there was no need for oxygen inhalations in pneumonia if plenty of air had been given to the patient throughout, and I have never seen reason to doubt that maxim.

Open-air treatment is good not only for pneumonia but for all the other specific fevers with which I am acquainted—scarlet, typhoid, etc.—whether I have seen them in my own practice among healthy young men or under the care of my friends. I give these pyrexial cases fresh air and water in plenty, nurse them and feed them as well as I can, and I am sure they are more comfortable so and recover more quickly. Alcohol I almost never give now; formerly my practice was different.

A WONDERFUL OPERATION.

IT is reported in the French papers that a wonderful new operation has been performed. It is more than wonderful; it is unique, if it be true, as stated, that a Swiss surgeon has removed the left liver!

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The Bradshaw Lecture

ON

PROGNOSIS IN RELATION TO TREATMENT OF TUBERCULOSIS OF THE GENITO-URINARY ORGANS.

DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

BY RICKMAN J. GODLEE, M.S., F.R.C.S.ENG.,
SURGEON IN ORDINARY TO THE KING; SURGEON TO UNIVERSITY COLLEGE HOSPITAL.

THE PIOUS FOUNDER.

THE simplest method of securing a limited immortality is that which involves the periodical mention of the name of a beneficiary by speakers or lecturers. As long as the Royal Colleges of Physicians and Surgeons exist, and Three per Cent. Consols bring in any income, and as long as men can be found to deliver lectures, so long must the name of Dr. Bradshaw be twice annually revived in London. I can imagine Dr. Bradshaw, if he was a cynic, in an exalted state of purity and wisdom, looking down complacently year by year upon those who undertake this task; watching them rack their brains for ideas during the summer months, or more likely feeling the prickings of conscience for failing in this duty. If he reflects upon his own peaceful life—not much worried with the cares of practice, not greatly embittered by the aggravations of public life—it may be hoped that he is grateful to those who thus vicariously keep his memory green.

Staying as I often do not far from Reading, and knowing something of Andover, I have made some inquiries into his history; but already, though he died only forty-one years ago, very little is to be made out concerning him. There is an aged member of our profession at Andover who still remembers him, and an old retired tradesman there who knew him well. Speculation as to his birthplace seems to have remained unsatisfied; he was said to have dropped from the clouds, and there were the usual rumours about exalted connexions; but I have discovered that he was the son of James Bradshaw, of St. James's Parish, Bristol. He was a man of some refinement and eccentricity, who wore his hair long, and possessed a somewhat theatrical manner. He never did much practice, either at Andover or at Reading, though at the latter place there is a tradition that he incurred some odium by seeing patients for nothing at a chemist's shop. He is said by Sir James Paget, who may possibly have known him, to have been "a home-loving and studious man, who diligently cultivated his mind in both literature and art." This is consistent with the fact that he was the possessor of numerous distinctions, but, like his monument which I am helping to erect, they grew from a small basis. After studying at Westminster and Middlesex he obtained the M.R.C.S.Eng., on December 13th, 1833, being then 29 years old, and he was admitted a Fellow by election in 1854. In 1833 he also obtained the M.D.Erlangen, which was probably not a very serious ordeal. In 1841 he became an Extra Licentiate of the Royal College of Physicians of London, which means that he passed an examination of rather low standard by the President and "Elects" giving the licence to those who practised beyond seven miles from London. On the strength of this he was granted the M.R.C.P. during the so-called year of grace 1859 without examination. In 1844 he matriculated at New Inn Hall, Oxford, at the age of 43, and was "created" M.A. in 1847 without any sort of examination. I cannot say where his degrees of D.C.L. and LL.D. were obtained, but certainly not in England, and I commend this object of research to the next Bradshaw Lecturer.

He was a member of the Oxford University Art Society and an honorary member of the Royal Jennerian Society. He wrote papers on the use of cod-liver oil in chronic rheumatism;[1] on the operation of narcotics;[2] on a case of chronic abdominal abscess;[3] on a case of spontaneous cure of cercocele;[4] and on the history of sheep;[5] besides various articles in the *Miscellany* and other periodicals signed "Beta."

He married the widow of a rich jeweller in Andover, whose money was left away in case she remarried; but Dr. Bradshaw and his wife bought the reversion for a sum down, and it was after this that he moved to Reading, where he lived till the time of his death, at the age of 62. Mrs. Bradshaw was many years older than her husband, whom, however, she survived for fourteen years, and it is the bequest in her will, dated 1875 and proved in 1880, which places me in my present unhappy position, and therefore it is against her and not her husband that the grudge, if any, is to be entertained. Dr. Bradshaw himself, it appears, had offered to endow a pathological department in connexion with the Reading Hospital, but for some reason or another this was not accepted. At some period of his life he added a final "e" to his name, which accounts for the fact that a doubt has arisen as to its correct orthography. It is thus spelt in an obituary notice which appeared in the *Reading Mercury and Oxford Gazette* for August 25th, 1866, in which we read:

> With much regret we have to record the death of Dr. Bradshawe of this town, which took place on the 18th inst., after a protracted illness. . . . The deceased gentleman had been a contributor of professional subjects and miscellaneous articles to various publications. He was a kind and warm-hearted friend, and during a residence of many years in this town he was ever ready to alleviate the sufferings of the poor by affording gratuitous relief, and by those his death will be especially felt.

THE RESISTANCE OF THE BODY TO TUBERCLE.

The subject of this lecture seems small when contrasted with the larger themes of those distinguished men who have preceded me; but, besides its intrinsic interest, there is a wider one, because it opens up the whole question of the resistance of the human body to the attacks of the tubercle bacillus.

It is instructive from this point of view to look back upon the accepted teaching with regard to tubercle in general at the time when I was a student. Although what were considered exceptional cases of cure of pulmonary tuberculosis came under the immediate cognizance of all, it was generally held that this was an almost invariably fatal disease. At the same time it was obvious that a large number of tuberculous affections in other parts of the body which were either imperfectly treated or not treated at all, had a natural tendency towards recovery. I am speaking of about 1870, when the excision of tuberculous joints was a comparatively recent invention, when tuberculous glands were either left alone or if they suppurated were only incised, when lupus (which, however, at that time was not recognized as tuberculous) was only treated with nitric acid or the cautery, when nephrectomy was hardly thought of, and when few would have advised the removal of a tuberculous testicle. Many of my hearers must be old enough to remember that it was then, as now, not uncommon for tuberculous joints, if taken early and treated with absolute fixation and counter-irritation, to make almost complete recoveries; they will also remember how common it was to see people, otherwise in good health, whose necks were marked with the frightful scars caused by suppurating glands or resulting from the ravages of lupus, and that suppurating tuberculous testicles did not even frequently continue to discharge for the remainder of the patient's life. All this is of course perfectly well known, and yet the modern student is tempted, as the result of modern teaching, to overlook the fact that he often sees old cured tuberculous lesions in the *post-mortem* room—cicatrized lungs, calcareous glands, strumous kidneys, and the like—evidences of long past acute tuberculous trouble in patients who have died of some totally different disorder.

The modern teaching to which I refer, to put it baldly, is that if there is one obvious tuberculous focus, and no evidence of any other, it should be extirpated root and branch, lest there should be left behind some root of bitterness from which the whole body may at some future time be infected. This teaching has no doubt much to be said for it, but the first part of the proposition must not be divorced from the second; and it is not only important to know whether there is at the time any active tubercle elsewhere, but also whether, in the case of twin organs, there is a reasonable chance of the fellow escaping, even although it be apparently healthy at the time the affected one is removed, and what the effect upon the system is likely to be if only one of such twin organs be left and it

fall a victim subsequently to the attacks of the tubercle bacillus.

Tuberculosis of Bones and Joints.

It is also interesting to recall the immediate effect of the introduction of the antiseptic principle upon the treatment of tuberculous affections of bones and joints. Before this period the opening of a psoas abscess was in the majority of cases the signing of the patient's death warrant, and it was therefore postponed till the latest possible moment. In the same way the bursting of an abscess in connexion with a tuberculous joint was almost always the precursor of excision or amputation. Not of course that in either case the tuberculous process was aggravated, but because septic organisms entered in, like the seven other spirits in the parable, and the last state became, therefore, much worse than the first. But as soon as it was possible to eliminate or keep in check the septic element, it was shown that tuberculous caries of the spine could be arrested and heal and cicatrize, at least as well when it communicated with a sinus leading to the surface as when no suppuration had taken place. And in the case of joints two methods of treatment were introduced, one by Lister and the other by König, which for a time had a considerable vogue, but which have long fallen into disuse. Lister's plan consisted in making long and deep incisions into the pulpy synovial membrane, say one 3 in. long on each side of a knee or an ankle, putting drainage tubes across the joints and then trusting to complete fixation and rigid antiseptic treatment. König's was for tuberculous hydrops articuli, in which the synovial membrane becomes converted into a substance which he compared to boiled bacon rind. He made two long incisions, one on each side of the joint, and pulled out through each as much of the boiled bacon rind as he could get hold of, but without making any attempt to remove the whole of it. The result was often excellent; and yet no attempt was made to remove the whole of the affected synovial membrane. I adduce these two examples, not that there is anything very remarkable in them, though they were remarkable enough at the time, but in order to emphasize two well known facts—first, that it is not essential to take away the whole of the diseased tissue from a tuberculous part, and, secondly, that, by partial removal or simple drainage, a degree of physiological usefulness may be retained which excision or amputation can never secure.

Doubtless it was not then, nor is it even now, in these more enlightened days (with all respect to Sir Almroth Wright, to whose work I shall have later to refer), completely understood in what way the treatment led up to the cure. Formerly we spoke about the relief of tension, the removal of congestion, and complete immobilization, now we have our attention directed to tryptic ferments and bacteriotropic substances. The problem remains complicated. The hypothesis upon which the treatment was founded was different from that which now explains the cure. At the present time the most important effect of the incisions might be held to be the removal of stagnant fluids from the source of infection and the douching of this infected focus with fresh lymph charged with bacteriotropic substances. These new ideas are intensely interesting, as indeed were the old ones, and few imagine that the last word upon the subject has even yet been said.

Illustrative Cases.

Let me now briefly refer to a few of the cases which have made me choose the subject of my lecture, and begin by sadly owning that the only advantage of growing older is that one has reaped the fruits of the experience of what (in our short lives) we reckon as many years, and can therefore speak from personal knowledge in such a matter as that of the prognosis of a chronic disease.

I know a man 53 years of age now who would pass muster in a crowd for a healthy man. He comes from a stock in which tuberculous disease has occurred rather frequently, but he himself escaped till the age of 34, when he suffered from left pleurisy, and was treated by Sir Andrew Clark, whose name in this connexion will remind many of the extreme chronicity of some tuberculous affections and of the grand life work which a tuberculous man may accomplish. In the following year, 1889, he came under my care for tuberculous epididymitis of the right side, and I removed the testicle. This was followed in 1890 by caries of the sternum, and in 1891, as is so common, by disease of the other testicle, which I scraped, leaving only a paltry fragment of the organ. He afterwards had tuberculous cystitis and degeneration of the prostate, an abscess about the right kidney, and symptoms of caries of the spine. The bladder was treated by rest and injections of silver nitrate and iodoform, the abscess round the kidney by incision, and the sternum by scraping. No abscess formed in connexion with the spine, but a certain amount of kyphosis ensued. Everything has now been in abeyance for eight or nine years. The remains of the testicle have enlarged so as to form a very decent approximation in shape and consistence to a normal organ, and the prostate is not to be felt. The only obvious abnormality is the presence of a small amount of debris in the urine, in which, however, no pus cells and no tubercle bacilli are to be found. The patient can play two rounds of golf a day with comfort, can attend evening parties or church, and can hold his water sometimes for three hours by day and for five hours in the early part of the night. So it must be owned that the result is not unsatisfactory.

One case only is as unconvincing as volumes of statistics, so I must ask your forbearance while I relate a few more. But I want to make myself understood as suggesting that they are not exceptional but rather common.

In 1897 I saw with Dr. Ringer a young lady of 19 who nine years previously had had tuberculous disease of the right hip, from which she made a recovery with ankylosis of the joint. At the time she came under my notice she was suffering from tuberculous ulceration of the bladder of ten months' standing, which, according to the teaching of that day, but I think rather against the wise instinct of my colleague, I treated by scraping and the application of iodoform. I do not think it did a particle of good, and it led to the introduction of other organisms into the bladder besides the tubercle bacilli. But, notwithstanding this, the disease rather quickly subsided and the bladder symptoms disappeared. She became well and fairly strong, and was able to enter with zest into the amusements suitable for a healthy young woman. For the last ten years she has been free from any tuberculous lesion, and she leads an active life occupied with parish work, playing golf and dancing (they say she waltzes really well but cannot manage a polka). The urine is normal, and guinea-pigs inoculated with it in October of this year were not affected with tubercle.

One of the earliest recollections and causes of wonder of my childhood is that of a boy some years older than myself with marked kyphosis from spinal caries. He was thoroughly well able to enjoy the pleasures of life, which included a Cambridge career and a shooting box in Scotland. He was twice married, and had one child by the first marriage. Within a few years of his death, which occurred at the age of 46, he developed tuberculous epididymitis which suppurated. But the abscess, which was opened and scraped, healed and gave no further trouble.

There is a lady of 51, delicate certainly, but quite able to enter into the occupations of a woman of society, who has had renal symptoms for ten or eleven years. I saw her five years ago, and was able to place beyond dispute the fact that she had at least one tuberculous kidney. I expressed a very strong opinion against any operation on it, being led to this principally by the fact that the specific gravity of the urine was low, 1012, and it contained one-sixth of albumen. This opinion was not shared by all her medical advisers; but it was followed, and the result fully justifies the course adopted, as her health has much improved under ordinary treatment.

A strong, healthy-looking man of 64, a monorchid, after spending fourteen years in China, returned home in 1878, and has enjoyed, he says, splendid health since. He was married in 1875, and has four children, varying in age from 29 to 23. Four and a half years ago he squeezed his testicle in mounting his bicycle which made it swell, and in two and a half months an abscess formed, which he was told was not tuberculous. The sinus gradually closed. I saw him in February of this year, and there was not any doubt about the diagnosis, as the epididymis, the lower part of the cord, and the vesicula were very hard and craggy, and there was a small hydrocele. The diagnosis was confirmed by finding tubercle bacilli in

the flocculent débris and mucus, which were present in small quantities in the urine; and rodents inoculated with it died of tuberculosis. He rested for a few weeks, and then returned to his country home, from which he comes up to business in the City; not certainly an ideal life, but it is his daily bread, and in spite of warnings he does not see his way to stop it. In the meantime he had gained 7 lb. in weight when I last saw him in July, and nothing is to be done to the testicle.

I know, of course, that some of these patients are walking on the edge of a more obvious precipice than the rest of mankind. Here, for instance, is a case I had hoped to bring forward as a striking example of chronicity.

A stockbroker, 34 years of age, came under medical care for irritability of the bladder, emissions, erections, etc., in 1896, at which time the urine contained pus and tubercle bacilli. Irrigations were employed and the symptoms disappeared. The following year he was sent for a voyage, and there was some thickening of one epididymis. He spent the winter of 1897-8 abroad, and in 1899 one testicle swelled. I saw him in 1900, and found both testicles and epididymes much swollen, hard and painless, and much induration of both vesiculae seminales. The right kidney was much enlarged and hard. The urine had a specific gravity of 1015 to 1010, and contained pus and occasionally a speck or two of blood and numerous tubercle bacilli, but no more albumen than the pus would account for. The only symptoms were slight frequency, especially in temperate as opposed to warm climates, and inability for very hard work, and occasional aching in the right loin. His appearance was robust. To summarize rather copious notes, this patient was allowed to return for short spells to his business in the summer, but made to winter abroad, and he went on very well indeed, the enlarged organs all becoming less obvious and the general health remaining good, though the urine became somewhat more albuminous. However, after working rather harder than usual, his health showed signs of failure in 1904-5, and he could not pick up after an attack of influenza in March, 1905, and died unexpectedly of heart failure in June of that year—that is, nine years after he first consulted a doctor.

But as a contrast take this, the last case I will inflict upon you—of a doctor, now 45 years of age, who is known to have had tubercle of the prostate and vesiculae seminales in 1896, and on this account was sent to South Africa. His troubles had begun four years previously, so that he probably had a tuberculous bladder fifteen years ago. I must not enter into the details of his case, his two residences in South Africa, his attacks of pyelitis, and his final settlement in 1899 (at which time tubercle bacilli were still to be obtained from the urine) in the South of England, where he is still carrying on a busy practice. Not that he is robust; but he has lost almost all his bladder symptoms, and there is no longer pus or blood in the urine. The urine, however, occasionally has an offensive smell which he subdues with urotropine. Its specific gravity is 1026. The only actual symptom is a dull ache in the right loin which does not prevent him from doing his work, and he keeps in fair general health and nutrition. I saw him on November 21st of this year, and found him well nourished and with no obvious physical signs of disease in kidney, bladder, or prostate.

I could produce many similar cases from my notebooks, which are not those of a specialist, but of what is called a mere surgeon. But, while stating my belief that tuberculous diseases of these organs are at least as chronic as, and perhaps even more disposed to undergo spontaneous cure than, those of other parts, I am aware that there is another side to the picture. Tuberculous disease of the bladder may cause intense trouble, and exhaust the patient by the irritation it produces; tuberculous nephritis with a blocked ureter may be a practically hopeless condition as far as the kidney is concerned, and tuberculous affection of the Fallopian tube may give rise to dangerous and fatal complications.

I recall the case of a young man, aged 32, of tuberculous stock, whom I saw in 1895 with my late colleague, Dr. Poore, on account of polyuria and great frequency of micturition, his symptoms having been noticed about six months. He passed water every hour, and the amount reached 8 pints a day. His urine had a specific gravity of 1002, and contained sometimes some small clots, but always a little pus and tubercle bacilli. He had lost flesh, but was leading an active life, hunting and so on; and his friends almost resented the grave prognosis we were forced to give, but he only lived a few months after our interview with him, and is said to have died of tuberculosis of the kidneys.

I thought at one time that it might be possible to make a prognosis depending on the specific gravity of the urine, but the problem is too complicated, there being so many other renal conditions commonly met with in tuberculous patients. I have, moreover, already adduced one case which is pursuing a calm and equable course in spite of albuminous urine of low specific gravity. It is indeed most difficult to say which cases will go rapidly or slowly downhill, and which are likely to remain stationary or improve—an important fact to bear in mind when we are asked to congratulate a surgeon upon the brilliant results of a single operation, or even a dozen, for it would be generally possible to cap them with similar successes obtained by pursuing a Fabian policy.

Prognosis and Treatment of the Various Organs under Discussion.

Let us now proceed to consider very shortly what the diseases are which are under discussion.

We may at once put out of consideration the miliary affections, because, although the earliest stage of a tuberculous lesion always consists in the deposit of miliary tubercle, it is not until one or other of the degenerative changes has set in that symptoms arise suggesting surgical interference, and it is from the point of view of the advisability and the nature of surgical interference that the question of prognosis is to be discussed.

Tubercle of the Adrenals.

Tubercle of the adrenals is such a medical disease that it may seem pedantic to refer to it in a surgical lecture. It is said always to be progressive, though its course is chronic, and always to give rise to Addison's disease. I can recall, however, two cases of surgical interest which alone would make me shy of operating when this condition was suspected. One was that of a middle-aged man who was under Lord Lister's care in 1888, on account of an almost acute abscess in the substance of the vas deferens as it lay in the inguinal canal; the vas and the testicle were removed, and the latter contained a few grey granulations. He had had tuberculous testis as a boy, and six years before the orchidectomy, caries of the spine with a psoas abscess, from which he had recovered. His skin was bronzed. He died collapsed a few days after the operation, and his adrenals were found to be enlarged and no doubt tuberculous.

The other was a young man in the Brompton Hospital whose skin was deeply bronzed and who had enormous glands on one side of the neck which displaced the trachea considerably to the other side. It was suggested that they were lymphadenomatous, but he went rapidly downhill, and at the autopsy all the lesions in glands and adrenals were found to be tuberculous.

Kidneys.

The conditions in the kidney which give rise to symptoms are the cheesy or calcareous degeneration of tuberculous deposits, or the breaking down of these deposits into abscesses which may or may not burst into or communicate with the pelvis of the kidney or the perirenal tissue. It not common to meet with these conditions unassociated with more or less pyelitis, and pyelitis with a normal kidney is practically unknown.

If the tuberculous deposits have simply undergone cheesy degeneration, there is probably enlargement of the kidney, but symptoms may be almost entirely absent or very slight, such enlarged kidneys being sometimes discovered accidentally. Almost the whole of the kidney may be affected in this way, but, on the other hand, there may be one or several cheesy masses in a kidney the rest of which is comparatively healthy.

The question of dealing with such a kidney if there are no urgent symptoms depends upon what views are held as to the likelihood of its being the only tuberculous focus in the body, and especially as to the probability of the other kidney being at the moment or in the future affected. It is unlikely that by the time the kidney can be diagnosed there will be no other deposits in the body, and I am therefore opposed to nephrectomy from the

point of view of eradicating all the existing tubercle from the system.

A word may here be said as to the sequence of events in the affections under discussion. It is certain that primary tuberculosis of one kidney occurs, and that the other may escape for a long time; and it is, I think, also certain that the disease may spread down the ureter to the bladder. The fact that the early symptoms are often vesical does not prove that the bladder is affected at the time these symptoms appear, for any vesical symptom may be caused by a renal affection. Some go so far as to suggest that primary tuberculosis of the bladder only occurs as a part of tuberculosis of the prostate, but this I do not believe to be the case; and, holding the view that it is a curable disease, I maintain that *post-mortem* evidence on the subject is likely to be deceptive. My own opinion is that it may spread from the bladder along the ureters to the kidneys in the same way that septic troubles do; but while this is an easy matter to argue about, it is not a simple one to prove.

It is or may be possible, by means of various separators or by means of catheterizing the ureters, to ascertain whether the secretion from the opposite kidney has a respectable specific gravity, and whether it does or does not contain tubercle bacilli; but such an observation does not settle the point as to whether or not there are any deposits of tubercle in the organ. There is, however, now no excuse for making the mistake that I once witnessed in the early days of nephrectomy, of removing the only functional kidney. The remorse of the very sensitive surgeon to whom this happened is not easily forgotten. No change in the mental condition and but little in the physical occurred for several days, and then, almost at the moment of the hospital visit, the end came suddenly with an epileptiform convulsion.

But seeing that it is impossible to be sure of the state of the opposite kidney, and that it is likely, or at all events possible, that it will be affected later, and that the chance of life must be a poor one if there be only one kidney and that tuberculous, I am opposed to removing the obviously affected one which causes no symptoms, even if the evidence is against the presence of any disease in the other. It appears that there is a good chance of the unaffected kidney escaping for a long time or altogether if the affected one be not removed, which is an argument against the likelihood of one kidney being infected from the other, and therefore in favour of letting the diseased one alone if it is not a source of inconvenience.

We come now to the question, What is to be done when the symptoms are sufficiently severe to warrant exposure of the kidney? It is presupposed that an attempt has been made to ascertain the state of the other kidney, and that, if its secretion does not suggest the absence of tuberculous disease, the cautious surgeon will always select the least serious operation. The kidney then is exposed, and one of these conditions is found:

Pyelitis with a fairly healthy kidney.

Patches of tuberculous disease, possibly cheesy or calcareous, in a fairly healthy kidney with or without obvious pyelitis.

A disorganized or atrophied kidney with probably extensive pyelitis. It may be a mere shell of renal tissue enclosing large collections of pultaceous cheesy matter (phthisis renalis).

Such a kidney as the last I should, if the other kidney were supposed to be normal, unhesitatingly remove with as much of the ureter as I could get hold of, and hope that the patient might long be spared from the incidence of disease in the opposite kidney; and I should quite expect that there would be a considerable improvement in his general condition and that his resisting power might thereby be increased. As to the removal of the capsule, it depends upon the amount of thickening and adhesion to surrounding parts. If there be much adhesion, the removal of the capsule involves much more haemorrhage and shock. On the other hand, if left behind it does not, in my experience, do much harm. If the capsule be removed it is far more easy to remove the whole of the pelvis and to deal with the probably diseased ureter.

But if the disease were confined to localized patches of tubercle, and the remaining portions had a healthy or moderately healthy appearance, I should have faith in the recuperative power of the organ and should not be influenced by the—shall I say?—sneers of some of the strong advocates of nephrectomy, but should remove the diseased foci and bring the sides of the wound together with trustworthy absorbable catgut, putting a drainage tube either down to the kidney or into the pelvis, as occasion might require. This conclusion is arrived at not simply from reading what others have written, but from the experience of such cases as the following:

A farm bailiff, 43 years of age, of robust appearance, had hip-joint disease as a boy, which resulted in ankylosis with 1½ in. shortening. He also had keratitis, no doubt tuberculous. For some time he had complained of symptoms strongly suggesting stone in the right kidney; but on exposing the organ it was found to contain numerous cysts, some of which contained limpid fluid and others cheesy material; they occupied mostly the lower pole of the kidney, and the remainder of the gland presented a normal appearance. The cheesy material was scraped away, and the cyst walls as far as possible were cut away, which entailed the removal of about one-third of the kidney. A drainage tube was inserted, which was dispensed with on the eighteenth day. There was some shock after the operation, and on the following day the urine contained 2.2 per cent. of sugar, but, except for this, recovery was uninterrupted, and he left the hospital on December 2nd, 1906. When seen in November, 1907, he was in excellent health and had lost all his pain. He rides about his work and has no complaints. The lower end of the right kidney can be felt. There is no sign of active tubercle, and no tubercle bacilli are to be found in the urine.

A railway porter, aged 24, was transferred from the medical wards with the diagnosis of calculous pyelitis; he was passing blood and pus, which segregation showed to come from the left kidney, the urine from the right being normal. No tubercle bacilli were found in the urine, and a skiagram showed a shadow. My colleague, Mr. Johnson, found extensive periadenitis, and that the lower pole of the kidney was hard and nodular—partly caseous and partly calcareous. The affected part was cut away with scissors, in the early part of April, 1906, the kidney was drained, and the patient made a good recovery. I saw him on October 10th, 1907—he looks and feels perfectly well; the kidney can be felt, but there are no marked physical signs anywhere. The urine contains some pus cells, but no tubercle bacilli were found. There is a little albumen. He has returned to his laborious occupation.

Perhaps these may be thought to be rather exceptional cases, but they are far from unique, and I believe the same arguments as to treatment apply to those in which there are one or a few abscesses. I always adopted the plan of opening and draining such abscesses before the methods of segregation had been perfected, chiefly from fear of the catastrophe referred to above, but also for the sake of estimating if possible the state of the other kidney, and the degree of success obtained seemed to me to justify the course pursued. Moreover, if what I have said about the chronicity of the disease and its tendency to become quiescent is true, it is surely another and a strong argument for dealing in this unheroic manner not only with these cases, but still more with those where the principal trouble is pyelitis. If there are no symptoms, I have already said I would leave them alone. If symptoms are present, I would drain for a time, unless, of course, the ureter is blocked, in which case it is almost certain that the kidney will be disorganized or atrophied, and nephrectomy will be the only resource.

Amongst those who advocate nephrectomy as the ideal and practically the only operation for tuberculous nephritis is Krönlein. His paper[6] is most interesting and carefully worked out, and represents admirably the views of those who hold an opposite view from mine. It deals with 51 cases, in 92 per cent. of which the evidence was in favour of unilateral affection; but his records go back to 1880, when the methods of segregation of the urine were rudimentary. He, however, agrees with the strongly-expressed opinion of Israel that, in spite of modern improvements, it is impossible to be certain that the other kidney is free from disease. He, however, says:

We surgeons are all of opinion that tuberculosis in the overwhelming majority of cases affects first one kidney and the other later—often much later.

And he points out that this is the opinion of a surgeon who sees his patients during life, and is to be contrasted with that of the pathologist who sees them only after death. He thinks the kidney is usually affected through the blood stream. In his practice nephrotomy and partial nephrectomy have given place to complete nephrectomy, which, to be what he calls typical, includes the removal of the capsule, and he thinks it one of the

most successful of operations. He considers that the presence of numerous other tuberculous foci or advanced cachexia forms no absolute contraindication to nephrectomy. So long as it could be established, or appear to be established, first, that the other kidney was intact and functionating, and, secondly, that the principal trouble and immediate danger depended on the renal condition, nephrectomy was, in his opinion, indicated. Of 34 nephrectomies, 10 at the time of publication had died, 3 of these deaths having occurred during the first year, 1 having survived seven years, and another eleven years. Of the remaining 24, no less than 14 had survived the operation more than three years, and 3 of these more than nine years. Naturally the mortality was highest—36 per cent.—amongst the cases in which complications were known to exist. Of the 12 cases which were supposed to be uncomplicated, not one died of the immediate effects of the operation, and only 1 had subsequently died of tuberculosis (of the lungs, bladder, and kidney), and that after six years.

These results are striking and give matter for serious thought. It is open to the advocates of nephrectomy to say that such cases as those which I have described who have survived and "recovered" without nephrectomy might have done the same if the kidney had been removed, and might have been saved the tedious process of convalescence. But, on the other hand, it may be replied that even the most successful cases of nephrectomy might have "recovered" without the operation; and that those who died—certainly those who died of the immediate effects of the operation—might, and probably would, have had a longer lease of life if they had been left alone. I am not a blind opponent of nephrectomy, but an advocate for a very careful selection of cases; and I think that those who adopt this view will have a still smaller mortality to record than even these admirable results of Professor Krönlein.

Ureters.

From the surgical point of view it is useless to consider the tuberculous affections of the ureter as distinct from those of the kidney; from that of the pathologist it is interesting to note that the earlier changes consist in the formation of small submucous plaques, such as are occasionally seen under the mucous membrane of the urethra; that these may go on to the formation of superficial ulcers or tuberculous growths which may completely obstruct the ureter, and that the process is accompanied by extensive fibrous thickening of the outer coat. The result of this latter change also is the diminution of the lumen and sometimes of complete stenosis. This is, however, not the invariable nor indeed a very common result, but if it should occur it must lead to a hopeless disorganization of the kidney or a permanent renal fistula. There is no proof that the earlier stages of ureteric tubercle can be recovered from; but the clinical evidence that this may occur is strong. It consists in the fact that after a patient has had symptoms and signs of tuberculous disease of the bladder and kidney there may come a time when no pus corpuscles and no tubercle bacilli can be discovered in the urine.

If it be determined to remove the kidney, and the ureter is found to be diseased, it is undoubtedly wise to remove the latter as far as possible, which means rather nearer to the bladder in the male than in the female; but I cannot regard the removal of the vesical extremity with a corresponding portion of the bladder as anything else than a surgical feat, and not one to be recommended for general adoption.

Bladder.

The subject of tuberculosis of the bladder is difficult to discuss because it presents itself in such varied aspects and is often complicated, especially in the male, with disease of other parts of the genito-urinary tract. It is not, however, for the moment with these complicated cases that I am concerned, but with those in which the disease is chiefly if not altogether confined to this organ. And, while admitting that there are cases where ulceration is considerable and involving the trigone and the neck of the bladder, in which the symptoms are very severe, I think that the more common type of the disease is one in which the only symptoms, except, perhaps, some failure of the general health, are frequency of micturition, possibly accompanied by a certain amount of pain during or after the act, and the only sign observed by the patient is that the water is thick. I call to mind many instances of young women who have endured this inconvenience for months or years without thinking it worth while to consult a doctor, and in whom the diagnosis has been made by a bacteriological examination of the urine. I believe that those of long experience will confirm the statement that if these patients are placed under good hygienic conditions and otherwise left alone except for the administration of various drugs, such as urotropine and salol, which may or may not be of much service, many of them will pursue a very chronic course, and the symptoms and signs will often very much subside or completely disappear. And probably many of the cases of simple cystitis which were in former days unexplained, and which recovered or became mildly chronic, were of this nature. Such, for example, is that of a lady now between 40 and 50 who had cystitis twenty years ago, and who still suffers from a certain amount of frequency, but, except for some neuroses, is now in excellent health. A brother and two sisters have had pulmonary tuberculosis, and a sister and a niece died of tuberculous meningitis, and therefore, even if an examination of the urine at the present time did not reveal the presence of tubercle bacilli, I should not be convinced that her original trouble had not been tuberculous cystitis.

We must remember that it has been positively asserted, though by others it is denied, that tubercle bacilli may be present in the urine of persons with general tuberculosis who have no gross tuberculous lesion in the genito-urinary tract. Metchnikoff,[7] after summarizing the evidence, states positively that micro-organisms, after their entrance into the refractory animal, are not eliminated by any of the excretory channels which serve for the elimination of many of the soluble poisons. Joseph Walsh,[8] on the other hand, brings forward strong evidence on the other side. Be that as it may, it is certain that none may be discoverable in the urine of those who have had tuberculous lesions of this nature, although pus or excess of mucus or epithelial debris may still be present. The persistence of turbidity depends upon the fact that septic organisms are commonly present in the urine of those who are the subjects of tuberculous cystitis; which leads up to the observation that while it may be difficult to say what ought to be done actively in such cases it is easy to point out how many of the possible active treatments may do actual harm. First comes the question of catheter specimens. It is of course satisfactory to have a specimen of urine which is beyond suspicion, and it is often said that our methods of catheterization are so perfect that there is no danger of introducing sepsis by this simple process. But how is the catheter specimen, as a rule, obtained? Is it not, if the patient be a female in the hospital, usually entrusted to a Sister or a nurse? And can any of us say that we have never seen, even in modern days, sepsis started by catheterization? Surely not one of us. And once in, how almost impossible it is to eradicate these organisms! I believe, therefore, that in cases of tuberculous cystitis, if the surgeon requires a catheter specimen, he ought, if possible, to be himself responsible for obtaining it. And what is to be said about the use of the cystoscope? This is delicate ground, because I know how extensively it is practised, and recognize the satisfaction of making an exact diagnosis, and so I will only say this, that it is a surgical operation which demands the most scrupulous attention to all the details of antiseptic treatment.

The days of draining the bladder, scraping the ulcers, and other heroic treatments are, I suppose, for the present over. Injections of silver nitrate ($\frac{1}{8}$ grain, aq. ad oz.), when frequency and pain are urgent and severe, sometimes appear to do good; but, speaking generally, I believe that the more cases of simple tuberculous cystitis are left alone the better the prognosis will be.

For the moment I am reserving the question of treatment by bacterial vaccines; but I think, with our present lights, that it should be employed on all suitable cases of tuberculosis of the bladder.

Testes.

Tubercle of the testicle is more easy to write about, because it is a common, tangible disease on which it is possible to form a definite opinion from personal experience. I have come to the following conclusions:

1. That it is usually a chronic disease, and that a majority of those cases which appear to be acute or subacute have been preceded by a slow enlargement of the organ which has escaped the attention of the patient. And this is based upon the facts that thickenings of the epididymis are often discovered accidentally, and that, in operations on the acute or subacute cases, more extensive cheesy masses are usually met with than it is possible to suppose could have been formed since the apparent onset of the disease. No doubt the acute process does occur. I saw, for example, a policeman whose testicle enlarged rapidly as the immediate result of a well-known trick of the criminal classes whilst they are being arrested, and became the seat of acute tuberculous degeneration; and I have also seen the disease very quickly developed in children, but I maintain that these are exceptional cases.

2. That it is so common as to be almost the rule for the second testicle ultimately to be affected whether the first has been removed or not.

I have given up removing every tuberculous testicle, however quiescent, if no sign of the presence of tubercle could be found elsewhere, because it has so often led to disappointment, the patient returning before long with the opposite testicle affected. And from the same point of view I have always deprecated extensive operations upon the vas deferens and the vesiculae seminales; not from the intrinsic difficulty of the operation, but because I do not think the idea of eradicating all the tuberculous material from the system by such a procedure is a reasonable one. I do not hesitate to remove one testicle which is completely disorganized, both body and epididymis, if it is causing much pain or inconvenience, and under such circumstances would take away as much of the vas as can easily be got at; but in most cases removal of the epididymis appears to be the better practice and equally efficacious. Thorough curetting often gives excellent results.

And certainly if after orchidectomy the other testicle is subsequently affected, it should not be removed, but the obviously diseased portions should be cut away or scraped. The internal secretion of quite a small portion of the organ appears to be sufficient to ward off the unpleasant results of complete castration; and the moral effect of an empty scrotum is not to be overlooked. I have already pointed out that even a small portion left by a partial operation may enlarge sufficiently to assume to the naked eye and finger the appearance almost of the healthy organ. It is interesting, however, in this connexion to note that while some men with undeveloped testicles, and all those whose testicles were removed in infancy are obvious eunuchs, others retain their manly characteristics, especially, I think, if atrophy has occurred after puberty owing to mumps or other causes; also that removal of the ovaries even in young women is not always, it might be said not often, followed by the loss of the feminine characteristics, the growth of hair and so on. Again, the method of castration of rams and bulls by bistournage, or by crushing of the testicles, does not, I believe, preserve the fierceness or the other male characteristics of the animals who have been submitted to these operations.

Vas Deferens.

Tubercle of the vas hardly requires a separate notice except, perhaps, to state that the enlargement and induration that so frequently are observed accompanying tuberculous epididymitis may, like other tuberculous processes, become smaller and practically disappear, but it may, as I have said before, give rise to an acute abscess. I should like also to mention the case of a healthy young officer who had a small hard nodule either in the lower part of the vas or the epididymis which I took for a solid tumour. It was a small tuberculous abscess, which I cut out. The wound healed perfectly, and whilst he was under observation, which lasted for a considerable time, there was no sign of any further tuberculous trouble.

Vesicula Seminalis.

It is well known that the vesicula seminalis is often indurated before the disease in the testicle has advanced beyond the early stage, and before there is any obvious affection of the vas deferens. In the course of time the induration may disappear. Removal of the vesicula, either by a posterior or a perineal incision, is not difficult, and is not to be recommended.

Prostate.

A very considerable deposit of tubercle may occur in the prostate without causing any symptoms whatever, and the process may go on almost to complete atrophy of the gland without giving rise to much or any trouble. But sometimes an abscess forms, which may cause complete retention, and, if it does not burst into the bladder, necessitate a perineal opening; or the deposit may break down, and cause or be associated with ulceration about the neck of the bladder, when great frequency of and very painful micturition may ensue. These cases are undoubtedly grave ones, and if the patient is in a dilapidated condition from pulmonary or renal complications the pain and exhaustion they cause may hasten his death. But even these, if no such complications are present, may under the milder forms of treatment settle down and become to all intents and purposes cured. The milder treatments consist in rest under the best hygienic conditions obtainable, and the most approved local applications and sedatives. The more radical, if abscess has formed, consist in a perineal incision and possibly scraping the prostate, though this may be followed by a chronic urinary fistula. It is a long time since I have resorted to suprapubic drainage, and the results obtained from this once fashionable procedure were in my hands very disappointing.

Urethra.

I pass over tubercle of the urethra with the observation that I have seen it *post mortem*, and that the appearances are very like those seen in the ureter, and with the mention of the case of an obviously tuberculous young man who contracted gonorrhoea which no ordinary treatment appeared to influence. At last he informed me that he contemplated matrimony, which I told him was quite out of the question; but he paid no attention to my advice, and he wrote afterwards to tell me that his wife was not affected, and that she had had a healthy child, but I had no opportunity of following the case up.

External Genital Organs.

I know practically nothing of tuberculosis of the external genitals; but it is a condition that is described in all monographs upon the subject and apparently is of the same nature as other tuberculous affections of skin and mucous membrane.

Female Genital Organs.

For the same reason, namely, lack of personal experience, I must pass rapidly over the tuberculous lesions of the uterus and ovary, merely mentioning that besides the miliary affections, both small and large tuberculous masses have been met with in the ovaries.

But there is one affection of the female genital organs to which more detailed reference must be made, namely, tubercle of the Fallopian tubes. Whatever view may be taken of the probable course of this affection, and that it may be very chronic all will agree, it seems at first sight to stand upon a footing of its own, because, although dilatation is uncommon, there is undoubtedly a risk of the bursting of such a tube, especially if the infection be a mixed one, and of its giving rise to acute septic peritonitis; and from my personal experience I should have been inclined to advise that, as this risk is always imminent, the source of danger should be removed whenever it is diagnosed. Another argument in favour of this position is the fact that the chronic peritonitis which ensues is often the cause of matting together of the intestines and consequent intestinal obstruction, and that the longer this process goes on the more difficult it is to deal with. I am, however, informed that in Germany, and more especially owing to the teaching of Martin, opinion on this subject has been undergoing a change in the direction of that which I have been advocating with regard to tuberculous affections of other parts of the genito-urinary system. The tendency now is said to be to avoid laparotomies and the more radical operations, and to treat these cases, when possible, by means of vaginal incisions. It is most interesting to me to hear of the advocacy of these views by so high a gynaecological authority as Martin.

Bacterial Vaccines: Opsonins.

So far I have hardly referred to opsonins, and have been discussing the prognosis and treatment, as though the claim had not been put forward that many of the diseases we are dealing with were amenable, and some indeed especially amenable, to the "opsonic treatment." Such is, however, the case, and there is a large amount of evidence that tuberculosis of testicles, bladder, and kidneys have been successfully treated in this way. It is therefore evident that this is a question which we must all, both now and for a long time to come, most carefully consider and try to consider without prejudice.

I am a great admirer of Sir Almroth Wright, of his energy, of his original mind, his fertile imagination, of his unbounded enthusiasm; and I am conscious that my personal experience of the methods he recommends is not yet sufficient in quantity or time to justify me in coming to a definite conclusion; and thus I feel almost ashamed of attempting to criticize even a small part of his work. Yet it must be owned that he rather seems to invite attack by the airy way in which he picks up, merely to drop upon the scrap heap, such trifles as the antiseptic treatment of wounds, the removal of foci of tuberculous disease, the expectant treatment and other methods which have been hallowed by time, or which appear to have stood the test of experience. One rises from the perusal of the commencement of his lecture before the Harvey Society of New York,[9] which I have read and re-read again and again, with the notion that, instead of one or two workers at a hospital, there should be a small army dealing with all cases of bacterial disease, and that in the treatment of these conditions the physician and the surgeon should stand aside after making a diagnosis, while the miracle of cure is effected by means of bacterial vaccines. Although this is the general impression which this lecture produces, I will allow that it is not quite a fair way of stating the case, because it is evident that he could not expect that bacterial vaccines can deal with, say, such an organ as a kidney or a knee-joint which has been disorganized by a tuberculous or a mixed bacterial affection, though he does expect them to cure masses of cheesy, if not calcareous, glands.

I must not allow myself to comment on the statement that antiseptics are now by general consent abandoned in connexion with the treatment of ordinary surgical wounds, but must make some observations on the last of the five methods which, in the lecture, he says, "we have to-day at our disposal for the treatment of bacterial disease"—namely, the expectant treatment. Let me draw your attention to these sentences:

> The really serious ills of life are the various localized bacterial infections which sooner or later fasten upon every man, never afterwards releasing their hold. It follows from this that a graver allegation is brought against the general value of a method of treating bacterial disease when it is alleged that such method has no application in connexion with localized bacterial processes, than when it is pointed out, as it has been here in connexion with the expectant treatment, that it is a method which utterly disappoints in many varieties of generalized infection. . . .
>
> Now the graver charge of having no application in connexion with localized bacterial diseases may be brought against the expectant method of treatment. It is only, if I rightly apprehend the matter, in the case where life is threatened by the entrance of bacteria or bacterial products into the blood—and, as we shall see later, not even invariably in that case—that Nature addresses herself in a serious manner to the task of immunization. As long as a bacterial invasion is still strictly localized Nature seems to oppose to it nothing more than a passive resistance. It follows that it is idle in connexion with localized infections to wait upon Nature and to expect from her any work of immunization. I am wont to insist that the statistics of the expectant method of treatment in the case of localized bacterial infections are hardly more favourable than those of the Pool of Bethesda. You will remember, in connexion with that pool, that an angel was wont to come down and trouble the waters once in seven years, and that, after that event, the man who stepped down first into the waters was cured.

This is a striking simile, made all the more striking by the fanciful introduction of the seven years, for which no support is to be found either in Holy Writ or in Baedeker. "At a certain season" are the actual words. One is inclined to ask, why not seventy years or even seventy times seven?

But seriously the question is whether the statement it illustrates is true; and I maintain that it is not. I appeal to the teaching of our great clinicians. Nay, I appeal to the experience of any careful observer who has been even a few years in practice. Is it or is it not a very rare thing for caries of the spine to be cured by rest and fresh air without the formation of an abscess; or for a tuberculous knee or hip to get well as the result of similar treatment? Do not glands that almost certainly contain tubercle disappear from view during a residence at the seaside? And is all that I have been saying about tuberculous diseases of the genito-urinary organs nothing but a myth? I sometimes doubt if Sir Almroth Wright's personal experience of these things can be so great as it undoubtedly is of the treatment by bacterial vaccines.

It must also be pointed out that the expectant treatment is not "committing the destiny of the patient—so far as that destiny is involved in the issue of his conflict with the invading microbes—entirely into the hands of chance" (I am quoting his own words); but consists essentially in feeding and nursing the patient, and giving him the amount of rest which his case requires under the best hygienic surroundings. And this treatment is usually going on *pasi passu* with the treatment by bacterial vaccines. Not always, of course. One of my cases in whom the injections appear to have been of considerable service is that of a young man in a lunatic asylum who has tuberculous disease of the shoulder and of a metacarpal bone. His surroundings remain the same. It will be most important, in estimating the value of the "opsonic treatment," to record most accurately the results in such cases, because it is otherwise so difficult as to be almost impossible to separate the effects of the two factors. For it must be remembered that the expectant treatment not only goes on *pari passu* with the "opsonic treatment," but that it goes on for a long time, it may be for months or even years. And if it were granted, for the sake of argument, that opsonins were the only weapons with which the body can combat and perhaps conquer the tubercle bacillus, it is certain that there must be other means of providing this defence besides the periodical injections of tuberculin. Reflect, for instance, on another case of which I have notes, and in which much improvement is recorded. It is that of a cellarman whose testicle swelled in July of this year, and who now, instead of sipping his heel-taps in a cellar, spends his time reclining on a sofa by the open window, or sitting in Regent's Park with his scrotum in a suspensory bandage and drinking one or two pints of milk a day. I have seen subacute tuberculous epididymitis subside with even less care bestowed upon it than this. The patient had six injections of what was supposed to be $\frac{1}{2000}$ milligram of tuberculin, but what I gather was really $\frac{1}{10000}$ milligram, between July 21st and October 4th. I take this opportunity of drawing attention to the note to Chart 1 in Wright's last paper,[10] from which it appears that the tuberculin with which he has been supplied in all his previous work has been one-fifth as strong as it was supposed to be. As I am told that all the tuberculin used in this country probably comes from the same source, a similar correction must be made as regards all English work. It comes as rather a shock, though it makes the results all the more striking.

I now wish to refer to one or two other points that are stumbling-blocks to me. One is the lack of finality about the treatment. No one can watch the records without being convinced that, so far as the changes in the opsonic index are concerned, it is a true bill. If the injections be made wisely and not indiscriminately the results usually follow in due order. But the invariable, or, at all events, the common, thing seems to be that the index shortly goes down to the level at which it started, and one is reminded of the amazingly brilliant results which we obtained when Koch first launched his discovery upon the world. Chronic lupus of the face, mixed infection though it was, used to disappear as though by magic, but of course only to return when the treatment was stopped, and I want to know how long the treatment is to go on now. One supposes until the last tubercle bacillus has disappeared from the local infection. But how is one to know when the period has arrived? And must the injections be continued for an indefinite period after all physical signs have disappeared unless it is shown that the opsonic index remains steady within normal limits? Since writing this

sentence the answer is supplied in the tables at the end of the paper just referred to. One must irritate the part and see if it modifies the opsonic index, and go on with injections till this no longer occurs. I confess this appears almost a counsel of perfection, and I can appreciate the state of mind of a doctor of whom I have been told that, having a tuberculous family under his care, he proceeded to inoculate them periodically, all round, for life one supposes, reminding one of Bernard Shaw's satirical suggestions of a dose of antitoxin three times a day before meals.

The second point is that it so happens that in most of the cases that have recently come under my notice the opsonic index has not actually transgressed the limits of what is considered normal; and yet Dr. Bunch and Mr. Embleton, who have kindly undertaken the treatment of my cases, and who have worked long and carefully at the matter, have not hesitated to make their injections when the index is not particularly high.

Lastly, there is the chance of error, the difficulty of obtaining uniform results and the really dreadful nature of the task. I have watched the process with awe,

> Count—count—count
> Till the brain begins to swim;
> Count—count—count
> Till the eyes are heavy and dim!

and have thanked my stars that my duty does not lie that way. And thus, while fully recognizing the value of the principle, one reads a paper like that of Simon[11] with the hope that some simpler method, one less open to error, and involving less labour upon the observer, may bring the matter more within the region of practical politics than it seems to be at present.

If I were to read out the actual results which I have obtained during this year—that is, since I have been thinking about this lecture—it would, I am afraid, be too tedious for you to follow. The net result would not differ much from those that have been published by others. In some there has apparently been more improvement than could have been expected from the other treatment that was applied at the same time. In others I could not satisfy myself that any influence was exerted upon the local condition—in two of them tuberculous testicles broke down and suppurated, and in one, a youth with cervical glands of such size and number and so adherent that I did not think it possible to remove them, the glands have certainly diminished much in size, but he has developed pulmonary tuberculosis in spite of the fact that he has been undergoing a pretty complete open-air treatment. So that I am driven to the conclusion that it is impossible at present to promise uniformly good results, and I am far from convinced that the treatment by bacterial vaccines is destined to replace all other medical and surgical therapeutic measures. But at the same time I hope and earnestly strive to preserve an open mind, and shall continue if possible to carry out the treatment in suitable cases, especially those of vesical tuberculosis, while not omiting other forms of treatment that appear to be necessary. Above all, I shall try to remember what little things may, according to Wright, upset the opsonic equilibrium—a country walk, a little massage, a surgical operation, or some trivial excitement; the daily visit of a strenuous doctor might almost be expected to fortify his patient by increasing the output of opsonins.

CONCLUSION.

Do I hear a murmur that this has been a wasted hour? That, instead of reaping the combined wisdom of all the ages and all quarters of the globe, one has been merely listening to the vague impressions of a single observer; that it is only necessary to cross the street to obtain a statement at least as positive of a diametrically opposite view? To such a complaint I can only answer that it would have been a simple matter—though no easy task—to collect oneself or by proxy elaborate statistics of the precise incidence of these diseases at particular ages, of the proportion of cases in which, *post mortem*, one kidney is found affected without the other, of the proportion of cases of those dying of pulmonary tuberculosis in which some affection of the genito-urinary tract is met with, and a variety of other information bearing upon the subject. If any one is seeking for this sort of knowledge, I can tell him where it is to be found. The new edition of Professor Cornet's gigantic work *Die Tuberculose*, which has appeared this year, provides a monumental bibliography of which no less than fifteen pages are devoted to the urogenital apparatus—a truly glorious field for (original) research. I did indeed myself at first propose to try to make comparative observations on the records of, say, the Brompton Hospital, a general hospital, a children's hospital, a workhouse infirmary and my private notebook. But I found on starting with the Brompton Hospital, the records of which might have been expected to be uniform, there had been such a complete change in the last few years, owing to the different class of patients who are now admitted, that I not unwillingly gave up the attempt, for which, indeed, it became at once obvious that an amount of time would be required which was not at my disposal. Moreover, the work has been done over and over again, and is being carried out still, as is illustrated by an elaborate paper in the third annual report of the Henry Phipps Institute, by Lawrence F. Flick, on the kidneys in tuberculosis.

And after all what does all this knowledge lead to? It is really no satisfaction to a patient to know that such and such a mortality has followed nephrectomy for tuberculous kidney, and that it has been reduced so much since such and such a year; or that of those who have had one kidney removed a certain percentage have apparently had no affection of the opposite kidney after so many years, while another definite percentage have exhibited signs of general tuberculosis. What he wants to know is what his particular chance is if he parts with his kidney, and still more he is anxious to know what are his chances if he does not submit to the operation. And this is a knowledge which no statistics can yield. Each case must be judged on its own merits, and it is only experience that can justify an approximate answer to these momentous questions. If it were only possible for one surgeon to retain his vitality and his faculties for some hundreds of years, like Mr. Rider Haggard's *She*, and, if it were thinkable, not to become stale in the meantime; or that it were really possible for a man of prolonged experience to hand it down to a young man so that he could actually start where the other has left off, and not have to sow his wild oats before he begins to gather in his harvest, how we should all flock to such a one to help us in casting a horoscope! But that not being possible, we must be content with slowly feeling our way; we must not be disheartened at the constant changing of views nor be disappointed that it is often necessary *reculer pour mieux sauter*.

When I remember, Mr. President, your great work in the subject of which I have chosen such a small portion for my theme, I hardly dare to bring it forward in your presence, and I am reminded of that sounding ode of Horace which begins with the words:

> Pindarum quisquis studet aemulari.

The poet, you will recollect, in contrasting his work with that of Pindar, likens himself to the bee of Matinus:

> Grata carpentis thyma per laborem
> Plurimum.
> (The Dircaean swan you know, and the busy bee and the bank whereon the wild thyme grows.)

He assumes an air of the greatest humility, and yet he seems to show a certain smug consciousness of the value and the longevity of his song. Perhaps I also may think my homily is not unimportant, though I expect for it no more than an ephemeral existence. These questions of treatment, which at the moment appear of such vital importance to those who are considering them for the first time, are, as all who have lived long enough to watch two or three swings of the pendulum know well, certain to be modified almost as soon as they are established, perhaps only to be revived again before the present generation has passed away. And, casting the prophetic eye into the future, say a thousand years—say two—for what, as I said before, is to prevent this painful spectacle from being repeated *ad infinitum*?—it is impossible to believe that any of these earlier discourses, if remembered at all, will be thought of in later days as other than the miserable gropings after light of the people of a barbarous age,

Such as it is, however, this is my exiguous message. Such, O Shade of Dr. Bradshaw! is the little stone, a mere

pebble, which I cast in passing upon your monument of fame. But, should it be the means of preventing one unnecessary or pernicious nephrectomy, or preserve to one poor wretch the internal secretion of his testicles, neither your bequest nor my labours will have been expended quite in vain.

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A NOTE ON NEPHROPEXY.

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THE interesting description which Mr. Billington has given of a method of nephropexy prompts me to describe a somewhat similar though less elaborate operation, which for ten years I regularly taught in my class of operative surgery at University College, and from time to time perform in hospital and private practice with most satisfactory results.

The principle of the operation is to support the kidney by means of a sling fashioned from part of its capsule, additional support being ultimately obtained by the union of the decapsulated surface of the kidney with the posterior wall of the abdomen.

The operation is performed as follows:—The patient having been placed on her side with a pillow beneath the loin, the kidney is exposed by an oblique incision commencing at the outer border of the erector spinae muscle about ½ in. below the last rib, and running forwards and downwards parallel with the rib for 4 or 5 in. The latissimus dorsi and obliquus externus muscles are separated from one another and retracted, and the lumbar aponeurosis is divided in the line of the skin incision. The kidney is then shelled out of its fatty capsule, and brought out of the wound. Two incisions are thereupon made in its fibrous capsule in the following manner: First, from a point on the outer border of the kidney, a little below the upper pole, an incision is carried obliquely over the posterior surface of the kidney to the lower part of the hilum; secondly, an incision starting from the same point is carried along the anterior surface of the organ, but parallel to the outer border, at a distance of about half an inch from it, and prolonged like its fellow to the level of the lower part of the hilum. The triangular flap thus outlined is peeled off the kidney, but is left attached along its lower border or base. If any part of the quadratus lumborum muscle projects beyond the outer border of the erector spinae, it is divided, and the latissimus dorsi and obliquus externus muscles are thoroughly separated from one another, and retracted at the upper part of the wound so as to expose the upper part of the lumbar fascia, together with the lower two ribs and the intervening intercostal muscle. The kidney is now dropped back into position, but not into its fatty capsule, which has been allowed to fall towards the middle line and lie about the renal pedicle. The flap of the fibrous capsule, held for the time by a couple of forceps, is utilized to raise and hold the kidney so that its decapsulated surface is drawn up beneath the ribs and comes to rest against the anterior or deep surface of the lumbar fascia, the external arcuate ligament, and the diaphragm; the flap is itself spread out, and is stitched along its borders to the outer surface of the lowest intercostal muscle and the portion of the lumbar fascia which intervenes between the wound in the fascia and the last rib. The kidney is thus suspended by a broad triangular ligament, made out of its own capsule, which is continuous with the part of the capsule left attached to the lower third of the kidney.

Further support is gained by a couple of stitches which fasten the lower third of the kidney to the lumbar fascia. The wound is finally stitched up in layers and completely closed. The material used for the buried stitches is silk, and for those in the skin silkworm gut and horsehair.

PERICOLITIS SINISTRA WITH ABSCESS FORMATION: RECOVERY.

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SEVERAL cases of pericolitis have been investigated during recent years, and it has ceased, therefore, to be regarded as of rare occurrence, but a detailed description of it has not yet found its way into the majority of English text-books. The following case, therefore, which came under my notice recently, will be of interest as illustrating the condition in a fairly typical manner.

The patient, a marine engineer, aged 44, came complaining that he was suffering from an attack of malaria. He had returned only a few days previously from South Africa, where he had been resident some ten years, and, while working out-of-doors insufficiently clad, had caught a chill. This ushered in what appeared to him to be a return of malarial fever, the symptoms of which he was thoroughly cognizant of from past experience.

Previous History.

About the age of 18 he contracted gonorrhoea. Six years ago, while resident in Natal, he began to suffer from bilharziosis. The acute stage of this disease lasted nearly a year, but he continued to be troubled in a slighter degree for the next four years, when he became apparently cured. Since then he has had no recurrence. It is interesting to note this in passing, for it is not an everyday occurrence to meet with a cure in a person who has acquired the disease in adult life. The parasite in this instance appears to have been confined to the genito-urinary tract, as the patient never had any symptoms of bowel irritation. Five years ago he had syphilis, for which at first he was not treated. Eighteen months ago he had his first attack of malaria, since when he has had several attacks at intervals. He has suffered all his life from chronic constipation, and this fact has an important bearing on the course of events in this case. The bowels, he said, were never moved save at intervals ranging from three to six days. Apart from this idiosyncrasy he has never had any other bowel trouble.

Condition when First Seen.

The patient was seen on the day following the supposed attack of malaria. He was a thin, rather cachectic-looking man. The spleen was slightly enlarged, but there appeared to be nothing in his condition to lead one to suppose he was suffering from other than an attack of malaria. The blood was unfortunately not examined for parasites, but he was at once put on a course of quinine.

After-History.

He appeared better for a day or two, when suddenly a fresh train of symptoms developed. The bowels, which had remained obstinate in spite of the repeated administration of aperients by the mouth, ceased to act, and he was quite unable to pass flatus. His tongue was thickly coated and dry. He was seized with frequent vomiting, and complained of severe abdominal pain, which seemed to come on in spasms. The temperature was subnormal, but the pulse, which was rather small, was over 100. He lay with the legs drawn up in bed; the abdomen was uniformly distended, the muscles were on guard, and there was an absence of movement of the abdominal walls on respiration. A condition of general tenderness was present on palpation, and a tympanitic note was elicited all over. Liver dullness was diminished. Turpentine stupes were applied locally, and enemata were ordered with a view to clearing out the large bowel. They, however, had absolutely no effect, and as the day wore on the patient's distress became more evident. The vomiting became constant; there was an increase of pain, greater abdominal distension, and a weaker and more rapid pulse; in short, all the signs and symptoms of acute obstruction. Where the obstruction was, or of what nature, it was impossible to say.

Preparations were accordingly made for immediate operation when, as a result of another enema, the patient passed some faeces and a large amount of flatus. It was decided, therefore, to adopt an expectant attitude, with a view to determining, if possible, the site of obstruction. There now followed a temporary general amelioration of the symptoms. The vomiting ceased, and by means of aperients and enemata the bowels were kept acting. The abdomen, however, remained distended, though not to the same extent. There was still a significant lack of movement of the abdominal wall. The patient still complained of general abdominal pain and discomfort. Although on palpation the abdomen was tender all over, no area could be singled out as being more tender than another. The tongue was dry, fissured, and thickly coated, and the pulse was small and about 100.

The patient remained more or less in this condition for some days, during which time he rapidly lost flesh, and became considerably weaker. Except for the initial rise of temperature at the commencement of his illness, the temperature had been normal all the time, but about the ninth day from the

appearance of the first symptoms of obstruction the temperature rose.

Operation.

On examination of the abdomen, which was still distended and tender on pressure generally, a small area of distinctly greater tenderness was discovered in the left iliac region; it was distinctly dull on percussion. This suspicious area was closely watched during the next three or four days, during which time it became visibly larger till it formed a somewhat oval patch measuring about three inches in its long diameter. It was excessively tender on palpation, pitted slightly on pressure, and the patient now referred most of his pain to this region. Synchronous with this all the symptoms of acute obstruction returned. The vomiting became persistent, the vomited matter being almost black in colour. Distressing hiccough supervened which nothing seemed to relieve. The abdomen was rigid and much distended, and waves of peristalsis could be seen through the abdominal wall, evidently indicative of an obstruction fairly low down. The patient complained of pain accompanying each act of micturition. Examination of the urine, however, revealed nothing of significance. On rectal examination there was great tenderness, especially in the neighbourhood of the prostate, which, however, was not enlarged. The rectum was empty and much ballooned; the temperature was 100° and the pulse about 120, very small, and almost thready in character. A consultation was held, and it was decided to open the abdomen immediately in the left iliac region. An incision was accordingly made in the long axis of the dull area, and by carefully working deeper an abscess was opened into and about a teacupful of fetid pus evacuated, such as one finds in purulent appendicitis. As adhesions had apparently formed shutting off the cavity it was deemed inadvisable to attempt to explore further. The cavity was therefore washed out and a large drainage tube inserted. Advantage was also taken of the anaesthesia to make a more thorough examination of the rectum, but nothing pathological could be discovered.

The vomiting and hiccough persisted at intervals during the next few days, the latter being particularly distressing. The patient could get very little sleep, and was slightly delirious part of the time. He continued to suffer a good deal from sharp spasms of abdominal pain, and there was still visible peristalsis. A fresh complication supervened in the shape of a septic pericarditis, and the outlook for the patient seemed very grave. The bowels became more and more loose, till there was persistent diarrhoea. The evacuations were very light, almost clay-coloured, and very offensive. The abdomen still remained distended and nearly immobile, and there was great tenderness, especially in the neighbourhood of the wound.

Then gradually the severity of the symptoms began to abate. Vomiting and hiccough disappeared, and he was able to get better sleep. He continued, however, for some time to have frequent sharp spasms of pain, but these gradually disappeared also. The motions then became occasionally formed, and gradually the diarrhoea ceased, giving place to copious, fully-formed stools, which in time assumed a normal aspect. The wound was kept open for some time, and then allowed to heal up.

The case presented some difficulty at first. The signs and symptoms resembled so closely those characteristics of an attack of appendicitis that, if they had occurred in the right iliac fossa instead of the left, a diagnosis of appendicitis would undoubtedly have been made, and an operation undertaken at an early stage for the removal of the offending organ.

As it was, the fact that the appendix might be to blame was not lost sight of, and this at first was one of the possibilities one had in mind. In fact when occurring on the right side pericolitis has frequently been mistaken for appendicitis and it seems extremely difficult to distinguish between the two conditions. Before definitely localizing symptoms in the form of abscess formation became evident, one had also to take into account the possibility of the presence of malignant disease. In support of this there was the loss of weight, obstinate constipation for some time before, the cachectic appearance of the patient, together with definite signs of obstruction probably somewhere in the region of the sigmoid as evidenced by the nature of the peristalsis and the ballooned and empty condition of the rectum. Against this we had to set the greater amount of pain than is usually expected in malignant disease. The extreme tenderness, the fever, and ultimately the rapidly increasing area of dullness with superficial oedema, helped to discount the theory of malignant stricture.

The conclusion finally arrived at, therefore, was that we were dealing with a case of pericolitis, probably of the sigmoid flexure and ending in abscess formation. In favour of this theory there was first of all the history of chronic constipation, a preceding factor found in so many of the recorded cases of pericolitis, and apparently a factor of some importance. Indeed, according to Rolleston,[1] chronic constipation is given as the commonest cause of pericolitis. Further, the position of the lesion corresponded with what is generally regarded as the commonest site of pericolitis, the sigmoid flexure. The definite symptoms in these cases would appear to come on fairly suddenly, and in this case the onset of acute symptoms was sudden.

As regards the pathology of the case, it was, perhaps, unfortunate, from one point of view, that the exact condition of the walls of the bowel could not be determined, especially as various theories have been advanced to account for the condition. What probably took place was that a local inflammation of the tissues in immediate relation to the sigmoid flexure occurred, cause unknown—perhaps the result of a discontinuity in the mucous membrane, perhaps the result of simple constipation, with infection of a sacculus. The peritoneum became involved with all the usual signs of peritonitis and obstruction. Instead of this inflammatory condition becoming resolved, as frequently happens, it progressed fairly rapidly to abscess formation—not so fast, however, not to allow of adhesions forming—and in this particular case, following this, we have pericarditis resulting from septic absorption.

It is interesting to note how, after the first few days following the operation, the patient began to make a steady, uninterrupted recovery, with the gradual disappearance of all signs of abdominal trouble. He is now is excellent health and has regained his normal weight. There are no evidences of thickening or adhesions anywhere in the left iliac region, and he has a daily natural action of the bowels.

REFERENCE.

[1] *Trans. Med. Soc.*, London, 1905, vol. xxviii.

THE PART PLAYED BY PEDICULUS CORPORIS IN THE TRANSMISSION OF RELAPSING FEVER.

By F. PERCIVAL MACKIE, F.R.C.S., Captain, I.M.S.,

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On August 16th, 1907, I was dispatched by the Director of the Laboratory (Lieutenant-Colonel W. B. Bannerman, I.M.S.) to investigate an outbreak of relapsing fever which had broken out about a month previously in the Nasik Mission Settlement. I remained there exactly a month, by which time the epidemic had practically subsided. The results of my investigation, though in some respects incomplete, may be considerd of sufficient interest to warrant publication, especially as, owing to stress of other work and the absence of relapsing fever in Bombay, many months may elapse before I shall get an opportunity of extending my inquiries.

General Observations.

The Mission Settlement contains a population of about 284 persons, including 170 boys and 114 girls. It is under the charge of the Rev. A. and Mrs. Manwaring, to whom and to Miss Landon, M.B., I am greatly indebted for their ever ready kind assistance and information. The surroundings and general sanitary conditions of the Settlement were excellent, and it was evident that these factors had nothing to do with the outbreak. The boys and girls occupied separate buildings scattered in a large compound, and their conditions of life were otherwise identical. The boys occupied the newer, and the girls the older and somewhat dilapidated, bungalows. As a result of this the girls' quarters were infested with bugs, whilst the more recently constructed boys' wards were almost entirely free from these pests.

I was a constant visitor to all these buildings, and was very much struck by the enormous number of bugs procurable from the girls' wards and the absence of them from the boys'. Still more striking was it that the boys were infested with body lice, whilst the girls at first were entirely free. The same rewards and inducements were held out for the production of all kinds of parasites, but all the lice came from the boys', and all the bugs from the girls' wards. *Pediculi capitis* were obtained in small

numbers daily from the girls' heads, and in somewhat fewer numbers from the boys'. A few mosquitos and fleas were caught, but there were no ticks.

The incidence of the disease amongst the two sexes is striking. Twenty-five out of the 170 boys were sent away on the first appearance of the epidemic, so that only 145 remained exposed, and out of these 137 were struck down, nearly all in the first month. Out of 114 girls about 35 contracted the disease, but only very slowly, so that the outbreak amongst them was spread over about three months. It is noteworthy that of the first 15 girls attacked every one had apparently contracted the disease in the boys' wards in which she had assisted as nurse or attendant. Again, practically every casual visitor and attendant from outside who spent any considerable time in the boys' wards went down with the disease.

This dangerous infectivity was strikingly absent from the girls' wards. There the attendants did not contract the fever, and even when the infection appeared to get a hold in the building itself the cases occurred at long intervals, and the disease spread with difficulty.

When I reached Nasik the explosion amongst the boys was over, and only a few outsiders and visitors contracted it on the boys' side; the girls, however, were succumbing to the disease one by one.

The number of lice continued high amongst all the boys, and particularly on those who were ill. Until I had been at Nasik for two weeks I had only succeeded in getting 29 body lice from the female building, but every day large numbers were sent from the boys. Latterly lice became less rare amongst the girls, and from 6 to 10 could be found daily.

My attention was thus attracted toward the question of louse infection. At the end of the first fortnight 112 body lice from the boys' wards had been subjected to careful dissection, and of these 27 (24.10 per cent.) were found to contain spirilla in greater or less numbers. Only 29 had been obtained from the girls, and of these 1 only (3.44 per cent.) was infected. At the end of my month's investigations the figures were:

	Number Examined.	Number Infected.	Percentage Infected.
Lice from boys	240	34	14.16
Lice from girls	108	3	2.77
Artificially-fed lice* ..	52	7	13.46
Total	400	44	11.0

* I cannot say how many of these actually took in blood.

Twenty lice were obtained from a neighbouring village which was stated to be infected with relapsing fever, but none of them contained spirilla.

Anatomy of Pediculus.

Before giving the results of dissection a few introductory remarks on the anatomy of the louse (*Pediculus corporis*) will be pertinent. This is the more necessary as I know of no writings bearing on the subject. This fact at first militated against accurate dissection, and introduced a fallacy upon which it is necessary to lay stress. This fallacy is due to the fact that during dissection the thin-walled stomach almost invariably protrudes at the first nick of the needle, and ruptures, flooding the whole dissection with its contents. When I say that the stomach is the principal seat of spirilla infection it is obvious that other organs may have become accidentally infected, and, though I have strenuously attempted to exclude this factor, the results of dissection of certain organs—for example, the ovary—must be read in the light of this warning statement.

Pediculus Corporis.

I have not so far had the opportunity of making sections of the mouth parts, so that no extended description can be given of these difficult structures, nor yet the exact relations of the pharyngeal and salivary structures to one another. I saw no evidence of protrusible proboscis, but there appears to be a chitinous biting mouth.

The pharynx is short and dilatable, and leads into the oesophagus, which after a short course in the upper thorax is lost in the thoracic fat-body until it opens into the stomach. A leash of tubular structure surrounds or accompanies the upper course of this tube, but I was not able to satisfy myself as to its nature or function. The salivary glands are minute paired bodies buried deep in the thoracic fat-body in close vicinity to the cornua of the stomach. Each is shaped like a "wishing-bone," the salivary duct emerging from the junction of the two limbs and running a long course mouth-wards. The stomach is a large distensile and thin-walled organ with two prominent cornua reaching as far as the origin of the second pair of the legs and backward to fill the anterior third of the abdomen. When the stomach contains blood it forms a prominent object, especially from the ventral aspect, it is then deep black, active peristaltic waves continuously flowing over it extending right down to the cloacal extremity. The process of digestion takes about three or four days, and the black faeces can be seen travelling backwards. Two pairs of Malpighian tubes emerge from the intestine a short distance behind the pylorus. The intestine is a short, highly contractile tube opening out somewhat into the rectum and cloaca

The ovary is a fimbriated body filling up almost the whole abdomen. Each fimbria is composed of a string of ova in varying degrees of development. There are generally four or five ripe ova (corresponding to the number of fimbria), which are large and contain dark granules and are about to be extruded. They are situated at the cloacal extremity of each fimbria. There are small paired spermathecae. The testes are shaped like twin acorns on a long stem, a pair on either side; the two vasa deferentia lead into thick bicornuate vesiculae seminales, which are full of spermatozoa, which also occupy each calyx of the testis, matured and about to make the passage of the vas. The spermatozoa are large spiral filaments with barbed heads, and I hasten to add that they cannot be mistaken for the spirilla of relapsing fever. The fat-body is a soft greyish organ occupying the margins of the abdomen, and forming a packing in which the thoracic organs are buried.

The external appearances are markedly different in the adults of the two sexes, but only the most obvious need be referred to. The adult female is much larger and broader across the abdomen than the male, and her posterior extremity more blunt than that of the male. On the ventral surface of the female body just anterior to the cloaca are two chitinous spurs converging and directed slightly backwards. More anteriorly still there is another curious chitinous structure formed of two short stout bars converging and fusing into a truncated projection. The male is furnished with a sharp chitinous penis which is extroverted in an upward and backward direction, that is to say, the penis is extruded like the tail of a scorpion. There is a strongly ribbed chitinous plate forming the sheath of the penis, and extending along the middle of the dorsal surface of the abdomen. The method of copulation has been watched, and explains the function of these curious secondary sexual organs, but it is outside the limits of the present paper to describe the process. The eggs are glistening white, and are glued on to the hairs or fibres of cloth, generally in a sheltered position.

Pediculus Capitis.

Attention was also paid to the head louse, and marked differences were found between the two species, both in their external features and in their life-history.

The internal anatomy of the head louse was not studied. I may here say that I do not think that the head louse plays any part in the transmission of relapsing fever. I do not believe that it even sucks blood, but that it feeds on the sebaceous and scurfy residue in the scalp. I came to this conclusion after having examined one hundred and more head lice all recently taken from the heads of both boys and girls, and I never found blood in the stomach, but always a greasy non-staining material in small quantities.

They differ also in the following ways:

P. Corporis.	*P. Capitis.*
Large and nearly always of a dirty white colour with dark or black margin.	Smaller and of a smoky dark colour pricked out strongly with black.
Nil.	Some show a black thoracic shield on the ventral surface.
The stomach very evident from the ventral surface as a black bicornuate pulsating organ.	Stomach not distended or visible from the outside.
Legs longer and white.	Legs short, curved and edged with jet black.
Female much larger than male.	Less disparity between the sexes.
Lays glistening white eggs.	Eggs smoky brown.
Lives for four or five days or more in captivity and is more active and hardy.	Dies in twenty-four hours in captivity and is sluggish.

All these points have a direct bearing on the life-history and habits of the insects and show how much more suited the *P. corporis* is for acting as a carrier of disease than is the head louse. Thus, if a piece of fresh blanket be brushed over the surface of another piece on which are placed body lice, some will at once transfer themselves from one to the other, and this is probably the way in which the disease spreads from one person to another and from one place to another, in clothes or bedding.

THE RESULTS OF DISSECTION OF PEDICULUS CORPORIS.

The exact details of dissection methods are not called for. Suffice it to say that in most cases complete separation of the important organs was attempted, and each was smeared separately on a slide and subjected to prolonged examination after staining by Leishman's method.

Compared with the bug, flea, or mosquito, the louse is a very difficult insect to dissect; this is partly due to the fact that it possesses a cuticle of indiarubber-like toughness, and the segments do not split and come away as they do in chitinous

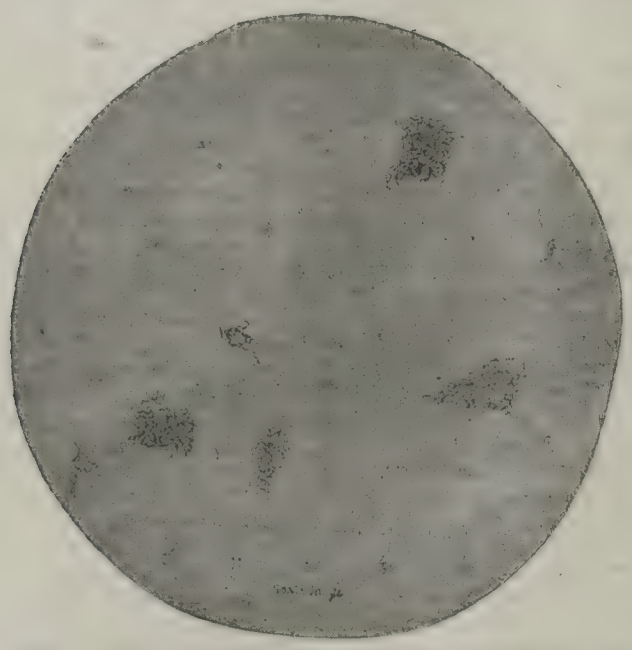


Fig. 1.—The stomach contents of an infected louse.

insects. The cephalic and thoracic organs I found almost impossible of isolation, and hence in many cases these portions were teased and smeared *in toto*. The large majority of the lice used for dissection were taken from the bedding or close vicinity of boys or girls actually suffering from the fever. The first 250 lice or so were fully dissected and all the organs specially smeared and the question of infection subsequently determined. It was found, however, that the state of the stomach contents was always a safe criterion of infection, and subsequently the full dissection was only carried out where preliminary examination of the stomach gave positive results.

The stomach is the organ principally infected, and great increase takes place in the number of the spirilla soon after a meal. I was not able to work out accurately the different stages in chronological sequence, but I believe that the maximum period of development is reached in about three days or less. In some stomachs which contained very recent blood the spirilla were seen in small numbers only, and this I believe to be the stage previous to commencing multiplication. Later the spirilla may be seen in every field in twos and threes and in small leashes, and appear to be undergoing active transverse division. Subsequently the spirilla undergo enormous multiplication, and are finally to be found in tangled masses of scores of individuals in almost every field of an oil immersion lens. Such a specimen is depicted in Fig. 1, and almost every field of this particular specimen shows one or more of such tangled leashes. The last stage in the stomach appears to be one of simple granular degeneration, and there is nothing to suggest spore formation or any intermediate stage. The spirilla have not been found in the stomach wall itself, but only in the contents.

It is noteworthy that spirilla are fewest when the blood is fresh and gradually increase as the blood disappears, so that the heaviest infections are found in stomachs where digestion is almost complete. The spirilla are slightly shorter than in the human blood, and are always more regularly spiral and stain somewhat less readily. When fresh specimens were examined they showed the spirilla to be in the same state of high activity as in recently-drawn human blood. Crithidia were frequently seen in varying stages of development. But neither trypanosomes nor bacteria were met with in living lice.

The ovary was infected in most instances where it was examined (twenty times out of twenty-nine), but it is certain that many of these instances were of accidental infection during dissection. It is equally certain, how-

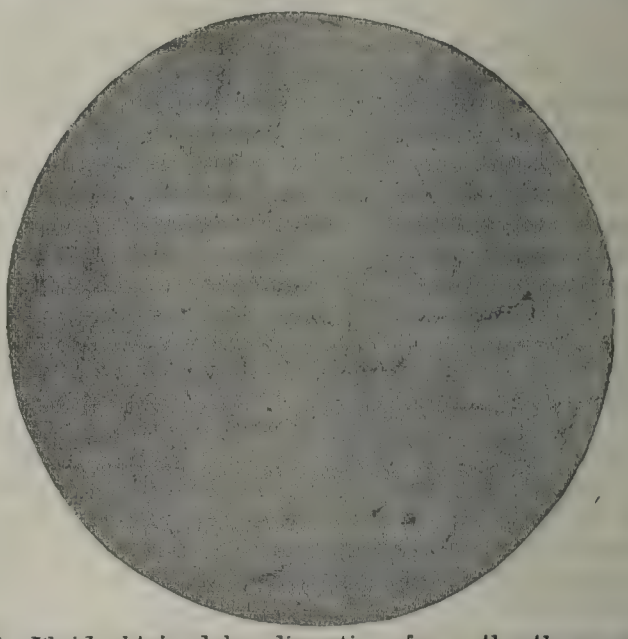


Fig. 3.—Fluid obtained by dissection from the thorax of an infected louse.

ever, that in one or two instances the infection in the ovary was heavier than that in the stomach, and Fig. 2 is an instance of this. The stomach contents from this louse contained a very few spirilla, not more than one to a field. It is also certain that spirilla were found in the ovaries in one or two cases where these were withdrawn from the abdomen without rupture of the stomach, and in one such case only one large leash of several score of individuals was seen, reminding one of the pictures in Koch's paper on the development of African spirilla in the ovaries of ticks. This was seen once only, for generally the spirilla in the ovary were discrete, and contrasted with the multiplication masses which characterize stomach infections.

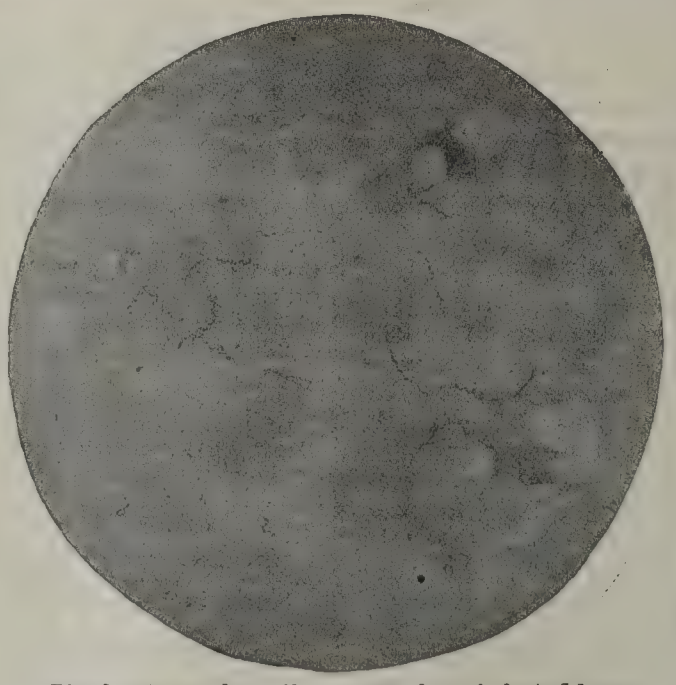


Fig. 2.—Smear from the ovary of an infected louse. (The spirilla had almost disappeared from the stomach of this louse.) Small circle, (*a*) short forms of spirilla (composite field) from the same ovary; (*b*) two spirilla from circulating blood of human patient.

I think that short forms are commoner in the ovary than in any other organ. They consist of only two, or even one, curve, and a few selected ones are depicted at (*a*) in the small circle in Fig. 2. They may be only 2 μ long as compared with 8 to 12 μ in the louse stomach, and 10 to 16 μ in their average length in the human blood. An ordinary spirillum and a short specimen from the blood of one of the girls are seen in the lower division of the small circle in Fig. 2.

Out of 36 infected lice where the sex was noted, 31 were females and only 5 were males. This is partly, but I think not entirely, attributable to conscious selection on my part of the bigger females, because I always found that the gravid females were more likely to be infected than the small individuals of either sex. I examined about a hundred or less nits laid by females from the infected boys' wards, but I never found any egg infected. These ova were in various stages of pupation.

Spirilla were occasionally found in small numbers in the intestine in the Malpighian tubes and in the testis (3 out of 5 cases), but not under conditions where fouling from the stomach contents could be entirely excluded.

Briefly, I am certain that the infection exists in the upper alimentary tract, and that the secretion expressed

from the mouth contains abundant spirilla, but I cannot say whether this secretion is derived from the salivary glands, from the pharynx itself, or from some of the diverticula which are connected with the pharynx or oesophagus.

This phenomenon of infection of the mouth secretion was observed in almost every case where it was looked for. If light pressure is made with a needle on the head a small quantity of cloudy fluid is expressed, and when this was examined it showed 9 times out of 13 the presence of spirilla in greater or less number. Once a few spirilla were seen in this secretion when none were found in the stomach. Once or twice larger numbers were found here than in the stomach, and once well-stained healthy-looking organisms were found here when the stomach contained spirilla, which were scarcely recognizable as such by reason of marked degeneration. A noteworthy point is that, however tangled the masses of spirilla in the stomach, they were always quite discrete in the mouth secretion.

The thorax was teased *in toto* 10 times, and in 7 of these spirilla were found, generally in considerable numbers. When the thoracic fat-body was separated together with the salivary gland embedded in it (16 times), on 6 occasions spirilla were demonstrated, in several cases in very large numbers as in Fig. 3. It is possible, however, that in some of these cases a portion of the oesophagus or diverticula therefrom was included. In the case of two infected lice where the salivary bodies were successfully isolated and washed neither contained spirilla.

Monkey Experiments.

Two of these animals were used for louse transmission and one for bug transmission. Neither of the experiments succeeded:

The monkeys were fitted with tight-fitting jerseys after the skin had been shaved, and beneath the jerseys relays of lice from the infected ward were placed at intervals of a day or two. The hands of the monkeys were restrained during the night. I was never able to satisfy myself that the lice bit the monkeys, and as the percentage of infected lice was low when the experiments were carried out I do not think that the failure proves much. Besides the monkey (*Macacus sinicus*) is much less susceptible to relapsing fever than man is. Lieutenant-Colonel Bannerman suggested that I should inject the stomach contents of lice artificially into monkeys, but the degree of louse infection fell towards the end of the epidemic, and I was unable to do the experiment.

Dissection of Other Insects.

I examined a few fleas and mosquitos from the beds or vicinity of infected patients, but found none containing spirilla. The question of bug infection requires more extended notice. I had already had considerable experience of the bug in its supposed part of carrier in this disease, and the results of about eighteen months' work are summarized in a paper on Bombay spirilla fever in the *Lancet* of September, 1907. I was prepared to find spirilla in the alimentary tract of bugs, and was not disappointed. The observations on Nasik bugs were in accordance with my previous experience, and the subject was not pursued. They were found in the stomach contents of bugs in the presence of fresh blood only, and in very small numbers. Scarcely more numerous were they than in the human blood, if allowance is made for concentration of the blood by the absorption of the fluid portions during digestion. There was never any sign of multiplication, and no organ was found to contain spirilla except the recently-filled stomach.

It may be argued that the bug may have been responsible for the slowly advancing epidemic in the girls' wards, but if the bug is really a carrier, then there should have been an explosion similar to that in the boys' wards.

I think, however—and this accords with my not inconsiderable previous experience—that the bug played no part in the epidemic, and that the few body lice in the girls' wards were sufficient to keep up the slow transmission.

Summary.

1. An epidemic of relapsing fever broke out in a mixed settlement of boys and girls living under similar conditions.
2. A very high percentage of the boys fell victims to the disease in the course of a few weeks.
3. A much smaller percentage of girls fell ill and at infrequent intervals extending over three months.
4. The most notable factor in which the boys differed from the girls was that they were infested with body lice, from which parasite the girls were almost free.
5. A well-marked percentage of the lice taken from the infected ward contained living and multiplying spirilla.
6. The stomach of the louse was the chief seat of multiplication, and this was carried on in the face of active digestion and after the disappearance of all other cellular elements. Other organs became secondarily infected. The secretion expressed from the mouth of infected lice contained numbers of living spirilla, and they also existed in greater or less numbers in the upper alimentary tract. The ovary was frequently infected, but spirilla were not found in deposited ova.
7. With the increase of the epidemic amongst the girls, body lice became more in evidence.
8. With the subsidence of the epidemic amongst the boys the percentage of infected lice fell.
9. An attempt to infect a monkey by means of lice failed.

I think that the above facts are sufficient to throw grave suspicion on the body louse as a transmitter of relapsing fever. Many epidemiological facts point to this mode of transmission as being a likely one, and the life-history and habits of body lice as outlined above show how well these parasites fulfil the necessary conditions for spreading the disease.

Thus relapsing fever has always been associated with poverty stricken, overcrowded, and half-starved communities, and it is under just such conditions that lousiness is at its worst. Again, in mixed communities, as in Bombay, the disease attacks the poor, dirty, and low caste living in squalid tenements, to the exclusion of those of cleanly habits and better conditions of life.

Relapsing fever is a "personal" and not a "place" disease, and amongst stricken communities the infection spreads from person to person very rapidly after only a few days' exposure, and mere contiguity without contact is not sufficient to carry on the infection.

It is probable that the infected secretion of the louse's mouth is the medium responsible for transmission during the height of an epidemic, but whether the ovarian infection plays any part in the linking together of epidemics or in the carrying over of the disease during the off season it is at present impossible to say, but the failure to find spirilla in nits is rather against this theory.

The photographs are from drawings made by Dr. Turkud, M.B, of Bombay. They are faithful to the minutest detail of the fields they represent, and are in no sense composite (except sector (*a*) in Fig. 2). The spirilla of the circumferential limits of each field were, for optical reasons, omitted by the draughtsman.

A POSSIBLE EXPLANATION OF LATE RETURN CASES IN SCARLET FEVER.

By WILLIAM HABGOOD, M.D.Brux., D.P.H.Lond.

Every medical officer responsible for the discharge of scarlet fever patients from isolation hospitals is beset with the difficulty of knowing when they are free from infection. The time having not yet arrived when he can, as in the case of diphtheria, call in the aid of the bacteriologist, he has to be guided by ordinary clinical examination. Formerly desquamation was the guide; when that was completed the case was discharged. Of recent years it has been recognized that where return cases of scarlet fever occur the discharged patient will be found to have some purulent or muco-purulent discharge.

While admitting the impossibility of being sure that all inflammation has ceased in the upper respiratory tract, I am inclined to believe, from observation at different hospitals in the last two years, that cases are sent out free from any nasal discharge and not infectious, but do again become infectious by the occurrence of an ordinary attack of nasal catarrh, which causes some remaining quiescent scarlet fever germs to renew their activity.

An analogy may be found in the case of one who sits in a warm room with a current of cold air playing on his neck. He may get an attack of acute nasal catarrh, and he may become infectious to others. The germs that cause the catarrh were already in his nose, but dormant and able to become active only when an interference with the nasal circulation was set up by the cold air driving on to the warm skin.

May one not argue, then, that the scarlet fever convalescent causing a "return case" has in some instances left the hospital not in an infectious state, but, owing to the change from the healthy open-air life and freely-ventilated wards of a hospital to the stuffy and ill-ventilated rooms of a cottage, has become more than usually liable to nasal catarrh—has, indeed, suffered such an attack, and is thereby again made capable of conveying scarlet fever infection?

I will give two examples that seem to support this view.

H. M., aged 6. Date of attack, April 28th; was discharged from hospital, June 19th, fifty-two days after onset of symptoms, and did not return home until August 22nd, spending the interval at a relative's house where there were no children.

On September 16th, her sister G. E. M., aged 7 years, had scarlet fever rash. When visited, H. M. was seen to have a purulent nasal discharge, and her mother said she had caught a cold in the head some days before, a not unlikely thing seeing the mother's habit of keeping all windows closed and a general want of cleanliness. There was no other known case of scarlet fever in the district.

J. W. R., aged 8 years; date of attack, July 22nd; discharged from hospital, September 7th, forty-seven days after onset of symptoms.

This boy was not notified until desquamation had well advanced, had caught the disease in an adjoining village, and had passed through the acute stage in the same bedroom where four other children under 10 years of age slept, none of whom took the disease. The removal to hospital was made in this case so that the house might be disinfected and the children attend school after the usual period of quarantine.

On October 23rd his sister, H. R., aged 1 year, had scarlet fever rash, and two days later a thick streptococcal membrane over the tonsils. J. W. R. was found to have pus in both nostrils, one being occluded with crusts. No other case of scarlet fever was known in the district.

I believe the reason that H. R. resisted the infection in July, but succumbed in October, was that she had an attack of measles and bronchopneumonia some few days before the scarlet-fever rash appeared, and thus had her resistance lowered.

The question whether the isolation at very considerable cost to the community of a disease in which no one can fix with certainty the time when a patient is free from infection is worth the labour and expense involved has been considerably debated of late. Whether there would not be a greater gain if the scarlet fever hospitals—for it is this disease which up to now has occupied most of the beds in the isolation hospitals—were used for the isolation of diseases in which one can fix a time after which a sufferer is no longer infectious appears to me very worthy of consideration.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

STRANGULATION OF SMALL INTESTINE THROUGH RENT IN MESENTERY.

W. A., aged 14, was riding his bicycle on the evening of April 17th, when he lost control and ran with some violence into the hedge and was thrown off. On reaching home he was put to bed and seen shortly afterwards by Mr. H. Andrews, who found him suffering from slight concussion and bleeding from the nose; there were no external marks of injury, and he had not vomited.

Next morning (April 18th) he complained of pain in the abdomen and had not passed urine. The temperature was 101° F., and the pulse 130. Mr. Andrews asked me to see the boy with him. Examination showed some distension of abdomen and tenderness on pressure, dullness in right flank and patchy dullness in front; the liver dullness was normal, but there were signs of commencing peritonitis. Urine (about a pint) was drawn off; it was normal. Neither flatus or motions had passed since the accident, and he had vomited once during the night.

The patient was at once removed into the "home hospital" with a view to immediate operation. On opening the abdomen a coil of small intestine was found collapsed, and, tracing this upwards about 6 ft., I found that it had slipped through a rent in the mesentery, and was very tightly strangulated. On drawing the bowel out the tight constriction was seen to have so damaged the peritoneal coat that I inverted the edges and stitched them over with fine silk. I flushed out the peritoneal cavity with normal saline, and closed the wound in layers. He made an uninterrupted recovery. On removing the dressings on the second day, a bruise exactly the shape of a bicycle handle-bar was clearly defined, and made it evident that the cause of the injury was the violent pressure of the handle-bar at the time of the accident.

Exeter. CHARLES E. BELL.

THE TREATMENT OF SCABIES.

PRIOR to 1906, all cases of scabies in the Colchester Garrison were treated by sulphur, or liq. calcis sulph. Since January, 1906, every case has been treated by balsam of Peru. The last 24 cases have had the application removed by a hot bath twenty-four hours afterwards. No case has relapsed, and no albumen has been found in the urine. It seems certain, therefore, that the acari and their eggs are destroyed within a few hours after the application of the balsam. The following table appears to show:

(*a*) The diminished prevalence of itch in the garrison during the last two years, which may, I think, be justly ascribed to the perfection of the cure on the men's discharge from hospital, so that they are no longer liable to convey it to their comrades.

(*b*) The much reduced stay in hospital of each case, leading, of course, to a smaller loss to the State.

Year.	Average Strength of Garrison.	Number of Admissions for Scabies.	Total Number of Days in Hospital.	Average Number of Days in Hospital.
1904	3,168	89	1,691	19
1905	3 252	82	955	11.64
1906	3,573	51	179	3.59
1907 (to Nov. 1)	3,349	43	121	2.81

If it were possible to disinfect the men's clothing at once, they need not have been taken into hospital at all. As it is not possible with the naked eye to accurately locate the parasite, I prefer to paint the whole body at the same time. I do not think your American military correspondent is ever likely to hear of a British soldier meeting the same fate as the French Cupid. Balsam of Peru is soluble in water, and a profuse perspiration would dissolve the application. It is, I think, a vastly different procedure to varnishing the whole body with copal varnish and applying gold leaf accurately to the surface.

Lieutenant-Colonel W. J. Baker, R.A.M.C., reports 61 cases treated in his hospital in Dublin,[1] without a relapse or other untoward incident.

Colchester. F. J. W. PORTER, Major, R.A.M.C.

CASE OF PTOMAINE POISONING FROM MUTTON, WITH MARKED BRADYCARDIA.

G. W., aged 39, a ploughman, whose previous history was good, though his digestion had always been easily upset, and he suffered occasionally from headaches, partook on Monday, September 16th, along with the other servants, of dinner at noon. The meal consisted of broth and mutton. The mutton was part of the carcass of a sheep which had been seen to be ill on the previous Thursday, and had been killed by the shepherd. This is a common practice among shepherds in Scotland, the meat being known as "braxy." According to the shepherd, the meat looked all right, but he thought that the viscera were not quite healthy, being dark and congested. The heart was minced up, and stewed with onions as a separate dish, and of this the patient ate freely. At 3 p.m. he had a sensation of fullness in the stomach, and felt sick; at 6 p.m. he vomited. (The other servants also felt ill and vomited, but soon recovered.) At 8 p.m. he again vomited freely, and at midnight he was seized with severe abdominal pain, with cramps of the extremities, and retraction of the head. This continued till 5 a.m. His wife gave him a dose of salts, which he vomited, and at 6 a.m. a dose of rhubarb.

I saw him first at 1 30 p.m. The bowels had moved at 12 30 p.m., the motion loose and very offensive. He was now fairly comfortable, though there was considerable tympanites and some abdominal tenderness, especially

[1] *R.A.M.C. Journal*, September, 1907.

over the sigmoid flexure. About 5 p.m. the pain returned with great severity, and was again accompanied by cramps in the extremities. At 9 p.m. I again saw him, when the pain had greatly lessened. The temperature was 100·5° F. There was considerable tenderness, and the tongue was foul. His breath had a curiously fetid character, which reminded the writer of the smell of a dead mouse which had caused considerable trouble by dying under the floor of a closet in his own house. The pulse was 48, regular and full but compressible. An enema with turpentine was given, and did not return for some time, when the motion was dirty-grey in colour and very offensive. On Wednesday the pulse was still about 48; there was no pain; a purgative was ordered, the motion resulting being the same as before. On Thursday morning he complained very much of weakness, and his pulse had fallen to 42; his breath was still fetid and his tongue foul. From this time he gradually improved; his tongue cleaned, and on Saturday his pulse was 62.

I have thought this case worth reporting (1) because Osler states in his *Practice of Medicine* that mutton and lamb have not been known to cause ptomaine poisoning, and (2) because of the remarkably slow pulse.

It should be noted that the weather was very warm and sultry at the time.

Thornhill, Dumfriesshire. MUNGO BRYSON, M.B.

CASE OF RUPTURED TUNICA VAGINALIS.

AFTER reading the report of Mr. Nash's case in the JOURNAL of October 19th, p. 1065, I thought the following might prove of interest:

On August 1st, 1896, I was called to J. E., a cart-man, aged 45. He told me that he had had hydrocele on the right side for thirty-five years. The day before I saw him, while climbing from one ship to another, he fell astride an iron rail. He felt something give in the scrotum with a sharp pain; this passed off in a few minutes, and he continued at work, paying no further attention to it till he reached home at 11.30 p.m., and went to pass water. He then found the parts very much swollen and bruised, but had no trouble in passing the usual quantity of clear urine. He was at work on the morning of August 1st, and felt no pain or inconvenience.

I saw him in the afternoon, and found him in bed, looking and feeling well and in no pain. The scrotum was distended, pear-shaped, and reached to the middle third of the thigh. It was bruised, was not translucent, and was dull to percussion. The testes could be easily defined. The penis was very much swollen and oedematous. There was marked swelling in the hypogastrium, reaching to within 3 in. of the umbilicus. I diagnosed ruptured hydrocele, and treated the case with rest in bed and application of evaporating lotion. By the end of a week the bruising had disappeared, and the swelling in the hypogastrium had gone. At the end of a fortnight the only abnormality present was an oval, non-translucent swelling the size of a hen's egg, which occupied the right side of the scrotum. This condition has remained unchanged to the present day, a period of eleven years, and it represents, I suppose, the thickened tunica vaginalis. The hydrocele has been cured.

North Shields. LACHLAN FRASER, M.D., M.S.

LARGE FATTY LIVER IN AN INFANT: SUDDEN DEATH.

IN the BRITISH MEDICAL JOURNAL of November 30th, p. 1581, is a letter from Dr. Alcindor, giving details of a case of hepatic congestion in an infant, apparently causing death. The following particulars may be of interest in this connexion:

On August 20th Mrs. L. was confined. The labour was normal and easy. On August 25th she developed mania, and on August 31st she was removed to the asylum. She died on September 15th.

The child was placed in charge of a neighbour, a very respectable person, who looked after him well. He was fed only on cow's milk and water, and grew apace. On November 9th I saw the boy, and arranged to vaccinate him on November 14th. He looked then the picture of health.

About 2 p.m. on November 12th his foster mother brought him in great haste to my surgery. I saw him at once; he was just dead.

On November 14th, assisted by my partner, Dr. Peall, I made a *post mortem* examination. The child was well nourished—if anything, too well. All the organs of the body, including the brain, were apparently healthy—all except the liver. That was enormous. It reached right across the abdomen, and descended to within about 1 in. of the umbilicus. As no scales or any other conveniences for doing an autopsy are provided at the Ilford mortuary, I was unable to weigh the organ. It was smooth, rounded, yellowish in patches, and evidently just "fatty." There was no evidence of that very rare disease in infants, cirrhosis, and alcoholism, syphilis, and tubercle might, I think, be safely excluded as being the cause.

Holt states that fatty liver is exceedingly common in early life, and out of 345 consecutive autopsies at the Babies' Hospital, the liver was found fatty in 201. In 77 of these 345 cases the infants were noted as "well-nourished," and 45 of them, or 59 per cent., had fatty livers; 20 were "very fatty."

There were no symptoms of liver disease in this child before or after death; in fact the boy had been quite well from birth right up to within an hour or two of his death.

Had this large fatty liver anything to do with his death? What caused the liver to be enlarged and fatty? Was it over-feeding, and have overfed babies usually large fatty livers? as, if so, such livers must be very common. If the liver were not connected with the cause of death, what was the possible or probable cause? The jury's verdict was "Death from natural causes," of course.

Chadwell Heath. T. REUELL ATKINSON.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL ALBERT HOSPITAL, DEVONPORT.

A CASE OF APPENDICITIS COMPLICATED BY INTESTINAL HAEMORRHAGE.

(Reported by G. S. THOMPSON, M.R.C.S., L.R.C.P., Senior Resident Medical Officer.)

THE patient in the following case, a man aged 23, a gardener by occupation, was admitted on August 13th, 1906, with a history of ten days' abdominal pain. This came on suddenly and became continuous. It was referred to the umbilicus and at times exacerbated. There was also some sickness and diarrhoea, but no headache.

Condition on Admission.—He was a well nourished man, who did not appear acutely ill; he was cheerful, and remained so until just before death occurred. The abdomen moved but little on respiration, especially in the hypogastrium, which was tender, but not more so on one side than the other. The abdomen as a whole was somewhat distended, and the percussion note rather tympanitic. Rectal examination caused no pain, and revealed no fullness anywhere. The faeces were pultaceous in consistence, and a white clay colour—in fact, to the naked eye they precisely resembled psilotic evacuations. Air did not enter the lower part of the right lung freely, and vocal resonance and fremitus were impaired, a dull note being elicited on percussion; there were no adventitious sounds. The pulse was quick, and the temperature raised.

Progress and Result.—Six days after admission, or on August 19th, three copious haemorrhages from the bowel took place; on the 21st another occurred. On the 23rd he complained of sore throat and pain in the left knee-joint, which joint soon became distended by fluid. On the 26th blood-coloured fluid to the amount of 1½ pints was passed per rectum, and the patient at the same time became extremely blanched, the pulse also increasing in rate and becoming very feeble. An intravenous saline injection was then given, with marked temporary improvement to the pulse. Two hours later, however, collapse ensued, followed by the expulsion of a large quantity of blood from the bowel, for which again intravenous injection was performed. During the procedure the patient vomited and indulged in vigorous spitting, while extreme restlessness supervened, followed by violent struggling, which latter was only controlled with the greatest difficulty. The breathing became very laboured, whilst the patient was also as white as a sheet. The fatal issue followed about three hours afterwards.

Autopsy.—The peritoneum was found adherent to the abdominal parietes, whilst the viscera were also glued together by adhesions, especially below where large quantities of pus bathed the parts, especially those in the pelvis and appendicular region. At the latter site the adhesions were so firm and consolidated as to render their disruption most difficult and almost impossible. Careful dissection of this part at length revealed a gangrenous appendix, the blind end of which had sloughed off. There were no ulcers in the small or large intestines and no congested patches, but both caecum and large intestine contained considerable quantities of blood.

REMARKS.—The patient's temperature throughout his stay in hospital fluctuated between 99° F. and 102° F. The case was sent in as one of appendicitis, but although no spots could be found, there were circumstances about it which seemed to suggest that it might be one of typhoid fever; to this even the subsequent developments seemed to offer some support. It was nevertheless recognized throughout that some peritonitis was present, but the general condition seemed to counsel delay in the adoption of operative measures.

A point of special interest in the case, if it was really one of ordinary appendicitis, is the presence of intestinal haemorrhage. This complication would appear to be an unusual consequence of this lesion, and for that reason the case seems worth publishing.

REPORTS OF SOCIETIES.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

JAMES RITCHIE, M.D., President, in the Chair.

Wednesday, December 4th, 1907.

THE ACTION OF FORMIC ACID SALTS.

DR. GOODALL AND MISS ISABEL MITCHELL, B.Sc., in a paper on the action of certain salts of formic acid on the circulatory and muscular systems, said they found that sodium formate had little effect on the blood pressure of rabbits, unless in a concentrated solution; it then had a depressor action. Potassium formate, even in dilute solutions, had a marked depressor action, and when in strong solution fatally inhibited the heart. Calcium formate in dilute solution was slightly depressor, but in concentration tended to raise the blood pressure. The action of formic acid itself was depressor. The experiments tended to prove that the true formate effect was depressor. The metallic ion was probably the cause of the above-mentioned differences in results. Observations on the perfused blood vessels of frogs showed that all three salts in varying dilutions had a transient vaso-dilator action, followed in a short time by vaso-constriction. Experiments on the frog's heart proved that all three salts were toxic to that organ. In the case of potassium formate this body was exclusively toxic. Sodium formate caused at first a stimulating effect, probably in virtue of its producing irritation. The action of calcium formate was mainly that of calcium, the toxic effects being secondary. Observations on nerve-muscle preparations showed that the effects on skeletal muscle were similar to those produced on cardiac muscle. All were toxic in the following order: potassium, sodium, calcium. Sodium formate was administered to four healthy human subjects. The dosage employed was 1 gram thrice daily for one day; 2 grams thrice daily for two days, and on the morning of the fourth day. No subjective sensations were experienced. Blood pressure observations and dynamometer records were negative. Ergographic records were also negative in two of the individuals who had undergone previously daily training with the erogograph. The general conclusions arrived at were that formic acid and its three salts exerted a toxic action on the circulatory and muscular systems, and that they accelerated rather than retarded fatigue. The administration of potassium formate to the human subject was unjustifiable, but calcium formate might be a serviceable form in which to exhibit lime.

DR. GEORGE GIBSON, speaking from clinical experience, was of opinion that the formates and formic acid had a marked beneficial action on the circulatory system.

DR. CLAUDE KER had administered the formates to a large number of post diphtheritic patients, and considered that their action was decidedly beneficial.

THE USE OF NOVOCAIN.

MR. J. W. STRUTHERS read notes of eighty-five cases in which novocain had been used as an anaesthetic. He had found that novocain answered all the requirements of a good local anaesthetic, inasmuch as it could be readily sterilized, was unirritating, acted quickly, and was relatively to other drugs of low toxicity. It could consequently be used in doses sufficient for all ordinary purposes with safety. For infiltration anaesthesia a 1 in 400 solution combined with adrenalin was most suitable. For regional anaesthesia a 2 per cent. solution was required. The author was of opinion that novocain was the most suitable substance for inducing local anaesthesia by subcutaneous use which had yet been brought forward.

MR. GEORGE CHIENE laid stress on the importance of using local in preference to general anaesthesia in minor operations.

MR. WHEELER (Dublin) stated that he had used novocain for some time, and agreed with Mr. Struthers that it was the best drug to use. He also described his technique in inducing local anaesthesia.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

DR. A. R. PARSONS, President, in the Chair.

Friday, November 22nd, 1907.

VILLOUS TUMOUR OF THE BLADDER.

DR. BOXWELL showed a specimen from a case in which the patient, a young man of 34, died about a fortnight after admission to hospital. Until twelve months previously he had been perfectly healthy. The chief symptoms were haematuria and pain and frequency of micturition. His appearance and loss of voice suggested tubercle, but none could be found in the urine. No operation could be undertaken. After death the base of the bladder was found to be occupied by several large villous masses, the largest being situated at the mouths of the ureters; the bladder wall was thickened, and the ureters greatly dilated. The kidneys showed the ordinary septic changes following cystitis.

THROMBOSIS OF ARM WITH GANGRENE.

DR. O'CARROLL described a case of gangrene in a widow, aged 39, who entered hospital in July last complaining of cramps in the fingers of her left hand. The day after admission a slight bluish tinge was seen, especially about the wrist, and she was unable to lift the forearm. Nothing in her history gave any clue to the cause of the condition. Her heart was found to be rather weak, with some slight softening of the first sound. The only objective defect to be found was a small quantity of albumen in the urine. Her chest was small; she was thin, and had a ruddy blue face. The day after admission pain was complained of in the *right* hand and arm, and a slightly black hue was found about the right wrist. Within a few days the circle moved up the left arm, while the right hand cleared up. The left hand gradually dried up, and became perfectly rigid, and in about three weeks the dryness and mummification had reached the junction of the upper and middle thirds of the forearm. The arm above this became swollen and tender, and presently a line of demarcation occurred, and sank in about a fortnight to a depth of about ½ in. The patient was given two or three minutes of anaesthesia, and the arm was taken off above the elbow joint. The stump healed perfectly, and she left hospital much better in general health.

LARYNGEAL SPECIMENS.

Professor WHITE showed and demonstrated a few interesting old specimens from the College of Surgeons' Museum. Among these were two specimens obtained from persons who had been hanged about eighty years ago, which showed the same lesions. In each case the same thyroid cartilages and os hyoides are widely separated from each other, the intervening muscles, etc, having been almost completely torn across. The epiglottis was torn away from the rest of the larynx, and ascended with the os hyoides and tongue into the floor of the mouth. The omo-hyoid, sterno hyoid and sterno-thyroid muscles were lacerated in such a fashion that only a few shreds held the torn portions

together. The right sterno-mastoid was ecchymosed, contused, and broken, while the left sterno-mastoid was but slightly bruised. The rope knot was to the left side. The skin alone intervened between the rope and the interior of the pharynx. The cervical vertebrae and spinal cord were uninjured.

Section of Surgery.

Mr. E. H. Taylor in the Chair.

Friday, November 29th, 1907.

Ascites and the Talma Morison Operation.

Mr. W. I. de C. Wheeler exhibited a case of ascites from hepatic cirrhosis cured by the Talma Morison operation performed three years ago. The patient had been frequently tapped before the operation, and drained through an exploratory laparotomy wound, but without any beneficial result. For about three weeks after the epiplopexy fluid collected, and a small amount has persisted, neither getting more nor less for the past three years. The patient, who weighed about 7½ st. before operation now averaged 11 st. The amount of fluid withdrawn by paracentesis before the radical operation was performed approximated two gallons per fortnight for three months. This case was an ideal one for operation for the following reasons: (1) Previous tappings and laparotomy failed to give relief; (2) progressive emaciation and the appearance of slight jaundice was a warning against further delay; (3) the exploratory laparotomy revealed an attempt by Nature to anticipate the operation by the formation of adhesions; (4) the liver was enlarged, not atrophied, and therefore sufficient liver cells remained to carry on life; (5) there was an absence of any cardiac or renal complication. The author considered that the efficacy of the operation was no longer in doubt.

Mr. R. C. B. Maunsell quoted a case in which the operation had proved unsuccessful, in which a markedly cirrhotic kidney was found at the *post-mortem* examination.

Mr. Benson asked if there was any cirrhotic condition in any other part of the patient's body, as he had seen a case of a lady who had cirrhosis of the lung eight or ten years previous to the condition of the liver coming on. He thought it might add to the patient's comfort if he were tapped to get rid of the fluid that still remained.

Mr. Wheeler, in reply, said the patient had nothing in the way of cirrhosis in any other organs, but the last time his urine was examined it showed signs as if he were getting cirrhosis of the kidneys. He was not inclined to do anything more in the case as long as the man remained in his present condition. The fluid still remaining was the same in amount as it was at the time of the operation.

Mucous Colitis and Appendicostomy.

Mr. Seton Pringle exhibited a case of mucous colitis in which he had performed appendicostomy some months ago. The patient, a strong labouring man, with no sign of neurosis about him, sought treatment some two years ago for an uneasy burning sensation in the lower bowel and rectum, some pruritus ani, and the passage of a quantity of mucus in the stools. He was found to have haemorrhoids, and these were removed by operation, but he returned some two months later worse than ever, and now the whole motion was often composed of cylinders of mucus. A course of treatment, consisting in daily irrigation of the large bowel with astringents and antiseptics was then commenced, and persisted in for months, the patient at the same time being dieted and stomach sedatives, etc., given by mouth. As the treatment resulted in no improvement appendicostomy was performed last June in order to enable the whole large intestine to be systematically washed out. Since last June the patient had washed out his own colon daily with various antiseptics, and latterly had been using argyrol 1 in 1,000 in the morning and normal saline solution at night, but the condition was in no way ameliorated, and the treatment was regarded as a complete failure. The bowel had been examined carefully with the electric sigmoidoscope and no gross lesion found, so that this was apparently a true case of mucous colitis and not one of those cases of ulceration, kinking, or growth which often so closely simulated the disease.

Mr. Maunsell said he considered the operation a most useful one. He suggested that if the medical treatment did not cure the patient, an ileo sigmoidostomy might be successful, in which case the excluded piece of gut could be resected subsequently.

Mr. Benson thought ipecacuanha might be tried.

Mr. A. J. Blaney thought that, notwithstanding recorded cases, the operation was not a very successful one in cases of mucous colitis.

Dr. Pugin Meldon said that a weak solution of peroxide of hydrogen would clear away any foreign matter in the intestines; mixed with borax and bicarbonate of soda it might do some good.

Mr. Haughton instanced a case of operation for ventral hernia which caused the disappearance of colitis that had been treated for a long time medically without success; and he raised the question as to whether Mr. Pringle had satisfied himself that there was no reflex cause for the disease in this case.

MEDICAL SOCIETY OF LONDON.

Dr. Kingston Fowler, President, in the Chair.

Monday, December 9th, 1907.

Discussion on Pneumococcus Infections.

Professor W. Osler, in opening a discussion on pneumococcus infections, said that among the maladies in modern life pneumococcus infections alone had increased in frequency and severity. In some cities in the United States the mortality had increased fourfold. In this country the death-rate had steadily increased during the last decennium, but not in the same startling ratio as in America. In Chicago the mortality from pneumonia had reached as high as 20 per 10,000 inhabitants, one-eighth of all the deaths being due to it, which was 46 per cent. more than from all other contagious diseases combined. The great increase had taken place in the cities, and there were evidently conditions in our modern life favouring the spread of the infection. They were face to face with a serious situation in preventive medicine, one quite as deserving of organized study as cancer or tuberculosis. There were varieties in the species pneumococcus which differed not only in their morphological characters but in their degree of virulence. Inflammation of the lungs was only one, though the chief, among many serious diseases due to it. Pneumococcic septicaemia was met with in pneumonia, and with the new methods of blood culture it was found that in a considerable proportion of all cases the blood swarmed with the organism. Toxaemia and many complications might be associated with this bacteriaemia, which curiously enough did not always disappear with the crisis. Pneumococcal septicaemia without recognizable local disease was rarely met with as a fatal malady. The majority of people carried about a potential infection, and catarrhal and suppurative affections of the upper air passages were not infrequently caused by pneumococci. The affection of the accessory sinuses was important, and meningitis had arisen in some cases at least from that source. Acute fibrinous pleurisy and empyema were the chief forms of inflammations of the pleura from direct infection from the lung. At Guy's, as described by Hale White, cases of empyema had doubled in ten years. Of cardiac affections due to the pneumococcus endocarditis was either associated with pneumonia or was met with as an independent disease. Peritonitis was the most fatal of the abdominal pneumococcic infections, and pneumococcic meningitis was third in order of frequency among the acute inflammations of the cerebro-spinal meninges. As a complication of pneumonia it was not uncommon, but isolated instances were met with in which no other lesion was found, and it was quite possible that the infection might come through the nose or the accessory sinuses. Pneumococci existed in the mouth and throat of a certain number of healthy people. Out of 200 persons chiefly normal individuals, pneumococci were present in a large proportion, and a larger number of atypical strains of pneumococci were obtained from healthy persons than from patients with pneumonia. The pneumococcus might appear suddenly in a normal mouth, and the period of persistence was variable. Buerger had investigated the communicability of the organism from one person to another, and found that normal individuals acquired the organism by association with cases of pneumonia, or with

normal persons with the organism in their mouths. According to His the appearance and persistence of pneumococci in the mouth was coincident with the development and course of ordinary cold. Wood found that persons suffering from pneumococcus infection in coughing or talking expelled from the mouth particles of saliva containing pneumococci. It was commonly thought that when the resistance of an individual was weakened from any cause the pneumococci present or inhaled reached the lungs and excited inflammation. But it might be that the infection might pass through the lymphatics, and there was the possibility of a haematogenous infection, as there might be a bacteriaemia before a local lesion in the lungs was detected. A complete disinfection of the mouth was impossible, but the most effective mouth disinfectants were those that had alcohol as a basis, and an alcoholic solution of bicarbonate of soda and sodium chloride with the addition of glycerine, made as strong as the patient could stand it, was recommended. Professor Osler concluded by referring to cases of pneumonic infection without any definite local lesion and discussed the question of having separate wards for cases of pneumonia.

The PRESIDENT described a case which had been under his observation in which there was pneumonic infection apart from any local lesion. His impression was that it was a case of pneumococci infection of a lower grade causing slight changes in the lungs. It had been diagnosed as a central pneumonia, but with that he did not agree.

Dr. DE HAVILLAND HALL was convinced that certain cases of acute inflammation of the mediastinum were due to direct pneumococcic infection, the organism having penetrated into the mediastinum and not into the lung. He did not consider separate wards for cases of pneumonia were necessary, because there was no evidence of cases arising *de novo* in the hospitals, provided there was free ventilation and careful sterilization of the sputa.

Dr. THEODORE WILLIAMS pointed out that cases of pneumonia with delirium or with pericarditis or with albuminuria were, in his opinion, to be regarded from a diagnostic point of view as of the most serious and even fatal character.

Dr. WEST said it was not easy to explain why complications were so rare in pneumonia, and why respiratory complications were so seldom seen in cases of pneumococcic infection. He suggested that they were perhaps bringing together affections which did not stand so closely in bacteriological association as at present thought.

Dr. ROLLESTON said that though pneumococcic peritonitis was rare, it had attracted attention because it was primary in probably half the cases, and so accounted for a considerable proportion of the rare cases of primary peritonitis. The greater frequency in young girls had been ascribed to the infection gaining an entrance through the Fallopian tubes.

Dr. HERBERT TILLEY detailed the results of investigations conducted to determine the relation of inflammation of the accessory nasal sinuses to pneumococcic infection.

Dr. H. A. DES VOEUX described a case similar to that recounted by the President, and asked Professor Osler if pneumonia was as prevalent in the Southern States as it was in the Northern States, where the houses were overheated.

Dr. EWART emphasized the importance of disinfecting the upper air passages in cases of pneumonia.

Dr. POYNTON confined his remarks to pneumococcal pericarditis in children under 12 years of age. The condition was of peculiar clinical interest because of its extraordinary difficulty in detection, a peculiarity it shared with all forms of suppurative pericarditis, and one that had been recognized for many years. It was clear that in the diagnosis of pneumococcal pericarditis in childhood they must be prepared almost invariably to discover it among other severe thoracic lesions. He had been surprised to find how frequently *post-mortem* examination had shown that suppurative pericarditis had been subacute and even chronic.

Dr. SYDNEY STEPHENSON described the rôle of the pneumococcus in ocular infections.

Professor OSLER, in the course of his reply, said that he would like to be able to associate pneumonia with the overheating of the houses in the Northern States of America, but was unable to do so, because pneumonia was more frequent in the Southern States, where of course the houses were not heated.

ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

AT a meeting on November 28th, Dr. COLCOTT FOX, Vice-President, in the chair, the following were among the exhibits: Dr. H. G. ADAMSON (for Dr. J. A. Ormerod) a case of *Congenital pigmentation* with numerous other congenital defects in a girl aged 19. Dr. J. L. BUNCH: A case of *Lichen spinulosus* in a boy aged 6 years, with very numerous and maked lesions of the disease. Dr. G. W. DAWSON: (1) A case of *Pityriasis rubra pilaris* with extensive distribution on the arms and legs. Some members present regarded the case as one of anomalous psoriasis. (2) A case of *Lichen planus* of unusual type in which an alternative diagnosis of parakeratosis variegata was made by several members. Dr. WILFRED FOX: A case of very extensive *Verrucose naevus* with bilateral distribution. Dr. COLCOTT FOX: A case of *Sycosis* which had been very successfully treated with injections of vaccine derived from cultures made from the patient. Dr. W. T. FREEMAN: A case of *Leucoplakia* of the buccal mucosa without any skin affection; he offered a provisional diagnosis of lichen planus. Dr. J. GALLOWAY: Records of a case of *Psoriasis* treated with staphylococcic injections, without improvement of the psoriasis. Mr. T. J. P. HARTIGAN: A case of persistent *Erythema* of the feet, with no symptoms of pain in the joints. Dr. E. G. G. LITTLE showed a case of *Lichen planus* of unusual type, with hypertrophic lesions of one leg and no other symptoms of the disease. Dr. J. J. PRINGLE: A case for diagnosis—a young woman who had been under the care of Mr. Jonathan Hutchinson many years ago, who had had a water-colour drawing, shown at the meeting, of the condition at that time. The patient had a warty growth on the scalp, and persistent suppurative disease of the skin which some members regarded as chronic eczema, with peculiar incrustations. Dr. J. H. SEQUEIRA: A case of *Lupus erythematosus* of the face, with Raynaud-like phenomena and a condition of early sclerodactyly. Mr. ARTHUR SHILLITOE: An annular syphilide in acquired syphilis in an adult, who gave a history of primary sore six months previously. Dr. A. WHITFIELD: A case of rodent ulcer successfully treated by zinc ions in the manner described by Dr. Lewis Jones in the BRITISH MEDICAL JOURNAL of February 6th, 1907.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION.

At a meeting in the Apothecaries' Hall on November 26th, Dr. W. MURRAY, in opening a discussion on the therapeutics of indigestion, specially emphasized the importance of diet and clothing, and, as regards drugs, said that in suitable cases he had seen the greatest benefit from the use of cerium oxalate, bismuth, chloroform, or strong nitro-hydrochloric acid. The discussion which followed turned for the most part upon the question of the relative digestibility of different forms of fat. Mr. J. CANTLIE then read a paper upon tropical diseases and their treatment. During the last few years attention, he said, had been directed especially to the study of protozoa, and increasing knowledge had shown that the majority of tropical diseases were due to them rather than to bacteria. The protozoa were especially affected by metals—the protozoon of syphilis by mercury, of malaria by arsenic, of sleeping sickness by antimony. In malaria quinine was apt to lose its power, and might well be reinforced by arsenic.

ODONTOLOGICAL SECTION.

At a meeting on November 25th, Mr. J. HOWARD MUMMERY, President, in the chair, Mr. J. T. CARTER, in a paper dealing with some points on the growth of the jaws, referred to the recent work done regarding the studies of ossification of the mandible, maxilla, and premaxilla. He also dealt with the growth of the bones after birth, and pointed out the existence of a so-called intermaxillary antrum in the skull of the chimpanzee. The changes in the maxilla and premaxilla consequent on expansion of the maxillary sinus were briefly described, as also those changes in the mandible which are correlated with, but secondary to, those of the maxilla. A discussion on the paper followed, Messrs. F. J. BENNETT,

H. Baldwin, Norman Bennett, and J. F. Colyer taking part. A note on some effects of chronic suppuration in the pulp of a molar of a horse was read by Mr. H. Watson Turner in the absence of the author, Mr. J. S. Turner. The tooth was one extracted from a horse after its death, when about 16 years old. About ½ in. from the base were four sinuses in the dentine, with everted smooth edges, leading into the pulp cavity; on the coronal surface the apices of the pulp cornua were exposed by softening (? caries) of the dentine. Early in life the horse had suffered from toothache, and a piece of the outer alveolar plate had been chiselled away, giving exit to pus. The tooth had always remained tender, and the horse used to "shy" on a hard road. The everted and smooth edges of the sinuses showed that they had been formed in soft tissue and subsequently calcified, and all the part of the tooth basal to them had been formed whilst or after the stump of the pulp was suppurating. The vital resistance thus evidenced might be due to the more free collateral circulation found at the widely open basal part of the developing tooth; the condition might be compared with the abscess cavities found in the tusks of elephants. The coronal caries was probably started by lodgement of crushed oats.

Sheffield Medico-Chirurgical Society.—At a meeting on December 5th, Dr. G. Thomson, President, in the chair, Dr. W. S. Porter, in opening a discussion on the treatment of *Acute rheumatism*, expressed himself in favour of moderate doses of sodium salicylate combined with alkalies. He did not think the salicylate prevented relapses or cardiac complications. Aspirin was useful in some cases. Serum treatment was at present in the experimental stage, and was so far of no practical use. In regard to local treatment to the affected joints, he was in favour of warmth and, in obstinate cases, blisters. To prevent or minimize heart lesions the chief indication was rest, not only during the attack, but continued for at least three weeks after convalescence was established. Blisters over the precordia were often of service. The diet should consist of milk and farinaceous food for some time after the subsidence of the pyrexia. Many heart lesions would be avoided were the slight cases of so-called subacute rheumatism energetically treated, and he insisted on the importance of treating such cases with as much care as those of a more acute nature. Dr. D. Burgess drew attention to the necessity of going into small details of treatment in order to make the patient comfortable. He advised great care in the giving of salicylates where nephritis was present. Dr. J. W. Martin gave his experiences with perchloride of iron and potassium iodide. In some cases he obtained great benefit. Dr. Arthur Hall thought it necessary to push the salicylates, giving them at frequent intervals He showed temperature charts to illustrate this point. He had never seen any untoward effects from the use of salicylates. Professor J. M. Beattie thought that eventually an antitoxin for rheumatism would be revealed. Dr. J. Sorley deemed large doses of salicylates necessary and found them well borne. Dr. Arthur Hall showed a case of *Erythema iris* affecting the palms of the hands The patient had had two previous attacks during the last few years. Dr. Geo. Wilkinson showed a case of *Chancre of the nasal septum* in a young woman, probably inoculated from the finger. The *Spirochaeta pallidum* was demonstrated in a section of the chancre. Dr. W. S. Kerr showed a man with a small *Gumma* of the bridge of the nose. He had contracted syphilis nine years ago. There was a large perforation of the cartilaginous septum not involving the bone.

Pathological Society of Manchester.—At a meeting on November 13th, Dr. J. J. Cox, President, in the chair, Dr. R. B. Wild, in a paper upon the relation of scar tissue to the *Etiology of malignant growths*, described 14 cases, of which 10 were on scars of lupus vulgaris, 2 on scars of burns, 1 of scald, and 1 on the scar left by repeated blistering for neuralgia. The cases were illustrated by photographs and microscopical slides, and showed multiple lesions in many cases. All the growths were squamous epitheliomata, the glands were not involved, and, where *post-mortem* examinations were obtained, visceral deposits were absent. Three possible modes of origin were noted: (1) Trauma or mechanical irritation of an old scar; (2) pus infection of the scar and development of a growth at the inflammatory focus; (3) irritation of the scar by *x* rays during treatment for lupus vulgaris. It was pointed out that the simple structure of scar tissue afforded a means of studying the development of epithelioma without the complicating influence of glands and other constituents of normal skin. Epithelial overgrowth seemed to be the result of local irritation—mechanical, chemical, bacterial, or due to ethereal vibrations. The hypertrophied epithelium might form a papilloma or thickened patch or invade the deeper tissues if the resisting power of the connective tissue was weakened. In a scar the connective tissue had only a feeble resisting power, and probably the senile factor in the etiology of epithelioma was more a want of vitality in the connective tissue, and hence a lessened resisting power to epithelial penetration, than any senile change in the proliferating epithelial cells. Finally, the tendency of the connective tissue element of a scar to occasional overgrowth was referred to, and keloid of scars was compared to and contrasted with epithelioma. In both cases there was a loss of balance between the two constituents of the scar tissue and an overgrowth of one of them.—Dr. F. Craven Moore read a paper recording some of the results of his own investigations on the relations of *Cholesterin* in the human organism. Using the melting point and the specific rotation as criteria, it was possible, he said, to establish the identity of the cholesterin extracted from a number of different tissues and fluids. By simple methods of extraction and fractionation, it was found in all the cases that the whole of the cholesterin could be extracted in an uncombined form, and that saponification gave no further yield. In normal tissues it was observed that the cholesterin was invariably associated with a lecithin or allied body, but the evidence so far obtained indicated that the association was physical rather than chemical. Of interest as throwing some light on the origin of cholesterin as a pathological product was the fact that no increase of cholesterin occurred when normal spleen and some other tissues were allowed to undergo bacterial putrefaction or septic autolysis. In an anaemic infarct of the spleen the percentage of cholesterin was less than in the normal organ. Referring to the excretion of cholesterin by the bowel, the investigation of normal human faeces (one case) failed to yield the substance koprosterin, and after the administration of 5 grams of cholesterin to a healthy subject it was found that it was excreted unchanged. In a case of complete obstruction of the common bile duct cholesterin could not be obtained from the faeces in recognizable quantity.—Drs. Cameron and Mair showed a specimen of *Spina bifida and hydrocephalus* presenting some unusual abnormalities. The vertebral arches from the second lumbar downwards were deficient; the first lumbar vertebra showed a bony outgrowth from the back of the body which, uniting posteriorly with the laminae, divided the spinal canal into two parts. The cord and its membranes became double at the same level, and the two cords thus formed were incorporated with the wall of the sac.

Medico Psychological Association of Great Britain and Ireland.—At a meeting on November 19th, Dr. P. W. Macdonald, President, in the chair, Dr. Albert Wilson introduced a discussion on the *Psychology of crime* by a recapitulation of his main contentions in a paper read at the previous meeting. Dr. Mercier defined a criminal as a person whom the community punished because he did something of which the community did not approve, though that something need not be anything intrinsically wrong—that is, failure to attend church on Sundays and Saints' days was not now regarded as against the law, though at one time it was. It was quite wrong to regard the criminal class as a class within the community, but not of it. It was sometimes taught that criminals were recognizable on inspection, but some of those shown by Dr. Wilson might, from appearances, have passed muster as members of a learned profession. Professor Lombroso had spoken of departures from the average, but it would be difficult to define the average type, and still more to find persons which conformed to it in every particular. It was a heresy to regard crime as necessarily insanity. The criminal was the product partly of instinct

and desire, and partly of opportunity. He feared very few people would resist temptation if the temptation were sufficiently strong. To believe that the criminal was marked off from the remainder of the race was to weaken the sense of responsibility which it was the duty of the citizen to foster, both in himself and in others. The outstanding feature of lunatics was loss of control, and readiness to yield to temptation. Sir RALPH LITTLER, K.C., while agreeing that the medical profession had the greatest opportunities for good in connexion with the subject under discussion, said that many members of the legal profession felt a deep interest in it also. As Chairman of Quarter Sessions he had often to decide what to do with a person who was known to the medical man as a "sport," and for whom one could not help feeling pity even though his conduct might have been brutal. Many cases which came before the courts were on the border line between sanity and insanity, and on that line which separated a knowledge of right from wrong. He hoped some method of detention would be found which was less expensive than a lunatic asylum. Many who were criminally-minded were prevented from committing crime for fear of the consequences. He was strongly opposed to the system of short sentences of imprisonment. In Birmingham 80 or 90 boys were, in one year, sent to prison for a nominal period of three days, which really meant one night in prison, the surest way of training them to become criminals. It was small wonder that they soon returned to prison. Alcohol, instead of being a cause of degradation, was in many instances a result of it, the cause being squalid homes and generally unsatisfactory surroundings. Dr. JAMES SCOTT said he did not quite agree with Dr. Mercier's definition. Criminals interfered with the law, and therefore a comprehensive term would be law-breaker; many law-breakers would not like to be called criminals—for instance, the conscientious objector sent to prison. Criminals were very difficult to deal with, and he suggested they should be separated into professional and others. The man who lived by crime was not a lunatic; he was in possession of his faculties, and, if he showed that he belonged to that class, he should be restrained indefinitely. In the other class there was more room for the work of the psychologist. The great influences were faulty environment and heredity, and cases could not be got hold of early enough to correct them. Dr. PAUL contended that the subject was so wide and far-reaching that it was difficult to keep the discussion within certain limits. He believed that when a man had become a hardened criminal there was very little more to be done with him. Hope lay only in a large alteration of the conditions which at the present day produced criminals. It seemed absurd to contend that there was no such thing as inherited disposition to crime. Dr. CARSWELL said many weak-minded persons stated to have passed a certain standard at the special schools were found, on test, to be far below it. There was a class of incorrigibles who, though not insane, were marked off from the rest of the community.

At a meeting of the Scottish Division on November 22nd, Dr. YELLOWLEES in the chair, Dr. IRELAND gave a short account of the International Congress of Neurology held in Amsterdam in September, which he attended as a delegate of the Association. He spoke in warm terms regarding the manner in which the members of the Association were received by the Dutch. The only objection he had to the work of the Congress was that it was conducted in three divisions, namely, those of psychology, psychiatry, and the care and nursing of the insane. As the business of each of the three divisions frequently took place at the same time, and was of great practical interest, it was impossible that one could attend to the several sections.

DR. PRESLEY M. RIXEY, Surgeon-General of the United States Navy, has, we learn from the *Medical Record*, recommended in his annual report that an order be issued by the Navy Department forbidding the use of cigarettes by all persons in the navy under 21 years of age. It is stated that in three months the crew of the battleship *Missouri*, numbering 700 men, used 1,500 books of cigarette papers, 1,200 lb. of smoking tobacco, and 37,000 cigarettes. None the less, 48,000 cigarettes and 15,000 lb. of candy, together with 1,000 lb. of navy plug chewing tobacco and 30,000 cigars, have been loaded on the *Culgoa*, in the Brooklyn Navy Yard, as a part of the canteen supply.

REVIEWS.

MEDICAL ETHICS.

THE term "ethics," as used in such a combination as "medical ethics," has been defined in Murray's *New English Dictionary* to be "the rules of conduct recognized in certain associations or departments of life"; that is, when used in this way, it is regarded not as a science, but empirically as a question of custom, and may be held to cover all questions which concern the duties of medical men towards the public, each other, and themselves in regard to the exercise of their profession. Some of these duties are laid down by the ordinary law, some by the regulations of the General Medical Council, some by a mutual agreement of a formal kind between members of the profession, and some by the unwritten tradition of the profession and by the ordinary rules of conduct in the light of these.

In the majority of cases where difficulties occur, it is only necessary to be familiar with the custom governing the question at issue, to see the facts clearly from every point of view, and to apply the ordinary rules of right dealing for the difficulties to disappear. To meet the great variety of circumstances that occur a complete code would be almost impossible; moreover, were it possible to frame such a code it would be undesirable, as it would needlessly hamper the man who wishes to behave in an honourable manner and who acts with care and circumspection, whereas it would exercise little or no restraint on the careless or wilful offender. Indeed, it would appear to be derogatory to the profession to draw up rules of a rigid kind dealing with many simple matters which should readily be settled by mutual goodwill. It is only those matters of fundamental importance on which professional opinion has long been formulated and organized that can with advantage be dealt with by a code, and even here the difference of circumstances in different parts of the Empire—for example, Scotland and the Colonies—makes codification difficult if not impossible.

But it is just the existence of this debateable region which no code can cover that makes a guide such as Professor SAUNDBY'S book, *Medical Ethics*, so desirable and even necessary. Experience shows that difficulties are constantly arising which are in many cases due to misunderstanding, thoughtlessness, a failure to recognize how an action may affect a colleague, or to ignorance of the customs of the profession, and that medical men in the presence of conflicting duties and interests do make mistakes from which a little reflection should have saved them. Little is done, unfortunately, at medical schools to direct the attention of the students, who no longer have the benefit of the experience which the apprentices had, to these matters. It is to supply such a want that the present book was written.

The present is the second edition of a work originally published in 1902.[1] As in the first edition, the matter is arranged under headings grouped alphabetically; this makes it easy to use for purposes of reference, and, as the subject does not lend itself to scientific treatment or logical classification, it is probably the best plan. The present edition embodies the substance of two courses of lectures delivered to university students, and is largely based on actual questions that have been presented to the writer for solution. In forming an opinion as to its merits, it is only fair to bear these points in mind. The work has been much extended, and in large part rewritten, while parts which have properly ceased to commend themselves to the author's judgement have been omitted. At the same time the index has been made more complete, and marginal references have added to the practical convenience of the book.

The original use of the material for the purpose of lectures has influenced the manner in which it is handled in this edition. The result is that, while a somewhat uninteresting subject is presented in a readable form, there is a tendency to discursiveness, and a somewhat free interpretation of the limits of the subject. Thus there is a tendency, which may be illustrated by the paragraph headed "Chemists" and in other places, to lay too much stress on the proper conduct of other people

[1] *Medical Ethics: A Guide to Professional Conduct.* By Robert Saundby, M.D. Second Edition. London: Griffin and Co. 1907. (Med. 8vo, pp. 144. 7s. 6d.)

in relation to the medical profession, which, it may be contended, hardly comes within the scope of the work. Similarly, the sections on "Marriage" and "Vaccination" appear to deal with questions of professional judgement rather than with ethics. In the main, the opinions expressed may be regarded as fair and judicious and in harmony with the recognized practice and tradition. It is difficult, however, to accept the verdict passed on "the squatter" without a protest. It is admitted that there is nothing necessarily unethical in being a "squatter," and it certainly seems hard to take it for granted, as the writer appears to do, that he will behave badly to his neighbour and to blame him for all the "ill feeling" which sometimes arises.

Again, in advising that it is the best course to avoid signing lunacy certificates as much as possible, the author says "it does no harm to let the public feel the inconvenience," etc. Surely the harm that may be done is very considerable, and the inculcation of such a view is hardly in accordance with the general principles of the book.

In view of recent controversies, it is a matter of some interest to read the author's opinion in regard to a case of "covering," that it was one that might "with perfect propriety have been brought under the notice of the General Medical Council; but the Ethical Committee, being new to its work, was timid," etc. This hardly seems to correspond with Dr. Saundby's recent attitude in regard to the action of the Ethical Committee in proposing to take cases before the General Medical Council.

There are, of course, debatable points on which differences of opinion are still entertained in the profession, such as the question of consultants, in regard to which the views expressed would not be universally endorsed. However as the author himself states, medical ethics is not a fixed set of rules or a science; corresponding with the advance of medicine which brings in its train new methods of practice, and with the progress of civilization, which leads to new social conditions, we find medical ethics undergoing evolution and change. Professor Saundby has certainly set himself a difficult task, and the result must from the nature of the case necessarily be partial, tentative and open to criticism. He was aware of the existence of a want and has tried to fill it, and it seems doubtful whether any one could have done it better. The book in its new form will be a valuable source of information for all who are uncertain as to what custom prescribes and what it prohibits, and if, after all, as the author claims, there is but one fundamental rule, "Thou shalt love thy neighbour as thyself," there are to-day many in the profession who are perplexed and still ask, "And who is my neighbour?" Here they will find a praiseworthy attempt to clear up their difficulties, and enable them to find the right answer to the question for themselves in most of the contingencies of professional life.

DISEASES OF THE DIGESTIVE TRACT.

We congratulate Dr. Paul Cohnheim on the appearance of a second edition of his book on the diseases of the digestive tract[2] after an interval of only two years; this is sufficient testimony to the favour with which it has been received by the medical profession. In a former notice (September 30th, 1905, p 812) the general scope of Dr. Cohnheim's manual was indicated; he has succeeded in including all that is required by a practitioner respecting diseases of the oesophagus, stomach, and intestine. He has, however, been tempted to collect in an appendix an epitome of much that may be found in the book. On reading this over we cannot help thinking that in his endeavour to be brief he has hardly done himself or his readers justice. For example, he has constructed a table to aid diagnosis without the employment of a test breakfast, which seems to us to contain so many statements to which there are numerous exceptions as to be of comparatively little value. Thus, in gastritis vomiting is said to be rare except after errors of diet, yet morning sickness is one of the most constant indications of chronic catarrh of the stomach. Again, in the same condition pain is said to occur only when the inflammation is complicated by stenosis, and even in ulcer of the stomach the statement that vomiting occurs after errors of diet appears to imply its absence except after excess or the use of articles of food generally recognized to be indigestible. These statements are all the more remarkable as, when we turn to the body of the text, the descriptions follow the classical pictures. The book is illustrated by seventeen plates, which add to the clearness of the author's text.

A recent volume of the American translation of *Die deutsche Klinik* deals with *Diseases of the Digestive System*,[3] and makes a brave show by the eminence of its contributors, among whom are to be found such well-known specialists as C. A. Ewald and Boas of Berlin, Oser and Neusser of Vienna, Fleiner of Heidelberg, Minkowski of Cologne, and Riegel of Giessen; but the work is a little disappointing, because the space devoted to some of the subjects is disproportionate. For instance, Fleiner's interesting essay on the history and clinical indication of gastric lavage occupies half as much space again as Oser's account of the whole of the diseases of the pancreas. The diseases of the liver are crowded up, but those of the oesophagus, stomach, and intestines are adequately dealt with. The translation is not sufficiently well done to make the work pleasant reading. Many passages are obscure, and some unintelligible; for example (page 39) we read of "emptying the stomach by the action of a *lever*," the word being repeated several times, the German word "heber" meaning both a siphon and a lever, a double sense which the English word does not possess. In describing the preparation of a solution of quassia for washing the stomach (p. 38) we are told that "after macerating for twelve hours the *colature* was employed," a pedantic expression which suggests that a non-medical person was employed for the work of translation. It is also to be noted that the German forms of the Latin names of drugs are retained—for example, "kalii iodat." for potassium iodide. The unsightly American rules of spelling, omitting diphthongs and replacing "re" by "er" at the end of words, must be accepted, but we know of no authority for writing (p. 35) "choloid" for "colloid" degeneration. To pass from these blemishes which detract from our pleasure and diminish the merit of the laudable enterprise of placing this admirable work within the reach of English readers, we desire to speak in high praise of the way in which the contributors have performed their tasks within the limits assigned to them. We may single out for special praise Riegel's essay on the diagnosis and treatment of gastric dilatation, the chapter on gastric and intestinal carcinomata by Boas, and the general account of acute and chronic appendicitis by O. Vierordt and Boas. Ewald, in his essay on gastric ulcer, omits to mention ulcer of the duodenum, nor do we find it under diseases of the intestine, so that this important if uncommon disease, which should be discussed in connexion with ulcer of the stomach, is left out of account in considering the differential diagnosis, as well as the treatment; his teaching upon the causation of gastric ulcer is vague, and he lays little stress upon anaemia; he does not discuss the difficulties of diagnosis raised by Dr. Hale White, but seems to imply (page 187) that fissures are really ulcers, and the state of his mind upon the subject is perhaps shown by his saying that "in the many hundreds of autopsies in which he has examined the stomach he has never seen a fissure." When Stadelmann throws doubt upon the existence of bronzed diabetes as an independent disease (page 366) and suggests that it is merely an example of diabetes complicated by hepatic cirrhosis, one wonders whether this is an instance of political or racial prejudice blinding an otherwise clear-sighted man. We notice the divergence of opinion between Stadelmann and the American editor on surgical intervention for gall stones, the American emphatically stating that it is a surgical disease, while the German throws cold water upon operative proposals. Such differences and the contradictions to be found when we compare the statements of the various contributors are only to be expected in a work which is the product of many

[2] *Die Krankheiten des Verdauungskanals.* [Diseases of the Digestive Tract.] Von Dr. Paul Cohnheim. Mit 17 Abbildungen. Zweite vermehrte und neubearbeitete Auflage. Berlin: S. Karger. 1908. (Sup.-roy. 8vo pp. 260. M. 6.)

[3] *Modern Clinical Medicine: Diseases of the Digestive System.* Edited by Frank Billings, M.D. An authorized translation from *Die deutsche Klinik*, under the General Editorial Supervision of Julius L. Salinger, M.D. London: Sydney Appleton. 1907. (Med. 8vo, pp. 840. 25s.)

independent minds; but it is a diversity which at least possesses the advantage of showing the reader where he should keep his own mind open.

The extreme difficulty attending bacterial examination of the contents of the digestive tract has hindered its introduction among routine clinical methods, and, although greater experience and the provision of special clinical bacteriological laboratories in most hospitals have facilitated such investigations, yet they are still tedious and laborious, and, even when most carefully conducted, often lead to no definite results. It is none the less desirable that what is known or thought on the subject should be put together, and Professor HERTER'S book[4] is an adequate and pleasantly written account, but makes no pretence to being a guide to the bacteriological methods involved. As is well known, the healthy intestine of man and other animals in our climate swarms with bacteria, and it has been suggested that they play an essential part in the digestive processes; but the discovery that the bowels of Arctic animals which live in a bacteria-free atmosphere are destitute of organisms has rendered this theory untenable. There are better grounds for the view that what may be called our domesticated bacteria play an important part in antagonizing the development of pathogenic organisms, and in that way fulfil a not unimportant function. On the other hand, the *B. coli*—a constant inhabitant of our bowels—is nearly related to some virulent organisms which it seems not unlikely are developed from it. While it will be generally admitted that individual susceptibilities to different poisons constitute factors of importance in determining the clinical types of disease, yet it will not be so generally admitted that the "mental and emotional peculiarities of individuals" have a large part in fixing these types, nor do we think that Professor Herter has indicated sufficiently clearly what he means by this suggestion. The indolic type of intestinal putrefaction occurs frequently in children and is associated with a *B bifidus*, which closely resembles but has not been proved to be identical with the *B. bifidus* of breast-fed infants. The saccharo-butyric type occurs more often among adults and is due to the *B. aërogenes capsulatus*; it is marked clinically by a tendency to desquamation of the epithelium of the digestive tract, visible in the mouth and on the tongue, and proved by a large quantity of epithelial débris in the faeces. Sugars and starch are badly borne, and there is an anaemia attributed to the haemolytic action of certain poisonous substances formed in the bowel. Professor Herter's therapeutic suggestions on the whole resemble those founded on the well-known principles worked out from clinical experience. In harmony with that experience he tells us that most intestinal antiseptics can do little good, but something may be effected by the antagonistic action of other ferments, such as, for example, those contained in kefir or matzoon or bacillac, the last being a fermented milk containing a lactic acid producer. Professor Herter thinks there is much to recommend the view that putrefactive intestinal processes may be favourably influenced by fermented milk containing an abundance of lactic acid and lactic-acid organisms, and according to Metchnikoff bacillac employed by him with this object is entirely harmless. We have heard that buttermilk, as a remedy for the gastric derangements resulting from an alcoholic debauch, is popular in the north of Ireland. This interesting therapeutic suggestion is not so alarming as one in favour of shortening the gut and removing the whole or part of the large intestine as a cure for chronic intestinal putrefaction, which the author appears to regard with favour.

The book closes with a short chapter on the sociological considerations raised by the facts which have been considered wherein Professor Herter urges the importance of a proper appreciation of hygiene by the public, and the need for including this subject in the instruction afforded in elementary schools. This opinion is shared by many medical men, and no doubt our carelessness in many matters of hygiene compares unfavourably with the customs of Oriental nations who live under the Mosaic law or the rules of caste; but these rules are enforced by severe social penalties, which no politician would venture to propose for ourselves.

[4] *The Common Bacterial Injections of the Digestive Tract and the Intoxications arising from Them.* By C. A. Herter, M.D. London and New York: The Macmillan Company. 1907. (Post 8vo, pp. 370. 6s. 6d.)

The main object of Dr. COMBE'S monograph on intestinal auto-intoxication[5] is to discuss its treatment. He claims to have had a large experience of this condition, especially in children, but in adults also, and to have worked out for himself therapeutic principles which he thinks worthy of being better known, although in Switzerland at most of the health resorts the hotels are prepared to diet visitors in accordance with his rules. Nevertheless, his book, which extends to 550 pages, necessarily embraces a good deal more than the methods of treatment. Food is a cause of auto-intoxication when in excess or too rich in nitrogen, or is partially putrefied—for example, game or cheese; the absorption of poison is facilitated by motor insufficiency of the stomach, pyloric obstruction, stasis in the alimentary canal, spasm, atony, obstructions, and inflammations. The symptoms produced are, according to Dr. Combe, numerous, and suggest almost every disorder to which flesh is heir, but the diagnosis of the relation is determined by the presence of indican and by the quantity of sulpho-ethers in the urine; he thinks the latter affords a means of estimating the intensity of the putrefactive process. He gives a method for estimating the quantity of sulpho-ethers present, and a table for comparison of the standard amounts in persons of various ages. For the treatment of these auto-intoxications he recommends first a diet composed of milk or milk derivatives, such as whey, buttermilk, and koumiss, he lays stress upon the avoidance of liquids at meals, and he thinks meals should be small, and that the patient should rest for half an hour afterwards; bilberries, either fresh or in confection, should be eaten with each meal; his dietaries are arranged to contain only small quantities of nitrogen. In a more interesting section he discusses the possibility of treating intestinal putrefactions by introducing organisms which are antagonistic to those which produce the poison. One of these is *B. lactis*, and this occurs in any form of milk, especially in clotted milk, and in a more energetic form where Oriental ferments are used, such as the Bulgarian clotted milk called *yoghourt*, prepared by a special ferment called *podkwaisa*. Pure cultures of these Oriental milk ferments have been prepared by Metchnikoff, Fournier, and Tissier. Yeast and the ferment of grapes appear to act in the same way as *B. lactis*, chiefly by producing acids destructive to the proteolytic microbes, but the torulae possess in addition a limited phagocytic power. Yeast is useful in the treatment of eczema, urticaria, and pruritus, acne and boils, and in intestinal catarrh of children, and perhaps in mucous colitis. With regard to antiseptic drugs, he places hydrochloric acid first when the stomach is the seat of the mischief; where the intestine is at fault he uses calomel, menthol in alcoholic solution, thioform, ichthyol, creosoted cod-liver oil for children, ichthoform (a compound of ichthyol and formaldehyde), or salacetol. He approves of irrigating the colon, for which he gives simple and practical directions; he precedes the irrigation by a small evacuant enema, and uses soft indiarubber tubes, the irrigation tin, which holds 3 pints, being placed only a few inches above the level of the anus. The tube should be introduced only 1 or 2 cm. with the tap open, and as the water distends the bowel it should be gently and gradually pushed onwards, as the water opens up the bowel and renders its passage painless. The whole proceeding should be done cautiously, and should be given up at once if it causes pain, or the fluid is forced back into the tin. Irrigations are indicated when constipation coexists with symptoms of autointoxication, or even when there is only auto-intoxication, but especially when there is enteritis with muco-membraneous discharge. The book is one from which practitioners may glean much information of practical value in the treatment of these conditions.

[5] *L'Auto-intoxication Intestinale.* Par le Dr. A. Combe, Professeur de Clinique Infantile à l'Université de Lausanne. Paris: J. B. Bailliere et Fils. 1907. (Demy 8vo, pp. 568. Fr. 12.)

APPLIED ANATOMY.

SIR FREDERICK TREVES'S *Surgical Applied Anatomy*[6] retains its convenient form and size, but it has been

[6] *Surgical Applied Anatomy.* By Sir F. Treves, Bart., G.C.V.O., C.B., LL.D., F.R.C.S. Fifth edition, revised by A. Keith, M.D., F.R.C.S. London: Cassell and Co. 1907. (Pott 8vo, p. 652. 9s.)

admirably revised and in part rewritten by Dr. Arthur Keith, who has contrived to bring the book well up to date without altering the excellent grasp of main points and brevity of exposition which have always characterized the manual. Many of the old and imperfect figures have been modified, removed, or replaced, and the illustrations as a whole have been greatly improved, indeed the only two to which exception might, perhaps, be taken are one on page 363, in which an interval is shown between the lower border of the stomach and the upper border of the transverse colon which does not usually exist, and Fig. 70 on page 418, which conveys an erroneous impression not only of the position of the ovary but also of its relation to the ureter and of the relation of the latter to the wall of the pelvis and to the uterus. These, however, are minor details, and they do not seriously affect the value of the book, which we can most cordially recommend both to the senior student and the qualified practitioner as a most helpful and suggestive volume, from a perusal of which he will gain a thoroughly scientific insight into anatomical details which have great clinical importance and utility.

The second edition of Dr. Eisendrath's *Textbook of Clinical Anatomy*[7] is in many respects well illustrated, and some of the errors which marred the first edition have been removed. As a whole the book is interesting to read and instructive, bringing into prominence anatomical points which have important clinical bearings, and forcing home their importance tersely and vigorously. Yet it fails in two important points. Some of its illustrations give false impressions and all its statements are not absolutely correct. Dr. Eisendrath would find it difficult to demonstrate communication between the pharynx and the surface through the branchial clefts of the embryo, and he could scarcely claim that the duodeno-jejunal flexure usually lies below the lower end of the left kidney, as it is represented in Fig. 69, or that the splenic flexure of the colon is at the level of the middle of the spleen. The common hepatic and cystic ducts do not unite behind the lower portion of the first part of the duodenum, as shown in Fig. 73; and we doubt if any anatomist at the present day would say that the heart is divided into auricular and ventricular parts by a "horizontal septum." There is also here and there a want of consistency which might prove disconcerting to the student. Thus, on page 268 it is stated that the pylorus lies free and uncovered in apposition with the anterior abdominal wall, and in Fig. 68 it is represented as under cover of the liver. We would suggest that the book is still capable of improvement.

FORENSIC MEDICINE.

In his monograph on *Blood-stains* Major Sutherland has compiled a book of value to the medico-legal expert.[8] Its main feature is the full description given of the precipitin test and of the researches upon which it is based. Previous to this discovery it was impossible for an expert to say more than that a given stain was due to mammalian blood, for the micrometric criteria were too uncertain to justify an expression of opinion upon which important issues might depend; but by the precipitin test it has been shown to be possible to recognize with certainty the species of animal from which the blood is derived, although it is interesting to note that the blood of anthropoid apes gives a positive reaction with antihuman serum. Even this difficulty does not seem to be altogether insuperable, for while antihuman rabbit serum reacted in the presence of human and of monkey blood, antihuman monkey serum reacted only when human blood was present. The book is illustrated with some excellent photomicrographs of blood and blood crystals and chromolithographs of the spectra of blood, and contains a long bibliography of the whole subject.

The practical guide to forensic medicine,[9] by Dr. Hugo Marx, gives a brief and concise account of the methods employed in forensic medicine for the examination of blood, hair, semen, and poisons. It also contains directions for the conduction of *post-mortem* examinations, and gives a good deal of legal information which will no doubt be useful to German practitioners. In the chapter on blood investigation there is a good account of the method employed by Uhlenhuth and Wassermann for identifying human and animal blood, more fully described by Major Sutherland; the test of Neisser and Sachs, which is based on the deviation of the complement, also receives notice, and the merits and demerits of this very delicate reaction are fairly stated. A word of praise may also be given to the chapter on the hair, which shows how much information may be gained by careful microscopic examination. But there are many important subjects, such as the investigation of poisons, which cannot be adequately treated in a volume of such small dimensions.

[7] *A Textbook of Clinical Anatomy.* By D. N. Eisendrath, A.B., M.D. Second edition. Philadelphia and London: W. B. Saunders Company. 1907. (Royal 8vo, pp. 535; figs. 168. 21s.).

[8] *Blood-stains: Their Detection and the Determination of their Source.* A Manual for the Medical and Legal Professions. By Major W. D. Sutherland, I.M.S., M.D. London: Baillière, Tindall, and Cox. 1907. (Demy 8vo, pp. 179. 10s. 6d.)

[9] *Praktikum der gerichtlichen Medizin.* Von Dr. Hugo Marx. Berlin: August Hirschwald. 1907. (Demy 8vo, pp. 146; 18 illustrations. M. 3.60.)

NOTES ON BOOKS.

The *Annals of Tropical Medicine and Parasitology*,[10] published on November 9th, 1907, contains the following papers: Concerning certain parasitic protozoa observed in Africa, by the late J. E. Dutton, J. L. Todd, and E. N. Tobey; yaws, by C. W. Branch; a description of some Gold Coast Entomostraca, by W. M. Graham; notes on Dr. Graham's collection of Cyclopidae from the African Gold Coast, by G. S. Brady; on the morphology and life history of *Spirochaeta duttoni*, by A. Breinl; the cytology of the trypansomes, by Salvin-Moore and A. Breinl. In the first paper an account is given of the life-history of *Leucocytozoon ziemanni*, the life-history of *Trypanosome loricatum*, and other parasites of lower animals. The descriptions are excellent, and have the further advantage of being illustrated with beautiful coloured diagrams. In the paper on yaws Branch tries to prove that this is the same disease as syphilis, bringing many points together to support his contention. The paper by Salvin-Moore and Breinl on the cytology of the trypanosomes is very important. Their interpretation of the peculiar bodies (latent bodies) found in trypanosome infections is convincing, and may largely revolutionize ideas of the life-history of those parasites. Many of their observations—for example, to quote only one, that there are no indications of the so-called males, females, and indifferent forms in trypanosome infections studied by them—are strongly opposed to Schaudinn's views, and if the two observers could only see their way to go out and study the whole of this question on the spot, and either confirm it or destroy it, it would be conferring a very special boon on protozoologists as a whole. It would also be fitting that such a piece of work should be done from the Liverpool School of Tropical Medicine, which has accomplished such good research work in this branch of medicine in the past. The standard of the *Annals* keeps high, and we must again specially note the coloured plates and other illustrations, which help so greatly in the proper understanding of the different technical points brought out in the papers.

Dr. Feldman, who lectures on behalf of the London County Council on midwifery and the care of children, has published a manual on these subjects in Yiddish[11] for the benefit of recent immigrants of the Jewish race, who often have little acquaintance with the English language. Considerable attention is given to the question of artificial feeding, and one chapter is devoted to the consideration of the value of various popular patent foods. There are also chapters on the general management of infants and on the ailments common in young children, while some useful advice is given as to prevention of accidents and the isolation of those who may be suffering from infectious disease. The last portion of the work deals with the precautions necessary during pregnancy and the care of the mother after parturition. The book is likely to be very useful to those for whom it is intended, most of whom have little, if any, knowledge of the first principles of hygiene. If Dr. Feldman can succeed in getting his advice followed by Yiddish-speaking mothers he will have done good work for this section of the population.

[10] University of Liverpool, November 9th, 1907. Series T.M., vol. i, No. 3. *Annals of Tropical Medicine and Parasitology.* Issued by the Liverpool School of Tropical Medicine. Liverpool: At the University Press. London: Williams and Norgate, 14, Henrietta Street, Covent Garden. (Price 7s. 6d. net.)

[11] *The Child: its Rearing, Development, and Ailments.* By Dr. W. M. Feldman. London: E. W. Rabbinowitz. 1907. (Post 8vo, pp. 180. 1s.

The reminiscences of Surgeon-Major HUTTON[12] will be of interest to his numerous friends and will serve as a record of the origin and early organization of the St. John Ambulance Brigade, which owes so much to his energy. The book may be described as consisting of three parts. The first deals with the life of the author up to the time when he retired from the army on account of indifferent health in 1874 after twenty years' service. The second part covers that portion of his life which was devoted to the work of the St. John Ambulance Association as the organizing commissioner. The last hundred pages contain letters and speeches and newspaper descriptions of various ambulance functions in which Surgeon-Major Hutton took a prominent part. Throughout the book we see the man who was thoroughly interested in his work and did it *con amore*—keen, conscientious, and unsparing of himself. He saw much of South Africa half a century ago, and his descriptions and comments cannot fail to interest. Surgeon-Major Hutton, in the course of his work and wanderings, came into contact with many interesting and exalted persons, about whom he tells us in these pages. There is nothing particularly stirring or exciting in these reminiscences, but they are a record of a well-spent and useful life. Dr. R. Lawton Roberts has written an appreciative introduction.

DIARIES.

WE have received from Messrs. John Walker and Co., Limited, Farringdon House, Warwick Lane, E.C., a number of specimens of their excellent pocket diaries. Among those which strike us as the most convenient is that in which the fasciculus for the year is detachable and slips into a pigskin case; this measures 6 in. by 4¼ in., and shows a week in an opening. Another excellent series of appointment books are of waistcoat-pocket size; in some of these the whole year is bound in, while in others the quarterly fasciculus slips into a case. There are various patterns of intermediate sizes, and all are well and strongly bound. A good feature of these diaries is that a calendar for the ensuing year—1909—is provided, and the dates of the Bank Holidays for that year stated.

We have received a specimen of the second year's issue of the *Ideal Medical Diary and Visiting List*, published by Messrs. Langley and Sons, of George Street, London, N.W. The opinion expressed in these columns last year, that the publication would prove particularly serviceable to any practitioner who wished to have his visiting list with him on his rounds, appears to have been justified, as the publishers have been encouraged to issue another edition this year. In the same wallet are included the diary and visiting list and blank duplicate prescription forms. The list affords space for forty-five, or, if necessary, sixty patients in each week of the year, and there are special tables for obstetric engagements, and pages for memoranda, addresses, and vaccination engagements. The price of the morocco wallet with list and duplicate prescription book is 7s. 6d.; a refill visiting list lasting a year costs 3s. 6d.; and the refill duplicate prescription books, fifty leaves 5s. 6d. a dozen, and twenty-five leaves 3s. 6d. a dozen.

[12] *Reminiscences in the Life of Surgeon-Major George A. Hutton, late Rifle Brigade (The Prince Consort's Own), Honorary Organizing Commissioner, St. John Ambulance Association.* Introduction by R. Lawton Roberts, M.D., J.P. London: H. K. Lewis. 1907 (Crown 8vo, pp. 237. 5s.)

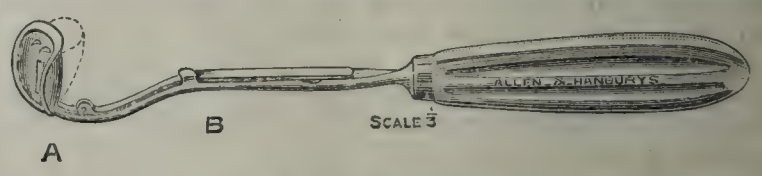
MEDICAL AND SURGICAL APPLIANCES.

Rainproof Coats.

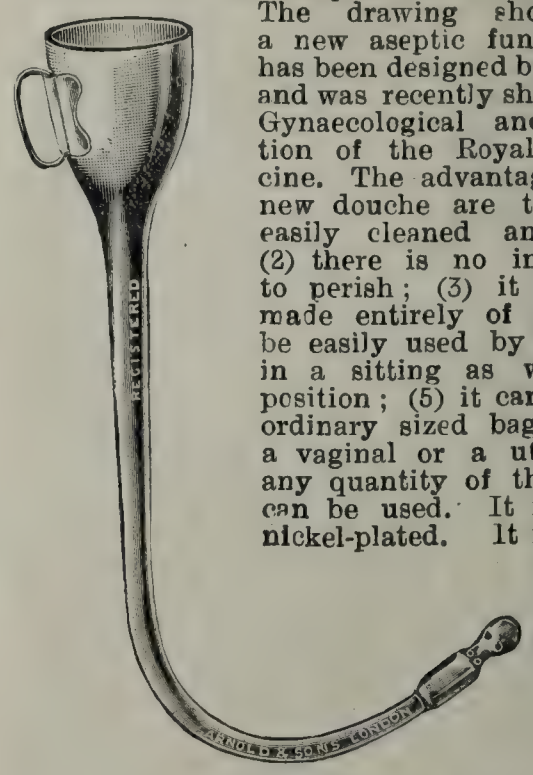
THE drawbacks of waterproof coats are well known, and various plans have been devised for obviating these objections and providing for ventilation. Messrs. BURBERRYS, of Haymarket, S.W., and Basingstoke, have sought to make a rainproof coat without using waterproof material. The essence of the idea is to insert between the exterior material, which is a closely woven cloth called gabardine, and the interior lining at the vulnerable points, that is to say the sleeves, shoulders and front, two layers of thin silk web, and between these a light proofed wool-netting. The effect of this interlining is that it takes up the friction of the exterior material on the lining and prevents wet being rubbed through. The garment is easily permeable by smoke, and the principle upon which it is constructed appears sound as well as ingenious. The process can be applied to garments of any material and shape and does not noticeably add to the bulk.

A Curette for Adenoids.

Mr. WILLIAM LLOYD (London, W.) writes: The use of a curette for the removal of adenoids, in preference to the post-nasal forceps, has now become an established fact. It was Delstanche who first invented an ingenious hinged and toothed cage to Gottstein's curette. The post-nasal curette generally used has a straight shaft from the catch to the handle, and when introduced behind the soft palate and swept backwards



and downwards the shaft of necessity is elevated, the result being that considerable bruising of the uvula and soft palate is caused. In the instrument devised by me and manufactured by Messrs. Allen and Hanburys, Limited, Wigmore Street, W., I have had the shank curved from A to B, with the result that in the large number of cases in which I have used it traumatic inflammation has been avoided.



An Aseptic Funnel Douche.

The drawing shows the form of a new aseptic funnel douche, which has been designed by Dr. ROBERT WISE, and was recently shown by him at the Gynaecological and Obstetrical Section of the Royal Society of Medicine. The advantages claimed for the new douche are that (1) it can be easily cleaned and made aseptic; (2) there is no indiarubber about it to perish; (3) it is durable, being made entirely of metal; (4) it can be easily used by the patient herself in a sitting as well as in a lying position; (5) it can be carried in the ordinary sized bag. It acts well as a vaginal or a uterine douche, and any quantity of the douching liquid can be used. It is made in metal, nickel-plated. It is supplied by the makers, Messrs. Arnold and Sons, of West Smithfield, London, at a moderate price.

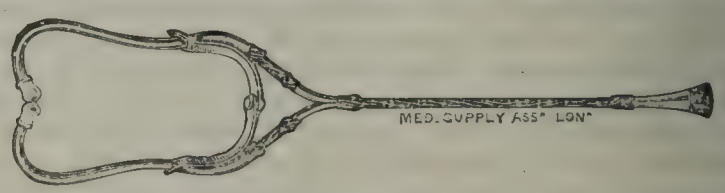
A Self Rubber.

Dr. T. GARREIT HORDER (Cardiff) writes: This strop, made of doeskin, will, I think, be found useful in those cases where patients have to apply liniments with friction. It is made

of material of an absorbent nature, and one that will wear well. It has been made under my instructions by Mr. Staniforth, Church Street, Cardiff, and the cost is about 3s. 6d.

Improved Stethoscope.

Dr. J. INMAN LANGLEY (Seabrook, Kent) writes: Binaural stethoscopes of the usual pattern must have struck every one as being somewhat awkward, at least in appearance. There being no apparent reason why the conducting air column should be divided immediately at the chestpiece, I have had made a stethoscope in which the division takes place as near as practicable to the ears. The distal ends of



the metal tubes curve inward instead of outward, and are connected to the metal "V" tube forming the junction by short lengths of rubber tubing. The advantages claimed over the usual pattern are: (1) Greater convenience in use; (2) a neater appearance; (3) increased compactness when folded, and the shorter length of rubber tubing required. The alterations mentioned have been most satisfactorily carried out by the Medical Supply Association, 228, Gray's Inn Road, London, W.C.

ROYAL COMMISSION ON VIVISECTION.

THIRD REPORT.

(*Continued from p. 1668.*)

THE Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till the evening of Thursday, October 3rd.* We continue our abstracts of the evidence.

Evidence of Mr. (now Sir) Henry R. Swanzy.

The witness stated that he represented the Royal College of Surgeons in Ireland, of which he was President. The Council of the College considered experimentation on animals necessary for the advancement of medical and surgical science, in that it had introduced great improvements and advance on our knowledge and our methods in the past, and that they might look forward to its doing similar work for the good of medicine and surgery and of humanity in general in the future. That was the unanimous view of the Council, which was the ordinary mouthpiece of the College. It was also his own view, most distinctly. His Council considered that, so far as it was possible and was compatible with the success of the operations, it was necessary and desirable that every means should be adopted to prevent animals having pain or inconvenience. It held that there should be no exceptions from the list of animals now experimented upon. Asked as to experiments upon animals for the purpose of enabling surgeons to acquire skill, he said that was a point as to which he had inquired among general surgeons. All those with whom he had spoken, including some of the most distinguished men, were of opinion that it would be greatly to the advantage of surgeons if operations upon animals for the purpose of acquiring skill were permitted. He would extend that to students towards the end of their course. The animals ought to be protected from pain and inconvenience as much in such operations as in operations for the ascertaining of knowledge; therefore he presumed it would be necessary to have a special certificate. He had not considered the question whether the authority to grant such a licence should be the Home Office or a medical authority, or both. He agreed with Professor Starling that the present law was immoral, because it did not permit operations for the acquirement of skill. As to demonstrations, the view of his Council was that it was desirable that students should be taught when necessary by means of experiments upon animals. There was one member of the Council who seemed to be a little doubtful on this subject, but he seemed to have altered his mind about it. The witness himself agreed with the majority of the Council. In regard to demonstrations, he would not limit the law any more than it was limited. Proceeding to illustrate his views from his experience in ophthalmic practice, he said the nature of inflammation had been one of the most important questions upon which a great deal of light had been thrown within the last fifty years or so, and some of the pioneer knowledge in this matter was gained by experiments upon the eyes of animals. The cornea was peculiarly suited for observing the processes of inflammation, as shown by the experiments of Cohnheim and Leber. Cohnheim was one of the first who showed what pus was, and a great deal of his experiments were made upon the corneae of living animals. These experiments were done in Germany, and they were not probably quite so particular there. The witness did not advocate some of the methods which had been used there, but these experiments would be done under anaesthetics, the animal would be anaesthetized the whole time, and then not killed afterwards, because one could not see what went on afterwards unless the animal was allowed to live. Cohnheim's first work was published in 1867, but he wrote a monograph in 1873 on the subject. The witness was in Berlin at the time, and saw his experiments, not upon animals' eyes, as it happened, because his very earliest experiments were done upon the mesentery of frogs and the tongues of frogs, and he saw those. Then it was very important to know the function of the ciliary body. There were two fluids in the interior of the eye—the vitreous and the aqueous. They knew or suspected that these fluids came from the uveal tract, or from some part of it, but it was not until 1880 that it was definitely ascertained that the ciliary body was the part of the eye which secreted them. When they found that it was the ciliary body which secreted these fluids—and that discovery was made by experiments upon animals—they began to understand certain diseases of the eye the nature of which they had not understood before. Keratitis punctata was thought to be a disease of the cornea; but from the time when they ascertained the meaning of the ciliary body, they learned that this keratitis punctata was merely a symptom of inflammation of the ciliary body, and consequently they then treated the disease in quite a different light. They now knew, too, that for the most part the opacities which sometimes appeared in the vitreous humour were due to inflammatory processes in the ciliary body, consequently they now dealt with them in a different way. That discovery was made definitely by Deutschmann in 1880. It was discovered entirely by experiments on animals; there was no other way by which it could be done. Continuing, the witness said that on the back of the cornea there was a very delicate membrane called the endothelium, and between the cornea and the iris there was the aqueous humour. They did not know what use the endothelium was, but it was discovered by Leber in 1873 that its use was to prevent the aqueous humour filtering into the cornea, and thus interfering with vision. That had been a most important discovery, because now, when they were operating, they were most careful to avoid injuring the endothelium. That knowledge could not possibly have been gained in any way except by experiments on animals. Asked what would be the nature of the experiment for making this discovery as regarded the corneal endothelium, the witness said there were a series of experiments, but the one which was conclusive was that an incision was made in the cornea, a sharp instrument was passed into the anterior chamber of the eye, and the back of the cornea was deliberately injured in the form of a cross; then the little wound in the cornea healed, the aqueous humour reformed after a few hours, and soon one saw in the cornea a little grey cross corresponding with the injury which was done on the back of the cornea; so that obviously the condition of opacity in the cornea must have arisen from the wound or injury on the back of the cornea. The witness proceeded to speak of transplantation of the cornea. A great many diseases caused opacity of the cornea, whilst the rest of the eye was perfectly good for vision. For a long time attempts had been made to transplant a clear cornea from the animal's eye to the human eye in such cases, with the object of providing the patient with a clear cornea and good vision. Reisinger, in 1831, operated and used a rabbit's cornea for the purpose. He wanted to transplant the whole cornea from a rabbit; he took away the opaque human cornea and put in the rabbit's clear cornea instead; it healed on, but it soon became opaque. Stilling, in 1833, tried the same thing, and there were a great many other experiments of that sort, modified by different people, but always the transplanted cornea, though it healed on, became opaque. Leber's experiments showed that it was the endothelium on the back of the cornea which protected the cornea from the aqueous humour. What was done was that the opacity was trephined off down to a certain depth and the posterior layer of the cornea and the endothelium were retained, and then a piece of the same size was taken off the other cornea with the same trephine, and put into the little hole in the cornea, where it healed on and it remained clear. This was first done by von Hippel in the year 1877. The operation was good only for cases where the opacity did not go right through the whole thickness of the cornea. Continuing, the witness said there was an ulcer of the cornea called ulcus serpens. Eyes were very frequently lost by it as seeing organs, because it caused opacity of the cornea. Except in the mildest cases they were seldom enabled to save the sight of an eye in that disease. The organism which caused the ulceration was the pneumococcus, and recently a pneumococcus serum had been prepared by Römer, which

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ameliorated its severity to such an extent very often that it enabled the other measures hitherto used to be used with greater benefit. The experiments were first made upon rabbits by Römer in 1905. In tubercle of the eye tuberculin was exceedingly valuable, both in treatment and in diagnosis. The method of treatment of diseases of the eye with tuberculin was introduced by von Hippel in 1904. The witness went on to speak of jequirity, which was the active principle of the paternoster bean, a Brazilian seed. They had in these countries, especially in Ireland, a great deal of trachoma, which was a most destructive disease to the eye. Jequirity was in his experience a most valuable remedy, but there was one drawback, which was that it acted in some people with such violence that it endangered the cornea; therefore they would like very much to have some means of controlling its action. It was found by Ehrlich that it was possible to immunize animals from jequirity. He devised an antitoxic serum which, when introduced into the animal, absolutely prevented production of a jequirity reaction in its eye. Römer found that if this serum was introduced into the blood of human beings, the individual became immunized. He supposed that probably a dry preparation would do, but clinically he always used the infusion. The injection in the human eye was very painful; the temperature went up and there was considerable feverish reaction, but the result was worth it. Asked by Dr. Wilson if it was to allay the pain that the serum was given, he said the serum would allay the pain, but that was not the great object. Speaking next of sympathetic ophthalmitis, he said it had been the object of oculists and pathologists for many years to ascertain what it was and how it came about. Sympathetic ophthalmitis, it was thought at one time, was caused by the irritation of the nerves in one eye giving rise to irritation of the nerves in the other eye, and that then, as the result of irritation merely, inflammation resulted. But this was found not to be so. Experiments upon animals were made with the object of deciding this point; he could not give the details, because it was a long time ago now. Then there was an idea that the inflammation, the bacteria or the toxins, travelled round from one eye through the optic nerve of that eye, across the optic commissure, down the optic nerve of the other eye and into that eye, and then set up the inflammation in the latter. Many experiments were made in this direction; they were all done in different ways by different men in the course of years, and they all failed to show that the inflammatory process extended round from one eye to the other through the optic nerve and commissure. The idea now was that sympathetic ophthalmitis came about really as a metastatic disease; when one eye was injured micro-organisms set up their residence in it, and after some time extended into the general system. But they did no harm to any organ in the general system except the second eye if they happened to go into it; and they appeared to have some special attraction for it. If they knew for certain that this view were correct, and if they knew what the specific micro-organism was, they could then perhaps get a serum which, when an eye was injured, they could introduce into the patient's system and prevent him from getting sympathetic ophthalmitis. Many a person who was going about blind now, if they had such knowledge, would now be seeing. It was a very common disease; it occurred in shooting accidents and all kinds of perforating wounds. The best thing they could do for an injured eye was to remove it. That was an example of a disease in which for years and years experiments were made in one direction, because it seemed so probable that the disease extended round from one eye to the other; and those experiments all resulted in a negative way. Now the new light which had been thrown upon general pathology had led one to direct a great deal more attention to this other way of infection of the second eye; and it was by experiments upon animals that this other theory must be followed out and tested. Proceeding, the witness said glaucoma was a very prevalent and a very serious disease. The idea at first was that glaucoma was a disease of hypersecretion; or, perhaps, if there was a low form of inflammation, it was the fluids given out by inflammation which caused increased tension. Although experiments on animals taught a vast deal, yet other methods were not forgotten; and it was by means of clinical observation that von Graefe, about the year 1867, discovered that iridectomy cured glaucoma; and the way in which it acted, he thought, was because it took away a little piece of the secreting surface of the eye. But it was in 1873 that Leber discovered, by experiments on animals, that the way of exit of the intraocular fluids was at the angle of the anterior chamber, the part called the ligamentum pectinatum; and he discovered that this was where the intraocular fluids made their escape. A few years after that it was discovered that in glaucomatous eyes which had been removed for one reason or the other, the angle of the anterior chamber was blocked, and then it became plain that it was the blocking of the way of exit of the intraocular fluids which caused glaucoma, and that therefore it was not a disease of secretion, as was formerly thought, but a disease of retention. Asked by Colonel Lockwood if glaucoma could be cured now, the witness said the cure of glaucoma previously had been, and continued still to be, mainly iridectomy; but now they knew that it was not the taking away of a piece of the iris that was the important part of the operation, but the incision, and the way in which the incision was made. The discovery of the blocking of the anterior chamber, as being the cause of glaucoma, led also to the use of eserin, the active principle of the Calabar bean, which contracted the pupil. It could hardly be called a remedy, but it postponed the evil day and it was a very great aid in many cases. The use of eserin in contracting the pupil was discovered by Fraser of Edinburgh by experiments upon animals. In this country very important work had been done by Parsons, Henderson, Starling, and Paterson, regarding the normal secretion and excretion of the eye; that was the branch of knowledge improvements in which led them to understand so much about glaucoma. Those experiments were for the most part of pure research. Proceeding, the witness said it would be very desirable to know the cause of senile cataract; and investigations by experiments upon animals were now being made on this subject. Römer had investigated the question of lentotoxins, or cystotoxins, and the protection of the lens against them in normal conditions. Hess's experiments led him to suspect that the cause of cataract was some auto-intoxication. These were going on now. Römer's experiments were published in the 60th volume of *Von Graefe's Archiv*, and that was quite a recent volume. These experiments had not resulted yet in anything, but there was every reason to think that knowledge would be gained, and the experiments would have to be continued. It was discovered by Leber in 1882 that the primary cause of detachment of the retina was shrinking of the vitreous humour. The disease was one of the most hopeless they had to deal with, and attempts were being made to replenish the vitreous humour by introducing the vitreous humour from animals, and some of those cases had resulted advantageously. In reply to Sir Mackenzie Chalmers, the witness said that argyrol was a preparation of silver, used very largely for diseases of the conjunctiva. Experiments upon rabbits showed that when argyrol was introduced into the anterior chamber of the animal's eye it did not set up any inflammation; and as it was known that it was good for certain bacterial diseases of the conjunctiva, Dr. Mooney, of Dublin, thought he would try what good it would do in a very severe case of inflammation extending into the interior of the eye in a case of injury. He introduced in this almost hopeless case some drops of argyrol into the anterior chamber, with the result that in the course of twenty-four hours the eye was a great deal better, and in the course of twenty-four hours more was quite well. The witness regarded that as a very brilliant result from the use of a remedy which had never been used in that way before, and which he would not have used if he had not learnt that, when introduced into a rabbit's eye, it did no harm. Asked if it was a painless experiment on the rabbit, he said he supposed so. He could not give details. Asked by the Chairman as to the Finsen light, the witness said it was a very valuable remedy in certain superficial cancers, lupus, and so on; it was a bactericide in those cases, and it seemed that it might be useful in certain bacterial diseases of the eye. But the Finsen light, as used in the usual way for lupus, could not possibly be used for the human eye, because it would do it a great

deal of harm. Yet it seemed so likely that it might be of use if its intensity could be subdued that experiments were made, in the first place, to see if it would kill any of the bacteria that infected the human eye, such as the streptococcus, the pneumococcus, and so on. Hertel had tried upon animals' eyes whether it would kill these bacteria, if used in a modified form, without destroying the eye, and he had found that this could be done; consequently, perhaps, they would come to use it in this modified way for the human eye. Asked by Colonel Lockwood if he traced his own success as an eye specialist to experiments made on living animals, he said a great deal of it. He did not witness or conduct many experiments; he merely utilized in practice the knowledge gained by these experiments. Asked if he did not think that knowledge could be arrived at, as in his own case, as much by reading as by witnessing experiments, he said the experiments shown to students related to some of the greater functions of the body, such as the action of the heart, peristalsis of the bowels, and so forth. These certainly were things which ought to be taught to students in the most demonstrative manner possible. He saw the beginning of Cohnheim's experiments, and they certainly impressed the nature of inflammation upon his mind more than anything he ever saw in his life. He wished he had seen more. When he was a student these things were not to be seen, and therefore he was at a disadvantage. He thought most distinctly that the success of the experiment on the animal was of more value than that the animal should not suffer pain. Asked if he thought the regulations laid down by the Home Office to prevent suffering in animals had hampered science in England, he said he did not think they had. He thought they were sufficient, except in regard to the restriction that surgeons should be allowed to operate for the purpose of obtaining skill. If the restrictions were made more strict, he thought it would be a distinct disadvantage. He would not exclude dogs, cats, horses, or monkeys. Asked by Sir Mackenzie Chalmers if it would satisfy his requirements in regard to experiments for the purpose of acquiring manual skill if the animal was anaesthetized and then killed before it recovered from the anaesthesia, he said it would not be desirable to let the animal recover in every case; for instance, if a surgeon wished to try some new method of suturing when a portion of the intestine had been excised, and he wished to see whether it was a good form of suture, and in many other cases. On its being pointed out to him that one of the witnesses had told them that before an ophthalmic surgeon became a really good surgeon he had to destroy a hatful of human eyes, he said he fancied it was Dr. Mackenzie, of Glasgow, who said that long ago. But it was not true, of course. Still, there was this element of truth in it, that a man's skill was progressive. Asked if he thought that a student, by operating on an anaesthetized animal which was killed before it recovered from the anaesthesia, would acquire skill in operating on the eye, he said he did not. He was not aware of any operation upon the eye, except the transplantation of the cornea, where it would be of any advantage to the student or to an ophthalmic surgeon to operate on a living animal's eye. He could begin by operating upon dead eyes. The operations he spoke of were those of general surgery. Asked how far diseases of the eye were common to human beings and to animals, he said he was told by Professor Mettam, head of the Veterinary College of Dublin, that all the diseases of the human eye, except certain infectious diseases peculiar to man, also affected the eyes of animals. Glaucoma was not at all uncommon in animals; horses especially were very liable to it; he had seen a horse himself with glaucoma, and had used eserin for it, because it was in great pain, and it relieved its pain in a few hours. He did not know if iridectomy had ever been performed upon a horse. He thought if a horse was blind of an eye it was hardly worth while doing any operation upon it except removing the eye. That was mostly what the veterinary surgeons did. Asked if animals suffered from trachoma, he said he believed pigs did very much; he did not know about other animals. The source of the infection was not known; the micro-organism had not been found. Asked if there were any experiments on animals at present being carried out with reference to the treatment and the source of trachoma, he said he was not aware of them; but he agreed that, if it was a disease that animals could suffer from, information might be obtained from experiments on animals. He operated mostly with cocaine. He put drops of cocaine into the eye, and then the eye became anaesthetized, and one could operate without giving the person any pain. In reply to Mr. Tomkinson, he said that was quite effective in cataract operations and iridectomy and such operations. In reply to Sir Mackenzie Chalmers, who asked if the experiments on animals which had been of use to him could be carried out under cocaine, he said the animal would require general anaesthesia; because it was not merely to do away with the pain, but it was also that it did not like to be restrained in any way; it was like a child. In many things one had to do for a child, one had to give general anaesthesia; whereas if one did the same thing for an adult, if one simply used local anaesthesia, the intelligent sense of a grown person would make him not resist. Asked if he thought that in experiments on animals cocaine ought to be allowed as an anaesthetic, he said he thought they ought to be put under general anaesthesia. Asked by Dr. Gaskell if he could give any information about certain experiments performed by Dr. Cecil Shaw for sympathetic ophthalmia, he said he knew that Dr. Shaw did perform some experiments some years ago, and they were published in the British Medical Journal. He thought they were in connexion with sympathetic ophthalmitis, and that he used jequirity beans. These experiments were done in Belfast. He had no personal knowledge of them except what anybody could read in the British Medical Journal. He certainly would suppose that experiments of that kind would be painful to the animal. Asked whether the results were valuable, he said he did not remember them well enough to say anything about that. On its being put to him by Dr. Gaskell that, even at the expense of some pain to the animal, it was most important to find out the meaning of sympathetic ophthalmitis, he said it was most important indeed. Dr. Shaw desired by this means to find out whether or not the inflammatory process extended round by the optic nerve and commissure. In reply to Mr. Tomkinson, he said he thought that the ascertaining of knowledge was to be put before the suffering of the animal; that was his own individual opinion. But he would always endeavour to the utmost to safeguard the animal from any pain, or even inconvenience, which could be avoided. So far as he knew, animals did not suffer any pain during operations; and after operations which were done aseptically, as they all were, the animals also did not as a matter of fact, he believed, suffer pain or inconvenience. Asked if he had any doubt in his own mind as to the possibility of keeping animals absolutely in a condition of insensibility for a prolonged period by anaesthetics, he said he had no doubt because he knew it on good authority, but he had no experience of his own. In reply to Dr. Wilson, he said that in diagnosing tubercle of the eye it was of great value to be able to inject the aqueous humour from a suspected eye into the eye of an animal. On its being put to him that the tubercle bacillus in the sputum was developed in artificial media, and his being asked why the same test could not be made with regard to the aqueous humour which he suspected, he replied because experience showed that it was not always successful. The tubercle bacillus in tubercle of the eye was very often in a very attenuated form, and it could not be cultivated in the same way as the more active bacillus which occurred in pulmonary tuberculosis. Asked with regard to the transplantation of the cornea, if it was not the case that only one single instance of cure had been recorded by Zirm in 1905, he said that was a very recent case; but von Hippel published two cases on the human eye. He agreed that these were the only recorded instances of success, but said that they were quite sufficient to show that the thing could be done. He did not think oculists had tried the experiment very often on human eyes, because the cases in which it was applicable at present were not many. They hoped to develop it as time went on. They had made a considerable advance in it now. With regard to antiseptics, they had to be careful about the use of them in operations on the eye. One could not operate under the spray on the eye. On its being put to him that what was called aseptic surgery really was not the direct

outcome of antiseptic surgery as introduced by Lister, he said he was not so sure about that. Asked if it was his experience that tuberculin was valuable in cases of tuberculous eye diseases, he said most distinctly. Asked if it had not failed as a test with human beings and been given up, he said he knew it was very much out of repute for some time, but it was obviously coming back into use again, used not quite in the way it was at first; and he knew from his own knowledge and experience that for tubercle of the eye it was a most useful remedy.

LITERARY NOTES.

DR. WEIR MITCHELL, of Philadelphia, the distinguished neurologist, who has also won laurels in the field of literature by poetry and works of fiction, has, it is said, written a story entitled *The Red City*. In a previous novel he chose the period when General Washington was the leader in the fight to free the American Colonies from Great Britain. The new story, which will be published serially in the *Century Magazine*, deals with Washington, the President of the United States.

In view of the fact that committees for cancer research have, as was stated in the BRITISH MEDICAL JOURNAL of November 30th, been formed in several countries, the German Committee has changed its name from "Central Cancer Research Committee" to "German Central Cancer Research Committee." The members, both honorary and ordinary, of the former Committee, are members of the new one, while the foreign members have been transformed into corresponding members. The *Zeitschrift für Krebsforschung*, which was founded under the auspices of the Committee for the purpose of collecting the results of the researches of workers in all countries, has addressed to the members of the German Central Committee an urgent request that all their work relating to cancer should appear in its pages. All communications on the subject, whether statistical or relating to the distribution of the disease in different countries, districts, families, houses, to its clinical manifestations within the spheres of medicine and surgery respectively, in women, in the larynx, the ear, the nose, the eye, the skin, the brain, and other parts, to its pathological anatomy and histology, to the differences between various kinds of malignant tumours, to experimental researches, and to surgical and other methods of treatment, will be welcomed.

In the recently-published *Leaves from the Note-Books of Lady Dorothy Nevill* there are several things that may interest some of our readers. Speaking of the Thirties, she says that while the provision for the performance of the ordinary ablutions was extremely meagre on the Continent, things were not very much better in England. Very few country houses had bathrooms, and baths, indeed, were considered more as luxuries than as anything else. Children are now brought up to regard a daily bath as one of the necessities of life, but this was not the case in the days when can after can of hot water had to be laboriously carried all over the house from the kitchen. Nevertheless, Lady Dorothy thinks people were not on the whole dirtier than they are now; she seems to imply that when they did bathe they made up in vigour what was lacking in frequency. Saturday night tubbing was, she says, a sort of regular English institution, dating, it is said, from the reign of King Henry VIII, who is declared to have performed certain partial ablutions on occasional Saturday evenings; at these lustrations His Majesty's barber, John Penne or Penn, was expected to be in attendance. This John Penn was an ancestor of the famous Quaker of the same name. In Holbein's famous picture of Henry VIII delivering a charter to the barbers and surgeons on the occasion of their amalgamation into one body, John Penn is a prominent figure. Lady Dorothy says there is a story, which she fancies rests upon no solid foundation, that the first Sir Robert Peel always expressed the greatest admiration for this painting on account of the fine portrait of the royal barber, and once actually offered the Barbers' Corporation £2,000 to allow him to have it cut out after a copy had been made to put in its place. There was an even more fantastic legend that Sir Robert had often expressed an eager desire to be allowed to have a bed made up upon the dining table of the Barbers' Company, in order that on awakening in the morning his eyes might rest upon his favourite Penn. The table in question, as a matter of fact, is said to be an ancient dissecting table, on which, previous to 1745, the bodies of criminals and malefactors were laid, the executions at Tyburn furnishing the Barber Surgeons' Company with a constant supply of anatomical subjects.

Elsewhere Lady Dorothy tells a story which, though not new, will bear repetition: In the old days, when communication between towns and villages was by no means easy, swift runners were often of the greatest service to their employers, especially in cases of illness when a doctor lived far away. On one occasion a Scottish running footman was on his way from Glasgow to Edinburgh in order to requisition the services of two noted physicians for his sick master, when he was stopped by an inquirer who wished to know how the invalid was. "He's no dead yet," was the reply, "but he soon will be dead, for I'm fast on the way to fetch twa Edinbro' doctors to come and visit him."

Speaking of the origin of the name "Piccadilly," she says the first mention of that thoroughfare occurs in Gerard's *Herbal*; this has given rise to an erroneous idea that Piccadilly existed in 1596, when the work was published. As a matter of fact, the name does not occur in the original edition of Gerard's *Herbal*; it is in a much later one published in 1636, and edited by Thomas Johnson, that Piccadilly is mentioned. It runs as follows:

> The little wild bugloss grows upon the dry ditch bank about Pickadella.

It is pretty well authenticated, says Lady Dorothy, that about 1630 a retired tailor, named Higgins, whose fortune had been in a great measure made by the sale of "pickadelles"—piccadillies or turnover collars—built himself a snug house in this locality, which he called Pickadilla Hall; and Mr. Higgins, therefore, it was who, in all probability, originated the name. The origin of the name is discussed in Mr. Street's new book, *Ghosts of Piccadilly*, but there still seems to be a good deal of doubt about the point.

Lady Dorothy has a good story about the crinoline, which in the Sixties was universally worn by ladies, and entailed untold inconvenience and discomfort. Old Dr. Fuller, of Piccadilly (the last of the apothecaries, as she calls him), was once summoned to dislodge a fish-bone from the throat of Frances Anne, Lady Londonderry, and when imperiously told to begin was obliged to say that he was quite unable to get within many yards of her ladyship's throat in consequence of her crinoline being so enormous and so solid!

We may cull another story from Lady Dorothy's lively pages:

> People were much more ignorant about health than is the case nowadays, when they discuss the unromantic ailments of their interiors with the greatest freedom. Formerly great reticence was observed about such subjects, which no one would have even dreamt of mentioning. Doctors, and the medicine they gave, were still viewed with something of a mysterious awe. In the days when the old Coliseum in Regent's Park was still in existence, a gentleman came out of his doctor's in Harley Street looking very solemn, and met a friend on the doorstep who said, "What on earth is the matter? You look like the man who lost a sovereign and found sixpence." "Well," said the other, "my doctor tells me that I am not at all the thing. By the way, where is the 'Perineum'?" "Oh," replied his friend, "that's easily answered; straight down Portland Place, and turn to the right, and then you'll see it in front of you!"

ELEVATION AND TEMPERATURE.—An account of an interesting endeavour to determine the meteorological conditions prevailing at great elevations was given at a meeting of the Royal Meteorolcgical Society on November 20th. In the last week of July twenty-five balloons, each fitted with recording instruments, were sent up from various parts of the British Isles, and fourteen of them have since been recovered. The height reached by these balloons was in some cases as great as 12½ miles, the average being about 7½ miles. The thermometrical records seemed to indicate that above the latter height the temperature does not vary with elevation. A similar inquiry, conducted by means of kites, described on the same occasion, was deemed to show that the temperature gradient varies with the direction and velocity of the prevailing wind and the amount of cloud; and that at high levels the prevailing wind tends to rotate in a clockwise direction; what is a south wind, for instance, at a low level becoming a west wind at a greater elevation.

SCHOOL HYGIENE.

The Teaching of Teachers.

At a meeting of the Cambridge Medical Society, held recently at the Medical School, Professor Woodhead, in submitting the following resolution, which was proposed at the recent Congress on School Hygiene by Mrs. Watt Smyth and passed unanimously:

> That practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades,

said that it dealt with a matter of very great importance, not only to teachers, but to the nation at large. It was now realized, as never before, that the training of teachers in the elements of physiology, and of hygiene and temperance, was as important as was their training in the more purely academic or scholastic subjects. He had special pleasure in bringing this resolution before the Society, because during the last twelve months he had been engaged in giving an experimental series of lectures. He, with others, was very anxious to see how far such teaching was practicable as well as useful. When the matter was first mooted it was said that the teachers were already overburdened, that they would not care to attend these lectures save under compulsion, and finally, that anything they might gain from such attendance would be of very little value to them in the conduct of their everyday work. When, therefore, at Dr. Dalton's suggestion, the Cambridge County Education Committee approached him, it gave him great pleasure to undertake to lecture and demonstrate to as many teachers as could be brought together. It was agreed that only half the time should be devoted to lectures, the other half to practical work and demonstrations. It was possible to accommodate only ninety for the practical demonstrations, but about one hundred and forty attended the lectures. It was clear, therefore, that the teachers were willing to undertake the work. It had been said that it was impossible in a course of twelve lectures and demonstrations to give them instruction that would be of any value; or that they could be so thoroughly imbued with the sense of the importance of this work that they would be able to give the children at different ages advice, etc., without unloading the whole of the course on the children. He was now convinced that those who assumed this attitude were mistaken. To begin with, the teachers had proved themselves capable and intelligent men and women exceedingly anxious to avail themselves of any help that was proffered, grasping intelligently the principles placed before them. So impressed was he with this feature of the work that before long he was convinced that he could learn much from them; he therefore asked the members of the class to write an account of the work of the class, stating therein their opinion as to the effect such a course of hygiene and temperance would have upon them and their work. He confessed that he was delighted to find how intelligently they applied to their everyday work what must in many cases have been given in mere outline and sometimes not very clearly, and that might easily have passed through their minds without making any definite impression. He found, indeed, that even a hint given was quite sufficient to set them thinking. One thing which impressed him greatly was their keen appreciation of the practical work. They asked for references and fuller descriptions, put many questions, and wished to learn more, for instance, concerning the importance of the digestive system and of the supply of nutriment to the body. The demonstration on the nerve cells also attracted their attention, the nutrition of the nervous system, the conditions under which it was poisoned and rendered less efficient, its proper development and growth, etc. They were specially interested in so far that never before had they looked upon a child as growing in anything but bulk and stature. Further, a consideration of the developing brain and nervous system enabled them to realize that the child when he came to them was a little savage who had to be civilized, that he had to pass through the various steps of civilization before they had done with him. He was struck by the keen anxiety evinced by these men and women to do the very best they could for the children under their charge, and it seemed to him that nowadays provision should be made that all entering the teaching profession should have the opportunity of obtaining instruction in hygiene. If teachers had this foundation on which to build, and the fresh standpoint from which to observe, they would be in a much better position to look after and train those under their care by precept no doubt, but also by example and by helping to form good habits, by indicating how important were unconsidered trifles in the building up of both body and mind and for the retention of health. An enormous amount of fatigue, illness, and deterioration, both physical and mental, might thus be avoided. If this training were valuable for the teachers in the primary schools, was it not equally requisite for those who taught in secondary schools? The British Medical Association could, he believed, help by advising and supporting the Minister of Education and the department over which he presided in their efforts to provide for such teaching. Professor Woodhead concluded by saying that he realized most fully that the proper place for this teaching was in the training colleges, and that any work that had been carried out up to the present was merely tentative and experimental. This work should really enter as an integral part into the teacher's training, and he maintained that if the teacher was not prepared in this part of his work he was not in a position to do his best for the children under his charge.

Professor Howard Marsh remarked that he had been struck by the want of sound information which existed in the minds of many otherwise intelligent people on hygienic questions, and by the necessity that the medical profession should continue its efforts to educate the public. For example, he had heard it maintained that parents would resent the medical inspection of schools as an unwarrantable interference with the liberty of the subject. Was it not, however, obvious that if a man was compelled by law to send his children to school, he had a right to demand that the scholars with whom his children would have to mix should be free from infection? Again, why should a parent resist the examination of his child if the examination brought to his knowledge the fact that his child was suffering from defective eyesight, or even heart disease, which required immediate treatment? From what they had just heard from Professor Woodhead, it was gratifying to learn that those who, as teachers in schools, had had some personal experience, took so keen an interest in the subject, and showed such an earnest desire for information. It was clear that any instruction given to them would be thankfully received and turned to good account. It was, he thought, important to bear in mind that instruction should be given rather by way of demonstration than by lectures. He gathered that this was Professor Woodhead's view. He thought that if teachers could be properly educated in the general laws of hygiene, they would be able to render great assistance to those who were in medical charge of schools. They would become trained observers of the children under their charge, and the utterly discreditable condition of affairs in which a child who was deaf, or whose eyesight was defective, was punished for stupidity would cease. Moreover, the general level of health in schools in which the teachers had been made acquainted with even the rudiments of hygiene would undoubtedly be raised to a very material degree. He found it impossible to exaggerate the importance of a properly organized system by which school teachers should receive instruction by medical authority.

Professor Clifford Allbutt thought that in the case of children the teaching should be purely dogmatic, the rules of hygiene being taught in such a way as to engrain them in their characters rather than in their memories. As for the instruction of the teachers, these already had trained minds and would assimilate what might be called "short-circuit" teaching; that is, the pith and bearing of hygiene rather than its physiology and anatomy. As for written paper, which had elsewhere been advocated, he favoured teaching in the shape of diagrams and demonstration which appealed to the eye, the object being to teach them the art of observing children from certain pathological points of view and thus to make them keen to note the weak points in their scholars. As an example of what he meant he instanced the fact that even trained anatomists and pathologists who were perfectly familiar with horses were at times forced to call in a "vet.," who, in his clear empirical way, put his finger instantly on the defect which the skilled anatomist had been unable to detect. That sort of instinct or empirical knowledge in

regard to children was what teachers ought to have, and they could acquire it if quick-witted without being taught much medical science. An individual fully versed in pathology might overlook many defective children in the school, while one with half his scientific equipment but a better empirical education would pick them out instantly.

Dr. DUNCAN FORBES said that he believed that the notification of infectious disease by teachers was introduced to Cambridge by Dr. Dalton. During the last year there were notified 263 cases, including such important diseases as scarlet fever 6, measles 16, ringworm 46, etc. A large number of these notifications had been of the greatest use to him in following up infectious diseases, and there was, therefore, strong reason for giving the teacher some knowledge of the more obvious signs of such diseases. In the medical examination of school children in Cambridge the teacher had to fill up a part of the schedule prepared for each child, necessitating the taking of notes of the mental capacity of and nutrition of the children. In this way defective children were brought under notice, and his attention was called to sufferers from adenoids, deafness, etc. A discussion with Mr. Wherry on the treatment of errors of refraction and the possibility of their prevention had first brought fully home to him the great extent to which the proper lighting of schools diminished the work of the oculist. In a great many schools the teachers had, during the last year, changed the position of the desks, and the lighting, formerly from the front, was now from the left. It was very obvious that all teachers should be taught the principles of heating, lighting, ventilation, and cleansing. He recommended two courses of instruction to teachers—one, elementary and compulsory, to contain a maximum of dogma and a minimum of anatomy and physiology; the other, advanced and optional, for those who desired a thorough knowledge of the subject, to treat fully of the rules of hygiene and the bases of these rules.

Dr. DALTON stated that about three years ago the Education Committee of the borough desired to have hygiene taught in their elementary schools, but were met with the fact that only eight or ten teachers in their schools were sufficiently qualified to teach the subject. They therefore asked the county, as the higher education authority, to provide a course of instruction for the elementary teachers; and, in consequence of this request, Professor Woodhead had arranged with the county to give the course referred to. The course was very popular with the teachers, there being a large number of applicants in excess of vacant places. This method of training teachers, however, was only applicable to a few large centres where competent teachers and laboratories were available; the only effective solution of the problem was for the training colleges to make hygiene a compulsory subject. He trusted the resolution would not only be carried unanimously but that a copy of it should be sent to the Board of Education and the other authorities who had influence on this matter.

Dr. G. F. ROGERS agreed with those speakers who said that if the reason why were taught, the hearer took more interest in the subject.

The CHAIRMAN (Dr. T. J. Walker) observed that all those who had taken part in the discussion were agreed as to the desirability of instruction in hygiene being given to those training as teachers, and did not think that there was any important difference of opinion between those who made a point of the character of the teaching being partly dogmatic, and those who would have it such a course as that given by Professor Woodhead. He thought it important the Education Department should not bind the teachers by hard and fast rules intended to bring all under one uniform standard. The system of instruction should recognize the importance of the impression of the teacher's personality, character, and mind upon his pupils. All would be grateful for what had been done in Cambridge, and especially to Professor Sims Woodhead. In a university town, with its great body of highly-trained teachers and its well-organized educational and public health arrangements, work could be done that could not be accomplished elsewhere. In conclusion the Chairman suggested that if the resolution proposed by Professor Woodhead, and supported by the Regius Professor, were carried, a second resolution should be moved directing that it be brought to the notice of the Board of Education and of others through whom it might become influential.

Professor WOODHEAD, in reply, said he realized most fully that he was working at a great advantage in having such a class, and that he was dealing with a number of men and women who had been actually engaged in scholastic work, and who knew, therefore, the difficulties with which the teacher had to contend in his or her daily work. It was of good omen for the future that so many of these men and women were prepared to accept the offer of the borough and education authority. It must be borne in mind, however, that this was only a temporary, experimental course. It was, of course, impossible in most parts of the country to carry on such work, but in the training schools and in large educational centres this work should form an essential part of the curriculum. The teachers so trained would commence their professional work knowing that certain calls would be made upon them and that their pupils would look to them for guidance in more than mere book work. At present trained teachers of hygiene were necessary. Medical men as a rule were too busy or had not sufficient teaching experience; medical officers of health also were far too busy to be able to undertake this work. For the time there would be a dearth of inspectors, and these, as in the case of the teachers, would have to be trained; the sooner the organization of this work was commenced the better. The Regius Professor of Physic had referred to those university students who were going to make educational work their profession. The Director of the University Educational Training College had applied asking if it were possible in half a dozen lectures, and with no practical work, to give anything worth the having to students. He was afraid of such a course. In an hour a week for half a dozen weeks little could be done unless a very full course of reading, for which the student now certainly had no time, could be prescribed to accompany the lectures. Moreover, he was convinced that the demonstration constituted a most important part of the curriculum. He had found that the members of his class began to look bored as soon as he became dogmatic. So long as they were dealing with cause and effect, with reasons and principles, they were keen, and would stay behind to ask questions. He found that they resented being treated as receptacles for dogmatic instruction. They asked not textbook information, but for lines on which they might work out their special problems. That would not be the case, at any rate to the same extent, in the training colleges; he saw certain difficulties, but the work would have to be done, and he believed that in time, perhaps even in the near future, every teacher passing out from the training centres would be equipped with a knowledge of hygiene sufficient for the purpose indicated. As for the children, he believed that if they could get a child interested and get it to discuss matters they were doing well. There were occasions on which the child must obey implicitly, but that did not preclude discussion when the matter had been settled. He agreed that in the first instance absolute obedience to law must be insisted upon. This, however, was necessary for the formation of character, not for the training of the mental powers. When he spoke of discussion and conversation, however, he had something different in his mind. He was thinking rather of the education of the powers of accurate observation and lucid and concise description: the training of the mind by means of the instruments with which it would always have to work.

The motion was seconded by Professor HOWARD MARSH and carried unanimously.

A second resolution as an appendix to the first was proposed by Dr. DALTON:

> That a copy of this resolution be forwarded to the Minister of Education and to the six local members of Parliament.

This was seconded by the REGIUS PROFESSOR OF PHYSIC and carried unanimously.

THE United States Government has appointed a Board of medical officers to investigate the various kinds of material used in the army, and to recommend the types best adapted to service in the field. The material to be investigated includes ambulances, medical wagons, transport wagons for the Hospital Corps, means of transportation for the sick and wounded, pack transportation, and hospital tents.

THE PREVENTION OF INFANTILE MORTALITY.

ISLINGTON.

DR. ALFRED HARRIS, Medical Officer of Health for Islington, has just issued a report of forty-four pages on the prevention of infantile mortality. He begins by pointing out that in 1905—the last year for which complete statistics are available—out of 929,293 births in England, 119,091 infants died before they completed a year of their life, or more than one-seventh, or 12.8 per cent.; the average of the previous ten years, however, was 15 per cent. In Islington in the same year there were 1,074 deaths of infants under a year, or more than one-eighth, or 12.3 per cent, the average of ten years being 14.0 per cent.

Dr. Harris goes on to examine the infantile mortality figures in Islington for the last two years in the early days of life, and shows that during the first week 21.07 per cent. of infants out of every 1,000 born die, so that, if this were to continue during 47½ weeks, all infants would have died. But the mortality diminishes, so that at the end of the first four weeks it is 36.98 per 1,000, during the first three months 62.41 per 1,000, during the second trimester 24.46, during the third trimester 18.72, and during the fourth 18.26; the average mortality during the two years under consideration is 123.86 per 1,000 births.

The next question dealt with is the cause of this large mortality, and Dr. Harris has set out his statistics in Table I:

TABLE I.—*Causes of Death in Infants.*

Disease.	Average Annual No. of Infant Deaths for 10 Years, 1896-1905.	Percentage to Total Infantile Deaths.
Prematurity and developmental diseases	216	16.51
Diarrhoea and enteritis	234	17.90
Atrophy and debility	212	16.21
Convulsions	57	4.36
Pneumonia	111	8.48
Bronchitis	111	8.48
Tuberculous disease	74	5.69
Whooping-cough	62	4.74
Measles	38	2.91
Suffocation (overlying in bed)	40	3.06
Total of above causes	1,155	88.30
All other causes	153	11.70
Total of all causes	1,308	100.00

This table is most instructive, as it clearly indicates the chief causes of infantile mortality, and shows with no uncertainty that an enormous proportion of these causes is preventable. Dr. Harris divides the causes of infantile deaths into three classes:

1. Preventable.
2. Partly preventable.
3. Non-preventable.

Under preventable deaths are included those due to zymotic diseases, such as small-pox, scarlet fever, measles, whooping-cough, diarrhoea, tabes mesenterica, and accident or negligence. Chief among the preventable deaths are those from diarrhoea and certain inflammatory conditions of the bowels which prevail in the third quarter of the year, and which jointly were accountable during the last ten years in Islington for 2,340 deaths, or 17.9 per cent. of all the deaths that occurred under a year old.

That improper feeding and unhygienic surroundings are largely the cause of this is generally admitted, and Table II given by Dr. Harris adds one more proof that this theory is correct.

Although only 22, or 1 in 10, had been reared on the breast alone, Dr. Harris ascertained that 151 of the 220 mothers included in the inquiry enjoyed good health, and 24 moderate, so that it was not a question of health with the majority, but a matter of convenience. A large number of these deaths were therefore preventable, for it is now a well-recognized fact that in infants fed on the breast diarrhoea is infinitely less fatal, even if the feeding is supplemented by artificial feeding. The truth of this is also borne out by Dr. Harris, who went into the question during his inquiry. The danger of artificial feeding is emphasized by the present state of the milk supply. Of seventy samples recently examined microscopically in Islington on arrival from the farmers, only one did not contain cowdung.

TABLE II.—*Deaths of Infants in Islington during the Summer Months of 1905 and 1906.*

		Per Cent.	
Fed on breast only—natural feeding	22	10.00	
Artificially fed:—			
Cow's milk	86	39.09	
Condensed milk	40	18.18	
Artificial foods	8	3.64	=90 per cent.
Breast and milk	37	16.82	
Breast and condensed milk	19	8.63	
Breast and artificial foods	8	3.64	
	220	100.00	

Interesting information was also obtained with regard to the manner in which artificial feeding was carried out; here we find that 113 were fed by tube bottle, 72 by boat bottle, and 13 by spoon or cup. Only in 24 cases were brushes used, and only eight of these bottles were cleansed with scalding water, while in 92 cases hot water was used, and in 47 soda and water. The state of the rooms was more satisfactory, 170 being noted as clean and only 19 as dirty, and 10 as unwholesome. No fewer than 106 of the dwellings were lodgings, 54 tenements, and only 60 self-contained houses.

In Islington tabes mesenterica destroys 34 infants every year, and has therefore killed 340 under 1 year during the last ten years. Dr. Harris thinks the disease is largely caused by contaminated milk given raw. Of the 471 deaths attributed to accident or negligence in these ten years, 400 were due to overlying in bed. It is significant that the greatest number occur on Sundays. Dr. Harris considers that these deaths should be made a criminal matter, as in Germany.

Measles caused 380 deaths in ten years, but an analysis of 1,515 deaths during the last nine years in Islington shows that pneumonia or bronchopneumonia was a secondary cause in 949 instances, and bronchitis in 303, pointing to carelessness on the part of the parents during the period of convalescence. Whooping-cough, which was responsible for 620 infant deaths during ten years, is greatly spread by parental ignorance. Rickets, causing such endless deformities, may be put down to improper feeding, and dyspepsia is rare in breast-fed children.

Among the diseases classified as partly preventable are included atrophy, marasmus, convulsions, pneumonia, bronchitis, and meningitis. Atrophy (marasmus, wasting, or debility) depends, according to Dr. Harris, on food and surroundings, and therefore is preventable in many cases. Bronchitis, which caused 1,110 deaths in ten years, is due to exposure and insufficiency of clothing, and is aggravated by insanitary surroundings such as dirty floors, walls, ceilings, bed clothing, etc. This also is true of pneumonia. Dr. Harris contends that among the causes commonly set down as non-preventable some are really preventable, notably premature births and congenital defects and miscarriages, which are dependent on the health of the mother. He dwells on such questions as poverty, exercise, housing, the milk supply, infantile life assurance, and employment. An interesting table is given, showing in detail the occupations followed by married or widowed women in Islington in 1901. From this it appears that of a total of 76,263 married women, 12,126 were engaged in occupations. These numbers have most probably largely increased since 1901. It may be inferred also that a very large number of unmarried women are also engaged in laundries, factories, and workshops, as the demand for

female labour has increased enormously on account of the economy in wages to employers of female labour.

Dr. Harris proceeds to consider how the question of infantile mortality is to be reduced. In 1878 he urged that ladies' sanitary associations should be established, in order to diffuse a knowledge of the rudiments of sanitary science and to teach mothers the care of their children. He now urges that if voluntary associations are to be permanent and to do the greatest good they require official help, and in considering the details makes the following observations:

Clerical Assistance.—In connexion with the duties of health visitors, a large amount of clerical work will be required, for during their visits a fund of information relating to the conditions that are discovered will be collected, not only with respect to the mothers and their infants, but as to the households themselves, all of which, being most valuable, will have to be classified and arranged so as to throw the greatest possible light on everything that is connected with the health of the people not at present ascertainable. The clerk will have to index and classify into districts and health visitors' subdistricts the weekly and daily returns of births; to prepare visiting lists, and to undertake the large correspondence which will undoubtedly ensue with medical men, midwives, nurses, heads of households, volunteer visitors, and others. Such work as this, which is only a mere outline, will entail the full time of a competent clerk, who must be able to write shorthand and typewrite, and draft letters; he will become, in fact, an official on whom a very large part of the executive work will devolve. Even at the present moment, when nothing is done except to send out instructions to mothers, the work occupies a considerable portion of the time of two clerks, to the great detriment of the regular work of the department. As a matter of fact, the scheme cannot be undertaken without a clerk.

Cost of the Scheme.—The cost of the health visitors and the clerk to be provided will be about £460 per annum, for I am of opinion that at least three health visitors will be required, at a salary of £120 each, while a clerk such as will be necessary for this work should be paid £100 per annum. This cost, in an enormous community like Islington, is not much. It will work out at something like 2 85d per inhabited house per annum in the borough, equal to 0 71d. per quarter, or 0 06d. in the £ on the rateable value, equal to 0 015d. per quarter, a sum so insignificant that even a pauper could hardly feel it.

Dr. Harris estimates roughly that the infantile mortality might be reduced to about half what it is at present. Say that 200 lives were saved annually, there would also be saved a corresponding amount of illness, say 10 cases to each death, or about 2,000, a fact which must not be lost sight of.

These deaths and illnesses represent a definite sum of money saved. Calculating the cost of each death at only £3—and it covers the illness, the funeral, the burial fees, the loss of the father's time from work—the amount saved would be £600 per annum, while the 2,000 cases of illness, reckoning each at only 5s. per head, would be equal to £500 per annum, or a gross total of £1,100, as against an expenditure of £460, thus leaving the borough the better off by £640.

He concludes his report with the following recommendations to the Borough Council:

1. The adoption of the Notification of Births Act, 1907.
2. The appointment of three health visitors and one clerk.
3. The encouragement of voluntary associations to assist health visitors.

THE HAMPSTEAD HOSPITAL AND THE LOCAL MEDICAL PROFESSION.

Origin of the Difficulties.

At a meeting of the Hampstead Division of the British Medical Association, held on June 9th, 1905, a member of the Committee called attention to what he described as some undesirable methods of administration adopted by the Hampstead Hospital authorities. These included the publication of the names and qualifications, etc., of the members of the staff on circulars and annual reports, the continued activity of the out-patient department, the want of regulations with regard to the keeping of records of cases treated in the hospital, and several other points. The matter was referred to the Committee after a considerable discussion. As an outcome of the deliberations of the Committee a report was drawn up and presented to a meeting of the Division held on November 10th, 1905. The question of the advertisement of the names of the members of the staff in circulars, etc., was not dealt with in the report, since the Committee had been able to satisfy itself that the members of the staff were not responsible for the previous publication, and that a repetition was not likely to occur. The resolutions submitted for consideration were:

1. That an out-patient department in Hampstead is unnecessary.
2. That the casualty department be kept distinct from any other department, and that casualty patients, if not suitable for admission, be seen once, and thereon be referred to private practitioners, provident dispensaries, or Poor-law authorities.
3. That there be greater facilities for general practitioners of the neighbourhood to attend in-patients.
4. That the more or less permanent appointment of the medical staff of the Hampstead Hospital is undesirable, and that there should be a *service limit* as well as an age limit to such appointments.
5. That the outside medical profession should be *adequately* represented on the Board.

History of the Hospital.

In order to understand the position, a brief description of the hospital and its history should be given. Founded in 1882 by the late Dr. Heath Strange, a much respected Hampstead practitioner, as a "home hospital," the institution was utilized for patients who could pay a small weekly sum for the benefit of receiving nursing under favourable conditions. At first, a house in Parliament Hill was fitted out for the purpose, and, although the beginnings were but small, within the course of a comparatively short time the hospital began to extend its sphere of activity. An extension was made by including a neighbouring house, and as far as can be ascertained the conduct of the hospital in its early days met with the approval of the medical and lay population of the neighbourhood. As the needs increased, the numbers of patients treated augmented by leaps and bounds, and in 1897 we learn that some 305 persons were attended to in the hospital. In 1893 an innovation was introduced by the admission of free patients, and the paying patients were divided into two classes, the one paying 12s. per week, and the other from 2 to 3 guineas. The name of the hospital was then changed from the "Hampstead Home Hospital and Nursing Institution," to the "Hampstead Hospital," while in 1903 it was further changed into the "Hampstead General Hospital." As the name, so the character of the institution changed. An out-patient department, much, as we are given to understand, to the disapproval of the founder, was formed, and in 1904 some 2,538, and in 1906 some 3 442 out patients received treatment at the hospital. Since about 1900, schemes were brought forward for the transferring of the hospital to a larger site, and in 1903, the council of the hospital signed the contract for the building of the structure which now stands in Haverstock Hill, and which was opened in 1905. The number of beds at Parliament Hill was 30, while there are to be 110 beds in the present building, of which about 80 are already in use.

During the period 1898–1905 the cost of maintenance varied between £2,720 and £3,519 per annum, the average working out at £3 106, while in 1906 £5,050 had to be expended. At present a large wing is being added to the building, and when the full complement of beds and departments is being utilized, the upkeep will cost, according to what has been publicly stated, about £7,000 a year.

The revenue of the hospital varied during the period 1898–1905 between £2,189 and £4 182, the average working out at £3,168, or some £62 less than the average expenditure. In 1906 the revenue was £6,508, that is, £1,448 in excess of the expenditure.

The building was undertaken before sufficient funds had been collected to pay for it; and even when the King Edward's Hospital Fund granted the hospital the sum of £5,000 for the purpose, matters looked very black indeed for a time. However, just as the Council was exercising itself as to how it could meet a debt of £10,000, Sir H. Harben made the announcement that an anonymous donor had come to the rescue with £20,000. The hospital was therefore opened without any incumbrance in the shape of a building debt.

Action of the Local Profession.

The outcome of the meeting of November 10th, 1905, was that the Committee was instructed to reconsider

some of the resolutions, and to arrange a conference with the members of the medical staff of the hospital. A very lengthy correspondence ensued, but owing to a tactical error at the outset of communicating with the Secretary of the Hospital, it was found that no such meeting could be arranged satisfactorily. It appears that the Medical Committee which included lay members, would have been willing to have met the Hampstead Division Committee, but as the instructions specifically stated that the conference was to be with the medical members of the staff, and for other obvious reasons, this was declined. On January 24th, 1906, Mr. Edmund Owen agreed to act as intermediator, but he failed to bring about the desired conference. The Committee, therefore, reported to the Division that it had failed to arrange the conference. At the time, it appeared that on certain points some of the members of the staff agreed with the Committee. No progress having been made during the following weeks and months, a general meeting of the local profession was summoned for May 8th.

Action of the Hospital.

Previous to this, the King Edward's Hospital Fund intimated to the hospital authorities that it thought that the time had now arrived when the services of consultants should be requisitioned for the hospital staff, and a gentle little pull at the purse strings caused the Council to consider the proposal seriously. A special committee was therefore appointed on February 20th, 1908, to consider the whole subject. This committee issued a circular to the medical profession of the neighbourhood, asking for the views held on the desirability of appointing a staff consisting of consultants or of local practitioners or of both. Only 96 replies were received to this circular (211 were sent out), and of these 80 were capable of being classified, 4 practitioners reserved themselves pending a meeting of the local profession, 36 expressed themselves in favour of local practitioners forming the staff, and 37 in favour of consultants, while 7 remained neutral.

Meeting of the Local Profession.

At the meeting of May 8th, 1906, the views of both sides were freely expressed. On the one hand it was urged that the hospital was originally intended to be a local cottage or home hospital, and that nothing had occurred in the neighbourhood to justify its development into a general hospital. The population of Hampstead was a prosperous and healthy one; there were eight institutions within the borough which received the sick and infirm and forty in the surrounding districts. It was said that 75 per cent. of the out-patients were derived from Kentish Town. Exception was taken to the method adopted in issuing the circular of questions on the ground that the majority of the Hampstead practitioners had not yet heard sufficient details of the way in which the hospital was administered, and that therefore the numbers replying was not a true index of the numbers who were interested in the question. On the other hand, some members regarded the out-patient department as necessary and useful provided that a sufficient control was kept on the class of patient receiving treatment, and stated that a sufficient control was, in fact, exercised to keep the amount of abuse at a very low ebb. With regard to the other resolutions which the Committee brought forward, and which are given above, there appeared to be but little difference of opinion. In the end all five were carried. In considering the question of consultants, the members of the staff stated that the general practitioner of the present day was quite capable of performing both major and minor operations. It was then resolved that the Hampstead Division Committee should co-opt four members of the meeting for the purpose of forming a "combined" committee to carry out the wishes of the local profession.

After a considerable amount of negotiation, the Council of the hospital agreed to receive a deputation of the combined committee, and a number of members attended a meeting of the Special Committee on June 21st and July 17th, 1906, to lay the views of the local profession before the hospital authorities. At the first deputation the members confined themselves to the five resolutions as given above, and argued on them at some length. Some questions were asked by the Chairman on the statements which had been made, and a question was thrown out to the effect that if the hospital beds, both free and paying, were thrown open to all the local practitioners, what guarantee would the Council have of the character and method of treatment of the individual practitioners? The reply given was that the medical profession was an honourable one, and that until any member had proved himself unworthy of it, he must be regarded as an honourable man, and capable of dealing with disease.

At the second meeting the question of the staffing of the hospital was discussed almost informally. The members of the deputation spoke of the wishes of the local profession to retain the hospital as a purely local institution. It was pointed out that the circular had revealed an almost equal division of opinion on this point, but against this it was urged that the large meeting of the local profession had voted *nemine contradicente* against the importation of an active staff of consultants. The Chairman of the Hospital Council owned that they were being pressed by the King's Fund, and that unless some medical member could guarantee that the income of the hospital would reach £7 000, they would have but little choice in the matter. The hospital was quite satisfied with its present staff. In reply to the argument that the introduction of an acting staff of consultants was but the first step toward turning the hospital into a teaching school, the hospital authorities definitely stated that they would never consent to such a proposal.

King Edward's Hospital Fund.

Negotiations between the hospital and the King's Fund then proceeded. A proposal, which was somewhat of the nature of a compromise, arranging for some continued representation of the local practitioners on the staff, was offered to the King's Fund but was not accepted. In the meantime, it appears that the North-West London Hospital, which is situated in Kentish Town, had been getting into financial difficulties. These difficulties having become more and more pressing, it became necessary to make a strong effort to keep the hospital above water, and the King's Fund was thereupon appealed to.

In February, 1907, the Special Committee reported to the Council of the hospital that it was considered desirable to appoint four consultants to the staff, but that it was important to retain the services and co-operation of the local profession. An interview then took place between some members of the Hospital Council and a subcommittee of the Fund, and certain suggestions were thrown out, which led to the formation of a scheme dealing with the staffing of the hospital, and a further proposition that the Hampstead Hospital and the North-West London Hospital should amalgamate was also considered.

The combined committee had been to a certain extent left in the dark during the latter part of 1906, and therefore attempted to obtain official statements of policy from the hospital authorities. It was pointed out that no reply to the questions raised by the deputations had been received. Increased efforts were made to elicit something from the hospital, when it was found that the extension building was in progress. However, all attempts at this stage proved unavailing. It has to be recorded that from time to time a certain amount of difference of opinion was being expressed by the various members of the combined committee on a few of the points at issue, and there can be no doubt that this weakened its position to some extent. In order to bring matters to a crisis, the Medical Charities Committee of the Metropolitan Counties Branch was appealed to. This Committee was asked to lay before the King's Fund the facts of the case, and to urge the Fund to bring pressure to bear on the Hampstead Hospital to come into line with the wishes of the local profession. This movement, however, did not bear any fruit.

The terms of the scheme which the Special Committee of the hospital recommended and which was approved of by the Council on March 26th, 1907, were that the service limit for the members of the staff should be fifteen years and the age limit 60 years; that four consultants should be appointed to the staff at first, but that eventually the whole staff should be composed of consultants; that specialists should be appointed to take charge of the special departments. No mention was made with regard to the out-patient department.

The King's Fund then submitted a scheme for amalgamation. The proposal was that the Hampstead Hospital was to take over the in-patients from the Kentish Town Hospital, while the out-patient department was to be continued in that district. The Hampstead Hospital was to receive £1,500 a year for five years, £500 for taking over the North-West London patients, and £1,000 as a grant to the Hampstead Hospital. The North-Western Hospital should if desired be represented on the Council of the Hampstead Hospital by two members, and lastly, the Fund was to retain a right to nominate two physicians and two surgeons from the staff of the North-West London Hospital to the staff of the Hampstead Hospital.

CONFERENCE BETWEEN THE STAFFS AND THE COMBINED COMMITTEE.

A conference next took place between the combined committee and the members of the staffs of the two hospitals, and from this meeting a subcommittee was appointed to consider the whole subject and to report to a second meeting. The report was actually a private one, but the details became public by some unaccountable accident and was subject to much adverse criticism. It stated that in principle there was no objection to the amalgamation, and from the public point of view it would be desirable. The conditions of amalgamation included that the out-patient department should be confined to Kentish Town and be consultative in character, that the claims of the present staffs of the two hospitals should be respected, and that there should always be a certain proportion of general practitioners on the staff of the Hampstead Hospital. On discussing this report, the combined committee came to the conclusion that the terms could not be accepted, and that it would be necessary again to turn to the local profession. A mass meeting was therefore called for May 24th, and a resolution to the effect that the meeting did not approve of the proposed amalgamation was referred back to the Committee after heated discussion.[1]

Some difficulty arose between the hospital authorities and the King's Fund, as to the number of consultants who should be appointed to the staff, but after some correspondence had passed a compromise was arrived at, by the number of three being tentatively agreed upon. The Fund gave the Hospital to understand that it approved of the majority of the points submitted but opposed the provision that the Council might promote two junior members of the staff to fill any senior vacancies arising, instead of consultants. This appears to have formed a bone of contention, and for a time the negotiations were checked. Eventually on June 18th it was resolved at a meeting of the Council to accept the terms offered by the King's Fund.

A further meeting of the local profession was held on July 3rd, and the proposition that the Hampstead Hospital should always have a visiting staff of local practitioners, and that in consideration of this the members of the medical profession were called upon to refuse to accept any office on the staff on terms which were not considered satisfactory by the local profession, was carried without opposition. In the discussion at this meeting the views of the various members appeared to agree on the point of policy entirely.

EXTRAORDINARY MEETING OF THE SUBSCRIBERS TO THE HOSPITAL.

Two days before the Council agreed to the terms of the King's Fund, a meeting of the subscribers and Governors of the hospital was held, in response to a requisition signed by a large number of persons. The Mayor of Hampstead spoke strongly in favour of retaining the services of the local practitioners, and his remarks met with approval of a number of speakers, while others favoured consultants. A Committee was appointed to go thoroughly into the matter, and this Committee reported to a further extraordinary meeting of subscribers on December 2nd. Five members of the Committee signed the report, one of whom, however, expressed a certain amount of dissent with regard to one of the points. The sixth member issued a minority report, the views of which coincided largely with those held by the local medical profession. The report favoured amalgamation and a staff of consultants, the present staff gradually to be superseded, while the out-patient department at Hampstead should be discontinued, except for the purpose of the treatment of casualties and affections of special organs of the body, and of cases which have already been treated in the wards. In the report prominence was given to the financial aspect of amalgamation and to the necessity of utilizing the hospital to its full extent.

The meeting discussed the proposed resolutions and the report at length, and then rejected the report by 40 votes to 29. However, a poll by circular was demanded, and on December 9th the result of the poll decided in favour of the Committee's report by 195 for to 187 against.

In the interval between the meeting and the polling, circulars were sent out from both parties. The circular from the Chairman and Treasurer of the Hospital Council laid great stress on the financial embarrassment which they consider would arise if the assistance of the King's Fund is not forthcoming. It is stated that there is an estimated deficit of £3,000 on the maintenance fund for the present year, and that if the subscribers refuse to accept the report, both of the members signing would resign their positions. The other circular expressed the view that no financial advantage would accrue from the amalgamation, since the cost of keeping up the extra work imposed on the hospital would swallow up the increase of income derived from the King's Fund. Amalgamation would, it was stated, effectually destroy the local character of the institution, and, further, it was argued that no adequate reasons had been brought forward for excluding the Hampstead doctors from the staff.

It appears to be the opinion of many persons that there is no need at all of a large general or even of a large cottage hospital in Hampstead, and that it is an unnecessary burden on the people of Hampstead to have to pay for a hospital which caters largely for Kentish Town. The fact that another hospital in the neighbourhood, the St. Johns and St. Elizabeth Hospital, has recently received a windfall in the shape of a large legacy, is further regarded by some as a disquieting piece of news, since it may tend still further to over-supply the neighbourhood with hospital beds, to the great detriment of the local practitioner.

[1] BRITISH MEDICAL JOURNAL, SUPPLEMENT, June 1st, 1907, p. 306 et seq.

THE PLAGUE.

PREVALENCE OF THE DISEASE.

INDIA.

DURING the weeks ended October 26th, November 2nd, 9th, and 16th the deaths from plague in India amounted to 8,785, 8,487, 5,328, and 6,308. The figures show a welcome diminution. The mortality returns from the chief centres of the disease during the weeks in question are: Bombay Presidency and Sind, 7,034, 6,116, 3,551, and 4,225; Punjab, 203, 475, 276, and 290; Mysore State, 539, 655, 572, and 498. In other districts the available figures show that during the weeks ended November 2nd, 9th, and 16th the mortality from plague amounted to: In Bengal, 50, 27, and 75; United Provinces, 56, 53, and 82; Rajputana, 178, 114, and 175; Kashmir, 4, 0, and 3; North-West Frontier Province, 1, 15, and 7; Central India, 174, 215, and 286; Central Provinces and Berar, 216, 327, and 191; Madras Presidency, 125, 122, and 81; Burmah, 39, 36, and 41.

During the week ended November 7th, 235 deaths from plague were reported from the Hyderabad State. Assam and Baluchistan continue to be free from plague. The issue of plague prophylactic is being actively pursued by the Government of Bombay, and revised rules for the issue of the prophylactic have been published.

AUSTRALIA.

Queensland.

Brisbane.—Up to November 2nd no fresh case of plague has occurred in Brisbane since July 26th, 1907.

Cairns.—Since October 3rd no fresh case of plague has been met with up to November 2nd, 1907. Of the 10 cases of plague which have occurred during the recent outbreak, 5 died. The plague hospital was closed on October 24th.

SOUTH AFRICA.

No fresh cases of plague have occurred in King Williamstown or Cathcart since October 21st, when the last case of plague left the hospital. The latest report available is dated November 16th, 1907.

MAURITIUS.

During the weeks ended November 7th, 14th, 21st, and 28th, and December 5th and 12th, the fresh cases of plague numbered 10, 7, 6, 9, 6, and 9, and the deaths amounted to 5, 4, 3, 4, 3, and 9.

MEDICAL NEWS.

The first climatic sanatorium in Russia was recently opened within the precincts of the Ophthalmic Hospital at Jalta.

It is proposed to found a society in Boston for the study of diseases of children, to be called the New England Paediatric Society.

Dr. John C. S. Rashleigh of Menabilly, Par Station, has been nominated to serve as one of the Sheriffs of the county of Cornwall.

On the recommendation of Major Torrens, H.M.V.L., the Lord Chancellor has appointed Dr. Thompson of Feeny to the Commission of the Peace for the county of Londonderry.

We regret to announce the death of Professor Moritz Schmidt of Frankfort-on-the-Maine, one of the foremost laryngologists of Germany. A few years ago the title of "Excellenz" was conferred upon him by the German Emperor.

Dr. Thomas W. Evans, the famous American dentist who helped the Empress Eugénie to escape from Paris after Sedan, left nearly his entire estate to found a museum and institute society in Philadelphia, to be called by his name. His wealth was great, but a considerable part of his princely gift has been frittered away in litigation. It is said that this is now ended, and the museum and institute will receive about £250,000. It appears that the lawyers, in the course of the litigation, have received about three times this amount.

The lecture arrangements at the Royal Institution before Easter include two lectures on the internal ear of different animals by Dr. A. A. Gray, and six lectures by Professor W. Stirling on membranes, their structure, uses and products. The Friday evening meetings will commence on January 17th, when Professor Thorpe will deliver a discourse on the centenary of Davy's discovery of the metals of the alkalies. On the following Friday, Colonel David Bruce, R.A.M.C., C.B., F.R.S., will lecture on the extinction of Malta fever.

The annual dinner of the Wigan Medical Society on December 5th was made the occasion of a presentation to Dr. William Berry in recognition of his twenty-five years' service as Honorary Secretary. The gift took the form of a silver tea service, in presenting which, on behalf of the Society, Dr. Monks said that alike as a physician, surgeon, specialist, and consultant, Dr. Berry had earned the goodwill of every one. Dr. Berry, who is Honorary Surgeon of the Royal Albert Infirmary, and Medical Officer of Health and Justice of the Peace for the County Borough of Wigan, was at one time President of the Lancashire and Cheshire Branch of the British Medical Association.

A further step in the transformation of St. Bartholomew's Hospital was taken on December 5th, when the foundation stone of the new Pathological block was laid by Lady Ludlow. The site adjoins the medical school facing Smithfield, and occupies one on which formerly stood the house of Johanna Astley, nurse of King Henry VI. The building, when complete, will have a frontage of 90 ft., and a depth of 48 ft. The topmost of the five floors will be devoted to the *post-mortem* rooms, the fourth to a pathological library, the third to rooms for bacteriology and histology, the second to research rooms and laboratories for the lecturers, the ground floor to rooms for the staff, and the basement to a mortuary and chapel. It is estimated that the total expenditure on the building will be £30,000, and, as it is not desired to pay for its construction out of the general rebuilding fund, a special fund has been started to meet the cost. A good deal has already been received, but more is required.

A case which has recently been occupying the attention of the Probate Court has brought to light one little fact which has a peculiar interest for medical men engaged in contract practice. The amount of the estate in dispute was £10,000, which had been left by a widow who must presumably have been living on the interest of this capital. During the hearing of the case the medical man who attended the deceased deposed that during her last illness he had been asked by one of the executors of the will to attend her as a private patient, but for the previous ten years he had attended her as an ordinary member of the London and Manchester Friendly Society, whose members paid four shillings a year each for medical attendance. According to the newspaper report before us, this statement appears to have caused no surprise in court and to have elicited no comment from the judge. No doubt it seemed quite a matter of course and quite an equitable thing that a woman of considerable property should have the services of a qualified medical man during a period of ten years in return for a total payment of two pounds. It is, of course, well known to the medical profession that such abuse is common, and it may do good that such a flagrant instance should be noted. But as long as the present competition among friendly societies exists, so long will they pursue this short-sighted policy of accepting as members any one who chooses to join, irrespective of their financial position, and the medical man's only hope of protection against this form of sweating lies in membership of the British Medical Association.

The members and friends of the Glasgow University Club dined together at the Trocadero Restaurant, Piccadilly Circus, on December 6th. The chair was taken by Professor John Ferguson. The Chairman, in proposing the toast of "The Glasgow University and the Club," referred to the system now followed in regard to the M.A. degree. The students called the method the soft option plan, and it might result in a man becoming a Master of Arts who had not studied the seven arts. It was proposed to remedy this defect by establishing different curricula from which a student would be able to make a choice instead of selecting a variety of subjects. The Chairman concluded his speech with stories of his experiences of the university in the olden days, and drew a contrast with the present time; he referred to the modern calendar of the university, a volume of 744 closely printed pages, as a proof of the material prosperity of the institution. The gifts to the university showed that the public appreciated the utility of the work done. The description of "Beelzebub," the taciturn attendant of the old reading room, who was credited with publishing poetry and a system of philosophy, greatly amused the audience. The toast of "The Guests" was proposed by Sir William Ramsay and acknowledged by Professor D'Arcy W. Thompson. The proceedings terminated with Professor J. M. Thomson proposing the toast of "The Chairman," which was duly acknowledged.

A proposal brought forward some little time ago to reduce the salary of the medical officer of health of Cheltenham by £100 a year has been finally dismissed, after a very long discussion of the whole subject at a meeting of the Town Council, fully reported in the *Cheltenham Examiner* for December 4th. The proposal emanated from an Inquiry Committee, which seems to have been appointed in the face of considerable opposition. In his reply to the attack of this Committee—which appears to have admitted to the full the excellence of his work—Dr. Garrett used phrases expressive of a doubt as to the propriety of the question being settled by individuals many of whom had been put to personal expense for sanitary repairs and the like. The Health Committee, to whom the matter was referred, decided that the proposal to reduce the salary was unsound and could not be supported. It disclaimed on behalf of Dr. Garrett any attack on the personal honour of the members of the Committee, and pointed out that the Local Government Board was unlikely to consent to any reduction of salary, as the existing total was only £100 above the minimum of £500 to which the Board would, in any circumstances, consent in the case of such towns as Cheltenham; this £100 had been long ago added to the original salary in acknowledgement of increased work, and since that time the town and the labours of the medical officer had again materially increased. This view was finally adopted by the Council, it being pointed out that the arguments of those who supported the recommendations of the Inquiry Committee were mutually destructive. On the one hand, they argued that the salary ought to be reduced because the town could not afford £600 a year; and, on the other, that Dr. Garrett ought to be mulcted £100 a year because he had not withdrawn the statements on which certain members chose to put an interpretation which they did not bear. One of the most effective speakers at the meeting was Dr. R. Davies, who fortunately has a seat on the Council; the opposition endeavoured to closure his speech, but by a vote the Council extended the time limit in order to permit of his observations being concluded.

British Medical Journal.

SATURDAY, DECEMBER 14TH, 1907.

THE DEPARTMENTAL COMMISSION ON INEBRIETY.

THE decision of the Home Secretary to appoint a Departmental Committee to inquire into the treatment of inebriety will be received with satisfaction in many quarters. The limitations of the present Inebriates Act have long been felt. The whole machinery of enforced treatment, so far as it goes, is excellent both in conception and execution, but the difficulty is that there exists no adequate means of bringing the worst class of drunkard under treatment. The small handful who come under treatment come as the result of certain accidents in their individual circumstances, not because they are very bad and therefore very suitable cases to be dealt with. Ways of escape are open on every side. However severe a man's case may be, he need never come under treatment at all. Unless he falls four times in one year into the hands of the police, or commits an indictable offence when under the influence of drink, he stands in no danger of being deprived of his liberty and put under treatment. If on appearing before a magistrate he is proved to be a suitable case for detention in a reformatory, and is duly committed, he does not get treatment unless the local authority consents to bear the cost of his maintenance. On the other hand, if the local authority wishes to pay for his treatment, but the magistrate refuses to commit him, he is equally left untreated. It is comparatively seldom indeed that he comes under the operation of the Inebriates Act, and therefore he seldom receives any treatment. And so the Inebriates Act is not anything like as useful as it might be.

A measure to increase the facilities for dealing effectively with the unfortunate persons who are in need of treatment is urgently needed. Huge populations crowd our workhouses, asylums, and local prisons; many, possibly most, are there as the result of drunkenness. Not a few circulate through all these institutions and spend most of their lives in one or the other. Many more are absolutely useless as citizens, parents, or breadwinners, and are not only useless but cruel and destructive, especially to thousands of unfortunate children. All are a burden on their friends and an enormous expense to their country. It is, therefore, of the greatest importance that the Inebriates Act should be revised and amended so as to compass the control of habitual drunkards in a more uniform and less casual manner.

Any inquiry into the treatment of inebriety must of necessity be an arduous undertaking. The places where treatment, voluntary or compulsory, is carried out are numerous and diverse, ranging from the charitable home or sisterhood to the costly private or licensed home, or from the certified reformatories of many grades to the State inebriate reformatory—the final destination of an incorrigible quasi-insane class segregated for the good of the more hopeful cases. A mass of evidence from the managers of every class of institution, most of whom are medical men, will be forthcoming, and a contribution as large as it will be valuable in character and scientific in tone, may be looked for from them. They have made most careful studies of the drunkards under their care as patients concerning whose physical and mental health, or rather ill health, there is plenty to record. It is through the painstaking researches of these men that the drunkard is now recognized as a person suffering from a disease with well-marked clinical features, rather than as a disorderly, ill-disposed social unit to whom no treatment, or rather any or every treatment, from hypodermic injections to years of imprisonment, is applicable.

Research has been orderly, systematic, and scientific. The results now at the disposal of any one who takes the trouble to look for them are also in order. It is therefore necessary that any inquiry into the needful additions to or modifications of existing methods should be of such a nature as to make plain our present standpoint and outlook, making the most of the knowledge obtained up to date. It is not difficult to predict beforehand an almost absolute unanimity on the part of those witnesses qualified to speak on the nature of the disease and the treatment appropriate. They will come as well equipped with their reasons as could be desired.

Whether "a tribunal of a lay character" "not "strongly medical" will be in a position to appreciate highly technical evidence on those questions of pathology and psychology which Mr. Gladstone foresees must be asked and answered is another matter. Probably such a tribunal would no more appreciate such evidence at its true value than a commission of medical men would be competent to pronounce upon the reasons and opinions of the Astronomer Royal on the motion of double stars. The only persons competent to pronounce on treatment are those who understand treatment.

If an inquiry into so highly technical a question as the treatment of persons ill in so serious and complex a way as the drunkard is to have any useful result, the Committee should unquestionably contain a large proportion of medical men, who through their training and experience are acquainted with the nature of the common fallacies which beset every therapeutic inquiry, and are therefore capable of properly interpreting the technical evidence which must be given, and of giving sound advice to the Government. This is surely the real function of any commission, not to sit as umpires to see fair play between the opposing parties. The Commission will be expected to express definite opinions and to make definite recommendations, and this it will not be in a position to do unless expert knowledge is fully represented among its members.

The question may, as Mr. Herbert Gladstone maintains, involve many social and political issues, but in its final analysis it is a question of the suitable treatment of the diseased man or woman.

We can have nothing but approval for an enterprise which prompts investigation of the "drug cure" treatment of inebriety. It is only to be hoped that the Commission will realize beforehand the magnitude of the task it is undertaking. The history of drug cures for inebriety goes far back. If to be old is to be respectable the drug cures are more respectable than the Inebriates Acts. The geography of the "cures" reaches far and wide, at least into every continent where the white man and drink are both to be found. By their methods, their advertisements, their specious but unfulfilled promises, their exploitation of the poor, by their preposterous pathology and psychology (when they descended to such trivial considerations), by their accusations, recriminations,

and abuse of one another—by all these things the vendors of "drug cures" had really killed their own case before ever the Inebriates Acts came into being. If the Home Secretary is sharpening his knife in order to slay a dead horse it is not for medical men to object. The proprietors of these much-advertised and more or less secret "cures" are in possession of no drugs and no method of treatment unknown to the medical profession. Medical men can tell the Commission all about the drug cures. What the promoter of the drug cures cannot tell the Commission is anything about the drunkard, for he has not studied him, nor about the nature and symptoms of the disease and its various complications and dangers, for he lives by ignoring them. Lay Commissioners will have little difficulty in understanding the evidence in favour of drug treatment. Their difficulties will begin when they try to understand the principles upon which rational treatment is based, when they are addressed on this question by medical experts. Where the difficulties will end, and what the treatment of inebriety will benefit by the inquiry, will depend entirely, not on the witnesses who will be ready with expert knowledge, but on the tribunal appointed to gather up and use it. Properly directed it may do good, in weak or incompetent hands it will certainly do much evil.

THE VALUE OF ATOXYL IN SLEEPING SICKNESS.

The two concluding reports which Professor Koch dispatched from Uganda concerning the work of the German expedition for investigating sleeping sickness have recently been published.[1] In the earlier report, dated April 25th, 1907, Professor Koch admits that the improvement observed after the administration of atoxyl is, in many cases, of only temporary duration. The enlarged lymphatic glands disappear, and trypanosomes are no longer demonstrable in them, but after the atoxyl treatment has been stopped for some little time the patient ceases to make further progress and, in many cases, becomes unmistakably worse. It is, therefore, clear that the parasites have not been completely eradicated from the body. To demonstrate their presence after the glands had cleared up, lumbar puncture might have been useful, but to this treatment the patients objected. Consequently the investigators had to fall back upon blood examinations. By making as thick a film as possible and using an appropriate stain, they were able to obtain satisfactory information. Thus, in a series of 75 cases the first examination of the blood yielded positive results in 40 per cent., the second in an additional 20 per cent., and by the time the fifth examination had been made the trypanosomes had been discovered in almost every case; only in two instances was it necessary to proceed to a seventh and an eighth examination. The searching of blood films was found a useful means of observing the effects of atoxyl administration. After a single injection of 0.5 gram of atoxyl, trypanosomes were found in the blood, in one case, as early as the fifth day; but after giving two doses on successive days, the method usually employed, the blood remained free from the parasites for a very much longer time after the cessation of the treatment, and the longer and more regularly the treatment was continued the longer was the period before the parasites reappeared. In some cases the period of absence extended to three or four months, and in a smaller number of cases no reappearance had been observed up to the time of writing, in spite of frequently repeated blood examinations.

In the hope of securing better and more permanent results an attempt was made to push the treatment by increasing the dose to 1 gram, and repeating the inoculations at intervals of seven or ten days. But as this treatment caused dangerous symptoms, and sometimes produced permanent blindness, it had to be abandoned. The investigators therefore returned to their original method, and administered two doses of 0.5 gram, repeated at intervals of ten days. At the time of writing they had a considerable number of patients under observation who had been undergoing this treatment for some months. In none of them had trypanosomes been present, although some hundreds of examinations had been made. Nor was there any indication that under long-continued treatment the trypanosomes had acquired an increased resistance against atoxyl, a phenomenon which Ehrlich has observed in experimental animals. In all the patients in whom the parasites reappeared after previous treatment with insufficient doses of atoxyl, the administration of half-gram doses caused a prompt and lasting disappearance of the organisms.

In addition to atoxyl a trial was given to other drugs found to be of therapeutic value for trypanosome infections in animal experiments. Arsenious acid, in the form of its sodium compound, was well borne by the patients even in large doses, and had an unmistakable action upon the trypanosomes; but its effect was much less powerful than that of atoxyl. We cannot, therefore, in Professor Koch's opinion, regard arsenious acid as a useful substitute for the latter drug. Other arsenical compounds tried were "nucleogen" and "arsenferratin," but the amount of arsenic in these preparations is small, and they were found to exercise no marked influence upon the trypanosomes. Trial was also made of two chemical dyes, trypan-red and afridol-blue, but without results yielding any promise that these compounds would prove of therapeutic value in the human disease.

During their examinations of an extremely large number of blood films, the investigators incidentally came across other blood parasites, in addition to the trypanosomes. The commonest were filarial, which all proved to be specimens of *Filaria perstans*. This parasite is so common that there is hardly a single native of the islands or north-west coast of Victoria Nyanza who is free from it. No clinical symptoms definitely attributable to the filariae could be observed in any of the cases, even where these organisms were present in large numbers; nor were any cases of elephantiasis found in the district. The parasites of malaria were also frequently met with; the percentage of cases showing these organisms varied from 20 to 50, according to the neighbourhood. While by far the greater number of the parasites were those of tropical malaria, quartan parasites were not uncommon, but tertian parasites were only encountered in a few cases. It was very noticeable that the malarial parasites were not influenced by atoxyl treatment to nearly so great an extent as the trypanosomes, although the former did show some diminution in numbers. Conversely, the trypanosomes were not influenced to any marked extent by quinine. A third class of organism sometimes accidentally found was the spirochaete of relapsing fever; but this was relatively rare, as the spirochaete was discovered in only 14 natives (11 adults and 3 children). In the adults clinical symptoms of the disease were either slight or absent, and the number of spirochaetes found in the blood was scanty; but the

[1] *Deut. med. Woch.*, November 14th, 1907.

children manifested serious illness, and it was observed that their blood contained very large numbers of spirochaetes, quite as many, in fact, as are found in European relapsing fever.

The later report, dated September 5th, announces that the investigations of possible substitutes for atoxyl were continued, but without the discovery of any alternative drug on which reliance could be placed. More interest attaches to the results obtained by the prolongation of the atoxyl treatment for many months. Profession Koch is now able to announce, on the basis of these recent investigations, that when a case of sleeping-sickness is treated with atoxyl according to the method adopted by the German expedition, trypanosomes never make their appearance in the blood during the treatment, even when it is continued for as long as ten months. How much longer they would remain absent it must be left for the future to decide. In no case during the period of observation was there any indication that the trypanosomes acquired a tolerance for atoxyl, and therefore the capacity of the parasites to gain this resisting power under prolonged treatment, though observed in animal experiments, has not manifested itself as a practical difficulty in human therapeutics. "We are, therefore, in a position," says Professor Koch, "to keep the blood of men suffering from "trypanosomiasis free from the parasites for at least ten "months, and thus we may prevent men from being a "source of danger by rendering them incapable of "spreading the disease through being a means of infec-"tion to *Glossinae*." In this respect alone atoxyl is a valuable agent for the suppression of sleeping sickness, though this is not the only advantage to be derived from it. Professor Koch admits that in a certain number of cases the trypanosomes reappear in the blood, sooner or later, after atoxyl treatment. "But in proportion to "the length and the regularity of the treatment and "the earliness of the stage in which the disease is met "with, there is a corresponding diminution in the "number of cases in which the trypanosomes are not "completely eliminated by the atoxyl treatment. Con-"sequently the best results are obtained in the mild "infections, and we can indeed assert that the vast "majority of these are permanently freed from trypano-"somes by a curative treatment lasting from four to "six months; moreover, since they do not exhibit the "least clinical symptom of disease, they may be "regarded as completely cured. With the severely "infected the results are less favourable. Amongst "these also there are not a few who become "apparently restored to health by the atoxyl treat-"ment, and, during the time we have been able to "observe them, remain in this condition. But others, "after the suspension of atoxyl, have relapsed, and "many who considered themselves cured, and conse-"quently abandoned the treatment prematurely, have "succumbed."

That atoxyl is not quite the ideal specific Professor Koch frankly admits, and he expresses the hope that further investigation will endow us with some more efficacious agent. In the meantime, he points out, we have already obtained in this drug a valuable agent, which, when employed carefully, systematically, and for a prolonged period, is a most important aid to the suppression of sleeping sickness.

Meanwhile, additional testimony to the value of the atoxyl-mercury method in the treatment of trypanosomiasis has recently been furnished by Professors Laveran and Thiroux of Paris, and Professor Jakimoff of St. Petersburg. Professors Laveran and Thiroux[2] state that they have repeated the experiments of Moore, Nierenstein, and Todd upon guinea-pigs infected with surra, and find that the mixed treatment with atoxyl and mercury biniodide or bichloride has resulted in cures in three out of twelve guinea-pigs, whilst the treatment with atoxyl alone had no effect. They point out that mercury salts used alone have the great drawback that the efficacious dose approximates closely to the toxic dose, five of the animals out of twelve having died from the toxic effects; and that, further, the mercury salts produce local lesions, such as abscess and gangrene. They find, however, that the mixed treatment with atoxyl and mercury, if it does not always give satisfactory results, at any rate is superior to the treatment with atoxyl alone. Laveran also repeated the experiments of Loeffler and Rühs, and has made experiments with other arsenical compounds. His observations demonstrate, as other observers have shown, that the compounds of arsenic have a remarkable effect upon trypanosomes. As the result of his observations he concludes that it is of great advantage in treatment to associate two arsenical preparations, such as atoxyl and the trisulphide of arsenic, but adds that many more observations are necessary to determine which is the best combination and which is the best method of administration.

The second communication has been sent from the Imperial Institute of Experimental Medicine of St. Petersburg by Professor Jakimoff to Dr. Nierenstein, who is at present engaged in carrying out investigations in the Bio-chemical Laboratory in the University of Liverpool upon the use of arsenic in the treatment of trypanosomiasis. Professor Jakimoff states that he has had excellent results from the atoxyl treatment of horses naturally infected by dourine. He is extending his observations, and will shortly be able to report on the treatment by the atoxyl-mercury method of fifteen to twenty horses.

[2] *Comptes Rendus des séances de l'Académie des Sciences*, November 4th, 1907.

MEDICAL FEES IN WORKMEN'S COMPENSATION CASES.

MEDICAL men who are consulted with reference to injuries as a result of which legal proceedings may be taken against an employer are sometimes at a loss to know to whom to look for their fees. Prima facie, of course, the person liable to pay the fee is the person who calls in the practitioner. It is not uninstructive to inquire whether this principle has been in any way altered by the Act of 1906. In a case which is noted elsewhere in this issue (page 1751) a medical man, who was called to attend an employee injured in an accident, sought to recover his fees from the employer. Compensation had been paid for the injury; but the injured employee refused to pay the doctor, on the ground that her employer had undertaken to do so. Fortunately for him the doctor was able to prove that this was so, and the employer was held liable. That a master is not bound to provide medical assistance for his servant is a well-known proposition of law. The obligation must arise from contract; and such a contract will not be implied merely because the servant is living under the master's roof, nor because the illness of the servant has arisen from an accident met with in the master's service. So, in an old case in which a servant who had been hired at the yearly wages of £3 10s. and victuals had his arm broken while driving his master's team, and was carried to his mother's house and attended by the master's surgeon, who was accidentally passing at the time and was called in, it was held that the surgeon could recover nothing from the master on an implied promise to pay for his attendance. An

examination of the provisions of the Act of 1906 and the rules made thereunder discloses the fact that the existing law as to the employment of medical practitioners has not been altered. It is true, of course, that where a servant has to undergo examination at the hands of a practitioner provided by the employer, the employer must pay the fee, for the Act expressly says so; but even in a case where compensation is recovered, it is the servant, not the master, who is primarily liable. The fact that in a successful case the medical fees are, in effect, paid from the money awarded by way of compensation makes no difference to the legal liability of the employer.

HAFFKINE'S PLAGUE PROPHYLACTIC IN INDIA.

Last October a memorial, signed by the professors of pathology and hygiene in London, Cambridge, Edinburgh, Liverpool, Manchester, Leeds, and Birmingham, was presented to the Secretary of State for India with reference to the result of the official inquiry into the origin of certain deaths from tetanus at Mulkowal in the Punjab following the employment of Mr. Haffkine's prophylactic against plague. The memorial reviewed the circumstances, and the memorialists expressed the opinion that: "(1) The evidence excludes the suggestion "that the bottle was contaminated in Mr. Haffkine's "laboratory; (2) the contamination very probably "occurred when the bottle was opened at Mulkowal, "owing to the abandonment of some of the precau- "tions prescribed by the laboratory; (3) the accident "was not due to any fault on the part of the "laboratory or of its director." The memorialists also dealt with the implication in the report referred to that Mr. Haffkine had made an unauthorized departure from a given standard ordered by Government for the preparation of his prophylactic, and that this departure, owing to the absence of carbolic acid in the new process, was responsible for the growth of the tetanus bacilli; they point out that the modification of the prophylactic adopted by Mr. Haffkine has had the approval of all bacteriologists who have written on the subject of his inoculation, and that it is used in many bacteriological laboratories. Attention is drawn also to the fact that Mr. Haffkine's statement that the Government did not bind him or instruct him as to any standard method of manufacture, but left the matter entirely to his own discretion, has remained without contradiction. He was, in fact, constantly introducing modifications with the knowledge of the Government, and this particular modification had been adopted two years previously by the Pasteur Institute in Paris, where the prophylactic has been continuously manufactured; moreover, Mr. Haffkine had reported to the Government the changes which the Punjab demands necessitated several months before the commencement of the inoculations there and the occurrence of the accident. We are glad to learn that Mr. Morley has intimated to the memorialists that before its receipt he had caused Mr. Haffkine to be informed that although the Secretary of State for India had not the expert knowledge which alone would justify him, amidst the disagreement of high authorities, in pronouncing a judgement which would claim to be decisive, he recognized the fact that an important body of scientific opinion was in Mr. Haffkine's favour, and he found nothing in the circumstances of the accident to prevent him from offering Mr. Haffkine further employment in India on honourable terms. Mr. Haffkine has accepted the employment offered and returns to India this month.

THE NOBEL PRIZES.

The Nobel Prizes, of the value of £7,700 each, were awarded on December 10th. That in medicine was awarded to Professor Laveran, of Paris, discoverer of the malaria parasite. We congratulate Professor Laveran on this well-deserved distinction, which must be all the more gratifying to him since he had to wait long for the general recognition of his discovery by the scientific world. Charles Louis Alphonse Laveran, who is 62 years of age, began his professional studies in 1863 in the Ecole de Médecine Sanitaire, and became *interne* in the Civil Hospital of Strassburg in 1866. He took his doctor's degree at Strassburg in the following year, and was appointed Agrégé Professor in the army medical school of Val-de-Grâce in Paris in 1874. In 1884 he became Professor of Military Hygiene and Clinical Medicine, a post which he continued to hold till 1894. He is the author of a treatise on diseases and epidemics of armies, published in 1875, which is placed by the Government in the hands of every medical officer of the French army. After researches perseveringly conducted for five years, he presented a paper to the Académie de Médecine on November 25th, 1880, announcing his discovery of a new parasite in the blood of patients suffering from malarial fever. This was followed by several communications on the same subject, the substance of which was embodied in a treatise on malarial fevers published in 1884. For his work on malaria the Institute of France awarded him the Bréant Prize in 1889. He was elected a member of the Académie de Médecine in 1893. The Nobel Prize in Literature was awarded to Mr. Rudyard Kipling, whose power and originality make him, as Mr. Andrew Lang said some years ago, a new force in English literature. We believe that Mr. Kipling had at one time some intention of studying medicine. He has always shown special sympathy for doctors and their work in his writings, and has some close friends and innumerable admirers in the profession. The Prize in Physics was awarded to Professor Michelson, of the University of Chicago; that in Chemistry to Professor Buchner, of Berlin.

THE PREVENTION OF INFANTILE MORTALITY IN ISLINGTON.

The report on the prevention of infantile mortality which Dr. A. E. Harris, M.O.H. for Islington, has recently presented to the Borough Council, shows that he has fully realized the great importance of this question, and has gone into the various matters which bear upon it in unusual detail, with a view to emphasizing the necessity for remedial measures. Every one has known more or less that the various conditions enumerated in the report tended to undue infant mortality. But taken together, as Dr. Harris has taken them, the facts are very striking, pointing as they all do to the conclusion that the high death-rate in infants under one year is due almost entirely to the ignorance of mothers and the bad conditions in which they live. The period of infancy is one during which the mother, as a rule, has supreme control of the welfare of her baby. How has the Islington mother carried out her functions? We find that in the ten years (1896–1905) there were 93,230 births, and that of these infants 13,080, or 14.02 per cent., died under a year old; in the same period there were 55,020 deaths at all ages, of which these 13,080 formed 23.77 per cent.; also there were 20,100 deaths of children under 5 years, which constituted 36.53 per cent. of the total deaths. In examining the figures for the last two years with regard to the mortality in the early days of life, it is evident that the first week is by far the most critical period. Thus in 1905 and 1906 the deaths under 1 week per 1,000 births in Islington were 367, or 21.07 per cent.; from 1 to 2 weeks 103, or 5 91 per cent.; while from 3 to 4 weeks they fell to 71, or 4 08 per cent. What do these figures point to? Undoubtedly their first great lesson is that mothers should suckle their infants. The

late Professor Budin and other experts have shown by statistics how the infantile death-rate sinks in breast-fed infants as compared with those who are artificially fed. Breast feeding is specially important during the first three months of life, although it should be continued if possible to 9 or 10 months. Now from the extremely small number of mothers in Islington who suckled their children one might be led to believe that there were overwhelming reasons against it, such as ill-health or delicacy. But from Dr. Harris's inquiry into the health of mothers it will be seen (p. 1727) that unhealthy women formed only a very small proportion of those examined. This failure must therefore be put down partly to ignorance and partly to the large number of married women and widows who work outside their own homes. It is a fact that in Islington a great number of men allow their wives to go out to work, while they themselves remain idle. Employers of labour prefer women because they work at lower wages. There is a tendency for girls to enter factories, laundries, and workshops when they leave school, and for this reason they find it hard to settle down after they are married. They like the independence of wage-earning, and the excitement of mixing with numbers of other women appeals to them more than staying quietly at home with their babies. Dr. Harris rightly contends that the employment of women who are pregnant should be regulated, and the law relating to the employment of mothers who have very young babies extended so that they may suckle their infants for at least three months. The whole question of the wastage of infant life hinges on ignorance; the ignorance in the first place of those who have it in their power to make reforms, and the much less blameworthy ignorance of the poorest classes. There are people who believe that the good mother is made by Nature. This is true of animals and primitive races, but as civilization becomes more complex the instinct seems to die out and to require creating over again. Now there is no doubt that doctors and specially trained health visitors are the proper people to reawaken the right instincts of mothers of the labouring classes. It will be by patience, sympathy tact, and above all by real experience and knowledge, that a right feeling will be established among poor mothers. The work of voluntary visitors is very good in its way, but unfortunately philanthropy is not always accompanied by sound knowledge, and it is sometimes spasmodic. If any real results are to be obtained, it must be by dogged perseverance, and there must be no discouragement. This can only be done by visitors paid for their knowledge and time, who will do their work in a business-like way, as part of an educational system which, to be thorough, must begin with the children before they are born, be continued during infancy by the mothers, and completed in the schools by teachers, who will thus handle classes healthy and bright instead of the diseased and depressed children who at present form so large a part of our elementary schools. Huddersfield is a practical example of what can be accomplished by paid health visitors working under the medical officer of health, and in perfect harmony with bands of voluntary workers. Dr. Harris has done very important work in showing how the conditions in Islington call for remedy through the employment of official health visitors. The cost is trifling compared with the ultimate gain by the saving of lives, and it is sincerely to be hoped that such an enlightened report as he has presented may not only ensure for Islington the support of the Borough Council in the important matter of the appointment of health visitors, but may be the means of arousing enthusiasm in other districts.

THE AUTHOR OF "RAB" ON VIVISECTION.

At this time, when the opinions of various people—poets, parsons, and ladies of the type whom the writers of Queen Anne's day called "prudes"—are being quoted as to the ethics of vivisection, it may not be amiss to quote the words of a man whom the most rabid sentimentalist could not suspect of cruelty, and who loved dogs better, because more intelligently, than the "idolaters" who make fetishes of them. In the *Letters of Dr. John Brown*, just published,[1] there is a letter to a lady who had evidently sent him some antivivisectionist tracts. The relevant part of the letter, which was written in 1878, is as follows: "Thanks for the papers; I am not an Antivivisectionist, "in the ordinary sense. I think great good to the "human race, and to knowledge of the true kind, has "come from experiments on living animals, always "under the restrictions of [a ['sense of what every "feeling and conscientious man must feel in such "circumstances; and I feel sure that in this country, and "especially in Edinburgh, vivisection when done at all "(which is very rare) is done with the *minimum* of "suffering and with an adequate motive. At the same "time I have no doubt good will come of Mrs. Gillespie's "prize; truth is always the winner in the long run, and "if the subject is honestly and temperately handled, "what we all have at heart, the good of man and beast, "is sure to gain. But there has been much unjust and "ignorant abuse among the extreme antivivisectionists. "This I know from my own experience and from my "knowledge of the men abused—men such as my "brother and Dr. Allen Thomson, etc., etc, whose hearts "are as tender and their consciences as strict and "imperative and clear-sighted as any men's or "women's (!). I wish you and the public and Mrs. "Gillespie and all good people would have a little "more faith in their fellow creatures and not think "them demons and brutes. There's for you! Not that "I think you and your friend do this, but many good "people do. Be assured that in this city of Edinburgh "there is no *cruelty* exercised by master or students, "and the operation is always performed by the masters, "and with the *minimum* of pain, and strictly in "accordance with Mr. Cross[2] and his commandments. "And so enough, and perhaps more than enough of "this. Not the less thanks for the circular, which is "very well expressed, fair and temperate, and very "properly intimating that 'rancour and bitterness of "'style' disqualifies." We commend this utterance of a man who was beloved by all who knew him and who, while his health lasted, went about doing good to his fellow-men, to the special attention of antivivisectionists in general, and in particular to that of the Rev. J. Page Hopps, who lately told the Royal Commission that he cannot trust an experimenter because he himself would certainly "revel" in experiments if he were a vivisector.

THE PREVENTION OF HYDROPHOBIA.

There are many to whom a little personal testimony is worth much more than official statements or statistics, and to such of these as have doubts in a vivisectional connexion a perusal of an article in the November issue of *Blackwood's Magazine* may safely be commended. It is an anonymous production, but obviously the work of a layman who has occupied his enforced leisure, while a patient at Kasauli, in taking notes of what was going on. The result is a curiously vivid sketch of the practice of the Pasteurian principles for the treatment of hydrophobia under the conditions of life in India. Obviously the treatment is a great social leveller, and a patient's companions in the

[1] London: Adam and Charles Black, 1907, p 255, Letter CCLXXXVIII.
[2] Then Home Secretary.

consulting room at Kasauli are not necessarily his social peers or even his fellow countrymen. Each patient is classified according to the length of the treatment prescribed. The writer of the article was a seventeen days' case, and his immediate companions were an ancient sweeper from the South Punjab, a private of a Scottish regiment from Fyzabad, and a grass-cutter from Oudh. To each, as he raised the syringe, the Director would say in his genial, quiet way, in Hindustani or in English, as the case might be, "Well, how are you feeling to-day?" Generally the answer evoked little comment, but sometimes a sudden alertness and further questions showed that a symptom of importance had been mentioned. The work of the staff is heavy, for besides the administration of from 80 to 130 injections each day, the material for each class of case has to be prepared and carefully set in order, in itself a laborious and delicate process; new cases have to be examined; actual bites dressed; an extensive correspondence dealt with; certificates for departing patients drawn up; forms filled in to enable the poorer patients to draw Treasury funds; the annexe where the poorer Europeans and poorer natives find quarters administered, and the brains of animals sent to the institution for report examined. When there is added to this as much original research as time permits, the whole represents a very full day's work for the Director and his assistant. There is, of course, no hesitation among Anglo-Indians in resorting to the institution when bitten by an animal deemed to be rabid, but as the natives are less nervous, and the loss of time and other difficulties involved are much more serious to them, there are still, and always must be, a vast number who prefer to rely on the administrations of a local hakeem. Nevertheless the number of natives among the patients is annually increasing. To the Anglo-Indian before this institution was opened only two courses were open—to trust to luck, or hurry off to Paris, the nearest place where rabid treatment could be obtained. In either case the suspense and anxiety, the writer remarks, must have been horrible, for in the former case the risk of death was imminent, and the latter course involved such delay that the probability of the treatment proving successful was greatly lessened. The shadow of the disease is peculiarly harassing, and it is dreadful to contemplate the depression of spirits that many must have suffered in India in those pre-Kasauli days. The writer seems to have been particularly struck by two points: first, the extreme humanity shown to the animals used for the treatment in every detail—the daily necessity of using these poor creatures in the service of man had obviously in no way blunted that sense among the staff; secondly, the extreme care exercised by the Director and staff to avoid accident of any kind. In spite of the grinding routine of much of the work, there was never any indication of weariness or carelessness. The Director of the Institute, to whom other pleasant references are made, is Captain W. F. Harvey, I.M.S. The general testimony to the value of the Kasauli Institute and to the principles on which its work is based is the more striking because the story of the way in which the writer of the article came to be bitten shows him to be a very pronounced animal lover.

UNDER-FEEDING AMONG SCHOOL CHILDREN.

By direction of his authority, Dr. Lechmere Andersen, Medical Officer of Health for Doncaster, has been engaged during the past few months in examining the school population with a view to ascertaining to what extent, if any, the physical capacity of the children to benefit by the instruction afforded is lessened by improper or deficient nourishment. From his report which has now been issued, it is obvious that he performed this task with much care, and his general conclusions are interesting. Before drawing them he makes allowance for children on the school registers who, being absent from causes possibly connected with under or improper feeding, were not among the 2,200 examined. While underfeeding, he says, may be taken to be nearly non-existent, there is a very considerable proportion of improperly-fed children. This doubtless accounts for the large number of cases of anaemia and general lack of stamina, and want of force in body and brain alike. Such conditions naturally tend, however excellent the instruction may be, to prevent the pupil from being able to receive full benefit. The condition of "improper feeding" is, he considers, to be ascribed rather to ignorance or carelessness than to poverty, and can be combated only by knowledge of the laws of healthy feeding being instilled into those who are destined to be the mothers of the succeeding race. If only one year (the last of school life) could be devoted to such instruction, and to such other important points of home hygiene as the choice, preparation, and cooking of foods; the proper feeding, not only of infants, but of older children and adults; the importance of the open window; of cleanliness of house and person; the nursing of the sick and ambulance training, the result would be of inestimable advantage. The loss of a few scraps of more or less useful information, of acquaintance with one or two pieces of more or less obsolete literature, of knowledge of arithmetical problems forgotten as soon as learned, and the other items which comprise the average training of girls during their last year of school life, should not be considered a serious drawback.

THE STATUE AND THE STUDENTS.

We have already expressed our disapproval of the attempts made by some medical students to dethrone the statue of the "brown dog" at Battersea from its pedestal, and we can only deplore the repetition of an offence against public order on the part of lads who should know better. The magistrate at Bow Street told the students who were brought before him that their proceedings were silly, and we quite agree with him. But sillier still is the fuss made by certain newspapers about the "rioting" of a handful of boys. Silliest of all is the statue which is the source of the trouble. There are, it is to be presumed, some inhabitants of that cultured suburb, Battersea, who have the grace to be ashamed of a monument which, as was said of a more famous one, "like some tall bully lifts its "head and lies." It was doubtless intended by the foolish folk who set it up as a defiance of the severe condemnation which the methods of certain antivivisectionist agitators met with from one of the highest public tribunals of this country, and it is a standing provocation to young men naturally high-spirited and proud of the profession which it is the business of these agitators to vilify. We have, however, too much confidence in the good sense of the bulk of medical students to believe that they look upon the effigy of the "brown dog," so far as they are aware of its existence, with any feeling but contempt, and we trust that there will be no more "rioting." The thing is not worth the martyrdom of even a small fine. The previous outburst was made the ground of various attacks on the medical profession in the Press. The *Daily Graphic*, in a beautiful piece of what Oliver Wendell Homes calls "bladdery "bathos," said: "One would have supposed that, "far from making the little brown dog an object of "attack and ridicule, students with any respect for "their profession would have regarded it as a humble "creature that gave its life for the benefit of humanity,

"and would have treated its memory accordingly." The *Morning Leader* published a letter to the following effect: "The public have now before them a fine "object lesson of the spirit of the men who are now "being trained for our future doctors. Can they view "with calm equanimity the agitation on the part of "medical men for more power over the children, and "over the poor of our land, while the students are pos- "sessed of the spirit of cruelty which this latest exhi- "bition proves?" Beside these noble sentiments we place the following from the *Daily Chronicle* of December 11th: "A student who fell or threw himself 'from the top of a tram was only slightly injured, and "the crowd refusing him a passage to the hospital, he "was taken to a neighbouring surgery, the people "shouting, 'That's the brown dog's revenge.'" The hospital in question appears from the context to have been the Antivivisectionist Hospital, and the action of the crowd who refused the injured man a passage may therefore have been prompted by benevolence. But the fine humanity of the people who shouted "That's the "brown dog's revenge" shows the moral effects of antivivisectionist agitation.

THE HEALTH OF THE ARMY.

THE annual report of the Army Medical Department for the year 1906, which has just been issued, is of more than usual interest. Important modifications have been introduced into the plan upon which these reports have hitherto been constructed. The first part of the report consists of a general history of the health of the army at different stations, mentioning only the chief causes of disease, their incidence as compared with previous years, and the general lines on which the problem of their prevention has been approached; the second part consists of a series of abstract tables, each giving statistics for the different commands on the same lines as in former years, but detailed tables have been added giving the individual causes of admission to hospital for three of the five groups into which for this purpose the army has been divided. The report partakes of the nature of a retrospect, and where it has seemed likely to be of value reference has been made to the medical history of former years; charts are introduced showing variations in admissions, sickness, invaliding, and deaths for the past sixteen years, proving that there has been on the whole a distinct improvement. Other charts compare the health of the British army with that of foreign armies. We hope in a future issue to publish a full account of the report.

AN ATTEMPT TO CULTIVATE THE SPIROCHAETE OF SYPHILIS.

LEVADITI AND MCINTOSH describe in the *Annales de d'Institut Pasteur* for October, their attempts to cultivate the organism formerly called *Spirochaeta* but now *Treponema pallidum* by the collodion sac method. Their material, obtained from the primary lesions of a rhesus monkey, was enclosed in a collodion sac and placed in the peritoneal cavity of a *Macacus cynomolgus*. Subsequent passages were effected by successive transferences of the material into collodion sacs which were inserted in the peritoneal cavity of rabbits. Up to the time of writing, twelve passages had been effected and fifty-nine sacs had been successfully inoculated during a period of seventy-four days. In spite of the progressive dilution of the virulent material, the later cultures were found to be richer in the spirochaetes than the earlier, apparently owing to the successively increased acclimatization of the parasite to the body of the rabbit. In company with the parasite of Schaudinn various bacteria were found in the sacs. One of these was the *Streptococcus pyogenes;* the others which had been isolated were all strict anaërobes. These bacteria appeared to favour the development of the syphilitic spirochaete by rendering the medium more suitable for assimilation. When tested on monkeys and on a chimpanzee the parasite recovered from the sacs was found to have completely lost its virulence; but the authors maintain that in morphological, tinctorial, and biological characters it still bore a close resemblance to *Treponema pallidum*. They, therefore, considered that the organism they have cultivated is a genuine, though non-virulent, variety of the spirochaete of syphilis.

A STATUE of the late Dr. Joseph Leidy, one of the most distinguished American scientists of the last century, was unveiled in Philadelphia on October 30th. Dr. Leidy, who was born in 1823 and died in 1891, was Professor of Human and Comparative Anatomy and Zoology in the University of Pennsylvania, President of the Wagner Free Institute of Science, and President of the Academy of Natural Science in Philadelphia.

IN order to commemorate his long association with, and the valuable services which he has rendered to, the National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, the medical and surgical staff have placed a marble bust of Dr. Hughlings Jackson, M.D., F.R.S., the "Father" of British neurology, in the hall of that institution. At the presentation Sir William Gowers, the Senior Physician, on behalf of the subscribers, handed over the bust in a few well-chosen and appreciative remarks. Mr. Frederick Macmillan, the Chairman of the Board, briefly acknowledged the gift on behalf of the hospital. The bust, which is a very excellent likeness of Dr. Jackson, is the work of Mr Herbert Hampton.

General Medical Council.

NOTES.

(Continued from page 1679.)

Action Taken in Cases of Conviction in Courts of Law.—The time of the Council during the session was almost entirely devoted to penal cases, which were numerous and in some instances raised important issues. The name of a medical missionary, convicted under the Indian penal code of causing miscarriage in an orphan girl in an institution under his charge, was struck off the *Medical Register*, he having been found guilty of infamous conduct in a professional respect. This course had to be adopted because the conviction had not taken place under English law, in which case the erasure could have been made merely on proof of a conviction for felony or misdemeanour. In the case of a practitioner who had been convicted on more than one occasion of being drunk and disorderly in Ireland, the Council, after hearing his solicitor and his own statements as to the circumstances, exercised the discretion allowed to them by the Act, and did not order the erasure of his name from the *Register*. In a somewhat similar case, in which the accused practitioner did not appear, the consideration of the conviction was postponed till the next session, when he will be required to appear and explain his conduct.

Alleged Canvassing.—A case which presented some points of interest, since it raised somewhat new issues, was brought up by the Medical Defence Union. An old-established practitioner had taken into partnership a younger man, and cards had been printed bearing the names of the partners, which, it was alleged,

had been distributed broadcast. It appeared that, so far as the younger practitioner was concerned, there was no evidence to connect him with their distribution, which took place without his knowledge and before he came into residence. The defence on the part of the older practitioner was that he had intended the cards to be given only to actual patients with their bottles of medicine; that he had not authorized their distribution in any other way; but that he was at the time canvassing for municipal office, and that these cards had become confused and mixed up with cards relating to his canvass for the municipal office. The Council, it would appear, was not satisfied with this explanation, and considered the facts to have been proved, but adjourned the further consideration of the case till the next session. There does not appear to have been anything objectionable in the cards themselves, but only in their broadcast distribution to persons other than patients.

A Case of Covering.—An unqualified person, one William Hamilton Jolly, had been convicted and sentenced for forging the name of a qualified practitioner, Joseph Fitzgerald, upon a number of death certificates, whilst subsequently Fitzgerald himself signed the death certificate of a child attended by Jolly, and not seen by Fitzgerald till after death. Jolly practised at the registered address of Fitzgerald, who was his brother-in-law. The Council directed the erasure of the name of Fitzgerald, holding him to have been guilty of infamous conduct in a professional respect.

Charge of Employing an Unqualified Assistant.—A practitioner and his assistant were summoned before the Council on a charge of having employed an unqualified assistant. In the case of the principal it was found that the charge was not proved. It appeared that he had formerly employed a qualified person, had endeavoured by advertisement to procure another, and had been very ill during the period in question. In the case of his qualified assistant, there was a further charge that he had improperly signed a certificate as to the death of a patient attended by the unqualified assistant at a branch colliery surgery. The charge was found to have been proved, but as there were circumstances of an extenuating kind the further consideration of the case was adjourned to the next session of the Council.

Dental Business.—A point of some importance has been decided in regard to the registration of a Queensland dentist who had obtained registration in the Colony as having been in practice prior to the passing of the Colonial Act. But by the wording of the British Act, recognition for registration in this country depends on the possession of "such certificates as are here recognized for the purpose." The applicant appears to have claimed that mere registration in the Colony is such a certificate, and on being refused registration by the Registrar here, appealed to the Privy Council, who however took the same view as the General Medical Council and upheld its decision. This settles the question whether admission to a register on grounds other than the possession of a diploma constitutes a "certificate" of a kind available for the purposes of reciprocity; the same argument would hold good in the case of a medical applicant. It is probable that the point will arise again in this latter connexion, so that it is a fortunate circumstance that the persistence of this particular applicant has resulted in an authoritative pronouncement on the issue.

Professional Misconduct.—In the President's address the story of a case which has in the past attracted a good deal of attention was brought to a close. It may be remembered that the names of several dentists connected with the American Dental Institute were removed from the *Register* on the ground of infamous or disgraceful professional conduct. The immediate sequel to this was that actions were brought by partners of these gentlemen for relief from their partnerships, but the judge, Mr. Justice Warrington, held that the decision of the General Medical Council could not be taken as final, and that he did not find any professional misconduct which in the sense of the covenant should annul the partnership. This decision having been reversed by the Court of Appeal, and the desired relief given, the case was carried to the House of Lords and the Lord Chancellor, the other law lords fully concurring, confirmed the judgement of the Court of Appeal; but what was of especial interest was that the House of Lords set aside the legal consideration, argued at much length in the lower courts, as to the admissibility as evidence of the judgement of the General Medical Council, and went straight to the issue whether grave professional misconduct had or had not taken place, deciding that it had. They thus gave an unexpected approval and endorsement of the Council's decision by themselves arriving at the same conclusions upon the same premisses, although in form the Council's decision was not reviewed by them.

Dental Companies.—Allusion was made by the President to an important decision given by the Irish Master of the Rolls in respect of a company registered under the title of Henry J. Bradlaw, Surgeon-Dentist, Limited; the individual whose name was thus used was struck off the *Dentists' Register* on November 27th, 1903. The Master of the Rolls, in granting an injunction against the use by the company of any such title, strongly condemned the company's methods. The wording of the Dentists Act happens to be in some particulars stronger than that of the Medical Acts; and in another case against a person who used the evasive title of "Tooth Specialist" a conviction in a Court of Summary Jurisdiction in Derry w a obtained under the clause forbidding any unqualified person from using any name, title, or description implying that he was specially qualified to practise dentistry. It would therefore appear that, notwithstanding the ill-fate of the Dental Companies Bill before the House of Lords Committee, the lot of fraudulent companies may be made uneasy under the present law. Irish decisions do not constitute full precedents for English courts, but notice of appeal has been given in this last case, and it is to be hoped that it will be persevered in, so that the decision of a higher court upon the point may be given.

Colonial Legislation.—A new ordinance for the regulation of medical practice for the Straits Settlements and the Federated Malay States presents several points of interest. Qualifications granted in Europe, America, and Japan will only admit to the *Colonial Register* if recognized by the General Medical Council. The prohibitory clause is of unusual strength; the words used, after a prohibition of the false assumption of titles, being that a person who "practises or professes to practise, or publishes his name as practising medicine or surgery, or receives any payment as practising medicine or surgery," unless registered, shall be liable to a maximum penalty of five hundred dollars, and a further penalty of fifty dollars a day during the continuance of the offence.

Nova Scotia.—When the recognition of diplomas granted in Nova Scotia was accorded by the Council some time ago, it was foreshadowed that the colonial authorities would increase the length of the course which they required. It is gratifying to note that this has already taken place, and that a five years' curriculum is now imposed.

Appointment of an Assistant Secretary to the Council.—As it has been found desirable that some member of the office staff should have a recognized position enabling him to act with authority in the temporary absence of the Registrar, Mr. Norman King was appointed Assistant Secretary, the choice of title being dictated by the wording of the Act, which appears to lay down that one person shall be called Registrar, and that the Registrar shall act as Secretary to the Council. Much of the correspondence, in fact, is already signed by him as "Registrar and Secretary." In recognition of their very efficient service, an augmentation of salary was voted both to Mr. Norman King on his appointment to his new position and to the other members of the office staff.

Liverpool.

THE ROYAL SOUTHERN HOSPITAL.

ON November 25th the Lord Mayor and more than 600 citizens were received at an "At Home" at the Royal Southern Hospital, in order that they should inspect the wards at their leisure and see the new apparatus which has been fitted up in the *x*-ray and other departments. The Chairman of the Hospital, Mr. Adamson, made an interesting statement with regard to the work and the progress of the institution. The additions and improvements in the *x*-ray department, he said, had been provided by Mr. John Hughes and by the trustees of the late Dr. John Cameron. He expressed the hope that Major Ross, on his return from the Mauritius, would be induced to accept the position of medical officer to the Tropical Ward in conjunction with the other physicians. Mr. Adamson spoke of the urgent need for an enlarged out-patient department, for which the land had already been secured. The cost would probably be £10,000. But he trusted that the Bill initiated by the Corporation to enable it to contribute a considerable sum towards the cost would be duly sanctioned by Parliament. In conclusion, he paid a tribute to two of the honorary medical officers who were shortly to leave the ranks of their honorary visiting staff for the more leisurely duties of the consulting staff. He referred to Professor William Carter, Senior Physician, and Dr. William Alexander, Senior Surgeon. Professor Carter, he said, who had so faithfully served the hospital for thirty-six years, had decided to retire this year to the country for the enjoyment of well-earned rest after a most active career; but Dr. Alexander they hoped to retain till the next annual meeting. Words of his would fail to express the very high esteem in which these gentlemen were held by all who had worked with or under them, but on behalf of the Committee he gave them heartfelt thanks for their unselfish loyalty and loving devotion to the hospital and the patients during the long periods they had been associated with them.

PRESENTATION TO PROFESSOR RUSHTON PARKER.

On the occasion of the completion of his term of office as surgeon to the Royal Infirmary, Professor Rushton Parker's past and present students are presenting him with his portrait in oils by Mr. Hall Neale. The presentation of the portrait will be made by the Lord Mayor (Dr. Richard Caton) at the Adelphi Hotel on Saturday, December 14th, shortly before the medical students' annual dinner, which is to take place at the same place on that evening, and at which Professor Parker will preside.

RETIREMENT OF PROFESSOR CARTER.

Dr. William Carter has resigned the position of Professor of Therapeutics and Materia Medica in the University. Dr. Carter was the oldest member of the teaching staff, and besides being an efficient and conscientious teacher is an expert on questions of school and university management. He has always been a regular attendant at the meetings of the Medical Faculty and the Senate, and his views were invariably expressed with firmness and conviction but with perfect courtesy, so that whether agreed with or not, they always secured respect. His influence in the councils of the medical school and the University will be greatly missed.

THE NOTIFICATION OF BIRTHS ACT.

The City Council has resolved to adopt the Notification of Births Act.

Leeds.

DINNER OF PAST AND PRESENT STUDENTS OF THE LEEDS SCHOOL OF MEDICINE.

THE twenty-ninth annual dinner of the past and present students of the Leeds School of Medicine was held in the Queen's Hotel on December 5th, when the chair was taken by Mr. R. Lawford Knaggs. About 120 sat down to dinner, and among these were the Right Hon. the Lord Mayor; Mr. Wilfred Hepton, who as a member of the Committee of the Hospital for Women and Children has for some years taken considerable interest in the medical charities of the city; and Mr. Charles Lupton, the Treasurer of the Infirmary. Most of the members of the teaching staff were present, and the guests included representatives of the students of Manchester, Liverpool, and Sheffield. The toast of "The Staff" was entrusted to Mr. Nicol, one of the students, and was ably proposed by him. In replying on behalf of the staff, Dr. Hellier made some extremely amusing points by commenting on an imaginary curriculum and series of examinations as he conceived they might be conducted under directions drawn up by the student Representative Council. In replying to the toast of "The Visitors," which was proposed by Mr. Dobson, the Lord Mayor made an excellent speech, and Mr. Rowland Barran, M.P., gave an interesting address on the aspirations which should actuate the dwellers in such large cities as Leeds, as to the maintenance of their charities and their universities, especially in relation to medical education. Much credit is due to Mr. Fothergill and to Mr. Nunneley, the two students who as secretaries were responsible for the management of the dinner.

FATAL BURNS IN CHILDREN.

In conducting two inquests on fatal cases of burning, Mr. J. W. Stead, the deputy coroner for Leeds, called attention to the lamentable fact that no less than five lives had been sacrificed in fourteen days from burning, the victims in every case being children, and the causes absolutely preventable by the exercise of a moderate amount of care. The history was always the same—the child left alone in the house, and either no fireguard or not even a fender of any kind to prevent it from playing with the fire. The loss of life from this cause is, as a perusal of the daily papers shows, truly deplorable. Perhaps the moderately well-to-do may not appreciate some of the difficulties with which the very poor have to contend. Children have to be left alone sometimes, sad though it may be, and the provision of an adequate fireguard may mean some expense, and may not appeal to the minds of the parents as being so necessary as food, drink, and raiment. Much can be done by medical men who are working among the poor calling attention to the dangers from fire, and by their doing so repeatedly. There is no class of the community from whom the poor will accept advice so readily. Accidents from fire are usually due to the above-noted causes in the poorer classes. In the middle classes perhaps the most fertile cause of such catastrophes is the use of flannelette as underclothing, and here also the voice of the medical man should be heard perhaps even more than it is. As has been stated recently in the JOURNAL, non-inflammable flannelette can be obtained.

CLASSES AT THE MEDICAL SCHOOL OF THE UNIVERSITY.

The first term ends on Friday, December 20th. The classes will be resumed on Monday, January 13th. This gives a longer vacation than usual, but the second term does not end till March 28th. The dissecting room will remain open during the Christmas vacation for any students who desire to work, and the Professor of Anatomy has, as in former years, arranged for their receiving assistance and supervision.

Lancashire.

PUBLIC VACCINATION IN OLDHAM.

THE Vigilance Committee and the Executive Committee of the Oldham Division of the British Medical Association have conjointly had under consideration the proposed terms of appointment of a public vaccinator for the township of Oldham, and have drawn attention to the following facts in regard to the proposed appointment:

A short time ago the guardians thought of appointing such an officer at a fixed salary of £500 per annum, and binding him to devote the whole of his time to the duties of the office, and this proposal received the approval of Dr. Wharton, the Local Government Board Inspector. It was not carried out because the Local Government Board then reduced the minimum fees for successful public vaccination from 5s. to 2s. 6d. a case, and the guardians are now advertising for such an officer, to be paid the minimum scale of fees—namely, 2s. 6d. per case—allowed by the Local Government Board, with £15 per annum for

a central vaccinating station. He is also to be allowed the necessary dressings.

Taking as a basis the amount of public vaccination done by the present interim public vaccinators during the six months ending September 30th, 1907, it is calculated that the proposed officer could at the most earn £200 per annum. Matters are even now worse than this, for under the recent Act of Parliament increased facilities for obtaining exemption orders have been provided, and, possibly as a result of this, the number of public vaccinations in the town has, it is reported, decreased to 33 during the month of November, and it is quite possible that this decrease may continue still further; but taking November as a basis the proposed officer would earn £69 per annum, inclusive of 1s. a case for notification and visit, an amount which is entirely inadequate for a professional man devoting his whole time to the duties of the office, and so sacrificing the principal portion of his professional life.

At a recent meeting it was resolved that no such proposed appointment could be satisfactory unless the guardians were prepared to guarantee a minimum salary, and a deputation then appointed has waited upon a number of the guardians, but without any satisfactory result; the guardians present were individually of opinion that the proposed officer should have a living wage, but they would not fix what amount that should be.

At an adjourned meeting it was resolved that a statement signed by Dr. James Corns, Chairman, and Dr. Frank Radcliffe, Honorary Secretary, be drawn up and sent to all the local members of the profession advising them not to apply for the proposed office until the guardians have amended their proposed terms of appointment by including a guaranteed minimum salary.

Exeter.

Territorial Army Medical Corps.

Sir Alfred Keogh, K.C.B., Director-General of the Army Medical Services, on December 4th met the members of the medical profession residing in Devonshire, Cornwall, Somerset, and Dorset, to explain and discuss with them the scheme which the Army Council has sanctioned for providing the medical organization required under the new Territorial and Reserve Forces Act, 1907. The meeting was held at Exeter Castle, under the presidency of Earl Fortescue, Lord Lieutenant of Devonshire, and there were about 100 members of the profession present.

Surgeon-Colonel Raglan Thomas who moved a resolution expressing approval of the scheme, discussed some of the details and asked certain questions with regard to several points.

Dr Davy, President of the British Medical Association, said the profession would do their best to make the scheme a complete success. It had the obvious fault of any voluntary scheme—the nation called for their service, and patriotic men came forward. But those who thought more of themselves and of their selfish interests remained at home and picked up the patients of their absent colleagues Unless this defect could be met the scheme would fail.

The Director-General, in reply, said the only protection under a voluntary system was a code of honour between the medical men to help one another in the difficulty which had been alluded to. Attendance at camp was not compulsory under the scheme so long as the medical men underwent eight days' training, each day of three hours, not necessarily consecutive days, in the course of the year. Some little compensation was offered to medical men who sacrificed the time to go into camp, as they would receive pay varying from £2 18s. a day for a colonel to one guinea for a lieutenant. Had he the power, he should have made the scale much higher. He quite concurred in the suggestion that medical men who served their country should be given a preference in reference to appointments. He had approached the Secretary of State on the matter and he hoped before long something would be done.

In the evening the members of the medical profession entertained Sir Alfred Keogh at dinner.

Plymouth.

Territorial Army Medical Corps.

On December 5th Sir Alfred Keogh, K.C.B., Director-General of the Army Medical Services, addressed a gathering of medical men at Plymouth. The meeting was very largely attended, over 150 being present, and all parts of West Devon and Cornwall were represented. Mr. Paul Swain, Consulting Surgeon South Devon and East Cornwall Hospital, presided, and he was supported by Major-General Sir John Leach, K.C.V.O., Commanding Plymouth Coast Defences, and by practically the whole of the members of the staffs of the various local hospitals, and also the officers of the R.A.M.C. stationed at Plymouth. In his introductory remarks Mr. Swain referred to the necessity of organization, and from the history of the Crimean and South African wars, for the former of which he had volunteered as a surgeon, emphasized the fact that a great amount of work was necessary to bring the army and civilian medical practitioners into active co-operation.

Sir Alfred Keogh, in commencing his address, said that the large attendance encouraged him to believe that the appeal would meet with as ready a response in the West as it did in the North and in Scotland. He then described the proposed organization of the Territorial Army Medical Corps.

After a short discussion Dr. C. Childs moved a vote of thanks to the Director-General, which was seconded by Surgeon-Lieutenant-Colonel Webb, M.D., V.D., and carried with acclamation.

A small committee was formed, with Mr. Swain as chairman and Dr. Soltau as secretary, to work out local details of the scheme. Any information will be supplied by the secretary on application to 1, Lansdown Place, Plymouth.

In the evening Sir A. Keogh was entertained at dinner, a large number attending. Mr. Swain, in proposing the health of "The Guest," referred to Sir Alfred's great work in popularizing the R.A.M.C., bringing it into touch with the civil practitioners, and breaking down the barriers which had unfortunately in times past occasionally divided them. He wished the great scheme of which they had heard that afternoon every success. In his reply, the Director-General emphasized his interest in his medical profession, and appealed to its members to support him in his task of making the Royal Territorial Medical Corps a practical and useful establishment. Mr. Whipple, Senior Surgeon to the South Devon and East Cornwall Hospital, proposed the health of Colonel Bourke, C.B., Administrative Medical Officer for the District. He regretted Colonel Bourke's approaching departure, for during his residence they had all learned to admire and respect him. They were grateful for his services as President of the Plymouth Medical Society, and wished him every prosperity. The toast was drunk with enthusiasm.

After dinner a conversazione took place, and many points of interest in the scheme were discussed and elucidated.

Bristol.

Bristol Royal Infirmary.

A final seal upon the agreement which has been reached between the medical profession in Bristol and the Committee of the Royal Infirmary was set at a special meeting of the Governors of the Institution on December 5th. At this meeting, which was by far the largest meeting ever held, the new rule was formally proposed and unanimously adopted without discussion. The proposer, Mr. J. N. C. Pope, mentioned that the gentleman who had brought forward the rule proposed at the last general meeting, was absent under doctor's orders; he entirely agreed with that which had been substituted for it, and, had he been present, would himself have moved its adoption. After the formal business of the meeting had been concluded there were several short speeches, all being to the effect that the Institution was to be congratulated not only on the final closure of a thorny incident, but on the fact that its occurrence was in itself a proof of the keen interest all

connected with the institution took in its efficiency; through different routes all were working towards the same object. Among the speakers was Mr. C. Munro Smith, one of the honorary surgeons of the institution, who moved a vote of thanks to Sir George White for presiding. His general remarks were of the tenor already indicated. The two parties had met one another half-way, and, shaking hands, had come to an amicable agreement, thus proving they had the interests of the Infirmary really at heart. Sir George White terminated his short speech of thanks by urging all to endeavour to extend the usefulness of the Bristol Royal Infirmary, and to maintain it in that premier position which it had always held, not only in Bristol, but throughout the West of England.

Canterbury.

THE TERRITORIAL ARMY MEDICAL CORPS.

A LARGELY attended meeting, in the form of a smoking concert, was held at Canterbury on November 14th, for the purpose of hearing an address from Sir Alfred Keogh on the subject of the medical service of the new territorial army. After giving some account of the scheme, which has already been fully explained in these columns, the Director-General said that he wanted in the first place to raise in Kent a cavalry field ambulance in which every one would either ride or be driven, the idea being rapidity of movement, and also three infantry field ambulances of 10 officers and 240 non-commissioned officers and men. One such field ambulance he understood Canterbury would be sufficiently sporting to supply entirely by itself. In addition, a general hospital for the area was required, and he felt sure that when the time came help would be forthcoming from Canterbury in that direction likewise. The assembly was also addressed by the Mayor, and by Lieutenant Henchley, M.D., the officer in command of the Canterbury Volunteers Detachment of the Royal Army Medical Corps, who was in the chair. The former said that the city was to be congratulated on the fact that it was to have within its midst its own special organization of the Army Medical Corps. This desirable change the city owed primarily to Dr. Henchley and Lieutenant Barford, for it was entirely due to these two gentlemen that Canterbury had been able to asserts its proper position in the county of Kent. Dr. Henchley, in proposing a toast to the guests, mentioned that on the platform there were fifteen or sixteen other medical men besides himself, and in reference to the probability of a successful realization of the scheme in view, as far as Canterbury was concerned, he mentioned that the detachment under his command was not only up to full strength, but he had in training a large number of other men who were ready to join it formally so soon as permission to increase the official strength of the detachment was received. The authorized present strength was 80, its real strength 150, and with the help of those present it should not be difficult to obtain the indicated future strength of 250 men. Sir Alfred Keogh and Lieutenant-Colonel Russell, Deputy Assistant Director-General, were present at the meeting as the guests of the Mayor of Canterbury, Alderman Francis Bennett-Goldney, F.S.A., who previous to the meeting gave a dinner at which were present the Deputy Mayor, the Sheriff, the Recorder, Lieutenant Henchley, M.D., Lieutenant and Quartermaster Barford, the Rev. Le Mare Shallis, Acting Chaplain R.A.M.C.Vols., and Mr. Sebastian Evans, M.A., LL.B. The new movement has thus been very happily set on foot at Canterbury, thanks to the foresight and energy of Dr. Henchley, who organized this very successful form of inaugurating it, and enlisted the sympathy of the civil authorities.

Wales.

NEWPORT AND THE PROVISION OF MEALS ACT.

AT the Newport Education Committee held on December 3rd Alderman Howell, on a minute of the Elementary Education Committee recommending the adoption of the Provision of Meals Act, moved as an amendment that the matter be considered twelve months hence, remarking that a good deal of expense would be entailed in satisfactorily working the scheme, and he considered the present time, owing to the heavy rates, inopportune for further expenditure. Who would benefit? he asked, and Councillor Wright replied: The children. Alderman Howell said honest parents would not allow their children to receive charity meals. It would be the children of the thriftless who would benefit. Dr. Sutton, who seconded, said only a few children would require the aid. Dr. Davies, in reply, said from 600 to 700 children would require feeding, and if these were the children of the thriftless, that was no reason why the sins of the fathers should be visited on the children. Another member strongly objected to the term "charity" used by the alderman; he knew of children that very afternoon who had returned to Crindaw School without their dinner, and their tea would be supplied to them only by charity. This Act would feed them by right and not charity. If the time was not opportune, he would like to ask when it would be. He was as poor a man as could be found in Newport, yet he did not object to paying his share towards the feeding of the needy children, and he considered, therefore, the alderman could afford to do it. "In the sweet by-and-by" was a pious cry for shelving their responsibilities. The motion to adopt the new Act was passed.

Ireland.

THE IRISH UNIVERSITY QUESTION.

AT the annual dinner of the Dublin University Association, which took place in Manchester, Dr. Traill, the Provost, made an important announcement in reference to university education in Ireland. In the course of his speech he said: I am happy to inform this assembly that I have received from Mr. Birrell the positive assurance that in the proposals which he hopes to be able to lay before Parliament Trinity College, its constitution and its endowments, are absolutely excluded. At the same time, it is only right to remark that any Bill such as is foreshadowed is one that must receive universal assent in Ireland before it could be pressed upon Parliament. In my opinion, the only principle which can ever be expected to solve the university question in Ireland is to have three universities, according to the example of Scotland, where university education has been so successful. Each of these three universities must be free from tests, and open to students of all denominations, but their general atmosphere must be decided, not by the particular views of their governing bodies, or of their teaching staffs, but by the great majority of their students. The new universities, in this sense, will be undenominational exactly in the same sense as is Trinity College, where, as you know, no tests exist for any secular office or for membership of the governing body, not even excluding the Provostship. The idea ought to be to have a University in Belfast based on the Queen's College there, reviving the old title of "Queen's University," which will have an atmosphere decided by the majority of its students, and another University dealing with the remaining three colleges connected with the Royal University, which will have an atmosphere of its own in the sense which I have described Trinity College, reformed internally, and from within i possible, remaining with its University powers. I am comt mitting no breach of confidence in saying that I know tha it is upon lines of this character the Chief Secretary is proceeding, though how far he has got with his negotiations I do not know. I consider that the line he is taking with regard to this university question is thoroughly honest and straightforward, and that he is actuated solely by the desire to solve the question once and for all. We would, I think, be poor patriots if we refused to give Mr. Birrell every assistance in our power. I can answer for the governing body of Trinity College, at any rate, that we will give him that assistance, and I intend immediately to summon the whole teaching staff, and give them an opportunity of doing the same if they should so think fit.

Sir Edward Carson, M.P., was not so optimistic, and observed that he had long since learned that the best time to criticise a Bill, to approve of it, or to disapprove of it, was after he had seen it.

The *Daily Express* does not approve of a Belfast University. The *Irish Times* thinks the Provost "a little too effusive, and associates itself with Sir Edward Carson's cautious reserve:

> The principal drawback to the scheme is its tendency to accentuate the comparative isolation of Trinity College. . . . If Mr. Birrell's Bill gives a fair field and no favour to the various educational interest in Ireland, it will be supported with national unanimity, and with an honest national desire for its permanent success.

The announcement has not produced any public discussion so far. It is so meagre that it leaves little room for the expression of any definite opinion, and it is regarded more as a *ballon d'essai* than a very serious declaration. Therefore it is wise to await full details before trying to judge of the merits of the proposals. The problem of university education in Ireland is so complex that he would be a daring man who was confident about its solution. In the present condition of politics it seems almost impossible that any real attempt will be made to deal with Irish education in the coming session.

Notification of Births Act in Dublin.

At the last meeting of the Dublin Corporation a report was received from the Public Health Committee recommending the adoption of the Notification of Births Act. The adoption of the report was moved by the Lord Mayor, but was opposed by Dr. McWalter, who suggested that the matter should be postponed for a year. This suggestion was eventually unanimously adopted.

The Tuberculosis War in Ireland.

A very important deputation waited upon His Excellency the Lord Lieutenant and Mr. Birrell, on November 29th, in Dublin, for the purpose of laying before them the need of urgent action in dealing with tuberculosis in Ireland. The deputation consisted of the following representatives:

Royal College of Physicians, Dr. Joseph M. Redmond, President; the Royal College of Surgeons, Sir Henry Swanzy, President; Irish Medical Association, Mr. J. S. McArdle, President; Women's National Health Association, Her Excellency the Countess of Aberdeen, President; Committee of the Tuberculosis Exhibition, Dr. Michael F. Cox, accompanied by the Honorary Secretaries of the Tuberculosis Exhibition, Dr. Alfred E. Boyd, Mrs Rushton; National Association for the Prevention of Tuberculosis in Dublin, Mr. E. P. Culverwell; National Association for the Prevention of Tuberculosis in Belfast, Mr. Robert Brown, Donaghmore, co. Tyrone; National Association for the Prevention of Tuberculosis in Cork, Sir Stanley Harrington; Veterinary Medical Association of Ireland, Professor Mettam, M.R.C.V.S.; Irish Workhouse Association, Mr. N. J. Synnott, J.P.; Philanthropic Reform Association, Mr. A. M Fullerton; the Ulster Medical Society, Dr. John McCaw, President; the Cork Medical Society, Dr. P. J. Cremen; the Dublin Sanitary Association, Major Courtney.

Mr. T. W. Russell, M.P., Vice-President of the Department of Agriculture, and Mr. T. Stafford, C.B., Medical Commissioner, Local Government Board, were also present.

The deputation was introduced by Her Excellency the Countess of Aberdeen, as President of the Women's National Health Association of Ireland.

Dr. Joseph Redmond, President of the Royal College of Physicians, said the question of tuberculosis was of vital importance to every one, but most particularly to the people of Ireland, as tuberculosis accounted for more than 12,500 deaths annually in Ireland, and for each death they might calculate that at least 20 patients were suffering from the disease. In the Dublin registration area tuberculosis was as fatal as all the principal epidemic and general diseases combined. In the gloomy picture there was one bright spot—that consumption was curable. That fact ought to act as a powerful stimulus in the warfare against this white plague. The Royal College of Physicians, which he had the honour to represent, was strongly of opinion that tuberculosis should be made a notifiable disease. But the College did not for a moment desire that the poor victims of the dreadful scourge should be dealt with in the same manner as would be a patient suffering from small-pox or the plague. In some English cities—for instance, Liverpool—a system of voluntary notification had been in existence for some time with, he understood, most gratifying results, as the mortality from tuberculosis showed a marked decline. This was not wholly ascribed to notification, but also to general sanitary measures. Reports from America in favour of compulsory notification were encouraging, and it had proved in every way satisfactory in Sydney. If legislation were introduced in the direction of compulsory notification, every precaution should be taken so that the liberty of the poor patient should not in any way be interfered with.

Sir Henry Swanzy, President of the Royal College of Surgeons, said he hoped legislation would be introduced by means of which this plague would be mitigated or altogether eliminated. Compulsory notification was the keystone, without which other remedial measures would fall to the ground. It did not mean that patients would be dragged from their homes and taken to hospital. In many cases it would be quite sufficient to teach the patient to treat himself, and in what way to avoid infecting those with whom he associated in his daily life.

Professor Mettam, President of the Veterinary Medical Association of Ireland, advocated the adoption of more stringent and uniform measures for the regulation of milk and food supplies. No crusade against consumption in man could be successful unless tuberculosis in the lower animals was also combated. At the present time there was no general adequate provision for the inspection of flesh and milk. The slaughter of animals should be allowed only in public abattoirs, and every place where cows were kept for the production of milk should be registered.

Dr. P. J. Cremen urged that the county councils in Ireland should be enabled to erect and maintain such hospitals, sanatoriums, and dispensaries for the treatment of consumption as they thought fit.

Mr. McArdle supported the proposal.

Dr. John McCaw moved—

> That there is urgent necessity for a system of medical inspection of schools and school children.

Dr. M. F. Cox spoke with reference to the work of the Committee of the Tuberculosis Exhibition.

The Lord Lieutenant, in reply, said such a deputation must have peculiar significance indeed, when such bodies as the Royal College of Physicians and the Royal College of Surgeons, and other well-known associations, through their able spokesmen, had made known their views. The occasion was one which might be regarded as memorable. He could assure them that the attitude of the Government would be sympathetic.

The Chief Secretary said that upon the four particular points to which attention had been so particularly called he would say simply one or two words. The question of notification was naturally placed in the front rank, and all were agreed that if there was one thing more than another that should be notified, it was the presence of the tubercle bacillus, which destroyed one-seventh or one-eighth of the whole human family, and destroyed them very often under the most painful circumstances in the prime of their manhood and womanhood, and inflicted suffering and loss upon the world which it was impossible to calculate. The time had come when mankind should make a united effort to deal with this bacillus, and they were encouraged to believe by scientific men that it could be so met that in years to come this awful scourge might be stamped out. He thought the presence of tuberculosis should at once be notified, not for the purpose necessarily of destroying the home, or even of removing the patient to hospital, but for the purpose, first of all, of making it known that this terrible disease was in a particular locality, and inform persons within its immediate reach how best to combat its ravages, and restore health to the unfortunate members of their families who might be in an early stage of the complaint. In the case of those in the advanced stage, they could not be removed to hospitals until such hospitals were in existence. On the second point, with reference to the adoption of more stringent measures for the regulation of milk and food supplies, the Local Government Board had already issued regulations with regard to the accommodation for cows in Ireland; they had been generally received with approval, and there was every reason to believe that these conditions would be generally observed by the people of Ireland. The third suggestion was that county councils should be enable to erect and maintain hospitals sanatoriums, and dispensaries for the treatment of consumption. Dr. Cremen had told them of the difficulties that had to be encountered in Cork owing to the necessity of consulting twenty-eight Councils. He

quite agreed it was most desirable there should be unification of authority in this particular, and that County Councils should be enabled to erect these necessary buildings. The question of cost would arise. Possibly it might be worth considering whether they could deal with this national calamity as they had dealt with contagious diseases of animals, by a national rate. If that could be done some of the difficulties which existed having regard to the poverty of the counties in which the sanatorium would be placed would be overcome. In Ireland there was a very good service of dispensary doctors; and in that respect Ireland was ahead of every other portion of the kingdom. Dispensaries properly founded, properly established, properly equipped, and properly fitted out to deal with this disease would play a great part in the warfare with it. Dispensary doctors were not too well paid very often, and if new spheres of duty were imposed upon them, it was only right that they should receive additional remuneration. He was a strong advocate of medical inspection of schools, and a clause to do that was introduced into the Bill with which he was happy to say his name was no longer connected. He was more than pleased with the reception that clause received from all parts of the country, and he was only sorry that it did not apply in Ireland; although he quite agreed that everything that could possibly be done should be done in order to make Irish schools sanitary and fit to be places of education, he saw very great difficulties in the way of putting them in the position in which they certainly ought to be. He would only say, on the part of the Government, when there was a unanimity of this sort, that it would do its very best to give as early effect as possible to their recommendations.

Mr. T. W. Russell, M.P., said the food and milk supply of the country were prime factors in the prevention or spread of disease, and the Department would give every attention to the matter. The milk production of the country was something like 475,000,000 gallons annually. Seventy-five million gallons were used as food, and of this twenty or thirty gallons were subject to some sort of inspection and the rest was consumed without any inspection whatever, and often the inspection was of a perfunctory character. This was a serious matter, and one which the local authorities of the country ought to be able to remedy. Two methods had been suggested for dealing with this question. The first was that proposed by Mr. Field, who proposed that they should slaughter all animals affected by this disease and give compensation to the owners. Mr. Field said this policy was successful in stamping out other diseases in cattle. But there was a vast difference. Foot-and-mouth disease, for instance, was easily detected, but tuberculous disease was not; and, in view of its extent, the compulsory slaughter of these animals would be met with very great resistance by the agricultural interest in Ireland. The second way of dealing with it, which the Department considered free from the difficulties contained in the first proposal, was by sanitary measures under the direction of the local authorities. The Department had over 300 men and women co-operating with the farmers in their businesses, and it could be made part of their duty to study this question and advise the farmers with regard to it. Hygiene ought to be on the list of subjects taught in domestic economy classes. There was another way in which the Department could do a great deal, and that was by the establishment of a veterinary dispensary system. Any legislation that was proposed would have the support of the Department.

Alleged Bribery.

Several persons were returned for trial at the recent Limerick Winter Assizes on a charge of bribery in connexion with the election of a Poor law medical officer. The grand jury, however, did not think that a prima facie case had been established, and the bills were thrown out.

The Tuberculosis Exhibition, Belfast.

Further popular lectures were given during the remaining evenings. In addition to those already mentioned, the following subjects were dealt with: On December 3rd, "The Prevention of Tuberculosis," by Dr. William Calwell; on December 4th, "Some Outstanding Effects of Tuberculosis," by Professor Symmers, M.D.: and on December 5th, "Sanatorium Life Illustrated," by Dr. Howard Sinclair. The attendance in all was overflowing; and the demonstrations by various medical men were listened to with attention. In all from November 23rd to December 6th, 43,000 persons passed through the turnstile; and the attendance on the concluding day was 4,951. Arrangements are being made to hold the museum in Lisburn, Portadown, Lurgan, and many other towns.

Isolation Accommodation in Belfast.

At present two institutions for infectious diseases exist in Belfast—one at Purdysburn under the control of the Corporation, the other on the Lisburn Road under the Poor-law guardians. A conference was held on December 4th between the Public Health Committee and a special Committee of the Board of Guardians in reference to what might be termed amalgamation. Alderman Dr. King-Kerr (Chairman of the Health Committee) suggested three points for consideration: (1) The desirability of having only one establishment for the treatment of all notifiable diseases; (2) the best method of bringing this about; and (3) the terms on which it could be carried out. It was agreed that there should be only one hospital, and that all infectious cases should be sent to Purdysburn. On the question of liability for maintenance and for the necessary additional buildings considerable discussion took place, and the conference was finally adjourned.

Ulster Medical Society.

The annual dinner of the Ulster Medical Society was held in the Medical Institute, Belfast, on November 28th. The President (Dr. John McCaw) occupied the chair, and over fifty Fellows, Members, and guests were present. The Chairman gave the toast of "The King," which was loyally and enthusiastically received. Mr. A. B. Mitchell proposed "The Lord Lieutenant and Prosperity to Ireland," which was responded to by the High Sheriff of Belfast (Dr. P. O'Connell). Mr. J. Walton Browne proposed "Our Visitors," which was responded to by Rev. Dr. Hamilton, President of Queen's College, and Dr. Warnock (Donegal), President of Ulster Branch. Dr. Moore proposed "The Health of the President," and Dr. McCaw, in responding, proposed that of the Honorary Secretary, Dr. Howard Stevenson. A number of members contributed songs and recitations, and Dr. R. J. Johnstone read an original composition, entitled, "The last dying speech and confession of Bacillus Tuberculosis, Esq., late of Belfast, with a full history of his many crimes and murders, and his most edifying end," with many local allusions, which was received with much enthusiasm and delight.

Galway Workhouse *v.* Galway Asylum.

We have received from the Medical Superintendent of the Ballinasloe Lunatic Asylum a letter complaining that the article (British Medical Journal, November 30th, p. 1616) "Ballinasloe Asylum *v.* Galway Workhouse" is unjust to him. He encloses complete newspaper reports of the proceedings at the Galway Board of Guardians and the Ballinasloe Asylum Committee. These we had already seen, and it was on these reports that the article was founded. He also sends us a copy of an article on the subject published in the *Poor Law Journal*. That article goes into controversial matters, upon which we did not touch, being only anxious to put the facts, so far as we could ascertain them, of what looked like a grave professional dispute, impartially before our readers.

With regard to the telegram from the Inspector of Lunacy quoted in our article, Dr. Kirwan writes:

> May I point out that you have—unintentionally, of course—totally misrepresented the telegram, which actual one I enclose, and which you will at once see puts quite a different aspect on the case.

As it appears that the text of the telegram was incorrectly given in the report from which we quoted, we give the correct and the incorrect version of the telegram side by side, and are sorry that Dr. Kirwan should consider that he was misrepresented, for what we wished to show was that he regarded the case on admission as so serious that he seemed to have reported it twice to the inspectors:

Incorrect Version.	*Correct Version.*
Yes; received your telegram that Anne Laffey was suffering from bedsores.	Yes; it was notified that Anne Laffey was suffering from bedsores on admission.

As we were careful to mention, the suggestion of mistaken identity came from a member of the Galway Board of Guardians and not from us, and such mistakes have occurred in large hospitals before now.

We feel sure that on further consideration the Medical Superintendent of Ballinasloe Asylum will see that the staff of the Galway Workhouse has just as much cause to complain as he has that exigencies of space compelled us to condense its explanations as well as his.

Scotland.

DINNER TO DR. ALEXANDER JAMES, EDINBURGH.

ON Thursday, December 5th, a number of his professional friends entertained Dr. James to dinner on the occasion of his severing his connexion with the Royal Infirmary, in which institution he had been full Physican for the past fifteen years. The dinner was held at the Caledonian Station Hotel. The President of the College of Physicians (Dr. Underhill), was in the chair, and there was a gathering of about seventy medical men from various parts of the country. After a number of apologies for non-attendance had been read by Mr. Caird, the toast of the evening was proposed in a charming and felicitous speech by Dr. J. Graham Brown, one of Dr. James's oldest and most intimate friends. Dr. Brown dwelt upon the geniality and many-sidedness of Dr. James's character, his originality of ideas, and his sterling and valuable professional work and writings. Dr. James replied in a characteristically humorous and imaginative speech, and expressed the intense gratification he felt at the honour done him by so many of his friends. Later in the evening, Dr. Goodall, in the name of Dr. James's former house-physicians, presented him with a handsome silver goblet, together with a pendant for Mrs. James. A number of songs and stories added to the enjoyment of a very pleasant gathering.

SPECIAL CORRESPONDENCE.

VIENNA.

Government Grants to Hospitals.—A New Society for Physical Therapeutics.—Results of a Stab in the Neck.—A Parliamentary Medical Club.

THE Minister of Finance recently announced in his budget speech, that the extraordinary surplus of the year 1906, amounting to about £6,000,000, enabled him, amongst other grants, to give a sum of £360,000 towards the completion of the hospital wards of Vienna, Prague, and Innsbrück. This will not be spent for the erection of new pavilions, but for better equipment of the existing wards and laboratories. Whilst the plan of the Government for disposing of the money met with universal approval, its policy was severely criticized, because the enormous surplus of the balance was obtained principally by the high duty on corn and sugar and meat thus drawing chiefly upon the income—and nutrition—of the poorer classes. The military authorities are complaining of the diminishing physical fitness of the population, which in some districts necessitates the rejection of 30 to 50 per cent. of recruits. It was pointed out that if the lower classes of the population were enabled to get plenty of cheap food, the results of recruiting and the figures for cases requiring hospital treatment would also improve.

A new society has been formed in Vienna, which was joined very quickly by numerous physicians, because it meets the requirements of modern medicine. It is called *Gesellschaft für Physikalische Therapie* (Society for Physical Therapeutics). In an opening address Dr. Bam remarked that hitherto in the clinics and wards insufficient attention had been paid to the possibilities of mechanical treatment in comparison to the chemical treatment by remedies and diet. The modern development of electricity, radioactivity and hydrotherapy necessitated a closer contact of all men practising on these lines. It is proposed to have the society recognized by the Medical Society and to make it a branch of that venerable medical union.

An interesting case was shown at one of the last meetings of the Surgical Society by Dr. Mayer. The patient was a man who had been stabbed four weeks before in the left side of his neck with a broad knife. The wound healed by first intention. The present condition is the following: There is a scar from the concha to the angle of the lower jaw. A distinct sensation of vibration is perceptible in the area of the scar down to the supraclavicular fossa, which disappears if the common carotid artery is compressed, and reappears if the pressure is relaxed. The patient himself feels constantly a vibrating noise all over his skull, more accentuated during the systole; this noise can be also heard with the stethoscope. The left half of the tongue is atrophied, with deviation to left if it is protruded, but without any disturbance of taste and touch. The patient's voice is hoarse, owing to paralysis of the left vocal cord, which is fixed in the cadaveric position. The left half of the pharynx of the epiglottis and of the larynx is absolutely anaesthetic to the middle line. The left eyeball is protruding, and the left pupil is smaller than the right one, but the reaction for light and accommodation is equal in both eyes. The diagnosis is therefore a wound of the carotid, leading to the formation of a traumatic aneurysm. It is most likely that both the internal and the external carotid arteries have been wounded; the noise all over the head supports the view that the internal artery also takes part in the formation of the aneurysm. Further, the hypoglossal nerve, the glosso-pharyngeal, and the sympathetic were injured, and the vagus also cut through, although no pathologic conditions of the lungs, the heart, and the circulatory system have followed. This is explained by the fact that the vagus nerve alone is sufficient to regulate the activity of these involuntary organs.

In the new Chamber of Deputies a new club has been formed, which will be called the Parliamentary Medical Club. It numbers about thirty members who are either physicians or are of a pro-medical turn of mind. It is proposed to keep up an intimate connexion with all medical representative councils of the empire, so as to be able to watch over the interests of the profession in legislature. As the Government has in contemplation the constitution of a health ministry, the club may have yet an opportunity of doing real good for the organization of this department. It is already engaged in the consideration of a general public health law for Austria.

CORRESPONDENCE.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

SIR,—The memorandum of the Board of Education, issued on November 22nd, and printed in the SUPPLEMENT to the JOURNAL of November 30th, p. 293 et seq., places the whole subject of medical inspection of school children on a more accurate footing than it has hitherto attained. The scope of the Act, we are told, is extensive, possibly more extensive than we had expected at first; and there can be no doubt that if it were properly planned, equipped, and carried out on the fundamental bases stated, that the most ardent hypercritic would be satisfied. The inclusion of (1) the medical inspection of school children, (2) the oversight of the sanitation of the school buildings, (3) the prevention, as far as may be, of the spread of infectious and contagious diseases, including skin diseases, and (4) the systematic supervision of the personal and home life of the child must be welcomed with satisfaction, and the admission that the Act does not aim at a mere collection of statistics, but proposes to deal radically with defects by what is termed "measures of amelioration" still further commands a whole hearted approval. But this is not all. We are told, since the work of medical inspection cannot be properly accomplished by medical men without assistance, that the co-operation of the teacher, the school nurse, and of the parent or guardian is to be sought. In another passage the health visitor is mentioned as a valuable subsidiary agent whose co-operation has done much in the past.

So far, therefore, the goodwill of the Board, the excellent object of the Act, with its wide scope and the amount of painstaking preparation which has been expended, would promise well, but when one begins to analyse the machinery for carrying out these aims, a degree of disappointment cannot be suppressed. I do not propose to deal with the anomaly of the choice of the medical officers

of health as the chief inspectors, nor with the proposed requirements for qualifying as a medical inspector, since you have already done so in a most able manner in the leading article in the JOURNAL of November 30th. But I should like to be allowed to deal with another important factor, which bears closely on the efficiency of the machinery—namely, the subsidiary agents. As stated, these are the teacher, the school nurse, the parent, guardian, and possibly the health visitor. The eighteenth paragraph states that the present regulations are only providing for the initiation of the Act, and that other subjects are receiving careful consideration. Among these are several which deal with the teacher. "The Board is urging the necessity of giving special instruction in the principles of hygiene to all students in every type of training college, so that they may be able to deal profitably with this subject in the schools" But we learn in the next sentence that it will take time to deal rightly and effectually with these subjects.

In her excellent letter to the editor of the JOURNAL (October 12th, 1907) Mrs. Watt Smyth pointed out the very great importance of instructing teachers in the principles of hygiene and emphasized the point that without a certain amount of knowledge of this on the part of the teachers, the utility of the measure must necessarily be impaired. If one limits oneself for the moment to medical inspection proper, one finds that even during the early stages of the application of the Act, when but three examinations of each child will be carried out, the energies of the medical inspector alone will fail to cover the objects, without the co-operation of the teachers. But that co-operation must be intelligent, if it is to be employed and experience has taught that the average teacher in elementary schools has practically no knowledge of the most fundamental essentials of hygiene. How far the co-operation will be required naturally depends on the character and form of the inspection required. The memorandum sketches out what it calls "minimum" requirements, and one has to suppose that each local education authority will have a free hand in forming its own schedule. That this is undesirable from the point of view of the results to be collected will no doubt be generally admitted. Dr. Leslie Mackenzie, the medical member of the Local Government Board of Scotland, has drawn up a most suitable schedule, which has been adopted by the Edinburgh and other Scottish School Boards. This schedule includes four paragraphs which are to be filled in by the teacher, while observations of defects of various kinds are also to be noted by the teacher and entered for the assistance of the medical inspector. A teacher versed in the principles of hygiene and in the methods of investigation would naturally possess advantages for the purposes of the Act, which cannot be overestimated. It is unnecessary to deal with this subject further, since its importance must be patent to all. Next, from the point of view of the sanitary condition of the school buildings and of the prevention of contagious and infective conditions, the teacher would, if competent, be in a position to indicate sources of trouble which might otherwise occupy much time of, and necessitate endless trouble to, the medical inspector. In the fourth point—the supervision of the personal and home life of the child—the first part is entirely in the hands of the teachers; while as far as the latter part is concerned, a teacher well trained in hygiene could at times do more indirectly to attain the desired end than even the medical man. Again, with regard to the mass treatment, the carrying out of the measures of amelioration, surely one of the sources of failure which one anticipates would lie in the incompetence or want of understanding of those who are called upon to carry out the instructions of the medical advisers.

That the school nurse, when one is employed, the parent or guardian, and the health visitor could in several ways assist in attaining the results hoped for must be admitted, but their part must remain secondary to that of the school teacher.

It is therefore extraordinary that the Board of Education should have formulated all the elaborate preparations for the working of the Act, and have failed to deal logically with the question of personnel. It seems to me that there is a great danger of the Act failing from the following causes:

1. The employment as inspectors of medical men especially trained in sanitary science rather than in the diseases and defects of children.

2. The postponement of equipping the teacher so that he or she may be able to carry out that part of the work, which otherwise may be neglected or become difficult.

3. The failure to insist on a standard schedule, which each local education authority must adopt as a minimum.

The remedies can yet be applied, before failure takes place. It would be wise if the British Medical Association were to express definite opinions on the details of these matters, so that the Education Board may receive advice on which, perhaps, it may act. That details and not only general principles must be dealt with is shown by the confusion of ideas met with in the memorandum.

It would be well to draw up schemes (1) with regard to the necessary qualifications of an ideal medical inspector; (2) with regard to the course of instruction in hygiene requisite for the training of school teachers; (3) with regard to the proper person for teaching hygiene to the teachers; and (4) with regard to the schedule of inspection, including the allocation of those points which are required to be filled in by the teacher, and those points on which the medical man must gain his information directly.

Perhaps I may be allowed to mention, in conclusion, that at my request the Division of Hampstead endorsed the view that such instruction of school teachers in hygiene is a real necessity, by adopting the resolution to this effect, which was carried at the Congress on School Hygiene held in London in August of this year, without a dissentient voice.—I am, etc.,

Wembley, Dec. 3rd. H. W. ARMIT.

SIR,—When you inserted your leader on this subject I am sure you overlooked the fact that you were about to do a grave injustice to a large section of the profession who are many of them working for the national good under circumstances of great difficulty. We, as a body of medical officers of health are fully aware that we have not the sympathy nor the co operation of the large body of the profession who form the bulk of the Association; but you must not forget that we possess among our number some of the most eminent members of the profession, and that to us far more than to the general practitioner is due the improvement of the national health.

The question of the fitness or suitability of this person or that for the new work lends itself to argument, not wholly untainted by self-interest on the part of the debater. Perhaps a few lines can be laid down as a basis of agreement outside the question of self.

It is obvious that the medical officers in the large cities who are already devoting their whole time to their work cannot do more than establish in their departments a bureau for the collation and interpretation of the facts gathered for them by the schools inspector.

It is equally obvious that men engaged in ordinary competitive general practice cannot be permitted to enter into the domestic and hygienic details of the patients of other competing practitioners.

It is also clear that the medical officers of health who only receive a nominal salary and who may, if any body may, come within your category of sanitarians who betray their trust, are not in a position to take up this work and carry it out efficiently.

But, Sir, it must not be overlooked that there are not a few men who, having been general practitioners first and health officers afterwards, who have qualified for the service not only by acquiring the D.P.H., but have gained, in the laborious and arduous duties of contract work and out-patient practice, a knowledge both of public health and of the conditions under which children are born and die in our slums, and who, above all other men, are qualified doubly for this work.

To these men who in great measure loyally sacrificed their private work and ruined their midwifery connexion, who have not feared to incur the enmity of the property holder and the jerry-builder, an opportunity presents itself of getting back what they have lost. If their hearts are in the work of the health department they will relinquish the curative side of their work and devote themselves to a whole-time appointment, and if they have no love for sanitation, but prefer the old lines of medical practice, the public health service will be well rid of such

and one of the greatest arguments against fixity of tenure will be silenced.

One of your correspondents points out that as a county medical officer of health he has no time to do this work. Of course he has not; nor have the working medical officers of any of the counties or any of the great towns. Another says that the examination must take up the hours he devotes to general practice. Very true; he has to choose which it will suit him to abandon. But let us have no more sneers at those men who have done their best for public health, and who deserve better things at your hands than the leader on the subject.

Personally I can and will do the work, if they will let me; I shall become a whole-timer, and get quite as much out of it as out of the practice which, I am convinced, no whole-hearted medical officer of health can conduct with profit.—I am, etc,

December 8th. A Part-time M.O.H.

Sir,—In the Memorandum of the Board of Education—published in the Supplement to the British Medical Journal of November 30th—there are many questions raised which it is most desirable that the profession should very carefully consider, but if our opinions are to be of any avail they must be expressed with the least possible delay, as the various local education authorities are already considering the working of the Act, or will very shortly be doing so, and naturally it will be much easier to influence them now than it will be after they have formulated their opinions.

Both the success of the Act and the position of the profession in the working of it depend very largely on these first-formed opinions of the local authorities, and we have in our Division an easy and effective means of making our own suggestions heard. If every Division would at once meet and discuss the Memorandum, and in some way bring its views before the proper authority, the result could not fail to be satisfactory. In the case of county councils it would be necessary for the various Divisions concerned to have joint meetings.—I am, etc.,

Bradford-on-Avon, Dec. 11th. Chas. E. S. Flemming.

THE PROCEDURE OF THE REPRESENTATIVE MEETING.

Sir,—The Chairman of the Representative Meeting has done me the honour of replying to one part of my letter of November 9th, in which I referred to a supplementary agenda of business containing resolutions which had not been advertised or considered by the Divisions, and he characterized my objection to this as a "misunderstanding," since "motions relating to the adoption of reports of Council or Committees" do not require previous notice, and "it is absolutely impossible to require notice of amendments." The former statement—that Council or Committee reports may be mangled out of all recognition without notice, if really in terms of the XXXIst Article of Association—shows that the rule is in need of amendment; and the latter statement is surely open to grave objection. Amendments may be not only destructive of the original motion and leave us "as we were," but introduce a fresh line of policy of far-reaching influence on the Association. Two of these so-called amendments were of that character, and, if they had been reached and passed, would have most gravely affected the relations between consultants and general practitioners. Yet Dr. Macdonald passed these as "in order," and they were assigned their place in the paper of business by the words in italics: "For insertion after item 35 in the Agenda" The principle of my objection to undiscussed motions, which Dr. Cox complained in his letter of November 9th was frequently violated, is, however, admitted by the Chairman, and it is satisfactory to know that in the future no motions "sprung on the meeting," as Dr. Fothergill calls them, will be brought to a decision. Whether it is wise or even feasible to allow discussion of such new motions is doubtful, but might be left to the Chair to decide, if in accord with the sense of the meeting.

The constitutional principle Dr. Macdonald enunciates in the ninth paragraph of his letter contains the crux of the whole question as to the true character and reliability of the Representative Meeting. He says that "it should act as a body of delegates—that is to say, in accordance with the instructions from its constituents." How is it to act, then, when its members are elected by a mere fraction of the constituents, and when they receive little or no instructions? That such is the case now cannot be denied by the majority of the Divisions. Take note of the numbers attending the meetings of the Divisions at the present serious juncture, and observe not only their miserable proportions, but the *wholesale* votes for or against according as they are advised by their Representatives. The average member is either indifferent to, or cannot understand without inside knowledge, the merits of the questions presented to him. The Representative Meeting is not true to its name.

I trust that a "round-table conference" may be held, and succeed in bringing about a settlement; but no compromise is possible without retaining some effective control over the decisions of the Representative Meeting.

May I be allowed to express my regret at the appeal made in the report of the Subcommittee in the name of the Representative Meeting to the *amour propre* of the delegates and the loyalty of the Divisions? The matters in dispute are, or should be, outside of all personal considerations.—I am, etc.,

Edinburgh, Dec. 10th. A. Walker.

ETHER ADMINISTRATION BY THE OPEN METHOD.

Sir,—I have read with interest Mr. Bellamy Gardner's article under the above heading in your issue of November 23rd, and agree with the majority of his statements. Mr. Gardner, however, states that adults can be satisfactorily anaesthetized *ab initio* by ether on an open mask. This may be, but I cannot understand an expert like Mr. Gardner subjecting his patients to such a disagreeable method.

He also states that there can be no question as to the ease and simplicity with which anaesthesia may be maintained by ether on an open mask. Possibly his experience with this method is greater than mine, but I have had great difficulty in several cases with adults.

I have given up the open mask for Dr. Hewitt's C.E. inhaler, and find it answers admirably for administering ether. The close-fitting facepiece of Dr. Hewitt's apparatus prevents that access of air which delays induction, and which in many cases renders it impossible to maintain a proper degree of anaesthesia when the open mask is used.

I induce anaesthesia with gas and ether in the ordinary way, and then proceed with Dr. Hewitt's inhaler, or I use the latter throughout, first inducing anaesthesia with C_1E_2—I am. etc.,

London, W., Nov. 28th. W. Monro Anderson.

Sir,—For some time I have been administering ether by the open method—first, by using the ordinary Clover's inhaler without the bag; later by an Allis's inhaler; and now, in the attempt to simplify apparatus, simply a gauze bandage, folded twice over a square of wire, and surrounded by a folded towel.

The use of such a simple apparatus allows one also readily to change to ether and chloroform mixtures, or to pure chloroform, if found advisable; and it admits of the use of chloride of ethyl to induce anaesthesia, 3 c.cm. of ethyl chloride sprayed intermittently over the gauze bandage being sufficient to give an effectual ethyl-chloride-ether sequence, with rapid loss of consciousness and consequent benefit to the patient, and with a minimum of struggling.

The average amount of ether used in my last 20 cases—with a simple gauze and towel apparatus—was 1 oz. an hour in excess of the average quantity used in a series of cases where Clover's inhaler with a closed bag was used. A relatively larger quantity, however, was used to induce the anaesthesia, but quite a small amount sufficed to keep it up.

Naturally, as one gains experience of the method the quantity used is lessened.

It is well to know that one objection often brought forward against the use of ether—the need of special apparatus—is non-existent, and that any one with the simplest of apparatus can induce an anaesthesia, as to the

convenience and safety of which there can be no doubt.—I am, etc.,

Glasgow, Nov. 30th. WILLIAM TEMPLETON, M.B.,
Honorary Extra Anaesthetist,
Royal Samaritan Hospital for Women,
Glasgow.

MOVABLE KIDNEY FROM A SURGICAL STANDPOINT.

SIR,—Under the above heading Mr. William Billington, in an excellent paper published in the BRITISH MEDICAL JOURNAL of November 30th, describes an operation which he says is a modification of that of Goelet. It might with equal justice be described as a modification of the method suggested and illustrated by me in the JOURNAL of December 24th, 1904, and subsequently published in the *Medical Annual* of 1906, and in the last edition of Jacobson's *Operations of Surgery*. My method consists essentially in slinging the kidney by its own capsule to the external arcuate ligament in almost exactly the same way as Mr. Billington slings it to the last rib. The flap in my cases is fashioned from the true capsule, but has the base upwards instead of downwards as suggested by Mr. Billington. While I admit that the kidney is more nearly in its normal position if slung to the last rib, I hold that the risk of wounding the pleura weighs against the theoretical advantage of exact anatomical reposition.

Mr. Billington has been fortunate in avoiding this risk, but I am sure in less experienced hands such immunity would hardly be obtained.

The external arcuate ligament is easily recognized, it is transverse, and not oblique as is the last rib, and it is so strong that there is very little risk of the kidney breaking away from it except by tearing of the capsule, an occurrence which might as readily happen if the last rib were chosen as a support.

From the after-history of my own cases I am satisfied that this method of slinging the kidney by its own capsule is uniformly successful if properly carried out.

My object in writing this note is not to defend my procedure as against that of Mr. Billington, but to point out that the method of using the capsule as a sling is not new.—I am, etc.,

Belfast, Dec. 2nd. ANDREW FULLERTON, F.R.C.S.Irel.

THE BRADSHAW LECTURE: A COMMENT.

SIR,—In the BRITISH MEDICAL JOURNAL of March 19th, 1904, Dr. James Barr published a clinical lecture on the treatment of serous effusions, in which he claimed that the injection of sterilized air after tapping was a new and original method of treatment introduced by himself. Among others, I pointed out, in a letter to the JOURNAL, that the introduction of sterilized air after tapping was well known on the Continent, and cited a case of pyopneumothorax which Professor Potain had treated successfully in 1888 by that means. Dr. Barr, in a characteristic letter, protested that Professor Potain's case was irrelevant, because it was one of pyopneumothorax, which every surgeon knew ought to have been treated by resection and drainage, as I also should have known.

In your issue of November 9th you published the Bradshaw Lecture, delivered on November 5th by Sir James Barr, before the Royal College of Physicians. M. Potain's case, to which I had so foolishly called attention, is there quoted by the lecturer as entirely relevant, with the following remarkable condition:

> Empyema is one of those numerous diseases which the surgeons have taken under their own special care, but they have done nothing to advance its treatment. . . . When a surgeon has to deal with a purulent effusion in the chest, about the only idea which he can get into his head is free drainage, and forthwith out comes a piece of rib and in goes a large drainage tube.

Truly "the convolutions of the human brain are very wonderful."—I am, etc.,

Mentone, Nov. 26th. D. W. SAMWAYS.

ACUTE GENERALIZING PERITONITIS AND ITS TREATMENT.

SIR,—In the BRITISH MEDICAL JOURNAL for November 30th Mr. Carwardine has published a most interesting paper on the treatment to be adopted in cases of soiling or infection of peritoneum. He strongly supports the drainage of that cavity by means of rubber tubes through multiple incisions.

Such a procedure has two distinct drawbacks: (1) The period of convalescence is lengthened by the insertion of the tubes, and (2) the points at which the tubes perforate the wall are the potential sites of abdominal hernia.

If drainage can be avoided, a material advantage is gained. It has been my practice for some time to close the abdomen completely in nearly all such cases, and when drainage is employed, it is only by means of a small tube carried down to the seat of a perforation in the stomach or duodenum when the suture has been unsatisfactory owing to the condition of the visceral wall.

In cases of recently perforated gastric or duodenal ulcer the peritoneum is rather soiled than infected, and should be cleansed by irrigation, special attention being paid to the pelvis and loins. The abdomen is then closed in layers. This treatment has been so successful that it is worthy of trial.

In cases of appendicitis with diffuse peritonitis the conditions are somewhat different. Here the peritoneum is infected. Dudgeon and Sargent have shown that the area of actual infection is often limited, although sero-pus or turbid fluid is found widely diffused between the coils of the intestine. This turbid fluid has been shown by the same observers to be sterile in a great majority of instances.

In consequence of these observations it has been my practice to remove the appendix, swab out the neighbourhood of the organ, and close the abdomen in layers. In the majority of cases the wound heals by first intention, and the patient is out of bed in the space of two weeks. If suppuration occurs it is caused by the *Bacillus coli communis*, and subsides in a short time provided an absorbable suture has been used. It is rare for a secondary abscess to form.

It is difficult to convey what one means by diffuse peritonitis, but I can only say that I now treat cases successfully by this method, which I should have formerly called general peritonitis and drained for that reason. A tube introduced into the abdomen quickly becomes surrounded by adhesions and can then only drain its immediate neighbourhood—it cannot drain any large area. The surgeon can only remove the source of infection and roughly clean the peritoneum; the real cleansing must be a vital process.—I am, etc.,

London, W., Dec. 2nd. CUTHBERT S. WALLACE.

THE BRISTOL ROYAL INFIRMARY.

SIR,—On page 1680 of the JOURNAL of December 7th, in an article on the Bristol Royal Infirmary, the inaccuracy and weakness of the Committee's last manifesto to the Governors are deservedly exposed; but near the foot of the page I read:

> The next paragraph deals with the prohibition rule over which the whole controversy raged. It states that this was *the suggestion of the Dean of the Faculty*, but it omits to mention that the Dean in proposing it in writing, was not acting as the representative of his colleagues, two other gentlemen being on the Committee specially for that purpose; that it was his own private proposal, and *had not been submitted to the staff for approval, and when it was, the staff would have none of it.*

In the interests of accuracy I wish to comment briefly on the portions I have italicized. The suggestions I sent in writing to the President were (as has also been stated by my colleagues) intended merely as a basis for discussion between the staff and the Committee. I submitted them to my colleagues ten days before I sent them to the President; but though *my proposals obtained considerable support, and an amendment to them was lost*, they failed to secure enough votes to pass. I had wished the suggestions to go from the staff itself, to try to divert the President and Committee from their so-called "sanction rule," which they were then determined to force upon us. This was as follows:

> That before the appointment of any applicant for election to any post on the honorary staff he shall consent not to apply for any other hospital *or public* appointment without the sanction of the Committee.

During the ten days' interval several of my colleagues visited the President, but failed to persuade him to abandon the "sanction rule" in favour of something less repugnant to our feelings. Then I wrote to the President suggesting some such rules as I had proposed to my

colleagues as an alternative plan. The result was the abandonment of the "sanction rule."

The "prohibition rule," as you term it, was the only one of the five clauses of my proposal which *was not originated by me*, for I had adopted the principle of the limitation of public (professional) appointments from the Committee's own "sanction rule," recognizing that if we wished the President and Committee to drop that pernicious rule, the bait must be made sufficiently tempting. This was the more necessary because it was one of our own colleagues on the "consulting" staff who had induced the Committee to include the words "*or public*" in the sanction rule.—I am, etc.,

Clifton, Nov. 9th. Arthur B. Prowse.

THE REPRESENTATION OF THE MEDICAL FACULTY ON THE SENATE OF THE UNIVERSITY OF LONDON.

Sir,—It is of little use whipping a dead horse, and the concentration controversy is over, but I must defend the accuracy of my previous letter.

The Dean of St. George's suggests that I—by this letter—produced a false impression in regard to his medical school and its claim for an institute at South Kensington.

The University *Calendar* (1906–7) states that there are two preliminary scientific students belonging to St. George's. To confirm this statement I looked over the examination pass lists, and I found one student belonging to St. George's passed the Intermediate M B. Examination in the year 1905–6. The Dean states that 33 students were transferred from St. George's to University or King's Colleges between 1905 and 1907. The 33 would include students who entered in 1903–4, and some at least who entered in 1902–3 Thus the average transferred per annum would be 10 at most. Among the 10 would be conjoint students, and Oxford and Cambridge students who required preparation for the first Fellowship examination. Whatever may have been the opinion of the now happily-defunct "Concentration Committee," I maintain that the University of London cannot be expected to build and endow an institute for the teaching of conjoint students and the undergraduates of other universities.

Will the Dean kindly state the number of University of London students that have been transferred from St. George's in the last two years? for it seems to me that his letter rather than mine may convey a false impression.—I am, etc.,

London Hospital Medical College, Dec. 4th. Leonard Hill.

EPSOM COLLEGE.

Sir,—Last week I received a circular from the Charity Voting Reform Association, at the foot of which is my name in ink as subscriber to Epsom College. With much that the Association says I fully agree, but I do not agree that Epsom College is in any sense a charity. In my opinion it is the duty, as it is also the privilege, of every doctor who can, to make provision for those who fall by the way, and I trust that all medical men will agree with me and say to the Charity Voting Reform Association —Hands off Epsom College.

Personally, I regret that the profession has two separate bodies to help the less fortunate members, for if the funds were worked together great economy, and therefore increased relief, must result.—I am, etc,

Paignton, Dec. 9th. Griffith C. Wilkin.

The fourth Congress on Climatotherapy and the Hygiene of Towns will be held at Biarritz from April 20th to 25th, 1908, under the presidency of Professor Pitres.

A new Psycho-Neurological Institute in St. Petersburg, under the direction of Professor Bechtereff, towards the cost of which a sum of 600,000 roubles was contributed by private subscribers, has recently been opened.

The late Mr. Edward Thomas Atkin, of Sheffield, whose will has now been proved, left £500 each to the Royal Infirmary, the Royal Hospital, and the Jessop Hospital, all of Sheffield.

PUBLIC HEALTH.
AND
POOR-LAW MEDICAL SERVICES.

UNSOUND POULTRY AND GAME.

The Corporation of London has recently issued a circular letter pointing out the details to which attention should be given at every stage of killing, storing, and packing poultry and game. It appears that the value of such articles of food condemned in the markets every year is considerable, and that a large proportion of this waste is due to carelessness or ignorance of consignors as to the best methods of preparing and packing.

THE HINCKLEY WORKHOUSE INFIRMARY.

We have recently had to draw attention to the altogether inadequate provision made by the Hinckley Board of Guardians for their sick poor and to the insanitary condition of the infirmary, and we are not surprised to learn that while the guardians neglect to take any steps to remedy matters, erysipelas continues to flourish and serious cases of illness have to be treated in the workhouse itself A recent report by the Local Government Board Inspector states that the infirmary is a small building with 16 beds, 8 for males and 8 for females. Owing to the overcrowded state of the building, the whole of the infirmary is occupied by males, and instead of having 16 occupants, 22 men and 1 boy were housed there, with no day-room accommodation and no means of classification.

The female sick are housed in the body of the house, in one ward; they numbered 16 women and 2 children. In the male receiving ward one man was isolated suffering from syphilis, and in the male side of the workhouse was accommodated a demented case who has frequently to be watched. In the female receiving ward a woman and two children were being isolated for scarlet fever at the time of the inspector's visits. It will be seen, therefore, the inspector adds, that every fresh admission has to be admitted direct into the body of the house.

The guardians' reply to the letter of the Local Government Board, enclosing the inspector's report, was very simple. They had decided at a recent meeting to postpone consideration of the matter for twelve months, and they adhered to that decision. For twelve months, therefore, unless the Local Government Board use the powers which it possesses, or the ratepayers at the next election turn out the present guardians, the disgraceful condition of affairs which has been described will continue. It is to be hoped that the local press will fully inform the ratepayers of the need there is for infusing some new blood among those who are supposed to look after their sick poor.

MEDICAL CERTIFICATION OF PATIENTS FOR EMIGRATION PURPOSES.

District Medical Officer, whose case was noted under this heading in the British Medical Journal, October 19th, 1907, page 1110, writes again, saying that the guardians have twice refused to entertain the question of fees for the special services there described, on the ground that the examinations and the filling up of the forms properly came within the ordinary duties of a district medical officer. He asks whether he would be justified in appealing to the Local Government Board.

*** We are still of opinion that our correspondent is entitled to extra remuneration for this very special duty, and as he is not likely to succeed by any further appeal to the guardians the only course open appears to be that of laying his case before the Local Government Board. He should, however, bear in mind that if he decides on doing so a copy of his application will be forwarded by that Board to the guardians, and even this may possibly give offence to the latter body. Should our correspondent hold a permanent appointment, he might risk the result of his application to the higher authority; but should he, on the other hand, hold only a temporary appointment necessitating periodical re-election to office, it would be unwise to take any such action. We cannot recommend taking the case into the county court, as, even if a favourable judgement were to be given on the main point at issue, the amount of remuneration awarded might, and probably would, be quite insufficient to compensate him for the very irksome duty. The least objectionable course would be to write a polite letter to the guardians, saying that he will not be able to undertake any such special extra duties in the future unless he is to be properly remunerated for such special services.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

SUPERSESSION.

INJURED BEGINNER writes: A. has been the medical attendant of B.'s family for several years, and has recently attended Mrs. B. in her confinement. Six weeks later B.'s child was taken ill, and C. was called in; after attending for a week the child grew worse, and a consultation with A. was requested. C. saw A., who refused to consult with him. C. then offered to hand over the case to A. entirely, but A. refused, saying he would have nothing to do with the case. Later on the same day B. called to see A., who then went to see the patient, and sent a message to C. to ask him to meet him. C., being busy, said he would be round in half an hour. A.'s partner, who had not previously seen the case, called for C., and these two went to see the case together. They found that A. had already visited the case. C. then retired, and refused to attend any longer. Was A. justified in his action, and was C. well guided in offering to retire in the first place, and in refusing to continue in attendance after A.'s visit?

*** A. might have shown more consideration for C. It was discourteous to refuse either to consult with C. or to accept C.'s offer to resign the case in his favour. C.'s conduct was correct up to the moment when A. relented and agreed to consult with him. If C. could not go when sent for he should have written to A. to explain and to request the postponement of the consultation, or, if this was impossible, to ask A. to see the case alone, and talk it over with him afterwards. A. could hardly be expected to wait half an hour, and under the circumstances he was justified in seeing the patient, but he should have left a note for C. If C., instead of retiring from the case, had called on A. to talk over the matter, it is to be hoped that mutual explanations would have followed, and the matter would have ended differently.

A DISCLAIMER.

SEAGHAN P. MACENRI (John P. Henry), Dublin, writes: A short time ago I was consulted about his eyes by the editor of a provincial newspaper. On his return home, being evidently unacquainted with the rules of the medical profession, he inserted in his paper a laudatory paragraph about me. I wish to say that the paragraph in question was written and inserted without my knowledge, consent, or approbation.

Medico-Legal.

DEATHS UNDER CHLOROFORM IN GENERAL HOSPITALS.

DR. WALDO, Coroner for Southwark, held an inquest on December 7th on a patient who had died in Guy's Hospital while under an anaesthetic given preparatory to an operation for cancer. This was, it appears, the thirty-eighth case of death under anaesthetics at Guy's which had been investigated by the same coroner since the middle of 1901, a period of six and a half years. The patient, John Chinn, aged 68, had had an attack of pneumonia in May last, and had subsequenly complained of a swelling in the neck for which he had sought advice at the Throat Hospital, Golden Square, and the Seamen's Hospital, and had ultimately been admitted to Guy's on October 15th. On October 17th one-half of the tongue was removed for cancer, the patient being under anaesthetics for an hour and a half, and five weeks later a second operation for the removal of glands was done under A.C.E. The third, which was for the removal of wires inserted at the first operation, was to have taken place on December 3rd. At the autopsy muco-pus was found in the bronchi, and cystic disease in one of the kidneys. The following is briefly the medical evidence given:

Dr. J. S. Hooper, House-Surgeon at Guy's, said the deceased was in hospital for cancer of the tongue when witness took up his duties on November 1st. Mr. Golding-Bird had removed half the tongue on October 17th under an anaesthetic given by the house-surgeon. The patient was an hour and a half under anaesthetic, and got over it all right. At the second operation A.C.E. was given, and there was no difficulty. For the third operation patient had been properly prepared, his urine was examined under witness's direction, and at his request Mr. Smith, one of the clinical assistants, gave the anaesthetic. At first A.C.E. was given on a cone with a sponge in it, and then this was changed for chloroform given in a definite proportion of not more than 2 per cent. The first sign of anything wrong was a little coughing after the patient had been inhaling about five minutes. There was no vomiting, but he went a little blue, and then the respiration stopped. The chloroform was removed and artificial respiration used for three-quarters of an hour.

Mr. H. J. Smith, M.B., Clinical Assistant at Guy's, said clinical assistants gave anaesthetics when called upon. Ether was safer than chloroform, but was inadmissible for operations on the jaws. A.C.E., followed by chloroform, was best. In this case he had given the chloroform by the Junker inhaler, by which not more than 2 per cent. could be given. The patient had twice previously been anaesthetized and bore it well. He was a sober man. There was no excitement or struggling. Both pulse and respiration were carefully noted by witness. The first symptom of anything wrong was coughing. Then the change from A.C.E. to chloroform was made. Respiration became difficult, and then the pulse stopped. Ether was injected, hot flannels applied, and artificial respiration used. He attributed death to a sudden dilatation of the right side of the heart due to the coughing. It was not due to an overdose of chloroform. The patient had only about four breaths of chloroform. Witness had given anaesthetics in about 100 cases.

Dr. Theodore Fisher said he had had considerable experience in making *post-mortem* examinations. He found on external examination the body fairly well nourished. On internal examination he found the heart very slightly enlarged and the tricuspid orifice slightly enlarged; there was no fatty degeneration. The large vessels were on the whole healthy. There was some muco-pus in the bronchi; there was no disease of the lungs, stomach, liver, or other organs except the kidneys; there was hydronephrosis of the left kidney and cysts in the right. He attributed death to respiratory and cardiac failure. He thought defective aëration of the blood, due to obstruction of the large bronchi by thick muco-pus, had predisposed to cardiac failure.

The Coroner having summed up, the jury wished to return a verdict of natural death, but, being reminded by the Coroner that death under anaesthetic could not be considered natural, agreed on the following verdict:

"That the deceased died from heart failure following a fit of coughing while under an anaesthetic, and that death was due to misadventure."

A CASE OF POISONING BY CARBON MONOXIDE.

WE are indebted to Dr. Waldo, Coroner for the City of London, for reports of a case of medico-legal importance, among the points of interest being the failure of the blood in the poisoned person to respond to spectroscopic tests, the fact that none of those who approached the locked door where the gas had escaped, and who ultimately broke it open, smelt gas; and that the glass in closed windows of the room remained intact, although the upper part of door was blown out and the wall bulged, as a consequence of the explosion which followed the introduction of a lighted candle into the room. Several witnesses having testified that there was no smell of gas until the room was entered, medical evidence was given by Dr. Wirgman who was called in to see the sufferers from the explosion immediately after its occurrence. He said the woman smelt very strongly of celluloid: and he picked up a haircomb made of that material on the stairs. The deceased, Mr. Levantin, who was quite unconscious when he saw him, but was breathing normally, was slightly burnt on the left cheek, and his hands were scorched. The left shoulder of his coat was burned. There was no smell whatever in his breath. If coal gas had been inhaled, he would have expected to have found some smell of it at his mouth. The pupils of the eyes were normal, and the whites were not reddened. The skin of the man's face, except where burnt, was practically of the normal colour. He thought there was a possibility of the cause of the condition being coal gas, or that it might have been due to his having thrown down an explosive. Mr. Levantin seemed to be burned at the back of his neck. He never regained consciousness so as to make a statement.

Dr. F. Womack said he had conducted a careful examination of the viscera, blood, etc. of deceased. He found no trace of metallic or alkaloid poisons—no strychnine nor morphine. According to one test he made, carbonic oxide was not present: and another test also gave a negative result. With coal gas 1 part in 10,000 would give a characteristic smell: while proportions of 1 part of coal-gas to 9 parts of air would give a perfect explosive mixture. In a case of gas poisoning he would expect to smell gas in the victim's breath. At the adjourned inquiry a further report by Dr. Womack, who, owing to an injury to his knee was unable to be present, was read by the Coroner. In it he said that he had further examined the materials received. The urine was slightly alkaline, nearly clear. It contained neither albumen or sugar. These bodies, though occasionally found in cases of carbon monoxide poisoning, were not at all characteristic. Some dried vomit, together with that on a handkerchief, had been submitted to a very careful analysis, but did not contain any trace of organic or inorganic poison (no alkaloid). He had examined the small quantity of bloodstained fluid in the jar of viscera, and was now satisfied as to the presence of carbon monoxide in the blood. The proportion of the colouring matter of the blood

(haemoglobin) which was converted into carboxyhaemoglobin (the compound of haemoglobin with carbon monoxide) was approximately 18 per cent. This was a proportion that would probably eventually prove fatal. The failure of the spectroscopic test, he said, must be attributed to the percentage of carboxyhaemoglobin being too small for this method. He had, however, succeeded in detecting it by two chemical tests. These were both entirely satisfactory; and by comparison of the colour with that of a solution of carboxyhaemoglobin of known strength, he estimated that the blood contained 18 per cent. of carboxyhaemoglobin. He therefore wished to modify his former opinion, and state that, while agreeing that the cause of death was primarily heart failure from shock due to burns, a contributory cause was carbon-monoxide poisoning. He understood that at Guy's Hospital the man had been kept alive for some hours with oxygen inhalation, and thought that during this time the proportion of carboxyhaemoglobin was lessening, and that, but for this treatment, he would probably have died sooner from carbon-monoxide poisoning.

The Coroner pointed out that this was in agreement with Dr. Kenelm Digby, who said that the fact that the man had lived 8½ hours from the time he was taken out of the room, and that during this time he was treated first by artificial respiration and then for five hours by inhalation of pure oxygen, would account for much of the carbon-monoxide being got rid of.

The Coroner having summed up, the jury returned a verdict of suicide, and that the cause of the explosion was illuminating gas, due to the presence of 10 per cent. carbon-monoxide in a mixture of 75 per cent. coal gas and 25 per cent. carburetted water gas.

EXHUMATION OF THE BODY OF AN INFANT.

It is a sufficiently rare occurrence for the body of a child which had lived but a little over a fortnight to be exhumed by order of the Home Secretary, but such a case has just occurred at Aston, Birmingham. The main facts of the case are brought out in the medical evidence at the inquest.

Dr. F. J. Vincent Hall said he first saw the child in the street, and sent the midwife with it to his surgery, telling her it was suffering from erysipelas. At his surgery he took the child's temperature, and expressed the opinion that the child had been neglected. The temperature was practically 105°. He notified the case as one of erysipelas. Next day, when he saw the child at home, the inflammation had spread all over its body. Subsequently he learned that the child had died, that Dr. Dixon had given a certificate, and the father had registered the death. Witness thereupon wrote to the sanitary authorities and the police, and finally to the Home Secretary, and as a result the exhumation had taken place.

Dr. Frank Dixon said he was called in by the father to see the child on November 27th, and found it suffering from a disease of the skin. It was a well-nourished child, and when he saw it was perfectly clean and dry. He did not consider the child to be suffering from erysipelas, nor would blood poisoning account for its condition. In his opinion death was due to pemphigus. He so described it in the death certificate.

Dr. Whitehouse, police-surgeoon, who made a *post-mortem* examination, said death was due to exhaustion following upon pemphigus. He did not think it had suffered from erysipelas.

The Coroner having summed up, the jury after consultation returned a verdict of "Death from natural causes" in accordance with Dr. Whitehouse's evidence. They were of opinion that Dr. Hall was quite right in having the inquiry, and that Dr. Dixon was wrong in giving a certificate of death so soon.

"REASONABLE CARE AND SKILL"

In a case recently heard in the Manchester County Court Judge Parry put the legal position with regard to cases of alleged negligent treatment by medical men very clearly and pithily. The case was one in which payment of an account for attendance on a child was resisted by the parent on the ground that the doctor had been grossly negligent, and his defence to this charge was undertaken by the Medical Defence Union. It was alleged on the part of the medical men concerned that the child had been suffering from pneumonia and that treatment recognized by the profession to be appropriate to this disease was followed. The case was adjourned for further medical evidence, when another doctor who had been called in subsequently stated that the child had suffered from meningitis, and that if there had been pneumonia it was secondary, but he admitted in answer to a question that he could not say that the first doctor had failed to use reasonable care and skill. Defendant's solicitor thereupon said that he could not carry the defence any further.

His Honour said he quite agreed. It was a hopeless case from the beginning. It ought to be thoroughly understood that in treating illness a doctor only undertook to bring to bear a reasonable degree of professional care and skill. He never undertook to perform a cure, any more than a lawyer undertook to bring his case to a successful issue. He didn't even undertake to bring as much skill to bear as another doctor might. There must be judgement for the plaintiffs, with costs.

Mr. Hislop, the defendant's solicitor, pointed out that the defendant was only a tram driver, and asked for time in which to pay.

His Honour: That is just like a defendant. First of all he won't pay, then he blackguards the doctor, and then he asks for that doctor's mercy and time in which to pay. However, I don't suppose Dr. Gregory has any vicious feeling. He was bound to justify himself, and I shall make a small order for ten shillings a month.

MUCH ADO ABOUT NOTHING.

When a coroner who is also a medical man proclaims in the public press that there have been gross irregularities in connexion with inquests which he has held in a public institution, and charges one of the junior members of the medical staff of the institution with gross ignorance, we naturally expect to find some startling facts brought forward to justify these allegations. According to the report which appeared in the *Manchester Evening News* of November 29th, however, the chief complaints which Mr. E. A. Gibson, M.B., Coroner for the City of Manchester, brought forward were that in one case an autopsy had been made without his permission and that in another the body was actually removed and buried before he could hold an inquest. On investigation by the Chorlton Board of Guardians it appeared that in the first case mentioned the medical officer need not have reported it to the Coroner at all, but did so as a matter of courtesy, giving him ample time to interfere if he thought fit; while in the other case, which happened some time ago, the Chairman of the House Committee of the Withington Workhouse, the institution in question, declares that the facts are that the Coroner had decided that an inquest was unnecessary, and this coming to the knowledge of the workhouse officials, they had handed the body over to the relatives, who had travelled from Denton for it. Immediately afterwards the Coroner's officer arrived with the permit, but, on learning that the body had been removed, declined to hand it over.

The charge of gross ignorance was made in connexion with some point of what is popularly known as "Crowners' Quest Law," a subject on which few medical practitioners, we believe, who are not themselves coroners or barristers, would care to submit themselves for examination.

The case has quite naturally given rise to a good deal of irresponsible chatter in the local press, and we cannot think that any public advantage is likely to arise therefrom.

WORKMEN'S COMPENSATION CASES.

Finality of a Certificate.—On November 26th the Court of Appeal heard an appeal on the part of Messrs. Bromilow and Co., who complained that the county court judge at St. Helens had not given due effect to the certificate of a medical referee. It appeared that the certificate of the medical referee set forth that the applicant had recovered from an accident which he had sustained, and that he was able to resume work on December 5th, 1906. As the result of another accident, however, his employers undertook to pay him 10s. a week down to March 22nd, 1907. Before this payment stopped there was a report from the medical referee to the effect that the workman was fit to go to work. After March 22nd there was an appeal to the Court to assess the compensation, when the applicant was met by the referee's certificate. This certificate was to the effect that the results of the accident were gone, and that, if the man was suffering from anything it was neurasthenia which had nothing to do with the accident. This, however, was not regarded as conclusive by the county court judge, and his award of compensation was appealed from. The Master of the Rolls asked Mr. Lord, who represented the workman, if he would be satisfied if they varied the order by giving compensation from April 13th. Counsel for the plaintiff said he would assent to that if it did not affect the costs. The Court then varied the order of the county court judge by stating that he was wrong in holding that the certificate was not conclusive of the applicant's condition, and directed that the compensation should date from April 13th instead of from March 22nd.

Whom to Sue for Fees.—Davis *v.* Jackson, Liverpool County Court, December 3rd: This case raised a question of some interest as to the person to whom the doctor who is called in in a compensation case should look for payment of his fees. The plaintiff sought to recover from a firm of wholesale druggists fees for professional attendance upon a girl who was injured in the course of her employment. She had made a claim for compensation under the Act of 1906 which had been honoured by her employers; but the doctor's charges were not included in the settlement, though according to her relatives who took charge of her after the accident, the defendants (her employers) had engaged the doctor and had agreed to pay his charges. Witnesses called on the plaintiff's behalf said that one of the defendants had stated that the firm would pay the doctor, and that the plaintiff had actually been called in by a forewoman in the defendants' employ. The defendants denied that they had employed the plaintiff, or that their forewoman had any authority to call him in. In the event, His Honour gave judgement for the plaintiff for the full amount claimed, with costs.

A RETIRING PARTNER.

NEMO writes: A. B., aged 25, paid £500 to Y. Z. for the half share of a country practice worth £900 a year. In seven years, according to the agreement, A. B. was to purchase a further share for £200, and in ten years, or on the death of Y. Z., A. B. was to purchase the remainder. Between four and five years have elapsed, and now Y. Z. wishes to retire. What compensation should he receive for leaving the practice earlier than settled by the agreement?

*** Y. Z. cannot retire without the consent of A. B., and, if he wishes to retire, he must come to terms with A. B. In estimating the compensation to be paid to Y. Z., the chief factors to be considered are: (1) The present value of the practice; (2) the probable effect on the practice of Y. Z.'s premature retirement. It is impossible to give further advice on the data. The matter is one which only A. B. can properly decide.

LIABILITY FOR ACCIDENT.

A CORRESPONDENT puts the following legal conundrum: A. is the *locum tenens* of B. B., for the purposes of his practice, is in the habit of jobbing a horse and trap, which A. has power to order when he requires it. While driving in the trap, A. is injured owing to the negligence of the driver. What are his remedies?

*** This question divides itself into two subsidiary questions—What are the rights of the *locum tenens* (*a*) by statute, (*b*) at common law? With regard to (*a*) he might have had a remedy against B. under the Workmen's Compensation Act, 1906, if the injury had been more serious; but it does not appear from the facts that he was disabled for any time from continuing the practice of his calling. We are advised that it would hardly be worth his while to prefer a claim under that Act. As to (*b*), which relates to the remedy at common law, the jobmaster clearly owed a duty to the person who hired his trap to provide a competent driver. It seems that on this occasion the *locum tenens* was the hirer, and that the duty was owing to him. We are advised, therefore, that an action could lie against the jobmaster. Upon the facts stated, we cannot advise what amount of damages ought to be claimed.

THE OBLIGATIONS OF A SUBSTITUTE.

VENATOR writes: In May, 1905, Mrs. S., when driving away from the house of A., whom she had just consulted, met with an accident for which she was treated at the house of friends, who summoned their own doctor B. When B. found that she was A.'s patient, although at the request of the lady he continued in attendance, he agreed to attend for A., to whom he handed the fees. In November, 1907, Mrs. S., who had in the meantime married again, asked B. to see her baby. We are asked to say whether the former attendance as A.'s substitute precludes B. from attending.

*** A sufficiently long time (more than two years) has elapsed to remove any close connexion between the two events, and moreover B. did not act as A.'s substitute at A.'s request, and his consenting to regard himself in that capacity and to pay over the fees was quite a sufficient compliance with the requirements of the situation.

SALE OF DEATH VACANCY.

M. was engaged some months ago as a *locum tenens* on account of the illness of the principal. The latter has since died, and his practice has been put in the hands of several medical agents for sale. Nothing has come of this, but M. has himself recently introduced a friend, who has purchased the practice. Is he entitled to a commission on this sale?

*** Not unless the executors of the deceased had agreed to pay him a commission. It is not usual for a medical practitioner to claim a commission under such circumstances.

UNDER the will of the late Mr. Edmund Kyffin Lenthall, of Besselsleigh Manor, near Abingdon, who died on July 24th, the Radcliffe Infirmary, Oxford, receives a sum of £1,000.

AT a meeting of the Dornoch Town Council, Dr. James MacLachlan was unanimously re-elected Provost of the burgh for another term of three years. This is the second time Dr. MacLachlan has been elected chief magistrate of Dornoch without a contest. We congratulate him on a distinction which shows how much his public services are appreciated by his fellow townsmen.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

DR. BARCLAY SMITH has been appointed University Lecturer in Advanced Human Anatomy for five years.

The following have been appointed members of Boards:

Financial Board.—Dr. Anderson.
State Medicine.—Dr. Shore, Dr. Gaskell, Mr. Fletcher.
Anthropological.—Dr. Guillemard.
Medicine.—Dr. Gaskell.

Mr. W. Bateson, M.A., St. John's College, has been appointed Reader in Zoology.

The following have been appointed additional Examiners for medical degrees:

PART I.—Professor Sims Woodhead, Professor C. R. Marshall, St. Andrews University.
PART II. *Medicine.*—Dr. F. Parkes Weber and Dr. P. Horton-Smith-Hartley.
Surgery.—F. J. Steward, M.S., F.R.C.S.

Mr. F. P. Jepson, Pembroke College, has been appointed to the Research Studentship in Medical Entomology, in place of A. H. Lees, who has resigned.

The following degrees have been conferred:

M.D.—E. Ward, Clare.
M.B.—W. L. Cripps, Trinity; C. A. W. Pope, Trinity; F. A. Barker, Emmanuel; R. B. Lloyd, Emmanuel.
B.C.—A. S. B. Bankart, Trinity; R. Davies-Colley, Emmanuel.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on November 20th.

Recognition of Teacher.

Dr. Frank Edward Taylor was recognized as a teacher of bacteriology at King's College.

Report from the Professor of Protozoology.

The report from the Professor of Protozoology for the year ending June 30th was received. The report stated that on November 15th Professor Minchin gave his inaugural lecture at the University of London, which, in spite of bad weather, was attended by about 300 persons. During May and June he gave a course of twenty-three lectures on protozoa at the Lister Institute, the average attendance at the lectures being twenty-five. Professor Minchin also reported that his assistant, Dr. J. D. Thomson, had been working in collaboration with Mr. Plimmer on the curative treatment of animals infected with trypanosomes, and that a preliminary communication was made by them to the Royal Society on July 10th last; Dr. Thomson had also completed some work, not yet published, on the cultivation of fish trypansomes. Dr. H. M. Woodcock, the other assistant to Professor Minchin, had been engaged upon various researches upon protozoa, had compiled the report upon protozoa for the Zoological Record for 1906, and had completed an article on flagellata for Lankester's *Treatise on Zoology*.

Addition to University Extension Board.

Dr. H. A. Caley, F.R.C.P., has been added to the Board to Promote the Extension of University Teaching for the remainder of the period 1907-8.

University of London Lodge of Freemasons.

At a regular meeting of the lodge held on November 14th Dr. Robert Maguire was installed Master of the lodge for the ensuing year.

University Library.

The University library at South Kensington is now open from 10 a.m. to 9 p.m. on Tuesday and Thursdays, and until 5 p.m. on other week days.

UNIVERSITY OF SHEFFIELD.

DR. ARTHUR HALL has been elected to the post of Lecturer on Practical Medicine rendered vacant by the resignation of Dr. W. Tusting Cocking.

ROYAL NAVY AND ARMY MEDICAL SERVICES.

DIRECTOR-GENERAL OF THE ARMY MEDICAL SERVICE.

THE following has been substituted for Article 312 of the Pay Warrant: The appointment of Director-General of the Army Medical Service shall be for three years, unless the term is specially extended by the Army Council for a further period not exceeding two years, or for such time as may be necessary to enable the holder to complete thirty years' service.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

AT the head quarters of the London Rifle Brigade on the evening of December 9th, Sir Alfred Keogh, K.C.B., Director-General, Army Medical Services, inspected the classes of the

Volunteer Ambulance School of Instruction, which paraded for the occasion in good strength, with a full complement of officers. The Director-General was received with a general salute, the companies being drawn up in line, under the command of Surgeon-Colonel P. B. Giles, F.R.C.S., Commandant.

After a minute inspection of the ranks, the prizes were distributed. The Maclure Challenge Shield for the Advanced Class was won by the Royal Fusilier V.I. Brigade Bearer Company; subjects, sanitation, hospital duties, and drill. The Hamilton Challenge Bowl was won by the 1st Cadet Battalion King's Royal Rifles; subjects, stretcher drill and first aid. The Commandant's Cup for the best men in the school was secured by Corporal A. W. Brown, Royal Fusilier V.I. Brigade Bearer Company.

The Director-General complimented the school, the staff of which had worked so well and for so many years under official discouragement and without recognition; but in the future that would not be so, for they would have both support and official recognition, and he was happy to say that Colonel Giles would be the principal medical officer of one of the London divisions of the territorial army. He was very pleased with the smartness of the men and their steadiness, the number of special certificates gained showing good work on the part of the instructors.

Colonel Giles, in thanking the Director-General, said that the teaching of sanitation had been made a special feature in the school, and he hoped that some of the members who had obtained certificates would in the future help in the instruction. He desired to thank the staff for their loyalty and good work. The school was just completing its twenty-first year of existence, and no less than 750 officers had obtained certificates of proficiency after instruction, many having come for that purpose from the King's dominions beyond the seas.

The following officers, in addition to those mentioned above, were present on parade: Lieut nant-Colonel T. Russell, Major H. Thurston, C.M.G., War Office, Surgeon-Colonel W. Culver James, Surgeon-Lieutenant-Colonel R. F. Sleman (Acting Adjutant), Surgeon-Majors W. Atkinson, E. Callender, C. S. de Segundo, Surgeon-Captains J. Dauber, J. H. Masters, and Captain E W. St. Vincent Ryan.

OBITUARY.

ADOLPHE WAHLTUCH, M.D.Kieff, L.R.C.P.Lond., MANCHESTER.

The death of Dr. Adolphe Wahltuch, which occurred at his residence at Rusholme, Manchester, on November 25th, means the loss to Manchester of one of its best-known medical men. For some time past he had been suffering from an illness of a painful and lingering character, during which his natural buoyancy of spirit never deserted him.

Dr. Wahltuch was a notable example of what may be accomplished under adverse circumstances by natural ability and persistent endeavour. He was a Russian by birth, born at Odessa in 1837, and was thus in his 71st year. He was educated first at the Grammar School at Odessa, and later at the University of Kieff, where he graduated M.D. and Sanitary Medical Officer in 1860. From his early days he took great pleasure in acquiring foreign languages, and was able to converse freely in many of the European tongues. After graduation at Kieff he practised for about two years in his native city, and then went to Prague, mainly to obtain better clinical experience. At Prague he was a fellow student of the late Sir Morell Mackenzie, and retained his connexion by becoming a Corresponding Member of the Prague Medical Society. He also became an Honorary Member of the Imperial Medical Society of Constantinople. From Prague he came to London, where he attended the Middlesex Hospital, and in 1863 obtained the diploma of L.R.C.P. In the same year he finally settled down at Manchester, where he practised until his death. In 1866 he married Miss Anna Goldschmidt of Frankfort-on-Main, who, with three sons and four daughters, survives him. On settling in Manchester he soon began to take interest in the various activities of the medical world, and before long it was recognized that he would become a great influence among his medical brethren. Some time after he joined the Manchester Medico-Ethical Society, of which for two years he was Honorary Secretary, and then President; and this Society, which has had such an excellent influence in Manchester, undoubtedly owes him a debt of gratitude for the pioneer work which he did for it. His connexion with the Manchester Clinical Society was also productive of the best results, and he served first as its Librarian, and in 1895 as its President. In 1875 he became Honorary Physician of the Hulme Dispensary, and recently a Consulting Physician of the Victoria Jewish Hospital. He was also Lecturer on Physiology and Hygiene at the training college of the Manchester Kindergarten Association, and was one of the founders of the Manchester Crematorium Society. He was the author of several valuable works on medical subjects, among which may be mentioned a *Dictionary of Materia Medica and Therapeutics*. His eminently practical mind regarded therapeutics as the one goal in medicine to which everything else in the way of theory and research ought to lead, and at times he did not hesitate to speak somewhat sarcastically of mere theories. His articles on catalepsy, asthma, electro-therapeutics, and other subjects in various periodicals all prove the practical bent of his mind. He contributed to the British Medical Journal in 1871 some useful notes on the treatment of ganglion and diarrhoea. Dr. Wahltuch was also well known as an enthusiastic lover of chess and a player of the highest rank. He served as Librarian and Honorary Secretary of the Manchester Chess Club, and was one of the founders of the South Manchester Chess Club and its first President. Two years ago, in the Lancashire and Cheshire match, he was first to win his game for Lancashire, and for some time he acted as the editor of the chess column of one of the Manchester weekly papers.

It will be difficult to fill the place occupied in Manchester by Dr. Wahltuch. Of late years he had taken little active part in medico-political matters, being content to take a more passive interest in the work of the British Medical Association. He was a type of the old family doctor, one of those who make but little stir in the outside world, who have but few, if any, enemies, and are mourned by numberless friends.

ALEXANDER MACTIER PIRRIE, B.Sc., M.B., Ch.B., CARNEGIE RESEARCH SCHOLAR IN ANTHROPOLOGY.

The death took place on November 12th, at the Chalmers Hospital, Edinburgh, of Alexander Mactier Pirrie, B.Sc., M.B., Ch.B., his life being thus cut short just at a time when he had laid what seemed the sure foundation of a career of much scientific distinction. He was a son of the late Alexander Pirrie, C.E., and after the completion of his general education became an undergraduate of the University of Edinburgh, and in 1904 received the degree of B.Sc., taking honours in anthropology. Two years later he received the M B., Ch.B. from the same University. He was then appointed Carnegie Research Fellow in Anthropology, and at once went out to the Wellcome Research Laboratories in Khartoum, in Upper Egypt, in the position of Anthropologist to that institution. Soon after his arrival he began a series of scientific expeditions, and completed two in the short period of seven or eight months that he was able to remain in Egypt. The first of these took him into some of the remoter parts of Bahr-el-Ghazal, and the second to the borders of Abyssinia, and on both he acquired a good deal of useful information and a large number of specimens of scientific interest. During the latter expedition, however, he unfortunately contracted a fever which eventually was identified as kala-azar, and by June he was so prostrated that it was deemed essential that he should return home. For some time he seemed to improve, but in October he had to enter the Chalmers Hospital, and there died, as already stated, a few weeks later. Of the work which he did during these two expeditions some account was presented to the British Association at its last annual meeting, the paper which he prepared for that purpose being read for him. His more formal report to the two bodies which he served, the Carnegie Trustees and the Wellcome Research Laboratories, he was finishing at the time of his death, which occurred just after he had entered the 26th year of his age. At his funeral on November 15th the trustees of the Gordon Memorial College, with which the Wellcome laboratories are connected, Sir William Turner, Vice-Chancellor of the University of Edinburgh, Mr. Wellcome, and others were represented, and as might have been expected, many expressions of sympathy have since been received by his relatives in the loss they have sustained. This feeling of regret will not be limited to those to whom Pirrie was per-

sonally known, for all must regret the loss of one whose early career seemed to suggest that it would be his lot to add considerably to the sum of existing knowledge.

THE death is announced of Dr. JAMES FRASER DAVIDSON, of Harris, after a comparatively short illness, coming on only a few months after a prolonged stay as an in-patient in the Western Infirmary, Glasgow. Dr. Davidson was born in Glasgow on December 20th, 1858, and on completion of his general education became an undergraduate in the medical faculty of the university of that city. In the year 1886 he became a Licentiate of the Royal Colleges of Physicians and of Surgeons of Edinburgh, and of the Faculty of Physicians and Surgeons of Glasgow, and in the following year received his degrees as Bachelor of Medicine and Master of Surgery of Glasgow University. Throughout the period of his student career he showed himself an able and industrious worker, and after serving for a time in the Lock hospital of the city settled down to practice in Banffshire, in the village of Tomintoul. There he remained until some four years ago, when several attacks of ill-health decided him to give up the work he was then doing and recommence somewhere on the sea-coast. Hence he became a candidate for the vacant post of medical officer and public vaccinator in Harris, was duly appointed, and continued to carry on the work until about a year ago. His health then again failed, and he became a patient on the surgical staff of the Western Infirmary, remaining there some eight months. He returned home in July, and appeared to be practically well again, but died after a short illness in the second week of October. Dr. Harris was of a retiring, modest disposition, but nevertheless made many friends, both in Banffshire and in Harris, in which places his quiet, conscientious manner of performing his duties won him great respect. Dr. Davidson was married, and is survived by a widow and two children, with whom much sympathy is felt.

CUT off in the prime of life—for he was only 44 years of age—the late Mr. GEORGE BROWN of Denby Dale, Yorkshire, had gained for himself a good name and position at Denby Dale, where he started practice seventeen years ago. He was the youngest son of Mr. George Brown, a leading merchant in Dublin, where he was born on October 25th, 1863. After a distinguished career at the Carmichael School of Medicine, he obtained the diplomas of L.R.C.P. and L.R.C.S.I., and L.M. of the College of Surgeons and the Rotunda Hospital. After spending two and a half years as assistant with the late Dr. Martin, of Portlaw, Waterford where, owing to the advanced age of his principal, a heavy share of the work fell upon him, he settled in Denby Dale in 1890. Without introduction, his warm-hearted, genial, and generous nature won a way for him, and he soon built up, on a basis of sound professional knowledge and skill, a wide and extensive practice. He gained not only the confidence and regard of his patients, but the esteem and good will of his professional brethren. He was a fine type of the country practitioner, a hard worker, never sparing himself when the welfare of his patients seemed to need it, and a loyal colleague who managed, amid the multifarious calls of a wide practice, to keep up to date and abreast with recent advances in medicine and surgery. The writer of these lines has had, in consultation in difficult cases, many occasions to observe and admire the soundness of his judgement, the excellence of his treatment, and the confidence and affection he inspired in his patients. He seemed assured of a long and useful life when a growth of the right kidney, for which Mr. Moynihan and Mr. Hurry Fenwick were consulted, appeared, and nephrectomy failed to save his valuable life. He was buried at Cumberworth after a service in the church of his adopted village, when it seemed as if all the village had gone into mourning, for every blind was drawn and the church was filled by a sorrowing congregation, which overflowed into the churchyard. It is proposed to erect a headstone to his memory by public subscription. May we hope that the universal sorrow, marking the respect and esteem in which the late Mr. Brown was held, may in some measure comfort the widow and three young children he has left to mourn his loss?

THE LATE DR. MONTAGUE MURRAY.

IN the obituary notice of the late Dr. Montague Murray which appeared in the JOURNAL of December 7th, p. 1687, the word "disc" in line 44 from the beginning should be "desk." The passage should therefore read, "The desk which now stands," etc.

HOSPITAL AND DISPENSARY MANAGEMENT.

SUFFOLK DISTRICT ASYLUM.

FROM the recent report of Dr. Jas. R. Whitwell, the medical superintendent of this asylum, we see that on January 1st, 1906, there were 860 patients resident, of whom 710 belonged to the district served by the asylum, and that on December 31st, 1906, there were 877 in residence, of whom 730 belonged to the district, showing a total increase for the year of 17, or of Suffolk district cases of 11. This increase is, Dr. Whitwell states, about the normal average for this asylum. During the year, 201 were admitted, of whom 169 were first admissions. In 76 the attacks were first attacks within three and in 22 more within twelve months of admission; in 32 not-first attacks within twelve months of admission; in 36 the attacks, whether first or not, were of more than twelve months' duration, and in 15 they were of congenital or unknown origin on admission. The admissions were classified as to the forms of mental disorder into: Mania of all kinds 84, melancholia of all kinds 80, secondary and senile dementia 14, general paralysis 6, acquired epilepsy 8, and cases of congenital or infantile defect 9. As to the probable causes of the insanities in these cases alcohol was assigned in 17, or 8·4 per cent.; venereal disease in 1; puberty, old age, and the menopause in 49; previous attacks in 55: parturition and the puerperal state in 6; various bodily diseases in 37, and moral causes in 36. Hereditary influences were ascertained in 68 or 39 per cent., and congenital defect existed in 10. During the year 37 were discharged as recovered, giving a recovery rate on admissions of 20·67 per cent. As showing the influence of the time which elapses between inception and treatment on the recovery rates, Dr. Whitwell states that of the cases which came under treatment within one week of inception 24 per cent. recovered; of those in which one month intervened 17 per cent.; of those in which three months intervened 15 per cent, and of those over three months 4 per cent. There were also discharged as relieved 23, and as not improved 13. During the year there were 111 deaths, giving a death-rate on the average numbers resident of 12.89, the deaths being due in 16 cases to cerebro-spinal diseases, including 8 deaths from general paralysis; in 18 to chest diseases (phthisis not included); in 13 to abdominal diseases; in 25 to senile decay; and in 41 to general diseases, including 14 deaths from pulmonary consumption and 13 from other forms of tuberculosis. This gives the high proportion of tuberculous to total deaths of over 24 per cent. The comparatively low recovery-rate and the high general and tuberculous death-rates are striking when the large proportion of first admissions (169 out of 201) is taken into consideration. No inquest was held during the year, and the casualties were few and with one exception not of a serious kind.

This annual report contains also a series of coloured charts prepared by Dr. Whitwell illustrative of some interesting general remarks upon the incidence of insanity and the proposed remedies of permanent segregation, sterilization, legitimized murder, and prohibition of marriage. From these remarks it is evident that Dr. Whitwell believes that there is an actual increase of insanity out of proportion to the increase of population. Chart II shows the parallel increase of urban population and insanity—that is, certified insanity—and though Dr. Whitwell does not state explicitly that these two are in a causal connexion, it is certainly suggested in his discussion of the subject. "It would have been," he says, "interesting and instructive had it been possible to show clearly the relation of mental disease to the two separate sociological conditions of urban and rural life; but there are, unfortunately, many reasons why this cannot be done in a satisfactory manner; mainly on account of the difficulty in deciding the point at which urban influences come into play, and also on account of the rapid and extensive interchange of people in an area even so limited as a county." To this it might, perhaps, have been added that statistical information shows that the ratio of insanity to population in urban is much lower than that in rural communities. The proposed remedies are ably discussed and finally dismissed by Dr. Whitwell, who finds that improvement "is only possible by slow, tedious, and uninteresting individual and personal effort spread over many generations.

> "'How small of all that human hearts endure,
> That part, that kings and laws can cure.'"

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* **British Medical Journal** *alone unless the contrary be stated.*

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any Circumstances be Returned.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the **Journal** be addressed to the **Editor** at the Office of the **Journal**, and not at his private house.

Communications respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the **Journal**, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

Authors desiring reprints of their articles published in the **British Medical Journal** are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

Telegraphic Address.—The telegraphic address of the **EDITOR** of the **British Medical Journal** is *Aitiology, London.* The telegraphic address of the **MANAGER** of the **British Medical Journal** is *Articulate, London.*

Telephone (National):—

EDITOR,	GENERAL SECRETARY AND MANAGER,
2631, Gerrard.	2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* **British Medical Journal** *are devoted will be found under their respective headings.*

☞ We would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided. Correspondents are asked to write upon one side of the paper only.

QUERIES.

Fibula would be glad of any suggestions as to treatment of excessive rumbling in the stomach, due to accumulation of gases. The patient, a young lady, aged 20, suffers a good deal of pain before the attack, which comes on at any time of the day or night, and the noise produced is very loud and distressing. Amongst other remedies she has tried sodium sulpho-carbolate, bismuth, charcoal, creosote, cajuput, galbanum, pepsine, with little or no good result.

The Blood in Malignant Disease.

W. O. W. desires to do work on "the blood in the various forms of malignant disease," and asks for references to the subject. So far as is known, there is no specially distinctive association between pathological changes in the blood and different types of malignant disease. A moderate degree of leucocytosis is common, and is said to be more marked in sarcoma than in carcinoma; in cancer of the stomach a type of anaemia is sometimes found, in which the blood changes are not easy to distinguish from pernicious anaemia; and some observers have found a marked lowering of the freezing-point of the blood in carcinoma, due to the excessive products of proteid decomposition, but this has been disputed. Our correspondent will find the subject discussed from the clinical standpoint in Emery's *Clinical Bacteriology and Haematology* (Lewis) and in Wells's *Chemical Pathology* (W. B. Saunders and Co.). He might also be interested in Dr. Carl Sternberg's *Pathologie der Primärerkrankungen des lymphatischen und hämatopoiëtischen Apparates* (F. Bauermeister, Glasgow), which contains special chapters on "Leucosarcomatosis" and "Lymphosarcomatosis."

Bacteria in Aërated Water.

B. desires information about the possibility of the typhoid bacillus retaining its vitality in bottled soda or aërated water, and asks, "Is it not the case that all aërated or carbonated effervescing bottled waters, even if abounding in disease germs when first bottled, become in the course of a few days, owing to pressure, free from all living matter?"

*** The pressure generated in such beverages is quite inadequate to kill bacteria, and though many micro-organisms are not capable of retaining their vitality indefinitely in such liquids it is certainly desirable that manufacturers should employ water guaranteed free from pathogenic germs.

Nail Biting.

P. X. asks for suggestions to prevent a boy, aged 7, from picking and biting his finger-nails. Moral suasion, bitter aloes painted on the finger ends, and the almost constant wearing of gloves day and night, have in no way mitigated the trouble.

Fontane—Morris.

F. Fontane and Co., Publishers, Grunewald, Berlin, write: The late well-known German writer, Herr Theodor Fontane, corresponded up to the year 1895, possibly up to 1898, with a London doctor named James Morris. We believe the correspondence to have been of very considerable importance, and to have covered a wide range of interests. We have been endeavouring to get into communication with Dr. Morris, but have, so far, been unsuccessful. We hope that your insertion of this letter may bring us some tidings of the doctor's present address, or, should he unfortunately not now be alive, prove the means of enabling us to get into touch with his heirs.

ANSWERS.

Finger Cracks.

Miss Frances Ede, L.S.A. (London), writes: In reply to "Didymus's" query of November 30th, I have for years used with great satisfaction a thick solution of celluloid (cleaned spoilt photographic films) in amyl nitrite. The crack should be quite dry and open, and be filled up solid to the level of the skin by as many applications as are necessary. This, once dry, will stand all ordinary washing and wear and tear for a week or more. Its efficiency is such as, for example, to cure completely, without other treatment or any abstentions from hard work, very deep cracks of old standing in the horny hands of an old gardener. A film over and around the crack is less adequate and more conspicuous.

Dr. Cameron Kidd (Bromsgrove) writes: I strongly recommend a trial of dry boric acid powder kept in contact with the finger tip by means of a finger stall. I have found this succeed in several obstinate cases. The finger stall should be cut from an old kid glove; an india-rubber stall prevents evaporation of moisture and causes the powder to cohere in a damp mass.

Military Medical Officers and Inquests.

"R.A.M.C."—An army medical officer ordered by a coroner to make a *post-mortem* examination on any man who dies out of a military hospital is entitled to the usual fee.

Microscopy.

R. F. W.—The only journal in the English language which is devoted to microscopic science is the *Journal of the Royal Microscopical Society.* It is published every two months, and the price to non-Fellows is 6s., or 36s. a year. Further particulars can be obtained on application to the Assistant Secretary, Royal Microscopical Society, 20, Hanover Square, London, W., or the journal can be ordered from Messrs. Williams and Norgate, Henrietta Street, W.C., through any bookseller.

LETTERS, NOTES, Etc.

Finger-Nail Exfoliation.

W. W. writes: As an encouragement to perseverance in the treatment of the above trouble I am glad to state that the very bad case I reported (British Medical Journal, June 8th, p. 1403), soliciting suggestions as to treatment, has turned out very satisfactory under the arsenic treatment recommended by Mr. Hutchinson (British Medical Journal, June 22nd, p. 1524). I may also add that ichthyol was applied locally. The nails are growing and resuming their natural appearance.

The Brocklehurst Fund.

Dr. S. Montgomery (Ashley Lodge, Upper Parkstone, Dorset), honorary secretary of this Fund, particulars of which were published on November 30th, p. 1628, writes: Will you kindly publish the following subscriptions for the Brocklehurst Fund:

	£	s.	d.
Amount already acknowledged	15	1	6
Dr. Batterbury	1	1	0
A Friend (per Dr. Batterbury)	5	0	0
The Practitioner	10	10	0
Dr. Ray	3	3	0
"Dinna Forget"	0	10	6
Dr. A. Preston	1	1	0
Dr. Good	1	1	0
A Retired Doctor	5	0	0
Dr. Barlow	0	10	6
Anonymous	1	1	0
Dr. Brown	0	10	0
Dr. Dodd	1	1	0
Dr. Crespi's Brother-in-law	1	0	0
Aliquis	2	0	0
Total	48	10	6

Appointment of M.O H., Stockport.

D. P. H. writes: The advertisement for this appointment states, "if so called upon must direct and supervise medical inspection of school children." Population, 92,000. Salary £450, rising to £550. Would it not be well to advise candidates to boycott this town for a short time? Under the Inspection of School Children Act some 200 or 300 medical inspectors will be needed, and the price will naturally rise with the demand. The work of supervising the inspection of school children is well worth £150 a year in addition to the work of M.O H., which is poorly paid at £450 for a manufacturing town like Stockport. There will probably be nearly 7,000 examinations of school children in such a town, and the supervisor will have to report on these, follow cases to their homes, advise the committee on all sorts of points—such as ventilation, number of school places, methods of teaching infants, defectives, etc. We have only to stand out and we can get proper terms and conditions, for there will be a dearth of suitably qualified candidates when all the authorities begin to apply for candidates.

A Common Reason for Changing the Doctor.

Only a Beginner writes: How is it that every week one reads suggestions and methods whereby the general public would be compelled to treat "the doctor" at least decently, when the real crux of the matter is so much ignored? The whole matter seems to lie with ourselves. Let us be reasonable to our neighbours, and not be so greedy for fame or for fees. "Fame" might be read "cheap notoriety." The following is a case in point. A country practitioner who does the best he can for his people is yet under the necessity of hearing statements made by another practitioner as to the reasons for his being in attendance on the country practitioner's patients, although he has at least ten extra miles to come, the real reason invariably being non-payment of the country practitioner's fees. Medico No. 2 is flattered by being called all this extra distance, and yet had he ordinary intelligence, he must see that a more potent reason than preference for his great personality is at the bottom of the matter, especially when the patient concerned is a man earning 18s. to 20s. a week. Ordinary intelligence can see that here one doctor is being made the catspaw, to spite or thwart another, of either a malcontent or a bad debtor, and that sooner or later he will get what he deserves—extra work, for which he may never even get paid; loss of home work which absence on these long journeys entails; the contempt of his fellow practitioners; the contempt of the better class of patients, who say, "Dr. —— cannot have much to do at home, or he could never afford to come away here every day to see Mr. ——." And again, "Who's to pay Dr. —— when each visit must be equal to half a week's pay of his patient?"

These better class folks know very well, and have very little regard for a presumably educated man who does not know that a labourer is not going to pass by a highly-respected doctor in the neighbourhood whose fee cannot be more than 2s. 6d., to go to another who cannot be any more highly respected, who lives ten miles at least further away, and whose fee (unless he undersells) must be proportionately greater, solely out of regard for the more distant man of whom he knows little more than that he is the nearest man willing to be fooled. He may take it that the nearer man is, or the nearer men are, being unfairly done by in some way. In any case I hold, he should find this out before he puts himself into the position of catspaw, or of being looked on by the intelligent section of the public as a poacher.

Another actual present-day example: A landed proprietor demands of me a detailed account. I refuse, and, having occasion to write to the only other doctor who can attend the landed proprietor, I get from him a promise not to attend until my bill is paid without detail being given. At the present moment this man, whose written promise I hold, is actually in attendance, and has been for a time, although my bill is not paid.

Motor Cars for Medical Men.

Dr. G. Baynton Foye, M.R.C.S., L.R.C.P. (West Malling, Kent), writes: No doubt a large number of medical men visited the Automobile Show at Olympia; a certain proportion may still be hesitating whether they will make the change from horses to the newer and more rapid locomotion of the motor, whilst others cannot decide which car to buy. On this account my experience with a 10-12-h.p. Humber may be of interest. Previously I had used a Benz car, an Achilles—a small two-seated car, fitted with De-Dion engine—a tricar, and a motor bicycle.

The Benz, solid tyres, purchased new, was noisy, and rattled to such an extent that it quite got on one's nerves, the Achilles was not much better, and I was glad to return to horseflesh. Later I bought a Phoenix tricar; this was very reliable and speedy, but it had its disadvantages; it was not a dignified means of progression, there was no protection from the weather, and the steering was difficult, especially if one were in a hurry. I ran into a ditch twice and a brick wall once; for these reasons I gave up both the motor bicycle and tricar, and purchased a 10-12-h.p. Humber. This has given me complete satisfaction. Adjustments have occupied four complete days during fifteen months, although I was afraid to use it for a week, owing to a knocking in the engine from a loose big-end bearing, but the mechanic informed me it would not have hurt to have run it fifteen to twenty miles a day. Other small adjustments have been done on slack afternoons. I have never been late for nor missed an appointment or train, neither have I been hung up on the road. For punctures we fix the Stepney spare wheel in three minutes, and on two occasions have run fifty miles on this wheel. Replacements have been one small fibre wheel and four blades for contact maker. The car is smart, very fast, and a good hill climber, very quiet and easy running on top gear, and I had no difficulty in ploughing through the snow last winter. The running cost for the year (mileage 5,548) works out as follows:

	£	s.	d.
Petrol	20	15	4
Oil	6	11	6
Sundries	4	8	10
Ignition	2	6	6
Tyres	14	18	1
Mechanic	10	13	9
Total	£59	14	0

Tyres, as usual, an expensive item; seven tyres in one year and nine at fourteen months.

Menstruation in an Infant.

J. C. McWalter, M.A., M.D. Brux., D P. H., Examiner in Medical Jurisprudence to the Apothecaries' Hall, Ireland, writes: It seems desirable to record instances of premature activity of the reproductive system, especially in females, as mothers are frequently prone to cast suspicion on persons who may be absolutely innocent. An interesting example of precocious menstruation occurred in a newborn female infant which I saw recently. Not only were the external genitals swollen, but the blood could be seen oozing from the mouth of the cervix, and it was of the characteristic colour and physical characteristics—at least as regards appearance, non-coagulability, etc. The attention of both mother and nurse was called by the perfect miniature representation of mature menstruation of womanhood exhibited at the infant's perineum, and the flow made its appearance morning and evening for between two and three days, and then ceased. The child was of full term, and well formed. A point of interest was that the mother calculated that her own menses were due on the very days on which they appeared in the infant, and she attributed the phenomenon to some influence in her blood which she transmitted to her offspring. This phenomenon must obviously be associated with the lactation which is comparatively commonly seen in infants, but in the present instance there did not seem to be any milk in the child's breasts. As one is frequently questioned concerning the cause of vaginal discharge in very young girls, it may be well to bear in mind such examples of premature uterine activity.

A Remarkable Anniversary.

Our esteemed contemporary the *Evening Standard and St. James's Gazette*, in the column of social gossip in its issue of December 7th, published the following interesting piece of intelligence:

> One of the King's Physicians Extraordinary, a Knight of Grace of St. John of Jerusalem, Sir Joseph Fayrer, reached yesterday the venerable age of 83, and in the mild climate of Falmouth, where he is passing his declining years, he still devotes much of his time to literature and the fine arts. Apart from his lifelong practice as a surgeon and his long service in India, including the Mutiny, the professorship of the Medical College of Calcutta, and the presidency of the Medical Board of the India Office, he has written many books, both professional and otherwise. Among the better known of the latter class are *With the Prince in India*, *The Life of Sir R. Martin, C.B.*, and *Recollections of My Life*.

Sir Joseph Fayrer, to the sorrow of all who knew him, died on May 21st last. We can only conclude from the announcement we have quoted that the *Evening Standard* has become a spiritualist organ, or at any rate has a special correspondent in the undiscovered country from whose bourn no traveller returns.

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ON

TUBERCULOSIS IN CHILDHOOD AND ITS RELATION TO MILK.

BEING PART OF A PRESIDENTIAL ADDRESS DELIVERED BEFORE THE ULSTER MEDICAL SOCIETY.

BY JOHN McCAW, M.D., R.U.I.,

PRESIDENT OF THE SOCIETY; SENIOR PHYSICIAN TO THE BELFAST HOSPITAL FOR SICK CHILDREN, QUEEN STREET, ETC.

My connexion with the Belfast Hospital for Sick Children for the past twenty years has given me exceptional opportunities for studying the disease, and I shall give as shortly as possible, the main points with regard to tuberculosis in childhood, and lay special emphasis upon the connexion which exists between tuberculosis and cow's milk.

1. *What amount of tuberculosis in children exists in Belfast?*

At the Children's Hospital, in Queen Street, Belfast, during the quinquennial period 1902-6, 26,193 cases were treated, and tuberculous disease in some form was met with in almost 20.0 per cent.—to be accurate, in 19.99 per cent. of them. Of this total, 4,049 were treated as in-patients in the wards, and 28.52 per cent. of them were tuberculous, while 22,144 new cases were treated in the out-patient department, and 18.26 per cent. suffered from tuberculosis in some form. If these figures be examined in detail some interesting points are brought out.

In the year 1902, 13.96 per cent. of the cases treated in the medical ward were tuberculous, while in the surgical ward 49.24 per cent of the cases treated suffered from the disease in some form. During the same year, in the out patient department, 6.65 per cent. of new medical cases were tuberculous, while on the surgical side 40.78 per cent. of the new cases suffered from the disease.

In the year 1903, 18.60 per cent. of the cases treated in the medical ward were tuberculous, while 40 76 per cent. of the cases treated in the surgical ward suffered from the disease in some form. During the same year, in the out-patient department, 5.67 per cent. of new medical cases, and 48.50 per cent. of new surgical cases, were tuberculous.

In the year 1904, 15.27 per cent. of the cases treated in the medical ward, and 39.81 per cent. of those treated in the surgical ward were tuberculous, while in the out-patient department 6 31 per cent. of the new cases treated on the medical side, and 47.74 per cent. of the new cases treated on the surgical side, suffered from tuberculosis in some form.

In the year 1905, 17.56 per cent. of the cases treated in the medical ward, and 40.64 per cent. of those treated in the surgical ward were tuberculous, while in the out-patient department 6.95 per cent. of the new cases treated on the medical side, and 38 86 per cent. of the new cases treated on the surgical side, were tuberculous.

In the year 1906, 14 04 per cent. of the cases treated in the medical ward, and 37 85 per cent. of those treated in the surgical ward were tuberculous, while in the out-patient department 5.16 per cent. of the new cases treated on the medical side, and 31.71 per cent. of the new cases treated on the surgical side, were tuberculous.

Through the kindness of Dr. Stevenson I have been enabled to examine the returns of the Ulster Hospital for Children for the years 1903, 1904, and 1906, and here again I find a similar, if more striking, record. During the year 1903 of all children treated in the wards 35 74 per cent. suffered from tuberculosis in some form; in 1904 the percentage is still higher, being 38.31 of all children treated; while in 1906, of all in-patients, 30.36 were tuberculous. The figures I have given carry one message of encouragement, and it is this, that the amount of tuberculosis met with at our local children's hospitals has been diminishing during recent years. With these statistics before me, I have no hesitation in answering the question set by saying that the amount of tuberculosis existing amongst children in Belfast is large; and in this I feel sure my hearers will agree.

The interesting question now arises: How do we in Belfast compare with other cities in regard to the amount of tuberculosis met with in children? To arrive at an answer to this question I have examined, on exactly the same basis, the returns of the cases treated at Great Ormond Street, London; the Royal Edinburgh Hospital for Sick Children; the Manchester Hospital for Sick Children at Pendlebury; the East London Hospital for Children, at Shadwell; and the Glasgow Hospital for Sick Children. Using the same methods of deduction, I find from the report of Great Ormond Street for the year 1905, that the number of cases treated in the wards was 2,876' of which 778, or 27.0 per cent., were tuberculous. In the Royal Edinburgh Hospital for Sick Children during the year 1906, 1,968 cases were treated in the wards, of which 407, or 20 per cent., suffered from some form of tuberculosis. In the Manchester Children's Hospital at Pendlebury during the year 1905 the number of cases treated in the wards was 1,999, of which 436, or 21 3 per cent., were tuberculous. In the East London Hospital for Children at Shadwell during the year 1905, 2 054 cases were treated as in-patients, and of these 501, or 24.3 per cent., suffered from tuberculosis in some form. Lastly, in the Glasgow Children's Hospital during the year 1906 the number of intern patients was 1,177, and of these 27.95 per cent. were tuberculous. That these figures may be more readily compared, I will tabulate them in one column as follows:

1906—Belfast Hospital for Sick Children	No. of intern patients, 827. No. tuberculous, 26.10 per cent.
1906—Ulster Hospital for Sick Children	No. of intern patients. 247. No. tuberculous, 30.36 per cent.
1905—Great Ormond Street, London	No. of intern patients, 2,876. No. tuberculous, 27 per cent.
1906—Royal Edinburgh Hospital ...	No. of intern patients, 1,968. No. tuberculous, 20 per cent.
1905—Manchester Children's Hospital	No. of intern patients, 1,999. No. tuberculous, 21 3 per cent.
1905—East London Children's Hospital...	No. of intern patients, 2,054. No. tuberculous, 24.3 per cent
1906—Glasgow Children's Hospital ...	No. of intern patients 1,177. No. tuberculous, 27.95 per cent.

This table shows a wonderful agreement amongst the returns of these hospitals as to the amount of tuberculosis met with. Had the reports all tabulated the cases in a similar way, it would have enabled me to be more accurate, and, I believe, would have shown a percentage return closer even than is here indicated. My firm conviction is that all children's hospitals meet with much the same amount of tuberculosis, and that that amount is very large.

2. *What types of the disease are met with?*

A glance at the statistics which I have given will be sufficient to demonstrate the fact that a certain number of the cases of tuberculosis met with at the children's hospitals are deemed suitable for treatment in the medical wards, while others are more properly sent to the surgical side. From this, then, one might say that there is a medical as distinguished from a surgical form of tuberculosis; and while this is true enough, still it is not sufficient, nor does it satisfy the question.

One of the most noteworthy deductions from the statistics is the preponderating amount of surgical tuberculosis met with when compared with that seen by the physician, and this point I wish very specially to emphasize, as having a most important bearing on causation and treatment. If the returns of the hospitals mentioned be examined, it will be found that the cases treated on the medical side consist of phthisis and meningitis, spinal caries and general tuberculosis; while on the surgical side the surgeon is deluged with chronic abscesses, tuberculous joints, lymphadenitis, and chronic ulcers. But it should be noted that many of the cases treated in the medical wards would be more properly classified as surgical—such, for instance, as lupus, spinal caries, etc.—which, if added to the surgical figures, would still more emphasize the preponderance of surgical over medical tuberculosis. These facts suggest the question, Is the disease as seen by the physician only another form of that met with by the surgeon, or are they different types of the same disease, and caused by a bacillus of a different species?

Recently the theory has been put forward that tuberculous affections of the human body are divisible into two types:—(*a*) a type caused by tubercle bacilli from the human, and called the "typus humanus"; and (*b*) a type caused by tubercle bacilli from the cow, and called the "typus bovinus." These bacilli are varieties of the same species, but they give rise to quite distinct and different lesions, according to the method of infection. In the first (or human) type, the bacilli are inhaled in dust, and find a lodgement in the apex of the lung. From this site of infection the disease may spread and cause secondary infection of the intestines, or set up a tuberculous laryngitis. In the second (or bovine) type, the disease is con-

veyed indirectly by means of tubercle bacilli taken into the body in raw milk, meat, etc. Here the infection is carried to the intestines and mesenteric glands, and gives rises to tabes mesenterica, tuberculous peritonitis, tubercle of the pelvic organs, tuberculous lymphatic glands, tuberculous bones and joints, lupus, tuberculous meningitis, or acute miliary tuberculosis. Much may be said in support of this theory; and I will content myself at present by pointing to the enormous amount of surgical tuberculosis met with at an age when cow's milk is largely availed of—indeed, is the chief article of diet—as a circumstance of the highest moment, and also to the Report of the Royal Commission on Human and Bovine Tuberculosis. Experiments in the anthropoid ape pointed clearly to the fact that when the dose of bovine tubercle bacilli taken into the system is large, a generalized tuberculosis, starting from the intestines and mesenteric glands, is set up; whereas when the dose is moderate, the affection may remain confined to the intestines and mesenteric glands, which in time may extend to other glands and bones and joints. Here, then, I submit, is evidence sufficient to support the contention that the large percentage of tuberculosis met with in children is bovine, and caused by the ingestion of bovine tubercle bacilli in milk, meat, etc., and that this form of tuberculosis is chiefly surgical. But this theory goes a step further. It is affirmed by some that these two types of the disease are more or less antagonistic, so that a child when it becomes affected with bovine tuberculosis absorbs an antitoxin, which protects it against the human type of the disease, and similarly the human type renders it either less liable to be attacked by, or immune against, the bovine bacillus. In support of this contention the rarity of pulmonary tuberculosis in association with tuberculous glands, or joints, or bone disease, is pointed to; and the farther fact is relied upon, namely, that the vast amount of tuberculosis met with in the child is surgical, the result of infection with bovine bacilli, and also that the adult or human type of the disease is quite rarely met with at an early age.

My experience at Queen Street Hospital for a period of over twenty years undoubtedly confirms both these contentions. I have been greatly impressed with the fact that only very rarely indeed do I meet with a case of pulmonary tuberculosis in which the disease follows the adult type and attacks the apex of the lung. On thinking this point over, another series of events not uncommon have impressed me. I can easily recall numbers of children who have been under my care for extensive disease of the glands of the neck, in whom suppuration went on until it seemed that the glands must have become completely eliminated, and yet in not one of them did any secondary infection of the lungs take place, and they are to-day apparently as strong, vigorous, and healthy as the best of us. How comes it, if these children were flooded with virulent human tubercle bacilli, that their lungs escaped? It seems to me that the theory I have put forward affords a reasonable answer—namely, that they were suffering from bovine tuberculosis, and that this protected them from the human type of the disease.

To carry this argument to a logical conclusion: If this theory be correct, then human serum, or tuberculin R., should be beneficial when used for surgical or bovine tuberculosis; and vice versa, bovine serum should be beneficial in tuberculosis of human type. Much evidence could be adduced in support of this contention, and my experience, but more especially the experience of surgeons, is that in limited tuberculous lesions of a surgical nature the injection of tuberculin R is followed by favourable results. Dr. Nathan Raw of Liverpool, whose work in this connexion has been very extensive, writes me to say that he has obtained the most gratifying results from the use of these serums, and, after long observation of clinical cases and extensive laboratory work, he is convinced the theory is sound.

3. *What connexion exists between tuberculosis in children and cow's milk?*

I have shown that a large amount of tuberculous disease exists amongst children, and that the disease appears at a time of life when cow's milk is the main, or almost the main, article of diet. These two statements, taken together, are sufficient to establish a prima facie case against cow's milk. Further, I have shown that tuberculosis in children is very largely of the surgical type—that is, it is chiefly glandular, and almost certainly due to the bacillus of bovine tuberculosis which has been taken into the system in food. The Report of the Royal Commission establishes a close and clear connexion between cow's milk and tuberculosis in children, and must be considered final.

4. *What can be done to prevent or cure the disease?*

With regard to the first part of the question, two eminent opinions have been expressed, that of Professor Koch, who lays stress upon the transmission of the disease by contagion, especially by means of the respiratory organs; and that of Professor von Behring, who is of opinion that tuberculosis in children is principally disseminated through the alimentary canal, and he sees a fruitful source of danger to children in the tuberculous nature of much of our milk supply. I think both these pronouncements are true, but I hold strongly that the latter theory is the more important as regards children. Acting upon Koch's opinion, it is necessary that children be kept apart from those suffering from pulmonary tuberculosis, whose breath and sputa are loaded with infectious germs. This has been recognized in Germany, where visits are made to the houses of consumptives, children are removed, when this is possible, from such surroundings, directions are given, and patients are taught the most efficient means of disinfecting and disposing of their sputa, and the necessity for keeping their clothes, beds, furniture, and floors clean. Such means as these constitute a powerful factor in limiting the area of the disease and diminishing its virulence. Then much good has resulted from convalescent homes in the country, holiday camps, and forest schools. The country homes are simple but suitable buildings put up somewhere in the woods to which children may be taken and kept for the entire day. At these homes everything is conducted upon strictly hygienic lines, from the proper cleansing of the children to the furnishing of a suitable dietary, and the enforcement of physical exercise.

Holiday camps provide children with a yearly or more frequent holiday in the country; such holidays do much to strengthen their bodies, and, at least, remove them for a time from undesirable surroundings. More recently still, forest schools have been tried in Germany and have proved most successful. Near Berlin, Charlottenburg, a school has been erected in the heart of the woods, to which pale, weakly children are sent and kept for months at a time. Here they are taught under the most advantageous condition, due regard being paid to their state of health. Scattered throughout France and Germany are numerous dispensaries, or *gouttes de lait*, at which children are brought under medical inspection, parents are instructed and advised, and good sterilized milk is supplied either free or at small cost.

Coming now to von Behring's view, that tuberculosis in children is principally disseminated through the alimentary canal, I believe we have here the most important factor in the tuberculosis of children. Many eminent authorities in this country adhere to this view, and have given expression to the opinion that the bacilli found in these cases are most commonly of the bovine type, and gain entrance into the system by means of the milk of infected cows. It may here be asked, What amount of bovine tuberculosis exists? The report of the Royal Commission on Tuberculosis states that "of all animals slaughtered for food in Great Britain and Ireland those of the bovine race seem to be more largely affected with tuberculosis than any other." In the absence of statistical information as regards our own country, the report proceeds to show that in Leipzig, of 9,303 cows slaughtered, 4,048, or 43·51 per cent., were tuberculous. The proportion of such diseased cattle in English cow-houses, which has been publicly and authoritatively stated to be about 30 per cent. by the late Professor MacFadyean, is, therefore, probably not excessive. In the year 1901 there were 1,887,414 milch cows in England, and 4,102,061 in the United Kingdom; 30 per cent. of these means upwards of 560,000 tuberculous cows for England alone, and nearly 1¼ millions for the United Kingdom. If 5 quarts of milk be allowed as a fair average yield per day for each cow, then 6,250,000 quarts of milk, the daily yield of tuberculous cows, are consumed in the United Kingdom. Again, it has been calculated, and is

admitted, that tuberculosis of the udder exists in 2 per cent. of dairy cows in the United Kingdom; this means that some 20,000 cows with active tuberculosis of the udder are to-day contributing to our milk supply, and some 100,000 quarts of milk teeming with virulent bovine tubercle bacilli are consumed each day in the United Kingdom. As a beginning, surely it is not too much to ask that these 20,000 cows with virulent disease of the udder be removed now and at once.

When it is remembered that even one diseased udder is capable of disseminating a huge number of tubercle bacilli, the bare idea of the amount of possible human tuberculosis from the milk of so immense a number of diseased cows is appalling. I regret I am unable to place before you any statistics bearing upon the prevalence of tuberculosis in cattle supplying milk to Belfast, but the following figures, taken from the report of the Medical Officer of Health of Manchester, Dr. Nevin, are interesting in this connexion: During the year 1904, 432 samples of milk were examined, the number of farmers represented in the total being 318. Of these 318 farmers, 188 reside in Cheshire, and 21 of them (or 11.17 per cent.) sent tuberculous milk; 83 live in Derbyshire, and 5 of them (6.02 per cent.) sent tuberculous milk; 14 reside in Lancashire, and 1 of them (7.14 per cent.) sent tuberculous milk; 8 reside in Yorkshire, and 2 of them (25.00 per cent) sent tuberculous milk. Are we in Belfast any better off in regard to the number of diseased cows supplying milk than Manchester? My firm belief is we are not. I am confirmed in this opinion from what I have seen when visiting some of the dairies within the city, and that much tuberculous milk is purveyed in our midst I think admits of no doubt. It is clear, therefore, that a large amount of tuberculosis in cattle exists, and the connexion between the disease in cattle and tuberculosis in childhood having been established, it follows that, if we would prevent the disease in children, the first and most important step is to stamp it out in cattle. In considering how this may be done it is necessary to remember that in tuberculosis, before the formation of tubercles in any part of the body, there is a stage of the disease of unknown duration during which the bacilli multiply and circulate throughout the body. To regard the disease as beginning with and being localized in tuberculous formations is to fail to recognize the bacillary stage of the disease, and is, therefore, wrong. This pre-tuberculous stage can only be detected by means of the tuberculin test; therefore, it becomes imperative that this test be applied to all dairy cattle, and that every cow reacting to this test be withdrawn and the carcass destroyed. To ensure success, however, compulsory and universal application of the principle is necessary. Fair compensation for the loss to the stock owner should be granted, and probably the sum of money that would be required for this purpose is the main objection to the enforcement of the measure by the Government. In the year 1865–6 an outbreak of cattle plague occurred in this country which involved the death of 233,000 head of stock. And what took place? The first consideration was the stamping out of the disease as quickly as possible and at any cost. But tuberculosis in animals is more widespread than cattle plague has ever been; it is always present in our herds, whereas outbreaks of plague are few and far between; and, what is worst of all, tuberculosis causes a vast amount of sickness and suffering and death and despair, which cattle plague does not. Surely this most astounding condition of things will not be permitted to continue much longer. The public—and, more especially, we members of the medical profession—should now and at once insist, both on hygienic and economic grounds, that it is urgently necessary to stamp out this awful disease of tuberculosis in cattle. It is estimated that the disease in animals may be eliminated in a single year, and, if so, what a year of triumph that would be!

To protect children from the ravages of tuberculosis, the following rules may be formulated:

1. *The notification of all births within twenty-four hours.* This would enable health visitors to examine into the state of the child's surroundings; to have the child removed, or precautions taken, should any case of tuberculosis exist in the house; and to give suitable directions for the care of the child, and especially to encourage breast-feeding.

2. *Complete control of the milk supply by the State.* This should include the application of the tuberculin test to dairy cattle, and the removal of all such as react to this test; cleanliness in the collection of all milk, and in the transmission of it from the dairy to the consumer; the removal of dairies from the centre of large towns and cities.

3. *Medical inspection of school children and school premises.* First, to detect and remove children who are actually ill or unfit to attend school; and, secondly, to ensure proper ventilation and sanitary arrangements in the schools, and to prevent overcrowding. The elementary principles of hygiene should be taught to even young children; to older children the principles of domestic hygiene and economy should be added.

4. *Housing reform.* Dwelling-houses in the poorer districts should be made more sanitary, especially with regard to the free access to them of sunlight and fresh air. Ireland is behindhand in this respect—a circumstance which may, in part, account for its high death-rate from phthisis. A levelling-up of the social and domestic conditions of the poor is urgently required; for of the 1,200,000 children born each year in the United Kingdom, fully one-fourth to one-third of them are born to want and squalor.

5. *Segregation of advanced cases.* All advanced cases of phthisis should be segregated as far as practicable and treated in special institutions set apart for that purpose. Children who are allowed to live in the house with a consumptive are exposed to serious risk.

6. *Notification* of the disease should be compulsory. By this means health officers would know where the disease existed, and it would enable them to take suitable precautions against the spread of the disease, by disinfection and other means.

With the second part of the question—What can be done to cure the disease?—I need not detain you long. I have said that the large proportion of tuberculosis in childhood comes within the purview of the surgeons, and with them the treatment may safely be left.

Unfortunately, the profession still feel a want of confidence in tuberculin, or a dread of its reaction, but it should be remembered that its use at the present time is very different from what it was when first introduced. Formerly tuberculin was administered by rule of thumb, and often with disastrous results; now, thanks to the brilliant researches of Sir A. E. Wright, and the discovery by him of the opsonic index, the dose of tuberculin, its effects, and the most suitable times for injection, can be regulated with scientific precision.

This discovery has, in fact, brought treatment with tuberculin within the realm of safe therapeutics, and the clinical success which has attended the employment of this treatment has firmly established its position as a remedial agent of the first importance. In addition to the use of tuberculin, our efforts to cure tuberculosis, or stay its progress, must include good and wholesome food, healthy hygienic surroundings, an abundance of pure air, and such drugs as cod-liver oil in combination with the hypophosphites.

HAS A PURIN-FREE DIETARY ANY SPECIAL THERAPEUTIC VALUE?*

By CHALMERS WATSON, M.D., F.R.C.P.Edin.,
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In the course of the past year I have on several occasions been asked by practitioners as to the value of a purin-free dietary, and it appeared to me appropriate to make this subject the basis of my lecture this afternoon.

Nature of Purins.

Purins are substances constructed on the base C_5N_4. Those of chief clinical importance are uric acid, xanthin, hypoxanthin, adenin, and guanin. These purins are present in certain articles of diet, in the tissues, and in the urinary excretion, occurring either in a free state or combined with albumen in the form of nucleic acid.

* Abstract of a lecture delivered at the Medical Graduates' College and Polyclinic.

(a) Purins in the Food.

Meat and meat extracts contain a large amount of purins; similarly, certain glandular organs, such as the pancreas and liver, are rich in purins. They are also present, though in smaller amount, in many vegetable foods—for example, beans, lentils, and oatmeal—and they are relatively abundant in some accessory articles of diet, notably tea and coffee. Purins which are taken in the diet are spoken of as exogenous purins.

(b) Purins in the Tissues.

Purins in the tissues exist chiefly in combined form in the nuclei of cells and in the muscular tissues. Xanthin and hypoxanthin occur in muscle extracts, adenin is yielded chiefly by decomposition of nucleic acid present in thymus, and guanin is derived mainly from the pancreas. The purins in the tissues are spoken of as endogenous purins in contrast to the exogenous purins of the dietary.

(c) Purins in the Urine.

Purins exist in the urine chiefly in the form of uric acid, xanthin, hypoxanthin, and adenin. Roughly speaking, about one-half of the purins in the urine are derived from the ingested food (exogenous purins), the remaining half being derived from tissue metabolism (endogenous purins).

THE PHYSIOLOGY OF PURINS.

There is an intimate relation between the various purin substances, this depending chiefly on the process of oxidation. Thus it has been shown experimentally that it depends on the facilities afforded for oxidation whether the product obtained be uric acid or one of the xanthin bases. It is believed that the same holds good in the living tissues, the decomposition of the nuclei of the cells leading to the formation of xanthin and hypoxanthin, which are in part oxidized to uric acid and excreted as such. Our knowledge of this subject has been much increased of late through the researches of Jones, Partridge, and Schittenhelm, who have shown that some tissues contain specific ferments which are essential for the conversion of one xanthin base into another, and for the conversion of the xanthin bases into uric acid. Schittenhelm has also shown the existence in certain tissues of a ferment oxidase which has the power of oxidizing and destroying the uric acid, and changing it into urea and other compounds. It is clear from the foregoing that on a diet which is rich in purins, the excretions of purin in the urine will be relatively high; and, on the other hand, when the diet is purin-free—such as milk, eggs, white bread, rice, fats, fruit, etc.—the purin in the urine will be reduced, being then derived solely from the metabolism of the tissues.

THE PATHOLOGY OF PURINS.

This centres largely round gout and gouty disorders. From the clinical standpoint it has long been recognized that the etiology of gout is closely connected with nitrogen metabolism, and with the formation and excretion of certain compounds of which nitrogen is a component. For many years it was held that uric acid was the causal factor in this disease, but the view is now widely held that uric acid plays little or no part in the actual etiology of gout. In recent years attention has been largely directed to the purin bases, with the result that gout is now generally regarded as a disease of intermediary purin metabolism. The recent discoveries regarding the ferments alluded to above have a distinct bearing on the excess of uric acid in the blood in gout, for, as Futcher points out, it is possible that this excess may be due to the inhibition of the uric acid destroying ferment as well as to an excessive activity of the ferments which lead to the production of uric acid. It is clear that for the tissues to function properly there must be a proper relationship between the amount of purins to be acted on and the various ferments present in the tissues. According to this conception we have in gout a defect in one or more organs, revealed by the inability to produce the ferment or ferments required, as a result of which proper oxidation of uric acid does not occur, and the latter consequently accumulates in the tissues in the manner observed in gout. With regard to the views now widely held as to the importance of the relationship between the purin bases and gout, Chittenden has recently written: "Enough has been said to indicate that in gout it is not so much a disturbance of purin metabolism as a perverted function of one or more organs and tissues which is of pathogenic moment." The writer is in entire agreement with this view. The fact cannot be too clearly emphasized that at the present time there is no evidence whatever that the purin bases, *per se*, are in any way more intimately concerned in the actual causation of gout and gouty disorders than is their ally, uric acid, which has now by common consent been discarded. This fact is of practical importance in treatment.

THERAPEUTICS OF A PURIN-FREE DIET.

In accordance with the views generally held, as to the etiological significance of purins in the production of gout, there is a marked tendency among the writers on the subject to attach special importance to a restriction in the amount of purins in the dietary, the view being apparently that, over and above a coincident restriction in the amount of animal protein food, special value attaches to the administration of articles of diet which are purin free. Dr. Potts, in a paper on the advantages of a purin-free diet,[1] records an interesting series of cases of chronic disease in which recovery from symptoms occurred under the administration of a purin-free dietary. Some of his cases had previously been treated for a lengthened period on more conventional lines without marked benefit. Dr. Potts concluded that the relief from symptoms was mainly due to the diminution in the amount of purin in the diet. My own view, based on observation of a large number of cases, is that there is no special therapeutic value in a purin-free dietary in the class of case in which such a régime is often prescribed, but that the undoubted benefit that may follow the use of this régime in certain cases is to be explained along lines other than the purin-free nature of the diet.

The distinct value of a purin-free dietary in certain cases was first clearly brought before me some years ago in the case of a young lady who came under my care in 1902, suffering from rheumatic pains and frequently-recurring nasal catarrh. She had twice been the subject of intranasal operations at the hands of recognized experts without permanent benefit. The only other noteworthy point in the history was the fact that she had been troubled for many years with severe dysmenorrhoea, and had on two occasions been operated on by a gynaecologist for the relief of this symptom without material improvement. The usual diet of the patient was a liberal régime containing a considerable amount of nitrogenous foodstuffs in the form of meat and other rich foods. The treatment I recommended was a general restriction in the highly nitrogenous foodstuffs, with increase in the amount of exercise and some extra attention to the functions of the bowels and skin. Under this régime, which I have reason to believe was only partially adhered to, the patient reported a slight, but not noteworthy, improvement in the symptoms, and I lost sight of her for eighteen months. The patient returned to Edinburgh in 1905, and came to report herself. She now informed me that on the advice of a lay friend she had for fifteen months been living on a purin-free dietary, with a highly gratifying result. The rheumatic pains had disappeared, the attacks of nasal catarrh were very few and far between, and she no longer suffered from dysmenorrhoea. The patient's general appearance was very greatly improved, and there was no reason to doubt the statement that her general health was now at a much higher level than it had been for a long time previously. She expressed herself as thoroughly pleased with the purin-free diet (no meat, no soups, no tea or coffee, and no peas, beans, etc), and had no desire to return to ordinary diet. This improved state of health was still maintained eighteen months later. It was perfectly clear to me that the patient had derived very great benefit from the dietary, but I was not convinced that the explanation lay in the deficiency of purins, and in the course of the past two and a half years I have sought light on the subject by special observations on over 60 cases of chronic disease which have been under my care and whose later history is known. In this series the symptoms of which the patient complained were regarded by the patients themselves or by their medical man as of gouty or rheumatic origin, and in the absence of any precise knowledge as to the nature of "irregular gout" and "rheumatism" one has perforce to accept this diagnosis. The leading symptoms were rheumatic pains,

headaches, neuralgia, nasal and naso-pharyngeal catarrhs, and depression both physical and mental. In a few instances only there were distinct evidences of declared gout—tophi in the ears, or joint affections.

One of the difficulties in arriving at a correct estimate of the value of any system of diet in the treatment of chronic disease is the fact that in nearly all cases the physician finds that it is essential in the interest of the patient to have recourse to measures calculated to improve the functional activity of one or more of the tissues of the body, for example, the skin, bowels, liver or other organs. This difficulty is in private practice insurmountable, and therefore the conclusion one arrives at as to the part played by diet in such cases can only be stated as a general impression.

The method followed in my observations has been briefly as follows: Ten of the cases in this series of varying grades of severity were put on a purin-free diet, which was maintained for periods ranging from a few weeks to over ten months; in the remainder the amount of purins in the diet was notably reduced, but not out of proportion to the reduction in the total amounts of nitrogenous foodstuffs. In many instances daily observations were made for short periods on the urinary purins, which were estimated by the purinometer.

Accessory measures of treatment were relatively as much employed in the purin-free-fed subjects as in those in which less attention was directed to the purin content of the food. I have made a careful comparison of the result of treatment of these cases, and found that the rate of recovery and the proportion of cases of apparent complete recovery is no higher in the patients fed on a purin-free diet than in those in which the purins are less restricted. As a matter of fact the only instances in which the treatment employed was entirely unsuccessful were those of two patients in the purin-free group. Both of these were severe cases of paroxysmal headache, one being specially noteworthy. This patient had suffered from extremely severe headaches of a paroxysmal character for over twenty-five years. She had consulted numerous physicians in different parts, and tried many systems of treatment, both dietetic and medicinal, without material improvement. As she had never tried a purin-free dietary, the case seemed to be a suitable one for this régime. After ten months of this dietary the patient writes stating that her condition is practically no better, the severity of the headaches being unabated.

The conclusion I have come to from practical experience of this subject is that there is no special therapeutic effect in a purin-free diet. The benefit that is derived from such a régime in certain cases would, I believe, be equally attained by the use of a carefully-planned system of feeding framed without special reference to purin contents. In some cases the restriction in amount of animal protein food is of special value, in others the diminution in the carbohydrate, and especially the sugars, is equally efficacious, and in others the restriction of various alcoholic liquors will suffice.

The points which should guide us in framing the dietary can only be laid down after consideration of all the available clinical facts in each case. I frequently find that the dietary of the patients who consult me needs no modification whatever, experience having taught the patient the value of a diet in which the amount of nitrogenous foodstuffs, purins, or carbohydrates is not apparently in any way excessive. Complete relief from their gouty symptoms is attained in such cases by measures directed to increase the functional activity of the liver, kidneys, skin, or thyroid gland.

The teaching of clinical experiences is therefore in perfect harmony with the teaching of the laboratory in showing that in gout it is not so much a disturbance of purin metabolism as a perverted function of one or more organs of the body which is of pathogenic moment.

REFERENCE.
1 *Lancet*, 1905.

UNDER the will of the late Mr. William Lyon, of Wanstead, who died on October 4th, Saffron Walden Hospital receives a sum of £500.

THE late Mr. Thomas Berry, of Manchester and Chester, who died on August 31st, left £1,000 each to the Clinical Hospital for Women and Children, Manchester; the Altrincham Provident Dispensary and Hospital; Salford Royal Hospital; and the Ancoats Hospital and Dispensary.

A CLINICAL LECTURE ON A CASE OF CEREBRAL TUMOUR ASSOCIATED WITH SUBJECTIVE SENSATIONS OF SMELL.

DELIVERED AT MIDDLESEX HOSPITAL.

BY H. CAMPBELL THOMSON, M.D., F.R.C.P.,

PHYSICIAN TO OUT-PATIENTS AT MIDDLESEX HOSPITAL; PHYSICIAN TO THE HOSPITAL FOR EPILEPSY AND PARALYSIS, MAIDA VALE.

GENTLEMEN,—The patient of whom I wish to speak to-day is a woman of 33 years of age. She first complained of her eyesight, and on this account she went to the Western Ophthalmic Hospital. There it was discovered that she was suffering from a slight degree of weakness of the left external rectus muscle and from double optic neuritis of considerable intensity, though her power of vision was still fairly good.*

The fact that the eyesight was the earliest symptom of which this patient complained must not lead you to think that optic neuritis is, at any rate in its earlier stages, necessarily associated with failure of vision. It is, indeed, common to find patients with advanced degrees of optic neuritis who have no idea that their vision is impaired, and hence it is necessary in every case where there is a probability of the occurrence of neuritis to make a routine practice of using the ophthalmoscope.

After the discovery of the ocular signs I was asked to see the patient, and some of you here may remember her coming up to one of my weekly demonstrations on nervous diseases. Later on she was admitted under my care into the Hospital for Epilepsy and Paralysis, Maida Vale.

Further examination showed that, in addition to the optic neuritis, headache, nausea, and a subnormal temperature were present, all of which are "general" signs of a cerebral tumour; but the pulse-rate, which is often slow, was in this instance about normal. These symptoms, then, taken together justified a diagnosis of cerebral tumour, and the next step, therefore, was to try to determine its position. Now, the power of localizing intracranial tumours depends upon our knowledge of the disturbance of function of that area of the brain in which the tumour happens to be situated; hence it is possible to localize tumours accurately only when there is a disturbance of those parts of the brain the function of which is known, and growths in other parts, the so-called "silent areas," often give no indications by which their localities can be defined.

But even when "localizing" symptoms are obtained our difficulties are by no means at an end, for it is still necessary to consider whether such signs indicate the primary seat of the growth, or whether they are the results of pressure from a distance, or of secondary changes, such as hydrocephalus, meningitis, and metastatic deposits in parts of the brain which may be some distance from the position of the primary growth.

There must, of course, often be a good deal of difficulty in arriving at a satisfactory solution of this problem, but, broadly speaking, the earlier the localizing symptoms appear, the more value can be attached to them as indicators of the site of the tumour. In the case now under consideration there was throughout only one localizing sign of importance, namely, a sensation of smell. This sensation of smell, which was always of a disagreeable nature, and which occurred with great frequency, was regarded as the key to the position of the tumour.

Many years ago Dr. Hughlings-Jackson drew the attention of neurologists in this country to the occurrence of a group of epileptics who suffered from crude sensations of smell, which were often accompanied by "dreamy reminiscences," and a masticatory movement of the lips, tongue, and jaw, and placed the probable seat of the initial discharge in such cases in the region of the uncinate convolution in accordance with the physiological localization of smell and taste as determined by Ferrier and others.

The accuracy of this localization has since been abundantly proved by records of tumours of the anterior part of the temporo-sphenoidal lobe, though tumours in this

* I am indebted to Mr. George Thompson for a note of the observations made at the Western Ophthalmic Hospital.

situation are of course by no means commonly met with.

Dr. Hughlings Jackson has himself recorded such cases, and more recently some interesting examples were published in a lecture by Dr. Thomas Buzzard.

I myself have met with one other case, a note of which is recorded in an article on subjective sensations of epilepsy in the *Practitioner*, 1897. The patient was an inmate of King's Ward under the care of Dr. J. Kingston Fowler, and suffered from cerebral abscess, with which were associated frequent epileptiform attacks that were preceded by a sensation of an unpleasant smell. After death a large abscess was found in the fore part of the temporo-sphenoidal lobe. Another interesting feature of this case was the presence of excessive hunger and thirst, sensations which appear to be more intimately connected with lesions in the vicinity of the temporo-sphenoidal lobe than with those of other parts of the brain.

Thus, in our case of to-day, the frequent repetition of the sensations of smell justified the assumption that the tumour was seated in the region of the uncinate gyrus—that is, at the anterior extremity of the temporo-sphenoidal lobe.

The next step was to try to decide on which side of the brain the tumour was situated, and evidence on this point was far from being conclusive. At first there were only two points which gave any assistance—namely, the weakness of the external rectus on the left side, and signs that the optic neuritis was more advanced also on that side.

The weakness of the left external rectus was very slight and seemed to pass off entirely later on, but, so far as it went, it was an indication of disturbance in the conductivity of one sixth nerve, which would naturally be most likely to take place on the same side as the tumour; the sixth nerve, however, from its long straight course is a sensitive indicator of any disease which causes displacement of or pressure upon the structures at the base of the brain, and for this reason too much weight must not be given to slight disturbance of its functions for purposes of localization. The second piece of evidence, that derived from a comparison between the degree of optic neuritis in the two eyes, was in keeping with the suggestion afforded by the weakness of the external rectus, for the neuritis appeared to be of longer standing in the left eye, and statistics show that on the whole neuritis is more likely to appear first on the same side as the tumour. No doubt there are many exceptions to this rule, but, as Sir Victor Horsley has shown, some of them are probably more apparent than real, and depend upon the interpretation that has been placed on the condition of the neuritis by the observer, for the point to determine is not on which side the neuritis is most intense at any given time, but on which side the neuritis is of longest standing, which two conditions by no means necessarily correspond.

Added to these two signs there occurred later in the course of the malady a third—namely, twitchings of the masseter muscle on the right side.

This later sign was capable of being interpreted in two ways. It might have been that the peripheral nerves at the base of the brain were being irritated, or, on the other hand, it might be that the twitching was due to irritation of the motor area of the cortex on the opposite side.

Acceptance of the first explanation would entail the presumption that the tumour was situated on the right side, and would therefore be antagonistic to the conclusions based upon the weakness of the sixth nerve and the unequal duration of the neuritis which we have already discussed, whereas adoption of the second hypothesis—namely, that the twitching was due to cortical irritation—would be an additional support to the view that the tumour was on the left side. A careful search failed to reveal any signs of irritation or pressure upon peripheral nerves, and it seemed most reasonable to take the view that the twitching was of cortical origin, and that this might happen is not surprising when we consider the contiguity of the fore part of the temporo-sphenoidal lobe to the motor area for the face. While mentioning these relations it may be stated that at no time was there any sign of difficulty in speech such as would have suggested an extension of the disease into Broca's convolution.

The next point was to consider the probable nature of the tumour—always a most difficult problem, and one which frequently has to remain unsolved.

In this instance there was no reason for suspecting the presence of syphilis or tubercle, and, moreover, large doses of iodide of potassium failed to give any relief. It is, however, necessary to bear in mind that large gummata by no means always react readily to treatment by mercury and iodides, and instances in which growths persist in spite of the administration of these drugs are not infrequent. It is also equally necessary to remember that the cases in which improvement follows antispecific remedies are not all of syphilitic nature, for iodides and mercury are capable of modifying—at any rate, for a time—the growth of other varieties of tumours. On the whole, it seemed most likely that the growth would prove to be of a gliomatous or sarcomatous nature.

A thorough trial of the effects of potassium iodide having been given and no definite results having been obtained, it became evident that further steps would have to be taken to preserve the eyesight, for the fields of vision, on which a careful watch had been kept by Mr. Mayou, were now becoming contracted, and there was imminent danger of the neuritis being succeeded by atrophy.

The position of affairs was fully explained to the patient, who suffered so little from the general effects of the tumour that she found it somewhat difficult to understand the necessity for an operation to preserve the eyesight, which, to her mind, was still fairly good. It was, however, finally decided that an operation should be performed, with the general understanding that it was to be looked upon primarily as a means of preserving vision, and that if the tumour was not obvious and readily removable, no efforts which would be likely to endanger life should be made to search the brain tissue for it, for the patient felt that her general condition was not bad enough to lead her to take any more risk than was necessary for the object of preserving sight.

Mr. Lenthal Cheatle accordingly trephined the skull, incised the dura mater, and exposed the anterior part of the left temporo-sphenoidal lobe. As is usual, the operation was performed in two stages, with an interval of a week between them. No tumour was visible on the outer surface, and a brief examination of the parts around, such only as was justified by the patient's request, failed to reveal any growth. The tension under which the intracranial structures had previously been labouring was shown by the bulging of the brain substance which immediately occurred.

The patient quickly recovered from the effects of the operation, and it was gratifying to find that the object for which it was performed was soon attained, for the neuritis gradually subsided and in a few weeks the discs showed only an insignificant trace of their recent infiltration. The tumour, of course, was there as before, and one could only hope that the symptoms might subside as sometimes happens. For a while it seemed as if this hope might be realized, for during the first six months following the operation the symptoms showed no signs whatever of increasing and at times scarcely troubled the patient at all, but at about the time of writing the patient has become worse again and signs have appeared which can only mean that the effects of the growth are widely and rapidly spreading.

With this termination it may be asked whether it was worth while to operate on the patient, and to this question I am sure every one who saw the case will unhesitatingly give an affirmative answer. The operation in itself was not one attended by danger, and the relief of intracranial pressure which was obtained undoubtedly saved the patient's sight and also almost certainly postponed the onset of the more severe symptoms. Added to these benefits there was the hope, unhappily in this case not realized, that a tumour might have been found and removed.

This case affords a good example of the manner in which neuritis of the optic nerve subsides after the pressure has been relieved by trephining the skull and incising the dura mater, and at the present time there is in Bird Ward a patient, a child, with signs of cerebellar tumour, whom Mr. John Murray has trephined with equally satisfactory results.

This important matter of preserving the sight must always be kept in mind or you will meet with cases of tumour like one whom you may see attending my out-patient department, who refused to entertain the idea of operation, both in this hospital and elsewhere, with the

result that he is now completely blind, though the other symptoms are by no means severe, and have in no wise progressed during the past eighteen months. Had he consented to have been trephined we can say with reasonable certainty that he would have been able to see quite well to-day.

After a fair trial of medicinal treatment the question of operation should be discussed, and its objects may conveniently be divided into two groups, namely (1) to preserve the sight, and (2) to remove the tumour. There are but few cases in which it is unreasonable to operate for the preservation of sight, but careful thought is necessary before an attempt is made to remove the tumour.

Consideration of the cases in which it is desirable to attempt to remove the tumour is, however, a large subject, and one which must be postponed for discussion on a future occasion.

An Address
ON
MEDICAL PRACTITIONERS AND PUBLIC HEALTH.

Delivered before the Walthamstow Division of the British Medical Association.

By TREVOR FOWLER, L.R.C.P., L.R.C.S.I., D.P.H.Camb.,

M.O.H. Epping; Chairman of the Division.

As a medical officer of health I am asked not infrequently to advise my brother medical practitioners in matters connected with public health, not so much in questions of diagnosis, and in the steps required for the prevention of disease—in neither of which do I claim any special knowledge—but more particularly in reference to the duties of the medical attendant under the numerous Sanitary Acts, Local Government Orders, etc., in which these duties are specified. I must say that I have many times been surprised to find how little the medical practitioner realizes the position in which the Legislature has placed him, and how apparently indifferent he is to this aspect of the question. Yet both morally and legislatively his relationship to the prevention of disease has always been very real and important.

Previous to the passing of the first Public Health Act in 1848, very little had been done by the Legislature in regard to sanitation; and although that Act showed an awakening of the public conscience to the fact that "a nation's health is a nation's wealth," it was not until the passing of the Public Health Act of 1875 that effectual measures for the prevention and against the spread of disease became law.

During the interval between the passing of these two Acts the growth of knowledge as to the origin and spread of infectious diseases was remarkable. Men of science had worked out and settled beyond dispute new problems, old theories had to be abandoned, and the subject of public health had assumed a position not only of national but of universal importance. As in all new movements, the earlier advocates of the science of hygiene, and the application of its discoveries to public uses, had much opposition to contend with—opposition not merely from ignorant and illiterate persons, but also from others of intelligence, whose motives were only too plainly personal and interested. Numerous instances of such opposition might be produced. Among others, I can recall the case of a medical practitioner who, because he dared to assert that a typhoid fever outbreak was due to contaminated wells in his district, was subjected to the grossest indignities; he was publicly burnt in effigy, and on one occasion in the dusk of evening he had an open coffin placed across his door in the diabolical hope that he might fall into it; and at another time this same man was bitterly ridiculed when he asserted that an outbreak of Asiatic cholera in a family he had been called to attend was due to contamination of the drinking water, an assertion afterwards proved to be correct by an examination of the house drains, coupled with the history of the first case in the house. This occurred so far back as the year 1865. Again, I have known the case of a medical practitioner who, having previously enjoyed the good will and esteem of his neighbours, had to endure intense hostility and bitterness when he had successfully carried through, in the face of determined opposition, a scheme for sinking a deep well to supply water in substitution for that of the polluted wells of the village in which he resided. It is within my knowledge, also, that besides the worries and annoyances which both of these men had to endure, they suffered very serious pecuniary loss in their practices as well.

All this, however, is now past history, and to come down more to the present day, let us consider how the medical practitioner stands as regards what is expected and sometimes required of him by the Legislature. Where the duties are optional and no provision is made for remuneration, no blame can attach to any medical practitioner who ignores them, as nearly all do; but where statutory duties are accompanied by a fee, although he may think the sum inadequate he is bound to comply with the law.

To take first of all the Public Health Act of 1875: under the regulations as to streets and houses, under Section 46, any two medical practitioners can give a certificate for the cleansing, whitewashing, or purifying of houses in a filthy or unwholesome condition affecting or endangering the health of any person, upon which the local authority is bound to act should the conditions appear to require it. I have never known an instance in which action has been taken under this section.

Under the provisions against infection, Section 120 of the same Act, upon the certificate of any legally qualified medical practitioner that the cleansing and disinfecting of any house or part thereof, and of any articles therein likely to retain infection, would tend to prevent or check infectious disease, it is the duty of the local authority to require the owner or occupier to cleanse and disinfect within a specified time. With regard to whose duty it is to carry out the cleansing and disinfecting, there is much misconception both on the part of the medical profession and the public; usually it appears to be thought by both that it falls upon the local authority, whereas the section makes it quite clear that the duty belongs to the owner or occupier, except where from poverty or otherwise the local authority may be of opinion that the owner or occupier is unable effectually to do it.

In cases in which it is desirable that infected persons without proper lodging or accommodation should be removed to a hospital provided for the purpose, the local authority may, on the certificate of a medical practitioner, by order of any justice, have removed to such hospital the infected person, or any person so suffering in a common lodging-house may on a like certificate be removed by the local authority, and any person wilfully disobeying or obstructing the execution of the order is liable to a penalty not exceeding £10. The same section (124) includes persons on board any ship or vessel. It would be well if medical practitioners would always remember to warn infectious patients, and those in charge of them, of the penalties to which they are rendered liable in exposing themselves in streets, public places, shops, inns, or public conveyances. I am afraid it not infrequently happens that a doctor is called in to visit a patient, it may be a visitor, or a servant at another person's house, whom he finds suffering from a dangerous infectious disease, and at once advises the patient to be sent home, and this without any reference as to how the removal is to be effected, or what may happen if Section 126 of the Public Health Act is disregarded.

Under Section 142 any medical practitioner can give a certificate for removal to a mortuary—if such has been provided by the local authority—of the body of any one who has died of any infectious disease, or any dead body in such a state as to endanger the health of the inmates, and the local authority may direct the same to be buried within a time to be limited in such order.

The Infectious Disease (Prevention) Act, 1890 (Sections 5, 15, 17), also entitles the medical practitioner to give a certificate for the cleansing and disinfecting of any house or articles therein likely to retain infection, and further allows that his certificate, stating that such disinfection and cleansing has been done to his satisfaction, may be accepted by the local authority.

Probably the Infectious Disease (Notification) Act, 1889, is one of the sanitary statutes with which the medical

practitioner is the most familiar, but I doubt if it is generally remembered that failure to comply with the requirements of the Act renders him liable to a penalty of 40s. One of its requirements is that the notification shall be sent to the medical officer of health "forthwith" on his becoming aware that the patient is suffering from an infectious disease to which the Act applies. It is not unusual for these notices to be received some days after the medical practitioner has become aware of the nature of the disease, sometimes they are post-dated, and occasionally they are not sent until a reminder has been received from the medical officer of health. It is not necessary to point out that unless the notification is sent "forthwith" the main object of the Act is completely frustrated. This is one of the few instances in which the Legislature recognizes the fairness of remunerating the medical practitioner for his services.

I wonder how many medical practitioners know that, if called in to visit a patient suffering from lead, phosphorus, arsenical, or mercurial poisoning, or anthrax, contracted in any factory, he is required by the Factory and Workshops Act, 1901, to send to the Chief Inspector of Factories a notice stating the full postal address of the patient and the disease from which, in his opinion, he is suffering, for which he is entitled to the fee of 2s. 6d. Failure to send the notice forthwith renders him liable to a penalty of 40s. Under Section 123 of the same Act, where there is no certifying surgeon for a factory, the Poor-law medical officer is to act as the certifying surgeon, and, it is to be presumed, is entitled to the fees (although this is not stated in the Act) upon the scale set forth in a schedule to the Act; the fee for each person examined is 6d.

The Housing of the Working Classes Act, 1890, which I think I am not exaggerating in describing as a huge failure, falls back upon the medical practitioner when the medical officer of health has failed in certain of his duties or has acted in opposition to the opinion of a certain number of the ratepayers, and if the medical practitioner agrees with the ratepayers his representation is to be acted upon, and not that of the medical officer of health (vide Section 16). This is a curious arrangement for settling a difference between the ratepayers and an official of the local authority.

In considering the various statutes already referred to, which only partly represent the duties, either voluntary or obligatory, falling to the lot of the medical practitioner, there are two points that need special notice; one is that where in the Act it is stated the medical practitioner "may" do so and so, no reference is made to his remuneration; another, that where the duty is prefixed by the word "shall" a prescribed fee is usually mentioned, but always with the warning proviso of a penalty for non-compliance. In other more recent statutes, such as the Midwives Act of 1902, and the Births Notification Act of the present year, the medical practitioner may be called upon to discharge difficult or onerous duties requiring much skill, and possibly at much personal inconvenience, for which no payment whatever is provided. Indeed, in the Births Notification Act, not only are the duties obligatory and without payment, but non-compliance renders the medical attendant liable to be summoned before a court of justice, where a fine of 20s. may be imposed upon him. Surely here we have the last straw to break the camel's back! and the meekness shown by the profession in omitting to protest vigorously against it, is the measure of our present state of helplessness. No other section of the community has ever been so treated by the Legislature.

One reason, and probably the chief, in explanation of the medical practitioner being so frequently referred to in the Public Health Act of 1875 is that at that time sanitation was in its infancy. There were then no medical officers of health or inspectors of nuisances except in the larger boroughs, and all the work that had previously been done in the way of preventive medicine was for the most part at the initiative of the medical practitioner. It was but natural, therefore, that he should be constantly in the minds of the framers of that Act, and that his opinion and advice in the matters then under consideration should form the basis upon which the Act was to be constructed. With the appointment, however, of paid officials for every district throughout the country whose duties it should be to attend to these matters, it became equally natural that the medical practitioners should leave work which brought neither popularity nor remuneration to them, entirely to these officials; and thus it came about that thenceforth we find them apparently taking so little interest in it. Sentiment and a spirit of philanthrophy are all very well, but after all, the medical practitioner has to live, like other people, and he cannot be expected to bestow valuable time upon an object with which he may nevertheless have the fullest sympathy.

The medical profession is unfortunately so weakened by its own internal differences and jealousies that it is absolutely at the mercy of the Legislature, and not of the Legislature only, but also of all public bodies, institutions, co-operative societies, and even of the public itself. Whilst our expenses are increasing year by year, and whilst our neighbours have been demanding and obtaining higher and higher remuneration for their services, a persistent and ever-increasing pressure is being put upon the medical man to obtain from him more and more work for less pay. It is time that these facts were brought home to the minds of that minority of the profession who occupy the higher ranks, and whose exalted position hinders them from acquaintance with the grievances of their poorer brethren. Some years ago the condition of the Poor-law medical officers in Ireland was investigated and reported upon by a Commissioner specially appointed by the British Medical Journal, and anything more heartrending and deplorable than the position of most of these men as described by him it would be difficult to depict. Even in this country at the present time the average earnings of the general practitioner amount only to a sum of £200, or a little more, per annum, out of which he has to keep his wife and family, for many object to an unmarried man as the family medical attendant. The age limit is also short; under 30 he is often thought to be too young, and over 60 too old. This means that there are some 10,000 or 12,000 hard-working men in the prime of life whose incomes are less than £200 a year—how much less we need not stop to inquire.

The medical profession is strong in numbers; its benefits to mankind were never more highly or more widely recognized than in the present day. Would that its power and deserts received the same recognition! I am afraid this will never be until by some means we become more united as a body. We do not want union as the trades-unionists appear to understand it. The glory of the medical profession has ever been its altruism, and its self-sacrificing spirit, but organization we must have if we are ever to present a strong and united front to all those, whoever they may be, who would for their own selfish ends, not only withhold from us the reasonable dues to which we are entitled, but who would also reduce us to a position of social inferiority.

The title of this paper forbids that I should occupy further time with my own personal views upon this important subject, but I would invite your attention to the excellent address of Dr. H. J. Campbell, Chairman of the Bradford Division of the Yorkshire Branch of the British Medical Association, which you will find in the Supplement to the Journal of November 9th.

A PLEA FOR THE STUDY OF BACTERIOLOGY BY THE GENERAL PRACTITIONER.

Being the Chairman's Address to the Swansea Division, British Medical Association.

By J. ARNALLT JONES, M.D., D.P.H., J.P.,

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Bacteria are classified according to their shape into:

1. *Cocci* or spheres, and these may exist singly or in pairs, in fours, in chains, or in clusters, hence the names diplococci, streptococci, staphylococci, etc.
2. *Bacilli* are rod-like bodies.
3. *Spirilla* are twisted like corkscrews.

All these are members of the vegetable kingdom and belong to the lowest order of plants; they are really fungi, and consist of protoplasm enclosed in a definite membrane of cellulose resembling in character the woody fibre of trees.

They multiply by fission, each individual cell dividing into two, and the two daughter cells take the place of the

original parent cell, and although the parent has lost its identity, yet there has been no death and no dissolution; the bioplasm of the parent exists in the progeny, and setting aside accidents, bacteria are immortal, and under favourable conditions they can multiply so rapidly that sixty generations may be developed in thirty hours; indeed it has been estimated that a bacillus dividing once every hour would in twenty-four hours have increased to 17 millions, and the mass in three days would weigh no less than 7,500 tons.

During the last quarter of a century we have witnessed the rise and progress of the modern laboratory. There are now established bacteriological and zymotechnical laboratories imparting instruction in the study of yeasts and mould fungi, agricultural stations, foresting, and dairy schools, and so on—all indications of our latter-day progress, and demonstrating that utility is the one powerful incentive of modern specialization.

Different bacteria have different missions, and commercially some are of the utmost importance, for without them there would be no fermentation, and the wine, beer, and indigo industries would suffer, and the ripening of cheese and like processes would not occur.

Municipal bodies in the treatment of sewage harness for their use myriads of bacilli, and set them to work on the sewage in septic tanks, coverting the sewage into a harmless and innocuous residuum, and a liquid effluent which can safely be admitted into running streams of water.

A good type is that which is in use at Exeter; the plant is twofold, consisting of a septic tank and several cultivation or bacteria beds.

The septic tank is a closed underground vault, with a capacity proportionate to the population; that of Exeter receives the sewage of 1,500 inhabitants, and contains nearly 54,000 gallons.

At the entrance is a submerged barrier forming a grit chamber to arrest gravel and coarse detritus, the remaining solids pass on to the tank, from which light and air are excluded as far as possible. At the bottom of the tank is sediment, on the top floats a thick scum, and here the bacteria break down the organic compounds, making them soluble. The bacteria at the bottom of the tank work only in the absence of air (anaërobic); they effect the liquefaction and digestion of the sewage, and generate numerous gases in the small masses of organic matter, causing them to rise. The bacteria on the surface are aërobic and denitrifying, converting ammonia into nitrites and nitrates. The sewage is broken down by a process of digestion until all the organic matter is in solution, and this process goes on continuously without rest, for the incoming sewage replenishes the supply of organisms.

The next stage is the distribution of the sewage from the tank into the half-dozen cultivation or filter beds by an automatic arrangement, which fills each tank in turn. In these beds oxidation takes place through the agency of aërobic nitrifying bacteria, with the result that the ammonia lessens, the oxidized nitrogen increases as nitrites and nitrates, and the total solids and organic nitrogen almost disappear. In these cultivation beds, to maintain the vigour of the nitrifying organisms, definite periods have to be allotted for labour, for rest, and for refreshment, so each bed is given 6 hours to fill. It remains resting for 6 hours, it is given half an hour to empty, and rests empty for 11½ hours.

The word "fermentation" usually recalls the ordinary processes concerned in the brewing of beer and making wines and spirits; but we must not forget that the word connotes all decompositions or alterations induced by the life-activity of fungi—one kind of fungus aids us in the disposal of refuse, another helps to prepare our drinks.

Alcoholic fermentation is the oldest bacteriological experiment. Through Hansen's work at Karlsberg, Copenhagen, the brewer can now work with yeasts of uniform type, and he has learned to know the diseases of beer and how to treat and avoid them. The destruction of timber by fungi is due to an enzyme produced by them. A bacillus converts a sterilized decoction of the indigo plant into indigo sugar and indigo white, the latter then oxidizing to form the indigo dye, whereas a sterile decoction without the bacillus produces no indigo. A special bacillus is concerned in destroying a portion of the flax and hemp plants which enables us to use the material for commercial purposes. In tanning, the steeping of skins in water involves bacterial action by which the hair and surface skin are removed; the bacillus is introduced by the pine bark, and is responsible for the proper acidification of the tauning solution and is much valued in the making of certain leathers.

Bacteriology plays a prominent part in the dairy. Milk is a great transmitter of disease, and there are few of us who have not seen enteric fever, scarlatina, diphtheria, or tubercle conveyed by its agency, and if we accept the statement of a Continental authority that each time we eat a slice of bread and butter we devour a number of bacteria equal to the population of Europe, then we have good grounds for demanding information as to what these bacteria are and what they are doing. The souring of milk is caused by lactic acid bacteria. Originally, when left to itself, the process often went wrong, because other putrefactive bacteria were present. Now, on Weigmann's suggestion, pure cultivations of lactic acid bacteria are employed, and all goes well in butter-making. A few years ago Storch found that the peculiar aroma of a good butter was due to a bacterium, which he isolated, and Weigmann has now cultivated two races, one of which produces an excellent flavour and aroma, but the butter keeps badly, while the other develops less aroma but has good keeping qualities. In America pure cultures of a bacillus which develops the famous "June flavour" hitherto met with only in butter of certain districts during a short season of the year, has been isolated, and this fine-flavoured butter is now prepared constantly in scores of American dairies, and perhaps a hundred years hence our Welsh farmers will do likewise.

Properly considered, the manufacture of cheese is a form of microscopic gardening even more complex than the brewing of beer. From the outset the cheese-maker guards and cools his milk, till his stock is ready, and does all he knows to keep down the growth of germs; he then adds rennet and the curd is treated as a medium, on which with the necessary precautions, fungi and bacteria are grown, protecting them against the inroads of animal and plant pests, against unsuitable temperature, moisture, access of light, etc. Having succeeded in growing the right micro-organisms on his curd, his art then demands that he shall stop their growth at the critical period, when his cheese is ready for the market. For instance, to the well-known Roquefort cheese is added a certain fungus (penicillium), which is cultivated on bread, and by its growth destroys the lactic acid formed by the first relay of bacteria; this neutralization of the acid enables another series of organisms, which were inhibited by the acid, to grow, and gives the peculiar flavour to the cheese.

In agriculture, bacteria are particularly useful. As in the septic tank, so here, we find organic matter acted on by one set of bacteria which split up the complex organic substances into simple chemical bodies, the final type of which is ammonia; then the ammonia compounds are attacked by a different set of organisms, which convert the ammonia groups into nitrites, and then another group of bacteria convert the nitrites into nitrates. These are the nitrifying bacteria, which it is proved can fix the free nitrogen of the atmosphere, and render it available for plant food. On the roots of leguminous plants, such as beans and peas, little tubercles or nodules may be seen arranged in clusters and attached to the roots—these nodules contain millions of bacteria, which absorb nitrogen from the air and give it to the plant to which they are attached, and, after the wants of the plant are supplied, they still continue to absorb more nitrogen and store it in the ground to enrich future crops. This is why plants of the pea, bean, vetch, and clover class are of such great value in the rotation of crops; they fertilize the soil for succeeding plants—the sequence is turnips, barley, clover, wheat; and here practice has been ahead of science. So progressive are the Americans that they collect these nodules on a large scale and sell them (nitragin) for the inoculation of poor soils, with wonderful results.

So much for utility; but before now bacteria have threatened the prosperity of a country. Take the cases of the silk industry and sheep farming in France. Both were threatened with extinction by pébrine attacking the silkworms and anthrax the sheep, but the genius of Pasteur stemmed both plagues and restored both these valuable industries to their former prosperity.

Bacteriology only touches animal pathology at a few points, and it should be recognized that the majority of organisms are not unfriendly to man. With regard to the germs of disease, or pathogenic organisms, Koch has laid down certain "postulates," which must be proved before the connexion between an organism and a disease can be admitted:

1. The organism must be found in the tissues, fluids, or organs of the animal affected with, or dead from, the disease.
2. The organism must be isolated and cultivated outside the body on suitable media for successive generations.
3. The isolated and cultivated organism, on inoculation into a suitable animal, should reproduce the disease.
4. In the inoculated animal the same organism must be found.

In some diseases—for instance, leprosy—from difficulty in isolating and cultivating the micro-organisms, we have to be satisfied with the fulfilment of the first postulate only.

In the middle of the last century the mortality in the surgical wards of hospitals was positively appalling, and Lister, availing himself of the discoveries of Pasteur, pointed out to the world that the reason surgery was handicapped was the parasitic infection of wounds by the exposure to certain baneful influences of the part injured or operated on; so antiseptics were employed to get rid of the infected material and kill the micro-organisms. This was the antiseptic era of surgery, and it has been followed by the aseptic era. Our aim now is not so much to kill the germs as to exclude their entrance. The sources whence the micro-organisms of suppuration may pass to the wound are numerous, and that is why the modern operating surgeon is armed *cap-à-pie*, as it were—in sea-boots, with a sterilized overall, wearing a veil like an Oriental beauty, to ward off from the wound the dangerous germs which escape from his nose, throat, and mouth when breathing, talking, and coughing; his hands well scrubbed, soaked in antiseptics, and gloved; his instruments, towels, swabs, and dressings thoroughly sterilized—all admirable and necessary precautions to ensure success.

Surgeons have availed themselves of the knowledge of immunity to which bacteriologists have contributed so much—they recognize the importance before operating of raising the resisting power of the patient, by insisting on rest and increasing nutrition, and they recognise how harmful is the influence of lowered nutrition on the recovery from major or even minor operations, as in cases of diabetes and granular kidney. So, again, susceptibility to infection (as the reverse to immunity) has received attention from surgeons in the operative manipulation of cases of malignant disease—a person with cancer is susceptible, obviously enough, to a disease which has a local origin, hence in operating, a surgeon who has had cause to incise a growth during the operation does not now continue his dissection with the same knife and forceps, and enlarged glands are treated as delicately as possible so as not to extrude their contents mechanically by the efferent vessels. So, again, in operating on a carbuncle, most surgeons would cut it out in preference to scraping it away with a sharp spoon.

The value of a knowledge of bacteriology in general practice is seen when dealing with aural and nasal discharges after scarlet fever or diphtheria as sources of infection; and as suggestive of a past infection, especially when such acute sequelae occur as lateral sinus thrombosis on a suppressed aural discharge, a continued fever of endocarditis or ulcerative endocarditis after pneumonia, after enteric fever abdominal symptoms from suppurative cholecystitis due to invasion by the *B. typhosus*, or acute periostitis of a long bone from the same cause years after the attack of fever.

Any obscure case of fever may have a previous infection as an etiological factor, found only when inquired for, and the practitioner who is on the alert and alive to the possible pathological sequelae of any given infection will diagnose more cases successfully, and be able to treat them more efficiently, and certainly will make fewer mistakes, if fortified by a knowledge of bacteriology.

Anthrax is a disease which receives much attention from every student of bacteriology, for it was one of the first in which the causal agency of bacteria was proved; it is a disease which was known in the time of Moses, and Rome was visited by it in 740 B.C. In 1849 Pollender found the characteristic rods in the blood of animals suffering from anthrax, and in 1863 they were described by Davaine, and the disease attributed to them; and in 1876 Koch isolated the bacilli in pure culture. The bacillus is a sporing bacillus, but the spores are only produced in the presence of free oxygen, and so are formed only outside the body. They may infect a farm for many months, and, indeed, may cling to the land for years, because the spores are so resistant that they can stand a brief period of boiling, and immersion in 5 per cent. of carbolic or 1 in 1,000 perchloride for quite an hour, whilst the bacilli without spores are readily killed at 54° C. in ten minutes. When an animal dead of anthrax is buried earthworms (as Pasteur pointed out) can reinfect the pasture by bringing up spores from the buried corpse.

The disease attacks herbivorous animals mostly, but the Barbary sheep is immune, and so are cats and white rats. Fowls and frogs are naturally immune, but Pasteur communicated the disease to fowls by artificially lowering their temperature by standing them in a bath of cold water, and frogs were given the disease by keeping them in warm water at 35° C., both examples of overcoming a natural immunity by lowering the powers of resistance.

The genius of Pasteur discovered that by inoculating an animal with a cultivation of anthrax, attenuated by growing it under unfavourable conditions, so that its virulence was modified, it could be protected against a subsequent inoculation with virulent bacilli. He prepared an attenuated culture by growing it at 42° C., so that after twenty-four days it would kill neither rabbits nor sheep, and this he called his "*premier vaccin*," and by growing the bacillus under similar conditions for half the time (twelve days) he obtained the "*deuxième vaccin*." He injected 5 drops of the *premier vaccin* into the sheep, and twelve days later 5 drops of the *deuxième vaccin*; fourteen days later an ordinary virulent culture was introduced without evil result, a good example of acquired immunity.

The world will always be indebted to Pasteur for what he did in connexion with rabies. He discovered: (1) That the virus was not only in the saliva, but in the central and peripheral nervous system, yet absent from the blood; (2) that the disease was most readily inoculated in the nervous system; (3) that the virus could be attenuated; and (4) by these means preventive and curative methods could be adopted. He failed to detect a specific microbe, though it is highly probable one exists. He found that by drying the spinal cord of an infected animal, its virulence lessened day by day so that on the fifteenth day of suspension the cord was practically innocuous and non-virulent. When treatment is commenced a small portion of a fourteenth-day cord is used so make an emulsion or vaccine, about 3 c.cm. of which is injected into the flank. The next day a thirteenth-day cord is used, and so on until a rabid cord emulsion of the first three days has been injected; the dose finally depending on the urgency of the case, whether bitten through the clothing, on the bare skin, or on the face or head.

Pasteur's treatment of rabies is therefore a vaccination of attenuated virus resulting in antitoxin formation to the further protection of the subject against rabies. It was my privilege to be a witness of the funeral of Pasteur. Being a Grand Officer of the Legion of Honour the huge garrison of Paris turned out to do him honour and lined the streets to Notre-Dame, and I could not help being impressed by the way his compatriots honour and respect men of science in contradistinction to the scanty recognition they receive in Britain, and by the genuine mourning of a great city for the noblest and most brilliant of her sons. His name will ever live in the splendid series of discoveries by which he enriched science and benefited mankind.

We speak of bacteria as the cause of infective disease, but as one authority puts it, when one strikes a match to light a fire the match is in a sense the cause of the fire, but the fuel must have been laid properly, and be dry, or no fire results. Now the tubercle bacillus is the cause of phthisis in the sense that the disease could not be set up without it; but there must be a receptive and susceptible soil on which it can grow and flourish, or no disease will occur. We all know how the tubercle bacillus runs riot when it gains a lodgement in the lungs of diabetics, because the sugar in the circulating blood stream favours germ growth, and the powers of resistance of the patient are lowered by an exhausting disease.

The ordinary strong healthy man does not present a soil suitable for the growth of the bacillus, but there are certain individuals and families who do, and even those not naturally predisposed may become so by living under unhealthy conditions such as overcrowding, bad housing, lack of ventilation, fresh air, and sunlight, and insufficient food—factors which render the body a suitable soil for the growth of the *B. tuberculosis* by lowering the vital resistance of the individual; they are the predisposing causes and the bacillus the exciting cause, and what applies to phthisis applies to most other infectious diseases also. In dealing with tuberculosis it can be seen that it is possible to wage war against infectious disease in a manner different from that usually followed, to trouble less about the bacteria, and more about the health and vital resistance of the population; and experience shows that the mortality from phthisis, and indeed the incidence of any given infectious disease, may be reduced by methods which bacteriology suggests.

In the care of phthisis our first aim should be to reduce the sources of infection from human beings and animals. The segregation of human beings is not possible on an extensive scale, but a great deal can be done by the education of patients to destroy all infective material, especially those who as parents are liable from their position to pass on the infection to their children. During a visit to Brighton I was enabled to see what good Dr. Newsholme, the medical officer of health there, had been able to do by taking the phthisical poor into the borough sanatorium for a short period, not only for treatment but also for education. The early detection of the bacillus is important in the diagnosis of phthisis, for the earlier the disease is recognized the better both for the patient and the public. To reduce the sources of infection from animals close inspection of all slaughter-houses should be made by competent and trained inspectors, and private slaughter-houses should be abolished. All cows supplying milk should be tested by tuberculin unless their sound health is beyond suspicion, and all animals should be properly housed. Dairies should conform with modern sanitary requirements, and be subject to frequent inspection; the common methods of distributing milk call for urgent reform.

The study of immunity has taught us to raise the powers of resistance of the population by placing it in their power to obtain cheap and good food which has been properly inspected; by preventing overcrowding, and seeing that the habitations of the people have good window area, are well ventilated, and free from damp; and that all people work under sanitary conditions.

Some bacilli—for example, those of diphtheria and tetanus—have the power of generating a poison or toxin. You are all familiar with the preparation and have used diphtheria antitoxin, and know how healthy horses are prepared by injecting into them at first weak preparations of diphtheria toxin, daily increasing the strength of these injections, until finally they become immune to diphtheria; the horses then are bled, and the serum collected, tested, and preserved. This serum is antitoxic only, and not antimicrobic, for the bacillus will flourish in it; therefore it is necessary to treat the throat antiseptically, although antitoxin has been injected.

In like manner tetanus antitoxin has been prepared, and Calmette has produced an antitoxic serum for snake-bite by injecting horses with increasing doses of snake venom, with excellent results, both in laboratory work and in man.

There are no doubt great possibilities awaiting bacteriologists in connexion with the treatment of disease by antitoxins; they have only to labour and to wait, and there will be few locked doors for which they will not be able to produce a key.

Pneumonia is a specific fever, and two micro-organisms are associated with it—one the pneumococcus of Fränkel, the other the bacillus of Friedländer, which is only present in about 3 per cent. of the cases. The pneumococcus is always present in the mouth and air passages, and in the pulmonary alveoli, even of healthy persons, but it never invades the tissues as long as the individual is in good health, vigorous, and strong; but let him get depressed by a chill, exposure to cold and wet, deprivation of food, or exhausted, as soldiers are after defeat, short rations, and harrassed retreat, then the vital resistance is lowered and the pneumococcus effects an entrance through the alveolar walls into the pulmonary tissues, so producing inflammation of the lung.

Stall-fed cattle often get pneumonia, especially when kept in close, ill-ventilated, and dark sheds, whilst cattle kept in the open never get it; their powers of resistance are improved through living in the open air.

The bacteriology of enteric fever is full of interest. The Widal reaction aids the bacteriologist in deciding, from a blood examination, if the patient is probably the subject of the disease. The *B. typhosus* is a motile organism, and the test depends on the fact that the bacilli, when brought in contact with the diluted blood serum of an enteric patient (especially after the first week of the disease), first become immobile, and later are gathered into clumps, just like rallying squares to receive charges of cavalry—a feature which can be watched under a high power in a hanging drop—and this agglutinative property of typhoid serum extends long into convalescence.

The diseases which dog the footsteps of our brethren in the tropics are cholera, plague, and malaria, the remedies for which are: For cholera, the tea kettle; for plague, the rat trap; and for malaria, the mosquito net.

What science can do in the way of preventing disease was afforded a brilliant practical illustration in the recent Russo-Japanese war. Major Seaman, of the U.S. Army, in his report pointed out that the Japanese medical officer was invariably found in the first screen of scouts, with his microscope and chemical reagents, testing and labelling wells, so that the army following should not drink contaminated water. When they reached a town inquiry was made as to the presence of cases of infectious disease, and if found a cordon was placed around the infected quarter. The medical officer examined all flesh, fruits, and other articles of food for the troops, with the result that little dysentery and fever developed. In the vast force of General Oku engaged in that war there were less than 200 cases of enteric fever, and less than 400 of dysentery, and only 40 deaths; whilst by contrast in the Boer war we lost more than 13,000 men from preventable disease alone.

The development of the tropical areas of our great Empire depends largely on the progress of our profession; this is at last recognized by the State. The formation of schools of tropical medicine in London and Liverpool is the outcome of this recognition by the State and by broad-minded merchant princes like Sir Alfred Jones and others. The institution of a Chair of Protozoology in the London University is a happy omen for the future, as was also the calling together of the late international conference for the stamping out of sleeping sickness.

In preventive medicine, as in war, the principle is that every defensive disposition should look to offensive action—mere defence is absolute ruin. "In the long run," said Napoleon, "no position whatever can be defended if it does not threaten the enemy." We have to learn not only how to treat the wound but also to annihilate the enemy inflicting it. In the study of bacteriology there is much to please the student; there is a pleasure in watching motile bacilli rushing hither and thither in a hanging drop, just as we delight from a bridge to watch a shoal of minnows in the stream below.

It is manifestly desirable that the general practitioner should be able to find out for himself the presence of the specific pathogenic organisms in cases of diphtheria, phthisis, enteric, malaria, gonorrhoea, etc. If one has time for it, it is a refreshing recreation, and our sporting instincts appreciate the pleasure of hunting down these micro-organisms and bringing them to bay.

The object of this address is to stimulate my fellows in general practice to take up the study of bacteriology, even if, as in my own case, they only touch the fringe of it.

The Royal Mail Steam Packet Line have again this year organized a series of winter tours to the West Indian Islands, the choice open in point of expenditure both of time and money being a wide one. The shortest tour takes thirty-three days, and the longest ten weeks. This season the fleet which is devoted to this service has been strengthened by the *Oroya* and *Magdalena*, which hitherto have been on the Australian and River Plate services. A description of the possible tours is contained in an attractive pamphlet, which contains a good collection of maps of the various islands.

An Address
ON
CREMATION.

DELIVERED BEFORE THE SHROPSHIRE AND MID-WALES BRANCH, ON OCTOBER 8TH.

BY

J. WOODWARD RILEY, L.R.C.P.ED., M.R.C.S.ENG.,

FONTESBURY; PRESIDENT OF THE BRANCH.

WHEN it was intimated to me that I was to be elected President of this Branch of the Association, my first feeling was one of unalloyed satisfaction and complacency, for I regarded it a great honour to be allowed the privilege of occupying a chair which had been graced by men of distinguished ability and acumen—whose record of high attainment in office was green in your memory, whose example I could only hope feebly to imitate. But on the horizon of this serene sea of gratifying thought there loomed the cloud of an unwritten presidential address; it hovered above me with baneful influence, for I was in doubt and perplexity as to a subject that might claim something of your interest and attention. I thought of this and that, of time-worn professional themes concerning which I knew nothing new, and in despair had nearly drifted upon the rocks of appendicitis, when a light illumined the darkness of my troubled thoughts in the form of a very able letter, from the pen of my friend Dr. Cureton, upon cremation of the dead. The letter impressed me, and made me think upon a matter to which I had previously given little thought; and I here express my grateful thanks to Dr. Cureton for, so to speak, laying for me the foundation-stone upon which I have built up this address.

In dealing with the subject of cremation, gentlemen, it is not within the limits of the time at my disposal to give anything like an exhaustive treatise on the subject. I can only attempt briefly to outline its history, to state some of the arguments for and against it, to see if we can reconcile it with religious sentiment, with the law of the land, and with the best interests of the community. It is a subject I suggest as well worthy your attention, for present-day conditions urge us to think most seriously of the disposal of the dead, in view of our grown and growing crowded centres of population; and we medical men are, I think, best fitted to educate quietly and tactfully the lay mind upon this matter, seeing there are prejudices which must be gently dealt with and overcome, and other grave considerations to be taken into account.

It is well known that cremation was the practice of the Ancient World, with some exceptions—for instance, Egypt, where bodies were embalmed; Judea, where they buried in sepulchres; China, where earth burial was in vogue. The Greeks, Romans, Slavs, Celts and Germans burned their dead. In Greece, so well ascertained was the law that only suicides, unteethed children and persons struck by lightning were denied the right to be burned. At Rome the custom was universal and one of twelve tables said *Hominem mortuum ne sepelito, neve urito.* The graves of north Europe throughout the bronze age contain only jars with ashes. The Jews, I ask you to note this, practised cremation in the Vale of Tophet when the plague came.

Coming to more recent times, Italy appears to be in the van in proposing its adoption in 1866, and it was largely due to the efforts of practical experimenters like Gorini and Polli that the first cremation of a human body effected in a closed receptacle took place at Milan in 1876. In 1877 cremation was legalized in Italy, and through the advocacy of Dr. Pini, President of the Cremation Society of Milan, crematoriums have been erected in many other towns and cities, notably Padua, Venice, Rome, Cremona, and Bologna, where a large nnmber of bodies have been cremated. In Berlin, Leipzig, and Dresden there has been a strong agitation in favour of cremation, and at Gotha there is a large crematorium and mortuary, where, between 1878 and 1888 more than 500 cremations were effected, and the ashes placed in the columbaria of the crematory temple; in fact societies for securing the legalization of cremation exist in nearly every country in Europe, and the number of bodies cremated shows a steady increase. Cremations in the United States are much in excess of those of other countries, the total number between 1876 and 1900 amounting to 13,012.

In 1874 the English Cremation Society was formed, and it included in its ranks men distinguished in the church, at the bar, in medicine, in public life, in literature and in art. Sir Henry Thompson was elected President, and he wrote and spoke upon this subject with marked lucidity and careful reasoning, and while always resourceful in arguments with opponents of the system he was ever tactful and courteous. The intent of this Society was to obtain and disseminate information upon the subject, to get at the best way of performing the process, and to institute a sanitary reform in our method of disposing of the dead, by substituting a cleanly and rapid disintegration of the elements of the body for a slow, offensive, and dangerous one. The Society made arrangements for the erection of a crematorium in one of the great cemeteries north of London, but meeting with opposition they bought a site at Woking, and the crematorium there was used for the first time in 1885. There were three cremations that year at Woking, in 1900, 301, and in the years between 1885 and 1900, 1,824. Figures which speak for themselves. There, reverently disposed, the ashes of the dead in cinerary urn or cista placed in cloistered niche may lie undisturbed and safe from rude or unholy touch.

As touching the legality of cremation the judgement delivered by Mr. Justice Stephen settles the point. He said, "Cremation is a legal procedure provided no nuisance be thereby caused to others," and this leads me to say a word or two about the furnaces used in the process, which must be so constructed as to prevent a nuisance. The two most in favour are the Siemens's regenerator furnace and the Gorini furnace. The latter I will briefly describe. It consists of a receiver, furnace, and chimney. The receiver is a flat-bottomed chamber opened at each end, one of which communicates with the upper part of the furnace, the other with the lower part of the chimney. The furnace, which discharges its heat into the receiver, is sufficiently spacious to provide the necessary heat by wood fuel only if found requisite. The chimney is of a sufficiently sectional area to remove the products of combustion from the receiver as well as from the furnace, and high enough to permit the draught to keep above the gases pervading the receiver, and prevent any dispersion of heat or smoke through the apertures around the receiver or cremation chamber. To prevent any organic molecules escaping from the shaft a grating is placed near the base of the chimney, and upon this a portion of coke is kept burning. The products of animal combustion which issue still highly heated from the receiver are subjected to higher temperature in passing through the burning coke, and any organic matter which may have resisted or escaped the first fire is destroyed by the second, and mixes harmlessly with the atmosphere. By this process incineration of a body may be completed in from 1¼ to 1¾ hours. The ashes weigh from 5 to 7 lb.

In the days when populations were sparsely scattered over a large area it could not reasonably be argued that burial in the earth had any grave disadvantages, but to-day, when our centres are crowded with overflowing and increasing numbers, and when every acre of land is required for economic purposes, is it wise to continue a system which robs us of land we want for other purposes than burial, and, gravest consideration of all, places a plague-spot in our midst? It is held, I believe, to be an undisputed fact that there must be damage to the health of such as live near churchyards from the exhalation of noxious irrespirable gases and poisoning of water supplies. I have been at funerals myself when the odours from an opened grave have been most revolting, have seen vaults opened and coffins floating in water, a saturated solution of putrefying matter. Think you that that water will not percolate and contaminate streams used for household supply? I draw no exaggerated picture, I could multiply instance after instance where I have seen the grossest carelessness exhibited in earth burial, and not the least regard paid to sanitary precautions. You may bury deep, hedge earth burial round with all the precautions you like, but would any man here be bold enough to say that, do it as you will, with all the care you like to manifest, there is not a possible source of danger to the living? And this admitted, I think you utter a note of condemnation which should be heard in the furthest corner of the land.

But what about those who die from infectious diseases such as diphtheria, scarlatina, variola, tuberculous disease, enteric fever, cholera, etc.? The poisons of these diseases are undoubtedly transmissible through the earth by more than one mode. Does it occur to the ordinary mind that earth burial in these cases means the storing up of bacilli, bacteria, spores, of various sources of infection for future use? Is this so? The burying in lead or strongly made coffins undoubtedly minimizes the danger, but does not obviate it. Are you satisfied that if you sanctioned the laying in the earth of a child who had died from diphtheria—I am only assuming for the sake of argument you were the persons responsible—you could go to sleep with a quiet conscience and feel you had done your duty to those around you? Does modern science prove or disprove that these germs will be destroyed in the earth, their power for evil in the near present or future absolutely and radically vanquished? If not, what must be the deduction? Truth lies deep, they say, and in a well, but if there be the smallest element of it in what has been said, would it not be wiser, more in accord with modern ideas of civilization and sanitation, to substitute cremation, which must absolutely destroy all germs, for earth burial, and to second the effort of the English Cremation Society by urging this matter for the consideration of Parliament?

We cannot treasure these bodies of ours; sooner or later, do what we will, they must go "back, back to Mother Earth," and cremation is merely the act of anticipating at once, in the interests of the living, what must surely come to pass after a longer or shorter time of nauseous process; and let me ask you to think if the slow hand of putrefaction has fewer horrors than the swift effacing fingers of flame?

Viewed from the medico-legal standpoint opponents say: "Your system tends to destroy the evidences of crime and facilitate the escape of criminals." I differ from this view. Nobody can be cremated without independent certification as to the cause of death by two medical men, and if this be not conclusive and satisfactory, an autopsy must be made. There are a series of categorical questions issued by the Society which must be answered to their satisfaction, and the care taken in this respect contrasts favourably with the loose method which, according to present law, is considered sufficient for earth-burial. It is quite common for the doctor to say to sorrowing friends—"I can do no more, for as far as I can see there is no hope of recovery"—and in a longer or shorter time as the case may be news is brought that the patient is dead, and you forthwith write a certificate stating your belief as to the fact of death on the testimony of an unprofessional person and in nine cases out of ten do not see the body after death; and this is considered satisfactory and conclusive. The contrary, unfortunately, has too often been proved. But what about those cases of poisoning where during life the symptoms have been obscure, and attributed to this or that cause, but where no suspicious circumstances have been noted at the time? Later, doubts have arisen, exhumation and analysis have followed, and a criminal has been brought to justice. I admit that this is one of the strongest arguments that can be brought against the practice of cremation. But let us examine it a little closely to see if it is as conclusive as it would appear. To ensure the public safety it is an obviously sound axiom that it is better to take such precautionary measures as may enable an act of poisoning to be discovered before burial, rather than rely upon the more remote chance of discovery afterwards. If in any given case where cremation is required there is doubt as to the cause of death after the ordinary precautions, an autopsy and preservation of certain portions would yield, I should judge, far more certain and conclusive results, than in those rare cases where examination has to be made after exhumation. It is, I believe, true that such poisons as morphine, aconite, atropine, and prussic acid lose their distinct reaction soon after burial, and may become so decomposed or commingled with poisons developed in the body as to render invalid evidence which might with certainty have been obtained before interment had taken place. Strychnine and the metallic poisons—arsenic, antimony, and mercury—are not in the same category, and may be discovered in the tissues after a much longer period; but here again the retort comes in that if proper care were exercised exhumation would not be necessary to discover these poisons; besides, these cases are very exceptional. The vast proportion of deaths are due to natural causes, and you would not condemn a system on account of the exceptions, but rather strive to fence it round with such stringent precautions that when an exception did arise it could never be quoted to its disadvantage.

I now come to the religious aspect of this question, and ask you to believe that I speak with all reverence and humility, and would not offend by a word the susceptibilities of those who think that this raises an insuperable barrier to the practice. There is no doubt that the advent of christianity stopped and prevented in a great measure the practice of cremation, partly on account of the doctrine of the resurrection of the body, and partly also by the notion that the christian body was redeemed and purified, a temple of the Holy Ghost. Also there is that kindly feeling for the dead which shudders at the idea of a body being burned, and would regard it as a heartrending ceremony to bereaved ones. Christ was buried, and there is the divine example of what we should do with our dead. It would give us more happiness to think of our bodies after death lying in the churchyard and waiting God's mighty working, than in bringing about by our own hands the "ashes to ashes and dust to dust." This I think fairly represents what many would say, and I think that if asked whether the resurrection of the body was jeopardized in the case of the blessed martyrs who were cremated alive for the faith's sake, or of those numberless instances where bodies have been blown to fragments or devoured—they would, I suppose, have an answer ready. I have not. I do not propose to deal further with the theological argument, I leave that for an abler pen, but cannot help remembering the words in that glorious lesson of the Burial Service, "There is a natural body and there is a spiritual body." And it seems to me it is the "spiritual body" that should most nearly concern our thoughts in regard to the resurrection. There is ample clerical testimony that cremation does not violate divine law. The Church approves, witness the direction of the Dean and Canons of Westminster that the late Sir Henry Irving's body should be cremated before burial in the Abbey. The Bishop of Coventry said that "cremation was preferable on several grounds to burial in populous districts, and that the disposal of the dead by burning was not contrary to any Christian precept." Many clergymen to whom I have spoken take the same view. To my mind it harmonizes with religion. The solemn and touching words, "ashes to ashes, dust to dust," are heart-breaking when uttered over a form we have loved, just lowered into the grave, but they would seem to gain a fresh and brighter significance when recited over remains about to be consigned to the purifying influence of fire, and all that is base and corruptible dissipated; and we can almost imagine the untrammelled, unimprisoned elements floating in the liquid ether, soaring upward to the realms of spiritual life, and those poor few remaining ashes waiting reverently the ultimate disposal of the great God.

I have pressed home my thoughts upon this matter, gentlemen, I hope not dogmatically or with any desire to compel or suggest compulsion, but rather to convince; and have spoken strongly upon contagious diseases, for I feel that reform is here much needed and the loudest cry sent up; I have shown many advantages and few objections. The system is growing, for already crematoriums figure in our principal towns and cities. There is economy, safety, and security, for the ashes of the dead may be deposited in any cloister or vault; there is no offence to the living, nothing out of conformity with the solemn reverence due to the majesty of death; no violation of divine law or interruption to the thought of "that sweet sleep and calm rest" we are all wont to associate with the grave. It does upset old ideas, old traditions and thoughts, but the march onward must ever do that, and, if we are stepping out to what we believe to be clean and righteous, we may be quietly confident that the end in view will sooner or later be obtained.

The Société Médicale des Dentistes des Hôpitaux of Paris, at a recent meeting, passed a resolution that dentists appointed to hospitals by competition shall henceforward be called "Stomatologistes des hôpitaux." It was agreed that a copy of this resolution should be forwarded to the Council of Supervision of the Assistance Publique.

PROTECTION OF INDIA FROM INVASION BY PLAGUE.

BY J. ASHBURTON THOMPSON, M.D., D.P.H.,

PERMANENT HEAD, DEPARTMENT OF PUBLIC HEALTH, GOVERNMENT OF NEW SOUTH WALES.

SELECTION of this topic for discussion by a stranger to India requires justification. I point out, therefore, first, that Australian conditions happened to be so favourable to the epidemiological investigation of plague that data of two classes were there acquired with comparative ease—namely, (*a*) fundamental data which concerned the disease itself, and which, consequently, hold good in all countries, under all circumstances; and (*b*) data which concerned practical administration, which are liable to modification in different countries by local habits. And then, secondly, I would say that I have no intention of trespassing on the province of the administrator, at least in the details of his work. I propose to speak rather of the statesman, and to point out that which I conceive to be the sole and irrefragable principle which he must impress on administrative staffs if he would achieve any permanent reduction in the susceptibility to invasion by plague which is so marked a feature of the conditions of life in India.

The fundamental data acquired at Sydney were the following:

1. The epidemic spread of plague occurs independently of communication of the infection from the sick; consequently, the infection of plague spreads by means which are external to man, and which are independent of his agency as subject of the disease. The data on which this conclusion is founded were first published in November, 1900.

2. The plague rat is harmless to man. It is, nevertheless, the essential cause of epidemics; consequently some intermediate agent is necessary to convey the infection in efficient form from rat to man. The evidence for this conclusion was first published in July, 1903.

3. The intermediate agent between rat and man (and between rat and rat) can be no other than the flea foreshadowed by Simond, and, further, actually is the flea. This conclusion also was published in July, 1903, together with the exact observations made in the field from which it was deduced.

The administrative data then acquired were many. They were all referable to the fundamental data; and when it appeared, as it sometimes did, that the conclusions of this class were not in accordance with experience in other parts of the world, it was still found that the differences were apparent and not real, and were easily explicable by the fundamental data already mentioned. For the sake of example, the following instances may be cited. One of them was that transfer of the sick to hospital is a very important curative measure, but is quite without importance as a preventive measure. Another was that there is no such thing as infection of localities or places, although the disease is acquired by resort to certain localities; the explanation is that the local rats are infected, not the places themselves. A third was that clothing never becomes infected with plague and is never a cause of spread; and it was easily seen that the contrary experience commonly recorded in India was not inconsistent with that conclusion, but was explained by the fundamental datum that the infection is communicated by fleas, which in India very much more commonly infest the people and their houses than in Australia, where such infestation is, for the most part, absent. Observations of the class now referred to may, or may not, hold good in all respects in changed social conditions. But there was another among them which has not yet been mentioned and which is certainly of universal applicability—this was that the infection of man was most usually contingent on his being within buildings together with plague rats; and on considering the fundamental data it became evident that a certain proximity between man and the minute agent of his infection—the flea—must be necessary. Hence it appeared plainly that the exclusion of rats from occupied buildings must be an important item among steps for the prevention of plague, for from the rat alone does the flea derive its power. But, more than that, the longer this point was contemplated the clearer it became that the rendering of occupied buildings rat proof was absolutely the most important item in plague prevention, and even the only one to which the epithet "preventive" could be justly applied. The reasons will be referred to presently; here I would merely note that I advocated this view also first in 1900, and then predicted that its simplicity, and perhaps also its apparent indirectness, would militate against its acceptance by the laity, who control the purse and consequently the means of carrying it out. And it is still the case that attention is concentrated on other measures which, in reality, are merely remedial, or merely palliative, and which are consequently interminable. This, then, is the point to which I wish to draw especial attention; but I must add that I take it to include and to cover destruction of the harbourage which rats find outside, and in the immediate neighbourhood of, buildings. The difficulty of saving the people in a place from attack is proportioned to any difficulty there may be in preventing the access of rats to the buildings occupied by them; but the difficulty of clearing plague away from the place itself is proportioned to any difficulty there may be in removing the harbourage which rats find in the mouths of sewers, in heaps of lumber and rubbish, in loose earth and rubble-fillings, and in dilapidated sheds or the like structures.

It should be noted that the administrator who is faced with an outbreak of plague is perfectly right in relying on immunization of the people—a possibility laid open to him by the genius of Mr. Haffkine, here present—on evacuation, and on the destruction of rats. These are his only, and fortunately his very effective, means of staying it. But the statesman should be caused to understand that the control of existing epidemics is not a subject to engage his supreme abilities, and that his preoccupation should be how best to diminish the susceptibility to invasion of his country as a whole. The methods just mentioned (I must repeat it) are in fact remedial, not preventive, and consequently, as I have already remarked, they are interminable. If a population be immunized this year, it must, if it be reinvaded, be again immunized in a twelvemonth, or a little later; evacuation may have to be repeated even during the same season; and to the killing of rats there is literally no end at all. But every building which is rendered inaccessible to rats may be regarded as a fortress impregnable to that enemy for ever. This, then, indicates the only road the statesman can fitly take; a road, namely, on which every step must be directly towards the goal, and on which there cannot be any backsliding.

The arrest of present outbreaks is a quite different matter from diminution of the liability of the country to suffer them. Removal of the conditions which constitute susceptibility can alone be justly spoken of as preventive action. And it is, I think, of little use to place scientific truths before the laity unless the expert points out their practical bearing and application at the same time. In order to judge in how far true that is, it is only necessary to ponder the *Gazette Extraordinary* which was published by the Government of India during August of this year. That *Gazette* draws attention to the essential part played by the rat, to the essential agency of the flea, and to the insignificance of deposited infection; but it also expresses the opinion that this knowledge, acquired by it from the remarkably brilliant reports of the Plague Research Committee, will probably not render the task of prevention much easier than it was before. The *Gazette* even mentions the desirability of excluding rats from dwellings, but only to dismiss this method with the remark that it is impossible to expect much improvement in the construction of buildings in the near future. The all-important distinction mentioned above between remedial and preventive measures is not perceived.

This pronouncement, then, appears to be rather less far seeing than might reasonably have been expected; for there are many other considerations which must be entertained besides the crude facts which are recited in the *Gazette*. It should be noticed that plague seems to have taken its place among the endemic diseases; and if the uncertain teachings of history seem to offer some prospect of its ultimate extinction by natural process, it should be borne in mind that present circumstances are vastly different from those which formerly obtained, and different especially in relation to traffic. To-day plague is a disease to be fought persistently in India, as, I suppose, typhoid

fever and cholera are there fought. No speedy exemption is, in my opinion, to be expected.

It must be frankly said that the method of exclusion is practically impossible in the smaller villages, in the larger villages, and in the lesser towns; but this admission is very far indeed from covering the whole case. In the first place, it is precisely in those smaller and more or less circumscribed collections of huts and houses that the palliative or remedial measures are easily successful, and, provided the infection be not reintroduced, permanently successful. In the second place, whence do Indian villages derive their infection? Is it not from the great cities on the seaboard, and from the larger inland cities which have become secondary distributing centres? And is it indeed quite impossible to apply the method of exclusion in them?

I do not doubt that when a broad and comprehensive survey of all the data has been taken, it will be perceived that the exclusion of rats from occupied buildings in cities is the only measure which can permanently diminish the susceptibility of India to plague; and that, as soon as this principle of action has been grasped, resolutions taken by Government will be conceived in the spirit which animated that courtier who, when he was desired to undertake a business which the King himself thought it hardly possible to carry through, replied, "Sire, if it be difficult, it is already done; if it be impossible—it shall be done!"

PRIMARY SARCOMA OF THE VERMIFORM APPENDIX.

By T. CARWARDINE, M.S., M.B., F.R.C.S.,
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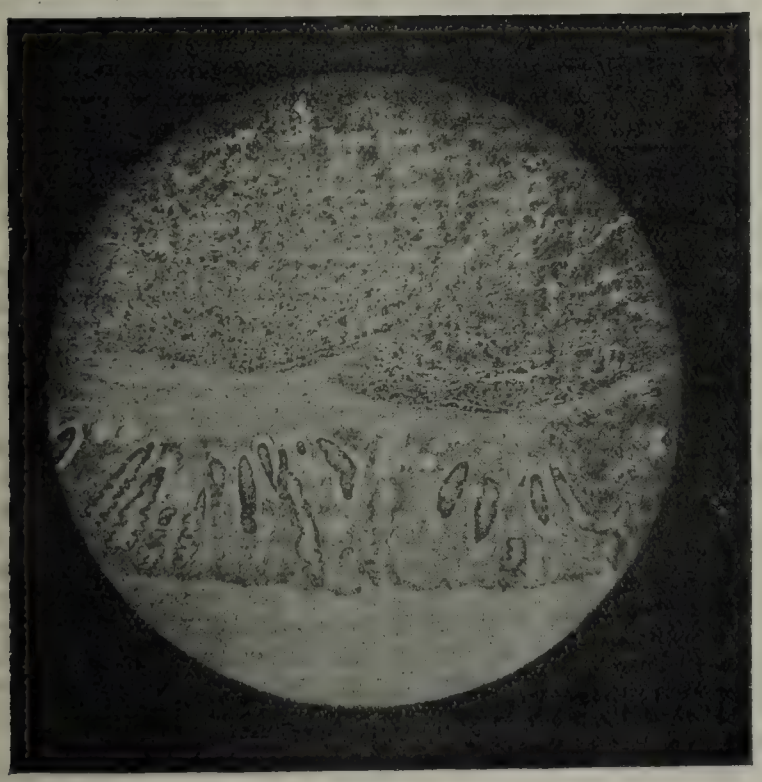
Although primary malignant disease of the vermiform appendix is comparatively rare, recent increase in surgical and pathological activity has brought to light many instances. The literature of the subject of malignant disease of the appendix was collected and critically examined by Dr. H. D. Rolleston and Mr. Lawrence Jones in an excellent paper read before the Royal Medical and Chirurgical Society of London in 1906.[1] They found that the total number of cases of primary malignant disease of the vermiform appendix available for analysis up to that time was 42. Of these, 37 were recorded as some form of carcinoma, 3 as endothelioma, and 2 as



sarcoma. It is only the last with which I am at present concerned; I am able to add a third case. No other subsequent reference to sarcoma has been found, though there have been a few later cases of carcinoma.

Case I.—In 1898 Warren recorded a round-celled sarcoma of the appendix spreading to the mesentery, for which he removed the caecum and performed an anastomosis by Murphy's button.[2]

Case II.—In 1903 P. Paterson recorded a case of round-celled sarcoma, infiltrating all the coats except the peritoneal.[3]

Case III.—In 1905 a case of round-celled sarcoma of the appendix was under treatment by the writer, in consultation with Dr. Lees of Clifton, the particulars of which are recorded below.

The patient was a lady, aged 45, who had been losing flesh, had severe pain in the right iliac region and diarrhoea. The first indication of trouble was five months previously, when she had a sudden colicky pain in the right lower abdomen. Two months afterwards she had another short attack; and again, two months later, a longer attack. Subsequently she was frequently awakened by pains at night, which tended to be less severe but more constant. Tenderness then appeared, and a deeply-seated swelling was found, occupying the false pelvis, just above the brim on the right side. The region was resonant, and the tumour somewhat defined above. During the next few weeks the swelling increased, though pyrexia and tenderness were absent. We had suspicions of its malignancy, and after further consultation an operation was decided upon.

The appendix was about 3½ in. long, as big as one's thumb, and very hard and very adherent. Its club-shaped extremity was deep down behind the ileo-caecal junction. It was enucleated with considerable difficulty and fractured like a carrot near the base. The caecum and ileum were normal. The base of the appendix presented into the caecum like an os uteri, and through the small lumen a glairy fluid, but no faecal matter, escaped. A gland could be felt in close proximity and was simultaneously removed, as well as the uninvolved head of the caecum. The patient made a satisfactory recovery from the operation.

About five weeks later a tender tumour was first noticed in the left lower abdomen, and bimanually this was found to be ovoid, mobile, and apparently in the position of the left ovary. This continued to increase, and at the time of the death of the patient, nine months after operation, it occupied almost the entire abdomen. For some months the patient was frightfully emaciated; she developed pleuritic effusion at an early stage and very marked oedema later on.

Microscopic sections of the appendix in several places showed it to be uniformly composed of round cells, with a little intercellular reticulum. This pathological change involved the whole of the wall between the peritoneum externally and the muscularis mucosae internally; it showed signs of breaking through the peritoneal coat at one place; and, as will be seen in the accompanying photomicrograph, the submucosa was becoming invaded. The sections were submitted to several authorities, and the consensus of opinion was that the tumour was a sarcoma. Mr. Shattock, who kindly examined the sections, regarded the growth as a lymphosarcoma, having its primary origin in the submucous tissue, and tending to infiltrate the neighbouring coats, as is common with lymphosarcoma of the alimentary tract.

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[1] *Transactions of the Royal Medical and Chirurgical Society of London*, 1906, vol. lxxxix. p. 125–156. [2] *Boston Med. and Surg. Journ.*, vol. cxxxviii, p. 177, 1898. [3] *Practitioner*, 1903, vol. lxx, p. 155.

A CASE OF SEPTICAEMIA WITH INTERESTING REACTIONS TO TREATMENT, AND RECOVERY.

By CLAUD F. FOTHERGILL, M.B., B.C.Cantab.

The following case appears to be of sufficient interest to warrant publication, showing, as it does, several interesting features. The writer himself was the unfortunate patient, and endeavoured accurately to observe his own case.

On May 1st, 1907, the patient, then senior house-surgeon at the Gloucester General Infirmary, had the misfortune to receive a small scratch at the root of the nail of the middle finger of his right hand whilst assisting at the amputation of a septic tuberculous hip. It bled slightly at the time, was there and then bathed in lysol solution, and was not again employed at the operation. Immediately the operation was over (and it necessarily had to be performed rapidly on account of the patient's condition) the finger was squeezed successfully to induce free bleeding, was held under a very hot stream of water, and then a little pure carbolic was rubbed into the cut.

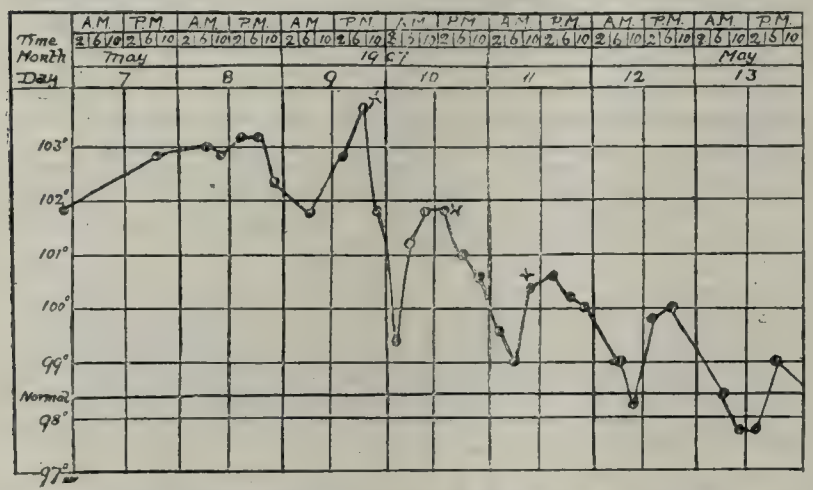
Hot boracic fomentations were applied at frequent intervals during the day and once in the middle of the night, and were continued throughout. In the meanwhile prophylactic treatment proved of no avail, for the patient felt progressively more ill, whilst the finger became more acutely painful. The bowels were freely opened by a calomel purge. No fluctuation was discoverable.

On May 5th patient began to have rigors. Gas was adminis-

tered and incisions made dorsally and ventrally over the distal interphalangeal joint, but only a bead of pus was liberated. Further incisions were made two days later without finding pus. The temperature had now risen to 103° and the patient had acute pain, was extremely weak and had lymphangitis to the level of the shoulder. A mixture of tincture of digitalis and liquor strychninae hydrochloratis was given every four hours and morphine at night.

On May 9th the pus yielded a pure culture of streptococcus, and 10 c.cm. of antistreptococcic serum (Parke Davis) were injected into the left flank at 6 p.m. The temperature at time of injection was 103 8°. The same evening the patient had a severe syncopal attack, but it passed off after brandy had been administered. The following day another injection of 10 c.cm. of serum (Parke Davis) was given into the right flank, and two incisions were made over the metacarpo-phalangeal joint, and again the next day another 10 c.cm. of serum, this time of the Lister Institute.

From this date the patient's general condition steadily improved, with the exception of a second severe syncopal attack on May 12th after a soap enema. No serum was injected after May 11th.



× = time of injection of antistreptococcic serum (10 c.cm.).

The various incisions soon closed with the exception of that on the palmar surface of the metacarpo-phalangeal joint, from which pus continued to discharge in spite of gauze drains, hot fomentations, hydrogen peroxide spray, hot boracic, carbolic and mercury perchloride baths. The finger remained exceedingly painful, especially at the interphalangeal joints, and grating on movement was observed. Ethyl chloride was applied locally, and a dorsal incision made again down to the bone over the mid-interphalangeal joint to see if any deep pus was present. None, however, was found.

About an inch and a half of the tendon of the flexor sublimis digitorum sloughed out on May 27th, followed three days later by about ¾ in. of the tendon of the flexor profundus, and the finger was then amputated at the metacarpo-phalangeal joint after the discharging wound had been well swabbed out with pure carbolic; a rubber and gauze drain was inserted on the palmar surface, the wound being otherwise sewn up.

There was considerable pain on the day after amputation, and on the second day oedema to the level of the wrist. All the stitches were consequently removed and the wound was allowed to gape. Very thick and gelatinous pus was discovered. Hot boracic fomentations were applied every two hours. The rate of coagulability of the patient's blood was now found to be very much above the normal, and he was accordingly given citric acid (gr. xxx) with syrup of lemons (♏ xl) every four hours for two days After an interval of two days citric acid was again administered and then an extraordinarily rapid recovery ensued. The wound healed completely, and although it was by granulation, it appeared almost as though it had been by primary union. During convalescence the patient peeled as though recovering from scarlet fever.

Since his illness the patient has been able to operate, thus showing recovery of the use of his hand minus the finger. He has also been on a walking tour, but finds some shortness of breath on going up hills, due probably to some myocardial degenerative change from which recovery is as yet incomplete.

The especial features about the case are: (1) The extreme virulence of the infection. (2) The general symptoms became progressively worse until the use of the antistreptococcic serum, which almost at once acted beneficially. (3) Brandy was without doubt of great benefit when given in the two syncopal attacks, but, when the patient was given brandy four-hourly, it was found to raise both temperature and pulse, and made him more restless, and was therefore discontinued. (4) That, although the temperature and pulse had been normal or subnormal for nineteen days after the abatement of the general symptoms, yet, when the amputated finger was examined, it was found that not only had all the cartilage of the interphalangeal joints been eroded, but the bone was also eroded into the cancellous tissue, thus proving that temperature and pulse in such a case are no guide to active disease, but that the presence of continuous pain is far more important. (5) The citric acid mixture proved of wonderful efficacy in lowering the abnormally high coagulability of the blood, and seemed directly responsible for improving the character of the pus, and bringing about the rapid and thorough recovery of the wound.

THE POST-MORTEM STATISTICS OF MIDDLE-EAR DISEASE IN YOUNG CHILDREN.

BY JAMES MILLER, D.Sc., M.D.,

VISITING PATHOLOGIST TO THE GENERAL HOSPITAL, AND SPECIAL LECTURER ON BACTERIOLOGY IN THE UNIVERSITY OF BIRMINGHAM.

THE frequency of middle-ear disease amongst apparently healthy children is well known. Cheatle, examining 1,000 school children, found that 335 of these had a discharge from one or both ears. That such a condition constitutes a menace to the health of the child, and that it may lead to fatal cerebral complications, is universally admitted. The results of investigations in the *post-mortem* room as to the frequency of these cerebral complications and the relationship which middle-ear inflammation bears to other diseases are, however, not so well known. It was in the hope of adding to our knowledge on this subject that I have been investigating these questions by observations on the material at my disposal at the General Hospital during the last twelve months.

The material comprises 50 cases in children whose ages varied from 12 days up to 4 years. In every case the middle ear was opened through the "tegmen tympani." If the fluid in the cavity was clear no further examination was made. If pus were present, or if there was a doubt as to its presence, films were made and stained for bacteria. The presence of considerable numbers of polymorphonuclear leucocytes along with organisms was taken as the criterion for the existence of an acute inflammatory condition of the middle ear (suppurative otitis media). In most cases, however, there was no difficulty, pus welling up at once on the bone being ruptured.

Out of the 50 cases examined, 37 showed pus in one or other or both middle ears. In 20 of these the disease was bilateral; in 11 of the remainder the condition was restricted to the left side.

Previous observations on this question are not numerous. Preysing[1] gives the results of an examination of 100 children whose ages varied from 1 day up to 3 years, and who had died from various causes. Of these, 81 showed middle-ear disease, which was bilateral in 73. Bacteriological examinations brought out the fact that by far the most common organism present was the pneumococcus. Out of 121 positive results, Preysing found the pneumococcus present in 112.

Although cultural methods were not adopted in my own series, a Gram-positive, lanceolate, and capsulated diplococcus was found in practically all the films examined. Further, in 3 cases of acute miliary tuberculosis tubercle bacilli were found along with diplococci. This predominance of the pneumococcus does not appear to obtain when all ages are included. Supfle[2] states that in a series of cases of middle-ear disease examined clinically, the *Streptococcus pyogenes* was found in 50 per cent. of all cases, but only in 30 per cent. of cases under 10 years, whereas the *Streptococcus lanceolatus* (pneumococcus) was found in 18 per cent. of all cases, and in 85.7 per cent. of cases under 10. We may therefore assume that, although not the commonest organism in otitis media of adults, the pneumococcus predominates in children, and that this predominance becomes more marked the younger the age limits selected.

With regard more particularly to the age of the children in my series, 43 were under 2½ years, 32 were under 1 year, and 17 under 6 months; 1 was only 12 days old, and yet showed bilateral otitis media.

The relationship of the cases with middle-ear disease to other pathological conditions is of considerable interest. Meningitis was found in 10 cases out of the 50; 8 of these showed middle-ear suppuration. Four out of the 10 were cases of pneumococcal cerebro-spinal meningitis, and in all these cases suppurative otitis media existed

with a Gram-positive, lanceolate diplococcus present in the pus. One was a case of tuberculous meningitis, and in the left middle ear tubercle bacilli along with a Gram-positive diplococcus were found. There were no cases of sinus thrombosis or of cerebral abscess, although I had several such in children over 4 years of age.

Five of the cases had enteritis or colitis put down as the cause of death, and 4 of these showed otitis media. Preysing lays stress upon the association of diarrhoea with middle-ear suppuration, and considers that organisms absorbed from the ear may be carried to the intestines, and set up inflammatory changes there. Such a method of infection is not improbable, but a more direct path would be the intestinal tract itself.

The most constant concomitant is undoubtedly bronchopneumonia. Out of the 50 cases 37 showed bronchopneumonia, and out of the 37 cases with middle-ear suppuration 29 showed this condition. Thus pneumonia was present in 74 per cent. of the cases, and in 78.3 per cent. of cases with middle ear disease. This connexion between middle-ear disease and pneumonia is not generally recognized. Stacey Wilson[3] lays stress upon it, and records a series of 71 cases of pneumonia, occurring in individuals between the ages of 3 and 25 years, in which 8 per cent. showed well marked otitis media clinically. Out of 7 fatal cases the middle ears were examined in 5, and of these 3 had suppurative otitis media. He considers that there are four ways in which the two conditions are related (1) the merely accidental occurrence of pneumonia in a child with otorrhoea; (2) otitis secondary to pneumonia, which he regards as the commonest relationship; (3) otitis media the primary manifestation of pneumococcal infection; and (4) an ordinary attack of otitis media giving rise to general pyaemia accompanied by pneumonia of the ordinary septic type.

Preysing found pneumonia present in almost all his cases, and he considers that it represents an infection of ear and lung at one and the same time from mouth or nose. My own observations, as already stated, show a large majority (78.3 per cent) of cases of young children dying with bronchopneumonia as the only or as a prominent condition present in which there is at the same time suppurative otitis media. It would seem, from the investigations of Preysing and Supfle, that the pneumococcus is the predominant etiological factor in middle-ear disease of young children. It is difficult from *post mortem* observations alone to be certain upon this point, but my own impression is that—at least, in a majority of cases—the lung lesion is of more recent date than the inflammation of the middle ear. The lesion in bronchopneumonia of young children represents such a very early stage of the inflammatory reaction that a purulent condition, such as that of otitis media, is almost certainly of earlier origin. In other words, the suppurative otitis media probably precedes the pneumonia, the middle ear forming a nidus where the pneumococcus acquires a heightened virulence. This organism exists in the mouth and throat of a considerable proportion of healthy individuals, but its virulence is of a low degree. By way of the Eustachian tube, it gains access to the middle ear, where it can, and apparently does in a large proportion of children, produce suppurative inflammation. The passage of the organism, greatly increased in virulence, down the Eustachian tube and into the air passages is a natural sequence. If this view be correct—and it is true in a percentage of cases, in the opinion of Stacey Wilson—then the menace of middle-ear suppuration to the life of the child is greatly increased.

References.

[1] Otitis media der Säuglinge, *Schmidt's Jahrbücher*, 1906. [2] *Centralbl. f. Bakt.*, vol. xlii, p. 414. [3] *Birmingham Medical Review*, July, 1901.

The late Dr. William Jacks, of Callander, N.B., who died on August 9th, bequeathed £1,500 each to the Glasgow Royal Infirmary, the Western Infirmary, Glasgow, and the Royal Hospital for Sick Children at Glasgow; £500 to the Glasgow Samaritan Hospital for Women, and £250 to Sunderland Infirmary.

The German Central Cancer Research Committee has invited the Russian Medical Council to establish a Cancer Committee which could be affiliated to the International Association. A Committee consisting of Professor Podwyssotzki, Director of the St. Petersburg Institute of Experimental Medicine, and Professors Sirotinin and Trojanoff, members of the Medical Council, has been appointed to report on the matter.

OBSERVATIONS ON BLOOD FILMS, WITH SPECIAL REFERENCE TO THE PRESENCE OF HAEMOCONIA.

By FREDERICK PORTER, M.B., C.M Edin.,

Clinical Assistant, Out-patients, Edinburgh Royal Infirmary.

Before describing the observations I have made on fresh blood films I should like to refer any one interested in this subject to certain articles which have appeared recently, as I feel they have a certain relationship to the above.

In the British Medical Journal of March 17th, 1906, there is the report of a demonstration by Dr. H. Charlton Bastian on the origin of life, with the question, Could bacteria be made to appear where previously they were non-existent? In the British Medical Journal of May 5th, 1906, Surgeon H. C. Ross wrote on the diffusion of red blood corpuscles through solid nutrient agar; in the British Medical Journal of December 1st, 1906, there is a paper on the virus of small pox *v.* vaccinia, by W. E. de Korté; in the *Lancet*, December 24th, 1904, on haemoconia, by Dr. A. Love; and in the British Medical Journal of November 16th, 1907, on some motile elements seen in certain cerebro-spinal fluids, by Dr. Frank C. Eve.

My observations were made on blood films taken from persons who were apparently healthy, and I employed the following method in every case:

The point of the little finger or lobe of the ear is sterilized in the usual way, a puncture is made, and the first drop of blood discarded. A cover-glass and slide thoroughly cleansed and sterilized are at hand, the drop of blood is lightly touched with the centre of the cover glass, and is immediately inserted on the slide film downwards. This is at once protected from the air by rubber solution. The solution I use is the one employed for mending bicycle tyres, as I find it lasts better than vaseline and the film is kept steadier. Care must be taken not to put on the solution until it slightly thickens, as it will tend to run below the cover-glass and spoil the film. I paint on a fresh coat daily to insure as great protection from the air as possible. I try to get as thin a film as possible. I find that a film so protected will last till disintegration is almost complete, about the eighth or ninth day. The film is kept at ordinary room temperature, is examined with an oil immersion lens, and a clear strong light is essential.

The appearances noted after the film is prepared are:

First Day.

Red corpuscles run into rouleaux and appear pale salmon pink. White cells appear greyish-blue, the nuclei are distinct, indistinct, or invisible. A few of the red cells are crenated with fine hair-like processes, the matrix of these cells is apparently finely granular, and under certain optical conditions these granules are highly refractile and of a bluish tinge. These cells appear to move by a pendular or rotary movement of the whole body. The so-called "blood" platelets can be seen as highly refractile round, egg-shaped, or indefinite-shaped bodies, which quickly aggregate or coalesce as a granular mass, and appear of a greyish-blue colour. In the intercorpuscular spaces other moving bodies are to be seen of varying shapes and ranging in size from a small micrococcus to a small microcyte. I have attempted to classify these bodies into five groups according to their shape and size, but I may here state that I have not found all present in every blood film, though I have found the five species in one film. Some films contain (on the first day) very few, and it requires long careful search to find them, while in others they are numerous.

1. The largest of those bodies appear greyish-blue and possess flagellae, are of indefinite shape, and apparently move by the twisting of the whole body or a rotary movement.

2. Bodies of the size and resembling a large diplococcus with the power of rapid movement.

3. Bodies of indefinite shape, from 2 to 4 μ. These have slower movements than Group 2. At times they resemble dumb-bells, at other times they appear as thin protoplasmic rods, and, again, they appear with a knob-like process at one end, while the rest of the body is like a tail. They are not unlike a tadpole in appearance, and

move by a lashing of the tail. At times, however, they assume so many varying shapes that it is impossible to describe them.

4. Small, round, vesicular bodies, highly refractile, with a central spot, ruby in colour. These bodies are usually at rest, though I have observed slow movement occasionally.

5. Small micrococcal forms, clear and highly refractile, and with the power of very rapid movement. They are never at rest, and appear to have the power of endless motion—a swift, tremulous movement, scintillating like heat rays. (All these bodies have been called "haemoconia," but their exact origin has never been definitely settled.)

Second Day.

Rouleaux have disappeared. The crenated corpuscle with the fine hair-like processes are now as numerous as the normal corpuscle, and appear to possess a tremulous movement. The uncrenated corpuscle is becoming faintly granular. No. 5 group of haemoconia are more numerous.

Third Day.

Much the same appearance as the previous day; all forms of haemoconia are more numerous and as freely motile as on the first day. Red corpuscles appear to be losing their colour and becoming fainter; the white cells appear to be unaffected.

Fourth Day.

It is apparent that the corpuscular elements are fewer in number. The crenated corpuscles have not so marked tremulous movement. The white corpuscles are becoming irregular in outline and more granular, the nuclei are more distinct. In the spaces there is a large amount of débris composed of irregular masses, some of indefinite shape, greyish-blue in colour. In places there are highly refractile bodies resembling the so-called blood plates. There are also irregular, indefinite-shaped bodies which appear under certain optical conditions as granular, blue in colour, sometimes highly refractile, and which have the power of tremulous movement, slow and rapid alternately. The haemoconia, especially Group 5 (which might be appropriately termed haemococci), are more numerous. It is clearly noticeable that the granules of the leucocytes have now the power of movement, and can be seen moving within the corpuscle, and if observed long enough can be seen detaching themselves from the corpuscle, sometimes singly, at other times in groups of two, three, or four, apparently connected by thin translucent threads. In whatever way they detach themselves or escape from the corpuscle, they always exhibit free movement. These granules are in every respect similar to one of the groups of haemoconia. The red corpuscles also appear to be undergoing a change, some becoming granular, others more distinctly so, while movement can be observed. These granules finally detach themselves, and exhibit a similar movement to those of the white cells. In certain films I examined, it could be observed that a few of the red cells showed signs of division. A constriction appeared at one pole, which ultimately ended in the cell being divided into two or three parts. The parts of this division appeared like a microcyte or a smaller body.

Group 5 of haemoconia appeared to be the most numerous elements in the field, especially near the corpuscles, which were disintegrating. The red cells, which look on a casual glance to be normal in appearance, have really very fine hair-like appendages. They all exhibited power of movement. In some films I observed a number of round amoeba-like bodies with a central spot or nucleolus; they are about 1 μ in diameter, and are motile and very similar to bodies I have observed in calf lymph.

Without describing in detail the further daily changes, a similar process is to be observed, the corpuscles becoming fewer, while all the groups of haemoconia increase in number. This process is continued till the eighth or ninth day, when disintegration is complete and no movement is visible. About the fifth or sixth day a number of red cells have become shadow corpuscles and microcytes. It is apparent to the naked eye at this time that the film is almost devoid of colour. As disintegration continues movement generally is less marked.

From my observations I have concluded that:

1. Haemoconia are present in all human blood.
2. Crenated corpuscles and shadow corpuscles are degenerated cells.
3. That a certain proportion, if not all, of microcytes are degenerated or altered cells.
4. Blood plates are débris of red and white corpuscles.
5. Leucocytes. Eosinophiles degenerate first; secondly, the polymorphs, and that lymphocytes are the longest lived (and youngest) of the white cells.
6. Haemoconia. Some are escaped nuclei of leucocytes, some escaped granules of leucocytes, others are the result of disintegration or alteration of red corpuscles, and that all are produced by some change in the blood constituents.

It is evident, therefore, that blood cells are destroyed within the vessels, and that under certain conditions they have the power of propagation. In films where pear-shaped cells are present I have observed that these cells are motile, that the apex is the motile part, and is analogous to a pseudopod. If this be observed long enough the pseudopod becomes detached as a free swimming organism. This I believe is propagation on the part of the red cell.

Before concluding I desire to state that I have failed to stain haemoconia, and have also failed to cultivate them, and this has been the experience of other observers.

Whenever I have observed blood cells in lymph, vaccine, urine, pus, etc., those bodies are visible, and exhibit similar changes to those in blood. Calf lymph shows so many bodies which present a very close similarity to haemoconia that I believe some at least are identical.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL.

METHOD OF ESTIMATING COAGULATION TIME.

FOR several months I have used a method of ascertaining the coagulation time very like that described by Dr. McGowan,[1] but even simpler, requiring less apparatus, and yielding results of, I think, much greater accuracy.

In my method, the file or glass knife is not necessary, and the bore of the capillary tube is quite immaterial.

The process is in all respects the same as Dr. McGowan's up to the point of filling the capillary tube. Then, instead of sealing the end of the tube, I blow the drop of blood at once upon a glass surface. Now seal the end of the tube, and use this sealed end as a rod to dip from time to time into the drop of blood. At length it will draw from the drop a fine thread of fibrin, and the very definite moment at which this takes place is noted, and gives the coagulation time.

Dr. McGowan does not record any fractions of minutes, and presumably, therefore, his method does not record intervals of less than a minute. By the method I use, it is possible to ascertain the coagulation time to within a very few seconds—with practice, to a single second.

The glass surface must, of course, be clean, and it is better that it should be the same in every experiment; the temperature, too, should be uniform. But it is as well to recognize that there is no absolute coagulation time. All that we can ascertain, and all that we need, is the relative time, previous to coagulation, taken by different specimens of blood under circumstances as similar as possible.

London, W. CHARLES MERCIER.

ALBUMINURIA FROM A LIFE ASSURANCE POINT OF VIEW.

THE differentiation of organic from functional albuminuria is of paramount importance. The problem, however, is somewhat more difficult than would at first appear, and in some cases practicably insoluble.

Functional (non-organic) albuminuria may be present in erysipelas, diphtheria, pneumonia, acute rheumatism and gout, consecutive to burns, blisters, and the use of salicylic acid, turpentine, and carbolic acid (Da Costa). Albuminuria has also been observed in young persons consuming large quantities of albuminous food, and after severe exercise. Orthostatic albuminuria, occurring late in the day and not at all in the morning, is, of course, a

[1] BRITISH MEDICAL JOURNAL, November 30th, p. 1580.

variety of the so-called functional form. The various forms of kidney disease and advanced cardiac disease are the main causes of organic albuminuria, haematuria; bladder and urethral disease are also to be borne in mind.

Out of 800 cases submitting themselves to examination for life assurance I observed albuminuria in 11. Those who have larger data and experience to go upon vary very greatly in their estimates, and Rose Bradford [1] states that slight intermittent albuminuria may be present in as large a proportion as 37 per cent. of the apparently healthy. Lambert, in a paper read before the New York Medical Society,[2] stated that during a period of twenty years, by rejecting albuminurics he had been the means of saving enough money to pay the entire expenses of the medical department of New York City. Stokvis[3] protests against indiscriminate rejection, and in the absence of polyuria, casts, cardiac hypertrophy, arterio-sclerosis, retinitis, uraemia, oedema, and where health is otherwise satisfactory, says that proposers may be accepted after a period of probation. De Havilland Hall suggests a period of three to six months, and acceptance then if free from albuminuria; if not, a further probation, or an extra premium to be charged as a debt upon the policy, this debt to be diminished each year, until at the expiration of the term for which the life may be expected to live the debt is cancelled, and the sum assured is payable in full on subsequent death. Craandyke[4] states that hyaline casts as found by the centrifuge may frequently occur in functional albuminuria.

The quantity of albumen present is not an absolute criterion, as an extremely small amount, in rare cases almost imperceptible, may occur in advanced Bright's disease; while in a case which came under my notice seventeen years ago albumen was present to the extent of 50 per cent., and the patient had not then, nor has he now, the slightest trace of ill-health.

An experimental treatment has been proposed as a method of differential diagnosis and prognosis by means of calcium lactate. A number of successful cases have been reported by Wright, Hingston Fox, and others. This procedure is extremely interesting, but probably impracticable from a life assurance medical officer's point of view, inasmuch as the candidate for insurance is rarely a patient of the examining physician.

Again, as certain cases of organic disease have shown diminution, though, it is true, never total disappearance, there seems to be an element of uncertainty about the test.

It would seem the wisest plan to reject all albuminurics with any symptoms of organic disease whatever; to reject temporarily cases without symptoms and apparently healthy, and only to accept after two satisfactory examinations at three months' interval and at different times of the day, and then only if no symptoms pointing to organic disease have presented themselves. If albumen is present at the end of six months and no symptoms, to accept and charge a debt upon the policy.

Upper Norwood. Robert Wilkinson, M.D., M.R.C.S.,

POISONING BY MERCURIC POTASSIUM IODIDE.

I was called to see a young man, aged 28, whom I found at his home, walking about and complaining of great pain in the abdomen and throat. He stated that he had "done what he ought not to have done," which meant that he had taken 24 or 25 grains of mercuric potassium iodide in soloids of 1 grain each. These he had obtained by having an old prescription, given for urethral injection, repeated. He mixed the tablets with water, and swallowed them, probably only partially dissolved. This was about 1 a.m. Vomiting soon occurred, and the patient drank warm water to encourage this.

On my arrival, about 2 a.m., there was constant retching and some purging, but as the latter appeared early and soon ceased I think it was only reflex. I was without a stomach tube, and should have hesitated to pass one, looking upon the case as being akin to one of corrosive sublimate poisoning. I suppose, as a matter of fact, a soft tube would do no harm in such a case. However, I gave olive oil, milk, petroleum emulsion, and, when I could obtain it (which was not for some time), white of egg. I also made the man drink repeated copious draughts of warm water till vomiting occurred, which it did forcibly. I kept this up for more than an hour, with the idea of getting rid of the pink dye from the soloids, but after such prolonged washing the colour was still in evidence. Fearing to exhaust the patient by keeping on too long, I gave white of egg, and also morphine ¼ grain, with digitalin $\frac{1}{100}$ grain hypodermically, got him to bed, and left him about 5 a.m, still in pain, but more comfortable.

Later in the day I gave bismuth and morphine in mixture every three or four hours. Vomiting was now less, but some blood was ejected, and there was much pain in the throat. Later the same day milk and lime water was retained. Slight purging took place during the following night.

Improvement was continuous, except for slight pain in the abdomen on the fourth day, and recovery was uneventful. No noticeable salivation occurred. The man was a neurotic, with criminal and immoral tendencies, as proved by later events, and the intention was suicidal.

The case may be of interest from the unusual nature of the poison. The dose was large, and I think the favourable result points to the innocuousness of this drug as compared with mercury perchloride, although Dixon Mann states that recovery has ensued in one case after 90 grains of the latter, with salivation, and after 100 grains in another case without salivation. He gives 3 to 5 grains as the probable fatal dose for an adult.

I am indebted to Dr. William Crooke, of Egremont, whose assistant I was at the time, for permission to publish these notes. The case was also seen by him upon one or two occasions.

Seymour W. Davies, M.B., Ch.B.Vict.

Liscard, Cheshire.

BONE ABSCESS DUE TO A BACILLUS ALLIED TO *B. PARATYPHOSUS*.

Much evidence has accumulated to prove that infected shellfish, as oysters, mussels, and cockles, even when "cooked," are causally related to typhoidal disease. The following case, an account of which was contributed to the Royal Society of Medicine affords bacteriological support to this view. The bacillus isolated from the bone abscess following the typhoidal disease was one of the intermediate group of organisms of which the bacilli of paratyphoid and Gaertner are members. Dr. A. Castellani has recorded in the Journal of November 23rd, 1907, such a bacillus as present in a case of gangrenous appendicitis, and playing a part in the causation of the disease.

E. T., aged 41 years, was admitted to the Sussex County Hospital under the care of Mr. R. F. Jowers, F.R.C.S., on May 25th, 1907, for acute suppurative periostitis of the left tibia. There was a history of mild "typhoidal" attack five weeks previously, when under the care of Dr. F. S. Beachcroft, of Petworth. This first illness was attributed to eating whelks bought from a barrow ten days previous to the onset of the sickness, and the eating of this foodstuff was followed by sickness and diarrhoea in other members of the family. The patient had diarrhoea during the first week, rose spots were present, and on the twelfth or fourteenth day the Widal reaction to typhoid was negative. The bone trouble began during convalescence, and yielded to incision, etc.

Bacteriological Examination.—Pus from the abscess contained Gram-negative bacilli, 1–2 μ long by 0.5 wide. Inoculated in broth there was uniform turbidity in twenty-four hours at 37° C., due to motile slender bacilli in pure culture; no pellicle, but sediment in a few days. On Conradi-Drigalski medium small transparent colonies appeared in twenty-four hours at 37° C. On gelatine at 22° C. numerous transparent colonies, with irregular or rounded margins, not liquefying the jelly.

	Twenty-four Hours.
Lævulose... ...	Acid and gas
Galactose ...	,,
Dextrose... ...	,,
Maltose	,,
Dulcit	,,
Mannite... ...	,,
Lactose	Unaffected (slight reddening once)
Raffinose ...	,,
Sucrose	,,
Milk	Acidified and clotted in 48 hours on two occasions; clotted and alkaline on one occasion
Peptone	No indol in 14 days

This bacillus fermented glucose and maltose, with production of gas and acid, and was thus an intermediate. As

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[1] *Allchin's System of Medicine.*
[2] *Med. Rec.*, February, 1903.
[3] *Wien. med. Woch.*, May 3rd and 10th, 1902.
[4] *Corr. Bl. f. Schweiz. Aerzte*, May 15th, 1902.

lactose remained untouched it was not a colon bacillus. With milk its action was variable (as also was Cushing's bacillus 0), so that it could not be assigned to paratyphoid type A, in which permanent acidity is usual, or type B, in which initial acidity is followed by alkalinity. Moreover, it clotted milk.[1]

Serum Reactions.—The patient's serum was negative to *B. typhi* on three occasions. It was positive in 1 per cent. solutions in thirty minutes to Schottmüller, paratyphoid *a*, 0.04 Buxton and Gaertner. Thrice the patient's serum was positive in 1 per cent. dilutions to the bacillus isolated from the abscess.

Paratyphoid fever appears to be not uncommon in Sussex, but this sequela is very rare. The sudden onset of symptoms of poisoning of the family after eating whelks is comparable to meat poisoning by *B. enteritidis* (Gaertner), but in this patient invasion of the system by bacilli followed in all probability.

Brighton. F. G. BUSHNELL.

SPECTACLES IN AMETROPIA AFTER REMOVAL OF THE LENS.

IN some cases of high myopia it is considered advisable to remove the lens for the treatment of the condition. In such cases it is useful to know what glass will be required after the operation to correct the remaining error of refraction. It is a somewhat troublesome calculation, but the following simple formula will give a result that is nearly correct if the curvature of the cornea has not been altered by the operation.

D. = glass required before the operation.
x = glass required after the operation.

$$x = \frac{25 + D.}{2 - .01\,D.}$$

Thus a myope who was corrected by a −18 D. would theoretically require after the operation about +3.56 D. for distance; and

$$x = \frac{25-18}{2 + .18} = \frac{7}{2.18} = +3.21\ D.$$

A myope of −25 D. would require no correcting glass for distance after his lens had been removed.

Similarly a patient requiring +5 D. to correct his hypermetropia will, after the removal of his cataract, theoretically require about 15.7 D. for distance; and

$$x = \frac{25+5}{2-.05} = \frac{30}{1.95} = +15.385\ D.$$

ARCHIBALD STANLEY PERCIVAL, M.B., B.C.Cantab.
Senior Surgeon Newcastle Eye Infirmary.

VAGITUS UTERINUS.

UNDER the above heading in an editorial in your issue of July 6th, you discuss the question of the possibility of a child being heard to cry in utero. In this connexion an experience I had in Bradford in November, 1905, may be of interest.

I was called to a Mrs. D., primipara, who had been some hours in labour. The vertex presented but would not engage owing to the patient having some degree of flattening of the pelvis. The membranes had ruptured, and the liquor annii escaped. After waiting some time I put her under chloroform and proceeded to apply forceps. There was a little difficulty in getting the blades into position, and while manipulating the lower blade the fetus gave a distinct whining cry. I said nothing, hoping that the two women in attendance had not noticed it, but in adjusting the upper blade the fetus twice repeated the same whining cry, and the women present both remarked it. I concluded that air had gained admission to the uterus and that unless the child was delivered in a few minutes it would be suffocated.

On this account most vigorous efforts were made to deliver as speedily as possible, but as at the end of ten minutes heavy pulling the head had not entered the pelvis, I concluded that the child must be dead, and desisted, releasing the fixation screw of the forceps and sending for my chief. He came shortly afterwards, and an hour from the time that the cries were heard a *living* child was delivered. It was considerably damaged—a fractured parietal, fractured base, haematoma of scalp, and facial paralysis on one side. In spite of these injuries it survived and did well.

The interest of the case lies in the fact of undoubted cries having been heard from a fetus which had not begun its journey through the pelvis, and, further, in the delivery of a living (though injured) child an hour later.

H. E. A. WASHBOURN, M.B.Edin.
Collingwood, New Zealand.

[1] BRITISH MEDICAL JOURNAL, November 23rd, 1907, p. 1513.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

MERTHYR GUEST HOSPITAL.

A CASE OF LACRYMAL OBSTRUCTION TREATED BY PARSON'S METHOD.

(Reported by C. MARTIN ROW, Surgeon to the Hospital.)

THE patient in the following case, a boy, aged 11 years, was admitted on February 11th, 1907, with a swelling, the size of a filbert on the inner side of the right eye; there was a good deal of conjunctivitis and the tears ran down the cheek. On pressure discharge issued from the lower punctum of the lacrymal sac. He also complained of deafness. The tonsils were found enlarged and adenoids to be present.

Treatment.—On February 15th I removed the tonsils and adenoids, and five days later dilated the lower punctum with a Nettleship's dilator; a probe-pointed cannula was then passed into the lacrymal sac, and the latter syringed out with a solution of zinc sulphate, 2 grains to the ounce.

Progress.—I repeated the syringing for five days without any fluid passing down the nose. On the sixth day the solution flowed quite freely out of the right nostril. I continued treatment each day for another week. I then instructed the nurse to continue doing so every other day. Two days later I found the patient with a large swelling completely closing his eye, and extending downwards and upwards over cheek and eyebrows. He complained of a good deal of pain. The nurse told me she had passed the cannula without causing pain, and on injecting the fluid the lower lid at once began to swell. The swelling had been increasing. No fluid came down the nose. Treatment was then suspended for five days, after which a cannula was passed by me without difficulty, though the lower lid was still a good deal swollen; on syringing the sac the fluid at once passed down the nose.

Result.—I continued treatment every other day till March 30th, when the boy was discharged cured of his deafness, and with his lacrymal apparatus working perfectly. He returned by instruction after three weeks, when I again syringed out the sac and found the nasal duct free. Between then and July 8th the sac was syringed out three times, and the nasal duct always found clear.

REMARKS.—The case seems worth recording, because it must be of interest to the general practitioner to know how easy it is to perform this little operation in place of the old and difficult treatment of probes and styles, both painful to the patient and unsatisfactory to the surgeon. It is to be noted, too, that though Mr. Parson advises that the mother in some cases should be taught to use the syringe, there is the danger she may perforate the canalicular wall, and inject the fluid into the loose cellular tissue round the eye in the same way as did the fully-trained nurse in this case.

PARK HOSPITAL, LEWISHAM, S.E.

A CASE OF CEREBRO-SPINAL MENINGITIS WITH IMMEDIATE RECOVERY AFTER TREPHINING.

(Reported by DUDLEY W. BOSWELL, M.D., Assistant Medical Officer.)

I AM indebted to Dr. Birdwood, medical superintendent, for permission to publish the following case.

The patient was a girl, aged 5, admitted to this hospital on the third day of illness—August 4th, 1907. She was sent in as a certified case of scarlet fever, the diagnosis of which was not confirmed, as the rash was very indefinite and the subsequent scanty desquamation not of the scarlatinal type; there was no albuminuria.

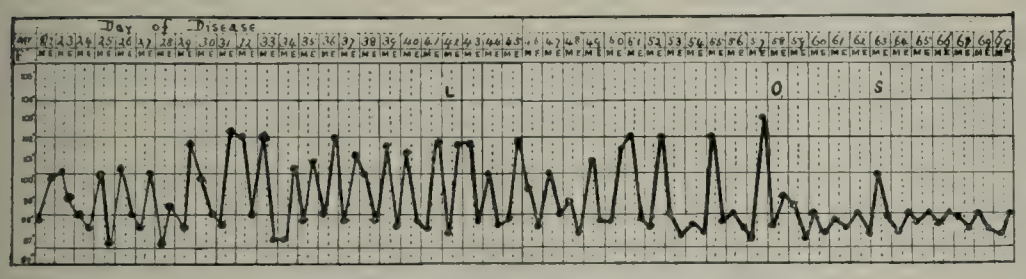
The illness commenced suddenly with headache, vomiting, an indefinite rash, delirium, pyrexia (104°), and squint. When the patient was admitted the squint was very evident and the head was markedly retracted. The child was extremely irritable and restless, constantly complaining of pain in the head, especially in the frontal region. Kernig's sign was present, and a *tâche cerebrale*

was well marked. She had regurgitation of food and required nasal feeding. Some nystagmus was noticed on the ninth day of illness but it did not persist. Towards the end of the first month of illness she had violent screaming fits, especially at night, at times appearing to be convulsed. These became worse, and she had some twelve to fourteen definite epileptiform seizures, becoming unconscious from five to ten minutes at a time. Retinoscopy showed nothing abnormal.

These symptoms persisted with more or less consistency, and she became very emaciated with a scaphoid abdomen. The temperature varied from 103° F. to normal, going up with great regularity every second or third day. Iodides, bromides, and other sedatives were all tried in large doses, with no permanent abatement of the symptoms, although she developed a well-marked pustular eruption due to the bromides.

On the forty-second day of illness a lumbar puncture was performed, and 1½ oz. of an opaque fluid escaped without the aid of a syringe; this clearly pointed to the tension being high. The fluid was rich in albumen, but did not reduce Fehling's solution.

On microscopic examination the fluid showed large quantities of leucocytes, 62 per cent. of which were lymphocytes and 38 per cent. were polymorphonuclear cells. No bacteria could be seen, but on cultivation for sixteen hours on blood serum a small opaque growth of a diplococcus was evident. Broth and gelatine cultures showed no growth. The diplococcus was of large size, sometimes arranged in short chains and tetrads, but usually separate



L, Lumbar puncture; O, operation; S, stitches removed.

in pairs. The organism stained readily with Pugh's blue or methylene blue, but did not retain Gram's stain, and showed no capsule. Hence it was not a pneumococcus. Ziehl-Nielsen's method showed no acid-fast organisms in the fluid or on cultivation.

The child's condition got steadily worse, and on the day before operation she had two fits, and the temperature rose to 103° F. On the fifty-eighth day of illness it was thought advisable to trephine in order to relieve tension. I removed a piece of bone in the right parietal region, and incised the dura mater. A few drops of fluid escaped, and a slight hernia cerebri occurred. A free drain was left in, the bone not being replaced, but the periosteum was stitched back in place. The foot of the bed was raised, and a considerable amount of fluid escaped during the next few days. The wound healed rapidly, and the drain was removed at the end of the first week.

After the operation the child made an uninterrupted recovery. The temperature fell and remained down. There was no return of fits. The squint entirely disappeared. She was no longer irritable and restless, but rapidly gained flesh and began to take a natural interest in life. She was quite a sharp girl mentally, and was discharged on the eighty-second day after admission quite well.

Her recovery may be merely a coincidence, but one is inclined to think from this case that in those cases of cerebro spinal meningitis in which the tension is high, and is due to a septic fluid, free drainage would often be beneficial, and trephining may therefore be indicated.

Fraulein von Runstedt, M.D., has been appointed Clinical Assistant in the Clinic for Children's Diseases of the University of Heidelberg.

The late Mrs. Annie Fulton, of Cardiff, whose will has now been proved, bequeathed £2,000 to Cardiff Infirmary, and an additional £1,500 for the maintenance of a Fulton bed; and £500 to the Royal Hamadryad Seamen's Hospital. The will also directs that £4,000 shall be paid to the University College of South Wales and Monmouth, and that this institution shall receive half of the ultimate residue of the estate. In this residue, which will probably amount to some £20,000, Cardiff Infirmary also benefits to the extent of a one-fourth share.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

Metropolitan Counties Branch: Ealing Division.—At a clinical meeting of the Ealing Division held on December 4th, Dr. Scott showed a case of heart disease, and Dr. Rudd one of a tumour on a finger. Opinions were invited and expressed as to prognosis and treatment. Dr. Ogier Ward read notes and exhibited a slide from a case of streptothrix abscess near the kidney, whose nature was not recognized owing to the organisms being "acid-fast" to the Ziehl-Neelsen stain. Attention was drawn to Mr. Foulerton's article in vol. ii of the new edition of Clifford Allbutt's *System of Medicine*, in which it was shown that there is a definite group of "acid-fast" streptotriches. The importance of recognition of this fact is great, as the clinical course differs from that of tubercle, and therefore the treatment should probably differ. Dr. Ward suggested that in every case of obscure abscess the lining wall should be scraped and stained, and, where possible, cultures should be taken; it would probably be found that cases of streptotrichosis were fairly prevalent.

North Lancashire and South Westmorland Branch.—At a meeting held at Lancaster on Wednesday, December 4th, Dr. Hall (Lancaster), in the unavoidable absence of the President, Dr. Cross (Dalton in-Furness), took the chair. Dr. T. H. B. Dobson (Windermere) read a paper on migraine. He said that the disease runs in families, and is often associated with gout. The primary cause, so far as we know, is a hereditary predisposition to a brain storm, the exciting causes being fatigue, worry, or eye-strain. After a graphic description of the main symptoms, Dr. Dobson went on to mention several other more alarming phenomena—tingling of the lips, numbness of the arm, drowsiness, motor aphasia, squint, etc. As regards diagnosis, cases have been known in which migraine has been mistaken for cerebral tumour or epilepsy. Mention was then made of various methods of treatment. A discussion followed, during which Dr. Gibson (Lancaster) maintained that uric acid poisoning was at the root of the evil. Dr. Blair (Lancaster) analysed the relation of migraine to epilepsy and other neuroses. Dr. Rutherford (Barrow) drew attention to its frequency in subjects whose eyes differed in refraction. Dr. Coupland (Lancaster), Dr. Cockill (Kendal), Dr. G. Johnston (Ambleside), Dr. Mathews (Kirkby Lonsdale), and Dr. Dean (Lancaster) also spoke. Dr. W. Edmondson described a specimen showing epithelioma of the oesophagus. The left recurrent laryngeal nerve was involved, and there was a perforation into the trachea just at its bifurcation. The patient had refused to submit to gastrostomy. Dr. W. H. Copeland gave a short description of a series of microscopic slides illustrating the histo-pathology of the thyroid gland. He also mentioned the diagnostic points between cretinism and other forms of idiocy, and showed a large collection of photographs in illustration of his remarks. A set of the Oxford medical publications was kindly lent by the publishers.

REPORTS OF SOCIETIES.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

Dr. George Westland, President, in the Chair.

Thursday, December 5th, 1907.

The Notification of Births Act.

In the absence of Dr. Albert Westland, the President introduced a discussion on the new Notification of Births Act, and stated that its provisions were an injustice to the medical profession, inasmuch that medical men attending cases were compelled to report these under a penalty, while no remuneration was offered for this service.

Professor Matthaw Hay, Medical Officer of Health for the city of Aberdeen, agreed that there was an unfairness

in this respect, but urged that in the interests of public health the Act should be adopted by the local authority. In recent years the Health Department had been assisted by local health visitors, dispatched on a birth being registered, but as registration had not hitherto usually been effected before the child was 18 or 19 days old the information came rather late in the day. For a period of thirty or forty years the infantile death-rate had remained stationary at about 150 per 1,000. In 1906 it was down to 130, and the current year it would probably work out at not more than 120. This reduction was, he believed, due to the work of the health visitors, and if information as to births were received under the new Bill much earlier better results might be expected.

ECTOPIA VESICAE.

Mr. T. SCOTT RIDDELL read a paper on a "case of ureterotrigonal anastomosis for ectopia vesicae," discussing first the various operations recommended for dealing with this condition. In his own case he used Maydl's plan, of which he gave an account illustrated by diagrams. The case was operated on on August 21st, and the patient was discharged from hospital on November 11th, at which time she was able to retain urine in the rectum for three or four hours. She might have gone out much sooner so far as her condition was concerned, but on account of the rarity of such cases she was kept in till the opening of the clinical surgical class at the beginning of the winter session.

THE TREATMENT OF NASAL POLYPI.

Dr. PETERKIN, in a paper on the treatment of nasal polypi, argued in favour of local anaesthesia, saying that a general anaesthetic was not necessary, that he did not believe that a single operation under a general anaesthetic would cure such cases, that general anaesthesia increased the risk of sepsis in chest and middle-ear conditions, and that synechia was apt to occur after a general anaesthetic. Exceptions might be made when dealing with very young and very nervous patients. As an anaesthetic he uses cocaine, first 10 per cent., and then 20 per cent., applying it on moist swab and alternating it with 1 in 1,000 adrenalin chloride. Believing that pain was caused by traction, he advised the use of the cold snare and of the punch forceps and curette rather than the cautery, arguing from the pathology of the disease in favour of the punch forceps and curette. Suppuration of the accessory sinuses and malignant polypi of the antrum should be excluded in the diagnosis if this treatment was to prove satisfactory. In reply to observations, he explained that he did not use the spray, as it was more likely to cause toxic symptoms, and he advised that the swabs should be shaken before use so as not to be too wet. Loquacity was one of the first signs of too much cocaine having been applied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—At a meeting on December 4th, Dr. E. POWELL in the chair, Mr. W. MORLEY WILLIS showed a man, aged 25, in whom he had excised the *Right patella* five months previously for a simple fracture caused by muscular violence while running to catch a cricket ball. The movements of the joint were now perfect, and there had been no sign of stretching in the tendon concerned. The author had performed the same operation in two other cases. The first of these was a comminuted fracture, and the result there was so good that he was induced to remove the bone in the two latter rather than wire. In all three he regarded the result as at least equal, if not superior, to that obtained by wiring the bone. Mr. A. R. TWEEDIE gave a demonstration of the physiology of the *Semicircular canals*, and a short description of its clinical application to the diagnosis of labyrinthine and cerebellar diseases. For the adaptation of these facts science was chiefly indebted to Continental observers, and its origination was associated with the name of Dr. Bárány. It had long been known to physiologists that stimulation of the vestibule produced peculiar oscillating movements of the eyes; and elaboration of this knowledge had established certain data as to the nystagmus so produced. This was characterized by a quick movement in one direction, alternating with a slower return in the opposite direction. If the eyes were turned in the same direction as the quick movement, the involuntary movements were accentuated, but they decreased or disappeared when the eyes were turned to the opposite side. Further, the nystagmus varied according to the particular canals stimulated; thus, a horizontal movement occurred in connexion with the external canals, a rotatory with the superior, and a vertical or diagonal one with the posterior. These movements were then demonstrated successively in two boys seated on a rotating stool whilst the head was held in different positions. Reference was also made to the varying intensity of the effect dependent on the direction of the current of the endolymph through the ampullae. Similar results might be brought about by syringing the ear, especially where the tympanic membrane was absent, in otitis media, and most of all where a fistula existed; it was noticed, too, that cold water acted as a depressant and hot water as an excitant of a pre-existing or elicited nystagmus. Anodal and kathodal currents from a galvanic battery, direct pressure of a probe on the inner wall of the tympanum, and variations of air-pressure in the meatus also afforded similar diagnostic data. Cerebellar lesions also caused this "vestibular" nystagmus, and recourse might therefore be had to these tests to determine and locate such disease, and differentiate it from pathological processes in the labyrinth. Allusion was made to the important relation of the external semicircular canal to the aditus ad antrum and to the part played by the labyrinth in transmitting infectious processes to the posterior fossa of the skull via the aquaeductus vestibuli. Mr. Tweedie urged the more general adoption of these methods of diagnosis, since their application was easy and their importance of great value, as evidenced by their routine use in Politzer's and other clinics.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—At a meeting on December 11th, Dr. W. J. TYSON (Folkestone), the President, in the chair, Dr. EDGECOMBE (Harrogate) read a paper on *Blood pressure in spa practice*, the purpose of which was to show the utility of making observations of blood pressure as an aid to diagnosis and as a guide to hydrotherapeutic treatment. After pointing out that most cases going to spas suffered from chronic diseases of nutrition in which blood-pressure changes afforded some indication of the state of tissue nutrition, and giving examples, he concluded with a plea for the routine examination of blood pressure, as affording more precise information than could be obtained by the digital method alone. Dr. LEONARD WILLIAMS, in support of Dr. Edgecombe's views, deprecated the pretensions of those who claimed to be able to estimate the degree of blood pressure by digital examination alone. He recalled Professor Clifford Allbutt's dictum to the effect that it was as absurd to discuss blood pressure in the absence of an instrument as it was futile to discuss temperature in the absence of a thermometer. He insisted likewise upon the existence of high blood pressure as a functional manifestation which was altogether independent of granular kidney or other structural disease, except in so far as its continuance tended to produce these conditions. Such benefits as were peculiar to spa and climatic treatment resided, he thought, rather in the greater readiness of patients to obey orders at health resorts than in any properties inherent in the waters. Dr. HARRY CAMPBELL contended that it was possible to estimate the radial blood pressure by the finger. He referred to the function of the muscular media in preventing vascular stretching. The discussion was adjourned to January 29th, 1908.

SOCIETY OF ANAESTHETISTS.—At a meeting on December 6th, Dr. PROBYN WILLIAMS in the chair, Dr. MCCARDIE, in a paper on the *Status lymphaticus*, gave a detailed history of the disease as it appeared in British and foreign medical literature, commencing with an alleged note on the subject by Plater in 1614. He then dealt with the general results of *post-mortem* examination, which were tolerably uniform. The characteristics were an enlarged spleen with varying degrees of prominence of its follicles, tumescence and hypertrophy of lymphatic glands in various regions (especially of the mesenteric, retroperitoneal, and cervical), noticeable prominence and multiplication of follicles at base of tongue and in the pharynx, enlargement of tonsils and swelling of solitary follicles and Peyer's patches in

the intestine, a dilated heart and extremely flaccid cardiac muscle. There was sometimes a contraction of the aorta and dark fluid blood. In 30 cases of status lymphaticus or thymicus in which deaths occurred during or after anaesthesia, records of which he had examined, the anaesthetic used was, in 17 cases $CHCl_3$, in 6 cases ether, in 5 a mixture of $CHCl_3$ and ether, and in 2 nitrous oxide. He could find no record of death under ethyl chloride. Records of death under morphine and local anaesthesia were given, the average age of patients in 35 cases collected being 16; the youngest patients were respectively 6 months, 8 months, and 11 months—7 were under 10, 14 were between 10 and 20, 8 from 20 to 30, 2 were 31 and 32 respectively, the oldest 55, 24 being under 20. Blake, he noted, had recorded 7 cases, all being in adults. In the last ten years 22 cases of deaths during anaesthesia had occurred, excluding cases of deaths from vomiting in intestinal obstruction and deaths from anaesthesia during tracheotomy. He himself had had 3 cases in ten years' practice, one occurring in a man who had practically no left lung and a very bad heart, another in a child, and a third in a child of 5. The anaesthetic in each of these cases was $CHCl_3$, and death was sudden. He also read notes of suspected cases of status lymphaticus during anaesthesia which had given trouble both during chloroformization and etherization in fairly young people or children. Status lymphaticus seemed to be not infrequently found in several members of one family. So far as he could discover, in no case of a death under anaesthesia had the condition been diagnosed beforehand.

Hunterian Society.—At a meeting on December 11th Mr. Rowland Humphreys, the President, in the chair, the following were among the exhibits:—Dr. O. K. Williamson: A woman, aged 50, who gave a history of wasting and pain in the back for eighteen months. She had a very high arterial blood pressure (260 mm.), marked *Arterio-sclerosis*, together with extreme hypertrophy of the left ventricle; there were no signs of disease of the aortic valves. In the right upper abdomen was a large soft movable tumour. The urine was increased in amount and contained albumen. The points of interest were: (1) The extreme degree of cardiac hypertrophy, and (2) the diagnosis of the abdominal tumour. The case was looked upon as one of acquired cystic disease of the right kidney, general arterio-sclerosis, and hypertrophy of the left ventricle. Mr. Hugh Lett: (1) A boy of 12 with *Sarcoma of the thigh.* He was knocked down and kicked last August, and a few days later a swelling was noticed, which had remained since, and had slowly increased in size. It was about the size of an orange, and intimately connected with the adductor longus at its attachment to the pelvis. The glands in the groin were slightly enlarged. Dr. Michels said he had seen a similar case in a lady of 35. She had severe neuralgic pain in the lower part of the thigh for several months. A tumour then appeared at the inner and upper part of the thigh, closely connected with the pelvis. It proved to be a myeloid sarcoma. He freely excised it, and then applied the galvanic cautery. Four years later the patient was well and free from recurrence. (2) A woman, aged 35, with a *Tumour of the sternum* of doubtful nature. She had four healthy children, and was still suckling the fourth. There was no history or evidence of syphilis, nor of tubercle. The tumour was firmly attached to the sternum, was hard at the circumference, and soft at the centre. It had been noticed for two months, and was growing rapidly. The most probable diagnosis was sarcoma. Dr. Purves Stewart asked whether Calmette's test had been applied. Dr. Langdon Brown said that in order to make Calmette's reaction reliable the solution should be freshly prepared at frequent intervals from the dry tuberculin. He also drew attention to the fact that tubercle might be present in another part of the body than suspected, and thus a positive reaction might be obtained, although the part under investigation was unaffected by tubercle. (3) A woman, aged 82, with *Atrophic scirrhus* of the breast. She had had a tumour of the breast for seventeen years, and during the last three months ulceration had been taking place. The breast had entirely disappeared, and was represented by a small ulcerated area with surrounding induration, adherent to the chest wall. The other breast was normal. The axillary glands were enlarged. Dr. A. C. Jordan thought that under x rays the ulceration would heal and the patient be relieved, though he feared that the benefit derived would be only temporary. The President: A patient whom he had treated for *Rodent ulcer* by means of zinc ionization. The ulcer had been cured by this means, though not so quickly as was often the case. In some instances, where the ulcer was small, one sitting had sufficed to effect a cure.

Manchester Medical Society.—At a meeting on December 4th, Dr. Moritz (President) in the chair, Mr. Burgess described two cases in which *Uretero-pyeloplasty* had been performed. The first was in a female, aged 32, with a large hydronephrosis found to be dependent on a tight stricture of congenital origin at the junction of the pelvis of the kidney and the ureter. A longitudinal incision 1 in. long was made through the constriction, and this wound was sutured up in the transverse direction with fine catgut. Ten months afterwards the kidney was felt of normal size, fixed to the loin, and the patient was free from trouble. The second case was a female, aged 21, who ever since the age of 3 years had had aching pains in the lower part of the back, equally marked on both sides, and for several years had also had pus in the urine. A cystoscopic examination showed that the pus came from the left ureteric orifice. The left kidney was exposed and found to be in a condition of pyonephrosis, with three small calculi lodged in the lowest dilated calyx. There was a constriction at the junction of the renal pelvis and ureter which admitted only the very finest probe. This was treated as in the first case. When the case was shown (twelve months after operation) the kidney was small and fixed to the lumbar wound. The urine was very much clearer than before, but still contained a little pus. The old pains had disappeared. Dr. Orr showed examples of the *Degeneration of the cranial nerves* in a case of cerebro-spinal meningitis. The pons and medulla had been treated by Marchi's method, and sections cut in series. The reaction of degeneration was present only in the intramedullary portion of certain cranial nerves, namely, third, fourth, fifth, sixth, seventh, eighth. The sensory portion of the fifth nerve showed the greatest degree of degeneration, and of a type indistinguishable from Wallerian change. In the other nerves there was a slight degree of primary degeneration of the myelin. The more advanced degeneration in the fifth sensory root showed its earlier implication in the morbid process, and suggested the theory that should the causal organism have its habitat in the buccal or nasal mucous membrane it could invade the brain along the nerve lymph stream. Dr. Haring, in a communication on *Asthma and nasal disease*, described a series of 25 cases in which various nasal lesions had been found. A large proportion of these cases, after ordinary treatment had been tried without avail, was cured or relieved by intranasal treatment or operation. The necessity of seeking for causative sources of peripheral irritation in cases of asthma was strongly urged, it being noted that the majority of text-books paid little or no regard to this aspect of the complaint.

ROYAL SOCIETY OF MEDICINE.

Epidemiological Section.

At a meeting on December 2nd, Dr. A. Newsholme in the chair, Mr. W. H. Haffkine, C.I.E., read a paper on the control of plague in India. In this he classified and described all the leading measures which have been authoritatively taken in India to end outbreaks of plague and control its spread, and showed why they had, and in the light of present knowledge must, prove comparatively ineffective. Special treatment of those actually sick, disinfection of houses and goods, evacuation of infected localities and destruction of rats might, it was indicated, all do something; but either because they aimed at the removal of what were factors of merely minor importance, or because it was impossible to carry out the measures with completeness, no reliance could be placed upon them. In the end, therefore, it was necessary to fall back upon what might be regarded as the ultimate method of combating with disease in areas in which it had become epidemic, namely, on the system of conferring on the population

immunity from the disease by means of artificial treatment, or in other words, on the use of the antiplague inoculation introduced by the author. It was indicated that this step was now admitted to be necessary by the authorities, while experience gathered from its use in the past justified the following conclusions:—(1) That in a native of India, who was more susceptible to the disease than Africans, Europeans, and some other races, the inoculation now in force reduced the liability to attack to less than one-third of what it was in a non-inoculated Indian; (2) that in one-third of the cases which still occurred, the recovery rate was at least double that in the non-inoculated when attacked, the ultimate result being a reduction of the plague mortality by some 85 per cent. of what it was among entirely uninoculated communities; (3) that in an inoculated European an attack of plague, if it subsequently occurred, had as far as the author knew, always ended in recovery; (4) that the inoculation was applicable to persons already infected and incubating the plague, and prevented the appearance of symptoms, or else mitigated the attack, a fact which disclosed a basis for the bacterio-therapeutic treatment of the disease; (5) that in natives of India the degree of immunity conferred by this inoculation, though gradually vanishing, seemed to last during several outbreaks of plague, and that (6) in Europeans the effect had not yet been seen to disappear in the space of time since 1897, and the inoculation in question had been under investigation. Dr. ASHBURTON THOMPSON, Chief Medical Officer of New South Wales, followed with a paper on the same general subject which is published in full at page 1770.

SURGICAL SECTION.

At a meeting on December 10th, Mr. WARRINGTON HAWARD, President, in the chair, Mr. B. G. A. MOYNIHAN described a case of *Complete gastrectomy* in a man aged 43. He had always enjoyed good health until two years ago, when he began to have pain after food; this was relieved by vomiting, and he would be free till an hour after his next meal. Under treatment, by careful dieting and lavage, his condition improved, but the symptoms returned after a time, and he noticed that the pain gradually appeared at shorter intervals after taking food; he lost weight to the extent of 2 st. When admitted he was emaciated, could take but a few teaspoonfuls of fluid at a time, and that only slowly. When the stomach was washed out, only a couple of ounces could be introduced at a time. A diagnosis of hourglass stomach was made. The principal point about the operation, which disclosed a "leather-bottle" stomach, was that the stomach, after it had been freed from the duodenum, the gastro-hepatic and gastro-colic omenta, was made use of to maintain such traction upon the oesophagus as enabled an anastomosis with the jejunum to be performed without any very great difficulty; the convalescence was uneventful. The patient, who was exhibited, and appeared to be in excellent health, had put on 2 st. in weight since the operation, May 24th, 1907, and could eat "almost anything" now, though he had to eat slowly. The stomach was examined by Dr. CRAVEN MOORE, who demonstrated the macroscopic and microscopic appearances; it measured 4¼ in. in length, was tubular, but showed a division into a more globular, smaller cardiac end, passing by a narrow constriction into the much contracted pyloric portion. The microscopic appearances were those of atrophic scirrhus. Mr. MCADAM ECCLES referred to a case in which he had performed an almost complete gastrectomy for a precisely similar condition; his patient was a woman aged 46; he was able to effect a junction between the oesophagus and duodenum which was very mobile. His patient lived for eleven months, but died eventually, he believed, from secondary deposits in the liver. Mr. J. D. MALCOLM, in a paper on seven cases of *Cholecystectomy*, said the after-history of his cases was so satisfactory that he thought the operation ought to be more often performed, and he could look back on other cases in which it would probably have been better to excise rather than merely to drain the gall bladder. Though the danger from recurrence of gall stones after complete emptying of the biliary passages was very slight, nevertheless the greater severity of the operation of excision was not, he thought, a valid contraindication, for it was only in cases where the disorganization of the gall bladder was extreme that the technique was difficult and lengthy, and it was in those very cases that excision was imperatively demanded. The great argument against routine excision was the danger of obstruction in the common duct afterwards. In the discussion which followed, Mr. MOYNIHAN stated that he now removed the gall bladder relatively less frequently than formerly; too many factors had to be considered to permit of the enunciation of any definite rule as to excision or drainage, but one most important consideration was often overlooked—namely, the physical condition of the patient. For example, in a very obese woman, with chronic lung mischief, the mechanical difficulties might be so great that a cholecystostomy might have to be performed where the ideal operation would have been excision. Even for the most experienced surgeon it might be extremely difficult to exclude with certainty abnormal conditions of the common duct and ampulla, the existence of which must constitute an absolute bar to excision. The routine performance of cholecystectomy was, he thought, no longer a tenable position.

LARYNGOLOGICAL SECTION.

At a meeting on December 6th, Dr. J. B. BALL, President, in the chair, the following were among the cases and specimens exhibited:—Drs. C. POTTER and JOBSON HORNE: A case of *Adherence of the soft palate* to the pharyngeal wall in a youth of 21 years. It was generally considered that the case was one of lupus and that operation was not advisable. Mr. ARTHUR EVANS: A specimen of leprosy of the larynx. Mr. HERBERT TILLEY: (1) A case of *Bridle formation* on the left ventricular band, the result of syphilis. (2) A man, aged 46, with granular congestion of the right cord. There had been no improvement under mercury and potassium iodide, and there was a suspicion of malignant disease. Sir Felix Semon thought that it was a case of unilateral simple laryngitis. Mr. LAWRENCE JONES: A case of *Laryngeal gumma*, which had been uninfluenced by oral administration of mercury and potassium iodide but rapidly improved under intramuscular injections of benzoate of mercury. Mr. ARTHUR HUTCHISON: A boy, aged 15, with bilateral tumours of the upper jaw, reported microscopically as sarcoma, but unchanged for over twelve months. He regarded the condition as more probably allied to leontiasis ossium.

CLINICAL SECTION.

At a meeting on December 13th, Sir T. BARLOW, Bart., President, in the chair, the following were among the exhibits:—Dr. EDGAR REID: (1) A woman, aged 68, with a large ulcer on each leg, dressed twice daily for thirty years with carbolic oil, 1 in 20. Six years ago the ears and whites of the eyes began to turn black, and two years ago the urine was first noticed to be dark. In June, 1907, the sclerotics were black in exposed portions; and the skin of the face and exposed parts was dusky compared with covered parts. Since June the patient had been kept in bed, the ulcers had lessened in size, and although the carbolic dressings had been continued the staining had diminished. Dr. A. E. GARROD said he had examined the urine, and, finding that 85 per cent. of the sulphates were in the aromatic form, concluded that the patient was a potential carboluric, though no carboluria was present. In some previous cases neither carboluria nor alkaptonuria was present. As in both these conditions hydroquinone derivatives were present, staining of the cartilages was probably due to that cause. Dr. PARKES WEBER, in regard to the early diagnosis, pointed out that cyanosis might be confounded with haemochromatosis. Professor OSLER: A woman with *Splenic polycythaemia and cyanosis*, who for two or three years had had slight failure of her previous good health and strength, but no other important symptom. She was permanently cyanosed and presented the three characteristic features of the disease: permanent cyanosis, a greatly enlarged spleen, and a polycythaemia of 10,000,000 red blood corpuscles. There was no increase in the leucocytes, and no marked variation in the size of the red blood corpuscles. There were nucleated red cells in moderate numbers, chiefly normoblasts. The first case of that kind had been published by Vacquez. Since Professor Osler's paper in 1903, some 40 or 50 cases had been recorded. Dr. R. G. HANN (Leeds) referred to a case with splenic enlargement, polycythaemia, and recurrent attacks of diffuse abdominal pain, but without

cyanosis. The President considered that the absence of cyanosis excluded Dr. Hann's case from the present group. In a case he had recently seen the vasomotor changes were very marked. Dr. Parkes Weber had found in one of his cases a great number of normoblasts. In all the autopsies infarctions of the spleen had existed with perisplenitis, which possibly accounted for the abdominal pain. Dr. W. Pasteur mentioned a case of splenic enlargement with periodic abdominal pain, in which neither infarction nor perisplenitis was found. Mr. T. H. Openshaw: A boy, aged 15, who had had a *Traumatic dislocation of the hip* reduced by manipulation after thirteen months. In the original accident the dislocated femur was fractured at its centre, and eleven months afterwards the shortening of the limb was 3¾ in.; this was now reduced to 1½ in. Dr. Parkes Weber: A man, aged 22, suffering from *Arteritis obliterans* with intermittent claudication. For five years he had had cramp-like pains in the left foot and calf, obliging him to rest. When both legs were hanging down the distal portion of the left foot became red and congested-looking. No pulsation could be felt in the dorsal artery, or posterior tibial of that foot. He considered the case a kind of angina cruris, and suggested that some cases of angina pectoris were like it in being due to ischaemia. He had found these cases frequent amongst poor Jews in East London, who indulged freely in tobacco smoking. Dr. W. Essex Wynter: (1) A woman, aged 45, with *Methaemoglobinaemia* of twelve years' standing, who was originally considered to be suffering from Addison's disease. There was a general yellowish pallor, with lilac-coloured mucous membranes, associated with feebleness, constipation, anorexia, and occasional vomiting. Temperature 100° F., pulse 74 to 96. Pulmonary systolic bruit; urine quite normal; blood chocolate-coloured, and the colour not altered by exposure to CO; red cells, 3,010,000; white cells, 7,000; haemoglobin, 50 per cent.; index, 0.74; lymphocytes, 22.6; transitional, 2.8; hyaline, 1.6: polymorphonuclear, 71; eosinophile, 0.2; mast-heads, 18; *Bacillus coli* not found in blood. Dr. Poynton said he had seen the patient at St. Mary's Hospital twelve years ago, when her condition was equally bad. He was then disposed to regard the case as possibly due to aniline poisoning. Dr. J. H. Drysdale asked if there was evidence of a large amount of blood destruction. The President nominated a committee to report on the case. (2) *Amyotonia congenita.* A female child, aged 15 months, with flabbiness of muscles and freedom of movement in articulations, both in flexion and extension, so that the toes could touch the front of the leg, and the fingers the back of the forearm. The child could sit up and walk, and was intelligent. (3) *Case of ascites* cured by permanent drainage through the femoral ring in a man, aged 50, a free beer-drinker. He had no cardiac disease, but scanty urine. Ascites was temporarily relieved by removal of 300 oz. of fluid, but returned in four weeks, when Mr. Sampson Handley made a small incision below the umbilicus and let out several pints of fluid. He next made an incision as for femoral hernia, and with the aid of a finger in the abdominal cavity drew down a process of peritoneum into the femoral wound, split it, stitched the edges right and left to maintain the opening, and closed the wounds. There was some leakage but the ascites did not recur, nor had femoral hernia nor oedema of leg developed. The object of draining the abdominal cavity into the tissues outside the abdomen had apparently been effected. The President hoped the results of this novel method of treatment would be communicated to the Society. Dr. W. Pasteur: A boy aged 13½, with *Anterior poliomyelitis* and permanent paralysis of the diaphragm and abdominal muscles. The condition developed a year ago during fever and delirium, with paralysis in the lower limbs, which gradually spread upwards to the arms. Inhalations of oxygen and frequent hypodermic injections of strychnine had to be administered to save life. Gradually the condition improved. The upper limbs had completely, the thoracic muscles partly, recovered; the diaphragm and all muscles below that level were permanently paralysed or nearly so. Dr. F. J. Poynton: Two girls, aged 15 and 12 respectively, who had *Thyroid swelling.* In the elder one the swelling commenced a year ago. She had no ocular changes, but the other conditions of Graves's disease were well marked—namely, thyroid enlargement, fine tremor of fingers and hands, tachycardia, 124 to 140 per minute, nervousness, and flushing of face. The cautious use of thyroid increased the symptoms, and was abandoned, and simple rest in bed produced remarkable improvement. The younger patient had been under treatment by thyroid since infancy. Whenever the treatment had been omitted for six weeks the thyroid became swollen, and mental dullness, slowness of speech, and enlargement of the tongue supervened. And all these symptoms disappeared when the thyroid was resumed. But four weeks ago a definite thyroid swelling appeared, but no symptom of Graves's disease. It was considered to be due to partial cretinism, with compensatory enlargement of an inefficient thyroid to supply the lack of secretion when the outside supply was slowly cut off. Dr. H. Batty Shaw: A woman, aged 47, afflicted with *Bulbar paralysis*, who had had a carcinomatous bronchocele partially removed, and probably had now a secondary deposit in and about the medulla.

REVIEWS.

A NEW SYSTEM OF MEDICINE.

The first two volumes of *A System of Medicine*, edited by Professor Osler and Dr. Thomas McCrae, Associate Professor of Medicine and Clinical Therapeutics, Johns Hopkins University, Baltimore, and forming part of the series of Oxford medical publications projected by Mr. Frowde and Messrs. Hodder and Stoughton, have appeared.[1] Professor Osler in the introduction explains the intended scope of the work in the following words:

> It is designed primarily for the practitioner who wishes to keep himself informed of the existing state of our knowledge in clinical medicine. Elaborate discussions upon doubtful problems have been avoided, and, as far as possible, a clear statement is given without unnecessary references to the literature. Authors have been selected who are acknowledged authorities, and while it is not always easy for a writer who is saturated, so to speak, with his subject to keep within limits, and to remember the practical character of the men for whom he is writing, I hope we have been able to keep an even balance between the condensation of the textbook and the elaborate treatment of the monograph.

Though the work is issued as one of the Oxford medical publications and is, we are told, to be written by eminent authorities in Great Britain, the United States and the Continent, we note that Professor Osler is the only one of the contributors to the first volume who has any connexion with Oxford, and that of the thirty-six chapters, exclusive of Professor Osler's introduction, only four have been written by residents in Great Britain, thirty being by Americans and the remaining one by Professor Adami of Montreal; we cannot feel altogether satisfied that the name of Oxford should be attached to a publication which owes whatever merit it possesses so overwhelmingly to transatlantic sources.

Passing from this subject we may express our high appreciation of the first volume. Professor Osler has furnished an admirable introduction which constitutes a brief summary of the history of medicine. The subject is so wide that it may be necessary to limit it, but we doubt whether it is possible to do justice to the efforts that have been made by mankind to develop the healing art if we confine ourselves strictly to what is called scientific medicine. As an art, medicine has been practised all over the world, and it has owed very little to science outside certain countries and particular historical periods. Its successes, even where they have been most marked, have

[1] The Oxford Medical Publications. *A System of Medicine.* By eminent authorities in Great Britain, the United States and the Continent. Edited by William Osler, M.D., F.R.S., Regius Professor of Medicine in Oxford University, England; formerly Professor of Medicine in Johns Hopkins University, Baltimore; in the University of Pennsylvania, Philadelphia, and in McGill University of Montreal. Assisted by Thomas McCrae, M.D., F.R.C.P.Lond., Associate Professor of Medicine and Clinical Therapeutics in Johns Hopkins University, Baltimore. Volume I. Evolution of internal medicine; predisposition and immunity; diseases caused by physical, chemical and organic agents; by vegetable parasites; by protozoa; by animal parasites; nutrition; constitutional diseases. Volume II: Infectious diseases. London: Henry Frowde and Hodder and Stoughton. 1907. (Royal 8vo, vol. i, pp. 937; vol. ii, pp. 858. 24s. per volume.) Volume ii contains two title pages, the one bearing the title, "A System of Medicine by eminent authorities of Great Britain, the United States and the Continent," and the names of the London publishers, the other with the title, "Modern Medicine: Its theory and practice, in original contributions by American and foreign authors," and bearing the name of Lea Brothers and Co., as the publishers in Philadelphia and New York.

been in some instances altogether independent of scientific methods, and have been the work of men not trained in the schools, and ignorant of anatomy and physiology. The introduction of cinchona bark for the treatment of malaria, of massage, and of hydrotherapeutics, to enumerate only some of the means which have been of the greatest service in the treatment of disease, was not the outcome of what is called scientific medicine, and any consideration of the whole subject which leaves this out of account lays itself open to being considered one-sided.

Professor Adami gives an adequate summary of the subject of inheritance and disease, Dr. Gordon and Dr. Edsall deal with the various physical and chemical agents as causes of disease, and Dr. Lambert with the organic poisons. Dr. Alonzo Taylor writes on auto-intoxication, and Dr. J. H. Wright on actinomycosis and certain other diseases due to vegetable parasites other than bacteria. Professor Chittenden has written in conjunction with Dr. Mendel the chapter on metabolism, normal and pathological. To Dr. T. B. Futcher are due the chapters on diabetes insipidus and mellitus and on gout, while our compatriots Drs. G. F. Still and Robert Hutchison have dealt respectively with rickets and scurvy.

Though the term "tropical diseases" is not used, it will be foreseen that a considerable number of the diseases to which this term is commonly applied are dealt with in the articles on protozoology and helminthology; they, in fact, form in many respects the most interesting and important part of the volume. They are introduced by a general chapter on the protozoa, and this is followed by chapters on mosquitos, the malarial fevers, blackwater fever, trypanosomiasis, and amoebic dysentry. Kala-azar, pretty definitely proved now to be protozoal in origin, might also, we think, have been treated here. Dr. Howard, the American authority on the *Culicidae*, deals with the mosquitos. We note that he does not adopt the new subfamily *Anophilinae*, with *Anopheles* as one of the genera, but sticks to the old genus *Anopheles*, keeping the different members, many of which have recently been given generic characters, as species only. Perhaps this is sufficient for the ordinary medical man, but the author might with advantage have described other forms besides those found in America. The malarial fevers are admirably treated by Dr. Charles J. Craig; his article is clear, concise, full, and up to date in every respect, and he must be congratulated on his effort. Stephens gives the latest views on blackwater fever, and clearly shows the part malaria plays in its etiology; while Colonel Bruce, one of the earliest investigators of the trypanosoma, treats this subject in his usual masterly fashion, giving a very good account of sleeping sickness. When we remember how little was known of those diseases in the days when he studied nagana, and the difficulties with which he had to contend, the value of his original work can be the more justly appreciated. The article on dysentery by Dr. Strong should convince those who are still sceptical as to the part the amoeba plays in the etiology of this disease. His work, and that of Musgrave, Clegg, and others in the Philippines, has resulted in very valuable contributions to tropical medicine, which have not always received the credit they deserve. Mr. Stiles, a leading American authority on helminthology, discusses the parasitic worms. He gives a very good short account of the different forms, and it is sincerely to be hoped that his remarks on nomenclature and terminology will be carefully read and acted upon by other writers.

The value of all these papers is undoubted; and it may seem ungrateful to find faults, but we believe—a belief of course that may not be shared by all—that it would have been more advantageous to combine all the diseases due to protozoa and helminths with other tropical diseases in one volume, as in the recent edition of Allbutt and Rolleston's *System of Medicine*. Where the articles on these special diseases are scattered through several volumes, it is necessary, in order to complete their study, to buy the whole set, and this is a serious matter to the practitioner in tropical countries, by reason not only of their prime cost, but of the expense of carrying them about with him in his travels. In the second place, some of the articles might have been a little more cosmopolitan. Howard's, on the mosquitos, might, for example, have dealt with mosquitos other than American; Craig's, on malaria, might at least have mentioned Leishman's stain, a method known all over Britain and the British tropics, and, as far as we remember, advocated before the modification of Romanowsky's stain by Wright. We point out these details because we suppose it is desired that the sale of the book should be universal, and not confined to America.

The second volume deals with most of the acute infectious diseases of temperate climates, together with three or four which are commonly prevalent only in the tropics. The contributors are all men of wide reputation, each an authority on the subject entrusted to him. Yet the articles they have produced are of very unequal merit. While some are of the highest order, others are not sufficiently full, and lack the personal note we look for in a work which should be more than a mere compilation; for this reason they seem hardly worthy of a system of medicine which is published under the auspices of an ancient seat of learning and claims to cover the whole field of medical practice in all parts of the world. We are quite aware that inequalities are not unlikely in any work in which a number of writers have been engaged; but we believe that in the present instance they are due not so much to the multiplicity of authors as to the unequal amount of space that has been allotted to their contributions, even when allowance is made for variations in the importance of the subjects. The text occupies just under 800 pages, and is concerned with 23 separate subjects. Yet we find, to give examples, that while typhoid fever and lobar pneumonia absorb 161 and 110 pages respectively, influenza has to be content with 20, and plague with 21. Doubtless typhoid fever and pneumonia are important and many-sided affections; it is possible, nay probable, that they would still deserve the amplest share of space, were the space to be unlimited. But surely influenza and plague, if portrayed on the same scale as are typhoid fever and pneumonia, would require more than one-sixth of the space granted to the latter. And why should they not be? It is not so long since influenza was pandemic, and it is still of world-wide prevalence; while as for plague, is it not a disease of singular historic interest, which has on several recent occasions been a source of grave apprehension in more than one quarter of the globe, and even now in British India is exacting a toll of hundreds of thousands of victims every year?

Passing on to details, it is interesting to observe that not only lobar pneumonia, but also acute rheumatism, are definitely included amongst the acute infectious diseases. The article on the latter malady is from the pen of Dr. Poynton, of University College Hospital, and it is one of the best in the book. Another admirable contribution is that on typhoid fever by Professor McCrae. We are glad to note that direct infection is given its proper place amongst the modes by which the disease is disseminated; in most recent works its importance is quite understated. Professor Councilman writes on small-pox. He assigns special prominence to accounts of the protozoon, *Cytorhyctes variolae* (unfortunately misprinted *cytorytes* on p. 255), and of the experimental study of small-pox recently undertaken by American observers in the Philippine Islands. So convinced is the author that the protozoon is characteristic of the disease that he states that its presence will decide the diagnosis in a doubtful case. In the chapter on scarlet fever, too, undue prominence is given to the protozoa-like bodies of Mallory; they are figured as well as described, but it is very doubtful whether they have anything to do with the disease. We doubt if the reader will gain a clear idea of the clinical aspects of scarlatinal nephritis; and we may say the same of paralysis and the article on diphtheria. But both these articles might well have been allowed a few more pages, even at the expense of some of the longer contributions. We should like to have made some observations on the remaining articles, but considerations of space forbid. We must not, however, omit to notice the excellent introduction on the study of infectious diseases by Professor Hektoen; it is a concise but at the same time very clear exposition of a complex and in many ways obscure subject.

The volume contains several effective illustrations, some in colours; that of scarlet fever is particularly good.

ANATOMY.

The Basle Anatomical Nomenclature (B.N.A.) is the designation used to signify a collection of anatomical terms relative to macroscopic anatomy which were agreed upon as most suitable for use at a meeting of anatomists in Basle in 1895, and Professor Barker's *Anatomical Terminology*[2] is merely a reprint of the terms, which are written in Latin, with a suggestion for English equivalents, and an explanation of why and how the list was arranged. It was arranged because anatomical terms were becoming an intolerable trouble on account of their number and the frequency of equivalents, the same structure or part being described by a different name in different countries, and even in different towns—a condition of affairs which could not but be inconvenient to readers of anatomical memoirs and papers. Recognizing the inconvenience the German Anatomical Society, which numbers amongst its members anatomists of all countries, appointed a Commission to revise anatomical terms. The Commission appointed an editor, and with his assistance and after six years' labour they reduced a series of about 30,000 terms to 5,000. The Commission accomplished a great task, it arranged the terms to be used, as far as possible, on a simple and definite system; and though the final result is perhaps on some points not beyond criticism, it is nevertheless a distinct advance, and we agree with Professor Barker that no one in the future should write a paper containing anatomical terms without adhering as closely as possible to the B.N.A. terms, which have received international acceptance.

The new *Human Anatomy*, edited by Professor Piersol, and contributed to by the editor and other well-known American writers, including Professor T. Dwight, Professor Playfair McMurrich, Professor Carl Hamann, Professor William White, and Professor John Heisler,[3] is almost too large and too heavy to secure the affection of the ordinary student, though it offers him a survey of the knowledge of human anatomy in a clear and practical form. The general plan of the book is very much the same as that adopted in other well-known anatomical textbooks, a general description of embryology and histology being followed by sections devoted to the different systems, each section opening, as a rule, with an account of the histology and development of the system under consideration, and closing with a discussion on practical considerations, though this order is not infrequently altered, and in many cases practical points are discussed after the position and relations of individual parts have been described, as in the cases of the more important arteries and nerves. The book, therefore, provides a very large amount of information, and places before the reader in an attractive manner the subject-matter usually dispersed through two volumes, one on systematic anatomy and the other on applied anatomy. This, in part, accounts for the size of the book, which surpasses that of most other anatomical textbooks. In the description of the various organs and structures the usual terms have been used, but they have been supplemented by the Basle terms, which are introduced in brackets after the ordinary English names. One of the striking features of the book is the inequality in value of various parts of the text and the variation in the character of the illustrations. Many of the written accounts of the different structures are fully up to date—for example, the descriptions of the development of the venous and lymphatic systems. On the other hand, the term "development" is constantly used in reference to bones when ossification only is meant, and many will consider the account of the ossification of the mandible both antiquated and incorrect. The account of the nervous system and the survey of its development are, on the whole, very full and precise; but we do not find, in the paragraphs devoted to the occipital lobe, any mention of the "*Affenspalte*," which has been shown to be so frequently recognizable, and which is of such great morphological importance. A similar variability is noticeable in the figures; some are bold and impressive, others are weak and uninteresting, and amongst them, we are sorry to note, is a reproduction of a figure showing an absolutely symmetrical and uniform distribution of the cutaneous nerves of the body wall, which has crept into many books on anatomy, and which is, in some respects, a travesty of the truth. As a whole, and taking into consideration the fact that this is the first edition, the editor, the authors, and the publisher are to be congratulated on the general excellence of the work, and the student who wishes to have before him as much information as possible in a comparatively convenient form will welcome the volume as a most useful textbook.

[2] *Anatomical Terminology: with Special Reference to the B.N.A.* By L. F. Barker, M.D. London: J. and A. Churchill. 1907. (Roy. 8vo, pp. 114; 5 figs. 5s.)

[3] *Human Anatomy.* Edited by G. A. Piersol. Philadelphia and London: J. B. Lippincott Company. (Sup. royal 8vo, pp. 3008, 1734 figures. 30s.)

HISTOLOGY.

The best of the larger textbooks of histology available to the student, after he has mastered Schäfer's *Essentials*, is that of Böhm and Davidoff. Professor Carl Huber has just issued a second English edition of this work.[4] That the book serves a useful purpose is shown by the fact that the first edition has been reprinted thrice since 1900. It is now brought up to date, and recognition is given in it to recent advances in knowledge of the structure of the organs and tissues, and of their histogenesis. In particular, illustrations of models made after Born's wax-plate reconstruction method, are given. These afford clear and accurate demonstration of the form and relationship of structures which are too small and delicate to admit of dissociation by methods of maceration and teasing, and too complicated to admit of full interpretation by means of sections, for example, the arrangement of the lobule, of the salivary and mammary glands, of the sweat glands, and those of the alimentary canal. There are 377 illustrations, uniformly distinguished by their truth of detail and high artistic quality. The technical details at the end of each chapter give the latest methods of histological preparation in a full and clear manner. In order to save space the editor has cut out the twenty pages of references, but he has omitted to cut out the reference numbers in the text, so that the reader may be trapped, like the writer, into spending some time in hunting for the reference pages. This omission is to be regretted, for the references are valuable to laboratory workers, and publishers have so diminished the size and weight of the volume, by printing on thin paper and binding in a light and supple cloth, that the omission was unnecessary. A careless passage is to be found on page 403, where the editor says, "keratohyaline . . . is not changed by the action of pepsin and trypsin," and ten lines lower down we find "keratohyaline remains unchanged in alcohol . . . but is digested in trypsin and pepsin." We cannot help smiling at this passage in the preface: "The publishers, Messrs. Saunders and Co., have shown throughout the greatest interest in the work, and deserve the gratitude of the editor for their ready acquiescence in all suggestions made by him," etc. It would indeed be surprising if a publisher did not take the greatest interest in the production of a profitable publication.

Professor Charles Hill, of the North-Western University Medical School, Chicago, has written a manual of *Histology* for elementary students.[5] It is well illustrated with 312 figures, most of which, and especially those of worth, have been gathered from other authors; a short and clear account of the embryonic development, as well as the microscopical structures of the organs, is given, and brief descriptions of the chief laboratory methods are added. In this country, where we have Professor Schäfer's admirable *Essentials of Histology*, there will be little demand for this new manual, which both in its scope and arrangements recalls that of Professor Schäfer.

The title (Textbook of Microscopic Technique) of Professor Rawitz's book[6] exactly expresses what it is. It deals with the microscope, and the various methods of

[4] *A Textbook of Histology, including Microscopic Technic.* By A. A. Böhm, M.D., and M. von Davidoff, M.D. Edited by G. C. Huber, M.D. Second edition. Philadelphia and London: W. B. Saunders and Co. 1907. (Roy. 8vo, pp. 528. Illustrations 377. 15s.)

[5] *A Manual of Normal Histology and Organography.* By Charles Hill, Ph.D., M.D. Philadelphia and London: W. B. Saunders and Co. (Cr. 8vo, pp. 463. 10s.)

[6] *Lehrbuch der mikroskopischen Technique.* By Dr. Professor Bernhard Rawitz. Leipzig: W. Engelmann. 1907. (Roy. 8vo, pp. 442; 18 figures in text. M. 12.)

fixing, imbedding, section cutting, staining, injecting, and so forth, employed in preparing objects for microscopic study. The subject is treated from the standpoint of the anatomist, and the second section of the book deals with the application of methods to the various tissues and organs of the body. Dr. Rawitz is to be congratulated on having produced a work so thoroughly up to date, and characterized by so much assiduity and completeness. The book should find a place in the library of every histologist.

NOTES ON BOOKS.

THREE more volumes of the *Practical Medicine Series* for 1907 have reached our hands, the first dealing with Gynaecology, the second with Obstetrics, and the third with Materia Medica and Therapeutics, Preventive Medicine and Climatology. In each the papers picked out for abstraction and permanent record seem to have been selected from a wide area, and in some cases are of a date as recent as the middle of the current year. The series is published in Chicago, the agents in this country being Messrs. Gillies and Co., Gibson Street, Glasgow.

Of the two volumes of *International Clinics*[1] now before us, the second and third of the seventeenth series for 1907, there is little in one, the third, but much in the other calling for appreciative notice. In the third volume there are two suggestive papers, one on the inoculability of tumours and the endemic occurrence of cancer by Dr. L. Loeb, and the other by MM. Ancel and Bouin on spermatic insufficiency and diastematic insufficiency, in which they elaborate from the clinical standpoint the teaching that the testis has two secretions, an internal as well as an external, and produced from distinct portions of the gland. There seems to be an effort towards the facetious in regard to the first paper. In the table of contents it figures as some practical and theoretical considerations concerning diabetes, in the title it is "Concerning Dietetics," and in all the headlines "Concerning Diatetetics"; it may be said that there is no special reference to diabetes in the paper itself. In the second volume there are twenty-five papers, and they are all, or nearly all, so good that it is difficult to single out any for special mention. That by Dr. J. M. Taylor, on the management of exhaustion states in man, alone makes the volume well worth purchasing; other valuable papers are a plea for laparotomy rather than paracentesis in ascites, by Dr. G. Dock; the clinical examination of the cerebro-spinal fluid, by Dr. F. P. Rous; perforated duodenal ulcer, by Mr. H. S. Clogg; appendicitis in pregnancy, by Dr. Cuthbert Lockyer; and the clinical study of inebriety, by Dr. T. D. Crothers.

Messrs. LIVINGSTONE AND LOGAN and Mr. JOHN CURRIE, both of Edinburgh, have each published the *Medical Examination Questions*[2] set during the previous five or six years by the University of Edinburgh. and the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow. The volume from Messrs. Livingstone and Logan has the greater number of pages, 378 as compared with 230, and as its type is smaller the number of papers collected is considerably larger. Unlike the other, it includes the medical preliminary examination papers of the University of Edinburgh and the Educational Institute of Scotland, and the papers set for the B.Sc. in Public Health by the University. On the other hand, the volume published by Mr. Currie is distinctly more legible and in other ways pleasanter in use. Considering that the passing of examinations is an art which may be cultivated, and in most civilized countries an important art, the employment of such books in acquiring that art is certainly not to be despised, and for the books themselves it may fairly be claimed that they give a definite idea of the type of questions likely to be set by the examining bodies in question. It is understood that similar books will be published annually.

Mr. H. K. Lewis has published in book form lists of muscles—of the head and neck, trunk, and limbs respectively—for electrical testing, intended for use both in private and hospital practice.[3] The names of the muscles are arranged in columns in the order of their nerve distribution, those of the head, neck, and trunk being on one sheet, those of the upper limb on another, and those of the lower limb on a third. Each sheet is readily detachable through a perforated line, and is gummed on the back for insertion in case-books.

The *Laboratory Outline of General Chemistry*[4] of Messrs. SMITH and HALE is an excellent little manual for beginners in practical chemistry. The course of work is well planned to develop the student's powers of observation and reasoning; the matter is very condensed, but the working directions are clear and adequate. No attempt is made to deal with anything but the practical operations of the laboratory, and to increase its usefulness at the bench the book is interleaved throughout with blank pages.

[1] *International Clinics.* A Quarterly. Edited by W. T. Longcope, M.D. Seventeenth Series. Vols. II. and III. Philadelphia and London: J. B. Lippincott Co. 1907. (Roy. 8vo, vol. ii, pp. 320, and vol. iii, pp. 304.)

[2] *Medical Examination Questions.* Edinburgh: Livingstone and Logan. 1907. (Cr. 8vo, pp. 378. 2s.) *Medical Examination Questions.* Edinburgh: John Currie. 1907. (Cr. 8vo, pp 230. 2s.)

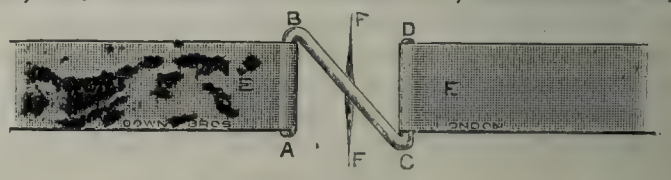
[3] *Lists of Muscles for Electrical Testing, for Use in Private and Hospital Practice.* 2s 6d.

[4] *A Laboratory Outline of General Chemistry.* By Alexander Smith, B.Sc.Edin., Ph.D. Third Edition, revised in collaboration with William J. Hale. London: George Bell and Sons; and New York: The Century Company. 1907. (Cr. 8vo, pp. 144, interleaved. 2s. 6d.)

MEDICAL AND SURGICAL APPLIANCES.

An Alternative Plan of Treating Wounds of Skin without Sutures.

DR. J. A. CALANTARIENTS (Scarborough) writes: To adjust the edges of a gaping wound and keep them in place it is necessary either to apply sutures or strips of adhesive plaster. Sutures, although effective, are painful, hide the part of the wound under them, and leave their marks. On the other hand, plasters hide a large part of the wound, and prevent its being afterwards inspected and treated effectually. To obviate this disadvantage of the plaster, I have devised the little apparatus shown in the drawings. A, B, C, D, Fig. 1, is a piece of wire shaped like N; where A B and C D are on the same level and parallel, but B C is on a higher level, forming a bridge between them, as shown in side view at Fig. 2. Rims of plaster, E E, are attached to A B and C D, the end of the plaster being carried round each and a little beyond, with the adhesive side towards the wire so as to hold firmly. When this is done the two pieces of plaster, with the N piece between them, form one piece. The wound to be strapped being made ready, the N part is placed over the wound F, so that A B and C D rest on each side of the wound. The plaster on one side is then made to adhere to the skin, the edges of the wound are brought together, and the plaster on the other side also applied to the skin. The wound is thus well adjusted and quite open to observation, treatment throughout its whole course in this respect being even superior to sutured wounds. The bridge B C can be modified in many ways, both as to shape, width, and height. I have sent a variety of models to Messrs. Down Brothers, St. Thomas's Street, Borough, S.E., who are willing to make and supply these N pieces. In one of these B C stands at right angles to A B and C D, and by screw-and-nut arrangement the edges of the wound can be approximated and adjusted to a nicety after the plasters are applied.



A New Boot.

Messrs. GILBERT BROTHERS, wholesale boot manufacturers, of Nantwich, submitted for inspection recently a boot, which realizes a novel idea, and one which merits attention. It consists in making the inner sole of compressed woollen fabric, to which the welt and ordinary sole are both stitched. The idea is to provide the wearer with a sole which will be cool in summer and warm in winter, in the one absorbing perspiration and in the other external moisture, and thus prevent either affecting the wearer's comfort and well-being. To those who are obliged to be out in all sorts of weather, and to those who suffer from cold feet or are liable to rheumatism, boots made on this plan, to which the trade mark "Osolite" is attached, seem to offer considerable advantages. It may be noted, too, that, unlike the majority of boots made on hygienic principles and so-called anatomical lasts, the boots submitted for inspection were of shapely appearance. They are constructed, we were informed, of English materials throughout, and appear to be not more expensive than ordinary boots and shoes.

ROYAL COMMISSION ON VIVISECTION.

Third Report.

(*Continued from p. 1724.*)

The Third Report of the Commissioners appointed on September 17th, 1906, to inquire into the practice of vivisection, with the Minutes of the Evidence taken during the months of April, May, June, and July, 1907, bears date July 29th, 1907, but was not published till the evening of Thursday, October 3rd.* We continue our abstracts of the evidence.

Evidence of Professor Schäfer.

Professor Schäfer said he appeared as the representative of the Royal Society of Edinburgh and the University of Edinburgh. He read the following statement on behalf of the Society:

The Royal Society of Edinburgh, being deeply interested in the advance of all branches of science, values the opportunity which has been given to it of expressing its views upon the important question which is at present being considered by the Royal Commission on Vivisection. From very early times the experimental method of investigation has been practised in physical and biological science, and it might be regarded as affording the most fruitful means of obtaining accurate information in both of these fields. In the latter department this method necessarily involves experiments on living organisms. The whole fabric of physiological knowledge rests on such experimentation, and those who are conversant with the general trend of physiological research know that results of the highest importance to the welfare of mankind have thereby ensued. From the time of the discovery of the circulation of the blood to the recent brilliant results which have so greatly enhanced our acquaintance with the functions of the brain and nervous system, the history of this branch of science reveals a long list of remarkable discoveries achieved by this method of inquiry. The knowledge which has been thus acquired has had a material effect in procuring the cure of disease and the relief of suffering, and has thereby been the means of saving and prolonging innumerable lives. In the field of pathology the advance which has been made by means of the experimental method has been no less striking. Within the last thirty years the methods of the physician and surgeon in combating disease have been completely revolutionized. It is now possible to attenuate, and perhaps destroy, the virulence of many of the deadly complaints which afflict mankind. A new science—bacteriology—has sprung into existence, largely through experimental effort, and a new light has been shed upon many departments of pathology which were formerly obscure. Tubercle, diphtheria, yellow fever, tetanus, hydrophobia, anthrax, malaria, sleeping sickness, typhoid fever, and other diseases, among which I would include Malta fever, nagana, and plague, are now better understood, and by aid of the information gained by experiments on animals, most of them can be successfully grappled with. The relation of man to his surroundings has thus been modified, and he now enjoys a degree of immunity from many of the dangers by which he is surrounded. In the sciences of pharmacology and therapeutics no advance in accurate knowledge is possible without experiments on animals. The action of drugs must be first tested in them, and the physician is guided by the information which is thus obtained. The Society, while fully admitting that every care should be taken that in the prosecution of experiments on animals no unnecessary pain is inflicted, is, at the same time, of opinion that the imposition of any further restrictions would impede the progress of physiological and pathological research, and would be attended by serious results to the progress of medical science and to the well-being of the community at large. Further, the Society would strongly deprecate any attempt to draw a distinction between experiments which are designed for utilitarian purposes and those which appear to have a purely scientific object in view. The history of science shows that it is not possible to draw such a distinction, seeing that so many scientific discoveries, which at the time they were made appeared to possess no utilitarian value, have in the course of time proved to be but the beginning of lines of investigation which have led to the acquirement of knowledge of incalculable benefit to humanity.

In reply to the Chairman, he said it had always been his practice to demonstrate before students. He did not think it possible to teach physiology properly without showing a certain number of experiments to students, on such subjects as the action of the heart, the effect of the action of the heart in maintaining the pressure of the blood, and the effect of certain nerves in influencing the heart and in influencing the blood vessels. He had noticed the keen interest which intelligent students took in these experiments. Such facts were so strongly impressed upon the mind by observation that they were never forgotten. There were a certain number of fundamental experiments which he held should always be exhibited to students. One of these was the action of the vagus upon the heart. He would add, the action of the sympathetic nerve upon the heart and blood vessels, and the action of the depressor nerve upon the central part of the nervous system which presided over the blood vessels. There were also the experiments of Bayliss and Starling, who had shown that the pancreas was capable of being stimulated to secretion by the injection into the vascular system of an extract from the mucous membrane of the intestine, which contained the principle to which they had given the name of "secretin." This principle, when injected into the blood vessels, provoked an extraordinary flow of pancreatic juice, and they had shown that this was the natural mechanism for secretion of pancreatic juice in the body. The material was poured into the blood from the mucous membrane of the intestine, passed to the pancreas, and caused secretion of the pancreatic juice. Before their experiments nothing practically was known of such chemical stimulation of glands, and they had opened up a whole vista of inquiry. Then there was the subject of internal secretion. It was only within comparatively recent years that they had understood that certain organs in the body, the functions of which were previously unknown, had the property of passing into the blood substances which circulated in the blood to the different organs of the body, and which affected the nutrition of the body generally, or secreting glands, or the vascular system, or the nervous system. He knew of no more striking experiment for demonstration than the very simple one of injecting into the blood vessels of an animal, in which the blood pressure was being taken, a small dose of an extract obtained from the suprarenal bodies. If a minute dose of a solution containing the active principle of the extract (not more than 1 part in 100,000, or less) was injected into the blood vessels of the animal, it was seen that the blood pressure was sent up to an extraordinary height, the heart was stimulated to a greatly increased activity, and a whole series of phenomena was produced which were due to the action of this drug upon the muscular and other systems of the body. Certain other internal secreting glands were also known to produce effects of a similar or slightly different nature. One of these had only quite recently been discovered—the influence which was exerted by extract of the pituitary body. The effects of this when injected into the blood vessels was, like that of the suprarenal, to cause a very marked contraction of the blood vessels generally, while it differed from that of the suprarenal in producing, not an accelerated action of the heart, but a steadying of the heart, a slower action, the force of which was, however, well maintained. It had quite recently been found also that, in addition to this action, the pituitary body had a specific effect upon the kidneys, so that if the kidneys were not at the moment secreting there might be an immediate and rapid secretion of urine. It was well known to surgeons that, as a result either of the anaesthetic employed, or of the surgical operation itself, the kidneys often did for a time cease to secrete. Under these circumstances, if the kidney secretion in an animal was in abeyance, a small dose of this extract of the pituitary body produced an immediate and rapid secretion of urine. There could be very little doubt that this discovery would have an important influence upon the treatment of cases of suppression of urine. One other point he would specially mention as of importance for exhibition to men who were to be engaged in the practice of medicine and surgery was the effect upon the movements of the body of stimulating certain parts of the brain. It was now well known, in consequence of the experiments of Ferrier, that when certain parts of the brain in monkeys were stimulated certain definite movements of the body were produced, and this discovery had had a far-reaching effect in moulding their views upon the functions of the brain. The original discovery was made by Fritsch and Hitzig in the dog. But it was owing to Ferrier's application of their methods to the monkey that

*London: Printed for His Majesty's Stationery Office by Wyman and Sons, Limited, 109, Fetter Lane, E.C. And to be purchased, either directly or through any bookseller, from Wyman and Sons, Limited, 109, Fetter Lane, Fleet Street, E.C.; and 32, Abingdon Street, Westminster, S.W.; or Oliver and Boyd, Edinburgh; or E. Ponsonby, 116, Grafton Street, Dublin. 1907.

physicians and surgeons had been enabled to apply to man results obtained upon animals, because the conformation of the brain of the monkey, although simpler than that of man, was essentially similar, whereas the conformation of the brain in the carnivora (as the dog and cat) was different, and one could not say that such and such a part of the brain, such and such a convolution, or such and such a fissure, represented exactly another convolution or fissure in man. In the case of the monkey and the ape they could make that assertion with the utmost positiveness, and now that these experiments had been confirmed and largely added to by the experiments of Sherrington and Grünbaum upon the brain of the chimpanzee and ape generally, their importance in relation to the practice of surgery and medicine in man had come out even more decidedly. By these experiments the student, when he afterwards came across cases in practice in which there were convulsions due to some irritation of the brain, beginning in this, that, or the other part of the body, knew what part of the brain was likely to be affected. The witness had never found that horror of these vivisectional experiments which had been asserted by many antivivisectionists. Levity would not be permitted by any class of students. Both as a student and a lecturer he had now been teaching physiology for thirty-seven years, and he had a very large experience of classes of physiology, and of demonstrations and experiments, and he had never in a single instance found that there was the least tendency to levity when an animal was under experimentation. In reply to the Chairman, he said he had formed a very decided opinion that it was in the highest degree desirable that any new operation should if possible be performed upon a suitable animal. Obviously it would be an improper thing to attempt a new operation upon, say, the human intestine without having tested the operation upon animals. He could not conceive of this not being done. It would only mean the sacrifice of patients. He thought that portion of the law ought to be repealed. In reply to further questions, he said that in all experiments which came under licence, complete anaesthesia was secured during the whole period of the experiment, however many hours it lasted. The object of the experimenter was to keep the animal under anaesthesia; his object was likely to be frustrated if it moved; and, although the condition of anaesthesia might be more or less complete, the amount of anaesthesia used in physiological laboratories was in almost every case vastly deeper than that used in the operating theatre. The suggestion that they knowingly, or even unknowingly, allowed the animal to come out of the anaesthesia was, on the face of it, absurd, because it would absolutely defeat the object of the experiment. He had never observed any indifference or carelessness on the part of operators as regards anaesthetics. He would not confine that answer to this country. He had witnessed a great many operations in Germany and other countries, and the statements which flew about regarding the callousness of foreign physiologists to the suffering of animals were quite unconfirmed by anything which he had seen. He himself worked for three months in Ludwig's laboratory at Leipzig, where Dr. Gaskell was also working at the same time, and the system of anaesthesia employed was a very delicate one indeed, and had the result of rendering the animal absolutely quiescent during the whole of the experiment. And he had seen at congresses of physiologists large numbers of operations performed, always under full anaesthesia. There was a time no doubt, before anaesthesia was fully admitted, when surgeons in this country ridiculed the idea of anaesthesia and for some time refused to employ it. There might have been a reminiscence of that in early experiments, but that was long before his time. Within the period covered by this Act he had never seen any operation performed without anaesthesia. The suggestion that the anaesthetic had not been applied fully and carefully, so as to ensure complete insensibility to pain, had no grain of foundation. In reply to Dr. Wilson he said he had chloroformed frogs, but he did not think they ever used frogs which were not killed. The actual meaning of the word "pith" was the destruction of the medulla oblongata. A pithed ox, for instance, was an animal in which a stab had been made in the medulla oblongata, and the animal dropped dead because its respiratory centre was destroyed; but by a pithed frog they generally meant complete destruction of the brain and spinal cord. If he were to tell his assistant to pith a frog, he would expect him to destroy the brain and spinal cord. Asked whether he contended that mere decerebration without destruction of the medulla oblongata rendered any experiment upon a frog painless, he said, Absolutely. In reply to further questions, he said he would be prepared to certify, "on his soul and conscience," that all experiments carried out on dogs, cats, rabbits, and other animals before his class were carried out, to the best of his endeavour and belief, painlessly. Asked whether adrenalin had failed as a cure for Addison's disease, he said he had no knowledge. He did not think the disease was confined always to the suprarenal capsules; it was often due to phthisis, which affected the suprarenal capsules; and he did not think one would expect under those circumstances the giving of adrenalin to be of any pronounced benefit, but it was not a subject he was competent to speak about. In reply to further questions, he said he never used curare in this class of demonstrations. He had not used curare at all for years. He had not been engaged in any experiments which required the use of curare. Asked if it would not be very difficult to decide as to the completeness of the anaesthesia if curare were used along with chloroform, he said not if one maintained the same dose of chloroform. If one gave curare one always gave chloroform through an apparatus which delivered the regulation dose—a certain amount of chloroform mixed with a certain amount of air. There were special apparatus constructed for that purpose. He had devised one himself (which he thought was better than the Woulff's bottle), which showed on an index the proportion of chloroform and air. He had made a special series of investigations on the action of chloroform and on the way in which it killed. Those experiments were made with Dr. H. J. Scharlieb, and were published in the *Transactions* of the Royal Society of Edinburgh a few years ago. They found that they could, with perfect security, give chloroform in certain proportions, and that they could even increase the proportion to what would otherwise be a dangerous extent, if in the first place they added to the chloroform a small amount of alcohol, and also if prior to the administration of the chloroform they gave a very small dose of atropine under the skin. The way in which chloroform killed, unless it was pushed to an extremely dangerous extent, to which no administrator would ever think of pushing it, was that it caused a direct inhibition through the vagus of the heart; this inhibition was so powerful that the heart stopped, and it was very difficult to get it to beat again. That effect of chloroform could be entirely abolished by the prior administration of a small dose of atropine, and they had very strongly expressed the opinion that in every case of the administration of chloroform there should be a prior administration of atropine in this manner. Asked as to an experiment on a mongrel setter described in a report of the Suspended Animation Committee, he said it was anaesthetized with chloroform, and ¼-grain morphine was also given hypodermically. On Dr. Wilson suggesting that, as the tracheal tube was occluded for 4 min. 20 sec., during that time the anaesthetic could not be delivered by his apparatus, Professor Schäfer said a much stronger anaesthetic was being administered to the animal during that time—carbon dioxide. It was absolutely insensible, and under any circumstances it took several minutes for an animal to recover from chloroform. Asked as to several other cases in which there was difficulty in chloroforming dogs safely, the witness said that in these cases it did not matter very much whether the animal got an overdose of chloroform or not, because if it did they would take another animal. The great object was to have the animal very thoroughly anaesthetized; consequently they took no special precautions to prevent its being killed by the anaesthetic otherwise than observing it carefully and endeavouring not to give a dose which would actually kill it. He explained that the expression, "The animal took the anaesthetic very badly," meant that the anaesthetic rendered the respiration rapid and shallow, so that there was a fear of the animal dying, not that it was imperfectly anaesthetized; it was rather too much anaesthetized, and went over rather too quickly. Asked as to his drowning experiments, he said they

were done under a special certificate. In that series of experiments, which were undertaken in order to determine exactly what happened during death by drowning, all except two (the total number, he thought, was 36) were conducted under complete anaesthesia during the whole time of the experiment; but it was of the highest importance, in order to appraise the value of these experiments, to do a certain number of control experiments to observe whether, so far as could be determined, the phenomena would be the same without an anaesthetic as with an anaesthetic. He therefore got permission from the Home Secretary to do ten experiments without anaesthetics, and he did two of them. The results obtained with those two showed so conclusively that the anaesthetic did not invalidate the object of the experiment that he did not perform the other eight experiments. In the two experiments referred to the animals were simply drowned by being held under water and not allowed to recover at all; and the obvious phenomena, such as the pulse and respiration, were observed, and a *post-mortem* examination was made in order to see whether the *post-mortem* conditions were the same when they were drowned without any anaesthetic as with an anaesthetic. Asked to describe his method of resuscitation, he said it consisted in laying the patient upon the floor or ground, kneeling by his side, placing one's hands flat on the lower part of the back of the chest, and allowing one's weight to fall upon it, so that the air was pressed out of the lungs. When the weight of one's body was removed, the resilience of the chest wall caused the chest to expand again, and air was drawn into the lungs. By repeating these movements a sufficient number of times per minute—from 12 to 15—one could completely respire a man, so that he would not feel any necessity for performing respiration himself. This he had shown by an experiment which he performed upon a gentleman who was working in his laboratory upon snake poisons. He was led to believe that if, in cases of snake poisoning, artificial respiration were performed for an hour or two, the poison might have an opportunity of eliminating itself, and wished to know whether by this method one could maintain respiration for as long as an hour. He allowed the witness to perform artificial respiration upon him for a whole hour without himself at any time wishing to respire, or taking any active part whatever in respiration. This method of performing artificial respiration was entirely suggested by the results which he had obtained in resuscitating dogs which had been drowned. He found that with dogs, which also had a resilient bony cage like man, it was possible to perform artificial respiration simply by squeezing the bony cage and placing the animal in a prone position, so that all fluid would flow out from the mouth, which was allowed to be dependent. Simply pressing was sufficient to drive out the water and air which was in the lungs and in the mouth, and then the resilience of the bony cage would cause the air to pass in again. He had tried experiments with Sylvester's method with dogs and man, and he had found it was impossible by that method, either with dogs or man, to maintain respiration. One could not do all the complicated motions involved in that method in the space of time required to effect the requisite exchange of air per minute. Dr. Howard's method was to apply pressure when the body was on the back; that was also an efficient method, but had certain dangers. One was that in applying the pressure to the ribs one was somewhat liable in old subjects to break them; and, as a matter of fact, he had been told by a gentleman who was present at a demonstration by Dr. Howard upon an elderly man in Dublin, that he did actually break some ribs. Another danger in cases of drowning, which came out very strongly in these experiments on drowning dogs, was that in drowned persons the liver was enormously congested, and extended far below the ribs, and, if one pressed upon this part of the abdomen and chest, one was liable to rupture the liver; that would be a serious danger in applying Howard's method to cases of drowning. The method which the witness had explained in which the patient was placed upon his face and pressure was applied to the back, had been applied in three or four cases of drowning with success by his students; to whom it was now always taught as a regular part of the curriculum. Two of these occurred at the seaside; these were cases of apparent drowning during bathing. One case in particular, of which a student told him, was at Shanklin. One of his fellow bathers got into difficulties and sank, and was not pulled out for nearly ten minutes. This student immediately applied the method, and in a quarter of an hour the man was up and walking away. Tests of his method showed that neither Sylvester's method nor the Marshall Hall method gave as much air as was normally taken in with ordinary respiration; whereas both the Howard method and his method gave a sufficient amount. It was tested very carefully spirometrically. Asked if he could not have evolved his own method without experiments on dogs, he said that as a matter of fact it was suggested in the course of these experiments. He would not say that he could not have evolved it without those experiments.

(*To be continued.*)

LITERARY NOTES.

Sir Thomas Barlow has written an introduction to a little book entitled *A School for Mothers*, which describes an interesting experiment now being carried on in Somers Town. Mothers and girls are taught how a baby should be clothed, fed, washed, and tended, and treated in small ailments; among other departments is one for feeding nursing mothers, a provident club, a weighing department, and lessons for mothers. The book, which is illustrated, will be published immediately by Messrs. Horace Marshall and Son.

In an introductory lecture by Dr. John Chiene, Professor of Surgery in the University of Edinburgh, published in *The Student*, an interesting account of his career is given. The turning point in his surgical training, he says, was in the spring of 1866 when he was introduced by Syme to his son-in-law Joseph Lister, then Professor of Surgery in the University of Glasgow. Lister shook him cordially by the hand, and that grasp fixed him. Still speaking of Lister, Professor Chiene goes on:

> From the day he came to Edinburgh in 1869 as Mr. Syme's successor in the Clinical Chair until he went to King's College, London, in 1878, I spent daily two hours in his wards—on Sunday afternoons often three or four hours. Lister went to church in the morning, and visited the infirmary in the afternoon. I have repeatedly, in season and out of season, spoken of these days when I saw him at his daily work, elaborating with zeal and patience and doggedness that imperishable system which he has been privileged to see an accepted fact. When I knew him he could count his disciples on the fingers of both hands. Don't mind that red herring drawn across the path called aseptic surgery. Boiling water is as much an antiseptic as carbolic acid. Asepsis is the result, antisepsis is the moving spirit.

Professor Chiene draws an interesting comparison between operative work in the early Eighties and that of the present day—1878-1885 with 1892-1906. He takes seven years (the biblical number) to give a sufficiently wide range, his first seven years compared with the last seven completed years. The essence of the statistics is that in the first period 752 operations were performed, 107.5 per annum; in the latter period, twenty-five years afterwards, 2,805 operations, 400.5 per annum. During the first period he had ten fewer beds, but that, he says, will not account for the difference. In the first period there were only 241 beds in the whole surgical house, now there are 379. The amputations are practically the same, 107 to 118. The excisions of joints are nearly doubled, 58 to 108. Excision of mammae more than doubled, 40 to 101. Tumours trebled, 114 to 353. Abdominal surgery in the first period consisted in one case of intestinal obstruction due to an adherent Meckel's diverticulum, as compared with 429 laparotomies, 210 of which were operations on the appendix. The first appendectomy was done in 1893, the rush began in 1901 and came to a head in 1904. Why this flood, asks the Professor? This is one of the unsolved problems which he hopes some one of his hearers may clear up. Operations on veins, 5 to 109; operations on nerves, 19 to 33; genito-urinary surgery, 50 to 321; hernia, radical cure, 21 to 233; strangulated hernia, 7 to 29. These figures are interesting as showing the great increase in surgical work that has taken place during the last twenty-five years. Mr. Scott Carmichael, Surgical Registrar, wrote a very interesting paper, comparing 1850 with 1900, which was published in the *Scottish Medical and Surgical Journal* for

August, 1902. Professor Chiene has taken the general mortality over the two periods, and finds that the percentage of deaths was 7.2 between 1878–85; in the latter period, 1899–1906, it was 6.7 per cent. These figures include all operations, and no allowance has been made for deaths occurring within twenty-four hours after admission.

The December number of the *Periodical*, issued by the Oxford University Press. quotes the following letter addressed to the Oxford Medical Publications from the Gold Coast:

Having heard your recommendation from a certain friend of mine that you are a general or magnanimously Medical publications. Hence in desire or Craving your indulgence in order to forward me your Special Medical Manuals which Consist the assorted medicene. Such as, a medecine for Education, Please the main object which induces me to draw your extraordinary attention is this, that I have a son by named ——— being a third Standard, the age is 23 years now; But he is too much heavy mind with stupid as I could not compare him to any one in our Gold Coast here. Being as am a gentleman by every one's known, should I not endeavour to find a good medicine for my son to become a fine or purest schorlar, the properties of mine will be in vain or In other respects the son will be in vanity. So long as this promulgated names has had in Our G. C. here I think there will be no hesitation and despatch as above stated, early as quick as possible, So as to enable me to forward you my Indent very Shortly. But scholars are plenty in negro land and there is a least distinctions of knowing better. These are being required as follows. viz. (1) Memory Training—(2) Pomades Oils. (3) Charms and any Pills kind of such medecine had at your site. No fail and oblige. Wishing you Continued success

I am yours Affectionately.

N.B. Please if any medecine for eye's sore or dim eye kindly send me the price together with.

Heaven forbid that we should seem to make a jest of a request from a distressed father on behalf of his son. We only cite the letter as a remarkable example of "English as She is wrote." We only wish a "medecine of Education" that would cure a "too much heavy mind with stupid" could be found. It would save the world much needless wrangling, and would eliminate quackery in many other things besides medicine. But what then would become of the leaders of sects and discoverers of "cures" who prey on human credulity?

In an interesting letter addressed to *Science*, Mr. Chas. W. Hargitt discusses a passage in a recent book entitled *Evolution and Animal Life*, the authors of which, Messrs. Jordan and Kellogg, attribute the following to John Wesley:

The ape is this rough draft of man. Mankind have their gradations as well as other productions of our globe. There is a prodigious number of continued links between the most perfect man and the ape.

This would seem to entitle John Wesley to be called a forerunner of Darwin. Mr. Hargitt, however, points out that these statements, selected from different contexts, are not attributable to Wesley in any proper sense. He thinks the authors were probably led astray by the fact that a work by Wesley entitled *A Survey of the Wisdom of God as Revealed in the Creation, or a Compendium of Natural Philosophy*, contains extended quotations from Bonnet's *Contemplation de la Nature*, and that among these may be found the passages in question which are erroneously attributed to Wesley himself. It would seem, nevertheless, that Wesley to some extent approved of the views there expressed, as may, says Mr. Hargitt, be inferred from the way in which he introduces the quotations. Thus Wesley says:

This reflection upon the scale of beings is pursued at large by one of the finest writers of the age, Mr. Bonnet, of Geneva, in that beautiful work, *The Contemplation of Nature*. When I first read this I designed to only make some extracts from it, to be inserted under their proper heads. But under further consideration I judged it would be more agreeable, as well as more profitable, to the reader to give an abridgement of the whole, that the admirable chain of reasoning may be preserved, etc.

Mr. Hargitt goes on to say that Wesley's books abound in examples of intelligent sympathy with scientific activity and progress. As an example he gives the following passage:

Animals of the monkey class are furnished with hands instead of paws; their ears, eyes, eyelids, lips, and breasts are like those of mankind; their internal conformation also bears some distant likeness; and the whole offers a picture that may mortify the pride of such as make their persons the principal objects of their admiration. These approaches are gradual, however, and some bear the marks of our form more strongly than others. In the apekind we see the whole external machine strongly impressed with the human likeness; these walk upright, want a tail, have fleshy posteriors, have calves to their legs, and feet nearly like ours. In the baboon kind we perceive a more distant approach; . . . the monkeykind are removed a step further, etc.

This would seem to bear out the statement of Messrs. Jordan and Kellogg in substance, though they may have failed to verify their references.

The allusion to verification of reference reminds us that in his suggestive address on the scientific evidence in surgical practice which was published in the JOURNAL of December 7th, Professor Howard Marsh quoted John Hunter as saying to Edward Jenner: "Don't think; go and see." The matter is of no great importance; we only cite it as a curious instance of the manner in which a passage that should be familiar to our lips as household words is constantly misquoted. Even so precise a writer as the late Sir James Paget failed to give Hunter's words as he wrote them. In his introduction to Mr. Stephen Paget's *John Hunter*, he says:

Therefore Hunter's lesson—"Don't think, try"—is admirable for all pursuit of science; a great contribution to scientific work, from one who was a surgeon, and most truly a "naturalist."

It may be worth while to quote what John Hunter did write to his famous pupil. The letter may be found in Barron's *Life of Jenner* (vol. 1, p. 32). The passage is as follows:

Dear Jenner,

. . . . I thank you for your experiment on the hedgehog, but why do you ask me a question by the way of solving it? I think your solution is just, but *why think—why not try the experiment?* Repeat all the experiments upon a hedgehog as soon as you receive this, and they will give you the solution. Try the heat. Cut off a leg at the same place; cut off the head and expose the heart, and let me know the result of the whole.

I am, dear Jenner,
Ever yours,
JOHN HUNTER.

August 2nd.

The italics are ours.

In *Ancient Britain and the Invasion of Julius Caesar* by Dr. T. Rice Holmes, which has recently been issued from the Clarendon Press, there is some interesting information as to the food of our forefathers. The author says:

The food of the neolithic population has left more abundant traces than their homes. The bones which are strewed in their sepulchres and settlements show that they lived in great part on venison and the flesh of the wild boar; and the skull of an aurochs, which was found in the Fen country with a stone weapon sticking in it, proves that they also followed the largest game. Unlike the palaeolithic hunters, they used dogs in the chase; and it has been plausibly conjectured that these animals were the first to be domesticated. For man was a hunter before he was a herdsman; and the dog would soon begin to lick the hand that rewarded it with a share of the slaughtered boar or deer. It would seem, however, that when with advancing age dogs had become too slow for hunting, they were killed and eaten; for canine bones, apparently of old animals, were found at Grime's Graves. Neolithic immigrants introduced sheep, goats, and pigs as well as horned cattle; and all the bones of the latter which have been collected from their refuse-heaps and graves were those of small oxen, the scientific name of which—*Bos longifrons*—is familiar to all students of antiquities, and which resembled their living descendants, the Kerry cattle of Ireland and the small black animals of the Welsh mountains. . . . The meat was boiled in rude hand-made vessels of earthenware heated by red-hot flints, or, as we may infer from the frequent occurrence in barrows of charred bones, roasted or broiled over the fire; and the remains of each meal were left to accumulate in the huts. . . .

Evidently people were not vegetarians in those days.

THE State Legislature of Illinois has just passed a Bill which forbids the sale of cocaine by retailers except upon the prescription of a duly registered medical practitioner which cannot be refilled or copied. Alpha and beta eucaine are included in the prohibition. They can be sold wholesale only upon the written order of a registered pharmacist or licensed physician, dentist, or veterinarian. All wholesale dealers must keep a record of all sales, which shall be open to inspection by the Board of Pharmacy. The Bill is virtually a duplicate of that passed by the New York State Legislature.

THE NEW MATERNITY HOSPITAL OF THE BIRMINGHAM LYING-IN CHARITY.

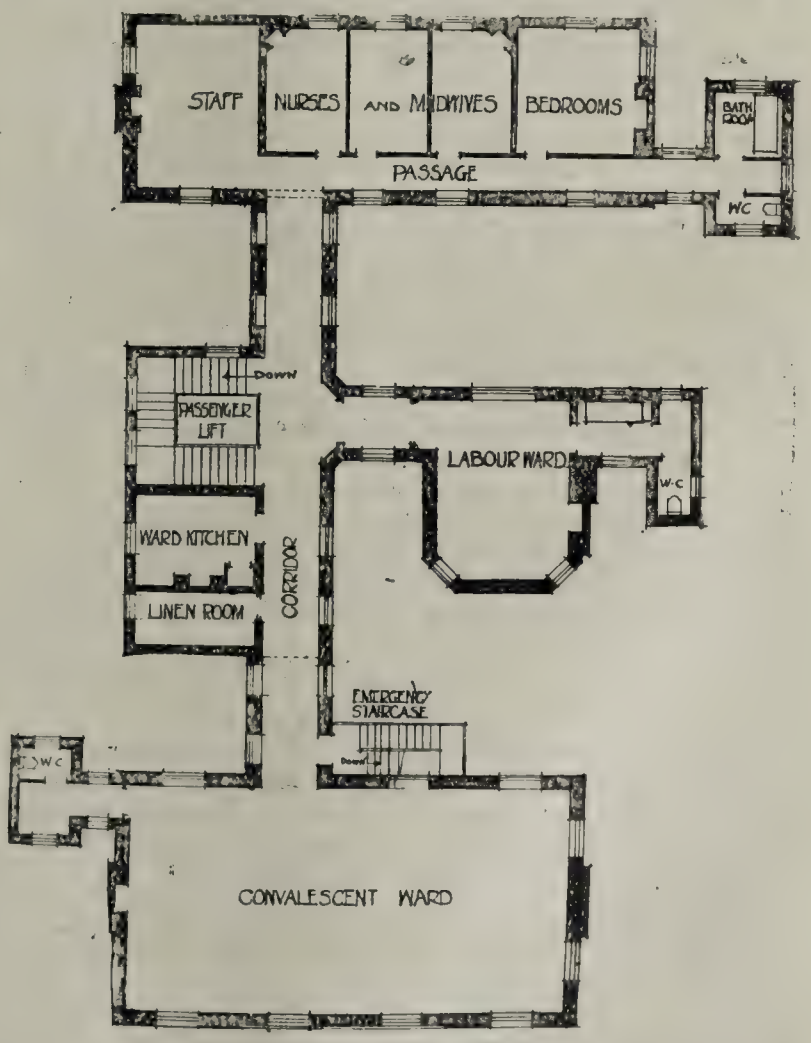
The new Maternity Hospital was opened on November 20th by Mrs. Barrow Cadbury. The Lord Mayor presided, and among those present were the Bishop of Birmingham, Mrs. Joseph Chamberlain (President of the charity), Sir William and Lady Cook, Sir William Sinclair of Victoria University, Lady Holder, Sir Hallewell and Lady Rogers, Dr. Malins, Dr. Robertson, Dr. Thomas Wilson, and Dr. Smallwood Savage. The hospital has accommodation for 24 beds, exclusive of two labour wards, and the number of beds will suffice for the admission of at least 300 cases a year. Midwives will be trained there, and special attention will begiven to the feeding and rearing of infants. The hospital will also be the means of educating the medical students of the University in obstetrics.

Ground Floor Plan.

The Birmingham Lying-in Charity was founded in 1842, and for the first twenty-six years of its existence was known as the Birmingham Lying-in Hospital and Dispensary for the Diseases of Women and Children. During this period—1842 to 1868—23,471 midwifery cases were attended; of this number 1,350 were in-patients. The work was carried out by resident surgeons living in the hospital under the superintendence of honorary medical officers. The hospital, which was situated in Broad Street, and contained thirteen beds, was closed in 1868, not on account of any outbreak of puerperal fever, as in many other institutions of the kind at the time, but rather in accordance with the general opinion of the day that the aggregation of midwifery patients was dangerous, and also on account of the costliness of the in-patient treatment.

The institution was remodelled, and changed its name to the Birmingham Lying-in Charity, and up to the present time it has carried out a very extensive work among the poor of Birmingham by the system of home attendance by midwives under the superintendence of honorary district surgeons. During the thirty-nine years—from 1868 to 1906—36,705 cases of labour were attended by the midwives of the Charity, the honorary district surgeons being called in to cases of difficulty or danger. The total deaths of mothers, including those due to septic diseases and those due to accidents of childbirth, has been 75, giving a mortality rate of about 2 per 1,000 deliveries. The operations of the Charity are conducted in seven districts by seven

First Floor Plan.



Second Floor Plan.

midwives, and the number of cases delivered last year was 1,454.

The new building, which is in the Georgian style, is admirably constructed. It is divided into three blocks connected by a central corridor. The first block, next Loveday Street, contains on the ground floor the office, Board room, patients' waiting room, and a consultation room, with an examination room adjoining. The central block contains the staircase, lift, dispensary, clinical laboratory, clothes storage, and bathroom for incoming patients. The furthest block contains the matron's sitting-room, two bedrooms, and the nurses' sitting-room. The first floor of the three blocks contains a waiting ward for 6 patients, having 1,433 cub. ft. of air space for each patient, a waiting room with two beds for cases requiring special observation and treatment, a labour ward having 3,100 cub. ft. of air space, a ward kitchen, linen store, and a convalescent ward for eight beds with 1,672 cub. ft. of air space for each. There is also a large labour ward. On the second floor there are labour and convalescent wards similar to those on the first floor, and also bedrooms for staff nurses and midwives. There is an isolation ward in the central block on the third floor, approached by a bridge from the main corridor. The staff dining-room, servants' dining-room, kitchen, and bedrooms for servants are situated on the third floor, while in the basement there are the heating apparatus, sterilizing room, and a fully equipped hand-power laundry. A *post-mortem* room and mortuary chapel have also been provided.

The total cost was £16,250, including £2,850 for the land, £11,900 for the building and the special fittings, and £1,500 for the furniture and surgical equipment. The response made to the appeal for funds has been so good that the hospital has been opened free from debt. The expenditure, however, will be much larger than formerly, so it will be necessary for the annual subscriptions, which this year amounted to about £420, to be increased to £1,200. There are at present 250 annual subscribers and 635 donors to the building fund.

THE GENERAL TREATMENT OF SKIN DISEASES.

In a post-graduate lecture Max Joseph[1] states that he regards it of utmost importance for the medical practitioner to master the elements of the general treatment of skin diseases, in order to be able to employ the various means successfully in individual cases. In some introductory observations he says that while water is a commodity which every person uses in the interests not only of cleanliness but also of comfort, it is necessary to limit its use or even to forbid it altogether in the treatment of some acute conditions, especially acute eczema. On the other hand, washing and baths are of great value in removing scales and concretions of the skin, and he instances psoriasis as a type of condition in which baths enable the scales to be removed so that healing applications may be employed. He is inclined to regard the value often attached to medicated baths as exaggerated, though benefit is at times derived either as the result of the mental effect or by their influence on the metabolism of the organism. Too much hope must not be placed in them, and it is immaterial whether camomile, elder, peppermint, sage, thyme, valerian, or calamus be added. Brine, sulphur, and carbonic acid baths are useful in certain cases.

Of soaps he says that since all are combinations of fatty acids and alkalies, the latter being in excess, the effect is always to soften and remove the epidermis to a slight extent. That this must be bad for such conditions as eczema, in which every effort ought to be made to regenerate the epidermis, is certain. Freshly-prepared superfatted soaps would not have this property, and therefore may be useful in such cases; but he warns against the use of superfatted soaps which have been stored for some time. For cosmetic purposes he recommends a mixture of almond oil (5 per cent.) with ordinary pure white household soap.

Ointments are the most important preparations which the dermatologist has at his disposal, and Max Joseph points out that the chances of success depend largely on the proper choice of the ingredients, and on the recognition of the stage in which they will act beneficially. Thus while tar may cure certain conditions, it will do definite harm if applied too early. It is further necessary to write prescriptions exactly, so that unpleasant and unexpected results do not occur from an indifferently made ointment. He gives one or two examples of how he writes his prescriptions. Erasmus Wilson's zinc benzoic acid mixture is prescribed as follows:

℞. Tinct. benzoic. 15 grams, evaporate to 7.5 grams, add zinci oxidi 3 grams, and unguentum leniens ad 100 grams.

Pastes fulfil a very important place. They have the property of absorbing the secretion of the surface. As the type of paste he cites the following indifferent zinc paste:

℞. Zinci oxid., amyli, āā 25 grams; vaselin. americ. alb. opt., 50 grams.

The paste is applied in a layer over the affected part and covered with gauze and a muslin bandage; a little linseed oil applied on a piece of wool suffices to remove the paste. A cooling paste used by Unna can be recommended:

℞. Ol. lini., aq. calcis, āā 30 grams; zinci oxid., calc. carb. prec., āā 20 grams. S. Pasta zinci mollis.

Ointments and pastes require a protective dressing, which is at times a disadvantage. Unna therefore introduced a so-called "size" (*Leim*), which can be applied only to absolutely dry skin, but which does not require any protection:

℞. Zinci oxid., gelatin. alb., āā 30 grams; glycerine 50 grams; and aq. destil. 90 grams.

This solid mass is rendered fluid over a water bath, and painted on to the area with a soft paint-brush. A little powder is then applied over the surface. Dieterich's glutectone has a similar function. Pick's drying liniment, which may be used under similar conditions, is made of *basserin* (gum tragacanth) 5 parts, glycerine 2 parts, and water 100 parts; it is applied in a thin layer, and dries as a thin skin. In inflammatory conditions—for example, pityriasis rosea, medicaments can be added to the liniment.

℞. Ammonii sulpho-ichtholici 3 grams; linimentum exsiccans ad 50 grams.

Joseph next describes the preparation and uses of Unna's gelanthum, caseine ointment, Jadassohn's mixtures, paraplasters, etc.

He then briefly describes the general principles of the treatment of skin diseases. In dealing with acute cutaneous catarrhs, he says that as long as inflammatory signs are present, and especially as long as there is any "weeping," antiphlogistic means should be employed. A weak solution of aluminium acetate applied every half-hour during the daytime yields good results; when this fails a lotion of 10 grams of resorcin to ½ litre of water may be traced. At night zinc and starch powder relieves the inflammatory symptoms. As soon as the surface is dry, astringent ointments may be applied, and he instances Lassar's oleum zinci as very suitable for this purpose:

℞. Zinci oxyd. puriss. 60 grams; ol. olivarum 40 grams.

When all traces of weeping have disappeared and the inflammation is considerably improved, the regeneration of the epidermis must be stimulated and the itching allayed. The so-called keratoplastic substances, of which tar is the best, fulfil both purposes. The oil of cade also is useful. When the epidermis is thickened, it may be necessary to use keratolytic substances. The chief use of these is in chronic eczema with a tendency to the formation of crusts. Lassar's salicylic paste serves as a good example:

℞. Acid. salicyl. 2 grams; zinci oxidi, amyl. āā 24 grams; vaselin. americ. alb. opt. 50 grams.

In obstinate cases 10 per cent. salicylic plasters, or from 30 to 50 per cent. salicylic acid plaster bandages may be used. In acne and other conditions, when it is required to remove epidermis to empty the sweat and sebaceous glands, naphthol or resorcin do good:

℞. Naphtholi 10 grams; sulphuris precipit. 50 grams; vaselin. flav., saponis virid., āā 20 grams.

In dealing with itching in skin diseases, especially when no changes in the skin are seen, bromocoll (dibromine tannin gelatine) is very valuable:

℞. Bromocoll. solub. 10 grams; zinc oxid, amyli, āā 20 grams; glycerine 30 grams; and distilled water ad 100 grams.

[1] *Deut. med. Woch.*, May 9th, 1907.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

A meeting of the General Council of King Edward's Hospital Fund for London was held at Marlborough House on December 16th for the purpose of making the awards and grants to the hospitals and convalescent homes for the present year. His Royal Highness the Prince of Wales was in the chair, and among those present were the President of the Royal College of Physicians (Sir R. Douglas Powell) and the President of the Royal College of Surgeons (Mr. Henry Morris).

Lord Rothschild, Treasurer of the Fund, reported that the amount received up to December 12th left, after payment of expenses, a balance of £147,263 2s. 7d. Sir Henry Burdett, speaking on behalf of the League of Mercy, stated that in spite of general depression throughout the year and the difficulty of raising money, even in small sums from many people, the actual results had proved better than in any previous year, hence the sum which the League could contribute to the King's Fund would be as much as in 1906—namely, £18,000.

Reports to the Council.

The reports of the Executive Committee, the Distribution Committee, and the Convalescent Homes Committee were then read by their Chairmen, Mr. Hugh C. Smith, Sir William Church, and Mr. William Latham, K.C., respectively. The Executive Committee recommended a distribution of £120,000, making, with the £1,000 entrusted to the Fund for convalescent homes by the London Parochial Charities, a total distribution of £121,000. This recommendation was based upon the consideration that, although the legacies accruing during the year and not specifically allocated to capital had reached the exceptional amount of £60,000, it was the average for the last five years—namely, £20,000—which should be taken as the sum available for distribution from this source.

The Awards.

The Distribution Committee prefaced its list of awards by sundry observations. It found itself in possession of £10,000 more to award than last year, when the total was £110,000, while the number of hospitals applying for grants was only 99, as against 105 in the previous period. In other words, six institutions had fallen out, among these being the City Orthopaedic Hospital, which, owing to the amalgamation carried out, had ceased to exist as a separate institution. Five throat, nose, and ear hospitals were negotiating with a view to amalgamation, and on this understanding a sum of £2,000 would be set aside instead of making separate grants to each hospital; the money would not be held over indefinitely, nor would it be paid if the amalgamation were not carried out. A liberal offer, which included an annual grant of £1,500 for five years had been made to the Hampstead General Hospital, and would take effect should it amalgamate with the North-West London Hospital. The grant to Guy's Hospital, totalling altogether £15,000, was much larger than usual, but was thought desirable in view of the urgent necessity of its out-patient department being rebuilt, at a cost of about £20,000. Note was made of the fact that some hospitals took an abnormal time in closing their annual accounts; all those who applied for grants should be expected to present their accounts not later than April 15th each year. The full list of awards was then presented, attention being drawn to the fact that the absence of a grant did not necessarily imply dissatisfaction with the institution concerned. The following extracts from the list cover some of the principal hospitals, large and small, and convey an idea of the ground on which, when stated, awards were made or withheld:

Grants recommended by the Hospitals Distribution Committee.

Bolingbroke Hospital.—£3,000, of which £2,500 to reduce building debt.

Cancer Hospital.—No grant. The Committee are glad to see that no assistance from the Fund is required.

Central London Ophthalmic Hospital.—£100, to bedsteads and bedding.

Cheyne Hospital for Sick and Incurable Children.—£50, in consideration of the fact that some curable cases are admitted.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—£2,500.

Dreadnought Hospital.—£2,500.

East End Mothers' Lying-in Home.—£500, of which £350 to alterations.

East London Hospital for Children.—£2,000, of which £1,000 to improvements.

Evelina Hospital.—£1,250, of which £1,000 to reduction of out-patient building debt.

French Hospital.—£200.

Friedenheim Hospital.—£50.

German Hospital.—£200.

Gordon Hospital for Fistula, etc.—£25.

Great Northern Central Hospital.—£2,000, of which £800 to complete purchase of land.

Guy's Hospital.—£15,000, of which £10,000 is an exceptional grant to enable the new out-patient department to be taken in hand during the present winter.

Home and Infirmary for Sick Children.—£250, of which £100 to reduce debt on mortuary.

Hospital for Consumption.—£2,500; the Committee view with special satisfaction the work done by this institution in its country sanatorium.

Hospital for Epilepsy and Paralysis.—£1,000, of which £500 to improvements, including an operating room.

Hospital for Invalid Gentlewomen.—£1,000, an exceptional grant towards building fund.

Italian Hospital.—£500.

Kensington General Hospital (late Queen's Jubilee Hospital).—No grant.

King's College Hospital.—£7,000, of which £6,000 to removal fund.

London Homoeopathic Hospital.—£:50.

London Hospital.—£10,000.

London Lock Hospital.—£1,100, of which £600 to nursing accommodation. The Committee will be prepared to recommend a substantial grant towards the expense of rebuilding the Hospital at Dean Street when a definite scheme has been submitted and approved.

London Temperance Hospital.—£1,600, of which £1,000 to out-patient debt.

Metropolitan Hospital.—£2,500; the Committee are pleased to see the successful efforts being made to reduce expenditure.

Miller Hospital (Greenwich).—£2,000, of which £1,250 to extension, provided the scheme is for a total of not more than 50 beds.

New Hospital for Women.—£1,000, of which £250 to electric light.

North-West London Hospital.—£250, in consideration of the work done by the hospital pending the decision as to its future.

Paddington Green Children's Hospital.—£750, of which £250 to reduce debt. The Committee view with satisfaction the efforts made to reduce expenditure.

Passmore Edwards Acton Cottage Hospital.—£50.

Passmore Edwards East Ham Hospital.—£50.

Passmore Edwards Hospital for Willesden.—£25.

Passmore Edwards Cottage Hospital, Wood Green.—No grant.

Poplar Hospital.—No grant; a well-managed economical institution.

Royal Eye Hospital.—£600; the Committee are glad to see the reduction in the cost per bed.

Royal Hospital for Diseases of the Chest, City Road.—£1,000, an exceptional grant to open a fund for a country sanatorium. The Committee consider that an open-air sanatorium in the country is essential for the consumptive patients of this hospital.

Royal Waterloo Hospital for Children and Women.—£1,750, the balance required to close the building fund to be paid first out of this grant.

Royal Westminster Ophthalmic Hospital.—No grant; the Committee are glad to see that the Hospital does not require assistance from the Fund this year.

St. George's Hospital.—£2,500.

St. John's Hospital for Diseases of the Skin.—£100.

St. Mary's Hospital, Paddington.—£3,500.

St. Monica's Hospital.—£150, of which £50 to verandah.

Santa Claus Home.—£25, in consideration of the fact that some curable cases are admitted.

South Wimbledon, Merton, and District Cottage Hospital.—No grant: the Committee would be prepared to recommend a grant towards rebuilding when an approved scheme is set on foot.

University College Hospital.—£3,000; the Committee are glad to see the reduction in the cost per bed.

West London Hospital.—£3,000, of which £1,500 to reduce bank debt.

Westminster Hospital.—£3,000.

Convalescent Homes.

The sum of £1,000 placed at the disposal of the Convalescent Homes Committee by the London Parochial Charities was recommended to be distributed among 17 institutions, preference as in previous years being given to those directly connected with the London hospitals. The highest award was £200, this sum going to the Convalescent Home at Clacton-on-Sea, belonging to the Middlesex Hospital.

Consumption Sanatoriums.

The Prince of Wales then moved the adoption of the reports, and in doing so made brief observations on their contents. The receipts for the year, he said, included a gift from Mr. Carnegie of £100,000, and some unusually large legacies, but the former would probably be treated as capital, and in disposing of legacies it would be wise to continue the policy of the past, and only treat as available an amount equal to the average receipts from this source in the foregoing five years. Guy's Hospital had already collected half the sum required for the rebuilding of its out-patient department, so that if the Fund instead of spreading the sum which in any case it was likely to give over a number of years

granted the sum forthwith, the work could be put in hand at once. This was in itself desirable, and moreover the contribution, by enabling the work to be done during the present winter, would benefit materially those employed upon such building, as well as those for whom the building was intended. The grant towards the removal of King's College Hospital would bring the total distribution from the Fund to that purpose up to £22,000. A subject which ought to engage the most serious attention of the Fund in the early future was that relating to the treatment of consumption; he was glad to see that the Distribution Committee was giving special attention to the necessity for sanatoriums, for whether the treatment of consumption should be regarded as distinct from ordinary hospital work or otherwise, the need of sanatoriums for London patients suffering from this disease was very great, and the Fund should do whatever it could to encourage their establishment. Reference was also made to a large number of other subsidiary questions, including the date at which annual reports and accounts should be issued by hospitals; it did not seem unreasonable to expect that three and a half months should be regarded as sufficient time for any hospital to prepare its annual statement to its subscribers. The amalgamation of orthopaedic hospitals was now complete, and it was hoped that next year a similar report could be made with regard to the Hampstead General Hospital and the North-West London Hospital, and concerning the throat, nose, and ear hospitals. Stress was also laid on the value of hospitals to insurance companies in connexion with the Workmen's Compensation Act, and acknowledgement made of the assistance received from the League of Mercy and the London parochial charities. Sir Eyre Shaw and Captain Wells were thanked for their report on fire prevention, and acknowledgement made of the indebtedness of the Fund to its honorary officials and to the members of the various committees. The year's work had been unusually heavy in consequence of business entailed by the incorporation of the Fund. Very much to their regret, one of their honorary secretaries—Mr. Danvers Power—was about to retire. It was impossible to speak too highly of his services. The statistical report which he had compiled was in itself an enormous asset to the Fund, while his qualities as a man of business and of practical experience in the hospital world were too well known to need comment. He would remain on the Council and Executive Committee, where his advice would always be available, and his post as one of the honorary secretaries be taken by Mr. Frederick Fry.

Mr. John Burns, in seconding the adoption of the report, said he wished to associate himself with His Highness's remarks about Mr. Danvers Power, of whose work he had had experience in connexion with the Queen's Unemployed Fund. The relationship between general hospitals and Poor-law infirmaries and outdoor relief generally, required attention. There was considerable overlapping, and a committee of the Fund might well look into the matter. There was demand for the compulsory notification of tuberculosis, but if it were hurriedly complied with, there would be an enormous, almost an overwhelming, claim made for new sanatoriums. He hoped to circulate a report on the subject next month.

The reports were then adopted.

The Future of the Fund.

The Prince of Wales then addressed the meeting with reference to the alterations entailed by incorporation of the Fund under the Act granted last session. Under that Act it would be his duty to appoint a new Council every year; such appointment must be made in, and in respect of, the year in which the Council was to act. He would therefore not nominate the Council for next year until next January, but it was his intention to invite all those who had hitherto given their help to continue their services, and he had also secured the assistance of some new members. The first work of the new Council would probably be to delegate some of its powers to committees, and in order that the meeting in January might be purely formal, the resolutions which it was proposed to bring forward had been prepared in advance, so that they might be discussed forthwith. The way in which the work of the Fund had hitherto been divided was satisfactory, and in pursuance of his duty in nominating the members of the various committees, he proposed in the first instance to proceed on the principle of not nominating any one to more than one committee. The honorary secretaries, however, should have the right to attend and speak at all committees, though they would be unable to vote except at that to which they belonged. If the Council decided to delegate its powers to committees their work under the draft resolution would be as follows: The Finance Committee would deal with all matters of investment; the Distribution Committee would advise the General Council as regards the hospitals, deciding which of them should be placed on the list for consideration, and making rules for their observation in connexion with their applications for grants. Their Visitors, whose work was personal rather than corporate, he would nominate as officials at a later date. The Convalescent Homes Committee would advise as to grants to convalescent homes and sanatoriums beyond the metropolitan area. The fact that these were outside the area at present visited by the Fund should not preclude consideration of their claims. Many of their inmates were patients from the London hospitals. Some portion of the Fund, he trusted, might be devoted to them next year. As hitherto, he hoped himself to attend the meetings of the Council regularly, but should he be unable to do so, he would like to think that his place as president would be taken by Mr. Hugh C. Smith, who would bring his long experience as Chairman of the Executive Committee to the service of the Council. It was doubtful whether any standing orders were necessary, for the constitution of the Fund was in its broad lines laid down by the Act and all would desire to give effect to it in the spirit as well as in the letter. The draft resolutions appointing committees provided for current work, and defined the power of the committees; the Distribution Committee in particular possessing that of making rules and regulations for the observation of institutions applying for grants. Under the Act, the machinery of the Fund was subject to annual reconstruction, and what was decided to be best now was not to be regarded an immutable law for all time, or even for the year after next. The Prince of Wales then named the persons whom he proposed to appoint as members of the Committee and invited discussions of the resolutions, and concluded his speech by congratulating all who had been connected with the Fund up to the present. Great results had been achieved, and it was starting upon a new era. The King watched over it with an interest no less keen than on the day of its foundation, and he himself never lost sight of its great responsibilities, and of the duty of directing, and encouraging and supporting efficient administration of the London hospitals.

On the motion of Sir William Collins, the resolutions mentioned by the Prince of Wales were then approved, a further resolution being adopted which gave the Executive Committee power to act for the General Council in all matters not covered by the duties assigned to the various committees, and to spend a sum not exceeding £3,500 on the administration of the Fund.

The proceedings then terminated by a vote of thanks to the Prince of Wales for presiding.

MEDICAL NEWS.

The sum collected for the erection of a Cancer Institute at Heidelberg now amounts to 878,185 marks (about £43,909).

The Secretary of the Royal Society of Medicine has given notice that its library and offices will be closed from the evening of Monday, December 23rd, to December 30th at 2.0 p.m.

His Majesty the King of Spain, before leaving Kensington Palace, conferred upon Dr. A. J. Rice Oxley, Physician in Ordinary to Her Royal Highness Princess Henry of Battenberg, the Order of Isabella the Catholic, in recognition of services rendered during the visit of His Majesty and the Queen of Spain.

Among those elected Fellows of the Royal Sanitary Institute this month are Dr. R. T. Hewlett, Director of the Public Health Laboratories, King's College, London; Dr. E. P. Lachapelle, Laval University, Montreal; Dr. G. F. McCleary, M.O.H. Hampstead; Dr. Frederick Montizambert, Director-General of Public Health, Ottawa, Canada; Dr. J. Andrew Turner, Health Department, Bombay, and the Bishop of Hereford.

The General Superintendent of the Wells and Baths, Harrogate, writes that the statement in Dr. H. T. A. Warnock's presidential address before the Ulster Branch published in the British Medical Journal of November 30th, page 1583, that the water of the Old Well, Harrogate, contained only 0.531 in. per gallon of sulphuretted hydrogen was incorrect, it contains according to an analysis of Professor Thorpe, 10.16 cubic inches of the gas per gallon.

The medical practitioners of Alfreton, Derbyshire, at a recent meeting, unanimously resolved to give notice that in future the rate of pay for all sick clubs shall be not less than 4s. a member per annum, the rate to apply to all members—men, women, and juveniles. It was also resolved that no discount should be given to sick clubs in the form of rebates or presents, and that no medical man should become an honorary member of a sick club, and that those who were already honorary members should resign such membership. We publish these facts for the information of the profession, and we understand that Dr. John C. Pounden, Ironville House, Alfreton, Derbyshire, will reply to any inquiries which medical men may wish to address to him with regard to the circumstances which have led to the adoption of this course of action.

At the annual meeting of the Metropolitan Hospital Sunday Fund, on December 17th, the report of the Committee, recommending the distribution of £68,134 among 159 hospitals, 57 dispensaries, and 27 nursing associations, was adopted. An attempt was made by the Rev. L. S. Lewis to refer the report back to the Committee on the ground that it had made no grant to the Antivivisection Hospital in Battersea. As an answer, the Lord Mayor read a resolution, in which the Distribution Committee expressed the opinion that, as the Antivivisection Hospital did not comply with those general conditions which should govern any hospital designed to give the best form of relief to the sick poor, no grant could be recommended. A protest against the introduction of the topic was raised by Mr. Sydney Holland, who said that the patients of this hospital were refused some of the greatest benefits known to the human race. It was a miserable hospital, miserably equipped, and, as its work was not based on considerations which were for the benefit of its patients, it ought not to be helped by the Fund.

Speaking at a recent flower show, Dr. Brown of Bacup, showed that the healthiness of plant life in the neighbourhood of large manufacturing towns was increased by filtering the air of greenhouses through muslin, and proceeded to suggest that a corresponding step would be useful in ordinary houses. Muslin curtains, he thought, should be used quite as much in winter as in summer, for owing to the increased use of coal fires the air contained far more solid matter. The healthiness of houses would be increased if all inlets were covered by filters made of unstarched and unironed muslin, which could be easily cleaned and replaced. The suggestion is attractive, and its value might easily be tested on any foggy day, by comparing the atmosphere of a room in which a window was partly open with that of one in which a window was open to the same extent but the aperture guarded by a muslin curtain. There is no doubt that the solid impurities of the air such as might be removed by filtration of this character, count for a good deal in the production of bronchitis, which year by year in the winter months is the immediate cause of grave illness and mortality, especially among persons of comparatively advanced age.

The French Government, wishing to restrict the use of opium in the French possessions in the Far East, directed the Governor-General of Indo-China to examine the question. In his report he expresses the opinion that the complete prohibition of opium without transition would cause serious discontent among the natives. It would, moreover, be impossible to enforce such prohibition so long as China has not completely suppressed the cultivation of the poppy. Even if the interdiction were possible, it ought not to be carried out until resources had been found that would make up for the disappearance of the revenue from the monopoly of this product, which amounts to seven million piasters—about one-fourth of the whole budget. On the other hand, the Governor-General has pronounced himself strongly in favour of the gradual restriction of the use of opium by increasing its price in proportion varying according to the regions, whether more or less distant from the centres of Chinese production. Since June 19th last an ordinance has been issued in this sense. In addition to this, he has forbidden the opening of any opium den in the territory of Indo-China. On the other hand, the Minister for the Colonies, holding that France could not permit its functionaries to give the example of the most fatal of habits to those whom their duty is to teach Western civilization, has ordered the local administration to forbid expressly the use of opium to all the functionaries and agents of every rank and service. Those infringing this rule will be debarred from all promotion till they have completely renounced the habit. Analogous measures will be taken in regard to native functionaries.

International First Aid Congress.—The First International First Aid and Life-Saving Congress will be held at Frankfort-on-the-Main in Whitsun week, 1908, under the honorary presidency of Count von Posadowsky. The Honorary President of the Committee is His Excellency Professor von Esmarch; the Honorary President of the Organizing Committee was to have been the late Professor Moritz Schmidt. Forty foreign Governments have been invited to send delegates. The work of the Congress will consist in lectures on subjects of general interest by eminent professional men, and in discussions in the Sections. The following are the Sections: (1) Medical first aid in accidents; (2) instruction of non-professionals in first aid; (3) ambulance work in towns; (4) ambulance work in the country, in industrial and small communal centres; (5) ambulance work in land traffic (railway, underground railway, electric railway, and automobile traffic), etc.; (6) ambulance work at sea, and on inland and coast waters; (7) ambulance work in mines and similar works; (8) ambulance work for fire brigades; (9) ambulance work in the mountains; (10) ambulance work in the hunting field, sports, etc. The official languages of the Congress are German, English, and French. The Secretaries of the Organizing Committee are Dr. A. Ettlinger, and Dr. Fromm, of Frankfort; Dr. Felix Hübel, Dr. Korman, and Dr. Streffer, of Leipzig; Dr. Kohler, of Munich; Professor Manes of Berlin; and Herren A. Scharff, engineer, and Dr. Schleussner, factory director, both of Frankfort.

Prizes of the Académie de Médecine.—The principal prizes in the gift of the Paris Academy of Medicine have this year been awarded as follows: The Louis Boggio prize of £172 (triennial) was awarded to Professor A. Calmette, Director of the Pasteur Institute of Lille, and Dr. C. Guerin, Chief of the Laboratory of the same institute, for their researches on the intestinal origin of pulmonary tuberculosis, and on vaccination against tuberculosis by the digestive channels; the Adrien Buisson prize of £420 (triennial) for the discovery of a method of complete cure for diseases hitherto recognized as incurable was awarded to Dr. Dopter, *professeur-agrégé* at the Army Medical School of Val-de-Grâce, for his bacteriological researches on bacillary dysentery, its specific germ, and anti-dysenteric serumtherapy; the Chevillon prize of £60 (annual) to Dr. Joseph Okinczic, of Paris, for a contribution to the surgical treatment of cancer of the colon. The Desportes prize of £52 (annual) for the best work on therapeutics was divided between Dr. Albert-Weil, of Paris, for his *Manual of Electrotherapy* (£32) and Dr. Niclot for a paper on the mosquitos of Oran during the years 1904-6 in relation to malaria (£20). The Théodore Herpin prize of £120 (annual) for the best work on epilepsy and nervous diseases, was awarded to Dr. L. Alquier, of Paris, for his work on nervous disorders in Pott's disease; the Huguier prize of £120 (triennial) for the best work on diseases of women was awarded to Drs. F. Jayle and X. Bender, of Paris, for their work on leucoplasia of the vulva, vagina, and uterus; the Laborie prize of £200 (annual) for the best work on surgery was awarded to Dr. G. Luys, of Paris, for his work on exploration of the urinary apparatus; the Louis prize of £120 (triennial) for the best essay on the radium treatment of neoplasms was awarded to Drs. J. Belot and G. Haret, of Paris, and M. Auguste Jaugeas, head of the laboratory of medical radiology at the Saint Antoine Hospital, Paris. The Meynot prize of £104 for the best work on diseases of the eyes was awarded to Dr. Etienne Ginestous, of Bordeaux, for a paper on granular ophthalmia in France; the Tarnier prize of £180 (annual) for the best work on gynaecology was not awarded, but Dr. X. Bender received an honourable mention for a contribution to the study of tuberculosis of the vulva. The Barbier prize of £80 (annual) for the discovery of a method of complete cure for diseases hitherto recognized as incurable, such as hydrophobia, cancer, epilepsy, scrofula, cholera, etc., was divided between Professor Cadéac, of the Veterinary School of Lyons, for experimental researches on the contagion of tuberculosis; Dr. E. François-Dainville, of Paris, for an essay on disturbances of nutrition and of urinary elimination in diathesic dermatoses (eczema and psoriasis); and Dr. A. Roussel, of Saint-Etienne, for an essay on ankylostomiasis in the coal-mining district of Saint-Etienne. The annual prize of £40, offered by the Academy itself, for the best essay on the physiology and pathology of the suprarenal capsules, was awarded to Drs. Léon Bernard and Bigart, of Paris.

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SATURDAY, DECEMBER 21ST, 1907.

MEDICAL INSPECTION AND AFTER.

THE Annual Representative Meeting at Exeter, after expressing the satisfaction with which it had learnt that the President of the Board of Education had fully accepted the principle of the compulsory medical examination of school children, referred the consideration of the subject, together with certain resolutions bearing upon it from several Divisions, to the Medico-Political Committee, and this Committee appointed a special subcommittee with instructions to take action should any emergency arise.

Such an emergency was created by the issue of the Board of Education's memorandum to local education authorities. The subcommittee has accordingly drawn up a memorandum, has forwarded it to the Board of Education, and publishes it in the SUPPLEMENT of this week, for the information of the Divisions, in the expectation that they will give the matter early consideration. Upon the question whether the supervision of this work should be carried out by medical officers of health or by medical officers specially appointed for this purpose no final opinion, so far as the point affects the principal school medical officers of large districts, has at present been expressed. As regards the officers who are to be engaged in the actual work of inspection, there is no hesitation in expressing the view that these duties could not, having regard to the nature and extent of the duties already required of medical officers of health, be efficiently discharged by them personally.

In the paragraphs discussing the definition of the duties which should be assigned to school medical officers the Committee has supplied a deficiency in the memorandum by giving a general definition of such duties, laying it down that the school medical officer should "concern himself with all matters affecting, or "tending to affect, the health of those who work in "the schools, except so far as any such matters be "specifically excluded from the scope of his duties as "medical inspector, among matters so excluded being "(*a*) the treatment of disease; (*b*) the visitation of the "homes of the children."

The concluding words of this definition—that is to say, exceptions (*a*) and (*b*)—raise a point which we venture to hope will not escape the attention of the Divisions, but will be thoroughly discussed by them, so that the Committee may be able to formulate an opinion upon a matter which must seriously engage public and professional opinion as soon as the system of medical inspection has got to work. Let us assume that in a school containing 500 children the school medical officer finds 100 children presenting some departure from the healthy standard—the estimate is not a high one and may easily be exceeded; of this 100 children some will be mentally deficient, and the method of dealing with them is more or less settled, but among the remainder there will be children suffering from errors of refraction, or from deafness or obtuseness due to naso-pharyngeal disease, from sore heads, and so on. What is to be done with these children? At present the general policy followed is to notify the parents and to advise them to obtain suitable medical treatment, and meanwhile to exclude the children; as a matter of fact this is not done in most places, but it appears to be the theory under which educational authorities are at present working. If the parents continue to neglect the child, they may be prosecuted for not sending the excluded child to school, but this is a roundabout method of obtaining the object in view, and has an appearance of hardship on the parents which public opinion will not, we believe, continue long to tolerate. There is a strong objection on the part of hospitals to receiving large batches of children from the schools for treatment, and there are many obvious objections to any arrangements having a pecuniary basis between the education authority and the hospital. Already certain education authorities are providing treatment for some of the simpler ailments, such as sore heads; and others are encouraging schemes for providing children with spectacles. We may, however, be quite certain that the system will not stop here, and that in time there will be pressure brought to bear upon education authorities to provide treatment for other minor disabling ailments, such as, for instance, adenoids; that is to say, we are brought within a measurable distance of the establishment, at any rate in the larger centres of population, of school clinics, places where children attending the schools will be medically examined and treated with a view of restoring them to a state of health warranting their further compulsory attendance at school. What is the essential difference between a school clinic and an out-patient department? Are these school clinics to be staffed by special officers, whole-time or part-time, or are they to be staffed by the members of the community whose natural duty it is to advise and treat such children—that is to say, the general practitioners of the country? These are questions which will have to be answered. With regard to providing for the medical inspection of children, the Act is compulsory—the duty is distinctly imposed upon education authorities; but as to treatment the provision of the Act is permissive—an education authority is given power, subject to the sanction of the Board of Education, to attend "to the health and physical "condition of the children educated in public elemen-"tary schools." Medical inspection must of course precede provision for attending to the health of the school children; the point we wish to make is that the interval is not likely to be very long, and we therefore venture to urge that the matter should receive early consideration from the Divisions.

THE SPECIFIC DIAGNOSIS AND TREATMENT OF TUBERCULOSIS.

It is calculated that out of the sixty million or so inhabitants of Germany some 800,000 suffer from pulmonary tuberculosis, and that about 80,000 of these die every year. As the chances of recovery from this disease are the greater the earlier it can be definitely diagnosed, it is of the utmost importance that any specific method of arriving at a decision should be employed, in doubtful cases, as early and as generally as possible. Further, when tuberculosis of the lungs has been shown to exist, it is equally important that the treatment adopted should be the most thorough and trustworthy attainable.

Ever since Koch published his first work on tuberculin in 1890, the efficiency and importance of the diagnosis and treatment of tuberculosis by specific preparations made from tubercle bacilli or their cultures have been recognized. But in the early days mistakes were made in the employment of tuberculin, actual injury caused to a number of patients, and the therapeutic use of tuberculin fell into disfavour, largely in consequence of Virchow's opposition to it. At the present time it is recognized on all hands that the numerous preparations of tubercle bacilli, if properly and skilfully administered, cause no harmful symptoms, immediate or remote; while their curative effects have been very highly praised by a number of writers. As the result of a recent study of the subject,[1] Drs. Bandelier and Roepke, physicians to the phthisical sanatoriums at Cottbus and Melsungen, strongly advocate extension of the use of these methods of diagnosing and treating tuberculosis, whether the lesion be situated in the lungs or elsewhere. They argue that the various medicinal, dietetic, or hygienic methods of treating tuberculosis are all admirable in their way, and give a certain percentage of cures; the specific method of treatment, however, they hold to be superior to all others. Its limitations are now so well recognized that it should be employed not only in sanatoriums, but also by the general practitioner.

The Koch tuberculin known as T.A. is used practically to the exclusion of all other forms for the diagnosis of tuberculosis. An initial dose of $\frac{2}{10}$ mg. is recommended, to be followed if necessary by successive doses of 1, 5, and 10 mg., given by subcutaneous injection. Such diagnostic injections are contraindicated if the patient's temperature rises above 98.6° in the axilla or 99.1° in the mouth, or if definite physical signs of tuberculosis are present, or if the tubercle bacilli have been found in the sputa, or there has been a recent attack of haemoptysis, or if grave cardiac or renal disease be present, or if the patient is subject to epileptic fits. They are directly indicated, on the other hand, in all cases where tuberculosis is suspected but not proven, whether in the lungs, larynx, ear, eye, skin, urogenital system, or serous membranes. Calmette's new "ophthalmo-reaction" to old tuberculin is mentioned, but the authors do not give any estimate of its value.

When antituberculous serums are used as curative agents the process is one of passive immunization, comparable to that with antidiphtherial or antistreptococcic serums; the extracts of tubercle bacilli are used to produce an active immunization, generally against the toxins, but in some cases against both toxins and tubercle bacilli. Whatever the form of bacillary product used, it is important that the dose injected should fall just short of that required to produce an immediate reaction—such signs and symptoms as malaise, fever, acceleration of the pulse-rate, or loss of body weight. It is believed that all the preparations of this class act locally by causing hyperaemia round the tuberculous deposits in the tissues, wherever they may be situated. Koch's old tuberculin has long been used therapeutically; the authors recommend that patients in the first or second stage of pulmonary tuberculosis, in whom the prognosis is still good, and who are free from fever, should begin with injections of $\frac{1}{10}$ mg., and this quantity can be gradually increased until 1,000 mg. are given in a single injection. In severer cases the initial injection should not be more than $\frac{1}{1000}$ mg., and it will often be found impossible to raise the maximum dose beyond 10 or 100 mg. in such patients without producing a harmful reaction. The injections should be continued so long as the patient shows improvement under them, or until he is cured; the treatment is best carried out in a sanatorium—at any rate at first, or until the maximum dose has been reached; and in almost all cases the maximum dose should be repeated several times at increasing intervals of weeks, after the patient has returned to work. The contraindications to this line of treatment grow fewer and fewer as experience with it increases, and Bandelier and Roepke state that they have treated with success, or at any rate with marked improvement, advanced cases with hectic fever, purulent expectoration, cavities in the lungs, anaemia, and emaciation.

In 1897 Koch introduced his "new tuberculin"—TR—which is antibacterial, as well as antitoxic. It consists of a suspension of pulverized tubercle bacilli after extraction with normal saline; it is the mildest of the bacillary preparations, and is therefore particularly suitable for the treatment of patients who are unusually sensitive to injections of T.A., and may be used to prepare the way for a subsequent course of T.A. It is contraindicated for patients with advanced lung disease, and it is also costly, but in suitable cases gives very good results. The initial injection should be of $\frac{2}{1000}$ mg., and the maximum dose should not exceed 20 mg.; here again the quantity given should never be large enough to produce a definite immediate reaction.

A third and more complex preparation of tubercle bacilli was introduced by Koch in 1901, called "new "tuberculin bacterial emulsion." It consists of pulverized bacilli in normal saline solution, with the addition of an equal volume of glycerine; 1.0 c.cm. contains 5 mg. of ground-up bacilli. Bandelier and Roepke give in tabular form the results obtained with it in 205 cases; they believe it to be the most active of Koch's tubercle products; the initial dose should be $\frac{1}{1000}$ mg., or in severe cases $\frac{1}{10000}$ mg., and the dose should be gradually increased, as tolerance is established, to a maximum of 10 mg., avoiding any but the slightest immediate reaction to the injections. As with the old and new tuberculins, satisfactory cures are obtained without the occurrence of any visible reaction at all during the course of treatment. Like TR, the new preparation tends to reduce an already febrile temperature to the normal, and to lessen the expectoration, in cases in which the pulmonary lesions are not too far advanced and the mixed infection of the lungs is not too severe.

These are the three best-known preparations of tubercle bacilli. The tuberculin of Denys (1905) is practically identical with Koch's original tuberculin of 1890, the filtered unconcentrated special bouillon in which tubercle bacilli have been cultivated. Denys's tuberculin should be injected in doses just too small to produce any reaction, and Denys himself refers to 2,000 cases of tuberculosis successfully treated with it. Klebs, working along slightly different lines, introduced his tuberculocidin in 1891—a precipitate obtained from tuberculin, which was to have a heightened power of destroying tubercle bacilli in the tissues; and in 1896 he further improved on his methods and introduced antiphthisin. He further increased the curative action of these in the treatment of pulmonary phthisis by the addition of selenin—a substance giving rise to active immunity to the *Diplococcus semilunaris*, which he found in the mixed infection commonly present in marked cases of phthisis, and of tubercle-protein also.

[1] *Lehrbuch der spezifischen Diagnostik und Therapie der Tuberkulose.* (Textbook of the Specific Diagnosis and Treatment of Tuberculosis.) By Bandelier and Roepke. Würzburg: A. Stuber. 1908. (Sup. roy. 8vo, pp. 119, with 18 temperature charts. M. 4.)

In 1907 Klebs summed up the good effects of his treatment; in other hands it has proved to be generally harmless, in some cases effective. Beraneck's tuberculin (1903) consists of the mixed toxins found in the bouillon cultures and in the pulverized tubercle bacilli themselves; it has been highly praised by Sahli (1906), who has also had experience of Koch's and of Denys's tuberculins. Sahli again emphasizes the importance of avoiding any immediate subjective or objective reaction to the injections, whatever the form of tuberculin employed, and advises that the treatment be prolonged over several years.

K. Spengler in 1904 introduced the treatment of human tuberculosis with a tuberculin prepared in the same way as Koch's original tuberculin, but from bovine instead of human tubercle bacilli — bovine original tuberculin, known as P.T.O. Bandelier and Roepke have had satisfactory results in 178 patients from a product similar to P.T.O., and think P.T.O. milder and less toxic than old tuberculin. Fever, and the presence of mixed infection, are not contraindications to the use of P.T.O., and Spengler believes that only patients *in extremis* or with very acute pulmonary tuberculosis are beyond the reach of cure with it. The specific substances tuberculase and tulase, introduced by von Behring in 1906, are designed for the prevention of tuberculous infection rather than its treatment, and little is yet known as to their utility, while they are at present accessible only to Marburg medical men.

Over a dozen other varieties of tuberculin of which little is known are in existence, and there are numerous methods of vaccinating with tubercle bacilli as a preventive of tuberculous infection. But early this year Deycke and Reschad Bey published work which may prove to be of great importance in the treatment of human tuberculosis; it is possible that a fatty body they extracted from *Streptothrix leproides*, a streptothrix analogous to but not identical with the *Bacillus leprae*, which they named nastin, may serve to immunize human beings against tuberculosis; further work on the subject must be awaited.

With regard to passive immunization against tuberculosis, Bandelier and Roepke remark that Maragliano's antituberculous serum is antitoxic, antibacterial, and agglutinating; Maragliano thinks it suitable only for the treatment of the early stages of tuberculosis, or for prophylactic use. It has been used with success by a large number of Italian workers, and altogether some 20,000 patients have been treated by it. In 1904 Figari introduced a method of increasing the antitoxic, antibacterial, and agglutinating powers of the blood of animals, and obtained good results by administering this blood by the mouth to phthisical patients, and this haemotoxin treatment may have a future before it. Marmorek's antituberculous serum, though many of the opinions expressed about it have been unfavourable, is said to deserve further trial. Bandelier and Roepke find that tuberculosis of the larynx improves or clears up wonderfully under treatment by injections of tuberculin, and they are giving up the use of local applications—such as lactic acid—to ulcers of the larynx, in favour of the tuberculin treatment. Operation is inevitable, however, when the ulcers are deep or when perichondritis is present. In tuberculous infections of the eye, skin, urogenital tract, and serous membranes the tuberculin treatment is generally worth trial. Specific treatment is also valuable in tuberculous peritonitis, and a clinique is mentioned in which operative interference in this condition has been abandoned in favour of tuberculin injections.

The practical conclusion is that there are many trustworthy preparations of tubercle bacilli, but those of Koch have been most employed and longest in the field; properly used they cannot produce any harmful results, and are practically certain to do good. It is, perhaps, needless to add that the tuberculin treatment of human tuberculosis does not render unnecessary any of the therapeutic, dietetic, or hygienic measures hitherto found advantageous in its treatment.

THE MEDICAL INSURANCE COMMITTEE.

THE attention of medical men who may have occasion at this time of the year to take out or renew policies of insurance may be drawn to the facilities which the Medical Insurance Committee offers. The Committee was formed early this year in view of the new liabilities created by the Workmen's Compensation Act which came into force on July 1st last, liabilities which are specially serious in the case of medical men employing assistants, locumtenents, or dispensers.

Any profit which the agency conducted under the direction of the Medical Insurance Committee may make will be devoted to benevolent purposes, and the great need which there is for additional funds to assist members of the medical profession who break down or leave their families inadequately provided for will, it is hoped, induce members of the profession to do as much insurance business as possible through this Committee.

The agency established by the Medical Insurance Committee is prepared to effect insurances for medical men in respect of accidents to themselves, third-party accidents, fire, and burglary, and a considerable number of policies have been issued through the agency by the Guardian Assurance Company, Limited, with which the Committee has entered into an arrangement. The Committee also arranges policies of life assurance, and is able to afford special advantages to medical men insuring through its agency, whether for life, accident, burglary, or for risks to employees. Full particulars of the advantages offered can be obtained on application to the Secretary, Medical Insurance Committee, at the offices of the British Medical Association, 6, Catherine Street, Strand, London, W.C.

We would again at the risk of telling an oft-told tale invite the very serious consideration of all general practitioners to the liability with regard to locumtenents which may arise under the recent Act. It is true that a person whose annual remuneration exceeds £250 a year is not included in the scope of the Act, but as the rate is stated by the year it is probable that the courts would hold that a locumtenent whose total remuneration had not amounted to £250 in a year would be entitled to benefit under the Act even though the weekly rate paid for the particular engagement was as much as, say, five guineas a week. The Medical Insurance Committee has arranged with the Guardian Assurance Company to cover the risk for a minimum payment of 5s., provided that the period during which the locumtenent is employed does not exceed a period of, say, ten weeks. The rate is governed by the general principle that the premium for covering the risk with regard to medical assistance of all sorts which the principal may employ shall be at the rate of 10s. per cent. on the total sum expended in this way. The premium for a collector employed to collect accounts would be at the same rate, but for a bookkeeper the premium would be 3s. per cent., the rate charged for a clerk in an office.

THE DOCTOR IN THE NEWSPAPERS.

We have long known the "eminent specialist" who gives to the interviewer his valuable opinion in regard to whatever subject touching on medicine may be attracting attention, and we respect the modesty which leads him to withhold his name, though his utterances are often sufficiently remarkable to make us guess that there is in it an element of prudence. There are others, however, who, whatever good they may do by stealth, do not seem to blush to find fame in the newspapers. Of those whose names are probably better known to the public than to the profession, we may once more mention Dr. Bernard Hollander, President of the Ethological Society, who has recently given the world the benefit of his views on crime and responsibility. We do not exactly know what the Ethological Society may be, but as we see that a well-known actor is to deliver a lecture before it, we suppose it has something to do with the stage, and therefore affords special opportunities to any one ambitious of publicity of showing himself, as Dr. Johnson put it—for a shilling. In an advertisement which has become famous, the proprietors of a large shop announced that they "kept a poet." The *Daily Mail* may now announce that it "keeps a "doctor." His function would seem to be to supply to the casual reader a peptonized intellectual food on matters relating to health. This is a useful enough function in its way, but we venture to think that the counsels of the oracle would carry more weight if the name were not revealed. *Omne ignotum pro magnifico.* This applies to the other medical preachers who of late years have taken the newspaper for their pulpit. Their number seems to be increasing; at any rate names previously unknown to us have recently appeared as those of men to whom the newspaper reader may look for light. In *Black and White* of November 30th, Mr. Raymond Blathwayt relates an interview with a Dr. Albert Wilson. It is adorned with a portrait under which Dr. Wilson is described as "one whose re-"searches upon the subject of mental development and "disease have given astonishing results." We are not in a position to say whether they have astonished any one besides Mr. Blathwayt, for we had not heard of them or their discoverer before. The interviewer found Dr. Wilson "seated at a table strewn with the photo-"graphs of the most terrible types of degenerates, and "with photographs not only of their own brains but also "of the brains of animals besides (*sic*) which theirs sank "into insignificance." Just what Mr. Blathwayt thinks he means by this statement we need not pause to inquire. It will be more interesting to the medical world to learn that Dr. Wilson "is shortly publishing the result "of his researches into the brain which he has carried "on for the last twenty years." In the meantime he gave Mr. Blathwayt a brief discourse on crime and the brain of the criminal which shows that Dr. Bernard Hollander will have to look to his laurels as the popular exponent of this particular subject. Of further remarks of Dr. Wilson on the soul nothing more need be said than that his researches have, in his own opinion, "helped to demonstrate both the existence of the soul, "and the possibility and probability of its continued "existence after death." This will, perhaps, bring comfort to many who are vexed by doubt as to a future state. Other doctors discuss various questions in the newspapers, a departure from the traditions of the profession which all who have a proper sense of its honour and dignity must deplore. But the interview and the signed article are as nothing compared with the appearance of an extract from a book by a member of the medical profession as a whole-page advertisement. In the *Strand Magazine* for October, 1907, there was a page in which the merits of a preparation much advertised as a food were vaunted in what purported to be a quotation from a work entitled *The Will to Do*, by C. W. Saleeby, M.D., F.R.S.E. At the foot of the second column the reader was informed that "the above is from "an engrossing booklet from the gifted pen of this well-"known medical author." An offer is made to send the book post free on application to a certain quarter, and an intimation is added that the substance in question can now be obtained "at all chemists." In the middle of the page is a portrait of the gifted one himself with all the mystic wisdom of the East looking out of his lustrous eyes. Dr. Saleeby states that he was asked to express his opinion on the patent food, with which, we gather, his book is to be given away, and we must congratulate him on the success with which he has caught the style of the writers employed by vendors of proprietary remedies and other things made, like the razors of which Peter Pindar sings, "to sell." We think these enterprising tradesmen are also to be congratulated, for it is not every day they can secure so "gifted a pen," and one hall-marked with the M.D. of a famous university and the Fellowship of the Royal Society of Edinburgh, to puff their wares.

REMOVAL OF ANOTHER M.O.H.

At a recent meeting of the Winterton Urban District Council Dr. Baker, the Medical Officer of Health for the district, in presenting a report criticizing the action of the council with regard to the drainage, observed that those who were in favour of cesspools instead of proper drainage were either 150 years behind the times, or very ignorant. The *Grimsby Telegraph*, in its report of the meeting, states that this plain speaking was hotly resented by a section of the council, who, at the next meeting, retaliated by refusing to re-elect Dr. Baker. The re-election of Dr. Baker was moved by the chairman and seconded by Mr. Waddingham, a farmer in the district, who had represented the ratepayers for sixteen years, and was formerly chairman. Mr. Waddingham said that Dr. Baker had always had the interests of the town at heart, and had done his duty; the incumbent of such an office was bound to hit some one, and Dr. Baker did not mince matters, but had performed his duties in a straightforward manner. An amendment was moved that Dr. Baker should not be re-elected, and this was carried by one vote. Some conversation then took place with regard to certain temporary cesspools which one member of the council had made, and subsequently Mr. Waddingham retired, stating that he would not be a party to transacting the business of the council as it had been transacted during the past fifteen months. Dr. Baker subsequently attended the meeting to report on a well which had been found to be polluted from a neighbouring cesspool; the well had been cleaned out and the cesspool filled in, but in reply to the chairman, Dr. Baker expressed the opinion that the water had been contaminated for some time and that the soil around it for some depth must be saturated; he did not think it ought to be used for a year. The action of the council in refusing to reappoint Dr. Baker is a striking illustration of the kind of treatment which a conscientious medical officer of health may receive from his council, and we hope the case may have the early attention of the Local Government Board. The clerk to the council explained that the Local Government Board would require reasons when it was informed of the refusal of the council to reappoint Dr. Baker, but the leader of the opposition declined to state his reasons until required to do so. This seems to be a proper case for a thorough inquiry by the Local Government Board, and we hope that the Board will not rest satisfied by merely addressing a letter to the council asking for its explanation, but will send one of its medical inspectors to make a thorough inquiry on the spot. If such an inquiry is not made it will become a serious matter for

the consideration of the profession whether any member of it can with propriety accept the appointment should the Local Government Board permit it to be advertised.

THE SANITARY CONDITION OF HAWARDEN RURAL DISTRICT.

IT is impossible to speak of Hawarden without recalling that it was in this charming portion of Flintshire that the late Mr. Gladstone spent the greater portion of his long life. During the latter half of the last century the district was visited by some of the greatest statesmen and administrators of the day, so that it would be quite fitting to expect the administration of local affairs to be above the average of other places. This anticipation receives a rude shock upon reading the report of Dr. J. Spencer Low, one of the medical inspectors of the Local Government Board, which has just been issued. The story which Dr. Low relates discloses an ineptitude on the part of the members of the Hawarden Rural District Council, and an inability on their part fully to realize their responsibilities, which is most difficult to understand. The district has a population approaching 20,000 persons, and an area of over 30,000 acres, and the custom, which is now being everywhere abandoned as unsatisfactory, of appointing as medical officers of health the Poor-law medical officers was continued until 1902, when one of the medical officers died. The council in applying for the sanction of the Local Government Board to an interim appointment for a few months undertook eventually to appoint one officer for the whole district. This appointment was advertised, but as the salary offered was only £50 per annum no applications were received for it. Instead of increasing the amount, two medical officers were again appointed, each at an annual salary of £20. The action of the Local Government Board at this stage is a little difficult to understand. The Board refused to give the sanction necessary for the repayment of half the salaries by the county council, but gave the sanction required by Section 191 of the Public Health Act, 1875, in those cases where it is proposed to appoint as medical officer of health a Poor-law district medical officer. For four years the latter sanction was annually given, but after Dr. Low's report and the advice contained in it there is every probability that it will now be refused. The only matter to which the Rural District Council appears to have given any really serious attention has reference to certain schemes for the disposal of sewage in different parts of the district. When these are completed the pollution of ditches and watercourses, which was adversely commented upon in 1895 by Dr. Bruce Low, will be very much diminished. The water supply in some parishes is far from satisfactory. In Hope village some persons have to resort to wells from 350 to 900 yards distant, while ditches and rain-water tanks constitute other sources of supply. It is, however, with regard to the provision of accommodation for isolating cases of infectious disease that the rural council has shown itself to be particularly inept. Presumably upon grounds of economy there was erected in 1903 a wood and iron hospital, and another building of similar type but smaller size, intended for the use exclusively of small-pox patients, was erected on the same site in 1906. In 1907 the first and larger building was accidentally burnt down and the nurse-matron and her two patients were only just able to escape in time to the small-pox hospital. Until the end of 1904, the Chester Corporation were willing to receive into their hospital cases of infectious disease from the Hawarden rural district. This arrangement came to an end because the Hawarden Council repudiated their liability to pay for a patient who had been admitted to the Chester Hospital in a dangerous condition, though owing to some misapprehension the usual formal undertaking on the part of the Hawarden authority to pay the usual charges had not been given. As a result of his inspection and inquiries Dr. Low states that there is much need of sufficient isolation accommodation in the district, and quotes the opinion of Dr. E. B. Roberts, the Medical Officer of Health for Division I, in which most of the infectious cases have been notified, to the effect that lack of isolation accommodation has tended to the spread of infection. If the members of the Hawarden Council refuse to give effect to the very reasonable recommendations contained in Dr. Low's report, then public opinion must be at a very low ebb in the district.

DEBATES ON VACCINATION.

IT has long been the boast of the leaders of the anti-vaccination movement that medical men will not, and dare not, meet their champions in public debate. The President of the Northern Counties Union of Anti-vaccination Societies, Mr. J. P. Swan (Southport), in particular has been regarded as the invincible foe before whom medical men tremble, and whose challenges none dare accept. Recent events have deprived Mr. Swan and his friends of any opportunity to renew this boast. Two debates have taken place during the past month in which medical men have met Mr. Swan on public platforms. On November 24th, Dr. A. Moss (West Kirby) encountered Mr. Swan before the West Kirby Debating Society, the question being "Ought Compulsory Vaccination to be Abolished?" On a vote being taken at the close of the debate an overwhelming majority was recorded against Mr. Swan. The December number of the *Vaccination Inquirer*, referring to the vote in a characteristic comment, says of Mr. Swan that he "did "not win in an assembly composed in part of doctors," evidently intending its readers to infer that doctors were present in sufficient numbers to influence the vote. We have ascertained that three doctors were present in an audience of about 200 persons. The second debate took place at Manchester on December 10th, under the auspices of the Physical Health Culture Society. On this occasion Dr. Drury (Halifax), President of the Association of Public Vaccinators, was Mr. Swan's opponent. The question submitted was, "Should the Vaccination Acts be entirely Repealed?" Long before the general discussion was reached it was manifest that the antivaccinators had determined not to allow a repetition of Mr. Swan's downfall. From various parts of the country officials and friends of the League had swooped down to "pack" the audience. Every moment allowed for general discussion was monopolized by them. Dr. Drury evidently created quite a dramatic sensation by the manner in which he attacked the bona fides of his opponents, proving the unmistakably packed character of the assembly, and establishing beyond doubt that Mr. Swan had not been content to confine himself to his own part of the debate, but had also sought to control and guide the general discussion. A sheet of type-written questions handed unwittingly by a member of the audience to Dr. Drury disclosed the fact that it had been prepared by Mr. Swan himself, as it was signed by him, and contained a comment in his handwriting. Dr. Drury's protest that questions propounded in this manner, and not bearing on any point raised by himself or his opponent, might properly be ignored, was received with applause. His vigorous denunciation of the tricks that had been played upon him appears to have had a marked effect on the assembly, and a suggestion from the Chair, that no vote should be taken, met with immediate and undisputed approval. The crushing

defeat of Mr. Swan at West Kirby in a bona-fide debate, and his failure to obtain a sort of automatic vote in his favour at Manchester—which his friends would have known how to use—may perhaps for the present satisfy his craving for public disputation. In our issue of April 6th, 1907, we welcomed Mr. J. P. Swan "as a useful witness against the cause which he pro-"fesses to champion," and we ventured to recommend to him the study of a treatise on logic. Reports of the essay—the same one served the two purposes—which Mr. Swan read at West Kirby and Manchester on the occasion of the two debates abundantly confirm our previously expressed opinion. The study, however, of a little elementary logic if undertaken does not appear to have "taken." Perhaps Mr. Swan is "unsusceptible" or has a conscientious objection to the use of logic when dealing with this subject. The difficulty in finding medical men willing to meet Mr. Swan in debate will not be diminished by the incidents mentioned, and members of the profession will hesitate more than ever to be drawn into such exhibitions as the debate in Manchester, which, however, serves the useful purpose of demonstrating that medical men who decline will do so with ample justification.

TINNING OF METAL.[1]

The Special Report on Dangerous or Injurious Processes in the Coating of Metal with Lead or a Mixture of Lead and Tin, issued by the Home Office, is supplementary to another presented to the Chief Inspector of Factories in 1902, which dealt more with the enamelling of metals than with tinning. As in the tinning of metals, the number of cases of plumbism within the last few years has increased. The duty of making an inquiry so as to ascertain what processes in the tinning of metals are injurious, and what regulations are further required to render the trade more healthy, was entrusted to Miss A. M. Anderson, His Majesty's Principal Lady Inspector of Factories, and Dr. Legge. Several experiments which were found to be necessary were carried out by Dr. Thorpe, of the Government Laboratory, and by Mr. G. E. Duckering, of the Factory Department. The result of this combination of labour is a pretty complete report upon a matter which had been only partially covered by previous inquiries. In what is called the "tinning of hollow ware" the interior of vessels is covered by an alloy of metals in a molten state. The alloy is lead and tin. The interior of the ware thus treated is protected against the action of water and acids, etc. Tin is only slightly tarnished by exposure to the air, and very little by contact with acids. It therefore forms a very useful covering for iron. Lead tarnishes slowly in air, and owing to its cheapness and efficiency an alloy of tin and lead is usually resorted to. An alloy of two parts of tin and one of lead melts at a lower temperature than either of these metals separately. When *tin* plates are spoken of iron plates coated with tin only are meant; when coated with an alloy of lead and tin they are known as *terne* plates, and with zinc only as *galvanized* plates. In the Report the term "tinning" refers to the application of lead and tin. Before there can be any satisfactory union of the coating metal and the metal to be coated fluxes must be used, in order to modify the effect of the surface tension in the coating metal and to render the conditions favourable for the union of the alloy and the coated metal. One of the fluxes in common use is sal ammoniac. In 1893, when a Departmental Committee reported to the Home Secretary on the tinning of hollow-ware, an alloy of 60 per cent. of lead and 40 of tin was being used, and in consequence frequent instances of plumbism, both in the tinners and also in persons who used the tinned ware for culinary purposes, were reported. Owing to the absence of vapours from the plates after their removal from the lead and tin bath, and the use of the dry method of burnishing the plates by bran or meal, lead poisoning is not often met with in terne-plate makers. On the other hand, in the fumes given off by hollow-ware after it has been tinned and during the act of wiping the interior with tow there is a considerable quantity of lead, to inhalation of which must be attributed much of the plumbism from which tinners of hollow-ware suffer. In the fumes above the tinning bath Duckering found considerable quantities of lead. His experiments leave no doubt, therefore, as to this as one of the sources of plumbism. The hands of the workmen, too, are brought much into contact with soluble lead compounds. For the four years ending 1906 there were reported to the Home Office 35 cases of plumbism in tinners of hollow ware, as against 29 for the previous four years. The lead poisoning that is met with in tinners is of rather a severe type. While female workers are liable to recurrent attacks of plumbism, they are not so liable as women in some other lead industries to encephalopathy. The average age of the women attacked was 18½ years, and of the men 35 years. The framers of the report recommend that no lead shall be used in the tinning of metal, that no female shall be employed in dipping or wiping, and that no person under 16 years of age shall be employed in tinning processes. It is recommended, too, that tinning baths shall be enclosed and provided with exhaust draughts to prevent the fumes entering the workshop. The other recommendations, which are all equally desirable, refer to the provision of washing accommodation and to medical inspection of the workers once every three months, with power of suspension. If these recommendations are put into force they will do much to remove from the tinning of hollow-ware what has hitherto been one of its scourges—plumbism.

[1] Special Report on Dangerous or Injurious Processes in the Coating of Metal with Lead or a Mixture of Lead and Tin. By Miss A. M. Anderson, T. M. Legge, M.D., and G. Elmhirst Duckering, all of the Factory Department, Home Office. Wyman and Sons, Fetter Lane, E.C. 1s.

INFLUENCE OF PATERNAL PLUMBISM.

That women workers in lead very frequently miscarry is well known, and lead has been detected in the fetus after abortion, but there is some evidence that plumbism in the father may result in a series of miscarriages in the wife. Professor Brouardel, when giving evidence before a Government commission on lead poisoning amongst house-painters, related the case of a man suffering from chronic lead poisoning who was treated by Pinard. The man's wife miscarried five times in succession. She became pregnant for the sixth time, and was delivered at term of a well-formed healthy infant. On inquiry she cynically admitted that she had grown tired of miscarrying, and had therefore chosen a healthy man for a change, with results satisfactory to herself, who had always longed to be a mother. Professor Oui of Lille[1] quotes Brouardel's remarkable evidence in relation to a similar case in his own hospital practice. He was consulted by a woman, aged 38, in the seventh month of pregnancy, who complained that for three weeks she had not felt the movements of the child. She had borne several dead children, but on all previous occasions they had been speedily expelled, and she was growing alarmed about the retention of the fetus so long after its death. M. Oui found that the patient's diagnosis was quite correct, and was able to obtain a very instructive clinical history, which he publishes in full. The woman's husband, 41 years of age, had been employed in stereotyping at a large printing establishment at Lille since 1890. At that date

[1] Influence du saturnisme paternel sur la grossesse et le produit de conception, *Annales de Gynéc. et d'Obstét.*, August, 1907, p. 495.

he was the father of two living children, the first by his first wife, the other by his second, Dr. Oui's patient. The latter, after the husband had become a stereotyper, bore to him three children which all died in early infancy. Then, in 1896, he began to suffer from lead colic. After that date his wife became pregnant no less than seven times, and on each occasion a dead and macerated fetus was expelled. The wife showed no signs of syphilis, and although Dr. Oui admits that he was not able to examine the husband, it appeared that he was a sober man free from vices who had never been subject to any other illness besides lead colic. Dr. Oui quotes three theses which demonstrate the evil effects of paternal lead poisoning on the fetus, and refers to the statement made last year by Dr. Verhaeghe of Lille, to the effect that no less than 22·91 per cent. of infants begotten by house-painters were born dead. Stereotyping, though less unhealthy than painting, exposes those who work at it to lead-poisoning, and at Lille printers in other departments of their calling are far more free from this evil.

THE BROWN DOG.

IT is stated by the *Daily Mail* that the authorities of University College have decided to take counsel's opinion upon the whole of the facts of the Brown Dog Memorial at Battersea. We do not know if this statement is accurate, but if it is we cannot help thinking that such a step might with advantage have been taken when the statue was first put up. We have a notion that the afflicted friends of the Brown Dog were persuaded to make some alteration in the inscription before its statue was added to the attractions of Battersea. Of this, however, we are not sure. What is certain is that the work of art has, for reasons not very clear to us, suddenly become an offence to the feelings of a number of young men who call themselves medical students, and that these feelings have found vent in "attacks" on the statue itself, and disorderly behaviour in the streets. We have already more than once expressed our regret that this should have occurred, and this week we have further to deplore that any students of medicine should think it worth while to try to drown the somewhat vixenish oratory of Miss Lind-af-Hageby. In this case the method applied in the *Taming of the Shrew* is a mistake; the lady would probably not talk if those whom she denounces with so fine a feeling of human fellowship paid no heed to her. But public order must be maintained, and we call on all earnest medical students to refrain from proceedings foolish in themselves, and calculated to bring discredit on the profession to which they aspire to belong. On the other hand, the fact should be taken into account that the Brown Dog statue, with its provocative inscription, is a standing incitement to breach of the peace. We are glad to see, therefore, that a member of the Battersea Town Council has given notice of the following motion: "That as a matter of good sense and "good taste and law and order, the un-English, libellous "and provocative inscription on the 'Little Brown Dog' "Memorial be removed." The motion will be discussed at the next meeting of the Council, and we hope that good sense will prevail among the members, and that the inscription which, if not libellous in a strict legal sense, serves to convey a wrong impression, will be erased.

ARRANGEMENT WITH SPECIALISTS.

THE Council of the Benevolent Fund of the National Union of Teachers has instituted, we have no doubt in perfect good faith and with the best intentions, a system of arranging to obtain the opinions of specialists for its members, which, as is pointed out in the resolutions of the South Wales and Monmouthshire Branch, printed in the SUPPLEMENT of this week, is clearly open to serious objection. The arrangement, which it appears has been in force for some years in certain centres, is that a list of specialists willing to see members of the fund at a reduced fee is kept at the central office, and a member desiring to consult a specialist is given the private card of the General Secretary of the Fund; this is presented to the specialist, who makes an appointment. Care appears to have been taken to prevent anything savouring of advertising, and it is claimed that the arrangement does not interfere with the ordinary relations between specialists and general practitioners. Judging from the rules under which the system is administered, we cannot think that the risk of such interference is obviated; on the contrary, the rules appear to make no provision for a consultation in the proper sense of the word, that is to say, for a meeting between the ordinary medical attendant of the individual and the consulting specialist. We believe that the profession generally will agree with the view expressed by the consultants in Cardiff to the effect that it is inadvisable to enter into a specific undertaking of the kind contemplated, and that the question of abatement of fees should be determined by the consideration of the circumstances of the particular case, and should be arranged through the general practitioner in attendance; this is the only sound basis upon which consultations can be adjusted. As to the abatement of fees which seems to be the main object of the scheme we can only say that in our judgement and experience no scheme of the kind is in the least necessary, since consultants and specialists will, on the advice of a general practitioner and on reasonable cause being shown, willingly meet the circumstances of any particular case.

AMERICAN STUDENTS IN GERMAN UNIVERSITIES.

FOR many years the German Universities were looked upon as finishing schools by young American graduates who aspired to emerge from the common ruck, but for some reason or other, there has lately been a great "slump" in the number of American students in Germany. According to the *Medical Record*, the number of American students at the University of Berlin has fallen to the smallest figure on record. Only 68 men and 27 women from America are enrolled on the University books, as compared with a total of more than 200 three years ago, and more than 400 ten years ago. A similar state of affairs is said to exist in Heidelberg, Göttingen, Jena, Leipzig, Halle, and other prominent Universities.

ALCOHOLIC PATENT MEDICINES.

ACCORDING to the *St. Louis Medical Review*, the United States Government has definitely decided that it will begin a systematic suppression of the sale of patent medicines, essences, extracts, and bitters, which are used as beverages in parts of the country. The Commissioner of Internal Revenue has prepared a set of special instructions for collectors and revenue agents, and in future it will be difficult in the United States to buy patent medicines which have such a large percentage of alcohol in them that their strictly medicinal qualities are lost sight of. The action of the department is the outcome of the more general sale of these patent preparations in parts of the country where there are strict prohibition laws.

AT a conference of health officers of the city of Chicago, its suburbs, and the towns and cities within a radius of 50 miles, held recently to consider the need of practical co-operation, it was resolved to establish a "health clearing house" for the district which would receive the daily returns of infectious diseases and other matters affecting the public health. This central office will immediately forward information of importance to the associated boards of health.

Manchester and Salford.

The Notification of Births Act.

The Manchester City Council has shown itself far more cosmopolitan in its views than its Sanitary Committee in considering the Notification of Births Act. Several weeks ago a deputation waited on the Sanitary Committee from the joint Divisions of Manchester and Salford, and the Chairman of the Committee promised that careful consideration should be given to the arguments against adoption of the Act. Nevertheless, the Committee lost little time in agreeing to recommend the Council to adopt the Act. On December 4th, when the matter came before the full Council, Councillor Dr. Skinner, who is the President of the Medical Guild, moved that the resolution of the Committee be referred back for further consideration. Such, at any rate, is the record of the proposition, though there would seem to be some doubt whether the Council did not intend a still stronger disagreement with the Sanitary Committee. In any case, the Council, by 58 votes to 36, showed that it was not in favour of the Act as it stands at present.

Dr. Skinner's arguments were mainly that the proper persons to make the notification were the parents, and nothing but laziness or apathy prevented the parents discharging their duty. To remove this responsibility from the person who had most to do with the care and bringing up of the children was not the best way to prevent infant mortality. The medical profession were unanimous, not against the Act, because they accepted the principle of it, but against a duty being thrust upon them which belonged to the parents of the child.

Councillor Dr. Chapman, in seconding the motion, said that the deputation that waited on the Sanitary Committee was representative of the unanimous opinion of the medical profession of Manchester, Salford, and neighbourhood. There was not a single dissentient voice in the whole of the profession, except that of their own medical officer of health. The Sanitary Committee, he declared, had given the subject no consideration whatever, and it was a great injustice and hardship on the profession that they should be penalized for not doing what was a civic duty of other persons.

One cannot help feeling that there is a history behind Dr. Chapman's remarks. He was too honourable to divulge the proceedings in the Sanitary Committee of which he is a member, but if his two statements are put together—namely, that the medical officer of health was in favour of the Act as it stands being adopted, and that the committee gave it no consideration whatever—the inference is inevitable that the influence of the medical officer of health with the committee is very great. This is as it ought to be as a general rule, and the profession in Manchester has confidence that Dr. Niven's aim was the noble aim of lessening infant mortality. He may rest assured that Manchester medical men, and not least among them Dr. Skinner and Dr. Chapman, will not fail to give him all the assistance in their power towards this object, though they have opposed him strongly on this occasion. Discussions are already going on as to the best way to prevent the loss of any benefits that the Act might have brought, and if the Sanitary Committee and its medical officer would only take the profession more into their confidence they would find that medical men are neither so selfish nor so void of civic loyalty as is sometimes represented.

Factory Surgeons and their Critics.

A somewhat lengthy correspondence is now going on in the *Manchester Guardian* on the Physical Fitness of Children in the Mill. The correspondence began with a letter from a school attendance officer, who complained of the superficial character of the examination to which children and young persons are subjected by the factory certifying surgeons before they are allowed to work in mills. It appears that though 390,869 examinations were made by the certifying surgeons during the year, there were only 3,200 rejections on medical grounds, or about ¾ per cent.; while conditional certificates—that is, certificates permitting the child to be employed only in certain kinds of work—were given only in 800 cases. Hip disease, spinal disease, heart disease, epilepsy, phthisis, etc., were among the diseases that only caused partial incapacity. The *Guardian*, in commenting on this, said:

> It is obvious that the certifying surgeon is not difficult to satisfy. There are some reasons why he—the surgeon—should put rather less than full zeal into his work. The fees for examination are excessively low, and under the Act of 1901 the surgeon who refuses a certificate can in every case be required to give his reasons in writing. As the average number examined by each last year amounted to 200, a rigid examination and a high standard would make demands on the surgeon's time out of all proportion to his emoluments. In other words, we have arranged the law so that it cannot be effective unless the cost of administering it is borne, not by the Government or the factory owner or the parent, but by the medical officer. If we are in earnest in keeping even diseased and feeble children out of the industrial machine, here is a reform whose necessity is indisputable.

If we rightly understand this, the *Guardian* thinks that a higher fee ought to be paid to the certifying surgeon. But more than that is involved in the passage quoted, for in it medical examinations are regarded as commercial commodities, their quality varying with the price paid for them. Exactly the same may be said of the paltry fees offered by some of the smaller insurance societies, the fee paid by the Shipping Federation, the 3s. a year sick clubs, the sixpenny doctor, and so on—small fee, slight attention; larger fee, better attention; the value received no more than the value paid. Now, no amount of virtuous indignation on the part of medical men will get rid of the fact that most men will not devote the same amount of time to an examination for which they are paid only sixpence as they would if they were paid a guinea, and, what is more, no sensible business man would expect it. Nevertheless, there is a much higher point of view, which no doubt the *Guardian* would recognize. For the wares that the medical man deals in are human lives. And if it were proved that a doctor were careless of the lives entrusted to him, simply because he received a miserable pittance for his trouble, he would deserve the execration of humanity, in spite of his bare commercial rectitude. The unfortunate thing is that the public, or rather a part of it which the *Guardian* would condemn, knowing well that conscience, not mere commercial practice, rules the profession, is not above taking advantage of it, and exploiting it to the utmost extent. The factory surgeons have to decide whether a youth is to be allowed to earn his living in any workshop he likes to go to, or whether he shall be handicapped by being confined in his choice of employment. To confine him is to limit his means of earning a living, and a physical disability which would be quite enough to excuse attendance at school for a time would not always justify the factory surgeon in limiting the means of earning a living. Such a remedy would be worse than the disease. The fact that only 800 conditional certificates have been issued in the year would seem to prove, not that the surgeons were careless in their work, but that they are fearful of interfering too much with the youths' scope of employment, which is all too limited in any case.

Birmingham.

Medical Students' Dinner.

The annual dinner in connexion with the Medical School of the University of Birmingham was held at the Grand Hotel on December 10th. The president, Dr. J. W. Russell, was in the chair, and the chief guests were Dr. W. Hale White, Dr. William Wright, and Sir Alexander Kennedy, F.R.S. (Warden of the Guild of Undergraduates). There were present Sir James Sawyer. Professor Gilbert Barling, Professor A. H. Carter, Professor Jordan Lloyd, Dr. Richards, Dr. Malins, Dr. Priestley Smith, and many others. About 120 sat down to dinner and spent a most enjoyable evening. The toast of the medical school was proposed by Dr. Hale White and responded to by Professor Gilbert Barling (Dean of the Faculty of Medicine), and Mr. J. Dale (Hon. Secretary). Professor A. H. Carter proposed the toast of the guests, which was responded to by Sir Alexander Kennedy and Dr. William Wright. The health of the President was proposed by Dr. E. Rickards. Between the toasts there were pianoforte solos by Mr. Bertram A. Lloyd, and songs by Mr. G. L. Herbert and Dr. F. N. Walsh.

Liverpool.

MEDICAL SERVICE FOR THE TERRITORIAL ARMY.

ON December 10th Sir Alfred Keogh, K.C.B., the Director-General of the Army Medical Staff, addressed a large meeting of medical men at the Town Hall, and placed before it an outline of the scheme by which it is proposed to organize a comprehensive volunteer medical and sanitary staff in connexion with the new territorial force. The Lord Mayor (Dr. Richard Caton) presided. After describing the scheme (which has been fully explained in the BRITISH MEDICAL JOURNAL of November 2nd, p. 1243 et seq.), Sir Alfred Keogh said that he proposed that there should be twenty-three general hospitals at the great educational centres, so that the aid of the most eminent experts in the profession could be obtained; three field ambulances would also be required in each division. For the organization of these Liverpool had great facilities.

The provisional area of which Liverpool is to be the centre—the "Western Divisional Area" of Lancashire—extends eastwards as far as the division of which Manchester is the centre; northwards it includes a portion of Westmorland and Cumberland. It is announced that Mr. Damer Harrisson, Senior Surgeon to the Liverpool Northern Hospital, has been selected for the position of Principal Medical Officer to the district. Mr. Harrisson is Surgeon-Lieutenant-Colonel in the Lancashire Hussars (Imperial Yeomanry), a corps with which he has been associated for twenty-one years. This appointment will give great satisfaction to his many friends in the county.

West Yorkshire.

BRADFORD AND THE NOTIFICATION OF BIRTHS ACT.

IN a recent issue it was stated that a deputation from the Bradford Division had been appointed to interview the Corporation Health Committee in connexion with the proposed adoption of this Act in Bradford. The deputation was received by the Health Committee on December 4th, and placed before its members the feelings of the local profession as expressed at the Divisional meeting. In a written reply from the Town Clerk it was stated:

> The Corporation have no power to vary the above Act when adopted, but they are willing to arrange for notification by means of letter cards instead of by open postcards, and they propose to carry out the provisions of the Act in the most sympathetic manner in their power.

This reply did not meet the wishes of the profession of Bradford, and a further meeting was held on December 9th, when it was determined to send a letter of protest to the meeting of the City Council on the following day. In this letter a short history was given of the method by which the Act had been placed on the Statute Book, and it was shown that the medical profession, though supporting the principle of the Bill, namely, the attempt to diminish infantile mortality, had consistently opposed the policy of making it obligatory on its members to notify under the Act for several reasons:

> 1. It would be a breach of professional secrecy—a duty to his patient undertaken by every right-minded doctor, and on several occasions enforced with penalties by juries on medical men who had shown any possible indiscretion. 2. Notification is the duty of the parent; it is a civic duty. 3. Medical men are to be penalized for what is a civil duty of the friends, and not a professional obligation.

It was suggested that the adoption of the Act should be postponed, and that a few members of the medical profession and the authorities should discuss the matter and come to an arrangement. We regret that the City Council did not agree to these representations, as it finally determined, after an amendment had been proposed to postpone its adoption, to take the necessary steps for bringing the Act into operation in the city.

ST. CATHERINE'S HOME FOR CANCER, BRADFORD.

The annual meeting of this admirable institution was held on December 11th, the Lord Mayor presiding. In the report it was stated that 42 patients had been admitted during the year, 28 being cancer cases. The deaths had numbered 19. The average of occupied beds was 23.4, which meant that the home was practically full all the year. Differing from most other Bradford charities, the home is nearly always able to pay its way. The income from all sources for 1907 was £1,300 13s. 1d., and the gross expenditure £1,227 8s. 6d. The average cost per occupied bed was £50 14s. 8d. The home has the right to take a certain number of incurable cases other than cancer, but cancer cases have always the first right to admission.

HALIFAX INFIRMARY CENTENARY.

The centenary of the Halifax Royal Infirmary has recently been celebrated by a series of balls, in which all the leading people of the town have taken part. Some further celebrations are to take place next year in the form of a military tournament. Of course, all these efforts are being utilized for the important purpose of raising money for the support of the infirmary. There is some doubt whether the original dispensary was founded in 1807 or 1808, so that it appears quite appropriate that the festivities should be spread over this year and the next. The dispensary was carried on for about twenty-five years, but the first provision for in-patients was not made until 1825. The infirmary in Harrison Road was opened in 1838, enlargements being afterwards made, and in 1891 there were 100 beds. The present infirmary, which cost £100,000, was opened in 1896, and has accommodation for 150 beds.

Scotland.

TERRITORIAL ARMY MEDICAL CORPS.

THE Lord Provost presided over a meeting of Volunteer medical officers and others held in the Senate Room of the University of Edinburgh on December 13th, when Sir Alfred Keogh described the proposed arrangements for the Territorial Army Medical Corps. In reply to Dr. J. D. Comrie, acting secretary to the Volunteer medical officers of the Lothians district, Sir Alfred Keogh stated that Edinburgh would be asked to provide one general hospital and one field ambulance. The field ambulance would supply its own transport, and the men would be trained by the officer commanding and the officers under him. The ambulance would be raised to the status of a school of instruction, but there would be no officer of the Royal Army Medical Corps attached, though one would be available to attend periodically. As for the grant to be allowed to enable commanding officers to provide suitable head quarters with sufficient storage, Sir Alfred Keogh said the County Associations maintained and administered the units. What they were engaged in doing now was to raise the units for the County Association; because they recognized that as the County Associations consisted for the most part of laymen, the raising of such technical units as medical units could not very well be delegated to them. But when raised they were handed over in the same way as other units. The provision of drill halls was one of the duties of the County Associations, and it was to them the medical officers must look for work of that kind. The territorial associations had nothing to do with training in the case of medical officers; the grant was given to the Director-General, and he distributed it. The ambulance would be required to raise and train the men to be attached to battalions and other units in time of war for water duties, etc., and to train if required the eight men per battalion for other sanitary duties. Sir Alfred Keogh said he would be in favour of allowing present regimental medical officers to remain with their regiments, even if their number should be in excess of the establishment. In reply to a further question as to whether officers of the Territorial Army Medical Corps otherwise specially qualified would be eligible for appointment to the staff of general hospitals, and, if so, whether they would have a preference over other physicians and surgeons of corresponding professional status, Sir Alfred Keogh expressed his concurrence, adding:

> I think the ideal thing for an officer of a general hospital is that as a young man, as a house-surgeon, he should have joined the territorial medical service, and as he worked up his way in the profession he should work his way up in the territorial service. When he became a teacher or professor, then

he could reasonably leave the ambulance and join the general hospitals of the organization. I think his value to the organization would be tenfold increased by the fact that he had military training.

A vote of thanks to Sir Alfred Keogh was moved by Lieutenant-Colonel J. Bruce Ronaldson, seconded by Professor Cunningham, and heartily accorded.

Treatment of Incipient Mental Disease in the Edinburgh Royal Infirmary.

This question still occupies to no inconsiderable extent the attention of Edinburgh practitioners, and the promoters of the proposal certainly display no false modesty or backwardness in their methods of pushing the scheme. Strong donbt is, however, arising as to its practicability. Many cases of severe nervous disorder, of incipient mental disease, can be, and are, treated in the general medical wards of the hospital. But many cases of incipient mental disease are, either in the interests of the patients themselves or of those around them, unsuited for such treatment in a general ward, and it is extremely questionable if the massed treatment of such cases in a separate ward is advisable. It is urged that to make the undertaking successful a miniature asylum would be necessary; the erection and maintenance of this would involve very considerable expenditure, and an increase in the nursing staff, while the avoidance of a certain amount of "stigma" would, in the course of time, be utterly impossible. Incipient mental disease is a nervous disease; the stay of very many cases of nervous disease in a hospital is frequently more a matter of academic and scientific interest than of marked value to the patient, and it would seem certainly not inadvisable nor altogether impracticable that a separate building should be obtained in the city for the care of "nervous" patients.

Scottish Women Graduates and the Franchise.

The Scottish women graduates who claim the right to exercise the parliamentary franchise, and whose claim has been repelled both in the Outer and Inner Houses of the Court of Session at Edinburgh, have now decided to appeal to the House of Lords in the hope of getting these judgements reversed, and are raising funds for this purpose.

Cerebro-spinal Meningitis in Scotland.

The Registrar-General for Scotland reports that in the month of November the number of deaths registered as due to cerebro-spinal meningitis further diminished in quantity; it was 8 less than in the previous month, and less than the number registered in any month since December, 1906. Of the 21 deaths registered, 14 were in Glasgow, 2 in Edinburgh, 2 in Leith, and 1 each in Dundee, Paisley, and Greenock.

A New Sanatorium for Inverness-shire.

Inverness-shire can now boast of two sanatoriums for the treatment of consumption, a private one at Kingussie, one of the highest points on the Highland Railway system, and the other lately opened at Aberchalder, overlooking the Caledonian Canal near Cullachy Locks. This sanatorium has been erected mainly by the efforts of the Hon. Margaret Fraser of Lovat (a sister of Lord Lovat); she is also acting as Honorary Secretary to the committee of ladies and gentlemen who with her have been instrumental in raising funds for the erection of this building which is mainly for the treatment of consumptives unable to pay the fees at private sanatoriums; they are admitted to the benefits of the institution at a nominal charge, and there are also one or two free beds.

Although the institution has only been opened a few weeks eight patients are at present under treatment. The sanatorium is situated about two miles from Aberchalder station. The site, which was favourably reported on by Dr. Philip, of Edinburgh, and the medical officer of health for the county, is about 400 ft. above sea level, and has a southerly exposure. The buildings, which are capable of accommodating twenty-two patients, are well sheltered from the north and east winds by a wooded hill immediately behind. The sanatorium is composed of two separate buildings—the administrative block and the wards for patients. The administrative block is 80 ft. in length, and comprises the medical officer's room, the matron and nurses' rooms, kitchen and kitchen departments, stores and servants' rooms. A large dining room is situated conveniently near the kitchen and wards. The wards are erected on a terrace immediately in front of and below the administrative block. This building is 170 ft. in length and contains six double rooms, four single rooms, two nurses' rooms, a large day room, and in the annexe bath-rooms, lavatories, etc. We understand that the plan of the sanatorium is similar to that of the Keeling Sanatorium in Norfolk. The form is a long narrow building, 11 ft. wide, with alternate approaches to be used according to the direction of the wind. There are 3-ft. eaves on each side. The doors, which are on the casement system, as are the windows, extend from floor to ceiling, and are in two leaves; they are also divided horizontally, the lower part being in wood and the upper part in glass. Owing to the protection afforded by the projecting eaves, the doors can usually be left open, even in the stormiest weather. The doors on the sheltered side, along with the top part on the windward side, can always be left open, ensuring a continuous supply of air directly from outside. There is also a 3-inch opening at the ceiling level, right along both sides of the block, which cannot be closed under any circumstances.

Patients in the sanatorium thus have the advantage of living in the open air while still under shelter. Everything has been done to make the buildings as comfortable as possible. The baths and lavatories are supplied with hot and cold water; the buildings are fitted throughout with electric bells, and lighted with acetylene gas. In addition to the wards proper, which are admirably designed and equipped, there is a wooden shelter of simple and ingenious construction. It is built to accommodate two patients, and the four sides of the building can be opened or closed according to requirements.

This sanatorium will prove of great benefit to the county of Inverness; it will be visited twice a week by Dr. Johnston, Fort Augustus; Dr. MacDonald, medical officer of health for the county, and Dr. Miller, Fort William, will act as consulting physicians.

Ireland.

University Education in Ireland.

Mr. Stephen B. Kellehar, Fellow of Trinity College, and a member of the recent Commission, writes to the *Irish Times* on the subject of Mr. Birrell's new scheme of University education in Ireland. He points out that Trinity College is face to face with a grave decline of students in the University, which the friends of the College cannot view without disquiet. If the proposals recently announced are carried into effect, the decline will become far more rapid. The number of students from Ulster who will go to Trinity College will be very much smaller than it now is, for it may be assumed that the University of Belfast will attract to it the university-going people of Ulster. The new college in Dublin will attract a large number of students. It will be academically controlled; it will contain a large number of Catholics, but its professorships and prizes will be open to all. Drawing its students from two-thirds of the population, it will have four times as many clever boys as Trinity, which will be fed by a diminishing one-sixth. Meanwhile Trinity College, daily losing its influence on Irish life, will prepare its diminishing students for the Church and for the Colonies. The glory of the University of Dublin, in which so many could be made to share, will vanish, and the country, poor in men and poor in money, will have to begin from the beginning to build up the reputation of a new university.

The Attitude of Trinity College.

At a full meeting of the staff of Trinity College, Dublin, summoned by the Provost on Saturday afternoon, December 14th, the following resolution was passed unanimously:

> That, fully realizing the importance of a settlement of the University question, this meeting of the staff of Trinity

College and members of the Academic Council think it undesirable to express any opinion on proposals which have not yet been formulated as a Government Bill, but they think it right to reaffirm the declaration contained in the statement issued by the Executive Committee of the Dublin University Defence Committee in March, 1907, namely:

> Should the Government determine to introduce a measure which, while leaving to Trinity College and the University of Dublin their present independent and unsectarian character, would at the same time be acceptable to our Roman Catholic fellow-countrymen, it would be a matter of supreme satisfaction to all who are interested in higher education in Ireland, and who desire a final settlement of the whole question. We, for our part, have confined ourselves to working out our own solution. We have not thought it our duty either to advocate or oppose any scheme for the satisfaction of the reasonable claims of Roman Catholics which does not interfere with our own development along undenominational lines.

CORRESPONDENCE.

THE REFERENDUM AND THE PROPOSED ROUND-TABLE CONFERENCE.

SIR,—There is a danger, if certain statements that have appeared in your columns are allowed to pass without comment, that the main facts of the situation may be obscured if not inverted.

At the present time, under the Articles of Association (Articles XXII, XXXV, and XXXIX) the Central Council is possessed of no formal veto on the decisions of the Representative Meeting; it has only a limited and strictly-defined duty of Referendum, and its powers are purely executive and administrative. The draft Charter does not propose to curtail these powers and duties. These principles were deliberately embodied in the Constitution at the time of the reorganization before the first Representative Meeting was convened, and in full view of the unsatisfactory conditions which had made reorganization necessary.

An attempt has been made to throw distrust on the Representative Meeting as an irresponsible and hasty body eager to revolutionize the Association, whereas it is in fact the Council which is now attempting to introduce a radical change of our existing Constitution in regard to the Referendum into the draft Charter, and one which is entirely out of harmony with the fundamental clauses of the Charter; further, the Council is taking this course without having given the Representative Meeting an opportunity of considering the proposal or offering an opinion upon it, by means of its powers of Referendum, which have been unduly strained to cover such a purpose. In view of the facts set forth above, it is quite impossible to accept Dr. Crichton's first conclusion—that from the nature of the Council's powers it must possess, or come to possess, a formal veto upon the Representative Meeting; indeed, the intention and fact have for the last five years been exactly the reverse, and experience has shown that so far from the Association having no weight with Parliament or the public, it has, since the establishment of the Representative Meeting, been treated with a consideration and respect which the old Council was unable to command.

Dr. Walker is evidently under a similar misapprehension as to the present powers and duties of the Council, as in the last sentence of his letter of October 26th he exhorts the Divisions to resist the extinction of the Council's veto, which, as has been shown, does not exist; the same is true of Mr. Percy Dunn, while Dr. Hichens seems to be unaware that the proposals of the draft Charter as to the limitations of the Council's powers and the Referendum are nothing new, but are already the law of the Association; it is therefore impossible to speak of the Council being slighted by such proposals.

Indeed the Council as at present constituted, although the government of the Association is not in its hands, is not only indispensable, but fills a most honourable and responsible position in the Association. But the Council is valued, needed, and selected, not so much for its representative character, as on the ground of the high reputation, wide experience, and administrative capacity of its individual members.

It is particularly important that these points should be borne in mind at the present time, when the suggestion is being made that the application for a Charter should be postponed or even dropped altogether with a view to giving the Council a veto on the Representative Meeting, and to make it the dominant body in the Association, because it is clear that that would not be the result of dropping the Charter, but that to secure these ends a subversion of our existing Constitution would also be required, and a return to the pre-reformation conditions. When it is considered that the desirability of securing a Charter has again and again been affirmed, and that the draft of the Charter proper has been approved by both the Representative Body and the Council, after the most careful and protracted consideration, the Association would be stultifying itself in drawing back now. Such delay would seriously imperil one of the main objects for which the Charter is desired, namely, to enable the Colonial Branches to pursue within the Association the objects they have at heart. Our Colonial members have shown clearly that if we do not act with more courage and promptitude in regard to the Charter they may be obliged to separate from the Association and start organizations of their own in which they will have reasonable liberty of action.

It seems evident that no end would be gained and much harm would be done by not pushing on vigorously with our application for a Charter, and no compromise would be satisfactory which did not treat this as essential. Further, if, for the rest, it is thought best not to make changes at this time, the Council on the one hand might withdraw its belated proposals in regard to Ordinance 17*b*, and on the other the changes proposed in the composition of the Council and the Journal and Finance Committee might be left over for the further consideration of the Association after the Charter has been secured. While one may sympathize with efforts at conciliation it must be recognized that at the present stage a round-table conference can effect nothing without doing violence to the Constitution. The time for such action was before the Referendum was determined upon.—I am, etc.,

Hampton Wick, Dec. 11th. R. LANGDON-DOWN.

THE NOTIFICATION OF BIRTHS ACT.

SIR,—The following propositions will, I think, commend themselves to almost every one:

1. Our moral obligations were not laid upon us by Parliament, and Parliament cannot absolve us from them.
2. To notify an illegitimate birth without the mother's consent is a breach of one of those obligations, even though Parliament orders and "privileges" us to commit it.
3. To attempt to wring an unwilling consent to notification from a woman during or within thirty-six hours of delivery would be heartless and might be dangerous; certainly it would not be professional.
4. If it is understood that doctors must notify births certain unfortunate women will be deterred from sending for help until driven by desperation, with grave risk to their lives or future health.
5. Our humanitarian principle is that no sick person shall be deterred from seeking medical aid by fear lest the doctor should betray some secret. Members of a humane profession must not overlook any of these five considerations.
6. Notification by a doctor within thirty-six hours is a very different thing from registration within six weeks. The registrar does not send an official in uniform to call attention to the birth, and within six weeks the mother may be married or buried, or may have had the birth quietly registered and be safe in America or elsewhere with her secret. It is not our concern; our duty is to keep her secret as long as she wishes.
7. There is no analogy between a case of infectious disease and a new-born baby. The former may be a danger to the public, but carries no disgrace to its family. The latter may carry disgrace to its family, but is in no sense a public danger. We are justified in helping to guard the public safety without injuring our patient, but not justified in publishing our patient's disgrace when the public welfare is not in jeopardy. Ought any member of

our profession to make light of this question of "professional confidence" or secrecy? Parliament ought to show very good cause why before calling upon us to ignore it.

8. The Act places medical men and midwives in a position of inferiority to their fellow citizens, in that it would compel them under a penalty to perform a service (over and above the common duties of citizenship) without remuneration. No one else except a convict is so treated by the law, and a new principle is introduced into our legislature, which may have far-reaching consequences in other directions if the precedent is allowed to stand.

9. The Act thus places an indignity on the whole profession, and though only general practitioners will be constantly reminded of the hardship, other members ought not to ignore it.

10. Members of our profession ought to, and generally will, sacrifice themselves a little for the public welfare, but they are certainly not bound to undergo indignity or hardship, unless it can be shown fairly clearly that the public welfare is at stake.

The objects of this Act can be attained quite as surely and more peacefully without subjecting our profession (or the midwives) to any indignity or hardship whatever. It has simply been taken for granted, without any further consideration, that compulsory notification by medical men is necessary, merely on an assumption based on a false analogy. We (here) have heard direct from the lips of the man who so thoughtfully introduced us into the Act exactly how it came about. He knew that prior to 1889 infective disease often escaped notification by the father, and that the duty of notifying was therefore laid on the medical attendant in that year with marked success. Therefore, he said, "let us follow the lines of the Infectious Disease Notification Act (1889)," and no one else (not even certain eminent doctors) seems to have detected the utterly false analogy. A man might plead any of at least ten reasons (some pretty valid) for not notifying scarlatina in his household, whereas he could only plead one of three for neglecting to notify a birth, and each of these three is easily met: (1) Ignorance of the Act—doctors and midwives could and would inform him of his duty at the proper time. (2) Negligence—the health authority could, if it would, soon put a stop to that by a prosecution or two. (3) Objection to official visit—he need not admit the health visitor unless he likes. Number 2 is the real crux, and it is the convenience of the health authorities, not the public welfare, that has been consulted to our detriment. We were placed in the Act under most unfavourable conditions in order to save the health authorities from the trouble, expense, and odium of occasional prosecutions. For the public welfare we might quietly submit to these conditions, but we ought not to be called upon to do so for the mere convenience of anybody.

A fair Act is much more likely to work smoothly and attain its objects than an unfair one, and this Act, made fair by amendment, might soon be almost universally adopted, to the advantage of the whole nation.

It is therefore the duty of all medical men (whatever their position), both to their profession and to the public, to do their best to secure amendment of the Act as early as possible, and to try to influence health authorities to work for amendment rather than to adopt the Act in its present form.—I am, etc.,

Swinton, Manchester, Dec. 15th. J. Price Williams.

Sir,—The advisability of adopting the Notification of Births Act in this city is now under consideration. The benefits to be derived from the Act, as regards lessening infantile mortality, are, I think, undoubted, but what I object to is the proposed method of obtaining the notification, the medical man being brought in as one of those liable for its performance. This is to be done without fee, and neglect to perform this duty within thirty-six hours after birth of child renders one liable to the penalty of a fine. Now I maintain the principle of this is exceedingly objectionable, and if a strong protest is not made, we shall later find that other duties, free from remuneration but not free from responsibility, will be thrust upon us. The State, from their standpoint, made an excellent start in compelling doctors to give death certificates; here, without remuneration, we give not only information, but skilled information, and in so doing, especially in cases of death due to syphilis, chronic alcoholism, etc., we may find we have got into bad odour and have seen the last, not only of deceased but of deceased's friends and relatives.

It is easy for the layman to say: It is so small of the doctors, for the sake of a few paltry shillings or half-crowns, to hamper the working of a good Act. It is not the amount we should make out of paid notifications; this could only be insignificant. It is the principle of the thing which to me is absolutely wrong, namely, being required to give something for nothing, and if you don't do so, being liable to a penalty.

I feel this Act, in its present form, should be strongly resisted by us, not only for our own sakes, but also for the sake of succeeding generations of medical men.—I am, etc.,

Brislington, Bristol, Dec. 9th. C. M. Phillips.

EPSOM COLLEGE FOUNDATION FUND.

Sir,—From time to time the Treasurer of Epsom College has considered it his duty to make a special appeal to every member of the medical profession on behalf of the Foundation attached to the College. I find, however, that such a general appeal has not been made since the year 1898, and it is only the present urgent need of funds that compels me now to follow the practice of my predecessors.

The Foundation of Epsom College gives annuities of £30 each to fifty aged members, or widows of members, of our profession, and provides gratuitously a high-class education, with clothing and maintenance, for fifty necessitous sons of medical men—a sum of £7,000 a year being required for these purposes. The need of help is specially urgent at the present time, for almost all the investments belonging to the General Purposes Fund had to be sold recently in order to meet a heavy outlay on sanitary and drainage works at the College.

I feel justified in making this appeal for two reasons. In the first place, death removes many supporters every year; and as the Council relies almost entirely upon annual subscriptions and donations for the maintenance of the charitable work, it is necessary that fresh supporters should come forward to fill these vacancies. In the second place, the marked improvement in the standard of education generally which has occurred of late has resulted in a material increase in the cost of the Foundation Scholars, hence the Council could not continue to maintain the full number should the annual income from contributions decline.

It is hardly necessary for me to remind you that many members of our profession are unable, owing to their small incomes, to make suitable provision for themselves in the event of prolonged illness or permanent incapacity from ill-health; whilst in the event of their own death their families are too often left very poorly provided for, and sometimes with no provision whatever.

I appeal with confidence to medical men who have not yet supported the Foundation to become annual subscribers, however small the amount of their contributions may be; and, whilst thanking those who have generously rendered assistance in the past, I would ask them to do all in their power toward enabling the Council to continue to maintain the full number of Pensioners and Foundation Scholars. Further, I would urge upon all members of our profession to bring the claims of the Foundation before their well-to-do patients, in view of the fact that so many medical men succumb in early life to diseases or accidents arising in the pursuit of their calling. The present appears to be a suitable opportunity to ask the public to show their appreciation of the work done by the medical profession in the services, in preventive and tropical medicine, and in gratuitous attendance on the poor in hospitals and elsewhere.

I would add in conclusion that this Foundation is sometimes spoken of as a "South of England charity." That this is far from being the case will be seen when I mention that our Pensioners and Foundation Scholars are often elected from distant parts of England, Wales, Scotland, and Ireland, whilst at the present time we have Pensioners residing in France, Western Australia, and South Africa.—I am, etc.,

London, W., Dec. 14th. Henry Morris, Treasurer.

P.S.—In reference to Mr. Griffith C. Wilkin's letter which appeared in the British Medical Journal of

December 14th, I think he hardly draws sufficient distinction between the College, which is self-supporting on its low scale of charges, and the Foundation attached to the College, which maintains fifty pensioners and fifty Foundation scholars. I am now appealing for contributions in aid of the Foundation.

December 17th. H. M.

PLEURAL EFFUSION.

SIR,—In your issue of to-day's date Dr. Samways reopens a controversy which took place between him and myself in the pages of the BRITISH MEDICAL JOURNAL in 1904; but as he seems to prefer the *suppressio veri et suggestio falsi* to a clear statement, I shall now put your readers in possession of the facts in chronological order.

In your issue of March 19th, 1904, I published a lecture on the treatment of *serous* effusions, which included the introduction of *air* into the *pleural* and *peritoneal* cavities. This was original so far as I was concerned.

In your issue of April 16th, 1904, Dr. Samways stated that my new method was "old history abroad"; but in support of this "old history" he only quoted one case where air had been introduced to the pleural cavity. Professor Dieulafoy, in his well-known *Manuel de Pathologie Interne*, Tome I, Ed. viii, p. 475, wrote in 1895:

Dans un cas de pyopneumothorax, M. Potain a obtenu un succès éclatant à la suite d'injections pleurales d'air stérilisé (communic. à l'Acad. de Médecine, 24 Avril, 1888). J'ai en l'occasion de traiter un pyopneumothorax tuberculeux par des ponctions multiples, à chaque ponction on ne retirait qu'une cinquantaine de grammes de liquide, et on pratiquait en suite une injection intrapleurale avec solution de sublimé (*Revue de Médecine*, 10 Février, 1892).

He also said that I advocated "the injection of air, etc., into the pleura and pericardium after tapping," although I have never produced a *pneumopericardium*, and I probably never shall, as I think I know a better treatment for the *pericardium*. In the BRITISH MEDICAL JOURNAL, April 23rd, 1904, I said:

I am very much obliged to Dr. Samways for drawing my attention to the fact that in a case of pyopneumothorax M. Potain had obtained a brilliant success following injections into the pleura of sterilized air, and that Professor Dieulafoy had treated a case of tuberculous pyopneumothorax by multiple tappings, and at each tapping withdrew 50 grams of the liquid, and then gave an intrapleural injection of a solution of sublimate; but what all this has got to do with my treatment of *serous* effusions I am rather puzzled to find out. If Dr. Samways had read my lecture with care, he would have discovered that it had nothing to do with pyopneumothorax, and that the injection of sterile air was only a supplemental part of my new method of treating serous effusions. Had I been delivering a lecture on the treatment of pyopneumothorax, and had I known of the methods of Drs. Potain and Dieulafoy I should have condemned both. What would any surgeon say of such treatment? For my own part, I have not the slightest intention of trying to remove the treatment of either an empyema or a pyopneumothorax from the domain of the surgeon. The proper treatment of an abscess, wherever situated, is to lay it open, and the best way of introducing air into the pleural cavity, when there is pus in it, is through a free incision. When I find "old history abroad" confounding the treatment of pleural effusion with that of pyopneumothorax, I am not surprised that medicine should remain in some men's minds a matter of irrelevant history, while surgery is advancing by leaps and bounds. Dr. Samways has evidently had *no personal experience in any part of the treatment*, yet he indulgently thinks, "with Dr. Barr, it (the introduction of air) might more commonly be profitably applied."

In my Bradshaw Lecture [1] I dealt with the treatment of serous effusion into the pleural cavity, and incidentally with that of empyema, but I did not touch upon pyopneumothorax. As a matter of history I gave the name of every one I could find who had introduced air into the pleural sac as a part of treatment, going back to the beginning of last century when Dr. Carson and Mr. Robert Bickersteth of this city produced artificial pneumothorax in the treatment of phthisis pulmonalis. As part of this history I referred to the case of M. Potain, but it was in no way relevant to my lecture. My views on the treatment of empyema have improved since 1904, and I am inclined to think that if I were operating on such cases I could soon improve the technique. Regarding pyopneumothorax, I may remark that the case recorded by M. Potain occurred in 1888, and I have not heard of any second successful case thus treated. It is quite possible that in a tuberculous case where the lung was so much involved that it could not expand so as to fill up the actual cavity, the repeated introduction of filtered air or oxygen, after removal of the purulent liquid, might do good, though it failed in the only case in which I had an opportunity of trying it. I think that such an operation as that performed by Sir William Macewen in a celebrated case recorded in his Cavendish Lecture would more likely be attended with success.

In the BRITISH MEDICAL JOURNAL of December 14th, 1907, to which your readers can now refer, Dr. Samways mixes up pyopneumothorax, serous effusion into the pleura, and empyema without any regard to the differences of treatment required. If "the introduction of sterilized air after tapping was well known on the Continent," why did he not quote something more than a mere case of pyopneumothorax? In France, prior to 1904, I have only found recorded, in addition to the case of M. Potain, two cases of chronic pleurisy thus successfully treated by MM. Vaquez et Quiserne. Since then there has been another case in 1906 by M. Dufour and M. Foix. None in Mentone. All other cases that I have come across are referred to in my Bradshaw Lecture. He quotes some of my remarks about the surgeons' ideas as to the treatment of empyema, as though those remarks had anything more to do with this question of the introduction of sterile air and oxygen into closed serous cavities than "the flowers that bloom in the spring." In the treatment of empyema I recommend free drainage in a dependent position, a free incision—even the removal of a piece of rib; but as far as possible *I try to keep the air out*. He finally concludes that the "convolutions of the human brain are very wonderful"; and I think that every lover of truth will agree with me that the convolution for accuracy is very poorly developed in his brain.—I am, etc.,

Liverpool, Dec. 14th. JAMES BARR.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

SIR,—May I be permitted to endorse my appreciation upon the letter of "A Part-Time M.O.H."? He has excellently stated the case of many officers of health who have done so much for the public health of the country, to the detriment of their practices and so a large source in their livelihood. Some part-time medical officers of health are known to have framed their opinions, or at least advice, upon the wishes of the councils they serve and have so passed as very good fellows and most efficient officers—where public health measures have advanced nothing. These the service can well dispense with.

But, Sir, when the service is "rid of such, the greatest argument against fixity of tenure" will not be silenced. When part-time men give up their whole time to the service, fixity will be wanted more than ever. It is a scandal that the provincial medical officers of health should not be on the same footing of fixity as the metropolitan officers are, and that the former are continued on the footing of domestic servants.—I am, etc.,

December 16th. ANOTHER PART-TIME M.O.H.

THE INHERITANCE OF PULMONARY TUBERCULOSIS.

SIR,—It is almost idle to reply to Messrs. Pope and Brown's further criticisms, because they merely consist in a reiteration of their first assertions, supplemented by statistics which have no real bearing on the points under discussion.* Still, the matter is of such great importance that I venture once more to trouble you. My critics commence by gratuitously correcting the table on page 10 of my memoir on the basis of the special data given on my page 9. Unfortunately for them the table on page 10 is perfectly correct, and naturally does not agree with the data given for the Mendelian results on page 9, for certain pedigrees cannot be used for both purposes. In the first place the Mendelian data require a knowledge of *both* parents and the parental inheritance table does not, and in the second place, there exist always in any data borderland cases, which will be differently estimated when we approach our data twice for different purposes. In this particular case, the difference depended upon the existence

[1] BRITISH MEDICAL JOURNAL, November 9th, 1907.

* It is perhaps unnecessary to state that I do not admit their second contention. I corrected the statement which I made as to the mode in which the table was formed, but I do not allow that the manner of reaching the table was inaccurate.

of cases in which only the history of one parent was known, and the exclusion or inclusion of cases in which a patient of considerable age had tuberculous offspring placed upon the record. The table on page 10 of my memoir is thus "properly" as I gave it, and is not to be corrected as Messrs. Pope and Brown gratuitously suggest.

We now come to the next point, which it seems impossible to make Messrs. Brown and Pope understand. My sample for female histories consists of the following individuals:

Offspring.	Parents.		Totals.
	Tuberculous.	Non-tuberculous.	
Tuberculous	107	509	616
Non-tuberculous ..	207	x	?

This group as it stands is the group I wish to follow. Now let us fix our attention only on these individuals as the basis of our sample. A certain number of the 207 non-tuberculous offspring can pass into the tuberculous or 107 group as they grow older, because many of them are not through the danger zone. This will not alter the number of tuberculous parents belonging to this group. But very few indeed of the 509 will pass into the 107 group, for the parents having offspring of the average age of 25 are reaching the end of the danger zone. That is to say, taking as the basis of our sample the 616 tuberculous individuals, no correction of a sensible kind need be made in the 509 group. Substantially all the correction is in the 107 group. The correction I made was 50 additional cases with completed history arising out of the 207 non-tuberculous offspring. Now let us compare my results with those of the authorities cited by Messrs. Pope and Brown. I found for incomplete histories for 616 cases of parent and offspring 107 cases of tuberculous offspring of tuberculous parent; or in 308 actual instances, since each offspring has two parents, we have 107 parents tuberculous. After correction to make my histories complete, I had 157 parents tuberculous out of 666 cases of parent and offspring, or 157 tuberculous parents to 333 tuberculous individuals. We have accordingly the following table:

Authority.	Nature of Offspring and History.	Number of Tuberculous Parents to 100 Tuberculous Individuals.
Pearson	Tuberculous, incomplete	35
Pearson	Tuberculous complete	47
Dock and Chadbourne	Tuberculous, presumably incomplete	27
Kuthri	Tuberculous, presumably incomplete	25
Fischer	Tuberculous, presumably incomplete	36
Schwarzkopf	Tuberculous, presumably incomplete	36
Buckhardt	Tuberculous, presumably incomplete	37
Pope and Brown	Tuberculous, complete	90 (2nd series)
Pope and Brown	Tuberculous, complete	97 (1st series)
Pope and Brown	Non-tuberculous, complete	47 (2nd series)
Pope and Brown	Non-tuberculous, complete	50 (1st series)

It will be seen that my result is in reasonable accordance with those of the German investigators, but that Messrs. Brown and Pope give values for what they term complete histories which are more than sufficient to make me doubt whether their completed family histories can be looked upon as what they describe them—namely, as "strictly random samples." This result more than justifies my challenge to them to publish their material. They assert that one-quarter of the parents of sound children in the United States are tuberculous, whereas the United States Census shows that only 1 in 9 of the parent population of the United States die of tuberculosis. And the Census return includes the parents of unsound children, of whom nearly 1 in 2 are, according to my critics' data, tuberculous!

I now pass to the second row of my corrected table, which at present stands:

Offspring.	Parents.		Totals.
	Tuberculous.	Non-tuberculous.	
Tuberculous	157	509	666
Non-tuberculous ...	157	x	$157 + x$

The problem is now to determine the offspring representing the general population; to how many individuals do 666 tuberculous persons correspond? Taking English data, I say to about 1 in 10. We then have my final table:

Offspring.	Parents.		Totals.
	Tuberculous.	Non tuberculous.	
Tuberculous	157	6 6	666
Non-tuberculous ..	157	5,837	5,994
Totals	314	6,346	6,660

There is no exception to be taken to this table on any one of the grounds stated by Messrs. Pope and Brown; but they criticize the result by saying, that while I find 1 in 10 of the general population tuberculous, I find that amongst the "parental population" only 1 person in 20 is tuberculous. They assert that this is absurd, and cite a table from the United States Census, which merely gives the proportions at each age of single, married, and widowed dying of "consumption," and, as not giving the totals of each class existing, has *absolutely no bearing on the subject under discussion.*

But the United States Census does enable us to form a very good estimate of the number of the class "parents" and of the class "general population" who are tuberculous, if we may judge from the deaths in the registration area.

United States Census of 1900.

Class.	Total Deaths.	Deaths from Consumption.	Percentage.
Single, 15 and upwards	Male ... 47,180	12,650	26.81
	Female... 28,222	7,705	27.30
Married and Widowed, 15 and upwards	Male ... 120,696	13,983	11.59
	Female... 125,741	14,657	11.66

That is to say, that among the single in the United States the death-rate from tuberculosis is more than double what it is among the class who may have been parents, namely, the married and widowed. If we take these death numbers to represent the relative class prevalence of tuberculosis in the United States among those who are over 15, and who are single or married (including widowed), we find, since these two classes are in the ratio of 7,505 to 12,611 according to the Census, that there is a 17.3 prevalence for the general population of 15 and upwards. Now, 17.3 and 11.6 are not my 10 and 5, but they are quite sufficiently close to them (when we remember that there appears to be 50 per cent. greater prevalence of the disease in the United States than in England) to show that my numbers are not in the least antagonistic to any *official* data from the United States.

According to the United States Census about one person in six of the general population, 15 and over, is tuberculous. I have used for this country 1 in 10. If I used 1 in 6 in my table, we should find that 1 in 13 of the parental population were tuberculous. In the United States this ratio is actually 1 in 9. This is a difference quite compatible with the different environmental and racial conditions. It is not the astonishing sort of difference which exists between Messrs. Pope and Brown's own death data and

those of the country in which they live. I will now indicate this.

Messrs. Pope and Brown's two series give 94 tuberculous parents in 200 cases of parent and offspring, or the first line of the table deducible from their data and corresponding to mine is:

Offspring.	Parents.		Total.
	Tuberculous.	Non-tuberculous	
Tuberculous	94	106	200

These 200 individual cases correspond on the United States Census basis to 1,200 of the general population, for 1 in 6 die of tuberculosis. But of the 1,200 "parent" class, 1 in 9 would be tuberculous from the same Census. The table accordingly reads:

Offspring.	Parents.		Totals[1]
	Tuberculous.	Non-tuberculous.	
Tuberculous ...	94	106	200
Non-tuberculous ...	35	961	1,000
Totals	133	1,067	1,200

Now, this table shows us at once:

(*a*) That not my 50 per cent., but 71 per cent. of the offspring of tuberculous parents would on completed history be tuberculous!

(*b*) That of 500 cases of non-tuberculous persons only 35 parents would be tuberculous, or 7 per 100. According to Messrs. Pope and Brown's own data, 47 per 100 would be tuberculous! I think this sufficiently indicates that the basis upon which Messrs. Pope and Brown criticize the second line of my table is hopelessly at variance with the United States returns.

Finally, let us prepare a table on the assumption that Messrs. Pope and Brown's ratio holds for the non-tuberculous section as well as for the tuberculous section of the United States population, the general population having 1 in 6 tuberculous. We find:

Offspring.	Parent.		Totals.
	Tuberculous.	Non-tuberculous.	
Tuberculous	94	106	200
Non-tuberculous ...	235	765	1,000
Total	329	871	1,200

According to this, 1 in 3.6 of the parent population is tuberculous, as against the actually-observed rate of 1 in 9 for the United States!

But Messrs. Pope and Brown's data are not only condemned by the United States Census. The authorities they cite are all against them, as the following table shows:

Authority.	Number of Tuberculosis Parents per 100 Non-tuberculous Offsprings.
Kuthri	20.4
Schwartzkopf	20.1
Burckhardt	18.4
Fischer	14.7
Dock and Chadbourne	12.0
Pope and Brown	47.9

It is perfectly true that my table gives a much lower value than any of these authorities, but I believe it to be far more nearly correct. Not one of them is consistent with the amounts of tuberculosis in (*a*) the general population, and (*b*) the married population of their respective states.

Further, the conditions in the United States, in Germany, and in England are very different. There is far more tuberculosis in the United States, and in Germany an earlier age at marriage. I believe, moreover, that of recent years there has grown up in England a stronger feeling against the marriage of persons—especially of very young women—with the tuberculous diathesis.

Lastly, I would point out that the United States ratio of 1 in 9 is far from applicable even in that country to tables of this character, for it includes *all* married people, while my table includes only married people having children, and the average age of consumption falls for both sexes into *early* married life. I shall therefore stick to my result that for England 1 family in 10 has on the average a tainted parentage until much better evidence than Messrs. Pope and Brown provide is forthcoming. Frankly I do not believe that any of the above authorities have got reliable statistics of the non-tuberculous element in the population. Being peculiarly in touch with the tuberculous, their data do not cover—as far as the non-tuberculous are concerned—a truly random sample of the general married population.—I am, etc.,

KARL PEARSON.

Biometric Laboratory, University College, Dec. 9th.

PUBLIC VACCINATION IN OLDHAM.

SIR,—With reference to the Oldham appointment[1] I wrote for particulars, and received a circular letter which made no mention at all of amount likely to be earned. I then wrote asking how much the man appointed would be likely to make. In reply I got the enclosed letter, which gives only the total births and vaccinations and says not a word about fees, nor does it say how many vaccinations are done by the public vaccinator. The whole thing is an attempt to get men to apply without their knowing how little they are likely to receive. I venture to think that our friends in Lancashire are playing the game in a manner unworthy of any Public Body. I did not apply for the post.—I am, etc.,

London, S.E., Dec. 13th. JOHN ROUND.

OLDHAM UNION.

Union Offices,
Rochdale Road,
Oldham,
7th December, 1907.

Dear Sir,

Public Vaccinator—Oldham Township.

I beg to acknowledge the receipt of your letter of the 4th December instant herein and to forward herewith certain information with reference to the numbers of Births and Vaccinations in the Oldham Township during the last three years.

Year ended 30th September.	Number of Births.	Number of Successful—	
		Vaccinations.	Revaccinations.
1905	3,588	1,749	359
1906	3,651	2,347	406
1907	3,826	1,285	2

Yours faithfully,
HORACE A. QUARMBY,
Clerk to the Guardians.

John Round, Esq., L.R.C.S., L.R.C.P.,
30, New Cross Road,
London, S.E.

TAXATION OF MOTOR CARS.

SIR,—The new Session of Parliament is drawing near, and with it the probability of increased taxation of motor cars.

Without entering on the vexed question whether a heavy car driven at 40 or 50 miles per hour does more damage to a road than a flock of sheep or a team of cart-horses, I think there is little doubt that the average doctor's modest motor is quite a harmless vehicle, and that any increase of its already heavy taxation would be nothing short of an injustice.

I believe that almost every member of Parliament would admit the truth of this if reasoned with in a calm hour. And if every motoring member of the Association

[1] BRITISH MEDICAL JOURNAL, December 14th, p. 1740.

will take the trouble to write or speak to his Parliamentary representative, I feel sure that an exception in our favour will be made to any alteration of the existing conditions.

In particular, might I call the attention of medical constituents in the East Fife Division to the importance of this subject?—I am, etc.,

December 3rd. PNEUMATIC.

THE LATE SIR W. T. GAIRDNER AND MESSRS. OPPENHEIMER.

SIR,—Most medical men throughout the country will recently have received a diary from Messrs. Oppenheimer and with the diary a letter from the late Sir W. T. Gairdner purporting to be a testimonial in their favour. To have a letter of his used as a testimonial to push a commercial article would have given my father the greatest displeasure, and had Messrs. Oppenheimer before publishing the letter asked the consent of the writer's family (which they did not do) it would most certainly have been refused. That the letter dated February, 1904, has only now been circulated is sufficient proof that the firm did not originally regard the letter as a testimonial for public use.

Seeing that the letter has been published it may be as well to publish also the incident that gave rise to the correspondence. Messrs. Oppenheimer had sent Sir William Gairdner a leaflet describing one of their preparations, which leaflet was returned to them with the endorsement "Polypharmacy run mad." Messrs. Oppenheimer replied in defence and the letter published apparently closed the correspondence. The last paragraph of that letter is not, I think, to be taken as meaning that Sir W. T. Gairdner regarded the palatinoids of Messrs. Oppenheimer as being superior to analogous preparations by other makers, but only that the formulae of some of that firm's products were not objectionable in the opinion of the writer, who would therefore have used them on a suitable occasion had one such arisen.—I am, etc.,

Ayr, Dec. 13th. ERIC D. GAIRDNER.

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

DR. R. DEANE SWEETING has been reappointed Examiner in State Medicine.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

THE new *Calendar of University College Hospital Medical School*, that for the session 1907–8, contains the text of the Act by which University College was transferred with its possessions to the University of London. Attached to it are sundry schedules appointing various Boards of Management and Commissioners, and a copy of the statutes drawn up for the constitution and management of the North London or University College Hospital and the School of Advanced Medical Studies connected therewith.

ROYAL COLLEGE OF PHYSICANS OF LONDON.

AN extraordinary Comitia was held at the College on Thursday, December 12th, the President, Sir R. Douglas Powell, in the chair.

Licences.

The Licence of the College was granted to John Lewis, Alfred Richardson, and John Lancelot Todd.

Admission of Women to the Examinations of the College.

The petition received at the Comitia on May 9th last from the London School of Medicine for Women, praying for the admission of women to the examinations of the College, was considered, and a resolution refusing the prayer was moved. An amendment to the effect that the by-laws be so amended as to permit women to present themselves for the examination for the licence only was, after prolonged discussion, carried by 59 votes to 33. The hour being late, the discussion of this amendment, which had thus become the substantive motion, was adjourned.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT an ordinary Council on December 12th, Mr. Henry Morris (President) in the chair, the diploma of Fellow was conferred on twenty-five candidates who had satisfied the examiners, and a Licence in Dental Surgery issued to forty-four persons found qualified at the examination recently held.

Appointment of Conservator.

Directions were given for an advertisement of the vacancy of the above appointment to be issued forthwith. Candidates should send in their applications before February 1st, 1908. A statement of the conditions of appointment may be obtained on application to the Secretary.

Court of Examiners.

Mr. C. J. Dent was re-elected a member of the Court.

Dates of the Fellowship Examinations.

With reference to the letter from the Deans of the Medical Faculties of the Universities of Leeds, Liverpool, and Sheffield, suggesting the desirability of holding the Primary Examinations for the Fellowship at other times of the year than May and November, the Committee proposed to postpone their report, with the object of ascertaining the views of the several medical schools upon the proposed change, before submitting any recommendation to the Council upon the subject.

The Curriculum in Dental Surgery.

The Board of Examiners, in pursuance of the request of the Council, have considered the following resolution adopted by the British Dental Association at its annual meeting, namely:

> That any regulation prescribing not less than two years' instruction in mechanical dentistry, instead of three years as heretofore, is seriously detrimental to the efficiency of the profession.

The Board of Examiners now beg to report to the Council that they are aware of no facts relating to the subject which were not before them when, on June 25th, 1906, they reported unanimously in favour of the recommendation to reduce the period of instruction in mechanical dentistry from three to two years, and that under these circumstance the Board can only recommend the Council to thank the Honorary Secretary of the British Dental Association for his enclosed resolution, and state that they see no reason to modify the decision already arrived at.

The Board of Examiners have also to report that they have considered the application from the University of Leeds, for the recognition of the dental department of the University, together with the accompanying documents. The Board being satisfied that the requirements of the College have been complied with in regard to the appointment of the staff, the scope of the courses of instruction, and the opportunities for hospital practice, recommend the Council to add the University of Leeds dental department to the list of dental schools recognized for the licence in dental surgery.

Examinations.

The following candidates have been approved at the examination indicated:

FINAL FELLOWSHIP.—H. Ainsworth, Captain, I.M.S., Victoria University, Manchester, and St. Bartholomew's Hospital; E. Maynard, London Hospital; R. D. Maxwell, London Hospital; W. S. V. Stock, University College, Bristol; W. E. Fisher, University College Hospital; A. J. Couzens, London Hospital; E. W. Bain, London Hospital; J. G. French, St. Mary's and St. Bartholomew's Hospitals; M. Culpin, London Hospital; W. Appleyard, University College Hospital; S. C. Hayman, University College, Bristol, and London Hospital; H. Chitty, University College Hospital; H. Hardwick-Smith, Cambridge University and St. Bartholomew's Hospital; W. E. Brierley, Leeds University; C. Clarke, St. Bartholomew's Hospital; H. T. Gray, Cambridge University and St. Thomas's Hospital; T. McPherson, McGill University and St. Bartholomew's Hospital; P. Talbot, Victoria University, Manchester; R. Jamison, Oxford University and St. Bartholomew's Hospital; L. R. Braithwaite, Leeds University; K. McK. Duncan, Glasgow University and London Hospital; E. Gillespie, Glasgow University and Middlesex Hospital; J. L. Falconer, Victoria University, Manchester, and London Hospital; D. Ligat, Glasgow University and London Hospital; H. F. Shorney, Melbourne University and Middlesex Hospital.

CONJOINT BOARD IN ENGLAND.

AT an extraordinary meeting of the Royal College of Physicians of London on December 12th, and at a meeting of Council of the Royal College of Surgeons of England on the same date, diplomas of L.R.C.P. and M.R.C.S. were conferred upon the following gentlemen who have passed the Final Examination in Medicine, Surgery, and Midwifery, and have now complied with the by-laws of both Colleges, namely: J. Lewis, A. Richardson, J. L. Todd.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

THE RIGHTS OF REGISTERED PERSONS.

LONDON.—(1 and 2) By Clause XXXII of the Medical Act, 1858, no person can recover any charge in any court of law for any medical or surgical advice, attendance, or for the performance of any operation, or for any medicine which he

shall have both prescribed and supplied unless he be registered under the Act. By Clause XXXVI no unregistered person can "hold any appointment as a physician, surgeon, or other medical officer either in the military or naval service, or in emigrant or other vessels, or in any hospital, infirmary, dispensary, or lying-in hospital, not supported wholly by voluntary contributions, or in any lunatic asylum, gaol, penitentiary, house of correction, house of industry, parochial or union workhouse or poor-house, parish union, or other public establishment, body, or institution, or to any friendly or other society for affording mutual relief in sickness, infirmity, or old age, or as a medical officer of health." The Registrar of the General Medical Council would, we believe, erase a name from the *Medical Register* if requested by the registered person. (3) It would be contrary to professional usage for a medical man to put a notice over his surgery stating his fees. (4) It would appear that the law does not forbid the use of mydriatics by opticians, but the Spectacle Makers Company professes to forbid its diplomates to do so. (5) There is no act forbidding a medical man to sell glasses to his patients, but we cannot say whether by so doing he would violate any by-law of the corporation from which he might hold his diploma; there is no doubt that such a course would be contrary to professional usage.

Medico-Legal.

A VERBAL ARRANGEMENT.

A. and B. are two practitioners separated by five miles. They have been partners for some time in a small branch country practice, and have had the use of two rooms in a cottage with their name plates on the door, each attending on one day in the week, while messages were received and drugs dispensed by both. There was no deed of partnership, but they divided equally expenses and profits. A fortnight ago B. received a letter, intimating that A. desired to dissolve the partnership, as he had taken a partner into the whole of his practice, and proposing that A. and B. should continue as before, but that each should work by himself. B. replied, consenting to the arrangement, but also stating that he expected that no one, except A. and B., should make use of the rooms. (1) Is B. right in objecting to a third man being brought in without his consent? (2) Has B. any rights based on the partnership, which, although not in writing, is admitted by A.? (3) Is such conduct on the part of A. and his new partner in accordance with the spirit which should regulate the dealings of medical men with one another?

*** (1) B. is within his rights in so objecting. (2) In no legal partnership could one of the partners introduce a third without the consent of the other. (3) A. is quite justified in proposing such an arrangement to B., but he has no right to take offence if B. objects.

INQUESTS IN HOSPITALS.

HOSPITAL MANAGER.—There is no law which gives the coroner any right to hold an inquest in any public or private building without the previous consent of the owners or occupiers of the premises, but he and jury have power to view the body wherever it may be deposited.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

DIFFICULTIES UNDER THE NEW VACCINATION ORDER.

SUSPENSION OF PUBLIC VACCINATION.

THE thirteen public vaccinators of the North Bierley Union (near Bradford, Yorkshire) are entitled to the sympathy and support of their professional brethren. Being convinced that the minimum fees offered by the Board of Guardians were inadequate they declined to enter into new contracts on those terms. It now remains to be seen whether the Local Government Board will consent to what is practically the dismissal of the public vaccinators which took effect on September 30th, seeing that it is due solely to a failure on the part of the guardians to "agree" with their public vaccinators on the question of fees and that the Local Government Board has reserved to itself the right to "fix" those fees in the event of no agreement having been arrived at by October 1st. The *Yorkshire Observer* of December 12th, commenting on what it styles the "novel position" says, "it has been urged on behalf of the vaccination officers (public vaccinators) that they have to perform duties in districts as remarkable for the height of the hills as for the depths of the hollows, and in portions of which the population is sparse. But the North Bierley Guardians, the majority of whom are antivaccinationists, are evidently determined to stick to their guns, being apparently indifferent whether vaccination officers are engaged or not." Comments of this kind in the lay press need no explanation in these columns. The appointments have now been advertised with the intimation that "the minimum prescribed fees suggested by the Local Government Board" will be paid. The local Division of the British Medical Association and the Association of Public Vaccinators of England and Wales are actively engaged in supporting the public vaccinators, and the loyal support of local practitioners is being vigorously sought and should be readily accorded. Any medical man desiring further information can obtain it on application to the Honorary Secretary of the Bradford Division of the British Medical Association, Lynthorne Hey, Frizinghall, Bradford.

A similar deadlock is reported from Launceston. Here again all the public vaccinators have been dismissed. The *Western Times* of December 2nd details what is described as the "curious position" and the "parents' dilemma." At the last meeting of the Launceston Board of Guardians the Clerk, replying to a question, is reported to have said, "There is now no vaccination going on anywhere in the union, as there are no public vaccinators." Speaking of the parents, he is further reported to have said, "They are running about asking where they can get them vaccinated." This is an example of administration which could not long be tolerated. A letter from the Local Government Board was read urging upon the guardians the duty of providing public vaccinators without delay, and asking the reasons why the doctors refused to accept the reduced fee. Unlike the North Bierley Guardians, the Launceston Board decided that the Committee appointed to deal with the matter should again meet the doctors.

The letter from a practitioner, published on page 1808, regarding the endeavour of the Oldham Guardians to obtain a whole-time public vaccinator, is a further significant comment on this case, some particulars of which were published in our columns last week (December 14th, page 1740). Other applicants have received similar scanty information from the Clerk, regarding this effort on the part of the Oldham Guardians to effect economy at the expense of medical men. It is said that the guardians wish to bind the successful applicant for three years! Even if influenced by the usual rush for vaccination by those who oppose it when the danger is not so evident, as is always the case during epidemics of small-pox, there is evidence that this appointment would not be satisfactory to any self-respecting doctor on the terms offered by the guardians. The Oldham Division of the British Medical Association is fully alive to the situation, and is using every possible endeavour to frustrate the attempt of the guardians to place a medical brother in such a disadvantageous position.

SANITARY INSPECTORS AND INFECTIOUS CASES.

RUSTICUS.—An inspector of nuisances is justified in visiting a house in which he has been told there is a person suffering from "sore throat," more especially if there are cases of diphtheria in the locality. He is not justified in examining the patient, and *a fortiori* has no right to express an opinion as to the nature of the illness. If he is told that the ordinary medical attendant has been sent for, it is highly improper for him to suggest that some other practitioner should be called in.

FEES FOR CERTIFICATION OF PAUPER LUNATICS.

POOR-LAW MEDICAL OFFICER asks the following question: Am I or am I not right in presuming that *all* persons certified as pauper lunatics should be certified by the Poor-law medical officer? He also asks for information on a case which has caused him to make the above inquiry and on which he comments at some length. The case is briefly as follows: A married woman (not hitherto a pauper) became insane and was attended by a private medical practitioner who certified to her insanity; she was then sent to a county asylum as a pauper lunatic, a guinea being paid to her private medical attendant by the guardians for his certification. In due course this patient was sent home from the asylum on two months' trial and then the relieving officer was directed by the guardians to apply to our correspondent to fill up a form of certificate, as district medical officer in compliance with Sec 55 (8) of the Lunacy Act 1890. For this duty he, as district medical officer, does not appear to be entitled to a fee, which he considers unfair, as the private medical attendant was at an earlier period paid a fee by the guardians for his certification of the same patient.

*** It is *not* right to assume that *all* pauper lunatics should be certified by a Poor-law medical officer, as the magistrate who acts in the case can call to his assistance any medical practitioner he may select for the purpose of certifying for an asylum. As in this case, the practitioner selected for this duty had already become familiar with all facts of the case and details bearing on it, and as our correspondent appears to have had no responsibility of any kind thrown upon him when the patient was sent to the asylum, we fail to see that he can reasonably claim a fee or have any grievance on not having been called upon to earn one.

The certificate which the guardians applied for when the patient was sent home on trial is one he may easily avoid giving, as it is not a duty which can be enforced upon him. Moreover, it would seem better *for all parties concerned* that this certificate should not be filled up, as no good can result from its being brought into operation; it is, on the contrary, quite possible that great inconvenience and something even more objectionable may accrue from it being filled up and made use of. The clause bearing upon it is as follows:

Sub-clause 55 (8) of Lunacy Act, 1890.

(8) If a person allowed to be absent on trial for any period does not return at the expiration thereof, and a medical certificate certifying that his detention as a lunatic is no longer necessary is not sent to the visitors of the asylum or the manager of the hospital or house, he may at any time within fourteen days after the expiration of the period of trial be retaken as in the case of an escape.

If no certificate of this character is given and a patient out on trial has an unexpected relapse and again requires detention he may at any time during the period of trial or within the lapse of fourteen days of such period be taken again to an asylum without fresh certification—a condition of affairs which would appear highly undesirable to disturb. On the other hand, should such certificate have been once given and forwarded to the managers of the asylum and the patient again require detention further certification and order would be necessary, however urgent the case may have again become. All this involves unnecessary trouble to friends, as well as additional expense to the ratepayers, and in all probability more or less serious delay before the patient can be again put under proper care and treatment.

If these views are correct, it will be at once seen that Poor-law medical officers as well as others may all exercise a wise discretion, and decline to certify to the effect that asylum patients out on trial have practically made a complete recovery from their state of mental derangement, when in many such cases, as is well known, a relapse at any moment may suddenly and unexpectedly supervene.

OBITUARY.

EDWARD LIVEING FENN, M.D., M.R.C.P., J.P.,

EX-PRESIDENT OF THE EAST ANGLIAN BRANCH.

Dr. E. L. Fenn, of Alston Court, Nayland, whose death occurred on December 8th, was the son of the late Dr. Fenn of Nayland, and was born in Nayland on August 20th, 1843. He was educated at Sherborne College, afterwards entered King's College, London, and qualified in 1865. A painstaking and hard-working student, he was elected to the office of House-Physician at the hospital. From thence he went to Vienna, where he studied for a year, and, returning to Nayland, he joined his father in practice there. On the death of his father he removed to Richmond, Surrey, in 1871, where he took over the practice of Dr. Julius, of the Old Palace, Richmond, in partnership with the late Mr. Bateman. Here for twenty years he carried on an extensive and high-class practice, and was Physician to the Royal Richmond Hospital. In November, 1872, he married Katherine Pauline, daughter of Dr. Julius, and resided at the Old Palace. During his residence in Richmond he took great interest in the public life of the place; he was a member of the municipal vestry and a churchwarden at the parish church. Ill health compelled him to relinquish his practice at Richmond, and he settled down in Colchester in January, 1892, and resided at Grey Friars, East Hill. In February, 1892, he married again, his second wife being Edith, a daughter of Mr. C. J. Todd, of Richmond, who survives him. In 1893 he was elected Physician to the Essex and Colchester Hospital, where he remained for ten years, and also took a prominent part in the general management of that institution. He carried on a practice as a consulting physician in the town and neighbourhood, having taken the diploma of M.R.C.P. in 1892. In 1903 he finally retired from practice, and settled down in his old family residence of Alston Court, Nayland. In October, 1892, Dr. Fenn was Chairman of the annual dinner of King's College Hospital, and in 1898 he was President of the East Anglian Branch of the British Medical Association. A capital public speaker, he filled both these offices with distinction. Dr. Fenn, who was a Justice of the Peace for Suffolk, was a very fine type of man, and unquestionably an honour to his profession. A dignified gentleman, he was universally beloved and esteemed by all who came into contact with him.

Dr. Charles Robert Drysdale, who died at his house at West Dulwich on December 2nd, 1907, in his 78th year, received his medical education at University College, London, and obtained the diploma of M.R.C.S.Eng. in 1858; he took the degree of M.D.St. Andrews in the following year, the diploma of F.R.C.S.Eng. in 1861, and that of M.R.C.P.Lond. in 1862. He subsequently joined the staff of the Metropolitan Hospital, to which he was Consulting Physician at the time of his death; he was also at one time Physician to the North London Hospital for Consumption and to the Farringdon Dispensary. He was early attracted to the study of syphilis, upon which he published a volume in 1872, and was thereby drawn to investigate the evils of prostitution, upon which also he published a book. It was probably the results of these investigations which led to his becoming a militant Malthusian and the President of the Malthusian League. He held his opinions honestly and defended them stoutly, and we cannot withhold a meed of respect from one who sacrificed much in fighting for a cause which does not commend itself to the majority of the profession.

Dr. George Herbert Graham, whose death occurred on December 5th last, at 14 Old Cavendish Street, was born in 1860 at Denia in Spain. He was educated at Dulwich College and Guy's Hospital, obtaining the diploma of L.S.A. in 1882, and those of M.R.C.S. and L.R.C.P. in the two following years. For about sixteen years he was in general practice at Storrington, in Sussex, and then resolved to take up the special branch of electrotherapeutics. In 1901 he took the M.D.Durh., and went to Denmark, where he studied the light treatment under the personal supervision of Finsen. He also made himself a thorough master of every phase of electricity with which medicine is concerned. In 1902 he was appointed Medical Officer to the Electrical Department at the East London Hospital for Children. As the first holder of that post the whole organization of the department fell to Graham's hands, and he rapidly brought it up to a high standard of efficiency. His work was much appreciated by his colleagues, who feel that it will be difficult to fill his place. For a short time, also, he was Assistant Physician in charge of the Electrical Department at the Seamen's Hospital, Greenwich. All Dr. Graham's work was so excellent that he was rapidly attaining, if he had not already attained, a leading position in his speciality. He was a member of the Clinical Society and on the Council of the Electro-Therapeutic Society, and one of the original Fellows of the Royal Society of Medicine. Dr. Graham was a tall man, of powerful physique, and in the early Eighties was full-back in the Guy's football team, and a sprinter of some note. In the beginning of last summer he was laid up with a large carbuncle, but no glycosuria was found. After convalescing in Cornwall he returned to London in the beginning of September in excellent health. Five days before his death, however, he was seized with what was apparently general streptococcal poisoning, complicated with acute diabetes, and he rapidly sank from diabetic coma. Apart from his professional ability, his earnestness and sturdy honesty gained him the respect of all with whom he was brought into contact, and his death, at the early age of 47, will be widely regretted.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

☞ WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided. Correspondents are asked to write upon one side of the paper only.

QUERIES.

TREATMENT OF RHEUMATOID ARTHRITIS.

ALTECHE asks for a remedy to relieve the terrible pain in rheumatoid arthritis. Morphine is inadmissible, and the ordinary drugs of little or no use internally or externally. Would Bier's method be of use?

THE TEACHING OF PUPIL MIDWIVES.

A CORRESPONDENT who has recently been appointed a teacher under the rules of the Central Midwives Board asks what apparatus for teaching midwifery to pupil midwives he will require, and from whom it can be obtained; he also asks what books would be suitable for the pupils.

*** A teacher of pupil midwives should have a female pelvis and fetal skull. These can be bought at Millikin and Lawley's, Strand, W.C. As to books, may be mentioned: *First Lines in Midwifery.* By G. E. Herman, M.B., F.R.C.P. New edition. (London: Cassell and Co. 1907.) *Midwifery for Nurses.* By H. R. Andrews, M.D., B.S., M.R.C.P. (London: Edward Arnold. 1905. 4s. 6d.); and *Introduction to Midwifery.* By A. Donald. Sixth edition. 1905. (5s.) If the class is a large one, Schultze's *Wand Tafeln* (wall diagrams) may be useful.

INCOME TAX.

TAXIMETER writes that last year (1906-7) his income-tax assessment was raised. At the time for appeal he was ill, and eventually paid the tax under protest. This year (1907-8) the same assessment was made, but on the production of our correspondent's accounts the surveyor reduced it to the original amount. He has, however, declined to admit a claim for repayment for last year.

*** It is too late to claim repayment for the year 1906-7, unless the Commissioners, as an act of grace, are willing to hear an appeal. If our correspondent was ill at the time for hearing appeals last year he should have pointed this out as soon as he recovered sufficiently to attend to business and asked for another opportunity of appeal, which would probably have been granted. Having failed to do this, he might still have obtained redress by way of an appeal "at the end of the year" (that is, at, or immediately after, April 5th, 1907), but this opportunity also has been let slip, and he has no further legal claim. Some Commissioners interpret the words "at the end of the year" as meaning "within twelve months after the end of the year," and if this applies to the Commissioners for the district in which he resides he may be able to get his appeal heard. The inference to be drawn from the surveyor's refusal, however, is that the Commissioners would not now entertain an application from our correspondent.

ABSORPTION OF CHROMICIZED CATGUT.

J. M. R. writes asking for information about chromic catgut, relating a case in which material which was stated by the makers to be absorbable in twenty days persisted in the wound forty-three days, and was then removed.

*** Generally speaking, the "chromic gut" supplied by makers is too thoroughly chromicized and persists too long. Estimates of persistence longer than ten days are more or less guesswork; for a ten days gut, soaking for twenty-four hours in a 1 in 10,000 solution of chromic acid is the treatment necessary. It is well to avoid specimens which are said to persist longer than this. Rapidity of absorption varies according to the tissues in which the material lies, it is always delayed when suppuration occurs. In the case instanced by our correspondent, on the one hand, the gut used was probably too thoroughly chromicized; and, on the other, infection still further delayed absorption. As far as the catgut is concerned, the moral of the case is not to use material more thoroughly chromicized than mentioned above in dealing with wounds in muscle, fascia, and connective tissue.

TREATMENT OF ERYTHEMA IRIS.

M. R. asks for advice in the treatment of erythema iris. He writes: In a case I am now treating in her fifth attack, the attacks always seem to last for four to six weeks. There are one or two dozen spots upon hands and wrists, one or two on the knees and feet and in the mouth, which is very sore. The tongue becomes white and very sore. There is much prostration and loss of appetite; she does not have much indigestion; she is rather constipated, but otherwise in perfect health between the attacks. She has had magnesium sulphate and pills of various kinds, bismuth, sodium sulpho-carbolate, salicin, sodium salicylate, and quinine; also mercurial ointment and lead lotion for the spots, boracic, carbolic mouth washes, and a host of other things.

ANSWERS.

WARDS FOR CONSUMPTIVES IN WORKHOUSES.

"FRESH AIR."—The best arrangement of windows for a fresh air ward for consumptive patients is to have them on both sides facing each other so as to allow free cross ventilation. There is no necessity to remove the frames. A satisfactory arrangement is to have an ordinary sash window in the lower part, so that it can be opened to half its area, and a falling light above, with cheek pieces at the sides. This upper part will always be open. There would be no objection to allowing cases of phthisis in a ward with non-tuberculous patients if the precautions with regard to coughing and the disposal of sputa were properly carried out. The patients who are admitted to workhouse infirmaries do not, however, generally belong to a class in which cleanly habits and careful attention to instructions can be relied on, and in these institutions it is therefore undesirable to put consumptives in the general wards. The kind of shelter required in the grounds will depend upon the use to which they are to be put. If only used during the day almost any kind of shelter will do; if used for sleeping they require to be more elaborate. Messrs. Boulton and Paul (Norwich) make a speciality of open-air shelters, and specifications for almost all kinds may be obtained from them, and we are informed that Messrs. Harbrow (Bermondsey) will make shelters according to specification supplied to them, at a moderate cost; but of course estimates should be obtained.

LETTERS, NOTES, Etc.

A WARNING TO DOCTORS' WIVES.

DR. CROSS (Leytonstone, Essex, Telephone, 546 Wanstead writes: There is a woman applying for a situation as cook-general at doctors' houses. She has for some years past given my wife's name as a reference. In each case she assumes a different name. Her object is to obtain her fare, and often a meal. She has never been in my service. Should anyone wish to prosecute her it might be advisable to detain her and communicate with me by telephone.

THE ABORTIVE TREATMENT OF BOILS.

IN a communication on this subject Mr. J. Cropper, M.A., M.B. Cantab., of Nablus, Palestine, suggests that when a boil has so far advanced that itching and some pain are present and a core has formed, a really sharp cataract knife should be passed vertically through the skin at 1 or 2 mm. from the centre, and to a depth of one-eighth to a quarter of an inch, and swept round the core with a slow sawing movement and in a circular direction. This little operation can be performed under an ether spray, or gas, if necessary, the net result being that most of the core can be immediately removed, and pain and induration at once subside, and in a day or two nothing is left but a trifling circular ulcer which rapidly heals up. This treatment he finds much less painful and much more satisfactory than the free linear incision at a somewhat later stage commonly recommended.

A CORRECTION.

IN Dr. D. W. Samways's letter which appeared in the JOURNAL of December 14th, p. 1748, the word "condition," in line 21, should have been printed "addition."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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A Lecture

ON

THE MENTAL ORIGIN OF NEURASTHENIA AND ITS BEARING ON TREATMENT.

Delivered at the Polyclinic, London.

By DAVID DRUMMOND, M.A., M.D.,

Senior Physician, Royal Victoria Infirmary, Newcastle-on-Tyne.

My object in addressing you on the subject selected for to-night's lecture is, if possible, to convince you that neurasthenia is essentially a disorder of the mind, and that it can only be treated successfully when this fact has been recognized.

My time is short, and you are all so familiar with the symptomatology of neurasthenia that I feel it will be unnecessary to describe the condition, but will proceed at once to the view of its origin that I wish to lay before you.

What, you will ask, is the evidence that the origin of this chameleon disorder—which is at present at once the backbone and bugbear of general practice—is mental? for I need scarcely remind you that there are some who regard bodily troubles as the primary cause. It is clearly of the utmost importance to recognize the cause of the neurasthenic condition, and close inquiry furnishes full evidence that it arises from morbid mental states.

Etiology.

The first fact I would point to is that in neurasthenia the physical symptoms are without pathological basis (in any individual case this must, of course, be ascertained by careful physical examination). To the patient the symptoms are as real as though some physical lesion existed, and often the description given of them is so lifelike as to deceive the doctor, who, fearful of being in the wrong, anxious to safeguard his reputation, and desirous of keeping his patient, will, even in cases of considerable doubt, accept the patient's lead, hedge over the diagnosis, and thus with disastrous results confirm the impression that some serious disease exists. The responsibility of the medical attendant in these circumstances is truly great, but to this point I shall return. In some cases the digestive organs are marked out by the patient as the seat of disturbance, or it may be the heart, or the genito-urinary system. What determines the bias of a patient's mind towards a definite organ is seldom of much moment; in some cases it is no doubt a functional derangement of the organ that in the first instance attracts attention, or it may be a recognized and dreaded hereditary tendency, or an incautious professional opinion suggesting, for example, uterine displacement, or kidney motility, or weak heart. However, the cause of the local physical symptoms is unimportant, as usually by the time the doctor's aid is sought there is little or nothing to combat but the mental state.

The next clinical fact of great importance is to be sought in the mental history of the patient, both family and personal. It may be assumed that with rare exceptions an established nervous temperament has been inherited, though a practical difficulty is often placed in the way of ascertaining this fact through the repugnance on the part of the patient and friends to admitting a family history. It is a real misfortune that most people should confound nervousness with timidity—apprehensiveness—and are likely to resent an inquiry into their mental history lest a charge of cowardice should be established. Most unfortunately there is no word in the language that would be understood by patient, friends, and doctor alike to convey the true significance of the term "nervous." The truth is that a highly-organized nervous system is a most valuable equipment in life; it enables its possessor to be and to do as well as to suffer. But just as you can get a purer tone and more exquisite music out of a fine violin than from a common one, so when injured or badly handled its dissonances are apt to be more excruciating. This aspect of the matter is not generally understood; even educated people fail to grasp the difference between the nervous temperament and the state of being easily frightened, and when you begin to make inquiries as to mental antecedents they will fence the question and endeavour to persuade you that there was nothing nervous about them until a certain illness—influenza, for example, or mental strain, or shock—developed the condition. Timidity is no doubt one outcome of an ill-managed nervous temperament, but not necessarily so, and many neurasthenics are brave and tranquil in the face of real danger, even if that danger be death.

It may, then, be difficult to trace a definite family history, but with care this can usually be made out, and not infrequently it will include cases of insanity. Clinically considered, this is of much importance in establishing the mental origin of the neurasthenic disorder; in practice what it points to is the fact that serious dangers particularly threaten persons who inherit a nervous temperament, for whom, therefore, special safeguards in home surroundings and personal habits ought to be observed, just as those who inherit a tendency to tuberculous mischief must observe careful precautions in their surroundings and manner of life if they are to escape harm.

But, after all, the player on the violin is the patient himself, and it is with the individual patient that we have to deal. Even when there is an unmistakable family history of nervous disorders, with possibly a case or two of insanity, the patient in early life may exhibit no striking deviation from the normal; perhaps nothing more than a certain lack of self-confidence. Sooner or later, however, there is shown a tendency to attach undue importance to matters that affect the personal feelings, and this strongly affects the subsequent course of affairs. The patient becomes hypersensitive, and gradually surrenders control of his thoughts at will; instead of choosing a line of thought and concentrating upon it, he is dominated by some personal matter, broods over some real or fancied trouble, allowing it to engross attention to the exclusion of all other matters of interest. The habit of indulging in introspection grows upon him, and from being a useful and wholesome practice in the main as exercised by a healthy, well-balanced mind, it becomes a source of danger when it defies control, and then perverts, hampers, and circumscribes mental action. At first the neurasthenic is conscious of a struggle to maintain his interest in affairs outside his own personal life, but by an effort he can do so, and to this end he is helped by continuing at work, which, even though it be uncongenial, serves to distract his attention from himself. Later on he fails to make the effort, or some illness or shock breaks down what little control he still possessed, and so the natural inclination usurps ascendancy: he becomes more and more self-centred and despondent, and loses the power of forming an intelligent judgement upon matters that relate to his health. In some cases the usual feeling of blameworthiness consequent on giving way to bad habits comes into operation, with further distressing results; others are spared this hope-robbing demoralization because they fail to recognize that the fixed idea can be in any sense the outcome of a bad habit, and therefore acquit themselves of all blame. These changes traced from the beginning are essentially mental; the patient abdicates will-power, and takes the path of least resistance.

I am of opinion that overwork, mental strain in business, or other ways, the grief of bereavement, or some alarming shock, do not in themselves produce neurasthenia, and cannot be said to be its cause, though by lowering health and weakening mental control they may contribute to the development of the more serious disturbance. On the other hand, I wish to emphasize the cramping and damaging effect on the mind of uncontrolled and bad habits of thought in early life, partly because of its testimony to the mental origin of neurasthenia, and also on account of a growing conviction that to such habits may be ascribed a great deal of the depression and mental discomfort from which nearly every one suffers at times. I dare say we are all more or less neurasthenic, for neurasthenia seems to range from occasional outbursts of uncontrolled temper or fits of gloom—"moodiness," in fact—to obsession by some one false idea, ending perhaps in insanity. Our unhappy neurasthenic patients forget—if they ever recognized—that the mental horizon of which each individual is the centre may be gloriously wide and embrace the interesting and sunny aspects of life, or may be miserably circumscribed to the petty affairs of one personality who lives under the toils, burdens, and

sorrows of life in a dense shadow that obscures all its joys. Hence the danger of introspection and self-examination to those whose minds are not easily responsive to the common wholesome incentives to thought, and who are not spontaneously attracted by things outside their own limited personal sphere; for these habits tend to fix attention more and more on the central point, the tiny circle from which radiations might go forth to an infinitely far horizon.

I have more than once alluded to insanity in connexion with neurasthenia. A most interesting and important field of investigation is opened up by the inquiry as to what part in the phenomena of neurasthenia is taken by the ordinary consciousness working through the brain (cerebrum), and what by the subconsciousness working through the cerebro-spinal and sympathetic nervous systems; but into this I have unfortunately no time to enter. I can only remark in passing that additional evidence for the mental nature of the disease is offered by the fact, which must be within the experience of most observers, that sometimes neglected cases of neurasthenia —and some cases that are not neglected—do undoubtedly drift into insanity, and occasionally end in suicide.

Finally, it can be shown that the disease does respond, and will only respond, to mental treatment.

THE ATTITUDE OF THE PROFESSION.

At this point it may very properly be asked: What has been the attitude of the profession towards neurasthenia, and what view has influenced the line of policy adopted towards the disease? I am afraid I must say that professional opinion—or at least conduct—has mostly been mistaken and has been fraught with danger to the sufferers and damage to medical reputations. It is a humiliating admission to make, but it has to be made, and the confession is wholesome, that doctors have erred sadly in their dealings with their neurasthenic patients. In palliation it may be added that the majority have erred in ignorance, and others have failed through lack of courage; but there remain some of whom it must be regretfully admitted that they have forgotten their duty and prostituted their high calling. These are hard words, but I fear they are true.

It is much to be regretted that the terms "neurotic," "neurasthenic," "hysterical," "hypochondriacal" are, on the lips of the majority of clinical teachers, terms of opprobrium, whilst systematic university and college lecturers on the principles and practice of medicine omit all reference to the subject, and, further, give effect to their attitude of neglect by excluding questions on the condition from the examination papers. Than this no surer method could be devised to mislead our future practitioners; we ourselves have experienced its ill effects. But although in the past we have had a valid excuse of ignorance, in the future, as light on the subject increases, no such excuse will hold good. To continue the sort of practice that has prevailed will be to deserve and probably incur a charge of downright dishonesty. Do you ask why? Because it will mean that, having in our hands the remedy for a curable disease which is yearly on the increase and more and more threatens the mental and physical welfare of our patients, we yet withhold it.

So long, of course, as the profession regards neurasthenia as akin to ill-nature and bad manners and the neurasthenic as a delinquent who has made the most of doubtful symptoms, the doctor has needed all his sympathy for himself—with, perhaps, a little for the relatives—and it may have been natural, though neither very creditable nor intelligent, to regulate his attitude towards the case by the length of the patient's purse and his own endurance. But this most unfortunate state of affairs has been short-sighted for the doctor, besides inflicting serious injury on the patient. If, on the other hand, we perceive that neurasthenia is a functional nervous disorder which when rationally treated responds like other curable disease to the proper remedy, we help our patients, brighten our own lives, and advance one step more towards the goal of scientific medicine.

The position I wish to take up is that neurasthenia is a definite, genuine disease of mental origin and amenable to treatment. In one short address it is difficult to make this clear and prove it to the satisfaction of all my hearers; but I must risk this, and ask you to consider the position very carefully. The immediate effect of adopting it, as I hope you may feel able to do, would be to recognize the very serious responsibility that falls upon medical men in connexion with this illness.

The responsibility will indeed be realized as heavy when the true cause of neurasthenic symptoms is grasped, and it becomes apparent how much is due to the patient's mental attitude, and how much also his demoralizing self-imprisonment may be helped or worsened by outside influences. The extreme importance of a correct diagnosis then becomes clear, and nothing is more certain than that it is the first slip that tells. Who can say what the effect of a careless opinion may be on a none too stable mental organization? Advice, for example, to be careful and not hurry for a train, when the muscle and valves of the heart are perfectly sound and some slight functional derangement alone is responsible for the symptoms. Or what mischief might not be occasioned by a meddlesome inquiry into family history eliciting the fact that some of a patient's forebears had suffered from cancer, when symptoms relating to the tongue or throat or stomach had already directed his attention to the possibility of serious organic disease? We cannot be too careful to avoid giving suggestions or hurting the susceptibilities of nervous patients, and even the most experienced and thoughtful will at times unwittingly fall into error. I remember accompanying a very depressed neurasthenic patient to consult the late Sir Andrew Clark, the kindest and most considerate of physicians; unfortunately, in giving his opinion, which was in the main most encouraging, he dropped the word "melancholia." The outcome of that visit was disastrous, entailing serious trouble all round, in which even Sir Andrew himself shared, for he was pestered for weeks with letters to know whether in using the term "melancholia" he had the idea of insanity in his mind.

In framing a diagnosis we cannot, of course, hope to be invariably right, for latent organic disease is prone to mask itself behind functional symptoms and to masquerade in a garb of pronounced neurotic character; and, on the other hand, the deceptions practised upon us by hysteria and allied functional nervous states in simulating serious lesions, is well known. But we can at least make an exhaustive examination of our patient and institute a thorough search for unequivocal physical signs and symptoms of organic disease; failing to find them, and recognizing that we have a nervous temperament to deal with, we may then give the patient the benefit of the doubt and choose treatment directed to combating the neurotic factor at work.

It may be urged that the doctor's reputation is at stake, and that if not quite certain of his ground he is justified in "hedging" by way of safeguard in the event of something turning up. But this is, to say the least, unscientific and selfish, and inconsistent with a professional man's duty towards his patient, which is, when possible, to effect a cure. In neurasthenia a hedging diagnosis may effectually block a cure. Once let us grasp the fact that neurasthenia is a definite morbid entity deserving of a prominent place in our nosological tables, to be diagnosed and treated like any other disease, and we shall see immediately that our reputations are in much greater peril in consequence of failure to effect a cure than they would be from missing a latent organic lesion. A correct diagnosis is, then, of the first importance.

DIAGNOSIS.

We employ the term "neurasthenic" in a very loose and certainly most comprehensive way. It is made to include the north and south poles and all the intermediate latitudes of functional nervous disease. Anything between the highly-strung, interesting, but irritable young lady who abhors the designation "nervous," and is grossly insulted by the slightest hint that she is hysterical when she complains of an abiding cold spot between her shoulders in her spinal column that nothing relieves, and the stupid, depressed, ever-complaining and, indeed, heart-breaking "lie-abed," a lifelong trouble to herself and her friends; anything between the intelligent, vivacious business man with a fixed and altogether exaggerated idea of the importance of a certain sensation in his head or stomach, and the distressing state of neurotic *impasse* as represented by the lifelong depressed hypochondriac, we call neurasthenic, and their name is legion. But the fact that the term is used in a loose and wide sense is only an additional reason why we should be

most careful in working out a diagnosis. Our guiding rules should be to make, if possible at our first interview, a careful search for organic mischief, and in any case to give no opinion until an exhaustive examination has been made.

A few points seem to indicate the neurotic nature of the symptoms, and to some of these I may briefly refer.

1. Many, though of course not all, neurotic pains are described as *constant;* it is said that the pain never ceases, is always present during waking hours. Organic pains are seldom so described. On close examination the admission is often made that these functional pains do occasionally cease for a time, but at the next interview the legend that the pains are constant is revived, and once more a close interrogation has to be instituted before the truth is reached; this lack of accuracy is strongly suggestive of the mental state underlying neurasthenia. Headache, for example, described as constant, is usually of this nature, and the same may be said of spinal pain and backache generally.

2. A clue may be furnished by the kind of language employed in describing symptoms, this being generally exaggerated, expansive, and florid. The neurotic refers to his pain or other abnormal sensation as ever increasing; at every visit it is worse than before—it is "appalling," "past bearing."

3. Again, we may learn much from the fact that a neurasthenic patient who comes to see us, and is both able and anxious to describe in detail every feature of his case, is nevertheless accompanied, as a rule, by some one who can and will emphasize his story further—a wife, a sister, or a sympathetic friend.

4. It is important to observe—and many neurasthenics are prepared to admit the fact, or we may obtain it from an intimate friend—that *pari passu* with the progress of the symptoms for which we are consulted there is evidence of an ever-increasing nervousness, using the term in a general sense. I think this is a valuable point, for it commonly happens that in a case of organic lesion complicated, and it may be masked, by neurasthenic symptoms, the functional aspect becomes less noticeable and the patient acquires more and more control as the serious mischief advances.

In addition we should become familiar with the special features of neurasthenic pains and other symptoms, many of which are characteristic. Just as the name of an individual will give us a clue to his nationality, so the special locality or description of a pain will furnish evidence of its origin. For example, neurotic or pseudo-angina is worse at night, excites but little real alarm in the minds of patients or friends, seldom passes into one arm alone, is accompanied by palpation, and lasts for hours. The neurotic backache is either a fixed sacral or coccygeal pain, or else is diffuse, a veritable will-o'-the-wisp in the sense that it cannot be located exactly. A headache complained of as constant and referred to the top of the head is nearly always functional and neurotic, and so on.

But no matter how suggestive the symptoms, no matter how great our experience may be, we should never content ourselves with a diagnosis arrived at in this way. A judiciously conducted inquiry and an exhaustive physical examination serve two valuable purposes: First, to set at rest the actual question whether there is organic disease, and then to convince the patient that we really and fully understand the case. If we are to treat the neurasthenic successfully we cannot do too much to gain confidence in the first instance.

Treatment.

Given a careful and correct diagnosis, we have next to consider the treatment to be adopted. I am bound to say at the outset of this that a personal factor enters into the successful treatment of neurasthenia that cannot be overlooked nor minimized. It calls for a combination of insight, sympathy, and firmness that all do not equally possess; and even those who do possess the power to rouse or restore the patient's confidence in his ability to combat his symptoms are not always able to exercise it with the same degree of success. In saying this I am not referring to the use of any such agency as hypnotism or suggestion, for that phase of the matter lies outside my subject to-night—I am speaking of ordinary intercourse between doctor and patient.

Next to the diagnosis based on positive and secure grounds must be placed courage to speak and act firmly, begotten of knowledge, and an eager desire to help our patient—and, may I add, confidence that the professional brother next door will say the same thing if appealed to by some dissatisfied patient who wants a definite name for his malady. Truth obliges me to add this qualification, as things are at present, for, though I would fain be the last to accuse any man unjustly, I am afraid it is undeniable that there are still in the ranks of our calling some few who will not hesitate to take advantage of the ignorance and credulity of patients and trade on the honesty of their neighbour. Such an one is, of course, not to be found amongst those whose scientific interest leads them to attend post graduate lectures—indeed, he is given to avoiding his professional brethren at all times—and what I would urge is that the growing assurance of medical men as to the nature of these neurasthenic disorders should in all cases be boldly acted upon. The more consistently this is done amongst upright practitioners the sooner will other methods—which, it will be seen, do not lead to cures—be discredited.

But to return to the patient. We must recognize that what we have to treat is not a group of symptoms, but a specific morbid state of the mind and nervous system. The well-known story of the patient who says "she cannot," the nurse who says "she will not," and the doctor who rejoins "she cannot will," puts the position in a nutshell. Therefore, as the successful treatment of neurasthenia does not lie in the treatment of symptoms, but rather in the management and correction of a mental fault, it follows that drugs are not of great assistance, though as tonics, etc., they have their place, and cannot, therefore, be entirely ignored. There are some who will argue that it is good practice to give neurasthenic symptoms a name based upon the locality to which they are referred, such as "liver," "gastric catarrh," "floating kidney," "displacement of uterus," "weakness of heart," and think it wise to treat these supposed ailments with drugs, etc., in the hope that the patient may eventually be persuaded that a cure has taken place. That is, drugs and other treatment are employed as an indirect method of suggestion, with a cheerful acceptance of the risk that they may do actual harm. This I believe to be most unsound practice, and I feel that we cannot too strongly set our faces against it.

The treatment that is attended by the greatest success, indeed the only rational line of treatment, consists of an honest and straightforward statement to the patient, dealing with the facts of the case—a statement that enters fully into its pathology and touches lightly upon the symptoms; a statement that, by its very firmness, disinterestedness, and kindliness, wins the confidence of the patient, and encourages him to think better of himself, and to make a real effort to rise above his trouble and ignore himself. The power to help and encourage our nervous invalids undoubtedly increases with experience and practice; and the sooner we begin to talk rationally to them the sooner will we acquire the art of curing them. Many a patient has returned to a doctor, it may be months or years after his first visit, the chief factor of which was a plain talk, and when asked as to his state and how the prescription suited him, has replied: "Oh, I am much better; but it was not the medicine that did me good, but what you said."

This is what may be done assuming that the patients seek advice at the beginning of the illness, before the neurasthenic symptoms are confirmed, and at a time when they are amenable to treatment, by the simple method of establishing confidence on the part of the patients in themselves and in their own ability to dominate and control the situation. The course becomes more difficult as time advances, and especially if a disquieting opinion has been offered and the patient's attention drawn by diagnosis to some definite lesion. Catchwords such as "catarrh of the stomach," "twist of the womb," stick and serve as a kind of rational peg on which to hang an entirely mythical string of non-existent symptoms. As a rule such a diagnosis is a random shot without meaning. I fear we are all too prone to give nervous symptoms a name—any name, alas! but the real one.

When the case has become confirmed, and especially when the surroundings are unfavourable and unhelpful, our difficulties are necessarily increased, and they become still greater when the patient's health has been lowered

by sleeplessness, anaemia, dyspepsia, and so on. But even then a true diagnosis and sound advice will do much, coupled with suitable remedies and change of air and scene; but the key to success still lies in the proper management of the patient's mental state. To grapple with this and the various causal factors at work requires all our tact, courage, and patience.

Many cases will, however, defy this rational line of treatment, even at the hands of the most experienced, when attempted at home. Adverse circumstances are too strong for them, and the doctor's efforts are more than counterbalanced by influences outside his control. It is then that isolation proves so valuable, with or without a course of the so-called Weir Mitchell treatment; and I feel that in bringing to a close my remarks upon the treatment of neurasthenia I cannot do better than give you a brief account of my own experience, extending now over many years, of the Weir Mitchell treatment.

This treatment, as you are aware, is a combination of isolation away from home, rest in bed, overfeeding, massage, and electricity. The one item in this list likely to produce a lasting mental effect is the isolation; and although Weir Mitchell himself incidentally speaks of this as giving a valuable opportunity for "moral suasion," he lays no great stress upon it from that point of view, while some of his followers openly deprecate "preaching," and insist on relying solely on the physical processes.

The great French physician, Dejérine, on the other hand, has evolved a system in which isolation with rest in bed and what he calls "persuasion" play the principal parts; overfeeding is used only in cases of emaciation, massage and electricity are discarded. Dejérine rejects suggestion as formerly used by Charcot and others because it in no way enlightens the patient's intelligence, nor does it help him to exercise his own will; the "persuasion" which he substitutes for suggestion means such rational explanation and demonstration to the patient as will communicate enough understanding of the matter to enable him to co-operate intelligently in his own cure.

My own experience, independently worked out and extending now over many years, goes to show that the point of chief importance is mental treatment administered under the most favourable conditions, of which the first essential is isolation under the doctor's control. The mental treatment is, in fact, a sort of education with encouragement. The plan adopted should not be too rigid; each case needs to be separately considered and treated on its own merits—one will require stern insistence, another gentle coaxing. By countless varying methods the treatment is always directed to the one end of leading the patient away from the constricted, self-centred attitude of mind in which attention is absorbed in narrow personal feelings, and substituting for this a roused or restored interest in wider affairs of life, which will in turn endow him with a new and larger and perfectly healthy self. To this main object the various helps of rest, over-feeding, "passive exercise" or massage, electricity, etc., are, when used at all, regarded only as subordinate accessories. And I may add, in conclusion, that the number of lasting cures secured in this way year by year strengthens my conviction that the theory is true and the practice sound.

Clinical Remarks
ON
TUBERCULOUS CHLOROSIS.

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WHEN we meet with a case which presents in a more or less marked degree all the ordinary appearances of chlorosis, and which yet on examination of the blood reveals the number of red corpuscles and the percentage of haemoglobin to be practically normal, we are very likely to find in it a history of past or present tuberculous disease. This condition, often occurring in young women, is one which long ago Trousseau recognized and called false chlorosis or tuberculous anaemia; and although in recent times, when blood examination has become more of a routine procedure, the co-existence in tuberculous disease of an anaemic appearance with a practically normal blood count is quite recognized, it seems to me that in cases apparently of chlorosis this possible association of tuberculous disease often passes for long unrecognized. Inasmuch as the recognition of such cases is important from the points of view alike of diagnosis, etiology, pathology, and treatment, I believe that the following are well worth recording.

CASE I.

A. H., aged 16, a French polisher, was admitted to Ward 31, April 9th, 1907, as a case of chlorosis. She complained of shortness of breath, palpitation, and swelling of the ankles, and stated that she had been ill for three weeks.

History.

Her family history was not very good. Her father had died, aged 35, from Bright's disease; her mother is alive and well. Of a family of four, two brothers had died, causes unknown; one sister was alive and well. Her surroundings at home seemed to be satisfactory; at work, however, she had been in a room with many others, and the air, she said, got very close. As regards previous illness, she gave a history only of suppurating glands in the neck at the age of 6 or 7. They were quite cicatrized. Her present illness, she said, began about three weeks before admission. With some pain and discomfort in the feet she noticed swelling, which the doctor told her was due to dropsy. The pain gradually ceased, but the swelling remained until her admission. She also noticed palpitation and breathlessness, and stated that she had been getting thinner.

State on Admission.

Height 4 ft. 10 in., weight 6 st. 3 lb. Her development and muscularity were poor. Some oedema of both ankles was present, and her appearance was one of pallor and extreme anaemia. The temperature showed slight irregularity.

Circulatory System.—The pulse was usually about 90 or 100. She had complained of shortness of breath, faintness, and palpitation. As regards physical signs, little that was abnormal could be detected. The heart was not markedly enlarged, the sounds were all closed, and, in spite of her pallor, the *bruit de diable* was not well marked. The red blood corpuscles numbered 5,200,000, haemoglobin 70 per cent., white corpuscles 7,187. A differential count gives polymorphs 57 per cent, lymphocytes 39 per cent., basophiles 3 per cent., eosinophiles 1 per cent.; the opsonic index was 0.9.

Respiratory System.—The patient had no cough, but gave a history of coughs coming on from time to time. Some weeks earlier the cough was very troublesome, and she suffered from pain in the chest on coughing and breathing. On careful examination of the lungs, slight shrinking of the left apex with a slightly impaired percussion note was made out. On auscultation, nothing was detected except slight harshening of the breath sounds. With the screen, the x rays afforded corroboration of the physical signs, for the left apex lighted up much less distinctly on inspiration than did the right. The urine was pale in colour, showing no trace of urobilin; and as regards the integumentary system, all that had to be noted was that there existed slight oedema of both ankles.

In this patient, then, we had presented all the appearances of chlorosis, and yet a practically normal blood count. The differential count of the white corpuscles showed, as was to be expected, a relative increase of lymphocytes, and the opsonic index, for the estimation of which I have to thank Dr. Ian Stewart, was within normal limits. Dr. Ian Stewart also tested in this patient the effect of tuberculin inoculation on the opsonic index, and found a rise on the third day, without any previous fall. All this may be regarded as indicating that there is at present no active tuberculous mischief going on. But the evidence of the old tuberculous neck glands, and the condition of the left apex undoubtedly point to the presence of tuberculous disease, whilst the occurrence from time to time of cough, expectoration, and chest pain, make this all the more manifest. The case is therefore one of tuberculous chlorosis.

CASE II.

Constance H., aged 18, domestic servant, was admitted to Ward 33 on December 18th, 1905, complaining of breathlessness, palpitation, stomach pain, and swelling of the legs, and stating that she had been ailing from this for the last two years.

History.

Her family history was not very good; her father died of Bright's disease, her mother in childbed. She had one sister alive and healthy, and one brother healthy; but of her other three brothers, one had Bright's disease, another had some form of paralysis, and another had died from consumption. She had been in service for three years, and as regards food and home surroundings had been well placed.

Previous Illnesses.—When she was 2 years old she had disease of the bones of the left foot. According to her account the bones were scraped, and the condition healed. At the age of 14, after vaccination, she seems to have developed a scaly skin disease, for which she was treated in the skin wards of the Royal Infirmary for some weeks. She left the infirmary improved, but the condition was very tedious, and did not completely disappear for a year or two after she left.

Present Illness —This seems to have begun about two years ago. She and her friends noticed that she was getting very pale, the lips especially. On climbing a stair she had breathlessness, palpitation, and pain over the heart; she had also headaches. At this time also her digestion troubled her. She had stomach pain and vomiting, and at times what she vomited resembled coffee grounds. In spite of dieting, and pills for the bloodlessness, she never felt strong.

State on Admission.

She appeared a well-nourished girl 5 ft. 5 in. in height, and over 10 st. in weight. She was very anaemic, the face, lips and gums showing marked pallor, and she had slight oedema of both ankles. The temperature was normal.

Circulatory System.—The pulse was about 70. She complained of breathlessness, palpitation, and pains over the heart on any exertion. She was giddy when she held her hands above her head. Examination of the heart revealed evidence of slight dilatation, but the sounds were closed in all the areas; there was a slight *bruit de diable.*

Haemopoietic System.—The lymphatic glands and spleen were normal. Blood examination showed red blood corpuscles, 4,900,000; haemoglobin 95 per cent.; white blood corpuscles, 9,000. The film shows a proportionate increase of lymphocytes.

Respiratory System.—She had had occasional coughs, but gave no history of haemoptysis. On physical examination all that could be made out was a shrinking of the right apex margin with harshening of respiratory sounds there.

Alimentary System.—For some time past she had been complaining of atonic dyspepsia, pain after taking food, with occasional vomiting. She was habitually constipated. The abdominal organs were all healthy.

Urinary System.—All that need be noted here is that the urine was of rather low specific gravity and rather pale.

This, then, was a second case admitted as chlorosis, in which on account of the high red corpuscles and haemoglobin estimation, we were led to look carefully for evidence of past or present tuberculous mischief. As will have been seen, this evidence was forthcoming.

As regards the course of these cases of tuberculous chlorosis, there is no doubt that though more tedious than ordinary chlorosis, they yet with treatment recover fairly well. But an interesting point is that with renewed feelings of health and vigour, and with great, often very great, improvement in their appearance, there is practically no improvement in the blood count. Indeed, I have had several cases which, on leaving the infirmary looking and feeling well, had an even smaller number of corpuscles and percentage of haemoglobin than on their admission. Such was the case with the first patient, for on leaving the infirmary her red blood corpuscles were 4,300,000, and haemoglobin 70 per cent. This naturally leads to the question, What is the real blood condition in those cases? Here we enter into the realm of theory, but the idea which naturally comes into our minds is that there is really an oligaemia—that is, a diminution in the total amount of the blood. On this theory we can quite understand how, on recovery, we get associated with increased volume of blood improvement alike in the appearance and in the nutrition and vigour of the patient, and yet that the haemocytometer and haemoglobinometer show little or no change.

This theory is also interesting because it recalls the old view that in those likely to become phthisical a relatively poor growth and development of heart and vascular system may be recognized. To this view I have always felt inclined, and it has been specially interesting to me to find, as have other observers, that skiagraphic examination in phthisical patients has often revealed a distinctly small heart.

Trousseau not only drew attention to the existence of this tuberculous chlorosis, but emphasized the fact that great care should be exercised as regards its treatment, inasmuch as the administration in such cases of large doses of iron might cure the anaemia, but was not unlikely to be followed by haemoptysis, and in time an acute and rapidly fatal phthisis.

This is perhaps an old-fashioned notion, and that grand old man, Trousseau, acknowledged that it was even in his own day. In his lecture on the subject he, however, stoutly affirms its truth, mentioning as conditions which also require equally careful handling *fistula in ano* and leucorrhoea in phthisical subjects. All this is, of course, a side-issue; and except to say that I am also old-fashioned enough to believe that what Trousseau has said is in the main true, and even to add two other conditions to his list, namely, enlarged neck glands and appendicitis in the phthisical, I shall do nothing more at present than report a case which bears out Trousseau's statements as regards the effects of iron in tuberculous chlorosis. As will be seen, it is different from the other two in that the blood count was really below the normal, but in many important respects it corresponds to the type of tuberculous anaemias.

Case III.

J. F., aged 17, by occupation a silver-chaser, but lately a worker in the slaughter-houses, was admitted to Ward 31 on October 31st, 1905, as a case of anaemia, and complaining of shortness of breath on the slightest exertion, and headaches.

History.

His family history was not good. He was the youngest of a family of thirteen, of whom eight were alive. Of those who were dead, at least two died of consumption. His home surroundings and food conditions were good. As a silver chaser he was exposed to bad air, but lately in the slaughter-houses he had always been in the open air, although exposed to weather and draughts.

Previous Illnesses.—About eleven years ago he had some inflammation at the base of the left lung. Six years ago he was treated in the infirmary for anaemia. Three years ago he had cough, expectoration, and haemoptysis, and two years ago he was a patient in the Victoria Hospital for Consumption, Craigleith, for six months. Shortly after leaving there he noticed bloodlessness beginning again, and this had got much worse during the last month.

State on Admission.

He was about 5 ft. in height, and his weight (7 st.) was fairly good. He was very pale and anaemic.

Circulatory Systm.—He complained of dyspnoea on the slightest exertion, also of palpitation, with occasional pains over the precordia. Examination of the heart revealed no marked enlargement, but a systolic murmur was heard over all the areas, especially over the pulmonary. The *bruit de diable* was marked.

Haemopoietic System.—The spleen and lymphatic glands were normal. Blood examination reveals: red blood corpuscles, 3,500,000; haemoglobin, 45 per cent.; white blood corpuscles, 5,000. A differential count showed: Polymorphs, 71 per cent.; small mononuclears, 23 per cent.; large ditto, 5.5 per cent.; eosinophiles, 0.5 per cent. The red corpuscles showed slight poikilocytosis, and they did not stain well.

Respiratory System.—He had very little cough or expectoration, and repeated examinations of the sputum showed no bacilli. Examination of the lungs revealed evidence of shrinking at the left apex posteriorly. The digestive system was practically normal, as also the urinary, the urine showing no appearance of urobilin. The opsonic index, as ascertained by Dr. Ian Stewart, was 1.12, and after inoculation with TR a slight negative phase was noticed, not sufficient, however, in Dr. Stewart's opinion, to warrant the diagnosis of tubercle, but yet more marked than would be expected in a healthy person.

After-History.

After some 7 weeks' treatment in the ward, with rest, fresh air, good food, and arsenic, he showed great improvement. He acquired a good colour, and his nutrition and general vigour increased, so that he was able to take his share actively in the ordinary work of the ward. With all this, however, it was noteworthy that his blood count showed practically no change.

He was sent to the convalescent home, but there, after a few days, he developed a cough, and spat up a large quantity of blood. He was at once sent back to the ward, and there we found him presenting again all the appearances of great anaemia, and with some dulness and crepitations at the left apex. From this condition he rapidly recovered, only, however, as strength returned and pallor disappeared, to suffer again from haemoptysis. He died a few weeks ago, apparently from anaemia and debility, and for the last eight or nine months of his life his condition was very much like that of haemophilia—that is to say, as soon as he felt well and developed a good colour, he had haemoptysis. Dr. Leslie Lyall, who saw him during the last months of his life, informed me that iron always brought this condition about.

Lastly, as regards treatment in those cases of tuberculous anaemia. As already stated, Trousseau held that iron was to be avoided, and that arsenic and general treatment by hydrotherapeutics, salt-water baths, etc., were good. In the main I agree with this, for I look upon the condition as one which occurs in individuals who, as the result of hereditary or acquired causes, have given indications that they possess that low resistance power to the

tubercle bacillus which is best described by the old-fashioned phrase "the tendency to consumption." In what way and to what extent this blood defect may be salutary as regards tuberculous lung disease, we can only conjecture. My own idea is that it may be by inducing an air hunger, and so stimulating lung function and nutrition. Anyhow, when we reflect that the quality of the blood is quite good, we can understand that treatment to improve the health generally rather than the blood specially is what is required.

THE AUTOMATIC RHYTHM OF THE HEART.

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THE prolonged controversy during the last quarter of a century as to the origin of the automatic power of the heart to beat rhythmically has received marked stimulation during the last few years. Leaving aside the earlier hypotheses, one of which attributed the beats to impulses sent from the central nervous system, while another regarded distension of a cardiac chamber by blood as the exciting cause of its systole, there are left two opposing theories, both of which recognize that the automatic power of the heart lies in itself, and is quite apart from the central nervous system or the circulation of the blood. The researches of Gaskell, Engelmann, and others have given us certain facts which it is the province of the theories to explain, although these facts are sometimes lost sight of in the heat of discussion. These facts are based, of course, on the examination of vertebrate hearts in general; and it is the discovery that they are also true of human hearts which constitutes the important advance in clinical knowledge that has followed the application of physiological methods by Mackenzie[1] and Wenckebach[2] in this particular branch of practical medicine. The theoretical explanation of these facts is relatively unimportant although it is of great interest.

In considering any theory it is necessary to assume that the heart possesses certain properties in order to account for the phenomenon of its rhythmical beat, but many of these properties are also possessed by the undifferentiated protoplasm of the lowest forms of life. In the first place it must respond to stimulation, a property which is really divisible into two: (1) excitability, and (2) in this muscular organ, contractility. Since the heart is capable of beating when separated from all external stimuli, it must possess its own stimulus which excites it to contract. Experimentally it has been found that an artificial stimulus is conducted in all directions in the heart from the point stimulated. Consequently the heart owns the further property of conductivity. Like all muscle it also exhibits tone, and during life is never completely flaccid. Thus the heart has these five properties: a stimulus of its own, excitability, conductivity, contractility and tonicity. The point at which theoretical controversy arises is over the question, "In what anatomical components of the heart are these various properties seated?" In the heart we find a special kind of muscular tissue, nerve cells and fibres and connective tissue with blood vessels, etc. It is evident, therefore, that the foregoing properties must be situated either in the nervous or the muscular elements. Some observers attribute them almost entirely to the first, whilst others attribute them absolutely to the second. It is, of course, possible that they may be divided between the two tissues, and it is necessary, therefore, to consider each property individually and to weigh the evidence before assigning it to the one or the other.

Contractility, or the power of contracting, is evidently a function of the muscle fibres, and does not need further discussion. Muscle fibres do not contract unless they are stimulated, and in order to receive the stimulus they must be excitable. Ordinary striped muscle may be excited through its nerve fibres, and it has been contended that both it and the cardiac muscle fibres can only be excited through nerve fibres. The cardiac muscle cells are surrounded by a very close network of non-medullated nerve fibres, as can be demonstrated by modern methods of staining.[3] We now know also, contrary to what was previously believed, that, in mammalia at any rate, a quiescent heart may be made to respond with a contraction to each stimulus sent to it by the accelerator nerve.[4] It has been found impossible to eliminate by means of poisons the possible action of the accelerator nerve endings in cardiac muscle without seriously injuring the muscle itself. On the other hand, nerve fibres, when separated from their cells of origin, degenerate and in time become functionless, and there is no reason to suppose that the cardiac nerve fibres differ from others. Although new methods of staining have shown that ganglion cells are more numerous in the heart than was at one time supposed, yet no ganglion cells have been found in the apex of the frog's ventricle; and if this part be separated from the rest of the heart, the nerve fibres may be assumed to degenerate in a few days and become functionless. It has been found possible to keep such an apex preparation for twenty-one days or more in a condition in which it will respond by a contraction to a direct stimulus. Further, it has been found that certain stimuli, such as ammonia or weak acids, excite ordinary skeletal muscular tissue, but not nerves; while others, such as glycerine, excite nerves, but not muscle. The apex of the frog's heart is excited by ammonia and weak acids, but not by glycerine.[5] It is thus evident that the cardiac muscle possesses the property of excitability as well as contractility, quite independently of the nerves with which it is surrounded.

It has already been pointed out that if the heart be stimulated artificially at any point, the stimulus is conducted in all directions from the point stimulated. This may be explained in three ways. It was at one time suggested that the stimulus excited nerve endings which transmitted it to the ganglion cells, which in their turn excited the muscle tissue, but there is no convincing evidence of any such reflex action, and the regular progression of the contraction wave from the spot stimulated weighs strongly against any such hypothesis. A direct conduction of the stimulus may occur through the muscle tissue or by means of the all pervading plexus of nerve fibres. Although nerves have the power of conducting stimuli in both directions, the terminations of nerves are not the same at each end. It is only one end which is connected with a responsive tissue. Practically, therefore, effective stimuli which produce tangible results only pass along nerve fibres in one direction. In the heart, however, stimuli pass in all directions—as readily from ventricle to auricle as from auricle to ventricle, a phenomenon which is somewhat difficult to explain if the conduction be through nerve fibres. In favour of the neurogenic theory it is contended that facts derived from the study of isolated nerve fibres are not applicable to a nerve plexus, for a nerve plexus is a very complex structure whose properties are little known. Engelmann[6] attempted to solve the problem by the study of the rate of conduction in the heart, which he found to be 300 times less than the rate of conduction in the frog's motor nerves and to be remarkably influenced by bleeding, which has but small influence on the rate of conduction in nerve fibres. Here, again, it has been contended that arguments drawn from isolated nerve fibres cannot be applied to the nerve plexus in the heart; and Carlson,[7] working with the heart of *Limulus*, where the heart nerve fibres can be isolated, found the rate of conduction in them eight to ten times less than in the motor nerves of the same animal.* A stronger argument against the neurogenic theory is afforded by Engelmann's[8] zigzag experiments, which showed that a stimulus was conducted from end to end of one piece of cardiac muscle tissue, which had been cut into an irregular zigzag shape and in which every nerve fibre had probably been cut across at least once.

During a contraction the heart is refractory to further stimulation, and this refractory period has been shown to be due to the destruction, or at any rate the great diminution, of its contractility, excitability, and conductivity. It is the contraction that brings about this change, since a stimulus that is ineffective in producing a contraction does not alter these properties. After a contraction it can be shown that contractility, excitability, and

* It is to be noted that in this experiment the nerve fibres were separated from the ganglion, and that in another place (*Amer. Journ. of Physiol.*, xiii, 1905, p. 217) Carlson states that separation from the ganglion results in depression of conductivity. The evidence of depression relied on, however, is that after removal of the ganglion a local stimulation of the heart is often followed only by a local contraction not spreading all over the heart. The local character of this contraction might be explained by the depression of excitability and contractility which, as Carlson has shown, follows removal of the ganglion.

conductivity are slowly recovered. It seems unlikely that this remarkable effect would be produced on these properties by the contraction of a muscle fibre if the properties were situated outside that muscle fibre. A similar inference may be drawn from the influence of alterations of tone on conductivity. Tone may be dependent on the nervous system, but is essentially a property or condition of the muscle fibres. In the early part of 1906,[9] I suggested, largely on theoretical grounds, that increase of tone had the effect of diminishing the other properties of the cardiac tissue, and about the same time Porter[10] demonstrated experimentally that increase of tone directly diminishes conductivity. One would not expect this result unless conductivity were located inside, not outside, the muscle fibres. Moreover, just as with contractility and excitability, there is direct evidence that conductivity is possessed by the muscle apart from the nerves. In the separated apex of the frog's ventricle a contraction can still be obtained on stimulation even after the lapse of twenty-one days, when all the nerve fibres should be degenerated, and the stimulus is conducted to all parts of the preparation.

There is thus conclusive evidence that the muscle fibres possess the properties of contractility, excitability and conductivity; and the various phenomena of the active heart can be explained by assuming that the stimulus is conducted through muscle, and that the muscle is excited directly without the intervention of nerves. This, of course, is no proof that under normal circumstances the conduction and stimulation do not take place through nerves, but since the muscular channel is sufficient, the proof of the wholly unnecessary nervous interference should come from those who support the neurogenic theory.

The question of the origin of the intrinsic stimulus is, however, in an entirely different category. We have no direct evidence that muscle fibres elsewhere can contract except under the influence of an external stimulus. It seems probable that the peristaltic contraction of the ureter, contrary to Engelmann's opinion,[11] depends on the nervous system, while it is almost certain that the intestinal movements depend on the intrinsic nervous mechanism. It is true that muscular tissue will contract rhythmically under the influence of salt solution when separated from nerve cells (for example, the apex of the frog's ventricle or a piece of striped muscle), but under these circumstances the salt solution in all probability acts as a constant stimulus to the muscle. Carlson[12] has recently shown that in the heart of one animal at least—*Limulus*, an invertebrate—the power of automatically beating depends on the nerve cells in a ganglion. In this animal the ganglion is quite separate from the heart muscle, as are also the larger nerve fibres. On removal of the ganglion the heart ceases to beat although it responds by a single contraction to a direct stimulus. There are also inhibitory and accelerator nerves which apparently act on the cardiac muscle through the ganglion cells. It seems also certain that the lymph hearts found in frogs and certain other animals depend for their automatic action on their connexion with the nervous system.[13] If we are to suppose that all these similar organs act in exactly the same way the question as to the neurogenic origin of the heart stimulus is settled. The application of facts, drawn from the study of the invertebrates, to the vertebrates has, however, several times proved to be fallacious, so that a further difference between them is quite possible. Moreover, on carefully examining the phenomena exhibited by the heart of *Limulus*, it is found that in several respects it does not correspond with the vertebrate heart. The heart of *Limulus* is a large organ 15 to 20 cm. long and 2½ cm. broad, and yet under ordinary circumstances it appears to contract simultaneously in all its parts.[14] It is true that, with tired hearts, the contraction can be seen to start at the posterior end and to travel to the anterior. Further, this heart consists only of a single chamber. The character of its beat differs very strikingly from the orderly procession of contraction of the great veins, auricles, and ventricles, which we can see in the vertebrate heart. Such a beat as that of the heart of *Limulus* could not possibly be co-ordinated and conducted by the muscle tissue alone, and, as a matter of fact, Carlson shows that the conduction and co-ordination of the normal beat takes place in the ganglionic cord. Cross-section of the heart itself does not interfere either with the conduction of the stimulus or the co-ordination of the heart beat, whereas section of the appropriate nerves or of the ganglion cord destroys conduction and co-ordination. This peculiar action of the heart, no doubt, is suited to the requirements of the animal, and it is not unreasonable to suppose a special mechanism is available to bring it about. The refractory period, which is such a marked feature of the muscular contraction of the vertebrate heart, is less conspicuous in the heart of *Limulus*, so that this heart can easily be tetanized. This also applies to the lymph hearts. In the vertebrate heart the contraction does not depend on the strength of the stimulus, but provided that the stimulus is sufficient to produce a contraction at all, then the contraction is the largest one of which the heart is at that moment capable, and this is also true of an isolated apex preparation. This "all or nothing" law does not apply to lymph hearts, where the contraction varies directly with the strength of the stimulus,[15] as in ordinary striped muscle, and only applies to a limited extent to the heart of *Limulus*, and then only when the ganglion is intact. On stimulation of the ventricle of a mammalian heart, an extra-systole can be produced which is followed by a pause—the compensatory pause—which is due to the ventricle having to await the next stimulus from the veins before it again contracts. Extra systoles can be produced by direct stimulation in lymph hearts, but they are not followed by any compensatory pause.[16] This aspect of the extra-systole does not yet seem to have been worked out in *Limulus*, but in the invertebrate *Palinurus*,[17] the extra-systole, even when the stimulus occurs late in diastole, has apparently no compensatory pause, while other invertebrates, such as *Heliotis* and *Aplysia*, show a well-marked compensatory pause.*

These remarkable differences justify one in not accepting the proved neurogenic origin of the heart beat in *Limulus* as necessarily involving a similar neurogenic origin for the beat of the vertebrate heart, although, of course, a strong argument is afforded in favour of this view.

Engelmann[18] showed that the isolated ventricle of the frog's heart beats rhythmically under the influence of a constant stimulus, a contraction taking place whenever the excitability had sufficiently recovered after the previous beat. In such a ventricle preparation an extra-systole may be produced by applying another momentary stimulus, stronger than the constant stimulus, during the quiescent period. Such an extra-systole is not followed by a compensatory pause. But if an intermittent stimulus be used to cause the apex preparation to beat rhythmically, an extra-systole is followed by a compensatory pause, the explanation being that the first stimulus after the extra-systole finds the muscle in the refractory stage, so that it is not until the second regularly occurring stimulus that a beat is produced. From this experiment it follows that the stimulus to the ventricles in the intact heart is intermittent, but it does not necessarily follow that the stimulus to the heart as a whole is intermittent. It is clear that the beat of the heart starts in mammals in the great veins, and spreads thence to the auricles and then to the ventricles. If we assume that the conduction of the stimulus is through the muscle, and that the muscle is directly excited without nervous intervention, the stimulus to auricles and ventricles must be intermittent, since both conductivity and excitability are destroyed by each contraction, and are only slowly recovered after a contraction. The stimulus to the muscle tissue in the great veins, however, might well be constant, only taking effect when the excitability there had sufficiently recovered.

Under these circumstances the rhythm of the heart would depend on the rate at which the excitability was recovered in the great veins, and on any variation in the strength of the supposed constant stimulus. The condition of excitability in the auricles and ventricles would be immaterial. A stimulus applied to the ventricles would produce an extra-systole destroying excitability and conductivity, and this extra-systole would spread up to the great veins and destroy excitability there. The next contraction of the heart could not occur until the excitability at the great veins had sufficiently recovered, and this would be at an appreciable interval after the recovery of excitability in ventricles and auricles according

* It is interesting that Straub (*Pflüger's Archiv*, vol. lxxxvi, 1901 p. 504) regarded the heart of *Aplusia* as showing strong evidence for the myogenic theory, owing to the supposed absence of nerve cells and fibres.

to the time taken in the conduction of the extra stimulus to the great veins from its point of application. Thus a compensatory pause would follow an extra-systole of ventricular or auricular origin. If the extra stimulus were applied to the ventricle, it is possible that it would not arrive at the great veins before the normal contraction had started, but this normal contraction would be confined to the great veins, as auricle and ventricle would be refractory from the extra-systole. Thus the next complete heart beat would not occur until the next normal contraction started from the great veins at the usual interval after this ineffective one, and so, under these circumstances, there would be a full compensatory pause (see Figs. 1 and 2). A constant stimulus to the muscle cells of the great veins would thus afford a sufficient explanation of the phenomena so far described. Such a constant stimulus might be—and, indeed, probably would be—derived from sources outside the muscle fibres them

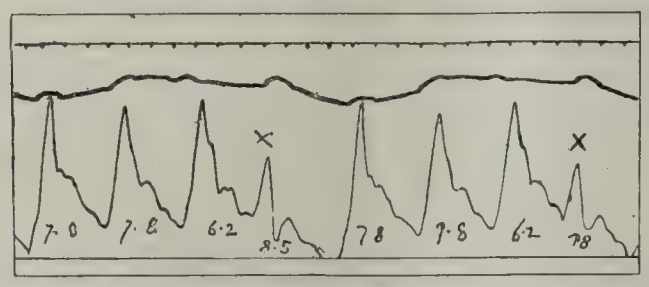

Fig. 1 shows extra-systoles starting from the auricle. The time-marker shows fifths of a second, and the normal interval between two pulse waves is 7 8 tenths of a second. After every third beat an extra-systole occurs too early, and is followed by the compensatory pause, which is longer than the normal interval. For instance, the pause before the first extra systole is only 6 2 tenths, while that following it is 8 4 tenths. These two together are not equal to the double of the normal interval, so that the compensatory pause is incomplete.

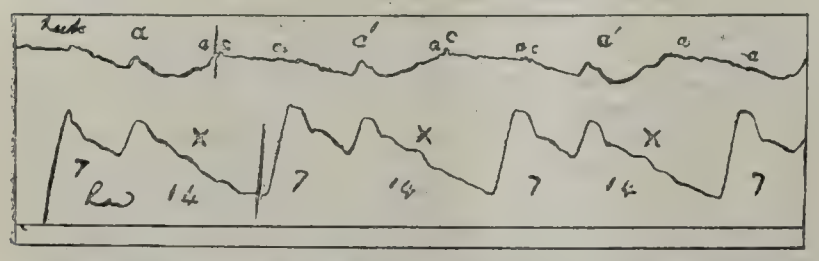

Fig. 2 shows extra-systoles arising from the ventricle. Every other beat is followed by a long pause, in which the small extra-systole x can be seen. The normal interval is approximately 7 tenths, although there is no time-marker, while the long pause endures for 14 tenths, or exactly double the normal interval. Here, then, there is a complete compensatory pause. In the tracing from the jugular vein, which is given above this radial tracing, small waves, a and c, are shown, due to the auricle and carotid respectively, the relation of which to the radial waves is obtained by measuring off from the uprights, which exactly correspond. Where the extra-systole, x, occurs in the radial a large single wave, a, is found in the jugular. The reason of this is that the ventricle here has contracted before the auricle, and when the auricle comes to contract it finds the ventricle in systole, and so sends its blood back into the veins, instead of into the ventricle. The auricles are beating quite regularly and take no part in the ventricular irregularity.

selves—for example, from the ganglion cells situated in the great veins. It is more probable that nerve cells discharge their energy intermittently rather than constantly, but the recovery after discharge is probably very rapid. Such an intermittent discharge with a rapid recovery would act in much the same way as the constant stimulus that has been described.

Engelmann considered that the stimulus was intermittent, was situated in the muscle fibres, and destroyed by each contraction. Obviously his theory gives a wider scope of variation of rhythm than that just considered. One point, upon which all observers are agreed, is that the stimulus and excitability are independent of one another. It is, for instance, possible to stop the heart experimentally without affecting its excitability, as shown by its response to direct stimulation. In other words, the stimulus may be removed while excitability remains unaltered.[19] This, of course, is explicable on either theory. Engelmann[20] has shown that variations in the stimulus and variations in excitability may occur independently of one another. The experiments are not, however, conclusive in showing that the variations of rhythm, etc., produced are not explicable with a constant external stimulus, just as they are with an intermittent internal stimulus of the muscle fibres, but the wideness and extent of the variations are certainly in favour of Engelmann's view.

Some experimenters[21] have come to the conclusion that the excitability may be recovered to its full extent some time before a contraction takes place. This weighs strongly in favour of Engelmann's view, but it is to be remembered that the experiments dealt with the excitability of auricle and ventricle, and not of the great veins.

Certain indirect arguments have been applied to the solution of the problem from time to time. For instance, Yandell Henderson,[22] from experiments on the volume of the heart, considered that a neurogenic origin of the beat was the more probable. His results are, however, not incompatible with the myogenic theory. Gibson, in his address this year to the Medical Society of London, brought forward some arguments from the human side. The possibility of a block between the veins and auricles seems definitely proved.[23] In human beings the

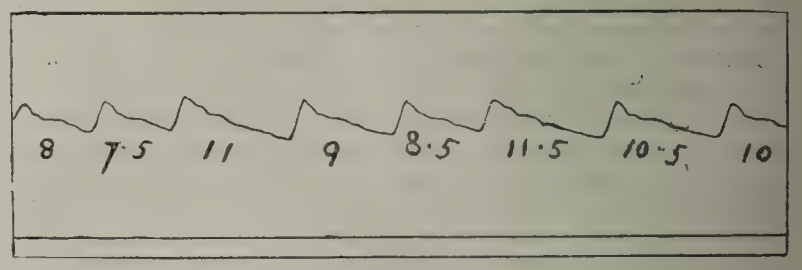

Fig. 3.

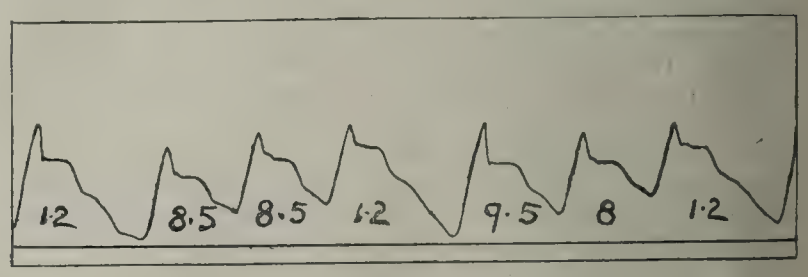

Fig. 4.

Figs. 3 and 4 show the juvenile type of irregularity. They are both taken from boys aged 11 years, one suffering from epilepsy, the other convalescent from enteric fever. The intervals between the pulse waves are approximately 8, 7 5, 11, 9, 8 5, 11.5, 10 5 tenths of a second in the first, and 12, 8 5, 8 5, 12, 9.5 8, 12 in the second. In spite of the inequality of the intervals the individual pulse waves do not differ much in size.

probable starting point of the heart beat is at the root of the superior vena cava, and this point is connected with the auricles by numerous muscle fibres,[24] a condition of things not favourable for the occurrence of a block. It is, of course, true that a stimulus is much more likely to be blocked in a narrow channel of communication than in a wide one, but a block in the latter is by no means impossible. Conductivity in a particular group of muscle fibres may be depressed in two ways: (1) By pressure from the outside, which is obviously more likely to affect a narrow strand; or (2) by its internal condition, which may be altered by nervous influences, poisons in the blood, fatigue, etc. This second cause of depressed conductivity would be likely to act equally on all muscle fibres, though it is quite possible that it might cause a block in a narrow strand sooner than in a wide one. Where, however, conductivity is gravely depressed in all the muscle fibres, the stimulus would never be conducted from its point of application. In other words, there would be an appearance of a block close to the point of application of the stimulus, which in a normally beating heart would be between the superior vena cava and the right auricle. A fibrosis might very well convert the wide channel between vein and auricle into a narrow one, in which a block might easily be induced, or communication between vein and auricle might be abolished by disease. Gibson also instances the juvenile type (see Figs. 3 and 4) of heart irregularity—when the beats are equal in size but are separated by unequal intervals—as being impossible of explanation on the myogenic theory, but it is almost equally difficult to offer any satisfactory neurogenic explanation of this irregularity.

The arguments adduced hitherto are, on the whole, rather in favour of the nervous origin of the stimulus, but they are certainly not incompatible with a muscular source. We have, therefore, to turn to more direct evidence in attempting to find a solution for the problem. Here we are met by a flat contradiction, one side affirming

and the other denying, that the muscle can be seen to beat when separated from nerve cells. The contention that every cardiac muscle fibre is capable of supplying its own stimulus and beating independently may be taken as disproved. All the later evidence goes to show that the ganglion free apex of the frog's heart is incapable of beating unless stimulated. Experiments on mammalian hearts also tend to prove that only certain parts of the heart are capable of starting an independent rhythm, though observers do not exactly agree with one another. For instance, Hering,[25] by making extensive cuts through the hearts of dogs and other mammals, found that a section cutting off the great veins stopped the heart for a time, and that later the heart started beating again; further cuts removing other parts of the heart showed that certain regions—such as the left auricle, the right auricular appendage, and the ventricular apex—never started a rhythm of their own. All the parts capable of starting a rhythm, such as the great veins, the greater part of the right auricle, and the upper parts of the ventricles, contain numerous nerve cells, while the auricular appendages and the ventricular apex contain no nerve cells. Langendorff and Lehmann[26] had previously come to the conclusion that the auricular appendages were incapable of starting an independent rhythm, but Erlanger and Blackman,[27] while generally confirming Hering's results, state that the whole of the right auricle, including the appendage, exhibits the property of rhythmicity. Assuming, however, that Hering is correct in his view, that only those parts of the heart exhibit rhythmicity which contain numerous nerve cells, this does not absolutely prove that the nerves supply the stimulus, though, of course, it affords strong testimony in favour of that view. If only certain of the muscle fibres possess the power of rhythmically contracting, we should expect these important fibres to be specially well provided with blood vessels and nerves.

A difference of structure would be expected in association with a difference of function. In respect of this point there is some evidence in favour of the myogenic theory; Gaskell had already[28] remarked that the muscle in the sinus venosus of the frog, which exhibits the greatest rhythmicity, was of a more embryonic type than the rest of the cardiac muscle, and recently Keith and Flack[29] have shown that a similar difference of muscle exists in mammals and man. They point out that the remnants of the sinus venosus are found chiefly in the right auricle in the muscle round the vena cava superior, coronary sinus, and remnants of the venous valves, although it is possible that some remnants may also exist in the left auricle round the openings of the pulmonary veins. The muscle in these situations belongs to the pale variety of striped muscle, as does also the muscle in the A–V bundle, whereas the rest of the cardiac muscle is red. The A–V bundle may be regarded as the remnant of the auricular canal, the appendage forming the auricle proper. Thus a special muscle tissue is found in those situations where a rhythmical beat may start, and is found nowhere else, with the possible exception of the muscle round the opening of the pulmonary veins in the left auricle. At two points or "knots" the muscle differs still more markedly from the general cardiac muscle. One knot forms the commencement of the auricular ventricular bundle just above the septal cusp of the tricuspid valve, and the other is at the root of the superior cava. The second of these receives a specially large blood supply, and has numerous nerve cells, and is possibly the spot from which the normal cardiac contraction starts.

There is also direct evidence in favour of the stimulus being of muscular origin. The first and most important is afforded by Engelmann's experiments on the great veins of frogs,[30] in which he found that these veins were capable not only of rhythmically contracting as a whole but that even very small pieces of them, hardly a cubic millimetre in size, rhythmically contracted also. In many of these tiny pieces Engelmann was quite unable to find any nerve cells although the muscle was very thin and the cells should have been easy to find. It is true that modern methods of staining show nerve cells to be numerous over the great veins, and it would be well if Engelmann's observations were repeated; but until they are disproved it seems to me that they must be accepted, and the possibility of the muscle beating rhythmically without the intervention of nerve cells acknowledged. Support is lent to this conclusion by the fact that the embryonic heart in birds and fishes starts beating before there are any nerves or nerve cells in it.[31] It is true that it also starts beating before the muscle fibres have developed, but the cells which start this rhythmic pulsation are mesoblastic cells from which muscle fibres are subsequently developed, while the epiblast, from which, so far as we know, all nerve cells are derived, has no part in the causation of the beat.

In conclusion, it may be emphasized that the myogenic theory is not incompatible with any of the known phenomena of the heart beat, while it affords the best explanation of many of them. It is certain that the muscle fibres possess the properties of contractility, excitability, conductivity, and tonicity, and it is probable that these are exercised during the normal beat of the heart without the intervention of the nervous tissue. It is also certain that all the muscle fibres are not capable of building up a stimulus for themselves, but there is evidence to show that certain fibres of peculiar structure possess this property. While certain facts seem to find their readiest explanation in the neurogenic theory, especially the response of the quiescent heart to the stimulation of the accelerator nerve, there are others pointing as strongly to the hypothesis that the heart beat is purely muscular; and in the face of Engelmann's direct observations on the great veins in frogs and the occurrence of pulsation in the embryo heart before development of nervous elements, it seems to me that the complete myogenic theory has the more weighty evidence in its favour, and should be accepted until stronger arguments are brought against it. The conception that the rhythmic beat is purely muscular in its origin does not precude the possibility of the beat being influenced by outside nervous impulses; this would give a sufficient explanation of the large nerve supply to the heart.

Attributing the rhythmic power of contraction to the muscle is, of course, only a very partial explanation of the cardiac beat, the cause of which lies deeper in physico-chemical changes in the cells. Much suggestive work has been done on these lines by Loeb,[32] Howell,[33] and others, but a discussion of this is outside the province of the present article.

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LOCOMOTOR ATAXIA: ITS EARLY RECOGNITION AND GENERAL MANAGEMENT.

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CHELTENHAM.

In considering the nature of the lesion, a sclerotic change in the posterior columns of the cord, in the posterior nerve roots, and in the peripheral nerves, we must bear in mind that although acute and subacute attacks do occasionally occur, the disease is essentially chronic and progressive, and that from a strictly curative point of view little can be expected. The course of the disease is usually very long, and may extend through a period of twenty or thirty years. Our aim, therefore, in treating the malady should be chiefly to relieve the symptoms, and as far as possible to arrest or retard the degenerative process. The cause of this degeneration is by most authorities considered to be syphilis. Erb, in his investigations on this subject, found that there was a history of syphilis in 90 per cent. of cases of tabes; Moebius

concluded that the disease "never originated without syphilis"; and, although the statistics of other observers show a somewhat lower percentage, there can be no doubt that syphilis is responsible for a very large number of cases of the disease.

How the result comes about is uncertain. Fatigue, excesses, cold, trauma, overstrain, intoxications, etc., are considered to be exciting causes; there may also be hereditary predisposition.

It has been shown that if syphilis be treated early and thoroughly the probability of the appearance of tabes is lessened, but not removed.

1. *The Preataxic Stage.*

Perhaps one of the greatest difficulties in regard to this stage is its recognition, yet it is at this early stage that treatment may be of most service.

It often happens that the patient complains of gastric or intestinal disturbances (the so-called crises), and as they simulate ordinary dyspepsias the underlying cause may be overlooked.

The neuralgic pains, too, are misleading and may be looked upon as rheumatic. I saw a number of cases while resident medical officer at the hospital at Buxton some years ago, and noted the tendency there was for patients suffering from locomotor ataxia to be sent as cases of rheumatism. A diagnosis is often missed by omitting to test the knee response.

Cases of so-called sciatica may be really tabes, and this disease should always be suspected when the "sciatica" is bilateral. An early intimation of the onset of the disease, and often that first noticed by the patient, is difficulty of micturition; he may ask advice simply on account of this.

A young man came to me about three years ago complaining of being unable to control his water, especially during the night, when he frequently used to "wet the bed"; he had no other symptoms which would lead to a suspicion of a spinal lesion. This patient has now marked ataxia with other evidences of the disease well pronounced; the trouble in regard to micturition, is, however at present in abeyance.

A patient in whom there is no ataxia and who walks briskly may complain of a burning feeling and numbness in the hands and feet, symptoms suggestive of peripheral neuritis. If the calf muscles are not soft and flabby, and pain does not result from pinching them, locomotor ataxia should be suspected.

It is always advisable when any of these early symptoms are observed to at once seek for confirmatory signs; probably the most important of these is loss of knee-jerk—often a very early manifestation, and with one or more accompanying symptoms it is practically diagnostic.

Eye indications (the Argyll-Robertson pupil, ptosis and optic atrophy) should be looked for; indeed, blindness may be the first symptom of tabes. Laryngeal dyspnoea, with cough and stridor, is occasionally a very early symptom, and the spasm may be so great as almost to cause asphyxia, though this is very rare. Lightning pains often occur early.

I have a patient now—a female, aged 52—who for several years has suffered from intense darting pains in both forearms, and although during the early days of my attendance on her I looked for signs of tabes, until the last year or so I was unable to satisfy myself that the disease was really present. In this patient the knee-jerks are now absent; she has very small pupils; says she feels giddy when washing herself; she sways when standing with the eyes closed; and has also other signs and symptoms of the development of the disease.

The pulse is in a number of cases accelerated.

Dr. Purves Stewart states that in the examination of the cerebro-spinal fluid we have a valuable and apparently constant means of recognizing tabes in its early stages, and that if there is no excess of lymphocytes present this disease (and also general paralysis) can confidently be excluded.

2. *The Ataxic Stage.*

This develops gradually. The patient sways in standing with his feet together and his eyes closed, and he finds difficulty in getting about in the dark; he is apt to fall if he suddenly turns round; the ataxic gait comes on slowly, and is quite characteristic; also inco-ordination of movements. There is no difficulty in recognizing this phase of the disease; it may continue for an indefinite term of years, and gradually merge into a condition of paralysis, when the patient becomes unable to walk and is obliged to take to his bed.

3. *The Paralytic Stage.*

In this intercurrent affections are apt to ensue, one of which is likely to be pyelonephritis or pneumonia.

General Management.

The preliminary or preataxic stage is often long, and characterized by few symptoms, and the case may never advance beyond this stage. The patient should be encouraged to follow his usual employment in a quiet way as long as he is able to keep about; he should be careful to avoid excesses of all kinds; systematic movements, regulated gymnastics, and general exercise are good, but must be indulged in short of fatigue. Cycling, as a rule, is not to be recommended, for fear of over-exertion.

Diet must be carefully regulated, and, in severe crises, peptonized milk and rectal feeding are indicated. It may be necessary during exacerbations, whether from crises of different forms or from severe pains, for the patient to be at complete rest in bed, with counter-irritation to the spine by heat, blisters, or the free use of the actual cautery. By these means great relief is obtained.

Suitable medicines must be given for the gastric and intestinal attacks; and constipation, which is common, relieved by an occasional purge and the usual tonics. Diarrhoea is sometimes troublesome, and requires checking in the ordinary way. Occasionally a hot or Turkish bath is very comforting and otherwise beneficial.

Drugs are often very disappointing, and the importance of devoting attention to the mental aspect of the case must never be lost sight of. Tabetics are apt to drift into a depressed condition, and no effort should be spared in endeavouring to brace up the muscular and other tissues which are not directly implicated, and to keep the general tone of the patient at its best. Massage is of use in many cases, and is a help to this end.

When the disease is advanced and paralysis has developed the patient should lie on a water bed, and all precautionary measures must be taken for the prevention of bedsores and other intercurrent troubles.

Special Indications.

(*a*) *Bladder.*—Retention and incontinence of urine are common symptoms, and cystitis, pyelitis, and suppurative nephritis may be set up. If cystitis occurs it should be treated with salol and quinine; the salol is broken up into carbolic and salicylic acid, and being excreted by the kidneys, disinfects the urinary passages. Urotropine is most excellent when the urine is alkaline and offensive; it may also be necessary to wash out the bladder for this condition. It is well to use a large india-rubber catheter, and strict antiseptic precautions must be observed. Catheterization, with the same precautions, must be resorted to whenever the bladder is imperfectly emptied.

(*b*) *Dyspnoea or laryngeal crises* as a rule are not serious, although at times they may be very severe and persistent; they may be relieved by the application of cocaine, inhalation of amyl nitrite, or a few whiffs of chloroform.

(*c*) *Perforating ulcers* form on the foot, generally over the metatarso-phalangeal articulation of the great or small toe, but other parts may also be affected, and sometimes both feet. There may be a sinus leading down to diseased bone, and gangrene occasionally sets in. In early stages ulcers must be treated by prolonged rest in bed and antiseptics; scraping becomes necessary in some cases. The ulcers may heal but recurrence is to be expected.

(*d*) *Fractures of bones* are caused very easily. They unite very quickly with a great amount of callus, so much sometimes that at the end of ten days or a fortnight there is a large mass around the part, due not only to callus, but also due to ossification in the soft tissues about the injured bone. These and even the muscles occasionally become so compact that there is the appearance of one solid mass of bone. The condition is akin to the arthropathic changes in Charcot's joints which occur in some persons suffering from locomotor ataxia, and which chiefly affect the knees. The effusion may be rapid. The joints must be kept protected from injury and abnormal movements by apparatus or position. Excision has not proved satisfactory. Fractures must be kept absolutely still, and fixed for a longer period than would be necessary in a healthy person, because the union tends to become soft, and directly the

patient bears weight on the limb after the splints have been removed the bone will very probably bend.

(*e*) *Ataxia.*—Probably the best form of treatment is by Frenkel's exercises, and even in very bad cases improvement is marked. When the ataxia is extreme and the patient unable to stand and walk, simple movements must be made while in bed. The first of these movements is that of raising one leg slowly and steadily to a fixed point, then bringing the heel down on a fixed point. A board can be used with notches, in which the heels are placed. The patient is then made to raise the foot and bring the heel down into another of the notches. These movements are persevered with several times each day, until the patient can perform them accurately. The next advance is to train him to stand steadily, and then to walk. At first this can be greatly aided by the use of an apparatus so constructed with adjustable crutches on wheels, that part of the patient's weight is transferred from the lower limbs to the axillae and arms; afterwards he should exercise with the aid of sticks, then without any support. He should next be made to walk bringing his foot down accurately on lines ruled on the floor. It is essential that the patient be impressed with the importance of making each step and movement in the precise way indicated. After some improvement has taken place and the patient has gained confidence, he may practise the movements himself. The best results are obtained in patients who take interest themselves in the exercises, and who are persevering in their attempts to carry out suggestions. It is important to give the patient every encouragement, and to try to help him to gain confidence in his own efforts. Movements for the arms suitable for each individual case can be devised. Every exercise must be made with great care. At first the movement should be practised for about a quarter of an hour two or three times a day, less or more according to the severity of the case; they should be stopped directly there is any sign of fatigue, and over-exertion must always be rigidly avoided. The exercises ought to be carried out under the eye of the medical attendant. They should be persevered with for not less than a month, except when contraindicated by fatigue, or other untoward symptoms.

X Rays.—In certain cases the *x* rays should be tried. Dr. Byrom Bramwell, in speaking of the effects of the treatment and its possibilities, states, in a case in which the most careful dieting, rectal feeding, and medicinal treatment had practically failed to arrest the gastric crises, which were very severe and of 2½ years' duration, the result was most remarkable. The *x* rays were applied for five minutes every day to the dorsal region of the spinal column. Immediate and extraordinary improvement resulted from the treatment, and the patient was able to digest potatoes, meat, etc., without pain or discomfort, and gained 10½ lb. in weight during the first week. There was a return of the symptoms in this case; they, however, were again relieved by the *x* rays. Nothing is known as to the mode of action of the *x* rays in cases of visceral and internal disease; it is probable that the improvement gained in locomotor ataxia is the result of a mental or psychical impression.

Thermal treatment may be obtained at Cheltenham, Buxton, Strathpeffer, and other places in this country; abroad, at Nauheim, Aix-la-Chapelle, St. Moritz, etc. Cheltenham, the garden town of England, has many advantages; the mild climate, the level aspect, and the general attractive appearance make it eminently suitable for the tabetic. A new central spa at the Town Hall was inaugurated by Dr. Goodhart on June 20th, 1906. The surrounding hills can be reached by electric car, where at a height of nearly 1,000 ft. above sea level the air is most invigorating. The most suitable temperature, as a rule, for baths is about 80° F. Sulphur baths are used, and are spoken highly of by some. Baths in general aid the circulation and are refreshing and comforting. The change of scene, regulation of diet, and general management to be obtained at a spa have a stimulating and helpful effect on the mental and general condition all-important to an ataxic patient, and there is no doubt that considerable benefit sometimes results from such treatment.

Suspension.—Benefit has been noted from this, it was probably due to suggestion and to psychical effects. It is not a form of treatment to be recommended and is now very rarely practised.

Electricity.—Both faradic and galvanic currents have been used, the former applied to the skin with a wire brush chiefly for the relief of pain, and with the hope of restoring sensation. The latter is best applied by means of two very large electrodes, one over the sacrum, the other higher up; the upper electrode is moved slowly up and down the spine, so as to vary the density without rapid makes or breaks, the current being gradually raised to the maximum which can be borne. The object of this is to modify the nutrition of the cord. Electricity may be tried for the paralysis which occurs, and should be applied to the nerves and muscles which are affected.

Marriage.—Tabetic patients ought not to marry.

Climate.—Cold and damp aggravate the pains; an equable warm and dry climate is one most suitable.

Drugs.—Potassium iodide and mercury have been largely given, but most authorities agree that they have not much influence over the lesions of the disease. If the case is seen in an early stage these remedies should be used, and if a history of syphilis can be elicited, and especially if the primary infection occurred within, say, two years of the onset of tabetic symptoms, or if there has not been early and thorough treatment of the syphilis, they should be administered perseveringly. Potassium iodide may be combined with colchicum and alkalies when the pains are severe. Silver nitrate given in ¼ grain doses for a long time often relieves and lessens the frequency of the pains, and may do some permanent good. Aluminium chloride may be given two or three times a day, and certainly with benefit, especially for the pains. Zinc phosphate is beneficial in some cases. Gold chloride has been used with good effects. Arsenic should be pushed and its general tonic effect is undoubtedly of service; its combination with iron is sometimes advisable. Strychnine is a remedy constantly employed for the tonic effect and is often of service. Ergot may be used in acute and subacute attacks, and it is recommended by Charcot for urinary troubles. Cannabis indica is serviceable in some cases for the relief of the pains. Calabar bean has some influence in improving muscular power and in retarding wasting in paralysis. Phenacetin and lactophenin are very useful for the relief of the pains, and also for control of crises and may be repeated. Antipyrin is used by many, but it is not without danger in large doses. An attack of pain will often yield after three or four doses of ten grains given at intervals of an hour. Sodium salicylate is worthy of trial when the pains are much in evidence. Nitroglycerine is very useful if there is increased arterial tension, then it may be given for a long time in increasing doses, with much benefit in relieving the crises and lessening the pain. Morphine is a remedy the use of which it is advisable to postpone as long as possible, but it may be a necessity if the distressing pain resists all other treatment; the smallest dose which will afford relief should be administered in the form of hypodermic injection. Sometimes it is also required for the gastralgia.

Animal Extracts.—Testicular juice, spinal cord, brain substance, spermin, have been tried but with very unsatisfactory results.

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AN OPEN METHOD OF ETHER ADMINISTRATION.*

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There are, of course, many known ways and means of administering ether, and I do not claim any originality for the method I am about to describe; but I think it would be worth bringing to notice, although I do not commend it as the only way ether should be administered, but rather look upon it as an addition to the

* Read before a joint meeting of the Lancashire and Cheshire and North Wales Branches at Chester.

anaesthetist's armamentarium. As the operating surgeon has several methods which he may adopt in the radical cure of hernia, so I think it is advantageous not to be too stereotyped in our methods of administering an anaesthetic, and to suit the anaesthetic and its method of administration to the case and condition of the patient, for, after all, the personal element is a great factor in anaesthetic work.

Those members of the Association who visited the Mayos' Hospital in Rochester when at the annual meeting last year, have seen the method adopted, it is said, in every case; but I must confess I myself would not apply it in every case, because I do not think it suitable to all the different types of patients one meets with here in England. Their habits may be different; either it may be that the climatic conditions in this country are different, and so the rate of evaporation of ether is not the same, or the ether itself may have a specific gravity unlike that used in America; which cause is at work I am not prepared to say.

I have long been an advocate for the open method of ether administration, using solely an Allis inhaler; but it is not my purpose in this short note to enter into the *pros* and *cons* of the open or closed method; I wish to describe a method which appeals to me on account of the simplicity of the apparatus which we all possess, since it consists merely of a Skinner's inhaler, a piece of gauze or Gamgee tissue, and a bottle with a gauze wick.

The Bottle and Wick.—An ordinary 6 oz. or 8 oz. medicine bottle answers the purpose well; a slit is made in the side of the cork to allow of the passage of a strip of gauze, which ought to reach to the bottom of the bottle, as, if this is the case, we are better able to regulate the flow.

The Inhaler.—The pattern known as Schimmelbusch's is perhaps as suitable as any; over it is placed a piece of stockinette bandage, which appears to answer more advantageously than flannel, and may easily and instantaneously be changed; lastly, we require a strip of gauze rolled into a ring, with a diameter sufficiently large to encircle the patient's nose and mouth; some use a piece of Gamgee tissue, with a hole to admit the nose and mouth, which answers the purpose equally well.

The Method of Administration.—First place the Skinner's mask over the patient's face as in using it for chloroform; allow a few drops of ether to trickle on the mask, and when the patient has become used to the smell, put the ring pad of gauze round the nose and mouth, resting the Skinner's mask upon it, and increase the rate of flow of the ether by tilting the bottle; it is necessary to keep this flow constant, either at a diminished or increased rate, according to the requirements of the case.

In conclusion, I may say I have used this method in children and adults: with children, for example, in circumcision operations it appears to be universally satisfactory, and with adults it answers well in thin anaemic females or extremely exhausted subjects, but in the plethoric man or fat woman it requires much patience and much ether to produce an anaesthetic state.

There are one or two points which ought to be observed during administration; it is well to keep the patient's head inclined, so that if mucus be secreted in excess it may not gravitate into the trachea and set up bronchial affections; should the inhaler inadvertently get too soaked, it also prevents any drops of ether getting into the fauces, and so setting up violent coughing; these are untowards incidents which may happen during first efforts, and it is just as well to bear them in mind; although I trust eventualities, which may happen in any method of producing anaesthesia, will not prevent the adoption of this method should occasion arise.

IN a recent article on insurance companies, the *Daily Telegraph* says that of all those who work for these companies, few render such valuable service as do the medical examiners, but little is heard about them. The success of any company largely depends upon the skill with which the medical men connected with it do their work. There are some pitfalls in their path, but happily for insurance companies the medical profession as a whole possesses a very sensitive conscience, and the reports made are as accurate and as fair as possible. In everything to do with insurance work doctors as a whole have a very fine record. The tornado of scandal in connexion with insurance companies which ruined so many reputations in America not long ago, left those of medical men not only unsmirched but even unassailed.

AN OPEN CONTINUOUS DROP METHOD OF ADMINISTERING ETHER.

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With Remarks by

J. LYNN THOMAS, C.B., F.R.C.S.

ETHER, as is well known, has been given in various open and semi-open methods for many years. For the past twelve months I have been giving ether by an open continuous drop method. Last January I read a short paper before the Cardiff Division of the British Medical Association on the subject, and the present paper was in the course of preparation when Dr. Gardner's article appeared, in the JOURNAL of November 23rd. Miss Alice Magaw, an American lady anaesthetist, records 14,000 cases of ether administered by the drop method "without a death directly due to the anaesthetic," and I am indebted to Mr. Lynn Thomas who saw her practising it, for my initial instruction in it.

The apparatus is simple and inexpensive. The mask is slightly larger than the ordinary Schimmelbusch's and fits the face more closely. It is covered with about 16 layers of sterilized gauze. The drop bottle is an ordinary 6 oz. bottle, with a plain cork in which two grooves are cut. One groove is larger than the other, and a strand of wool passes through it, the smaller groove allowing air to pass into the bottle and the ether coming out by capillary action. By means of this simple arrangement, a steady drop is obtained. Although I have tried many of the ordinary drop bottles, I have not been able to get the same regular steady drop with one of them. I find it best to have 2 drop bottles, the grooves in the corks being cut so that a large drop is got from one and a smaller drop from the other. It is essential to bear in mind that ether should never be *poured* on the mask. If this be done, the result generally is that some ether gets into the patient's mouth, and there is an attack of coughing. In some of my early cases, in which I fell into this mistake, a rigid condition of the abdominal wall was the result, and I had to dispense with ether and "push" the administration of chloroform to overcome it.

The patient having been put on the table, the mask is placed on the face, and the administration commenced by slowly dropping ether on the mask until the patient becomes somewhat accustomed to the smell. The ether is then dropped more rapidly, and the mask surrounded, if necessary, by a towel until the patient's face is completely hidden. As the patient goes "under" the towel may be removed. The administration can then be continued with the smaller drop bottle. I am bound to say, however, that I find considerable difficulty in inducing anaesthesia in strong or alcoholic men by this means, and in the case of such subjects I begin with a mixture of chloroform and ether ($CHCl_3$ 1 part, ether 3 parts), get the patient fairly well under with this, and then continue with ether alone. Once anaesthesia is established there is no difficulty in maintaining it. In the cases of children, women, and in men in any way emaciated or weak, complete anaesthesia can be induced by this method with ether alone in from three to ten minutes.

Up to date I have conducted 257 administrations, and the results have been, I consider, highly satisfactory. The ages and conditions of the patients operated on have varied within wide limits. Thus my youngest patient was 2 years old; my eldest 73. The cases have included all classes of patients—strong, healthy men, alcoholics, neurotic women, patients emaciated by malignant disease and other debilitating conditions, and serious accident cases. The shortest administration lasted seven minutes, the longest three hours. In the great majority of the cases the condition of the patient was very satisfactory. There is not the anxiety associated with the administration of chloroform, while many of the objectionable features of ether administration with the Clover or other closed apparatus are eliminated. There is less secretion of mucus than when the latter is employed, and the respiratory excursions of the abdominal wall are not so vigorous—a point not without importance to the surgeon in operations requiring fine manipulation. The breathing is invariably of a regular snoring type, the pupils

moderately contracted, and reacting very sluggishly, or not at all, to light, and the colour is good. The last point is one which presents a great contrast to the condition almost always prevailing when a closed apparatus is used—that of cyanosis.

As regards after-effects, post-anaesthetic sickness is lessened, and there is assuredly less shock than when chloroform is used. In the course of my administrations by this method I have only had one really bad case.

The patient was a boy aged 16, with advanced tuberculosis of the knee-joint; excision of the knee was performed, and the operation lasted an hour and a half. Anaesthesia was induced and maintained throughout with ether by the drop method. For forty-five minutes the patient's condition was good, and presented the ordinary signs of ether administered in this way, but at the end of that time it changed, the breathing becoming shallow and the patient pale and cold. The pulse, however, remained fairly good. The anaesthetic was withdrawn for fifteen minutes without any sign of consciousness returning, but he then developed a clonic condition of the muscles of the leg, and the operator desired more anaesthetic given. This was done, but as he soon showed signs of extreme collapse, it was withdrawn entirely and finally twenty minutes before the operation was finished. Half an hour after being returned to bed there was no improvement in his condition, and the ward sister remarked that he seemed to be very deeply under the anaesthetic. An hour after the termination of the operation the resident medical officer ordered a brandy-and-coffee enema, but it was not retained. However, after sleeping for three hours, he gradually came round, and ultimately made a complete recovery.

In contrast to this, I have had many cases where prolonged operations, involving considerable shock, have been extremely well borne.

A man of 46, suffering from carcinoma of the stomach, bore an extensive operation very well, although the ultimate result was unfavourable. In this case about three-fourths of the stomach was removed, together with a part of the duodenum, the hepatic flexure, transverse colon, and splenic flexure. The operation lasted two hours and twenty-five minutes, and the patient left the table with a pulse of 84. He did well for four days, but on the fifth day he developed symptoms of pneumonia and died within twenty-four hours.

Another case was one of prostatectomy in a man of 71. This patient was in very bad condition, as he was slightly under the influence of morphine and was suffering from toxaemia. The breath had a urinous odour. The operation lasted one hour, but he stood it well and made a complete recovery.

The longest administration—three hours—was for the removal of gall stones. The operation was well borne, and the patient made a perfect recovery.

One case, where death was possibly attributable to the anaesthetic, falls to be recorded. This was a case of goître in a girl of 19. Anaesthesia was induced with the C E mixture and maintained with ether. The whole administration lasted seventy minutes, and there was no cause for any anxiety throughout. However, on the evening of the operation the temperature shot up, physical signs of pneumonia developed, and she died on the fourth day after the operation.

In summing up I may say I do not claim that this method of administering ether is perfect. It has, like other anaesthetics and methods of administering them, advantages and disadvantages, but the former in my opinion far outweigh the latter.

The only disadvantages I have experienced are (1) the difficulty in inducing anaesthesia in strong or alcoholic men in a reasonable time with ether alone, (2) the quantity of ether used, which is undoubtedly greater than when a closed apparatus is used.

The advantages are numerous (1) it is cleanly in the surgical sense. The mask can be boiled and sterilized gauze used. Contrast this with ether administered with a closed apparatus, where the patient rebreathes his own expired vitiated air from an apparatus which cannot be sterilized and is in fact with difficulty kept clean. (2) The cyanosis, violent respiratory movements, excessive secretion of mucus with the consequent gurgling, frothing, coughing, etc., are greatly diminished and in many cases entirely abolished. (3) There is less shock than when chloroform is used. (4) Many of the unpleasant after-effects commonly associated with ether administered from a closed apparatus, are done away with.

Remarks by Mr. J. Lynn Thomas.

The first time I saw the method used was at the hospital of the brothers Mayo, of Rochester, Minnesota; subsequently I saw it employed in Dr. Ochner's practice. Having seen the method used over a hundred times, I was favourably impressed with it, and it has been adopted almost entirely in my practice during the last twelve months. Its advantages over giving ether in Clover's inhaler are:

1. There is less capillary haemorrhage during operations.
2. There is less sickness after operations.
3. The surgeon is not bothered with the bag, which may or may not be sterile, when operating about the chest, neck, face, or head.
4. The whole mask is easily sterilized.
5. There is much less anxiety to the surgeon when it is given by an anaesthetist of little experience.

In one of the cases referred to by Mr. Brownlee the operation lasted two and a half hours. After removing three-fourths of the stomach and a large portion of the duodenum, together with the whole of the transverse colon with its mesentery and glands, I had to occlude the ends of the duodenum, of the ascending colon, and the descending colon, and had to perform a gastro-jejunostomy under difficulties, because the stump of the stomach would not be brought out to the surface. I had also to perform an ileo-sigmoidostomy, and although the operation was very extensive the shock could not have been less. The patient recovered and was quite cheerful within six hours.

So far I have seen no case in which there has been any anxiety from the administration of the anaesthetic, either during the operation or subsequently. I consider it a method well worth trying, as it is simple and clean, but a little more expensive on account of the larger quantity of ether used.

MALIGNANT ENDOCARDITIS LASTING OVER SIX MONTHS WITHOUT BRUIT.

By ROBERT CAPES, M.R.C.S.Eng., L.R.C.P.Lond.,
DENMARK HILL.

The interesting point in the following case is that, although the illness and the pyrexia lasted seven months, at no time was a bruit ever heard, though the patient was seen by five medical men, all of whom were looking out for signs of heart disease. The rapid wasting at the end, with the enlargement of the liver and spleen, and loss of consciousness, made the theory of growth seem likely, though the continued rise of temperature for so many months was against it.

Hence although the petechiae, the pyrexia, and the slightly increased heart-rate all pointed to a possible fungating endocarditis, a positive diagnosis was not arrived at. Even towards the end, as the liver became quite as much enlarged in proportion as the spleen, the diagnosis still remained doubtful. Cases not infrequently occur in which for a long time there is no bruit, or only a very doubtful one; but it is very exceptional for a case of such prolonged duration to remain without a bruit throughout.

History.

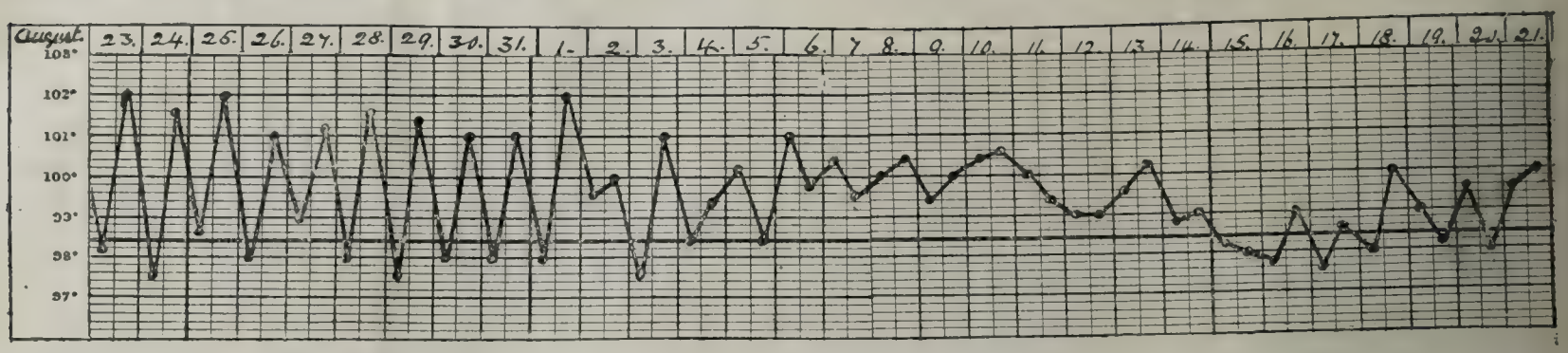
J. M., a male, aged 64, was first seen on February 26th, 1906. He gave the following history: Had been confined to bed for ten days or a fortnight with influenza, followed by pain and swelling of the calf of the left leg, and subsequently by a similar condition, though not so severe, in the right leg. His condition corresponded with the history; his temperature was normal in the mornings, but occasionally in the evenings reached 99.4° F. or 99.8° F.; the heart sounds were normal and the breath sounds also, with the exception of slight crepitation at the base of the left lung. He was kept in bed until the condition of the legs had cleared up, when he was allowed to get about with an elastic stocking on each leg; and afterwards he went to Hastings for change of air.

On his return from Hastings, on March 20th, he said he was not feeling much better, his chief complaint being that he easily got tired. His temperature was usually over 99° F. in the evening, more especially after exertion, but was normal in the morning.

On April 11th he went to Matlock, and from there to Liverpool, and back to town about April 25th. He still said he did not feel any better, but resumed business.

On May 3rd I found he was still going up to business, but always returned home tired out, and with the evening rise of temperature.

On May 10th he was seen by Dr. Goodhart, who reported no physical signs of disease, condition of organs normal, and advised a further period of rest to be followed by change of air. Dr. Goodhart in a subsequent letter wrote: "I remember



examining the heart carefully, because his illness had commenced with thrombosis of a vein in the leg."

On May 12th he felt ill when out walking, came home, and went to bed. I saw him in the course of the day; his temperature was 102.6° F., but there was nothing fresh in his condition. Next day his temperature was normal, and there is no record of its having been above 99° during the next two months. The pulse-rate was 72. At first there was no albumen in the urine, but later a third, and this was reduced to a mere trace after a time.

On June 11th he went to Margate, having been in bed practically from May 12th to June 9th. I wrote to Dr. Sutcliffe:

> "I think there is no doubt his heart was considerably affected by the influenza, but did not show any physical signs; his temperature has been very irregular ever since, and made me suspicious of endocarditis, but I could never get any evidence of it. I could find nothing in his rectum, and his expectoration gave a negative result. There is a minute trace of albumen, but nothing else abnormal in his urine. There is no doubt he stands exertion very badly."

On August 15th I went to Margate to see him. He had picked up a little at first, and then seemed to lose ground, and was then complaining of great weakness and inability to sleep. The physical signs were much the same, but he had oedema of both legs and a petechial rash over the greater part of his body, the petechiae being about $\frac{1}{16}$ in. in diameter. There was no marked wasting.

On August 18th he was moved into a nursing home at Brixton. From this date until September 22nd, when he died, he gradually failed, the chief points being high evening temperature with morning remissions, sometimes below normal, pulse between 80 and 90, rarely over 100, very profuse perspirations, gradual loss of flesh and strength.

On August 24th the sputum again examined, with a negative result.

On August 28th Dr. Newton Pitt saw the patient with me; he pointed out that both liver and spleen were much enlarged, and this became much more apparent as the patient got thinner. The heart sounds were normal; there were still a few small petechiae on the skin. Throughout his illness his temperature was frequently raised with slight exertion.

On September 3rd, blood examination showed:

Number of red blood discs	=	4,200,000 per c.mm.
Number of white cells	=	13,000 per c.mm.
Amount of haemoglobin	=	78 per cent. of normal
Differential count of whites:		
Small lymphocytes	=	30.0 } 31.0
Large lymphocytes	=	1.0 }
Polymorphonuclears	=	66.7
Eosinophiles	=	1.8
Mast cells	=	0.5

No myelocytes nor nucleated red discs were seen. Poikilocytosis was absent.

On September 10th emaciation was very marked and much more rapid; the urine dark owing to blood; bile was absent.

On September 18th the liver and spleen had increased in size, there was some ascites, and fresh crops of petechiae had appeared. There was incontinence of urine, and still a trace of albumen in it.

On September 19th the patient was unconscious, and apparently paralysed in both arms and legs; the patellar reflex was absent, the superficial plantar reflex present; the pupils were equal and reacted to light.

On September 21st the pulse was 116 and the temperature in the rectum in the evening 99°. The patient was apparently dying. At 10 p.m. the rectal temperature was 103°, and the same at midnight; at 2 a.m the rectal temperature was 102°. The patient died at 4.20 a.m., the rectal temperature being 103° immediately after death and 102° one hour after death.

Necropsy.

The *post-mortem* examination, kindly made by Dr. Newton Pitt, revealed fungating endocarditis. There were three small, flattened patches of vegetations on the inner margin of the mitral valve, firm to the touch, and not friable. Their surfaces were fairly smooth and uniform. Their uniform, flat surfaces allowed the valves to come together, so that they were not incompetent. The masses quite lacked the usual verrucose appearance so often present in such cases, and which invariably interfere with the competence of the valves. The firm, flat, smooth, non-friable character of the vegetations indicate why there were no physical signs of valve lesion. There were three small haemorrhages in the cerebral cortex, two on the right side—namely, one in the temporo-sphenoidal lobe and one in the fissure of Rolando; one on the left side in the second frontal lobe. There were infarcts in the spleen and kidneys, and the liver was enlarged. The lungs were engorged.

MEMORANDA:
MEDICAL, SURGICAL, OBSTETRICAL.

THE OPHTHALMO-REACTION OF CALMETTE.

I WOULD like to point out that the reaction is sometimes *bilateral*. Out of a series of 40 cases in which I have so far tried it a well-marked reaction occurred in both eyes with two patients. In both instances one drop only of a 1 per cent. solution of Calmette's serum was used. The first case was one of early pulmonary tuberculosis, with tubercle bacilli in the sputum. Six hours after the drop had been put into the right eye a well-marked reaction was seen; and twenty-four hours later a very distinct reaction was visible also in the opposite eye, and this did not pass off until four days later.

The second case was one of chronic discharge from both nostrils of three years' duration in a boy aged 14. In this instance also the reaction in the left eye was not evident until about forty-eight hours after the drop had been put into the right eye, which latter gave a very marked positive reaction.

I am not prepared with any explanation of this bilateral effect, though in the case of the boy with the nasal discharge an anatomical explanation would obviously not be far to seek.

Norwich, Dec. 16th. SYDNEY H. LONG, M.D.

DEATH FROM A SINGLE PELLET WOUND.

THE following case, in which a gamekeeper died shortly after being found behind a tree unconscious and bleeding profusely from the mouth and nose, presents points of interest. As inspection showed nothing but a black eye and a very small abrasion on the upper eyelid, explicable on the supposition that he had fallen against the tree, it at first seemed to me possible that the bleeding was due to rupture of an aneurysm, for the haemorrhage, observed while still in progress, seemed arterial in character.

On *post-mortem* examination nothing but what has been noted was discovered externally, but on everting the eyelid an ecchymosed patch was found under the conjunctiva to the nasal side of the eyeball. On opening the skull an effusion of blood was found both external to the dura mater and between it and the brain, the amount being greater on the under surface of the brain on the left side and over the pons and cerebellum. A small puncture was found in the dura mater, and a probe passed through it penetrated through the sphenoid for 1½ in. in a direct line with the abrasion on the external surface of the eyeball. The supraorbital plate was then removed, and the adipose tissue internal to the eyeball found to be ecchymosed, the main contents of the orbit being uninjured. On further dissection the orbital plate of the ethmoid was found to be splintered and a probe inserted through the internal puncture readily reached this point. Following the track backwards I found it to pass through the left cavernous sinus and the internal carotid artery. On

incising the pons, a small blood-stained point was observed in the white substance and between the lobes of the cerebellum in this region a pellet was discovered. Death and the haemorrhage were thus fully explained.

Examination of the scene of the accident showed that the deceased, who was bolting a rabbit with a ferret for his master, must have exposed his head from behind the tree while in a stooping posture just at the moment a shot was fired 25 yards away.

J. Bruce Ronaldson, M.D.St. And., F.R.C.S.Edin.
Haddington, N.B.

TWO CASES OF MISTAKEN DIAGNOSIS.

I have had two cases recently under my care in both of which a wrong diagnosis was made, and as they present points of interest, should like to place them before your readers.

Case I.—A Russian child, aged 5 years, had had fever for two days before I saw him, temperature rising to 40° C.; when I saw him the temperature was 104° F. There were no other symptoms whatever. The abdomen appeared perfectly normal and there was nothing to indicate anything unusual. The fever continued for eight days, the temperature ranging from 103° to 104° F. in the morning, when it was usually highest, with afternoon remissions to normal, and a rise again in the evening. The bowels were regular. Enemata were ordered, and, according to the nurse and mother, acted freely and sufficiently. On the eighth day the temperature reached 105° F. The child was distinctly weaker and I was on the point of suggesting a consultation, but, before doing so, fortunately decided to administer myself a large enema of boracic acid and olive oil. The effect was very satisfactory, as four large prune stones came away embedded in large foul-smelling lumps of faeces. It was then remembered that the child had eaten some prunes five months previously. There was no further fever. In Dr. Ashby's able and interesting article on unexplained fever in children, there is no mention of any case resembling this, which, as a refuge, had been named malaria—a diagnosis, to a certain extent justifiable, as Russian children appear to suffer a good deal from fever of a malarial character.

Case II is unique so far as I know. The patient, aged 49, was a maid to an American lady. For some months she had suffered from nervous symptoms of an aggravated nature, such as sleeplessness, irritability, great depression, inability to perform work of any sort, and twitchings of the right arm and subsequently of the left. She was under treatment for a fortnight, but no improvement resulted, and it was recommended that she should return to her friends in America. She did so, and on the first day after leaving Genoa became violently seasick and vomited a piece of wood about the length, and half the diameter of the little finger. The patient writes that all the symptoms disappeared immediately, and that there has been no return. It appears that last August, at an American seaside resort, she attempted to rescue a child from drowning, and at the time, it is now remembered, there were numerous small pieces of wood floating in the water, as the pier was being repaired. The patient was unconscious when rescued. It was evident that the piece of wood had remained in the stomach for over three months. I do not know, even now, what name to give this affection.

Florence. T. Gerald Garry, M.D.

A CASE OF SINGLE KIDNEY.

On November 18th, while making a *post-mortem* examination on the body of a healthy man aged 59, who had died from shock and multiple injuries caused by falling from a height, I was surprised to find no trace of a right kidney. A careful search for marks of operation or signs of disease was unsuccessful. The abdominal aorta was dissected out and no trace of a right renal artery was to be found. The left kidney was considerably enlarged and weighed 9 oz.; its ureter was proportionately increased in size. On section this kidney seemed perfectly healthy to the naked eye. The bladder was normal, but only the left ureteric opening was found.

In the books on anatomy it is stated that it is the left kidney that is usually absent, and that often there is a minute kidney with its ureter on the other side. Apart from anatomical interest, such cases seem worthy of record from a surgical point of view and are arguments for the segregation of urine in all cases of renal disease.

November 24th. J. S. Manson, M.B., Ch.B.,
Senior House Surgeon, Oldham Infirmary.

REPORTS
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

BARBADOS GENERAL HOSPITAL.

CASES OF BULLET WOUND.

(Reported by S. McNaughton, M.B., Ch.B.Edin., Resident Surgeon.)

During last May two cases of bullet wounds of rather more than usual interest were admitted and treated at the hospital. The first patient, a girl of 19 years, was admitted on the night of May 1st, complaining of a wound and pain in the right side; she said it had been caused by the explosion of a revolver cartridge which had been thrown on to a fire whilst she was standing near.

On examination a small circular wound was found over the eighth right interspace in the posterior axillary line, this being directly over the liver; a probe passed with ease for about an inch. The case was seen the same night by Dr. Manning, the Visiting Surgeon on duty, who thought a search for the bullet very inadvisable. On the second morning after admission the bullet was passed per rectum without consciousness of the fact on the part of the patient. The temperature varied a little for twenty days, and then became and remained at normal; the highest point reached was 104° F., on the eleventh day. She was discharged perfectly well at the end of the fourth week without ever having had an alarming symptom.

The second patient, a boy, aged 14, was admitted on May 11th suffering from dyspnoea, with a wound and pains in the left side. He said it had been caused by a revolver going off in the hands of another boy with whom he was playing.

Much surgical emphysema was found around a small circular wound situated in the fifth left interspace ½ in. to the outer side of the apex beat. The wound was not probed. Dr. Bannister, the Visiting Surgeon on duty, found the bullet lying subcutaneously in a position ¼ in. internal to border and ½ in. below the spine of the left scapula. It was easily extracted from here with the aid of a local anaesthetic. Strapping was put over the wound in front, and, as the boy was very weak and anaemic, he was not further disturbed. A day or two later, the emphysema having disappeared, his chest was sounded, and much dullness found at the left base behind. The breath sounds were almost completely gone. Nevertheless his progress towards recovery was steady, and in a little less than four weeks he was discharged without ever having exhibited an alarming symptom. Of the dullness previously noted a little was left at the left base, but the breast sounds were much more audible.

Remarks.—The ease with which both these patients recovered from revolver bullet wounds of so-called vital parts is noteworthy. The weight of the bullet which passed through the boy's chest in close proximity to his heart was 84 grains. In the case of the girl the bullet which penetrated her abdomen was much larger; it weighed 146 grains. It is curious that its progress through her body should have been arrested in the lumen of the intestine. It was a rattle in the bedpan which led the nurse to examine the contents and to the discovery that the bullet had been passed. The girl's story of the way in which she had received her wound was not believed when she gave it, as it seemed improbable that the mere explosion of a revolver cartridge would have caused a penetrating wound. It was believed, therefore, that she must have been fired at. An examination of the bullet proved this to have been the case, for the scoring of its surface showed that it had been fired from a rifled revolver, and she herself afterwards confessed that this was the case.

REPORTS OF SOCIETIES.

EDINBURGH OBSTETRICAL SOCIETY.

Professor STEPHENSON, President, in the Chair.

Wednesday, December 11th, 1907.

INFANT FEEDING.

IN a paper on infant feeding, Dr. A. DINGWALL FORDYCE, said that the whole subject had become surrounded by a ring of artificial difficulties. The primary essentials in arranging for the artificial nourishment of any infant were sound theory and consistent practice. A proper substitute for mother's milk could be obtained by readjusting the constituent of cow's milk according to the age and digestive capacity of the individual child. Proprietary foods or mixtures were usually quite unnecessary. There should be: (1) Definite, distinct and minute instructions as to diet. (2) Gradual increase of food constituents in healthy babies. (3) Sudden and thorough diminution of food constituents in the cases of infants suffering from digestive disturbance, more especially so when this condition was acute. (4) In the cases of infants who had previously suffered from digestive disturbance, increase of food constituents, both in amount and nature, must be extremely gradual. Increase in the amount and quality of a food must never take place simultaneously. (5) Alteration of the diet as a rule should be brought about by the immediate stoppage of the diet in use.

Dr. CARMICHAEL thought very little change had occurred during the past twenty years in the feeding of infants. There was a "vital principle" in milk which was destroyed by scalding, sterilizing, etc., and was entirely absent in proprietary foods.

Dr. BALLANTYNE called attention to the difficulty of feeding premature infants. In such cases intestinal was more important than stomach feeding.

Dr. ELSIE INGLIS considered that the great difficulties which had to be contended with amongst the poor were the impure milk supplied to them, and the reluctance of the mothers to follow advice in the preparation of proper food for their infants.

Dr. FOWLER did not think that the proteid percentage in milk ingested by healthy children was of such vital importance. He had obtained good results by feeding infants on undiluted cow's milk. Up to the third week of life he had not given undiluted milk, but after this period he had done so. The amount at each meal should not be large, and the interval between the feeds should be soon lengthened. By this means some free hydrochloric acid was present in the stomach, and this tended to check fermentation.

LIVERPOOL MEDICAL INSTITUTION.

Mr. FRANK T. PAUL, F.R.C.S., President, in the Chair.

Thursday, December 5th, 1907.

CLINICAL EVENING.

THE following were among the exhibits:

Dr. T. R BRADSHAW: Three adults suffering from *Acute anterior poliomyelitis*: (1) A man aged 53. Sudden onset, hands giving way while patient was sitting on a gate; the paralysis was at first attributed to the fall; characteristic paralysis with wasting affecting forearms and thighs. (2) A man aged 28. Ill two days with what was supposed to be influenza, and then found to have paralysis of one arm; condition characteristic. These two cases occurred within a week of one another, and the patients lived in the same district, suggesting an infective source for the disease. (3) Woman aged 35. Two years ago sudden paralysis of right leg, slightly of left. At present foot drop with coldness and blueness of feet.

Dr. R. J. BUCHANAN: (1) A child who had suffered from *Tuberculous meningitis* and recovered. After an illness of four weeks and coma for eight days, lumbar puncture was performed, and 20 c.cm. of cerebro-spinal fluid removed, containing lymphocytes, but no meningococci were found. The symptoms were classical. An inoculation of $\frac{1}{4000}$ mg. new tuberculin was given. The child showed immediate signs of improvement, and gradually recovered consciousness. Three weeks later the above treatment was repeated, after which the child made an uninterrupted recovery, and when shown was intelligent and able to run about. Calmette's tuberculin reaction on the conjunctiva had been positive. (2) A case of *Chloroma* in a child of 4½ years. The symptoms commenced with anaemia in July, right facial paralysis with pain in the right ear in October, and exophthalmos followed. The latter was increasing rapidly. Characteristic blood changes were present, the leucocytosis increasing from 25,000 to 250,000 per c.mm. in a few days.

Dr. J. LLOYD ROBERTS: (1) A case of *Chancre of the scalp* caused by the patient butting his head in a scuffle against the teeth of a man who had secondary symptoms of syphilis. (2) A case of *Lead paralysis*, which was improved rapidly under treatment with iodipin, after potassium iodide had been tried for some time without apparent benefit.

Dr. PERCY MARSH: (1) A boy, aged 1 year 9 months, who was admitted into the Children's Infirmary on November 5th with a history of having had *meningitis* with retraction of the head seven weeks previously. On admission he had marked "intention tremors" of all the parts of the body. The cerebro-spinal fluid was turbid, reduced Fehling, and showed a large number of polymorphonuclear leucocytes. A growth of *Staphylococcus aureus* was obtained; there was no optic neuritis nor atrophy of the disc.

Mr. R. C. DUN: General *Thyroid enlargement* in a girl, aged 12, showing tremors and rapid heart's action but no exophthalmos.

Dr. H. LESLIE ROBERTS: (1) *Rodent ulcer* of two years' duration caused by *x* rays. (2) *Lupoid gummata* covering the whole of the front of the neck, and a portion of the nose and upper lip; the resemblance to lupus was remarkable, but the disease was only of one year's duration. (3) *Tuberculeids* in a woman aged 47, involving the right upper eyelid, the cheek and upper lip, of 3½ years' duration. A sister died of consumption, and the patient had had more than one "haemorrhage." The lesions were multiple, discrete, uniform in their objective characters and their mode of evolution. Each lesion presented the appearance of a slightly elevated, convex spot of bluish-red colour. At the centre of each spot a slight amount of fluid exudate preceded quiet necrosis, the loss of tissue being followed by a minute depressed scar.

Drs. STOPFORD TAYLOR and MACKENNA: (1) *Enchondroma cutis* in a female child aged 15 months. She was the fifth child in a family all of whom were healthy. In the skin on the outer side of the left thigh, the front of the chest, the back, the left side of the scalp and the left forearm just above the wrist, were plates of cartilage varying from 1¾ in. to the size of a split pea. Over these deposits the skin had a peculiar violaceous hue, and showed here and there a pearly deposit. The cartilaginous nature of the plaques had been confirmed microscopically, and at points the cartilage which was lying in the true skin showed signs of ossification. So far as was known this was the first case of the kind that had been shown in England. (2) *Psorospermosis follicularis vegetans* (Darier's disease) in a young woman aged 32. The disease affected chiefly the neck, the upper part of the chest and back, and the arms. It had lasted for 7 years. (3) *Folliculitis* of the fingers and hands of 13 years' duration in a young woman. The tuberculous nature of the disease was confirmed by the presence of tuberculous glands in the neck.

Mr. J. BARK showed cases of the complete mastoid operation and *Heath's conservative method*. The patients had been the subjects of fetid middle ear suppuration of from 3 to 12 years' duration; the results were excellent and the hearing after the operation was most marked.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—At a meeting on November 29th, Dr. WALKER DOWNIE, President, in the chair, Dr. J. SOUTTAR MACKENDRICK reported a case of *Mediastinal carcinoma* occurring ten years after removal of the breast, with secondary nodulation well distributed over the head and trunk. The symptoms were cough and breathlessness, and there were signs of a right-sided pleurisy. Painless nodules appeared on the head and on the left suprascapular regions. A skiagram showed involvement of the upper part of the left lung. *X* rays were applied to the nodules and effected their disappearance, but a fresh crop appeared some months after more extensively than before. The patient then rapidly lost

ground and died. *Post-mortem* examination showed firm adhesions in the left pleura and secondary nodules in the lungs. The posterior mediastinum was filled with large glands surrounding the bronchi and the base of the heart. The abdominal glands were also affected, but not any abdominal organ. Microscopic examination of the masses and the skin nodules showed the structure of a mammary cancer. Dr. David Newman demonstrated 8 cases of *Renal calculus* by means of the opaque projector. The cases were specially selected to illustrate the difficulty of diagnosis in certain cases and the valuable aid rendered by the cystoscope. While in most cases the size, shape, composition and location of a stone in the kidney or ureter could be diagnosed with mathematical precision, in others the symptoms were misguiding and the physical signs wanting. He described first a typical case and then a series of atypical cases, including examples of reno-renal, reno-testicular, and reno vesicular reflex pain in which the disease had been in the first instance diagnosed as lumbago, acute cystitis, chronic cystitis, or disease of the testicle, pain in the diseased kidney being entirely absent. The cystoscope in such cases was of the highest value, not only in eliminating vesical disease, but by locating renal affections. The main points to study were: The appearance of the ureteral orifices, the character of the ureter shoots as regards size, form, composition and frequency. Dr. Riddell showed a number of *x*-ray photographs illustrating the points raised in the paper. Dr. Walker Downie reported: (1) A case of *Macroglossia* in a male child of fourteen months. The child was well nourished and appeared intelligent, but no teeth had erupted and he could not walk. He could make no attempt to talk owing to the size of the tongue. The condition was probably congenital, as from the first there had been trouble in feeding the child. At six months the tongue was noticed to be large and since then had increased steadily in size. Now the tongue completely filled the mouth and a large part was extruded. The enlargement was uniform and soft, except the extruded portion which was dry. There were no ulcers or abscesses. (2) A case of *Acute glossitis* in a boy of 15 years, caused by the tongue being scratched by a hard crust. The tongue swelled and an abscess formed in the floor of the mouth. This burst and a large quantity of pus, very foul-smelling, escaped. The pus yielded pure cultures of streptococci.

Hunterian Society.—At a meeting on November 27th, Mr. Rowland Humphreys, President, in the chair, Dr. Russell Andrews, in a paper on the treatment of *Puerperal eclampsia*, emphasized the importance of the routine examination of the urine during pregnancy, especially during the first one. The albuminuria of pregnancy, even of high degree, might be so insidious in onset that, if a routine examination were not carried out, a convulsion might be the first symptom that anything was seriously wrong. If much albumen was found the patient should be put to bed, the bowels kept well open, and the diet consist entirely of milk. If the condition did not improve, the question of induction of premature labour must be considered. If threatening symptoms of eclampsia were present when the patient was first seen, a brisk purge and a thorough diaphoresis might avert the attack. It should be impressed upon every patient after recovery from eclampsia that she should put herself under medical observation as soon as she found herself pregnant again. Injection of morphine was one of the best methods of stopping the fits, but must not be repeated without due caution, as poisoning might occur and prove more difficult to treat than the eclampsia itself. Chloroform was useful, but its administration for several hours at a time was to be deprecated on account of the danger of increasing the tendency to heart failure and oedema of the lungs. The patient must be given plenty of fluid by the mouth, rectum, or subcutaneously, while she was being made to sweat in a hot pack, otherwise the concentration of the poison in the blood might induce convulsions. Administration to an unconscious patient of food or drugs, particularly croton oil, by the mouth was deprecated strongly. Subcutaneous injection of saline solution was recommended for the purpose of diluting the poison and re-establishing the function of the kidneys. Dr. Eden said he attached a good deal more importance to the evacuation of the uterus than Dr. Andrews. He accepted the toxaemic theory of the causation of eclampsia, and therefore agreed that elimination of the poison from the blood must form a very important indication for treatment; but there could be no doubt that the ultimate cause of the toxaemia of eclampsia was the pregnant state, and the production of the poison would not cease until pregnancy had been terminated. Accordingly no case of eclampsia could be looked upon as definitely cured until the cause of the toxaemia had been attacked by evacuating the uterus. He was in favour of immediate induction of labour in all cases of eclampsia and in all cases of premonitory symptoms of eclampsia in which labour had not begun spontaneously. The most suitable method was generally preliminary dilatation of the cervix sufficient to allow the introduction of Champetier de Ribes's bag and hastening dilatation by continuous traction upon the bag. When sufficient dilatation had been obtained, delivery should be accomplished by version or forceps. This procedure would not interfere with the application of those methods of promoting elimination which Dr. Andrews had described. He attached importance to venesection in cases not characterized by marked anaemia and oedema, subcutaneous saline infusion, and sweating by means of the wet pack. Enemata and irrigation of the colon were also very useful. Cases of continuous coma were practically hopeless, and morphine and chloroform were unsuitable remedies in these circumstances, but he thought such cases should never be allowed to die undelivered, for evacuation of the uterus remained practically their only chance of life. Mr. Rowland Humphreys said that with regard to the injection of saline fluid, care should be taken as to the amount of salt in the solution, lest it add to the concentration of the blood, with bad results. Dr. Langdon Brown though that the effect of injecting hypotonic salt solution would be to cause fluid to pass from the blood stream to the tissues, thus increasing the oedema and not increasing diuresis. He was much obliged to Dr. Andrews for calling attention to the necessity of free administration of water if the dry pack were used. Dr. W. A. Milligan said some recommended the induction of labour, others preferred to keep their patients under morphine. He allied himself with the latter class unless labour was advanced. The question of salines was an interesting one, especially in view of the fact that some authors believed that the retention of chlorides in the blood was a cause of eclampsia. The reduction of blood pressure could be effected either by lumbar puncture or by the hypodermic injection of veratrum viride. The latter method appeared to be the more effectual. Dr. Harris Best advocated the use of chloroform, and spoke favourably of the administration of chloral and bromides. He considered that diet was a matter of great importance. Dr. Corner thought that eclampsia was less frequent now than formerly. He relied upon morphine and chloroform, and had never lost a case.

Northumberland and Durham Medical Society.—At a meeting on December 12th the following were among the exhibits:—Dr. McCracken: A girl of 8, in which he had made a diagnosis of *Patent ductus arteriosus*, with recent endocarditis and pericarditis. Dr. Beattie concurred in the diagnosis. Mr. Rutherford Morison: A series of men whose *External genitalia* had been removed—in one instance for persistent perineal fistula with elephantiasis of the scrotum, due to impassable penile stricture; in the others for malignant disease. In every case the glands in the groin, the whole penis with its crura, and the scrotum and testicles had been removed. The operation had not been attended with any mortality, and in no instance was there any recurrence, though five years had elapsed since the first operation. There was some discussion as to the propriety of removing the testicles in cases where it was necessary to sacrifice the whole penis. Mr. Turner agreed with Mr. Morison that they should be removed, basing his opinion on the dreadful condition of two uncured cases of ectopia vesicae who had attained adult life. Mr. John Clay was rather in favour of leaving the testicles from what he had seen of old men castrated for prostatic hypertrophy. Mr. John Clay: An old man, whose thigh he had amputated for gangrene, using stovaine spinal anaesthesia. There were no unpleasant after-effects, and the patient was making a very

good recovery. He also demonstrated a new form of graduated ureteral bougie, which he had found very useful in the diagnosis and measurement of bladder calculi. Mr. G. GREY TURNER: A boy of 15, from whom he had removed the sigmoid colon for congenital *Idiopathic dilatation*. The boy was very greatly improved, though he still had some symptoms of his old trouble. Mr. RUTHERFORD MORISON: A man of 69, from whom he had removed the sigmoid colon seven years ago for *Recurring volvulus*. It was suggested that this patient had also been the subject of congenital idiopathic dilatation, as the symptoms dated from early life. Mr. A. M. MARTIN: A case of *Lymphangiectasis* of the tongue and floor of mouth in a young child. Mr. H. B. ANGUS: (1) A case of absolute *Dysphagia* in a man of 37, apparently cured by a temporary gastrostomy in spite of the fact that a large mass was felt at the cardiac end of the stomach when the abdomen was opened; (2) two children recently operated upon for renal sarcoma.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—At a meeting on December 12th, Mr. R. MARCUS GUNN, President, in the chair, Mr. NETTLESHIP, in a paper on some cases possibly allied to *Tay-Sachs's infantile retinitis*, suggested that the amaurotic family idiocy of Waren Tay and Sachs, although usually fatal in infancy and limited to children of pure Jewish origin, might sometimes be milder, allowing the child to live several years, or even to grow up; and that many families of "Gentiles" contained more or less Jewish blood. Cases such as those described by Dr. F. E. Batten, Mr. Mayou and others, in which amblyopia, with slight changes in the macular region, came on a few years after birth and was sometimes associated with progressive cerebral degeneration, might be mild examples of Tay's disease. The same might be true of certain cases of amblyopia counted as congenital in which there was central defect in the field, and sometimes nervous and mental failure, but no tendency to early death. In the best marked of these cases there was colour-blindness, often total and complete, and day-blindness, but in the less severe ones there might be no colour defect and no dislike of strong light. All these forms of non-fatal amblyopia were, like Tay's disease, liable to run in families.

UNITED SERVICES MEDICAL SOCIETY.—At a meeting on December 12th, Sir HERBERT ELLIS, President, in the chair, Fleet-Surgeon BASSETT-SMITH gave a history of the work done in connexion with Mediterranean or undulant fever. The most important points brought out step by step were: (1) The great vitality of the organism outside the body, when not exposed to direct sunlight; (2) the constant presence of the organism in the peripheral blood of cases suffering from the disease; (3) the escape of the organism from the body chiefly through the urine; (4) the presence of the infective organism in the urine of apparently healthy men; (5) frequent infection of domestic animals, chiefly goats; (6) infectivity of the urine and milk of these animals; (7) the high incidence of cases in patients and staff of hospitals; (8) the high incidence in officers, women, and children; (9) occurrence of localized epidemics; (10) rare recovery of the organism from local mosquitos and very doubtful possibility of their being distributors of the disease; (11) complete cessation of cases where infected milk was removed from the dietary or when it was properly sterilized. The prevention of the disease by "protective inoculations" still remains *sub judice*. In respect of treatment he had little to say in favour of antiserums or vaccines, though in chronic cases the latter seemed to have some slight beneficial effect. No specific drug has yet been discovered, quinine in large doses was harmful, cyllin disappointing, fresh yeast inoperative, and quinine combined with chlorine water very uncertain in its results. Symptomatic treatment might, however, do much to relieve the insomnia and the persistent neuritis of the later stages. For this he recommended salicylate of quinine, while arsenic and iron were of use in the later cachexia, and strychnia for the irritable heart, which was a not frequent sequela. The evidence in favour of a general septicaemic infection was very strong, the organism being recoverable not only from the peripheral blood, but also from the internal organs. In one case he had known an infective endocarditis develop. Local lesions also occasionally occurred, sometimes in the form of soft fluctuating swellings, not containing pus, but a turbid fluid from which the characteristic organism could be isolated. Ulceration of the small intestine, and enlargement of the liver and spleen in chronic cases were also found. Lieutenant-Colonel W. B. LEISHMAN considered that it was very desirable that investigation should be directed towards ascertaining the line of communication from diseased to healthy goats. The disease might be attacked by immunizing these animals by means of injection of attenuated cultures of the micrococcus; good results had been achieved by this method in other diseases—for example, in cholera by Haffkine, and more lately by Strong of Manila in the case of plague. Lieutenant-Colonel A. M. DAVIES quoted instances which inclined him to doubt whether milk was the only source of infection. The mosquito might still be found to play a part in its dissemination. Lieutenant-Colonel D. V. O'CONNELL, R.A.M.C., considered opium and morphine as of great value in treatment, but condemned the bromides as useless. Fleet Surgeon W. P. BASSETT-SMITH, R.N., in replying, said he thought the Maltese would raise no objection to immunization experiments amongst goats if threatened with destruction of infected animals. The success of the Malta Fever Commission was a strong argument in favour of experiments on animals, since without these the work of the Commission could never have been carried out.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—At a meeting on December 6th, Mr. RICHARD LAKE, F.R.C.S., President, in the chair, Dr. MANSELL MOULLIN read a paper on the treatment of *Uterine fibroids*, advocating early operation in all cases giving rise to symptoms. The troubles arising from these tumours were so grave and so varied that, considering the brilliant results now attained by surgery, it seemed worse than folly to allow a woman to spend years of her life as a chronic invalid exposed to all these risks, when the remedy was at hand—a remedy which might, and often did, become a matter of necessity at a later date. He described the technique of hysterectomy and advocated the supravaginal operation in the great majority of cases. He had lost but one case in seventy-eight operations. The danger of the operation had been reduced to a minimum, and need not deter one urging radical treatment when called for.—Mr. SAMPSON HANDLEY, in a paper on *Chronic appendicitis in women*, said the study of chronic appendicitis had been retarded by two causes: first, by the erroneous belief that an appendix free from adhesions is necessarily a healthy appendix; secondly, by the divorce which in England exists between the practice of general surgery and that of gynaecology. The most striking symptoms of chronic appendicitis were located in the female pelvic organs. Of these the most constant and important was dysmenorrhoea. The history of a painful menstrual period precipitated (or brought back after its cessation) by what appeared to be an attack of acute indigestion, was very characteristic of chronic appendicitis. But the main object of his paper was to show that chronic appendicitis in women was frequently accompanied by a definite physical sign. This sign was an enlargement of the right ovary up to double its normal size, owing to the congestion and lymphatic stasis produced by the near neighbourhood of an inflammatory focus in the appendix. In such cases the diagnosis of chronic ovaritis was usually made, and futile gynaecological treatment was often carried out for long periods. In one of his own cases appendectomy cured a patient who had submitted without benefit to douching, blisters, tampons, and local applications to the cervical canal, over a period of five years. The appendix was free from adhesions, and its lumen contained a small collection of pus.

THE Orient Steam Navigation Company has arranged a series of attractive tours to different parts of the Mediterranean at moderate prices and of varying length. They begin on January 31st, 1908, and run on continuously until the end of April. The vessel employed for the purpose—the s.s. *Orient*—is of 5,453 tons. A detailed programme and descriptive booklet can be obtained on application at any of the company's agencies.

REVIEWS.

NEURASTHENIA AND PTOSIS.

Dr. B. Stiller, of Buda-Pesth, has collected into a monograph[1] on what he calls the asthenic constitutional disease, the substance of numerous contributions published by him in various medical periodicals upon the general subject of neurasthenia with its consequences, especially those manifested in the displacements and functional disorders of the abdominal and pelvic viscera, for example, nervous dyspepsia with gastroptosis and enteroptosis, movable kidney, and uterine displacements, alike dependent upon this general constitutional condition. While all the above conditions depend in the majority of instances upon neurasthenia, in a minority they originate from injury, hernia, relaxation of the abdominal walls, or other direct mechanical influence, and during the last fifty years partisans have shed much ink in the attempt to claim all of these cases exclusively for their own side; on the whole those who have argued in favour of the mechanical theories have met with most success, presumably because their doctrines appeared to lead to practical results, but their victories have caused much unprofitable expenditure on pessaries, trusses, and belts, and an even larger outlay on surgical operations. Dr. Stiller's description of the characteristics of neurasthenia agrees generally with that usually accepted; he lays stress upon the long narrow thorax with small epigastric angle that German clinicians regard as especially associated with the tendency to gastroptosis, etc.; but he holds the constant and fundamental stigma of the disease to be the presence of a floating tenth rib, which he says can be felt more or less movable at the costal border. He enters into a lengthy argument with numerous opponents who have been unable to verify his statements regarding this sign, to which he seems to attach an exaggerated value, and by this insistence to run some risk of making his work ridiculous, and of diverting attention from the main proposition, namely, that these derangements of the abdominal viscera depend upon a constitutional condition which is as a rule congenital and often hereditary. The congenital structural anomaly constitutes the predisposition, and under favourable circumstances the disease becomes developed. He contends that the nervous dyspepsia does not cause the neurasthenia, and at most slightly aggravates it, that these patients digest perfectly well except in their intervals of nerve depression; nor do the displacements constitute causes, for as age advances the neurasthenic symptoms disappear, although the displacements persist; nor does neurasthenia accompany the grave displacement caused by great scrotal herniae. In some cases the displacement may be so great as to need mechanical relief, and where this can be given by surgical means an operation may be beneficial. So far we agree with our author, but we must part company with him when he relies on "splashing" as the most trustworthy sign of atonic dilatation of the stomach; he does not appear to grasp clearly the essential difference between dilatation of the stomach with and without pyloric obstruction, or to put it another way, he does not see the importance of food stagnation as the real indication for the operation of gastro-enterostomy, or the impropriety of recommending this operation, as he appears to do without such definite evidence, as a remedy for atonic dilatation; otherwise the treatment he recommends is the rest cure, or Weir Mitchell treatment, undoubtedly the means most likely to be beneficial.

DIGESTION AND METABOLISM.

The physiology of digestion involves chemical and physical problems of such a delicate kind, and information has been sought in so many directions by experiments upon animals beset with fallacies and open to interpretations which vary with each observer, that nothing is more kaleidoscopic than the picture presented by this subject from year to year, and no presentation of it, however carefully compiled, can possess more than a passing value. The latest accounts of the state of these shifting questions must be gleaned from innumerable periodicals and the published proceedings of learned societies, and probably few but those who are actually engaged in teaching are able to keep themselves abreast of the discussions. We can therefore recognize the value of such a book as Dr. Martin H. Fischer's *Physiology of Alimentation*,[2] which is an honest and careful attempt to photograph the passing show and fix for the use of students the present position of the problems involved. Among the most interesting of the recent work is that of Cannon upon the mechanism of the movements of the various portions of the alimentary canal which he has studied by means of *x* ray photographs, the parts being rendered visible by the ingestion of food mixed with bismuth; Dr. Fischer has been enabled to reproduce some of the plates, and the whole account is worth reading.

The third volume of Dr. Craemer's lectures on the diseases of the stomach and intestine is devoted to the consideration of the effects of means of gratification on the human constitution, specially on the digestive organs—tobacco, coffee, and tea being discussed in the first and alcohol in the second.[3] He disagrees with the opinion expressed by Ewald that the use of these "means of gratification" is not only permissible but indispensable, but he is more lenient with regard to alcohol than tobacco, coffee, or tea, although tobacco comes under the heaviest condemnation. In a brief historical introduction he shows how tobacco had to overcome the strongest opposition, being prohibited by the Roman and Greek Churches, while the laws of 1650 in North America forbade any one to smoke under the age of 21. Cigars came into use in the early part of the nineteenth century; the author's grandfather first saw cigars smoked in Paris by the German army of occupation in 1814. Cigarettes have been only introduced in Germany during the last forty years. Dr. Craemer's personal experience of tobacco was unfavourable as it gave rise to persistent gastralgia, palpitation and loss of appetite; he was formerly in the habit of smoking three "Dutch cigars" a day, sometimes going as far as six or seven. He says that the finest cigars contain the smallest percentage of nicotin, but he speaks of cigars of German or Dutch manufacture, and seems to know little about Havana cigars. He says that the effects of smoking upon the pulse and blood pressure are that the pulse frequency is increased and the blood pressure "doubled," but Hesse's observations (*D. Arch. f. klin. med*, 1907, lxxxix, 5-6) show that the increase in frequency is "slight" and the increase in pressure not constant, sometimes marked but never doubled. Experiments with nicotin injected hypodermically in animals are not fairly applicable to the question; nicotin is no doubt a violent poison and if only a small proportion of that contained in a cigar passed into the circulation it would prove fatal, but experience shows that the use of tobacco is unattended by these tremendous risks or followed by such dire results. We notice that the effects he quotes of so-called "nicotin-free" cigars were as bad as those of ordinary cigars or worse. In speaking of the abuse of tobacco he mentions twelve to fifteen cigars and thirty to fifty cigarettes daily! It appears that during the epidemic of cholera at Hamburg in 1892 the tobacco workers enjoyed some degree of immunity. Tobacco, according to Dr. Craemer, is the chief cause of arterio-sclerosis, but tobacco, tea and coffee alike act injuriously upon the digestive organs. He estimates the food value of beer compared to milk as three to four. As a citizen of Munich the author is perhaps inclined to say what he can in favour of his city's staple product, but he states that at the Pathological Institute in Munich only 1.2 per cent. of the bodies show alcoholic lesions; while at Hamburg, where spirits are largely drunk, the percentage is as high as 10.8. He thinks alcohol may be used in moderation with advantage, and he complains of its fanatical opponents, who turn their weapons against those who, like himself, would allow its moderate use, while shutting their eyes to the injurious effects of tobacco, tea, and coffee. He will not admit the merit of total abstinence from alcohol when the abstainer smokes tobacco all day. In our opinion, it may

[1] *Die Asthenische Konstitutionskrankheit.* (Asthenia Universalis Congenita Morbus Asthenicus.) Von Professor Dr B. Stiller. Stuttgart: Ferdinand Enke. 1907. (Roy. 8vo, pp. 235. M.8.)

[2] *The Physiology of Alimentation.* By Dr. Martin H. Fischer. New York: John Wiley and Sons; and London: Chapman and Hall, Limited. 1907. (Post 8vo, pp. 356 8s. 6d.)

[3] *Die Einwirkung der Genussmittel auf den menschlichen Organismus speziell auf die Verdauungs-Organe*—(1) *Tabak, Koffee, und Tee und Verdauung*; (2) *Alkohol und Verdauung* Von Dr. Friedrich Crämer. München: J. F. Lehmann. 1907. (Med. 8vo pp. 196. M.4)

be allowed that there are people who use tobacco, tea, and coffee to excess, but as a general rule they are taken in moderation, and the temptation to excess is small, while it is notorious that the abuse of alcohol is common and constitutes one of the gravest social evils. The question of the abuse of alcohol cannot be adequately discussed when its effects upon the digestive organs only are considered. While it is undoubtedly true that people sometimes suffer from the effects of the poison contained in tobacco, and less often from those in coffee and tea, yet such accidents are comparatively rare; and when we read Dr. Craemer's indictment of these for the most part harmless articles we think that it would be equally easy to show that CO_2 being a poison which acts on the nervous, respiratory, and vascular systems, the constant use of soda water must be regarded as a very probable cause of the prevalence in these days of diseases of the brain, lungs, heart, and blood vessels!

We have already (October 12th, 1907, p. 989) referred to the German edition of which the third volume of *Metabolism and Practical Medicine*[4] is a translation. It completes the translation of Professor von NOORDEN'S standard textbook for which the profession is indebted to Professor WALKER HALL. As previously pointed out, this is an especially interesting volume to practitioners because it describes the *pathology* of metabolism—that is to say, the metabolic changes which occur in such diseases as diabetes mellitus, gout and obesity, and the influence of physical agencies, whether employed as remedies or otherwise, mineral waters, baths, light, *x* rays, radium, drugs, and of poisons.

PHYSIOLOGICAL CHEMISTRY.

THOSE acquainted with Professor BUNGE'S textbook on physiological chemistry will remember the enthusiasm with which that work was welcomed on its first appearance. This feeling was due not so much to its matter (though that was excellent) as to its manner, for Bunge was one of the earliest to show that the subject can be treated in an interesting style. The subject of biochemistry, which has become so large and important of recent years, would no doubt have flourished under any circumstances; still, it can hardly be doubted that it was books like Bunge's which gave an impetus to its study and development. Physiological chemistry, as it becomes more and more exact, is rapidly also becoming only a part of organic chemistry, and for the medical student the most important part. In these days, when every preliminary science is claiming the time of the unfortunate student of medicine—and chemistry is a subject second to none in the loudness of its voice—it is getting more and more necessary for some adjustment of these conflicting claims to be brought about. Among other subjects, organic chemistry will have to limit its demands to those portions which bear directly on the work of the physician. A textbook of the subject is therefore to be desired, and the question, Does Professor Bunge's *Textbook of Organic Chemistry for Medical Students*,[5] which Dr. ADERS PLIMMER has translated, meet the demand satisfactorily? We must confess we are disappointed; the book is not very different from the ordinary textbook of organic chemistry, and the author seems to have lost his cunning. Flashes of his old, interesting style do occur, but these are few and far between. Perhaps the subject is one that does not lend itself to this kind of treatment. Dr. Aders Plimmer is to be congratulated, not only on the excellence of his translation, but also on the numerous interpolated paragraphs in which he has supplemented Bunge's work and filled in his omissions. The book is written as a series of lectures, as was Bunge's previous work. This, however, is only a fiction; there is but little of the lecture style in the chapters, and if they ever were really lectures, the German student must be more patient than his English *confrère* for each is of inordinate length, and is packed with information. The book is undoubtedly a useful and accurate one; it is only the fact that its author has not lived up to his previous reputation as a striking writer that gives rise to the feeling of disappointment we have expressed.

In these days of almost universal research in the realm of bio-chemistry, Dr. FRÄNKEL'S excellent work[6] will be welcomed as one of the most recent and trustworthy compendia of data. It will no doubt find its way into the hands of all workers in physiological laboratories. It is a mine of information, and the references given to the original memoirs from which the facts are gathered will prove most useful. It is a book which is of no use to the medical student, and is not intended for him. It appeals to the advanced worker, and to those engaged in original research. As its title implies, it is written from the chemical point of view; there is little of biological interest in it except indirectly. Bio-chemistry, or physiological chemistry, as it is still sometimes called, is gradually being sucked into the vortex of organic chemistry. From the high-and-dry standpoint of pure science this is advantageous; but to the practical medical man and biologist it is a pity that specialization should lead to his neglecting what is essential and important. He is apt not to see the wood because of the trees. The jargon of the ultraspecialist is rapidly becoming a foreign language even to the disciples of allied branches of science. Dr. Fränkel has produced a work which exhibits these faults. It is not a book one can sit down to and read with pleasure. As a catalogue of facts, figures, and formulae it is admirable, but like most catalogues it is not interesting.

VARIATIONS OF THE FACIAL BONES.

DR. LE DOUBLE'S Treatise on the variations of the human face bones and their morphological significance[7] is a continuation of his work of the variations of the bones of the human cranium to which attention was directed in these pages on April 16th, 1904, p. 896. Dr. Le Double has devoted much time to the study of variations, and the present volume is as readable, clear and comprehensive as those which he has previously published. In it he discusses all the known variations of the bones of the human face, and draws attention to their relationship to the conditions met with as a general rule in lower forms. He distinctly disclaims, however, any intention of supporting the view held by some anatomists that all variations met with in the human body are atavistic or reversive, for as he quite fairly points out he has always maintained that three classes of variations can be defined. First the atavistic or regressive, which are returns to a more primitive condition. Second, variations which may be described as progressive and which are due to the tendency for adaptation which is so strongly marked in many living forms. Third, variations which are neither regressive nor progressive but are distinct variations from any normal type. The subject dealt with, as Dr. Le Double points out, is not only of interest to the anatomist but also to the physician and surgeon, for a knowledge of the variations which may be expected to occur will often enable a correct diagnosis to be made, and it will suggest plans of treatment by which a successful result may be obtained. The book is well printed from good type and it is illustrated with numerous figures which are not elaborate, but which serve admirably to elucidate the subject under discussion.

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[4] *Metabolism and Practical Medicine.* By Carl von Noorden. Vol III. The Pathology of Metabolism. English Issue under the Editorship of I. Walker Hall. London: William Heinemann. 1907. (Roy. 8vo, pp. 527 to 1320. Three vols., £2 12s 6d.)

[5] *A Textbook of Organic Chemistry for Medical Students.* By Dr. G. v. Bunge, Professor of Physiological Chemistry in the University of Basle. Translated, with additions, by R. H. Aders Plimmer, D Sc Lond., Assistant Professor of Physiological Chemistry, University College, London. London, New York, Bombay, and Calcutta: Longmans, Green, and Co. 1907. (Demy 8vo, pp. 270. 6s.)

[6] *Descriptive Biochemie, mit besonderer Berücksichtigung der chemischen Arbeitsmethoden* [Descriptive Bio-Chemistry, with special reference to chemical methods.] By Dr. Sigmund Fränkel, Docent für medicinische Chemie an der Wiener Universität. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1907. (Super-royal 8vo, pp. 651.)

[7] *Traité des Variations des Os de la Face de l'Homme et leur Signification au point de vue de l'Anthropologie Zoologique.* By M. le Dr. F. Le Double. Paris: Vigot Frères. 1906. (Demy 8vo, pp. 471; 1 plate, 163 figs. Fr. 25.)

THE Portuguese Commission appointed to investigate sleeping sickness on the Ilhado Principe in the Gulf of Guinea is now at work. For the purposes of the investigation the island has been divided into four zones. Of the northern of these Dr. Annibal Correia Mendes, head of the expedition, has charge; Dr. Damas Mora is working in the north-east, Dr. Bernardo Bruto da Costa in the south, and Dr. Arnaldo José Villela in the west.

NOTES ON BOOKS.

Yearbooks.

We have exhausted our vocabulary of praise in mentioning the previous editions of *Who's Who*, and can only say with regard to the issue for 1908[1] that it appears to be in every way worthy of its predecessors. We have had occasion to test the previous editions in the course of business in many directions and seldom in vain, and have never, we believe, been misled. The present volume is a little larger than the last, but the price remains the same, 10s. net. Events subsequent to September 30th, 1907, are not recorded. *The Who's Who Yearbook, 1908*,[2] is a kind of supplement; it contains lists of officials, of the House of Commons, of consuls, of colleges with their officers, of newspapers, and of clubs and societies; it is furnished with an adequate index.

Whitaker's Almanack for 1908[3] is the fortieth annual volume. The editor announces with pardonable pride that by reconstruction and rearrangement he has been able to add two pages to the index, thereby increasing the number of references to close on 5,000, and undoubtedly increasing the utility of the volume. The article on remarkable occurrences has been recast, and now serves as a dictionary of dates for the period from November 1st, 1906, to October 31st, 1907. There is an article on employers' liability, curiously not indexed under that title, dealing with the Workmen's Compensation Act, under which it is indexed; from this article we take leave to quote the following passage in reference to doctors and nurses: "Probably on the technical ground that a doctor in regular and long-continued attendance on a patient is a contractor doing his work in his own way, and not under the control of the employer, a medical attendant could not claim compensation. Among other doubtful cases are trained nurses. A regular attendant on a permanent invalid would in all probabilty be regarded in the same way as a children's nurse or a valet, and be entitled to compensation; but a professional nurse, engaged for the course of a particular illness or accident, might on the one hand be considered a 'casual' employee, or perhaps be regarded as technically a 'contractor,' and thus not be entitled to compensation. It seems clear that if a professional nurse is regularly employed by an institution which pays the nurse and is paid by the employer, the nurse could claim compensation from the institution. It is probable that a doctor's assistant, if in receipt of less than £250 a year, and a curate, if they are regarded as working under the direct orders of their superiors, would be entitled to compensation; as also, apparently, would be school masters and school teachers." The article goes on to point out that if an odd man be occasionally employed to carry, for instance, a professional bag or even personal luggage for an employer who is travelling on business, the employer would be liable; if he is travelling for amusement he would not be liable; but the pleasure to be derived from this reassuring statement is somewhat mitigated when we go on to read that a golf club which employed a caddie would be liable, and that possibly a member of the club who played habitually and engaged the same caddie would be personally liable. The fact is that the Act is full of anomalies, and it will be a long time before its exact effect is settled. We may also call attention to a very excellent short article on the cost of old-age pensions by Mr. Herbert H. Bassett, and to another short article explaining the functions of the Public Trustee appointed under the recent Act.

Whitaker's Peerage, Baronetage, Knightage, and Companionage,[4] makes its appearance for the twelfth time. Its scope is sufficiently indicated by the title; a special feature is that all the names are in one alphabetical list.

In the new *Yearbook of Scientific and Learned Societies*,[5] which has now made its twenty-fourth annual appearance, the various bodies mentioned are divided into fifteen sections, that devoted to medicine being considerably the largest. It would appear that there are in England, Wales, Scotland, and Ireland together considerably over 200 societies connected with the science of medicine, though exception should probably be taken to the mention in this connexion of one society which receives notice, the Phrenological Society. Apart from its great value as a book of reference, the fact that the volume includes a list of the principal papers read at the leading societies adds a special interest to it, for by running through its pages it is possible to gauge the trend of current thought in various branches of medicine.

[1] *Who's Who, 1908.* London: A. and C. Black. (Cr. 8vo, pp. 2040.)

[2] *Who's Who Yearbook, 1908.* (Cr. 8vo, pp. 155. 1s.)

[3] *Whitaker's Almanack, 1908.* London: J. Whitaker and Sons, Ltd. (Cr. 8vo, pp. 960. 2s. 6d.)

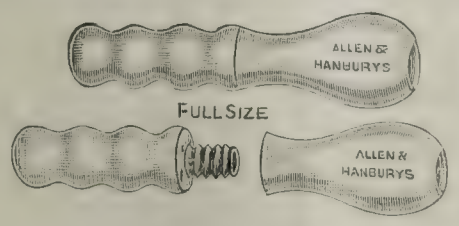
[4] *Whitaker's Peerage, 1908.* London: Whitaker and Sons, Ltd. (Cr. 8vo, pp. 836. 3s. 6d.)

[5] *The Yearbook of the Scientific and Learned Societies.* London: Charles Griffin and Co. 1907. (Pp. 341. 7s. 6d.)

MEDICAL AND SURGICAL APPLIANCES.

An Otoscope.

Dr. William Lloyd (London) has devised an otoscope for which he claims the following advantages, namely: (1) The end piece, that is, the piece which is inserted in the patient's ear, is made in several sizes, so as to fit a large or small meatus. (2) It can easily be rendered sterile by boiling or by immersion in antiseptic solution, which is exceedingly important to the surgeon when he has several septic ears to examine. (3) It does away with the necessity of possessing more than one otoscope. The instrument is manufactured by Messrs. Allen and Hanburys, Limited, 48, Wigmore Street, W.



Cupping Instrument for Cervix Uteri.

Dr. Alexander Duke (London, W.) writes: The illustration represents a simple instrument designed by me, and made by Messrs. Hewlett and Son, Charlotte Street, E.C., which will be found useful more especially for dry or wet cupping of the cervix uteri. By the latter proceeding I have given much relief to the vertical headache complained of so often during the menopause. It will also help to remove unhealthy secretions, and thus prepare the part for the usual application of liquid escharotics (as in cases of endometritis, etc.). The cup at the top of the instrument is pressed up firmly, so as to embrace the os and point of cervix; the handle is then drawn down, and a half turn of the ring at the base will engage the pin in the angle of the slot. The cup can be left on as long as required, producing local congestion or hyperaemia (something like Bier's method). Another use for the instrument will be found during the operation for supravaginal amputation, when the part is too friable to be held by volsella.

THE SWEDISH ROYAL COMMITTEE ON TUBERCULOSIS.*

The population of Sweden in 1904 numbered 5,260,811, of whom 4,071,494 resided in the country and 1,189,317 in towns. During 1905 there were 82,262 deaths, of which 9,717 were due to tuberculosis. Calculated upon the population of 1904, the death-rate from tuberculosis was 2.26 per 1,000. Tuberculosis is most frequent in the north and west of the country, Skaraborg, Jemtland, Blekinge, and Gottland also furnishing high mortality from this cause.

The Committee instituted a special inquiry as to the occurrence and treatment of tuberculosis during February, March, and April, 1906. Lists of queries were issued to medical practitioners, and 1,215 replies were received. These represented 92 per cent. of the number issued. The reports dealt with 14,538 cases of tuberculosis. Of these cases 26.2 per cent. were treated "at home," 41.2 per cent. at sanatoriums, and 32.6 elsewhere. There was a general consensus of opinion that the cases could be treated "at home" more easily in the country than in the towns.

* *Bulletin de la Ligue Nationale Suédoise contre la Tuberculose*, 1907 (Johanssen, J. E.).

That tuberculosis is more common amongst the indigent is shown by the fact that 54.7 per cent. of the total cases occurred in the poorer classes, 37 per cent. in the middle, and 8.3 per cent. in the upper classes. It is of interest to note that, despite the ease with which cases of tuberculosis can be treated in the "free air" of Sweden, 54.6 per cent. of their poor are treated in sanatoriums.

From the experience gained from a consideration of a large number of cases, the Committee place the duration of tuberculosis at about 3½ years from its first manifestation. Calculated at this rate, 5.7 per 1,000 of the inhabitants of Sweden are tuberculous.

During 1905, in 93 towns there was a mortality from phthisis of 2,861 persons, a death rate of 2.41, the average length of the disease being 2.3 years. For the same period, in the country, the deaths numbered 7,206, giving a mortality rate of 1.77, the average length of the disease being 1.11 years.

As regards age, 8.7 per cent. of the tuberculous subjects were under 15 years, 77.3 per cent. between 15 and 50 years, and 14 per cent. over 50 years.

In spite of the excess of females in Stockholm, of the total number of cases of tuberculosis 51.9 per cent. were males and 48.1 per cent. females. In the country, however, the tables are turned, the males averaging 46.5 per cent. and the females 53.5 per cent. The maximum age for males is between 20 and 25 years in the country, and 25 and 30 years in the towns. In Stockholm a second maximum appears between 50 and 55 years. That for females in the country is 30 to 35 years, and in the towns 25 to 30 years. In the capital there is also a second maximal period between 50 and 55 years.

Marriage appears to increase the liability to tuberculosis in both men and women, except during the period of 55 to 65 years of age, when the results of the abuse of alcohol, etc., are most evident.

With regard to occupation, tuberculosis is most frequent in tobacco workers, potters, printers, bookbinders, photographers. A high percentage is reached among waiters and hotel servants, in whom alcohol may play a part. The following abstract gives the average number of cases per 1,000 in the particular occupations:

Cases of Tuberculosis per 1,000 Individuals Engaged in the Respective Occupations.

	Males.	Females.	Females, Married, without Profession.	Children under 15 Years.	
				Male.	Female.
Agriculture ...	1.77	2.35	2.44	0.42	0.89
Miners	5.23	—	5.15	0.59	2.10
Ironworkers ...	9.04	11.93	4.62	0.89	1.64
Carpenters	6.33	—	4.02	1.04	1.73
Painters	8.95	—	5.63	1.41	1.97
Tobacco-workers ..	17.02	35.62	7.23		
Potters	13.82	15.24	2.0		
Printers, Lithographers, etc. ..	21.77	19.12	8.46		
Bookbinders ...	24.24	33.48	2.98		
Photographers ...	16.03	13.92	3.72		
Postal Officials, Telegraph Clerks, Telephone Clerks	9.04	21.12	9.42		
Waiters ... Hotel Servants	17.11	4.78	—		
Domestic Servants	8.71	4.92	7.51		

SOME of the vacancies recently announced on the Livery of the Guild of the Society of Apothecaries of London still remain to be filled. The advantages of membership include a right to vote at Parliamentary elections in the City, participation in the not infrequent hospitality dispensed by the Society, and the probability of assistance being rendered in the hour of need, should it ever occur. The Society has a fund out of which pensions of £50 can be allotted to those of its members who are in distressed circumstances, while widows of its members may be annually awarded a sum of £20 in the same circumstances.

ROYAL COMMISSION ON VIVISECTION.

THIRD REPORT.

(*Continued from p. 1787.*)

Professor Schäfer's Evidence (continued).

ASKED by Dr. Wilson whether many of the results of brain experiments had not been rather contradictory and practically of very little value in brain surgery, Professor Schäfer said he should think not; but Sir Victor Horsley would give them the best evidence on that point. They were not contradictory, so far as animals were concerned. He admitted that experimentation on animals had done nothing for insanity; as regards epilepsy, he said probably not, but he did not know. He did not think his own mapping out of brain functions in animals was disputed by other physiologists, except in unimportant details. He thought the analogy between the brain of a monkey and that of a man was fairly complete, as had been shown by cases in which the brain had been exposed in man. In such cases it had been repeatedly found that excitation of the same or the corresponding part of the brain in man to that which yielded a certain result in a monkey would give the same result. In reply to a suggestion that in all these experiments on monkeys a great deal of pain must be suffered afterwards when the animal was under observation, the witness said there was absolutely no sign of it. The animal was in a perfectly normal condition, ate its food, and ran about the cage, except for such paralysis as might have been produced as the result of the operation. If there was any sign of pain they would immediately kill the animal, but they had never had occasion to do this since the introduction of antiseptic methods. Experiments performed before the introduction of antiseptics might well have been painful, because inflammation was then possible. But there was no such thing now. In reply to further questions, he said all knowledge was useful, but what would be applicable to medicine or surgery he could not at the moment say. Who would have thought that Pasteur's experiments upon fermentation would be applicable to medicine and surgery? Who would have thought that there was useful knowledge in them? And yet that had led to the whole of Listerism. Aseptic surgery was the most complete carrying out of Listerism. The principle of Listerism was the elimination of micro-organisms; they could be eliminated by antiseptics or by asepsis. His experience was derived from animals alone, but that experience was very extensive, and he had never seen any sign of pain in an animal which had been anaesthetized during an operation and treated either antiseptically or aseptically afterwards. There were certain parts of an animal that could not be treated antiseptically, because the antiseptic itself might be a source of irritation; but, as a general rule, it was safe to apply a certain amount of antiseptic to the outside of a wound, because it ensured, especially in animals in which one could not cleanse the skin so thoroughly as could be done in man, that there should be no invasion of germs from the outside. In reply to Dr. Gaskell, he said he had not had deaths by giving atropine with chloroform, with careful administration; without atropine, with the most careful attention, one might have deaths. He thought the method was chiefly confined to his laboratories. Asked if in his time at University College such a course for advanced students was ever given as was described in the *Shambles of Science*, he said he thought that was an innovation. He thought it a very good innovation. It seemed to him from what he had read and from what came out in the case of Bayliss *v.* Coleridge that reasonable care was taken that the students should be bona fide students and should be advanced students. Asked whether he would advocate any change in the law as it was at present administered or stated in the Act, he read the following statement

Although the Act has not been without benefit, because it has given to all intelligent laymen a definite assurance that no wanton cruelties (such as were basely insinuated before the system of licensing and inspection was instituted) are possible, and the reports have shown that all experiments are carried out with the least possible amount of pain, and in 99 out of 100 cases are absolutely painless from beginning to end—it must be admitted that it somewhat tends to hamper research. There is often too great a delay in the allowing certificates, and by the time the inhibition to use them is

removed (the normal period of inhibition being one week according to the Act, and the actual period of detention being often very much longer, at the discretion of the Secretary of State), the best opportunity for conducting the experiments may have lapsed. It was quite clearly the intention of the Act that all certificates should be granted by two eminent medical or scientific authorities, and although power was taken to disallow or suspend a certificate which had been granted, nevertheless this was obviously intended only to be used in case of any abuse or infringement of the Act. The Act nowhere gives power to the Secretary of State to impose any conditions on the certificates, but this power has been illegally assumed by successive Secretaries, and certificates are thereby materially modified and their usefulness seriously impaired. I would like to give an instance of that which occurred to myself. I mentioned two experiments which I performed on animals in connexion with the subject of drowning. I asked for permission to perform certain experiments without general anaesthesia, because I was anxious to determine whether every condition was exactly the same without anaesthesia as with anaesthesia; accordingly, I asked for permission to put a cannula into the artery of a dog's leg with complete local anaesthesia—cocaine, and during the drowning to make an experiment upon the blood pressure in that dog. I obtained a certificate for that purpose, but there was written over that certificate, "The preliminary operation which is suggested under local anaesthesia is hereby disallowed" (or words to that effect). I consider that that was an illegal action on the part of the Secretary of State, but I had no remedy because the Secretary of State would simply have disallowed the certificate altogether, and I was compelled to do the best I could under the circumstances. This I put forward as an instance of a research, and an important research, being hampered by the authority of the Secretary of State acting, so far as I am able to ascertain, without expert advice, and, indeed, contrary to such advice. To enforce this illegal position the threat of suspension of the certificate is held over the head of the applicant. Further, all applications are referred, first, to the Association for the Advancement of Medicine by Research; and, secondly, to the Inspector under the Act. I do not object to a confidential reference to the Association for the Advancement of Medicine by Research, because that Association is composed of experts on the subject who are very capable of forming a judgement as to the expediency of proposed experiments, and their judgement can only have the effect of strengthening the position of the Secretary of State when he is called upon to decide on any doubtful question; nevertheless, it must be conceded that even this is clearly outside the four corners of the Act. On the other hand, the Inspector has to do with the administration of the Act, and is not necessarily an expert upon the subject of physiology or pathology or pharmacology; he has no special knowledge of what is or is not necessary for the advancement of knowledge in the special branches of these subjects; his duties are defined by the Act, and consist in visiting registered places for securing a compliance with the provisions of the Act. Personally, I have not a word to say against any advice which may have been given by the present or past Inspectors in Great Britain; but the abuse of the position of the Inspector has come out very glaringly in the evidence of the Inspector for Ireland, whose advice seems to have been acted upon for a time in opposition to that of the granters of certificates. I have studied the Act carefully, and I can find nothing in its provisions which warrants an appeal being made from the experts who are authorized to grant certificates to officials who are not experts in the science and are not conversant with the necessities of the investigation proposed to be employed. That is what I have to say about the present restrictions. I would strongly deprecate, on behalf both of the Royal Society of Edinburgh and of the University of Edinburgh, the imposition of any further restrictions whatever. Any restrictions on scientific work are detrimental to its progress, and further restrictions of experiments on animals might prove disastrous to the progress of physiology and medical science in this country. Since the revival of scientific medicine in the last two centuries we have taken a leading part in contributing to its progress. In no other country in the world is more regard paid to the ethical aspect of the treatment of animals, and the care which has always been exercised by physiologists in this country to prevent pain in the performance of experiments is a reflection of a general sentiment which animates all classes of society. (The callousness of the laity generally with regard to the sufferings which are inflicted upon animals intended for the table, or which are involved in pursuit of pleasure, is due, I believe, in the majority of cases, to sheer ignorance.) Nevertheless, I have not found any disregard of animal suffering to prevail amongst physiologists and medical men of other countries, in spite of the fact that in some countries the people generally are far more callous regarding animals than are we ourselves. It is strange that this should be the only country in the world in which restrictions are placed on the use of animals for the purpose of advancing medical and scientific knowledge, in spite of the fact that there is overwhelming evidence that the actual amount of pain inflicted is infinitesimal compared with the results achieved and compared with that which is daily and hourly inflicted in the pursuit of pleasure or of commerce. Even quite recently a clause was inserted in an Act of Parliament prohibiting stray and unclaimed dogs seized by the police being employed for the advancement of medical knowledge. The silliness of such a regulation is self-apparent, for these animals are condemned to die, and are in many cases killed by a process of suffocation; at the best they are killed by the same anaesthetic as would be employed in the laboratory; and the result is that other dogs have to be killed in the laboratory and the number of animals sacrificed is increased by so many. Who benefits by this? Certainly not the canine race.

The necessity of employing dogs has been emphasized by others who have given evidence, but it cannot be too strongly insisted upon. No other animals are available for experiments in important fields of physiology. Among these I would instance experiments upon the heart and circulation, upon the secreting glands and the digestive system, upon the kidneys and the formation of the constituents of urine, upon lymph formation, upon metabolism, and lastly, experiments on the nervous system, in certain of which animals which can be trained must be employed. Dogs are the only animals which are available for many such experiments.

Asked if he did not think it would be a good plan if animals kept alive under Certificate B were not necessarily obliged to be kept in the laboratory in which they were operated upon—that they might go to a farm, for instance—he said, Certainly, if that was the case, it was unnecessary, and might be detrimental. The new place would be registered. Asked if he would also agree that authorized laboratory assistants should be allowed to do inoculations, he said he would like to reserve his opinion on that. To Sir William Church, who said that at the present time it was a great infliction that the head, who was, perhaps, the only man who held a licence in connexion with that research, should have to spend all his time in making 100 or 200 inoculations, the witness replied that he would certainly agree that the change indicated should be made. He would be inclined to confine the Act to warm-blooded animals; it was absurd to suppose that cold-blooded animals felt in the same way that warm-blooded animals did. In reply to further questions, he said he did not use morphine. He used to employ it more often, but now he used atropine, and they were somewhat antagonistic. A sufficient dose of morphine absolutely removed all signs of pain. In reply to Sir Mackenzie Chalmers he said he thought licences and certificates under the Act ought to be granted to physiologists who had not any medical qualification. Physiology was only accidentally and incidentally a medical science, and must be treated as an independent science. Asked if his method of resuscitating the drowned had been communicated to the Royal Humane Society, he said it was only communicated by his having sent a copy of the paper to the secretary. It was adopted by individual instructors in various parts of the country. He thought it unfortunate that the Royal Humane Society, the Life-saving Society, and the National Life Boat Institution had none of them taken it up, although it was becoming widely known to medical men. His method was very much easier to teach, and much easier to practise. It could be done by one man or one woman, or even a boy or a girl. He believed many lives would be saved if it were generally known, because it could be applied so promptly and easily. Asked as to the testing of drugs on animals, he said if one took a drug that one knew nothing about, and administered it to a man, first, there was a certain element of danger; secondly, one could only judge of its action upon man by external signs, whereas upon animals one could judge very accurately its action on different organs of the body. One could not do that on man. Asked as to homoeopathic experiments, he said he did not think there was any danger in the doses that homoeopaths gave. He was no authority on homoeopathy, but he would put an extreme case: Suppose a new drug having such a powerful action as cobra venom, and suppose one tested it in ever so small a dose upon a man, it would probably kill him. In reply to Sir Mackenzie Chalmers, he said he was very strongly of opinion that to complete the education of a man who was going to practise as a doctor, he should see certain experiments on animals. He had never seen an instance in which by seeing these experiments certain individuals got a desire to perform cruel experiments. Asked as to the suggestion that in demonstration experiments, as well as others, very light anaesthesia was practised, he said that that was certainly contrary to the fact. In his laboratory during his 37 years' teaching, the animals never made purposive movements and struggled. If one killed the anima

by pithing, there would be movement of muscles, which would not be voluntary movements, but simply due to excitation of the motor nerves that were being cut through. But the usual plan was to kill the animals with chloroform. They pushed it rather further, or injected chloroform into the blood vessels, which killed them immediately. On its being put to him that Miss Hageby spoke to hearing cries from some of the animals seen under demonstrations, he said it had never happened when he had been present. He should think it was quite impossible. In reply to further questions, he said it was well known that when an anaesthetic was administered sensation disappeared before power of movement, and power of movement returned before sensation. Asked if that was sensation generally, or sensation to certain stimuli, he said sensation generally. There were higher and lower forms of sensation. The higher forms of sensation were, of course, the last to return. In reply to Dr. Gaskell, he said there might occasionally be sounds of a whining character—a sort of râle—if there was mucus in the respiration tube. It was very well known that patients when taking chloroform, although they were perfectly without sensation, made all sorts of noises, sang, screamed, and made ridiculous utterances without being the least conscious of it, and without having any memory of having done so when they woke up. In the same way, one of the symptoms observed when a dog was put into a box or given chloroform was, just before he had become profoundly anaesthetized, a succession of loud noises, not exactly a bark, not exactly a whine and not exactly a howl, but peculiar noises which might be taken by anybody who was not an expert to indicate that the animal was under the influence of pain. It was nothing of the sort at all. It belonged to the same class of noise that patients made who sang and cried out when they were going under chloroform, just before they were completely under its influence. Asked by the Chairman if that differed with different dogs as it did with different human beings, he said, Yes; some were perfectly quiet, and others made a great deal of noise. He did not like to hear it himself, and he was afraid that the students who were not always in the room at the time might sometimes think that they were ill-treating the dog, whereas, as a matter of fact, the animal was simply in a box with vapour of chloroform being pumped into it. He used chloroform with a small proportion of alcohol, one-tenth of alcohol; he found that quite as efficient as A.C.E., and simpler. In his experience dogs were more easy to anaesthetize than any other animal. It was very rarely indeed that he had lost a dog after introducing atropine. They could not in a laboratory always have the services of a skilled anaesthetist, and that made a great difference. Asked in regard to pithing frogs, and the suggestion that the spinal cord might be severed from the brain and purposive movements still go on and the frog would feel pain, he said he thought all the evidence they had was contrary to that. The evidence from man—if a man was to be compared with a frog—was conclusive. When the spinal cord was severed from the brain of man there was no sensation below the point of severance. The fact that movements were produced was well understood. One might as well say that the tail of a newt, which continued to writhe and perform spontaneous movements, had all consciousness and volition left in it. No expert authority, or any person who had studied the subject and was capable of forming an intelligent opinion, would hold such a thing for a moment. Asked if the use of atropine had been applied as yet to human beings, he said it had, in conjunction with an anaesthetic. Dr. Scharlieb, who did the experiment with him, and was an expert anaesthetist in London, told him that he would use it always, but he could not always get surgeons to agree that it should be used. Asked if he thought that, as the result of his experiments on animals, a possible improvement had been made in administering anaesthetics to human beings which might have the result of saving life, he said "Yes"; but he would not take the credit of that to himself. It was first shown by the experiments of Dr. Embley and Dr. C. J. Martin of Melbourne, now of the Lister Institute, that the fatal effect of chloroform was usually produced on the vagus, and that cutting the vagus—and giving atropine had exactly the same effect as cutting the vagus because it cut off the influence of the vagus from the heart—entirely abolishes this inhibitory effect of chloroform. So that although the witness had carried the giving of atropine into practice and had recommended that it should be given in all cases of anaesthesia, he did not wish to take credit for the discovery of the fact. Asked if he had discovered any dangerous result from giving a dose of atropine when given with an anaesthetic, he said none whatever; the dose required was very small. In a large dog, for example, $\frac{1}{50}$ grain of atropine was quite enough to keep the animal in a safe condition for three hours. In the case of man he did not think a larger dose was required, because man was more susceptible to atropine than the dog. In reply to further questions he agreed that under the Act the Home Secretary could suspend or disallow a certificate, but he did not know that it followed from that that he could impose conditions on the certificate; but he could do so on the licence. The certificate was granted by two authorities, and there was nothing in the Act to say that he should alter the certificate. As regards the place of the experiment, he would confine his amendment of the law to allowing the animals to be moved from one registered place to another registered place, for example, from a laboratory in town to a farm in the country, which might also be registered for the keeping of animals.

In conclusion Professor Schäfer illustrated the defects of mere clinical observation unassisted by experimentation on animals by a statement regarding the discovery of the active principle of suprarenal extract. Dr. George Oliver had been making a number of clinical observations upon the effect of various organ extracts upon the circulation, but had been unable to arrive at any definite conclusions regarding them. Amongst these was extract of suprarenal capsule, extract of thyroid gland, extract of brain, and so on. He consulted the witness as to what steps might be taken to arrive at a clearer understanding with regard to their action, and he invited him to investigate their physiological action along with him upon animals in the laboratory. The result of the investigation was that the majority of the extracts from which Dr. Oliver supposed he had obtained definite results in man gave no indications of physiological activity; whereas, on the other hand, the extract of suprarenal capsule gave such manifest indications of activity that it was quite clear a very important principle was contained within that organ. The properties of that principle they proceeded to work out, and the result of the investigation led to the discovery of adrenalin, which had proved of immense physiological, and would in all probability prove of great therapeutic and clinical, importance. The witness further pointed out that two methods must always be employed in physiology in investigating the functions of an organ: (1) The method of stimulation or addition; (2) the method of removal or substraction. This might be illustrated by experiments upon such organs as the ductless glands. If they again took the case of the suprarenal capsule they found that the effects of addition were, first, increased contraction of the blood vessels; secondly, increased action of the heart; thirdly, contraction of the uterus, and generally a tonic influence in all parts supplied by the sympathetic nerve. If, however, the addition was excessive and prolonged, certain chronic effects were produced, the most striking of which was an atheromatous condition of the arteries, which might eventually lead to aneurysm. The effect of removal, on the other hand, was in most animals death within a few hours with symptoms of extreme vascular and general muscular weakness, symptoms similar to those resulting from the gradual destruction of the gland by disease. So again with the thyroid body. The effects of addition or increase of its secretion were the production of a condition of nervous excitation, and certain ill-understood effects on nutrition. The effects of its removal varied in different species of animals. In some the result was *nil*, possibly owing to the fact that there might be small accessory glands of the same structure and function left behind in the body. In other cases a general condition of malnutrition of the connective tissue was produced, together with depression of the functions of the higher parts of the brain, sometimes combined with an excitable condition of the lower levels of the nervous centres, leading to increased reflex action and even to convulsions. All these effects could be counteracted by thyroid administration. The second method of experimentation necessitated the keeping of the animal after removal of the organ for days, weeks, or months, in order to understand the condition of the experiment; and the animal used must be one the organs of which were generally similar to those of man, if the conclusions drawn from the experiment were to be applicable to man. On that account, and for this second method of experimentation in particular, it was in very many instances essential that dogs should be the subject of experimentation. This was especially true for work upon the alimentary and glandular systems, whereas for work upon the central nervous system monkeys, as well as dogs, required to be used.

Nova et Vetera.

A STATUE OF LAËNNEC.

In the British Medical Journal of July 6th there appeared an interesting paper by Dr. Theodore Williams entitled Laënnec and the Evolution of the Stethoscope, in which he gave an account of the modifications which the instrument has undergone from the time of its invention by Laënnec. In the same number we added some further particulars of the man to whom medicine owes this great step in its progress, with two portraits. Dr. Malcolm of Dundee has been kind enough to send us a photograph of a statue of Laënnec which commemorates his fame in his native place, Quimper, in Lower Brittany. The statue, which is here reproduced, shows the famous physician in his academic robes seated in the professorial chair in the act of lecturing. Dr. C. J. B. Williams, who was one of the most distinguished of Laënnec's pupils, says he was not thought so much of by his French disciples as by foreigners. And even in foreign countries, while he was highly esteemed for his researches on the pathology of lung disease, comparatively little importance was attached to his great invention. As appears from the review of his great work by Dr. Granville, F.R.S., editor of the *London Medical and Physical Journal*, published in the issue of that periodical for January 20th, 1820, the profession was very doubtful of the practical usefulness of the stethoscope. Even at a later date, says Sir Benjamin Ward Richardson,[1] when the "listening tube" had got quite into fashion, there were pupils, and favourite pupils of Laënnec himself, who said that were it not for the admirable manner in which the master described the phenomena of thoracic disease and added to the domain of pathology, the introduction of the stethoscope would have been a mere casual incident destined to come and go and bring forth no fruit. There were also, he adds, some who, after all the great truths respecting the value of the stethoscope were widely known, still looked upon it as a toy. One of the old practitioners, who in the first days of Richardson's own career "did very well without the tube," and who looked on the process of "sounding the chest," as an agreeable way of spending the time, asked him when he got his first new instrument whether he didn't "expect to hear the grass grow through it." With regard to the evolution of the stethoscope Richardson says:

We have seen already that the first instrument was improvised from a roll of paper, which for a short period answered fairly; but soon a more durable instrument was turned in wood in the form of a straight cylinder 1½ in. in diameter and 12 in. long, with a bore ⅛ in. extending through it. The tube was divided into two parts in the centre, transversely, so that it could be taken into two pieces if necessary; and at its lower part, that which was applied to the chest, it was armed with what was called a stopper, which could be taken out or fixed in by means of a short connecting bit of brass tube. Forbes had in his possession one of those "second-edition stethoscopes" that had been sent him by Laënnec himself a short time before his death, an instrument which I remember seeing at Forbes's house when once visiting him there in company with the late Dr. Patrick Stewart and Sir John Rose Cormack. Forbes used this stethoscope for many years in preference to any other, although towards the end of his active life he retained it rather as a curious relic than as an instrument for daily practice.

Laënnec was not a man of one idea, and into his short life of 45 years he crowded an amount of work that might have made the reputation of half a dozen lesser men.

Nor was he a man of one book. He wrote, among other things, treatises on peritonitis; on pathological anatomy; a monograph on vesicular worms, containing the description of several new species, and of the diseases and organic changes to which the presence of these worms gives rise in the human body; an essay on angina pectoris, and one on the works and doctrines of Gall, which he did not regard with favour. In connexion with Gall's system, he tells a story of the first Vestris. On being asked, after one of his Terpsichorean feats, if he was not tired, the famous dancer replied: "Sir, in our art the fatigue of the legs counts for little; it is this (pointing to his head) that works." "Why, then, does not Gall," asked Laënnec, "give a bump for dancing, as he does for painting?"

An interesting pen picture of Laënnec was published in the *Albany Medical Annals* for February, 1903; it is taken from the *Recollections of a Lifetime*, by Dr. S. G. Godrich (Peter Parley):

Went to the hospital of La Charité. Saw Laënnec with his pupils, visiting the patients. He makes a great use of the stethoscope, which is a wooden tube applied to the body and put to the ear; by the sound the state of the lungs and the vital organs is ascertained. It is like a telescope by which the interior of the body is perceived, only that the ear is used instead of the eye. It is deemed a great improvement. Laënnec is the inventor, and has high reputation in the treatment of diseases of the chest. He has learned to ascertain the condition of the lungs by thumping on the breast and back of the patient and putting the ear to the body at the same time. He is a little man, 5 ft. 3 in. high, and thin as a shadow. However, he has acute features and a manner which bespeaks energy and consciousness of power. The whole hospital was neat and clean; bedsteads of iron. French medical practice very light; few medicines given; nursing is a great part of the treatment. Laënnec's pupils followed him from patient to patient. He conversed with them in Latin.

A curious sidelight on Laënnec is found in an article on Fauriel, a critical student of primitive and popular literature, by Sainte-Beuve in the *Portraits Contemporains*, who says:

Another man who shared more in Fauriel's enthusiasm for the primitive was—will it be believed?—the great physician, Laënnec. That excellent person had been introduced to Fauriel by M. Cousin, whose physician and friend he was. The songs of Brittany became their favourite subject of conversation, and as it were the passionate meeting ground of those two spirits, come from such different shores. Fauriel knew the words, but Laennec knew the airs, those airs learnt in childhood and never forgotten. He used to bring his flute (and one must have seen Laënnec to picture him in the character of Lycidas), and as the other recalled the words he tried to note them; *Numeros memini, si verba tenerem.*

[1] *Disciples of Aesculapius*, vol. i.

Touching scene, the mere thought of which makes one smile, and which was worthy of those spirits, those hearts, truly antique and simple.

The phrase about Lycidas seems to show that Sainte-Beuve had been privileged to see the discoverer of auscultation playing the flute.

The stethoscope, while it was yet a novelty, naturally gave rise to many jokes. Dr. Theodore Williams has told the story of the dissecting-room porter who, when asked to decide as to the reality of a *bruit* in the course of the classic experiments on a donkey made at St. George's Hospital, applied his ear to the instrument, and gravely gave his verdict as follows: "Yes, gentlemen, I hears the *brute*" Oliver Wendell Holmes, in his "Stethoscope Song," tells the story of a mishap which overtook a young physician confident in his possession of the "new learning." It is doubtless familiar to many of our readers, but we venture to quote it for the benefit of others who may have forgotten it:

There was a young man in Boston town,
  He bought him a Stethoscope nice and new,
All mounted and finished and polished down,
  With an ivory cap and a stopper too.

It happened a spider within did crawl,
  And spun him a web of ample size,
Wherein there chanced one day to fall
  A couple of very imprudent flies.

The first was a bottle-fly, big and blue,
  The second was smaller, and thin and long;
So there was a concert between the two,
  Like an octave flute and a tavern gong.

Now being from Paris but recently,
  This fine young man would show his skill;
And so they gave him, his hand to try,
  A hospital patient extremely ill.

Some said that his *liver* was short of *bile*,
  And some that his *heart* was over size,
While some kept arguing all the while,
  He was crammed with *tubercles* up to his eyes.

This fine young man then up stepped he,
  And all the doctors made a pause;
Said he, "The man must die, you see,
  By the fifty-seventh of Louis's laws.

"But since the case is a desperate one,
  To explore his chest it may be well;
For if he should die and it were not done,
  You know the *autopsy* would not tell."

Then out his stethoscope he took,
  And on it placed his curious ear;
"*Mon Dieu!*" said he, with a knowing look,
  "Why, here is a sound that's mighty queer!

"The *bourdonnement* is very clear,
  Amphoric buzzing, as I'm alive!"
Five doctors took their turn to hear;
  "*Amphoric buzzing*," said all the five.

"There's *empyema* beyond a doubt;
  We'll plunge a *trocar* in his side."
The diagnosis was made out,
  They tapped the patient; so he died.

Now such as hate new-fashioned toys
  Began to look extremely glum;
They said that *rattles* were made for boys,
  And vowed that his *buzzing* was all a hum.

There was an old lady had long been sick,
  And what was the matter none did know;
Her pulse was slow, though her tongue was quick;
  To her this knowing youth must go.

So there the nice old lady sat,
  With phials and boxes all in a row;
She asked the young doctor what he was at,
  To thump her and tumble her ruffles so.

Now, when the stethoscope came out,
  The flies began to buzz and whiz;
Oh ho! the matter is clear, no doubt;
  And *aneurism* there plainly is.

The *bruit de râpe* and the *bruit de scie*,
  And the *bruit de diable* are all combined;
How happy Bouillaud would be,
  If he a case like this could find!

Now, when the neighbouring doctors found
  A case so rare had been descried,
They every day her ribs did pound
  In squads of twenty; so she died.

Then six young damsels, slight and frail,
  Received this kind young doctor's cares;
They all were getting slim and pale,
  And short of breath on mounting stairs.

They all made rhymes with "sighs" and "skies,"
  And loathed their puddings and buttered
And dieted, much to their friends' surprise,
  On pickles and pencils and chalk and coals.

So fast their little hearts did bound,
  The frightened insects buzzed the more;
So over all their chests he found
  The *râle sifflant* and the *râle sonore*.

He shook his head;—There's grave disease,—
  I greatly fear you all must die;
A slight *post-mortem*, if you please,
  Surviving friends would gratify.

The six young damsels wept aloud,
  Which so prevailed on six young men
That each his honest love avowed,
  Whereat they all got well again.

This poor young man was all aghast;
  The price of stethoscopes came down;
And so he was reduced at last
  To practise in a country town.

The doctors being very sore,
  A stethoscope they did devise
That had a rammer to clear the bore,
  With a knob at the end to kill the flies.

Now use your ears, all you that can,
  But don't forget to mind your eyes,
Or you may be cheated, like this young man,
  By a couple of silly, abnormal flies.

LITERARY NOTES.

THE Rev. Lionel S. Lewis, giving evidence on behalf of the Church Antivivisection Society before the Royal Commission on Vivisection on May 29th, as reported in the Minutes of Evidence from April to July, 1907, quoted Lecky, (p. 87) as one of the great thinkers who "tell us that it is one of the great dangers of vivisection that a man who gets callous to pain and does not inflict it for the good of the sufferer, will not be over-particular when he gets straight from the vivisectional laboratory to the bedside of a hospital patient." In the JOURNAL of November 30th, Sir Samuel Wilks asked from which of Mr. Lecky's works the quotation came, as it was in direct contradiction to the opinion expressed in Lecky's *Map of Life*, where he strongly condemns the "strange form of benevolence . . . which in a country where field sports are the habitual amusement of the higher ranks of Society, denounces as criminal even the most carefully limited and supervised experiments on living animals, and would thus close the best hope of finding remedies for some of the worst forms of human suffering." Foreign critics, Lecky goes on to say, "are apt to find much that is exaggerated or even fantastic in the great popularity and elaboration of some animal charities." No answer to Sir Samuel Wilks's question has been forthcoming. Lecky's reference to the exaggeration of "animal charities" is in agreement with some remarks made by us in the same number on the marks of devotion lavished on animals by many people who are indifferent to the needs of their fellow creatures. Whoever it was who said, *Plus je connais les homme, plus j'admire les chiens*, was merely a cynic; but it is interesting to find it recorded in Grant Duff's *Notes from a Diary, 1996* to *January 23rd, 1901* (p. 105), on the authority of Lecky, that Miss Frances Power Cobbe used to say, "I love dogs by nature; human beings only by grace." There are, if we may trust their own utterances, antivivisectionists who never find grace to overcome their natural preference for beasts.

It is announced that the German medical press has determined to rid itself of a stain on its scutcheon of which the profession in the Fatherland has long been ashamed. With the assistance of the leading chemical houses, the German Medical Editors' Association is

drawing up a list of doctors who write—for a consideration—articles recommending proprietary remedies. The German editors have agreed not to print, abstract, or otherwise give publicity to articles written by such persons. We fear that venal scribes of the kind referred to are not altogether unknown in other countries. We have heard of gentlemen who for a fee of 30 to 50 guineas contribute papers to journals professedly intended for the medical profession, of which the theme may be expressed in the words of Molière:

> O grande puissance de l'orviétan!

Nowadays, of course there are many things with "names of learned length and thundering sound" much more imposing than *orviétan*. It is bad enough when "London Physicians" discourse on the marvellous virtues of "bosholia," let us call it, in influenza in the advertisement pages of popular magazines. In such a case, however, the principle of *caveat emptor*, so dear to the Free Trader, may be pleaded in excuse. But to dress up a puff of a preparation under the guise of a contribution to science is an offence not only against the profession, but against humanity.

According to the *Centre Médical*, Le Verrier, who shared with our own John Couch Adams the glory of the discovery of the planet Neptune, was a chronic dyspeptic, and finally died of some affection of the digestive apparatus. But Désiré Nisard has left it on record in his *Souvenirs* that the great astronomer had another infirmity, that of physicking himself. It has been said that the man who is his own doctor has a fool for his patient, and this aphorism seems to have been verified in the case of Le Verrier. But his method was peculiar, and perhaps characteristic of the mathematical mind. He consulted several physicians, reserving to himself, however, the right of correcting or supplementing their advice and prescriptions in accordance with his diseased appetite. His wife, who seems to have encouraged this weakness, called his system of self-doctoring *une médecine de moyenne*, as though it were the resultant of the various therapeutic forces applicable to his case. The physician whom he trusted most is said, when asked what the astronomer died of, to have replied, "Of his own private judgement." Whatever may be thought of private judgement in theology, there can be no doubt that its exercise in the sphere of medicine often has eminently unhappy results for the patient.

Henry II of France (1519–1559) does not seem to have loved doctors. He issued a decree that on complaint made by the heirs of persons who had died through the fault of their medical attendants, information of the fact should be laid, and the case dealt with in the same manner as other homicides. A cynic might say that in such circumstances the heirs were more likely to show gratitude to the doctor than to bring him to justice. But the human mind is even more fearfully and wonderfully made than the body, and it is conceivable that some, while rejoicing in their inheritance, wreaked vengeance on the doctor all the same, as the writer of a letter to a newspaper is asked to give his name "as a guarantee of good faith." Mercenary doctors were compelled to taste the excrements of their patients, as a kind of poetical justice, we suppose, in punishment of their love of filthy lucre. If the doctor refused to submit to this ordeal, he was to be adjudged guilty of the death of the patient. The preamble of this interesting decree sets forth that "blue was for doctors, being an evil colour assigned to them because usually they killed more people than they cured. The poor patient often taking one remedy for another made his disease worse and lost his life." It was added that the earth covers up the mistakes of doctors. The last statement recalls to us one of the best retorts ever made by a doctor to an ill-timed jest made about his profession. A man was being tried for his life, and the cross-examining counsel amiably suggested to a medical witness that doctors' mistakes were buried six feet under the ground. To which the witness blandly replied, "Yes, and lawyers' mistakes are hanged six feet above it!"

The Edinburgh *Student* is publishing a series of articles entitled "Famous Undergraduates." In the issue of November 22nd Professor J. Arthur Thomson gives an interesting account of Charles Darwin, who entered the University as a medical student in 1825. He was then a boy of 16. With him was an elder brother, and both were following in the footsteps of their grandfather and their uncle, who had studied at Edinburgh. Charles Darwin, we are told, was anything but keen on his medical studies. Professor Thomson explains this by the fact that his heart was already given to natural history, though he knew it not. Besides, he found the lectures, with the exception of those on chemistry, "intolerably dull"; then dissection disgusted him, and the memory of the only two surgical operations he witnessed haunted him "for many a long year." Lastly, his belief that his father would leave him pretty comfortably off was, he confesses, "sufficient to check any strenuous effort to learn medicine." In regard to dissection, Darwin regretted that he had not tried to overcome his dislike for it. He says:

> It has proved one of the greatest evils in my life that I was not urged to practise dissection, for I should have got over my disgust, and the practice would have been invaluable for all my future work. This has been an irremediable evil, as well as my incapacity to draw.

Darwin was not, as is well known, an example of precocity. His father, whom he described as the kindest man he ever knew, said to him once, with paternal frankness:

> You care for nothing but shooting, dogs, and rat catching, and you will be a disgrace to yourself and all your family.

This dismal prognosis should be an encouragement to all dull lads who have not found the direction in which their intellectual aptitude lies. Darwin distinguished himself, in the academic sense, as little at Cambridge as he did at Edinburgh. But all the time he was feeling his way, and while he seemed to be wasting his time, he was preparing for his life-work. For two sessions at Edinburgh, in the words of Professor Thomson:

> He roamed on Arthur's Seat and the Pentlands and the shores of the Forth; made friends with the Newhaven fishermen, and went with them in their boats; attended meetings of the Plinian and Royal Medical Societies, not to speak of the Wernerian (the Royal Physical now) and the Royal Society, where he once saw Sir Walter Scott in the chair, and got to know interesting people like Dr. Robert Grant and Mr. William MacGillivray. So it was that he made his first discoveries on the larvae of the sea-mat and the egg clusters of the sea-leech, while others were listening to lectures and poring over books. .... It was the guarding of his freshness of mind, as much as the perusal of Humboldt and Herschel, that fitted Darwin to be the naturalist of the *Beagle*, which discovered a newer world than that of Columbus.

We have received the first number of a periodical entitled *The Albion Magazine*, which is, as far as we know, the concrete expression of a new idea. It is wholly a production of the work of deaf persons, and the staff, from the Editor-Publisher, Mr. Evan Yellon, downwards, consists of men and women who labour under the disability of total deafness; the very outdoor men are deaf. With the exception of a serial story by Mr. William Platt, the contents of the magazine represent the work of deaf writers. Naturally the contents largely relate to the special interests of the deaf. In particular there is a most useful article on Aural Quacks to Avoid, in which most of the advertising "institutes," "professors," and what we may call privateers, who seek to prey on the affliction of the deaf, are pilloried. Apart from this, the literary contents of the magazine are interesting, and the publication reflects great credit on all concerned in its production. We wish it every success.

A writer in the *Gazette Hebdomadaire des Sciences Médicales* of November 24th, states that he had an opportunity not long ago of examining the parish registers of the Commune of Cadéac in the Hautes Pyrénées, and found there an interesting entry by the parish priest relating to the plague in the seventeenth century. After stating that the plague raged in the parish from August, 1653, to March, 1654, and again from September, 1654, to the following January, he says that during that time more than 2,040 persons had died of the disease. The vicar adds the following account of what should be done in every house by way of protection against infection:

> Primo, if it should happen that any servant is taken ill, he must be put outside the house for five days, at the end of which if he is found to be infected with plague, the other servants must leave the house and change all their clothes, and take others which have been baked in the oven, in which also must be placed all that they take away with them. After having undergone their quarantine they shall again place in the oven everything, even their shoes and sabots, and if there be no oven, they must have their

clothes well boiled and keep their houses very clean and not go near any one. And in case it should happen that any poor person falls ill, the community must maintain him with special care, unless it is wished that the disease should spread all over the place, and watch and ward should be kept that they do not come near each other. In persons infected should there occur any cold shivers in the shoulders or in any other part of the body, an attempt must be made at once to open the vein, and no one must drink out of the same cup, even should it be the husband or wife. People must not go about barefoot, and without often changing their clothes and their linen, a precaution which must also be observed for the "hot illness" (*mal chaud*), and they must also use perfume and notify the disease one to the other as soon as possible in order that precautions may be taken against it. All which above written we have set down for the profit and utility of posterity.

Here follows the signature of Guilhaume Darnauld, priest and vicar, with the date June, 1655. The Vicar of Cadéac evidently held, or had learnt, opinions on the prophylaxis of infectious diseases very much in advance of his time. Isolation was indeed carried out in a rough and ready fashion by confining the plague-stricken in pest-houses, but in these recommendations of Guilhaume Darnauld can be seen the germ of sterilization by heat and of the notification of infectious diseases.

The *International*, of which the first number has just appeared, is described as a review of the world's progress. The editor is Dr. Rodolphe Broda. Among other articles it contains one by Sir Charles Dilke on "Sweating and Minimum Wage," one by Sir John Cockburn, M.D., on imperial federation, and one by Francis de Pressensé on "The Results of the Hague Conference," besides a review of the month by the editor and correspondence from Germany, France, Austria, Finland, Australia, South America, Persia, China, Siam, and Japan. An account is given of a book by Dr. Pressat on malaria and mosquitos, which has just been published, and which tells how within a few months Ismailia was reclaimed. We learn also that a new artificial language has been invented by Dr. Beerman, which he calls "Novilatin." As its name imports it is based on Latin, but the author has added a few roots of his own fashioning, besides borrowing words from all the leading languages of Europe. If the making of artificial languages goes on at the present rate, we shall soon have a greater confusion of tongues than that for which the Tower of Babel is held accountable.

THE ROYAL COMMISSION ON THE POOR LAWS AND RELIEF OF DISTRESS.

THE following official notification has been issued on behalf of the Royal Commission on the Poor Laws and Relief of Distress, and is reproduced here because most of the subjects mentioned have more or less bearing on medical affairs, and some concern them very intimately.

The Royal Commission on the Poor Laws and Relief of Distress, of which Lord George Hamilton is Chairman, has adjourned for the Christmas recess.

During the first seven months of the year the Commission mainly devoted its attention to studying the methods of Poor-law administration in the provinces and Scotland. It has received from local representative witnesses a large mass of written and oral evidence as to the working of the Poor Law, the methods adopted for medically assisting the poor outside the Poor Law, and the relation of charity and of voluntary effort and self-help societies to the Poor Law. In order, also, that the Commission should see for itself the local conditions prevailing it visited about 100 unions in the neighbourhoods of Liverpool, Manchester, West Yorkshire, the Midlands, South Wales, Newcastle-on-Tyne, Taunton, Shrewsbury, and Bury St. Edmunds. It also spent a month in Scotland, during which time it visited many of the industrial and agricultural centres and the parishes in the Western Hebrides.

In each of the centres visited the Commissioners, as far as possible, attended meetings of boards of guardians, parish councils, Poor-law relief committees, and distress committees. They also visited Poor law and charitable institutions, and saw paupers in receipt of outdoor relief, including boarded-out children.

The Commission have also employed a number of special investigators to make inquiries on its behalf into various subjects coming within the terms of the Commission's reference. The inquiries in certain cases have been completed and reports on the following subjects have now been received from the investigators: (1) The relation of industrial and sanitary conditions to pauperism in London and certain provincial towns in England; (2) the effects of employment given to the unemployed since 1886 as a means of relieving distress outside the Poor Law in England and Wales, Scotland, and Ireland; (3) the effect of outdoor relief on wages, and the conditions of employment in certain unions in London, in the provinces of England and Wales, in Ireland, and in certain parishes of Scotland.

Other inquiries now proceeding, which it is hoped will be finished shortly, deal with such matters as: (1) The results on the applicants of the refusal of out-relief by boards of guardians; (2) the question of boy labour; (3) the relations existing between charity and the Poor Law; (4) the methods and results of the present system of administering indoor and outdoor Poor-law medical relief; (5) the health, clothing, conditions and other circumstances of Poor-law children.

In the course of these inquiries the investigators have interviewed and obtained information from a large number of officials, employers of labour, and others, to whom the Commissioners are desirous of tending their sincere thanks for the courtesy and readiness with which they complied with the demands made on them.

Two statistical inquiries have been undertaken by the Commission with the object of obtaining fuller information of the class of persons relieved. One of these inquiries was a census of all the persons relieved in every Poor-law area in the United Kingdom on March 31st, 1906, and the other was designed to give statistical information as to the nature of the diseases from which sick paupers were suffering. At the instigation of the Commission, the Local Government Boards of England and Wales, Scotland, and Ireland moved for returns relating to their respective countries showing the total number of persons relieved during the course of twelve months, and the periods and recurrence of relief. The Commission is not yet in possession of the results of this inquiry.

Through the courtesy of the Archbishops of Canterbury and York, the Bishops of the various dioceses in England and Wales, and the Moderator of the Church of Scotland, the Commission have been enabled to secure the appointment of small committees of each of the Diocesan Conferences and of the General Assembly of the Scottish Church, with the object of obtaining from the clergy throughout England, Wales, and Scotland information as to the extent of poverty in each parish and how far it is relieved by existing agencies, etc. The reports of the different diocesan committees are now being received, and it is hoped that they will prove of much value.

The Commission has also been collecting information relating to the Poor-law systems of most of the European countries, the United States, Australia, New Zealand, and Canada.

Since the beginning of October the Commission has been hearing evidence from witnesses on the subject of distress due to unemployment, and this evidence has been supplemented by a large amount of written evidence from persons interested in the subject. The Commission has taken the views of every distress committee in the country on the subject of the Unemployed Workmen Act; it has addressed a series of questions to eminent political economists, employers and representatives of labour, social workers, and others, on matters relating to the conditions of labour as affecting unemployment; and it has received memoranda from the Board of Trade giving information as to cyclical trade depressions, and other cognate subjects. Other Government departments, including the War Office, the Admiralty, the Post Office, and the Local Government Boards of England and Wales, Scotland, and Ireland, have also supplied memoranda, or have undertaken inquiries on behalf of the Commission.

With the exception of short vacations, the Commission has been sitting almost continuously on two days in each week for the last two years; it has orally examined about 400 witnesses, and, in addition, it has received written statements of evidence from nearly 1,000 persons whom it has not been possible to examine orally. It has also invited expressions of opinion from some 1,500 Poor-law bodies in the United Kingdom.

The further evidence to be taken will not, it is believed, occupy much time, after which the Commission will at once begin the consideration of their report.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

The following are the members of the Council and various Committees of King Edward's Hospital Fund for London nominated by H.R.H. the Prince of Wales to serve for the year 1908. The Honorary Secretaries are Sir Savile Crossley and Mr. Frederick Fry, the permanent Secretary being Mr. H. R. Maynard.

The Council.

The Lord-Lieutenant of the County of London (the Duke of Fife).
The Lord-Lieutenant of Middlesex (the Duke of Bedford).
*The Speaker of the House of Commons (the Rt. Hon. J. W. Lowther, M.P.).
*The President of the Local Government Board (the Rt. Hon. John Burns, M.P.).
The Postmaster-General.
The President of the Hospital Sunday and Hospital Saturday Funds (the Lord Mayor).
The Chairman of the County Council.
The Governor of the Bank of England.
The President of the Royal College of Physicians (Sir R. Douglas Powell, Bart.).
The President of the Royal College of Surgeons (Mr. Henry Morris).
*The Chancellor of London University (the Earl of Rosebery).
The Duke of Norfolk.
The Bishop of London.
The Bishop of Southwark.
Archbishop Bourne.
The Rev. J. Guinness Rogers, D.D.
The Rev. T. Bowman Stephenson, D.D.
The Chief Rabbi (the Rev. Dr. Adler).
The Earl of Bessborough.
Viscount Iveagh.
Lord Rothschild.
Lord Strathcona and Mount Royal.
Lord Farquhar.
The Rt. Hon. Sir Savile Crossley, Bart.
The Rt. Hon. Sir Joseph Dimsdale, Bart.
The Rt. Hon. Thomas Burt, M.P.
The Rt. Hon. C. Stuart-Wortley, K.C., M.P.
Sir Trevor Lawrence, Bart.
Sir John Aird, Bart.
Sir W. S. Church, Bart.
Sir Julius Wernher, Bart.
Sir Edgar Speyer, Bart.
Sir Henry Burdett, K.C.B.
Sir W. J. Collins, M.P.
Sir John Craggs.
Mr. Frederick M. Fry.
Mr. E. A. Hambro.
Mr. William Latham, K.C.
Mr. J. Pierpont Morgan, jun.
Mr. J. Danvers Power.
Mr. Albert G. Sandeman.
Mr. Hugh C. Smith.
*Lord Revelstoke.
*The Master of Elibank, M.P.
*The Rt. Hon. Sir Ernest Cassel.
*Lieut.-Col. Sir Arthur Bigge.
*Sir Horace Marshall.
*Professor W. Osler.
*Mr. Vaughan Hawkins.
*Dr. Edwin Freshfield.
*Mr. J. G. Griffiths.

Members of Finance Committee.

Lord Rothschild (Chairman).
Lord Revelstoke.
The Rt. Hon. Sir Ernest Cassel.
Sir John Craggs.
Mr. Robert Fleming.
Mr. Hugh C. Smith.

Members of Distribution Committee.

Sir William Church, Bart. (Chairman).
Sir Trevor Lawrence, Bart.
Sir Henry Burdett.
Sir E. Cooper Perry.
Sir John Tweedy.
Mr. Frederick M. Fry.
Rev. Canon Barnett.
Sir Horace Marshall.

Members of Convalescent Homes Committee.

Mr. William Latham, K.C. (Chairman).
Dr. Edwin Freshfield.
Mr. Alfred Willett.
Sir Walter Lawrence, Bart.
Mr. S. H. Benson.
Mr. Geo. Lawson Johnston.

Members of Executive Committee.

The Earl of Bessborough (Chairman).
The Rt. Hon. Sir Savile Crossley, Bart.
The Rt. Hon. C. Stuart-Wortley, K.C., M.P.
Sir William J. Collins, M.P.
Mr. J. Danvers Power.
Mr. A. E. Sydney.
The Hon. Arthur Stanley, M.P.
Mr. R. F. Cavendish.
Mr. J. G. Griffiths.
Mr. O. C. Philipps, M.P.

* New members.

The Lord Chancellor of Ireland has, on the recommendation of Mr. Thomas Lough, Lord Lieutenant of the county, placed the name of Dr. J. B. Kenny, of Killeshandra, on the Commission of the Peace for the county of Cavan.

MEDICAL NEWS.

The Army Council has approved of the following additional appointments to Queen Alexandra's Military Hospital: To be consulting physician, Surgeon-Major General A. F. Bradshaw, late Army Medical Staff; to be consulting surgeon, Lieutenant-Colonel P. J. Freyer, late Indian Medical Service.

Dr. Marshall, of Douglas, Isle of Man, was recently presented with a carriage barometer by the members of the St. John Ambulance class, in recognition of his services as teacher and instructor to the class. The presentation was made by Mr. Hobbs, Collector of Customs and Receiver of Wrecks for the Island, who was supported by Mr. C. T. Cowell. Dr. Marshall, in returning thanks, offered his services to the corps for the forthcoming class.

The State Children's Association usually keeps in touch with its supporters by the frequent issue of leaflets, but recently has issued a report covering the whole of the work for the past three years. It contains a good deal of information as to the way in which the State at present deals with the many children for whom it is responsible. The Association aims at popularizing a belief that a home, and not an institution, is the place in which even a "workhouse" child should be reared. Nearly half of all these unfortunate children are still living in workhouses and barrack schools, though this fashion of providing for them has so long stood condemned that most Boards of Guardians are endeavouring to substitute some other system. The plan which the association seems mainly to favour is the "scattered home" system, one which secures for the child at least some of the advantages of ordinary people, which treats it as an individual, brings it into daily and free association with more happily circumstanced young children, and frees it when young from the stigma of "the house." Four years ago there were only some 37 unions in which this system had been adopted, now the number has nearly doubled.

The London Ambulance Service.—The Committee appointed by the Secretary of State for the Home Department to inquire into the question of the ambulance provision for cases of accident and sudden illness occurring in the streets and public places in the metropolis, met at the Home Office on Friday, December 20th, Sir Kenelm Digby, Chairman, presiding. Evidence was given by Mr. Henry Morris, President of the Royal College of Surgeons, on behalf of the College of Surgeons; by Sir William S. Church, Bart., K.C.B., on behalf of the Royal College of Physicians; and Mr. J. E. Adams, F.R.C.S., Resident Assistant Surgeon of St. Thomas's Hospital. The Committee propose shortly to conclude the taking of evidence; communications which it is desired to bring before the Committee should, therefore, be addressed as soon as possible to the Secretary, Mr. A. L. Dixon, Home Office, Whitehall, S.W.

The American Pharmaceutical Association.—At the recent annual meeting of the American Pharmaceutical Association the following resolutions were adopted:

"Whereas, the American Medical Association, the American Pharmaceutical Association, and the National Association of Retail Druggists, together with many State and local organizations and journals in both professions, have been for some years endeavouring to bring about a return to the practice of medicine based on the *Pharmacopoeia*; and

"Whereas, the medical colleges are represented on the Committee of Revision of the *United States Pharmacopoeia*; and

"Whereas, it is manifest to the thoughtful men both in medicine and pharmacy that a very large number of medical men might be better informed regarding the *Pharmacopoeia* as a book of reference and standards: Be it therefore

"Resolved: That it is the sense of the American Pharmaceutical Association in convention assembled, that a great advance in the ethical practice of medicine and pharmacy will be made when the medical colleges make the *Pharmacopoeia* a prescribed textbook or book of reference, and require familiarity with it in their examinations.

"Resolved: That we request the governing authorities of all medical colleges in the United States to put into force such a ruling in their respective institutions as will ensure in future classes a well-grounded knowledge of materia medica and pharmacognosy, as set forth in the *Pharmacopoeia*."

British Medical Journal.

SATURDAY, DECEMBER 28TH, 1907.

TECHNICAL PROGRESS AND MENTAL INTEGRITY.

BETWEEN primitive man and the man of to-day there lies a gulf so great, that though, like the remoteness of a star, it may be some day measured with approximate accuracy, our feeble imaginations must ever fail to grasp its vast extent. Still less can we picture to ourselves the countless obstacles that had to be overcome by primeval man, the unnumbered failures "that "weighed not as his work, yet swelled the man's "account," failures that had to be finally and triumphantly outbalanced by success ere any achievement, however seemingly insignificant, could become an abiding possession—a heritage. Yet ever since the time when feeble, stooping, weak-chinned, semi-simian quaternary man first set himself to climb the Hill Difficulty, he has left the imprints of his feet upon the clay. These trace a devious course, yet from them we may discern, in whatever fragmentary fashion, the tale of his ever-waxing bodily and mental power. The stone, bronze, and iron ages are chapters in his biography bearing faithful witness to his progressive mental attainments. But what of the Steam Age? What of the Age of Electricity?

In our age we are accustomed to find in man's knowledge and mastery over natural forces sufficient proof of an intellectual superiority never hitherto attained. This judgement is doubtless just. But is there not a danger of forgetting that if, truly enough, the inventions of science and the labour-saving artifices of modern industry are expressions of intellectual depth and subtlety, of an unparalleled ingenuity, these same appliances and inventions constitute an artificial and reactive environment whose influences are not easily gauged, and whose final effect is impossible of foretelling? Is it not probable, also, that in precisely the same degree as these mechanical expedients gain in usefulness, and consequently replace or oust man's natural and inherited neuro-muscular acquirements, they must tend to destroy the psycho-motor basis on which all conception ultimately rests? That the machine thus viewed menaces in proportion as it helps its creator? Becomes, in fact, a veritable Frankenstein?

To the hard-headed business man intent on money-getting, and to the political economist who discounts mental and moral character in his valuation of national assets, as much as to the merely pleasure-seeking and unreflecting majority, these must seem but idle fears, lightly heeded as the voice of one crying in the wilderness. This is only in the nature of things. The practical man demands not theory, nor prophecy, but fact. To assert that man in his whole anterior development has grown up out of doors in circumstances requiring courage, initiative, and the harmonious co-ordination of every side of his being, and that therefore his subjection to a largely indoor life of deadly monotony in factory, workshop, or counting-house must in the end breed a race of half-men is not enough. Quite reasonably he asks for proof that the machine is taking something from the man, and that there are to-day valid evidences of its ill-effects. This proof Dr. Hellpach, in a recently published inaugural address[1] delivered before the Technical High School of Karlsruhe, has tried to supply. Dr. Hellpach accepts as a settled fact that the last fifty years have witnessed a marked mental deterioration, as evidenced by the increasing augmentation of the certified insane. This by the laity, he says, is attributed, though in his opinion attributed wrongly, to the increasing strain and competition of modern commercial conditions. Alcohol, syphilis, and artificial feeding of infants have much more to do with the matter, though even these are only contributory causes. Technical industry, he says, is of recent development, but the causes of insanity are neither of to-day nor yesterday. If, however, the causes of the increase of insanity have not been born in this machine-ridden age, it is, he maintains, otherwise with other less pronounced mental disorders euphemistically termed "nervous" troubles—neurasthenia, nervous exhaustion, hystero-neuroses, hypochondria—and, in particular, the traumatic neuroses. In the citizen class the evidences of chronic mental over-stimulation abound as do in the factory class the traumatic neuroses. Unknown at the beginning of the nineteenth century, both have increased *pari passu* with the growth of mechanical industry, with the increasing tyranny of the machine.

Identical in cause, they are, Dr. Hellpach maintains, different in production, the neurasthenia of the citizen being due to continued over-stimulation through incessant artificially-induced changes in the mental situation, and the neurosis of the factory hand to a mechanical, interest-destroying, thought-killing monotony. The traumatic neuroses are closely associated with the monetary compensation paid in Germany to the injured labourer. Yet, Dr. Hellpach affirms, he does not simulate, "he is ill and becomes worse and worse; he "suggests his illness, his symptoms, but that he is so "under the ban that he *must* suggest them constitutes "his mental illness." In all circumstances, Dr. Hellpach points out, the highest compensation, the *invalidenrente*, falls far short of the ordinary wage of the workman; and the only explanation of it all lies in the mechanical nature of his employment. This is supported by the fact that traumatic neuroses are almost entirely confined to machine workers; pleasurable work and traumatic hysteria being statistically in inverse proportion.

As to the future Dr. Hellpach wisely declines to prophesy. Most evils work their own cure, and it is to be hoped that with increasing perfection of mechanical aids the machine will perform its drudgery so well that man need only concern himself with its intelligent direction, and so quickly that he may have time to grow into the man he was meant to be—away from it!

THE RESULTS OF STOMACH SURGERY.

DRS. PARMENTIER AND DENÉCHAU have published recently[2] the results of a careful study of the after-history of 102 cases of ulcer of the stomach operated on during the last ten years by MM. Terrier, Tuffier, Hartmann, Gosset, and Souligoux. To illustrate the condition often seen they relate the case of a man aged 47, a worker in bronze, operated on in June, 1906, for stenosis of the pylorus caused by cicatrization of an old

[1] *Technischer Fortschritt und seelische Gesundheit* [Technical Progress and Mental Health]. By Dr. W. Hellpach. 1907. Carl Marhold. Halle a. S. Pp. 30.

[2] *La Semaine Médicale*, No. 41.

ulcer, the operation being a gastro-enterostomy. The immediate results were excellent and the patient left the hospital well, except for a slight tendency to constipation. A few weeks after he had resumed his ordinary mode of living he began to suffer from pain coming on after fatigue or the use of coarse food, generally four hours after food; the pain was situated in the pit of the stomach and radiated to the shoulders; there was increased constipation but neither regurgitation nor vomiting. When invited to attend the hospital he admitted these troubles and was strongly advised to be more careful in his diet; but he was not convinced of the importance of this advice, and continued the same mode of life until two months later, when he had a very severe attack of pain accompanied by vomiting of sour, watery fluid containing a large amount of hydrochloric acid. On a modified diet and by the use of bismuth he recovered and has kept fairly well, but he has learnt the need to be prudent, and that he will suffer pain if he takes any liberties with his diet or even if overtired.

Pain is the chief symptom from which these patients suffer, sooner or later, after the operation; it is at first slight and localized, but afterwards becomes more severe, and extends over a wider area. Vomiting seems to be completely cured by the operation, but simple regurgitation of sour fluid may occur and be independent of pain. The watery fluid may contain a little bile, and rarely the remains of food. Vomiting may occur exceptionally, as in the case of a patient operated on twenty months previously who, when fatigued, has severe attacks of vomiting, which last two or three days, but are unaccompanied by pain. Constipation is frequent but slight, and less than before operation. If diarrhoea was present before the operation, it generally persists, and requires regulation of diet and avoidance of fatigue. Apart from the occurrence of these single symptoms, Parmentier and Denéchau recognize a special form of dyspepsia after operation characterized by pain, watery regurgitation, and constipation, with impairment of the general health and wasting or arrest of the tendency to regain weight. Many attacks are due to the unfavourable conditions of life, and, above all, to abuse of alcohol.

Operation does not absolutely prevent the formation of fresh ulcers, as illustrated by cases quoted from the practice of Teston and Monprofit, and more or less severe haemorrhage, arising from different causes, has occurred after operation, and was fatal in four recorded instances. Further, operation does not remove all risk of cancer, which may occur in the scar after resection, or in the ulcer, two cases being quoted from the experience of the writers; while references are given to others recorded by Kocher, Koerte, and Kroenlein. Tuberculosis, always prone to attack patients whose health is reduced by gastric ulcer, has supervened after the most successful operations.

The patients observed by the writers comprised 74 men and 28 women; in one case pylorectomy was done, and in two a perforation was sutured; in the others gastro-enterostomy in one form or another was performed. Three underwent a second operation, and another two years later was operated on for cancer of the gastro-jejunal opening. Fifty had been operated on more than four years before the report, the others more recently. Nearly all the dyspeptic accidents were in consequence of errors of diet, especially abuse of alcohol. Bread did not seem always to suit, and wine, specially white wine and medicated wines, caused attacks of pain. Some suffered from the slightest variation of diet, and were obliged to keep strict rules, but in these the disease was usually complicated by pronounced nervous ailments and disorders due to ptosis of the viscera. Occasionally, the gastro-jejunal opening healed, giving rise to a return of the former symptoms, but as a rule this occurred only where the obstruction of the pylorus had completely disappeared, for it seemed that the anatomical and physiological restoration of the pylorus determined the obliteration of the jejunal opening. The unfavourable results of operation may at times be due to the intervention having taken place when the mucous membrane of the stomach was subacutely inflamed, of which an example is quoted. With regard to treatment, the writers believe that surgeons have been careless in allowing their convalescent patients to eat anything they like, and they add that after operation patients should not be allowed to suck ice, to have their stomachs washed out with *cold* water, or to use aërated drinks or bouillon (beef-tea), which provoke hyperacidity.

The facts which Parmentier and Denéchau have collected indicate that the results of operations are not so uniformly and so entirely beneficial as some would have us believe, and emphasize the need for giving a proper trial to well-considered medical treatment in all suitable cases before resorting to surgical aid. Of the cases reviewed by them, in 7 per cent. the consequences of operation were bad; in 39 per cent. moderately good—that is to say, there was dyspepsia, but the condition was an improvement upon that which had preceded the operation; and in 54 per cent. good. It should be remembered that in all these cases medical treatment had failed. The most favourable cases were those in which there had been old-standing stenosis; after these came patients with ulcer in the course of evolution or with recurrent haemorrhage; and, lastly, those in which the ulcer was seated far from the pylorus, and cases of hour-glass stomach, which seem to be specially liable to post-operative accidents. In conclusion, agreement is expressed with the opinion of von Mikulicz and Professor Saundby, that in this, as in so many other pathological questions, the best results can be obtained from the cordial co-operation of the physician and the surgeon, by which means great relief can be afforded to the suffering of the patient, even if a cure is not always possible.

THE ROYAL COMMISSION ON THE POOR LAW.

The Royal Commission on the Poor Laws and the Relief of Distress has issued a statement which partially withdraws the veil behind which its activity has hitherto been concealed, and the first impression of the reader of this statement, which is to be found at page 1840, will be that this activity has been prodigious. In the first place, the Commission has been sitting with short vacations almost continuously on two days in each week for the last two years, and has orally examined some four hundred witnesses, while it has received written statements from nearly a thousand other individuals. In addition it has instituted or instigated a bewildering number of special inquiries, and in five instances these inquiries have been carried out by special investigators. It was of course to be anticipated that the work of the Commission would touch matters in which the medical profession is particularly interested, and this anticipation, it is clear, will not be disappointed. For example, a special inquiry has been carried out into the methods and results of the present system of administering indoor and outdoor Poor-law medical relief; the investigator in this case was

Dr. J. C. McVail, medical officer of health for the counties of Stirling and Dumbarton, and we have no doubt that his report, which it appears has not yet been presented, will deal in a comprehensive and enlightened manner with problems which in view of the present trend of social legislation are daily growing in importance. Again, the Commission has already received a report of a special investigator on the relation of industrial and sanitary conditions to pauperism in London and certain provincial towns in England. It has taken a census of the persons relieved in every Poor-law area on a certain date and has instituted a statistical enquiry into the nature of the diseases from which sick paupers were suffering at that date. Further, with the assistance of the clergy, it has gathered information as to the extent of poverty in every parish in England, Wales, and Scotland, and as to how far it is relieved by existing agencies. The problems with which the Commission has to deal are bewildering in complexity, and the amount of material already at its disposal must be so large that it is with something approaching relief that the reader finds in the concluding paragraph a statement that the Commission does not intend to take much further evidence and hopes shortly to proceed to the consideration of its report.

THE SUPPLY OF MIDWIVES.

THE Association which exists to promote the training and supply of midwives to meet the requirements of the Midwives Act, 1902, and to raise funds to facilitate the training of midwives in approved hospitals or other institutions held a public meeting recently at which the Archbishop of Canterbury, who presided, said that the existing supply of properly trained women was inadequate, and that even if the required number were provided, it was clear that the practice to be obtained by them in many parts of England would not be sufficient to afford a living wage for a woman who had no other means of subsistence. Sir Dyce Duckworth, who accepted the estimate that at least 70 per cent. of all cases of labour were attended by midwives, urged that the Association merited public support in its effort to supply the demand which must arise for trained midwives when the Act came fully into force in about two years' time. He recognized that among the questions to be faced was the desirability of keeping the duties of midwives distinct from those of the sick nurse, and the further question of the relationship of trained midwives to medical men. The Act provided that a midwife must send for the nearest medical man in any case of abnormality, but did not make provision for any kind of remuneration to the medical man thus summoned; that, he said, was a matter not of local concern, but one affecting the whole country, since it touched the interests of womanhood. Lord Balfour of Burleigh, who moved the principal resolution, in extenuation of this oversight of the Legislature, dwelt on the difficulty of passing private Bills and said that an appeal to Parliament to supplement the Act would have a better chance of success if it could be shown that every effort had been made to make the Act a success. We believe that those who were most active in obtaining the Midwives Act are now beginning more generally to recognize that the omission to provide remuneration to those members of the medical profession who are summoned by midwives in compliance with the specific provision of the Act is a serious injustice, that a fuller measure of success cannot be hoped for until it is remedied, and that the remedy must not be partial and piecemeal but applicable to the whole country.

ALCOHOL AND TAXATION IN RUSSIA.

A CORRESPONDENT of the *Morning Post*, in a consideration of a report on the estimated income and expenditure of the Zemstvo of the district of Morshansk, in the Government of Tambov, throws an interesting light on the aspirations of rural districts of the Russian Empire, and of the difficulties to be encountered. A Zemstvo is a kind of county council, formed of representatives of the nobility, or landowners possessing over 500 acres of ground, of the peasant farmers, and of residents in the urban districts within its area. This body has a right to levy taxes on the property within its confines, and in the budget in question the estimated income and expenditure is some £24,000 odd. Of this it is proposed to devote about one-fourth to the support of public hospitals, district medical officers, midwives, and nurses, another fourth to the support of schools, and to expend the balance in such ways as the upkeeping of roads, contributions to various public institutions, pensions to widows and orphans; 1 per cent. being expended on veterinary objects. There appears, however, to be little prospect of the work in view being carried out, as under present circumstances these Russian county councils find it extremely difficult to obtain the sums due to them, the landowners and the peasant farmers equally refusing to pay. Each party chooses to regard the Zemstvo as an institution purely for the benefit of the other, while the peasants in particular claim that they are already so heavy taxed that they cannot possibly find the money required. According to the correspondent to the *Morning Post*, it is the peasants who, misled by public agitators, are in error in this instance. By far the greater proportion of the tax comes out of the pockets of the landowners, that which is paid *pro rata* by the peasants being so small a sum that for every rouble a peasant farmer contributes he receives back two roubles and twelve kopecks in the form of free medical aid and free education. As for the general taxation being too high, it is shown that in this district when the total amount paid either to the State or to any other authority is distributed over the 40,000 farms held by peasants, the sum in each case comes to twelve roubles, fifty kopecks. On the other hand, the occupants of these same farms are shown by the official accounts of the district to spend annually on alcoholic drinks just three times the amount of the whole of their taxes, and twelve times the amount of the Zemstvo tax. Other indications of the enormous hold which alcoholism has on the Russian peasantry and of the deleterious effect it must have on their material and physical well-being are to be found in an interesting little book on *The Russian Peasant*[1] recently published. It contains some realistic pen sketches of Russian life outside the great towns as seen by its author, Dr. Howard Kennard, an English medical man, during more than a year of wandering in the famine and other districts as the agent apparently of several philanthropic societies; the book leaves an impression that there is nothing in the least degree resembling the Russian peasant in ignorance and sloth in any other civilized country, and that he is in every way his own worst enemy and almost impossible to assist.

CONCEPTION AFTER SUPPURATION OF UTERINE APPENDAGES.

AT a recent meeting of a German medical society,[2] Professor Martin stated that thirty years ago, when he, simultaneously with Hegar and Tait, had opportunities for studying pelvic disease, then so little understood, it struck him that radical surgery was not the right

[1] *The Russian Peasant*, by Howard P. Kennard, M.D. London: T. Werner Laurie. 1907.

[2] Schwangerschaft und Geburt nach früherer eitriger Adnexerkrankung. [Report of a Meeting of the Pommersche gynäkologische Gesellschaft.] *Monatsschr. f. Geb. u. Gyn.*, August, 1907, p. 269.

treatment in inflammatory disease of the Fallopian tubes and ovaries. That opinion was now universally accepted, and no more was heard of wholesale extirpation of inflamed ovaries and tubes. Evacuation of the pus through the vagina was followed by the best results, the inflammatory processes subsiding under careful after-treatment; the patient recovered unmutilated and capable of bearing children. These remarks were made after the recital of the following case by Haupt: In June, 1901, a girl came under that doctor's observation in a hospital. She was suffering from bilateral disease of the appendages following an abortion at the third month of pregnancy four weeks before admission. Abdominal section was performed, and double pyosalpinx discovered. The pus in the dilated tubes was fetid, and their amputation was not considered advisable. The abdominal wound was therefore closed, and both tubes were drained through a vaginal incision. The *Bacterium coli* was found in the pus. The patient was in great danger for a fortnight, improving at once when freer drainage was effected: a parametritic abscess, however, developed, and had afterwards to be laid open. Notwithstanding the severity of the bilateral septic suppurative disease of the Fallopian tubes, which are, as we all know, the oviducts, the patient became pregnant twice after convalescence, and on both occasions was delivered in the institution, where the above conservative surgical measures had been carried out. In both instances delivery took place at term, and, strange to say, the foot presented and the arms and head had to be brought down in both these labours. There were no complications whatever during the puerperium. We must never forget, when treating women for pelvic inflammatory disease, that the most acute attacks of suppurative inflammation do not necessarily sterilize the subject. Amputation of course means sterility when both tubes and all ovarian tissue are thoroughly removed, but the stumps of the inflamed appendages are sources of danger so that the uterus usually requires amputation as well adding to the mutilating practice. Neglect or faulty expectant treatment also means barrenness, sinuses and endless complications with certain invalidism. The right treatment of suppuration of the appendages is to allow the escape of the pus by free incision, just as the surgeon treats suppuration elsewhere.

THE BEDSIDE MANNER.

What is the "bedside manner" as to the importance of which all are agreed? The "manner" of successful physicians varies as widely as their opinions. Abernethy influenced people by an abruptness often amounting to rudeness. Sir Astley Cooper, however, estimated that he himself owed a thousand a year to Abernethy's brusquerie. The ordinary notion is that a good bedside manner consists of suavity carried to the verge of servility. This, as a general rule, is untrue, though it is related that Sir Henry Halford, when called to a Prime Minister who had been struck down by apoplexy, made three profound bows at carefully-regulated intervals to the unconscious form lying on the sofa before him. Halford was, of course, a consummate courtier, having ministered to the bodily ailments of several kings and queens and other royal personages; and it is, we believe, the case that a doctor is apt to fall out of favour with such exalted patients unless he prophesies smooth things. But with men and women of common clay a certain roughness sometimes inspires confidence. Sir William Jenner used to say that, provided the doctor made the patient believe he was thoroughly in earnest about his case, it mattered little what his manner was. Another point we think essential to a good bedside manner is cheeriness. There is, perhaps, a grain of truth in Smollett's description of the "uncouth gravity and "supercilious self-conceit of a physician piping hot "from his studies." Sir Richard Quain used to tell how, when a beginner in practice, he was called in by an experienced practitioner to help in looking after a case which caused anxiety. He thought it right, in going upstairs, to compose his countenance to what he deemed to be a proper degree of solemnity, but as he was about to enter the sick room his senior said, "For "God's sake, man, try to look more cheerful, or they "will take you for the undertaker." On the other hand, the inopportune display of joviality may earn for a doctor the fatal reputation of not being a serious man. Another point which is important is that if one is in doubt it is impolitic to show the fact too plainly. It is of course the doctor's duty to consider the case in all its bearings, and it is wrong to seek to convey the impression that he knows when he does not know. But if over-confidence is wrong, scientifically as well as ethically, it is none the less true that in medical practice "the man "who hesitates is lost"; he loses the confidence of those who seek counsel of him, and may thus do not only himself but them great harm. Another thing which should not be forgotten is to take pains to give the patient the fullest and most explicit directions as to the treatment; a hastily scrawled prescription is not enough. Many busy men, especially when they have risen to the position of oracles, are apt to dismiss the patient with a paper on which are inscribed some cabalistic symbols and a few words of perfunctory advice. They would excuse themselves by saying that such details are needless. They should remember the story of some one who said to Talleyrand, *Cela va sans dire.* To which the old diplomatist replied, *Oui, mais cela va mieux en le disant.* It is of great advantage to all concerned that the physician who orders a patient to some health resort should be able and willing to give him every information as to the route, the place itself, the accommodation, the food, and the special treatment carried out there. Knowledge of this kind has sometimes formed the basis of a physician's popularity. Lastly, the prescription itself should be simple, and the medicine neither unsightly nor disgusting to the taste or smell. We have heard patients speak with hearty approval of the "elegance" of Dr. So-and-So's medicine. As an example of the "bedside manner" carried to the degree of a fine art, we may quote some advice recently given by Professor Huchard, of Paris. He says: "To "patients put on exclusive milk diet and theobromine, "who show recalcitrancy, I often say, 'Don't complain; "in theobromine you have the food of the Gods, and I "am placing you in the Milky Way!'" There may be a smack of "preciosity" in this, but, as M. Huchard points out, it is better than to say roughly, like certain physicians whom he names, "*Le lait ou la mort!*"

MEDICINE AND MEDICAL SCHOOLS IN AMERICA.

Dr. H. D. Rolleston, who recently visited America, has given his impressions of medicine and medical schools in that country, in the *St. George's Hospital Gazette* for December. He says that a four years' course is now practically universal, and in 1906 the University of Manitoba at Winnipeg started a five years' course, while McGill University, Montreal, followed suit this year, and Toronto has decided to do so in 1908. Harvard and the Johns Hopkins University, Baltimore, require a rather higher standard than most medical schools in Great Britain; before a student is eligible to enter he must be a Bachelor of Arts, and must show proficiency in physics and chemistry, and in at least one modern language. In many ways the curriculum in America resembles ours, but in the United States German methods are more to the fore than British. There

is more systematic work in the clinical laboratory, and, generally speaking, less clerking and routine work in the wards. The absence of the system of routine ward work is, in part at least, due to difficulty in obtaining the necessary material, for a large proportion of the patients contribute something to the hospital funds, and, on the ground that they are paying patients, decline to be examined. The scarcity of clinical material is, it appears, partly due to the keenness of the American political agent who, in return for the promise of a vote in the future, often provides poor patients with money to pay the hospital dues. Further, the relations between the ordinary hospitals and the medical schools are not so intimate, and the governors of the charity are not always so enlightened as with us. Hence some of the large universities, such as the Johns Hopkins, Philadelphia, Harvard and Toronto, have decided to build their own hospitals. Extremely well-organized classes for physical diagnosis, so arranged that each student has individual attention from the instructor, are held in the out patient rooms. The thoroughness of the work in the clinical laboratories is no doubt in part due to the influence of German clinics, to which recently qualified American men resort very freely. It is impossible to exaggerate the value of clinical laboratory work, and this is so confidently relied upon in every-day practice that there is, perhaps, some danger that the routine physical examination of patients may be less thorough than in the past. The systematic lecture is not so prominent a feature as it is here. Dr. Rolleston thinks it doubtful whether this is an unmixed advantage, for some means of going over the work in a systematic fashion has to be substituted. This is done in "quiz" classes, which may degenerate into a somewhat inferior form of coaching class. Perhaps, as a result of this freedom from systematic lectures, there is a tendency for American students to do work of a more advanced or special character. In America students are examined by their own teachers and not by strangers or outside examiners, and their past record is taken into account in determining the result. Rejections are comparatively infrequent, but this does not mean that every candidate becomes qualified as a matter almost of routine, for students are advised not to present themselves for examination if it appears probable to their teachers that success is undeserved. The resident posts in hospitals are held for longer periods than in the London hospitals; and the number of residents is larger. Consulting physicians have usually started in general practice, and while working at the hospital as "associates"—a post which, generally speaking, corresponds to that of assistant-physicians with us—have at the same time earned their living by seeing private patients in the suburbs. After perhaps ten or more years of this hard work they move to a more central part of the town, and are ready for consulting work. Specialism is probably more extreme in America than with us, and irregular practitioners, "osteopaths," and the proprietors of patent medicines compete very seriously with the orthodox practitioner. Nursing homes are much less numerous than in London because nearly all the large hospitals have admirable private wards shut off from the rest of the hospital, which have all the advantages of close proximity to a hospital without the drawbacks of a "home." The hospital charges the patient for board, nursing, and attendance, just as a nursing home does, and the surgeon or physician who, as a member of the staff of the hospital, has the privilege of admitting his private patients, gets his fee in the ordinary way. The hospitals make a considerable sum out of the private wards, which are not, like St. Thomas's Home and the paying wards at Guy's Hospital, intended for persons with small incomes. The private wards are extremely comfortable and attractive, and in some hospitals there are suites of rooms, so that the patient's friends may stay with him. The hospitals are, generally speaking, modern in construction, and the out-patient rooms are extremely well arranged. The medical school buildings are, as a rule, extremely good, the new buildings of the Harvard Medical School being probably the finest in the world. The amount of original work that is being done now is remarkable, and has greatly increased in quite recent years. Dr. Rolleston concludes by saying that the general impression left on the visitor's mind alter seeing the medical schools of America is certainly one of admiration for the work that is being done, and a firm belief in the future of transatlantic medicine.

THE PREVENTION OF SYPHILIS.

IN the October number of the *Annales de l'Institut Pasteur*, Metchnikoff discusses the value of his mercurial ointment and other remedies, which are supposed to prevent syphilis if used shortly after inoculation with the virus has occurred. One objection to the use of his ointment was that it was not soft enough. This disadvantage he has to some extent removed by introducing vaseline into its composition, the formula now recommended being 33 grains of calomel to 67 of lanoline and 10 of vaseline. He complains that its advantages are not so well known as they ought to be, and that chemists often sell to their customers inferior preparations, which cannot be expected to prove efficacious. A friend of his has made the tour of the Parisian chemists, asked from each a preventive ointment against syphilis, purchased the commodities recommended, and then submitted them to chemical analysis. Some of the chemists sent their customer away with the assurance that such an ointment did not exist; others provided him with an ointment which was quite different from the genuine article and contained only 10 per cent. of calomel; and one gave him a preparation, labelled "Pommade de Metchnikoff," which was found on chemical analysis to contain only 9 per cent. of calomel. Many chemists tried to push various nostrums of their own, bearing different titles, and coupled with their recommendations abusive references to the Pasteur Institute and its officers. Naturally, Professor Metchnikoff feels aggrieved at this lack of appreciation. The prophylactic value of the genuine preparation has, he says, been fully established by rigorous experimental tests, and therefore there can be no doubt as to its practical utility. Unfortunately the ointment is efficacious only when employed during the first few hours after contact with syphilitic virus; hence it is useless to recommend it in cases which first come under observation some few days later. As the medical practitioner is frequently consulted by persons who come under the latter category, Professor Metchnikoff and his colleagues have been endeavouring to find an alternative treatment applicable to such cases. They have turned their attention to atoxyl, and record several experiments on monkeys inoculated with syphilitic material, which indicate that the subcutaneous inoculation of this drug is effective in preventing the development of the disease. It is stated that a single injection of atoxyl, delayed until the fifteenth day after the inoculation of the syphilitic virus, is capable of preventing infection. To this observation Professor Metchnikoff attaches high importance, but he is careful to point out that before employing atoxyl in human therapeutics serious attention must be paid to the possibility of producing toxic symptoms, including impairment of vision, if large doses of the drug be employed. If the doses found effective for monkeys are used as a basis for calculating the quantity necessary to inject into a man, it would be

requisite to employ about 2 grams for a person weighing 60 kilog. Since, however, smaller quantities have already been found sufficient to cure manifest syphilitic lesions, it may be believed that the prophylactic effect could be obtained with a dose smaller than this. H. Hallopeau, who has extensive experience in the treatment of syphilis by atoxyl, recommends an injection of 75 cg., followed by a second injection of 60 cg, and a third of 50, making a total of 185 cg. In no instance has he observed any sign of intolerance or poisoning under this treatment. In conjunction with Dr. Salmon, Professor Metchnikoff has had the opportunity of observing the effects of atoxyl treatment in two cases in which the patients feared they had contracted syphilis. Two subcutaneous injections, of 50 cg. each, were given at an interval of two days. The treatment was borne without any sign of intolerance or poisoning. No manifestations of syphilis supervened, but on this fact the authors base no conclusions, since the actual occurrence of infection could not be verified.

GROWTH OF GUERNSEY RECRUITS.

In an address introductory to the lecture session 1907-8 of the Guille-Allès Library, Guernsey, Dr. John Aikman took for his subject some aspects of growth. After discussing the subject fully from the biological point of view, he illustrated his theme by some interesting remarks on the growth of the recruits of the Guernsey Militia, described by Colonel Percy Groves as one of the oldest military organizations of the world. In the possession of this organization, Dr. Aikman thinks, lies "the secret of the "prominence which Guernsey men attain in "the race of nationalities wherever they have the "opportunity." He gives the results of the twenty days' training of the recruits of the Guernsey Militia during the past autumn. In the case of the recruits of the Royal Guernsey Artillery and Engineers, the average gain in height was 0.315 in.; in those of the 1st Infantry Regiment it was 0.33125 in., and in those of the 2nd Infantry Regiment, which is recruited from country districts, it was 0.4345 in. Dr. Aikman says the picked men of the Artillery and Engineers are the smartest to begin with, and they gain least in point of height; the countryman gains most. But when we look at the increase in the flexibility of the chest we find that here again the countryman gains 0.6279 in., while the gunner gains only 0.574 in., and the 1st Infantry Regiment 0.4342 in. When we remember that 2 in. is a good amount of flexibility for the chest, this average gain of half an inch must favour the growth both of body and mind. The erect posture is responsible for most of the increase in height; it is not all growth, though it favours it. It is the first step towards the greater flexibility of the chest, which, in turn, is followed by an increase in the aëration of the blood. The other figures tell us that these red blood cells must attain some maturity in their better condition before they have their fullest power to influence growth. Hence it is that the gunners, who were, at first, best in their erect posture, and had, from their smartness, the greatest flexibility of chest, were the more ready to put on weight—the average gain among them reached the large figure of 2.792 lb. a man during their twenty days. The 1st Infantry Regiment followed with the creditable figure of 2.4357 lb., while the country regiment made the lesser gain of 2 050 lb a man. All these men were under the same conditions of housing, food, and drill; moreover, the good food which the authorities provided was a greater change and a greater privilege to the countryman than it was to the townsman, yet he made less weight under it; and for no assignable reason except that his red blood cells were occupied with the task of becoming accustomed to carry more oxygen. Next year, says Dr. Aikman, these country recruits should show a larger increase in weight; they are on the way to form better members of the community.

MEDICAL INSPECTION AND TREATMENT OF SCHOOL CHILDREN.

An indication of the line which some local education authorities may be disposed to take with regard to the arrangements to be made for carrying out the provisions of the last Education Act with regard to medical inspection of children is afforded by the report of the special subcommittee presented to the Dudley education authority last week. The committee recommended as a tentative arrangement to be put into operation for twelve months, that the county borough, which has a population of nearly 50,000, should be divided into four districts, to each of which a school medical inspector should be appointed, and that the medical officer of health should be given an honorarium of £25 a year for supervising the new work. As to the remuneration to be offered to the medical inspectors, the subcommittee recommended that they should be paid 1s. a head "for thorough examination and carrying "out all remedial measures in accordance with the new "Act." If the terms of the report are correctly reproduced in the local press, it would appear that the Dudley Committee already contemplates not only the inspection, which is compulsory, but the treatment, which is permissive. The memorandum by the Medico-Political Committee published in the Supplement of last week, advised that the remuneration for medical inspection should be at the rate of £50 per annum for attendance on one half a school day a week, half a school day being defined as two hours; this may be taken to be at the rate of a little over 12s. an hour. We doubt very much whether thorough examination of children can be made at the rate of twelve an hour, an average of five minutes to each case, although it may perhaps be possible, if Dudley school teachers have been trained in hygiene, and are capable of giving competent assistance in the examination of the children and the filling up of the card schedule; we note also the further recommendation that an ophthalmic surgeon should be appointed, and this will no doubt lighten the work of the medical inspectors. But if the rate of 1s. a head is really intended to include "carrying out all remedial "measures," then it becomes evident that the remuneration offered is so absurdly inadequate that we hesitate to believe that the words used can be really intended to express the meaning which they apparently convey.

OEDIPISM.

Ch. Lafon[1] records a case of "oedipism"—self-inflicted injury to the eyes—which came under his notice. A merchant gradually developed symptoms of insanity, and after some business losses he tried to commit suicide by dashing his head against a wall. He at the same time attempted to rupture his eyeballs by pressing his thumbs against them. He was found to have a large hyphaema and minus tension on each side. The globes were not ruptured, but sight was eventually lost from traumatic irido-cyclitis. The patient was placed in an asylum, and became a confirmed melancholic, with suicidal tendencies. Lafon gives an account of the cases of automutilation of the eyes which have been recorded—about twenty in all—and appends a full bibliography. In every instance the patient, who is always insane, has attempted and often succeeded in tearing out both eyes. All degrees of injury have been described, from simple contusions of

[1] *Rec. d'Ophtalm*, October, 1907.

the globes and laceration of the conjunctivae to complete evulsion of the eyes, with their attached muscles. De Wecker denied the possibility of enucleating the eyeball with the fingers, or even with a simple hook. Chauvel agreed that the eye could not be removed with the fingers alone. Recent facts have shown that both de Wecker and Chauvel were in error, and that the insane can and do tear out their eyes with their unaided fingers. The conjunctiva is lacerated and the recti muscles torn through with the nails, the globe is then dislocated with the fingers and twisted free. The tough optic nerve is scratched through with the nails. These automutilators are all melancholics, generally with religious delusions. The ruling idea of the self-mutilator is to kill himself. The eyes are not torn out to get rid of terrifying hallucinations, nor does the insane person mutilate himself as a punishment for sin. The term *oedipism* has been suggested for the act of self-evulsion of the eyes. Lafon thinks it is an inapt synonym, for Oedipus tore out his eyes, not because he was a suicidal melancholic, but because he wished to punish them for not having forewarned him that he was about to kill his father, and that he might not in future see anything which could recall to his memory his involuntary crimes. Mutilation of the eye is a rare form of malingering, although it is quite common for malingerers to introduce irritating substances into the eye to cause or increase inflammation. Such acts are committed by working men to obtain compensation, and by soldiers who wish to escape conscription or to obtain their discharge. Tobacco is a favourite irritant, and soldiers have rubbed blenorrhoeal pus into their eyes. A case is recorded in which a French soldier persuaded a comrade to pierce both his eyes with a needle.

THE MEDICINE MEN OF THE TEN'A.

To the current number of the *Journal of the Royal Anthropological Institute* the Rev. J. Jetté contributes an article on the medicine men of the Ten'a, a branch of the widespread Alaskan stock living on the Yukon River and its tributaries from Tanana down to Koserefsky. Nulato occupies a central position in this tract, and the group of Indians dealt with by the author numbers somewhat less than 2,000 souls. The word *Ten'a* means in their language man or men; to the Russians they were known as Ingaliks or Ingaleets, an offensive appellation, meaning the lousy, given them by their Eskimo neighbours, who, says Mr. Jetté, deserve it much more. They are described as being of wonderful credulity, accepting all that their medicine men tell them for fear of the consequences of disbelief. Their religion is rudimentary. They believe in spirits, not, however, immaterial, but beings something between soul and body. These spirits are essentially malignant, though some of them minister to men, mostly to help them in doing evil, but occasionally also to provide them with the necessaries of life. A man or woman who has one of these spirits at command is a medicine man or woman. As elsewhere, the male practitioners preponderate in number, the proportion being estimated by Mr. Jetté as one medicine woman to every five medicine men. The medicine man is influential among his fellows and is feared on account of his supposed power to do evil. He is rich because his services are generously remunerated. His words are taken as oracles. According to Ten'a medicine all diseases are caused by a spirit taking up his abode in the patient's body. These simple folk have indeed grasped the parasitic theory, though they carry it rather farther than modern pathology has yet gone. The method of treatment is founded on the theory. The medicine man sets his familiar spirit at the "hyperbolical fiend" who is vexing the sufferer, and a tussle takes place in which, naturally, the attacking devil is not always the conqueror. But the doctor suffers no discredit from the failure; it is his devil that is held responsible. This belief is at once convenient to the doctor and comforting to the afflicted friends. Some medicine men have at their command more powerful spirits than others, and when it happens—and it would seem that professional jealousy is not unknown even among these primitive people—that two medicine men are enemies, the one with the stronger spirit is sure to triumph sooner or later over his rival. This, however, appears not to be an unmixed advantage—at least for the relatives, for if a medicine man is at odds with another, each spirit works for his own man, and the darts, so to speak, which are hurled by one spirit may be averted by the other; but if this other spirit is not very powerful, he only turns aside the darts, which will glance off on to the medicine man's relatives, leaving him unhurt. Therefore though the medicine man may earn the gratitude of patients who believe they have been cured by him, he is looked upon by the people generally as a dangerous person who may at any time cause the death of his best friends, either willingly or unwillingly, owing to the inadequacy of his spirit. This does not tend to make him popular. But though distrusted, he is regarded as a necessary evil, and even if he should wish to abdicate his functions he can only do so by incurring disgrace. The procedure of "curing" a sick man is exhausting both for doctor and patient, and the author says that in the cases he saw the patients generally felt much worse on the day following the ceremony. Mr. Jetté adds that the medicine men have absolutely nothing to do with real medicine. The only medical practices he witnessed among the Ten'a were puncturing and the preparation of spruce-tea, and of a decoction of a bush resembling juniper. The puncturing, which consisted in thrusting a small pointed blade through the skin, previously seized and held up between the thumb and forefinger, just as is done with the hypodermic syringe, was their method of blood-letting. It was performed by women, generally old women, who had had much practice. The two decoctions alluded to were prepared by anyone who wished to use them. The medicine man never interfered in any way with the use of these natural remedies.

HEALTH IN NORTHERN NIGERIA.

THE last Colonial Office Report on Northern Nigeria records a curious abnormality in the incidence of sickness in the Protectorate—January, which as a rule is one of the healthiest months, showing the greatest number of cases, while September, ordinarily the worst month, showed the fewest. It is difficult to explain the former, but the latter result is probably due to unusually heavy rains having washed out all the mosquito breeding places. Malaria, as usual, was the most common disease of Europeans, but there were only 370 cases as against 445 last year and 515 in the previous year, so there seems reason to hope that an actual progressive diminution is taking place while dysentery is also apparently less common. There were, however, 25 cases of blackwater fever against 20 of the previous year, and 5 of them terminated fatally. The average number of resident Europeans was 347, and the total number of deaths from disease 14, a death-rate of rather over 40 per mille, though conclusion based on such small figures have, of course, a tendency to be fallacious, and the general health of the European community may be said to have been fairly good, the number of cases on the sick list being considerably lower than in the preceding year. A previous report, it may be remembered, recorded a severe and generalized epidemic of cerebro-spinal meningitis among the natives which

was of very fatal character and must have killed thousands in the Protectorate. This year, fortunately, the disease seems more or less to have died out, and only 29 cases of it were admitted. It is sometimes stated that blackwater fever does not occur in natives, but two cases were recorded during the year. There were three cases of sleeping sickness among the troops, and there is no doubt that this malady is fairly common in many parts of the Protectorate, especially in the Bassa Province and along the Benue River. It is well known to the natives, and, curiously enough, a native hospital, established by a native for the treatment of this disease by native remedies, has been discovered near Loko, and several cures are reported. The facts are now being investigated with a view of finding out if the cases were true sleeping sickness, and if cured, what treatment was employed. The natives vary very much as to their views on the efficacy of European medicine in different parts of the country. Thus, while a native hospital started in Bornu has done a great deal of work, those in Kano have met with no success whatever, although the Emir of Kano sends his children and followers to be treated. The European stations are steadily improving in point of sanitation, and wherever possible permanent rest-houses or dak bungalows are being established along the main roads, built at some distance outside the native towns. Kano has been found a difficult province from a health point of view, and it is almost impossible to get a healthy site for the Government station anywhere in the neighbourhood of the capital. It is worthy of note that a case of Malta fever was diagnosed during the year in a European, the first ever recorded from the Protectorate, but it is not stated whether the patient became affected in the country or whether he had previously resided in some Mediterranean port.

THE POPE AND THE ANTIVIVISECTIONISTS.

It appears that not long ago the Pope, in a letter expressing his approval of the objects of a society for the protection of animals, sent with it a photograph of himself and his blessing. The blessing was written with His Holiness's own hand and was made to include all associations which take the prevention of cruelty to our "poor relations" for their province. This gracious act brought to the Pope expressions of thanks from a number of similar societies throughout the world. But the Berlin Antivivisection Society, which consists largely of Protestants, appears to have been somewhat embarrassed by the Papal blessing. There was a discussion among the members whether a compliment which some of them thought might compromise them in a theological sense should be accepted. Another section held stoutly that it was not a matter of creed at all, and that the blessing of the Vatican would be an excellent advertisement for their work. We gather that this business-like view of the case prevailed. We cannot help wondering, however, how the Rev. J. Page Hopps and the Rev. L. S. Lewis feel at having the blessing of the Pope inflicted upon them. Perhaps they may bear it meekly, as being a form of pain inflicted for the good of the sufferer. Another question is, Will the benediction of Pius X serve to bring the various antivivisection societies, which now quarrel with such feminine shrillness, under "one umbrella"?

THE CULT OF THE CLEAN SHEET.

In an age when fastidious children are still told not to be "so particular," since they must needs eat a peck of dirt before they die, true domestic cleanliness seems an impossible idea, and how much nearer its attainment the new Education Act will bring us is a secret still lapped on the knees of the gods. Meanwhile it is somewhat consoling to meet with a person, and that a layman, so far convinced of the necessity of reform and of its possibility as to devote an immense amount of energy to bringing about an improvement in one small detail. This is a gentleman who has constituted himself the high priest and missioner of what may be called "the cult of the clean sheet," and his scheme, which has the charm of simplicity, should appeal more especially to those whose lot it is to sleep in alien beds—in short, in these travelling days, to the majority of mankind. On their part, as on that of the frequenters of many restaurants, a certain amount of ignorance is convenient, if not wise, but the gentleman in question is determined to make it no longer possible. He argues that attention on the part of the traveller to the sheets which are to enwrap him when he goes to rest is not only exceedingly necessary, but that in a year or two's time, and if the public will, this scanning may be of real utility. According to his statement, the accuracy of which seems not improbable, it is a common practice among hotel and lodging-house keepers to take sheets which are merely tumbled and not obviously dirty, damp them, press them, and use them again. Such a sheet has not only been next to a previous sleeper, but, what is worse, since the chambermaid uses one side or another of a sheet indifferently, it is as likely as not that it has been in contact with bedticking or the under blanket. If this is the case it is necessarily unclean, because bedticking and under blankets are rarely cleansed, and in the lapse of time necessarily become exceedingly impure. The picture is not a pleasant one, and it is not difficult to imagine circumstances in which the risks involved should call forth something more than a sentimental shudder. The remedy indicated is to establish as a domestic practice the habit of making a tuck at either end of every sheet; it should be about 1½ in. wide and be placed 30 in. from the bottom end and 7½ in. from the top end where it looks like an ordinary "sheet-sham." This tuck will show when a sheet is right way up, and the public, being educated to expect its appearance on their sheets, will demand that hotel-keepers shall adopt the same fashion. When this is the case the number of times that a sheet can appear as a "clean" sheet on different beds will be materially diminished; and our high priest suggests that though the whole possible evil will not be obviated, even half a loaf in hygienic as in other matters is better than no bread.

THE *MEDICAL DIRECTORY*.

The *Medical Directory* for the year 1908 was published last week by Messrs. Churchill. It is in its familiar red cover, and in point of bulk appears identical with its immediate predecessor. The article dealing with the principal laws affecting the medical profession has been revised by Mr. E. A. Armstrong, barrister-at-law, and a perusal of its contents indicates that it is well up to date. The same may be said of the list of deaths which have taken place since the *Directory* was last published. As usual, there is at the beginning of the work a statement of the number of names contained in each of its medical sections: London, the Provinces, Wales, Scotland, Ireland, the Naval, Military, and Indian Medical Services, and British Practitioners Abroad. The total number of names has increased by 338 which a little calculation shows to be considerably below the average of the last ten years, the present total being 39,703, against figures which in previous years have increased annually at the rate of 446. In point of distribution the figures, when compared with the corresponding figures in the edition for last year, do not show any striking alteration; the most noticeable point being that, while the numbers in all other areas show a slight increase, there is a diminution in the number of medical men practising in Ireland, though it is not

great—in actual numbers, 2,660 instead of 2,672. The other figures are perhaps best quoted as percentages; thus London and the provinces between them account for nearly 60 per cent. of the total, the percentage of practitioners in the provinces being over 43, and in London over 16. The next highest percentage—12—refers to practitioners abroad; then comes Scotland with 9, the Services with 8, Ireland with 6, and Wales with 3.

THE Royal Commission on Vivisection sat on December 17th and 18th. It is announced that the Commission proposes now to conclude the taking of evidence, and to proceed in due course to the consideration of its report.

BY a sad coincidence Scotland has lost her two leading surgeons, almost on the same day. Professor Thomas Annandale, Regius Professor of Surgery in the University of Edinburgh, died suddenly of heart disease on December 20th. Professor Annandale, who was in his 70th year, was apparently in his usual health on Thursday, and was operating in the infirmary in the afternoon of the day of his death. Sir Patrick Heron Watson died on December 21st, also from heart disease, at the age of 75. He had been in poor health for some time, and his death was not unexpected. He was knighted in 1903. Full obituaries will appear in a later issue.

Liverpool.

PRESENTATION TO PROFESSOR RUSHTON PARKER.

PROFESSOR RUSHTON PARKER has been presented with his portrait in oils by the past and present students of the Liverpool School of Medicine. The presentation was made by the Lord Mayor (Dr. Richard Caton) at the Adelphi Hotel. The Lord Mayor said he felt a great pleasure in presenting to his old friend a tribute of the affection in which Mr. Parker had always been held by his students ever since the earliest days of the University College, where he and Mr. Parker had both been engaged in teaching the same subjects. He expressed regret at the retirement of Professor Parker from the active work of the Royal Infirmary, but was glad to remind his hearers that Mr. Parker's services as professor of surgery would still be retained for the benefit of the students of the school. The Lord Mayor then unveiled the portrait, which is a speaking likeness, and one of Mr. Hall Neale's happiest and best works.

Mr. Rushton Parker expressed the deep gratitude of himself and Mrs. Parker to the donors of the portrait, for the kind and touching manifestation of feeling which prompted the presentation, and to the artist, Mr. G. Hall Neale, for the excellence of the picture. It was peculiarly acceptable to have this interesting ceremony performed by the Lord Mayor, Dr. Caton, with whom Mr. Parker had been so intimately and agreeably associated at the School of Medicine. When Dr. Caton was appointed Lecturer on Physiology in 1872 Mr. Parker was appointed his first demonstrator, and held the post for five years, after which he was elected to the Lectureship in Surgery (1877), which was converted into a Professorship in 1882 in University College, Liverpool, more recently the University of Liverpool. The only emblem introduced into the portrait was an outline in the background of the hip and knee splints of the late Mr. Hugh Owen Thomas. Mr. Parker expressed the respect and affection with which he had regarded that surgeon from their first acquaintance some time about or before 1874, until the lamented death of Mr. Thomas in 1891, and acknowledged with pride the part he had been enabled to play in furthering the knowledge of Mr. Thomas's ingenious and important apparatus, and in himself using them and otherwise making known to others a means of treatment that has long had a world-wide reputation.

The ceremony took place in the large ballroom of the hotel, immediately before the medical students' annual dinner, in the presence of a large gathering of medical practitioners and students and of some eighty-five ladies who were giving a dinner to Mrs. Rushton Parker, presided over by Mrs. Caton, the Lady Mayoress. This dinner also took place in the Adelphi Hotel. Among the ladies present was Mrs. Hugh Owen Thomas. Mrs. Rushton Parker has also been the recipient of a large silver rose-bowl, presented by a number of ladies on the occasion of her husband's completing his term of office at the Royal Infirmary.

Manchester and Salford.

CARE OF FEEBLE-MINDED.

THE annual meeting of the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded was held in the Lord Mayor's Parlour, Manchester, and was presided over by Lord Stanley of Alderley. According to the annual report, there are now 124 children and young people at the Sandlebridge Homes of the Society, and during the year an extension of the day school has become necessary, the cost of which Mr. Sam Gamble has undertaken to defray. It is intended as soon as possible to make the necessary alterations at Warford Hall to adapt it as a home for paying patients, and something like £9,000 will be required for this purpose. Bishop Welldon hoped it would be found possible before long to prolong the period for which the defective children were subjected to the discipline and treatment so essential to their welfare. Lord Stanley said he thought that there should be a combination of devoted and unpaid activity with public financial responsibility. Since perhaps 99 per cent. of the mentally defective children would in after-life become chargeable on the rates, it was reasonable to ask that Boards of Guardians should be enabled to contribute towards the cost of their maintenance in special establishments.

The Manchester Education Authority has at present three special Council schools for defective children, giving accommodation for 255, while another school is in course of erection for 120. Children are now admitted to these schools between the ages of 5 and 16, but the question as to what will become of them when they leave the day schools causes grave anxiety, and in the more serious cases the Education Committee reports that it has freely availed itself of the opportunity of sending children to the Sandlebridge school, where it has at present about forty children from Manchester. As we gather from the Education Committee's report for 1906, recently issued, the Society which owns the Sandlebridge school undertakes the care of its inmates for life, though the contributions of the education authority cease at the age of 16. The teaching and instruction are carried on in the happiest surroundings in boarding schools, three of which have been specially erected. A farm of 120 acres, with gardens and greenhouses, affords work for the older boys, while the girls are employed in laundry work and household duties. All this entails considerable expense to the voluntary society, which has earned the highest praise from the Board of Education; its method is generally recognized as the ideal method of effectually dealing with the care of the feeble-minded. In the same report Dr. Ashby discusses the question as to what is to be done with those children who are so mentally feeble that they are unable to gain any lasting advantage by attendance at day schools; he thinks the only solution of the question is to be found in the establishment of residential institutions, where the education and training would be exclusively manual, and where the inmates by their work would make some slight contribution towards their maintenance. Without such custodial care, these children are certain sooner or later to drift into the workhouse, or recruit the criminal or chronic inebriate class. No great attainments in reading or writing can be expected from many of these children. Their greatest advance has generally been in manual work, their drawing, moulding, wood-work, and knitting being most creditable, and Dr. Ashby thinks that "the direction in which we must work in the future should be in the practical teaching of handicraft trades. A 'trades school' where the simpler handicrafts were taught by practical men to boys of 14 to 16 years of age

and 'domestic economy' to girls of the same age, would be of great advantage in providing means for their earning their own living on leaving school." According to the latest regulations issued by the Board of Education, it is no longer necessary for the principal teacher in such schools to be certificated. But to deal in a proper way with defective children, who are often careless in their personal habits, it would seem to be essential that the teacher should have had some previous training in hygiene. It is useless beginning at the wrong end, as is being done by the Board of Education in the arrangements for the medical inspection of schools, where the teachers will have duties thrust upon them for the proper performance of which they have never had any training.

The Christie Cancer Hospital.

At the annual meeting of the Christie Cancer Hospital last week it was reported that during the last year 106 in-patients and 41 out-patients had been treated. The average age of the in-patients was 50.8 years; the deaths in the hospital numbered 38. A permanent abode has been provided for 63 patients who could not be properly treated at home. These patients are called "home patients," and are admitted at a late stage of the disease, when already beyond hope of recovery, simply for the purpose of alleviating suffering during the rest of their lives. All of them died sooner or later in the hospital, and it is therefore not surprising that the death-rate in the hospital is so very high. The rate cannot of course be compared with that of general hospitals, from which incurable patients are discharged after a limited period of treatment. It appears that out of 12,111 deaths from all causes in Manchester in the year, 562 were from cancer, or about 1 in every 21. Professor Lorrain Smith said that special investigation into the nature of cancer had been undertaken at the Manchester University; it would take some years to complete, but they hoped to be able to announce some important results. Professor Wild said that the doctors at the hospital tried every new remedy brought before them, provided that it would not do actual harm to patients. They had tried all the remedies advertised in the papers in the last ten years, except that they would not try any secret remedy, as they could not know what harm would arise. He did not think that the latest suggested cause of cancer, which was being boomed at present—that tea and coffee were the most probable causes—was at all likely to offer any better solution of the problem than its predecessors. Much regret was expressed by Professor Sinclair at the fact that a large proportion of the patients did not enter the hospital until the disease was too far advanced to allow of successful operation, and it was suggested that something might be done on the lines adopted in Prussia—namely, the distribution of leaflets through midwives and nurses, calling attention to the earliest symptoms of the disease. This was said to have been very successful in Prussia in bringing patients earlier, while there was still some hope from operation.

West Yorkshire.

Bradford Corporation's Infirmary Contribution.

At a meeting of the Finance and General Purposes Committee of the Bradford Corporation held recently, it was decided to recommend to the City Council that its donation to the funds of the Royal Infirmary should be increased from 50 guineas to 100 guineas annually. The former sum has been contributed for the last thirty-five years, and with the enormous expansion in the size and wealth of Bradford it was high time that the Corporation should subscribe more liberally than formerly to the premier medical institution in the City.

The Sewage Problem.

The sewage problem is a very difficult one to solve in the densely-populated areas of the West Riding. The West Riding Rivers Board is putting considerable pressure on all the local authorities to improve the condition of the effluent thrown into the streams and rivers from the various sewage works. Bradford has acquired a large area of land for sewage purposes at Esholt, and to improve the condition of the Yeadon and Guiseley effluents it is necessary for the authorities for these districts to acquire more land; but the only land available is that belonging to the Bradford Corporation, which declines to sell, and is backed up by the Local Government Board, which will not sanction compulsory purchase. Undoubtedly it is desirable to get these authorities to allow Bradford to treat their sewage, which it is willing to do for a price; but the terms appear difficult to arrange. There is little doubt that the multiplication of sewage farms over the country is undesirable in the interests of public health, and it is to be hoped that the smaller bodies will throw in their lot with the larger.

Anthrax in the Bradford Trade.

The second annual report of the Bradford Anthrax Investigation Board issued recently contains some interesting particulars. The opinion that strains of anthrax spores vary considerably in strength and vitality has been confirmed by Dr. Eurich, Bacteriologist to the Board. Under certain conditions anthrax spores are effectually destroyed by the use of cyllin, kerol, formic aldehyde, or Leach's (woolcombers') fluid, and formalin gas will sterilize wool if passed through in a constant stream. Experiments have been made to test the effects of electricity in connexion with the destruction of bacilli and spores, but the conclusion arrived at is that electrolysis simply with the aid of an acid is not commercially possible. Further tests are being made to ascertain the assistance, if any, obtainable from the electric current in securing penetration by and heightening the efficiency of germicides. The Board has received detailed reports of 12 cases, as compared with 17 last year, investigated by Dr. Eurich on its behalf. Of the cases enumerated one is described as probably not anthrax. Another case on recovering from anthrax was attacked by pneumonia, which caused death. Of the 11 remaining cases only one was a female. With one exception all the cases were cutaneous. There were 3 deaths—the one mentioned, one cutaneous case, and one internal. Of the 11 cases only 2 came into actual contact with the raw material before washing, and 1 whilst supervising washing. In the next process, that of willowing the washed material and carding, 5 cases occurred, 3 during willowing and 2 during carding. One case occurred in a "packer of tops," and the two remaining cases in the combing. It is pointed out that there is a greater liability to anthrax if the work is amongst low and inferior sorts of material.

New South Wales.

The Diagnosis of Appendicitis.

The difficulties which often surround the diagnosis of appendicitis are well known, and the list of things which may be confounded with this disease is formidable enough. But after hearing a paper read at the last meeting of the New South Wales Branch of the British Medical Association by Drs. Blackburn and Gordon Craig it appears that it may be necessary also to diagnose appendicitis from a dislocated spleen. The patient was a single woman aged about 17 years, a saleswoman, who had gone to the Royal Prince Alfred Hospital as an out-patient complaining of the ordinary symptoms of "indigestion." She was examined carefully and nothing abnormal was found in the abdomen. A fortnight later she had an attack of acute abdominal pain, and when seen by Dr. Blackburn was lying in bed with her knees drawn up and a temperature of 102° F. There was marked tenderness in the right iliac fossa, with resistance and dullness on percussion. Vaginal examination revealed a mass pushing the uterus over to the left side, and depressing the right fornix. In the absence of vomiting and any intestinal disturbance the diagnosis of appendicitis was considered doubtful, and it was thought more likely to be some tubal or ovarian mischief. The patient was sent to hospital, and after a day or two operation was decided upon. On opening the abdomen Dr. Craig found the mass to be the spleen lying in the right iliac fossa; the organ was swollen and tense, and the capsule ruptured in some places and covered with some shreds of inflammatory lymph. It was easily replaced, and the patient made a good recovery. On

examination of the abdomen after the lapse of several weeks, the organ was found firmly fixed and the patient enjoying good health. In the discussion which followed this paper, it was suggested that the spleen should have been removed as there was a risk to the patient in leaving the organ in that state in the abdomen. Dr. Craig, however, defended his line of action, and, while keeping an open mind on the point, said he would probably do the same in any other case if he was called upon to operate upon a similar condition.

PERIODIC FEVER AND LYMPHOCYTOSIS.

At the same meeting of the New South Wales Branch a paper was read by Dr. Sinclair Gillies and Professor D. A. Welsh on a case of periodic fever with recurrent lymphocytosis. The patient was a man aged about 40, who for the last seven years had been suffering from attacks of fever lasting four or five days, and recurring at regular intervals of twenty-one days. With the occurrence of the attacks of fever the lymphocytes in the blood rose to 40,000 or 50,000 per cm. The patient had been once in China for a short time, but there was no sign of any malarial or other organisms in the blood. Examination of the patient failed to reveal any focus of disease, or any evidence of parasitic infection. Professor Welsh was of opinion that it was a case of lymphocythaemia, although the periodicity of the attacks of fever were rather difficult to explain.

INSANITY IN NEW SOUTH WALES.

The annual report of Dr. Eric Sinclair, the Inspector-General of the Insane in New South Wales, has just been presented to Parliament. It states that on December 31st last the number of insane persons under official cognizance was 5,525, an increase of 248 during the year. The average for the past twenty years is 131, so that the increase last year was excessive. The number of admissions during the year was 1,129, of whom 909 were admitted for the first time. Natives of New South Wales formed 54 per cent., other Australian States 9 per cent., England 17½ per cent., Ireland 10 per cent., Scotland 4½ per cent., and other countries 5 per cent. of the total admissions. The number of patients discharged recovered was 428, equal to a rate of 38 11 per cent. of the admissions and readmissions. The number discharged improved was 57. The recovery-rate shows a considerable drop as compared with previous years. This is attributed in part to the overcrowded state of the wards and the consequent interference with the institutions as hospitals for treatment. The number discharged on probation, or granted leave of absence to their friends, was 372, making with those remaining from the previous year 566. Of these 200 were discharged, 169 returned to hospital, and 4 died, 193 remaining on leave at the end of the year The deaths numbered 389. This is a percentage of 7.51, a slight increase on the rate for 1905. The amount expended on the maintenance of the patients during the year was £143,245 18s. 8d, being an increase of £5,274 on the previous year. A sum of £25,771 16s. 5d. was received from the patients' friends, and £1,788 was received from other sources, so that the actual cost to the State was £115,685. Dr. Sinclair again draws attention to the insufficiency of the accommodation in the hospitals, and although a liberal building programme has now been undertaken by the Government, it must be some considerable time before the necessary accommodation can be provided.

VITAL STATISTICS.

A report by the Bureau of Statistics on the vital statistics for the month of September shows an excess of births over deaths of 681. The illegitimate births numbered 132, being 11 per cent. of the total births, which is slightly above the average. The birth record is 49 and the death record 61 above the average for September during the last five years. The births have only been exceeded twice within the last ten years, while the deaths are the highest recorded in September since 1898. The resultant birth-rate is 2.24, and the death-rate 0.97 per 1,000, corresponding respectively to annual rates of 26 88 and 11 64 per 1,000 of the population. The birth-rate is above the monthly average during the last ten years. The number of deaths of infants under 1 year was 80, equal to 74 per 1,000 births, which compares favourably with 78, the mean rate for the last decade. For the quarter ended September 30th the equivalent annual birth-rates and death-rates are 28.44 and 13.08 respectively. The birth-rate is 6 per cent. above, and the death-rate 13 per cent. above the corresponding quinquennial rates for the September quarter.

FRIENDLY SOCIETIES IN NEW SOUTH WALES.

The annual report of the Registrar of Friendly Societies for the year 1906 shows that at the close of the year the number of registered friendly societies was 45. New branches to the number of 122 were established during the year, as against 85 formed in 1905, while 18 branches closed, leaving 1,299 branches in existence at the close of the year. The membership of friendly societies proper at the end of 1906 was 106,220, an increase of 4,757, or at the rate of 4.7 per cent. During the year 18,633 persons were sick for an aggregate term of 105,310 weeks, at a total cost in sick pay of £84 070. The deaths of members numbered 755, equal to 7.1 per 1,000 of mean membership, and a sum of £23,871 was paid away for funeral benefits. An amount of £90,698 was paid for medical attendance and medicines, representing an average cost of 17s. 6d. per head of mean membership. The receipts of societies from all sources were £396,027, and the expenditure was £220,544. The funds at the close of the year amounted to £1,057,496, an increase of £96,826 as compared with those in hand on December 31st, 1905. The total cost of management during the year was £42,528, consisting of £24,536 for salaries and £17,992 for expenses. A scheme for the payment of subventions to the friendly societies was announced by the late Premier, Mr. Carruthers, the details are as follows:

The Government will pay to societies:

(*a*) One-third of the cost to the society in each year for sick pay according to its rules, in respect of the period of sickness after 12 months from the commencement of each case of continuous sickness, for all male members less than 65 years of age, and for all female members less than 60 years of age.

(*b*) The whole cost to the society for sick pay in respect of male members 65 years and over, and of female members aged 60 years and over. Provided that the total rate of sick pay recoverable by members shall not exceed 10s. a member per week for the period of illness mentioned in Paragraph (*a*), inclusive in every case of the proportion payable by the State, nor 5s. per member per week for the sickness mentioned in Paragraph (*b*).

No interference with the independence of the societies will ensue upon the acceptance of the subvention. The only requirements will be the presentation of a statement of claim, duly accredited, to the Colonial Treasurer, and the payment of the sum to the trustees of the society, who will have to see that the various portions belonging to each branch reach their proper destinations.

ADULTERATED FOODS.

The Inspectors of the Board of Health are ever keeping a watchful eye on the manufacturers and purveyors of foods. During the month of September 218 samples of foods submitted by the various local authorities were analysed in the laboratories of the Board of Health. In 15 cases the chemical evidence was such as would support prosecution if undertaken. Of 203 samples of milk taken in the city and suburbs 32 were found to be adulterated. Three samples of groceries and one sample of spirits out of three analysed were found to be adulterated. The Board of Health directed that twenty-one food purveyors should be warned.

THE AUSTRALIAN ABORIGINES.

The annual report of the Aborigines Protection Board for 1906 shows that according to the census taken in October of that year there were 2,503 full bloods (1,028 male and 731 female adults, and 744 children), and 4,569 half-castes (1,146 male and 973 female adults, and 2,450 children) making a total of 7,072 as compared with 7,133 1905, a decrease of 61. The deaths among the full bloods exceeded the births by 58, the numbers being 127 and 69, while there were 100 more births than deaths among the half-castes, the births numbering 164, and the deaths 64. The number of aboriginal children who received elementary instruction throughout the State was 706, 633 at public schools and 73 at private schools, being an increase of 23 as compared with 1905.

Research in Tropical Medicine.

We learn from the *Australasian Medical Gazette* that a memorandum containing the proposed arrangements for the appointment of an investigator of tropical diseases—or "Fellow of Tropical Medicine," as it is suggested he should be called—has been issued and approved by the Senate of the Sydney University, and is now being considered by the University authorities in Adelaide and Melbourne. The memorandum is based upon the assumption that the sum of £700 per annum is now assured (that is, £450 from the Federal Government and £250, it is hoped, from the Queensland Government). It is proposed that the Fellowship should be confined to graduates of the Australian universities and be tenable for five years, and renewable only on special grounds. The appointment should be made by three men, nominated by each of the three universities having medical schools, but after appointment the Fellow should pass under the direction of the University of Sydney. The central laboratory work should be done in the department of pathology in Sydney. The outlying laboratory work should be in the Townsville Hospital. Further propositions are made in the memorandum for the collaboration of the various universities, and for their participation in the results of investigations in Townsville and North Queensland generally. It is proposed to commence operations in January, 1908. The following clause is quoted by our contemporary as showing that the formation of a medical school in Brisbane is anticipated: "Whenever any other State of the Commonwealth shall have established a medical school, it may share in every way as if it were one of the original medical schools."

South Australia.

Annual Meeting.

The chief medical event of the past few months has been the annual meeting of this Branch of the British Medical Association. On this occasion Dr. E. W. Morris, of Port Adelaide, delivered an able address, dealing with many politico-ethical subjects of interest, the only purely medical matter touched upon being his experience as to the prevalence in his district of subacute arteritis and endocarditis in early middle life amongst the wharf-lumpers, etc.; this, he considered, had a bearing upon the question of a white Australia. Dr. Morris's address will repay perusal. The dinner in the evening, presided over by the incoming President, Dr. J. H. Evans, of Hindmarsh, was a great success.

Quarantine Act and Rumoured Appointments.

The Commonwealth Parliament has concocted an elaborate Quarantine Act—the complement of its Protective Tariff—which seems not only designed to protect the sacred soil of Australia from all imported diseases of man and beast, but, as it involves interference on the part of the Federal Government with the individual Sovereign states, to be calculated some day to lead to an internecine strife, comparable only to the great American war of the Sixties. Though this is scarcely "a consummation devoutly to be wished," it is not the more likely to be prevented (if the rumour be true) because the President of the Central Board of Health here is to be translated to Melbourne as the chief executive officer under the new Act. Already the succession to Dr. Ramsay Smith's appointments is being speculated upon, and it is said to be not unlikely that the Labour Premier will appoint one of his friends to the vacancy rather than Dr. Thomas Borthwick, who, in the opinion of the profession in South Australia, is specially marked out for the post.

Amendment of the Vaccination Act.

This Quarantine Act may perhaps afford some excuse for the passing of an amendment to the Vaccination Act, which enables parents more easily to evade this operation under the conscientious objector's clause. With swifter steamers reaching Adelaide from Colombo in about eleven or twelve days, a fearful Nemesis may one day be expected

Adelaide Children's Hospital.

It is reported that the children's hospital authorities are spending about £5,000 on the erection of a steam laundry and other improvements, including what the Americans call a "sun parlour"—a wide balcony, which will also serve as outdoor sleeping place; the temperature in the wards has been known to remain at 102° all night, though no case of heat stroke has ever been reported.

Lunacy Report.

It is interesting to note that insanity, according to Dr. Cleland's report for last year, is at a lower ratio to population than it has been for eleven years.

Discussion of the Referendum.

On October 31st the Branch discussed the Referendum. It decided in favour of the Council of the Association upon all the issues, there being only one dissentient, and he only dissenting upon the first resolution. The general feeling expressed was that the Representative Meeting had to make out a much stronger case to justify opposition to the Council which had managed the Association's affairs so successfully in past years, and in which there was a majority of 3 to 1 in favour of its policy; while without troubling as to the question of the legality of the Referendum, it was thought that the Council ought in any case to have such discretionary power as it sought. There was no profound interest felt in the subject, but rather there was a feeling that there was a slightly undignified squabble amongst members of the Council, as to "the rights" of which members in Australia were not in a position to form a valid judgement.

Natal.

The Medical Outlook in the Colony.

On the last occasion that we had occasion to refer to Natal it was to consider some objections raised from an official source as to the accuracy of statements made by a correspondent in the Colony. Various communications which have since reached us, including several statements in local lay and professional journals made with the authority of their respective editors, make it, however, impossible to doubt that the position of the medical profession in Natal is really one of increasing difficulty, and that the outlook for the general public is also disquieting. Separating for the moment the interest of the medical profession and of its individual members from that of the public at large, the position is that from one cause and another the practice of medicine in the Colony is becoming less and less remunerative, while the situation of District Surgeons, who were regarded in former times as the more happily circumstanced of their brethren, is now, perhaps, more unpleasant than any. The *quasi* Civil Service position which they hold is, so far as money is concerned, of very doubtful value; their official emoluments have been greatly reduced, their work has been increased, and attempts have even been made to dictate to them the terms on which they shall extend their services to those within their districts who are not their official patients but who desire to consult them in their private capacity. It may be said, in short, with full assurance, that at the present time Natal is not a locality to which those in search of a professional opening should turn their thoughts. There is even clear evidence that many medical men, long established in the Colony, would move away but for the fact they have thrown in their lot with it, have burnt their boats and must bear the result. If, however, the medical position is bad, the situation is no more satisfactory when regarded from the standpoint of the general public interest. The underlying cause is the same in both cases, and sociologically is in some respects unique. The commoner weakness of legislative assemblies elsewhere is that they tend to be influenced by too advanced and sometimes immature ideas, but in Natal the reverse seems to be the case. Its government is practically in the hands of a strong agricultural party. Nowhere have farmers a reputation of being especially enlightened, so it is not peculiar that among the farmers of Natal recognition of the value of scientific medicine, or even of preventive medicine—a branch which in nearly every civilized state has now had its full value acknowledged—is practically non-existent. The result is that each year the Legislature shows an increasing disposition to cut down the votes for the medical service of the country, to decrease the sums

granted for the preventive health medical service, and at times passes the most ill considered measures. Of these the Vaccination Bill, to which attention was recently drawn in these columns, may be regarded as one, for while it makes vaccination compulsory, it establishes a Government fee for the performance of the operation, in spite of the fact that everywhere else it is acknowledged that free vaccination should be provided for those who desire to take advantage of it. In Natal, however, a fee of 1s. is imposed, one by-result, to which the medical profession naturally takes exception, being the fact that the public is thereby led to believe that such a fee represents the true cost and value of the operation. A further folly of the Natal Government is the continuance of the issue of licences to native medicine men—to persons who do not even pretend to have any knowledge of modern medicine, and who are really on a par with witch finders and the Obeah men of Western Africa. The licensing of such men by a civilized body tends to keep alive the most undesirable practices. Prosecutions have recently been instituted in the criminal court of the Colony of persons who have committed murders with the object of obtaining the ingredients of certain native medicines. That the conduct of the Government for the past few years is due to the special character of the Legislature, and not to lack of well-informed persons amongst the general community, is shown by the frank condemnation which its medical policy has met at the hands of the general Press. This is at times decidedly caustic on the subject, and recently has drawn attention to the fact that the Government estimates for the current year devote nearly £90,000 to the Agricultural Department—apart from a special expenditure of £200,000 authorized at the end of last year to deal with a fever prevalent among cattle on the East Coast—and less than a tenth of that sum to the Public Health Department. Indeed, the bacteriological and entomological branches of the Agricultural Department have a larger sum allowed them than is devoted to the whole of the public health service, with the exception of the expenditure on district surgeons, which is trifling. Various complaints, too, have been made to the effect that the Government in no way aids the municipalities, and that of Durban in particular, in their endeavours to keep the areas in their charge free from malarial fever; and even increases the existing difficulties by neglecting the districts from which the municipal areas become infected and over which the municipalities have no control. Various circumstances, indeed, point towards a probability that before many years have passed the continued starvation of the medical branch of the Government services will lead to disastrous results.

Ireland.

THE EDWARD HALLARAN BENNETT MEDAL AND PRIZE.

THE past-pupils of Professor E. H. Bennett, for nine years University Anatomist, and for thirty-three years Professor of Surgery in Trinity College, Dublin, wishing permanently to record their appreciation of his eminent services to the surgical profession, and of his many acts of kindness to them while students, subscribed a sum of money for the purpose of founding a medal in the School of Physic, to be called the Bennett medal, and a prize, to be called the Bennett prize.

The following resolutions were adopted at a meeting of the subscribers, and accepted by the Board of Trinity College:

1. That Dr. Bennett be asked to give sittings for a portrait medallion.
2. That from this medallion dies for stamping a medal be made.
3. That the original medallion be placed in the School of Physic in Ireland, and a copy of it in Sir Patrick Dun's Hospital.
4. That the first proof of the medal in gold be presented to Dr. Bennett.
5. That a medal in bronze, to be called the Bennett medal, with a suitable inscription on the reverse, be presented to the candidate who obtains the surgical travelling prize given by the Provost and Senior Fellows of Trinity College every second year.
6. That the surplus funds, after payment of initial expenses, be formed into a trust to provide for the production of the medal awarded every second year to the surgical travelling prizeman, and that the balance of income from the trust be awarded as a money prize, to be called the Bennett Prize, to the candidate who obtains second place at every surgical travelling prize examination, provided that, in the opinion of the examiners, sufficient merit is shown. In the event of the Bennett money prize not being awarded from want of merit or other cause, the accumulated income of the trust for the previous two years is to be invested and added to the corpus of the trust fund.
7. That the Provost and Senior Fellows be invited to accept this trust and the custody of the dies for the purpose of awarding the prizes according to the terms of these resolutions.

Professor Bennett died before all these arrangements had been carried out; but they have now been completed, and the dies, a number of medals, and the sum of £205 17s. 5d. have been handed over to the Board together with the sum of £12 4s. 6d., which, being interest on the amount subscribed, together with the additional income of the trust, will represent the prize to be given to the second-best candidate at the Surgical Travelling Prize examination to be held next June.

(A photograph of the medal, which was designed by Oliver Sheppard, R.H.A., appeared in the JOURNAL of July 7th, 1906, vol. ii, p. 36.)

CORRESPONDENCE.

THE EMERGENCY FUND.

SIR,—During the next few days most of us will be engaged in the congenial task of making out a cheque for our subscription to the Association for 1908. May I point out that a moral obligation rests on every one of us to remember the Emergency Fund? Whether we all like it or not, we have entered on a new phase. We have deliberately encouraged—nay urged—members to resist unfair conditions of employment, and have given them to understand that in so doing they will have the whole Association at their back. The honour of the British Medical Association is involved in seeing the South Wales men, for example, through their trouble, and it is a disgrace to us that periodical appeals should have to be made in the JOURNAL. Until we get the Charter at any rate the Emergency Fund *must* be supported, and there is not a member who could not add 5s. to his subscription cheque. Just imagine the British Medical Association with a fighting fund of £5,000 behind it! and yet that is a flea-bite to what the working man in his associations can do!—I am, etc.,

Gateshead, Dec. 23rd. ALFRED COX.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Sir,—In a recent leading article on this subject you showed very clearly: (1) That medical officers of health are not adapted by their special training for acting as medical inspectors of school children, and (2) that the practitioner whose knowledge of disease in children qualifies him to act as inspector is unlikely to possess also that knowledge of public health and hygiene which is the special equipment of the medical officer of health.

These two propositions are incontrovertible, and would certainly be endorsed by the medical profession as a whole. But the inference apparently to be drawn therefrom—that medical officers of health are ill-adapted to organize and superintend the work of the medical inspectors may be disputed. At any rate, in areas where the medical officer of health is a specialist, devoting his whole attention to the duties of his office, his incapacity as regards children's diseases is to be met by the clinical knowledge of the inspector, while any want of skill of the latter in matters of hygiene and public health will be counterbalanced by the skilled advice and direction of the medical officer of health. The association of the two offices was apparently the highest wisdom on the part of the Board of Education.

The purpose of the Act being the amelioration of the health and improvement of the physique of children of school age, and thus of each succeeding generation, it has a twofold object—to influence both the child and its environment favourably. The one aim is inseparable from the other.

But the former is the more easily attainable. On the appointment of the medical inspector—if he be sufficiently

tactful, discriminating, and experienced—it will immediately become possible to influence parents in having obvious defects attended to. The machinery for the treatment of the children is in existence, in private skill and our public medical charities.

The second aim of the Act—the improvement of the sanitary surroundings of the children at school and in their homes—will have to be effected more slowly. Proved causes of ill-health must first be dealt with, and then those which clearly threaten to produce disease. For many years to come the child's environment cannot be ideal. The necessity for keeping the rates within moderate dimensions will prevent it.

Certain it is, too, that local authorities will not consent to the expenditure of large sums in improving school buildings, etc., except on the strongest representations from the medical officer of health. In practice it will be found that on this side of the new inspector's duties the voice of the medical officer of health will be paramount.

The notion you appear to entertain of a race of young men training for this particular line of work does not seem feasible. The kind of knowledge required can only be got in practice. For the efficient working of the Act the inspector must have had a large experience in dealing with the class of children and parents concerned. He can be recruited from the ranks of the general practitioner. Who else can be relied on to possess the tact and discernment necessary to fill so difficult an office?

By selecting local men of known character, zeal, and discretion it may be possible to make the Act a genuine ameliorative factor in the well-being of the people, even should these men fall far short of the impossible ideal standard suggested by the Board of Education.—I am, etc.,

December 16th. SINE DUBIO.

THE TERRITORIAL ARMY MEDICAL CORPS.

SIR,—Several very interesting and important letters have been written in the BRITISH MEDICAL JOURNAL on the above subject during the last few weeks, but the letter by "X." in the JOURNAL of November 2nd deserves the closest attention.

"X." hits the right nail on the head when he asks those five important questions, for it is on the answers to those questions that the success or non-success of the new scheme depends. It is far better that these matters should be gone into *now* by the authorities, when they are giving special attention to the volunteer question, than that they should wait until matters are cut and dry, and then find there is a great dearth of medical officers.

When the new uniform is ordered it will cost medical officers about £50 to replace their present uniforms by the new ones; will the Government give a grant towards that? It could hardly be expected that medical officers, with their present uniforms in perfectly good condition and which would last for many years yet, should have to pay about £50 out of their own pockets for their new kit.

Then could not camp be made more attractive to medical officers, who whilst there are carrying out the duties and the responsibilities which they carry out in civil life, and therefore, unlike their combatant colleagues, cannot consider camp life a change or a holiday, especially when a *locum tenens* has to be paid for at home? In addition could we not be better supplied with materials to give us pleasure in doing our work?—an empty hospital tent and an old medical companion is all that is given us. Could we not even be supplied with materials such as are used in Inspection rooms (Appendix 8, Regulations for Army Medical Service) with a better supply of surgical dressings and more modern drugs than the medical companion supplies? (Appendices Nos. 21, 23, 32, and 41, contain suggestive lists.)

I once went to camp with my own regiment over 500 strong. In the next field was a volunteer regiment about 900 strong. This latter regiment had five medical officers, and not one could be got to come to camp, so I was asked to do the work for both regiments, which I willingly did. But when not one medical officer out of five was able to turn up at camp, it rather suggests that the present regulations are not as they ought to be, and hence all medical officers hail with joy the prospective improvements which will meet the cases of patriotic civil practitioners, who are anxious to do what they can to make their part of the T.A.M.C. as efficient as possible.

As regards the important Sanitary Department it is not very easy for the ordinary medical officer of health to apply to his local Board for permission to help with the sanitary organization, he being a paid official? It would be much better if the application, with sanction of the medical officer of health be made direct from the War Office itself, or the Incorporated Society of Medical Officers of Health, or the Royal Sanitary Institute, as the necessary explanations could be much better given and carry more weight.

I trust the Volunteer Ambulance School of Instruction will still persist and carry on its useful work, as it has always been equal to the requirements. It takes years to get a good staff and material together, and teaching is an art not readily acquired. The School has been a medium to notify all its members of what is new and of material interest, and however good local schools may be, one central one in London is wanted, and especially just now when there are to be so many changes requiring attention. Again directing attention to "X's" letter, I am, etc.,

December 7th. ENTHUSIASTIC.

THE ROYAL SOCIETY AND THE TEST FOR COLOUR BLINDNESS.

SIR,—I have been much interested in Dr. Edridge-Green's recent letter in your JOURNAL. Being a considerable traveller by land and sea, the mere suggestion that colour-blind persons can be placed in responsible positions on engines or on board ship gives me a terrible shock. I admit that I take a purely selfish point of view, but submit that it is that of the great travelling public. And I would respectfully ask, through the columns of your widely-read journal, is the suspicion thus raised to be allayed or not? If there is but an ounce of fact in Dr. Edridge-Green's contention—[I have no desire to put it in any way offensively, but I take it at the lowest, as being quite sufficient]—surely, whatever action or inaction may follow his letter, so far as the Royal Society is concerned the Board of Trade *must* take some steps. The Board of Trade is, as Dr. Edridge-Green points out, a practical body, and if owing to the persuasion or influence of the Royal Society it made a mistake some years ago in the matter of its tests for colour vision, the travelling public has a right to demand that it opens the matter afresh, and sets at rest once and for all this important and alarming suggestion, or takes steps to find out a remedy.—I am, etc.,

London, E.C., Dec. 4th. N. NEWMAN.

MOVABLE KIDNEY FROM A SURGICAL STANDPOINT.

SIR,—Perhaps I may be allowed to intervene in the correspondence regarding the fixation of movable kidney by stating that fixation of an abdominal organ to bone or even to an inflexible ligament like the external arcuate ligament is contrary to Nature's method of support of the viscera. However, be this as it may, there is no necessity to endanger the pleura nor does there appear to be any advantage in rib fixation over simple suture to the anterior layer of the lumbar fascia, upon which and the quadratus and psoas muscle the kidney lies. The sutures should take up the capsule of the kidney along the line between the quadratus and the transversalis impressions. They should be numerous. The convex border of the kidney should then be incised as to capsule and then stripped back for half an inch each way. Then in closing the incision through the lumbar fascia these folds of capsule are to be caught in several places. A glance at Fig. 269 in Cunningham's *Anatomy* will make this quite clear. The incision should be large enough to enable the hand to be inserted and the kidney grasped and drawn out. This saves time, gives command, and prevents opening of the peritoneum, which is a technical fault.—I am, etc.,

Wolverhampton, Dec. 16th. FREDERICK EDGE.

SIR,—In recent issues of the BRITISH MEDICAL JOURNAL there are articles under the above heading from Mr. Billington and Mr. Fullerton with regard to the fixation of a movable kidney by means of a capsular flap. I have

been in the habit of using this method for some years, but in a slightly different manner—a modification of the method described by Mr. Arbuthnot Lane. The kidney is exposed by a lumbar incision and brought up into the wound. The true capsule is freed from the perirenal fat, any adhesions are divided, and the fatty tissue lying in front of the upper part of the quadratus lumborum muscle is removed. Incisions are then carried through the true renal capsule in the upper two-thirds of the posterior surface of the kidney in the form of a broad N, thus marking out two triangular flaps in the capsule, which are peeled off the renal cortex, so that the base of the upper flap is at the upper pole of the organ and that of the lower at the junction of the middle with the lower third. The apices of the two flaps are then picked up and twisted slightly to increase their strength. I next separate the superficial fascia of the upper part of the lumbar incision from the muscles and, with the fingers of left hand in the wound, push up the pleura from the upper border of the twelfth rib, at the same time passing a long, blunt renal-pedicle needle through the parietal muscles on to my fingers immediately above the last rib. The apex of the upper flap is then threaded into the needle, and the flap drawn over the last rib and through the muscle layer. The lower flap is similarly drawn through the muscle layer of the upper part of the incision below the last rib, and the two ends sewn together by sterilized thread, the kidney being meanwhile pushed well up into position. Occasionally I make use, in addition, of a single supporting suture of firm thread passed beneath the capsule of the lower third of the kidney near the convex border and through the muscle layer of the primary incision. I close the wound without drainage.

The results of this method have been very satisfactory, the kidney remaining fixed in a high position and relieving the symptoms necessitating the operation. I have had no difficulty in escaping the pleura, nor do I think any would occur if the needle be passed on to the fingers in the wound in this way, whilst finally the organ is supported by capsular flaps, leaving a large denuded area to form adhesions with the parietes.

During the last six months I have had occasion to open the abdomen for other conditions of two patients operated upon in this way, one after two years and a half and the other after one year and a half. I took the opportunity to examine the anchored kidney, which in each case was firmly fixed and in good position.—I am, etc.,

R. H. JOCELYN SWAN, M.S.Lond., F.R.C.S.Eng.

London, W., Dec. 18th.

THE LITERARY KNOWLEDGE OF THE PROFESSION.

SIR,—Your annotation concerning the haziness of the knowledge possessed by the students and members of our profession where the classics in literature are concerned reminds me of an amusing story told by the late John Curnow of one of his pupils.

Curnow was endeavouring to elicit from him some information about the acromion process, with but little success. Finally he was asked if he knew why the process was called the *acromion*. No answer. Curnow then endeavoured to help him out by asking if he had ever hear of the Acropolis. A bright beam of intelligence lighted up the face of this formidable rival to the modern Baboo, and he cheerfully replied, "Why, of course; it's down Woking way, isn't it?"

Now, Sir, may I, after winning your ear with this story, moralize? Before we make such a point of accuracy in the dead languages, ought we not to encourage a more scrupulous care for the living? Week by week one is offended by bad English and bad spelling, no worse—but no better—than those little contortions you have given us: *they* are at least amusing, but the same cannot be said of our modern scientific English papers. These are rarely interestingly constructed; hardly ever literary. This letter may of itself contain grammatical effrontories; if so, it shows how hopelessly we have sunk—we cannot recognize them ourselves!

May I, however, suggest, Sir, that just as a beginning you should not pass "judgement" (with two e's) week by week in the columns of our JOURNAL—or has the editorial pen to be so tactful?—I am, etc.,

December 8th. A SINNER.

*** With regard to the concluding part of this letter we venture to quote again for our correspondent's special behoof and benefit the following, from the BRITISH MEDICAL JOURNAL, April 11th, 1903:

Several esteemed correspondents are much exercised as to the spelling of certain words adopted by the BRITISH MEDICAL JOURNAL. Their souls are vexed by the middle "e" in "judgement"; their finer etymological feelings are wrung by the "x" in "connexion"; they find a literary stone of stumbling in the "l" in "dispatch." Now be it known unto all men by these presents that if these be, as one correspondent assures us, "orthographical errors," the blame for them must lie, not on our shoulders, but on those of the editors of the *New English Dictionary*, Dr. J. A. H. Murray and Mr. Henry Bradley. It is convenient to have a fixed standard for spelling, and for that purpose we chose the *Rules for Compositors and Readers employed at the Clarendon Press*, Oxford, compiled by Mr. Horace Hart, printer to the University, and revised by the scholars above mentioned. As to "judgement" in particular, which seems for some inscrutable reason to arouse special ire in heavenly breasts, we may be allowed to quote the following note by Dr. Murray:

> "I protest strongly against the vulgar and unscholarly habit of omitting it (the 'e') from 'abridgement,' 'acknowledgement,' 'judgement,' 'lodgement,' which is against all analogy, etymology, and orthoepy, since elsewhere *g* is hard in English when not followed by *e* or *i*. I think the University Press ought to set a scholarly example, instead of following the ignorant to do ill, for the sake of saving four *e's*. The word 'judgement' has been spelt in the Revised Version correctly."

UNIVERSITIES AND COLLEGES.

UNIVERSITY OF CAMBRIDGE.

DEGREES.

THE following degrees have been conferred:

M.D.—J. F. Halls Dally, Joh.
M.B., B.C.—C. Stanley-Clarke, Gonv. and Cai.
M.B.—C. King, Trin.; H. B. Owen, Gonv. and Cai.; G. L. Cox, Christ's.
B.C.—B. T. Lang, Trin.

APPOINTMENTS.

The following appointments have been made: E. D. Paton, M.D., M.S.Lond., Assistant Surgeon, Westminster Hospital, to be an Additional Examiner in Surgery in the Third M.B., Part II; Professor Nuttall, Dr. Newsholme, Dr. Anningson, Mr. Purvis, and Mr. R. D. Sweeting to be examiners in State Medicine; Dr. Daniels and Dr. Leishman to be examiners in Tropical Medicine and Hygiene.

EXAMINATION.

The following candidates have been approved at the examinations indicated:

FIRST M.B.: *Part I (Chemistry and Physics)*.—A. B. Appleton, Down.; S. G. Askey, Joh.; M. Avent, Cai.; W. G. Bigger, Queen's; E. J. Boyd, Sid. Suss.; E. J. Y. Brash, Joh.; E. N. Butler, Cla.; D. G. Cherrington, Trin.; B. K. T. Collins, Trin.; K. B. Dickson, Trin.; E. Donaldson, Trin.; G. D. East, Emm.; J. V. Fiddian, Emm.; R. H. Growse, Cai.; C. Helm, King's; W. S. Herman, Sid. Suss.; G. J. Hill, Pet; A. N. Hooper, Emm.; T. J. H. Hoskin, Trin.; G. D. Jameson, Pemb.; D. W. John, Cla.; T. Jones, Sid. Suss.; H. A. Lucas, Trin.; M. MacGregor, Cai.; A. F. MacMullen, Cai.; F. D. Marsh, Trin.; W. H. Marshall, Pemb.; O. G. Morgan, Cla.; J. O. Morris, Emm; M. W. Paterson, Joh.; D. V. Pickering, Emm.; F. S. L. Piggott, Emm.; W. A. Pocock, Pemb.; H. Roberts, Cla.; A. N. Rushworth, Trin.; L. T. Rutherford, Cla.; C. G. Sharp, B.A., Joh.; L. W. Shelley, Cai.; G. W. Spencer, Joh.; R. Stansfeld, Joh.; M. T. W. Steedman, Cla.; H. M. Stephenson, Cai.; A. V. Stocks, Joh.; W. J. F. Symons, Sid. Suss.; E. S. Taylor, King's; K. S. Thomson, Joh.; L. H. D. Thornton, Emm.; S. J. Titterton, Cai.; J. R. A. D. Todhunter, B.A., Cai.; T. Warrington, Emm.; M. H. Watney, Trin.; Ll. M. Weeks, Cai.; K. J. Yeo, Emm.

SECOND M.B. (*Human Anatomy and Physiology*).—R. L. Barker, B.A., Cai.; F. S. Bedal, Cla.; J. P. Benskin, Christ's; D. C. Bluett, Emm.; C. H. B. Booth, King's; E. G. S. Cane, B.A., Jes.; R. G. Canti, B.A., King's; K. F. P. Cory, B.A., Cai.; H. T. Depree, B.A., Cla.; C. Ede, King's; R. Ellis, B.A., Cath.; A. G. Evans, Trin.; J. T. Fox, B.A., Sid. Suss.; A. W. Gaye, B.A., Cai.; A. C. Gemmell, B.A., Trin.; R. W. B. Gibson, B.A., Jes.; H. K. Griffith, B.A., Trin.; L. S. M. Habich, B.A., Joh.; J. B. Hance, Christ's; L. C. D. Irvine, Emm.; A. C. Jepson, B.A., Pemb.; J. C. John, King's; L. F. G. Lewis, B.A., Christ's; J. R. Marrack, Joh.; W. G. Marsden, Emm.; C. C. Messiter, B.A., Cai.; C. G. H. Moore, B.A., Cai.; P. A. Opie, B.A., Cai.; G. M. Parker, B.A., Emm.; A. B. Pavey-Smith, Cla.; J. W. Pigeon, Christ's; H. B. Pope, Cai.; F. A. Powell, B.A., Trin.; R. A. Ramsay, Cai.; E. Rayner, Pemb.; W. D. Ross, King's; A. Sandison, B.A., Trin.; F. B. Saunders, B.A., Cla.; W. Shipton, B.A., Emm.; I. Singh, B.A., Pemb.; G. N. Stathers, Trin.; F. J. Thorne, B.A., Jes.; P. B. Wallis, B.A., Pemb.; F. H. Watson, B.A., Cai.; J. B. A. Wigmore, Cai.

Third M.B.: *Part I (Pharmacology and General Pathology).*—C. J. Blaikie, B.A., Cai.; D. W. A. Bull, B.A., Cai.; J. S. Burn, B.A., Trin.; L. S. T. Burrell, B.A., Trin.; W. H. Cam, B.A., Cai.; W. T. Chaning-Pearce, B.A., Emm.; N. L. Clarke, Christ's; R. Crawford, B.A., Jes.; F. C. Davies, B.A., Down.; K. J. A. Davis, B.A., King's; H. G. Dearden, B.A., Cai.; M. E. Dellschaft, B.A., Jes.; J. R. Dick, B.A., Down.; W. H. F. Eales, B.A., Emm.; R. Fisher, B.A., Sid. Suss.; H. G. Frean, B.A., Joh.; T. R. Glynn, B.A., Cla.; L. H. Goh, M.A., Emm.; S. Gordon, B.A., Pemb.; J. L. Graham-Jones, B.A., Emm.; W. C. Hodges, B.A., Trin. H.; G. Holmes, Cai.; B. Hughes, Inc., H. Selw.; J. S. Jobson, B.A., Sid. Suss.; C. E. M. Jones, B.A., King's; L. R. King, B.A., Pemb.; A. C. C. Lawrence, B.A., Trin.; G. C. Lim, B.A., Joh.; N. F. Lock, Cai.; H. G. Monteith, B.A., Pemb.; C. G. H. Morse, B.A., Emm.; N. Mutch, B.A., Emm.; T. E. Osmond, B.A., Emm.; W. S. Perrin, B.A., Cai.; B. A. Playne, B.A., Pemb; F. S. Poole, B.A., Sid. Suss.; R. P. M. Roberts, Queens'; J. B. Ronaldson, B.A., Joh.; L. W. K. Scargill, M.A., Trin. H.; E. F. Shann, B.A., Cai.; A. L. H. Smith, Cai; A. E. Stansfeld, B.A., Joh.; H. S. C. Starkey, B.A., Down.; C. J. Stocker, B.A., Trin.; A. W. Stott, B.A., Trin.; W. W. Treves, B.A., Cai.; L. B. C. Trotter, B.A., Cla.; G. W. Twigg, B.A., Cai.; C. St.A. Vivian, B.A., Cai.; J. Walker, B.A., Cla.; J. M. Wallace, B.A., Down.; W. E. Wallis, B.A., Cla.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a meeting on December 16th, the following were elected Fellows: B. Foster, W. J. France, H. Goodwyn, H. J. Lotz, R. H. Price, Captain, I.M.S.; J. F. Robertson, C. Shellshear, F. Stoker, H. P. Thompson, W. W. White, D. P. D. Wilkie, J. Wilson.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee.

CIRCULARS TO PATIENTS.

K.—The proposed alteration in charges is a perfectly proper subject upon which to address a circular to patients. We would suggest that if it were sent out with the half-yearly accounts there would be no question of its reaching any other than our correspondent's patients.

Sussex.—A circular to notify that our correspondent will be away from his practice for some time sent, as suggested, with the half-yearly accounts is a proper proceeding, and it would not be improper to mention the name of the locumtenent to whom the care of the patients is entrusted meanwhile.

PUBLIC HEALTH AND POOR-LAW MEDICAL SERVICES.

TUBERCULOUS BEEF.

In the *Newcastle Evening Chronicle* of December 13th a case of some general interest was reported.

Mr. Alfred A. Stevens, veterinary surgeon, Durham, was summoned on a charge of having unlawfully deposited for sale, between November 4th and 8th, three quarters of beef which were to his knowledge unfit for the food of man; and Mr. J. A. Hutson, cowkeeper, Sleetburn Lane, Durham, was summoned on a similar charge. Mr. Thomas Parker, veterinary officer under the Corporation of Newcastle, said that he had inspected the meat at the mart to which it had been sent; he found that the carcass had been carefully stripped, and he had never known stripping done for any other purpose than for the concealment of disease. He found that there had been tuberculosis which had even attacked the bone of one of the ribs. Hutson told him that the internal organs had been buried 6 ft. deep, and that the fourth quarter had not been sent to market because the animal fell and bruised herself before being slaughtered; it was kept and boiled for the pigs. The manager of the mart said that the meat was extensively stripped; the process had been carefully carried out, and the only reason for stripping was to hide tuberculosis; the case was a very bad one of tuberculosis. Dr. H. E. Armstrong, M.O.H., and Dr. Harold Kerr, Assistant M.O.H., confirmed the evidence as to the condition of the meat, and said that the possibility of any one overlooking the condition of the meat was absurd.

Hutson said that when the cow became ill he asked Mr. Stevens to see it, and he advised him to have it slaughtered, and said that the meat would be all right; witness had no experience of tubercle, and if he had thought there was anything wrong would have buried the meat; he acted on the advice of his veterinary surgeon. Mr. Stevens said that he was veterinary surgeon to the Durham Corporation, and stated that he found the animal lying in the channel of the byre paralysed; the heart and lungs were sound, he saw two or three nodules, but in his opinion they were not tubercles; the beast was not diseased, and he considered its flesh fit for food. In cross-examination he said that he had not known of the phrase among butchers "running the blockade" or that where the blockade was run successfully there was a great deal of credit due to the butcher.

The magistrates were unanimously of opinion that both defendants were guilty, but they thought that there was a degree of guilt; Mr. Stevens, with his professional knowledge, was guilty in the bench's opinion to a greater degree than the other man, and he would be fined £10 and costs; Hutson would be fined £5 and costs.

OBITUARY.

At the comparatively early age of 51 there passed to his rest on December 12th, after a week's illness, a well-known medical practitioner in Newcastle-upon-Tyne—Dr. William Slater. A few months ago Dr. Slater received a serious injury to his shoulder in a collision, and since the accident his health had not been good. He was able, however, to attend to his duties, and was actively engaged in the discharge of them when on December 5th he was suddenly seized with a rigor. This was followed by double pneumonia, from which he died on December 12th. In his illness he was attended by his friends Dr. Jos. Rutter and brother-in-law Dr. Horsfield, in consultation with Professor Oliver. From the first the illness assumed a serious aspect. A son of the late Mr. Richard Slater of Preston, Lancashire, Dr. Slater commenced his medical studies at Queen's College, Galway, and completed them at the College of Medicine, Newcastle-upon-Tyne. After graduating as Bachelor in Medicine at the University of Durham, he soon gathered around him a large circle of friends, and installed himself in a busy practice, for he was a man of many good social qualities, and possessed a kind and benevolent nature. Dr. Slater was one of the founders of the Lancastrian Society of the North of England, to the success of which he in no small degree contributed. At no gathering was his presence more welcome than at the Annual Banquet of the County of the Red Rose, and at none was it more missed than on the evening of the afternoon on which he became ill. Dr. Slater took a keen interest in sport, and followed the fortunes of several of the football teams with considerable eagerness. He was honourable in all his dealings, and was a lover of fair play in all concerns of life. He leaves behind him two daughters, his wife having predeceased him several years ago. Dr. Slater will be much missed by a large circle of patients and friends.

Major Walter Barrie Turnbull, M.D., Indian Medical Service, died recently at Mainpuri, from blood poisoning contracted through a scratch on the finger while performing an autopsy. He was born August 2nd, 1872, and entered the service on July 29th, 1895; he was made Surgeon-Captain, July 29th, 1898; and Major, January 20th, 1907. His war record comprises: North-West Frontier of India campaign in 1907-8, including operations in Bajaur and the Mamund country (medal with clasp); the China war of 1900 (medal); the Waziristan expedition, 1901-2 (clasp); and the Tibet mission, 1903-4 (medal).

Surgeon Reginald Charles Pattisson McDonagh, R.N. died at the Naval Hospital, Malta, of enteric fever, on November 21st, aged 24. He entered the Royal Navy as a Surgeon, February 10th, 1906.

Brigade Surgeon Edmond Hoile, retired, late Army Medical Department, died in London on October 18th. His commissions were thus dated: Assistant-Surgeon, September 22nd, 1858; Surgeon, March 1st, 1873; Surgeon-Major, December 6th, 1873. He retired from the service, with the honorary rank of Brigade Surgeon, October 1st, 1883. He had received a medal with two clasps for the China war in 1860, when he was present at the action of Sinho, the taking of Tangku, the storming of the inner Taku Forts, and the surrender of Peking.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have racently died are Dr. Manuel Nicolas Bettencourt Pitta, Professor first of Hygiene, late of Internal Pathology in the Medical School of Lisbon, and Physician to the Hospital of St. José in that city, at an advanced age; Dr. Ludwig Csatáry, formerly Surgeon-in-Chief to the Railways of Hungary, aged 76; Dr. Francesco Businelli, Professor of Ophthalmic Surgery and Director of the Eye Clinic of the University of Rome, aged 79; Dr. Th. Sinizin, sometime Professor of External Pathology in the Medical Faculty of Moscow; Professor Ludwig Hirt, of Breslau, a recognized authority on nervous diseases, aged 63; Dr. Unruh, of Dresden, a well known specialist on children's diseases; Dr. Arlur Pollack, a medical practitioner of Dresden, who had a considerable reputation as a poet; and Dr. E. Goujon, of Paris, a distinguished alienist, representative of the Ain Département in the French Senate, aged 67.

HOSPITAL AND DISPENSARY MANAGEMENT.

THE INFANTS' HOSPITAL, WESTMINSTER.

A CONFERENCE of medical men was held at the Infants' Hospital, Vincent Square, Westminster, on November 29th, to discuss the question of establishing an out-patient department of a restricted and consultative character in connexion with that institution.

Dr. F. J. Allan, M.O.H., Westminster, who presided, said that he had suggested such an out-patient department because it appeared to him from inquiries he had made in regard to the deaths of infants that the babies seemed to be hawked about by the mothers from hospital to hospital, and doctor to doctor. He thought it would be acceptable to medical men if the establishment of a suitable out-patient department resulted in keeping the babies more in touch with the doctors in charge of them. Only those patients would be seen who were brought or sent up by a practitioner. There was no intention to establish an out-patient department like those at the large general hospitals, which in his opinion were considerably abused. The Infants' Hospital was only for cases of malnutrition.

Dr. Ralph Vincent said that he and his colleague, Dr. Kelynack, were ready to agree to the terms that no out-patients should be seen unless sent with a note from the doctor, or with the doctor himself; but the medical staff could not undertake to enter into correspondence with doctors in regard to the cases. In answer to Dr. A. G. C. Pocock, Dr. Vincent explained that only cases of malnutrition were admitted to the hospital, and, replying to Dr. W. M. O'Connor, that the hospital was founded in Hampstead five years ago, and was then removed to Westminster.

Dr. H. Tanner asked what was the actual initiation of the hospital. General practitioners complained that at the present day hospitals were instituted where they were not wanted.

Dr. Vincent said that the hospital was started by people interested in scientific work, who felt that there was no institution for studying, treating, and giving instruction in regard to the nutrition and malnutrition of babies.

Dr. Fothergill described how the Bolingbroke Hospital at Wandsworth started an out-patient department, which became an abuse; that had been remedied by the staff of the hospital carrying out the following rules, the adoption of which by that Conference he moved:

> "That the words 'Out-patient Department' be never used in print or verbally. That the Department be called 'The Consultation Department.' That only those quite unable to pay the fee that can be arranged between a consultant and the general medical practitioner be sent to the hospital for the opinion of a consultant. That if the medical practitioner does not attend himself, every patient sent for the opinion of a consultant bring a NOTE, stating the various points in the previous history that may be considered to be of use. That the consultant's opinion and advice be communicated direct to the medical practitioner who sent the patient. That no communication be made to the patient by the consultant nor any invitation to attend again be given. That no second or subsequent attendance of the patient be allowed without a letter from a general medical practitioner. That suitable cards be supplied to the local medical profession in bulk or on request."

If the proposed department were not started on the lines he had suggested it would become a curse instead of a blessing. At the Bolingbroke Hospital the staff always communicated by letter, telephone, or otherwise with any doctor who sent up a case. The scheme worked admirably there, and it was hoped that the junior hospitals having set the example the senior hospitals would be induced to give up out-patient departments and have consultation departments.

Dr. L. Archer pointed out that any advice in regard to these proposed consultations should be given only to the doctor, who would communicate with his patients himself.

Dr. G. E. Haslip remarked that the fact that only patients suffering from malnutrition were admitted only made necessity of consultation with the general practitioner the greater, since he usually knew the circumstances of the parents, and whether it was a fit case for admission. If the junior hospitals accepted Dr. Fothergill's scheme, they would gain the confidence of the general practitioner, who was just as anxious for properly-managed hospitals as anyone.

Replying to Dr. J. Dunbar Brunton, Dr. Vincent said that it was impossible for the medical staff to undertake to communicate with doctors who were unable to accompany their patients to the consultation department.

Many of the medical men present explained that it was difficult for the general practitioner to be sure of being able to attend with every case that was sent up for consultation.

Dr. Fothergill observed that it was necessary that the staff should communicate any advice necessary to the medical practitioner and not to the patient, and warned the Conference that unless the staff undertook to communicate directly with the patient's medical man, then within three years that consultation department would be a curse to the district.

Dr. Archer having formally seconded the proposals of Dr. Fothergill, these were unanimously agreed to by the Conference.

In response to remarks from Drs. Haslip, Fothergill, Archer, Tanner, and Cope, Dr. Vincent said that the medical staff could not pledge themselves to communicate with doctors unable to attend with the patients at the consultation department, but the staff would give the matter its attention, as it seemed to be the chief point of difference between them.

Dr. Haslip said it was the whole crux of the question, but Dr. Vincent was unable to agree with them.

The Conference then terminated with a vote of thanks to the chairman and staff.

ROYAL ALBERT ASYLUM, LANCASTER.

FROM the report of Dr. Archibald R. Douglas, the Medical Superintendent of the Royal Albert Asylum, Lancaster, for the year ending June 30th, 1907, we learn that the number of inmates on that date was 653 (415 males and 238 females); 109 patients (60 males and 49 females) had been admitted during the year; 93 (59 males and 34 females) had been discharged; and 13 (9 males and 4 females) had died. The average number resident had been 637 (405 males and 232 females). The death-rate, calculated on the latter number, showed the comparatively low percentage of 2·04. Six deaths are attributed to tuberculosis and 1 to phthisis, so that more than half of the 13 deaths appear to be of tuberculous origin.

At the Royal Albert Asylum considerable improvement in the sanitary conditions has been made in recent years, and the general death-rate has diminished; but the proportion of deaths from tuberculous disease continues high, averaging about one-third of the total deaths during the last ten years. The high mortality from this class of disease has engaged the anxious attention of managers of asylums for imbeciles throughout the country, and at the Royal Albert Asylum facilities for open-air treatment have recently been provided and the disqualification of candidates for admission known to be suffering from tuberculous symptoms resolved on. Of the 109 patients admitted 53 were elected by subscribers, and 31 maintained by their respective unions, while 25 were reduced and full payment cases. It will be seen that this useful institution caters for all classes of the community; for boys of the higher social class there is a well-appointed detached residence (Brunton House) at a little distance from the main building, with separate grounds, etc.

Of the 93 patients discharged, 37 are reported as much improved; but as it is stated that "too many of the ex-patients who ought to have done better have gravitated to the lunatic asylum or the workhouse," solely from the lack of helpful relatives or friends, it is obvious that the laudable efforts of such charities as this require to be supplemented by the State provision of suitable employment in a colony or otherwise of trained cases. For such provision the recommendations of the Royal Commission on the Care and Control of the Feeble Minded are anxiously awaited. The industrial training of the patients has always been a strong point at the Royal Albert Asylum, and the "Herbert Storey" workshops have proved of great utility in this direction, while the farm and gardens furnish appropriate and healthy training for some thirty of the boys.

The chief addition to the resources of the institution during the year has been the opening of the "James Diggens Memorial Reception House," wherein new patients are received for a period of probation and quarantine before being distributed in the institution generally. It has combined with it a home for the nurses employed at the Rodgett Infirmary. The Medical Superintendent has now the assistance of two medical colleagues (Drs. Coupland and Farries), the senior of whom is resident at Brunton House. We notice that the name of Dr. Ashby of Manchester appears (with that of Dr. Shuttleworth) as Honorary Consulting Physician to the institution.

We are glad to find that the funds of the institution are well maintained, the total receipts for the year from various sources amounting to nearly £28,000, though the Central Committee point out that in order to maintain the full number of 700 patients, for which there is now accommodation, an additional annual income of £1,750 is needed.

LETTERS, NOTES, AND ANSWERS TO CORRESPONDENTS.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 6, Catherine Street, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Manager, at the Office, 6, Catherine Street, Strand, London, W.C.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Manager, 6, Catherine Street, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the MANAGER of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—

EDITOR,	GENERAL SECRETARY AND MANAGER,
2631, Gerrard.	2630, Gerrard.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

☞ WE would request correspondents who desire to ask questions in this column not to make use of such signatures as "A Member," "A Member B.M.A.," "Enquirer," and so on. By attention to this request much confusion would be avoided. Correspondents are asked to write upon one side of the paper only.

QUERIES.

LOCAL ANAESTHESIA: RUPTURED PERINEUM.

R. will be glad to know the best local anaesthetic (quantity, etc.) for use in the case of a lady, who objects to a general anaesthetic, and who requires a secondary operation for the repair of a ruptured perineum, the rupture extending to, but not into, the sphincter ani? Is it possible to perform the operation painlessly by using local anaesthesia?

ANSWERS.

DR. ALBERT ROSENAU, L.R.C.P.Lond. (Kissingen) writes: In answer to "Fibula's" question as to treatment of excessive rumbling in the stomach, I venture to recommend a treatment directed against a general neurasthenic or nervous condition: Rest, isolation, overfeeding, general mild massage, and galvanic electricity, eventually arsenic and iron. It is important to note whether there is not present a ptotic condition of the abdominal organs (nephroptosis, etc.), and wearing of a belt may be advisable.

DR. H. J. THORP (Ipswich) writes: I would suggest the young lady taking calomel $\frac{1}{20}$ grain, three times a day, and particularly to avoid all sweets and pastry.

AHLFELD'S METHOD OF DISINFECTING THE HANDS IN MIDWIFERY.

ASEPSIS.—In his article in the *Deut. med. Woch.* of August 9th, 1906, Opitz refers to Ahlfeld's hot-water alcohol method of disinfecting the hand for midwifery practice. This method was described by Ahlfeld in several articles published about twelve years ago, together with a number of experiments which he carried out in support of his contention that the method gave reliable results. In the *Deut. med. Woch.* of 1895 (pp. 853-855) he advises for ordinary purposes, when the skin of the obstetrician's hand is smooth and the nails well kept, that the hand be washed for three minutes in very hot water with soap and a nailbrush, the nails having previously been cut short, made even, and cleaned. The nailbrush may be dispensed with at times. The hands are then rinsed in clear water, and then are to be rubbed with a piece of flannel soaked in 96 per cent. alcohol. Special attention must be paid to rubbing the examining finger and to insuring that the alcohol is applied below the nail, which is done by a twisting and dabbing movement. When there is need to be more particular, he advises the following: The nails are first cut and cleaned, then the hand and forearm are to be washed in very hot water for five minutes with soap and a nailbrush. After rinsing, the alcohol is applied as before, but for five minutes, and each finger and nail must receive careful attention. The examination is carried out after the alcohol has been applied without any rinsing or drying.

THE M.D. OF HEIDELBERG.

INQUIRER.—A foreign candidate for the degree of M.D. at Heidelberg (save when the degree is granted *honoris causâ*) must produce with an account of his life evidence that he has received a preliminary education in his own country, which is required for the acquisition of the degree of Doctor, and that he has passed an examination qualifying him to practise. He must further produce evidence of having passed through a scientific medical curriculum of the same length as that required by the German State, or by a "well-conducted" foreign medical faculty. Of this curriculum, the candidate must have spent at least one semester (term of half-year's duration) at the Heidelberg University, but if the candidate is well known the Faculty may waive this point in his favour. Then a written thesis must be presented, and an oral examination (*Examen rigorosum*) must be passed. The thesis or dissertation is to be written in the German language, but "the use of another language is allowed with the sanction of the Faculty." The name of the scientific institute or hospital at which the candidate has worked at the subject of the thesis must be given, and he must state if he has received any "advice" from others in the work. The candidate must "state on oath" that he has received no further assistance than that mentioned. With the sanction of the Faculty, a paper which has already been published may be offered instead of the ordinary thesis. After the candidate has passed his viva voce examination, he must have his thesis printed and deliver 200 copies to the Secretary of the University within one year. When the thesis has been accepted as sufficient by a specially-appointed critic (Referent), the candidate is admitted to the "Rigorosum." This examination is conducted in the German language by a President and seven other members of the Faculty. The theoretical part includes: I, Anatomy; II, Physiology; III, Pathological Anatomy and General Pathology; and IV, Hygiene. Parts I and II must extend over at least one hour each, and III and IV over at least half-hour each. The practical part is conducted at the bedside in medicine, surgery, gynaecology, and obstetrics. The candidate is required to make a diagnosis of one or two cases. The thesis will be judged as being "excellent," "very good," "good," or "pass"; at least one-half of the total possible marks is required for a pass. If the candidate fails he cannot present himself again for this part within six months. The fee for the examination is 550 marks (£27 10s.), exclusive of the cost of the diploma and that of printing the thesis. Should the candidate fail to pass the Rigorosum he receives 100 marks back.

LETTERS, NOTES, Etc.

THE Nestlé and Anglo-Swiss Condensed Milk Co. calls attention to a statement in a report of the meeting of the Sheffield Medico-Chirurgical Society in the JOURNAL of November 23rd, p. 1521, to the effect that condensed milk "when not sweetened presumably contained some antiseptic." The Company desires to state that the brand of unsweetened condensed milk known as "Ideal" milk contains no antiseptic, being preserved solely by sterilizing through heat.

MENSTRUATION ACCOMPANIED BY LACTATION IN AN INFANT.

ROBERT E. LORD, M.D., B.Sc Lond (Colwyn Bay), writes: The case recorded by Dr. McWalter in the BRITISH MEDICAL JOURNAL for December 14th, p. 1756, is paralleled by the following: A female child was born after a normal labour on August 3rd, 1905, the breasts being flat at birth. On August 8th (that is, the fifth day after birth) the breasts became enlarged and a slight vaginal discharge of yellow fluid was noticed. From August 9th to August 12th there was a discharge of dark menstrual blood and the external genitals were swollen, while the breasts were distended with milk, which oozed from them independently of manipulation, and were enormous in comparison with the size of the child, meeting in the middle line and extending vertically from close to the clavicle to the level of the ensiform cartilage. The discharge had stopped and the genitals became normal by August 13th, and the breasts returned to their original size in the course of the next few days. On September 3rd (that is, twenty-seven days after the inset of the first menstruation) the breasts again began to enlarge, and from September 8th to September 10th there was menstrual discharge. The enlargement of the breasts on this occasion was only moderate and lasted for three or four days. On October 8th or 9th there was a glairy discharge from the vagina for one day without any enlargement of the breasts. No further menstrual signs have occurred since then, and the child in all other respects has been throughout life well formed and healthy, and was born of healthy parents. The mother has not suffered from menstrual irregularities, and puberty occurred at the normal time with her, and no cases of precocious menstruation have occurred either in her own family or in her husband's.

ABORTIFACIENT PILLS.

A. W. S. writes: I was called to see a young married lady the other day and found she was suffering from lead poisoning; she had taken a number of abortifacient pills which she had obtained from a lady friend who could recommend them.

*** The pills contain diachylon very imperfectly mixed with the mass, so that, apart from the varying sizes of the pills, the dose would be very far from uniform; they also contain aloes and a powdered drug, which was not savin or canella, but which has not been identified.

THE BROCKLEHURST FUND.

DR. S. MONTGOMERY (Ashley Lodge, Upper Parkstone, Dorset), honorary secretary of this Fund, particulars of which were published on November 30th, p. 1628, writes: Will you kindly publish the following further subscriptions for the Brocklehurst Fund:

	£	s.	d.
Amount already acknowledged	48	10	6
Dr. Emerson	2	2	0
Dr. Curme (per Parkinson)	1	1	0
Dr. Hutch	1	0	0
Dr. Forge	1	0	0

DEATHS UNDER CHLOROFORM IN GENERAL HOSPITALS.

DR. J. MCNAMARA (London,) writes: In the BRITISH MEDICAL JOURNAL of December 14th, p. 1750, there is an account of an inquest on the latest victim of chloroform. It is terrible reading. You state that during the past six and a half years thirty-eight patients have died under anaesthesia in one London hospital. This hospital does not stand alone in its misfortunes. Week after week in the melancholy records of the coroner's court we read, "Chloroform was administered; then the heart stopped." Why is this? Why has London such a terrible pre-eminence in these tragedies? In Dublin, in New York, and throughout America death under anaesthesia is extremely rare. The contrast is due to the fact that in London chloroform is extensively used, whereas in Ireland and America ether is almost exclusively employed. For years theorists have been wasting time and energy in discussing how and why chloroform kills. For practical men, and, above all, for our patients, the great fact is that it kills, and kills with terrible frequency. Is it not time, then, to discard this deadly drug? Why it should continue in general use, why we should continue to witness this dreadful systole, diastole—Chloroform, Death; Chloroform, Death—can only be explained as part and parcel of the pigheadedness and stupidity which account for so much in our recent history.

THE PROSPECTS OF THE MEDICAL PROFESSION.

BRISTOLIAN writes with reference to an advertisement in the issue of the JOURNAL of December 14th, inquiring as to a possible opening for a young well-qualified man without capital, as follows:

It is too late for the advertiser to benefit by the knowledge that there does not exist any such opportunity as he seeks, but it would be well if the students at our medical schools could realize that in a few years' time they also, if with "practically no capital available," will be seeking in vain for an opportunity of earning a livelihood. Go where you will, you find the men on the spot racking their brains how to cut down expenses to meet their insufficient incomes (instance a query in the JOURNAL as to how to bleach corks to enable them to be used again!) That there *appear* to be openings is true, and my purport is to unveil things that "are not what they seem."

I take the case of a growing suburb with rows of new houses full of people who, one would say, *must* need a doctor. This looks more promising than trying to wedge oneself in the denser part of the town; here, at any rate, the "nearest opposition is quite a quarter of a mile distant;" so our newcomer, highly qualified with some experience as assistant, a graduate maybe of a university, prizeman, what not, settles down to make a practice; and why should he not because his prospective *clientèle* is illusory? Of the 2,000 or 3,000 people in these houses, a large proportion—quite half, I should think—are in clubs; another fourth get along nicely with dispensary and hospital notes, etc.; of the remaining fourth a few are substantial and of the paying class, but they have their own doctors nearer town; the rest do indeed hail with joy the advent of a new doctor, for they have pretty well exhausted the patience of the older-established men, and they foresee the pleasure and opportunity of running up a fresh bill with a new man.

Other "openings" are just as illusory, and the long and short of the matter is that, judged by the thirty or forty places I have experience of, and the dozen or so that I have colleagues' information about, the country is overstocked with doctors to an extent that no one but the unfortunates themselves has any idea of; hence the 6d surgery and the cry for a trade-union—futile hope. The Association could do no more useful work than that of arresting the influx of new doctors by illuminating the present position of the general practitioner and giving a picture of him such as he presents to the Income-tax Commissioners or the Administrator of the Medical Benevolent Fund.

A COMMON REASON FOR CHANGING THE DOCTOR.

X. Y. Z. writes: "Only a Beginner's" letter in your issue of December 14th contains many truths, none of which is inferior to the statement that the whole matter of treating the doctor decently lies with ourselves. I am afraid that if beginners in practice receive the same treatment as I had when I started, they would soon become trained into feeling anything but kindly disposed to their own professional men, and this is, I believe, the root of so much jealousy and petty quarrels which exist in the profession. Old residents are jealous of a new youngster, or even an old bird; they see in the change of practices a chance of picking up some crumbs, and it is this spirit which prevents them receiving in at all a friendly spirit the new-comer. In the case of the hand-to-mouth practitioners, a guilty conscience of stealing whatever may come their way hardens their hearts and paralyses the words of welcome which a beginner in life's struggle so yearns for. Personally I had had some years of *locum* work, which had taught me much, and yet, on returning one day from answering an urgent summons, I was surprised to meet a fellow practitioner and receive a mild lecture from him for attending patients "who did not pay." It seems, so he said, they had formerly been his patients though since then, as he himself allowed, they had gone to my predecessor. The result of his lecture was my ready acquiescence not to attend further. When then a few days later I was again summoned to see these same people I did not respond or attend, but went to see the aforesaid medical gentleman and informed him that I had been sent for but preferred to follow his advice and refuse to go and be made a cat's-paw of because I was a newcomer. Judge of my surprise and indignation when I learnt a day or two after that the patients had sent later for this self-same medico and *he had gone and was in attendance for some time after*. His excuse was as they owed him money he thought he might just as well add some more to their account and then summon them for the lot. He had lectured me on the folly of summoning patients and yet we find him using it as an excuse. The above incident is perfectly true and but one out of others not a whit better which have come under my own experience or of which I have been told. How can we deal with such? Is it any wonder we are made cat's-paws of by the general public?

AN OLD STAGER writes: Whatever may be the faults of others, surely "Only a Beginner" has made a grave one in "refusing to give his late patient a detailed account." I take it the patient has a perfect right to ask this, and to refuse payment till he gets it. Further, the attempt to "boycott" the patient seems to me an ethical mistake under the circumstances. I do not say a word in favour of the *confrère* who is described as having promised not to attend. A kindly note from him to "Only a Beginner," warning him that his ground was too slippery for a firm stand, might have prevented medical discredit and heart burning.

THE DOCTOR AS BABY DEALER.

DR. A. EVELYN GOLDIE (Tywardreath, Cornwall) writes: Apropos of the dialogue under the heading "The Doctor as Baby Dealer," published in the JOURNAL of November 2nd, the following is stated to have issued from the lips of a child of a patient of mine; the boy was about 6 or 7 years of age. I forward it for what it is worth. Some one leaving the lad's house met the lad returning home. In his absence, unknown to him, his mother had given birth to a baby. The friend, thinking to interest the lad, said to him, "There is a little baby at home, my dear; it arrived this morning." "Who brought it?" replied the lad. "Dr. X," was the reply. "Well," quoth the young hopeful, "there will be a row when pa comes home, for we always get our things from the co-op.!"

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Each additional line	0	0	6
A whole column	2	13	4
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An average line contains six words.

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AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

1. The Prognosis in Phthisis.

E. RUMPF (*Deut. med. Woch.*, February 28th, 1907) points out that the large majority of living human beings are affected at one time or another with an invasion of tubercle bacilli. This is shown by the fact that nearly every one reacts to tuberculin, and further, that in nearly every corpse some tuberculous focus is to be found. But as only from one-seventh to one-sixth of the population die of tuberculosis, one has to realize that a predisposition is required to render a person liable to fall a prey to the disease. Clinical experience has taught that it is extremely difficult to form a correct idea of the prognosis in any given case. The author first deals with those patients who are distinctly predisposed to the disease, mostly on account of hereditary weakness. The results gained in the various large sanatoriums show clearly that the percentage of permanent arrest is not higher in persons who are hereditarily predisposed than in those whose family has not been crippled with tuberculosis. In forming a prognosis it is necessary to note, not only the hereditary factor with regard to tuberculosis, but also with regard to other diseases and morbid conditions, as alcoholism, nervousness, and the like. Next, one can form some opinion from the body habit; 63.2 per cent. of permanent arrests were obtained at Davos among well-nourished and moderately powerfully built individuals; 42.2 per cent. arrests were obtained among slender persons, and only 32.4 per cent. in definitely phthisical-looking people. However, he owns that it is extremely difficult to fix a standard for these three classes. Besides, a distinctly phthisical habit of body does not necessarily indicate that the patient is sure to die of his phthisis. Many other factors must be taken into consideration. A bad eater or a person who suffers frequently from catarrh is not likely to do well, although there is no doubt that a systematic hardening may even remove the tendency towards catarrh. With regard to age, he points out that while rapid unfavourable cases are more common in young people than in middle life, the majority of cases are of a chronic nature. The percentages of permanent cures in Davos worked out at 79.1 per cent. between the ages of 16 and 20 years, at 75 9 per cent. between 20 and 30, and at increasingly diminished rates in each succeeding decennium, until it was only 33.3 per cent. between the ages of 60 and 70 years. In speaking of the physical signs as a guide to prognosis, he says that although the prognosis is best in the first stage and worst in the third, when other factors are favourable, the chances during the second stage of a permanent arrest are excellent. The prognosis is good when the tubercle bacilli disappear from the sputum during treatment, but when, in spite of persistence of râles, the expectoration ceases altogether, one has to form a bad prognosis. He regards a well-marked line of demarcation of physical signs as favourable, but when the seat of disease is a lower lobe he takes a serious view of the case. The chances are good when the râles disappear during treatment, while, when the râles persist after the course of treatment is over, the results are better when these are not clicking in character. This he proves by the Davos results, taken four years after the patients were discharged. Another bad prognostic sign is a lability of the pulse. Persons whose pulse increases from 70 or 80 to 100 or 120 in response to slight psychical or other stimulation generally do badly. High fever, especially if this be continuous for a long time, is an unfavourable sign, and when the fever does not respond to rest in bed and good nursing it is doubtful whether any good can be done to the patient by sending him or her to a sanatorium. Complications of all sorts naturally affect the prognosis, and must be taken into consideration when present. Lastly, he calls special attention to the character of the patient as an important factor in the course of cure. He lays great stress on the influence which the patient himself can exercise on the effect of treatment, and believes that one cannot be too careful in the way in which the patient is individually treated. For this reason he has limited his own sanatorium to ladies, and thinks that the division of the sexes is advisable.

2. Early Traumatic Arterio-sclerosis.

F. RIVALTA (*Il Policlin.*, March, 1907) describes the case of a healthy man, aged 29, who developed severe arterio-sclerosis within two months of an accident. The patient had never suffered from syphilis, and was not much addicted to alcohol or tobacco. He fell from the saddle on to his head, and gave no sign of life until a quarter of an hour later, when he vomited. He was insensible for ten days, and was then found to have forgotten everything that happened during the hour before his accident. He remained in bed twenty-five days. About a month after he got up it was noticed that his temporal arteries were increased in size to about the dimensions of a goose-quill. The walls were thickened and very tortuous, and the vessels pulsated visibly. The two internal frontal arteries and the two supraorbital arteries were also tortuous and much enlarged. The radials were large and tense. The testimony of his friends and of photographs taken before and after the accident bears out Rivalta's recollection that his appearance before the fall was normal, while the thickened arteries formed a striking feature very soon afterwards. Six months after the accident Rivalta found his condition normal except for the arterio-sclerosis, some palpebral and lingual tremor and tremor of the hands, slight defect of memory and of the power of attention, and alkalinity of the urine, which was loaded with phosphates. Over the right parietal bone was a depressed finger-shaped scar, several centimetres long, running from the anterior superior angle of the bone to the parietal eminence, where it bifurcated. The author believes that no exactly similar case has hitherto been reported. Increased nervous and psychical excitability is a well-established cause of arterio-sclerosis, acting probably by prolonged vasomotor nerve disturbance, but in this case there was no time for the action of prolonged vasomotor changes. Atheroma is common in cases of long-standing traumatic neurosis with unilateral vasomotor disturbances. The author explains all such cases by the hypothesis that the vasomotor nerves exercise a trophic influence over the vessel walls in the same way in which motor nerves influence the nutrition of striated muscles.

3. Orthotic Albuminuria.

O. HEUBNER (*Berl. klin. Woch*, January 7th, 1907) says that "postural" albuminuria described by Stirling, and now better known as "orthotic" albuminuria, has secured a safe position in pathology during the last few years. The clinical manifestations are very striking. The patient passes urine containing albumen as long as he is getting about, and this abnormal constituent disappears completely when he is kept in bed. For a long time the condition was regarded with suspicion, and it was only after Edel had conducted some exact observations on the pulse and blood pressure that one accepted the reality of the condition. Edel found that those influences which produce a rise of blood pressure in healthy persons cause a fall in the subjects of orthotic albuminuria. These results were verified by other observers. Loeb came to the conclusion that there is a connexion between the excretion of albumen in these persons and cardio-vascular disturbances. He tested the freezing point depression of the urine during the various periods, and applied his results to Koranyi's quotient—$\frac{\Delta}{NaCl}$—in order to determine the condition of the circulation in the kidneys. He found that these patients showed a raised quotient—that is, a diminution of the excretion of sodium chloride, and also a diminution of the total quantity of urine during the albuminurous period; this is not the case in nephritic patients. Heubner has had the opportunity of examining the kidneys of a patient suffering from orthotic albuminuria *post mortem*, and in detailing the results remarks that this is the first occasion on which this could be properly carried out. The patient was a girl, 10 years old, who suffered from typical orthotic albuminuria, and developed a cystic glioma in the left hemisphere of the cerebellum with hydrocephalus, from which she died. During the last weeks of life convulsive attacks took place frequently, and the sensorium was much affected. The albuminuria was present when the child was allowed to assume the upright position during a spell of comparative improvement shortly before the termination. The kidneys showed marked hyperaemia of the small veins and capillaries, but this Heubner thinks must be ascribed to the effect of the fits. In no situation was there any trace of haemorrhagic infiltration. A few

parenchymatous cells showed sparse fat granules. This fatty metamorphosis was more marked on the left side than on the right, but at most it was but a slight change. Besides this, there were no signs of inflammation or degeneration of the renal substance; and when one considers that the whole organism had suffered from disturbances in the circulation, deficient nutrition and insufficient respiratory function during the last few weeks, one is forced to regard the fatty changes as being due to these causes and not to any nephritic changes. The vascular system throughout the whole of both organs was intact. One little focus of disintegrated renal tissue was found at the posterior surface of the right kidney, having a length of 1 mm. and depth of ½ mm. This, too, was obviously of recent date and not part of a chronic degeneration. He therefore deduces that the kidneys were absolutely free from nephritic changes. The lungs contained a small tuberculous focus, which is of interest, since orthotic albuminuria is often supposed to be a pretuberculous condition.

SURGERY.

4. Primary Cancer of the Appendix.

Hartmann (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 8, 1907), in a report on 2 cases of primary cancer of the appendix, communicated by Lecène, expresses the opinion that the apparent rarity of this disease indicated by the tables of Maydl and Nothnagel does not correspond to the reality. Lecène, it is stated, has collected from different sources 40 instances of cancer originating in the appendix, which have been observed within the last eight years. As the growth is usually small and the affected structure differs but slightly from one that is the seat of chronic inflammation, the presence of malignancy is likely to be overlooked unless a systematic examination be made of every diseased appendix. The 2 cases observed by Lecène correspond to 50 cases of appendicitis; these, together with about 40 of the collected records, give much information on the clinical history, hitherto very slight, of cancer of the appendix. The affected process is not, as a rule, much enlarged, and to the naked eye presents lesions of quite an ordinary character. These lesions, however, when histologically examined present the typical structure of epithelioma. The cancerous growth in many cases involves a restricted or obliterated portion of the appendix. It is doubtful whether the disease ever extends from the appendix to the caecum, as in cases in which both these parts are involved there is much difficulty in determining the starting point of the growth. In the cases collected by Lecène there is but little mention made of generalization of the disease, but in one case recorded by Lejars widespread glandular infiltration was observed. The growth is always an atypical cylindrical epithelioma, usually an adeno-carcinoma, very rarely an alveolar carcinoma. The disease originates in the mucous membrane and its glands, and rapidly invades the other coats of the organ. Primary cancer of the appendix seems to develop mainly between the ages of 20 and 30 years. The pre-existence of inflammation of the appendix is evidently an element of real importance in the etiology of the cancerous disease. In half the number of cases in which a clinical history is recorded, reference is made to previous attacks of appendicitis at dates when it could hardly be assumed that epithelioma already existed. The frequent association of the cancerous growth with an appendicular cicatrix, or some other relic of long past inflammation, indicates that such growth may be a cicatricial epithelioma of the appendix analogous to ulcero-cancer of the stomach. Primary appendicular cancer, it is pointed out, is a latent disease, and presents no distinct symptoms. Hitherto a clinical diagnosis has never been made, the disease having been first revealed during an autopsy, or an operation for some uterine lesion, or for appendicitis. When observed on a living subject, the whole of the affected appendix, together with its meso, should be removed. The fact that the disease is more frequent than was formerly supposed should lead the surgeon who is operating on the female genital organs, or performing coeliotomy or any other procedure in the ileo-caecal region, to make an examination of the appendix, and to remove this process whenever it presents any apparent structural change. It is also an additional argument in favour of the systematic removal in every case of an appendix that has been the seat of one or more inflammatory attacks. The prognosis of appendectomy for cancer is still uncertain, but cases have been recorded of freedom from relapse during four, three, and two years.

5. Total Extirpation of the Bladder.

Verhoogen (*Journ. de Chir. et Ann. de la Soc. Belge de Chir.*, No. 3, 1907) holds that in the treatment of malignant growths of the bladder, as of those of other organs, the main conditions of success are early recognition and radical removal of the disease. By the use of the cystoscope and the facility of removing a minute portion of suspected tissue for microscopical examination, the surgeon is enabled to make an earlier and more certain diagnosis of cancer of the bladder than if this disease developed in organs that are less accessible. In vesical cancer metastasis in remote organs seldom occurs, and glandular propagation is relatively late. Cystectomy from a technical point of view is not more difficult than the removal of other abdominal organs. The hesitation in practising total removal of the bladder, of which not more than 30 instances have been recorded, is attributed by the author not so much to the gravity of the operation itself as to the difficulties in dealing with the ureters. If the ends of these tubes be left in the wound a troublesome urinary fistula must result, and their implantation into the walls of the vagina, though it has given in Pawlik's hands excellent results, is regarded as a very complicated and often impossible operation. The author describes the methods that have been practised of implanting the ureters into the rectum and other parts of the intestinal canal. All these methods have been applied to the human subject with variable results, but in none can the surgeon avoid with certainty the subsequent occurrence of ascending pyelitis. This danger, however, it is held, though not negligible, is less constant than it is supposed to be, as many patients surviving rectal implantation of the ureters have presented no signs of renal mischief. The author approves the practice of Depage of implanting the ureters into the colon, and refers to a case under his own care in which with good results he made the right ureter to open into the caecum, and the left into the sigmoid flexure. Although it is possible to remove the bladder without opening the peritoneal cavity, the author thinks this method a very difficult and at times an impracticable one. It is, moreover, a dangerous one; and, as the surgeon cannot freely explore the lower part of the cavity in which he works, it is attended by a risk of serious bleeding. With laparotomy and free exposure of the diseased bladder the danger of cystectomy in regard to peritoneal infection ought not, it is pointed out, to be greater than that of gastrectomy or of abdominal hysterectomy. The different stages of total removal of the bladder, as practised by the author, are fully described. In the first and longest stage the ureters are dissected out and divided, and their proximal ends implanted into the colon. The bladder having been taken near its summit by toothed forceps is dragged upwards, and then the peritoneum is dissected from the front of the organ to form an anterior flap. The urachus, the pubo-vesical ligaments, and the anterior venous plexus are divided, and a posterior peritoneal flap is formed. The vessels accompanying the ureters are divided and secured, and the bladder is then set free by rapid dissection and removed. In the female, the anterior part of the vagina, which is often involved in the disease, is removed, and in the male the prostate, whether it be diseased or quite healthy, is sacrificed. The wounds thus made are utilized for drainage by the vagina and the perineum. Total cystectomy has, it is stated, hitherto given encouraging results. In the 30 cases that have been recorded the operative mortality was 56 per cent. Of the thirteen patients who recovered from the operation, some died after intervals of a few months from renal or other maladies. One patient is living after an interval of thirteen months, another after an interval of five years, and in a case treated by Pawlik the length of survival has reached sixteen years.

OBSTETRICS.

6. Alcohol in Obstetrics.

The use of alcohol during pregnancy is approved of by many practitioners, who order brandy or wine for weakness, feeling of nausea, vomiting, and loss of appetite; but A. Theilhaber (*Muench. med. Woch.*, January 22nd. 1907) has not been able to receive the impression that the results gained in this treatment are better than those gained without alcohol. It has been pointed out that the prescription of alcohol during pregnancy is not unlikely to make the patient a drinker, and that the children of such children are mostly stupid. During labour wine is also freely prescribed. Theilhaber says that it has been the

practice in Munich for midwives to order almost every well-to-do patient champagne during the expulsion period; and, as the patient does not finish the bottle, the midwife feels it to be her duty to take what remains. Alcohol has a baneful influence on the pains, and *post-partum* haemorrhage is more common in patients who have taken it during the labour. For puerperal fever alcohol has been ordered by some in large quantities, often exceeding ¼ litre of brandy daily. Although it has been shown that large doses of alcohol render animals less susceptible toward bacterial infection if given immediately after the infection, the production of immune substances is lessened if the alcohol is given after the symptoms have shown themselves. The beneficial action of alcohol on the heart, when given in large quantities, is extremely doubtful, and the antipyretic effect is but small. The author does not believe that alcohol does any good either in pregnancy, in parturition (including the stage of post-parturient haemorrhage), or in the puerperal stage, be this normal or abnormal. With regard to the lactation period, many persons believe that beer increases the secretion of milk. In Munich, nursing mothers usually drink from 1½ to 2 litres of beer daily. The author states that as far as he is aware it has never been proved that alcohol does increase the secretion. In many parts where nursing women do not drink any beer, the average breast secretes milk which is plentiful and rich, while in Upper Bavaria, where beer is drunk in quantities, the production of milk is mostly small. He thinks that it is much wiser to give milk, malt, coffee with milk, water and the like instead of beer. He, therefore, does not give any alcohol during lactation. In the treatment of gynaecological conditions, there is not a single indication for the use of alcohol. Physiologically, alcohol produces a hyperaemia of the genitals and leads to increased sexual desire, increases secretion of the genital glands and increased menstrual flow. It is, therefore, contraindicated in all bleeding myomata, in chronic metritis, in atony of the uterine muscle, in preclimateric haemorrhages, etc. The increased secretion caused by alcohol forbids its use in salpingitis, endometritis, and vaginitis. Further, alcohol may not be given in gonorrhoea. Kraepelin stated that in East Asiatic countries, where alcoholism does not exist, general paralysis of the insane is unknown. For this reason, it would be wise to forbid alcohol to all syphilitics. In neuralgic and hysteric conditions, he thinks that one ought to greatly reduce the quantity of alcohol taken or forbid it altogether. In conclusion, he says that it is the duty of medical men to take up the fight against alcohol, and he points out that the use of it in obstetrics and gynaecology is unnecessary and even harmful.

GYNAECOLOGY.

7. Climacteric Haemorrhages Simulating Cancer.

MYER-RUEGG (*Zentralblatt f. Gynäk.*, No. 22, 1907) notes the extreme interest which women as well as gynaecologists take in climacteric symptoms. Patients now think not only of the chances of temporary ill-health during the change of life but also of the risks of cancer. Atypical haemorrhages rightly alarm them, and are enough, even when scanty, to drive them to their doctors. It happens that Myer-Ruegg has been consulted by no less than five women where the haemorrhages were essentially atypical, that is to say, irregular and independent of menstrual molimen, and very suspicious in character; yet on careful examination it was found that there was no trace of incipient cancer of the cervix or of the body of the uterus. The irregular haemorrhages were caused by acquired cervical haematometra, the retained blood escaping from time to time, generally in the form of a brown discharge. The condition seems due to the atrophic narrowing of the os externum common at the menopause, whilst the uterine end of the cervix also undergoes some contraction. In the least marked cases of this cervical haematometra the canal appears fusiform on section. Myer-Ruegg noted that the os externum was difficult to distinguish, even with the aid of the speculum. In more than one case it was indicated by a minute fold of the mucosa at the top of the vagina; then a probe could be passed into a narrow opening. When the probe was pushed up further, it entered a cavity, and, when retracted, dark blood or old clot escaped in more or less abundance. The atypical haemorrhages ceased altogether after the canal of the cervix was carefully dilated. In none of the five cases was the cavity of the uterus itself enlarged. In one case the period returned and remained regular for a while, ceasing at length without any abnormal manifestations. Schick (ibid.) publishes a case quite opposite in character, where a woman, aged 58, had been quite regular until the age of 55, when the show ceased for three months. Since then irregular haemorrhages and dark-brown discharge had been noted. In October, 1906, the curette was used, but no evidence of malignant change could be made out in the scrapings. Yet by February, 1907, when Schick examined her, cancer of the body of the uterus was detected and metastases were found in the connective tissue of the vagina on the right, extending down to the perineum and anus in the form of well-defined tuberosities. Yet the cancer had originated in the glands of the endometrium, the situation of the metastatic deposits was, therefore, most unusual. The most interesting feature in this case, as compared with Myer-Ruegg's, was the long continuance of atypical haemorrhage before malignant disease was established, whilst in the cases under the latter writer the bleedings continued for long, yet were from first to last due to morbid conditions which had nothing to do with any type of malignant disease of the uterus or cervix.

THERAPEUTICS.

8. Marmorek's Serum in Laryngeal Tuberculosis.

WEIL (*Prog. Méd.*, May 18th, 1907) records 24 cases of laryngeal tuberculosis in which Marmorek's serum was employed. Among them there were 2 cases of primary tuberculosis of the larynx. The rest of the cases the author has divided into four groups, according to the severity of the symptoms. The first group comprises 6 cases of a mild type of pulmonary tubercle with very slight recent laryngeal lesions. The second group of 8 cases is made up of patients whose condition was grave at the time they were first seen. The third group is made up of 3 women who were pregnant, and had severe tuberculosis both pulmonary and laryngeal. Two of these cases died before their pregnancy ended; the other survived her delivery for seven months, and then succumbed to the pulmonary trouble, the laryngeal lesions being greatly improved. In the fourth group are 5 cases, all very severe, in the last stages of the disease. In 5 of the cases the laryngeal lesion healed, and the patients were greatly improved after a short course of the serum. All of these 5 cases were slow types. The beneficial action of the serum is soon seen, and the laryngeal lesions showed marked improvement within a few days of the commencement of the treatment. In 1 case an apparent cure was achieved by continuous injections extending over several weeks. In 6 cases a slight passing amelioration was obtained in the second or third week of treatment. Marmorek's serum does not give good results in all cases. Very few of the severe cases have received much benefit from it. When the serum does not arrest the progress of the tuberculosis, it does not stop the extension of the laryngeal ulceration. The author used the method recommended by Marmorek. That is, daily injections of 5 c.cm. for three weeks and then a week's rest, followed by two or three more weeks of daily 5 c.cm. injections and another rest of a week. As soon as the author noticed with the mirror an improvement in the laryngeal symptoms he ceased the injections, and as long as this improvement was maintained no more serum was given. When this interval in the treatment was extended to two or three weeks, the injections were renewed, but in smaller amount, only 15 or 10 c.cm. being now given in the week. In early laryngeal tubercle the author thinks it is better to abstain from any local treatment while the serum is being given. Constant examination of the larynx must be made, and the patient's general condition must be carefully noted throughout the course of the treatment by serum.

9. Pyramidon in Enteric Fever.

PYRAMIDON was recommended for the treatment of enteric fever in 1903 by Valentini. B. Leick, writing in the *Muench. med. Woch.* of March, 1907, says that since this time he has employed the preparation in a large number of cases, and is able to confirm the beneficial action. He is of opinion that pyramidon does more for the enteric fever patient than the bath treatment is able to do, and places it foremost among the remedies employed in the treatment of this disease. A few reports, however, have appeared in which it would seem that pyramidon is uncertain in its action and possesses disadvantages in producing profuse sweating, loss of appetite, nausea, and the like. He is of opinion that failures of this kind are always due to an incorrect application, and for the purpose of pre-

venting such mistakes being made, he details the method recommended by Valentini and adopted by himself, from which such excellent results have accrued. The patient is given 10 c.cm. of a 2 per cent. solution (children are given a 1 per cent. solution) of pyramidon every two hours day and night. He was rarely forced to use a 3 per cent. solution. It is immaterial whether one adds a taste corrective to the solution, but he does not think this necessary, as the drug has not such an unpleasant taste that the patients object to it much. It is particularly important to give it every two hours, and less frequent doses mostly result in the profuse sweating about which some authors have complained. Sweating may occur at first, but is rarely profuse, and as soon as the temperature is considerably lowered, does not take place. The temperature has to be taken before each dose. If it is found to be below 36° C. (96.8° F.) the drug is withheld, but after two further hours, if the temperature has again risen, a dose is then given. It has been suggested that the two-hourly taking of temperature and giving of medicine is a strain both on the patient and on the nurses. This, however, is not so in the case of a disease like typhoid fever, and the amount of disturbance for both is less when treated with pyramidon than when treated with baths. He has given pyramidon at times, with the result that the temperature has been depressed to 35° C. (96.0° F.) and lower, without any harm being done; but, in spite of this, he considers that the taking of the temperature is essential. He is of opinion that one must decide individually in each case as to how long one should continue giving the pyramidon, and states that he has given it at times for several weeks continuously without any ill effects following. As a rule, when the temperature has kept below 37° C. for some time, he gives the drug experimentally every three hours. If the temperature keeps low, he then gives it every four hours, then every six hours, then every eight, and, lastly, every twelve hours, before withholding it altogether. Under this treatment it is often difficult to realize that the patients are really suffering from enteric fever at all. There is no delirium, no apathy, and no restlessness. The only complaint which one hears is that the patients want solid food. He is not convinced that pyramidon shortens the course of the disease, but this question is extremely difficult to decide. In all he has treated 113 patients in this way, and has lost 11; 5 of the patients died on the first, second, fourth, and fifth day, so that it would be unfair to include these cases in the number when dealing with the effect of any form of treatment. He therefore has had 6 deaths among 108 cases, and he claims that his cases were largely severe ones. He is consequently of opinion that any objection to the depression of the fever on the ground that one is removing one of Nature's protective means does not hold good in actual practice. In conclusion, he again emphasizes that if pyramidon is given every two hours one may expect good results.

10. The Influence of Alcohol, Adrenalin, and Nicotine upon Immunization.

BRANDENBURG (*Medizin. Klinik*, No. 16, 1907) has investigated the influence of alcohol, adrenalin, and nicotine upon the production of specific immune substances in rabbits. He obtained his bacterial extract from typhoid bacilli killed at 60° C., and determined the presence and amount of antibodies by the method of Bordet and Gengou. It was found that rabbits which had received a preliminary treatment with repeated injections of alcohol showed the same capacity for producing antibodies after inoculation with the typhoid extract as the control animals which had received no alcohol. Nor was it found that the length of time during which alcohol was administered made any difference to the result; rabbits treated for fourteen days reacted in the same way to the bacterial extract as those which had received alcohol for twenty-five days. Similarly a preliminary treatment with adrenalin, though productive of the toxic effects which are characteristic of this substance, was found to have no inhibitory action upon the formation of amboceptors. But with nicotine the result was different. In contrast to alcohol and adrenalin, nicotine brought about a marked diminution in the capacity of the animals for forming specific antibodies.

11. The Artificial Preparation of Therapeutic Serums.

CZAJKOWSKI (*Bull. Internat. de l'Acad. des Sciences de Cracovie*, February, 1907) proposes a new method of serum therapeutics which is intended to dispense with the long process involved in the immunization of animals from which the serum is to be obtained. Starting from the conception that the oxidizing ferments of the liver and spleen play an important part in the production of antitoxin within the body of an infected animal, he has obtained these organs from healthy bovines and pigs and has extracted therefrom the ferments in question by a process which is too lengthy to be described in a brief summary. He then takes pure cultures, grown in a liquid medium, of the microbe in question, sterilizes them in the autoclave, reduces them to powder, adds the powder to sterilized normal saline solution, and treats this mixture with an extract of his ferments at a temperature of 37° C. From the material thus prepared there is yielded in the course of about two months the "artificial serum" which it is desired to obtain. For a description of the many manipulations which are required before this final result is reached the reader must be referred to the original article. By these means the author claims that he has obtained an efficacious antidiphtheritic "serum" and a useful and specific antityphoid "serum." He is also applying his method for the preparation of antituberculous, antistreptococcic, antipneumococcic, and anticholeraic "serums."

PATHOLOGY.

12. Disseminated Tuberculosis in Relation to the Thoracic Duct and Vascular Tubercles.

WHIPPLE (*Johns Hopkins Hosp. Bull.*, August, 1906) has examined smears from the thoracic duct in 27 cases of tuberculosis. The cases are divided into three groups: (1) Acute miliary tuberculosis, 2 cases; both showed ulcers in the intestines and caseation of the mesenteric glands. The smears contained tubercle bacilli. The main vascular focus in one was a tuberculous thrombus of a pulmonary vein; in the other a large caseating aortic tubercle. (2) Subacute tuberculosis usually with the most extensive lesions in the lungs, and numbers of disseminated tubercles in the organs. Of the 19 cases, 14 showed tubercle bacilli in smears, some only 2 or 3, others 40 or 50 on a single slide. Of these 14 cases, caseation of the mesenteric glands was present in all, intestinal ulcers in 11. (3) Chronic tuberculosis (usually of the lungs) with no disseminated tubercles. Of 6 cases in this group, none showed tubercle bacilli in smears, although 4 had tuberculous mesenteric glands, and 2 intestinal ulcers. From this analysis it would seem that tubercle bacilli which are swallowed can pass through the intestinal mucosa, in some cases causing no visible lesion. The majority of these cases, however, showed intestinal ulceration. In their passage through the mesenteric glands, in every instance the bacilli left traces in the form of more or less extensive caseation, but the most interesting feature is that they seem able to traverse the thoracic duct with no damage to its intima. The bacilli can easily pass through the mucosa and lymphatic channels, but are blocked by the glands which may encapsulate them and prevent further damage. On the other hand, the glands may liberate bacilli into their efferent channels, which finally end in the thoracic duct. Recent methods have shown an increasing number of small vascular or intimal tubercles in cases of acute or subacute miliary tuberculosis, and great stress has been laid on these as foci of distribution of bacilli. Three cases examined showed such tubercles in the intima of the portal vein in the liver. They are most often deposited at the margin of the lobules, and soon begin to invade the wall of the portal vein. A thrombus forms over the damaged area, and closes the vessel if it is of small size, but in any case seems to wall off the tubercle from the blood stream. Later this thrombus is overgrown by a delicate layer of endothelial cells. It is difficult to believe that these small vascular tubercles, thus walled off, can take an active part in the dissemination of bacilli. It is possible that they contribute a few tubercle bacilli to the blood stream, but proof would be difficult, and it can be shown conclusively that in many cases the thoracic duct takes an active part in such dissemination. Two other types of vascular tubercles were found: (1) Intimal or implantation tubercles may be found in any vessel—for example, portal, renal, and pulmonary veins. They begin by the adhesion of bacilli to a damaged part of the intima. (2) Medial tubercles are common. The bacilli are carried by the vasa vasorum to the middle coat, they tend to invade the lumen of the vessel. The author concludes that cases of acute miliary tuberculosis usually show a vascular focus from which most of the bacilli are derived, but in the more common subacute cases the thoracic duct may be the channel of infection. Small vascular tubercles would seem not to take an active part in the dissemination of bacilli, because during a greater part of their development they are covered by an intact endothelium which, if it ruptures or degenerates, is rapidly coated by a thrombus.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

13. Thyroid Insufficiency.

HERTAGHE (*Bull. de l'Académie Royale de Méd. de Belgique*, April 27, 1907) treats of thyroid insufficiency, especially with reference to nocturnal enuresis in children and adults. It is a little-known fact that women with thyroid insufficiency are subject to profuse haemorrhages, which follow one another in quick succession and are attributed to a special condition of haemophilia. They conceive readily, and as readily abort. There is undoubted antagonism between thyroid activity and utero-ovarian functions. The author has often seen women nearing 40 years of age, who are fat and whose menstrual flow is excessive, take thyroid extract in order to reduce their stoutness. He has often seen the menstrual flow in these women become modified, their stoutness decrease, and the women find themselves pregnant, when they had for a long time given up all hope of ever being so again. He has often by means of thyroid extract brought to a successful end a pregnancy in women who have repeatedly miscarried. It is often noticed that in adults incontinence of urine can be stopped by rest in bed. This comes about from the fact that, while resting in bed, the patient is subjecting his tissues to large doses of thyroid secretion. In the case of a pregnant woman, the increased thyroid secretion often becomes excessive during the pregnancy, and the woman suffers from the symptoms of excessive thyroid secretion. Thyroid extract acts as a strong diuretic on the myxoedematous patient. Women with thyroid insufficiency have little or no milk. And this is remedied by the administration of thyroid extract. And it would be just to suppose that the extract passes into the milk, but for the fact that milk from a cow treated with thyroid extract does not alter the flow of water. If the mother has at her disposal sufficient store of thyroid secretion, the child does well; but if there is thyroid insufficiency, and especially if to this fault be added tuberculosis, hereditary syphilis, alcoholism, inanition, saturnism, or diabetes, the child will show undoubted signs of these taints, and will probably be a myxoedematous cretin, with signs of rickets and achondroplasia, and to this cause may be assigned such malformations as hare-lips, cleft palate, bony deformities, hypospadias, or undescended testicle. Should the maternal taint be but slight the child will merely be very backward, which is a matter of small moment in boys, and is after a time righted by the thyroid equilibrium being established; but in girls menstruation is late in being established; uterine retroflexion is frequent; the chest is undeveloped. To-day the specific action of the thyroid gland on growth is fully established, both by animal experiments and by clinical observations. The author, in spite of many adverse opinions, now considers that adenoid vegetations are probably due to a thyroid insufficiency. The actual composition of the thyroid secretion is little known. Bauman has found iodine, Baldi has found bromine, and Gautier has found arsenic in it, and the author thinks that certain cases of thyroid insufficiency can be put down to a lack of one or other of these elements. Essential incontinence of urine is a very common complaint, and it lasts up to 10, 15, or 20 years of age, or even longer. The subjects are always infantile in appearance, small, rachitic, and generally undeveloped. No definite causative lesion is assignable. The only treatment is thyroid extract, and in very persistent cases to this may be added small amounts of the iodide or bromide of potassium. Should the patient be apparently cured, only slight cause, such as cold, may set up the incontinence again.

14. Antrum of Highmore and Hay Fever.

JACOB E. SCHADLE (*Med. Record*, May 25th, 1907) advances the theory that catarrhal sinusitis of the antrum of Highmore is an important etiological factor in the causation of hay fever and some of the commoner forms of catarrhal disease of the nasal tract. The author deals with investigations of a considerable number of cases of the disease accompanied by the catarrhal form of disease of the antrum. The affection does not occur in persons in whom the ostium maxillare is of the normal very small size, but in those in whom disease, malformation, or injury has made the antrum opening of sufficient size to admit germs to the interior of the cavity. Under normal conditions the opening is for purposes of ventilation only, and the cavity is sterile, the opening being securely protected by the tissues and hard to reach. The nervous supply is very abundant and communicates with that of all parts of the nasal cavities. The peculiar exciting causes of hay fever, dust, pollen, etc., enter the antral cavity and there produce irritation. Hay fever is a neurosis and occurs in persons in whom there is an idiosyncrasy against certain elements. But it is not a nervous disease alone, independent of local irritations. The author has treated 91 cases of hay fever and rose cold of varying degrees, by washing out and medicating the antrum, and has obtained the best of results in nearly all cases treated. Only one was unbenefited. Most of them were entirely cured in from one to two weeks and remained so.

15. Cancer-Precipitins in the Diagnosis of Gastric Cancer.

NUMEROUS experimenters have endeavoured to produce an immune serum by the injection of cancer cells or extracts, in the hope that such a cancer serum would give a visible precipitate when mixed with the serum of a person suffering from cancer. These attempts, however, have not met with success, because it has not been found possible to obtain cancer extracts which contain nothing but extract of cancer cells, and are free from extracts of blood, serum, connective tissue, etc., all of which produce their own precipitins when the so-called cancer extract is used for making a cancer immune serum. Maragliano (1904) tried to use the stomach washings of cancer patients, instead of their serum, to give the precipitate with the immune serum; but the reaction was found present in non-cancerous as well as in cancerous cases. G. Serafini and S. Diez (*Giorn. d. R. Accad. di Med.*, Turin, 1907, p. 141) have repeated and extended a number of the experiments that have been made in this subject, endeavouring to obtain specific precipitates with cancer immune serum prepared in various ways, and stomach washings from patients suffering with gastric carcinoma. They detail the precautions necessary in using this method, but were not able to obtain any trustworthy information from it. They think that cancer immune serums are at present useless for the early diagnosis of cancer of the stomach.

SURGERY.

16. Strangulated Hernia and Rectal Cancer.

VERDELET AND GRIEWAIK (*Gaz. Hebd. des Sci. Méd.*, January 27th, 1907) report two cases of rectal cancer in which the development of a strangulated hernia was the first sign which led to the recognition of the rectal trouble. The first patient was a man of 52, who since 28 years of age had had a right inguinal hernia; this had been kept up by a bandage. Four days before being seen by the authors he had been seized with acute pain at the neck of the hernia, and he found that the hernia had pushed its way beneath the bandage; attempts to replace the hernia were unsuccessful. He remained at work for four days afterwards, but at the end of this time the continuance of the pain, the irreducibility of the hernia, the presence of nausea, enlargement of abdomen, and constipation compelled him to call in a doctor, who diagnosed strangulated hernia, attempted taxis, and ordered a purgative, without, however, any beneficial result. The patient at this time was ill, with pinched features, cold extremities, and rapid pulse. The abdomen was considerably distended and very painful to the touch, especially at the level of the hernia. The hernia itself, however, was only slightly tense, soft, and scarcely painful. Operation was carried out at once and the hernial sac opened up; there escaped at once a considerable quantity of sero-purulent liquid, which appeared to come from the abdominal cavity. The sac contained a large piece of the great omentum, which was excised. As there were signs of peritonitis a lateral laparotomy was performed by prolonging the original incision. Sero-purulent peritonitis was present, and the fluid was of a faecal odour, and free gas was present in the peritoneum. A perforation of the small intestine was found; this was closed by suture, and for precaution this

loop was fixed to the abdominal wall, so as to obtain an artificial anus, if the sutures closing the perforation gave way. The operation wound was then closed. The next day an artificial anus had formed, but the general condition of the patient was better. One month later the patient had regained his health, but the artificial anus still persisted, in spite of several attempts to close it. Nine months later the patient found difficulty in getting his bowels to act, and at a second operation it was found that he was suffering from a cancer of the upper part of the rectum, which was considered unsuitable for operative interference. The second case was a man, 69 years of age, who had had for as long as he could remember a small right femoral hernia, which had always been reducible, and for which he had never worn any truss or bandage. Six days before being seen by the authors his hernia became slightly painful, and he felt sick. On the day when the authors saw him vomiting began and absolute constipation had set in. On examination there was found a rather tense and painless right femoral hernia. At operation there was found a large prehernial lipoma, beneath which was a coil of small intestine, slightly congested. The usual operation for femoral hernia was performed, and progress of the patient's condition was good. The bowels, however, could only be made to act by the use of mild purgatives and rectal enemata. He left the hospital three weeks later, apparently cured. A week later he complained of obstinate constipation, and on examining the rectum there was found an epithelioma of its upper part, for which it was considered no operation was advisable. As to whether in these two patients the occurrence of cancer of the rectum and of strangulated hernia was a coincidence or whether they may be considered as cause and effect, the authors are unable to decide. The history of these two cases, however, emphasizes the importance of examining for neoplasm in cases of old people who have had for years a hernia which had given them no trouble until it had suddenly become strangulated.

17. Pus Tubes in the Male.

Wm. T. Belfield (*Med. Record*, May 4th, 1907) says that pus infection in the seminal tubes of the male is quite as frequent as in the Fallopian tube in the female. It is frequently not recognized, since pyuria, frequent and painful micturition, and retention of urine are symptoms common to it and other urinary conditions. Infections result from the gonococcus, pyogenic bacteria, and the tubercle bacillus. When the seminal vesicle is invaded the complex of symptoms causes a diagnosis of prostatic abscess in most cases, while they are rather due to abscess in the seminal vesicles. Stricture of the bulbous urethra gives a picture that is usually mistaken for gonorrhoea, although it is purely the result of pyogenic bacteria. In men over 40 years old pus in the urine is ascribed to prostatic hypertrophy. The author advises simple incision with a cautery knife from the rectum to relieve pus tubes. A still simpler operation, and one that can be done in the office, is that of opening the vas deferens, stitching the cut edges to the skin, and injecting through a curved hypodermic needle any chosen solution. The liquid traverses the vas and ampulla, and enters the seminal vesicle. Daily injections are made until the infection is over, when the fistula can be closed.

18. Diagnosis and Reduction of Congenital Dislocation of the Hip-joint.

Calot (*Sem. Méd.*, April 3rd, 1907) describes a method of reduction which he has found successful in cases of congenital hip-joint dislocation. The diagnosis of this condition, he says, is easy. The patient is usually a small girl, who has been noticed to limp ever since she began to walk. There is no pain with the condition. A double rachitic deformity of the femora will sometimes cause a very similar limp; but dislocation can be easily detected if the child is laid quite naked on a table with her legs parallel. It will be then seen (if the limp is only on one side) that the leg on that side is shorter than the sound leg; it must be, however, remembered that the older the child the greater the shortening. The trochanter on the affected side is very prominent and is situated above Nélaton's line The head of the femur will be found above and external to its normal position, close to the superior iliac spine, or even in the iliac fossa. The treatment consists of three stages—the reduction, plaster for five or six months, and the subsequent exercises. The reduction will be best accomplished under chloroform. The soft tissues surrounding the joint must be first moulded and stretched. The operator should commence by wide circumduction movements. While an assistant holds the trunk firmly and flexes the sound leg on the abdomen, the operator takes the affected leg in both hands, and, having subjected it to circumduction, he draws the leg directly downwards for a short time to lengthen the muscles. Then, pulling all the while, he carries the leg outwards in order to stretch the adductor muscles, which are much retracted. To complete this, he now flexes the thigh to 90°, and then carries it further and further outwards with one hand, while with the ulnar edge of the other hand he kneads the prominent lines of the adductor tendons. By this combination of leverage on the knees and direct pressure on the adductors he soon stretches the muscles sufficiently to allow of the knee touching the table at an angle of 90° of abduction. Now, the pelvis being held, the sound thigh flexed against the belly, he seizes the knee of the affected leg with one hand, and, flexing the leg on the thigh and the thigh on the belly, he pulls directly upwards, while with the fingers of the other hand he seeks for the head of the femur in the iliac fossa, pushes it inwards and upwards in the direction of the acetabulum, and thus effects the reduction. Should he fail thus, he may bend the knee at a right angle and abduct the leg, while with the other hand he pushes the head directly upwards towards the acetabulum. Another alternative is to lay the child on its sound side; and while an assistant steadies the pelvis, and another assistant flexes the affected thigh to 90°, forcibly adducts it and rotates it internally, the operator presses with both thumbs on the femoral head, and pushes it into the acetabulum. The reduction being now effected, the thigh must be flexed and abducted, the leg flexed on the thigh at an obtuse angle, and the whole covered with plaster-of-paris from the umbilicus to the feet. The child is to remain in plaster for two and a half months. Then the plaster is removed, the thigh is flexed and abducted to a less degree and internally rotated, and another plaster casing applied. This is kept on for two and a half months. The plaster being at the end of this period removed, the child is kept at rest for a fortnight. Massage is given, but no direct movements of the hip-joint are yet allowed. After this period the child is put on its feet, holding on to the back of a chair; and a month or two will usually enable the child to walk alone. A year after the reduction the cure should be complete. Certain accidents may occur when the plaster is removed. For instance, the reduction may become incomplete, the head of the femur having a tendency to slip out of the acetabulum either backwards or forwards. The backward dislocation is due to the insufficient depth of the acetabulum or to a fresh retraction of the adductor muscles. The forward dislocation is due to the looseness of the anterior part of the capsule. The head will point in front of the fold of the groin, while the trochanter will look somewhat posteriorly, and the knee will be gradually externally rotated. These accidents can all be overcome by rest with the leg bandaged in appropriate positions during parts of the days and all the nights for a month or two, the child being still allowed to move about during the rest of the day.

OBSTETRICS.

19. Death During Expulsion of Fetus.

Remy (*Rev. Méd. de l'Est*, June, 1907) discusses the harmful effect which the efforts made by the woman when expelling the fetus may have upon the cardio-respiratory system when heart lesions or pulmonary phthisis are present. The uterine contractions are aided by the voluntary efforts of the woman. During these efforts the glottis is closed, and the thorax, which is filled with air, is fixed so as to give support to the abdominal muscles. The left heart is thus pressed upon by the distended lungs and is not able to receive and distribute the blood brought to it by the pulmonary veins. It follows that stasis is experienced in the vessels of the lungs, and the right heart being unable to expel the blood coming to it from the venae cavae becomes dilated, and the veins become engorged, as is evident from the swelling of the jugular veins. When a right heart already suffering from disease is distended in this manner it is liable to collapse and cause a fatal syncope. It is useless to advise a patient not to make expulsory efforts, for when she becomes aware of the pressure of the fetal head upon the pelvic floor she is unable to resist the impulse to bear down. The best course to adopt is to apply forceps and deliver her promptly; in this manner the whole process is shortened and the efforts which might have a prejudicial effect are suppressed. It is not always easy to put this advice into practice, for the physician may not arrive in time, or death may supervene before he has a chance of intervening, as the reported cases show. A lady who had had serious dyspnoea at her previous confinement

came for advice during her next pregnancy; she had a feeling of oppression, epistaxis and pallor, but no albuminuria, and her pulse was regular. She kept about till labour began, during the period of dilatation she remained in bed, and experienced no difficulty. As soon as dilatation was complete the midwife sent for the medical adviser, but with the first expulsory effort the patient had a feeling of suffocation and succumbed after a few attempts to inspire. The fetus was promptly delivered by forceps, but it was not possible to reanimate it. There was a lesion of the mitral valve, and a single effort had been enough to induce a fatal syncope. Dr. Etienne reports a case of a lady who had had articular rheumatism followed by haemoptysis and several attacks of dyspnoea, the last of which occurred during her pregnancy. He desired the nurse to call him as soon as parturition began, but he only arrived in time to find the patient collapsed and pulseless with the fetal head resting on the perineum. He gave subcutaneous injections of camphor and ether and prepared to apply the forceps, hoping to relieve the respiratory difficulty. As soon as the patient resumed the recumbent position she fell into a syncope and died. Abandoning attempts to restore the mother, the child was delivered, but was found to be inanimate and could not be revived. Dr. Wilhelm also reports a case of a woman, aged 28, who had acute phthisis in both apices, and who had suffered from haemoptysis during her pregnancy, especially during the last month. She was very cachectic, but he hoped at least to save the child, and gave instructions that he should be sent for as soon as labour began. However, he did not arrive in time; the mother died, and the midwife delivered a well-made child completely blanched and which it was not possible to save. The prognosis in such cases is serious for the infant as well as for the mother; the fetus suffers during the pregnancy from disturbed placental respiration, and from the excess of carbonic acid in the maternal blood. In such cases attention should be directed to saving the child.

GYNAECOLOGY.

20. Tuberculosis of the Inner Genitals in Early Childhood.

HOHLFELD (*Zentralbl. f. Gyn.*, No. 23, 1907) publishes an account of the *post-mortem* examination of two children where this condition was found, though it was associated in both with tuberculosis elsewhere. The first subject was a girl aged 3. Her father and infant brother had both died of tuberculous disease. She herself had been taken into hospital seven months before death on account of attacks of vomiting; tuberculous peritonitis and enteritis were correctly diagnosed. At the necropsy Hohlfeld detected advanced tuberculous disease of the cervical, bronchial, mediastinal, and mesenteric glands, and a few foci in the liver and in one lung. The intestines and peritoneum were much involved. The Fallopian tubes were thickened and bore prominent yellow swellings; miliary tubercle was detected not only in one ovary, but also in the muscularis and mucosa of the uterus. The second subject was a girl aged 1 year and 7 months, an only child of a mother who died in the puerperium and of a father said to be delicate. She herself had undergone a successful operation for tuberculous disease of the bones of the fingers and metacarpus, dying, after recovery, from an attack of double pneumonia. At the necropsy miliary tuberculosis of the spleen, liver, and peritoneum were discovered, as well as a caseous bronchial gland, and a tuberculous ulcer in the colon 8 in. below the ileo-caecal valve. The uterus, as in the first case, was distinctly involved in the general disease, the endometrium being in a state of caseation, breaking down into the uterine cavity. The right ovary was converted into a tuberculous mass of the size of a hazel-nut.

21. Vulvo-vaginitis in Children.

HERMAN B. SHEFFIELD (*Med. Rec.*, May 11th, 1907) classifies vulvo-vaginitis in children as catarrhal, due to lack of cleanliness or chemical irritation; traumatic, due to masturbation, mechanical injury, or indecent violence; and parasitic, due to oxyurides, saprophytes, or pathogenic bacteria, generally gonococci. The catarrhal variety occurs in poorly nourished and cared for children, especially if the genitals are exposed to wetting by discharges from the rectum and hyperacid urine, with pressure and friction. The traumatic is often due to foreign bodies accidentally getting into the vagina, rarely to indecent violence. The parasitic is very often due to saprophytes, especially after exanthemata and skin eruptions. They occur in strumous children with purulent discharges from the nose and ears. The vagina bacillus, which is anaërobic, inhibits the growth of the saprophytes and prevents many infections by production of lactic acid. Contamination of the vagina by criminal assault is very rare. It is most frequently effected by sleeping with relatives who have the disease. Vaginitis is common and very hard to cure in children's institutions. Strict isolation and preventing common use of conveniences alone will stop it. Complications are rather common. Ophthalmia can be prevented by cleansing the genitals and protecting them by bandages and closed night-drawers. Involvement of uterus and adnexa occurs secondarily from douches. Proctitis also occurs, as well as rheumatism and inguinal adenitis.

THERAPEUTICS.

22. Atoxyl.

LAFAY (*La Clin.*, May, 1907) calls attention to the great therapeutical value of atoxyl; it is not a new product, having been obtained in 1863 by heating an aniline arseniate, and contains 29 per cent. of arsenic. It is largely used for cutaneous affections, for acne, lichen rubra, psoriasis; it gives excellent results in acne vulgaris, and cures psoriasis completely. In chronic eczema, alopecia, and urticaria the results have been negative. Siegel obtained good results with atoxyl in anaemic and chlorotic women, and claims that benefit results from its use in cases of valvular disease and myocarditis. In neurasthenia, hysteria, and chorea it is valuable, and Basedow reports surprising results in a case of epilepsy for which he employed it. Its use is particularly indicated in tuberculosis, and tuberculous glands and scrofulous affections generally. Moller got results which deserve to be better known when he gave it in intravenous injections in a case of pulmonary phthisis. And the author reports a series of cases of phthisis which have benefited so much from its use that he is inclined to consider it in some sort a specific for tuberculosis. It may be given by the mouth, subcutaneously or intravenously. When given internally atoxyl is not well tolerated by the stomach. Rhoden overcomes this difficulty by giving it in the form of a pill with ichthyo-salicyl. In the treatment of tuberculosis two pills are given daily, after two days three pills, and after a week the dose is increased by one pill daily until six are taken. For subcutaneous injections a 5 or 10 per cent. solution of atoxyl is used, and an injection given every five days, beginning with 0.2 cg. and increasing the dose up to 0 8 cg. When the maximum dose has been taken for some weeks it should be gradually reduced. For the intravenous injection a 20 per cent. solution is used in doses of 0.2 gr. every second day for three or four weeks. Atoxyl is considered less toxic than other preparations of arsenic; it should be watched with some care at first, since the degree of toxicity is not absolutely decided. Fourneaux has thrown some doubt upon the widely curative powers claimed for atoxyl; it is, however, an active and useful drug, and merits trial.

23. Benzosalin.

J. BODENSTEIN (*Berl. klin. Woch.*, April 8th, 1907) has tested the action of a new salicylic preparation, called benzosalin, and reports on the same. It is a methyl ester of benzoë-salicylic acid, and is gained by combining salicylic and benzoic acids. It is a tasteless white powder, which is insoluble in cold water, only slightly soluble in hot water, and freely soluble in chloroform, alcohol, and ether. Aqueous alcoholic solutions do not give a salicylic acid reaction, but when boiled up in the presence of alkalies it is split up into its constituents. It is claimed for benzosalin that it is not dissociated until it passes into the intestine, so that symptoms of gastric disturbance are avoided. Benzoic acid is said to exercise a safe antiseptic and disinfectant action in the intestine and also an antizymotic action. Apart from this, it has been claimed for benzoic acid that it acts antipyretically, and that it is of use in polyarthritis. The cases which the author has subjected to the action of benzosalin include four severe and four mild cases of acute polyarthritic rheumatism, several cases of muscular and nerve rheumatism, sciatica, neuralgia, and lumbago. The effect in all the acute rheumatic cases was exceedingly good. He instances three typical cases in support of this statement. He gave it in tablet form, each tablet containing half a gram. At first he used 6 tablets a day, and then increased the dose to 8 and later to 10. In neuralgias, etc., he gave from 1½ to 3, or, rarely,

4 grams a day, with good results. He has not met with any unpleasant side-effects, and is highly satisfied with the action which he obtained. He considers that benzosalin should do good in intestinal tuberculosis, enteric fever, and dysentery.

24. Action of Pituitary Extract on the Circulation.

A. Conti and O. Curti (*Bull. d. Sci. Méd., Bologna*, November, 1906) give a summary of the work done with extracts of the different portions of the hypophysis cerebri, and compare the vascular effects of pituitary extract with those of extracts of the thyroid and suprarenal glands. Their extracts were made from the fresh gland tissue in normal saline rendered antiseptic with $CHCl_3$, and were administered intravenously. They find that thyroid extract is comparatively well borne by rabbits, though in large doses it may cause death by gradual or sudden heart failure. Extracts of the glandular or pharyngeal lobe of the hypophysis are less well tolerated than thyroid extracts, and have very similar physiological effects; neither of them produces a characteristic pulse or blood-pressure tracing. But extracts of the infundibular or nervous part of the hypophysis are more toxic to rabbits; one-third of the gland is generally and a half always fatal to a rabbit of 2 kilos, using the pituitaries of man, the horse, or the calf. Intravenous injection of this extract brings about a small and short rise of blood pressure, then a considerable fall; in a few minutes the pressure rises to much above its normal value, while the pulse becomes much slower and irregular; then the pressure slowly falls, and death from asystole follows if the injection has been large enough. The authors find that these lethal effects do not occur, other things being equal, if either thyroid extract or extract of the glandular part of the hypophysis be injected before the extract of the cerebral part of the hypophysis. Suprarenal extract has no such protective action against extract of the cerebral portion of the hypophysis. Blood-pressure curves are given.

25. The Early Treatment of Syphilis.

In speaking of the early treatment of syphilis, Thalmann (*Muench. med. Woch.*, March 26th, 1907) states that by observing the effect of mercurial treatment in the first days of its application on primary sores and secondary rash, he has found that the mercury acts chiefly by killing the spirochaetes. The so-called "Herxheimer reaction" coincides in point of time with a marked diminution of the spirochaetes, and he ascribes this to a setting free of the syphilitic endotoxin. This toxin produces a hyperaemia, round-cell infiltration, hypertrophy of the tissue elements, and a new formation of tissue cells. The body, he states, reacts to the disintegration products of the spirochaetes by the formation of antibodies, which at first may induce a high degree of immunity. This immunity, however, diminishes gradually at a later date, and the spirochaetes which have escaped the bactericidal effect of the antibodies again begin to multiply. The result is the so-called late secondary roseolous eruption. Spontaneous cure may be effected by the primary immunity, but if this does not take place it never again becomes high enough to overcome the parasites. Each eruption causes, by means of the endotoxins, a local damaging of the cells, and in this way he explains that in tertiary syphilis only a few spirochaetes are required to produce ulcerative changes in the already damaged tissue. The increase of symptoms following the introduction of a mercurial treatment is due to the setting free of the endotoxin and its reactive effect on the tissues. On the other hand, iodide of potassium, acting by increasing the absorption of the inflammation products and of the poison itself, and leading to the excretion of the latter, limits or stops this reactive damage. The author regards the secondary symptoms as most important, inasmuch as the effect of them is to so damage the tissue cells that they are easily affected during a later period. For this reason he considers it essential for successful treatment to employ a local and general mercurial treatment as soon as the spirochaetes are found in a primary sore. He injects the perchloride of mercury under the sore, so that the spirochaetes in this situation and between it and the glands may be destroyed. Since but few spirochaetes are present at this stage, but little endotoxin will be set free, and therefore a high degree of immunity will not be achieved. In order to increase the artificial immunity, he prefers to carry this treatment out in interrupted stages. He has treated 34 men in this way within about fourteen months, of whom 33 were subjected to local and general treatment and 1 to local treatment alone at first. In all the 33 cases the treatment was begun before the secondary eruption had shown itself. In 17 he carried out a local application of calomel, in 16 he injected perchloride of mercury once or twice underneath the sore and also applied calomel, and in all he employed inunction. In a few he carried out his nasal mercurial application. In 7 cases he was only able to watch the course for six months, and in none of them did he see any secondary rash; 8 of the remaining 24 were watched for over six months (up to fifteen months) and did not have secondary eruptions. He discusses the 8 cases briefly, and lays great stress on the fact that in all his cases *Spirochaeta pallida* was found before the treatment was begun. Although he realizes that it is extremely difficult to speak with certainty, he is inclined to regard the eight cases as cured, as no secondary eruption appeared after an early local and general treatment was carried out. Turning to the other cases, he finds that when secondary symptoms appear after the cases are treated in this way, the secondary signs differ in two respects from the usual secondary manifestations. In the first place, the eruption appears much earlier than usual, at times after six weeks, but never later than three months; and, secondly, the eruption is limited to much fewer and smaller areas than without treatment. The author illustrates these points by giving the details of some cases. After discussing the early treatment in considerable detail, he concludes by stating that 30 per cent. of the cases which he treated in this way did not show any secondary symptoms after six months, and the remaining cases showed symptoms which were localized to one or at most a few foci. He believes that the only rational treatment of syphilis is the early treatment.

26. The Electrical Treatment of Pruritus.

Noire (*La Clin.*, May, 1907) states that few affections are so intractable as pruritus; whether generalized or localized, it is usually chronic or recurrent. One is frequently consulted after many other practitioners and after a variety of remedies have been tried. The worst cases are those of anal or vulvar pruritus; there is an anal affection termed idiopathic pruritus because the cause is unknown and it is not associated with any local lesion. The itching is intense; it comes on in crises, generally worst at night; an examination reveals nothing except lesions caused by scratching and irritation. Pruritus of the vulva may or may not be found in association with local disorders; the irritation and friction lead to oedema and pigmentation of the parts; sometimes pustules develop or inguinal intertrigo, especially in women who are stout. Some cases yield to treatment with baths, douches, local applications, and constitutional treatment, but others are only relieved by electrical treatment The best results are obtained by the use of the *x* rays, the following technique being adopted: A weak dose must be used, rather less than that which corresponds to the tint B. of Sabouraud-Noire's radiometer. Anything stronger will cause a disagreeable dermatitis. The patient should rest upon a couch with the legs separated and surfaces well exposed to the radiation. The affected part should be about 20 cm. distant from the anticathode. The dose should be equal to a half-tint of the radiometer, and should be renewed in ten days. In favourable cases some relief is experienced three or four days after the first application; three seances are required or possibly four; in each case there is an interval of ten days. The anus should be subjected to the same exposure, but the testicles must be protected by sheets of lead. The results obtained with the *x* rays for pruritus of the anus and of the vulva are excellent.

PATHOLOGY.

27. Histology of Tuberculous Sputum.

E. Löwenstein (*Zeit. f. Tuberk.*, Bd. x, Heft. 1, 1906) deals with the significance of the presence of tubercle bacilli within the leucocytes in tuberculous sputum and gives in tabulated form details of 56 cases in which this phenomenon has been observed. The following are his results: (1) Tubercle bacilli are found within leucocytes with from one to three nuclei in about 10 per cent. of cases of manifest tuberculosis of the lungs. (2) This intracellular disposition of the bacilli occurs (*a*) in well-marked chronic forms of the disease and (*b*) also in recent cases with a tendency to recovery. (3) The intracellular disposition of the bacilli very frequently points to a rapid disappearance of the bacilli from the sputum. The author also describes a case of rabid tuberculosis of the genital organs followed by tuberculosis of the bladder in which the intracellular position of the bacilli was first observed after tuberculin injections had been employed.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

28. Pentosuria and Diabetes.

IN the *Berl. Klin.* (No. 226, April, 1907) M. Bial lays stress upon the importance attaching to the recognition of pentosuria, and supplies a simple method of differentiating it from diabetes mellitus. The diagnosis of the latter disease in practice rests essentially on the examination of the urine and the results given by Fehling's or Nylander's test. In cases of uncertainty recourse is had to the phenylhydrazin test, and if the typical yellow crystals are obtained, then no doubt usually remains in the mind of the physician that glucose is present. Unfortunately, however, research has shown that these tests are unreliable; even the phenylhydrazin test may be given by urine that contains no grape sugar whatever. For all of them give a positive reaction in the presence of pentoses. Grape sugar is a hexose containing six carbon atoms in the molecule, while the pentoses, containing only five carbon atoms, closely resemble grape sugar in structure and properties. Clinically the difference is of extreme importance. Chronic pentosuria is a not uncommon condition, which is not affected by dieting. But it is in no way dangerous or even serious. It presents absolutely no other symptoms, and as a rule its existence is only discovered when the urine is examined for some other condition. Such examination suggests diabetes, and, unless it is established that we are dealing with a case of pentosuria, a wrong diagnosis of diabetes mellitus may easily be made, with the most serious consequences to the patient in anxiety, expensive treatment, difficulties in life assurance, etc. A diabetic urine can be distinguished from pentosuria by the polarimeter, or, again, by the fermentation test, for the pentoses are not split up by yeast. But these tests are not very readily, and certainly not usually, carried out in general practice. There is, however, an easy and, so far as is yet known, quite reliable method of detecting the presence of pentoses in the urine. This is a modification by Bial of the orcin reaction introduced some years ago by Salkowski. The original method involved a somewhat lengthy procedure quite unsuited to practice, but the use of Bial's reagent is simplicity itself; 4 c.cm. of the fluid is heated to boiling point in a test tube, then withdrawn from the flame, and a few drops of the urine to be examined are added. If pentoses are present in quantity sufficient to reduce Fehling's solution, a beautiful green colour develops in the fluid within a few seconds, and this reaction is absolutely characteristic. Further, the diagnosis of pentosuria by this means excludes diabetes mellitus, since the two conditions have not been found together. Bial quotes a number of authors who vouch for the reliability of the test. The reagent consists of 0.5 gram orcin dissolved in 500 c.cm. of 30 per cent. hydrochloric acid, to the solution being added 20 drops of liq. ferri sesquichlorati. It remains active for at least a year. The source of pentoses occurring in quantity in the urine is not yet definitely established. Bial believes they are not derived from the food, and that there is no renal lesion associated with pentosuria. So far as the evidence goes, it would seem that they are derived from the central nervous system, in which they occur normally.

29. Leucopenia in the Diagnosis of Typhoid.

GENNARI (*Rif. Med.*, No. 11, 1907) has examined the blood of 106 cases presenting very early symptoms of typhoid fever. He has examined the cases in this early stage, as most of the cases hitherto reported have been in the second week of the disease. The serum reaction for the typhoid and paratyphoid bacillus was taken and the blood count for the white corpuscles observed. It was found that leucopenia may exist as early as the second day of the disease (in 4 cases out of 9) whilst the Widal reaction was present in only 2 out of 9. A similar relation between the two phenomena was found to exist in later stages, so that the author concludes that leucopenia is more frequently to be met with in the early stages of the disease than any other sign (including the Widal test). Thus, out of 66 cases 47 had less than 5,000 white corpuscles per c.cm., whilst only 23 reacted to the Widal test. Leucocytosis was never present in any of the 106 cases, or if so was due to some complication. No prognostic import can be drawn from the presence of leucopenia as it occurs in mild and in severe cases. In the acme of the disease (and according to the author at the beginning also) there is an inversion of the normal ratio between the polynuclear cells and the lymphocytes (the former being diminished, up to 60 per cent.).

30. Paraplegia following X-Ray Treatment of Malignant Tumours.

E. MARTINI (*Giorn. d. R. Accad. d. Med. d. Torino*, 1907, p. 52) records two cases of malignant disease treated by the *x* rays in August, 1906, in which fatal nervous disorders appeared. One patient, a man of 23, who did not drink, and had not had syphilis, developed a rapidly growing round-celled sarcoma in the left thoracic wall; the tumour reached the size of an adult's head in a few months, growing from the axillary hollow. In thirty days he was exposed to *x* rays fifteen times, each sitting lasting 8 to 10 minutes, with the anticathode at 20 cm. distance, 2 or 3 Holtzknecht being given. During the treatment the patient had fever and malaise, and an erythematous *x*-ray dermatitis developed; the tumour soon disappeared completely. Soon weakness and pains in the legs appeared, with girdle pains, paresis of the sphincters, loss of sensation, and diminution of the reflexes, and the paraplegia was complete in a week. Metastasis to the dorsal medulla was diagnosed; laminectomy was performed, but nothing was found. Sacral decubitus developed, with cystitis and pyelonephritis, and death occurred thirty days after the onset of the paraplegia. At the autopsy were seen invasion of the pleura and lung by sarcoma, and degeneration in the cord; no sign of pachymeningitis or of metastatic invasion of the cord could be found. The second patient, aged 33, had never had venereal disease; he developed a malignant lymphoma in the neck, with invasion of the axillary glands and secondary growths in the naso-pharynx and over the sternum. In two months he was given thirty exposures to the *x* rays, as described in the previous case. The tumours disappeared under the treatment, during which the patient was depressed and feverish; some dermatitis appeared latterly. Then paraplegia occurred, similar to that described in the previous case, and death followed in forty-four days. At the obduction no lymphoma or secondarily affected glands were found; but the lumbar and the lower dorsal parts of the spinal cord were in a state of leucomyelitis, and by Marchi's method a general degeneration of the white matter was demonstrated; numerous Gluge's cells (with fatty granules) were seen. Martini thinks that the myelitis was due to some toxic substance due to the destruction of the tumour by the *x* rays. A. Gramegna and C. Quadrone (ibid., p. 57), discussing Martini's paper, distinguish between the doubtless toxic paraplegia that may come on while a tumour is being made to vanish by the *x* rays, and the paraplegia which appears after the treatment has been suspended. In the latter case they think that a metastatic deposit in the cord must be the cause of the symptoms. M. Bertolotti (ibid., p. 62) states that Martini's second patient was 35 years old, alcoholic, and syphilitic, and that his myelitis was due to a syphilitic endarteritis. Discussing Martini's first case, Bertolotti holds that the patient showed signs of paraplegia before the *x*-ray treatment began; the autopsy was not complete, and the myelomalacia found was very probably due to interference with the blood supply of the cord. No doubt the voluminous sarcoma compressed the branches of the two posterior spinal arteries. It may be noted that Bertolotti is a radiologist.

SURGERY.

31. Adenoma and Ectopic Testis.

LECENE AND CHEVASOU (*Rév. de Chir.*, No. 2, 1907) publish the results of histological examination of five displaced testes, from which they draw the following conclusions: (1) There is sometimes met with in the ectopic testis—probably also in the normally-placed organ, although the authors have not met with an instance—a pathological lesion which it is proposed to call true or pure testicular adenoma. (2) This lesion is characterized on macroscopic

examination by the presence in the testicular parenchyma of one or more nodules, usually well defined, of an ovoid or rounded form, of dimensions varying from that of a pin's head to that of a pea, of a milky-white or yellowish colour, and always standing out from the rest of the glandular parenchyma. (3) The microscope shows that these nodules are formed by (*a*) a scanty stroma which sometimes, but not always, includes in its meshes masses of interstitial cells; (*b*) contorted and closely packed tubules with walls of very thin and elastic connective tissue, and containing epithelial cells which include very large nuclei. (4) These collections of contorted tubes are not invariably isolated from the rest of the gland by a membrane of connective tissue; at certain points it may be possible to trace a very gradual transition from the seminiferous tubules of the ectopic testes to the tubules of the new growth. (5) These nodules are, the authors hold, actual and simple adenomata of the testicular glandular tissue; they represent a proliferative condition of the cells which in their normal condition line the seminiferous tubes of the ectopic testis. (6) It is absolutely necessary to distinguish these genuine adenomata of the testis from those growths which were formerly described by Langhans under the heading of adenoma, but which really are embryomata of a complex structure.

32. Immediate Massage in the Treatment of Fractures.

Guarnieri (*Archiv. di Ortoped.*, An. 24, No. 2), as the result of a considerable experience (including one in his own person) of the treatment of fractures by immediate massage, writes enthusiastically of the benefits to be derived therefrom. Massage should in his opinion be started as soon after the fracture has occurred as possible, the sooner the better. In the first instance it should be of the lightest character, and should hardly give any pain at all. The limb should not be rigidly fixed in splints, but merely kept at rest by some very light splint. Moreover, he says massage in this early stage suffices to diagnose the fracture, there being no necessity for passive movement which is so painful. The improvement is most marked in the first fortnight. As the tenderness decreases the massage may be more vigorous, and passive movements of the joint started, followed by warm baths and the prudent use of electricity. In the massage of these cases it is advisable to use plenty of vaseline. The cases which give the best results are those fractures in or near the joints, the forearm and shoulder. The author advises massage for an hour, or even two hours, if it can be borne; the shorter periods are, in his opinion, less advantageous.

33. Cholerrhagia.

Gangitano (*Rif. Med.*, February 2nd, 1907), under the above title, discusses the obstinate flow of bile which sometimes follows operations upon echinococcal cysts of the liver. In the majority of cases there is not much trouble from this complication, but occasionally the excessive and prolonged discharge of bile becomes a serious matter. In the case reported by him the flow was effectual y arrested by means of adrenalin. In the first instance (after previously washing out the cavity) a 1 in 10 solution was tried, but as this did not seem very effectual gauze soaked in pure adrenalin was plugged in the cavity; five applications were used between February 28th and March 4th, and the result was so satisfactory that no further applications were necessary. The cyst had been emptied on January 25th, and no suppuration had occurred. The cholerrhagia in these cases is probably due to the sudden withdrawal of support as the cyst collapses. The author discusses the various methods of dealing with echinococcal cysts of the liver, with a view to this question of prolonged biliary discharge. Each case has to be taken on its merits, but, where possible, the author suggests laparotomy and puncture, followed by injection of 1 per cent. silver solution.

OBSTETRICS.

34. Scopolamine in Childbirth.

C. J. Gauss (*Muench. med. Woch.*, January 22nd, 1907) has conducted 1,000 cases of parturition with the assistance of scopolamine. It has been stated that scopolamine is one of the most deadly of all poisons, and that there is no justification for employing it, but inasmuch as the toxicity of a drug is merely a matter of dosage, there is no reason why a small dose should not be considered safe. The purity of the preparation is of importance, and the author has found the specimens which he has used to be chemically pure. He criticizes some of the statements which have been made, and quotes from Bumke, who has also had a large experience with this form of medication. The dose given by Bumke is 0.001 milligram (about $\frac{1}{64000}$ grain) or less, and very rarely more. The maximum daily dose, save in one case, was 3 milligrams. As far as the mothers are concerned, he says that among his 1,000 cases he did not lose a single one from the scopolamine. In his last 500 cases he had one death, which was due to internal haemorrhage in a contracted pelvis case. He did not experience a single instance of cardiac disturbance of serious nature. With regard to haemorrhage, he finds that after measuring the loss in 363 cases, in 92.8 per cent. the loss was within the margin of the so-called physiological (that is, up to 500 grams), while in 6.3 per cent. it varied between 500 and 1,000 grams, and only in 0.9 per cent. did it exceed this amount. The average for the 363 cases was only 277.7 grams, a loss which is well below the physiological amount. The placenta was born spontaneously in 51 per cent. by means of slight pressure, or Credé's method in 48.1 per cent., while it had to be removed manually in 0.4 per cent., and by Caesarean section in 0.5 per cent. The effect on the morbidity of the mothers, taken as indicated by a rise of temperature of over 101° F., appears to be absent, this working out in one series at 1.7 per cent. Turning to the duration of labour, he finds that forceps had to be applied in 6.83 per cent. (or 7.32 per cent. if one counts 5 cases in which they were applied for clinical purposes). This is highly satisfactory in the author's opinion. He proceeds to show further that the children were not harmed by the medication; 70.5 per cent. of them were born lively, 18.1 per cent. were oligopnoeic, and 9.6 per cent. were asphyxiated when born. The results were better with the second 500 than with the first, and this he ascribes to the improvement in dosage. The mortality of the fetus was certainly not increased during the time in which he has used scopolamine as compared with the period preceding. Preller also deals with the use of scopolamine and morphine in childbirth in the same number of the *Muench. med. Woch.* His experience extends over a series of 120 cases, and to this he adds another 100 cases dealt with by his predecessor, making 220 in all. Since he has employed the method he has found it necessary to depart from the original dosage, which he considered too high with regard to the scopolamine and too low with regard to the morphine. He uses separate solutions, the scopolamine being a 0.03 per cent. solution and the morphine a 2 per cent. solution. The first injection is carried out as soon as the pains distress the patient. One must be prepared for unequal action of the first-named drug, and therefore injects small quantities at first. He usually gives 0.000375 gram to 0.00045 gram of scopolamine and from 0.008 to 0.1 gram. This is equal to from 0.0057 to 0.007 grain of scopolamine and from 0.12 to 0.15 grain of morphine. He then watches the effect on the circulation and other systems. If the desired sleep does not set in with this dose, and no unpleasant symptoms are seen, he injects from 0.00015 to 0.0003 gram scopolamine and 0.003 or 0.004 gram morphine after from ¾ to 1¼ hours. This second dose has almost always the desired result, and the patient shows the signs of a combined scopolamine-morphine action. This is a quiet, not heavy sleep, which is interrupted at each pain, when the patient complains of pain, but there is total amnesia of this pain afterwards. He continues to inject in pauses of from 1½ to 3 hours, and generally uses from 0.00015 to 0.0002 gram of scopolamine, while at the third and fourth repetition it may be necessary to give an alternating dose of morphine. In one case he found it necessary to give a second dose after the first one of 0.0006 gram. He gave half of this quantity, and the patient then fell into a refreshing slumber. The combined dose of 0.0009 gram of scopolamine and 0.014 gram of morphine is not large, but he prefers to keep it lower, especially when the individual injections are close together. In 70 per cent. of his 120 cases he obtained a satisfactory condition. He aims at obtaining peaceful sleep between the pains and complete forgetfulness, and is not disappointed at a momentary awakening during the pains. The patients were extremely pleased with the results, and the relatives who saw them were also quite satisfied. In 18 per cent. he only obtained a sleepy condition, which was associated with a lessening of the pain but no amnesia. In 12 per cent. no satisfactory result at all was attained. This was due in some cases to the fact that the birth was so rapid that there was no time to obtain a good action, and in some cases to the onset of symptoms which indicated threatening toxic symptoms. Actual failures only took place in 4 per cent. He describes the unpleasant side-effects of the injections, and considers that if one is careful

in the dosage of the scopolamine, one will not meet with dangerous symptoms. He thinks that in from 20 to 30 per cent. of the cases the duration of the partus was lengthened somewhat, and sums up the conditions of the births, which show that in other respects the injections had but little deleterious effect. He believes that the method is suitable for relieving the pain of childbirth if proper care is exercised, and if no severe disturbance of the circulatory and respiratory organs is present. Each case must be carefully watched during the whole period, and this he puts forward as a warning for general practitioners, who, apart from having to acquire the proper technique, must be prepared to spend the necessary time, if they would introduce the method into private practice.

GYNAECOLOGY.

35. Intraligamentary Chorion-epithelioma.

GARKISCH (*Zeit. f. Geb. u. Gyn.*, vol. lx, part 1, 1907) reports a remarkable instance where a malignant deciduoma developed in the broad ligament. The patient was 37 years of age; she had only been twice pregnant, and the last pregnancy had occurred fourteen years before she came under observation. In January, 1906, she was laid up with pleurisy; early in March a tumour developed in the left iliac region and grew quickly. The period ceased in February, and was replaced by occasional haemorrhages. On May 1st she was examined; there was anaemia, with emaciation. A tumour of the size of a child's head rose above the pelvic brain; it was tuberous and rather firm. The uterus could be distinctly defined to its right. Von Franqué operated. The tumour lay under the peritoneum, and its removal with the uterus and left appendages proved difficult. The peritoneum of the bladder was united to the appendices epiploicae and serous coat of the sigmoid flexure, and the big cavity thus cut off from the peritoneum was drained through the vagina. The patient did well for a short time, but died on the twenty-fourth day with pulmonary symptoms; metastatic chorion-epithelioma and an abscess were discovered in the right lung, there was suppuration of both sterno-clavicular joints, with plugging of several of the branches of the vena cava and pulmonary embolism. The pelvic tumour is figured and described minutely, it was a solid chorion-epithelioma separate from the uterus. Decidual changes were very marked in the isthmus of the Fallopian tube, yet absolutely wanting both in the ampulla and in the uterine part. On the other hand these changes were detected on the surface of the left ovary, and a well-marked uterine decidua had developed with abnormal hyperplasia of the uterine glands. Hence the pregnancy had, in all probability, developed in the isthmus, the decidua growing through the tubal walls into the folds of the mesosalpinx, or reaching it after rupture of the tube. "Ectopic" chorion-epithelioma following an overlooked uterine pregnancy seemed less probable.

36. Imperforate Hymen.

GUINARD (*Journ. des Praticiens*, June 1st, 1907) gives the history of a case of imperforate hymen. The patient, a girl aged 15, had been subject for some months to severe epistaxis. Her abdomen on examination was found to be swollen, and palpation revealed an enormous tumour, pear-shaped and rising above the umbilicus, soft and fluctuating. It was like a gravid uterus of seven months. The girl had never menstruated. She was seized two years ago with severe pain in the abdomen. She had frequently had the wish to make water, but for some weeks past had had some difficulty in micturition. Diagnosis in these cases often favours an ovarian dermoid cyst with a twisted pedicle or tuberculous peritonitis. But a speculum clears up the diagnosis at once. The vulva in this case was perfectly formed. On separating the labia majora a bluish curved surface came into view, convex forwards, just like the head during labour. At each sigh of the patient this surface grew and stretched. In the middle line was seen a frenum of a reddish colour which united the lower pillar of the vagina to the urethra. The hymen was opened by scissors in a transverse direction, and about 1½ litres of thick brown liquid, just like chocolate cream, was forced out violently. The liquid was contained in a very much distended vagina. The patients nearly always consult a medical man for vague abdominal pains, or for epistaxis, or frequent desire for, with difficulty of micturition. Another point to notice is that sometimes the opening of the hymen infects the distended vagina, and a purulent vaginitis is the result. A simple incision followed by injections usually effects a cure. A similar dilatation of the uterus is a very rare event.

THERAPEUTICS.

37. Transfusion in Severe Anaemia.

TRANSFUSION of blood in the treatment of severe anaemia appears to be almost entirely given up, although some fifteen or twenty years ago it was freely made use of. Many older authorities have attempted to support the method, but the majority of the modern writers raise a number of objections to it. One must realize at once that transfusion is quite incapable of doing good in cases of tumour or of aplasia of the medulla of bones, and in those processes in which there is a rapid and progressive destruction of red corpuscles. P. Morawitz (*Muench. med. Woch.*, April 16th, 1907) says that, apart from these cases, there is a long series of cases in which the anaemia depends, in part at all events, on the deficient regenerative power of the bone marrow, but in which this power can be induced to recover itself. Systematic treatment by arsenic produces improvement and cure in this way. The objections to transfusion include the fear of ferment intoxication. The appearance of dyspnoeic attacks, oedema, and fever were supposed to depend on an intoxication with fibrin ferment and a secondary capillary thrombosis. This, however, has proved to be erroneous, and it is now certain that intravascular thrombosis can only be produced by defibrinated blood when the blood is injected too fresh or too warm, or when the fibrin coagulum has been squeezed. It is impossible to prophesy when transfusion will be tolerated without reaction, or when rigors, haemoglobinuria, etc., will follow; but while these symptoms are sufficient to prevent the method from becoming popular, the author insists that no case of death has yet been recorded, and that it is just the cases in which the symptoms were well marked that the greatest good has been done. It must further be remembered that the cases for which transfusion may be required are cases for which one can do nothing in any other way. In France the transfusion method has been entirely replaced by treatment with haemolytic serum and organ extracts. These methods, however, are too new to justify one in giving up the old method, provided that the old method is capable of doing what is required of it. In order to illustrate what transfusion is capable of doing, the author recites 6 cases in which he has carried it out. The method adopted was as follows: A healthy person, or one who had only some insignificant ailment, was chosen to give up the necessary amount of blood. The blood was obtained by puncturing the median vein after constricting the arm, and allowing the blood to flow directly into a sterile glass bottle with a ground-glass stopper. The defibrination was carried out by shaking the bottle, which contained glass beads, for at least five to ten minutes after the blood had been drawn off. After standing for from twenty to thirty minutes the blood was filtered through several layers of sterile canvas into a second glass bottle, but the clot was not pressed. (If one withdraws about 250 c.cm. of blood, one will have about 200 c.cm. after it is defibrinated and filtered). A cannula was then introduced into the median vein of the anaemic patient by means of a small incision, and when the patient's blood had filled the cannula, a funnel with tube was attached to the same and the warmed blood poured into the funnel. The blood should not be allowed to flow quickly into the patient's vein, and the author found that if one allowed from twenty to thirty minutes for the whole 200 c.cm. one would not meet with difficulty. The cannula was then removed and the wound closed and covered. In the first case the patient was suffering from very severe anaemia, and the characteristics in the blood-count were like those of leukanaemia. Oedema, ascites and enlargement of the liver, loss of appetite, vomiting, and increasing illness persisted, in spite of arsenic and other forms of treatment. The transfusion was then carried out, and resulted in a steady recovery, the leucocytes regaining their original normal condition. The second case was one of *post-partum* pernicious anaemia. The symptoms here were extremely severe also, and were progressive; 150 c.cm. of defibrinated blood were transfused, and no reaction followed. From this time onwards the patient made a good recovery. The third case was another of pernicious anaemia. Here, again, after other means had failed to check the progress of the disease, transfusion was carried out, and from that time improvement set in and continued until recovery was complete. The fourth and fifth cases were similar. A reaction was seen in the third and fifth cases. The recovery of the fourth and fifth cases could not be followed out completely. In the sixth case the patient was suffering from a severe aplastic anaemia. Here the transfusion, which was twice performed, failed to do any good, and

death followed as the patient became more and more anaemic. The *post-mortem* examination revealed atrophy or aplasia of the medulla of the bones. In this case no reaction followed the transfusion. The beneficial action of the transfusion was best marked in the three first cases, but in none did it set in immediately after the transfusion. A few days elapsed before the blood showed the disposition to improve. The immediate results in the fourth and fifth cases were somewhat alarming, but the untoward symptoms passed off safely. The author discusses the possible action of transfusion from a theoretical standpoint, and concludes by stating that the method should be again revived for the treatment of severe forms of anaemia.

38. Lumbar Puncture in the Treatment of Cerebral Tissues.

Babinski (*Journ. des Praticiens*, June 15th, 1907) records a case in which, besides mental trouble, there was a right-sided hemiplegia without exaggeration of reflexes. There was no means of precisely localizing the lesion, and as surgical interference was impossible, lumbar puncture was per formed. A lymphocytosis of the cerebro-spinal fluid was revealed, which is diagnostic of either tubercle or syphilis. The patient improved after the puncture; he could walk, his mind became more lucid, the pains in his head diminished. The improvement became still greater after anti syphilitic treatment. Various lesions can be improved by mercury, without necessarily being of a syphilitic origin. Epitheliomata of the mouth are often diminished by mercurial treatment, which may however have a harmful effect in that radical operation is likely to be postponed. Lumbar puncture is often attended with wonderful results. The removal of 15 to 20 c.cm. of fluid is sufficient. The operation is harmless. It is more prudent to perform it horizontally, to allow the fluid to escape slowly, and to keep the patient in bed for a day or two. Fatal accidents have happened. One patient has died of syncope twenty-four hours after the puncture, which was done for a cerebral tumour. Lumbar puncture is always of undoubted value in those cases in which there is hypertension of the cerebro-spinal fluid. If there is no hypertension of the cerebro-spinal fluid, if the patient does not feel better in the vertical position, it is advisable to intervene with only the greatest precautions.

39. Tannin in Dental Pain.

Knev (*Wien. med. Presse*, March 17th, 1907), as a dentist in Ischl, where neuralgia of dental origin is extremely prevalent, has had great experience in the treatment of this disorder. The most universally useful application to the gums is a lotion of two parts of tannic acid to ten parts of rectified spirit. When this is painted on the gums and round the teeth, it relieves almost every kind of dental pain. It is also the best application in alveolar pyorrhoea. Loose teeth under this treatment soon become tight, and regain their power of mastication.

40. Adrenalin in Diabetes Insipidus.

Varanini (*Gazz. degli Osped.*, May 19th, 1907) reports a case of diabetes insipidus successfully treated by adrenalin. The patient, a man aged 27, had suffered from diabetes insipidus since the age of 16. He drank from 5,000 to 6,000 c.cm. of fluid per diem in addition to the liquid contained in his food, and passed from 9,000 to 10,000 c.cm. of clear non-albuminous, non-saccharine urine in the twenty-four hours. The adrenalin (Parke, Davis, and Co.'s 1 in 100 solution) was given in 7-minim doses, increased later to 10 minims. After two days the urine lessened to 7,000 c.cm., and rapidly decreased to 4,500 c.cm. per day, the general condition improving *pari passu*, and as long as he continued taking the drug the improvement was maintained.

PATHOLOGY.

41. Bacteriology of Conjunctiva in Typhoid Fever and Pneumonia.

Randolph (*Johns Hopkins Hosp. Bull.*, October, 1906) has examined the conjunctiva in 100 cases of typhoid fever and 48 cases of lobar pneumonia. There are several ways by which micro-organisms can gain access to the conjunctiva, namely: (1) From the exterior, either through air infection, through dust or droplets, or by direct contact; (2) from the throat and nose by way of the naso-lacrymal duct; (3) by the blood circulation, either directly to the conjunctiva or by elimination of germs in the lacrymal secretion; (4) by the lymphatics; and (5) by direct extension from infection of neighbouring parts. It is often difficult to determine by which path the infection has been conveyed. For a considerable number of diseases it has been determined that the bacteria of the primary disease may also cause an associated conjunctival infection. This is true of gonorrhoea, cerebro-spinal meningitis, pneumonia, diphtheria, influenza, tuberculosis, erysipelas, pyaemia, septicæmia, bubonic plague, Malta fever, and leprosy; but in the case of some of these affections a complicating conjunctivitis is due more frequently to secondary invaders than to the bacterium causing the primary disease. As regards the secondary inflammations of mucous membranes, including the conjunctiva, which so often complicate scarlet fever, small-pox, measles, and the other exanthemata, the evidence favours the view that they are most often due to secondary invaders, of which the streptococcus is the most frequent; Other secondary invaders being the pneumococcus, pyogenic staphylococci, influenza, and pseudo-influenza bacilli, xerosis and other pseudo-diphtheria bacilli. The wide distribution of the typhoid bacillus throughout the body in typhoid fever suggests the possibility of the appearance of the bacillus in the conjunctiva, especially as conjunctivitis is a recognized complication. Although rare in contrast to otitis media, conjunctivitis is not uncommon also in acute pneumonia. In the cases examined the predominant growth was almost always *Micrococcus albus*. This organism occurred alone in 59 of the typhoid cases, and in association with other bacteria in 23 cases, so that out of the 100 cases this organism was found 82 times. In 8 cases *M. aureus* was found alone, in 13 cases associated with other bacteria. *Streptococcus pyogenes* was found three times, and in two of these along with *M. albus*. The Morax-Axenfeld diplococcus was found once, the xerosis bacillus three times. *B. pyocyaneus* occurred once, *B. subtilis* occurred four times, and in 2 of these cases along with *M. albus*. Only 2 cases were found sterile, and in 2 cases impurities predominated to such an extent as to make the observations valueless. Out of the 100 cases the conjunctival sac was found to contain bacteria in 96. In the 48 cases of pneumonia *M. albus* was found alone in 24, and along with other germs in 14—that is, in 38 out of 48 cases. The pneumococcus was found twice, once alone and once with *M. albus*. *B. subtilis* was found three times alone and once with *M. albus*. *M. aureus* was found ten times, once alone and nine times with *M. albus*. The Morax-Axenfeld diplobacillus was found once and the xerosis bacillus once. In five cases there was conjunctivitis; three of these cases showed only *M. albus*, one *M. aureus*, and the fifth the pneumococcus. There were three sterile cases in this series. The author regards the *M. albus* as an invariable inhabitant of the conjunctival sac, and thinks that, either by its numerical superiority or by its products, it may aid in rendering the part of the body unfavourable for the growth and multiplication of other organisms which are pathogenic for the eye.

42. Phagocytosis in Vitro.

Löhlein, working in Metchnikoff's laboratory (*Ann. de l'Inst. Pasteur*, November, 1906) on the influence of normal serum upon phagocytosis, finds that amongst different strains of one and the same pathogenic micro-organism there are some which, even under the influence of normal serum, completely escape the phagocytic action of guinea-pig's leucocytes *in vitro*, whilst others are rapidly attacked by the cells, even without the assistance of serum. Only a limited number of bacterial strains are suitable for the investigation of the "opsonic" properties of normal serum. And when these "opsonins" appear to be necessary for the phagocytic process, it must, he thinks, be admitted that they can be furnished by the leucocytes themselves. He agrees with Wright that normal guinea-pig serum contains substances which attach themselves to certain pathogenic organisms and so prepare them, under special conditions, for phagocytosis. These substances unite themselves to the micro-organisms even at the temperature of 0° C.; they are destroyed at a temperature of 55°. They appear to possess a constitution analogous to that of the agglutinins. They are not identical either with bacteriolysins or with bacteriolytic sensitizing substances, or with complement. But it is not yet possible to affirm that they are not identical with the agglutinins of normal serum. Löhlein does not regard the introduction of the new term "opsonin" for these substances as justifiable, since they fulfil exactly the rôle ascribed by Metchnikoff to his "fixatives." The author suggests that all ambiguity would be avoided if "sensitizing substances" were characterized as being either "phagocytic" or "bacteriolytic."

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

43. Diabetes Insipidus.

SEILER (*Zeit. f. klin. Med.*, lxi, 1, 1907) discusses the nature of diabetes insipidus. Four cases were observed. The first was a girl of fourteen, who had bitemporal hemianopsia and diabetes insipidus following upon fracture of the skull. In the second case, a child of 8, no etiological factor was found. The third case, a man of 18, was associated with fracture of the base of the skull; and the fourth case was in a hysterical girl of 16. The last was the only one in which much improvement was seen. Seiler's observations were undertaken to confirm the views of Strubell, Tallqvist, Meyer, and others, that the condition is due to a disturbance of kidney function. Constant quantities of water were accurately administered at hourly intervals for twenty-four hours, each separate specimen of urine being examined. The amount of urine passed at night was found to be much larger than that during the day, but the specific gravity of all the specimens was constant. Such a condition could only be due to a disturbance of kidney function, and is opposed to the view of a disturbance of absorption. A large amount of water (1½ litres) was administered to both a normal person and a patient with diabetes insipidus early in the morning. There was much more prompt excretion of water in the normal person than in the patient. In the latter the excretion of the excessive amount of water extended over a long period, in the healthy person the increased excretion only lasted a few hours. This was not due to disturbed absorption, as in both persons a marked diminution of the haemoglobin—that is, a thinning of the blood—was seen twenty minutes after drinking the water. The delayed water excretion could only be due to disturbance of the kidneys. Further observations were made to ascertain the nature of this disturbance to the kidneys. The amounts of urea, phosphates, and chlorides excreted in twenty-four hours showed no difference in the diabetic patients from the normal amounts, but uric acid showed a definite and marked diminution. The effect of large amounts of albumen were tested by giving five eggs in the morning and afterwards making hourly estimations of the urine. In a normal person this was followed in four to six hours by a marked increase in the specific gravity of the urine, due to increased urea, but in diabetes insipidus the increased excretion of urea occurred gradually, without any real change in the concentration of the urine. Nothing abnormal was observed after administration of large amounts of sugar, potassium iodide, or methylene blue. In another series of observations more exact metabolic experiments were undertaken, in which the food remained constant but the amount of water varied. When the patient took all the water he desired, metabolism showed no variation from the normal except the diminution in uric acid. The amount of water was then limited, and a control experiment was made on a healthy child. In the latter it was found that with an increase or diminution in the amount of water, nitrogen loss or retention occurred for the first one or two days, and afterwards the figures returned to the previous level. In the case of diabetes insipidus, however, the amount of nitrogen excreted remained permanently diminished, and the same was true of the phosphates and chlorides. The excretion of potassium iodide was much delayed, and the patient suffered from headache, lassitude, disturbance of appetite, and a tendency to vomiting. There was also a definite increase in the osmotic pressure of the blood serum. All these observations point to diabetes insipidus being due to a disturbance of kidney function, the kidneys being no longer able to excrete a urine above a certain concentration, this concentration being usually much less than normal. A satisfactory excretion of the urinary solids, then, only takes place when such an amount of water is given that the urine will be of low concentration. If this amount be not given there is retention of the solid constituents, and symptoms similar to those of uraemia appear. This need for increased water occasions the chief symptom—polydipsia. Treatment should therefore not include limitation of the amount of water, but an attempt to stimulate the kidney to excrete the solid constituents in a more concentrated condition. Diuretics, however, did not give favourable results.

44. Morphology of Dementia Praecox.

L. LUGIATO (*Il Morgagni*, January, 1907) considers that dementia praecox has been studied too exclusively from the standpoint of function and too little from that of structure. He describes the methods of examination employed by Professor de Giovanni and his pupils, and discusses 24 cases of dementia praecox, for each of which the anthropometrical formula of de Giovanni is supplied. The most important points are the height, the reach with arms extended, the height and circumference of the thorax, the abdominal height, the xipho-umbilical distance, the bi-iliac diameter, and the length of the vertebral column. The morphological characters which he notices in the subjects of dementia praecox are a broad chest, sometimes of small depth; height of patient, often less than breadth with arms extended; and height of sternum, not greater than one-fifth of thoracic circumference. These characteristics are often combined with undue development of the abdomen, especially in the hypochondriac region, and an excessive length of the xipho-umbilical line. The vertebral column is always excessively long, a persistent embryonal character which de Giovanni has found frequently associated with neurasthenia. The patient is apt to present a rather delusive appearance of robustness, but, in fact, he is feeble and torpid, and even before the well-marked onset of the disease his circulatory system is apt to be poorly developed, his left ventricle small, his pulse feeble and of low tension, and his superficial veins not very distinct. The heart is sometimes smaller than usual, and the left ventricle is frequently small in comparison with the rest of the heart. Circulatory torpidity may be shown by reddened extremities—hands, feet, nose, ears. The patient is apt to suffer from chilblains during winter. The lymphatic glands may be enlarged, and the lymphatic system appears to take on a vicarious activity, compensatory of the sluggishness of the circulation of blood. There may be an excessive deposit of flabby fat. The early history of the cases shows that the patients have usually been strange and fatuous in manner before the disease was distinctly declared. Apathy, indifference to their surroundings and to the future, love of solitude, and sexual perversion are common facts in the early history of the patients, and the author connects them all with the torpidity which is characteristic of the disease.

45. Gonorrhoeal Rheumatism.

ROBIN (*Journal des Praticiens*, January 26th, 1907) points out that owing to the different forms in which gonorrhoeal rheumatism may manifest itself, one method of treatment cannot be suitable for all. The arthritic manifestations of gonorrhoea may show themselves at various periods of time after the onset of the primary infection, in some cases after a few days, in others only after the gonorrhoeal discharge has subsided. The appearance of arthritis following an attack of gonorrhoea is sometimes followed by cessation of the discharge, at other times by its increase. Monoarticular and polyarticular gonorrhoeal rheumatism may resolve completely, may become chronic, or may end in suppuration. In the acute forms and in the polyarticular varieties the author finds salicylate of soda to be the best remedy; in the monoarticular forms this drug is useless, and when renal disease is present it should not be given. In all cases of gonorrhoeal arthritis the primary disease should be suitably treated, and for this purpose one may order daily warm baths, and internally drugs consisting of a decoction of the leaves of the pine to which has been added a little bicarbonate of soda. This treatment at first increases the discharge, but this is soon followed by a marked diminution. When there is gonorrhoeal inflammation of the conjunctiva, the author advises frequent washing of the lids with hot boracic lotion, and the instillation between the eyelids twice daily of a solution of copper sulphate (0.10 gram to 30 grams of water). In cases where the kidneys are unsound and salicylates cannot be given, the primary trouble can be favourably influenced by the administration of urotropin or of benzoate of soda, or in obstinate cases by a mixture of the oils of juniper and laurel (10 to 12 drops daily). In cases where these remedies are badly tolerated by the patient, one may prescribe turpentine. If the affected joint be very painful, it must be kept at rest on a splint and an ointment

containing 10 grams each of salicylic acid, essence of turpentine, and lanolin in 80 grams of lard applied to the surface on lint. As soon as pain has ceased the joint must be passively moved, and free movements carried out from time to time to prevent ankylosis. Bier's method of treatment has also proved very efficacious in the treatment of gonorrhoeal arthritis. In those cases where the primary gonorrhoeal discharge has existed for several months, intraurethral injections of protargol or of potassium permanganate, 1 per cent. each, may be recommended, together with the internal administration of balsam of copaiba and cubebs, and as a tonic a preparation of iron may be ordered. For the joint trouble massage and electricity will help to render the articular movements supple and to prevent muscular atrophy. Arthrotomy should not be attempted with gonorrhoeal joint inflammations, the author thinks, neither should simple puncture of the joint cavity be practised. If the joint becomes painfully distended it may be punctured and a small quantity of 1 in 4,000 perchloride of mercury injected; this is again withdrawn and another small quantity injected, and this is repeated until the fluid which is withdrawn is quite clear.

SURGERY.

46. Dislocation of Hip-joint.

L. R. v. Ruediger Rydygier (*Berl. klin. Woch.*, April 1st, 1907) finds that mistakes in diagnosis of dislocation of the hip-joint are not rare, and when they occur often are followed by serious consequences both for the practitioner and for the patient. He limits his remarks to traumatic dislocations, which are comparatively uncommon. Statistics show that among dislocations, while the shoulder is affected in 52 per cent. of all cases and the elbow in 27 per cent., the hip is only affected in 12 per cent. This is explained by the depth of the socket, by the density of the capsu'e and the ligaments, and by the strength of the muscles surrounding the joint. The hip-joint is, therefore, only dislocated as the result of considerable force. As would consequently be expected, it is an accident which befalls men of the working age, that is, from 20 to 50 years, and is very rare in children or old people. A number of classifications of the varieties have been made, but the author prefers to adhere to Hueter's classification. The first variety is the dislocation induced by flexion and adduction. This is the most common form. The force which acts places the limb in the position of flexion, adduction, and internal rotation. Either the pelvis or the leg may be fixed. The head of the femur impinges on the capsule below and behind, and tearing it in this situation passes through either to be held in position by Bigelow's ligament, and thus to lie close to the great sciatic notch, or the capsule and muscles are widely torn, and the head passes upwards on to the outer surface of the ilium. The two subvarieties are therefore spoken of as the sciatic and iliac dislocations. The head of the femur may tear the capsule behind and above, and thus pass directly on to the ilium. In the latter case the tear in the capsule is above the acetabulum while in the indirect variety it is below. The symptoms are very characteristic. At first one may fail to palpate the head of the bone in its abnormal position; but, as a rule, one can feel a hard round resistance placed deeply in the buttock when the patient is narcotized. The extremity is flexed, adducted, and rotated inwards, and is shortened. The actual shortening is greater in the iliac form than in the sciatic. The trochanter is found between 3 and 7 cm. above Nélaton-Roser's line in the former, and only between 2 and 3 cm. above this line in the latter. Apparent shortening is further caused by the patient attempting to correct the adduction by tilting the pelvis. The flexion is much more marked in the sciatic form than in the iliac form. An important diagnostic sign is the fixation of the leg in the false position; but one must remember that slight passive movement in the perverse direction is possible, but is accompanied by much pain. One feels a spring-like, elastic resistance to attempts to move the limb. As far as the differential diagnosis is concerned, one can easily exclude severe contusions by the false position, and fracture of the neck of the femur by the fact that in this injury the rotation is always outwards. The flexion and adduction also are never marked in fracture. It is further necessary to be on the look-out for fracture of the edge of the acetabulum. The reduction is mostly easy when attempted early, but may be impossible after the lapse of some weeks. Cases, however, have been known in which the reduction has been successfully carried out after a whole year. Great force is unnecessary, but one can rarely do without anaesthesia. The patient is placed on his back and his pelvis is fixed firmly by a strong assistant. It is often useful to get the assistant to flex the other thigh and leg *ad maximum* against the patient's body. The dislocated limb is then secured by the surgeon and the leg flexed to a little more than a right angle. Then he pulls strongly upwards, as if he is trying to pull the thigh out of its pelvic attachment. If the head does not fly back into the socket in response to this, one may add abduction and outward rotation to the flexion, so that the outer limb of the ilio-femoral ligament is stretched and the head is levered into the acetabulum while the trochanter is fixed as pivot against the ligament. When the tear in the capsule is small, it may be necessary to perform adduction instead of abduction in order to place the head opposite the tear. One would then flex, adduct, and rotate outwards. The author calls especial attention to the possibility of the head sliding round the outside of the acetabulum instead of springing into it, and thus converting the dislocation into an obturator dislocation. It is therefore always necessary to assure oneself that the head has actually been replaced. When the hip cannot be reduced, one can choose between leaving it alone or performing an operation either for the reduction or resection or subtrochanteric osteotomy. The hip may be left alone if the shortening is not too great and the chances of walking fair, or if there is not much pain or paralysis, indicating pressure on the sciatic plexus. The anterior dislocations are less common than the foregoing. First he deals with dislocation by flexion and abduction. This is caused by some power which forces the limb into flexion, abduction, and external rotation. When the tear in the capsule is small, the head remains close to it, and an obturator dislocation results, but when the tear is greater, the head may pass deeply down, and a perineal dislocation will result. In these forms, one has a moderate degree of flexion, abduction, and outer rotation, and one finds slight apparent shortening. The trochanter, however, is always below Nélaton-Roser's line. In reducing this form, one flexes to render the capsule and Bertini's ligament less tense, adducts to approximate the head to the edge of the acetabulum, and performs internal rotation to lever it over the edge. The pulling in the flexed position prevents the head from merely sliding round the socket. Dislocation caused by extension is caused by violence forcing the limb into a position of hyperextension and adduction. The varieties are the ilio-pectinea and the pubic dislocations. The symptoms are shortening, abduction, and rotation outwards. The head is easily felt close under the skin, and in this way a confusion with fracture of the neck of the femur is not likely. The rarest form of dislocation of the hip-joint is the dislocation upwards. This form is like the ilio-pectinea as far as symptoms are concerned. Dislocation downwards—that is, dislocation caused by flexion—is rare, but when met with is characterized by the absence of adduction and internal rotation. In conclusion, the author emphasizes the necessity of recalling the anatomy of the muscles and ligaments of the hip region before one attempts to reduce a dislocation of the hip-joint.

47. Dangers of Immobilization of Limbs.

Lucas-Championnière (*Journ. de Méd. et de Chir.*, February 10th, 1907) points out some of the dangers which are liable to ensue from a too complete or too prolonged immobilization of the limbs. He maintains that a certain amount of movement, carefully graduated, is the best condition to assist the reparation of bony tissue, and as evidence in support of this statement he refers to the experiments carried out on animals by Cornil and Coudray. These authors fractured the bones of animals, and then moved the fragments every now and then; it was found that such movements not only did not prevent the formation of callus, but actually accelerated it. They further found that, when the broken fragments were immobilized, union of the broken ends occurred more slowly than when the fragments were freely moved on one another. In order to prevent union of the fragments, they found that movement of the bones of such a kind had to be made so that the adjacent ends were not in contact. The author affirms that not only is immobilization of bones (when bony union is required) useless, but that it is actually injurious to the vitality of the bony tissue, and he therefore urges that only in those cases in which immobilization is absolutely indispensable should fragments of bone be immobilized, and that even in such cases movements should be carried out when circumstances allow. As evidence to the danger of immobilization, he refers to cases of congenital dislocation of the hip in children treated by the bloodless operation, and followed by prolonged immobilization of the limb;

many of these cases on using the limb cause fractures of its bones by comparatively trivial movements; but when these fractures unite and the limb is allowed free movement afterwards for a sufficient length of time the bones regain their natural strength.

OBSTETRICS.

48. The Care of the Perineum during Labour.

E. TOFF (*Muench. med. Woch.*, March 12th, 1907) says that it is not surprising that a certain number of cases of ruptured perineum occur still even in the best conducted lying-in hospitals, when one considers that nearly every method of protection of the perineum aims at allowing the fetal head to pass slowly through the vulvar opening, if possible during a pause between the pains, that the pelvic floor is supported by the hand and the fetal head is pushed upwards against the pubes. But he considers that the determining cause of rupture is not to be sought in the rapid transit of the fetal head and the pressure which it exercises, but that the misproportion between the parts passing through and the inelasticity of the external genitals are the real causes. It is mostly the greatest sagittal diameter, that is, the suboccipito-frontal diameter, which stretches the vulva, and as the forehead is being born, the rupture occurs. This diameter measures on an average 11 cm. (that is, about 4¼ in.), which corresponds to a circumference of between 34 and 35 cm. (or 13¼ to 13⅝ in.). Various causes, such as shortness of the fetal neck, increased movability of the maternal coccyx, shortness of the perineum, etc., may cause the deflexion of the fetal head to set in too soon. This should not take place before the whole occiput has passed beneath the symphysis. Under these circumstances, the diameter which has to negotiate the vulvar opening will be the occipito-frontal (12 cm.) or even the mento-occipital (13 cm.) He therefore argues that the best protection for the perineum is to ensure that the fetal head shall pass through the vulva with its most favourable diameter. This can be effected by delaying the deflexion (extension) as long as possible, and pressing on the occiput until not only the occipital bone has passed beneath the symphysis, but the soft parts of the neck are lying in contact with the lower surface of the symphysis. The diameter which now has to pass is smaller than the suboccipital frontal diameter, as the neck is capable of being compressed against the bone. Toff has carried out this principle in a large number of births during the last four years, and has not had a single ruptured perineum. He applies his method by taking up his position at the right side of the bed, facing the patient. As soon as the head appears at the vulva he lays his hand on the vulva, with the fingers directed toward the symphysis. At each pain he attempts to bring down more of the occiput, and thus to increase the flexion. As soon as the whole occiput has passed below the symphysis and he can only feel the soft parts of the nape of the neck against the bone, he allows the extension to take place. He prefers to place his patient on her left side, and not on her back, as is usual in Germany. One can further assist matters by pressing the whole head against the symphysis during the extension. In face presentations the same principle is applied, and the chin is brought as far down as possible before the extension is permitted. He appends some diagrams to show the advantage of his method.

GYNAECOLOGY.

49. Influence of the Placenta on the Maternal Tissues.

FRANK (*Journ. of Exper. Med.*, May 25th, 1907) has performed experiments which have a bearing on the theory that the placenta exerts a specific influence upon the maternal organism. Three rabbits were repeatedly injected with fresh placenta of pregnant rabbits removed by operation just before term. These animals were used (*a*) anatomically, to study the uterus, ovary, and tubes; and (*b*) biologically, to test the serum for precipitins. The results of these investigations were all negative. Histologically, not the slightest difference was to be found in the organs of the injected rabbits as compared with control animals; and in none of the serum tests was a precipitate obtained. In a second series of experiments three groups of rabbits—each group composed of two animals, a male and a female—were injected repeatedly with the following materials: (*a*) A solution of nucleo-proteid obtained from the human placenta; (*b*) a maceration of human placenta made blood-free by washing in running water; (*c*) a maceration of human placenta made as bloodless as possible by washing with large quantities of normal saline solution. These preparations were tested for precipitins and for deflection of the complement by the method of Neisser and Sachs; (*c*) was also tested for cytolysis. The results of these investigations were as follows: "The injection of human placental nucleo-proteid, prepared from placental tissue made nearly blood-free, does not produce an antiserum. This result confirms the conclusions of Pearce and Jackson that nucleo-proteids act merely as mild toxic agents, without specific qualities. The injection into rabbits of human placental tissue rendered practically blood-free fails to produce any specific reaction. This confirms the view that the serum reaction following the injection of cells into a foreign organism is largely due to the blood contained in the injected tissues. The injection into rabbits of the human placenta made nearly blood-free produces a weak 'human reaction' which can be demonstrated by the reactions for precipitin, deflection of complement, agglutinin, and haemolysis. *No specific placental reaction can be shown.* This is in strict accord with the view that cytotoxines are not specific; that there is no morphological specificity. The antiserums obtained showed no cytolytic action; therefore no specific syncytiological action could be demonstrated." The author therefore concludes, with regard to Veit's hypothesis concerning the influence of the placenta on the maternal tissues, that "no experimental proof of a specific placental immune reaction can be demonstrated by our present biological methods."

50. Fibroid Suppurating after Typhoid Fever.

DELORE AND CHALIER (*Lyon Médical*, May 12th, 1907) report a case of a woman, aged 30, who was in hospital from December 17th last till January 19th for typical typhoid fever, diagnosed by the serum test. Two years previously her doctor had detected a small uterine fibroid which caused no symptoms. Four days after the patient's discharge from hospital she was readmitted on account of fever, rigors, and hypogastric pains; the latter had been noted during convalescence, but they now became severe. A relapse was suspected, but on vaginal exploration a tender mass was detected in the left broad ligament. On January 25th posterior colpotomy was performed, and a few days later the uterus and appendages were removed by the subtotal operation. The result is not given. The uterus bore under its peritoneal coat in the region of the internal os anteriorly and to the left a fibro-myoma of the size of an orange. That tumour contained a large cavity full of greenish pus. Delore and Chalier are careful to note that there was not a trace of slough or other necrotic process. They further add that at the colpotomy an abscess was found surrounding the right and the left appendages, whilst when removed the ovaries and tubes showed no signs of suppuration. They consider that the fever caused the suppuration of the fibroid, the two encysted abscesses around the appendages being without doubt secondary.

THERAPEUTICS.

51. Bromural.

THE disadvantages of all the numerous existing hypnotics stimulate experimenters to discover fresh ones which can satisfy the practitioner in every respect. Several preparations have been introduced as harmless and not poisonous nerve sedatives and hypnotics, but T. Runck (*Muench. med. Woch.*, April 9th, 1907) does not think that any of them can be truly described as such. The long-felt want seems, however, to be supplied in a new compound which Saam has synthetically built up. This compound is the α bromine iso-valerianate of urea, and is placed on the market under the name of "bromural." The non-toxicity of this new preparation has been determined by other investigators, and Runck has satisfied himself on his own person and on other healthy individuals that up to 6 grams can be taken without ill effect. His clinical experiences of the drug were satisfactory from the first. He divides his cases into three classes—namely, mild, moderate, and severe forms of sleeplessness. The first class consisted of 10 patients, and good sleep was obtained in all the patients with doses varying between 0.3 and 0.6 gram. Sleep mostly set in soon after taking the bromural, and lasted till morning. On awakening, the patients felt well and fresh. None of them com-

plained of bad dreams and no side-effects or sequelae were seen. The second group consisted of 25 cases. In this group the disturbance of sleep was moderately severe. The resistance against sleep was greater in these cases than in those of the first class, and correspondingly the sleep set in less promptly. The sleep did not last for longer than from three to five hours in any case, but it was always possible by giving a second dose to extend the sleep to double that time. The dose varied between 0.3 and 0.7 gram, while 1.5 gram was given on one occasion. It appears, however, that the effect is not increased by increasing the dose much above 0.3 gram. The fact that bromural only acts for a few hours in conditions in which cough or some other symptom disturbs the sleep speaks in favour of a rapid excretion of the substance. In the third class there were 11 patients, and in all of these the pain or other cause preventing sleep was severe. Bromural had no effect in overcoming the want of sleep here. In spite of large doses, however, no ill effects followed the exhibition of the preparation. It is therefore clear that bromural is not a toxic narcotic, and in order to support his contention that it is quite a safe mild hypnotic Runck quotes the cases of 18 infants to whom he gave it with excellent results. He states that he has employed the drug in much larger numbers than those mentioned in the various groups, but for the purpose of demonstrating the efficacy of the drug he limited himself to the few. He believes that bromural surpasses all other drugs of this class in safe and prompt action, and prophesies a wide use of bromural in future.

52. The Intratumour Application of Radium and other Rays.

H. Strebel (*Münch. med. Woch.*, March 12th, 1907) believes that it can no longer be disputed that Roentgen, radium, and external cathodal rays are capable of producing a degenerative process in the tissues of carcinomatous and sarcomatous growths. But these rays are quite incapable of bringing about a total disappearance of every growth, no matter of what size, when applied as they are at the present time. After exposing a tumour one not infrequently finds that the action of the rays has penetrated 3 mm. or more, but no trace of any action is to be found at a depth of 1 cm. The uninfluenced part of the growth usually proliferates rapidly, while the treated part is retarded. These considerations *inter alia* induced the author to apply radium inside malignant growths. This was done by boring a hole in an aluminium rod and placing his radium at the opening of this rod. The rod is then passed through a trocar opening into the centre of the tumour. The rays are then utilized in all directions, and no absorption taking place into the skin, the gain in activity is considerable; the radium can further be applied as long as is required, since no burning of the skin can result. During the last year he has been working out a method of applying *x* rays "intratumourally," and has devised a method of carrying this out. *X* rays are the secondary products of the cathodal rays on the anticathode. He allows the cathodal rays to fall on the finely-drawn-out point of a glass tube, and finds that the glass anticathodal rays are diffused in all directions. When using a platinum cathode, he only obtains diffusion to the extent of a half sphere. The latter is, therefore, useful in subcutaneous applications for superficially-placed small growths. The parts are first well anaesthetized by the infiltration method with the addition of adrenalin, and then a double-edged knife is thrust into the tumour in any direction permissible by the anatomical structures. The Roentgen tube is then passed through the incised wound canal, and then attached to a stand. The adrenalin and also the pressure render the parts bloodless, and this increases the power of absorbing the rays. It is necessary previously to have determined the capabilities of the tube by a control test with the chromo-radiometer, and so that one will be able to measure the dosage during the application. The current employed should be relatively weak in order to avoid excessive heat and to protect the tube. When soft tubes are used the result of such an application is to produce a cylinder of necrotic tissue. At times in large growths it may be necessary to make several incision canals and to apply the rays from many points, while in small subcutaneous growths, especially in glands, the so-called subcutaneous method may be used. Next, he turns to the external cathodal rays. He claims to have been the first to show that the rays which pass directly outwards through an aluminium window from the vacuum tube—that is, the external cathodal rays—are much more powerful than *x* or radium rays. They are also of greater therapeutic value. He states, without giving any details as yet, that he has succeeded in applying these rays also intratumourally. In discussing the action of the rays, he says that it is probable that all agents which cause a destruction of the blood elements, such as burns, arsenic, chlorate of potassium, etc., also cause a more or less marked degeneration of malignant tissue. It has further been shown that both *x* rays and radium induce a change in the blood corpuscles, especially a hyperleucocytosis and lymphopenia, and that the application of the rays produces a substance in the tissues which acts positively chemiotactically toward the polymorphonuclear cells, producing, as a by-product, cholin. The sum total of these changes is to prevent the new formation of leucocytes, and thus to produce leucopenia. He therefore considers that one should not only apply the rays locally to the malignant growths, but also generally, so as to assist this blood change generally, which may assist in causing degeneration of the tumour cells. He thinks that the application of chlorate of potassium, which causes a haemolysis, should be combined with the ray treatment in order to increase this blood change effect.

PATHOLOGY.

53. Experimental Arterio-sclerosis produced by Nicotine.

G. Papadia (*Riv. di Pat. Nerv. e Ment.*, Florence, 1907, xii, 161) has given repeated injections of nicotine to rabbits, in quantities up to 1 mg. at a time, for periods of from one to thirteen weeks. He finds that nicotine given intravenously causes hyaline degeneration of the arterial muscle, atrophy of the elastic fibres, and proliferation of the intima, in both young and adult animals. The nicotine weakens the vessel walls, and raises the blood pressure; the media gives way, and compensatory growth of the intima follows, producing arterio-sclerosis. The thickened intima contains a few connective tissue cells and numerous bundles of elastic fibres; its deeper layers tend to degenerate, and the necrotic areas in the media become infiltrated with lime salts, which provoke growth of connective tissue in their vicinity. Photomicrographs of the changes observed are given. The injection of 1 mg. of nicotine under the skin produces no symptoms; the same quantity given intravenously may produce at once an attack of tonic and clonic spasms, with rigidity of the limbs, opisthotonos, and trismus. The attack passes off in tremors, and the animal returns to its normal condition.

54. Lesions of Posterior Root Ganglia in Herpes Zoster.

Dejerine and André-Thomas record (*Rev. Neurologique*, No. 10, May 30th, 1907, p. 469) a case of herpes zoster in which lesions of the posterior root ganglia were found *post mortem*. The case was that of a man, aged 75, in whom shingles appeared six weeks before death from heart disease, the eruption being strictly limited to the distribution of the right eighth dorsal root. The only other important clinical peculiarity was the absence of lymphocytes from the cerebro-spinal fluid during twenty days after the appearance of the eruption. The eighth dorsal posterior root was manifestly atrophied, and showed a considerable number of fibres undergoing Wallerian degeneration. The ganglia and roots above and below showed no degeneration, and the anterior roots were healthy. As regards the eighth ganglion and root there were pathological changes in the interior of the ganglion, in its capsule, and in the root on both sides of the ganglion. The changes involved both the nervous and interstitial tissues. The capsule of the ganglion was thickened; the interstitial tissue of the ganglion and root showed accumulations of lymphocytes, the walls of many of the vessels were thickened, and their lumen narrowed. The venous sinuses of the root near the ganglion were dilated, but there were no haemorrhages. The axis cylinder in the affected parts were much hypertrophied in parts, and in some places had disappeared: besides these signs of degeneration there were signs of regeneration in the form of very fine and much twisted axis fibres resembling those described by Ramon y Cajal in the cicatrix of divided nerves. Many of the ganglion cells had entirely disappeared in the regions invaded by leucocytes, others were small, atrophied, and vacuolated. The pericellular capsules were relatively but little affected. No micro-organisms were found in the sections, but an exhaustive search for them was not made. The histological changes corresponded with those of an infective lesion.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

55. Subaortic Stenosis.

L. Zoja (*Il Policlin.*, January, 1907) says that subaortic stenosis was originally described as the result of a chronic mitral endocarditis spreading to the tissues at the upper part of the interventricular septum, and leading to fibrous thickening of the tissues below the level of the healthy aortic valves. Subsequent investigations have tended to show that the process is not necessarily fibrous, but may be atheromatous or endarteritic, especially in cases of hereditary syphilis, the disease in that case spreading from the aortic to the mitral region, and not in the direction first described. Diagnosis has usually been made *post mortem*, but Huchard considers that it may be possible to diagnose the disease during life. The murmur is heard a little lower down than in the case of aortic stenosis, and over a wider area, so as almost to suggest interventricular communication, but for the fact that in that case more severe functional symptoms would be likely to show themselves. A peculiar fremitus, and other signs difficult to demonstrate, have also been described. Whenever mitral stenosis is accompanied by a systolic murmur in the aortic area it is desirable to bear in mind the possibility of subaortic stenosis. Zoja reports and discusses a case carefully observed by himself, and examined anatomically after death. The patient was a woman of 33. She had two attacks of facial erysipelas at the ages of 13 and 14. She suffered at 17 years of age from an illness supposed to be diplococcic meningitis, and after that time always suffered from giddiness and palpitation of the heart after slight exertion. She was married and bore a child at the age of 23. Six years later she suffered from a pelvic and abdominal inflammation spreading to the chest, and considered by the author to have been gonorrhoeal in origin. The same symptoms appeared again in July, 1905. When she came to the hospital she was pale, had some oedema of the legs, slightly thickened arteries, and a dicrotic pulse—109. Over the carotid arteries the heart sounds to be heard were a blowing systolic murmur and a second sound. The cardiac impulse was feeble. There was a slight systolic fremitus to be felt over the fourth and fifth left intercostal spaces. The heart dullness was very slightly increased in extent. At the apex there was a first sound partly obscured by a blowing murmur lasting up to the beginning of the second sound. This murmur was heard more or less over the whole cardiac area, being conducted especially along a line from the apex to the aortic cartilage. At the lower part of the sternum there was a faint diastolic murmur. At the aortic cartilage the systolic murmur completely effaced the first sound, and the second sound was accentuated. At the pulmonary cartilage the murmur was more faint, and the second sound was not accentuated. The murmur was also heard in the left axilla and to the right of the sternum. While she was in hospital there were haemorrhages from the nose and gums and from haemorrhoids. The case was diagnosed as aortic stenosis without involvement of the mitral orifice. She died at the beginning of March, 1906. At the autopsy an atheromatous patch was found in the aorta. The aortic valves were slightly thickened. The stenosis was shown to be due to a cord of fibrous tissue of inflammatory origin, running three-quarters of the way round the inner surface of the base of the aorta, and was therefore of the nature of subaortic stenosis. Zoja considers that the origin of the disorder is to be found in the bacillary infection causing the two attacks of erysipelas, or else in that which gave rise to the meningitis. He states that his case shows the possibility of subaortic stenosis without mitral disease from endocarditis the result of infection, and the fact that in such a case, in the absence of arterial changes, the cardiac hypertrophy is slight, and only proportional to the amount of stenosis. Diagnosis depends on this fact and on the minute differences between the murmurs in subaortic stenosis and those in pure classical aortic stenosis.

56. Appendicitis.

A. Albu (*Mitt. a. d. Grenzgb. d. Med. u. Chir.*, 1907, xvii, p. 349) has observed 178 cases of acute and 315 of chronic inflammation of the appendix during the last ten years in his private and public practice. The figures include a number of the milder attacks that are rarely seen in hospital practice, are cured spontaneously in from one to eight days, and lead Albu to protest against the practice of operating early upon every case of appendicitis that may be met with. His article extends to over fifty pages, and can only be summarized here; he is in favour of operation the moment any evidence of peritonitis or peritoneal irritation makes its appearance, but, in view of the fact that many acute cases recover of their own accord in a few days, he deprecates the invariable early operation advised by many surgeons. Such operations are as dangerous to the patient as the mild attack of appendicitis is itself, and erroneous diagnosis must often be made if the operation is done within twenty-four to forty-eight hours, before a mild case of appendicitis can be certainly diagnosed. The favourable statistics of the early operation are attractive, but owe some of their attraction to the fact that they include very mild attacks. Appendicitis must not be diagnosed unless macroscopic changes can be seen in the appendix. Opium and purgatives should be withheld even in mild cases; operation is always indicated in intermittent or remittent attacks, and also in chronic appendicitis whenever any objective evidence of disease can be made out—constant resistance or tenderness on pressure over typical areas. But if only subjective troubles are complained of, a long course of internal therapy should first be tried; rest in bed, hydrotherapy or balneotherapy, and so forth, will often work lasting cures in mild cases.

57. Fever as a Symptom of Gastric Carcinoma.

G. Spelta (*Gazz. Med. Ital.*, May 16th, 1907) states that fever has been described by some authors in as many as 27 per cent. of all cases of cancer of the stomach, but if attention be directed only to those cases in which fever is constantly noted while the patient is under observation, and in which it may be supposed to be really a symptom of the disease, few cases will be found. He inclines to the view that in some cases at any rate it is due to the cancer itself, and not, as some have thought, to secondary infections. For it is not confined to cases where the growth has ulcerated and it is not attended by the rapid physical deterioration which might be expected if it were due to secondary infection. The type of fever is characteristic, a remittent quotidian fever, varying for the most part between the limits of 37.5° and 38.5° C. The elevation of temperature, which reaches its height in a few hours, is not preceded by shivering, nor accompanied by delirium, severe headache, palpitation, and illness. Defervescence is usually followed by profuse sweating. There is no leucocytosis. The fever hastens the patient's downward career, but it does not produce the well-marked and speedy wasting which might be expected. Two cases are recorded by the author, who reproduces their temperature charts for the time of their stay in hospital. The first patient was a man of 50 with pain at the epigastrium—at first two hours after food, getting worse during the last year, and at last becoming almost continuous—a lump the size of a fist palpable just below the xiphoid cartilage, and a hard and nodulated liver. An hour after Ewald's small test breakfast the stomach yielded 73 c.cm. of food slightly tinted with fresh blood. There was no free hydrochloric acid, but slight traces of lactic acid. No cancer cells found. The patient was in hospital from November 6th to January 4th, and his weight gradually fell from 53 to 49 kilos. He lived three weeks after leaving hospital, and continued to suffer from fever of the same type, unaccounted for by any coexistent respiratory, urinary, or other disease. The second patient had similar symptoms, except that no lump could be felt. He died rather suddenly after being in hospital for twenty days and losing 3 kilos in weight. *Post mortem* there was found an ulcerated new growth in the pyloric region, opening by a large rent into the peritoneal cavity.

SURGERY.

58. Posterior Drainage in Operative Treatment of Large Pancreatic Cysts.

Hardouin (*Rev. de Chir.*, No. 6, 1907) reports a case in which Duvot, after exposure of a large glandular cyst of

the pancreas by median laparotomy, and removal of its fluid contents, completed the operation by establishing free drainage in the left lumbar region. The wound in the abdominal wall was completely cicatrized by the eleventh day after the operation, and the lumbar fistula closed at the end of the third month. The practice of lumbar drainage is strongly recommended by the author as a means of overcoming a serious result of incision of a pancreatic cyst. This operation, when performed in the usual way by laparotomy, marsupialization, and anterior drainage, is often followed by a persistent fistula, which not only causes much discomfort, but often impairs the general condition and leads to the death of the patient through exhaustion. The chief causes of persistence of the fistula are, it is pointed out, retention of an irritating fluid, infection of this fluid, and the continuous secretion from the cyst. Drainage through a posterior opening made in the lumbar region favours the ready removal of the secretion, and, moreover, enables the surgeon to arrest the discharge by injections of iodine solution or some other irritating fluid, a therapeutical resource which would not be applicable in drainage by an anterior abdominal wound. It has been proposed by Geraud to attack the cyst from the lumbar region, and thus to avoid the dangers and inconveniences attending anterior laparotomy; but Hardouin, whilst acknowledging that such an operation would afford the best conditions of security, and secure perfect drainage, points out the technical difficulties of this procedure, and the impossibility in those rare cases in which the cyst can be removed, of practising total extirpation.

59. Surgery in Diabetes.

Joseph Wiener (*Med. Rec.*, May 4th, 1907) discusses the advisability of performing surgical operations in diabetes and the care of the surgical complications of diabetes. We must distinguish between intercurrent diseases demanding surgical interference and the surgical complications of diabetes. All necessary operations for diseases not due to diabetes should be performed just as would be advisable in ordinary patients. All operations of any kind on diabetics should be done as simply and quickly as possible, and ether and chloroform should be avoided. The use of a moderately restricted diet before operation will be serviceable, but care should be taken not to weaken the patient's resistance by too strict diet. Sodium bicarbonate given before and after operation will do some good in neutralizing the acids that are created by the disease in the blood. Sugar in the blood is not of as much importance as the acetone, diacetic acid, oxybutyric acid, and lactic acid which are in the circulation. They injure the tissues and render them prone to infection, as well as producing premature arteriosclerotic changes. This results in the production of dry gangrene, which is converted into the wet form by infection. In gangrene of the foot, a high amputation is demanded by affection of three or more toes, cellulitis, and progressive infection. If more than 1 gram of ammonia is excreted in twenty-four hours, operation should be postponed until careful diet has lessened the ammonia.

60. Preventive Treatment of Tetanus.

In the course of a long discussion by many leading members of the Société de Chirurgie of Paris on the value of injections of antitetanic serum in the prevention of tetanus, Berger (*Bull. et Mém.*, No. 18, 1907), arguing in favour of such prophylactic method, stated that great importance was to be attached to the study of the records from those hospitals in which it had been systematically practised. In his own hospital practice during the past seven years preventive injections had been made, by his instructions, in all cases of injury likely to result in tetanus, and particularly of wounds soiled by contact with earth or complicated by the introduction of some foreign body. The only case of traumatic tetanus observed in the course of this long trial was one in which the wounded subject had not been treated by preventive injections. A like experience has been recorded by Luckett, an American surgeon, who in 60 cases of revolver wound noted only 1 instance of tetanus. This occurred in a woman who refused to be treated, as all the other subjects were, by antitoxic injections. These results, Berger holds, confirm the favourable expectations of those who have tried preventive injections with much success on animals. Berger, in discussing the published instances of the failure of the preventive treatment, states that such instances are rare, and, in his opinion, not sufficient to destroy faith in the value of antitetanic injections. At the most, he states, they suggest some reservations in regard to the constant efficacy of the method. A study of the few recorded cases of failure show, it is pointed out, a much reduced mortality, and favours the view that preventive injection, if not an absolute guarantee against the development of tetanus, is a cause of attenuation and of diminished gravity of this complication. There are, it is thought, two essential conditions for the success of the preventive treatment by antitoxin. It should be commenced as early as possible after the injury, and be repeated not only after an interval of a few days, but also at a later period and at the end of the second or the third week, in order to act on any toxins developed by bacilli that have escaped phagocytosis. In concluding, Berger expressed the opinion that in the action of the preventive injection of antitetanic serum, if such injection be made early and be repeated, we possess a very sure if not constant means of protection against the development of tetanic symptoms, and stated that he would not hesitate to recommend such treatment whenever the conditions of a wound suggested the possible occurrence of this complication.

61. Three Laparotomies in an Infant.

At a recent meeting of the New York Surgical Society Elsberg (*Ann. of Surg.*, May, 1907) presented a child on whom he had performed laparotomy three times. The first operation was practised when the infant was 10 months old for an ileo-caecal intussusception which extended into the sigmoid flexure. Reduction was successfully accomplished, and after an interval of ten days the child was well. Four weeks later the child was attacked by severe symptoms of acute intestinal obstruction, due—as was found on reopening the abdomen through the old scar—to constriction of the caecum by a band. This was divided between ligatures, and after ten days recovery was complete. Six weeks later, when the child was just 1 year old, laparotomy was performed for the third time for intestinal obstruction, and a band was found which had strangulated a loop of ileum. Notwithstanding the severity of this third attack and the intensity of the shock, the child made an uneventful recovery from the operation.

OBSTETRICS.

62. Rupture of Membranes: Precautions Necessary.

Rudaux (*La Clin.*, May, 1907) finds that artificial rupture of the membranes in labour is a simple matter when a real bag of water is present in front of the presentation; the difficulty arises when the fetus is not engaged in the pelvis and the bag is large, and when the membranes are so tightly applied over the presenting part as to be almost unrecognizable. When rupture is indicated it may be performed either with the finger or with a perforator. The latter is sterilized in a flame, and held in one hand while the index finger of the other hand is passed into the vagina, and comes into contact with the membranes. When a contraction commences the instrument is slipped up along the index finger and gently pressed against the sac, which it tears. The finger should not be withdrawn until it is certain that it is in direct contact with the presenting part. When intervention is undertaken with the object of arresting haemorrhage due to the insertion of the placenta upon the lower uterine segment, the index finger should be further employed to tear the membranes as widely as possible. This will prevent any dragging on margins of the placenta, and will therefore stop its detachment and the consequent flow of blood. When the fetus is not engaged in the pelvis and the sac formed by the pelvis is very large, it is wise to undertake a thorough manual examination of the sac to determine whether the cord or a small limb is lying in front of the presentation. Should such be the case, it is replaced before the rupture is made. The perforation is made in the interval of two contractions to prevent a too rapid loss of the amniotic fluid; before withdrawing the hand one should ascertain that the escaping waters have not brought down the funis, and that the presentation is occupying the pelvic basin, making it impossible for prolapse to occur. More rarely one sees the presenting part flexed and engaged in the parturient canal with no bag of waters in front of it, but with the membranes so smoothly applied to the head that they are almost imperceptible, or appear to have been already ruptured. An attentive examination shows that the head is smooth, and that the folds and hair of the scalp are not in contact with the fingers. On the other hand, a sero-sanguineous swelling has been mistaken for the sac, and should not be forgotten; the integrity of the membranes is evident when the entire hand is introduced into the vagina and passed over the fetal head, which is

felt to be smooth and uniform, and from which no liquid is flowing. No sharp instrument can be used to make the perforation, but the membranes can be grasped by a pair of forceps, and these twisted round several times, when the rupture will easily be made. The index finger is then introduced into the breech and the opening extended freely. In some rare cases the membranes which form the amniotic sac contain blood vessels distributed over them, the funis is not inserted in the placenta but in the membranes, and the vessels diverge, running singly between the folds of the amnion and chorion to the placental mass. When it is possible to diagnose this condition an effort should be made to tear the membranes in the direction of the vessels, and not transversely to them. When placenta praevia is present palpate the margin of the placental surface to find a point at which the membranes are accessible and easy to rupture.

63. Delivery of the Retained Head after Decapitation.

Borgnis regrets that the methods of the delivery of the fetal head which is retained after decapitation are not dealt with more minutely in the midwifery textbooks (*Deut. med. Woch.*, October 16th, 1906). The deplorable accident of pulling the fetal head off in attempts to deliver does not occur so frequently since delivery by forceps has become more common than version and extraction by traction on the feet. Still the accident may occur at the present time, especially with a dead and decomposed fetus. How to deliver the retained head under these conditions is an important question in midwifery. If the pelvis is normal, and the cervix is completely retracted, with a dilated or nearly dilated os externum, one can deliver by the manual method. This is done by passing the hand into the uterus, seeking the fetal mouth with the index and middle fingers, and, while the head is pressed on by the external hand, slight tension is applied on the chin. Next one can deliver with forceps, fixing the head in the true pelvis from outside. Or one can apply a method which the author has devised. This consists in catching hold of the head with a vulsellum or some suitable form of forceps, tying a string on to the instrument and weighting the string, which is brought over the end of the bed. The continuous traction induces good uterine contractions, and the head can be delivered after a few hours by slight pulling on the forceps. When the cervix is maintained, and only admits one or two fingers, one can dilate with a dilating bag or metal dilator, and deliver by perforation and applying the cranioclast, or one may adopt the method mentioned above of applying continuous traction by means of the forceps tied and weighted. When the pelvis is contracted one has either to employ perforation and extraction with the cranioclast, or, if the conjugate is too small, one must perform Caesarean section. The author describes the details and advantages of his method, and, while he does not wish to give the impression that it is a method calculated to replace all others, he believes that it will be found extremely useful in certain cases. It is less severe for the mother, and is very simple to carry out.

GYNAECOLOGY.

64. Retroflexion at Term: Abdominal Section.

Lange (*Monatsschr. f. Geb. u. Gyn.*, May, 1907) publishes a full report of a labour at term impeded by retroflexion of chronic character, as adhesions were found to be present. The patient was 31 years of age. All her three previous labours had been lingering but spontaneous; the second and third child, delivered in a condition of asphyxia, both died within a day. At term, during the fourth pregnancy, labour pains were strong, the membranes ruptured early, yet delivery did not occur. At the end of four days Lange was consulted, as an irreducible tumour had been detected in the pelvis. The uterus reached to three fingerbreadths above the umbilicus; its walls were so tense that the outline of the fetus was not easy to define. The fetal heart sounds were clear. The os uteri was drawn up to the level of the upper border of the symphysis; behind the cervix was a soft mass which filled the pelvis, and was continuous with the gravid uterus above. The os externum looked directly downwards, and there was a deep groove between the back of the cervix and the pelvic mass. The breech presented. Lange operated; the uterus, when the abdominal incision was made, could not be delivered. The round ligaments and appendages sprang from it below the level of the promontory. Some adhesions being separated, the fundus could be brought to the level of the abdominal wound but no further. A transverse fundal incision was made and the fetus delivered alive. The uterus immediately contracted, and the placenta was at once detached. Whilst the deep pelvic adhesions were being separated from the incarcerated portion, a very difficult task, requiring the aid of scissors, the uterus became very flaccid, and bled so freely at the site of the placenta that supravaginal amputation was found necessary. After appropriate treatment the patient recovered. The child was reared, it weighed at birth nearly 9½ lb., and measured 21 in. in length. The anterior wall of the uterus, to which the placenta was attached, was doubly as thick as the posterior; it had been very tense, but, after amputation, was much contracted, whilst the posterior wall appeared as a flaccid sac hanging from the uterus. The pelvic adhesions to the outer aspect of this sac were found to be very intimate; yet, although this condition proved that the incarceration was of long standing, there had been no symptoms whatever of that complication until labour. On the other hand, the dystocia was extreme, and the operator met with unusual difficulties.

65. Malformations in one Family Limited to one Sex.

Schirmer (*Zentralbl. f. Gynäk.*, No. 3, 1907) refers to Sippel's experience in a family where all the girls were born healthy and free from malformations whilst the three boys were quite otherwise, the first having spina bifida, the second persistent thymus, and the third myxoedema. Schirmer himself was for many years the medical adviser to a family where all the girls had the same malformation, hemicephaly, whilst all the boys were well formed, healthy, and strong. Of the total eight children the first three were boys born between 1882 and 1885 inclusive. The fourth child, the first girl, was born in 1887, and was dead when delivered. Late in 1888 the fifth child, a boy, was born; in 1891 the sixth child, a girl, was delivered alive and lived for a day and a half, notwithstanding the arrested cranial development. The seventh child was a boy, born in 1894. Seven years later the mother was delivered of her last child. It was a stillborn girl, with hemicephaly like the two other female children. The placenta was adherent. Schirmer considers that this uniformity of a malformation limited to one sex in one family favours the theory that the sex of the individual ovum is distinct before impregnation. He further believes that male and female ova occupy different parts of an ovary; the ancient theory of the definite limitation of each sex to one ovary is less probable. Ahlfeld reported to Schirmer a case where a woman aged 37 came under his care. She had already given birth to seven children. The third and fourth were healthy girls, the remainder healthy boys. At her eighth confinement the mother was delivered of triplets, not uniovial but developed from three ova. Two were females, both hemicephalic, the third was a healthy boy. Schirmer considers that some disease of the female ova occurred subsequent to the birth of the fourth child, which was the second girl.

THERAPEUTICS.

66. Dosage of Suprarenin in the Lumbar Canal.

According to J. Biberfeld (*Deut. med. Woch.*, April 4th, 1907) very little work has been published on the toxicity of suprarenin. Doenitz found that 1 mg. injected into the spinal canal in cats did not produce any severe poisonous symptoms; 0.5 to 0.8 mg. pro kilo is said to be the lethal dose of suprarenin when applied intravenously in cats and 0.1 to 0.2 mg. in rabbits. Biberfeld has investigated this point, especially in connexion with a synthetically prepared suprarenin and some suprarenin derivatives. He found that cats mostly died after receiving 5 mg. of suprarenin (medium-sized animals) intravenously or subcutaneously, while medium-sized rabbits generally died after 0.3 mg. They recovered slightly from the early symptoms for a short time, but died within twenty-four hours of the onset of the secondary symptoms. Death was due to suffocation, which was caused by an acute oedema of the lungs. He does not think that one is justified in assuming that the dose for rabbits can be applied to human beings. According to Braun 0.5 mg. is the highest permissible dose for the human subject. Rabbits show very marked toxic symptoms when 2 mg. are injected subcutaneously. When the suprarenin is applied intradurally, it is found to be ten times more poisonous. If one were to argue from this basis, one must assume that the permissible

dosage for the human subject, by spinal application, is from 0.05 to 0.075 mg. One finds that some surgeons have injected $\frac{1}{8}$, $\frac{1}{4}$, and even $\frac{1}{2}$ mg. into the spinal canal in human subjects. It thus appears that from a theoretical standpoint this dosage is much too high. Now turning to the clinical reports, one reads of side-actions of suprarenin, such as headache, vomiting, and the like. Peripheral paralyses have been noted in cats after spinal injections of suprarenin, and it is not unlikely that the paralyses following some of the lumbar anaesthesias may be due to the adrenal extract injected. However this may be, the author is inclined to believe that the doses of suprarenin which are mostly applied in lumbar anaesthesia are too high. They are unnecessary and not free from danger. The author states that the synthetic suprarenin which he is interested in is chemically nearly allied to natural suprarenin. According to the formula given, the synthetic compound is a suprarenin in which the methyl group is replaced by a hydrogen group. Pharmacologically he finds that subcutaneously, intravenously, and also when applied into the spinal canal, the synthetic preparation is tolerated in considerably larger doses than is the natural product. The lethal dose when applied as a spinal injection for cats is about 10 mg., and for rabbits is about 0 5 mg. In spite of this diminished toxicity, the effect on the blood pressure and other pharmacological effects are just as powerful as those of the natural suprarenin. It thus appears that it might be wiser to use the synthetic preparation for lumbar anaesthesia.

67. Acocanthera and Ouabain.

THE various species of the acocanthera appear to have a very powerful toxic effect on the heart, and extracts from one or more are utilized by the natives of Nyassa and Abyssinia as arrow poisons. Acocanthera belong to the family of Apocyneae. The most common variety is called *A. schimperi*, while a second variety has been described by Schweinfurth under the name, *A. deflersii*. L. Lewin and E. Stadelmann deal with the pharmacology of acocanthera. The former, who has studied the chemistry, considers that all the non-poisonous varieties in reality belong to the Carissa genus (*Berl. klin. Woch.*, December 10th, 1906). Lewin has been able to isolate an amorphous glucoside from the wood of the two named varieties, which, although in many respects like the crystalline glucoside, ouabain, which was isolated from the plant by Arnaud in 1888, is distinct from this latter in certain particulars. The crystalline ouabain is little soluble in cold water, while the amorphous form is very soluble. The former does not possess a bitter taste, which the latter does. The formula of the former is $C_{30}H_{46}O_{12}.7H_2O$, while that of the latter is $C_{30}H_{48}O_{13}$. The crystalline form yields a slight green fluorescence, which develops slowly when dissolved in concentrated sulphuric acid, and the amorphous form yields a very marked fluorescence rapidly under the same conditions. He is of opinion that his ouabain is identical with abyssin, an amorphous glucoside obtained from acocanthera wood by Brieger and Dieddelhorst, and with carissin, an amorphous glucoside isolated from *Carissa ovata*. The enormous toxic action of the arrow poison is well exemplified by the fact that the amount which an arrow can carry leads to the death of an elephant, rhinoceros, or giraffe after a short time. It therefore seemed clear to Lewin that one must be dealing with the strongest cardiac poisons known. On experimenting, he found that $\frac{1}{2}$ mg. causes the frog's heart to stop in extreme systole. A few milligrams applied to rabbits and dogs produces yawning respiration, followed by cyanosis and extreme dyspnoea, and finally death in convulsions. The respiratory changes are secondary to the cardiac disturbances. The action of the acocanthera and its glucoside thus appeared to be more powerful but similar to that of digitalis, and Lewin therefore wished to try the drug in clinical medicine. Stadelmann reports the results of the clinical experiments. After very carefully testing for a pharmacological dose, both on himself and on patients, he found that an infusion of acocanthera wood of 1 to $1\frac{1}{2}$ grams to 160 grams of water, to which he added 30 grams of simple syrup and 10 grams of peppermint water, was the best means of employing it. He gave from 6 to 8 tablespoonfuls of this in twenty-four hours. The pharmacological action was very like that of digitalis. In some cases it acted well after digitalis had failed, while in other cases it failed to do good. The pulse was generally slowed and improved in quality. This was mostly seen in mitral disease and less frequently in aortic disease. Blood pressure sometimes rose and sometimes fell, but in spite of the variations in the objective action, it mostly did the patients subjective good. The quantity of urine excreted is not always increased. Sometimes the amount is raised without any corresponding action being noticed in the pulse. In general, he is inclined to regard acocanthera infusion as a valuable means of supplementing the treatment of cardiac disease, although he does not suggest that it should replace digitalis. He has also made a few experiments with ouabain, which, as far as they go, seem to promise well. He found that it could be injected subcutaneously or intramuscularly, which is a gain both as regards economy and therapeutic action; 0.3 to 0.4 mg. of ouabain injected in this way is painless, and the action on the heart is very marked. No unpleasant side-effects, which are not uncommon with digitalin, etc., have been met with so far. He proposes to continue this research further.

68. Tetra-chlor-methane as Solvent.

THE inflammatory and explosive nature of ether has led to some disastrous results in its application as a solvent in medicine, and Wederhake (*Deut. med. Woch.*, April 11th, 1907) considers that for this reason it is necessary to limit the use of ether, benzene, and similar compounds, when dealing with the human body. He suggests that tetra-chlor-methane (CCl_4) can be substituted for these substances as a solvent. Tetra-chlor-methane is a liquid, having a pleasant odour, and is somewhat volatile. It boils at 76° C., and its specific gravity is 1631. It is neither inflammable nor explosive. As a solvent, it serves excellently for bromine, iodine, oils. paraffin, gutta-percha, resins, tars, etc, and therefore is able to supplant benzene. It penetrates deeply into the skin, and for this reason, Wederhake regards it as an excellent vehicle for the strong disinfectants, such as iodine or bromine. He disinfects his hands as follows: After washing systematically with nailbrush or rough cloth for five minutes, the hands are dipped in a solution of 1 per cent. iodine and 0 5 per cent. solid paraffin (43° C. melting point) in tetra-chlor-methane; 500 c.cm. of the solution is necessary for the disinfection, but the fluid can be resterilized by boiling and used again. Water and soap are not needed. After the operation, one merely rinses one's hands in the solvent to get rid of the paraffin. Another method of preparing the hands for operations is to dip them in a solution of gutta-percha in tetra-chlor-methane. This leaves a thin flexible glove of sterile gutta-percha on the skin. For cosmetic purposes, he finds that a 1 per cent. solution of paraffin in tetra-chlor-methane protects the hands from cracks and chapping, and he further suggests that it might be utilized instead of petrol ether for the so-called dry shampooing of the hair. In short, he believes that every medical practitioner will find hundreds of uses for this solvent as soon as he is familiar with its chemical and physical properties.

PATHOLOGY.

69. Cerebro-spinal Fluid and Cytodiagnosis.

G. MAIELLA (*Giorn. Internaz. d. Scienze Med.*, Naples, October 31st, 1906) gives a brief discussion of some of the points in the cytodiagnosis rendered possible by the examination of cerebro-spinal fluid withdrawn by Quincke's puncture, and then describes his own experiments upon dogs and his clinical experiences. Cerebral compression, cerebral abscess, and meningitis due to *Staphylococcus albus* were produced in three series of 6 dogs each; lumbar puncture was performed at appropriate intervals, and the fluid extracted was employed as in cytodiagnosis. Maiella believes that the fluid shows an excess of polymorphonuclear leucocytes in all forms of acute meningitis. In two patients with chronic meningitis he found an excess of lymphocytes in the cerebro-spinal fluid. Compression of the brain, he finds, augments the secretion of the fluid; for the first few days this fluid shows an excess of polymorphonuclear cells, which passes off in less than a week, when the fluid becomes cytologically normal again. Hence a "polynucleosis" does not necessarily accompany cerebral compression. His results with cerebral abscess were less satisfactory. A subacute abscess in the white matter of the brain may not disturb the cytological formula at all; a polynucleosis may begin to appear if the abscess is more superficial, and will be marked if cortical encephalitis is present. In staphylococcal meningitis, if the process was very acute and caused death in a couple of days, the cerebro-spinal fluid showed only a slight excess of cells; if the animal lived a week, the cells would be mainly polymorphonuclears with a few mononuclears.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

70. Motor Aphasia without Lesion of Broca's Convolution.

Bernheim (*Rev. de Méd.*, April 10th, 1907) quotes the following case: A woman, 56 years of age, entered hospital June 2nd, 1903, for right hemiplegia with aphasia, which had come on early the same day accompanied with loss of consciousness. When admitted to hospital consciousness had returned, but there was marked intellectual dullness, Cheyne-Stokes respiration, hemiplegia, hemianalgesia, normal tendinous reflexes, and a slow bounding pulse. She could move her tongue naturally, and swallow liquids well, but in speaking uttered unintelligible sounds. Four days later she was still aphasic, did not reply to questions, and could not repeat words; she understood, however, partly what was said. On June 11th she replied to questions in unintelligible words, and only partly understood what was said. Two days later she was found to understand certain things, and would then put out her tongue and give her hand when asked. On June 18th she was able to reply "Yes, sir," in answer to a question. She was psychically blind, did not understand writing, and did not understand the uses of various objects. On June 25th she was able to repeat the vowels, and appeared to understand better. From this time onwards her condition varied much; at times she would be able to reply to questions and to repeat small sentences moderately well, but this improvement was not of a lasting nature, and would be followed in a few days by inability to carry out these actions. For three years her condition remained much the same, and at the end of this time she died. In this patient motor aphasia was partial, inasmuch as she could at times say certain phrases perfectly correctly. Verbal amnesia was also partial and of a transitory nature, as she could at times remember words which at other times were lost to her. Further, in this patient there was only temporary word-deafness, for on certain days she understood perfectly and did what she was told to do, although at other times this was impossible. Again, there was no complete word-blindness; the patient could at times recognize writing and objects. At the autopsy there was found congestion of both lungs, hypertrophy of the left ventricle of the heart, some atheroma of the aorta, granular kidneys, five calculi in the upper part of the right ureter, two calculi in the bladder, fibroids of the uterus, and a nutmeg liver, with two biliary calculi in the gall bladder. On opening up the dura mater of the skull one found that the meninges were dry and firmly attached to the brain substance; the right cerebral hemisphere was larger than the left; the external appearance of the third left frontal convolution was normal. On making horizontal sections of the brain one found that the right cerebral hemisphere was distended by a mass of blackish-red blood, semi-coagulated, which undoubtedly caused the patient's death; this haemorrhage appeared to have arisen in the external capsule, and almost completely destroyed the lenticular nucleus; this haemorrhage was large enough to cause flattening of the convolutions of the corresponding hemisphere, and to push over towards the left side the septum lucidum. In the left cerebral hemisphere the following changes were found: In the region of the central grey body there was found an irregular cavity, its foremost and hindermost parts being fissured; this cavity was limited in front by a mass of cerebral substance from 3 to 5 cm. thick, laterally by the operculum and by the convulutions of the island of Reil, and behind by a layer of white substance, which separated the cavity from the lateral ventricle. This cavity from before backwards measured 6 cm. and 0.7 cm. across in its widest part It was further found that this cavity communicated with the lateral ventricle at its anterior extremity by means of two orifices. The haemorrhage giving rise to this cavity was found to have arisen in the region of the external capsule, and was limited below and internally by the innermost layers of the lenticular nucleus and the globus pallidus and higher by the internal capsule and the wall of the lateral ventricle. To sum up, this haemorrhage had destroyed the following nervous areas: The external capsule with a part of the subcortical white fibres of the island of Reil, the external part of the lenticular nucleus, and almost the whole of the internal capsule. From the result of the *post-mortem* findings in this case the author concludes, amongst other things, that motor aphasia can arise apart from a lesion of Broca's convolution; that since in this patient there was no destruction of the first temporal convolution, only a lesion of the subjacent white substance, the defects of auditory memory cannot be due to a lesion of the supposed centre for auditory memories; and since the supposed centre for visual memories was also intact, the defects of visual memory in this patient could not be due to a lesion of this centre. The author's explanation of this case is as follows: The motor aphasia was due to a lesion of the path between the "inner" speech centre and the bulbar nuclei; the accessory disturbances of speech, the defects of verbal, auditory, and visual memories, to an enfeeblement of the cellular mechanism which gives rise to images in the frontal lobe.

71. The "White Line" as a Sign of Suprarenal Insufficiency.

In 1903 E. Sergent described a new sign of suprarenal inadequacy and low blood pressure which he discovered accidentally in a case of acute suprarenal insufficiency with meningeal symptoms. This sign is the formation and persistence of a white line on the skin of the abdomen after mechanical irritation, and is therefore the converse of the well-known *tache cérébrale*. L. Bernard (*Bull. et Mém. Soc. Méd. d'Hôp., Paris*, 1907, xxiv, 866) has critically examined the significance of this sign in 79 cases, taking the blood pressure in all of them with Potain's sphygmomanometer. The white line was present in 31 patients, absent in 41, and intermittent in 7. In 2 patients with definite lesions of the suprarenals, as proved by autopsy, the sign was absent. In the 31 cases in which the sign was positive the blood pressure was low in 8, normal in 7, high in 11, and variable in 5; in the 41 cases in which the sign was negative the blood pressure was high in 22, normal in 8, low in 8, and variable in 3. He definitely concludes that this white line is not a sign of suprarenal insufficiency and is not dependent on low blood pressure.

72. Myocarditis after Influenza.

Pianori (*Gazz. degli Osped.*, May 26th, 1907) reports the case of a man, aged 40, who was attacked severely with influenza fourteen months previously (in bed twenty-five days). Before the influenza he had had no illness, and there was no history of rheumatism, syphilis, or any disease likely to cause endocarditis. The family history was negative. During the influenzal attack he suffered from palpitation, cardiac and respiratory distress, and these symptoms returned with increasing frequency after he resumed work, so that for the last three months he had to keep his bed. On admission into hospital he was cyanosed, had a small frequent pulse, and pulsation in the jugular veins. There was orthopnoea and anasarca. The cardiac dullness was increased, especially to the right; the rhythm regular, presystolic and systolic murmurs in the mitral and tricuspid areas, and weak sounds at the base, the second aortic sound being especially weak; there was pulmonary oedema and a pleural effusion. The man died three days later. At the autopsy the right ventricle was much hypertrophied and dilated, occupying almost the whole of the anterior face of the heart. The myocardium was pale, and easily lacerable over the whole heart but more marked on the right side, and contained little yellow spots of degeneration; histologically, there was marked evidence of chronic myocarditis. The endocardium was normal on both sides, and the mitral and tricuspid valves were unchanged, but the respective orifice was distinctly dilated, and showed insufficiency of the tricuspid valve. The author is of the opinion that the myocarditis was definitely due to the preceding influenza, and as such worthy of record.

SURGERY.

73. Rupture of the Lung.

Schwartz and Dreyfus (*Revue de Chirurgie*, No. 5, 1907) state that lacerations of the lung without fracture of any rib, analogous to laceration of abdominal organs in cor-

tusion of the abdomen, though fairly rare injuries, are yet far from being unknown. They have been able to collect twenty-nine records of such lesion from different sources, and add an original case observed by Professor Reclus. These records show that the form of injury here discussed is usually caused by great violence, as, for instance, in compression of the chest by a heavily-loaded vehicle; and that it is often associated with multiple injuries in other parts of the body. Though occasionally produced in adults, rupture of the lung without costal fracture has been observed in most instances in infants and children, and it is certain, the authors state, that a high degree of elasticity of the thoracic cage plays an important part in the causation of the injury. In elderly subjects with a very solid and thoroughly ossified thoracic cage, the pulmonary rupture is probably due to luxation of a costal cartilage. There are, the authors point out, three degrees of contusion of the lung: In the first, simple laceration of the capillary vessels with production of ecchymoses; in the second, division of more important vessels resulting in large effusions of blood; and in the third, crushing of the lung tissue here and there with lesions of the large bronchial tubes and blood vessels. The pulmonary laceration is in some cases peripheral, when it often involves the pleura, in other cases central, and, again, may occur together in both these parts of the lung. In discussing the mechanism of the injury, the authors express the opinion that this varies in different cases according to the condition of the periphery of the injured lung. If there be any pleural adhesions, the adherent portions of the lung when this organ is violently compressed are torn away from the inner surface of the wall of the chest. If the pleural surface of the lung be quite free from adhesions, the pulmonary tissue is more likely to be ruptured, in consequence of sudden and forcible compression of the organ before it has had time to expel the air and blood with which it is distended. The injury, if these views be correct, consists in one case in tearing, in the other case in bursting of the lung-tissue. The nature of the injury in cases of pulmonary rupture is indicated mainly by respiratory symptoms, such as intense dyspnoea; haemoptysis, varying in different instances from expectoration of small blood-clots to a profuse flow of blood, which if a large vessel has been injured may prove rapidly fatal; and, if the visceral pleura has been torn, haemo-pneumothorax. The most important symptom in regard to diagnosis is subcutaneous emphysema starting at the root of the neck just above the sternum. This proves, as has been pointed out by Delbeau, that the air has followed the trail of the peribronchial and mediastinal cellular tissue, and its effusion is the result of a severe lesion of the lung, and one not produced on the surface of the lung by costal depression or fracture, as in such case the earliest signs of emphysema would appear on the chest. The association of suprasternal emphysema with clear signs of fracture of one or more ribs, would therefore indicate a deep-seated pulmonary contusion quite independent of the costal lesion. The prognosis in cases of pulmonary contusion is very grave, and the patient after recovery from asphyxia and profuse haemorrhage, and also in instances of apparently slight injury to the lung, may after a time be carried off by traumatic pneumonia, pulmonary gangrene, or pleural infection. The treatment of the injury described in this paper should be of a more or less expectant character and directed mainly to such symptoms as emphysema, pneumothorax and haemothorax. The last mentioned condition may indicate surgical intervention, but the authors are of opinion that thoracotomy with the object of suturing a wound in the lung, as proposed by Richter, is not advisable except in cases in which the pleural cavity has been inundated by a rapid and profuse effusion of blood.

74. Neurosarcokleisis.

Bardenheuer, in a translated article on the pathogeny and treatment of neuralgia in the *Journ. de Chir. et Ann. de la Soc. Belge de Chir.*, No. 2, 1907, describes an operation for the cure of certain very painful and persistent forms of this affection. This operation, to which he has given the name of "neurosarcokleisis," and which he has practised with success in 8 cases of sciatica and 5 cases of neuralgia of the fifth nerve, consists in relieving pressure on the affected nerve by partial resection of the osseous canal through which it passes, and in transposing it amongst soft tissues. In the author's opinion, the cause of neuralgia is to be found in local circulatory disturbances. He believes that in facial neuralgia some casual cause, such as cold, injury, irritation, or alveolar-dental periostitis, sets up peripheral perineuritic hyperaemia, which gradually extends to the nearest osseous canal, where the stasis is arrested by the rigid walls. Repetitions of this abnormal condition produce neuralgic attacks through compression of the nerve, and in course of time the hyperaemia passes beyond the osseous canal and ascends to its root and ganglia. This view, the author states, has been confirmed by the results of his operations. In cases of neuralgia treated by operation, he has invariably observed hyperaemia of the venous plexus around the affected nerve. Immediately after the operation the pain ceased. Cure lasting from six to eight years has, it is asserted, been obtained in 6 cases of sciatica and trigeminal neuralgia. In these cases no injury was inflicted on the nerve, which was simply raised from its osseous bed and transferred to soft parts, the persistence of sensibility proving that it remained structurally intact. In reviewing other methods of treating neuralgia, the author holds that attempts to arrest the nervous current without interrupting the continuity of the nerve, as in stretching and torsion, though occasionally successful, are very uncertain in their results, as relapse occurs in from one-third to half of the cases. Neurectomy is believed to be still less certain, as, in 78 cases, Krause noted 80 per cent. of recurrences. Resection of the Gasserian ganglion, though a radical and effectual operation, has against it a high mortality rate, which in Krause's practice has reached from 10 to 15 per cent. The following details are given of the operation of neurosarcokleisis as practised on the different branches of the fifth nerve: To reach the supraorbital nerve a transverse incision about 1¼ in. in length is made through the skin that is covered by the eyebrow, the knife being carried down to the periosteum. The nerve having been found and detached from surrounding soft parts, the anterior wall of the osseous canal and the ligament also, if it be ossified, are resected. The nerve is now raised by a blunt hook, and sutured to the periosteum of the frontal bone, and the opening in the bone is closed by a musculo-periosteal flap. In attacking the second branch of the fifth a transverse incision, about 1 in. in length, is made just below the inferior margin of the orbit, the infraorbital canal is opened up, and its roof resected, care being taken not to open the antrum, and the nerve is displaced and stitched either to the side of the nose or to the zygomatic arch. In the operation on the third branch an incision is made over the margin of the horizontal ramus of the mandible. A second incision, about 2¼ in. in length, commencing over the anterior border of the masseter, is made parallel to the former at a distance above it of about ½ in., which, when it is near the chin, is carried upwards as far as the margin of the lip. The first is carried down to bone, the second to mucous membrane. The mental foramen is looked for after the periosteum has been detached from the bone, and the anterior wall of the canal is resected. The nerve having been exposed as far as the superior dental foramen, is lifted out of its canal and fixed to the periosteum of the flap. The author, in concluding, states that his method, in the few cases in which it has been practised, compares very favourably with other operations for neuralgia in regard to persistence of relief, and to mildness of the procedure.

OBSTETRICS.

75. Deformities of the Fetal Head in Labour with Normal Pelvis.

Berthaut (*Arch. Gén. de Méd.*, April-May, 1907), doubts the accuracy of Robert Barnes's view, that the deformities of the fetal head produced by labour rarely disappear completely. He attributes persistent deformity rather to congenital asymmetry, which is found even in children delivered by Caesarean section. In Berthaut's opinion, the fetal head ordinarily regains the shape which it had before labour when this has been spontaneous and the pelvis normal. The principal changes in the shape of the head are an elongation and a parietal deformity. The former is generally attributed to compression at the pelvic outlet, but opinions differ as to the nature and mechanism of production of the latter. Labat found no parietal deformity in 3 cases delivered by Caesarean section, and therefore concludes that it is the result of labour. Dohrn, by means of measurements taken by a cyrtometer soon after birth, believed that the posterior parietal bone was displaced forwards and flattened. Labat was able to contradict this by means of more exact measurements repeated daily while the head gradually regained its original form. He proved that it is the anterior parietal boss which is displaced backwards, for he found this to gradually resume a more anterior position day by day,

while the posterior boss retained a practically unaltered position. Berthaut made casts of some heads of fetuses which had died during labour, after having frozen them and removed the integuments. His casts absolutely confirmed Labat's results. The anterior parietal bone showed a double displacement—namely, towards the median plane and in an antero-posterior direction. The subjacent cerebral hemisphere was also more or less flattened. Like Labat, Berthaut found one protuberance often lower than the other. As to the method of production, Dohrn considers that the parietal deformity is produced by the promontory; but since Labat found no trace of this deformity in a case in which the woman died during the first stage of labour, the head having completely passed into the pelvic cavity, this cannot be the true origin. Moreover, as Duncan has pointed out, there is no special pressure at the pelvic inlet; neither can it be produced during the passage through the pelvic outlet, since then the deformity would be symmetrical, which is not the case. One must therefore conclude, with Labat, that it is to be attributed solely to the internal rotation of the head. The view is strengthened by the fact that the deformity is absent when the rotation has been very rapid, and accentuated in long and difficult rotations. Barnes and Duncan agree with this view. The mechanism is explained as follows: The flattening and displacement towards the occiput of the anterior parietal boss take place during the movement from the occipito-anterior position to the antero-posterior diameter of the pelvis, and are due to the pressure and friction experienced by the boss against the whole extent of the posterior surface of the ischio-pubic ramus. The right parietal boss is displaced by the right ischio-pubic ramus, and one can diagnose after birth a right or left presentation by this means. Berthaut found this correct in every case he examined. A confirmation of this theory of the production of the parietal deformity is taken from Barbour's illustrations of a series of sections of the fetus *in situ*. From the study of these Berthaut concludes that the head has completed its internal rotation, and the sections show flattening and displacement backward of the anterior parietal boss. In occipito-sacral deliveries, where the described movement is of course absent, there is no parietal deformity. In other presentations the moulding of the head is a simple rounding, flattening, or bulging (one or two exceptional cases being explained as a congenital asymmetry), and the most complex deformity is thus found in the most usual presentations—namely, occipito-anterior and occipito-posterior, rotating into occipito-anterior.

76. Pregnancy and Tuberculous Laryngitis.

Barthas (*Thèse de Paris*, 1907) collects evidence about the coexistence of pregnancy and tuberculous laryngitis. The physiological influences the morbid condition very unfavourably. On the other hand, abortion of premature labour is not the rule, so that the throat complaint does not seem to prejudice the pregnancy. Pulmonary tuberculosis almost invariably exists as well as the laryngeal disease; the latter often originates early in pregnancy. When tuberculous laryngitis has developed before the pregnancy, prognosis seems very bad; the patient will probably die during the puerperium. The infantile mortality is high, according to all reliable reports—36 per cent. after the author's experience, and as great as 55 per cent. if we may rely on certain German authorities. Medical treatment of tuberculous laryngitis during pregnancy is, on the whole, satisfactory, but tracheotomy may be advisable. The induction of abortion does not, according to experience, influence the course of the disease satisfactorily, which as a rule advances just as rapidly when the uterus is emptied as when the pregnancy is not interrupted. Premature delivery is even worse in its effects, according to reported results, the throat disease being greatly accelerated. Thus artificial arrest of the pregnancy kills or endangers the child, often capable of surviving its birth and living free from the disease, without profit to the mother, who in any case is not likely to live long. The mother should on no account suckle the child, who ought to be sent away from home to avoid infection.

GYNAECOLOGY.

77. Inoperable Uterine Cancer: Apparent Cure.

Weindler (*Zentralbl. f. Gyn.*, No. 22, 1907) refers to Czerny's case where the curette and thermocautery were applied to the uterus for advanced cancer, the parts being then dressed with chloride of zinc gauze. Over five years later the disease had made no progress. Weindler relates three similar cases in his own experience. The first patient was 51 years of age and very cachectic, troubled with irregular bleedings and foul discharge. The uterus was enlarged and hardly movable, the parametrium around the cervix thickened and rigid. On December 11th, 1900, vaginal hysterectomy was attempted unsuccessfully. A crateriform cavity occupied the site of the cervix; it was at once freely burnt with the actual cautery, and afterwards painted at gradually increasing intervals with pure carbolic acid. Contrary to expectation, the tissues bordering the cavity cicatrized, the parametric tissue softened, and in March, 1907, there was no sign of recurrence, whilst the patient's health was good. The growth treated by the cautery in 1900 bore all the microscopical characters of cancer. Early in 1901 two similar cases were similarly treated with the actual cautery and carbolic dressings. Both patients were a little under 50 years of age. The first was a nullipara; it is noted that thirty years previously she had suffered from a severe attack of gonorrhœa, followed by parametritic exudation and peritonitis. The second patient had borne eight children; the last pregnancy ended twelve years before she came under observation. There was a history of fever in childbed after several of her labours. In October, 1906, both patients were examined; they were free from cancer, and in the multipara the uterus had become movable.

78. Intact Hymen: Abortion and Retained Placenta.

Skupiewsky (*Frauenarzt*, March 27th, 1907) reports a case where a virgin allowed incomplete connexion without penetration and immediately conceived. Abortion occurred at the third month, followed by sepsis due to retained placenta. The hymen had to be divided before the uterus could be cleared and the curette applied. This case, among others recently under Skupiewsky's observation, shows that spermatozoa can certainly ascend the vagina when deposited outside that canal.

THERAPEUTICS.

79. Maretin.

G. Fiorio and G. Zambelli (*Il Morgagni*, April and May, 1907) describe their experiments with maretin. It is a white, translucent, tasteless powder, melting at 183° to 184°. It is soluble in the proportion of 2 per cent. in hot water, 1 per cent. in alcohol, and almost insoluble in cold water and in most of the usual solvents. For hypodermic injection it is best dissolved in hot glycerine. A few experiments on rabbits showed that in therapeutic doses maretin acts on them as an antipyretic without exerting a poisonous action on the blood serum or the red corpuscles. The clinical part of the work consists of a very large number of observations made on 95 patients. The subjects were divided into six groups—convalescents and healthy persons, patients suffering from respiratory disorders, from infectious diseases, especially enteric fever, from febrile disorders of digestion, from diseases of the circulatory system, and from other diseases. The authors conclude that maretin in moderate doses has no unfavourable action on the blood plasma or on the structure or function of the red corpuscles. In adults they advise that for slight fever maretin should be given in a single dose of $\frac{1}{5}$ gram to $\frac{1}{4}$ gram; for high fever $\frac{1}{5}$ gram to $\frac{1}{3}$ gram may be given every two hours. In children the dose is 1 cg. for each year of age, and apparently this may be repeated every two hours. These doses lower the temperature gradually, and their effect extends over a period of from three to six hours, so that maretin is more useful than ordinary antipyretics. It is no doubt due to its gradual effect that maretin produces neither collapse nor depression, but exercises a beneficial effect, especially on the nervous and circulatory systems. It has a marked antifermentative power, acting on the chemistry of the organism, not by any nervous mechanism. Maretin is especially useful in infectious diseases when for any reason other antipyretics are contraindicated and hydrotherapy is difficult to carry out. It answers well in respiratory disorders, acute and chronic, exercising a beneficial effect on respiration and blood pressure. Its antifermentative action gives it a special value in diseases of the alimentary system.

80. Liberal Feeding in Pulmonary Tuberculosis.

Sakorraphos (*Prog. Méd.*, May 25th, 1907) deals with the advantages of liberal feeding in phthisis. He compares

the phthisical subject to a workman who never rests. The chief hope of a cure for these subjects lies in their power to digest a large amount of food daily; and it is usual to find that the stomach is very tolerant. An average diet for a phthisical patient should consist of not less than 500 to 700 grams meat, 300 to 400 grams butter and fats generally, four eggs, and a litre of milk per day. By the ingestion of these amounts of food the patients make up for the excess of albumen and carbon which is daily lost owing to their disease, and can retain their weight. The author is in charge of the Sanatorium of Athens, and has for some time treated the inmates on these lines. The sanatorium is close to Mount Hymettus, and all the hygienic ideals are realized by its position and surroundings. Patients entering the sanatorium were put upon the liberal diet either at once or, if their digestion could not stand it, more gradually. The dietary at the Sanatorium of Athens consists of 350 grams meat, 1 litre milk, 2 eggs, 50 grams sweets, 200 grams feculents, 40 grams butter and fat. The patients were ordered to take a short walk daily, and the rest of the day was spent in their long chairs in the open air. In nearly all cases was an improvement observed after some weeks of this *régime*. They put on weight, the fever diminished as well as the bronchitis, and although the local lesions persisted, and tubercle bacilli were still found in the sputa, the number of secondary organisms was markedly decreased. In fact, the specific lesion resisted all treatment, while the general condition improved wonderfully. The author found that there always came a time when the digestion flagged and demanded a rest; diarrhoea sometimes supervened, and all the gain in weight so hardly achieved was lost in a few days. But among the poor who cannot afford this style of treatment there are seen some cases of spontaneous cure of phthisis. while many sanatorium cases die in spite of the liberal feeding and all the other treatment. The author asks, Why? And he answers, that the statistics from sanatoriums are fallacious. Cases which have improved under the sanatorium *régime* are allowed to go out as cured, whereas, in reality, they are far from cured. The improvement is but transitory. Should a cure really take place, as it sometimes does, the real cause is unknown. At present all that can be truly said is, that tuberculosis is a curable disease, but the causes which bring about a cure are unknown.

81. Tuberculin Immunization in Pulmonary Tuberculosis.

TRUDEAU (*Amer. Journal of Med. Sciences*, June, 1907) urges the use of tuberculin in the treatment of tuberculosis by the clinical method which aims at producing a well-marked degree of toxin immunity by the administration of very small doses, methodically increased at tated intervals. By thus producing each time a very slight stimulation of the defensive resources of the organism, any intolerance of the treatment is avoided, since larger doses or too rapid an increase may bring about hypersusceptibility and an aggravation of the disease. The method of administration is of the greatest importance, and any good results depend quite as much upon this as upon the particular kind of tuberculin used. In contrast to the laboratory method, which relies solely upon the opsonic index as a guide to the doses and the intervals between them, the clinical method is the gradual outcome of experience, and by it the doses, intervals, length of treatment, and ultimate dosage reached are controlled entirely by the clinical manifestations of each case, and the effect of the injections on the patient's conditions and symptoms Its aim is to carry the patient to large doses—one hundred to ten thousand times larger than the commencing dose—and thereby produce tuberculin immunity, while avoiding marked reactions or any disturbance of general health. In most cases this may be done by commencing with very minute doses and by increasing these so gradually and at such intervals, and by extending the treatment over any length of time needed so as to produce as strong an immunity as possible with hardly perceptible local reactions, and without at any time setting up general fever reactions or violent local ones. It is found that reactions take place more readily at doses between 0.1 mg. and 1 mg. than at any other stage, and consequently it is essential in febrile cases to begin with $\frac{1}{10000}$ mg. of filtrate B.F., or Koch's B.E., or $\frac{1}{10000}$ mg. of old tuberculin. Denys uses eight solutions in giving B.F. No. I contains $\frac{1}{10000}$ mg. in each c.cm. (this is for febrile cases only); No. II contains $\frac{1}{1000}$ mg. in each c.cm.; No. III, $\frac{1}{100}$; No. IV, $\frac{1}{10}$; No. V, 1 mg. in each c.cm.; No. VI, 10 mg.; No. VII, 100; and No. VIII is pure filtrate. In using these the increase is always by 1 decigram of each solution. Thus the increase for each dose is by $\frac{1}{10000}$ mg. for 10 doses; then by $\frac{1}{1000}$ for 10 doses; then by $\frac{1}{100}$ for 10 doses; and so on until 1 c.cm. of the pure filtrate or old tuberculin is reached. The intervals between the injections are three or four days, but as the higher doses are reached five or six days may elapse, and the last three or four doses may be given a week or ten days apart. If no intolerance is manifested the treatment will take six months, but when any reactions occur a year or more may be needed to reach full doses. It is a mistake to attempt to shorten the time by increasing the doses too rapidly or by decreasing the intervals. Tolerance is an excellent prognostic sign. When intolerance manifests itself either by general fever, local reactions, or signs of constitutional impairment, the injections must be stopped until these have completely disappeared, and, upon recommencing, the dose should be decreased by at least one-half. The two most important factors are the length of time over which treatment is extended and the maximum dose of toxin that can be eventually tolerated. Chronic and incipient cases respond well to treatment, but in acute cases it is well to wait until a partial arrest shows itself under rest and open-air treatment before beginning the use of tuberculin. Cases with long-continued increasing fever, and cases with extensive lesions or intestinal or other complications, or very feeble and badly-nourished cases, as well as those showing marked intolerance, are unsuitable for treatment. The production of tuberculin immunity by this mild clinical method influences favourably the course of chronic tuberculosis, prolongs life, and often aborts a commencing infection.

PATHOLOGY.

82. The Nature of Myelin.

FIFTY years ago Virchow described, under the name of "myelin," a substance or group of substances which swelled when brought into contact with water, and assumed a characteristic appearance, throwing out processes of most irregular form with a double contour. He considered this body to be closely allied to, if not identical with, the essential constituent of the medulla of nerves, and determined certain of its chemical reactions. It is found in some of the secretions, and in most of the normal organs it occurs in a diffuse form. As small, highly refractile, intracellular bodies it occurs in the suprarenal cortex, thymus, and corpus luteum even under physiological conditions, and is found in this form in many pathological conditions, such as atheromatous patches, fatty kidney, and many tumour cells. *Post mortem* it appears also in this discrete form in many places as the result of an autolytic change. The chemical nature of the substance is still undetermined, but Adami and Aschoff (*Proc. Roy. Soc.*, B., vol. lxxviii, 1906) claim to have advanced a step towards its determination. A very characteristic property of many myelin bodies is that of double refraction. Seen through crossed Nicol's prisms a myelin globule shows a black cross with four clear bright intervening sectors. This is a property of crystals, and these globules are in fact "fluid-sphero crystals." The old view that a crystal is a solid unyielding body must be abandoned in view of Lehmann's researches. He has shown that a crystalline substance may remain crystalline though it be converted into a fluid state, altering its shape under pressure. Such crystalline fluids have a very comprehensive power of dissolving other substances and yet remaining crystalline, not merely—as is the case with ordinary crystals—isomorphous substances, but bodies of other orders. This property is of great significance. It helps to explain the varying microchemical reactions of myelin even in one and the same specimen to such dyes as Sudan III or saffranin. Further, it has an intimate bearing on cell activity if myelin or lecithin-like substance is present in the cells of most organs. We know, for example, that the red blood corpuscles contain abundance of lecithin. Adami and Aschoff have found that many soaps possess this property at ordinary temperatures, and, in view of the fact that the only crystalline fluids known to exist in the fluid crystalline state at room temperature are oleic acid compounds, they conclude that fatty acid is an essential constituent of myelin, and that of fatty acids oleic acid plays the most important part. They consider, however, that there are at least two different varieties of myelin. They have found that one myelin substance, which they obtained from an atheromatous aorta, consists essentially of a compound of cholesterin with oleic acid, while in another the essential constituent is a compound of cholin with oleic acid.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

83. The Scrotal Tongue.

The "scrotal" tongue, as described by Horaud, consists essentially in the presence on the dorsum and the borders of deep depressions or furrows, more or less regular and symmetrical, and giving to the organ an appearance almost exactly like that of the wrinkled skin of the scrotum. Dubreuil-Chambardel (*Archives Gén. de Méd.*, October 30th, 1906) has described in detail the characters of this peculiar anatomical variation, and supplements his paper by giving the clinical history of eight patients presenting this variation from the normal. It is a rare affection, and is to be distinguished from the pathological forms of fissured tongue resulting from syphilis, cancer, etc., and from the physiological fissured tongue, which is found in about 60 per cent. of people who have reached their 40th year, by the following characters: (1) The furrows are deep and symmetrical; (2) they are generalized all over the dorsum of the tongue. Three varieties of the affection can be distinguished. First, the foliaceous type: In this the median fissure of the tongue is deep and spreading, and from it from behind forwards and from within outwards are numerous secondary furrows, which extend round the borders of the organ to reach its lower surface, decreasing in depth as they do so; the fraenum is not involved. Secondly, the transverse type: Here the furrows are deep and short and take a transverse direction, cutting the median fissure, which, however, often is wanting. Thirdly, the "cerebriform" type: This is distinguished by the number of secondary furrows directed in every direction, but exhibiting a certain symmetry in relation to the median fissure, which is always accentuated. Of these three types, the first is the one most commonly met with. In cases in which one or other of these types of lingual surface is found, the tongue itself is generally of a deep red colour, resembling raw beef steak; its papillae are hypertrophied and the organ abnormally large and flattened. Patients showing this peculiarity of tongue surface have a larger lower jaw than other individuals, thus disproving the statement that the folded appearance of the tongue's surface is the result of compression of the organ by a narrowed lower jaw. Associated with this lingual peculiarity the author finds that the salivary glands are increased in size, and saliva is secreted in excess; in some cases the lacrymal gland is hypertrophied; the teeth are usually finely developed. The author does not consider the "scrotal" tongue to be a sign of pathological heredity, neither does he look upon it as a sign of degeneracy; none of the cases described by him support these theories. He considers it to be a hereditary anatomical variation, which, like other anatomical variations is especially prone to disease (aphthae, leucoplakia, glossitis, or thrush often attacks these tongues), and it is often to be met with in different members of the same family, or it may be transmitted through as many as three generations.

84. Pleurisy.

Fraley (*Amer. Journ. of Med. Sci.*, May, 1907) records results of observations from a study of 500 cases of pleurisy admitted to the Pennsylvania Hospital during a decade. Only inflammatory conditions of the pleura have been considered, transudates and cases of chronic thickening of the pleura being deemed outside the scope of the investigation. Though more or less prevalent at all seasons, the disease shows a decided tendency to occur during the colder months, especially in damp seasons. In childhood both sexes are equally susceptible, but after 15 years of age men are affected four times as frequently as women, the majority of cases occurring between the ages of 20 and 40. The tendency to pus formation appears to be much more marked in the young, and steadily decreases in later life. Occupation shows a marked influence upon the predisposition to the disease, outdoor labourers and those leading exposed lives, with probably a history of alcoholism, being especially liable; while among indoor occupations this applies more especially to houseworkers, tailors, waiters, and cooks. Nearly one-third of the cases gave a history of previous pulmonary trouble. Among exciting causes in 233 cases exposure to cold, dampness, or sudden chilling accounted for 65, while 52 followed croupous pneumonia (48 of which were empyemata), and 42 followed acute or subacute bronchitis. Pain in the chest is the predominant symptom, but in 3 cases the pain was entirely abdominal, and in 8 it was present in both chest and abdomen, and cough and dyspnoea are generally present. Of complications, nephritis and croupous pneumonia were by far the most frequent. Urinary examination of admitted alcoholics revealed surprising findings, being negative in two-thirds, whereas in the non-alcoholics this was the case in less than one-half. Among methods of treatment, strapping the chest always appeared to give marked and prompt relief of pain, cough, and dyspnoea. As regards aspiration, in uncomplicated cases of serous effusions recovery took place in three weeks, whereas in non-aspirated cases another week was required to effect a cure. This contrast between aspirated and non-aspirated cases was more marked when the effusion was small than when of moderate size. In private practice it is recommended that, in uncomplicated cases of effusion not exceeding one-third of the chest, aspiration should be delayed until it becomes evident that absorption will not occur naturally in a fortnight, and it usually only requires to be performed once to effect a cure. In empyema resection is the only treatment.

85. The Myasthenic Reaction of Jolly.

A. Salmon (*Policlinico, Sez. Med*, Rome, 1907, xiv) discusses the relations of Jolly's myasthenic reaction to the myasthenic reaction seen in certain primitive myopathies and atrophies. Jolly's reaction consists in the rapid loss of the faradic tetanus by the muscle; but the apparently exhausted muscle still reacts perfectly to galvanic or to voluntary stimuli, and the loss of faradic excitability is confined to an area of the muscle near to the spot stimulated. Salmon argues that the term "myasthenic reaction" is not properly applicable to Jolly's reaction; it is, however, suitable for the reaction seen in muscles in the primary myopathies and the muscular atrophies of medullary or cerebellar or cerebral origin, for here the muscle rapidly loses its excitability to galvanic as well as to faradic currents. Further discussing Jolly's reaction, Salmon concludes that it is not due to exhaustion of the motor nerves or of their terminations in the muscle plates, seeing that these both continue normally excitable to galvanism. He attributes it to the rapid exhaustion of the power of the cutaneous nerves to be excited by faradism and to transmit the faradic stimuli to the neuromuscular motor apparatus. This rapid exhaustion of farado-cutaneous sensibility would explain: (1) The fact that the loss of faradic excitability of the nerves and muscles is confined to the cutaneous area directly stimulated; (2) how the loss of faradic excitability by the muscle leaves the excitability of the nerve unimpaired, and vice versa; (3) the independence between myasthenia and Jolly's reaction, which is often seen in muscles whose tone is normal; (4) the fact that galvanic or voluntary stimuli can excite the muscle which no longer responds to faradism. It is probable that Jolly's reaction is due to a functional depression of the cortical centres presiding over the cutaneous nerve supply. This explains why the reaction is seen in cases of neurasthenia, hysteria, traumatic neurosis, and Erb's disease.

SURGERY.

86. Indications and Results of Prostatectomy.

Desnos (*Prog. Méd.*, April 27th, 1907) considers that total extirpation of the prostate has taken and justified its place among recognized operations. But still the catheter must always be tried first, and should, if possible, be employed because of the risks which always attach to an operation on an old patient. No one should be operated on previous to the onset of retention unless there be much pain, frequent and painful micturition, and haematuria. With the exception, then, of these cases, retention must be the main indication for a prostatectomy. The patient's social position, his way of living, and his work should also be taken into consideration; and an operation will the readier be performed on a man who has not the chance, owing to his work or other circumstances, of using his

catheter frequently. The danger of constant catheterization is infection, and this can only be prevented by rigid asepsis, which is very hard for most men to observe. The infection of the prostate, with formation of small abscesses, which ulcerate into the urethra and make micturition and catheterization painful or impossible, is an indication for prostatectomy. It is when the upper parts of the urinary passages are affected that the difficulty arises in deciding whether or not to operate. If both kidneys are affected and the renal function much impaired, and the whole system weakened, operation should not be attempted. But if there is only slight infection, which is known to be limited to the ureters and the pelvis but is rising, operation should be resorted to, as that, and that only, will put an end to the infection. The urine must, of course, in all cases be carefully examined before operation. The disadvantages of prostatectomy are fast disappearing with improved technique. Persistent perineal fistulae have been known to follow the operation. Incontinence has resulted more frequently. Impotence is a somewhat common sequela of prostatectomy. To the majority of patients who have undergone the perineal operation erection is impossible, the immediate cause being removal of the terminations of the vasa deferentia. Hypogastric prostatectomy would do away with this trouble to a certain extent. The results of the operation are excellent. Retention is relieved, infection stopped, and the bladder, which previously has been but incompletely emptied, is now voided easily and completely. There comes, too, a return to general health such as the patient has not known for a long time. The appetite returns, strength is restored, the insomnia and almost constant malaise, so characteristic of the disease, disappear.

87. Mortality of Ear Disease.

Max Levy (*Deut. med. Woch.*, March 28th, 1907) says that patients suffering from chronic ear disease are nearly always refused by life insurance companies, even when the benignity of the affection is undoubted. In order to form an opinion on the question as to how far such a policy on the part of the insurance companies is justified, he has made inquiries from all the larger companies and has subjected the replies to his questions to a minute criticism. Some societies are prepared to accept the risk provided that the applicant undergoes treatment, and, if necessary, operation before the policy is issued. Seventeen out of thirty-seven large societies do not always refuse the application, but mostly refer the case to an ear specialist, and decide on whether to accept or refuse after having received his report. One company states in its policies that no payment will be made if death occurs directly as a result of middle-ear disease. In one company, between the years 1829 and 1896, only 0.04 per cent. of the deaths of its *clientèle* was due to ear disease. It therefore does not appear that the policy of the companies is due to any bad experience in the past. Turning to the statistics of medical men, he finds almost as little uniformity as he does in the insurance companies. The statistics of Pitt and Barker fall within the pre-operative era, and are therefore of little value for his purpose. Orth's material of the *post-mortem* room in the Berlin Charité shows that between 1881 and 1905 about 0.6 per cent. of deaths were ascertainably due to intracranial suppuration due to middle-ear disease. This appears to agree with the figures of the insurance company, in which 0 04 per cent. of the insured, corresponding to 0.12 per cent. of the total mortality, died from middle-ear disease. As this company refused to insure middle-ear disease patients, one may presume that this number of deaths was due to acute disease; and, apart from this, the fact that the persons insured were chosen after medical examination would indicate that the health of these persons was better than the average. It is therefore easy to suppose that about four times the number would die of chronic ear disease, and the author is prepared to accept that 0.6 per cent. is the incidence of chronic middle-ear disease deaths. Other points in connexion with this question required living material to illuminate. He therefore obtained the clinical details of 900 cases of middle-ear disease from various publications, and divided these into acute, chronic, and recurrence cases. The age-incidence of acute suppuration appears to vary but slightly during the first three periods of 10 years of life, and for the following three periods it is lower, but still steady. After 60 years of age the incidence is considerably lower. With regard to chronic cases, complications are more frequent. The maximum incidence of suppuration lies in the second period of 10 years of life, and the rate is much diminished from 30 years onwards. He appends a number of tables and curves showing the various points in connexion with chronic and acute middle-ear disease. In summing up, he comes to the conclusions that the policy of refusing all applications on the ground of middle-ear disease is unjustified; that when the case, according to clinical experience, is to be regarded as a benign, the application might be accepted at a higher premium; and that the decision as to whether a case is insurable or not should be left to otologists.

88. Gunshot Wounds of the Stomach.

Martin (*Ann. of Surg.*, May, 1907), in a paper on the lesions associated with gunshot wounds of the stomach, states that in civil practice it has been definitely decided that active surgical interference is imperative, although the experience gained in recent wars has unmistakably shown the desirability of conservative treatment under the conditions found in military service. Perforations of the stomach alone should show a low mortality, the author reporting 2 cases under his care, and referring to several cases from different sources in support of this view. Uncomplicated gunshot wounds of the stomach are, however, very uncommon, and, as has been set out by Forgue and Jeanbrau, this organ is so surrounded by other structures that such a lesion is almost impossible. In most cases of gunshot wound the associated lesions are usually of graver significance than the gastric injury, and are in most instances the cause of death. It is misleading, therefore, to speak of the mortality following gunshot wound of the stomach without considering the complicating injuries. As the greater part of the area of gastric vulnerability lies within the limits of the thorax, there will in the majority of cases be a wound of the thoracic wall and diaphragm, and also, in many instances, of the pleura and the lower lobe of the left lung, with consequent haemothorax and pneumothorax. Injury to the liver is the most frequent visceral complication, the wound being usually situated in the left lobe. The spleen also is frequently wounded, and 15 cases have been collected by Borchardt of complicating wound of the pancreas. In 8 recorded instances the bullet, after passing through the stomach, wounded the upper pole of the kidney, causing usually profuse and fatal retroperitoneal bleeding. Perforations of the transverse colon and the small intestine are also frequent complications. Reference is made to one case in which there were eleven perforations of the small intestine and one of the colon. In an operation undertaken for a wound which from its situation on the surface of the body has very probably involved the stomach, the surgeon should be prepared not only to suture the gastric perforation but to treat any of the associated injuries. This is clearly shown in a table of 25 collected cases of gunshot wound subjected to operation. In most of these there were associated injuries of graver significance than the stomach injury. In 2 cases splenectomy was performed; in 2 thoracotomy as well as laparotomy; in 5 the diaphragm was sutured; in 1 the twelfth rib was removed, and a wound in the kidney packed; and in another the gall bladder was excised. There were 6 deaths and 19 recoveries, the mortality being, therefore, less than 25 per cent.

OBSTETRICS.

89. Hyperemesis Gravidarum.

K. Baisch says that the cause of hyperemesis gravidarum and of the physiological vomiting of pregnancy is still an unsolved problem, in spite of the very numerous theories which have been suggested in explanation (*Berl. klin. Woch.*, March 18th, 1907). For a time it was almost generally accepted that hyperemesis gravidarum was a hysterical condition, but recent observations show that a large number of the patients are not neuropathic. Baisch considers that there are two facts which must be utilized in attempting to solve the problem. The first is that nothing stops the excessive vomiting with such certainty and promptitude as clearing out the uterus, provided that the condition has not been allowed to progress too far. The second fact is that not infrequently a small interference of any kind, such as the cauterizing of an erosion, or even some pretended therapeutic measure, may cause the vomiting to cease. While the first fact forces one to believe that the exciting cause of the hyperemesis is to be sought in the living ovum, the second fact—that is, the possibility of cure by suggestion—proves that it is not caused by a poisonous metabolic product or other toxic substance. He states that no one has cured eclampsia by suggestion. However, it is by no means excluded that a chemical substance is implicated in the pathology of this

ondition. The peculiar gustatory fancies of pregnant omen and the marked changes in the secretion of the aliva go to show that the digestion centre is affected y the increasing ovum. Given a particular form f predisposition, one can readily find an explanaon why these signs may become pathological. The redisposition which plays a part in the development of ne vomiting must be sought for in the uterus, the central ervous system, or in the stomach. The quantitative ver-production or qualitative alteration of the supposiitious chemical substances in the uterus explain the yperemesis in twins, and hydatid mole, in endometritis, nd retroflexion. One can understand why neurasthenics nd hysterics form so large a contingent of all the cases one presupposes the existence of an abnormal irriibility of the nerve centres; while when the hyperemesis ccurs in women with weak digestive organs, the history f some past gastric disturbance offers a feasible explanaon. During the last five years Baisch has observed 20 ases of hyperemesis out of about 20,000 patients, and his xperience teaches him that these three factors play a arge causative rôle in hyperemesis. He further thinks hat the prognosis assists one to form a clear idea in many cases. The hyperemesis of neurasthenic or hysterical atients is the most favourable form, and treatment is ostly able to cope with the condition successfully. In he first place, he mentions that a consultant often succeeds etter than the general practitioner, because the patient nows the latter too well for him to be able to carry out uggestive treatment with ease. Rest in bed must be omplete, and is very valuable. It may be wise to order a ermophore to the gastric region or an icebag to the abdoen, so that a plausible reason may be given to the patient hy she must go to bed. When the vomiting is severe, all od, both fluid and solid, must be withheld for the first 24 ours at least. Thirst can be removed by subcutaneous injecons of saline fluid. After the fast is over he gives the patient ilk cooled with ice by the teaspoonful. A dry biscuit ay be allowed on the following day, then tea and coffee ith milk, bouillon, and other slops. At first he arranges hat the diet is largely fluid, and he takes the return of ppetite as a certain sign of getting better. One has to be xtremely careful how one allows the diet to be increased, nd everything must be very gradual. When this treatment oes not lead to cure rapidly, one should not go on trying ll sorts of diets, but should remove the patient from her ome surroundings and place her in a hospital. This is ften difficult to do, but at times it is imperative. The ervous form of hyperemesis is by far the most common of he three forms. Among his 20 cases, 15 suffered from it. n two there was profuse salivation as well as hyperemesis; n these cases he was forced to interrupt the pregnancy. n all the other cases he was able to cure the patients ithin from two to three weeks. He cites a very severe ase among these to serve as an illustration. Three of the atients suffered from the gastric form. In one abortion ad to be induced, while in the two others the rest and ieting treatment led to the desired result. With regard o the uterine form he says that one does well to assist the eatment by drugs. These drugs must be sedatives, and ractically all the known sedatives, from bromides to orphine, may be used. Scopolamine answers best of all. Having discussed the conservative treatment, he turns to he treatment by interruption of pregnancy. This should nly be undertaken when all else fails, and when the connuance of the symptoms threatens to be a danger to the other's life. He clears the uterus out in one sitting, as his he believes taxes the strength of the mother far less han the slower method.

GYNAECOLOGY.

90. Treatment of Severe Vesico-vaginal Fistulae.

Richelot (*Prog. Méd.*, June 15th, 1907) says that the method of dealing with vesico-vaginal fistulae which Marion Sims and Bozeman introduced in 1858 was a great advance on former methods. It consisted in making round the abnormal orifice a large fresh surface, circular in shape, at the expense of the vaginal mucous membrane, and of drawing together by suture the extended surfaces. In 1864 Duboué proposed to incise the mucous membrane transversely at the site of the orifice, to detach the vaginal wall to a certain distance from the fistula, and to cut two flaps, whose fresh surfaces he would suture together. A few years ago Braquehaye devised a method which combined the principles of the two foregoing plans, and which gives excellent results. An incision is marked out at a distance round the fistula. A collarette is dissected up towards the orifice, stopping at a distance of a few millimetres from it. The collarette is turned in towards the orifice, and its fresh edges are united by catgut sutures, the mucous surface of the collarette being towards the vesical cavity. The edges of the fresh surfaces due to the dissection of the collarette are united by means of horsehair sutures, some traction being used to adjust the edges. Here is a case treated in this way. A woman, aged 31, had been delivered of a child. She had, when seen, a large fistula with fixed edges, oval in form, occupying the whole of the anterior vaginal wall. The anterior wall of the bladder was protruded hernially into the wound. The operation of Braquehaye was performed, not without considerable difficulties; and the result was satisfactory. After the operation the author advises the use of the catheter two-hourly, the patient being placed on her side. The final result in this case was most satisfactory, the patient making a thorough recovery. No urine filtered through the closed fistula; the stitches were removed by degrees; the use of the sound was dispensed with in a month. The urethra regained its normal calibre, and the patient passed water by herself every two hours. She at first had a partial incontinence, which has since entirely disappeared. The functions of the bladder have now become quite normal.

91. Ovarian Dermoids and Undeveloped Uterus in Child aged Ten.

A. Pinkuss (*Zentralbl. f. Gynak.*, No. 29, 1907) recently reported before the Berlin Obstetrical Society a case of an ovarian dermoid as big as a fist, in a child aged 10 with a rudimentary uterus and cystic degeneration of the opposite ovary, which was of the size of a small plum. At the operation, performed a year before the case was made public, the uterus was found reduced to a band of connective tissue, bifurcated above, each division ending in a normal Fallopian tube. The vagina was 2¼ in. long, and ended in a blind pouch above; the outer parts and the mammae were normal. The ovaries were connected with the two divisions of the undeveloped uterus. That which was converted into a dermoid was easily removed, as its pedicle was long; eight or ten metastatic deposits were detected in Douglas's pouch, none larger than a mustard seed. The opposite ovary was treated by ignipuncture. A year later, when the patient was examined, the child had grown and was free from evidence of growth of the metastatic deposits. The remaining (left) ovary was of the size of a small almond.

THERAPEUTICS.

92. A Method of giving Phosphorus to Children.

The majority of the authorities in children's diseases consider that the treatment of rickets and allied disturbances of nutrition depends on the regulation of the diet and of the hygienic conditions of the life of the patient and one medicament. This medicament is phosphorus. As far as is known, this element is only active in the treatment of rickets in its elementary form of yellow phosphorus. It is practically always given dissolved in cod-liver oil. C. Manchot (*Muench. med. Woch.*, March 19th, 1907) states that the phosphates and hypophosphates are quite useless for this purpose. But one must bear in mind that elementary yellow phosphorus is one of the most potent poisons known, and cases of fatal poisoning from the ordinary doses of the cod-liver oil solution of the phosphorus have been met with from time to time. Apart from the danger connected with this form of medication, one meets with another disadvantage, namely, that the solution is extremely unstable, and decomposes easily. It has been found that after the course of eight days, oxidation processes have destroyed the active phosphorus to the extent of about 21 per cent. Manchot attempted to overcome this difficulty by giving the phosphorus dissolved in butter, but this proved to be inactive. He met with better results when giving it in almond oil. The body weight increased rapidly under the influence of subcutaneous injections of this solution. The general condition improved coequally with the weight, and the children promised to get well rapidly, but unfortunately local infiltrations and obstinate abscesses compelled him to give up the method. Arguing from the basis of mother's milk, he came to the conclusion that organically-bound phosphorus must be active in supplying children with the necessary form of phosphorus. The organically-bound phosphorus in mother's milk is derived from vegetable and animal articles of diet. Cow's milk contains

more phosphorus than does mother's milk, but the greater part of this is in organic combination. Children fed by cow's milk excrete much more phosphorus both in the faeces and in the urine than do children fed on mother's milk. He therefore thought that if he could find some organic combination of phosphorus in some of the plants or seeds which could be given to children, this might be used for its phosphorus content. First, he tried to employ phytin for this purpose, but found that it was not of sufficient activity to satisfy him. Turning to hemp-seed, he found that the chances of success were better, since this seed contains a high percentage of organically-bound phosphorus. Hemp-seed is supposed to contain roughly 22 per cent. nitrogenous substances (albumen, etc.), 13 6 per cent. carbohydrates, 26 3 per cent. raw fibres, and from 30 to 31 per cent. hemp oil, besides its phosphorus. The carbohydrate content is thus considerably lower than that of the other kinds of meal (oatmeal, rice, etc.). First, he got rid of the oil by extracting with benzine, and, although he lost a certain quantity of phosphorus, which is soluble in benzine, he found that the residue contained actually a greater percentage of its weight in phosphorus than did the untreated seed. This was found to correspond to 1.5 per cent. of phosphorus, after grinding and drying, as compared with 1.02 per cent. before the oil was extracted. He uses the Russian hemp-seed. His clinical experiences with a "soup" or decoction of hemp-meal were highly satisfactory. The soup is prepared by mixing 100 grams of crushed hemp-seed from which the oil has been extracted in 1 litre of water and heating it gently until the quantity has diminished to 250 c.cm. The mixture should not be allowed to boil. The fluid is then passed through a fine sieve and the residue pressed by means of a wooden spoon, and, lastly, the fluid is filtered through a fine cloth or thin filter paper. He gives from 30 c.cm. to 50 c.cm. of this soup to children, according to age, in the ordinary food. Two or three days after giving the "soup," without changing the diet, the weight begins to increase, and within a week the whole appearance of the children becomes altered; the pallor disappears, the face becomes rosy, and the muscles become firm. He states that the action is more rapid than he has ever seen in cod-liver oil and phosphorus mixture. He also discusses the chemical condition of the phosphorus in hemp-seed, and gives some data of an investigation carried out by his brother, Professor W. Manchot, on the subject.

93. Diabetes Insipidus Treated by Atropin.

Fontana (*Gazz. degli Osped.*, May 12th, 1907) reports a case of diabetes insipidus in a child aged 4 successfully treated by atropin. Before treatment the child was drinking every quarter of an hour and getting no proper sleep. About 9 litres of fluid were taken in the twenty-four hours, and 7 to 8½ litres of pale urine of specific gravity 1002 to 1006 passed. There was no albumen, no sugar, and no abnormal elements present in the urine. The skin was very dry and abdomen swollen. On January 11th the atropin treatment was commenced, and continued until March. The drug was given by the mouth in a solution of 1 grain to 10 grams of water. Of this solution 1 drop, increasing to 18 drops per diem, was given daily. The total amount of atropin administered during the course of treatment was 6 grams. No ill-effects were observed beyond a slight skin eruption in the early days. At the end of treatment the child only drank 1½ litres as against 9, and the urine passed only reached 1,200 to 1,400 c.cm., and the specific gravity increased to 1010 to 1013. The abdominal swelling diminished, and the child put on 500 grams in weight.

94. Novaspirin.

O. Lehmann (*Deut. med. Woch.*, March 7th, 1907) considers that aspirin, with its recognized advantages, has unmistakable disadvantages. In the first place, it produces unpleasant gastric symptoms, such as pressure, nausea, tendency to vomiting, acid eructations, and the like; next, its taste is so unpleasant to some persons that it is refused altogether; and lastly, it occasionally produces an oedematous swelling of the face and an urticaria-like eruption on the body. It is therefore not surprising that the same firm which brought out aspirin have now produced a substitute which does not possess the unpleasant taste nor induce gastric symptoms, while it is said to retain all the advantageous actions of aspirin. The new preparation is called "novaspirin." It is a combination of methylene citric acid with salicylic acid, as compared with aspirin, which is a combination of acetic acid and salicylic acid. It is practically insoluble in water and acid liquids, is soluble in alcohol, ether, and chloroform, and in alkaline fluids. In the intestine it is readily split up into its component parts. When boiled in water and shaken, novaspirin gives off much less free salicylic acid than aspirin does. When aspirin is split up and salicylic acid set free, the acetic acid which is also set free acts deleteriously on the stomach wall. When novaspirin is split up, the methylene citric acid, being a fruit acid, does not disturb the digestion. He has given novaspirin in repeated doses of from 3 to 4 grams, until the patient has taken from 30 to 40 grams, without producing any gastric disturbances. The patients do not mind taking novaspirin, which has a very faintly bitter but not unpleasant taste. It is absorbed and excreted more slowly than aspirin, and for this reason it acts less favourably at first in cases of acute rheumatism than the latter. He therefore prefers to begin in severe cases with aspirin or sodium salicylate and to continue with novaspirin after the pain and fever has begun to be influenced. Good results can be obtained in influenza, neuralgias, headaches, nervous dysmenorrhoea, and the like. In conclusion, he states that novaspirin is a mild form of aspirin—that is, it acts less rapidly, but the action lasts for a longer period. It does not produce any gastric symptoms and is not unpleasant to take, and, lastly, its action is chiefly a sedative to painful and nervous disorders.

PATHOLOGY.

95. Experimental Syphilis in the Dog.

E. Hoffmann and W. Bruening (*Deut. med. Woch.*, April 4th, 1907) report on some recent work which they have conducted with syphilitic virus. They point out that Bertarelli was the first to successfully graft syphilitic material on to the rabbit's eye by inoculation into the anterior chamber, or scarification of the cornea. The affection thus produced proved to be syphilis—by the presence of numerous spirochaetes, by the histological changes which correspond to the changes in human syphilis, and by the typical clinical course. The spirochaetes have been demonstrated in the rabbit's keratitis both by staining by Giemsa and by the method of "dark field" illumination. Further, the same observer has succeeded in passing the virus through a series of rabbits, thus not only obtaining pure cultures of spirochaetes in the anterior chamber of the rabbit's eye, but also gaining a considerable increase of virulence in the micro-organisms. The authors have succeeded in inoculating a rabbit's eye with a portion of a primary sore of human origin, producing a distinct keratitis. From this keratitis they infected a monkey (*Cercocebus fuliginosus*), and the infiltration in the lid of the monkey showed typical spirochaetes. Next they report on some experiments on dogs. A portion of a human primary sore, crushed up, was introduced into the anterior chamber of a poodle's eye. A marked reaction followed, and lasted for several days. Sixteen days after the inoculation a keratitis began to develop, which increased in intensity and extent during the following weeks. Two months from the beginning there was still marked opacity and slight iritis. A fortnight later the keratitis was clearing up somewhat, and the iritis had become less. In another experiment, the portion of the primary sore was introduced into the anterior chamber of a "spitz's" eye. A well-marked reaction followed. Pericorneal infiltration and opacity developed, and arising from this a progressive keratitis was noted. The eye was enucleated, and smears from the cornea stained by Giemsa's method showed typical *Spirochaeta pallida*. The keratitis thus proved to be typically syphilitic.

96. Changes in Nerve Cells due to Experimental Hyperpyrexia.

V. Scarpini (*Riv. sperim. d. Freniatria*, October, 1906) kept rabbits and guinea-pigs in a well-aired thermostat at 44° to 45° for forty to seventy minutes, which is as much as or more than the animal can stand; he then studied the appearances presented by their nerve cells, using the staining methods advised by Donaggio (*Riv. sperim. d. Fren.*, vol. xxx, pt. 2, 1904). He finds that the pyramidal and anterior cornual cells first lose their fibrillation, the fibrillary reticulum becoming reduced to a confused granular mass. The nucleus, nucleolus, and cellular protoplasm take the stain abnormally well; later the whole cell tends to stain uniformly while preserving its shape. If the animal survives this hyperpyrexia a few hours, vacuoles appear in the cell body and in the circumnuclear corpuscles. This change is no doubt due to hyperaemia.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

97. Pseudo-epidemic Cerebro-spinal Meningitis.

A. Baginsky considers that the interest which recent outbreaks of epidemic cerebro-spinal meningitis have awakened in this disease justifies him in calling attention to a disease which is exceedingly like it, but which can be distinguished from it by the more rapid and favourable course, and by the results of bacteriological examination (*Berl. klin. Woch.*, April 8th, 1907). As the points of the illness are well exemplified in each case, he gives the clinical details of a few cases. The first patient was a male child, aged 7 years. He was taken ill on the day previous to admission into hospital with severe headache, vomiting, and fever. He looked very ill, lay with half-closed eyes and retracted head. On the following day his mental condition was clouded, he replied slowly to questions, but did not know where he was or what was taking place in his environments. His limbs were somewhat rigid, and passive movements called forth some resistance. Kernig's symptom was well marked. His mouth was dry and the tongue pale. Nothing abnormal was made out in the heart, lungs, and liver. The spleen was slightly enlarged; the urine contained excess of urates, but no sugar or albumen. There was no paralysis either of the pupils or of the extremities. The temperature ranged between 101.5° and 102° F. No change was seen on the two following days, save that the orthotonos became more marked. Lumbar puncture failed to reveal anything definite. On the following day all the reflexes were exaggerated, and there was marked dermography. Lumbar puncture was again applied, and about 3 c.cm. of turbid fluid escaped slowly. This contained numerous polymorphonuclear and mononuclear leucocytes and a few diplococci, a few of which lay intracellularly. From the next day onwards the boy made steady progress toward recovery, the rigidity of the neck first disappearing, and Kernig's symptom lasting for a few days longer. Widal's test to enteric fever and to paratyphoid A and B proved negative. No micro-organisms could be grown from the cerebro-spinal fluid. He also gives the details of three other cases, all of which in the main presented a similar clinical picture to the first case. From the point of view of bacteriology he found that the causal micro-organism, or at all events the micro-organism found in cerebro-spinal fluid, was either pneumococcus, or *Diplococcus crassus*, or streptococcus, or staphylococcus. The course was a rapid one in all the cases, and recovery was complete within a short space of time. With regard to treatment, he gave iodide of potassium internally, rubbed in mercurial ointment freely, and besides he employed hot baths, cool applications (for example, the cool mattress), and, although this was carried out more for diagnostic than for treatment purposes, lumbar puncture. The last named may prove useful when the fluid is exerting a heightened pressure. In conclusion, he details a fifth case, which terminated fatally on the third day after admission, in which a micro-organism which was most probably *Micrococcus flavus* alone was found. These cases, he thinks, warn one to be very careful before one definitely states that any case of cerebro-spinal meningitis is epidemic.

98. Entero-colitis and Muco-membranous Entero-Neurosis.

Lebeaupin (*Journ. de Méd. et de Chir.*, November 25th, 1906) points out the necessity of differentiating these two affections, since their treatment is different. Entero-neurosis occurs especially in nervous women, but also in neurasthenic or hypochondriacal male patients. These patients have a distinct neuropathic history—hysteria in women and neurasthenia in men; they complain of having always suffered from abdominal pain and from uneasy digestion, and they examine their stools with minute care; they read up their cases in medical books, consult numerous doctors, and try every method of treatment. Entero-neurosis shows itself by the appearance of nausea and vomiting, followed by very painful peristaltic movements of the intestine; these painful peristaltic waves are worse during the menstrual period, and are particularly prone to occur at night time. Constipation is usually present; the stools are small in calibre, and generally take the form of small pellets or of ribbons, sometimes accompanied by mucus or false membranes. Sometimes there are numerous motions per day, but these are not of a diarrhoeal character. Crises of intestinal pain of an extremely acute character may occur, the seat of the pain varying, sometimes in the region of the ascending colon, sometimes in that of the transverse colon or in the iliac fossa, and the whole of the large intestine is often painful on palpation. Pains over the bladder, in the genital organs, and in the sciatic nerve may be present. During the crisis of intestinal pain the abdomen is usually retracted, the muscles tense, and palpation cannot be tolerated by the patient. In entero-colitis, constipation alternates with diarrhoea, the intestinal pains are never so severe as in entero-neurosis, and symptoms of peritonism (distended abdomen and excessive meteorism) are the dominant features, the painful intestinal crises of entero-neurosis are accompanied by great agitation of the patient, or even by convulsive attacks, but with the passage of a motion all these signs disappear, the stool usually containing no faecal matter and being composed of false membranes, sometimes in enormous quantities. If faecal matter is present in the stool, it is usually hard and white. In entero-neurosis various ptoses may occur. In entero-colitis one never finds enormous quantities of false membranes expelled after the intestinal crisis. In entero-neurosis the false membranes contain very few epithelial cells. There are no pus cells or red cells or eosinophiles, all of which are present in considerable numbers in entero-colitis. Further, bacteria are far more abundant in the false membranes of entero-colitis than in those of entero-neurosis. In entero-colitis suitable treatment for the inflamed mucous membrane by diet, drugs, tonics, etc., are sufficient to effect in many cases a cure. In entero-neurosis the most important point to remember is that the general nervous condition must receive appropriate treatment if success is to be expected. Moral and intellectual repose must be insisted upon, and if necessary the patient must be isolated, and the hysteria or neurasthenia should receive appropriate treatment.

99. Tattooing by Hypodermic Injections.

The blue patches of the skin of morphinomaniacs has been described by several authors. Horaud (*Lyon Médical*, June 9th, 1907) has recently had the opportunity of examining such spots on the skin of a woman who had died from malignant disease, and who had been in the habit of injecting hydrochlorate of morphine and hydrochlorate of cocaine. The dark patches occurred on all parts of the body accessible to the right hand, save the exposed parts. The spots resembled tattoo marks made by China ink, but in the centre there was usually a white spot to be distinguished; they were about the size of lentils; they were level with the skin, except for the small central cicatrix. Their diagnosis should be easy; their situation and the lack of signification will be sufficient to distinguish them from ordinary tattoo marks. The origin of the pigment was carefully investigated. A patch of skin was dissected from the abdomen, freed from blood, and soaked in nitric acid. The acid contained no carbon, but gave all the ordinary reactions of iron. Horaud concluded that the pigment was reduced iron. The iron found was in far too great amount to have come from the blood. In part it might have come from the rust of steel needles into which no wire had been inserted after use, but another possible source was adulteration of the alkaloids used by some salt of iron.

SURGERY.

100. Artificial Thrombosis of Varices.

Tavel, of Bern (*Berl. klin. Woch.*, February 18th, 1907), recommends a method of treating varices. The idea of producing thrombosis artificially is not new, but in the modern textbooks it is not mentioned. Various plans have from time to time been brought forward, and these include the injection of alcohol and lead acetate or tannin, of pure alcohol, of solutions of the perchloride of iron, etc. Trendelenburg was the first to practise ligature scien-

tifically, although the method dates back to Celsus and Paré. According to Trendelenburg, varix occurs as a result of the insufficiency of the venous valves in the saphena. Valves are not necessary in the vena cava, iliac and femoral veins, since the intra-abdominal and muscular pressure can keep the blood from regurgitating, but the saphena vein usually is supplied with eight to ten valves, the function of which is to interrupt the venous pressure and to prevent the blood from congesting in the lower parts of the leg. Although the results of ligature of the veins and removal of a piece between the ligatures in the main are satisfactory, a certain number of failures are met with in which regeneration of the excised portion of the vein takes place. Apart from the occurrence of regeneration of the excised portion, one meets with thrombosis in from 9 to 10 per cent. of the ligature cases. The thrombosis may occur either above or below the ligatures. Tavel is of opinion that the results obtained by spontaneous thrombosis are considerably better than those of ligature when no thrombosis takes place. The causes of varix are not clear. Compression of large vein trunks, pregnancy, exertion, and changes in the venous wall, have all been suggested as causes. It has, however, been shown that compression in itself is quite incapable of producing a varix. In all probability the cause is a chronic inflammatory change in the vessel wall, and this change may be due to certain bacterial toxins. Tavel has frequently seen varix develop after acute infective illnesses, such as typhoid fever, scarlatina, etc. Prolonged standing frequently takes some part in the production of the varix, and tumour and pregnancy are also undoubtedly etiological factors. Before describing his method of treatment, he gives a classification of varices, based on the cases he has observed personally. The classification is as follows: *Phlebectasia ampullaris*, which includes sack-form dilatations of the veins. *Ph. cylindrica*, which includes simple excentric regular dilatations, such as is mostly seen in vein trunks, while, when the dilatation is spindle-shaped, he calls it *Ph. fusiformis*. *Ph. cirsoidea*; here the dilated veins are tortuous. In all cases of this variety Trendelenburg's symptom (of the filling of the vein, after mechanical emptying in the lying posture, from the large abdominal veins, thus demonstrating the want of competent valves) and a wave when the intra-abdominal pressure is suddenly increased, as in cough, can be made out. *Ph. racemosa*; this form is distinguished from the last-named by the existence of anastomoses. It is formed by small veins. *Ph. angiomatosa*; this form implicates only the smallest veins. *Ph. cavernosa*; this is the most common complication of varix, and in it one finds large cavities in the subcutaneous tissue containing blood. This form is the most likely to lead to varicose ulceration. *Ph. diffusa* is a rare form. The patients have cold feet and hands, the subcutaneous tissue is swollen, infiltrated, and looks as if it were oedematous, but does not pit on pressure. All the veins, from the largest to the capillaries, are dilated, but Trendelenburg's symptom is not present. Lastly, he recognizes a sclerotic form. Apart from the cases which he has treated with ligature, he has dealt with 27 cases by artificial thrombosis. All save one yielded good results. The case of failure was that of a woman who had been operated on for a perityphlitic abscess, and who had later on to be operated on for an ovarian cyst and a ventral hernia. A large cirsoid varix developed, and this was treated by ligature and injection of carbolic acid, but the thrombosis did not form satisfactorily. Later on he found that between the last two operations, during an interval of ten days, the patient had conceived, and he ascribes the failure to this event. In three of the other patients, in whom the thrombosis was successful, subsequent pregnancy did not interfere with the lasting result; 2 of the cases were of the ampullary form, 2 were of the cylindrical and cavernous form, 7 were cylindrical, and in 6 the cirsoid forms were in part associated with racemose varices. Other forms were also dealt with. The method is carried out as follows: The venous trunk is ligatured first. This is done either in the thigh or at the knee (saphena), according to the localization of the varicosity. Local anaesthesia with cocaine, novocain or alypin, or regional anaesthesia (Hackenbruch), or lumbar analgesia was employed. The ligature can be carried out percutaneously, subcutaneously, or transcutaneously. He prefers the last named. The vein should be marked with fuchsin before the operation. He advises not injecting the carbolic acid for from twenty-four to forty-eight hours after the ligature, so that one can be sure not to soil the wound with the acid. For the purpose of thrombosing the vein he chooses carbolic acid in place of tannin, perchloride of iron, etc., because he considers these too dangerous; 5 per cent. solutions of carbolic acid produce localized thrombosis by stimulating the intima. It is necessary to inject at various situations during the following two or three days until the whole varix is completely thrombosed. As a rule, from 2 c.cm. to 3 c.cm. is sufficient, but this may have to be repeated several times; 10 c.cm. suffices for most cases, but he has had to make fifty injections in large varices. The injection is carried out while the patient stands on a chair, and a little blood is aspirated into the syringe, to make sure that the needle is in the vein. It is not necessary to keep the patient in bed after the injection, but he prefers to do this in most cases. The collateral circulation usually forms in a short time, and in no case has he noticed any disturbance of general health after the procedure. He believes that the method shortens the times during which the patients have to lie up after ligature for varicose veins.

101. Prognosis of Foreign Bodies in the Eye.

A. TROUSSEAU (*Journ. de Méd. et de Chirurgie Pract.*, February, 10th, 1907) discusses this subject according to the situation of the foreign body, to its size, to its qualities, to its nature, and to the care given to treatment. Foreign bodies in the conjunctiva are easy of access and cause no complications. When situated superficially in the cornea they are not always of insignificant notice, as if centrally placed over the pupil they will markedly impair vision by the opacity which appears after their removal. Foreign bodies deeply embedded in the cornea are of grave significance, and one may say generally that the deeper a foreign body penetrates into the eye the graver will the prognosis be. Should it enter the lens a cataract will form, and if it enters the iris it may lacerate it and will set up iritis and possibly irido-choroiditis. If the ciliary region be the seat of the foreign body, enucleation of the eye is almost always necessary, sometimes on account of signs of cyclitis, with a tendency to atrophy which it brings on, at other times from serious manifestations of sympathetic ophthalmitis in the other eye appearing. When in the vitreous a foreign body causes nearly always loss of sight and often loss of the eye. The larger the foreign body the greater the damage done to parts of the eye it passes through. A small foreign body may become encysted, a large one will not, and will further mechanically irritate those parts of the eye with which it comes in contact when the eye is moved about. With an aseptic foreign body there are some chances that it may be tolerated by the eye; when septic, however, terrible results will follow (hypopyon, infectious irido-cyclitis, or panophthalmitis). Chemical glass, gold, steel, and lead are well tolerated as foreign bodies by the eye, whilst copper and iron, on the contrary, cause grave inflammation, as they dissolve slowly and thereby act as chemical irritants. The prognosis in cases of foreign bodies in the eye is greatly influenced by the care which is bestowed on treating the condition. If possible, the foreign body should be extracted as soon as possible after the accident, the most rigid antiseptic precautions being taken, and for this purpose obviously the foreign body must be visible and easily accessible. When these conditions are not realizable, it is best to render the eye as antiseptic as possible, to cover it with aseptic dressings, only rarely removing them to see how the eye is progressing.

102. The Surgery of the Spleen.

KÜTTNER (*Zentralbl. f. Geb. u. Gyn.*, No. 29, 1907), at the recent meeting of the German Surgical Congress, related two cases of splenic abscess. In the first case, the abscess burst into the pleura and was taken for an empyema and opened accordingly. It was not until after the patient's death that the original seat of the abscess was discovered. In the second case, diagnosis was made correctly during life and the patient recovered. Küttner declaring that the presence of pieces of organic tissue in the pus drawn from a subphrenic abscess on the left side is pathognomonic of splenic abscess, even when the tissue does not, under the microscope, show any essentially splenic histological elements. Küttner operated in an instance where movable spleen, enlarged by leukaemia, caused great discomfort. After splenectomy the patient was able to work, yet the blood disease showed no change whatever.

OBSTETRICS.

103. Retention of the Placenta.

THE causes and prevention of retention of the placenta is a theme which S. Durlacher (*Muench. med. Woch.*, February 19th, 1907) has chosen. He starts by objecting to the definition of retained placenta as a placenta which is not

born within two hours of the birth of the child. He considers that one should only speak of retained placenta when some pathological condition is present which offers an obstruction to the birth. The causes may be manifold. In the first place, if the placenta is detached from the uterine wall it may be retained on account of weakness of the expelling contractions. Very rapid births, artificial delivery, and hydramnion may lead to such a condition. At times there is a mechanical obstruction. Very large placentae may be difficult to bring forth, while marked displacements of the uterus may have similar results. Distended bladder also may form the obstruction. Next, the placenta may be held tightly in the spasmodically contracted os. The more important causes, however, are to be found in the partial or incomplete detachment of the placenta. This may be induced by kneading and pressing on the uterus during the third stage of labour. In 78 cases of retained placenta, in which manual detachment was required, 59 were cases managed by midwives. Ten cases (out of 85 abnormal cases) were attended by Durlacher himself. Interference had to be undertaken in these cases on account of atony of the uterus and haemorrhage. Since 1898 he has had to detach 9 placentae (out of 270 abnormal cases), and 2 of these were cases of placenta praevia. Only in 3 of the 9 cases was he compelled to interfere on account of atony of the uterus. He therefore has come to the conclusion that atony of the uterus is diagnosed more frequently than it actually occurs. Between 1892 and 1898, he finds that he diagnosed the condition in 11.75 per cent. of all abnormal cases, while in the subsequent period he has only had cause to diagnose it in 1.1 per cent. He discusses the actual frequency of interference in the third stage of labour, in the various clinics, and finds that a fair average may be taken at 0.57 per cent. The reason why he employed such means ten times more frequently before 1898 as after that year, is to be sought in the fact that he used to apply Credé's expression soon after the birth of the child, frequently during the first period, while during the second period, he always awaited the detachment before he attempted expression. He considers that one is extremely likely to mistake the physiological division in the serotina for adherence of the placenta, when detaching the same manually. He quotes a number of cases in which manual detachment was required after a midwife had attended the labour, and in which during subsequent labours an expectant treatment led to the spontaneous birth of the placenta. The histories of these cases, he claims, show that the premature and ill-directed expression caused unequal detachment. Physiologically, as soon as the uterus has emptied itself of the fetus, the muscle relaxes and only later does it again contract, to relax after each effort to expel the afterbirth. It is, therefore, a mistake to rub or press a uterus as soon as it relaxes, but one ought merely to watch it, and provided that no haemorrhage of consequence takes place, await events. When the fundus of the uterus is below the umbilicus, one may assume that the placenta has not yet become detached. After an hour, when the uterus is found in this condition, the midwife should call on a medical practitioner for assistance, as some pathological condition is probably causing a delay. On the other hand, if she finds the fundus uteri above the umbilicus after an hour, she is justified in attempting to expel the placenta as soon as the next pain contracts the uterine muscle. Should haemorrhage set in in spite of this, she must under all circumstances send for a doctor, and rub or knead the uterus until he arrives. No midwife should be allowed to remove a placenta manually on her own responsibility. He would prefer to forbid the midwife to even lay her hand on the abdominal wall during the third stage of labour, if she could recognize the signs of internal haemorrhage by the condition of the pulse, the general condition of the patient, etc.; but unfortunately one cannot expect her to be able to do this. In maternity clinics the watching should be carried out without any palpation. He comes to the conclusion that the best prevention of retention of the placenta is to avoid touching the uterus or abdominal walls after the birth of the child until the placenta is being born.

GYNAECOLOGY.

104. Abdominal Section for Puerperal Peritonitis.

Knyvett Gordon (*Journ. of Obstet. and Gyn. of Brit. Emp.*, June, 1907) reports 10 consecutive cases of puerperal peritonitis treated by abdominal section in the Monsall Fever Hospital, Manchester. All the patients were in a critical condition when the operation was undertaken. Six out of the 10 recovered. In the first of the 6 infection was traced to dilatation shortly after the puerperium; the cervix was deeply lacerated. Perforating pyosalpinx and abscess of the uterus were detected, the abscess was drained through Douglas's pouch after removal of both tubes and the right ovary. In the second, an instance of neglected abortion, the patient's condition was very grave. Pus was evacuated from Douglas's pouch, but as it was clear that more was pent up in the peritoneum abdominal section was performed. A pint and a half of pus was removed. Pus exuded from the ostia of the Fallopian tubes, and both ovaries were suppurating; the tubes and the left ovary, with the portion of the right which contained an abscess, were amputated. The next successful case was almost moribund on admission; she had been subject to rigors for a week, and treated with injections. Abdominal distension was extreme, and a big mass could be felt in the right iliac fossa. The peritoneal cavity was full of pus, and a large tubo-ovarian abscess lay on the right side. No attempt was made to cleanse the peritoneal cavity, but an opening was made in Douglas's pouch large enough to drain the abscess cavity and the general peritoneal sac. The lower end of the abdominal incision was also drained. The right Fallopian tube was removed. Cultures from the peritoneal pus showed streptococci only. The temperature fell to normal on the third day, and the abdominal wound healed soundly. The remaining 3 successful cases resembled those above related in general characters. Gordon considers that in these desperate cases the individual patient should be given a chance, the suggestion that a patient with an abdomen full of pus can recover without operation being hardly worth consideration. He is not in favour of flushing the peritoneal cavity, yet credits the practice, in one of the cases where it was adopted, with the successful issue of the case. Lastly, Gordon regrets that so often, as in nearly all his 10 patients, time is wasted in ineffective palliative and faulty local treatment. The intrauterine douche often does more harm than good; the uterus cannot be cleansed, when septicaemia has set in, by merely playing solutions and powders on its interior, for it needs scrubbing.

THERAPEUTICS.

105. Treatment of Phthisis by Artificial Pneumothorax.

C. Forlanini (*Gazz. Med. Ital.*, July, 1907) states that he first advocated the treatment of phthisis by artificial pneumothorax in 1882, and has since then continuously studied the principle of the treatment and perfected the method. The treatment was not favourably received because it is entirely independent of the tubercle bacillus which has absorbed public attention ever since its discovery. His own method is different from that published by Murphy and other Americans. Both depend on artificial pneumothorax, but the principle, the details, and the results are entirely different, and Forlanini anticipates no success for the American method. He attributes the difference between tuberculous infection of the lungs and tuberculous infection elsewhere to the constant variations of pressure and constant movements of the lungs, and states that even if all micro-organisms were destroyed a lung with cavities might still be expected to involve incurable disease. He proposes to cure phthisis by obliterating cavities and putting the lung at rest. Then the opposing sides of the cavity come into contact or are united by connective tissue, giant cells and all definite evidences of tubercle disappear, bacilli and elastic fibres are no longer found in the expectoration, and finally the expectoration itself comes to an end. Such results demand a few months in favourable, many months in unfavourable, cases. Since it involves the complete cessation of function on the part of the lung directly treated the method can only be applied to one side. It is not inapplicable to all cases in which both lungs are affected, for the author claims that in addition to curing the lung on the side operated on it favourably affects the other lung, and thus gives good results in many cases of bilateral disease, but it is useless in cases where the disease is widespread and rapidly advancing in both lungs. It is also inapplicable to cases where the visceral and parietal pleura are completely united throughout, but by repeated and carefully planned injections it may be usefully applied to many cases where there are considerable adhesions. In spite of these contraindications, Forlanini claims that the method may properly be applied in a majority of all cases of phthisis. It leads not only to a clinical cure in a sense of cessation of symptoms of phthisis, but to a real anatomical cure. The only way of judging during life whether anatomical cure has occurred

is by observing the prolonged duration of clinical cure, and until further experience decides the point, the author takes provisionally two years as the necessary time of probation. Minute details of the method are reserved for a later communication, but it consists essentially in the injection into the pleural cavity of from 1,000 to 1,500 c cm. of sterilized air, an amount sufficient to keep the lung absolutely unaffected by the movements of the chest walls, and the reinforcement of the intrathoracic pressure thus obtained by further injections—at first 100 or 200 c.cm. each day or each alternate day, and later 200 or 300 c.cm. every month, for the lung loses its expansibility, and moreover, after a time, the air is not so quickly absorbed. In really early cases of phthisis, where the whole of one lung and a large and distinct part of the other are sound, the author has not yet given his method a good trial. He recommends that it should be tried whenever such a case does not promptly yield to ordinary treatment, which is to be employed first. After the attainment of cure in such a case it remains to be determined whether it will be best to abandon the pneumothorax, allow the air to be absorbed, and the healthy part of the lung to expand and resume its function, or to maintain the pneumothorax by continuing to give small injections of air at considerable intervals. The latter alternative involves the acceptance of considerable deformity of the chest wall. Where one lung is healthy but almost the whole of the other is attacked, Forlanini advises that no effort be made to obtain restoration of function in the lung, but that pneumothorax be maintained indefinitely until a time comes when further experience shall have shown the length of treatment necessary to ensure complete and permanent immobility of the lung. When both lungs are affected, he recommends that the pneumothorax shall be maintained indefinitely on the worse side as the best guarantee for the gradual amelioration of the condition of the less diseased lung. Since each such case involves the restoration to health, and even to work, of a patient whose prospects were at one time very bad, Forlanini finds that it is not difficult to get people to submit to very prolonged, but very easy and not very frequent, treatment. It may become possible in future to assign a limit to the necessary duration of treatment in these cases also.

106. Modern Treatment of Gonorrhoea.

The modern treatment of acute uncomplicated gonorrhoea of the male urethra is based on the destruction of the gonococci in every part in which they are known or supposed to harbour, while the mucous membrane is damaged as little as is possible and all deleterious agents are avoided. K. Zieler (*Muench med. Woch.*, February 12th, 1907) considers that an ideal treatment is to be found in the systematic antiseptic method. In this one aims at applying substances which kill gonococci to the mucous membrane of the urethra as early as possible and for long and frequently-recurring periods, until one can assure oneself that all the cocci have been destroyed. In order to understand the action of the modern treatment it is necessary to follow out the behaviour of the gonococci toward the mucous membrane and the behaviour of the mucous membrane toward the gonococci. At first the cocci increase on the surface and in the superficial layers of the squamous epithelium of the fossa navicularis, then they increase largely over the whole surface of the urethral epithelium of the penile portion, and soon insinuate themselves between the loosely-placed cells into the deeper layers. They find their way into the ducts of the urethral glands and produce changes in them. The connective tissue may be completely infiltrated in from three to seven days *post infectionem*. The gonococci, having penetrated into the tissues, act upon them by means of the toxin. This produces hyperaemia, exudation of cells and fluid, and all the signs of acute inflammation. The exudation moves in the opposite direction to the path of the gonococci, and may wash the cocci back again to the surface. It may act upon the germs as a bactericidal substance and thus either damage them or kill them. In this way one sees in some cases that during the third week no deeply-situated gonococci are present. Nature therefore assists in getting rid of the cocci by means of the hyperaemic exudation. The local remedies which are applied seem to have but little deep action. Silver nitrate produces an increase in the upper layers of the mucous surface, and converts them into squamous cells. Plentiful deposit of silver takes place even in the submucosa, but no round cell infiltration is found. Protargol, on the other hand, produces very little overgrowth of the squamous epithelium, but calls forth much round cell infiltration. No deposit of silver into the tissue takes place. In order to attack the gonococci in all parts it is necessary to remove those which are growing on the surface, and to so influence the deeper tissues that the further growth of gonococci in these parts is impossible. This latter can be carried out by favouring the acute hyperaemia until no gonococci are left in the deeper layers and in the submucosa. The removal of the cocci on the surface may be effected by peroxide of hydrogen or by Janet's procedure of injecting potassium permanganate. The chief action of this method consists less in the bactericidal effect than in the fact that by stretching the urethra, and then suddenly relieving it of its pressure, an acute hyperaemia is set up which loosens the cocci from the surface and allows them to be washed away. To act upon the deeper structures it is necessary to avoid clogging up the epithelial layers with silver nitrate. The inflammation should be kept up, in order to obtain a good exudation, and to apply strong antisepsis to the surface. This is best done by means of protargol, argonin, and the like. These remedies must be applied for long periods and frequently. It does not matter whether these preparations possess any real deep action or not. As long as the hyperaemia exists the exudation will work in the deeper layers, and the antiseptic deals with the cocci as they are carried upwards.

107. Treatment of Gastroptosis.

George Roe Lockwood (*Med. Rec.*, July 20th, 1907) discusses gastroptosis and its management. Out of 2,000 patients he has found 351 suffering from gastroptosis. The disease runs a typical and characteristic course, and can be divided into stages. It begins with subnutrition and nervousness, and occurs especially in persons with an acute costal angle. In such persons prophylactic treatment should be instituted. In the first stage there is a gastroptosis alone without any symptoms. In the second temporary atony sets in with intermittent symptoms, consisting of gas in stomach, heartburn, and distress after eating. Later follows permanent atony and continuous symptoms. Gastritis is not an etiological factor, neither is tight lacing. In fact, a straight-front corset gives support, and is of value. Intermittent atony is brought on by mental and physical strain. Fermentation has been proved by the author's experiments not to occur in atonic stomachs, in which food is perfectly digested as a rule. High gastric acidity exists and prevents fermentation. Distress depends on the amount of gas and quantity of food. Neurasthenia and constipation result. Flushing of the colon will bring away strings of mucus. Diet brings on subnutrition and makes the patient worse. Examination of stomach contents shows a top layer of clear liquid and a lower one of digested food. Inflation is valuable to aid in diagnosis. Treatment of permanent atony involves rest in bed for four weeks with entire absence of worry and of society, and a trained nurse in charge; hot baths and spinal douches, massage, and a very nutritious diet, excluding fruits and red meats, given in six small meals a day. Bromide is an indispensable remedy. Under such treatment weight increases, the curvature of the stomach rises, and a cure is complete after six weeks or so. Prophylactic treatment consists of teaching the patient not to undergo strains, mental or physical, and keeping up the general condition.

PATHOLOGY.

108. Sudanophil Leucocytes in the Blood.

The presence and significance of leucocytes containing granules that stain with Sudan III in the blood has recently been emphasized by Cesaris-Demel. D. Buttino and G. Quarelli (*Riv. Crit. di Clin. Med.*, Florence, 1907, pp. 321 and 337) have stained the blood of 70 patients with a 0 2 per cent. solution of Sudan III in absolute alcohol, and a 0.1 per cent. solution of brilliant cresyl-blue in the same medium; the method is that advised by Cesaris-Demel, and it brings out any globules of fat that may be present in the leucocytes. The patients were suffering from a great variety of diseases; in 8 cases of purulent meningitis the percentage of sudanophil leucocytes was high (from 50 to 70 per cent.); in 4 cases of tuberculous meningitis it was low (16 per cent. or under). In general, the percentage of sudanophils is much increased in all suppurating affections and in pneumonia. The authors think that in many cases the fatty sudanophil granules in the leucocytes are products of degeneration formed in those cells, and that often they represent fatty degenerated tissue englobed and in process of removal by healthy leucocytes.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

109. Functional Diseases of the Heart.

Huchard (*Jour. des Praticiens*, July 20th, 1907) considers that cardiac neuroses, tachycardias, arrhythmias and troubles arising from reflex or toxic causes are often overlooked. Two contrary opinions have been expressed on the subject of palpitations. Gendrin said that palpitations are a symptom of most diseases of the heart; while according to Laënnec palpitations without an organic lesion are frequently more intractable than the purely organic type. Sénac, too, said that palpitations come on chiefly in the diseases in which there is no lesion of the heart. The author some years ago saw a fashionable young lady who had constant and painful palpitations of the heart and who thought she had an organic disease. He found no lesion, but he found that the patient was in the habit of paying a number of calls every afternoon, and of drinking several cups of tea. He advised her to give up the tea, which to his surprise she did, and in a very short time the palpitations ceased. It has long been known that theism causes a condition of cardiac erethism, which is very pronounced. Morton and Bullard, of Boston, have also described a disease of tea tasters, whose chief symptoms are insomnia, cerebral excitation, dyspepsia, palpitations, and a kind of neurasthenia. In addition, there may be a state of pseudo-angina. An excessive indulgence in coffee may cause a tremor of the limbs, precordial pains, frequent palpitations, nausea, and profuse sweats. Tobacco has a pronounced vaso-constrictor effect. It acts upon the pneumogastric nerves, causing circulatory, gastric, and respiratory troubles. So instead of seeking the cause of palpitation in the heart itself, treatment should be directed to the stomach, liver, or intestines. At other times palpitations are of vascular origin, due to a condition of peripheral vaso-constriction. This condition has been called angio-spastic dilation of the heart and angio-spastic pseudo-anaemia. The author has noted an increased blood pressure for some days before menstruation, especially in certain cases of dysmenorrhoea, and a fall of blood pressure at the end of the menstrual flow and during a few days after. When the menopause takes place too suddenly the blood pressure is raised, because the ovary, whose internal secretion is a depressor of the blood pressure, is too suddenly removed from action. This may cause palpitation, which will usually yield to a treatment aimed at lowering the blood pressure. The "palpitations of puberty," which Stokes remarked, are due to a development of the heart out of proportion to the development of the thorax. The pseudo-dilatation of the heart in anaemia and chlorosis is due to the raising of the diaphragm carrying the apex of the heart up and outwards, so that it appears to have a greater area of transverse dullness than normally. The palpitations of gastro-intestinal origin can be controlled by removing the cause in the stomach or intestines. Intercostal neuralgia may be the cause of false palpitations. Treatment must be directed to removing the pain, when the palpitations will cease.

110. Hepatic Cirrhosis of Tuberculous Origin in Infancy.

Spolverini (*Rif. Med.*, May 18th, 1907) reports 2 cases of hepatic cirrhosis occurring in children, aged 6 years, due in each case to tubercle. It has been said that one cannot have a true primary tuberculous hepatic cirrhosis, but that it is generally secondary to cardiac mischief and due to stasis, but this is not universally true. Nor is it necessary that there should be an actual tuberculous growth in the liver; cirrhosis may be induced by the tuberculous toxin just as it may by the alcoholic poison or the malarial; and the author's first case was an example of cirrhosis due to tuberculous toxin. The child had no cardiac affection, no evidence of syphilis, but there was evidence of enlarged bronchial glands (dullness to percussion, radiograph, etc.), which were undoubtedly tuberculous (the child responded to the tuberculin test). There was no oedema, no ascites, and only slight enlargement of the spleen. The liver was not smooth but somewhat nodulated, and there was glycosuria and urobilinuria. There was no jaundice, no fever, and no chronic gastro-enteritis. Under antituberculous treatment the child steadily improved, and the liver went down to its normal size. In the second case there were many signs which suggested that the enlargement of the liver was of cardiac origin (dyspnoea, cyanosis, distended jugulars, oedema, etc.), but no cardiac disease could be made out. The child died of acute miliary tuberculosis, and it was found that old pericardial adhesions had compressed the vena cava near its opening into the auricle, and hence caused hepatic stasis. The tuberculous inflammation had set up a capsular hepatitis spreading into the hepatic lobules. Tuberculous granulations were found in the new connective tissue growth developed within the liver itself, thus proving the tuberculous character of the cirrhosis.

111. The Opsonic Index in Diabetes.

Da Costa (*Amer. Jour. of Med. Sci.*, July, 1907) has examined the opsonic indices of 22 patients, 16 of whom were examples of diabetes mellitus, 4 of diabetes insipidus, and 2 of transient "accidental" glycosuria. Many diabetics show an undue susceptibility towards bacterial infections, notably of the cutaneous and pulmonary systems. The grave metabolic disturbances of diabetes leading to hyperglycaemia, lipaemia, and the accumulation of β-oxybutyric acid in the blood and tissues prompt the query, How much, if at all, do these changes influence the blood opsonins? *Staphylococcus aureus* was used for the test. Of the 16 cases of diabetes mellitus, all had subnormal opsonic indices—0.34 to 0.72—the average being 0.62. Three in which the urine gave positive tests for acetone and diacetic acid had especially low indices—namely, 0.49, 0.52, and 0.34; but extremely low indices may occur in the absence of these changes. No relationship was found between the index and the sugar content of the urine. There was also no relation with albuminuria, the leucocyte count, haemoglobin, and red cells. The four cases of diabetes insipidus had indices within the normal limits—namely, 0.82, 0.82, 0.87, and 0.89; the average, 0.85, is a decided contrast to that of diabetes mellitus (0.62), but even in diabetes insipidus the average is below the average of normal individuals. Of two patients with transient glycosuria, one had an index of 0.81, the other 0.91; the former was a post-operative glycosuria, the latter was due to malt liquors. The inquiry establishes the fact that diabetics have a feeble resistance to staphylococcic infections, and explains the prevalence of boils, carbuncles, abscesses, and similar lesions, but it is premature to assert that all subjects thus affected show especially wide deviations from the normal standard.

112. Blood in the Faeces of Pulmonary Phthisics.

Carletti (*Gazz. degli Osped.*, April 28th, 1907), realizing the frequency with which intestinal tuberculous lesions accompany pulmonary phthisis and the importance which such lesions have in prognosis and, on the other hand, the difficulty in the early diagnosis of them, has examined the faeces of 25 tuberculous subjects (pulmonary) with a view to the presence of blood. The tests used were: (1) The guaiacum and turpentine, (2) the aloin, and (3) Boas's test with paraphenyl endiamine. In every case he was dealing solely with such minute traces of blood that they could only be detected by chemical means. As a result of his research, he finds blood in these small quantities is frequently found, and the more so the more advanced the disease, but there are many exceptions. At times, in early stages of pulmonary phthisis, blood can be found in the faeces while there are no symptoms of intestinal disease; on the other hand, tuberculous ulcers of the intestine may exist without giving any blood reaction in the faeces. If blood is found constantly in the faeces, in an early case of pulmonary phthisis, tuberculous lesion (other things being excluded) of the intestine may be diagnozed, but the absence of blood does not exclude intestinal ulceration.

SURGERY.

113. The Uses of the Permanent Catheter.

J. Vogel (*Berl. klin. Woch.*, May 20th, 1907) says that the employment of the permanent catheter does not enjoy that popularity among medical practitioners which it deserves. This is to a great extent due to the unjustified fear of

suppositious dangers, as well as to the want of recognition of the advantages. Most practitioners have a dislike for using a catheter, especially in males, but when a Nélaton can be used they are comparatively happy. When such an instrument cannot be passed it is common practice to use a small metal catheter, and this is a dangerous instrument. Naturally a metal instrument cannot be used as a permanent catheter. With regard to cystitis, he says that a moderate degree of catarrh may be induced, and no known means are strong enough to protect entirely against it. But this complication is not such a serious disadvantage that it can be regarded in the face of the great advantages of catheterization, and after all a bladder catarrh induced in this way is only an unpleasant complication, which generally disappears spontaneously after the catheter is laid aside. When the cystitis is more intractable and severer, one can assume that it was not caused by the catheter. Catheter fever is another imagined disadvantage of the permanent catheter. When the internal remedies fail to relieve the symptoms of this rare but disagreeable condition, the best form of treatment is in the application of the permanent catheter itself. In speaking of the choice of instrument, he is of opinion that the Nélaton catheter is too easily compressible for general use, and he prefers to use silk webbed catheters. Next he insists on scrupulous asepsis in all dealings with the catheter. The catheter can be fastened in position by numerous methods, but none of these is really perfect. He thinks that it is best to apply two strips of strapping around the catheter close to the orifice of the urethra, in such a manner that the four ends lie in a cross shape. The prepuce is then drawn backwards and the strips applied to the glans. A third strip is applied outside the four ends around the sulcus coronarius, but not tightly. The patient has to be kept on his back as long as the catheter is *in situ*, and this is a real disadvantage of the method. When the patient is restless, it is necessary to have a well-trained nurse to look after him constantly. Cystitis may be provided against by washing the bladder out with 3 per cent. solutions of boric acid or 0.1 per cent. of silver nitrate, and by giving urotropin internally. The catheter may not remain in the urethra for longer than one week. The results obtainable in gonorrhoeal stricture of the urethra by the permanent catheter are excellent, while those obtainable in traumatic stricture are much less good. It is quite remarkable how easily a big instrument can be passed after a small one could only be passed with difficulty, when the latter is allowed to remain in the urethra until the inflammatory swelling and congestion has had time to diminish. In operations on the urethra, the permanent catheter is an important instrument. It acts in many ways. First he mentions that it is a tampon of considerable value. Next it prevents the wound edges from sticking together. Next, it prevents the urine from infiltrating the wound. In carrying out Le Fort's method of dilating the urethra, the filiform bougie is passed and allowed to remain *in situ* for several days. This bougie is used as a director for the passage of metal catheters, which are passed one after another at one sitting. In this way, one can often pass a metal bougie or catheter of the size of No. 15 or 16 after only the filiform bougie could be passed. For internal urethrotomy, he advises the use of a permanent catheter of a size somewhat smaller than the lumen of the urethra. He also believes that great use can be obtained from its use in external urethrotomy. He also has got excellent results in the treatment of urethral wounds, either produced by the passing of unsuitable catheters or by other means. In hypertrophy of the prostate gland, he is inclined to regard the permanent catheter as a valuable method. Prostatectomy has not yet secured a safe place in surgery for this condition, partly because the mortality of 10 per cent. is a very high one. When applied during the stage of congestion, the permanent catheter often renders it possible for the patient to urinate spontaneously after a few days. But he adds that if the catheter is to be of service in this condition, it is a *sine qua non* that the detrusor must be functionally active. Lastly, he deals with the method for affections of the bladder. It acts both as a means for providing drainage and also as a means of relieving pain. He also says a few words on the use of the permanent ureteral catheter.

114. Treatment of Fractures of the Clavicle.

Couteaud (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 22, 1907), who has for some years treated fracture of the clavicle without splints or bandages, publishes a recent case in which deformity at the seat of injury, which involved the outer third of the bone, was prevented by his method of "aesthetic treatment by position." This method consists in keeping the patient in the recumbent position with the shoulder on the injured side unsupported, and the upper extremity hanging down by the side of the bed. Notwithstanding excessive overriding of the fragments and the complication of traumatic arthritis in this case, the patient, who was a tall and very muscular seaman, recovered with as complete a restoration as possible of the form of the shoulder. This method is advocated as being efficient, harmless, and capable of application by any one. The dependent and vertical position of the arm causes relaxation of the contracted muscles of the shoulder, and thus facilitates proper apposition of the clavicular fragments. This position is maintained for two or three days, after which period the forearm and hand may for the next two weeks be supported on a cushion placed on the floor by the side of the bed. This treatment has evidently many disadvantages. It necessitates prolonged confinement to bed, causes much oedema of the upper limb, and needs much patience and toleration of extreme discomfort on the part of the patient. In the discussion of this report Berger spoke in favour of Couteaud's method, and held that in many cases of fractured clavicle better results could be thus obtained than by the usual plans of treatment. The necessity of keeping the patient at complete rest in the dorsal position for at least a fortnight he regards, however, as an inconvenience likely to lead the subjects of fractured clavicle to reject a method causing so much discomfort.

115. The Causes of Strabismus.

Etienne Ginestous (*Gaz. Hebd. des Sci. Méd.*, May 19th, 1907), from the analysis of 170 cases of internal and 30 cases of external strabismus, concludes that the theory of Donders does not afford sufficient explanation of the pathogenesis of strabismus. For how can one explain the fact that the same amount of ametropia causes strabismus in one case and not in another? The author in a previous paper stated that strabismus is partly due to hereditary taints, affecting the central apparatus which controls binocular vision. Following up this idea he found that in 37 per cent. of the cases of strabismus there was a history of alcoholism in the father and in 70 per cent. of the cases a history of hysteria in the mother. Moreau found in 79.60 per cent. of his cases of strabismus an antecedent ametropia: the author's statistics found this cause in 93 per cent. of his cases. But since ametropia need not necessarily cause a squint, there must be some other cause of strabismus. Paul Simon has found many nervous manifestations, and especially epilepsy and hysteria, the antecedents of strabismus. Moussans remarked that convulsions and strabismus were nourished in the same soil. Javal noted a dissymmetry of the cranium in many people affected with strabismus. The course of strabismus is the easier, the fewer and the slighter are the hereditary taints. Binocular vision is a function of normal man, and the fact of not possessing it constitutes in itself an hereditary imperfection. Valude and Féré have cured some cases of strabismus by antinervous remedies. In attacking the error of refraction the surgeon is merely rectifying that cause of strabismus which is most easily seen and most easily treated.

OBSTETRICS.

116. Fetus in Abdominal Cavity for Twenty-one Years.

Brandeis (*Gaz. Hebd. des Sci. Méd.*, January 27th, 1907) gives in detail the results of his examination of an extra-uterine fetus which had been retained in the abdominal cavity for twenty-one years, and which was removed by operation. When the abdomen was opened, the fetus was found to be adherent to the abdominal wall, to the true pelvis, and to a coil of intestine. On separating these adhesions, 30 to 40 c.cm. of yellow liquid (probably amniotic) escaped. This liquid was alkaline, contained urea, sodium chloride, and albuminoid matters. On centrifugalizing some of this liquid, and examining microscopically, a granular amorphous deposit was found, but there were no cellular elements; no organism could be grown on media inoculated with this liquid. What was supposed to be the placenta consisted of threads of connective tissue containing large cells of rounded form, non-nucleated, and the protoplasm of which was feebly coloured. Certain parts of the placenta were amorphous in appearance, and did not stain well; there were neither crystals nor fat present. In the umbilical cord were found some discoloured fibres and a substance through which were scattered what appeared to be mucous cells. The protoplasm of these cells stained badly with eosin, and no

nuclei were visible; the thymus was unrecognizable. Sections of the right eye showed an amorphous granular substance in which no formed elements could be detected by staining. Examination of the liver showed that the columns of hepatic cells did not present the characteristic radial arrangement around the intrahepatic veins. The liver cells were irregular, deformed, and stained a pale rose colour with eosin; their nuclei were invisible. The perilobular connective tissue was still present in certain territories, but no nuclei could be seen. Indications of portal vessels and of biliary canals were found, but there existed no cellular elements of their walls. On the cut surfaces of the liver were found numerous blood granules. Examination of the left buttock, anterior surface of the left thigh, and of the anterior abdominal wall showed the following condition: The epidermis was defective; it is not replaced by any calcareous coating, thus showing that the fetus was not a "lithopaedion" in the true sense of the word. It is seen that the external surface of the fetus is formed by the dermis, and is formed of well-preserved connective-tissue bundles, amongst which are scattered elastic and muscle fibres. The muscular tissue stains well, as do also the nuclei of the muscle fibres. The subjacent reticular tissue contains in its meshes cells whose outlines are well defined, and whose nuclei stain well. Some cells here, however, do not stain well with eosin, and are of yellow colour. The fatty cellular layer shows crossing of loose connective tissue fibres, in the interstices of which one can detect some amorphous powder and some leucocytes; fat itself is absent. The vessels of the dermis are reduced to a band of circular fibres with no trace of cellular elements. Some lymphatics are in good state of preservation, and around them are found masses of leucocytes. The muscles of the left thigh are much more altered than those of the other parts examined. In no part was any muscle striation found. Most of the muscle fibres stain badly, and even those which are best preserved show fragmentation into short and hard masses. Bacteriological examination of tissue from various regions showed the complete absence of micro-organisms.

117. Spirochaete in Dead Syphilitic Fetus.

Bar and de Kervilly (*L'Obstet.*, May, 1907) examined a stillborn female fetus weighing over 4½ lb. The placenta was very heavy and oedematous and strongly adherent. The mother showed no symptoms of syphilis. The fetus was macerated when delivered. The liver was reddish grey spotted with white; it weighed 4½ oz. It was treated by impregnation with nitrate of silver after Levaditi's method. Sections showed that the liver tissue was infested with the spirochaete of Schaudinn. The germ was ten times more numerous than the hepatic cells, and showed very clearly. As nitrate of silver staining is not satisfactory for decomposing tissues, and as the liver was certainly in an incipient stage of decomposition when prepared, Bar and de Kervilly conclude that the germ which came out so clearly in the sections must have been fresh or even living until the reagent was applied. The spirochaete, in short, resists decomposition, at least for some time. It was so extremely abundant in this case that the hepatic tissue looked like an artificial cultivating medium. The spirochaete was found in the kidneys and suprarenal capsules, also in the blood of one branch of a pulmonary vein, but not in the spleen or in the placenta.

GYNAECOLOGY.

118. Malignant Vaginal Polypus.

A. Doran (*Journ. of Obst. and Gyn. of the Brit. Emp.*, June, 1907) describes a case of "hypernephroma," or adrenal tumour of the kidney, a tumour which receives its name because it originates in "rests" or tracts of tissue resembling that which makes up the normal zona fasciculate of the suprarenal capsule. The patient was a married woman, 40 years of age, who had borne one child at term seventeen years before. She was sent in to the Samaritan Free Hospital because of the presence of an abdominal tumour and of a polypoid growth in the vagina. The catamenia had ceased abruptly two months previously. The abdominal tumour had been first observed a month before admission, after the patient had been confined to bed for a few days on account of a "chill"; the tumour had been slowly growing during the intervening month, and the patient had also suffered from profuse sweats, which continued after operation. On admission there was an oval elastic tumour about the size of a cricket ball occupying the right iliac region, a tumour which was diagnosed as being either an enlarged kidney or an ovarian dermoid held back by adhesions and bearing adherent intestine on its anterior surface. In the vagina, on the posterior commissure, lay a flat nodule under an eighth of an inch in diameter, with papillae springing from the surface. Near the mucous membrane, 2 in. above the vulval orifice, a little to the right of the middle line in part, sprang a pedunculated morbid growth of somewhat unfamiliar type, attached by a stout fleshy pedicle about three-quarters of an inch in length; the secondary branches of the pedicle running to each outgrowth were pliable, and the two lobules came away after admission before operation. In addition to these growths, three sessile growths, one of them showing pseudo-melanosis, were found in the mucous membrane of the posterior part of the vaginal wall. The abdominal tumour was removed. At the operation it proved to be the right kidney, surmounted by a tuberous mass, separated from the kidney in part by a distinct groove, but posteriorly blended with the adjacent pole of the kidney. The cut surface of the mass showed the yellow tissue with spaces filled with blood characteristic of adrenal growths. Microscopically, the kidney substance was found to be separated from the new growth by a narrow but distinct tract of fibrous tissue. The tumour was made up of large cells with big, well-formed nuclei, the cells being arrayed much as the cells of the zona fasciculate of the cortex on the suprarenal body. Section of the lobules of the vaginal growth showed that this tumour also was made up of large cells with big nuclei, the cells showing in many parts a tendency to a columnar arrangement, and the vaginal tumour was pronounced to be secondary to the adrenal growth connected with the kidney, and to have none of the microscopical characters of a pedunculated primary sarcoma of the vagina. The patient was in such a state of collapse at the end of the abdominal operation, that it was not possible at that time to remove the vaginal growth also. Later on she refused any further operation, and died after three months. After death metastatic deposits were detected in the liver and lung as well as in the vagina. The author shows how close is the resemblance between the tumour he has described and tumours described as primary vaginal sarcoma, and emphasizes the necessity in such cases both of a careful examination of the abdomen and thorax, and of the choice of a competent pathologist. He reviews the literature of adrenal sarcoma, and calls attention to Bland-Sutton's warning against confusing primary tumour of the suprarenal capsule with primary tumour of adrenal "rests" developing in the kidney. The case described was clearly an instance of tumour of accessory adrenal tissue in the kidney, and not of tumour of the suprarenal capsule.

THERAPEUTICS.

119. Intravenous Application of Strophanthus.

H. Starck considers that the conditions which should govern an ideal cardiac therapeutic agent are that it should act solely on the heart, without damaging any other organ, that it is possible to employ a mathematically exact dosage, and thirdly that the heart should be rapidly influenced (*Deut. med. Woch.*, March 21st, 1907). None of the old preparations of digitalis or strophanthus fulfil these conditions. This is particularly well marked in the case of digitalis leaves or an infusion made from them; the deleterious effect on the stomach and intestines, the variability of the action with the same dose and the slowness of its action are all well known. Improvements have been attained recently by the introduction of titrated tinctures of digitalis and of strophanthus. The preparation of Ziegenbein and Siebert is standardized in the following manner: An alhoholic extract of the leaves is concentrated by heat and then diluted with water to a given volume. A certain amount is then applied to the lymph sac of the exposed frog's heart, and the amount is determined which produces stopping of the heart in systole within two hours. This amount is always reckoned per 100 frog weight. The tincture is so diluted to correspond to 0.49 gram, which would be capable of stopping the frog's heart within two hours per 100 grams of frog weight. These tinctures appear to have gained a considerable reputation, especially for chronic cases, and as only small doses are employed, the cumulative action is usually not present. A further advance marked the introduction of chemically pure active principles of digitalis, and among these he mentions digitalein, digitalon, etc. The

third condition offered difficulty, inasmuch as it was found that, apart from the necessity of having very soluble substances, it was necessary to alter the method of application, so as to overcome the loss of time taken up by the absorption from the digestive tract. Subcutaneous application proved of little advantage, since this mostly caused much pain, and was accompanied by other disadvantages. Cloetta's digitoxinum solubile or digalen was therefore in a better position than the earlier preparations, as this substance could be given either by mouth or subcutaneously or intravenously. The large quantity which was required was regarded as a disadvantage. Other preparations were then applied intravenously. Fraenkel experimented with strophanthin, a glucoside gained from the seeds of *Strophanthus hispidus*, occurring as a white amorphus powder which is soluble in water. He injected 1 mg. of this substance in 1 c.cm. of water directly into the veins. The effect was striking. Without producing any pain or discomfort, the pulse became full, regular, and slow within a few minutes, and the signs of stasis disappeared within a short time. He met with fever and rigors when 1 mg. was introduced, but not with ¾ mg. The author has employed this method in a number of cases of acute and of chronic cardiac affections. In every case save one in which he applied the strophanthin, the effect was a brilliantly good one. The case of failure was one of sepsis, in a patient who was dying when admitted into hospital, and who actually died on the same day. At first he injected ½ mg., then ¾, and then 1, and even 1¼ mg., without experiencing any unpleasant side-effects like those of fever and rigors which Fraenkel has seen. He states that he has not met with a cumulative action, although he gave as much as 2.25 mg. in three days to one patient. The effect on the pulse was most striking in his cases. All the qualities of the pulse become nearly normal after the injection. The action is extremely rapid and satisfactory. Strophanthin applied intravenously is naturally not suited for all cases, and it will require careful clinical observations to determine which cases are best suited for it, and which should be treated in some other manner. The question of the dosage also requires further investigation.

120. Bipalatinoids in the Treatment of Anaemia.

N. Goldberg (*Wien. med. Woch.*, June 15th, 1907) states that in cases in which iron is indicated the results obtained with bipalatinoids surpass those obtainable with any other preparation—organic or inorganic. The ferrous sulphate and sodic carbonate being preserved in separate air-tight compartments, the possibility of oxidation is excluded. Further, nascent ferrous carbonate appears to be immediately dissolved and absorbed into the circulation. The following case is an example of many: A woman, aged 45, was admitted to hospital on November 26th, 1906. She had suffered for eight years with purpura haemorrhagica. Early in November there were severe epistaxis, constant gingival and vaginal haemorrhage, and a universal livid eruption. She frequently vomited, and was apathetic. The gums were ulcerated. The pulse was 116, the respirations 30, and the temperature was subnormal. The urine contained nucleo-albumin. The haemoglobin was reduced to 15 per cent., and the red corpuscles to 1,960,000 in the c.mm., 6 per cent. being normoblasts. The colour index was 0.39. She was treated with adrenalin and gelatine for the haemorrhage and with hypodermic injections of atoxyl. But the vomiting and haemorrhage continued. On December 15th, the blood count having undergone no alteration since admission, one bipalatinoid containing 0.12 gram of ferrous sulphate and 0 1 gram of sodic carbonate was given thrice daily after food. On December 21st the percentage of haemoglobin was 30, the number of erythrocytes had risen to 2,664,000, and the colour index to 0.55. There was extreme poikilocytosis, but the number of normoblasts was less. On December 22nd, four bipalatinoids daily of ferrous carbonate with 0.002 gram (1/33 grain) of sodic arsenate were substituted. On December 28th fresh petechiae appeared, but the patient felt well, and could with difficulty be kept in bed. The improvement was then continuous, and on January 5th she was discharged with 50 per cent. haemoglobin. She continued to take the palatinoids, and on January 19th the percentage of haemoglobin was 75, and the number of erythrocytes 3,400,000 in the c.mm. There was slight poikilocytosis, but no nucleated red corpuscles were present. The woman looked in perfect health, and could perform all household duties without fatigue. Bipalatinoids are, like preparations of iron in general, contraindicated in gastric ulcer.

121. Visvit.

Visvit is a new nutrient preparation which has been introduced in Berlin, and contains 1.85 per cent. of its nitrogen as haemoglobin proteid, a small quantity of lecithin, carbohydrates, and salts. The last-named include phosphates, iron salts, calcium oxide, magnesium oxide, and sodium chloride. F. Rosenthal (*Berl. klin. Woch.*, November 26th, 1906) considers that it contains all the essentials for a mixed food. He states that the preparation has a pleasant smell and a faint taste. It not only assists the production of fat in the body, but serves also to build up the blood corpuscles and also the bone during the developmental period. Visvit, in his opinion, acts on the haemopoietic system. When iron is given simultaneously with visvit he claims that the results are remarkable. He appends extracts from some cases which he has treated in this way. In these improvement is recorded after visvit was exhibited. The conditions in which he has seen good derived from the taking of visvit are anaemia, early tuberculosis, hysteria, diabetes, arterial sclerosis, convalescence from pneumonia, influenza, etc. His experience of this preparation leads him to recommend its use in similar conditions.

PATHOLOGY.

122. Tick Fever.

Levaditi and Manouélian (*Ann. de l'Inst Pasteur*, April, 1907) have investigated experimentally the course of the infection produced by the spirillum of tick fever, employing for the purpose mice, rats, and monkeys. The animals were inoculated with the virus either subcutaneously or intraperitoneally, and were killed at various periods after infection, and at different intervals after the critical disappearance of the spirilla from the blood. Portions of the organs were then removed, and were submitted to very careful microscopic examination. The investigation of tissues removed from animals killed at the period when the infection was fully developed showed that the spirillum has a marked predilection for the vascular system, within which it develops actively, resembling, in this respect, the *Spirillum obermeyeri* and the *Spirillum gallinarum*. Although the sections were searched with extreme care, it was impossible to discover any intimate relation between the spirillum of tick fever and the cellular elements other than the phagocytes. At no stage in the evolution of the disease did the parasite attack the glandular cells or penetrate into their protoplasm. The authors conclude that this spirillum is an organism which multiplies exclusively in the blood stream, and at no stage invades the cellular protoplasm in the course of its evolution within infected animals. With regard to the ultimate fate of the parasites, the authors find that in the monkey (*Macacus cynomolgus*) their absorption at the time of the crisis is brought about by the intervention of the polynuclear leucocytes accumulated in the spleen. This is in conformity with what Metchnikoff observed in human relapsing fever. But in mice, on the other hand, the principal situation where the spirilla undergo phagocytic destruction is the liver. When mice are killed at the height of the infection, or when the crisis is at hand, the liver shows large numbers of macrophages containing spirilla which are more or less modified in form. The writers maintain that the destruction of the tick fever parasite is essentially a phagocytic phenomenon, and is in no way dependent on the direct intervention of bactericidal substances.

123. The Pancreatic Juice in Experimental Jaundice.

L. Mastroeni (*Lo Sperimentale*, Florence, 1907, p. 461) has ligatured and divided the common bile duct in a series of six dogs, producing severe jaundice, and has then examined the pancreatic secretion with respect to the amount of the secretin and enterokinase in it, and its digesting power. He finds that the jaundice does not in any way prevent the duodeno-jejunal mucous membrane from forming secretin and enterokinase; the secretin reaches the pancreatic cells, and they respond to it just as do those of the normal dog. The jaundice makes no difference in the quality of the enterokinase. The dogs were killed from three to nine days after the ligature of the common duct; suppuration and fever occurred in one case, but even then there was hardly any corresponding change in the secretion of the pancreas.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

124. The Mortality of Acquired Syphilis.

Audry (*Sem. Méd.*, June 26th, 1907) considers the question of the mortality of acquired syphilis is a very difficult one to solve. Syphilis takes an active part in bringing about many pathological conditions. Death may occur from the attack of syphilis itself or from the pathological changes brought about by the attack. Tabes and general paralysis are numbered as specific syphilis. Diseases of the circulatory system due to syphilis are looked upon as secondary or indirect causes of death. Insurance company statistics are the best guide; but they are far from infallible. Among the policy-holders of a Finnish company there were 5.4 per cent. declared syphilitic; a German company had 2.7 per cent. The author has been informed by a medical officer of a French company that less than 1 per cent. of the people he examined confessed to having had syphilis. At Copenhagen, where notification of syphilis is obligatory, 4.3 per cent. of the inhabitants are said to be infected. Of the patients attending a London hospital, 10 per cent. are syphilitic. Statistics put the infected of the population of Berlin at 20 per cent. The author's own experience has shown that syphilis is more general among the lower classes of society; he places the number at 18 per cent. of all the people he sees. Out of 1,000 deaths, the author considers 200 would be of syphilitic persons; and of these 200, he considers that in 20 cases the death would be directly due to syphilis. Kristian Grön calculated that 11.8 per cent. of 36,757 cases were suffering from tertiary symptoms; Runeberg that 84 out of 734 deaths were due to syphilis; of these 84, 31 had disease of the heart, 22 general paralysis, 21 other nervous diseases, 3 kidney disease, 2 aortic aneurysm, 2 arterio-sclerosis, 1 bony necrosis, 1 pulmonary hepatization, 1 tumour of the neck. Runeberg places the deaths due to syphilis at 11.4 per cent. as a minimum and 17.8 as a maximum, while phthisis causes 21 per cent. and pneumonia 10 per cent. Salomonsen and Hyde, on the other hand, consider syphilis comparatively unimportant as regards vital statistics. Parkes Weber, too, put the mortality from syphilis at 3 per cent. Blaschko has found that of 150 insured persons, known to have had syphilis who have died, 50 died of tabes, general paralysis, or aortic aneurysm, and 27 others can more or less certainly also be ascribed to syphilis. The author is inclined to look with suspicion on such statistics. Taking the deaths that have occurred in the hospitals of Toulouse during the last six years, the author places the mortality due directly and indirectly to syphilis at 11.3 per cent. Certain conclusions can be drawn from the study of the statistics of tertiary symptoms. During the last four years, at the University of Toulouse 802 cases of syphilis have presented themselves. Of these, 16.8 per cent. had tertiary symptoms. Matthes gives the figures for Jena as 19 4 per cent. of cases of tertiary syphilis. The best way of ascertaining the mortality of syphilis would be to follow up the whole life-history of a large number of syphilitic persons. Matthes, aided by Martin, Dörfer, and Knabe, has treated of the syphilitic patients who came to the hospital of Jena between the years 1860 and 1900. They were in all 1,550, 1,250 of whom had secondary, and 300 tertiary, symptoms. Out of some 698 of these, 568 were treated for secondary, 130 for tertiary, syphilis. There were 202 fatal cases, 150 among the secondary, 52 among the tertiary. Apoplexy was the cause of death in 11 cases, general paralysis in 8, tabes in 3, myelitis in 1, cerebral syphilis in 2. This gives a mortality directly due to syphilis of 15.6 per cent. Summing up the results, the author concludes that 14 to 15 per cent. of syphilitic patients die, directly or indirectly, from syphilis. Speaking for the neighbourhood of Toulouse, the author says: "In our climate the mortality of syphilis regularly treated, in young and sober patients, should not exceed 4 to 5 per cent., although among old men, drinkers, and people suffering from certain maladies, this number becomes ten times as large."

125. Recurrent Momentary Blindness.

Jacqueau (*Lyon Méd.*, May 12th, 1907) has observed four patients who suffered from time to time from attacks of total blindness, which lasted for two or three minutes at a time. His patients' ages were 22, 25, 44, and 74 years respectively; the youngest and eldest were men, the others women. None was definitely hysterical, in each case the fundus was normal, and the field of vision was not retracted. In the case of the younger man the fundus was observed for two minutes during an attack; the pupils retracted to light although there was no perception of light, the disc was normal, and the vessels were of ordinary calibre and did not pulsate. The attack came on quite suddenly and passed off rather more gradually, the sight returning uniformly without any stage of hemianopia. Headache came with the loss of vision, and remained for a time. The elder woman suffered the loss of vision in one eye only. The symptoms may have been due to a larval epilepsy, but Jacqueau attributes them to the so-called "ophthalmic migraine." The lesion must have been cortical rather than peripheral, since there was no change of the vessels of the fundus. In all four cases the course was benign, but cases have been recorded due to cerebral tumour, but the prognosis, even where the discs are apparently normal, should be guarded at first.

126. Manganese Intoxication.

It has long been recognized that manganese oxide powder is capable of giving rise to a curious complex of nervous symptoms in workmen who have to handle this substance. R. von Jaksch has had the opportunity of seeing 3 cases of this condition, and in following the course of illness up to five years in one case (*Muench. med. Woch.*, May 14th, 1907). In two of the patients no alimentary glycosuria was present, while in the third he found sugar in the urine on two occasions. The symptoms were impulsive laughing, impulsive crying, monotonous scanning speech, symptoms of retropulsion, and changes in the psychical condition. No disturbance of sensation was found, and the visual field was not diminished. The knee-jerks were exaggerated, but Babinski was negative. One of his patients committed suicide, but unfortunately no *post-mortem* examination was carried out. The gait was of a spastic paretic character, and is well illustrated by photographs taken at different stages of walking. The electric tests of the muscles showed normal conditions. In no case could manganese be found in the urine. Turning to the question of the etiology of the complaint, he states that there is but little doubt but that the symptoms are due to manganese. Workers who handle the permanganate of potassium and manganese dioxide are the only persons in whom the affection is known to have occurred. Since certain precautions have been adopted in one factory in which cases of this sort used to occur fairly frequently, no further cases have been noticed. Jaksch believes that the dust is inhaled by the workmen. In order to supplement the arguments in support of his view, he details a case of what he calls "manganophobia," in which the symptoms bore a superficial resemblance to the real cases. With regard to the prognosis, he believes it to be favourable *quoad vitam*, but points out that the disturbance of the gait appears to be permanent. Some of the nervous symptoms lessen or even disappear. He treated his cases with hydrotherapeutic means, galvanism, faradism, exercises, and the like, and thinks that this form of treatment was beneficial.

SURGERY.

127. Splenectomy.

G. Perez (*Il Policlin.*, May and June, 1907) describes a case in which he removed the spleen and estimated the haemoglobin, the red and white corpuscles, the antibacterial and antitoxic power of the serum, and the leucocytic formula before and after operation. He records also observations on the blood of a second patient, whose spleen had been removed before the patient came to him. The operation had been preceded by a complete blood examination. He elucidates these observations by very numerous references to earlier writers on the same subject, and enunciates a theory based on them. A woman of 37 years had suffered for nine years from abdominal pains, due to an enlarged and movable spleen. There was no history of malaria. The day before operation the haemoglobin was 25 per

cent. of the normal quantity. The corpuscle count gave 4 880,000 red and 4,800 white. The white corpuscles were 82 per cent. polynuclear neutrophiles, 7 per cent. small lymphocytes, 1 per cent. transitional forms, and 10 per cent. large lymphocytes. Anaesthesia was obtained by the hypodermic injection of 2 cg. of morphine, followed in fifteen minutes by the spinal injection of 10 cg. of stovaine. Complete anaesthesia was thus obtained; a spleen three times the normal size was removed, recovery was uneventful, and the wound was perfectly healed on the eighth day. On the evening of the day of operation the haemoglobin was 20 per cent., the red corpuscles 5,060,000, the white corpuscles 26,400. Of these white corpuscles 78 per cent. were polynuclear neutrophiles, 12 per cent. small lymphocytes, and 8 per cent. large lymphocytes. Another examination was made on the sixth day. The haemoglobin was 55 per cent., red corpuscles 4,600,000, white corpuscles 15,200, out of which 15 per cent. were small lymphocytes. On the twentieth day the haemoglobin was 45 per cent., the red corpuscles 3,910,000, and the white corpuscles 14,800, containing 16 per cent. of small lymphocytes. The toxicity of the urine was less by about one-third both on the sixth and on the twentieth day after operation than it had been the day before operation. The bactericidal power of the blood serum also was greater after operation than before. The spleen weighed 460 grams, and measured 25 by 15 cm. There was slight thickening of its fibrous capsule, and some fibrosis throughout the spleen, with a little thickening of the vessel walls. These changes were not far enough advanced to interfere with the function of the spleen, and it cannot therefore be supposed that the organism had become gradually accustomed to doing without the spleen. When the splenic parenchyma has long been destroyed, or when the experiment is complicated by the loss of much blood, as in the comparatively large number of splenectomies done on account of rupture of the spleen, it is not to be expected that splenectomy can throw much light on the function of the organ. The patient in this case showed some thermal changes after operation. They were successfully treated on the assumption that they were due to intestinal causes. Different observers have obtained discordant results as to the effect of splenectomy on the red corpuscles, but there is agreement as to the effect of splenectomy in producing a leucocytosis especially affecting the small lymphocytes. The striking feature of this case was the great and almost immediate increase in the amount of haemoglobin. The author's second patient was operated on for haemorrhoids four and a half months after her spleen had been removed. At the date of the second operation the haemoglobin was 70 per cent., red corpuscles 4,460,000, white corpuscles 8,200. The leucocyte formula showed polynuclear neutrophiles 49, eosinophiles 5, small lymphocytes 32, large lymphocytes 13, large mononuclears 1. The author considers that the removal of the spleen leads to an immediate increase in the activity of the other organs, lymphatic glands, bones, and thyroid gland, whose function is more or less supplementary to that of the spleen, and that this stimulation of the other organs is excessive, and leads to the better performance of the haematopoietic, antitoxic, and antibacterial functions by the remaining organs than originally by the entire body. The extirpation of the spleen, even when it is in full working order, does not lead to any immediate and serious disturbance of the metabolism of the organism, but the spleen is not on that account to be considered a useless organ.

OBSTETRICS.

128. Paludism and the Fetus.

The influence of paludism on the fetus and the newborn infant is a question of great importance. Economos, experienced in malarial diseases in the Morea, has recently read a communication on congenital paludism at a meeting of the Société d'Obstétrique de Paris ("La Perméabilité du Placenta aux Hématozoaires; le Paludisme Congénital," *L'Obstétrique*, May, 1907, p. 245). He observed that it was well known that the normal placenta was impermeable to microbes. When the epithelial investment of the villi is damaged, then the placenta is no guard against the free transmission to the fetal circulation of microbes contained in the maternal blood. Economos examined blood fresh from seven living newborn children delivered by women suffering from malaria. He notes, by the way, that in none was the spleen hypertrophied. The blood showed that microbes had passed into it through the placenta. The course of infection is not the same in all infants. Some develop fever directly after birth; others—the very cases where the influence of paludism is manifest—do not show any clinical symptoms till later. Lastly, in more than one infant where the microbe was detected in the blood no fever occurred, and the nutrition and growth proved quite up to the normal standard. In 3 cases the mothers had suffered from ague fits during the earliest months of pregnancy; the children of these women came under the third of the classes just mentioned, and grew up quite healthy. The earlier the date of paludal infection in the mother the greater is the resistance of the fetus to microbes entering its circulation. The infant only shows clinical symptoms and subsequent impaired nutrition when the mother has become infected late in pregnancy.

129. Chorea during Pregnancy.

Several writers have suggested that the chorea of pregnancy is toxaemic in origin, but none of them has proceeded to urge the advisability of a treatment based upon this theory of origin. W. Fletcher Shaw (*Journ. of Obstet. and Gyn. of the British Empire*, April, 1907) describes a series of eleven cases of the disease treated in St. Mary's Hospital, Manchester, between June, 1905, and September, 1906, and brings out clearly the benefit to be obtained by an antitoxaemic treatment. The first two cases were treated on traditional lines by nourishing food and the administration of hypnotics, arsenic, strychnine, and aspirin. In both cases the patients gradually lost ground, and labour was induced after one or two weeks in the two cases respectively. After labour one patient sank and died in twenty hours, the other died in twenty-nine days from septic endocarditis with embolism; in the first case the child lived for two days, in the second was stillborn. The treatment, as judged by the result for mother and child in the two cases, was absolutely unsatisfactory. The remaining nine patients were treated as suffering from toxaemia; they were kept quiet in bed, only milk was allowed as food until signs of improvement appeared, and a return was not made to ordinary diet until choreiform movements had entirely disappeared for several days; elimination was aided by the administration of jalap and of a simple saline mixture. Improvement began in each case within a few days and went on to complete recovery. The results to the children were equally good; one child was stillborn owing to an accident at birth, five were healthy when born, and in each of the remaining three cases of patients who recovered *ante partum* and were discharged from the hospital, the fetal heart could be heard. Thyroid extract was given freely to five of the patients with very good clinical results, but it was not possible to show definitely from an examination of the urine, in the one case in which it could be collected for examination, that the thyroid extract had increased elimination, and five patients who were treated without thyroid appeared to recover quite as rapidly as the others. Loss of sleep was one of the most distressing symptoms in every case, but it was not necessary to give hypnotics to the patients under eliminative treatment, because they obtained natural sleep, as a rule, on the second or third night. All the cases were not of the same severity, and the first described was undoubtedly the worst. Some of the 9 cases subjected to the new treatment were only minor ones, but one of them was very severe and accompanied by delusions. As tested by this series of cases, the treatment by elimination is incomparably superior to the older methods. The following are the conclusions at which the author arrives: (1) The chorea of pregnancy, like other choreas, is due to a toxin, which appears to be identical with, or closely to resemble, that of acute rheumatism; (2) it affects human subjects under two circumstances, both of these being characterized by instability or irritability of the nervous system—namely, childhood and pregnancy; (3) the cause of the instability or irritability of the nervous system in pregnancy, bringing it down to the level of childhood, is the toxaemia of pregnancy; (4) in the chorea of pregnancy, therefore, it is more important to remove the predisposing cause than to apply merely symptomatic treatment; (5) the treatment must be eliminative, as in the other toxaemias of pregnancy; (6) the pregnancy should not be arrested as a rule, as this is generally unnecessary and harmful to the patient as well as to the child.

130. Twin Pregnancy in a Woman who had Previously Undergone Abdominal Hysteropexy.

Bue (*Nord Méd.*, January 1st, 1907) relates the following case: The patient was a woman of 29, who came under the author's care in April, 1906. For eight days she had suffered from abdominal pain, for which she had been sent to hospital. Menstruation had always been normal until after her third child was born, when it became extremely painful and irregular in frequency. She was at this time

found to be suffering from a retroverted uterus, for which in 1901 she underwent abdominal hysteropexy. Menstruation afterwards became normal. Three years ago her fourth child was born, and menstruation afterwards again became painful, and the menstrual periods occurred every three weeks. The present pregnancy was associated at its onset with frequent vomiting, diarrhoea and pains in the abdomen; at the third month of pregnancy these pains increased in intensity and forced her to take to her bed. After suitable treatment the pains disappeared. The same symptoms returned again a month ago. For six weeks her legs had been swollen, and she passed little urine. On admission there was seen to be puffiness of the face and marked oedema of the legs and of abdominal wall below the umbilicus and also of the vulva. The urine contained 4 grams of albumen per litre. The progress of labour was slow in spite of painful uterine contractions, and when the os was fully dilated the membranes were ruptured; a fetus presenting by the shoulder, podalic version was performed and delivery effected. A second fetus was then found presenting by the shoulder, and podalic version was again carried out, and delivery effected. There were two separate placentas. Considerable haemorrhage occurred during and for some time following delivery, and at the end of the twelfth day after delivery the uterus was still to be felt high up above the pubis. The oedema and albuminuria rapidly disappeared. The double shoulder presentation in this case of twin pregnancy was no doubt favoured, as the author points out, by the fixation of the uterus carried out three years previously, and in view of the dangers this operation may cause to follow in the puerperal state, the author considers it should not be undertaken without very strong reasons.

GYNAECOLOGY.

131. Metrorrhagia Syphilitica.

Muratoff (*Zentralbl. f. Gynäk.*, No. 27, 1907) dwells on the much disputed question of the relation of common uterine diseases to syphilis. He watched one case, which he holds to be typical, very closely. A woman, aged 23, was quite healthy till the age of 18, when she married a man who had suffered from syphilis and believed that he was perfectly cured. Shortly after marriage the wife suffered from discharge and then from a sore. A few weeks later typical roseola appeared, and she submitted to specific treatment; at the same time, she was found to be pregnant. She was taken suddenly, without any apparent reason, with labour pains in the seventh month, and was delivered of a male child, which died within a few days. The patient suffered from feverishness during the puerperium, and had to keep her bed for three weeks. From that date until she came under Muratoff she was subject to severe menorrhagia, which greatly reduced her general health, and became associated with hysterical symptoms. A large scar was found at the junction of the vagina and perineum. There was a characteristic stellate cicatrix on the right calf, and enlarged cubital and inguinal glands. Sanious mucus came away from the os externum, the body of the uterus was not enlarged, nor were the appendages swollen or tender. On palpation in the right fornix, the pulsations of the uterine artery were felt to be very marked, and it was tender on pressure. The patient had been under all kinds of treatment without avail. Muratoff administered the green iodide of mercury, and after a time the menorrhagia, or more properly the metrorrhagia, disappeared, without any employment of the curette or other kind of intrauterine medication. By the end of a year the patient had become healthy and almost corpulent. Muratoff relates the experience of others in the cure of this condition by specific treatment alone.

132. Pyosalpinx Opening into Rectum; Double Uterus and Vagina.

Kolet and Gotte (*Lyon Méd.*, June 23rd, 1907) report a remarkable complication of rectal and tubal disease with malformation of the genital tract. The patient was 39 years old; the catamenia were regular; she had never been pregnant. In 1890 she was under treatment for perimetritis, and on discharge from hospital an abscess developed at the margin of the anus, and was very slow in healing. In 1898 the patient underwent operation for *fistula in ano*. Two years later salpingitis developed on the left side. The patient recovered, and enjoyed fairly good health until June, 1906. Then fever, rigors, and sickness occurred, with pain in the left iliac fossa. Pus discharged freely from the anal fistula. On examination the patient was found to possess two vaginal canals, with a complete septum and a distinct cervix uteri on each side. There was discharge from the left side, the vagina on that side was the more frequently used *in coitu*. A tender, fluctuating mass lay in the left side of the pelvis; the uterus could be felt in the right side, enlarged and freely movable; it seemed to be double. The anal fistula was laid open; it ran in the recto-vaginal septum up to the base of the left broad ligament. During convalescence the mass on the left side greatly diminished in size. A few months later, as the fistula once more discharged, Pollosson of Lyons operated. The uterus was double, the halves being separated by a deep and thick peritoneal fold running from the bladder to the rectum. The right uterus bore a myoma of the size of a Tangerine orange in the fundus; the Fallopian tube and ovary were sound. Myomectomy was performed. The left uterus was imbedded in a mass made up of adherent inflamed structures. In setting free the left tube, which was greatly dilated, it burst, and much thick, odourless pus escaped. The walls of this pyosalpinx communicated with the rectum by a fistulous orifice which was touched with the thermo-cautery and closed, after removal of the suppurating tubal sac by simple "peritonization." No drainage was employed. This operation was performed on January 2nd. The anal fistula speedily began to cicatrize. Six months later the patient was in good health; although the left ovary had been removed with the tube, the menstrual blood came away exclusively through the left vagina.

THERAPEUTICS.

133. Treatment of Hypersthenic Dyspepsia.

Albert Robin (*Journ. des Prat.*, June 22nd, 1907) describes the treatment he adopts in this form of dyspepsia. The cause of the dyspepsia is an absence of hydrochloric acid at the time of a meal, and an excess of it three hours after a meal. The appetite is good, but a feeling of discomfort and fullness a quarter of an hour after a meal is experienced. These patients feel mentally tired. They suffer from regurgitation of food. At 4 in the afternoon the crisis appears, and is ushered in by frequent yawns, copious salivation, pain and retching, accompanied by cardiac arrhythmia or palpitations. The pain is dissipated by dinner, only to reappear at midnight with giddiness, trembling, itching, and nightmares. The treatment consists in provoking a secretion of hydrochloric acid immediately after a meal, and, when the crisis is imminent, in administering powders which neutralize the excessive hydrochloric acid. To provoke a secretion of hydrochloric acid the carbonate of potassium dissolved in an extract of aromatic plants is useful; a teaspoonful in a little water ten minutes before the midday and evening meals. After the meal drugs which tend to hasten digestion must be given; the author gives a prescription: Tincture of St. Ignatius beans 4 grams, tincture of ipecac. 2 grams, tincture of star-anise 6 grams—5 drops in a little water. The tincture of St. Ignatius beans contains strychnine, brucine, and igasurine. Should diarrhoea come on diminish the dose of magnesium and increase the bismuth. The patient should take an early *déjeuner* of an egg and cooked fruit. He should drink nothing with this meal, and should take, an hour afterwards, an infusion of mint, camomile, and limes very hot. At a second *dejeuner* he should take well-cooked meat without any sauce, fish (except salmon, eel, herring, or mackerel) cooked in wine-sauce. Fresh butter can be taken. Vegetables cooked in salt and water are allowed, but very little bread. For the evening meal a vegetable stew, no bread, eggs, and vegetables. No melted butter, raw fruits, sauces, stews, or pastry. He may have whipped cream, rice-cakes, semolina, and *compôtes de fruit*. He may drink with his meal Pougues Saint-Léger or Vals Saint-Jean waters. He should rest in an arm-chair half an hour after the meal. In the morning a tepid bath and exercises are useful.

134. The Treatment of Delirium Tremens.

F. Eichelberg considers that the extensive material of the Hamburg-Eppendorf General Hospital is capable of throwing some light on the disputed questions in connexion with the treatment and mortality of delirium tremens (*Muench. med. Woch.*, May 14th, 1907). During the eleven years from 1896 to 1906 inclusive, 1,574 cases were treated. Of these 1,043 were uncomplicated cases and 531 showed more or less severe complications; 39 died, yielding a total mortality of 2.4; 1 per cent. of these were uncomplicated cases and 1.4 per cent. were complicated; 173 cases were complicated with pneumonia. Of these 58 died. These cases are not included among the 1,574 cases. The complications of the 531 cases include tuberculosis, epi-

lepsy, severe injuries, erysipelas, diabetes, nephritis, and other conditions. Transitory albuminuria was noticed in 40 per cent. of all the cases. He regards the mortality rate as satisfactory. If he included the pneumonia cases it would be 5.5 per cent., which compares well with some other statistics. The mortality rates which have been published vary between 0.9 per cent. and 24 per cent. Most authors give higher mortality percentages. The reason why his mortality appears low is that in every case a careful *post-mortem* examination was carried out, and those cases in which the death was definitely caused by advanced and extensive tuberculosis or perforative peritonitis were naturally excluded. With regard to the treatment, he agrees with Kraepelin and others that alcohol must be withheld from the first. No special form of specific treatment has been followed, and in general no hypnotics are given, since it is believed that these drugs place a tax upon the already weakened heart, which does a considerable amount of harm. As soon as the pulse shows signs of deteriorating in quality, recourse to digitalis, strophanthus, camphor, coffee, etc., is freely had. On the third evening, when the delirium is abating, 2 grams to 4 grams of chloroformamide is given. To allay the thirst and to increase the diuresis, a drink is given freely to the patient, and as this drink is coloured like some of the beloved alcoholic drinks, it is gladly taken. It consists of extract of oxy-coccus 50 grains, simple syrup 200 grams, and water 2 litres. The patients are kept in one ward together as far as possible, and isolation is only carried out for short times when this becomes absolutely necessary. Digitalis is given from the first in all pneumonia cases from the beginning. In these cases alcohol is allowed. The idea of giving digitalis in every case of delirium tremens, which was recently suggested by Ganser, is a good one, but the author doubts whether the mortality will be much reduced by this means below the level of the Hamburg statistics.

135. Mercurial Injections in Diabetes Insipidus.

Vaphiadès (*Rev. de Méd.*, March 10th, 1907) reports the following case: A man, aged 29, five years previously had contracted syphilis, for which he underwent specific treatment. About a month before coming under the author's observation recently, he began to suffer from severe thirst. His urine became very abundant, amounting to 8 litres in the twenty-four hours. His bodily strength rapidly failed, the urine, on analysis, was normal in composition, but his condition had not improved under treatment with antipyrin, opium, valerian, etc. At this time he was anaemic and cachectic in appearance; appetite was bad, but thirst was intense, and there was obstinate constipation. He complained of great thirst, of passing large quantities of urine, and of general weakness. In the absence of any other exciting cause for the patient's condition than previous syphilis, antisyphilitic treatment was instituted. Mercurial injections and potassium iodide by the mouth were given, and under this medication the patient rapidly improved, thirst and polyuria diminished, and his general health rapidly and markedly improved. After two months' treatment, the patient's health was fully re-established.

PATHOLOGY.

136. Experimental Inoculation of Syphilis.

The discovery of the spirochaete of syphilis by Schaudinn and Hoffmann, and the successful inoculation of syphilis in monkeys, has opened out a new era in the study of this disease. C. Bruns recapitulates the work done in this direction (*Berl. klin. Woch.*, Nos. 48 and 49, 1906). In spite of several attempts to overthrow the theory that *Spirochaeta pallida* is the causal organism of syphilis, one may now accept this theory as true. The work of Metchnikoff and Roux, and the earlier researches of Neisser are well known, and show without any doubt that monkeys can be inoculated with the disease. Later Neisser dealt with 53 lower monkeys, and demonstrated that the material obtained from the primary sore, papules, and infected lymphatic glands of human syphilitics when introduced into lower monkeys give rise to typical syphilis with considerable regularity. Subcutaneous inoculations and subcutaneous and intraperitoneal injections of the blood or serum of human syphilitics failed to lead to an infection. In his third series of experiments, conducted in Batavia, Neisser increased his experimental material to about 900 monkeys. The higher apes are more susceptible to syphilis than are the lower monkeys; they can be infected in any region of the body, and frequently show secondary symptoms. Lower monkeys as a rule can only be inoculated at certain chosen situations, for example, the eyebrows, the genitals, etc.; they scarcely ever show any secondary symptoms. The primary sores thus produced appear after an incubation period of from three to five weeks, and present all the characteristics of the sore in man. The attempts to render the local susceptibility greater by damaging the tissue in various ways did not lead to satisfactory results. While no further symptoms developed in the lower monkeys, it was shown that the spleen, bone marrow, glands, and testes of infected monkeys were capable of infecting other animals, especially higher apes. In other experiments it was demonstrated that excision of the seat of inoculation, eight hours after inoculation, failed to prevent the infection. The attempts to immunize against the disease were negative. Neisser then proved that the products of tertiary syphilis were capable of inducting an infection. He was also successful in producing syphilis by inoculating the virus from congenital lesions, including the virus taken from a congenitally syphilitic child a few hours after death. Wassermann and Bruck have worked with Neisser in elaborating a sero-diagnostic reaction with syphilitic material. They found that a mixture of the serum of a monkey treated with syphilitic material, together with the material of a syphilitic monkey or man, is capable of inhibiting or preventing haemolysis. Up to the present time, however, no other observers have confirmed the application of this reaction for clinical diagnosis. Finger and Landsteiner demonstrated the possibility of reinfection and superinfection of syphilis, and Neisser confirmed their results. Metchnikoff performed some experiments to show that the inunction of a 10 per cent. to 25 per cent. calomel ointment is capable of preventing an infection. This was also tried on a student. Neisser failed to obtain similar results in monkeys. Bertarelli succeeded in producing a condition indistinguishable from keratitis parenchymatosa by inoculating the syphilitic material into the anterior chamber of a rabbit's eye. Large numbers of spirochaetes were found in the microscopical sections. Others also were able to produce similar results, but the number of spirochaetes found in the lesions varied considerably. In summing up these and a few other less striking experimental results, Bruns finds that much still remains to be done to clear up the pathology of syphilis. Inoculation experiments on monkeys has a very important diagnostic significance, but at present, for many reasons, this inoculation will scarcely be applied to clinical use, and the diagnosis will have to be made from the clinical appearances and the detection of spirochaetes. The infectivity of tertiary lesions is of great importance, and while he does not think that this newly-elicited fact need change the usual advice given with regard to marrying two years after the last sign of secondary syphilis has disappeared, it must guide the clinician to employ mercury as well as iodide of potassium energetically whenever any tertiary symptoms manifest themselves, with the view of preventing a spread of infection. He reviews the subject from the point of view of immunity, and finds that the hitherto adopted belief that an attack protected against a further infection is incorrect. The experimental evidence shows that the immunity at first is only slight, that during the secondary stages it is partial and the course of an infection is much modified, and during the tertiary stage a modified reaction takes place.

137. Virulence of Nervous System in Rabid Animals.

Fermi (*Rif. Med.*, June 15th, 1907) has carried out a series of experiments on mice with a view to determine the degrees of virulence of different parts of the nervous system. He found there was no difference in the number of germs contained in the cornu ammonis, the cerebellum, and medulla oblongata. On the other hand, the number of germs (as estimated by the degree of dilution required in the emulsion to delay a fatal result) in the frontal lobes and extremity of the lumbar medulla was much less. Whilst dilutions of 1 in 30,000 caused death with emulsions of the frontal lobes and lumbar medulla, a dilution of the occipital, caudate nucleus, and white substance of the brain of the same strength was not strong enough to cause death. An emulsion of the dorsal medulla (1 in 30,000) caused death on the seventh day. Probably infection in rabies is not in direct ratio to the number of Negri corpuscles, for in ½ c.cm. of an emulsion of cornu ammonis (1 in 500,000) only two corpuscles were seen, and yet this proved infectious.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

138. Multiple Myelomas and Albumosuria (Kahler's Disease).

C. degli Occhi (Milan, A. Vallardi, 1907) describes a fatal case of the so-called Kahler's disease, and discusses at some length the name that should be given to it and its etiology. The patient, a man of 54, of simple and regular habits of life, gave a negative family and past medical history; syphilis was denied and he had never taken much alcohol or tobacco. In the winter of 1904 he had transient attacks of violent pain in his ribs and femurs, not in the joints; he was treated with salicylate and quinine. Some relief was obtained, but soon the pains returned, with general debility, palpitations, loss of appetite, constipation, and other symptoms. Various treatments were tried without success; the pains and gastro-intestinal troubles increased and the patient came into hospital early in 1906. He was thin, pale, troubled with frontal headache, unable to stand up without much pain, and forced to lie curled up on his side in bed. The eyes and fundi were normal, and no evidence of visceral disease could be found. The upper ribs and the upper dorsal vertebrae were very painful at times, and were very tender on palpation, as was the manubrium. Little tumours the size of a lentil or of half a pea, not so hard as spongy bone, tender, and the seat of constant pain, could be felt on these bones. The skull was normal. The superficial and deep reflexes of the legs were increased; the glands were normal. The blood showed 3¾ million red cells, 9,000 white, and 80 per cent. of haemoglobin; the leucocytes were normal in percentage and type. The urine varied from 1½ to 2 litres a day, specific gravity 1028 to 1020. It always contained 0.7 to 0.8 per cent. of albumose; when acidified with acetic acid and boiled, it gave no precipitate; but if it were thus acidified and treated with a few drops of strong potassium ferrocyanide solution, a copious white precipitate appeared, dissolving on heating, and reappearing when the mixture was cooled. The urine gave a marked biuret reaction; nitric acid brought down a precipitate soluble on heating, but saturation with $MgSO_4$, or with NaCl caused no precipitation. The amount of urinary albumose was increased when the pains were very severe. The urinary sediment showed no abnormality. Treatment, except with morphine, gave no relief. The patient suffered terribly from pains aggravated by any movement, was prone to bedsores, took his food ill, and died of exhaustion and heart failure in two months. At the necropsy the viscera in general were normal; no enlargement of the lymphatic glands could be found. The bones showed a number of small rounded tumours, covered with thinned periosteum; on section, it appeared as if the medulla were growing out through the bony wall at these points. Under the microscope these tumours appeared to be plasmomas, or plasma-cell tumours, composed of small rounded cells 5 to 12 μ in diameter, and arranged in cords or concentric rods, with scanty connective tissue. The small rounded cells had finely granular protoplasm, a single excentric nucleus, and various staining reactions; the larger cells were oval, and had two, or even three, distinct nuclei. This newly-formed tissue entirely replaced the bony medulla where it occurred.

139. Acute and Chronic Pyelitis.

Believing that certain points in connexion with pyelitis are but little recognized, H. Lenhartz (*Muench. med. Woch.*, April 16th, 1907) considers that a short description of the clinical picture of the cases which he has studied will be of interest. He only deals with primary pyelitis, and does not include any of the cases which depend on such primary causes as pregnancy, prostatic hypertrophy, etc. The majority of the observations were carried out on adults, and he particularly emphasizes that the fever curve appears to him to be extremely characteristic in his cases. He believes that the majority of infections attack the pelvis of the kidney by spreading upwards; it is possible that the infection may spread occasionally from the blood vessels, but he does not think that it ever is derived from the intestine. Females are much more frequently attacked than are males, and the infection appears to be derived in them from local infections of the genital organs in connexion with the menses, pregnancy, and parturition. In 66 out of his 80 cases the *Bacterium coli communis* was the sole infective agent. The fact that males are but rarely affected shows that the infection with the colon bacterium does not take place directly. The bacteria, passing from the bowel, give rise to an infection through the external genitals. *Bacillus lactis* and *proteus* were found twice each, Friedlaender's pneumobacillus once, and the paratyphoid bacillus three times. On one occasion there was a mixed infection of *coli* and *proteus*. The soil suitable for the propagation of the bacteria appears to be produced by pregnancy, parturition, and also by the menses. As a rule the bladder does not become affected by the passage of the bacteria on their way to the kidney. The right kidney is much more frequently affected than the left. In 75 per cent. of the cases of acute and chronic pyelitis the temperature is raised. This fever is mostly characterized by a sudden and severe pyrexia lasting for from eight to fourteen days, or by recurrent attacks of pyrexia at irregular or regular intervals. Only in about 25 per cent. is the temperature either only slightly raised or subnormal. Accompanying the fever, there are symptoms of general illness of a more or less severe type, and pains in the head, back, and limbs. Only about one-half of the patients refer the pain to the seat of the trouble, but on careful bimanual examination it can be found that the kidney affected is very tender from the first. In a number of his cases he was able to make out a marked swelling of the renal pelvis, which attained the size of a fetal head in one or two cases. The urine is turbid, and in severe cases contains sufficient pus in it to be recognizable to the naked eye. It often contains blood. The reaction is acid, and albumen is always present. Microscopically, it contains pus cells, red blood corpuscles, and rodlets, mostly agglutinated in clumps or arranged in threads. Threads of fibrin can also be seen in stained preparations. The nature of the rodlets or other bacteria can only be determined by bacteriological examination. The differential diagnosis must be made from appendicitis, influenza, pneumonia, etc. The diagnosis can mostly be made from the type of the fever curve. In most cases there is an initial rigor, and this can be repeated if the attack recur. Many cases present a curve which is practically identical with a pneumonia fever curve, but the low pulse and respiration-rate offer a marked contrast to this disease. When the crisis occurs between the sixth and tenth days there is little likelihood of confusion with enteric fever, but at times the type is more remittent, and ends by lysis. When the leucocyte count is low the diagnosis may be very difficult between these diseases, but as a rule the leucocytes are increased in number. The author gives the charts of a number of patients to illustrate, first, the short severe fever with critical fall at the end of the first week; secondly, high fever with lytic fall during the second week; thirdly, cases in which a succession of attacks gives a typical curve. The intervals are represented by periods of normal or subnormal temperature, and the fresh attack generally sets in with a sudden rise of temperature. In the recurrent cases he has noticed that the onset of the menstruation is often in direct connexion with the renewed manifestation of the local infection. With regard to the prognosis, he says that of his 80 patients, 5 died; but of these 5, 1 must be excluded, as she was suffering from carcinoma, and the same applies to a second, who died of a tuberculous affection. It therefore appears that 3 of his patients died as a direct result of the pyelitis. Of the remaining 75, 54 were clinically cured, 14 considerably improved, and 7 still had symptoms. Bacteriologically speaking, only 16 were actually cured, 20 improved, and 39 were not cured. He does not think that drugs do much to help the patients to get better. He usually gets good results by washing the kidneys out with waters, such as Wildunger, or by giving hot tea made of the blossoms of the lime tree. Urotropin is the best of the so-called bactericidal drugs, but he says that this preparation does not cure the disease, and that the bacteria continue to have their own way after one has given urotropin for some time. He only deals separately with the bladder when there is evidence of cystitis. The pain can be treated without narcotics as a rule, either by heat or by cold, according to the individuality of the patient. He concludes by saying that when the swelling of the renal pelvis is marked one can puncture the tumour, or even make an incision into the organ, but the majority of the patients do not consent to any surgical procedure.

SURGERY.

140 Epithelomatous Degeneration of a Ranula.

Duvergey gives the history of a man (*Gaz. Hebd. des Sciences Méd.*, April 14th, 1907) who was suffering in 1902 from a ranula. An operation was performed in that year, and the mucous membrane over the ranula being incised, the growth was opened and the liquid contents let out. The cavity was packed with gauze, which was removed after three days. The interior of the cavity was then cauterized with a stick of silver nitrate, and another gauze plug was put in. The cauterization was repeated every two days for three weeks, when the cavity had closed up, and the patient left the hospital. Nothing was seen of him for over four years, when he returned suffering from an ulceration at the seat of the old wound. This was very painful and caused excessive salivation, and discharged a little blood. He had violent pain up the whole of the left side of his face. Secondary growths occurred in the subhyoid region and in the right submaxillary region. He could only with difficulty speak and eat. The ulcer extends from the right maxillary border up to about 1 cm. from the left maxillary border; the tongue is infiltrated. The ulceration lies upon a hard tumour. Microscopical examination of fragments confirms a diagnosis of epithelioma. The author proceeds to discuss the theories of origin of ranulae, whether, as Suzanne thinks, they are analogous to ovarian cysts or, as Imbert and Jeanbrau have suggested, are really branchial vestiges. Ranulae contain much cylindrical epithelium, and that was the constitution of the cancerous growth in this case. The remains of the cyst walls, which were left at the operation, and were not completely removed, themselves epithelial, remained for some time quite inert in the depth of the floor of the mouth, and then began to develop and form an atypical tissue. The case shows that surgeons should remove ranulae *in toto* and not merely empty them.

141. Prostatectomy under Spinal Anaesthesia.

W. Moore (*Intercolonial Medical Journal of Australasia*, May 20th, 1907) records the results of his experience in 8 cases of prostatectomy operated upon by him under spinal anaesthesia. The employment of this method by the use of stovaine greatly improves the results of operations for the removal of the prostate, as none of the evil effects so often hampering the surgeon with general anaesthesia were noticed, and in the case of feeble old patients it is possible to maintain a sufficient degree of anaesthesia to allow the operation to be performed rapidly. Among the advantages of spinal anaesthesia it is claimed that the operation is rendered easier by reason of the complete relaxation of the recti and anal muscles obtained, with a consequent greater rapidity and a minimum of injury to the parts; also the risks of injury to the lungs and kidneys and the dangers attending severe vomiting are avoided. Shock appears to be less after this method, and from records of its use in other operations there seems to be no specially inherent dangers attending it. In the notes of the 8 cases recorded no mention is made of any after-effects beyond a slight headache and backache and in one instance a little vomiting, but in no case were there any severe symptoms. In 7 of the cases the suprapubic operation was performed; one case had extensive malignant disease, but the wound healed and urine was passed naturally, though death ultimately resulted from the disease. The other 6 recovered without serious complication. In the suprapubic operation, which is the one usually adopted by the writer, spinal anaesthesia renders its performance easier and more certain and with lessened risks, while for the aged it has an undoubted advantage over general anaesthesia.

142. Genu Valgum and Late Rickets.

Kirmisson (*Journ. des Praticiens*, April 27th, 1907) says genu valgum makes its appearance at two periods—in early infancy, when it is accompanied by various rachitic deformities, and at adolescence, when it may appear as an isolated lesion, but provides certain evidence of faulty nutrition. A girl of 12 is an example of this latter form. It was only a few months ago that her parents noticed she had some difficulty in walking. She has a well-marked double genu valgum. When the deformity is femoral, and consequently situated above the knee-joint, it disappears on flexion of the joint; but it does not disappear when the trouble is in the tibia. In adolescence the femur is usually the seat of the trouble, but in the infantile form the femur and tibia are affected, the one as often as the other. Genu valgum is accompanied by a hypertrophy of the internal condyle, which is situated lower than the external, and is enlarged transversely and in the antero-posterior direction. Besides, there is often a curving of the femoral diaphysis with convexity inwards. This deformity is not present in the case in question. There is no trace of scoliosis, but she is very tall for her age, and has enormous feet and hands, which are cold and blue. It is proposed to perform a Macewen's osteotomy with a skin incision 2 cm. above the external condyle. In very young subjects the bones can be broken by the hand. When there is extreme hypertrophy of the internal condyle this may be removed, but the plan has this objection—that the joint is opened. After all these operations the patients must remain for a long time in the apparatus for immobilizing the limb, and a tonic treatment must be instituted.

143. Decapsulation of the Kidneys.

P. Rondoni (*Lo Sperimentale*, Florence, 1907, p. 5) has made experiments upon dogs and rabbits to determine the effect of decapsulation upon the kidneys. This operation may influence the course of nephritis favourably, either by relieving tension (the renal glaucoma theory of Harrison, Rovsing, and others), or by providing a new and peripheral arterial blood supply (Edebohls and others). Rondoni divides his experiments into three series. In the first, decapsulation was performed upon one kidney in each of eight rabbits; and at various periods after the operation injections of renal poisons (diphtheria toxin, filtered cultures of *Staphylococcus pyogenes aureus*, or Lustig's bubonic plague bacillus nucleoproteid) were given. The two kidneys in every case were equally inflamed thereby. In a second series of eight rabbits, the left kidney was stripped of its capsule, and the animals were killed after from two to sixty days; careful microscopical examinations were made to see if the stripped kidney had acquired a new cortical blood supply. Rondoni found that a few days (two to four) after the operation, the superficial part of the renal cortex showed fatty and granular degeneration of the parenchymatous cells, with oedema; a thin deposit of richly cellular and vascular connective tissue could be seen in the place of the capsule. In eighteen to twenty days a new connective tissue capsule had formed round the stripped kidney, rich in cells but not rich in vessels; and sending down fibrous strands into the kidney substance at any place where the deepest layers of the original capsule had been successfully torn away and the renal parenchyma lacerated. Apparently, then, it is not easy to strip the renal capsule completely away, down to its lowest layers; and, further, it is not desirable to do so, for fear of setting up a process of fibrosis in the kidney. In either case the new blood supply brought to the renal cortex is little or *nil*. In a third series of experiments Rondoni secured two dogs suffering from nephritis (mainly chronic interstitial), due to poisoning by cantharides for several months, and two normal dogs. He then tested the activity of their renal tissues by the subcutaneous injection of methylene blue and of phloridzin, both before decapsulation of the left kidney and after it. The methylene blue was excreted in the ordinary way, both before and after the operation; the phloridzin glycosuria was increased after the stripping in one case, diminished in another. If the capsule was stripped completely, a new fibrous capsule appeared and invaded the renal cortex with sclerotizing fibrous tissue, as was the case in the rabbit, but brought no increased vascular supply with it. Anatomically, chronic interstitial nephritis is aggravated by renal decapsulation.

OBSTETRICS.

144. Uterine Cancer Complicating Pregnancy.

Oui deals at length with this subject in *L'Echo Méd. du Nord*, May 19th, 1907. Nearly all authors, he says, agree that pregnancy has a baneful effect on uterine cancer. All the symptoms, the pain, haemorrhage, foul discharge, are increased, and the growth of the cancer is hastened. Statistics show that a cancer has a bad influence on pregnancy and conception. According to Colnstein and Bar, pregnancy went to term in two-thirds of the collected cases of uterine cancer. Other observers found a larger percentage of pregnancies which went to term. As regards the labour, there is no doubt that cancer of the cervix uteri may cause very grave complications. Tearing of the cervix,

uterine rupture, and vesico-vaginal fistula may occur. Puerperal sepsis is a frequent result, and even death may ensue from exhaustion following a long and hard labour. The prognosis for the child, too, is bad. Treatment of these cases must be considered, during the pregnancy, at labour, and during the puerperium. During pregnancy the treatment differs according as the cancer is operable or no. If it is not operable, the only line of treatment is to relieve the pain, and the other symptoms as they occur. Morphine must be freely used. Haemorrhage may be stopped by hot douches, tampons, and even by curetting the cancer and applying the cautery. When the cancer is operable, some authors think that no operation should be performed during the pregnancy, but that the efforts of the accoucheur should be directed to bringing the mother to term as safely as possible. Others recommend operation. The operation may be cervical amputation or hysterectomy. The author has collected 31 cases of the former operation, in 58 per cent. of which abortion occurred subsequent to the operation; while in 9.7 per cent. the mother died at the time of the operation; only 9 children were saved. Hysterectomy may be vaginal, abdomino-vaginal, or abdominal. Of 68 cases of vaginal hysterectomy performed during pregnancy 3 cases died at the operation. The rest lived, some two, some four years without a recurrence of the growth. Of 11 cases of abdomino-vaginal hysterectomy 2 died at the time of operation, 2 survived four years without recurrence, 2 lived two years without recurrence, the rest had recurrence at periods varying from three months to two years. Twenty-seven cases of abdominal hysterectomy gave the following results: 3 deaths at the time of operation; 1 case had no recurrence for three years, 1 had no recurrence for two years, all the rest had recurrence under two years from the time of operation. The total results from hysterectomy done during pregnancy are: 106 cases operated on; 9 deaths at the time of operation, 8 survivals without recurrence for four years, 19 survivals without recurrence for two years. In 14 cases a living child was born. Results for mother and child alike combine to condemn hysterectomy late in pregnancy. Vaginal hysterectomy would appear from the figures to give the best results. It is useless to empty the uterus before operating when the operation is performed in the early months of operation. The risks in delivery grow with the length of the labour, which should consequently be quickly ended. And as all interference through the vagina is more or less useless, if not dangerous, Caesarean section remains the only alternative. When the cancer is inoperable Porro's operation is preferable to a conservative Caesarean section, as the former completely protects the peritoneal cavity from contact with the infected uterus. Collected cases show that a conservative Caesarean section, when the cancer was inoperable, gave 47.60 per cent. of deaths to the operation for the mother and 23.30 per cent. for the child. Caesarean section, followed by Porro's operation, gave 40.90 per cent. of maternal deaths and 30.48 per cent. of fetal deaths. When the cancer is operable, the only course is a Caesarean section followed by an abdominal hysterectomy. And this procedure is attended with excellent results for the child, but the mother's chances of life are bad. In only 2 cases out of 8 collected by the author did the mother survive the operation. When hysterectomy was performed immediately after delivery the following were the results: Out of 24 cases only 1 died after the operation, 3 lived without recurrence for longer than four years, the majority for more than two years.

GYNAECOLOGY.

145. Sterility from Atresia of the Fallopian Tubes.

DOLÉRIS (*Comptes rendus de la Soc. d'Ostét. de Gynéc. et de Obstr. de Paris*, June, 1907) reports a case where a woman aged 28, robust and well developed, was absolutely sterile. The periods, established at 14, were normal. She married when 25, lost her husband within a year, and married again a year later. There had been no sign of pregnancy, and the patient, a French woman, attributed her barrenness to residence in a tropical climate. She therefore came back to her native country and consulted Doléris. He found that the uterus was retroverted; its cavity measured 2¾ in. in length, and the appendages seemed to be enlarged. After this examination the patient resided for five months in France with great benefit to her health, but there was no sign of pregnancy. Doléris operated, intending to correct the position of the uterus. The left tube and the right appendages were resected on account of certain malformations, it being at the same time clear that both tubes were impervious, and therefore unfit for their functions. In both the abdominal end and fimbriae were well developed, but the inner half of the right tube was absolutely wanting, the free border of the broad ligament forming a sharp fold in its place. The middle third of the left tube was reduced to a thin cord. The right ovary contained a blood cyst. The uterus was fixed in its normal position by suture of the round ligaments. The patient recovered, but no after-history is published. Lejars (ibid.) reports another instructive case of atresia. A girl aged 17, previously regular, had suffered for a year and a half from pelvic pains and several attacks of pelvic peritonitis, traceable to a mass in the right fornix. An operation was performed, and a right pyosalpinx with a voluminous cystic ovary removed. The left cornu uteri was wanting; a cord ran from above the level of the os internum for about 3 in. upwards, ending in a short Fallopian tube with a well-developed ostium and a small micro-cystic ovary. The uterus, with the ill-developed left appendages, was removed, and the patient recovered. The uterus itself, consisting of a right cornu only, was not well developed, and ran into the right tube without any line of demarcation. Hence, in all probability the patient would have been sterile. Pinard, in a discussion on the above two cases, noted that the first patient's catamenia had been quite regular although the atresia of the tubes was so extreme, a point to be borne in mind in respect to cases of sterility of obscure character.

THERAPEUTICS.

146. Opsonic Treatment of some Diseases in the Tropics.

ALDO CASTELLANI (*Archiv für Schiffs- und Trop. Hyg.*, Bd. xi, Heft 3) in Ceylon has used the opsonic treatment in 10 cases of various bacterial diseases, namely, 1 case of pseudo-granuloma pyogenicum, 1 of pseudo-granuloma septicum and coccogenic sycosis, 2 of acne vulgaris, 4 of folliculitis of the legs, 1 of furunculosis, and 1 of chronic dysentery. The methods given by Wright and Douglas were closely followed. The vaccines were always prepared direct from the germs isolated from the patients. The initial dose administered was as a rule ¼ c.cm., and this dose was gradually increased up to ½ c.cm. and ⅔ c.cm.; a dose of more than 1 c.cm. was never exceeded. In the case of pseudo-granuloma pyogenicum, which occurred in a Cingalese boy 5 years of age, the opsonic index rose from 0.6 before the treatment began, to 1.3 after the fourth injection, and the patches gradually disappeared within three weeks. In the case of coccogenic sycosis the patient had tried various treatments, including epilation, with only temporary benefit. The first injection of ½ c.cm. of a mixed staphylococcus vaccine prepared from the strains isolated from the patient had not resulted after five days in any rise of the index; another injection was then given, and the opsonic index rose after three days from 0.7 to 0.8; two further injections were given a week later. No local treatment was tried except an occasional application of boric lotion. The patient became much better soon after the second injection, and was practically well a week after the third. The next case was of interest because of the continuation of coccogenic sycosis and patches of pseudo-granuloma pyogenicum. A *Staphylococcus aureus* in pure culture was grown from the sycosis pustules and from the granulomatous patch. Pure injections of staphylococcus vaccine were made, the opsonic index rose from 0.6 to 0.95, the condition was much improved after the first injection, and the patient left the hospital having completely recovered a few days after the second. In the case of furunculosis the patient had been suffering from large, very painful boils on the legs and arms for several weeks, and later there had been some irregular rises of temperature accompanied by slight shiverings. Under the vaccine treatment the opsonic index rose from 0.5 to above normal, and the boils gradually disappeared within three weeks. In the case of chronic bacterial dysentery, the patient had been suffering at intervals for six months after an acute attack of dysentery, which had lasted for two weeks; when first seen he was passing daily from four to six stools containing very little faecal matter, much muco-pus and a little blood. He was first inoculated without result with some antidysenteric serum, which had been prepared at the Lister Institute, London. Next the strain of Kruse-Shiga bacillus isolated from the stools was used in the preparation of a vaccine. The number of inoculations made with the new vaccine was three in all. After the first there was a slight rise of temperature of a few hours' duration. The blood and pus dis-

appeared from the stools within six days, and the number of stools fell to two feculent daily motions. The patient had then to leave Ceylon, but he wrote from Egypt three months later and reported that he had not had any more attacks, whereas previously he had had at least two every month. It would seem advisable to continue the investigation as to the value of the opsonic treatment of chronic dysentery, especially as the disease is a most difficult one to cure. In two cases of acne vulgaris the opsonic treatment gave a poor result. In one the patient was a man, 22 years of age, who had been suffering from the disease for more than four years; the condition was improved but not cured. In the other case no improvement resulted. Except for these cases of acne, the results of the treatment were extremely satisfactory.

147. The Action of Radium on Plants and Animals.

Louis Hussakof (*Med. Record*, July 20th, 1907) sums up the recent investigations as to the effects of radium on plants and animals. Earlier investigations showed that radium produced reddening of the skin, inflammation confined to the exposed spot, and a gradual falling-off of the skin, depending on the intensity of the rays and the length of the exposure. It arrests culture growth, and destroys most germs when long enough exposed, and with a sufficient intensity of the rays, and nearness of the tissues to the tube. After several days the bacteria became radio-active themselves. Protozoa are at first stimulated, and later die. The shelled organisms are more resistant than those containing chlorophyll. On animals the effects are mainly on the skin, the connective and muscular tissues being little affected. The central nervous system is peculiarly sensitive to the action of radium, and young animals are more susceptible than older ones. As to the pathological significance, it is certain that radium rays exert a baleful effect on animal tissues. The emanations as well as the rays have these effects. There is little effect on metabolism. Development and regeneration in animals are retarded as plant growth and development. Radium has also an effect on biochemical substances, ferments losing their powers. Red corpuscles lose their haemoglobin and salts into the containing solution. Radium emits three kinds of rays; the alpha having least penetrating power, while the beta and gamma rays are both physiologically active. When all three kinds are used the effect is greater. Oxygen seems to play an important rôle in the effects.

148. Liton Bread in Diabetes.

The majority of diabetic breads are considered to be much too unreliable to enjoy a safe place in the treatment of the disease. J. Brodzki finds that while Graham bread and the German "pumpernickel" contain as much as 45 per cent. of carbohydrates, none of the other kinds which he has examined contained less than 26 per cent. (*Berl. klin. Woch.*, January 28th, 1907). It has been found that by using almond powder and baking with gluten one can obtain a bread which contains less carbohydrates than usual, and yet has the appearance of bread. Recently a new bread, called liton bread, has been introduced. This is made with wheat, gluten, and rye. The gluten albumen admits of it being baked, and produces a bread-like taste, but it was found that it was not possible to bake without some further material, which should supply the "body" of the bread. This is supplied in rye seedlings, which are freed from the greater part of the carbohydrate content by treatment with an infusion of malt and washing out. Brodzki deals with his experience of liton bread. He has given it in 18 cases of diabetes. In each case the patients liked it, and did not get a bread craving. In 10 of the cases he was able to study the effect of taking the bread on the glycosuria. He details the history of one case in support of his contention that liton bread is well tolerated, and that the carbohydrate tolerance can be increased while the patient is taking the bread. The patient was put on a strict diet, given baths and massage until the sugar was got rid of out of the urine. In the first period the patient received liton bread, and harmless carbohydrates such as inulin, inosite, and manite. In the second period more carbohydrates were given until the patient reached his limit of toleration, and in the third period he was given oatmeal (according to v. Noorden) as well as liton bread. The diet tables of each period show the amount of carbohydrate, etc., given, and the excretion of sugar. The case is classified as a moderately severe one. He was rendered free from glycosuria fairly readily under a strict diet, and then the effect of the liton bread was shown by no further sugar appearing in the urine. At first he was given the 3 per cent. carbohydrate liton bread, and later the 10 per cent. carbohydrate bread. In conclusion, he claims that liton bread has proved itself to be the first really useful form of bread introduced for diabetes.

PATHOLOGY.

149. Experimental Alcoholism.

In experiments upon mice, guinea-pigs, and rabbits which received small doses of alcohol in addition to their ordinary food, Reid Hunt, of the United States Public Health and Marine-Hospital Service (*Studies in Experimental Alcoholism*, Bull. No. 33, Hyg. Lab., U.S. Pub. Health and Mar.-Hosp. Serv., Wash., pp. 43), has endeavoured to throw some light on the physiological effects which alcohol produces upon the "moderate drinker." He finds that animals to which alcohol has been administered for some time acquire an increased susceptibility to a definite poison, acetonitrile, and that this occurs after the administration of amounts of alcohol far too small to ever cause indications of intoxication, and from doses insufficient to cause demonstrable anatomical lesions. This increased susceptibility is not due to a general "lowering of resistance," but is associated with a distinctly increased power of the body to break up the molecule of acetonitrile, and this physiological alteration appears to be due to increased powers of oxidation on the part of the body. Acetonitrile, or methyl cyanide, may be considered as hydrocyanic acid in which the hydrogen atom has been replaced by the methyl group, and its poisonous effects in the animal organism are attributable to the slow formation of hydrocyanic acid. This acid subsequently unites with sulphur to form sulphocyanic acid. The idea which formed the starting point of Hunt's experiments was the view that hydrocyanic acid is liberated from acetonitrile through the oxidation of the methyl groups. He therefore endeavoured to determine the effects upon the toxicity of the nitrile produced by various agents currently supposed to influence physiological oxidation. He selected alcohol as one of these because, notwithstanding the popular view that alcohol diminishes oxidation, he anticipated that in this case oxidation would be increased. This hypothesis was based on a consideration of the probable cause of tolerance for alcohol. Comparing alcohol with morphine, it has been shown that the establishment of tolerance for morphine is accompanied by an increased power on the part of the organism to destroy the morphine by oxidation, and it seemed reasonable to suppose that the tolerance for alcohol is accompanied by a similar increased power on the part of the body to oxidize alcohol. If, then, the body becomes increasingly capable of oxidizing alcohol, it is but a step further to suppose that it will also oxidize alkyl groups in general, such as the methyl group, more readily. If this should occur with the methyl group of acetonitrile, then animals accustomed to alcohol should be especially susceptible to this nitrile. Hunt's experiments have confirmed this view. Animals which had received for a few weeks or months small, non-intoxicating amounts of alcohol succumbed to doses of acetonitrile which produced no symptoms in the control animals which had received no alcohol. Hunt endeavours to bring these results into line with Ehrlich's side-chain theory. "If we suppose that alcohol is normally oxidized by reactive chemical groups analogous to side-chains, then the tolerance may be thought of as due to an increase in the number of these groups, and it is very natural to suppose that an organism that has acquired increased power of oxidizing the ethyl group of alcohol has also acquired increased power of oxidizing the methyl group of acetonitrile." Hunt concludes from his experiments that extremely moderate amounts of alcohol may cause distinct changes in certain physiological functions, and that these changes may, under certain circumstances, be injurious to the body.

150. The Liver after Complete Thyro-parathyroidectomy in the Dog.

Parenchymatous hepatitis, with hyperaemia and haemorrhages in the liver, has been described as results of removal of the thyroid and parathyroid glands, by Rosemblatt. Others have observed fibrosis of the spleen or of the kidneys after the operation. F. Delitala (*Lo Sperimentale*, Florence, 1907, p. 436) has gone over these questions again; he finds that various hepatic lesions may occur after removal of the thyroid and parathyroid glands, but that there is no constant relation here. The liver may be normal, although the symptoms due to the operation were most severe; the changes in the kidneys, however, were proportional to the severity of the post-operative symptoms.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

151. Toxic Peripheral Neuritis due to Gastric Retention.

Tetany has been not infrequently attributed to toxic absorption from the stomach, but Duvernay (*Lyon Méd.*, July 14th, 1907) has recently treated a patient whose peripheral neuritis he believes to have been due to absorption of toxins from a dilated stomach. The man was 39 years of age, and for some years had drunk alcohol freely, both as wine and spirits, but owing to the stomach disturbance which it set up he had for ten years given it up altogether. In spite of this he suffered from gastric pain and vomiting of food, and lost flesh rapidly. When seen in 1906 the stomach was enormously distended, reaching to within three fingerbreadths of the pubis, and causing splashing noises on movement. There were also subjective feeling of cold in the hands and feet, cramp and lightning pains in the legs, wasting of the muscles of the thigh and leg, and progressive loss of power. The patellar reflexes, feeble when first examined, soon became abolished. Operation became urgent on account of complete pyloric obstruction, and gastro-enterostomy was performed. The recovery from the operation was rapid, and although the stomach remained distended, there was rapid gain in weight. The obstruction was found to be due to an old cicatrizing ulcer of the pylorus. The neuritis, which had been sufficiently severe to cause an inability to walk or even stand, improved after operation with electrical treatment so far that within a few months the patient was able to ride a bicycle. The reflexes returned to some extent. Duvernay believes that the neuritis could not have been directly due to alcoholic poisoning, since it only appeared nine or ten years after the intemperance had ceased, and feels himself justified in concluding that it was due to intoxication from the stomach on account of the unusually rapid improvement which followed relief of the obstruction.

152. Fatal Trichocephaliasis.

Regina Kahane (*Corr.-Bl. f. Schweizer Aerzte*, April 15th, 1907) reports a fatal case of trichocephaliasis. Ten years ago the *Trichocephalus dispar* was accepted as a harmless parasite of the caecum. But it is now known that it is harmless only if, as is usually the case, it is present in small numbers, and that it may be as dangerous as the *Ankylostomum duodenale*, the *Trichina spiralis*, or the *Bothriocephalus latus*. It is found in small numbers in 23.7 per cent. of the inhabitants of Basle. The eggs are usually swallowed in water or in soil. In what way the worm is injurious is undecided. Some maintain that it sucks blood like the ankylostomum, others that it secretes a toxin. However this may be, one of the most prominent symptoms of trichocephaliasis is anaemia. A girl, aged 4½, who had suffered from infancy with diarrhoea, was seen on January 27th. A year before extreme anaemia, an anaemic mitral murmur, and diarrhoea had been diagnosed. The stools contained no tubercle bacilli. The mother stated that the child ate earth with avidity, and that her eldest son, who was extremely pallid, had the same habit. Until the patient could walk, and was taken into the fields, she had been healthy. She was extremely anaemic and poorly developed. The lungs were normal. There was a loud systolic mitral murmur. The pulse was 136; the percentage of haemoglobin was 15. On February 3rd large numbers of the ova of *Trichocephalus dispar* were found in the faeces. There were two or three semiliquid stools daily, which usually contained dark blood. Treatment consisted in tannigen for the diarrhoea and enemata of garlic for the worms. Afterwards she was given 0.1 gram of thymol twice daily, and high intestinal irrigations with creolin, without reduction of the number of ova passed. Santonin and calomel, with enemata of normal saline solution, also failed. On May 1st, after 0.1 gram of thymol had been given thrice daily for three days, an enema of 1 litre of a 1 per mille solution of thymol brought away about twenty adult worms (male and female) and a quantity of ova. The patient then temporarily improved, but twenty or thirty worms continued to return with each enema, and on August 15th the urine contained albumen and sugar. There was oedema of the face and ankles. On August 24th petechiae appeared on the lower limbs, and on September 1st there were haemorrhages on and under the skin of the arms. There were four or five diarrhoeal stools daily, and death occurred on September 18th. *Post mortem*, the heart was found to be dilated, and the muscular tissue to be soft and yellow. The valves were healthy. The liver was greatly enlarged; it was typically "nutmeg" and fatty. There was nephritis, both kidneys being enlarged. The small intestine was contracted, the large was distended. In the caecum, appendix, and colon as far as the rectum were innumerable trichocephali. Some were embedded in the mucous membrane, others were swimming freely in the semiliquid contents. Microscopically, chronic catarrh of the large intestine was found with evidence of appendicitis. Possibly the latter accounted for occasional attacks of colic and of pyrexia which occurred during life. The trichocephalus ova are oval, yellow to reddish-brown, spindle-shaped, and have a clear pole at either end.

153. Splenectomy and the Power of Resisting Disease.

N. Biagi (*Lo Sperimentale*, Florence, 1907, p. 295) discusses at some length the literature dealing with the power of increasing the body's resistance to disease which is attributed to the spleen. He has removed the spleen from 9 dogs, in each case examining its blood reactions before the operation, and afterwards on several occasions. He finds that the haemoglobin content, the leucocytic formula, and the resistance of the red cells are not altered by splenectomy; the operation does not sensibly affect the formation of haemolytic, bacteriolytic, or agglutinating substances by the blood. Spleenless dogs are rather more readily killed than normal dogs by the rapid anaemia produced by the injection of haemolytic immune serum; Biagi believes that the haemolytic complement for this destruction of the red cells is derived from the large mononuclear leucocytes. He holds that the operation of splenectomy is not nearly so dangerous as it is commonly believed to be, nor so liable to dangerous sequelae.

SURGERY.

154. Retro-colic Cholecystenterostomy.

Brentano (*Zentralbl. für Chir.*, No. 24, 1907) describes a new method of establishing anastomosis between the gall bladder and the small intestine, an operation which, though seldom practised, is clearly indicated in cases of compression of the biliary ducts by inoperable tumour, and by new growth and chronic inflammation of the head of the pancreas. The usual method of attaching the fundus of the distended gall bladder to a high portion of the small intestine is, the author holds, open to objection, as the gall bladder, when it shrinks after the operation, displaces the anastomosed jejunum, and exerts forcible and, it may be, dangerous traction on its coats. A case is referred to in which the author, finding it necessary to perform cholecystenterostomy, turned the transverse colon with the omentum upwards, as in posterior gastro-enterostomy, and after having drawn a portion of the jejunum through a slot made in the transverse mesocolon, punctured and emptied the gall bladder, and finally established an anastomosis between the two structures. The portion of jejunum that was attached to the lower surface, not to the tip of the collapsed gall bladder, was situated at a distance of about 3 in. from the distal end of the duodenum. After the anastomosis had been completed, the loop of the jejunum was drawn back through the slot in the mesocolon until its attachment to the gall bladder could be seen and the surface of this latter structure was fixed by sutures to the margins of the mesenteric opening. The author found this method of cholecystenterostomy a very easy one in his case, and advocates it in preference to that hitherto practised on the grounds that it results in much less displacement of the intestine, and that the passage of intestinal contents into the gall bladder is rendered less probable in consequence of a free and normal peristalsis.

155. Post-operative Psychoses.

Lorenzi (*Rif. Med.*, March 11th, 1907) publishes 3 cases where mental derangement, chiefly of the melancholic

type, developed after, and as a probable result of, operation. The first case was that of a woman aged 45, who had nothing in her past or family history which would suggest mental disease, and yet developed melancholia after amputation of the arm. The operation was necessary, for after a severe compound fracture of the arm grave cellulitis set in, threatening life. The woman resented the operation very much, and said she would rather lose her life than her arm. The wound healed well, but the mental condition, which set in almost immediately after operation, steadily got worse, and the patient still (eighteen months after the injury) remains in the asylum. The second case referred to a woman aged 55, whose breast was removed in the spring of 1905, for cancer. Three weeks after operation a marked mental change set in and slowly developed into melancholia, which still persists. In the third case there was a well-marked neurotic family history, and after comparatively slight operation for tuberculous disease of the humerus she (a woman aged 48) became (some weeks later) melancholic. Most of the more serious psychoses occurring after operation—if they come on immediately after operation—are of an active type (mania, delirium, etc.), and these usually get better fairly quickly, but if they set in later they are more likely to be of a melancholic type and to last much longer. The author does not believe that in either case they represent any special specific group to be classed by themselves, but are simply examples of traumatic psychosis due to a special trauma. If one realizes from the family history, etc., that there is a danger of developing mental trouble, it is clear one ought not to operate unless compelled, but unfortunately even where there is no reason to suspect such a possibility—for example, in the first two cases—mental trouble may set in as a result of operation, and when one might reasonably fear such a result it does not occur, so that it all turns on a calculation of the various risks. Moreover, post-operative insanity is of so polymorphic a character that no certain rule as to the probable type can be formulated.

156. Enchondroma with Multiple Exostoses.

GANGOLPHE AND GABOURD (*Rev. d'Orthop.*, No. 3, 1907) publish a case of huge enchondroma of the inferior costal region on the right side in a male aged 26 years, who was also the subject of multiple hereditary exostoses. The growth returned rapidly after incomplete removal, with metastasis in the liver and diaphragm. The following conclusions are drawn by the authors from a study of this and some other instances of the coexistence of enchondroma and multiple exostoses: (1) Osteogenic exostoses in the right sense of the term are essentially hereditary, this being one of the important characters which enable the pathologist to distinguish them from exostoses occurring after the period of growth, which are of inflammatory or nervous origin. (2) The coexistence of pure enchondroma and multiple exostoses is not of infrequent occurrence; these two forms of tumour, moreover, have close relations, as they have been observed in association or alternately in the same families and in subjects presenting decidedly congenital malformations. Exostoses and enchondroma are regarded by the authors not as diseases in the usual sense of the word, but as congenital malformations and special conditions of the skeleton of fetal origin. (3) The cause of these abnormalities remains unknown, as the hypotheses of Cohnheim and Virchow have not been verified. (4) In regard to treatment, the surgeon should not operate in cases of exostosis unless the growth be painful or interferes with some function, but should be very conservative in his dealing with such swellings, which are always benign, and which may either disappear spontaneously or at least cease to grow at the end of the period of growth. With enchondroma, on the other hand, he should intervene promptly, as such a tumour has a tendency to constant increase, and may give rise to metastases and become generalized. The extirpation of the growth should, if possible, be complete, as recurrence is likely to follow if any fragment be left in the wound. (5) In dealing with an enchondroma of the thorax the surgeon ought not to be influenced by the dread of operative pneumothorax. Extension of the growth to the diaphragm should be regarded as a decided contraindication, as resection of this structure is a very dangerous procedure.

OBSTETRICS.

157. Phthisis and the Induction of Abortion.

P. J. DE BRUÏNE PLOOS VAN ARMSTEL (*Beiträge zür Klinik der Tuberk.*, Bd. vii., Heft 2) deals at considerable length with the subject of phthisis as an indication for the induction of labour. His conclusions are the result both of his own experience and an exhaustive study of the literature. The author has not found that phthisis, except when in its last stages, causes abortion. Maragliano's statistics as to the effect of pregnancy upon an existing phthisis in 42 cases are very striking. The patients suffered in every instance from circumscribed tuberculosis, and the general condition at the beginning of pregnancy was good. Nine of the mothers died from phthisis during the puerperium, 7 died within three months from the time of labour, 9 died between the third and sixth months after labour, 10 between the sixth and ninth, 4 died after about a year; in only 3 out of the 42 cases did the condition of the lungs remain stationary. The death-rate was thus 94 per cent.; while in 188 cases of circumscribed phthisis in women not pregnant, the death-rate in the same period of twenty-one months was 18 per cent. only. The chances of life for a child of a tuberculous mother are in any case bad. Friedmann's statistics with respect to 2 984 patients suffering from phthisis showed that in 33 per cent. of the cases there was a definite history of hereditary predisposition, while in only 25 per cent. could such a history be definitely negatived. The author gives the history of 17 cases from his own practice in order to show the results to mother and child of allowing the pregnancy of a phthisical mother to go to term. In these cases the women all came from phthisical families; 10 of them were sound at the beginning of pregnancy, the others suffered in each case from a chronic form of phthisis and the prognosis apart from pregnancy would have been good. In every instance the phthisis made rapid progress during pregnancy, one woman died during labour, the others at intervals after labour which varied from three days to eighteen months. Of the children, one died at birth, only four reached the age of 1 year, and only three that of 2 years. Thus seventeen mothers died, while three weakly children survived. It seems probable that a large proportion of these women would have survived if abortion had been induced early in pregnancy; but it is also true that in many similar cases labour has gone on to term with results favourable both to mother and child, and therefore the author dissents from the opinion of Maragliano that in every case in which pregnancy occurs in a woman suffering from phthisis abortion should be induced, and he would judge each case on its merits. Another great distinction between the author and Maragliano is that the latter would induce abortion in these case for the purpose of fighting tuberculosis, while the former would do it only in the interests of the mother. Where the disease of the mother is curable van Armstel would, as a rule, induce abortion as soon as possible in order to increase her chances of recovery, but when there is no hope of the mother's recovery he would let the pregnancy go to term in the interests of the child. For practical purposes the differences between van Armstel and Maragliano are more apparent than real, because the objections of the mothers would make it impossible for Maragliano to follow out his proposed course uniformly. Pinard is one of the most prominent opponents of the treatment by artificial abortion, but his views carry less weight than they otherwise would because he both acknowledges that an existing phthisis is often very prejudicially affected by a superimposed pregnancy and has also laid down the general rule that a pregnancy should be interrupted when a disease produced or aggravated by it threatens the life of the woman. The author formulates a series of conclusions with almost all of which he seems to be in substantial agreement; to any conclusion to which exception might be taken he appends the names of the more prominent of its supporters. Among these conclusions are the following: (1) Pregnancy, labour, and the puerperium have a harmful effect upon an already existing phthisis. (2) Where a hereditary predisposition to tuberculosis exists pregnancy often causes the development of phthisis or of some other form of tuberculosis. (3) Germinative infection does not occur, and placental infection rarely occurs, but the children of a tuberculous mother are weaker, and have less resistant power and less prospect of life both before and after birth than normal, and are predisposed to tuberculous disease, especially to phthisis. (4) It is the duty of the doctor to warn any woman who suffers from acute or latent phthisis, and who proposes to marry, of the dangers which marriage will bring. (5) When marriage has occurred the doctor should point out to the wife and husband the necessity and the usefulness of facultative sterility. (6) After conception has occurred the doctor should make clear the danger to the wife of pregnancy, and should advise that the pregnancy should be interrupted in her interests. (7) The indication for the induction of abortion is the more pressing the less far the phthisis has advanced, because of the increased chance of preserving a relatively

sound state of health in the woman. (8) Only in cases in which it is certain that the mother is lost should the pregnancy be allowed to go to term. (9) All the above indications refer both to phthisis and to laryngeal tuberculosis. (10) When the mother suffers from phthisis and is becoming worse, the chance that a living and strong child will be born is exceedingly small; it is, therefore, not right to wait in the interests of the child until the mother is becoming worse in order to induce abortion. (11) The law needs to be changed in order to give to any doctor the right to induce abortion in the interests of the patient.

GYNAECOLOGY.

158. Granuloma Pudendi.

W. Siebert (*Archiv f. Schiffs- u. Trop. Hyg.*, Band II, No. 12), describes the venereal disease known as granuloma pudendi. The disease is one of tropical countries, but has a wide distribution. There is no race immunity, and white as well as coloured races suffer, women more frequently than men; the disease may be contracted at any age between puberty and the menopause. As a rule a circumscribed nodular swelling appears first in the genital region and spreads centrifugally so as to give rise to an increasing area covered by bright red granulations which bleed easily and secrete a fetid fluid often mixed with blood. Cicatrization may occur at the centre, but the process spreads at the edges, especially over warm damp parts, along folds of skin, and autoinfection from contact also occurs. Troublesome scarring may result when mucous membrane is involved. Parts of the body other than the genital region may be affected, and for this reason Maitland prefers the name "infective or cicatrizing granuloma" to that of "granuloma pudendi." Attempts have been made to identify granuloma pudendi with other diseases, as, for instance, lupus and syphilis. Granuloma is, according to Manson, differentiated from lupus by the absence of giant cells, tubercle bacilli, caseation, and any other sign of tuberculous disease, as well as by its limitation to skin and mucous membranes and by its tendency to follow in its spread the lines of folds of skin, while, according to Plehn, the different localization of granuloma and lupus is in itself almost enough to differentiate the two diseases from one another. From tertiary skin syphilides granuloma pudendi differs in its bright red colour, its tendency to bleed, its luxurious granulations and its absence of response to mercury and the iodides. Plehn looks upon the disease as being phagedenic chancre modified by climatic conditions. Kuhn, who has lately been able to examine pathologically and anatomically 7 cases of granuloma, decides against its identity with lupus, syphilis, or chancre, as well as glanders, leprosy, actinomycosis, and framboesia, and considers it to be an independent venereal disease distinguished from any other both clinically and pathologically. The general opinion appears to be that in granuloma pudendi there is a granulation process, limited, as a rule, to the skin or superficial mucous membranes, and that the lymphatic glands become affected only as a result of the destructive lesion of the skin; in advanced cases where death ensues, it is the result of the lowering of the resisting power of the organism to disease, in consequence of the continued free discharge. The fact that extirpation, when it can be carried out, is a successful treatment points to a local rather than a constitutional affection. The specific virus has not yet been identified with certainty. McLennan discovered the presence of spirochaetes, which in most cases resembled *Spirochaeta refringens*, in others the *Spirochaeta pallida*. Wise also describes a spirochaete which in some cases he was inclined to identify with the *Spirochaeta pallida*. According to Wise, the presence of the *Spirochaeta pallida* would show a syphilitic origin of the disease; but Maitland denies this, on the ground that a mixed infection is of frequent occurrence. The author has examined specimens of the growths taken from cases of granuloma pudendi, occurring in one instance in New Guinea and in two in India, as well as a stained microscopical specimen sent from India. He found in all cases that large plasma cells formed the basis of the granuloma; the cells were circular and distinct in parts which were oedemic, and in these parts there was a leucocytosis; the cells in other parts of the growth were more cubical, and lay in contact with one another between the radiating lymph paths. In the stained specimen he found a coccus which was encapsuled, and of which one form resembled the *Streptococcus lanceolatus*; another was single and was often changed by plasmolysis so as to have a bipolar appearance. He found also a coccus whose capsule stained slightly differently, the coccus being smaller and less distinct than in the other forms, and this coccus he looked upon as degenerated forms of the other two. Siebert also found a coccus in the specimens taken from his own cases. In these specimens the micro-organisms were larger, often thickened at the ends, sometimes clearly bipolar, stained with difficulty, and usually lay in groups; they were to some extent enclosed in cells, and were especially frequent in the oedemic tissue in the peripheral parts of the granuloma. There was a certain resemblance between this variety of coccus and that found in the stained specimen, but it was obviously impossible to identify them with one another with certainty. The author has the impression that, at any rate in the specimens he himself prepared, the coccus found was the cause of the disease.

THERAPEUTICS.

159. The Treatment of Infective Diseases.

R. Deutschmann has found that the introduction of yeast into the animal body increases the resistance against microbial infections, probably by stimulating the production of protective substances (*Muench. med. Woch.*, May 7th, 1907). He believes that the serum of such an animal possesses sufficient therapeutic qualities to ensure it a safe place in the therapeutics of the future. He first experimented in order to obtain a harmless substance for the treatment of eye diseases, but since his experiments with yeast have been conducted he wishes to extend the application of his remedy. He has found that his serum has proved of value as an auxiliary means of treatment in infections by pneumococci, staphylococci, and streptococci or their toxins, not only in improving the general condition of the patient, but also in shortening the course of disease and in reducing the temperature promptly. He has given the serum in doses of from 2 c.cm. to 4 c.cm., both subcutaneously and intramuscularly. He further claims that, although hundreds of injections have been carried out, not a single unpleasant side effect has been produced. The injection of from 1.5 c.cm. to 2 c.cm. of the serum does not affect the temperature of normal individuals, while, when fever is present, the same dose either causes an immediate gradual sinking of the temperature or there may be an initial rise with a subsequent fall. In all, the serum treatment was undertaken in 24 cases of croupous pneumonia. Of these 3 were already moribund. In more than half of the remaining cases the serum acted most strikingly by causing the fever and other symptoms to disappear within a very short time of the injection. The crisis was seen on the fourth, and even on the second day in a few cases. The serum did not harm any of the patients. His serum was further successfully employed in a case of otitis media with suppuration (boils) on the lower lip following pneumonia. Some typical fever charts are appended to illustrate the effect of the serum. When the patient is very susceptible toward serum in general, and the rashes, etc, are severe, he finds it advisable to give his serum per rectum using a double dose. In the same way, the serum is useful in the treatment of septic or pyaemic infections, in erysipelas, influenza, acute tonsillitis, etc., while he further suggests it for measles, scarlatina, and enteric fever. He claims to have obtained excellent results in diseases of the eye. These results have been published elsewhere. The diseases to which he calls attention are septic infections (traumatic), hypopyon keratitis, various ulcerative processes, etc. He also uses it as a prophylactic before operations and immediately after traumatic wounds. Lastly, he mentions that he has had a series of experiments carried out in tuberculosis. Here he uses either his ordinary serum or a serum especially prepared for the purpose. (No details of the special serum are given.) The serums must be applied in gradually-increasing doses, beginning with 0.5 or 1 c.cm.

160. Radiumtherapy in Syringomyelia.

Beaujard and Lehrmitte (*Sem. Méd.*, April 24th, 1907) have treated 3 patients suffering from syringomyelia with *x* rays, and in all there has been a diminution of motor, sensory, and trophic disturbances as a result of this treatment. One of these cases the authors treated systematically for a year, and the following is the clinical history and progress of the case. The patient was a man 23 years of age, in whom four years previously there began motor troubles of the left arm, followed by atrophy of the hypo-

thenar muscles of the left hand. Three years ago there appeared a painless whitlow on the right index finger, which ended by destroying the terminal phalanx. When first seen by the authors his condition was as follows: The left upper limb was considerably wasted, especially about the hand; the thenar and hypothenar eminences of the left hand were flattened, the interosseous spaces depressed, and the hand "clawed," the last phalanges being flexed and the first phalanx extended. Flexion of hand was feebly carried out and extension was impossible, as was also apposition of the thumb and little finger; the fingers could not be separated. Muscular power was well maintained in the forearm, but the power of extending forearm on upper arm was markedly diminished. The muscles of the rest of the body were in a normal condition. Partial reaction of degeneration was present in the muscles of the left thenar eminence, and the complete reaction of degeneration in the hypothenar muscles and the external interossei. There was lowering of sensation, together with complete analgesia and thermanaesthesia over an area limited below by a horizontal line passing through the eighth dorsal spine, and extending on to each arm, and above on the left side by the clavicle; on the right side the anaesthetic area extended up to the level of the chin and the angle of the lower jaw. Vasomotor and trophic changes were well marked; the skin of the hands was of a deep-red colour; the right index finger had lost its terminal phalanx; on the middle finger of the same hand was a painless whitlow; the skin of the right palm was horny, and covered with ulcerated fissures. The tendinous reflexes in the upper limbs were normal, but in the legs were exaggerated; there was no foot clonus, the cutaneous reflexes were present, and the plantar reflex of the normal flexor type. The sphincters acted normally; there was scoliosis with the convexity of the curve to the left The other organs of the body were healthy. *X*-ray treatment was begun in May, 1906, the cervico-dorsal region of the spine being exposed to the rays, the distance of the anti-cathode from the skin being 15 cm. and the radio-chronometer of Benoist registering 7 to 9. These applications were made, as a rule, once a week, the treatment being suspended from time to time to guard against injuring the skin. After the third application the sensory troubles began to retrocede, the mental state of the patient improved, as did also his general muscular weakness. After the fifth application the ulcerations and fissures of the right hand were almost completely healed. After the seventh application a careful re-examination of the patient was carried out, and it was then found that the area of skin involved in anaesthesia had markedly diminished, the tactile sense had completely returned on the left side of the body, the analgesic and thermanaesthesic areas were not much altered in extent. Motor power in the left arm had considerably improved, and the hand could be extended more easily. After the tenth application of the *x* rays the right hand was quite healed. After the twenty-fifth application it was found that the analgesia on the left side had disappeared, and had also diminished in extent on the right, the area of thermanaesthesia was also equally reduced, the muscles of the left thenar eminence had recovered their power, and the thumb and little finger could be moved into apposition voluntarily without difficulty. At this time there appeared a lowering of sensibility on the right side of the face and of the same side of the tongue, and the cervical spine and back part of the head were therefore exposed to the *x* rays. After four such applications the diminished sensibility of the right half of the face and of the right side of the tongue had completely disappeared. From the satisfactory results obtained in this case and from the experience of other observers, the authors conclude that the *x* rays afford valuable means of treatment of syringomyelia. Under the influence of the rays motor troubles especially retrocede, and bad positions of the hands are corrected. As regards sensory disturbances, tactile anaesthesia disappears first, then analgesia, and lastly thermanaesthesia. Trophic lesions of the skin and bones clear up in a surprising manner. Muscles which show the complete reaction of degeneration remain unchanged, but those which give only an incomplete degenerative reaction regain their normal size and strength. With regard to the mode of action of the *x* rays in syringomyelia, the authors think it probable that the rays cause an atrophy of the neuroglial cells, just as these rays may cause atrophy of the connective tissue cells of a sarcoma; they further think that the rays may have some effect in modifying the degeneration which goes on in the walls of the vessels supplying the neuroglial new formation in syringomyelia. In treating cases of this disease by the *x* rays it is necessary, as the authors point out, that not only the whole extent of the diseased cord should be exposed to the influence of the rays, but that the healthy part of the cord or bulb, somewhat above the upper limit of the diseased region, should also be exposed to the *x* rays. As long as the sensory disturbances continue to retrocede, one ought to continue with the treatment, but if after three or four séances no improvement has resulted, it is useless to continue the treatment.

161. The Treatment of Pneumonia.

Burt (*Med. Rec*, March 30th, 1907) recommends that patients suffering from pneumonia should be placed in large, sunny rooms with wide-open windows, if not actually upon a roof or verandah. The more fresh air the patients get the better, because there is an extra demand for it, owing to the toxaemia and consolidation. If the weather is cold so much the better, since cold air, especially when dry, excites respiration and thereby promotes oxidation. It is also more concentrated than warm air, and therefor contains more oxygen to a given inhalation. The patient must be kept comfortable by extra bed clothing and hot-water bottles, if necessary. Hypodermic injections of physiological saline solution help to increase the patient's resisting powers. "This treatment," the author says, "has rescued a number of patients in my practice, as well as in that of many others, from impending dissolution." And the same beneficial result may, except in some emergencies, be accomplished with much less trouble by the administration per os of alkaline salts, consisting of 10 grains of sodium chloride, 5 grains of potassium bicarbonate, and 1 drachm of lemon juice, to 8 oz. of pure water every two hours. Opium should be avoided, since it weakens phagocytosis and depresses the respiratory centre. Alcohol, too, has a harmful action on the phagocytes, which are the chief means of defence against the infective micro-organisms, and is in its general effects depressing rather than stimulating. This drug, therefore, should either be avoided altogether or only used in very small amounts.

PATHOLOGY.

162. Streptococcal Erythema and Scarlatina.

Gabritschewsky discusses the experimental work done with regard to streptococcal erythema, and makes a number of deductions concerning the relationship of this condition and scarlatina (*Berl. klin. Woch.*, May 6th, 1907). The employment of his vaccine has, in his opinion, assisted in clearing up much that was dark in the pathology of these conditions. He finds that streptococci are capable of inducing scarlatiniform erythemata in the course of septic infections, and that vaccines prepared from streptococci derived from scarlatina are also able to induce scarlatiniform erythema and exanthemata. He believes that the punctiform erythemata and exanthemata of scarlatina, scarlatinoid and streptococcal vaccine, can be classified among the infective toxidermal affections, and that they are identical, pathologically speaking. The fact that punctiform rashes, and other symptoms usually associated with scarlatina, can occur in response to the introduction of scarlatinal streptococcal vaccine in the human subject may be regarded as an important and almost decisive fact in favour of the recognition of the streptococcus being the specific cause of scarlatina. He considers, further, that this supports the employment of Moser's serum in the treatment of scarlatina, and also the use of his vaccine both for the scarlatinal process itself and also for its complications.

163. Hypertrophy of the Hypophysis Cerebri after Thyroidectomy.

A. Cimoroni (*Lo Sperimentale*, Florence, 1907, lxi, p. 109) has studied the hypertrophy of the hypophysis cerebri that was observed to take place by Rogowitsch (1888) in animals from which the thyroid gland had been removed. This hypertrophy has been investigated by several experimenters since that date; Cimoroni shows that it is caused by ablation of the thyroid and not of the parathyroid glands. Certain of the hypophyseal cells, normally indistinguishable from their neighbours, enlarge very considerably after thyroidectomy; whereas after castration, as Fichera (1905) demonstrated, the hypophysis hypertrophies without the production of any such large cells. Cimoroni argues that there must be some special function attaching to these scattered cells that enlarge after thyroidectomy, but does not seek to specify it more definitely.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

164. Modern Diagnostic Methods in Diseases of the Stomach.

The work of Kussmaul and of Pawlow has led to the development of a new chapter in pathology of gastric diseases, and has resulted in the introduction of various methods of diagnosis. Schuele discusses these diagnostic means in some detail in the *Berliner Klinik*, July, 1907. Inspection does not teach much, while careful palpation is capable of eliciting important signs, for example, "splashing." In cases of enteroptosis, an abnormal movability of the tenth rib should always be sought for. It is also important to examine the skin for hyperaesthetic areas, which point toward gastric ulcer. With regard to the position and size of the stomach, one can percuss out the greater curvature during standing. *X* rays illumination further yields reliable results. Distending the stomach with carbonic acid or air (the former by giving an effervescing drink, the two powders to be taken separately) must be carried out with care, but if the quantity of gas used is not too great is of great value. It is of assistance to fill the colon with water first, when this is possible. With regard to *x* rays, the best method is to give a thickened soup containing a teaspoonful of bismuth. The bismuth produces a shadow on the radiograph. Turning to the determination of the quality and quantity of the secretion, he finds that the presence or absence of hydrochloric acid is the most important detail to determine. To carry this out, the patient is given a trial breakfast (Ewald) or a trial meal, and one hour after in the former case, or three hours after in the latter case, the stomach is emptied by the tube and the contents titrated against $\frac{1}{10}$ normal sodium hydrate solution. The total acidity is best determined by using red litmus paper as the indicator (phenolphthalein is not so reliable), while one uses Congo paper for determining the amount of free hydrochloric acid. The determination of combined chlorides can be carried out by various means, but this point is of minor importance. First it is necessary to measure the quantity of the contents of the stomach which is regained. Normally this is about 150 c.cm. Under certain circumstances the quantity can be materially increased, and the condition is then spoken of as hypersecretion. When the hypersecretion is permanent, one mostly has to deal with a stenosis of the pylorus. It may be due also to some temporary cause, such as digestive or alimentary irritation. He next mentions Sahli's method (called the desmoid reaction) of giving a little india-rubber bag tied up with a piece of catgut, containing a methylene blue pill. If the peptic activity of the gastric juice is sufficient to dissolve the catgut, the blue will be absorbed and will be excreted in the urine after from four to six hours, or, in delayed cases, after twenty hours. It has, however, been questioned whether catgut cannot be digested in the intestine. Schuele has employed the method frequently, but has obtained irregular results. It is often necessary to give both the trial breakfast and the trial meal. In summing up, he finds that when the hydrochloric acid is absent and the total acidity is not more than 10, one speaks of achylia; when the total acidity is about 30, and the hydrochloric acid value low, one speaks of hypochlorhydria; when the total acidity is about 70 per cent. and the free hydrochloric acid up to 0.1 per cent., of orthochlorhydria; and when the values are higher, of hyperchlorhydria. Lactic and acetic acids indicate fermentative processes in the stomach. Lactic acid is frequently found in connexion with carcinoma of the stomach. Clinical experience teaches that when lactic acid is found in the gastric secretion the diagnosis of carcinoma is probable but not sure, while when it is absent the presumption that cancer is not present exists. An exception to this is when the motility of the stomach is good and yet there is some stagnation. To determine the motility of the organ, one gives a trial breakfast, and washes the stomach out after six hours. The organ should be empty. Various other methods also give reliable results. Some of these are discussed in detail. He considers that the examination of the stomach should be carried out in somewhat the following manner: On the first day, palpation after the bowels have been cleared well out; percussion and the various direct outside methods. On the second day, expression of the contents after fasting and then washing it out; examination of the fasting contents for undigested bits, mucus, etc., or for acid (hypersecretion). On the third day, trial breakfast, washing out after six hours (for motility test). On the fourth day, trial breakfast, expression after one hour and testing chemically. On the fifth day, trial meal, expression after three hours and chemical examination. On the sixth day, radiographic examination. Mostly it is not necessary to carry out all these stages, but the plans for the first, fourth, and fifth days are essential in all gastric cases. The significance of occult or latent gastric haemorrhage is next dealt with. The detection of blood in the faeces by the turpentine and guaiacum test, after rendering the faeces acid with acetic acid and extracting by shaking up with ether, is of value. It is, of course, necessary to determine that the patient does not eat any food which contains blood, such as beef steak or the like, for some days before. A few other interesting remarks are also given.

165. Diphtheria Reappearing during an Attack of Measles.

Barbier (*Prog. Méd.*, June 22nd, 1907) recounts some cases of the reawakening of a passed or latent diphtheria under the influence of measles or scarlet fever, but especially the former, either when the child has been exposed to diphtheritic infection and has received a prophylactic inoculation of antitoxin, or when the child has had, and been cured of, an attack of diphtheria. C. A., aged 3½, entered hospital January 14th, 1907, for a pseudomembranous angina which appeared in the third week of an attack of scarlet fever. The child was given 30 c.cm. of antitoxin; only streptococci could be found bacteriologically. The membrane became detached on January 16th; the desquamation proceeded normally until February 23rd, when a morbilliform eruption appeared on the lower limbs, which lasted for two days. On March 6th the temperature was raised (38° to 38.5° C.), there was cough, and oculo-nasal catarrh. On March 8th the temperature was 39.8°, and a widespread and well-marked measly rash appeared, with more pronounced catarrh, the nostrils running copiously with an abundant muco-purulent discharge. On March 13th the eruption faded, and a yellowish-white membrane was seen around the nostrils, which contained Loeffler's bacillus. The patient had 10 c.cm. of antitoxin on the 13th and 14th, and the next day the membrane came away. The measles at once began to disappear, and the child was cured by March 24th. The second case was a patient wasted with tuberculosis, pulmonary and glandular; measles were contracted, and during the course of this infection an intense conjunctivitis set in. This proved to be diphtheritic, a thick white membrane soon uniting the eyelids; which membrane gave a culture of Loeffler's bacilli. In spite of a prophylactic inoculation of antitoxin thirty days before the appearance of the conjunctivitis the patient died. The third case was a child, aged 3, who came to hospital suffering from croup and diphtheria (Loeffler's bacillus present). She was given 30 c.cm. of antitoxin, and the membrane came away three days after. Two days later scarlatina appeared, and after two weeks measles. At the same time another membrane grew, which gave a culture of Loeffler's bacillus; 20 c.cm. of antitoxin was given, and this membrane was detached in four days. The child recovered quickly.

166. The Clinical Determination of HCl in Gastric Contents.

G. Bastogi (*Riv. crit. di Clin. Med*, Florence, 1907, pp. 289 and 305) has compared various methods by which the free, combined, and total HCl in fluids withdrawn from the stomach can be determined, and concludes that the Summer-Fischer method (*Amer. Journ. Med. Sci.*, 1903) is clinically the best and the quickest. Its sources of error are those common to all colorimetric methods, and it has the advantage of demanding no special chemical aptitude for its execution. It is carried out as follows: If the gastric contents contain free HCl, 5.0 c.cm. of the gastric filtrate are titrated with $\frac{1}{10}$ normal NaOH solution, with dimethyl-amido-azo-benzene as indicator; this gives the free HCl. A few drops of phenolphthalein solution are added to the mixture, and the total acidity is titrated in the same way. Then add to the mixture a volume of $\frac{1}{10}$ normal HCl equal to the two quantities of $\frac{1}{10}$ normal NaOH that have been added to it, bring the total volume up to 30.0 c.cm by

the addition of 4 per cent. solution of neutral calcium phosphotungstate, agitate, allow to stand a few minutes, filter (to decolorize) through animal charcoal, take 15.0 c.cm. of the filtrate and titrate again with $\frac{1}{10}$ normal NaOH, using alcoholic 1 per cent. rosolic acid as indicator. This third titration, doubled, gives the combined HCl.

SURGERY.

167 Late Recurrence of Mammary Cancer.

Bircher (*Zentralbl. f. Chir.*, No. 26, 1907) states that the hopes that by modern methods surgery might effect a permanent cure of malignant disease have been fulfilled but partially and to a slight extent. Although instances are on record of patients who after operative treatment have remained free from recurrence of cancer for periods of ten, twenty, and more years, there can never be any certainty even in cases of this kind that retarded relapse or metastasis will not sooner or later recur. Volkmann's assurance of a definite cure of mammary cancer on freedom from recurrence during the three years after operation has been disproved by recent statistics taken from many sources, which show that a return of the disease has been noted in more than a fourth of the number of patients who survived this interval with complete relief. Labhardt, who has made a laborious study of the literature relating to the results of surgical treatment in cases of cancer, asserts that no one who has gone through an operation for the removal of this disease can ever be regarded during lifetime as free from the danger of relapse. Most of the late relapses occur in the first decennial period after the operation. In the second decennium they are less frequent, and in the third they have been very rarely observed. Fifteen cases have been recorded of recurrent cancer of the breast after intervals from the date of operation varying from ten to thirty years. Hirsch has reported a case in which the patient remained free during twenty-five years. The two most remarkable cases in regard to lateness of recurrence were made known by Boeckel and Verneuil, in one of which the interval of freedom extended to twenty-nine, and in the other to thirty years. To the scanty list of cases of long-retarded relapse after operative removal of mammary cancer Bircher makes an interesting addition. A merchant, aged 52, came under surgical notice in 1890 with a small growth in the left breast of about twelve months' duration, which was associated with swelling of some of the axillary glands. In June of the same year the mammary growth was removed, together with an infiltrated portion of the pectoralis major, and, at the same time, the corresponding axilla was cleared out. The diagnosis of carcinoma was confirmed by histological examination of the excised growth. In February, 1904, the patient, who had remained in good health during the interval of twelve years and eight months, complained of pain in the mammary scar. A second operation was performed, by which the scar, together with three hard nodules and a portion of rib, were removed. Five months later death resulted from cancerous metastasis in the liver and the left shoulder. After a reference to the rare occurrence of cancer of the breast in the male, the proportion of affected males to females being about 2 per cent., the author points out the fact of the sudden and rapid development of metastatic growths after the second operation in his case, and discusses the question whether the later attack could be regarded as a retarded recurrence or really as no recurrence at all, but a fresh disease. This case, it is held, supports the view of an association between the two attacks. The growths removed in the second operation were in their histological structure completely identical with the primary tumour. They had started at different parts of the scar and at the same time latent metastatic germs began to develop. Such an attack cannot, it is urged, be explained solely by the view of a local disposition to cancerous disease, as the sudden outbreak of local recurrence and of metastasis must have been due to the influence of some factor favouring the proliferation of latent germs.

168. Ear Troubles in Caisson Workers.

Ear affections are the commonest troubles met with in men working in compressed air and are the result of an inequality of the pressure of air on the inner and outer surfaces of the membrana tympani. Maurice Philip (*Gaz. Hebd. des Sci. Méd.*. May 5th, 1907) has made careful examinations of workmen employed on an underground railway in Paris with a view of classifying the ear troubles caused in these men by being employed in an atmosphere of compressed air. As regards affections of the external ear, the author finds these are generally of little importance, consisting of small gaseous phlyctenules which cause aching and lancinating pain; these sometimes run into one another and give rise to subcutaneous emphysema; sometimes haemorrhage may occur in these blebs. Sometimes phlyctenules or haemorrhages occur in the tympanum itself, but the gravest affection is rupture of the membrane itself, which accident is accompanied by a noise like that of a cannon firing and often followed by syncopal attacks. Rupture of the membrane may occur during the stage of compression and results from a too low pressure of air in the tympanum, the result of pharyngeal, nasal or Eustachian tube obstruction. Rupture may also occur during decompression when this is carried out too rapidly. When a person is exposed to an increase of atmospheric pressure, the blood takes up an increasing quantity both of oxygen and nitrogen, the oxygen being dissolved in great part in the plasma whilst the nitrogen remains dissolved in the serum. If now decompression is carried out slowly, the gases in solution in the blood escape from the pulmonary alveoli and are eliminated during expiration. If decompression be carried out abruptly the nitrogen is given off in small bubbles, especially at those parts where the vessel walls are least resistant (the extremities of the arterioles and the capillaries). These bubbles of nitrogen form emboli, and by obstructing the vessel lumen produce two effects: anaemia of the region supplied by the obstructed vessel and blood stasis above the obstruction, the latter giving rise almost always to exudation or haemorrhage. When the internal ear is affected the symptoms produced are noises in the ear, deafness, and vertigo; these may be the result of either a simple labyrinthitis or of a haemorrhage into the labyrinth, the former being due almost always to an increase of the intralabyrinthine pressure; the latter is a much more grave condition; it causes not only total deafness but also general symptoms—pallor, nausea, vomiting, syncope; the haemorrhage in these cases may occur into the canal of Rosenthal, into the semicircular canals, cochlea, auditory nerve, etc. Sometimes the blood is slowly absorbed and the general symptoms retrocede; but often inflammation of the labyrinth follows and causes an atrophy of the organ of Corti. Lastly, the clot may organize and give rise to further irritation. These labyrinthine troubles may arise either during the stage of compression or of decompression, sometimes several hours after. From a consideration of the cases which the author has examined he concludes that as a rule the affections of the external and middle ear subside gradually, and a cure more or less complete results, although a certain impairment of hearing power almost always persists. In a labyrinthine affection, if the symptoms subside after some days of repose, and if the vertigo and deafness diminish, one may hope for a cure with the exception of a certain loss of hearing power. If, on the contrary, the symptoms persist, hearing power and the power of equilibrium are likely to be seriously impaired. In the treatment of these ear affections the method of recompression gives good results in mild cases. In the case of a haemorrhage into the auditory canal or a rupture of the membrana tympani, a small plug of cotton-wool in the canal and a cotton-wool dressing over the ear is sufficient. In middle-ear affections catheterization of the Eustachian tube cautiously and regularly carried out will serve to clean away the exudate contained in the middle ear and to equalize the pressure of air on both sides of the tympanic membrane. In affections of the internal ear one may give internally strychnine arsenate and the iodide of sodium in small doses; during attacks of vertigo amyl nitrite may be inhaled, or a dose of nitro-glycerine may be given. When there is hyperaemia, or a haemorrhage in the labyrinth, sulphate of quinine should be given internally, and subcutaneous injections of pilocarpine will aid the absorption of the exudate. As regards the prophylactic treatment, the author points out the necessity of excluding from working in compressed air of all those suffering from any cardio-vascular affection or auditory affection; hysterical and neurasthenic subjects also should not be allowed to work under these conditions. Compression should be slow; the greater the compression the less time should the workman remain subject to it. With a pressure of two atmospheres eight hours is the maximum length of time a man should work in it. The caissons ought to be large, and the proportion of carbonic acid should never reach 1 per cent. Decompression should be slowly carried out.

169. Crural Hernia of the Ureter.

C. Provera (*Giorn. d. R. Accad. di Med.*, Turin, 1907, p. 131 describes the case of a woman of 24 who came up for opera-

tion with a right crural hernia of a year's standing. Her brother had a right inguinal hernia, and one of her three sisters had bilateral hernia. The patient's tumour was the size of a walnut, painless excepting at the time of the menstrual flow, and reduced itself spontaneously when she lay down. When the sac was found, it had in its outer part a pink, rounded cord, the size of a goose's quill, looped. Light traction on the inner side of the sac brought part of the bladder into view, just at the point where the ureter, here reddened and dilated, entered it. The sac itself contained a little piece of omentum. The operation was performed in the usual way, and the patient made a straightforward recovery; at no time did she have any renal, ureteral, or vesical symptoms. Provera gives and discusses the literature of the subject.

OBSTETRICS.

170. Caesarean Section in Prolonged Labour.

Gosse (*Comptes rendus de la Soc. d'Obstét. de Gynéc. et de Pédiat. de Paris*, June, 1907) read a case before a medical society last June, which led to a discussion on the practice of Caesarean section in urgent circumstances. His own patient was 24; labour set in at term, but the first stage was very lingering; the os was rigid, meconium came away, soiling the patient's thighs, and the conjugate diameter was 10.5 cm. The presentation was left occipito-transverse, the left parietal bone over-rid its fellow, and the head remained entirely above the brim. The pains were very strong and frequent. Thirty hours from the beginning of labour Caesarean section was performed. The fetus was found to be covered with meconium, but it was still living; the fact that the heart sounds were audible just before the beginning of the operation was one of the chief reasons for its performance. The placenta, attached to the posterior aspect of the uterine cavity, was detached, and a strip of gauze passed through the cervical canal into the vagina. The uterine wound was closed with interrupted silk sutures passed through the muscular and serous coats, but avoiding the mucosa; the serous coat was united with interrupted silk sutures introduced between the deeper silks, which lay about ½ in. apart. The upper part of the uterine wound suppurated, and pus discharged from a fistulous tract through the abdominal wound on the sixth day; ultimately, a silk came away, and the patient recovered. The child also was saved. Its cranial bones at birth were much flattened on the left side, and were prematurely ossified. On the day after its birth it weighed over 7 lb., and measured nearly 20 in. It was brought up by the bottle, and when 7 weeks old weighed 9 lb., and was in very good condition. Gosse dwells on these facts to show that prompt Caesarean section saved the life of a fine child with little risk to the mother, herself in danger owing to the pronounced retraction of the uterus. Pinard, in discussing the case, agreed with Gosse and recorded a case under Lepage, where conditions were similar—the uterine wall was stained by the meconium, yet the mother and child were saved; and Pinard himself was equally successful in another similar instance. Champetier de Ribes remarked how boldly and satisfactorily obstetricians performed the Caesarean operation in these days.

GYNAECOLOGY.

171. Chronic Metritis.

A. Donald (*Journ. of Obst. and Gyn. of the Brit. Emp.*, February, 1907) gives a comprehensive account of the progress and results of certain inflammatory processes as they affect the uterus, tubes, and ovaries, and deals especially with cases of chronic metritis and endometritis, in which, from the first, the mischief is mainly uterine, and in which there is never any acute stage. In these cases the symptoms usually date from a confinement or miscarriage, the recovery from which may have been considered to be good, although careful observations of the pulse and temperature would have shown that convalescence had not been perfectly satisfactory. The history will be that the patient, while still in bed, felt fairly well, but on beginning to move about found that she was easily tired, and in most cases complained of pain or, perhaps, only of dragging or discomfort in the hypogastrium or in one or both iliac regions. In the earlier stages there might be leucorrhoea, and the periods, when established, would tend to be profuse or long-continued. If the patient should again become pregnant there would be a liability to miscarriage, which, if it occurred, would almost certainly cause an increased severity of the symptoms. In the later stages of the condition the pain or dragging sensation in the iliac regions is common and is aggravated by standing or walking; in exceptional cases leucorrhoea may be persistent, in some cases, especially in those of women over 40 years of age, haemorrhage may be a prominent symptom and may be so profuse as to affect the general health or even to endanger life. The author draws special attention to the symptom of pain or dragging in the iliac region, because he believes it to be caused by the pull or strain of an abnormally heavy uterus, which has sunk in the pelvis upon the broad and round ligaments, and not, as a rule, by ovarian trouble, as has been supposed. The one physical sign common in all these cases is enlargement of the body of the uterus; in some cases the cervix may be lacerated and hypertrophied, or it may be thickened without obvious laceration, or it may show an erosion; there may be retroversion or exaggerated anteversion, or if the isthmus of the uterus is unduly pliant there may be anteflexion or retroflexion. For the pathology of the condition the author makes use of an article published in the same journal by W. F. Shaw, who gives the fullest account of microscopic changes in chronic metritis, the account being based upon the most copious material and careful investigations. Shaw attributes the increased thickness of the uterine walls to overgrowth of both muscular and cellular tissue, which, according to him, are increased almost equally, but with a very slight excess of connective tissue; he finds no constant changes in the vessels. The endometrium was definitely thickened in all but two of the 25 cases in which it could be measured, and in these two cases a simple explanation could be given. There are three main theories as to the cause of chronic metritis—those of: (1) Passive congestion; (2) inflammatory change; and (3) muscular hypertrophy. With respect to the first theory, the condition which is held to give rise to passive congestion is that of retroversion, but the arrangement of the circulation in the uterus makes it exceedingly improbable that alteration in the position of the organ, when healthy, should cause passive congestion; and the uterus is not always enlarged, even in cases of marked retroversion, while the fact observed by Shaw that there is no characteristic change in the blood vessels would of itself negative the theory. The position with regard to the other two theories is not absolutely clear; the author believes that most cases of chronic metritis show both hypertrophy of muscular tissue and increase of connective tissue. The treatment of chronic metritis must depend upon the pathology and the theory of causation adopted. It is obvious that when the theory of passive congestion is discarded treatment by pessaries, or by operation for reposition and fixation of a retroverted mobile uterus must be discarded also, and the author believes that the use of pessaries for backward displacement eventually does more harm than good, while a round ligament or fixation operation never causes reduction in the size of an enlarged uterus. As palliative treatment in the early stages he recommends rest in bed, frequent vaginal douching with hot water, tonics, and careful attention to the bowels. For cases with marked enlargement of the uterus accompanied by typical symptoms the treatment is curetting, carried out with the most rigid aseptic precautions, and repeated if necessary. For bad cases with prolonged haemorrhage, which repeated curettings have failed to cure, vaginal hysterectomy is generally agreed to be justifiable, and the author thinks that the operation should also be used in cases in which, even without much haemorrhage, the patients' lives are made miserable at a period when they should be most active, provided that everything points to the uterus being functionally useless and repeated curetting does no good.

THERAPEUTICS.

172. Marmorek's Serum in Tuberculosis.

Gustav Baer (*Muench. med. Wochenschr.*, No. 34. August 20th, 1907) records a case from Turban's sanatorium in Davos-Platz in which treatment with Marmorek's serum resulted in the apparent cure of a long-standing tuberculosis, but was attended with curious cerebral symptoms. The patient was a young woman, 23 years of age, whose mother died of tuberculosis of the lung. She herself was a delicate child, who at 6 years of age developed coxitis, and at 11 years of age had some disease in the lung, which appeared to be healed after several years' treatment. In October, 1906, she had pain in the left knee, followed by

swelling and fever, and in December the cough recommenced. She was a nervous subject, but not hysterical. The knee was fixed, and on February 14th, 1907, a daily rectal injection of 5 c.cm. of Marmorek's serum was commenced. About an hour after each injection a local reaction was apparent in the knee. The patient's temperature, which before the injections rose to 38.3° C. (101° F.), fell after six injections to 37.3° C. (99° F.). On February 20th, after the seventh injection, the patient was suddenly seized (5 p.m.) with palpitation, faintness, and rapid rise of temperature; the pulse was 132 and the breathing undisturbed. There was a feeling of sickness, but without vomiting. Later (7 p.m.) the pulse had fallen to 90, there was intense headache, the pupils were dilated, and hallucinations of hearing were followed by almost complete deafness. The breathing became disturbed, Cheyne-Stokes respiration occurred; the pulse became irregular, rapid, and small. The patient did not entirely recover from the attack for about twenty-four hours. Similar, but less severe, attacks followed subsequent injections of the serum.

173. Adrenal Extract in Chloroform Poisoning.

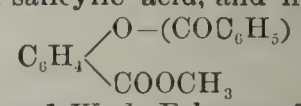
Kothe, an assistant in Sonnenburg's clinic (*Zentral. f. Chir.*, No. 33, 1907), in a paper on the restorative action of adrenal extract in acute and intense cardiac failure, insists on the pressing need of an efficient and safe treatment of serious asphyxia due to poisoning by a general anaesthetic. Massage of the heart after more or less exposure of this organ by operation has not, it is stated, given results favourable to so severe a procedure. The author's attention has recently been directed to the results of recent research on the general action of adrenal extract, which show that this substance, in addition to its great efficacy as a local haemostatic, is capable of exerting a marked stimulating influence on a failing and collapsed heart. Gottlieb has found that by the injection of a solution of adrenal extract into animals poisoned by chloral hydrate, the action of the heart can be kept up until the period of danger has elapsed. It occurred to Kothe that a like result might be thus attained in cases of cardiac collapse caused by chloroform poisoning, and he has proved by experiments on animals that when the heart's action has been arrested by an excess of inspired chloroform, the blood pressure can in the course of a few minutes be raised not only to the normal degree, but even beyond this. The author has not had any opportunity of trying on the human subject the effects of injection of adrenal abstract in chloroform poisoning, but he reports two instances in which he practised this method with complete success in the treatment of very intense collapse, regarded as the result of lumbar anaesthesia, in one patient by cocaine, in the other by stovaine. Although he fully recognizes the value of this method of producing anaesthesia, which is frequently used in Sonnenburg's clinic, he is of opinion that it is not so harmless as is generally supposed. The details of the two reported cases seem, however, to indicate that in each the grave condition removed so effectually by the injection of adrenal extract was one not so much of poisoning by an anaesthetic agent as of severe shock following a prolonged abdominal operation on a subject of advanced age. The symptoms in both cases, which were certainly very grave, the heart sounds being no longer audible, began to improve in about ten seconds after intravenous injection of a very weak solution ($\frac{1}{20000}$ to $\frac{1}{10000}$ of a gram) of adrenal extract. At the end of this paper, which shows that injections of adrenal extract or epirenan are likely to be found very useful in cases of severe shock and of poisoning by a general anaesthetic, the author points out the necessity of caution in applying such treatment to any patient whose heart has been weakened by a long and exhausting illness.

174. Atoxyl in Malaria.

G. Fusco in a pamphlet (Naples, July 6th, 1907) gives a short review of the use of atoxyl (meta-arsenic anilide) in various protozoan infections, and records three cases of malaria in which he used it with success. Two of his patients had not been improved by the daily administration of quinine injected subcutaneously, but recovered completely after two subcutaneous injections of 1.2 c.cm. of 10 per cent. atoxyl solution. Fusco believes that atoxyl has a specific action against the plasmodium of malaria, and suggests that under exceptional circumstances the malarial parasite and the *Treponema pallidum* of syphilis may both become habituated to and able to resist their respective specific remedies, producing the malignant forms of syphilis or of malaria resisting the actions of mercury or quinine.

175. Benzosalin.

Hoffmann, La Roche and Co., of Bâle, aiming at producing a salicylic preparation which could only be dissolved in the intestine, so that it would not induce any gastric symptoms, have manufactured a substance which they call "benzosalin." This substance is said to be the methyl ester of benzoyl-salicylic acid, and has the formula of:



R. Freund (*Deut. med. Woch.*, February 28th, 1907) finds that the substance is scarcely dissolved in gastric juice, but is easily dissolved in the intestine, forming solutions of its two acids, the salicylic acid and the benzoic acid. He realizes, therefore, that a preparation which has the actions of these two substances without producing any irritation on the stomach must be of value. Benzoic acid and salicylic acid have certain points in common and certain differences. Both leave the body after having paired off with glycocoll, both act as strong antiseptics, both increase the tissue change in the human and animal organism greatly, both reduce the body temperature, and both retard the respiration. On the other hand, the sodium salt of benzoic acid acts antiseptically, while that of the salicylic acid does not. Benzoic acid produces an extremely short period of excitement, followed by a prolonged stage of paralysis, while salicylic acid produces a prolonged stage of irritation, followed by a very short paralytic stage. Salicylic acid produces intense singing in the ears and sweating, and at times also dyspnoea, while benzoic acid scarcely ever produces these symptoms. Salicylic acid in toxic doses produces a cardiac paralysis, while benzoic acid produces a respiratory paralysis. The *post-mortem* changes in salicylic acid poisoning are characterized by ecchymoses in the pleura and heart, and in benzoic acid poisoning by ecchymoses in the stomach. Lastly, benzoic acid has an expectorant action. With regard to the effect on the nervous system, he considers that when both substances are circulating in the body at the same time, the antagonistic action might to some extent prevent the usual unpleasant singing in the ears, sweating, and dyspnoea. Even when he gave 4 grams of benzosalin he never experienced these symptoms. He was particularly interested to see how the new preparation would affect the heart. Being fully satisfied with the action in persons with sound hearts, he tried it in those with cardiac diseases. He quotes some cases in support of his statement that even in marked disease benzosalin is well tolerated. He regards it as a cardiac tonic, and claims as its advantages that it does not affect the stomach, that it does not act harmfully on the heart, that the dose—0.5 gram, given up to six times a day or more—is a small one, and that it is not expensive. He prefers the preparation to other salicylate preparations in cases of irritable stomach and weak heart.

PATHOLOGY.

176. Tuberculosis of Alimentary Origin.

Bonome (*Gazz. degli Osped.*, July 14th, 1907) since 1889 has made 4,224 autopsies, of these 769 were cases of tuberculosis and 126 (out of the 769) were examples of primary tuberculosis of the intestine. In one case the origin of the tuberculosis seemed to be oro-pharyngeal. Sometimes no obvious lesions were seen in the intestine itself, sometimes two or three crater-like ulcers (usually in the ileum) could be seen. The mesenteric glands were always affected. Where no intestinal lesion could be detected the author prefers to think that such a lesion had really existed, but was healed, rather than to believe no lesion had ever existed. In the statistics all secondary tuberculous injection of the intestine or mesenteric glands was excluded, but the cases included those which showed tubercle elsewhere than in the intestine or mesenteric glands. Primary intestinal tuberculosis is, as one might expect, much more common in childhood and infancy than in later life, for example, in childhood the percentage as compared with tuberculosis in general is 23.84, in adults 16.03, and in the old 6.25 per cent. The author gives details of 129 cases of primary intestinal tuberculosis occurring at various ages since 1889. In experimental aërogenic infection with bacilli the germs as a rule do not reach the trachea, but lodge in the nasopharynx, and infection occurs through the lymphatics much in the same way as happens in the upper digestive tract. The changes in the mesenteric glands show that infection is usually brought by way of the chyliferous ducts, but it may happen via the blood.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

177. Sudden Rise of Arterial Tension in Typhoid Fever.

Huchard and Amblard (*Rev. de Méd.*, July 10th, 1907) think that, when in the course of typhoid fever a sudden rise in arterial tension takes place accompanied by a galloping cardiac rhythm, a rapid aggravation of the patient's general condition is to be feared. As a rule, in typhoid fever, the blood pressure is very low. In 4 cases recently seen by the authors, intestinal haemorrhage and perforation were preceded directly by sudden rises in arterial tension. This heightened tension is, however, very transient, being followed by a phase of low tension, with a threadlike and very rapid pulse. In the 4 cases the authors had noticed slowing of the pulse, with a rise of tension and a *bruit de galop*. These signs were invariably followed by haemorrhage or perforation, which in their turn were quickly succeeded by a sudden fall of tension and a quickening of the pulse-rate. The cardiac sounds heard in these cases were a bruit following the first sound, and produced to all appearances by the contraction of the ventricle being accomplished in the action to overcome the peripheral resistance; the cardiac muscle stopping short in its contraction, not relaxing, but remaining for a moment stationary, and, as it were, breathless, seemingly taking breath before completing the systole, and so accomplishing that by a double action. Whatever may be the accepted interpretation of the modification of the first sounds, the authors are sure that it is not the doubling of the second sound which Hayem noticed in typhoidal myocarditis, and which would be a sign of weakness of the cardiac muscles, as is witnessed by the increased arterial tension which accompanies it. The increased arterial tension observed in the cases was not due to any accompanying myocarditis. Nor was it due to an increase of temperature. Is it due to reflex action starting from the intestines under the influence of the aggravation of the lesion? It is allowable to think that either the sudden rise in arterial tension is a reflex phenomenon, produced in the walls of the blood vessels by the aggravation of the intestinal lesions, or that the state of vaso-constriction is due to an increased virulence of the bacillus of Eberth, the toxins being thrown upon the system in greater quantity. Vulpian says that the vasomotor apparatus is always active, and never at rest, so that the walls of the vessels are always in a state of semicontraction. Sharp pain to the surface can cause constriction of the blood vessels all over the body. It may be possible that the ulceration of a Peyer's patch can do the same. But this toxic origin is also very doubtful. In typhoid fever the heart should be regularly examined, as myocarditis is a frequent complication. The pulse gives valuable information, both rate and tension being important factors in forming a prognosis; arterial hypertension plays a large part in the production of haemorrhage of every description. Baxbarg in 1905 demonstrated the following facts: That haemoptysis in tuberculosis is brought about by a transient rise of arterial tension; and that prophylaxis of haemoptysis consists in the treatment of the various causative factors in the increased tension, which are often unrecognized or unsuspected in the tuberculous patient.

178. Essential Paroxysmal Tachycardia.

Baccelli (*Gazz. degli Osped.*, July 4th, 1907) reports in detail the case of a man aged 48, who suffered from very severe attacks of paroxysmal tachycardia. The attacks always began with a severe pain in the precordial region, and from lasting a few minutes at first came to persist for a month. The pulse was irregular and beat over 250 per minute, and was associated with cyanosis, ascites, oedema, and all the signs of heart failure. No improvement followed ordinary treatment, including hypodermics of strophanthin. But an extraordinary improvement was noted as soon as this drug was given endovenously, starting with a dose of ½ mg. The strength was increased to 1 mg., when the pulse-rate fell to 200, to 180 after the second injection, and to 80 after the third, and finally to 60. The improvement was maintained, diuresis increased from 100 c.cm. to 3 litres of urine; the heart, which had been dilated, resumed its normal size, and the liver decreased, whilst all oedema disappeared. No organic or valvular disease could be detected. This excellent result was also repeated in another case of tachycardia similarly treated by endovenous injections. The author believes that these cases of tachycardia are due to functional disease of the cardiac ganglia and not of the vagus, and quotes some experiments in support of this view. Whatever the exact pathology, there is no doubt as to the extremely satisfactory nature of the results of treatment in the two cases quoted by the author.

179. Serous Meningitis.

G. Riebold describes a number of cases of serous meningitis, and discusses many points of this disease (*Deut. med. Woch.*, November 15th, 1906). The first case was that of a man of 47 years. He was seized on May 4th with intense headache and fever suddenly. During the following days severe pains in the head and limbs, cough, high fever, loss of appetite, constipation, and sleeplessness were the salient symptoms. At first he was only a little clouded in his mind, but later he became quite unconscious. On admission his temperature was 104° F., pulse 100. The tongue was coated and trembled on being protruded. The right pupil was larger than the left one, but both reacted promptly to light and accommodation. A small pneumonic patch was discovered in the left lower lobe, the spleen was just felt. His leucocytes were diminished to 9,600 per c.mm. Diazo test and Widal were negative. On May 13th he became completely comatose. The motor oculi muscles were paralysed and double papillitis was noted. On the evening of this day lumbar puncture was performed and a pressure of 280 mm. of water was registered. The cerebrospinal fluid was quite clear; 25 c.cm. of this fluid were allowed to escape, and the pressure fell to 110 mm. The fluid proved to be sterile. The general condition improved, but on the next day he became worse again. A repetition of the lumbar puncture reduced the pressure again and removed 10 c.cm. of sterile clear fluid. From that time onwards the patient made a slow but steady recovery. Two other cases showed similar clinical signs and reacted similarly to lumbar puncture. The fourth case was somewhat different. This was the case of a boy, aged 7 years, who was admitted on July 13th with the history of having been attacked with morbilli on the 1st and of having become drowsy on the 9th. The chief symptoms were fever, coma, rapid irregular pulse, conjugate deviation of the eyes, grinding of the teeth, orthotonos and retracted abdomen. Later the muscles of the extremities became flaccid and paralysed, and showed signs of atrophy, and the nerve trunks were tender. Bed sores developed. From this time onwards the paralysed muscles gradually recovered their function and the lad became mentally clearer. He was discharged on November 28th completely recovered, but a certain degree of mental weakness was evident. The fifth case is similar to the fourth, and is characterized by a rapid recovery after the spontaneous discharge of blood-stained purulent material from the ear. Serous meningitis begins with signs of inflammation, redness and sometimes haemorrhagic effusion, round-cell infiltration, and exudation into the membranes. The changes spread from the pia mater rapidly to the ventricles, and lead to the development of an internal hydrocephalus. After it has existed for some time a tendency for the ventricles to be cut off is shown. The author believes that in one of his cases the brain itself participated in the inflammatory changes. With regard to the pathogenesis, he states that any agent capable of producing inflammatory changes may give rise to the disease. He quotes measles, typhoid fever, pneumonia, phthisis, influenza, and otitis media, as the most common forerunners. Spontaneous development of the condition seems to take place, and it has been suggested that these cases may in reality be rheumatic in origin. It is also probable that non-parasitic toxic agents, which are capable of producing inflammation, may at times be the causes of this disease. He believes that the disease is by no means so uncommon as is usually supposed. After dealing briefly with the diagnosis, he raises the question whether the drowsiness and unconsciousness met with in enteric fever does not depend on inflammatory changes in the membranes of the brain, and quotes cases in support of this contention. Acute serous meningitis may take on a somewhat chronic course and lead to chronic internal hydrocephalus. Even under these circumstances Quincke's

lumbar puncture may be effective in causing the pressure to become normal again. When this is not the case the milder cases show obstinate headache, attacks of giddiness, and anomalies of mood. The severest cases assume the types of cerebral tumours. Riebold quotes a typical case of chronic hydrocephalus. In conclusion he points out that in mild cases lumbar puncture is of great value as a diagnostic and therapeutic agent, and in severe cases it also acts surprisingly well in many cases, and it is therefore advisable not to limit the use of this safe procedure to too narrow lines. In every case of severe cerebral disease, in which there is doubt as to the exact nature of the changes, it is absolutely necessary to employ the puncture and thus to clear up the diagnostic doubt.

SURGERY.

180. The Surgery of the Heart and Pericardium.

REHN (*Zentralbl. für Chir.*, No. 31, 1907), in an abstract of a paper read at the last meeting of the German Surgical Society, discusses at some length the indications for surgical intervention in cases of gunshot and other penetrating wounds in the cardiac region, and describes what he considers to be the best method of exposing the injured heart. Attention is also directed to the prognosis of such treatment, and reference made to a recent case in which the author sutured with fatal results a large stab wound of the right ventricle. In some preliminary remarks on the symptoms of wound of the heart, the author points out the analogy between the phenomena of intrapericardial and of intracranial haemorrhage, death in both instances being caused either suddenly by a rapid and profuse effusion of blood, or remotely and indirectly by gradual compression of the nutrient vessels of the injured organ. It is held, in regard to the indications for operation in cases of wounded heart, that although spontaneous cure has undoubtedly occurred in some of these instances, the subject of a sutured heart is in a more favourable condition than one who has recovered without surgical intervention. If the patient present alarming symptoms of cardiac compression, or of severe internal bleeding, an operation, it is asserted, should be practised. If in a case of stab-wound, the wounding body—a knife or dagger, for instance—be still fixed in the heart, no attempt should be made to remove it before the pericardium has been freely exposed and opened. The different methods of cutting down on to pericardium by the formation of large flaps of the thoracic wall are, in the author's opinion, too severe, as they intensify shock and favour infection. He prefers a single intercostal incision carried outwards from the margin of the sternum and passing through the external wound. If, after partial resection of one or more ribs, further exposure of the wounded region is required, a second skin incision is made along the outer margin of the sternum at right angles to the first, and, after division of the exposed costal cartilages, the two small flaps comprising skin and bone are forcibly separated. The author insists on the necessity of dealing very carefully with the pleura. If it be impossible to avoid wounding this membrane—which, in fact, is often involved in the original injury—the surgeon should endeavour to keep the orifice within very narrow limits. As a method of arresting haemorrhage, which is often profuse and embarrassing from the cardiac wound during the application of sutures, the author suggests temporary digital compression of the vena cava near its insertion into the right auricle. This he has found in experiments on dogs to be practicable and harmless. For closing the wound in the heart an interrupted suture of fine silk is recommended. The statistics of cardiac suture collected by Rehn show that in 124 recorded cases the percentage of recoveries was 40, and that of the fatal cases death was due in 44 per cent. to haemorrhage and shock, and in 40 per cent. to infection. This paper is followed by another on the same subject by Sauerbruch, who gives the results of a series of experiments on the technique of operations for exposure and direct treatment of a cardiac wound. He holds that his pneumatic chamber would be found very useful in operations on the heart, as it would allow free incision and rapid exposure of the pericardium. The association of pneumothorax with a wound of the heart is regarded as favourable, as bleeding from the heart, especially from the left side, is thus much reduced. Free bleeding from the heart can, he asserts, be arrested by temporary compression of both venae cavae, which, it is asserted, can be kept up in dogs during ten minutes without any bad result. The cardiac cavities may thus be rendered bloodless and be opened and explored.

181. Torsion of the Great Omentum.

M. LAPEYRE of Tours (*Archives Provinciales de Chirurg.*, May, 1907, p. 270) distinguishes two varieties of torsion of the great omentum. The first is the hernial type simulating strangulated epiplocele, with which it has been confounded until recently. The second is the abdominal or appendicular type simulating appendicitis. M. Lapeyre reports 2 new cases illustrating these varieties. A railway porter, aged 40, was subject to a right inguinal hernia for about six years and recently it had become irreducible. When lifting a package, a violent attack of pain occurred followed by nausea. A few hours later Lapeyre was called in and detected what appeared to be a strangulated irreducible epiplocele. On opening the sac he found a mass of almost sphacelated omentum with greatly distended veins. Yet the neck of the sac did not press on it, and on drawing more of it down the portion previously above the sac was seen to be in a similar condition. The skin incision was, therefore, prolonged. Within the abdominal cavity the omentum was found twisted three times on its long axis from left to right. The twisted part formed a cord-like structure as thick as a thumb. The omentum above it was healthy, it was ligatured and divided. The patient made a good recovery. In the second case the patient was a dealer in manure, aged 44. He was seized, when on a business journey, with a pain like a slap just after lifting some heavy bags, and then returned home by rail. The journey lasted three hours; when the patient reached Tours he was very ill, and vomited feculent material almost incessantly. Pain became intolerable. There was distinct swelling on the right side from the ribs to the groin. The patient had noticed a right inguinal hernia twenty years before, cured apparently by a truss worn for about four years. The patient was so ill that operation was deferred for a day, then an incision was made as for appendicitis. A greatly thickened omentum, bearing engorged and thrombosed veins, was discovered. Inferiorly it lay in a shallow hernial sac, to which it adhered rather firmly. Close up to the transverse colon the omentum was twisted four turns, forming a cord as thick as a little finger, and about 2 in. in length. The entire omentum was ligatured and removed; it weighed over a pound. The patient died of septic peritonitis fifty-four hours after the operation. When admitted into hospital he observed that when lifting big sacks of compost he was accustomed to lean them against his abdomen. These cases are certainly instructive both for their marked clinical symptoms and gravity, and also for their diagnostic peculiarities.

182. Phlebotomy.

JACOBS (*Amer. Journ. of Surg.*, No. 4, 1907) describes a new method of blood-letting, which minor operation, he states, though its use is restricted in both private and hospital practice, often proves when indicated a life-saving measure. The method described has been in use for the past few months in the services of Dr. Meyer and Dr. Manges at the Mount Sinai Hospital, New York. The instrument is an aspirating needle 2 in. long and of a calibre of $\frac{1}{16}$ in. To this is attached a rubber tubing from 4 in. to 6 in. in length, at the end of which is a small glass cannula. After the application of a tourniquet to the arm, the needle is introduced into the lumen of the selected vein in a reverse direction to that of the blood current. This introduction is immediately followed by a flow of blood. A sterile flask is used for the collection. After the needle has been withdrawn a fairly firm compression bandage is applied over the site of the puncture. The advantages of this procedure, which requires about five minutes, are: (1) No incision is necessary; (2) it is clean, easy, and effectual; (3) the amount of blood withdrawn can be measured exactly; (4) the blood is sterile and can be used for cultural purposes.

OBSTETRICS.

183. Intractable Vomiting of Pregnancy.

PEUCH (*Province Médicale*, June, 1907) discusses the causation of the vomiting of pregnant women, and the two main theories now put forward by Kaltenback and Pinard. The former attributes it to an abnormal excitability of the reflexes, and regards it chiefly as a nervous manifestation of pregnancy, while the latter holds that it is due to hepatic intoxication. This second theory is not easily reconciled with the circumstances under which intractable vomiting may be produced. Accidents of a hysterical kind are generally initiated by emotional excitement, especially of an unpleasant description, and such cir-

cumstances are not uncommonly found at the onset of an attack of hyperemesis. The wife of a coffee-house keeper was seized with vomiting immediately after a police raid upon her husband's shop; her symptoms became so alarming that it was necessary to induce abortion in the second month. Another patient began to vomit after the death of her sister subsequent upon an operation for a disease of the liver, and was convinced that she suffered from the same disease. Abortion was also necessary in the case of a lady, previously diagnosed as neurasthenic, who had a serious disagreement with her husband, the vomiting beginning coincidently with the agitation she experienced. A lady having been told by a palmist that she would die within the first year of marriage, developed hyperemesis in the second month of her pregnancy, and again in the sixth month, and finally succumbed. Infectious diseases are also provocative of hysterical manifestations, and cases of vomiting are reported as following attacks of measles, scarlatina, rheumatism, and influenza. Statistics show that the onset of vomiting most frequently occurs during the first few weeks of pregnancy—namely, at a time when gestation is not far advanced, which is not favourable to the theory of hepatic intoxication; if pregnancy stimulates nutrition, then nutritive activity must increase as pregnancy advances, and the strain upon the organs of elimination becomes greater. If vomiting is the result of the retention of toxic material in the organism, it should be met with in the later rather than in the earlier months of gestation. This is what occurs in eclampsia, which seldom declares itself before the fifth or sixth month. The evolution of intractable vomiting resembles that of nervous phenomena. A lady in her third month, who had undergone various treatments, and was still unable to retain anything, suddenly asked for some *foie gras*, which she eat and retained; she then partook of some lobster, and continued to live on these two articles of diet for some days, and afterwards was able to extend her diet; meanwhile all vomiting ceased, and her pregnancy terminated successfully. Another patient was cured by the application of a solution of nitrate of silver to an imaginary ulcer of the cervix. Caneaux reports a case which had retained nothing for three weeks, when her husband suddenly became dangerously ill; immediately the vomiting stopped, and did not recur again. Tarnier has checked the vomiting by a change of residence, and electrical applications have been equally successful. Sudden and complete disappearance of the hyperemesis is not compatible with the theory of toxaemia, for a liver which is inefficient tends to become more so, and could only with great difficulty recuperate enough to resume its function adequately. On the other hand, a cure is not always effected, and recovery is generally slow. Many varieties of treatment have been employed more or less beneficially for such patients, but one finds that the moral influence of the remedies has had considerable effect in producing the cure. In such methods as the use of electricity, the breast pump, cauterization, lavage, the introduction of a bougie, and finally of abortion, suggestion plays an important part. The element of suggestion, as in many hysterical phenomena, seems to explain the different results obtained by the therapeutical measures undertaken to check the vomiting. The author concludes that hyperemesis does not always indicate renal or hepatic insufficiency, but that in the greater number of cases it has a nervous origin.

GYNAECOLOGY.

184. The Treatment of Vaginal Lacerations.

Rudaux (*La Clinique*, July 20th, 1907) writes that laceration of the vagina is a frequent accident during labour; that it is a cause of complications at the time, such as haemorrhages, of secondary infections, and later on of troublesome cicatrices and contractions. It is important to recognize these wounds and to repair them at once. He gives several different methods of treating them, and urges that instrumental delivery should only be resorted to when absolutely necessary, and that too much care and gentleness cannot be exercised in the operation. In cases where the tear does not extend deeper than the vaginal mucous membrane it is sufficient to employ very careful antiseptic treatment to obtain healing by first intention. In deeper wounds the haemorrhage is often troublesome, and may require to be checked either by hot douches or by the application of pressure forceps, which may be left on for some hours, or by introducing the fingers into the vagina and exerting pressure for from ten to fifteen minutes. Also tampons of gauze or cotton-wool may be used to plug the cavity and kept in for twelve hours. Surgical treatment consists in suturing immediately; when the edges of the wound are brought into apposition the risk of sepsis is lessened and cicatrization prevented. When the wound is high up in the vagina it is difficult to reach it easily; wounds of the lower part are readily accessible, but generally complicated by a rupture of the perineum, for which it is well to do an immediate perineorrhaphy. Before beginning any operation, a hot antiseptic douche should be given, the walls should then be held apart with retractors, and the first suture inserted at the highest point of the tear, the edges are then drawn close and the suture tied. The stitches are placed at intervals of a centimetre apart, the needle being inserted about half a centimetre from the edge; it is passed well into the tissues and carried through to the same distance on the other side of the wound. After the stitches have been put in, another douche is given, and a tampon of iodoform gauze is applied; this is changed daily for a week, and the stitches are removed on the tenth day. When the laceration is overlooked, and only discovered after febrile symptoms have occurred, it must be well disinfected with tincture of iodine or glycerinated creosote, and tampons of iodoform gauze should be placed in the vagina. Such wounds are sometimes long in healing, and an attempt to suture them may be made, but it is well to disinfect them thoroughly and scrape the edges and surface. When the laceration extends into the abdominal cavity it should only be partially sutured, and a gauze drain should be inserted; in such a case it is not always possible to repair the wound at once, and the vagina should be disinfected and plugged with iodoform gauze. When the tear is large and high up, the fetus may pass either completely or partly into the abdominal cavity, and the conditions are the same as when the uterus ruptures during labour. The child is usually dead and the patient much exhausted Laparotomy is the safest treatment to adopt; it is then possible to repair the peritoneum properly, and to drain Douglas's pouch, and the question of removing a much-injured uterus can be considered at the same time. When the placenta has followed the fetus into the abdomen it can be removed through the laparotomy wound, but if it has remained in the genital canal it should be delivered through the vagina to avoid soiling the peritoneum with blood and meconium. Subcutaneous saline injections of serum are recommended for some days after an accident of this sort.

THERAPEUTICS.

185. Hysterical Paralysis following Intraspinal Injection of Stovaine.

Schwartz (*Jour. des Prat.*, September 14th, 1907) describes an accident, of which he says the stovaine, though liable to be incriminated, was absolutely innocent. A woman, aged 38, suffering from a recto-vaginal fistula, the result of suppuration, underwent an operation after lumbar injection of stovaine. The fistula was completely cured, and the patient had no vomiting or headache, and experienced no pain during the operation. During her convalescence she developed a very painful anal fissure, for which anal dilatation was advised. So she a second time submitted to intraspinal (lumbar) injection of stovaine. The puncture, however, was not achieved at once, as on the first occasion. The operator was compelled to move the needle about in order to find his way into the canal, and the patient in consequence had some slight pain. Perfect anaesthesia was before long, however, obtained, and the dilatation of the anus was performed without the patient feeling it. In ten days' time it was decided to get the patient up, but it was found that she could not move her left leg, and that it bent beneath her. She showed all the signs of an incomplete monoplegia of the left leg, with paralysis, especially of the gluteal muscles and of the quadriceps extensor. There was also some loss of sensation of the whole limb ending completely at a horizontal line on a level with the inguinal fold. The pharynx was completely anaesthetic. also the cornea. There was no muscular atrophy. It was represented to the patient that there was no real injury, and the treatment adopted was massage and cautery. The patient was walking perfectly after a few weeks. The author then describes the technique he has employed in his practice. He mentions that he has discarded coca-stovaine, employing now only pure stovaine. The patient is made to bend forward in order to flex the spine. A puncture is then made 1 cm.

outside a finger placed just below the spinous process situated over the bi-iliac line—that is, between the fourth and fifth lumbar vertebrae. Ten to fifteen drops of cerebro-spinal fluid are allowed to run out, then a syringe containing the stovaine is fitted to the needle, and cerebro-spinal fluid is aspirated into the stovaine in the syringe. When the syringe is full the whole contents, a mixture of stovaine and cerebro-spinal fluid, are gently injected, great care being taken at this part of the performance not to disturb the position of the needle. When the syringe is empty, fluid is again aspirated and re-injected. After the first injection the liquid aspirated is usually of a whitish milky colour, owing to the reaction of the sodium chloride in the cerebro-spinal fluid. When the injection is completed the needle is kept in position about half a minute; it is then withdrawn, and the puncture hole covered with a clean dressing. In most cases anaesthesia is obtained after five minutes, and lasts from three-quarters to one hour. For operations on the abdominal wall it is advisable to make the puncture in the third lumbar space. For heavy men a dose of 7 to 8 cg. of stovaine is necessary; 5 to 6 cg. will be sufficient for a patient of medium weight.

186. Toxic Reaction and the X Rays.

Edsall and Pemberton (*Amer. Jour. of Med. Sciences*, March, 1907) studied the alterations in metabolism in two cases in which general toxic reactions followed the application of *x* rays. In the first (a case of pernicious anaemia) marked prostration and fever accompanied by anorexia and nausea followed a very brief and mild exposure, while in the second (a case of rheumatoid arthritis), in which direct exposure was confined to one arm, similar effects were produced. In both a remarkable drop in the excretion followed the exposure, giving place subsequently to an equally striking rise, and neither this drop nor the subsequent rise was due to any corresponding alteration in the intake. From these and other experiences it is seen that a toxic reaction is particularly likely to occur in persons already the subjects of a toxaemia. In such cases the organism is already severely taxed in its attempt to control the existing intoxication, and if to this is added the metabolic labour of carrying out the complete decomposition of a quantity of tissue products, it is natural that metabolism collapses and a severe intoxication results. The toxic reaction due to *x* rays appears to be due to a sudden demand upon the organism for the complete disintegration and excretion of large quantities of the products of tissue breakdown, while, the organism being unable to respond, a consequent halting of metabolism occurs resulting in an intoxication produced by incompletely disintegrated tissue remnants. Not only are such symptoms more likely to occur in those already suffering from severe metabolic or infectious intoxications, but also in those in whom there is pre-existing kidney disease, and an actual nephritis may be set up by the action of the rays, while a pre-existing nephritis may be made worse by such exposure. It is highly inadvisable, therefore, unless urgent contraindications exist, to use *x* rays in the treatment of patients already the subjects of intoxication produced by either infectious disease or metabolic disorder, since there is considerable danger in adding to such an intoxication the sudden necessity for metabolizing and excreting large amounts of the products of tissue breakdown.

187. Jaundice after Chloroform.

Reggianini (*Rif. Med.*, July 6th, 1907) reports two cases of severe jaundice coming on about thirty-six hours after operation, and attributable to chloroform. The first case was that of a man, aged 32, who had suffered from chronic indigestion, and was admitted for double inguinal hernia. A radical cure was performed on November 6th, the operation lasted half an hour, and about 60 grains of Duncan's chloroform was used. On the 7th the patient seemed all right, but was restless at night, and on the 8th was found comatose and slightly jaundiced. The urine was strongly acid, specific gravity 1062, contained bile and albumen, but no sugar; the blood showed no marked change. The temperature remained normal and pulse slow and full. On the 10th he had profuse sweating and recovered consciousness. On the 11th the dressings were removed for the first time, and the wounds were healed by first intention. On the 12th profuse diarrhoea set in; on the 13th blood was noticed in the urine (a true haematuria). On the 15th the diarrhoea ceased, and there was some general improvement, but the jaundice continued. Improvement was maintained, and the patient left the hospital on November 22nd with only slight traces of jaundice remaining. The second case was that of a boy, aged 16, operated on July 21st for appendicitis. The operation lasted three-quarters of an hour, and 60 grains of Duncan's chloroform was used. Two days later the lad became comatose, jaundiced, and died in coma on July 25th. At the necropsy the wound and peritoneum showed no signs of inflammation, and the coils of intestine were smooth and free. The liver was much diminished in volume and consistence, and was in fact in a state of acute yellow atrophy. In neither case could the jaundice be attributed to fright or to infection, and in view of certain experiments with toxic doses of chloroform, the author believes the jaundice in both his cases was due to the chloroform administered acting with unusual severity on livers which had already been strained by previous dyspeptic troubles.

188. Serum Treatment of Diphtheria.

Writing in the *Gazeta dos Hospitaes do Porto*, August, 1907, on the occurrence of diphtheria in Oporto, Souza—who recognizes three clinical forms of the malady, and points out the variation in their proportional incidence in different years—shows that an extraordinary advance has been made in that city in the percentage of recoveries. A free antidiphtheritic service has been in existence for some years; and though previous to 1903 the statistics cannot be regarded as entirely trustworthy, it appears that in that year the case-mortality was approximately 18.5 per cent. For the following years the figures are completely reliable, and show that in 1904 the corrected mortality was 11.2 per cent., in 1905 it had fallen to 6.52, and last year to 3 21, a figure of which the staff may be justly proud. Souza claims that these favourable results are entirely due to the employment of very large doses of serum. In 1904, only tentatively using increased doses, the mortality did not fall below 11 per cent.; but in the two following years a bolder treatment was adopted, and with excellent results, as the following figures show, M representing the quantity of serum corresponding to 1,000 antitoxin units:

Year.	Reduced Mortality.	Average Dose.
1904	11.20 per cent.	4.09 M.
1905	6 52 per cent.	5.83 M.
1906	3 21 per cent.	7 29 M.

PATHOLOGY.

189. The Pathology of Dropsy.

In a recent communication to the Royal Society, Charles Bolton discusses the pathology of dropsy in the light of experimental investigations which he has conducted upon cats. In these experiments he observed the effects upon the circulation of the blood, and upon the production of dropsy, which were brought about by obstruction of (1) the superior vena cava, (2) the inferior vena cava, (3) the portal vein, and (4) both the superior and the inferior vena cava. The production of hydraemic plethora after obstruction of the inferior vena cava was also studied. Bolton finds that whatever may be the nature of the impediment which opposes the free flow of blood into the heart, and thereby diminishes the diastolic blood quantum, precisely the same effects are produced upon the circulation of the blood. There is first a general rise of systemic pressure, affecting all the veins of the body, and extending back as far as the capillaries, and a fall of the mean arterial pressure. This effect is due to accumulation of blood in the veins. The venous pressure, however, soon falls to its normal level again, and the arterial pressure is raised more or less completely to its former level owing to vasomotor constriction. Dropsy is produced after several hours, whilst the capillary pressure is normal or even subnormal. The production of dropsy where the veins and capillaries are distended, and where the blood flows with a diminished velocity, "probably depends entirely upon an altered condition of the vessel wall, and not upon an altered condition of the nutrition of the tissues themselves." This alteration, in Bolton's opinion, is presumably of a pathological nature, and is not such as would lead to an increase of the normal function of the capillary endothelium. "Raised capillary pressure," he insists, "plays no part in the production of this oedema, and the arterial pressure may be normal or less than normal, it matters not which." The earliest dropsy in uncompensated heart disease is to be regarded as strictly local in origin; the capillaries of the district affected become, practically speaking, an excretory organ.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

190. The Liver and the Regulation of the Blood Pressure.

Delaunay (*Gaz. Hebdom. des Sci. Méd.*, July 21st, 1907) writes that the cardiac rhythm seems to be maintained at its normal status by the antagonistic actions of several substances like internal secretions. The vascular pressure, too, is regulated by similar agents. The liver, he thinks, seems capable of a special function, the regulation of the tone of the vessels. The liver regulates mechanically the blood pressure in the portal system, as is shown by the heightened pressure that results from an attack of Laënnec's cirrhosis, manifested by haemorrhoids, hypertrophy of the spleen, oesophageal varices, and ascites. But the liver can as well influence the general blood pressure through humoral means. Longlois has shown that adrenalin can be destroyed by the liver as well as by muscle tissue. So the liver can counteract high blood pressure by destroying the suprarenal extract. Canter has recently shown that a heightened blood pressure is often due to an excess of acidity of the blood, as in the gouty, the diabetic, and the arthritic. Minkowski has shown that the hepatic parenchyma can destroy sarcolactic acid, and it can probably, too, destroy other acids. Roger and Josué have recently demonstrated the presence in the wall of the small intestine of dogs and rabbits of some substances which, when injected intravenously, cause a sudden fall of blood pressure. Bayliss and Starling in 1902, when working upon secretin, showed that the acid extract of intestine administered intravenously depresses the blood pressure. It seems certain that the liver exerts a neutralizing action on the substances in the intestinal wall that tend to lower abnormally the blood pressure. The influence of the nervous system, hepatic glycogenesis, is to-day generally accepted. And so it is reasonable to suppose that the function of the liver of regulating the blood pressure is also controlled nervously. These facts lend light to a theory of the reason for the increased blood pressure which accompanies Bright's disease, which is ordinarily put down to the hypertrophied suprarenal glands found on autopsy in these cases. But this cause is insufficient, since the medullary portion of the suprarenal gland, which portion produces the secretion, is not sensibly affected by the hypertrophic process. Now the liver nearly invariably shares in any affection of the kidneys, and vice versa; and so it is easily explained how the increased blood pressure of Bright's disease is caused, if among the functions of the hepatic parenchyma is included that of regulating the tone of the blood vessels. In this theory a causative agent of the increased pressure is the secretion of the suprarenal glands; but instead of an increased supply of this substance, it is an insufficient destruction or neutralization of it that causes the rise in blood pressure.

191. Are there Cancer Houses?

Illaissier (*Jour. Méd. de Brux.*, September 5th, 1907) asks the question, and collects some facts in support of the theory that some houses, or at least some parts of a town, are cancer-infected. The sanitary report for Paris for the first six months of 1906 registered 1,062 deaths from cancer; of these, 1,008 occurred each in a different house, twelve houses were accountable for 2 deaths each, 26 deaths occurred in five workhouses, and one religious institution claimed 4 deaths. Guaillot refers to a house at Vouziers, in which a man, his wife, the servant, and the father-in-law died between 1870 and 1875 from cancer of different parts of the body. In the community of Saint-Sylvestre-Cormeilles, between 1880 and 1887, 11 people succumbed to cancer, situated in the stomach in 8 of the cases. It was thought possible that the source of these infections could be traced back to the water supply. In 1890 Arnaudet collected fifty-four houses in one street 150 metres long; in seventeen of these houses there were 21 cases of cancer. All the cases were in houses in the middle part of the street. The author considers that infection of house must replace heredity in the causation of cancer. In 1892 Lassinger described an epidemic of cancer in Oyonnaux, a town having 4,500 inhabitants and 500 houses. Every year 3 or 4 people were attacked with cancer. Three houses, situated at one extremity of the town, have rendered 5 cases in four years. The patients were strangers to each other, and in no case was there any history of cancer in their families. In 1886 a woman having a carcinoma of the right breast came to Oyonnaux, and lodged in a house. She threw her dirty dressings into a stream which ran into a tank. She died the following year (1887), and in 1888 and 1890 two lodgers in the same house developed cancer. Two neighbours who were in the habit of drinking the water from the stream have become infected, the one with cancer of the stomach, the other with an osteo-sarcoma of the leg.

192. Aneurysm of the Abdominal Aorta.

Pepper (*Univ. Pennsylvania Med. Bulletin*, May, 1907) records a case of aneurysm of the abdominal aorta, and gives the *post-mortem* notes of 10 other cases. As with aneurysms elsewhere, these occur more frequently in males than in females, and sudden efforts or excessive strains are the chief causative factors, especially with a pre-existing atheroma. The triangular part of the aorta formed by the diaphragm above and the coeliac axis below is the usual site for their occurrence. Rupture is a very frequent termination. Pain is the most constant symptom, and it is generally of a dull, boring character, with occasional acute exacerbations. Erosion of the vertebrae frequently occurs, and emaciation is fairly constant. The diagnosis depends upon the presence of a definite, palpable tumour with an expansile pulsation, and no pulsation, however forcible, no thrill, however intense, no bruit, however loud, justifies a diagnosis of aneurysm without the presence of such a palpable expansile tumour. Transmitted pulsation to abdominal tumours may render the diagnosis difficult if not impossible. Though occasionally at autopsy a case of healed abdominal aneurysm is found, this is rare, and the great majority of cases progress steadily to a fatal termination within one or two years in spite of treatment. A few cases of cure are reported after compression, or the introduction of wire into the sac with the passage of a constant current. The case under observation was that of a man, aged 40, giving a history of syphilis which was only treated for two months. His chief trouble was difficulty of urination. Pain in the lumbar region followed a strain from carrying heavy weights. This, at first dull, gradually became worse and extended down the left hip, thigh and leg, becoming shooting in character and eventually preventing his walking. As a shoemaker he had to press his last against the pit of the stomach, but this apparently had nothing to do with the causation of the condition. There was marked emaciation and a distinct fullness in the left flank, while an expansile mass the size of a fist could be felt immediately under the skin, which was stretched tightly over it. The percussion note over this was dull, but this dullness did not extend above the costal margin, and only about 1 in. to the right of the median line, but below it extended behind the crest of the ileum and outwards to the left as far as the spine of that bone. The bodies of the eleventh and twelfth dorsal and first lumbar vertebrae were markedly eroded by the false sac. Latterly a bruit could be heard over the area, and death occurred from exhaustion.

193. Summer Diarrhoea.

Variot (*La Clin.*, August 9th, 1907) finds that diarrhoea in breast-fed children is related to the temperature of the air, the incidence being greatest in the summer months. He considers the temperature rather than the feeding to be the cause in the breast-fed, but points out that where the conditions are good it is most probably due to over-feeding. The child's rations should be diminished in warm weather, as it requires less caloric. Possibly the external temperature produces changes in the bacteria of the intestinal canal which produce the catarrh. These diarrhoeas he considers comparatively harmless. Diarrhoea in the child fed upon sterilized milk is of the same type so long as the milk is sterilized without delay, but milk which has travelled and been delivered before sterilization is often a source of harm, for boiling will destroy the living organism, but has no effect upon the toxins, which may already have been generated in the milk. Vegetable broth has been much recommended in the treatment of acute attacks; analysis shows this broth to contain a high percentage of albuminoids and organic material; its nutritive

value is therefore high. He prefers, however, to use rice water. Infants are forbidden milk, and given rice water only for forty-eight hours; after this they receive one part of milk with two parts of rice water, and the amount of milk is gradually increased. Once or twice in the day irrigation with rice water is employed. Very acute cases are given nothing but water in which some citrate of soda is dissolved, and subcutaneous injections of artificial serum or sea water. No drugs or opiates are used, but in prolonged cases 1 or 2 grains of lactic acid are given daily. He regards summer enteritis as a toxic infection, and the diarrhoea as useful in assisting the elimination of the poisons.

SURGERY.

194. Early Operation in Simple Fractures of the Femur.

In an abstract of a paper read at the April meeting of the German Surgical Society (*Zentralbl. f. Chirurg.*, No. 31) König of Altona expresses the opinion that while simple fractures of the shaft of the femur can, as a rule, be effectually treated by ordinary bloodless methods, fractures of the neck of this bone often present indications for open treatment and suturing of the fragments. The prognosis in regard to the functional results of the latter class of injuries has, it is held, been overrated. Even in impacted fracture of the outer portion of the neck of the bone fibrous union often results, and in many cases of what seems to be firm union of an impacted fracture of the middle of the neck, distortion and shortening of the fractured portion, together with fibrous union, may be revealed by the Roentgen ray. In cases of intracapsular fracture the results are still worse, the fragments being united by more or less fibrous tissue and with the formation of a pseudarthrosis, the function of the limb being consequently much impaired. These bad results, especially when they follow a non-impacted fracture, are the more serious as this kind of injury is usually met with in subjects below the age of 20. In these cases of non-impacted intracapsular fracture it is advisable, the author holds, to establish at once the most favourable conditions of healing by opening the joint and then bringing the ends of the fracture in apposition, and fixing them by suture. In exposing the joint the author practises Hueter's incision. Exposure of the seat of injury and suturing are also indicated in complete traumatic detachment of the great trochanter. Operative intervention, though attended under such circumstances with great difficulty, may be applied also to cases of oblique infratrochanteric fracture of the femur, as the results of the ordinary treatment of this form of injury are often very bad in consequence of the interposition of soft parts between the fragments, and of the strong muscular resistance to extension of the limb. In fixing the ends of the fragments of bone in a case of this kind, it would be necessary, the author points out, to substitute some form of screw for metallic sutures. Direct operative treatment is indicated in cases of long oblique fracture near the lower end of the femur, and also of intra-articular fracture, if there be any difficulty in retaining the fragments in good position. Traumatic detachment of the lower end of the femur requires, the author points out, special attention. There is often much displacement of the loose epiphysis, which may cause compression of the popliteal blood vessels and consequent gangrene of the extremity. An operation for the reduction of the displaced epiphysis is likely to be attended with considerable difficulty, if some time has elapsed since the receipt of the injury. As it is very necessary to replace the epiphysis, an open operation is decidedly indicated in any case in which bloodless attempts at reduction have failed.

195. Resection of the Vagus.

Venot (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 23, 1907) directs attention to a case of fibro-sarcoma of the pneumogastric, in the removal of which he excised about ½ in. of this nerve. The patient, a man aged 33, made a good recovery, and during the after-treatment presented no disturbance of respiration and no change in the pulse on the affected side. Faure, in a report on this case, states that it is an additional proof of the relative innocuity of section of the cervical portion of the vagus. The alarming spasm of the glottis, so often observed in the course of deep operations on the neck, is held to be due to irritation of the nerve, and is relieved at once by its division. Of 13 recorded cases of section of the nerve 1 only was fatal, and the result in this case—according to Martini, who has made a very thorough study of the subject—was due not to functional suppression of the nerve, but to concomitant lesions produced in the attempt to remove a large malignant growth in the neck. This observer concluded from his clinical and experimental researches that unilateral vagotomy causes permanent paralysis of the corresponding vocal cord and temporary tachycardia and respiratory slackening, but no disturbance either of the lungs or of the digestive organs. In a healthy and vigorous subject section of the nerve on one side of the neck causes, it is stated, no persistent bad consequence beyond hoarseness. These favourable conclusions, which are confirmed by the reports of Venot and other surgeons, support the view held by Faure, that in the removal of a cervical tumour involving the vagus it would be better for the surgeon to make a complete resection of the involved portion of nerve than to attempt to set it free by dissection and thus to run the risk of leaving some portion of the new growth in the wound.

196. The Magnet in Ophthalmology.

Twenty-seven years have passed since J. Hirschberg published his first case of successful removal of a fragment of iron from the interior of the eye by means of an electro-magnet, and since that time a large number of communications on the subject have appeared. Hirschberg has employed the magnet in 347 cases since that time, and on the basis of this experience addresses a few remarks on the subject to the readers of the *Berl. klin. Woch.* of February 25th, 1907. The diagnosis may at times be very difficult, but the general practitioner must always be prepared to consider the possibility of an iron splinter having penetrated into the eye. The ophthalmic surgeon must examine the eye from every possible point of view. The examination methods include careful inspection, side illumination, ophthalmoscopy, *x*-ray examination, and sideroscopy. It has been stated that an iron splinter can remain in the interior of the eye without causing irritation. This is incorrect. Sooner or later the foreign body will destroy the sight if it is left *in situ*. In one case he saw an eye, eighteen years after the iron particle had penetrated, in which the sight and the bulb appeared to be practically normal, but two years later he was able to watch a marked diminution of sight and contraction of the visual field. With regard to the diagnosis, it has been stated that in a freshly-injured eye, if an iron splinter is present, the application of the giant magnet will cause pain. If no iron be present no pain is caused. This is incorrect. Hirschberg has had more than a dozen cases in which an iron splinter could be removed from the depths of the eye, and yet no pain was produced by applying the giant magnet. This method of examination has its dangers, for one may draw the particle into the iris, and thus make it impossible to remove it. He does not feel inclined to lay more importance on examination by *x* rays than by means of the magnet. Artistic Roentgographs rarely fail to reveal the foreign body, but at times when the Roentgograph fails, one may be able to see the iron by means of the ophthalmoscope. He considers the sideroscope as a very important means of diagnosis. Turning to the treatment, he lays down the rule that in fresh cases one ought to remove the fragment at once in every case. He employs a very strong giant magnet as well as a moderately strong magnet, and more frequently a small hand magnet, which is worked from the ordinary electric light installation. With regard to his results, he says that during eight years he has removed or attempted to remove iron splinters in 64 cases, either from the retina or from the vitreous. Thirty-six of the cases retained good and permanent sight, corresponding to 56 per cent.; 22 of these were fresh injuries, and 14 were old-standing cases. One third of them were operated on by the hand magnet alone. In 6 (that is, 9 per cent.) the form of the eye was retained, but the sight was lost. In 22 (that is, 34.5 per cent.) the eye was totally lost. In 4 cases he failed to remove the iron splinter. He regards these results as satisfactory, inasmuch as they are much better than any others which he has yet heard of. In conclusion, he gives the details of 2 unfavourable cases in which he was able to save the sight by means of the magnet operation.

OBSTETRICS.

197. Diagnosis and Treatment in Prolapse of the Cord.

Rudaux (*La Clin.*, September 6th, 1907) finds that this accident is most liable to occur in cases where hydramnios is present, or in multiparae with very relaxed uterine muscular tissue; it is also frequent when the placenta

site is abnormal. Attention is either drawn to the condition during the act of making a vaginal examination, or when the fetus shows signs of distress, such as an alteration in the sounds of the fetal heart or a sudden discoloration of the amniotic fluid. This latter sign is only possible when the membranes have been ruptured, bnt prolapse is possible with the fetal sac intact. Diagnosis is clear when the membranes have ruptured and the cord is outside the vulva, or when it lies in the vagina and the pulsations are evident to the finger. When the membranes are intact the bag of waters is usually very large, and it is possible to feel a small and very mobile object in it which it is difficult for the fingers to grasp. By pressing this object gently, so as not to rupture the bag against some firmer substance such as the pelvic cavity or the presenting part, its round outline and its size are distinguished, and the pulsations may also be felt if the fetus is alive. Its mobility is a most distinctive sign. The diagnosis being established, the treatment is as follows: If the membranes are ruptured and the child is alive, perform manual reduction. Pass a sterilized hand into the vagina, seize the cord and carry it inside the uterine cavity high above the fetus, then with the other hand exert pressure on the fundus. The prolapse is apt to recur; if the cervix is then found to be fully dilated, it is well to terminate labour as rapidly as possible either by the application of forceps, or by internal version and manipulation. Where the dilatation is incomplete the funis may be protected by inserting the hand into the lower segment of the uterus, where its presence will excite contractions and hasten dilatation. Under suitable conditions a Champetier de Ribes's bag can be employed. Membranes which are intact protect the cord, and should only be ruptured if the dilatation is complete or stationary. The operation should be followed at once by manual reduction, the hand remaining in the vagina until it is certain that the presentation is longitudinal and fills up the pelvic brim. When the fetus shows signs of distress, even with unruptured membranes, the patient should be placed in an improvised Trendelenburg position. If it is evident that the fetus is dead, labour may be left to take a natural course. In a case where infection might result from the dead fetus, a speedy termination should be sought by the use of Champetier de Ribes's bag, or an embryotomy to hasten extraction.

GYNAECOLOGY.

193. Gunshot Wounds of the Gravid Uterus.

Picqué (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 25, 1907) reports on a case communicated by Baudet, of wounds caused by a revolver ball involving the small intestine and the uterus of a woman, aged 22 years, who was in the fourth month of pregnancy. The external wound, through which protruded a large mass of omentum, was situated about three fingerbreadths below the umbilicus and a little to the right of the middle line. The orifice having been extended upwards and downwards, four penetrating wounds were found in the small intestine, and on examination of the enlarged uterus, a wound of the size of a penny was seen on its anterior wall near the fundus. These wounds were carefully sutured, and a large quantity of effused blood was removed from the abdominal cavity. The fetus, which presented no sign of injury, came away about twelve hours after the operation. The patient progressed favourably and was discharged as cured on the twenty-fourth day. Picqué in his comments on this case states that gunshot wound of the gravid uterus is a rare lesion, and that beyond a discharge from the abdominal wound of blood-stained amniotic fluid observed in some instances, presents, as a rule, no special symptoms. Profuse haemorrhage and other severe results of abdominal injury are usually due to concomitant lesions of adjacent structures. Although several instances have been recorded of recovery after expectant treatment, wounds of the uterus, Picqué insists, should not be exempt from the common rule of modern surgical therapeutics—that in every penetrating wound of the abdomen laparotomy should be promptly practised, and the nature and extent of the deep injury be thus revealed. In gunshot wound of the uterus the surgeon should carefully examine both the front and the back of the organ, with the object of finding an orifice of exit. If the uterus be much damaged by multiple wounds, hysterectomy, it is suggested, might be indicated. Of such operative treatment, however, only one instance, and that a fatal one, has hitherto been published. In regard to the fetus which, if viable at the time of the injury, is destined to die either from the wounds or from premature expulsion, Picqué is inclined to recommend Caesarean section, with the object of guarding the mother against the complications resulting from infection of the uterine cavity.

THERAPEUTICS.

199. Dechlorinated Diet in Pemphigus.

Micheleau (*Arch. Gén. de Méd.*, July, 1907) adds another case of pemphigus of alimentary origin successfully treated by a dechlorinated diet to the two previously published by Cassaët and himself in the same journal (January, 1906). In the present case, a man of 64 years, symptoms of gastro-intestinal catarrh and of congested liver had been present ten or eleven days, swelling of the hands eight days, before admission to hospital. On examination enormous swelling of the hands and an enlarged and tender liver, reaching 5 cm. below the costal margin, were noted, while the urine contained a slight trace of albumen. The chlorides in the urine were diminished in quantity. The patient was treated by purgation, and later also by a mixed diet, consisting chiefly of milk and its products. Bullae shortly developed on the hands. Eight days after admission the elimination of chlorides was normal, but the condition of the hands was only slightly ameliorated. A dechlorinated diet was then prescribed, which was immediately followed by rapid improvement in the hands and diminished elimination of chlorides. In five days cure was nearly complete, and the patient was allowed ordinary diet. The elimination of chlorides at once rose considerably above the normal, and remained so for several days. On the seventh day it showed a tendency to return to normal. The two previously-reported cases had presented the same general symptoms, retention of chlorides, and favourable reaction to a dechlorinated diet. The researches of Achard, Javal, Widal, Lemierre, etc., show that oedema of cardiac or renal origin disappears on a diet free from chlorides, and reappears when chlorides are again taken. This seems to Micheleau to indicate a relation of cause and effect between retention of chlorides and serous effusions. He is, nevertheless, more inclined to regard both as common symptoms of a general toxic condition. In the present case he considers the retention of chlorides not as an etiological factor, but merely as a symptom, valuable, however, for its prognostic significance. If one accepts Professor Gautier's view that sodium chloride is necessary for the dialysis of toxic products, excessive elimination of chlorides is indispensable during the process of cure, and one may suppose that during their retention the chlorides are neutralizing or fixing in some measure the toxins which are afterwards eliminated with them. Thus excessive output of chlorides indicates the moment of cure. In conclusion, Micheleau points out that the retention of chlorides is one of the most frequent signs of auto-infection, and that pemphigus is only another sign of the same; that since cure began at the commencement of treatment, and was henceforward rapid, the dechlorinated diet has hastened the cure, and is to be recommended in the treatment of most toxic infections; and, finally, that excessive elimination of chlorides is of great prognostic importance.

200. Vibratory Massage.

Carlo Colombo (*Gazz. Med. Ital.*, June, 1907) insists on the distinction between vibratory massage and other forms of kinesitherapy, shakings, harpings, propulsions, and succussions. Vibrations are constituted by a fine and very rapid tremor communicated to the superficial or deep tissues by the hand or some special instrument. They have a calming and anaesthetizing effect and are especially useful in inflammatory affections. They diminish the pain of neuralgia and migraine and determine contraction of the muscular coats of the small blood vessels. The other manipulations mentioned above increase sensibility and are worse than useless in the cases for which vibrations are really indicated. They are, however, adapted to stimulation of the nutrition of tissues and of the contractility of muscular organs, and it is not uncommon for vibration massage to be described as having effected such objects when the therapeutic agent really applied has been one of the coarser forms of movement. To produce fine vibrations without mechanical means demands natural aptitude and long training. Experts can produce as many as 600 vibrations a minute, but this rate can only be maintained for three or four minutes. The vibrations are transmitted by the hand, but really originate at the elbow joint. Great care must be taken to avoid tetanic contraction of the synergic muscles fixing the shoulder, elbow, and hand. The difficulty of carrying out manual vibratory massage

has led to the introduction of several mechanical methods of attaining the same end. These methods are capable of giving from 800 to 8,000 vibrations a minute, but the vibrations are apt to be coarse and violent. This defect is found especially in the small portable vibrators, but some of the larger forms of apparatus may be made to supply vibrations exactly like those of manual vibratory massage. The methods especially recommended by the author are the humanized massage of the Zander system and Kaiser's carbonic acid gas method. Vibratory massage is not necessarily applied only to the external surface of the body, but may be applied to internal organs, the larynx, the nasal fossae. Such applications are made by passing a sound with a small cotton-wool pad at one end into the organ, and holding it there with the finger and thumb while the forearm of the operator rests on a support which is itself the subject of mechanical vibrations. Thus are combined the delicacy of manual vibration and the prolonged action only possible by mechanical methods.

201. Treatment of Chilblains.

C. RITTER has applied Bier's method of artificial hyperaemia to the treatment of chilblains and other forms of frost-bites, but finds that the method does not appear to be at all generally used (*Muench. med. Woch.*, May 7th, 1907). In spite of the enormous numbers of reputed cures for chilblains, the complaint may be said to resist all the forms of treatment, and Lassar in 1902 wrote that the practitioner is not able to do much for it. The author believes that this is due to the fact that all the remedies aim at dealing with the symptoms, and he therefore discusses the nature of the ailment before describing the hyperaemia treatment. When a skin area is exposed to the effect of severe cold, the result is a marked anaemia. This is even true for the face, although one generally sees red faces in persons who have been exposed to great cold, and hyperaemic areas when the cold has been moderately severe The reason of this is that the face being exceptionally well supplied with blood vessels which react very delicately, the hyperaemic reaction which follows the anaemia sets in very early. The next stage of cold acting locally is a reactionary hyperaemia. If one renders a limb bloodless, and then applies cold to one point, on removing the bandage the whole limb becomes hyperaemic, and only after the limb has regained its normal colour does one see that the affected area is still very red. It thus appears that the hyperaemia is secondary, and, in Ritter's opinion, this hyperaemia is not harmful, but rather the reverse. On one occasion he was applying Bier's hyperaemia to the arm of a boy for a tuberculous lesion. This boy had a chilblain on his finger. During the course of treatment the ulcerated chilblain, which was merely covered with aseptic gauze, healed up firmly and rapidly. He therefore extended the treatment to chilblains and frost-bites whenever he got a chance, and found that the results in his 160 cases were undoubted. He points out that the hyperaemia of cold is not produced by stasis. It is a real congestion, and the slowed circulation is only the result of a larger vascular area. The result of the primary anaemia in chilblain is, as has already been said, a secondary hyperaemia. But this is not a necessary result of an artificial anaemia. It seems that a local damage to the tissues has been affected by the cold, and when this damage is well marked one can see the effect later when gangrene sets in. In milder cases the damaging effect on the tissue cells can be plainly seen by the microscope. He next found that when he applied Bier's constricting bandage, while the whole limb became bluish red, as indicating a venous hyperaemia, the frozen area remained an arterial red. He has come to the conclusion from these considerations, and from several others, that the hyperaemia of chilblains and frost-bites is a mild inflammatory reaction which the body uses as an attempt to repair the damage done, and therefore, if it is possible to increase this hyperaemia either by inducing a venous hyperaemia according to Bier or by applying hot air (arterial hyperaemia), one will assist the body in curing the affection. It is not always possible to produce a passive hyperaemia in anaemic persons. He therefore finds that Bier's bandage acts best in acute cases, and in chronic cases occurring in fairly healthy persons The hyperaemia should be applied for from six to twelve hours, and a pause of at least two hours daily is advisable. The bandage can be worn while the patient is following his occupation. The action is always beneficial. The author has never seen a case in which it increased the symptoms. The most marked effect is that the itching is stopped very rapidly. The affected area becomes more pliable within a short time, and healing takes place sooner than with any other form of treatment. Next he deals with his cases treated with hot air. The cases best suited to this treatment are chronic cases, even those affecting anaemic persons. It not only always acts rapidly and never fails, but it can also be used successfully as a prophylactic means. Both the hot-air treatment and the hyperaemia by bandage lessen the chances of gangrene.

202. Arsenic in Cutaneous Epithelioma.

SERRA (*Rif. Med.*, May 25th, 1907) gives his experience in the treatment of cutaneous epithelioma by means of an application of powdered arsenious acid (1 gram) dissolved in ethylic alcohol and water (āā 75 grams). The fluid (after being well shaken) is painted freely over the diseased surface, and allowed to evaporate freely, no dressing or bandage being applied. The pain is as a rule acute, but does not last long; fresh applications are made each day over the yellowish crust, which is not disturbed. The strength of the solution is increased to 1 in 80, and after the tenth or fifteenth application the crust (which has become darker) may be detached, and fresh solution applied to the wound. If after this application the crust is only very slight and easily removed, one may conclude the diseased tissue is destroyed, and the wound may be treated on ordinary lines. Of the 4 cases reported by the author, all were cured by this method of treatment in an average of about fifty days, including the after-treatment of the simple wound left after the diseased tissues have been destroyed. In the fourth case the author used an ethereal and alcoholic solution without any water, and bound the parts up, which seemed to cause less pain. In all the 4 cases the epithelioma was of a vaso-cellular structure, and affected the skin only. In another series of 4 cases of a more malignant type the treatment gave decided relief, but could not be said to bring about a cure in any of them.

PATHOLOGY.

203. Fetal Meningitis and Spina Bifida.

RABAUD (*Arch. Gén. de Méd.*, August 21st, 1906) has carried out detailed histological examination of cases of anencephalus or pseudo-encephalus associated with spina bifida, with a view of determining the modes of origin of these cases. The following changes have been found by him: Sections of the end of the filum terminale show simply signs of meningitis, the pia mater is thickened and invaded by a number of small blood vessels, especially on its posterior part; as one proceeds upwards this vascular sheath becomes thicker, the vessels multiply, and tend to invade the space between the pia and dura mater; actual haemorrhages and serous exudates are also found to appear. As one proceeds higher up towards the brain, the spinal tissue itself becomes involved, its cells lose their histological structure, waste, and finally tend to disappear; haemorrhages are found in the spinal marrow, chiefly in the posterior root zones. Vessels from the vascular sheath already described and embryonic tissue arising at the posterior fissure, enter the spinal tissue, and rapid proliferation of this embryonic tissue takes place; the posterior wall of the central canal is invaded, and the canal itself partially occluded by this tissue and by a number of red cells. These lesions of a meningitis tend also to extend outwards and to involve the dura mater. Gradually the vessels of this newly-formed tissue become thickened and come in contact with one another, and ultimately blend, whilst at the same time the nervous tissue gradually disappears, so that at the upper part of the spinal cord very few traces of nervous tissue remain. At the level of the encephalon the lesions extend without, invading the preosseous fibrous membrane. As the author points out, these phenomena are obviously those of a meningitis affecting the fetus towards the middle period of intrauterine life and involving ultimately the whole of the brain and spinal cord. The absence of a cranial vault is the result of involvement of the membranous part of the cranium by the pathological process. The "true spina bifida," the author says, is produced by the violent and repeated muscular contractions resulting from a meningitis, separating the lateral halves of the spinal laminae, that is to say, it depends upon an active participation of the nervous system, thus differing from "rachischisis," where the separation of the vertebral laminae is due to muscular action apart from any active participation of the nervous system. Myelomeningocele, the author thinks, arises from a meningitis affecting the fetus between the third and fifth months of intrauterine life, and myelocystocele arises from an embryological process of which the initial stages are characterized by the formation of a widely extended medullary sheath.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

204. Spontaneous Evacuation of Ascitic Fluid by Perforation of the Intestine.

Challier (*Prov. Méd.*, August 10th, 1907) says the termination of ascites by spontaneous evacuation is a rare event. Of the cases reported, the rupture appears to have occurred at one or other of weak points in the abdominal wall, the pressure exerted by the fluid having overcome the resistance of the muscular fibres and caused the skin to perforate. Such a rupture occurs most often at the umbilicus, the invaginated skin being pushed out like the finger of a glove, and finally giving way; the median line is the next most usual site of perforation. Challier reports a case in which the fluid perforated the intestine and escaped by the rectum. The patient was a woman of 45, and an alcoholic, who came to hospital complaining of weakness and an increase in the size of her abdomen. She was suffering from vomiting and some diarrhoea; she was slightly cachectic, with fluid in the abdomen and oedema of the feet and legs. The spleen was enlarged, but the distended abdomen made it difficult to palpate the liver margin. She had no cardiac disease and no albuminuria. The ascites increased, and she became semi-comatose with dyspnoea and cough. A fortnight after admission she was found to be completely comatose, having passed some faecal matter and a large quantity of serous fluid, sufficient to soak through two mattresses on to the floor. She died next day. The *post-mortem* examination showed the liver to be cirrhotic and the spleen large and soft. On searching the large intestine, low down and almost in the pouch of Douglas, the wall was found to be very thin, and a small puncture was discovered through which a probe could be passed into the rectum. The special interest lies in the position of the rupture, no other case similar to this having been reported.

205. Multiple Neurotic Skin Gangrene.

L. von Szoellosy (*Muench. med. Woch.*, May 21st, 1907) described a case of multiple neurotic skin gangrene which was curiously influenced by hypnotism. The patient was a girl, aged 20 years, whose past and family history was free from any points of interest. Three years ago the patient noticed that her left hand swelled, and a few hours later she saw greenish vesicles on the dorsum. The vesicles rapidly became black, but did not give her any pain. They dried up, and after a scab had formed and been cast off a deep, irregular ulcer remained which only healed after several months. The same process occurred on other parts of her body. Scars resulted from the ulcers. On admission into hospital an ulcerated area was found on the left elbow and another on the outer side of the left upper arm. During her stay in hospital a fresh place developed in the left subclavicular region. The healing process was extremely slow, in spite of the most careful treatment and the most constant watching of the patient. The patient was then hypnotized. She was placed into a condition of somnambulism with post-hypnotic amnesia without difficulty. The suggestions included the healing of the present ulcerating areas and the command never to have any more ulcers or gangrenous places. This has become realized up to the present. It was thought wise to hypnotize her once a week for a time, and in one of these hypnoses the author touched the back of her hand with a coin, telling her that it was a burning hot iron. Next day the place showed a deep necrosis. She had no recollection of having been burned. She had considerable pain for a few days in the place. She believed that she had really burned herself by touching the sterilizer in the surgical ward.

206. Intermittent Claudication of Extremities.

This condition, as affecting the horse, was first described by Boulay in 1822. It occurs especially in racehorses. After galloping for some distance the animal begins to limp, and later the hind legs become paralysed. At the end of half or three-quarters of an hour the paralysis is found to have disappeared, and the animal can again gallop, but not for so long a time as it could before the paralysis first occurred. This peculiar condition of temporary paralysis of the hind legs brought on by extra exertion, and passing off after resting, depended upon an obstruction of the iliac arteries at their origin by adherent clots of blood; when the animal was at rest sufficient blood was supplied to the hind limbs, but when the animal was set to gallop the blood supply to the hind limbs, by means of the narrowed iliac arteries, was insufficient for the due performance of the muscular actions required. In 1862 Charcot showed that this condition occurring in human beings was the result of a chronic arteritis affecting different arteries of the lower limbs; he also found that the arteries of the spinal cord and those of the brain might also be involved by the same process, thus giving rise in the legs to intermittent paraplegia and in the brain to intermittent aphasia. Raymond showed that not only the arteries, but the veins also may be affected in the same way. After giving a short history of the condition, Raymond (*Jour. des Prat.*, December 22nd, 1906) quotes the case of a man, 46 years of age, who for some years had complained of troubles of this kind. He could walk quite freely and comfortably for a distance of about 300 metres; if he continued his walk further, he had tingling in the right foot and the foot felt as if it were swollen; soon after the left foot became affected in the same way. Both feet then became cold and took on a reddish-black colour. The legs became ataxic and walking became impossible. After a few minutes' rest these troubles disappeared. His general health was very good, and there was no evidence of alcoholism or syphilis, but he was a large eater and a heavy smoker. Some short time before the patient came under the observation of the author he had had a gangrenous sore on one of his toes, which had been accompanied with severe pain. He had been treated with salicylate of soda without any benefit, and on another occasion with mercurial injections, under which his condition had improved somewhat but had again relapsed. At the present time no pulsation in the popliteal or pedal arteries of either leg can be found, but in the femorals pulsation can be felt. There are no sensory disturbances; the left knee-jerk is somewhat diminished, and the retinal arteries are smaller than normal; the temporal and radial arteries are hard. The author points out that this condition of the legs after exercise resembles somewhat a similar condition occurring in tabes, chorea, and exophthalmic goître; in these, however, tingling and such marked circulatory troubles are wanting. The preventive treatment of the condition is that for arterio-sclerosis. When the disease is established and syphilis suspected mercurial injections may be carried out. Iodide of potassium may be given in small doses, or the vaso-dilators (trinitrin or sodium nitrite), or the vaso-dilatation produced by high-frequency currents may be of service. The prognosis is bad excepting when syphilis plays a part in the etiology of the condition.

SURGERY.

207. Traumatism and Appendicitis.

Jeanbrau and Anglada (*Rev. de Chir.*, No. 7, 1907) have carefully collected and studied all available reports of cases published under the title of traumatic appendicitis, and in an elaborate article deduce from this material all practical points bearing on the interpretation of the part taken by injury in the pathogeny of inflammation of the appendix. The question of the influence of traumatism in a case of appendicitis following a blow over the right iliac fossa or some violent effort is not only of clinical interest, but is important from a medico-legal point of view and with regard to claims for compensation for the consequences of injury sustained during work. The question discussed by the authors is put in these terms: A labourer is struck in the right groin or makes a forcible muscular effort, and soon afterwards suffers from severe pain at MacBurney's point; an attack of appendicitis is developed, the existence of which is verified on surgical intervention or *post-mortem* examination. What part has the accident played in this attack? A painstaking review of the facts collected in this paper has led to the conclusion that traumatism will not set up appendicitis in a subject whose appendix is quite sound, and that in cases in which it is speedily followed by such an attack it is to be regarded only as a revealing and aggravating complication of pre-existent chronic appendicitis. It is held by the authors that in an

individual whose appendix is in a healthy state and free from foreign body a blow on the abdomen or a violent effort will not cause appendicitis. They acknowledge the possibility of some very rare exceptions to this rule, but have been unable to find a record of any such instance properly verified by surgical operation or by autopsy within an interval of a few days from the date of the injury. In a person who has suffered from previous attacks of appendicitis or is the subject of appendicitis in a chronic and latent form a blow on the abdomen, even though at a part remote from the caecal region, may aggravate the chronic inflammation and excite an acute attack with perforation of the appendix and risk of death. It is concluded also that in such subject a violent movement of the body—as, for instance, a fall on the feet or a prolonged shaking—may lead to the same result by breaking through adhesions or the thinned wall of an appendix on the point of perforation. In the authors' opinion, the maximum delay permitting any recognition of the influence of traumatism in exciting an attack of appendicitis should not exceed two days. If pain and the signs of peritonitis do not occur until after a complete symptomatic silence of forty-eight hours, the responsibility of the accident might, it is thought, be negatived. If the patient recover from an attack of appendicitis following injury and afterwards suffer from other attacks, the latter are exclusively dependent on the appendicular affection and cannot be attributed to the injury. This paper, to which is appended a very full bibliography, concludes with the medico-legal applications of the authors' clinical studies, with special reference to the French law of 1898 concerning the accidents of labour.

208. Rachistovainization.

Gironi (*Gazz. degli Osped.*, July 7th, 1907) gives his experience of about 200 operations in which local anaesthesia was procured by the injection of stovaine into the spinal canal. Of the cases 67 were operations for the radical cure of hernia, 34 for haemorrhoids, 10 for removal of glands, etc. A syringe holding 2 c.cm. was used and the injections made between the fourth and fifth lumbar vertebrae; no fluid was injected until it was quite certain (by watching for the flow of cephalo-rachidian liquid) the syringe had entered the spinal canal. A 10 per cent. solution was used and about 6 to 7 cg. of stovaine injected. To procure a more extensive anaesthesia the fluid was given in several doses and a process of aspiration and injection maintained. No advantage was gained by lowering the head of the patient, so as to spread the fluid over a higher area. Some precipitation of the stovaine may occur from the alkalinity of the spinal fluid, but in the larger volume of spinal fluid the stovaine quickly gets redissolved, hence the author does not think it necessary to acidify the stovaine solution. Anaesthesia occurred in from 2 to 12 minutes and never lasted less than 40 minutes. All the cases became anaesthetized except 3 (aged 18, 30, and 45 years—2 inguinal hernia and 1 appendix case). The failure in these cases was possibly owing to neurasthenia, and although analgesia failed, there was motor paralysis and loss of knee-jerks. Except some attempts at vomiting in 2 cases, no immediate ill effects were ever observed. The after-effects were slight and chiefly consisted of a feverish headache.

209. Treatment of Wounds of the Spleen.

Legueu (*Bull. et Mém. de la Soc. de Chir.*, No. 39, 1906), in a report on a case of serious stab wound of the spleen, successfully treated by splenectomy by Barnsby, of Tours, points out that a wound of this organ is a much less frequent injury than rupture. The prognosis in the former class of injury is usually very grave, as a wound of the spleen is often complicated by wounding of some other abdominal organ, such, for instance, as the stomach, the liver, the kidney, and intestine; or of such important structures as the diaphragm and pleura. Although cases in which the wounded spleen is prolapsed through the incision in the abdominal wall are much less serious than those in which the wounded organ remains *in situ*, prompt surgical intervention, Legueu holds, is indicated whenever in any instance of penetrating wound of the abdomen there are good grounds for suspecting that the spleen has been involved. In his treatment of a wound of the spleen the surgeon has the choice of one or other of two methods, suturing and splenectomy. Simple compression or packing of the splenic wound has not been found satisfactory, as the organ is soft and mobile, and its sensibility and remoteness from the surface of the abdomen hinder this method of treatment from being applied with the same facility and security as in the case of a wound of the liver. Suturing is the method of choice in all linear and evenly cut wounds of the spleen that are readily accessible; as the splenic tissue is apt to give way, the surgeon should work with a blunt needle and a thick suture, and include in the suture a minute portion of adjacent omentum. Splenectomy, it is held, is the only suitable method of treatment in cases of deep and extensive wound of the spleen. The results of the operation in cases of this kind have not hitherto been very satisfactory, as death resulted in no less than 8 of 17 cases collected by Lebreton. This high mortality may be explained by the severity of the injury, by its frequent serious complications, and by the profuse bleeding from a rent in so vascular an organ as the spleen. Legueu approves of the method adopted by Barnsby of exposing the wounded spleen. The external incision was carried from a point in front about 4 cm. to the left of the middle line to the anterior margin of the sacro-lumbar muscles, and kept at a distance of a fingerbreadth below the margin of the thoracic wall. By this incision the spleen can, under ordinary anatomical conditions, be freely exposed, and at the same time complicating wounds of the diaphragm and pleura can be dealt with.

OBSTETRICS.

210. Epilepsy and Childbirth.

R. Jardine (*Journ. of Obst. and Gyn. of the Brit. Emp.*, July, 1907) discusses epilepsy and the status epilepticus in connexion with pregnancy and labour. This subject is hardly discussed in most textbooks either on midwifery or on epilepsy. W. Aldren Turner, however, in his recent book on epilepsy, has given in tabulated form his observations on 61 pregnancies occurring in 41 epileptic women, and shows that in these women quickening induced a relapse in 7 cases, pregnancy was the original cause of the occurrence of epileptic fits in 2 cases, induced relapse in 14 cases, temporarily beneficial in 6 cases, and made no difference in 1 case; labour was the original cause in 5 cases and induced relapse in 17, lactation was the original cause in 3 cases, and induced relapse in 6. In the 5 cases in which the first fit occurred during labour the onset was in the form of serial epilepsy or the status epilepticus, and Turner considers the cases to be of peculiar interest as arguing strongly in support of the view that puerperal eclampsia is merely epilepsy in an acute form, and that the disease started in this way may persist for years. Jardine, while agreeing with many of Turner's statements, does not agree with him in the opinion that many cases of puerperal eclampsia are really examples of serial epilepsy or the status epilepticus, and he has himself observed only 6 such cases in considerably more than a hundred cases of puerperal eclampsia. Jardine gives notes of the 4 most recent of these cases. In the first of these the patient's father died in an asylum, and one of her seven sisters suffered from epileptic fits; she herself had no fits prior to her admission to hospital, when she was pregnant for the third time; her health during the pregnancy had been good, and there had been no swelling of the face or legs. At the onset this case was looked upon as one of ordinary puerperal eclampsia; the patient was at once put under chloroform, 16 oz. of fluid blood was drawn from a vein in the right arm, and 3 pints of saline solution were infused. The os, which was found to be about half dilated, was fully dilated manually, and delivery was effected by version. After delivery the patient remained free from fits for eight hours, but they then recurred, and, except for a remission of one hour after a hot pack, another of five hours after a cellular transfusion, they continued until the patient's death, three days and some hours after delivery. The whole number of fits was 774. In regard to treatment, drugs, including morphine given hypodermically and chloral and potassium bromide per rectum, seemed to have no effect. Besides the remissions above referred to, the fits lessened but did not cease after an intracellular infusion, a second bleeding, and a third intravenous infusion. The final intracellular infusion seemed to have no effect. The removal of cerebro-spinal fluid did no good; the tension did not seem to be raised except during the fits. Injection of stovaine had an alarming effect, inasmuch as it appeared for a time that the heart would be paralysed. The urine at the beginning of the attack was free from albumen, although towards the end of the case there was, as might have been expected, a trace. The recurrence of the fits after the eight hours' remission following delivery, together with the absence of albumen from the urine, led to the conclusion that the case was one of epilepsy. The second case was that of a 2-para, whose fits dated from her first pregnancy, and who from that time onwards had continued to suffer from attacks of *petit mal*. She was admitted to hospital under the care of Dr. Kerr, after 29 fits in all had

occurred. She was at that time 7½ months pregnant, and there was no indication of labour. There was a very faint trace of albumen in the urine, but no oedema. The fits continued in spite of treatment, and on the evening of the day following admission Dr. Kerr emptied the uterus by vaginal Caesarean section. The total number of fits in this case was 102, the greatest number in any one day being 42 on the day after delivery. The case might be termed one of status epilepticus. In the next case the patient, a 3-para, had been under treatment for epilepsy at the Royal Infirmary for some weeks before admission to the Maternity Hospital. There were no fits during labour, and only one very slight one during the puerperium. In the fourth case the epileptic attacks dated from childhood; pregnancy seems always to have had a beneficial effect, but the attacks were most frequent during lactation; the patient had no fits while in hospital.

GYNAECOLOGY.

211. The Sigmoid Flexure and the Female Organs.

Albrecht (*Monats. f. Geb. u. Gyn.*, September, 1907) recently led a discussion, at a medical society, on the relations between the sigmoid flexure of the colon and the female pelvic organs. The intestine, the peritoneum, and the subserous connective tissue were separately considered. (1) Constipation may cause dilatation of the sigmoid flexure, whether in itself the result of congenital defects (including abnormal length of its mesentery), or of atony, spasm, and mechanical irritation from the contents of the bowel. Constipation may also follow or complicate inflammatory or neoplastic diseases of the uterus and appendages. Faecal tumour in the sigmoid flexure may be difficult to diagnose. Dilatation of the flexure from faeces before puberty exercises a bad influence on the equilibrium between the different pelvic organs, predisposing the subject to prolapses. Later on in life faecal accumulations may set up dysmenorrhoea and menorrhagia. Sigmoiditis in all its forms may be confounded with disease of the female organs, even in the puerperium. There is a very chronic "pseudo-carcinomatous" type, with cicatricial changes in the walls of the gut, and fatal perforation has been known to occur. Albrecht reported a case of suspected axial rotation of an ovarian tumour. An operation was performed and a left pyosalpinx discovered adherent to a sigmoid flexure, with extreme thickening of its walls causing stenosis. The diseased gut was successfully resected. (2) There may be a perisigmoiditis caused by disease of the intestine. This condition may end in the infection of adherent tubes and consequent pyosalpinx, yet these peritoneal adhesions may have a directly salutary effect by cutting off from the general peritoneal cavity septic foci developed in the pelvis. (3) Mesosigmoiditis or inflammation of the subserous connective tissue may follow any of the well-known affections of the bowel itself, faecal accumulations in particular, and volvulus of the flexure has been associated with mesosigmoiditis. The chief clinical feature of interest, however, is seen in the more chronic forms where contraction of the subserous layer with the development of cicatricial tissue occurs. In other words, it may closely simulate parametritis atrophicans. As that disease itself tends to invade the subserous tissue of the sigmoid flexure diagnosis may be very difficult. Lastly, cancer of the sigmoid flexure and new growths developed in its subserous tissue must be taken into account. In discussing Albrecht's address, Amann agreed as to the accidental benefits which resulted when the adherent serosa of the sigmoid flexure cut off the general peritoneal from the pelvic cavity. It accounted for the relatively mild results observed in cases of ectopic gestation and of large haematoceles. Amann availed himself of this protective faculty, for he often made use of the sigmoid colon to cover in peritoneal deficiencies after extensive dissections in pelvic operations, especially during the removal of cancerous growths. Inflammatory deposits in the flexure might naturally be taken for cancer of that portion of the intestine; a case was quoted where the bowel was resected in error. Yet Amann himself, on the other hand, had quite recently resected the sigmoid flexure for tuberculous disease, already diagnosed. Nassauer related a case of pelvic inflammation where it was not possible to make sure of the primary seat of disease. The patient, a woman aged 28, had an attack of abdominal pain simulating appendicitis; the uterus soon became quite fixed after much displacement forward. A tense swelling occupied Douglas's pouch; it was incised, and two pseudo-cysts laid open. They held a quantity of fluid, holding in suspension blood-stained shreds of tissue. The pain and accompanying fever at once subsided, and on the second day big masses, consisting of perfect casts of the mucosa of the bowels came away in quantities. As there was also a history of chronic constipation Nassauer was inclined to consider that the primary disease was sigmoiditis. Seitz related a case of obscure pelvic inflammation which proved to be acute diphtheritic colitis, chiefly in the sigmoid flexure. A phlegmon of the entire pelvic connective tissue developed, and ended fatally. Stumpf observed that when the temperature rose in childbed and a little tenderness and resistance could be detected high up in the left side of the pelvis, both the subjective and objective symptoms vanished after free purgation. As chronic constipation was very common in women and caused great irritation to the lower bowel likely to cause complications in the puerperium Stumpf advocated the opening of the bowels earlier than the third day. The practice would save many women from slight febrile attacks so common in childbed.

THERAPEUTICS.

212. Iodofan.

Iodofan has been introduced on the market as a substitute for iodoform. It is a reddish crystalline powder possessing neither taste nor smell. Its chemical formula is given as $C_6H_3I(OH)_2.HCOH$. Piokowski (*Berl. klin. Woch.*, May 20th, 1907) has examined this new product bacteriologically, and reports on his investigations. Iodofan is said to split up into iodine formol when it comes into contact with wound secretions. The difference between iodofan and iodoform is that the former is gained by iodizing benzol, while the latter is gained by iodizing methane. Iodoform has been shown to be a substance possessed of the power of inhibiting the growth of micro-organisms, but it has no real antiseptic value. It therefore seemed of advantage to the author to compare the action of the two substances side by side. Taking twenty-four or forty-eight hours old cultures of streptococci and *B. coli*, etc., he inoculated one or two loopfuls into tubes of sterile bouillon, and after fifteen minutes he added 0.1 gram of iodofan, shook the tubes up and made subcultures after times varying from two minutes to three hours. An inhibitory action was seen after one hour, and after three hours this action was better marked, but in no instance was any bactericidal action seen. Next he added 0.2 gram of iodofan to the tubes, and with this quantity the inhibitory action was strong from twenty minutes onwards, while after forty minutes the bacteria were killed off. Next he made subcultures on agar from twenty-four-hour old staphylococci and streptococci cultures, and poured the agar out on plates. After cooling he sprinkled the plates with minute quantities of iodofan, and incubated the plates at 37° C. Where the iodofan had fallen on the surface of the agar no growth was to be seen, while everywhere else the growth was abundant. The free areas extended for 5 mm. around the iodofan particles. He regards these plates as evidence of a marked antagonism between the bacteria and the iodofan. Similar experiments with iodoform failed to reveal any similar appearance. Mixing putrefying material (for example, bloody exudations, decomposing urine, etc.) with iodofan, he found that the smell disappeared after one or two minutes. After three or four weeks no smell had returned. Neither iodoform nor formaldehyde is able to deodorize as rapidly as this, and he regards this action as being due to nascent iodoformol. The gelatine of culture media on which iodofan was sprinkled had an alkaline reaction before the sprinkling, and after it was found to be acid. The acid medium is unsuitable for the growth of staphylococci. Three mice were experimented on by inflicting a small wound aseptically above the root of the tail. The wound secretion gave an alkaline reaction. Iodofan was then sprinkled on the wounds, and after two hours they were infected with staphylococci beneath the layer of iodofan. No infection took place, and the wounds were found to give a faintly acid reaction. In summing up, he finds that iodofan has antibacterial properties, acts as a deodorizer within a brief space of time, and possesses an extraordinary antagonism against bacteria. He regards the last-named property as most important in the treatment of wounds.

213. The Treatment of Arterio-Sclerosis.

Colombo (*Rif. Med.*, June 29th, 1907) accepts the recent doctrine as to the pathogenesis of arterio-sclerosis, namely,

that it is due to toxaemia, and that this poisoning of the blood is really more important than the state of the blood pressure. Arterio-sclerosis may exist with low blood pressure. The chief factor in the genesis of arterio-sclerosis is the sudden changes in blood pressure due to variations in the degree of toxaemia. Permanent high pressure does not do so much harm as sudden bursts of high pressure. Such sudden outbursts may follow any violent excitement, any debauch, or after prolonged constipation following the absorption of many toxic products. On these lines, therefore, the main reliance in treatment must be on those measures which purify the blood, for example, sudorifics, purges, respiratory stimulants, diuretics, rather than on drugs which lower blood pressure, for example, iodide, nitrites, etc. The author cautions against heating cold air whilst the body is bathed in perspiration, as in the sun-bath treatment. He advises absolute teetotalism and very spare use of tobacco. High-frequency currents are not in his opinion of much value, and do not decrease blood pressure as much as is said.

214. Typhoid Immunization.

F. MEYER AND P. BERGELL have investigated the subject of the immunization against enteric fever (*Berl. klin. Woch.*, May 6th, 1907). They came to the conclusion with regard to the possibility of treating typhoid fever with a specific serum that it was necessary to find out whether toxins, either outside or inside the bacterial cell, exist which are capable of producing an antitoxin when introduced into the animal body, and also whether such a serum would be able to cure animals which are severely infected without changing the infection into a fatal or severer one by bacteriolysis. Their researches were conducted in such a way that these questions might be answered. First, they prepared the toxin by taking large quantities of bacilli, and macerating these in water with a weak alkaline reaction at room temperature for forty-eight hours. The fluid was then filtered through a Chamberland filter and injected intravenously. Three to 4 c.cm. of this filtrate killed rabbits of from 2 to 3 kilogs body weight in from twelve to twenty-four hours. The result of intraperitoneal and subcutaneous injections was less striking, and it required twelve to fifteen times the lethal dose to kill animals certainly in this way. The filtrate possessed a marked aggressive action as well. When sublethal doses of typhoid bacilli were injected together with from 0.5 to 2 c.cm. of the filtrate death followed rapidly. Next they produced a toxin by extracting the bacilli with fluid hydrochloric acid at very low temperatures. The poison thus gained is absolutely water-free, and can be used for immunizing purposes. They do not feel inclined, however, to state that this toxin is a true endotoxin. In the third place, they prepared a toxin from peptone-meat broth, prepared from ox spleens, having a moderate alkalinity and a moderate content of alkali albuminate. Typhoid bacilli form a superficial scum on the third, fourth, or fifth day, and the filtrate of the broth contains a definite toxin which, like the first-mentioned toxin, loses its toxicity within a few hours. The authors briefly describe the changes produced by the endotoxin in animals. Next they turn their attention to the immunizing experiments. The animals chosen for this purpose were horses and sheep. The injections were repeated as soon as the animals again regained their usual health, and in this way considerable quantities could be introduced. The symptoms of the reaction were well marked. In testing the curative value of the immunized animals' serum, they found that 0.01 c.cm. of the serum protected mice against a twenty times lethal dose of bacilli, 0.001 c.cm. did the same, while 0.005 c.cm. failed once and succeeded once. When injected seven hours after infection (with a single lethal dose), 0.01 c.cm. failed to prevent symptoms, but the animal recovered; while 0.01 c.cm., 0.005 c.cm., and 0.0025 c.cm. proved successful; 2 c.cm. of serum was able to prevent 4 c.cm. of toxin from harming a rabbit. They realize that their serum is comparatively weak, and might be increased in activity. Nevertheless, they consider that the experiments show that the serum possesses toxin-neutralizing capabilities, and is capable of curing an infected animal. In a series of experiments on mice, they found that when mice were infected with small doses of bacilli and received sufficient quantities of serum to protect them marked phagocytosis went on in the peritoneal exudation, and after six hours no bacteria could be found. When the intraperitoneal injection of larger quantities of bacilli was undertaken, phagocytosis, it is true, was still active, but was not complete after twenty-four hours. The phagocytic power of the leucocytes was still more marked in those cases in which the serum was used after the animal had already become ill. In conclusion, they say that the toxin which is gained from the substance of the bacillary cells is capable of producing a true autotoxin. Part of the poison which is gained from the bacilli passes into the bouillon, and after a short space of time is no longer recognizable. They think that the chances of treating human enteric fever with such a serum as they have produced is promising.

PATHOLOGY.

215. Chemical Compounds and Epileptic Fits.

J. DONATH (*Deut. Zeits. f. Nerven.*, Leipzig, 1907, xxxii, p. 232) records a number of experiments made upon dogs with the object of determining the nature of the chemical substances circulating in the blood that are presumed to be the cause of the fits in idiopathic epilepsy. The experiments were carried out by injecting into the veins of dogs solutions of these various toxic substances in definite quantities, and observing whether or no convulsive seizures followed the injections. In opposition to Haig and to Krainsky, Donath holds that uric acid and urates, though retained in the body before and during an epileptic attack, and excreted in increased amount after it, have nothing to do with the production of the fits; the dog has no fit even when the amount of urate circulating in its blood is from four to thirty-six times as great as the maximum amount (0.175 per mille) found in human blood. Similarly he has failed to produce epileptic fits by the injection of lactic acid, sarcolactic acid, β-oxybutyric acid, or aceto-acetic acid. But he finds that certain ammonium salts and derivatives are powerful convulsants. Ammonium chloride and ammonium carbonate in moderate dose produce violent seizures, and finally pareses; trimethylamine, choline, creatinine, and guanidine or guanidine hydrochloride have similar actions and produce convulsions. He thinks that salts of potassium play no part in the production of epileptic fits; he failed to find any lactic acid in the cerebro-spinal fluid of epileptic patients, even when so large a quantity as 100 c.cm. was examined for it, and considers that the presence of sarcolactic acid in the blood, urine, and cerebro-spinal fluid of women with eclampsia gravidarum is only a non-poisonous product of the augmented muscular activity. Donath concludes that these basic substances (ammonia and the derivatives mentioned above) are directly concerned in the production of epileptic seizures.

216. Extra-pulmonary Pneumococcal Infection.

G. BRECCIA (*Riv. Crit. di Clin. Med.*, Florence, 1907, p. 401), after remarking on the frequency with which the pneumococcus has been found in the circulating blood of pneumonia patients, and quoting the figures given by various observers, records the case of a girl of 12 who was treated successfully for tuberculous peritonitis with effusion in January to March, 1907. She left the hospital much improved, but returned at the end of April with double apical pneumonia following on a sore throat, diarrhoea, and a swollen but soft and freely-moving abdomen. Two days later, on the seventh day of the disease, she died; Federici's sign, audibility of the respiratory murmur over the whole of the abdomen, was marked, and acute peritonitis was diagnosed. Blood was taken from a vein immediately after death, and gave a rich culture of the pneumococcus. At the *post-mortem* examination, red hepatization of the apices of both lungs was found; the pericardium was normal; the peritoneal cavity contained no free gas; nearly a pint of turbid fibrinous fluid was in the pelvis, which gave a pure growth of the pneumococcus, and contained more polymorphonuclear cells than lymphocytes; a few weak adhesions were found about the viscera and about the liver. The stomach and intestines were normal. There was an abundant deposit of healed slaty-grey tubercles on the parietal peritoneum. The second case was that of a girl of 20 who was treated for a typical attack of pneumonia, the temperature falling by lysis after the sixth day. After this an intermittent fever persisted, with vague articular pains; on the fifteenth day the pain was localized in the region of the right sacro-iliac synchondrosis, and a pasty tumour appeared. This was punctured; sanious pus issued, from which the pneumococcus was isolated in pure culture. The patient made a good recovery; she was delirious from the fifth to the tenth day of the disease, and lumbar puncture was performed, but only normal and sterile cerebro-spinal fluid was withdrawn.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

217. Circulatory Changes and Painful Areas.

Medical practitioners in Germany are frequently called upon to deal with claims made by patients under the accident insurance, in which certain subjective symptoms are complained of, but in which no objective signs are to be found. Rumpf says that Mankopf described a case in which pressure on the painful area resulting from a trauma caused an increase of the pulse-rate (*Muench. med. Woch.*, January 22nd, 1907). Rumpf found, on investigating this, that in many cases of neuralgia and painful points the circulatory system is undoubtedly influenced. The changes which he noted are (1) acceleration of the rate, (2) retardation of the cardiac beat with subsequent acceleration, (3) diminution of the size of the pulse, (4) irregularity of the pulse, and (5) acceleration associated with the two last-mentioned changes. He tests the value of these changes as diagnostic means in the following manner: The patient is admitted into hospital, and is mostly kept in bed. The cardiac activity must be equable when the test is to be applied. Everything is done to avoid exciting the patient, and thus to prevent accelerating the pulse-rate. Care is taken to make the patient breathe regularly, and not to force his expirations. He further repeated the test more than once whenever this was possible. He exemplifies the method by one or two cases. In one of these the patient was 34 years of age, and was referred to Rumpf on account of suspicion of malingering by the railway authorities. The past history was unimportant. He had followed the calling of a technical electrician. In October of 1900 he was in a railway collision. He stated that he heard a report, and then became unconscious. When in hospital he complained of pain in the occipital region, intolerance of noises, and loss of memory. Later on he found that he could not work on account of this intolerance of noises and because he had become very excitable and could not contain himself. He further stated that while he used to be able to drink about 3 litres of beer daily, he had found it impossible to take even small quantities since the accident. The symptoms at a still later period were incapability of working, loss of appetite and sleep, a sensation of pressure on the chest, pain in the head and back, and slight constipation. Objective examination failed to reveal any explanation for these pains. The patient was allowed to lie on a couch for some time, and when examined, it was found that his pulse had sunk to 72 in the minute. The painful area in the occipital region was then rubbed, after it had been found that no increase in frequency was produced by rubbing another part of the head. The patient's face expressed pain and his hands sweated. The pulse-rate increased during the first quarter minute to 24 beats, during the second to 27, and during the third to 25. After desisting, the rate per quarter minute diminished to 25, 24, 22, and 21 after seven minutes. On each occasion the same result was obtained. A year later he was again examined, and again the rate increased in response to rubbing of the painful area, while the pulse became very small, the face became slightly cyanotic and pale, and he sweated from the hands and axillae. As it could be shown that the patient had been quite well before the accident, and as this accident had been attended with temporary loss of consciousness, it was certain that he was not malingering but really suffering from the effects of the accident. Rumpf, however, considered that he was not totally unfit for work, and therefore decided that he was only justified to claim as 50 per cent. unfit for work. With regard to the effect on blood pressure, he has found that at times pressure on the painful area is attended by a lowering of the pressure, and at times by a raising of the same. The same applies to certain cases of neuralgia, and he therefore sums up by stating that in general neurosis, connected with neuralgia or painful points, marked stimulation of the affected areas is attended (1) by simple acceleration of the cardiac activity, (2) by initial short-lived slowing and subsequent acceleration, (3) by diminution of the volume of the pulse, (4) by irregularity of the pulse and especially by the intermission of single waves in the radial pulse, (5) by distinct cyanosis of the face by lowering of blood pressure, and (7) by raising of blood pressure. The method, however, must be cautiously applied.

218. Uraemia in Chronic Nephritis.

Fiessinger says (*Journ. des Prat.*, February 2nd, 1907) two factors play a part in the production of uraemia in chronic nephritis, namely, the kidneys and the heart. When a lacto-vegetarian diet has been instituted the kidneys can often perform their function of elimination in a satisfactory manner and one may even allow a little meat at the mid-day meal, provided that little or no salt be taken with it. The quantity of salt that may be allowed to the patient varies, however; when all oedema has disappeared 2 to 3 grams of salt may be allowed daily, provided the patient be weighed every day; should the patient's weight increase rapidly, the quantity of salt allowed should be diminished or even withdrawn altogether. If the patient be cachectic a salt-free diet should also be instituted, as cachexia in chronic renal disease may be the result of a retention of chlorides in the system. The eliminating power of the kidneys in cases of chronic nephritis may be considerably interfered with by attacks of acute renal congestion. In such cases the author advises linear scarifications of the skin over the kidney regions, assisted by rest in bed and a milk and water diet. After a few days broths, vegetables, and fruits may be added to the dietary, also such articles of food as potatoes, rice, pears, etc. After a few days of milk and water diet, theobromine may be prescribed if the arterial pressure is high or there still exist oedema. If these methods do not suffice to relieve the acute attacks of renal congestion the patient may be given to drink broth made from pig's kidneys; this preparation, although very active, has, however, given unequal results in the hands of the author. Purgatives and inhalations of oxygen occupy only a secondary place in the treatment of the acute renal congestion. When considerable cardiac dilatation has occurred and there is feebleness of ventricular contraction and signs of passive engorgement of the liver and other viscera, a mistake commonly made is to give too large doses of digitalis and to fill the patient with liquid nourishment. The author points out that in these cases only very small doses of digitalis should be prescribed ($\frac{1}{10}$ mg. of crystallized digitalin). This dose may be repeated daily for ten days, interrupted for six to fifteen days, and repeated again for another ten days. During the attacks of cardiac dilatation the patient should be restricted to a milk and water diet, and not too large quantities of these should be given at a time. A return to broths, purées, and legumes can gradually be made, but meat in these cases is badly tolerated, even when taken without salt. At this stage of the disease theobromine may be prescribed and may be continued for months, interrupting it for five or six days every fortnight. These patients, treated as above laid down, may live for years, but if treated with large doses of digitalis they die in a few months.

219. Nervous Manifestations of Hereditary Syphilis.

Gaucher (*Gazz. Méd. Belge*, August 15th, 1907) says that epilepsy is not rare as a manifestation of hereditary syphilis. This type of epilepsy is exceedingly incurable. It is quite certain that syphilitic antecedents can be found in a number of epileptic cases. Fournier and many other authorities hold this opinion. If an epileptic has not a history of hereditary neurosis, it is almost certain he is born of syphilitic parents; and, if the father and mother of an epileptic are not syphilitic, the syphilitic taint will certainly be found in the grandparents. Hereditary syphilis also shows itself as neurasthenia, hysteria, and imbecility. Neurasthenia, so frequent in acquired syphilis, can also be caused by hereditary syphilis. Hereditary neurosis, even if it be present in the same patient, cannot put syphilis out of court, for one must always recollect the specific origin of a neurotic diathesis. The author has treated two young girls for hysteria, which was due to syphilitic taint inherited from their father. He has seen patients born of syphilitic patients suffer from nocturnal frights. In one of these cases there were other signs, such as changes in the shape of the teeth, arched palate, slight strabismus; in another case the patient's father had died of angina pectoris, and a sister had suffered from aphasia. In fine, the majority of the backward and degenerate people are born of syphilitic antecedents. Some have simply lacunae in their intelligence; in others the cerebral

trouble reaches mental aberration in moral perversion. In some may be seen tremors, uncertainty and clumsiness of action, denoting in a general way medullary trouble. The author knows a subject of hereditary syphilis who has had incontinence of water since childhood. She is 30 years old. She has some exostoses, so has her sister. She has practically no intelligence. Her father, who had syphilis, died of an aortic aneurysm. Another patient, aged 19, with urinary incontinence of an intermittent nature, had an arched palate, an asymmetrical cranium, a malformation of the orbit, and a convergent strabismus. The author has already mentioned facial and scapular tics as occurrences in hereditary syphilis.

SURGERY.

220. Inflammation of and Round Tendons.

DE BOVIS (*Sem. Méd.*, July 24th, 1907) discusses the subject. Tendons which have not synovial sheaths are usually surrounded by a double layer of cells. The first and outer is the peritendinous cellular tissue, which is liable to peritendinous cellulitis; the second layer, which the author calls the juxtatendinous cellular tissue, is something like an arachnoid sheath, is transparent, and is continued into the perimuscular aponeuroses. It is very closely applied to the tendons. In it at various points are found small serous bursae. Sometimes the juxtatendinous tissue is in two layers, between which stretch numerous fibrous strands, there being a potential cavity between the two layers. The minute serous bursae are found on the posterior surface of the calcanean insertion of the tendo Achillis; above them the juxtatendinous tissue, like a sort of rough sheath, rises 4 cm. or 5 cm. above the upper edge of the calcaneum. In the lower third of the leg Mignon and Sieur have described a loose cellular tissue uniting the flexor and extensor tendons to the osteofibrous cavity in which they lie. These prolongations of serous bursae or of tendon sheaths, which form the juxtatendinous cellular tissue, can become inflamed. Inflammation of the tendo Achillis can occur either as peritendinous cellulitis or as juxtatendinous cellulitis. Peritendinous cellulitis of the tendo Achillis causes swelling in the sulci between this tendon and the malleoli. It does not often proceed to suppuration. Juxtatendinous cellulitis may be diffused or circumscribed. In the circumscribed form there are small nodosities, which seem to be attached as much to the skin as to the tendon. Both forms cause much pain and make walking impossible. They both give a fine, dry crepitation, though this is more pronounced in the case of juxtatendinous cellulitis. Another variety of peritendinous cellulitis attacks the anterior muscles of the leg just where they begin to become tendinous. This variety, too, gives the crepitation when the tendon is palpated and put in motion. There are two chief causes of the various inflammatory conditions of tendons, traumatism and rheumatism, and these two causes may be combined. Probably in these cases, as in tenosynovitis proper, the tendon itself is not much, if at all, inflamed. The inflammation is seated in the surrounding connective tissue. Treatment is simple. In rheumatic cases the rheumatic diathesis must be attacked. Locally embrocations and analgesic pomades may be used, while the joint is kept at rest. In traumatic cases rest is the all-important factor in the treatment. In painful cases Aakarblom has punctured deltoid bursae and injected some drops of a 2 per cent. carbolic solution.

221. Post-operative Pneumonia.

POLINI (*Rif. Med*, June 15th, 1907) discusses the above subject, and after a careful analysis of some cases comes to the following conclusions: In the first place he notes that nearly all the cases of post-operative pneumonia occur after abdominal operations, and almost invariably in subjects otherwise debilitated from various causes. He does not believe that the chloroform has anything directly to do with it, for such cases occur after purely local anaesthesia. Chloroform may cause a certain amount of pulmonary congestion, varying in different cases, but this is quite temporary in character, and depends not so much on the amount of chloroform inhaled as on some special susceptibility of the patient; it never gives rise to diplococcal pneumonia, and is indeed unfavourable to its development. The true cause of so-called post-operative pneumonia is Fraenkel's diplococcus, which is liable to attack people in weak or debilitated states, such as are often associated in cases where operation is required, and there is no reason to make post-operative pneumonia a special class in itself.

222. Surgical Treatment of Goître.

TINKER (*Amer. Journ. of Med. Sciences*, August, 1907) urges operation in all patients resisting therapeutic measures, and points out that cases treated by medical means alone show a higher death-rate than those operated upon, in spite of the fact that usually only the most unfavourable ones have been submitted to excision. The grave prognosis in well-developed cases of exophthalmic goître, the importance and difficulties of early diagnosis between benign and early malignant tumours, and the frequency of malignancy, with its hopeless prognosis unless excised, must all be borne in mind. The results of excising portions of the thyroid in the case of simple goîtres and benign tumours are excellent, and although the mortality is higher in exophthalmic goître, it is better than in those treated medically. Recovery is rapid, and there is little post-operative discomfort, while usually there is immediate slowing of the pulse and relief of nervous symptoms. Of 10 cases operated upon, all sat up in bed on the third day, and were out in a wheel chair on the fifth. Directly the goître becomes dangerous, with difficulty in breathing or inflammatory changes, or on the slightest suspicion of malignancy, operation is indicated, and this is the case when even slight symptoms of Graves's disease are present, as by early operation further development may be prevented. Local anaesthesia is entirely satisfactory, and is unattended by retching and vomiting, while the haemorrhage is less than with general anaesthesia, and the surgeon can devote more time to the necessary dissection where important structures are involved. All larger branches of the superficial cervical and supraclavicular nerves may be avoided by placing the transverse incision between their regions of distribution, and in dissecting the flap upward these nerves may be entirely avoided, the nerve trunks and the skin they supply being lifted with the flap, which includes the fascia beneath the platysma. The muscles attached to the larynx may be divided near their upper attachment, so as not to interfere with their nerve supply, and after the removal of the goître they must be carefully sutured. The superior thyroid artery is first secured, and after freeing the goître from its attachments it can be dislocated from its bed and the inferior thyroid artery secured. All large veins should be isolated and tied, as far as possible, after the arteries, in order to minimize haemorrhage. The laryngeal side of the capsule should be separated with a small portion of gland, in order to avoid injury to the recurrent laryngeal nerve. In the 10 cases operated upon there was extreme discomfort, and in several dangerous symptoms. Yet operation had only been previously advised in one of these. The importance of realizing the excellent results of excision in the hands of experienced surgeons is urged, seeing that Kocher has lately reported 661 cases, with only 1 death.

OBSTETRICS.

223. Abdominal Section in Puerperal Peritonitis.

A. KNYVETT GORDON (*Journ. of Obstet. and Gyn. of the Brit. Emp.*, June, 1907) reports on 10 consecutive cases of puerperal peritonitis treated by abdominal section, with 6 recoveries and 4 deaths. In one of the cases infection was said to have occurred before delivery, which, because of a contracted pelvis, was only effected after craniotomy. In a second case peritonitis followed a laceration due to dilatation of the cervix by Hegar's dilators; this operation was carried out three weeks after parturition by a medical man to whom the patient came complaining of pain in the back. Of the other 8 cases, 4 were attended by doctors, 1 by a midwife, 1 was unattended, but a midwife arrived in time to "extract" the placenta, 2 were unattended by either doctor or midwife. In 2 cases forceps had been used, but in all except the one case mentioned above the placenta had been expelled without any intrauterine manipulation. In the two cases in which peritonitis supervened, the birth not having been attended by either doctor or midwife, gonococci were found in the peritoneal pus. In 6 cases retained placental tissue was found in the uterus either on curetting or *post mortem*, and in 1 case its presence was suspected, but no *post-mortem* examination was possible. The time which elapsed between parturition and admission into the Monsall Fever Hospital, where the cases came under the author's care, varied in the 9 cases from two to nineteen days. Five of the patients are described as "apparently moribund" on admission, and 1 as being "*in extremis*"; of these, 2 recovered, while 3 died a few hours after operation. The author suggests certain points for special consideration. All the patients were in a

critical condition at the time of operation, and many were regarded as being in a hopeless state; nevertheless the author's conviction is that the individual patient should be given a chance, however slight the chance may be, and he does not believe that the suggestion that a patient with an abdomen full of pus can recover is worth consideration. Flushing of the peritoneal cavity was only resorted to in 1 case. Judging from his whole experience, the author's opinion is that as a rule it is best not to flush or even sponge out the peritoneal cavity, but to rely rather on free drainage at the most dependent part, with subsequent propping up of the patient in the sitting-up position, and the injection of saline solution with or without antistreptococcic serum and adrenalin; the author almost invariably gives calomel on the second or third day. In the 1 case in which flushing was adopted, the author thinks that the patient's recovery may be attributed to it. Thirdly, attention is called to the use of the hospital by some doctors as "a sort of municipal cemetery." In almost every case which was attended by the certifying practitioner from the outset, much valuable time had been wasted in the administration of quinine and daily vaginal douches. The most that had been attempted was an intrauterine douche, which, according to the author, may possibly often do more harm than good. In 1 of the cases reported, there had, it is true, been a curetting, but this had been done inadequately, and the uterus was afterwards found to be full of large portions of placental tissue.

GYNAECOLOGY.

224. Chorion-Epithelioma Complicated by Haematometra.

W. S. A. Griffith and H. Williamson (*Journ. of Obstet. and Gyn. of the Brit. Emp.*, August, 1907) report a case of chorion-epithelioma which presented certain unusual features in its clinical and pathological features. The patient was 42 years of age, and had borne four children. She became pregnant for a fifth time, and, by Griffith's advice, abortion was induced by her doctor at the seventh month, with the result that a carneous mole was expelled. A month later the patient was brought to Griffith on account of persistent haemorrhage. The uterus was then explored, a large quantity of blood clot removed by the finger, and a considerable quantity of decidua with adherent clot removed by curetting. After this the patient was at first thought to be doing well, all haemorrhage ceasing for more than a fortnight, and then only returning slightly once. Twelve days after the occurrence of the latest haemorrhage the patient was again brought to Griffith complaining of persistent aching pain in the epigastrium and hypogastrium. A diagnosis of chorion-epithelioma was then made, although it was difficult to explain the fact that for a month there had been haemorrhage once only, and then slight in amount. Abdominal hysterectomy was performed, and the clinical peculiarity of absence of haemorrhage was found to be due to occlusion of the cervical canal by a quantity of coagulated blood; the uterus was distended by the haemorrhage from the growth. The peculiarities of the case from the pathological aspect were three in number:—(1) An excessive formation and wide distribution of lutein tissue throughout the ovaries; (2) the support given by the case to the theory that lutein cells may arise by modification of the connective tissue cells of the ovarian stroma; (3) the presence of a layer of necrosed tissue closely resembling Nitabuch's layer of canalized fibrin between the uterine wall and the tumour outgrowths.

225. Membranous Dysmenorrhoea.

Morse (*Bull. Johns Hopkins Hosp.*, February, 1907) publishes a report of four cases of this disease with microscopic drawings. Diagnosis, although it may be very probable from the clinical history, should not be made without a microscopic examination, as there are two other discharges from the genital tract which to the naked eye may simulate menstrual membranes. There are vaginal casts or fragments of vaginal epithelium, and decidual casts. As a rule, the former are thinner but tougher and more parchment-like than membranes from the uterus, and no glandular openings are seen on the surface. Diagnosis can be made immediately with the microscope, which is indispensable even when the membranes are passed solely during the periods, as such is known to occur in cases of exfoliative vaginitis where there was no membranous dysmenorrhoea. Morse herself detected error of diagnosis in two such cases, by microscopic examination of the membranes. The distinction of dysmenorrhoeal membrane from decidua, a subject well known in obstetrics and forensic medicine, is specially difficult where an early abortion has to be taken into account. Cells which in size, form, nucleus, and staining properties closely resemble true decidual cells, are found apart from pregnancy, not only in menstrual membranes, but also in oedema of the endometrium, glandular hypertrophy, and inflammatory conditions of the mucosa. But these large cells do not show the epithelioid appearance found so often in the mature decidual cell, which has more abundant protoplasm and a much more sharply-defined outline. Still, cells are not always perfect, nor are membranes always fresh when committed to the pathologist, so that the question of early pregnancy cannot be excluded without the aid of clinical histories.

THERAPEUTICS.

226. The Cure of Addison's Disease.

Since it is extremely rare for a case of Addison's disease to get quite well, E. Grawitz (*Deut. med. Woch.*, July 4th, 1907) considers that it is worth while recording his experience and giving the details of the treatment employed. The patient had been a weakly child, but had apparently grown out of his weakness. At the age of 17 years he entered a public service in Charlottenburg as clerk, and at the age of 22 years he served his year with an infantry guard regiment. At first he did not find his military duties hard, but as he had to prepare for an examination during his later months he felt somewhat done up, and during the manœuvres he had to drop out once. After five months' service he had to be treated for middle-ear disease, and a little later he noticed that his skin was of a peculiar brownish colour. In the eleventh month of service he was sent into hospital on account of looking ill, but at the end of his year he resumed his clerical work. Within a very short time, however, he was compelled to seek medical advice. On admission into hospital he was found to be suffering from extreme weakness, his gait was laboured, and his grasp weak. His skin was tinted brown, especially his face and dorsa of his hands. On examination no physical signs of disturbance of any internal organs, save those of digestion, could be elicited. There was permanent tenderness in the region of the epigastrium and violent vomiting after taking food. The trial breakfast revealed diminished hydrochloric acid, motor insufficiency, and stagnation of the ingesta. The diagnosis thus was clear, and the severity of the adynamic symptoms pointed to a rapid progress of the disease. On account of his gastric symptoms, he was treated by washing the stomach out with saline solution. At first he objected very much to the procedure, but as soon as he realized that the washing had a beneficial result he did not raise any further objections. He was then fed with fluid food, which was introduced through the stomach tube, and which was retained. Apart from this, he was kept on nutrient enemata. The only medicament which was given was hydrochloric acid. After a course of this treatment extending over five weeks he was sent to a convalescent home, having gained 14 lb. and a considerable amount of strength. At this place he again lost weight, and when he returned to the hospital he was weak and ill, although not so ill as when he was first admitted. It was then found that he was not secreting any hydrochloric acid in his stomach at all. The same treatment was adopted, and after a further period of five weeks he was discharged much improved, the brown colorization of the skin having paled, although it was still marked. He kept on improving, and later on Grawitz did not hesitate to consider him cured, although there were still faint traces of discoloration of the skin. Grawitz states that he has been able to note the same beneficial result of this treatment in another case, in which the patient was discharged after having put on 32 lb. in weight and being in excellent health subjectively and objectively. In discussing the pathology of these cases, he calls the reader's attention to the work of Kohn and others, which shows that the chromaffine cells—that is, the cells which take up chromic salts selectively—are the cells which contain the actual active substance of the adrenals, and that the chromaffine cells in the sympathetic have a similar function. Destruction of the adrenal chromaffine cells is followed by a vicarious hyperplasia of the chromaffine cells in the paraganglions and in the sympathetics. Addison's disease is a disease of the chromaffine system. He discusses the points which Addison's disease has in common with pernicious anaemia and severe cachexia, and remarks that all of them are associated with severe

gastric disturbances. He is inclined to regard the intestinal gastric disturbances of his cases as being independent factors which only influenced the prognosis of the adrenal disease, and explains the beneficial effect of the treatment from this standpoint.

227. Dangers of Scopolamine.

DELBET (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 24, 1907) publishes 2 cases in which the subcutaneous injection of 1 mg. of scopolamine, together with 1 cg. of morphine, one hour before the administration of chloroform was followed by death on the operation table. In both these cases the operations—one an hysterectomy, the other a removal of a cancerous maxilla—though long and laborious, were completed without undue haemorrhage or any mishap likely to arouse suspicion of immediate death. The chief symptom in each of the fatal instances was respiratory failure recurring again and again after promising efforts at artificial respiration, and finally becoming persistent, the cardiac action, which had been maintained up to this time, also suddenly failing. The persistence of the heart's action during the attacks of respiratory failure is regarded as a special indication of scopolamine poisoning, as in poisoning by chloroform the heart usually ceases to beat at the time that the breathing is arrested. Delbet alludes to a third case in which alarming symptoms followed the injection of scopolamine. After an operation for removal of the appendix the patient ceased to breathe, but soon recovered after traction on the tongue and some movements of artificial respiration. These three mishaps occurred in 60 cases in which Delbet has employed scopolamine. Although not going so far as to assert that the proportion of two deaths to 60 cases is the rule, he has been led by his own experience and by reports of other fatal results in the practice of Delagenière and other colleagues to regard scopolamine as a terribly dangerous substance. It does not, it is held, possess any advantages that can be set off against its dangers, and so long as there are no means of distinguishing cases in which it is harmless from cases in which it causes death Delbet will make no further use of it.

228. Ferroplasma.

AMBROGIO DA GRADI (*Gazz. Med. Ital.*, August, 1907) traces the history of the therapeutic administration of iron back to Dioscorides. Bunge attempted to obtain iron for therapeutic use from milk and from the yolk of eggs. Saget improved on this idea by seeking iron in the vegetable world, and produced ferroplasma. Very similar inquiries had been conducted by a number of other observers. Ferroplasma is obtained from the abundant roots of *Rumex crispus*. Da Gradi reported full 10 cases of anaemia treated with the drug. The anaemias were of all kinds, primary and secondary, and treatment was always successful, although in some of the cases iron in other forms had been badly borne or had failed to do good. Ferroplasma appears to combine complete harmlessness with a rapid effect such as may be obtained by hypodermic injection. The author implies that endovenous injection has been abandoned in Italy, but that hypodermic injection is much practised, and in country districts it is common to entrust to the patient a syringe and a preparation of iron. The blood counts show that there is an apparent increase of white corpuscles, especially at first, but the author attributes much of this to diminution in the amount of blood serum. A great increase takes place in the number of red corpuscles, especially at first, with an improvement in their colour, resisting power, and regularity of shape. All this is better marked in primary than in secondary anaemias, and better in second anaemias due to endogenous, than in thsse due to exogenous, toxins. Da Gradi attributes the effect to diminished destruction of red corpuscles rather than to increased production, for he notices that there are few defective corpuscles (microcytes, macrocytes, and nucleated red corpuscles) after ferroplasma has been given for a little time. The most brilliant part of the results obtained was the increase of haemoglobin, an increase from 20 per cent. of normal to 90 per cent. being sometimes shown during the first month of treatment. Ferroplasma in the doses recommended does not disturb digestion; it relieves constipation without causing diarrhoea or giving rise to any other disturbance, and it promotes appetite. It should not, however, be given in large doses or administered when from any other cause gastric or intestinal digestion is disturbed.

229. Digalen and Leucocytosis.

MIRANO (*Rif. Med.*, June 8th, 1907), recalling the beneficial influence of digitalis in pneumonia, has tested the power of certain preparations of digitalis to cause leucocytosis. A certain amount of leucocytosis is the normal condition in pneumonia, and the question was how far the reported benefits of digitalis in pneumonia are due to the power of this drug to cause leucocytosis. From the author's experiments with digitoxin and digalen, both in cases of pneumonia and in cardiopaths, he concludes that these digitalis preparations have the power *per se* to induce a certain amount of leucocytosis, when administered hypodermically, endovenously, or by the mouth. It was found that at the crisis in pneumonia, where usually the leucocytosis fails, if digalen is given there is, even at this time, an increase in the number of leucocytes. Control experiments with injections of simple glycerine and water showed that the leucocytosis was not an ordinary chemiotaxis due to foreign material in the blood.

PATHOLOGY.

230. The Production of Giant Cells.

PODWYSSOTZKI AND PIRONE (*Archives des Sciences Biologiques*, St. Petersburg, 1906, vol. xii, p. 214) have studied the histogenesis of giant cells of epithelial origin by means of experiments upon rabbits, using the freezing method for producing irritation. They evaporated ether for two or three minutes on the rabbit's ear, and then gently rubbed the affected area. This operation was repeated several times a day at intervals of an hour. In from six to ten hours after the application of cold there appeared in the nuclei of certain cells unmistakable signs of direct division. The dividing process went on with remarkabie rapidity. and in from twelve to twenty-four hours many of the cells of the granular and Malpighian layers were filled with a mass of nuclei set closely together, several dozen nuclei being present in each protoplasmic area. The grouping of these nuclei was characteristic and differed from the appearance found in the ordinary giant cells of mesodermic origin in that the nuclear mass was centrally placed and the individual nuclei were closely packed together. The fate of these artificially-produced giant cells was interesting. Up to the end of the second day they were extremely numerous, but after that they rapidly disappeared owing to protoplasmic division and the distribution of the newly-formed nuclei into individual mononuclear cells. This process of new cell formation was so rapid that on the fourth or fifth days only vestiges of giant cells remained, whilst on the seventh day they had completely vanished and even cells with two nuclei were rare. The giant cells, therefore, were only a preliminary phase of epithelial hypertrophy, the nuclear divisions being temporarily in advance of the protoplasmic. Epithelial hypertrophy, the authors note, is common in the face and fingers of persons exposed to severe cold, and they consider that this condition is due to a protective mechanism similar in its histological nature to the epithelial thickening which they have produced experimentally in rabbits' ears.

231. Experimental Framboesia Tropica.

HALBERSTAEDTER (*Arb. aus dem Kaiserl. Gesundheitsamte*, Bd. xxvi, H. 1, 1907) adds further evidence, in addition to that which has already been brought forward, in favour of Castellani's view that framboesia tropica or yaws is caused by a spirochaete which is specifically different from. though closely resembling, the *Spirochaeta pallida* of Schaudinn. Framboesia tropica is inoculable upon both anthropoid apes and monkeys, and in the lesions produced in these animals Castellani's *Spirochaeta pertenuis seu pallidula* is demonstrable. The organism is to be found both in the primary lesions and in the recrudescent lesions at the site of inoculation. In the latter situations it is particularly abundant. It has also been found in a generalized eruption which was produced in an orang-outang. The great similarity between framboesia and lues, and their identity in many respects, have been illustrated by the experimental inoculations made upon anthropoids and monkeys; but these investigations have also established certain differences which, irrespective of possible morphological distinctions between the organisms in question, serve to separate the two diseases. The author calls particular attention to the three following points: (1) The appearance of the primary lesion in framboesia is different from the lesion caused by a syphilitic virus; (2) local recrudescences in monkeys are commoner after inoculation with framboesia than after inoculation with syphilis; (3) after the appearance of the primary efflorescence of yaws the animals are susceptible to inoculation with syphilis, and vice versa.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

232. Uraemic Meningitis.

Lepine (*Sem. Méd.*, July 31st, 1907) argues that it is quite possible for the meninges to become affected in kidney disease, just as does the pericardium. He gives 3 cases bearing upon the question. The first was a man, aged 66, who has arterio-sclerosis. When admitted to hospital in March he had very pronounced symptoms of kidney disease, notably a general anasarca. A diet free from chlorides did not improve his condition, and by the beginning of May he was delirious. He was still passing 2 litres of urine, but there was considerable albuminuria and the elimination of methylene-blue was far below normal. Uraemia became accentuated and his pulse feeble. He died at the end of May without ever having convulsions or coma. The kidneys on *post-mortem* examination weighed 260 grams. Their cortex was very atrophied. The heart, more dilated than hypertrophied, weighed 620 grams. The aorta was large and non-elastic; but without any atheromatous plaques. The liver weighed 1,480 grams, the spleen 120. The meninges on the convexity of the hemispheres showed marked thickening; they were opaque and milky in appearance, except over one small point, some centimetres square, which was deep red. They separated easily from the grey matter. The central parts of the brain were normal. There was no available history of alcoholism, and no signs of tuberculosis. The second case was a woman, aged 45. She came in to the hospital on April 14th. She was wasted, vacant, and did not speak. She understood partially what was said to her. She had exaggerated patellar reflexes. Her pulse was 116. The urine contained a large amount of albumen, but no sugar. Lumbar puncture was performed with very little benefit. The urine remained albuminous; it contained 20 grams of urea and 92 cg. of phosphoric acid per litre. Coma and death supervened. *Post mortem* the kidneys weighed 110 grams, and were very atrophied. The heart, fat and dilated, weighed 380 grams. The aorta was dilated. The meninges were very red on the convexity of the brain. The ventricles were not dilated. The third case was a woman, aged 30, who came to hospital on May 12th. She was delirious and restless. Rectal temperature was 40° C. She was thin. She had always been sober. There was retraction of the abdomen. She was quiet the following day, but unconscious, and Kernig's sign was present. In two days she became comatose, and died two days later. *Post mortem*, the kidneys showed chronic nephritis; they weighed 220 grams. The heart weighed 350 grams. There was intense redness of the meninges, and much congestion of the grey matter. No tuberculous lesions were found in the lungs or glands. Some of the blood vessels showed periarteritic and endarteritic lesions. The author concludes, from his observations, that it is only in chronic uraemia that inflammatory lesions are produced. He thinks that the symptoms depend less upon the nature of the morbid process than upon its localization. He does not, however, pretend that the nature and severity of the lesion are of no import. It is clear that the destruction of an organ abolishes that organ's functioning powers; but so long as the lesion is not too deep, and so long as it is, strictly speaking, curable, the functional trouble must be, above all other things, kept in view.

233. Pyelitis in Enteric Fever.

In a reprint from the *Glasgow Medical Journal* for December, 1906, Brownlee gives the notes of 5 cases of pyelitis complicating enteric fever, the *post-mortem* appearances in one of them being fully described by Chapman. The diagnosis of the condition, especially at the outset, is always difficult, since some degree of nephritis is also present; and, while this may be looked upon as due to a focal lesion in the kidney, the opportunity for verification *post mortem* is not always forthcoming, as in one of these cases. The onset of the symptoms relating to the urinary condition developed at the end of a primary attack of enteric fever in one, in another in the apyretic interval between the primary attack and a relapse, and in two others shortly after the temperature became normal. There were no special symptoms, such as rigor, altered pulse or temperature, or feeling of special discomfort. The first sign noted was the altered urinary colour, showing the presence of blood, and the sediment contained altered blood cell and catarrhal epithelial cells. In 2 cases epithelial and granular casts were present, and the amount of albumen was out of proportion to that which the presence of blood would account for. These symptoms of nephritis disappeared in five or six days. The symptoms proper to pyelitis were the presence of blood, with a certain amount of tailed epithelium, which in two or three days became replaced by pus cells. An interesting point in connexion with haematuria in pyelitis is the difficulty of obtaining the guaiacum test. In the case upon which a *post-mortem* examination was made by Dr. Chapman the chief changes found in the right kidney were an extreme degree of congestion, and some haemorrhages and degeneration of the tubular epithelium, together with small interstitial haemorrhages, and in some instances haemorrhage into the tubules through the destruction of their basement membrane. These changes were most marked in a localized region, extending up from one pyramid into the boundary zone, around which was an area of marked hyperaemia. The pyelon was markedly congested, with destruction of the epithelial cells, and the pelvis of the kidney contained some thin, slightly blood-stained, opaque fluid, which gave bacteriologically an almost pure culture of the *Bacillus typhosus*. Cultures made from the bile also showed a pure growth of this organism.

234. Quantitative Estimation of Bilirubin in the Urine.

Severino (*Rif. Med.*, May 4th, 1907), after several trials, recommends the following method: Take a small quantity of urine (3 to 4 c.cm.), dilute with 5 to 6 c.cm. of chloroform; this dissolves out the bilirubin; the mixture with chloroform should be repeated two or three times until all the bilirubin is dissolved out, and the last remaining portion can be extracted by adding to the urine a few centimetres of a saturated solution of sulphate of ammonia and a few drops of 1 in 5 H_2SO_4. To the separated chloroform solution 20 c.cm. of caustic soda solution is added; this extracts the bilirubin from the chloroform. Next, 10 c.cm. of the supernatant sodic solution are withdrawn, and accurately neutralized by 1 in 5 acetic acid solution; to this is added 2 c.cm. of pure chloroform, and from a graduated burette a centinormal solution of iodine is added drop by drop, and the test tube gently shaken after each addition. The iodine is added until a distinct rosy colour is seen. By experiment it is found that every centimetre of the iodine solution transforms 0.0000945 gram of bilirubin, hence the total amount of bilirubin can be estimated. The method is reliable, simple, requires no costly or special apparatus, and, owing to the small amount of fluid required, may be applied equally well to the serum of the blood as to the urine.

SURGERY.

235. Operation for Cancer of the Breast.

G. Marzagalia (*Il Morgagni*, February and March, 1907) discusses the different operations for the removal of cancer of the breast. The points of special importance are: (1) The removal of the whole gland, including outlying lobules, which are not always very obvious until they are sought for. (2) The removal of the pectoral fascia, which is not entirely superficial to the muscle, and cannot therefore be completely removed without the removal of the superficial fibres of the muscle. (3) If the pectoral muscles themselves are invaded further spread quickly occurs. (4) The subscapular glands are never infected until after the pectoral muscle. (5) The advantage of removing the pectoralis major in all the cases is that it is then possible to remove the retropectoral glands which are often infected early. (6) The removal of the pectoralis major does not much affect the mobility of the arm. (7) Some recommend the removal of parts of other muscles with which mammary gland is in contact. (8) There is some doubt as to the desirability of removing portions of ribs attacked by mammary cancer. Pneumothorax thus caused often disappears very soon, but there is not much prospect in such cases of a lasting cure. (9) An infected lymphatic gland is not necessarily increased

in size, and the normal size of a gland is not therefore a reason for leaving it. (10) The axilla should always be opened up and the possibly infected elements removed as thoroughly as possible. (11) It has been suggested that the clavicle should be divided and the neck spaces cleared out as a matter of routine, but cure is probably impossible when the cervical glands are infected; the operation outlined above is severe, convalescence slow, and the result of doubtful utility. (12) Very wide operations appear to give increased security against local recurrence, but to favour the occurrence of internal metastasis. The author therefore advises complete rather than ultra-complete operations. (13) The whole of the skin covering the breast should be regarded with suspicion and removed, although it may be freely movable over the tumour. For the repair of the large wound thus made skin-grafting by Thiersch's method is altogether inadequate, and it is better to attempt to fill the gap and obtain healing by first intention by Tansini's autoplastic method or some modification of it. Tansini cuts a large flap from the skin of the dorsal region, leaving the upper end of it undisturbed, and bringing the lower end forwards to cover the area from which the skin and breast have been removed. In some cases a considerable part of the flap has necrosed. To avoid this it is desirable to include in the flap a part of the latissimus dorsi, and so obtain a better supply of blood than can be secured with skin alone.

236. Selection of Anaesthetics in Operations on the Thyroid.

Delore and Chalier (*Rev. de Chirurgie*, No. 10, 1907) publish some clinical details, together with the results of treatment, in 73 cases of benign swelling of the thyroid, on which they have operated in the course of the last seven years in the clinic of Professor Poncet. In the section of their paper which deals with the operative and post-operative complications in cases of this kind the authors discuss the question of general anaesthesia, which in the opinion of some authorities cannot be employed in thyroid surgery without danger. Two questions are considered: Is it imperative on the surgeon to operate without anaesthesia, and, if not, should he use ether or chloroform? Ether, it is pointed out, has been accused of causing, when employed in operations for goître, various respiratory disturbances, from simple tracheo-bronchial irritation to vascular and pulmonary congestions, and to post-operative bronchopneumonia. The ordinary dangers of chloroform, on the other hand, are held by many to be exaggerated by the risk of cardiac syncope, a special predisposition to which exists in the case of a tumour compressing the trachea and, it may be, the pneumogastric nerves. Some surgeons reject both ether and chloroform, and in all their cases rely systematically on local anaesthesia by cocaine. The authors hold that on this subject a general rule cannot be laid down. General anaesthesia, in their opinion, is subject to just the same indications and contraindications in thyroidectomy for goître as in other operations. Though the surgeon may be obliged to replace it by local anaesthesia in debilitated and cachectic subjects, or in urgent cases complicated by serious respiratory and cardiac complications, it ought to be employed in most of the operations for goître. Ether is always used and has been found free from danger by Poncet, who asserts that post-operative pneumonia and broncho-pneumonia are due as a rule not to the action of ether, but to infection. It is necessary, however, for the anaesthetist when dealing with a goitrous patient to be very careful, and to endeavour not to put his subject deeply under the influence of the agent, and also not to begin its administration before the surgeon is ready to intervene. The usually prolonged period before ether has taken any decided effect on the patient may be shortened by the use of ethyl chloride, which acts very rapidly, and usually suppresses the initial phase of congestion and excitement. This mixed procedure of anaesthesia, the authors state, was practised in nearly all their cases, and always, except in some instances of threatened asphyxia, without any serious incident.

237. Anastomosis between the Liver and Small Intestine in an Infant.

Ehrhardt (*Zentralbl. f. Chir.*, No. 42) publishes a case in which he practised the rare operation of hepato-cholangio-enterostomy on an infant, aged 6 weeks, for the relief of congenital jaundice due to absence of the large ducts and the gall bladder. The liver having been exposed by a vertical incision in the middle of the rectus muscle on the right side, a small portion of its parenchyma was cut away from its under surface, and, after arrest of bleeding by ligatures and compression, anastomosis was established by two rows of sutures between this raw surface of hepatic parenchyma and the margins of an opening made in a loop of jejunum. The early results of the operation, which lasted twenty-five minutes, were favourable, as in the course of the next twenty-four hours there was a free discharge of bile with the stools. The infant, however, showed signs of exhaustion on the sixth day and died two days later. At the autopsy the peritoneum, including the portion at the seat of operation, was found free from any signs of irritation. The anastomosis was complete and none of the sutures had given way. This, the author states, is the fourth instance that has been recorded of direct anastomosis between the liver itself and the intestine. The operation cannot at the present time be regarded with favour, for should the patient survive it is probable, as the results of experiments on animals indicate, that the fistulous opening will in course of time become closed.

238. Tuberculosis of the Testicle.

Keyes, jun. (*Ann. of Surg.*, June, 1907), publishes the results of a study of 100 cases of tuberculosis of the testicle, collected from the practice of van Buren, Keyes, sen., and Chetwood. This affection, he holds, is clinically never an isolated lesion, and is only one feature of a general genital tuberculosis. Sterility, it is pointed out, is frequent, if not constant, at the time the first testis is invaded, and there is evidence at this time of inflammation of the internal genital organs. The opposite testicle is attacked within a few years in 8 or 9 of 10 cases, and such relapse is in no wise postponed by early removal of the primarily diseased testis. Though suppuration seems often to result in permanent cure of the local process, and though a chronic focal is unlikely ever to suppurate, yet in no case is there a certainty of a real cure unless the tuberculous epididymis has been removed. As the demoralizing effect of epididymectomy is not to be compared with that of castration, and as slight tuberculosis of the body of the testicle may be depended upon to heal spontaneously after removal of the epididymis, this may be regarded as the radical operation of choice, unless there be hyperacute generalized epididmo-orchitis, or unless the testicle has been destroyed by suppuration. Epididymectomy has a beneficial effect upon the general health and upon tuberculosis of the internal genital organs, and should therefore be performed early in the disease. If the patient be sterile, it would probably be advisable to remove both epididymides even though only one side is diseased.

OBSTETRICS.

239. Primary Chorion-epithelioma Outside the Uterus.

H. T. Hicks (*Journ. of Obst. and Gyn. of the Brit. Emp.*, August, 1907) has collected notes of 14 cases of primary vaginal chorion-epitheliomata, and gives a full description of a case which came under his own care. The patient was a married woman, 28 years of age, who had had three children, no miscarriages, and had always been in good health up to the beginning of the illness in question. On June 21st, 1907, the patient, who was at that time pregnant, was taken ill and found to have basal pneumonia. On the following day a miscarriage occurred, and a large hydatid mole, together with a five and a half months dead but fresh fetus, were cleared out of the uterine cavity; the inner surface of the uterus was felt to be smooth and soft after the evacuation. The patient was admitted into Guy's Hospital on account of the lung condition. An empyema was diagnosed and drained, but for some weeks after the operation there was continuous pyrexia, which was thought to be possibly due to the pelvic condition. Hicks saw the patient at the end of July. She had continued since the miscarriage to suffer from a blood-stained vaginal discharge of dark venous colour, but the bleeding was not profuse and did not increase on examination. On vaginal examination a soft single cyst, apparently superficial and covered with unaltered vaginal mucous membrane, was found high up in the left fornix, and below, on the posterior wall of the vagina, a small knob, about the size of a cob-nut, hard and looking bluish-purple, beneath the mucous membrane. The condition of the empyema caused the postponement of operation until August 20th, when the lower tumour, which in the interval had increased a little in size, was removed. After the operation the patient got on well, the vaginal discharge ceased, the cyst disappeared spontaneously, although there remained a small dimple at its original site, and by the beginning of September the

patient felt quite well. The growth which had been removed proved to be a typical chorion-epithelioma. The patient remained free from recurrence for five months (until January 8th), when a small soft but well-defined tumour was found in the lower part of the anterior wall. This was removed and the vagina removed well wide of the tumour. Two other growths, apparently independent of one another, appeared at intervals of six and three weeks respectively, and were also removed. After this there was not any further definite tumour formation, but a soft growth spread and infiltrated over an extensive area, so as to make further operation useless. Secondary growths occurred in the right lung, and the patient died on May 8th—eleven months after the passage of the mole. The most striking fact about the case was the complete absence of any intrauterine growth. The vaginal growths, in the author's opinion, arose from the epithelium of embolic villi. During the five months' freedom from recurrence the villi must have lain dormant in the perivaginal tissues. The section taken from the growing edge of the growth showed the growth creeping along the veins on the vaginal walls, and as at the time of operation each tumour was found to have a definite capsule on its deeper aspect, the author would think it safe in such cases to shell the tumour out of its bed on the deep aspect, while removing the vaginal wall at the periphery as widely as possible. The 14 cases of primary vaginal growth which the author has collected bring out the comparative absence of malignancy in many of the cases. The following are the general conclusions at which he arrives on the subject of the primary vaginal growths: (1) These growths most often follow the passage of a vesicular mole, but may follow abortion or full-term pregnancy. (2) They may occur before the expulsion of the mole. (3) They originate from the epithelium of migratory embolic villi. (4) There is no evidence to show that a malignant growth or mole can be expelled from the uterine body and leave that organ free from growth, while metastatic growths may occur in other parts of the body. (5) The growth spreads via the perivaginal veins. (6) There is no means of telling whether any given mole will be followed by chorion-epithelioma. (7) The large quantity of syncytial masses which were seen in the section from the case described is very characteristic of vaginal chorion-epithelioma.

GYNAECOLOGY.

240. Sarcoma of the Vulva.

W. Blair Bell (*Journ. of Obst. and Gyn. of the Brit. Emp.*, Oct., 1907) gives an account of a case of spindle-celled sarcoma of the labium minus. The patient was 56 years of age. She had borne six children, the confinements had been natural, there had been no miscarriage, and the menopause had occurred between seven and eight years before the appearance of the growth. On admission to the Liverpool Infirmary the patient stated that she had noticed a small lump in the vulval region six months before, and that it had grown rapidly, but had not caused pain, dysuria, or bleeding. The tumour proved to be a large pedunculated growth, of the size of an orange, which protruded between the labia majora above the orifice of the urethra; the base of the tumour appeared to correspond with the position of the clitoris and to involve the left labium minus. The labia majora, the urethra, and vagina were all unaffected. No enlarged glands could be felt in the inguinal region. The diagnosis made was of epithelioma of the clitoris. When the growth was excised the inguinal canals were found to be free from enlarged glands; the wound was closed with sutures and healed by first intention. Examination of the specimen showed it to be a typical, pure, large, spindle-celled sarcoma, with none of the characters of a melanotic fibrosarcoma or myxosarcoma. A horizontal section through the base of the growth showed that it had probably originated in the prepuce of the clitoris. The author has made a study of the literature of sarcoma of the vulva, and, after excluding all but cases of pure sarcoma—that is, excluding melanotic sarcoma—has found records of only 21 cases, which are described in a tabular form. From these cases it would seem that the age of incidence is very similar to that of ordinary carcinoma, being most commonly between 30 and 50. The most common site of origin appears to be the labia majora, the three cases in which the growth is said to have originated from the clitoris needing further evidence. The myxomatous and mixed celled growths were the most common. The cases supply no definite idea of the prognosis, which is probably similar to that for sarcoma elsewhere on the surface of the body.

THERAPEUTICS.

241. Opsonins and Vaccines in Surgical Treatment.

Bergey (*Univ. Pennsylvania Med. Bull.*, June, 1907), while recognizing the great value of vaccines in the treatment of certain chronic infections where operation has proved more or less disappointing, urges their use to fortify the system against bacterial invasion in operations which cannot be conducted under strictly aseptic or antiseptic conditions. Furunculosis, carbuncle, circumscribed suppurations due to the staphylococcus, chronic streptococcic or pneumococcic inflammations, and especially localized tuberculous infections of the skin, bones, glands, peritoneum, or genito-urinary tract may be benefited by treatment with bacterial vaccines. Autogenous cultures are preferable to stock ones in preparing the vaccines, and treatment should commence with small doses (50,000,000 bacteria) gradually increased to larger ones (500,000,000 bacteria), according to the reaction. In chronic tuberculous lesions (for example, psoas abscess) after evacuation of the caseous material injections of mixed vaccines of tuberculin, staphylococcus, and streptococcus should be administered, but in tuberculous lesions where there is no mixed infection Koch's new tuberculin (0.004 to 0.06 mg. of dry powder at a dose) will suffice. Subsidiary measures in conjunction with treatment by vaccines will be useful, and in this connexion massage and measures to promote passive hyperaemia of the part, promoting blood and lymph flow, should be tried. Such measures, however, may be harmful in the absence of treatment by vaccines, because they may suddenly liberate poisonous substances lodging in the infected area. In oral operations liable to secondary pyogenic infection, and in cases where the general vitality is low, as in diabetes and albuminuria, the patient's opsonic index for staphylococci and streptococci may be increased by bacterial inoculation; and this may be useful also in the treatment of wounds where perfect asepsis is doubtful.

242. The Treatment of Whooping-cough.

P. Reyler, dealing with this subject in *Therapeutische Monatshefte* for October, says prophylaxis is very important. The exciting cause is most probably a short polar staining bacillus very similar to the influenza bacillus. Reyler has found this bacillus in large quantities in the sputum during the early prodromal catarrhal stage. The infection cannot be carried by a third person, so the child is sufficiently isolated if it be kept in one room. Diet and nursing are very important elements in the treatment; drugs have not much influence upon the course of the disease. The question of open-air treatment is entirely one of climatic conditions. If the weather be warm and dry, the child should be as much in the open air as possible; if it be cold, damp, and windy, he is much better indoors. Should the child be taken out during winter, it should be warmly clad, and the day must be most carefully chosen. A change of air has no value whatever unless the child be removed to a better, a warmer, and drier spot, where the child can spend more time out of doors in safety. When such a climate cannot be obtained, the child is best treated in two rooms, the sleeping room being well aired during the day, and brought to a temperature of about 63° F. before the child is put to bed. During the night the day-room must be well ventilated. As soon as a rise of temperature is detected the child must be kept in bed. If the child be bathed, the greatest care must be taken that it does not take cold. It is often better merely to wash it. The diet must be regulated and anything likely to cause diarrhoea omitted. If the child vomit often, it must be re-fed, and should have milk and cream, malt extract, the yellow of egg with sugar, and some patent food. Quinine, euquinine, aristochin, and antipyrine are sometimes of value. Cyprus oil in 20 per cent. alcoholic solution sprinkled on the bed has been used, but its efficacy is not proportionate to its price. Reyler has not found pertussin of much value. Pyrenol (the sodium salt of benzoic acid-thymol-ester) is said to combine the therapeutic action of benzoic acid, thymol, and salicylic acid. Reyler, after an extensive trial, finds it of little value. He believes belladonna is the most valuable drug combined with potassium bromide and ipecacuanha. Should the case be complicated by capillary bronchitis, mustard plasters are indispensable. Convulsions often threaten the child's life. Bromide must be pushed. Reyler gives even infants 15 to 20 grains a day combined with enemata containing chloral hydrate. Children who get convulsions are victims of the so-called spasmodic diathesis, or spasmophilia, and should be put on a milk diet.

243. **Boldo.**

CARLO FEDELI (*Il Policlinico*, June, 1907) states that boldo is a drug derived from the *Boldea fragrans*, which has long been in popular use in South America, where it is considered a gastric stimulant and sedative, an antispasmodic and cholagogue, and a useful drug for all sorts of hepatic disease, especially those of a painful nature. It was introduced into Europe twenty years ago. It contains 2 per cent. of an essential oil, 1 per cent. of an alkaloid—boldin—some citric acid, sugar, gum, tannin, and an aromatic ingredient. There is also a glucoside—boldoglucin. Laborde, experimenting on animals, showed that boldoglucin quickly caused a quiet sleep, with slow, regular respiration, and diminished production of carbonic acid. This condition is probably due to cerebral anaemia. Larger doses, such as 20 to 25 cg. to each kilogram of body weight, cause deeper sleep, leading to death without convulsions. The gastric and hepatic uses of the drug have been alternately affirmed and denied by a number of writers, to whom Fedeli refers. The native and European inhabitants of South America use a strong decoction of the leaves, and take at least half a litre in the day. They judge of the effect produced by the amount of gravel eliminated with the faeces, presumably from the liver. The author has tested the drug in more than 300 cases. A 5 per cent. tincture was prepared from the leaves, and 20 to 80 drops, or very rarely 100 drops, were administered as a dose. In cases of uncomplicated biliary colic the pain was usually much diminished and soon disappeared. If it returned again it was less violently and at longer intervals than before. One patient continued the use of the drug for eleven months with the best results. In nearly all these cases gastric digestion was much improved, the bowels acted freely, and the passage of biliary calculi was much facilitated. In one case of chronic calculous cholecystitis with evident perihepatitis and very frequent and severe attacks of colic, large and numerous stones were passed and then a large quantity of biliary gravel, and complete cure was thus brought about after repeated failures with other drugs. A similar result was attained in another case of biliary lithiasis, with a very large gall bladder, after a well-known surgeon had pronounced that cholecystectomy was urgently necessary. In about 3 per cent. of all cases of biliary lithiasis uncomplicated by fever boldo appeared to produce no good effect. These were cases in which the calculi were very large, or else repeated attacks of inflammation had led to chronic structural changes in the gall bladder or the ducts. Very good results were also obtained in cases of cholelithiasis complicated by fever due to inflammation of the gall bladder. Where the fever was due to a persistent or recurrent cholangitis the results were not nearly so good. The author, therefore, on clinical grounds, agrees with those who have ascribed to boldo a stimulant effect on gastric digestion, a sedative effect on biliary innervation, and a great power of facilitating the passage of biliary gravel and calculi. Fedeli also records observations made on a dog which had successfully undergone the operation of cholecystostomy. The bile was collected and analysed for a period of four hours on each of the six days preceding the administration of boldo, then on each of six days while 50 grams of fluid extract of boldo were being given daily, then for several succeeding days. It was found that boldo increased the secretion of bile, and the proportion of water in the bile, and diminished the solid residue. When the administration of the drug ceased the bile quickly returned to its previous amount and composition.

244. **The Early Treatment of Gonorrhoea.**

PANICHI (*Clin. Mod.*, An. 12, No. 49) gives details of 14 cases of gonorrhoea treated in the early stages by the following method: As soon as the discharge is recognized injections of picric acid (10 cg. and 300 grains water, a little laudanum and glycerine) are used in the following manner: The patient urinates and then the meatus and end of the urethra is well washed out for ten minutes with the solution and finally about a cubic centimetre injected into the anterior urethra. The injections are followed by keeping the penis in a special bath of hot water (up to 50° C.) for fifteen or twenty minutes. During the first day two series of injections are given. On the third day, if all goes well, a more copious washing (up to 500 c.cm.) with the same solution is used and on the fourth day a weak solution of pot. permang. ½ per cent. is used. At the same time santal oil is given internally. By this mixed treatment the author says he has got good results, as tested by the microscope. Out of his 14 cases, cure (that is, absence of gonococci) was obtained in five days in 1 case, in six days in 2, in seven days in 1, eight and nine days in 2 cases, eleven days 2 cases, thirteen days 4 cases, and in sixteen days 2 cases. The picric acid solution is said to be painless and did not give rise to any untoward complications.

PATHOLOGY.

245. **Sclerodactyly.**

M. CHIADINI (*Riv. Crit. di Clin. Med.*, Florence, 1907, pp. 372–85) describes the case of a man under observation for over two years with sclerodactyly. The patient had never had malaria or syphilis. At 17 he had a whitlow, which left some deformity of the right middle finger, but in general had enjoyed good health until he was 55 (July, 1904), when he began to suffer from severe spontaneous pains in the palm of the right hand, made worse by pressure. The hand was not swollen, but began to swell three or four months later, when it was noticed that the right arm was shrunken. The palm was incised, but pus was not found. At this time the patient was a well-formed, rather thin man; the movements of his right hand were limited, the right arm and shoulder were a little atrophied and weaker than the left, the muscles of the right arm showed lessened excitability to galvanic and faradic currents and increased mechanical excitability, but otherwise nothing abnormal was found in the patient, excepting that his weak voice and the results of laryngeal inspection suggested that he had suffered from tuberculous laryngitis in his youth. In particular, it may be mentioned that the nervous system appeared normal throughout; the various sensations of the right hand were normal also. The skin of the right hand was dry and somewhat hardened, particularly over the whole palm and over the joints. After repeated examinations, signs suggesting tuberculosis were detected at the right apex. In November, 1904, small, shallow, and indolent ulcerations began to appear about the right hand, spreading, and healing slowly; ultimately these reached the right forearm, and similar ulcers appeared at the left wrist. In March, 1905, deformities began to appear in the right hand, recalling those seen in rheumatoid arthritis; viewed by the *x* rays, the left hand was normal, but slight trophic changes could be seen in the phalanges of the right hand, suggesting bony absorption. In April, 1906, tuberculosis of the left testis appeared; the organ was removed in July, and the patient died of acute tuberculosis in September, 1906. No autopsy was made. Discussing the diagnosis, Chiadini points out that sclerodactyly is usually symmetrical; he excludes Raynaud's disease, cutaneous tuberculosis, eczema, Dupuytren's disease. He holds that both sclerodermia and sclerodactyly are often due to tuberculosis; the muscular atrophy in his patient he attributes to the tuberculosis of the apex of the right lung, which acted here reflexly rather than by any definite neuritis. The cutaneous ulceration he sets down similarly to a trophic lesion, due to reflex irritation of the trophic centres for the hands and arms.

246. **The Reaction of Justus in Syphilis.**

IN 1895 Justus stated that patients with syphilis, if not already treated specifically, exhibited a fall in the haemoglobin value of their blood of from 10 to 20 degrees in von Fleischl's scale when given a large dose of mercury by subcutaneous injection. B. Nicola (*Giorn. d. R. Accad. d. Med.*, Turin, 1907, p. 185) has looked for the reaction of Justus in 80 patients, most of them soldiers, and all with florid syphilis. The blood for the haemoglobin estimation was drawn from the finger; the reaction takes place eight to twenty-four hours after the injection. Injecting 10 cg. of calomel, Nicola obtained a positive reaction in 8, no reaction in 17, and a negative reaction (that is, an increase in the haemoglobin value) in 5 cases; injecting 5 cg. of corrosive sublimate, 4 positive, 9 neutral, and 2 negative reactions were found; and with the injection of 10 cg. of mercury salicylate, 1 positive reaction and 4 neutral reactions resulted. Hence the reaction of Justus was obtained in 13 out of 50 patients with untreated syphilis, and 9 of these had low haemoglobin values, from 70 to 80 on von Fleischl's scale. In 15 patients who were already undergoing specific treatment, the reaction was positive in 3, neutral in 8, and negative in 4 cases. In 10 patients, 5 of untreated and 5 of syphilis that was being treated, Nicola continued the examination of the blood till after the fourth mercurial injection in each case; he only found that in the anaemic the haemoglobin value tends to rise during the treatment. The injection of 10 cg. of calomel into 8 non-syphilitic individuals caused a fall of over 5 degrees in the haemoglobin value in 2 of them. Nicola thinks that Justus's reaction is valueless for the diagnosis of syphilis.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

247. Pseudo-Diabetes: Its Diagnosis and Treatment.

Quite apart from the temporary glycosuria met with during an attack of malarial fever, in cholera, in cases of strangulated hernia, after the administration of anaesthetics, in asphyxia, etc., a more important form of glycosuria and one which is not so transitory and is often very difficult to distinguish from true diabetes sometimes occurs; it is of this form of glycosuria that the author Lebeaupin writes (*Journ. de Méd. et de Chir. Prat.*, July 25th, 1907). It is not uncommon to find sugar in the urine of young arthritic subjects, in the children of parents who are diabetic, gouty, or sufferers from stone; also in gouty and obese patients. Digestive glycosuria may arise from excess of sugar or starch in the diet, sometimes also from disturbances of the digestive tract. Nervous disturbances may also cause glycosuria; thus in cerebral haemorrhage, in cerebral tumour, general paralysis, disseminated sclerosis, tabes, intraspinal haemorrhages, acromegaly, and neuritis, glycosuria may occur, also in epilepsy, chorea, exophthalmic goître, and rarely in injuries to the head or vertebral column. Lastly, in the puerperal state sugar may appear in the urine. In the differentiation of glycosuria produced by the preceding causes from true diabetes it is necessary, as the author points out, to take into consideration the state of the general health. In the absence of excessive thirst, polyuria, excessive hunger, failure of bodily health and altered reflexes, one may conclude that true diabetes is not present. In non-diabetic glycosuria the urine is passed in normal quantity and its specific gravity is normal; its acidity is increased. The amount of sugar the urine contains is generally small in amount. Another important feature distinguishing glycosuria from true diabetes is the fact quoted by Lécorché, namely, that in non-diabetic glycosuria the urine secreted during the night contains no sugar. Fermentation of urine containing sugar in the "glycosuric" cases does not occur or only to a very slight extent when the urine is exposed for some time to the air. The urine in non-diabetic glycosuria contains usually an excess of urea and of chlorides and leucin and tyrosin are generally present, thus differing from diabetic urine. Non-diabetic glycosuria runs a benign course and none of the grave complications of true diabetes (such as lung troubles) appear. In the treatment of this affection much depends for successful treatment on suitable methods being adopted to relieve the conditions giving rise to the glycosuria. In arthritic subjects red meats, game, etc., should be withheld from the diet, and white meats, fish, and fresh green vegetables substituted; as medicine, alkalies should be given. In azoturic glycosuria arsenic in the form of Fowler's solution gives the best results. For obese patients one will advise physical exercises. In cases due to digestive disturbances a flesh diet should be advised, the starchy foods being thereby replaced by fats. When intestinal putrefaction is a factor in the causation of the glycosuria one will institute an intestinal antiseptic treatment, and reduce, in bad cases, the diet to milk. In glycosuria of nervous origin, bromides, belladonna, etc., are employed, and suitable treatment for the underlying nervous condition instituted—for example, suggestion, hydrotherapy in hysteria and neurasthenia. The author points out the necessity of finding out the underlying cause of the glycosuria, as the different causes necessitate different treatment, and providing true diabetes can be excluded, the results of treatment in these cases of non-diabetic glycosuria are most satisfactory.

248. Inflammation of the Cutaneous Arterioles in Syphilis.

S. Ehrmann (*Wien. med. Woch.*, April 13th, 1907) describes a peculiar mottling of the skin as a late symptom of syphilis. Little has been written on the syphilitic changes of the smallest vessels in the subpapillary and papillary layers of the skin, though syphilitic endarteritis of the larger vessels, including the subcutaneous veins, is well known. This cutaneous mottling is due to a form of arteritis of the smallest vessels, which resembles that described by Necker and Dehio as occurring in the vessels of the fingers and hands in Raynaud's disease. The writer has observed it in 7 cases. The mottling in some respects resembles the common cutis marmorata, but differs from it in being of a darker and more livid colour, in being present only in certain parts instead of being distributed in a continuous fine network over the greater part of the body, and in consisting of disconnected, branching, thick lines, not unlike those produced by lightning. The chief distinction is that in cutis marmorata, which may occur in healthy persons, especially after exposure to cold, friction causes the skin to become temporarily white, owing to active contraction of the arterioles and capillaries, previously paretic and distended with deoxidized blood. As the contracted capillaries dilate, the part of the skin which has been rubbed slowly reddens from the periphery towards the centre, but as the vessels are now filled with oxidized blood the previously bluish redness is temporarily replaced by a bright rose colour. But in mottling due to syphilitic arteritis the pallor due to friction is of only momentary duration, the blood in the neighbouring vessels flowing directly into the vessels immediately the pressure is relaxed; that is, in cutis marmorata the vessels are normal, in syphilitic mottling they are diseased, the process consisting in disappearance of the elastic and muscular elements. The blood stagnates in the capillaries, and is not properly forced into the veins. Hence the livid discoloration and the branching outlines which correspond to the arteries. In the writer's 7 cases there usually were well-marked signs of late syphilis and of arterio-sclerosis of the larger vessels. In one case, in which death occurred with paralytic symptoms, there were chronic endarteritis deformans of the larger vessels, cardiac dilatation, and multiple foci of encephalomalacia. In another, in which there were no signs of disease of the larger vessels and the patches of mottling were small, complete disappearance of the mottling was obtained by two years' almost continuous local treatment with emplastrum hydrargyri and the prolonged intermittent administration of mercury.

249. Glandular Fever and Parotitis.

Lucchesini (*Clin. Mod.*, An. 13, N. 17, 1907) believes that the so-called glandular fever described by Filatow and Pfeiffer (with slight differences) is allied to epidemic parotitis, and that the probable seat of infection is via the throat. It is fairly well recognized that epidemic parotitis may affect the submaxillary glands chiefly, and leave the parotid unaffected. The author has had experience of glandular fever occurring in members of a family where others were affected with ordinary mumps, and in some cases influenza seemed to be the starting point. In a large number of these cases of glandular fever the pharynx is merely reddened and slightly congested, and apparently not sufficient in itself to account for the enlargement of the cervical glands. The saliva acts as a channel of infection, but in all these cases the primary infection starts in the pharynx, then the lymphatics. In the case of glandular fever in a child of 2 recorded by the author, one of the sisters had recently suffered from severe influenza followed by bilateral swelling of the parotids, another sister had inflammatory swelling of the submaxillary glands, and the patient in question showed swelling of the submaxillary and latero-cervical glands on the right side. The spleen was slightly enlarged in the last case, and there was some transient albuminuria on the sixth day. The pharynx and tonsils were merely reddened.

SURGERY.

250. The Surgical Treatment of Innominate Aneurysm.

Impert and Pons (*Arch. Prov. de Chir.*, No. 8, 1907), in concluding an elaborate review of the clinical features and the therapeutics of innominate aneurysm, consider, with the aid of the most recent statistical information, the prognosis of simultaneous ligature of the common carotid and the subclavian or the axillary arteries, which is regarded as the method of choice. The preference of this operation by modern surgeons is partly due, the authors state, to the fact that the differential diagnosis between aneurysm of the innominate and aneurysm of the arch of the aorta is often very difficult, and that this difficulty is of less importance as the same method of surgical treat-

ment is indicated in both instances. The statistics of the cases that have been reported by different surgeons in the course of the last twenty years are arranged to show (1) the direct mortality of the operation; (2) the proportion of cases of recovery from the operation with, as regards the aneurysm, no definite therapeutical result; (3) the number of instances of perfect recovery after the operation; and (4) the cases of operative success followed by relief but not by cure. The list of cases, 45 in number, includes an original record by the authors of simultaneous ligature of carotid and axillary arteries, in which very slight improvement followed the operation. In 4 of the 45 collected cases of double simultaneous ligature, the axillary artery was tied and not the subclavian. The operation in these 4 cases resulted once in early death, in two in complete cure, and in the fourth in failure. It was found necessary on account of incomplete record to eliminate 9 cases, the number of cases for further study being thus reduced to 36. In 6 of these cases death resulted from the operation, and was attributed in 3 to haemorrhage, and in 2 to hemiplegia. The former, being due to infection, will, it may be anticipated, cease to occur in future operations, but cerebral lesions cannot be prevented. The number of cases in which the operation, though not fatal, failed to give any relief was 11. Of these patients most, if not all, are now dead. Eleven patients were much relieved, though not cured. In 8 cases complete cure was recorded, but these statements should, the authors point out, be treated with caution, as in some of the reports the interval between the dates of the operation and of the last examination of the patient is too brief to allow of any definite conclusion. The authors hold that, notwithstanding these poor results, the surgeon is justified in advising operative treatment in cases of innominate aneurysm. In the course of the last ten years the operation has caused death only in 1 of 12 cases of double simultaneous ligature. The results, though not brilliant, are held to be as good as those of the majority of operations for cancer.

251. Resection of Thoracic Wall in Removal of Mammary Cancer.

Haecker (*Zentralbl. f. Chir.*, No. 37, 1907) publishes a case in which Friedrich, in the course of a radical operation for the removal of a cancerous tumour of the breast, resected a portion of the thoracic wall. This case, which is the second of the kind treated by Friedrich, is recorded as an instance of the value of Sauerbruch's chamber in operations in which it is necessary to open a pleural cavity. The patient, who was 52 years of age, was the subject of a painful and rapidly-growing tumour in the right breast, which was closely adherent to the fourth and fifth ribs on the same side, and associated with glandular swellings in the axilla. In the operation, which was performed in a Sauerbruch's pneumatic chamber, Halsted's complete method of removing cancerous disease of the breast and axillary glands was practised. After removal of the diseased structures, together with both pectoral muscles, portions of the fourth and fifth ribs, each about 8 cm. in length, were resected and removed, together with the intercostal soft parts and the underlying portion of parietal pleura. The orifice in the thoracic wall was immediately closed by projection of the exposed part of the distended right lung. Pneumothorax was thus prevented, and there was no disturbance of respiration during the operation. The opening was closed by bringing together over the exposed lung the adjacent soft parts after these had been undermined by dissection. The patient did well after the operation, and was discharged as cured on the fourteenth day. Complete removal of the disease, it is stated, was quite hopeless in this case without resection of the involved ribs, and this formidable part of the operation was, by means of Sauerbruch's chamber, practised, with subsequent freedom from pneumothorax and infection of the wound.

252. Varicose Thrombo-phlebitis.

Fioravanti (*Clin. Mod.*, An. 13, N. 14–18, 1907) records with some detail 8 case of phlebitis in varicose veins—6 in the lower limbs and 2 in the lower limbs and lower abdomen—and discusses the subject in general. He believes that in every case the thrombus is due to bacteria; in 3 out of 4 cases examined by him bacteria were found. In the cases where no bacteria are found he believes that this is because the activity of the process is over by the time the examination is made; moreover, the particular bacilli—the ordinary pyogenic organisms—are not very numerous and do not thrive well in the blood, but if they are looked for in the early stages of the disease and at the starting point they may generally be found. This slight virulence and poor culture medium explains also why suppuration is comparatively rare in these cases. When abscesses do form it is a serious complication, and only a slight step to general septicaemia. Of the three main symptoms, pain, oedema, and thrombosis, the thrombosis is the last to appear. The oedema is not a passive stasis but a true inflammatory oedema—for example, in the leg it does not begin in the foot but may start in the thigh, which is against a purely mechanical explanation. Embolism is a rare complication of varicose phlebitis, probably because of the irregularity and tortuous character of the vessel. In operating it is as well to ligature the internal saphena near its junction with the femoral, so as to avoid the danger of an embolism during the manœuvres necessary to remove the veins. If surgical treatment is undertaken it should not be done in the acute stage. If embolism does occur, it happens through the deep non-varicose veins to which the inflammation has spread by anastomotic channels. The prognosis is as a rule good in varicose phlebitis, but it usually takes a month to recover.

OBSTETRICS.

253. Fibromata and Pregnancy.

Pinard (*La Clin.*, September 27th, 1907) reports the case of a woman who consulted him having had one child and two abortions, whose uterus was known to be fibromatous, and who was again pregnant. Her period was a fortnight late, though she had previously been very regular, accompanied by heavy losses, with occasional clots. The fundus of the uterus was as high as the umbilicus and a large tumour could be distinctly felt, inclined to the right and lying in the pelvic cavity. At the sixth month the tumour was in the same position, but was distinctly softer, at the eighth month the tumour, which had until then appeared to be fixed in the pelvis, was more movable and had risen into the abdominal cavity. Labour followed its normal course and the woman was able to nurse her child. The fibroid had diminished considerably in size and will in all probability disappear completely within eighteen months or two years. It has been recognized that infertility plays an important rôle in the etiology of fibromata, their growth is encouraged by inactivity of the genital organs. A woman may become pregnant whatever size or number of fibromata she has, so long as they do not prevent the spermatozoa from penetrating into the uterine cavity; during her pregnancy the tumour will generally grow less and soften, it does not calcify or become encysted. Such a tumour, by causing pressure, may cause trouble of the bladder, intestine, or ureter, but incidents of this kind are exceptional; haemorrhages are more frequent than in other cases, as the fibroid is often a cause of an abnormally-situated placenta. This is rare, and is usually found in women whose surroundings are unhygienic, or in whom the fibroid is complicated. Pregnancy, as a rule, runs a normal course except in the case of a pedunculated fibroid whose pedicle becomes twisted, or in cases where the tumour becomes painful. Pinard considers that whatever the size or position of the fibroid may be, only hygienic treatment is called for. When the tumour begins to accommodate itself to the fetus it requires to be carefully watched; when the fibroid lies in the pelvic cavity and the fetus presents by the breech, version is not advised, as this position is very favourable to spontaneous displacement of the tumour, and is generally followed by an uneventful labour. If after the commencement of labour it is found that the tumour is an obstruction, a Caesarean section is advised either with or without hysterectomy. After delivery such tumours may be the cause of troublesome haemorrhage, requiring the rapid delivery of the placenta before it can be arrested. Lactation favours a decrease in the size of fibromata.

254. Tubal Pregnancy.

Ely (*Amer. Journ. Obstet.*, September, 1907) published the following clinical report: A woman underwent operation for tubal gestation when 32 years of age. The right Fallopian tube was excised, but half an inch of its uterine end, quite patent, was left, nor was the right ovary removed. Within four years the patient again became pregnant. A mass, boggy in consistence, occupied the site of the excised tube, and the right ovary seemed to be cystic. Three days later an attack of pain, followed by syncope, occurred. An operation was performed. The stump of the right tube was the seat of extrauterine pregnancy. A blood clot lay free in the peritoneal cavity, and in it was found a six months fetus. The tube was excised at the right cornu and the right ovary removed.

The patient recovered. Egbert Graudin, in discussing this case, declared that whenever the tube was removed it should be excised entirely from the cornu, which should then be sutured.

GYNAECOLOGY.

255. Uterus Didelphys in Adult: Haematometra.

Vineberg (*Amer. Journ. Obstet.*, June, 1907) attended a single girl, aged 18, for dysuria and sense of weight in the hypogastrium. She had menstruated regularly for four years. A globular tumour of the size of a large cocoanut was found occupying the pelvic cavity anteriorly and bulging against the pelvic wall; it was fairly movable. A body corresponding in size to the uterus projected from its upper surface. A small circular opening could be seen through the speculum on the left side of the tumour. This opening admitted a sound which passed to the left upwards for about 3 in. Fibroid involving the cervix was diagnosed. Abdominal section was performed. Two uterine cornua, fully developed, were discovered; the right was the larger. The tumour could not be delivered; in endeavouring to bisect it thick tarry blood appeared and then the true condition was recognized. There were two uterine bodies each with a tube and ovary, and each also had a perfect and separate cervix. The left cervical canal was normal, but the right os externum was closed and the right cervical canal extremely distended with retained menstrual blood, the collection forming a tumour of the size of a cocoanut. Recovery was speedy.

256. Pelvitomy.

Zweifel (*Annales de Gynéc. et d'Obstét.*, September, 1907) recently discussed the technique, indications, and results of the different varieties of pelvitomy. He preferred the subcutaneous methods, as the wound healed quicker and asepsis was more assured; but it must be remembered, he added, that a needle wound might introduce septic germs, whilst long wounds healed well when infection was successfully avoided. Prognosis depended on asepsis and the absence of haemorrhage. In symphysiotomy the bladder was endangered, but only a short incision was necessary, and the finger, guarded by a rubber glove, could be introduced into the wound so as to protect the bladder with little risk of infection. Subperiosteal hebosteotomy was the safest method for division of the pubis, as it did not endanger big vessels. Symphysiotomy had one advantage over pubiotomy, for it allowed of future spontaneous deliveries. Again, Zweifel added, it could be performed subcutaneously and aseptically, as in subcutaneous pubiotomy. Zweifel concluded with observations on the precise surgical operation required for pelvic contractions of different degrees. Pelvitomy was very favourable for cases of moderate contraction, and under certain conditions the induction of premature labour was justifiable. In the extreme forms of contraction Caesarean section or perforation were the sole alternatives, and the former was greatly to be preferred, for induction of premature labour was in such cases wrong, whilst the Caesarean operation saved the child and was now attended with very good results as far as concerned the mother.

THERAPEUTICS.

257. Standardization of Disinfectants with Streptococci.

T. Paul and F. Prall, working with the method of standardization of disinfectants devised by T. Paul and Kroenig, find that streptococci can be utilized if kept at the temperature of liquid air, and that the results gained with these micro-organisms are as trustworthy as those obtained with tetanus spores. (*Arbeiten aus d. Kaiserlichen Gesundheitsamt*, Band xxvi, Heft 2, 1907.) The method consists of immersing garnets of small size, which have been scrupulously cleaned and sterilized, into a bacterial emulsion, drying them in a desiccator over chloride of lime, and then exposing the garnets with the dried bacteria to the disinfectants for a definite period of time, after which the disinfectant is neutralized by first washing with water, and then with some chemical agent, and lastly the garnets are shaken up in a test tube with water for three minutes, during which procedure the bacteria are detached from the garnets. This fluid is then mixed with nutrient material (agar) and poured out on plates, and the number of colonies which grow within a certain number of days are counted. The garnets are especially adapted for this procedure, inasmuch as they can be wetted equally, and having been sorted according to size, are believed to take up approximately the same number of bacteria. The minute details of the method must be sought in the original paper of Kroenig and Paul (*Zeitsch. f. physik. Chemie*, Band xxi, p. 414, 1896). First Paul and Prall experimented with staphylococci, as a type of vegetative micro-organism, and with anthrax spores to determine the effect of keeping these bacteria at varying temperatures. The latter keep well in the ice room and can be utilized for a long time for experiments. Streptococci when kept at room temperature or in the ice room gradually die off, and a marked decrease in the number of colonies is noted day by day. When kept at the temperature of liquid air a marked decrease in the number of colonies is seen on the first day, after which the number keeps fairly constant. In testing the action of the perchloride of mercury on the cocci, the neutralizing agent used was ammonium sulphide, while when carbolic acid was used the neutralizing agent was ammonia. Neither of these reagents influenced the vitality of the cocci in the concentrations required. It could be shown that the susceptibility toward these two disinfectants is not altered by keeping the cocci in the temperature of liquid air for periods up to seventy-two days. Next they determined that the addition of sodium chloride to the perchloride of mercury (0.053 per cent. of the latter and 0.365 per cent. of the former) interferes materially with the bactericidal action. The addition of the same concentration of sodium chloride to 1.175 per cent. carbolic acid solutions increases the bactericidal action. They also experimented with o-, m-, and p-kresol, and found that m- and p-kresol act more strongly in 0.54 per cent. solutions than carbolic acid in 0.94 per cent. solution, while o-kresol acts better than the carbolic acid, but not so well as the meta or para modifications. Formaldehyde and certain derivatives act less well than carbolic acid on streptococci, but much better than it on anthrax spores. Formaldehyde was used in 3 per cent. solution, lysoform in 10 per cent. solution, septoform in 10 per cent. solution, carbolic acid in 4.7 per cent. solution, and raw kresol in 2 per cent. solution.

258. The Harmlessness of Large Doses of Strychnine.

Troisfontaines (*Rev. de Méd.*, June 10th, 1907) is a strong advocate of the use of large doses of strychnine in cases of collapse of whatever origin, and he has for many years employed the alkaloid in doses which are generally considered to be dangerous. He points out, however, that in many cases large doses need not be given at one time, but may be divided into two or three doses, and given one after the other, a few hours intervening between the doses. In cases of urgency, however, he does not hesitate to administer at once subcutaneously 5 to 10 mg. of the sulphate or nitrate of strychnine, and to repeat this several times in the twenty-four hours, so that the patient receives in the twenty-four hours from 2 to 4 cg. of the drug. He has used these doses of injections many times, and has never seen any injurious result. In administering strychnine to patients the author graduates the dose according to the weight of the patient, and to a small extent according to the condition of the liver and kidneys, although in many patients with pyelonephritis to whom he has given the drug he has never seen the least intolerance. In extremely bad cases of collapse, where death seems impending, he does not hesitate to give subcutaneously for the first dose 50 mg. of the drug. Strychnine can, he finds, be borne in large doses for months at a time, as it does not accumulate in the system. The author quotes the case of an old man who, during a period of nine months, took 1.35 grams of sulphate of strychnine; the drug was then stopped for a year, after which time it was again given, and in three months the patient again took 57 cg., in the next twelve months he took 4.312 grams, and in the following ten months 4.670 grams. In patients suffering from marked involvement of the urinary tract (pyelonephritis) and in very bad general condition the author has seen the administration of large doses of strychnine so improve their vitality as to allow in some cases methods to be adopted to combat their urinary trouble.

259. The Treatment of Syphilis.

E. Lesser (*Deut. med. Woch.*, July 31st, 1907) says that the question of the treatment of syphilis has been revolutionized by the discovery of Metchnikoff and Roux of the transmissibility of syphilis to animals, and by the discovery of the *Spirochaeta pallida* and the recognition of its etiological importance by Schaudinn and Hoffmann. He follows out the effect which these two discoveries have had on the therapy of the disease. First of all he speaks of the excision of the primary sore. The uncertainty of the

diagnosis in early cases used to render this procedure unwise, but since one can confirm a suspicious diagnosis from the first by finding the spirochaetes, the matter has become different. Naturally, the earlier the chancre is removed the better is the chance of success. Neisser has removed chancres successfully in 9 cases (one of which was as late as the twelfth day after infection) and unsuccessfully in 10 cases. Other authors have also reported cases in which the sores were removed, after spirochaetes had been found, and no symptoms were seen during the following two years. It may therefore be possible to treat very early cases by excision. It is, however, necessary to treat the patient for syphilis after the excision, since one can never be quite sure that all the spirochaetes have been removed, and as there is no doubt now as to the diagnosis, the chances of cure are good if several courses of mercurial treatment follow on the excision. The suggestion of Weisflog of injecting mercurial salts beneath the primary sore, so as to offer a bar to the dissemination toward the lymphatic glands, is said to have yielded good results, but these injections undoubtedly act partly as general mercurial applications, and it is therefore difficult to say whether they act as a means of checking the spread locally or by the general effect of the drug. Turning to the question of the time when the general treatment should be begun, Lesser points out that he among many others used to urge that one should first await the secondary symptoms. Since this was done because of the doubt as to the diagnosis, it would no longer be necessary to delay. But it has been put forward that the effect of the treatment is much greater when the mercury is first given during the secondary stage. Many authorities, however, claim that the early treatment is often capable of cutting the disease short. Considered from a theoretical point of view, if mercury acts best when the spirochaetes have invaded the blood stream, one is wrong in supposing that the treatment should be delayed until the rashes appear. The spirochaetes enter the blood some time before the secondary manifestations, which should be regarded as metastatic processes, the average time being three weeks before the rashes appear—that is, about six weeks after the infection. Whether this time is more favourable for the beginning of the treatment than an earlier or later date remains to be proved. Lesser says a word in favour of Fournier's chronic intermittent treatment. The recurrence of secondary symptoms at a late date indicates that some spirochaetes have escaped, and are capable of again stirring up the disease, if not treated. He believes that the spirochaetes invade the whole body, and, although the mercury kills off the majority at first, some, as it were, hide themselves in a distant corner, and only come out of hiding later on. This is a potent reason for advocating the chronic intermittent treatment. He quotes Thalmann, who explains the so-called Herxheimer reaction (exacerbation of the rashes when mercury is first given) by assuming that by killing the spirochaetes the mercury sets the endotoxin free. He next discusses the treatment by atoxyl. He has treated 28 cases with this preparation, and has obtained a surprisingly rapid disappearance of symptoms. In 3 of his cases the atoxyl did not succeed in preventing a recurrence of symptoms, but it is, of course, much too early yet to speak of the curative value of this drug in syphilis. He points out that it is by no means non-toxic, and therefore requires to be handled with care.

PATHOLOGY.

260. The Spirochaeta Pallida.

W. FISCHER (*Berl. Klin.*, Heft 223, January, 1907) collects and reviews present information upon the relation of the *Spirochaeta pallida* to syphilis. Much of what he says has already appeared in our pages, but it is convenient to have the findings of the 300 or more papers already published on the subject summarized and arranged and such general conclusions drawn as the state of our knowledge warrants. In the outpouring of literature the claims of Siegel's *Cytorrhyctes luis* to be the causal agent in syphilis have been somewhat overlooked. The technical difficulties in its investigation limit the number of those qualified to undertake its study, and as yet there is not sufficient evidence concerning it to make a fair conclusion possible. In the demonstration of *Spirochaeta pallida* three methods are available. In fresh preparations the parasite may be shown living or in smears after staining with Giemsa or hot gentian violet, or it may be seen in sections after impregnation with silver nitrate. The first method may show the existence of living spirilla, but spirilla of other kinds than the *Spirochaeta pallida* are very frequently present in superficial lesions of many parts of the body, and especially in ulcers on the genital organs. In stained smears, however, the only organism likely to be confused with pallida is the *Spirochaeta refringens*, and this is distinguishable by its greater thickness, dissimilar and more irregular spirals, and by its much deeper staining reaction. In sections it is sometimes difficult to distinguish the organism from strands of tissue, nerve fibrils, etc., especially since the spirochaete may show a granular fragmentation or an alteration of form; but as a rule when present undeniable spirochaetes may be found. They have an undoubted relationship to the blood vessels and connective tissue. They may be swarming in all the coats of the vessel wall and in the surrounding tissue, and are sometimes seen free in the lumen. They are occasionally found inside leucocytes, and have been described in the cells of glandular epithelium, though this must be of rare occurrence. The *Spirochaeta pallida* is never found except where syphilis is present. So much is apparently established. This, however, does not prove its causal connexion, and the converse is far from true, for it cannot always be found in syphilitic lesions. We may distinguish between the congenital and acquired forms. In congenital syphilis it is usually present. It has been found in almost all the viscera, in skin, bronchi, bile-ducts, even in the urine of syphilitic children, and not only in the gumma or diffuse interstitial process of manifest lues, but in apparently healthy tissues of children one or other of whose parents has the disease. In acquired syphilis the case is very different. In the tertiary stage it has not certainly been shown (in lues maligna it is also absent), though apes may be infected with tertiary material. In the primary stage it is frequently found, most commonly in the primary sore and mucous patches, sometimes in swollen glands, the roseola and other parts. In many cases, however, apparently entirely favourable for its demonstration, the result is absolutely negative. No adequate explanation not purely theoretical can yet be offered; but there seems to be an incubation period before the organism appears, and apparently it again disappears after an indefinite interval. As a diagnostic sign, failure to demonstrate the *Spirochaeta pallida* is of no account; but its presence may be held to be at least an indication of syphilis, and in such a case as its undeniable presence in an aborted fetus, we may regard it almost as proof of syphilis in one parent. The difficulty of demonstration is in any case still so great that its practical value in diagnosis is almost *nil*. The technique of section-preparation given by Levaditi is hardening in formalin and alcohol; then very small pieces are placed for three days at 38° C. in a 1½ to 3 per cent. solution of silver nitrate; then twenty-four hours at room temperature in a mixture consisting of pyrogallic acid 2 grams, formol 5 c.cm., distilled water 100 c.cm.; finally, dehydration and embedding in paraffin. The organisms are black against a yellow ground (contrast anilin dyes may be used, but are not necessary).

261. Vascular Lesions in Experimental Glanders.

DUVAL (*Journ. of Exper. Med.*, May 25th, 1907) has inoculated full-grown rabbits and guinea-pigs with cultures of *B. mallei*, and finds that the vascular lesions produced afford an excellent opportunity for studying the early intimal and medial changes in experimental arteriosclerosis. In addition to the degenerative changes analogous to those produced by adrenalin, the bacillus and its toxin produce lesions of an exudative and proliferative character. Microscopically the earliest lesions show a focal heaping up of one portion of the intimal endothelium. Immediately external to this intimal proliferation the internal elastic membrane becomes straightened and somewhat swollen. Associated with the changes in the intima there is often a narrow band of degeneration of the innermost layer of the media, which is separated from the intima by the swollen internal elastic membrane. The injection of cultures of low virulence almost invariably gives rise to lesions in the peripheral vessels, especially the smaller visceral arteries, while the aorta and its larger branches remain free from even microscopic changes. On the other hand, Duval found that a killed culture of highly toxic bacilli produced aortic as well as peripheral lesions. He states that the repeated administration of the autolyzed product of highly virulent glanders bacilli produces marked proliferative and degenerative changes in the aortic walls, as well as in the walls of the smaller vessels. These observations appear to indicate that the aorta and its larger branches are better able to resist the bacterial poison than the peripheral vessels. The vascular changes of a proliferative and degenerative nature produced by the slow action of the glanders poison in rabbits and guinea-pigs are analogous to the vascular lesions caused by subacute glanders infection in man.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

262. Haemophilia.

The Ninth French Congress of Medicine, held at Paris, October 14th to 16th (*Sem. Méd.*, October 16th, 1907), discussed the subject of haemophilia, introduced by M. Carrière of Lille, and M. Marcel Labbé of Paris. The great rarity of the affection was first remarked upon, Carrière having found that 104 out of 164 colleagues had never had a case under observation, whilst he himself could collect only 6 cases during a practice of sixteen years. The disease appears to prevail most frequently in cold or damp climates, and patients have been cured, temporarily or permanently, by removing to warmer countries. The two theories of its causation, abnormalities in the coats of the vessels and retardation in the coagulation of the blood, were referred to; the latter being upheld by all the speakers. It was pointed out that coagulation might be delayed from the normal eight or ten minutes to twenty or thirty minutes or even longer. This delay is caused, not by any alteration in the number or appearance of the blood corpuscles, or in the amount of fibrin or salts, but by a chemical change in the blood, the absence of some ferment which causes coagulation, the exact identity of which is not known. Haemophilia must not be confounded with purpura or other haemorrhagic and scorbutic affections, which depend upon abnormalities in the coats of the vessels, and are not, as a rule, associated with tardy coagulation. The discussion concerned itself chiefly with the question of treatment. Carrière divides his cases into those with no haemorrhagic tendencies, those in which bleeding has occurred, and those which are being prepared for operation. To the first he advocates residence in a warm climate, and against the tendency to haemorrhage he prescribes calcium salts, gelatine and serum treatment; but all have to be continued for some time, and administered frequently, to prevent relapse. Before operation or accouchement he gives all three remedies at once, using thyroid, thymus, hepatic or adrenal serums, or, in case of emergency, even antidiphtheritic and antitetanic. Other speakers depreciated the value of the calcium salts, and preferred the injection of serums, thyroid, hepatic, or even ordinary fresh blood serum, human or animal. A special caution was given as to guarding affected children from injury and accident during the early years of life.

263. Pernicious Anaemia and Cancer of the Stomach.

Ceconi (*Rif. Med.*, July 6th, 1907) points out the extreme difficulty in certain cases, in differentiating between latent cancer of the stomach and pernicious anaemia. By latent cancer of the stomach he means cases where there are many signs and symptoms suggesting cancer (for example, pain, sickness, vomiting, haemorrhage, loss of weight, etc.), and yet nothing can be felt to suggest the existence of a new growth. Again, some cases of pernicious anaemia (for example, the case detailed by the author) may show absence of HCl after a test meal. The only real test is an examination of the blood, which may show the characteristic changes of pernicious anaemia (megaloblasts, poikilocytosis, megalocytes, etc.). But there are some cases of true pernicious anaemia where, for some not easily-explained reason, megaloblasts are not present in the blood: these are known under the name of "anaemia aplastica." The case recorded by the author never showed any megaloblasts in the blood. The diagnosis of pernicious anaemia, as against gastric carcinoma, was founded chiefly on (1) the leucopenia present (leucocytosis being more often seen in carcinoma), (2) the haemorrhagic diathesis, (3) the contrast between the general nutrition and the degree of anaemia, (4) the functional state of the stomach and intestine (achylia, diarrhoea), and (5) the presence of indicanuria. Laparotomy was performed, and a few days later an autopsy, and no new growth was found, but abundant evidence of profound anaemia.

264. Iritis a Complication of Mumps.

De Micas (*Recueil d'Ophtalmologie*, July, 1907) gives an account of 4 cases of iritis complicating mumps. Sendral (*Recueil d'Ophtalmologie*, 1901) describes the ocular diseases associated with mumps—conjunctivitis, dacryoadenitis, and optic neuritis and atrophy. He did not include iritis. The first recorded case was Pechin's. His patient developed facial paralysis on the eleventh day, and nine weeks later iritis was detected. There was no severe inflammation, no pain, no lacrymation, and no photophobia. A sector of the right cornea became infiltrated, but De Micas does not say whether the keratitis was interstitial or superficial. Posterior synechiae were detected, and V.R. sank to $\frac{1}{5}$. Both eyes made a complete recovery after a six months' treatment. Collomb and Villard described the next two cases. Collomb's case developed iritis synchronously with the parotid swelling In Villard's case iritis appeared at the end of the attack. Both were mild cases, and made good recoveries. De Micas's own case was a boy, aged 21, whose mumps were associated with orchitis. Nearly three months from the commencement of the disease the right eye became inflamed and the left followed three weeks later. De Micas found a subacute iritis V.R. $= \frac{1}{6}$ V.L. $= \frac{1}{2}$. The disease yielded to atropine, but full visual acuity was not regained.

SURGERY.

265. Operation for Gastric Ulcer.

E. Parmentier and D. Dénechau (*Sem. Méd.*, October 9th, 1907) have followed up some 102 cases of patients operated on for gastric ulcer, with a view of ascertaining their future history. They divide the result of their investigations into three classes—7 per cent. bad, 39 per cent. mediocre, and 54 per cent. good, over 90 per cent. thus showing an improvement on the condition obtaining before operation. The best results were attained in cases where the ulcer had previously healed, and the operation had been undertaken on account of pyloric stenosis; whilst cases in which the seat of the ulcer was far from the pylorus, or when the stomach was bilocular, were most liable to post-operative accidents. In 70 per cent. of the cases investigated by one of the writers some amount of functional disturbance, local or general, was found, whereas the only after-effects hitherto published have been very serious mischances. The authors employ the term "dyspepsia" to designate collectively those disturbances, finding it convenient and suitably vague; but they do not desire to imply that the phenomena are always purely functional. The different forms of dyspepsia which they have observed are pain, vomiting, diarrhoea, simple dyspepsia, a nervous form, and certain grave and complicated forms, in which haemorrhage or other symptoms indicate the reopening of an old or the formation of a new ulcer. The pain varies in intensity and in position, but it is always less than before operation, and often two foci of pain are reduced to one. Vomiting is rarer than pain, the operation having generally sufficed to cure it. When it does occur it consists most frequently of eructations of acid fluid, sometimes of bile, and occasionally food débris may be ejected towards the end of the paroxysm. It is only very exceptionally that vomiting of long-retained food takes place after gastro-enterostomy. Constipation is frequent, though not distinctive, but diarrhoea, occurring some time after operation, may constitute the dominant symptom. Food débris may appear in the stools, but hardly ever unaltered food. From the side of the liver may come a triad of symptoms—pain, watery regurgitations, and constipation, and these are the cases in which alcoholic excess, which is always to be avoided, proves most disastrous. Careful dieting is always necessary at first; thin vegetable broths, milk, raw eggs, proceeding by way of farinaceous puddings and rice to a mixed diet, the meat being finely minced. At all times alcohol, even in the form of light wine, is to be prohibited. The writers recommend the cordial co-operation of physicians and surgeons in such cases, with a view to the amelioration of the patient's sufferings, even in cases where they cannot be cured.

266. Retention of Urine in Adolescents.

V. Blum (*Wien. klin. Rundschau*, October 27th, 1907) reports a case which seems conclusively to prove the existence of a vesical centre in the spinal cord. A boy, aged 13, in infancy had convulsions, and seven years before coming under observation had fractured the frontal bone and suffered from concussion. Eighteen months before the writer saw him haematuria appeared, and there

was subsequently both nocturnal and diurnal incontinence of urine. At the first examination the bladder was found to extend to the umbilicus. The external genitals were poorly developed, and the prostate gland was abnormally small. The urine was dilute, clear, and contained no albumen. In the sediment were leucocytes and epithelium from the lower urinary passages. The knee-jerks and the Achilles reflex were exaggerated, but the nervous system appeared otherwise normal. Urine was passed alternately by continuous dribbling and in a thin, sluggish stream. During treatment by catheterism, the over-distended bladder being gradually emptied, the temperature rose to 104° F. and the urine became turbid. The boy vomited, was collapsed, and died thirty-six hours later. *Post mortem* were found lobular pneumonia, bilateral acute haemorrhagic pyelonephritis, peritonitis, and dilatation of the ureters and renal pelves. From the blood in the heart, the renal abscesses, and the urine pure cultures of the *Bacillus pyocyaneus* were obtained. There was no stricture, abnormal valve, or other obstruction in the urethra. The central canal of the lumbar cord was reduplicated, and the whole transverse section was hyperaemic. There were increase of nuclei and axon-degeneration of the ganglion cells of the anterior horns. In the absence of obstruction to the passage of urine, the retention of urine was primarily attributed to the poliomyelitis, which was situated at the level of the cord to which the micturition centre is usually assigned. The case was also of interest in that general infection with the *Bacillus pyocyaneus* occurred; the organism evidently infected the urine during catheterism. Von Frankl-Hochwart (ibid.) reports two somewhat similar cases of juvenile retention of urine, and states that they are not infrequent. It usually occurs in feeble subjects with ill-developed sexual organs. At puberty the genital organs do not develop, and dysuria, retention of urine, and paralytic dribbling occur. In one of his cases the urine could readily be evacuated by pressure on the bladder above the pubes. The main spinal lesion is probably a circumscribed poliomyelitis of the vesico-sexual centre, and reduplication of the central canal, which was present in one of his cases, also at the level of the fifth lumbar segment, is probably of secondary importance.

267. Bone Metastases of Hypernephroma.

Scudder (*Publications of the Massachusetts General Hospital, Boston*, No. 3, June, 1907) records 11 cases of hypernephromata which have been under observation in the Massachusetts General Hospital Clinic. Of these, 1 case was living but cachectic a year after the operation, 2 were dying when last heard of, and 8 had died. Bone metastases were observed in 4 of these cases; this complication, excluding incomplete or unreliable reports, has already been noted in 13 instances (Albrecht, Hochenegg, etc.), making 17 cases altogether. In No. 1 of Scudder's new cases the patient was a man aged 34, subject to pain and discomfort about the right shoulder-joint for about a year. A tumour was detected in the upper end of the shaft of the right humerus; it proved to be a metastatic hypernephroma. After amputation at the shoulder-joint the patient recovered, but then it was found that the left kidney was enlarged and slightly movable. A year later the patient was extremely cachectic. In the second case the patient was a woman aged 40; there was hypernephroma of the left kidney, with numerous metastases. One growth perforated the frontal bone, and was successfully removed; a second, also perforating, was excised from the same bone a month later. The patient lived for three weeks, becoming blind before death. There were metastases in the left humerus. The third case was in a man aged 33. The disease pursued a very malignant course, and was first detected by the appearance of a metastatic deposit on the pinna of the right ear. After death metastases were found in the upper end of the right humerus; the patient had recently suffered from great pain in the shoulder. Both adrenals were involved, as well as many of the solid and hollow viscera. The fourth case occurred in a man aged 75. He was the subject of marked senile pathological conditions, and was admitted into hospital for fracture of the left femur caused by a fall on his kitchen floor. He died two days after admission. There was hypernephroma of the left adrenal, with metastases in the left femur, as well as in the brains, lung, pleura, and several of the abdominal viscera.

268. Decortication of the Kidney and Nephrectomy.

Francesco (*Rif. Med.*, March 23rd, 1907), in cases where a nephrectomy becomes necessary, advises decapsulation of the other kidney if it should happen to be in a state of nephritis. He quotes cases where this has been done with decided benefit to the patient. By decapsulation, he says, he is able to avoid some of those disastrous accidents which occasionally follow nephrectomy, the other kidney being unsound. He advises a double lumbar incision, and says the additional operation does not add to the risk. In all these cases he prepares the patient beforehand by injecting, a couple of hours previously, a mixture of scopolamin bromide 1 mg., atropin sulph. 1 mg., and morphine 1 cg. After this injection the patient requires very little chloroform, and has less vomiting and distress after the anaesthetic. In illustration of his main contention he gives details of nephrectomy coupled with decapsulation in cases of calculous and tuberculous nephritis.

OBSTETRICS.

269. Spontaneous Rupture of Umbilical Cord.

Tissier (*Le Scalpel*, October 13th, 1907) relates a case proving the possibility of the spontaneous rupture of the cord when delivery has taken place in the upright position. A woman, aged 33, pregnant for the third time, with no history of mental or other abnormality clearly made out, progressed satisfactorily from her conception in August till towards the end of February. Then she became strange in manner, "lost her head" as her neighbours expressed it, and at last, on April 15th, had a seizure which appeared to be of the nature of eclampsia, and was removed to hospital. There was no sign of albuminuria, oedema, or stupor, although she was certainly deranged in mind, and was insensitive alike to pinpricks and to the application of heat. The attack was regarded as hystero-epilepsy, and the authorities played a waiting game. In the course of the morning of the 18th the patient got out of bed, and stood in the middle of the ward over a basin, her face still wearing its expression of hebetude. To the inquiries of the other patients she simply replied that she was having a baby, and sure enough the sound of a fall was followed by the presence of an infant in the basin. The patient was at once got back into bed, and it was not until the fifth day that she recovered full consciousness, greatly surprised at the possession of her child, having been quite unaware of the delivery. There was no perineal tear, and she made a good recovery. The infant was not injured in any way by its abrupt entrance into the world, but the cord, which was apparently quite normal, was broken off about 5 in. from the umbilicus, the fracture being oblique but without any irregularity, as if it had been cut in that manner. The question arose whether the cord gave way suddenly from the weight of the child upon it, or whether it had been torn asunder by the patient herself, who was observed at the time to pull on something between her thighs. Tissier inclines to the view that it broke suddenly, as a pull on such a slippery surface would have caused the vessels to separate at different levels, with irregularity of the gelatine stroma.

270. The Treatment of Puerperal Insanity.

Rudaux (*La Clin.*, August 23rd, 1907) understands by this term all the different mental manifestations which are liable to supervene during the course of the child-bearing period, during pregnancy, parturition, and lactation. When such symptoms appear during pregnancy two factors are at work: first, a nervous temperament or heredity, and secondly, a determining cause. The former is very variable, it may be depression due to unhappiness or adverse circumstances or anxiety, whilst the latter is generally an auto-intoxication due to pregnancy, and against which prophylactic and curative measures can be adopted. Thus, a strict regimen with a well-regulated diet and laxatives are required to prevent further absorption of toxins. When nervous symptoms appear these measures should be redoubled and there should be no hesitation in isolating the patient in a home or asylum. The treatment depends upon absolute mental rest, suggestion, hypnotism, and a careful mental and moral re-education. In acute mania sedatives are employed, such as chloral bromide or morphine. Mental symptoms appearing after the confinement generally have their origin in an intoxication starting from some lesion of the genital tract, and local treatment with sedatives and constitutional measures are sufficient. In some cases mental symptoms only become evident during lactation, the first signs are the suppression of the milk and a dislike to the child. Isolation with strict supervision are needed and should be accompanied by hygienic measures and an attempt to reduce the blood pressure with salines and diuretics.

GYNAECOLOGY.

271. Rupture of Ovarian Cyst during Pregnancy.

Morestin (*Ann. de Gynéc. et d'Obstét.*, October, 1907) reports that a woman, aged 35, was seized with violent abdominal pains when travelling on a tramway. She was in the fourth month of pregnancy, but her abdomen had become abnormally distended before the accident. On the fourth day, after passing a hard motion, the patient felt even more violent pain and vomited frequently. She was admitted into hospital, and there all the signs of internal haemorrhage were observed. The extremities were cold, the radial pulse could not be felt, and there was clearly free fluid in the peritoneal cavity. A bulky tumour lay on the left of the middle line, reaching above the level of the umbilicus, and the uterus was enlarged and soft. No blood issued from the vagina. Anaemia was extreme. Abdominal section was performed, and the tumour proved to be a ruptured multilocular cyst of the right ovary. Its pedicle had apparently become twisted, and it had swung over to the left side. The bleeding issued from a rent in its walls. The peritoneum was drained. The patient's condition seemed desperate for some time. On the second day labour set in and a dead and macerated male fetus was expelled. The placenta had to be removed on the second day, and on the third the patient was very weak and excitable, yet she ultimately recovered.

272. Uterine Fibroid associated with a Dermoid Cyst.

Berger (*Journ. des Prat.*, May 11th, 1907) quotes the case of a woman, 40 years of age, who suffered from an interstitial fibroid of the body of the uterus, in whom there was also found on the left side above the true pelvis a tumour the size of the fist. This tumour was mobile, resistant, and slightly tender, and it was thought to be a pedunculated fibroid. As the patient was losing much blood, operation was carried out, the uterus and its appendages being removed. The movable mass on the left side of the uterus was found to be a dermoid, containing hair, part of a dental alveolus, and two teeth. Complete recovery followed the operation.

THERAPEUTICS.

273. The Trypsin Treatment of Malignant Disease.

Donati (*Rif. Med.*, March 2nd, 1907) publishes a case of sarcoma of the testicle successfully treated with injections of trypsin. The man, aged 52, first noticed symptoms in the summer of 1905. In January, 1906, he sought advice owing to pain in the lumbar region and for a left inguinal hernia. An operation was performed on January 29th, 1906, the testicle and cord removed as far as possible, but owing to deep-seated glands in the iliac region, it was impossible to remove the growth completely. On microscopic examination, it was found to be a round-celled sarcoma. The wound suppurated, and when the patient left the hospital in March there was still a fistulous track and the lumbar pains were worse than before; a hard mass of new growth had formed in the site of the wound. Radiotherapy was tried, but gave no relief. On May 17th a further operation was performed, and as much of the growth removed as possible. The wound broke down again, and nodules of new growth soon reappeared. It was then decided to try the trypsin treatment, and on June 10th 2 c.cm. of a 2 per cent. solution were injected into the gluteal region; no immediate result followed, and the injection was repeated on the 12th (not in the gluteal region, but in the neighbourhood of the growth). The treatment was carried on for seven months, and about 130 c.cm. were injected in forty-five sittings, either in the region or in the substance of the growth itself. The injections had to be abandoned for short intervals, either owing to pain or constitutional disturbance. But at the end of the treatment the wound remained closed, and the growth, as far as one could feel, was completely absorbed; the lumbar pains had disappeared, and the man was able to follow his employment without fatigue. The mass removed in the second operation had the same characters as before, namely, round-celled sarcoma. The patient remained well at the date of the report.

274. Light Treatment of Lupus.

Mally (*Rev. de Chir.*, No. 7, 1907), in a paper on the present state of phototherapy, gives a full description of the technique of Finsen's method, which he believes is very efficacious, and beyond comparison the best plan of treatment in cases of lupus of the face. In Finsen's Institute at Copenhagen, where this method is extensively practised by experts, and careful study has been made of its technical details, good results have, it is stated, been obtained in 95 per cent. of all cases of facial lupus. The author disputes at some length Finsen's view that these superior results are due to the destructive action of light on bacteria, and argues that the modern method acts just as the old plans of treatment by scarification, the thermo-cautery and chemical caustic agents did, by producing a chronic irritation of the skin. The older methods, the author points out, were capable of giving good results, but in regard to facility of application, and also to the convenience and comfort of the patient, presented certain disadvantages. Finsen's treatment in most cases is certainly spread over a period of many months, but the course is broken by periods of rest. It causes very little if any pain, and is followed by less scarring and disfigurement. In conclusion, the author insists on the necessity of rendering what he regards as a marvellous therapeutical method, generally available, and holds that other countries should follow the example of Denmark, where, thanks to the help of public authorities, lupus in advanced stages has ceased to exist.

275. The Disinfectant Action of Kresol Preparations.

The disinfection of fluids containing the causal micro-organisms of various infective diseases by means of kresol preparations ought to fulfil two functions. In the first place, the kresol preparation forms a layer above the infected fluid, and shuts off the contact with the outer air and deodorizes; and in the second place it should be able to attack the germs in the fluid and destroy them. Bickel and A. Kraus (*Arbeit. a. d. Kaiserl. Gesund.*, Band xxvi, Heft 2, 1907) have investigated the action of three preparations of kresol, namely, saprol, linseed oil, and petroleum kresol, all of which have been prescribed by the Prussian Ministry for the disinfection of rafts. It was found that linseed oil mixed with raw kresol in equal parts formed a homogeneous fluid. Petroleum formed a mixture with kresol, which when floated over water allowed the kresol gradually to separate out of the mixture, and to fall in drops through the water. One sample, however, gave a mixture from which the kresol only separated very slowly in small quantities. The disinfecting properties were determined by the method described by Paul and Kroenig. The tests were conducted with staphylococci, both 1 and 2 per cent. of the substances being used. Ammonia was used to neutralize the effect of the disinfectant at the end of the time of experiment. After five minutes with 1 per cent. solutions only two colonies developed within two days from each five garnets when saprol was used, twenty-two when petroleum kresol was used, and 160 when linseed oil kresol was used. The second series, which corresponded more nearly to natural conditions, was conducted with less differences in the results. When typhoid bacilli and cholera vibriones were used, suspended in physiological saline solution, practically no difference between the disinfectant strengths of the three preparations was noted. These micro-organisms resisted the action of the disinfectants longer when contained in faeces than when in saline solution. (Typhoid bacilli lasted for four or five days in physiological saline suspension when covered with each of the three fluids, while they lasted for eight days when in suspension in faeces, when covered by the kresol preparations.) The lower layers of the faecal suspensions resisted the action of the floating disinfectant longest, and since the conditions of the experiment were rendered as favourable as possible, the authors say that one may expect that disinfection by these means in actual practice would be completed more slowly and less certainly. They conducted some experiments with tap water, and the kresol preparations, which show clearly that the rate of diffusion is by no means inconsiderable. The inhibition toward the diffusion when the medium through which the kresol preparation has to diffuse contains solid particles is certainly great, and for this as well as other reasons it becomes necessary to recommend that the quantity of fluid floated over the fluid to be disinfected should be as great as the vessel in which the disinfection is to be carried out allows.

276. Intraperitoneal [illegible]ons of Air in Tuberculous [illegible]ritonitis

Silvestri (*Gazz. degli Osped.*, April 21st, 1907) believes that when laparotomy is successful in the treatment of tuberculous peritonitis it is not so much in virtue of the effect of light as to the introduction of air *per se*. Certain results with the introduction of sterilized air in the pleura

and the anterior chamber of the eye are quoted in support of the same condition. In the case of peritonitis the author does not believe it necessary to sterilize or filter the air, as he believes that the saprophytes in the air assist in the mechanism of cure. Enough air is introduced to distend the abdomen to the same size as it was before paracentesis. The author has treated two cases successfully, both of the ascitic type, even the solid masses becoming completely absorbed at the end of five months.

277. Indicanuria in Cerebro-spinal Meningitis.

Campagna (*Gazz. degli Osped.*, August 11th, 1907), during an epidemic of cerebro-spinal meningitis, examined 14 cases (mostly children) with reference to the presence of indican in the urine. With the exception of one case indican was present in considerable quantities in all. Further, it was found that there was a constant relation between the amount of indican and the gravity of the disease; the more indican the severer the attack. It is possible that the increased indican in severe cases may only be a special case, for it is said that indican is frequently found in other diseases just before a fatal termination, and if this is so the indicanuria in some cases of cerebro-spinal meningitis may only be part of this general law. Further observations are necessary.

PATHOLOGY.

278. Cancer and the Internal Medium.

Legrand says (*Sem. Méd.*, No. 8, February 20th, 1907) that twenty years of continued research have failed to demonstrate a parasite in cancerous disease, and in spite of the arguments in favour of such an agency, many facts appear to indicate that some other causation must be sought for. Even if we were to find a micro-organism, cultivable and inoculable, capable of producing all the various changes grouped under the name of cancer, we should still be at a loss to explain the two clinically cardinal facts of local recurrence and metastasis. The neoplastic process is undoubtedly one of deranged cellular proliferation. Of the laws of normal cell proliferation we know extremely little, but some general conclusions may be drawn from such knowledge as we have. The tissues in man are composed of differentiated cells, and according to the manner of the differentiation is the duration of life of the individual cell. Thus, the intestinal epithelium is renewed from day to day, while a nerve cell probably lives for many years. In order to maintain a given tissue in its normal perfect state a balance must be maintained between decaying cells and cells coming to maturity. Hence there must be the optimum period for the perfect development of a cell in that tissue, and so for each variety of differentiated cell there must be a definite characteristic period within which it is replaced or renewed. If now we suppose that for any reason a group of cells within a tissue alters its renewal period, multiplying more rapidly than its neighbours, which retain the physiological period, this group of cells has taken on neoplastic characters. Its number will increase in geometrical progression; and, further, since the generations are more hurried, the cells cannot become fully differentiated, and must be atypical in character. Thus, a simple cessation of the synchronism of its renewal is sufficient to give to any cell a neoplastic capacity. In accordance with this, we find malignant growths to be more common in tissue of frequent renewal, such as epithelia, than in nerve or bone or muscle. Now, the fixity of type presented by differentiated cells of the higher animals is dependent on the constancy of composition of the fluids in which they are bathed, the "internal medium" of Claude Bernard. The cells constantly tend to vary in response to external influences or slight local changes in the lymph. These variations, however, are kept within what we call physiological limits by the general uniformity of the internal medium, which thus makes possible a regular renewal period, and so supplies the necessary conditions for atypical multiplication—that is, cancer. In invertebrates this constancy is absent and cancer is unknown, as it is in the embryonic stages of vertebrates where the circulatory system is still of the invertebrate type. Further, once a cell has altered its renewal period, the constancy of the composition of the blood enables it to maintain its new rate of growth. Embolic foci, therefore, continue to proliferate at this new rate, and metastatic growths are the result. The neoplastic process is thus allied to the normal evolution of the tissues. Future study will be directed most profitably to the laws of development of the non-malignant tumours, in relation to which cancer merely represents a further step in evolution, and specific cytotoxic serums may be expected to give the most fruitful results.

279. Septicaemia due to Micrococcus Tetragenus.

Bonardi (*L'Ospedale Maggiore*, Milan, 1906) adds another to the slowly-increasing list of cases where the *Micrococcus tetragenus* was the cause of a general infection or septicaemia, ending fatally. This organism, first brought into prominence by Koch and Gaffky as occurring in lung cavities in association with the tubercle bacillus, was at first denied pathogenic properties. Evidence, however, has accumulated showing that it may cause local abscesses, for example, in the recesses of the buccal cavities, where it occurs normally, and among many cases where it was present along with the more common pyogenic bacteria; a few cases have been recorded where it was the only organism found in widespread general lesions. In one or two of these it has been obtained in pure culture from the circulating blood during life and the heart blood after death. Bonardi collects the recorded cases, and gives a summary of the literature to date which is very useful, the more so as many of the references are to journals or discussions not generally accessible. He gives, in fact, a fairly full account of the *Micrococcus tetrogenus* in its biological characters as well as its pathogenic properties, bringing together many details not to be found even in pretentious manuals like Kolle and Wassermann's *Handbuch*. Several varieties have been distinguished, to some of which the power of producing disease in man has been denied, but Bonardi inclines to the view that these distinctions are not specific. Clinically the symptoms are not characteristic. They are those of a general septicaemia, accompanied by effusion into the serous cavities, and frequently also into the joints. Their indefinite nature may, perhaps, justify Bonardi's inclusion of the disease amongst the so-called rheumatic infections. In his case the symptoms were added to a typical picture of biliary colic. During life the *albus* form of the micrococcus was obtained in pure culture from the blood. Arguing from the *post-mortem* finding, he considers that the organism was carried from the mouth and effected a lodgement in the bile ducts, where it caused an angio-cholitis, with formation in the gall bladder of a calculus; and when the general health and resisting power of the patient had been reduced by the recurrent attacks of colic and jaundice, the organisms invaded the circulation and became disseminated throughout the body, causing a fatal termination.

280. Leucocytic Action of the Blood Serum in Leukaemia.

J. A. Capps and J. F. Smith, of Chicago, have had the opportunity of making experiments with the blood of four patients suffering from leukaemia who were being subjected to the *x*-ray treatment. Three of these cases were of the lymphatic and one of the spleno-myelogenous variety. The clinical result of the treatment was "favourable" in one case, "fair" in another, whilst the third showed "slight improvement only," and the fourth gave "a good result followed by a relapse." Capps and Smith found (*Journ. of Exper. Med.*, January, 1907) that the *x*-ray treatment produced a disintegration of the leucocytes, affecting especially the young forms, namely the myelocytes and the non-granular mononuclear cells. A similar action, but one of less degree, was also found to take place in leukaemic blood exposed to the *x* rays *in vitro*. The serum of a leukaemic patient who showed improvement under the treatment caused leucopenia when injected into animals, and when added in hanging-drop preparations to the leucocytes of other individuals caused disintegration of the cells. This leucolytic action appeared to be selective, the mononuclear cells being first destroyed, and to be proportionate to the degree of clinical improvement of the patient under treatment. The serum of a case of leukaemia which had been exposed to the *x* rays had a marked agglutinating action upon normal red corpuscles and upon other corpuscles. The degree of agglutination varied roughly with the degree of leucolysis which was present. It was found that the *x*-ray treatment of normal or leukaemic blood *in vitro* did not materially alter the phagocytic power of the leucocytes. The injection of a strong leucolytic serum from a patient suffering from lymphatic leukaemia and under *x*-ray treatment into another individual with lymphatic leukaemia and not under this treatment caused a decided and rapid fall in the number of the leucocytes, the mononuclear cells being principally affected. But with repeated injections a partial immunity to the serum was established.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

281. Exogenous Toxic Albuminuria.

Albuminuria resulting from the toxic effects of poisons taken into the body, such as lead, mercury, phosphorus, etc., may be either acute or chronic, and Fiessinger (*Journ. des Prat.*, August 17th, 1907) gives an excellent account of the various forms of albuminuria resulting from the intake and absorption of these poisons. Poisoning by mercurials may give rise to an acute nephritis and in some cases to suppression of urine; in other cases the urine is found to contain albumen and an abundance of fatty granular casts. The author states that in the Paris hospitals patients with mercurial poisoning are frequently admitted, their urine containing large quantities of albumen and casts. The prognosis in these cases of albuminuria due to mercurial poisoning is favourable, and the treatment should consist in the administration of large quantities of Evian water by the mouth and rest in bed. In influenza and in pneumonia the application of cantharides to the skin to produce vesication is attended with grave risks; in the former disease there is great danger of setting up nephritis, and in several cases of pneumonia, in which vesication by cantharides had been produced, death from anuria and haematuria have resulted. Further, in other infectious diseases of an acute nature cantharides vesication should not be permitted. When albuminuria due to the employment of cantharides has occurred, the treatment should consist of the administration of a milk-and-water diet only and with rest in bed. In albuminuria the result of acute phosphorus poisoning the urine may be suppressed or diminished in amount and blood-coloured. Amongst the workers in the manufacture of matches chronic albuminuria is more frequent. In the acute forms the stomach should be washed out, and for the first few days nothing but water should be given by the mouth, to be gradually followed by a milk-and-water diet. Albuminuria due to a mild nephritis may also result from the administration of turpentine, cubebs, copaiba, and santal. Arsenical albuminuria may occur in both acute and chronic poisoning. In acute poisoning with arsenic the urine may even be suppressed; for this one prescribes a milk-and-water diet, a dessertspoonful of calcined magnesia five or six times a day in water, and a teaspoonful of peroxide of iron in coffee every ten minutes. Chronic arsenical albuminuria results from a fatty degeneration of the renal epithelium or from a cirrhosis of the kidneys. For the albuminuria resulting from carbonic oxide poisoning one may employ scarifications over the kidney regions, inhalations of oxygen, and a milk diet. The two most important causes of chronic toxic albuminuria are lead and mercury; other minor causes are the use of tobacco and the prolonged taking of sulphonal. In workers in lead albuminuria with signs of cirrhosis of the kidneys is commonly observed, but, apart from evidences of interstitial nephritis, the author has never found chronic albuminuria to exist in workers in lead. Treatment consists in prophylaxis, body hygiene, milk-and-water diet, and the administration of potassium iodide in small doses for a fortnight every two or three months. Chronic mercurial albuminuria is more common than it is supposed to be, and interstitial changes in the kidneys may at length appear. Mercurial albuminuria differs from that occurring during the second and tertiary periods of syphilis in being less marked and in being preceded by polyuria, and, lastly, in being increased by further administration of the drug. In patients undergoing prolonged treatment with mercury it is advisable to examine the urine frequently, and to stop the treatment as soon as albuminuria appears.

282. "Skin-stone," or the Syndrome of Proficbet.

A. Busi (*Bull. d. Sci. Med.*, Bologna, 1907, p. 217) describes the case of a woman of 53, apparently free from any family history of gout, who at the age of 35 began to suffer from severe facial neuralgia; and articular pains (shoulder, elbows, hands), worse at night, appeared three years later. At this time, too, the hands began to be red, swollen, cold, and the seat of formication, especially in the winter; and hard, tender masses slowly formed in the finger-pulps, which ulcerated and gave issue to a thick yellowish discharge, which dried up in the summer. Some years later her condition was diagnosed as the gangrenous form of Raynaud's disease. When the patient was 49, pains appeared in the knees after a chill, and small stony subcutaneous nodules slowly grew over the right patella, followed two years later by similar nodules appearing over the left patella and along the crests of the tibiae. Finally, similar nodules were found along the ulnar aspects of the forearms a few months before Busi saw her. None of the nodules ulcerated, excepting those in the finger-tips. The patient was habitually constipated; numerous small facial angiomas had made their appearance a few years before she came under observation. At 52 the patient had an attack of lumbar pains, vomiting, and general debility, and albumen was found in the urine. Gout was diagnosed. Busi describes the condition of the patient at 53. The subcutaneous nodules were very opaque to the x rays, and an incomplete biopsy showed that the material composing them gave no murexide reaction, but did evolve CO_2 when treated with HCl. Skiagraphs are given which show admirably the deposits in the tips of left little and right middle finger, and in the right thumb, left forearm, and right knee. Busi thinks that these deposits were made up of phosphate and carbonate of calcium. He discusses the history and nature of the syndrome, which was described by Proficbet in 1900, and of which Bayle (1905) has collected 15 cases, and consists in the gradual growth of calcareous nodules in the subcutaneous tissues, especially round about the larger joints, without involvement of the lymphatic glands, with a tendency to ulceration or cicatrization, and accompanied by various atrophic and nervous symptoms. The disease appears mostly in the young. Proficbet thought the nodules due to parasitic infection rather than to any diathesis, but it has also been attributed to Talamon's "calcareous diathesis." It may be associated with attacks of diarrhoea or of abdominal pains. It is obviously liable to be confused with chronic gout; but gouty nodules contain urates, and are comparatively transparent to the x rays. Busi notes that some of the nodules in his case definitely took origin from the bones, while others were free in the subcutaneous tissues. References to the literature are given.

283. Leiomyomata of Gastro-intestinal Tract.

Fabyan (*Johns Hopkins Hosp. Bull.*, September, 1907) records the occurrence of leiomyomata of the gastro-intestinal tract, associated with fibromata mollusca and subcutaneous haemangiomata, in a white woman, aged 67, who first noticed the lumps on her body when a child. She had always had good health and never any chronic gastric symptoms. Scattered over the whole body, but especially over the anterior surface of the trunk, were a large number of nodular growths which microscopically were fibromata mollusca with a few small haemangiomata. There were none on the mucous surfaces, and the palms and soles were free, and the position of the nodules showed no relation to the course of nerves. Some were but slightly raised, while others were elevated on a broad base or had a short pedicle. The stomach was dilated and showed considerable *post-mortem* self-digestion. Scattered over the posterior wall were a dozen or more fine nodular elongated thickenings slightly bulging the peritoneal surface, but not observable on the mucous surface, and their axes were parallel to the long axis of the stomach. These were myomatous in nature, and a similar subserous sessile nodule was found in the ileum. There were no uterine myomota. Other lesions present were: Arterio-sclerosis, chronic fibrous myocarditis, brown atrophy of the cardiac muscle, chronic nephritis, chronic bronchitis and emphysema, tuberculous apical scar, chronic fibrous pleuritis, anthracosis, chronic tuberculous bronchial lymphadenitis, chronic tubercles in the liver, and scoliosis. The features of interest in the case were the marked condition of fibromata mollusca of the skin associated with gastro-intestinal myomata, and the multiplicity of the gastric myomata with involvement in every instance of the outer layer of the muscularis, and also the presence of subcutaneous haemangiomata.

SURGERY.

284. The Treatment of Subastragaloid Luxations.

Baumgartner and Huguier (*Revue de Chirurgie*, No. 8, 1907), in concluding a lengthy review of the clinical

features, complications, and treatment in the different forms of subastragaloid luxations, lay down the following rules for dealing with these injuries. Recent simple luxations should be reduced as soon as possible after the injury. It is indispensable in all but some exceptional cases to administer an anaesthetic in order to relax the contracted muscles, which present powerful obstacles to reduction. In cases in which there is no interposition of ligamentous tissue or of tendon between the head of the astragalus and its articular cavity, reduction may be readily effected by abduction for inward luxation and adduction for outward luxation, the head of the astragalus in each instance being pushed backwards. If there be any interposition of fibrous tissue, reduction cannot be made without forcible flexion of the foot on the leg with the object of relaxing the tendon of the tibialis posticus. Reduction of luxation in the long axis of the foot can be effected by traction and depression of the displaced bones in the long axis of the leg, the foot being dragged forwards in cases of posterior luxation, and pushed backwards in cases of anterior luxation. In cases of recent simple luxation in which reduction cannot be effected by manipulation, arthrectomy should be practised with the object of removing the obstacle. If this fails, the surgeon should remove the detached head of the astragalus if the neck of this bone be fractured, and, if the bone be intact, resect the head, and then replace in its normal position the body of the bone. If this cannot be done, the whole of the astragalus should be removed without delay. Compound subastragaloid luxations may be treated in the same way as the simple forms, provided the injury be a recent one and the wound free from infection and capable of being thoroughly cleansed. The patient should be carefully watched, and the astragalus be removed at the first signs of septic infection. In cases of infected compound luxation, immediate astragalectomy should be practised, and the wound be freely drained. Resection of the astragalus is indicated in cases of old luxation.

285. Pelvic Deformity in Spina Bifida.

Kermisson (*Revue d'Orthopédie*, No. 5, 1907) directs attention to an abnormal state of the pelvic bones, which though of decided pathological interest does not seem likely, from the conditions of such cases, to present, as the author suggests, any great importance from a practical point of view. Two cases are reported which show that in spina bifida in the lumbo-sacral region, and especially in that form known as spina bifida occulta, in which there is no protrusion of the spinal contents through the osseous cleft, complicating deformities of the spine and pelvic girdle may occur of such a nature as to interfere with parturition. In one of these cases skiagraphic examination showed a very decided scoliotic curvature of the lumbo-sacral portion of the spine, the convexity of which was on the left. The whole of the right half of the pelvic cavity was large and well developed, while the left half was narrow and flattened, the wing of the ilium being elevated and in almost direct contact with the vertebral column. The left half, which is thus much contracted, conforms to the type of deformity known as the oblique oval pelvis. There is a considerable elevation of the iliac crest on the left side which corresponds to an elevation of the whole of the ilium. The left pubis also is elevated, so that the symphysis is directed obliquely towards the left side. This elevation of the left half of the pelvis is the cause of shortening of the lower limb on the left side, and of consequent limping.

286. Tendon Transplantation in Congenital and Acquired Talipes.

Ashhurst (*Amer. Journ. of Med. Sciences*, August, 1907) reports six cases of clubfoot in which tendon transplantation was successfully performed. In patients with infantile paralysis he urges that when competent surgical treatment has been unsuccessfully tried for a year, this treatment offers the best prognosis; while in those cases arising congenitally a longer period may be allowed before resorting to transplantation. Prior to the operation it is necessary to overcome the deformity, so that the foot may be temporarily retained in a position of over-correction, and this may be done by manipulation, stretching, and tenotomy until its over-corrected position can be easily maintained by the pressure of one finger. Ten days or a fortnight after the foot has become perfectly flaccid the retaining cast may be removed and tendon transplantation performed. Periosteal implantation gives better results than transplantation into another tendon, and a more certain result follows transference of a healthy tendon to the place of a weak one than by suturing the distal end of the paralysed tendon into a normal tendon. More satisfactory also will be the result of transplantation of an extensor tendon for extensor paralysis or of a flexor tendon for flexor paralysis than by using a flexor muscle to overcome extensor paralysis, or vice versâ. When, however, all of one group of muscles are paralysed it may be necessary to transplant a muscle whose function is the reverse of that we wish to develop. A short incision is made in the line of the tendon, the sheath opened, and the tendon, after being grasped by clamp forceps to prevent retraction, cut at the desired point. In the case of the tibialis anticus it must be shaved from the scaphoid and internal cuneiform bones, as it is none too long to reach the insertion of the peroneus brevis. Longer tendons may be cut higher and their distal ends sutured to neighbouring sound tendons. After exposing the tendon above the annular ligament it is drawn out and, either by burrowing subcutaneously with forceps or by attaching it to a probe, drawn down subcutaneously to the point where it is to be permanently anchored. The incision here should not be exactly in the line of pull of the transplanted tendon, since skin union may be delayed by tension. In suturing, the knot should never be on the tendon, but placed to one side and in such a position as to be unable to cause annoyance. The foot is dressed before the Esmarch is removed and a plaster case applied with the limb elevated, in which position it is kept for forty-eight hours. This may be removed at the end of three or four weeks, but free motion of the foot should not be permitted for six or eight weeks.

OBSTETRICS.

287. Lesions of Nipple during Lactation.

Rudaux (*La Clin.*, October 11th, 1907) says fissures and excoriations of the nipple generally develop during the first week of lactation, seldom after this time; primiparae are more prone to them than multiparae, although a few persons find they recur at every birth. The lesions are as a rule bilateral, and personal predisposition has much to do with the production of them. There are two forms of umbilicated nipples, the one can be readily reduced, that is, pushed out by pressure of the fingers so that the child can take hold of it, the other is not reducible, the nipple appearing to be held down by inelastic fibrous tissue. In such a case lactation is often impossible, but occasionally the child succeeds in making a false nipple by suction. The nipple is sometimes very prominent, looking rather like a raspberry and with deep fissures in it, or it is a large mass attached to the centre of the areolus by a narrow stalk. The immediate cause of a lesion is suction; children differ considerably in their manner of sucking, some seem to have harder mouths than others, and they tend to produce ulceration of the part after suckling a few times. The nurse often neglects prophylactic measures, or permits the child to remain at the breast for very long periods, sometimes for several hours, with the result that the epidermis is macerated and crevices are formed. The effect of acidity of the mouth of the infant has been much exaggerated. Before a lesion is evident there is a great deal of tenderness either when the child first seizes the nipple or during the whole time of feeding; when a crack or fissure is present the tenderness becomes definite pain. The pain is so acute that the mother cries out with it, and learns to dread the moment when the child takes hold or leaves go of the breast. The repetition of the painful experience produces so much distress and nervousness in delicate and neuropathic women that it is not unusual to find it necessary to abandon lactation, especially where the result is a diminution of the secretion. One is also afraid that the little sore may be the origin of an infection, causing in the mother glandular enlargement or abscess, and in the child some gastric disturbance. Spurious melaena may occur in the infant if it has swallowed much blood, but this cannot be regarded as a true complication. The writer does not consider the usual prophylactic treatment by alcoholized lotions is very efficacious; he recommends that the feeding times should be at long intervals, until the secretion is fully established, that the child should not be left longer than five minutes at the breast, and that special precautions as to cleanliness of the parts should be observed. After each feed the breasts are washed with oxygenated water one part, in three of boiled water, and covered with a pad of sterilized gauze; before the next feed they are again washed, and the cleanliness of the child's mouth is attended to. When fissures are present the nipple should be washed in equal parts of oxygenated water and boiled water, and then wrapped up in gauze soaked in oxygenated water. In twenty-four or

forty-eight hours signs of cicatrization will become evident, and the moist application is replaced by a dust of boracic acid powder and a layer of dry sterilized gauze. The person who dresses the wounds must wash and disinfect the hands before touching the affected part, otherwise a possible source of further infection is present.

288. Diabetes and Pregnancy.

Eshner (*Amer. Journ. of Med. Sciences*, September, 1907) records a case of diabetes in which the glycosuria disappeared with the inception of pregnancy and reappeared after delivery at term of a macerated fetus. During the whole nine months sugar, which had previously been present, entirely disappeared, and the day before delivery the patient complained of tenderness and pain in the lower abdomen, unquenchable thirst, and she was passing large quantities of urine giving a specific gravity of 1005, without albumen or sugar. Five months later diabetes was again present. Transitory glycosuria towards the end of pregnancy or during the puerperium may be regarded as a physiological resorption phenomenon and related to the activity of the mammary glands. Diabetes is rarely a complication of pregnancy, though it has occasionally been noted in two or more successive pregnancies, and pregnancy very seldom occurs in women suffering from diabetes because of the lowered nutrition resulting from the disease and a disordered function of the generative organs. The complication of either condition with the other increases the gravity of both, the fetus often dying *in utero* with a consequent miscarriage, or the child, which may be diabetic, may die at or shortly after birth. The disease is often fatal to the mother during pregnancy, or shortly afterwards, and accordingly a diabetic woman should not become pregnant. In the event, however, of a diabetic woman becoming pregnant, or vice versa, there is no necessity to procure abortion unless some special indication arises, and such a woman after a safe delivery should not nurse her baby.

GYNAECOLOGY.

289. Lithopaedion in a Woman aged 85.

Wallart (*Zeitschr. f. Geb. u. Gyn.*, vol. xlix, 1907, Part 2) describes this case, from the Pathological Department of the University of Basel. Unfortunately the life-history of the subject is imperfect. A woman aged 85½ years died of pneumonia. There was no symptom during her last illness of any abdominal and pelvic disease, but the patient's friends knew that the menopause had occurred forty-five years before death, and that she had formerly suffered from a feeling of weight in the abdomen. At the necropsy the great omentum was found adherent to a hard, tuberous mass of the size of a fist occupying the left half of the pelvic cavity. It was pyriform and somewhat flattened. The atrophied uterus was detected, and both Fallopian tubes appeared to be normal. The right ovary lay enveloped in adhesions, but the left could not be defined, nothing save some irregular calcified masses could be found in its place. The tumour in the pelvis was a true lithopaedion, the fetus was in a fair state of preservation, many of the bones of the skeleton as well as the lungs and liver being plainly visible, in their normal relations, in a section made through the tumour. The lithopaedion must have been at least forty years in existence. The subject is discussed and some reference to new cases added by Wallart. (See also Walter Tate, *Trans. Obst. Soc.*, vol. xliv, 1904, and Hedley Bartlett, ibid., vol. xl.)

THERAPEUTICS.

290. The Cutaneous Tuberculin Reaction.

Von Pirquet (*Wien. med. Woch.*, July 6th, 1907) has discovered that when tuberculin is introduced into the superficial layers of the skin, as in vaccination, a reaction occurs which, in children, is of diagnostic and prophylactic importance. If tuberculin is injected hypodermically in a tuberculous subject three reactions occur: (1) An exacerbation of inflammation in tuberculous parts ("focal reaction"); (2) a pyrexial reaction which in children and animals is an important sign of tuberculous infection; and (3) a needle-track reaction, the diagnostic importance of which has only recently been recognized. But if it is introduced as in ordinary vaccination with calf lymph slight redness and swelling, resembling the needle-track reaction, are usually the sole result. Thus pyrexia occurred in only 3 of about 700 vaccinations with tuberculin. The first change, which is usually evident within twenty-four hours, is that a small red papule develops at the site of inoculation. The size, shape, colour, and time of appearance of this papule are of diagnostic importance. The average diameter is 10 mm. Greater diameters are found in the same class of cases in which hypersensitiveness to the injection of tuberculin is common, that is, in tuberculosis of glands, bones, and joints. The colour at first is usually a vivid red, but fades and leaves a pigmented spot, which may be visible for weeks. In infants the stages are passed more rapidly, and sometimes no trace of positive reaction remains on the sixth day. The intensity of the reaction varies considerably. Thus in weak, cachectic children there may be but slight hyperaemia and slight exudation, the bright redness being replaced by a livid discoloration. In other cases the exudation is extreme, the centre of the papule being pale, like an urticarial wheal, and surrounded by a bright red areola. Sometimes miliary or larger vesicles with clear contents form on the surface of the papule. The reaction in tuberculous subjects is often at its height twenty-four hours after "vaccination," and is usually so within forty-eight hours. A "torpid" reaction, that is, one in which nothing is visible until forty-eight hours, or even later, after vaccination, is mostly found in older children who present no clinical sign of tuberculosis. It possibly indicates that tuberculous foci formerly present have healed. Von Pirquet claims that the reaction is specific, that is, that it occurs only in those who are tuberculous, and possess specific antibodies. It failed to appear in only 11 of 80 undoubtedly tuberculous children. The exceptions included cases of tuberculous meningitis, advanced pulmonary and general tuberculosis, and chronic tuberculous caries. The patients were all cachectic, or, as in the cases of tuberculous meningitis, were first vaccinated a few days before death. Now it is exactly such cases that often fail to react to hypodermic injections of tuberculin, and no more can be expected of the cutaneous reaction than of hypodermic injections. The former is merely a much more convenient and safe method. Whether cutaneous tuberculin vaccination in children will constantly reveal small tuberculous foci, such as caseous bronchial glands, can only be determined by a long series of necropsies. That non-tuberculous subjects exhibit no reaction was shown by necropsies on 23 previously "vaccinated" children, and in the few cases in which a reaction occurred and a necropsy was subsequently performed tuberculosis was found with one exception. In this death was attributed to the status lymphaticus. In adults the diagnostic value of the cutaneous tuberculin reaction is much less than in children, because the older the subject the greater is the probability that he has become infected with tubercle, though it may be completely latent. A positive reaction after 8 years of age is therefore extremely common, whether tuberculosis is suspected or not. On the other hand, in obviously advanced tuberculosis in adults a negative result is frequent. This fact is comparable to the negative results obtained in cachectic tuberculous children. The method is thus of diagnostic value only in early childhood. Of greater importance are the prophylactic possibilities. If all children were vaccinated with tuberculin every six months the exact date of onset of tuberculosis would be detected, and appropriate treatment could be immediately begun. The writer uses as a vaccine Koch's original tuberculin diluted with 1 part of a 5 per cent. solution of carbolic acid in glycerine and 2 parts of normal saline solution. Two small scarifications are made in the superficial layers of the skin through two drops of dilute tuberculin placed on it. Between the two the skin is similarly punctured without tuberculin; this serves as a control.

291. The Action of Certain Disinfectants at Low Temperatures.

The fact that a disinfectant action is dependent on the temperature at which the substance is applied has long since been recognized, and in view of the practical importance of this question as affecting the disinfection of objects such as railway goods stations, where cattle are dealt with during the winter, A. Kraus has investigated the subject, and reports in the *Arbeit. a. d. kaiserl. Gesundheitsamt*, B. xxvi, Heft 2, 1907. According to the German law, all movable landing stages and bridges where cattle are loaded on board trains, etc., must be cleansed at least once daily and disinfected with a 3 per

cent. solution of kresol sulphuric acid. In the first place, it is highly desirable to ensure that the disinfecting solution should be fluid, even at low winter temperatures, and, further, it is important to ascertain which methods of disinfection yield the best results at low temperatures. The addition of glycerine (5 per cent.), common salt (5 and 10 per cent.), and magnesium chloride (5 and 10 per cent.) has been suggested for the purpose of lowering the freezing point of the kresol. The freezing point of 3 per cent. kresol sulphuric acid is −3.8° C., while that of a mixture of 3 per cent. kresol sulphuric acid and 5 per cent. glycerine is −7.8° C.; that of kresol sulphuric acid and 10 per cent. salt solution is −13° C., and of kresol sulphuric acid and 10 per cent. magnesium chloride is −11.1° C. The addition of sodium chloride and of magnesium chloride increases the disinfectant properties of the kresol sulphuric acid so considerably that the inhibitory action of cold is equalized. The experiments, which were conducted with Paul and Kroenig's methods, show that when the temperature is low the addition of 5 per cent. sodium chloride is sufficient to render the kresol sulphuricacid solution satisfactory. When there is a very severe frost it is wiser to add 10 per cent. of this salt. The author further reports that a dry mixture of kresol in sand has a good disinfecting power at room temperature (18° C.), but at lower temperatures it is insufficient to kill off anthrax spores and staphylococci. Lastly, he proves that formaldehyde solutions act well on anthrax spores at low temperatures, but not on staphylococci.

292. Iodile.

E. Filippi (*Riv. Crit. di Clin. Med.*, Florence, 1907, p. 669) describes iodile—a new organic compound of iodine—as a scaly white shining and tasteless crystalline substance, soluble in 6 parts of cold water; it contains 35.5 per cent. of iodine, together with C, H, N, and O. His experiments on frogs and rabbits show that in large doses iodile produces toxic symptoms, namely, feebleness, slowing of the pulse, and finally paralysis and death. Comparing it with KI, Filippi finds that in rabbits iodile is slightly less toxic than an amount of KI containing the same quantity of iodine. Casali has used iodile in the treatment of syphilis, goitre, and tuberculosis, with satisfactory results, administering it hypodermically. The injections are painless and not prone to suppurate. Other advantages of iodile are that it is rapidly absorbed, that it upsets the stomach less than KI does, that it is eliminated less rapidly than KI, and that it has a considerable diuretic action.

293. Milk in the Artificial Feeding of Infants.

Finkelstein (*Therap. Monats.*, October, 1907) discusses the relative value of boiled and unboiled milk in the artificial feeding of infants. For many years sterilized milk, especially that produced by Soxhlet's apparatus, was regarded as the very best diet for infants. Then there was a change of opinion. It was pointed out that some infants reared on sterilized milk developed Barlow's disease (scurvy-rickets), and it was thought by some authorities that boiling so "denatured" milk that it lost many valuable qualities and became unsuited for infant diet. Behring went so far as to suggest that the popularity of the sterilized milk diet was largely responsible for the high death-rate among infants. In most countries milk can be obtained for children which has been carefully preserved from bacterial contamination. Such milk, though suitable for infant diet is very expensive and beyond the reach of the poor. Finkelstein asks the question, "Is the advantage of unboiled milk so great that we must use every endeavour to bring an uncontaminated supply within the reach of the very poorest; and when this has been done has the difficult problem of artificial feeding been solved?" At present the researches on the comparative value of boiled and unboiled milk are few, and in many cases open to criticism. Experiments have been made on animals to ascertain the influence of the two diets upon metabolism. These have shown that boiled milk is at least of equal value, and is probably superior as a diet to unboiled milk. Bruning has shown that pigs, dogs, rabbits, guinea-pigs, and goats develop better when brought up on boiled than on unboiled milk. There is no proof whatever that unboiled milk is a better diet for infants than boiled milk. Those who have brought forward evidence in favour of unboiled milk have often not taken all the circumstances into consideration. Finkelstein has made some very careful experiments to ascertain whether any superiority can be detected for one or the other. The experiments fall into three groups. Those on healthy infants, on sick children, and on undersized, ill-developed children. The result was that no superiority could be maintained for either method of feeding, neither the progress of the healthy children nor the recovery of the sick seemed to be influenced by the diet. Experiments made in Stockholm showed that when children were fed from birth until they were three years old by the two methods no difference could be detected. The question of Barlow's disease is not, Finkelstein thinks, an uncomplicated one. Barlow's disease is unknown in many countries where sterilized milk is used; we can say that Barlow's disease is only found in children fed upon boiled milk, but not that such a diet is the only cause. The conclusion seems to be that failing a milk supply which is absolutely above suspicion, it is better to boil the milk of infants than to run the risk of infection with tuberculosis and other diseases.

294. Alipin Anaesthesia.

D'Ottone (*Rif. Med.*, September 28th, 1907) writes enthusiastically of alipin as a local anaesthetic. He uses it in a 1 per cent. solution given from a glass syringe holding 1 c.cm. After using it in over 100 cases, he finds it possesses distinct advantages over other local anaesthetics. It gives a longer anaesthesia than cocaine, is much less toxic, and the solutions can be sterilized by boiling without spoiling. The author has seen no bad effects either general or local—no headache, no vertigo, no cold sweats or pallor and no signs of collapse. Alipin does not have any effect on the vessels, like cocaine, so that the tissues retain their normal appearance, and there is less serous oozing afterwards. The author uses a simple solution without the addition of adrenalin or other drug. Details of 14 cases are given, from which it can be seen severe operations of considerable duration were performed with complete anaesthesia. The anaesthesia was given locally and never by lumbar puncture.

PATHOLOGY.

295. Antitetanic Action of Eosin.

Noguchi (*Journ. of Exper. Med.*, May 25th, 1907), in continuation of his investigations of experimental tetanus in animals subjected to the influence of certain photodynamic aniline compounds, such as eosin, finds that eosin, if present in cultures containing tetanus spores, prevents the germination of these spores when its concentration (in glucose bouillon) reaches 0.2 per cent. When the concentration of the eosin sinks to 0.01 per cent. germination of the spores is no longer inhibited, but the vegetative bacilli develop with difficulty. When the eosin concentration sinks to 0.001 per cent. vegetation and multiplication of the bacilli become more active, but no new spores are formed, even after a long time. With glucose agar it is not until the concentration of the eosin falls to 0.05 per cent. that sporulation again appears. The spores, which are formed in a medium containing 0.01 per cent. of eosin, are often situated at the centre and not at one pole of the bacilli. Eosin in a strength of 2 per cent. is capable of destroying the vegetative bacilli in fifteen minutes, and 0.1 per cent. of this substance will kill them in twenty-four hours. The bactericidal effect is greatly hastened by placing the mixture of bacilli and eosin in the sunlight. But tetanui spores are not killed even by high concentrations of eosin and after exposure to sunlight for as long as thirty hours. The toxin production of tetanus bacilli grown in eosinized culture media diminishes as the concentration of the eosin increases. This effect is brought about partly by the restraining action of the dye on vegetation, and partly by its detoxicating action upon the poison. But the toxin-producing power and the virulence of tetanus bacilli are not permanently modified by contact with eosin for a long period, nor by successive cultivations in eosinized media. Eosin is likewise capable of restraining the vegetation of tetanus spores in the animal body. If threads on which spores have been placed are inserted beneath the skin of rats and surrounded with a solution of eosin, a very restricted vegetation takes place, and if the injections of eosin are repeated growth soon ceases, and the vegetated bacilli degenerate and disappear. The ungerminated tetanus spores remain alive in a latent condition indefinitely in the healed wound beneath the skin. These spores do not lose the power to grow outside the body, or inside the body of animals under favourable conditions, or to produce toxin in a characteristic manner.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

296. Gastric Ulcer.

The ninth French Congress of Medicine, held in Paris October 14th to 16th (*Sem. Méd.*, October 23rd, 1907), discussed the course and treatment of gastric ulcer. Linossier of Vichy dealt with uncomplicated ulcer, from the side of medical treatment only. He laid more stress on the question of diet than of medication by drugs, advocating where it was possible complete rest of the stomach for a few days, during which nothing should be given by the mouth. He places no confidence in nutritive enemata, being of opinion that only water and salts are assimilated in that way, but he acknowledges their psychical value, as patients think that their strength is kept up by them. The subcutaneous injection of nutritive substances was mentioned only to be rejected, whilst alimentation by the jejunum is not possible without a serious preliminary operation. Suitable diet by the mouth must always follow complete stomachic rest, and in many cases it is sufficient of itself to effect a cure. The difficulty is to combine a food which will neutralize the acidity of the gastric juice with one which will not excite its secretion, as in most cases the two essentials are mutually exclusive. It is generally safe to begin with milk, with or without eggs, gradually adding sugar, raw meat, rice in milk, biscuits, and butter. Medically he recommends *small* doses of sodae bicarb., as large quantities increase the acid secretion, bismuth in suspension, and alkaline chloride of sulphur waters, either natural or artificial. He does not advocate surgical interference in the case of simple ulcers, declaring that while cancer should be treated medically only when surgery fails or is impracticable, simple ulcers should not be dealt with surgically until medicine has been tried and found wanting. Castaigne of Paris spoke on the complications of gastric ulcer, superacute, acute, and slight. The first class includes perforation and excessive haemorrhage, and requires immediate operation even in the period of shock—extirpation of the ulcer, flushing and draining of the peritoneal cavity being the proper procedure. Acute complications are mostly localized peritonitis and circumscribed abscesses, either abdominal or pleural. In these cases also surgical treatment is the only one effectual. The slighter complications concern themselves mainly with pyloric stenosis and hypersecretion of gastric juice. When stenosis is pronounced surgical interven ion is imperative. Chronic ulcer causes many symptoms more or less serious in their influence on the general health, resulting in anaemia and grave nervous phenomena. Even surgical operations, however, have to be followed up by a course of medical treatment, and the patient often remains more or less of an invalid.

297. The Ophthalmic Tuberculin Reaction in Children.

H. Audeoud (*Rev. Méd. de la Suisse Rom.*, October 20th, 1907) confirms the diagnostic value of the ophthalmic tuberculin reaction recently introduced by Calmette. A 1 in 100 solution, which must be used within twenty-four hours, is prepared by dissolving 0.005 gram of dried tuberculin, precipitated by alcohol, in 10 drops of tepid distilled water. A single drop of this solution is placed within the inner canthus of the eye to be tested. If the patient was tuberculous, Calmette observed obvious congestion of the palpebral conjunctiva, with more or less marked oedema three to five hours later; the lacrymal caruncle simultaneously became red and swollen and covered with a small amount of fibrinous exudation. There was but slight smarting. The reaction was usually at its height between six and ten hours after instillation of tuberculin, and disappeared without trace in children eighteen hours and in adults thirty-six hours after instillation. There was practically no rise of temperature. In healthy subjects at most a slight evanescent redness was produced. Courby prefers a 1 in 200 solution of tuberculin to a 1 in 100. The reaction is then less intense, but is sufficient for diagnostic purposes. He insists that the method should not be used unless both eyes are perfectly healthy. No immunization results, as the test may be successfully repeated within eight days. The following are the writer's results: Of 13 obvious cases of tuberculosis in children aged from 8 months to 15 years, a positive reaction was obtained in 12. The exception was a case of tuberculosis of the cheek which had been scraped and was rapidly healing. In 3 cases suspected to be tuberculous a positive reaction occurred in 1. In 15 cases obviously non-tuberculous the results were uniformly negative. Some divergences were observed from Calmette's description. Thus, in 6 positive cases the reaction was limited to the caruncle, and in one case it was most intense and accompanied by chemosis. In this, however, the child had previously had conjunctivitis. The onset of the reaction after instillation was later than in Calmette's case—between five and forty-eight hours—and the reaction was at its height eight to twelve hours after the appearance of symptoms. The total duration of the reaction was from two to seven days. Contrary to other observers, a slight rise of temperature—never attaining 1° C.—was the rule. The instillation had no ill effects. Audeoud has collected 611 cases thus tested. A positive result was obtained in 94.6 per cent. of the 261 obviously tuberculous cases; in 8.3 per cent. of 303 cases which presented no clinical symptoms of tuberculosis; and in 81 per cent. of 47 cases in which tuberculosis was suspected. The ophthalmic reaction is not infallible, but is a most useful aid to the early diagnosis of tuberculosis in children.

298. Pharyngeal Reflex.

Guerra Coppioli (*Rif. Med.*, May 18th, 1907) has examined over 400 subjects with a view to testing the semeiological value of the pharyngeal reflex. Using an ordinary tongue depressor, and touching the pharynx with a camel-hair brush, he noted the presence (or absence) and degree of the reflex, testing once or twice to make sure. In the first group of 300 healthy soldiers, he found a rather unexpected diminution and abolition of the reflex in a fairly large percentage of the cases. Age seemed to exercise a marked influence—for example, in the young adolescents the reflex was weakened in 24 per cent. and absent in 8 per cent., whilst amongst the old (60 to 80 per cent.) the figures were 42 per cent and 36 per cent. respectively. In 27 epileptics the reflex was normal in 3, diminished in 8, and abolished in 16, nor was this due to bromide, for 5 out of the 24 had never had bromide. In 8 cases of general paralysis the reflex was normal in 1, weakened in 4, and absent in 3. In 33 cases of neurasthenia the reflex was active in 6, weakened in 15, and absent in 12. In 18 hemiplegics the reflex was normal in 3, weakened in 8, and absent in 7. No difference in the reflex, according to the area touched, was noted in relation to the side of the hemiplegia. In 21 hysterics the reflex was normal in 3, weakened in 5, and absent in 13 It is evident from the above research that the pharyngeal reflex cannot be relied on implicitly in the differential diagnosis of functional conditions of the nervous system, and is only of value in conjunction with other signs.

SURGERY.

299. Operative Treatment of Severe Burning of the Stomach by Caustic Fluid.

Lambotte (*Journ. de Chir. et Ann. de la Soc. Belge de Chir.* No 4, 1907) states that in many cases ingestion of a caustic fluid determines isolated lesions of the stomach whilst leaving the mouth and oesophagus uninjured. The patient who in such cases has survived the immediate results of the injury is exposed to two kinds of subsequent mischief: (1) Early lesions occurring in the course of the first few days after the injury; and (2) remote troubles due to consecutive cicatricial stenoses. In the second category there are distinct indications for operative intervention, but no mention has been found by the author of any instance of such treatment in the early and acute stages of the gastric injury. A report is given of a case recently under his own care, which, it is stated, seems to demonstrate that by an early operation the subject of recent burning of the stomach by a caustic fluid may be saved from a speedy death. In a girl, aged 10 years, the accidental swallowing of some hydrochloric acid was followed by severe abdominal tenderness, by almost incessant vomiting of dark-coloured fluid mixed with shreds of burnt tissue, and by intense collapse, pointing to an early and inevitable

fatal result. There were no indications of burning of the mouth and throat. The author, who saw the patient for the first time on the fourth day after the accident, at once proposed laparotomy, with the objects of preventing threatened perforation of the stomach and of enabling the patient to take nourishment. On opening the abdomen in the median line he found the pyloric half of the stomach much altered, its walls being thickened and much injected. Posterior gastro-enterostomy was practised, the anastomotic opening being made very large. The gravity of the lesion was shown on opening the stomach by the condition of the mucous membrane which was necrosed, and came away in black and fetid sloughs. The vomiting ceased immediately after the operation, and on the fourth day the general condition suddenly improved, and the patient entered into the stage of convalescence; on the tenth day recovery seemed to be complete, the appetite being good and digestion normal. The author is convinced that the patient would have certainly succumbed had an operation not been performed, and that death would have resulted from acute inanition due to extreme swelling of the gastric coats and consequent obliteration of the pylorus. The anastomosis, it is pointed out, would do later service by protecting the patient against the secondary lesions caused by cicatricial contraction. Gastro-enterostomy, the author holds, is clearly indicated in burning of the stomach by caustic fluids, as in cases of such injury the pyloric half of the organ is almost exclusively involved.

300. Treatment of Fresh Wounds by Sugar.

Meyer (*Zentralbl. f. Chir.*, No. 33, 1907) holds that the use of gauze as a direct dressing to fresh open wounds is attended by serious disadvantages Such dressing is apt to adhere to the raw surface so that it cannot be detached without causing pain and irritation, and without leaving adherent fibres which act as foreign bodies. Moreover, in deep wounds in which muscle is freely exposed, the deeper layers of the gauze may become saturated with abundant wound secretion, and act as culture ground for germs derived from the air and from the skin in the neighbourhood of the wound. During the last two years the author has obtained excellent results from the use of brown sugar sterilized by heat and mixed with a small percentage of salicylic acid. A thick layer of this mixture is spread over the open wound, and over this is applied a gauze dressing. The sugar, it is stated, takes up the effused blood and wound secretion very energetically. At a change of dressing the small dry masses of brown sugar can be easily removed without causing any pain by a stream of sterilized water, and a fresh layer of sugar is then applied. The freedom from pain and the absence of reaction in wounds thus treated by the author have convinced him that sugar, by its capacity for absorbing wound secretion and of thus keeping the raw surfaces quite dry, may be relied upon as a sure agent for protecting the open surface against infection. Sugar has been very useful in crushing of the fingers with exposure of tendons and articular cavities. It is contraindicated in cases of very foul wounds, and also of wounds showing a tendency to bleed.

301. Hernia of Appendices Epiploicae.

Hannecart (*Journ. Méd. de Brux.*, August 8th, 1907) says that if the rôle of the peritoneal annexes does not appear to be important, their power of doing harm can sometimes be very real. They have been known to become free in the abdomen and to be the cause of a laparotomy. They have become inflamed, and formed adhesions which have caused constriction of the bowel, and they have been found in hernias. An epiploic appendix, when engaged in a hernial sac, may become incarcerated, inflamed, and necrosed; it can also undergo a real diffuse fatty hypertrophy. Appendices epiploicae have been seen to form the contents of small hernias, and to produce by the changes they undergo (strangulation or necrosis) symptoms which resemble a strangulated epiplocele. They have also been found in large hernias implicating the portion of intestine to which the appendices involved belong. Vulliet saw a man, aged 61, fat and alcoholic, who had a left inguinal hernia, which first came down in August, 1904. He wore a bandage periodically. In December, 1905, he noticed a lump appearing independently of the hernia. This lump was painless but irreducible. It increased in size; the pain grew worse. In April, 1906, Vulliet saw him, and found a large left inguinal hernia partially irreducible. At the lower end of this, above the testicle but quite free from it, was found a lump as large as a nut, hard, and hanging from the mass which formed the hernia. At the operation a very thick sac was found, which contained a part of the sigmoid fixed to the fundus of the sac by appendices epiploicae, which were prolonged into an indurated nodule. Some of the appendices had become fibrous cords; the nodule itself formed a compact, fibro-fatty, chalky mass. The hernia had been rendered irreducible by these appendices. In some cases the contents of the hernial sac consist entirely of appendices epiploicae; in others intestine and appendices are found, usually a part of the sigmoid.

OBSTETRICS.

302. Post-mortem Caesarean Section.

All are agreed that our art is mainly intended for the saving of life and the relief of suffering. As for the fulfilling of the first aim, perhaps the only circumstance which can induce us to hesitate is the death of a pregnant woman during the last weeks of gestation. Can we save the fetus when the mother has expired? If not, are we justified in operating on the moribund mother in order to give the fetus a fair chance? Caesarean section and allied operations on a fairly healthy mother are highly successful in these days, and the child is usually saved as well. An operation on the moribund parent seems repulsive, and the chances of saving the child are under most circumstances very small, for the fatal illness of the mother has of necessity been prejudicial to its maintenance. The above considerations were discussed at a recent meeting of a German medical society, where Dr. Sippel read notes of an exceptional case of Caesarean section on a dead subject (report of meeting of the Mittelrheinische Gesellschaft für Geburtshülfe und Gynäkologie, *Monats. f. Geb. u. Gyn.*, October 1907, p 618). The patient was a woman aged 30, who died near term of embolism, though, according to Dr. Sippel, her general health and nutrition were perfect. The child was extracted and its cord tied just twenty-two minutes after the death of the mother. The fetal pulse, as heard through the maternal parietes before the incision was made, was under sixty beats per minute. When extracted, the fetus was in a state of suspended animation, pale, and with all reflexes in abeyance. The pulse was still under 60. By means of Schultze's method, carried on intermittently for three-quarters of an hour, circulation was restored; then the first spontaneous inspiration occurred. It was not until one hour and a half after extraction that the infant cried lustily and moved its limbs freely. It was placed in bed with its head and shoulders lowered so as to allow of the escape of any liquor amnii that might have entered the lungs. Unfortunately, deglutition was impossible, for however carefully milk was administered, symptoms of suffocation immediately followed. The milk without doubt entered the larynx. Saline enemata were given, but though retained did not prove of any benefit, the child dying on the second day. No *post-mortem* examination was allowed. Most probably there was something wrong on the side of the fetus to account for the unfavourable result, but still its retention in the uterus for over twenty minutes after the death of the parent must have been very prejudicial. There are obstetricians who might suggest that some internal organ was injured when the child was swung after Schultze's method. In short, it is unfortunate that there was no necropsy in this case, for, as Sippel observed, the chances of fetal survival must be high when the mother was, as in this instance, constitutionally sound.

303. Puerperal Erythema.

Rudaux (*La Clin.*, August 23rd, 1907) writes that erythemata often appear soon after the confinement which bear a strong resemblance to the erythema of scarlet fever and that they are not always easily distinguished. A simple erythema appears about five or six days after delivery, there are no prodromal symptoms and no throat or glandular affection. The eruption is usually seen upon the trunk and thighs and is fainter than that of scarlet fever, but it tends to last longer. It is followed by a fine squamous desquamation which does not resemble the large flakes of scarlet fever. The temperature is not much elevated and albuminuria is not found. These eruptions are usually classed as septic puerperal rashes, and are called harmless; it is to be noted that they do not appear in severe puerperal septicaemia. They are said to have their origin in local lesions and infections. The writer considers this doubtful and reports a case of a young woman who during the eighth month of her pregnancy had a severe attack of erysipelas involving her face and part of her back; she was readily cured and was delivered successfully at term. On the fourth day her face became oedematous and red, a manifestation which subsided after

a subcutaneous injection of antistreptococcic serum. But two days later a scarlatiniform rash appeared on the body and thighs which lasted a week and was followed by desquamation. She had some slight constitutional disturbance, but no lesion of the genital tract was present and at the end of the week she was well again. This erythema was certainly infectious but did not merit to be classed as a puerperal infection.

GYNAECOLOGY.

304. Ovarian Tumour.

Gaudin and Debeyre (*L'Echo Méd. du Nord*, August 25th, 1097) report a case of a child of 4 years, from whom was removed the left ovary on account of a tumour. For three or four months there had been noticed a tumour growing in the abdomen, very mobile, regular and smooth, bound to the broad ligament by a pedicle. This pedicle was very long and very vascular, allowing to the tumour a large range of movement. The child had had very severe menorrhagia and metrorrhagia for three months. There was a growth of hairs on the mons veneris; the labia minora, highly pigmented, protruded beyond the labia majora. Vaginal examination was easy. The breasts showed a remarkable stage of development considering the child's age. On section the tumour seemed solid, and when looked at closely the whole mass has a wonderfully yellow colour, of glandular appearance. At one part of the periphery of the tumour the ovary can be seen with many follicles, some of them forming regular subcortical cysts. The tumour, which looks like a small-celled sarcoma with large fibrous strands, has grown from the hypertrophy of a large corpus luteum. There exist at birth some 100,000 follicles, the greater part of which atrophy. This atrophy goes on from birth until the end of the child-bearing age. The cells are like epithelial elements with fatty contents, with which there are mixed up leucocytes and connective tissue cells around numerous capillaries. In this particular case it is thought that the corpus luteum, formed essentially of epithelium, has no excretory canal, and that its cellular elements are in contact with a well-developed capillary network. It resembles a gland with internal secretion. The secretion of the corpus luteum, having a vasodilatory action on the uterine vessels, has been able in this case to set up a precocious puberty, indicated by the menorrhagia and the increased size of the uterus. The mammary circulation has, too, in comparison with that of the epigastric region, become markedly developed. All these secondary phenomena appeared at the same time that the ovarian tumour was growing. This may explain the relative benignity of certain solid ovarian tumours, for the mass of cells can, for some time, increase actively and abnormally, and can sometimes undergo cystic dilatation, and then suddenly retrogress. The prognosis is somewhat uncertain, for though there are instances of sarcomata of the ovaries which grow slowly, there are, on the other hand, fibromata of rapid growth. As there is no symptom or clinical sign that admits of an exact diagnosis, operation is always advisable.

THERAPEUTICS.

305. Festoform and Formobor.

One of the great disadvantages of formalhyde as a disinfectant is that it does not keep well. It becomes polymerized very easily, and when in the altered conditions requires to be heated up to 156° C. before it can exercise any disinfectant action. Xylander (*Arbeit. a. d. kaiserl. Gesundheitsamt*, Band xxvi, Heft 2, 1907) has examined certain preparations of formaldehyde which are said to be more stable, and therefore to admit of a full utilization of the disinfectant qualities of the formaldehyde. It has been noticed that when aqueous solutions of formaldehyde are mixed with a small quantity of a solution of a soda soap a hard mass is formed. This fact led to the preparation of a solid aldehyde, which is called "festoform." Festoform is put up in pastilles, tablets, and in mass. Each pastille is said to correspond to 0 5 gram of formaldehyde. It is fairly soluble, and the solutions have a neutral reaction, and are somewhat opalescent. For disinfecting rooms, a small apparatus called the festoform disinfector has been supplied by the manufacturers. Xylander tested the disinfecting properties of varying strength solutions of festoform. The experiments were carried out by comparing the effect of festoform in ½, 1, 2, 3, and 6 per cent. solutions with that of similar strength formaldehyde solutions on anthrax spores and staphylococci, which had been dried on garnets. The action of the festoform at 17.5° C., 37° C., and 55° C. was equally strong as that of the formaldehyde solutions of similar strength, save when ½ per cent. formaldehyde was used, in which case festoform proved itself more active than the formaldehyde at 37° C. Next he turned his attention to room disinfection. It was found that when 100 to 300 grams of festoform were utilized in a room of 60 cubic metre space the action was insufficient to kill spores and staphylococci placed on garnets about the room. When 325 grams were evaporated with 2½ litres in a saucepan for seven hours the result was incomplete at first, but in a second experiment all the bacteria were killed; 375 grams and 2 litres evaporated in a Berolina apparatus was also successful. It therefore appears that 2.53 grams of formaldehyde (6.25 grams of festoform) and 40 c.cm. of water are necessary for complete disinfection if allowed to act for 7 hours per cubic metre. Festoform is, according to Xylander, very stable, and can be used in any improvised apparatus. The formaldehyde contained exists as a monomolecular aldehyde. It is convenient for taking about for the purpose of disinfecting rooms. Xylander has also tested another formaldhyde preparation called "formobor." This is a combination of formaldehyde and borax in solution. It is said to contain 4 per cent. of the former and 1.5 per cent. of the latter. The borax is added to prevent oxydation and polymerization of the aldehyde. It is also supposed to increase the deep effect of the formaldehyde. His experiments show that as it acts slowly it is not suitable for the disinfection of hands, etc., but its deep action and relative harmlessness render it suitable for barber's tools. Streptococci are killed in fifteen minutes in a 4 per cent. solution, while staphylococci require sixty minutes to be killed.

306. A Danger in the Use of Atoxyl.

M. H. Hallopeau discussed a case of blindness due to the use of atoxyl before the Académie de Médecine (*Bulletin*, July 9th, 1907). The patient, whose case had been reported by a foreign colleague, had received 5 grams 10 of atoxyl during twenty-six days. A few days after the last injection, she developed visual trouble, resulting after fourteen days in complete amaurosis. The fundus was normal, except for a small focus of choroiditis. M. Hallopeau admits that the blindness was probably caused by the atoxyl, but he calls attention to the following modifying circumstances: (1) The patient was suffering at the time from alcoholic neuritis, and was, therefore in a condition of lowered resistance to the toxic action of the medicament. (2) The dose was relatively high. The quantity administered during twenty-six days would by the author have been spread over thirty-nine days, during which time a greater elimination of the drug would have taken place. (3) The drug used was of foreign manufacture. M. Duret has shown by chemical experiments that some samples of atoxyl contain free arsenites and arseniates, bodies eminently toxic. The author found no case of visual trouble in 130 cases treated in S. Louis Hospital, French atoxyl being used; but in 10 cases where atoxyl of foreign manufacture was administered, two patients suffered from slight and transient ocular disturbance. Other cases of ocular trouble due to atoxyl have been reported. In one case atoxyl had been given continuously for three months. Enormous doses have been given in sleeping sickness, as much as 55 grams in a few weeks. M. Ayres Kopke noted 6 cases of visual affection among 14 (29 Laveran) of these cases, in 3 of which blindness ensued. Result due not to excess of atoxyl, but to its German source—Laveran. Gama Pinto found optic atrophy in these. In one other case there was unilateral hemianopsia. The minimum dose given was 5 gr. 50. (Among cases of sleeping sickness treated with atoxyl in the Pasteur Hospital, no ocular accident occurred—Laveran.) In view of this complication, M. Hallopeau now recommends the postponement of the second series of injections until the arsenic injected in the first series has been completely eliminated, precise indications of which are to be expected from some researches now being carried out by M Fourneau. As administered by the author, slight symptoms of gastro-intestinal intolerance have been observed occasionally, always occurring after the fourth injection. To be on the safe side, therefore, a pause should be made after the third injection. That this restricted medication is undoubtedly useful, is shown by the fact that the author has observed a most notable amelioration after the second injection, and even recalls the disappearance of a papulo-squamous syphilide after only one injection. M. Hallopeau believes also that favourable results have been observed in sleeping sickness after the injection of one dose of 1 gr. 50. He

considers, therefore, that the drug should not be pushed till all syphilitic manifestations have disappeared, but that it will nevertheless attenuate the intensity of the disease, giving a heavy blow, as it were, to the treponema. The author gives as his routine prescription, in patients of medium stature, three injections of French atoxyl in decreasing doses, the first 0.75 gram, two days later 0.60 gram, and three days after that 0.50 gram. After waiting ten days he begins a course of mercury lasting sixty days, concluding, if necessary, with a course of iodides. M. Hallopeau considers that the results obtained from the use of this third specific in syphilis, justify him in continuing the treatment, and predicts a good career for this anil-arsenate of soda, used with necessary precaution.

307. Antitoxin and Post-Diphtheritic Paralysis.

Rosenau and Anderson (*U.S.A. Hygienic Laboratory Bulletin*. No. 38, The Influence of Antitoxin upon Post-Diphtheritic Paralysis) conclude from the experimental evidence which they have obtained upon guinea-pigs that it is useless to give diphtheria antitoxic serum for the purpose of controlling diphtheritic paralysis after it has appeared. Post-diphtheritic paralysis in the guinea-pig is an almost exact counterpart of the same sequela in man, but in the guinea-pig antitoxin has no influence in preventing the paralysis if injected shortly before the paralysis will develop, nor can it influence the affection if injected after its appearance. When given twenty-four hours after infection with the bacillus antitoxin can save the life of the guinea-pig and greatly modify the paralysis, but neither of these results is attained when the antitoxin is not administered until forty-eight hours after infection, if given in a single large dose. "Thus, in our experiments 4,000 units failed to modify the paralysis or save the life of guinea-pigs weighing about half a pound. Weight for weight, this corresponds to 400,000 units for a 50 lb. child." When the antitoxin is given in repeated injections beginning twenty-four or forty-eight hours after infection, it seems to have a more favourable influence upon the subsequent paralysis than when given in a single dose; and a very small quantity (1 unit) of antitoxin given either twenty-four hours before or at the time of infection was found sufficient to prevent the development of paralysis. As the authors were dealing with an early and malignant form of experimental post-diphtheritic paralysis—a variety which is rare in man—they expect that in human therapeutics the use of antitoxin might be somewhat more favourable than their experiments would indicate, and that, even if given at a somewhat later period than in their work, beneficial results might be obtained. At the same time, they regard their research as emphasizing the supreme importance of resorting to early administration of the remedy.

PATHOLOGY.

308. Thyroid Carcinoma.

M. Donati (*Arch. per le Sci. med.*, Turin, 1907, 31, p. 118) discusses at length three cases of carcinoma of the thyroid gland in which the microscopical structure of the tumours was complex and obscure. In the first case the tumour weighed 1 lb, and grew from the left lobe of the thyroid. The patient, a woman of 27, died a week after operation, and metastatic nodules were found in the lungs. Most of the tumour consisted of more or less regular follicles, with cylindrical epithelium, and often colloid contents; in places these follicles were replaced by alveoli filled with polymorphous cells, or with giant cells and cells showing active irregular karyokinesis; at the periphery of the growth the structure often resembled that of a perithelioma, a central blood vessel often being surrounded by a column of tumour cells. The pulmonary deposits consisted of follicles lined with one or more layers of cubical epithelium, or of compact masses of cells, some of them very large in size. Donati remarks that in this case the appearances were variously those of carcinoma, of sarcoma and of perithelioma, the latter in some cases being simulated by central necrosis in a cord of tumour cells, in others to cylindrical invasion of the sheath of a lymphatic vessel or the lymphatics round a blood vessel by the cells of the neoplasm. Giant cells and multinuclear cells are not rare in carcinoma; the tumour in the present case may be defined as an adenocarcinoma, passing into a giant-celled medullary carcinoma; the thyroid had been enlarged since the patient was 3 years old, but had only grown rapidly for three months before she died. The second patient, a woman of 34, had had a goître since childhood; it had grown much larger when she was 24; it weighed 2 lb., and was successfully removed. Under the microscope it consisted of larger and smaller alveoli separated by fibrous tissue poor in cells and containing elastic tissue. The tumour cells were rounded or polyhedral, separated from one another by fibrillary intercellular substance; in many places they were arranged in columns invested with a regular endothelium and surrounding a blood space. No thyroid follicles were found, but a little colloid was seen in intercellular spaces. Donati gives reasons for believing that this tumour was a carcinoma rather than a perithelioma or endothelioma. The third patient, a woman of 27, began to develop a thyroid tumour at 25, and latterly it grew fast. It was removed, but the patient died with collapse the same evening. The tumour weighed ¾ lb; microscopically it consisted mainly of large polymorphous cells in cords, separated by a network of capillaries and a scanty stroma of connective tissue and fine elastic fibres. The cellular columns were generally solid, but at times contained cavities; some of their cells were cylindrical, and some very large, a few containing two or three nuclei. Other parts of the tumour showed follicles containing colloid and lined with one or more layers of regular cubical epithelial cells; interfollicular tissue was lacking, and so, by irregular proliferation, these follicles could be seen passing over into the solid columnar structure described above. Hence Donati argues that the tumour was not a perithelioma, as at first sight it appeared to be, but an adenocarcinoma.

309. Snake Venoms and Antivenins.

Madsen and Noguchi (*Journ. of Exper. Med.*, January, 1907) have found that a specific antivenin against crotalus venom can be prepared by the immunization of goats. A specific antivenin against water moccasin venom can be produced by the immunization of goats with this venom, modified by hydrochloric acid. Immunization with the unmodified venom is very difficult. The toxicity of crotalus venom is diminished more than 50 per cent. by passage through a Chamberland filter. There is a simple relation between the toxicity and the body weight for guinea-pigs weighing from 250 to 500 grams. Smaller guinea-pigs (125 grams) are comparatively less resistant. The toxicity is smaller by subcutaneous than by intraperitoneal injection (guinea-pigs), or by intravenous injection (rabbits). White rabbits are very resistant. The toxicity of cobra venom is not measurably diminished by filtration through a Chamberland filter. The relation between the amount of venom and the corresponding time of death is very regular, and can be expressed by a curve of asymptotic nature. Lecithin does not increase the toxicity. The tracings representing toxin-antitoxin neutralization for the three venoms—crotalus, cobra, and moccasin—show deviation from the straight line. This deviation is most pronounced for the toxic quota of the venoms. The tracing representing crotalus venom antivenin neutralization, determined on guinea-pigs, can, within errors of experiment, be expressed by the equation: Free toxin × free antitoxin = K × toxin-antitoxin. The corresponding tracing determined on rabbits is somewhat different, but both tracings are much more markedly curved than that for cobra venom-antivenin. The neutralization tracing of water moccasin venom shows the peculiarity that small amounts of antivenin decrease the toxicity to a minimum, but the toxicity is again increased by further addition of antitoxin. The tracing representing neutralization of the haemolysins of the three venoms are different from the tracings of neutralization of the toxins, and approach very closely to a straight line. Still, in all instances, the determinations with great concentrations of antilysin show pronounced deviation, perhaps due to some dissociation of the toxin-antitoxin combination.

310. Changes in the Blood in Hepatic Disease.

Seeing the importance of the liver in relation to the blood, Ferrannini (*Rif. Med.*, July 13th, 1907) has examined the blood in 10 cases of uncomplicated hepatic disease. Speaking generally, he finds the blood less altered than might be expected—for example, in one case of secondary cancer of the liver the blood was nearly normal. The changes which were most usually found were a diminution in the haemoglobin and in the number of erythrocytes, an increase in the polynucleated cells and in the blood plates, and a distinct lessening in the coagulability of the blood. This lessened coagulability is due to a defect in nucleoproteids, and helps to explain the frequent haemorrhages seen in liver disease. The blood was taken, with the usual precautions, from the ear.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

311. Hysterical Insanity.

Raecke says that hysteria is built up on purely psychical bases. There is an alteration of the mental standpoint, such as inequality of temper, with irritability, abnormally-developed capability of being influenced by the chances of life, inclination to act impulsively and to translate mental processes into bodily disturbances, increase of the fancy, so that the patient becomes untruthful; inconsistency of thought, combined with a faulty interpretation and unreliable memory; an unlimited egotism; a desire to play an important part in life at all costs; a predilection toward intrigue and gossip; mistrust; a desire for revenge; and childlike obstinacy (*Berl. klin. Woch.*, March 11th, 1907). While these qualities all go to make up the hysterical character, one must realize that not every hysteric possesses all of the qualities. Hysteria may lead to transitory psychoses, which depend solely on the primary hysteria, and yet are not so mild that the term "insanity" ought not to be applied to them. First, Raecke mentions those forms of simple hysterical insanity which give the impression of psychical paroxysms by their sudden onset and rapid course to improvement, and which mostly begin with a fit. *Furor hystericus* is a maniacal condition, and is often induced by a disturbance of mood or by excess in alcohol. The patient is seized with sudden violent mania, sometimes after an initial convulsive attack, and shouts, beats, kicks, and bites at all objects in the neighbourhood. The face is drawn, is sometimes pale, and sometimes dark red, and is often covered with sweat. No words or acts can influence the patient's condition. When left alone the period of excitement rapidly gives place to a period of exhaustion, and the patient either falls to sleep or becomes tearful and mild. In a few cases a second fit ends the attack. When feelings of fear and oppression are prominent during the excitable stage, one can speak of *raptus hystericus*. This form is characterized by a markedly theatrical attitude, but the effect of the mental process is rarely a deep one, and one never meets with serious suicidal attempts. When the excitable stage is characterized by childish behaviour and silly misdeeds, one may call the condition *moria*. In some cases there are hallucinations and illusions, which appear suddenly and which mostly have a terrifying character. This is often associated with attacks of paranoic madness, the patient applying the hallucinations or phantasy pictures to himself or herself, and this may lead to impulsion and impulsive actions. While these disturbances are mostly of short duration, they may last for some weeks, and there may be periods of delirium and of conditions of sleep and slumbering. The delirium is characterized by very lively falsifications of scenes, combined with hallucinations for all senses. These may deal with past experiences or with the remembrance of something which the patient has heard or read about. There may be ideas of ecstatic rapture. At times they believe themselves to be other persons or even animals (transformation delirium). Hysterical lethargy is a condition of hysterical stupor, and not of proper sleep. The patients may keep in one position or fall limp to the ground, and are generally unaffected by external stimuli. The pulse is rapid, and the respiration is both rapid and superficial. The pupils are not dilated, as in ordinary sleep. Uncomfortable positions, etc., are mostly slowly and almost imperceptibly changed, and the patients do not pass urine or faeces under them, but use a bedpan when this is applied. At times they awaken for meals regularly, pass urine, etc., and then fall "asleep" again. The slumbering conditions are like the lethargic conditions. The patient remains in complete control of his limbs, can speak and even carry out complicated actions, but appears to be living in a sort of automatic existence. The expression is lost, the eyes look into distance, the walk is slow, co-ordinated but purposeless movements are carried out, but no notice is taken of the surroundings. In mild cases, questions may be answered in a dreamy sort of way, mostly quite wrong, but yet with some sort of associative connexion to the question. This complex is spoken of as "speaking past the point" (*Vorbeireden*). Mostly, however, one cannot get the patient to react to questions at all. At times, during the condition of slumbering, a one-sided prominence of certain complexes of impression may lead to the appearance of a second personality. In this way the "double ego" may be produced. Raecke cites two cases, both in males, which exemplify the condition of hysterical slumbering. In speaking of the prognosis, he states that cure always follows, but the duration of the attack is very variable. The diagnosis must be built up partly by considering the past history and antecedents and by testing the patient for hysterical character. One must not lay much weight, however, on the detection of bodily disturbances, such as functional paralyses, etc., after the psychosis has broken out, and one should always bear in mind that hysterics may be attacked by other forms of psychoses, especially katatonic demented processes. In dealing with criminals, one must be careful not to confuse simulation or exaggeration with "speaking past the point." The treatment consists in doing as little as possible. Isolation from relatives, rest, and monotonous life, combined with occasional suggestion, often leads to rapid results.

312. Diffuse Dilatation of the Oesophagus without Anatomical Stenosis.

Lerche (*Amer. Journ. of Med. Sci.*, October, 1907) discusses the condition of diffuse dilatation of the oesophagus without anatomical stenosis, and reports a case due to chronic cardiospasm—that is, a pathological exaggeration of a physiological phenomenon in which, through an abnormal innervation of the cardia, a habitual spastic closure occurs, especially after deglutition. The etiology of such a dilatation is doubtful, but from cases previously reported it would appear that those cases in which atony of the muscular wall is primary to the dilatation and spasm should be differentiated from those in which the cardiospasm is the primary factor. The case observed was that of a man, aged 27, with good previous history. During an attack of sore throat and swollen tonsils ten years previously he choked while at dinner, and was not relieved until the food came back. Since then he has had difficulty in getting the food into the stomach. After having eaten about a quarter of his meal he experiences a choking sensation, and has to drink water copiously to force the food down. This has to be repeated three or four times during each meal. At times all the food and water returns, and he is unable to swallow. The condition is aggravated if he gets out of health or is worried. On examination a spasm of the upper end of the oesophagus was noticed, and another at the cardia, requiring the use of a wire stylet in the stomach tube to overcome it. In order to differentiate between a dilatation and a deep-seated diverticulum an ordinary stomach tube was passed into the stomach and 750 c.cm. of water poured in. With the tube still *in situ* the patient was given 250 c.cm. of milk to drink. On allowing the water to flow off from the stomach it was found to be clear, and the tube was then pulled up into the oesophagus and the milk siphoned off. In order to determine the amount of dilatation a stomach tube with a silk bag attached was introduced and the bag filled with water, different sized bags being tried, until one with a diameter of 5 cm. when distended was found to be capable of only slight movement up and down. The diagnosis of diffuse dilatation, due to cardiospasm and oesophagospasm, was based upon the sudden onset with regurgitation of food and fluids; the fact that the difficulty of passing food into the stomach varied considerably at times; the sudden relaxation of the cardia on gentle pressure; and the result of sounding with the pear-shaped rubber-silk sound. The history and symptoms of the case excluded the possibility of either malignant or benign stricture, and the results of the Rumpel test excluded a diverticulum, primary atony being excluded by the regurgitation of fluids from the outset, the sudden onset, and the promptness with which the oesophageal contents could be ejected. Although the prognosis has been considered grave, the results of overstretching the cardia have been promising, and for this purpose the author has constructed an apparatus for dilating the cardia with a gradually-increasing pressure, thereby reducing the danger attending the use of bougies. Another case is quoted pointing to a congenital origin, but it is difficult to differentiate a congenital from an acquired dilatation unless an early oesophagoscopic examination can be made.

313. Diazo Reaction in Pulmonary Tuberculosis.

IDEAS as to the prognostic value of Ehrlich's diazo reaction of the urine in cases of pulmonary tuberculosis are still somewhat at variance. Some, including Michaelis, consider that its presence indicates that the disease will pursue a rapid course; others think that the reaction is of no value in the prognosis of pulmonary phthisis. Dimitrenko (*Journ. des Prat.*, July 14th, 1906) has investigated the presence or absence of this reaction in 300 cases of pulmonary tuberculosis. He finds that the reaction is very rarely found at the onset of pulmonary phthisis. In 10 per cent. of his cases it was entirely absent, and in some of the cases in which it was present it would now and then disappear for several days together without there being any obvious reason for this disappearance. The reaction is never so constantly found in tuberculosis of the lungs as it is in enteric fever. The author concludes that it is only in those cases in which the reaction is well marked and permanent that one can speak of the gravity of the state of the patient from the presence of this reaction.

SURGERY.

314. Diagnosis of Congenital Dislocation of the Hip.

J. PRIVAT (*Journ. des Prat.*, October 20th, 1906) gives briefly the signs by which one may suspect congenital dislocation of the hip in a child, and finally describes the methods which should be employed to verify the diagnosis and to estimate the prospects of success by suitable treatment. When the dislocation is a double one, the walk of the patient is almost pathognomonic of the condition. The child limps, but there is no associated painful limping; the step is free and normal, and the foot is carried resolutely forward. In a double dislocation the height of the body at each step is inclined abruptly to the side of the leg which rests on the ground; it seems as if the support on which the patient proposes to rest is suddenly drawn away, so that the trunk sinks; the gait, therefore, resembles very closely the "waddle" of a duck. When unilateral, this limping character is similar but one-sided. A marked lumbar lordosis is present; the waist appears shortened, and the pelvis seems enlarged from the projection of the trochanters. To verify the diagnosis of a congenital dislocation of the hip one must demonstrate the absence of the femoral head from the acetabulum; to do this one may either employ the *x* rays or demonstrate the condition clinically and in the following way: With the child lying flat on its back, one grasps the lower end of the femur with the right hand and imparts to the limb movements of flexion and extension and rotation; with the other hand one seizes the upper extremity of the femur, and recognizes in turn the outermost projection (the great trochanter), and internal to this the femoral neck, and still more internal the femoral head. If there be no dislocation, the head of the femur will be felt with difficulty, and on hyperextending and externally rotating the thigh a prominence (the head of the bone) will be seen in Scarpa's triangle. If a dislocation be present the head of the femur can be plainly felt, and at the place where the head of the bone should normally be one finds an emptiness. This demonstration of a mobile femoral head outside its normal position, together with the absence of previous symptoms of disease or injury, is sufficient to differentiate the condition from traumatic dislocation or hip disease. The head of the femur in congenital hip dislocation may be either below the level of the anterior superior spine of the ilium, on its level, or well above it; in the first case reduction will be easily effected, in the second with more difficulty, and in the last with still greater difficulty. Further, reduction is easier when the head of the femur is in front of the acetabular cavity than when it is behind it. In a few cases the femoral head is situated above the normal position, but is not freely movable; in these cases the head of the bone has formed a new acetabulum for itself; these cases differ from the ordinary forms of congenital dislocation in the fact that walking causes pain; reduction also is difficult in these cases.

315. Primary Tuberculosis of the Breast.

ZIRONI (*Rif. Med.*, April 20th, 1907) reports a case of primary tuberculosis of the breast occurring in a young woman aged 23. The symptoms were first noticed two years ago, the breast and axilla were cleared out in February, 1905, and there has been no recurrence or development of tubercle elsewhere since the operation. Of the three chief roads of infection (the blood, the lymphatics, and the milk ducts) in the author's case it was via the blood that infection took place. Pregnancy or lactation may act as predisposing causes, but the more important is the tuberculous tendency. Mammary tuberculosis may develop as disseminated nodules, as a confluent mass or in the miliary form which is always associated with miliary tuberculosis elsewhere. In the two former cases the eventual issue is the formation of an abscess and troublesome sinuses. In diagnosis the chief points to bear in mind are the early age of the patient, the associations with tubercle elsewhere or in the family, the long duration of the disease, the comparative absence of pain and non-affection of the skin (before breaking down occurs) and the presence of enlarged lymphatics and glands in the axilla. The prognosis, as in most tuberculous affections, should be reserved—in itself it is not dangerous to life. As regards treatment, the author recommends complete removal of the breast and axillary contents.

316. Annular Gastrectomy.

LERICHE (*Arch. Prov. de Chir.*, No. 3, 1907) discusses the indications, technique, and results of the somewhat exceptional operation of annular resection of the median portion of the stomach. This procedure of partial gastrectomy has been practised in a few cases of gastric ulcer, of hour-glass contraction, and of cancer. The author points out that it is rarely applicable to ulcer, which does not often involve both the anterior and posterior walls of the stomach, and which, as a rule, can be effectually treated by simple excision. If, however, the ulcer, extending from the lesser curvature, has spread over portions of both walls, then, notwithstanding the probable presence of firm gastric adhesions, annular resection, it is held, should be preferred to cuneiform excision of the ulcer or to gastro-enterostomy. In hour-glass contraction, which in most instances is a result or a complication of gastric ulcer, partial gastrectomy is held to be indicated when the contraction is situated in or near the median line, when active ulceration is still going on, when the stomach is freely movable, and when there is no pyloric stenosis. This operation, if found anatomically possible, is regarded as preferable to both gastro-anastomosis and to gastro-enterostomy, as a more radical method, and as one that in the actual conditions of intervention is certainly not more dangerous. Although median gastrectomy cannot as a rule be regarded as a suitable operation for cancer, by reason of the necessity in such cases of practising a much more radical method, it ought not, the author thinks, to be rigorously excluded from the therapeutics of malignant disease of the stomach. In certain exceptional instances it may be found an excellent and legitimate operation, and in cases reported by Roux and Hoeberlein it has given marvellous results. It is, the author holds, the operation of choice for tumours localized in the walls of the central portion of the stomach, which need removal, not because they are setting up obstruction but because they are malignant. It is, of course, contraindicated when the growth is found to be extensive and when the glands of the small omentum are enlarged. In a full description of the technique of median annular gastrectomy Leriche points out suitable means of overcoming the chief difficulties of the operation, which are caused by restricted mobility of the margins of the divided posterior wall of the stomach and by unequal calibre of the two gastric segments.

OBSTETRICS.

317. Occipito-posterior Presentations.

D. HARDIE (*Journ. of Obstet. and Gyn. of the Brit. Emp.*, September, 1907) describes the methods of treatment which he has found most useful in dealing with occipito-posterior presentations. Rotation by external manipulation would be an ideal treatment if the diagnosis could be made with certainty at the beginning of labour before the membranes had ruptured, but these conditions will not often be met with in practice. When the head has entered the brim, the membranes being entire the only treatment is the postural treatment, the patient being directed to lie on her right or left side, according as the occiput is to the right or to the left. The time of active interference comes, if at all, when labour has well advanced into the second stage. At this period pressure upon the sinciput may be made in order to encourage flexion and cause the occiput to occupy a lower plane in the pelvis. The pressure is made with one or two fingers, and is begun before a pain (when the position of the head can be more easily altered) and continued throughout the pain, in order to prevent the

head slipping back into its original position. This method often succeeds after a short time, but unless it is definitely useful, it should not be persisted in for more than half an hour. Where the measures described have failed the author strongly recommends rotation by hand. The process is somewhat different, according as the head is only fairly advanced or is bearing on the perineum. (*a*) When labour is only fairly advanced and progress is distinctly retarded. The patient is anaesthetized and placed on her left side. In the case of a right occipito posterior presentation the right hand with its back looking upwards is introduced into the vagina, the fingers are passed along the upper surface of the head nearer the sinciput than the occiput and the thumb placed over the lower temple; the head is thus gripped and is flexed and rotated so as to occupy the left oblique diameter with the occiput in front. Forceps are now applied, the lower blade being introduced while the right hand is still in position. There is no danger of injury to the child from the rotation of the head, which is altogether only through three-eighths of a circle, and in practice it is found that the body rotates with the head. In the case of a left occipito-posterior presentation either the right or left hand may be employed. If the right hand is used, it grips chiefly the sinciput and sweeps round the arch of the pubes, from left to right of the patient, the upper blade of the forceps being the first to be applied; if the left hand is used, it grips the occiput and sweeps round in front of the perineum from right to left of the patient, the lower blade being the first to be applied. (*b*) When the head is on the perineum. The process is essentially the same, but it is not in this case necessary to pass the whole hand into the vagina, and flexion may be aided by pressure on the sinciput with the left hand. The author has employed the treatment above described in cases of occipito-posterior presentation for some years, and finds that no other treatment can compare with it in efficiency and safety.

318. Quinine in Obstetrics.

Maurer (*Gaz. Hebd. des Sci. Méd.*, October 20th, 1907) advocates the use of quinine to increase uterine contractions during labour, and even sometimes to set them going. He has found it particularly useful in cases where the membranes have ruptured prematurely, and the contractions are absent or feeble; and he has employed it also in the induction of premature labour and in the treatment of abortion. He has not found any injurious effect on either mother or child from its use, the ringing in the ears observed in some of the cases soon passing off. He administers 1 gram by the mouth in a cachet, giving half the quantity one hour after and again in half an hour if required. He has not found it of any use to exceed 2 grams, and it has generally answered very well to give it by the mouth, although in some cases he has had recourse to subcutaneous injection. He has never known it to fail.

GYNAECOLOGY.

319. Local Treatment of Peritonitis by Alcohol.

From time immemorial alcoholic stimulants have been prescribed, or taken by the patient without being prescribed, as a remedy in septic infection, peritonitis included. It appears that in Bucharest alcohol mixed with saline solution is poured into the peritoneal cavity as a therapeutic measure in septic cases (Report of Articles on Obstetrics and Gynaecology published in Roumania in 1906, *Monatsschr. f. Geb. u. Gyn.*, October, 1907, Abstract No. 23, p. 574). Constantinescu claims the best results in a case of general suppurative peritonitis of uncertain origin, and in a second where that complication followed supravaginal hysterectomy for uterine fibroid. In both instances the peritoneal cavity was flushed out with artificial serum. Then 500 grams more of the fluid containing 5 per cent. of rectified alcohol was poured into the peritoneum, and left there when the abdominal wound was closed. Both cases recovered, and Constantinescu attributes the satisfactory result to antiseptic action exerted by the alcohol in solution. The focus of infection was probably destroyed otherwise than by the alcohol.

320. Do Ovarian Dermoids become Cancerous?

Gorisoutoff (*Zentralbl. f. Gynäk.*, No. 45, 1907) is of opinion, after considering a case under his own care, that primary cancer may develop in a common ovarian dermoid. His patient was a virgin, aged 45; the menopause had been completed two years previously. She had noticed for two months a swelling of the size of a fist in the hypogastrium, which caused dysuria and constipation. It proved to be an intraligamentary tumour of the left ovary, which was successfully removed. The tumour was a dermoid, and bore a distinctly cancerous area, with flat cells derived from the stratified epithelium of the dermoid tissue. The patient, as is usually the case after ovariotomy for dermoid, recovered speedily from the operation. Two months later infiltration in the left half of the pelvis was detected, and it spread until the death of the patient within six months. No necropsy, however, is reported. Gorisoutoff states that over twenty cases of primary cancer of ovarian dermoids, which he considers authentic, have been published.

THERAPEUTICS.

321. Treatment of Neuralgia.

Dr. Schultze (*Zeit. für Phys. und Diät. Therap.*, May, 1907) reviews the different methods of treatment available for neuralgia. Amongst drugs which often give relief in recent cases he mentions the salicyl preparations, especially aspirin and novaspirin, and the other so-called antineuralgics, from quinine to pyramidon. When these fail arsenic may be tried, or aconitine, which Barber has found useful given in doses of 1 decimilligram three times a day. Strychnine in large doses has also been recommended, and in many cases of trigeminal neuralgia and of sciatica aperients do good service. Amongst physical methods Schultze values least massage, which he has found to be of no use in severe cases. Electricity, especially the weak galvanic current, is more effectual than massage. The author saw one case of trigeminal neuralgia of long duration and most severe type in which the pain almost disappeared after the use of the galvanic current. While this one case may have been accidental, it cannot be denied that electricity in some cases gives relief. The application of heat has been tried in many forms. Bier makes use of it, especially in the form of the hot-air douche, the heat being such as to cause a burn of the first degree, and he had had success in some cases of severe trigeminal neuralgia sent to him for operation; where this method fails the failure may depend on some special cause, as, for instance, the presence of arterio-sclerosis or of deeply-seated nervous condition. The author has had considerable success in the treatment of sciatica by warm sand baths. As well as dry heat, all sorts of warm baths have been used, and Brieger especially recommends the Scottish douche, which, however, Schultze has not found as useful as the hot sand baths. Another method which undoubtedly affords relief is nerve-stretching by the bloodless method. The simplest way of carrying it out in cases of sciatica is Lasègue's method of flexing the extended lower limb upon the pelvis from the ankle-joint. Goldsheider has invented a special kind of seat in which exercises can be carried out for stretching the nerve. Hartmann for the same purpose fixes the lower extremity and bends the patient's body forwards. On the other hand, rest is strongly recommended for cases of sciatica, and Weir Mitchell puts the leg up in splints. The author considers the right principle to be to start the movements as soon as the pain begins to yield to the treatment by rest or to treatment on other lines. A more modern treatment is by perineural injections or injections into the nerve substance. Amongst the different substances which have been used for injection since the method came into vogue are morphine, atropine, strychnine, aconitine, curare, ergotine, gall solution, silver nitrate, tincture of iodine, alcohol, ether, chloroform, methylene blue, water, carbolic acid, antipyrin, cocaine, and eucaine. In trigeminal neuralgia Schlösser has used alcohol injections with specially constructed cannula introduced high up; he has had good but not permanent success in a large proportion of 68 cases of severe neuralgia, and relapses can receive renewed treatment on the same lines. In one case of sciatica which came under the author's observation which had been treated on these principles, a circumscribed area of painful inflammation had remained after the injection. If alcohol be injected into the nerve substance or close to it, it causes degeneration of the nerve; thus the injection may be looked upon as a form of medical resection, which must be used with caution in the case of mixed nerves. Küster recommends the injection of 5 per cent. cocaine solution, and claims that about eight injections should bring about recovery, but cases have been reported in which such injections have caused severe

collapse symptoms. Lange uses for injection a solution of 1 per cent. β-eucaine in a salt solution of 8 per 1,000, and differs from earlier writers in that he uses large quantities of fluid, up to 70 or 100 c.cm. in cases of sciatica; he has reported on 8 cases, with complete success in 5. Umber dispenses with the eucaine, and uses still greater quantities of salt solution, up to 170 c.cm. In 4 cases of sciatica of long standing he obtained freedom from pain after two days, but he does not say whether relapses occurred. The author has used the method in 2 cases, but with no special success. Krause substituted for β-eucaine stovaine and adrenalin, and reported prompt improvement in 5 cases of rheumatic sciatica, and an excellent result in 1 case of trigeminal neuralgia. When all such methods have proved useless there remains surgical treatment. The author describes the different operations which may be undertaken; none of them are certain in their results, while some of them are of considerable danger, and therefore the greatest efforts should be made to render operations superfluous by further development of our knowledge of the pathology of the disease, and of the physical methods and injection methods of dealing with it.

322. The Action of Priessnitz's Application.

H. SCHADE (*Muench. med. Woch.*, April 30th, 1907) discusses the action of the Priessnitz application of cold water on a linen bandage, covered with a layer of some protective tissue, for inflammatory conditions. He maintains that a satisfactory explanation of the action has not yet been given, and he attempts to supply this want by dealing with the matter from the point of view of the osmotic pressure of the tissues and tissue fluids. The osmotic pressure of a solution may be said to be the pressure which the dissolved substances exert on the molecular surface of the fluid in the endeavour to increase the latter. This pressure may be very considerable. The osmotic pressure of human blood and serum during health is constant, and equals from 7.5 to 7.9 atmospheres. This may be expressed in another way by stating the lowering of the freezing point of the solution. Serum has a freezing-point depression of 0.55° to 0.57° C., and this is usually indicated by the Greek symbol Δ. The endeavour on the part of the body to keep this pressure at a constant level is spoken of as the isotonic balance of the blood and the tissues. In inflammatory conditions the osmotic pressure becomes changed, and the isotonic balance is lost. In order to understand the conditions affecting an inflamed area, it is necessary to analyse a simple condition such as a boil. The central pustule has an abnormally high osmotic pressure, ranging between 0.6° and 0.8° C., and may even reach as much as 1.4° C. Passing outwards, one next comes to the hyperaemic zone, in which the pressure is still too high, but is increasingly lower the farther distant it is from the central pustule. Outside this is the area of manifest oedema, which has a pressure varying from about 0.75° C. close to the hyperaemic zone to 0.56°, which is the normal pressure of healthy tissue. The importance of this change in pressure is grasped when one learns that the volume of a cell diminishes as the osmotic extension of the fluid in which the cell is suspended is raised above that of the cell itself. Thus a red cell loses about one-quarter of its volume when suspended in 1.5 per cent. sodium chloride solution ($\Delta = -0.9°$ C.), as compared with the cell suspended in 0.9 per cent. sodium chloride solution ($\Delta = -0.56°$ C.). Next, as is well known, the structure of a cell is materially altered by suspension in a fluid of a higher osmotic pressure than that of the cell itself. Red cells lose their disc shape and become spherical when kept in 1.5 per cent. sodium chloride solution. In correspondence with this, the function of the cell suffers as soon as the isotonic balance is lost. This can be measured by watching the phagocytosis of leucocytes, suspended in saline solution of varying strengths. Turning to the physiological and clinical side of the question, the author finds that when the osmotic pressure is raised a damage is inflicted on the tissues, and this results in an inflammatory reaction. The injection of isotonic solutions is tolerated by the tissues without disturbance, but when the solutions are hyperisotonic, pain is always produced. This, of course, applies only to solutions of substances which are non-escharotic or which do not attack the tissues chemically. In cold tuberculous abscess the osmotic pressure is not raised, but the inflammatory signs are altered; there is little or no pain and no oedema. From these considerations he comes to the conclusion that osmotic pressure of the tissue fluids plays an important part in the process of inflammation. The Priessnitz application causes a reactive hyperaemia, and thus tends to re-establish the balance of the osmotic pressure. He does not consider that the poultice acts beneficially or otherwise on the area of hyperaemia—that is, on the pustule itself; but, when it covers the oedematous zone, it converts the local anaemia into a local hyperaemia. The result of this increased circulation through this zone is to heighten the lymph circulation centrifugally, thus getting rid of the products of inflammation rapidly, or rendering them harmless by neutralization with the various substances in the serum or lymph. In testing the various forms of water applications, he found that hot fomentations, which only just cover the highly-inflamed area, rather tend to increase the pain; that hot fomentations which cover the whole of the affected area widely allay the pain rapidly; that hot fomentations which cover a ring around the central pustule, leaving this part uncovered, also allay pain rapidly. In conclusion he surveys the action of the cold-water applications in various situations, and states that he believes that the action on the osmotic pressure is an important one, although he considers that other factors also come into play.

323. Treatment of Acute Mercurial Poisoning.

SALVATANI (*Rif. Med.*, July 13th, 1907) points out that the toxic action of mercury depends largely on the degree of concentration of the mercurial ions, and the more effectually this concentration can be lessened the more efficacious will be the antidotes employed. From certain experiments carried out by the author (by endovenous injections in animals) it was found that the power to lessen this concentration was least marked in chloride of sodium and more marked in the following drugs in ascending degree—bromide, iodide, sulphide, and hyposulphite of sodium (thiosulphate). In treatment he distinguishes an external (including treatment by the stomach) and an internal antidotism, the latter being applied to the drug after absorption. By external antidotes we try to immobilize chemically and pharmacologically the ions of mercury not yet absorbed; by internal antidotes we try to lessen the concentration of the ions until the poison can be eliminated from the system. As external antidotes albumen is good, but H_2S and the sulphites are better, as they hinder absorption, lessen the corrosive action, and diminish the local toxic action. The hyposulphite should not be used where there is danger of general poisoning, but for small doses (for example, where a strong mercurial solution has got into the eye) it should be very useful. As an internal antidote the hyposulphite of soda and H_2S are recommended. The hyposulphite should not be given by the mouth, but only endovenously or hypodermically; the H_2S may be given in the form of enemata, inhalations, or by the mouth. When one can feel sure that all the mercury has been absorbed from the intestinal canal, hyposulphite of soda may be given by the mouth.

PATHOLOGY.

324. Case of Triorchidiitism.

POTARCA (*Sem. Méd.*, May 8th, 1907) reports the following case of supernumerary testicle. The patient, a soldier aged 21, came under the author's care to be operated on for a left hydrocele. According to the patient's account the left side of his scrotum had always been much larger than the right and contained two glands, each of which was much smaller than the normal right testicle. On examination there was found marked fluctuation in the tunica vaginalis of the left side, and here were also to be detected two small mobile masses similar in shape and size, and united by a double cord, which passed upwards towards the external orifice of the corresponding inguinal canal. Both masses were of the same consistence, and were somewhat more sensitive to pressure than was the right testicle. Under local anaesthesia the hydrocele was opened, giving exit to some citron-coloured liquid, and it was then seen that the two small masses, each about the size of a pigeon's egg, were really two testicles. Two spermatic cords with two vasa deferentia could be traced into the left inguinal canal, and a double serous membrane enclosed the two glands with their cords. No trace of epididymis could be found in either of these rudimentary glands, but at the lower borders of each were to be seen two small excrescences, each the size of a lentil. The vasa deferentia of these glands were almost natural in size. The parietal wall of the left tunica vaginalis ended blindly at the external orifice of the left inguinal canal.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

325. **Kala-azar.**

MARTINI reports on two cases of febrile tropical splenomegalia—kala-azar (*Berl. klin. Woch.*, August 19th, 1907). The first patient was 26 years old. In the spring of 1904 he was taken ill with high fever, rigors, and sweating; these symptoms lasted one month, and during the following winter, the following spring, the following autumn, and, lastly, during the spring of 1906 they were again repeated. The last attack lasted a long time, and the patient was rendered quite unfit for work during the following twelve months. During the three years his abdomen had been swollen, and for the last eight months he complained of pain and a burning sensation in the upper region of the abdomen. He stated that he had noticed a swelling of the testes and of the ankles from time to time. After having been in hospital for some two months Martini reports that he appeared to be a pale, moderately strongly-built man, looking younger than he was. He lay in an apathetic manner, his eyelids were somewhat oedematous, and there was oedema of the testes and ankles. The blood count revealed from 1,600 to 2,000 leucocytes per c.mm.—that is, there was leucopenia. The temperature ranged between 98° and 101.3°. The examination of the chest did not reveal anything abnormal, while on examining the abdomen ascites was discovered. The spleen was distinctly enlarged, but the size of the liver appeared to be normal. The urine did not contain any pathological constituents. Puncture of the spleen yielded a thick blood-stained fluid, which was smeared on cover-glasses and stained by Giemsa's method after fixation in alcohol. Normal red and white blood cells were seen under the microscope, besides large numbers of mononuclear giant cells (macrophages) and metachromic red cells. In the macrophages Martini found Leishman-Donovan bodies, which are now recognized as the causal parasites of kala-azar. Some parasites were also found lying free between the cells, while a few were inside the normal leucocytes. The nuclei (chromatin aggregations) and micronuclei (blepharoblast) were so typically stained red and so typically placed, that no doubt could exist as to the correctness of the diagnosis. He proceeded to see if he could obtain the transformation into flagellates by culturing the bodies on liquid blood with spleen pulp derived from the patient kept at between 17° and 22° C. These experiments are still in progress. With regard to the diagnosis, he points out that the chronic course, with long periods of fever, the anaemia, oedema, and leucopenia, together with the find of the Leishman-Donovan bodies, removed all possible doubt. He briefly traces the work which has been done with regard to this disease, and then passes on to the possible methods of infection. Bentley has shown that certain fishes in kala-azar districts harbour a flagellate similar to the one obtained from the Leishman-Donovan bodies, while the same species of fish in kala-azar-free districts do not harbour the parasite. The fish is freely eaten in the infected districts. Infection from drinking water or ponds in which the natives bathe is supposed by McKenzie. Lastly, some observers regard it probable that mosquitos and bugs carry the infection. Quinine and arsenic are used in the treatment, but it is doubtful whether either do much good. The patient mentioned above seemed to improve under arsenic. The second patient had been ill for two months. He was in the stage of his first remission. He also showed leucopenia, fever, and enlargement of the spleen. Leishman-Donovan bodies were found in the puncture fluid from the spleen.

326. **Tabetic Arthropathies.**

RAYMOND (*Journ. des Prat.*, October 20th, 1906) discusses the characters of the joint affections occurring as a result of tabes, and points out the importance of being able to differentiate them from rheumatism, gout, etc., and especially from the syphilitic arthropathies. Tabetic arthropathies may constitute the sole clinical picture of a case of tabes dorsalis; they occur usually at the earliest stage of the spinal disease, and appear very rapidly. In a few hours the affected joint may be enlarged to twice its normal size. Subcutaneous oedema appears, the synovial secretion rapidly increases in amount, distends the synovial sac, bursts this, and then infiltrates the neighbouring parts. The articular cartilages and adjacent bony parts may undergo either atrophic or hypertrophic changes. The ends of the bones undergo absorption, and the medulla returns to an embryonic state. Bony outgrowths may develop on the articulating extremities. These joint affections are generally symmetrical, and occur chiefly in the larger articulations, such as the hip, knee, shoulder, and elbow. Sometimes the joint swelling subsides altogether and does not reappear; at other times it subsides but reappears; at other times still it remains in a chronic condition. The author, in order to urge the necessity of differentiating true tabetic arthropathies from syphilitic arthropathies occurring in a patient the subject of locomotor ataxia, quotes the cases of two patients, both suffering from tabes dorsalis and both exhibiting arthritic troubles; in the one the joint affections (both knees and left hip) were trophic in nature and dependent upon the spinal disease, in the other the joint troubles (both ankles) were the direct result of syphilis and were rapidly ameliorated by mercurial treatment. It is important, as the author says, to distinguish between the trophic disturbances which do not get well and the syphilitic arthropathies which improve markedly with mercurial treatment.

327. **Acute Diverticulitis.**

BREWER (*Amer. Journ. of Med. Sciences*, October, 1907) gives notes of six cases of acute intra-abdominal abscess originating in the left lower quadrant. The symptoms so nearly simulated those of acute appendicitis as to suggest the possibility of transposition of viscera. The chief features presented at operation were in two of the cases a well-defined intraperitoneal abscess and in the third a retroperitoneal abscess, the bowel wall at one point being covered with fibrinous exudate, pointing to the possibility of a small perforation as its origin. These cases were suggestive of the rupture of a small acquired diverticulum of the sigmoid or descending colon, and, while such acquired diverticula are of fairly frequent occurrence in elderly people, their pathological importance in the production of intra-abdominal abscess has had scant attention, though occasionally the relationship between such lesions and general or localized peritonitis has been demonstrated by pathologists. The remaining three cases pointed most clearly to such an origin. In the first a walled-off abscess was found containing gas and pus, with considerable matting together of the intestines. In the second, a large abscess cavity containing pus and an oblong faecal concretion was found, together with a small ulceration in the wall of the sigmoid. The third case clearly showed the relationship between an acute perforative diverticulitis of the sigmoid and a generalized fatal peritonitis, an oval concretion somewhat larger than a date seed being found, and a deeply-congested loop of sigmoid, on the free border of which were the gangrenous remains of a small perforated diverticulum. It is possible that the concretions found in in the last two cases acted as predisposing causes of the perforation.

328. **The Etiology of Pleurisy.**

FERMANI (*Il Morgagni*, October, 1907) draws attention to the importance of a morphological study of the patient from the point of view of etiology—his heredity, kind of life, general nutrition, past history of disease. Cytological examination of the pleural effusion is highly important. Speaking generally, lymphocytosis is characteristic of the tuberculous forms, whilst on the other hand polynucleosis is the rule in non-tuberculous types. Bacteriological examination, with cultures of the organism and experimental proofs on animals, each play a part in settling the etiology. The author is convinced of the value of Mayer's chemical reaction. This is carried out as follows: Two drops of blood are collected in a pipette and diluted with distilled water until the red colour disappears; a 50 per cent. alcoholic solution of tr. guaiaci is then added. If many polynuclear leucocytes are present a blue ring is formed at the point of contact. Polynuclear cells seem to contain a ferment which acts (like turpentine) as an oxidizing agent. Something may also be learned by the injection of methylene blue into the pleural cavity and observing (from an examination of the urine) its rate of absorption; it is rapid in acute non-tuberculous pleurisies,

whilst in tuberculous forms it is notably diminished or retarded. An excess of chlorides in the urine is rather in favour of a tuberculous form of pleurisy. Lastly, the tuberculin test gives useful information in the attempt to derive the cause of any given case of pleurisy.

329. **Zonular Meningitis.**

Chauffard (*Journ. des Prat.*, November 2nd, 1907) treats shortly of this subject. The disease, he says, is usually fleeting. A woman entered hospital complaining of girdle pains, which she had had for five days. When first she was seen the cerebro-spinal fluid was normal; but four days afterwards there was a lymphocytosis of this fluid, and the patient complained of pains down the spine. She also had exaggerated knee-jerk and slowing of the pulse-rate. All these symptoms had disappeared in three or four days' time. Another woman, aged 38, suffered from trigeminal pain. The attack was ushered in with a rigor, headache, numbness of the right side, and the appearance of groups of vesicles at the ala of the nose and on the forehead. Lumbar puncture, performed on the fifth day of her illness, proved the cerebro-spinal fluid to be normal. The following day the patient had pain in the cervical spine, slow pulse, but no Kernig's sign. Picard has published a note concerning a child, 12 years old, who had a localized meningitis following an attack of mumps. The child had a slow pulse and Kernig's sign. Nine days after the child had trigeminal pain with vomiting, cervical rigidity, and lymphocytosis of the cerebro-spinal fluid. All these symptoms had cleared up in sixteen days. In these cases there is a constant accord between the situation of the zone and the location of the signs. The disease, no doubt, starts in the spinal ganglia, and from them extends to the posterior roots and the medulla. In the ophthalmic zone the Gasserian ganglion is implicated.

SURGERY.

330. **Tumours of the Ampulla of Vater.**

De Graeuwe (*Journ. de Chir. et Ann. de la Soc. Belge de Chir.*, No. 4, 1907) deals with the subject of tumour of the ampulla of Vater, which he defines as a cancerous growth developed in this part of the biliary canal, and either protruded into the lumen of the duodenum, or confined to the ampulla itself, or involving the duodenal portion of the choledochus. Tumours of this kind, though rare, are more frequent than has hitherto been supposed. Their clinical diagnosis may be assumed as impossible, but in the treatment of any case of jaundice from retention, the constant and most grave results of tumours of the ampulla, it is always incumbent to find out the seat of the obstruction. In every case of jaundice due to obstruction surgical intervention is indicated. If, in the course of such intervention, a tumour be found in the ampulla, an attempt should be made to remove it, and this failing, an anastomosis should be established between the gall bladder and the intestine or stomach. A case is here recorded in which Verhoogen of Brussels recently removed a tumour from the ampulla which was exposed by opening the duodenum. The patient did well for the first seven days after the operation, but three days later died from collapse due to progressive intestinal haemorrhage.

331. **Surgical Conditions Arising from Branchial Clefts.**

Speese (*Univ. Pennsylvania Med. Bulletin*, October, 1907) deals with those errors of development due to non-union of the branchial clefts which result in fistulae and cysts. Lateral fistulae originate from the second branchial cleft, and may be complete or incomplete. In their course they pierce the subcutaneous tissue and fascia, and run parallel with the sterno-mastoid on the deep fascia above the sterno-hyoid and sterno-thyroid muscles to the hyoid bone, passing over the internal carotid and between it and the external, finally reaching the pharynx under the digastric. Operation is not always indicated, since in some cases the dangers are obviously greater than the inconvenience warrants, and any attempt at complete removal is a serious matter because of the intimate relation to important structures and the possibility of failure on account of dense adhesions. Branchial cysts are composed of fetal epiblastic and hypoblastic tissues remaining in an embryonal state for an indefinite time until by a later proliferation of their epithelial elements they give rise to a characteristic cystic tumour. Although they may be congenital they generally develop at puberty, and are apt to be mistaken for strumous conditions, aneurysm, or dermoid cysts. Suppuration may occur, the resulting abscess being of interest from a diagnostic standpoint, and from the malignant degeneration which such abscesses tend to incite. A case of branchiogenic carcinoma is reported occurring in a man aged 36, who noticed a painless swelling on the right side of the neck of three years' duration. Diagnosed as an abscess it was opened and drained, but examination of the abscess wall showed an epitheliomatous formation. Radical removal of the sac was performed, and as the process had not extended deeply it was possible to do this completely, and three years later there was no sign of recurrence. The case is of interest since the age of the patient was only 36, whereas the majority of those previously reported have been about 60 years of age, and while few of these have recovered none have been free from secondary developments for so long a period as three years.

332. **Leucoplakia of the Mucosa of the Urinary Passages.**

Sobieri (*Il Policlin.*, October, 1907) describes two cases—both in women, aged 35 and 53—of this rare condition. In the first case the disease was localized in the right renal pelvis, and the symptoms were paroxysmal pain in the hypochondrium, pollakuria, intermittent haematuria, and the presence of delicate white shreds in the urinary sediment consisting of cornified pavement epithelium. The symptoms dated from five years. The kidney was removed, and the patient cured of her symptoms. In the second case the symptoms (hypogastric pain, dysuria, polyuria, pollakuria, intermittent haematuria, incrustation of salts in the bladder walls, and degenerated pavement epithelium on the urinary sediment) had lasted for six months. Cystotomy was performed, and numerous foci of leucoplastic mucosa were excised. This operation cured for a time, but six months later a relapse occurred, when partial resection of the bladder was performed, and permanent cure followed. The leucoplakia seen in each case was exactly comparable to the similar change which is well known in the case of the tongue. Very little is known as to the etiology, and owing to the scarcity of cases, what has been written on the subject is for the most part guesswork. Cystoscopic examination is not very satisfactory in these cases. The prognosis is favourable if the diseased parts can be effectually removed; no other treatment is of use.

333. **Presence of Vermiform Appendix in an Umbilical Hernia.**

Mühsam (*Zentralbl. für Chir.*, No. 14, 1907) states that though the appendix is not infrequently found in inguinal herniae on both the right and the left side, the presence of this process in an umbilical hernia is of very rare occurrence. A case is reported in which the author, while operating on a strangulated umbilical hernia in a woman aged 41, found in the midst of extensive adhesions a tough cord of the thickness of the little finger which at one extremity was firmly attached to the abdominal wall, and when traced inwards and carefully separated from omentum was found to end at the caecum. This cord, which proved to be the appendix, was detached at its caecal end in the usual way, and the whole of it was resected, together with surrounding adipose and cicatricial tissue and a small portion of the skin over the hernia, to which it was closely attached. This report, the author suggests, indicates the necessity of much caution in dealing with adhesions found in operating on an old and large umbilical hernia. Notwithstanding the extreme rarity of the complication described in this paper, the possibility of an inclusion of the appendix should be remembered, and in any case of umbilical hernia in which the adhesions are thick and extensive any unusually thick and prominent cord should be regarded as suspect and not be divided until its true nature has been determined. If the caecum be involved in the adhesions such dissection, it is stated, might be found very difficult. In the author's case this portion of the large intestine was quite free, and did not form part of the adherent contents of the hernial sac.

334. **Dilatation of the Frontal Sinuses.**

J. Dunn (*Archives of Ophthalmology*, March, 1907) gives an account, illustrated by a skiagraph and a photograph, of a case of bilateral painless dilatation of the frontal sinuses due to death of the lining mucous membrane. The patient was a male, aged 23. In 1902 there was severe pain behind the right eye. A profuse discharge from the right nostril gave complete relief. During 1903 he began to notice that "his forehead was swelling." In 1906 there was a marked protrusion of the region overlying the frontal sinuses. The nose was perfectly normal, no turbinal hypertrophy, no abnormal secretion, no pain, no disturbance of vision.

The *x*-ray picture showed that the trouble was confined to the frontal sinuses, and that the external bony wall was very thin. An exploratory incision showed that the external bony plate of both sinuses was only as thick as a thumb nail, the walls of the sinus were dry, dead white, and as hard as ivory. The bone was bare or covered by a very thin white membrane which did not bleed. Both sinuses were alike. The naso-frontal ducts were patent. There was in fact a complete bilateral atrophy of the mucous membrane lining the sinus. The thinning and subsequent dilatation of the sinus walls had been secondary to the death of the lining membrane. There was no history of syphilis. Dunn cannot suggest an explanation of the bulging, except that it was caused by air pressure during the act of blowing the nose. The wound healed well, but the patient thinks the protrusion is increasing.

OBSTETRICS.

335. Diagnosis of the Period of Pregnancy.

Funck-Brentano (*La Clin.*, November 8th, 1907) considers that it is not possible to do more than calculate the approximate date at which delivery will take place. Even when the date of the last or only coitus is known, it is little guide to the date on which conception has occurred, since a period of from eight to fourteen days may elapse between connexion and the penetration of the ovum by the spermatozoon. Further, the date of coitus is frequently unknown, and the calculation is based upon the date of the last menstrual period. In these cases the date of conception may be anything, between a few days after the last period and a few days preceding the period which is missed. The average number of days between conception and delivery is 270 to 286, though many observers have quoted instances in which it extended to 252 and 326 days, and it is not uncommon to find a pregnancy terminate more than 300 days after the end of the last menstrual period. It is easy to make a miscalculation, and the error may be large when the woman is inaccurate or does not recollect, or when she has no periods, as in the case of those who are nursing. It is usual to base the calculation upon the date on which the woman has experienced fetal movements for the first time; this may be said to occur generally during the first fortnight of the fifth month, but it varies considerably with individuals, and has been known to mislead by weeks or even months. The size of the uterus is the best and most certain guide. Some authors take their measurements by starting from the umbilicus or from the xiphoid cartilage, but they are liable to forget that the distance of these points from the symphysis pubis varies in different women. The height of the umbilicus above the pubes may range from 12 to 20 cm. The measurement should be taken from the upper margin of the symphysis with a measuring tape laid along the median line to the upper level of the uterus. The height to which the uterus rises at the same period of pregnancy differs in individuals, and will differ in the same individual during different pregnancies. It is therefore only possible to give a table of the average height which it attains in the various months: At three months, 9 cm.; at four months, 15 cm.; at five months, 20 cm.; at 6 months, 24 cm.; at seven months, 27 cm.; at 8 months, 30 cm.; and at nine months, 34 cm. Dr. Macdonald of New York, who has made a study of this point, concludes that the height of the uterus above the pubes, measured in centimetres and divided by 3½, will give the age of the pregnancy in lunar months fairly exactly. Thus, if the height of the uterus were 26 cm., the woman would have been pregnant for 7⅔ lunar months—that is, for 7 months and 12 days; and when the measurement is 35 cm., the pregnancy is 10 lunar months old—that is to say, is at term. When measuring, the fingers of the right hand are placed on the fundus, and the tape is brought up to the palmar surface of the second phalanx of the index finger, so that the tape does not lie in its entire length against the abdominal wall, thus avoiding an error. When the abdominal tissues are lax it is well to have the uterus supported in the longitudinal axis by an assistant. Macdonald considers 35 cm. to be the usual height of the womb at term, and 3,300 grams to be the usual weight of the fetus at term; he finds that for every centimetre of height above 35 the child will weigh another 200 grams. When the practitioner who is acquainted with the probable height of the uterus at the various months finds his measurements to be abnormal, he will investigate the cause; thus, if the uterus be abnormally large, he may be able to diagnose a twin pregnancy; or, if it be abnormally small, he may discover that the fetus is dead.

336. The Chorea of Pregnancy.

Rudaux (*La Clin.*, August 30th, 1907) writes that when chorea is first noticed in a pregnant woman a vigorous antitoxic treatment must be instituted. Milk diet is essential. The intestine must be cleared out by the administration of a purgative, followed by fractional doses of calomel and copious injections. The urine should be thoroughly examined, both as to quality and quantity. By these means the cause of the manifestation may be reached, but the nervous system is in a state of hyperexcitability and demands special treatment. He prefers large doses of chloral to other drugs, and would give from a drachm to 3 drachms in twenty-four hours if necessary. It may be administered either by mouth or by rectum. In the latter case a drachm of chloral may be added to the yolk of one egg and 4 oz. of milk, and be passed into the rectum very slowly with a fine syringe. This will send the patient to sleep for some hours; she should only be roused to take milk at stated intervals. The chloral should be gradually increased from 1 to 2 or 3 drachms, and then diminished as the symptoms subside. It should only be stopped when these have completely disappeared. Abortion or premature labour should only be undertaken when the life of the woman is in danger.

GYNAECOLOGY.

337. Uterine Fibroid and Cancer.

Max Schwab (*Beiträge zur Geburts. u. Gynäk.*, vol. xii, Pt. 1, 1907) reports very minutely a case where a woman, aged 37, was subject to severe abdominal pains, menorrhagia, and high temperature. There was a tender swelling of the size of a hen's egg in Douglas's pouch. Disease of the appendages was suspected, but at the operation the swelling proved to be a myoma, which was enucleated without much difficulty. Some small subserous outgrowths were excised from the surface of the uterus, and that organ, having been fixed forward by intraperitoneal shortening of the ligaments, was not removed. On microscopic examination of the parts removed they proved to be adenomyomata undergoing cancerous degeneration. The growths were removed on January 15th, 1907. The uterus remained movable and free from enlargement up to April, when the patient was last under observation, but Max Schwab feels certain that signs of advance of the malignant disease must soon make their appearance.

338. Myoma and Double Uterus.

Falgowsky (*Monatsschr. f. Geb. u. Gyn.*, October, 1907) was consulted by a woman, aged 50, for uterine fibroid disease with haemorrhages and dysuria. She had been four times pregnant, aborting twice. The last pregnancy ended twenty years before she came under observation. At the operation uterus duplex bicornis bicollis was discovered. Each cornu bore a fibromyomatous tumour of the size of a man's head. As usual, a deep fold of peritoneum passed between the cornua from the bladder to the rectum, so that Douglas's pouch was divided into two. There was a right and left os uteri separated by a stout partition lined with mucous membrane, and two cervical canals existed. Subtotal hysterectomy was performed under the influence of morphine-scopolamin. Each cervix was covered over with a peritoneal flap after the application of a Paquelin's cautery to its canal. The patient recovered. Falgowsky also reports a case of uterus septus duplex and vagina septa from a nullipara, aged 24. Panhysterectomy was performed for the complete removal of suppurating appendages; a portion of the double vagina was included in the amputation. The results were satisfactory.

THERAPEUTICS.

339. Treatment of Tuberculosis.

Lemaine and Gérard (*Nord Méd.*, November 1st, 1907) recall that Phisalix in 1897 observed the antitoxin action exerted by the bile and the bile acid, and especially by cholesterin, in the presence of the venom of vipers. The authors injected into the peritoneum of a first (A) series of six monkeys 1 c.cm. of an emulsion of bovine tubercle bacilli. A second (B) series of monkeys received similar injections of tubercle bacilli, but every second day after the inoculation these animals were given 2 cg. of cholesterin by subcutaneous injection. A third (C) series of monkeys received similar

intraperitoneal inoculations of bovine tubercle bacilli, followed immediately by an intraperitoneal inoculation of 2 cg. of cholesterin. This series (C) also received similar subcutaneous cholesterin injections, as did Series B. The monkeys of Series A had temperatures between 39° and 40° at the end of a day or two, and all died between the twenty-fourth and the twenty-eighth days after inoculation. The monkeys of Series B had somewhat lower temperatures; death took place between the twenty-sixth and the thirty-second days after the initial inoculation. The monkeys of Series C had similar temperatures as, and died within the same limits of time as, the animals of Series B. The monkeys of Series A showed *post mortem* very severe tuberculous lesions in liver, spleen, and lungs. Those of Series B showed less marked lesions, especially in liver and spleen. Those of Series C showed lesions identical with Series B. The authors repeated the experiments, using an extract of bile in petroleum-ether. More encouraging results were thus obtained. The animals so treated had a much lower temperature, and the lesions found *post mortem* were very much smaller than in the first experiments. One of the authors has made use of this method in hospital practice. He has found that patients in the last stages of tuberculosis are greatly benefited. There is no local discomfort owing to the injections.

340. Fever Reaction following the Application of Mercury in Early Syphilis.

H. Lindenheim (*Berl. klin. Woch.*, March 18th, 1907) discusses the raising of the temperature which has been observed after the first few applications of mercury in syphilis by several clinicians, and which has been ascribed *inter alia* to the bactericidal action of the mercury setting free endotoxins. In studying this reaction there are three sources of error which one must consider. First, there is the raising of temperature which follows the first application of mercury in response to an increase of the secondary eruption. The eruption fever may, according to Fournier, be either intermittent or continuous or irregular. It is always a fever of some days' duration, and at times it may extend over weeks. Next, fever may be produced by mercuric intoxication. It is believed that the fever in this case is not due to the mercury, but is secondary to ulceration of the throat, stomatitis, enteritis, etc. In the third place, one must be on one's guard to exclude any accidental fever which may run concurrently with the early syphilis. In order to determine what the exact state of things in this respect is, all cases of secondary syphilis which were admitted were examined for rises of temperature three times a day, both before and after the first mercury application. In the majority of cases the mercury was given either as a subcutaneous or intramuscular injection of corrosive sublimate, or by inunction of mercury ointment. He divides the patients into four groups: (1) Those who did not show any rise of temperature in connexion with the first mercury application; (2) those who showed a rise of temperature, but this proved to be due to some complication; (3) those in whom some independent disturbance produced fever; and (4) those who reacted to the first mercury application with a rise of temperature, which lasted from one to several days, and terminated without interruption of the treatment. Among 106 cases, 89 belong to the first group, 2 to the second group, 3 to the third, and 12 to the fourth group. In this way he found that the reaction was present in 12 out of 106 cases. The reaction always occurred during the first twenty-four hours after the application of the mercury. In males, the maximum temperature registered was lower than in females (average 38.1° C. in males as against 38.8° C. in females). In males the maximum was reached later than in females, and the fever ended by crisis in females nearly always within twenty-four hours, while it ended by lysis in males after having lasted for three days on the average. He states that it will be necessary to observe a large number of cases, before one can determine whether these differences between the sexes are constant. He appends the temperature charts of each case, together with a short account of the condition, etc. In 7 out of the 12 cases, the cases were fresh attacks, while in the remaining 5 he was dealing with recurrence of symptoms. Two of the 5 patients had previously been treated with mercury. He does not feel justified in drawing any conclusions from these observations, on account of the small number of cases.

341. Treatment of Acute Coryza.

Boulai (*La Clinique*, September 6th, 1907) has employed sulphate of atropine for coryza for several years, and speaks highly of its efficacy. He points out that he has not used it for children, but he considers that they would tolerate it as readily as adults do. The solution is applied to the nasal mucous membrane as soon as the earliest symptoms are perceived; it is advisable that the patient should be encouraged to do it for himself. The solution used is as follows: Sulphate of atropine (neutr.), 1 centigram; cherry laurel water and distilled water, of each 20 grams. Some cotton-wool is then tightly wrapped round the end of a match, soaked in the solution, and swabbed on the nasal mucous membrane, passing it as high as possible; this is repeated every half-hour at first, then every hour if necessary, but not oftener than eight or ten times in the day. The treatment may be continued (if required) for three days, not longer, and in addition small doses of aconite can be given. The treatment is only advised for early cases, and should not be used when there is obstruction of the nasal passages; a menthol ointment is of use subsequently as a disinfectant and sedative.

PATHOLOGY.

342. Antitoxin and Albumen.

F. Hamburger (*Muench. med. Woch.*, February 5th, 1907) details a series of experiments which he has carried out with tetanus antitoxin injected into rabbits which had recently thrown young. The object was to follow up the fate of the antitoxin in the milk of the mother and in the serum of the young animals. Similar experiments were conducted with goats. It proved that the milk of animals which had been injected with the antitoxin contained antitoxin and also horse serum (derived from the tetanus serum), and that the antitoxin is always bound to the horse albumen. The horse serum antitoxin contained in the milk of these rabbits is either not absorbed at all by the young suckling rabbits or is only absorbed in small quantities. In the latter case he found that the antitoxin in the young animals' serum was still bound to the horse albumen. This he takes to support the argument which he has brought forward that antitoxic substances are indivisibly bound to the precipitable substance—that is, albumen.

343. Post-mortem Changes in the Pancreas.

A. Cevidalli and F. Leoncini (*Lo Sperimentale*, Florence, 1907, lxi, p. 565) have studied the *post-mortem* changes successively exhibited by the pancreas under the microscope when that organ has been kept for a shorter or longer time before being fixed. They find that these degenerative changes appear more quickly in the pancreas than in any other organ; the observations were made upon human tissues, and also upon the tissues of dogs and rabbits. There is no regularity about the development of these changes; complete necrosis of the secreting cells may appear in as little as twenty hours, while other portions of the same organ may show but slight degeneration. The rapidity with which the necrosis comes on does not seem to depend upon the age, the manner of death, or the temperature at which the body is kept. In some cases the islands of Langerhans necrose more rapidly than the rest of the pancreas. Bacteria can always be grown from the pancreas *post mortem*; the authors think, however, that most of the necrosis is due to autolysis.

344. Opsonins.

Charles E. Simon (*Journ. Exper. Med.*, September, 1907), from a critical study of the factors involved in determinations of the opsonic index, arrives at the following conclusions: (1) The determination of Wright's index of the opsonic content of the blood and other fluids of the body is open to serious and in part unavoidable errors, and should be abandoned in its present form. (2) Conclusions based upon the determination of the opsonic content of the blood, according to Wright's method, are accordingly not uniformly reliable. (3) The percentage index is a valuable check on Wright's bacillary index, but likewise does not furnish an adequate idea of the opsonic content of the blood, unless carried out with progressive dilutions to the point of opsonic extinction. (4) The opsonins of normal blood serum are not specific. (5) The specificity of the opsonins in "immune" serums has not been satisfactorily established, but appears probable. (6) An opsonic immunity, in the sense of a continued high opsonic content of the blood, does not exist. (7) In the blood and exudates of infected individuals substances may be present which exercise an inhibitory effect upon phagocytosis.

THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

SUPPLEMENT

CONTAINING

PROCEEDINGS OF COUNCIL

REPORTS OF STANDING COMMITTEES

MEETINGS OF BRANCHES AND DIVISIONS

PROGRAMME OF ANNUAL MEETING

MEDICAL BILLS IN PARLIAMENT

PROCEEDINGS OF THE GENERAL MEDICAL COUNCIL

Etc.

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SUPPLEMENT

TO THE

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs.

BY ORDER.

MATTERS REFERRED TO DIVISIONS.

British Medical Association.

ANNUAL REPRESENTATIVE MEETING AT EXETER.

JULY 27TH AND 29TH, 1907, AND FOLLOWING DAYS IF NECESSARY.

NOTICES OF MOTION (Supplementary).

(Arising out of Notices previously published.)

THE following Notices have been received from Divisions and Branches of Motions to be made in the Representative Meeting, arising out of Reports of the Council and Committees or out of Notices of Motions by Divisions already published in accordance with the Regulations.

UNCLASSIFIED.

Apportionment of a Member's Annual Subscription.

By the WANDSWORTH DIVISION (Metropolitan Counties Branch):

With reference to the Addendum to the Annual Report of the Council (SUPPLEMENT of June 15th, p. 399)—

That, in the report on the apportionment of a member's annual subscription of 25s., full particulars as to the amount spent under the heading, "Meetings of Council, Representatives, and Committees, Salaries, Library," etc., are desirable.

Ethical Aspects of Medical Consultation.

By the BATH DIVISION (Bath and Bristol Branch):

With reference to Recommendation 4 in the Special Report of the Central Ethical Committee on "The Ethical Aspects of Medical Consultation" (SUPPLEMENT *of February 16th, p. 76*)—

That it is undesirable for one practitioner to meet in consultation another practitioner who professes some special peculiar system of treatment which the proposed "consultant" believes to be fallacious.

By the BLACKPOOL DIVISION (Lancashire and Cheshire Branch):

With reference to Recommendation 6, "Etiquette of Consultation," paragraphs (*i*) and (*j*),

That the words "as a rule" be omitted.

By the GLASGOW SOUTHERN DIVISION (Glasgow and West of Scotland Branch):

In connexion with Recommendation 8, "After-care of Patients"—

That the following be added to Recommendation 8:

"After surgical operations in Nursing Homes in cases where frequent dressings are necessary, it should be mutually arranged between the surgeon and the attendant how these were to be carried out."

By the BLACKPOOL DIVISION (Lancashire and Cheshire Branch):

With reference to Recommendation 10, "Consultant not to Supersede Attendant"—

That, in the last two lines, the words "unless the circumstances are exceptional," be omitted.

By the EDINBURGH SOUTHERN DIVISION (Edinburgh Branch):

That the special class designated "Consultants" should not engage in general practice.

By the NORTHAMPTONSHIRE DIVISION (South Midland Branch):

That the Report be referred back to the Ethical Committee for further consideration.

By the BOURNEMOUTH DIVISION (Dorset and West Hants Branch):

That in the event of a general practitioner considering it necessary to alter the treatment advised by a consultant, he should inform the latter, and if necessary advise a second consultation.

Hospital Administration.

(For the Report see SUPPLEMENT *of April 13th, 1907, pp. 189-90.)*

By the WEST BROMWICH DIVISION (Birmingham Branch):

That, except in cases of accident and sudden illness, admission to any department of hospitals should be by a note from a medical practitioner.

By the CITY DIVISION (Metropolitan Counties Branch):

That cases accepted by the almoner on account of emergency, etc., and trivial cases that have evaded the almoner, should be sent back by the medical officer who sees them at the hospital for a certificate from an outside practitioner before they are seen a second time.

By the CHELSEA DIVISION (Metropolitan Counties Branch):

That the system of payments of any kind by patients to any general or special hospital supported by public subscription is entirely immoral and wrong and ought at once to be stopped, inasmuch as funds provided by public benevolence are thereby being used to undersell the private practitioner.

By the WANDSWORTH DIVISION (Metropolitan Counties Branch):

With reference to Suggested Model Principle 1 of Hospital Management—

That a qualification be now introduced in Principle 1 to the effect that, with the exception of urgent cases, cases of injury or illness that come under the Workmen's Compensation Act should be deemed ineligible and referred for treatment elsewhere if the person liable for payment is not the patient.

Medical Inspection of School Children.

By the MARYLEBONE DIVISION (Metropolitan Counties Branch):

That the dental inspection and treatment of children be undertaken by dental surgeons specially appointed.

That opposition be offered to any attempt of the education authorities to enter into arrangements with hospitals for the treatment of children.

By the BRADFORD DIVISION (Yorkshire Branch):

That it is most desirable that universities and other licensing authorities should without delay establish special courses of instruction in all subjects which appertain to the effective discharge of the duties connected with the medical inspection of school children; that a degree or diploma should be instituted for those who have attended such courses and successfully passed an examination in the special subjects; that after a certain date, to be hereafter fixed, no person should be eligible for the post of school medical officer who is not possessed of such degree or diploma; and that the special course of instruction should include Psychology, Paedagogy, the necessary conditions of construction of school buildings, furniture, the effects of school work on the evolution of the body, mind, and character of the child, general hygiene and allied subjects.

By the BIRMINGHAM CENTRAL DIVISION (Birmingham Branch):

That no scheme of medical inspection is satisfactory which does not include a daily visit to each school by a medical practitioner in the district, and the appointment of a medical adviser to the Education Committee to receive, collate, and report upon the reports of the inspectors.

By the BRIGHTON DIVISION (South-Eastern Branch):

That the local Educational Authority in conjunction with the Medical Officer of Health should appoint medical officers as Inspectors from among the medical practitioners of the district.

By the SOUTH-EASTERN OF IRELAND BRANCH:

That, whatever the system of medical inspection adopted, the examiners so employed should be adequately remunerated.

By the NORTHAMPTONSHIRE DIVISION (South Midland Branch):

That when the Bill becomes law, the method of the examination of the school children shall be a matter of arrangement between the local Education Authority and the Divisions of the British Medical Association.

By the EDINBURGH SOUTHERN DIVISION (Edinburgh Branch):

That the medical inspection of school children before or at the time of their admission to a public elementary school should be made by the family doctor, and in the case of poor children, whose families have no regular medical adviser, the certificates should be granted by the dispensary or parish doctors.

By the WANDSWORTH DIVISION (Metropolitan Counties Branch):

That every medical practitioner resident within the area of the Education Authority and prepared to undertake a proportion of the duty of the Medical Inspection of School Children should be eligible for office in the Educational District or Sub-district.

That the Divisions should arrange with the Education Authority for the schools of its district a scheme for a rota of general medical practitioners which will allow of every general practitioner desirous of holding office doing so.

Estimate of Income and Expenditure for 1907.

By the WANDSWORTH DIVISION (Metropolitan Counties Branch):

With reference to Paragraph 12 of the Annual Report of the Council, "Estimate of income and expenditure for 1907" (SUPPLEMENT, May 4th, p. 235)—

That, in the opinion of the Representative Meeting, it is desirable that steps be taken to give members of the Association the opportunity to subscribe for the £40,000 in Debentures, in whole or in part, in order that the interest from the same should be paid to them instead of any outside body (*re* new buildings).

Balance Sheet, December 31st, 1906.

By the WANDSWORTH DIVISION (Metropolitan Counties Branch):

With reference to the Balance Sheet (SUPPLEMENT, May 4th, p. 236)—

That the attention of the Representative Meeting having been drawn to the fact that the Balances of Association Funds in the hands of the Home Branches were for 1904, £2,300; 1905, £3,200; 1906, £3,700, for the use of which, at all events for the present, there seems no local demand, this Meeting instructs the Central Council to call in such sums as it may consider desirable, having in view future grants and average probable local expenditures, in order to use the same for Central Expenses, and also toward the organization of the various Divisions by increased medical assistance as suggested by the Organization Committee.

Annual Report of Council.

By the WANDSWORTH DIVISION (Metropolitan Counties Branch):

With reference to the Annual Report of the Council (SUPPLEMENT, May 4th, 1907):

That it is desirable that the main point in each Paragraph of the Annual Report be printed in heavier type.

Irish Poor-law System.

By the ULSTER BRANCH:

That the main recommendations of the Viceregal Commission on the Irish Poor-law System be approved of, and that the Council be requested to take proper steps to press the matter to legislation.

AMENDMENTS OF BY-LAWS.

Irish Committee.

By the WANDSWORTH DIVISION (Metropolitan Counties Branch):

With reference to the Notice of Motion by the Council of the Association as to the Irish Committee (SUPPLEMENT, April 20th, p. 198)—

That, with reference to By-law 41 (12), as it is not desirable to have a paid official in Ireland at present, the words "an Honorary" be inserted before "Secretary, resident in Ireland," and that the word 'a" be omitted.

Voting at Representative Meetings.

By the WANDSWORTH DIVISION (Metropolitan Counties Branch):

With reference to the Notice of Motion by the Kensington Division in connexion with By-law 21 (SUPPLEMENT, April 20th, p. 198)—

That in the Motion by the Kensington Division all the words after the words "such Resolution" be omitted.

Mode of Election of Members of Council by Branches.

By the WANDSWORTH DIVISION (Metropolitan Counties Branch):

With reference to the Notice of Motion by the Council to amend By-law 25 (SUPPLEMENT, April 20th, p. 197)—

That it is desirable that the election of Members of Council by Branches in the United Kingdom be conducted by the Head Office and out of Central Funds, and that By-law 25 be amended accordingly.

By direction of the Chairman of Representative Meetings,

J. SMITH WHITAKER, *Medical Secretary.*

July 3rd, 1907.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

1907 ANNUAL GENERAL MEETING.

The Annual General Meeting of the British Medical Association will be held in the Royal Public Rooms, Exeter, on Saturday, July 27th, at 9.30 o'clock in the forenoon.

ANNUAL REPRESENTATIVE MEETING.

The Annual Representative Meeting will take place in the Royal Public Rooms, Exeter, on Saturday, July 27th, immediately after the Annual General Meeting, which will be held at 9.30 o'clock in the forenoon; on Monday, July 29th, at 9.30 a.m.; on Tuesday, July 30th, at 9.30 a.m. if required; also on Wednesday, July 31st, at 3.15 p.m if required.

BY ORDER OF THE COUNCIL,

GUY ELLISTON, *General Secretary,*

April 25th, 1907.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

OWING to the rebuilding of the Association premises in the Strand the Library is closed but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

NORTH OF ENGLAND BRANCH: NORTH NORTHUMBERLAND DIVISION.—The annual meeting will be held in the Plough Hotel, Alnwick, on July 9th, at 3.30 p.m. Business: To elect officers and Representatives for the ensuing year; to consider the proposed changes with regard to public vaccination; to consider any matters referred to Divisions.—SCOTT PURVES, M.D., Alnwick, Honorary Secretary.

NORTH WALES BRANCH.—The annual meeting of this Branch will be held at Machynlleth on Tuesday, July 16th.—H. JONES ROBERTS Llywenarth, Penygroes, Honorary Secretary.

SOUTH-WESTERN BRANCH.—A meeting of the Branch Council will be held at the Royal Devon and Exeter Hospital, Exeter, on Thursday, July 11th, at 3.15 p.m. Agenda: (1) minutes of the last meeting; (2) election to the membership of the Association and Branch; (3) any other business.—RUSSELL COOMBE, 5, Barnfield Crescent, Exeter Honorary Secretary.

The Seventy-Fifth Annual Meeting

of the

BRITISH MEDICAL ASSOCIATION,

EXETER,

JULY 27th to AUGUST 2nd, 1907.

President:

Richard Andrews Reeve, B.A., M.D., LL.D., Dean of the Faculty of Medicine, University of Toronto.

President-elect:

Henry Davy, M.D., F.R.C.P., Physician, Royal Devon and Exeter Hospital.

Chairman of Representative Meetings:

James Alexander Macdonald, M.D., Physician, Taunton and Somerset Hospital.

Chairman of Council:

Edmund Owen, LL.D., F.R.C.S., Consulting Surgeon to St. Mary's Hospital.

Treasurer:

Henry Radcliffe Crocker, M.D., F.R.C.P., Physician, Skin Department, University College Hospital.

PROGRAMME OF BUSINESS.

An Address in Medicine will be delivered by William Hale White, M.D., F.R.C.P.Lond.
An Address in Surgery will be delivered by Henry Trentham Butlin, D.C.L., F.R.C.S.Eng.
A Popular Lecture will be delivered by Sir John William Moore, M.D., D.Sc., F.R.C.P.Irel.

THE SECTIONS.

There will be thirteen Sections as shown in the subjoined list; they will meet on Wednesday, Thursday, and Friday, July 31st, and August 1st and 2nd, from 10 a.m. to 1 p.m.

The President, Vice-Presidents, and Secretaries of each Section constitute a Committee of Reference for that Section.

Papers read are the property of the British Medical Association, and cannot be published elsewhere than in the British Medical Journal *without special permission.*

No paper must exceed fifteen minutes in reading and no subsequent speech ten minutes.

It is requested that copies of any papers offered in any of the Sections should be supplied to one of the Honorary Secretaries of the Section not later than May 30th, accompanied by a short abstract, in order that such abstract may be printed and circulated before the meeting.

Pathology.

President: Robert Muir, M.D., F.R.C.P.Ed., Professor of Pathology, Glasgow.

Vice-Presidents: Henry George Plimmer, M.R.C.S., F.L.S., London; William Hunter, M.D., F.R.C.P., London; Walter Ley Pethybridge, M.D., B.Sc., Plymouth.

Honorary Secretaries: Reginald Vaughan Solly, M.D., F.R.C.S., 40, West Southernhay, Exeter; Professor William St. Clair Symmers, M.B., C.M.Aberd., Queen's College, Belfast.

The following provisional programme has been arranged:

Wednesday, July 31st.—A discussion on Pernicious Anaemia and Allied Conditions, to be opened by Dr. William Hunter, followed by Professor Lorrain Smith, Dr. A. G. Gullan. Dr. Lovell Gulland, Dr. F. G. Bushnell, Dr. C. Melland, Professor R. Muir and probably Professor Sims Woodhead. Professor Walker Hall will speak on Metabolism in Anaemia; and Professor A. R. Ferguson and Dr. A. E. Boycott on Ankylostomiasis Anaemia.

Thursday, August 1st.—A discussion on Phagocytosis and Bactericidal Action, to be opened by Dr. George Dean, who will be followed by Professor R. Muir, Professor J. M. Beattie, Dr. Charlton Briscoe, Dr. T. Houston, Dr. David Lawson, Dr. J. C. Rankin, Dr. J. Peel Ritchie' Dr. E. Turton, and probably Professor Sims Woodhead.

Arrangements will be made for the exhibition in the Pathological Museum of specimens illustrating the work of the Section. Members wishing to exhibit specimens or photographs should communicate with the Secretaries of the Pathological Museum (Drs. R. V. Solly and G. P. Hawker, 40, West Southernhay, Exeter).

The following papers have been accepted:

Beattie, Professor J. M.: A Sporozoon in Aural Polypi.
Bushnell, Dr. F. G.: A Case of Mycosis Fungoides in its Relation to Infection and Malignant Disease.
Browning, Dr. Carl H.: Experimental Chemotherapy in Trypanosome Infections.
Bayon, Dr. H: Peritheliomata and Endotheliomata.
Teague, Dr. Oscar, and Dr. B. H. Buxton (Cornell University, New York): The Migration of Antibodies under the Influence of the Electric Current.
Buxton, Dr. B. H.: Absorption from the Peritoneal Cavity.
Coombs, Dr. Carey: Lesions of Myocardium in Rheumatism.
Eve, Dr. F. C.: Peculiar Bodies found in Cerebro-spinal Fluid.
Forsyth, Dr. David: The Relations between the Thyroid and the Parathyroid Glands.
Ferguson, Professor A. R.: (1) The Blood and Bone Marrow in Ankylostomiasis (part of discussion on pernicious anaemia, etc.); (2) A demonstration of Lesions produced by Bilharzia in the Genito-urinary Tract.
Gay, Dr. F. P., and Southard, Dr. E. E. (Danvers, Massachusetts): (1) Serum Anaphylaxis in the Guinea-pig; (2) Structural Changes in Myeline Sheaths in Experimental Intoxication in the Guinea pig.
Leiper, Dr. R. T.: Helminthological Nomenclature in Medical Literature.
Lucas, Dr. J. J.: Pericardial Calcification.
McLennan, Dr. Alexander: The place the *Spirochaeta pallida* occupies in the Diagnosis of Syphilis.
Stennan, Dr. T.: The *Spirochaeta pallida.*
Symmers, Professor St. Clair: On *Bilharzia haematobia.*
Hall, Professor I. Walker: Estimation of the Fats in Faeces.

Medicine.

President: William Gordon, M.D., F.R.C.P., Exeter.

Vice-Presidents: William Powell, M.B., F.R.C.S., Torquay; William Joseph Tyson, M.D., F.R.C.P., F.R.C.S., Folkestone; George Newton Pitt, M.D., F.R.C.P., London; Edward Lawrence Fox, M.D., M.R.C.P., Plymouth.

Honorary Secretaries: FREDERICK JOHN POYNTON, M.D., F.R.C.P., 1, Harley Place, London, W.; EDWIN BRAMWELL, M.B.Edin, F.R.C.P., 23, Drumsheugh Gardens, Edinburgh; ALFRED BERTRAM SOLTAU, M.D., F.R.C.S., 1, Lansdowne Place, The Hoe, Plymouth.

The following subjects have been chosen for discussion:

1. The Indications for Operation in Cases of Intracranial Tumour. To be introduced by Dr. J. S. Risien Russell.

Dr. Risien Russell will deal with the following points:

I. The influence of diagnosis. Affections that may be mistaken for intracranial tumour. II. Conditions under which operation may be recommended: (1) To effect cure; (2) to relieve symptoms and prolong life.

The considerations that influence the first question are: (*a*) The possibility of accurate localization. (*b*) The position of the tumour. (*c*) The nature of the growth. (*d*) The probable effects of operation—(1) Risk to life; (2) amount of paralysis or other defect that will result; (3) aphasia.

In connexion with the second consideration the following arise: (*a*) The indications and contraindications for trephining. (*b*) The importance of saving sight. (*c*) The circumstances under which lumbar puncture may be substituted for trephining.

2. The Diagnosis of Acute Pancreatitis. To be introduced by Professor Osler.

3. Rheumatoid Arthritis and the Morbid Conditions which simulate it, with special Reference to Pathology and Treatment. To be introduced by Dr. A. P. Luff.

The following are the headings of Dr. Luff's paper introducing the discussion on Rheumatoid Arthritis: Definition of the term "rheumatoid arthritis." Rheumatoid arthritis is a distinct clinical entity. Rheumatoid arthritis is an infective disease due to the presence of micro-organisms in the joints; subsidiary symptoms are caused by the toxins elaborated by the micro-organisms. Distinction of rheumatoid arthritis from subacute rheumatic fever. The different forms of rheumatoid arthritis. The age-incidence of rheumatoid arthritis. The pathological changes occurring in the joints. Relationship of rheumatoid arthritis to other diseases of the joints. Dietetic treatment. Drug treatment. Local treatment of the joints. Climatic treatment.

The following papers have been accepted:

BRADSHAW, Dr. T. R.: Points in the Diagnosis of Myelopathic Albumosuria.
MITCHELL, Professor John Michell: A Case of Lymphadenoma Treated by *X* Rays.
DOW, Dr. W.: Observations upon the recent Outbreak of Cerebro-spinal Meningitis in Glasgow.
HUNTER, Dr. W.: The Effect of Oral Antiseptics in Scarlet Fever.
NORTHRUP, Professor W. P.: Treatment of Pneumonia and other Acute Infectious Diseases by Open-air Wards in Metropolitan Hospitals.
RIVIERE, Dr. Clive: The Tuberculin Treatment of Tuberculosis in Children.
ROBB, Dr. A. Gardner: Observations upon the Recent Outbreak of Cerebro-spinal Meningitis in Belfast.
SIKES, Dr. A. W.: Some Gastro-intestinal Affections in Gouty Subjects.
TYSON, Dr. W. J.: Some Remarks on the Prevention of Appendicitis.
WEST, SAMUEL, M.D., F.R.C.P.: 1. Some Remarks upon Acute Pericarditis and its Treatment. 2. A further Contribution to the Treatment of Diabetes by Uranium Nitrate.

DISEASES OF CHILDREN.

President: ALFRED HERBERT TUBBY, M.S., London.

Vice-Presidents: LEWIS MACKENZIE, F.R.C.S., Tiverton; FRANK HICHENS, M.D., Redruth; REGINALD HORACE LUCY, F.R.C.S., Plymouth; EDMUND CAUTLEY, M.D., London.

Honorary Secretaries: JOHN HARLEY GOUGH, M.D., Glenallon, Old Torwood Road, Torquay; EDRED MOSS CORNER, F.R.C.S., 37, Harley Street, London, W.

The following arrangements have been made:

Wednesday, July 31st.—Discussion, The Diseases and Displacements of the Testicle. To be opened by Mr. D'Arcy Power. Professor W. E. Dixon will speak on the question of Organotherapy, Mr. Russell J. Howard on Torsion of the Testicle. The following gentlemen have signified their intention of taking part in the discussion: Mr. Douglas Drew, Mr. McAdam Eccles, Mr. G. H. Edington, Mr. H. A. T. Fairbank, Mr. H. Tyrrell Gray, Mr. C. B. Keetley, Mr. Lockhart Mummery, Mr. Betham Robinson, and Mr. G. E. Waugh.

In opening the discussion on Wednesday, Mr. D'Arcy Power will group the subject under the headings of Tubercle, Syphilis, Malignant Disease, Innocent Tumours, and Teratomata, the following being a summary of his paper:

The displacements are due to faulty processes of development.

In regard to tubercle, most of the swollen testicles seen in very young children in the out-patient rooms at hospitals are due to tubercle growing in tissues which have been prepared for infection by changes due to congenital syphilis. He asks whether it is certain that tuberculous inflammation of the testicle ends in atrophy, and if children suffering from this form of disease are more or less likely to become the subjects of spinal caries.

Syphilitic inflammation of the testicle is commoner in young children than tuberculous orchitis, and the tunica vaginalis is so frequently involved that a hydrocele is of frequent occurrence. The absence of pain causes the condition to be overlooked in the majority of cases. Wasting of the testis is a frequent consequence of this form of inflammation. Are there any observations as to the retardation of puberty consequent upon this atrophy?

Teratomata are due either to dermoids or sebaceous tumours.

Sarcoma of the testicle is in need of further investigation in the light of Mr. Foulerton's recent work. Is it possible that some of the cases grouped as sarcoma are not in reality examples of carcinoma? The author is not satisfied with the results of orchidopexy in cases of undescended testis, and now advises removal of the testicle in nearly every case where it is retained in such a position that it is likely to be injured, especially if there is evidence of a hernia. When no hernia is present he advises the parents to wait until the child is 7 or 8 years old, in the hope that the testicle may descend into the scrotum as the child grows. He asks an opinion on the following points: First, as to the indication for operating when the testicle lies at or near the external abdominal ring; secondly, as to the advice which should be given when both testicles are undescended; and, thirdly, as to the most appropriate time for operating when there is no hernia. He also alludes to the treatment of ectopic testicle. Finally is pointed out the frequency with which hydrocele occurs in children; the ease with which an erroneous diagnosis is made, and the means by which such mistakes are best avoided.

The following papers will be read:

EDINGTON, Mr. G. H.: Some Abnormalities of the Penis.
GRAY, Mr. H. Tyrrell.: Some Cases in which Meckel's Diverticulum was present.
NITCH, Mr. C. A. R.: Some Cases of Fracture of the Tubercle of the Tibia.
MUMMERY, Mr. Lockhart: Some Cases of Prolapsus Recti.

Thursday, August 1st.—Discussion, Acute Nephritis and its Results. To be opened by Dr. A. F. Voelcker. Dr. A. W. Sikes will introduce the physiological aspect; Mr. Sydney Stephenson, the eye changes; Dr. Theodore Thomson, Unsuspected Nephritis in Septic Infections. The following gentlemen have signified their intention of taking part in the discussion: Dr. H. R. Dean, Dr. F. C. Eve, Dr. F. Langmead, Mr. J. H. Parsons, Dr. J. E. H. Sawyer, and Dr. G. A. Sutherland.

In opening the discussion, Dr. Voelcker will treat the subject under the following headings:

(1) Frequency in Children and Adults Contrasted. (2) Acute Nephritis in Association with the Acute Specific Fevers. (3) Acute Nephritis apart from the Acute Specific Fevers. (4) Frequency of Acute Nephritis in the more common Acute Specific Fevers. (5) Frequency of Acute Nephritis in (i) Fever Hospitals, (ii) Children's Hospitals and General Hospitals, (iii) Private Practice. (6) Age Incidence of Acute Nephritis. (7) Comparison of the Symptoms and Complications of Acute Nephritis in Children and Adults. (8) Results of Acute Nephritis in Children. (9) Anatomical Varieties of Acute Nephritis. (10) Frequency of (i) Complete Recovery, (ii) Incomplete Recovery, (iii) Death in Acute Nephritis. (11) Causes of Death in Acute Nephritis. (12) Duration of Acute Nephritis. (13) Factors Determining Incomplete Recovery or Death. (14) Evidences of Incomplete Recovery in the Urine, Cardio-vascular System, Blood, Retina, Skin, Serous Membranes. (15) Anatomical Changes Resulting from Unresolved Acute Nephritis. (16) Is Chronic Nephritis

resulting from Acute Nephritis Incurable? (17) The Relation of Acute Nephritis to Chronic Interstitial Nephritis in Childhood and in Later Life. (18) Conditions Simulating Acute Nephritis. (19) The Treatment of Acute Nephritis in Children. (20) Prophylaxis. (21) The Treatment of Special Symptoms in or resulting from Acute Nephritis.

Dr. A. W. Sikes will follow with a paper on the Physiological and Pathological Aspects of Nephritis in Children, and touch upon the following topics: (1) Its influence on the general metabolism. (2) Its effect on the digestive system, liver, stomach. (3) The metabolism of protein. (4) The rôle of sodium chloride. (5) The influence of acute nephritis on the urinary secretion. (6) The proteins of the urine. (7) Urea, uric acid, salts. (8) Methods of examining the urine. (9) The reaction of the blood. (10) Other changes in the blood. (11) Drugs; contraindication of caffeine. (12) Recent work on the nephrotoxins. (13) The theory of the secretion of urine, "Filtration plus reabsorption" not now accepted. (14) Recent physiological work on the kidneys. (15) Oedema. (16) Uraemia.

The following papers will be read:

LANGMEAD, Dr. F.: Acetonaemic Conditions in Children.
DEAN, Dr. H. R.: The Classification and Diagnosis of the Varieties of Purpura occurring in Children.
PINCHES, Dr. H. Irving: Retropharyngeal Abscess.
KELYNACK, Dr. T. N.: The Care of Tuberculous Children.

Friday, August 2nd.—Discussions: (1) Lumbar Puncture, its Diagnostic and Therapeutic Value. To be opened by Dr. Farquhar Buzzard. The following gentlemen have signified their intention of joining in the discussion: Dr. F. E. Batten, Dr. J. S. Risien Russell, Dr. Edwin Bramwell, Dr. F. C. Eve, Dr. J. G. Forbes, Dr. Porter Parkinson, Dr. Athole Ross, Dr. A. E. Russell, Dr. Purves Stewart, and Dr. G. A. Sutherland.

In opening the discussion Dr. Farquhar Buzzard will refer to the following points: (1) The technique of the operation. (2) General indications and contraindications. (3) Diagnostic value; (*a*) bacteriological, (*b*) cytological, (*c*) chemical. (4) Therapeutic value; (*a*) decompression, (*b*) drainage.

(2) Precocious Development. To be opened by Dr. Reginald Langdon Down, followed by Dr. Leonard Guthrie.

The opener of this discussion, Dr. Reginald Langdon Down, will deal with the subject of Precocity rather from the broad biological point of view than from the narrow clinical aspect, and will draw the following conclusions:

The precocious children are those from whom we draw our great men—that is, those who advance the nation intellectually and socially.

They may be roughly divided into two groups: the stable and the unstable. The former are well developed, both physically and mentally, and in good order and proportion; the latter are often physically below the average, and show an irregular, or one-sided, mental development; these cases need special care, and form the majority of those usually coming under medical attention.

From the point of view of the race, a late maturity seems to be advantageous, and this points to preserving slight beneficial variations rather than large ones; from the point of view of the individual, the later-acquired powers of the race may advantageously appear sooner, but this should be in good order and with uniform development.

It appears, on the other hand, that anything in the environment likely to produce artificially a premature development of any function or organ is harmful, particularly so in those cases where there is naturally a tendency to extreme deviation from the average; while a careful discipline and social restraint are needed to save some of the extreme cases from social failure. On the other hand, the judicious guide will give the bright youth of the stable class free play as to his line of study, while preventing him from straying over too wide an area. And at the right moment, when his choice is made, he will endeavour to stir the youth's energies and fire his enthusiasm to the utmost.

The following papers will be read:

BIRD, Dr. A. C.: Tonsils and Voice Production.
CORNER, Mr. Edred M.: Two Cases of Amputation of the Forequarter for Sarcoma of Shoulder.

PSYCHOLOGICAL MEDICINE.

President: THOMAS CLAYE SHAW, M.D., London.

Vice-Presidents: ARTHUR NATHANIEL DAVIS, L.R.C.P., Exminster; ROBERT LEONARD RUTHERFORD, M.D., Exeter; GEORGE M. ROBERTSON, M.B., Larbert.

Honorary Secretaries: SAMUEL HOLLINGSWORTH AGAR, M.R.C.S., Hurst House, Henley-in-Arden; WILLIAM FRANCIS MENZIES, M.D., Staffs County Asylum, Cheddleton, Leek.

The following programme has been arranged:

Wednesday, July 31st.—Introductory remarks by the President, Dr. Claye Shaw.

Discussion on Alcoholism and Insanity, to be introduced by Dr. F. W. Mott, F.R.S.

JOHNSTONE, Dr.: Paper on Fatigue.

Thursday, August 1st:

MERCIER, Dr. C. A.: Three Cases of Periodic Dementia.
ROBERTSON, Dr. GEORGE, M.: On the Presence of a Bacillus in the Blood of Persons suffering from General Paralysis of the Insane.
BRUCE, Dr. LEWIS CAMPBELL: The Opsonic Index in Mania.

Friday, August 2nd.—Discussion on Hypnotism, to be introduced by Dr. J. F. Woods.

In his paper Dr. Woods gives his experience, extending over a period of fifteen years, of the therapeutic value of hypnotism in insanity. Most of the patients were treated in asylums, others in private. He finds the treatment most efficacious fn borderland cases. Illustrative cases are given with details of the method employed.

SCHOFIELD, Dr.: The Teaching of Psychology in Medical Schools.
PASSMORE, Dr. E. S.: On Case Taking.

ELECTRICAL SECTION.

President: H. LEWIS JONES, M.D., London.

Vice-Presidents: JOHN DELPRATT HARRIS, M.D., Exeter; CECIL R. CHAWORTH LYSTER, M.R.C.S., London; WILLIAM CHEYNE WILSON, M.D., Plymouth.

Honorary Secretaries: ELLIS PEARSON, F.R.C.S.E., Strand House, Bideford; EDWARD WARREN HINE SHENTON, M.R.C.S., 126, Harley Street, London, W.

The Section will be opened on Wednesday, July 31st, by an address from Professor Stéphane Leduc.

On Thursday, August 1st, a discussion on *X* Rays and Sensitive Plates will be opened by Mr. Mackenzie Davidson.

On Friday, August 2nd, a discussion on the Dosage of *X* Rays will be opened by Dr. Sequeira.

The following papers will also be read:

WERTHEIM SALOMONSON, Professor J. K.: (1) The Electrodiagnosis of Oculo-motor Paralysis; (2) The Einthoven Galvanometer.
JONES, Dr. Lewis: (1) Oscillograph Tracings of Medical Coil Currents; (2) Ionic Medication in Ringworm.
ARTHUR, Dr. D.: A new Static Machine.
WALSHAM, Dr. Hugh: The Orthodiagraph.
SHENTON, Mr. E. W. H.: The Examination of the Hip-joint.
REID, Mr. A. D.: Ureteral Calculi.
PEARSON, Mr. E.: The use of *X* Rays from the Point of View of the General Practitioner.
BRUCE, Dr. Ironside: Treatment of Graves's Disease by *X* Rays.
MORTON, Dr. R.: Alternating Currents of Slow Periodicity.
GREEN, Dr. Stanley: *X* Rays and Chest Diseases.
HARRIS, Dr. Delpratt: Some Statistics of *X* Ray Therapeutics in Rodent Ulcer and Carcinoma.

It is hoped to provide a convenient room for the demonstration of new forms of apparatus and the showing of lantern slides by members.

TROPICAL DISEASES.

President: JAMES CANTLIE, F.R.C.S., London.

Vice-Presidents: GUTHRIE RANKIN, M.D., London; Sir RICHARD HAVELOCK CHARLES, K.C.V.O., M.D., I.M.S. (ret.), London; Lieutenant-Colonel ROBERT CALDWELL, F.R.C.S., R.A.M C., Plymouth.

Honorary Secretaries: WILLIAM CARNEGIE BROWN, M.D., 32, Harley Street, London, W.; Lieutenant-Colonel G. M. J. GILES, M.B., F.R.C.S., I.M.S. (ret.), 3, Elliot Terrace, The Hoe, Plymouth.

The following subjects have been selected for discussion:

Wednesday, July 31st.—The Best Methods of carrying out Antimalarial Sanitation, with special reference to such plans as may be most suitable for populations in the more primitive stages of civilization. To be opened by Professor Simpson, King's College, London.

The following will take part in the discussion: Dr. W. J. Prout, C.M.G. (Liverpool); Major Nott, I.M.S.; Dr. H. M. Fernando (Colombo); and Dr. C. W. Daniels (London School of Tropical Medicine).

Professor Leonard Rogers of Calcutta will give a lantern demonstration to illustrate his work on the fevers of India.

Thursday, August 1st.—Diabetes in the Tropics. To be opened by Sir Richard Havelock Charles, K.C.V.O., Lieutenant-Colonel I.M.S.

Dr. Rai Seoilas Chandra Bose Bahadur, C.I.E. (Calcutta) will read a paper, and the following gentlemen will take part in the discussion: Dr. F. M. Sandwith (London); Dr. H. de Silva (Colombo); Major Nott, I.M.S.; Dr. H. M. Fernando (Colombo).

Sir Havelock Charles, in opening the discussion, will deal with the following headings: (1) Peculiarities met with in the type of diabetes found in the tropics—glycosuria of the tropics. (2) Peculiarities in the peoples, their habits and surroundings, predisposing and exciting causes. (3) Incidence according to race, profession, and social status. (4) The part dyspepsia plays therein. (5) Modifications of course, physical signs, and symptoms. (6) Characters of the urine. (7) Assurance and diabetes. (8) Complications of a surgical nature and their treatment. (9) Is there any justification in distinguishing diabetes in the tropics apart from the type of diabetes known in the temperate regions?

Friday, August 2nd.—Haemoflagellates and Allied Organisms. To be opened by Professor E. A. Minchin, Professor of Protozoology, University of London.

Professor E. A. Minchin will open the discussion in a paper, of which the following is a synopsis: Differences in the points of view of the zoologist and the medical man; importance of the study of the life-history of parasites for the etiology of disease; haemoflagellates, brief review of the forms comprised under this title; life-cycles of haemoflagellates, *Herpetomonas muscae-domesticae;* transmission of haemoflagellates by blood-sucking invertebrates; direct and indirect transmission; inoculative indirect transmission; contaminative transmission; reasons for believing that the infection may be effected in a different manner in different cases; theories upon the origin of haemoflagellates; suggestion that the ancestral form was a parasite of the vertebrate digestive tract; possible types of life-cycle on this view.

Professor L Rogers (Calcutta), and Dr. A. Balfour (Khartoum), will also take part in the discussions.

The following papers have been accepted:

CANTLIE, JAMES, F.R.C.S.: (1) One Hundred Cases of Liver Abscess. (2) The Part Played by the Colo-Sigmoid and the Sigmo-Rectal Pylorus in Intestinal Troubles.
CALDWELL, Lieutenant-Colonel, R.A.M.C.: Enteric Fever during Active Service.
GRATTAN, Major, R.A.M.C.: Blackwater Fever.
PROUT, Dr. W. J., C.M.G.: Blackwater Fever.
BEGG, Dr.: Complications in Chronic Sprue.
DARKER, Dr.: (1) West African Climate. (2) Treatment of Malaria.
BIRT, Lieutenant-Colonel, R.A.M.C.: (1) South African Diseases. (2) Mediterranean Fever in South Africa.

The Secretaries will be glad to receive from members unable to be present pathological specimens, photographs, drawings, or microscopical preparations illustrative of any subject of interest in Tropical Medicine.

SURGERY.

President: GEORGE A. WRIGHT, F.R.C.S., Professor of Surgery, Manchester.

Vice-Presidents: EDWARD JAMES DOMVILLE, M.R.C.S., Exeter; CHARLES EDWARD WALLACE BELL, M.R.C.S., Exeter; DAVID NEWMAN, M.D., Glasgow; WILLIAM FREDERIC HASLAM, F.R.C.S., Birmingham.

Honorary Secretaries: BERNARD SCOTT, M.R.C.S., Stagsden, West Cliff, Bournemouth; BRENNAN DYBALL, F.R.C.S., 47, Queen Street, Exeter; WILLIAM SAMPSON HANDLEY, M.S., 77, Wimpole Street, London, W.

The following subjects have been selected for special discussions on Wednesday, July 31st, and Thursday, August 1st:

1. The Relative Value of Inhalation and Injection Methods of inducing Anaesthesia. To be introduced by Mr. H. P. Dean, M.S., F.R.C.S., to be followed by Messrs. J. Ward Cousins, J. F. W. Silk, E. H. Howlett, Alexander Wilson, C. Leedham Green, A. G. Levy, F. W. Bailey, and J. W. Struthers.

2. The Indications for Cholecystectomy. To be introduced by Mr. J. Bland-Sutton, F.R.C.S., to be followed by Messrs. A. W. Mayo Robson, J. Ward Cousins, F. S. Eve, A. E. Maylard, J. S. McArdle, F. F. Burghard, B. G. A. Moynihan, E. Stanmore Bishop, William Thorburn, and J. D. Malcolm.

The following is an abstract of the remarks which Mr. J. Bland-Sutton proposes to make in opening the discussion:

Physiological observations fail to show that any chemical change takes place in bile retained in the gall bladder under normal conditions, except an alteration in colour and a slight admixture of mucus.

Anatomy, human and comparative, teaches that absence of the gall bladder entails no disadvantage. Observations in the deadhouse show that disease destroys it very often without causing any inconvenience to the individual; and surgeons practising in large cities can demonstrate that the gall bladder can be dispensed with as easily as the vermiform appendix.

Pathological observation and surgical experience are equally eloquent in proclaiming the dangers and catastrophes accompanying many diseased conditions of the gall bladder which may be obviated by a timely operation, and the accumulated experience of many surgeons shows that the most satisfactory consequences are obtained by treating the gall bladder, when it requires surgical intervention, in the summary fashion in which we now deal with the vermiform appendix.

The diseases of the gall bladder best suited for cholecystectomy are: (1) Injury to the gall bladder; (2) calculous cholecystitis; (3) acute (non-calculous) cholecystitis; (4) perforating ulcers of the gall bladder; (5) mucocele (hydrops vesicae felleae); (6) chronic cholecystitis (empyema); (7) biliary fistula; (8) cancer, sarcoma, and endothelioma of the gall bladder (primary).

In discussing the comparative mortality of cholecystotomy and cholecystectomy it is advisable to deal with the cases as we do in the consideration of the mortality of operations on the vermiform appendix—namely, those performed for acute cholecystitis, especially the perforative cases, should stand in a separate table to those performed for chronic cholelithiasis; operations performed for primary malignant disease of the gall bladder should form a class by themselves.

Friday, August 2nd, will be devoted to the reading of papers on subjects other than the above.

The following papers have been accepted by the Committee of Reference for this section:

PARDOE, J. G., F.R.C.S.: The Indications for Prostatectomy.
FREYER, P. J., M.Ch.: Over 400 Operations for Total Enucleation of the Prostate, for Radical Cure of Enlargement of that Organ, briefly Reviewed.
COUSINS, J. Ward, F.R.C.S.: A Case of Composite Odontoma.
CHILDE, C. P., F.R.C.S: A Case of Successful Resection of 9½ ft of Small Intestine for Gangrene.
TAYLOR, W., F.R.C.S.I.: Intestinal Obstruction (based on 30 cases).
MUMMERY, J. P. L., F.R.C.S.: Lesions of the Sigmoid Flexure as a Cause of Chronic Colitis.
ANDERSON, Miss L. G., M.D.: A Case of Sarcoma of the Small Intestine.
EDINGTON, G. H., M.D., C.M.: Two Cases of Branchial Fistula.
NEWMAN, D., M.D.: The Early Diagnosis and the Treatment of Tuberculous Disease of the Kidney and Bladder. (A cystoscopic demonstration of cases will, if possible, be given in connexion with this paper.)
MAYLARD, A. E., F.R.C.S.: The Relative Merits of Transverse or Oblique and of Vertical Incisions in Opening the Abdominal Cavity in the Antero-lateral Region.
STARR, F. N. G., M.D.: Gastro-intestinal and Latero-intestinal Anastomoses by Means of a Platinum Wire.
BISHOP, E. S., F.R.C.S.: Anterior Nephropexy.
MURRAY, R. W., F.R.C.S.: The Saccular Theory of Hernia.
MCARDLE, J. S., F.R.C.S.I.: (1) The Treatment of Ancient Dislocations of the Elbow-joint. (2) Tuberculosis near Joints.
GORDON, F. E., F.R.C.S.I.: An Experience of Critical Gastric Surgery.
HORROCKS, W., F.R.C.S.: Chronic Hypertrophy of the Breast.
VERNON, A. H., F.R.C.S.: A New Operation for Haemorrhoids.

The papers will be taken in the order indicated above: the first four after the formal discussion on Wednesday, July 31st; the second four after the discussion on

Thursday, August 1st, and the remainder on Friday, August 2nd.

Ophthalmology.

President: Louis Hy. Tosswill, M.B., Exeter.

Vice-Presidents: John R. Rolston, M.R.C.S., Plymouth; Alexander Hill Griffith, M.D., Manchester; Arthur Charles Roper, F.R.C.S.E., Exeter.

Honorary Secretaries: Ransom Pickard, M.S., F.R.C.S., 31, East Southernhay, Exeter; Elmore Wright Brewerton, F.R.C.S., 84, Wimpole Street, London, W.

The following subjects have been chosen for discussion:

1. The Construction and Manipulation of the Principal Instruments used in Ophthalmic Surgery. To be introduced by Professor E. Landolt, Paris.

2. Irido-cyclitis. To be introduced by Mr. Richardson Cross.

Mr. Richardson Cross's paper will deal with symptoms, course, and results of the disease; exudates and adhesions, their pathology and effects; cases illustrating various types of the affection; etiology, treatment.

3. Vesicular Affections of the Cornea. To be introduced by Mr. W. Holmes Spicer.

Mr. W. Holmes Spicer will discuss vesicular affections of the cornea with herpes febrilis; superficial punctate keratitis; dendritic ulcer; stellate ulcer; relapsing bulla.

The following have proposed to join in the discussions: Messrs. W. H. Jessop, J. Herbert Parsons, K Grossmann, A. Hill Griffith, G. Hartridge, Freeland Fergus, Simeon Snell, Lieutenant-Colonel Herbert, and Cecil E. Shaw.

Papers will be read by Dr. H. Manning Fish, Mr. R. Coulter, Dr. J. Hinshelwood, Dr. Thomson Henderson, Dr. W. H. de Silva, Dr. K. Grossmann, Mr. A. C. Roper, Dr. A. Hill Griffith, Lieutenant-Colonel Herbert, Simeon Snell, and A. F. MacCallen.

Laryngology, Otology, and Rhinology.

President: Robert McKenzie Johnston, M.D., Edinburgh.

Vice-Presidents: George Jackson, F.R.C.S., Plymouth; James Barry Ball, M.D., London; Patrick William Maxwell, M.D., Dublin.

Honorary Secretaries: Charles Edward Bean, F.R.C.S.E., 19, Lockyer Street, Plymouth; Arthur Longley Whitehead, M.B., 31, Park Square, Leeds.

The following subjects have been selected for special discussion:

Wednesday.—The Differential Diagnosis of Tuberculous, Syphilitic, and Malignant Disease of the Larynx. To be opened by Sir Felix Semon, K.C.V.O., and Dr. Jobson Horne.

The following is an epitome of Sir Felix Semon's paper: The differential diagnosis between the three diseases named usually is easy, not rarely difficult, in exceptional cases for a time almost impossible. It is easy enough to diagnose what are called "typical" cases of the three affections, but it is not for the consideration of such cases that the present discussion has been arranged. Observations are therefore limited to an analysis of cases in which either the appearances are so deceptive as to induce even an experienced observer to form an erroneous conclusion, or in which the signs are so ambiguous as to make the expert pause before committing himself to a definite opinion; or, finally, in which no clue is offered by the local or the general phenomena as to the true nature of the case. These are classified as follows:—1. Congestion of the vocal cords as an initial sign of tuberculosis, syphilis, and malignant disease—(*a*) bilateral, (*b*) unilateral. 2. The difficulties of diagnosis between tuberculous, syphilitic, and malignant laryngeal tumours. 3. Laryngeal tuberculosis in middle-aged or old people as a source of error in the differential diagnosis between tuberculosis, malignant disease, and syphilis of the larynx. 4. Difficulties of differential diagnosis between all the three diseases when appearing in the form of infiltration. 5. Combination of two of the diseases under consideration, and consequent diagnostic difficulties. Under each of these headings the signs are enumerated which may be useful in arriving at a correct diagnosis, and the difficulties encountered are illustrated by examples furnished by the author's own experience.

Dr. Jobson Horne, in his introductory paper, indicates a process of elimination by which a diagnosis of malignant disease may be arrived at to the exclusion of tuberculosis, that being the disease which, of the three, is more commonly overlooked. Whilst certain features characteristic of syphilis of the larynx are described, the disease itself is viewed more from the point of view of it being a possible factor—both concomitant and causal—common to tuberculosis and malignant disease. Transillumination of the larynx is mentioned as an aid to ascertaining the nature and the extent of the disease. The value and the fallacies of the opsonic index are also touched upon. The significance to be attached to a pathological examination is considered in some detail; and the technique adopted in removing a portion of the growth for microscopic examination is held to be of no little importance in influencing, if not in determining, the value of the report of the pathologist.

Thursday.—The Treatment of Chronic Suppuration of the Middle Ear without resort to the Radical (Complete) Mastoid Operation. To be opened by Dr. W. Milligan and Dr. W. Hill.

Dr. W. Milligan, in his opening remarks, will deal with the following points: Definition of chronicity. Types of chronic suppurative otitis media. Drainage; inflation; aspiration. The wet and the dry methods of treatment. Classification of cases from point of view of danger to life. Intrameatal operative treatment. Extrameatal. Stacke's operation and modifications. General deductions.

Dr. William Hill's remarks will be limited to the value of operative procedures performed through the meatus for the treatment of purely chronic suppuration apparently due to disease confined to the tympanum and antrum. Post-auricular operations of the type of (1) Schwartze's antrotomy; (2) Küster's procedure of antrotomy *plus* removal of more or less of the posterior meatal wall; and (3) Stacke's more radical extension of these measures, including removal of the external attic wall of the malleus and incus, will only be attended to for the purpose of comparison of results with those of meatal ossiculectomy and external atticotomy.

Friday.—To be devoted to papers.

The following papers have been accepted:

Onodi, Professor A.: The Etiology of the Severe Complications of Empyema of the Accessory Nasal Cavities.

Yearsley, Mr. Macleod: The Value of Pneumo-massage in Affections of the Middle Ear.

Fullerton, Dr. Robert: Notes, Photographs and Microscopic Slides of a Tumour which was removed from the Right Tonsil and which is regarded as being a Teratoma.

Nourse, Mr. Chichele: Observations on Frontal Sinusitis.

Low, Mr. Stuart: Submucous Turbinectomy.

Syme, Dr.: Remarks on a Case of Acute Suppuration of the Middle Ear, complicated by Septic Meningitis and Brain Abscess.

Jackson, Mr. George: The Relative Frequency of Caries of the Superior and Middle Turbinates and Ethmoid Bones, and the Importance of Examining the Nose in all Cases with Symptoms of Deafness, Giddiness, and Vertigo, and Throat Affections, with some Remarks on the Treatment thereof.

Jones, Mr. Hugh: Slight Deviations from the Normal in the Form of the Auricle in Relation to Degeneracy and Deafness.

Bronner, Dr. Adolph: Notes on a Case of Thrombosis of the Lateral Sinus, with Complete Obliteration of the Jugular Vein.

Yonge, Dr. E S.: Observations on the Determining Cause of the Formation of Nasal Polypi.

Members are invited to contribute any preparations, specimens, or drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects.

Lantern demonstrations will be given by Dr. Watson Williams on the Anatomy of the Accessory Sinuses of the Nose, and by Dr. Milligan on the Surgical Treatment of Labyrinthine Suppuration.

Professor Onodi (Buda Pesth) will show (*a*) Phantom of the Larynx; (*b*) Diagrams of the Accessory Sinuses of the Nose; (*c*) an Instrument for Opening the Antrum of Highmore.

Mr. T. Guthrie will show Diagrams illustrating the Development of the Middle Ear.

Dental Surgery.

President: John McKno Ackland, M.R.C.S., L.D.S Exeter.

Vice-Presidents: Peter Sidney Spokes, J.P., M.R.C.S L.D.S., London; Thomas Arthur Goard, M.R.C.S

L.R.C.P., L.D.S., 28, Southernhay, Exeter; KENNETH WELDON GOADBY, M.R.C.S., L.R.C.P., L.D.S., London.

Honorary Secretaries: JOSEPH LEWIN PAYNE, M.R.C.S., L.R.C.P., L.D.S., 44, Devonshire Street, Portland Place, W.; GEORGE ARTHUR PEAKE, M.R.C.S., L.R.C.P., L.S.A., L.D.S., Alma House, Cheltenham.

The following subject has been selected for special discussion on Wednesday: The Causes, Effects, and Treatment of Dental Diseases in Children. To be opened by Mr. Edmund Owen, M.B., F.R.C.S., Dr. G. F. Still, F.R.C.P., and Mr. J. G. Turner, F.R.C.S., L.D.S.

The following is an abstract of Dr. Still's paper:—Frequency of dental caries in children too often an overlooked cause of symptoms; local sepsis and general toxaemia; interference with digestion and symptoms arising therefrom; recurring headaches; probably also a cause of certain nervous disturbances; a predisposing, possibly a direct, cause of tuberculous infection of lymphatic glands; importance of parental care; value of dentist's supervision; the treatment of dental caries in children from the dentist's point of view and from the physician's.

Mr. J. G. Turner's paper will deal with hypoplasia of teeth under the heads of hypoplasia of malnutrition, inflammatory hypoplasia, traumatic hypoplasia, hypoplasia of congenital syphilis, hereditary hypoplasia. The relation to rickets is discussed, and a special form of syphilitic molar described. Cause, incidence, and treatment of dental caries in children is discussed, with special emphasis on early incidence, and the completeness of our knowledge as to cause and prevention. Extraction, as the most generally useful treatment and as prevention of oral sepsis, is urged. Ulcerative stomatitis is discussed in its possible relation to pyorrhoea alveolaris. The possibility of organized, or even State, assistance in preventing dental caries is touched on.

The discussion will be taken up by Messrs. Morton A. Smale, A. S. Underwood, J. F. Colyer, Kenneth Goadby, C. E. Wallis, Frank Coleman, W. R. Ackland, and Russell Barrett.

The following papers will be read on August 1st and 2nd:

ACKLAND, W. R., M.R.C.S., L.D.S.: Notes on Some Cases of Neuralgia.
BAKER, A. W. W., M.B., M.S., F.R.C.S.I., L.D.S.Dub.: Difficult Eruption of the Third Molar.
BENNETT, F. J., M.R.C.S., L.D.S.: Some Anatomical Results of Efficient Mastication.
COLYER, J. F., M.R.C.S., L.R.C.P., L.D.S.: Irregularities of the Teeth as shown by the Jaws of Animals. A contribution to comparative pathology.
FAIRBANK, H. A., M.S., L.D.S.: Sarcomata of the Jaws.

OBSTETRICS AND GYNAECOLOGY.

President: ERNEST HASTINGS TWEEDY, F.R.C.P.Ire., Dublin.

Vice-Presidents: WILLIAM FOOKES THOMPSON, M.D., Launceston; J. MACPHERSON LAWRIE, M.D., Weymouth; WALTER LEY WOOLLCOMBE, F.R.C.S.E., Plymouth; WILLIAM WALTER HUNT TATE, M.D., London.

Honorary Secretaries: GEORGE HERBERT JOHNSON, M.R.C.S., 7, Den Crescent, Teignmouth; HY. RUSSELL ANDREWS, M.D., 7, Wimpole Street, London, W.; EDWIN JOSIAH TOYE, M.D., Bridgeland Street, Bideford.

The following is a preliminary programme of arrangements:

Wednesday.—Discussion, The Justification for Artificial Dilatation of the Cervix to Hasten Delivery at Full Time, with a discussion on the Most Appropriate Method for Procuring this Dilatation. To be opened by Dr. Robert Jardine.

The following is a synopsis of Dr. Jardine's paper: Justified by use and wont, also because by the performance of the operation in certain cases the mother's life can be saved, and in other cases it is necessary in the interest of the child. Methods of performance of the operation: (1) Methods which are somewhat approximated to the natural process—first, by the use of hydrostatic bags of the type of Barnes's or Champetier de Ribes's; secondly, the vaginal tampon which stimulates uterine action. (2) More rapid methods by stretching the canal—first, the manual method; secondly, the bimanual method; thirdly, the use of screw dilators of the type of Bozzi's. (3) Cutting methods—first, multiple incisions when the cervix is taken up; secondly, vaginal Caesarean section when the cervix is not taken up. The dangers of each of the methods will be dealt with, and the cases most suitable for the different methods will be indicated.

Thursday.—Discussion, Measures to be Recommended to Secure the Earlier Recognition of Uterine Cancer. To be opened by Dr. Herbert R. Spencer.

The following propose taking part in the discussions: Professor Strassmann, Dr. Robert Bell, Dr. S. Cameron, Dr. Frederick Edge, Dr. W. E. Fothergill, Dr. A. L. Galabin, Dr. T. Arthur Helme, Mr. F. Bowreman Jessett, Dr. M. Handfield-Jones, Dr. J. Munro Kerr, Dr. Arnold Lea, Dr. A. H. N. Lewers, Dr. Cuthbert Lockyer, Dr. F. J. McCann, Dr. W. H. Newnham, Dr. Inglis Parsons, Dr. Charles Ryall, Mrs. Scharlieb, M.D., Sir William Japp Sinclair, Sir William Smyly, and Dr. Thomas Wilson.

Friday is set apart for the reading and discussion of short papers. The following papers will be read:

CAMERON, Dr. S.: Fibroid and Fibromyomatous Tumours in Unusual Sites.
EDGE, Dr. Frederick: A Note on the Technique of Abdominal Hysterectomy.
KERR, Dr. J. Munro: A Case of Complete Rupture of the Uterus, with escape of the Fetus into the Peritoneal Cavity: Panhysterectomy: Recovery.
LOCKYER, Dr. Cuthbert: The Operative Treatment of Cervix Carcinoma.
SCHARLIEB, Mrs., M.D.: A Short Report on Cases of Abdominal Section for Cancer of the Uterus.
LAWRIE, Dr. Macpherson: Remarks on Six Successful Hysterectomies for Fibroid Disease in One Family.
MARTIN, Mr. Christopher: On Three Cases of Osteomalacia treated by Removal of the Ovaries.
STRASSMANN, Dr. Paul: Remarks on the Indications for, and Methods of, Operating on Uterine Fibroids.
SWAYNE, Dr. C. Walter: Chorion-epithelioma with Sections and Lantern Slides.
WILSON, Dr. Thomas: Pubiotomy, with Notes of an Illustrative Case.
PARSONS, Dr. Inglis: A Series of 100 Consecutive Abdominal Sections in Hospital Practice.

STATE MEDICINE.

President: ARTHUR NEWSHOLME, M.D., M.O.H., Brighton.

Vice-Presidents: EDWARD ALEXANDER BRASH, M.R.C.S., Exeter; FREDERICK MANN WILLIAMS, M.R.C.S., Plymouth; Professor HENRY RICHARD KENWOOD, M.B., London.

Honorary Secretaries: SACK NOY SCOTT, M.R.C.S., Plymstock, Devon; FRANCIS CHARLES MARTLEY, M.D., 71, Lower Baggot Street, Dublin.

The following preliminary arrangements have been made:

Wednesday.—Dr. Newsholme will introduce a discussion on The Co-ordination of the Public Medical Services.

Dr. H. Cooper Pattin, Dr. H. Manley, Dr. F. E. Freemantle, Dr. M. D. Edes, and Dr. Joseph Kenny will take part in this discussion.

Thursday.—Professor Kenwood will open a discussion on The Reduction of Infant Mortality by Better Management and Control of the Milk Supply. It is further proposed to consider the Abolition of Private Slaughterhouses and a more strict Inspection of our Meat Supplies.

Dr. E. W. Routley (Aldershot) will read a paper on Infant Mortality the Result of Home Contamination of Milk. The following will contribute towards this discussion: Lieutenant-Colonel R. Caldwell, R.A.M.C.; Dr. Herbert Jones, Dr. F. E. Freemantle, Dr. W. J. Thompson, Professor J. S. Woodhead, Dr. Cuthbert Thompson (Kentucky), and Dr. T. Frederick Pearse (Calcutta).

Friday.—It is proposed to discuss the following questions on Rural Hygiene: (*a*) The Isolation of the Infectious Sick in Rural Districts; (*b*) The Difficulties in the Operation of the Midwives Act in Rural Districts; (*c*) The Housing of the Labourer in Rural Districts; (*d*) The Economical Treatment of the Sewage of Small Communities; (*e*) What constitutes "Sufficient Supply of Wholesome Water," P. H. W. Act, 1878?

These subjects will be introduced or discussed by Dr. W. F. Brown (Ayr), Dr. J. Arnallt Jones (Aberavon), Dr. F. C. Freemantle (Hertford), Dr. J. M. Wilson (Beverley), Dr. Herbert Jones (Hereford), Dr. C. H. W. Parkinson (Wimborne), Professor T. A. Starkey (Montreal).

The following papers will be read on convenient days:

HORDER, Dr. T. Garrett (Cardiff): The New Vaccination Order.

TIDSWELL Dr. H. (Torquay): The Effect of Tobacco Smoking on the Health of the Individual and the Nation.

MCWALTER, Dr. J. C. (Dublin): The Prevention of Putrefaction.

GILCHRIST, Dr. A. W. (Nice): On the Necessity of Increasing the Degree of Immunity Against Small-pox.

The septic sewage works at Exeter will be open for inspection, and the city surveyor will be glad to show and explain the works.

NAVAL AND MILITARY.

President: Inspector-General JAMES PORTER, C.B., M.D., R.N., Newport, Mon.

Vice-Presidents: Colonel GEORGE DEANE BOURKE, C.B., R.A.M.C., Devonport; Brigade-Surgeon-Lieutenant-Colonel J. RAGLAN THOMAS, M.D., V.D., Exeter; Surgeon-Lieutenant-Colonel DECIMUS CURME, M.R.C.S., Blandford.

Honorary Secretaries: Fleet-Surgeon HORATIO S. R. SPARROW, L.R.C.P., R.N., Royal Marine Barracks, Plymouth; Surgeon-Major JOHN ROBINSON HARPER, M.R.C.S., Bear Street, Barnstaple; Surgeon-Captain JOHN SHIRLEY STEELE PERKINS, M.B., V.M.S., 47, Southernhay West, Exeter; Major BENJAMIN FRAZIER ZIMMERMANN, R.A.M.C. (ret.), M.R.C.S., L.R.C.P., Bicton Lodge, Heavitree, Exeter.

The following programme has been arranged:

Discussions: The Treatment of Wounded in Fleet Actions. To be opened by Fleet Surgeon A. Gaskell, R.N.

The following is a synopsis of Fleet Surgeon Gaskell's paper: I. Details on which we are all practically agreed: (1) A hospital ship should be built. (2) A new naval first-aid dressing should be devised. (3) First aid should be taught. (4) The haversacks should be distributed before action. (5) In peace time the first-aid dressing should frequently be used for instruction. (6) The surgical apparatus should be protected during action. II. Details on which we are as yet undecided: (*a*) The proper medical "preparation for battle." (*b*) The medical staff should be augmented. (*c*) Cleansing the men's skin and clothing before going into action. (*d*) The proper stations for the medical staff and their assistants. (*e*) The details of moving the wounded. (*f*) The treatment of the wounded after action. (*g*) The best authorities on the subject.

Treatment Afloat of (*a*) Syphilis, to be opened by Surgeon A. Burke, R.N.; and (*b*) Burns and Scalds, to be introduced by Staff Surgeon Sutcliffe.

Papers:

CALDWELL, Lieutenant-Colonel: Enteric Fever during Active Service.

WILSON, Lieutenant-Colonel E. M., R.A.M.C., C.B: The Provision of Male Subordinates for the Medical Service on Mobilization in Case of War.

DAVIES, Lieutenant-Colonel A. M., R.A.M.C.: Enteric Fever: Its Spread by Personal Infection and Preventive Measures on Active Service. The Value of Inoculation as a Preventive.

FAICHNIE, Major, R.A.M.C.: Water Supply in Camps, on the March, and in Battle.

BLACKHAM, Major, R.A.M.C.: The Teaching of Hygiene in the Army.

GILES, Surgeon-Colonel: The Position of the Volunteer Regimental Stretcher Bearer. Disposal of Excreta in Camp and on the March.

BASSETT-SMITH, Fleet Surgeon: Frequency of Aneurysms in the Royal Navy.

DUNCAN, Staff Surgeon: A Form of Oral Filter to be Used by all Persons in the Operating Room.

NORRIS, Staff Surgeon: Wireless Telegraphy and Hospital Ships.

HORNE, Fleet Surgeon: The Choice of the Field of Practice (the Navy).

PATHOLOGICAL MUSEUM.

THE following are the members of the Committee:—

President: J. D. HARRIS, M.D.

Honorary Secretaries: R. V. SOLLY, M.D., 40, West Southernhay, Exeter; G. P. HAWKER, M.B., 8, St. Leonard's Road, Exeter.

MEMBERS OF COMMITTEE:

A. E. CARVER, M.D.	W. L. PETHYBRIDGE, M.D.
B. DYBALL, F.R.C.S.	R. PICKARD, F.R.C.S.
W. GORDON, M.D.	A. C. ROPER, F.R.C.S.Edin.
R. HINGSTON	H. SHARP, M.B.
H. C. JONAS, M.D.	P. H. STIRK
R. H. LUCY, F.R.C.S.	G. L. THORNTON, M.R.C.P.
H. MONTGOMERIE, M.D.	H. W. WEBBER.

EX-OFFICIO MEMBERS:

The President-elect: H. DAVY, M.D., F.R.C.P.

The Local Honorary Treasurers: J. SOMER, M.R.C.S.; L. H. TOSSWILL, M.B.

The Local Honorary Secretaries: RUSSELL COOMBE, F.R.C.S.; G. T. CLAPP, M.B.; LEONARD R. TOSSWILL, M.R.C.S.

The Committee responsible for the organization of the Pathological Museum are anxious to secure the co-operation of the officers of the various Sections at the forthcoming annual meeting. They will be glad to take charge of, and place in the Museum for exhibition, any specimens, photographs, diagrams, or microscopic slides during the time they are not required by those who are reading papers or taking part in the discussions. The Committee therefore request members who propose to bring any material to communicate direct with the Honorary Secretaries, at 40, West Southernhay, Exeter, as this will greatly facilitate the necessary arrangements.

PROVISIONAL PROGRAMME OF PROCEEDINGS.

SATURDAY, JULY 27TH.

9.30 a.m.—Annual General Meeting, to be followed immediately by Representative Meeting.

MONDAY, JULY 29TH.

9.30 a.m.—Adjourned Representative Meeting.
4 p.m.—Reception by the R.W. the Mayor in the Guildhall.

TUESDAY, JULY 30TH.

9.30 a.m.—Adjourned Representative Meeting.
12 noon.—Service at the Cathedral.
Exhibition of Foods, Drugs, and Instruments.
2.30 p.m.—Adjourned General and Representative Meetings. Induction of President.
4 p.m.—Garden Party by Mayor on Northernhay.
8.30 p.m.—President's Address in Theatre.

WEDNESDAY, JULY 31ST.

10 a.m. to 1 p.m.—Sectional Meetings.
Exhibition of Foods, Drugs, and Instruments.
2.30 p.m.—Address in Medicine.
3.15 p.m.—Adjourned Representative Meeting.
4 p.m.—Garden Party by Dr. Deas (President, South-Western Branch), Wonford House.
Garden Party by Dr. Samways, Knowle, Clyst St. George.
Drive across Woodbury Common, and Garden Party in Manor House Grounds, Exmouth.
8.30 p.m.—Reception by Branch on Northernhay.

THURSDAY, AUGUST 1ST.

8 a.m.—Temperance Breakfast.
Exhibition of Foods, Drugs, and Instruments.
10 a.m. to 1 p.m.—Sectional Meetings.
2.30 p.m.—Address in Surgery.
4 p.m.—Garden Party at Bishop's Palace.
Drive from Cullompton to Black Down Hills and Picnic Tea by Dr. Gidley, Cullompton.
Garden Party at Killerton by Sir Thomas Dyke Acland, Bart.
Garden Party at Seaton.
7.30 p.m.—Annual Dinner.
8.30 p.m.—Ladies' Entertainment at Theatre.

FRIDAY, AUGUST 2ND.

10 a.m. to 1 p.m.—Sectional Meetings.
Exhibition of Foods, Drugs, and Instruments.
4 p.m.—Garden Party by Sir Dudley Duckworth King, Bart., High Sheriff of Devon, and President of the Royal Devon and Exeter Hospital, at Wear House.
Luncheon Party at Teignmouth, and Drive to Chudleigh, tea being given at Ugbrooke by Lord Clifford of Chudleigh.
Luncheon Party at Torquay.
Luncheon Party at Sidmouth.
8 p.m.—Popular Lecture.
8.30 p.m.—Reception by Civic Authorities in Royal Albert Memorial.

SATURDAY, AUGUST 3RD.

Excursions.

ANNUAL EXHIBITION.

THE Annual Exhibition of Foods, Drugs, Medical and Surgical Instruments, Sanitary and Ambulance Appliances, etc., will be held at the Victoria Hall, Queen Street, within two minutes' walk of the Reception Room, from Tuesday, July 30th, to Friday August 2nd. The exhibition will be open from 9 a.m. to 6 p.m. daily.

HONORARY LOCAL SECRETARIES:

RUSSELL COOMBE, M.D. (Cantab.), F.R.C.S.Eng., 5, Barnfield Crescent, Exeter.

G. T. CLAPP, M.B. (Cantab.), 14, West Southernhay, Exeter.

LEONARD R. TOSSWILL, M.R.C.S., L.R.C.P., 34, West Southernhay, Exeter.

EXCURSIONS.

SATURDAY, AUGUST 3RD.

1. *Plymouth.*—The Mayor of Plymouth will kindly entertain 125 members to luncheon at 1 p.m. At 3 p.m. the members resident in the three towns and district have arranged for a steamer to leave West Hoe Pier for a trip round Plymouth Sound, the Hamoaze, and the River Tamar. At 4.30 there will be tea at Mount Edgcumbe, kindly provided by the Earl of Mount Edgcumbe. The steamer will return to West Hoe Pier about 6 p.m. Ladies will be heartily welcomed on the steamer trip, and also at tea. In addition, arrangements will be made in the morning for visiting Devonport Dockyard. The P.M.O., R.A.M.C., and the Inspector-General, R.N., will be pleased to show members over the Station Hospital, Devonport, the Military Families' Hospital, and the Royal Naval Hospital, Plymouth The Inspector-General, R.N., has also arranged for visits to H.M.S. *Cambridge* (gunnery ship, H.M.S. *Defiance* (torpedo ship), H.M.S. *Indus* (training ship for artificers), etc.

2. *Falmouth.*—An unlimited number of members will be entertained at luncheon.

3. *Ilfracombe.*—The Urban District Council will entertain twenty-five members to luncheon, and before leaving, Dr. C. W. Toller will kindly provide refreshments at the Hydropathic.

4. *Bideford and Clovelly.*—Members will proceed to Bideford by rail, continuing the journey to Clovelly by coach. Mrs. Hamlyn, of Clovelly Court, will kindly entertain twenty members to luncheon, and on the return journey it is expected that tea will be provided at Bideford by the kindness of the Mayor.

5. *Tavistock and Endsleigh.*—Members will proceed to Tavistock by rail, arriving about 11.30 a.m., driving thence to Endsleigh, the beautiful seat of His Grace the Duke of Bedford, who has kindly promised to entertain fifty members at luncheon. Returning to Tavistock, tea will be provided at the Bedford Hotel.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

ABERDEEN BRANCH

THE summer meeting was held at Stonehaven on Tuesday, June 18th, at 1.45 p.m. There was a representative attendance in spite of most unfavourable weather. The Council met under the presidency of Professor Finlay and admitted, as members of the Association, Dr. William A. Watson (Huntley), Dr. McGregor (Kuala Lumpur, Selangor, Straits Settlements), and Dr. F. K. Smith (Aberdeen).

Representative on Branch Council.—It was announced that Professor Finlay had been appointed to represent the Branch on the Council of the Association.

Minutes and Report.—At the general meeting held subsequent to the Council meeting, the minutes of the last meeting and the annual report were approved.

Representative at Annual Representative Meeting.—Dr. Lawson (Banchory) was appointed Branch Representative to the Representative Meeting at Exeter.

Luncheon, etc.—Thereafter the members lunched together, and in the afternoon several golf matches were played. The annual dinner in the Bay Hotel, Stonehaven, in the evening proved a most enjoyable function.

BORDER COUNTIES BRANCH.

THE annual general meeting of the Branch was held in the Crown and Mitre Hotel, Carlisle, on Friday, June 21st, Dr. BOWSER, President, in the chair.

Apologies for Non-attendance.—Apologies for unavoidable absence were intimated from Drs. S. F. McLachlan, Mungo Bryson, Goodchild, and G. J. Muriel.

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed by the Chairman.

Report of Council.—The following report was read: Since your Council's last report three meetings of the Branch have been held, one in Penrith and two in Carlisle. At all of these the attendance has been unusually satisfactory, a fact due, perhaps, to the unusual interest that the subjects under discussion had aroused. The President's address at the last annual general meeting was received with the greatest interest, and occasioned considerable discussion amongst the profession throughout the country. At the Penrith meeting Dr. Clouston gave a most interesting address on the hygiene of mind, and at the special meeting, held at the request of the Scottish Division in Carlisle to discuss the question of contract practice, there was a very large attendance to hear Mr. Smith Whitaker's address on that subject. As the practical outcome of that meeting the Divisions are at present considering the advisability of adopting the measures then put forward. Ten new members have been elected to the Association during the year, but your Council regrets having to record the deaths of two past Presidents of the Branch in the persons of Dr. J. A. Campbell and Dr. James Altham. With regard to the meetings to be held during the ensuing year, your Council suggests that one be held in the autumn in Dumfries, and another in the spring at some convenient town in the English Division. The work under consideration at this time last year of revising the existing boundaries of the Divisions has now taken definite shape, and the date of the fortieth annual meeting of the Branch will mark the inauguration of the "English" Division, and it is the hope of the Council that the changes they have recommended may prove beneficial to the better working of the Branch. The Branch had this year 35 votes for foundation scholarships at Epsom College, and these were allotted by the Council as follows: 18 to Robert E. Denny and 17 to Eric D. Harlock. The votes for pensionerships were divided equally among those specially recommended by the Committee of Examination. The financial report is appended, and shows a credit balance of £21 2s. 4d. The Council announces with pleasure that Dr. James Macdonald of Carlisle has allowed himself to be nominated for the post of President-elect in the ensuing year. Dr. F. R. Hill of Carlisle was also nominated as Secretary and Treasurer, and as no further nominations have been received these gentlemen are hereby declared duly elected. Dr. Maxwell Ross has again been returned unopposed as the Representative on the Central Council of the Association. The annual meeting of the Branch has to elect six members to serve on the Branch Council, and the following names are suggested by the Council for your consideration: D. S. Doughty (Dalston), W. F. Farquharson (Carlisle), W. Lockerbie (Annan), M. Ogilvy-Ramsay (Carlisle), W. Murdoch (Annan), G. J. Muriel (Whitehaven). The report was adopted. The six members of Council nominated in the report were then formally elected and the auditors, Drs. Donald and Sedgwick, were re-elected.

Additional Branch Secretary.—The Secretary of the Scottish Division, Dr. G. R. Livingston, was then elected to be Additional Secretary of the Branch in accordance with the request of the Scottish Committee of the Association.

Alterations of By-laws.—The following alterations in the Branch By-laws were then put to the meeting and formally adopted after some discussion:

Constitution.

1. The Branch shall consist of the Scottish, North and West Cumberland Divisions.

Membership.

2. The ordinary members of the Branch (hereinafter called members) shall be the ordinary members of the Divisions composing the Branch.*

Branch Council.

3. The management of the affairs of the Branch shall be vested in the Branch Council, which shall consist of the officers named in Rule 4, together with the member of the Central Council of the Association elected by the Branch jointly with the North Lancashire and South Westmorland Branch; members elected by the Divisions in the manner prescribed in Rule 6, and six members elected at the annual general meeting of the Branch.†

Officers.

4. The officers of the Branch shall be a President, President-elect, a Vice-President, Treasurer, and Secretary.‡

The President shall be elected annually from among those members of the Branch who have not held the said office during the previous two years. He shall take office as President at the annual meeting of the year following the year of his election, and until then shall be designated President-elect.

The office of Vice-President shall be held by the retiring President for a space of one year.

The Treasurer and Secretary shall be elected for a term of one year, and shall be eligible for re-election.

The above officers shall be elected by voting papers sent to every member of the Branch, not less than fourteen days before the annual meeting, containing the names of those members who have been nominated for each office by the Council, or by any three members of the Branch, in writing, to the Secretary, not less than three weeks before the annual meeting.

These voting papers shall be returned to the Secretary not less than three days before the annual meeting, and the result shall be ascertained by two scrutineers appointed for the purpose.

AMENDMENTS.

1. The Branch shall consist of the English and Scottish Divisions.

* *Add*—and Extraordinary Members (Art. VI and By-law 10), who shall come up for re-election at each annual general meeting of the Branch.

† *Add*—and the Secretaries of the two Divisions. Each member of the Branch Council shall be elected for one year, and at the end of that time shall be eligible for re-election, unless he has served as such member for five years consecutively, in which case he shall be for one year ineligible for re-election.

A term of membership held *ex officio* shall be regarded as the necessary break entitling the holder to re-election.

‡ *Add*—and an additional Secretary from the Scottish Division, who shall have a seat on the Scottish Committee of the Association.

Extraordinary Members.—Arising from their adoption the following extraordinary members were then elected: The President and Secretary of the North Lancashire and South Westmorland Branch (*ex officio*), Dr. W. S. Syme, Glasgow.

Future Meetings.—It was decided that the Branch should hold meetings in Dumfries in the autumn and another in the spring of 1908 in Workington.

Vote of Thanks to the Honorary Chairman.—Dr. MACDONALD of Carlisle, the new President-elect, proposed a vote of thanks to Dr. Bowser, referring in happy terms to the prosperity of the Branch, in every sense, during Dr. Bowser's term of office. Dr. MAXWELL ROSS, seconded this proposal, which was carried by acclamation.

Introduction of New President.—Dr. BOWSER returned thanks for the honour and introduced his successor, Dr. F. H. Clarke, of Dumfries.

President's Address.—Dr. CLARKE gave a most interesting address on the subject of the occurrence of epileptoid symptoms with tachycardia and bradycardia. On its conclusion Dr. BOWSER moved that the thanks of the meeting be accorded to Dr. Clarke for his most useful address, and Dr. HENRY BARNES warmly seconded this, and referred to the long and careful study which Dr. Clarke had evidently given to a subject which is at present engrossing the attention of the medical profession. Dr. CLARKE returned thanks, and this terminated the meeting.

Office-Bearers.—The following is a complete list of the office-bearers and members of Council for the ensuing year:—*President*, F. H. Clarke (Dumfries); *President-elec*, James Macdonald (Carlisle); *Vice-President*, J. E. Bowser (Penrith); *Secretary and Treasurer*, F. R. Hill (Carlisle) *Additional Secretary*, Dr. G. R. Livingston (Dumfries) *Scottish Delegates*, G. D. Logan and J. S. Bell; *English Delegates*, J. W. Crerar, D. C. Edington, C. W. Donald, J. Penny; *Representative on Central Council*, J. Maxwell Ross (Dumfries), D. S. Doughty, M. Ogilvy-Ramsay, W. Murdoch, W. F. Farquharson, W. Lockerbie, G. J. Muriel; *Divisional Secretaries*, G. R. Livingston (Scottish); N. MacLaren (English).

CONNAUGHT BRANCH.

PURSUANT to notice, a meeting was held at 12.30 p.m. at Ryan's Hotel, Claremorris, to form the Connaught Branch of the British Medical Association. There was a good attendance of members from the three constituent Divisions. The notice convening meeting was read, and Mr. Mahon was appointed chairman of the meeting.

Election of Officers.—The following officers were elected: *President*, R. J. Kinkead, M.D., Galway; *President-elect*, R. B. Mahon, F.R.C.S.; *Honorary Secretary*, John Mills, M.B., Ballinasloe; *Representative for Representative Meeting*, R. B. Mahon, F.R.C.S., Ballinrobe; *Representatives on Irish Committee*, R. B. Mahon, F.R.C.S.; John Mills, M.B. *Executive Committee of Branch*, Drs. Kelly, Hanrahan, Brennan, Martyn, Carroll, Laird, S. B. Costello, Joseph MacDonald, John Mills, with the President and President-elect.

Rules.—Rules for the Branch were considered and adopted.

Ethical Rules.—Draft rules to regulate procedure in ethical matters were considered, and also the draft rules as to contract practice. It was unanimously agreed that these be referred to the Executive Committee, to whom full power be delegated to revise and adopt them, and that they be then forwarded to each Division for adoption.

Annual Meeting.—It was agreed that the next annual meeting should be held on the third Wednesday in May, 1908.

The Charter.—Dr. Mills, the present Representative to Representative Meetings, was directed to oppose the alteration in the Charter of the existing power of the Central Council, and if unable to attend the Special Representative Meeting was given power to appoint a deputy.

New Member.—Dr. MacDonough, Galway, was elected by the Council a member of the Branch.

EAST ANGLIAN BRANCH:

WEST NORFOLK DIVISION.

THE annual meeting of this Division was held at the West Norfolk and Lynn Hospital on Wednesday, June 19th, at 3 p.m. Dr. J. R. CHADWICK, Chairman, presided.

Confirmation of Minutes.—The minutes of the last meeting were read and adopted.

Election of Officers.—The following office-bearers were then elected for the ensuing year: *Chairman*, Dr. Steele; *Vice-Chairman*, Dr. Chadwick; *Honorary Secretary*, Dr. Forrest; *Representative at the Representative Meetings*, Dr. Thomas; *Representative on the Council of East Anglian Branch*, Dr. Thomas; the *Executive Committee* was elected by ballot as follows: Drs. Gardiner, Lister, Roddis, and Wales.

Annual Report.—The annual report and balance sheet were approved.

Hospital Administration.

The subject of hospital administration was considered and the following conclusions unanimously arrived at:

1. That there be no compulsory payment by patients to hospitals other than cottage hospitals.

2. That the production of subscribers' letters be not compulsory.

3. That inquiry into a patient's circumstances should invariably take place.

4. That a certificate be required from the medical attendant of all persons attending out-patient departments.

Medical Inspection of School Children.—It was agreed that the question of the medical inspection of school children be not considered at present.

Ethical Aspects of Medical Consultation.—As regards the ethical aspects of medical consultation, the recommendations of the Central Ethical Committee were considered and unanimously approved.

The New Vaccination Order.—An interesting discussion on the new Vaccination Order then took place, and it was

decided unanimously that any attempt by boards of guardians to reduce the fees now payable to public vaccinators be resisted.

Luncheon.—The members were entertained to luncheon and tea by the Chairman.

GLASGOW AND WEST OF SCOTLAND BRANCH: NORTH-WEST DIVISION.

A special meeting of this Division was held in the large theatre of the Western Infirmary on May 31st at which about one hundred and ten medical practitioners were present. All the practitioners in Glasgow and the neighbouring district were invited.

Electro-therapeutics.—Dr. LEWIS JONES, medical Officer in charge of the Electrical Department in St. Bartholomew's Hospital, London, delivered a lecture on The Really Useful in Electro-therapeutics. After referring to the great progress which had taken place during the past fifteen years in the general employment of electricity, he touched upon the advances which had been made in its medical applications during the same period. He then proceeded to discuss the reasons for the comparatively slight hold which medical electricity had taken upon the general body of medical practitioners. Many explanations had been put forward, but he was disposed to think that the real one was that so much of the work done in electro-therapeutics was of a vague or unsatisfactory nature, being auxiliary rather than indispensable. Still there were certain things which could be accomplished better by electrical than by any other methods, as, for instance, the diagnosis of nervous diseases, the uses of *x* rays in diagnosis, the treatment of peripheral paralyses by electrical currents, of ringworm and other cutaneous disorders by *x* rays, the destruction of naevi, and the removal of superfluous hairs by electrolysis. These were instances of definite results obtained by electrical methods, and if medical electricity was to take a high position in therapeutics, it must be by the discovery of new methods of the same nature, which were capable of giving results which were plain for all men to see. Of all the promising lines for future investigation in connexion with the medical applications of electricity, he thought that work in connexion with the migration of ions under electric stresses was the most promising. The introduction of chemical substances by electric currents had been known for a long time, but the subject had remained without valuable applications until quite lately. The writings of S. Leduc, of Nantes, had illuminated the matter and had started investigators along that channel. Dr. Jones mentioned especially the treatment of rodent ulcer with zinc ions, which, he said, had proved very satisfactory in his experience, and then proceeded to point out the possibility of obtaining other equally satisfactory results in the treatment of other superficial diseased conditions by ionization. Cocaine could be usefully introduced for producing local anaesthesia; adrenalin also. Copper ions were valuable in the treatment of ringworm. Aniline, zinc, and other antiseptic bodies were being employed for lupus, and some successes had been obtained. Magnesium ions had a striking effect upon multiple warts. All these applications of the ionic method and many others required patient study in order to elaborate them for general medical use, and a field of research was here indicated which promised to be a fruitful one.

The meeting was very successful.

LANCASHIRE AND CHESHIRE BRANCH: LIVERPOOL (SOUTHERN) DIVISION.

THE annual meeting of this Division was held on June 28th at the Liverpool Medical Institution. Dr. WESTBY, the retiring Chairman, was unable to be present. The VICE-CHAIRMAN (Dr. Harvey) took the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Annual Report.—The annual report of the Division, showing a membership of 62, and a balance of £4 4s. 5d. in hand, was read and adopted.

Election of Officers.—Dr. Harvey, the Vice-Chairman, was unanimously elected Chairman for the ensuing two years. The following elections were also made: *Vice-Chairman*, Dr. Charles Lee; *Honorary Secretary and Treasurer*, Dr. Given; *Executive Committee*, Drs. Bennett, Logan, Sharp, Steeves, Westby; *Representatives on Branch Council*, Drs. Given and Westby; *Representative at Exeter*, Dr. Westby; *Deputy Representative*, Dr. Given; *Representatives on Joint Committee of Liverpool and Birkenhead Divisions*, Drs. Bennett, Given, Harvey, C. Lee, Westby.

Special Representative Meeting.—The report of Dr. Westby, the Representative at the Special Representative Meeting in London in May, was then read and adopted, and a very cordial vote of thanks to him was passed.

Librarian of the Liverpool Medical Institution.—The HONORARY SECRETARY was instructed to forward the following resolution, which was passed unanimously, to the Honorary Secretary of the Council of the Lancashire and Cheshire Branch:

> The Southern Division of Liverpool is of opinion that some substantial honorarium should be given to the resident librarian of the Liverpool Medical Institution by the Lancashire and Cheshire Branch, in consideration of the very numerous meetings of the Council, Divisions, and Committees of the British Medical Association held, free of all charge, in that institution.

ST. HELENS DIVISION.

A MEETING of the St. Helens Division was held on Wednesday, June 19th, in the Young Men's Christian Association Buildings, North Road, St. Helens. Dr. REID, Chairman of the Division, was in the chair, and there were also present: Drs. Bassett, Dowling, Mouncey, Orton, Walker, and Buchan.

Annual Report.—The SECRETARY presented the report for the year 1906-7, with the financial statement, which was approved.

Election of Officers.—The following office-bearers were appointed for the session 1907-8: *Chairman*, J. Reid, M.D.; *Vice-Chairman*, C. J. Mouncey, M.B.; *Honorary Secretary and Treasurer*, John J. Buchan, M.D, Town Hall, St. Helens; *Representative on the Branch Council*, F. P. Bassett, Esq.; *Representative at the Representative Meetings* (with Warrington Division), F. P. Bassett, Esq.

Medical Attendance and the Truck Act.—The Division then went over the memorandum of the Association with respect to medical attendance and the Truct Act, and made replies to the queries so far as they affect the district.

This was all the business.

ST. HELENS AND WARRINGTON DIVISIONS.

A JOINT meeting of these two Divisions was held on June 19th, in the Young Men's Christian Association Buildings, St. Helens, for the purpose of electing a Representative for the two Divisions at the Representative Meetings of the Association. It was moved and seconded and carried that Dr. REID, Chairman of the St. Helens Division, take the chair.

In accordance with the arrangement come to last year, it was agreed that a member of the St. Helens Division should this year act as Representative; and it was moved and seconded and carried unanimously that Dr. F. P. Bassett, Victoria Square, St. Helens, be the Representative for the ensuing year.

METROPOLITAN COUNTIES BRANCH.

THE annual meeting of this Branch took place on Thursday, June 27th, in the Oak Room of the Great Central Hotel, Dr. KER, President, in the chair.

Minutes.—Owing to circumstances the minutes of the last annual meeting could not be read.

Amended Rules.—The HONORARY SECRETARY then proposed seriatim the amended rules of the Branch which had been discussed by the Council of the Branch. They were all passed as the Council had amended them with one important exception, the effect of which was that the Chairman and Representative at the Representative Meeting of each Division were made *ex officio* members of the Branch Council. This amendment was proposed by Dr. FRED. J. SMITH, seconded by Sir VICTOR HORSLEY, and carried with one dissentient.

Election of Officers.—The HONORARY SECRETARY then read the result of the recent elections to the various offices of the Branch—namely: *President-elect*, Mr. Edmund Owen (the Honorary Secretary explained that Mr. Owen's was the only nomination for this office, the nomination of Dr. Buckell having been a mistake of the Honorary Secretary); *Treasurer*, Mr. H. B. Robinson; *Honorary Secretaries*, Dr. F. J. McCann and Mr. Atwood

Thorne; *Representatives on the Central Council*, Dr. Ford Anderson, Dr. Eastes, Dr. Haslip, Dr. Ker, and Dr. L. E. Shaw; *Vice-Presidents*, Dr. Goodall, Dr. Ker, Dr. Shaw, Dr. F. J. Smith.

Annual Report.—The HONORARY SECRETARY then read the following:

Branch Meetings.

During the year there has only been one Branch meeting necessary, namely, the annual one for the election of officers and for sanctioning the new rules of procedure in ethical matters.

Branch Council.

During the year the Council has held ten meetings, which have been occupied with the following important matters:

1. The rules of procedure in ethical matters. These were very fully discussed by the Council, and finally agreed to by the Branch at its annual meeting. Happily no case arose during the year calling for the application of either these or our old ethical rules.

2. Early in the year the Council, after very full and protracted discussion, determined to appoint three new Standing Committees, viz.:

i. A Finance Committee.
ii. A Medico-Political.
iii. A Medical Charities.

These three Committees have proved very useful, and have held many meetings, at which matters of great importance have been discussed, amongst which may be enumerated—

(*a*) The settlement of the financial relationships of the Divisions to the Branch.
(*b*) Approaching the candidates for the London County Council and ascertaining their views on several burning questions of the day—for example, the Midwives Act, Registration of Births and Deaths Act, the Coroners Act, etc.
(*c*) Hospital reform, especially in connexion with the King's Fund Bill, the Hospital Sunday Fund Charter, and the management of the Hampstead Hospital.
(*d*) Revision of the rules and formation of standing orders.
(*e*) The organization of the Watford Division.

3. In July the Branch entertained the Representatives of Divisions at a *conversazione* held at the Natural History Museum.

It will thus be seen that the Council has been very active during the year in setting its house in order under the new constitution, and has also found time to help in some important political work in connexion with the non-professional world.

Financial Statement.—The annual statement of the finances of the Branch had been prepared for the meeting and was ordered to be printed in the JOURNAL and entered on the minutes. (See balance sheet at foot of page.)

Central Emergency Fund.—Dr. HASLIP then proposed and Dr. SHADWELL seconded the following resolution:

> That the Council of the Branch be asked to devote a further sum of twenty-five guineas (out of the old Branch Funds) to the Central Emergency Fund.

This was carried.

President elect's Address.—Dr. FREDERICK TAYLOR (President-elect) then gave an interesting address, largely historical, and would have been installed in the President's Chair had not the new rules prevented this being done until after the meeting of the Association at Exeter.

Dinner.—No other business being brought forward the members adjourned to dinner in the Wharncliffe Rooms. At the conclusion of dinner the CHAIRMAN (Dr. Ker) proposed the usual loyal toast, and was then succeeded by Sir ALAN MANBY who proposed in felicitous terms "The British Medical Association." Dr. DAWSON WILLIAMS replied in a good kennel speech, likening the Association to a St. Bernard puppy full of life and energy, but still awkward in its gambols, unconscious of its size and strength. Dr. FLETCHER LITTLE then proposed "The Metropolitan Counties Branch," to which Dr. KER, in well chosen terms, replied. Dr. FREDERICK TAYLOR (President-elect) then proposed "The Visitors," sketching them with the rapidity of a Phil May or a Tom Browne. Canon CURTIS and Dr. SPRIGGE returned thanks on their behalf with deftness and skill of repartee worthy of a larger audience. The TREASURER (Mr. H. B. Robinson) then proposed "The Divisions," saying that as treasurer he knew their little financial difficulties. Dr. LANGDON-DOWN replied in appropriate terms. Mr. A. E. BARKER then proposed "The Officers," coupling the name of Dr. Fred. J. Smith with the toast, whom he said he knew as a man of great prowess on the golf course. Dr. SMITH replied in terms of due deference to the God or Goddess of Gowf. Dr. Byrd Page enlivened the proceedings by exhibitions of conjuring and card tricks mixed with metaphysics, and Mr. Robert Hine pleased the company with two or three most excellent songs. The meeting broke up about 11 p.m.

Balance Sheet for 1906.

Dr.

	£ s. d.	£ s. d.
Balance in hand		716 17 11
Paid by General Secretary:	£ s. d.	
On February 6th, 1906	13 16 0	
,, May 28th, 1906	266 14 0	
,, June 26th, 1906	0 18 0	
,, October 3rd, 1906	133 7 0	
,, December 31st, 1906	114 11 0	
		529 6 0
[This amount represents:—		
2,553 Members at 4s.	£511 12 0	
Arrears for 1904, 15 at 4s.	3 0 0	
,, ,, 1905, 73 at 4s., 1 at 2s.	14 14 0	
	£529 6 0]	
Interest		16 0 5
[N.B.—The balance of £826 19s. 0d. is made up of—		
£650 0 0 on Deposit,		
53 4 0 Balance at Bank,		
123 15 0 in hands of Division Secs.]		
£826 19 0		

FINANCE COMMITTEE.

The Committee has, in accordance with the regulations of the Council, examined the Honorary Treasurer's Financial Statement, and, having compared this with the vouchers and bank book, has authorised the Chairman to sign it as correct.

(Signed) C. O. HAWTHORNE,
Chairman, Finance Committee.
H. BETHAM ROBINSON,
Treasurer.

March 1st, 1907.

£1,262 4 4

Cr.

	£ s. d.	£ s. d.
Expenses of Divisions:		
Chelsea	20 5 4	
City	20 5 0	
Ealing	8 8 11	
Hampstead	45 11 11½	
Kensington	20 3 0	
Lambeth	8 9 0½	
Marylebone	39 9 8	
Richmond	13 16 4	
St. Pancras	14 12 9	
Stratford	12 7 3	
Tottenham	6 15 7	
Walthamstow	9 6 0	
Wandsworth...	75 0 0	
Watford	—	
Westminster...	33 19 1	
		328 9 11
Expenses of Branch:		
Hire of Rooms	18 7 6	
Printing	64 7 4	
Typewriting	3 15 8½	
Expenses of Midwives Committee ...	0 4 11½	
Expenses of South London Hospitals Committee	15 0	
Secretarial expenses	4 11 4	
Treasurer's expenses	0 4 5	
Bank Charges	0 4 2	
		106 15 5
Balance in hand		826 19 0
		£1,262 4 4

KENSINGTON DIVISION.

THE annual general meeting of the Kensington Division was held in the Kensington Town Hall on Tuesday, June 25th, at 5 p.m., Dr. G. CRAWFORD THOMSON in the chair.

Scrutineers.—Dr. C. H. Bennett and Mr. Clifford were nominated scrutineers of the ballot.

Report of Committee.—The SECRETARY read the report of the Committee for the year 1906-7. The adoption was proposed by Sir CHARLES CUFFE, seconded by Mr. STURGE, and carried unanimously.

Annual Representative Meeting.—Dr. C. Buttar was elected Representative for the Division at the Exeter meeting, and matters referred to the Divisions were discussed.

Letters.—The Secretary was instructed to answer letters received from the Chelsea Division with reference to the Kensington General Hospital, and from the Medico-Political Committee of the Branch with respect to the payment of consultation fees by insurance companies, etc.

Election of Officers.—The officers for 1907-8, nominated by the Council, were declared unanimously elected.

Vote of Thanks to Retiring Chairman.—Dr. LAMB proposed and Sir JOHN TYLER seconded a vote of thanks to Dr. Crawford Thomson for his tenure of the chair during the past year. This was carried by acclamation.

SOUTH-EASTERN BRANCH.

THE annual meeting of this Branch took place at Brighton on Wednesday, June 19th. In the unavoidable absence of Dr. Hetley of Norwood, the chair was taken by Mr. J. H. EWART of Eastbourne.

Election of Officers.—The following officers were elected to serve for the ensuing year: *President-elect*, Dr. M. Kirkby Robinson of Dover; *Vice-Presidents, 1907-8*, Dr. Hetley, Dr. Hollis; *Vice-Presidents, 1908-9*, Mr. T. Jenner Verrall, Mr. Charles Wood; *Honorary Secretary and Treasurer*, Dr. H. M. Stewart; Dr. Galton, Dr. Tyson, and Mr. Jenner Verrall were elected as Representatives of the Branch on the Central Council.

Vote of Thanks to Retiring Officers.—A vote of thanks was accorded to the retiring officers.

President's Address.—Mr. JENNER VERRALL, the new President of the Branch, then took the chair and delivered an address on the proposed Charter. Mr. Verrall traced the progress of events which had led up to the proposed Charter, and dealt with the various objections which had been raised. He laid stress on the fact that no action had been taken and nothing had been put into the application, except at the wish of the Association as a whole expressed at meetings of the Representative Body and various Divisions. Mr. Verrall also pointed out that the powers which would be given by the Charter were simply permissive, and in no way necessitated increased expense or new departures. Finally, he urged members to give the matter their most careful consideration and to come to a decision without further delay. A hearty vote of thanks was accorded to Mr. Verrall for his very interesting and helpful address.

Annual Report.—The annual report and statement of accounts of the Branch were laid before the meeting and adopted.

Rules.—Dr. DOUGLAS moved:

> That no alteration of or addition to existing rules be made unless notice of the same be printed and circulated with the agenda at least fourteen days before the meeting at which such alteration, etc., shall be brought forward, and that one month's notice shall be given the Secretary by any member proposing to make any such change in the rules.

This resolution was carried.

The New Vaccination Order.—A resolution was then passed deprecating any reduction in the fees paid to public vaccinators, and pledging the Branch to support to the utmost the present holders of vaccination appointments in resisting any reduction of fees.

Reception by the Mayor.—The majority of the members present subsequently attended a reception at the Royal Pavilion, by the kind invitation of the Mayor, Dr. Henry Gervis. After the Mayor's reception, parties were taken to visit Booth's Museum of British Birds, the Aquarium, and Volk's Seaside Railway.

Dinner.—Fifty-four members and friends dined together at the Hotel Métropole in the evening.

GUILDFORD DIVISION.

THE annual meeting of the Division was held at the Royal Surrey County Hospital on Wednesday, June 26th, at 4.30 p.m., Dr. GEORGE FISHER being in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Election of Officers.—The following were elected officers for the ensuing year: *Chairman*, Dr. George Fisher (re-elected); *Vice-Chairman*, Dr. Anderson Morshead; *Honorary Secretary and Treasurer*, Dr. E. J. Smyth (re-elected); *Representatives at Representative Meetings*, Dr. A. B. Hudson; *Representative on Branch Council*, Dr. E. J. Smyth (re-elected); *Executive Committee*, Drs. Kendall, Kingsford, Levick, Minchin, Morshead, Napper, Pearse, Sloman, Walker, Weaver, and Winstanley.

Annual Report and Balance Sheet.—These were submitted, and it was unanimously agreed to adopt them.

Next Meeting.—It was agreed that the next meeting should be held in October, should be followed by a dinner, and that Dr. H. A. Powell, Honorary Treasurer to the Royal Surrey County Hospital, should be requested to give an address on Hospital Administration with special reference to the abuse of out-patient departments and its remedy.

Contract Practice.—It was also agreed that the question of fixing rates and any other conditions of contract practice in accordance with the ethical rules adopted at the last meeting, should be considered at the next meeting.

Cases, etc.—Dr. ANDERSON MORSHEAD showed the following cases: (1) Paralysis agitans, chiefly left-sided, and following a blow on the head; (2) traumatic neurasthenia in a man, who showed extreme convulsive movements, on attempting any muscular effort. Dr. H. F. PARKER showed, and read the notes of a case of embryonic tumour of the neck in a young child upon which he had operated. The tumour, on pathological examination, was shown to consist mainly of coils of intestine, and was regarded as a case of included fetation. Only partial removal was possible at the time of the operation, and Dr. Parker proposed to deal with the rest of it on a future occasion. It showed no signs of active growth at present.

Votes of Thanks.—The meeting closed with votes of thanks to Dr. Morshead and Dr. Parker, and to the Hospital Committee for the use of the Board room, and for kindly providing tea.

ISLE OF THANET DIVISION.

THE nineteenth meeting of this Division was held at the Royal Sea-bathing Hospital, Margate, on June 25th, at 4 p.m., W. G. SUTCLIFFE, F.R.C.S., in the chair.

Confirmation of Minutes.—The minutes of last meeting were read, confirmed, and signed.

School Certificates.—A letter was read from the Secretary of the South-Eastern Branch with regard to fees for signing school certificates. It was decided that a reply should be sent stating that the Division had made its own resolutions regarding the matter.

Next Meeting.—It was decided that Dr. Moon be asked to take the chair at the next meeting, to be held at Broadstairs in September.

Election of Officers.—The Chairman is elected for each meeting. Mr. Hugh M. Raven was elected Honorary Secretary and Treasurer, and Representative Member of the Division of South-Eastern Branch Council. Drs. Heaton, Nichol, Street, and Watts were elected members of the Executive Committee of the Division.

Executive Committee.—The report of the Executive Committee together with the audited financial statement (which had been circulated) was taken as read and adopted.

Representative Meeting.—The agenda of the Representative Meeting was next discussed, and it was decided to oppose the amendment of Article XXVII, which proposes that the minimum membership of a constituency electing a representative shall in future be 100 instead of 50.

Hospital Administration.—The report of the Hospitals Committee with regard to hospital administration (SUPPLEMENT, BRITISH MEDICAL JOURNAL, April 13th, 1907) was considered, and in the main approved. In answer to the specific questions, the following were given: (1) No; (2) No; (3) Yes; (4) Yes. No comments.

Medical Inspection of School Children.—In discussing the question of medical inspection of school children, it was decided by a majority that it would be preferable to have

a special medical officer for the duties rather than that the duties should be divided among such medical men who cared to undertake the work.

Ethical Aspects of Medical Consultations.—The report on the ethical aspects of medical consultations was discussed, and a vote of general approval passed.

Specimens.— Drs. SUTCLIFFE and HEATON showed two pathological specimens: (*a*) Periosteal sarcoma of upper end of tibia; and (*b*) endosteal sarcoma of upper third of tibia. X-ray photographs were shown, and a discussion followed on the differential diagnosis between such cases and tuberculous disease of the knee-joint.

Paper.—Dr. HALSTEAD read a paper entitled "Miscellanies." He dealt with various questions: Cheyne-Stokes breathing, senile heart, senile insanity, alcohol and albuminuria, ischio-rectal abscess, the insurance statistics on the question of total abstinence *versus* moderate alcohol drinking. The paper was discussed by the CHAIRMAN and Drs. NICHOL and WATTS. Dr. HALSTEAD replied.

Vote of Thanks.—A vote of thanks was passed to the Chairman for presiding.

ULSTER BRANCH.

THE twenty-ninth annual meeting of this Branch was held in the Medical Institute, Belfast, on Saturday, June 29th; the PRESIDENT, Professor Symington, F.R.S., in the chair.

Confirmation of Minutes.—The minutes of the last annual meeting were read and confirmed.

Apologies for Non-attendance. — The HONORARY SECRETARY (Dr. Cecil Shaw) announced that apologies had been received from Sir John Byers, Dr. Warnock (Donegal), Dr. J. G. Cooke (Derry), and Dr. StGeorge (Lisburn).

Report of Council.—The report of Council was read by the HONORARY SECRETARY. It included a recommendation to the effect that the resolution of 1906 be reaffirmed—that the Association be invited to meet in Belfast in 1909; and, further, that Sir William Whitla be nominated as President for that meeting; and Drs. H. L. McKisack, Cecil Shaw, and Howard Stevenson as honorary local secretaries. The report was moved by Mr. R. J. JOHNSTONE, seconded by Dr. MCQUITTY, and passed unanimously.

Annual Report.—The annual report was read by the HONORARY SECRETARY and the statement of accounts by the HONORARY TREASURER (Dr. J. S. Darling) and adopted. They showed a slight increase in the membership of the Branch, which now stands at 355, and an income just equal to the expenditure.

Election of Officers.—The following office-bearers for the session 1907-8 were elected: *President*, Dr. H. T. A. Warnock (Donegal); *Secretary*, Dr. Cecil Shaw; *Treasurer*, Dr. J. Singleton Darling (Lurgan); *Representatives of Ulster and Connaught Branches combined on Central Council*, Drs. H. L. McKisack and Cecil Shaw; *Country Representative on Irish Committee*, Dr. J. G. Cooke (Derry).

WEST SOMERSET BRANCH.

THE sixty-fifth annual meeting of this Branch was held at the Royal Clarence Hotel, Bridgwater, on Friday, June 28th. The chair was taken by the in-coming President, Dr. G. W. HARVEY BIRD.

Confirmation of Minutes.—The minutes of the spring meeting were read and signed.

Annual Report and Balance-Sheet.—These were submitted to the meeting and approved, the balance in hand being £39 16s. 2d.

Election of Officers.—The following officers were elected: Mr. H. T. S. Aveling, Superintendent of the Cotford Asylum, President-elect; Mr. J. A. Macdonald was re-elected Representative; Mr. W. B. Winckworth was re-elected Honorary Secretary and Treasurer; Mr. N. O'D. Burns and Mr. C. Farrant to vacancies on the Council of the Branch; Mr. C. H. Watts Parkinson, Representative of the Branch (with the Dorset and West Hants Branch) on the Council of the Association, was elected an honorary member of the Branch.

Reports of Subcommittees.—(1) The report of the Subcommittee on fees from coroners was submitted to the meeting and approved; (2) the report of the Subcommittee on medical certificates was read, and the Subcommittee was reappointed with a view to the still further elaboration of their report, which it was decided to print and circulate among the members.

President's Address.—The PRESIDENT read a very thoughtful and instructive address on notes on influenza, dealing particularly with the so-called influenza epidemic, characterized by gastro-enteritis, which occurred last winter in Bridgwater. Many present expressed a hope that an opportunity might be found for a discussion of the subject at a future meeting. On the motion of Dr. MACDONALD and Mr. SINCLAIR, Dr. Bird was cordially thanked for his address.

Cricket Match.—After lunching together, an adjournment was made to the Bridgwater cricket ground, where a cricket match was played between elevens representing the Bridgwater and Taunton districts, which ended in a narrow victory for the latter. There were large numbers of visitors present, who, with the cricketers, were hospitably entertained during the afternoon by Dr. and Mrs. Bird.

WORCESTERSHIRE & HEREFORDSHIRE BRANCH.

THE annual general meeting was held at the Imperial Hotel, Malvern, on June 27th, at 5.30 p.m., Mr. MILES A. WOOD, President, in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read, confirmed, and signed.

Election of Officers.—Mr. Edgar Morris, of Hereford, was elected President for the year 1908-9. Mr. C. S. Morrison, of Hereford, was elected Secretary and Treasurer of the Branch.

Dinner.—The members subsequently dined together, and the occasion was made memorable by a presentation of plate to Dr. G. W. Crowe, of Worcester, who had been the Secretary and Treasurer of the Branch from its formation in May, 1880, until his resignation in June, 1906. Mr. T. BATES made the presentation in a speech which ably expressed the feelings of esteem and regard which the members of the Branch have towards Dr. Crowe. His valuable services through these twenty-six years had been of the greatest benefit to the Branch, and his unfailing courtesy had won the hearts of all those with whom he had been brought into contact. Mr. MILES A. WOOD and other members expressed their pleasure at being able to show in a small way their appreciation of Dr. Crowe's long and arduous work as secretary, and their sincere thanks for the ability and assiduity which he had shown. Dr. CROWE, in responding, warmly thanked the members for this sign of their esteem, and assured them of the pleasure he had had in carrying out the duties. He gave an interesting account of the work of the Branch in its early days, and regretted that, in recent years, so much time had been taken up in the discussion of medico-political matters. He forcibly pointed out what a power for good the Association is, and how this might be increased if more efforts were made to recruit its ranks and bring about united action among members of the medical profession.

New Members.—At a meeting of the Council of this Branch, held at Malvern on June 27th, the following gentlemen were elected members: H. Westley Burnam, The Willows, Upper Colwall, Malvern; Arthur Augustus Fletcher, M.D., The Garth, Kington, Herefordshire; Charles F. Hadfield, M.D., Mornington, Malvern Link; Clifford Taylor, General Hospital, Hereford.

HAMPSTEAD GENERAL HOSPITAL.

A WELL-ATTENDED meeting of the medical profession in Hampstead and its neighbourhood was held under the auspices of the Hampstead Division, Metropolitan Counties Branch, British Medical Association, on July 3rd, at the Hampstead Conservatoire, Swiss Cottage, Dr. PIDCOCK, Chairman of the Division, in the chair.

The HONORARY SECRETARY (Dr. Yeld) read letters of regret for non-attendance from Drs. Ford Anderson, Rayner, Wilson, and Van Praagh, expressing sympathy with the object of the meeting.

The CHAIRMAN, in opening the proceedings, said they had met to consider a very important subject. If there were any member of the Hampstead Hospital staff present who desired to make a statement, he would ask him to do so.

Dr. COLLINGWOOD ANDREWS, Chairman of the Medical Committee of the hospital, said it was common knowledge that negotiations had been proceeding for some time with reference to the proposed amalgamation of the Hampstead General Hospital with the North-West London Hospital.

He was able to state that the decision of the Council of the Hampstead Hospital to amalgamate had been come to without any reference to their subscribers, who were not to be asked their opinion on the matter at all. The terms arranged between the Council of the hospital and the King Edward's Hospital Fund were that the King's Fund would contribute £1,500 a year to the hospital funds. They would also benefit to the extent of about £200 a year by subscribers to the North-West London Hospital. The out-patient department was to be taken over with an indefinite expense attached. With regard to the hospital staffs, three members of the North-West London Hospital were to receive appointments; two senior medical officers of the Hampstead Hospital would be continued in office for five years; two others for seven years. The two assistant medical officers would receive no promotion, and would never have charge of any beds in the hospital. A definite stipulation was made that in future no general practitioners were to be appointed on the staff of the Hampstead Hospital. Should these decisions of the Council be carried out, the present staff felt that they must sever their connexion with the hospital. But the majorities by which these resolutions had been carried were very narrow, and the staff had determined to appeal against them to the subscribers, for which purpose a requisition for a meeting had been obtained and influentially signed, a copy of which was circulated at the present meeting. The question was, Was the Hampstead Hospital to remain as it had been, or to degenerate into a third-rate consulting hospital?

Dr. WALTER SMITH asked Dr. Andrews if any arrangement had been come to as to the lines on which the out-patient department was to be run, but was told that nothing had yet been settled.

Mr. ARMIT, in moving the first resolution,

> That this meeting considers that the Hampstead Hospital should always have a visiting staff of local practitioners, and in consideration of this opinion calls upon the members of the medical profession to refuse to accept any office on the staff on terms which are not considered satisfactory by the local profession,

said that hitherto the profession in Hampstead had been trying to fight the battle without the help of the staff, but now that they had the staff with them he thought their prospects of success were much better. They wanted, if possible, to get a unanimous vote which would enable them to treat those who took office at the hospital against the wishes of the local profession as blacklegs. Some of his friends were greatly against the use of trades-union methods, but if they wanted to use the great power the British Medical Association possessed as a great trades-union, they must make use of trades-union methods. They could make it too hot for any one who accepted office at the hospital against the wish of the profession. On the other hand, the subscribers might disagree with the Hospital Council's resolutions, and so make it unnecessary for them to go to these lengths.

Dr. OPPENHEIMER, in seconding the resolution, wished to dissociate himself from Mr. Armit's profession of trades-unionism. He thought the great thing was that the hospital should remain a local institution staffed by local men. The action of the Hospital Council had united the staff with the local profession in joint action, and the cordial co-operation of the profession should be given to them.

Dr. CLAUDE TAYLOR asked whether, if the Hospital Council agreed to the promotion of the junior staff, a compromise would be possible.

Dr. ANDREWS thought no compromise was possible.

Dr. SHARMAN said he was going to vote for the resolution because he thought there should always be a staff of local practitioners, but he was of opinion that there should be consultants as well. He did not think the resolution meant that the hospital was to continue to be carried on as at present.

Dr. PARSONS objected to the introduction of trades-unionism. He thought it would be better if they could act by common consent.

Dr. STRANGE suggested that the resolution should be divided into two parts which should be voted on separately, but, Mr. ARMIT objecting, the suggestion was not pressed.

Dr. JESSOP asked whether the staff was prepared to support the principles already agreed to as to the out-patient department by the local profession?

Dr. ANDREWS replied that he fully agreed that the hospital should be carried on in accordance with the local opinion of the profession.

Dr. GLOVER said he had so recently discussed the whole matter from his personal point of view in the BRITISH MEDICAL JOURNAL that he had not intended to speak. He thought they were dealing with a much larger question than that of the Hampstead Hospital, and that they would set an example for suburban hospitals about London for the next twenty or thirty years. He gave the resolution his hearty support, and if the Hospital Council should act differently from what they desired his connexion with the hospital would cease.

The resolution was then carried *nem. con.*

Dr. OPPENHEIMER moved, Dr. CLAUDE TAYLOR seconded, and it was resolved, that a short report of the meeting be sent by the Honorary Secretary to the local papers and also to the hospital subscribers.

The following is the requisition referred to in the report:

SPECIAL MEETING OF GOVERNORS AND SUBSCRIBERS OF THE HAMPSTEAD GENERAL HOSPITAL.

In consequence of the decision of the Council—that in future local practitioners shall not be appointed on the medical staff—a special meeting of governors and subscribers has been requisitioned to consider and, if deemed desirable, to adopt, the following resolutions:

1. That the practice, hitherto followed, of appointing acting medical officers from among the members of the medical profession practising in Hampstead, be continued
2. That the number of physicians and surgeons on the consulting staff be augmented.

This requisition is signed by, among others:

The MAYOR OF HAMPSTEAD,
Sir GEORGE BARHAM,
Colonel C. GRANT GORDON, C.B.,
Mr. J. S. FLETCHER, M.P.,
} Vice-Presidents of the Hospital.

Sir SAMUEL WILKS, Bart., M.D., Consulting Physician to the Hospital.

Mr. JAMES GOUGH, Chairman of House Committee.

Dr. COLLINGWOOD ANDREWS, Chairman Medical Committee.

Mrs. KING,
Mrs. SWINBURNE HANHAM,
} Representatives on Council of Ladies' Association.

Mr. H. W. BIRKS,
Dr. F. P. WEAVER, J.P.,
} Members of Council.

Mr. W. R REA, M.P.
Mr. J. T. TAYLOR, I.S.O., L.C.C.
Mr. A. J. SHEPHEARD, L.C.C.
Mr. Alderman BOUSFIELD.
Mr. Alderman MCMILLAN.
Etc., etc.

AN EXAMINATION OF CERTAIN FRIENDLY SOCIETY STATISTICS IN THEIR BEARING UPON CONTRACT PRACTICE.

By JAMES PEARSE, M.D.,
Trowbridge.

THE question of the rates of remuneration for contract practice has been so often raised in the BRITISH MEDICAL JOURNAL that it might be well to endeavour to ascertain some accurate basis which would be of service in any readjustment of the scale. Hitherto rules covering the amount of fee have been purely arbitrary: there has been no attempted ratio to the quantity of work required. Any readjustment can only be satisfactory if this principle is recognized either on the lines of *pro rata* payment, as in the National Deposit Friendly Society, or by a capitation fee which has been accurately estimated to cover the probable amount of work.

In the present article it is proposed to indicate statistically reasons for a revision of the present system and to give some figures on which such revision might be based. For these purposes examination is made of an elaborate report, entitled, "An Account of an Investigation of the Sickness and Mortality Experience of I.O.O.F. Manchester Unity during the Five Years 1893-7," prepared by Mr. Alfred W. Watson, one of the actuaries to the Society. Note may be made, in the first instance, of this sentence from the introduction:

> Out of the funds which naturally accumulated from the small weekly contributions called for in those early days our benevolent predecessors in the largeness of their hearts promised benefits in sickness and at death out of all proportion to the sums demanded as subscriptions.

This fact was recognized by the officials of the Society earlier than it has been by medical men, and as long ago

as 1845 a commencement was made of the substitution of a scientific for a haphazard system. Further actuarial investigations have been made from time to time, and the present report on the altered conditions of sickness and mortality is elaborate in its completeness.

The total number of members of the Unity is over 600,000, its lodges exist throughout the whole country, and its members are engaged in all varieties of occupation, so that the analysis of sickness incidence, etc., may be considered as fairly typical of friendly societies as a whole.

Sickness Incidence.

The figures relating to this are somewhat startling, being considerably higher than might have been anticipated (p. 11):

The annual average proportion of members sick was 27.59 per cent.

The annual average period of sickness per member exposed to risk was 2 344 weeks.

The annual average period of sickness to each member sick was 8.497 weeks.

Further, there has been in the years under review a marked increase in the sickness experience compared with former periods :

> Nor is this excess a comparatively small quantity. Up to 45 years of age the average sickness has exceeded that of the period 1866-70 by 21 per cent., between the ages 45 to 65 the excess is equal to 26 per cent , and at the ages 65 and over it is no less than 42 per cent. (p. 17).

Table III gives the figures for each age period.

This increase is largely due to the increase of permanent sickness, and this not only at the older ages but at every period of life. This increase is so marked that, classing all occupations together, the sick-pay claims in the "after two years" period "are almost invariably between 200 and 300 per cent. of the expectation" (p. 38). The following table (p. 38) may be quoted in this connexion :

Sickness in the Period "after Two Years" (all Occupations); Percentage of Actual Sickness to Expectation Based on 1866-70 Experience.

Ages.	Whole Society.
16 to 44	264
45 to 65	243
65 and upwards ...	238

A further highly instructive table is No. XVIII.

Sum of the Sickness-Rates Experienced in passing through the Years of Life Comprised within the Ages named.

Ages.	Whole Society. 1893–7.	1866–70.
16 to 24	8.4 weeks	... 6.4 weeks.
25 to 34	10.1 ,,	... 8.7 ,,
35 to 44	14.3 ,,	... 11.8 ,,
45 to 54	23 8 ,,	... 19.6 ,,
55 to 64	52.5 ,,	... 40.2 ,,
65 to 74	142.6 ,,	... 98.6 ,,
	251.7	185.3

Mortality Experience.

The investigation of the mortality returns shows :

A remarkable decline in the death-rates at all the earlier periods of life, the average up to 45 years of age being but 66 per cent. of the death-rates of 1866–70: in the middle period, say, ages 45 to 65, the average is 90 per cent. of the corresponding rates of 1866-70, and from 65 years of age the average is 105 per cent. of that standard (p. 20).

The conclusion drawn from these figures of sickness and mortality is stated thus :

It may be pointed out that this experience is unfavourable financially in two directions. Not only is the sickness per member at each period of life heavier than was formerly the case, but a greater proportion of members than formerly now survive to old age, the period of life at which sickness is at its maximum intensity (p. 20).

Financial Aspects.

The important bearing of this increased sickness incidence on the financial position of the Society is shown by the following abstract from Table XXIII :

Annual Premiums Payable throughout Life to Provide a Sickness Benefit of £1 per Week Estimated on a 3 per Cent. Basis, and an Age of Entry of 18 Years (whole Society Experience) :

	1866-70.	1893-7.
	£	£
£1 a week during first six months of sickness	1.061 ...	1.111
,, second ,, ,,	0.175 ...	0.198
,, second twelve months ,,	0 204 ...	0.214
,, "after two years" period ,,	0.329 ...	0.780

It will thus be seen that the increase in the sickness claims is leading this Society to the necessity of revising its scale of contributions. An alternative method of relieving the Society's funds is suggested, which is well worthy of quotation :

> The Legislature has deliberately cast upon the employer in many industries the duty of providing in part for the injured workman, and as an alternative to an increase of contributions . . . the Society may justifiably consider the propriety of withdrawing the sickness benefit where the statutory disablement allowance is being received (p. 44).

To summarize the above conclusions. The report shows that this Society early recognized the necessity of substituting a scientific for a haphazard basis of contributions, that it has revised such basis from time to time, that alterations in sickness and mortality-rate have necessitated a further revision, and that drastic amendments have been contemplated to safeguard the interests of the Society. All these considerations apply with equal force to the question of medical attendance. When such at contract rates was first established the capitation fee was fixed in a purely arbitrary manner, and unfortunately no attempt has ever been made to adapt it scientifically. Further, it is evident that members of Friendly Societies are more often on the sick list than formerly, that they are ill for longer periods, and that there is a larger number of aged beneficiaries who will require attendance.

The amount of remuneration given to medical men is variable. The recent report of the Association on Contract Practice states that out of 1,641 clubs, 76.5 per cent. paid less than 5s., 23.5 per cent. 5s. or more. If a club of a hundred members be considered on the basis of the above figures, it will be seen that such members represent during the year 234 weeks of sick pay. If the higher rate of 5s. a year be taken, the medical man will receive for such attendance £25, or approximately 2s. per week's attendance. It is difficult to strike a balance between acute and chronic cases, but two visits a week may be considered a low average; that is to say, the amount received is 1s. a visit.

But it must further be considered that this calculation takes into account only work done while a patient is in receipt of sick pay. But in estimating the payment consideration must also be given to the numerous minor ailments for which the medical man is consulted; in contract practice the surgery work is probably more burdensome than the home visitation; at a low estimate surgery consultations equal the home visits; thus, 1s. is reduced to 6d. per visit or consultation.

Further, the figures given refer only to adult males. The practice of including women and children in contract work is one which is unfortunately spreading. The rates for women may be the same as for men, those for children are almost invariably less, and may not exceed 2s. per annum. Women and children constitute probably 80 per cent. of patients in general practice. If the payments made are the same as for adult males, the above-mentioned 6d. is reduced to 1½d., while if the reduced rates of payment be considered, a fraction of a penny is reached! To state such an absurdity is to condemn the present system root and branch.

The fundamental principle of Friendly Societies is that contributions in early life should be framed to meet the demands of later periods. In contract practice not only is this principle not recognized, but the usual payment is inadequate to cover even the minimum risk. This stands at 0.9 week at the ages 20 to 24, while the figure at the ages 65 to 69 stands at 10.59 weeks (Table II.) If contract practice is to be retained, it can only be by the recognition of this principle and by the reorganization of its terms on some such basis as the present figures afford. The recently issued report of the Association indicates how grave is the need of reform, but its conclusions are inadequate for dealing with the question. The evil will be little ameliorated if for the present system there are instituted public medical services on the same haphazard basis of a contribution of 4s. or 5s. per member.

It is worthy of serious consideration that the Association should arrange for the preparation of a careful actuarial report on the incidence of sickness in various Friendly Societies, and among women and children, and should draw up a scale of fees proportionate thereto.

THE WORKMEN'S COMPENSATION RULES, 1907.

SPEAKING generally, the coming into force of a new Act of Parliament is not of immediate interest to any one but a lawyer. Many statutes affect small classes of persons. Others are remote and obscure in their application to the ordinary citizen. It is seldom, indeed, that we have to chronicle the advent of a measure like the Workmen's Compensation Act, 1906, which, together with certain statutory rules, came into force on Monday last.

In two articles which appeared in the SUPPLEMENT in January last[1] and in several articles published in the JOURNAL subsequently it has been shown how nearly the medical profession is affected by the Act of 1906. Prior to July 1st, 1907, a limited number of medical men were interested in the payment of compensation to workmen by reason of the fact that under the older measure, they had certain duties to perform as medical referees. The position is very different at the present time. The functions of the medical referee have been considerable extended, but there has been a change of far greater moment. Nearly every practitioner in the United Kingdom is affected by the Act either as an employer or as an employed person. In these circumstances it is right that the duties and liabilities of members of the profession should be made as widely known as possible.

As already stated, the provisions of the Act have been dealt with in these columns; but he who has merely read and who understands the Act cannot boast a complete knowledge of workmen's compensation. He must also consult the Statutory Rules. These have only just been published. They serve to explain many a point which the mere perusal of the Act itself wholly fails to elucidate. In particular they give persons who are affected by the Act some idea as to how to proceed if a claim is made against them, or if they desire to make a claim. Many of the rules relate to legal procedure, and we do not propose to deal with them. There are some, however, of more general application to which we think it right to refer.

It is proposed to deal in the first place with some of those which affect a medical man who desires to make a claim or who may have a claim made against him, and in the second place those which affect a medical man as medical referee, etc.

I. RULES OF GENERAL APPLICATION.

It is made clear by R. 8 (1) that there need be no litigation of any kind if the employer and employed come to an amicable arrangement for compensation. If the parties fail to come to an arrangement, the applicant must file with the registrar of the county court what is termed a "request for arbitration." This request must give all the necessary particulars relating to the case. An employer who desires that there shall be an arbitration must state whether he admits his liability wholly or partially. Although the rules mention arbitration, it should be mentioned that in practice cases are usually heard by the county court judge or a barrister sitting as his deputy. Where a claim is preferred, the employer may relieve himself of much trouble by giving notice to the registrar of the county court that he consents to pay so much per week, or, if the application is for a lump sum, he may pay into court the amount which he considers sufficient to cover his liability. If his offer is accepted, he will then have merely to pay such costs as the applicant may have incurred up to date. If, however, the applicant refuses to accept it and the case goes to trial, one of two things may happen: If the court awards more than the employer has been willing to pay, he may have to pay the costs of the inquiry; but if the applicant only recovers the amount offered, or less, he must bear the cost of the proceedings after the date of payment in.

Court in which a Dispute is to be Settled.

The question, What county court is a disputed claim to be settled in? is answered by R. 73. That rule provides, in effect, that a claim is to be heard either (i) in the district in which all the parties concerned reside, or (ii) if the parties concerned reside in different districts, in the court of the district in which the accident out of which the matter arose occurred. Special provision is made for a case in which the accident occurs on a ship at sea. Careful consideration of the rule brings to light an extraordinary anomaly. It seems that if the accident happens abroad (elsewhere than on a British ship), and the parties do not reside in the same district, there is no court in which a claim can be adjudicated upon. So if a medical practitioner who lives in London were employed to take a patient who resides in Birmingham abroad, and he were to meet with an accident, it is difficult to see how he could prefer a claim. Where, however, both patient and doctor lived in Westminster, a claim could apparently be enforced in the Westminster County Court, wherever the accident occurred. At the same time we have it on good authority, that there is considerable doubt in the minds of many lawyers as to whether the Act will apply to an accident which occurs abroad.

Appearance of Parties.

R. 33 provides that any party to an arbitration under the Act may appear in person, by solicitor, or by counsel. By leave of the judge or arbitrator he may appear by a member of his family, or by a person in his permanent or exclusive employment; or, in the case of a limited company, by any director, secretary, or other person in the permanent employment of the company. It is provided, however, that no person other than a solicitor, or a solicitor employing counsel, may recover any fee or reward for so appearing other than such travelling expenses as may be allowed. Other rules provide for the submission of questions of law to the county-court judge; the application of the Act to masters, seamen, apprentices, and pilots; the registration of a memorandum of agreement as to compensation made between employer and employed; the payment into court, investment, and application of money payable in case of death; costs; and the setting aside of any awards improperly obtained.

II. POWERS AND DUTIES OF MEDICAL REFEREES.

The Act of 1906 made a very important alteration of the law with regard to the duties of medical referees. Broadly speaking, a referee may be employed (*a*) as an assessor to assist the judge; (*b*) as referee to consider and report upon any matter referred to him; (*c*) to examine an applicant at the request of the applicant and the employer; (*d*) to exercise an appellate jurisdiction with regard to persons suffering from certain industrial diseases; (*e*) to examine workmen who are about to reside abroad.

It is proposed to consider the rules applicable in each case.

(*a*) *The Referee as Assessor.*

The Act provides (by Sched. II (5)) that a judge of county courts may, if he thinks fit, summon a medical referee to sit with him as an assessor. Effect is given to this in R. 52, which provides as follows:

(1) Any party to an arbitration may eight clear days at least before the day fixed for proceeding with the arbitration file with the registrar an application requesting the judge to summon a medical referee to sit with him as an assessor under paragraph 5 of the second schedule to the Act.

(2) On the receipt of an application for an assessor, the registrar shall forward a copy of the same to the judge, who, if he thinks fit, shall return the same with his approval, and thereupon the registrar shall forthwith summon an assessor.

(3) If the judge does not think fit that an assessor shall be summoned, notice thereof shall be given by the registrar to the applicant, according to the form in the appendix.

(4) If the judge thinks fit, either on the application of any party to an arbitration or on his own motion, to summon a medical referee to sit with him as an assessor, the registrar shall forthwith summon one of the medical referees appointed by the Secretary of State for the area comprising the district of the court in which the arbitration is pending, by sending to such medical referee by post a summons according to the form in the Appendix.

(5) If at the time and place appointed for the arbitration the medical referee summoned does not attend, the judge may either proceed with the arbitration without the assistance of an assessor, or he may adjourn the hearing.

R. 82 (1) provides that:

(1) Where a medical referee is summoned as an assessor, or any matter is referred to a medical referee, such referee shall be summoned or the matter shall be referred subject to and in accordance with any regulations made by the Secretary of State and the Treasury; and any such regulations shall, so far as they affect the county court or an arbitrator appointed by the judge of the county court, and proceedings in the county court or before any such arbitrator, be deemed to be Rules of Court, and shall have effect accordingly. [For paragraph 2 of this rule see *infra* sub. tit. "Duty of medical referee as to industrial diseases."]

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, Jan. 12th and 19th.

(b) The Consultative Duty of a Referee.

Sched. II (15), which replaces paragraph 13 of the corresponding schedule of the Act of 1897, provides that any committee, arbitrator, etc., may submit to a medical referee for report any matter which seems material to any question arising in any arbitration.

R. 53 provides that:

(1) Subject to and in accordance with regulations made by the Secretary of State and the Treasury under paragraph 15 of the second schedule to the Act, the judge may submit to a medical referee for report any matter which seems material to any question arising in an arbitration.
(2) When any matter is submitted as aforesaid, the judge may, subject to and in accordance with such regulations, order the injured workman to submit himself for examination by the medical referee; and it shall be the duty of the workman, on being served with such order, to submit himself for examination accordingly.

(c) Duty of Referee as to Examining Workmen.

The Act of 1897 imposed no obligation on a workman to submit himself to a medical referee after going to the employer's medical practitioner. Under the new Act the registrar may, on the application of *both* parties, refer the matter to a medical referee.

It should be mentioned, however, that even under the new provisions there is no obligation on the workman to submit himself for examination, but their utility lies in the fact that the medical referee's decision can be obtained under them in a summary way which was not previously available. On the other hand, if either party refuses to allow the case to be sent to such a referee as provided, it will be disposed of by the arbitrator, who will use his discretion in the matter by either deciding it himself on evidence taken, or by sending it to the medical referee. The referee's report will be conclusive as to whether the alleged incapacity is due to the accident. The changes necessary to carry out these modifications in practice are carried out in R. 54, which provides (in effect) as follows:

(1) With respect of applications to the registrar pursuant to Sched. I (15) to refer any matter to a medical referee the following provisions shall have effect.
(2) The application is to be made in writing with a statement of the facts which render it necessary. It is to be accompanied by a copy of the report of every medical practitioner who has examined the workman either on behalf of the employer or on the selection of the workman. The application is to be signed by or on behalf of both parties; and the applicant must file copies of the application and reports for the use of the referee.
(3) On the hearing of the application the registrar shall refer the matter to one of the medical referees appointed for the area comprising the district of the court, and shall forward to such medical referee by registered post one of the filed copies of the application and reports, with an order of reference.
(4) The registrar shall also make an order directing the workman to submit himself for examination by the medical referee, subject to and in accordance with any regulations made by the Secretary of State.
(5) Before making such order the registrar shall inquire whether the workman is in a fit condition to travel for the purpose of examination, and if satisfied that he is in a fit condition shall by the order direct him to attend at such time and place as the referee may fix, and if satisfied that he is not in a fit condition to travel shall so state in the order of reference; and it shall be the duty of the workman on being served with the order to submit himself for examination accordingly.
(6) The registrar shall deliver or send by registered post to each party a copy of the order of reference, and shall send to the workman a copy of the order directing him to submit himself for examination.
(7) The medical referee shall forward his certificate in the matter to the registrar by registered post.
(8) On the receipt of the certificate of the medical referee the registrar shall inform the parties by post that it has been received, and shall permit any party to inspect the same during office hours, and shall, on the application and at the the cost of either party, furnish him with a copy of the certificate, or allow him to take a copy thereof.
(9) The fee payable by the applicant shall be calculated at the rate of one shilling in the pound on twenty-six times the amount of the weekly payments claimed by or payable to the workman, so that the total fee shall not exceed one pound.
(10) The costs of any application to the registrar, including the fee paid under the last preceding paragraph, may be allowed as costs in any subsequent arbitration for the settlement of the weekly payment to be made to the workman; or, where the application is made after the weekly payment has been settled, as costs in any subsequent arbitration as to the review of such weekly payment.

It is also made clear (by R. 55) that where a workman refuses to submit himself to medical examination the employer may make an application for a suspension of the right to compensation until such examination has taken place. Suspension of the right to compensation means actual forfeiture of the amount accruing for the time during which the workman persists in his refusal. With regard to the incidence of costs, if the certificate of a referee is used in any subsequent arbitration any reasonable travelling and other expenses incurred by the workman in obtaining the certificate may be allowed as costs in the arbitration (R. 61 (4)). Further, where a workman is ordered to submit himself for examination by a medical referee any reasonable expenses incurred by such workman in travelling to attend on such referee may be allowed as costs in the arbitration (R. 61 (5)).

(c) Duty of Medical Referee as to Industrial Diseases.

A medical referee may also have a certain appellate duty to perform with reference to industrial disease. Stated quite shortly, S. 8 of the Act provides that if a certifying surgeon under the Factory Acts grants a certificate to the effect that a workman is suffering from one of the industrial diseases which are included in the schedule to the Act, that workman may be entitled to compensation. Subsection (1) *(f)* of that section provides that if an employer or a workman is aggrieved by the action of a certifying or other surgeon in giving or refusing to give a certificate of disablement, or in suspending or refusing to suspend a workman from employment on account of such disease, the matter shall in accordance with regulations made by the Secretary of State be referred to a medical referee whose decision shall be final.

R. 82 (2) provides that:

In particular, if such regulations as in the preceding paragraph mentioned (that is, paragraph (1) of this rule, set out, *supra*, sub. tit. "The Referee as Assessor"), provide that an employer or a workman who desires any matter to be referred to a medical referee under Sec. 8 (1) (*f*) of the Act shall apply to the registrar of a county court for the matter to be so referred, it shall be the duty of the registrar to refer the same in accordance with such regulations.

It is important to notice that in the case of an application for the reference of a question relating to industrial disease, the registrar has no option but to make the reference, and that the decision of the referee is final.

(e) Duty of Referee as to Workmen about to Reside Out of the United Kingdom.

The new rules also make provision for the medical examination of workmen residing out of the United Kingdom. It is expressly provided by Schedule I (18) of the new Act that a workman ceases to be entitled to receive weekly payments when he ceases to reside in the United Kingdom, unless a medical referee certifies that the incapacity is likely to be of a permanent nature. Under the old Act, residence out of the United Kingdom was held to amount to obstruction of a medical examination (*Finnie* v. *Duncan*, 1904, 7 F. 254). R. 60 makes provision for the examination of a workman in receipt of weekly payments who intends to cease to reside in the United Kingdom. It may be summarized as follows: Such a workman must apply to the registrar of the county court to refer to a medical referee the question whether the injury is likely to be permanent. The application must be accompanied by a report of the workman's own practitioner. If the workman has also been examined by the employer's medical practitioner, a copy of his report may also be sent to the workman, and another may be filed for the use of the referee. If the registrar makes an order referring the question to the referee, he may also direct the workman to submit himself to examination by the referee. The referee must then send a certificate to the registrar showing whether the incapacity of the workman is total or partial. Paragraph (*a*) of this rule makes provision for the case of a workman actually residing abroad. It provides that:

A workman who desires to have the weekly payments payable to him remitted to him while residing out of the United Kingdom, shall at intervals of three months from the date to which such payments were last made submit himself to examination by a medical practitioner in the place where he is residing, and shall produce to him the copy of the certificate of the medical referee and a certificate of identity, and shall obtain from him a certificate (in a particular form) that the

incapacity resulting from the injury continues; and such certificate shall be verified by declaration by the medical practitioner, in the presence of the workman, before a person having authority to administer an oath.

The rule goes on to provide that the certificate above mentioned shall be forwarded to the registrar, who, if satisfied that it is genuine, must send a notice to the employer requiring him to forward the amount due. This sum having been sent to the registrar, he is bound to send it on to the workman residing abroad.

A large number of forms which are of legal rather than general interest are appended to the rules.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held at Caxton House, Westminster, on June 27th, with Dr. F. H. CHAMPNEYS in the chair.

Taking the Pulse and Temperature.

On the motion of Sir WILLIAM SINCLAIR, seconded by Mr. PARKER YOUNG, the following resolution was passed:

That inasmuch as changes in the pulse and temperature are the earliest and surest indication of the onset of puerperal fever when the disease is still amenable to treatment this Board resolves to call the attention of local supervising authorities to the importance of instructing and encouraging midwives practising within their areas in taking and recording the pulse and temperature in every case under their care.

Refusal to Rescind a Censure.

Letters were read from the Town Clerk of Southampton asking the Board to rescind its resolution of censure for having given a false certificate of stillbirth, passed January 31st, 1907, on Adeline Letitia Bellis, on her own admission. The Board declined to reopen a case which had already been considered at the request of the Local Supervising Authority, together with the whole of the facts as presented by it, and as to which no fresh facts had been adduced.

Midwives Censured.

Ellen Greenwood was severely censured on her admission of not having advised that medical assistance be sent for in a case of breech presentation in a primipara.

Mary Lixton was censured on her admission of not having advised that medical assistance be sent for in a case of ophthalmia neonatorum.

Annie Duncalf was censured on her admission of not having advised that medical assistance be sent for in a case of rigor, and of not having taken the temperature of the patient after the occurrence of a second rigor.

Midwives Cautioned.

Jane Jones was cautioned as to the strict observance of the rules of the Board, and in particular as to those requiring midwives to notify the local supervising authority in cases of stillbirth, and when medical assistance has been sent for.

Mary Chalk was cautioned as to the strict observance of the rules of the Board, and in particular as to that requiring her to send for medical assistance in a case of inflammation about the navel of the child.

Naval and Military Appointments

ROYAL NAVY MEDICAL SERVICE.

INSPECTOR-GENERAL JAMES PORTER, C.B., M D., has been appointed to the Royal Naval Hospital, Haslar, to date July 1st.

The following appointments have been made at the Admiralty: JOHN C. FERGUSON, M.B, Fleet Surgeon, to the *Ariadne*, on recommissioning, and as Acting Interpreter in French, June 20th; ADRIEN A. FORRESTER, M.B., Staff Surgeon, to the *Pyramus*, additional, July 2nd, and on recommissioning, undated; REGINALD WATERFIELD, Staff Surgeon, to the *Psyche*, additional, July 2nd, and on recommissioning, undated; ROBERT HUGHES, Staff Surgeon, to Chatham Hospital, June 20th; SYDNEY CRONEEN, Staff Surgeon, to the *Forward*, July 2nd; JOHN C. G. REED, Staff Surgeon, to the *Charybdis*, July 2nd; EUSTACE ARKWRIGHT, M B, Staff Surgeon, to the *Vivid*, additional, for Devonport Dockyard, June 21st; WALTER S H. SEQUEIRA, M.B., Staff Surgeon, and W. F ARCHIBALD, M.B., Surgeon, to the *Flora*, July 2nd, and on recommissioning, undated; RICHARD W STANISTREET, Staff Surgeon, to the *Doris*, on recommissioning, July 4th; J L. BARFORD, Surgeon, to the *King Alfred*, additional, June 18th; ARTHUR S. BRADLEY, M B, Surgeon, to the *Diadem*, June 18th; JOHN ST. J. MURPHY, to the *Pioneer*, additional, July 2nd, and on recommissioning, undated; LLEWELLYN LINDOP, Surgeon, to the *Excellent*, additional for the *Revenge*, July 8th; WILLIAM K. D. BRETON, Surgeon, to the *Cornwall*, July 14th; ARTHUR R. SCHOFIELD, M.B., to the *Goliath*, undated; JOHN F. HALL, M.B., Fleet Surgeon, to the *President*, additional, temporary, for London recruiting head quarters, July 9th; RICHARD C. MUNDAY, Fleet Surgeon, to the *Formidable*, June 22nd; MORRIS C. LANGFORD, Staff Surgeon, to the *Aboukir*, June 22nd; NORMAN IRELAND-SMITH, Staff Surgeon, to the *Leander*, July 8th; GEORGE R MACMAHON, M.B., Staff Surgeon, and HENRY HUNT, Surgeon, to the *Blake*, June 25th; EDWIN S. MILLER, M B, Staff Surgeon, to the *President*, for three months' course at West London Hospital, June 26th; JOHN J. H ROONEY, Surgeon, to the *Leander*, June 25th; FREDERICK E ANLEY, Surgeon, to the *Victory*, additional, for Portsmouth Dockyard, June 24th; HENRY W. W. TOWNSEND, Surgeon, to the *President* for three months' course at West London Hospital, July 11th; F. A. BRICE, Fleet Surgeon, and H. C. WOODYATT, Surgeon, to the *Good Hope*, on recommissioning, July 16th; E. A. PENFOLD, M.B. Fleet Surgeon, and G. TAYLOR, M.B., Staff Surgeon, to the *Terrible*, on recommissioning, July 16th; C E. C. STANFORD, M.B, Surgeon, to the Royal Marine Barrack Dispensary, July 16th; C. J. BOUCHER, M B, Surgeon, to the *Argonaut*, July 17th.

J. O'DONOGHUE, civil practitioner, has been appointed Surgeon and Agent at Baldoyle and Clontarf, June 17th; and A. G. PRICE, civil practitioner, to be Surgeon and Agent at Greystones, June 17th.

ROYAL ARMY MEDICAL CORPS.

MAJOR A. Y. REILY, M.B., retires on retired pay, June 22nd. He was appointed Surgeon-Captain February 5th, 1887, and Surgeon-Major twelve years thereafter. His war record includes: The Dongola Expedition, 1896 (Khedive's medal); the Soudan campaign in 1898, including the battles of Atbara and Khartoum (mentioned in dispatches, British medal, and two clasps to Khedive's medal); South African war, 1902.

The following tour-expired officers have been detailed to proceed from India to England during the ensuing trooping season: Lieutenant-Colonels N. W. KERIN, H. G. HATHAWAY, J. R. DODD, M.B., W. ROWNEY, M.D., D. F. FRANKLIN, H. J. BARRATT, W. A. MORRIS, A. E. TATE, C. C. REILLY, W. TURNER, S. G. ALLEN, B. L. MILLS, M.D.; Majors B. H. SCOTT, L. MAY, E. W. SLAYTER, M.B., R. C. LEWIS, F. G. FAICHNIE; Captains R. S. H. FUHR, D.S.O., J. E. HODGSON, L. W. HARRISON, M.B., E. B. KNOX, M.D., C. C. CUMMING, M.B, T. BIGGAM, M.B., W. M. H. SPILLER, M.B., L. L. G. THORPE, W. S. CROSTHWAIT, J. F. WHELAN, M.B., W. H. ODLUM, W. M. POWER, W. R. P. GOODWIN, E. S. WORTHINGTON, A. J. W. WELLS, M. W. FALKNER, F. E. ROWAN-ROBINSON, M.B, M. F. FOULDS, A. MCMUNN, T. F. RITCHIE, M.B., A. J. WILLIAMSON, M B., H. ROGERS, M.B, W. DAVIS, L. COTTERILL, H. W. LONG, M.B.

INDIAN MEDICAL SERVICE.

FRANK P. WERNICKE has been appointed Lieutenant, February 1st, 1906.

The undermentioned promotions, all of which have been already announced in the BRITISH MEDICAL JOURNAL, have received the approval of the King:—To be Surgeon-General: Colonel Henry Hamilton, M.D., C.B., V.H.S. To be Colonel: Lieutenant-Colonel Douglas ffrench-Mullen, M.D. Majors to be Lieutenant-Colonel: Charles H. L. Meyer, M.D., William H. W. Elliot, M.B., D.S.O., Letterstedt F. Childe, M.B, William R. Clark, M.B., George F. W. Braide, Robert J. Marks, Charles E. Sunder, M.B., Malcolm A. Ker, Herbert Herbert, F.R.C.S., Thomas D. C. Barry, Andrew Buchanan, Lewis G. Fischer, William Vost, M.B., John Garvie, M.B., Clarence E. L. Gilbert, Gerard B. Irvine, Frederick J. Crawford, M.D., Robert Robertson, M.B.

The Royal sanction has also been given to the retirement from the service of Major C. L. Williams, M.D., which has been already recorded in the BRITISH MEDICAL JOURNAL.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

LLOYD T. PRICE, M.B., to be Surgeon-Lieutenant in the 1st Forfarshire. May 22nd.

FRANCIS W. SQUAIR, M.B., to be Surgeon-Lieutenant in the 1st Renfrew and Dumbarton, May 17th.

ROYAL ENGINEERS (VOLUNTEERS).

WILFRED E. ALDERSON, M.D., to be Surgeon-Lieutenant in the 1st Newcastle-on-Tyne Regiment, April 26th.

Surgeon-Lieutenant A. C. TURNER, 1st (Sheffield) Yorkshire (West Riding), to be Surgeon-Captain, May 7th.

VOLUNTEER RIFLES.

F. J. WARWICK, M.B. (formerly Captain Royal Army Medical Corps, Volunteers), to be Surgeon-Captain, 3rd Volunteer Battalion the Essex Regiment, March 20th.

Surgeon-Lieutenant W. S. KERR, M.B., 1st (Hallamshire) Volunteer Battalion the York and Lancaster Regiment, to be Surgeon-Captain, May 7th.

Surgeon-Lieutenant J C. HERBERTSON, 2nd (Renfrewshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders), to be Surgeon-Captain, March 19th.

DAVID M. ALEXANDER to be Surgeon-Lieutenant in the 8th (Scottish) Volunteer Battalion the King's (Liverpool Regiment), February 16th.

WILLIAM R. WILLIAMS to be Surgeon-Lieutenant in the 5th Volunteer Battalion the South Wales Borderers, May 12th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

LIEUTENANT W. BRYCE, M.D., Glasgow Companies, Scottish Command, to be Captain, June 1st.

Lieutenant G. H. L. HAMMERTON, South Yorkshire Bearer Company, to be Captain, April 10th.

CHANGES OF STATIONS.

THE following changes of stations amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during May, 1907:

		FROM	TO
Colonel	H. J. W. Barrow	Lahore	Dalhousie.
Lieut.-Col.	T. P. Woodhouse	,, ...	Kasauli.
,,	B. T. Mecrecry, M.B. ...	Bangalore ...	Shahjehanpore.
,,	W. A. Morris	Rawal Pindi ...	Murree.
,,	J. R. Forrest	Meerut... ...	Delhi.
,,	W. Turner	Kasauli ...	Ferozepore.
,,	F. W. G. Hall, M.B. ...	Dinapore ...	Landour.
,,	H. M. Adamson, M.B. ...	Shahjehanpore	Ranikhet
,,	J. Fallon	Dagshai ...	Multan.
,,	R. Holyoake...	Lahore	Dagshai.
Major	B. H. Scott...	Rawal Pindi ...	Murree.

		FROM.	TO.
Major	T. McCulloch, M.B.	London Dist. ..	Ambala.
,,	C. W. Reilly	Dublin	Calcutta.
,,	A. P. Blenkinsop...	Lucknow ...	Agra.
,,	J. Paterson, M.B	Fort George ...	Irvine.
,,	A. Wright	Devonport ...	Falmouth.
,,	W. T. Mould	Meerut... ...	Sitapur.
,,	F. Smith, D.S O.	Portsmouth ...	Benares.
,,	G. S. McLoughlin, D.S.O., M.B.	Woolwich ...	Colchester.
,,	H. P. Johnson	Taunton ...	Okehampton.
,,	W. G. Beyts	Ambala ...	Sabathu.
,,	E. M. Morphew	Meerut... ...	Kailana.
,,	N. Tyacke	Lahore... ...	Dalhousie.
,,	C. B. Martin, M.B.	Straits Settlements	Netley.
,,	J. G. McNaught	Edinburgh ...	Wynberg, C C.
,,	E. W. Slayter, M.B.	Naini Tal ...	Lucknow.
,,	L. P. More, M.B.	Sialkot	Murree.
,,	R. C. Lewis	Bareilly ...	Chaubuttia.
,,	E. H. Condon, M.B.	Sabathu ...	Jullundur.
,,	K. M. Cameron, M.B.	Ambala ...	Kasauli.
,,	W. Tibbits, M.B.	Delhi	Meerut.
Captain	M. Swabey	Chester ...	Preston.
,,	G. E F. Stammers	Aldershot ...	Tidworth.
,,	T. H. M. Clarke, C.M.G., D.S.O., M.B.	Lucknow ...	Naini Tal.
,,	A. W. N. Bowen	—	Cardiff.
,,	E. P. Connolly	Londonderry	Belfast.
,,	L. W. Harrison, M.B.	Sialkot	Murree.
,,	B S. Bartlett	Colchester ...	Norwich.
,,	J. M. Cuthbert, M.B.	Glencorse ...	Edinburgh.
,,	J. P. J. Murphy, M.B. ...	W. Command	Fleetwood.
,,	B. B. Burke	E. Command...	Woolwich.
,,	R F. Ellery	Devonport ...	Bodmin.
,,	W. R. P. Goodwin	Rawal Pindi ...	Murree.
,,	R. N. Hunt, M.B.	Belturbet ...	Belfast.
,,	J. W. West, M.B.	Ballykinder Camp	,,
,,	A. R. C. Parsons	Devizes ...	Perham Down Camp.
,,	J. S. Bostock, M.B.	Portland ...	Portsmouth.
,,	A. H. McN. Mitchell	W. Command	Warrington.
,,	J. B. Clarke, M.B.	York	Halifax.
,,	R. C. Wilson, M.B.	Belfast... ...	Ballykinder Camp.
,,	F. W. W. Dawson, M.B. ...	Middelb'g, C.C.	Wynberg, C.C.
,,	J. E. H. Gatt, M.D.	Bloemfontein..	Middelb'g, C.C.
Lieut.	K. A. C. Doig	Shahjehanpore	Chaubuttia.
,,	G. B F Churchill	Cawnpore ...	Chakrata.
,,	W. S. Nealor	Meerut... ...	Lebong.
,,	J. A. Anderson, M.B.	Bulford ...	Bloemfontein.
,,	R. P. Lewis	Devonport ...	,,
,,	T. Scatchard	Lucknow ...	Agra.
,,	V. H. Symons	Fort Tregantle	Bloemfontein.
,,	R. A. Bryden	Bulford ...	,,
,,	T. B. Moriarty	Lucknow ...	Agra.
,,	F. C. Sampson, M.B.	Belfast... ...	Simonstown.
,,	P. J. Marett...	Aldershot ...	Malta.
,,	F. A. McCammon, M.B.... ...	Londonderry .	Belfast.
,,	G. B. Edwards	Gosport ...	Tavistock C'p.
,,	W. C. Smales	Birmingham...	Bulford.
,,	T. C. C. Leslie	Aldershot ...	Maritzburg.
,,	A. C. Amy, M.B.	Deepcut ...	Aldershot.
,,	E. Gibbon, M.B.	Aldershot ...	Blackdown.
,,	E. B. Lathbury	Colchester ...	Yarmouth.
,,	J. J. O'Keeffe, M.B.	Portsmouth ...	Hilsea

Major J. D. Moir, M.B., retired pay, has relinquished the medical charge of troops at Great Yarmouth.

Captain J. T. Clapham, retired pay, has been placed in medical charge of troops at Landguard Fort.

Lieutenant W. Ranson, R.A.M.C (Militia), retired pay, has assumed medical charge of troops at Beverley.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,063 births and 3 847 deaths were registered during the week ending Saturday last, June 29th. The annual rate of mortality in these towns, which had been 13 7, 13.1, and 12.7 per 1,000 in the three preceding weeks, further declined to 12.5 per 1,000 last week. The rates in the several towns ranged from 3 9 in Burton-on-Trent, 4.1 in Hornsey, 6 0 in Leyton, 6.3 in Willesden. 7.7 in Northampton 7.8 in Walthamstow and in Devonport, and 7.9 in Norwich to 16.3 in Salford, 16.4 in St. Helens, 16 8 in Bury, 17.4 in Middlesbrough, 17.7 in Sunderland, 19.2 in Huddersfield, and 19 4 in Bolton. In London the rate of mortality was 12.5 per 1,000, while it also averaged 12.5 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1 4 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.7 per 1,000, while among the other large towns the rates from these diseases ranged upwards to 2.7 in West Ham, 2 8 in Rhondda, 2.9 in Wigan and in Bolton, 3.3 in Walsall, 3.4 in Tottenham, and 4.5 in Warrington. Measles caused a death-rate of 1 1 in Bolton, 1.2 in Blackburn, 1.3 in Tottenham and in Sunderland, 1.7 in Derby, 2 2 in Warrington, 2.7 in Walsall, and 2.9 in Wigan; diphtheria of 1.2 in Rochdale; whooping-cough of 1.1 in East Ham in St. Helens, and in Manchester, 1.4 in West Ham, 1.5 in Stockport, and 2 1 in Ipswich; and diarrhoea of 1 2 in Rhondda The mortality from scarlet fever and from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,862, 2,936, and 2,985 at the end of the three preceding weeks, had further risen to 3,022 at the end of last week; 422 new cases were admitted during the week, against 368, 389, and 414 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, June 29th, 954 births and 522 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 19.0, 17 2, and 17.3 per 1,000 in the three preceding weeks, declined again to 15.0 per 1,000 last week, but was 2 5 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 10 0 in Paisley and 10 6 in Leith to 17.0 in Dundee and 22 0 in Greenock. The death-rate from the principal infectious diseases averaged 2 2 per 1,000 in these towns, the highest rates being recorded in Greenock and Perth. The 259 deaths registered in Glasgow included 2 which were referred to measles, 2 to diphtheria, 20 to whooping-cough, 5 to diarrhoea, and 16 to cerebro-spinal meningitis. Two fatal cases of measles, 3 of whooping-cough, 2 of diarrhoea, and 3 of cerebro-spinal meningitis were recorded in Edinburgh; 6 of whooping-cough and 1 of cerebro-spinal meningitis in Dundee; 2 of whooping-cough and 3 of diarrhoea in Aberdeen; and 2 of diarrhoea in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, June 22nd, 515 births and 330 deaths were registered in six of the principal Irish towns as against 517 births and 379 deaths in the preceding period. The annual death-rate in these towns, which had been 20.3, 23 7, and 18 0 per 1,000 in the three preceding weeks, fell to 14 7 per 1,000 in the week under notice, this figure being 2 0 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 8 6 in Londonderry and 10.9 in Limerick to 18 5 in Belfast and 20 8 in Dublin. The zymotic death-rate in the same six Irish towns averaged 1.2 per 1,000, or 0 4 per 1,000 higher than during the preceding period, the highest figure—2 5—being recorded in Dublin, while Londonderry and Limerick registered no deaths under this heading at all. In Belfast 17 deaths were returned as due to cerebro-spinal fever and 3 as cerebro-spinal meningitis. In Dublin the deaths from the former disease for the past three weeks have been 3, 0, and 5.

During the week ending Saturday, June 29th. 604 births and 335 deaths were registered in six of the principal Irish towns, as against 515 births and 330 deaths in the preceding period. The annual death-rate in these towns, which had been 23.7, 18 0, and 14.7 per 1.000 in the three preceding weeks, rose to 16.3 per 1,000 in the week under notice, this figure being 3.8 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 11.0 in Londonderry and 13.6 in Waterford to 19.0 in Belfast and 19.5 in Dublin. The zymotic death-rate in the same six Irish towns averaged 0 6 per 1 000, or 0.6 per 1,000 lower than during the preceding period, the highest figure—1.5—being recorded in Dublin; while Cork, Londonderry, and Waterford registered no deaths under this heading at all. In Belfast only 4 deaths were ascribed to cerebro-spinal fever, and 2 to cerebro-spinal meningitis. In Dublin the figures relating to the former for the three preceding weeks are 0, 5, and 2.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

ABERGAVENNY: MONMOUTHSHIRE ASYLUM.—Senior Assistant Medical Officer. Salary, £250 per annum.

AYR COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £70 per annum.

BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer. Salary, £104 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary, £100 per annum.

BURNLEY: VICTORIA HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

BURY ST. EDMUNDS: WEST SUFFOLK GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CAIRO: DEPARTMENT OF PUBLIC HEALTH.—Sub-Inspector of Ophthalmic Hospitals. Salary, £500 per annum.

CALCUTTA: LADY DUFFERIN VICTORIA HOSPITAL.—Lady Doctor. Salary, Rs. 550 per month.

CANCER HOSPITAL, Fulham Road, S.W.—Medical Officer in Charge of Electrical Department. Honorarium, £26 5s.

COLCHESTER: ESSEX AND COLCHESTER GENERAL HOSPITAL.—House-Physician. Salary, £80 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary at the rate of £60 per annum

DERBYSHIRE ROYAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum.

EDINBURGH HOSPITAL FOR WOMEN AND CHILDREN.—Female Resident Medical Officer.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £30 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon. Salary, £100 per annum.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon. Salary, £50 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—House-Surgeon. Salary, £100 per annum.

LIVERPOOL STANLEY HOSPITAL.—Assistant Honorary Ophthalmic Surgeon in the Out-patient Department.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant House-Surgeon. Honorarium at the rate of £75 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £100 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, and £5 for washing.

MANCHESTER ROYAL INFIRMARY.—Surgical Registrar. Salary, £80 per annum.

MIDDLESEX HOSPITAL, W.—Medical Officer and Registrar to Cancer Department. Salary, £100 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary, £80 per annum.

NORTHAMPTON GENERAL HOSPITAL.—Male House-Surgeon. Salary, £90 per annum, increasing to £100.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Male Assistant House-Surgeon. Honorarium, £20 for six months.

ROTHERHAM HOSPITAL AND DISPENSARY.—(1) Senior House-Surgeon: (2) Assistant House-Surgeon. Salary, £110 and £80 per annum respectively.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at the rate of £40 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior House Surgeon (male). Salary, £100 per annum.

STAFFORD: STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer. Salary. £150 per annum, rising to £200.

STIRLING ROYAL INFIRMARY.—Resident House-Surgeon. Salary, £80 per annum.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary, £80 per annum.

STOCKTON AND THORNABY HOSPITAL.—House-Surgeon. Salary, £180 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon. Salary at the rate of £50 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—(1) Senior House-Surgeon; (2) Assistant House-Surgeon. Salary, £110 and £75 per annum respectively.

APPOINTMENTS.

COLYER, Stanley, M.B., B.S Lond., D.P.H., House-Physician to the General Lying-in-Hospital, York Road, Lambeth.

COOKSON, F. N., M.D.Lond., F.R.C.S.Eng., Certifying Factory Surgeon for the Stafford District.

COOMBS, Carey, M.D.Lond., Assistant Physician to the Bristol General Hospital.

COURT, E. P., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Horsmonden District, co. Kent.

DICKINSON, J. J., M.B.Camb., M.R.C.S., Certifying Factory Surgeon for the Tenbury District, co. Worcester.

EWING, J. Millar G., L.R.C.P., L.R.C.S.Edin., House-Surgeon to the Wallasey Dispensary and Victoria Central Hospital, Liscard.

FANNING, J. J., L.R.C.P.and S.Edin., L.F.P.S.Glasg., Certifying Factory Surgeon for the Birr District, King's County.

GOOD, A. S., M.R.C.S., L.R.C.P., District Medical Officer of the Torrington Union.

GOODWYN, H., L.R.C.P. and S. Edin., District Medical Officer of the Newton Abbot Union.

GREGOR, J., M.B., Ch.B.Glas., Certifying Factory Surgeon for the Lochwinnoch District, co. Renfrew.

JOHNS, Frederick A., M.B.Lond., M.R.C.S., L.R.C.P., Honorary Physician to the Royal Bath Hospital, Harrogate.

KELYNACK, T. N., M.D., M.R.C.P., Honorary Physician to the Children's Home and Orphanage (Head Quarters: Bonner Road, N.E., and nine country branches).

LEWIS, Thomas, M.B., B.S.Lond., M.R.C.P.Eng., Physician to the Out-patients, City of London Hospital for Diseases of the Chest, Victoria Park, E.

LYON, T. M. M., M.D Edin., Certifying Factory Surgeon for the Mid Calder District, co. Edinburgh.

MACLEAN, S. W., M.B., Ch.B.Edin., Medical Officer of Health, Withnell Urban District.

MORGAN, J. A., M.R.C.S., L.R.C.P., Medical Officer of Health, Llanwrtyd Urban District.

MURRAY, Donald, M.B., C.M.Glas., Certifying Factory Surgeon for the Stornoway District, co. Ross.

PEDDIE, C., L.R.C.P.and S.Edin., Certifying Factory Surgeon for the Withnell District, co. Lancaster.

RICHARDSON, M. J., M.B., Certifying Factory Surgeon for the Wolston District.

RYGATE, J. R., L.R.C.P., etc., District Medical Officer, Woking (West), Guildford Union.

ST. JOHNSTON, Thomas Reginald, M.R.C.S., L.R.C.P., M.S.A., Government Medical Officer, Fiji.

SAUNDERS, Percy W., B.A., M.B., Resident Medical Officer to the City of London Hospital for Diseases of the Chest, Victoria Park, E.

SYMES, J. Odery, M.D.Lond., Physician to the Bristol General Hospital.

WATSON, J. R., M.D., D.P.H.Camb., Medical Officer of Health for the Burgh of Peebles.

WILLIAMSON, Herbert, M.A., M.B., M.R.C.P., Assistant Physician-Accoucheur to St. Bartholomew's Hospital, E.C.

WILTSHIRE, H. P., B.A.Cantab., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Hemsworth District, co. York, and Medical Officer of Health, Hemsworth Rural District.

DIARY FOR THE WEEK.

TUESDAY.

ROYAL SOCIETY OF MEDICINE (Laryngological Section), 20, Hanover Square, 5 p.m.—To elect officers, and consider rules and regulations.

WEDNESDAY.

DERMATOLOGICAL SOCIETY OF LONDON, 11, Chandos Street, 5.15 p.m.—Cases and Specimens.

THURSDAY.

BRITISH GYNAECOLOGICAL SOCIETY, 20, Hanover Square, W., 8 p.m.—Exhibition of Specimens.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Tuesday and Friday, 3.45 p.m.: Pharynx.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m.: The Diagnosis, Prognosis, and Treatment of Pleural Effusions in Children.

LONDON SCHOOL OF CLINICAL MEDICINE.—Clinics: Monday, Medicine, 2.15 p.m.; Surgery, 3.15 p.m.; Ear and Throat, 4 p.m. Tuesday, Medicine, 2.15 p.m.; Surgery, 3.15 p.m. Skin, 4 p.m. Wednesday, Medicine, 2.15 p.m.; Ophthalmology, 3.30 p.m. Thursday, Medicine, 2.30 p.m.; Surgery, 3.15 p.m.; Radiography, 4 p.m. Friday, Medicine, 2.15 p.m.; Surgery, 3.15 p.m. Operations each day at 2.30 p.m. Out-patient Demonstrations: Surgical, daily, 10 a.m.; Medical, daily, 10 a.m. Ear and Throat, Mondays and Thursdays, 12 noon. Eye, Wednesdays and Saturdays, 11 a.m. Skin, Tuesdays and Fridays, 12 noon.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day:—Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eye. Lectures at 5.15 p.m. each day will be given as follows: Monday, Lingering Labour, its Causes and Treatment; Tuesday, Infantile Diarrhoea; Wednesday, Sudden Death.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m.: Amyotonia Congenita. Friday, 3.30 p.m.: Surgery of the Nervous System.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—The following are the clinics and demonstrations for next week: Monday, 10 a.m.: Surgical; 2.30 p.m.: Medical, Throat, Nose, and Ear, *X* Rays. Tuesday, 10.30 a.m.: Medical; 2.30 p.m.: Operations—Surgical and Gynaecological; Wednesday, 2.30 p.m.: Medical, Skin, Eye. Thursday, 2.30 p.m.: Gynaecological Operations—Medical, Surgical; *X* Rays; 3 p.m., Medical (In-patient). Friday, 9.30 a.m., Surgical: 2.30 p.m.: Operations—Medical, Eye; 3 p.m., Medical (in-patient).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics and *X* Rays; 2.30 p.m.: Operations. Monday and Thursday, 2 p.m.: Diseases of the Eye. Tuesday and Friday, 10 a.m.: Gynaecological Operations. 2.30 p.m.: Diseases of Throat, Nose, and Ear. also Wednesday and Saturday, 10 a.m. Tuesday and Friday, 2.30 p.m.: Diseases of Skin. Wednesday, 10 a.m.: Diseases of Children. Lectures—Monday, 12 noon: Pathological Demonstration; 5 p.m.: Clinical. Tuesday: Clinical. Wednesday: Practical Medicine. Thursday and Friday: Practical Surgery.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BUCKLEY.—On June 30th, at 11, Goldsmith Street, Nottingham, the wife of Dr. J. C. Buckley, of a son.

EDGE.—On the 1st inst., at Granville House, Tettenhall Road, Wolverhampton, the wife of Frederick Edge, M.D., F.R.C.S., M.R.C.P., of a son.

REVIE.—At Craigmore, Chikalda, Berars, India, on 7th ult., the wife of the Rev. Dugald Revie, M.B., C.M., Medical Missionary, U.F.C. of Scotland Mission, Wardna, C.P., India, of a son (Malcolm Fairfowl).

MARRIAGES.

MATTHEW—YOUNG.—On June 26th, at Cheadle Hulme, Cheshire, by the father of the bride, assisted by the Rev. W. S. Simpson, M.A., Frederick Crichton Matthew, M.D., F.R.C.S.Edin., of St. Ives, Cornwall, son of the late James Matthew, Corstorphine, N.B., to Janie Marian, elder daughter of the Rev. William Young, B.A., Sedgley Bank, Bramhall.

TRIST—OWEN.—On June 26th, at St. Luke's Parish Church, Chelsea, by the Venerable the Archdeacon of Middlesex, assisted by the Rev. W. B. Trevelyan, Vicar of S. Mathew's, Westminster, and the Rev. Owen Slacke, Curate-in-Charge, Cole's Hill, Bucks (cousin of the bride), John Ronald Rigden Trist, M.R.C.S., L.R.C.P, Crest House, Putney, elder son of Herbert H. Trist, of 22, Vernon Terrace, Brighton, to Louisa Harriet, eldest daughter of E. Annesley Owen, Esq., Barrister-at-Law, of 94, Oakley Street, Chelsea, and of the Inner Temple.

DEATHS.

GAIRDNER.—At Bracondale. Colinton, Midlothian, on Friday, 28th ult., very suddenly, Sir William Tennant Gairdner, K.C.B., LL.D., M.D., aged 82.

JOHNSON.—On the 29th June, at 25, Vernon Gardens, Seven Kings, Ilford, Essex, W. H. Johnson, aged 60 years, late of 725, Commercial Road, E., and previously of Hogsthorpe, Lincs.

REID.—On June 26th, at Harrogate, William Swanstone Spence Reid, M.B., C.M.Edin., of Oakley, Kirkcudbright, aged 50.

BOOKS, ETC., RECEIVED.

Home Gymnastics on Ling's System. By Professor A. Wide, M.D. New York and London: Funk and Wagnalls Company. 1907. 1s.

Jahrbuch für Kinderheilkunde und physische Erziehung. Unter Redaktion von O. Heubner, A. Steffen, Th. Escherich. 65 der dritten Folge, 15 Band, Heft 6. Berlin: S. Karger; London: Williams and Norgate. 1907.

Bibliothek v. Coler-Schjerning. Band XI. Zweite Auflage. Die experimentelle Diagnostik, Serumtherapie und Prophylaxe der Infektionskrankheiten. Von Stabsarzt, Professor Dr. E. Marx. Zweite Auflage. Berlin: A. Hrischwald. 1907. M. 8.

The British Sanatoria Annual. 1907-8. London: J. Bale, Sons, and Danielsson, Limited. 5s.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
JULY.	
7 Sunday ...	
8 MONDAY ...	
9 TUESDAY ...	LONDON: Organization Committee, 11 a.m. LONDON: Special Finance Inquiry Committee, 2.30 p.m. LONDON: Referendum Committee, 4.30 p.m. NORTH NORTHUMBERLAND DIVISION, *North of England Branch*, Annual Meeting, Plough Hotel, Alnwick, 3.30 p.m.
10 WEDNESDAY	
11 THURSDAY...	SOUTH-WESTERN BRANCH, Meeting of Branch Council, Royal Devon and Exeter Hospital, Exeter, 3.15 p.m.
12 FRIDAY ...	LONDON: Central Ethical Committee, 1.45 p.m.
13 SATURDAY...	
14 Sunday ...	
15 MONDAY ...	LONDON: Central Ethical Emergency Subcommittee, 2 p.m.
16 TUESDAY ...	NORTH WALES BRANCH, Annual Meeting, Machynlleth.
17 WEDNESDAY	
18 THURSDAY...	
19 FRIDAY ...	
20 SATURDAY...	
21 Sunday ...	
22 MONDAY ...	
23 TUESDAY ...	LONDON: Metropolitan Counties Branch Council, 3.45 p.m.
24 WEDNESDAY	
25 THURSDAY...	
26 FRIDAY ...	

Date.	Meetings to be Held.
JULY *(Continued).*	
THE ANNUAL MEETING AT EXETER.	
27 SATURDAY...	ANNUAL GENERAL MEETING, Royal Public Rooms, Exeter, 9.30 a.m. ANNUAL REPRESENTATIVE MEETING, immediately after the Annual General Meeting.
28 Sunday ...	
29 MONDAY ...	ANNUAL REPRESENTATIVE MEETING, Royal Public Rooms, Exeter, 9.30 a.m.
30 TUESDAY ...	ANNUAL REPRESENTATIVE MEETING, 9.30 a.m. (*if required*). Adjourned General and Representative Meetings; induction of President, 2.30 p.m. President's Address 8.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
31 WEDNESDAY	ANNUAL REPRESENTATIVE MEETING, 3.15 p.m. (*if required*). Sectional Meetings, 10 a.m. to 1 p.m. Address in Medicine, 2 30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
AUGUST.	
1 THURSDAY...	Sectional Meetings, 10 a.m. to 1 p.m. Address in Surgery, 2.30 p.m. Annual Dinner, 7.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
2 FRIDAY ...	Sectional Meetings, 10 a.m. to 1 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
3 SATURDAY...	Excursions.
4 Sunday ...	
5 MONDAY ...	
6 TUESDAY ...	
7 WEDNESDAY	
8 THURSDAY...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 13TH, 1907.

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ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF COUNCIL.

AT a meeting of the Council, held, by kind permission of the Metropolitan Asylums Board, London, in their Board Room, on Wednesday, July 3rd, 1907, at 2 o'clock in the afternoon,

Present:

Dr. H. RADCLIFFE CROCKER, Treasurer, in the Chair.

Mr. GEORGE COOPER FRANKLIN, LL.D., F.R.C.S., Leicester, Past-President.

Dr. J. A. MACDONALD, Chairman of Representative Meetings.

Dr. JOHN FORD ANDERSON, London
Dr. EDGAR G. BARNES, Eye
Fleet Surgeon E. J. BIDEN, R.N., Fareham (Representative of the Royal Navy Medical Service)
Dr. T. R. BRADSHAW, Liverpool
Dr. J. BRASSEY BRIERLEY, Old Trafford
Colonel DAVID BRUCE, C.B., F.R.S., London (Cape of Good Hope, Eastern and Western Province)
Dr. R. COCHRANE BUIST, Dundee
Dr. W. A. CARLINE, Lincoln
Mr. ANDREW CLARK, D.Sc., F.R.C.S., London
Dr. WILLIAM COLLIER, Oxford
Mr. C. F. CUTHBERT, Gloucester
Mr. E. J. DOMVILLE, Exeter
Lieut.-Colonel DRAKE-BROCKMAN, I.M.S. (ret.), London (Colombo and South Indian and Madras Branches)
Mr. GEORGE EASTES, M.B., London
Professor DAVID W. FINLAY, M.D., LL.D., Aberdeen
Dr. BRUCE GOFF, Bothwell
Dr. D. GOYDER, Bradford
Dr. JAMES HAMILTON, Glasgow
Dr. G. E. HASLIP, London
Dr. T. ARTHUR HELME, Manchester
Sir VICTOR HORSLEY, LL.D., F.R.S., London
Colonel C. H. JOUBERT DE LA FERTÉ, I.M.S. (ret.), Weybridge (Representative of the Indian Medical Service)
Mr. R. H. KINSEY, Bedford
Dr. C. W. MARRIOTT, Reading
Dr. C. J. MARTIN, F.R.S., London (Sydney and New South Wales Branch)
Dr. C. G. DRUMMOND MORIER, London (South Australian and West Australian Branches)
Professor J. T. J. MORRISON, Birmingham
Mr. EDMUND OWEN, LL.D., F.R.C.S., London
Mr. C. H. W. PARKINSON, Wimborne Minster
Dr. FRANK M. POPE, Leicester
Dr. EDWIN RAYNER, Stockport
Mr. H. JONES ROBERTS, Penygroes
Professor ROBERT SAUNDBY, M.D., LL.D., Birmingham
Dr. ST. CLAIR B. SHADWELL, Walthamstow
Dr. CECIL E. SHAW, Belfast
Mr. W. D. SPANTON, Hanley
Mr. C. R. STRATON, Salisbury
Dr. W. J. TYSON, Folkestone
Dr. NORMAN WALKER, Edinburgh
Dr. DENIS WALSHE, Graigue
Mr. F. E. APTHORPE WEBB, Cambridge
Mr. SINCLAIR WHITE, F.R.C.S., Sheffield
Mr. D. J. WILLIAMS, F.R.C.S., Llanelly
Lieut.-Colonel E. M. WILSON, C.B., C.M.G., S. Farnborough (Representative of the Army Medical Service).

Chairman.

Moved by Mr. ANDREW CLARK, seconded by Mr. EASTES, and

Resolved: That the Treasurer take the chair.

Apologies.

Read letters of apology for non-attendance from the President-elect, Mr. H. A. Ballance, Dr. Galton, Dr. J. J. Giusani, Dr. McKenzie Johnston, Dr. J. Murray, Dr. T. G. Nasmyth, Dr. J. Maxwell Ross, Professor W. R. Smith, Mr. T. Jenner Verrall, and Dr. A. T. Wear.

Resignation.

Read letter of resignation of Chairman of Council:

Moor House, West Bromwich,
June 7th, 1907.

My dear Elliston,—When I received the communication from the General Medical Council I was of opinion that no immediate action was necessary, but now I have come to the conclusion that I should resign my membership of the Association, and I shall be glad if the Council will accept it forthwith.

I take this opportunity of thanking the members of the Council and the officers for the valuable assistance and cordial support they have given me during my term of office, and I do thank them most sincerely.

I am, yours faithfully,

Guy Elliston, Esq. HENRY LANGLEY BROWNE.

Moved by the CHAIRMAN, seconded by Colonel WILSON, and

Resolved: That this Council regrets to learn that Dr. Langley Browne, on his election to the General Medical Council, has felt it incumbent on him to resign his membership of the British Medical Association, and desires to place on record its sincere appreciation of the valuable services he has rendered the Association, more especially during the past two years as Chairman of Council. The Council is gratified that the services of Dr. Langley Browne are not to be lost, as on the General Medical Council he will still be furthering the best interests of the medical profession.

Acknowledgement of Vote of Condolence.

Read letter from Mrs. Markham Skerritt acknowledging resolution of condolence on death of her husband, which was ordered to be entered on the minutes.

Death.

The GENERAL SECRETARY reported the death of Sir William Gairdner, a Vice-President of the Association.

Moved by the CHAIRMAN, seconded by Professor SAUNDBY, and

Resolved: That this Council regrets to learn of the death of Sir William Tennant Gairdner, K.C.B., F.R.S., etc.,

and desires to extend its sympathy to Lady Gairdner in her loss. Sir William joined the Association as far back as 1853, and during the many years of his membership held several important positions in the Association. He delivered the Address in Medicine at the Dublin Meeting in 1887, and was President of the Association in 1888 when it met at Glasgow.

1908 Meeting.

Dr. SINCLAIR WHITE reported that steps were being taken by the Sheffield Division to extend an invitation for the Association to hold the annual meeting in 1908 at Sheffield. Also that he had interviewed the coming Lord Mayor and Master Cutler, who are both prepared to help the Sheffield Division.

Prosecutions before General Medical Council.

A motion moved by Professor SAUNDBY, and seconded by Dr. TYSON, with regard to prosecuting cases in the name of the Association before the General Medical Council, having been fully discussed, it was

Moved by Mr. DOMVILLE, seconded by Mr. HASLIP,

That the Council proceed to the next business.

The motion having been put from the Chair, was declared to be carried, 24—14.

Journal and Finance Committee.

Resolved: That the minutes of the Journal and Finance Committee be received.

Moved by the CHAIRMAN, seconded by Mr. EASTES, and

Resolved: That the accounts for the quarter ending June 15th last, amounting to £11,516 5s. 8d., be received and approved, and the Treasurer be empowered to pay those remaining unpaid, amounting to £3,203 17s.

Premises Committee.

Resolved: That the minutes of the Premises Committee be received.

Irish Committee.

Resolved: That the minutes of the Irish Committee be received.

Resolved: That the British Medical Association press upon the Local Government Board for Ireland the urgent necessity which exists for the Board to obtain powers to make compulsory a satisfactory scale of salaries for Poor-law medical officers, and in this way remove the anomalies which exist at present owing to a scale being adopted in some unions and not in others, the latter being in a large majority.

Resolved: That a copy of the foregoing resolution be forwarded to the Chief Secretary for Ireland, and to the Local Government Board for Ireland.

Resolved: That it is advisable that the Irish Committee should be permitted to submit nominations to the Representative Meeting for such places on Committees as may be allotted to Ireland.

Organization Committee.

Resolved: That the minutes of the Organization Committee be received.

Resolved: That the alterations of Rules submitted by the Natal Branch be approved.

Resolved: That the issue of the circular to the Governing Bodies of Medical Schools and circular to newly-qualified practitioners be approved.

Resolved: That in the formation of a Special Committee to deal with any subject of local interest, the Central Council will consult, where the circumstances permit, either the Council of the Branch or the Executive Committee of the Division primarily interested, so as to give an opportunity for its co-operation in nominating members on such Special Committee.

Resolved: That the alterations of rules submitted by the Lancashire and Cheshire Branch be approved.

Resolved: That the present Grahamstown Division (Cape of Good Hope Eastern Province Branch) (subject to such modifications of the boundary between that Division and the present East London Division as may be agreed upon by the two bodies) be constituted a separate Branch under the designation of the Cape of Good Hope Eastern Province Branch.

Resolved: That the present East London Division (Cape of Good Hope Eastern Province Branch) be constituted a separate Branch under the designation of the Border Branch, South Africa.

Science Committee.

Resolved: That the minutes of the Science Committee of June 15th, 1907, be received.

Resolved: That John Paul McGowan, M.A., M.B., be appointed Ernest Hart Memorial Scholar for a period of one year.

Resolved: That Mr. Thomas Shirley Hele be reappointed one of the Research Scholars for a further period of one year.

Resolved: That Willoughby Henwood Harvey, M.B., be reappointed one of the Research Scholars for a further period of one year.

Resolved: That Alfred Edward Barnes, M.D., be appointed one of the Research Scholars for a period of one year.

Resolved: That the Middlemore Prize, consisting of a cheque for £50 and an illuminated certificate, be awarded to Mr. Sydney Stephenson, M.B., F.R.C.S., for his essay on "Ophthalmia Neonatorum."

Public Health Committee.

Resolved: That the minutes of the Public Health Committee be received.

Arising out of Minute 70:

Resolved (*nem. con.*): That, while approving the action of the Chairman in giving general support to the deputation, the Committee (with the concurrence of the Chairman) considers that it should be made clear that the British Medical Association is not committed to all the details of the propositions contained in the Memorandum placed before Mr. McKenna.

It was

Moved by Dr. HELME, seconded by Dr. BRASSEY BRIERLEY:

That in the opinion of this Council Sir Victor Horsley, as a member of the deputation to the Minister of the Board of Education, did not correctly represent the opinion of the British Medical Association in his demands set out in the two questions reported in the JOURNAL. These demands recited, firstly, that the Board should provide that every teacher should be taught science not by a slight degree of hygiene teaching as at present established, but a full teaching of science on an adequate scale. Secondly, that the Board would provide that the inspectors are fully qualified to appreciate the value of the teaching of science.

After full discussion it was

Moved by Dr. POPE, seconded by the CHAIRMAN OF REPRESENTATIVE MEETINGS:

That the Council proceed to the next business.

The motion having been put from the Chair the same was declared to be carried.

On consideration of the following minute of the Committee:

That the Public Health Committee does not think it desirable that the Association should be committed at present to the proposal for the establishment of a medical bureau in the Education Department, and that it be so reported to the Council and Representative Meeting,

it was moved by the CHAIRMAN OF REPRESENTATIVE MEETINGS, seconded by Sir VICTOR HORSLEY:

That the Council do disagree with the recommendation.

The motion having been put from the Chair was declared to be carried, 15—12.

Hospitals Committee.

Resolved: That the minutes of the Hospitals Committee be received.

Resolved: That the following report of the Hospitals Committee be approved:

With regard to a communication from the Stockport Division referred by the Chairman of Council for the consideration of the Hospitals Committee, the Committee reports that the Chairman of the Committee and the Chairman of Representative Meetings have been requested to write to the Stockport Division, stating the circumstances under which mistakes in the office had arisen, and that the Committee, while regretting the occurrence, exonerates the Medical Secretary from all blame in the matter.

Medico-Political Committee.

Resolved: That the minutes of the Medico-Political Committee be received.

Ethical Committee.

Resolved: That the minutes of the Ethical Committee be received.

Resolved: That the adoption of the Model Rules of Procedure by the Cape of Good Hope, Eastern Province Branch, and the Grahamstown Division of that Branch, and by the East Yorkshire Division (East Yorks and North Lincoln Branch) be approved.

Resolved: That the modification by the Salford Division (Lancashire and Cheshire Branch) of the Rules of Ethical Procedure be approved.

Resolved: That the adoption of the "Bradford" Rules and Rule "Z" by the Salford Division (Lancashire and Cheshire Branch) be approved.

Resolved: That the adoption of Rule "Z" by the North of England Branch be approved.

Resolved: That the adoption of the "Bradford" Rules by the Wandsworth Division (Metropolitan Counties Branch), subject to the amendments desired by the Division in Rules (E) and (F), be approved.

Resolved: That Rules 2, 3. 4, and 6, submitted by the Wandsworth Division (Metropolitan Counties Branch), be approved.

Resolved: That the adoption of the "Bradford" Rules and Rule "Z" by the North-East Essex Division be approved.

Resolved: That the alteration of the Ethical Rules submitted by the Lancashire and Cheshire Branch be approved.

Irish Medical Graduates.

Read application from the Irish Medical Schools' and Graduates' Association for permission to hold their meeting during the Annual Meeting.

Resolved: That the application be acceded to.

Candidates.

The election of candidates was then considered, and the twelve candidates whose names appeared on the circular convening the meeting were declared duly elected members of the Association.

Charter.

Moved by Mr. PARKINSON, seconded by Dr. COLLIER,

That the question whether it is desirable to proceed with the application for a Royal Charter forthwith, or postpone it for a time, be referred to the Divisions, having regard to the serious differences of opinion and consequent cost at a time when the rebuilding of the office is straining the resources of the Association.

After discussion, and with the consent of the meeting, the motion was subsequently withdrawn.

Constitution of Committees.

Moved by Mr. EASTES, seconded by Dr. BUIST, and

Resolved: That it is desirable that each member of Council should serve on at least one Committee.

Referendum.

The CHAIRMAN reported that the Referendum Committee had not yet prepared its observations for the approval of the Council for submission to the Divisions in regard to the minutes of the Representative Meeting which were the subject of a Referendum at the June Council meeting.

Moved by Sir VICTOR HORSLEY, seconded by the CHAIRMAN OF REPRESENTATIVE MEETINGS:

That a special meeting of the Council be held for the purpose of considering the observations (prepared by the Referendum Committee) which are to accompany the Referendum ordered by this Council.

The motion having been put from the chair, was declared to be lost 4—11.

CHAIRMAN OF COUNCIL.

Moved by Dr. COLLIER, seconded by Sir VICTOR HORSLEY, and carried unanimously:

That Mr. Edmund Owen, LL.D., F.R.C.S., be elected Chairman of Council for the ensuing three years, vice Dr. Langley Browne, resigned.

Communications.

Read reply from the North Manchester Division to the request of the Council that Divisions, when forwarding resolutions on matters referred to them, should furnish certain information as to the numbers present, absent, and voting, which was received and ordered to be entered on the minutes.

Read communication from the Lancashire and Cheshire Branch relating to a dispute in the Stockport Division, when the CHAIRMAN reported that this matter had been dealt with under the Hospitals Committee minutes.

ANNUAL MEETING AT EXETER.

JULY 27TH, 29TH, 30TH, AND 31ST; AND AUGUST 1ST AND 2ND, 1907.

SECTIONS.

THE following additional synopses of introductions to discussions in the Sections have been received:

SECTION OF PATHOLOGY.

Pernicious Anaemia and Allied Conditions.

The following are the headings of Dr. HUNTER'S paper: (1) Scope of subject; (2) necessity of distinguishing between (*a*) Addison's idiopathic anaemia, (*b*) Biermer's progressive pernicious anaemia, on historical, etiological, pathological, and clinical grounds; (3) the unity of the former disease; the multiplicity of the forms of anaemia included under the latter; (4) nature of Addison's idiopathic anaemia, a remarkable infective disease (infective baemolytic anaemia); (A) Its pathology: blood changes — (*a*) Blood haemolytic changes, lesions. Bone-marrow changes. Relative importance and relation one to another. (*b*) Infective lesions: Glossitic, gastric, intestinal. Naked eye and lantern slide demonstration. (B) Etiology: (*a*) General etiology (insufficiency of ordinary causes of anaemia to produce the whole features of this disease. (*b*) Infective etiology: Rôle of septic infection, specific haemolytic infection. (C) Clinical features and course (distinctive features). (D) Diagnosis (relative importance of (*a*) blood changes, (*b*) clinical features). (E) Prognosis—improved character of. (F) Treatment (results of antiseptic and serum treatment). (5) Progressive pernicious anaemia: The clinical forms of anaemia included under this generic title.

SECTION OF DENTAL SURGERY.

The Causes, Effects, and Treatment of Dental Diseases in Children.

The following is a synopsis of Mr. EDMUND OWEN'S remarks in opening this discussion: The chief *cause* of dental disease in children is imperfect development of the enamel and dentine due to faulty feeding. Any condition tending to the production of rickets favours histological imperfection of the teeth. Sterilized milk is harmful, as are also the speciously advertised patent foods. The present fashion of feeding children does not encourage healthful use of jaws and teeth. Two of the most serious effects of dental disease in children as met with by the general surgeon are septic ostitis of the jaw started by incubation of septic micro-organisms in a carious fang, and septic inflammation of the cervical lymphatic glands. The more quiet form of septic adenitis prepares the tissue for the incubation of the bacilli of tuberculosis. Thus, carious teeth are often found in association with cervical tuberculosis. The most important points as regards *treatment* are the regular inspection of the child's teeth, and the thorough dealing with carious spots; that it is easy to carry conservative principles too far. Prompt extraction of a doubtful tooth is safer than treatment by excavating and filling.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Measures to be Recommended to Secure the Earlier Recognition of Uterine Cancer.

The following is an abstract of the remarks Dr. HERBERT SPENCER intends to make in opening the discussion:

Cancer of the uterus *at an early stage of its growth* is curable in a large proportion of cases by vaginal operations (high amputation of the cervix and vaginal hysterectomy), with a very small immediate risk of life. In more advanced stages it may still be cured by the extended abdominal operation, which, however, has a higher immediate mortality than the vaginal operations. The desirable object is to get cases of cancer in the early stages, whatever be the operation performed. Experience in this country shows that but a small proportion of patients present themselves to gynaecologists at the beginning of the

disease, and that in most of them the disease is too far advanced for even the extended abdominal operation to give a chance of cure. This unfortunate state of things is due to: (1) The patient's ignorance of the early symptoms of the disease; (2) the practitioner's delay in examining the patient who presents the early symptoms of the disease (abnormal haemorrhage or discharge); (3) the disinclination or refusal of the patient to submit to examination; (4) the occasional difficulty in distinguishing between benign and malignant disease of the uterus. The remedy consists in: (1) Diffusion amongst women over 25 years of age of knowledge of the early symptoms of the disease, and of the fact that diagnosis can only be made by means of physical examination; (2) an appeal to all general practitioners to advise examination by finger, speculum, and, if necessary, by removal of growth for microscopic examination in all cases of bleeding and discharge which may be due to cancer; (3) the better education of medical students in practical gynaecology; (4) dilatation with tents and examination of the corporeal cavity with the finger is not less important than the microscopical examination of curettings in the diagnosis of cancer of the corpus. Results obtained in Germany.

Section of Tropical Diseases.

Diabetes in the Tropics.

The following is a revised synopsis of Sir R. Havelock Charles's paper in introducing this discussion: (1) The glycosuria of the tropics—the part dyspepsia plays therein. (2) Peculiarities or modifications of course, physical signs and symptoms, of the tropical diabetic type. (3) The peoples—their habits and surroundings; predisposing and exciting causes of the disease. (4) Incidence as to race, sex, profession, and social status. (5) Peculiarities in urine analysis. (6) Life assurance and diabetes. (7) Complications of a surgical nature and their treatment. (8) Is there any justification in distinguishing diabetes in the tropics from the type of diabetes known in the temperate regions?

Section of Laryngology, Otology, and Rhinology.

Treatment of Chronic Suppuration of the Middle Ear without resort to the Radical (Complete) Mastoid Operation.

The following is a revised synopsis of Dr. William Hill's paper in this discussion. His remarks will be limited to the *value of the various operative procedures performed through the meatus* in the treatment of purely chronic suppuration apparently due to disease confined to the tympanum and antrum. Post-auricular operations of the type of (1) Schwartze's antrotomy; (2) Küster's procedure of antrotomy *plus* removal of more or less of the posterior meatal wall; and (3) Stacke's more radical extension of these measures, including removal of the external attic wall and of the malleus and incus, will only be alluded to for the purpose of comparison of results with those of *meatal ossiculectomy* and *external atticotomy*.

Section of State Medicine.

The Co-ordination of the Public Medical Services.

The following is a summary of Dr. Newsholme's paper in introducing the discussion: The scope of preventive medicine is no longer confined to germ-borne diseases, but extends to such early treatment of any disease as will secure a less severe or less protracted later stage of disease.

The community as well as the individual is interested in this wider definition of preventive medicine, though, as shown by the serious loss of life and health still due to avoidable causes, this is only partially realized. Poverty and disease act in a vicious circle, and the practical problem considered in this paper is the means by which people may be prevented from becoming poor by preventing them from becoming sick.

Official and voluntary agencies now at work show how much is already being done in the communal treatment and prevention of sickness. The list of these agencies given in the paper shows that the distinction between prevention and treatment has never been maintained. A rapidly-increasing proportion of total sickness is being treated in voluntary and in State or rate supported institutions.

Are we getting a satisfactory return for this increasing burden on rates, taxes, and charity? Whether viewed from the standpoint of patients, doctors, or of the public health, the present state of the medical service must be condemned as unsatisfactory.

The conditions of private medical practice among the poor are admittedly most harassing and unsatisfactory to the doctor. To the patient they are equally unsatisfactory, for (1) diagnosis is belated, and (2) treatment is curtailed owing to expense. (3) In dispensaries, etc., there is a serious waste of time. (4) There are no co-ordinated arrangements for medical consultations. (5) Valuable information as to the incidence of disease is wasted. (6) There is a great waste of information as to the existence of conditions conducing to disease.

These defects can be overcome, as is seen in the co-ordinated arrangements where the notification of consumption is successfully at work. Thus the visit of an officer to the notified patient sets in operation all the prophylactic, curative and sanitary measures which are needed, equally for the welfare of the patient and of the public. Undetected cases are recommended for diagnosis and treatment. Sanatorium training and treatment are secured.

These defects are not overcome, for instance, when the organization for the medical supervision of scholars is separate from the general public health administration of a district. Much of the medical inspection of scholars if it is to be efficient must be done by interviewing parents, and much of it involves home visits. The home is the point from which many of the evils discovered by medical school inspection will have to be attacked and controlled. In actual fact parents will not tolerate dual medical examinations for school purposes, and on the other hand neither school doctor nor medical officer of health fulfil the complete needs of the case. These will only be met when district doctors are appointed by each municipality, and these doctors are co-ordinated with the mechanism of preventive medicine, enabling us to secure the early systematic and unstinted diagnosis and treatment of all disease before, even more than at, school ages.

The present state of medical service is evidently transitional. Neither provident dispensaries nor cries against "hospital abuse" and "undercutting" practice have been able to hinder the steady progress towards the treatment of disease at the expense of the community; nor is it possible to arrest this trend. What has hitherto been done in the collective treatment of disease is merely a phase in the evolution of the system which will effectually ensure the early recognition and proper treatment of all diseases at the expense of the community. Such a system would justify itself economically by the corresponding reduction of sickness and of inefficiency; in short, the justification of a municipal medical service both economically and medically consists in its being a branch of a general system of preventive medicine. This necessarily implies that it must centre round an expanded Public Health Medical Service, embracing every phase of disease and every means for maintaining health. By this means information of preventive value will no longer be allowed to run into culs-de-sac and be lost, preventive medicine being regarded as a whole, and its many fragmentary portions being no longer allowed to continue relatively impotent by being detached from single executive control.

The Reduction of Infant Mortality by Better Management and Control of the Milk Supply.

The following is a synopsis of Professor Kenwood's remarks in opening the discussion: A great waste of infant life results from the use of raw milk; but statistical evidence must be somewhat discounted. The present milk supply can (and must) be made cleaner and safer but absolute cleanliness and safety are unattainable. The use of raw milk for infant feeding should therefore be discouraged, at least during the summer. Suggestions for obtaining a cleaner and safer milk supply. The general neglect of sanitary authorities to do their duty. Many dairy companies do the work of the defaulting sanitary authorities. Despite all our efforts to foster breast-feeding a large proportion of infants will be artificially fed, and such feeding must be made as safe as possible. Infant consultations preferred to municipal milk dépôts. A general tendency to grossly exaggerate the dangers o

sterilized milk. Some facts and arguments in favour of its use. Reasons why pasteurized milk is to be preferred. A bottled supply advocated. A recommendation.

Sufficient Supply of Wholesome Water.

Dr. J. MITCHELL WILSON, in introducing this discussion, will deal with the following points: The requirements of the Act. Distinction between the needs of towns and villages. A sufficient supply under the Act really means a sufficient supply for purely domestic purposes. The theoretical estimates of this amount vary. A better estimate can be obtained from the experience of villages where water is drawn from a main through meters. These show theoretical estimates to be exaggerated, with the result that water schemes are made to appear more unduly costly than in practice they should really prove. Reasons are given for considering that a supply of six gallons a head as a minimum meets the requirements of the Act when water has to be stored in cisterns.

NAVAL AND MILITARY SECTION.

Treatment Afloat of Syphilis.

The following is a synopsis of Surgeon C. B. BUSHE's paper:

(1) Necessity for keeping all cases of venereal sores, and some cases of urethral discharge, under regular observation even after these conditions have disappeared, with a view to the detection of symptoms of constitutional syphilis. (2) Necessity for sending "venereal cases" to accompany men wherever they may be drafted in order to inform medical officers of their condition, and the amount and nature of the treatment they have had. (3) The term "syphilis" only to be used to mean constitutional syphilis. (4) Particular attention paid to informing men of the nature of their disease, treatment necessary for its cure, and its effect if uncured on themselves and others. Printed rules to this effect. (5) When to allow full liberty to syphilitics. Benefit of routine weekly inspection of all men suffering from syphilis. (6) Description of the administration of mercury by intramuscular injection as the most serviceable method. (7) Necessity for local applications to active lesions; value of solid copper sulphate for this purpose. (8) Marginal case notes written in on medical history sheets.

Treatment Afloat of Burns.

The following is an abstract of the remarks of Staff Surgeon P. T. SUTCLIFFE in opening the discussion: (1) Remarks to be confined to the more severe cases where the patient is landed at the earliest opportunity and sent to hospital. (2) Choice of dressing to be made, with some thought of those who will treat the patient when in hospital. (3) Forms of dressing. (*a*) Powders, short remarks on. (*b*) Oils, disadvantages of (especially carron): Not antiseptic; does not absorb discharges; requires frequent change of dressing; dirty with regard to linen, etc.; difficult to remove when other applications are chosen; space occupied by is considerable in men of war. (*c*) Lotions, advantages of: Aseptic and antiseptic; discharges are absorbed; requires less frequent change; has stimulating properties; space occupied is inconsiderable; choice of lotion. Remarks chiefly on the value of picric acid as an application and the dangers of storing. General advice to use lotions in preference to oils.

TRIPS AND CIRCULAR TOURS IN THE NEIGHBOURHOOD OF EXETER.

EXETER is a particularly convenient tourist centre; by a glance at the map it will be seen that railway lines radiate from it in all directions. The following information is compiled so that members may readily find the easiest and cheapest method of seeing any particular part of the country.

Tickets to all these places (except the excursions especially named) can be obtained (on production of member's ticket) at a reduced rate for the return journey.

BIDEFORD, WESTWARD HO, CLOVELLY.

Bideford is two hours by rail from Exeter, Clovelly an additional two hours by coach. There is a daily excursion by the L. and S.W.R. to Clovelly via Bideford and thence by coach. Return fare from Exeter, including coach, 8s.

LYNTON, LYNMOUTH, WOODY BAY, WATERSMEET.

Lynton and Lynmouth are between three and four hours by L. and S.W.R. from Queen Street, change at Barnstaple. Watersmeet and Woody Bay are reached by walking or driving from Lynmouth. There is an excursion by the L. and S.W.R. on Monday, Wednesday, and Saturday. Return fare from Exeter, 5s. 3d.

A special coaching trip to Lynton, starting from Dulverton and passing over some of the most wild, beautiful, and romantic parts of Exmoor, will be arranged if there are sufficient members and their friends to make up a coaching party. The return journey from Lynton would be made by rail. This will allow about two hours to see Lynmouth.

SEATON AND LYME REGIS.

Seaton.—L. and S.W.R. (Queen Street), change at Seaton Junction. One hour by rail from Exeter.

Lyme Regis.—L. and S.W.R. (Queen Street), change at Axminster. One and a half to two hours from Exeter.

These places are 7 miles apart, and the well-known Landslip is between the two.

On Wednesday there is a circular tour from Exeter, which may be taken either from Seaton to Lyme or vice versa, passengers finding their own way between the two places. Fare, 2s. 6d.

EXMOUTH AND BUDLEIGH SALTERTON.

L. and S.W.R. (Queen Street), half an hour from Exeter.

Steamer Excursions.—The well-appointed steamers, *Duke of Devonshire* and *Duchess of Devonshire*, leave Exmouth daily for trips up and down the coast. A time-table of these excursions will be placed in the Reception Room. A steam launch makes frequent journeys from Exmouth to Starcross.

OTTERY ST. MARY AND SIDMOUTH.

L. and S.W.R. (Queen Street), change at Sidmouth Junction. Both places are about one hour from Exeter.

The Collegiate Church at Ottery is a fine old church, and is a half-scale copy of Exeter Cathedral.

STARCROSS, DAWLISH, TEIGNMOUTH, NEWTON ABBOT, TORQUAY, PAIGNTON, DARTMOUTH, AND TOTNES.

There are frequent trains from St. David's Station (G.W.R.) to these places.

A steam launch to Exmouth meets most of the trains at Starcross. This makes a short circular land and sea trip, members returning by rail from Exmouth if preferring to do so.

Dartmouth can be taken *en route* by three different circular trips as under.

1. Rail to Dartmouth, thence by steamer up the Dart to Totnes, returning to Exeter by rail or vice versa according to tide. Fare, inclusive of steamer, 3s. 9d.

2. To Kingsbridge by rail, Kingsbridge (via Torcross and Slapton Sands) to Dartmouth by coach, thence by rail to Exeter. Fare, inclusive of coach, 5s. 6d.

3. Sea trip by steamer from Exmouth to Dartmouth.

At Torquay, Dr. Courtenay Dunn (Fair View), offers to secure lodgings for members who write to him enclosing a stamped envelope; accommodation can, he states, be obtained at very reasonable rates.

DARTMOOR COACHING DRIVES.

1. A circular tour by G.W.R. to Moreton Hampstead, thence across Dartmoor to Prince Town by coach, returning by rail via Plymouth. This trip opens up some of the choicest scenery in Devonshire, passing across the centre of Dartmoor and bringing under notice well known places of moorland interest, amongst which are Wistman's Wood, Two Bridges, Dartmeet, Crocken Tor, Grimspound and Prince Town. The tour is made on Monday, Wednesday, Thursday and Saturday. Inclusive fare, 8s. 6d.

2. Circular trip by G.W.R. to Ashburton, thence through the Buckland and Holne Chase drives to Prince Town Convict Prison and enabling visitors to see the fine stone avenues above Merivale Bridge on the way back to Tavistock, returning thence by L. and S.W.R. to Exeter. This drive is considered to pass through some of the prettiest of the Dartmoor scenery. The tour can only be made if there are sufficient numbers to make a brake party. Members anxious to make the excursion will be requested to place their names on a list in the Reception Room.

3. There are daily coaching drives over Dartmoor, starting from Newton Abbot and Bovey Tracey. These drives take in Haytor Rocks (1,500 ft.), Bowerman's Nose Rock, the Logan Stone, Manston and Becky Falls. One of these drives is well worth making.

4. *Dartmoor Convict Prison.*—Dr. Dyer, P.M.O., has obtained permission from the authorities to show thirty members over the convict prison, and has kindly offered to show round the prison ten members on the Wednesday, ten on Thursday, and ten on Friday, and to provide tea afterwards. To reach the prison, a circular tour by rail to Ashburton, thence by coach through the Holne Valley and across Dartmoor to the prison, returning via Tavistock to Exeter, has been arranged if sufficient numbers apply, particulars of which will be found in the Reception Room.

5. *Dartmoor Sanatorium* (near Chagford).—Dr. A. Scott Smith will be pleased to see any members interested in sanatoriums and anxious to view this sanatorium. Wagonettes will meet motor bus (L and S.W.R.) at Chagford and drive members to the sanatorium, and they will be provided with luncheon and tea. Notice will have to be given.

6. *Didworthy Sanatorium.*—The Committee of this sanatorium will be pleased to see any members interested in sanatoriums. Carriages will take them from Brent Station (G.W.R.), and a light luncheon will be provided. Notice will have to be given.

Exmoor Coaching Excursions.

As there are no circular excursions over Exmoor by the railway companies, coaching expeditions can only be arranged if there is a sufficient number of members and their friends to make a coaching party. Exmoor is the country of the Doones and the home of the wild stag. The wildness and loneliness of this vast expanse of hilly country has a peculiar charm of its own, and is well worth seeing. The railway journey to Dulverton, whence the coach drives start, passes up the lovely Exe Valley. Dulverton is reached by Great Western Railway from St. David's Station.

Boscastle and Tintagel.

There is a daily cheap excursion to these interesting places by the London and South-Western Railway. The tour is taken by rail to Camelford, thence by coach or char-à-banc to Boscastle and Tintagel, returning to Camelford. The drive passes through delightful scenery with excellent sea views throughout, and visits the strange old-world harbour of Boscastle and the sequestered glen and waterfall of St. Nighton, the fabled trysting place of the Knights of the Round Table. Fare, including coach drive, 5s.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

BATH AND BRISTOL BRANCH:

Bath Division.

The annual meeting of the Bath Division was held at the Royal United Hospital on June 28th, Mr. Beaumont in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Election of Officers.—The following gentlemen were elected office-bearers: *Chairman*, Mr. Lace; *Vice-Chairman*, Mr. Beaumont; *Honorary Secretary and Treasurer*, Mr. Beath; *Re-elected Members of Executive Committee*, Dr. Briscoe, Mr. Lace, Dr. Symons, Dr. Wigmore; *Newly-elected Members of Executive in place of Retiring Members*, Dr. Carsberg, Mr. Goss, Dr. Walsh, Dr. Preston King, Dr. Norburn—the foregoing members of Executive to serve on Branch Council; Mr. Scott and Mr. Curd were also elected as extra members of the Executive Committee.

Annual Report and Balance Sheet.—The annual report and balance sheet for the past year were then presented and adopted.

Annual Representative Meeting.—It was decided that special matters referred to Divisions be voted upon at the discretion of the Representative except that concerning the ethics of medical consultation, upon which the following resolution was passed. Resolved:

> That, in the opinion of this Division, it is undesirable for one practitioner to meet in consultation another practitioner who professes some special peculiar system of treatment which the proposed "consultant" believes to be fallacious.

It was decided that the Representative be instructed to vote at the annual meeting in accordance with this resolution.

BIRMINGHAM BRANCH:

Bromsgrove Division.

Election of Officers.—The following gentlemen were elected officers at a meeting held on June 26th: *Chairman*, T. E. Underhill, M.D., Barnt Green; *Vice-Chairman*, F. W. J. Coaker, F.R.C.S., Bromsgrove; *Honorary Secretary*, E. W. Parsey, M.B., Glenavon House, King's Norton; *Representative for Representative Meeting*, Mr. M. A. Messiter, Dudley.

BORDER COUNTIES BRANCH:

English Division.

The inaugural meeting of this Division was held at the Crown and Mitre Hotel, Carlisle, on Friday, June 21st, at 3.15 p.m.

Election of Chairman.—Dr. Graham (Carlisle) was elected Chairman for the ensuing year.

Rules.—It was resolved that the rules of the old North and West Cumberland Divisions, with the necessary verbal alteration, be the rules of the new English Division with the following additions: (1) That the Branch Secretary be *ex officio* a member of the Division Committee; (2) that the Division Executive Committee consist of six members.

Election of Office-bearers.—The following office-bearers were then elected for the ensuing year: *Vice-Chairman*, Dr. J. H. Dudgson (Workington); *Honorary Secretary*, Mr. Norman Maclaren (Carlisle); *Representative to the Representative Meetings*, Dr. Harrison Mitchell (Cockermouth); *Representatives on the Branch Council*, Dr. J. W. Crerar (Maryport), Dr. Donald (Carlisle), Dr. Edington (Penrith), Dr. Penny (Cockermouth); *Executive Committee*, Dr. Barnes (Carlisle), Dr. Bowser (Penrith), Dr. Burnett (Keswick), Dr. Crerar (Maryport), Dr. Doughty (Dalston), Dr. G. B. Muriel (Whitehaven).

GLASGOW AND WEST OF SCOTLAND BRANCH:

Glasgow North-Western Division.

The annual meeting of this Division was held in the Board room, Western Infirmary, on Tuesday, June 25th, at 8 45 p.m., Dr. D. J. Mackintosh, M.V.O., presiding.

Confirmation of Minutes.—The minutes of the last meeting were read and approved.

Report of Representative.—Dr. Caskie gave a very interesting and instructive report of the Meeting of Representatives at London in May. His report helped members to understand the clauses of the proposed Charter.

Election of Officers.—The following gentlemen were elected office-bearers and members of the Committee for the ensuing year: *Chairman*, Dr. D. J. Mackintosh, M.V.O.; *Vice-Chairman*, Dr. J. Galbraith Connal; *Secretary and Treasurer*, Dr. George Burnside Buchanan; *Representative for Representative Meetings*, Dr. D. J. Mackintosh, M.V.O.; *Representatives on Branch Council*, Dr. Mackintosh and Dr. Buchanan; *Executive Committee*, Drs. Wm. Caskie, A. Thomson Campbell, J. Donald, J. C. Edmiston, A. G. Hay, John Morton, Daniel McNicol, and Thos. Richmond.

DUNDEE BRANCH.

The annual meeting was held at the Dundee Royal Infirmary, May 10th, at 3.30 p.m.

Confirmation of Minutes.—The minutes of the last meeting were confirmed.

Election of Officers.—The following gentlemen were elected officers for the ensuing year: *President*, C. R. Marshall (Dundee); *President-elect*, G. A. Peterkin (Forfar); *Past-President*, G. C. Dickson (Carnoustie); *Vice-Presidents*, M. F. Anderson (Dundee), D. Laing (Arbroath); *Honorary*

Treasurer, D. M. Greig (Dundee); *Council*, J. Broom (Kirriemuir) (elected 1906), A. J. Duncan (Dundee) (elected 1906), R. Soutar (Montrose) (elected 1906), H. C. Colman (Broughty Ferry), G. Halley (Dundee), W. Malcolm; *Honorary Secretaries*, R. C. Buist (Dundee), A. P. Low (Dundee).

Treasurer's Report.—The Treasurer's report was presented as follows:

1905.					
Cash in hand	£12	1	2		
Per General Secretary... ...	21	12	6		
	£33	13	8		
Hire of rooms	£2	0	0		
Postages	0	1	9		
Secretaries' expenses	4	19	1		
Printing, etc.	11	11	4		
Clinical meeting	4	3	6		
	£22	15	8		
Credit balance for 1905 ...	...		...	£10	18 0
1906.					
Cash in hand	£10	18	0		
Per General Secretary ...	22	1	0		
	£32	19	0		
Secretaries' expenses	£2	5	0		
Postages	0	0	8		
Printing, etc.	9	1	5		
	£11	7	1		
Credit balance for 1906 ...	...		...	£21	11 11

Other Business.—The other business consisted in receiving the report of Representative Member of Council, electing a Representative to the Annual Representative Meeting at Exeter, and nominations for representation of the conjoint Branches. At 4 p.m. there was a clinical meeting and museum.

Dinner.—At 6 p.m. the members dined together in the Queen's Hotel, G. C. DICKSON, M.D. (Carnoustie), President, in the chair.

EAST ANGLIAN BRANCH.

THE annual meeting of the East Anglian Branch of the British Medical Association was held at the Town Hall, Ipswich, on Thursday, June 20th, when there was a good attendance.

New Members.—At the Council meeting the following were elected as members: R. E. Pitts, M.R.C.S., L.R.C.P. (Chelmsford), W. Redpath, M.B.Lond. (Woodbridge), S. Borrodaile Smith, M.B., B.C.Camb. (Lowestoft).

President-elect.—A letter was read from Dr. D. G. Thomson, of Norfolk County Asylum, Thorpe, Norwich, accepting the office of President-elect of the Branch.

Autumn Meeting.—It was decided to hold the autumn meeting at Cromer at the end of September.

Luncheon.—Luncheon was afterwards provided in the library of the Town Hall by kind invitation of the President-elect (Dr. R. W. Brogden). Some fifty members partook of luncheon, and the Mayor of Ipswich (Mr. W. Orford White) was also present as a guest.

Confirmation of Minutes.—At the general meeting, which was held after luncheon, the minutes of the last meeting were read and confirmed.

Report of Council.—The following report of Council was presented: The Council have pleasure to report that the Branch is in a prosperous condition. Twenty-three new members have been elected. There are 420 members in the Branch, exclusive of Associate members. The annual meeting was held at Southend on June 26th, under the presidency of Dr. Clough Waters. The meeting was largely attended and was most successful. Luncheon was given by the President, and was attended by about one hundred members and friends, including the Mayor of Southend and Sir Frederick Treves. The PRESIDENT addressed the members on Immediate Treatment in Fractures, and at the conclusion he was accorded a hearty vote of thanks for his interesting and valuable paper. Sir FREDERICK TREVES kindly gave an address which was much appreciated. The Council desire to express their warm thanks to Dr. and Mrs. Clough Waters for their unbounded hospitality to every one present, and also to the Southend Division for the way in which they carried out the arrangements. The autumn meeting was held at Felixstowe on October 4th. Interesting papers were read by Dr. Sinclair Holden, Dr. Hawell (Felixstowe), and Dr. Pringle (Ipswich). A special meeting of the Council was held at Ipswich on March 7th for the consideration of the reports of the Division. The work of the Division has been most satisfactory. Many papers dealing with ethical and scientific subjects have been read, and much excellent work has been done. The spring meeting was held at Witham on April 9th. Papers were read by Dr. S. W. Curl and Dr. Penry Rowland. The Council wish to express their thanks to Dr. Gimson, of Witham, for his kindness on that occasion. It was resolved that the annual meeting in 1908 should be held at Harwich, and that Dr. Thomson, of the Norfolk County Asylum, should be invited to become president. Dr. Thomson has replied in a kind letter accepting the honour. A grant of £10 was given to the South Wales Fund to help the petitioners in their fight with the Miners' Committee of Ebbw Vale.

Election of Officers.—The following gentlemen have been elected for 1907-8: *President*, Dr. R. W. Brogden, Ipswich; *President-elect*, Dr. D. G. Thomson, Norfolk County Asylum, Thorpe, Norwich; *Vice-Presidents*, H. B. Walker, Esq. (Lowestoft), S. J. Barton, Esq., M.D. (Norwich), A. Clough Waters, Esq., M.B. (Southend); *Secretary for Essex*, Dr. B. H. Nicholson (Colchester); *Secretary for Norfolk*, Mr. H. A. Ballance (Norwich); *Secretary for Suffolk*, Dr. J. Gutch (Ipswich); *General Secretary and Treasurer*, Dr. B. H. Nicholson (Colchester); *Members of the Central Council*, E. G. Barnes, M.D., and Mr. H. A. Ballance, M.S. (Norwich).

Financial Report.

Cr.	£	s.	d.	*Dr.*	£	s.	d.
Capitation grants received from General Secretary	82	18	6	Capitation grants to Divisions...	39	12	0
Balance in hand, December 31st, 1905	39	15	1	Hire of rooms	1	1	0
				Grant to Secretary for expenses	21	13	6
				Dr. Nicholson's travelling expenses	2	7	6
				Mr H. A. Ballance's travelling expenses	0	16	7
				Dr. Gutch's travelling expenses	0	18	6
				Balance in hand, December 31st, 1906	56	4	6
	£122	13	7		£122	13	7

Introduction of New President.—The PRESIDENT (Dr. Clough Waters) introduced Dr. R. W. Brogden, of Ipswich, as President for the year 1907-8.

President's Address.—Dr. BROGDEN having returned thanks for the honour conferred upon him, delivered his presidential address on appendicitis.

Papers.—Dr. HOLLIS (Woodbridge) read a paper, Notes on nine cases of prostatectomy; Dr. MULLOCK (Southwold), Notes on a case of acute appendicitis in which the patient underwent ten major operations.

Cases.—The following cases were shown: Dr. R. W. BROGDEN (Ipswich): (1) Abdominal tumour, (2) transposition of viscera. Mr. H. A. BALLANCE, F.R.C.S. (Norwich): Case of facial paralysis, treated by anastomosis of the facial and spinal accessory nerves, and in connexion with this exhibited a series of temporal bones, normal and pathological, to illustrate its surgical relationship, and the operations necessary for the treatment of the complications of middle-ear disease. Dr. HOLLIS (Woodbridge): Case of cerebral tumour. Dr. GUTCH (Ipswich): Case of cerebral tumour. Mr. J. STADDON (Ipswich): Case of pseudohypertrophic paralysis. Dr. CAIE (Bury St. Edmunds): Two cases of pseudohypertrophic paralysis in brothers. Mr. A. Y. PRINGLE (Ipswich): (1) Case of congenital dislocation of both patellae, (2) case of congenital hip disease treated by Lorenz's method. Mr. S. O. EADES (Ipswich): Case of heart disease.

Specimens.—Dr. H. H. BROWN (Ipswich): Specimen of malignant disease of colon. Mr. H. A. BALLANCE: Specimens of temporal bone. Dr. GUTCH (Ipswich): Vesical calculus from child, aged 2 years. Dr. CHICHESTER (Colchester): Vesical calculus. Dr. W. W. SINCLAIR (Ipswich): Twelve specimens illustrative of diseases of the eye.

Microscopic Specimens.—Dr. BROWN (Ipswich): Illustrative of blood diseases. Dr. HAVELL (Felixstowe): Illustrative of phagocytosis.

Water-colour Drawing.—Lieutenant-Colonel HATCH, F.R.C.S. (Norwich): Pictures of mycetoma or fungus foot of India.

Tea.—Subsequently afternoon tea was served by kind invitation of Dr. and Mrs. Brogden, and Dr. and Mrs. Gutch, at 12, Lower Brook Street.

Exhibition of Instruments, etc.—Instruments were shown by Down Bros.; drugs by Burroughs, Wellcome and Co.; plasters, etc., by Seabury and Johnson.

LANCASHIRE AND CHESHIRE BRANCH.

THE seventy-first annual meeting of this Branch was held, by the kind permission of the Council of the University of Manchester, in the Medical School Buildings, on Thursday, June 20th; 150 members and several visitors were present. The chair was taken at 2 p.m. by Dr. WOLSTENHOLME, one of the Vice-Presidents, in the unavoidable absence of the retiring President, Sir James Barr. The usual routine business was transacted.

Election of Officers.—The following officers were elected: *President-elect*, Dr. C. J. Renshaw; *Vice-Presidents*, Dr. Karl Grossmann and Dr. J. Brassey Brierley; *Secretary*, Mr. F. C. Larkin; *Auditors*, Dr. A. W. German and Dr. S. J. Palmer.

Next Annual Meeting.—Altrincham was chosen as the place of the next annual meeting.

Alterations of Branch Laws.—Certain alterations and additions to the Branch laws, proposed by the Council, were agreed to.

The late Dr. Dreschfeld.—A vote of condolence with the family of the late Dr. Dreschfeld was unanimously passed.

Votes of Thanks.—Votes of thanks were passed to the retiring President, to the office-bearers, representatives, and members of the late Council, and to the auditors. Also to the Council of the University of Manchester for permission to hold the meeting in the University buildings, and to the Vice-Chancellor and to the Dean of the Medical Faculty for their kind assistance.

President's Address.—The new PRESIDENT (T. Arthur Helme, M.D., M.R.C.P., F.R.S.E.), delivered an eloquent and suggestive address entitled "The Unborn Child, its Care and its Rights," and was unanimously accorded a very hearty vote of thanks.

Tea.—At 4 o'clock the members were entertained to afternoon tea by the President and the local members.

Scientific.—From 4.15 to 6.15 the members greatly enjoyed the following excellent scientific programme:—4.15 p.m. Histological Laboratory (Upper Floor). 1. Demonstrations by Professor STIRLING. Some optical and other demonstrations showing: (i) Contrast; (ii) illusions of motion—size, length, and direction; (iii) anaglyphs; (iv) mistakes made by colour-blind persons; (v) three-colour photography by Lumière; (vi) analysis of ciliary motion; (vii) tropo-stereoscope; (viii) stereoscopic view of the fibres of the heart of a frog; (ix) eyes of owl and spider; (x) mixing of colour sensations; (xi) enlarged section of retina; (xii) heart in systole and diastole. 2. Demonstrations: (i) The histology of the special sense organs, by Dr. J. CAMERON; (ii) nerve tracts and fibres, by Dr. D. ORR; (iii) micro-organisms in nerve tissues, by Dr. R. G. ROWS; (iv) staining of cord degenerations by the safranin method, by Dr. N. J. H. GAVIN; (v) specimens illustrating diseases of the spinal cord, by Dr. R. T. WILLIAMSON; (vi) specimens illustrating the pathology of cerebro-spinal meningitis, by Dr. ARTHUR SELLERS; (vii) slides illustrating blood diseases, by Dr. E. M. BROCKBANK and Dr. C. MELLAND; (viii) preparations showing *Spirochaeta pallida*, by Dr. O. CORE; (ix) specimens of sarcoma of the liver, by Dr. CRAVEN MOORE; (x) a method for the physiological standardizing of the digitalis group, by Professor R. B. WILD and Dr. C. S. O'NEILL; (xi) the Roth-Dräger-Krohne oxygen-chloroform-ether apparatus, by Mr. ALEXANDER WILSON. The above preparations were on view during the whole afternoon after 2 p.m.—4.45 p.m. General Theatre. Demonstrations by the Zeiss epidiascope of pathological specimens, slides, and diagrams, Professor J. LORRAIN SMITH, Dr. C. POWELL WHITE, Dr. W. B. ANDERTON, Dr. W. MAIR.—5.15 p.m. Communications: (1) Dr. MILLIGAN, on the diagnosis and treatment of empyema of the maxillary antrum, with lantern slides. The following were omitted from want of time; (2) Dr. MORITZ, on the treatment of the principal symptoms and complications of pulmonary phthisis; (3) Mr. E. STANMORE BISHOP, on the causation of gall stones; (4) Dr. S. ENGLISH, on the prevention of *post partum* haemorrhage; (5) Dr. LANCASHIRE showed a series of cases of diseases of the skin.

Dinner.—At 7 o'clock 80 members sat down to dinner at the Queen's Hotel, under the Presidency of Dr. HELME. After dinner a smoking concert was given, at which about 100 members were present.

The Manchester meeting will long be remembered by all who were present as having been a very great success—socially, intellectually, and from a business point of view.

LIVERPOOL CENTRAL DIVISION.

THE annual meeting was held in June, Dr. A. G. GULLAN, Vice-Chairman, in the chair.

Election of Officers.—In accordance with the rules, the following gentlemen were elected officers and members of the Executive Committee for the ensuing year: *Chairman*, Dr. A. G. Gullan; *Vice-Chairman*, Dr. Hubert Armstrong; *Secretary*, Dr. Frank H. Barendt; *Representatives on the Branch Council*, Drs. A. G. Gullan and F. H. Barendt; *Divisional Representative for Representative Meetings*, Dr. Francis W. Bailey; *Executive Committee*, Drs. Bradshaw, Palmer, and Warrington, and Messrs. Newbolt and Stockdale.

Report of Executive Committee.—The annual report of the Executive Committee setting forth the work of the Division during the past year was received and adopted. This will be sent to all members of the Division.

Annual Representative Meeting.—The business at the forthcoming Annual Meeting of Representatives was discussed, and the Divisional Representative was requested to record his vote as follows:

Hospital Administration (SUPPLEMENT, April 13th, 1907).—The answers to the four questions on p. 190: 1. No. 2. No. 3. Yes. 4. Impracticable.

Medical Inspection of School Children (SUPPLEMENT, February 16th, 1907).—The answers to the four questions on p. 74: 1 and 2 subclause (*b*) was approved of; 3 and 4, no evidence forthcoming.

The Ethical Aspects of Medical Consultation.—The recommendations on pp. 76 and 77 meet with the approval of the Division.

In other matters the Representative would use his own discretion in recording his vote.

Special Representative Meeting.—Dr. BAILEY then communicated his report of the Special Representative Meeting held in London, May 29th and 30th, in reference to the draft Charter. A warm vote of thanks was unanimously given to him for his indefatigable services.

Combined Meetings.—In connexion with combined meetings of the Divisions of Liverpool and Birkenhead the following were appointed members of the Joint Committee regulating such combined meetings: Drs. Frank H. Barendt and Francis W. Bailey, *ex officio*; and Drs. A. G. Gullan, W. B. Warrington, and S. J. Palmer.

Votes of Thanks.—The retiring Chairman, Mr. G. P. Newbolt, and the Secretary, Dr. Frank H. Barendt, were awarded the hearty thanks of the Division for their conduct of the proceedings during the past year.

ROCHDALE DIVISION.

A MEETING was held at the Wellington Hotel on July 2nd. Dr. THORP was in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Representative to Annual Representative Meeting.—Dr. John Brown, of Bacup, was elected Representative of the Division at the Annual Representative Meeting.

This was all the business done.

METROPOLITAN COUNTIES BRANCH:

WANDSWORTH DIVISION.

Annual Dinner.

THE annual dinner of this Division was held in the Adam Chamber of the New Gaiety Restaurant, Strand, on Tuesday, May 28th, when Dr. LLEWELLYN WILLIAMS presided over a large gathering. A new departure was made on this occasion, ladies being invited to be present, which was voted a great success on all hands. Colonel A. N. L. Burne, Drs. de Havilland Hall, Risien Russell, and E. W. Goodall, with Messrs. Hicks and W. G. Spenser, were present as guests of the Division. The dinner was well served and was followed by a capital programme of music, etc., contributed by Mr. Walter Walters, Miss G. Lewis, and Dr. Gay. The loyal toast having been enthusiastically honoured, the "Wandsworth Division" was

proposed by Colonel BURNE and responded to by the CHAIRMAN, after which "The Ladies" were toasted by Dr. MCMANUS in a felicitous speech, which was acknowledged by Dr. GAY. After the Chairman and Secretaries had been similarly honoured, the toast of the "Sister Societies" was given by Dr. MARTIN, and replied to by Dr. MACKINTOSH, President of the South-West London Medical Society. Altogether a most enjoyable evening was spent.

NORTH OF ENGLAND BRANCH.

THE annual meeting of this Branch was held at Gateshead on July 3rd. Previous to the meeting the Division entertained visitors to light refreshments. The chair was taken by the PRESIDENT (Dr. T. Beattie).

Annual Report of Branch Council.—This was taken in sections and considered generally satisfactory, except that relating to the Branch Defence Fund, which was passed "with regret" and on which the President and several other members made pointed remarks. As was mentioned by the President, the moral of it seemed to be that medical men were unwilling to pay for what they got—a moral he was reluctant to draw.

Report of Representatives on Central Council.—On the report of the Representatives on the Central Council, Dr. COX moved that the paragraph, "It is suggested to group this Branch with other three North-country Branches, an arrangement which will not be to our advantage," be altered so that the last few words read, "an arrangement which will require careful consideration by the Divisions." He said that the proposed arrangement was for the purpose of lessening the size of the Council, which many considered too big for efficiency. Now they had a Representative Meeting the Council had become purely an executive body, and it was too large.—The amendment was seconded by Dr. CROMIE and carried *nem. con.*

Election of Officers.—The following gentlemen were elected officers: *President*, Dr. Alfred Cox; *President-elect*, Dr. A. E. Morison (West Hartlepool), proposed by Dr. BEATTIE, seconded by Dr. MEARNS, and carried with applause. Dr. MORISON thanked the meeting for his election. *Honorary Secretaries:* Drs. Hunter and Smurthwaite were re-elected on the motion of Dr. COX, seconded by Dr. A. GREEN. *Representatives on Central Council:* Drs. A. T. Wear and Smurthwaite were declared elected. *Extra Members of Branch Council:* Drs. Peart and J. W. Smith were re-elected, and Dr. Bunting was elected to the vacancy caused by Dr. Morison becoming President-elect.

Vote of Thanks to Honorary Secretary.—Dr. BEATTIE then proposed a hearty vote of thanks to the honorary secretaries for the arduous work done throughout the year. As an old secretary of the Branch he knew the exacting nature of the duties, which seemed to be continually increasing. This was carried with enthusiasm.

Installation of New President.—The new President (Dr. A. Cox) then took the chair, and proposed a vote of thanks to the retiring President. He said he had been a devoted Secretary, an excellent Representative on the Central Council, and a no less excellent President, and the Branch owed him a great deal. This was carried with acclamation, and Dr. BEATTIE responded. He said he had endeavoured to carry out the duties as he understood them and so as not to be behind his predecessors. His ideal of the Association was a high one and would not be attained until every reputable member of the profession was a member of it.

President's Address.—Dr. COX read his paper on The Transformation of the British Medical Association, which was well received. On its conclusion Dr. TODD proposed a vote of thanks to the President for an address which was quite out of the ordinary line of addresses so far as that Branch was concerned. Dr. MEARNS seconded, and it was passed with acclamation, with the addition that it should be printed and circulated to the members of the Branch.

Golf and Excursions.—Some of the party then went off to golf, under the guidance of Drs. S. V. Robinson and Arthur Green; while the rest were driven to Ravensworth Castle, where, by the kindness of Lord Ravensworth, they were entertained to tea after being shown round the lovely gardens and part of the castle. The weather was propitious so far as weather can be this year, and a very enjoyable time was spent.

Dinner.—At 7 p.m. forty members from various parts of the Branch sat down to dinner in the Town Hall, Gateshead. There were present also, the Mayor of Gateshead (Alderman Gillies), the Town Clerk (Mr. W. Swinburne), the Chairman of the Board of Guardians (Alderman Affleck), the Clerk to the Guardians (Mr. G. Craighill), and others. After an excellent dinner the following toasts were proposed: "The Mayor and Corporation of Gateshead," proposed by Dr. CROMIE (Blyth), responded to by the MAYOR; "The British Medical Association," proposed by Alderman AFFLECK. He referred to the large sums of money spent by the Association in matters which were quite as much for the public good as for that of the profession, and declared that the Association, in his opinion, would be powerful and well respected in so far as it was organized. Dr. COX, in responding, said that the public did not understand how greatly it was indebted to a profession which, by worrying the Legislature, had brought about such Acts as the Notification of Infectious Disease Act and others which had deliberately cut off part of the doctor's income. As a citizen one rejoiced, but as a medical man one could hardly prevent the silent tear over the cases of typhoid and the like which seemed to have gone for ever. Dr. TODD (Gateshead) proposed the toast of "Our Guests," to which Mr. CRAIGHILL responded.

Presentation to Dr. Cox.—Dr. BEATTIE then proposed the toast of "The President," and said he took it as a matter of course that all wished him most heartily happiness, health, and a pleasant year of office. He had, however, a most pleasant duty to perform, and that was to present to Dr. Cox a small token of their esteem. He referred to the great changes which had taken place in the organization of the British Medical Association in recent years, and he said that to Dr. Cox was due a great deal of the credit for those changes. The Association in general had recognized this by placing him repeatedly on committees of great importance. He had acted as Secretary of the Branch for five years, and had served it on the old Parliamentary Bills Committee and the Central Council. In regard to the work of the Branch he had devoted so much time and energy that every one realized, that it could only be done at the expense of his practice to some extent. Recognizing this and the great services Dr. Cox had rendered to the Association, and consequently to the profession at large as well as to the general public, his colleagues had thought fit to present him with some token of recognition, and had regarded this as a most fitting occasion for such a recognition. Here Dr. Beattie turned and addressing himself to the President, said:

"Dr. Cox, on behalf of the members of this Branch (and I wish to state further that these presents are not confined to the members of the Branch only, subscriptions having been received from members of the profession from Berwick-on-Tweed to Cleveland) I have great pleasure in presenting you with this gold watch. It is inscribed thus:

> Presented to Dr. Alfred Cox, J.P., together with a cheque, by the North of England Branch of the British Medical Association in recognition of his services as their Honorary Secretary, July, 1907.

In addition I have to present you with a cheque, representing £150, which I am sure will go the way of all cheques. In addition to these presents to yourself I am asked to offer to your wife this silver salver, which is inscribed thus:

> Presented to Mrs. Alfred Cox on the occasion of her husband's assumption of the Presidency of the North of England Branch B.M.A. and in recognition of his services as Honorary Secretary.

It is considered by the members that Mrs. Cox has been so robbed of her husband's comradeship by the claims of the profession that this presentation is made to show we are remindful of her sacrifices. On behalf of the members of this Association and also of the profession in the North of England for whom you have laboured so assiduously, I ask you to accept these gifts as an indication of the honour and esteem in which you are held by the whole local profession." [Long continued applause, which was renewed together with musical honours when Dr. Cox rose to respond.] He said:

"Dr. Beattie and my dear colleagues, this is a very proud occasion for me and one I shall always remember.

I cannot, of course, say that it has come on me as a surprise, for I knew that the movement was on foot, but the extent of it has simply overwhelmed me. It is beyond me to say how much I appreciate your generosity." He went on to say that he thought the recognition quite out of proportion to the work when one considered that it was done as a hobby and a labour of love, and had probably been useful in keeping him out of mischief. The recognition also removed one of his favourite declarations, which was that medical politics never paid any one, but after this he would have to admit that they had paid him, both in the joy of work and also in material recognition. He thought of the scores of workers for the Association who had never had any recognition, and he felt humbled. He assured Dr. Beattie that his forebodings as to the fate of the cheque were quite justified, and said how much he admired the watch, which he would have passed round for inspection had he not had his doubts as to its return. As to the present for his wife, that would be quite a surprise for her, and was a pure joy to himself. He then referred to the loyal and cordial way in which his own Division had backed him up in the arrangements for that day, and said that that support by the men who knew him best added enormously to his pride and pleasure. He particularly wished to thank Dr. Kimpster for the capital arrangements he had made for meeting and dinner. He also thanked his colleagues, Drs. Robinson and Green, who had taken charge of the golfers—a most responsible task from the little he knew of golfers. He asked the Secretaries of the Branch to convey their thanks to the golf club, and also to Lord Ravensworth, who had so hospitably entertained the Branch, the latter invitation being due to the kindness of Dr. Mearns, a former Branch President. He also thanked Dr. Hunter, who had acted as secretary of the Presentation Fund, and had added one more to his many expressions of friendship. He concluded:

"Lastly, I hardly know what to say to Dr. Beattie, who has spoken so well of me, and whose words always have so much weight with me, as with the members of this Branch. I followed him at college, in the secretaryship of this Branch, and in the presidential chair. I only hope I shall be able to follow him out of it with as much credit. I think the Branch, in taking farewell of him as President, will always remember the work he has done for it and how unostentatiously he has carried it through. Gentlemen, again I thank you most sincerely for what has been the proudest day of my life."

The Honorary Secretaries of the Branch.—Mr. RUTHERFORD MORISON then proposed the toast of the Honorary Secretaries of the Branch, a toast which was received very heartily, and to which Drs. HUNTER and SMURTHWAITE responded. Thus ended what was by common consent one of the most successful functions ever held by the Branch.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.

THE annual meeting was held at Furness Abbey on June 26th. Dr. H. F. OLDHAM took the chair, in the unavoidable absence of the President, Dr. Hall.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Members of Branch Council.—The SECRETARY announced that the following gentlemen had been elected members of the Branch Council by the Divisions:—Furness: J. Livingston and T. F. Forster. Kendal: W. B. Cockill and P. F. Sturridge. Lancaster: H. F. Oldham and J. A. Gilson.

Election of Officers.—Dr. C. H. Hough was elected President-elect and Dr. H. F. Oldham Vice-President.

Expenses of Representatives.—It was resolved that the Branch pay something towards the expenses of the Representatives of Divisions if it is found that it has power to do so.

NORTH WALES BRANCH:

NORTH CARNARVONSHIRE AND ANGLESEA DIVISION.

THE annual meeting of this Division was held at Bangor on May 22nd.

Representative at Representative Meeting.—Dr. Emyr O. Price, Bangor, was unanimously elected Representative of Division at Representative Meeting.

Ethical Rules.—Rules Z (Ethical Rules) was adopted as an ethical rule of Division.

Draft Charter, etc.—Instruction was given to the Representative to oppose the Charter, and to support that the Referendum, if any, be sent to each individual member and not to Secretaries of Division. Passed unanimously.

Hospital Administration.—(SUPPLEMENT, April 13th, 1907.)

1. Yes, subject to local conditions. Unanimous.
2. Yes. Unanimous.
3. Yes. Unanimous.
4. Yes. Unanimous.
5. None.

Medical Inspection of School Children.—(SUPPLEMENT, February 16th, 1907.)

1. (*a*) No. Unanimous.
   (*b*) According to local circumstances. Unanimous.
   (*c*) According to local circumstances. Unanimous.
2. Not prepared to advise at present. Unanimous.
3. No. Unanimous

Ethical Aspects of Consultation.—Generally approved of, unanimously.

Election of Officers.—The following officers, etc, were elected: *Chairman*, H. Grey Edwards, M.D. (Bangor); *Vice-Chairman*, R. Arthur Prichard, J.P. (Conway); *Honorary Secretary*, John Evans, M.D. (2, Church Street, Carnarvon); *Representative for Representative Meeting*, Dr. E. O. Price (Bangor); *Representatives on Branch Council*, John Evans, M.D., R. A. Pritchard, Esq., J. R. Prytherch, M.B., J. Lloyd Roberts, M.B.; *Executive Committee*, A. E. Carruthers, M.B., C. W. Owen, Esq., R. L. Roberts, Esq., John R. Williams, M.B.

Paper.—A paper entitled "Some Recent Therapeutical Advances" was read by Dr. Grey Edwards, of Bangor.

SOUTH-EASTERN BRANCH:

CANTERBURY AND FAVERSHAM DIVISION.

THE members of the Divisions comprised in the old East Kent District—that is, Ashford, Canterbury and Faversham, Dover, Folkestone, and Thanet Divisions—met on June 27th at the County Hotel, Canterbury, at 3 p.m., Dr. WHITEHEAD REID (Canterbury) in the chair.

Papers and Demonstrations.—Most interesting and instructive papers were read and demonstrations given by the following gentlemen: (1) W. J. TYSON, M.D., F.R.C.P., F.R.C.S., Honorary Physician, Victoria Hospital, Folkestone; (2) ALEXANDER G. R. FOULERTON, F.R.C.S., D.P.H., Director, Bacteriological Department, Middlesex Hospital, M.O.H. to East Sussex; (3) W. F. HILLIER, M.R.C.S., D.P.H., Pathological Assistant, Research Laboratory of Middlesex Hospital. The subject of Dr. Tyson's paper was Future Lines of Treatment—their Effects on the Profession. The paper dealt shortly with past and present as well as with future lines of treatment. The introduction of the Public Health Acts and the recognition of division of labour among medical men were important epochs in past treatment. The present treatment Dr. Tyson spoke of under the headings of (*a*) anaesthesia (mentioning the recent advances in the utility of local anaesthetics), (*b*) tuberculosis, (*c*) the new therapeutics, (*d*) the preventive treatment of cancer, gastric ulcer, and of appendicitis, and (*e*) the relationship of milk to infantile disorders. Looking to the future, the speaker thought the work of the profession would be in the prevention of disease to our children; the future of the profession lies in preventive medicine. Dr. REID while agreeing with Dr. Tyson as to the future, thought that there would always be work for the surgeons. Referring to the advances in local anaesthetics, at the request of the meeting a member described the removal of a large growth from the thyroid of a woman recently performed by himself under local anaesthesia (eucaine and adrenalin). The operation lasted one and a half hours—the patient cheerful throughout. Pulse at commencement 120, and at the end 84 per minute. In similar cases he would prefer local to general anaesthesia. The subject of Mr. Foulerton's address was the Treatment of Infective Disease by Bacterial Vaccination. This proved a most lucid and comprehensive paper, which dealt with our knowledge of immunity and its present limit, the utility and mode of action of specific serums and bacterial vaccines, special attention being given to those of value to the practitioner as streptococcic, staphylococcic, typhoidal and tuberculous. Several speakers expressed the thanks of the meeting for the most instructive address, congratulating Mr. Foulerton upon his lucidity in spite of

the necessary condensing of the paper owing to the short time given. Mr. HILLIER demonstrated completely and clearly the technique of the process for determining the opsonic index of the blood, using tubercle bacilli as his example. Specimens were also shown of trypanosomata.

Dinner.—Members of the combined Divisions afterwards dined together at the County Hotel where congratulation was expressed for the successful meeting. All Divisions expressed their desire for similar reunions in future years.

PRELIMINARY MEETINGS.

Preliminary meetings were held as follows:

Canterbury and Faversham Division.

A meeting of this Division was held at 2 30.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed, the annual report submitted and approved.

Election of Officers.—The following officers were elected: *Chairman*, Dr. S. R. Alexander (Faversham); *Vice-Chairman*, Mr. M. T. Williams (Canterbury); *Representative at Representative Meetings*, Dr. W. Gosse (Sittingbourne); *Representative on Branch Council*, Dr. Henchley (Canterbury); *Honorary Secretary and Treasurer*, Dr. T. Barrett Heggs (Sittingbourne); *Committee*, (1) Dr. Whitehead Reid (Canterbury), (2) Mr. Dudley Garrett (Faversham), (3) Dr. C. J. Evers (Faversham), (4) Mr. G. P. Selby (Tevnham), (5) Mr. F. Noble (Sittingbourne), (6) Mr. J. W. Hayward (Whitstable).

Votes of Thanks.—A vote of thanks was passed to the retiring officers for their services, especial thanks being expressed to Dr. Henchley, the late Honorary Secretary and Treasurer, for his excellent services for several years.

Proposed Amalgamation with Ashford Division.—With reference to the desirability of amalgamating with the Ashford Division, which was to be discussed, a letter was received from the Ashford Division stating that Division's entire disagreement with the proposal. No discussion therefore took place.

Canterbury and Faversham and Thanet Divisions.

A combined meeting of these Divisions was held at 2.50.

Election of Representative at Annual Representative Meeting.—The business of electing the joint Representative for Representative Meetings was the only matter before the combined Divisions. Dr. Wm. Gosse (Sittingbourne) was unanimously re-elected, with Dr. Street (Thanet) as his deputy.

CHICHESTER AND WORTHING DIVISION.

THE annual meeting was held at the Norfolk Hotel, Arundel, on Thursday, June 13th. Mr. W. S. SIMPSON, Chairman of the Division, presided.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Next Place of Meeting.—It was decided to hold the next meeting at Chichester in the autumn.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman*, Mr. W. S. Simpson; *Vice-Chairman*, Mr. E. H. Buckell; *Secretary and Treasurer*, Dr. H. C. L. Morris; *Representative on Branch Council*, Dr. W. Eustace; *Representative at Representative Meeting*, Mr. H. Elliot-Blake; *Executive Committee*, Drs. Cameron, Elliot-Blake, Eustace, Ewart, and Hinds.

Election of a Medico-Political Committee.—It was decided that a Medico-Political Committee should be formed from the Executive Committee, and that rules should be drawn up by the Committee and sent round to every member before the next meeting.

Matters Referred to the Division.

Ethical Aspects of Medical Consultation.—The Central Ethical Committee's recommendations were considered and approved of.

Medical Inspection of School Children.—This subject was discussed, and the specific questions referred to the Divisions were carried as follows: 1. The inspection should be assigned to specially appointed medical officers. 3. There is evidence that this abuse takes place in the towns where there are hospitals. 4. No steps have been taken.

Contract Practice.—This subject was discussed, and the following resolution was carried:

> In the event of a dispute arising between a member of this Division holding a contract appointment and the party or parties with whom the contract is held, the member shall have the power to inform the Medico-Political Committee of such dispute, and while the matter is under consideration by the said Committee no other member of this Division shall accept the appointment if vacant, nor subsequently, without the approval of the majority present at a meeting of the Division.

Paper.—Mr. Elliot-Blake read notes on Novel Additions to Armamentarium Medicum, Armamentarium Chymicum, Armamentarium Chirurgicum in Awkward and Common Conditions.

SOUTH-EASTERN OF IRELAND BRANCH.

A MEETING of this Branch was held, by kind permission of the Mayor and Corporation, in the Council Chamber, Town Hall, Clonmel, on June 19th, at 12 o'clock noon, Dr. J. V. RYAN, M.B., President, in the chair.

Apologies for Non-attendance.—Apologies were received from five members.

Confirmation of Minutes.—The minutes of the last meeting were read, approved, and signed by the Chairman.

Hospital Adminstration.—The following answers to questions submitted to Divisions, proposed by Dr. LAFFAN, and seconded by Dr. SHEE, were passed *nem. con.*—No. 1: That there should continue to be compulsory payment by patients able to pay, not only for their hospital attendance but also for their medical attendance, in all hospitals other than fever hospitals. No. 2: No. No. 3: Yes. No. 4: Yes.

Ethical Aspects of Medical Consultation.—It was proposed by Dr. WILLIAM SHEE, seconded by Dr. DARLEY WYNNE, and unanimously resolved:

> That the recommendations of the Central Ethical Committee dealing with the aspects of medical consultation be adopted by this Branch.

Paper.—Dr. JELLETT read a paper on retinitis proliferans, and exhibited drawings.

Discussion.—Afterwards a discussion took place on infective parotitis.

Clonmel Meeting.—It was moved by Dr. LAFFAN, seconded by Dr. WYNNE, and unanimously resolved:

> That the second Wednesday in June be the fixed day, which if not found suitable, the Chairman and Honorary Secretary to arrange day of meeting there.

Locum Tenents.—Proposed by Dr. WM. SHEE, and seconded by Dr. QUIRKE:

> That in the opinion of this Branch no member should act as locum tenent in any public appointment against the wish or contrary to the nomination of the member holding the appointment for which a temporary substitute is required.

Vote of Thanks.—It was proposed by Dr. CAREY, and seconded by Dr. MACKESY:

> That the best thanks of this meeting be accorded to Mayor and Corporation of Clonmel for loan of the Council Chamber for the occasion of our meeting.

Vote of Sympathy.—It was proposed by Dr. CAREY, and seconded by Dr. WYNNE:

> That the members of this Branch heard with deep regret of the unexpected demise of the late Dr. Kennefick of Clonmel, and beg to tender to his family their most sincere sympathy.

Dinner.—The business having concluded, twelve members adjourned to Hearne's Hotel, where an excellent dinner was served.

ULSTER BRANCH:

PORTADOWN AND WEST DOWN DIVISION.

THE annual meeting of this Division was held on June 21st, in Newry, at 4 p.m., Professor ANDERSON, M.D., Vice-Chairman, presiding. An apology for unavoidable absence was received from Dr. Fergus, Chairman of Division.

Confirmation of Minutes.—The minutes of the previous meeting were passed.

Honorary Secretary's Report.—The SECRETARY made his report, showing that the number of the members, 70, is the same as last year, and that he has £4 11s. 3d. in hand.

The late Dr. O'Hara.—A letter of condolence to the mother and friends of the late Dr. O'Hara, who recently died of typhus, was proposed by Dr. AGNEW, seconded by Dr. S. E. MARTIN, and most sympathetically spoken to by Dr. BEAMISH and the CHAIRMAN, and ordered to be sent.

Representative Meeting.—The Representative gave the report of the Representative Meeting.

Election of Officers.—The following gentlemen were unanimously elected to their respective offices for the ensuing year:—*Chairman*, Dr. Beamish, J.P.; *Vice-Chairmen*, Dr. Sugars and Dr. Frier; *Honorary Secretary*, Dr. J. Singleton Darling; *Representative*, Dr. J. Singleton Darling; *Members of Branch Council*, Drs. Agnew, Taylor, and Lawless; *Executive Committee*, Drs. Deane, W. E. Hadden, Fergus, Smartt, Graves, S. E. Martin.

Communications.—Dr. DEENY read a paper on Rupture of the Uterus, and gave notes of a case recently occurring in his practice in which hysterectomy had been performed five and a half hours later by Dr. Darling, with recovery of the patient. Drs. PALMER and AGNEW related cases occurring in their practice. Dr. DARLING related another case in which operation was refused. These were all fatal. He commented on the fact that in Dr. Deeny's case uterine contractions were present at the time of delivery. A paper was read by Dr. T. B. PEDLOW, who made some observations on Tubal Pregnancy, and related a case to which he was recently called in which the period had only passed two weeks in a woman whose last child was 5 months old. The woman was pulseless. She lived but a short distance from Lurgan Infirmary, where he had her conveyed, and Dr. Darling operated at once. The peritoneum was full of blood which had escaped from a ruptured ovum not larger than a filbert in the tube close to left cornu. Both ovaries were cystic. The right, as large as a small orange, was removed. The cysts in the left were, as far as possible, punctured and part of ovary removed, but, as the patient was only 22, the major part was left. Patient rapidly recovered. Dr. BEAMISH read notes of an interesting case of recurrent thrombosis of veins of both lower and one upper extremity following a slight attack of typhoid fever. Professor ANDERSON and most of the members present discussed the case.

Dr. S. E. Martin most hospitably entertained the members at the close of an interesting meeting.

YORKSHIRE BRANCH.

THE annual meeting of the Branch was held at Dewsbury on Wednesday, June 26th, Dr. MOSSOP in the chair.

New Members.—The following gentlemen were elected members of the Association: Drs. and Messrs. Acomb, Andrews, Barnes, Bonar, Hallam, Innes, Kennedy, Knaggs, Marshall, Mays, Nixon, Rodgers, Taylor Smith, Twigg, Walton, and Wilson.

Election of Officers—The following officers were elected: *President*, Dr. Lee (Dewsbury); *Secretary and Treasurer*, Dr. Bronner (Bradford); *Representatives on the Central Council*, Drs. Goyder and Sinclair White. It was decided to hold the next annual meeting at York, and to ask the York Division to nominate the President elect.

Increase of Expenditure.—The following resolution was passed on the motion of Dr. SWANSON, seconded by Dr. SOLLY:

> The Council of the Yorkshire Branch wish to draw the attention of the Central Council to the great increase in the expenditure of the Association. and request that steps be taken to keep the expenditure of the Association within its income.

Report of Council.—The report of the Council was read and adopted.

Introduction of New President.—Dr. Mossop resigned the chair and introduced the new President, Dr. Lee, who then took the chair.

Vote of Thanks to Retiring President.—Dr. GOYDER proposed, and Dr. DYSON seconded, a vote of thanks to Dr. Mossop for his services as President during the year. He was elected a permanent Vice-President of the Branch.

Annual Representative Meeting.—It was proposed and seconded that the representatives of the Branch on the Central Council be requested to report at the annual meeting on the work done during the year by the Council.

Central Emergency Fund.—Dr. ALLAN proposed and Dr. SINCLAIR WHITE seconded:

> That the sum of £25 from the funds of the Branch be sent to the Central Emergency Fund for the Ebbw Vale Division.

Papers.—The following papers were read: Dr. PORRITT (Huddersfield), Some thoughts on appendicitis; Dr. CHURTON (Leeds), On the treatment of maniacal delirium of the respiratory centre, a rising pulse-rate with falling temperature in acute pneumonia, with recent cases; Dr. GIBSON, Psoriasis.

Next Meeting.—It was decided to hold the next meeting at Sheffield.

Luncheon.—Dr. Lee kindly invited the members of the Council to luncheon.

Dinner.—After the meeting twenty-one members dined together at the Masonic Rooms.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

1907 ANNUAL GENERAL MEETING.

The Annual General Meeting of the British Medical Association will be held in the Royal Public Rooms, Exeter, on Saturday, July 27th, at 9.30 o'clock in the forenoon.

ANNUAL REPRESENTATIVE MEETING.

The Annual Representative Meeting will take place in the Royal Public Rooms, Exeter, on Saturday, July 27th, immediately after the Annual General Meeting, which will be held at 9.30 o'clock in the forenoon; on Monday, July 29th, at 9.30 a.m.; on Tuesday, July 30th, at 9.30 a.m. if required; also on Wednesday, July 31st, at 3.15 p.m. if required.

BY ORDER OF THE COUNCIL,

GUY ELLISTON, *General Secretary.*

April 25th, 1907.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

OWING to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

NORTH WALES BRANCH.—The fifty-eighth annual meeting of the Branch will be held at the Wynnstay Hotel, Machynlleth, on Tuesday, July 16th, at 3 p.m. Agenda: (1) To read the minutes of the last meeting. (2) To read correspondence. (3) To introduce President-elect. (4) To read financial statement for 1906. (5) To receive the report of the Branch Council. (6) To elect President for 1908 9. (7) To elect Honorary Secretary. (8) To report the election of Representative of the Branch on the Central Council. (9) To report election of members on Branch Council. (10) To select places for the intermediate and annual meetings for 1908. The President will deliver his address. The following papers will be read:—Rushton Parker, B.S., F.R.C.S.: Case of Ununited Fracture of the Humerus. W. B. Warrington, M.D., F.R.C.P.: Meningococcal Cerebro-spinal Meningitis, with specimens. H. Briggs, M.B., F.R.C.S.: Case of Hydatidiform Mole followed by Deciduoma Malignum, with specimen. H. E. Jones, M.R.C.S.: A note on the Form of the Auricle. K. W. Monsarrat, M.B., F.R.C.S.Ed.: Some Clinical Observations on Gall-stone Disease. J. Howell Evans, M.Ch., F.R.C.S.: The Relation of Cancer to Certain Congenital Lesions. W. Blair Bell, M.D.: Retroversion of the Uterus and its Treatment. Luncheon at 2 p.m. prompt; tickets, 3s. The Branch Council will meet at 2.45 p.m.—H. JONES ROBERTS, Llywenarth, Penygroes, Honorary Secretary.

SOUTHERN BRANCH.—Notice is hereby given that during the month of August next the Branch will proceed to elect a member to fill the vacancy on the Central Council of the Association caused by the death of Dr. Joseph Groves. Candidates who have been nominated each by three electors in writing must please send their application to me on or before August 10th next.—H. J. MANNING, Honorary Secretary, Laverstock House, Salisbury.

HAMPSTEAD GENERAL HOSPITAL.

Proposed Amalgamation with the North West London Hospital.

MR. ALFRED CRASKE (Secretary, North-West London Hospital, Kentish Town Road, N.W.) writes: I venture to ask if you will kindly allow me to correct the statement which Dr. Collingwood Andrews is reported in the BRITISH MEDICAL JOURNAL of July 6th to have made in his speech at the meeting of the Hampstead Division, Metropolitan Counties Branch, British Medical Association, on July 3rd, in reference to the assets which the North-West London Hospital might be expected to bring into the proposed partnership.

Dr. Andrews would have his supporters believe that the only financial help to be given by the North-West London Hospital would be "to the extent of about £200 a year by subscribers." In this Dr. Andrews is very wide of the mark, and it is to be regretted that apparently there was no one at the meeting sufficiently well-informed to correct the misstatement.

As a matter of fact, my Committee is prepared at this moment to hand over investments and cash balance at the bank to the amount of over £5,500, with "stock in trade," which includes surgical instruments valued at £400. Last year (an average year) our annual subscriptions were £754; donations (apart from the King's Fund, the Hospital Sunday and Saturday Funds), £1,128. Many of these donations may be regarded as regular income, although they do not appear under the heading of "annual subscriptions." The average annual income for the past few years has been nearly £5,000.

Besides all this, there is the very generous promise of support from the King's Fund in the event of amalgamation, by (1) contributing for five years the annual sum of £1,500; (2) guaranteeing the rent of the premises of the North-West London Hospital in the Kentish Town Road for ten years, and paying the cost of adapting these premises as an out-patient department to the amount of £2,000.

The question as to whether or not the Hampstead practitioners would suffer by the transaction is not one which should influence the public in their decision. The point at issue is, Will these charitable institutions, to which the public have so generously subscribed, be thereby benefited? To the unprejudiced mind there can be but one answer. Both institutions will undoubtedly in the truest sense be strengthened and their sphere of usefulness extended.

It must be remembered that in carrying out a scheme such as this there will of necessity be changes involving cases of individual hardship. This is especially the case here at the North-West London Hospital. But it is gratifying to know that every one whose personal interest is at stake, be he doctor or layman, is prepared to stand on one side rather than put the smallest hindrance in the way of an undertaking which we all believe to be on the whole a wise and beneficent one.

Naval and Military Appointments

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: EDWARD J. MORLEY, Fleet Surgeon, to the *President*, July 2nd; THOMAS J. CROWLEY, M.D., Fleet Surgeon, to the *Ganges*, for Shotley Barracks, July 2nd; RICHARD A. FITCH, Fleet Surgeon, to the *Impregnable*, July 2nd; JEROME BARRY, M.D., Fleet Surgeon, to the *Indus*, July 2nd; CHARLES M. BEADNELL, Fleet Surgeon, to the *President*, additional, for three months' course at West London Hospital, July 11th; MICHAEL J. LAFFAN, M.B., Surgeon, to the *Speedwell*, lent, temporary, July 4th.

F. J. AYRE, civil practitioner, has been appointed Surgeon and Agent at Llantwit, July 2nd.

ROYAL ARMY MEDICAL CORPS.

THE notification regarding the retirement on retired pay of Lieutenant-Colonel J. L. HALL, which appeared in the *Gazette* of June 7th, is cancelled.

ARMY MEDICAL RESERVE OF OFFICERS.

SURGEON-CAPTAIN A. L. JONES to be Surgeon-Major, June 19th.

INDIAN MEDICAL SERVICE.

COLONEL D. WILKIE, M.B. (Bengal), has been appointed to officiate as Director-General, Indian Medical Service, during the absence on leave of Surgeon-General G. Bomford, M.D., C.I.E.

The following changes and transfers in the administrative medical staff of the army take place in consequence of the abolition of the commands: Surgeon-General H. HAMILTON, M.D., C.B., Principal Medical Officer late Northern Command, to be Principal Medical Officer 2nd (Rawal Pindi) Division; Surgeon-General W. B SLAUGHTER, Principal Medical Officer late Eastern Command, to be Principal Medical Officer 8th (Lucknow) Division; Surgeon-General F. W. TREVOR, M.B., Principal Medical Officer late Western Command, to be Principal Medical Officer 6th (Poona) Division.

ROYAL ARMY MEDICAL CORPS (MILITIA).

THOMAS P. THOMAS to be Lieutenant, June 18th.

IMPERIAL YEOMANRY.

SUPERNUMERARY SURGEON-LIEUTENANT W. F. L. A. HOLCROFT, M.B., Royal North Devon (Hussars), resigns his commission, May 31st.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-MAJOR G. TODD, from the 1st Durham Royal Garrison Artillery (Volunteers), to be Surgeon-Major 2nd Durham (Seaham), May 29th.

ROYAL ENGINEERS (VOLUNTEERS).

SURGEON-LIEUTENANT J. P. STEWART, M.D., East London (Tower Hamlets), resigns his commission, May 28th.

EDWARD C RYALL, F.R.C.S.I., to be Surgeon-Lieutenant in the East London (Tower Hamlets) Regiment, May 28th.

VOLUNTEER RIFLES.

SUPERNUMERARY SURGEON-LIEUTENANT W. G. MACFEE, 19th Middlesex (St. Giles's and St. George's, Bloomsbury), to be Surgeon-Captain, remaining supernumerary, June 4th.

Surgeon-Lieutenant P. G. MCREDDIE, 3rd Volunteer Battalion the Prince Albert's (Somersetshire Light Infantry), resigns his commission, June 4th.

Supernumerary Surgeon-Lieutenant-Colonel J. K. ANDERSON, M.D., 2nd (Angus) Volunteer Battalion the Black Watch (Royal Highlanders), Brigade Surgeon Lieutenant-Colonel, Senior Medical Officer the Black Watch Volunteer Infantry Brigade, is granted the honorary rank of Surgeon-Colonel, June 6th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

ROBERT CORFE to be Lieutenant in the Woolwich Companies, Eastern Command, June 1st.

Lieutenant A. E. KIDD, Black Watch Bearer Company, to be Captain, June 12th.

Lieutenant S. H. HOUSE, M.B., Liverpool Bearer Company, to be Captain, June 3rd.

Vital Statistics

VITAL STATISTICS OF LONDON DURING THE SECOND QUARTER OF 1907.

IN the accompanying table will be found summarized the vital statistics of the metropolitan boroughs and of the City of London, based upon the Registrar-General's returns for the second, or spring, quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the various boroughs, and are the result of a complete system of distribution of the deaths in institutions among the several boroughs in which the deceased persons had previously resided. The 31,645 births registered in London during the three months under notice were equal to an annual rate of 26.7 per 1,000 of the population, estimated at 4,758,218 persons in the middle of the year; in the corresponding quarters of each of the two preceding years the rate had been 27.0 per 1,000, the average rate in the second quarters of the ten years 1897-1906 being 28.5. The birth-rates last quarter ranged from 14.4 in the City of London, 16.1 in Hampstead, 16.3 in the City of Westminster, 17.7 in Kensington, and 20.5 in Chelsea, to 31.9 in Bermondsey, 32.0 in Shoreditch, 33.1 in St. Marylebone, 37.3 in Finsbury, and 38.0 in Stepney.

The 16,625 deaths of persons belonging to London registered during last quarter were equal to an annual rate of 14.0 per 1,000, against 14.3, 13.8, and 14.2 per 1,000 in the corresponding period of the three preceding years; in the second quarter of the ten years 1897-1906 the rate averaged 15.3 per 1,000. The death-rates in the several boroughs last quarter ranged from 9.4 in Hampstead, 10.1 in Woolwich, 10.2 in Lewisham, 11.7 in Wandsworth, and 12.0 in Fulham, to 17.8 in Holborn, 18.0 in the City of London, 18.2 in Southwark, 19.0 in Finsbury, and 20.0 in Shoreditch.

During the last quarter 1,857 deaths were referred to the principal infectious diseases; of these, 657 resulted from measles, 141 from scarlet-fever, 157 from diphtheria, 675 from whooping-cough, 33 from enteric fever, 1 from ill-defined pyrexia, and 193 from diarrhoea, but not any from small-pox or from typhus. These 1,857 deaths were equal to an annual rate of 1.56 per 1,000, against an average rate of 1.69 in the second quarters of the ten preceding years. The lowest death-rates last quarter from these principal infectious diseases were 0.74 in Hampstead and in Lewisham, 0.79 in the City of London, 0.84 in Woolwich, and 0.86 in the City of Westminster; the highest rates were 2.07 in Bermondsey, 2.15 in Southwark, 2.25 in Poplar, 2.95 in Finsbury, and 3.53 in Shoreditch. Measles showed the highest proportional fatality in Chelsea, Finsbury, Shoreditch, Poplar, Southwark, and Greenwich; scarlet fever in St. Marylebone, Hackney, Finsbury, Shoreditch, Bethnal Green, Poplar, and Bermondsey; diphtheria in Holborn, Shoreditch, Poplar, Battersea, and Greenwich; whooping-cough in Kensington, Holborn, Finsbury, Shoreditch, and Camberwell; "fever" in Hammersmith, the City of Westminster, Stoke Newington, Finsbury, Bermondsey, and Woolwich; and diarrhoea in Paddington, Fulham, Chelsea, Finsbury, Bethnal Green, and Stepney.

During the three months under notice, 1,676 deaths from phthisis were registered, equal to an annual rate of 1.41 per 1,000; in the corresponding quarters of the three preceding years the rates were 1.57, 1.33, and 1.42 per 1,000. Among the various boroughs the lowest death-rates from phthisis last quarter were recorded in Paddington, Ken-

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the Second Quarter of 1907.

BOROUGHS.	Estimated Population middle of 1907.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Infectious Diseases.	Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Typhus.	Enteric Fever.	Ill-defined Pyrexia.	Diarrhoea.	Phthisis.	Deaths of Children Under 1 Year of Age to 1,000 Births.
COUNTY OF LONDON ...	4,758,218	31,645	16,625	26.7	14.0	1.56	1,857	—	657	141	157	675	—	33	1	193	1,676	101
Paddington	149,909	779	461	20.8	12.3	1.34	50	—	11	5	7	16	—	1	—	10	34	112
Kensington	181,842	801	575	17.7	12.7	1.50	68	—	13	3	5	43	—	2	—	2	42	116
Hammersmith ...	122,337	780	457	25.6	15.0	1.48	45	—	24	—	3	15	—	3	—	—	38	118
Fulham	166,749	1,149	499	27.6	12 0	1.74	72	—	31	1	5	19	—	2	—	14	59	107
Chelsea	74,857	383	297	20.5	15.9	1.87	35	—	18	—	2	9	—	—	—	6	29	120
City of Westminster	172,219	701	521	16.3	12.1	0.86	37	—	4	2	5	16	—	3	—	7	61	106
St. Marylebone ...	127,718	1,055	474	33.1	14.9	1.23	39	—	4	7	3	20	—	—	—	5	45	56
Hampstead	91,137	365	213	16.1	9.4	0.74	17	—	6	1	3	5	—	—	—	2	18	71
St. Pancras	236,753	1,357	884	23.0	15.0	1.54	91	—	45	5	7	26	—	1	—	7	91	122
Islington	347,017	2,129	1,225	24.6	14.2	1.56	134	—	56	4	4	55	—	2	—	13	110	103
Stoke Newington ...	53,613	292	163	21.8	12.2	1.27	17	—	2	2	—	10	—	1	—	2	18	86
Hackney	232,993	1,521	760	26.2	13.1	1.26	73	—	21	12	5	22	—	2	—	11	76	87
Holborn	55,134	386	245	28.1	17 8	1.67	23	—	2	1	5	14	—	—	—	1	37	88
Finsbury	96,732	898	459	37.3	19.0	2.95	71	—	22	5	4	27	—	2	—	11	55	108
City of London ...	20,310	73	91	14.4	18.0	0.79	4	—	—	—	1	3	—	—	—	—	9	123
Shoreditch	115,662	982	576	32.0	20.0	3.53	102	—	33	7	6	50	—	—	—	6	68	130
Bethnal Green ...	130,831	1,015	548	31.1	16.8	1.99	65	—	22	10	5	20	—	—	—	8	52	137
Stepney	308,923	2,423	1,151	38.0	14.9	1.34	104	—	25	14	11	30	—	4	—	20	130	92
Poplar	171,086	1,308	712	30.7	16.7	2.25	96	—	43	9	12	25	—	1	—	6	63	109
Southwark	209,781	1,582	983	30.2	18 2	2 15	112	—	51	6	5	38	—	2	—	10	111	132
Bermondsey	128,263	1,021	549	31.9	17.2	2.07	66	—	21	7	5	24	—	2	—	7	47	107
Lambeth	318,638	2,217	1,077	27.9	13.6	1.58	125	—	58	7	9	37	—	2	—	12	113	93
Battersea	181,736	1,175	554	25.9	12.2	1 33	60	—	17	6	10	23	—	—	—	4	48	95
Wandsworth	281,419	1,847	819	26.3	11.7	1.31	92	—	28	6	12	42	—	1	—	3	65	93
Camberwell	277,059	1,650	927	23.9	13.4	1.65	114	—	36	8	5	56	—	—	—	9	101	101
Deptford	116,510	804	392	27.7	13 5	1 68	49	—	25	3	5	11	—	—	—	5	45	98
Greenwich	107,222	689	327	25.8	12.2	1.53	41	—	25	1	6	6	—	1	—	2	36	74
Lewisham	152,532	978	389	25.7	10.2	0 74	28	—	8	5	1	8	—	—	—	6	30	59
Woolwich	129,336	845	327	26.2	10.1	0.84	27	—	6	4	6	5	—	1	1	4	45	78

sington, Hampstead, Wandsworth, and Lewisham; and the highest rates in the City of London, Holborn, Finsbury, Shoreditch, and Southwark.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 101 per 1,000, against 107, 103, and 97 in the corresponding periods of the three preceding years; in the second quarters of the ten years 1897-1906 the rate averaged 111 per 1,000. The lowest rates of infant mortality last quarter were recorded in St. Marylebone, Hampstead, Greenwich, Lewisham, and Woolwich; and the highest rates in Chelsea, St. Pancras, the City of London, Shoreditch, Bethnal Green, and Southwark.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,255 births and 3,853 deaths were registered during the week ending July 6th. The annual rate of mortality in these towns, which had been 13.1, 12.7, and 12.5 per 1,000 in the three preceding weeks, was again 12.5 last week The rates in the several towns ranged from 4.1 in Walthamstow, 5.2 in Hornsey, 6.0 in Northampton, 6.2 in King's Norton, and 6.8 in Tottenham and in Bournemouth, to 18.4 in Sunderland, 18.5 in Bolton, 18 6 in Bury, 18.9 in Blackburn, 19.6 in Burnley, and 20.0 in Middlesbrough. In London the rate of mortality was 11.9 per 1,000, while it averaged 12.8 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.2 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.1 per 1.000, while in the seventy-five other large towns the principal infectious diseases caused death-rates ranging upwards to 3.1 in Blackburn, 3.3 in Derby. 3.7 in Bolton, 5.3 in Wigan, and 5 4 in Walsall. Measles caused a death-rate of 1.8 in Hull, 2 3 in Bolton. 2.5 in Derby. 3 5 in Wigan, and 4.9 in Walsall: diphtheria of 1.1 in Huddersfield; whooping-cough of 1 0 in Leeds, 1.1 in Bolton, 1.4 in Merthyr Tydfil, 1.8 in Wigan and in Bury, and 1.9 in Tynemouth; and "fever" of 1.0 in Burnley. The mortality from scarlet fever and from diarrhoea showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,936, 2,985, and 3,022 at the end of the three preceding weeks, had further risen to 3,193 at the end of last week: 504 new cases were admitted during the week, against 389, 414, and 422 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, July 6th, 902 births and 504 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 17.3 and 15 0 per 1,000 in the two preceding weeks, further fell to 14.5 per 1,000 last week, but was 2 0 per 1.000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 10 2 in Greenock and 11.7 in Aberdeen to 15.3 in Glasgow and 19 3 in Leith. The death-rate from the principal infectious diseases averaged 1.7 in these towns, the highest rates being recorded in Glasgow and Leith. The 249 deaths registered in Glasgow included 5 from measles, 4 from diphtheria, 10 from whooping-cough, 10 from cerebro-spinal meningitis, and 5 from diarrhoea. Two deaths from measles, 3 from whooping-cough, 3 from cerebro-spinal meningitis, and 2 from diarrhoea were recorded in Edinburgh: 6 from whooping-cough in Dundee: 2 from whooping-cough and 3 from diarrhoea in Aberdeen; and 2 from diarrhoea in Greenock.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

ABERGAVENNY: MONMOUTHSHIRE ASYLUM.—Senior Assistant Medical Officer. Salary, £250 per annum.

BIRMINGHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £50 per annum.

BLACKPOOL.—Resident Medical Officer at the Infectious Diseases Hospital and Assistant Medical Officer of Health.

BOLINGBROKE HOSPITAL, Wandsworth, S.W.—Assistant Surgeon.

BRADFORD POOR-LAW UNION.—Resident Assistant Medical Officer for Hospital and Workhouse. Salary, £100 per annum.

COLCHESTER: ESSEX AND COLCHESTER GENERAL HOSPITAL.—House-Physician. Salary, £80 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £60 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

EGYPTIAN OPHTHALMIC HOSPITAL.—Sub-inspector.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £30 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon. Salary, £100 per annum.

HALIFAX ROYAL INFIRMARY.—Second House-Surgeon. Salary, £100 per annum.

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.—Physician for Diseases of Women.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon. Salary, £50 per annum.

KENSINGTON GENERAL HOSPITAL.—Junior Resident Medical Officer (Male). Salary, £40 per annum.

LENZIE: WOODILEE ASYLUM.—Junior Assistant Medical Officer. Salary, £125 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—House-Surgeon. Salary, £100 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £100 per annum.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton Street, W.—Anaesthetist.

MIDDLESEX HOSPITAL, W.—Medical Officer and Registrar to Cancer Department. Salary, £100 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Clinical Assistants.

NORTHAMPTON GENERAL HOSPITAL.—Male House-Surgeon. Salary, £90 per annum, increasing to £100.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary at the rate of £80 per annum.

ROTHERHAM HOSPITAL AND DISPENSARY.—(1) Senior House-Surgeon; (2) Assistant House-Surgeon. Salary, £110 and £80 per annum respectively.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C. — Clinical Pathologist and Demonstrator of Bacteriology. Salary, £75 per annum.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at the rate of £40 per annum.

SEAMEN'S HOSPITAL SOCIETY.—(1) Assistant Physician. (2) Assistant Surgeon at the Dreadnought Hospital, Greenwich.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House-Surgeon (male). Salary, £90 per annum.

STIRLING ROYAL INFIRMARY.—Resident House-Surgeon. Salary, £80 per annum.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary, £80 per annum.

STOCKPORT UNION — Resident Assistant Medical Officer at the Stepping Hill Hospital. Salary, £130 per annum, rising to £150.

STOCKTON AND THORNABY HOSPITAL.—House-Surgeon. Salary, £180 per annum.

TAUNTON AND SOMERSET HOSPITAL.—(1) House-Surgeon. (2) Resident Assistant House-Surgeon. Salary at the rate of £100 and £50 per annum respectively.

TOTTENHAM: PRINCE OF WALES'S HOSPITAL. — Honorary Anaesthetist.

WEST BROMWICH DISTRICT HOSPITAL.—(1) Senior House-Surgeon; (2) Assistant House-Surgeon. Salary, £110 and £75 per annum respectively.

WEST HAM UNION.—Medical Superintendent of the Infirmary. Salary, £700 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Shaftesbury (co. Dorset); Stanley (co. Durham); Sturminster Newton (co. Dorset); Kirkcudbright (co. Kirkcudbright); Rathdowney (Queen's co.).

APPOINTMENTS.

BEST, W. J., M.R.C.S.Eng., L.S.A., Certifying Factory Surgeon for the Louth District, co. Lincoln.

CROSBIE, R. P., M.B., B.Ch.R.U.I., Certifying Factory Surgeon for the Cork District, co. Cork.

DAVIDSON, G. E., M.B., B.C., District Medical Officer of the Guildford Union.

DYER, Sidney Reginald, M.D.Brux., M.R.C.S.Eng., L.R.C.P.Lond., D.P.H., Medical Officer, H.M. Prison, Wandsworth.

EVANS, W. O., L.R.C.P. and S.Edin., Workhouse and District Medical Officer of the Pontardawe Union.

HASLUCK, E. P., L.R.C.P. and S.Edin., District Medical Officer of the Penrith Union.

HAYES, H. W. McCaully, M.R.C.P.E., L.R.C.P., L.R.C.S.E., L.F.P. and S.Glasg., Chief Medical Officer of the South Indian Railway, India.

HUTCHINSON, L., M.B., Assistant Medical Officer, Mill Road Infirmary, West Derby Union.

LEIGHTON, T. P., M.B., Ch.B.Vict., District Medical Officer of the Chorley Union.

MCDOUGALL, J. W., M.B., Ch.B.Glasg., District Medical Officer of the Bolton Union.

MUNRO, J. R., M.D.Edin., District Medical Officer of the Boston Union.

PHELPS, J. H. D., M.B., B.Ch.Oxon., District Medical Officer of the Richmond (Yorks) Union.

ROBBS, C. H. D., M.B.Lond., M.R.C.P., Certifying Factory Surgeon for the Grantham District, co. Lincoln.

RYNNE, M. A., M.D., B.Ch.Dub., Certifying Factory Surgeon for the Cheltenham District, co. Gloucester.

SMITH, F. L., M.B., B.S.Durh., Workhouse and District Medical Officer of the Louth Union.

TWIGG, S. W. J., M.R.C.S., L.R.C.P., Third Resident Assistant Medical Officer, Lambeth Parish Infirmary.

WELSH, J. G., L.R.C.P. and S.Edin., District Medical Officer of the Bellingham Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

GARDNER.—On July 6th, at 18, Rastell Avenue, Telford Park, Streatham Hill, S.W., the wife of Thomas Hudson Gardner, M.B.Lond., M.R.C.S., L.R.C.P., of a daughter.

DEATHS.

DRURY.—On June 26th, 1907, at 132, Queen's Road, Liverpool, George Herbert Drury, M.B., C.M.Edin.Univ., youngest son of Edward Drury, J.P., Halifax, Yorks, aged 40 years.

LEIGHTON.—On July 5th, aged 30, of typhoid, at the Royal Southern Hospital, Liverpool, Frederick Francis Leighton, M.B., St. John's College, Cambridge, Resident Pathologist, R.S.H., eldest son of R. L. Leighton, M.A., Chesterton, late of Bristol.

ROSS.—At "Dunvegan," Colwyn Bay, on the 6th instant, suddenly, Arthur MacLeod Ross, M.B., C.M.Edin., F.R.C.S.Eng., aged 44.

DIARY FOR THE WEEK.

FRIDAY.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN, 11, Chandos Street, Cavendish Square, W., 5 p.m.—Annual general meeting.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Tuesday, 3.45 p.m.: External Ear. Friday, 3.45 p.m.: Thyroid and Cervical Region.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m.: Fractures.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day:—Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m.: Lumbar Puncture.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—The following are the clinics and demonstrations for next week: Monday, 10 a.m.: Surgical; 2.30 p.m.: Medical, Throat, Nose, and Ear, *X* Rays. Tuesday, 10.30 a.m.: Medical; 2.30 p.m.: Operations—Surgical and Gynaecological; Wednesday, 2.30 p.m.: Medical, Skin, Eye. Thursday, 2.30 p.m.: Gynaecological Operations—Medical, Surgical; *X* Rays; 3 p.m., Medical (In-patient). Friday, 9.30 a.m., Surgical: 2.30 p.m.: Operations—Medical, Eye; 3 p.m., Medical (In-patient).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics. 2.30 p.m.: *X* Rays, Operations. Monday and Thursday, 2 p.m.: Diseases of the Eye. Tuesday and Friday, 10 a.m.: Gynaecological Operations. 2 p.m.: Diseases of Throat, Nose, and Ear; also Wednesday and Saturday, 10 a.m. Tuesday and Friday, 2.30 p.m.: Diseases of Skin. Wednesday, 10 a.m.: Diseases of Children. Wednesday and Saturday, 2 p.m.: Diseases of the Eye. 2.30 p.m.: Diseases of Women. Lectures—Monday, 12 noon: Pathological Demonstration; 5 p.m.: Clinical. Monday and Tuesday: Complications of Middle-ear Suppuration. Wednesday: Dysuria. Thursday: Practical Surgery. Friday: Clinical.

BOOKS, ETC., RECEIVED.

The Office of Midwife (in England and Wales) under the Midwives Act, 1902 (2 Edw. VII, ch. 17). By S. B. Atkinson, M.A., LL.M.Cantab., M.B., B.Sc.Lond. London: Baillière, Tindall and Cox. 1907. 2s. 6d.

Bibliothek v. Coler. Herausgegeben von O. Schjerning. Band 22. Die Verwundungen durch die modernen Kriegsfeuerwassen, ihre Prognose und Therapie im Felde. Von Stabsarzt Dr. Graf und Dr. Hildebrandt. II Band. Spezieller Teil. Berlin: A. Hirschwald. 1907. M. 12.

Gout: Its Pathology, Forms, Diagnosis and Treatment. By A. P. Luff, M.D., B.Sc. F.R.C.P. Third edition. London; Cassell and Co., Ltd. 1907. 10s. 6d.

Beiträge zur Entstehung der Geschwülste. Zweite Ergänzung. Von Dr. H. Ribbert. Die Entstehung des Karzinomes. Bonn: F. Cohen. 1907. M. 4.80.

The American Textbook of Prosthetic Dentistry. Edited by C. R. Turner, D.D.S., M.D. Third edition. London: H. Kimpton. 1907. 26s.

London: H. K. Lewis. 1907:

Fever Nurses and State Registration. By J. Biernacki, M.D. 1d.

Manual of Operative Surgery. By J. F. Binnie, A.M., C.M.Aberd. Third edition. 12s. 6d.

Lehrbuch der speziellen Chirurgie. Herausgegeben von Prof. Dr. J. Hochenegg. Erster Band, II Teil. Berlin and Wien: Urban and Schwarzenberg. 1907.

Die Melancholie: ein Zustandsbild des manisch-depressiven Irreseins. Von Dr. G. L. Dreyfus. Jena: G. Fischer. 1907. M. 7.

A Textbook of the Science and Art of Obstetrics. By H. J. Garrigues, A.M., M.D. Second edition. Philadelphia and London: J. B. Lippincott Co. 25s.

The Oxford Medical Publications. London: H. Frowde, and Hodder and Stoughton. 1907:

Cancer of the Womb. By F. J. McCann, M.D., F.R.C.S., M.R.C.P. 20s.

Functional Nervous Disorders in Childhood. By L. Guthrie, M.A., M.D., F.R.C.P. 7s. 6d.

The Treatment of Disease in Children. By G. A. Sutherland, M.D., F.R.C.P. 5s.

The Skin Affections of Childhood. By H. G. Adamson, M.D., M.R.C.P. 5s.

Surgical Emergencies. By P. Sargent, M.A., M.B., B.C., F.R.C.S. 5s.

Practical Anaesthetics. By H. E. G. Boyle, M.R.C.S., L.R.C.P. 5s.

Diseases of the Larynx. By H. Barwell, M.B., F.R.C.S. 5s.

Medical Lectures and Aphorisms. By S. Gee, M.D. Second Edition. 5s.

Manuale dell' Igienista. Per cura del Prof. A. Celli. Terza edizione. Vol. I, Parte 2a, e Vol. II, Parte 2a. Torino: Unione Tipografico-editrice Torinese. 1907. L. 40.

Philadelphia and London. W. B. Saunders Company. 1907:

Atlas and Epitome of Diseases of Children. By Drs. R. Hecker and J. Trumpp. Translation from German edited by I. A. Abt, M.D. 21s.

A Manual of Personal Hygiene. By American Authors. Edited by W. L. Pyle, A.M., M.D. Third Edition. 6s. 6d.

A Textbook of Embryology. By J. C. Heisler, M.D. Third edition. 13s.

Diagnostics of the Diseases of Children. By Le Grand Kerr, M.D. 21s.

On Acute Pneumonia, its Signs, Symptoms, and Treatment. By S. Taylor, M.D., F.R.C.P. London: H. J. Glaisher. 1907. 1s.

Jahresbericht über die königliche psychiatrische Klinik. in München für 1904 und 1905. München: J. F. Lehmann. 1907. M. 2.40.

Medical Homes for Private Patients. 1907. Edited by R. P. Binnie. London: The Scientific Press, Limited. 6d.

*** In forwarding books the publishers are requested to state the selling price.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
JULY	
14 Sunday ...	
15 MONDAY ...	LONDON: Central Ethical Emergency Subcommittee, 2 p.m.
16 TUESDAY ...	NORTH WALES BRANCH. Annual Meeting, Wynnstay Hotel, Machynlleth, 3 p.m; Luncheon, 2 p.m.; Branch Council, 2.45 p.m.
17 WEDNESDAY	
18 THURSDAY...	
19 FRIDAY ...	
20 SATURDAY...	
21 Sunday ...	
22 MONDAY ...	
23 TUESDAY ...	LONDON: Metropolitan Counties Branch Council, 4.30 p.m.
24 WEDNESDAY	
25 THURSDAY...	
26 FRIDAY ...	
THE ANNUAL MEETING AT EXETER.	
27 SATURDAY...	ANNUAL GENERAL MEETING, Royal Public Rooms, Exeter, 9.30 a.m. ANNUAL REPRESENTATIVE MEETING, immediately after the Annual General Meeting.
28 Sunday ...	
29 MONDAY ...	ANNUAL REPRESENTATIVE MEETING, Royal Public Rooms, Exeter, 9.30 a.m.
30 TUESDAY ...	ANNUAL REPRESENTATIVE MEETING, 9.30 a.m. (*if required*). Adjourned General and Representative Meetings; induction of President, 2.30 p.m. President's Address, 8.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
31 WEDNESDAY	ANNUAL REPRESENTATIVE MEETING, 3.15 p.m. (*if required*) Sectional Meetings, 10 a.m. to 1 p.m. Address in Medicine, 2.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
AUGUST.	
1 THURSDAY...	Sectional Meetings, 10 a.m. to 1 p.m. Address in Surgery, 7.30 p.m. Annual Dinner, 7.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
2 FRIDAY ...	Sectional Meetings, 10 a.m. to 1 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
3 SATURDAY...	Excursions.
4 Sunday ...	
5 MONDAY ...	
6 TUESDAY ...	
7 WEDNESDAY	
8 THURSDAY...	
9 FRIDAY ...	
10 SATURDAY...	
11 Sunday ...	
12 MONDAY ...	
13 TUESDAY ...	
14 WEDNESDAY	
15 THURSDAY...	
16 FRIDAY ...	
17 SATURDAY...	
18 Sunday ...	
19 MONDAY ...	
20 TUESDAY ...	
21 WEDNESDAY	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 20TH, 1907.

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THE SEVENTY-FIFTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION,

EXETER,

JULY 27TH TO AUGUST 2ND, 1907.

President:

RICHARD ANDREWS REEVE, B.A., M.D., LL.D., Dean of the Faculty of Medicine, University of Toronto.

President-elect:

HENRY DAVY, M.D., F.R.C.P., Physician, Royal Devon and Exeter Hospital.

Chairman of Representative Meetings:

JAMES ALEXANDER MACDONALD, M.D., Physician, Taunton and Somerset Hospital.

Chairman of Council:

EDMUND OWEN, LL.D., F.R.C.S., Consulting Surgeon to St. Mary's Hospital.

Treasurer:

HENRY RADCLIFFE CROCKER, M.D., F.R.C.P., Physician, Skin Department, University College Hospital.

PROGRAMME OF BUSINESS.

An Address in Medicine will be delivered by WILLIAM HALE WHITE, M.D., F.R.C.P.Lond.
An Address in Surgery will be delivered by HENRY TRENTHAM BUTLIN, D.C.L., F.R.C.S.Eng.
A Popular Lecture will be delivered by Sir JOHN WILLIAM MOORE, M.D., D.Sc., F.R.C.P.Irel.

THE SECTIONS.

THERE will be thirteen Sections as shown in the subjoined list; they will meet on Wednesday, Thursday, and Friday, July 31st, and August 1st and 2nd, from 10 a.m. to 1 p.m.

The President, Vice-Presidents, and Secretaries of each Section constitute a Committee of Reference for that Section.

Papers read are the property of the British Medical Association, and cannot be published elsewhere than in the BRITISH MEDICAL JOURNAL *without special permission.*

No paper must exceed fifteen minutes in reading and no subsequent speech ten minutes.

It is requested that copies of any papers offered in any of the Sections should be supplied to one of the Honorary

Secretaries of the Section not later than May 30th, accompanied by a short abstract, in order that such abstract may be printed and circulated before the meeting.

PATHOLOGY.

President: ROBERT MUIR, M.D., F.R.C.P.Ed., Professor of Pathology, Glasgow.

Vice-Presidents: HENRY GEORGE PLIMMER, M.R.C.S., F.L.S., London; WILLIAM HUNTER, M.D., F.R.C.P., London; WALTER LEY PETHYBRIDGE, M.D., B.Sc., Plymouth.

Honorary Secretaries: REGINALD VAUGHAN SOLLY, M.D., F.R.C.S., 40, West Southernhay, Exeter; Professor WILLIAM ST. CLAIR SYMMERS, M.B., C.M.Aberd., Queen's College, Belfast.

The following provisional programme has been arranged:

Wednesday, July 31st.—A discussion on Pernicious Anaemia and Allied Conditions, to be opened by Dr. William Hunter, followed by Professor Lorrain Smith, Dr. A. G. Gullan. Dr. Lovell Gulland, Dr. F. G. Bushnell, Dr. C. Melland, Professor R. Muir and probably Professor Sims Woodhead. Professor Walker Hall will speak on Metabolism in Anaemia; and Professor A. R. Ferguson and Dr. A. E. Boycott on Ankylostomiasis Anaemia.

The following are the headings of Dr. HUNTER'S paper: (1) Scope of subject; (2) necessity of distinguishing between (*a*) Addison's idiopathic anaemia, (*b*) Biermer's progressive pernicious anaemia, on historical, etiological, pathological, and clinical grounds; (3) the unity of the former disease; the multiplicity of the forms of anaemia included under the latter; (4) nature of Addison's idiopathic anaemia, a remarkable infective disease (infective haemolytic anaemia); (A) Its pathology: blood changes — (*a*) Blood haemolytic changes, lesions. Bone-marrow changes. Relative importance and relation one to another. (*b*) Infective lesions: Glossitic, gastric, intestinal. Naked eye and lantern slide demonstration. (B) Etiology: (*a*) General etiology (insufficiency of ordinary causes of anaemia to produce the whole features of this disease. (*b*) Infective etiology: Rôle of septic infection, specific haemolytic infection. (C) Clinical features and course (distinctive features). (D) Diagnosis (relative importance of (*a*) blood changes, (*b*) clinical features). (E) Prognosis—improved character of. (F) Treatment (results of antiseptic and serum treatment). (5) Progressive pernicious anaemia: The clinical forms of anaemia included under this generic title.

Thursday, August 1st.—A discussion on Phagocytosis and Bactericidal Action, to be opened by Dr. George Dean, who will be followed by Professor R. Muir, Professor J. M. Beattie, Dr. Charlton Briscoe, Dr. T. Houston, Dr. David Lawson, Dr. J. C. Rankin, Dr. J. Peel Ritchie, Dr. E. Turton, and probably Professor Sims Woodhead.

Arrangements will be made for the exhibition in the Pathological Museum of specimens illustrating the work of the Section. Members wishing to exhibit specimens or photographs should communicate with the Secretaries of the Pathological Museum (Drs. R. V. Solly and G. P. Hawker, 40, West Southernhay, Exeter).

The following papers have been accepted:

BEATTIE, Professor J. M.: A Sporozoon in Aural Polypi.
BUSHNELL, Dr. F. G.: A Case of Mycosis Fungoides in its Relation to Infection and Malignant Disease.
BROWNING, Dr. Carl H.: Experimental Chemotherapy in Trypanosome Infections.
BAYON, Dr. H: Peritheliomata and Endotheliomata.
TEAGUE Dr. Oscar, and Dr. B. H. BUXTON (Cornell University, New York): The Migration of Antibodies under the Influence of the Electric Current.
BUXTON, Dr. B. H.: Absorption from the Peritoneal Cavity.
COOMBS, Dr. Carey: Lesions of Myocardium in Rheumatism.
EVE, Dr. F. C.: Peculiar Bodies found in Cerebro-spinal Fluid.
FORSYTH, Dr. David: The Relations between the Thyroid and the Parathyroid Glands.
FERGUSON Professor A. R.: (1) The Blood and Bone Marrow in Ankylostomiasis (part of discussion on pernicious anaemia, etc.); (2) A demonstration of Lesions produced by Bilharzia in the Genito-urinary Tract.
GAY, Dr. F. P., and SOUTHARD, Dr E. E. (Danvers, Massachusetts): (1) Serum Anaphylaxis in the Guinea-pig; (2) Structural Changes in Myeline Sheaths in Experimental Intoxication in the Guinea-pig.
LEIPER, Dr. R. T.: Helminthological Nomenclature in Medical Literature.
LUCAS, Dr. J. J.: Pericardial Calcification.
MCLENNAN, Dr. Alexander: The place the *Spirochaeta pallida* occupies in the Diagnosis of Syphilis.
STENNAN, Dr. T.: The *Spirochaeta pallida*.
SYMMERS, Professor ST. CLAIR: On *Bilharzia haematobia*.
HALL, Professor I. WALKER: Estimation of the Fats in Faeces.

MEDICINE.

President: WILLIAM GORDON, M.D., F.R.C.P., Exeter.

Vice-Presidents: WILLIAM POWELL, M.B., F.R.C.S., Torquay; WILLIAM JOSEPH TYSON, M.D., F.R.C.P., F.R.C.S., Folkestone; GEORGE NEWTON PITT, M.D., F.R.C.P., London EDWARD LAWRENCE FOX, M.D., M.R.C.P., Plymouth

Honorary Secretaries: FREDERICK JOHN POYNTON, M.D., F.R.C.P., 1, Harley Place, London, W.; EDWIN BRAMWELL, M.B.Edin, F.R.C.P., 23, Drumsheugh Gardens, Edinburgh; ALFRED BERTRAM SOLTAU, M.D., F.R.C.S., 1, Lansdowne Place, The Hoe, Plymouth.

The following subjects have been chosen for discussion:

1. The Indications for Operation in Cases of Intracranial Tumour. To be introduced by Dr. J. S. Risien Russell.

Dr. RISIEN RUSSELL will deal with the following points: I. The influence of diagnosis. Affections that may be mistaken for intracranial tumour. II. Conditions under which operation may be recommended: (1) To effect cure; (2) to relieve symptoms and prolong life.

The considerations that influence the first question are: (*a*) The possibility of accurate localization. (*b*) The position of the tumour. (*c*) The nature of the growth. (*d*) The probable effects of operation—(1) Risk to life; (2) amount of paralysis or other defect that will result; (3) aphasia.

In connexion with the second consideration the following arise: (*a*) The indications and contraindications for trephining. (*b*) The importance of saving sight. (*c*) The circumstances under which lumbar puncture may be substituted for trephining.

2. The Diagnosis of Acute Pancreatitis. To be introduced by Professor Osler.

3. Rheumatoid Arthritis and the Morbid Conditions which simulate it, with special Reference to Pathology and Treatment. To be introduced by Dr. A. P. Luff.

The following are the headings of Dr. LUFF'S paper introducing the discussion on Rheumatoid Arthritis: Definition of the term "rheumatoid arthritis." Rheumatoid arthritis is a distinct clinical entity. Rheumatoid arthritis is an infective disease due to the presence of micro-organisms in the joints; subsidiary symptoms are caused by the toxins elaborated by the micro-organisms. Distinction of rheumatoid arthritis from subacute rheumatic fever. The different forms of rheumatoid arthritis. The age-incidence of rheumatoid arthritis. The pathological changes occurring in the joints. Relationship of rheumatoid arthritis to other diseases of the joints. Dietetic treatment. Drug treatment. Local treatment of the joints. Climatic treatment.

The following papers have been accepted:

BRADSHAW, Dr. T. R.: Points in the Diagnosis of Myelopathic Albumosuria.
CLARKE, Professor John Michell: A Case of Lymphadenoma Treated by *X* Rays.
DOW, Dr. W.: Observations upon the recent Outbreak of Cerebro-spinal Meningitis in Glasgow.
HUNTER, Dr. W.: The Effect of Oral Antiseptics in Scarlet Fever.
NORTHRUP. Professor W. P.: Treatment of Pneumonia and other Acute Infectious Diseases by Open-air Wards in Metropolitan Hospitals.
RIVIERE. Dr. Clive: The Tuberculin Treatment of Tuberculosis in Children.
ROBB. Dr. A. Gardner: Observations upon the Recent Outbreak of Cerebro-spinal Meningitis in Belfast.
SIKES, Dr. A. W.: Some Gastro-intestinal Affections in Gouty Subjects.
TYSON, Dr. W. J.: Some Remarks on the Prevention of Appendicitis.
WEST, SAMUEL, M.D., F.R.C.P.: 1. Some Remarks upon Acute Pericarditis and its Treatment. 2. A further Contribution to the Treatment of Diabetes by Uranium Nitrate.

DISEASES OF CHILDREN.

President: ALFRED HERBERT TUBBY, M.S., London.

Vice-Presidents: LEWIS MACKENZIE, F.R.C.S., Tiverton; FRANK HICHENS, M.D., Redruth; REGINALD HORACE LUCY, F.R.C.S., Plymouth; EDMUND CAUTLEY, M.D., London.

Honorary Secretaries: JOHN HARLEY GOUGH, M.D.,

Glenallon, Old Torwood Road, Torquay; EDRED MOSS CORNER, F.R.C.S., 37, Harley Street, London, W.

The following arrangements have been made:

Wednesday, July 31st.—Discussion, The Diseases and Displacements of the Testicle. To be opened by Mr. D'Arcy Power. Professor W. E. Dixon will speak on the question of Organotherapy, Mr. Russell J. Howard on Torsion of the Testicle. The following gentlemen have signified their intention of taking part in the discussion: Mr. Douglas Drew, Mr. McAdam Eccles, Mr. G. H. Edington, Mr. H. A. T. Fairbank Mr. H. Tyrrell Gray, Mr. C. B. Keetley, Mr. Lockhart Mummery, Mr. Betham Robinson, and Mr. G. E. Waugh.

In opening the discussion on Wednesday, Mr. D'ARCY POWER will group the subject under the headings of Tubercle, Syphilis, Malignant Disease, Innocent Tumours, and Teratomata, the following being a summary of his paper:

The displacements are due to faulty processes of development.

In regard to tubercle, most of the swollen testicles seen in very young children in the out-patient rooms at hospitals are due to tubercle growing in tissues which have been prepared for infection by changes due to congenital syphilis. He asks whether it is certain that tuberculous inflammation of the testicle ends in atrophy, and if children suffering from this form of disease are more or less likely to become the subjects of spinal caries.

Syphilitic inflammation of the testicle is commoner in young children than tuberculous orchitis, and the tunica vaginalis is so frequently involved that a hydrocele is of frequent occurrence. The absence of pain causes the condition to be overlooked in the majority of cases. Wasting of the testis is a frequent consequence of this form of inflammation. Are there any observations as to the retardation of puberty consequent upon this atrophy?

Teratomata are due either to dermoids or sebaceous tumours.

Sarcoma of the testicle is in need of further investigation in the light of Mr. Foulerton's recent work. Is it possible that some of the cases grouped as sarcoma are not in reality examples of carcinoma? The author is not satisfied with the results of orchidopexy in cases of undescended testis, and now advises removal of the testicle in nearly every case where it is retained in such a position that it is likely to be injured, especially if there is evidence of a hernia. When no hernia is present he advises the parents to wait until the child is 7 or 8 years old, in the hope that the testicle may descend into the scrotum as the child grows. He asks an opinion on the following points: First, as to the indication for operating when the testicle lies at or near the external abdominal ring; secondly, as to the advice which should be given when both testicles are undescended; and, thirdly, as to the most appropriate time for operating when there is no hernia. He also alludes to the treatment of ectopic testicle. Finally is pointed out the frequency with which hydrocele occurs in children; the ease with which an erroneous diagnosis is made, and the means by which such mistakes are best avoided.

The following papers will be read:

EDINGTON, Mr. G. H.: Some Abnormalities of the Penis.
GRAY, Mr. H. Tyrrell.: Some Cases in which Meckel's Diverticulum was present.
NITCH, Mr. C. A. R.: Some Cases of Fracture of the Tubercle of the Tibia.
MUMMERY, Mr. Lockhart: Some Cases of Prolapsus Recti.

Thursday, August 1st.—Discussion, Acute Nephritis and its Results. To be opened by Dr. A. F. Voelcker. Dr. A. W. Sikes will introduce the physiological aspect; Mr. Sydney Stephenson, the eye changes; Dr. Theodore Thomson, Unsuspected Nephritis in Septic Infections. The following gentlemen have signified their intention of taking part in the discussion: Dr. H. R. Dean, Dr. F. C. Eve, Dr. F. Langmead, Mr. J. H. Parsons, Dr. J. E. H. Sawyer, and Dr. G. A. Sutherland.

In opening the discussion, Dr. VOELCKER will treat the subject under the following headings:

(1) Frequency in Children and Adults Contrasted. (2) Acute Nephritis in Association with the Acute Specific Fevers. (3) Acute Nephritis apart from the Acute Specific Fevers. (4) Frequency of Acute Nephritis in the more common Acute Specific Fevers. (5) Frequency of Acute Nephritis in (i) Fever Hospitals, (ii) Children's Hospitals and General Hospitals, (iii) Private Practice. (6) Age Incidence of Acute Nephritis. (7) Comparison of the Symptoms and Complications of Acute Nephritis in Children and Adults. (8) Results of Acute Nephritis in Children. (9) Anatomical Varieties of Acute Nephritis. (10) Frequency of (i) Complete Recovery, (ii) Incomplete Recovery, (iii) Death in Acute Nephritis. (11) Causes of Death in Acute Nephritis. (12) Duration of Acute Nephritis. (13) Factors Determining Incomplete Recovery or Death. (14) Evidences of Incomplete Recovery in the Urine, Cardio-vascular System, Blood, Retina, Skin, Serous Membranes. (15) Anatomical Changes Resulting from Unresolved Acute Nephritis. (16) Is Chronic Nephritis resulting from Acute Nephritis Incurable? (17) The Relation of Acute Nephritis to Chronic Interstitial Nephritis in Childhood and in Later Life. (18) Conditions Simulating Acute Nephritis. (19) The Treatment of Acute Nephritis in Children. (20) Prophylaxis. (21) The Treatment of Special Symptoms in or resulting from Acute Nephritis.

Dr. A. W. SIKES will follow with a paper on the Physiological and Pathological Aspects of Nephritis in Children, and touch upon the following topics: (1) Its influence on the general metabolism. (2) Its effect on the digestive system, liver, stomach. (3) The metabolism of protein. (4) The rôle of sodium chloride. (5) The influence of acute nephritis on the urinary secretion. (6) The proteins of the urine. (7) Urea, uric acid, salts. (8) Methods of examining the urine. (9) The reaction of the blood. (10) Other changes in the blood. (11) Drugs; contraindication of caffeine. (12) Recent work on the nephrotoxins. (13) The theory of the secretion of urine, "Filtration plus reabsorption" not now accepted. (14) Recent physiological work on the kidneys. (15) Oedema. (16) Uraemia.

The following papers will be read:

LANGMEAD, Dr. F.: Acetonaemic Conditions in Children.
DEAN, Dr. H. R.: The Classification and Diagnosis of the Varieties of Purpura occurring in Children.
PINCHES, Dr. H. Irving: Retropharyngeal Abscess.
KELYNACK, Dr. T. N.: The Care of Tuberculous Children.

Friday, August 2nd.—Discussions: (1) Lumbar Puncture, its Diagnostic and Therapeutic Value. To be opened by Dr. Farquhar Buzzard. The following gentlemen have signified their intention of joining in the discussion: Dr. F. E. Batten, Dr. J. S. Risien Russell, Dr. Edwin Bramwell, Dr. F. C. Eve, Dr. J. G. Forbes, Dr. Porter Parkinson, Dr. Athole Ross, Dr. A. E. Russell, Dr. Purves Stewart, and Dr. G. A. Sutherland.

In opening the discussion Dr. FARQUHAR BUZZARD will refer to the following points: (1) The technique of the operation. (2) General indications and contraindications. (3) Diagnostic value; (*a*) bacteriological, (*b*) cytological, (*c*) chemical. (4) Therapeutic value; (*a*) decompression, (*b*) drainage.

(2) Precocious Development. To be opened by Dr. Reginald Langdon Down, followed by Dr. Leonard Guthrie.

The opener of this discussion, Dr. REGINALD LANGDON DOWN, will deal with the subject of Precocity rather from the broad biological point of view than from the narrow clinical aspect, and will draw the following conclusions:

The precocious children are those from whom we draw our great men—that is, those who advance the nation intellectually and socially.

They may be roughly divided into two groups: the stable and the unstable. The former are well developed, both physically and mentally, and in good order and proportion; the latter are often physically below the average, and show an irregular, or one-sided, mental development; these cases need special care, and form the majority of those usually coming under medical attention.

From the point of view of the race, a late maturity seems to be advantageous, and this points to preserving slight beneficial variations rather than large ones; from the point of view of the individual, the later-acquired powers of the race may advantageously appear sooner, but this should be in good order and with uniform development.

It appears, on the other hand, that anything in the environment likely to produce artificially a premature development of any function or organ is harmful, particularly so in those cases where there is naturally a tendency to extreme deviation from the average; while a

careful discipline and social restraint are needed to save some of the extreme cases from social failure. On the other hand, the judicious guide will give the bright youth of the stable class free play as to his line of study, while preventing him from straying over too wide an area. And at the right moment, when his choice is made, he will endeavour to stir the youth's energies and fire his enthusiasm to the utmost.

The following papers will be read:

Bird, Dr. A. C.: Tonsils and Voice Production.
Corner, Mr. Edred M.: Two Cases of Amputation of the Forequarter for Sarcoma of Shoulder.

Psychological Medicine.

President: Thomas Claye Shaw, M.D., London.

Vice-Presidents: Arthur Nathaniel Davis, L.R.C.P., Exminster; Robert Leonard Rutherford, M.D., Exeter; George M. Robertson, M.B., Larbert.

Honorary Secretaries: Samuel Hollingsworth Agar, M.R.C.S., Hurst House, Henley-in-Arden; William Francis Menzies, M.D., Staffs County Asylum, Cheddleton, Leek.

The following programme has been arranged:

Wednesday, July 31st.—Introductory remarks by the President, Dr. Claye Shaw.

Discussion on Alcoholism and Insanity, to be introduced by Dr. F. W. Mott, F.R.S.

Johnstone, Dr.: Paper on Fatigue.

Thursday, August 1st:

Mercier, Dr. C. A.: Three Cases of Periodic Dementia.
Robertson, Dr. George, M.: On the Presence of a Bacillus in the Blood of Persons suffering from General Paralysis of the Insane.
Bruce, Dr. Lewis Campbell: The Opsonic Index in Mania.

Friday, August 2nd.—Discussion on Hypnotism, to be introduced by Dr. J. F. Woods.

In his paper Dr. Woods gives his experience, extending over a period of fifteen years, of the therapeutic value of hypnotism in insanity. Most of the patients were treated in asylums, others in private. He finds the treatment most efficacious fn borderland cases. Illustrative cases are given with details of the method employed.

Schofield, Dr.: The Teaching of Psychology in Medical Schools.
Passmore, Dr. E. S.: On Case Taking.

Electrical Section.

President: H. Lewis Jones, M.D., London.

Vice-Presidents: John Delpratt Harris, M.D., Exeter; Cecil R. Chaworth Lyster, M.R.C.S., London; William Cheyne Wilson, M.D., Plymouth.

Honorary Secretaries: Ellis Pearson, F.R.C.S.E., Strand House, Bideford; Edward Warren Hine Shenton, M.R.C.S., 126, Harley Street, London, W.

The following programme has been arranged:

Wednesday, July 31st.—Address by Professor Stéphane Leduc.

Papers:

Harris, Dr. Delpratt: Some Statistics of *X*-Ray Therapeutics in Rodent Ulcer and Carcinoma.
Salomonson, Professor Werthim: The Einthoven Galvanometer.
Jones, Dr. Lewis: Oscillograph Tracings of Medical Coil Currents.
Tomkinson, Dr. J. Goodwin: A Method of Treating Lupus Vulgaris.
Somerville, Dr. W. F.: The Effects of High-frequency Currents on the Urinary System.
Walsham, Dr. Hugh: The Orthodiagraph.
Lantern Demonstration.

Thursday, August 31st.—Discussion on *X* Rays and Sensitive Plates, to be opened by Mr. Mackenzie Davidson. Dr. Orton and others will speak.

Papers:

Pearson, Dr. Ellis: The use of *X* Rays from the Point of View of the General Practitioner.
Shenton, Mr. E. W. H.: The Examination of the Hip-joint.
Riddell, Dr. J. R.: The Measurement of the Brim of the Female Pelvis by means of *X* Rays.
Pirie, Dr. Howard: A New Meter for Measuring the Current through an *X*-ray Tube, and measurement of the Reverse Current passing through an *X* ray Tube.
Salomonson, Professor Wertheim: The Electro-diagnosis of Oculo-motor Paralysis.
Taylor, Dr.: A Case of Paget's Disease treated by *X* Rays (Microscopic Specimens).
Lantern Demonstration.

Friday, August 2nd.—Discussion on the Dosage of *X* Rays, to be opened by Dr. Sequeira.

Papers:

Humphris, Dr. Howard: The Rationale of Static Currents.
Morton, Dr. R.: Alternating Currents of Slow Periodicity.
Reid, Dr. A.: Ureteral Calculi.
Bruce, Dr. Ironside: Systematic Radiography.
Green, Dr. Stanley: *X* Rays and Chest Disease.
Arthur, Dr. D.: A new Static Machine.

It is hoped to provide a convenient room for the demonstration of new forms of apparatus and the showing of lantern slides by members.

Tropical Diseases.

President: James Cantlie, F.R.C.S., London.

Vice-Presidents: Guthrie Rankin, M.D., London; Sir Richard Havelock Charles, K.C.V.O., M.D., I.M.S. (ret.), London; Lieutenant-Colonel Robert Caldwell, F.R.C.S., R.A.M.C., Plymouth.

Honorary Secretaries: William Carnegie Brown, M.D., 32, Harley Street, London, W.; Lieutenant-Colonel G. M. J. Giles, M.B., F.R.C.S., I.M.S. (ret.), 3, Elliot Terrace, The Hoe, Plymouth.

The following subjects have been selected for discussion:

Wednesday, July 31st.—The Best Methods of carrying out Antimalarial Sanitation, with special reference to such plans as may be most suitable for populations in the more primitive stages of civilization. To be opened by Professor Simpson, King's College, London.

The following will take part in the discussion: Dr. W. J. Prout, C.M.G. (Liverpool); Major Nott, I.M.S.; Dr. H. M. Fernando (Colombo); and Dr. C. W. Daniels (London School of Tropical Medicine).

Professor Leonard Rogers of Calcutta will give a lantern demonstration to illustrate his work on the fevers of India.

Thursday, August 1st.—Diabetes in the Tropics. To be opened by Sir Richard Havelock Charles, K.C.V.O., Lieutenant-Colonel I.M.S.

Dr. Rai Koilas Chandra Bose Bahadur, C.I.E. (Calcutta) will read a paper, and the following gentlemen will take part in the discussion: Dr. F. M. Sandwith (London); Dr. H. de Silva (Colombo); Major Nott, I.M.S.; Dr. H. M. Fernando (Colombo).

Sir R. Havelock Charles, in opening the discussion, will deal with the following headings: (1) The glycosuria of the tropics—the part dyspepsia plays therein. (2) Peculiarities or modifications of course, physical signs and symptoms, of the tropical diabetic type. (3) The peoples—their habits and surroundings; predisposing and exciting causes of the disease. (4) Incidence as to race, sex, profession, and social status. (5) Peculiarities in urine analysis. (6) Life assurance and diabetes. (7) Complications of a surgical nature and their treatment. (8) Is there any justification in distinguishing diabetes in the tropics from the type of diabetes known in the temperate regions?

Friday, August 2nd.—Haemoflagellates and Allied Organisms. To be opened by Professor E. A. Minchin, Professor of Protozoology, University of London.

Professor E. A. Minchin will open the discussion in a paper, of which the following is a synopsis: Differences in the points of view of the zoologist and the medical man; importance of the study of the life-history of parasites for the etiology of disease; haemoflagellates, brief review of the forms comprised under this title; life-cycles of haemoflagellates, *Herpetomonas muscae domesticae;* transmission of haemoflagellates by blood-sucking invertebrates; direct and indirect transmission; inoculative indirect transmission; contaminative transmission; reasons for believing that the infection may be effected in a different manner in different cases; theories upon the origin of haemoflagellates; suggestion that the ancestral form was a parasite of the vertebrate digestive tract; possible types of life-cycle on this view.

Professor L. Rogers (Calcutta), and Dr. A. Balfour (Khartoum), will also take part in the discussions.

The following papers have been accepted:

Cantlie, James, F.R.C.S.: (1) One Hundred Cases of Liver Abscess. (2) The Part Played by the Colo-Sigmoid and the Sigmo-Rectal Pylorus in Intestinal Troubles.
Caldwell, Lieutenant-Colonel, R.A.M.C.: Enteric Fever during Active Service.
Grattan, Major, R.A.M.C.: Blackwater Fever.
Prout, Dr. W. J., C.M.G.: Blackwater Fever.

BEGG, Dr.: Complications in Chronic Sprue.
DARKER, Dr.: (1) West African Climate. (2) Treatment of Malaria.
BIRT, Lieutenant-Colonel, R.A.M.C.: (1) South African Diseases. (2) Mediterranean Fever in South Africa.
MOTT, Dr. F. W.: Further Observations on Cell Changes in Sleeping Sickness and Dourine.

The Secretaries will be glad to receive from members unable to be present pathological specimens, photographs, drawings, or microscopical preparations illustrative of any subject of interest in Tropical Medicine.

SURGERY.

President: GEORGE A. WRIGHT, F.R.C.S., Professor of Surgery, Manchester.

Vice-Presidents: EDWARD JAMES DOMVILLE, M.R.C.S., Exeter; CHARLES EDWARD WALLACE BELL, M.R.C.S., Exeter; DAVID NEWMAN, M.D., Glasgow; WILLIAM FREDERIC HASLAM, F.R.C.S., Birmingham.

Honorary Secretaries: BERNARD SCOTT, M.R.C.S., Stagsden, West Cliff, Bournemouth; BRENNAN DYBALL, F.R.C.S., 47, Queen Street, Exeter; WILLIAM SAMPSON HANDLEY, M.S., 77, Wimpole Street, London, W.

The following subjects have been selected for special discussions on Wednesday, July 31st, and Thursday, August 1st:

1. The Relative Value of Inhalation and Injection Methods of inducing Anaesthesia. To be introduced by Mr. H. P. Dean, M.S., F.R.C.S., to be followed by Messrs. J. Ward Cousins, J. F. W. Silk, E. H. Howlett, Alexander Wilson, C. Leedham Green, A. G. Levy, F. W. Bailey, and J. W. Struthers.

The following is a synopsis of Mr. DEAN'S paper in opening the discussion:

Presuming I was honoured by an invitation to open a discussion on the huge subject of local anaesthesia because of a paper I published in the BRITISH MEDICAL JOURNAL last year upon the value of lumbar injection on acute diseases of the abdomen, I decided to limit my remarks to that subject.

Apart from the results obtained *quâ* anaesthesia in the cases where I have employed lumbar injection, I have been very much struck by the way in which surgical shock has been mitigated, if not practically abolished.

When drawing up a list of operations liable to be followed by grave surgical shock, it is obvious that those upon the abdomen form the great bulk. The classical amputations at the hip and shoulder joints and at the upper part of the thigh, with their high mortality from surgical shock, so frequently performed in the early Victorian period, have become much less frequent, and so it comes to pass that but few operations remain with severe surgical shock outside the domain of abdominal surgery.

Apart from the dangers of chloroform and ether, especially of the former, during the operation, the effect of these drugs upon the organs generally is a most serious one. When these general anaesthetics were first introduced two results somewhat unexpectedly forced themselves upon the attention of the surgeon:

(1) The deleterious effect of the anaesthetic upon the lungs and other organs of the body.

(2) The fact that surgical shock was not materially diminished by these general anaesthetics.

I think all of us are agreed that the secondary effects of ether, especially in abdominal surgery, are more far-reaching than those of chloroform. From the time that the first portion of the vapour reaches the bronchial mucous membranes to the time that it escapes by the excretory organs, we have a summation of poisonous effects which contribute so largely to swell the death-rate from all grave abdominal operations in which these general anaesthetics are given.

In the early days of these general anaesthetics it was thought that surgical shock would to a large extent disappear; this, however, was not the case, and for the past half-century the attention of surgeons has been continuously directed towards some method of preventing this grave condition.

When we consider the physiological action of the general anaesthetics we see an explanation. Chloroform and ether affect primarily the higher nerve centres, especially those concerned with consciousness; these are the first to be affected, then the middle centres—the basal ganglia—then the sensory and motor tracts, and lastly, if the anaesthetic is pushed to excess, we reach the centres essential for maintaining life—those connected with the heart and lungs.

In seeking an anaesthetic that would avoid these dangers, it is obvious that we should endeavour to employ a drug that would avoid that serious irritation of the bronchi and lungs. In the next place, we should try and find an anaesthetic that would act upon the peripheral part of the nervous system in such a way as to prevent stimuli passing from the field of operation to the vital centres—some drug that would paralyse all the sensory nerves passing from the region to be operated upon. If the peripheral nerves in the region of a wound were thrown completely out of action no amount of damage would cause stimuli to pass up to the central nervous system, and at the same time consciousness and the integrity of the vital centres would be maintained.

If these peripheral nerves were absolutely paralysed by the anaesthetic, we might compare the condition produced to that of gangrene of the leg. However much one may cut or burn or lacerate the dead tissues, no effect could be produced on the central nervous system.

Of recent years several drugs have been shown to possess the property of paralysing the peripheral nerves without affecting the central nervous system directly, unless given in maximal doses. The first of these—cocaine—is so poisonous and so treacherous that its employment has to be very carefully done, and it is not suitable for the group of cases which we are especially considering.

Within the last two years a drug has been discovered belonging to the cocaine group which will to a large extent do what we require. In France, the chemist Fournier, the discoverer, called it stovaine. A similar body has been largely used in Germany called novocaine; both of these have been used with or without adrenalin.

These new drugs have been examined carefully, and researches made upon them in various directions have already been published. They can be used in all cases where cocaine is employed, but they differ from cocaine in that they do not produce any injurious effect upon the heart; in fact, some experimenters indicate that they may be regarded as cardiac tonics.

When the anaesthesia is required for an operation where shock is not likely to be produced, the question of a general anaesthetic *versus* a local anaesthetic is not a matter of any moment. When, however, we are dealing with acute abdominal diseases, especially with general peritonitis, the value of this peripheral anaesthetic is at once placed upon a different basis. All the harmful effects of chloroform and ether upon the respiratory tract are absent; all the grave secondary effects of chloroform and ether upon the organs are not present when these local anaesthetics are used. Thirdly, by their action in paralysing the peripheral nerves the patient is protected largely, if not entirely, from the condition known as surgical shock.

In order to elicit the experience of my colleagues upon the various aspects connected with this method, I will consider it under the following headings:

(1) The method of administering the anaesthetic, lumbar puncture, its situation and difficulties, etc., are described and illustrations shown.

(2) The management of the patient is an important factor upon which opinions are urgently required.

(3) The dose, of course, is a very important point, and one where experience alone can help us both as regards the minimal and maximal dose that should be given.

(4) The method of administering the anaesthetic, whether to trust to one large dose at the commencement, or to employ a method of gradual dosage. The questions of administering doses during an operation and afterwards are important.

(5) The reliability of the anaesthetic in producing anaesthesia.

(6) Its influence in protecting the patient from surgical shock.

2. The Indications for Cholecystectomy. To be introduced by Mr. J. Bland-Sutton, F.R.C.S., to be followed by Messrs. A. W. Mayo Robson, J. Ward Cousins, F. S. Eve, A. E. Maylard, J. S. McArdle, F. F. Burghard, B. G. A. Moynihan, E. Stanmore Bishop, William Thorburn, and J. D. Malcolm.

The following is an abstract of the remarks which Mr. J. BLAND-SUTTON proposes to make in opening the discussion:

Physiological observations fail to show that any chemical change takes place in bile retained in the gall bladder under normal conditions, except an alteration in colour and a slight admixture of mucus.

Anatomy, human and comparative, teaches that absence of the gall bladder entails no disadvantage. Observations in the deadhouse show that disease destroys it very often without causing any inconvenience to the individual; and surgeons practising in large cities can demonstrate that the gall bladder can be dispensed with as easily as the vermiform appendix.

Pathological observation and surgical experience are equally eloquent in proclaiming the dangers and catastrophes accompanying many diseased conditions of the gall bladder which may be obviated by a timely operation, and the accumulated experience of many surgeons shows that the most satisfactory consequences are obtained by treating the gall bladder, when it requires surgical intervention, in the summary fashion in which we now deal with the vermiform appendix.

The diseases of the gall bladder best suited for cholecystectomy are: (1) Injury to the gall bladder; (2) calculous cholecystitis; (3) acute (non-calculous) cholecystitis; (4) perforating ulcers of the gall bladder; (5) mucocele (hydrops vesicae felleae); (6) chronic cholecystitis (empyema); (7) biliary fistula; (8) cancer, sarcoma, and endothelioma of the gall bladder (primary).

In discussing the comparative mortality of cholecystotomy and cholecystectomy it is advisable to deal with the cases as we do in the consideration of the mortality of operations on the vermiform appendix—namely, those performed for acute cholecystitis, especially the perforative cases, should stand in a separate table to those performed for chronic cholelithiasis; operations performed for primary malignant disease of the gall bladder should form a class by themselves.

Friday, August 2nd, will be devoted to the reading of papers on subjects other than the above.

The following papers have been accepted by the Committee of Reference for this section:

PARDOE, J. G, F.R.C.S.: The Indications for Prostatectomy.
FREYER, P. J., M.Ch.: Over 400 Operations for Total Enucleation of the Prostate, for Radical Cure of Enlargement of that Organ, briefly Reviewed.
COUSINS, J. Ward, F.R.C.S.: A Case of Composite Odontoma.
CHILDE, C. P., F.R.C.S.: A Case of Successful Resection of 9½ ft. of Small Intestine for Gangrene.
TAYLOR, W., F.R.C.S.I.: Intestinal Obstruction (based on 30 cases).
MUMMERY, J. P. L, F.R.C.S.: Lesions of the Sigmoid Flexure as a Cause of Chronic Colitis.
ANDERSON, Miss L. G., M.D.: A Case of Sarcoma of the Small Intestine.
EDINGTON, G. H., M.D., C.M.: Two Cases of Branchial Fistula.
NEWMAN, D., M.D.: The Early Diagnosis and the Treatment of Tuberculous Disease of the Kidney and Bladder. The lesions found in the bladder will be illustrated by means of an opaque projector.
MAYLARD, A. E., F.R.C.S.: The Relative Merits of Transverse or Oblique and of Vertical Incisions in Opening the Abdominal Cavity in the Antero-lateral Region.
STARR, F. N. G., M.D.: Gastro-intestinal and Latero-intestinal Anastomoses by Means of a Platinum Wire.
BISHOP, E. S., F.R.C.S.: Anterior Nephropexy.
MURRAY, R. W., F.R.C.S.: The Saccular Theory of Hernia.
MCARDLE, J. S., F.R.C.S.I.: (1) The Treatment of Ancient Dislocations of the Elbow-joint. (2) Tuberculosis near Joints.
GORDON, F. E., F.R.C.S.I.: An Experience of Critical Gastric Surgery.
HORROCKS, W., F.R.C.S.: Chronic Hypertrophy of the Breast.
VERNON, A. H., F.R.C.S.: A New Operation for Haemorrhoids

The papers will be taken in the order indicated above: the first four after the formal discussion on Wednesday, July 31st; the second four after the discussion on Thursday, August 1st, and the remainder on Friday, August 2nd.

OPHTHALMOLOGY.

President: LOUIS HY. TOSSWILL, M.B., Exeter.

Vice-Presidents: JOHN R. ROLSTON, M.R.C.S., Plymouth; ALEXANDER HILL GRIFFITH, M.D., Manchester; ARTHUR CHARLES ROPER, F.R.C.S.E., Exeter.

Honorary Secretaries: RANSOM PICKARD, M.S., F.R.C.S., 31, East Southernhay, Exeter; ELMORE WRIGHT BREWERTON, F.R.C.S., 84, Wimpole Street, London, W.

The following subjects have been chosen for discussion:

Wednesday, July 31st.—Discussion on the Construction and Manipulation of the Principal Instruments used in Ophthalmic Surgery. To be introduced by Professor E. Landolt, Paris.

The following papers have been accepted:

FISH, H. M., M.D., Chicago: The Relation of Disease of the Nasal Accessory Sinuses to Optic Neuritis.
SNELL, Simeon, F.R.C.S.E.: An Inquiry into the Causes of Blindness in 350 Inmates of a Blind School.
GROSSMANN, K., M.D., F.R.C.S.E.: (*a*) A Portable Refractometer; (*b*) a Portable Astigmometer; (*c*) an Improved Form of Artificial Eye.

Thursday, August 1st.—Discussion on Irido-cyclitis. To be introduced by Mr. Richardson Cross.

Mr. RICHARDSON CROSS's paper will deal with symptoms, course, and results of the disease; exudates and adhesions, their pathology and effects; cases illustrating various types of the affection; etiology, treatment.

The following papers have been accepted:

HINSHELWOOD, J., M.A., M.B.: 4 Cases of Congenital Word-blindness in the Same Family.
MACCALLAN, A. F., F.R.C.S.: Ophthalmic Hospitals in Egypt and their Work.
DE SILVA, W. H., M.B., F.R.C.S.E.: Lepra Ophthalmica in Ceylon.
GRIFFITH, Alexander Hill, F.R.C.S.E.

Friday, August 2nd.—Discussion on Vesicular Affections of the Cornea. To be introduced by Mr. W. Holmes Spicer, F.R.C.S.

Mr. W. HOLMES SPICER will discuss vesicular affections of the cornea with herpes febrilis; superficial punctate keratitis; dendritic ulcer; stellate ulcer; relapsing bulla.

The following papers have been accepted:

HERBERT, Lieutenant-Colonel, I.M.S.: Some Clinical Observations on Spring Catarrh.
ROPER, A. C., F.R.C.S.E.: Prolapse of Iris in Simple Cataract Operation.
HENDERSON, Thompson, M.D.: Pathogenesis of Primary Glaucoma and the Rationale of Iridectomy.
COULTER, R. J., F.R.C.S.E.: The Treatment of Alternating Strabismus.

The following have proposed to join in the discussions: Messrs. W. H. Jessop, J. Herbert Parsons, K. Grossmann, A. Hill Griffith, G. Hartridge, Freeland Fergus, Simeon Snell, Lieutenant-Colonel Herbert, and Cecil E. Shaw.

LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

President: ROBERT MCKENZIE JOHNSTON, M.D., Edinburgh.

Vice-Presidents: GEORGE JACKSON, F.R.C.S., Plymouth; JAMES BARRY BALL, M.D., London; PATRICK WILLIAM MAXWELL, M.D., Dublin.

Honorary Secretaries: CHARLES EDWARD BEAN, F.R.C.S.E., 19, Lockyer Street, Plymouth; ARTHUR LONGLEY WHITEHEAD, M.B., 31, Park Square, Leeds.

The following subjects have been selected for special discussion:

Wednesday.—The Differential Diagnosis of Tuberculous, Syphilitic, and Malignant Disease of the Larynx. To be opened by Sir Felix Semon, K.C.V.O., and Dr. Jobson Horne.

The following is an epitome of Sir FELIX SEMON'S paper: The differential diagnosis between the three diseases named usually is easy, not rarely difficult, in exceptional cases for a time almost impossible. It is easy enough to diagnose what are called "typical" cases of the three affections, but it is not for the consideration of such cases that the present discussion has been arranged. Observations are therefore limited to an analysis of cases in which either the appearances are so deceptive as to induce even an experienced observer to form an erroneous conclusion, or in which the signs are so ambiguous as to make the expert pause before committing himself to a definite opinion; or, finally, in which no clue is offered by the local or the general phenomena as to the true nature of the case. These are classified as follows:—1. Congestion of the vocal cords as an initial sign of tuberculosis, syphilis, and malignant disease—(*a*) bilateral, (*b*) unilateral. 2. The difficulties of diagnosis between tuberculous, syphilitic, and malignant laryngeal tumours. 3. Laryngeal tuberculosis in middle-aged or old people as a source of error in the differential diagnosis between tuberculosis, malignant disease, and syphilis of the larynx. 4. Difficulties of differential diagnosis between all the

three diseases when appearing in the form of infiltration. 5. Combination of two of the diseases under consideration, and consequent diagnostic difficulties. Under each of these headings the signs are enumerated which may be useful in arriving at a correct diagnosis, and the difficulties encountered are illustrated by examples furnished by the author's own experience.

Dr. JOBSON HORNE, in his introductory paper, indicates a process of elimination by which a diagnosis of malignant disease may be arrived at to the exclusion of tuberculosis, that being the disease which, of the three, is more commonly overlooked. Whilst certain features characteristic of syphilis of the larynx are described, the disease itself is viewed more from the point of view of it being a possible factor—both concomitant and causal—common to tuberculosis and malignant disease. Transillumination of the larynx is mentioned as an aid to ascertaining the nature and the extent of the disease. The value and the fallacies of the opsonic index are also touched upon. The significance to be attached to a pathological examination is considered in some detail; and the technique adopted in removing a portion of the growth for microscopic examination is held to be of no little importance in influencing, if not in determining, the value of the report of the pathologist.

Thursday.—The Treatment of Chronic Suppuration of the Middle Ear without resort to the Radical (Complete) Mastoid Operation. To be opened by Dr. W. Milligan and Dr. W. Hill.

Dr. W. MILLIGAN, in his opening remarks, will deal with the following points: Definition of chronicity. Types of chronic suppurative otitis media. Drainage; inflation; aspiration. The wet and the dry methods of treatment. Classification of cases from point of view of danger to life. Intrameatal operative treatment. Extrameatal. Stacke's operation and modifications. General deductions.

The following is a revised synopsis of Dr. WILLIAM HILL'S paper in this discussion. His remarks will be limited to the *value of the various operative procedures performed through the meatus* in the treatment of purely chronic suppuration apparently due to disease confined to the tympanum and antrum. Post-auricular operations of the type of (1) Schwartze's antrotomy; (2) Küster's procedure of antrotomy *plus* removal of more or less of the posterior meatal wall; and (3) Stacke's more radical extension of these measures, including removal of the external attic wall and of the malleus and incus, will only be alluded to for the purpose of comparison of results with those of *meatal ossiculectomy* and *external atticotomy.*

Friday.—To be devoted to papers.

The following papers have been accepted:

ONODI, Professor A.: The Etiology of the Severe Complications of Empyema of the Accessory Nasal Cavities.

YEARSLEY, Mr. Macleod: The Value of Pneumo-massage in Affections of the Middle Ear.

FULLERTON, Dr. Robert: Notes, Photographs and Microscopic Slides of a Tumour which was removed from the Right Tonsil and which is regarded as being a Teratoma.

NOURSE, Mr. Chichele: Observations on Frontal Sinusitis.

LOW, Mr. Stuart: Submucous Turbinectomy.

SYME, Dr.: Remarks on a Case of Acute Suppuration of the Middle Ear, complicated by Septic Meningitis and Brain Abscess.

JACKSON, Mr. George: The Relative Frequency of Caries of the Superior and Middle Turbinates and Ethmoid Bones, and the Importance of Examining the Nose in all Cases with Symptoms of Deafness, Giddiness, and Vertigo, and Throat Affections, with some Remarks on the Treatment thereof.

JONES, Mr. Hugh: Slight Deviations from the Normal in the Form of the Auricle in Relation to Degeneracy and Deafness.

BRONNER, Dr. Adolph: Notes on a Case of Thrombosis of the Lateral Sinus, with Complete Obliteration of the Jugular Vein.

YONGE, Dr. E. S.: Observations on the Determining Cause o the Formation of Nasal Polypi.

Members are invited to contribute any preparations, specimens, or drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects.

Lantern demonstrations will be given by Dr. Watson Williams on Some Points in the Anatomy and Surgical Treatment of the Nasal Accessory Sinuses, and by Dr. Milligan on the Surgical Treatment of Labyrinthine Suppuration.

Professor Onodi (Buda Pesth) will show (*a*) Phantom of the Larynx; (*b*) Diagrams of the Accessory Sinuses of the Nose; (*c*) an Instrument for Opening the Antrum of Highmore.

Mr. T. Guthrie will show Diagrams illustrating the Development of the Middle Ear.

DENTAL SURGERY.

President: JOHN MCKNO ACKLAND, M.R.C.S., L.D.S., Exeter.

Vice-Presidents: PETER SIDNEY SPOKES, J.P., M.R.C.S., L.D.S., London; THOMAS ARTHUR GOARD, M.R.C.S., L.R.C.P., L.D.S., 28, Southernhay, Exeter; KENNETH WELDON GOADBY, M.R.C.S., L.R.C.P., L.D.S., London.

Honorary Secretaries: JOSEPH LEWIN PAYNE, M.R.C.S., L.R.C.P., L.D.S., 44, Devonshire Street, Portland Place, W.; GEORGE ARTHUR PEAKE, M.R.C.S., L.R.C.P., L.S.A., L.D.S., Alma House, Cheltenham.

The following subject has been selected for special discussion on Wednesday: The Causes, Effects, and Treatment of Dental Diseases in Children. To be opened by Mr. Edmund Owen, M.B., F.R.C.S., Dr. G. F. Still, F.R.C.P., and Mr. J. G. Turner, F.R.C.S., L.D.S.

The following is a synopsis of Mr. EDMUND OWEN'S remarks in opening this discussion: The chief *cause* of dental disease in children is imperfect development of the enamel and dentine due to faulty feeding. Any condition tending to the production of rickets favours histological imperfection of the teeth. Sterilized milk is harmful, as are also the speciously advertised patent foods. The present fashion of feeding children does not encourage healthful use of jaws and teeth. Two of the most serious effects of dental disease in children as met with by the general surgeon are septic ostitis of the jaw started by incubation of septic micro-organisms in a carious fang, and septic inflammation of the cervical lymphatic glands. The more quiet form of septic adenitis prepares the tissue for the incubation of the bacilli of tuberculosis. Thus, carious teeth are often found in association with cervical tuberculosis. The most important points as regards *treatment* are the regular inspection of the child's teeth, and the thorough dealing with carious spots; that it is easy to carry conservative principles too far. Prompt extraction of a doubtful tooth is safer than treatment by excavating and filling.

The following is an abstract of Dr. STILL'S paper:—Frequency of dental caries in children too often an overlooked cause of symptoms; local sepsis and general toxaemia; interference with digestion and symptoms arising therefrom; recurring headaches; probably also a cause of certain nervous disturbances; a predisposing, possibly a direct, cause of tuberculous infection of lymphatic glands; importance of parental care; value of dentist's supervision; the treatment of dental caries in children from the dentist's point of view and from the physician's.

Mr. J. G. TURNER'S paper will deal with hypoplasia of teeth under the heads of hypoplasia of malnutrition, inflammatory hypoplasia, traumatic hypoplasia, hypoplasia of congenital syphilis, hereditary hypoplasia. The relation to rickets is discussed, and a special form of syphilitic molar described. Cause, incidence, and treatment of dental caries in children is discussed, with special emphasis on early incidence, and the completeness of our knowledge as to cause and prevention. Extraction, as the most generally useful treatment and as prevention of oral sepsis, is urged. Ulcerative stomatitis is discussed in its possible relation to pyorrhoea alveolaris. The possibility of organized, or even State, assistance in preventing dental caries is touched on.

The discussion will be taken up by Messrs. Morton A. Smale, A. S. Underwood, J. F. Colyer, Kenneth Goadby, C. E. Wallis, Frank Coleman, W. R. Ackland, and Russell Barrett.

The following papers will be read on August 1st and 2nd:

ACKLAND, W. R., M.R.C.S., L.D.S.: Notes on Some Cases of Neuralgia.

BAKER, A. W. W., M.B., M.S., F.R.C.S.I., L.D.S.Dub.: Difficult Eruption of the Third Molar.

BENNETT, F. J., M.R C.S., L.D.S.: Some Anatomical Results of Efficient Mastication.

COLYER, J. F., M.R.C.S., L.R.C.P., L.D.S.: Irregularities of the Teeth as shown by the Jaws of Animals. A contribution to comparative pathology.

FAIRBANK, H. A., M.S., L.D.S.: Sarcomata of the Jaws.

Obstetrics and Gynaecology.

President: Ernest Hastings Tweedy, F.R.C.P.Ire., Dublin.

Vice-Presidents: William Fookes Thompson, M.D., Launceston; J. Macpherson Lawrie, M.D., Weymouth; Walter Ley Woollcombe, F.R.C.S.E., Plymouth; William Walter Hunt Tate, M.D., London.

Honorary Secretaries: George Herbert Johnson, M.R.C.S., 7, Den Crescent, Teignmouth; Hy. Russell Andrews, M.D., 7, Wimpole Street, London, W.; Edwin Josiah Toye, M.D., Bridgeland Street, Bideford.

The following is a preliminary programme of arrangements:

Wednesday.—Discussion, The Justification for Artificial Dilatation of the Cervix to Hasten Delivery at Full Time, with a discussion on the Most Appropriate Method for Procuring this Dilatation. To be opened by Dr. Robert Jardine.

The following is a synopsis of Dr. Jardine's paper: Justified by use and wont, also because by the performance of the operation in certain cases the mother's life can be saved, and in other cases it is necessary in the interest of the child. Methods of performance of the operation: (1) Methods which are somewhat approximated to the natural process—first, by the use of hydrostatic bags of the type of Barnes's or Champetier de Ribes's; secondly, the vaginal tampon which stimulates uterine action. (2) More rapid methods by stretching the canal—first, the manual method; secondly, the bimanual method; thirdly, the use of screw dilators of the type of Bozzi's. (3) Cutting methods—first, multiple incisions when the cervix is taken up; secondly, vaginal Caesarean section when the cervix is not taken up. The dangers of each of the methods will be dealt with, and the cases most suitable for the different methods will be indicated.

Thursday.—Discussion, Measures to be Recommended to Secure the Earlier Recognition of Uterine Cancer. To be opened by Dr. Herbert R. Spencer.

The following is an abstract of the remarks Dr. Herbert Spencer intends to make in opening the discussion:

Cancer of the uterus *at an early stage of its growth* is curable in a large proportion of cases by vaginal operations (high amputation of the cervix and vaginal hysterectomy), with a very small immediate risk of life. In more advanced stages it may still be cured by the extended abdominal operation, which, however, has a higher immediate mortality than the vaginal operations. The desirable object is to get cases of cancer in the early stages, whatever be the operation performed. Experience in this country shows that but a small proportion of patients present themselves to gynaecologists at the beginning of the disease, and that in most of them the disease is too far advanced for even the extended abdominal operation to give a chance of cure. This unfortunate state of things is due to: (1) The patient's ignorance of the early symptoms of the disease; (2) the practitioner's delay in examining the patient who presents the early symptoms of the disease (abnormal haemorrhage or discharge); (3) the disinclination or refusal of the patient to submit to examination; (4) the occasional difficulty in distinguishing between benign and malignant disease of the uterus. The remedy consists in: (1) Diffusion amongst women over 25 years of age of knowledge of the early symptoms of the disease, and of the fact that diagnosis can only be made by means of physical examination; (2) an appeal to all general practitioners to advise examination by finger, speculum, and, if necessary, by removal of growth for microscopic examination in all cases of bleeding and discharge which may be due to cancer; (3) the better education of medical students in practical gynaecology; (4) dilatation with tents and examination of the corporeal cavity with the finger is not less important than the microscopical examination of curettings in the diagnosis of cancer of the corpus. Results obtained in Germany.

The following propose taking part in the discussions: Professor Strassmann, Dr. Robert Bell, Dr. S. Cameron, Dr. Frederick Edge, Dr. W. E. Fothergill, Dr. A. L. Galabin, Dr. T. Arthur Helme, Mr. F. Bowreman Jessett, Dr. M. Handfield-Jones, Dr. J. Munro Kerr, Dr. Arnold Lea, Dr. A. H. N. Lewers, Dr. Cuthbert Lockyer, Dr. F. J. McCann, Dr. W. H. Newnham, Dr. Inglis Parsons, Dr. Charles Ryall, Mrs. Scharlieb, M.D., Sir William Japp Sinclair, Sir William Smyly, and Dr. Thomas Wilson.

Friday is set apart for the reading and discussion of short papers. The following papers will be read:

Cameron, Dr. S.: Fibroid and Fibromyomatous Tumours in Unusual Sites.
Edge, Dr. Frederick: A Note on the Technique of Abdominal Hysterectomy.
Kerr, Dr. J. Munro: A Case of Complete Rupture of the Uterus, with escape of the Fetus into the Peritoneal Cavity: Panhysterectomy: Recovery.
Lockyer, Dr. Cuthbert: The Operative Treatment of Cervix Carcinoma.
Scharlieb, Mrs., M.D.: A Short Report on Cases of Abdominal Section for Cancer of the Uterus.
Lawrie, Dr. Macpherson: Remarks on Six Successful Hysterectomies for Fibroid Disease in One Family.
Martin, Mr. Christopher: On Three Cases of Osteomalacia treated by Removal of the Ovaries.
Strassmann, Dr. Paul: Remarks on the Indications for, and Methods of, Operating on Uterine Fibroids.
Swayne, Dr. C. Walter: Chorion-epithelioma with Sections and Lantern Slides.
Wilson, Dr. Thomas: Pubiotomy, with Notes of an Illustrative Case.
Parsons, Dr. Inglis: A Series of 100 Consecutive Abdominal Sections in Hospital Practice.

State Medicine.

President: Arthur Newsholme, M.D., M.O.H., Brighton.

Vice-Presidents: Edward Alexander Brash, M.R.C.S., Exeter; Frederick Mann Williams, M.R.C.S., Plymouth; Professor Henry Richard Kenwood, M.B., London.

Honorary Secretaries: Sack Noy Scott, M.R.C.S., Plymstock, Devon; Francis Charles Martley, M.D., 71, Lower Baggot Street, Dublin.

The following preliminary arrangements have been made:

Wednesday.—Dr. Newsholme will introduce a discussion on The Co-ordination of the Public Medical Services.

Dr. H. Cooper Pattin, Dr. H. Manley, Dr. F. E. Freemantle, Dr. M. D. Edes, and Dr. Joseph Kenny will take part in this discussion.

The following is a summary of Dr. Newsholme's paper in introducing the discussion: The scope of preventive medicine is no longer confined to germ-borne diseases, but extends to such early treatment of any disease as will secure a less severe or less protracted later stage of disease.

The community as well as the individual is interested in this wider definition of preventive medicine, though, as shown by the serious loss of life and health still due to avoidable causes, this is only partially realized. Poverty and disease act in a vicious circle, and the practical problem considered in this paper is the means by which people may be prevented from becoming poor by preventing them from becoming sick.

Official and voluntary agencies now at work show how much is already being done in the communal treatment and prevention of sickness. The list of these agencies given in the paper shows that the distinction between prevention and treatment has never been maintained. A rapidly-increasing proportion of total sickness is being treated in voluntary and in State or rate supported institutions.

Are we getting a satisfactory return for this increasing burden on rates, taxes, and charity? Whether viewed from the standpoint of patients, doctors, or of the public health, the present state of the medical service must be condemned as unsatisfactory.

The conditions of private medical practice among the poor are admittedly most harassing and unsatisfactory to the doctor. To the patient they are equally unsatisfactory, for (1) diagnosis is belated, and (2) treatment is curtailed owing to expense. (3) In dispensaries, etc., there is a serious waste of time. (4) There are no co-ordinated arrangements for medical consultations. (5) Valuable information as to the incidence of disease is wasted. (6) There is a great waste of information as to the existence of conditions conducing to disease.

These defects can be overcome, as is seen in the co-ordinated arrangements where the notification of consumption is successfully at work. Thus the visit of an officer to the notified patient sets in operation all the prophylactic, curative and sanitary measures which are needed, equally for the welfare of the patient and of the

public. Undetected cases are recommended for diagnosis and treatment. Sanatorium training and treatment are secured.

These defects are not overcome, for instance, when the organization for the medical supervision of scholars is separate from the general public health administration of a district. Much of the medical inspection of scholars if it is to be efficient must be done by interviewing parents, and much of it involves home visits. The home is the point from which many of the evils discovered by medical school inspection will have to be attacked and controlled. In actual fact parents will not tolerate dual medical examinations for school purposes, and on the other hand neither school doctor nor medical officer of health fulfil the complete needs of the case. These will only be met when district doctors are appointed by each municipality, and these doctors are co-ordinated with the mechanism of preventive medicine, enabling us to secure the early systematic and unstinted diagnosis and treatment of all disease before, even more than at, school ages.

The present state of medical service is evidently transitional. Neither provident dispensaries nor cries against "hospital abuse" and "undercutting" practice have been able to hinder the steady progress towards the treatment of disease at the expense of the community; nor is it possible to arrest this trend. What has hitherto been done in the collective treatment of disease is merely a phase in the evolution of the system which will effectually ensure the early recognition and proper treatment of all diseases at the expense of the community. Such a system would justify itself economically by the corresponding reduction of sickness and of inefficiency; in short, the justification of a municipal medical service both economically and medically consists in its being a branch of a general system of preventive medicine. This necessarily implies that it must centre round an expanded Public Health Medical Service, embracing every phase of disease and every means for maintaining health. By this means information of preventive value will no longer be allowed to run into culs-de-sac and be lost, preventive medicine being regarded as a whole, and its many fragmentary portions being no longer allowed to continue relatively impotent by being detached from single executive control.

Thursday.—Professor Kenwood will open a discussion on The Reduction of Infant Mortality by Better Management and Control of the Milk Supply. It is further proposed to consider the Abolition of Private Slaughter-houses and a more strict Inspection of our Meat Supplies.

The following is a synopsis of Professor KENWOOD'S remarks: A great waste of infant life results from the use of raw milk; but statistical evidence must be somewhat discounted. The present milk supply can (and must) be made cleaner and safer, but absolute cleanliness and safety are unattainable. The use of raw milk for infant feeding should therefore be discouraged, at least during the summer. Suggestions for obtaining a cleaner and safer milk supply. The general neglect of sanitary authorities to do their duty. Many dairy companies do the work of the defaulting sanitary authorities. Despite all our efforts to foster breast-feeding a large proportion of infants will be artificially fed, and such feeding must be made as safe as possible. Infant consultations preferred to municipal milk dépôts. A general tendency to grossly exaggerate the dangers of sterilized milk. Some facts and arguments in favour of its use. Reasons why pasteurized milk is to be preferred. A bottled supply advocated. A recommendation.

Dr. E. W. Routley (Aldershot) will read a paper on Infant Mortality the Result of Home Contamination of Milk. The following will contribute towards this discussion: Lieutenant-Colonel R. Caldwell, R.A.M.C.; Dr. Herbert Jones, Dr. F. E. Freemantle, Dr. W. J. Thompson, Professor J. S. Woodhead, Dr. Cuthbert Thompson (Kentucky), and Dr. T. Frederick Pearse (Calcutta).

Friday.—It is proposed to discuss the following questions on Rural Hygiene: (*a*) The Isolation of the Infectious Sick in Rural Districts; (*b*) The Difficulties in the Operation of the Midwives Act in Rural Districts; (*c*) The Housing of the Labourer in Rural Districts; (*d*) The Economical Treatment of the Sewage of Small Communities; (*e*) What constitutes "Sufficient Supply of Wholesome Water," P. H. W. Act, 1878?

These subjects will be introduced or discussed by Dr. W. F. Brown (Ayr), Dr. J. Arnallt Jones (Aberavon), Dr. F. C. Freemantle (Hertford), Dr. J. M. Wilson (Beverley), Dr. Herbert Jones (Hereford), Dr. C. H. W. Parkinson (Wimborne), Professor T. A. Starkey (Montreal).

Dr. J. MITCHELL WILSON, in introducing the discussion on sufficient supply of wholesome water, will deal with the following points: The requirements of the Act. Distinction between the needs of towns and villages. A sufficient supply under the Act really means a sufficient supply for purely domestic purposes. The theoretical estimates of this amount vary. A better estimate can be obtained from the experience of villages where water is drawn from a main through meters. These show theoretical estimates to be exaggerated, with the result that water schemes are made to appear more unduly costly than in practice they should really prove. Reasons are given for considering that a supply of six gallons a head as a minimum meets the requirements of the Act when water has to be stored in cisterns.

The following papers will be read on convenient days:

HORDER, Dr. T. Garrett (Cardiff): The New Vaccination Order.
TIDSWELL, Dr. H. (Torquay): The Effect of Tobacco Smoking on the Health of the Individual and the Nation.
MCWALTER, Dr. J. C. (Dublin): The Prevention of Putrefaction.
GILCHRIST, Dr. A. W. (Nice): On the Necessity of Increasing the Degree of Immunity Against Small-pox.

The septic sewage works at Exeter will be open for inspection, and the city surveyor will be glad to show and explain the works.

NAVAL AND MILITARY.

President: Inspector-General JAMES PORTER, C.B., M.D., R.N., Newport, Mon.

Vice-Presidents: Colonel GEORGE DEANE BOURKE, C.B., R.A.M.C., Devonport; Brigade-Surgeon-Lieutenant-Colonel J. RAGLAN THOMAS, M.D., V.D., Exeter; Surgeon-Lieutenant-Colonel DECIMUS CURME, M.R.C.S., Blandford.

Honorary Secretaries: Fleet-Surgeon HORATIO S. R. SPARROW, L.R.C.P., R.N., Royal Marine Barracks, Plymouth; Surgeon-Major JOHN ROBINSON HARPER, M.R.C.S., Bear Street, Barnstaple; Surgeon-Captain JOHN SHIRLEY STEELE PERKINS, M.B., V.M.S., 47, Southernhay West, Exeter; Major BENJAMIN FRAZIER ZIMMERMANN, R.A.M.C. (ret.), M.R.C.S., L.R.C.P., Bicton Lodge, Heavitree, Exeter.

The following programme has been arranged:

Discussions: The Treatment of Wounded in Fleet Actions. To be opened by Fleet Surgeon A. Gaskell, R.N.

The following is a synopsis of Fleet Surgeon GASKELL'S paper: I. Details on which we are all practically agreed: (1) A hospital ship should be built. (2) A new naval first-aid dressing should be devised. (3) First aid should be taught. (4) The haversacks should be distributed before action. (5) In peace time the first-aid dressing should frequently be used for instruction. (6) The surgical apparatus should be protected during action. II. Details on which we are as yet undecided: (*a*) The proper medical "preparation for battle." (*b*) The medical staff should be augmented. (*c*) Cleansing the men's skin and clothing before going into action. (*d*) The proper stations for the medical staff and their assistants. (*e*) The details of moving the wounded. (*f*) The treatment of the wounded after action. (*g*) The best authorities on the subject.

Treatment Afloat of (*a*) Syphilis, to be opened by Surgeon C. K. Bushe, B.A., M.D., R.N.; and (*b*) Burns and Scalds, to be introduced by Staff Surgeon P. J. Sutcliffe, M.B., B.C.

The following is a synopsis of Surgeon C. K. BUSHE'S paper on the Treatment Afloat of Syphilis:

(1) Necessity for keeping all cases of venereal sores, and some cases of urethral discharge, under regular observation even after these conditions have disappeared, with a view to the detection of symptoms of constitutional syphilis. (2) Necessity for sending "venereal cases" to accompany men wherever they may be drafted in order to inform medical officers of their condition, and the amount and nature of the treatment they have had. (3) The term "syphilis" only to be used to mean constitutional syphilis. (4) Particular attention paid to informing men of the nature of their disease, treatment necessary for its cure, and its effect if uncured on themselves and others.

Printed rules to this effect. (5) When to allow full liberty to syphilitics. Benefit of routine weekly inspection of all men suffering from syphilis. (6) Description of the administration of mercury by intramuscular injection as the most serviceable method. (7) Necessity for local applications to active lesions; value of solid copper sulphate for this purpose. (8) Marginal case notes written in on medical history sheets.

The following is an abstract of the remarks of Staff Surgeon P. T. Sutcliffe in opening the discussion on the Treatment Afloat of Burns and Scalds:

(1) Remarks to be confined to the more severe cases where the patient is landed at the earliest opportunity and sent to hospital. (2) Choice of dressing to be made, with some thought of those who will treat the patient when in hospital. (3) Forms of dressing. (*a*) Powders, short remarks on. (*b*) Oils, disadvantages of (especially carron): Not antiseptic; does not absorb discharges; requires frequent change of dressing; dirty with regard to linen, etc.; difficult to remove when other applications are chosen; space occupied by is considerable in men of war. (*c*) Lotions, advantages of: Aseptic and antiseptic; discharges are absorbed; requires less frequent change; has stimulating properties; space occupied is inconsiderable; choice of lotion. Remarks chiefly on the value of picric acid as an application and the dangers of storing. General advice to use lotions in preference to oils.

Papers:

Caldwell, Lieutenant-Colonel: Enteric Fever during Active Service.

Wilson, Lieutenant-Colonel E. M., R.A.M.C., C.B.: The Provision of Male Subordinates for the Medical Service on Mobilization in Case of War.

Davies, Lieutenant-Colonel A. M., R.A.M.C.: Enteric Fever: Its Spread by Personal Infection and Preventive Measures on Active Service. The Value of Inoculation as a Preventive.

Faichnie, Major, R.A.M.C.: Water Supply in Camps, on the March, and in Battle.

Blackham, Major, R.A.M.C.: The Teaching of Hygiene in the Army.

Giles, Surgeon-Colonel: The Position of the Volunteer Regimental Stretcher Bearer. Disposal of Excreta in Camp and on the March.

Bassett-Smith, Fleet Surgeon P. W., R.N.: Frequency of Aneurysms in the Royal Navy.

Duncan, Staff Surgeon G. E., R.N.: A Form of Oral Filter to be Used by all Persons in the Operating Room.

Norris, Staff Surgeon H. L., R.N.: Wireless Telegraphy and Hospital Ships.

Home, Fleet Surgeon, M.D., R.N.: The Choice of the Field of Practice (the Navy).

PATHOLOGICAL MUSEUM.

The following are the members of the Committee:—

President: J. D. Harris, M.D.

Honorary Secretaries: R. V. Solly, M.D., 40, West Southernhay, Exeter; G. P. Hawker, M.B., 8, St. Leonard's Road, Exeter.

Members of Committee:

A. E. Carver, M.D.	W. L. Pethybridge, M.D.
B. Dyball, F.R.C.S.	R. Pickard, F.R.C.S.
W. Gordon, M.D.	A. C. Roper, F.R.C.S.Edin.
R. Hingston	H. Sharp, M.B.
H. C. Jonas, M.D.	P. H. Stirk
R. H. Lucy, F.R.C.S.	G. L. Thornton, M.R.C.P.
H. Montgomerie, M.D.	H. W. Webber.

Ex-Officio Members:

The President-elect: H. Davy, M.D., F.R.C.P.

The Local Honorary Treasurers: J. Somer, M.R.C.S.; L. H. Tosswill, M.B.

The Local Honorary Secretaries: Russell Coombe, F.R.C.S.; G. T. Clapp, M.B.; Leonard R. Tosswill, M.R.C.S.

The Committee responsible for the organization of the Pathological Museum are anxious to secure the co-operation of the officers of the various Sections at the forthcoming annual meeting. They will be glad to take charge of, and place in the Museum for exhibition, any specimens, photographs, diagrams, or microscopic slides during the time they are not required by those who are reading papers or taking part in the discussions. The Committee therefore request members who propose to bring any material to communicate direct with the Honorary Secretaries, at 40, West Southernhay, Exeter, as this will greatly facilitate the necessary arrangements.

PROVISIONAL PROGRAMME OF PROCEEDINGS.

Saturday, July 27th.

9.30 a.m.—Annual General Meeting, to be followed immediately by Representative Meeting.

Monday, July 29th.

9.30 a.m.—Adjourned Representative Meeting.
4 p.m.—Reception by the R.W. the Mayor in the Guildhall.

Tuesday, July 30th.

9.30 a.m.—Adjourned Representative Meeting.
12 noon.—Service at the Cathedral.
Exhibition of Foods, Drugs, and Instruments.
2.30 p.m.—Adjourned General and Representative Meetings. Induction of President.
4 p.m.—Garden Party by the R.W. the Mayor on Northernhay.
8.30 p.m.—President's Address in Theatre. Presentation of Middlemore Prize.

Wednesday, July 31st.

10 a.m. to 1 p.m.—Sectional Meetings.
Exhibition of Foods, Drugs, and Instruments.
2.30 p.m.—Address in Medicine.
3.15 p.m.—Adjourned Representative Meeting.
4 p.m.—Garden Party by Dr. Maury Deas (President, South-Western Branch), Wonford House.
Garden Party by Dr. Samways, Knowle, Clyst St. George.
Drive from Budleigh Salterton to Bicton House, where a Garden Party will be given by Lord Clinton, and drive back across Woodbury Common.
Drive across Woodbury Common, and Garden Party in Manor House Grounds Exmouth, to include a visit to Hayes Barton, the birthplace of Sir W. Raleigh.
8.30 p.m.—Reception by President and Members of the South-Western Branch on Northernhay.

Thursday, August 1st.

8 a.m.—Temperance Breakfast.
10 a.m. to 1 p.m.—Sectional Meetings.
Exhibition of Foods, Drugs, and Instruments.
2.30 p.m.—Address in Surgery.
4 p.m.—Garden Party by the Right Rev. the Lord Bishop of Exeter at the Palace.
Drive from Cullompton to Black Down Hills and Picnic Tea by Dr. Gidley, Cullompton.
Garden Party by Sir Thomas Dyke Acland, Bart., at Killerton.
Garden Party at Seaton.
7.30 p.m.—Annual Dinner.
8.30 p.m.—Ladies' Entertainment at Theatre.

Friday, August 2nd.

10 a.m. to 1 p.m.—Sectional Meetings.
Exhibition of Foods, Drugs, and Instruments.
4 p.m.—Garden Party by Sir Dudley Duckworth King, Bart., High Sheriff of Devon, and President of the Royal Devon and Exeter Hospital, at Wear House.
Luncheon Party at Teignmouth, and Drive to Chudleigh, tea being given at Ugbrooke by Lord Clifford of Chudleigh.
Luncheon Party at Torquay.
Luncheon Party at Sidmouth.
8 p.m.—Popular Lecture in Theatre by Sir John William Moore.
8.30 p.m.—Reception by Civic Authorities in Royal Albert Memorial.

Saturday, August 3rd.

Excursions.

ANNUAL EXHIBITION.

The Annual Exhibition of Foods, Drugs, Medical and Surgical Instruments, Sanitary and Ambulance Appliances, etc., will be held at the Victoria Hall, Queen Street, within two minutes' walk of the Reception Room, from Tuesday, July 30th, to Friday August 2nd. The exhibition will be open from 9 a.m. to 6 p.m. daily.

HONORARY LOCAL SECRETARIES:

Russell Coombe, M.D. (Cantab.), F.R.C.S.Eng., 5, Barnfield Crescent, Exeter.
G. T. Clapp, M.B. (Cantab.), 14, West Southernhay, Exeter.
Leonard R. Tosswill, M.R.C.S., L.R.C.P., 34, West Southernhay, Exeter.

EXCURSIONS.

SATURDAY, AUGUST 3RD.

1. *Plymouth.*—The Mayor of Plymouth will kindly entertain 125 members to luncheon at 1 p.m. At 3 p.m. the members resident in the three towns and district have arranged for a steamer to leave West Hoe Pier for a trip round Plymouth Sound, the Hamoaze, and the River Tamar. At 4.30 there will be tea at Mount Edgcumbe, kindly provided by the Earl of Mount Edgcumbe. The steamer will return to West Hoe Pier about 6 p.m. Ladies will be heartily welcomed on the steamer trip, and also at tea. In addition, arrangements will be made in the morning for visiting Devonport Dockyard. The P.M.O., R.A.M.C., and the Inspector-General, R N., will be pleased to show members over the Station Hospital, Devonport, the Military Families' Hospital, and the Royal Naval Hospital, Plymouth. The Inspector-General, R.N., has also arranged for visits to H.M.S. *Cambridge* (gunnery ship, H.M.S. *Defiance* (torpedo ship), H.M S. *Indus* (training ship for artificers), etc.

2. *Falmouth.*—An unlimited number of members will be entertained at luncheon.

3. *Ilfracombe.*—The Chairman, J. G. Dodd, Esq., J.P., and members of the Urban District Council will entertain twenty-five members to luncheon, and before leaving, Dr. C. W. Toller will kindly provide refreshments at the Hydropathic.

4. *Bideford and Clovelly.*—Members will proceed to Bideford by rail, continuing the journey to Clovelly by coach. Mrs. Hamlyn, of Clovelly Court, will kindly entertain twenty members to luncheon, and on the return journey it is expected that tea will be provided at Bideford by the kindness of the Mayor.

5. *Tavistock and Endsleigh.*—Members will proceed to Tavistock by rail, arriving about 11.30 a.m., driving thence to Endsleigh, the beautiful seat of His Grace the Duke of Bedford, who has kindly promised to entertain fifty members at luncheon. Returning to Tavistock, tea will be provided at the Bedford Hotel.

FROM WEST OF SCOTLAND TO EXETER.

Dr. JAMES HAMILTON (Honorary Secretary, Glasgow and West of Scotland Branch) writes: For the benefit of Representatives and others who purpose going to Exeter from Glasgow and the West of Scotland, I would remind them that they have a considerable choice of routes. If they wish to rail it all the way, the G. and S.W. (St. Enoch's) runs two suitable trains—one leaving Glasgow at 9.20 a.m., arriving at Exeter 10.30 p.m., and another leaving at 5.30 p.m., arriving at Exeter 8.30 a.m., both changing at Bristol; while the Caledonian (Central) runs a through train leaving Glasgow at 5.55 p.m., arriving at Exeter at 8.20 a.m. For those, on the other hand, who would enjoy a sea trip, two routes are available: Messrs. Swan and Co. run steamers every Monday and Thursday to Bristol, due Wednesday and Saturday evenings respectively; and the Clyde Shipping Company run steamers to Plymouth on Monday, July 22nd, and Friday, July 26th, arriving on the Thursday and the Monday following respectively.

THE JOURNEY FROM LANCASHIRE AND CHESHIRE TO EXETER.

Dr. W. G. BOOTH, 30, Swan Street, Manchester (Representative of the Manchester (Central) Division) writes: The most convenient train for Representatives of this Branch is the one leaving London Road, Manchester (L.N.W.), at a quarter past twelve (12.15 noon) on Friday, July 26th, arriving at Exeter at 6.50. Representatives from the northern districts can join the train at Stockport at 12.25, and at Crewe (North Wales also) at one o'clock (1.12). If twenty passengers can be guaranteed by Thursday, July 23rd, a saloon will be engaged. Names to be forwarded before that date to Dr. W. G. Booth, 30, Swan Street Manchester.

TRIPS AND CIRCULAR TOURS IN THE NEIGHBOURHOOD OF EXETER.

EXETER is a particularly convenient tourist centre; by a glance at the map it will be seen that railway lines radiate from it in all directions. The following information is compiled so that members may readily find the easiest and cheapest method of seeing any particular part of the country.

Tickets to all these places (except the excursions especially named) can be obtained (on production of member's ticket) at a reduced rate for the return journey.

BIDEFORD, WESTWARD HO, CLOVELLY.

Bideford is two hours by rail from Exeter, Clovelly an additional two hours by coach. There is a daily excursion by the L. and S.W.R. to Clovelly via Bideford and thence by coach. Return fare from Exeter, including coach, 8s.

LYNTON, LYNMOUTH, WOODY BAY, WATERSMEET.

Lynton and Lynmouth are between three and four hours by L. and S.W.R. from Queen Street, change at Barnstaple. Watersmeet and Woody Bay are reached by walking or driving from Lynmouth. There is an excursion by the L. and S.W.R. on Monday, Wednesday, and Saturday. Return fare from Exeter, 5s. 3d.

A special coaching trip to Lynton, starting from Dulverton and passing over some of the most wild, beautiful, and romantic parts of Exmoor, will be arranged if there are sufficient members and their friends to make up a coaching party. The return journey from Lynton would be made by rail. This will allow about two hours to see Lynmouth.

SEATON AND LYME REGIS.

Seaton.—L. and S.W.R. (Queen Street), change at Seaton Junction. One hour by rail from Exeter.

Lyme Regis.—L. and S.W.R. (Queen Street), change at Axminster. One and a half to two hours from Exeter.

These places are 7 miles apart, and the well-known Landslip is between the two.

On Wednesday there is a circular tour from Exeter, which may be taken either from Seaton to Lyme or vice versa, passengers finding their own way between the two places. Fare, 2s. 6d.

EXMOUTH AND BUDLEIGH SALTERTON.

L. and S.W.R. (Queen Street), half an hour from Exeter.

Steamer Excursions.—The well-appointed steamers, *Duke of Devonshire* and *Duchess of Devonshire*, leave Exmouth daily for trips up and down the coast. A time-table of these excursions will be placed in the Reception Room. A steam launch makes frequent journeys from Exmouth to Starcross.

OTTERY ST. MARY AND SIDMOUTH.

L. and S.W.R. (Queen Street), change at Sidmouth Junction. Both places are about one hour from Exeter.

The Collegiate Church at Ottery is a fine old church, and is a half-scale copy of Exeter Cathedral.

STARCROSS, DAWLISH, TEIGNMOUTH, NEWTON ABBOT, TORQUAY, PAIGNTON, DARTMOUTH, AND TOTNES.

There are frequent trains from St. David's Station (G.W.R.) to these places.

A steam launch to Exmouth meets most of the trains at Starcross. This makes a short circular land and sea trip, members returning by rail from Exmouth if preferring to do so.

Dartmouth can be taken *en route* by three different circular trips as under.

1. Rail to Dartmouth, thence by steamer up the Dart to Totnes, returning to Exeter by rail or vice versa according to tide. Fare, inclusive of steamer, 3s. 9d.

2. To Kingsbridge by rail, Kingsbridge (via Torcross and Slapton Sands) to Dartmouth by coach, thence by rail to Exeter. Fare, inclusive of coach, 5s. 6d.

3. Sea trip by steamer from Exmouth to Dartmouth.

At Torquay, Dr. Courtenay Dunn (Fair View), offers to secure lodgings for members who write to him enclosing a stamped envelope; accommodation can, he states, be obtained at very reasonable rates.

DARTMOOR COACHING DRIVES.

1. A circular tour by G.W.R. to Moreton Hampstead, thence across Dartmoor to Prince Town by coach, returning by rail via Plymouth. This trip opens up some of the choicest scenery in Devonshire, passing across the centre of Dartmoor and bringing under notice well known places of moorland interest, amongst which are Wistman's Wood, Two Bridges, Dartmeet, Crocken Tor, Grimspound

and Prince Town. The tour is made on Monday, Wednesday, Thursday and Saturday. Inclusive fare, 8s. 6d.

2. Circular trip by G.W.R. to Ashburton, thence by coach through the Buckland and Holne Chase drives and via Prince Town to Tavistock, returning from Tavistock by L. and S.W.R. to Exeter. This drive is considered to pass through some of the prettiest of the Dartmoor scenery and will enable visitors to see the fine stone avenues above Merivale Bridge. The tour can only be arranged if there are sufficient numbers to make a brake party, and members anxious to make this excursion will be requested to place their names on a list in the Reception Room.

3. There are daily coaching drives over Dartmoor, starting from Newton Abbot and Bovey Tracey. These drives take in Haytor Rocks (1,500 ft.), Bowerman's Nose Rock, the Logan Stone, Manaton and Becky Falls. One of these drives is well worth making.

4. *Dartmoor Convict Prison.*—Dr. Dyer, P.M.O., has obtained permission from the authorities to show thirty members over the convict prison, and has kindly offered to show round the prison ten members on Wednesday, ten on Thursday, and ten on Friday, and to provide tea afterwards. To reach the prison, a circular tour has been arranged—rail to Ashburton, thence by coach through the Holne Valley and across Dartmoor to the prison, returning via Tavistock to Exeter—particulars of which will be found in the Reception Room.

5. *Dartmoor Sanatorium* (near Chagford).—Dr. A. Scott Smith will be pleased to see any members anxious to view this sanatorium. Wagonettes will meet motor bus (L. and S.W.R.) at Chagford and drive members to the sanatorium, and they will be provided with luncheon and tea. Notice will have to be given.

6. *Didworthy Sanatorium.*—The Committee will be pleased to see any members interested in sanatoriums. Carriages will convey them to the Sanatorium from Brent Station (G.W.R.), and a light luncheon and tea will be provided. Notice will have to be given.

EXMOOR COACHING EXCURSIONS.

As there are no circular excursions over Exmoor by the railway companies, coaching expeditions can only be arranged if there is a sufficient number of members and their friends to make a coaching party. Exmoor is the country of the Doones and the home of the wild stag. The wildness and loneliness of this vast expanse of hilly country has a peculiar charm of its own, and is well worth seeing. The railway journey to Dulverton, whence the coach drives start, passes up the lovely Exe Valley. Dulverton is reached by Great Western Railway from St. David's Station.

Map of country surrounding Exeter illustrating the circular rail and coach tours.

BOSCASTLE AND TINTAGEL.

There is a daily cheap excursion to these interesting places by the London and South-Western Railway. The tour is taken by rail to Camelford, thence by coach or char à banc to Boscastle and Tintagel, returning to Camelford. The drive passes through delightful scenery with excellent sea views throughout, and visits the strange old world harbour of Boscastle and the sequestered glen and waterfall of St. Nighton, the fabled trysting place of the Knights of the Round Table. Fare, including coach drive, 5s.

LOCAL ENTERTAINMENTS.

IN addition to the information given above as to the excursions which have been arranged for Saturday, August 3rd, we may here publish some account of entertainments which have been organized for the other days on which the meeting will be held.

While possessing numerous features of interest in itself, Exeter will be found to have this advantage over some other cities at which the annual meeting has been held in that not only is it surrounded by some of the most beautiful country in England, but within easy reach of it are many seaside and inland holiday resorts, each possessing some special charm and attraction of its own. It is no wonder that members attending the meeting should wish to see as much of this picturesque scenery and as many of these charming spots as may be possible within the space of the afternoons of one short week, and in deference to their wishes the aim of the Local Entertainments Subcommittee has been so to distribute the various entertainments, that members may be enabled not only to visit the most attractive of these places, but also, by means of specially arranged drives in their neighbourhood, may have every opportunity of seeing the beauty of their setting among the hills of fair Devon.

Those who prefer other forms of recreation have not been forgotten. Members of the Association will be welcome at the various golf links in the neighbourhood; boating may be had on the canal; while those who delight to—

"... throw, nice judging, the delusive fly,"

will find, within easy reach, many streams which may be fished on payment of a small sum.

The following list gives some particulars of the entertainments which have been arranged.

On *Tuesday, July 30th*, the Mayor will give a garden party on Northernhay, at which the band of the Royal Marine Light Infantry (Plymouth Division) will play.

On *Wednesday, July 31st*, members will have the choice of four entertainments during the afternoon. A garden party will be given by Dr. P. Maury Deas (President, South-Western Branch) at Wonford House, Exeter. A garden party will be given by Lord Clinton at Bicton, which will be reached by a pleasant drive from Budleigh Salterton along the pretty and peaceful valley of the Otter. The grounds of Bicton have long been noted for their beauty, and contain the finest collection of rare and ornamental trees in the county. On the return journey members will be driven back to Budleigh Salterton by another route by Hayes Barton, the birthplace of Sir Walter Raleigh. A garden party will be given by Dr. Samways, at Knowle, Clyst St. George; and a garden party will be given in the Manor Grounds, Exmouth, in connexion with which arrangements have been made for taking those who may desire it for a drive over Woodbury Common, a plateau sheltering Exmouth from the north. From here one of the most magnificent views in the county may be obtained. Looking inland, on either hand lie the valleys of the Exe and the Otter; and on the horizon, 30 miles away, the rugged outline of the Dartmoor Tors is visible. Seawards, the view is, if possible, still finer; stretching in a bold sweep from Portland on the east to Berry head on the west, sheltered bay alternating with bold headland, over 50 miles of the Dorset and Devon coast can be seen on a clear day. In the evening the President and members of the South-Western Branch will give an evening fête on Northernhay.

On *Thursday, August 1st*, members will again have a choice of four places at which to spend the afternoon. Those who prefer to remain in Exeter may attend the garden party given at the Palace by the Bishop of Exeter. For those who wish to go further afield, there is the garden party given by Sir Thomas Dyke Acland, at Killerton, noted for its fine timber and its herd of deer; or there is the drive from Cullompton and the picnic tea given by Dr. Gidley on the Black Down Hills, from which extensive views can be obtained over the counties of Devon and Somerset; while for the large number who will prefer to visit one of the most charming of the South Devon watering-places, there is a reception at Seaton, after which the guests will be driven to the many places of beauty and interest in its neighbourhood, including the Dowlands Landslip, a weird and romantic spot which alone is worth a visit. The annual dinner of the Association will take place at 7.30 p.m., and members intending to be present who have not yet notified the local committee are asked to communicate with the Secretary of the Dinner Committee, Dr. C. E. Stokes, Warkworth House, St. Thomas, Exeter, as early as possible. The dinner ticket, with wine, is one guinea, without wine but inclusive of aërated waters, fifteen shillings. On the same evening the ladies' entertainment will be given at the theatre, Exeter.

On *Friday, August 2nd*, a garden party will be given in the afternoon by the High Sheriff of Devon, Sir Dudley Duckworth-King, at Wear House, near Exeter; and luncheon parties have been arranged at three of the most popular South Devon health resorts—Sidmouth, Teignmouth, and Torquay. At Sidmouth, after the luncheon, members should take the opportunity of inspecting the well-equipped baths. The views from Salcombe Hill and Peak Hill, which flank Sidmouth on the east and west, are as fine as those to be obtained from Woodbury Common. From Teignmouth, after the luncheon, members will be driven to Chudleigh, the rocks and caverns of which are worth a visit, and tea will be given at Ugbrooke by Lord Clifford of Chudleigh. The charms of Torquay are so well known and appreciated that anything we could say of them would be superfluous. The luncheon will be followed by drives in the neighbourhood; by the courtesy of Colonel Cary the grounds of Torre Abbey will be open during the afternoon, and tea will be provided there. At Exeter, in the evening, the Mayor and citizens will give a reception in the Royal Albert Memorial Museum.

In addition to the above, arrangements have been made to conduct parties over the Cathedral, and to the many places of interest in the city. Full particulars of these, and also of means of access to the other entertainments, will be published in the *Daily Journal*.

Golf.—The Committee of the Royal North Devon Golf Club has most kindly offered to admit members of the Association as honorary members during the week of the meeting; and arrangements have also been made for members to play at the Budleigh Salterton, Exeter, Exmouth, and Warren Golf Clubs on payment of the usual visitors' fees.

Lawn Tennis.—The Victoria Park Lawn Tennis Club has arranged a tournament during the week, for which it will be pleased to receive entries from members of the Association or their ladies. Entries for the men's singles (entrance fee 5s.) close on Monday, July 29th. For all the other events (entrance fee 2s. 6d.) entries will close on Thursday, July 25th. Names and entrance fees should be sent to Mr. Harold Ward, 36, St. Leonard's Road, Exeter, from whom all further particulars may be obtained.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

LEINSTER BRANCH:

EAST LEINSTER DIVISION.

THE annual general meeting was held in the Royal College of Physicians on Wednesday, July 3rd.

Election of Officers.—The following gentlemen were appointed: *Chairman*, Dr. J. M. Neale (Newbridge); *Vice-Chairman*, W. R. Dawson, M.D. (Finglas); *Representative for Representative Meetings*, J. D. Hillis, F.R.C.S.I. (Rathmines); *Honorary Secretary and Treasurer*, Reginald

Peacocke, M.D. (Blackrock); *Executive Committee*, J. Wallace Boyce, M.D., H. C. Earl, M.D., W. V. Furlong, M.D., R. L. Heard, M.B., R. N. Lyon, J. Mason, M.B., J. F. Pollock, M.D., Professor A. H. White, Isaac Ussher, J.P.; *Representatives on Branch Council*, H. C. Earl, M.D., J. D. Hillis, F.R.C.S.I., W. V. Furlong, M.D., J. Mason, M.B., Reginald Peacocke, M.D.

METROPOLITAN COUNTIES BRANCH:

WESTMINSTER DIVISION.

THE annual meeting of the Division was held at 5 p.m. on Friday, June 28th, at St. James's Vestry Hall, Piccadilly, G. E. HASLIP, M.D., Chairman, presiding.

Central Emergency Fund.—Dr. HASLIP reminded the members of the necessity of subscribing to the Central Emergency Fund, and it was agreed that a circular should be sent to each member of the Division asking for a subscription of 5s., and that this suggestion should be recommended to other Divisions.

Special Representative Meeting.—Dr. EWART submitted his report on the Representative Meeting *re* the proposed Charter. A vote of thanks was accorded to Dr. Ewart for his services.

Election of Officers.—The following officers were elected for 1907-8: *Chairman*, Dr. Knowsley Sibley; *Vice-Chairman*, Dr. William Ewart; *Honorary Secretary and Treasurer*, Mr. Harvey Hilliard; *Representative for Representative Meeting*, Dr. William Ewart; *Representatives on the Branch Council*, Mr. Hilliard, Dr. Sibley, Dr. Ewart (*ex officio*), Dr. Donald Baynes, Dr. Bernard O'Connor; *Executive Committee*, Drs. Addinsell, F. J. Allan, Donald Baynes, Cautley, Dauber, Haslip, Des Voeux, Mr. Durham, Drs. F. J. McCann, Bernard O'Connor, Bruce Porter, Inglis Parsons, J. E. Sinclair, and Finucane.

Report of Executive Committee.—The SECRETARY submitted the report of the Executive Committee for 1906-7, which was received and adopted.

Vote of Thanks to Chairman.—Dr. HASLIP gave a short review of the year's work, and was accorded a hearty vote of thanks for the able manner in which he had discharged the duties of Chairman of the Division. Dr. Haslip thanked the officers and Committee for their assistance during his term of office.

OXFORD AND READING BRANCH:

OXFORD DIVISION.

THE annual meeting of the Division was held at Moreton-in-Marsh, Gloucestershire, on Friday, July 5th.

Luncheon.—Some twenty members attended the luncheon at the White Hart Hotel.

Installation of New Chairman.—Dr. Collier vacated the chair in favour of Dr. R. Yelf, of Moreton-in-Marsh, who assumed the office of chairman for the ensuing session. He (Dr. YELF) delivered a short and interesting address on the history of the surrounding district.

Confirmation of Minutes.—The minutes of the last meeting were read.

Report of Executive Committee.—The SECRETARY read the report of the Executive Committee. This stated that the meetings had been more than usually well attended, owing partly to the introduction of subjects for discussion. The Division was indebted to Dr. Garrod and Dr. Newton Pitt, who had on separate occasions come down from London to open these discussions. The numbers of the Division had been well maintained, and four new members had joined. The loss to the Division by the death of Dr. Cheatle, of Burford, a former President of the old Oxford Branch, was alluded to. Finally the settlement of the dispute between a member and the Mickleton Board of Guardians was announced. This was largely due to the support of the Division.

Balance Sheet.—The balance sheet was read and adpoted.

Election of Officers.—The following officers were elected: *Chairman-elect*, Mr. Anglin Whitelock, F.R.C.S. (Oxford); *Vice-Chairman* (by rotation), Dr. Collier, F.R.C.P. (Oxford); *Secretary and Treasurer*, Dr. Duigan; *Representative of Division*, Dr. Duigan; *Two New Members of Executive Committee*, Mr. E. A. Bevers, Dr. Denning, in place of Mr. Parker and Surgeon-Captain Hall, retiring.

Central Emergency Fund.—The SECRETARY read an appeal for contributions to the Emergency Fund of the British Medical Association, and it was resolved that notices of appeal should be sent to all members of the Division.

Notification of Births Bill.—The communication from the Medical Secretary *re* the Notification of Births Bill was read, and the Secretary was authorized to circularize the members of Parliament within the area of the Division with a view to gaining their support,

Visit to Lord Redesdale's Wild Garden.—Later in the afternoon a visit to Lord Redesdale's famous wild garden at Batsford was made, and finally members were entertained to tea at Bengal House by Dr. and Mrs. Yelf.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

MONMOUTHSHIRE DIVISION.

THE annual meeting was held at the Newport and Monmouthshire Hospital, on Friday, May 31st, Dr. S. BUTLER MASON in the chair.

Apologies for Non-attendance.—Apologies for inability to attend were received from Drs. W. D. Steel, T. H. Redwood, and Haslett.

Confirmation of Minutes.—The minutes of the meeting held on April 25th were read and confirmed.

Election of Officers.—It was proposed by Dr. GRATTE, seconded by Dr. GLENDINNING, and carried unanimously, that Dr. W. W. Steel be Chairman for the ensuing year. Proposed by Dr. GAMBLE, seconded by Dr. HAMILTON, and resolved, that Dr. W. F. Nelis be Vice-Chairman for the ensuing year. Proposed by Dr. G. A. BROWN, seconded by Dr. MCGINN, and resolved, that Drs. Greer and Coulter be re-elected Honorary Secretaries for the ensuing year. Proposed by Dr. GLENDINNING, seconded by Dr. MCGINN, and carried, that Dr. Greer be elected Representative at the Representative Meeting. A ballot having been held the following were elected Representatives on the Branch Council, on the motion of Dr. MCGINN, seconded by Dr. FROST: Drs. Mason, Marsh, Gratte, and G. A. Brown. Proposed by Dr. G. A. BROWN, seconded by Dr. C. S. VINES, and carried, that Drs. D. J. Jones, O. W. Morgan, R. W. Haslett, and E. M. Griffiths be elected members of the Executive Committee. Proposed by Dr. J. GLENDINNING, seconded by Dr. J. MCGINN, that Drs. Mulligan, D. T. Richards, and J. O'Keefe be re-elected members of the Contract Practice Committee. Drs. Lawrence and D. J. Jones kindly acted as scrutineers at the ballot.

Report of Executive Committee.—The report of the Executive Committee was read and adopted, on the motion of Dr. MCGINN, seconded by Dr. MORRELL THOMAS.

Annual Representative Meeting.—There was no fresh business for the Annual Representative Meeting in addition to that which had already been considered at the special meeting on April 25th.

Rules.—No new rules were made, and no existing rules were altered.

Quarterly Meetings.—It was decided to hold the quarterly meetings as follows: The autumn meeting at Abergavenny on the first Friday in September; the winter meeting at Newport on the last Friday in November; the spring meeting at Pontypool on the last Friday in February; the annual meeting at Newport on the last Friday in May. Power was given to the Chairman to vary the dates if necessary.

Ordinary Meetings.—Proposed by Dr. T. MORRELL THOMAS, seconded by Dr. PATON, and carried:

> That the ordinary meetings be clinical as far as possible.

Special Representative Meeting.—Dr. GREER gave a report of the Special Representative Meeting *re* Charter, and on the state of the Ebbw Vale dispute.

Votes of Thanks.—Proposed by Dr. MULLIGAN, seconded by Dr. GAMBLE:

> That the best thanks of the Division be given to the Directors of the Newport and Monmouthshire Hospital for permitting the meetings to be held in the Board Room, and to the Newport members for providing tea.

A vote of thanks to Dr. Mason for his services in the chair during his year of office was proposed by Dr. GLENDINNING, seconded by Dr. G. A. BROWN, and carried by acclamation.

Contract Practice Fund.—The following members kindly undertook to canvas their districts for contributions to the Contract Practice fund: Dr. E. M. Griffiths, Western Valleys; Dr. D. J. Jones, Eastern Valleys; Dr. A. G. Lawrence, Chepstow District; Dr. C. B. Gratte, Newport; Drs. C. Reidy and Bowen, Bargoed District.

NORTH OF ENGLAND BRANCH:
NORTH NORTHUMBERLAND DIVISION.

THE annual meeting was held in the Plough Hotel, Alnwick, on July 9th.

Election of Officers.—Officers for the year were appointed as follows: *Chairman*, Dr. Main (Alnwick); *Vice-Chairman*, Dr. McKay (Berwick); *Secretary*, C. Clark Burman, L.R.C.P. and S Edin., 12, Bondgate Without, Alnwick; *Representatives on Branch Council*, Drs. Maclagan and Robson; *Executive Committee*, Drs. Macdonald, Stumbles, Forrest, Dey.

The New Vaccination Order.—The SECRETARY proposed, and Dr. DEY seconded, that a special meeting of this Division be called so soon as the various Boards of Guardians gave notice to terminate the existing engagements of the Public Vaccinators in the Division, to consider the Vaccination Order, 1907, and decide upon a united line of action with reference to the same.

YORKSHIRE BRANCH.

IN the report of this Branch which appeared in the SUPPLEMENT of July 13th, 1907, p. 36, col. 1, last line and two next lines in col. 2 should read as follows: "Dr. Churton (Leeds): On the treatment of (*a*) maniacal delirium, (*b*) 'delirium of the respiratory centre,' (*c*) a rising pulse-rate with falling temperature, in acute pneumonia; with recent cases." In justice to ourselves, we feel bound to say that the sentence was printed as received.

Association Notices.

1907 ANNUAL GENERAL MEETING.

The Annual General Meeting of the British Medical Association will be held in the Royal Public Rooms, Exeter, on Saturday, July 27th, at 9.30 o'clock in the forenoon.

ANNUAL REPRESENTATIVE MEETING.

The Annual Representative Meeting will take place in the Royal Public Rooms, Exeter, on Saturday, July 27th, immediately after the Annual General Meeting, which will be held at 9.30 o'clock in the forenoon; on Monday, July 29th, at 9.30 a.m.; on Tuesday, July 30th, at 9.30 a.m. if required; also on Wednesday, July 31st, at 3.15 p.m. if required.

BY ORDER OF THE COUNCIL,

GUY ELLISTON, *General Secretary.*

April 25th, 1907.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

OWING to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

SOUTHERN BRANCH.—Notice is hereby given that during the month of August next the Branch will proceed to elect a member to fill the vacancy on the Central Council of the Association caused by the death of Dr. Joseph Groves. Candidates who have been nominated each by a Division or by not less than three electors must please send their application to me on or before August 10th next.—H. J. MANNING, Honorary Secretary, Laverstock House, Salisbury.

ANNUAL REPRESENTATIVE MEETING AT EXETER.

JULY 27TH AND 29TH, 1907, AND FOLLOWING DAYS IF NECESSARY.

NOTICES OF MOTION (Supplementary).

THE following Notices have been received from Divisions and Branches of Motions to be made in the Representative Meeting, arising out of Reports of the Council and Committees or out of Notices of Motions by Divisions already published in accordance with the Regulations.

Presentation of Cases to General Medical Council.

By Dr. JAMES HAMILTON, Member of Council (representing the Glasgow and West of Scotland Branch):

That in view of the letter of the President of the General Medical Council, and in view of counsel's opinion placed before the Central Council at the meeting of June 5th last, this Representative Meeting do hereby rescind for the present the resolution (Minute 312) passed at the Annual Representative Meeting of 1906 in the following terms—namely:

"That it is absolutely necessary, in the interests of the medical profession, that the Association should take up cases of a penal nature before the General Medical Council as complainants."

Notification of Births Bill.

By the SOUTH MANCHESTER DIVISION (Lancashire and Cheshire Branch):

That with reference to the Notification of Births Bill, steps be taken to oppose the imposition on the profession of what would be a breach of professional confidence.

Draft Charter.

By the SOUTH MANCHESTER DIVISION (Lancashire and Cheshire Branch):

That this Division is of opinion that a Charter at the present date in the history of the Association is premature, and should be postponed, and in the meantime would urge on the Central Authorities the necessity of at once applying to the Higher Court for the benefits which are at present required and urgent; and for powers to use the money of the Association for purposes of promoting providence and benevolence and other necessary reforms.

Ethical Aspects of Medical Consultation.

By the NORWICH DIVISION (East Anglian Branch):

With reference to the Special Report on the Ethical Aspects of Medical Consultation (page 75 of SUPPLEMENT of February 16th, 1907, paragraph *Arrangements for Consultation*)—

That the words "any person" be inserted before the word "other" in the fourth line of the paragraph.

By the NORWICH DIVISION (East Anglian Branch):

With reference to the paragraph, *Cases Seen at Consultant's House* (page 76 of the SUPPLEMENT of February 16th)—

That the words "in general," in the 10th line of the paragraph, be deleted; that in the 12th line of the paragraph there be inserted, between the word "patient" and the word "is," the words "has a medical attendant, and especially if he"; that the words in the 14th to 19th lines of the paragraph, "until he has . . . formed," inclusive, be deleted, and the following substituted: "unless he receives permission to communicate

at the conclusion of the consultation with the ordinary attendant"; and that the words in the 20th and 21st lines of the paragraph, "and may be a serious ethical offence," be deleted.

Recommendation 2, "Cases in which Consultation is Specially Required."

By the Cleveland Division (North of England Branch):

That, with reference to Recommendation 2, *Cases in which Consultation is Specially Required*, subclause (*a*) (page 76 of Supplement of February 16th), a practitioner in attendance should not be bound to call in a consultant in all cases of dangerous operation if he cares to take the responsibility upon himself.

Recommendation 3, "Choice of Consultant."

By the Blackpool Division (Lancashire and Cheshire Branch):

With reference to Recommendation 3 (page 76 of Supplement of February 16th), *Choice of Consultant*—

That there may be exceptional cases, in which circumstances might justify refusal to meet another in consultation.

By the Norwich Division (East Anglian Branch):

With reference to Recommendation 3, *Choice of Consultant*—

That, in the 5th, 6th, and 7th lines of the Recommendation, the words "the medical attendant is satisfied . . . special case" inclusive, be deleted, and the following substituted, "the one so selected has not, in the opinion of the ordinary medical attendant, special knowledge of the class of disease in question, and this situation should then be made clear to the patient."

Recommendation 4, "Refusal to Meet."

By the Norwich Division (East Anglian Branch):

With reference to Recommendation 4, *Refusal to Meet*—

That in the 1st line of subclause (*b*) the word "such" be inserted between the word "profess" and the word "peculiar"; and, in the 2nd line of the subclause, the words "as will" be substituted for the word "which."

Central Staff.

By the Stockport, Macclesfield, and East Cheshire Division (Lancashire and Cheshire Branch):

That in view of the continuous increase of the work in the Medical Secretary's Department, and the delays that have occurred in dealing with matters of the utmost importance to members of the British Medical Association, it be an instruction to the Central Council to at once consider the urgent necessity of increasing the paid medical secretariat, this Division being of opinion that nothing will so enhance the advantages of membership of this Association as successful treatment of questions affecting the interests of members, and that any increased expenditure will be amply justified by the consequent increase of membership.

By direction of the Chairman of Representative Meetings,

J. Smith Whitaker, *Medical Secretary.*

July 18th, 1907.

HAMPSTEAD GENERAL HOSPITAL.

Proposed Amalgamation with the North-Western London Hospital.

Dr. E. Collingwood Andrews (Hampstead) writes: In your last issue Mr. Craske makes a great deal of what is obviously an error in the report of my speech. My assertion was that the income from the invested funds of the North-West London Hospital was under £200 a year—it is actually £170. Mr. Craske endeavours to prove too much, and his account of the favourable financial condition of the North-West London Hospital is a curious commentary on the closing of its wards.

MEDICAL PRACTITIONERS AND THE WORKMEN'S COMPENSATION ACT, 1906.

In order to complete our treatment of this important measure, we have to refer to certain rules and regulations which have been issued under the authority of the Home Secretary and the Treasury with reference to the duties of medical practitioners and referees under the Act. They are issued in two series which must be dealt with separately. They may be conveniently referred to as (A) and (B).

(A) Regulations as to the Duties and Fees of Certifying and other Surgeons, and as to References to Medical Referees under S. 8 of the Workmen's Compensation Act, 1906.

These regulations, which were published on June 21st, 1907, have relation to the procedure which has to be adopted by workmen who are suffering from industrial diseases. R. 1 contains the following definitions (*inter alios*):

A "Certifying Surgeon" means either the certifying surgeon mentioned in Section 8 (1) (i) of the Act (that is to say, a surgeon who has power to grant a certificate of fitness for the purposes of the Factory Act, 1901), or a medical practitioner appointed by the Secretary of State to have the powers and duties of a certifying surgeon under the said section. An appointed surgeon means a surgeon having power, in pursuance of any special rules or regulations made under the Factory and Workshops Act, 1901, to suspend a workman from employment in the process or processes specified in such rules or regulations. The words "disease to which the Act applies," which are frequently used in these regulations, mean a disease mentioned in the third schedule to the Act, or a disease or injury (not being an injury by accident) to which the provisions of Section 8 have been extended by an order of the Home Secretary. A list of the diseases to which the section has been extended was published in the British Medical Journal, July 13th, 1907, at p. 121.

Certificate of Disablement.

R. 2 provides that where a workman applies to a certifying surgeon for a certificate (that is, a certificate of disablement) that he is suffering from a disease to which the Act applies, and is thereby disabled from earning full wages at the work at which he was employed, the certifying surgeon, on payment of the prescribed fee, and after obtaining certain particulars, and such further information which he may deem necessary, must proceed to make a medical examination of the workman, or must appoint a time and place for such examination, and must give notice of that time and place to the workman. The particulars which he is to obtain include (1) Name and address of workman; (2) disease in respect of which certificate is applied for; (3) symptoms complained of; (4) employment to the nature of which disease is attributed; (5) name and place of business of employer who last employed workmen in such employment; (6) (*where application is not made by the workman in person*) whether workman is able to travel for purposes of examination (see Sched., Form I).

After making an examination of the workman, the surgeon must either give him a certificate of disablement, or certify that he is not satisfied that the workman is entitled to such certificate. In either case he gives a certificate (which is to be in a form prescribed in the schedule to the regulations) to the workman.

Certificate of Suspension.

Where in pursuance of any special rules or regulations made under the Factory Act, 1901, the certifying or appointed surgeon, after a personal examination of the workman, suspends him from his usual employment on account of his having contracted an industrial disease; or where in the case of a workman applying to be suspended on account of his having contracted any such disease, the surgeon refuses to order his suspension, the surgeon must, on the application either of the employer or of the workman, and on payment of the prescribed fee, certify or refuse to suspend in accordance with the schedule to the regulations. (R. 4.)

Certificate where Disease not Due to Employment.

Where a certificate of disablement is given or a work-

man is suspended, and the case is one in which the disease contracted by the workman will be deemed, unless the employer proves or the certifying surgeon certifies to the contrary, to have been due to the nature of the employment in the process in which at or immediately before the date of the disablement or suspension the workman was employed, the surgeon, if he is of opinion that the disease contracted by the workman was not due to the nature of the employment, must certify accordingly. The certificate must follow the form prescribed in the schedule to the regulations (R. 5). For the purposes of this regulation an appointed surgeon has the same powers and duties as a certifying surgeon.

Certifying and appointed surgeons must keep copies of any certificates given by them and of any other documents relating to any case with which they may have to deal. They must supply copies to any employer or workman on payment of the prescribed fee (R. 6).

Fees to Certifying and Appointed Surgeons.

R. 7 provides that the fees which the certifying and appointed surgeons shall be entitled to charge in respect of duties performed under S. 8 of the Act (that is, the section relating to industrial diseases) shall be as follows:

Fees payable by the Workman

(i) For any certificate given under Regulation 3 (that is, certificate of disablement, or certificate that workman is not disabled):

(*a*) in cases where the medical examination of the workman is made by the surgeon in the performance of his duties under the Factory and Workshop Act, 1901, a fee of 1s ;

(*b*) in all other cases, a fee of 5s., and where the workman is unable to present himself for examination at the residence of, or other nearer place fixed by, the certifying surgeon, for every mile or portion thereof which the certifying surgeon is required to travel therefrom for the purpose of examining the workman, an additional fee of 1s.

(ii) For any certificate of suspension or refusal to suspend, under Regulation 4, when the medical examination of the workman is made in pursuance of any special rules or regulations under the Factory and Workshop Act, 1901, a fee of 1s.

(iii) For a copy of any certificate obtained under Regulation 6, a fee of 1s.

Fees payable by the Employer.

(iv) For any certificate of suspension or refusal to suspend, obtained by the employer under Regulation 4, a fee of 1s.

(v) Where the employer applies under Regulation 5 for a certificate that the disease contracted is not due to the nature of the employment, in respect of every such application (to include the certificate, if given), a fee of 2s. 6d.

(vi) For a copy of any certificate obtained under Regulation 6, a fee of 1s.

Appeals to Medical Referees.

Where an employer or a workman is aggrieved by the action of a certifying or appointed surgeon in giving or refusing to give a certificate of disablement, or in suspending or refusing to suspend a workman he may (within certain specified times) apply to the registrar of the county court for the district in which the workman was employed at the time of his examination by the surgeon for the matter to be referred to a medical referee (R. 8). An application must be in writing and must specify the grounds on which the reference is asked for (R. 9 (*a*)). The application is to be accompanied by the certificate, or a copy of the certificate, obtained from the surgeon by whose action the applicant is aggrieved, and by any available report or reports of any practitioner by whom the workman has been examined. If the applicant is an employer he must also send in the notice of disablement or suspension served on him by the workman, and an undertaking to pay any reasonable travelling expenses incurred by the workman in attending for examination by the medical referee (R. 9 (*b*)). If the application is duly made in accordance with the regulations, the registrar must refer the matter forthwith to a medical referee, and must forward to such referee by registered post one of the copies of the application, and the other documents filed therewith, with an order of reference according to the prescribed form (R. 10). The registrar must also make an order directing the workman to submit himself for examination by the medical referee (R. 11), and must send copies of the order of reference to the parties concerned (R. 12).

Who is to be the Medical Referee?

In the case of a reference or appeal under these regulations, R. 13 provides that the referee must be one of those appointed by the Secretary of State for the county court circuit which includes the district in which the case arises, and if the circuit has been subdivided and medical referees have been appointed for the subdivisions, shall be one appointed for the subdivision comprising that district. The reference may also be to a referee specially appointed for considering a particular class of case, or, if the surgeon by whose action the applicant is aggrieved has been appointed a medical referee, the reference shall not be made to him, but to such other medical referee as may be authorized to act (R. 13).

Duty of the Medical Referee.

On receipt of an order of reference duly signed by the registrar of a county court, together with copies of the necessary documents, the referee must fix a time and place for the examination of the workman, and give notice to the employer and workman accordingly. The workman and the employer (or the employer's representative) must attend at the appointed time and place. In the event of their failing to appear, the referee must decide on the matter forthwith upon such information as shall be available, and with or without a personal examination. Where, however, the absence of the employer or his representative or of the workman is shown to the satisfaction of the referee to be unavoidable, or where the referee considers it necessary to apply for expert assistance as hereinafter provided (see *sub. tit.* "Fees to Medical Referees," *infra*), it shall be open to him to adjourn the inquiry on the reference, and to resume it at such time and place as he may fix, after giving due notice to all parties concerned. (R. 14.) Before deciding on the matter referred to him, the referee must (except as provided in R. 14 *supra*) make a personal examination of the workman, and must consider any statements made or submitted by either party. (R. 15.) He must notify his decision to the registrar of the county court, the applicant, and the respondent (R. 16), and must send to the Home Office at the end of each quarter a statement in a prescribed form showing the fees due to him under the regulations.

Fees to Medical Referees for "Appeal" Cases.

The following fees and allowances are authorized to be paid to medical referees under these regulations:

(i) For deciding the matter referred to him in any reference and for all duties performed in connexion therewith, 2 guineas.

(ii) Where in order to examine the workman the medical referee is compelled to travel to a place distant more than two miles from his residence or such other centre as may be prescribed by the Secretary of State, in addition to the above fee, 5s. for each mile beyond two, and up to ten, miles distant from such residence or centre, and thereafter 1s. for each mile distant therefrom.

(iii) In cases involving special difficulty the medical referee may apply for special expert assistance which may be granted by the Secretary of State if he thinks fit, on such terms as to remuneration or otherwise, as he may with the sanction of the Treasury determine (R. 18).

The registrar of the county court must keep a record in a prescribed form of all references to medical referee made by him under the regulations (R. 20).

(B) DUTIES, ETC., OF MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT, 1906, SCHED. 1 AND 2.

Generally.—Broadly speaking, the duties of a medical referee fall under the following heads: (*a*) Inquiries as to the condition of a workman and his fitness for employment or as to whether and to what extent his incapacity is due to the accident; (*b*) inquiry as to whether the incapacity resulting from the injury is likely to be of a permanent nature; (*c*) duty to report on any matter material to any question arising in an arbitration under the Act; (*d*) duty to sit as assessor to a judge; (*e*) duty of examining a workman about to reside out of the United Kingdom.

A series of somewhat complex regulations, dated June 24th, 1907, deals with the powers, duties, and fees of

medical referees under these various heads. They may be conveniently dealt with as follows:

Regulations of General Application.

Where a medical referee is appointed to undertake any duty he shall be one of those appointed by the Secretary of State for the county court circuit which includes the district in which the case arises (R. 2). Where, however, there has been a previous reference in any case, any subsequent reference in the same case shall if possible be made to the same referee and shall be accompanied by the previous report or certificate, of the copy thereof, of the medical referee (*ib.*).

A medical referee cannot accept any reference unless it is signed or countersigned by the registrar and sealed with the county court seal (R. 3). The medical referee must send to the Home Office at the end of each quarter statements in a prescribed form of the fees due to him for the quarter under these regulations (R. 4). Where a claim is made for travelling expenses the medical referee must state the distance which he has had to travel (R. 5). R. 6 makes the important provision that in cases involving special difficulty the medical referee may apply to the Secretary of State for special expert assistance which may be granted by the Secretary of State, if he thinks fit, on such terms as to remuneration or otherwise as he may with the sanction of the Treasury determine. It is presumed that under this section it would be competent for a referee to apply for the assistance of one who has special knowledge of a particular form of disease.

Regulations as to the References under Sched. I (15).

It is provided by Sched. I (15) that a workman who is in receipt of weekly payments must, if so required, submit himself for examination from time to time by a practitioner employed and paid by the employer. If a workman submits himself to such an examination, or has been examined by a practitioner on his own account, and he and the employer are unable to agree as to his condition, the registrar may, on the joint application of the employer and workman, refer the matter to a referee.

It is provided by rules published on June 28th, 1907, that where a workman has given notice of an accident, or is in receipt of weekly payments under the Act, he shall not be required to submit himself, against his will, for examination by a medical practitioner provided by the employer, except at reasonable hours. Some limitation is to be placed to the number of times upon which a workman must submit to examination. Thus, after a period of one month from the date of the first payment of compensation, he need not submit to compulsory examination, except at the following intervals: Once a week during the second, and once a month during the third, fourth, fifth, and sixth months, after the date of the first payment, and thereafter once in every two months. It is provided, however, that where after the second month an application has been made to the county (in Scotland the sheriff) court or to a committee for a review of the weekly payment, the workman may be required, pending and for the purposes of the settlement of the application, to submit himself to one additional examination.

Rs. 9-13 of the rules as to medical referees lay down the procedure to be adopted by a referee in these circumstances. On receipt of a reference duly signed and sealed, he must fix a time and place for the examination of the workman, and must send notice accordingly to both the parties (R 9). Before giving the certificate required by the reference, he must personally examine the workman and must consider any statements which may be made or submitted by either party (R 10). The certificate is to be forwarded to the registrar from whom the reference was received (R. 12).

The scale of fees to be paid in respect of references under this part of the regulation is as follows:

(i) For a first reference (to include all the duties performed in connexion forthwith) ... ... 2 guineas.

(ii) For a second or subsequent reference to the same medical referee in the same case ... ... 1 guinea.

(iii) Where in order to examine the injured workman the medical referee is compelled to travel to a place distant more than two miles from his residence or such other centre as may be prescribed by the Secretary of State, in addition to the above fees—5s. for each mile beyond two, and up to ten, miles distance from such residence or centre, and thereafter 1s. for each mile distant therefrom (R. 13).

Examination of Workmen about to Reside Abroad.

References under Sched. I (18).

Sched. I (18) provides, in effect, that a workman who ceases to reside in the United Kingdom ceases to be entitled to weekly payment, unless he obtains the certificate of a referee that the injury is likely to be permanent. By R. 60 (2) of the Workmen's Compensation Rules (which were dealt with in the Supplement to the Journal of July 6th), a workman may apply to the registrar to refer to a medical referee the question whether the incapacity of the workman resulting from the injury is likely to be permanent, and by R. 60 (5) the registrar may make an order referring the matter to a referee. By R. 14 of the new regulations, the referee, on receiving a reference duly signed and sealed, must fix a time and place for the examination of the workman, and must send notice to the workman accordingly. Before giving the certificate (in the prescribed form) he must make a personal examination of the workman (R. 15), and he must forward the certificate, when made, to the registrar (R. 17). The fee to be paid to a medical referee in respect of a reference (to include all the duties performed in connexion therewith) under this part of these regulations shall be 1 guinea (R. 18).

Referees as Assessors.

Where a referee attends on the summons of the judge for the purpose of sitting with the judge as an assessor, as provided for in Sched. II (5), he is entitled for such attendance (to include his services as assessor) to a fee of 3 guineas, and where in order so to attend on the judge, he is compelled to travel to a place distant more than two miles from his residence or such other centre as may be prescribed by the Secretary of State, he shall be entitled in addition to the above fee to 5s. for each mile beyond two, and up to ten, miles distant from such residence or centre, and thereafter to 1s. for each mile distant therefrom (R. 19).

Reports Made by Referee at Request of Arbitrator or Judge.

By Schedule II (15) of the Act, any committee, arbitrator, or judge may, subject to regulations made by the Secretary of State and the Treasury, submit to a medical referee for report any matter which seems material to any question arising in an arbitration.

Conditions of Reference.

Before making any reference, the committee, arbitrator, or judge must be satisfied, after hearing all medical evidence tendered by either side, that such evidence is either conflicting or insufficient on some matter which seems material to a question arising in the arbitration, and that it is desirable to obtain a report from a medical referee on such matter (R. 20).

Form and Mode of Reference.

A reference "for report" must be made in writing, and must state the matter on which the report of the referee is required, and the question upon which such matter seems to be material. It must be accompanied by a general statement of the medical evidence given on behalf of the parties; and if such evidence has been given before a committee or an agreed arbitrator, each medical witness must sign the statement of his evidence, and may add any necessary explanation or correction (R. 21). On making the reference to the referee, the committee, arbitrator, or judge must make an order directing the injured workman to submit himself for examination by the referee. Before making the order they must inquire whether he is fit to travel. The workman must obey the order. If he is not fit to travel, a statement to that effect must be made in the reference (R. 22). The reference is addressed in general terms to "one of the medical referees appointed by the Secretary of State for the purposes of the Workmen's Compensation Act, 1906" (R. 24).

Report of the Referee.

On receipt of a reference duly signed and sealed, the referee must appoint a time and place for the examination of the workman, and must send him notice accordingly

(R. 27). He must make his report in writing, and forward it to the registrar from whom he received the reference (R. 28). The committee, arbitrator, or judge may, on request signed and forwarded in the same manner as the reference, remit the report to the referee for a further statement on any matter not covered by the original reference (R. 29).

Fees.

R. 30 provides that the following shall be the scale of fees to be paid to the medical referees in respect of references under this part of the regulations:

(i) For a first reference, to include examination of the injured workman and written report ... ... 2 guineas.
(ii) For a further statement under Regulation 29 on any matter not covered by the original reference ... ... 1 guinea.
(iii) For a second or subsequent reference to the same referee in a further arbitration on the same case, to include examination, if necessary, and written report ... ... 1 guinea.
(iv) Where in order to examine the injured workman the medical referee is compelled to travel to a place distant more than two miles from his residence or such other centre as may be prescribed by the Secretary of State, in addition to the above fees—5s for each mile beyond two, and up to ten, miles distant from such residence or centre, and thereafter 1s. for each mile distant therefrom.

Naval and Military Appointments

ROYAL NAVY MEDICAL SERVICE.

INSPECTOR-GENERAL C. C. GODDING has been placed on the retired list, at his own request, July 1st. His commissions are thus dated:—Surgeon, April 1st, 1873; Staff Surgeon, November 18th, 1882; Fleet Surgeon, December 31st, 1890; Deputy Inspector-General, June 4th, 1899; Inspector-General, December 5th, 1903. He served with the Naval Brigade against the Malays in 1875-6 (medal with clasp). He was also in the Egyptian war in 1882 with the 1st Battalion Royal Marines, and was present at the actions of Mallaha Junction, Kassasin (August 28th and September 9th), and Tel-el-Kebir (medal with clasp, Khedive's bronze star, promoted to be Staff Surgeon, and granted the 4th class of the order of the Medjidie). He was awarded Sir Gilbert Blane's gold medal for the year 1889 and 1890.

The following appointments have been made at the Admiralty: EWEN CAMERON, M.B., Surgeon, to the *Skipjack*, on recommissioning, July 23rd; DONALD T. HOSKYN, M.D., Fleet Surgeon, to Haulbowline Hospital, July 22nd; THOMAS E. H. WILLIAMS, Fleet Surgeon, to the *President*, additional, for Deptford Victualling Yard, temporary, August 1st; NORMAN L. RICHARDS, Fleet Surgeon, to the *Tenedos*, July 16th; WILLIAM JACKSON, M.B., Staff Surgeon, and HARDY V. WELLS, Surgeon, to the *Juno*, on recommissioning, July 16th; GEORGE LEY, Staff Surgeon, to the *Eclipse*, July 16th.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT F. J. TURNER has been appointed Captain, March 4th, His first appointment dates from August 31st, 1903.

Lieutenant-Colonel R. S. F. HENDERSON, M.B., has been appointed Registrar and Secretary at the Royal Victoria Hospital, Netley, vice Lieutenant-Colonel G. E. Twiss.

Vital Statistics

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,054 births and 3,774 deaths were registered during the week ending Saturday last, July 13th. The annual rate of mortality in these towns, which had been 12 5 per 1,000 in each of the two preceding weeks, declined to 12.3 per 1,000 last week. The rates in the several towns ranged from 3.5 in Hornsey, 5.1 in Leyton, 6 2 in King's Norton, 7.0 in Walthamstow, 7.1 in Northampton, and 7.6 in East Ham, to 17.7 in Stockton-on-Tees, 17 8 in Preston, 18 6 in Hanley, 19.1 in Oldham and in Tynemouth, and 19.4 in Bootle. In London the rate of mortality was 12.2 per 1,000, while it averaged 12.3 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.1 per 1,000 in the seventy-six towns; in London also this death-rate was equal to 1 1 per 1,000, while in the seventy-five other large towns it ranged upwards to 2.6 in Reading, 2.8 in St. Helens, 2.9 in Gateshead, 3.3 in Devonport, 3 7 in Derby, 4.7 in Wigan, and 5.4 in Walsall. Measles caused a death-rate of 1.4 in Merthyr Tydfil, 1 9 in Reading, 3.3 in Derby, 3.5 in Wigan, and 4.3 in Walsall; whooping-cough of 1 2 in West Ham and in Wigan and 1 7 in Barrow-in-Furness: and diarrhoea of 2.0 in Devonport. The mortality from scarlet fever, from diphtheria, and from "fever" showed no marked excess in any of the large towns, and no fatal case of small pox was registered during the week. The number of scarlet-fever patients under treatment at the end of the week in the Metropolitan Asylums Hospitals and the London Fever Hospital was 3,276, against 2,985, 3,022, and 3,193 at the end of the three preceding weeks: 493 new cases were admitted during the week, against 414, 422, and 504 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, July 13th, 923 births and 475 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns which had been 17 3, 15 0, and 14.5 1,000 in the three preceding weeks, further declined last week to 13.7 per 1,000, but was 1.4 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among thes Scottish towns the death-rates ranged from 9.0 in Aberdeen and 10. in Paisley to 17 3 in Dundee and 22 5 in Perth. The death-rate from the principal infectious diseases averaged 1 7 per 1,000 in these towns, the highest rates being recorded in Dundee and Paisley. The 280 deaths registered in Glasgow included 7 which was referred to measles, 12 to whooping-cough, 6 to cerebro-spinal meningitis, and 3 to diarrhoea. Five fatal cases of whooping-cough, 4 of cerebro-spinal meningitis, and 3 of diarrhoea were recorded in Edinburgh; 3 of whooping-cough and 2 of diarrhoea in Dundee; 2 of whooping-cough and 2 of diarrhoea in Paisley; and 2 of cerebro-spinal meningitis in Leith.

HEALTH OF IRISH TOWNS

DURING the week ending Saturday, July 6th, 487 births and 332 deaths were registered in six of the principal Irish towns as against 604 births and 335 deaths in the preceding period. The annual death-rate in these towns, which had been 18.0, 14.7 and 16 3 per 1,000 in the three preceding weeks, fell to 15.2 per 1,000 in the week under notice, this figure being 2 7 per 1,000 higher than the mean rate for the seventy-six English towns for the corresponding period. The figures ranged from 9 7 in Waterford and 10 9 in Limerick, to 18 5 in Cork and 20 3 in Belfast. The zymotic death-rate in the same six Irish towns averaged 0.8 per 1,000, or 0.2 per 1,000 higher than during the preceding period, the highest figure—2 5—being recorded in Dublin, while Cork, Londonderry, and Waterford, registered no deaths under this heading at all. The deaths at Belfast included 4 returned as cerebro-spinal fever and 1 due to cerebro-spinal meningitis.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRMINGHAM UNIVERSITY.—Walter Myers Travelling Studentship. Value, £150 a year.

BOLINGBROKE HOSPITAL, Wandsworth, S.W.—Assistant Surgeon.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon (Male). Salary, £100 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—Two Assistant Anaesthetists. Honorarium, 25 guineas each.

CARDIFF INFIRMARY.—House-Physician. Honorarium £30 for six months.

CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer. Salary, £100 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E. House-Physician (male). Salary at the rate of £50 per annum.

COLCHESTER: ESSEX AND COLCHESTER GENERAL HOSPITAL.—House-Physician. Salary, £80 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary at the rate of £60 per annum.

DOVER: ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

EGYPTIAN OPHTHALMIC HOSPITAL.—Sub-inspector.

GLOUCESTER: GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £30 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon. Salary, £100 per annum.

HALIFAX ROYAL INFIRMARY.—Second House-Surgeon. Salary, £100 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Physician; (2) House-Surgeon; (3) Assistant Casualty Officer.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon. Salary, £50 per annum.

LEEDS UNION.—Assistant Medical Officer. Salary, £120 per annum.

LENZIE: WOODILEE ASYLUM.—Junior Assistant Medical Officer. Salary, £125 per annum.

LINCOLN COUNTY HOSPITAL.—Junior Male House-Surgeon. Honorarium, £30 for six months.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—Jenner Memorial Studentship, value £150.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—Resident Pathologist and Registrar. Salary, £100 per annum

LONDON HOSPITAL, Whitechapel, E.—Surgeon Dentist.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary, £80 per annum.

NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—Junior House-Surgeon. Salary, £50 per annum.

NORWICH: JENNY LIND INFIRMARY FOR CHILDREN.—Lady Resident Medical Officer. Salary, £50 per annum.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—House-Surgeon (Male). Salary, £80 per annum.

PERTH ROYAL INFIRMARY.—House-Surgeon. Salary, £60 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary, £50.

ROTHERHAM HOSPITAL AND DISPENSARY.—(1) Senior House-Surgeon. (2) Assistant House-Surgeon. Salary, £110 and £80 per annum respectively.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Clinical Pathologist and Demonstrator of Bacteriology. Salary, £75 per annum.

ROYAL EYE HOSPITAL, St. George's Circus, S.E. Refraction Assistant. Honorarium, £40 per annum.

SALFORD UNION.—Male Resident Medical Officer at the Infirmary. Salary, £130 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House-Surgeon (male). Salary, £90 per annum.

STAFFORD: STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer. Salary, £150 per annum, rising to £200.

STIRLING ROYAL INFIRMARY.—Resident House-Surgeon. Salary, £80 per annum.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary, £80 per annum.

SUNDERLAND INFIRMARY.—(1) House-Physician and Pathologist. (2) House-Surgeon. Salary, £80 per annum each.

TAUNTON AND SOMERSET HOSPITAL.—(1) House-Surgeon. Salary, £100 per annum. (2) Resident Assistant House-Surgeon. Salary, at the rate of £50 per annum.

TOTTENHAM: PRINCE OF WALES'S HOSPITAL.—Honorary Anaesthetist.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—(1) Senior House-Surgeon; (2) Assistant House-Surgeon. Salary, £110 and £75 per annum respectively.

WEST HAM UNION.—Medical Superintendent of the Infirmary. Salary, £700 per annum.

WESTERN GENERAL DISPENSARY, Marylebone Road, N.W.—Honorary Anaesthetist.

YORK DISPENSARY.—Resident Medical Officer. Salary, £120 per annum.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Tuesday and Friday, 3.45 p.m.: Clinical Pathology.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—The following are the clinics and demonstrations for next week: Monday, 10 a.m.: Surgical; 2.30 p.m.: Medical, Throat, Nose, and Ear, *X* Rays. Tuesday, 10.30 a.m.: Medical; 2.30 p.m.: Operations—Surgical and Gynaecological; Wednesday, 2.30 p.m.: Medical, Skin, Eye. Thursday, 2.30 p.m.: Gynaecological Operations—Medical, Surgical; *X* Rays; 3 p.m., Medical (In-patient). Friday, 9.30 a.m., Surgical; 2.30 p.m.: Operations—Medical, Eye 3 p.m., Medical (In-patient).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics. *X* Rays, 2.30 p.m.: Operations. Monday and Thursday, 2 p.m.: Diseases of the Eye. Tuesday and Friday, 10 a.m.: Gynaecological Operations. 2 p.m.: Diseases of Throat, Nose, and Ear; 2.30 p.m.: Diseases of the Skin. Wednesday, 10 a.m.: Diseases of Children. Wednesday and Saturday, 10 a.m.: Diseases of Throat, Nose, and Ear. 2 p.m.: Diseases of the Eye. 2.30 p.m.: Diseases of Women.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BRUCE-PEARSON.—On July 15th, at "The Cottage," Buckingham, the wife of G. Bruce-Pearson, L.R.C.P., L.R.C.S.E., etc., of a son.

CHANING-PEARCE.—On July 12th, at Meadowcroft, Wokingham, the wife of Dr. A. Chaning-Pearce, of a son.

GOLDIE.—On the 13th instant, at "Polbrean," Tywardreath, Par Station, Cornwall, the wife of A. Evelyn Goldie, M.B., Ch.B.Edin., of a son.

NEWNHAM.—On July 10th, at 3, Lansdown Place, Victoria Square, Clifton, the wife of Dr. W. H. C. Newnham, of a daughter.

THOMPSON.—On July 16th, at 3, Park Place Gardens, Paddington, W., the wife of Dr. Peter Thompson, King's College, London, of a son.

MARRIAGES.

FORD—THOMAS.—On July 10th, at the Church of the Holy Name, Manchester, by the Very Rev. T. J. Browne, S.J., Alex. Ford, F.R.C.S.E., Waterford, to Annie Thomas, 16, Upper Park Road, Hampstead, N.W., late A.N.S.R.

GLANVILLE—BELL.—On the 11th July, at Hampstead Parish Church, by the Rev. Maurice E. Hoets, Vicar of Weston, Bath, uncle of the bride, assisted by Rev. Brook Deedes, Vicar of the Parish, William M. G. Glanville, M.B., B.Ch.Oxon., of Guyon House, Hampstead, elder son of the late Rev. J. F. M. Glanville, and of Mrs. Glanville, of Bristol, to Muriel, eldest daughter of Edward Bell, of "The Mount," Hampstead.

RAIT—BOYD.—On Saturday, 13th inst., at St. Andrew's Presbyterian Church, Frognal, by the Rev. Roderick McLeod, Captain J. W. F. Rait, Indian Medical Service, son of the late Henry Rait, of Mountjoy Square, Dublin, to Belle, elder daughter of Mr. and Mrs. James Boyd, "Woodstock," Lyndhurst Gardens, Hampstead.

SHANKS—SHARP. On July 10th, at Hanwell Parish Church, by the Rev. W. M. Farquhar, M.A., H. Priest Shanks, L.S.A., younger son of H. H. P. Shanks, Paymaster-in-Chief, R.N., Plymouth, to Carrie, elder daughter of A. Stockdale Sharp, of Gloucester House, Hanwell, W.

DEATHS.

AMBLER.—July 14th, at Rhuddlan, Flints., aged 35 years, John Richardson Ambler, M.R.C.S., L.R.C.P.

HAYDON.—On Sunday, July 14th, at "Beachcroft," Littlehampton, Sussex, Margaretta, the beloved wife of F. E. Haydon, M.B., aged 54 years.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
JULY.	
21 Sunday ...	
22 MONDAY ...	LONDON: Election Returns Committee, 3 p.m.
23 TUESDAY ...	LONDON: Metropolitan Counties Branch Council, 4.30 p.m.
24 WEDNESDAY	
25 THURSDAY...	
26 FRIDAY ...	
THE ANNUAL MEETING AT EXETER.	
27 SATURDAY...	ANNUAL GENERAL MEETING, Royal Public Rooms, Exeter, 9.30 a.m. ANNUAL REPRESENTATIVE MEETING, immediately after the Annual General Meeting.
28 Sunday ...	
29 MONDAY ...	ANNUAL REPRESENTATIVE MEETING, Royal Public Rooms, Exeter, 9.30 a.m.
30 TUESDAY	ANNUAL REPRESENTATIVE MEETING, 9.30 a.m. (*if required*). Adjourned General and Representative Meetings; induction of President, 2.30 p.m. President's Address 8.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
JULY *(Continued).*	
31 WEDNESDAY	ANNUAL REPRESENTATIVE MEETING, 3.15 p.m. (*if required*) Sectional Meetings, 10 a.m. to 1 p.m. Address in Medicine, 2.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
AUGUST.	
1 THURSDAY...	Sectional Meetings, 10 a.m. to 1 p.m. Address in Surgery, 2.30 p.m. Annual Dinner, 7.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
2 FRIDAY ...	Sectional Meetings, 10 a.m. to 1 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
3 SATURDAY...	Excursions.
4 Sunday ...	
5 MONDAY ...	
6 TUESDAY ...	
7 WEDNESDAY	
8 THURSDAY...	
9 FRIDAY ...	
10 SATURDAY...	
11 Sunday ...	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 27TH, 1907.

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THE SEVENTY-FIFTH ANNUAL MEETING

OF THE

BRITISH MEDICAL ASSOCIATION,

EXETER,

JULY 27TH TO AUGUST 2ND, 1907.

President:
RICHARD ANDREWS REEVE, B.A., M.D., LL.D., Dean of the Faculty of Medicine, University of Toronto.

President-elect:
HENRY DAVY, M.D., F.R.C.P., Physician, Royal Devon and Exeter Hospital.

Chairman of Representative Meetings:
JAMES ALEXANDER MACDONALD, M.D., Physician, Taunton and Somerset Hospital.

Chairman of Council:
EDMUND OWEN, LL.D., F.R.C.S., Consulting Surgeon to St. Mary's Hospital.

Treasurer:
HENRY RADCLIFFE CROCKER, M.D., F.R.C.P., Physician, Skin Department, University College Hospital.

PROGRAMME OF BUSINESS.

An Address in Medicine will be delivered by WILLIAM HALE WHITE, M.D., F.R.C.P.Lond.
An Address in Surgery will be delivered by HENRY TRENTHAM BUTLIN, D.C.L., F.R.C.S.Eng.
A Popular Lecture will be delivered by Sir JOHN WILLIAM MOORE, M.D., D.Sc., F.R.C.P.Irel.

THE SECTIONS.

THERE will be thirteen Sections as shown in the subjoined list; they will meet on Wednesday, Thursday, and Friday, July 31st, and August 1st and 2nd, from 10 a.m. to 1 p.m.

The President, Vice-Presidents, and Secretaries of each Section constitute a Committee of Reference for that Section.

Papers read are the property of the British Medical Association, and cannot be published elsewhere than in the BRITISH MEDICAL JOURNAL *without special permission.*

No paper must exceed fifteen minutes in reading and no subsequent speech ten minutes.

PATHOLOGY.

President: ROBERT MUIR, M.D., F.R.C.P.Ed., Professor of Pathology, Glasgow.

Vice-Presidents: HENRY GEORGE PLIMMER, M.R.C.S., F.L.S., London; WILLIAM HUNTER, M.D., F.R.C.P., London; WALTER LEY PETHYBRIDGE, M.D., B.Sc., Plymouth.

Honorary Secretaries: REGINALD VAUGHAN SOLLY, M.D., F.R.C.S., 40, West Southernhay, Exeter; Professor WILLIAM ST. CLAIR SYMMERS, M.B., C.M.Aberd., Queen's College, Belfast.

The following provisional programme has been arranged:

Wednesday, July 31st.—A discussion on Pernicious Anaemia and Allied Conditions, to be opened by Dr. William Hunter, followed by Professor Lorrain Smith, Dr. A. G. Gullan. Dr. Lovell Gulland, Dr. F. G. Bushnell, Dr. C. Melland, Professor R. Muir and probably Professor

Sims Woodhead. Professor Walker Hall will speak on Metabolism in Anacmia; and Professor A. R. Ferguson and Dr. A. E. Boycott on Ankylostomiasis Anaemia.

The following are the headings of Dr. Hunter's paper: (1) Scope of subject; (2) necessity of distinguishing between (*a*) Addison's idiopathic anaemia, (*b*) Biermer's progressive pernicious anaemia, on historical, etiological, pathological, and clinical grounds; (3) the unity of the former disease; the multiplicity of the forms of anaemia included under the latter; (4) nature of Addison's idiopathic anaemia, a remarkable infective disease (infective haemolytic anaemia); (A) Its pathology: blood changes — (*a*) Blood haemolytic changes, lesions. Bone-marrow changes. Relative importance and relation one to another. (*b*) Infective lesions: Glossitic, gastric, intestinal. Naked eye and lantern slide demonstration. (B) Etiology: (*a*) General etiology (insufficiency of ordinary causes of anaemia to produce the whole features of this disease. (*b*) Infective etiology: Rôle of septic infection, specific haemolytic infection. (C) Clinical features and course (distinctive features). (D) Diagnosis (relative importance of (*a*) blood changes, (*b*) clinical features). (E) Prognosis—improved character of. (F) Treatment (results of antiseptic and serum treatment). (5) Progressive pernicious anaemia: The clinical forms of anaemia included under this generic title.

Thursday, August 1st.—A discussion on Phagocytosis and Bactericidal Action, to be opened by Dr. George Dean, who will be followed by Professor R. Muir, Professor J. M. Beattie, Dr. Charlton Briscoe, Dr. T. Houston, Dr. David Lawson, Dr. J. C. Rankin, Dr. J. Peel Ritchie, Dr. E. Turton, and probably Professor Sims Woodhead.

Arrangements will be made for the exhibition in the Pathological Museum of specimens illustrating the work of the Section. Members wishing to exhibit specimens or photographs should communicate with the Secretaries of the Pathological Museum (Drs. R. V. Solly and G. P. Hawker, 40, West Southernhay, Exeter).

The following papers have been accepted:

Beattie, Professor J. M.: A Sporozoon in Aural Polypi.
Bushnell, Dr. F. G.: A Case of Mycosis Fungoides in its Relation to Infection and Malignant Disease.
Browning, Dr. Carl H.: Experimental Chemotherapy in Trypanosome Infections.
Bayon, Dr. H: Peritheliomata and Endotheliomata.
Teague, Dr. Oscar, and Dr. B. H. Buxton (Cornell University, New York): The Migration of Antibodies under the Influence of the Electric Current.
Buxton, Dr. B. H.: Absorption from the Peritoneal Cavity.
Coombs, Dr. Carey: Lesions of Myocardium in Rheumatism.
Eve, Dr. F. C.: Peculiar Bodies found in Cerebro-spinal Fluid.
Forsyth, Dr. David: The Relations between the Thyroid and the Parathyroid Glands.
Ferguson, Professor A. R.: (1) The Blood and Bone Marrow in Ankylostomiasis (part of discussion on pernicious anaemia, etc.); (2) A demonstration of Lesions produced by Bilharzia in the Genito-urinary Tract.
Gay, Dr. F. P., and Southard, Dr. E. E. (Danvers, Massachusetts): (1) Serum Anaphylaxis in the Guinea-pig; (2) Structural Changes in Myeline Sheaths in Experimental Intoxication in the Guinea-pig.
Leiper, Dr. R. T.: Helminthological Nomenclature in Medical Literature.
Lucas, Dr. J. J.: Pericardial Calcification.
McLennan, Dr. Alexander: The place the *Spirochaeta pallida* occupies in the Diagnosis of Syphilis.
Stennan, Dr. T.: The *Spirochaeta pallida*.
Symmers, Professor St. Clair: On *Bilharzia haematobia*.
Hall, Professor I. Walker: Estimation of the Fats in Faeces.

Medicine.

President: William Gordon, M.D., F.R.C.P., Exeter.

Vice-Presidents: William Powell, M.B., F.R.C.S., Torquay; William Joseph Tyson, M.D., F.R.C.P., F.R.C.S., Folkestone; George Newton Pitt, M.D., F.R.C.P., London Edward Lawrence Fox, M.D., M.R.C.P., Plymouth

Honorary Secretaries: Frederick John Poynton, M.D., F.R.C.P., 1, Harley Place, London, W.; Edwin Bramwell, M.B.Edin, F.R.C.P., 23, Drumsheugh Gardens, Edinburgh; Alfred Bertram Soltau, M.D., F.R.C.S., 1, Lansdowne Place, The Hoe, Plymouth.

The following subjects have been chosen for discussion:

1. The Indications for Operation in Cases of Intracranial Tumour. To be introduced by Dr. J. S. Risien Russell.

Dr. Risien Russell will deal with the following points:

I. The influence of diagnosis. Affections that may be mistaken for intracranial tumour. II. Conditions under which operation may be recommended: (1) To effect cure; (2) to relieve symptoms and prolong life.

The considerations that influence the first question are: (*a*) The possibility of accurate localization. (*b*) The position of the tumour. (*c*) The nature of the growth. (*d*) The probable effects of operation—(1) Risk to life; (2) amount of paralysis or other defect that will result; (3) aphasia.

In connexion with the second consideration the following arise: (*a*) The indications and contraindications for trephining. (*b*) The importance of saving sight. (*c*) The circumstances under which lumbar puncture may be substituted for trephining.

2. The Diagnosis of Acute Pancreatitis. To be introduced by Professor Osler.

3. Rheumatoid Arthritis and the Morbid Conditions which simulate it, with special Reference to Pathology and Treatment. To be introduced by Dr. A. P. Luff.

The following are the headings of Dr. Luff's paper introducing the discussion on Rheumatoid Arthritis: Definition of the term "rheumatoid arthritis." Rheumatoid arthritis is a distinct clinical entity. Rheumatoid arthritis is an infective disease due to the presence of micro-organisms in the joints; subsidiary symptoms are caused by the toxins elaborated by the micro-organisms. Distinction of rheumatoid arthritis from subacute rheumatic fever. The different forms of rheumatoid arthritis. The age-incidence of rheumatoid arthritis. The pathological changes occurring in the joints. Relationship of rheumatoid arthritis to other diseases of the joints. Dietetic treatment. Drug treatment. Local treatment of the joints. Climatic treatment.

The following papers have been accepted:

Bradshaw, Dr. T. R.: Points in the Diagnosis of Myelopathic Albumosuria.
Clarke, Professor John Michell: A Case of Lymphadenoma Treated by *X* Rays.
Dow, Dr. W.: Observations upon the recent Outbreak of Cerebro-spinal Meningitis in Glasgow.
Hunter, Dr. W.: The Effect of Oral Antiseptics in Scarlet Fever.
Mott, Dr. F. W.: Further Observations upon a Case of Bilateral Embolic Cortical Softening followed by Deafness and Aphasia.
Northrup, Professor W. P.: Treatment of Pneumonia and other Acute Infectious Diseases by Open-air Wards in Metropolitan Hospitals.
Riviere, Dr. Clive: The Tuberculin Treatment of Tuberculosis in Children.
Robb, Dr. A. Gardner: Observations upon the Recent Outbreak of Cerebro-spinal Meningitis in Belfast.
Sikes, Dr. A. W.: Some Gastro-intestinal Affections in Gouty Subjects.
Tyson, Dr. W. J.: Some Remarks on the Prevention of Appendicitis.
West, Dr. Samuel: 1. Some Remarks upon Acute Pericarditis and its Treatment. 2. A further Contribution to the Treatment of Diabetes by Uranium Nitrate.

Diseases of Children.

President: Alfred Herbert Tubby, M.S., London.

Vice-Presidents: Lewis Mackenzie, F.R.C.S., Tiverton; Frank Hichens, M.D., Redruth; Reginald Horace Lucy, F.R.C.S., Plymouth; Edmund Cautley, M.D., London.

Honorary Secretaries: John Harley Gough, M.D., Glenallon, Old Torwood Road, Torquay; Edred Moss Corner, F.R.C.S., 37, Harley Street, London, W.

The following arrangements have been made:

Wednesday, July 31st.—Discussion, The Diseases and Displacements of the Testicle. To be opened by Mr. D'Arcy Power. Professor W. E. Dixon will speak on the question of Organotherapy, Mr. Russell J. Howard on Torsion of the Testicle. The following gentlemen have signified their intention of taking part in the discussion: Mr. Douglas Drew, Mr. McAdam Eccles, Mr. G. H. Edington, Mr. H. A. T. Fairbank, Mr. H. Tyrrell Gray, Mr. C. B. Keetley, Mr. Lockhart Mummery, Mr. Betham Robinson, and Mr. G. E. Waugh.

In opening the discussion on Wednesday, Mr. D'Arcy Power will group the subject under the headings of Tubercle, Syphilis, Malignant Disease, Innocent Tumours, and Teratomata, the following being a summary of his paper:

The displacements are due to faulty processes of development.

In regard to tubercle, most of the swollen testicles seen in very young children in the out-patient rooms at hospitals are due to tubercle growing in tissues which have been prepared for infection by changes due to congenital syphilis. He asks whether it is certain that tuberculous inflammation of the testicle ends in atrophy, and if children suffering from this form of disease are more or less likely to become the subjects of spinal caries.

Syphilitic inflammation of the testicle is commoner in young children than tuberculous orchitis, and the tunica vaginalis is so frequently involved that a hydrocele is of frequent occurrence. The absence of pain causes the condition to be overlooked in the majority of cases. Wasting of the testis is a frequent consequence of this form of inflammation. Are there any observations as to the retardation of puberty consequent upon this atrophy?

Teratomata are due either to dermoids or sebaceous tumours.

Sarcoma of the testicle is in need of further investigation in the light of Mr. Foulerton's recent work. Is it possible that some of the cases grouped as sarcoma are not in reality examples of carcinoma? The author is not satisfied with the results of orchidopexy in cases of undescended testis, and now advises removal of the testicle in nearly every case where it is retained in such a position that it is likely to be injured, especially if there is evidence of a hernia. When no hernia is present he advises the parents to wait until the child is 7 or 8 years old, in the hope that the testicle may descend into the scrotum as the child grows. He asks an opinion on the following points: First, as to the indication for operating when the testicle lies at or near the external abdominal ring; secondly, as to the advice which should be given when both testicles are undescended; and, thirdly, as to the most appropriate time for operating when there is no hernia. He also alludes to the treatment of ectopic testicle. Finally is pointed out the frequency with which hydrocele occurs in children; the ease with which an erroneous diagnosis is made, and the means by which such mistakes are best avoided.

The following papers will be read:

EDINGTON, Mr. G. H.: Some Abnormalities of the Penis.
GRAY, Mr. H. Tyrrell.: Some Cases in which Meckel's Diverticulum was present.
NITCH, Mr. C. A. R.: Some Cases of Fracture of the Tubercle of the Tibia.
MUMMERY, Mr. Lockhart: Some Cases of Prolapsus Recti.

Thursday, August 1st.—Discussion, Acute Nephritis and its Results. To be opened by Dr. A. F. Voelcker. Dr. A. W. Sikes will introduce the physiological aspect; Mr. Sydney Stephenson, the eye changes; Dr. Theodore Thomson, Unsuspected Nephritis in Septic Infections. The following gentlemen have signified their intention of taking part in the discussion: Dr. H. R. Dean, Dr. F. C. Eve, Dr. F. Langmead, Mr. J. H. Parsons, Dr. J. E. H. Sawyer, and Dr. G. A. Sutherland.

In opening the discussion, Dr. VOELCKER will treat the subject under the following headings:

(1) Frequency in Children and Adults Contrasted. (2) Acute Nephritis in Association with the Acute Specific Fevers. (3) Acute Nephritis apart from the Acute Specific Fevers. (4) Frequency of Acute Nephritis in the more common Acute Specific Fevers. (5) Frequency of Acute Nephritis in (i) Fever Hospitals, (ii) Children's Hospitals and General Hospitals, (iii) Private Practice. (6) Age Incidence of Acute Nephritis. (7) Comparison of the Symptoms and Complications of Acute Nephritis in Children and Adults. (8) Results of Acute Nephritis in Children. (9) Anatomical Varieties of Acute Nephritis. (10) Frequency of (i) Complete Recovery, (ii) Incomplete Recovery, (iii) Death in Acute Nephritis. (11) Causes of Death in Acute Nephritis. (12) Duration of Acute Nephritis. (13) Factors Determining Incomplete Recovery or Death. (14) Evidences of Incomplete Recovery in the Urine, Cardio-vascular System, Blood, Retina, Skin, Serous Membranes. (15) Anatomical Changes Resulting from Unresolved Acute Nephritis. (16) Is Chronic Nephritis resulting from Acute Nephritis Incurable? (17) The Relation of Acute Nephritis to Chronic Interstitial Nephritis in Childhood and in Later Life. (18) Conditions Simulating Acute Nephritis. (19) The Treatment of Acute Nephritis in Children. (20) Prophylaxis. (21) The Treatment of Special Symptoms in or resulting from Acute Nephritis.

Dr. A. W. SIKES will follow with a paper on the Physiological and Pathological Aspects of Nephritis in Children, and touch upon the following topics: (1) Its influence on the general metabolism. (2) Its effect on the digestive system, liver, stomach. (3) The metabolism of protein. (4) The rôle of sodium chloride. (5) The influence of acute nephritis on the urinary secretion. (6) The proteins of the urine. (7) Urea, uric acid, salts. (8) Methods of examining the urine. (9) The reaction of the blood. (10) Other changes in the blood. (11) Drugs; contraindication of caffeine. (12) Recent work on the nephrotoxins. (13) The theory of the secretion of urine, "Filtration plus reabsorption" not now accepted. (14) Recent physiological work on the kidneys. (15) Oedema. (16) Uraemia.

The following papers will be read:

LANGMEAD, Dr. F.: Acetonaemic Conditions in Children.
DEAN, Dr. H. R.: The Classification and Diagnosis of the Varieties of Purpura occurring in Children.
PINCHES, Dr. H. Irving: Retropharyngeal Abscess.
KELYNACK, Dr. T. N.: The Care of Tuberculous Children.

Friday, August 2nd.—Discussions: (1) Lumbar Puncture, its Diagnostic and Therapeutic Value. To be opened by Dr. Farquhar Buzzard. The following gentlemen have signified their intention of joining in the discussion: Dr. F. E. Batten, Dr. J. S. Risien Russell, Dr. Edwin Bramwell, Dr. F. C. Eve, Dr. J. G. Forbes, Dr. Porter Parkinson, Dr. Athole Ross, Dr. A. E. Russell, Dr. Purves Stewart, and Dr. G. A. Sutherland.

In opening the discussion Dr. FARQUHAR BUZZARD will refer to the following points: (1) The technique of the operation. (2) General indications and contraindications. (3) Diagnostic value; (*a*) bacteriological, (*b*) cytological, (*c*) chemical. (4) Therapeutic value; (*a*) decompression, (*b*) drainage.

(2) Precocious Development. To be opened by Dr. Reginald Langdon Down, followed by Dr. Leonard Guthrie.

The opener of this discussion, Dr. REGINALD LANGDON DOWN, will deal with the subject of Precocity rather from the broad biological point of view than from the narrow clinical aspect, and will draw the following conclusions:

The precocious children are those from whom we draw our great men—that is, those who advance the nation intellectually and socially.

They may be roughly divided into two groups: the stable and the unstable. The former are well developed, both physically and mentally, and in good order and proportion; the latter are often physically below the average, and show an irregular, or one-sided, mental development; these cases need special care, and form the majority of those usually coming under medical attention.

From the point of view of the race, a late maturity seems to be advantageous, and this points to preserving slight beneficial variations rather than large ones; from the point of view of the individual, the later-acquired powers of the race may advantageously appear sooner, but this should be in good order and with uniform development.

It appears, on the other hand, that anything in the environment likely to produce artificially a premature development of any function or organ is harmful, particularly so in those cases where there is naturally a tendency to extreme deviation from the average; while a careful discipline and social restraint are needed to save some of the extreme cases from social failure. On the other hand, the judicious guide will give the bright youth of the stable class free play as to his line of study, while preventing him from straying over too wide an area. And at the right moment, when his choice is made, he will endeavour to stir the youth's energies and fire his enthusiasm to the utmost.

The following papers will be read:

BIRD, Dr. A. C.: Tonsils and Voice Production.
CORNER, Mr. Edred M.: Two Cases of Amputation of the Forequarter for Sarcoma of Shoulder.

PSYCHOLOGICAL MEDICINE.

President: THOMAS CLAYE SHAW, M.D., London.

Vice-Presidents: ARTHUR NATHANIEL DAVIS, L.R.C.P., Exminster; ROBERT LEONARD RUTHERFORD, M.D., Exeter; GEORGE M. ROBERTSON, M.B., Larbert.

Honorary Secretaries: Samuel Hollingsworth Agar, M.R.C.S., Hurst House, Henley-in-Arden; William Francis Menzies, M.D., Staffs County Asylum, Cheddleton, Leek.

The following programme has been arranged:

Wednesday, July 31st.—Introductory remarks by the President, Dr. Claye Shaw.

Discussion on Alcoholism and Insanity, to be introduced by Dr. F. W. Mott, F.R.S.

Johnstone, Dr.: Paper on Fatigue.

Thursday, August 1st:

Mercier, Dr. C. A.: Three Cases of Periodic Dementia.
Robertson, Dr. George, M.: On the Presence of a Bacillus in the Blood of Persons suffering from General Paralysis of the Insane.
Bruce, Dr. Lewis Campbell: The Opsonic Index in Mania.

Friday, August 2nd.—Discussion on Hypnotism, to be introduced by Dr. J. F. Woods.

In his paper Dr. Woods gives his experience, extending over a period of fifteen years, of the therapeutic value of hypnotism in insanity. Most of the patients were treated in asylums, others in private. He finds the treatment most efficacious fn borderland cases. Illustrative cases are given with details of the method employed.

Schofield, Dr.: The Teaching of Psychology in Medical Schools.
Passmore, Dr. E. S.: On Case Taking.

Electrical Section.

President: H. Lewis Jones, M.D., London.

Vice-Presidents: John Delpratt Harris, M.D., Exeter; Cecil R. Chaworth Lyster, M.R.C.S., London; William Cheyne Wilson, M.D., Plymouth.

Honorary Secretaries: Ellis Pearson, F.R.C.S.E., Strand House, Bideford; Edward Warren Hine Shenton, M.R.C.S., 126, Harley Street, London, W.

The following programme has been arranged:

Wednesday, July 31st.—Address by Professor Stéphane Leduc.

Papers:

Salomonson, Professor Wertheim: The Einthoven Galvanometer.
Jones, Dr. Lewis: Oscillograph Tracings of Medical Coil Currents.
Tomkinson, Dr. J. Goodwin: A Method of Treating Lupus Vulgaris.
Somerville, Dr. W. F.: The Effects of High-frequency Currents on the Urinary System.
Reid, Dr. A.: The Use of the Cryptoscope in Operations for Renal Calculi
Walsham, Dr. Hugh: The Orthodiagraph.
Lantern Demonstration.

Thursday, August 1st.—Discussion on *X* Rays and Sensitive Plates, to be opened by Mr. Mackenzie Davidson. Dr. Orton and others will speak.

Mr. Mackenzie Davidson deals with the following points: (1) The qualities of the *x*-ray tube necessary for the production of successful *x*-ray photographs; (2) the plate best suited to *x* rays, the photographic effect of *x* ray and light contrasted, etc.

Photographs and slides to illustrate the subject will be shown.

Papers:

Pearson, Dr. Ellis: The use of *X* Rays from the Point of View of the General Practitioner.
Shenton, Mr. E. W. H.: The Examination of the Hip-joint.
Riddell, Dr. J. R.: The Measurement of the Brim of the Female Pelvis by means of *X* Rays.
Pirie, Dr. Howard: A New Meter for Measuring the Current through an *X*-ray Tube, and measurement of the Reverse Current passing through an *X*-ray Tube.
Salomonson, Professor Wertheim: The Electro-diagnosis of Oculo-motor Paralysis.
Taylor, Dr.: A Case of Paget's Disease treated by *X* Rays (Microscopic Specimens).
Lantern Demonstration.

Friday, August 2nd.—Discussion on the Dosage of *X* Rays, to be opened by Dr. Sequeira.

Dr. Sequeira in his opening paper will consider the following points: The physiological effects of large and small doses of *x* rays; the pathological effects; the treatment of tinea tonsurans, favus, tinea barbae, sycosis by the Sabouraud method; the treatment of rodent ulcer, lupus, etc., by measured doses at intervals.

Papers:

Humphris, Dr. Howard: The Rationale of Static Currents.
Morton, Dr. R.: Alternating Currents of Slow Periodicity.
Harris, Dr. D.: Some Statistics of *X*-Ray Therapeutics in Rodent Ulcer and Carcinoma.
Bruce, Dr. Ironside: Systematic Radiography.

It is hoped to provide a convenient room for the demonstration of new forms of apparatus and the showing of lantern slides by members.

Tropical Diseases.

President: James Cantlie, F.R.C.S., London.

Vice-Presidents: Guthrie Rankin, M.D., London; Sir Richard Havelock Charles, K.C.V.O., M.D., I.M.S. (ret.), London; Lieutenant-Colonel Robert Caldwell, F.R.C.S., R.A.M C., Plymouth.

Honorary Secretaries: William Carnegie Brown, M.D., 32, Harley Street, London, W.; Lieutenant-Colonel G. M. J. Giles, M.B., F.R.C.S., I.M.S. (ret.), 3, Elliot Terrace, The Hoe, Plymouth.

The following subjects have been selected for discussion:

Wednesday, July 31st.—The Best Methods of carrying out Antimalarial Sanitation, with special reference to such plans as may be most suitable for populations in the more primitive stages of civilization. The discussion will be opened by Professor Simpson, King's College, London.

The following gentlemen will join in the discussion: Major Nott, I.M S.; Dr. H. Marcus Fernando (Colombo); Dr. W. T. Prout, C.M.G.; Dr. C. W. Daniels (London School of Tropical Medicine).

The following papers will be read:

Cantlie, James, M.B., F.R.C.S.: The Part Played by the Colo-Sigmoid and the Sigmo-Rectal Pylorus in Intestinal Troubles.
Birt, Lieutenant-Colonel, R.A.M.C.: (1) South African Diseases. (2) Mediterranean Fever in South Africa.

12 noon: Professor Leonard Rogers of Calcutta will give a lantern demonstration to illustrate the fevers of India.

Thursday, August 1st.—Diabetes in the Tropics. The discussion will be opened by Sir Richard Havelock Charles. K.C.V.O., Lieutenant-Colonel I.M.S.

Papers have been promised by the following gentlemen:

Dr. Rai Koilas Chandra Bose, Bahadur, C.I.E. (Calcutta); Dr. Rai C. L. Bose, M.B., F.C.S., Chemical Examiner for Bengal.

The following gentlemen will join in the discussion: Dr. F. M. Sandwith (London); Dr. H. M. Fernando (Colombo); Major Nott, I.M.S.; Dr. W. H. de Silva, F.R.C.S.E.

Sir R. Havelock Charles, in opening the discussion, will deal with the following headings: (1) The glycosuria of the tropics—the part dyspepsia plays therein. (2) Peculiarities or modifications of course, physical signs and symptoms, of the tropical diabetic type. (3) The peoples—their habits and surroundings; predisposing and exciting causes of the disease. (4) Incidence as to race, sex, profession, and social status. (5) Peculiarities in urine analysis. (6) Life assurance and diabetes. (7) Complications of a surgical nature and their treatment. (8) Is there any justification in distinguishing diabetes in the tropics from the type of diabetes known in the temperate regions?

The following papers will be read:

Prout, W. T., M.B., C.M.G.: On the Treatment of Blackwater Fever.
Begg, C., M.D. (Bath): On some Complications of Chronic Sprue.
De Silva, W. H., M.B., F.R C.S E.: On the Climate of Ceylon.
Williamson, G. A., M.D.: On Bilharzia Disease in Cyprus.
Darker, G. A., M D.: (1) On West African Climate. (2) The Treatment of Malaria.
Cantlie, James, M.B., F.R.C.S.: One Hundred Cases of Liver Abscess.

Friday, August 2nd.—Haemoflagellates and Allied Organisms. The discussion will be opened by Professor E. A. Minchin, Professor of Protozoology, University of London.

Professor L. Rogers (Calcutta) will join in the discussion.

The following is a synopsis of the discussion to be opened by Professor E. A. Minchin: Differences in the points of view of the zoologist and the medical man; importance of the study of the life-history of parasites for the etiology of disease; haemoflagellates, brief review

of the forms comprised under this title; life-cycles of haemoflagellates, *Herpetomonas muscae domesticae;* transmission of haemoflagellates by blood-sucking invertebrates; direct and indirect transmission; inoculative indirect transmission; contaminative transmission; reasons for believing that the infection may be effected in a different manner in different cases; theories upon the origin of haemoflagellates; suggestion that the ancestral form was a parasite of the vertebrate digestive tract; possible types of life-cycle on this view.

The following papers will be read:

MOTT, F. W., M.D., F.R.C.P., F.R.S.: Further Observations on Cell Changes in Sleeping Sickness and Dourine.

CHRISTOPHERS, Captain S. R., I.M.S.: On the Development of *Piroplasma canis* in the Tick. Demonstration by J. W. W. STEPHENS, M.D.

BALFOUR, Andrew, M.D. (Khartoum): On a New Blood Parasite of Fowls: with Specimens.

The Secretaries will be glad to receive from members unable to be present pathological specimens, photographs, drawings, or microscopical preparations illustrative of any subject of interest in Tropical Medicine.

SURGERY.

President: GEORGE A. WRIGHT, F.R.C.S., Professor of Surgery, Manchester.

Vice-Presidents: EDWARD JAMES DOMVILLE, M.R.C.S., Exeter; CHARLES EDWARD WALLACE BELL, M.R.C.S., Exeter; DAVID NEWMAN, M.D., Glasgow; WILLIAM FREDERIC HASLAM, F.R.C.S., Birmingham.

Honorary Secretaries: BERNARD SCOTT, M.R.C.S., Stagsden, West Cliff, Bournemouth; BRENNAN DYBALL, F.R.C.S., 47, Queen Street, Exeter; WILLIAM SAMPSON HANDLEY, M.S., 77, Wimpole Street, London, W.

The following subjects have been selected for special discussions on Wednesday, July 31st, and Thursday, August 1st:

1. The Relative Value of Inhalation and Injection Methods of inducing Anaesthesia. To be introduced by Mr. H. P. Dean, M.S, F.R.C.S., to be followed by Messrs. J. Ward Cousins, J. F. W. Silk, E. H. Howlett, Alexander Wilson, C. Leedham Green, A. G. Levy, F. W. Bailey, and J. W. Struthers.

The following is a synopsis of Mr. DEAN'S paper in opening the discussion:

Presuming I was honoured by an invitation to open a discussion on the huge subject of local anaesthesia because of a paper I published in the BRITISH MEDICAL JOURNAL last year upon the value of lumbar injection on acute diseases of the abdomen, I decided to limit my remarks to that subject.

Apart from the results obtained *quâ* anaesthesia in the cases where I have employed lumbar injection, I have been very much struck by the way in which surgical shock has been mitigated, if not practically abolished.

When drawing up a list of operations liable to be followed by grave surgical shock, it is obvious that those upon the abdomen form the great bulk. The classical amputations at the hip and shoulder joints and at the upper part of the thigh, with their high mortality from surgical shock, so frequently performed in the early Victorian period, have become much less frequent, and so it comes to pass that but few operations remain with severe surgical shock outside the domain of abdominal surgery.

Apart from the dangers of chloroform and ether, especially of the former, during the operation, the effect of these drugs upon the organs generally is a most serious one. When these general anaesthetics were first introduced two results somewhat unexpectedly forced themselves upon the attention of the surgeon:

(1) The deleterious effect of the anaesthetic upon the lungs and other organs of the body.

(2) The fact that surgical shock was not materially diminished by these general anaesthetics.

I think all of us are agreed that the secondary effects of ether, especially in abdominal surgery, are more far-reaching than those of chloroform. From the time that the first portion of the vapour reaches the bronchial mucous membranes to the time that it escapes by the excretory organs, we have a summation of poisonous effects which contribute so largely to swell the death-rate from all grave abdominal operations in which these general anaesthetics are given.

In the early days of these general anaesthetics it was thought that surgical shock would to a large extent disappear; this, however, was not the case, and for the past half-century the attention of surgeons has been continuously directed towards some method of preventing this grave condition.

When we consider the physiological action of the general anaesthetics we see an explanation. Chloroform and ether affect primarily the higher nerve centres, especially those concerned with consciousness; these are the first to be affected, then the middle centres—the basal ganglia—then the sensory and motor tracts, and lastly, if the anaesthetic is pushed to excess, we reach the centres essential for maintaining life—those connected with the heart and lungs.

In seeking an anaesthetic that would avoid these dangers, it is obvious that we should endeavour to employ a drug that would avoid that serious irritation of the bronchi and lungs. In the next place, we should try and find an anaesthetic that would act upon the peripheral part of the nervous system in such a way as to prevent stimuli passing from the field of operation to the vital centres—some drug that would paralyse all the sensory nerves passing from the region to be operated upon. If the peripheral nerves in the region of a wound were thrown completely out of action no amount of damage would cause stimuli to pass up to the central nervous system, and at the same time consciousness and the integrity of the vital centres would be maintained.

If these peripheral nerves were absolutely paralysed by the anaesthetic, we might compare the condition produced to that of gangrene of the leg. However much one may cut or burn or lacerate the dead tissues, no effect could be produced on the central nervous system.

Of recent years several drugs have been shown to possess the property of paralysing the peripheral nerves without affecting the central nervous system directly, unless given in maximal doses. The first of these—cocaine—is so poisonous and so treacherous that its employment has to be very carefully done, and it is not suitable for the group of cases which we are especially considering.

Within the last two years a drug has been discovered belonging to the cocaine group which will to a large extent do what we require. In France, the chemist Fournier, the discoverer, called it stovaine. A similar body has been largely used in Germany called novocaine; both of these have been used with or without adrenalin.

These new drugs have been examined carefully, and researches made upon them in various directions have already been published. They can be used in all cases where cocaine is employed, but they differ from cocaine in that they do not produce any injurious effect upon the heart; in fact, some experimenters indicate that they may be regarded as cardiac tonics.

When the anaesthesia is required for an operation where shock is not likely to be produced, the question of a general anaesthetic *versus* a local anaesthetic is not a matter of any moment. When, however, we are dealing with acute abdominal diseases, especially with general peritonitis, the value of this peripheral anaesthetic is at once placed upon a different basis. All the harmful effects of chloroform and ether upon the respiratory tract are absent; all the grave secondary effects of chloroform and ether upon the organs are not present when these local anaesthetics are used. Thirdly, by their action in paralysing the peripheral nerves the patient is protected largely, if not entirely, from the condition known as surgical shock.

In order to elicit the experience of my colleagues upon the various aspects connected with this method, I will consider it under the following headings:

(1) The method of administering the anaesthetic, lumbar puncture, its situation and difficulties, etc., are described and illustrations shown.

(2) The management of the patient is an important factor upon which opinions are urgently required.

(3) The dose, of course, is a very important point, and one where experience alone can help us both as regards the minimal and maximal dose that should be given.

(4) The method of administering the anaesthetic, whether to trust to one large dose at the commencement,

or to employ a method of gradual dosage. The questions of administering doses during an operation and afterwards are important.

(5) The reliability of the anaesthetic in producing anaesthesia.

(6) Its influence in protecting the patient from surgical shock.

2. The Indications for Cholecystectomy. To be introduced by Mr. J. Bland-Sutton, F.R.C.S., to be followed by Messrs. A. W. Mayo Robson, J. Ward Cousins, F. S. Eve, A. E. Maylard, J. S. McArdle, F. F. Burghard, B. G. A. Moynihan, E. Stanmore Bishop, William Thorburn, and J. D. Malcolm.

The following is an abstract of the remarks which Mr. J. Bland-Sutton proposes to make in opening the discussion:

Physiological observations fail to show that any chemical change takes place in bile retained in the gall bladder under normal conditions, except an alteration in colour and a slight admixture of mucus.

Anatomy, human and comparative, teaches that absence of the gall bladder entails no disadvantage. Observations in the deadhouse show that disease destroys it very often without causing any inconvenience to the individual; and surgeons practising in large cities can demonstrate that the gall bladder can be dispensed with as easily as the vermiform appendix.

Pathological observation and surgical experience are equally eloquent in proclaiming the dangers and catastrophes accompanying many diseased conditions of the gall bladder which may be obviated by a timely operation, and the accumulated experience of many surgeons shows that the most satisfactory consequences are obtained by treating the gall bladder, when it requires surgical intervention, in the summary fashion in which we now deal with the vermiform appendix.

The diseases of the gall bladder best suited for cholecystectomy are: (1) Injury to the gall bladder; (2) calculous cholecystitis; (3) acute (non-calculous) cholecystitis; (4) perforating ulcers of the gall bladder; (5) mucocele (hydrops vesicae felleae); (6) chronic cholecystitis (empyema); (7) biliary fistula; (8) cancer, sarcoma, and endothelioma of the gall bladder (primary).

In discussing the comparative mortality of cholecystotomy and cholecystectomy it is advisable to deal with the cases as we do in the consideration of the mortality of operations on the vermiform appendix—namely, those performed for acute cholecystitis, especially the perforative cases, should stand in a separate table to those performed for chronic cholelithiasis; operations performed for primary malignant disease of the gall bladder should form a class by themselves.

Friday, August 2nd, will be devoted to the reading of papers on subjects other than the above.

The following papers have been accepted by the Committee of Reference for this section:

Pardoe, J. G, F.R.C.S.: The Indications for Prostatectomy.
Freyer, P. J., M.Ch.: Over 400 Operations for Total Enucleation of the Prostate, for Radical Cure of Enlargement of that Organ, briefly Reviewed.
Cousins, J. Ward, F.R.C.S.: A Case of Composite Odontoma.
Childe, C. P., F.R.C.S.: A Case of Successful Resection of 9½ ft. of Small Intestine for Gangrene.
Taylor, W., F.R.C.S.I.: Intestinal Obstruction (based on 30 cases).
Mummery, J. P. L, F.R.C.S.: Lesions of the Sigmoid Flexure as a Cause of Chronic Colitis.
Anderson, Miss L. G., M.D.: A Case of Sarcoma of the Small Intestine.
Edington, G. H., M.D., C.M.: Two Cases of Branchial Fistula.
Newman, D., M.D.: The Early Diagnosis and the Treatment of Tuberculous Disease of the Kidney and Bladder. The lesions found in the bladder will be illustrated by means of an opaque projector.
Maylard, A. E., F.R.C.S.: The Relative Merits of Transverse or Oblique and of Vertical Incisions in Opening the Abdominal Cavity in the Antero-lateral Region.
Starr, F. N. G., M.D.: Gastro-intestinal and Latero-intestinal Anastomoses by Means of a Platinum Wire.
Bishop, E. S., F.R.C.S.: Anterior Nephropexy.
Murray, R. W., F.R.C.S.: The Saccular Theory of Hernia.
McArdle, J. S., F.R.C.S.I.: (1) The Treatment of Ancient Dislocations of the Elbow-joint. (2) Tuberculosis near Joints.
Gordon, F. E., F.R.C.S.I.: An Experience of Critical Gastric Surgery.
Horrocks, W., F.R.C.S.: Chronic Hypertrophy of the Breast.
Vernon, A. H., F.R.C.S.: A New Operation for Haemorrhoids.

The papers will be taken in the order indicated above: the first four after the formal discussion on Wednesday, July 31st; the second four after the discussion on Thursday, August 1st, and the remainder on Friday, August 2nd.

Ophthalmology.

President: Louis Hy. Tosswill, M.B., Exeter.

Vice-Presidents: John R. Rolston, M.R.C.S., Plymouth; Alexander Hill Griffith, M.D., Manchester; Arthur Charles Roper, F.R.C.S.E., Exeter.

Honorary Secretaries: Ransom Pickard, M.S., F.R.C.S., 31, East Southernhay, Exeter; Elmore Wright Brewerton, F.R.C.S., 84, Wimpole Street, London, W.

The following subjects have been chosen for discussion:

Wednesday, July 31st.—Discussion on the Construction and Manipulation of the Principal Instruments used in Ophthalmic Surgery. To be introduced by Professor E. Landolt, Paris.

The following papers have been accepted:

Fish, H. M., M.D., Chicago: The Relation of Disease of the Nasal Accessory Sinuses to Optic Neuritis.
Snell, Simeon, F.R.C.S.E.: An Inquiry into the Causes of Blindness in 350 Inmates of a Blind School.
Grossmann, K., M.D., F.R.C.S.E.: (*a*) A Portable Refractometer; (*b*) a Portable Astigmometer; (*c*) an Improved Form of Artificial Eye.

Thursday, August 1st.—Discussion on Irido-cyclitis. To be introduced by Mr. Richardson Cross.

Mr. Richardson Cross's paper will deal with symptoms, course, and results of the disease; exudates and adhesions, their pathology and effects; cases illustrating various types of the affection; etiology, treatment.

The following papers have been accepted:

Hinshelwood, J., M.A., M.B.: 4 Cases of Congenital Word-blindness in the Same Family.
MacCallan, A. F., F.R.C.S.: Ophthalmic Hospitals in Egypt and their Work.
De Silva, W. H., M.B., F.R.C.S.E.: Lepra Ophthalmica in Ceylon.
Griffith, Alexander Hill, F.R.C.S.E.

Friday, August 2nd.—Discussion on Vesicular Affections of the Cornea. To be introduced by Mr. W. Holmes Spicer, F.R.C.S.

Mr. W. Holmes Spicer will discuss vesicular affections of the cornea with herpes febrilis; superficial punctate keratitis; dendritic ulcer; stellate ulcer; relapsing bulla.

The following papers have been accepted:

Herbert, Lieutenant-Colonel, I.M.S.: Some Clinical Observations on Spring Catarrh.
Roper, A. C., F.R.C.S.E.: Prolapse of Iris in Simple Cataract Operation.
Henderson, Thompson, M.D.: Pathogenesis of Primary Glaucoma and the Rationale of Iridectomy.
Coulter, R. J., F.R.C.S.E.: The Treatment of Alternating Strabismus.

The following have proposed to join in the discussions: Messrs. W. H. Jessop, J. Herbert Parsons, K. Grossmann, A. Hill Griffith, G. Hartridge, Freeland Fergus, Simeon Snell, Lieutenant-Colonel Herbert, and Cecil E. Shaw.

Laryngology, Otology, and Rhinology.

President: Robert McKenzie Johnston, M.D., Edinburgh.

Vice-Presidents: George Jackson, F.R.C.S., Plymouth; James Barry Ball, M.D., London; Patrick William Maxwell, M.D., Dublin.

Honorary Secretaries: Charles Edward Bean, F.R.C.S.E., 19, Lockyer Street, Plymouth; Arthur Longley Whitehead, M.B., 31, Park Square, Leeds.

The following subjects have been selected for special discussion:

Wednesday.—The Differential Diagnosis of Tuberculous, Syphilitic, and Malignant Disease of the Larynx. To be opened by Sir Felix Semon, K.C.V.O., and Dr. Jobson Horne.

The following is an epitome of Sir Felix Semon's paper: The differential diagnosis between the three diseases named usually is easy, not rarely difficult, in exceptional cases for a time almost impossible. It is easy enough to diagnose what are called "typical" cases of the three affections, but it is not for the consideration of such cases that the present discussion has been arranged. Observations are therefore limited to an analysis of cases in which either the appearances are so deceptive as to induce even an experienced observer to form an erroneous con-

clusion, or in which the signs are so ambiguous as to make the expert pause before committing himself to a definite opinion; or, finally, in which no clue is offered by the local or the general phenomena as to the true nature of the case. These are classified as follows:—1. Congestion of the vocal cords as an initial sign of tuberculosis, syphilis, and malignant disease—(*a*) bilateral, (*b*) unilateral. 2. The difficulties of diagnosis between tuberculous, syphilitic, and malignant laryngeal tumours. 3. Laryngeal tuberculosis in middle-aged or old people as a source of error in the differential diagnosis between tuberculosis, malignant disease, and syphilis of the larynx. 4. Difficulties of differential diagnosis between all the three diseases when appearing in the form of infiltration. 5. Combination of two of the diseases under consideration, and consequent diagnostic difficulties. Under each of these headings the signs are enumerated which may be useful in arriving at a correct diagnosis, and the difficulties encountered are illustrated by examples furnished by the author's own experience.

Dr. JOBSON HORNE, in his introductory paper, indicates a process of elimination by which a diagnosis of malignant disease may be arrived at to the exclusion of tuberculosis, that being the disease which, of the three, is more commonly overlooked. Whilst certain features characteristic of syphilis of the larynx are described, the disease itself is viewed more from the point of view of it being a possible factor—both concomitant and causal—common to tuberculosis and malignant disease. Transillumination of the larynx is mentioned as an aid to ascertaining the nature and the extent of the disease. The value and the fallacies of the opsonic index are also touched upon. The significance to be attached to a pathological examination is considered in some detail; and the technique adopted in removing a portion of the growth for microscopic examination is held to be of no little importance in influencing, if not in determining, the value of the report of the pathologist.

The following members propose taking part in the discussion: Professor Onodi (Buda-Pesth), Dr. Birkett (Montreal), Dr. Willinger (Buda-Pesth), Dr. Stanley Green, Mr. Harold Barwell, Mr. Lake, Dr. StClair Thomson, Dr. Smurthwaite, Dr. Fullerton, Mr. Mark Hovell, Dr. Chevalier Jackson (Pittsburg), Dr. Syme, Dr. Tilley, Dr. Mérel and Dr. Dundas Grant.

Thursday.—The Treatment of Chronic Suppuration of the Middle Ear without resort to the Radical (Complete) Mastoid Operation. To be opened by Dr. W. Milligan and Dr. W. Hill.

Dr. W. MILLIGAN, in his opening remarks, will deal with the following points: Definition of chronicity. Types of chronic suppurative otitis media. Drainage; inflation; aspiration. The wet and the dry methods of treatment. Classification of cases from point of view of danger to life. Intrameatal operative treatment. Extrameatal. Stacke's operation and modifications. General deductions.

The following is a revised synopsis of Dr. WILLIAM HILL'S paper in this discussion. His remarks will be limited to the *value of the various operative procedures performed through the meatus* in the treatment of purely chronic suppuration apparently due to disease confined to the tympanum and antrum. Post-auricular operations of the type of (1) Schwartze's antrotomy; (2) Küster's procedure of antrotomy *plus* removal of more or less of the posterior meatal wall; and (3) Stacke's more radical extension of these measures, including removal of the external attic wall and of the malleus and incus, will only be alluded to for the purpose of comparison of results with those of *meatal ossiculectomy* and *external atticotomy*.

The following have signified their intention of taking part in the discussion: Dr. Kerr Love, Dr. Stanley Green, Mr. Macleod Yearsley, Dr. Smurthwaite, Mr. Hunter Tod, Mr. Lake, Dr. Fullerton, Mr. F. Spicer, Mr. Mark Hovell, Dr. Chevalier Jackson, Mr. Chichele Nourse, Mr. Stuart Low, Dr. Syme, Dr. Pegler, Mr. Heath, Mr. Guthrie, Dr. Tilley, Mr. Hugh Jones, Dr. A. Bronner, Mr. J. Bark, Dr. Stoddart Barr, Dr. Mérel, Dr. Dundas Grant, Dr. Cresswell Baber, Dr. Willinger, Dr. Birkett.

Friday.—To be devoted to papers.

The following papers have been accepted:

ONODI, Professor A.: The Etiology of the Severe Complications of Empyema of the Accessory Nasal Cavities.

YEARSLEY, Mr. Macleod: The Value of Pneumo-massage in Affections of the Middle Ear.

FULLERTON, Dr. Robert: Notes, Photographs and Microscopic Slides of a Tumour which was removed from the Right Tonsil and which is regarded as being a Teratoma.

NOURSE, Mr. Chichele: Observations on Frontal Sinusitis.

LOW, Mr. Stuart: Submucous Turbinectomy.

SYME, Dr.: Remarks on a Case of Acute Suppuration of the Middle Ear, complicated by Septic Meningitis and Brain Abscess.

JACKSON, Mr. George: The Relative Frequency of Caries of the Superior and Middle Turbinates and Ethmoid Bones, and the Importance of Examining the Nose in all Cases with Symptoms of Deafness, Giddiness, and Vertigo, and Throat Affections, with some Remarks on the Treatment thereof.

JONES, Mr. Hugh: Slight Deviations from the Normal in the Form of the Auricle in Relation to Degeneracy and Deafness.

BRONNER, Dr. Adolph: Notes on a Case of Thrombosis of the Lateral Sinus, with Complete Obliteration of the Jugular Vein.

YONGE, Dr. E. S.: Observations on the Determining Cause of the Formation of Nasal Polypi.

ROWAN, Dr. J., and BARR, Dr. J. Stoddart: An Investigation into the Frequency and Significance of Optic Neuritis and Other Vascular Changes in the Retinae of Patients Suffering from Purulent Middle-ear Disease, with the Reports of 100 Consecutive Cases.

Members are invited to contribute any preparations, specimens, or drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects.

Lantern demonstrations will be given by Dr. Watson Williams on Some Points in the Anatomy and Surgical Treatment of the Nasal Accessory Sinuses, and by Dr. Milligan on the Surgical Treatment of Labyrinthine Suppuration.

Professor Onodi (Buda Pesth) will show (*a*) Phantom of the Larynx; (*b*) Diagrams of the Accessory Sinuses of the Nose; (*c*) an Instrument for Opening the Antrum of Highmore.

Mr. T. Guthrie will show Diagrams illustrating the Development of the Middle Ear.

DENTAL SURGERY.

President: JOHN MCKNO ACKLAND, M.R.C.S., L.D.S., Exeter.

Vice-Presidents: PETER SIDNEY SPOKES, J.P., M.R.C.S., L.D.S., London; THOMAS ARTHUR GOARD, M.R.C.S., L.R.C.P., L.D.S., 28, Southernhay, Exeter; KENNETH WELDON GOADBY, M.R.C.S., L.R.C.P., L.D.S., London.

Honorary Secretaries: JOSEPH LEWIN PAYNE, M.R.C.S., L.R.C.P., L.D.S., 44, Devonshire Street, Portland Place, W.; GEORGE ARTHUR PEAKE, M.R.C.S., L.R.C.P., L.S.A., L.D.S., Alma House, Cheltenham.

The following subject has been selected for special discussion on Wednesday: The Causes, Effects, and Treatment of Dental Diseases in Children. To be opened by Mr. Edmund Owen, M.B., F.R.C.S., Dr. G. F. Still, F.R.C.P., and Mr. J. G. Turner, F.R.C.S., L.D.S.

The following is a synopsis of Mr. EDMUND OWEN'S remarks in opening this discussion: The chief *cause* of dental disease in children is imperfect development of the enamel and dentine due to faulty feeding. Any condition tending to the production of rickets favours histological imperfection of the teeth. Sterilized milk is harmful, as are also the speciously advertised patent foods. The present fashion of feeding children does not encourage healthful use of jaws and teeth. Two of the most serious effects of dental disease in children as met with by the general surgeon are septic ostitis of the jaw started by incubation of septic micro-organisms in a carious fang, and septic inflammation of the cervical lymphatic glands. The more quiet form of septic adenitis prepares the tissue for the incubation of the bacilli of tuberculosis. Thus, carious teeth are often found in association with cervical tuberculosis. The most important points as regards *treatment* are the regular inspection of the child's teeth, and the thorough dealing with carious spots; that it is easy to carry conservative principles too far. Prompt extraction of a doubtful tooth is safer than treatment by excavating and filling.

The following is an abstract of Dr. STILL'S paper:—Frequency of dental caries in children too often an overlooked cause of symptoms; local sepsis and general toxaemia; interference with digestion and symptoms

arising therefrom; recurring headaches; probably also a cause of certain nervous disturbances; a predisposing, possibly a direct, cause of tuberculous infection of lymphatic glands; importance of parental care; value of dentist's supervision; the treatment of dental caries in children from the dentist's point of view and from the physician's.

Mr. J. G. TURNER'S paper will deal with hypoplasia of teeth under the heads of hypoplasia of malnutrition, inflammatory hypoplasia, traumatic hypoplasia, hypoplasia of congenital syphilis, hereditary hypoplasia. The relation to rickets is discussed, and a special form of syphilitic molar described. Cause, incidence, and treatment of dental caries in children is discussed, with special emphasis on early incidence, and the completeness of our knowledge as to cause and prevention. Extraction, as the most generally useful treatment and as prevention of oral sepsis, is urged. Ulcerative stomatitis is discussed in its possible relation to pyorrhoea alveolaris. The possibility of organized, or even State, assistance in preventing dental caries is touched on.

The discussion will be taken up by Messrs. Morton A. Smale, A. S. Underwood, J. F. Colyer, Kenneth Goadby, C. E. Wallis, Frank Coleman, W. R. Ackland, Russell Barrett, R. Denison Pedley, and F. J. Bennett.

The following papers will be read on August 1st and 2nd:

ACKLAND, W. R., M.R.C.S., L.D.S.: Notes on Some Cases of Neuralgia.

BAKER, A. W. W., M.B., M.S., F.R.C.S.I., L.D.S.Dub.: Difficult Eruption of the Third Molar.

BENNETT, F. J., M.R.C.S., L.D.S.: Some Anatomical Results of Efficient Mastication.

COLYER, J. F., M.R.C.S., L.R.C.P., L.D.S.: Irregularities of the Teeth as shown by the Jaws of Animals. A contribution to comparative pathology.

FAIRBANK, H. A., M.S., L.D.S.: Sarcomata of the Jaws.

OBSTETRICS AND GYNAECOLOGY.

President: ERNEST HASTINGS TWEEDY, F.R.C.P.Ire., Dublin.

Vice-Presidents: WILLIAM FOOKES THOMPSON, M.D., Launceston; J. MACPHERSON LAWRIE, M.D., Weymouth; WALTER LEY WOOLLCOMBE, F.R.C.S.E., Plymouth; WILLIAM WALTER HUNT TATE, M.D., London.

Honorary Secretaries: GEORGE HERBERT JOHNSON, M.R.C.S., 7, Den Crescent, Teignmouth; HY. RUSSELL ANDREWS, M.D., 7, Wimpole Street, London, W.; EDWIN JOSIAH TOYE, M.D., Bridgeland Street, Bideford.

The following is a preliminary programme of arrangements:

Wednesday.—Discussion, The Justification for Artificial Dilatation of the Cervix to Hasten Delivery at Full Time, with a discussion on the Most Appropriate Method for Procuring this Dilatation. To be opened by Dr. Robert Jardine.

The following is a synopsis of Dr. JARDINE'S paper: Justified by use and wont, also because by the performance of the operation in certain cases the mother's life can be saved, and in other cases it is necessary in the interest of the child. Methods of performance of the operation: (1) Methods which are somewhat approximated to the natural process—first, by the use of hydrostatic bags of the type of Barnes's or Champetier de Ribes's; secondly, the vaginal tampon which stimulates uterine action. (2) More rapid methods by stretching the canal—first, the manual method; secondly, the bimanual method; thirdly, the use of screw dilators of the type of Bozzi's. (3) Cutting methods—first, multiple incisions when the cervix is taken up; secondly, vaginal Caesarean section when the cervix is not taken up. The dangers of each of the methods will be dealt with, and the cases most suitable for the different methods will be indicated.

Thursday.—Discussion, Measures to be Recommended to Secure the Earlier Recognition of Uterine Cancer. To be opened by Dr. Herbert R. Spencer.

The following is an abstract of the remarks Dr. HERBERT SPENCER intends to make in opening the discussion:

Cancer of the uterus *at an early stage of its growth* is curable in a large proportion of cases by vaginal operations (high amputation of the cervix and vaginal hysterectomy), with a very small immediate risk of life. In more advanced stages it may still be cured by the extended abdominal operation, which, however, has a higher immediate mortality than the vaginal operations. The desirable object is to get cases of cancer in the early stages, whatever be the operation performed. Experience in this country shows that but a small proportion of patients present themselves to gynaecologists at the beginning of the disease, and that in most of them the disease is too far advanced for even the extended abdominal operation to give a chance of cure. This unfortunate state of things is due to: (1) The patient's ignorance of the early symptoms of the disease; (2) the practitioner's delay in examining the patient who presents the early symptoms of the disease (abnormal haemorrhage or discharge); (3) the disinclination or refusal of the patient to submit to examination; (4) the occasional difficulty in distinguishing between benign and malignant disease of the uterus. The remedy consists in: (1) Diffusion amongst women over 25 years of age of knowledge of the early symptoms of the disease, and of the fact that diagnosis can only be made by means of physical examination; (2) an appeal to all general practitioners to advise examination by finger, speculum, and, if necessary, by removal of growth for microscopic examination in all cases of bleeding and discharge which may be due to cancer; (3) the better education of medical students in practical gynaecology; (4) dilatation with tents and examination of the corporeal cavity with the finger is not less important than the microscopical examination of curettings in the diagnosis of cancer of the corpus. Results obtained in Germany.

The following propose taking part in the discussions: Professor Strassmann, Dr. Robert Bell, Dr. S. Cameron, Dr. Frederick Edge, Dr. W. E. Fothergill, Dr. A. L. Galabin, Dr. T. Arthur Helme, Mr. F. Bowreman Jessett, Dr. M. Handfield-Jones, Dr. J. Munro Kerr, Dr. Arnold Lea, Dr. A. H. N. Lewers, Dr. Cuthbert Lockyer, Dr. F. J. McCann, Dr. W. H. Newnham, Dr. Inglis Parsons, Dr. Charles Ryall, Mrs. Scharlieb, M.D., Sir William Japp Sinclair, Sir William Smyly, and Dr. Thomas Wilson.

Friday is set apart for the reading and discussion of short papers. The following papers will be read:

CAMERON, Dr. S.: Fibroid and Fibromyomatous Tumours in Unusual Sites.

EDGE, Dr. Frederick: A Note on the Technique of Abdominal Hysterectomy.

KERR, Dr. J. Munro: A Case of Complete Rupture of the Uterus, with escape of the Fetus into the Peritoneal Cavity: Panhysterectomy: Recovery.

LOCKYER, Dr. Cuthbert: The Operative Treatment of Cervix Carcinoma.

SCHARLIEB, Mrs., M.D.: A Short Report on Cases of Abdominal Section for Cancer of the Uterus.

LAWRIE, Dr. Macpherson: Remarks on Six Successful Hysterectomies for Fibroid Disease in One Family.

MARTIN, Mr. Christopher: On Three Cases of Osteomalacia treated by Removal of the Ovaries.

STRASSMANN, Dr. Paul: Remarks on the Indications for, and Methods of, Operating on Uterine Fibroids.

SWAYNE, Dr. C. Walter: Chorion-epithelioma with Sections and Lantern Slides.

WILSON, Dr. Thomas: Pubiotomy, with Notes of an Illustrative Case.

PARSONS, Dr. Inglis: A Series of 100 Consecutive Abdominal Sections in Hospital Practice.

STATE MEDICINE.

President: ARTHUR NEWSHOLME, M.D., M.O.H., Brighton.

Vice-Presidents: EDWARD ALEXANDER BRASH, M.R.C.S., Exeter; FREDERICK MANN WILLIAMS, M.R.C.S., Plymouth; Professor HENRY RICHARD KENWOOD, M.B., London.

Honorary Secretaries: SACK NOY SCOTT, M.R.C.S., Plymstock, Devon; FRANCIS CHARLES MARTLEY, M.D., 71, Lower Baggot Street, Dublin.

The following preliminary arrangements have been made:

Wednesday.—Dr. Newsholme will introduce a discussion on The Co-ordination of the Public Medical Services.

Dr. H. Cooper Pattin, Dr. H. Manley, Dr. F. E. Freemantle, Dr. M. D. Edes, and Dr. Joseph Kenny will take part in this discussion.

The following is a summary of Dr. NEWSHOLME'S paper in introducing the discussion: The scope of preventive medicine is no longer confined to germ-borne diseases, but extends to such early treatment of any disease as will secure a less severe or less protracted later stage of disease.

The community as well as the individual is interested

In this wider definition of preventive medicine, though, as shown by the serious loss of life and health still due to avoidable causes, this is only partially realized. Poverty and disease act in a vicious circle, and the practical problem considered in this paper is the means by which people may be prevented from becoming poor by preventing them from becoming sick.

Official and voluntary agencies now at work show how much is already being done in the communal treatment and prevention of sickness. The list of these agencies given in the paper shows that the distinction between prevention and treatment has never been maintained. A rapidly-increasing proportion of total sickness is being treated in voluntary and in State or rate supported institutions.

Are we getting a satisfactory return for this increasing burden on rates, taxes, and charity? Whether viewed from the standpoint of patients, doctors, or of the public health, the present state of the medical service must be condemned as unsatisfactory.

The conditions of private medical practice among the poor are admittedly most harassing and unsatisfactory to the doctor. To the patient they are equally unsatisfactory, for (1) diagnosis is belated, and (2) treatment is curtailed owing to expense. (3) In dispensaries, etc., there is a serious waste of time. (4) There are no co-ordinated arrangements for medical consultations. (5) Valuable information as to the incidence of disease is wasted. (6) There is a great waste of information as to the existence of conditions conducing to disease.

These defects can be overcome, as is seen in the co-ordinated arrangements where the notification of consumption is successfully at work. Thus the visit of an officer to the notified patient sets in operation all the prophylactic, curative and sanitary measures which are needed, equally for the welfare of the patient and of the public. Undetected cases are recommended for diagnosis and treatment. Sanatorium training and treatment are secured.

These defects are not overcome, for instance, when the organization for the medical supervision of scholars is separate from the general public health administration of a district. Much of the medical inspection of scholars if it is to be efficient must be done by interviewing parents, and much of it involves home visits. The home is the point from which many of the evils discovered by medical school inspection will have to be attacked and controlled. In actual fact parents will not tolerate dual medical examinations for school purposes, and on the other hand neither school doctor nor medical officer of health fulfil the complete needs of the case. These will only be met when district doctors are appointed by each municipality, and these doctors are co-ordinated with the mechanism of preventive medicine, enabling us to secure the early systematic and unstinted diagnosis and treatment of all disease before, even more than at, school ages.

The present state of medical service is evidently transitional. Neither provident dispensaries nor cries against "hospital abuse" and "undercutting" practice have been able to hinder the steady progress towards the treatment of disease at the expense of the community; nor is it possible to arrest this trend. What has hitherto been done in the collective treatment of disease is merely a phase in the evolution of the system which will effectually ensure the early recognition and proper treatment of all diseases at the expense of the community. Such a system would justify itself economically by the corresponding reduction of sickness and of inefficiency; in short, the justification of a municipal medical service both economically and medically consists in its being a branch of a general system of preventive medicine. This necessarily implies that it must centre round an expanded Public Health Medical Service, embracing every phase of disease and every means for maintaining health. By this means information of preventive value will no longer be allowed to run into culs-de-sac and be lost, preventive medicine being regarded as a whole, and its many fragmentary portions being no longer allowed to continue relatively impotent by being detached from single executive control.

Thursday.—Professor Kenwood will open a discussion on The Reduction of Infant Mortality by Better Management and Control of the Milk Supply. It is further proposed to consider the Abolition of Private Slaughter-houses and a more strict Inspection of our Meat Supplies.

The following is a synopsis of Professor KENWOOD'S remarks: A great waste of infant life results from the use of raw milk; but statistical evidence must be somewhat discounted. The present milk supply can (and must) be made cleaner and safer, but absolute cleanliness and safety are unattainable. The use of raw milk for infant feeding should therefore be discouraged, at least during the summer. Suggestions for obtaining a cleaner and safer milk supply. The general neglect of sanitary authorities to do their duty. Many dairy companies do the work of the defaulting sanitary authorities. Despite all our efforts to foster breast-feeding a large proportion of infants will be artificially fed, and such feeding must be made as safe as possible. Infant consultations preferred to municipal milk dépôts. A general tendency to grossly exaggerate the dangers of sterilized milk. Some facts and arguments in favour of its use. Reasons why pasteurized milk is to be preferred. A bottled supply advocated. A recommendation.

Dr. E. W. Routley (Aldershot) will read a paper on Infant Mortality the Result of Home Contamination of Milk. The following will contribute towards this discussion: Lieutenant-Colonel R. Caldwell, R.A.M.C.; Dr. Herbert Jones, Dr. F. E. Freemantle, Dr. W. J. Thompson, Professor J. S. Woodhead, Dr. Cuthbert Thompson (Kentucky), and Dr. T. Frederick Pearse (Calcutta).

Friday.—It is proposed to discuss the following questions on Rural Hygiene: (*a*) The Isolation of the Infectious Sick in Rural Districts; (*b*) The Difficulties in the Operation of the Midwives Act in Rural Districts; (*c*) The Housing of the Labourer in Rural Districts; (*d*) The Economical Treatment of the Sewage of Small Communities; (*e*) What constitutes "Sufficient Supply of Wholesome Water," P. H. W. Act, 1878?

These subjects will be introduced or discussed by Dr. W. F. Brown (Ayr), Dr. J. Arnallt Jones (Aberavon), Dr. F. C. Freemantle (Hertford), Dr. J. M. Wilson (Beverley), Dr. Herbert Jones (Hereford), Dr. C. H. W. Parkinson (Wimborne), Professor T. A. Starkey (Montreal).

Dr. J. MITCHELL WILSON, in introducing the discussion on sufficient supply of wholesome water, will deal with the following points: The requirements of the Act. Distinction between the needs of towns and villages. A sufficient supply under the Act really means a sufficient supply for purely domestic purposes. The theoretical estimates of this amount vary. A better estimate can be obtained from the experience of villages where water is drawn from a main through meters. These show theoretical estimates to be exaggerated, with the result that water schemes are made to appear more unduly costly than in practice they should really prove. Reasons are given for considering that a supply of six gallons a head as a minimum meets the requirements of the Act when water has to be stored in cisterns.

The following papers will be read on convenient days:

HORDER, Dr. T. Garrett (Cardiff): The New Vaccination Order.
TIDSWELL, Dr. H. (Torquay): The Effect of Tobacco Smoking on the Health of the Individual and the Nation.
MCWALTER, Dr. J. C. (Dublin): The Prevention of Putrefaction.
GILCHRIST, Dr. A. W. (Nice): On the Necessity of Increasing the Degree of Immunity Against Small-pox.

The septic sewage works at Exeter will be open for inspection, and the city surveyor will be glad to show and explain the works.

NAVAL AND MILITARY.

President: Inspector-General JAMES PORTER, C.B., M.D., R.N., Newport, Mon.

Vice-Presidents: Colonel GEORGE DEANE BOURKE, C.B., R.A.M.C., Devonport; Brigade-Surgeon-Lieutenant-Colonel J. RAGLAN THOMAS, M.D., V.D., Exeter; Surgeon-Lieutenant-Colonel DECIMUS CURME, M.R.C.S., Blandford.

Honorary Secretaries: Fleet-Surgeon HORATIO S. R. SPARROW, L.R.C.P., R.N., Royal Marine Barracks, Plymouth; Surgeon-Major JOHN ROBINSON HARPER, M.R.C.S., Bear Street, Barnstaple; Surgeon-Captain JOHN SHIRLEY STEELE PERKINS, M.B., V.M.S., 47, Southernhay West, Exeter; Major BENJAMIN FRAZIER ZIMMERMANN, R.A.M.C. (ret.), M.R.C.S., L.R.C.P., Bicton Lodge, Heavitree, Exeter.

The following programme has been arranged:

Discussions: The Treatment of Wounded in Fleet Actions. To be opened by Fleet Surgeon A. Gaskell, R.N.

The following is a synopsis of Fleet Surgeon Gaskell's paper: I. Details on which we are all practically agreed: (1) A hospital ship should be built. (2) A new naval first-aid dressing should be devised. (3) First aid should be taught. (4) The haversacks should be distributed before action. (5) In peace time the first-aid dressing should frequently be used for instruction. (6) The surgical apparatus should be protected during action. II. Details on which we are as yet undecided: (*a*) The proper medical "preparation for battle." (*b*) The medical staff should be augmented. (*c*) Cleansing the men's skin and clothing before going into action. (*d*) The proper stations for the medical staff and their assistants. (*e*) The details of moving the wounded. (*f*) The treatment of the wounded after action. (*g*) The best authorities on the subject.

Treatment Afloat of (*a*) Syphilis, to be opened by Surgeon C. K. Bushe, B.A., M.D., R.N.; and (*b*) Burns and Scalds, to be introduced by Staff Surgeon P. J. Sutcliffe, M.B., B.C.

The following is a synopsis of Surgeon C. K. Bushe's paper on the Treatment Afloat of Syphilis:

(1) Necessity for keeping all cases of venereal sores, and some cases of urethral discharge, under regular observation even after these conditions have disappeared, with a view to the detection of symptoms of constitutional syphilis. (2) Necessity for sending "venereal cases" to accompany men wherever they may be drafted in order to inform medical officers of their condition, and the amount and nature of the treatment they have had. (3) The term "syphilis" only to be used to mean constitutional syphilis. (4) Particular attention paid to informing men of the nature of their disease, treatment necessary for its cure, and its effect if uncured on themselves and others. Printed rules to this effect. (5) When to allow full liberty to syphilitics. Benefit of routine weekly inspection of all men suffering from syphilis. (6) Description of the administration of mercury by intramuscular injection as the most serviceable method. (7) Necessity for local applications to active lesions; value of solid copper sulphate for this purpose. (8) Marginal case notes written in on medical history sheets.

The following is an abstract of the remarks of Staff Surgeon P. T. Sutcliffe in opening the discussion on the Treatment Afloat of Burns and Scalds:

(1) Remarks to be confined to the more severe cases where the patient is landed at the earliest opportunity and sent to hospital. (2) Choice of dressing to be made, with some thought of those who will treat the patient when in hospital. (3) Forms of dressing. (*a*) Powders, short remarks on. (*b*) Oils, disadvantages of (especially carron): Not antiseptic; does not absorb discharges; requires frequent change of dressing; dirty with regard to linen, etc.; difficult to remove when other applications are chosen; space occupied by is considerable in men of war. (*c*) Lotions, advantages of: Aseptic and antiseptic; discharges are absorbed; requires less frequent change; has stimulating properties; space occupied is inconsiderable; choice of lotion. Remarks chiefly on the value of picric acid as an application and the dangers of storing. General advice to use lotions in preference to oils.

Papers:

Caldwell, Lieutenant-Colonel: Enteric Fever during Active Service.

Wilson, Lieutenant-Colonel E. M., R.A.M.C., C.B.: The Provision of Male Subordinates for the Medical Service on Mobilization in Case of War.

Davies, Lieutenant-Colonel A. M., R.A.M.C.: Enteric Fever: Its Spread by Personal Infection and Preventive Measures on Active Service. The Value of Inoculation as a Preventive.

Faichnie, Major, R.A.M.C.: Water Supply in Camps, on the March, and in Battle.

Blackham, Major, R.A.M.C.: The Teaching of Hygiene in the Army.

Giles, Surgeon-Colonel: The Position of the Volunteer Regimental Stretcher Bearer. Disposal of Excreta in Camp and on the March.

Bassett-Smith, Fleet Surgeon P. W., R.N.: Frequency of Aneurysms in the Royal Navy.

Duncan, Staff Surgeon G. E., R.N.: A Form of Oral Filter to be Used by all Persons in the Operating Room.

Norris, Staff Surgeon H. L., R.N.: Wireless Telegraphy and Hospital Ships.

Home, Fleet Surgeon, M.D., R.N.: The Choice of the Field of Practice (the Navy).

PATHOLOGICAL MUSEUM.

The following are the members of the Committee:—

President: J. D. Harris, M.D.

Honorary Secretaries: R. V. Solly, M.D., 40, West Southernhay, Exeter; G. P. Hawker, M.B., 8, St. Leonard's Road, Exeter.

Members of Committee:

A. E. Carver, M.D.	W. L. Pethybridge, M.D.
B. Dyball, F.R.C.S.	R. Pickard, F.R.C.S.
W. Gordon, M.D.	A. C. Roper, F.R.C.S.Edin.
R. Hingston	H. Sharp, M.B.
H. C. Jonas, M.D.	P. H. Stirk
R. H. Lucy, F.R.C.S.	G. L. Thornton, M.R.C.P.
H. Montgomerie, M.D.	H. W. Webber.

Ex-Officio Members:

The President-elect: H. Davy, M.D., F.R.C.P.

The Local Honorary Treasurers: J. Somer, M.R.C.S.; L. H. Tosswill, M.B.

The Local Honorary Secretaries: Russell Coombe, F.R.C.S.; G. T. Clapp, M.B.; Leonard R. Tosswill, M.R.C.S.

The Committee responsible for the organization of the Pathological Museum are anxious to secure the co-operation of the officers of the various Sections at the forthcoming annual meeting. They will be glad to take charge of, and place in the Museum for exhibition, any specimens, photographs, diagrams, or microscopic slides during the time they are not required by those who are reading papers or taking part in the discussions. The Committee therefore request members who propose to bring any material to communicate direct with the Honorary Secretaries, at 40, West Southernhay, Exeter, as this will greatly facilitate the necessary arrangements.

PROGRAMME OF PROCEEDINGS.

Saturday, July 27th.

9.30 a.m.—Annual General Meeting, to be followed immediately by Representative Meeting.

Monday, July 29th.

9.30 a.m.—Adjourned Representative Meeting.
4 p.m.—Reception by the R.W. the Mayor in the Guildhall.

Tuesday, July 30th.

9.30 a.m.—Adjourned Representative Meeting.
12 noon.—Service at the Cathedral.
Exhibition of Foods, Drugs, and Instruments.
2.30 p.m.—Adjourned General and Representative Meetings. Induction of President.
4 p.m.—Garden Party by the R.W. the Mayor on Northernhay.
8.30 p.m.—President's Address in Theatre. Presentation of Middlemore Prize.

Wednesday, July 31st.

10 a.m. to 1 p.m.—Sectional Meetings.
Exhibition of Foods, Drugs, and Instruments.
2.30 p.m.—Address in Medicine.
3.15 p.m.—Adjourned Representative Meeting.
4 p.m.—Garden Party by Dr. Maury Deas (President, South-Western Branch), Wonford House.
Garden Party by Dr. Samways, Knowle, Clyst St. George.
Drive from Budleigh Salterton to Bicton House, where a Garden Party will be given by Lord Clinton, and drive back across Woodbury Common.
Drive across Woodbury Common, and Garden Party in Manor House Grounds. Exmouth, to include a visit to Hayes Barton, the birthplace of Sir W. Raleigh.
8.30 p.m.—Reception by President and Members of the South-Western Branch on Northernhay.

Thursday, August 1st.

8 a.m.—Temperance Breakfast.
10 a.m. to 1 p.m.—Sectional Meetings.
Exhibition of Foods, Drugs, and Instruments.
2.30 p.m.—Address in Surgery.
4 p.m.—Garden Party by the Right Rev. the Lord Bishop of Exeter at the Palace.
Drive from Cullompton to Black Down Hills and Picnic Tea by Dr. Gidley, Cullompton.
Garden Party by Sir Thomas Dyke Acland, Bart., at Killerton.
Garden Party at Seaton.
7.30 p.m.—Annual Dinner.
8.30 p.m.—Ladies' Entertainment at Theatre.

FRIDAY, AUGUST 2ND.

10 a.m. to 1 p.m.—Sectional Meetings.
Exhibition of Foods, Drugs, and Instruments.
4 p.m.—Garden Party by Sir Dudley Duckworth King, Bart., High Sheriff of Devon, and President of the Royal Devon and Exeter Hospital, at Wear House.
Luncheon Party at Teignmouth, and Drive to Chudleigh, tea being given at Ugbrooke by Lord Clifford of Chudleigh.
Luncheon Party at Torquay.
Luncheon Party at Sidmouth.
8 p.m.—Popular Lecture in Theatre by Sir John William Moore.
8.30 p.m.—Reception by Civic Authorities in Royal Albert Memorial.

SATURDAY, AUGUST 3RD.
Excursions.

ANNUAL EXHIBITION.

THE Annual Exhibition of Foods, Drugs, Medical and Surgical Instruments, Sanitary and Ambulance Appliances, etc., will be held at the Victoria Hall, Queen Street, within two minutes' walk of the Reception Room, from Tuesday, July 30th, to Friday August 2nd. The exhibition will be open from 9 a.m. to 6 p.m. daily.

HONORARY LOCAL SECRETARIES:

RUSSELL COOMBE, M.D. (Cantab.), F.R.C.S.Eng., 5, Barnfield Crescent, Exeter.
G. T. CLAPP, M.B. (Cantab.), 14, West Southernhay, Exeter.
LEONARD R. TOSSWILL, M.R.C.S., L.R.C.P., 34, West Southernhay, Exeter.

EXCURSIONS.

SATURDAY, AUGUST 3RD.

1. *Plymouth.*—The Mayor of Plymouth will kindly entertain 125 members to luncheon at 1 p.m. At 3 p.m. the members resident in the three towns and district have arranged for a steamer to leave West Hoe Pier for a trip round Plymouth Sound, the Hamoaze, and the River Tamar. At 4.30 there will be tea at Mount Edgcumbe, kindly provided by the Earl of Mount Edgcumbe. The steamer will return to West Hoe Pier about 6 p.m. Ladies will be heartily welcomed on the steamer trip, and also at tea. In addition, arrangements will be made in the morning for visiting Devonport Dockyard. The P.M.O., R.A.M.C., and the Inspector-General, R.N., will be pleased to show members over the Station Hospital, Devonport, the Military Families' Hospital, and the Royal Naval Hospital, Plymouth. The Inspector-General, R.N., has also arranged for visits to H.M.S. *Cambridge* (gunnery ship, H.M.S. *Defiance* (torpedo ship), H.M.S. *Indus* (training ship for artificers), etc.

2. *Falmouth.*—An unlimited number of members will be entertained at luncheon.

3. *Ilfracombe.*—The Chairman, J. G. Dodd, Esq., J.P., and members of the Urban District Council will entertain twenty-five members to luncheon, and before leaving, Dr. C. W. Toller will kindly provide refreshments at the Hydropathic.

4. *Bideford and Clovelly.*—Members will proceed to Bideford by rail, continuing the journey to Clovelly by coach. Mrs. Hamlyn, of Clovelly Court, will kindly entertain twenty members to luncheon, and on the return journey it is expected that tea will be provided at Bideford by the kindness of the Mayor.

5. *Tavistock and Endsleigh.*—Members will proceed to Tavistock by rail, arriving about 11.30 a.m., driving thence to Endsleigh, the beautiful seat of His Grace the Duke of Bedford, who has kindly promised to entertain fifty members at luncheon. Returning to Tavistock, tea will be provided at the Bedford Hotel.

FROM WEST OF SCOTLAND TO EXETER.

Dr. JAMES HAMILTON (Honorary Secretary, Glasgow and West of Scotland Branch) writes: For the benefit of Representatives and others who purpose going to Exeter from Glasgow and the West of Scotland, I would remind them that they have a considerable choice of routes. If they wish to rail it all the way, the G. and S.W. (St. Enoch's) runs two suitable trains—one leaving Glasgow at 9.20 a.m., arriving at Exeter 10.30 p.m., and another leaving at 5.30 p.m., arriving at Exeter 8.30 a.m., both changing at Bristol; while the Caledonian (Central) runs a through train leaving Glasgow at 5.55 p.m., arriving at Exeter at 8.20 a.m. For those, on the other hand, who would enjoy a sea trip, two routes are available: Messrs. Swan and Co. run steamers every Monday and Thursday to Bristol, due Wednesday and Saturday evenings respectively; and the Clyde Shipping Company run steamers to Plymouth on Monday, July 22nd, and Friday, July 26th, arriving on the Thursday and the Monday following respectively.

TRIPS AND CIRCULAR TOURS IN THE NEIGHBOURHOOD OF EXETER.

EXETER is a particularly convenient tourist centre; by a glance at the map it will be seen that railway lines radiate from it in all directions. The following information is compiled so that members may readily find the easiest and cheapest method of seeing any particular part of the country.

Tickets to all these places (except the excursions especially named) can be obtained (on production of member's ticket) at a reduced rate for the return journey.

BIDEFORD, WESTWARD HO, CLOVELLY.

Bideford is two hours by rail from Exeter, Clovelly an additional two hours by coach. There is a daily excursion by the L. and S.W.R. to Clovelly via Bideford and thence by coach. Return fare from Exeter, including coach, 8s.

LYNTON, LYNMOUTH, WOODY BAY, WATERSMEET.

Lynton and Lynmouth are between three and four hours by L. and S.W.R. from Queen Street, change at Barnstaple. Watersmeet and Woody Bay are reached by walking or driving from Lynmouth. There is an excursion by the L. and S.W.R. on Monday, Wednesday, and Saturday. Return fare from Exeter, 5s. 3d.

A special coaching trip to Lynton, starting from Dulverton and passing over some of the most wild, beautiful, and romantic parts of Exmoor, will be arranged if there are sufficient members and their friends to make up a coaching party. The return journey from Lynton would be made by rail. This will allow about two hours to see Lynmouth.

SEATON AND LYME REGIS.

Seaton.—L. and S.W.R. (Queen Street), change at Seaton Junction. One hour by rail from Exeter.

Lyme Regis.—L. and S.W.R. (Queen Street), change at Axminster. One and a half to two hours from Exeter.

These places are 7 miles apart, and the well-known Landslip is between the two.

On Wednesday there is a circular tour from Exeter, which may be taken either from Seaton to Lyme or vice versa, passengers finding their own way between the two places. Fare, 2s. 6d.

EXMOUTH AND BUDLEIGH SALTERTON.

L. and S.W.R. (Queen Street), half an hour from Exeter.

Steamer Excursions.—The well-appointed steamers, *Duke of Devonshire* and *Duchess of Devonshire*, leave Exmouth daily for trips up and down the coast. A time-table of these excursions will be placed in the Reception Room. A steam launch makes frequent journeys from Exmouth to Starcross.

OTTERY ST. MARY AND SIDMOUTH.

L. and S.W.R. (Queen Street), change at Sidmouth Junction. Both places are about one hour from Exeter.

The Collegiate Church at Ottery is a fine old church, and is a half-scale copy of Exeter Cathedral.

STARCROSS, DAWLISH, TEIGNMOUTH, NEWTON ABBOT, TORQUAY, PAIGNTON, DARTMOUTH, AND TOTNES.

There are frequent trains from St. David's Station (G.W.R.) to these places.

A steam launch to Exmouth meets most of the trains at Starcross. This makes a short circular land and sea trip, members returning by rail from Exmouth if preferring to do so.

Dartmouth can be taken *en route* by three different circular trips as under.

1. Rail to Dartmouth, thence by steamer up the Dart to Totnes, returning to Exeter by rail or vice versa according to tide. Fare, inclusive of steamer, 3s. 9d.

2. To Kingsbridge by rail, Kingsbridge (via Torcross and Slapton Sands) to Dartmouth by coach, thence by rail to Exeter. Fare, inclusive of coach, 5s. 6d.

3. Sea trip by steamer from Exmouth to Dartmouth.

At Torquay, Dr. Courtenay Dunn (Fair View), offers to secure lodgings for members who write to him enclosing a stamped envelope; accommodation can, he states, be obtained at very reasonable rates.

Dartmoor Coaching Drives.

1. A circular tour by G.W.R. to Moreton Hampstead, thence across Dartmoor to Prince Town by coach, returning by rail via Plymouth. This trip opens up some of the choicest scenery in Devonshire, passing across the centre of Dartmoor and bringing under notice well known places of moorland interest, amongst which are Wistman's Wood, Two Bridges, Dartmeet, Crocken Tor, Grimspound and Prince Town. The tour is made on Monday, Wednesday, Thursday and Saturday. Inclusive fare, 8s. 6d.

2. Circular trip by G.W.R. to Ashburton, thence by coach through the Buckland and Holne Chase drives and via Prince Town to Tavistock, returning from Tavistock by L. and S.W.R. to Exeter. This drive is considered to pass through some of the prettiest of the Dartmoor scenery and will enable visitors to see the fine stone avenues above Merivale Bridge. The tour can only be arranged if there are sufficient numbers to make a brake party, and members anxious to make this excursion will be requested to place their names on a list in the Reception Room.

3. There are daily coaching drives over Dartmoor, starting from Newton Abbot and Bovey Tracey. These drives take in Haytor Rocks (1,500 ft.), Bowerman's Nose Rock, the Logan Stone, Manaton and Becky Falls. One of these drives is well worth making.

4. *Dartmoor Convict Prison.*—Dr. Dyer, P.M.O., has obtained permission from the authorities to show thirty members over the convict prison, and has kindly offered to show round the prison ten members on Wednesday, ten on Thursday, and ten on Friday, and to provide tea afterwards. To reach the prison, a circular tour has been arranged—rail to Ashburton, thence by coach through the Holne Valley and across Dartmoor to the prison, returning via Tavistock to Exeter—particulars of which will be found in the Reception Room.

5. *Dartmoor Sanatorium* (near Chagford).—Dr. A. Scott Smith will be pleased to see any members anxious to view this sanatorium. Wagonettes will meet motor bus (L. and S.W.R.) at Chagford and drive members to the

Map of country surrounding Exeter illustrating the circular rail and coach tours.

sanatorium, and they will be provided with luncheon and tea. Notice will have to be given.

6. *Didworthy Sanatorium.*—The Committee will be pleased to see any members interested in sanatoriums. Carriages will convey them to the Sanatorium from Brent Station (G.W.R.), and a light luncheon and tea will be provided. Notice will have to be given.

EXMOOR COACHING EXCURSIONS.

As there are no circular excursions over Exmoor by the railway companies, coaching expeditions can only be arranged if there is a sufficient number of members and their friends to make a coaching party. Exmoor is the country of the Doones and the home of the wild stag. The wildness and loneliness of this vast expanse of hilly country has a peculiar charm of its own, and is well worth seeing. The railway journey to Dulverton, whence the coach drives start, passes up the lovely Exe Valley. Dulverton is reached by Great Western Railway from St. David's Station.

BOSCASTLE AND TINTAGEL.

There is a daily cheap excursion to these interesting places by the London and South-Western Railway. The tour is taken by rail to Camelford, thence by coach or char-à-banc to Boscastle and Tintagel, returning to Camelford. The drive passes through delightful scenery with excellent sea views throughout, and visits the strange old-world harbour of Boscastle and the sequestered glen and waterfall of St. Nighton, the fabled trysting place of the Knights of the Round Table. Fare, including coach drive, 5s.

LOCAL ENTERTAINMENTS.

IN addition to the information given above as to the excursions which have been arranged for Saturday, August 3rd, we may here publish some account of entertainments which have been organized for the other days on which the meeting will be held.

While possessing numerous features of interest in itself, Exeter will be found to have this advantage over some other cities at which the annual meeting has been held in that not only is it surrounded by some of the most beautiful country in England, but within easy reach of it are many seaside and inland holiday resorts, each possessing some special charm and attraction of its own. It is no wonder that members attending the meeting should wish to see as much of this picturesque scenery and as many of these charming spots as may be possible within the space of the afternoons of one short week, and in deference to their wishes the aim of the Local Entertainments Sub-committee has been so to distribute the various entertainments, that members may be enabled not only to visit the most attractive of these places, but also, by means of specially arranged drives in their neighbourhood, may have every opportunity of seeing the beauty of their setting among the hills of fair Devon.

Those who prefer other forms of recreation have not been forgotten. Members of the Association will be welcome at the various golf links in the neighbourhood; boating may be had on the canal; while those who delight to—

"... throw, nice judging, the delusive fly,"

will find, within easy reach, many streams which may be fished on payment of a small sum.

The following list gives some particulars of the entertainments which have been arranged.

On *Tuesday, July 30th*, the Mayor will give a garden party on Northernhay, at which the band of the Royal Marine Light Infantry (Plymouth Division) will play.

On *Wednesday, July 31st*, members will have the choice of four entertainments during the afternoon. A garden party will be given by Dr. P. Maury Deas (President, South-Western Branch) at Wonford House, Exeter. A garden party will be given by Lord Clinton at Bicton, which will be reached by a pleasant drive from Budleigh Salterton along the pretty and peaceful valley of the Otter. The grounds of Bicton have long been noted for their beauty, and contain the finest collection of rare and ornamental trees in the county. On the return journey members will be driven back to Budleigh Salterton by another route by Hayes Barton, the birthplace of Sir Walter Raleigh. A garden party will be given by Dr. Samways, at Knowle, Clyst St. George; and a garden party will be given in the Manor Grounds, Exmouth, in connexion with which arrangements have been made for taking those who may desire it for a drive over Woodbury Common, a plateau sheltering Exmouth from the north. From here one of the most magnificent views in the county may be obtained. Looking inland, on either hand lie the valleys of the Exe and the Otter; and on the horizon, 30 miles away, the rugged outline of the Dartmoor Tors is visible. Seawards, the view is, if possible, still finer; stretching in a bold sweep from Portland on the east to Berry head on the west, sheltered bay alternating with bold headland, over 50 miles of the Dorset and Devon coast can be seen on a clear day. In the evening the President and members of the South-Western Branch will give an evening fête on Northernhay.

On *Thursday, August 1st*, members will again have a choice of four places at which to spend the afternoon. Those who prefer to remain in Exeter may attend the garden party given at the Palace by the Bishop of Exeter. For those who wish to go further afield, there is the garden party given by Sir Thomas Dyke Acland, a Killerton, noted for its fine timber and its herd of deer or there is the drive from Cullompton and the picnic tea given by Dr. Gidley on the Black Down Hills, from which extensive views can be obtained over the counties of Devon and Somerset; while for the large number who will prefer to visit one of the most charming of the South Devon watering-places, there is a reception at Seaton, after which the guests will be driven to the many places of beauty and interest in its neighbourhood, including the Dowlands Landslip, a weird and romantic spot which alone is worth a visit. The annual dinner of the Association will take place at 7.30 p.m., and members intending to be present who have not yet notified the local committee are asked to communicate with the Secretary of the Dinner Committee, Dr. C. E. Stokes, Warkworth House, St. Thomas, Exeter, as early as possible. The dinner ticket, with wine, is one guinea, without wine but inclusive of aërated waters, fifteen shillings. On the same evening the ladies' entertainment will be given at the theatre, Exeter.

On *Friday, August 2nd*, a garden party will be given in the afternoon by the High Sheriff of Devon, Sir Dudley Duckworth-King, at Wear House, near Exeter; and luncheon parties have been arranged at three of the most popular South Devon health resorts—Sidmouth, Teignmouth, and Torquay. At Sidmouth, after the luncheon, members should take the opportunity of inspecting the well-equipped baths. The views from Salcombe Hill and Peak Hill, which flank Sidmouth on the east and west, are as fine as those to be obtained from Woodbury Common. From Teignmouth, after the luncheon, members will be driven to Chudleigh, the rocks and caverns of which are worth a visit, and tea will be given at Ugbrooke by Lord Clifford of Chudleigh. The charms of Torquay are so well known and appreciated that anything we could say of them would be superfluous. The luncheon will be followed by drives in the neighbourhood; by the courtesy of Colonel Cary the grounds of Torre Abbey will be open during the afternoon, and tea will be provided there. At Exeter, in the evening, the Mayor and citizens will give a reception in the Royal Albert Memorial Museum.

In addition to the above, arrangements have been made to conduct parties over the Cathedral, and to the many places of interest in the city. Full particulars of these, and also of means of access to the other entertainments, will be published in the *Daily Journal*.

Golf.—The Committee of the Royal North Devon Golf Club has most kindly offered to admit members of the Association as honorary members during the week of the meeting; and arrangements have also been made for members to play at the Budleigh Salterton, Exeter, Exmouth, and Warren Golf Clubs on payment of the usual visitors' fees.

Lawn Tennis.—The Victoria Park Lawn Tennis Club has arranged a tournament during the week, for which it will be pleased to receive entries from members of the Association or their ladies. Entries for the men's singles (entrance fee 5s.) close on Monday, July 29th. Names and entrance fees should be sent to Mr. Harold Ward, 36, St. Leonard's Road, Exeter, from whom all further particulars may be obtained.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BIRMINGHAM BRANCH:

CENTRAL DIVISION.

THE fifth annual meeting was held at the Medical Institute on Wednesday, June 5th, at 4 p.m. Dr. W. R. JORDAN was voted to the chair, in the absence of the Chairman (Dr. Milligan) and Vice-Chairman (Mr. Morrison).

Confirmation of Minutes.—The minutes of the last annual meeting were read, confirmed, and signed.

New Rule.—The following new rule, instead of Rule 5, proposed by Dr. KIRBY, seconded by Dr. STANLEY, was carried unanimously:

> The officers of the Division shall be a Chairman, Vice-Chairman, and two Secretaries, one of whom shall also act as Treasurer. The Chairman and Secretaries shall be *ex-officio* members of the Branch Council.

Annual Report of Executive Committee.—The annual report of the Executive Committee, presented by Dr. KIRBY, was taken as read and adopted.

Annual Representative Meeting.—Dr. KIRBY proposed, Dr. HALLWRIGHT seconded, and it was carried:

> That the Executive Committee be empowered to instruct the Representative on any matters to be brought forward at the Annual Representative Meeting on which specific instructions have not been given by general meetings of the Division.

Associate Members.—A proposal

> That the Executive be empowered to elect and make rules for the privileges of Associate Members

was discussed. Dr. STANLEY proposed and Mr. OAKES seconded

> That the meeting proceed to the next business.

This was carried.

Election of Officers.—The CHAIRMAN announced that Dr. J. Neal had been elected Chairman, and Dr. F. W. Foxcroft, Representative. Mr. R. A. Newton, having withdrawn his name, Mr. Gamgee was returned unopposed as Vice-Chairman. Dr. Kirby and Mr. Nuthall were declared to be elected Joint Honorary Secretaries. Dr. Stanley Barnes and Mr. Furneaux Jordan were appointed Scrutineers. Messrs. Hallwright, W. R. Jordan, J. F. Jordan, and Douglas Stanley, Representatives of the Division on the Branch Council, the *ex-officio* Representatives being Dr. J. Neal, Dr. Kirby and Dr. Nuthall. Messrs. Stanley Barnes, Billington, Bragson, Dain, Dale, Lucas, and Oakes, were elected to form the Executive Committee.

Votes of Thanks.—Mr. HALLWRIGHT then proposed, and Mr. OAKES seconded:

> That a hearty vote of thanks be given to Dr. Milligan, Chairman, and Mr. Morrison, Vice-Chairman, for their services during the past year.

Carried unanimously. A similar vote of thanks to Dr. Thomas Wilson (Representative), Dr. Kirby (Secretary), and the Executive Committee, proposed by Sir JAMES SAWYER, and seconded by Mr. BILLINGTON, was also carried unanimously. A vote of thanks to the Scrutineers and to the Chairman (Dr. W. R. Jordan) concluded the meeting.

EDINBURGH BRANCH.

THE annual meeting of the Edinburgh Branch was held in the hall of the Royal College of Physicians on Friday, June 28th.

Confirmation of Minutes.—The minutes of the last meeting were read and approved.

Installation of New President.—The retiring PRESIDENT (Professor Chiene, C.B.) called Dr. Byrom Bramwell to the chair. A very hearty vote of thanks was accorded Professor Chiene for his occupancy of the chair.

Election of Officers.—The following office-bearers were elected: *President-elect*, Mr. George Berry, F.R.C.S.Ed.; *Vice-Presidents*, Dr. J. R. Hamilton, Dr. James Carmichael; *Treasurer*, Dr. James Ritchie; *Secretaries*, Dr. A. Logan Turner, Dr. Francis D. Boyd.

Report of Branch Council.—The report of the Branch Council was submitted and Dr. R. McKenzie Johnston and Dr. T. G. Nasmyth were re-elected members of the Central Council of the Association as representing the Edinburgh and Fife Branches.

Financial Statement.—The TREASURER submitted a statement showing a balance of £131 14s. 5d. for the year.

Central Emergency Fund.—On the motion of Dr. MATHESON a sum of £10 was voted to the Emergency Fund.

The Association as Prosecutor.—The following motion was moved and carried unanimously:

> That the Edinburgh Branch of the British Medical Association expresses its strong disapproval of the proposal that the Association, its Committees or Branches, should appear as prosecutors before the General Medical Council.

The Spitting Nuisance.—A motion was passed strongly supporting the proposed action of the Tramway Committee of the Edinburgh Town Council against the nuisance of spitting from, in, or on tramway cars.

LANCASHIRE AND CHESHIRE BRANCH:

ALTRINCHAM DIVISION.

THE members of the Division visited the David Lewis Epileptic Colony, Sandal Bridge, Great Warford, on Wednesday, July 10th, on the kind invitation of Dr. Alan McDougall, the Medical Superintendent.

After an inspection of the colony, Dr. MCDOUGALL gave a short account of the objects and work of the colony and entertained the party to tea.

On the proposition of Dr. G. H. SMITH, seconded by Dr. HERBERT RENSHAW, a hearty vote of thanks was passed to Dr. McDougall for his kindness in entertaining the Division.

MANCHESTER (SOUTH) DIVISION.

AN ordinary general meeting of this Division was held at Dr. Vipont Brown's, 2, Birch Lane, Longsight, at 4 p.m. on Tuesday, July 9th, Dr. VIPONT BROWN being in the chair. The other Manchester Divisions were represented by their officials: The Central by Dr. Booth, Representative; the North by Dr. Broadbent, Representative; the West by Dr. Skardon Prowse (Secretary), and Dr. Brassey Brierley.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Apologies for Non-Attendance.—Letters of regret for non-attendance were received from Mr. Howson Ray, F.R.C.S., Dr. H. Milligan, Dr. Serra (Vice-Chairman of the Salford Division), Dr. Taylor (Secretary), and Dr. Hamill.

Notification of Births Bill.—A letter from the Medical Secretary was read with regard to the Notification of Births Bill. The SECRETARY mentioned that letters and memoranda with regard to this Bill had been sent to seven members of Parliament of the district, and that he had received a reply from Mr. Harry Nuttall, M.P., who wrote:

> I beg to acknowledge receipt of yours of the 6th inst. enclosing memorandum from the British Medical Association on the subject of the Notification of Births Bill. I need not say that it shall receive my best consideration.

On the motion of Dr. J. MILSON RHODES, seconded by Dr. SAWERS SCOTT, the following resolution was carried by the meeting:

> That we urge on the Conjoint Committee the necessity of taking steps to oppose the imposition on the profession of what would be a breach of professional confidence.

Dr. SAWERS SCOTT, in the course of his remarks, said:

> We are in no respect State officials. We are not licensed by the State. We keep our own Registrar and pay for our own Council. We object most strongly to act as State police when called in to the assistance of private individuals.

It was decided that the above resolution should be sent as a matter of urgency to be included in the agenda of the Exeter Annual Representative Meeting.

Letter from Mrs. Collins.—A letter from Mrs. Collins in reply to the Division's resolution of sympathy was read by the Secretary.

The late Dr. Dreschfeld.—The following resolution, moved from the chair, was unanimously carried by the meeting:

> We, the members of the Manchester (South) Division of the British Medical Association, wish at this first general meeting of the Division of the year to express our sincere

sympathy with Mrs. Dreschfeld in her sad bereavement and the great loss we and the profession have sustained by the death of Dr. Dreschfeld.

Annual Representative Meeting.—The SECRETARY read a letter from the Medical Secretary giving an outline of the agenda of the Annual Representative Meeting.

The Draft Charter.

Dr. J. MILSON RHODES then read an address on the draft Charter. He said: Some members of the profession appear to hold the opinion that the proposed Charter is the Magna Charta of the medical profession. I am afraid I cannot go so far as that; as the years roll by my faith in things legislative diminishes and my reliance on things administrative increases, and what the Association requires is administration on common-sense lines; that it should realize that it is the British Medical Association, and not merely an association of certain persons to be run for their especial benefit. Holding that opinion, I look upon the Charter question with a considerable amount of equanimity. Of one thing, however, I am quite certain, namely, that we are very much indebted to the Organization Committee for the enormous amount of trouble they have taken in carrying out the instructions they received, and which so far has been, I am afraid, a very thankless task. I do not propose to deal with the whole of the 45 pages in a quarter of an hour—that would be as great a feat as getting a bull into an oxo bottle—but just to point out a few of the changes, and to touch upon some of the clauses that appear to me to require consideration. To say that the draft Charter is as difficult to be understanded of the people as the Workmen's Compensation Act would be going too far, but it does require careful consideration before you discriminate between the old and the new. As you are all aware, the present position of affairs is that the British Medical Association is, and has been since 1874, an incorporated trading Association under the Companies Act, and is to all intents under the regulations of the Board of Trade, who may by the Memorandum, if they are of opinion that it is necessary to prevent evasion, impose further conditions which shall be duly observed by the Association. And at the present time you must also have the consent of the High Court of Justice. The new Charter, or, rather, proposed Charter, changes all that. The Association seeks to have powers of association given it by the Royal Charter, which would make the controlling authority His Majesty's Privy Council and not the Board of Trade. As you are no doubt aware, the regulations of the proposed Charter make very little alteration in the powers of the Divisions or in the Branches so far as concerns local affairs; it is when we come to the composition and the powers and regulations governing the action of the Council and Representative Body that matters requiring careful consideration arise. (Section IV, 15.) Any resolution of the Representative Body which touches "the funds of the Association, or relates to the Ordinances and By-laws or policy of the Association in matters affecting the *honour or interests of the Association*—[please notice the very wide scope of the last four words]—must be carried by a majority of not less than two-thirds," that which relates to any other business requires to be only carried by a bare majority. I am afraid that the word "interests" may in the future be as difficult to define as the word "casual labourers" in a certain Act. The next clause reduces the notice required for any alteration in the Ordinances or By-laws from three to two months before the Annual Representative Meeting or one month before a Special Representative Meeting. The Council is to be, shall we say, renovated or reformed? As you all know, the present Council is a huge affair, numbering in all no less than 70 members. Of these, at least 15 come from London, that home of parochialism, only 3 from Lancashire, with an equal population, and only 1 from Yorkshire. I think those figures are enough to prove the gross absurdity of the present system of electing members of a Council which is supposed not only to look after the interests of the specialist, but also that long-suffering individual the general practitioner. I have the honour of a seat on a Council of 40, and some members of that Council think that 30 would be a more workable number; but, whatever our opinion of the number of members of the Council, we are unanimous in thinking that such a state of affairs as at present exists—London 15, Lancashire 3 members of the Council—must be both ended and mended. The new Charter proposes to reduce the number of the Council from 70 to 49 *tous compris*—a move decidedly in the right direction, if you send the right men. The question is at present, How is the Council proposed to be made up?

		R.	M.
Ex officio	6 ...		6
Home Divisions ...	30 ...		24
Colonial	10 ...		7
Services	3=49 ...		3
Representative Body...	— ...		12

We have only a direct say in the election of 20 members of the Home Divisions, or just about two-fifths of the Council, and in my opinion that is not a safe basis upon which to work. The electoral areas proposed are as follows: The North of England, Midlands, Metropolitan, and South and South-Western; each area will send 4 members, Scotland 3, and Ireland 1. Roughly speaking, that is about 1 to every 700 members in the English constituencies, 1 to every 470 in the Scottish, and 1 to every 450 in Ireland; so the Association should hardly be, though they possibly may be, accused of adding another injustice to the wrongs of unfortunate Ireland. If you once manage to pass the golden gates that lead to the charmed circle of the Association Council Chamber, it is to be hoped you will have a nice time, for the period of office is like life, decidedly brief—only one year—and then comes all the worry of another election. One feels inclined to ask the question, Is the game worth the candle? I find from the lists of members of the Council that between 1905 and 1907 there had been a change equal to 33 per cent. in the *personnel* of the Council, and it may be well if there is time to give some consideration to the question. Is it desirable in the real, the best, interests of the Association to have this "quick-change system"? Would it not be preferable to have more continuity in the Council than exists at the present time? Those appear to be some of the principal points as regards the election of your representatives on the Council, and now we come to the consideration of the powers conferred by the Charter if granted. Clause 2 gives all the powers possessed by the Association, and extends them to "*all* matters affecting them in their professional capacity, including the encouragement, promotion, or provision of means for protecting members and their families against the exigencies of age, sickness, death, or misfortune." Those are powers we ought to have possessed long ago, Charter or no Charter. Only a few weeks ago I was asked how to obtain relief for the widow of a late member of the profession from the guardians. Subclause VI appears, in the light of recent events, a very important one. It gives the power to "originate, support, promote, and oppose alterations in the law of the United Kingdom *re* affecting the public health and the medical profession." If you think of the cool way in which we have been deprived—not to use a stronger phrase—of our rights, I think that clause will have the unanimous support of the profession—death certification handed over to the registrars; cases of fever sent to hospital, and public vaccination officers calling on your private patients; proposed compulsory notification of births by the medical practitioner—in all these matters we have been, or are being, more treated as serfs than members of a learned profession, and it is time we obtained powers—and not only obtained them, but used them, too, in the interests of the profession. The latter part of the subclause which gives the Association power to *promote* the candidature of any member of Parliament is one about which there is certain to be a considerable difference of opinion. That we should have our representatives in Parliament is a consummation most devoutly to be wished, but where are you to find them? I am not sure if it would not be better to pay a Liberal and a Conservative parliamentary agent to do the necessary lobbying to enlighten our legislators as to what we require doing. I know only too well what weary work lobbying is, but I know also how useful it is if properly done by people who are personally known to the members of the House, and whom they can trust. The subclause says power to promote. I think we ought to add after *promote* the words *or oppose*. There are I am sorry to say, M.P.'s who appear to look upon the pro-

fession as a sort of Nazareth out of which no good thing can come, and we ought to be able to make those members, if they do not respect, at any rate fear us. Subclause vii, which gives the Association power to take or defend legal proceedings, has raised a rather important question—namely, Is a member of the General Medical Council acting legally in adjudicating on the Council if he is a member of the Council of the British Medical Association? The Solicitor of the General Medical Council says that members of the General Medical Council ought to resign their membership of the Association. I do not see the necessity, any more than for a medical magistrate to retire from the bench if a medical man is brought before him. The powers to provide benevolent funds and carry out the execution of trusts as provided by (ix) and (x) are powers that we ought to have insisted upon many years ago. However, better late than never, and I hope we shall be unanimous in doing what we can to make provision for your widows and children. I do not intend to take up time discussing the question of whether the British Medical Association should act as an agent for the sale and transfer of practices and partnerships, except to say that I think the Association will be wise to think twice before they go into that line of business. The Association have enough to do without going into the agency business, and I want to say something more about Clauses 7 and 8. The first of these (7) deals with the Representatives elected by the Divisions, and (8) the Central Council. As you are all aware, the functions of these and the Representative Body are summed up very nearly in attending the annual meeting, the power of attending being conferred upon them by the Divisions, to which the Representatives give a report. The Council, on the other hand, is what may be called a composite body—namely, the *ex-officio* members, twenty-four members elected by the Branches in the United Kingdom, ten members elected by the Representative Meetings, and one each ex-medical officers of the Army, Navy, and Indian Civil Service. Personally, I think it would have been better to have had one system of election all round, and I also think that three Service members is a larger share than the Services are entitled to. If you give a privilege to one branch of the Service, why not to another—for example, Poor-law officials? This is a point that requires careful consideration by the profession at large. Another point I entirely differ from is the annual election of the members, and I would suggest that it would conduce to the true interests of the Association if the term of office were made three years instead of one, one-third of the members to retire annually, but to be eligible for re-election. You make a great mistake if you keep continually changing your Representatives on the Council. I feel certain that those who have had seats on the Council will agree with me when I say that it takes at least a year for a member of a large Association to learn the details connected with the working of a great administrative body like the Council of the British Medical Association. Administration is not to be learnt in a day, and I know from an experience of over a quarter of a century that it is one of the greatest possible mistakes to have too many prentice hands to do your work. In changing your Council I would advise you to adopt the old motto, *Festina lente*. As you have no doubt seen in the Journal, the Special Representative Meeting and the Council do not see eye to eye on several points, and probably our Representatives may, if discussion is allowed, have lively times at Exeter over certain questions upon which a Referendum is to be taken. Now, the Referendum requires careful consideration. If the Representative Body pass a resolution by a two-thirds majority, the Council "may approve the resolution or determine on a Referendum, and they shall determine on a Referendum if, in their opinion, the resolution does not truly represent the wishes of the Association." A bare majority of one on the Council puts the Association to all the trouble and expense of a Referendum. If the Referendum is determined on, the Secretary of the Association shall send a requisition to the Secretary of each Division, and he is bound to call a meeting within three weeks of the Division, the Secretary of the Division to notify the numbers of votes given at the meeting for and against, and if the aggregate number of votes for the resolution is a majority the resolution shall be held to be approved on the Referendum. I have no doubt the Committee gave careful consideration to the subject before they brought forward the proposed system of taking a referendum; but, all the same, it does appear to me to be very improbable that we shall get the real opinion of the profession by so doing; for example, take our own Division. We have 80 members, but you never see more than 20 present at the outside, therefore by that method you would only get the opinion of 25 per cent. of the members. I think it would be far better to attach a poll ticket to the Supplement of the British Medical Journal, and let the member vote "Yes" or "No." If he is too idle to fill it in and send it to post he deserves to lose his vote; but, as every member here knows, it is often impossible for gentlemen to be present at the meetings of the Association on account of professional duties. The system I propose would save a considerable amount of trouble and expense to the members of the Association, and would, I feel certain, result in a larger poll than the system proposed. I should like to hear a discussion on the question, Is a Referendum necessary where you have a two-thirds majority against you? Personally, I think it is not; such debatable questions can usually stand over for a year, and by that time the *cacoëthes scribendi* with which some of us are afflicted will most probably have resulted in the matter being thoroughly threshed out, as I hope it will be here to-day. Whether we have a Royal Charter or not we must have the power to promote the true interests of our great profession. —On the proposal of Dr. Broadbent, seconded by Dr. Hopkinson, a hearty vote of thanks for his paper was accorded Dr. J. Milson Rhodes. The discussion on the draft Charter was continued by Dr. Brassey Brierley, who strongly objected to stereotyping the present organization before it was a much more efficient instrument of use in the hands of the general practitioners than it was now. "To pass the draft Charter in its present form and as the Association is now organized is to perpetuate the system of 'dual control.' It is further to perpetuate a so-called Referendum system which simply makes those who have already voted the referees for their own referred resolutions. The sum total of such a Referendum is to leave the questions referred just where they previously were, and to put the Association to a vast, needless, or rather useless, expense. The Representative Meeting itself is a costly experiment; it is a gross injustice that the report of the Finance Inquiry Committee was not to be published in the Supplement of the British Medical Journal." Dr. Brierley then went on to say that the Charter would be delayed for years. "What had the action of the Representative Meeting effected with regard to the General Medical Council? This, that thirty-two members of the General Medical Council will be no longer members of the British Medical Association. To-day we are at least £30,000 less well off than we should have been under the old government. To sum up: we are not ready for the Charter in the present state of the Association's organization, and whereas, if we wait for the passing of the Charter, reforms will be indefinitely postponed; on the other hand, if we apply to the Higher Court, reforms can be made and benefits received immediately." On the proposal of Dr. Russen Rhodes, seconded by Dr. Vipont Brown, the following resolution was passed with one dissentient:

> That this meeting is of opinion that a Charter at the present date in the history of the Association is premature and should be postponed, and in the meantime would urge on the central authorities the necessity of at once applying to the Higher Court for the benefits which are at present required and urgent; and for powers to use the money of the Association for purposes of promoting providence and benevolence and other necessary reforms.

The meeting closed with a few remarks of appreciation from Dr. Broadbent of the social character of the meeting, and a vote of thanks to the Chairman.

Southport Division.

A meeting of the Division was held on July 19th at the Temperance Institute, Southport, Dr. Anderson in the chair.

Apology for Non-attendance.—Dr. Baildon sent apology for non-attendance due to absence from home.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Notification of Births Bill.—The Notification of Births

Bill was discussed, and the action of the Executive Committee in instructing the Honorary Secretary to write to the members of Parliament for Southport and Ormskirk, asking them to oppose the proposal for compelling medical practitioners without fee and under penalty on failure to notify births attended by them, was approved. The HONORARY SECRETARY reported that his letters to the members had been acknowledged, Mr. Astbury, the member for Southport, promising to give the matter his most earnest attention, and the Hon. Arthur Stanley, the member for Ormskirk, promising to bear the wishes of the Executive Committee in mind when the matter comes before the House of Commons.

Annual Report of Council.—The annual report of Council in the SUPPLEMENT of May 4th was generally approved.

Annual Representative Meeting.—Other matters referred to Divisions, appearing in the SUPPLEMENT of June 29th and July 6th, were left to the judgement of the Representative at Representative Meeting, Dr. Baildon, who had discussed most of them at the last meeting of the Executive Committee and knew the feeling of the Division respecting them.

Central Emergency Fund.—The Central Emergency Fund was considered, and it was decided, on the suggestion of the PRESIDENT (Dr. Anderson), who is also the President of the Southport Medical Society, that the subject should be mentioned at the annual meeting of that Society and an appeal made for the support of the fund. The Honorary Secretary of the Division was instructed to apply to the Medical Secretary for eighty copies of the regulations of the fund, that one may be enclosed to each member of the Society with his notice of the meeting.

METROPOLITAN COUNTIES BRANCH:

TOTTENHAM DIVISION.

AN extraordinary general meeting of this Division was held at 9.15 p.m. on July 15th at the Park Road Schools, Crouch End, Dr. LEONARD GRANT presiding. Non-members practising in Hornsey were also invited to the meeting.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Cottage Hospital.—Dr. FULLER, Chairman of the Special Hospital Committee appointed in November, 1906, reported that after long delay a reply had been received from the Secretary to the Cottage Hospital Committee, refusing to accede to any of the requests of the deputation, which had received the unanimous approval of members of the Division. After a discussion, in which Drs. BRACKENBURY, FULLER, HARE, WINSTON, and BRYCE took part, it was unanimously resolved that the subjoined statement of the views of the local profession should be circulated to every medical man practising in Hornsey and district, with a letter requesting his signature and support in order that the statement, with signatures, might be published in the local papers. It was then moved by Dr. HARE, seconded by Dr. WINSTON, and carried unanimously, that before publishing the statement agreed upon in the local papers, a communication be made to the Cottage Hospital Committee, stating the decision at which the medical men practising in Hornsey had arrived, and asking for the appointment of a joint committee to draft rules in consonance with this decision.

The following is the statement referred to:

At a meeting of the medical men practising in Hornsey it was resolved to approach the Committee which is now engaged in promoting the establishment of a cottage hospital with a view to that hospital, if established, being conducted on lines which would secure efficiency as a medical institution, ready help to those whom the charitable public would wish to benefit, absence of abuse as far as possible, and avoidance of those mistakes which, in the opinion of the medical profession and of most others having a large knowledge of hospital work, have been made in connexion with some other similar hospitals. Certain resolutions were passed by the meeting, and were approved with practical unanimity by the medical men practising in Hornsey and its immediate neighbourhood.

A representative deputation waited upon the Provisional Committee of the hospital and, in addition to suggesting certain minor though important matters, in which it seemed desirable that there should be some alteration in the interests alike of the profession and of the public, urged upon the Committee three points which they considered to be essential to the harmonious, efficient, and seemly working of the charity. These were:

1. That all local medical men should be treated alike—that is, there should be no special medical staff selected from among them by a lay committee, but that every medical man should attend his own patients admitted to the hospital (of course gratuitously, so far as is contemplated at present), and that, for the purpose of attending to emergencies and to patients too poor to have consulted a medical man privately at all, a rota of medical men willing to give their services to such cases should be arranged by the medical men themselves.

2. That the statement of a medical man that a case was suitable and urgent should be all that was necessary to secure admission to an available bed—that is, that on the one hand there should be no necessity for such a case to be delayed admission until a subscriber's signature was obtained, and that, on the other hand, a subscriber's letter should not be sufficient to secure admission in the absence of some medical guarantee that the case was suitable and urgent.

3. That every endeavour should be made to prevent the development or establishment of an out-patient department, that department of a hospital which experience has shown to be least needed, to be peculiarly open to abuse, and to result in a large expenditure of money with the minimum of public benefit, and for which, in so far as there is any need at all, there are more efficient and in every way more desirable substitutes.

These requests, made after full consideration on behalf of the whole medical profession in the neighbourhood, have been somewhat brusquely refused, and a suggestion that, with a view to affording further opportunity for explanation and mutual understanding, a few representatives of the Committee with a few representatives of the profession, should draw up a draft set of rules for submission to the larger committees, has not been adopted by the Hospital Committee.

Although a number of medical men consider that a cottage hospital, as ordinarily understood, is not really required in Hornsey, all were willing to co-operate in promoting the success of the institution if the three points above mentioned were secured. The goodwill of the profession is obviously of great value in helping forward the establishment of the suggested hospital, and absolutely necessary in working of the hospital when established. There is no class of men which has more sympathy with human suffering or does more for the sake of charity than the medical profession, but under the present circumstances the medical men practising in Hornsey are unable to ask the public to subscribe towards any hospital to be worked on the lines contemplated by the present promoters, and will be unable to assist in any way in the medical work of such a hospital.

NORTH WALES BRANCH.

THE annual meeting was held on Tuesday, July 16th, at The Vane Hall, Machynlleth, at 3 p.m.; the President, Dr. RICHARD JONES (Blaenau Festiniog), was in the chair.

Confirmation of Minutes.—The minutes of the last annual meeting, together with those of the joint meeting with the Lancashire and Cheshire Branch, were read, confirmed, and signed.

Congratulation.—It was resolved:

That the hearty congratulations of the Branch be offered to Sir Harry R. Reichel, LL.D., Principal of the North Wales University College, upon the honour recently conferred upon him by H.M. the King, and through him upon the College.

Central Emergency Fund.—A communication was read from the Medical Secretary, and the attention of the members called to this fund.

Introduction of President-elect.—The PRESIDENT introduced the President-elect, Dr. E. D. Evans, J.P., of Wrexham, who took the chair.

Vote of Thanks to Retiring President.—The PRESIDENT proposed, Dr. SAMUEL GRIFFITH (Portmadoc) seconded, and it was unanimously resolved:

That the best thanks of the Branch be tendered to the retiring President for his able services during the past year.

Election of Officers.—The following members were elected officers for 1908-9: *President*, Dr. W. M. Williams; *Honorary Secretary*, Mr. H. Jones Roberts, re-elected. The following gentlemen were reported to have been elected on the Branch Council: Drs. E. D. Evans, H. Drinkwater, E. Moss, John Evans, R. Arthur Prichard, J. R. Prytherch, J. Lloyd Roberts (Colwyn Bay), O. Wynne Griffith, H. Gladstone Jones, and Howel White.

Representative on Central Council.—It was reported that Mr. H. Jones Roberts had again been re-elected as the representative of the Branch on the Central Council. Mr. JONES ROBERTS thanked the members for their continued confidence and gave a brief account of the work done during the past year, more particularly with respect to the proposed Charter.

Financial Statement for 1906.—The HONORARY SECRETARY

read the financial statement for 1906, which showed a balance to the credit of the Branch of £9 18s. 4d.

Report of Council.—The annual report of the Branch Council was read, in which the Council congratulated the Branch on its continued prosperity, and also the Divisions upon their activity. The report was received and adopted.

Places of Meeting for 1908.—It was resolved to hold the intermediate meeting at Denbigh and the annual meeting at Holyhead.

President's Address.—The PRESIDENT delivered his address, taking at his subject, Influenza in its Protean Aspects. Dr. SAMUEL GRIFFITH (Portmadoc) proposed, Dr. LLOYD WILLIAMS (Llanberis) seconded, and it was unanimously carried:

> That the best thanks of the meeting be accorded to the President for his able, thoughtful, and interesting address.

Papers, etc.—Dr. RICHARD JONES (Blaenau Festiniog) showed an interesting and unusual case of depressed fracture of the skull. Mr. RUSHTON PARKER (Liverpool): On a Case of Ununited Fracture of the Humerus, illustrated by skiagrams. Dr. W. B. WARRINGTON (Liverpool): On Meningococcal Cerebro-spinal Meningitis, with specimens. Mr. J. HOWELL EVANS (London): On the Relation of Cancer to certain Congenital Lesions, illustrated by lantern slides.—The communications of Drs. Permewan, Blair Bell, and Mr. K. W. Monsarrat were, for the want of time, deferred to the next meeting.

Vote of Thanks.—A vote of thanks was accorded to Mr. Gillach for the use of the Vane Hall; Dr. Williams, Machynlleth, and the Cambrian Railway Company for the provision made by them for the comfort of the members travelling on that line.

Luncheon.—Before the meeting the members and guests lunched at the Wynnstay Hotel, when expressions of regret were received for their inability to attend from Lord Herbert Vane Tempest, Mr. David Davies, M.P., and others.

SOUTHERN BRANCH.

THE thirty-fourth annual meeting was held at the Guildhall, Winchester, on July 4th, Dr. MUMBY presiding, and between fifty and sixty members being present.

The late Dr. Groves.—The CHAIRMAN referred to the great loss the Branch had sustained in the death of Dr. Joseph Groves, a Past-President of the Branch and one of its Representatives on the Central Council of the Association. The Secretary was requested to convey to Dr. Groves's relatives an expression of sincere sympathy and regret.

Reports of Honorary Secretary and Treasurer.—The SECRETARY and TREASURER reported that the numerical strength of the Branch is now 422, as against 415 last year, and presented a balance sheet, showing a favourable financial position.

Draft Charter.—It was moved by Dr. STRATON, seconded by Dr. WARD COUSINS, and resolved (20 votes to 3):

> That, in framing the Charter to be applied for, it is undesirable that any change should be made in the constitution of the Central Council of the Association, but that each Branch should be represented according to its numbers as at present.

Installation of New President.—Dr. MUMBY resigned the chair to Dr. FULLER ENGLAND, who delivered an address on infective endocarditis with illustrative cases.

Luncheon and Garden Party.—The members were entertained at luncheon by Dr. England and at a garden party later in the day. During the afternoon visits were paid to Winchester Cathedral, St. Cross, and Winchester School.

Votes of Thanks.—Votes of thanks were accorded to Dr. Mumby for his services as President during the past year, and to Dr. England for his very interesting address and for his generous hospitality.

STOCKPORT, MACCLESFIELD, AND EAST CHESHIRE DIVISION.

WE have received the following letter from a member of the Executive Committee of this Division:

Sir,—I was considerably astonished to see in the SUPPLEMENT of July 20th a notice of motion standing in the name of the Stockport, Macclesfield, and East Cheshire Division relating to the central staff of the Association.

I do not think that the resolution ought to go forward to the Representative Meeting as the real feeling of this Division. I was not present at the meeting when this was considered, but had I known that such an important matter was coming up for discussion I should certainly have been there. There was no intimation on the notice calling the meeting that this matter was to be introduced, and I must protest against such important resolutions being so hastily adopted and sent forward as the feeling of a Division, when the great majority of the members of the Division have not had the opportunity of considering them. Surely the matter was not of such urgent importance or conceived so hurriedly that proper notice could not have been given.—I am, etc.,

Stockport, July 22nd. E. A. GOULDEN.

We have also received a letter from Dr. H. G. Smeeth of Stockport, stating that at the meeting of the Division in Macclesfield he protested against the passing of the resolution referred to. It was reported to that meeting that a reply had been received from the central office to a resolution adopted at a previous meeting, but the consideration of this reply was adjourned until the next meeting of the Division to allow of the attendance of the Stockport members at whose instance the resolution had been passed. The notice of motion printed on page 56 of the SUPPLEMENT of July 20th was, Dr. Smeeth states, brought forward by Mr. Housman, the Honorary Secretary and Representative, as arising out of the reply; among the points to which Dr. Smeeth wishes to draw attention are:

1. There are over 70 members in this Division, but there were only 9 present at this meeting. Five voted for the resolution, 3 voted against, and the Chairman did not vote.
2. Questions involving an increased expenditure ought to be carefully considered, but no facts or figures justifying this resolution were submitted.
3. No notice was given of this resolution, nothing in any way relating to it was in the agenda; the whole matter was improperly rushed, and did not receive the consideration it demanded.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

1907 ANNUAL GENERAL MEETING.

The Annual General Meeting of the British Medical Association will be held in the Royal Public Rooms, Exeter, on Saturday, July 27th, at 9.30 o'clock in the forenoon.

ANNUAL REPRESENTATIVE MEETING.

The Annual Representative Meeting will take place in the Royal Public Rooms, Exeter, on Saturday, July 27th, immediately after the Annual General Meeting, which will be held at 9.30 o'clock in the forenoon; on Monday, July 29th, at 9.30 a.m.; on Tuesday, July 30th, at 9.30 a.m. if required; also on Wednesday, July 31st, at 3.15 p.m. if required.

BY ORDER OF THE COUNCIL,

GUY ELLISTON, *General Secretary.*

April 25th, 1907.

BRANCH AND DIVISION MEETINGS TO BE HELD.

SOUTHERN BRANCH.—Notice is hereby given that during the month of August next the Branch will proceed to elect a member to fill the vacancy on the Central Council of the Association caused by the death of Dr. Joseph Groves. Candidates who have been nominated each by a Division or by not less than three electors must please send their application to me on or before August 10th next.—H. J. MANNING, Honorary Secretary, Laverstock House, Salisbury.

SOUTH-EASTERN OF IRELAND BRANCH.—A meeting of this Branch will be held at New Roos on August 7th, at 4.50 p.m. Agenda: (1) Minutes. (2) Dr. Laffan's motion *re* Medical Parliamentary Candidate referred. (3) Any other business.—J. QUIRKE, Honorary Secretary, Piltown, co. Kilkenny.

MEMBERS ELECTED DURING THE JUNE QUARTER.

UNDER BY-LAWS 2 AND 3.

BY THE COUNCIL.

Bushe, Charles Kendal, B.A., M.D., Surg., R.N.
Fraser, Arthur Forbes, M.B., Ch.B., Surg., R.N.
Gurha, Sidh, Gopal, L.M.S., Assistant Surgeon, Sitapur, U.P. India
Hernaman-Johnson, Francis, M.B., Ch.B. Aber., Surg., R.N.
Hartigan, James A., M.B., B.S. (Durh.), Captain, R.A.M.C.
Mackie, Frederick Percival, F.R.C.S., L.R.C.P., Captain, I.M.S.
Moore, Edward, F.R.C.S.I., L.R.C.P., Degema, Southern Nigeria

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Hawkins, Arthur, Esq., Royal Devon and Exeter Hospital, Exeter
Hustler, G. H., M.B., Royal Devon and Exeter Hospital, Exeter
Jones, R. L., Surg., R.N., Royal Naval Hospital, Plymouth
Langworthy, W. S., Esq., Yealmpton
Lemarchand, A. W., Esq., Barnstaple
Lyth, H. A., F.R.C.S., 2, Argyle Ter., Plymouth
Martyn, A. L., Esq., Hartland, North Devon
Pullin, B. G., Esq, Rahere House, Sidmouth
Rendall, R. M., Esq., The Infirmary, Barnstaple
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Haldane, P. S., M.D., 6, Pitt Terrace, Stirling
Hunter, A. E., M.D., Highfield, Falkirk

Sydney and New South Wales Branch.
Camm, T. C. T., M.B., St. Mary's
Clifford, J. P., M.B., Randwick
Culpin, Ernest, M.B., Kurri Kurri
Greer, W. W., M.D., Kyogle
Johnson, L. P., M.B., Sydney
Lamrock, James, M.B., Kogarah
Lloyd-Jones, John R., Esq., Guyra
Palmer, H. W., M.B., Thirlmeere
Robinson, A. C., M.D., Jerilderie
Watt, J. A., Esq., Epping

Ulster Branch.
Killen, J. W., M.B., Queen St., Londonderry
Kirkwood, E. A., Esq., 129, Crumlin Road, Belfast

West Australian Branch.
Blackall, W. E., M.B., The Asylum, Fremantle
Brown, W. G., M.B., Perth Public Hospital, Perth
Crawford, A. W., M.B., Newcastle, W.A.
Gillespie, L. T., M.B., Claremont
Griffiths, J. N., M.B., Perth Public Hospital, Perth
Humphry, E. Scott, Esq., Southern Cross, W.A.
Jamieson, D. D., M.B., Fremantle
Tymms, H. G., M.B., Perth Public Hospital, Perth

Yorkshire Branch.
Acomb, John, M.B., 39, Blossom Street, York
Andrews, J. D., Esq., Springfield House, Leeds
Barnes, A. E., M.B., Royal Infirmary, Sheffield
Bonar, J. M., M.B., Balfron, Leeds Road, Bradford
Hallam, Rupert, M.D., 325, Fulwood Road, Sheffield
Innes, George, Esq., 33, St. James's Road, Halifax
Kennedy, Edward, Esq., 158, Gibbet Street, Halifax
Knaggs, F. H., Esq., Oak House, New North Road, Huddersfield
Knowles, A., Esq., Newstead, Gibbet Street, Halifax
Marshall, W. L. W., Esq., Vernon House, Huddersfield
Mays, C. C. W., Esq., 182, School Road, Sheffield
Nixon, H. C., M.D., Clarence Drive, Harrogate
Rodgers, William, M.B., 1, Iveridge Street, Hunslet, Leeds
Smith, T. T., Esq., 150, Gibbet Street, Halifax
Twigg, F. G., F.R.C.S., Annerley House, Denaby, Main
Walton, R. H., M.B., The Infirmary, Huddersfield
Wilson, David, jun., Esq., Paddock, Huddersfield

CENTRAL MIDWIVES BOARD.

SPECIAL meetings of the Central Midwives Board were held on July 18th and 19th at Caxton House, Westminster, with Dr. F. H. CHAMPNEYS in the chair.

MIDWIVES STRUCK OFF THE ROLL.

The Board considered the following charges amongst others against the midwives whose names are given below and ordered them to be struck off the Roll:

Mary Jane Banks, that being in attendance at a confinement she attended with an open sore on her finger; the perineum being seriously ruptured and the placenta not having been completely expelled an hour after the birth of the child, she did not sent for a doctor.

Frances Box, that being in attendance as a midwife at a confinement, the perineum being seriously ruptured, she did not send for a doctor.

Sarah Brettell, that being in attendance at a confinement she neglected to take any steps to secure the comfort or cleanliness of the patient during the lying-in period, and persistently refused to permit a registered medical practitioner to be sent for, though the patient frequently expressed a desire that one should be fetched.

Annie Broomhead, that she was found drunk and incapable within half an hour after attending at a confinement.

Mary Brown, that she personally undertook the management of presentations other than the uncomplicated vertex or breech, instead of declining to attend alone and advising that medical help be sent for as required by the rules, and that though unable to read a thermometer, she persistently declined to receive instruction in that respect.

Sarah Dawn, that she was uncleanly in her person, clothing, house, and appliances, and that on March 19th, 1907, she was drunk while on duty as a midwife.

Rebecca Ann Gill, that being in attendance at a confinement a doctor having been sent for to deliver the patient, and another doctor having subsequently been sent for to attend the patient, she failed to notify the same to the local supervising authority as required by the rules. And that on March 22nd, 1907, she refused, without reasonable excuse, to allow the Inspector of Midwives to enter her house or to inspect her appliances and register.

Jane Heath, that having been duly suspended from practice as a midwife by the local supervising authority, she nevertheless, while under suspension, attended and acted as a midwife at confinements, and that *ante-partum* haemorrhage occurring in one of these cases she did not send for a doctor.

Jane Perkins, that being in attendance at a confinement, the death of the child having occurred before the attendance of a registered medical practitioner, she failed to notify the death to the local supervising authority, and she attempted to get the child buried as stillborn, well knowing that it had been born alive.

Eliza Southall, that being in attendance at a confinement, the presentation being a shoulder one, she did not send for a doctor.

Ellen Anders, that being in attendance at a confinement, the progress of the patient after delivery not being satisfactory, she did not send for a doctor, and discontinued her attendance on the fifth day.

Ellen Birkett, that being in attendance at a confinement on March 8th, 1907, she neglected to cleanse the infant's eyelids on birth; that she neglected to remove the soiled linen from the neighbourhood of the patient, but left it lying under the bed; and that, the child's eyes being inflamed and discharging on March 12th, she did not send for a doctor.

Charges were heard against the following midwives, and their names were ordered to be struck off the Roll: Sarah Ann Blackledge, Sarah Ann Chapman, Catherine Hawkins, Margaret Kirby, Margaret Riding, Mary Jane White, Mary Ellen Darlington, Jane Annie Gambrill, Jane Rayne, Mary Ann Freedom Wilkinson.

MIDWIVES CAUTIONED.

The following midwives were cautioned by the Board after charges alleged against them had been considered: Kate Martin, Ann Robinson, and Katherine Wraith.

HAMPSTEAD GENERAL HOSPITAL.

Proposed Amalgamation with the North-West London Hospital.

MR. ALFRED CRASKE, (Secretary, North-West London Hospital) writes: It is extremely unfortunate that when correcting one mistake Dr. E. Collingwood Andrews should have fallen into another. Dr. Andrews assumes that I "endeavour to prove too much" by my "favourable" report of the finances of the North-West London Hospital, which, he writes, is a "curious commentary on the *closing of its wards*."

Allow me to state my Committee has closed only one of the three wards, and this was done early in the year (in view of the proposed amalgamation) in order to keep the expenditure well within the bounds of the estimated income. Up to the present time, however, the actual income shows that the precaution was unnecessary; but my Committee has erred on the safe side.

Vital Statistics.

ENGLISH URBAN MORTALITY IN THE SECOND QUARTER OF 1907.

THE vital statistics of the seventy-six large towns dealt with in the Registrar-General's weekly returns are summarized in the accompanying table. During the three months ending June last 112,235 births were registered in these towns, equal to an annual rate of 28.1 per 1,000 of the population, estimated at 16,024,458 persons in the middle of the year; in the corresponding quarters of the three preceding years the rates were 29.5, 28.5, and 28.3 per 1,000 respectively. In London the birth-rate last quarter was 26.7 per 1,000, while it

Analysis of the Vital Statistics of Seventy-six of the Largest English Towns during the Second Quarter of 1907.

Towns.	Estimated Population middle of 1907.	Births.	Deaths.	Annual Rate per 1,000 Living.			Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhoea.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
				Births.	Deaths.	Principal Infectious Diseases.										
76 Towns	16,024,458	112,235	59,609	28.1	14.9	1.58	6,307	2	2,585	475	570	1,868	228	579	110	0.9
75 Provincial Towns	11,266,240	80,690	42,983	28.7	15.3	1.59	4,480	2	1,928	334	413	1,193	154	386	114	1.3
London	4,758,218	31,645	16,626	26.7	14.0	1.56	1,857	—	657	141	157	675	34	193	101	0.1
Croydon	154,342	1,083	432	28.1	11.2	0.82	31	—	1	6	3	15	—	6	81	—
Willesden	149,192	1,105	394	29.7	10.6	1.13	42	—	12	1	1	23	2	3	89	0.5
Hornsey	89,816	427	170	19.1	7.6	0.97	22	—	2	3	2	13	1	1	84	—
Tottenham	122,793	930	413	30.4	13.5	2.27	70	—	28	5	3	28	1	5	94	—
West Ham	308,284	2,233	1,099	29.1	14.3	2.21	169	—	51	16	15	65	3	19	124	—
East Ham	136,421	914	350	26.9	10.3	1.36	46	—	6	6	6	26	—	2	103	0.3
Leyton	122,040	797	331	26.2	10.9	2.13	65	—	15	4	12	24	3	7	83	—
Walthamstow	126,397	897	350	28.5	11.1	1.78	56	—	14	5	9	21	1	3	97	0.3
Hastings	67,477	304	227	18.1	13.5	0.48	8	—	—	—	2	2	—	4	76	0.4
Brighton	129,023	675	401	21.0	12.5	0.71	23	—	9	—	—	12	1	1	89	0.2
Portsmouth	208,291	1,451	869	27.9	16.7	3.12	162	—	108	1	14	25	9	5	132	1.2
Bournemouth	69,246	353	201	20.5	11.6	0.06	1	—	—	—	1	—	—	—	54	—
Southampton	119,745	774	356	25.9	11.9	0.46	14	1	—	1	3	5	1	3	88	—
Reading	80,311	461	231	23.0	11.5	1.15	23	—	5	—	12	2	1	3	65	1.3
Northampton	95,070	502	286	21.2	12.1	1.05	25	—	21	—	2	—	—	2	106	2.8
Ipswich	72,825	493	265	27.3	14.6	0.56	10	—	—	—	4	5	1	—	105	—
Great Yarmouth	52,879	344	179	26.1	13.6	0.76	10	—	—	1	2	3	2	2	102	—
Norwich	119,191	804	381	27.1	12.8	0.74	22	—	—	1	7	11	1	2	95	0.5
Plymouth	120,063	733	394	24.5	13.2	0.52	16	—	1	1	4	4	2	4	80	—
Devonport	79,959	555	230	26.8	11.5	0.45	9	—	6	—	2	—	—	1	76	—
Bristol	367,979	2,288	1,150	24.9	12.5	0.54	50	—	4	13	14	9	1	9	89	0.3
Hanley	67,174	536	316	32.0	18.9	4.18	70	—	54	3	8	2	2	1	149	0.9
Burton-on-Trent	53,425	350	145	26.3	10.9	0.38	5	—	—	—	1	—	4	—	40	4.1
Wolverhampton	102,016	685	355	26.9	14.0	1.45	37	—	6	4	9	8	1	9	99	0.6
Walsall	96,171	739	336	30.8	14.0	1.88	45	—	21	2	—	11	4	7	137	1.8
Handsworth	65,929	420	155	25.6	9.4	1.15	19	—	9	—	4	1	1	4	83	2.6
West Bromwich	69,123	579	272	33.6	15.8	2.03	35	—	30	4	1	—	—	—	121	1.8
Birmingham	553,155	4,071	2,194	29.5	15.9	2.02	279	—	153	5	26	61	13	21	127	3.3
King's Norton	75,600	499	197	26.5	10.5	1.06	20	—	11	4	2	—	2	1	84	1.0
Smethwick	66,467	506	178	30.5	10.7	0.84	14	—	8	1	—	4	1	—	77	1.7
Aston Manor	83,266	547	232	26.4	11.2	0.83	17	—	11	1	2	2	—	1	75	—
Coventry	77,626	718	295	37.1	15.2	0.72	14	—	4	1	2	1	—	6	78	2.0
Leicester	236,124	1,493	634	25.4	10.8	0.58	34	—	8	15	4	1	1	5	82	0.6
Grimsby	70,574	535	301	30.4	17.1	2.16	38	—	9	5	4	16	3	1	146	0.7
Nottingham	257,489	1,794	1,148	27.9	17.9	3.00	193	—	135	4	11	33	5	5	135	0.6
Derby	125,774	850	483	27.1	15.4	1.76	55	—	32	3	8	11	1	—	125	0.2
Stockport	100,986	682	445	27.1	17.7	0.92	23	—	3	2	3	11	2	2	135	—
Birkenhead	118,553	956	515	32.3	17.4	3.09	91	—	73	4	4	7	1	2	116	0.4
Wallasey	66,707	443	216	26.6	13.0	0.90	15	—	2	2	3	6	—	2	79	0.9
Liverpool	746,144	6,074	3,350	32.7	18.0	1.77	327	—	104	42	26	85	27	45	121	2.8
Bootle	67,114	556	236	33.2	14.1	0.72	12	—	3	4	2	2	—	1	99	2.5
St. Helens	92,476	796	432	34.5	18.7	3.34	77	—	38	2	4	20	6	7	155	2.8
Wigan	88,606	678	443	30.7	20.1	2.81	62	—	29	4	1	19	7	2	181	—
Warrington	70,269	625	259	35.7	14.8	1.49	23	—	15	4	3	2	1	1	80	5.0
Bolton	182,917	1,113	906	24.4	19.9	4.82	219	—	170	8	3	26	4	8	167	0.3
Bury	58,901	344	242	23.4	16.5	1.37	20	—	7	—	1	11	—	1	108	0.8
Manchester	643,148	4,901	2,859	30.6	17.8	1.73	277	—	75	29	16	127	8	22	133	0.7
Salford	236,670	1,835	1,114	31.6	18.9	2.61	154	—	33	15	11	79	3	13	125	0.2
Oldham	141,730	931	700	26.3	19.8	1.61	57	—	13	5	3	25	—	11	143	0.1
Rochdale	87,999	542	393	24.7	17.9	1.47	32	—	7	2	7	11	4	1	107	2.0
Burnley	103,947	752	474	29.0	18.3	1.01	26	—	—	2	3	13	2	6	142	0.8
Blackburn	134,980	881	571	26.2	17.0	1.38	46	—	15	5	4	11	4	7	131	2.1
Preston	117,093	810	570	27.7	19.5	1.29	38	—	3	1	2	23	3	1	135	1.8
Barrow-in-Furness	61,635	433	192	28.2	12.5	0.80	12		—	—	3	5	3	1	92	3.6
Huddersfield	94,814	550	453	23.3	19.2	0.97	23	—	7	1	1	5	4	5	93	0.4
Halifax	110,138	519	400	18.9	14.6	0.40	11	—	—	1	5	2	—	3	83	0.8
Bradford	290,323	1,540	1,110	21.3	15.3	0.88	64	—	17	2	8	22	6	10	128	0.7
Leeds	470,268	3,136	1,654	26.7	14.1	0.74	86	—	6	14	9	42	6	10	108	0.3
Sheffield	455,553	3,641	1,948	32.1	17.2	2.90	329	—	218	35	11	39	9	17	126	2.3
Rotherham	62,412	487	207	31.3	13.3	0.82	13	—	4	1	1	3	1	3	109	1.9
York	84,730	594	256	28.1	12.1	0.28	6	—	—	1	2	1	2	—	96	0.4
Hull	266,762	1,971	975	29.6	14.7	1.46	97	—	51	4	16	18	1	4	105	1.3
Middlesbrough	101,783	908	557	35.8	21.9	4.49	114	—	78	2	5	15	2	12	150	0.7
Stockton-on-Tees	52,909	456	223	34.6	16.9	1.59	21	—	6	—	2	12	1	—	68	2.7
West Hartlepool	75,473	525	254	27.9	13.5	1.34	25	—	12	—	2	7	2	2	128	0.8
Sunderland	156,029	1,403	777	36.1	20.0	2.53	93	—	66	1	15	7	2	7	124	4.1
South Shields	113,460	831	474	29.4	16.8	1.07	30	—	5	4	3	11	4	3	125	5.1
Gateshead	125,783	1,000	509	31.9	16.2	1.63	51	—	32	1	8	5	—	5	135	4.1
Newcastle-on-Tyne	272,969	2,128	1,002	31.3	14.7	0.93	63	—	14	9	8	26	2	4	105	0.1
Tynemouth	54,688	448	237	32.9	17.4	0.81	11	—	2	—	1	6	—	2	116	1.3
Newport (Mon.)	75,585	620	271	32.9	14.4	1.42	27	—	20	4	1	1	1	—	110	0.4
Cardiff	187,020	1,217	624	26.0	13.3	0.67	31	1	4	2	6	12	5	1	99	—
Rhondda	130,400	1,282	467	39.4	14.4	1.53	50	—	19	1	5	8	3	14	127	1.1
Merthyr Tydfil	76,085	694	323	36.6	17.0	0.86	16	—	—	2	2	4	2	6	120	1.5
Swansea	97,324	810	395	33.4	16.3	0.85	21	—	—	2	3	12	—	4	95	—

averaged 28.7 in the seventy-five other large towns, and ranged from 18.1 in Hastings, 18 9 in Halifax, 19.1 in Hornsey, 20.5 in Bournemouth, 21.0 in Brighton, 21.2 in Northampton, and 21.3 in Bradford, to 35.7 in Warrington, 35 8 in Middlesbrough, 36.1 in Sunderland, 36.6 in Merthyr Tydfil, 37.1 in Coventry, and 39.4 in Rhondda.

During the quarter under notice 59,609 deaths were registered in these towns, equal to an annual rate of 14 9 per 1,000, the rates having been 15 3, 14.7, and 14.9 per 1,000 respectively in the corresponding quarters of the three preceding years. In London the rate of mortality last quarter was equal to 14 0 per 1,000, while it averaged 15 3 in the seventy-five other large towns, among which the death-rates ranged from 7.6 in Hornsey, 9.4 in Handsworth (Staffs), 10.3 in East Ham, 10.5 in King's Norton, 10 6 in Willesden, and 10.7 in Smethwick, to 19.5 in Preston, 19.8 in Oldham, 19.9 in Bolton, 20.0 in Sunderland, 20.1 in Wigan, and 21.9 in Middlesbrough.

The 59,609 deaths from all causes in the seventy-six towns last quarter included 6,307 which were referred to the principal infectious diseases; of these, 2 resulted from small-pox, 2,585 from measles, 475 from scarlet fever, 570 from diphtheria, 1,868 from whooping-cough, 228 from "fever" (principally enteric), and 579 from diarrhoea. The death-rate from these epidemic diseases was 1.58 per 1,000 in the quarter under notice, against 1.73, 1.41, and 1.45 in the second quarters of the three preceding years. In London the rate last quarter from these diseases was 1.56 per 1,000, while it averaged 1.59 in the seventy-five other large towns, and ranged from 0 06 in Bournemouth, 0.28 in York, 0.38 in Burton-on-Trent, 0.40 in Halifax, 0.45 in Devonport, 0 46 in Southampton, and 0 48 in Hastings, to 3 09 in Birkenhead, 3.12 in Portsmouth, 3.34 in St. Helens, 4.18 in Hanley, 4.49 in Middlesbrough, and 4.82 in Bolton. The 2,585 deaths from measles were equal to an annual rate of 0.65 per 1,000; in London the death-rate from this disease was 0.55 per 1,000, while it averaged 0 69 in the seventy-five other large towns, the highest rates being recorded in Portsmouth, Hanley, Nottingham, Birkenhead, Bolton, Sheffield, and Middlesbrough. The 475 fatal cases of scarlet fever corresponded to an annual rate of 0.12 per 1,000: in London the rate was also 0 12; among the seventy-five other large towns it was highest in West Bromwich, Leicester, Grimsby, Liverpool, Bootle, Warrington, Salford, and Sheffield. The 570 deaths from diphtheria were equal to 0.14 per 1,000: in London the mortality from this disease was at the rate of 0.13 per 1,000, while it averaged 0 15 in the seventy-five other large towns, among which the highest rates occurred in Leyton, Walthamstow, Reading, Hanley, Wolverhampton, Rochdale, and Sunderland. The 1,868 fatal cases of whooping-cough gave an annual rate of 0.47 per 1,000; in London the rate was 0.57 per 1,000, while in the other large towns it averaged 0.42, and showed the greatest excess in Tottenham, West Ham, Grimsby, St. Helens, Wigan, Salford, Preston, and Stockton-on-Tees. The 228 deaths referred to different forms of "fever" were equal to a rate of 0.06 per 1,000; in London the fever death-rate was 0.03 per 1,000; it averaged 0.07 in the seventy-five other large towns, among which the mortality from this cause was greatest in Portsmouth, Burton-on-Trent, Walsall, Grimsby, St. Helens, Wigan, Rochdale, Barrow-in-Furness, and Huddersfield. The 579 fatal cases of diarrhoea corresponded to an annual rate of 0.14 per 1,000; in London the rate was 0.16 per 1,000, while in the other large towns it averaged 0.14, and was highest in Wolverhampton, Coventry, St. Helens, Oldham, Middlesbrough, Rhondda, and Merthyr Tydfil. The 2 deaths from small-pox belonged respectively to Southampton and Cardiff.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 110 per 1,000; in the second quarters of the three preceding years the rates had been 120, 112, and 108 per 1,000. In London the rate of infant mortality last quarter was 101 per 1,000; among the other towns it ranged from 40 in Burton-on-Trent, 54 in Bournemouth, 65 in Reading, and 68 in Stockton-on-Tees, to 142 in Burnley, 143 in Oldham, 146 in Grimsby, 149 in Hanley, 150 in Middlesbrough, 155 in St. Helens, 167 in Bolton, and 181 in Wigan.

The causes of 558, or 0.9 per cent., of the deaths registered in the seventy-six towns last quarter were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Croydon, Tottenham, West Ham, Cardiff, Southampton, Plymouth, Stockport, and in nine other smaller towns; the highest proportions of uncertified deaths were 3.6 in Barrow-in-Furness, 4.1 in Burton-on-Trent, in Sunderland, and in Gateshead, 5.0 in Warrington, and 5.1 in South Shields.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,160 births and 3,814 deaths were registered during the week ending Saturday last, July 20th. The annual rate of mortality in these towns, which had been 12.5 and 12.3 per 1,000 in the two preceding weeks, rose again to 12.4 per 1,000 last week. The rates in the several towns ranged from 4.5 in Reading, 4.9 in Burton-on-Trent, 5.7 in East Ham, 5.9 in Willesden, 6.2 in Hastings, 6.8 in York, and 7.2 in Ipswich, to 17.1 in Hanley, 17.2 in Rochdale, 17.7 in Liverpool, 18.5 in Merthyr Tydfil, 20.1 in Walsall, and 21.0 in Middlesbrough. In London the rate of mortality was 11.8 per 1,000, while it averaged 12.7 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.3 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.5 per 1,000, while among the seventy-five other large towns the death-rates from the principal infectious diseases ranged upwards to 3.1 in Blackburn, 3 3 in Cardiff, 3.9 in Stockton-on-Tees, 4.1 in Middlesbrough, 5.4 in Derby, and 6.0 in Walsall. Measles caused a death-rate of 1.1 in Bolton, 1.2 in Wigan and in Gateshead, 1.5 in Blackburn, 3.1 in Cardiff, 3.9 in Stockton-on-Tees, 4.6 in Derby, and 5.4 in Walsall; scarlet fever of 1.5 in West Bromwich; diphtheria of 1 3 in Norwich; whooping-cough of 1.1 in Salford and in Huddersfield, 1.2 in Wigan, and 1.6 in Brighton; and diarrhoea of 1.2 in Walthamstow, 1.7 in Barrow-in-Furness, and 2.0 in Middlesbrough. The mortality from "fever" showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital at the end of the week was 3,387, against 3,022, 3,193, and 3,276 at the end of the three preceding weeks; 570 new cases were admitted during the week, against 422, 504, and 493 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, July 20th, 990 births and 518 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 15.0, 14.5, and 13.7 per 1,000 in the three preceding weeks, rose again to 14.9 per 1,000 last week, and was 2.5 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 9.6 in Aberdeen and 11.2 in Leith to 17.6 in Dundee and 18.0 in Perth. The death-rate from the principal infectious diseases averaged 1 8 per 1,000, the highest rates being recorded in Paisley and Leith. The 261 deaths registered in Glasgow included 6 which were referred to measles, 9 to whooping-cough, 2 to "fever," 7 to diarrhoea, and 7 to cerebro-spinal meningitis. Five fatal cases of whooping-cough, 4 of diarrhoea, and 3 of cerebro-spinal meningitis were recorded in Edinburgh; 2 of whooping-cough and 4 of diarrhoea in Dundee: 2 of whooping-cough and 2 of diarrhoea in Paisley; 3 of whooping-cough in Leith; and 2 of diarrhoea in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, July 13th, 416 births and 318 deaths were registered in six of the principal Irish towns, as against 487 births and 332 deaths in the preceding period. The annual death-rate in these towns, which had been 14.7, 16.3, and 15.2 per 1,000 in the three preceding weeks, rose to 16.6 per 1,000 in the week under notice, this figure being 4 3 per 1,000 higher than the mean rate in the seventy-six English towns for the corresponding period. The figures ranged from 15.0 in Limerick and 15.6 in Waterford to 17.2 in Londonderry and 21.0 in Dublin. The zymotic death-rate in the same six Irish towns averaged 0 8 per 1,000, or the same as during the preceding period, the highest figure—1.9—being equally recorded in Dublin and Waterford, while Limerick and Londonderry registered no deaths under this heading at all. The deaths in Belfast included 8 returned as cerebro-spinal fever and 2 as cerebro-spinal meningitis. The figures in Dublin relating to cerebro-spinal fever for the past four weeks have been 2, 2, 0, 2.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON T. E. H. WILLIAMS has been placed on the retired list at his own request, with the rank of retired Deputy Inspector-General, July 12th. His commissions are dated: Surgeon, September 30th, 1876; Staff Surgeon, September 30th, 1888; Fleet Surgeon, November 19th, 1893.

The following appointments have been made at the Admiralty: JOSEPH A. MOON, Fleet Surgeon, to the *Prince of Wales*, July 17th; WALTER G. AXFORD, Fleet Surgeon, to the *Magnificent*, July 17th; HUBERT W. A. BURKE, Fleet Surgeon, to the *Wildfire*, and for Sheerness Yard, July 26th.

I. K. HERMON, M.D., civil practitioner, has been appointed Surgeon and Agent at Eyemouth and Burnmouth, July 15th.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL E. O. MILWARD is placed on retired pay, July 24th. He was appointed Surgeon, July 31st, 1880; Surgeon-Major, July 31st 1892; and Lieutenant-Colonel, July 31st, 1900. He served in the South African war in 1899-1902, and was present at the relief of Ladysmith, including the action at Colenso; he was in the actions at Spion Kop, Vaal Kranz, on the Tugela Heights, and at Pieter's Hill; he was also in operations in Natal, including the action at Laing's Nek; he was afterwards Principal Medical Officer, Eastern Mobile Force, being in operations in the Transvaal and Orange River Colony; he was several times mentioned in dispatches, and has received the Queen's medal with six clasps and the King's medal with two clasps.

Lieutenant-Colonel Sir JOSEPH FAYRER, Bart., M.D., Medical Officer of the Duke of York's Royal Military School, has been appointed to the Medical Charge of the Union Jack Club.

ARMY MEDICAL RESERVE OF OFFICERS.

SURGEON-LIEUTENANT H. G. SMEETH, M.D., to be Surgeon-Captain, July 6th.

The undermentioned Lieutenants are confirmed in that rank: C. V. NICOLL, J. F. MURPHY, S. K. ADAMS, M.B., M. R. TAYLOR, M.B.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL E. W. REILLY (Madras) is permitted to retire from the service, from July 18th. He was appointed Assistant Surgeon, April 1st, 1882, and became Lieutenant-Colonel, April 1st, 1902. He served with the Burmese Expedition in 1836-9, receiving a medal with two clasps.

Major W. E. SCOTT-MONCRIEFF, M.B. (Bengal), is posted as Agency Surgeon in Kota and Jhalawar.

Major R. C. MACWATT, M.B. (Bengal), is posted as Residency Surgeon in the Western States of Rajpootana.

The *Gazette of India* announces that Surgeon-General G. BOMFORD, C.I.E., M.D. (Bengal), has been granted privilege leave for three months from June 26th. Colonel D. WILKIE, M.B. (Bengal), Inspector-General of Civil Hospitals, Eastern Bengal and Assam, is appointed to officiate as Director-General, Indian Medical Service.

IMPERIAL YEOMANRY.

SURGEON-MAJOR AND HONORARY SURGEON-LIEUTENANT-COLONEL D. HARRISSON, Lancashire Hussars, to be Surgeon-Lieutenant-Colonel, June 9th, 1906; he is granted the honorary rank of Surgeon-Colonel, June 20th, 1907, and resigns his commission, retaining his rank and uniform, June 21st, 1907.

ROBERT B. PURVES, M.B., F.R.C.S.Edin. (late Surgeon-Captain, 1st Edinburgh (City)), Royal Garrison Artillery (Volunteers), to be Surgeon-Lieutenant (extra) in the Lincolnshire Regiment, May 14th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

HAROLD G. ADAMS (formerly Lieutenant) to be Surgeon-Lieutenant (supernumerary) in the 1st Devonshire Regiment, under the conditions of paragraph 56, Volunteer Regulations, June 1st.

Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel M. J. FOX, 3rd Lancashire Regiment, resigns his commission, retaining his rank and uniform, June 6th.

Surgeon-Lieutenant F. W. BAILEY, 6th Lancashire Regiment, to be Surgeon-Captain, June 12th.

WILLIAM G. PORTER to be Surgeon-Lieutenant in the 1st Midlothian Regiment, June 17th.

VOLUNTEER RIFLES.

HERBERT G. HARRIS to be Surgeon-Lieutenant in the 2nd Volunteer Battalion the Hampshire Regiment, June 1st.

PERCY G. M'REDDIE (late Surgeon-Lieutenant) to be Second Lieutenant in the 3rd Volunteer Battalion the Prince Albert's (Somersetshire) Light Infantry, June 4th.

Surgeon-Captain J. E. H. DAVIES, 1st Volunteer Battalion the Royal Welsh Fusiliers, resigns his commission, June 14th.

Surgeon-Lieutenant K. M. PARDHY, 1st Volunteer Battalion the Duke of Cornwall's Light Infantry, resigns his commission, June 15th.

Surgeon-Lieutenant C. R. WHITE, 3rd Volunteer Battalion the Welsh Regiment, to be Surgeon-Captain, June 12th.

Surgeon-Captain J. A. K. RENSHAW, M.D., 2nd Volunteer Battalion the Manchester Regiment, resigns his commission, May 24th; he is appointed Captain in the same regiment, May 24th.

ALEXANDER MACPHAIL to be Surgeon-Lieutenant in the 5th (Glasgow Highland) Volunteer Battalion the Highland Light Infantry, June 14th.

Surgeon-Major G. H. DARWIN, M.D., retired, to be Surgeon-Major, 2nd Volunteer Battalion the Manchester Regiment, October 30th, 1906.

CHANGES OF STATIONS.

THE following changes of stations amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during June, 1907:

	FROM.	TO.
Lieut.-Col. H. J. Wyatt	Curragh ...	Dublin.
,, R. G. Hanley, M.B. ...	Londonderry..	,,
,, C. S. Sparkes	Aldershot ...	Deepcut.
Major C. J. Healy, M.B....	Dublin	Glen Imaal Camp.
Captain H. L. W. Norrington	Manchester ..	Warrington.
,, W. H. S. Nickerson, V.C., M.B.	—	Dublin.
,, A. R. O'Flaherty	Hounslow ...	Woolwich.
,, D. E. Curme	Secunderabad.	Bellary.
,, R. A. Cunningham, M.B. ...	Gosport ...	Wool Camp.
,, G. G. Delap, D.S.O.	London Dist..	Millbank.
,, H. Simson	,,	,,
,, W. J. P. Adye Curran ...	Tidworth ...	Bulford.
,, F. P. Lauder	Edinburgh ...	Stobs.
,, R. T. Brown, M.D.	London ...	Colchester.
,, F. A. Stephens	Edinburgh ...	Ayr.
,, A. C Duffey, M.D.	—	Rosses Point Camp.
,, J C. Kennedy, M.B.	London Dist...	Millbank.
,, A. H. McN. Mitchell	Warrington ...	Trawsfynydd.
,, F. W. Lambelle, M.B.... ...	Piershill ...	Blair Athol.
,, E. V. Aylen	Portsmouth ...	Gosport.
,, D. J. F. O'Donoghue	Dublin	Curragh.
,, C. W. Holden	Bulford ...	Tidworth.
,, P. J. Hanafin	Pretoria ...	Standerton.
,, T. J. Wright	Rangoon ...	Maymyo.
Lieut E. G. Anthonisz	Bangalore ...	Wellington.
,, C. J. Wyatt, M.B.	Curragh ...	Straits Settlements.
,, T. S. Blackwell	Bangalore ...	Secunderabad.
,, F. D. G. Howell	Gosport ...	Lodmoor C'p.
,, J. W L. Scott	Netley	Filleigh Camp.
,, W. C. Smales	Bulford ...	Tidworth.
,, A. H. Bond	Gosport ...	Willsworthy Camp.
,, T. W. O. Sexton	Dublin	Curragh.
,, W. H. Forsyth, M.B.	Netley	Groone Camp.
,, E. J. Elliot, M.B.	,, ...	Rolleston C'p.
,, O. C. P. Cooke	Devonport ...	Plymouth.
,, D. Coutts, M.B.	Netley	Honiton C'mp.
,, F. L. Bradish	Fermoy ...	Cork.
,, J. A. Bennett, M.B.	Portsmouth ...	Penzance.
,, W. F. M. Loughnan	Netley	Copythorne Common C'mp.
,, W. T Browne	Waterford ...	Queenstown
,, J. J. O'Keeffe, M.B.	Hilsea	Portsmouth.
,, R. C. Galgey	Bulford ...	Tidworth.

Lieutenant H. E. Gotelee, appointed on probation, January 30th, 1906, is stationed at Aldershot.

The undermentioned, appointed on probation, July 30th, 1906, are posted to the stations cited: J. H. Spencer, M.B, Eastern Command; B. Johnson, Dublin; W. E. C. Lunn, M.B., Scottish Command.

The following, appointed on probation, January 28th, 1907, are now stationed: A. D. Fraser, M.B., Netley; M. P. Leahy, M.B., Dublin; F. T. Turner, Netley; A. Fortescue, M.B., Scottish Command; H. G. Gibson, Eastern Command; J. L. Wood, Scottish Command; S. Field, Aldershot; R. D. O'Connor, Southern Command; D. F. Mackenzie, M.B., Netley; J. E. M. Boyd, London; G. Carlisle, Southern Command; E. M. Middleton, Eastern Command; O. R. McEwen, Northern Command; J. H. Gurley, Eastern Command; F. H. M. Chapman, Netley; A. C. Elliott, M.B., Dublin; J. du P. Langrishe, M.B., Western Command; W. G. Aviss, Northern Command; W. B. Purdon, M.B., Aldershot; H. M. J. Perry, Dublin; J. C. Hart, M.B., Aldershot; M. O. Wilson, M.B., Dublin; T. H. Scott, M.B, Northern Command; L. A. A. Andrews, G. F. Rudkin, V. T. Carruthers, M.B., and H. W. Farebrother, Western Command; F. Casement, M.B., Dublin.

Lieutenant-Colonel R. Anderson, retired pay, has relinquished the medical charge of troops at Bury St. Edmunds.

Captain J. H. P. Graham, R.A.M.C. (Militia), retired pay, has relinquished the medical charge of troops at Brecon.

Major C. W. Allport, M.D., retired pay, has been placed in medical charge of troops at Great Yarmouth.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BOLINGBROKE HOSPITAL, Wandsworth, S.W.—Assistant Surgeon.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon (Male). Salary, £100 per annum.

BRADFORD POOR-LAW UNION.—Resident Assistant Medical Officer for Hospital and Workhouse. Salary, £100 per annum.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN.—House-Surgeon. Salary, £80 per annum.

CAMBRIDGESHIRE, ETC., ASYLUM, Fulborn.—Second Assistant Medical Officer. Salary, £120 per annum.

CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer. Salary, £100 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E. House-Physician (male). Salary at the rate of £50 per annum.

DERBY: COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer (Male). Salary, £120 per annum, rising to £150.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Resident Medical Officer Salary, £100 per annum.

EGYPTIAN MINISTRY OF EDUCATION.—Assistant to the Professor of Pathology. Salary, £E320 per annum.

EGYPTIAN PUBLIC HEALTH DEPARTMENT.—Sub-inspector of Ophthalmic Hospitals.

FIFE DISTRICT ASYLUM, Cupar.—Junior Assistant Medical Officer. Salary, £120 per annum.

GLOUCESTER: GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £30 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Physician; (2) House-Surgeon; (3) Assistant Casualty Officer.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon. Salary, £50 per annum.

IPSWICH: EAST SUFFOLK AND IPSWICH HOSPITAL.—Third House-Surgeon. Salary, £50 per annum

KINGUSSIE: GRAMPIAN SANATORIUM FOR TUBERCULOSIS.—Male Resident Physician. Salary, £100 per annum.

LANCASTER ROYAL INFIRMARY.—House-Surgeon. Salary, £100 per annum.

LINCOLN COUNTY HOSPITAL.—Junior Male House-Surgeon. Honorarium, £30 for six months.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—Resident Pathologist and Registrar. Salary, £100 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £100 per annum.

NORWICH: JENNY LIND INFIRMARY FOR CHILDREN.—Lady Resident Medical Officer. Salary, £50 per annum.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—House-Surgeon (Male). Salary, £80 per annum.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Assistant Medical Officer. Salary, £100 per annum.

PERTH ROYAL INFIRMARY.—House-Surgeon. Salary, £60 per annum.

PLAISTOW FEVER HOSPITAL, E.—Second Assistant Medical Officer. Salary at the rate of £100 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary, £50.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road. N.W.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum.

SALFORD ROYAL HOSPITAL.—Junior House-Surgeon. Salary at the rate of £50 per annum.

SOUTHPORT INFIRMARY.—(1) Resident Senior House-Surgeon; (2) Junior House and Visiting Surgeon. Salary, £90 and £70 per annum respectively.

STOCKPORT INFIRMARY.—(1) House-Surgeon. (2) Assistant House and Visiting Surgeon. Salary, £100 and £80 per annum respectively.

SUNDERLAND INFIRMARY.—(1) House-Physician and Pathologist. (2) House-Surgeon. Salary, £80 per annum each.

TAUNTON AND SOMERSET HOSPITAL.—House-Surgeon. Salary, £100 per annum.

TEIGNMOUTH HOSPITAL.—House-Surgeon. Salary, £70 per annum.

UNIVERSITY OF LONDON.—Rogers Prize of £100.

WALSALL AND DISTRICT HOSPITAL.—Junior House-Surgeon. Salary, £50 per annum.

WESTERN GENERAL DISPENSARY, Marylebone Road, N.W.—Honorary Anaesthetist.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House-Surgeon. Salary, £120 per annum.

YORK DISPENSARY.—Resident Medical Officer. Salary, £120 per annum.

ZANZIBAR GOVERNMENT.—Bacteriologist. Salary, £300 per annum, rising to £400.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Market Harborough (co. Leicester).

APPOINTMENTS.

BENNETT, T., M.B., Ch.B.Glasg., Certifying Factory Surgeon for the Knaresborough District, co. York.

BENTHALL, Albert, F.R.C.P.Edin., M.R.C.S.Eng., etc., Medical Referee under the Workmen's Compensation Act, 1906, to Circuits Nos. 40 and 42, including the Bow, Shoreditch, Bloomsbury, and Whitechapel County Court Districts.

BONNEY, Victor, B.Sc., M.S., M.D.Lond., F.R.C.S., M.R.C.P., Hunterian Professor at the Royal College of Surgeons.

BOYCOTT, A. E., M.A, M.D, B.Sc.Oxon., Gordon Lecturer on Pathology in the Medical School of Guy's Hospital.

BUCHANAN, Angus, M.B., Ch.B, House-Surgeon, Edinburgh Royal Maternity and Simpson Memorial Hospital.

CLARE, S., L.R.C.P.and S.Irel., District Medical Officer of the Royston Union.

COATES, F. A., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Whitchurch District, co. Hants.

COPE, V. Zachary, B.A., M.D., B.S.Lond., Resident Medical Officer to the British Lying-in Hospital, Endell Street, W.

CORDER, E. H., L.R.C.P.and S.Edin., District Medical Officer of the Worcester Union.

DAVIS, Frederick Herbert, M.R.C.S.Eng., L.R.C.P.Lond., Medical Officer to one of the Districts of the West Ham Union.

HUNT, A. D., M.D.L'pool, District Medical Officer of the Derby Union.

JOHNSON, James, L.R.C.P.and S.Edin., Certifying Factory Surgeon for Blackpool and District, co. Lancashire.

JONES, John Arnold, M.B., Ch.B.Vict., F.R.C.S.Edin., Honorary Assistant Aural Surgeon to the Manchester Eye and Ear Hospital.

KERR, Harold, M.D., Ch.B.Edin., D.P.H Camb., Assistant Medical Officer of Health for the City of Newcastle-upon-Tyne.

LESLIE, W. Murray, M.D., F.R.C.S.E., Medical Referee under the new Workmen's Compensation Act for the City of London.

LEWIS, W. J., L.R.C P.and S.Edin., L.F.P.S.Glasg., Medical Officer of Health, Pontardawe Rural District.

LOCHRANE, Frank J., M.D.Glas., Ch.B., Honorary Gynaecologist to the Derbyshire Royal Infirmary.

MCEWAN, Peter, M.A., M.B., Ch.B., F.R.C.S.Edin., Resident Surgical Officer to the Bradford Royal Infirmary.

MEADEN, C., M.D.Durh., District Medical Officer of the Worcester Union.

NELSON, W. E., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Henley-in-Arden District, co. Warwick.

PEARSE, T. F., M.D., F.R.C.S., M.R.C.P., D.P.H., Health Officer to the Corporation of Calcutta.

ROBBS, Charles H. D., B.A.Oxon., M.B.Lond., Surgeon to Borough Police, Grantham, and Certifying Factory Surgeon, Grantham District.

SUTHERLAND, D. P., M.B , B.S.Lond., Assistant Medical Officer at the Fishpool Workhouse of the Bolton Union.

TANNAHILL, W. B., M.B., Ch.B., House-Surgeon, Edinburgh Royal Maternity and Simpson Memorial Hospital.

TINLEY, W. E. F., M.D.Durh., B.S , Certifying Factory Surgeon for the Whitby District, co. York.

WATSON, C. Gordon, F.R.C.S., Surgical Registrar, St. Bartholomew's Hospital, E.C.

WILLIAMS, J. Attridge, M.B., R.U.I., Clinical Assistant, Hospital for Skin and Urinary Diseases, Birmingham.

GUY'S HOSPITAL.—The following appointments have been sanctioned:

Consulting Dental Surgeon: F. Newland-Pedley, F.R.C.S., L.D.S.
Dental Surgeon: H. L. Pillin, L.D.S., R.C.S.; M. F. Hopson, L.D.S., R.C.S.
Bacteriologist: J. W. H. Eyre, M.D., M.S.Durh., D.P.H.Camb.
Physician to Electrical Department: A. F. Hertz, M.B., B.Ch. Oxon.
Surgeon to Actino-therapeutic Department: C. E. Iredell, M.B.Lond., M.R.C.S., L.R.C.P.
Medical Radiographer: A. C. Jordan, M.D., B.C.Camb.
Surgical Radiographer: C. J. Morton, M.D., C.M.Edin.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics. *X* Rays, 2.30 p.m.: Operations. Monday and Thursday, 2 p.m.: Diseases of the Eye. Tuesday and Friday, 10 a.m.: Gynaecological Operations. 2 p.m. and Wednesday and Saturday 10 a.m.: Diseases of Throat, Nose, and Ear; Tuesday and Friday, 2.30 p.m.: Diseases of the Skin. Wednesday, 10 a.m.: Diseases of Children. Wednesday and Saturday, 2.30 p.m.: Diseases of Women.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

NEWBOLT.—July 16th, at 42, Catharine Street, Liverpool, the wife of George Palmerston Newbolt, F.R.C.S., of a daughter.

SNAPE.—On July 13th, at Barr Hill, Pendleton, Manchester, the wife of Dr. Harold Snape, of a daughter.

WATSON.—On July 10th, at 3, Queen Street, Wellingborough, the wife of W. Ivens Watson, M.B.Lond., M.R.C.S.Eng., of a daughter.

BOOKS, ETC., RECEIVED.

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society. Fasciculus XXVI., XXV of the Clinical Atlas. Eczema, Lichen, and Tinea, Gout Tophi, Darier's Dermatosis, etc. London: H. K. Lewis. 1907. 1 guinea.

London Health Resorts Development Association. 1907:
Dunbar; North Berwick; and Inverness. Edited by G. W. May. Free on application to Town Clerks.

London: H. K. Lewis. 1907:
What to Do in Cases of Poisoning. By W. Murrell, M.D., F.R.C.P. Tenth edition. 3s. 6d.
Post-graduate Clinical Studies for the General Practitioner. By H. H. Scott, M.B.Lond., M.R.C.S., L.R.C.P. First series 8s.

Die chronische progressive Schwerhörigkeit Ihre Erkenntnis und Behandlung. Von Dr. A. Lucae. Berlin: J. Springer. 1907. M.18.

London: J. and A. Churchill. 1907:
Practical Physiological Chemistry. By P. B. Hawk, M.S., Ph.D. 16s.
Foods and their Adulteration. By H. W. Wiley, M.D., Ph.D. 21s.

Die hygienische-diätetische Behandlung der Syphiliskranken. Von Dr. J. Müller. Berlin: A. Hirschwald. 1907. M.3.

London, Rebman Limited. 1907:
Hygiene of the Lung in Health and Disease. By Professor Dr. L. von Schrötter. Translated by H. W. Armit, M.R.C.S., L.R.C.P. 2s.
Surgical Diseases of the Chest. By C. Beck, M.D. 20s.
The Treatment of Disease. By R. W. Wilcox, M.A., M.D., LL.D. 24s.

Manual of Surgery. By A. Thomson, F.R.C.S.Edin., and A. Miles, F.R.C.S.Edin. Vol. II, Regional Surgery. Second Edition. Edinburgh and London: Young J. Pentland. 1907. 2 vols, 21s.

Voice Production in Singing and Speaking based on Scientific Principles. By W. Mills, M.A., M.D., F.R.C.S. London: J. Curwen and Sons, Limited. 7s. 6d.

Through Jamaica with a Kodak. By A. Leader. Bristol: J. Wright and Co.: and London: Simpkin Marshall. 1907. 6s.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
JULY.	
THE ANNUAL MEETING AT EXETER.	
27 SATURDAY...	ANNUAL GENERAL MEETING, Royal Public Rooms, Exeter, 9.30 a.m. ANNUAL REPRESENTATIVE MEETING, immediately after the Annual General Meeting.
28 Sunday ...	
29 MONDAY ...	ANNUAL REPRESENTATIVE MEETING, Royal Public Rooms, Exeter, 9.30 a.m.
30 TUESDAY ...	ANNUAL REPRESENTATIVE MEETING, 9.30 a.m. (*if required*). Adjourned General and Representative Meetings; induction of President, 2.30 p.m. President's Address, 8.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
31 WEDNESDAY	ANNUAL REPRESENTATIVE MEETING, 3.15 p.m. (*if required*). Sectional Meetings, 10 a.m. to 1 p.m. Address in Medicine, 2.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.

Date.	Meetings to be Held.
AUGUST.	
1 THURSDAY...	Sectional Meetings, 10 a.m. to 1 p.m. Address in Surgery, 2.30 p.m. Annual Dinner, 7.30 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
2 FRIDAY ..	Sectional Meetings, 10 a.m. to 1 p.m. Exhibition of Foods, Drugs, and Instruments, 9 a.m. to 6 p.m.
3 SATURDAY...	Excursions.
4 Sunday ...	
5 MONDAY ...	
6 TUESDAY ...	
7 WEDNESDAY	SOUTH-EASTERN OF IRELAND BRANCH, New Roos, 4.50 p.m.
8 THURSDAY...	
9 FRIDAY ...	
10 SATURDAY...	
11 Sunday ...	
12 MONDAY ...	
13 TUESDAY ...	

Printed and Published by the British Medical Association at their Office, No. 6, Catherine Street, Strand, in the Parish of St. Paul, Covent Garden, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 3RD, 1907.

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SEVENTY-FIFTH ANNUAL MEETING

OF THE

British Medical Association

EXETER, 1907.

ANNUAL GENERAL MEETING.

FIRST GENERAL MEETING, SATURDAY, JULY 27TH.

THE Annual General Meeting of the Association was opened at the Royal Public Rooms, Exeter, on Saturday, July 27th, 1907.

In the absence of the President of the Association and the Chairman of Council, it was unanimously resolved on the motion of Sir VICTOR HORSLEY, seconded by Dr. L. S. MCMANUS:

That the Chairman of the Representative Meeting (Dr. J. A. Macdonald) take the chair.

The SECRETARY, having read the notice convening the meeting, and the minutes of the last general meeting, which began at Caxton Hall, and was adjourned to Toronto, having been agreed to, the CHAIRMAN moved:

That the meeting stand adjourned to Tuesday, July 30th, at 2 p.m.

Dr. A. G. GULLAN (Liverpool Central) seconded.

Dr. J. BRASSEY BRIERLEY (Manchester West) thought that sufficient notice of the adjournment had not been given. He and others had come there specially to attend the annual general meeting, and he himself had to leave that day at 12 30.

The CHAIRMAN pointed out that the summoning of the general meeting was a formal matter. The regulations of the Association required that the general meeting should be summoned first before the Representative Meeting could proceed to business. Notice had been distinctly given in the JOURNAL that immediately after the annual general meeting the Representative Meeting would proceed to work.

The motion for adjournment was then put to the meeting, and carried *nem. con.*

ADJOURNED ANNUAL GENERAL MEETING.

TUESDAY, JULY 30TH.

Dr. RICHARD ANDREWS REEVE, B.A., LL.D. (President), in the Chair.

INDUCTION OF NEW PRESIDENT.

THE PRESIDENT: Mr. President-elect, Members of the Association, Ladies and Gentlemen,—Sir, in handing over to you this afternoon the duties of office, may I be permitted to say a few words with regard to the year now

closing? Some months of hard work on the part of various Committees, with faith tinged at times with more or less misgiving, found the fruition of their work in a meeting which, we are told, was a marked success not only in point of attendance and of accession to the ranks of membership, but in the high character of the scientific work done [Applause.] During the past year research work has been prosecuted with the zeal and characterization which have marked them in the past; and, in addition to the faithful discharge of their respective duties on the part of various other Committees of the Association there have been matters of great importance under discussion by the Council and reports of the Association. I would hope, Sir, that during your tenure of office these moot matters of much moment to the present and future well-being of the Association and which, indeed, bid fair in some regards to become burning questions which are now passing through the crucible of criticism and discussion may have a happy solution consonant with the high dignity and noble calling of this great Association. [Applause.] I congratulate you, Sir, upon assuming the presidentship at this particular juncture in the history of the Association, and I also beg to congratulate you upon the promise of assured success of the meeting which has been gathered together under your auspices. I sincerely trust that during the year upon which we are now entering, the work of the Association will be characterized by all that tends to enhance its influence throughout the country, and to give it a still higher status. I have now great pleasure in asking you, Sir, to assume the duties of presidentship. [Loud and continued applause.]

Dr. Henry Davy, F.R.C.P., on taking the chair as President, said: Sir, Ladies and Gentlemen,—I believe it is customary on such an occasion as this to reserve one's speech and one's voice for the evening's ceremony, but I must take this opportunity of thanking you very deeply and very gratefully for the honour which you have done me. When I think of the number of distinguished men —some of them very distinguished and known throughout Europe—who have preceded me in this chair, I feel that possibly my colleagues in Exeter have done me too much honour in electing me to fill this most important office. I can only say that it will be my endeavour throughout this year to do my best to keep up the lofty traditions which have been handed down to me, and to do everything I can for the welfare of this Association. [Applause.]

Vote of Thanks to the Retiring President.

Mr. George C. Franklin: Mr. President, Ladies and Gentlemen,—It is with the very greatest satisfaction and keenest pleasure that I move a resolution thanking the Past-President for his kind and excellent services during the past year. The resolution reads thus:

> That the warmest thanks of the Association be given to Dr. Richard Andrews Reeve for so ably presiding over the Association during the past twelve months, and that in accordance with By-law 36 he be, and he is hereby elected a Vice-President of the Association for life.

Those who were sufficiently fortunate to be at the meeting at Toronto last year will not easily forget the great cordiality and the excellent reception which we had at the hands of the Executive of Toronto with Dr. Andrews Reeve at their head. I am sure that every one of us who had the privilege of being over there will never forget the real pleasure of the meeting. I have the greatest pleasure in moving the resolution that I have just read. [Applause.]

Dr. J. A. Macdonald: Mr. President, Ladies and Gentlemen,—It is with the greatest pleasure that I second the motion proposed by my friend Mr. Franklin; and I can only echo what he has said with regard to the reception we got in Toronto. Canada has been called by poetic licence "the Queen of Snows"; but, for those who went there last year it would be very difficult to find a reason for that name, because the warmth of the reception we got both physically and socially would certainly give the lie to that title. We all enjoyed it most thoroughly as the guests of the Association there; and we all enjoyed it most thoroughly as showing the power of the British Medical Association and the extent to which the ramifications of the British Medical Association stretch through that country. The effects of that meeting were very extensive, and we hope it will not only be a record for the number of candidates who joined the Association last year, but that it will mark an era of the development of the Association in Canada and the States, which will make it, as I hope it will be one day, coterminous with the profession wherever the English language is spoken. It is with the greatest pleasure that I second this resolution, and I know of no man who is more likely to do honour to the Association than our retiring President, Dr. Reeve.

The resolution was carried amidst loud and continued applause.

Dr. Richard Andrews Reeve: Mr. President and Members of the Association, Ladies and Gentlemen,—I thank you, Sir, and these gentlemen for this kind resolution, but I certainly would have considered myself derelict if I did not regard this resolution, or accept it, vicariously. I take this second opportunity of saying most decidedly that a large share of the credit of the success of the meeting in Toronto, which amply justified the approval of the Association to our proposal to come to Toronto, must be attributed to the loyal and united efforts of a number of gentlemen who acted upon the various committees. This, I think, is but their due, and I gladly pay it.

"The Book of the South-West."

Dr. P. Maury Deas: Mr. President, Ladies and Gentlemen,—As the President of the South-Western Branch, a very pleasant duty has been placed in my hands. I think many of us who have attended many of these Annual Meetings cannot have helped being struck with the fact that there is a sort of keynote or characteristic which marks one Annual Meeting out from another. I may be right and I may be wrong, but I think in the case of this meeting at Exeter in the South-West the characteristic and keynote of the meeting to which I have alluded will be found to lie in *The Book of the South-West* which has been placed in all your hands. I do not want to use exaggerated language, but I think you will all agree with me that that book is a wonderful production. It quite exceeds anything I have ever seen in connexion with the Annual Meeting, because it is not merely a guide book in the ordinary sense of the word, but it is a textbook of the place and the district in which the meeting is being held—a textbook as to the scenery, as to the climate, and as to the medical influences that may be derived from residing in the neighbourhood of the counties of Devon and Cornwall. I simply make that preliminary remark in regard to what is to follow. We members of the South-Western Branch have been so impressed with this fact that we wish to present three special copies of this book of the South-West to three very prominent members of the organization which is receiving you at this time. One of these copies I shall have the honour of presenting to your President, Dr. Davy. I do not wish in Dr. Davy's presence to say much, but I have worked with Dr. Davy for some months now in connexion with the arrangements for this meeting, and I can only say that no one could have thrown himself more thoroughly into the arduous and, I might almost say, thankless work which has lain before him in making arrangements for this meeting. I will sum up with regard to Dr. Davy by saying that the characteristics which have been noted in my mind are his unfailing tactfulness and courtesy and desire to be, so far as possible, all things to all men. With those words I beg to hand to Dr. Davy this copy of *The Book of the South-West*, and with the illuminated inscription, "Presented to Henry Davy, Esq., F.R.C.P., President for 1907-1908 of the British Medical Association by the members of the South-Western Branch."

The President: Dr. Deas, President of the South-Western Branch, Ladies and Gentlemen,—This is a pleasant surprise. I had not the slightest idea that there was going to be presented to me this copy. I thank you very deeply indeed. I shall value this book immensely. It has entailed an amount of labour which only those who have to do with publishers and the publishing of books can tell. I believe my friend Dr. Gordon has not only worked on it by day but he has dreamed of it by night, and I think it has on several occasions given him nightmare. It is a wonderful production, and it is more wonderful in this—that it has cost the Association practically nothing, or hardly anything. Thanks to the way in which people have supported

this book, and the advertisements which they have sent, and the contributions which they have given Dr. Gordon and the Publishing Committee, it has cost the Association nothing. I conclude by thanking Dr. Deas and the Branch for this book, which I shall value extremely.

Dr. Maury Deas: Now, Mr. President, Ladies, and Gentlemen, I have another copy of the book which we wish to present to a man who has had more, I should say, of the hard work in connexion with this meeting than any one else, and this copy is presented to Russell Coombe, Esq., by the President and members of the South-Western Branch in recognition of his great services as Local Honorary Secretary of the annual meeting of the British Medical Association in Exeter, 1907. To those who have been working in connexion with the organization of this meeting it is a work of supererogation for me to say anything about the work Mr. Russell Coombe has done, and the unflagging energy he has thrown into it. Those of you who have had to do with the organization of this Annual Meeting will no doubt realize to a certain extent what the work of the Honorary General Secretary is. With regard to Mr. Russell Coombe, I do not wish to say too many words, but I would say that his powers of organization, his business capacity, and his untiring energy have been devoted absolutely to the interests of this meeting; and to a very large extent I think the success of this meeting will be due to the unflagging way in which he has discharged his duties.

Mr. Russell Coombe: Mr. President, Dr. Deas, Ladies and Gentlemen,—I have to thank Dr. Deas and the members of the South-Western Branch most sincerely for this token of their kindness and favour. I know that there is a large amount of business to be done, and therefore I will not detain you longer, but I should like to say that the whole of the work that I have done, whatever value you may place upon it, has been for me a labour of love, and the greatest reward that I can have is that you will be able to go away from Exeter and say it was a well-managed meeting.

Dr. Maury Deas: Mr. President, Ladies and Gentlemen,—I have still one more book to present, and I shall find it somewhat difficult to speak in terms that will not seem perhaps rather exaggerated of the third recipient. This copy that I am now presenting is, as it were, the artist's creation presented to himself. Dr. Gordon is the artist who has conceived, and with willing and ready helpers, has carried out this wonderful production. Dr. Gordon is a very modest man, and would be the last to wish to be spoken of, and as he is also an argumentative man, he might traverse perhaps what I am saying. I know he would be the last man to lay claim to anything that does not properly belong to him, but I am honest when I say that this book which I am now presenting to him is really the work of the artist presented to himself, and I might, perhaps, paraphrase the translation of the old Latin motto: "If you require a monument look within." Dr. Gordon, I present to you this book in the name of the South-Western Branch.

Dr. Gordon: Dr. Deas, Dr. Davy, Ladies, and Gentlemen,—I thank you very heartily for the kind way in which this volume has been appreciated by you. It has been a very great pleasure to help in bringing out this book. No one could have worked with a more absolutely devoted lot of men than I have had to deal with, and if anything could add to the pleasure which it has been to me to do work for the Association it is to have done it in such excellent company.

The President observed that this concluded the ornamental business, and he would call upon the Treasurer to move a resolution.

On the motion of the Treasurer (Dr. Radcliffe Crocker), the Chairman of the Representative Meeting (Dr. J. A. Macdonald) took the chair.

Annual Meeting, 1908, Sheffield.

The Chairman: Mr. President, Ladies and Gentlemen,—It is my pleasure to announce that we have had a cordial invitation to move from the sunny south to the bleak wilds of the north, and to hold our meeting next year in Yorkshire. I have to ask you to confirm the resolution of the Council to-day that we accept the invitation of Sheffield to hold the annual meeting of the British Medical Association next year in that city, and that Mr. Simeon Snell be the President-elect.

The motion was carried by acclamation.

The Chairman: Mr. Simeon Snell, I have the greatest pleasure in announcing that the Association has accepted the invitation of Sheffield for next year, and I may say the Association is looking forward with the greatest pleasure to the meeting at Sheffield.

The President elect: Mr. President, Ladies and Gentlemen—I am extremely obliged to you, speaking not only for myself but for the medical profession in Sheffield, for accepting our invitation. I feel that in many respects you will be in a totally different place from that in which you are meeting now. I like Devonshire, it is my native county, but at the same time, having lived the whole of my professional life in Yorkshire, I know very well that they are a clear-headed and warm-hearted people there, and there is no question that when you visit Sheffield you will be very cordially welcomed. We are fortunate in being able to assure you that not only will our civic authorities extend their hospitality warmly to you, but our University authorities will place their buildings at our disposal, and when I say they will place their buildings at our disposal I may tell you that they are modern buildings; it is a modern university, modern in its equipment, and in every way up to date, and we hope that in this university will be found sufficient room for the annual meetings to be held. The locality, of course, will present a totally different aspect, but Sheffield is a very progressive town, and if there are any here who had an opportunity of visiting Sheffield thirty years ago they will now find it a totally different city. They will find the streets widened, and they will be alive to the fact that during those thirty years the Sheffield people have not been asleep, but have been very wide awake indeed. Then I may say that if we have not in Sheffield the old monuments of an historic town to show you, we have many things to show you which even in this beloved city you cannot see. This is the county of Drake and Hawkins, and abounds in the history and traditions of their old ships, but when you come to Sheffield there you will see the making of the equipment of modern ships, the armour plates and the guns; so that in these ways we are able to offer you a different sort of entertainment from that which a grand old city like this can offer. Beyond all that I believe that when you are there you will receive a very hearty welcome, not only from the profession but also from the citizens of Sheffield.

Financial Statement.

The Treasurer (Dr. Crocker) presented the balance sheet, with the announcement that he was prepared to answer any questions. He would move that the financial statement for the year ending December 31st, 1906, be received and adopted.

The Chairman formally seconded the resolution and remarked that the statement was now open for discussion by the members.

Dr. Brassey Brierley (Manchester West) said it had been his privilege on several previous occasions to criticize the financial statement. During the past year the Association had economized very largely in many directions. He made out that there was a sum total of £4,000 in advance of the receipts of former years. Last year there was a surplus of £800, and this year a surplus of something like £1,300. That was an increase in the surplus of £500, but the figures demonstrated that the Association had received over £4,000 more than the year before. Between £500 and £4,000 was a very substantial difference, but where had it gone? As indicated in the balance-sheet, the general expenses were £159 less, so what was the explanation? He wanted again before sitting down to call attention to the paragraph which had reference to the Benevolent Fund. The Association had no organized provident fund. The General Secretary had permission to collect, and did collect, sums of money for charitable purposes, but he did not believe in that at all. What he would like would be that it should be a right for any dependent of any member of the Association to come to the Association for help in distress. He wanted such people to be able to come to the Association and not to have to go round the country, hat in hand, to collect votes and small subscriptions to send their children to college. He would move the resolution of which he had given notice—namely:

That this meeting instruct the Finance Committee to lay aside a sum of £1,000 a year out of the general funds of

the Association, to be earmarked for use for provident purposes only.

Dr. JOHN BROWN (Rochdale and Bury) had pleasure in seconding the motion.

In reply to a question, the CHAIRMAN replied that it had been decided over and over again that the Association had no power to lay out a penny for such purposes.

Dr. MUIR SMITH (Eastbourne) understood that the resolution was out of order and contrary to the constitution.

The CHAIRMAN said the motion was not out of order; it was a mere matter of proposing that the Association should do what it could not do, but he would put the resolution.

The resolution was accordingly put and lost.

Mr. NASH (East Norfolk and North Suffolk) asked whether it would not be well to explain that the rejection of this resolution did not convey what was beneath the surface. In the Charter it was provided that they should in future take up this work.

The financial statement was then adopted.

RESIGNATION OF TREASURER.

The TREASURER said he had to announce, with great regret, that he had been obliged to resign office as Treasurer. He had worked for the Association as a member of Council for about fifteen years and as Treasurer for two years, but he found the demands of the Treasurership and the affairs of the Association had increased, while the time at his disposal had decreased, and he felt, therefore, that he could no longer do justice to the post, and he had very reluctantly come to the conclusion that it was his duty to resign. The work had been congenial to him, and he would have been very glad to have fulfilled his three years' term of office, but he had found it impossible.

The CHAIRMAN said it was with the greatest regret that he put to the meeting the question whether they should accept Dr. Crocker's resignation. He was afraid they must accept it, because Dr. Crocker had made the statement that his general work was not consonant with his doing the work of the Association as he would wish to do it, and he regretted that he must ask the Association to accept the resignation.

The resignation was accordingly accepted.

Mr. EASTES was sure that they had all heard with the greatest regret the announcement that Dr. Crocker had just made. They would have been only too pleased had he been able to go on for the normal time and serve them one more year. Dr. Crocker having, however, resigned, there was only one thing they could do—namely, to thank him heartily for his valuable services and especially for his services as Treasurer during the past two years. Whatever Dr. Crocker had done had been done heartily and in the interests of the Association, and he had therefore great pleasure in proposing that, in accordance with By-law 36, Dr. Crocker be elected a Vice-President for life.

Mr. KINSEY seconded. With other members of the Council he had had the opportunity of admiring Dr. Crocker's industry and business-like capacity, his grasp of figures, and his lucid way of presenting them. He had always found Dr Crocker a most agreeable and courteous Treasurer. It was Disraeli who said that an agreeable man is a man who agrees with you, and he was happy to say that they had found Dr. Crocker a very agreeable man, but capable of being stern at the proper time.

The resolution of thanks and appointing Dr. Crocker a Vice President for life was then adopted.

Dr CROCKER, in acknowledgement, said his appointment as Vice President was a compliment he appreciated very much, though it was one which signified retirement rather than active work.

Messrs. Price, Waterhouse, and Co. were subsequently appointed auditors at a remuneration of 105 guineas.

THE GENERAL MEDICAL COUNCIL.

The CHAIRMAN said he had an unfortunate statement to make. Some difficulties had arisen with regard to the position of members of the Association who had been elected on the General Medical Council, and two of their most distinguished members of the Association had felt it their duty to tender their resignations as Vice-Presidents and members. In order to give effect to the resignations it was necessary for the meeting to pass resolutions. They had only to regret that the two gentlemen in question should have found it necessary to retire.

Resolutions empowering Sir George Philipson and Professor Robert Saundby to vacate the office of Vice-President were then passed.

ELECTION OF TREASURER.

Mr. PARKINSON said it must always be satisfactory to the members to know that, even when they lost such a Treasurer as they had had, there were others ready to take up the work. As successor to Dr. Crocker he proposed Mr. C. R. Straton, who had belonged to the same Branch as himself for thirty years; he was one of those who, when he took up a thing, fulfilled it to the utmost of his ability. He had been a member of the Council for many years, and he had taken a leading part upon a great many committees.

Dr BRASSEY BRIERLEY said that he had the pleasure of seconding that proposal in the Council, and he had much pleasure in seconding it at this meeting.

Sir VICTOR HORSLEY said that he wished to nominate for this important office Dr. Rayner, of Stockport. He had had wide experience in finance, and quite as wide experience on the Council and on Committees as Mr. Straton. This was one of the fortunate occasions upon which the Association realized what a wealth of men it had within itself to carry on its business. There was no competition between the two gentlemen upon their merits as financiers. He would remind the meeting that at Cheltenham, when the new constitution was carried, there was a distinct feeling that as far as possible territorial representation should exist throughout the Association, and that it was only by territorial representation that the widest interests of the Association could be properly insured. He might be thought a fanatic on the subject, but he would point out that in appointing men to the high offices of the Association that principle had been carried out also. The time had come for the North to give the Association a Treasurer. It had had a most able Treasurer from the South, and not only for two years had the South been represented but for five years, because Dr. Markham Skerritt preceded Dr. Crocker.

Dr. ALFRED COX had very great pleasure in seconding the nomination as a representative of the North; but he did it with a great amount of diffidence, because Mr. Straton was a gentleman for whom he had the very highest personal regard, and he was sorry to seem to oppose his nomination. But he thought, as Sir Victor Horsley had said, that it was the turn of the North; and provided the North could offer to the Association a man of equal experience and ability, it was only right that the North should have its turn. Knowing Dr. Rayner, as he did, as a colleague upon Committees, and as an earnest and active member of the Council, he had great pleasure in seconding his nomination.

Mr. E. H T. NASH (East Norfolk and North Suffolk) supported the nomination of Dr. Rayner. As a past member of the Council of the Lancashire and Cheshire Branch, of which Dr. Rayner had been a member for years, he was able to testify to the enormous amount of good work he had done, and to the respect which was felt for him in that Branch.

Dr. JOHN BROWN, as a member of the Lancashire and Cheshire Branch for thirty years, had very great pleasure in supporting the nomination of Dr. Rayner.

Mr. R. H. WOLSTENHOLME said that as a Representative of a Lancashire constituency he could tell the Association that they need not elect Dr. Rayner simply because he was a Lancashire man. The Lancashire and Cheshire Branch had recently had an opportunity of returning Dr. Rayner to the Council, and had not done so. On this occasion, although he did not generally support the Council, he had very great pleasure in supporting Mr. Straton.

Professor MORRISON said that in asking the members to give their support to Dr. Rayner he would appeal to them not to allow their judgements to be biassed by the fact that Dr. Rayner's political opinions, so far as the Association is concerned, were not altogether in harmony with the opinions of the majority of the members of his own Branch. He thought that it would be a very disastrous thing if an influence of that sort were allowed to prevail in a matter of this deep importance. As one who had had the great advantage and pleasure of working with

Dr. Rayner in connexion with the Committee work of the Association for some years he asked leave to testify to the immense amount of interest which Dr. Rayner took in the work, and to the great ability which he displayed in its discharge.

The Chairman asked members not to continue the discussion unless there was some very definite statement to be made with regard to one or other of the two gentlemen. He did not think that the discussion could contribute to the peace of the Association and there was a great deal of work to do.

Dr. E. J. Maclean moved, and Dr. A. G. Gullan seconded, that the question be now put.

The motion was carried.

A show of hands was then taken.

The Chairman: Dr. Rayner has the majority of the votes. I would like to put it to the meeting that he be unanimously elected Treasurer.

The proposal was adopted with acclamation.

Dr. Rayner, who was received with loud and continued applause, said that the present was neither the time nor the occasion for him to make a speech, but he begged to assure the meeting that he appreciated to its utmost the honour which the Association had paid him. He had been a member of the Association for some thirty years, and he had taken a great interest in the work both of his own Branch and in that of the Association generally. He would continue as far as he could to take the same interest in it, and hoped that at the end of his term of office, if he lived for the three years, they would say that he had done his work as well as those gentlemen who had preceded him.

Date of Meeting.

Dr. Pope said that when he left Leicester preparations were being made for the visit of the British Association there. Until this year the British Association had met at a later period. It used at one time to meet in September and then in August. Now the meeting of the British Association and the meeting of the British Medical Association were taking place at the same time. It was very unfortunate that that should be the case. He suggested that the Secretary should communicate with the Secretary of the British Association with a view to preventing such an unfortunate occurrence another time.

Sir Victor Horsley seconded the proposal.

The Chairman stated that the Secretary would try to make an arrangement with the Secretary of the British Association.

The proceedings then terminated.

EVENING MEETING.

Distinguished Foreign and Colonial Guests.

Before the President delivered his address, the following distinguished foreign guests were publicly presented to him by Mr. Russell Coombe:—Dr. Paul Strassman, Professor of Obstetrics and Gynaecology in the University of Berlin; Dr. Stephane Leduc, Professor of Medical Physics in the Medical School of Nantes; Dr. Wertheim Salomonson, Professor of Neurology and Medical Electricity in the University of Amsterdam; Dr. Bonnefoy; Dr. E. Landolt, Professor of Ophthalmology (Paris); Dr. H. Manning Fish (Chicago); Dr. McCrae, Associate Professor of Medicine, Johns Hopkins University (Baltimore); Dr. W. Northrupp, Professor of Paediatrics, University of New York; and Dr. H. S. Birkett, President of the American Laryngological Association.

On the list of Colonial delegates for presentation were the following: Dr. T. A. Starkey (McGill University), Colonel Davis and Captain Fenton (Burmah), Dr. T. F. Waldron (Cape of Good Hope, Eastern Provinces), Dr. A. Jasper Anderson (Cape of Good Hope, Western Provinces), Drs. F. Grenier and Fernando (Colombo and Ceylon Branch) Dr. A. W. W. Dowding (Gibraltar Branch), Dr. Arnold H. Watkins (Griqualand West), Dr. F. Keyt (Hong Kong), Dr. R. R. Stawell (Melbourne), Dr. H. S. Birkett (Montreal), Drs. W. R. Strapp and Patrick Murison (Natal), Dr. Albert Martin (New Zealand), Dr. W. N. Robertson (Queensland), Dr. A. B. Atherton (St. John's, New Brunswick), Dr. H. Swift (South Australia), Major F. J. Crawford, I.M.S., and Captain F. S. Ross, I.M.S. (South Indian and Madras Branch), Sir Philip Sydney Jones and Drs. R. Worrall and C. P. R. Clubbe (Sydney and New South Wales Branch), Professor Reeve, Professor Irving Cameron, and Dr. F. N. G. Starr (Toronto), Drs. T. L. Anderson and H. J. Lotz (West Australian Branch).

Presentation to Dr. Davy.

Dr. P. Maury Deas, President of the South-Western Branch, said that when it was decided that the time had come to hold another meeting of the British Medical Association in the South-West of England, the Branch had no difficulty in recommending that the meeting should be held in Exeter, and still less difficulty in nominating a gentleman to fill the office of President—an office which had been filled by so many eminent and distinguished men. The President's position, his high professional attainments, his position as consulting physician in the West of England, and his position as Senior Physician of the Royal Devon and Exeter Hospital, pointed out Dr. Henry Davy as pre-eminently fitted to fill the office of President. The members of the South-Western Branch desired to present to Dr. Davy a little memorial which in future years might remind him of the position he had filled as President of the British Medical Association, and which might be handed on as an heirloom. He was sure all would heartily join with him in congratulating Dr. Davy on the eminent position to which he had attained, and in wishing him a most prosperous year of office. The jewel which he now presented to Dr. Davy consisted of the Arms of Exeter emblazoned in colours enamelled on a shield with the words "British Medical Association" above and "President" below, and between the two was the staff with the serpent of Æsculaplus. He sincerely trusted that the President would have many years in which to wear the jewel, and that when he looked upon it it would never call up anything but happy and pleasant memories. [Applause.]

The President said he was afraid the medical profession of Exeter rather spoilt him and had always spoilt him. He was wearing that night, not knowing the presentation which was going to be made to him, a badge presented to him some thirteen years ago by the whole of the profession in Exeter on the occasion of his being elected President of the South-Western Branch. So much had he valued that that he had put it as one of his heirlooms in his will for his son, for he considered that nothing was of more value to a medical man than the esteem, and he might say affection, of his professional brethren. He thanked them for it, and he would be able to alter his will and leave one to his daughter and another to his son. He thanked them extremely for the kindness which prompted them to give him that very handsome badge, which he would always esteem as one of the most valuable things he possessed.

The Middlemore Prize.

The President then presented the Middlemore Prize to Mr. Sydney Stephenson, M.B.

The prize was founded by Dr. Middlemore, who left £500, the interest on which was presented to recipients of the award, which on this occasion consisted of an illuminated address and a cheque for £50.

President's Address.

The President then delivered the address which is printed at page 245 of the Journal.

Professor Osler, F.R.S., in moving a vote of thanks to the President, congratulated him upon having delivered an address characterized by such good sound sense and so much practical wisdom. Dr. Davy had touched the keynote of the whole situation—to make the knowledge they had efficient. It was not as if they had not knowledge enough. Every sentence of the address showed that they had plenty of knowledge. They knew what they had to do, but they did not do it. The whole question before the nation to-day, so far as public health was concerned was, how to make the knowledge that the medical profession had thoroughly efficient. He thought the three points the President had dwelt upon were all of utmost importance. There was the question of physical degeneration, and the prevention of that in the schools. Where was the acre of playground to be found? He instanced a school he passed every day, where children were drilled in a wretched little three foot alley, in which there was not room enough for the teacher to stand to face the children. She had to stand at the end of the alley. That condition prevailed nearly everywhere, and he was glad to hear Dr. Davy refer particularly to the need of play-

grounds for children. He was glad the President had referred to the notification of tuberculosis. There were a great many men in the profession who did not like a word spoken with regard to it. They were too soft hearted, and they had to be hard-hearted in that matter. It was for the safety of the public that the profession should demand that the notification of tuberculosis should be made compulsory. It was not a hardship; it was done in large cities—done easily and readily—and it should be done to make medical knowledge efficient. With the greatest pleasure he moved—

That the best thanks of the Association be given to Henry Davy, M.D , F.R.C.P., for his able and interesting address delivered before the British Medical Association on the occasion of the Seventy-fifth Annual Meeting of the British Medical Association at Exeter.

Sir PHILIP SYDNEY JONES (Australia) did not know why he had been asked to second the vote of thanks when he saw around him so many distinguished men from the continent of Europe and from America. He had perhaps been selected because he came from the ends of the earth, it being thought well that that vote of thanks should have a sort of Imperial character. Professor Osler had taken out of his mouth a good deal that he had proposed to say; and at that late hour he was sure he would best please the meeting by seconding the resolution and sitting down. But he would just say this—that he thanked the President for his admirable address, and for his selection of a subject which would not only meet the eye of the profession but meet the eye of the public; that was a most important point. He had listened to a great many presidential addresses, both here and in his own part of the world, and he could confidently say that he had never listened to one of so practical a character, and one which the whole of the people could well understand.

Dr. R. A. REEVE said that the resolution which they had heard had been moved by Professor Osler and seconded by Sir Philip Sydney Jones, and inquired what was the pleasure of the meeting.

The resolution was carried unanimously amidst loud applause.

Dr. R. A. REEVE, addressing the President, said it was particularly gratifying to him to have the honour to present to the President the hearty thanks of that large, kindly critical, and intellectual audience for his very practical, valuable, and most interesting address, which, indeed, might rightly be regarded as a fitting climax to his many efforts to promote and ensure the success of the meeting.

The PRESIDENT returned thanks and the proceedings then terminated.

THE ADDRESS IN MEDICINE.

The PRESIDENT OF THE ASSOCIATION briefly introduced Dr. Hale White, who delivered the address published at page 250 of the JOURNAL. At its conclusion

Dr. GORDON (President of the Section of Medicine) moved a vote of thanks, saying that it had been a very great pleasure, as well as a privilege, to listen to so fascinating an address, full as it was of so much good sense. He moved:

That the best thanks of the Association be given to Dr. William Hale White, F.R C.P., for his able address entitled A Plea for Accuracy of Thought in Medicine.

Sir JOHN MOORE, in seconding, said that in large assemblies it was customary to hear a good deal of coughing and noises of various kinds, but he had been struck by the complimentary silence with which the address had been listened to. He agreed that the friendly, if somewhat sharp, criticism of the attitude of the profession was deserved. The address was worthy of a great occasion, it was worthy of the high standard of excellence which had so far characterized the meeting of the British Medical Association in Exeter, and it was worthy of the man who delivered it.

The resolution was carried with acclamation and enthusiastic applause.

Dr. HALE WHITE, in returning thanks for such a hearty vote of thanks, said he only wanted to repeat what Sir John Moore had said: there was nothing unfriendly in the criticism he put before them. It did seem to him that the profession sometimes went a little off the track, and, however humbly, he ventured to say so.

The proceedings then terminated.

ANNUAL REPRESENTATIVE MEETING.

SATURDAY, JULY 27TH.

J. A. MACDONALD, M.D., in the Chair.

CONSTITUTION OF MEETING.

THE return of the election of Representatives of Divisions for the year and the notification of substitutes were received.

STANDING ORDERS.

On the motion for the adoption of the Standing Orders as amended by the Organization Committee, Mr. E. H. T. NASH (East Norfolk and North Suffolk) inquired whether, if a Representative withdrew from the meeting under instructions from his Division, his expenses were paid by the Association?

The CHAIRMAN ruled the question out of order.

The meeting then agreed to adopt the Standing Orders as amended. Among the amendments, the most important appear to be those to the Standing Order as to election of Committees, which now reads as follows:

† *10. Election of Committees.*—Nominations for election by the Representative Meeting of members of Standing Committees shall be handed in writing to the Secretary of the meeting not later than the termination of the second day's proceedings. Each nomination shall be signed by the nominator and shall contain a declaration that the candidate nominated has agreed to serve. No member shall be eligible for nomination who, having been a member of a Standing Committee during the previous year, shall have failed to attend at least half the meetings of the Committee for that year. The names of all candidates duly nominated shall be included in a voting paper issued to each voter, and shall be arranged in three lists—one of those residing in England and Wales, one of those residing in Scotland, and one of those residing in Ireland. Each voter shall be entitled to vote for not more candidates than there are members to be elected, and of these not more than two-thirds of the total number shall be those of candidates in the English list, not more than one-fourth in the Scottish list, and not more than one-fourth in the Irish list. In counting the votes, the candidates on the English list who have obtained the highest number of votes, being not more than one-half of the total number of members to be elected, the candidates on the Scottish list who have obtained the highest number of votes, being not more than one-fourth of the total number to be elected, and the candidates on the Irish list who have obtained the highest number of votes, being not more than one-fourth of the total number to be elected, shall be deemed to be elected. If any place on the Committee be still vacant, that candidate or those candidates shall be deemed to be elected who shall have obtained the highest number of votes, irrespective of the list in which the name of any such candidate appears. Scrutineers to conduct the election shall be nominated by the Chairman, and the details of the voting shall be placed before and verified by the Chairman before being declared to the meeting.

REPORT OF COUNCIL.

The CHAIRMAN, in the absence of the Chairman of Council, moved the reception of the Report of the Council. (The report was published in the SUPPLEMENT, May 4th, p. 233)

Sir VICTOR HORSLEY moved that paragraphs 1 to 10 be taken as read, as that part of the report was purely narrative.

Dr. W. MUIR SMITH (Eastbourne) seconded.

Dr. ALFRED COX (Gateshead and Consett) said that last year he had called attention to the fact that the report did not contain a statement of the exact membership, and it was promised it should appear this year, but that had not been done. He moved that the exact number should be given.

This was seconded by Dr. ROSE (Stratford), and carried.

Dr. J. BRASSEY BRIERLEY (Manchester West) called attention to Paragraph 8, which stated that in the year 1906 the General Secretary had received £950 from members on behalf of the British Medical Benevolent Fund, Epsom College, and the Irish Medical Benevolent Fund, which represented an increase of £178 over the previous year. He thought the few hundred pounds collected through the Association, which had a membership of over 20,000, was a scandal to a wealthy profession. He moved that some action be taken.

Dr. M. R. RHODES (Manchester) seconded.

The CHAIRMAN said this was not an amendment to the Council's report. It was only an appeal to the Association. For the Association to give a penny for this purpose was illegal. All they could do was to

emphasize Dr. Brassey Brierley's appeal to the members individually.

Dr. John Brown (Rochdale and Bury) said the Association was empowered to do anything for the honour and credit of the profession, and he thought it was distinctly to the discredit of the Association that out of the large income received not a fraction was given in benevolence. He thought they would be in order in voting a sum of £1 000 a year to those members of the Association who might be in needy circumstances.

The Chairman said that the discussion was really waste of time. The matter had been threshed out dozens of times, and the legal opinion expressed over and over again was that the Association could not subscribe a penny to any benevolent institution.

Sir Victor Horsley's motion for the adoption of the report down to Paragraph 10 was then agreed to.

Balance Sheet.

The Chairman said, as the Treasurer unfortunately was unable to be present, he had now to present the balance sheet for the year 1906.

Dr. W. Douglas (Maidstone, etc.) said that he saw that there was an overdraft at the bank of £2,796. That seemed to be a large amount, taking into consideration the large income. Further, he would ask whether the sum put down as the value of the freehold of 429, Strand, represented the present value or its value when bought.

The Chairman said that the value stated was that of the property when bought. It had distinctly appreciated since. The overdraft was a matter of convenience for the purpose of making investments better. It happened that the account was completed for the time being before the subscriptions came in. The present arrangement gave the Association an advantage of something between £100 and £150 a year.

In reply to questions, the Chairman stated that the stock had been written down to the market value on December 31st, the date to which the balance-sheet was made up, and in the opinion of men who knew the value of property in London the Association's property in the Strand was at the present time much more valuable than it was when the building was standing.

The balance-sheet was approved.

The Chairman thought that the meeting ought to congratulate the Manager upon the way in which the Journal had been handled during the past year. There had been a distinct improvement in the Journal itself as a journal. Its alteration in shape had been a great success, and the Journal had been a great success also in the way of advertisements. Although the advertisements had been charged at a higher figure *pro rata*, yet the income from them had been better than in the previous year; 1,245 fewer pages had been printed, which was a material saving. The combined result of the higher scale of charge for advertisements and the diminished number of pages printed had paid for the cost of the improvements in the Journal. He thought that it was doubly his duty, as Chairman of the Representative Meeting and as Chairman of the Finance Inquiry Committee, to render this tribute to the Manager of the Journal for the successful way in which he had conducted it during the year. He drew attention to the fact that the Representative Meeting cost more last year because the General Meeting was held at Toronto. The Association had to pay for the room in London in which the Representative Meeting was held.

Mr. Nash (East Norfolk and North Suffolk) said that in his experience the attendance at committees towards the end of a meeting tended to shrink, and very often a large amount of work had to be carried over to another meeting which might have been got through if there had been a quorum until the end of the first meeting. Perhaps some definite ruling could be laid down as to what should constitute an attendance. He quite appreciated the great difficulty in doing as he suggested, because the members of all committees sacrificed a large amount of time, and there must be a certain amount of elasticity; but he thought something might be done.

Dr. Pope (Leicester) disagreed with Mr. Nash. In his experience members stayed till the last moment they possibly could and displayed the most praiseworthy diligence.

Mr. R. H. Wolstenholme (Manchester, Salford) agreed with Mr. Nash that something should be done, and, as one of the sinners, he felt that the remarks of Mr. Nash had a certain application. Provincial men were compelled to come up at great expense and inconvenience, and the time of a meeting was always fixed to suit the London men. It would be an exceedingly good plan if the inconvenience and expense were shared by the members of the Committees in various parts of the country. There was no reason at all why many committees should not meet in other places so as not always to call upon the same class of persons to make a sacrifice.

Dr. Alfred Cox (Gateshead and Consett) said that it was only right that, as a provincial member of several committees, he should try to disabuse the meeting of the idea that the meetings of committees were held to suit the London men only. He might say that on several occasions a committee had very kindly considered his convenience both as regards the day and time of meeting.

Mr. G. Westby (Liverpool Southern) agreed with Mr. Nash that on some occasions the committees had had to leave business over because the members could not stay or.

The Chairman said that the meeting must recognize the amount of unpaid work done by members in attending to the business of the Association. He would ask the meeting not to make it too difficult for the men to carry on the work pleasantly. The matter rested entirely in the hands of the Chairmen of the Committees. If the Chairman of a Committee did not find that a member was carrying out his duties properly he could make a report to the Council, and the costs of the journey of the Committee-man would not be paid.

Estimates for 1907.

Dr. Percy Rose (Stratford), on the estimate of income and expenditure for 1907, said that it was too late at the Representative Meeting to move a resolution on the estimate, as nothing could then be done to alter expenditure or to increase revenue in the short space intervening before December 31st. He moved:

> That the Journal and Finance Committee be asked to consider the advisability of making the financial year close on March 31st in each year, instead of December 31st.

Dr. P. D. Turner (Isle of Wight) seconded.

At the suggestion of the Chairman the motion was postponed.

Mr. E. H. T. Nash (East Norfolk and North Suffolk) inquired whether the expenses of the Representative from West Manchester would be paid for his journey to London to attend the Representative Meeting in London to discuss the proposed Charter, as his Division instructed him to leave the meeting unless it agreed to the resolution not to discuss the Charter further.

The Chairman replied that the expenses would be paid.

Mr. Nash asked for an interpretation of the Standing Order, which seemed to him to be very definite on the matter.

The Chairman said the matter rested altogether in his hands. The Representative in question had spoken to him about it before he left the meeting. If he (the Chairman) had wished that his expenses should be refused he would have so reported to the Council; but he did not do so. By the Articles of Association the Council determined what would be considered an attendance for any purpose. If there were any blame, it attached to him. The case was exceptional, and he did not know how things would go on on a future occasion.

Mr. Nash thought something should be settled, because it was not fair to other Representatives who stayed out the meeting and who bore the heat and burden of the day that members should just make an attendance and then retire, leaving the others to do the work. He thought some ruling should be given as to what constituted an attendance; and, although, of course, he bowed to the ruling of the Chair, he thought there should be something a good deal more binding.

The Chairman thought the simplest course would be to move an amendment to the Standing Order.

Mr. Nash replied that he had asked leave to move under the Standing Order.

The Chairman thought notice must be given to move an amendment to the Standing Order.

In dealing with the paragraph of the Council's report referring to Committees, the CHAIRMAN said that, speaking for the Chairman of Council, he desired to thank the Committees of the Association for the work they had done during the past year. Few members of the Association had any idea what they owed to the Committee-men who attended and did the work of the Association.

Central Ethical Committee.

The passage in the report of Council referring to the Central Ethical Committee contained the following paragraph:

> Your Council sees with regret that a report on the ethics of consultation has been sent to the Divisions without having been submitted to the opinion of some body representing consultants, whose concurrence is necessary to the success of any project of reform in procedure, and the Council trusts that any decision on the matter be deferred until such conference has taken place.

Sir VICTOR HORSLEY moved that—

> This meeting disagrees with the paragraph in the Report of the Central Council criticizing the action of the Central Ethical Committee, inasmuch as there is not yet in existence any body representing the consultants in the medical profession with whom that Committee could have conferred as suggested by the Council.

The Representative Meeting should not in any way allow what he might call an accidental censure to be passed upon the Ethical Committee. It was quite obvious that on the great question of the relations between the different departments of the profession there should be obtained, if possible, expressions of opinion from all branches of the profession. But in the Council it was moved and carried—he was quite sure it was under a misunderstanding—that the Ethical Committee had acted wrongly in not conferring with a body representing the consultants. There was no such body in existence, and therefore it was most unreasonable for the Council to criticize the Ethical Committee for not doing the impossible. His own Division (Marylebone) was doing what it could to obtain the opinions of individual consultants, but those opinions would not be final in any sense, though so far as they went they would be a contribution to the subject.

Dr. L. S. MCMANUS (Wandsworth) seconded.

Dr. W. EWART (Westminster) observed that the wording of the paragraph was that the matter should be submitted to the opinion not of the body representing consultants, but of some body representing consultants, and therefore it clearly invited some concerted action on the part of the other side, and it would be most desirable to have some expression of opinion on the part of the large body of consultants. As to the definition of "consultants," it would be found that they needed no definition.

The CHAIRMAN remarked that the definition of "consultants" was not in question.

Dr. EWART said it seemed to him the meaning of this paragraph was perfectly clear, namely, that there should be some body representing consultants; though there was no such body in existence to-day, at some future time it might be born.

The CHAIRMAN said that the report expressed regret that the report of the Ethical Committee had been sent to the Divisions "without having been submitted to the opinion of some body representing consultants." The Committee was censured not for something it was going to do, but for something it had not done.

Dr. W. GOSSE (Isle of Thanet, Canterbury, and Faversham) said the fact seemed to have been overlooked by the Council that consultants were already members of the British Medical Association as well as general practitioners, and therefore represented. Before the reorganization of the Association the consultants were better represented than the general practitioners.

Mr. WOLSTENHOLME (Salford) supported the resolution of Sir Victor Horsley, as it seemed to him the Ethical Committee was merely carrying out the instructions of the Representative Meeting. The Ethical Committee had practically reported to a body of consultants when they reported to the Council of the Association, the Council being largely representative of consultants.

Sir Victor Horsley's motion was then carried by 70 votes to 10.

Upon the paragraph in the Council's report referring to the Medico-Political Committee, Mr. WOLSTENHOLME, speaking in the interests of economy, urged that the number of members co-opted should be stated. The meeting appointed Committees of a certain number with power to co-opt, and he thought that power had been rather excessively used in some instances. If the Committees would state in the Report the number of members co-opted, possibly the next Representative Meeting might give some instructions on the point.

The CHAIRMAN said the point would be noted. The Medico-Political Committee was not a Committee which had power to co-opt, the only Committees having that power being the Hospitals Committee and the Organization Committee.

On the part of the report dealing with the Public Health Committee, Sir VICTOR HORSLEY said that it was satisfactory to be able to state that the contest at Halifax had just been decided in favour of the Association.

The CHAIRMAN said that was very cheering news indeed, and presently he would read a letter which the Council had received in reference to the matter.

Mr. WOLSTENHOLME asked whether it was a fact that the Science Committee met elsewhere than in London.

The CHAIRMAN said that it had, but that the matter did not come up on the report for this year.

Mr. WOLSTENHOLME wished to know why, if this Committee could meet in other places than London, other Committees could not also meet elsewhere.

The CHAIRMAN said he did not think there was anything to prevent other Committees meeting where they liked; it was merely a matter of the convenience of the Committees.

Dr. BRASSEY BRIERLEY (Manchester West) observed that if the Representative Meeting would make some pronouncement on this question it would have a marvellous effect on the healthy working of the Association. If Committees dealing with questions of great public interest could meet alternately in London and the provinces, the interest in those Committees would be wonderfully increased, and would, he was sure, bring the work of the Association more in touch with the provinces.

Dr. WALTER SMITH (St. Pancras and Islington) asked whether, if a Committee met elsewhere than in London, the expenses of meeting would be increased. The staff would have to go to various parts of the country and take with them papers and documents connected with the business of the Committees that were kept in London; would not that mean a considerable increase in expense?

The CHAIRMAN having remarked that Dr. Walter Smith had stated very pertinently a serious objection to the proposal, no resolution was moved on the matter.

MATTERS ARISING OUT OF THE REPORT OF COUNCIL.

Dr. L. S. MCMANUS (Wandsworth) moved, according to notice:

> That it is desirable that the main point in each paragraph of the annual report be printed in heavier type.

The matter was really only intended for the consideration of the central office, but as it was on the agenda he hoped they would all agree that it was very desirable.

Dr. E. B. HARRIS (Tottenham) did not approve of the suggestion, and would like to vote against it.

The CHAIRMAN informed Dr. John Brown (Rochdale and Bury) that the change would not appreciably increase expenditure.

The resolution was carried by 62 votes to 9.

Medical Secretary's Department.

Mr. WOLSTENHOLME asked as a point of order whether the matter raised by a notice of motion standing in the name of the Stockport, Macclesfield, and East Cheshire Division, would not come up for discussion on the report of the Special Finance Inquiry Committee.

The CHAIRMAN said that he considered it preferable to take the discussion then instead of on the report of the Finance Committee, as the resolution was from a Division.

Mr. W. B. HOUSMAN (Stockport) thereupon moved on behalf of his Division:

> That in view of the continuous increase of the work in the Medical Secretary's department, and the delays that have occurred in dealing with matters of the utmost importance to members of the British Medical Association, it be an instruction to the Central Council at once to consider the urgent necessity of increasing the paid medical secretariat,

this Division being of opinion that nothing will so enhance the advantages of membership of this Association as successful treatment of questions affecting the interests of members, and that any increased expenditure will be amply justified by the consequent increase of membership.

The matter, he said, had come specially before his Division because it had encountered some difficulty in getting certain matters in which it was particularly interested considered, or rather brought to the notice of the Hospitals Committee. He knew that the Committee and the Medical Secretary were under the circumstances doing their very best, and he fully appreciated that they were most distinctly overworked, and that the matter the Division had to complain of was entirely due to that undermanning and overworking. Nevertheless there was an error, and when errors occurred heads of departments must accept responsibility for them. He considered that the letter that the Division had received from the Hospitals Committee entirely explained the matter, and it was with a view to preventing any recurrence of such a circumstance that this resolution was drafted. He did not think he could very well bring forward all the reasons and arguments that prompted the Division to pass this resolution. Every argument had been distinctly and succinctly stated in the report of the Special Finance Inquiry Committee, which had been placed in the hands of Representatives on the previous morning. In an appendix was a long statement from the Medical Secretary as to the enormous amount of work he had to do. He thought that any Divisional or Branch Secretary who realized that the work he had to do was multiplied 150-fold for the Medical Secretary with the secretarial work of various important committees thrown in, could not but fully appreciate how very much overworked the Medical Secretaries must be.

Mr. E. H. T. Nash (East Norfolk and North Suffolk) was instructed by the two Divisions he represented to support most strongly this resolution of the Stockport Division. Speaking as a member of committees for some years at head quarters, he knew the enormous increase that had taken place in the work, and it was those who were in touch with the work at head quarters who appreciated most what this increase brought to the Medical Secretary and his department. He believed he was right in saying that the Stockport Division actually passed a vote of censure on the Medical Secretary some little time ago, and it was very striking that the Division, having passed a vote of censure on an officer, should within a very short period bring forward such a resolution as this. He felt with the Stockport Division that the best work they could do for the Association was to increase the department, which would in the end increase the membership and add to the general strength of the Association.

Mr. Wolstenholme (Salford) was sorry to dissent from the resolution. He believed that he was the one member of the Special Finance Inquiry Committee who did. He did not mean to say that the Medical Secretary's department did not want strengthening somewhat, but he did not approve of the adding of another medical secretary and also an extensive staff as suggested in the report. He had no doubt that the Medical Secretary's department and the Medical Secretary were rather overworked, but this was in his opinion partly the fault of the authorities and also in part the fault of the Association, which seemed to be eager to take up too many big questions at the same time. His opinion was that it was very much better to do a little less fussy work and to leave the Medical Secretary a little more time. The Association had a Medical Secretary and an Assistant Medical Secretary, and those two officials with an efficient lay staff and under the guidance of the various committees ought to be able to do all the necessary work of the Association for some years to come.

Dr. Latimer (Swansea) believed that if all the members of the Association knew the amount of work done in the department they would not in any way endorse the sentiments uttered by the last speaker, who had used a most inappropriate word in speaking of the Medical Secretary's work as "fussy work." In his opinion the more fuss they made over this work the better. The Medical Secretary's department was absolutely overworked as it was at present, and there was very great danger that the man to whom they were very much indebted for the increased work done for the general benefit of the Association would break down, and he did not very well know how they could replace him. It was most important to the Association that it should have not only Mr. Smith Whitaker to do this work, but that he should have at his side an assistant to take part of the work from him. No doubt there were members of the Association who thought it had been pushing on too rapidly, but those who followed the Journal would recognize, as Sir Victor Horsley had pointed out at the previous meeting when he resigned his Chairmanship of the Representative Meeting, they had now, for the first time in the history of the medical profession, a body to whom the Government and the great departments could turn for an authoritative voice in medical matters. He would say, without fear of contradiction, that a large amount of the work and a large amount of the influence which the Association was obtaining was due to the fact that the Medical Secretary's department had been superintended and worked in the energetic manner it had been. He therefore strongly supported the motion.

Dr. J. Brassey Brierley hoped that the meeting would not entertain the resolution of the Stockport Division. He was in perfect sympathy with the difficulties of the Medical Secretary, and it was their duty to reduce his work as much as possible, but they could not afford to indulge in further extravagant expenses.

Dr. J. Langdon-Down (Richmond) called attention to the amounts at present expended on the General Secretary's department and the Medical Secretary's department. On the first the Association was spending £3,500 and on the other only £1,224.

Mr. R. H. Wolstenholme (Manchester, Salford) asked whether the figures for the General Secretary's department included the cost of composing the Journal, or whether it was merely the figures for the clerical staff.

The Chairman stated that they were purely for the clerical staff and for the management of the Journal, and did not include the printing and the compositors' wages.

Dr. Langdon-Down thought that the figures were vital in the consideration of the question. The margin for expansion in the Medical Secretary's department was very large relative to the general work of the Association. Before the critics of the resolution were listened to they should define in some more accurate way the particular work they would leave undone, or which they thought ought not to have been done in the past. The only evidence of fussiness about the work was that it unavoidably became crowded up to the last minute when there was a flood of appendices and reports which it was impossible to digest properly before the meeting. He hoped the resolution would be carried.

Mr. G. H. Broadbent (North Manchester) said that Mr. Whitaker was originally appointed Organizing Secretary and subsequently became Medical Secretary. He seemed to be absorbing fresh duties continuously. The question was whether he ought to be encouraged in that.

Mr. Kinsey (Chairman of the Ethical Committee) said that he would like to add the testimony of that Committee as to the work of the Medical Secretary. The resolution which that Committee had passed was as follows:

That with reference to the complaint made by the Stockport, Macclesfield, and East Cheshire Division, the Committee having considered the matter cannot find any ground for imputing negligence or discourtesy on the part of the Medical Secretary. Further, that in the opinion of this Committee, the services of the Medical Secretary are of the utmost value to the Association, that the various departments in which he serves are working at great pressure, and that more assistance should be afforded him.

That was a unanimous resolution. There was not a more self-sacrificing man in the profession than the Medical Secretary. It would be absolutely mean to ignore the services he had been rendering. He could say from his own personal experience that anybody who became intimately acquainted with the work done at the central office would feel that the work was necessary if the Association was to carry out the objects for which it was constituted, if it was to make the medical profession take a proper standing, and do the work which it was possible for the profession to do if its members acted unitedly. That could not be done if the Medical Secretary's department was starved. It was absurd to say that the Medical Secretary made the work. He was working week-days and Sundays, and frequently day and night. He did not believe that there was anything like a majority in the meeting in favour

of overworking and sweating and starving the Medical Secretary, and then ignoring his work.

Dr. EWEN J. MACLEAN (Cardiff) felt that he should be remiss if he did not refer to the very eminent services which the South Wales and Monmouthshire Branch had received from the Medical Secretary. The headway which had been made had been entirely due to the supervision and the inspiration of the Medical Secretary.

Mr. C. R. STRATON (Salisbury) supported what had been said about the personal ability and zeal of the Medical Secretary, but the motion involved a large addition to the annual expenditure. In his remarks on the estimates for 1907 the Treasurer had written: "Attention is called to this matter to remind members that for the next two years the Association has to face exceptional commitments out of its revenue." However desirous they might be to appoint two, three, four, or five medical secretaries, they had to ask themselves the simple question, could they pay for it? At the present moment the Association could not afford it. He thought a subcommittee should be appointed to rearrange the work of the Secretaries.

Dr. ALFRED COX (Gateshead and Consett) asked the meeting to look at the question from the point of view of the present constitution and organization of the Association. It had been asked whether the Association could afford to strengthen the staff; but he would ask, Can the Association afford to stand still? He was sorry that the resolution had not been taken in connexion with the report of the Special Finance Inquiry Committee. In that report there would be seen set out all the reasons why the Association could not stay where it was at present. Those who read that report must be convinced that the organizing and medico-political work of the Association was reaching a point at which the organization was likely to break down unless the work was limited, but no member had suggested a single thing which the Association could drop. What item of the work which the Association was doing could be left alone without danger to the Association? The work of protecting the members was only beginning. The Association must go on, and the only way in which it could go on was by increasing the staff. He very cordially on behalf of his Division supported the resolution.

Dr. W. EWART (Westminster) moved an amendment to leave out the words "the urgent necessity of increasing the paid," and the substitution of the words "inadequacy of the subsidy to the medical secretariat." He desired to emphasize two points. First, the great pleasure it gave him to endorse every word said as to their indebtedness to the Medical Secretary; and, secondly, that it was not expedient to modify the constitution of the secretariat, and add a fresh office straight off by the act and deed of that meeting. He proposed the verbal alteration in order that there might be room for the meeting to recommend any measure temporarily adaptable to the circumstances with a view to the work to be done, and not to make a rigid recommendation which would commit the meeting to alterations or modifications which might or might not work. The present arrangement worked well, and what was wanted was more steam or oil, by means of which the machine could work more efficiently.

Dr. W. DOUGLAS (Maidstone, etc.) pointed out that the future and success and increase in numbers of the Association depended upon the efficient working of the Medical Secretary's office. Difficulties occurring in the Divisions were brought to him, and he dealt and grappled with them. If there were a breakdown there, the Association would be in a very serious condition, and in the case of emergency caused by illness or incapacity of the Medical Secretary it was necessary to have some one who knew the working of the office, otherwise the work would be stopped. Therefore it was essential for the wellbeing of the Association that they should, as soon as possible, take steps to carry out the recommendation of the Special Finance Inquiry Committee appointed last year which was embodied in the resolution.

Mr. H. W. ARMIT (Hampstead) moved, and Mr. G. WESTBY (Liverpool, Southern) seconded, that the question be now put; this was carried, and on Dr. Ewart's amendment being put to the meeting, it was on a show of hands declared lost.

Dr. J. BRASSEY BRIERLEY (Manchester, West) moved:

> That in the opinion of this meeting it would be inadvisable to incur any further expense in any department of the Association at the present time.

Mr. H. W. ARMIT (Hampstead) submitted that the amendment was a direct negative; but the CHAIRMAN ruled otherwise.

Dr. E. T. DAVIES (Liverpool, Northern) seconded the amendment.

The amendment, on being put to the meeting, was lost.

Dr. W. GOSSE (Isle of Thanet, Canterbury, and Faversham) inquired, if the resolution proposed were passed, what would be the probable increased annual expenditure to the Association? Was there any estimate?

The CHAIRMAN replied that the only information was to be found in the report of the Finance Inquiry Committee. He thought it was about £600.

Mr. R. H. WOLSTENHOLME (Manchester, Salford) proposed as an amendment to strike out all words after the word "once" and to insert "to consider the necessity of increasing the staff of the Medical Secretary." He desired to say that any remarks he might have been understood to have made with regard to the personality of the Medical Secretary were not intended unkindly towards him, but merely as an expression of opinion that the Medical Secretary had taken up too much work and was too keen to do work which was not absolutely required, and also that the Council and Committees had forced him into doing more work than he need have done. As instances of that he cited the work carried on in connexion with the coroners of London, which was unnecessary. There was also the proposed work in reforming the Local Government Board, which had all led to nothing, and was quite untimely. Then a tremendous amount of work was done on the improvement of the Medical Acts Amendment Bill when there was no Parliament willing to undertake it, and it was quite premature. He maintained that if the Association were to take up one or two questions and stick to them until they had been brought to a satisfactory termination, it would be all the better. He pressed his amendment because he felt that the Medical Secretary's staff was not quite adequate. They had a Medical Secretary and an Assistant Medical Secretary at the present moment, and he did not see any need to add to the medical secretariat. He was prepared to propose that the Council should consider the question of improving or increasing the staff, but not the medical secretariat.

Dr. ST. CLAIR SHADWELL (Walthamstow) seconded.

Mr. E. H. T. NASH asked that the names of the speakers and their Divisions might be announced from the Chair. He did so in order that some of the newer members might be alive to the fact that all this opposition came from practically one Branch.

Mr. F. C. LARKIN (Secretary of the Lancashire and Cheshire Branch) did not think the opposition came from only one Branch, but from all parts of the country. There would always be differences of opinion, but those differences of opinion were more on the surface than in the depth. He thought they would all agree either with the amendment or the original proposition if the right meaning were given to it. To him it seemed certain that, if the Medical Secretary's department was to go on at all, it must be altered. He did not say that with any discourtesy to or disregard for the Medical Secretary, whom he had always found most obliging, most useful, and a most acceptable officer of the Association; but he did feel, the more he was thrown in contact with the two departments, that the Medical Secretary's department was not satisfactory to deal with. He was sure that Mr. Smith Whitaker knew that he had no ill-feeling towards him, but he felt that he was dealing with a department which was not properly managed, and that in dealing with the other department—Mr. Elliston's department—he was dealing with a business department. For every time he wrote to Mr. Elliston, he had to write ten times to Mr. Smith Whitaker; and he felt that if the Association was to go on with the department at all, it should be properly conducted. The real question was whether the department was or was not required. If it was required, it must be properly manned, and the Association must pay properly for it. He took it they were going to constitute the Central Council a Committee to consider thoroughly the organization of the Medical Secretary's department, and from that point of view the meeting had no alternative but to agree with the resolution. If the other meaning—namely, to constitute a new office—were attached to it, he would feel compelled to vote

against it, because at a meeting like that things were too hurried and could not be sufficiently thought over.

Dr. J. Hamilton (Glasgow and West of Scotland) inquired whether the words implied that the person to be appointed should be a medical man. He wished that to be clearly understood by the meeting.

The Chairman said his ruling would be that the Stockport resolution involved the appointment of a medical man.

After further discussion, Mr. Wolstenholme's amendment was put and lost, 18 voting for it and 69 against.

Dr. Bruce Goff (Lanarkshire) moved as an amendment, seconded by Dr. D. J. Mackintosh (Glasgow North-Western):

> That it be an instruction to the Central Council at once to increase the salary of the Medical Secretary, and that his lay clerical staff be also increased in proportion to the increased work.

in substitution for the words "to consider the urgent necessity of increasing the paid medical secretariat." Dr. Bruce Goff said he was convinced that the work of the Medical Secretary was of a very important character; and all knew that he and his staff had been for a considerable time overworked. An enormous amount of work had been suddenly put upon the department, which formerly had not been taken up by the Association at all. Although comparisons were odious, yet comparisons had been made between the work of the Medical Secretary and the work of the General Secretary; and figures had been adduced showing that a great deal more money had been spent on the General Secretary's department than upon the Medical Secretary's department. That arose not from the salaries paid to the heads of the departments, but from the clerical staff employed. It had been stated that it was necessary for the Medical Secretary to have an understudy; but the Medical Secretary already had an understudy; he had an assistant, and an assistant of his own selection. He was at liberty to select the best man he could get hold of. They had in their General Secretary a man who had managed to select his under secretary and clerical staff in such a manner that he overtook his work without there being any complaint of overpressure. It was, he thought, in the clerical staff that assistance was needed; and, if a good assistant medical secretary and a good clerical staff were obtained, there was no reason why he should not be able to carry on the work of that department as well as the work of the other department was carried on.

Mr. E. H. T. Nash (East Norfolk and North Suffolk) wished to correct a wrong impression which might have been created by what Dr. Bruce Goff had said. The Association did not see its way to vote more than £250 a year for the Medical Secretary's understudy, and he did not think it was fair to put an exact interpretation on what Dr. Bruce Goff had said that he was at liberty to choose. To offer a man £250 a year to take the position was, he thought, little short of disgraceful. How could they expect to get a man with large experience of private and contract practice and a good general practitioner to take up an appointment at £250 a year? They must put the blame on the Association, which had been niggardly enough to offer no more than £250 a year.

Dr. Rayner (Stockport), having known something of the work of the Association in London for some years, strongly advised the meeting to pass the resolution proposed by the Stockport, Macclesfield, and East Cheshire Division. It was no use to say they must curtail the work of the Medical Secretary. On the contrary, he thought his work would increase, and the increase would be for the benefit of the Association. The work now done in the Medical Secretary's office was simply the work that had been neglected in times gone by before the Association had an organizing secretary. With regard to the amendment of Dr. Bruce Goff, that the salary of the Medical Secretary should be increased, he thought it very much better that the meeting should leave that to the committees or to the Council, which knew what work was done much better than the members of the meeting. If any justification were wanted for the resolution of the Stockport Division it was to be found in the report of the Special Finance Inquiry Committee appointed by the Representative Meeting last year.

Mr. G. H. Broadbent (North Manchester), on a point of order, questioned whether it was right to refer to a report that had not been passed.

The Chairman ruled that Dr. Rayner was perfectly in order in referring to a report which was pertinent to the discussion.

Dr. Rayner, continuing, said that the report of the Committee stated that the Medical Secretary's department was undermanned, that the Medical Secretary was overworked, and that unless relief was promptly granted great detriment to the department would result. He hoped that everybody would agree with the motion proposed by Mr. Housman and rectify the condition of things, so that more work might be done. The Association could not stand still; it must either go forward or go back, and he preferred to go forward.

On the motion of Mr. H. W. Armit (Hampstead), seconded by Dr. H. A. Latimer (Swansea), it was agreed that the question be now put.

The amendment was lost.

Dr. Langdon Down said it had been already ruled that the words "medical secretariat" included a medical man. Would it also include an increase in the clerical staff non-medical?

The Chairman ruled that it meant the whole staff of that branch of the office.

Dr. Rhodes (Manchester): Another medical secretary?

The Chairman said that it was not proposed to have a coequal.

The Stockport resolution was then put.

In reply to Dr. James Anderson (Blyth and Morpeth),

The Chairman said that a two-thirds majority was not required.

The resolution was carried by 89 votes to 13.

Dr. Goyder moved, and Dr. J. Wilson seconded, the following rider:

> That it be an instruction to the Central Council to consult the Medical Secretary as to the best means of arranging, assisting, and further systematizing the medico-secretarial work.

Dr. E. Rayner said that no one knew better than the Medical Secretary himself what his difficulties were, and the Council could not fail to consult with him.

The resolution was withdrawn.

Capitation Grants to Branches.

Dr. L. S. McManus moved the following resolution on behalf of the Wandsworth Division:

> That the attention of the Representative Meeting having been drawn to the fact that the balances of Association funds in the hands of the home Branches were for 1904, £2,300; 1905, £3,200; 1906, £3,700, for the use of which, at all events for the present, there seems no local demand, this meeting instructs the Central Council to call in such sums as it may consider desirable, having in view future grants and average probable local expenditures, in order to use the same for central expenses, and also toward the organization of the various Divisions by increased medical assistance as suggested by the Organization Committee.

There were, he said, some Branches and Divisions which could not, or at least did not, use their grants themselves, and were not in a position to let anybody else use them. Those sums of money were lying idle. As to Wandsworth, they might judge from the name of the Division appearing so often on the agenda paper of the amount of interest taken by the Division in the work of the Association, but it often found itself handicapped by the fact that the amount of money granted was absolutely limited, and felt that as a general principle, where a Division showed a lively, actual, virile interest in the working of the Association, it ought to be allowed the opportunity of working, and it would be only fair to dispose of the money in the way contemplated by the resolution.

Dr. J. S. Darling (Portadown and West Down) thought the resolution should not be accepted without further information. He was the Treasurer of a Branch that was fairly active and had a little money, but that money was not increasing; in fact it was rather decreasing. It would be a serious thing to cripple a Branch by taking from it any balance it might have. The resolution should be looked into pretty closely before it was passed.

Mr. H. A. Ballance (Norwich) hoped the resolution would not be accepted. On the ground of expediency and on the ground of harmony within the Association, he did not think it would be wise for the Council at the present

time to make an attempt to call up these surplus funds. It had been laid down by the Solicitor that the Council had power to call in the surplus funds should it so wish on any pretext whatever—if the Association, for instance, were wound up—these balances being really the assets of the Association. The Special Finance Inquiry Committee proposed, as would be seen by reference to the report, that the capitation grant to the Branches should be limited to a smaller sum than 4s. should the Council so decide. If the meeting accepted the report of the Committee, that proposal would limit very considerably the funds a Branch might accumulate. In addition it was proposed that the Treasurer of each Branch should refund to the Treasurer of the Association moneys in excess of the requirements for the year. Those two provisions would, he thought, be quite sufficient to prevent surplus funds accumulating to any extent. It would be well to let bygones be bygones and allow the surplus funds already accumulated to remain in the hands of the Branches.

Dr. F. J. H. COUTTS (Blackpool and Isle of Man) supplemented what Mr. Ballance had said by the remark that by the time any resolution could come into operation the Association would probably be under new conditions. Some Divisions, like the Wandsworth, had many meetings, while in some country Divisions the place of meeting was distant. He thought the resolution premature, and that when Branches and Divisions had the opportunity of doing a little more as they liked with their funds, they would find objects on which to expend them.

Dr. J. MCNIDDER (East Yorks and North Lincoln) observed that the amount stated in the resolution was £3,700, and asked if it included amounts in the hands of Divisions. He found that in his own Branch the sum stated to be in the hands of that Branch corresponded with the amount stated in the SUPPLEMENT of April 27th, 1907, as being in the hands of one of the Divisions.

The CHAIRMAN said the amount given in the resolution was only the amount in the hands of the Branches. The Committee had not been able to get at the amount in the hands of the Divisions.

Dr. E. J. MACLEAN (Cardiff) asked whether the amounts stated included the balances in hand at the time of the institution of the new constitution.

The CHAIRMAN said that the balance represented the amount that had accrued since the new constitution was introduced. No notice was taken of the amount in the hands of the Branches before that. That amount was entirely in their hands to do as they pleased with.

Dr. W. DOUGLAS (Maidstone, Rochester, and Chatham) said this was a very similar resolution to one he brought before the meeting last year, and he had pleasure in supporting it, but he did not feel very much concerned in the matter, because it was pretty certain the Council would be forced to bring the money into the central coffers when the reorganization took place.

Dr. A. WALKER (Edinburgh, South) said that he was instructed to oppose the resolution, which, on being put to the meeting, was lost by a large majority.

REBUILDING DEBENTURES.

The CHAIRMAN said that he had permitted Dr. McManus to alter the form of the resolution standing in the name of the Wandsworth Division, which was accordingly moved in the following form:

> That it be an instruction to the Council to take into consideration the desirability of giving members of the Association the opportunity to subscribe for the £40,000 in debentures, in whole or in part, in order that the interest from the same should be paid to them instead of any outside body (*re* new buildings).

Mr. F. C. LARKIN asked if there was anything to prevent members of the Association from subscribing for these debentures.

The CHAIRMAN said the resolution was really an instruction to the Council to consider the matter.

Mr. BROADBENT (Manchester, North) would vote against the resolution because, from what he had seen of the plans and elevation, the new building in the Strand would not be to the credit of the Association. He wished to know how it was that the members of the Association, and especially members of the Representative Body, had not had the plans put in their hands. They were shown to members in an informal way twelve months ago, but there was no chance of going through them properly.

Dr. POPE called attention to a statement in the artistic column of the *Morning Post* on the previous day, wherein it was stated that the new buildings were the commencement of a new artistic era in Western London.

The CHAIRMAN observed that both Mr. Broadbent's and Dr. Pope's speeches were out of order.

Dr. WALTER SMITH (St. Pancras and Islington) moved as an amendment that the words specifying the sum of £40,000 should be deleted.

Mr. W. L. MUIR (Glasgow East) seconded the amendment, and asked what was the interest the Treasurer would have to pay to the bank for any overdraft that might be required, and what was the interest proposed to be paid on the debentures if issued by themselves?

The CHAIRMAN said the amount that would have to be paid on an overdraft would be the ordinary bank rate, with a minimum of 4 per cent. The interest proposed to be paid on the debentures was not more than 4 per cent.

Dr. MCMANUS accepted the words "the amount necessary" instead of "£40,000."

Dr. SHADWELL (Walthamstow), on a point of order, quoted Article 4 of the Memorandum of Association, which provides that the income and property of the Association from whatever source derived shall be applied solely towards the promotion of the objects of the Association, and that no portion thereof shall be paid or transferred directly or indirectly by way of dividend or bonus or by way of profit to persons who at any time are or have been members of the Association or to any person claiming through any of them.

The CHAIRMAN said that he did not think that provision affected the resolution, but he had no doubt that the effect of the Memorandum and Articles of Association would be considered by the meeting when it decided whether or not it would carry out the Council's recommendations.

The resolution as amended was then put, and was carried *nem. con.*

APPORTIONMENT OF MEMBER'S ANNUAL SUBSCRIPTION.

Dr. MCMANUS (Wandsworth) moved, with reference to the Addendum to the Annual Report of the Council (SUPPLEMENT of June 15th, p. 399):

> That in the report on the apportionment of a member's annual subscription of 25s. full particulars as to the amount spent under the heading "Meetings of Council, Representatives, and Committees, Salaries, Library," etc., are desirable.

He had, he said, been asked by many men whom he had pressed to become members, "What do you get for the subscription beyond the JOURNAL?" They did not realize the work being done in the interests of the profession. If the 25s. could be apportioned under the various headings so as to show that the supply of the JOURNAL was only part of the enormous work of the Association, very many recruits would come in.

Mr. WOLSTENHOLME (Manchester, Salford) suggested that in future the cost of producing the JOURNAL should be separated from the cost of posting it.

Dr. F. J. BAILDON (Southport) asked Dr. McManus to define the word "etc." in his motion.

The CHAIRMAN suggested the substitution of the word "fuller" for "full" in the motion.

This was agreed to, and the motion so altered was carried.

Mr. NASH (East Norfolk and North Suffolk) moved the following rider:

> That a copy of the report be circulated to every member of the profession who is not a member of the British Medical Association, drawing attention to the amount of work the Association is doing on behalf of the profession as a whole.

In answer to a question by Dr. POPE (Leicester), the CHAIRMAN stated that it seemed that the object of the proposal was a legitimate object to which to put the money of the Association.

The motion was seconded by Mr. H. ELLIOT-BLAKE (Chichester and Worthing and Horsham).

Dr. ALFRED COX (Gateshead and Consett) said that it was the custom of the Association every year to send a free copy of the JOURNAL to non-members, and it would

be a very good thing to send the fuller details mentioned in the resolution just passed as an inset.

The Chairman stated that the General Secretary informed him that owing to the postal arrangements it would be impossible to carry out this suggestion. There would be an extra charge for postage on every Journal in which the slip was inserted.

Mr. F. C. Larkin presumed that a properly drawn circular would be sent. He did not think that anything else would be of any use.

Dr. R. L. Langdon-Down (Richmond) said that in the report of the Finance Committee there was a very admirable summary of the history and work of the Association. The essential part of that would form a very valuable basis for the proposed circular.

Sir Victor Horsley (Marylebone) said that the drawing up of a memorandum of the kind suggested must be done by some committee; and he would suggest that Mr. Nash should move that it be an instruction to the Organization Committee to carry out this work.

Mr. Nash said that he would accept the suggestion on the understanding that the circular should be as brief as possible.

Mr. H. Elliot-Blake (Chichester, etc.) also agreed to the suggestion.

The following motion was then carried:

That it be an instruction to the Organization Committee to prepare a brief circular to be sent out to non-members of the Association.

The Financial Year.

Mr. Percy Rose (Stratford) moved:

That the Council be asked to consider the advisability of making the financial year of the Association terminate on the 31st March of each year.

The resolution was seconded by Dr. P. D. Turner (Isle of Wight).

The Chairman stated that the proposal would involve altering one of the Articles of Association.

Mr. Rose said that he merely wished that the Council should consider its advisability.

Dr. Pope (Leicester) asked whether it had been taken into account that the proposal would destroy all comparison with former years.

Dr. Walter Smith (St. Pancras and Islington) said that the proposal would not give an opportunity to the Divisions to consider the accounts before the annual meetings.

Dr. W. Muir Smith (Eastbourne) said that in the present state of the Association, and in view of the possibility of further changes taking place in the constitution of the Association, it seemed hardly worth while to disturb the present state of affairs.

Dr. Arnold H. Watkins (Griqualand West) said that it would not be to the advantage of the Colonial Branches to change the financial year by making it end three months later, since it would deprive them of all opportunity of considering the financial report.

The resolution was put to the meeting and lost.

The report of the Council as amended was then agreed to.

Statement by the Chairman.

The Chairman said that it was necessary sometimes that the Chairman of the Representative Meeting should take action during the year without application for permission. That had been the case very little during the last year, but on one occasion he had to give a decision without being able to apply to the Representative Meeting. The question was raised by the Wandsworth Division as regards election to the General Medical Council, and some of the Divisions got hold of the idea that the Representative Meeting had made a pronouncement upon the matter. He wrote a letter to the Journal explaining the position of affairs and saying that the Representative Meeting had not laid down any rule upon the matter, and that the Divisions were perfectly free to exercise their own judgement. He asked for the approval of the meeting of his action with regard to that. ("Agreed.") The next thing was a matter of detail; but it was necessary that he should report to the meeting that he had recommended the Council to fix Saturday, July 27th, for the first day of the Representative Meeting, because he considered that it was necessary to get the work over, so that it should not clash with the scientific and social part of the gathering. They would never work harmoniously if some men were grumbling at having to miss the sections, and so he thought it would be better to propose that the meeting should be held on the Saturday, and he asked for the approval of the meeting upon his action in the matter. ("Agreed.")

Medico-Political Committee.

The discussion on the report of the Medico-Political Committee was postponed.

Election of Committees.

The Chairman announced that in view of the probability that the work would not last much beyond the second day he moved the following amendment to the Standing Orders:

That the names be handed in to the Secretary not later than one hour after the beginning of Monday's first session.

To this the meeting agreed.

Dr. Hamilton inquired whether it was essential that each member nominated should be a Representative, to which the Chairman replied that any member of the Association might be nominated.

It being 1 o'clock, the meeting at this point adjourned till 2 p.m.

Ethical Committee's Report.

Mr Kinsey, in moving the reception of the report of the Ethical Committee, observed that it would be seen from the first paragraph that the work had been at least equal to that in any previous year. It would be possible to diminish the work of the Medical Secretary if more work were done in the provinces, and if proper rules were adopted, and every Division conformed strictly to them. The amount of work that was done in correcting work which had been wrongly done, and in doing work which had been left undone, would be a surprise to many, and he would request every Representative to use his influence in his Division without loss of time for the adoption of proper ethical rules of procedure. In this not only would the work in the office be considerably diminished, but the profession in general would become better educated in doing this work. As to the next paragraph, which dealt with the cases of expulsion of members, he need only say that that was the most painful business which the Ethical Committee had to do. With regard to the presentation of cases to the General Medical Council, it would be remembered that last year the Representative Meeting passed a resolution to the effect that it was absolutely necessary in the interests of the medical profession that the Association should take up cases of a penal nature before the General Medical Council as complainants. The Committee had acted in strict obedience to these instructions; like every other Committee, it was fully conscious that it was its business merely to follow out the instructions given to it by the Council and by the Representative Meeting; it was not its business and it was not its responsibility to say whether the thing was right or not. Its business was to carry out instructions, and that, he maintained, had been done. It was true that the Ethical Committee had recommended the Representative Meeting last year to pass the resolution, and therefore might be considered morally responsible for that. He would relate in a few words the circumstances alluded to in the report which induced the Committee to bring the resolution before the meeting last year. There were in Wales two medical men who were carrying on a perfectly honest and legitimate practice amongst what was usually called the lower middle class. Some lay person took it into his head that it would be very desirable to get the practice of these two gentlemen into a club. It would have been ruinous to these two gentlemen to carry on their practice on the terms of an artisan club, and as they declined the proposal the layman imported a stranger. The Committee was informed that this person who had imported the stranger was touting all over the neighbourhood for patients, and the stranger was informed that the employment of an agent to tout for him was contrary to the regulations of the General Medical Council. The services of the agent were then discontinued, and he began to tout for himself. His conduct was investigated and reported to the General Medical Council by the Committee, under the belief that the General Medical Council, having the whole statement of the case clearly laid before it, would itself take action. But at the last moment the General Medical Council sent word to the Association that it must appear

as complainant or get somebody else to do so. The Committee had to telegraph to Wales, and absolutely at the last moment these two gentlemen came up; it fortunately turned out that they were excellent witnesses in the case, and the result was that a stranger who had been imported was taken off the *Register* by the General Medical Council. If these two practitioners had not happened to have the courage to come up or the capacity to represent their case properly they would simply have been ruined. It would be seen from the letters in the JOURNAL that the Committee was accused of being sentimental. The sentiment, if sentiment it were, was this: that they did not approve of honest and upright men, less fortunate than some members of the Association, being sweated and deprived of their living because the Association would not lift a finger to help them. If that was sentiment then the Committee was sentimental. It was in consequence of that experience that the Committee had drafted the resolution which was brought as a recommendation before the Council in July, 1906. The Council then determined to postpone the consideration of their resolution till October. In the meantime in August, the resolution was brought before the Representative Meeting and passed. The Council took no referendum on it, and the Committee waited until October when work began again, and then presented a minute informing the Council that the Committee had instructed the Emergency Subcommittee to bring forward cases in consultation with the solicitor before the General Medical Council as complainants when there was any urgency in the matter. The Council did not consider that minute nor did it recollect the resolution on which it had not taken any referendum and which it had postponed until October. On January 11th, 1907, the Committee received a letter from the late Chairman of Council, saying that, as he was now a member of the General Medical Council, he thought it was incumbent upon him to retire from the Ethical Committee. Shortly afterwards a strong resolution was brought before the Council condemning the Committee for the action they had taken. The Chairman of Council had taken the opinion of counsel, Mr. Colquhoun Dill. Among the objects of the Association were the maintenance of the honour and the interests of the medical profession and the doing of other such lawful things as were incidental or conducive to the attainment of such objects. A suggestion made by one of the greatest authorities on company law was to the following effect: "You may do certain things which are absolutely specified; other things are not specified; what I advise you to do is to go on with your good work until somebody stops you. Nobody can say whether it is legal or illegal, except a judge of the High Court, and no one can bring an injunction in the High Court against you except a member of your own Association who could say that the money of the Association was being improperly spent." The following is the opinion that Mr. Colquhoun Dill expressed:

> The question whether the existing Association has power to act as prosecutor or complainant in proceedings before the General Medical Council, and to apply its funds for that purpose, depends upon the construction of the third clause of the Memorandum of Association. The wording of that clause is such that the methods described in paragraphs (*a*) to (*e*) are made parts of the objects for which the Association is established. The objects are, in fact, not merely the promotion of medical and allied sciences, and the maintenance of the honour and the interests of the medical profession, but such promotion and such maintenance by the aid of certain prescribed methods. It is clear that paragraphs (*a*) to (*d*) do not authorize the proceedings in question; and since those paragraphs form part of the description of "the above objects" mentioned in paragraph (*e*), that paragraph does not in my opinion extend the objects beyond those referred to in the preceding parts of the clause. Even if the clause ought to be construed less strictly, the objects being taken to be the promotion of the sciences and the maintenance of the honour, etc., and the lettered paragraphs being taken as merely descriptive of means of carrying out these objects, still, I consider it extremely doubtful whether the proceedings in question can be said to be incidental or conducive to the attainment of those objects. It is material to observe that the Articles contain no indication that the proceedings in question were considered to be included in the sphere of operations of the Association. For these reasons I am of opinion that the Association cannot safely engage in the proceedings referred to or apply their funds for that purpose.

That was the whole of the opinion, and the question was, What did it mean? It meant, as he thought, that if the Association went on, somebody within the Association might bring an injunction to restrain it. It did not necessarily follow that the injunction would be obtained, and if the great majority of the Association determined to go on with this work, what would be the position of any member of the Association who had the temerity to bring an injunction to stop the work which was felt to be absolutely necessary in order to help, not the least deserving, but the less prosperous and the less fortunate members of the profession? The whole matter was discussed at great length by the Council, which decided by 24 to 14 to proceed to the next question. He had no wish to say anything to persuade the meeting in any way. The business of the Committee was simply to carry out instructions, but he wanted the meeting to understand what the position would be if the Association neglected those members of the profession who were most in need. Only two objections had been raised: one was as to the position of members of the Association who were members of the General Medical Council. If the Association went on acting as complainants, those of its members who were fortunate enough to become members of the General Medical Council would have to resign the Association. The other objection would be brought forward by Dr. Hamilton, who would propose that the Committee had acted *ultra vires* as regarded the legal side of the question. What he now had to propose was:

> That this meeting approves the action of the Ethical Committee, and expresses the opinion that so long as such action is desirable on other grounds it should not be discontinued only on the ground of the position of members of the General Medical Council.

Dr. MACAN (Croydon) seconded.

Dr. POPE desired to say something to some extent justifying the course taken by the Council. As one of those who voted in favour of passing to the next business he could say that what was in his mind, and what he believed was in the mind of the great majority who had voted as he did, was as follows: What Mr. Kinsey had said was perfectly true, and the particular case which he had brought forward was one specially calculated to appeal to their sympathies and to make them think that the action of the Ethical Committee was right in every respect. But, what appeared to him was that, though the resolution passed at the last Representative Meeting did indicate that they thought that the Association ought to proceed in such cases, yet it gave no mandate to any individual committee or to the Ethical Committee to do so off their own bat. He was not going to oppose the resolution because it appeared to him that if the meeting passed the resolution in its present form it would be giving the Ethical Committee a mandate. He maintained that the resolution of last year did not specify the Ethical Committee as the proper persons to act in the matter. It did on the face of it, look as though the Council had, by 24 votes to 14, said that it ought not to have acted; but the reason was, not that the Council thought the action was not right but that it thought that the Committee had no mandate from the Representative Meeting.

The motion was then put and carried by 91 votes for to 2 against.

Dr. J. HAMILTON, member of Council for Glasgow and West of Scotland Branch, moved:

> That in view of the letter of the President of the General Medical Council, and in view of counsel's opinion, placed before the Central Council at the meeting of June 5th last, this Representative Meeting do hereby rescind for the present the resolution (Minute 312) passed at the Annual Representative Meeting of 1906 in the following terms, namely:
>
> That it is absolutely necessary, in the interests of the medical profession, that the Association should take up cases of a penal nature before the General Medical Council as complainants.

He said that to ask the meeting to rescind a resolution agreed to so recently as last year was perhaps an unusual course, and probably scarcely justifiable under ordinary circumstances; but if he was able to show the meeting that they had come to a decision without sufficient consideration at the time, and if the year had brought out fresh facts and thrown new light on the far-reaching effect of the decision, contrary probably to what the meeting anticipated, an excuse for his attitude might be found.

In support of his first point—that the matter was not fully considered at the last meeting—he stated that up till then the Ethical Committee in its yearly reports had congratulated itself upon having been thoroughly successful in bringing into the path of righteousness by a little gentle moral suasion men who had strayed into the broad path. In the minutes of the Oxford meeting was the report of the Ethical Committee, in which it stated that it had been able by moral suasion to settle a case perfectly amicably. At the Leicester meeting a like report was put forward, and at the end of it the Committee congratulated itself and said that the cases showed the necessity of proper and prompt action in inquiring into cases which might require to be reported to the General Medical Council. It was only in the minutes of last year that the Committee seemed to find the necessity for something stronger, and it came up in the form of a recommendation to the Council. Now, according to the Council's proceedings on July 4th (reported in the Supplement of July 14th), the same resolution was brought before it by the Ethical Committee, and an amendment was moved that the matter be postponed until the October meeting of the Council. In spite of that reverse, however, the Ethical Committee brought the resolution forward in its annual report to the Representative Meeting. Was the matter treated with sufficient care when it came before the Representative Meeting a year ago? In looking up the Journal he had discovered a serious discrepancy between the report of the July meeting last year and the minutes of the meeting. The matter was in the minutes, but the minutes of that meeting had been passed as correct on the very last day of the Representative Meeting; and he put it to those present whether the minutes were likely to be read through at the last moment, when scarcely a quorum was available? In the Supplement of August 4th, 1906, there was some reference to the matter. Sir Victor Horsley spoke with reference to the General Medical Council, and said that if a complainant did not appear it undoubtedly placed the General Medical Council in a somewhat false position, and so on. But the report mentioned two things—one that the necessary information must be supplied to the Committee by those locally concerned, and the other that the Association should not be placed in the position of complainant or prosecutor before the Council, but should simply report facts in its possession. Then Mr. Kinsey had gone on to suggest that an instruction should be given to the Ethical Committee to go further and act as complainant, but according to the report he was not stated to have made a definite motion about it. He (Dr. Hamilton) would go so far as to deny that any motion was passed at the Representative Meeting in July, 1906. The only way in which the difference between the two documents could be decided was to call for the shorthand notes of the meeting; but he understood that they were not available. He would not like to labour the point too much, because the Ethical Committee had made up its mind that it had got an instruction from the Representative Meeting, and he presumed that he must take it that it did get that instruction. He felt, however, whether it got it or not, that the report showed that the matter was not seriously considered. Passing to his second point, Dr. Hamilton said that, even supposing the solution had been threshed out and arrived at after careful consideration, were not the incidents which had occurred since a sufficient justification for calling a halt? He asked the meeting to consider the fact that Mr. Kinsey had mentioned—that they were face to face with the resignation of all those members of the Association who were members of the General Medical Council. He further asked them to consider whether they were not paying a very big price for the permission they were supposed to have given to the Ethical Committee to prosecute. It was not merely the money value of their subscriptions which the Association lost, but the prestige they lost through the resignation of eminent men.

Sir Victor Horsley (Marylebone) rising to a point of order, asked if the meeting had not by a resolution settled that point.

The Chairman assented.

Dr. J. Hamilton thereupon closed his remarks by moving his resolution.

The Chairman inquired if the resolution was seconded.

Dr. A. Walker (Edinburgh South) seconded.

Mr. W. L. Muir (Glasgow East) asked Dr. Hamilton whether his motion was an official one passed at a meeting of the West of Scotland Branch, or was it a motion off Dr. Hamilton's "own bat"?

Dr. J. Hamilton said it was a motion entirely off his own bat.

Mr. W. L. Muir said that he could honestly assure the meeting from his knowledge of the general practitioners in Glasgow, particularly in the east end of it—and he had spoken to a great many—that not one of them had any sympathy with Dr. Hamilton's resolution.

In answer to Dr. John Brown's inquiry as to whether Dr. Hamilton had power to vote on his proposition,

The Chairman replied in the negative, but added that he had power to move the resolution.

Dr. E. J. Maclean (Cardiff) inquired whether, it being a motion on behalf of a private member, it was in order in appearing on the agenda.

The Chairman replied in the affirmative.

Mr. Kinsey, in reply, said: Dr. Hamilton tells us that in July the Council postponed the consideration of this matter, because of its seriousness, till October. Was it because it was so serious that it was forgotten in October? The Ethical Committee, at the time it passed that resolution, decided to bring it before the Council and before the Representative Meeting, so that there was no discourtesy. Further, Dr. Hamilton said the minute was incorrect, that it was passed on the last day of the meeting, and that every one in the Representative Meeting was so busy, that an important matter of that kind was rushed through. He begged to remind the meeting that he had called attention to the incorrectness of the report; and any one who read that report would see from the remarks he (the speaker) had made that they did not apply to the two paragraphs in small print which preceded his explanation, but that, as explained at the meeting, it was to the paragraphs one of which was before them now. If the hurry were so great, whoever made the mistake in reporting might be excused. If the whole body was in such a terrible hurry, they could not be surprised if the reporters were somewhat overdone. But why did not Dr. Hamilton notice it then or subsequently, and bring it before the Council? The Ethical Committee had not made up its mind to do anything except what it was instructed to do. It did not consider that it had any mandate from the Council; and, in proof of that, passed a resolution on June 21st to the effect that the Committee "report the facts to the Annual Representative Meeting, and in the meantime take no action as regards bringing penal cases before the General Medical Council." That would show that the Committee had no desire to act beyond its instructions in any way at all.

Mr. E. H. T. Nash (East Norfolk and North Suffolk) observed that it seemed to be in doubt who was to take any action which was required—whether that meeting was to give a mandate to the Ethical Committee, or allow the Council to do so. It rather seemed to him that the Ethical Committee were at loggerheads with the Council.

Dr. E. J. Maclean inquired whether the Chairman had said that a motion by an individual member was in order when appearing on the agenda.

The Chairman did not see how any difficulty arose. Every member of the Representative Meeting, whether a member of the Council or a Representative, had a right to move any resolution, and it was for the convenience of the meeting that every motion should be put on the agenda if possible.

Dr. Walter Smith (St. Pancras and Islington) inquired whether it should not be stated on the agenda whether it was a motion from the individual member himself or from his Division.

The Chairman replied that that was quite a different thing.

Mr. Elliot-Blake (Chichester and Worthing, and Horsham) inquired whether, in accordance with counsel's opinion, the Association could take up penal cases.

The Chairman replied that whether counsel's opinion as read out by Mr. Kinsey was to be accepted or whether the meeting would take up the position that the Association should go on with the work was a matter for the meeting to decide. The point had never been decided whether the proposed course of action was legal or

illegal, and it could not be decided till a case had been tried. The question then was, Would the Association take the risk? for until the point was decided by a court of law on an application for an injunction against the Association the question would not be settled.

Dr. Hamilton's resolution was then put to the meeting, the voting being 1 for and 98 against.

Ethical Aspects of Medical Consultation.

Mr. Kinsey brought up the report of the Ethical Committee on the ethical aspects of medical consultation.* Many of the Divisions had sent up opinions for consideration, but the Committee was anxious to get the general sense of that meeting on those opinions of the Divisions. It was most desirable to obtain a consensus of opinion throughout the profession. The Ethical Committee did not wish to impose any opinion upon the meeting, neither did it want any Division to carry out the recommendations as they stood, but rather that opinions should be collected for reconsideration, perhaps several times, by the Ethical Committee, by the Representative Meetings, by the Council, and by consultants. The force of a document which ought to be the law of the profession for many years to come would be very much diminished unless all parties were satisfied that they had had a thorough opportunity of considering and making their opinions known. Therefore, he moved:

> That the report be referred to the Central Ethical Committee with instructions to take into consideration the following specific matters, namely:

Those matters would be any brought forward that day in connexion with the resolutions on the agenda.

The Chairman explained that some difficulty had been felt as to the best way of dealing with the resolutions from the Divisions. The business was so very important in connexion with the internal work of the Association between ordinary practitioners and consultants that it ought to be thoroughly threshed out; and he did not think the meeting was quite in a position to do that at once. The amendments which had come up from Divisions ought, he thought, to be considered by the meeting, which should instruct the Ethical Committee with regard to them.

Mr. H. A. Ballance (Norwich) said that the first amendment of his Division was simply a matter of drafting, that in the paragraph on the "Arrangements for Consultations" the words "any person" be inserted before the word "other" in the fourth line.

Dr. E. J. Maclean (Cardiff) presumed there might be an application by a person who was not a medical attendant.

Mr. H. A. Ballance said it was put broadly as "other person"—"other" would include lay and medical persons.

Mr. W. H. Horrocks (Bradford) inquired whether, if the practitioner made arrangements for the consultation, he was responsible for the fee.

The Chairman said that the inquiry was not in order in regard to the matter under discussion.

Dr. E. T. Davies (Liverpool Northern) thought this verbal alteration did not alter the pith of the resolution, and he inquired what the object of it was.

Mr. H. A. Ballance replied that, if read as the Ethical Committee proposed, it might be understood to mean another medical man; the words "any person other," would include lay or medical.

The suggestion was referred to the Ethical Committee for consideration.

Mr. H. A. Ballance said that the next proposal was of much more importance; it was with reference to the paragraph, "Cases seen at consultant's house," which read: "It is in general the duty of the practitioner consulted to ascertain the facts as to the previous medical attendance." The Norwich Division thought he ought always to ascertain the facts as to the previous medical attendance, and therefore proposed to omit the words "in general."

Dr. K. A. Grossmann (Liverpool Western) said that, as the paragraph stood, the obligation to ascertain the facts was laid on "the practitioner consulted." Some of his friends had privately told him, two of them being specialists who did not consider themselves consultants, that they could not accept this. He thought it should read "consultant," instead of "practitioner consulted."

Mr. F. C. Larkin thought it useless to make recommendations about consultants unless it was made clear what a consultant was.

The Chairman admitted that there was great difficulty in getting a definition of consultant. So far, a consultant was assumed to be any practitioner to whom a patient went for a second opinion.

Mr. Elliot-Blake (Chichester and Worthing) thought it desirable that the meeting should deal with the matter of consultants, as the mover of the resolution evidently did not desire to deal with it himself.

Mr. Armit thought that if the meeting were discussing the meaning of the word "consultant" the definition suggested by the Hampstead Division ought to be considered.

The Chairman said that, as a matter of fact, the meeting was not really discussing what "consultant" meant.

Mr. F. C. Larkin said that if the Chairman ruled that the question whether a consultant might also be a practitioner was not to be considered, he would obey; but what he had to say was, he thought, relevant to the general point to be considered by the Committee. The resolution would make it incumbent upon the first consultant to do a certain thing, but did not make anything incumbent upon the second general practitioner seeing the case. He would like the whole to be referred back to the Committee.

Dr. Pope moved that the recommendations sent up by the different Divisions should be sent to the Ethical Committee to consider.

The Chairman said he was afraid he could not take that as a motion.

Dr. Pope said he had a seconder. All the recommendations must be worthy of consideration.

Mr. Wolstenholme asked if the proposal was to strike out the words "in general," and put in "always" in these particular cases.

Mr. Ballance said he did not propose to put in any words, but simply to strike out the words "in general."

Mr. Wolstenholme thought the passage meant "always." "If a patient seeks an opinion from a practitioner other than his ordinary attendant, and without any introduction, it is (always) the duty of the practitioner consulted to ascertain the facts as to previous attendance; and if he finds that the patient is already under medical treatment he should refuse to see the case until he has communicated with the ordinary attendant." People would go from one general practitioner to another merely for the second opinion. They would go to him and say, "Dr. —— says so and so. We want your opinion." If under those circumstances a doctor was not to give an opinion without the permission of the doctor who had been in attendance, it was a very stringent rule, and he was not sure it would work to the good of the general practitioner.

The Chairman said that it was exactly on such points that the Ethical Committee wanted an expression of opinion from the meeting. It was proposed to strike out the words "in general," and to make it compulsory on every man who was applied to for a second opinion to ascertain the previous history of the case, but there was a difference of opinion as to whether the rule would work well, and it was felt that the matter required further consideration.

Dr. A. H. Watkins (Griqualand West), speaking for South Africa, strongly deprecated the suggestion to delete the words "in general" and would go further and deprecate the whole of the paragraph because he did not think it would be for the harmonious working or for the good and honour of the profession, at any rate in South Africa. He could, of course, only speak of colonial practice, but he had had some thirty odd years of that and knew very well all the conditions attached to it. On the whole the profession in South Africa got on very amicably and well together. They endeavoured to preserve the strict rules of etiquette with regard to one another and he thought they had succeeded in doing so, but if these rules were going to be made so stringent that it would be almost impossible for any one to observe them an apple of discord would be thrown amongst the members of the profession in the colonies and he thought amongst those at home too. In South Africa they had gone so far as to rule that where a patient was being attended in his own house no other doctor must go and see him in that house without the consent of the man who was already attending or without a clear understanding with

* Supplement, February 16th, 1907.

him. But they had always recognized that where a man went to the doctor's "office," as it was called, to consult him, and they were all general practitioners out there and not consultants, the doctor consulted had nothing to do with what had gone before, but had every right to go into the man's case, and tell him his opinion and prescribe for him. As a matter of grace and courtesy the other doctor might be communicated with, but to make it a rule that a doctor must communicate with the doctor previously in attendance would be an impossible law in the circumstances out there. He had called attention in a little literary work of his own to the Dutchman who carried in his belt the scalps of thirteen medical men whom he had consulted. If a Dutchman chose to collect medical opinions in that way, why say that the latest doctor consulted must go back to the twelve other men and talk the case over with them? He did not want to labour the point, but men from the colonies did not always have the opportunity of being heard when these matters were being discussed. By all means let them work together, and have strict laws of etiquette, but do not make laws such as would be impossible to carry out.

Dr. Pope said the only object of his resolution was to save time, as Mr. Kinsey had told them that the report was incomplete and wished it to go back to the Ethical Committee for reconsideration. The suggestions from the various Divisions would have to be considered, no doubt, and he therefore proposed :

> That all the recommendations relating to consultants which have been sent up by the Divisions be sent to the Ethical Committee as matters worthy of their consideration.

Dr. Bruce Goff seconded the motion. The Ethical Committee ought to have the opinion of every member of the profession with regard to these matters—the opinion of consultants, the opinion of general practitioners, and the opinion of the Colonies.

Dr. Pope observed that his proposal did not shut out other suggestions.

Mr. Nash (East Norfolk and North Suffolk) asked, having regard to the view of the Representatives of the Colonies as to the different aspects of this matter, whether Dr. Bruce Goff was not rather defeating his own ends in seconding this proposal, the effect of which was rather to shut the whole matter up.

Dr. Langdon-Down (Richmond), as a member of the Ethical Committee, thought it was to be regretted that the discussion should be stopped, because it was particularly the opinions of the Representatives that the Ethical Committee wished to get. Dr. Bruce Goff, in enumerating a great number of categories of people from whom he wished to get information, had carefully excluded the Representative Meeting.

Dr. Pope said he did not wish to stop the suggestions but merely to take the opinions of Divisions as a first instalment of those which were to go to the Ethical Committee.

The Chairman said he was afraid that Dr. Pope had rather misunderstood the point of Dr. Langdon-Down's speech. Dr. Langdon-Down did not want any further amendments, but to get the opinions of Representatives at this meeting.

Mr. Kinsey observed that what the Ethical Committee wanted was to know what the consensus of opinion was. It was no use proposing a number of amendments—it would take too long. The Committee wanted the Representatives just to say whether they thought such and such a proposal by any Division was desirable or not—whether they would rather have things left as they had been presented in the report or whether they thought that the amendment proposed by a Division was worthy of the further consideration of the Ethical Committee. If they could get that done in a short time the result would be very valuable indeed to the Committee.

Dr. W. Muir Smith (Eastbourne) asked if all these resolutions, if referred to the Ethical Committee, would be boiled down and then sent to the Divisions again for discussion.

The Chairman replied that would be the case.

Dr. J. F. Carruthers (Guernsey, Alderney, and Jersey) said that the Division he represented was contented with the present condition of affairs. As far as consultants and practitioners were concerned, they got on very amicably indeed, and he would be sorry to see any stringent hard and fast rules laid down as between consultants and practitioners.

Dr. E. J. Maclean (Cardiff) moved that the question be now put; Dr. Milner Moore (Coventry, Nuneaton, and Tamworth) seconded, and the motion was carried.

Mr. Kinsey moved :

> That the report be referred back to the Ethical Committee with instructions to take into consideration all the points mentioned in the motions on the agenda paper, and others that may be sent to them.

In reply to Mr. Nash, the Chairman stated that all notices of motion received subsequent to the printing of the agenda would be sent to the Ethical Committee.

In answer to a question by Dr. Pope (Leicester), Mr. Kinsey said that it was for the consultants to take the trouble to state their views and to report them to the Committee. It was impossible for the Committee to find out the views of the consultants.

Mr. F. C. Larkin said that there were two or three points which he thought ought to be considered more carefully than they were in the report. There was, first, the question of what he called third party consultations, where a consultation was held in the interests of a third party, as, for example, where an employer had to appoint some person to see a case in his interest under the Employers' Liability Act. Another point was that the position of the Association as regards practitioners professing a peculiar method of treatment was undefined. He understood that there were many members of the Association who were homoeopaths, and it seemed rather awkward to make rules that members were not to meet certain persons who were members of the Association. As long as homoeopaths were recognized as members of the Association, the Association should be very careful about drawing up rules excluding those who were not homoeopaths from consulting with those who were.

Mr. J. Ward Cousins (Portsmouth) said that the question of homoeopaths was a very old one indeed in the Association, and what was decided many years ago was that a man might practise in any direction he thought proper, provided that he did not practise under any special name, or pretend that he had remedies or means of treatment which other practitioners had not got.

Mr. W. H. Horrocks (Bradford) said that the rule was that a homoeopath, or a person practising in an irregular way, was not to be met in a case in which the consultation was likely to be futile. He looked at the matter from a surgical point of view. He took it that homoeopathy dealt with surgical cases in the ordinary way, and he thought that it ought to be considered whether homoeopaths should be met on surgical cases where their practice was very much the same as the practice of other medical men.

Dr. W. Odell (Torquay) asked what would be the value of one who practised surgery or medicine in the ordinary way meeting a homoeopath in consultation. He had often been asked to meet homoeopaths, and his statement had always been that it was useless for him to meet a homoeopath because he did not understand the homoeopath's remedies, and the homoeopath certainly did not understand his. It seemed to him that homoeopaths should not be met.

Mr. D. Leslie Beath (Bath and Trowbridge) said that the Bath Division had sent up a recommendation designed to elicit from the Association some pronouncement on the question of meeting homoeopaths and others who professed irregular systems, such as Christian Scientists, and he should be glad if the Ethical Committee would consider the matter.

The motion was put to the meeting and carried.

The paragraph of the report of the Ethical Committee expressing the opinion that it was undesirable for practitioners to act as local correspondents for the National Society for the Prevention of Cruelty to Children was agreed to.

Mr. Kinsey then referred to the paragraph of the report on the Prevention of Corruption Act. The memorandum appended to the report had been drawn up after a long consultation with the solicitor. At Mr. Kinsey's suggestion the meeting directed that a copy of the memorandum should be sent to every Secretary of a Branch or Division, with instructions to draw the attention of members to it, and that it be published in the Supplement.

Mr. Kinsey then drew attention to the paragraph in the report on the ethics of advertising. The Committee

deemed it advisable that the subject should receive further consideration before submitting a report to the Representative Meeting.

This was agreed to.

Mr. KINSEY said that, in a case submitted for the consideration of the Committee, the most important question of principle involved was as to the propriety of the action of a medical practitioner who, in various public notices, used the term "Hospital" as the designation of an establishment for the treatment of disease of which he was the sole medical member of the staff, and which appeared to be under his sole control. Having conferred with the Hospitals Committee, the Ethical Committee submitted the following definition:

DEFINITION OF THE TERM "HOSPITAL."

The term "hospital" shall not be applied to any institution for the treatment of disease which does not possess the following characters:

(*a*) That the institution in question receives necessitous patients, and is maintained wholly or partially by public funds or charitable contributions.
(*b*) That the control, including the appointment of the staff, is in the hands of medical or lay persons appointed by, and responsible to, those who provide the funds.
(*c*) That the institution is not established or conducted for the pecuniary profit, personal gain or benefit of any individual or individuals other than the patients.

It was not a lexicon or dictionary definition that was wanted, but an ethical definition which would enable the Ethical Committee to say when a man was acting unethically. He proposed:

That the definition of the term "hospital" be referred to the Divisions and Branches, with a statement by the Central Ethical Committee giving the reasons why such a definition was wanted.

This was agreed to.

The remaining clauses of the report of the Committee having been passed,

Mr. KINSEY asked for the approval of the whole of the report subject to any special resolution which might have been passed that day.

Mr. R. H. WOLSTENHOLME (Manchester, Salford) asked the Chairman of the Committee to draw attention to the necessity of adopting rules such as the Bradford rules, as a great many Divisions and Branches had not yet done so, and the consequence was that they were not able to deal with contract practice properly.

Mr. KINSEY having accepted the proposal, the motion that the report of the Ethical Committee be approved was carried.

SPECIAL FINANCE INQUIRY COMMITTEE.

The CHAIRMAN asked the meeting to postpone the consideration of this report until Monday. He should like to have the meeting fresh when they dealt with the report, and to have a thorough discussion of it.

The proposal was agreed to.

ORGANIZATION COMMITTEE.

The CHAIRMAN stated that in the absence of Mr. Verrall, who was not able to be present, and whose absence they all regretted, Mr. Ballance would bring the annual report of the Organization Committee before the meeting.

Mr. BALLANCE (Norwich) said that the first matter which he had to mention came up upon a resolution from the Wandsworth Division as regards the titles of the officers of a Division, whether the chief member of the Division should be called president or chairman. The Organization Committee suggested that it should be left to the Division itself to decide what should be the titles of the officers. In the Branches there was a president and vice-presidents, and in the Divisions a chairman and vice-chairman, and the Organization Committee thought that that would be the best arrangement to continue. He would ask whether the meeting approved that recommendation.

The recommendation was agreed to.

Mr. E. H. T. NASH did not think the matter should be left to the Divisions; it was desirable to have uniformity throughout the Association.

Mr. F. C. LARKIN supported this view.

Mr. H. A. BALLANCE thought an amendment was hardly necessary. Model rules were issued by the Organization Committee for adoption by the Divisions, in which the officers were called Chairman and Vice Chairman. If the Divisions adopted the model rules, those titles would stand.

After some further discussion, Mr. E. H. T. Nash accepted the Chairman's suggestion to make the amendment read:

That the title of officers of Divisions be uniform throughout the Association, and be decided by the Council on the advice of the Organization Committee.

Dr. E. J. MACLEAN (Cardiff) moved as a rider, and Dr. W GOSSE (Isle of Thanet) seconded:

That the titles used in the model rules issued by the Organization Committee shall be the titles of the officers.

The CHAIRMAN having put Mr. E. H. T. Nash's amendment as a substantive motion, and it having been carried, Dr. Maclean's rider was put and carried.

Mr. H. A. BALLANCE said that the following motion from the Hampstead Division had been referred to the Organization Committee:

That at least one registered dental surgeon should be added to the Central Council of the Association, either by election or co-option.

The Organization Committee's report contained a memorandum calling attention to the fact that under the Charter, when obtained, "co-option" was deleted and the dental surgeon could not come on the Council by that method, but it was open to any Branch to elect as a representative on the Council a registered dental surgeon if it thought fit.

Mr. R. H. WOLSTENHOLME (Manchester, Salford) inquired if "dental surgeon" meant also a qualified medical practitioner.

Mr. H. A. BALLANCE said he must be to be a member of the Association.

The memorandum was approved.

Mr. H. A. BALLANCE said that the suggestion to appoint district organizing secretaries, made by the Wandsworth Division, had been referred to the Organization Committee. The recommendations of the Organization Committee were:

That it is highly desirable, in the interests of the organization and work of the Association, that the paid medical organizing secretariat should be increased.

That if such an increase should be found financially practicable in the near future, it should take the form of adding to the staff of the Medical Secretary's office another medical man or medical men giving their whole time to the work, and not of the appointment of officers attached to special districts or of practitioners who are engaged in private practice or hold other appointments.

Mr. G. H. BROADBENT (Manchester, North) inquired if the first of the recommendations could be passed consistently with what had been done to encourage local work as well as to strengthen head quarters.

Mr. R. H. WOLSTENHOLME (Manchester, Salford) did not quite understand what was meant by "paid medical organizing secretariat." Did it mean an increase in medical officers at head quarters, or a certain number of men throughout the districts trying to develop and to organize the Association?

Mr. F. C. LARKIN proposed that the matter be referred back to the Committee until it was settled by the Council, as had been arranged that morning. He did not see any use in passing such a resolution as proposed when a resolution almost on the same matter had previously been passed.

The CHAIRMAN pointed out that it was only a recommendation to the Council, and it must all come before the Council for approval.

Mr. H. A. BALLANCE then moved the first recommendation, which was carried by 87 votes to 7. The reason for making the second recommendation was that it was impracticable for practitioners in practice in various districts throughout the country to give sufficient time to organization.

Dr. JOHN BLAIR (Leigh and Wigan) said they had already a Medical Secretary and Assistant Secretary, the latter getting £250 a year. If they were going to appoint any further secretaries, they would be medical men junior to those men, and getting smaller salaries. If further men were appointed they would be low down the scale, and would be getting salaries inconsistent with their qualifications.

Mr. R. H. Wolstenholme (Manchester and Salford) was sorry to oppose, but he did so because he firmly believed the increase of the medical secretariat would not further the interests of the Association. He felt strongly that the best method to develop the Association was not by increasing the number of medical secretaries at head quarters, but by encouraging local secretarial effort. An increase in medical secretaries would mean a further cost of £1,000 a year, which would mean an increased subscription, and decrease in the number of men likely to join the Association.

Dr. Walter Smith (St. Pancras) moved that all the words after "office" should be deleted.

Dr. F. T. Davies (Liverpool, Northern) seconded.

Dr. Walter Smith said the meeting had not yet considered the Special Finance Inquiry Committee's report, and was simply given an opinion that the Medical Secretary's office staff should be increased. He thought the matter should be left open until the financial report had been considered.

Dr. John Brown (Rochdale and Bury) was strongly opposed to passing the recommendation on the ground that it would tie the hands of the Council in regard to helping the medical man in his work in large districts like Lancashire and Cheshire, where they had something like 1,200 medical men not attached to the Association; it would be far better to engage a secretary to help the Medical Secretary in those important counties. There were young medical men who had plenty of time to assist the Association in increasing its numbers. He thought it unwise to increase the central staff by two or three medical men resident in London. It was desirable to decentralize a little in regard to the body of officials, and it was also desirable not to bind the Association to appoint a medical man not engaged on any other kind of work.

The amendment to delete the words after "office" was carried by 51 to 42.

Dr. Broadbent (Manchester, North) proposed:

That if such an increase should be found financially practicable in the near future, it should take the form of appointing organizing secretaries, and should be confined to the Divisions or Branches or to head quarters.

That left it optional whether it should be one or the other, or both.

Dr. John Brown seconded.

Dr. Gosse (Isle of Thanet, Canterbury, and Faversham) asked whether the ordinary secretarial staff would not be included.

The Chairman replied in the affirmative, and said that it was very difficult to know what Mr. Broadbent's resolution intended. It looked as if it intended the appointment of distinct and independent officers.

Dr. Broadbent said there must either be a distinct Organizing Secretary at head quarters or one in the provinces. A good energetic man who would attract members to the different Divisions would be very useful in the North.

The amendment was lost.

After some further discussion,

Mr. Farrant Fry (Hastings) moved, and Dr. Gosse (Isle of Thanet) seconded, that the resolution be now put.

The resolution was accordingly put and carried *nem. con.*

Mr Ballance (Norwich) observed that the question of capitation grants had been referred to the Organization Committee. It was owing to the system of fixed capitation grants that at the present time such large sums were at the disposal of the Branches. Certain Branches were getting more money than was necessary for them to defray their own expenses and the expenses of the Divisions of which they were composed. The Organization Committee concurred in the motion of the Wandsworth Division that it is desirable that the question of the fixed capitation grants should be considered. The resolution of the Wandsworth Division was:

That in view of the greater activity and organization now apparent in various Divisions of the Association, the time has come for reconsideration of By-laws 16 and 17, whereby fixed capitation grants are made to the Branches and through them to the Divisions.

Mr. Wolstenholme (Salford) said that his Division did not think that this money ought to be either called up or diminished until such time as the Association as at present existing was wound up for the purpose of getting a Charter.

Some further discussion took place, during the course of which the Chairman said that the point at issue had nothing to do with the Charter nor the calling-in of surplus funds; it was whether the By-laws should be altered so as to do away with the fixed capitation grants of 4s. a head.

Sir Victor Horsley moved, and Dr. Esler (Lambeth) seconded, that the question be now put.

The recommendation was agreed to by 86 votes to 4.

Mr. Ballance said with reference to the next resolution of the Wandsworth Division that the Organization Committee recommended the Representative Meeting to adopt the following resolution:

That it is desirable that a limit be fixed to the accumulation of surplus funds in the hands of various Branches.

Mr. Straton (Salisbury) suggested that the limit should not be made too small, for matters might crop up rather suddenly, and money was sometimes wanted at once.

The Chairman said that Mr. Straton was not in order, as the limit was fixed by the next resolution. This resolution simply proposed the principle that surplus funds should be limited.

In reply to Mr. Elliot-Blake, the Chairman said that the motion was not retrospective.

Mr. Ballance said that the Organization Committee proposed to fix the limit as follows:

That the Treasurer of each Branch should refund to the Treasurer of the Association on March 15th of each year, such sum, if any, as may be in excess of half the amount of the previous year's capitation grant.

Lieutenant-Colonel Crawford (South India) asked whether the sum included the amount in the hands of the Division.

The Chairman said that the phrase "such sum" meant "such accumulation of funds." His ruling was that it included the sum in the hands of the Divisions.

Dr. Pope (Leicester) said that as the paragraph stood it meant that if a Branch had more than half what it got the previous year it must give the whole amount back. He did not think that that was the intention.

Mr. Ballance said that it meant that on March 15th it was not desirable that any Branch should have at its disposal more than half the amount of the previous year's capitation grant. The Branch would after that receive a grant for the year in addition to the sum it had retained, namely, half the previous capitation grant. If the Branch had anything over and above that, it was to be returned to the Treasurer of the Association.

Mr. C. R. Straton (Salisbury) said that last year an attempt was made to pass a law in Guernsey by which French practitioners were to be allowed to be admitted to the Guernsey Register without any reciprocity between France and themselves. English practitioners were not to practise at Granville, but French practitioners were to be allowed to practise in Guernsey. His constituency took steps on behalf of the Branch to oppose that, and they succeeded. But there was a charge of eleven guineas for counsel's fees which had to be paid, and that was met out of the Branch surplus. If there had been no surplus what had been done could not have been done. It was necessary that the Branch should have some surplus in hand to meet such emergencies.

Dr. St. Clair B. Shadwell (Walthamstow) thought it would simplify matters if the capitation grant was regulated by the amount in hand of each Branch instead of making the Branch return the money annually. The Association had agreed to the principle of a movable capitation grant and, therefore, it would be an easy matter to make a grant of a shilling a head instead of four shillings, so that the balance in the hands of the Branch should not be too large.

Dr. W. Douglas (Maidstone, etc.) asked whether, in a case like that brought forward by Mr. Straton, there was any other way of meeting the emergency.

Mr. Ballance said that there was no attempt to touch the present balance in the hands of the Branches. As regards any extra expenditure on an emergency, a supplementary grant could always be obtained from the Council if the Council thought that it was a justifiable expenditure

The Chairman said the following amendment had been proposed by Mr. Jackson and seconded by Dr. Cholmeley—

That the amount of money in the hands of the Branches should not exceed five shillings per member.

Mr. G. Jackson (Plymouth) said that he moved the amendment simply because it might meet the objection which had been raised as to the difficulty that might arise if there was no money in the hands of the Branch.

In answer to a question, the Chairman stated that the resolution would not affect the money at present in the hands of the Branches at all. It would not touch the accumulations already in the hands of the Branches.

After a short discussion, the Chairman said that the resolution would read as follows:

That the Treasurer of each Branch shall on the 15th March in each year account to the Treasurer of the Association for all expenditure in connexion with the Branch and Division expenses incurred up to that date, and shall refund to the Treasurer of the Association such sum, if any, as may remain in excess of half the amount of the capitation grant received by them the previous year over and above the amount in hand at the date when this resolution comes into force.

Mr. F. C. Larkin asked whether the Branch would be empowered to deal with the Divisions. The money, when once it passed out of the Branch Treasurer's hands, was no longer in his control. It passed into the hands of the Treasurer of the Division. Some regulation would have to be made whereby the Treasurer of the Division should refund to the Treasurer of the Branch.

The Chairman said that the Branch Council had entirely in its hands the dealings with the Divisions as far as finances went.

Dr. M. Russen Rhodes (Manchester South) said that as Treasurer of the Division he should strongly object to returning the funds which had been placed in his hands. He did not see how a Division would arrange its work if funds were returned. The only way continuous action in the Divisions or the Branches could be assured was by knowing exactly what funds were in hand. In Manchester a combination of the Divisions to work together had been formed. If the surplus had to be returned such work would suffer.

Mr. Broadbent (Manchester North) said that the real object of the proposal was to encourage the Divisions to spend their money.

Mr. Elliot-Blake (Chichester, etc.) hoped that the proposal would not be retrospective as regards funds that had been accumulated through thrift.

Mr. H. W. Armit (Hampstead) moved that the matter be referred back to the Organization Committee for further consideration.

Mr. Nash (East Norfolk and North Suffolk) seconded the motion.

Mr. Ballance (Norwich) said that he would accept the reference because he was sure that the question of the return of the Division money to the Branch was a very difficult one.

Mr. F. C. Larkin said that if a Branch had a surplus, it could, instead of paying it back to the central authority, make a larger grant to the Divisions. The matter must be somehow or other definitely arranged and put upon a business basis.

Mr. Ballance then brought forward the following report of the Organization Committee upon another resolution of the Wandsworth Division:

The Committee reports that it cannot concur in the principle of direct grants to Divisions which are not themselves Branches, except in the case of special supplementary grants as provided under the By-law (18) adopted on the recommendation of the Council by the Annual Representative Meeting, 1906.

This was agreed to.

Mr. Ballance then said that with regard to the next resolution of the Wandsworth Division the Organization Committee recommended:

That the principle of variable capitation grants be adopted.

Dr. M. Russen Rhodes (Manchester South) said that this proposal would lead to a great deal of jealousy.

Mr. R. H. Wolstenholme thought it would be much better to give a smaller capitation grant and increase it. With a variable grant there would be innumerable squabbles and disputes.

Dr. J. J. Macan (Croydon) said that the principle of varying the capitation according to the amount of work done had been recognized as the proper one to adopt, and he thought that it was the only sound principle. He very much doubted whether there would be any jealousy between different Divisions. If there was, it would only lead to a healthy competition and encourage them to do as good work as their neighbouring Divisions.

The recommendation of the Committee was agreed to.

Mr. Ballance then moved:

That the ordinary grant to each Branch for its expenses should not exceed 4s. a member per annum; the actual sum to be given to be decided by the Council.

The Committee considered whether it would be desirable to maintain a minimum capitation grant, and then increase it according to the requirements of the Branch; but found, considering all things, that it would be better not to have a minimum capitation grant, but to have a maximum capitation grant for ordinary expenditure. The amount required by different Branches varied very much.

The recommendation of the Committee was adopted.

The Chairman said the matter would have to come before the Representative Meeting again in the shape of by-laws. At present the meeting had only affirmed principles.

Mr. H. A. Ballance then read Subsection (*d*) of the Wandsworth Division's second motion, as follows:

That a basis for the necessary first instalment in each year to a Branch or Division could be arrived at by consideration of the average of expenses incurred during the past three years.

The Organization Committee recommended that the principle of the proposition be approved.

Mr. F. C. Larkin said the proposition was absolutely in opposition to the principles that almost all the speakers had laid down. He understood that what would guide the Council in making grants would be the work done in a particular Branch's Divisions. Now it was proposed to pay on an average of three years' expenditure without any inquiry at all. To put the Association's finances on a sound basis there ought to be a payment or grant made on the work done.

Dr. R. L. Langdon-Down (Richmond) inquired whether the matter did not only refer to the first instalment, and not to the grant for the whole year. The words in the Wandsworth resolution were, "That a basis for the necessary first instalment in each year" for Branches be arrived at in that way. Therefore it left it open for the work of the Branch to be considered subsequently.

The Chairman could not accept Dr. R. L. Langdon-Down's reading, having regard to the words of the Committee's recommendation.

Mr. H. A. Ballance said when the Organization Committee drafted the resolution it was thought the average of the last three years would depend upon the work done and would form certainly a good basis for the proposed grant, and he inquired whether the words "by consideration of the work done in the three previous years" would meet Mr. Larkin's objection.

Mr. F. C. Larkin agreed, and the motion as amended was then put and agreed to as follows:

The Committee recommends that the principle of the proposition be approved, namely, that a basis for a grant to a Branch should be arrived at by consideration of the average expenses and the work done in the three previous years.

Mr. H. A. Ballance then read the motion by the Bournemouth Division:

That the capitation grant to Branches should be absolutely at the disposal of the Branches and Divisions, and to be allocated to the Divisions as agreed on.

The report of the Committee was:

(*a*) That the opinions frequently expressed by the legal advisers of the Association show that such a proposal could not be given effect to under the existing Regulations of the Association; (*b*) that the expenditure of Branches must always be confined within the limits of the objects of the Association; and (*c*) that the proposal is inconsistent with the principle of variable capitation grants recommended by the Committee.

He moved the adoption of this report, and this was agreed to.

Mr. H. A. Ballance then moved:

That it be an instruction to the Council to prepare for the consideration of the Representative Meeting the alteration of the by-laws to give effect to these resolutions.

This was seconded by Dr. H. A. Latimer (Swansea) and agreed to.

Election of Chairman and Deputy Chairman.

Mr. H. W. Armit (Hampstead) said he had great pleasure in proposing that Dr. J. A. Macdonald be asked to act as Chairman for another year. [Loud applause.] Their applause, he said, was quite sufficient, and he did not propose to make any further remarks.

Dr. Latimer (Swansea) said that in the days of old, in the Roman arena, it was the custom for dying gladiators to say, "Morituri te salutant." He (the speaker) was, so far as that meeting was concerned, dying for a time; but it was one of the proudest moments in his life to second the resolution that Dr. Macdonald be re-elected. He had had the honour of proposing that resolution with regard to the previous occupant of the chair, Sir Victor Horsley, for whom he had the highest regard, and who had fulfilled the duties of that chair in a way which excited their admiration. Without fear of contradiction he might say that in Dr. Macdonald they had a very worthy successor to Sir Victor Horsley. He knew the election would be unanimous, and he had only to say again that it was with the very greatest pleasure that he seconded the proposition.

Mr. Armit was proceeding to put the motion to the meeting, when, amidst laughter, the Chairman reminded him that he was out of order. He then inquired whether there were any further nominations.

There being no reply, Mr. Armit put the motion, which was carried by acclamation.

The Chairman, addressing Mr. Armit, Dr. Latimer, and the meeting, assured them that he felt that he was in a very proud position. When he was first nominated for the deputy chairmanship, he thought the whole thing was a huge joke—he was quite honest when he said that. He really was astonished when one of his friends asked him to allow himself to be nominated as deputy chairman. He said, off-handedly, "Go on"; and he was very much more astonished when he found that he had been elected to that post. He was hardly so astonished as he was delighted; and he felt, when, last year, he was made successor to Sir Victor Horsley, that it was a very difficult thing to follow a Chairman of his (Sir Victor's) ability. But he took it that their selection of him now to fill the position for another year was a recognition that he had, at any rate, done his best. What he had tried to do was to hold the scales fairly and honestly between every man in the meeting, and to give every one a fair chance. If he had done that he had done the principal part of the duty of a chairman. To talk of the difficulty of ruling a meeting of that sort was nonsense, because there was no difficulty with a lot of gentlemen such as were before him, who came together to do work. The only difficulty was, sometimes in deciding as to a point of order; and that difficulty, he was afraid, to some extent arose, he was sorry to say, from carelessness of the members in not drafting resolutions sent up to him, and not sending them up in time to consider them before they were put to the meeting. He should like to ask the meeting in future to take a little more care about that; and then, he thought, the business might be conducted with a little more order, and with a saving of time, which at those meetings was of very great importance, because there was a tremendous amount of work to do, and it was important that every subject which came before them should be thoroughly considered. In conclusion, he thanked them for the honour they had done him. It had been a very hard year's work, but he hoped he would be able to survive another, even if it were as hard as that of the previous year. The next business was the election of Deputy Chairman. He was sorry to say that his friend Dr. Latimer had had to resign his connexion with the Association so long as he was a member of the General Medical Council, and therefore he was ineligible for that nomination.

Mr. E. H. T. Nash said he would like to propose the name of Mr. H. A. Ballance as Deputy Chairman. In doing so, he felt they were doing a great honour in a quiet way to a man who had done an enormous amount of work which few people outside the Representative Meeting knew of; he did not think he need say more than that. They all knew what Mr. Ballance had done, but it was not known outside; and he did not think they could find a more worthy man to fulfil the position of Deputy Chairman.

Dr. Cox seconded the proposition. No one was held in greater respect than Mr. H. A. Ballance, and it would be a compliment to them if he would accept the office.

The Chairman thought, from the loud applause, there would be no other nomination for the office; although, of course, it was open to any one to nominate another member.

There being no other nomination, he put the motion to the meeting:

That Mr. H. A. Ballance be elected Deputy Chairman,

and the motion was carried unanimously.

Mr. H. A. Ballance, replying, said if the Chairman thought it was a joke when he was nominated for the Deputy Chairmanship, he himself looked upon it as a very great risk to the Association to elect him (the speaker) Deputy Chairman, because he had had no experience in conducting a meeting at all. The matter had been sprung upon him just before the afternoon's session, and he looked upon it as a very grave responsibility. They had paid him a very great compliment indeed, and it was one he should have been very pleased to do without. But in the face of the way in which his name had been proposed, seconded and accepted, he must accede to their wishes, and he could only hope that during his term of office as Deputy Chairman, Dr. Macdonald would be always able to be in the chair and that he would not have to take his place at all.

Hospitals Committee.

Dr. Pope (Leicester) said the Committee had had a good many sittings during the year, and had had the conference with lay representatives. Some seemed to think the conference had not had much result, but that was not his own opinion. A large number of persons from all over the kingdom connected with hospitals had attended. They had most of them taken the trouble to read the resolutions proposed by the Hospitals Committee, and at that meeting not a word was said against any one of the twelve resolutions which were adopted. Since that meeting he had had coming in from all sources proofs that by-laws and resolutions had been put before the annual meetings of various hospitals in correspondence or in agreement with the general tenor of the Hospitals Committee's recommendations. He thought the work done was very good, and was gradually permeating. They could not expect to go very fast, because a large number of the hospital Boards had not had time thoroughly to appreciate it. It would be observed that the report of the Committee contained four specific questions submitted to the Divisions. A great many had answered, and replies were still coming in. The Hospitals Committee would welcome any expression of opinion from the Representative Meeting with regard to those specific questions or with regard to any of the other points mentioned in the report, and he would be glad to answer any questions. He would take the questions submitted to Divisions seriatim, and would move:

1. That compulsory payment by patients to hospitals other than cottage hospitals should cease.

Mr. R. H. Wolstenholme (Manchester, Salford) said that the question had arisen in his Division, "Can a medical man attending a cottage hospital charge his fee for an operation?"

Dr. Pope said it was certainly intended that payment should be made in respect of the cottage hospital, because it gave a patient shelter which would be impossible in his own house.

Mr. Nash said that, in his opinion, the definitions as to what was and what was not a cottage hospital should be very strict. In the North there were several largish hospitals worked by general practitioners who were determined not to have a house-surgeon. These were called cottage hospitals, but were in no sense cottage hospitals, there being in one case sixty beds, and in another forty-two. The practitioners were determined not to have an out-patient department, which would necessitate the appointment of a house-surgeon, and therefore they called them cottage hospitals.

Dr. Cox (Gateshead and Consett) observed that it was rather contrary to their usual custom to proceed to lay down a policy for the Association before they had got in the replies from the Divisions. He understood that the

replies of the Divisions had not been classified, and all had not come in. He thought it rather premature to proceed to lay down a policy. He would like to say that the work done by the Hospitals Committee was one of the best pieces of work done by the Association. That the Committee should have won the interest and sympathy of prominent laymen was an excellent step, because it showed that they had been convinced that the requests of the profession were reasonable. Many laymen had been interested in this new crusade against hospital abuse, and the Committee had done a marvellous thing in convincing them that it was against the public interest that hospital abuse should go on. There were some men, he knew, whose secret ambition was to show that they were having more patients in the hospital every year. He wished to compliment the Hospitals Committee and Dr. Pope very much upon the very useful step they had taken in commencing a campaign against hospital abuse based upon knowledge of facts, and had enlisted the support of the men without whose aid they could do nothing.

The Chairman said he quite understood Dr. Cox's position about this matter which had been under the consideration of the Association for something like five years off and on. This was a continued minute from last year. This matter was sent to the Divisions some time in March, and if they had not in the meantime instructed their Representatives as to the action they were to take with regard to the matter he took it that was due to slackness on the part of the Divisions. This was an urgent matter and one upon which the opinion of the meeting was hardly wanted at all, but Dr. Pope had asked him to explain the position with regard to it, and he thought it would strengthen the hands of the Hospitals Committee if they had a pronouncement from this Representative Meeting.

Dr. Pope called attention to paragraph 7 on page 107 wherein the Divisions had been distinctly asked to instruct their Representatives with a view to a definite pronouncement by their Representatives at this Representative Meeting.

Dr. A. Trotter (Perth) observed that the general opinion of the meeting seemed to be strongly that compulsory payments should not be made by patients to hospitals, but in his opinion hospitals ought to have power to ask for compulsory payments. In Scotland it was found that in the local hospitals there was a considerable amount of abuse, and the Committee of his hospital passed a resolution to the effect that the Committee should have power in exceptional circumstances to charge those patients who were found to be financially able to pay a certain sum per week. That, he thought, had had a great effect in checking hospital abuse, and he therefore suggested that the words "except under special circumstances" should be added to the resolution.

Dr. F. J. Baildon (Southport) said that there was one matter which had been under consideration by the Hospital Committee at Southport—namely, the effect that the new Act would have on insurance companies in respect of medical attendance in cases of accident. Most people would insure their servants with the insurance companies, and also provide for payment by the insurance companies of medical expenses up to a certain amount. In Southport the Committee had so altered the by-laws of the hospital that it would be in a position to claim a reasonable amount for the working expenses of the patient.

Dr. H. A. Latimer (Swansea) regarded this matter as one of the most important in the controversy concerning hospital administration. It was a fact that there was at present a great feeling of socialism, a great feeling on the part of many that the hospitals should be open to everybody, and the hospital authorities, on the other hand, had to drive it home to them that there were two kinds of people they as a profession had to deal with—people who were coming for true charity, and those people who were capable of paying medical men for their attendance. The only way in which the desired end could be attained was to say that the only people who were really worthy of charity should be admitted to the hospital, and if they were worthy of charity it was not a right thing that they should be charged anything at all. They had the other day in Swansea a large meeting of the governors of the hospital in order to consider this question of hospital abuse, and they were faced by the fact that a solid body of workmen came and declared that they would not allow any investigations to take place into their circumstances, and showed as clearly as possible that they regarded the payments which they made to the hospital as entitling them to admission and treatment free. It was therefore more than ever driven home to his mind that the whole question at the base of this matter was charity or non-charity. That was the point that would have to be fought, and he considered that cottage hospitals should be the only exception in the matter of payment, for where the principle of payment was conceded at all, and it was made compulsory, they were giving to the working men the conviction that they were paying for what they were getting, whereas they were not paying for it at a rate in any way commensurate.

Dr. A. Walker (Edinburgh) asked if this regulation referred to hospitals for tuberculous diseases as well as to others?

Mr. Fullerton (Belfast) said he had been on the staff of a large hospital in Belfast, and the way patients were admitted to that hospital was, in his opinion, simply scandalous. They paid 7s., 14s., or 25s. a week. These people were not poor, but well-to do artisans, and when inquiry was made into their financial position it was found that the family had as much as £5, £10, or £15 coming in weekly. The staff were obliged to treat these people without fee or reward, although the total income of the family might actually be more than the medical staff were able to gather individually from the rest of the community. He had taken some little trouble in trying to get this state of matters rectified, and he had asked some of these people questions. He had asked them if they thought they were objects of charity, and they told him that they paid a penny a week, or whatever it was, and, having done that, they thought they were entitled to the services of the hospital. It was also told to the Committee, *in camera*, by a number of working men belonging to the Working Men's Committee that people who were subscribers were not to be interrogated, because the hospital had made a compact with them that if they paid a penny a week they were entitled, without any question, to be treated. He objected to this, whatever the consequences would be. They had now succeeded in getting a joint committee of the staff and of the Board of Management appointed to inquire into this crying abuse. It would be a very good thing for him to have the support of the opinions of the members of the Representative Meeting, so that he could put them before this joint committee, and in that way strengthen the hands of those who, although on the staff of the hospital, were doing their best for the general practitioner.

Mr. Horrocks (Bradford) corroborated what the last speaker had said. It was very difficult indeed to impress upon working men that a penny a week was not a payment for hospital treatment. However much that was instilled into them, they still kept that impression. It was also a forced payment, because the overseers collected the money in the mills, and the man who stood out and refused to contribute was forced to contribute, so it came very near to a forced contribution to the hospital. There was a very good committee in his own town, and they took care to insist on the fact that a penny was a charitable contribution and not a payment for hospital treatment.

Dr. D. J. Mackintosh (Glasgow), speaking in support of the resolution, said that in his opinion compulsory payment should not be recognized in hospital work. The first point to be decided from the medical point of view was, Was the patient suitable from the point of view of administration of the hospital? and secondly, from the social point of view was he a suitable object for a charitable institution? If a patient was suitable, there was no doubt that he should come in. If he was unsuitable from a social point of view, he thought he should not be retained. The subscription of the working classes should be encouraged, but they should not regard hospital treatment as a right.

Mr. Muir (Glasgow Eastern): They do in Glasgow.

Dr. Mackintosh said if they did there could be no difficulty in dealing with them; they had no right; the hospitals were subscribed to for poor people who were unable to pay; but they had no prescriptive right to medical treatment. When this was pointed out to them they were amenable and saw the reasonableness of it.

The resolution was adopted.

At 6.40 p.m. the meeting adjourned till Monday.

MONDAY, July 29th.

Dr. J. A. Macdonald in the Chair.

Confirmation of Minutes.

The minutes of the meeting on Saturday were read, and, amendments being made therein, confirmed.

Nominations for Committees.

The Chairman drew attention to the fact that Dr. McManus and Dr. Latimer were not eligible for election to Committees because both were members of the General Medical Council; and, by the decision on Saturday with regard to the Ethical Committee, those two members retired. He added that Dr. Oldham was not eligible, he not having attended Committee meetings during the past year.

Hospitals Committee.

The consideration of the report of the Hospitals Committee was resumed, and the meeting affirmed the following additional principles:

2. That the production of subscribers' letters should cease to be compulsory.
3. That inquiry into a patient's circumstances should invariably take place.

With regard to the fourth principle—

That a certificate should be required from the medical attendants of all persons attending out-patient departments—

as considerable difference of opinion existed, it was agreed to refer it back to the Committee.

On consideration of the Appendix* containing "proposals as to the administration and management of hospitals and kindred institutions," the Chairman asked for suggestions from the meeting. A number of suggestions were made, and it was agreed that the consideration of the entire matter should be referred back to the Committee, together with the suggestions.

In regard to the suggestion that inability to pay for adequate treatment shall be the consideration for admission of all patients to hospital treatment, Dr. Bushnell (Brighton) said that his Division wished the omission of the word "adequate," because they thought that word tended to complicate matters. With reference to the suggestion as to cases of serious accident and severe sudden illness, his Division also suggested the omission of the words "serious" and "severe," and of the paragraph which dealt with trivial cases.

The Chairman said he took it these were only suggestions for the Hospitals Committee, and that the meeting could not deal with them.

In regard to the paragraph as to "reference elsewhere of unsuitable cases," Dr. Bushnell said his Division thought it would be difficult to find an almoner, and his Division suggested that the clause should read: "That all cases unsuitable for hospital treatment shall be referred in general terms to a medical practitioner, to a public medical service, an approved provident dispensary, or to the relieving officer under the Poor Law." His Division also suggested that the paragraph as to the notices to facilitate co-operation should be omitted. He moved that these suggestions of the Brighton Division be referred to the Committee.

Mr. Wolstenholme (Manchester, Salford) supported the suggestion of the Brighton Division as to the "reference elsewhere of unsuitable cases." His own Division wished the suggestion to be altered to read "that all cases shall be referred elsewhere" without mentioning either the private practitioner or a public medical service. Further, his Division did not approve of the proposed co-ordination between the various public services and general practitioners.

Dr. Milner Moore (Coventry) said that his Division desired the appointment of almoners.

Mr. Armit (Hampstead) said his Division thought that the paragraph as to co-ordination should read: "That there should be co-operation and co-ordination between the hospitals themselves, especially those which operate in the same area."

Dr. Grossmann (Liverpool Western) said his Division thought that the paragraph as to the "limitation of the work of medical officers" ought to be more definite; and with regard to the "reference of cases for special advice," that the consultation should be personal.

Dr. Ewart (Westminster) thought these were reasonable suggestions.

Mr. Muir (Glasgow Eastern), dealing with the paragraph on the "relation of hospitals to the Poor-law Medical Service," thought it was not practicable to carry the suggestion into effect in cities. It might be done in smaller towns, but in the city of Glasgow it would be utterly impossible.

With regard to the paragraph which stated that inability to pay for adequate treatment should be the consideration for the admission of all patients for hospital treatment, and that this should not apply to Poor-law cases, Dr. Laffan (Carlow, Kilkenny, and Waterford) said that if a person was able to pay he ought not to be admitted to a Poor-law hospital. In his part of Ireland well-to-do people made their way every other day into the Poor-law hospitals.

Mr. F. C. Larkin hoped that the Hospitals Committee would not take seriously into consideration the idea of dropping the word "adequate." With regard to the definition of a cottage hospital the Committee did not quite say what a cottage hospital was, and he should like that point to be made clear.

Dr. Walter Smith (St. Pancras and Islington) said that a large number of people went into Poor-law infirmaries who had no right there.

Dr. A. G. Gullan (Liverpool Central) wished to support very strongly what Mr. Wolstenholme had said, and he hoped the Committee would take that point into account very seriously. As regards the paragraph dealing with pay wards he was afraid that the suggestions were rather too narrow.

Mr. Nash (East Norfolk and North Suffolk) said he believed that quite recently some of the friendly societies had passed resolutions saying that they would not allow any inquiry into the means of their members when they were applying for admission to hospitals. If the hospitals lost the working men's contributions they would also lose a large number of patients, and the hospitals' expenses would correspondingly decrease, but he did not think that the efficiency of the hospitals would be in any way diminished.

Dr. E. T. Davies (Liverpool Northern) said that in a large general hospital in which there were pay wards, any person going into those wards and paying 3 guineas a week got everything he required excepting medical services; but he maintained that nobody who could pay 3 guineas a week should be allowed to go into any public hospital at all.

Mr. Ballance (Norwich) said that in a hospital with which he had been connected a lady almoner had been working since the beginning of the year, and had been a very great success. The most energetic member of the Board of Management in the appointment of this almoner and in the direction of her duties had been a working men's representative. He believed that if they could get on the Boards of Management of hospitals one or two working men's representatives there would be very little or no difficulty in the appointment of an almoner. In connexion with University College Hospital the appointment of an almoner had been of the greatest possible service.

The Chairman said that he was afraid that he must plead guilty to a mistake in ruling, because he saw in the report the following: "The Hospitals Committee considers, however, that independent action by the British Medical Association through the Divisions will also be necessary, and in preparation for this now requests the Divisions to consider and favour the Hospitals Committee with their opinions upon the proposals contained in the appended document, and to instruct their Representatives with a view to definite pronouncements by the Representative Meeting." He saw that the meeting was asked to give a pronouncement upon the matter.

Dr. Pope (Chairman of the Committee) moved that the whole matter be referred back with the suggestions that had come from the meeting.

Mr. Armit (Hampstead) seconded the motion.

Mr. Ballance (Norwich) said that he supposed that it would be taken that the suggestions had come from individuals and not from the Representative Meeting.

The Chairman said that that would be so.

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*Supplement to the British Medical Journal, April 13th, 1907, p. 190.

The motion was carried.

Mr. Elliot-Blake (Chichester, etc.) moved:

That a *précis* of the report of each annual Hospital Conference, with comments thereon by the Hospitals Committee, be prepared and sent for discussion to the Divisions.

Dr. J. F. Garner (Preston) seconded the motion.

Dr. Pope accepted the suggestion, and it was then agreed to.

League of Mercy.

Mr. Kinsey proposed and Mr. R. C. Straton (Salisbury) seconded:

That the Hospitals Committee be instructed to consider the operations of the League of Mercy.

This was carried.

Vaccination by General Practitioners.

Dr. F. C. Martley (Dublin), in the absence of the Chairman of the Public Health Committee, moved the adoption of the following report:

Special Report by the Public Health Committee on Resolutions of the Annual Representative Meeting at Oxford, 1904, and Westminster, 1906.

The Public Health Committee has considered the following resolution of the Annual Representative Meeting of 1906:

That every registered medical practitioner should have the privileges of a Public Vaccinator.

The Committee, as responsible for advising the Council upon action to be taken on behalf of the Association in the matter of vaccination, experiences difficulty in respect of this resolution, inasmuch as it appears to the Committee to conflict with the previous carefully considered and formal declarations of the policy of the Association as regards vaccination, which have not been rescinded.

In order that the policy of the Association in this matter may be clearly defined, and the action of the executive thereby facilitated, it appears to the Committee advisable to submit for the consideration of the Divisions and the Representative Meeting a memorandum to elucidate the points at issue.

The question of the policy of the British Medical Association, with respect to vaccination, was one of the first questions which presented itself for consideration by the Council, after the adoption of the new constitution, as vaccination legislation was understood then to be contemplated by the Government. Six proposals were formulated by the Medico-Political and Public Health Committees, jointly, and approved by the Council in January, 1903, as a basis for action that might be required in emergency before the Representative Meeting could consider the matter.

The Representative Meeting at Swansea referred these proposals for consideration by the Divisions, and they were accordingly duly submitted, the replies of the Divisions were collected, a report upon them was laid before the Representative Meeting at Oxford in 1904, and that meeting definitely approved the six proposals in question. Among these were the following:

That in future vaccination legislation no certificate of successful vaccination should be accepted unless it contain a statement as to the number and area of the vesicles produced:

That all lymph should be supplied by the Government or by private establishments under Government supervision and guarantee:

That every private practitioner furnishing the vaccination authority with certificates of successful and efficient vaccination, satisfying a standard fixed by the Local Government Board, should receive a suitable fee for each such certificate.

The action taken by the Public Health Committee and Central Council has since that date been guided by this declaration of policy, the effect of which will be seen to be that the private practitioner would, in vaccinating his own private patients, be placed in the position of the public vaccinator as regards being supplied with Government lymph, and as regards being required to vaccinate in accordance with the standard for the time being laid down by the Local Government Board, in consideration of which he would receive a fee from the State for his certificate, while being paid by his own patient for the performance of the operation. The resolution of the Representative Meeting adopted in 1906 would, on the contrary, have the effect that all patients would be vaccinated at the expense of the State, each medical practitioner employed by a patient being in the position of a public officer for the purpose.

The difficulties which have in the past appeared to the Public Health Committee to militate against such a proposal and have prevented the Committee from putting it forward are, stated shortly, first, the difficulty of providing for the systematic vaccination of all who may require it, seeing that a large proportion of the population have not any recognized ordinary medical attendant, and secondly, the great expense of Government inspection of vaccination performed under such conditions.

The principal objection which has been urged against the present system of appointment of public vaccinators—namely, the alleged undue interference with the patients of other practitioners—has been shown by experience to be obviated by those practitioners who so organize their practice that the fixing of a date for the vaccination of the infants of their patients within the first four months is systematically arranged and no necessity for the intervention of the public vaccinator arises.

Dr. Arthur Drury (Halifax and Huddersfield) said that at the Representative Meeting last year he spoke on the resolution, and strongly urged the opinion which the Committee had expressed in their report; therefore he was pleased now to support the report of the Committee. But since then a new Order had come into existence, and he very much questioned whether any members of the medical profession in that room or outside would desire that last year's resolution should be perpetuated this year, for the simple reason that he did not see how any of them could possibly crave for the privileges of a public vaccinator. One of those privileges was that half a crown was proposed to be paid for three or three and a half visits; and, in addition, facts showed that there had been a great loss of practice to public vaccinators. In the last paragraph of the report the objections to the system of public vaccinators were very tersely put. It was clear that the objection to the system of domiciliary vaccination was not one which called for any alteration of that section of the report. He did not think that it was practicable to lay down specifically the area of the vesicles. It was different with regard to a statement of the number of the vesicles; and he should not be surprised to see that put into a new Vaccination Order.

The Chairman said that the three resolutions to which Dr. Drury was referring were passed at Oxford in 1904; and the point at issue was, whether the resolution passed at the Caxton Hall in 1906 clashed with them. He thought that if Dr. Martley would move a specific resolution, it would clear the air.

Dr. Martley said that his Committee felt that the resolution of 1906—that every registered medical practitioner should have the privilege of a public vaccinator—conflicted with what had been passed at Oxford. He did not himself know which to prefer, so to clear the air he would move that the resolution of the Annual Representative Meeting of 1906 be rescinded, and that the policy adopted at Oxford be adhered to.

Mr. George Jackson seconded, and remarked that he thought this course only fair. He was a public vaccinator himself, and in a sense was speaking against himself. It did not follow that the public vaccinator would get more than 2s. 6d., and when the matter was done independently of the public vaccinator, the fee varied from 3s. 6d. to 5s. In fairness they should take both sides of the question.

Sir Victor Horsley, on a point of order, said that if a member moved to rescind a motion of such importance, the motion should be on the agenda paper. He did not think this really arose on the report of the Committee. What the Committee said was this: "It appears to the Committee advisable to submit for the consideration of the Divisions and Representative Meeting a memorandum," and he would suggest that all the meeting had to do was to approve or disapprove that memorandum. He did not believe it to be advisable to approve; he did not believe that it would have a good effect on the public, nor, above all, on the Government departments if the meeting passed resolutions one year

and rescinded them without due notice another year. The original resolution was passed after debate and due consideration, and therefore he thought that any motion for rescinding that resolution ought to appear upon the agenda. All that was necessary was to approve or disapprove of the memorandum.

Mr. Wolstenholme (Manchester, Salford) pointed out that it was merely a matter of definition as to what was meant by privileges. The feeling of the previous meeting was that to be a general practitioner and not a public vaccinator was to incur certain disabilities. In the first place, the general practitioner did not get a free supply of Government lymph; and, secondly, he did not get paid from a Government source for all successful vaccinations. Many of the matters Dr. Drury had referred to were not privileges but duties.

Mr. Armit asked the Chairman to give a ruling on Sir Victor Horsley's point of order.

The Chairman ruled that the motion to rescind was in order.

Dr. Cox (Gateshead and Consett) said that his Division considered the objection on the ground of the great expense of Government inspection of vaccination was made under a misunderstanding. His Division thought the expense would not be much more than it was at present. Under the present system the inspector selected a few cases to inspect. He ventured to submit that he need do no more if every medical man's certificate were accepted by the Government, and the expense would not be much greater. He would move, therefore, that the meeting disagrees with the statement on the ground that the expense of inspection need not necessarily be greater.

Mr. Wolstenholme (Manchester, Salford) moved to delete the clause, but the Chairman said he could not accept that.

Mr. Broadbent (Manchester North) seconded the resolution, and also wished to point out that the feeling was very strong in Lancashire that every practitioner should be a public vaccinator. It was felt that that would remove a very great deal of friction. He had, therefore, great pleasure in supporting this, and also the suggestion which was carried in London.

Mr. Nash (East Norfolk and North Suffolk) said he was one of the Committee that had had this under consideration, and all the members had come to the conclusion that there must be increased expense of inspection. Under the present system the inspector took perhaps a dozen of the public vaccinator's cases, so that he had a fair scattering of samples of the man's practice. If he was only to take the same number of cases in a town where perhaps instead of one public vaccinator there would be thirty practitioners, how was he to take a fair sample of each man's practice, unless he trebled the ground of inspection? That was one of the difficulties which had to be met in considering the suggestion that every medical man should be a public vaccinator.

In reply to Dr. J. D. Hillis (East Leinster) the Chairman said that a motion to rescind a resolution was in order even though notice had not been given of it, and added that he wanted to clear up Dr. Martley's position. If the Chairman of the Committee had been present the meeting would have been able to get more definitely and clearly what the opinion of the Committee was on the matter. The Committee wanted guidance from the meeting. In the report it was asserted that the resolutions of 1904 and 1906 were in conflict.

Dr. M. Russen Rhodes (Manchester South) opposed the proposal to rescind the resolution. The meeting would appear to be vacillating if it passed a resolution one year and rescinded it the next. The question was one of principle, and not of advantages or disadvantages.

Mr. Percy Rose (Stratford) could not see that the two resolutions were contradictory.

The motion that the resolution of 1906 should be rescinded was put to the meeting and lost.

Dr. Alfred Cox (Gateshead and Consett) moved, and Mr. G. H. Broadbent (Manchester North) seconded a motion to the effect that the meeting disagreed with the statement relating to the expense of inspection.

Sir Victor Horsley (Marylebone) said that this extremely important business should not be disposed of by a report such as the meeting had before it. Many questions were really involved. For instance, the Representative Meeting referred to had instructed the central officials to go to the Local Government Board on the important question of the provision of Government lymph to every practitioner. He was one of the deputation to the Board for that purpose. He need hardly say that they got no further; but at any rate they did their duty in endeavouring to carry out their instruction. This was really one of the points included in the report, though it was so buried in it that he defied anybody who was not acquainted with the previous history of the subject to discover it. He would suggest to Dr. Martley, considering the importance of the subject, that the most politic thing to do in regard to the question was to take back his report. He would ask him to receive it back for further consideration of the whole subject by his Committee.

Mr. Nash seconded the proposal of Sir Victor Horsley.

Dr. Martley (Dublin) said that he was perfectly willing to accept the suggestion.

The proposal was carried.

Special Finance Inquiry Committee.

The Chairman at this point vacated the chair, on the ground that as he was the Chairman of the Special Finance Inquiry Committee it would be more convenient that he should not occupy the chair of that meeting while in charge of the report of the Committee. The chair was taken by Dr. H. A. Latimer, Deputy Chairman.

The meeting then proceeded to the consideration of the report, together with its conclusions and recommendations. The report, after the amendments adopted by the Representative Meeting have been embodied in it, will be published, and the publication of the report of the discussion is postponed, so that it may appear along with the report itself.

TUESDAY, July 30th.

Dr. J. A. Macdonald in the Chair.

Confirmation of Minutes.

The minutes of the previous day having been signed as correct,

Special Finance Inquiry Committee.

The meeting proceeded to allocate the resolutions it had adopted on the report of this Committee to the Council and the Divisions respectively. The report of these proceedings will be published subsequently.

Medico-Political Committee.

The annual report of the Medico-Political Committee was received as follows:

The Medico-Political Committee, in reporting to the Annual Representative Meeting of 1907 upon the results of its deliberations and action taken during the year, pursuant to instructions of the Annual Representative Meeting at London, or instructions of the Council, or with respect to matters which have been brought to the notice of the Committee, presents, as in former years, in tabular form, a succinct account of the matters dealt with, as follows:

Subject.	Origin.	Action taken and Result.
1. Contract Practice—		
a. Recommendations as to (i) Contract Practice, (ii) Public Medical Services, (iii) Provident Dispensaries	Resolutions that Recommendations as amended be approved and circulated to Divisions	Recommendations circulated to Divisions accordingly
b. Disputes in various districts	Usually applications for assistance	Action taken as stated in report
c. Central Emergency Fund	Instructions of Council confirmed by Representative Meeting, 1906	Action taken to obtain subscriptions; contributions made to South Wales Branch for Ebbw Vale dispute
d. Present working of Truck Act and suggestions for amendment	Communication from Branch	Departmental Committee communicated with and evidence tendered; information collected; statement of evidence drafted

Subject.	Origin.	Action taken and Result.
e. Employment of Steamship Surgeons	Communication from former Ship Surgeon	Enquiries made
2. Relation of Medical Men to Friendly Societies' Sanatoria	Communications from Members	Investigation proceeding
3. Certifying Factory Surgeons	Communication from Factory Surgeons' Association	Conference and promise of support; negotiations with Home Secretary pending
4. Postal Medical Officers	Request from Postal Medical Officers' Association for support as regards new order affecting termination of appointments	Postal Medical Officers' Association supported; action taken in individual cases; concessions from Postmaster-General; action being continued and general conditions of service investigated
5. Medical examination for Life Insurance	Resolution renewing instruction to ascertain proportion between work of Medical Examiner and fees offered, and to refer whole questions to Divisions for their opinion	Information collected from Insurance Companies preparatory to reference to Divisions
6. Medical examination of Seamen; employment of practitioners by Shipping Federation	Communications from North of England Branch, and Salford Division	Correspondence with the Shipping Federation; enquiries proceeding
7. Fees to Medical Witnesses and fees in Police Emergency cases	Instruction to continue action	Memorial forwarded to Home Secretary
8. Action with respect to Parliamentary Elections	Instructions to Medico-Political Committee	Parliamentary questions re-drafted; arrangements made for action in by-elections
9. Medical and Dentists Acts Consolidation Bill	Approval of Report and Instruction to prepare Consolidation instead of Amendment Bill	Bill re-drafted accordingly as Consolidation Bill
10. Prohibition of Medical practice by Companies Bill	Introduction of Bill	Conference with various bodies held; communication with General Medical Council
11. Notification of Births Bill	Introduction of Bill	Bill blocked; Members of Parliament circularised through Divisions
12. State Registration of Nurses	Resolutions of Representative Meeting approving action and ordering continuance	Copies of resolutions forwarded to Chairman of Select Committee and Introducer of Bill
13. King Edward's Hospital Fund Bill	Introduction of Bill for statutory incorporation	Enquiries in co-operation with Hospitals Committee; representations to Prince of Wales; communication with Dr. Rutherford, M.P., and with other Members of Parliament seeking amendment of Bill
14. Midwives Act— *a.* Amendment of Act	Instructions to continue action	Memorial prepared for submission to Privy Council as to Midwives Act
b. Rules under Act	Instructions to continue action	Communications with the Midwives Board as to Rules
15.— *a.* Medical Inspection of School Children	Instruction to continue action, after reference to Divisions	Schemes submitted to Divisions, in preparation for action
b. Sending of School Children to Hospitals	Instruction to enquire	Enquiries made of Divisions
16. Workmen's Compensation Act	Instruction to continue action	Progress of Bill watched: amendment proposing extension of schedule of diseases supported; recommendations made at request of Home Office as to regulations under Act affecting conditions of employment of referees and other practitioners
17. Vaccination .	Approval of Report on Vaccination expenses; instructions as to policy concerning position of private practitioners, supply of Government lymph, re-vaccination and instruction in vaccination	Instructions as to policy noted; action taken with regard to Local Government Order reducing vaccination fees; report submitted by Public Health Committee as to position of private practitioners
18. Lunacy and Inebriates Law	Approval of Report and Instructions to continue action	Evidence given before Royal Commission
19. Vivisection ..	Instruction to continue action	Action taken through Science Committee
20. Income Tax ..	Instruction to continue action	Correspondence with Select Committee of House of Commons
21. Sight-Testing Opticians Bill	Instruction to continue action	Subject watched; no action needed
22. Application by Association of Medical Herbalists for Royal Charter	Communication from Medical Defence Union	Grant of Charter successfully opposed

The Committee presents the following more detailed statement as to their deliberations and the action they have taken upon each of the matters contained in the foregoing table, as follows :—

(1) CONTRACT PRACTICE.

(a) *Circulation of Recommendations to Divisions.*

The Recommendations as to Contract Practice generally, as to Provident Dispensaries and as to Public Medical Services were circulated to the Divisions as directed by the Meeting, and several Divisions have reported having taken action to give effect to the principles therein contained.

Copies of the Recommendations have been supplied to several Divisions at their request for circulation to all practitioners in their respective areas.

(b) *Action in Disputes.*

The Committee has acted in accordance with the principles approved by the Representative Meeting in support of medical practitioners in the following districts, the nature of the appointments in question being stated in each case :—

1.	Ammanford	Colliery appointments.
2.	Barrow-in-Furness ...	National Deposit Friendly Society.
3.	Bradford	Police Surgeons.
4.	Brixton	Free Dispensary.
5.	Chirk	Colliery appointment.
6.	Colne Valley... ...	Friendly Society.
7.	Coventry	Provident Dispensary.
8.	Ebbw Vale	Colliery and Steel Works.
9.	Godalming	Local Medical Aid Society.
10.	Gower (Glam.) ...	Friendly Society.
11.	Helensburgh... ...	Friendly Society.
12.	Ilford	Local Medical Aid Society.
13.	Luton...	Friendly Societies' Institute.
14.	Manchester and Salford.	Provident Dispensaries.
15.	Norwich	Friendly Societies' Institute.
16.	Petworth	Friendly Society.
17.	Rhymney Valley ...	Collieries and Local Medical Aid Society.
18.	Sheffield	Great Central Railway appointments.
19.	Stockport	Great Central Railway appointments.
20.	Tottenham	Post Office appointment.
21	Upper and Lower Gornal.	Friendly Societies.
22.	Worcester	Amalgamated Friendly Societies.

Action has also been taken, under the immediate supervision of the Public Health Committee, in the following cases, which are conveniently stated here for the information of the Representative Meeting :—

1.	Coventry	Medical Officer of Health.
2.	Glenshiel, &c.	Poor Law Medical Officer.
3.	Halifax	" " "
4.	Ibstock	" " "
5.	Ilkeston	Lady Health Officer.
6.	Keighley	Public Vaccinator.
7.	Lutterworth	Poor Law Medical Officer.
8.	Market Harborough ...	" " "
9.	Mickleton	" " "
10.	Wimborne...	" " "

The amount of assistance required has varied greatly. In some instances advice or information only has been needed, and in some simply the insertion of the usual warning notice in the Journal, and the ordinary action taken pursuant thereto. Some cases have required very careful consideration by the Committees concerned, and in a few instances it has been necessary to instruct the Medical Secretary to visit the district.

In the matter of the Great Central Railway, the Stockport Division has, on its own initiative, collected information, and communicated with other Divisions with a view to joint action.

In several of these cases the intervention of the Association has resulted in obtaining better terms than would otherwise have been procurable. In some instances the issue is still in doubt.

(c) *Central Emergency Fund.*

The Central Emergency Fund, on which the Association must rely in some cases for giving the necessary material support to individuals, has not yet received the general support either from the Association or from the profession as a whole, which the Committee hopes it may receive. As the nature and objects of the Fund, however, have become more widely known during the last few months, contributions have increased. A statement of the present position of the Fund will be laid before the Representatives.

(d) *Truck Act.*

At the instance of a Branch of the Association, an offer was made and accepted, for the Association to give evidence before the Departmental Committee of the Home Office on the Truck Act, under which much contract work is carried on in some industrial districts. The Council made a grant in aid of such inquiry into the matter, and valuable information has been collected which will be placed before the Committee when evidence is given, a date for which has not yet been fixed. A copy is appended to this Report of the provisional Memorandum of the evidence to be given.

(e) *Employment of Ships' Surgeons.*

Information received from a Ship's Surgeon, who complained that he had been called upon when on the high seas to perform duties, as regards vaccination, greatly in excess of those for which he had been engaged, led the Committee to inquire into the conditions of service of medical officers of passenger vessels, particularly those trading with South America. As the result of communications with the Company specially concerned, compensation was given to the individual officer who raised the question, and assurances satisfactory to the Committee were given as regards future conditions of employment.

(2) Sanatoria for Workers Suffering from Tuberculosis.

(Established by a Society representing Friendly Societies, Trades Unions, and similar bodies.)

Enquiries received from Members of the Association in Carlisle, Leicester, and Tunbridge Wells, brought to the notice of the Association the efforts that were being made by a body designated the National Association for the Establishment and Maintenance of Sanatoria for Workers suffering from Tuberculosis, to obtain the gratuitous services of medical practitioners as referees for the examination of patients whose admission to the Sanatoria established by that body should be under consideration. The Members in question considered that this organisation was established on provident principles and that medical practitioners who worked for them should be paid for such work.

The question was also raised as to whether this was a matter in which the appointment of medical referees in different districts was the most satisfactory system.

The question having been referred to the Hospitals and Medico-Political Committees, it was decided to investigate the circumstances and a paragraph was inserted in the British Medical Journal advising medical practitioners to suspend decision as to acting as referees in this matter until the enquiries of the Association were completed. The National Association for the Establishment of Sanatoria applied to the Association to receive a deputation, and it was referred to the Contract Practice Sub-Committee of the Medico-Political Committee, with representatives appointed by the Hospitals Committee, to receive such deputation and report.

The deputation was received on July 10th, and gave information to the effect that the Association in question was an independent organisation, formed, however, as the result of a conference of delegates of Friendly Societies, Trades Unions, and similar bodies ; that the Sanatoria were to be maintained by contributions from such bodies who were expected to maintain beds for the patients whom they sent ; that it was considered that the Association could not at present afford to pay medical fees (except those of the resident medical staff), but the ultimate payment of fees was contemplated ; and that medical practitioners in many parts of the country had already consented to act as referees, particularly those who already act as local referees for the Mount Vernon Hospital at Ventnor.

The reception of the deputation having taken place so recently, there has not been an opportunity for the Hospitals and Medico-Political Committees to consider the Report of the Joint Sub-Committee.

(3) Fees of Certifying Factory Surgeons.

Action has been taken by the Committee in support of the effort of the Association of Certifying Factory Surgeons to obtain adequate remuneration for examinations made by them, namely, a fee of 1*s.* for examinations at their surgeries instead of the 6*d.* at present paid ; and, for examinations a factories, a minimum fee of 2*s.* 6*d.*, to cover examination of

not more than two cases, with an additional 1*s.* for each extra case examined.

The Home Secretary has been requested to receive a deputation with regard to the subject. He has intimated (May, 1907) that although he is unable to receive such a deputation at present, he does not intend to lose sight of the matter.

(4) Position of Postal Medical Officers.

Arising out of new rules laid down by the Postmaster-General, as to the age limit for the retirement of Postal Medical Officers, the Committee has supported action taken by Divisions in vindication of the rights of Postal Medical Officers serving under existing contracts.

The Committee has acted in co-operation with the Postal Medical Officers' Association in connection with the matter, and an investigation of the whole subject of terms of employment of Postal Medical Officers has been undertaken.

The action of the Postal Medical Officers' Association, supported by the British Medical Association, has resulted in the promise of important concessions by the Postmaster-General, among these being that in the case of any existing officer whose age may be above the age limit recently laid down, and of whose efficiency there is definite evidence, the Order will not at present be enforced. Accordingly, the case of one officer dismissed has been brought to the notice of the Postmaster-General by the Postal Medical Officers' Association, the Division concerned, and the Medico-Political Committee, and the Postmaster-General has promised careful consideration of the representations made by the three bodies.

(5) Medical Examinations for Life Insurances.

Pursuant to the instructions of the Representative Meeting, enquiries were sent to the 86 Insurance Companies mentioned in Whitaker's Almanack as doing Life Insurance business, and a further letter was addressed to 23 who had not previously replied. Up to June 12th, 64 Companies have given the information desired, six have written refusing to give any information, two state that they are not within the scope of the Committee's enquiries, and one that it pays no fee to its Medical Examiners; 13 have taken no notice.

Of the 64 Companies who have furnished information as to the fees which they pay, 20 pay at least £1 1*s.*, irrespective of amount of Policy; one pays that fee except in the case of "Children's Deferred" Insurance, for which it pays 10*s.* 6*d.*; one pays £1 1*s.* except for amounts under £100, or "where the premium is inadequate," in both of which cases it requests the proposer to pay the fee.

The remaining 42 companies pay in some cases fees less than £1 1*s.*, the fee varying according to the amount proposed to be insured for.

The replies obtained contain so much important information that the Committee has thought it desirable that this should be thoroughly analysed before the next part of the instruction to the Committee, namely, a reference of the subject to the Divisions, is carried out.

(6) Medical Examination of Seamen.

Information received from the North of England Branch and the Salford Division drew attention to the action of the Shipping Federation in engaging medical men to examine seamen, as regards their fitness for employment, at a fee of 1*s.* per head.

The replies of the Shipping Federation to the enquiries of the Committee were to the effect that the duties required were of a very simple character, and the Committee has directed further enquiries to be made.

(7) Fees to Medical Witnesses and Fees in Police Emergency Cases.

During the period since the Annual Representative Meeting, 1906, the Committee has continued to watch the result of the Home Secretary's Order, dated June 22nd, 1904, as to fees to medical witnesses.

The official Memorandum accompanying that Order stated that there was a suitable increase in the allowances to witnesses giving professional evidence, and that, except in one point, fees under this head followed the recommendations of the Departmental Committee appointed in 1903 to enquire into allowances to prosecutors and witnesses on criminal prosecutions. The recommendations of the Departmental Committee were to the effect that, having regard to the special position of professional witnesses who gave evidence in their professional capacity, there should be an increased scale of fees paid to them.

The Committee has collected evidence which shows that the declared intention of the Home Office in this respect is not uniformly carried out under the Order in question, and that, so far from a general increase of fees having taken place, fees at assizes have in some parts been even less than under the old rules.

A Memorial to the above effect has been forwarded to the Home Secretary, who was requested to receive a small deputation on the subject.

The Home Secretary declined to receive the deputation and requested the Committee to forward to him in writing particulars of specific cases of inadequate fees.

The Committee has deferred further action until a more complete collection of illustrative cases is in its possession.

(8) Parliamentary Elections.

Pursuant to the instruction of the Representative Meeting the Committee has redrafted the questions to be put to Parliamentary candidates, and it is proposed that these shall in future be corrected from time to time in order that they may relate to the matters of actual Parliamentary interest at the time when an election takes place.

With a view to the systematic approaching of candidates for Parliament, arrangements are being made whereby, in connection with any By-election, the Division, if it desires to take action, may be supplied with prints of the questions, addressed envelopes, and such other documents and assistance generally as can be given from the Central Office.

(9) Bill to Amend and Consolidate the Medical and Dentists Acts.

In pursuance of the instruction in Minute 266 of the Annual Representative Meeting at London, the Committee has continued the redrafting of the Medical Acts Amendment Bill, to make it a Bill both to amend and consolidate the Medical and Dentists Acts.

Pending the completion of the draft of this Bill, Members of Parliament had balloted for places in the interests of the previous draft Bill (Medical Acts Amendment Bill), but without success.

The Committee has communicated with the British Dental Association as regards questions arising, in connection with the Consolidating Bill, affecting the dental profession.

A draft Consolidation Bill, prepared by Counsel, has been considered, and referred back for redrafting in respect of certain details.

(10) Prohibition of Medical Practice by Companies Bill.

A communication from the Solicitors to the General Medical Council drew the attention of the Association to this Bill promoted by the General Medical Council. The Association was requested to assist in collecting evidence of the abuses which the Bill is designed to remove, namely, the carrying on of medical practice by Limited Companies, and the commission by companies of certain acts which if committed by individuals would be offences under the Medical Acts.

At the instance of the Association a Conference took place of representatives of the Association, of the Medical Defence Union, and of the London and Counties Medical Protection Society, with the Solicitors of the General Medical Council. The conclusions of the Conference were that the Bill in question, relating only to Limited Companies, was too restricted in its scope to deal with a large proportion of the abuses of which the records of the various societies afforded evidence, and representations were made to the General Medical Council with a view to the promotion of a Bill of more extended form. That Council, however, has proceeded with the Bill, and, in compliance with its request, a draft statement was prepared, under direction of the Parliamentary Sub-Committee, of the evidence which the Association would be able to give. This being considered by the advisers of the General Medical Council not to be such as would facili-

tate the passing of the Bill, those acting for the General Medical Council decided not to call representatives of the British Medical Association as witnesses, and the Parliamentary Sub-Committee did not consider it necessary for the Association to give evidence in the matter on its own account.

The Bill has passed in the House of Lords and is now awaiting second reading in the House of Commons.

(11) Notification of Births Bill.

The introduction into Parliament by Lord Robert Cecil and others of the Notification of Births Bill has raised again the question of statutory obligations imposed upon medical practitioners to discharge duties for which they receive no remuneration, as in the case of the Death Registration Acts.

Dr. Cooper, M.P., took the matter up in the House of Commons, and urged in the Standing Committee on the Bill that the provisions requiring medical practitioners and midwives to notify births, under a penalty of 20*s.*, should be struck out of the Bill, the duty being left to be discharged by the parents. Though defeated in the Committee, Dr. Cooper has continued his opposition to the Bill, and, as the result of the action taken by many Divisions of the Association, at the instance of the Medico-Political Committee, many Members of Parliament have intimated their concurrence in his opposition, as regards imposing a statutory obligation of the kind in question without remuneration.

The President of the Local Government Board having taken an active interest in the Bill, representations have been made to him by the Association, both by memorial and by deputation, but up to the present he has not consented to the suggestions of the Association.

(12) State Registration of Nurses.

The Annual Representative Meeting of 1906 approved, by 90 to 3 (*Minute* 252), of the recommendation of the Parliamentary Select Committee that a State Register of Nurses should be instituted. The Meeting further expressed the opinion that on any Central Council or Board appointed the medical and nursing professions should be adequately and directly represented, the medical representatives to be at least one-half of the Members of that body. The Resolutions of the Representative Meeting were duly forwarded to Mr. Tennant, M.P., as Chairman of the Select Committee, and also to Mr. Munro Ferguson, M.P., who introduced the Nurses Registration Bill into Parliament in the Session 1905–6. No progress has been made as regards legislation on the subject in the present Session.

(13) King Edward's Hospital Fund Bill.

In view of the announced intention of the Council of the King Edward's Hospital Fund to promote an Act of Parliament for the incorporation of the Fund, on the basis of giving to the present President, the Prince of Wales, the sole power of appointing the Council, disposing of the Funds, and appointing his successor, the Hospitals and Medico-Political Committees considered that action by the Association was desirable.

As the result of their representations the Council appointed a Joint Committee, representative of the two Committees, to make representations to the Prince of Wales as to the desirability of the introduction of the representative principle in the constitution of the Council, and as to the importance of medical representation on such a Council. An unfavourable reply was received from the Prince of Wales, but the Council did not think it desirable that the Association should act as opponents of the Bill. When the Bill reached the report stage in the House of Commons, amendments were introduced through the intervention of Dr. Rutherford, M.P., with whom the Association acted in co-operation. These amendments removed in some degree the objections previously taken by the profession to the Bill.

(14) Midwives Act.

(a) *Amendment of the Act.*

Owing to the many matters requiring the attention of the Medico-Political Committee during the year, and the congested state of Parliamentary business, an opportunity has not been found of advancing legislation with a view to the payment of Medical Practitioners called in to assist midwives.

A Memorial to the Privy Council has been drawn up, and it is proposed to seek the support of the General Medical Council and the Central Midwives Board in approaching the Privy Council on the subject. No Bill of the kind would have any prospect of success unless introduced by the Government, who it is hoped may take the matter up, if brought before the Privy Council at a suitable date during the Parliamentary recess.

(b) *Rules under the Midwives Act.*

As the result of further communication with the Midwives Board, information has been received that many of the amendments suggested by the Association to the Rules of the Board under the Act were being carried into effect.

(15) Medical Inspection of School Children: Medical Bureau in the Education Department.

The Session 1906–7 has been marked by a distinct advance in the movement for medical inspection of school children and kindred reforms.

The result of the action taken by the Association in 1905–6, including the deputation which waited upon the President of the Board of Education in July, 1906, was, as reported to the Annual Representative Meeting of that year, the acceptance by the Government of an amendment to the Education Bill, then before the House of Commons, to provide for such inspection.

In the present Session of Parliament a Bill has been introduced by Mr. W. Rea to provide for medical inspection, and a provision for this is also included in a Government Bill which embodies the less controversial Clauses of the Education Bill of 1906. There is every reason to believe that one of these Bills will be enacted in the present Session.

In anticipation of such enactment the Committee has circulated to the Divisions: (i) a series of questions on the subject; (ii) a provisional scheme for the inspection of school children, both of which, together with the replies of the Divisions thereon, are printed as an Appendix to the present Report. (See pp. 11–15.)

The subject of medical inspection of schools is connected from the administrative standpoint with that of the teaching of hygiene and temperance in schools (the promotion of which as part of the policy of the Association was adopted by the Council in February, 1904, on the recommendation of the Public Health Committee), the establishment of a medical bureau in the Education Department being necessary for both purposes. The Association, through the Public Health Committee, took part with other Societies in a Conference held in April, 1907, as to the teaching of hygiene and temperance in the British empire, and the Chairman of Representative Meetings and the Chairman of the Public Health Committee of the Association, as representatives from that Conference, accepted invitations to act in a deputation to the President of the Board of Education to urge upon him, *inter alia*, the importance of the establishment of a medical bureau, as recommended by the Representative Meeting of the Association in July, 1906. In the unavoidable absence of the Chairman of Representative Meetings, Sir Victor Horsley put forward the views of the Association in this matter on his behalf. Mr. McKenna has subsequently promised that such a bureau shall be constituted.

(16) Workmen's Compensation Act.

The progress, during the Autumn Session, of the Workmen's Compensation Bill was carefully watched and Members of Parliament were circularised in support of an amendment by Mr. Tennant, M.P., to extend the scope of the Bill so as to include all diseases the result of employment, instead of only those stated in the schedule of the Bill.

Since the passing of the Act the Committee has, at the request of the Home Office, considered the draft regulations to be made under the Act regarding the conditions of employment of medical referees and other practitioners in compensation cases.

The recommendations of a conference of experts, convened by the Committee, were forwarded to the Home Office, the principal recommendations being that the fees in respect of certain duties should be increased, and that provision should

be made for the referee to meet the employer's and workman's doctor for a joint examination of the patient.

The suggestions made by the Association were not adopted by the Home Office, but when experience has been obtained of the working of the Act an opportunity may arise for suggesting amendments of the regulations.

(17) Vaccination.

The Committee has carefully noted the instructions of the Annual Representative Meeting, 1906, as to the policy of the Association in matters of vaccination legislation, but no opportunity has presented itself of giving effect to these except as regards the question of fees of Public Vaccinators.

The Local Government Board has issued an Order empowering Guardians to pay lower fees than hitherto, and several Boards of Guardians have already taken action with a view to reducing fees accordingly. On the recommendation of the Public Health Committee, and as the result of a conference with representatives of the Public Vaccinators' Association, action is being confined to those cases in which the local Division is of opinion that the fees offered by the Guardians are inadequate, having regard to the duties to be discharged by the Public Vaccinators, that is to say, that the principle approved by the Representative Meeting, 1906, will be observed, namely, that the question of fees must be considered in connection with the amount of work to be done. In any case in which a Division shall decide to support the Public Vaccinators in resisting the reduction of fees, support will be given from the central office.

As regards the question of all medical practitioners acting as Public Vaccinators, a special report has been prepared by the Public Health Committee, and is being submitted to the Representative Meeting.

(18) Lunacy and Inebriates Law.

The Annual Representative Meeting, 1906, approved the reports and recommendations presented to that Meeting by the Medico-Political Committee (*page* 116 *of London Minutes*).

The Committee has again appointed a Lunacy Sub-Committee to carry out the instructions arising from the approval by the Annual Representative Meeting of the reports and recommendations referred to.

In view of the extension of the reference to the Royal Commission on the feeble-minded, to include questions affecting the constitution of the Lunacy Commission and the general administration of the Lunacy Laws, application was made to the Royal Commission that evidence, in the sense of the instructions of the Annual Representative Meeting, should be heard from the Association.

This request having been acceded to, Dr. Buist, Mr. Straton and the Medical Secretary were nominated as Representatives of the Association to attend, and attended before the Royal Commission on December 13th and gave evidence.

The question having been raised, during the giving of evidence before the Commission, as to which Government Department should have the duty of supervising the care and control of all persons of unsound mind, evidence was given in accordance with the pronouncements of the Association to the effect that all questions of Public Health should be placed under the central supervision of the Local Government Board, reorganised to discharge efficiently the duties of the State Administration of Public Health.

The Committee submits (*see Appendix*, pp. 17-20) a formal statement of the evidence presented by the Committee on behalf of the Association to the Royal Commission.

(19) Vivisection.

The Annual Meeting of 1906 approved the Committee's report of action taken in opposition to certain Bills introduced into Parliament for the prohibition or greatly increased restriction of vivisection.

As the Science Committee had already under consideration the preparation of evidence to lay before the Royal Commission, the instruction of the Annual Representative Meeting, 1906, to continue the above action was referred to that Committee.

(20) Income Tax.

The Committee communicated with the Select Committee of the House of Commons on the Differentiation and Graduation of the Income Tax, with a view to submitting evidence in co-operation with other bodies in support of the principle of differentiation between "Earned" and "Unearned" Incomes. A reply was received from the Committee that presumably the evidence given by the Association would have reference only to the *desirability* of graduation as to which the difficulty of the Committee did not chiefly arise. The main question before the Committee was as to the *practicability* of differentiation.

The Select Committee finally reported that differentiation was practicable, and the Chancellor of the Exchequer, acting upon this Report, introduced into the Budget provisions whereby a remission of taxation is given in respect of earned incomes.

(21) Sight-Testing Opticians Bill.

With regard to the instruction to the Committee to continue to oppose Bills introduced into Parliament to create a special privileged class of "Sight-Testing Opticians," no Bill of the kind has been introduced in the present Session. It would appear, therefore, that the action taken in the last Session by the Association has succeeded for the time being.

(22) Application by the Association of Medical Herbalists for a Royal Charter.

The attention of the Association having been drawn by the Medical Defence Union to the fact that a body called the "National Association of Medical Herbalists of Great Britain, Limited," had applied for a Royal Charter of Incorporation, a Memorial objecting to the granting of the proposed Charter was submitted to the Privy Council, attention being specially drawn to the fact that among the declared objects of this body was practically the evasion of the Medical Acts. Action in the matter was taken also by the General Medical Council, the Apothecaries' Society, and the Pharmaceutical Society. The Privy Council refused to grant the Charter.

(1) (*a*) *Circulation of Recommendations to Divisions.*

This paragraph was agreed to.

(1) (*b*) *Action in Disputes.*

Statements were made by the Medical Secretary, and by Representatives specially acquainted with the matters in dispute, but it is not, for the present at any rate, possible to publish a report of this part of the proceedings.

Other Paragraphs.

The paragraphs relating to the Truck Act, the Employment of Ship Surgeons, Sanatoriums for Workers suffering from Tuberculous Diseases, Fees of Certifying Factory Surgeons, the Position of Postal Medical Officers, Medical Examination of Seamen, Fees to Medical Witnesses and Fees in Police Emergency Cases, Parliamentary Elections, the Bill to Amend and Consolidate the Medical and Dentists Acts and the Prohibition of Medical Practice by Companies Bill were also agreed to.

(11) *The Notification of Births Bill.*

Dr. M. Russen Rhodes (Manchester, South) moved:

That with reference to the Notification of Births Bill steps be taken to oppose the imposition on the profession of what would be a breach of professional confidence.

He must say how much his Division was indebted to the Medical Secretary for the prompt action he had taken in the matter. The Medical Secretary took his ground chiefly on the non-payment of a fee. That was important; but there were other arguments which ought to be brought forward by medical men, and one was that it was a breach of professional confidence on their part to notify. They were asked by patients into their houses, and then they were to be used by the Government as State police to notify. His Division emphatically held that they were in no respect State officials.

Mr. J. Walker (Liverpool, Bootle), on behalf of his Division, supported the motion of Dr. Rhodes. A special meeting of the Division had been held to consider the question, and the opinion arrived at was that, quite apart

from any consideration of fee, the proposal in the Bill ought to be opposed. The Division objected altogether to being called on to notify births compulsorily.

The Chairman stated that if the Bill was passed there would be no breach of privilege or breach of confidence. Once the law was passed there was no confidence.

Dr. H. A Latimer (Swansea) said that it was very important that action should not be taken on a wrong issue. It was no breach of confidence, in his opinion, to notify births, and the opposition ought not to be based on the argument that it was violating professional confidence.

Mr. Straton (Salisbury) said that there was a very practical way out of the difficulty. There was no doubt that the notification of births very early was in many districts of exceedingly great value. The medical officer of health at once sent the lady adviser, and instruction in the feeding of infants was given. That was with a view of preventing disease. The object of the Infectious Disease Notification Act was to prevent disease, and it would be an extremely simple thing to allow the notification of births to be added to the other subjects of notification.

Mr. Armit (Hampstead) proposed, and Dr. T. W. Pattinson (Bolton) seconded, that the question be now put.

This was agreed to.

The motion was then put to the meeting and lost.

Sir Victor Horsley said that he was a member of the deputation which interviewed Mr. John Burns and Lord Robert Cecil, the chief supporters of the Bill. That deputation consisted of Mr. Armit, Dr. Cooper, M.P., Mr. Whitaker, and himself. They were very kindly received by Mr. John Burns, and had an extremely friendly conversation on the point. Mr. John Burns took the view which, until Dr. Cooper put down his blocking motions in the House of Commons, was receiving general acceptance, namely, that the medical profession were behaving in a very stingy and mean way. Why was that? As Mr. Straton had told the meeting, the Act would be of extreme use in connexion with the public health and in preventing national deterioration. So that if medical men objected in any way, it would, to the mind of a man like Mr. John Burns, be contrary to the traditions of the profession. It was the business of the deputation to explain to Mr. John Burns that he was under a misapprehension, and that medical men were acting solely upon the principle that the State had no right to demand under penalty from the profession public services without remuneration. The deputation made that perfectly clear to him; he was totally innocent of any knowledge of the Medical Acts, and thought that medical men were endowed with great privileges. After seeing Mr. Burns the deputation saw Lord Robert Cecil, and he told them exactly the same thing—that they were to act as a man would in the street if a policeman called upon him to help him in tackling a rough. The deputation told him that that was not the position, but that a medical man was in the house professionally, and was compelled to be there. Then came the question of fees with both Lord Robert Cecil and Mr. Burns. The deputation said that that was not a matter of such importance, but that they wanted to establish the principle; though they thought that no medical fee ought to stand at less than half a crown—the actual amount was not a question materially at issue. The result of the deputation was that Mr. Burns said that he was sorry that he could not help them; that in his opinion the Act was necessary for the health of the country, but that he would consider all that had been said by the deputation. As to Lord Robert Cecil he gave the deputation no encouragement at all, though, of course, he received them very courteously. Under these circumstances he proposed that the meeting should pass the following resolution:

> That this Representative Meeting of the British Medical Association, while cordially welcoming any legislation which shall provide for an early and accurate notification of births, is of opinion that no public work can justly be demanded under penalty from the medical profession unless the principle that service so rendered by the profession to the State should be remunerated is fully recognized and provided for.

Dr. McManus (Wandsworth) said that he felt very indignant about this matter. The Bill was a most useful one, but it contained a most iniquitous clause. He had pointed out to members of Parliament that the profession was tired of being alternately cajoled and hoodwinked and bullied and abused. The Bill was small, but the principle involved was big. They had themselves to blame for the fact that in the past so many Acts had been passed taking advantage of the dictum that medical men were acting for the benefit of humanity and never for themselves. The Legislature said in effect, "You are a most noble profession, and your first thoughts are for suffering humanity." But was it not time that their second thought should be for their suffering wives and families who were being gradually starved by those lay persons who never did a stroke of work for nothing? It was all very well for an armchair philanthropist and an amateur politician to bring in this Bill, but the gentlemen belonged to a profession which never did a stroke of work without an extremely good solatium marked on the back of the brief. It had been his privilege to hear the President of the Local Government Board on many an occasion from the unstable platform of a three-legged stool preach the gospel of the labourer being worthy of his hire. That applied as much to medical men as to the men who were sweeping a crossing. They had no eight hours day; they had to work night and day at the call of humanity, and the profession ought to be sufficiently organized to resist such a proposal as that in the Bill. The public and Parliament had said to them: "You are a flock of sheep. We confer on you the honourable name of sheep, and we confine you in a zareba. We tell you that this zareba is to protect you; but it is really to keep you in. If you ever break out you shall cease to be honourable sheep, and you shall be known by the opprobrious name of goat." Medical men looked over the zareba, and they saw grazing in the best pastures, and rejoicing in the name of goat, the bone-setting goat, the pill goat, and the prescribing-chemist goat. He would advise the members of the profession if they were animated only by commercial instincts to leave the zareba and go out and become goats. But they had a higher motive. They were animated by pride of their cloth, pride in their profession, and by the wish to benefit humanity. Therefore he said, "Get the zareba enlarged, and force the goats out of existence." There were members of the Representative Meeting whose horizon was as limited as the view from the bottom of a well, and those gentlemen had tried to hoodwink the meeting into starving the organization which would enable the Association to prevent the commission of such an iniquity as the Bill proposed. He would ask medical men not to carry out the Act. If it was forced upon them, let them go in for a species of passive resistance.

Sir Victor Horsley's resolution was then put and carried.

The Chairman then moved that the paragraph with regard to Notification of Births Bill with the amendment be passed, which was agreed to.

Other Paragraphs.

It was also agreed that paragraphs (12) and (13) with reference to the State registration of nurses and the King Edward Hospital Fund Bill be passed.

(14) *Midwives Act.*

The Chairman then moved the paragraph with reference to the Midwives Act.

Dr. Maclean (Cardiff) said he was sure it would be the wish of the meeting to press on the Medico-Political Committee the advisability of proceeding as quickly as possible in the sense indicated in that paragraph; the action suggested would be of the utmost service. Meanwhile, he thought it well to call attention to the fact that it was now possible for any local supervising authority under the Act to secure, under Section 133 of the current Public Health Act, payment in accordance with the scale to be arranged by a local Division to medical men called in by midwives. That was in operation in Cardiff, in Liverpool, and in other districts.

The paragraph was agreed to.

(15) *Medical Inspection of School Children.*

The Chairman then moved the adoption of the paragraph with reference to the medical inspection of school children and a medical bureau in the Education Department.

Dr. C. S. Brewer (Birkenhead) said that it was a matter which would have to be settled, and which would need to be considered by every one of the Representatives present, because in every Division there would have to be medical officers appointed; and the analysis of the question that was being sent from the various Divisions showed somewhat different opinion.

Sir Victor Horsley (Marylebone) thought the matter could be settled in five minutes. He desired to move a general resolution, which was:

> That this Representative Meeting of the British Medical Association notices with satisfaction, in view of the resolution of 1906, that the President of the Board of Education has fully accepted the principle of compulsory medical inspection of school children, and the provision for its administration by the establishment of a Medical Bureau in the Education Department.

The Representative Meeting in 1906 drew Mr. Birrell's attention to the advisability of that being done; it had taken that time to do it, but at last Mr. McKenna had acceded. Inasmuch as the Association had constantly done work in the past which the Government had taken up and the credit of which had been taken by the Government itself, while the Association had never got any credit at all, he wanted to put that resolution on record so that it should be known distinctly what body it was that had moved in the matter.

Dr. L. S. McManus (Wandsworth) seconded the resolution.

Mr. G. H. Broadbent (Manchester, North) desired to point out one feature in connexion with the matter which had evidently been overlooked. At a meeting in Manchester a medical inspector of schools pointed out in his address that it was quite probable that not only would medical inspections of schools come, but also diagnosis and treatment would be carried out. That was what was looming in the distance so far as school specialists were concerned, and it was anticipated in some of the large cities that the head medical inspector would have eight or ten officials under him. What, then, would become of the poor practitioner?

Dr. C. S. Brewer (Birkenhead) said that while grateful for what the Board of Education and the Government had done, it must be remembered that the appointments would be made by the local educational authorities. What remuneration would they give to the medical officers they appointed? There were 22,000 children in Birkenhead; and if the children were inspected once a year, and one shilling a head paid, that would come to £1,100. Although there was to be an initial inspection of a child at the age of 5, that would not be sufficient; the child had to be watched throughout the whole of its school life, and there must be thorough systematic and continuous inspection. He asked the Representatives, when they went back to their Divisions, to bring to bear all the influence they could on members of local education authorities. The question mentioned by Mr. Broadbent was a serious matter for those who were appointed to deal with the inspection of the children, and who would perhaps have to give reports with regard to defects of eyesight, or hearing, or physical defects. It was very important that they should not do too much with regard to treatment; and the question was whether the meeting should not make some pronouncement with regard to sending these cases to their own practitioners. A large number of children were sent to public elementary schools whose parents were well able to pay for medical attendance.

The Chairman pointed out that that fact was appreciated, but there was no provision in the Bill for treatment or diagnosis. He then put Sir Victor Horsley's resolution to the meeting, and it was carried.

Sir Victor Horsley, in moving a second resolution, said they had to consider what was the practical position of the matter at the present time. Mr. McKenna pledged himself to the deputation which waited upon him from the Association and one or two other bodies on the questions of hygiene and temperance to construct a scheme after the House had risen, and after he had had an opportunity of consulting the *Transactions* of the International Congress of School Hygiene in London, when a great many valuable papers from the Continent, as well as from the United Kingdom, would be read on the very point as to what was to be done, and who was to do it, and how they were to be paid. Under those circumstances he suggested it would be futile for the meeting to pass resolutions which might conflict with those of that Congress. At the same time, as had been said, it was a matter of the utmost importance to the profession. He proposed that the report should be approved, and referred back, with all the recommendations of Divisions, to the Medico-Political Committee, and that that Committee should be authorized to act on the general lines of that report, which embodied the rough outlines of a scheme. The details of that scheme would have, as the Medico-Political Committee pointed out, to be adjusted locally, and therefore during the recess, when those matters were decided upon by the Government, each Division must immediately take up the matter on its own account, and they must consider what would be the best procedure. It would be impossible for the Medico-Political Committee to lay down any principles which would apply to the whole of the United Kingdom. As regards the collocation of facts, and as regards the co-ordination of the work, he suggested that the Medico-Political Committee could perfectly well carry it out if the meeting gave authority. He therefore begged to move:

> That the report on the medical inspection of children be approved and together with the resolutions of the Divisions thereon be referred, as a continuation of action, to the Medico-Political Committee, and that that Committee be authorized to act on the lines of the report furnished to the Representative Meeting.

Dr. Goyder seconded, and said that a motion had been put into his hands by the Representative of Bradford which might well be left without any resolution being taken upon it, as all those matters would come before the Division. He might say that the Bradford Division had already communicated with the Education Authorities of Bradford, and the probability was that justice might be done, at all events in that district. They had succeeded in more ways than one in influencing the Educational Committee. If the resolution were adopted, he thought the Bradford resolution might be considered with the others referred to the Medico-Political Committee.

Mr. R. H. Wolstenholme (Manchester, Salford) desired to know whether it was intended that the resolution by the Bradford Division was to be acted upon by the Committee, because his Division was strongly opposed to any suggestion to establish a fresh set of officers. If that resolution were included in the report, would the Medico-Political Committee have power to act on the suggestions approved by the Bradford Division?

Sir Victor Horsley said: No. His resolution entrusted the Committee to act on the lines of the report furnished to the meeting.

Mr. Wolstenholme said that his Division was strongly opposed to the proposal as to medical pedagogy; that no man was to take up an office in a school unless he had a special certificate and special training.

The Chairman proposed to ask the Representative of each Division who had sent up a resolution on the matter if he were willing to accept Sir Victor Horsley's resolution and refer it to the Committee, with the assent of the meeting. He would take it, for instance, that the Representative for the Marylebone Division and the Committee agreed that it should be referred to the Committee.

The Chairman inquired if the Representative of the Bradford Division, Dr. Goyder, was willing to assent?

Dr. Goyder replied in the affirmative.

Mr. Wolstenholme requested a vote on the point, because his Division was strongly opposed to it.

Dr. T. Laffan (Carlow, etc.) said that the Bradford resolution ought not to be supported by general practitioners. If they had every department of medicine converted into a specialism, what would be the use of the general practitioner? There was too much specialism going on, and the whole effect was simply to create places for friends of those in authority; and he, for one, was "teetotally" opposed to that.

The Chairman then read the Bradford resolution as follows:

> That it is most desirable that universities and other licensing authorities should without delay establish special courses of instruction in all subjects which appertain to the effective discharge of the duties connected with the medical inspection of school children; that a

degree or diploma should be instituted for those who have attended such courses and successfully passed an examination in the special subjects; that after a certain date, to be hereafter fixed, no person should be eligible for the post of school medical officer who is not possessed of such degree or diploma; and that the special course of instruction should include physiology, pedagogy, the necessary conditions of construction of school buildings, furniture, the effects of school work on the evolution of the body, mind, and character of the child, general hygiene, and allied subjects.

Dr. M. Russen Rhodes (Manchester, South) said that after these ideas had been put into actual practice there would be nothing left for the general practitioner to learn.

Sir Victor Horsley, on a point of order, said the points raised did not affect his resolution, which was that the suggestions sent up by the Divisions should be considered by the Committee.

The Chairman said the resolutions had been sent up by the Divisions for an expression of opinion of the meeting. He was quite willing to send these suggestions to the Committee, but it was evident the meeting did not want to send this particular resolution.

The amendment was lost.

The Chairman then put the Bradford resolution, and announced that, it being negatived, it disappeared altogether.

The Representative of the Birmingham Central Division, in reply to the Chairman, consented to the resolution of the Division being referred to the Committee:

That no scheme of medical inspection is satisfactory which does not include a daily visit to each school by a medical practitioner in the district, and the appointment of a medical adviser to the Education Committee, to receive, collate, and report upon the reports of the inspectors.

Mr. Wolstenholme said his Division objected to a daily visit on the ground of cost. If inspection was made too expensive, the local education authority would not consent

Dr. Cox (Gateshead and Consett) said his Division considered that if this system could be carried out, as it undoubtedly was in some of the States of America, it could be carried out in England, and personally he hoped to see all medical men interested in medical inspection. He wished every medical practitioner to look upon this as part of his duty in the town in which he lived and make himself conversant with the business. He did not wish to see the matter drift into the hands of future specialists.

The Chairman expressed the opinion that the resolution of the Birmingham (Central) Division should be sent to the Committee for consideration, and that suggestion was adopted.

The following resolution standing in the name of the Brighton Division was next considered:

That the local educational authority in conjunction with the medical officer of health should appoint medical officers as inspectors from among the medical practitioners of the district.

Dr. Bushnell said the Brighton Division felt strongly on this point, and thought that the appointments of medical officers should be made in co-operation with the medical officer of health and the sanitary authority, in order that the appointment might be of practical public value.

The resolution was adopted.

The following resolution standing in the name of the South-Eastern of Ireland Branch was adopted:

That, whatever the system of medical inspection adopted, the examiners so employed should be adequately remunerated.

Upon the following resolution from the Northampton Division:

That when the Bill becomes law, the method of the examination of the school children should be a matter of arrangement between the local Education Authority and the Divisions of the British Medical Association,

Mr. Wolstenholme said his Division thought the suggestion could not be carried out in that Division because there was a number of members of the profession who were not members of the Association, and they did not think they should be debarred.

The resolution was referred to the Committee for consideration.

The following resolution in the name of the Edinburgh Southern Division was adopted:

That the medical inspection of school children before or at the time of their admission to a public elementary school should be made by the family doctor, and in the case of poor children whose families have no regular medical adviser, the certificates should be granted by the dispensary or parish doctors.

It was agreed to refer the following resolutions of the Wandsworth Division to the Committee for consideration:

That every medical practitioner resident within the area of the Education Authority and prepared to undertake a proportion of the duty of the medical inspection of school children should be eligible for office in the Educational District or Subdistrict.

That the Divisions should arrange with the Education Authority for the schools of its district a scheme for a rota of general medical practitioners which will allow of every general practitioner desirous of holding office doing so.

On the motion of Sir Victor Horsley it was resolved:

That the report on the medical inspection of school children be approved, and together with the resolutions of the Divisions thereon, except the Bradford resolution, be referred as a continuation of the action of the Medico-Political Committee, and that the Committee be authorized to act on the lines of the report furnished to the Representative Meeting.

(16) *Workmen's Compensation Act.*

The paragraph dealing with the Workmen's Compensation Act was agreed to.

(17) *Vaccination.*

Upon the paragraph dealing with vaccination Dr. Arthur Drury (Halifax and Huddersfield) observed that the matter affected several thousands of their brother practitioners. This was a recent action on the part of the British Medical Association only about a week or ten days old. The matter would probably come before most of the Divisions, and he would urge that Divisions should take into consideration the fact that this was not a question of public vaccination, but simply a question of remuneration, and therefore he would ask them to pay special attention to the duties of the public vaccinator in deciding whether the payment suggested in each separate Division was reasonable or not. Many had the idea, and some had said to him, "I will do it for less," but would they themselves do it for less? That is what he wanted them to keep in mind. The paragraph was agreed to.

Other Paragraphs.

The following paragraphs were also agreed to: Lunacy and Inebriates Law, Vivisection, Income Tax, Sight Testing Opticians Bill.

(22) *Herbalists.*

On the paragraph dealing with the application of the Association of Medical Herbalists for a Royal Charter, Mr. Armit (Hampstead) said he thought the meeting ought to record its appreciation of the fact that that Committee's action had been successful.

International Congress of School Hygiene.

The paragraph was agreed to.

Mr. Elliot-Blake (Chichester, Worthing, and Horsham) said he had already suggested that Sir Victor Horsley should form one of the delegates to the International Congress of School Hygiene in London on August 5th.

The Chairman thought the meeting should recommend to the Council that Sir Victor Horsley should be the delegate, and this was agreed to.

Irish Poor-law System.

Dr. Darling (Portadown and West Down) moved on behalf of the Ulster Branch:

That the main recommendations of the Viceregal Commission on the Irish Poor-law System be approved of, and that the Council be requested to take proper steps to press the matter to legislation.

This report had been considered by the Irish Committee

and by every Branch in Ireland, by the Irish Medical Association, by the Poor-law Officers' Association, and by the Workhouse Reform Association, and had received the approbation of each of these bodies. All the matters which had been the subject of criticism were small matters, and the Irish Medical Association had passed a resolution approving of the recommendations.

Mr. FULLERTON (Belfast) supported the resolution.

Dr. LAFFAN (Carlow, Kilkenny, and Waterford) said his Branch had passed a resolution in favour of the report.

The resolution was then carried, and the report of the Medico-Political Committee was approved.

THE REFERENDUM.

Dr. MACLEAN (Cardiff) moved:

That in view of the fact recorded in the minutes of the meeting of the Council of June 5th, and published in the SUPPLEMENT to the JOURNAL of June 22nd, that the Council had decided to take a referendum upon certain resolutions carried at the Special Representative Meeting held in May relating to the proposed Royal Charter, this meeting decides to appoint a Committee to consider the terms of such referendum, and to draft a report upon the same, the report to be sent to each Representative, to the Secretaries of Divisions and Branches, and to be published in the JOURNAL.

The Council had determined to take a referendum particularly on two points—first, the constitution and mode of election of the Council; and, secondly, the constitution of the Journal and Finance Committee. Under Article 22, a referendum was supposed to be taken on points which, in the opinion of the Council, did not properly represent the wishes of the Association. The only sentiment he cared to express was that any two points could have been better selected than those two, and therefore, in his opinion, the referendum had not been used for the proper purpose. Without suggesting what the present purpose was, he thought the present referendum would certainly have the effect of discrediting this meeting in the eyes of the Divisions, and that, he took it, was not the wish of the meeting, and on that account he moved this resolution.

Dr. ALFRED COX (Gateshead and Consett) seconded.

Mr. H. A. BALLANCE (Norwich) asked if Dr. Maclean would add the chairmen of Divisions and Branches as well as the secretaries, so that the matter should have the fullest publicity possible.

Dr. MACLEAN agreed.

The resolution was carried *nem. con.*, and the following gentlemen were appointed the Committee: The Chairman of Representative Meetings, Dr. Cox, Dr. Maclean, Dr. Walter Smith, Dr. Langdon-Down, and Mr. Armit.

Dr. WALTER SMITH asked if the effect of the referendum would be to put off the Charter for another year.

The CHAIRMAN said not necessarily for a year, as a Special Representative Meeting might be held to consider the matter during the year.

The meeting then adjourned until 9.45 p.m.

ELECTION OF STANDING COMMITTEES.

When the meeting resumed, the CHAIRMAN announced the result of the voting for the Standing Committees:

Medico-Political Committee.

Sir Victor Horsley (Marylebone) ...	England.
Mr. H. W. Armit (Hampstead) ...	
Dr. Alfred Cox (Gateshead and Consett)	
Mr. W L. Muir (Glasgow, Eastern ...	Scotland.
Dr. Buist	
Dr. F. C. Martley (Dublin)	Ireland.

Ethical Committee.

Dr. R. L Langdon-Down (Richmond)	England.
Dr. A. G. Bateman	
Dr. Bruce Goff (Lanarkshire)... ...	Scotland.
Dr. P. G. Lee	Ireland.
Dr. Ewen J. Maclean (Cardiff) ...	Wales.

AMENDMENT TO BY-LAWS

Order of Business at Representative Meetings.

Dr. WALTER SMITH, on behalf of Dr. Buttar (Kensington) moved:

To amend By-law 20 to read as follows:
The first daily session . . . . Annual General Meeting. The Chairman shall be elected for a period of three years, and the first business of the session shall be (when necessary) to elect the Chairman of Representative Meetings and also one Vice-Chairman. The next business shall be to determine the order in which the various matters placed upon the Agenda shall be taken.

There shall be two Vice-Chairmen, one of whom shall be elected each year to hold office for two years. The Chairman and the two Vice-Chairmen, together with a Member of the Central Council, and elected by the Council, and the General Secretary, shall form a permanent Committee to arrange the business of the Representative Meetings.

The Minutes of each Representative Meeting shall be forwarded to the Council by the Chairman.

The present by-law was as follows:

The first daily session of the Annual Representative Meeting shall be held not later than two hours after the time fixed for the commencement of the Annual General Meeting. The Minutes of each Representative Meeting shall be forwarded by the Chairman thereof to the Council.

The Kensington Division was of opinion that the Representative Meeting should arrange its own business. The Central Council appointed the day and the hour of meeting and the officials saw to the details. The opinion of the Kensington Division was also that the work of the Chairman was too much for one man, and that there should be two or more Vice-Chairmen.

Mr. BALLANCE (Norwich) pointed out that the Standing Orders of the Representative Meeting had been under consideration by the Organization Committee during the last few months, and they were submitted as amended at the beginning of the present meeting, and the meeting approved them. Under the resolution the Chairman would be elected for a period of three years, but he could not see that the present practice could be improved upon. Then the resolution would direct that "the first business of the session shall be to elect the Chairman of Representative Meetings." It had been found in practice that it was more convenient that the Representative Meeting should elect its Chairman whenever it chose. As to the proposal that there should be two Vice-Chairmen, as far as he could see one deputy chairman was quite enough. As to the suggested committee, he could not understand why there should be a joint committee; and he did not see why the General Secretary should be a member of the Committee when he had no official post in connexion with the Representative Meeting. He believed that the resolution had been sent up without any real appreciation of the facts of the case, and he hoped that it would not be passed.

The motion was put to the meeting and lost.

Voting at Representative Meetings.

Dr. WALTER SMITH then proposed for the Kensington Division:

To amend By-law 21 to read as follows:
The Representative of a Division, or of a group of Divisions, shall be entitled to vote. Voting shall be by show of hands, but when the majority is not more than 3 to 2, the vote shall be taken by card (in which case . . . he represents), provided that a motion to that effect be made immediately, and supported by one-third of the members present. In voting upon . . . such meeting, its Representative shall be under obligation to vote in accordance with such resolution. And no alteration of a By-law shall be operative until, or unless, it have received the sanction of a majority of Divisions.

The existing by-law was as follows:

In any Representative Meeting, Representatives of Divisions only shall be entitled to vote. Voting shall be, as a rule, by show of hands, unless, before such vote is taken, 20 of those present determine that the vote shall be taken by card, in which case every Representative shall record as many votes as there are Members in the Constituency which he represents. In voting upon any matter upon which a Constituency has passed a Resolution within the nine months immediately preceding such Meeting, the Representative of that Constituency shall be under obligation to vote in accordance with such Resolution. When the vote is taken by show of hands, the Chairman shall, in the case of an equality of votes, have a second or casting vote.

It was a waste of time to have a card vote when there was a 3 to 1 majority, but when the vote was nearly equal it should be possible to have a card vote.

The CHAIRMAN stated that the amendment in the name of the Wandsworth Division to omit all words after "such resolution" in the Kensington resolution was not in order; it conflicted with one of the articles.

Mr. BALLANCE (Norwich) said that as far as he could

make out, the proposal of the Kensington Division would compel a card vote far more often than was necessary.

Mr. F. C. Larkin thought the proposition a reasonable way of dealing with the card vote.

Dr. Baildon (Southport) said that the main effect of the proposed alteration would be that a vote given by the meeting could be challenged, and would have to be taken a second time by card; that would certainly lead to waste of time and to a good deal of feeling. The by-law was far better as it stood

Dr. Langdon-Down (Richmond) thought the proposal would lay the meeting open to great obstruction.

Mr. Armit (Hampstead) said that if the motion was carried, the possibility of a Representative claiming a card vote before he knew how the voting would go would be done away with. That was a privilege of which no one could want to rob the meeting. He hoped that the proposal would not be accepted.

The Chairman drew attention to the fact that there was no provision in the proposal for the Chairman giving a casting vote in case of the division being close.

It was moved, seconded, and carried that the question be now put, and the motion being put to the meeting, was lost.

Representation of the Services on the Council.

The following resolution, moved by Mr. Ballance on behalf of the Council, was adopted:

That for the word "three" in the last line of By-law 23, there be substituted the word "five."

The effect of this is to permit the selection of an officer who has been on the retired list for five years.

Mode of Election of Members of Council by Branches.

Mr. Ballance, for the Council, moved:

That By-law 25 be amended to read as follows:
The elective members of Council shall be elected by voting papers sent to each elector by post. Candidates may be nominated by any Division of a Branch or by such number of members as the rules of the Branch may prescribe. Nominations shall be sent, in writing, to the Secretary of the Branch on or before an appointed day, of which not less than fourteen days' notice shall have been given to him in the British Medical Journal. The names of all candidates so nominated shall be placed in a list which it shall be the duty of the Secretary to circulate to every member of the Branch.
In any case in which Branches are grouped for representation on the Council, the above provisions shall be carried out as though the Branches so grouped formed one Branch, and it shall be the duty of the Secretary of the Branch having the largest membership to carry out the requirements of the by-law.

Dr. L. S. McManus (Wandsworth) moved the following amendment:

That it is desirable that the election of members of Council by Branches in the United Kingdom be conducted by the head office and out of central funds, and that By-law 25 be amended accordingly.

Dr. Maclean opposed the amendment on the ground that it meant further expense at head quarters, and to that extent a further accumulation of funds in the Branches.

Mr. Muir (Glasgow Eastern) supported it, for the reason that it would leave the Branches more money to spend at home.

Dr. J. S. Darling (Portadown and West Down) opposed the amendment, on the ground that by the existing method more interest in the elections was created in the Branches.

Dr. Walter Smith supported the amendment, on the ground that the elections could be conducted better from head quarters.

The amendment was lost and the resolution of the Council carried *nem. con.*

Naval and Military Committee.

Mr. Ballance, for the Council, proposed:

That By-law 41 (5) be amended by the omission of the last sentence, namely, "Such Committee to include the Representative Members of these services who are on the Council."

It had reference to the position of the Naval and Military Committee, and it had been found necessary to leave out representative members of the army and navy from this Committee, owing to difficulties that had occurred from their presence on this Committee.

The motion was accepted.

Irish Committee.

Dr. Darling (Portadown and West Down) proposed, and it was agreed:

That By-law 41 (12) be amended to read as follows:
An Irish Committee, consisting of the Irish Members of the Central Council, one secretary from each Irish Branch, one member elected by each Branch, who in the case of the Leinster and Ulster Branches shall be a member not resident in Dublin or Belfast, and not more than three members co-opted by the Committee to represent districts which are not otherwise represented thereon. If the the Secretary of any Branch be also a member of the Central Council, the said Branch shall have power to elect an additional member of the Committee. It shall have a secretary, resident in Ireland, and shall meet at such place and time as the Committee may itself direct, and shall report to the Council on any matters specially concerning Ireland.

Mr. Ballance proposed on behalf of the Council:

That the necessary steps be taken in due course to amend Article VIII as follows:
Insert in the last line but three, between the words "given" and "previous," the words "one calendar month's;" and delete the words "on or before the 1st December in the current year."

This resolution had reference to the termination of membership due to arrears of subscription. Under the present Article VIII a member must give a previous notice in writing of his intention to resign on or before December 1st in the current year. The Council's proposal was that a member wishing to retire should give one calendar month's notice, without any reference to the month of the year in which such notice was given.

Mr. Armit (Hampstead) wished for an assurance from the Council that it was not proposed to call special meetings to carry this article into effect, because, although the alteration was satisfactory, he did not consider it of sufficient importance to justify the expenditure of £200.

The Chairman said he could give an assurance to the Representatives that the Council would not expend extra money in calling a special general meeting for this purpose. The Council felt that there was a difficulty about requiring notice to be given at the particular date mentioned.

The resolution was carried *nem. con.*

Election of Representatives of Divisions.

The Chairman, in the absence of Sir Victor Horsley, moved the following resolution of the Marylebone Division:

That Article XXVII be amended in such a manner that 100 be substituted for 50, as the minimum membership of a constituency.

Although he had formally moved the resolution as a Representative of the West Somerset Branch, he begged to speak against it, because he thought that a constituency of fifty was a very good one, and that there would be infinite difficulty if the change were made.

Dr. Douglas (Maidstone, Rochester, and Chatham) said the proposal would act most unfairly in thinly-populated districts. He had to drive twelve miles to the central town for a meeting. In London and thickly-populated places it was another matter.

Dr. Maclean (Cardiff) asked what effect the passing of the resolution would have on the members of the Representative Meeting.

The Chairman said it would be a difficult thing to answer that question offhand. It would mean rearranging the conditions throughout the country.

Lieutenant-Colonel Curme (West Dorset) said he had analysed the returns, with this result: It would affect 155 Divisions.

The resolution was rejected.

The Charter.

Dr. M. Russen Rhodes (South Manchester) moved:

With reference to Paragraph 22 ("Organization Committee") of the Report of the Council, as to the application for a Charter—
That this Division is of opinion that a Charter at the present date in the history of the Association is premature and should be postponed, and in the

meantime would urge on the Central Authorities the necessity of at once applying to the Higher Court for the benefits which are at present required and urgent; and for powers to use the money of the Association for purposes of promoting providence and benevolence and other necessary reforms.

He hoped even at this late hour to be allowed a little indulgence when he stated that there had been a special meeting of the South Manchester Division to consider this question, there being representatives of the other Manchester Divisions also present at the meeting. He wished the meeting to understand that South Manchester only desired to delay application for the Charter until the working machinery of the Association should be in a better condition than at present. There was a very great feeling in Manchester that it could be made much more effective, and the Division desired that the machinery should be the most effective possible for the good of the profession in general and the general practitioners in particular. It was desired that every part should work harmoniously, and it seemed to the Division that at present there was not the harmonious working there should be. At present the Branches did not seem to be brought into line with the rest of the Association. Some people desired to abolish the Branches; others desired to retain them, and, like South Manchester, to bring them into actual working line with the rest of the Association. The Charter would perpetuate the dual control. At present there was a Representative Meeting and a Council, and he did not say that these two bodies did not work harmoniously; but there were possibilities that they might not. A dual control was not always a good thing. Another matter that would be perpetuated was the Referendum, which was simply a referring of matters back to the place from whence they came, and prevented what should be a direct line between the unit and the central body. The Divisions should be grouped into workable areas, as they had been grouped in Manchester, and as was being done in Liverpool. His Division protested against an imperfect machinery being stereotyped by Charter. Further, it was a mistake to insert the provisions as to providence and benevolence in the Charter, instead of applying at once to the High Court.

The Chairman said this question had come up several times, and the meeting had had an expression of opinion of the Council. The Council would not apply for an alteration of the Memorandum of Association because of the difficulties that might arise. He would point out that it was the Council which first moved in the direction of applying for a Charter. He thought it would save trouble if the Solicitor would give a short summary of the legal side of the question.

Mr. Hempson pointed out that the suggestion of the resolution was that the Association should apply to the High Court in respect of the benefits at present required and ask for powers to use the money of the Association in this way. This matter was very ancient history. It had gone through every form of discussion and consideration as to whether the Association would get the benefits desired by the limited procedure of the alteration of the Articles of Association. It was decided by the Council over and over again that it could not be done, and therefore the Association was driven into a corner, and from that corner Mr. Beaufort Palmer relieved them by the advice which he gave in the opinion to which the Chairman had referred, and the reason he gave for the Association applying for a Charter was that it would relieve it from the disability under which it found itself under the Companies Acts.

Mr. A. Jasper Anderson (Cape of Good Hope), on behalf of the Colonial Branches and Divisions, wished to offer strenuous opposition to this motion. It was late in the day to bring forward a motion of this sort. A Charter had already been framed, and he thought the thanks of the meeting were due to the Organization Committee for the good work it had done in that respect. The matter had been discussed in the Colonies, where they were very anxious indeed that a Charter should be obtained, so that the Association could do what it wished to do. For instance, they wished to take up the question of medical defence, and the question of benevolence, and the question of the combination of the Branches, so that they could carry on their work, and they wished that the Charter, which would enable them to do this, might be obtained as quickly as possible.

The motion was put to the meeting and lost.

Resolutions Withdrawn.

The resolutions standing in the name of the Waterford Division were withdrawn by Dr. T. Laffan.

The Council and the Representative Meeting.

Dr. W. Douglas (Maidstone, etc.) proposed:

That this meeting of Representatives expresses the hope that the Chairman of Council and the Honorary Treasurer will find it convenient to attend the meetings of the Representatives.

Co-ordination between the Council and the Representative Meeting would come principally, or at least in great measure, through the Chairman of Council and the Treasurer. The meeting had suffered considerable inconvenience through not having one or other of those gentlemen to apply to. He had shown the resolution to Dr. Rayner, and he cordially approved it.

The motion was seconded by Dr. Smyth.

Mr. Armit (Hampstead) said that it would be a very great advantage if not only the Treasurer and the Chairman of the Council, but the members of the Council attended.

The motion was carried *nem. con.*

Vote of Thanks.

Mr. Armit proposed that the meeting should extend its most hearty thanks to their most respected Chairman for the magnificent way in which the business had been conducted by him. He said that it had been the privilege of a good many of those present to sit under the chairmanship of Sir Victor Horsley, and they pitied Dr. Macdonald when he first took the chair, at having to follow Sir Victor Horsley; but the pity had all drifted into nothingness since they had learnt how absolutely capable he was of managing the meeting, and seeing what wonderful geniality he had, what control over the order of the meeting, and how readily he disposed of very touchy points in the conduct of the meeting. [Loud applause.]

Dr. Alfred Cox (Gateshead and Consett) seconded the motion. He said that the Chairman knew the feelings of more than respect—of affection he might say—in which he was held. The Representatives might congratulate themselves upon the fact that he was willing to give up the enormous amount of time necessary for the conduct of that most important business for still another year.

The motion was carried with acclamation.

The Chairman said that he really found it very difficult to express himself with regard to the motion which had been so cordially accepted, and which his friend, Mr. Armit, had proposed in terms which to him, as an Irishman, suggested that Mr. Armit had been to Blarney and had performed the very difficult feat of kissing the Blarney Stone. He could assure those present that it really was a pleasure to him to preside at the meetings. They all responded so very well and pleasantly to the suggestions which he made, sometimes, perhaps, in rather strong terms. He assured them that it really was a pleasure when he saw how they took up anything that was put reasonably before them, in such a pleasant, reasonable way, and that they were always willing to respond to his effort to keep order in the meeting, and to carry on the business with justice to every man in it. That was the ideal which he had set before himself. If he had carried that ideal out he felt amply repaid for any trouble he might have taken in being present and taking charge of the meeting.

Procedure on Reports.

Dr. J. J. Macan (Croydon) moved that the Organization Committee be requested to draft an amendment to the Standing Orders for next year so that the reports could be considered in a way which would conduce to their being carried through more expeditiously and with better effect.

Mr. Armit (Hampstead) seconded the motion. He said it would be a very great advantage if they adopted the Parliamentary procedure and had the reports laid on the table, and only the recommendations on those reports discussed.

Dr. M. Russen Rhodes (Manchester, South) supported the proposal.

Mr. J. H. Gibson (Winchester) asked whether it would be possible to arrange the meetings in such a way that they went on without interruption.

Dr. Walter Smith asked whether it would not be possible in future to meet in the evenings on the first day or two of the Representative Meeting.

The Chairman said that Dr. Macan's proposal was a very good one. With regard to what Mr. Gibson had said, this year there had been less difficulty in that respect than ever before. As to Dr. Walter Smith's suggestion, he thought that an evening sitting would very often get the meeting out of a difficulty.

The motion proposed by Dr. Macan was then agreed to.

Annual General Meeting.

Dr. Macan said there had been some dissatisfaction expressed on account of the fact that the Annual General Meeting had been adjourned from Saturday morning to to-day. If it was necessary for the Annual Meeting to precede the Representative Meeting, it should be understood that it would be formally opened before the Representative Meeting and then adjourned as a matter of course to a suitable time afterwards.

This proposal was seconded by Mr. Armit.

The Chairman said he did not think there had been much real dissatisfaction about the matter.

Dr. Douglas said that with the additional help that would, he hoped, very shortly be given to the Medical Secretary's office, he trusted the agenda would be issued two weeks before the meetings. Such a course would facilitate the work immensely. He would not move a resolution, but he took it that the Medical Secretary would use his best endeavours in the matter.

Confirmation of Minutes.

The minutes were read by the Medical Secretary, and as amended were signed by the Chairman as correct.

Dr. Hugh Ker then moved a very hearty vote of thanks to the Medical Secretary for the very able way in which he had conducted the business, and to his staff for the untiring manner in which they had assisted him.

Dr. J. A. Macdonald, in seconding, said he was glad it had been proposed by another member than himself. He heartily agreed that the way in which the business had been managed by the Medical Secretary and the staff was most admirable, and it was entirely due to their efforts that the meeting had been able to get through the minutes so rapidly. It would not be correct to put the resolution on the minutes, but he thought the meeting owed its heartiest thanks to the Medical Secretary and the staff for the way which they had carried through their part of the work.

The proceedings then terminated.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

GLASGOW AND WEST OF SCOTLAND BRANCH:

Glasgow Eastern Division.

Election of Officers.—The following are the office bearers for 1907-8: *Chairman*, W. B. Armstrong, M.B., Lenzie; *Vice-Chairman*, W. Core, M.D., Stobhill Hospital, Springburn; *Honorary Secretary and Treasurer*, John Patrick, M.B., 23, Westercraigs, Dennistoun; *Representative for Representative Meeting*, Mr. W. L. Muir, 1, Seton Terrace, Dennistoun; *Representative on Branch Council*, Miller Semple, M.B., John Patrick, M.B.; *Executive Committee*, M. Black, M.D., W. Bryce, M.D., P. S. Buchanan, M.B., William Findlay, M.D., Alex. Munro, M.B., D. McKail, M.B., D.P.H., Thomas Russell, M.B., Robert Scott, M.B., R. Service, M.D.

METROPOLITAN COUNTIES BRANCH:

Wandsworth Division.

An ordinary meeting was held, by kind permission, at the Head Quarters of the 4th V.B. East Surrey Regiment, 27, St. John's Hill, S.W., on Tuesday, July 16th, Dr. Malcolm Mackintosh in the chair.

Confirmation of Minutes.—These were read and confirmed.

Correspondence.—Several letters from the Medical Secretary, acknowledging resolutions passed, were read.

Special Representative Meeting.—The Deputy Representative at the May meeting reported on the principal subjects considered. A vote of thanks was passed for his attendance.

Proposed Alterations in Charter.—Several suggested alterations were brought forward, and it was resolved to refer them to a special meeting of the Executive Committee to consider and report at an early date.

Alteration of Rules.—It was proposed, seconded, and resolved to so alter Rule 5 as to make the office of Honorary Treasurer separate from that of Honorary Secretary; and subsequently Dr. E. Rowland Fothergill was elected Honorary Treasurer.

Report of Medico-Political Committee of the Division.—The report on various matters appearing in the Supplements for June 29th and July 6th was considered and the recommendations approved. Attention was drawn to the absence of the annual reports of the Central Medico-Political and Ethical Committees, and it was resolved that the Representative should move a special resolution on this at the Representative Meeting.

Reports of Finance Investigation Committee.—It was resolved that the Representative do move that these be referred to the Divisions for consideration before the Representatives consider the same at a Special Representative Meeting.

Communications.—Communications from Dr. Milner Moore, of Coventry, and the Honorary Secretary of the Macclesfield Division were read, and the Representative was instructed to support the respective resolutions they were bringing before the Representative Meeting.

Representatives' Meetings.—It was resolved that power be given to the Chairman, Honorary Secretary, and Representative at Representatives' Meetings, to act as a Committee on all other subjects requiring immediate decision which are to be before the Representatives' Meeting, to take what action they consider desirable, and to report to the next meeting.

Hospital Committee.—Dr. M. G. Biggs, as Chairman, reported the result of negotiations with the Board of the Bolingbroke Hospital, and stated that all the suggestions submitted had been accepted. It was resolved that a summary of the result of the negotiations be circulated with the agenda for the September meeting, this summary being prepared by the Hospital Committee. Correspondence with the Board of the proposed Wimbledon Hospital was read, and it was resolved that Dr. George Walker be the Representative of the Division on that Board, and that he be asked to report to each meeting of the Executive Committee.

Vote of Thanks.—A vote of thanks to the Chairman closed the meeting.

OXFORD AND READING BRANCH.

The annual meeting of this Branch was held on July 19th at the Radcliffe Infirmary, Oxford, at 3.30 p.m.

Discussion.—Mr. H. G. Armstrong opened a discussion on The Case-Incidence in Seven Epidemics of Measles, with Notes on the Pre-eruptive Stage. He introduced a series of most instructive diagrams, and his remarks led to an animated discussion.

Cases.—Mr. H. P. Symonds showed a case of congenital specific disease of the knee joint. Mr. H. Gilford showed a case of osteitis deformans. Dr. Wylie showed a case of universal tuberculous syphilide in a man; many of the lesions were of a rupial nature. It was only six months from the date of the primary infection. Dr. W. T. Freeman showed a case of permanent alopecia produced by an *x*-ray burn four years previously. Mr. Ranking showed, for Dr. Freeman, a case of marked general lymphatic enlargement in a young man. The case had the appearance of early Hodgkin's disease. There was an indefinite history of syphilis. Beneath the prepuce was a large crop of gonorrhoeal warts. Dr. Marriott showed a case of primary lateral sclerosis in a young man. Other cases were exhibited in a side room, including two cases of xanthoma tuberculatum by Dr. Mallam. Professor Osler, Dr. Collier, Dr. Duigan, Dr. Neil, and Mr. H. P. Symonds joined in the various discussions.

Demonstration.—Dr. GIBSON demonstrated some pathological specimens, and Dr. SANKEY showed skiagrams.

The Central Council.—Dr. COLLIER proposed, and Dr. HOLDEN seconded :

1. That the members of the Oxford and Reading Branch consider that the Council of the British Medical Association should retain effective control over the affairs of the Association.
2. The members of the Oxford and Reading Branch consider that the Council of the British Medical Association should retain control over the finances of the Association.

Both resolutions were carried unanimously after some expressions of dissent from Dr. YELF.

Dinner.—Twenty-two members, with the President in the chair, subsequently dined together at Exeter College.

SOUTH-EASTERN OF IRELAND BRANCH.

A MEETING of this Branch was held in the Club House, Carlow, on July 3rd, J. V. RYAN, M.B., President of the Branch, in the chair.

Confirmation of Minutes.—The minutes of last meeting were read and confirmed.

Apologies for Non-attendance.—Letters of apology were read from Drs. Quirke (Honorary Secretary), Shee, and Laffan.

Locum Tenent.—It was proposed by Dr. H. KIDD and seconded by Dr. MCDONALD that the resolutions *re* appointment of locum tenent passed at the Clonmel meeting be published in the press.

Correspondence.—A letter from Dr. Laffan *re* medical parliamentary candidate was postponed for larger attendance.

Medical Defence.—It was proposed by Dr. MCDONALD and seconded by Dr. T. KIDD :

> That this meeting of the South-Eastern of Ireland Branch is of opinion that the British Medical Association should become a medical defence association.

Discussion.—There followed a discussion on Irish cholera. Dr. H. KIDD recommended pulv. rhei co. as specific; pil. plumb. c opio in dispensary cases.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

OWING to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

SOUTHERN BRANCH.—Notice is hereby given that during the month of August next the Branch will proceed to elect a member to fill the vacancy on the Central Council of the Association caused by the death of Dr. Joseph Groves. Candidates who have been nominated each by a Division or by not less than three electors must please send their application to me on or before August 10th next.—H. J. MANNING, Honorary Secretary, Laverstock House, Salisbury.

SOUTH-EASTERN OF IRELAND BRANCH.—A meeting of this Branch will be held at New Roos on August 7th, at 4.50 p.m. Agenda: (1) Minutes. (2) Dr. Laffan's motion *re* Medical Parliamentary Candidate referred (3) Any other business.—J. QUIRKE, Honorary Secretary, Piltown, co. Kilkenny.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held at Caxton House, Westminster, on July 25th, with Dr. F. H. CHAMPNEYS in the chair.

Conviction for Using Description Implying Midwifery Qualification.

A letter from the Solicitor to the London County Council was read reporting the conviction of Mrs. Ita Feldmann for unlawfully using a description implying that she was specially qualified to practise midwifery.

Notification of Births Bill.

A letter from the Clerk of the Council was received stating that the proposed amendment of Clause 2 (4) of the Notification of Births Bill did not commend itself to the Lord President.

Ignorance of the Rules.

A letter was considered from Dr. R. P. Ranken Lyle as to ignorance of the rules shown by candidates at the recent examination in Newcastle, and inquiring whether examiners should reject candidates on this ground alone. The Board decided that Dr. Lyle be informed that as candidates were bound to know the rules (Rule C, 4 (i), it was the duty of the examiners to ascertain that they did. Further, the Secretary was directed to call the attention of the training schools involved to the necessity of adequately instructing their pupils in the rules, as required by Rule C, 4 (i).

Doctors sent for in Emergency Cases.

A letter was received from Dr. Buchan, Medical Officer of Health, St. Helens, forwarding a copy of a scheme adopted by the local supervising authority for the payment of medical practitioners sent for in cases of emergency to assist midwives. The Board decided that Dr. Buchan be thanked for the care and trouble he had taken in compiling the scheme, which it was hoped might lead to the difficulty being similarly dealt with in other places. A letter was read from a midwife as to the refusal of a parish doctor to attend when sent for in a case of emergency. The Board decided that the midwife be informed that a midwife has discharged her responsibility in advising that medical assistance be sent for, and that when the patient is unable to pay a doctor's fee she should send direct to the District Medical Officer.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON C. W. BUCHANAN-HAMILTON has been placed on the retired list, with the rank of Deputy Inspector-General, July 27th. Appointed Surgeon, June 4th, 1878, he was made Staff Surgeon on June 4th, 1890, and Fleet Surgeon, July 15th, 1894. He served throughout the Egyptian war in 1882 in the *Beacon*, being present at the bombardment of Alexandria, the seizure of the Suez Canal, the occupation of Port Said, Suez, and Ismailia, the surrender of the Aboukir, Damietta, and Ghimileh Forts, and until the end of the war (medal with clasp and Khedive's bronze star); was Surgeon with the Royal Marine Battalion in the Soudan expedition, 1884; of the Royal Victoria Hospital and of H.M. *Sphinx*, at Suakin, until the close of the campaign (clasp); Surgeon of Naval Brigade in the Burmese war, 1885, and attached to the Burmah Field Force in the advance to Upper Burmah and in the Indian Marine ship *Tigris*, and was at the occupation of Mandalay and deposition of King Thebaw (medal with clasp).

The following appointments have been made at the Admiralty : JOHN MENARY, M.D., Fleet Surgeon, to the *President*, additional, for three months' course at West London Hospital, July 25th; SHELDON F. DUDLEY, Surgeon, to the *Queen*, July 22nd; OSWALD MILLS, Surgeon, to the *Donegal*, July 22nd; NOEL H HARRIS, Surgeon, to the *Defiance*, July 22nd: ROBERT J. MACKEOWN, M.B., to the *Thetis*, on recommissioning, August 1st; MICHAEL J. LAFFAN, M.B., Surgeon, to Chatham Hospital, July 26th; GEORGE D. WALSH, Surgeon, to the *Wildfire*, additional, to be lent to the *Speedwell*, July 26th.

W. DRAKE, civil practitioner, has been appointed Surgeon and Agent at Harwich, July 25th; and C. P. RUEL, to be Surgeon and Agent at Southsea, July 29th.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL C. R. WOODS, M.D., retires on retired pay, July 27th. He was appointed Surgeon, July 31st, 1880; Surgeon-Major, July 31st, 1892; and Lieutenant-Colonel, July 31st, 1900 He served with the British Field Hospital during the Manipore expedition in 1891, receiving a medal with clasp.

Major C. E. P. FOWLER, Assistant Professor of Hygiene at the Royal Army Medical College, has been appointed for special duty at Gibraltar.

INDIAN MEDICAL SERVICE.

THE retirement from the Service of Lieutenant-Colonel H. M. MORRIS, which has been already announced in the BRITISH MEDICAL JOURNAL, has received the approval of the King.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

Surgeon-Lieutenant-Colonel R. R. Brown, 1st Kent Regiment, is granted the honorary rank of Surgeon-Colonel, July 1st.

Thomas J. Faulder to be Surgeon-Lieutenant in the 3rd Middlesex Regiment, July 9th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Lieutenant D Rorie, M.B., Aberdeen Companies, Scottish Command, to be Captain, June 12th.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,067 births and 3,665 deaths were registered during the week ending Saturday last, July 27th. The annual rate of mortality in these towns, which had been 12.5, 12.3, and 12.4 per 1,000 in the three preceding weeks, declined last week to 11 9 per 1,000. The rates in the several towns ranged from 1.2 in Hornsey, 4.9 in Northampton, 5 0 in East Ham, 5.8 in Walthamstow, 6.0 in Leyton, and 6.2 in West Hartlepool, to 16.9 in St. Helens, 17 0 in Sunderland 17.1 in Bootle, 17.3 in Walsall, 18.4 in Rochdale, 19.4 in Hanley, and 19.7 in Great Yarmouth. In London the rate of mortality was 12.1 per 1,000, while it averaged 11.9 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1 3 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.4 per 1,000, while among the seventy-five other large towns the death-rates from the principal infectious diseases ranged upwards to 3.5 in Wigan, 3.6 in Preston, 3.7 in Grimsby, in Derby, and in Gateshead, 4.3 in Walsall, and 4.4 in Cardiff. Measles caused a death-rate of 1 2 in Blackburn, 1.7 in Gateshead, 1.8 in South Shields, 2 7 in Walsall, 2 9 in Derby, and 3.1 in Cardiff; scarlet fever of 1.5 in Grimsby; diphtheria of 1.2 in Wigan; whooping-cough of 1.1 in St. Helens and in Cardiff, 1.2 in Gateshead, 1 4 in Ipswich, 1.8 in Wigan and in Preston, 2.0 in Great Yarmouth, and 2 2 in Grimsby; and diarrhoea of 1.1 in Walsall and in Bolton, 1.2 in Rhondda, and 1.3 in Devonport. The mortality from "fever" showed no marked excess in any of the large towns, and no death from small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,193, 3,276, and 3,386 at the end of the three preceding weeks, had further risen to 3 586 at the end of last week; 557 new cases were admittted during the week, against 504, 493, and 569 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, July 27th, 926 births and 474 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.7 and 14.9 per 1,000 in the two previous weeks, declined again last week to 13.6 per 1,000, but was 1.7 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rate ranged from 9 0 in Perth and 9 3 in Aberdeen to 15.3 in Paisley and 15 8 in Edinburgh. The death-rate from the principal infectious diseases averaged 1.9 per 1,000, the highest rates being recorded in Edinburgh and Leith. The 235 deaths registered in Glasgow included 4 which were referred to measles, 2 to scarlet fever, 2 to diphtheria, 13 to whooping-cough, 4 to diarrhoea, and 1 to cerebro-spinal meningitis. Eight fatal cases of whooping-cough, 2 of diarrhoea, and 3 of cerebro-spinal meningitis were recorded in Edinburgh; 3 of whooping-cough and 3 of diarrhoea in Dundee; and 2 of whooping-cough in Paisley, in Leith, and in Greenock.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BATH: BAILBROOK HOUSE.—Medical Superintendent. Salary, £450 per annum.

BIRMINGHAM: QUEEN'S HOSPITAL.—House Surgeon and Obstetric and Ophthalmic House-Surgeon. Salary at the rate of £50 per annum.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House-Surgeon. Salary, £160 per annum.

CAIRO: EGYPTIAN GOVERNMENT.—Resident Medical Officer. Salary, £250 per annum.

CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer. Salary, £100 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

EDINBURGH: CRAIGLOCKHART POORHOUSE AND HOSPITAL.—Medical Officer. Salary at the rate of £106 6s. per annum.

EGYPTIAN MINISTRY OF EDUCATION.—Assistant to the Professor of Pathology. Salary, £E320 per annum.

EGYPTIAN PUBLIC HEALTH DEPARTMENT.—Sub-inspector of Ophthalmic Hospitals.

ESSEX AND COLCHESTER GENERAL HOSPITAL.—House-Physician. Salary, £80 per annum.

GREENWICH: DREADNOUGHT HOSPITAL.—Pathologist. Salary, £100 per annum.

HUDDERSFIELD INFIRMARY.—Male House-Surgeon. Salary, £100 per annum.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon. Salary, £50 per annum.

LANCASTER ROYAL INFIRMARY.—House-Surgeon. Salary, £100 per annum.

LIVERPOOL DISPENSARIES.—Assistant Surgeon. Salary, £100 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—Resident Pathologist and Registrar. Salary, £100 per annum.

MANCHESTER: ANCOATS HOSPITAL.—Resident House-Physician.

MANCHESTER: MONSALL FEVER HOSPITAL.—Fourth Medical Assistant. Salary, £100 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Secretary and Superintendent. Salary, £200 per annum.

NORTHAMPTON CORPORATION.—Medical Officer of Health. Salary, £400 per annum.

NORTHAMPTON GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney, N.E.—House-Physician. Salary at the rate of £60 per annum.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—House-Surgeon (Male). Salary, £80 per annum.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Assistant Medical Officer. Salary, £100 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary, £50.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House-Surgeon. Salary, £80 per annum.

ROYAL INSTITUTE OF PUBLIC HEALTH.—Demonstrator of Comparative Pathology and Bacteriology.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House-Physician. Salary, £100 per annum.

SALFORD ROYAL HOSPITAL.—Junior House-Surgeon. Salary at the rate of £50 per annum.

SOUTHPORT INFIRMARY.—(1) Resident Senior House-Surgeon; (2) Junior House and Visiting Surgeon. Salary, £90 and £70 per annum respectively.

STOCKPORT INFIRMARY.—(1) House-Surgeon. (2) Assistant House and Visiting Surgeon. Salary, £100 and £80 per annum respectively.

TEIGNMOUTH HOSPITAL.—House-Surgeon. Salary, £70 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House-Surgeon. Salary, £120 per annum.

ZANZIBAR GOVERNMENT.—Bacteriologist. Salary, £300 per annum, rising to £400.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Market Harborough (co. Leicester).

APPOINTMENTS.

Bennett, T., M.B., Ch.B.Glasg., Medical Officer of the Workhouse of the Knaresborough Union.

Coates, F. A., M.R.C.S., L.R.C.P.Lond., District and Workhouse Medical Officer of the Whitchurch Union.

Collie, R. J., M.D.Aberd., Medical Referee under the Workmen's Compensation Act, 1906, to be attached to County Court Circuit No. 43.

Dickins, S. J. O., M.D.Brux., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Cuckfield Union.

Drury, A. E., L.R.C.P. and S.Edin., District Medical Officer of the Wells Union.

Flood, F. G., M.R.C.S., L.R.C.P., District Medical Officer of the Loughborough Union.

Frith, Walter S., M.B., B.C.Cantab., Honorary Anaesthetist to the Prince of Wales's General Hospital, Tottenham.

Gutch, J., M.A.Cantab., B.A., M.D., B.C., M.R.C.S., L.R.C.P.Lond., Medical Officer, St. John's Home, Ipswich Union.

Hawksley, W. L., M.B., Ch.B., D.P.H. (Liverpool), Assistant Medical Officer, New City Hospital for Infectious Disease, Fazakerley, Liverpool.

Kelly, T. Gordon, B.A., M.D.Dub., D.P.H.Oxon., Medical Referee under Workmen's Compensation Act, 1906, for County Court Circuit No. 20, comprising Leicester, Ashby-de-la-Zouch, Market Harborough, Market Bosworth, Hinckley, and Melton Mowbray County Courts.

Larking, Arthur E., M.D., D.P.H., Medical Officer and Public Vaccinator to the First District of the Buckingham Union.

Leighton, T. P., M.B., Ch.B.Vict., District Medical Officer of the Chorley Union.

McDougall, J. W., M.B., Ch.B.Glasg., L.S.A., District Medical Officer, Bolton Union.

MacMyn, J., M.D.Edin., Certifying Factory Surgeon for the Kirkcudbright District.

Munro, J. R., M.D.Edin., District Medical Officer of the Boston Union.

Paul, V. G. J., M.R.C.S., L.R.C.P Lond., Certifying Factory Surgeon for the Harwich District, co. Essex.

Pearson, Allan Campbell, M.B., B.C.Cantab., D P.H.Camb., M R.C S.Eng., L.R.C.P.Lond., Deputy Medical Officer in Charge, H.M. Prison, Borstal.

Prosser, James G., M R.C.S., L R C.P.Lond., Certifying Factory Surgeon for the Penarth District, co. Glamorgan.

Roberts, R W., L R.C.P. and S.Edin., Medical Officer to the Shipping Federation at Port Talbot, Workmen's Compensation Act, 1907.

Roberts, P. M., M.B., B.S Lond., Junior Assistant Medical Officer at the Parish of Fulham Infirmary.

Rusby, E L. M., M.B.Lond, M.R.C.S., L.R.C.P.Lond., District Medical Officer, Lambeth Parish.

Scott, W. J., L.R C P. and S.Irel., District Medical Officer of the Cuckfield Union.

Sutherland, D. P., M.B., B S.Lond., Assistant Medical Officer of Workhouse, Bolton Union.

Thomas, J. H., L.R.C.P.Edin., M.R.C.S.Eng., District and Workhouse Medical Officer of the Market Harborough Union.

TOMLIN, H., M.B., Ch.B.Vict., District Medical Officer of the Mansfield Union.

YOUNG, B. M., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Cuckfield Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ECCLES.—On July 29th, at 124, Harley Street, W., the wife of W. McAdam Eccles, M.S., F.R.C.S., of a son.

SPENCER.—On July 24th, at 5, Ferndale Avenue, Wallsend-on-Tyne, the wife of G. Herbert Spencer, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

KINNEAR—ATKINS.—On July 25th, at St. John's Church, Angell Town, S.W., by the Rev. J. Jenkins, Forbes Kinnear, of Royton Hall, Royton, Lancashire, to Ethel Jessie, fourth daughter of James Yeo Atkins, of 24, Overton Road, S.W.

MCLAREN—EVERETT.—At St. Bride's Episcopal Church, Kelvinside, Glasgow, on July 30th, by the Rev. T. Younghughes, B.A., assisted by the Rev. G. Robinson, B.A., John McLaren, Glasgow, to Maud Varley Everett, L.R.C.P. and S.Ed., second daughter of R. Lacey Everett, Esq., M.P., Rushmere, near Ipswich. At home, Rushmere, during August.

TAYLOR—WRENFORD.—On July 27th, at Holy Trinity, Sloane Street, by the Rev. Hugh Wrenford, assistant priest, St. Paul's, Swindon, brother of the bride, assisted by the Rev. H. Gamble, the rector, Martin Bramly Taylor, M.R.C.S., L.R.C.P., of Hemsworth, Yorkshire, elder son of W. Bramly Taylor, J.P., M.R.C.S., M.S.A., of The Birches, Weybridge Common, Surrey (late of Denmark Hill), to Mildred May, youngest daughter of the late Rev. W. H. Wrenford, vicar, of Shaldon, South Devon.

BOOKS, ETC., RECEIVED.

The Major Symptoms of Hysteria. By P. Janet, M.D. 1907. New York: The Macmillan Company.

Oxford Medical Publications. London: H. Frowde, and Hodder and Stoughton. 1907:

Prostatic Enlargement. By C. S. Wallace, M.B., B.S., F.R.C.S.

Bacteriology. By L. S. Dudgeon, M.R.C.P. 12s. 6d.

Diseases of the Male Generative Organs. By E. M. Corner, M.A., M.D., D.Sc., M.C., F.R.C.S. 5s.

A System of Medicine. Edited by William Osler, M.D., F.R.S., assisted by Thomas McCrae, M.D., F.R.C.P.Lond. Vol. I. 24s.

Essentials of Milk Hygiene. By C. O. Jenson. Translated by L. Pearson. Philadelphia and London: J. B. Lippincott Co. 7s. 6d.

The Principles and Practice of Dermatology. By W. A. Pusey, A.M., M.D. London: S. Appleton. 1907. 25s.

Die Lösung des Problems der Urzeugung (Archigonia, Generatio spontanea). Von M. Kuckuck. Leipzig: J. A. Barth. 1907. M.3.

Die asthenische Konstitutionskrankheit (Asthenia universalis congenita Morbus asthenicus). Von Prof. Dr. B. Stiller. Stuttgart: F. Enke. 1907. M 8.

Healthy Boyhood. By A. Trewby, M.A. London: Fenton House, Hampstead Heath. 1s. 6d.

Surgical Instruments in Greek and Roman Times. By J. S. Milne, M.A., M.D.Aberd. Oxford: The Clarendon Press. 1907. 14s.

The City of Worcester Official Handbook. Worcester: The Worcester Press. 1907. 6d.

A Textbook of Practical Therapeutics. By H. A. Hare, M.D., B.Sc. Twelfth Edition. London: H. Kimpton; Glasgow: A. Stenhouse, 1907. 21s.

London: The Sanitary Publishing Company, 1907:

Modern Drainage Inspection and Sanitary Surveys. By G. J. G. Jensen, C.E. Second edition. 2s. 6d.

Ventilation, Heating, and Lighting. By W. H. Maxwell, A.M.I.C.E. Second edition. 3s.

The Edinburgh Medical Journal. Edited by A. Thomson, M.D., F.R.C.S.Ed., and H. Littlejohn, M.B., F.R.C.S.Ed. New Series. Vol. xxi. Edinburgh and London: Young J. Pentland. 1907.

London: J. and A. Churchill; Berlin: Dr. W. Rothschild; and Paris: Boyveau and Chevillet. 1907:

The Medical Translator. Edited by P. Blaschke. 1st Part. A Dictionary of Medical Conversation. English-German. 4s.

Blaschke's Dolmetscher am Krankenbette. Abteilung I. Medizinisches Konversationbuch. Deutsch-Englisch. 4s.

Blaschke's Dolmetscher am Krankenbette. Abteilung II. Medizinisches Wörterbuch in Deutscher, Französischer, Englischer. 8s.

Klinische Diagnostik innerer Krankheiten mittels bakteriologischer, chemischer und mikroscopischer Untersuchungsmethoden. Von Dr. R. v. Jacksch. Sechste Auflage. Berlin and Wien: Urban und Schwarzenberg 1907. M.18.

London: H. Frowde, Oxford University Press. The World's Classics. From 1s.:

CIX. The Poems of G. Herbert.

CXXVII. A New Spirit of the Age. Edited by R. H. Horne.

CXXXIV. Aristophanes' Four Plays Translated into English Verse. By J. H. Frere.

Bilharziosis. By F. C. Madden, M.D., F.R.C.S. London: Cassell and Co., Limited. 1907. 3s. 6d.

London: The Health Resorts Association, 1907:

Harwich and Dovercourt, Falmouth and Skegness. Edited by G. W. May. Free on application to Town Clerk.

Bristol: J. Wright and Co.; and London: Simpkin and Co., Limited, 1907:

A Pharmacopoeia for Diseases of the Skin. Edited by J. Startin. Sixth edition. 2s. 6d.

The Clinical Use of Prisms; and the Decentring of Senses. By E. E. Maddox, M.D., F.R.C.S.Edin. Fifth edition. 5s. 6d.

International Clinics: A Quarterly. Edited by W. T. Longcope, M.D. Vol. ii. Seventeenth series. 1907. Philadelphia and London: J. B. Lippincott Co. 1907.

Praktikum der gerichtlichen Medizin. Von Dr. H. Marx. Berlin: A. Hirschwald. 1907. M. 3.60.

*** In forwarding books the publishers are requested to state the selling price.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
AUGUST.	
3 SATURDAY...	
4 Sunday ...	
5 MONDAY ...	
6 TUESDAY ...	
7 WEDNESDAY	South-Eastern of Ireland Branch, New Roos, 4.50 p.m.
8 THURSDAY...	
9 FRIDAY ...	
10 SATURDAY...	
11 Sunday ...	
12 MONDAY ...	
13 TUESDAY ...	
14 WEDNESDAY	
15 THURSDAY...	
16 FRIDAY ...	
17 SATURDAY...	
18 Sunday ...	
19 MONDAY ...	
20 TUESDAY ...	
21 WEDNESDAY	
22 THURSDAY...	
23 FRIDAY ...	
24 SATURDAY...	
25 Sunday ...	
26 MONDAY ...	
27 TUESDAY ...	
28 WEDNESDAY	
29 THURSDAY...	
30 FRIDAY ...	
31 SATURDAY...	
SEPTEMBER.	
1 Sunday ...	
2 MONDAY ...	
3 TUESDAY ...	

Printed and Published by the British Medical Association at their Office, No. 6, Catherine Street, Strand, in the Parish of St. Paul, Covent Garden, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 10TH, 1907.

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British Medical Association.

ANNUAL GENERAL MEETING.

Thursday, August 1st, 1907.

THE TORONTO MEETING.

THE PRESIDENT, in opening the proceedings, said that two presentations on the occasion of his induction were omitted, and those who remembered the great *éclat* with which the meeting at Toronto went off would think it curious that they should have omitted two most popular representatives from that place, but it was rather the fault of the representatives, because they were not present to be presented. He welcomed them that day, and desired to say how pleased they were to see Professor Irving Cameron, F.R.C.S., and Dr. F. N. G. Starr, who had acted as Honorary Secretary, and who had helped so much to make the Toronto meeting so pleasant.

THE ADDRESS IN SURGERY.

The PRESIDENT then called on Mr. Butlin to deliver the address in surgery. The President had an especial pleasure in welcoming Mr. Butlin there, because, like himself, Mr. Butlin was an old Devonian.

Mr. H. T. Butlin's address was published in the JOURNAL of August 3rd, p. 255.

Professor IRVING CAMERON, F.R.C.S., in moving a vote of thanks, said it was remarkable that as a humble member of the Association he should be called upon to move a vote of thanks to Mr. C. J. Bond at Leicester, to Sir Victor Horsley at Toronto, and now to Mr. Butlin at Exeter for the address in surgery. He could only explain it by the fact that they looked upon him as a Canadian with undue favour. In selecting autoinoculation of cancer as the topic of his address Mr. Butlin had chosen a subject he had made peculiarly his own. It was not part of the duty of the mover of the vote of thanks to discuss the question brought forward, and it would be impertinent for him to do so; but he craved indulgence to make a few remarks with regard to the subject matter of the address, because he wanted to put on record his own experience with regard to Mr. Butlin's view of autoinoculation of cancer. He desired to refer to Dr. Dauber's cases in order to lend his testimony to the fact that carcinoma of the vulva was frequently transferred from one side to the other, which was to be attributed to the fact that the local conditions of moisture and friction were favourable to it. Of the laryngeal cases he knew little; but as to lip cases, which were admittedly rare, he thought nearly every medical man would agree with Mr. Butlin as to the possibility, and it was to be remembered that the opinion of his kinsman, Sir Hector Cameron, was given 20 years ago. The explanation which Mr. Butlin gave of the rarity of such cases seemed to be satisfactory. In addition, the universal care exercised by operators to prevent the inoculation of cancer during operations was a practical proof of the concurrence of surgeons in general with Mr. Butlin's views. He accordingly moved:—

> That the best thanks of the Association be given to Professor Henry Trentham Butlin, F.R.C.S., D.C.L., for his able and interesting address on autoinoculation of cancer in surgery.

Mr. E. J. DOMVILLE esteemed it a very great privilege to second the vote of thanks. The address contained a clear and eloquent exposition which showed most careful preparation, and which was a model to all. Without flattery, he could say that the address was an example of the carefulness of the truly scientific man, who did not "rush" a theory upon his profession without due preparation, but who was willing to take small things here and small things there, and was content to build his theory upon facts before he put the result before his professional brethren. That was an example they might take to themselves in connexion with the work they were doing all over the world; by collating and noting facts with the care displayed by such men as Mr. H. T. Butlin, they ought to amass an amount of material which would cover the demands made upon reputations such as his.

The PRESIDENT then put the resolution to the meeting, and it was carried with acclamation amidst loud and prolonged applause.

Mr. BUTLIN, in reply, expressed his thanks to so many coming that afternoon to listen to a very dry lecture on cancer.

The proceedings then terminated.

ANNUAL REPRESENTATIVE MEETING.

CORRECTIONS.

LIEUTENANT-COLONEL DECIMUS CURME (Representative of the West Dorset Division) desires the report (SUPPLEMENT, August 3rd, p. 119) of his remarks on the amendment of Article XXVII, proposed by the Marylebone Division, to make the minimum membership of a constituency entitled to elect a Representative 100 in place of 50 to be corrected to read as follows:

He had analysed the returns, and the alteration would affect 115 out of 165 constituencies. The numbers were as follows: 105 having 50 and under 100 members, 10 having under 50 members, 50 having 100 members and over.

In the annual report of the Medico Political Committee, published at p. 111 of the SUPPLEMENT of August 3rd, the Mount Vernon Hospital was referred to as "at Ventnor." The hospital is situated at Hampstead, with a branch at Northwood, Middlesex.

ANNUAL DINNER.

THE Annual Dinner of the Association was held on Thursday evening, August 1st, at the Royal Public Rooms, Exeter. The PRESIDENT (Dr. Davy), who occupied the chair, was supported by the Lord Bishop of Exeter, the Mayor and the Sheriff (Dr. Ransom Pickard) of Exeter, Dr. Reeve, ex-President (Toronto), Sir Philip Jones (Sydney, N.S.W.), Professor McCrae (Baltimore), Dr. Bonnefoy (Paris), Professor Salomonson (Amsterdam), Inspector-General Porter, Professor Leduc (Nantes), Professor Strassmann (Berlin), Professor F. Ziemann, Surgeon-Major of the German Navy; General Kirkpatrick, the Archdeacon of Exeter, Chancellor Edmonds, Dr. J. A. Macdonald, Dr. Maury Deas, Professor Landolt (Paris), and several gentlemen of the Local Executive.

The PRESIDENT proposed the toast of "The King," and also that of "The Queen, the Prince and Princess of Wales, and Other Members of the Royal Family," which were received with much enthusiasm and with musical honours.

The Imperial Forces of the Crown.

Mr. ANDREW CLARK proposed this toast, remarking that the British Medical Association had recently interested itself considerably in questions connected with the medical services of the auxiliary forces and the new territorial army.

Inspector-General PORTER and General KIRKPATRICK responded.

The Bishop of the Diocese and Clergy of all Denominations.

Dr. MAURY DEAS, in proposing this toast, referred to the intimate connexion that ought to exist between those who had the care of the souls of mankind and those who had the care of their bodies.

The BISHOP OF CREDITON, in responding, said the warmest thanks were due to the members of the medical profession for the kindness they invariably showed to those members of the clergy who were not well off in any illness which might overtake them.

The Mayor and Corporation of Exeter.

Dr. REEVE said that the Association had met in great centres in this great old land, but in no place had it met which had greater interest for the student of history than Exeter. He knew that those members of the Association who had attended the meeting would never forget the great cordiality of the welcome extended to them by the people of Exeter and Devon.

The MAYOR responded, and expressed the pleasure it was to all those who had taken part in the local work to know that their efforts had been so much appreciated.

The British Medical Association.

This toast was proposed by the Rev. CHANCELLOR EDMONDS. He said no more agreeable thing could have happened than that he should have been asked to propose this toast in the year in which his old friend Dr. Davy was the President. He thought there should be no rivalry between the medical profession and the clergy. Both professions had the opportunity of cultivating that great quality which bound all together, namely, sympathy.

Dr. J. A. MACDONALD, in responding, agreed that the two professions must always be deeply in sympathy in the great work which came to both if the good of humanity was to be carried to its fullest development. The British Medical Association had several objects in view; one was the advance of science, another was the protection of particular members, and the third—and the greatest of all—was the alleviation of the sufferings of humanity; and the power that the Association had in these three respects was almost illimitable.

The President.

Sir JOHN MOORE, in proposing this toast, said that the success of such a meeting as the Association had had at Exeter depended very largely on weeks and months of work and trouble on the part of the local executive; and at the head of that executive it was most necessary to have a man who could be relied upon to exercise, not only the *suaviter in modo*, but the *fortiter in re*; such a man had been found in Dr. Davy. From first to last their President had spared neither time nor trouble in making every one feel thoroughly at home. He (the speaker) thought that a great part of the success of this really magnificent meeting of the British Medical Association was due to the urbanity of Dr. Davy.

The toast was received with musical honours, and

The PRESIDENT, in returning thanks, said there was no city in England which had better traditions in regard to its hospitality than Exeter. The proposer of the toast had stated that in his opinion the success of such a meeting depended on the President of the Association, but in his (the speaker's) opinion it depended more on the loyal support that was given to the President by the profession, and he could assure the members that although the Association might have Presidents of greater eminence and better known throughout the world, yet no President would ever have more loyal support than he had had. He then proceeded to speak in the highest terms of praise of those who had worked with him to make the meeting a success, and concluded by saying that he and those who had worked with him had tried to do their best, and he hoped that the meeting would be a memorable one, and that the members had learnt what the traditional hospitality of Exeter was.

The Guests.

Dr. GORDON proposed this toast, and Professor LANDOLT in responding, said that a foreigner need not stay long in this country to discover the reasons that had made it, and still made it, one of the great nations; he referred to the intelligence and energy of its people, the great sense for order and common sense; but, in addition to all these qualities, there was still another, and that was the great courtesy and kindness which was always shown to a stranger. He could assure those present that their guests would always remember the happy time they had spent and they desired to express their gratitude for the kindness and courtesy which they had received from every one, especially from the esteemed President of their great Association.

THE POPULAR LECTURE.

THE lecture, first instituted three years ago as some kind of acknowledgement of the goodwill shown by the public at large towards members of the British Medical Association during its annual meetings, and designed also to promote interest in scientific medicine among laymen, was delivered this year at Exeter by Sir John William Moore of Dublin. For many years past he has been in the habit of supplying to the Registrar-General of Ireland the meteorological data incidental to the annual return respecting births, deaths, and marriages, and causes of mortality; and in this lecture he turned his extensive knowledge of vital statistics and his profound acquaintance with practical and theoretical meteorology to most excellent account.

He gave his address the title of Weather, Climate, and Health—and with the help of material which most persons would have regarded as of a most unpromising character, contrived to keep the mixed and large audience which had collected, in spite of a severe storm of rain thoroughly interested from beginning to end. In effect the lecture was a limelight demonstration of tables showing the incidence of disease throughout series of years and curves of prevalence of various classes of illness during different periods of the year, the leading points of each diagram being briefly described and attention being drawn to the practical lessons which seemed to be suggested by each table in its turn. The whole demonstration was well calculated to awaken an intelligent interest in the general subject of meteorology, and in spite of the brevity with which each point was dealt, should enable those present to read much more comprehendingly the references to mortality, and the extracts from the returns of medical officers of health and the reports of the Registrars-General in the three divisions of the United Kingdom which not infrequently appear in newspapers.

The lecture began with a reference to the general geological and geographical circumstances of Exeter itself, note being made of the fact that in 1880 Mr. Thomas Andrew of Exeter had read at the Congress of the Sanitary Institute of Great Britain (now the Royal Sanitary Institute) a paper showing that Exeter occupies the site of an extinct volcano. Dr. Gordon's investigations as to the direction of the prevailing

inds and other atmospheric conditions in Devonire and their influence on the distribution of ıthisis were also mentioned. An account was then ven of the way in which records of atmospheric nditions are obtained and kept by the Meteorological ffice, and of the general fashion in which weather foreısts are made at the present date. The earliest known tempt at keeping a weather record would appear to ıve been made early in the fourteenth century, when weather journal was kept for some years at Oxford by a ellow of Merton College, the Rev. William Merle. Our vn Meteorological Office was not founded until the year 54, and it was noted with regret that the Government ill treated it in a very penurious fashion. It only lowed for the study of practical meteorology and the mpiling of records a paltry sum of £70,000 a year, as mpared with more than four times that amount lowed to its corresponding department by the United ates of America.

Having described in outline the science of meteorology, r John Moore threw on the screen his series of mortality ıgrams. Pneumonia he showed had greatly increased the United Kingdom of late years, while there was a arked difference in the seasonal incidence of scarlet ver in New York and the United Kingdom, the difference ing probably due to the different methods of house ating adopted in the two countries, and the habitual seness of many New York dwellings. A further eresting point brought out was the fact that the period the greatest mortality from phthisis was not the lement periods of the year, winter and spring, but dsummer. In connexion with the latter period, ısolation for wet summers and excessive rainl at that period of the year was drawn in shape of the great saving to the nation of ant lives; this was shown to result when the nmer was so wet and cold that the surface layers of the th never reached Ballard's critical temperature—that nperature which seems necessary to the development of full activity of the organisms productive of the nmer diarrhoea of infants. The lecturer expressed an nion that climate *per se* played but a very small part the incidence of that disease, which had been so ly named "the white plague." The comparatively ater prevalence of phthisis throughout the western parts reland as compared with the urban districts of Dublin, k, and Belfast, was to be explained by the fact that these ns, with their slums and old tenement houses, reeked h the infection of tuberculosis. Sunlight, he pointed , as well as air, was a strong bactericide, and it was ission to recognize this fact that led to the imposition such a short-sighted, foolish tax as that which a ndred years ago was placed on windows; it led to blocking up of many existing windows, and to custom of building houses with as few and small dows as possible; instances of such architecture ld still be found in most old towns. As proof of severity of this tax, he showed an actual bill of ancient e, presented by a collector of the King's taxes. The cluding part of the demonstration was a series of ern pictures, illustrating effects of the seasons in ous parts of Great Britain. In these were included a ain number showing what very different atmospheric ditions may prevail simultaneously from above nwards in any given section of the atmospheric ering of the globe.

n the conclusion of the lecture, Mr. Russell Coombe, few well-chosen words, moved a vote of thanks to the urer, which was passed by acclamation and acknowed by Sir John Moore in a few simple phrases.

PATHOLOGICAL MUSEUM.

no means the least interesting part of the 1907 ting of the Association was the Pathological Museum, h found a place in the Barnfield Hall, Exeter. Here energetic Secretaries, Drs. Solly and Hawker, had nged a most varied and instructive collection of imens that had arrived in response to the appeals of Museum Committee, and warm congratulations are to them for the results of their industry, as well as ks to those who by sending specimens made that istry profitable. Special attention was this year paid iseases of the breast, nervous system, liver and gall bladder, tropical medicine, cancer research, fractures near joints, and dislocations. The first of these departments, was most exhaustively treated, and a large contribution from St. Bartholomew's included three fine examples of Paget's disease of the nipple, besides all varieties of inflammation and tumour formation. The Cancer Hospital and Cambridge University were also represented in this section, and Mr. E. H. Shaw, of the Metropolitan Hospital, exhibited a collection of several hundred microscopical preparations of breast diseases, while Dr. Bayon, of Greenwich Hospital, showed a series of specimens purporting to prove that in the majority of cases the nipple is the starting point of the growth.

In the section of nervous diseases, which included valuable specimens from Dr. Mott and Dr. Grainger Stewart, of the National Hospital, there were most striking specimens mounted in gelatine by Dr. Miller, of the London Hospital, several beautiful examples of epidemic cerebro spinal meningitis sent by Professor Muir from Glasgow and Professor Symmers (Belfast), a specimen of multiple aneurysms of the vessels at the base of the brain and life-like pictures of gummatous syphilitic meningitis, as well as a series of lantern slides by Dr. Michell Clarke showing degenerations in the posterior columns of the cord in pernicious anaemia. To the liver specimens Dr. Carey Coombs (Bristol) had added some of acute diffuse hepatitis; Professor Muir several infarcts due to portal thrombosis and cirrhosis with primary cancer, specimens of this latter also coming from St. George's Hospital; Dr. Spilsbury (St. Mary's) specimens of obstructive biliary cirrhosis; and Dr. Langmead a series showing fatty degeneration from cases of cyclical vomiting, some of which were complicated by chloroform poisoning.

Professor Wright (Manchester) and Mr. Moynihan (Leeds) contributed largely to an extensive collection of diseases of the gall bladder and bile ducts, and here as elsewhere the value of the specimens was enhanced by the clinical data given in the catalogue.

The specimens illustrating cancer research were of intense interest. Dr. Bashford (Imperial Cancer Research) exhibited a series of mice in whom various tumours had been transplanted, including squamous-celled growths with keratinization and typical cell nests; and Mr. Cecil Rowntree (Middlesex) showed many tumours (mounted) by his new and successful method in liquid paraffin. But the most convincing specimens were Professor Ehrlich's beautiful microscopical sections of experimental tumours, including sarcomata and a chondroma, that had been nine times transplanted and still remained typically chondromatous; all of them were indistinguishable from tumours found in man. In the Section of Tropical Medicine were many coloured illustrations of Leishman-Donovan bodies, and of amoebic dysentery by Major Donovan, I.M.S., a collection of biting flies by F. Theobald, M.A., and a series of cultures of dysentery, typhoid, and the allied bacilli from South Africa by Lieutenant Colonel Birt, R.A.M.C.

Professor Fergusson (Egypt) showed many typical examples of bilharziosis of the genito-urinary and alimentary tract in its various stages. The microscopical specimens in this section attracted much attention, and included various trypanosomata exhibited in a most effective manner by Plimmer and others, the different stages of development of the malarial plasmodia by Drs. Cropper and Stephens, and one saw there the rare conditions of full spores and flagellation.

Although special attention had been directed to these sections, other systems were not neglected. The circulatory system included a number of aneurysms from Haslar (Fleet Surgeon Bassett-Smith) and a series of lantern slides of coloured photomicrographs by Dr. C. H. Melland (Manchester) of the blood in pernicious anaemia. Specimens of secondary melanotic cancer of the suprarenal and of acute glanderous abscesses in the testicle sent by Dr. Spilsbury, and some sheep skulls showing the influence of castration, by Messrs. Shattock and Seligmann, were very striking. To the Gynaecological Section the London Hospital contributed largely. Syncytioma was well represented in females, including one from Dr. Solly, but unfortunately no example of the disease as it occurs in males was forthcoming. Mrs. Scharlieb contributed many uterine growths

under the designation endothelioma; and Dr. Cuthbert Lockyer a series exhibiting Wertheim's abdominal hysterectomy; whilst Professor Strassmann (Berlin) showed a comprehensive series of fibroids under various conditions of inflammation and degeneration, some that had been enucleated with favourable results, and a striking series of large "watch-glass preparations" measuring some 9 in. in diameter, which demonstrated a successful method of preparing specimens.

From Cambridge there came a collection of joints macerated to show the effects of osteo-arthritis, and a specimen of the hypertrophic variety of Charcot's knee-joint from the Royal Devon and Exeter Hospital, which institution was in fact represented in almost every section by specimens comparing favourably with those from the larger teaching centres.

The Dental Section was well supplied with teeth, models, and specimens illustrating comparative dental pathology, and Mr. Kenneth Goadby contributed lantern slides of the mouth flora, but it must be noted that the Surgery Section was unduly encroached upon by such things as tumours of the jaws and tongue. The Royal Devon and Exeter Hospital was responsible for an example of multiple carcinoma of the oesophagus, and the Cambridge University for a collection of appendices prettily mounted. Here were to be seen also Dr. Bolton's specimens of experimental gastric ulcer. Space will not permit us to give each exhibitor his due, but we must mention the effective microscopical demonstration, including, in addition to those already mentioned, Negri's corpuscles from a rabbit with hydrophobia (Dr. Bayon), and Dr. McLennan and others' slides of spirochaetes. And here we must comment on the kind loan of a large number of microscopes with several new improvements—for example, a pointer eyepiece, and an automatically disengaging fine adjustment, by Messrs. Zeitz, who also sent at their own expense a competent operator to superintend the working. Nor can we ignore the fine show of x-ray photographs and the dermatological pictures (by the three-colour process) of Dr. Phineas Abraham.

In conclusion, it may be repeated that the comprehensive character of the exhibition, including as it did macroscopical and microscopical specimens and illustrations and examples of all the methods of mounting specimens, together with lecture demonstrations by Drs. Mott and Bashford, rendered it a great success.

Thanks are due to Drs. Solly and Hawker, who sacrificed their whole time for the benefit of the visitors, and were ready on all occasions to demonstrate the exhibits.

The Annual Exhibition
OF
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[FIRST NOTICE.]

As usual at the Annual Meeting there was an exhibition at which members of the Association had an opportunity of personally inspecting many of the new developments due to the ingenuity of instrument makers, drug manufacturers, and specialists in articles of food. Together they made a most attractive and time-absorbing show, and those who exhibited must be congratulated on the manner in which the different articles were displayed and the ability with which their precise use and claims were explained to visiting members. An account of some of the exhibits which attracted more particular attention follows.

INSTRUMENTS AND APPLIANCES.

The AJAX SANITARY COMPANY (22, Ely Place, Holborn). The exhibit of this firm consisted of various basins and sinks, all fitted with the firm's patent. A basin so arranged is shown in the annexed engraving (Fig. 1). The invention of the firm is represented by the dark patch in the centre; this is a shutter which can be made of metal, of glass, or of sterilizable vulcanite. When let down it keeps the water in the basin; when raised it gives the contents of the basin rapid and noiseless outlet. This, however, is by no means all—when the shutter is raised, the out and overflow passages are not only in full view, but are thoroughly and immediately accessible, so that they can be cleansed without the slightest difficulty. One merit of the contrivance is its extreme simplicity; it adds nothing to the cost of construction, with the result that basins and the like so fitted are as cheap or cheaper than those of ordinary construction. Another is that it really

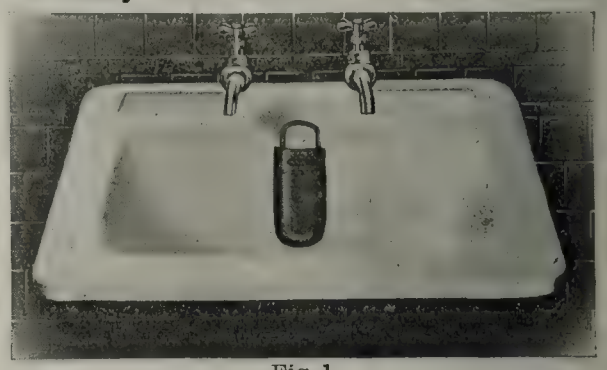

Fig. 1.

does what it pretends to do—namely, enables basins, sinks, and wastes to be kept in a state of high and, if necessary, even surgical cleanliness. There are many circumstances in hospitals, in operating theatres, in isolation wards, in hotels, in bedrooms, and in private houses, where such facilities are of great value, so it is to be expected that the contrivance will shortly become a familiar object, for it is at once simple, clever, and useful.

ALLEN AND HANBURYS (48, Wigmore Street, Cavendish Square).—The exhibit of this firm of instrument makers was a very large one, filling three stands, and containing such a large variety of instruments and appliances that an adequate description of them is impossible. The hospital furniture, made by the firm in phosphor bronze, German silver, and white enamelled steel, is sufficiently well known to be passed over. So, too, perhaps, are the excellent instruments for cleft palate operations, designed by Mr. Arbuthnot Lane and Mr. James Berry and others;

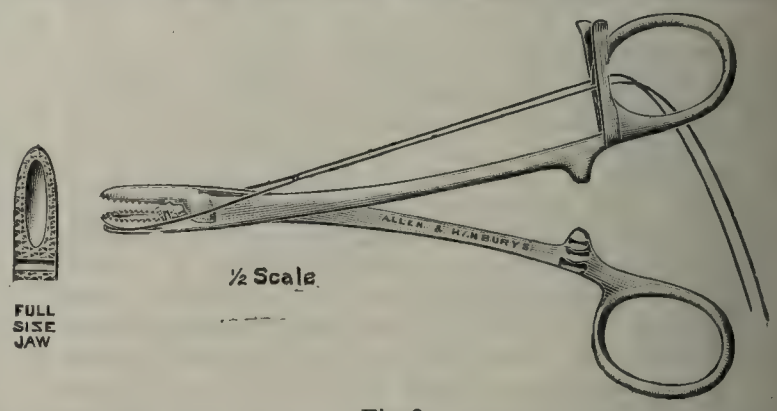

Fig. 2.

but amongst the retractors for general work shown there seemed some new models, while the smaller useful appliances exhibited included some Japanese Icebags, which present certain advantages over indiarubber articles of the same character. They are neat, and, if kept in a dry place, seem likely to be durable. A new material for bandages and compresses of French origin was also shown under the name of "Tetra." It is

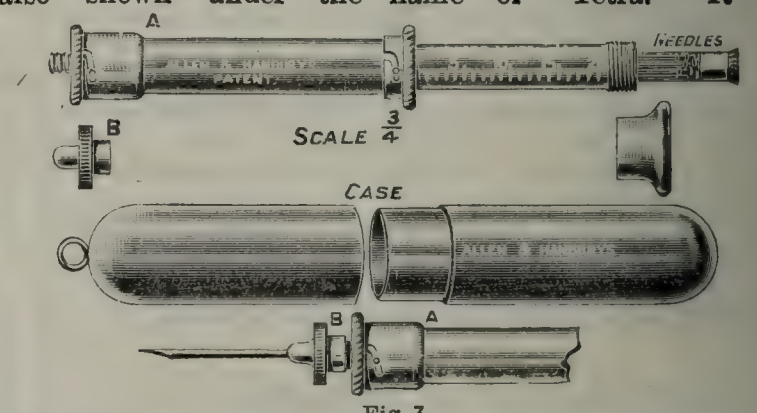

Fig. 3.

soft and absorbent, and as it can be washed, resterilized, and used a great many times it should be found economical. Among the smaller instruments Schoemaker's Patent Artery Forceps certainly deserve note. As will be seen from the illustration annexed (Fig. 2), it is a contrivance for simultaneously picking up an artery and putting a ligature in place ready to tie. It is an ingenious, well-made instrument, which should certainly be found useful under many circumstances. Another attractive instrument (Fig. 3) was an ex-

ceedingly well-made hypodermic syringe in a small case attachable to a watch chain. It is entirely of metal and unbreakable, the plunger being well ground, and acting immediately and efficiently. Six needles are supplied with the syringe in a small glass tube which fits into the interior; getting them in the place is very easy, and they are so cheap that they can be thrown away and a new supply obtained whenever desired. This instrument is certainly one of the best hypodermics we have seen. Another form of syringe shown was the one devised by Major Porter for the injection of eucaine; it is well made throughout and seemed well adapted to its purpose. A full account of its design was given in a recent issue.

Thomas Hawksley (337, Oxford Street, London). The exhibit of this surgical and physiological instrument maker was on this occasion practically given up to instruments intended to aid in ascertaining the condition of the blood and of its containing vessels, and it may be said at once that they were all extremely well made. Sphygmomanometers were shown in six different forms, sphygmodynamometers in three, while the number of haemoglobinometers was six also, among the latter that which may be regarded as the standard instrument being Haldane's modification of the original instrument, made on the suggestion of Sir William Gowers. Of the haemocytometers known four varieties were shown, all of them having squares equally divided to facilitate counting. In regard to the latter fatiguing process, those who make a constant practice of blood examination work are likely to welcome two mechanical counters that were to be seen. Two instruments for measuring the coagulating power of the blood also attracted attention; one of these, made on the suggestion of Sir A. E. Wright, measures the clotting power by means of a series of tubes containing blood at a known temperature, the time required for clotting being of course noted. In the other instrument, suggested by Brodie, the clotting process is watched with a microscope. Last year, at the annual meeting at Toronto, the importance of the viscosity of the blood received a good deal of notice, and this made the viscometer made on the pattern of Messrs. Denning and Watson of additional interest. With this instrument it is possible to measure the viscosity of the blood in any given patient by means of only one drop of that fluid. Another instrument shown, which was first alluded to in these columns as recently as last April, is the calcimeter, the object of which, as indicated by the title, is a determination of the lime contents of the blood, a subject to which a good deal of attention has been paid of late years. In the paper to which allusion has been made, and in which Mr. Hawksley's instrument was figured, Dr. Blair Bell gave reasons for believing that the precise amount of lime contained in the blood has a large bearing on the development and course of a number of ill-understood diseases. Gibson's Clinical Polygraph, which demonstrates the movements of various organs, such as the heart-apex beat and the pulsations to be perceived in the liver, jugular vein, and elsewhere, was also shown. Finally should be mentioned Antiphones, an appliance of another class. Formed of clay and wool, they should in these days of banging motors and universal noise be found useful as sound deadeners by a much larger class of persons than those for whom they were originally introduced—namely, officers and men belonging to the Army and Navy, for use during big-gun practice.

Mayer and Meltzer (71, Great Portland Street, London). From the large exhibit of this firm of instrument makers we picked out for special examination the two instruments here illustrated. One of these (Fig. 4) is a syringe made entirely of hardened glass and rubber, and therefore capable of being boiled and rendered thoroughly sterile after use. The basin end of the syringe terminates, moreover, in a suction pad, so that only one hand is required to use the syringe effectively, and there is no risk of the apparatus jumping out of the basin and air being sucked in. Another good feature of the syringe is that the nozzles, which can be obtained in various shapes, are so constructed that no discharge can be drawn through them into the bulb of the syringe. This is a strong point in its favour, because the interior of ordinary syringes of the Higginson variety are all liable to become foul. The syringe may be regarded as in all respects excellent. The other illustration (Fig. 5) shows an ear-massage instrument, a hand-driven and substantially-made appliance of a thoroughly practical kind. The metallic piston is accurately ground, and the stroke can be adjusted so as to suit the requirements of the case under treatment; even when hand-driven, as many as 2,000 strokes a

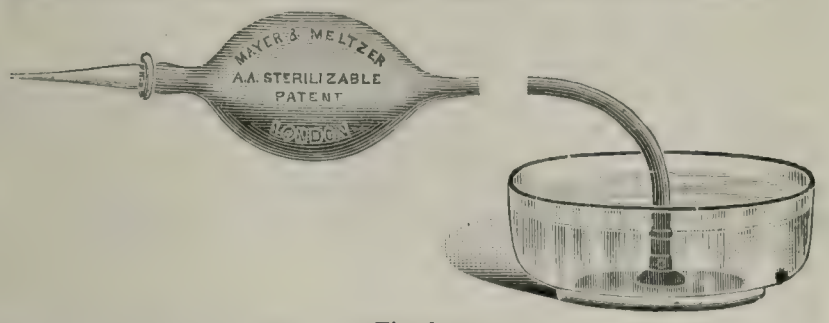

Fig. 4.

minute can be given. It is often desirable to put ear-massage instruments into the hands of patients, and for this purpose this machine seems thoroughly well suited. A similar instrument, arranged to be driven by an electric motor and for the use of the surgeon himself, is also made by the firm. Another attractive instrument

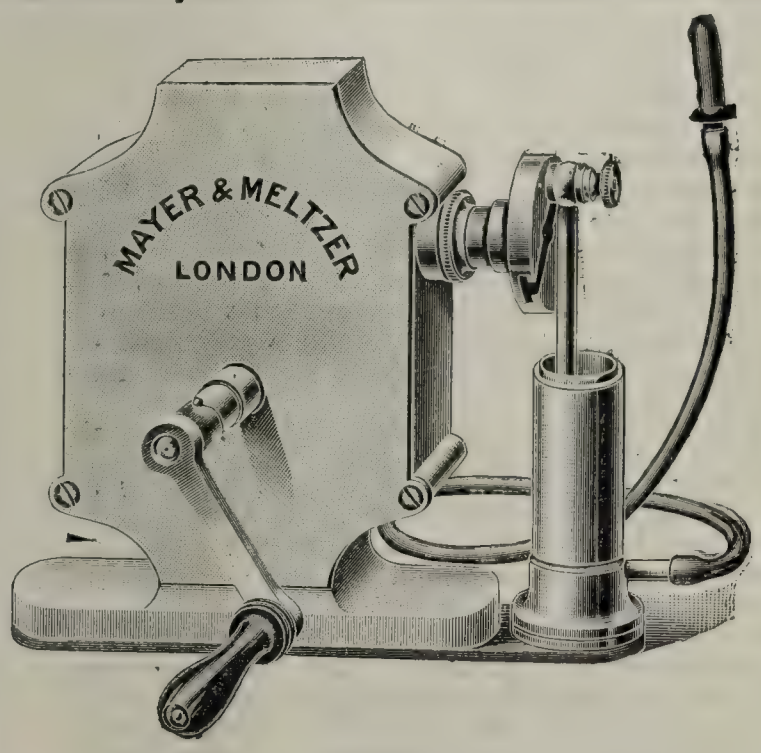

Fig. 5.

shown was a hand motor, designed by Mr. MacLay, of Wallsend, for use either in mastoid operations or for drilling long bones, or for trepanning. It goes easily into an ordinary bag, has an aseptic cable and handpiece, can be fixed to any table and got into working order in a very few moments. Some good lamps, known as the University electric examination lamps, and a number of new nasal surgery instruments were also on view.

The Medical Supply Association (228 and 230, Gray's Inn Road).—This firm showed three classes of exhibits—

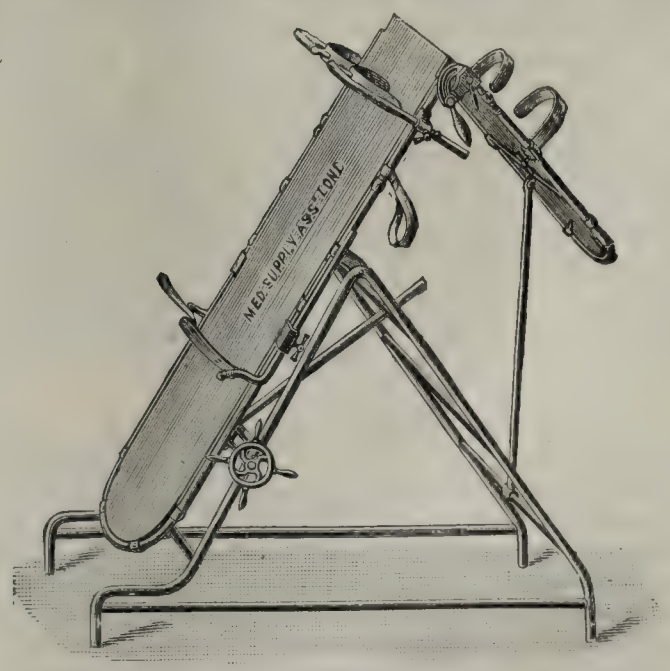

Fig. 6.

namely (1) surgical instruments and hospital furniture of British manufacture; (2) surgical instruments and hos-

pital furniture of French manufacture; (3) *x*-ray apparatus manufactured by Gaiffe of Paris. Exhibits (1) and (2) comprised (Fig. 6) an operating table, on which all the positions for abdominal, general, and special surgery can be obtained by a single movement by any one standing at one end of the table. The pressure of one finger is then sufficient to lock the table in any required position. Moreover, the upper part of the table could easily be removed and used as a stretcher to carry the patient to and from the operating room. The whole appliance could be packed up and carried in a basket. Another exhibit was Dr. Langley's improved binaural stethoscope with a single tube, of which

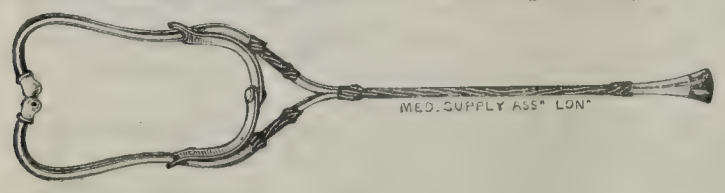

Fig. 7.

an illustration is here given (Fig. 7). The "Grevillite" antiseptic local anaesthetic was also shown. It is believed by many persons to be very safe to use and thoroughly effective. Another interesting apparatus was the "Greville" faradic battery, which it is considered gives the practitioner a much greater range of adjustment of the interruptions than can be obtained otherwise. For those interested in ambulance work there was to be seen Weber's folding and dividable stretcher, as used by the Swiss army. This stretcher can be divided in halves and folded up, each half weighing 10 lb. Finally may be mentioned the *x*-ray exhibit of the firm, which included the Gaiffe mercury jet interrupters for continuous alternating currents and a new apparatus for regulating *x*-ray tubes in such a way as to eliminate reverse currents.

W. Watson and Sons, 313, High Holborn. Apparatus connected with electro-therapeutics and microscope stands were the special feature of the exhibit of this firm. As for the microscope stands, these as made by this firm have for many years past enjoyed a high reputation, and in respect of them it is superfluous to say anything more than that those shown were applicable to all forms of microscope work, and that they embodied most of the modifications of structure which have been found to be of real utility. What, perhaps, were the principal exhibits of the firm on this occasion have been described with approval in these columns quite recently. One of these is an Intensified Induction Coil which has been manufactured with the idea that for various reasons exposures during skiagraphy should be as short as can be contrived. Apart from the fact that skiagraphy is now applied to moving organs, the chance of producing dermatitis when exposures have to be frequently repeated, and on each occasion for a long period, has also to be considered. The idea, therefore, has been to construct a coil in which not a long spark, but capability of standing a heavy primary current and a secondary current of very large capacity, is the object in view. In illustration of what the coil could do, and of its penetration, a number of excellent skiagraphs were shown, all taken with exposures of from two to five seconds only. The second instrument mentioned was one shown working in conjunction with the foregoing; it is a Moto-magnetic Interruptor which is a distinct advance upon existing instruments of the type; the di-electric used is either ordinary coal gas or hydrogen, and if the latter be used there is no deposit of carbon, and cleansing of the mercury is superfluous. Its speed can be varied at will, and this, together with its simplicity of adjustment and the noiseless working of the motor, are admirable features.

Foods and Beverages.

Callard and Co. (74, Regent Street). This firm has long had a reputation for its skill in the preparation of food free from starch and sugar, and its exhibit supplied ample evidence of the attractive forms in which such food can now be obtained. The assortment comprised various forms of bread, biscuits, cakes, and flour on the one hand, and on the other such food adjuvants as sugar-free jam, chocolate, and beverages. A recent addition is a bread named Prolacto, which is prepared from milk proteids and vegetable albumen. Special mention, too, should be made of casoid biscuits, which seem to us a particularly successful effort. They are, as stated by the manufacturers, entirely free from sugar and starch, but in no way reveal this fact either in appearance or in taste. They look very much like the wholemeal biscuits which are commonly served with cheese, and have a clean sapid flavour which is distinctly attractive.

Cadbury Brothers, Limited (Bournville, Birmingham). The preparations of this firm have received high praise in the medical press so often that little that is new can be said about them. It is indubitable that the flavour of its chocolate is exceedingly delicate, and Bournville being one of the first garden cities to come into existence, it is prepared under ideal conditions as regards cleanliness and purity in all processes of manufacture. A comparatively new product is the Dairy-maid chocolate, which contains a good deal of milk in its composition, and should be useful in the dietary of children, invalids, and others. The cocoa essence prepared by the firm is guaranteed to be absolutely pure, and is certainly of delicious flavour; and this being the case, it should provide an attractive liquid food of high value in many conditions of health and disease.

Books.

W. B. Saunders Company (Henrietta Street, Covent Garden.) This firm of publishers, which has done so much to bring European and American medical men into touch, had upon view a representative assortment of the volumes associated with its name. Prominent amongst these was *Keen's Surgery*, a publication of which the first two volumes appeared early this year, while the remaining three, it is understood, are already in the press. The work is being brought out under the general editorship of Dr. W. W. Keen, of Philadelphia, but the contributors are drawn from among the leading surgeons of both hemispheres. Each chapter practically represents a monograph on some particular subject by a recognized authority, and to each an extensive bibliography is attached. Hence the monographs are as useful to research students as to those who merely wish to acquire the latest practical and theoretical knowledge concerning each subject treated. Another notable publication on view was Kelly and Noble's *Gynaecology and Abdominal Surgery*. It is published in two volumes, and is perhaps one of the most ambitious attempts yet made in connexion with these two subjects. A special effort seems to have been made in connexion with the illustrations. Over 600 in number, they show artistic skill of the highest order. The firm also showed a complete set of its well-known medical atlases; among them we noted two new volumes, one dealing with dentistry and the other with diseases of children. Other volumes on the same stand were a second edition of Moynihan's *Abdominal Operations*, and a translation of Sahli's *Diagnostic Methods*; the latter being a reference work of great value.

Miscellaneous.

Jeyes' Sanitary Compounds Company (64, Cannon Street, London). The feature of the exhibit of this firm was Cyllin in various forms. It is a drug which the company, acting, it is said, on a suggestion thrown out by Sir Lauder Brunton in one of his Croonian lectures, succeeded in producing some few years ago, and it has since become well known. It is believed by the manufacturers to combine a maximum of efficiency as a bactericide with a minimum of causticity and toxicity to the higher forms of life, and is, therefore, described as a non-toxic bactericide. It has been tested with various micro-organisms by a number of well-recognized authorities, such as Simpson, Hewlett, Klein, and Firth, who have shown that it has a coefficient of from 10 to 30, as compared with pure carbolic acid. In the form in which it is prepared for medical and surgical use, Cyllin medical, it has a coefficient with a culture of *Bacillus typhi* of 20. It is also prepared for inhalation in cases of throat affection, and as an intestinal antiseptic in the form of capsules and as a syrup. It lends itself readily to the manufacture of gauzes and wools for surgical use, and these articles being impregnated with 10 per cent. Cyllin are more germ-proof than corresponding articles prepared with ordinary carbolic acid. Soaps have also been prepared, their antiseptic value being guaranteed to be equal to 50 per cent. carbolic acid soap; the Cyllin liquid soap on view was specially attractive. We have not submitted Cyllin to a scientific test ourselves, but have used it in surgical work with satisfaction, and found nothing incompatible with the claims made for it by the manufacturers.

THE TEMPERANCE BREAKFAST.

As has been customary for some years past, a breakfast organized by the National Temperance League was held during the course of the meeting at Exeter, and on this occasion brought together some 200 persons, including about 150 members of the British Medical Association. The chair was occupied during the earlier part of the proceedings by the Mayor of Exeter (Mr. Alderman Reed), who, on having to leave in consequence of another engagement, was succeeded by Mr. McAdam Eccles. Among the general company were the Sheriff of Exeter (Dr. Ransom Pickard), the Archdeacon of Exeter, the present and two past Presidents of the Association, and the President-elect (Mr. Simeon Snell).

As soon as morning appetites had been satisfied, Mr. J. T. Rae, Secretary of the Science and Education Committee of the League, gave an interesting summary of the evolution of the temperance movement, more particularly in its scientific and medical aspects. Early in the eighteenth century the Royal College of Physicians of London presented to Parliament "a Remonstrance against the Common Sale of Spirits," and at about the same period port wine was thus apostrophized by Dr. John Armstrong in a book on the *Art of Preserving Health:*

> Ah, sly deceiver! branded o'er and o'er,
> Yet still beloved! exulting o'er the wrecks of sober vows.

Later on, in 1839, and again in 1847, formal declarations in favour of temperance were drawn up by members of the medical profession. More recently still, a memorial advocating the compulsory instruction of children as to the dangers of alcohol and the principles of hygiene had been signed by nearly 15,000 medical men.

The next speaker was the Mayor of Exeter, who, after a general testimony to the value of the work being done by the Temperance League, said that he wondered sometimes that the medical profession did not take up the same work more seriously than it had yet done. Dr. Davy, in his presidential address to the Association, had convinced them of the urgent necessity of dealing with tuberculosis, for at least 60 000 victims fell to that disease yearly. Years ago it was said that alcohol claimed as many as that, and it must be a still larger number now. Therefore it should demand as much research on the part of the medical profession as the disease to which he had already referred. They looked to the medical profession to give a lead, and to tell them clearly what their position was. He felt sure the cause of temperance had suffered very much in the past at the hands of some of the profession in their thoughtless and needless advocacy of the recommendation of the use of strong liquors.

He was answered by Dr. Davy, the President of the Association, who enlarged upon the evils brought about by drink; the nation at large was spending as much as 160 millions sterling on alcohol, and most of this was waste of money, while the sole product of much of it was merely disease and crime. Moreover, the drink habit seemed to be increasing among women. "If women," he said, "are going to turn out a drunken lot of mothers who will not look after their children, England is in a bad way." On the other hand, he expressed strong disapproval of the lines on which the doctrine of temperance was preached in some quarters. A good deal that was said about alcohol and its effects was merely twaddle and utterly wrong Children in schools should certainly receive instruction on the subject, but the teaching should be free from dogma and absolutely scientific. Alcohol was not necessary to life or to bodily work, very rarely useful in disease, and the nation at large drunk at least twice as much as it should. In his own experience he had known persons to take harmlessly considerable quantities of port wine for years, but they were persons who took much exercise and passed most of their time in the open air. It was therefore incorrect to speak of it definitely as a direct poison, and he was even prepared to believe that there was something to be said in favour of a very light beer, containing not more than 2½ per cent. of alcohol, as a healthier beverage than the stewed tea consumed in such quantities by many of the working and other classes, young and old, but in his own practice he always abstained from recommending a patient to take alcohol, and he thought all medical men should adopt the same course.

The President was followed by Dr. Ransom Pickard (Sheriff of Exeter), who had something to add on the value of teaching temperance to school children. Early instruction in the value of abstinence would bear fruit in their after-lives. The temperance movement, as a whole, was having an effect beyond the making of mere abstainers, and was exercising a beneficial influence outside its original area. The public, as a whole, was becoming more temperate, at all events the middle classes, and the rest in time would follow.

Dr. R. A. Reeve, the retiring President, said that he had always been a total abstainer, though he had not appeared on the temperance platform. The sights brought about by drink in the city of London had somewhat appalled him. There was scope for greater effort on the part of medical men in the cause of temperance. If there could not be total abstinence let there at least be sobriety, and let medical men help to obtain it. The effect of habit was not to be forgotten, and it would be something gained if the people could be convinced that alcohol was by no means a necessity, merely a superfluous and dangerous luxury.

Sir John Moore reminded the audience that what they had to deal with was not alcohol itself—which was an exceedingly nasty thing—but the drinks which contained it, and these were many and often unsuspected. The use of such beverages was certainly the most potent factor in the production of diseases. As medical men it was their duty to deal with each case of disease on its own merits and to prescribe whatever was thought most likely to restore the patient to health and strength, but he was quite certain that usually they could do much more good by prescribing other drugs than by administering wine or spirits. It was with the greatest reluctance that he himself ever prescribed alcohol, for he feared that when such patients had passed out of his hands they might continue to take whisky or some other alcoholic drink on their own account.

Dr. Schofield further punctuated the danger of prescribing alcohol by pointing out that it was the only drug every prescribed which was also regarded as a beverage, and that a popular one.

The proceedings concluded with a vote of thanks to the Mayor for presiding.

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

Owing to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Southern Branch.—Notice is hereby given that during the present month the Branch will proceed to elect a member to fill the vacancy on the Central Council of the Association caused by the death of Dr. Joseph Groves. Candidates who have been nominated each by a Division or by not less than three electors must please send their application to me on or before August 10th.—H. J. Manning, Honorary Secretary, Laverstock House, Salisbury.

Vital Statistics

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,583 births and 3,597 deaths were registered during the week ending Saturday last, August 3rd. The annual rate of mortality in these towns, which had been 12 3, 12.4, and 11.9 per 1,000 in the three preceding weeks, further declined last week to 11.7. The rates in the several towns ranged from 4 9 in York, 5.2 in Hornsey and in Reading, 6.7 in Tynemouth, 6 8 in Burton-on-Trent, 6.9 in Newport, and 7.3 in Leyton, to 14.8 in Liverpool and in Rochdale, 15 3 in Cardiff, 15.7 in Walsall, 15 8 in Oldham, 16.0 in Preston, 18.0 in St. Helens, and 19.4 in Sunderland. In London the rate was 11.5 per 1,000, while it averaged 11.8 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.2 per 1,000 in the seventy-six towns; in London this death-rate was equal

to 1.3 per 1,000, while among the seventy-five other large towns the death-rate from the principal infectious diseases ranged upwards to 2.3 in Sunderland and in St. Helens, 2.5 in Derby, 3.5 in Wigan, 4.4 in Cardiff, an 4.9 in Stockton-on-Tees. Measles caused a death-rate of 1.2 in Walthamstow and in Blackburn, 1.7 in Derby, 2.0 in Stockton-on-Tees, 2 1 in Merthyr Tydfil, and 3.1 in Cardiff; diphtheria of 1.0 in Croydon; whooping-cough of 1.1 in Oldham, 1 7 in St. Helens, and 2.0 in Stockton-on-Tees; and diarrhoea of 1 0 in Birmingham and in Stockton-on-Tees, 1.1 in Walsall, and 1.8 in Wigan. The mortality from scarlet fever or from "fever" showed no marked excess in any of the large towns, and no death from small-pox was registered during the week. The number of scarlet-fever patients under treatment in the Metropolitan Asylum Hospitals and in the London Fever Hospital, which had been 3,276, 3,386, and 3,586 at the end of the three preceding weeks, had further risen to 3,626 on Saturday last, August 3rd; 419 new cases were admitted during the week, against 493, 569, and 557 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, August 3rd, 918 births and 445 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 14.9 and 13.6 per 1,000 in the two preceding weeks, further declined last week to 12.8. but was 1.1 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 10.0 in Leith and 11.2 in Edinburgh to 13.9 in Greenock and 17.3 in Dundee. The death-rate from the principal infectious diseases averaged 1.7 per 1,000, the highest rates being recorded in Leith and Dundee. The 208 deaths registered in Glasgow included 4 which were referred to measles, 1 to scarlet fever, 1 to diphtheria, 8 to whooping-cough, 7 to diarrhoea, and 9 to cerebro-spinal meningitis. Two fatal cases of measles, 1 of scarlet fever, 1 of diphtheria, and 3 of diarrhoea were recorded in Edinburgh; and 2 of cerebro-spinal meningitis in Leith.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, July 27th, 513 births and 337 deaths were registered in six of the principal Irish towns, as against 604 births and 335 deaths in the preceding period. The annual death-rate in these towns, which had been 14 7, 16 3, and 15.2 per 1,000 in the three preceding weeks, rose to 18.3 per 1,000 in the week under notice, this figure being 6.4 per 1,000 higher than the mean rate for the seventy-six English towns for the corresponding period. The figures ranged from 15.0 in Limerick and 16.4 in Cork to 21.2 in Dublin and 23.4 in Waterford. The zymotic death-rate in the same six Irish towns averaged 1 4 per 1,000, or 0.6 per 1,000 higher than during the preceding period, the highest figure—2.7—being recorded in Limerick, while Waterford registered no deaths under this heading at all. The deaths in Belfast included 9 returned as cerebro-spinal fever and 3 as cerebro-spinal meningitis.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BARNSLEY: BECKETT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BATH: BAILBROOK HOUSE.—Medical Superintendent. Salary, £450 per annum.

BEDFORD COUNTY HOSPITAL: House-Physician. Salary, £60 per annum.

BIRMINGHAM GENERAL HOSPITAL.—(1) Three Receiving Room Officers. Salary, £150 per annum each. (2) House-Physician. Salary at the rate of £50 per annum. (3) Assistant House-Surgeon. Salary at the rate of £40 per annum.

BIRMINGHAM: QUEEN'S HOSPITAL.—House-Surgeon and Obstetric and Ophthalmic House-Surgeon. Salary at the rate of £50 per annum.

BOURNEMOUTH: ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRADFORD POOR-LAW UNION.—Medical Officer for the Sanatorium for Consumptives at Eastby. Salary, £100 per annum.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £80, increasing to £90 per annum.

CAIRO: EGYPTIAN GOVERNMENT.—Resident Medical Officer. Salary, £250 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—Clinical Assistant.

DEVONPORT: ROYAL ALBERT HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

DOVER: ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum.

EDINBURGH: CRAIGLOCKHART POORHOUSE AND HOSPITAL.—Medical Officer. Salary at the rate of £106 6s. per annum.

EGYPTIAN MINISTRY OF EDUCATION.—Assistant to the Professor of Pathology. Salary, £E320 per annum.

GLASGOW DISTRICT ASYLUM, Woodilee.—Third Assistant Medical Officer. Salary, £135 per annum.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £30 per annum.

GREENOCK: INFECTIOUS DISEASES HOSPITAL, Gateside.—Medical Superintendent. Salary, £200, rising to £250.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £100 per annum.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon. Salary, £50 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL.—Resident House-Surgeon. Salary, £100 per annum.

MANCHESTER: ANCOATS HOSPITAL.—Resident House-Physician.

MANCHESTER COUNTY ASYLUM, Prestwich.—Junior Assistant Medical Officer. Salary, £150, increasing to £250, per annum.

MANCHESTER: MONSALL FEVER HOSPITAL.—Fourth Medical Assistant. Salary, £100 per annum.

MONTGOMERY COUNTY COUNCIL.—Medical Officer of Health.

NORTHAMPTON CORPORATION.—Medical Officer of Health. Salary, £400 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer. Salary at the rate o £50 per annum.

ROCHDALE INFIRMARY.—House-Surgeon. Salary, £100 per annum.

ROYAL INSTITUTE OF PUBLIC HEALTH.—Demonstrator of Comparative Pathology and Bacteriology.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House-Physician. Salary, £100 per annum.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House-Surgeon. Salary, £65 per annum.

SOUTHPORT INFIRMARY.—(1) Resident Senior House-Surgeon; (2) Junior House and Visiting Surgeon. Salary, £90 and £70 per annum respectively.

STOCKPORT INFIRMARY.—(1) House-Surgeon. (2) Assistant House and Visiting Surgeon. Salary, £100 and £80 per annum respectively.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon. Salary at the rate of £50 per annum.

WALSALL AND DISTRICT HOSPITAL.—Junior House-Surgeon. Salary, £50 per annum.

WORCESTER COUNTY AND CITY ASYLUM.—Third Assistan Medical Officer. Salary, £140, rising to 160 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

YORK COUNTY HOSPITAL.—House-Surgeon Salary, £100 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Cheltenham, co. Gloucester.

APPOINTMENTS.

CHATE, H. S., L.S.A., Second Resident Assistant Medical Officer a Paddington Infirmary.

CORDER, E. H., L.R.C P and S.Edin., L.F.P.S.Glas., District Medical Officer of the Worcester Union.

DAVIDSON, Thomas, M.A., M.B.Edin., House-Surgeon to the Stockton and Thornaby Hospital.

DE SOUZA, D. H., M.B., B.S., B.Sc.Lond., Demonstrator in Physiology, University of Sheffield.

HOLLICK, B. S., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for Sturminster Newton District, Dorset.

HUNT, A. D., M.D.Liverpool, District Medical Officer of the Derby Union.

LAUGHTON-SMITH, F., M.B., B.S.Durh., District and Workhouse Medical Officer of the Louth Union.

MEADEN, C., M.D.Durh., B.S., District Medical Officer of the Worcester Union.

MILLER, G. W., M.R.C.S., L.R.C.P.Lond, District Medical Officer o the Louth Union.

ROBERTS, P. M., M B., B.S.Lond., Junior Assistant Medical Officer o the Fulham Infirmary.

RODRIGUES, U. Joseph, L.R.C.P., L.R.C.S.Edin., Assistant House and Visiting Surgeon to the Stockport Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGE.

LEWIS—WARBURTON.—On July 31st, at St. George's Parish Church, Edgbaston, by the Rev Arthur Perowne, assisted by the Rev. Connop Price, Rector of Caerphilly, brother-in-law of the Bridegroom, Cyril Lewis, M.D., of Cardiff, son of the late Dr. Thomas Lewis, J.P, of Carmarthen, to Florence Amy, eldest daughter of the late Thomas Warburton, of Barr House, Great Barr. At home, 27, Windsor Place, Cardiff, September 4th and 5th.

DEATHS.

BRUMWELL.—July 29th, at Newcastle-on-Tyne, aged 54 years, Ernest Brumwell, M.D., M.R.C.S, L.S A., of North Shields.

KENNARD.—On August 2nd, at Bloomfield House, South Lyncombe, Bath, Thomas Atherton Kennard, M.R.C.S., late of Kempsey, Worcester, in his 74th year.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics; *X* Rays. 2.30 p m.: Operations. Monday and Thursday, 2 p m.: Diseases of the Eye. Tuesday and Friday, 10 a.m.: Gynaecological Operations. 2 p m., and Wednesday and Saturday 10 a.m.: Diseases of Throat, Nose, and Ear; Tuesday and Friday, 2.30 p.m.: Diseases of the Skin. Wednesday, 10 a.m.: Diseases of Children. Wednesday and Saturday, 2 p.m.: Diseases of the Eye. Lectures—Monday. 12 noon, Pathological Demonstration. Tuesday, 5 p.m., Treatment of Urethral Stricture. Wednesday, 5 p.m., Pelvic Haemorrhage. Friday, 5 p.m., Clinical.

Printed and Published by the British Medical Association at their Office, No. 6, Catherine Street, Strand, in the Parish of St Paul, Covent Garden, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 17TH, 1907.

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ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF COUNCIL.

A MEETING of the Council was held in the Royal Public Rooms, Exeter, on Tuesday, July 30th, 1907.

Present:

Mr. EDMUND OWEN, LL.D., Chairman of Council, in the Chair.

Dr. HENRY DAVY, Exeter, President.

Professor R. A. REEVE, M.D., Toronto, Past-President.

Dr. J. A. MACDONALD, Chairman of Representative Meetings.

Dr. H. RADCLIFFE CROCKER, London, Treasurer.

Mr. H. A. BALLANCE, M.S., Norwich
Dr. EDGAR G. BARNES, Eye
Dr. T. R. BRADSHAW, Liverpool
Dr. J. BRASSEY BRIERLEY, Manchester
Dr. W. A. CARLINE, Lincoln
Mr. ANDREW CLARK, London
Dr. JAMES CRAIG, Dublin
Mr. C. F. CUTHBERT, Gloucester
Dr. W. H. DE SILVA, Colombo
Mr. G. YOUNG EALES, Torquay
Mr. GEORGE EASTES, London
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Mr. GEORGE COOPER FRANKLIN, LL.D., Leicester
Dr. BRUCE GOFF, Bothwell
Dr. DAVID GOYDER, Bradford
Dr. JAMES HAMILTON, Glasgow
Dr. G. E. HASLIP, London
Dr. ROBERT MCKENZIE JOHNSTON, Edinburgh
Dr. HUGH R. KER, London
Mr. R. H. KINSEY, Bedford
Mr. F. C. LARKIN, Liverpool
Dr. H. L. MCKISACK, Belfast
Dr. J. MUNRO MOIR, Inverness
Professor J. T. J. MORRISON, Birmingham
Mr. C. H. WATTS PARKINSON, Wimborne
Dr. FRANK M. POPE, Leicester
Dr. CECIL E. SHAW, Belfast
Dr. LAURISTON E. SHAW, London
Dr. HENRY SMURTHWAITE, Newcastle-on-Tyne
Mr. CHARLES R. STRATON, Salisbury
Dr. W. J. TYSON, Folkestone
Mr. T. JENNER VERRALL, Brighton
Dr. ARTHUR T. WEAR, Newcastle-on-Tyne
Dr. SINCLAIR WHITE, Sheffield
Lieut.-Colonel E. M. WILSON, C.B., C.M.G., Farnborough

Chairmanship.

Taken as read, acknowledgment from Mr. Edmund Owen of his election to the office of Chairman of Council:

64, Great Cumberland Place, W.,
July 4th, 1907.

Dear Sir,—I beg to acknowledge your letter of this date, telling me that the Council have been pleased to elect me their Chairman. It is an honour which I would not have desired, and I accept it with considerable diffidence. I will do my best, however, to justify this mark of confidence which the Council have shown in me, and I know that, in return, I may rely upon the members for a full measure of their forbearance and support.

I am, dear Sir,
Yours faithfully,
EDMUND OWEN.

Guy Elliston, Esq.,
General Secretary,
British Medical Association.

Resolved: That the same be received and entered on the minutes.

Co-option.

The CHAIRMAN reported that the total number of representative members returned to the Council was 61, and therefore, under By-law 32, the Council was entitled to co-opt 6 members. On a ballot being taken, the following were declared elected: Sir James Barr, Mr. Andrew Clark, Dr. W. Collier, Mr. G. C. Franklin, and Professor Osler, F.R.S.

Minutes.

The minutes of the last meeting (July 3rd, 1907) having been printed and circulated, were taken as read and signed as correct.

Apologies.

Read letters of apology for non-attendance from Dr. J. Ford Anderson, Fleet Surgeon Biden, R.N., Dr. R. C. Buist, Dr. John Galton, Dr. A. Godson, Colonel C. H. Joubert de la Ferté, I.M.S., Dr. C. H. D. Morier, Mr. Jones Roberts, Lieutenant-Colonel R. J. S. Simpson, Mr. W. D. Spanton, Mr. Apthorpe Webb, and Mr. D. J. Williams.

Representatives of the Services.

Resolved: That the following be elected the Representatives of the Services, in accordance with By-law 23, namely: Colonel C. H. Joubert de la Ferté, I.M.S. (ret.), representing the Indian Medical Service; Fleet Surgeon E. J. Biden, R.N., representing the Royal Navy; Lieutenant-Colonel E. M. Wilson, C.B., C.M.G., representing the Army Medical Service.

Referendum Report.

Moved by the CHAIRMAN:

That the Report of the Referendum Committee be received.

Whereupon an amendment was moved by Mr. BALLANCE, seconded by Mr. VERRALL:

That in place of receiving the Report of the Referendum Committee, the Council report to the Divisions as follows:

That on June 5th the Council for the year 1906-7 decided that in its opinion the following resolutions, duly passed by the meeting of Representatives held May 29th—30th, should be referred to the Divisions on the ground that they do not properly represent the wishes of the Association.

That the Council of 1906-7 appointed a Committee to prepare for its consideration a draft of the observations of the Council to accompany the resolutions referred.

That the Committee appointed did not, however, present any report for consideration by the Council appointing the Committee.

That the said Committee has now submitted a statement embodying their observations for consideration by the present Council, that is, for 1907-8.

The present Council, however, is not cognizant of the considerations which induced the Council of 1906-7 to conclude that the resolutions did not represent the wishes of the Association.

The Council of 1907-8 therefore forwards without comment to the Divisions those resolutions of the Meeting of Representatives upon which the Council of 1906-7 decided to take a Referendum.

The amendment was put and declared to be lost.

Moved by Dr. HASLIP, seconded by Dr. BRADSHAW:

That the question be adjourned, and in the meantime

another Committee be appointed to consider the matter and report to this Council.

The motion for the adjournment having been put from the Chair was declared to be lost.

The original motion to receive the report of the Referendum Committee was then put and declared to be carried.

It was moved by Mr. BALLANCE, seconded by Mr. VERRALL,

That the report of the Referendum Committee be considered clause by clause.

The motion having been put from the Chair was declared to be lost—10 for, 20 against.

A further motion was moved by Dr. BRADSHAW, seconded by Dr. CECIL SHAW,

That the Report of the Referendum Committee be adopted *en bloc*.

Whereupon an amendment was moved by Professor MORRISON, seconded by Dr. HAMILTON,

That the following words be added to the end of the Clause relating to Minute 123, Ordinance 17 (*b*):

The like procedure shall also apply to any decision of the Representative Meeting other than the resolution.

The amendment having been put from the Chair was declared to be carried.

The CHAIRMAN then put the motion:

That the Report of the Referendum Committee as amended, with Professor Morrison's addition, be adopted.

A count having been taken—27 voted for and 9 against.

Whereupon five members stood up and demanded the names to be taken in accordance with Standing Order 50.

For:

Messrs. Barnes, Bradshaw, Brassey Brierley, Carline, Craig, Crocker, De Silva, Eales, Eastes. Franklin, Goff, Goydon, Hamilton, Johnston, Larkin, McKisack, Munro Moir, Morrison, Parkinson, Pope, Cecil Shaw, Smurthwaite, Straton, Tyson, Wear, White, and Wilson (27).

Against:

Messrs. Ballance, Cuthbert, Flemming, Haslip, Ker, Kinsey, Macdonald, Lauriston Shaw, and Verrall (9).

THE REFERENDUM REPORT.

At the Special Representative Meeting held in May, when the draft Charter was considered, certain resolutions finally adjusting the draft Charter were passed, which, if carried into effect, will involve such radical changes in the management of the affairs of the Association that your Council considers it imperative to submit such resolutions for the consideration of the Divisions, and in order to do so has exercised its power of referendum as provided for by the Articles of Association.

The draft Charter was published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of April 6th 1907.

The majority of the resolutions relating to the Charter are approved by your Council.

Your Council is in favour of the Association being governed by a Royal Charter, if its scope of influence may be extended, but in the opinion of your Council it is essential that members shall be fully satisfied that the changes introduced will be in the best interests of the Association at large.

The draft Charter contains certain Clauses which your Council submits should receive the serious attention of all the members, more especially in view of the fact that there is a strong feeling that some of the proposals are likely to be harmful to the well-being of the Association.

The first resolution of the Representative Meeting challenged by the Council is that the following Clause be approved:—

PROVISO AS TO REFERENDUM. ORDINANCE 17 (*b*).

Minute 123.

"The Council at their said meeting may either approve the resolution or determine on a Referendum, and they shall determine on a Referendum if in their opinion the resolution does not truly represent the wishes of the Association."

Your Council submits this resclution is too precipitate, and would suggest that it should read:—

"The Council at their said meeting may either approve the resolution or refer it back to the Representative Meeting for reconsideration, indicating clearly their reasons for so doing. If the resolution be again sent back unaltered, or altered, in the opinion of the Council, in an unsatisfactory manner, the Council may then determine on a Referendum. The like procedure shall also apply to any decision of the Representative Meeting, other than the resolution."

COMPOSITION OF COUNCIL. BY-LAW 36.

Minutes 283, 287, 293, *and* 298.

The four succeeding resolutions adopted by the Council refer to certain proposals eventually incorporated in the proposed By-law 36, which, after being amended, was approved by the Representative Meeting as follows:—

"The Council shall be composed of the *ex-officio* Members mentioned in the Ordinances, and of Members duly elected by the following bodies, namely:—(*a*) By the Branches of the Association in the United Kingdom, which shall be grouped for the purpose of electing 24 members of the Council in the manner prescribed by By-law 37; (*b*) by the Branches of the Association not in the United Kingdom, which shall be grouped for the purpose of electing members of the Council not exceeding seven in number; (*c*) by the Representative Body, which shall elect annually 12 members of the Council from lists of candidates nominated by (i) Branch Councils, (ii) by Divisions, (iii) by the Scottish Committee, (iv) by the Irish Committee, or (v) by at least ten members resident in the district of the United Kingdom to which the candidate nominated belongs; and (*d*) by the Council itself, which shall have power to add to its numbers at any of its meetings, all, or any one or more, of the following, namely: one Medical Officer on the active or retired list of each of the following services:—The Royal Navy Medical Service, the Army Medical Service, and the Indian Medical Service, provided that in each case such Medical Officer shall not have retired from the active list more than five years previously."

This resolution directly raises the question whether the members of the Association wish to transfer the management of its business and affairs from the Council to the Representative Body, which must happen if the above By-law be passed.

Mistakes may be made by any Representative Body, and unless there be another Chamber to revise and to refer matters for further consideration, serious difficulties are certain to arise, which will tend to destroy the unity of the Association and impair its influence for good.

The Council believes that the proposed mode of election, partly by the Branches and partly by the Representative Body does not accurately represent the wishes of the Association, but rather that members desire that the Council shall have the necessary powers of revision, acting as a Second Chamber, and retaining the fullest control over the finances of the Association.

Your Council submits that a body directly elected by and responsible to the Branches is the proper body to act in these capacities on behalf of the Association.

Up to 1902 it might have been claimed that your Council was not fully representative of the wishes of the Association, owing to the fact that a percentage of the members were not possessed of the franchise. This disability passed with the disappearance of the unattached member. Now every member of the Association is entitled to take part in the election of a member of Council.

Your Council submits that having regard to its form of election *it is the most representative body in the Association*, and chosen with the utmost caution by the general body of members. The election takes place with wide publicity, it is open to anyone to nominate a candidate, and in the event of more nominations than vacancies, voting papers are sent to every member of a constituency. These voting papers are returnable through the post, so that no member has any excuse for not exercising the franchise.

The Council has hitherto performed not only administrative duties, but on occasion has revised decisions with satisfaction to the general body of members. Why, therefore, should the constitution of the Council be changed, and its scope of influence curtailed?

The proposed Charter must lessen the influence of the Council in the Association, while no sufficient arguments have yet been adduced whereby compensating advantages will accrue to members by transferring these powers to the Representative Body.

The Council submits that it is a mistaken policy to deprive the Council of the power of co-option. Co-option is often the only means the Council has of retaining the services of tried and experienced workers, whose services it is of considerable importance for the Association to retain.

For these various reasons your Council trusts the Divisions will reject By-law 36, and require that elected members of Council shall be returned solely by the Branches as heretofore, and not to the extent of one-third by the Representative Meeting.

Grouping of Branches. By-law 37.

Minute 299.

Minute 299 of the Representative Meeting:

"That By-law 37 be redrafted to provide that the grouping of the Branches in the United Kingdom for the election of the Council be generally as shown in Appendix E to the Committee's Report; that each such group elect four members of Council; that the Members elected by the Representative Body be topographically distributed among the same districts, and in the same proportion; and that for this purpose By-law 37 be referred back to the Organization Committee, with the instruction that they reconsider also the details of the grouping, and circulate the redrafted by-law to the Divisions.'

It is proposed to link together remote Branches without any possibility of being able to preserve local representation for such wide areas. This will deal a final blow at the individuality of the Branches. Two results are inevitable—the representative autonomy of the Branches will disappear, and there will be a fundamental cleavage between the members elected by the Branches and those chosen by the Representative Meeting, resulting in a constant rivalry seriously affecting the best interests of the Association. Instead of encouraging union of interests and united actions, this will promote disunion and loss of strength.

The primary object for the existence of a Branch, under this project of grouping of Branches for representation on the Council would be taken away. Moreover, the destruction of the existing electoral areas of Branches, and the linking of such areas with merely geographically contiguous groups, the members of which have had no common action or *esprit de corps* in the past, and who from various circumstances can seldom, if ever, meet together, would tend to deprive the representation of all real local feeling.

Mode of Election by Groups. By-law 38.

Minute 303.

"That the election in the United Kingdom be conducted by the Head Office and out of central funds."

As already pointed out it is proposed to group Branches, but if this grouping is nullified, as your Council earnestly hope it will be, the necessity for By-law 38 disappears.

Business of Annual Representative Meeting. By-law 29.

Minutes 328 *and* 330.

Your Council determined to take a Referendum on these resolutions of the Representative Meeting chiefly because of the previous proposals. If the views of the Council meet with the approval of the Divisions this by-law will require to be modified accordingly.

By-law 29, as finally passed by the Representative Meeting, is as follows:—

"29. The business of the Annual Representative Meeting shall be to elect a Representative of a Division as the Chairman of Representative Meetings, and also a Representative of a Division as Deputy-Chairman; to elect a President of the Association; to elect 12 Members of the Council, and such other Officers and such Members of Committees as by

the Ordinances or By-laws be required to be so elected; to consider the election of Honorary Members when recommended by the Council; to appoint a place at which the next Annual Representative Meeting shall be held; to consider the Annual Financial Statement and Balance Sheet presented by the Council; to appoint an Auditor or Auditors (who shall be a professional accountant or professional accountants) and fix his or their remuneration; to consider Reports of the Council, Reports of Committees instructed to report to such Meeting, and Reports of Branches, and motions relating to the adoption of such Reports in whole or in part; to make new Ordinances or By-laws, and alter and repeal existing Ordinances or By-laws, and to consider any resolution relating to the honour and interests of the Medical Profession, or of the Association, which shall have been adopted by any Division or Branch, provided that any such resolution proposing material alteration of the constitution or policy of the Association shall have been submitted through the *Journal* for the consideration of all the Divisions not less than three months previously."

It will be noticed that By-law 29 gives the whole of the work of the General Meetings to the Representatives, and deprives individual members in General Meeting of all opportunity of criticizing the Annual Financial Statement and Balance Sheet, prepared and presented by the Council; this would deprive the individual member of those rights so carefully preserved by law in all Friendly Societies, Corporate Bodies, and Companies.

JOURNAL AND FINANCE COMMITTEE.

Minutes 342 *and* 346.

Your Council decided to take a Referendum on Minutes 342 and 346 of the Representative Meeting which propose to divide the Journal and Finance Committee into two Committees, viz., a Journal Committee and a Finance Committee.

Your Council submits that the proposed separation must be injurious to the interests of the Association. Opinions against the separation have been strongly expressed by your Council, by your Treasurer, and by the Journal and Finance Committee, and thus your Council had no alternative but to take a Referendum.

For some years the Journal and Finance Committee has been the General Purposes Committee of the Council, and has been in the habit of reviewing and advising on all matters connected with the finances and general administration. That the practice has been justified is evidenced by the steady growth of the influence and financial stability of your Association. This prosperity is primarily dependent on the success of the *Journal*, while the management of the *Journal* and of Finance are so closely interlocked that your Council would earnestly appeal to the Association, in its own interests, to consider carefully before endorsing the resolution of the Representative Meeting.

Out of a revenue of £52,000, no less than £25,000 is revenue direct from the *Journal*.

It has been urged in favour of the separation, that all Committees spend money, and that there is no reason why one spending department alone should be specially joined with the Finance Committee.

It is essential that the Journal and Finance Committee should direct equal attention to sources of revenue as is given to the control of expenditure. To continue to carry out this double function satisfactorily, it is necessary that the Journal and Finance Committee remain one and undivided.

Experience has shown that a Journal Committee is not successful. Such a Committee did exist for years under the name of the Editorial Reference Committee, and although it met once a week, it found that it was impossible to check an Editor who needed control, while it was easy for the Editor to throw upon the Committee a great deal of responsibility which it is right he should himself bear.

For these reasons alone the Council trusts the Divisions will not favour the separation of the Journal and Finance Committee.

CONCLUSION.

In conclusion, your Council submits that no sufficient arguments have been advanced to justify the proposed changes in the management of the affairs of your Association. The management has resulted in remarkable prosperity, both numerically and financially. Your Council, therefore, appeals to every member to hesitate before adopting these drastic changes, and to make himself conversant with the issues involved, and to concern himself at the meeting of his Division with these proposals, which are to be reconsidered, so as to assure a clear and decisive vote being obtained of the real wishes of the Association on each resolution of the Representative Meeting on which your Council has exercised the Referendum.

Signed on behalf of the Council,

EDMUND OWEN,

Chairman.

EXETER,
July 30, 1907.

SCHEDULE OF RESOLUTIONS.

Your Council appeals to the Divisions to disapprove of the following resolutions of the Special Representative Meeting:—

Minute of Representative Meeting.	*Clause in Charter referred to.*
MINUTE 123.	ORDINANCE 17.
(123). That Ordinance 17 (*b*) be approved.	(*b*) The Council at their said meeting may either approve the resolution or determine on a Referendum and they shall determine on a Referendum if in their opinion the resolution does not truly represent the wishes of the Association.

Minutes 283, 287, 293, and 298. By-Law 36.

(283). Resolved, *nem. con.*: That the principle of the election of the Council be that the Council be elected partly by the Branches and partly by the Representative Body.

(287). Resolved, with 1 dissentient: That the ratio be 2 to 1.

(293). Resolved, with 5 dissentients: That the Council include 24 members elected by the Branches in the United Kingdom; members not exceeding 7 in number, elected by the Branches not in the United Kingdom; 12 members elected by the Representative Body; 6 *ex-officio* members and 3 members representing the Navy, Army, and Indian Medical Services.

(298). Resolved *nem. con.*: That By-law 36, as amended, be approved as follows:

The Council shall be composed of the *ex-officio* members mentioned in the Ordinances and of members duly elected by the following bodies, namely, (*a*) by the Branches of the Association in the United Kingdom which shall be grouped for the purpose of electing 24 members of the Council in the manner prescribed by By-law 37; (*b*) by the Branches of the Association not in the United Kingdom which shall be grouped for the purpose of electing members of the Council not exceeding 7 in number; (*c*) by the Representative Body, which shall elect annually 12 members of the Council from lists of candidates nominated by (i) Branch Councils, (ii) by Divisions, (iii) by the Scottish Committee, (iv) by the Irish Committee, or (v) by at least 10 members resident in the district of the United Kingdom to which the candidate nominated belongs; and (*d*) by the Council itself which shall have power to add to its numbers at any of its meetings all or any one or more of the following, namely:—One medical officer on the active or retired list of each of the following Services:—The Royal Navy Medical Service, the Army Medical Service, and the Indian Medical Service, provided that in each case such medical officer shall not have retired from the active list more than five years previously.

The Council shall be composed of the *ex-officio* members mentioned in the Ordinances, and of members duly elected by the following bodies, namely, (*a*) by the Branches of the Association, which shall be grouped for the purpose of electing twenty members of the Council in the manner prescribed by By-law 37; (*b*) by the Representative Body, which shall elect annually ten members of the Council, and (*c*) by the Council itself, which shall have power to add to its numbers at any of its meetings all or any one or more of the following, namely: One medical officer on the active or retired list of each of the following services:—The Royal Navy Medical Service, the Army Medical Service, and the Indian Medical Service, provided that in each case such medical officer shall not have retired from the active list more than three years previously.

Minute 299. By-law 37.

(299). That By-law 37 be redrafted to provide that the groupings of the Branches in the United Kingdom for the election of the Council be generally as shown in Appendix E to the Committee's Report; that each such group elect four members of Council; that the members elected by the Representative Body be topographically distributed among the same districts and in the same proportion; and that for this purpose By-law 37 be referred back to the Organization Committee, with the instruction that they reconsider also the details of the grouping and circulate the redrafted By-law to the Divisions.

The motion was carried.

The Branches shall be grouped for the purpose of the election of 20 members of the Council in such manner as the Council may from time to time direct, but so that each group shall elect not less than one such member nor more than four such members.

Minute 303. By-law 38.

(303). That By-law 38, subject to amendment as directed, be approved.

The following is a copy of the amendment:—

That the election in the United Kingdom be conducted by the Head Office and out of central funds, and the By-law be amended accordingly.

The election of members of Council by the groups of Branches shall be by means of voting papers sent by post to each member of every Branch comprised in the group. The said voting papers shall contain the names of those candidates who have been nominated, either (*a*) by a Division, or (*b*) in writing, signed by not less than three members of any such Branch, and sent to such officer as the Council may appoint for the purpose on or before an appointed day of which not less than fourteen days' notice has been given in the *Journal*. The said voting papers shall contain such other particulars (if any), and shall be sent to the said officer within such time as the Council may from time to time prescribe by notice given as aforesaid.

MINUTE 328.

(328). That By-law 29 be amended by substituting for the word "ten" in the fourth line the word "twelve" (sixth line as herein shown).

BY-LAW 29.

The business of the Annual Representative Meeting shall be to elect a Representative of a Division as the Chairman of Representative Meetings, and also a Representative of a Division as Deputy-Chairman; to elect a President of the Association; to elect ten members of the Council, and such other officers and such members of Committees as by the Ordinances or By-laws be required to be so elected, &c.

MINUTE 330.

(330). That By-Law 29, as amended, be approved, as follows:—

29. The business of the Annual Representative Meeting shall be to elect a Representative of a Division as the Chairman of Representative Meetings, and also a Representative of a Division as Deputy Chairman; to elect a President of the Association; to elect twelve members of the Council, and such other officers and such members of Committees as by the Ordinances or By-laws be required to be so elected; to consider the election of honorary members when recommended by the Council; to appoint a place at which the next Annual Representative Meeting shall be held; to consider the Annual Financial Statement and Balance Sheet presented by the Council; to appoint an Auditor or Auditors (who shall be a professional Accountant or professional Accountants) and fix his or their remuneration; to consider Reports of the Council, Reports of Committees instructed to report to such Meeting, and Reports of Branches and motions relating to the adoption of such Reports in whole or in part; to make new Ordinances or By-laws and alter and repeal existing Ordinances or By-laws, and to consider any resolution relating to the honour and interests of the Medical Profession or of the Association which shall have been adopted by any Division or Branch, provided that any such resolution proposing material alteration of the Constitution or policy of the Association shall have been submitted through the *Journal* for the consideration of all the Divisions not less than three months previously.

MINUTES 342 AND 346.

(342). That the composition, duties, and powers of the Finance Committee, as stated in the Schedule to By-laws, be approved.

(346). That the composition, duties, and powers of the *Journal* Committee, as stated in the Schedule to the By-laws, be approved.

SCHEDULE TO BY-LAWS.

Name of Committee.	Additional *ex officio* Members.	Appointed Members.		Total.	Duties, Powers, &c.
		Appointed by the Representative Meeting.	Appointed by the Council.		
Finance..	The Chairman of each of the following Committees:—Organization, Journal, Science, Medico-Political, and Premises.	4	4	13	To certify the accounts prior to their presentation to the Council; to advise the Council on the administration of any funds held in trust by the Association, and of the Superannuation Fund. When necessary, the appointment of administrators for any such funds; to report to the Council on the financial bearings of any proposals involving special expenditure; to supervise and report to Council on the general working and organization of the Central Office.
Journal..	..	3	3	6	To consider and report to the Council upon any matters connected with the *Journal* or other publications of the Association.

EDMUND OWEN,
Chairman of Council.

EXETER,
July 30th, 1907.

New Members.

The following new Members of Council were welcomed by the Chairman on attending for the first time:

Dr. W. H. de Silva, Mr. G. Young Eales, Mr. C. E. S. Flemming, Mr. Hugh R. Ker, Mr. F. C. Larkin, Dr. H. L. McKisack, Dr. J. Munro Moir, Dr. Lauriston E. Shaw, and Dr. Henry Smurthwaite.

Dates of Meetings.

Resolved: That the Quarterly Meetings of Council be held on the following dates:

1907—October 30th.	1908—April 15th.
1908—January 22nd.	,, —July 1st.

Additional meetings to be summoned when necessity arises.

Annual Meetings, 1908, 1909.

Read communication conveying invitation for the Association to hold its annual meeting in 1908 at Sheffield.

Moved by the Chairman, and

Resolved: That it be recommended to the general meeting of members that the invitation of the Sheffield Division to hold the annual meeting for 1908 in Sheffield be accepted, and that Mr. Simeon Snell be nominated President-elect.

Read the following letter relating to the annual meeting in 1909:

Ulster Branch,
18, College Square East, Belfast,
June 8th, 1907.

Dear Mr. Elliston,—We had a meeting of our Branch Council this morning and unanimously agreed to keep to our intention of inviting the Association to visit Belfast in 1909. We should have been glad to step into the gap for 1908 if it had been possible to make a meeting next year a success, but the men think that both the scientific and business arrangements would suffer from our haste. Also the Dental Association is to meet here in 1908, and will claim a good deal of attention and hospitality. The men are very keen on making our meeting a real success.

Yours very truly,
Cecil E. Shaw.

Resolved: That the communication be received and entered on the minutes.

Irish Committee.

Resolved: That the minutes of the Irish Committee of July 6th, 1907, be received, and the following recommendation approved:

That the Central Council forward the Viceregal Report to the Royal Commission on the Poor Law with the statement that the Irish Committee of the British Medical Association, having considered very fully the Report of the Viceregal Commission on Poor-law Reform in Ireland, express their conviction that it is most desirable that the Royal Commission on the Poor Law should accept and approve this Report as a satisfactory solution of the problem so far as the Report goes.

Organization Committee.

Resolved: That the Rules of the Victorian Branch be approved, subject to certain modifications.

Resolved: That the consideration of the Report of the Organization Committee on the question of amending the Standing Orders be deferred until the October meeting of the Council.

Chloroform Committee.

Read report submitted by Dr. Dudley Buxton:

The Special Chloroform Committee have to state that they have pursued their work during the past year on the lines indicated in their last report. They are not, however, in a position to issue a further report at the present time, as the researches undertaken are not sufficiently advanced to be formulated. The Committee hope, if re-elected, to tender a full report in 1908.

Dudley Buxton, M.D., Honorary Secretary.

Resolved: That the same be received and entered on the minutes.

Resignation of Treasurer.

Read letter of resignation from the Treasurer:

121, Harley Street, W.,
July 19th, 1907.

Dear Mr. Chairman,—I herewith send you the formal intimation of my resignation as Treasurer of the Association.

It is with the greatest regret and reluctance that I do so, but I find that I can no longer give the time required to carry on the duties of the office.

With all good wishes for the success of the Association and of yourself as Chairman of Council,

Believe me,
Yours very truly,
H. Radcliffe Crocker.

Moved by the Chairman of Representative Meetings, seconded by Mr. Kinsey,

That the Council recommend to the General Meeting the election of Dr. Edwin Rayner, of Stockport, to the office of Treasurer of the British Medical Association for the ensuing three years, vice Dr. Radcliffe Crocker, resigned.

Whereupon an amendment was moved by Dr. Parkinson, seconded by Dr. Brassey Brierley,

That the Council recommend to the General Meeting the election of Mr. Charles Robert Straton, F.R.C.S., to the office of Treasurer of the British Medical Association for the ensuing three years, vice Dr. Radcliffe Crocker, resigned.

The amendment having been put from the Chair, the same was declared to be carried.

On the Chairman submitting this as a substantive motion, the same was carried *nemine contradicente.*

Eyesight Conference.

Resolved: That as the Metropolitan Counties Branch Council has been informed that seats at a conference to be held early in October, with reference to regulating the inspection of the eyesight of school children in London, are to be offered to the Association, the Chairman of Council is hereby authorized to ask for, accept, and forward nominations made by the Emergency Committee of that Branch Council.

Candidates.

The election of candidates was then considered, and the three candidates whose names appeared on the notice convening the meeting were duly elected members of the British Medical Association.

Branch Returns, 1907-8.

The Chairman reported the following returns of elected Representatives of the Branches:

Aberdeen Branch.—Professor David W. Finlay, M.D., LL.D., 2, Queen's Terrace, Aberdeen. *Barbados, Jamaica, Trinidad and Tobago, Leeward Isles, British Guiana Branches (United).*—(No return.) *Bath and Bristol Branch.*—Mr. C. E. S. Flemming, Bradford-on-Avon. *Bermuda, Ottawa, Quebec, Montreal, Halifax and Nova Scotia, and St. John, N.B., Branches (United)*—Dr. P. R. Inches, St. John, N.B. *Birmingham Branch.*—Mr. M. A. Messiter, Cappoly, Dudley; Professor J. T. J. Morrison, 3, Great Charles Street, Birmingham. *Bombay Branch, Punjab District, Bengal District, and Burmah Branch (United).*—(No return). *Border Counties Branch and North Lancashire and Westmorland Branch (United).*—Dr. J. Maxwell Ross, County Buildings, Dumfries (see also North Lancashire and South Westmorland). *Brisbane and Queensland Branch.*—Dr. H. A. Francis, 2, Henrietta Street, Cavendish Square, W. *British Guiana, Barbados, Jamaica, Trinidad and Tobago, and Leeward Isles Branches (United).*—(No return.) *Burmah Branch, Bombay Branch, Punjab District, Bengal District (United).*—(No return.) *Cambridge and Huntingdon Branch and East York and North Lincoln Branch (United)*—Mr. F. E. A. Webb, Grafton House, Maid's Causeway, Cambridge (see also East York and North Lincoln) *Cape of Good Hope Eastern Provinces Branch and Cape of Good Hope Western Provinces Branch (United).*—Colonel David Bruce, C.B, F.R.S., 68, Victoria Street, S W. *Colombo, Ceylon Branch and South Indian and Madras Branch (United).*—Dr. W. H. De Silva, 23, Upper Montagu Street, Montagu Square, W. *Connaught Branch and Ulster Branch (United).*—Dr. H. L. McKisack, 17, University Square, Belfast (see also Ulster); Dr. Cecil E. Shaw, College Square East, Belfast (see also Ulster). *Dorset and West Hants Branch and West Somerset Branch (United).*—Mr. C. H. Watts Parkinson, Wimborne Minster (see also West Somerset). *Dundee Branch, Perth Branch, and Stirling Branch (United).*—Dr. R. Cochrane Buist, 166, Nethergate, Dundee (see also Perth and Stirling). *East Anglian Branch.*—Mr. H. A. Ballance, M.S., 46, Prince of Wales Road, Norwich; Dr. Edgar George Barnes, Eye, Suffolk *East York and North Lincoln Branch and Cambridge and Huntingdon Branch (United).*—Mr. F. E. A. Webb, Grafton House, Maid's Causeway, Cambridge (see also Cambridge and Huntingdon). *Edinburgh Branch and Fife Branch (United).*—Dr. Robert McKenzie Johnston, 2, Drumsheugh Gardens, Edinburgh (see also Fife): Dr. Thomas Goodall Nasmyth, 27, Palmerston Place, Edinburgh (see also Fife). *Egypt, Gibraltar, and Malta Branches (United).*—(No return.) *Fife Branch and Edinburgh Branch (United).*—Dr. Robert McKenzie Johnston, 2, Drumsheugh Gardens, Edinburgh (see also Edinburgh); Dr. Thomas Goodall Nasmyth, 27, Palmerston Place, Edinburgh (see also Edinburgh). *Glasgow and West of Scotland Branch.*—Dr. Bruce Goff, The Lindens, Bothwell, Lanarkshire; Dr. James Hamilton, 1, Royal Crescent, Crosshill, Glasgow. *Gloucestershire Branch and Worcestershire and Herefordshire Branch (United).*—Mr. C. F. Cuthbert, 2, Barton Street, Gloucester. *Griqualand West Branch, Natal Branch, including Orange River Colony and Transvaal.*—(No return) *Halifax, Nova Scotia, Ottawa, Quebec, Montreal, Bermuda, St. John, N.B., Branches (United).*—Dr. P. R. Inches, St. John, N.B.

Hong Kong and China Branch and Malaya Branch (United).—(No return.) *Jamaica, Barbados, Trinidad and Tobago, Leeward Islands, and British Guiana Branches (United).*—(No return.) *Lancashire and Cheshire Branch.*—Dr. T. R. Bradshaw, 51, Rodney Street, Liverpool; Dr. J. Brassey Brierley, Alma House, Old Trafford, Manchester; Alfred Godson, M.B., Cheadle House, Cheadle; Frederick Charles Larkin, F.R.C.S., 54, Rodney Street, Liverpool. *Leeward Islands, Barbados, Jamaica, Trinidad and Tobago and British Guina Branches (United).*—(No return.) *Leinster Branch and South-Eastern of Ireland Branch (United).*—Dr. James Craig, 18, Merrion Square, Dublin (see also South-Eastern of Ireland); Dr. Denis Walshe, Bellevue, Graigue, co. Kilkenny (see also South-Eastern of Ireland). *Malaya Branch, Hong Kong and China Branch (United).*—(No return.) *Malta and Mediterranean, Gibraltar, and Egyptian Branches (United).*—(No return.) *Melbourne and Victoria Branch.*—Dr. R. R. Stawell, 44, Westbourne Park Villas, W. *Metropolitan Counties Branch.*—Dr. John Ford Anderson, 41, Belsize Park, N.W.; Mr. George Eastes, M.B., 35, Gloucester Terrace, Hyde Park, W.: Dr. G. E. Haslip, 8, Suffolk Place, Pall Mall, S.W.; Dr. Hugh R. Ker, Tintern, 2, Balham Hill, S.W.; Dr. Lauriston E. Shaw, 64, Harley Street, W. *Midland Branch.*—Dr. W. A. Carline, Lincoln; Dr. F. M. Pope, 4, Prebend Street, Leicester. *Montreal, Ottawa, Quebec, Halifax and Nova Scotia, Bermuda, St. John, N.B., Branches (United).*—Dr. P. R. Inches, St. John, N.B. *Munster Branch.*—Dr. Joseph Giusani, Patrick's Hill, Cork. *Natal Branch, Griqualand West Branch (including Orange River Colony), and Transvaal Branches (United).*—Lieutenant-Colonel R. J. S. Simpson, C.M.G., R.A.M. College, Millbank, S.W. *New Zealand Branch.*—Dr. E. H. Colbeck, 55, Upper Berkeley Street, W. *North of England Branch.*—Dr. Henry Smurthwaite, 8, St. Mary Place, Newcastle-on-Tyne; Dr. Arthur T. Wear, 1, Wentworth Place, Newcastle-on-Tyne. *Northern Counties of Scotland Branch.*—Dr. John Munro Morr, 4, Ardross Terrace, Inverness. *North Lancashire and South Westmorland Branch and Border Counties Branch (United).*—Dr. J. Maxwell Ross, County Buildings, Dumfries (see also Border Counties). *North Wales Branch.*—Mr. H. Jones Roberts, Llywenarth, Penygroes. *Oxford and Reading Branch.*—Mr. A. J. Drew, Water Hall, Oxford. *Perth Branch, Dundee Branch, and Stirling Branch (United).*—Dr. R. Cochrane Buist, 166, Nethergate, Dundee (see also Dundee and Stirling). *St John N.B., Ottawa, Quebec, Montreal, Halifax and Nova Scotia, and Bermuda Branches (United).*—Dr. P. R. Inches, St. John, New Brunswick. *Saskatchewan and Toronto Branches, Manitoba and British Columbia Districts (United).*—(No return). *Shropshire and Mid-Wales Branch and Staffordshire Branch (United).*—Mr. W. D. Spanton, Chatterley House, Hanley. *South Australian Branch and Western Australian Branch (United).*—Dr. C. G. Drummond Morier, 1, Hamilton Terrace, St. John's Wood, N.W. *South-Eastern Branch.*—Dr. J. H. Galton, Chunam, Sylvan Road, Upper Norwood, S.E.; Dr. W. J. Tyson, 10, Langhorne Gardens, Folkestone; Mr. T. Jenner Verrall, 97, Montpellier Road, Brighton. *South-Eastern of Ireland Branch and Leinster Branch (United).*—Dr. James Craig, 18, Merrion Square, Dublin (see also Leinster); Dr. Denis Walshe, Bellevue, Graigue, co. Kilkenny (see also Leinster). *Southern Branch.*—Mr. Charles Robert Straton, F.R.C.S., West Lodge, Walton, Salisbury. *South Indian and Madras Branch and Colombo, Ceylon Branch (United).*—Dr. W. H. De Silva, 23, Upper Montagu Street, Montagu Square, W. *South Midland Branch.*—Mr. R. H. Kinsey, 10, Rothsay Gardens, Bedford. *South Wales and Monmouthshire Branch.*—Mr. John Lynn Thomas, C.B., F.R.C.S., 21, Windsor Place, Cardiff; David James Williams, F.R.C.S., Greenfield House, Llanelly. *South-Western Branch.*—Mr. E. J. Domville, Northernhay House, Exeter; G. Young Eales, 1, Matlock Terrace, Torquay. *Staffordshire Branch and Shropshire and Mid-Wales (United).*—Mr. W. D. Spanton, Chatterley House, Hanley. *Stirling Branch, Dundee Branch, and Perth Branch (United).*—Dr. R. Cochrane Buist, 166, Nethergate, Dundee (see also Dundee and Perth). *Sydney and New South Wales Branch.* Dr. C. J. Martin, F.R.S., Lister Institute of Preventive Medicine, Chelsea, S.W.; Dr. G. E. Twynam, 2, Wetherby Place, Hereford Square, South Kensington, S.W. *Toronto Branch, Saskatchewan Branch, Manitoba and British Colombo Districts (United).*—(No return). *Trinidad and Tobago Branch, Barbados, Jamaica, Leeward Islands, and British Guiana Branches (United).*—(No return). *Ulster Branch and Connaught Branch (United).*—Dr. H. L. McKisack, 17, University Square, Belfast (see also Connaught); Dr. Cecil E. Shaw, College Square East, Belfast. *Western Australian Branch and South Australian Branch (United).*—Dr. C. G. Drummond Morier, 1, Hamilton Terrace, St. John's Wood, N.W. *West Somerset Branch and Dorset and West Hants Branch (United).*—Mr. C. H. Watts Parkinson, Wimborne Minster (see also Dorset and West Hants). *Worcestershire and Herefordshire Branch and Gloucestershire Branch (United).*—Mr. C. F. Cuthbert, 2, Barton Street Gloucester. *Yorkshire Branch.*—Dr. D. Goyder, 88, Great Horton Road, Bradford; Dr. Sinclair White, Ranmoor, Sheffield.

A MEETING of the Council was held in the Royal Public Rooms, Exeter, on Wednesday, July 31st, 1907.

Present:

Mr. EDMUND OWEN, LL.D., Chairman of Council, in the Chair.

Dr. J. A. MACDONALD, Chairman of Representative Meetings.

Mr. SIMEON SNELL, President-elect, Sheffield.

Dr. EDWIN RAYNER, Treasurer.

Mr H. A. BALLANCE, M.S., Norwich
Dr. EDGAR G. BARNES, Eye, Suffolk
Dr. J. BRASSEY BRIERLEY, Old Trafford
Dr. W. A. CARLINE, Lincoln
Dr. JAMES CRAIG, Dublin
Mr. C. F. CUTHBERT, Gloucester
Dr. W. H DE SILVA, Colombo
Mr. E. J. DOMVILLE, Exeter
Mr. A. J. DREW, Oxford
Mr. GEORGE EASTES, M.B., London
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Mr. G. COOPER FRANKLIN, LL.D., Leicester
Dr. BRUCE GOFF, Bothwell
Dr. DAVID GOYDER, Bradwell
Dr. JAMES HAMILTON, Glasgow
Dr. G. E HASLIP, London
Dr. R. MCKENZIE JOHNSTON, Edinburgh
Colonel C. H. JOUBERT DE LA FERTE, I.M.S., ret., Weybridge
Dr. HUGH R. KER, London
Mr. R. H. KINSEY, Bedford
Mr. F. C. LARKIN, Liverpool
Dr. H. L. MCKISACK, Belfast
Dr. J. MUNRO MOIR, Inverness
Professor J. T. J. MORRISON, Birmingham
Mr. C. H. WATTS PARKINSON, Wimborne
Dr. FRANK M. POPE, Leicester
Dr. CECIL E. SHAW, Belfast
Dr. LAURISTON E. SHAW, London
Dr. HENRY SMURTHWAITE, Newcastle-on-Tyne
Mr. C. R STRATON, Wilton, Salisbury
Mr. J. LYNN THOMAS, C.B., Cardiff
Dr. W. J. TYSON, Folkestone
Mr. T. JENNER VERRALL, Brighton
Dr. ARTHUR T. WEAR, Newcastle-on-Tyne
Dr. SINCLAIR WHITE, Sheffield
Lieutenant-Colonel E. M. WILSON, C.B., C.M.G., South Farnborough

Minutes.

The minutes of the last meeting (July 30th, 1907) having been printed and circulated were, after slight emendation, approved and signed as correct.

President-elect.

The CHAIRMAN introduced to the Council Mr. Simeon Snell, the President elect of the Sheffield meeting.

Dental Congress.

The Chairman reported receipt of communication from the Dental Section, asking the Council to sanction the appointment of delegates to a meeting of the International Stomatological Association to be held in Paris on August 5th.

Resolved: That the Council sanction the Dental Section nominating the following delegates to attend the Congress, namely, Messrs. Colyer, Goadby, Payne, Peake, Spokes, and Underwood.

Treasurer.

The CHAIRMAN reported that at the General Meeting held the previous day Dr. Edwin Rayner, of Stockport, had been elected Treasurer of the Association.

Minutes of Representative Meeting.

The CHAIRMAN OF REPRESENTATIVE MEETINGS presented the minutes of the Annual Representative Meeting held on Saturday, July 27th, 1907, which the Council considered minute by minute.

A MEETING of the Council was held in the Royal Public Rooms, Exeter, on Thursday, August 1st, 1907.

Present:

Mr. EDMUND OWEN, LL.D., Chairman of Council, in the Chair.

Dr. J. A. MACDONALD, Chairman of Representative Meetings.

Dr. EDWIN RAYNER, Treasurer, Stockport.

Mr. H. A. BALLANCE, M.S., Norwich
Dr. EDGAR G. BARNES, Eye
Dr. J. BRASSEY BRIERLEY, Manchester
Dr. W. A. CARLINE, Lincoln
Dr. JAMES CRAIG, Dublin
Mr. C. F. CUTHBERT, Gloucester
Dr. W. H. DE SILVA, Colombo
Mr. E. J. DOMVILLE, Exeter
Mr. A. J. DREW, Oxford
Mr. GEORGE EASTES, London
Mr. C. E. S FLEMMING, Bradford-on-Avon
Mr. GEO. COOPER FRANKLIN, LL.D., Leicester
Dr. BRUCE GOFF, Bothwell
Dr. DAVID GOYDER, Bradford
Dr. JAMES HAMILTON, Glasgow
Dr. G. E. HASLIP, London
Dr. ROBERT MCKENZIE JOHNSTON, Edinburgh
Dr. HUGH R. KER, London
Mr. R. H. KINSEY, Bedford
Mr. F. C. LARKIN, Liverpool
Dr. H. L. MCKISACK, Belfast
Dr. J. MUNRO MOIR Inverness
Professor J. T. J. MORRISON, Birmingham
Mr. C. H. WATTS PARKINSON, Wimborne
Dr. FRANK M. POPE, Leicester
Dr. CECIL E. SHAW, Belfast
Dr. LAURISTON E. SHAW, London
Dr. HENRY SMURTHWAITE, Newcastle-on-Tyne
Mr. CHARLES ROBERT STRATON, Salisbury
Mr. J. LYNN THOMAS, C.B., Cardiff
Dr. W. J. TYSON, Folkestone
Dr. T. JENNER VERRALL, Brighton
Dr. A. T. WEAR, Newcastle-on-Tyne
Dr. SINCLAIR WHITE, Sheffield
Lieut.-Colonel E. M. WILSON, C.B., C.M.G., South Farnborough

Minutes.

The minutes of the last meeting (July 31st, 1907) having been printed and circulated were taken as read and signed as correct.

Representative Meeting Minutes.

The CHAIRMAN OF REPRESENTATIVE MEETINGS presented the minutes of the Annual Representative Meeting of Monday and Tuesday, July 29th and 30th, which were considered minute by minute.

The officials having retired, the Council proceeded to consider the resolutions arising out of the Special Finance Inquiry Committee report.

In reference to "Recommendations" No. 337 et seq., on question raised by Professor Morrison as to whether the words "and action" pledged the Council to take any action at all or was intended so to do, the CHAIRMAN OF REPRESENTATIVE MEETINGS gave to the Council an official assurance that the words were used only in the sense of "such action as the Council may think fit," and that therefore it rested with the Council to take action or not to take action as they thought fit in connexion with any recommendation.

Moved by the CHAIRMAN OF REPRESENTATIVE MEETINGS, seconded by Dr. CRAIG, and

Resolved: That Sir Victor Horsley be appointed a representative delegate with the other representative delegates to the Second International Congress on School Hygiene.

Referendum Report, Letter from Chairman of Representative Meeting.

The CHAIRMAN read communication from the Chairman of Representative Meetings to the Chairman of Council, as follows:

"Those members of the Council who are not in agreement with the Report of the Referendum Committee feel that in justice to themselves they ought to issue a statement of their position in the form of a Minority Report. This would in ordinary course accompany the report approved by the majority to which it relates. I hope that as Chairman of Council you may make arrangements for this to be done."

Moved by Dr. POPE and

Resolved: That the General Secretary be empowered to receive reports from any members who differ from the report of the majority and circulate to the Divisions under separate cover.

Elections to Committees.

The election of Committees was then considered, and as a result of the ballot are appointed as follows:

(The President, Chairman of Representative Meetings, Chairman of Council, and Treasurer are *ex-officio* members of all Committees):

ARRANGEMENTS COMMITTEE.

Crocker, Dr. H. Radcliffe, London
Eastes, Mr. George. London
Galton, Dr. J. H., Norwood
Johnston, Dr. R. McKenzie, Edinburgh
McKisack, Dr. H. L., Belfast
Parkinson, Mr. C. H. W., Wimborne

CHLOROFORM COMMITTEE.

Barr, Sir James, M.D., Liverpool
Brodie, Dr. T. G., F.R.S., London
Buxton, Dr. Dudley, London
Crocker, Dr. H. Radcliffe, London
Dunstan, Professor, F.R.S., London
Harcourt, Professor Vernon, F.R.S., Ryde
Horsley, Sir Victor, LL.D., F.R.S., London
Martin, Dr. C. J., F.R.S., London
McCardie, Dr. W. J., Birmingham
Rowell, Mr. George, London
Sherrington, Professor C. S., F.R.S., Liverpool

COLONIAL COMMITTEE.

Five members to be appointed by the Representatives of the Colonial Branches on the Council, and

Armour, Mr. Donald, London
Wilson, Lt.-Col. E. M., C.B., C.M.G., Farnborough

ETHICAL COMMITTEE.

Elected by the Representative Meeting:

Bateman, Dr. A. G., London
Goff, Dr. Bruce, Bothwell
Langdon-Down, Dr. R. L., London
Lee, Dr. P. G., Cork
Maclean, Dr. E. J., Cardiff

Elected by the Council:

Craig, Dr. James, Dublin
Kinsey, Mr. R. H., Bedford
Shaw, Dr. Lauriston E., London
Spanton, Mr. W. D., Hanley
Straton, Mr. C. R., Salisbury

HOSPITALS COMMITTEE.

Anderson, Dr. J. Ford, London
Cuthbert, Mr. C. F., Gloucester
Fox, Dr. E. L., Plymouth
Godson, Dr. A., Cheadle
Hamilton, Dr. Jas., Glasgow
Hamilton, Dr. J. Rogerson, Hawick
Horder, Mr. T. Garrett, Cardiff
Joubert de la Ferté, Colonel C. H., I.M.S. (retired), Weybridge
Pope, Dr. F. M., Leicester
Shaw, Dr. L. E. London
White, Mr. E. F., Putney

JOURNAL AND FINANCE COMMITTEE.

Bradshaw, Dr. T. R., Liverpool
Carline, Dr. W. A., Lincoln
Eastes, Mr. George, London
Galton, Dr. J. H., Norwood
Goyder, Dr. D., Bradford
Johnston, Dr. R. McKenzie, Edinburgh
Kinsey, Mr. R. H., Bedford
Parkinson, Mr. C. H. W., Wimborne
Spanton, Mr. W. D., Hanley
Tyson, Dr. W. J., Folkestone
Verrall, Mr. T. Jenner, Brighton

MEDICO-POLITICAL COMMITTEE.

Elected by the Representative Meeting:

Armit, Mr. H. W., Wembley
Buist, Dr. R. C., Dundee
Cox, Dr. Alfred, Gateshead
Horsley, Sir Victor, F.R.S., LL.D., London
Martley, Dr. F. C., Dublin
Muir, Dr. W. L., Glasgow

Elected by the Council:

Flemming, Mr. C. E. S., Bath
Haslip, D. G. E., London
Parkinson, Mr. C. H. W., Wimborne
Shaw, Dr. Cecil E., Belfast
Straton, Mr. C. R., Salisbury
Webb, Mr. F. E. Apthorpe, Cambridge

NAVAL AND MILITARY COMMITTEE.

Biden, Fleet Surgeon E. J., R.N., Farnham
Cuffe, Sir Charles, C.B., London
Curme, Surgeon-Colonel D., Blandford
Elliston, Surgeon-Colonel G. S., Ipswich
Evatt, Surgeon-General, C.B., London
Joubert de la Ferté, Colonel, I.M.S. (retired), Weybridge

ORGANIZATION COMMITTEE.

Ballance, Mr. H. A., Norwich
Clark, Mr. Andrew, London
Kirby, Dr. E. D., Edgbaston
Morrison, Professor J. T. J., Birmingham
White, Professor A. H. Dublin.

PREMISES COMMITTEE.

Barnes, Dr. Edgar G., Eye
Clark, Mr. Andrew, London
Galton, Dr. J. H., Norwood
Johnston, Dr. R. McKenzie, Edinburgh
Pope, Dr. F. M., Leicester

PUBLIC HEALTH COMMITTEE.

Jones, Mr. Herbert, Hereford
Martley, Dr. F. C., Dublin
Nasmyth, Dr. T. G., Cupar
Parkinson, Mr. C. H. W., Wimborne
Domville, Mr. E. J., Exeter

SCIENCE COMMITTEE.

Bruce, Colonel D., C.B., F.R.S., London
Buist, Dr. R. C., Dundee
Helme, Dr. T. A., Manchester
Martin, Dr. C. J., F.R.S., London
Nuttall, Professor G. H. F., M.D., F.R.S., Cambridge
Paton, Professor Noël, M.D., Glasgow
Pope, Dr. F. M., Leicester
Shaw, Dr. Cecil E., Belfast
White, Dr. Sinclair, Sheffield
White, Professor A. H., Dublin

THERAPEUTIC COMMITTEE.

Bradbury, Dr. J. B., Cambridge
Brown, Dr. Burton, London
Crawford, Dr. Raymund, London
Cushny, Professor, A. R., M.D., F.R.S., London
Dixon, Professor W. E., M.D., London
Marshall, Professor C. R., Dundee
Stockman, Professor Ralph, M.D., Glasgow
Tirard, Dr. Nestor, London
White, Dr. W. Hale, London
Wild, Professor Robert B., M.D., Manchester

British Medical Association.

ENTERTAINMENTS AT EXETER.

As may have been gathered from what was said in the issue for August 3rd, Exeter, in its preparations for the visit of the British Medical Association and in the effect it gave its good wishes, exceeded both its own reputation for hospitality, and even perhaps the efforts in that direction of every other city which the British Medical Association has so far visited. From Monday onwards the afternoon and evening entertainments were both numerous and varied. Practically all medical men in Exeter connected with the Association and its meeting kept open house during the week, and many of them gave private dinner parties every evening. Apart from these, there were, of course, the organized entertainments, those to which all alike were invited, and those tickets for which could only be obtained by persons sufficiently fortunate to draw them at the ballots held for admission cards. His Worship the Mayor, besides welcoming the Association on Monday at the Guildhall, gave an evening fête on the following day, on his own account, and on the last evening of the meeting entertained the members, on behalf of the city and himself, at a most successful *conversazione*, in the Royal Albert Memorial College. The members of the Association have reason to be grateful to the principal officers of this College, all of them lending their assistance to make the affair pleasant, and some of them giving definite entertainments, such as demonstrations of models showing the generation of ocean currents by winds, of working model airships, of the methods used in the Exeter Museum for producing models on a large scale of various minute organisms, and several other exhibitions of the same general kind. Leading members of Exeter society were also prominent as entertainers. Thus, in addition to the very successful garden parties given by Dr. P. Maury Deas, at Wonford House, and by Dr. Samways at Knowles, and an evening fête given by the South-Western Branch, entertainments, similar in kind, and as pleasant and successful, were given by the Right Rev. the Bishop of Exeter and Mrs. Robertson, by Sir Thomas Dyke Acland and Lady Acland at Killerton Park, and by Sir Dudley and Lady Duckworth-King at Wear House. Nor should be forgotten the repeated tours of the city, including the Elizabethan house of the Guild of Merchant Adventurers, incorrectly described in the JOURNAL of August 3rd as Tuckin Hall, conducted by Mr. Harbottle Reed, the demonstration given at the Guildhall by Mr Parry, the Town Clerk, and the excellent opportunities for visiting the cathedral, under skilled guidance, afforded by the Rev. Canon Edmonds.

So far, however, reference has only been made to entertainments in and around Exeter; outside it and at a greater or less distance the opportunities of amusement afforded and the hospitality offered were equally numerous. Thus, at CULLOMPTON on Thursday, Dr. and Mrs. Gidley received some fifty members and ladies, and drove them to Blackdown Hills, where a picnic tea was provided; an exceedingly pleasant hour was there spent, and on the return journey a half-hour was occupied in visiting the interesting old church at Cullompton. A slight acknowledgement of Dr. and Mrs. Gidley's kindness was made in a short speech by Dr. Drury, and the guests then returned to Exeter well pleased with their outing, and each provided with a souvenir of the visit in the shape of a book containing pictures of the neighbourhood.

On the same day a still larger number of members paid a visit to SEATON, where ample provision had been made for their reception at the Town Hall. The afternoon was spent in excursions to various places of interest in the neighbourhood, including the museum at Rousdon Landslip, which Lady Peak had kindly thrown open to the visitors. Golf also was to the fore, the Axe Cliff Club having placed its grounds at the disposition of the Reception Committee. Before leaving on the return journey further material refreshment was offered the visitors at the Town Hall.

On the previous day there had been two very well attended entertainments at the neighbouring towns, EXMOUTH and BUDLEIGH SALTERTON; those who visited the latter place were received by Dr. Evans, the Chairman of the Urban District Council, and by Dr. Brushfield. The feature of the afternoon was a garden party at Bicton, where Lord and Lady Clinton, the host and hostess, took much trouble to give their visitors a pleasant afternoon, including an opportunity of examining the collection of rare and ornamental trees, for which this estate is famous. On the way back to Budleigh Salterton a drive was taken across Woodbury Common, during which magnificent views of the surrounding country and the coast were obtained, and a short visit paid to Hayes Barton, the birthplace of Sir Walter Raleigh. Those who took advantage of the invitation to the entertainment by EXMOUTH were received by Mr. J. E. Daw (Chairman of the Urban District Council), Dr. Thornton, and Dr. Thomas, were entertained at a garden party on a large scale in the beautiful grounds of Exmouth Manor House. Moreover, a considerable number of them drove across country to the ancient house at Hayes Barton, with its old-world porch and thatched gables, which has already been mentioned. The house is of distinct interest, and is believed to be much in the same condition as in the time of the birth of Devonshire's greatest hero.

On Friday luncheon and exploring parties were entertained at several places. A large party went by special train to SIDMOUTH, where they were received by the representatives of the local reception committee, including Drs. Bird and Colclough, its honorary secretaries. The visitors then proceeded on foot to the charming grounds of Sidmouth Manor House, where luncheon was served to the strains of the Sidmouth Town Band. Sir John Kennaway, C.B., M.P., who presided at the luncheon, read a letter from Colonel Balfour, the lord of the manor, expressing regret that he was unable to be present personally, and hoping that the members of the Association would carry away pleasant memories of their visit to Sidmouth. Sir John Kennaway also proposed several toasts, and made special reference to the fact that Her Majesty Queen Victoria had in her childhood spent much of her time in Sidmouth. He mentioned with satisfaction that the new president, Dr Davy, was an Ottery man, and that he himself hailed from the same vale. Acknowledgements on behalf of the visitors were made by Dr. Lees, who spoke of Sidmouth as being a place so healthy that doctors could neither live nor die in it. In the afternoon visits were paid to various spots of interest in the neighbourhood, use was made of the golf links, tea being provided in the club house; a cricket match in progress was watched for some time, and the Cottage Hospital, the Baths, and the Sid Vale Dairy examined. The comfort of the visitors was greatly increased by making them independent during the afternoon rambles and enabling them to get tea at any of the many hotels of Sidmouth. Each visitor was presented with a copy of the annual report of the Medical Officer of Health, Dr. Pullin.

Another and not less successful entertainment on the same day was provided by TORQUAY, where the guests arrived in time for an elaborate luncheon at the Bath Saloons. At this Dr. Powell presided, the Honorary Secretary of the Reception Committee being Dr. Carver. Several speeches were made, toasts drunk, the good wishes expressed towards the Association being acknowledged by Sir William Macewen and Mr. L. B. Bowring, C.S.I., and a toast to the Borough of Torquay being proposed by Lieutenant-Colonel Sir Havelock Charles. The guests, who numbered well over one hundred, divided up after luncheon into several parties; some taking drives around the Lincombes and over Babbacombe Downs, others going to Cockington village, and some to Kent's Cavern; a considerable number also joined in an expedition by sea around Torbay. Eventually, however, all reassembled at Torre Abbey, where, after being refreshed with tea, they were shown the remains of the ancient religious foundation from which this estate takes its name. It was an interesting afternoon, and those who took part in it appear to have enjoyed themselves thoroughly. This, however, does not complete Friday's list, for on the same day there was a most enjoyable entertainment at TEIGNMOUTH, of the invitations to which some seventy members and ladies availed themselves. The guests were received by Mr. J. W. Morrison, of the Urban District Council, Dr. G. H. Johnson, Dr. Piggott,

Dr. Rudkin, Dr. Little, and other medical men in practice in the neighbourhood, and a most elaborate luncheon was then served, each visitor finding by his plate a guide to Teignmouth, containing a special article on its qualities as a health resort written by Dr. Piggott. The short toast included one to the visitors; this was acknowledged on their behalf by Dr. Shingleton Smith, who took the opportunity of expressing the pleasure felt by members of the Association at the cordiality everywhere extended to them. In the afternoon, under the guidance of Dr. Whiteway-Wilkinson, the visitors drove to Ugbrooke, where Lord and Lady Clifford entertained them at tea. An inspection of the beautiful grounds of this estate was then made, and finally the party found its way back to Exeter via Teignmouth, after a most enjoyable outing.

Excursions.

On Saturday, when the annual meeting had formally come to a close, there was a series of events, which, though denominated excursions only, were really quite as much entertainments as any of those of which an account has been given. These were expeditions lasting the whole day, and taking the visitors as far afield as Plymouth, Falmouth, Ilfracombe, Clovelly, and Eastleigh. Unfortunately, many seemed to have been unaware that they could obtain tickets sufficiently early to make the arrangements necessary, and others could not manage to remain in the neighbourhood of Exeter any longer; so the number of guests who arrived fell far short of that for which some of the hosts had taken the trouble to prepare. This was notably the case at Falmouth, probably because this was the longest expedition of all, but it is to be none the less regretted because the preparations made were of the most generous kind. However, those who arrived were well repaid for their journey. They were received at the station by the Mayor (Mr. Alderman Grose) and a number of medical practitioners in the neighbourhood, and were then taken in Jersey cars for a tour of the Castle Drive and cliffs, which included glimpses of Gyllyngvase Bay and peeps at the Truro river and St. Mawes. The drive ended at the King's Head Hotel, where an excellent luncheon was provided. For this appetites were well prepared, as the party had started early. The Mayor presided, and, in the course of a speech proposing "Success to the British Medical Association," mentioned that when arrangements for the visit had first been mentioned it was hoped to signalize it by conferring the freedom of the city on Sir Joseph Fayrer, by whose death Falmouth had lost a very warm-hearted friend. The toast was acknowledged in fitting terms by Major-General Sir Charles Cuffe, and "Success to Falmouth" was submitted, on behalf of the visitors, by Dr. Colt. After luncheon, the time still available was spent in an interesting tour of the Port of Falmouth in a steamer, which included an exploration for a short distance of the beautiful river Fal. The excursion to Clovelly suffered also, from the point of view of those who had taken the trouble to get it up, from paucity of visitors owing to the distance which had to be traversed, and possibly also to some extent because it was not open to members who had ladies with them. The day began with a railway journey of a couple of hours, which landed the party at Bideford; there coaches were waiting and took the visitors for an interesting drive of another two hours to the unique village of Clovelly. There is only one Clovelly in the world, and those who saw this quaint old-world place on this occasion had the advantage of being most hospitably entertained by Mrs. Hamlyn, of Clovelly Court; while on the return journey some very welcome tea was provided at Bideford by Dr. Toye, of that town. The party which made Ilfracombe its objective point was sumptuously entertained at luncheon, and, after having been shown the chief beauties which have made this North Devon watering-place famous, was given tea at Dr. Toller's hydropathic establishment. The excellent arrangements for this expedition were made by Dr. Slade-King, whose efforts were ably seconded by other medical men in the place, and it would have been an even greater success had more visitors been able to take part in it.

The largest excursion of all was that to Plymouth, where a most elaborate plan of entertainment had been devised. The train arrived somewhat late, so it was not possible to carry it out in its entirety; but the arrangements were so good that the very large party, by dividing into sections, managed to see a great deal of the more interesting parts of this famous town, and its neighbour, Devonport. At midday, luncheon was served at the Royal Hotel under the presidency of the Mayor; while ladies, though not nominally on the invitation list, were excellently catered for at a neighbouring hotel. The Mayor, in his speech of welcome to the Association after luncheon, displayed a strong vein of humour; and also, in the course of some subsequent remarks in acknowledgement of a toast to himself, specially mentioned Drs. Fox, Webber, and May as amongst those who had materially assisted to arrange the programme. The Mayor's humorous touches, it may be noted, fell by no means flat, and were well capped subsequently by Dr. Davy, who responded for the Association. The latter also drew attention to the fact that the chain of office worn by the Mayor originally belonged to Sir Francis Drake, and that the medal attached to it was made from gold taken from one of the Armada ships. The afternoon was spent by some in a tour round the Naval Dockyard, by others at Devonport, while a certain number went for a cruise round the Sound, and, on the invitation of Lord Mount Edgcumbe, landed at Edgcumbe, where tea was served in the Orangery.

The fifth and last excursion to be mentioned was that to Tavistock. In this some fifty guests took part, the expedition including a pleasant drive of some eight miles across country to the Duke of Bedford's beautiful country estate at Eastleigh. There luncheon was served in the grounds, Mr. Rundle, the agent in charge of the estate, acting as host on behalf of the Duke. His pleasant performance of this duty was subsequently acknowledged on behalf of the guests in a few well-termed phrases by Mr. Russell Coombe. Very rightly he included in his remarks Dr. and Mrs. Smyth, of Tavistock, who greatly added to the pleasure of the expedition by accompanying the party on the drive to Endsleigh, and subsequently entertained it at tea in Tavistock before the return railway journey.

This concludes what is necessarily a somewhat imperfect account of the very numerous entertainments for which the Association has to thank Exeter and the profession in the south-west of England, but mention should be made of the fact that Dr. Dyer, of the convict prison at Princetown, took much trouble to enable a certain number of members to visit this establishment, and that Dr. and Mrs. Davson, of Dartmouth, remained at home on Wednesday and Thursday of the week ready to see to the comfort of any chance visitors from the Association to this town. Note may also be made of the fact that once again a smoking concert was organized by a committee drawn from among the exhibitors at the Annual Exhibition, and that to it a number of members of the Association received invitations, and thus passed a very pleasant evening.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

Cape of Good Hope (Eastern Province) Branch:

East London Division.

An ordinary meeting was held on July 12th. There was a good attendance. Dr. Farmer, a new-comer, was made welcome.

Police Calls.—As medical men in East London had been called to emergency cases by the police and no fee, or one only after much delay, had been forthcoming from Government, the Honorary Secretary was instructed to write the resident magistrate bringing to his notice this grievance and asking for its removal.

Ambulance Lectures.—The principle of the profession being paid for ambulance lectures and examinations was approved of, but before communicating with the St. John

Ambulance Association it was decided to get in touch with the Divisions in the Colony and find out their ideas on the subject. Drs. Stirling and Ganteaume did not think East London yet able to pay fees for ambulance lectures. After some discussion the following resolution was passed:

We do not approve of lowering the standard of examinations and certificates for native nurses.

Papers.—Dr. Grey read an interesting paper on a case of cardiac dilatation, and Dr. Rubidge showed a case of high myopia on which he had successfully operated and then read a paper on myopia. The readers of these papers were thanked. Dr. Hill Aitken demonstrated Riva-Rocci's sphygmomanometer.

Future Meetings.—The Division will meet in future on Tuesdays.

EAST ANGLIAN BRANCH:
South Suffolk Division.

School Certificates.—At a meeting of this Division held at Ipswich on Wednesday, July 31st, the following resolution was unanimously passed, nine members being present:

This Division of the British Medical Association recommends to members not to give school certificates until the Education Committee agree to pay 2s. 6d. for each certificate.

The Annual Exhibition
OF
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[*Second Notice.*]

Foods and Beverages.

Feltoe and Smith (25, Augustus Street, Regent's Park, London, N.W.). This firm is the proprietor of two brands of lime juice and lemon squash, known respectively as "Specialité Lime Juice Cordial" and "Specialité Lemon Squash," both of which are manufactured by the firm itself. The lime juice cordial is guaranteed by the firm to be entirely free from foreign material, and is certainly, when mixed with water, an extremely pleasant and refreshing beverage. Unlike many articles of its kind, it is entirely free from musty flavour, while it is believed by the manufacturers to be as free from alcohol as any beverage can be. The Specialité Lemon Squash contains, we were informed, nothing but the juice of lemons and loaf sugar. When the lemons are squeezed the pulpy portions are removed by a special process discovered by the firm, leaving the juice perfectly clear. All the processes of its manufacture, it was stated, are carried on under the direct supervision of one of the proprietors, and all utensils used in the process are made of porcelain, so as to ensure absolute cleanliness. The lemon squash crystals are another useful product of the firm, as they are, of course, exceedingly portable, and, provided water is obtainable, lemonade of excellent flavour can be prepared rapidly by their aid at a very small cost; the contents of one of the bottles costing 4½d. are sufficient, we were informed, for two gallons of lemonade.

Perrier (45, Wigmore Street, London, W.) The table water shown by this firm is now fairly well known, and has at least four good points in a mineral water intended for daily consumption. First comes its organic purity, which, according to the analysis by Wilson Hake, appears to be high. It is natural that it should be so, for the water is derived from a spring in the centre of an open plain in the South of France, and thus, being surrounded by vineyards and absolutely isolated from habitations, there is practically no risk of its becoming contaminated. The free supply of carbonic acid which the water possesses is also, of course, desirable in a table water; it has a further advantage, in that such carbonic acid is not added, but naturally present, for there would appear to be some reason to suppose that natural carbonic acid is more capable of aiding ordinary digestion than the artificial variety. The total solids contained, according to the analysis of the authority already quoted, are very small in quantity—less than 4 grams in 10 litres. They consist almost entirely of calcium bicarbonate. There are also traces of those alkaline carbonates which, according to Murrell, are of value as a stimulant of the secretion of gastric juice if taken early in a meal. Finally, and perhaps most important of all, the flavour of this water is decidedly pleasant and delicately subacid.

Theinhardt's Food Company (6, Catherine Court, Seething Lane, London, E.C.). The stand of this company was devoted to its two specialities, "Infantina" and "Hygiama," two preparations which have only been put upon the market in England comparatively recently, although in Germany and on the Continent generally they appear to have been well known for nearly two decades. The former is a preparation containing cow's milk, milk sugar, a minute quantity of ordinary sugar, and cereals which have been slowly diastased and thoroughly dextrinized; it is claimed that its analysis, when compared with those of other artificial foods well known all over Europe, shows it to be of high quality. We were supplied with a table containing such analyses by different authorities, and from this it would appear that Infantina contains a little over 16 per cent. of nitrogenous matter, 5 per cent. fats, and about 70 per cent. carbohydrates, of which nearly 54 per cent. are soluble, while there is also 1.11 per cent. phosphoric acid. The firm believes that both theoretically and practically Infantina provides the best means of rearing children from birth, if unfortunately deprived of mother's milk; and its general claims seem to be well supported by the fact that it has been recommended by Heubner, Beider, and others, and that it is in use in the municipal milk dépôts in several large Prussian towns. Hygiama, which is intended for the use of adults, is of the same general character, but more concentrated, and flavoured slightly with cocoa. Both are decidedly pleasant preparations and inexpensive. It is stated that 100 grams of Hygiama are equal in food value to 430 calories, but contain only 0.56 gram of sodium chloride, so that this preparation might prove of special utility when patients suffering from albuminuria and like troubles are placed on the "salt-free" food treatment.

H. Whiteway and Co. (The Orchards, Whimple, Devon). The cider-makers of Devon were well represented by this well-known firm, who showed cider of various brands—dry sparkling cider, sweet sparkling cider, still cider, non-alcoholic cider, cider in casks, and also two brands of perry. The dry sparkling cider appeared in five brands, one, which may be noted for its pleasant quality and moderate price, being the "Whimple Specialité." The non-alcoholic cider, sold under the name of "Cydrax," is a sparkling beverage, with a brisk, refreshing subacid flavour. As regards its freedom from alcohol, we were assured it would bear the test of the most rigid analysis. In respect of cider in general, it is claimed that it is a specially suitable beverage for those who suffer from gout or rheumatism, and that the malic acid it contains is particularly useful to those who are large meat-eaters. We are not sure how far these claims could be proved scientifically, but they seem to be founded on the experience of a great number of persons, and there are certainly many medical men whose large clinical experience is favourable to the use of cider by gouty and rheumatic individuals who use stimulants of any kind. At any rate, there seems good ground for believing that a beverage which has been popular in some parts of the country for so many centuries, and which is prepared in so pleasant and easily transported a form, might well take the place of much of the wine of foreign source now used, and that the lighter varieties might well be drunk instead of the lager beers now imported so largely.

Instruments and Appliances.

Harry W. Cox Ltd. (1a, Rosebery Avenue and 15-21 Laystall Street, E.C.). This firm had an extremely attractive display of all kinds of electro-medical apparatus. Especially noticeable perhaps were their heavy discharge coils; the information given as respecting them goes to prove that it is possible with this class of coil to take skiagraphs of any part of the body with exposures of a few seconds only; indeed, the operation is practically instantaneous. The coil was worked by a new "Trough" break devised by Mr. Cox, which in general principle is a form of mercury jet interrupter, but of improved design.

Another decidedly valuable appliance shown was one for working an induction coil direct from an alternating current main. It was of attractively simple design, and it appeared to us to present material advantages over the more complicated devices commonly used to effect the same end. Its utility it seems is not limited to induction coils, for we were informed that high-frequency apparatus can also be worked by the system. Another apparatus for the benefit of the electro-therapeutic specialist was a couch constructed to the design of Mr. A. D. Reid. Its special effort is to make it possible for the operator to take skiagraphs of the chest without any appreciable discomfort on the part of the patient. In addition the operator using the couch is protected to a very considerable and satisfactory degree from exposure to the rays himself. Furthermore, the box attached to the bed for the reception of the *x*-ray tube is fitted with an adjustable diaphragm, by means of which radiographs can be taken with a very desirable degree of definition. The gold medal "Record" tube of the firm is probably too well known to require description; it was shown again this year, with many other forms of *x*-ray tubes having regulating attachments. The many different patterns of shields which were shown and which have been made by the firm on the suggestions of many well-known *x*-ray workers, show the extent to which the need for protecting the operator is now recognized, and there were other shields specially intended for ringworm work and the treatment of various dermatological troubles. We were informed that everything shown was throughout of British manufacture, and this is a satisfactory feature.

Alfred E. Dean (82, Hatton Garden, London, E.C.). This manufacturer of scientific instruments showed a wide range of electro-therapeutic instruments, comprising *x*-ray appliances, static machines, vibratory machines, numerous ways of employing heat, and devices for localizing the rays during light treatment and protecting the operator. The firm believes itself to have been the first to recognize practically the importance of limiting the emission of *x* rays to the patient under treatment, and as far back as 1900 had contrived some protective devices. Those exhibited this year were elaborations of what is known as the London Hospital Shield, and were mounted and counterbalanced so as to facilitate the treatment of skin disease, and especially of tinea. The Crookes tubes were entirely immersed in the impermeable lead glass shield, and were so constructed as to permit of Sabouraud's test pastilles being employed. Another attractive feature of the stand was the appliance for the treatment of tinea, on the plan sometimes called the McLeod-Dean method. The apparatus has been called by the firm the "Radiogenometer," and by its aid it is claimed that the degree of radiation the patient is receiving and should receive, can be precisely determined. It is, we were informed, in use in some of the large general hospitals, which seems to point to its utility. The "Ergos" static machine appeared to us to present new features in this class of machine. The makers showed the machine exciting a Crookes tube in a perfectly satisfactory manner. It is driven by chains enclosed in iron columns, and this definite means of revolving all the plates at one speed renders possible, the makers consider, a greater output of electricity than that produced by other machines employing belts or other mechanism of an indefinite nature. With the chains any slip is scarcely possible, so that the apparatus should be quite reliable as a generator of static electricity. The firm further showed some new models of radiant heat apparatus, the most novel of all being an appliance for treating a shoulder or knee by light, whilst a bed specially designed with a view to portability and to treat the whole body seemed to be a well-thought-out apparatus. A neat and solidly constructed machine was that shown for producing from an ordinary electric motor light for illuminating cystoscopes, urethroscopes, and the like, the same machine being useful for electro-cautery work; in fact, the machine was extremely adaptable, for it also provided means by which power of the motor could be made to operate a shaft or a centrifuge for urines, blood, and other fluids. We were informed that the current could also be so transformed as to be available for giving sinusoidal currents for local application or for hydro-electric baths. In connexion with the apparatus was shown a well designed switchboard, which permitted of the employment of current from the main in water without any danger of the patient coming in contact with the power generators. The whole exhibit seemed to provide ample evidence of the firm's experience in this branch of work.

John Weiss and Son (287, Oxford Street, London). This firm showed an excellent collection of instruments and appliances, all of the finest English manufacture, although a certain proportion of them were constructed from patterns originally suggested by Continental and other foreign surgeons. Among the latter may be mentioned in particular Professor Lambotti's instruments for bone surgery, and his steel splints, the bladder instruments used by Guyon, and the trephine for the treatment of conical cornea suggested by von Hippel; eye instruments, in fact, were prominent on the stand, this firm taking a special, and, from the ophthalmic surgeon's point of view, desirable interest in instruments of this class, and those shown included a complete outfit for an ophthalmic surgeon in a handsome cabinet of ingenious construction. A good many instruments were shown which are practically of entirely new design, especially those relating to renal surgery which have been devised by Mr. Hurry Fenwick. Of the general construction and purpose of these some idea, at any rate, will be gathered from the illustrations which are here given. Thus, Fig. 1 represents a pair of forceps for compressing the kidney during resection of either of its poles; while Fig. 2 is a meatotome for use in the same general connexion, and for slitting up the bladder extremity of the affected ureter. Finally, in Fig. 3 is shown an instrument for dilating the ureter in female patients when this tube is the seat of a stricture or when a calculus has lodged in its lumen.

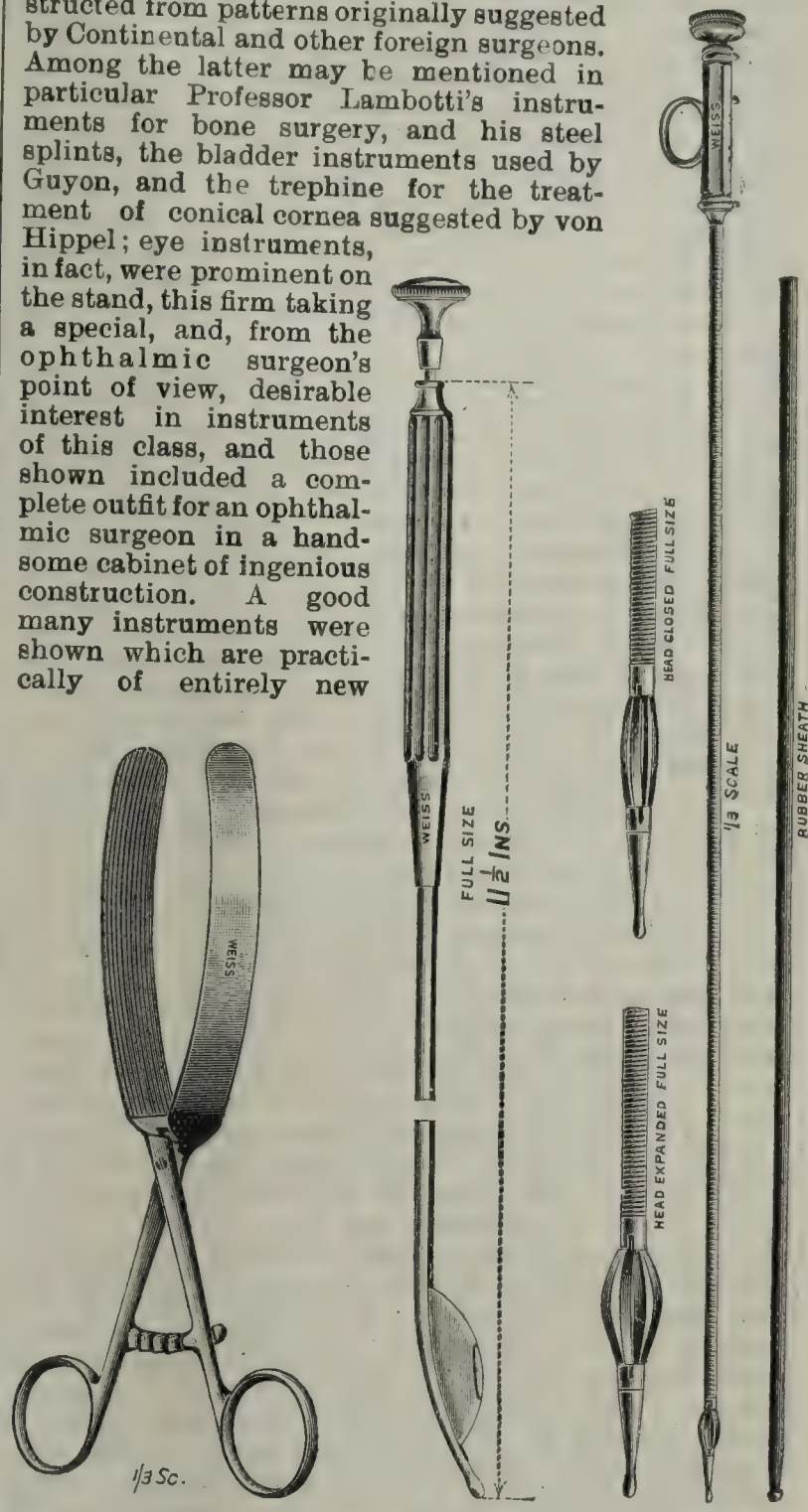


Fig. 1. Fig. 2. Fig. 3.

Miscellaneous.

Messrs. Bale, Sons, and Danielsson, Limited (83—91, Great Titchfield Street, London, W.). This firm of medical publishers, apart from an array of case sheets, clinical figures, diagrams, charts, and the like, made a strong point of its Simple Medical Year Book, which can be used either independently or in conjunction with the firm's Medical Card Index System. The account book in question is decidedly attractive, and from the letters shown us seems to have been found an extremely simple and satisfactory way of keeping an account of the income

and expenditure of a practice by a large number of medical men practising in various parts of the United Kingdom and the Colonies. The task presents no difficulty, and if properly kept the practitioner should have before him day by day an exact statement of the results of his labour, of what he has earned, what received, and what expended. It is a book which should certainly minimize the labour of keeping the accounts of a practice in such form that income-tax rebates and the like can be easily returned and possible purchasers or others be satisfied as to what the practice is really worth. The Medical Card Index System of the firm perhaps requires rather more initial study to get out of it the best that it can give; but this would probably be thoroughly worth while, for the card system as a whole has now established its claims thoroughly, and it should, as carefully adapted by this firm to the needs of medical practice, be just as useful and labour-saving in connexion with medicine as in relation to other careers.

H. K. Lewis (136, Gower Street, London, W.C.). The stall of this medical publisher was not an easy one to leave, for it contained so much to interest the book lover, and especially one who prefers medical works by British authors. In addition to entirely new works, there were a surprisingly large number of new and revised editions of old friends brought out since last year's exhibition. Amongst the former were an addition to special bacteriological books in the shape of *The Bacteriological Examination of Water Supplies*, by Dr. Savage, M O H. for Colchester; *X Rays in the Diagnosis of Diseases of the Chest*, by Drs. Walsham and Orton; while an equally timely publication is *Injuries of the Eyes of the Employed and the Workmen's Compensation Act*, by Mr. Beaumont. *Modern Methods of Diagnosis in Urinary Surgery*, by Dr. Deanesly; and a handsomely bound new dictionary by Dr. Gould, *The Practitioner's Medical Dictionary*, also attracted us; while for the benefit of those who hold police appointments may be mentioned a handy little book called *The Police Surgeon's Emergency Guide*, written by Mr. Graham Grant. Among the new editions were several of the firm's standard textbooks. Amongst those calling for mention were a new and ninth edition of Dr. H. R. Swanzy's *Handbook of the Diseases of the Eye*, in which Dr. Louis Werner's name appears as joint author. Another ninth edition was that of a book familiar to many generations of students and practitioners, *The Elements of Practical Medicine*, by Dr. A. H. Carter; while an example of a twelfth edition was found in *The Extra Pharmacopoeia*, revised by Drs. H. Martindale and Wynn Westcott. Others that may be noted were a third edition of the *Manual of Operative Surgery*, by Binnie; a second edition of Mr. Louis Rawling's *Landmarks;* a seventh edition of Dr. Stanford Morton's *Refraction;* and third of Professor Osler's *Aequanimitas*, containing the Fixed Period address; also the *Public Health Acts and other Sanitary Laws*, by Messrs. M. and G. Elliott, and Dr. William Murray's *Rough Notes*, which has now appeared for the fourth time. There were also some fresh editions in the popular "Practical Series," three in all; these included a fifth edition of Dr. Lewis Jones's *Medical Electricity;* a fourth of Dr. Dudley Buxton's *Anaesthetics;* while the third was a second and very much enlarged edition of *Clinical Bacteriology*, by Dr. Emery. Besides these, there were a number of books which have attained the rank of classics, such as Radcliffe Crocker's work on *Diseases of the Skin* and Dr. F. T. Roberts's *Theory and Practice of Medicine* (in two vols.). There are many men who take a delight in charts for various purposes, temperature records, diet prescriptions, clinical progress, and the like, and these, and case books, were present in sufficient variety to suit the most exacting requirements in the way of compactness, clearness, and comprehensiveness.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

Owing to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 7,229 births and 3,637 deaths were registered during the week ending Saturday last, August 10th. The annual rate of mortality in these towns, which had been 12 4, 11 9, and 11.7 per 1,000 in the three preceding weeks, rose again to 11 8 per 1,000 last week. The rates in the several towns ranged from 3 8 in Willesden, 5.0 in Walthamstow, 5 2 in Hornsey, 5.5 in King's Norton, 5.7 in Ipswich, and 5.9 in Grimsby, to 16.8 in Bury, 17.4 in Blackburn, 17 7 in Sunderland, 17.8 in Rochdale, 18.6 in St. Helens, and 21.7 in Stockton-on Tees. In London the rate of mortality was 12.0 per 1,000, while it averaged 11.8 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.2 per 1,000 in the seventy-six large towns; in London also this death-rate was equal to 1.2 per 1 000, while among the seventy-five other large towns the death-rate from the principal infectious diseases averaged upwards to 2 7 in Walsall, in Blackburn, and in Merthyr Tydfil, 2.9 in Wigan, 3 9 in Stockton-on-Tees and in Cardiff, and 5 1 in St. Helens. Measles caused a death-rate of 1 1 in St Helens, 1.9 in Blackburn, 2 2 in Walsall, 2 5 in Cardiff, and 3 0 in Stockton-on-Tees; scarlet fever of 1 5 in West Bromwich; diphtheria of 1.5 in Middlesbrough and 1.7 in Rotherham; whooping-cough of 1 1 in Cardiff, 1.2 in Wigan, and 2.3 in St. Helens; and diarrhoea of 1 3 in Coventry, 1 5 in Warrington, 1 6 in Bootle, 1.7 in St Helens, and 2 4 in Smethwick. The mortality from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet-fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3 386, 3,586, and 3,626 at the end of the three preceding weeks, had further risen to 3 660 at the end of last week: 466 new cases were admitted during the week, against 569, 557, and 419 in the three preceding weeks. One small pox patient was admitted to these hospitals during the week.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, August 10th, 868 births and 479 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 14 9, 13 6, and 12.8 per 1,000 in the three preceding weeks, rose again last week to 13 8 per 1,000, and was 2 0 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scottish towns ranged from 8 8 in Paisley and 10 6 in Leith to 15 4 in Dundee and 16 1 in Greenock. The death-rate from the principal infectious diseases averaged 2 2 per 1,000 in these towns, the highest rates being recorded in Dundee and Leith. The 234 deaths registered in Glasgow included 4 which were referred to measles, 15 to whooping-cough, 2 to "fever," 10 to diarrhoea, and 4 to cerebro spinal meningitis. Two fatal cases of measles, 6 of whooping-cough, and 2 of cerebro-spinal meningitis were recorded in Edinburgh; 4 of whooping-cough and 7 of diarrhoea in Dundee; 3 of whooping-cough, 2 of diarrhoea, and 2 of cerebro-spinal meningitis in Leith; and 1 of cerebro-spinal meningitis in Greenock and in Perth.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, August 3rd, 605 births and 315 deaths were registered in six of the principal Irish towns, as against 513 births and 337 deaths in the preceding period. The annual death-rate in these towns, which had been 16 3, 15.2, and 18 3 per 1,000 in the three preceding weeks, remained at 18.3 per 1,000 in the week under notice, this figure being 6 6 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 14.7 in Londonderry and 16 2 in Belfast to 19.1 in Limerick and 23 4 in Waterford. The zymotic death-rate in the same six Irish towns averaged 1.1 per 1,000, or 0 3 per 1,000 lower than during the preceding period, the highest figure—2 0—being recorded in Dublin, while Waterford registered no deaths under this heading at all. In Belfast 9 deaths were returned as due to cerebro-spinal fever.

EPIDEMIC MORTALITY IN LONDON.

The accompanying diagram shows the prevalence of the principal epidemic diseases during the second, or spring, quarter of the year. The fluctuations of each disease and its relative fatality compared with that in the corresponding periods of recent years can thus be readily seen.

Small-pox.—No fatal case of small-pox has been registered in London since June, 1905; 1 small-pox patient was admitted during the quarter to a Metropolitan Asylums Hospital, but had been discharged before the close of the quarter.

Measles.—The deaths from measles, which had been 256, 213, and 465 in the three preceding quarters, further rose to 661 last quarter, but were 61 below the corrected average number in the corresponding periods of the five preceding years. Among the various metropolitan boroughs this disease was proportionally most fatal in Chelsea, Finsbury, Shoreditch, Poplar, Southwark, and Greenwich.

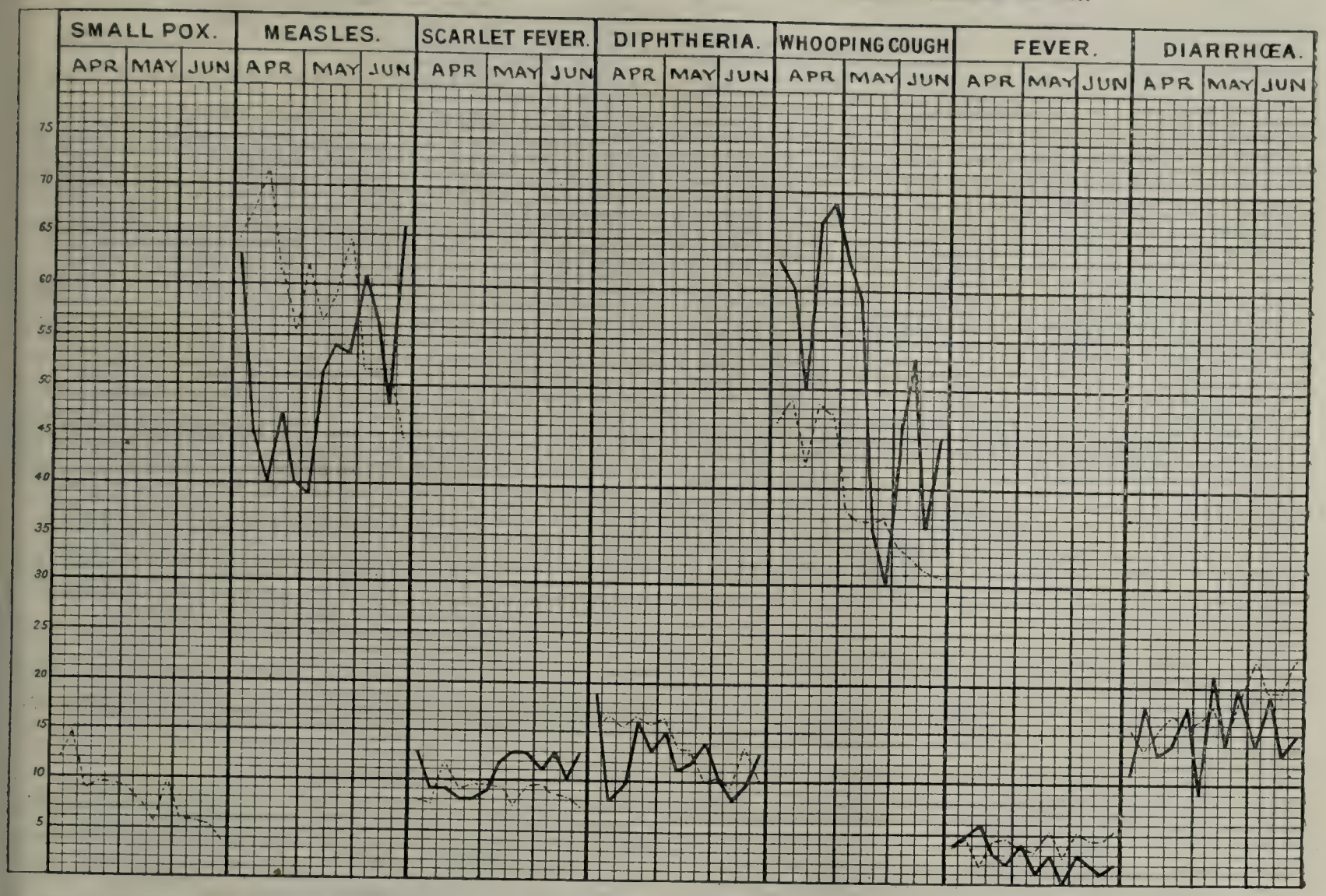
Scarlet Fever.—The fatal cases of this disease, which had been 108, 152, and 104 in the three preceding quarters, rose again to 141 last quarter, and were 26 in excess of the corrected average number. Scarlet fever showed the greatest proportional mortality in St. Marylebone, Hackney, Finsbury, Shoreditch, Bethnal Green, Poplar, and Bermondsey. The Metropolitan Asylums Hospitals contained 2 975 scarlet fever patients at the end of last quarter, against 3,360, 3,787, and 2,614 at the end of the three preceding quarters: 4,726 new cases were admitted during the quarter, against 5,114, 5,845, and 4,033 in the three preceding quarters.

Diphtheria.—The deaths referred to diphtheria, which had been 153, 213, and 229 in the three preceding quarters, declined again last quarter to 159, and were 21 fewer than the corrected average number. The disease was proportionally most fatal in Holborn, Shoreditch, Poplar, Battersea, and Greenwich. There were 806 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of the quarter, against 844, 995, and 1,012 at the end of the three preceding quarters: 1,507 new cases were admitted during the quarter, against 1,612, 1,995, and 1,665 in the three preceding quarters.

Whooping-cough.—The fatal cases of this disease, which had been 195, 180, and 536 in the three preceding quarters, further rose to 677 during the three months under notice, and were 181 in excess of the corrected average number. Among the various metropolitan boroughs this disease was proportionally most fatal in Kensington, Holborn, Finsbury, Shoreditch, and Camberwell.

Fever.—Under this heading are included deaths from typhus, from

DEATHS FROM EPIDEMIC DISEASES IN LONDON DURING THE SECOND QUARTER OF 1907.



NOTE.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the five preceding years, 1902-6.

enteric fever, and from ill-defined pyrexia. During last quarter there was no death from typhus, and only one from ill-defined pyrexia. The deaths referred to these different forms of "fever," which had been 109 and 60 in the two previous quarters, further declined last quarter to 36, and were 18 below the corrected average number. The greatest proportional mortality from enteric fever occurred in Hammersmith, the City of Westminster, Stoke Newington, Finsbury, Bermondsey, and Woolwich. The Metropolitan Asylums Hospitals contained 57 enteric fever patients at the end of June, against 139, 134, and 93 at the end of the three preceding quarters; 146 new cases were admitted during the quarter, against 251, 333, and 183 in the three preceding quarters.

Diarrhoea.—The 193 deaths from diarrhoea in London last quarter were 30 below the corrected average number. This disease was proportionally most fatal in Paddington, Fulham, Chelsea, Finsbury, Bethnal Green, and Stepney.

In conclusion it may be stated that the 1,873 deaths in London attributed to these principal epidemic diseases during the quarter under notice were 3.3 per cent. below the corrected average number in the corresponding periods of the five preceding years. The lowest death-rates from these diseases were recorded last quarter in the City of London, the City of Westminster, Hampstead, Lewisham, and Woolwich; and the highest rates in Finsbury, Shoreditch, Poplar, Southwark, and Bermondsey.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: EDWARD C. CRIDLAND, M.B., Fleet Surgeon, to the *President*, additional, for three months' course at West London Hospital, August 1st; FREDERICK J. LILLY, Fleet Surgeon, to the *Indus*, August 15th; CECIL H. ROCK, Staff Surgeon, and LESLIE M. MORRIS, Surgeon, to the *Hampshire*, on recommissioning, August 20th; LESLIE C. ROWAN-ROBINSON, M.B., Surgeon, to the *Impregnable*, August 20th; ERNEST A. PENFOLD, M.B, Fleet Surgeon, and MALCOLM CAMERON, M.B., Staff Surgeon, to the *Hindustan*, on recommissioning, August 20th; GEORGE HEWLETT, M.B., Fleet Surgeon, and ALFRED J. HEWITT, Surgeon, to the *Prince George*, on recommissioning, August 20th; EDWARD B. TOWNSEND, Fleet Surgeon, to the *Terrible*, August 20th.

Surgeon E. F. POWER is promoted to be Staff Surgeon, November 10th, 1904. He was appointed Surgeon, November 10th, 1896. He was Surgeon of the *Aurora* during the China war in 1900, and was at the relief of Pekin; he was granted a medal with clasp, and was mentioned in dispatches for his services at Tientsin in June, 1900.

Surgeon E. FOLLIOTT, whose first commission bears date May 25th, 1897, is also promoted to be Staff Surgeon, May 25th, 1905.

Surgeon G. E. MACLEOD is likewise promoted to be Staff Surgeon, November 29th, 1905. His commission as Surgeon is dated November 29th, 1897.

Surgeons J. A. FORREST, M.B., and H. W. M. REES are also gazetted Staff Surgeons, November 8th, 1903, their first commissions being dated November 8th, 1898.

Civil Practitioner G. C. MARCH is appointed Surgeon and Agent at Langton and Abbotsbury, August 3rd.

ROYAL ARMY MEDICAL COLLEGE.

CAPTAIN C. F. WANHILL, R.A.M.C., has been appointed Assistant Professor of Hygiene at the Royal Army Medical College, vice Major C. E. P. Fowler, R.A.M.C., dated July 29th.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL J. L. HALL retires on retired pay, August 3rd. He was appointed Surgeon, March 6th, 1880; Surgeon-Major, July 6th, 1892; and Lieutenant-Colonel, March 6th, 1900. During the South African war in 1899-1901 he was Principal Medical Officer of a General Hospital, and was present in operations in the Transvaal, receiving the Queen's medal with three clasps.

Captain J. V. FORREST, M.B., is promoted to be Major, July 29th. His previous commissions are dated: Surgeon-Lieutenant, July 29th, 1893; Captain, July 29th, 1898. He served in the South African war in 1900-02, and was present in the advance on Kimberley, including actions at Belmont, Enslin, Modder River, and Magersfontein, at the relief of Kimberley, in operations in the Orange Free State, including actions at Paardeberg, Poplar Grove, Karee Siding, and Zand River; in operations in the Transvaal, including actions near Johannesburg, Pretoria, and Diamond Hill (June 11th and 12th); in Orange River Colony, including actions at Bethlehem, Wittebergen, and Caledon River (November 27th to 29th); and in operations in Cape Colony. He has received the Queen's medal with seven clasps, and the King's medal with two clasps.

Captain J. C. B. STATHAM is also promoted to be Major, July 29th. He joined as Surgeon-Lieutenant, January 29th, 1896, and was made Captain, January 29th, 1899. He was present in the campaign on the North-West Frontier of India in 1897-8, receiving a medal with clasp.

Captain E. C. HAYES is likewise promoted to be Major, July 29th. His previous commissions are simultaneous with those of Major Statham.

Captain E. T. W. BIRRELL also is promoted to be Major, July 29th. His commission as Surgeon-Lieutenant bears date July 29th, 1896; that of Captain July 29th, 1899.

Majors H. J. M. BUIST, M B, D.S.O., and F. J. WADE-BROWN were successful at the examination for promotion in subjects (*d*) to (*i*) held in May.

Major G. F. ALEXANDER, M.B., is placed on retired pay, July 27th. He was appointed Surgeon-Captain, July 27th, 1887, and Major twelve years thereafter. He served with the Chitral Relief Force in 1895, receiving a medal with clasp, and with the Nile Expedition in 1898, for which he was granted the British and Egyptian medals.

Major J. PATERSON, M.B., is also placed on retired pay, July 27th. His commissions were simultaneous with those of Major Alexander. Major Paterson was with the Chitral Relief Force in 1895 (medal with clasp); he was also in the South African war in 1899-1901, including the relief of Ladysmith, the actions of Spion Kop, Vaal Kranz, Pieters Hill, and Laings Nek, and in operations in Natal, on the Tugela Heights, in the Transvaal, Orange River Colony, and Cape Colony; he has received the Queen's medal with six clasps.

Major V. H. W. DAVOREN also is placed on retired pay, July 27th. His commissions bear the same dates as those of Major Alexander.

Major A. B. HINDE retires on retired pay, August 7th. He joined

the department as Surgeon-Captain February 5th, 1887, and was made Major February 5th, 1899. He served in the campaign on the North-West Frontier of India in 1897-8 (medal with clasp). He was also in the South African War in 1899 1902, and was present at the relief of Ladysmith, in the actions at Colenso, Spion Kop, Vaal Kranz, and Pieters Hill, in operations on the Tugela Heights, in Natal (including the action at Laings Nek), in the Transvaal (including actions at Reit Vlei, Belfast, and Lydenberg), and the Orange River Colony; he was mentioned in dispatches, and granted the Queen's medal with five clasps and the King's medal with two clasps.

The undermentioned Lieutenants are promoted to be Captains, dated July 30th: G. F. RUGG, D. S. B. THOMSON, M.B., J. FAIRBURN, M.B., L. BOUSFIELD, M.D., R. G. ANDERSON, J. H. DOUGLASS, M.D., R. R. LEWIS, A. L. OTWAY, M.B., C. H. TURNER, F. H. NOKE, M.B., E. C. WHITEHEAD, M.B., W. F. H. VAUGHAN, R. B. HOLE, M.B., T. C. LUCAS, M.B., G. E. CATHCART, W. WILEY, M.B., H. HARDING, M.B., J. A. TURNBULL, M. F. GRANT, D. P. JOHNSTONE, E. H. M. MOORE, M. D. AHERN, F. J. GARLAND, M.B., A. A. MEADEN, R. J. CAHILL, M.B., S. C. BOWLE, H. B. CONNELL, and G. S. C. HAYES.

The undermentioned to be Lieutenants on probation, dated July 29th: T. McC. PHILLIPS, M.B., H. S. DICKSON, G. F. DAWSON, M.B., H. V. B. BYATT, R. E. TODD, M.B., T. F. LUMB, H. GIBSON, C. P. O'B. BUTLER, G. PETIT, J. B. HANAFIN, J. A. RENSHAW, R. F. O'T. DICKINSON, W. R. O'FARRELL, R. DE V. KING, D. B. MCGRIGOR, M.B., C. A. T. CONYNGHAM, M.B., J. R. LLOYD, W. C. CARSON, M.B., R. G. S. GREGG, M.B., H. T. TRAVES, F. T. DOWLING, M.B., J. C. L. HINGSTON, F. J. STUART, M.B., B. A. ODLUM, W. A. SPONG, M.B., J. F. GRANT, M.B., H. P. HART, M.B., A. E. B. JONES, M.D., and A. HENDRY, M.B.

Lieutenants R. E. TODD, M.B., and J. C. L. HINGSTON are seconded under the provisions of Article 349, Royal Warrant for Pay and Promotion, 1906, dated July 29th.

Lieutenant-Colonel J. R. DODD, M.B., has been appointed to the medical charge of the Royal Infirmary at Dublin.

INDIAN MEDICAL SERVICE.

MAJOR C. R. STEVENS, M.D., F.R.C.S., Bengal Establishment, is appointed Professor of Surgical and Descriptive Anatomy in the Medical College, Calcutta, and *ex-officio* Surgeon to the College Hospital.

ARMY MEDICAL RESERVE OF OFFICERS.

SURGEON-MAJOR T. McC. FOLEY to be Surgeon-Lieutenant-Colonel, July 20th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-LIEUTENANT E. A. WHITE, M.D., 1st Cinque Ports, resigns his commission, July 4th.

COLONIAL MEDICAL SERVICE.

THE following appointments have been made to the West African Medical Staff:

NAME.	COLONY.
P. F. Foran, L.R.C.P., L.R.C.S.Irel.....	Southern Nigeria.
W. A. Trumper, M.R.C.S., L.R.C.P.....	Northern Nigeria.
W. F. Todd, M.R.C.S., L.R.C.P.....	Sierra Leone.
F. C. Hepburn, M.R.C.S., L.R.C.P.	Southern Nigeria.
H. S. Coghill, M.B., B.Ch.Edin.....	Southern Nigeria.
T. R. Beale Browne, M.R.C.S., L.R.C.P.....	Southern Nigeria.

PROMOTIONS.

The promotions of the following officers, already notified, take effect from the dates given:

W. H. Langley, C.M.G., Principal Medical Officer in the Gold Coast, from August 3rd.

J. P. Fagan, Deputy Principal Medical Officer in Northern Nigeria, from August 3rd.

St. G. Gray, Senior Medical Officer in Southern Nigeria, from April 19th.

M. Cameron Blair, M.D., M.S., Medical Officer in Northern Nigeria, to be Senior Medical Officer in Southern Nigeria, from August 3rd.

RESIGNATION.

J. B. Tombleson, M.B., B.Ch.Oxon., Medical Officer in Southern Nigeria, resigns his appointment on the ground of ill-health, from August 7th.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Honorarium at the rate of 52 guineas per annum.

BIRMINGHAM GENERAL HOSPITAL.—(1) Three Receiving Room Officers. Salary, £150 per annum.

BIRMINGHAM: QUEEN'S HOSPITAL.—House-Surgeon and Obstetric and Ophthalmic House-Surgeon. Salary at the rate of £50 per annum.

BRADFORD POOR-LAW UNION.—Medical Officer for the Sanatorium for Consumptives at Eastby. Salary, £100 per annum.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BOMBAY MUNICIPALITY.—Two Assistant Health Officers. Salary, Rs.750, rising to Rs.1,000, and Rs.600, rising to Rs.700 respectively.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £80, increasing to £90 per annum.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

CAIRO: KASR EL AINY HOSPITAL.—Resident Medical Officer. Salary, £250 per annum.

DERBY: COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer (Male). Salary, £120, rising to £150 per annum.

DOVER: ROYAL VICTORIA HOSPITAL.—House-Surgeon. Salary, £100 per annum.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum.

EGYPTIAN MINISTRY OF EDUCATION.—Assistant to the Professor of Pathology. Salary, £E320 per annum.

GLASGOW DISTRICT ASYLUM, Woodilee.—Third Assistant Medical Officer. Salary, £135 per annum.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon. Salary, £50 per annum.

LOWESTOFT HOSPITAL.—House Surgeon. Salary at the rate of £80 per annum.

MANCHESTER: ANCOATS HOSPITAL.—Resident House-Physician Salary, £80 per annum.

MANCHESTER COUNTY ASYLUM, Prestwich.—Junior Assistant Medical Officer. Salary, £150, increasing to £250, per annum.

MANCHESTER TOWNSHIP.—Junior Resident Assistant Medical Officer at the Workhouse, Crumpsall. Salary, £110 per annum.

MONTGOMERY COUNTY COUNCIL.—Medical Officer of Health.

NORTHAMPTON GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—Junior House-Surgeon. Salary, £50 per annum.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, W.C.—Junior House Surgeon. Salary at the rate of £50 per annum.

SALFORD UNION.—Male Resident Medical Officer at the Infirmary. Salary, £130 per annum.

SOUTHPORT INFIRMARY.—Resident Senior House-Surgeon. Salary at the rate of £90 per annum.

STOCKPORT INFIRMARY.—(1) House-Surgeon. (2) Assistant House and Visiting Surgeon. Salary, £100 and £80 per annum respectively.

WALSALL AND DISTRICT HOSPITAL.—Junior House-Surgeon. Salary, £50 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

WORCESTER COUNTY AND CITY ASYLUM.—Third Assistan Medical Officer. Salary, £140, rising to 160 per annum.

YORK COUNTY HOSPITAL.—House-Surgeon. Salary, £100 per annum.

YORK DISPENSARY.—Two Resident Medical Officers. Salary, £120 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Strathmiglo, co. Fife.

APPOINTMENTS.

BENSON, E. G. D., L.R.C.P. and S.Edin., L.F.P.S.Glas., Certifying Factory Surgeon for the Stanley District, co. Durham.

GOULD, H. U., M.B., B.C.Camb., Certifying Factory Surgeon for the Shaftesbury District, co. Dorset.

MATTEI, Charles, L.R.C.P., L.R.C.S.Edin., D.P.H Dub., Medical Officer of Health to the Government of Malta.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

HOLLAND.—On August 10th, at 62, Hart Road, Erdington, Warwickshire, to the wife of William A. Louis Holland, M.R.C.S., L.R.C.P.Lond., a son.

SCATCHARD.—On August 6th, at Ivy House, Tadcaster, Yorkshire, the wife of James Percival Scatchard, M.B., B.S.Lond., of a daughter.

MARRIAGE.

CLARK—GORDON.—At the Presbyterian Church, Colwyn Bay, on August 2nd, by the Rev. John Edwards, John Thomson Clark, M.B., 401, Old Kent Road, London, S.E., to Helen Mary Gordon, M.D., eldest daughter of Joseph Clement Gordon, of Drimnin, Argyllshire.

DEATH.

WILLIAMS.—On August 11th, at 48, Prince of Wales Road, Norwich, Charles Williams, F.R.C.S.Eng.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics; *X* Rays. 2.30 p.m.: Operations. Monday and Thursday, 2 p.m.: Diseases of the Eye. Tuesday and Friday, 10 a.m.: Gynaecological Operations. 2 p.m., and Wednesday and Saturday 10 a.m.: Diseases of Throat, Nose, and Ear; Tuesday and Friday, 2.30 p.m.: Diseases of the Skin. Wednesday, 10 a.m.: Diseases of Children. Wednesday and Saturday, 2 p.m.: Diseases of the Eye. Lectures—Monday. 12 noon, Pathological Demonstration. Tuesday, 5 p.m., Examination of Severe Cases of Gastric Disorder. Friday, 5 p.m., Some Common Symptoms of Throat and Nose Disease.

BOOKS, ETC., RECEIVED.

The Common Bacterial Infections of the Digestive Tract. By C. A. Herter, M.D. New York and London: Macmillan and Co. 1907. 6s. 6d.

Some Memoranda in Regard to William Harvey, M.D. By S. Weir Mitchell. New York. 1907.

Mikroskopie und Chemie am Krankenbett. Von Professor Dr. H. Lenhartz. Fünfte Auflage. Berlin: J. Springer. 1907. M.9.

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UNIVERSITY OF ILLINOIS

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 24TH, 1907.

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CENTRAL EMERGENCY FUND.

UNDER the present constitution of the British Medical Association as a limited liability company, registered under the Companies Acts as formed not for profit, no part of its funds can be applied centrally or by any Branch or Division for the benefit of any individual member, except by way of remuneration for services rendered to the Association.

This has been found to prevent the Association, its Branches and Divisions, from giving the financial support which it is deemed desirable or even necessary in the interests of the profession to give to members of the profession engaged in contract practice and similar disputes. The Council of the Association, therefore, with the approval of the Annual Representative Meeting of 1906, has instituted a fund called the Central Emergency Fund, to be maintained by voluntary subscriptions, and to be under the management of the Medico-Political Committee, for purposes of action in disputes of the kind referred to.

The following are the

REGULATIONS OF THE FUND.

1. The Fund is created by voluntary subscription, to assist members of the profession in various parts of the country in maintaining the interests of the profession against organized bodies of the community.

2. All members of the profession are invited to contribute. Any contribution may be earmarked for use in specified disputes, or for application to special methods of carrying out the objects of the Fund, and when not so earmarked shall be deemed to be given for disposal at the discretion of the Medico-Political Committee in carrying out the general objects defined in Clause 1. At the termination of any special dispute for which funds may have been earmarked, the balance (if any) shall be merged in the General Fund.

3. Subject to the conditions defined in this Scheme, the fund shall be under the entire control of the Medico-Political Committee of the British Medical Association, and shall be vested in the names of the Chairman of the Committee and the Treasurer of the Association, as representing the Committee. Payments shall only be made on the authority of a resolution of the Medico-Political Committee, or of a Subcommittee of the Medico-Political Committee acting under powers specifically delegated by the Committee.

4. The Fund may be applied for the promotion of the general objects stated in Paragraph 1 in any of the following ways:

(*a*) By a grant or grants to any individual practitioner to assist him in maintaining any position in which the Association shall have decided to support him, or to compensate him for losses which he shall have incurred through taking action approved by the Association;

(*b*) By a grant or grants to any Division or Branch of the British Medical Association, for its assistance in defraying expenses incidental to the conduct of local disputes falling within the scope of the objects of the Fund;

(*c*) By expenditure under direct supervision of the Medico-Political Committee, or of a Subcommittee of that Committee, for the purpose of any action which the Medico-Political Committee may deem necessary or advisable for the promotion of the general objects of the Fund.

The Medico-Political Committee, through its Contract Practice Subcommittee, has had recently brought under its notice disputes in several parts of the country in which it may be necessary to take, for the maintenance of the interests of the profession, action requiring such financial support as the Central Emergency Fund has been instituted to provide, and members of the Association and other members of the profession are strongly urged, so far as their circumstances permit, to assist the Committee in this important work.

N.B.—Contributions—whether of periodical subscriptions at such periods, yearly, quarterly, or monthly, as may be convenient to the subscribers, or of special donations—are received on behalf of the Medico-Political Committee by the Medical Secretary, 6, Catherine Street, Strand, London, W.C., to whom Cheques and Postal Orders should be made payable, crossed "London and Westminster Bank, Bloomsbury Branch."

Forms of Banker's Orders will be supplied on application for those regular subscribers who may prefer to pay in this way.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

CAPE OF GOOD HOPE (EASTERN PROVINCE) BRANCH:

GRAHAMSTOWN DIVISION.

A REGULAR meeting of the above Division was held at the Albany General Hospital, Grahamstown, on July 12th, at 8 p m.

Confirmation of Minutes.—The minutes of May 17th were read and confirmed.

Departure.—Read a letter from Dr. J. C. Young, of Riebeek East, taking leave of the Division on his departure for Steynsburg, a place at which he had practised twenty-two years ago for a period of five years. Secretary instructed to reciprocate the sentiments of the writer.

South African Medical Congress.—On the subject of the meeting place of the South African Medical Congress in the year 1908, it was resolved that it is not at present practicable for Grahamstown to extend an invitation to that body to meet here.

New Rules.—Resolved:

That in view of the approaching recognition of the East London Division as a Branch, and the consequent fusing of the Grahamstown Division in the Eastern Province Branch, the Executive Committee be requested to draw up rules suitable for the combined bodies.

Museum and Library.—Resolved:

That the Senate of the Rhodes University be approached with a view to obtaining from that body the use of a room for the purpose of meeting, of forming a museum of pathology, and collecting a medical library, urging the precedent set by the South African College at Capetown.

Gratuitous Treatment.—Resolved, after a full discussion of the letters bearing on the subject,

That this Division hereby records its disapproval of the scheme for providing free medical attendance to members of the cadet corps of the 1st City Volunteers, it being unnecessary as regards the cadets, and unfair to the members of the medical profession; but that this meeting recognizes its obligation toward cases of genuine poverty.

Midwives.—A discussion was opened by Dr. BRUCE-BAYS, who contended that "there is need for a Midwives Act in South Africa." Dr. DRURY opposed the motion, and every member present joined in the discussion. A distinction was clearly drawn between the "midwife" and the maternity nurse, and it was felt that there was a need for greater facilities for training the latter. It seemed to be generally agreed that there was no room for an Act modelled on the Midwives Act, 1902. It was resolved to entrust Dr. J. B. Greathead with the following resolution:

That this meeting of the Grahamstown Division desires to draw the attention of the Colonial Medical Council to the fact that there are a large number of uncertified women practising as maternity nurses or as midwives in this country; and that, in its opinion, some measures should be taken to supervise and control them.

NORTH OF ENGLAND BRANCH:

NORTH NORTHUMBERLAND DIVISION.

Scale of Fees.—A special meeting of this Division was held on August 6th, in accordance with the resolution passed at the annual meeting:

To decide upon the line of action which this Division should adopt so as to ensure a united effort in support of the present scale of fees.

New Vaccination Order.—The new Vaccination Order was considered, and the circular of the guardians of the Alnwick Union (offering under Article 3, i (*a*) 1s, (*b*) 3s 6d., (*d*) 3s. 6d. if not over three miles from residence of public vaccinator, and 1s. additional for each mile or part of a mile over that distance) was fully discussed, and the following resolution was proposed by Dr. MAIN, of Alnwick, and seconded by Dr. PAXTON, of Norham, and carried unanimously:

That considering the onerous and responsible character of the duties required of a public vaccinator, the fees offered by the guardians in their circular of 15th July are quite inadequate.

SOUTH-EASTERN BRANCH:

NORWOOD DIVISION.

THE annual meeting of the Division was held at Blackheath on June 13th, Dr. H. F. BAILEY, of Blackheath, in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Next Meeting.—It was arranged that the next meeting should be held at Streatham on the second Thursday in November.

Election of Officers.—The officers of the Division were elected as follows: *Chairman*, Mr. H. C. Burton; *Vice-Chairman*, Mr. H. J. Prangley; *Representatives on Branch Council*, Dr Hetley, Dr. Prangley; *Representative at Representative Meetings*, Mr. Parnell; *Executive Committee*, Drs. Annis, Burgess, Bailey, and Stewart; *Honorary Secretary*, A. W. Soper.

Report of Executive Committee.—The Report of the Executive Committee was then read as follows:

Your Executive Committee beg to report that during the year scientific meetings have been held at Blackheath, Norwood, and Streatham, each being followed by a dinner. Clinical meetings at the Home and Infirmary for Sick Children, Norwood Cottage Hospital, Seamen's Hospital, and St John's Hospital. The attendances have been bad, both at meetings and dinners, and the Committee would like to hear from the members as to the number of meetings to be held during the ensuing year.

Dr. GOODING proposed, and Dr. BURGESS seconded, that the meetings be the same as last year. This was carried.

Retirement of Representative.—Dr. PRANGLEY proposed, and Dr. GOODING seconded, that a letter be sent to Dr. Rand expressing the regret of the Division at his retirement from the post of Representative.

Dinner.—After the meeting twelve members dined together.

REIGATE DIVISION.

A MEETING was held at 8 30 p.m. on Thursday, July 11th, at the White Hart Hotel, Reigate.

Election of Representative.—Dr. Blackler was elected Deputy Representative for Dr. Bromet, who is unable to attend the Exeter Meeting.

Medical Law Reform.—Mr. SEWILL opened the adjourned discussion on medical law reform and quackery. Dr. WALTERS moved the following resolution, which was seconded by Dr. BROMET and carried unanimously:

The Reigate Division of the South-Eastern Branch of the British Medical Association would urge upon the Council the desirability of the promotion of a Royal Commission to inquire into the whole question of medical law, into the practice of the profession by unqualified pretenders, and into the traffic in quack medicines and apparatus. The Reigate Division believes that the exposure which a Commission would effect would prove that reform is called for much more for the protection of the public than the advantage of the profession; that it would force the attention of the Legislature to the question, and lead to the speedy construction of laws for the abatement of existing evils.

An addendum to the resolution was proposed by Dr. BROMET and seconded by Dr. BERRIDGE, that a letter be sent to the honorary secretary of each Division in the South-Eastern Branch, together with a copy of Mr. Sewill's speech, asking their co-operation. This was carried unanimously. Mr. SEWILL said that he was willing to attend and speak on the subject at any meetings of other Divisions in the Branch.

Hospitals Committee.—The report of the Hospitals Committee on Hospitals Administration was discussed, and the specific questions submitted to the Division by the Committee were answered as follows:

(*a*) Proposed by Dr. BROMET and seconded by Dr. BLACKLER:

That compulsory payment of patients to hospitals other than cottage hospitals be discontinued.

Carried unanimously.

(*b*) Proposed by Dr. BERRIDGE and seconded by Dr. HEWETSON:

That the compulsory production of subscribers' letters by patients be discontinued.

Carried unanimously.

(*c*) Proposed by Dr. BERRIDGE and seconded by Dr. BROMET:

That inquiry into a patient's circumstances invariably take place.

Carried unanimously.

(*d*) Proposed by Dr. Bromet and seconded by Dr. Blackler:

That a certificate be required from the medical attendant of all persons attending out-patient departments.

This was carried—5 voting for, 3 against, and 2 members abstained from voting.

Medical Inspection of School Children.—The scheme for the medical inspection of school children, submitted to the Division by the Medico-Political Committee, was discussed.

(*a*) It was proposed by Dr. Ogle, and seconded by Dr. Berridge:

That the medical inspection of school children be distributed among those practitioners of the district who are prepared to undertake a proportion of the duty.

This was carried unanimously.

(*b*) Proposed by Dr. Bromet and seconded by Dr. Ogle:

That, in case of absence from school through illness, notice be sent by the master to the medical officer of health, who shall inquire into the case and instruct the parents to send for their usual medical attendant. The medical attendant shall supply a certificate for the medical officer of health, stating cause of non-attendance, the fee for which shall be paid by the school authorities.

This was carried unanimously.

Notification of Births.—A letter from the Medical Secretary of the Association was read on the subject of the Notification of Births Bill. It was decided that letters be sent to Mr. Brodie and Vicount Turnour (the members of Parliament corresponding to the area of this Division) protesting against the provision in the Bill that not only the parents of newborn children but also any medical practitioner or midwife present at the birth shall, under penalty, by required to notify the medical officer of health of the birth within forty-eight hours without fee; and urging them to support Dr. Cooper, M.P., in his opposition to this provision.

YORKSHIRE BRANCH:

Bradford Division.

A special meeting of this Division, to which all medical practitioners in the city were invited, was held at the Great Northern Hotel, Bradford, on Wednesday, July 24th, at 8 30 p.m.; Mr. Basil Hall, Chairman, presided.

Police Surgeonships.—The Chairman explained that the meeting was called together to consider some new proposals in connexion with the police surgeonships. On the previous Friday the Chairman, Vice-Chairman, and Honorary Secretary had met at the Town Hall on the invitation of the Mayor, the Chairman and Vice-Chairman of the Watch Committee, and the Chief Constable. The question of the method of remuneration of the police surgeonship had been especially discussed. The suggestion now was that the chief police surgeon should be paid £105 per annum, and, in addition to court and coroners' fees, he was to be paid for all calls outside the police station or mortuary at the rate of 5s. between 9 a.m. and 9 p.m., and 10s. between 9 p m. and 9 a.m. The divisional surgeons were to be paid £45 per annum and similar fees for attendances either at the police station or in the district. The subdivisional surgeons were to be paid 10s. per man per annum for attendances on the police constables and all calls at the station or otherwise to be paid for at the same rates as in the other cases. Dr. Mitchell considered the results obtained as a splendid object lesson of the value of unanimity and organization. He moved that the proposals be accepted and that the Watch Committee be informed that the objections of the medical profession to the scheme were now withdrawn. Dr. Shackleton, in seconding, thought that they had practically gained their point. The arrangement put a check on indiscriminate calls and the fees suggested were very good ones. Dr. Campbell drew attention to the suggestion that the chief police-surgeon could, if he wished, appoint a deputy to do the casualty work. Drs. Horrocks and Parkinson having spoken, the Chairman put the resolution to the meeting, which was carried unanimously. Dr. Metcalfe (Honorary Secretary) drew attention to the value of an organization like that of the British Medical Association in assisting the profession in a controversy of this character. They had had powerful support not only from the local body, but also in the columns of the Journal. He would be glad to receive any new names for membership. The meeting then terminated.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

Owing to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

East Anglian Branch.—The autumn meeting of this Branch will be held at Cromer on Thursday, September 26th. Members wishing to read papers or show cases or specimens should communicate at once with Mr. H. A. Ballance, M.S., Norwich.—B. H. Nicholson, Honorary Secretary, East Lodge, Colchester.

North of England Branch: North Northumberland Division.—The annual social meeting will be held at Embleton on Thursday, August 29th. Members with their wives and friends will assemble at the residence of Dr. Waterson at 2.30 p.m. Dunstanburgh Castle will then be visited and the party will afterwards proceed to the Hotel, where tea will be served at 4.45 p.m. Members intending to be present will please communicate with the Secretary (giving the number of invited guests) not later than Monday, August 26th. Trains at Christon Bank: North, arrive 2 6, depart 7.3; South, arrive 1.36, depart 6.13.—C. Clark Burman, Honorary Secretary, 12, Bondgate Without, Alnwick.

South-Eastern Branch: Eastbourne Division.—A statutory meeting will be held at West House 1, Chiswick Place, Eastbourne, on Thursday, August 29th, at 8 30 p.m. Business: (1) Minutes. (2) Receive Representative's report of the Annual Representative Meeting recently held at Exeter.—Wm. Muir Smith, Honorary Secretary, 97, South Street, Eastbourne.

The Annual Exhibition
of
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[*Third Notice.*]

Drugs.

Parke, Davis, and Co. (111, Queen Victoria Street, E.C.). Perhaps the feature of this stand was the display of serums. They are a form of preparation for which the firm has become well known, and antidiphtheria serum, antitetanus serum, and antistreptococcus serum were all on view. The first named was the earliest of the three to appear, and from the beginning it has been carefully standardized, first by the firm itself, and more recently in the Pathological Laboratory of the University of Cambridge. The antitetanus serum is similarly standardized; the standard adopted for this preparation being. we were informed, that of the United States Board of Health. Each bulb contains 1,500 antitoxin units, one unit representing the amount of antitoxin necessary to protect a guinea-pig against a thousand times the minimum fatal dose of tetanus toxin. This part of the firm's exhibit was made the more interesting to those unfamiliar with the principles of serum preparation by frequent lantern demonstrations illustrative of the processes adopted by the firm in its serum and toxin manufacture, and showing also the lines on which drugs are physiologically standardized. Adrenalin and its compound derivatives, codrenine and eudrenine, were also well to the fore. The two last are local anaesthetics, the former containing adrenalin and cocaine, the latter adrenalin and eucaine. These have been introduced as an aid to the performance of minor opera-

tions and teeth extractions under effective local anaesthesia. Adrenalin inhibits, it is believed, the systemic absorption both of cocaine and eucaine, without interfering with their local anaesthetic action, and thus enables them to be safely used with freedom. Among other preparations which attracted attention were the physiologically standardized drugs, namely, ergot, digitalis, and strophanthus, and the well-known fluid extracts of the firm, which likewise are standardized. We were also shown formidine, a new condensation product of iodine, formic aldehyde and salicylic acid, which, if it fulfils the prognostications made of its future, is certain to be a formidable rival to iodoform. Its antiseptic power is said to be greater than that of iodoform, while it is quite free from offensive odour, and does not stain the skin or the clothing. Furthermore it is said to be nontoxic, and suitable for internal administration in diseases of the intestinal tract due to bacterial infection. Another new remedy shown—iodalbin—an organic compound of iodine, has been introduced as a substitute for potassium iodide; the advantage attributed to it being that it is productive neither of gastric disturbance nor iodism. Some well-made medicine cases for the pocket, carriage, and motor car, were also on view, as also some exceedingly portable nebulizers, which seemed to have been well thought out and effective in action. They should be found useful by patients who require spray treatment.

INSTRUMENTS AND APPLIANCES.

GEORGE GALE AND SON, LIMITED, AND WHITFIELD BEDSTEADS, LIMITED (Birmingham). These combined firms had upon view a good selection of the bedsteads, which are so familiar to most medical men, under the name of the "Lawson Tait" bed. They are made in various sizes, of various strengths, according to the precise purpose for which they are required, and there can be few frequenters of hospitals who have not come across them. In asylums it is equally common to see them, for the firm has special beds for asylum work, finished and fitted according to the different class of asylum ward for which they are required—for instance, safety beds for epileptics. Apart from the complete bedsteads the "Dominion spring" wire mattresses, on hard

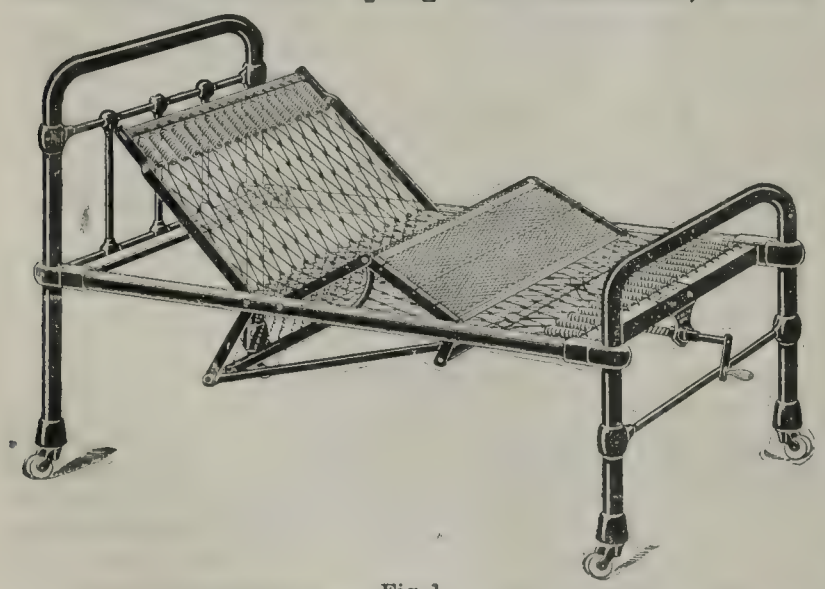

Fig. 1.

wood foundations, for use on ordinary beds, were also on view. The feet of all these beds are of various patterns, some having wooden castors, others castors with india-rubber tyres, and others no castors, but india-rubber shod feet. The firm, in spite of the popularity it has obtained, has not rested on its oars, and we noted more than one improvement brought out since last year. Among these was a notable addition in the shape of a head and knee rest bedstead (Fig. 1), which is worked by turning a handle at the foot end of the bedstead, and can be adjusted to any desired angle. This bedstead does away with the necessity of loose rests, which are never satisfactory and very difficult to adjust. It works easily, without material trouble and without disturbing the patient. Apart from the essential disadvantage of ordinary bed-rests, it is with some heavy patients almost impossible to insert a head and knee rest so as to add to their comfort, but with this bedstead the raising of a weight of 12 st. or of a helpless patient into a sitting position with a knee support is a comparatively simple matter. Furthermore, the knee-lifting arrangement can be raised separately by itself, or the head-lifting arrangement can be raised separately by itself, or both can be left flat and out of use, or they can both be raised together. Among the bed fittings, extension pulleys, irrigator rods, and the other facilities for nursing, was one which seemed new, and which would please in particular those responsible for the perfection of the internal walls of hospitals. It was an overhead bed pulley which would turn flat to the wall so as to be out of the way, but would not turn so far as to hit and damage the wall at the head of the bed.

MESSRS. REYNOLDS AND BRANSON (14, Commercial Street, Leeds). This firm had on view a good display of new instruments of various kinds, and a certain number of improved ointments and some syrups; but perhaps its most attractive exhibit was that here illustrated (Fig. 2), to which the firm has given the name of Chrometer. This is an ingenious and yet simple device which has been worked out by Dr. A. F. Dimmock, of Harrogate, and Mr. F. W. Branson, F.I.C., of Leeds, and it is believed that with its assistance the amount present in any liquid of creatinin, sugar, indican, or other normal or abnormal constituent of urine, can be quantitatively determined with an error of not more than 1 per cent. As its name implies, the instrument depends upon colour testing, on one side being a test solution of known strength, and on the other the urine or other liquid under examination. The apparatus consists practically of a dark chamber, at the top of which is an eyepiece, and on looking through this two discs of light are seen. Inside the chamber are two glass tubes containing the liquid to be tested, which are connected with the corresponding tubes outside. By raising or lowering the outside tubes the depth of the column of liquid in the corresponding inner tube is altered until the discs of light watched through the eyepiece are precisely equal in colour. The height of the pointer on the outside of the apparatus is then noted, and the estimation easily effected. Two other instruments of the same general kind, and due to the ingenuity of the same gentlemen, were also shown; both being instruments for the determination of uric acid. In the one, and this the simpler in character, the method adopted was that of precipitating the uric acid as urate of ammonium, and measuring the amount of such precipitate in a glass tube narrowed at one end. In the other, the uric acid is precipitated as acid ammonium urate; this is washed free from chloride, and then treated in a closed glass bottle, with hypobromite solution, the amount of nitrogen gas eventually evolved being measured on the tube scale.

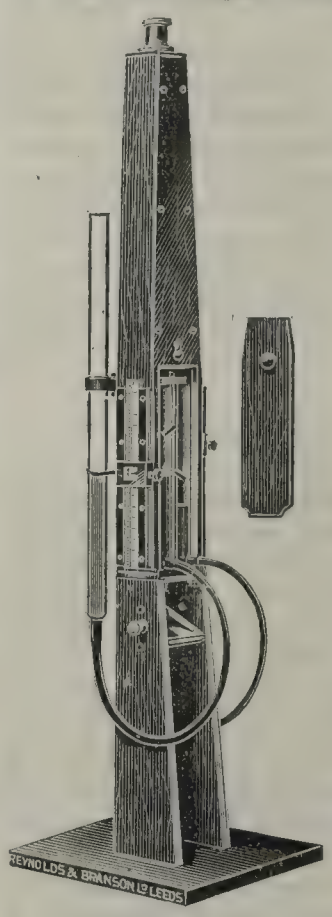

Fig. 2.

The DOWSING RADIANT HEAT CO. (24, Budge Row, Cannon Street, London, E.C.). This company exhibited an apparatus for giving the well-known radiant heat and light treatment, and they showed a new type of radiant heat bed fitted complete which seemed a considerable improvement on the older form. The regulating rheostat is fixed on a neat board attached to the head of the bed, and the loose wires from the lamps and reflectors are attached to insulators, and kept clear of the patient and nurse. The cover, which is made of a special cloth lined with asbestos, is thrown over the bed and supported by bars fixed to the top of reflector, is in the new bed divided into two parts, each side being removable, so that it is quite easy to see the results of the treatment, and to open up the apparatus very readily. The reflectors, which are fixed along the side of the bed, carry the heat lamps, which project the luminous heat rays on the patient in such a manner that each part of the patient's body is bathed by them. It is claimed that a large

number of these rays penetrate the body, producing a very rapid sudation, and greatly increasing metabolism. Smaller appliances were shown for treating the hands and feet, also for localizing the rays on any part or organ of the body. It is claimed that almost immediately the luminous heat rays are turned on, pain is relieved. On the stand was to be seen a long list of branches, showing over a hundred places in England and abroad where the treatment can be given, the chief being in York Place, Baker Street, London, W.

Philip Harris and Co. (Edward Street, Birmingham). This well-known provincial firm had upon view a good selection of general surgical instruments, appliances for orthopaedic surgery, and goods such as trusses and belts; it also showed an apparatus for determining the urea contents of urine, known as the Harris ureometer. It has the merit of being simple in construction, and it enables the results to be read off at a glance without calculation; but, of course, we had no opportunity of testing its accuracy scientifically. More conspicuous exhibits were two cabinets and a surgery couch, all known under the name of "Perfectum"; of the former the one was a surgery cabinet, highly finished, and fitted with glass top shelves and an opaline counter. It contained 250 half-pint bottles, and was supplied with drawers for dressings, some of them being glass lined, for instruments, and therefore readily kept clean. It was certainly an attractive cabinet and seemed thoroughly well made. The other cabinet was intended to serve the needs of those who desire to conduct their own bacteriological and general clinical examinations. It was provided with a lamp for microscopic work, and seemed not less well designed than its fellow, and an equally satisfactory piece of work. The couch was an adjustable surgery couch, in polished oak, fitted on rollers, and finished in crimson.

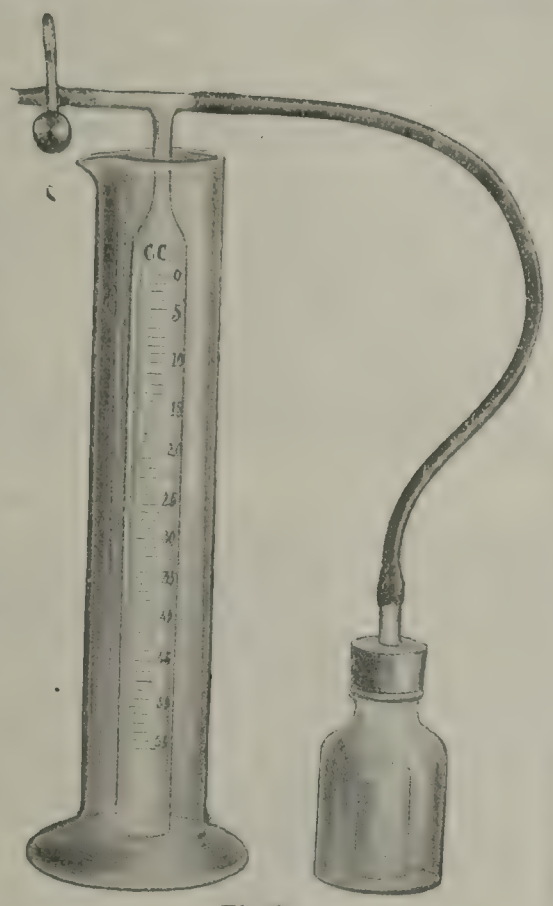

Fig. 3.

Foods and Beverages.

Brown and Polson (6, Bouverie Street, London, E.C.). This firm by its display made a by no means ineffective appeal either to the housewife or the medical man. For the benefit of the former, the possibilities of the firm's product were shown in attractive fashion in the shape of tempting cakes, loaves, ice-creams, and jellies, which proved to be all of pleasant flavour, while the medical visitor had other means of becoming acquainted with the product offered him. This consisted of two microscopes armed with objectives of equal power, the one having under it a slide showing the cornflour produced by the firm, while for use with the other was a series of well-prepared slides showing starch granules derived from a large number of cereals other than maize. The object was to show that the granules of pure maize starch are smaller than those of many other cereals in common use, the claim being made that, apart from the cheapness and economy derived from using maize starch, the smallness of its granules must make it easy to digest. It was also suggested that dusting powders with a foundation of maize starch flour are much more suitable for use than those made of rice flour, since rice starch is soluble in cold water, and therefore liable to alteration by perspiration, while powder made from maize starch is unaffected unless boiled. Besides its patent cornflour the firm also showed a product which it has called Paisley flour; this is a leavening preparation, to the work of which was due a good many of the palatable dishes shown on the firm's stand.

Miscellaneous.

Broomfield and Co. (83, Upper Thames Street, London, E.C.). This firm showed Albene, an article for which it appears to have been awarded some eighteen gold and silver medals and other prizes at various food and cookery exhibitions since it was first brought out, some eight years ago. It is a pure white fat, entirely free from odour or taste, and is believed by the firm to represent an excellent basis for ointments of all characters. Apart from this, it would appear to be suitable for use in the household, in place of butter, lard, or margarine, in the cooking of fish and the making of cakes, biscuits, and the like. The firm guarantees that it is wholly and solely a pure vegetable fat, the cleanliness of which is ensured by the fact that during the process neither of manufacture or of packing is it touched by the hand. It makes appeal, therefore, both to medical men in the preparation of drugs and to hospitals which use large quantities of lard and butter in cooking. An analysis with which we have been supplied supports the claims made for it, and states that it is a vegetable fat entirely free from water or salt, and that it keeps perfectly fresh and sweet for an unlimited length of time. This being the case, it might be expected to prove very satisfactory and economical in use both in the kitchen and surgery.

The Denver Chemical Manufacturing Company (41, St. Ann's Road, Burdett Road, London, E.). The feature of this firm's stall was Antiphlogistin. This, in appearance, is a fine grey paste, which is entirely free from odour, and capable of being spread out into adherent layers of any thickness. We were informed that it is composed of very fine water-free and levigated clay, with the addition of pure glycerine, some iodide salts, and minute quantities of boric and salicylic acid, and peppermint, gaultheria, and eucalyptus oils. With this composition it is easy to understand that it does not dry up, that when spread about ½ in. thick, and covered with a layer of lint or cotton-wool, it keeps hot for a very long period. It is certainly a pleasant preparation, and at the present time, when the advantage of increasing local circulation of blood and lymph by applications of a poultice order and other means is being again recognized, it may often be found of great use. In practice, the best way to employ it is to heat it in the original container, spread it on the skin as hot as it can comfortably be borne, covering with cotton-wool and a bandage; it can be removed whenever desired, and peels off readily in from twelve to twenty-four hours. The manufacturers believe that it acts reflexly, and also by a process of dialysis, and that it is decidedly anodyne. In any case, we are acquainted with independent medical men who have found it of great utility in general practice in various classes of inflammatory disorders or states of congestion, in which moist heat is likely to be of utility.

Mellin's Food, Limited (Peckham, London, S.E.). In addition to the food for children and invalids from which this company takes its name, there was this year shown a preparation named Lacto. This has been introduced primarily for use in tropical climates where cow's milk is at a premium, or an impossibility, but obviously it might also be used in any place where the milk supply is regarded as being of too untrustworthy a character to be utilized. It is prepared, we were informed, from milk carefully selected for its rich quality and from wheat and barley malt. In the process of manufacture the caseinogen is modified by the action of the malt until the milk no longer clots when treated with digestive ferments. Added to warm water Lacto forms a milk-like fluid which according to an analysis shown on the stall contains a high proportion of hydrocarbons. Moreover, in the total ash there is a good deal of phosphoric acid, while lecithin is present in the fluid in its original organic form. The preparation would appear to be entirely starch-free, the whole of that present in the original components having been converted into maltose and dextrin. There were also shown what the firm has named Mellin's Food Biscuits. In their manufacture it is stated that no foreign flavouring or preservative matter is used, the

biscuits consisting purely of Mellin's Food and high-grade English flour. An analysis exhibited showed them to contain 41 per cent. of soluble matter, carbohydrates, and 10 per cent. of fat, and on essay they proved to be of pleasant taste, crisp, and palatable. To Mellin's Feeding Bottle we drew attention on its first production some three or four years ago, and it was shown on this occasion in an improved form. The alteration consists in marking the lettering and graduations by sand blasting; this avoids the production of recesses in the interior of the bottle, which, with this new form of marking, is perfectly smooth. Any risk, therefore, of particles of sour curd remaining in overlooked crevices is thus avoided. The bottle in its present form is decidedly a good one, being in all respects well designed.

Vital Statistics.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

THE Registrar-General has just issued his return relating to the births and deaths in the second quarter of the year, and to the marriages during the three months ending March last. The marriage-rate during that period was equal to 12.3 per 1,000 of the population, or 1.0 per 1,000 more than the average rate for the corresponding quarter of the ten preceding years.

The births registered in England and Wales during the quarter ending June last numbered 238,599, and were equal to an annual rate of 27.4 per 1 000 of the population, estimated at 34,945,600 persons in the middle of the year; this rate is 1 4 per 1,000 below the mean rate in the second quarters of the ten preceding years, and is the lowest rate recorded in the corresponding period of any year since civil registration was established. The birth-rates last quarter in the several counties ranged from 20.7 in Sussex, 21.9 in Cornwall, 22.5 in Northamptonshire and in Devonshire, 23.0 in Somersetshire, and 23 1 in Dorsetshire, to 31.4 in Staffordshire, 31.5 in Northumberland, 31.9 in Carmarthenshire, 34.2 in Glamorganshire, 34.9 in Durham, and 35.5 in Monmouthshire. In seventy-six of the largest English towns, including London, the birth-rate averaged 28.1 per 1,000; in London the rate was 26 7, while it averaged 28.7 in the seventy-five other towns, and ranged from 18.1 in Hastings, 18.9 in Halifax, 19.1 in Hornsey, and 20 4 in Bournemouth, to 35.7 in Warrington, 35 8 in Middlesbrough, 36 1 in Sunderland, 36 6 in Merthyr Tydfil, 37.1 in Coventry, and 39.4 in Rhondda.

The births registered during the quarter under notice were 111,161 in excess of the deaths; this represents the natural increase of the population during the period. From returns issued by the Board of Trade, it appears that the passenger movement to and from places out of Europe showed a net balance outward of 112,990 passengers from the various ports of the United Kingdom. There was an outward balance of 44,331 English passengers, of 18,181 Scottish, of 12,092 Irish, and 38,721 persons of foreign origin, while those whose nationality was not stated showed an inward balance of 335. The English and Scottish numbers were 28 per cent. and 47 per cent. in excess of those for the corresponding period of last year, while the Irish showed a decline of 10 per cent.

During the second quarter of the year the deaths of 127,438 persons were registered, equal to an annual rate of 14.6 per 1,000, against an average rate of 15.7 in the ten preceding second quarters. The lowest county death-rates last quarter were 11.3 in Buckinghamshire, 11.5 in Northamptonshire, 11.6 in Middlesex, 11.7 in Leicestershire, and 12.0 in Essex; while the highest rates were 16.7 in Durham, 17.0 in Lancashire, 17.5 in Denbighshire, 17.6 in Carmarthenshire, 17.7 in Cumberland, and 18.1 in the North Riding of Yorkshire. In seventy-six of the largest towns, with an aggregate population estimated at upwards of sixteen millions, the death-rate averaged 14.9 per 1,000; in 142 smaller towns, containing in the aggregate nearly five millions, the mean rate was 14.0 per 1,000; while in the remaining, and chiefly rural, parts of England and Wales the rate was 14.5 per 1,000. In London the death-rate was 14.0, while in the seventy-five large provincial towns it averaged 15.3, and ranged from 7.6 in Hornsey, 9 4 in Handsworth (Staffs), 10 3 in East Ham, 10 5 in King's Norton, and 10 6 in Willesden to 19.8 in Oldham, 19 9 in Bolton, 20.0 in Sunderland, 20.1 in Wigan, and 21.9 in Middlesbrough.

The 127,438 deaths from all causes in England and Wales included 10,800 which were referred to the principal infectious diseases; of these, 4,219 resulted from measles, 3,036 from whooping-cough, 1,165 from diphtheria, 1.077 from diarrhoea, 805 from scarlet fever, 493 from "fever" (principally enteric), and 5 from small-pox. The mortality from these diseases was equal to 1.23 per 1,000, or 0.11 per 1,000 below the average for the second quarters of the ten preceding years; the mortality from each of the diseases, except measles, was below the average.

The rate of infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 104 per 1,000, against an average rate of 116 in the corresponding periods of the ten preceding years. Among the several counties the rates of infant mortality ranged from 65 in Herefordshire, 68 in Hertfordshire and in Wiltshire, 73 in Berkshire, and 76 in Sussex and in Somersetshire, to 118 in Durham, 121 in Nottinghamshire, 123 in Lancashire and in Cumberland, and 133 in Carmarthenshire. In seventy-six of the largest towns the mean rate was 110 per 1,000; in London it was 101, while among the seventy-five other towns it ranged from 40 in Burton-on-Trent, 54 in Bournemouth, 65 in Reading, 68 in Stockton-on-Tees, and 75 in Aston Manor, to 146 in Grimsby, 149 in Hanley, 150 in Middlesbrough, 155 in St. Helens, 167 in Bolton, and 180 in Wigan.

The mortality in England and Wales during the three months under notice among persons aged between 1 and 60 years was equal to an annual rate of 7.6 per 1,000 of the population at this group of ages; the average rate in the ten preceding second quarters was 8.3 per 1,000. In the seventy-six large towns the death-rate in this age-group averaged 8 3 per 1,000, being 7 8 in London, and ranging from 3.7 in Hornsey, 4.4 in Handsworth (Staffs), 5.2 in King's Norton, 5.3 in Croydon, and 5.5 in Leicester, to 11 8 in Oldham, 11.9 in Sunderland, 12.1 in Bolton, and 14.0 in Middlesbrough.

Among persons aged 60 years and upwards the death-rate last quarter averaged 66.3 per 1,000 living at these ages, the mean rate in the corresponding period of the ten preceding years having been 66.2. In the seventy-six towns the mean death-rate at this age-group was 68.5 per 1,000; in London the rate was 63.1 per 1,000, while among the other large towns it ranged from 41.4 in Hornsey, 45.2 in Leyton, 48.6 in East Ham, and 51.1 in Brighton to 88.3 in Bolton, 94 3 in Rochdale and in Burnley, 95.4 in Huddersfield, and 101.6 in Preston.

The mean temperature of the air during the quarter was below the average. There was an excess of rain in all parts of the country; in London the total amount was 7.28 in., or 28 per cent. more than the average, but in other districts the excess ranged upwards to as much as 55 per cent. in the North West and in the Channel districts. The duration of bright sunshine in London amounted to 423 hours, or 31 per cent. of the possible amount; the aggregate was 77 hours less than the average.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,578 births and 3,625 deaths were registered during the week ending Saturday last, August 17th. The annual rate of mortality in these towns, which had been 11.9, 11.7, and 11.8 per 1,000 in the three preceding weeks, was again 11 8 per 1,000 last week. The rates in the several towns ranged from 4.1 in Croydon, 4.2 in Willesden, 5.8 in Hornsey, 5.9 in Devonport, and 6.8 in Leyton and in Burton-on-Trent, to 17.1 in Bolton, 17.2 in Birkenhead, 17.7 in Great Yarmouth, 17.8 in Merthyr Tydfil, and 18.7 in Stockton-on-Tees. In London the rate of mortality was 12.0 per 1,000, while it averaged 11.7 in the seventy-five other large towns. The death-rate from the principal infectious diseases in these seventy-six towns averaged 1.3 per 1,000; in London the death-rate was equal to 1.4 per 1,000, while among the seventy-five other large towns the death-rates from the principal infectious diseases ranged upwards to 2.6 in Sheffield, 2.7 in Blackburn, 2.9 in Wigan, 3.0 in Warrington, 3.9 in Bootle and in Stockton-on-Tees, 4.9 in Walsall, and 6 1 in Cardiff. Measles caused a death-rate of 1.4 in Merthyr Tydfil, 1.5 in Blackburn, 1.7 in Derby, 3.0 in Stockton-on-Tees, 3.8 in Walsall, and 4.2 in Cardiff; diphtheria of 1.5 in Warrington; whooping-cough of 1.1 in Newcastle-on-Tyne and 1 2 in Walthamstow; and diarrhoea of 1.3 in Sheffield, 1.5 in Warrington, 1.6 in Wallasey, 1.7 in Rotherham, and 3.1 in Bootle. The mortality from scarlet fever and from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,586, 3,626, and 3,660 at the end of the three preceding weeks, had further risen to 3,669 at the end of last week; 430 new cases were admitted during the week, against 557, 419, and 466 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, August 17th, 803 births and 436 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns which had been 12.8 and 13.8 per 1,000 in the two preceding weeks, declined again last week to 12 6 per 1,000, but was 0.8 per 1,000 in excess of the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 8 7 in Leith and 11 6 in Edinburgh to 14 7 in Paisley and 19.5 in Perth The death-rate from the principal infectious diseases averaged 1.5 per 1,000, the highest rates been recorded in Glasgow and Greenock. The 208 deaths registered in Glasgow included 2 which were referred to measles, 10 to whooping-cough, 2 to "fever," 8 to diarrhoea, and 7 to cerebro-spinal meningitis. Four fatal cases of whooping cough and 2 of cerebro-spinal meningitis were recorded in Edinburgh; 3 of diarrhoea in Dundee; 2 of diarrhoea in Aberdeen; 2 of whooping-cough in Leith; and 1 of cerebro-spinal meningitis in Paisley.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, August 10th, 464 births and 283 deaths were registered in six of the principal Irish towns as against 605 births and 315 deaths in the preceding period. The annual death-rate in these towns, which had been 15 2, 18 3, and 18.3 per 1,000 in the three preceding weeks, fell to 16 2 per 1,000 in the week under notice, this figure being 4.4 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 10.9 in Limerick and 14.6 in Belfast to 19 2 in Cork and 19.6 in Londonderry. The zymotic death-rate in the same six Irish towns averaged 0.8 per 1,000, or 0.3 per 1,000 lower than during the preceding period, the highest figure—1.7—being recorded in Dublin, while Cork and Waterford registered no deaths under this heading at all. The deaths in Belfast included 3 ascribed to cerebro-spinal fever.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON J. BARRY, M.D., has been placed on the retired list, August 15th. He was appointed Surgeon, February 18th, 1886, and Fleet Surgeon, February 18th, 1902. Whilst Surgeon of the *Satellite* he served with the Naval Brigade in 1894 at Bathurst, on the West Coast of Africa, in the punishment of Fodi Silah, a rebellious slave-raiding chief, receiving a medal with clasp.

The following appointments have been made at the Admiralty: JOHN F. HALL, M.B., Fleet Surgeon, and DAVID W. HEWITT, M.B., Staff Surgeon, to the *Europa*, on recommissioning, September 3rd, and to the *Powerful*, on recommissioning, undated; HENRY W. GORDON-GREEN, Staff Surgeon, and L. C. HUNT, Surgeon, to the *Roxburgh*, on recommissioning, September 3rd; CHARLES H. J. ROBINSON, Staff Surgeon, to the *Donegal*, September 3rd; EDWARD T. P. EAMES, Staff Surgeon, and JOHN BOURDAS, Surgeon, to the *Edgar*, September 3rd, and to the *Cambrian*, on recommissioning, undated.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Lieutenants are confirmed in that rank: H. E. GOTELEE, J. H. SPENCER, M.B., B. JOHNSON, W. E. C. LUNN, M.B., A. H. JACOB, C. H. DENYER, A. D. FRASER, M.B., A. FORTESCUE, M.B., G. CARLISLE, H. G. GIBSON, S. FIELD, F. H. M. CHAPMAN, H. M. J. PERRY, J. L. WOOD, F. T. TURNER, M. P. LEAHY, M.B., W. G. AVISS, J. E. M. BOYD, D. F. MACKENZIE, M.B., R. D O'CONNOR, O. R. MCEWEN, M. O. WILSON, M.B., J. DU P. LANGRISHE, M.B., J. C. HART, M.B., T. H. SCOTT, M.B., G. F. RUDKIN, L. A. A. ANDREWS, J. H. GURLEY, A. C. ELLIOTT, M.B., W. B. PURDON, M.B., F. CASEMENT, M.B., E. M. MIDDLETON, V. T. CARRUTHERS, M.B., H. W. FAREBROTHER.

The following is the list of prize winners and prizes gained by them at the Junior Course Examination held in July, 1907, at the Royal Army Medical College: Lieutenant G. Carlisle, for Hygiene, the De Chaumont Prize; Lieutenant J. H. Spencer, M.B., for Military Medical Administration, the Marshall Webb Prize; Lieutenant A. D. Fraser, M.B., for Pathology and for the highest aggregate, the Herbert Prize.

Colonel A. W. P. Inman, M.B, is placed on temporary half pay on account of ill-health, August 14th. He was appointed Surgeon, March 6th, 1880; Surgeon-Major, March 6th, 1892; Lieutenant-Colonel, March 6th, 1900; and Colonel, July 22nd, 1905. He is Principal Medical Officer in South China. Colonel Inman has no war record in the Army Lists.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain E. W. St. V. Ryan to be Surgeon-Major, August 7th.

VOLUNTEER RIFLES.

Surgeon-Lieutenant-Colonel J. R. Essex, 3rd Volunteer Battalion the South Wales Borderers, is granted the honorary rank of Surgeon-Colonel, June 26th.

Charles B. Baxter, M.B., to be Surgeon-Lieutenant in the 2nd Volunteer Battalion the King's (Shropshire Light Infantry), July 1st.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Captain A. C. Tunstall, M.D., 4th or City of London Bearer Company, to be Major, July 25th.

CHANGES OF STATIONS.

The following changes of stations amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during July, 1907:

		FROM.	TO.
Lieut.-Col.	F. B. Maclean	Potchefstroom	Pretoria.
,,	F. P. Nichols, M.B. ...	Norwich ...	Poona.
,,	H. S. McGill	Kirkee ...	,,
,,	D. Hennessy, M.D. ...	Poona	Deolali.
Major	J. J. C. Watson, C.I.E., M.D. ...	Portsmouth ...	Southampton.
,,	C. A. Young	Belfast	Ballykinder Camp.
,,	C. W. R. Healey	Dublin	Fermoy.
,,	R. W. H. Jackson, M.B. ...	Athlone ...	Jamaica.
,,	G. W. Tate, M.B.	Dundalk ...	Finner Camp.
,,	I. A. O. MacCarthy	Curragh ...	Straits Settlements.
,,	E. M. Pilcher, D.S.O., M.B. ...	Woolwich ...	Straits Settlements.
,,	S. H. Withers, M.B.	York	Strensall.
Captain	A. H. Morris	—	Edinburgh.
,,	M. Swabey	Preston ...	Conway.
,,	H. G. F. Stallard	R.A.M. Coll. ...	Aldershot.
,,	A. W. N. Bowen	Cardiff	Altcar.
,,	W. H. S. Nickerson, V.C., M.B.	Dublin	Lusk Camp.
,,	H. O. B. Browne-Mason ...	R.A.M. Coll. ...	London Dist.
,,	F. S. Penny, M.B.	London Dist.	R.A.M. Coll.
,,	E. Brodribb	Kilkenny ...	,,
,,	E. P. Hewitt	R.A.M. Coll. ...	E. Command.
,,	H. P. W. Barrow	,, ,,	Irish Comd.
,,	G. H. Goddard	Dover	R.A.M. Coll.
,,	H. S. Taylor	R.A.M. Coll. ...	Dublin.
,,	R. H. Lloyd	Edinburgh ...	Piershill.
,,	H. D. Packer	Portsmouth ...	Golden Hill.
,,	H. Simson	Millbank ...	R.A.M. Coll.
,,	A. L. A. Webb	R.A.M. Coll. ...	London Dist.
,,	E. E. Ellery	Devonport ...	Tregantle.
,,	J. W. Langstaff	Pembroke Dk.	Chapel Bay.
,,	L. Wood	Woolwich ...	R.A.M. Coll.
,,	E. P. Connolly	Belfast	Dunree Camp.
,,	P. S. O'Reilly	R.A.M. Coll. ...	S. Command.
,,	J. A. Hartigan, M.B.	,, ...	E. Command.
,,	A. H. Safford	,, ...	Aldershot.
,,	W. L. Baker	Aldershot ...	R.A.M. Coll.
,,	F. W. Cotton	R.A.M. Coll. ...	E. Command.
,,	F. M. Parry, M.B.	,, ...	London Dist.
,,	B. R. Dennis, M.B.	,, ...	S. Command.
,,	J. Powell, M.B.	Woolwich ...	R.A.M. Coll.
,,	J. G. Foster, M.B.	Londonderry..	Magilligan Cp.
,,	L. M. Purser, M.B.	Woolwich ...	R.A.M. Coll.
,,	W. Bennett M.B.	R.A.M. Coll. ...	Dublin.
,,	H. B. Fawcus, M.B.	,, ...	London Dist.
,,	T. E. Fielding, M.B.	R.A.M. Coll. ...	Dublin.
,,	E. P. Sewell, M.B.	London Dist. ...	R.A.M. Coll.
,,	C. H. Straton	Dover	,,
,,	G. Carroll	R.A.M. Coll. ...	Dublin.
,,	A. E. Hamerton, D.S.O. ...	Millbank ...	R.A.M. Coll.
,,	J. G. Churton	R.A.M. Coll ...	Edinburgh.
,,	A. D. Waring, M.B.	,, ...	Dublin.
,,	J. M. Cuthbert, M.B.	Edinburgh ...	R.A.M. Coll.
,,	F. McLennan, M.B.	R.A.M. Coll. ...	Edinburgh.
,,	A. F. Weston	Chatham ...	R.A.M. Coll.
,,	F. P. Lauder	Stobs	,,
,,	J. Tobin	Fethard ...	,,
,,	A. D. Jameson	R.A.M. Coll. ...	London Dist.
,,	W. L. Bennett, M.B.	,, ...	Edinburgh.
,,	G. Baillie, M.B.	Dublin	Curragh.
,,	R. L. Popham	,, ...	Lusk Camp.
,,	F. A. Stephens	Ayr	Edinburgh.
,,	A. C. Duffey, M.D.	Rosses Point Camp	Dublin.
,,	R. N. Hunt, M.B.	Belfast	Finner Camp.
,,	J. W. West, M.B.	,,	R.A.M.Coll.
,,	H. R. Bateman	R.A.M.Coll. ...	London Dist.
,,	A. R. C. Parsons	Perham Down Camp	R.A.M.Coll.
,,	J. B. Cautley	R.A.M Coll. ...	E. Command.
,,	W. M. B. Sparkes	Portsmouth ...	Bulford.
,,	E. W. Powell	Kirkee	Belgaum.
,,	G. F. Sheehan	Curragh ...	R.A.M.Coll.
,,	R. N. Woodley	Cork	,,
,,	J. H. Barbour, M.B.	R.A.M.Coll. ...	Dublin.
,,	R. C. Wilson, M.B.	Ballykinder Camp	Dundalk.
,,	P. G. Hyde, M.B.	Cork	Glenbeigh Camp.
,,	F. W. Lambelle, M.B.	Blair Athol ...	R.A.M.Coll.
Captain	E. V. Aylen	Gosport ...	R.A.M. Coll.
,,	A. W. A. Irwin	Kildare ...	,,
,,	S. M. Adye-Curran	Kinsale ...	,,
,,	B. A. Craig	Curragh ...	,,
,,	T. S. Coates, M.B.	Neemuch ...	Nasirabad.
Lieutenant	G. F. Rugg	Colchester ...	Northampton.
,,	G. S. C. Hayes	Devonport	Bulford.
,,	P. C. T. Davy, M.B. ...	Colchester ...	Warley.
,,	C. M. Drew, M.B.	London Dist. ...	Tidworth.
,,	A. S. Littlejohns	R.A.M. Coll. ...	Woolwich.
,,	F. A. McCammon, M.B. ...	Belfast	Mosney Camp.
,,	F. D. G. Howell	Lodmoor Camp	Weymouth.
,,	E. M. O'Neill, M.B. ...	Bulford ...	Wedgnock Park Camp.
,,	G. B. Edwards	Tavistock Cp.	Shiplake Cmp.
,,	D. De C. O'Grady	Dublin	Kilbride.
,,	T. W. O. Sexton	Curragh ...	Keadean Cmp.
,,	J. H. Spencer, M.B. ...	E. Command ...	Woolwich.
,,	W. H. Forsyth, M.B. ...	Groone Camp	Portsmouth.
,,	E. B. Lathbury	Yarmouth ...	Colchester.
,,	C. Scaife, M.D.	Dublin	Lusk Camp.
,,	E. D. Caddell, M.B. ...	,, ...	Holywood.
,,	B. Johnson	,, ...	Cork.
,,	O. C. P. Cooke	Plymouth ...	Bulford.
,,	J. A. Bennett, M.B. ...	Penzance ...	Portsmouth.
,,	J. J. O'Keeffe, M.B. ...	Portsmouth ...	Beaulieu Camp
,,	H. G. Gibson	E. Command ...	Woolwich
,,	O. R. McEwen	N. Command ...	Chester
,,	V. T. Carruthers, M.B. ...	W. Command ...	York

The undermentioned Lieutenant-Colonels, retired pay, have relinquished the medical charge of troops at the stations named: J. McGann, Detention Barracks, Dublin; J. Tidbury, M.D., Royal Military College; J. McLoughlin, M.D, Bradford.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BEDFORD COUNTY HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

BOMBAY MUNICIPALITY.—Two Assistant Health Officers. Salary, Rs.750, rising to Rs.1,000, and Rs.600, rising to Rs.700 respectively.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BURY INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum.

CAIRO: KASR EL AINY HOSPITAL.—Resident Medical Officer. Salary, £250 per annum.

CARLISLE: CUMBERLAND INFIRMARY.—Male Resident Medical Officer. Salary, £80 per annum.

DERBY: COUNTY ASYLUM, Mickleover.—Junior Assistant Medical Officer (Male). Salary, £120, rising to £150 per annum.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum.

EDMONTON UNION, Upper Edmonton.—Assistant Medical Officer at the Workhouse. Salary, £180 per annum.

EGYPTIAN MINISTRY OF EDUCATION.—Assistant to the Professor of Pathology. Salary, £E320 per annum.

GLOUCESTER: GENERAL INFIRMARY.—Male Assistant House-Surgeon. Salary, £30 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon. Salary at the rate of £90 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £120 per annum.

HEMEL HEMPSTEAD: WEST HERTS INFIRMARY.—House-Surgeon. Salary, £100 per annum.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon. Salary, £50 per annum.

LEICESTER INFIRMARY.—Assistant House-Surgeon. Salary, £50 per annum.

LEICESTER: ISOLATION HOSPITAL.—Resident Medical Officer. Salary, £120 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Three House-Physicians. (2) Two House-Surgeons. Salary at the rate of £60 per annum.

LOWESTOFT HOSPITAL.—House Surgeon. Salary at the rate of £80 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer (Male). Salary, £80 per annum.

MANCHESTER: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Third and Fourth House-Surgeons. Honorarium at the rate of £25 per annum.

NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—Junior House-Surgeon. Salary, £50 per annum.

ST. PETER'S HOSPITAL FOR STONE, Henrietta Street, W.C.—Junior House Surgeon. Salary at the rate of £50 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior House-Surgeon. Salary, £100 per annum.

SHREWSBURY: SALOP INFIRMARY.—House-Physician. Salary at the rate of £50 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon. Salary, £40 per annum.

TOWNSHIP OF TOXTETH PARK.—Assistant Resident Medical Officer at Workhouse and Infirmary. Salary at the rate of £100 per annum.

WALLASEY URBAN DISTRICT COUCIL.—Medical Officer of Health. Salary, £500 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

YORK DISPENSARY.—Two Resident Medical Officers. Salary, £120 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Shere, Surrey.

APPOINTMENTS.

BAIRD, J. J. W., M.R.C.S., L.R.C.P., District Medical Officer of the Lambeth Parish.

BATTERSBY, James, F.R.C.S.Eng., Lecturer on Anatomy in Saint Mungo's College, Glasgow.

DANVERS, H., M.D.Parma, L.R.C.P.and S.Edin., L.S.A., Assistant Physician to the Italian Hospital, Queen Square, W.C.

FAIRWEATHER, A. F. A., jun., M.B., C.M.Aberd., Medical Officer of Health, Pocklington Rural District.

HAYMAN, G. A., M.R.C.S., L.R.C.P., Resident Assistant Medical Officer, Wandsworth Union Infirmary.

HOLLWAY, Miss E. B., M.B., B.S.Lond., Resident Assistant Medical Officer, Sheffield Union Hospital.

NASH, Edwin H. T., M.R.C.S., L.R.C.P., Research Fellowship, Public Health, Victoria University.

OLLERENSHAW, R., M.B., B.S.Vict., Second Assistant Medical Officer, Kensington Parish Infirmary.

WONNACOTT, R. H. H., M.R.C.S., L.R.C.P., District Medical Officer of the Faversham Union.

WRANGHAM, William, M.D.Lond., M.R.C.S., L.R.C.P., Honorary Assistant Physician to Bradford Royal Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

GILL.—On August 15th, the wife of G. Brittan Gill, M.B., Belper, of a son.

M'KIE.—At 14, Arthur Street, Newton Stewart, on August 17th, to Dr. and Mrs. M'Kie, a son.

MARTIN.—On August 16th, at 1, Marlborough Avenue, Hull, the wife of Edward Lister Martin, M.D., of a daughter.

PATTON.—On July 9th, at Freshford, Chetput, Madras, the wife of Captain W. S. Patton, I.M.S., of a son.

DEATH.

BROWN.—On August 12th, aged 50 years, Walter Henry Brown, M.Sc.Leeds, F.R.C.S.I., M.R.C.S.Eng., of Highfield House, Headingley, Leeds, Consulting Surgeon, Leeds General Infirmary.

BOOKS, ETC., RECEIVED.

Health in the Home Life. By H. Morten. London: J. Clarke and Co. 2s. 6d.

American Practice of Surgery. In 8 volumes. Edited by J. D. Bryant, M.D., LL.D., and A. H. Buck, M.D. Vol. iii. New York: W. Wood and Co. 1907.

The Birds of the British Islands. Part VI. By C. Stonham, C.M.G., F.R.C.S., F.Z.S. London: E. Grant Richards. 1907. 7s 6d.

London: H. Frowde and Hodder and Stoughton. The Oxford Medical Publications. 1907:

Heart Disease and Thoracic Aneurysm. By F. J. Poynton, M.D., F.R.C.P. 5s.

Clinical Lectures and Addresses on Surgery. By C. B. Lockwood. 5s.

Auscultation and Percussion, together with the other Methods of Physical Examination of the Chest. By S. Gee, M.D. Fifth edition. 5s.

Matriculation Directory. No. XLVI, June, 1907. Cambridge: University Tutorial Press, Limited. 1s.

The International Scientific Series. Edited by F. Legge. The New Physics and its Evolution. By L. Poincaré. Authorized translation of "La Physique Moderne, Son Évolution." London: Kegan Paul, Trench, Trübner, and Co., Limited. 1907. 5s.

Recent Improvements in Methods for the Biological Purification of Sewage. By W. J. Dibdin, F.I.C., F.C.S. Second edition. London: The Sanitary Publishing Co. 1907 1s.

Zur Psychopathologie des Alltagslebens (Ueber Vergessen, Versprechen, Vergreifen, Aberglaube und Irrtum). Von Professor Dr. S. Freud. Zweite Auflage. Berlin: S. Karger. 1907. M. 3.50.

Oxford Medical Publications. The Operations of General Practice. By E. M. Corner, M.A., M.C., M.B., B.Sc., F.R.C.S., and H. J. Pinches, M.A., M.B., B.C., M.R.C.S., L.R.C.P. London: H. Frowde, and Hodder and Stoughton. 1907. 15s.

Lessons in Disinfection and Sterilization. By F. W. Andrewes. Second edition. London: J. and A. Churchill. 1907. 3s. 6d.

Health, Work, and Recreation. By G. A. Hawkins-Ambler, F.R.C.S. Liverpool: D. Marples and Co. 1907. 6d.

The Abdominal and Pelvic Brain. By B. Robinson, B.S., M.D. Chicago: F. S. Betz and Co. London: A. B. Walsh and Co. 16s.

The Sigmoidoscope. By P. L. Mummery, B.C.Cantab., F.R.C.S.Eng. London: Baillière, Tindall and Cox. 1906. 3s. 6d.

Die Augenheilkunde in der Römerzeit. Von Dr. R. del Castillo y Quartiellers. Übersetzung aus dem spanischen von Dr. M. Neuburger. Leipzig and Wien: F. Deuticke. 1907.

Gardening in Town and Suburb. By Harry H. Thomas. London: Longmans, Green and Co. 1907. 2s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics; *X* Rays. 2.30 p.m.: Operations. Monday and Thursday, 2 p.m.: Diseases of the Eye. Tuesday and Friday, 10 a.m.: Gynaecological Operations. 2 p.m., Diseases of Throat, Nose, and Ear; also Wednesday and Saturday, 10 a.m.: Tuesday and Friday, 2.30 p.m.: Diseases of the Skin. Wednesday, 10 a.m.: Diseases of Children. Lectures—Monday. 12 noon, Pathological Demonstration. Tuesday, 5 p.m., Clinical. Friday, 5 p.m., Cases of Skin Disease.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
AUGUST.	
25 Sunday ...	
26 MONDAY ...	
27 TUESDAY ...	
28 WEDNESDAY	
29 THURSDAY...	EASTBOURNE DIVISION, *South-Eastern Branch*, West House, 1, Chiswick Place, Eastbourne, 8.30 p.m. NORTH NORTHUMBERLAND DIVISION, *North of England Branch*, Annual Social Meeting, Embleton, 2.30 p.m.
30 FRIDAY ...	
31 SATURDAY ...	
SEPTEMBER.	
1 Sunday ...	
2 MONDAY ...	
3 TUESDAY ...	
4 WEDNESDAY	

Date.	Meetings to be Held.
SEPTEMBER *(Continued).*	
5 THURSDAY...	
6 FRIDAY ...	
7 SATURDAY...	
8 Sunday ...	
9 MONDAY ...	
10 TUESDAY ...	
11 WEDNESDAY	
12 THURSDAY...	
13 FRIDAY ...	
14 SATURDAY...	
15 Sunday ...	
16 MONDAY ...	
17 TUESDAY ...	
18 WEDNESDAY	
19 THURSDAY...	
20 FRIDAY ...	
21 SATURDAY...	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 31ST, 1907.

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The Annual Exhibition

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[*Fourth Notice.*]

Drugs.

ANGIER CHEMICAL COMPANY (32, Snow Hill, London, E.C.). The stand of this firm was given up to the preparation known as Angier's Emulsion and the Throat Tablets produced by the same firm. The emulsion is in appearance a thick, creamy liquid, which possesses no objectionable odour, and to the palate is not unpleasant. It was found to mix easily with water, milk, and other liquids. Under the microscope the granules are seen to be in a state of fine subdivision. The firm states that in its preparation it uses a specially-purified petroleum, to which it adds the hypophosphites of lime and soda and chemically pure glycerine. Some years ago the preparation was analysed by us, and what is stated by the manufacturers was found to be accurate. From a pharmaceutical standpoint it is undoubtedly a very successful preparation, and from a clinical standpoint the fact that it mixes so well with fluids is decidedly in its favour, since its administration in any desired beverage and in the undiluted form is equally easy. There are some people who believe that petroleum is absorbed and exercises a direct influence on nutrition, and to these Angier's emulsion offers as convenient a way of administering this hydrocarbon as could be desired. Furthermore, if, as has been stated, petroleum leaves the intestine unaltered, the claim of the firm that its emulsion forms an excellent vehicle for the administration of intestinal antiseptics, and that the passage of the oily petroleum along the intestinal tube exerts a sedative effect in conditions of mucous irritation, may still be sustainable. The throat tablets of the firm are, we were informed, made of purified petroleum in combination with elm bark and other ingredients, and do not contain any form of narcotic. The firm believes them to be specially useful to those who have much speaking to get through, and in the general treatment of irritable throats they are certainly pleasant lozenges to take.

ARMOUR AND CO. (Atlantic House, Holborn Viaduct, London, E.C.). Two stands were devoted to the products of this firm, amongst the products shown being a complete array of glandular extracts in powder and tablet form for the benefit of those who desire to avail themselves of the resources of organotherapy. Some of these, of course, are already sufficiently well known, more especially the preparations from the suprarenal bodies, and the pancreas derivatives, trypsin and amylopsin. Red bone marrow should be placed in the same category, and is prepared by the firm for administration in three forms, as a glyceride of definite strength, in soluble gelatine capsules each containing the equivalent of 15 grains of fresh bone marrow, and in *perles* which contain in addition to the equivalent of half a teaspoon of crude bone marrow, $\frac{1}{8}$ grain ferri arsenias. Obviously, therefore, there can be no difficulty in using red bone marrow in the cases of anaemia, chlorosis, or neurasthenia in which bone-marrow treatment may be considered to be indicated. The provision for the use of suprarenalin was equally extensive. The solution of this extract on view was of the strength of 1 in 1 000, and it was also put up in the form of triturates. These are small pulverizable discs, which on the addition of 15 minims of sterilized water or normal salt solution make a solution of 1 in 1,000. In this form, and in conjunction with $\frac{1}{4}$ grain tablet of cocaine, they are recommended by the firm for use in dental operations, such as the removal of nerve pulp. The ordinary solution, of course, can be used either for internal administration, by hypodermic injection, or as a local application in any case in which its vessel contracting action is desired. Another form in which suprarenalin appeared was as a snuff, in conjunction with boracic acid, menthol, and other powders. The suprarenalin suppositories compounded with hamamelis extract and a minute quantity of morphine may also be mentioned as likely to be useful in acute attacks of haemorrhoids and other allied circumstances. Another preparation in which suprarenalin played a part was one to which the firm has given the name of "Eucapren." This is a combination of suprarenalin and beta eucaine, and is intended for use in the safe production of local anaesthesia. There were also a large collection of digestive enzymes, pepsine being shown in numerous forms—in

scales, granules, and powder, as glyceroles, and as an essence, and in combination with pancreatin. Finally may be mentioned the firm's semi-solid extract—Virogal. This, we were informed, is prepared from Armour's extract of beef, with the addition of seasoning, and some other nutritive constituents. It is intended to afford a ready means of preparing hot or cold bouillon for use in the sick room or elsewhere.

THE BAYER COMPANY, LIMITED (19, St. Dunstan's Hill, London, E.C.). To the credit of this company can be placed the origination of a good many synthetic and other preparations the value of which is now widely recognized They include, we believe, phenacetin, sulfonal, and veronal, and these, together with heroin hydrochloride, aspirin, and several others, were all on view. In connexion with veronal, the series of transformations which the original constituents—acetic acid and urea—undergo were interestingly displayed. There are many persons who regard this hypnotic as superior to any of its predecessors and rivals, the claims made for it being that it is safer to use in efficient doses and free from unpleasant by-effects. Sajodin is a preparation of iodine intended for internal use, being chemically a calcium salt of monoiodo-behenic acid; it is claimed that in all cases in which the internal use of iodine alkalies are indicated this form of the drug can be used for a longer time without risk of iodism than any other. Professors von Mering of Halle and Lassar of Berlin both seem to have used it extensively in the treatment of late syphilis with good results, the former having also found it satisfactory in cases of arterio-sclerosis. Another preparation of iodine brought out by the firm is "Jothion," which is primarily intended for inunction or for painting on the skin, and stated to be unexcelled in the facility with which it is absorbed. Protargol, also shown, is an organic silver preparation, which has for a considerable time now been regarded by many practitioners as a desirable substitute for nitrate of silver in ophthalmic practice and in the treatment of gonorrhoea. Heroin hydrochloride is another product of the firm, the preparation of which it retains in its own hands. All mixtures containing heroin and vended by other houses depend, we were informed, on the heroin supplied by the original makers. It was originally introduced as a substitute for morphine and codeine, and is regarded by many persons who have employed it as being in some respects a more desirable drug to use than either, since it seems to exercise a selective influence on the respiratory system, checking cough without causing constipation.

The MALTINE MANUFACTURING COMPANY (24, Hart Street, Bloomsbury, London). At this date there is little fresh that can be said in favour of maltine, which, in the various guises in which it is produced by this firm, is likely to maintain its position in the treatment of nutritional disorders, whatever advances in other directions may be made. Apart from its own dietetic value, it certainly, when combined with cod-liver oil, enables the latter to be taken by persons who can neither swallow nor assimilate it in any other form. We tasted the previous preparation once more after an interval of several years, and were again struck by the success with which all taste of cod liver oil is concealed by maltine when mixed with the oil by a vacuum process such as that employed by this firm. A large number of other compounds of maltine were also shown, the majority being well known. One preparation which would seem to be indicated in a wide class of cases is maltine with pyrophosphate of iron, quinia, and strychnia, the amount of quinia and strychnia in each fluid ounce being 1 grain and $\frac{2}{75}$ grain respectively. Another combination which should be found useful in numerous conditions is maltine with creasote. On the same stall was shown another popular preparation, "Carnrick's Liquid Peptonoids." This is a compound of beef, wheat, and milk, in an easily-absorbed form, and, as we have already stated in a previous note, is found to be readily taken and well borne by persons of very delicate digestion. A good deal of the food material which it contains seems to be assimilable so rapidly that, according to the *Lancet*, the preparation has considerable power as a stimulant.

FOODS, ETC.

APOLLINARIS COMPANY, LTD. (4, Stratford Place, Oxford Street, London, W.) The exhibits of this firm were for the most part familiar to visitors. They included, of course, the table water Apollinaris, which has so long been popular. It is a natural mineral water conspicuous for the large amount of carbonic acid it contains, and is of agreeable taste. It is bottled by the firm itself at the springs, and can be obtained in glass bottles and large stone bottles. The latter contain about 40 per cent. more than an ordinary siphon, so thus obtained the water is relatively cheap. The firm believes, too, that the water stored in these stone bottles is on the whole of more agreeable flavour than when it is kept in glass, while there is the added advantage that when a bottle has to be open for some little time, as in a hot dining room, the water in these earthenware vessels remains cool and sparkling longer than otherwise would be the case. We were somewhat attracted by the bottle-closing arrangement now used by the firm; it is a patent known as the Crown Cork. The bottles so corked are absolutely airtight, yet permit of instant opening when the hand opener supplied is used. The other exhibits of the firm were Johannis Water, Johannis Lithia, and Apenta. The first of these is, like Apollinaris, a sparkling table water drawn from springs near Niederselters, in Rheinish Prussia. It mixes well with wine and water, and, while well adapted for ordinary drinking purposes, is believed by the firm to be especially suited as a beverage for those who suffer from dyspepsia and gouty disorders. The second exhibit mentioned is Johannis Water with the addition of 1 grain of lithia carbonate to each bottle; it has been brought out to meet the special needs of those who, rightly or wrongly, are supposed to suffer from a tendency to an abnormal formation of uric acid. The last water mentioned, Apenta, is a natural aperient water, containing the sulphates of magnesia and soda in relatively large proportions. By Liebreich, Lancereaux and other authorities at home and abroad it is regarded as of marked value in dealing with cases of chronic constipation, portal obstruction, and obesity.

AYLESBURY DAIRY COMPANY, LIMITED (St. Petersburg Place, Bayswater, London, W.). If the system on which this company conducts the operations of milk production, collection, storage, and distribution had been generally adopted some years ago, it is fairly certain that the present outcry for more efficient control of the public milk supply would not have arisen. Its plan, which is that of subjecting all the dairy farms with which it makes contracts to a periodic inspection by veterinary surgeons and medical men versed in the questions arising in connexion with milk, may not be perfect, but the results have been so generally good that this firm enjoys an excellent reputation among medical men in London and its neighbourhood. With many of these, the milk which it sends out in quart bottles, with cartridge paper caps, under the name of "nursery milk," is especially popular, and personal experience shows it to be practically of staple quality and a desirable milk for all-round household purposes. Its stall, however, at Exeter was given up mainly to the milk specialities which the firm produces and vends. Among these were Humanized milk in three strengths, all being cow's milk modified in the laboratory so as to resemble mother's milk; that labelled No. 1 is prepared with a minimum percentage of curd, and is intended for weakly infants The firm, we were informed, is prepared to supply milk modified so as to contain any percentage of fat, milk sugar, and proteids which may be desired. Koumiss, a fermented product of milk, and prepared after the formula of Dr. Jagielski, was also shown. It is to a certain extent a stimulant as well as a food, and some patients can take it when all other forms of milk produce nausea. In Russia Koumiss is the favourite form in which to administer milk to tuberculous patients. We also noted as comparatively novel two preparations named respectively "Pollyta" and "Humanoid." The former is a milk food intended for children who have been weaned but who are still in the infant stage of existence, and the other is a concentrated preparation which, on dilution with a suitable quantity of boiled water, forms a fluid having the approximate constitution of average human milk.

BRAND AND CO. (11, Little Stanhope Street, Mayfair, London, W.). Most of the dietetic specialities produced by this firm have been so long and favourably known that any detailed description of them is superfluous. A fairly complete collection of them was on view, including beef tea jelly, mutton jelly, and chicken jelly, all of which are of delicate

and pleasing flavour, and offer a useful means of ringing the changes on the ordinary beef-teas of the sick room. They are said in this solid form to be about three times as strong as ordinary home-made beef-tea. Brand's meat juice and various broths—veal, chicken, game, and turtle—were also shown, as well as Ivory jelly, a form of calf's-foot jelly, specially prepared for diabetics. A further preparation, which may be noted as not unlikely to prove very useful in foreign countries and other places where domestic resources are limited, is the firm's Fever food, which is stated to be a mixture of meat essence, yolk of egg, and fresh cream. The Brand's meat juice, put up in small flat bottles, is an excellent preparation which personal experience has shown to form an excellent pick-me-up when tired, and as such may be recommended to hard workers of all classes. It is not unpleasant to take even undiluted, and keeps well after the bottle has been opened, and with soda or other aërated water is very palatable. Only a small quantity is necessary, a teaspoonful in a wineglass of soda from a siphon proving very refreshing. It should be useful likewise for administration to invalids after operation and confinements, and the like. The Home-made beef-tea now put up in a new style of bottle is also worth noting.

Camwal, Limited (Camwal Works, Bristol). This is a firm which has factories at London, Manchester, Harrogate, Mitcham, and Bristol, and devotes itself to the manufacture of aërated waters. Its products must already be familiar to most persons. Its soda, seltzer, potash, lithia, and other table waters are prepared in two strengths, one for ordinary drinking purposes and the other in the medicinal strength prescribed by the *British Pharmacopœia* of 1885. As an adjuvant to its principal product, it also vends under its own name a number of palatable fruit syrups. Ginger beer also had a place on its stand, appearing in two forms, one being this favourite beverage brewed in old-fashioned style and issued in the familiar stone bottles, and the other, Pale Dry Ginger Ale, which has been specially prepared to suit the taste of those to whom the comparative sweetness of the older product is not acceptable. It is certainly a very pleasant drink, and seemed to be appreciated widely by those who visited the Exhibition.

Instruments and Appliances.

Arnold and Sons (West Smithfield). The exhibit of this firm covered the whole range of hospital work, and was of a most interesting description. There was an attractive array of aseptic furniture and operation tables, many of the articles being strikingly well designed and excellently finished. They included a new operation table, which has been made and patented for St. Bartholomew's Hospital, and the table originally made on the suggestion of Sir Frederick Treves in a new form. Each of them seemed to us well-thought-out appliances. Amongst the exhibits of a smaller character, we noted the instrument which has been invented by Dr. Vernon for the performance of Whitehead's haemorrhoid operation in a bloodless and cleanly fashion, and which he described in the Section of Surgery. The sterilizing kettle, already well known under the name of the "Bruce Clarke" kettle was shown, with some improvements suggested by Dr. Van Buren, of Bristol. As will be gathered from the above illustration (Fig. 1), they consist in the addition of a booklet division by which the interior may be subdivided as desired for small operations. Another useful apparatus

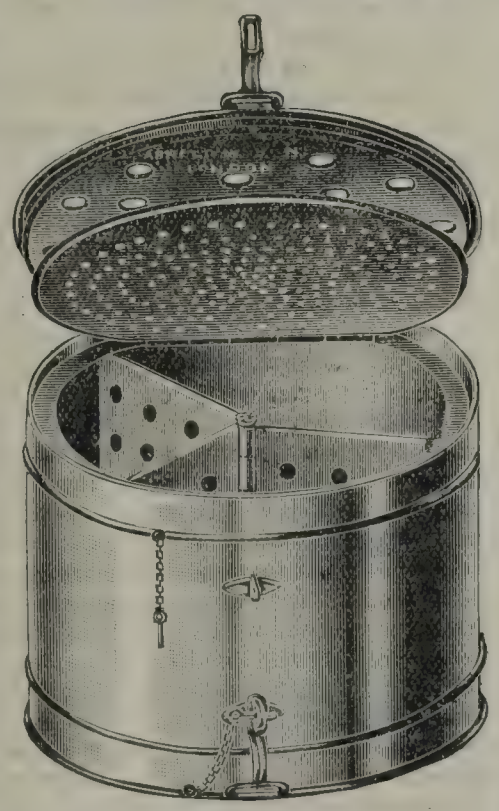

Fig. 1.

was a perforated box, in which to place india-rubber gloves during sterilization (Fig. 2). A cap

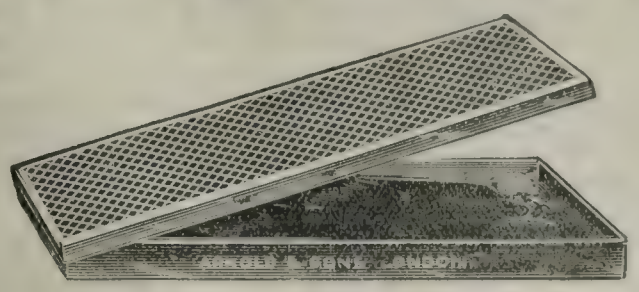

Fig. 2.

for use during operations, which is coming into use at the Westminster Hospital, was also shown. It is of linen, with a gauze front, and known under the name of "Burgess Cap." In the same general connexion should be mentioned also a finger-stall fitted with an india-rubber petticoat, which is intended to enable the practitioner to conduct ordinary rectal and vaginal examinations without soiling his fingers. It is in use, we understand, at the

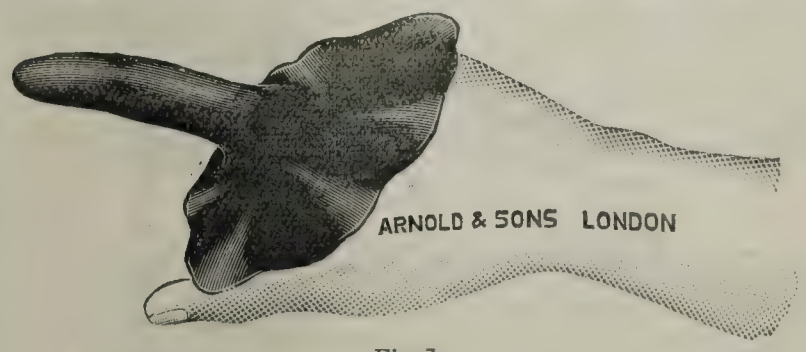

Fig. 3.

Royal Free Hospital, and should be found of value under many circumstances. The finger-stall part is so thin as not to interfere materially with tactile sensation. Its general construction will be gathered from Fig. 3. To the medical visitor one of the binaural stethoscopes on view had decided attractions. It has been made to the order of Dr. Colquhoun, the ear-pieces being so fashioned that the instrument keeps in position without holding, and without hurting the user's ears. Furthermore, it has a revolving and sound-magnifying phonophore attachment, with the aid of which it is believed the whole chest can be efficiently examined without disturbing the patient's dress (Fig. 4). Two new forms of guillotine were also shown, one having been designed by Mr. Hills, and having a fork and interchangeable handle for the right or left side; the other has been developed from older forms by the firm itself, and is here shown. In Fig. 5 it is seen ready for operation, and in Fig. 6 as taken apart for cleaning and sterilizing. It is an inexpensive instrument, and decidedly practical and efficient. Another interesting exhibit was a complete set of the instruments designed by Mr. Charles Heath for mastoid operations; the copper hammer in particular seemed specially noticeable for its balance, while the glass wells for probes and cotton-wool swabs, etc., were very ingeniously designed.

Fig. 4.

Fig. 5.

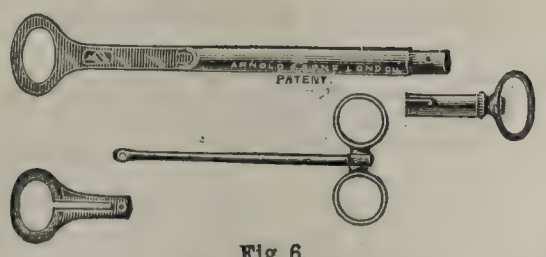

Fig. 6.

The whole of this set of instruments seemed mechanically perfect in respect of the end in view. Another appliance shown was the keratometer of Mr. J. H. Sutcliffe, which is calculated to save an immense amount of exertion on the part of those whose lot it is to examine eyes. Other instruments which attracted attention were some improved forms of Kollmann's anterior and posterior urethral dilators, and a new useful form of dressing table, made of non-corrosive metal. Some improved bladder forceps designed by Mr. Hurry Fenwick were also shown.

Browne and Sayer (104, Upper Thames Street, E.C.). The principal exhibit of this firm of surgeons' sundriesmen was a new form of bed-rest known as the Osborne, of which an illustration (Fig. 7) is here given. As will be gathered, its novelty lies in its exceedingly simple structure and in the fact that it can be rolled up into so small a compass that it can be carried about in the pocket or the bag of a surgeon or district visiting nurse. It consists of a broad band of strong webbing which is placed round the patient's back just below the shoulder blades, thus giving him support where it is most required. The

Fig. 7.

ends of this band are passed under his arms and hooked to the bed-rail at the foot, the length being adjustable by buckles. The correct position of the back support is secured by shoulder straps, which, crossing behind, rise over each shoulder and are buckled to the ends of the support; the length of the shoulder straps may be varied by buttons, according as to whether it is wished that the patient's position should be more or less erect. When not in actual use the bands can be left in position on the foot-rail and serve as a pulley. The contrivance is ingenious, and in many circumstances should prove very useful.

Equipoise Couch Company (Ashford, Kent). A year or two ago we expressed a high opinion of the ingenuity and practical utility of the invention of this firm. Its point is that by its means a patient can be placed, or can even place himself, in any position pleased, and be maintained in that position without the slightest exertion. At the time we described it it had only been

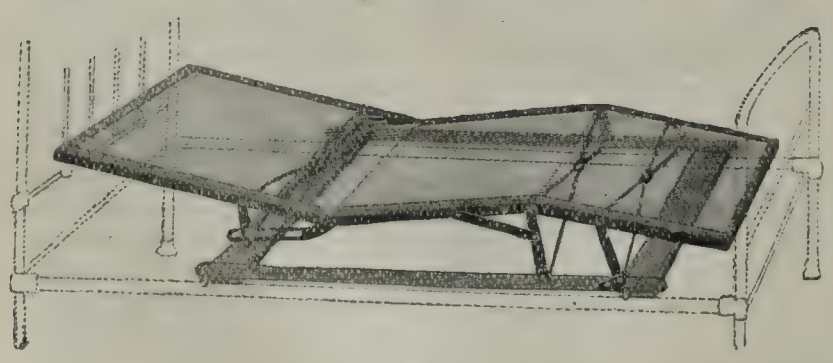

Fig. 8.

applied to complete beds and couches, but at Exeter the company showed it in three new forms. One of these was as attached to a mattress which can be placed on any bed, just like an ordinary wire mattress. A bath-chair arranged on the same principle was also shown, the occupant being able to vary his position at will. The contrivance as arranged for use with any ordinary bed is shown in the above engraving (Fig. 8). The third form is a most excellent easy chair with broad arms for books and papers, or a cup or glass, in which the occupant can either lie down or sit up as he pleases.

Books.

Sidney Appleton (25, Bedford Street, Covent Garden). This firm had upon view a complete collection of the books on medicine and surgery and allied studies which it has published. They include a volume of *Clinical Lectures and Essays*, by Dr. H. D. Rolleston; and Professor H. Tillmann's elaborate work on *General Surgery*, published in three volumes; and a well illustrated work on *Operative Gynaecology*, by H. A. Kelly. Dr. H. A. Hare's *Practical Therapeutics*, in three volumes, also found a place. Another book of interest which attracted our attention was an illustrated treatise, by Dr. R. C. Cabot, dealing with *Diseases of the Blood*.

Miscellaneous.

Buxton Thermal Mineral Water Station.—The springs of this Derbyshire health resort are now the property of the town and Corporation, and a by no means unsuccessful effort was made to bring home to visitors the attractions of this spa and the extent to which its accommodation for the visitors and therapeutic resources have been developed and improved since the Corporation assumed their control. Good photographs of recently extended baths were shown, these including the Buxton douche-immersion baths and the Vichy douche. There were also illustrations showing how the peat is dug on the moors near Buxton and carted to the bath-house during the winter, for use in the mud or fango baths which have now been opened. In further exemplification of the same department was shown one of the rooms devoted to this form of bath and to the cleansing mineral bath which follows it. There were several pictures, too, to prove the completeness with which the electrical department has been fitted up with all forms of apparatus suitable for use in connexion with or as adjuvants to hydrotherapeutic treatment. The stall was provided also with samples which might be taken away, both of the thermal and chalybeate waters, and analyses supplied to show that in many respects the Buxton waters resemble those of Plombières, while in one department the method of use is identical. Other illustrations concerned the outdoor summer and winter amusements of Buxton and its neighbourhood, and meteorological tables were on view to prove that, owing to its altitude, 1,000 ft. above sea level, and the subsoil and general configuration of the locality, Buxton enjoys a climate of less absolute humidity than any of the Royal Meteorological Society's stations. A claim, too, was made that in the winter the atmosphere is so attractive, clear and dry, that a cure conducted during that period of the year is just as pleasant and not less efficacious than during the summer season, while many of the bath charges are only half of the ordinary rates.

B. Kuhn and Co. (16, Rood Lane, London, E.C.). The principal exhibits of this firm were chinosol and papain (Finkler). The former is a readily soluble powder which in a solution of 1 in 100 is limpid and possesses a slight aromatic smell; applied to the tongue, it is found to have a somewhat astringent flavour and to produce a sensation of slight smarting, which rapidly passes away. Applied to the skin, it produces no change or sensation; these are facts which seem to indicate that it is a non-poisonous, non-irritant drug, as stated by the manufacturers. As regards its disinfecting power, these have been favourably reported on both by Professor Klein, of St. Bartholomew's Hospital, and by Mr. C. A. Hill, who read a paper dealing with the use of chinosol in connexion with typhoid excreta before a Branch of the British Medical Association some years ago. Professor Klein considered that while a 1 per per cent. solution was perfectly harmless to human beings, it was fatal to anthrax spores in five minutes, and therefore very much more powerful than carbolic acid, which would not devitalize the same spores, even in 5 per cent. solution, maintained in contact with it for forty-eight hours. Mr. Hill, in addition to speaking of its powers as compared with carbolic, pointed it out as possessing great deodorizing power, and as having the advantage of being non-toxic, non-volatile, readily portable, and economical. Papain (Finkler) is a drug which has been used and recommended by several authorities as both an external and internal remedy. It is considered to be indicated for the removal of false membrane in diphtheria, and in chronic eczema and psoriasis. Internally its use has been suggested in connexion with chronic gastric ulcer and atomic dyspepsia.

The Sanitary Wood Wool Co. (14 and 26, Thavies Inn, Holborn Circus, London, E C). The majority of the exhibits of this firm were articles already well and favourably known to most medical men. The wood wool tissue and Hartmann's patent wood wool wadding are both thoroughly useful dressings, and practically identical, the tissue being a layer of the wood wool wadding between two pieces of sublimate gauze. It can thus be made into rolls, off which pads can be cut, of any shape or size desired. It is a thoroughly absorbent preparation, comfortable in use, and desirably cleanly. Other preparations shown, and long since popular, were the wood wool sheets, in three sizes, intended for confinements, and the ordinary sanitary towels and sponges made of wood wool enclosed in gauze. Hartmann's catgut, sterilized and packed in glass tubes, and in a great variety of thicknesses, was also shown, as well as catgut in hanks of 25 lengths, on glass rollers encased in bottles, and prepared with juniper oil and sterilized with either carbolic acid or mercury. Besides these we noted a new preparation, which seemed to possess considerable advantages as a dressing. It is called Feltine, and can be cut to any size desired without waste. It seems likely to be quite as popular as Wood wool. Two other articles which may be mentioned are also new products of the firm, the one being catgut for ligatures prepared dry and known as Dry Iodized Catgut, the other an absorbent cotton wool, which is put up in air-tight packages either merely sterilized or carbolized or sublimated, or otherwise charged with antiseptics to the extent of 10 per cent. of its weight.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

Owing to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

East Anglian Branch.—The autumn meeting of this Branch will be held at Cromer on Thursday, September 26th. Members wishing to read papers or show cases or specimens should communicate at once with Mr. H. A. Ballance, M.S., Norwich.—B. H. Nicholson, Honorary Secretary, East Lodge, Colchester.

Midland Branch: Coventry Division.—A special meeting of this Division will be held on Tuesday, September 3rd, at 8.30 p.m., at the Coventry and Warwickshire Hospital. Agenda: (1) To receive the resignation of Mr. Faulder White as representative for the Division upon the Management Committee of the New Dispensary Service, and to fill up the vacancy. (2) To consider the report and recommendations of the Committee in regard to the dispensary question. (3) To consider the recommendation of the Committee to adopt the rules of the New Dispensary Service. (4) To rescind rule relative to the non-admittance of members of Coventry Provident Dispensary, both contract and club members, into other medical services. (5) To consider Committee's Report *re* steps to be taken for expulsion of two members of the Association.—John Orton, Honorary Secretary.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,444 births and 3,542 deaths were registered during the week ending Saturday last, August 24th. The annual rate of mortality in these towns, which had been 11 8 per 1,000 in each of the two preceding weeks, declined last week to 11 5 per 1,000. The rates in the several towns ranged from 4.4 in Grimsby, 5.2 in Willesden, 5 4 in East Ham, 5.6 in Leyton, 5.7 in Southampton, and 6.2 in Walthamstow and in King's Norton, to 15 5 in Stockport and in Bootle. 15 6 in Warrington and in South Shields, 15 8 in Oldham, 16 6 in Burton-on Trent, 18.8 in Wallasey, and 21 7 in Great Yarmouth. In London the rate of mortality was 11.6 per 1,000, while it averaged 11.5 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.4 per 1,000 in the seventy-six large towns; in London also this death-rate was equal to 1 4, while among the seventy-five other towns the mortality from the principal infectious diseases ranged upwards to 3 0 in Great Yarmouth, 3.2 in Handsworth (Staffs.), 3.3 in Sheffield, 3.8 in Aston Manor, 3.9 in Bootle, and 6.1 in Cardiff. Measles caused a death-rate of 5.6 in Cardiff; scarlet fever of 1 0 in Wolverhampton; whooping-cough of 1 2 in Wigan and in Gateshead, 1 4 in South Shields, 1.5 in Grimsby, 1.8 in Bury, and 3.0 in Great Yarmouth; and diarrhoea of 1 3 in Birkenhead, in Liverpool, and in Sunderland, 2.3 in Bootle, 2 6 in Sheffield, and 3.1 in Aston Manor. The mortality from diphtheria and from "fever" showed no marked excess, and no fatal case of small-pox was registered during the week. One small-pox patient was admitted into the Metropolitan Asylums Hospitals, and remained under treatment at the end of the week. The number of scarlet fever patients in these hospitals and the London Fever Hospital, which had been 3,626, 3 660, and 3 669 at the end of the three preceding weeks, had further risen to 3,687 at the end of last week; 440 new cases were admitted during the week, against 419, 466, and 430 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, August 24th, 879 births and 443 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.8 and 12 6 per 1,000 in the two preceding weeks, rose again to 12.8 per 1,000 last week, and was 1.3 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death rates ranged from 8.7 in Leith and 10.1 in Edinburgh, to 14 0 in Glasgow and 15.0 in Perth. The death-rate from the principal infectious diseases averaged 1.9 per 1,000, the highest rates being recorded in Paisley and Greenock. The 228 deaths registered in Glasgow included 3 which were referred to measles, 4 to diphtheria, 11 to whooping-cough, 2 to "fever," 12 to diarrhoea, and 3 to cerebro-spinal meningitis. Two fatal cases of measles, 4 of whooping-cough, and 1 of cerebro-spinal meningitis were recorded in Edinburgh; 3 of diphtheria and 3 of diarrhoea in Dundee; 2 of whooping-cough and 2 of diarrhoea in Paisley: and 3 of whooping-cough in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, August 17th, 467 births and 296 deaths were registered in six of the principal Irish towns, as against 464 births and 283 deaths in the preceding period. The annual death-rate in these towns, which had been 18.3, 18.3, and 16 2 per 1 000 in the three preceding weeks, rose to 17.4 per 1,000 in the week under notice, this figure being 5 6 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 13 6 in Waterford and 13 7 in Cork, to 19.1 in Limerick and 25 8 in Londonderry. The zymotic death-rate in the same six Irish towns averaged 0.6 per 1,000, or 0.2 per 1,000 lower than during the preceding period, the highest figure—2.3—being recorded in Dublin, while Cork, Londonderry, Limerick, and Waterford registered no deaths under this heading at all. In Belfast 6 deaths were ascribed to cerebro-spinal fever.

During the week ending Saturday, August 24th, 591 births and 282 deaths were registered in six of the principal Irish towns as against 467 births and 296 deaths in the preceding period. The annual death-rate in these towns, which had been 18 3, 16.2, and 17.4 per 1,000 in the three preceding weeks, fell to 15 9 per 1,000 in the week under notice, this figure being 4.4 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 14 7 in Londonderry and 15.1 in Belfast to 16 4 in Cork and 17 8 in Limerick. The zymotic death-rate in the same six Irish towns averaged 0 9 per 1 000, or 0.3 per 1,000 higher than during the preceding period, the highest figure—1.9—being recorded in Dublin and Waterford, while Londonderry and Limerick registered no deaths under this heading at all. In Belfast 4 deaths were ascribed to cerebro-spinal fever, and 1 to cerebro-spinal meningitis.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Henry W. Finlayson, M.B., Fleet Surgeon, and Thomas W. Jeffery, Surgeon, to the *Cressy*, on recommissioning, September 3rd; John H. McDowall, M.B., Surgeon, lent to Yarmouth Hospital, September 1st.

ROYAL ARMY MEDICAL CORPS.

Major E. C. Freeman, M.D., retires on retired pay, August 28th. He was appointed Surgeon-Captain, July 27th, 1887, and promoted to be Major, July 27th, 1899. He served in the South African war in 1899-1901, and was present in operations in Orange Free State and in Cape Colony, receiving the Queen's medal with two clasps.

Major A. Wright also retires on retired pay, August 28th. His commissions were simultaneous with those of Major Freeman, his war services also being similar, and he receiving the Queen's medal with two clasps.

Lieutenant-Colonel R. J. Windle, M.B., has been selected for the appointment of Physician and Surgeon of the Royal Hospital at Kilmainham, from October 1st, vice Lieutenant-Colonel F. R. Heuston,

C.M.G. Lieutenant-Colonel Windle is to be succeeded in the South Dublin District by Major E. G. Browne, R.A.M.C.

INDIAN MEDICAL SERVICE.

Colonel P. H. Benson, M.B. (Madras), has been appointed Principal Medical Officer, Secunderabad Brigade.

The following Captains are promoted to be Majors from July 28th: A. Leventon, P. F. Chapman, M.B., A. Hooton, A. F. W. King, F. R. Standage, A. A. Gibbs, F. L. Blenkinsop, M.B., H. A. F. Knapton, T. E. Watson, M.B. Their previous commissions, which were simultaneous, are thus dated: Surgeon Lieutenant, July 29th, 1895; Surgeon-Captain, July 29th, 1898. The war records of such as are given in the Army Lists are as follows: Major King—Tirah campaign, 1897-8 (medal); operations against the Ogaden Somalis in Jubaland, British East Africa, in 1901 (medal with clasp); South African war, 1902 (Queen's medal with three clasps). Major Standage—Uganda, 1897-9, including actions at Jeruba in April and August, 1898, and operations in Unyoro in June and July, 1898 (medal with clasp). Major Gibbs—Operations in Somaliland, East Africa, in 1903-4 (medal with clasp). Major Blenkinsop—Tirah campaign, 1897-8 (medal with clasp); China war, 1900, including the relief of Peking (medal with clasp); operations in Somaliland, East Africa, in 1903-4, including the action at Jidballi (mentioned in dispatches, medal with two clasps). Major Watson—Tirah campaign, 1897-8 (medal with two clasps); China war, 1900 (medal).

The following, all of the R.A.M.C., are appointed Sanitary Officers in the Divisions named:—Captain H. A. Davidson, M.B., 1st (Peshawur) Division; Major B. H. Scott, 2nd (Rawal Pindi) Division: Lieutenant-Colonel J. R. Forrest, 3rd (Lahore) Division; Lieutenant-Colonel R. L. R. Macleod, M.B., 4th (Quetta) Division; Lieutenant-Colonel H. P. G. Elkington, 5th (Mhow) Division; Lieutenant-Colonel J. Meek, M.D., 6th (Poona) Division; Captain P. S. Lelean, 7th (Meerut) Division; Major J. C. Morgan, 8th (Lucknow) Division; Major G. Raymond, M.B., 9th (Secunderabad) Division; Captain J. H. Brunskill, M.B., Burmah.

VOLUNTEER RIFLES.

Surgeon-Captain S. L. Potter, 1st Volunteer Battalion the King's Own (Yorkshire Light Infantry), resigns his commission, July 23rd.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Junior House Surgeon. Salary, £50 per annum. (2) Locum Junior House Surgeon.

BUXTON: DEVONSHIRE HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon Salary, £100 and £70 per annum respectively.

CAIRO: KASR EL AINY HOSPITAL.—Resident Medical Officer. Salary, £250 per annum.

CARDIFF INFIRMARY.—House-Surgeon. Honorarium of £30

CARLISLE: CUMBERLAND INFIRMARY.—Male Resident Medical Officer. Salary, £80 per annum.

CARLOW DISTRICT ASYLUM.—Resident Medical Superintendent. Salary, £350 per annum.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—(1) Medical Officer to Casualty Department; salary, £100 per annum. (2) Second Medical Officer to Casualty Department; salary, £40 per annum. (3) House-Surgeon; honorarium of £25, on six months' service.

GLOUCESTER GENERAL INFIRMARY.—Male Assistant House-Surgeon. Salary, £30 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon. Salary at the rate of £90 per annum.

HULL ROYAL INFIRMARY.—Casualty House-Surgeon. Salary, £50 per annum.

HULL ROYAL INFIRMARY.—Honorary Physician.

LEICESTER INFIRMARY.—Assistant House-Surgeon. Salary, £50 per annum.

LEICESTER: ISOLATION HOSPITAL.—Resident Medical Officer. Salary, £120 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Three House-Physicians. (2) Two House-Surgeons. Salary at the rate of £60 per annum.

LIVERPOOL UNION.—Assistant Medical Officer at Workhouse. Salary, £80 per annum.

LONDON TEMPERANCE HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant Resident Medical Officer. Honorarium at the rate of £75 and £52 10s. per annum respectively.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon. Salary at the rate of £80 per annum.

METROPOLITAN HOSPITAL, N.E.—(1) House-Physician, (2) House-Surgeon, (3) Resident Anaesthetist, (4) Assistant House-Physician, (5) Assistant House-Surgeon. Salary (1) (2) (3), £40 per annum; (4) (5) £20 per annum.

MIDDLESEX COUNTY ASYLUM, S.W.—Fourth Assistant Medical Officer. Salary, £150 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION, Hampstead.—Junior Resident Medical Officer. Honorarium £50 per annum.

NORTHAMPTON GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL, —House-Physician. Salary, £50 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum.

ROYAL DENTAL HOSPITAL, W.C.—Demonstrator of Practical Dental Surgery. Stipend, £40

SALFORD: BOROUGH FEVER HOSPITAL.—Assistant Medical Officer. Salary, £150 per annum.

SALFORD UNION INFIRMARY.—Male Resident Medical Officer. Salary, £130 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior House-Surgeon. Salary, £100 per annum.

SHEFFIELD UNION HOSPITAL.—Resident Assistant Medical Officer. Salary, £30 per annum.

SOUTHWARK UNION INFIRMARY.—Second Assistant Medical Officer (Male). Salary, £100 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon. Salary, £40 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon (Male). Salary at the rate of £50 per annum.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck Street, W.—Honorary Registrar and Pathologist.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

YORK DISPENSARY.—Two Resident Medical Officers (Male). Salary, £120 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces vacancies at Coldstream, co. Berwick; Lauder, co. Berwick; Penkridge, co. Stafford.

APPOINTMENTS.

Allen, L. L., M.R.C.S., L.R.C.P., Junior Medical Officer in the Lunacy Department, New South Wales.

Ash, Edwin L., M.B.Lond., M.R.C.S.Eng., Clinical Assistant at Great Northern Central Hospital, London, N.

Ball, W. Girling, F.R.C.S., Assistant Surgeon to the City of London Truss Society.

Buchanan, J. D., M.B., B.Ch., Senior Assistant Resident Medical Officer of Salford Union.

Collins, E., M.R.C.S., L.R.C.P., District Medical Officer of Bishop's Stortford Union.

Cressy, G. J., L.R.C.P.I., L.R.C.S.I., District Medical Officer of the Guildford Union.

Gorham, P. C., L.R.C.P., L.R.C.S., Certifying Factory Surgeon for the Clifden District, co. Galway.

Ellison, Francis Charles, M.D.Dub., Resident Medical Superintendent, Mayo County Asylum, Castlebar.

Gask, G. E., F.R.C.S., Surgeon to the City of London Truss Society.

Hebb, J. H., M.B., B.Ch.Oxon., B.A., District Medical Officer of Bicester and Headington Unions.

Hopgood, T. F., L.R.C.P., M.R.C.S., L.M., Medical Referee under the Workmen's Compensation Act, 1906, for the County Court Circuit No. 2.

Hustler, G. H., M.B., Ch.B.Leeds, Government Medical Officer for Fiji.

Lawson, T. C., M.R.C.S., District Medical Officer of Stratton Union.

Mair, Gavin D., M.B., B.Ch., Resident Medical Officer, Royal Albert Hospital, Devonport.

Paul, V. G. J., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Tendring Union.

Ridley, T., M.B.Melb., Assistant Resident Medical Officer of the Midwifery Department of the Women's Hospital, Melbourne.

Walford, H. R., M.R.C.S., L.R.C.P., Assistant Surgeon to the Coventry and Warwickshire Hospital, Coventry.

Webb, A. B., M.B., Health Officer for the Shire of Grenville, Victoria, vice J. B. Donaldson, L.R.C.P., resigned.

Wilkins, Eric M., M.D., M.R.C.S., appointed Assistant Medical Officer to the Metropolitan Asylums Board.

Williams, E. G. H., M.R.C.S., L.R.C.P., District Medical Officer of the Droitwich Union.

St. Thomas's Hospital.—The following gentlemen have been selected as House Officers:

Casualty Officers: (Senior) W. O. Sankey, M.B., B.S.Lond., M.R.C.S., L.R.C.P.; (Junior) C. M. Page, M.B., B.S.Lond., M.R.C.S., L.R.C.P.

Resident House-Physicians: G. G. Butler, B.A.Cantab., M.R.C.S., L.R.C.P.; S. L. Walker, B.A., B.C.Cantab., M.R.C.S., L.R.C.P.; C. E. Whitehead, B.A.Cantab., M.R.C.S., L.R.C.P. (Extension); H. G. Bennett, M.B., B.S.Lond., M.R.C.S., L.R.C.P. (Extension); A. L. Loughborough, M.R.C.S., L.R.C.P.

House-Physicians to Out-patients: W. H. R. Sutton, B.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P. (Extension); S. Churchill, B.A.Cantab., M.R.C.S., L.R.C.P. (Extension); B. T. Parsons-Smith, M.R.C.S., L.R.C.P.; A. J. S. Pinchin, M.B., B.S.Lond., M.R.C.S., L.R.C.P.

Resident House-Surgeons: H. J. Nightingale, M.B., B.S.Lond., M.R.C.S., L.R.C.P.; H. R. Unwin, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.; G. M. Huggins, M.R.C.S., L.R.C.P.; F. M. Neild, M.B., B.S.Lond., M.R.C.S., L.R.C.P.

House-Surgeons to Out-patients: H. H. Carleton, B.A., M.B., B.Ch.Oxon.; R. E. Todd, M.B., B.S.Lond., M.R.C.S., L.R.C.P.; W. R. Bristow, M.R.C.S., L.R.C.P.; H. E. T. Dawes, B.A.Cantab., M.R.C.S., L.R.C.P.

Obstetric House-Physicians: (Senior) F. S. Hewett, B.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.; (Junior) H. B. Whitehouse, M.B., B.S.Lond., M.R.C.S., L.R.C.P.

Ophthalmic House-Surgeons: (Senior) A. S. Burgess, M.A.Cantab., M.R.C.S., L.R.C.P.; (Junior) A. I. Cooke, B.A., B.C.Cantab.

Special Departments: (Throat) R. G. Bingham, M.R.C.S., L.R.C.P.; A. W. C. Drake, B.A.Cantab., M.R.C.S., L.R.C.P. (Skin) E. C. Sparrow, B.A.Cantab., M.R.C.S., L.R.C.P. (Extension); J. F. Windsor, B.A.Cantab., M.R.C.S., L.R.C.P. (Ear) W. H. G. Verdon, M.R.C.S., L.R.C.P.; W. Patey, M.R.C.S., L.R.C.P.

Children's Surgical: W. A. Morton Jack, M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

WALES.—On August 22nd, at Downham Market, to Dr. and Mrs. E. Garneys Wales, a daughter.

MARRIAGES.

BALDWIN—CASSAN.—On August 22nd, at Gainsborough, by the Rev. Francis Baldwin, vicar of Holy Trinity Church, Gainsborough, father of the bridegroom, assisted by the Rev. R. Barker, rector of Fulletly, Edward Baldwin, 121st Pioneers, to Gwendolen Mary, only daughter of Theodore Cassan, M.R.C.S., L.R.C.P., of Gothic House, Gainsborough.

DOWDEN—OSWALD.—At St Mary's Cathedral, Edinburgh, on August 21st, by the Bishop of Edinburgh (father of the bridegroom), John Wheeler Dowden, F.R.C.S.E., to Edith Georgiana, younger daughter of the late Surgeon-General H. R. Oswald, I.M.S.

SEWELL—PATTON.—At St. Michael's Church, South Shields, on August 8th, by the Rev. C. E. Adamson, J. Scott Sewell, M.D., Horwich, Lancashire, eldest son of James F. Sewell, Mount Pleasant, Hexham, to Emily, eldest daughter of Thomas Patton, Westoe Parade, South Shields.

DEATH.

ANTROBUS.—On August 22nd, at The Chase, Great Malvern, Edmund Antrobus, M.D., aged 45.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics; *X* Rays. 2.30 p.m.: Operations. Monday and Thursday, 2 p.m.: Diseases of the Eye. Tuesday and Friday, 10 a.m.: Gynaecological Operations. 2 p.m., Diseases of Throat, Nose, and Ear; also Wednesday and Saturday, 10 a.m. Tuesday and Friday, 2 p.m.: Diseases of the Skin. Wednesday, 10 a.m.: Diseases of Children. Lectures—Monday, 12 noon, Pathological Demonstration. At 5 p.m., Infection from the Mouth. Wednesday, 5 p.m., Some Intense Forms of Inflammation of the Eye, and Their Treatment.

BOOKS, ETC., RECEIVED.

The Major Symptoms of Hysteria. By P. Janet, M.D. New York: The Macmillan Co. 1907.

Oxford Medical Publications. London: H. Frowde, and Hodder and Stoughton. 1907:

Prostatic Enlargement. By C. S. Wallace, M.B., B.S., F.R.C.S.

Bacteriology. By L. S. Dudgeon, M.R.C.P. 12s. 6d.

Diseases of the Male Generative Organs. By E. M. Corner, M.A., M.B., B.Sc., M.C., F.R.C.S. 5s.

A System of Medicine. Edited by W. Osler, M.D., F.R.S., and T. McCrae, M.D., F.R.C.P. Vol. i and Vol. ii. 24s. per vol.

Essentials of Milk Hygiene. By C. O. Jensen. Translated by L. Pearson. Philadelphia and London: J. B. Lippincott Co. 7s. 6d.

The Holidays: Where to Stay and What to See. London, by Walter Hill. 1s.

Sea-Sickness: its True Cause and Cure. By H. N. Barnett, F.R.C.S. London: Baillière, Tindall, and Cox. 1907. 1s. 6d.

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Diseases of Infancy and Childhood. By L. Fischer, M.D. Philadelphia: F. A. Davis Co. 1907. $6.50.

*** In forwarding books the publishers are requested to state the selling price.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
SEPTEMBER.	
1 Sunday ...	
2 MONDAY ...	
3 TUESDAY ...	COVENTRY DIVISION, *Midland Branch*, Special Meeting, Coventry and Warwickshire Hospital, 8.30 p.m.
4 WEDNESDAY	
5 THURSDAY...	
6 FRIDAY ...	
7 SATURDAY...	
8 Sunday ...	
9 MONDAY ...	
10 TUESDAY ...	
11 WEDNESDAY	
12 THURSDAY...	
13 FRIDAY ...	
14 SATURDAY...	
15 Sunday ...	
16 MONDAY ...	
17 TUESDAY ...	
18 WEDNESDAY	
19 THURSDAY...	
20 FRIDAY ...	
21 SATURDAY...	
22 Sunday ...	
23 MONDAY ...	
24 TUESDAY ...	
25 WEDNESDAY	
26 THURSDAY...	EAST ANGLIAN BRANCH, Autumn Meeting, Cromer.
27 FRIDAY ...	
28 SATURDAY...	
29 Sunday ...	
30 MONDAY ...	
OCTOBER.	
1 TUESDAY ...	
2 WEDNESDAY	
3 THURSDAY...	
4 FRIDAY ...	
5 SATURDAY...	
6 Sunday ...	
7 MONDAY ...	
8 TUESDAY ...	
9 WEDNESDAY	
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22 TUESDAY ...	
23 WEDNESDAY	
24 THURSDAY...	
25 FRIDAY ...	
26 SATURDAY...	
27 Sunday ...	
28 MONDAY ...	
29 TUESDAY ...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 7TH, 1907.

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THE INSECURITY OF TENURE OF PUBLIC HEALTH APPOINTMENTS.

SOUTH ESSEX DIVISION, EAST ANGLIAN BRANCH.

As was stated last week (JOURNAL, page 538), the South Essex Division of the British Medical Association, so soon as the decision of the Town Council of Southend-on-Sea not to reappoint Dr. Nash as medical officer of health on the same terms became known, summoned a meeting of the members of the profession residing in Southend and the immediate neighbourhood. At this meeting a resolution of confidence in Dr. Nash and of protest against the action of the Town Council was unanimously adopted and afterwards extensively signed. It was presented in the form of a memorial.

SPECIAL MEETING OF THE TOWN COUNCIL OF SOUTHEND-ON-SEA.

A special meeting of the Southend Town Council was held on September 3rd to consider a letter from the Local Government Board with reference to the post of medical officer of health. At the quarterly meeting of the Council a fortnight previously the Health Committee recommended the reappointment of Dr. J. T. C. Nash for three years at a salary of £600 a year, £80 of which has been allocated to the Sanatorium account. To this an amendment was carried, by 12 to 6 votes, that the salary be £500, and that the appointment be for one year only. The Town Clerk at once communicated this to Dr. Nash, who promptly declined to accept the altered terms, but subsequently was persuaded by Alderman J. Francis, Chairman of the Health Committee, to continue the duties for three months, the Council deciding to advertise in the meantime for a medical officer at £500 a year.

Several of the members present at the quarterly meeting were away this week, the total muster being 18—three-fourths of the whole Council. The portion of the Council Chamber set apart for the public was crowded, and the burgesses frequently gave expression to their feelings during the debate, which extended over two hours, and was characterized by personal allusions of a not pleasant character. These remarks mainly applied to members of the Council, and throughout the discussion not the slightest suggestion was made that Dr. Nash was inefficient or had in the slightest way neglected his duties. From time to time the onlooking public manifestly showed that it regarded Dr. Nash as capable and conscientious, and it also indicated in a very pronounced way that the conduct of the Council towards him was not approved by it.

At the outset the TOWN CLERK read the following letter from the Local Government Board:

Local Government Board,
Whitehall, S.W.,
26th August, 1907.

SIR,

I am directed by the Local Government Board to acknowledge the receipt of your letter of the 21st instant, relative to the arrangements proposed by the Town Council of Southend-on-Sea, for the discharge of the duties of Medical Officer of Health in the Borough.

In reply, I am to state that, in the circumstances, the Board sanction the reappointment of Dr. J. T. C. Nash as Medical Officer of Health to the 19th November, 1907, inclusive, with a salary at the rate of *£520 per annum for his services.

The Board, however, wish to be fully informed of the reasons for the alterations in the terms of the appointment proposed by the Town Council, and whether the Council have been dissatisfied with the manner in which Dr. Nash has performed his duties as Medical Officer of Health. The Board also direct me to inquire whether the Town Council consider that the appointment of a new Medical Officer of Health is likely to promote the best interests of such an increasingly important town as Southend.

I am, Sir,
Your obedient Servant,
NOEL T. KERSHAW,
Assistant Secretary.

The Town Clerk.

The Town Clerk next reported that in accordance with the Council's resolution he had sent advertisements inviting applications for the post of medical officer to the usual journals, the BRITISH MEDICAL JOURNAL and the *Lancet*, but both had declined to insert the advertisements owing to the strained relations between the Council and Dr. Nash. Some correspondence had taken place between the Council and the Manager of the BRITISH MEDICAL JOURNAL, who had stated that the advertisement could not be inserted because in the same issue for which the advertisement was ordered there was also a notice about Southend in the "Warning Notices" under Medical Officers of Health. This correspondence led to a letter being received from the Medical Secretary of the British Medical Association, who wrote *inter alia:*

The BRITISH MEDICAL JOURNAL, as you are doubtless aware, is the property of the British Medical Association, and it is the rule of that Association not to insert advertisements in the JOURNAL which are regarded as prejudicial to the honour or interests of the medical profession.

With respect to appointments, the rule is not to insert advertisements of appointments which it is considered that medical practitioners would be unwise to accept on professional grounds. Medical practitioners of good professional standing are in the habit of looking upon advertisements in the BRITISH MEDICAL JOURNAL and *Lancet* as affording some guarantee of the desirability of the appointments advertised, or at all events that the Association is unaware of any definite reasons for suspecting them to be undesirable.

*This does not include the £80 per annum in respect of the Sanatorium.

It is a matter for regret that the action of the Corporation of Southend has placed it beyond the power of the Association to give such a guarantee or assurance as to the appointment of M.O.H. of that Borough.

The memorial from thirty-four local medical practitioners, published in last week's issue of the British Medical Journal, was also read.

Councillor Dr. Forsyth mentioned that the memorial was almost unique, because the medical profession, as such, did not usually interfere in matters affecting domestic or national politics. Moreover, the local practitioners had not always seen eye to eye with Dr. Nash, and therefore questions of personal friendship had not influenced them to send the memorial. Their conduct had been actuated by the knowledge that Dr. Nash had rendered splendid service to the town.

Considerable discussion took place as to the regularity of dealing with the subject as a matter of "urgency" under the Standing Orders, and the Town Clerk advised that nothing effective could be done unless the Standing Orders were suspended. He suggested, however, that the Council could express an opinion at that meeting that the reappointment of Dr. Nash on the old terms was desirable, and on the strength of such an opinion the necessary steps could be taken to ratify it at the next meeting.

Councillor Hubbard thereupon moved:

> That the Local Government Board be informed that this Council know of no reasons for the alteration of the terms of the appointment of the Medical Officer of Health; are satisfied with the manner that Dr. Nash has fulfilled his duties; and do not consider the appointment of a new Medical Officer of Health likely to promote the best interests of the town.

Councillor G. Allen seconded, and spoke of the untiring services of Dr. Nash in stamping out small-pox some years ago, when he (the speaker) was chairman of the Health Committee.

In the course of the subsequent discussion Councillor H. Garon admitted that four years ago, after Dr. Nash had inspected the kitchen at his restaurant, he got "warm" and over the telephone told Dr. Nash something in "plain English."

Councillor Doody remarked that at the previous meeting, when he suggested that Councillor Garon had a personal prejudice against Dr. Nash and had sworn at him over the telephone, Councillor Garon said it was not true. Councillor Doody thought the public ought to know what had taken place between Dr. Nash and Councillor Garon, and therefore he read the following letter:

August 18th, 1903.

Dear Sir,—In the course of a systematic inspection with the Inspector of Nuisances, I had occasion to visit and inspect the restaurant kitchen on your premises, in accordance with the provisions of the Public Health and Factory and Workshops Acts. Later on I was rung up on the telephone, and some person used disrespectful and self-condemnatory language, even to the extent of an attempt of intimidation.

As I understand that the proprietor of Garon's Restaurant and the Captain of the Fire Brigade are one and the same person, I find it very difficult to believe that it was you yourself who so far forgot self-respect and the respect due to a chief official of the Corporation. I am content to assume that it was some irresponsible underling. In any case, I am one of the last persons to be intimidated from doing my duty; and, in common with other restaurant kitchens, yours will in due course be visited from time to time, either by myself or one of my inspectors.

There were one or two little matters in connexion with your kitchen which could very easily be remedied, but which are not easy to explain in writing. Mr. Whur will call on you one of these days and explain what is wanted.—Yours faithfully,

J. T. C. Nash,
Medical Officer of Health.

Mr. H. Garon,
Southend Market, Southend-on-Sea.

Councillor Garon: The windows wanted a little cleaning; a little bit of dirt—that's all.

Councillor Hubbard's resolution was carried by 9 to 7 votes, and Alderman Francis said that at the next meeting the Health Committee would again recommend the appointment of Dr. Nash on the terms as heretofore.

Bournemouth Division: Dorset and West Hants Branch.

At a special meeting of the Bournemouth Division of the Dorset and West Hants Branch of the British Medical Association,* the Honorary Secretary reported that Dr. Auld had resigned the appointment of medical officer to the workhouse infirmary, Wimborne, on the ground that the salary, £30 a year, to include drugs and surgical appliances, was inadequate. The medical men of Wimborne had unanimously agreed to support Dr. Auld, and had asked that the salary should be £40 a year, the guardians to supply drugs and appliances. The guardians first of all advertised the appointment at £25 a year, all found, but having received no application, raised their offer to £35, all found, and this was accepted by Mr. Charlton, from outside the district. The local medical men at a special meeting had already drawn up a letter to the Board of Guardians refusing to recognize Mr. Charlton professionally, and the following resolutions were adopted by the Division:

> That this Division considers a minimum salary of £40 a year (exclusive of drugs and appliances) a reasonable one for the post of medical officer to the Workhouse Infirmary at Wimborne.
>
> That the Division approves of the attitude of the medical men of Wimborne towards Mr. Charlton as expressed in their letter to the guardians of March 22nd.

We now learn that about two months ago Mr. Charlton was obliged to resign, and that the Board of Guardians applied to the Local Government Board requesting it to sanction his reappointment. The Local Government Board refused its sanction and suggested that a slight increase in salary would end the dispute with the local medical men. The guardians then advertised again at £35, but had no applications. The guardians at their last meeting, rather than raise the salary to £40 (the sum asked by the Division), decided to terminate their vaccination contracts, and the rural district council (substantially the same body) gave notice to its medical officer of health (Mr. Parkinson), who has held the post for twenty-five years. The sole object appears to be that the local authorities may be in a position to offer a substantial salary by combining the appointments, and so by inducing an outsider to come in, find a way out of the difficulty with regard to the medical officership to the workhouse. It is obvious that any one applying for these posts will be acting against the declared opinion of the profession in the locality. We understand that Dr. E. Kaye le Fleming, St. Margaret's, Wimborne, Honorary Secretary of the Bournemouth Division, will be ready to answer inquiries.

Sir,—In the leading article in the Journal of August 31st it is noticed that the Chairman of the Health Committee of Southend-on-Sea has stated that the present system of appointment for a limited period only, instead of permanently, is imposed on the Corporation by the requirements of the Local Government Board. If this view be held it seems to me desirable that it should be corrected. As long ago as 1875 the Legislature appeared to recognize the importance of securing the medical officer of health in his office, subject to an appeal to the Local Government Board, and I have no doubt that they thought that this was accomplished by Section 191 of the Public Health Act, which provided that the Board should have the same powers in regard to the appointment, tenure of office, etc., of this official that it already had in the case of the district medical officer of a union, and these powers were made to apply in all cases where a moiety of the salary was paid out of the central funds. This obvious intention of Parliament has been defeated by local authorities adopting the very simple plan of making the appointment for a limited period only. And this evasion of the spirit of the Act is supported by the sanction of the Local Government Board.

The object of the section would have been better accomplished if nothing had been said about tenure, in which case the medical officer of health and inspector of nuisances would have been appointed in the ordinary way, just like the other officers; the question of reappointment would never have arisen; appointments could then only have been terminated by notice, and this could scarcely occur without reason given.

The remedy appears to be entirely in the hands of the Local Government Board; it has simply to discontinue its practice of sanctioning appointments made with the

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* Supplement, April 20th, 1907, p. 199.

deliberate intention of evading this provision of the Public Health Act.—I am, etc.,

Coventry, Aug. 31st. E. H. Snell.

*** The operative part of Clause 191 of the Public Health Act, 1875, to which Dr. Snell refers, is as follows:

A person shall not be appointed medical officer of health under this Act unless he is a legally qualified medical practitioner; and the Local Government Board shall have the same powers as it has in the case of a district medical officer of a union with regard to the qualification appointment duties salary and tenure of office of a medical officer of health or other officer of a local authority any portion of whose salary is paid out of moneys voted by Parliament, and may by order prescribe the qualification and duties of other medical officers of health appointed under this Act.

The General Order of the Local Government Board as to the appointment, tenure of office, salary, and duties of medical officers of health and inspectors of nuisances, dated March 23rd, 1891, contains provisions with regard to the appointment and tenure of office of a medical officer of health, part of whose salary is to be repaid by the Local Government Board or the county council. Articles 1 and 2 provide that before any appointment is made its terms shall be approved by the Local Government Board. Article 3 provides that the vacancy must be advertised, and that the advertisement must contain a statement of the amount of salary proposed to be assigned. Article 4 is as follows:

4. Every officer shall be appointed by a majority of the members present, and voting on the question, at a meeting of the sanitary authority consisting of more than three members, or by three members, if no more be present, but such appointment shall be subject to our approval. The sanitary authority shall specify in the resolution making the appointment, the term for which, with our approval, the appointment is made.

Article 8 specifies the conditions under which an officer may be reappointed. Article 10 is as follows:

10. Every officer shall continue to hold office for such period as the sanitary authority may, subject to our approval, determine at the time of his appointment, or until he die, or resign, or be removed by such authority with our assent, or be removed by us, or be proved to be insane by evidence which we shall deem sufficient.

Sir,—I read with great interest the account given in last week's British Medical Journal of the action of the Southend Town Council in voting a reduction in the salary of their able Medical Officer of Health. I am moved to sympathy and fellow-feeling with Dr. Nash, having experienced very similar treatment myself, though in my case the proposition to reduce my salary from £600 to £500 after fifteen years' service is at present in the stage of a minute made by an "Expenditure Enquiry Committee" which has not yet been voted on by the full Council. Possibly more may, therefore, be heard of it at a later date.

At Cheltenham, as apparently at Southend, no complaint is made of my conduct, although I have been subjected to the shabbiest treatment possible at the hands of those who have been for some time very intent upon getting me turned out of my post, such, for instance, as having had spies set to watch me, and attempts made to obtain a cause of complaint against me by other underhand means.

It would be advantageous as giving the Local Government Board a clearer understanding of the position of the medical officer of health in relation to the Council he is supposed to serve, if Dr. Nash would inform them of how the members of the Southend Council and their more immediate friends and relations have been affected by the action of himself and his department in regard to their trades, properties, etc., for I fully expect some such cause for the behaviour of the Southend Council has been in operation. This I judge from the likelihood of the case at Southend being analogous to that at Cheltenham. The last time I counted the number of members of the Cheltenham Town Council who had had notices served upon them from my department for the execution of sanitary works they amounted to more than two thirds of the whole Council.

In the case of Southend you point the moral of the necessity of giving security of tenure to medical officers of health, but I can assure you, Sir, that more is wanted than that. The public health officer must be removed from the control of the Local Council altogether. It happens that I am appointed without term, and this may prevent either my discharge or my salary being reduced, but it does not prevent local people, including some of those upon the town council, from attempting to do me a personal injury in return for an active performance of duty on behalf of the public. Almost every act of the medical officer of health and inspector of nuisances is directed against individual interests as a matter of course, and unless we are protected against the malice of those against whom we have to take action how can the public health service be satisfactorily performed? As it is at present, those against whom we take action are in the position to deny us that to which we are justly entitled, and the only way we are able to get it is by making ourselves conformable to the desires of the members of the council, and seeking to maintain friendly relations with them at all costs. The determined and energetic action of the public health officer is at present very disadvantageous to himself, and far from good public service bringing him greater appreciation and increased remuneration, the result is the exact opposite. The harmful effect is manifest at the present time not so much in the occasional refusal to reappoint a medical officer of health, as in the loss of interest and destruction of honest effort on the part of the officers who still continue to hold office in the numerous badly administered sanitary districts throughout the country.—I am, etc.,

J. H. Garrett, M.D., D.P.H.,
September 2nd. Medical Officer of Health for the Borough of Cheltenham.

Sir,—The action of the Town Council of Southend-on-Sea, as detailed in the British Medical Journal of August 31st, in declining to re-elect their medical officer of health at his old salary on the termination of his six years' appointment, without previous notice and without alleged failure of duty on his part, causes no surprise to those in the public health service, but only leads to a recurrence of the painful sense of humiliation in which the general body of the medical profession must share.

Frequent as these acts of injustice are shown to be by a perusal of the columns of the daily and of the medical press, the numbers thus made public fall short of the truth. In a somewhat limited sphere three other instances have recently been communicated to me by the medical officers concerned, in which they were threatened with non-reappointment at the termination of the annual period for which they had been elected; and in each instance without sufficient reason. In two cases no competitor was forthcoming, and after a little delay the previous medical officer of health was eventually re-elected. The third lost his appointment for no adequate cause. None of these three cases have been the subject of comment in the press. I cannot doubt that the aggregate number of such cases would prove to be large, if only they could be ascertained; and I know that the feeling of insecurity thus engendered is responsible for much of the inefficient work, especially in rural and small urban districts.

On the other hand, inefficient medical officers of health and sanitary inspectors, taking their cue from councils who wish little done, enjoy practical security of tenure. Even where the Local Government Board declines to sanction an appointment, and refuses to allow part of the salary to be paid out of the Exchequer contribution account, the inefficient officer may be undisturbed for years or for life. It is the capable, efficient, and zealous officers who lose their appointments, and the public health suffers. It is difficult to discern any permanent benefit to the public in such measures, even in the direction of economy.

It is doubtful whether any of these cases, unless the most flagrant, reach the President of the Local Government Board (there is no *Board*), and the official staff are, to say the least, very unsympathetic.

The remedy is the same as in the case of the Army Medical Service a few years ago. Argument, agitation, deputations led to no improvement. The leaders of the profession and the teachers in the medical schools advised students about to become qualified to avoid the Army Medical Service. The candidates for appointments soon fell to less than the number of vacancies. Competitive examinations were abandoned. Vacancies could not be filled, and the redress of grievances speedily followed. There is no other way.

If the student of to-day be systematically warned at his medical school of the insecurity of the public health service, and of the humiliations to which he will probably be exposed, and the taking of special public health qualifications be discouraged, reasonable security of tenure must follow in a very few years. But so long as there are plenty of candidates for every vacancy, *however caused*, it is mere waste of time and money to promote *private* Bills in Parliament for security of tenure. Boycotting of individuals is undesirable and inefficient. The public has not been convinced that there is any *serious* demand for security of tenure; and, unfortunately, at present they are right, although medical literature shows that the subject has been discussed for at least thirty years, and was considered "threadbare" as long ago as 1880.—I am, etc.,

September 4th. D.P.H.

THE REFERENDUM BY THE CENTRAL COUNCIL: AS TO THE MODE OF USING THIS POWER OF REFERRING QUESTIONS TO THE MEMBERS.

By E. Rowland Fothergill, M.B., B.S.Durh.,
Honorary Treasurer, Wandsworth Division, British Medical Association.

May I first of all quote the suggested amendment to Ordinance 17? It is:

The Council at their said meeting may either approve the resolution or refer it back to the Representative Meeting for reconsideration, indicating clearly their reasons for so doing. If the resolution be again sent back unaltered, or altered, in the opinion of the Council, in an unsatisfactory manner, the Council may then determine on a Referendum. The like procedure shall also apply to any decision of the Representative Meeting other than the resolution.

The Representative Body in May last affirmed as an ordinance in the Charter a similar provision for a Referendum as is now in force under our present constitution, but with one alteration. This alteration was made in order to insure that no future Central Council that might be antagonistic to the wishes of the Association should have power to hang up any decision of the Representatives of the members by availing itself of a legal quibble due to the mode of drafting the ordinance.

The amendment suggested above leaves that loophole.

The Central Council now proposes another alteration to that ordinance, whereby all decisions of the Representative Body could be referred back to that body in the first instance before the expense of a Referendum to the Divisions is incurred.

It is to be regretted that during the two years or more that the draft Charter has been under consideration the Central Council has not brought forward their suggestion now made, and so have avoided the consequent delay there will be in obtaining the Charter.

But as the members have been appealed to, the Central Council's suggestion should be well considered.

The primary object of a Referendum would seem to be to prevent important negative or positive decisions arrived at by the Representative Body becoming binding on the Association in a case where an opportunity to consider the principle involved has *not* previously been given to the members in their Division meetings.

To take a Referendum on any subject that has been previously laid before the members, and to which a direct Yea or Nay only is required, would be absurd, and an abuse of the powers vested in the Central Council, providing always that the voting of the Representatives has been overwhelmingly in one direction.

It must be remembered that the great majority of the subjects that come before the Representative Body have to be published at least two months before the Annual Representative Meeting. During this period each Branch Council and Division has the opportunity of considering them, and of instructing its Representative how to vote.

The members of the Central Council are also members of the Representative Body, and can there individually express not only their own private opinion, but also that of the Branch they represent, if so instructed.

In addition to this the Central Council as a body could and should consider during these two months all matters so published, and through a deputed Representative, or by means of a memorandum, can express its corporate opinion at the Representative Meeting. Not having availed itself of this right in the past is no argument in favour of the above amendment to the Ordinance, but rather for a reorganizing of the Council's mode of procedure in such matters.

Thus we have it that there is no snatch vote possible so far as all questions that have been duly advertised are concerned; and there would, therefore, seem to be no necessity for a Referendum as to these, providing an overwhelming vote is required in order to make any decision effective.

On the other hand, with regard to subjects that have *not* been duly advertised, and on which neither the members nor the Central Council have had an opportunity to form an opinion, the tendency of the Representative Body has been to avoid coming to any decision, and to refer such questions to the Divisions.

But did the Representative Body formulate a decision, and the Central Council not agree with it, then there should be a power given to the Central Council, as suggested in their amendment, to ask the Representative Body to reconsider their decision, submitting at the same time an explanatory memorandum; and if the second reply were similar to the first, then a Referendum should be possible.

Negative decisions, when the voting is close, should be considered by the Central Council equally with positive. Curiously enough, the Representative Body in May decided by an odd vote not to include dentists in any permissive power for a Benevolent Fund inserted in the Charter. This question might well have formed a subject for a Referendum.

It is essential that, when dealing with questions referred to in Ordinances 15, 16, and 17, there should be full attendances of the Council, as also of the Representative Body. Snatch voting in either assembly should be impossible.

Thus, it would seem to be desirable that a distinction should be made between subjects duly advertised and subjects, so to speak, sprung on the Representative Meeting.

But the effect of the amendment as proposed by the Central Council would be to hang up all decisions for a year, and even then, were a Referendum ultimately taken, at least another six months would be wasted. Such a catastrophe should be absolutely avoided with regard to duly advertised questions.

There is, however, a means by which the suggestion of the Central Council to refer back to the Representative Body any of its decisions could be carried out without causing undue delay.

Ordinance 17, giving the Council power to determine on a Referendum, allows it to meet at any time within three months after the decision has been come to by the Representative Body. The present Articles say seven days. As a matter of fact, the Council can and does meet next morning during the Annual Representative Meeting, and the minutes of each day's Representative Meeting are submitted then to the Central Council. Also all the members of the Central Council should have been present at the previous day's Representative Meeting, and so cannot claim to be ignorant of what took place. That being so, it would seem that a matter of twenty-four hours at most is all that is required for the Central Council in which to make up its mind as to asking the Representative Body to reconsider any subject along with any memorandum the Council desires to submit to it.

If, after this further consideration, the vote of the Representative Body should go as it did originally, then the Central Council should have the power of a Referendum on subjects that have not been advertised, but should not have this power on matters that have been so advertised.

In this way snatch votes in small meetings of either Body should be impossible; we should have no development of the "House of Lords" domineering over the will of the members as expressed by their "House of Commons"; unreasonable delay would be avoided; vexatious referendums done away with; and the two Bodies would tend to work harmoniously.

The suggested amendments, therefore, to Ordinances 15, 16, and 17 would be as follows; and as these most probably will be before the Representative Body when they

next meet to consider the Charter, it would seem to be an advantage if the Divisions were to consider them at the same time as the Referendum.

That in order to make any resolution effective under Ordinances 15, 16, and 17,

(*a*) An attendance of at least two-thirds of the accredited Representatives should be necessary;

(*b*) A majority of two-thirds of the votes taken on a vote by card should be necessary;

(*c*) An attendance of at least two-thirds of the members of the Central Council should be necessary at any meeting called to consider any such question; with

(*d*) A majority of two-thirds of the votes taken on a vote by card at such meeting of the Council;

(*e*) The Central Council should hold such meeting within twenty-four hours of the resolution being passed by the Representative Body, and must then decide whether they will refer the subject for reconsideration (which must be done within twenty-four hours of coming to such a decision), or whether they will accept it as a decision of the Association;

(*f*) If the question is referred, and the subject-matter of such referred resolution has been duly published two months previously, it should only be necessary, in order that the resolution be carried and become a decision of the Association, for conditions (*a*) and (*b*) to have been fulfilled at the subsequent Representative Meeting.

(*g*) If the subject matter of such referred resolution has *not* been duly published two months previously, and on reference to the Representative Body it is again carried, conditions (*a*) and (*b*) being fulfilled, then the Central Council should meet again within seven days and decide if they will take a Referendum or allow the resolution to become a decision of the Association, conditions (*c*) and (*d*) having to be fulfilled by the Central Council if they decide on a Referendum.

(*h*) If a Referendum is taken, the report from Divisions outside the United Kingdom should be by cablegram duly certified by the President of the meeting at which the vote is taken.

The last paragraph in the alteration suggested by the Central Council to Ordinance 17 cannot be criticized, as no explanation accompanies it; and without such it would seem to be inexplicable.

The omission from Ordinance 17 of the words "does not truly represent the wishes of the Association" is most desirable, both from being too limiting and also as they reflect on the elected Representatives; but the phrase suggested by the Central Council is still more unfortunate, and will only tend by its usage to bad feeling between the two Bodies concerned. It is not required, and could well be omitted.

EARLY NOTIFICATION OF BIRTHS ACT.

THE following is the Division List on the amendment to omit medical practitioners from the scope of the Bill:

Friday, 23rd August, 1907.

Notification of Births Bill,—As amended (by the Standing Committee), *considered*:—

Another Amendment proposed to the Bill, in page 1, line 12, after the word "person," to insert the words "other than a medical practitioner:"—(*Lord Robert Cecil*:).

Question put, "That those words be there inserted in the Bill:"—The House *divided*: Ayes 19, Noes 87.

AYES.

Balcarres, Lord (C.), Chorley.
Bowles, G. Stewart (C.), Norwood.
Bull, Sir William James (C.), Hammersmith.
Cave, George (C.), Kingston.
Cooper, G. J. (L.), Bermondsey.
Corbett, C. H. (L.), Sussex, East Grinstead.
Craik, Sir Henry (C.), Glasgow and Aberdeen Universities.
Fell, Arthur (C.), Yarmouth.
Forster, Henry William (C.), Sevenoaks.
Harris, Frederick Leverton.
Horniman, Emslie John (L.), Chelsea.
Lamont, Norman (L.), Buteshire.
Napier, T. B. (L.), Faversham.
O'Brien, Patrick (N.), Kilkenny.
O'Connor, John (N.), Kildare North.
Rainy, A. Rolland (L.), Kilmarnock District.
Sherwell, Arthur James (L.), Huddersfield.
Stanley, Hon. A. Lyulph (L.), Cheshire.
Valentia, Viscount (C.), Oxford City.

Tellers for the Ayes, Lord Robert Cecil (C.), Marylebone East, and Mr. Masterman (L.), West Ham North.

NOES.

Adkins, W. Ryland D. (L.), Middleton.
Alden, Percy (L.), Tottenham.
Baker, Joseph A. (L.), Finsbury, East.
Bertram, Julius (L.), Hitchin.
Birrell, Right Hon. Augustine (L.), Bristol, North.
Bowerman, C. W. (Lab.), Deptford.
Branch, James (L.), Enfield.
Brigg, John (L.), Keighley.
Byles, William Pollard (L.), Salford, North.
Causton, Right Hon. Richard Knight (L.), Southwark, West.
Chance, Frederick William (L.), Carlisle.
Cherry, Right Hon. R. R. (L.), Liverpool, Exchange.
Clarke, C. Goddard (L.), Peckham.
Cleland, J. W. (L.), Glasgow, Bridgeton.
Clynes, J. R. (Lab.), Manchester, North-East.
Collins, Stephen (L.), Lambeth.
Cremer, Sir William Randal (L.), Haggerston.
Crooks, William (Lab.), Woolwich.
Dickinson, W. H. (L.), St. Pancras, North.
Elibank, Master of (L.), Peebles and Selkirk.
Essex, R. W. (L.), Cirencester.
Esslemont, George Birnie (L.), Aberdeen S.
Ferens, T. R. (L.), Hull East.
Fletcher, J. S. (C.), Hampstead.
Fuller, John Michael F. (L.), Westbury.
Gill, A. H. (Lab.), Bolton.
Gooch, George Peabody (L.), Bath.
Grant, Corrie (L.), Rugby.
Hazleton, Richard (N.), Galway Co. North.
Henderson, Arthur (Lab.), Durham.
Henderson, J. M. (L.), Aberdeen West.
Higham, John Sharp (L.), Sowerby.
Hobart, Sir Robert (L.), New Forest.
Howard, Hon. Geoffrey (L.), Eskdale.
Illingworth, Percy H. (L.), Shipley.
Jackson R. S. (L.), Greenwich.
Jones, William (L.), Carnarvonshire.
King, Alfred John (L.), Knutsford.
Lambert, George (L.), South Molton.
Lardner, James Carrige Rushe (N.), Monaghan, North.
Lever, A. Levy (L.), Essex, Harwich.
Lewis, John Herbert (L.), Flintshire.
Lloyd-George, Rt. Hon. David (L.), Carnarvon District.
Lundon, W. (N.), Limerick county.
Lupton, Arnold (L.), Sleaford.
Macdonald, J. M. (L.), Falkirk Burghs.
Mackarness, Frederic C. (L.), Newbury.
Macnamara, Dr. Thomas J. (L.), Camberwell North.
MacVeigh, Charles (N.), Donegal East.
M'Callum, John M. (L), Paisley.
M'Crae, George (L.), Edinburgh East.
Maddison, Frederick (Lab.), Burnley.
Morrell, Philip (L.), Henley.
Morton, Alpheus Cleophas (L.), Sutherlandshire.
Murray, James (L.), Aberdeenshire East.
Nannetti, Joseph P. (N.), Dublin, College Green.
Nicholson, Charles N. (L.), Doncaster.
Nolan, Joseph (N.), Louth North.
Norton, Captain Cecil William (L.), Newington West.
O'Connor, T. P. (N.), Liverpool, Scotland.
O'Grady, J. (Lab.), Leeds East.
Parker, James (Lab.), Halifax.
Pearce, Robert (L.), Staffs, Leek.
Pease, J. A. (L.), Saffron Walden.
Radford, G. H. (L.), Islington East.
Rees, J. D. (L.), Montgomery District.
Rickett, J. Compton (L.), Osgoldcross.
Robertson, J. M. (L.), Tyneside.
Robson, Sir William Snowdon (L.), South Shields.
Rowlands, J. (L.), Dartford.
Scott, A. H. (L.), Ashton-under-Lyne.
Seddon, J. (Lab.), Newton.
Seely, Colonel (L.), Liverpool, Abercromby.
Shaw, Right Hon. T. (L.), Hawick B.
Shipman, Dr. John G. (L.), Northampton.
Silcock, Thomas Ball (L.), Wells.
Sinclair, Right Hon. John (L.), Forfarshire.
Snowden, P. (S.), Blackburn.
Verney, F. W. (L.), Buckingham.
Vivian, Henry (L.), Birkenhead.
Walters, John Tudor (L.), Sheffield, Brightside.
Weir, James Galloway (L.), Ross and Cromarty.
White, J. D. (L.), Dumbartonshire.
Whiteley, George (L.), West Riding, Pudsey.
Wiles, Thomas (L.), Islington, South.
Wilson, P. W. (L.), St. Pancras, South.
Wilson, W. T. (Lab.), Westhoughton.

Tellers for the Noes, Mr. Acland (L.), Richmond, Yorks, and Mr. Gulland (L.), Dumfries District.

Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the Journal.*]*

NORTH OF ENGLAND BRANCH:

North Northumberland Division.

Social Meeting.—The annual social meeting of this Division was held on August 29th at Embleton. Members and their friends met at the residence of Dr. Waterson, where they were kindly received and entertained by Mrs. Waterson. Dunstanburgh Castle was then visited, and Dr. Waterson read a most interesting historical description of this ancient ruin and its association with many names closely connected with the history of England. Dr. Waterson also kindly acted as guide to the various remaining towers of the castle, which were examined, and after a very pleasant excursion the party returned to Embleton, where a most enjoyable meal was served at the Dunstanburgh Castle Hotel.

☛ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

Owing to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

East Anglian Branch.—The autumn meeting of this Branch will be held at Cromer on Thursday, September 26th. Members wishing to read papers or show cases or specimens should communicate at once with Mr. H. A. Ballance, M.S., Norwich.—B. H. Nicholson, Honorary Secretary, East Lodge, Colchester.

Edinburgh Branch: South-Eastern Counties Division.—The autumn meeting will be held in the King's Arms Hotel, Melrose, on the afternoon of Thursday, the 26th inst., at 3 o'clock, Dr. Bannerman, Chairman, presiding. Agenda: (1) Reading of minutes. (2) Report by Dr. Blair of the Annual Representative Meeting at Exeter. (3) Matters referred for consideration of Divisions: (*a*) Finance Inquiry Report; (*b*) Referendum on certain clauses of the Charter. (4) Clinical papers by members. (5) Other matters, such as the Annual Dinner. Note.—The Honorary Secretary begs to remind members that, as Local Secretary of the Benevolent Fund, he will be glad to receive subscriptions of members.—W. Hall Calvert, Honorary Secretary.

Lancashire and Cheshire Branch: Leigh Division.—A meeting of the members of this Division will be held at the Co-operative Rooms, Ellesmere Street, on September 19th, at 8.30 p.m.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,455 births and 3,617 deaths were registered during the week ending Saturday last, August 31st. The annual rate of mortality in these towns, which had been 11.8, 11.8 and 11.6 per 1.000 in the three preceding weeks, rose again to 11.8 last week. The rates in the several towns ranged from 2.0 in Burton-on-Trent, 2.1 in Kings Norton, 5.2 in Hornsey, 5.9 in Tottenham and in Devonport, and 6.2 in York and in West Hartlepool, to 15 7 in Liverpool, 15.8 in Great Yarmouth, 15.9 in Wigan, 16.4 in St. Helens, 17.8 in Hastings, 17.9 in Walsall, 18.7 in Sunderland, and 22.9 in Tynemouth. In London the rate of mortality was 11.7 per 1,000, being slightly lower than the mean rate for the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1 4 per 1,000 in the seventy-six towns; these diseases also caused a death-rate of 1.4 in London, while among the other large towns the rates ranged upwards to 3.1 in Bootle, 3.4 in St. Helens, 3.7 in Sheffield, 3 8 in Tynemouth, 4.3 in Walsall, and 4.7 in Cardiff. Measles caused a rate of 1.3 in Coventry, 1.4 in Merthyr Tydfil, 2.1 in Ipswich, and 3.9 in Cardiff; diphtheria of 1.3 in Reading and 1.9 in Tynemouth; whooping-cough of 1.1 in St. Helens, and 1 5 in Stockport; "fever" of 1.2 in Wigan; and diarrhoea of 2.2 in Walsall, 2.3 in St. Helens, 2.9 in Sheffield, 3.0 in West Bromwich, and 3.1 in Bootle. The mortality from scarlet fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet-fever patients under treatment in the Metropolitan Asylums Hospitals and in the London Fever Hospital, which had been 3,660, 3,669, and 3,687 at the end of the three preceding weeks, had further risen to 3,737 at the end of last week: 557 new cases were admitted during the week, against 466, 430, and 440 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, August 31st, 854 births and 475 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 12.6 and 12.8 per 1,000 in the two preceding weeks, further rose last week to 13.7 per 1,000, and was 1.9 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 10.5 in Aberdeen and 12.8 in Glasgow, to 16.1 in Greenock and 16.7 in Dundee. The death-rate from the principal infectious diseases averaged 1.8 per 1,000, the highest rates being recorded in Paisley and Leith. The 208 deaths registered in Glasgow included 5 from diphtheria, 7 from whooping-cough, 2 from "fever," 7 from diarrhoea, and 10 from cerebro-spinal meningitis. Five deaths from whooping-cough were recorded in Edinburgh: 2 from cerebro-spinal meningitis and 3 from diarrhoea in Dundee; 2 from diarrhoea and 1 from cerebro-spinal meningitis in Aberdeen; 5 from whooping-cough and 1 from cerebro-spinal meningitis in Paisley; and 3 from diarrhoea in Leith.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon J. W. O. Underhill, M.B., has been placed on the retired list, at his own request, August 31st. He was appointed Surgeon August 20th, 1886, and Fleet Surgeon, August 20th. 1902.

Deputy-Inspector-General T. D. Gimlette, C.B., has been promoted to be Inspector-General from July 1st. His previous commissions are thus dated: Surgeon, October 1st, 1879; Staff Surgeon, April 1st, 1885; Fleet Surgeon, August 13th, 1893; Deputy-Inspector-General, May 2nd, 1901. He was Surgeon of the *Seahorse* during the Egyptian war in 1882 (medal and Khedive's bronze star); served with the Naval Brigade in the Soudan in 1884, and was present at the battles of El Teb and Temai, where he highly distinguished himself (mentioned in dispatches, promoted to be Staff Surgeon, two clasps); in 1884 also he accompanied Admiral Sir W. Hewett as Medical Officer on the mission to King John of Abyssinia.

Fleet Surgeon J. J. Dennis, M.D., is promoted to be Deputy Inspector-General, July 1st. He was made Surgeon, October 2nd, 1880; Staff Surgeon, October 2nd, 1892; and Fleet Surgeon, October 2nd, 1896. Whilst Surgeon of Malta Hospital he received the expression of their Lordships' satisfaction at receiving the report of his able performance of his duties during the operations in Egypt, 1882; Surgeon of *Turquoise* during the naval and military operations in the Eastern Soudan, at Suakin, 1884-5 (medal and Khedive's bronze star), served with the Naval Brigade during the Burma Annexation war, 1885-7, and was present at the capture of Mandalay and further expedition to Bhamo (medal with clasp). Also served in *Highflyer* (flagship) during the naval and military operations in Eastern Somaliland in 1902-1903 (medal with clasp).

The following appointments have been made at the Admiralty: William J. Colborne, Fleet Surgeon, and William N. Horsfall, M.B., Surgeon, to the *Euryalus*, September 10th; D'Arcy Harvey, M.D., Fleet Surgeon, and Charles J. Boucher, M.B., Surgeon, to the *Argonaut*, on recommissioning, September 10th; Edward O. B. Carbery, M.B., Staff Surgeon, to the *Sappho*, August 28th; Hugh L. Norris, Staff Surgeon, to the *Arrogant*, September 10th; Thomas D. Halahan, M.B., Staff Surgeon, to the *Isis*, on recommissioning, September 10th; John C. G. Reed, Staff Surgeon, to the *Charybdis*, on recommissioning, undated; Arthur la T. Darley, Surgeon, to the *Bulwark*, August 28th.

ROYAL ARMY MEDICAL CORPS.

Captain W. A. Ward has been appointed Specialist in Dermatology in the London District.

Lieutenant P. C. T. Davy, M.B., having obtained the necessary percentage of marks in each of the subjects (*c*) to (*i*) for promotion, has been granted a "Special Certificate" in accordance with Appendix VII, King's Regulations.

INDIAN MEDICAL SERVICE

The undermentioned Captains are promoted to be Majors, from July 29th: A. W. R. Cochrane, M.B., W. W. Clemesha, M.D., J. A. Black, M.B., J. C. Robertson, M.B., N. R. J. Rainier, E. L. Perry, W. J. Niblock, M.B. They entered the service as Surgeon-Lieutenants, January 29th, 1895, and became Captains, January 29th, 1899. Major Robertson served with the Dongola Expedition in 1896 (medal), and in the Transvaal during the South African war in 1902 (Queen's medal with two clasps). Major Perry was in the North West Frontier of India campaign in 1897 (mentioned in dispatches), and with the Waziristan Expedition in 1901-2 (medal with clasp). The other officers cited have no war records in the Army Lists.

VOLUNTEER OFFICER'S DECORATION.

The Volunteer Officer's Decoration has been conferred upon the following officers:—Surgeon-Major C. A. MacMunn, M.D., 3rd Volunteer Battalion the South Staffordshire Regiment; Surgeon-Major G. Hollies, M.D., 2nd Volunteer Battalion the King's (Shropshire Light Infantry); Captain D. Smart, M.B., Liverpool Bearer Company, Royal Army Medical Corps (Volunteers).

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRMINGHAM: QUEEN'S HOSPITAL.—House-Surgeon. Salary at the rate of £50 per annum.

BRADFORD UNION.—Resident Assistant Medical Officer. (Male.) **Salary, £100 per annum.**

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House-Surgeon. Salary, £100 per annum.

CAMBRIDGESHIRE, ETC., LUNATIC ASYLUM, Fulbourn, near Cambridge.—Second Assistant Medical Officer. (Male.) Salary, £120 per annum.

CARLOW DISTRICT ASYLUM.—Resident Medical Superintendent. Salary, £350 per annum.

CENTRAL LONDON OPHTHALMIC HOSPITAL, W.C.—House-Surgeon. Salary, at the rate of £50 per annum,

CITY OF LONDON HOSPITAL, Victoria Park, N.E.—(1) Pathologist. Salary, £105 per annum. (2) House-Physician. (Male.) Salary, £50 per annum. (3) Clinical Assistant.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Secretary. Salary, £175 per annum.

EDINBURGH HOSPITAL AND DISPENSARY FOR WOMEN AND CHILDREN.—(1) Honorary Surgeon Gynaecologist; (2) Honorary Junior Surgeon Gynaecologist. Medical women only.

GRAVESEND HOSPITAL.—House-Surgeon. Salary, £100 per annum.

GREAT NORTHERN HOSPITAL, Holloway.—(1) Anaesthetist; (2) Senior House-Surgeon; (3) Senior House-Physician; (4) Two Junior House-Surgeons; (5) Junior House-Physician. Salary (1), 10 guineas per annum; (2) (3), £60 per annum; (4) (5), £30 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon. Salary at the rate of £90 per annum.

HOSPITAL FOR WOMEN, Soho.—Limited number of Clinical Assistants to the Gynaecologists in the Out-Patient Department.

HULL ROYAL INFIRMARY.—Honorary Physician.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Three House-Physicians. (2) Two House-Surgeons. Salary at the rate of £60 per annum.

LONDON TEMPERANCE HOSPITAL.—(1) Assistant House-Surgeon. (2) Assistant Resident Medical Officer. Honorarium at the rate of £75 and £52 10s. per annum respectively.

LONDON TEMPERANCE HOSPITAL.—Resident Medical Officer. Salary, £120 per annum.

MANCHESTER UNION.—Assistant Medical Officer. Salary, £110 per annum.

METROPOLITAN HOSPITAL, N.E.—(1) House-Physician, (2) House-Surgeon, (3) Resident Anaesthetist, (4) Assistant House-Physician, (5) Assistant House-Surgeon. Salary (1) (2) (3), £40 per annum; (4) (5) £20 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION, Hampstead.—Junior Resident Medical Officer. Honorarium £50 per annum.

NEWCASTLE-ON-TYNE: CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary, £104 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary, £50 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum.

ROYAL DENTAL HOSPITAL, Leicester Square W.C.—Morning House-Anaethetist. Honorarium, £50 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, E C.—Senior House-Surgeon. Salary at the rate of £100 per annum.

SHEFFIELD UNION HOSPITAL.—Resident Assistant Medical Officer (Male.) Salary, £80 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon. Salary, £40 per annum.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon (Male). Salary at the rate of £50 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea.—House-Surgeon. Honorarium, £30.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck Street, W.—Honorary Registrar and Pathologist.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Coldstream, co. Berwick; Lauder, co. Berwick; Penkridge, co. Stafford.

APPOINTMENTS.

BALL, A., M.R.C.S., L.R.C.P., Assistant Medical Superintendent of Paddington Union Infirmary and Assistant Medical Officer of Workhouse.

BOWMAN, G. F., M.B., Medical Officer of Health to Limehurst Rural District.

CAIRNS, D. L., M.D., District Medical Officer of the Huddersfield Union.

DEWAR, J., M.A., M.B., Certifying Factory Surgeon for the St. Margaret's Hope District, co. Orkney.

FLETCHER, L, M.R.C.S., L.R.C.P., District Medical Officer of Sudbury and Thingoe Unions.

FLITCROFT, T. E., L.R.C.P., L.R.C.S., Certifying Factory Surgeon for North Bolton District, co. Lancaster.

GLASSINGTON, Charles W., M.R.C.S., L.D.S., Dental Surgeon to the Duke of York's Royal Military School, Chelsea.

GUNN, A. B., M.B., C.M., Certifying Factory Surgeon for the Westray District, co. Orkney.

LAWRY, R. C, M.R.C.S., L.R.C.P., Medical Officer to Penzance Union Workhouse and District.

LLEWELLYN, J., M.R.C.S., L.S.A., District Medical Officer to the Cleobury Mortimer Union.

MCCRINDLE, J. D., M.B., Medical Officer of Health to Northampton.

MAPLETON, H. B., M.A., M.D., etc., Medical Officer of Health to Newton Urban District Council.

PENNY, S. G., M.R.C.S, L.R.C.P., District Medical Officer of Penzance Union.

SMITH, G. MCCALL, M.B., Ch.B., Certifying Factory Surgeon for the Strathmiglo District, co. Fife.

WELSH, J. G., L.R.C.P., L.R.C.S., District Medical Officer of Rothbury Union.

WILTSHIRE, H. P., M.R.C.S., L R.C.P., District Medical Officer of the Hemsworth Union.

WINTERBOTHAM, R., M.R.C.S, L.R.C.P., Medical Officer of Health to the Brixworth Rural District.

WOODWARD, H. C. S., M.A., M.B., District Medical Officer of the Abingdon Union.

WORTHINGTON, G. V., M.R.C.S., L.R.C.P, Certifying Factory Surgeon for the Cheltenham District, co. Gloucester.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGES.

BRUCE—BOWDEN.—On the 3rd inst., at S. John's Church, Dumfries, by the Rev. F. C. Moir, Provost of St Paul's Cathedral, Dundee, assisted by the Rev. C. C. im Thurn, of S. John's, Dumfries, and the Rev. H. Skinner, of St. Andrew's, Callander, Lewis Campbell Bruce, M.D., F.R.C P.E., second son of Major-General A. A. Bruce, retired Bengal Staff Corps, to Caroline Desborough, elder daughter of the late Major H. G. Bowden of the 22nd Foot.

DRUITT—MILLER.—On August 29th, at St. Leonard's Church, Exeter, by the Rev. F. Bishop, Vicar of Holy Trinity, Torquay, assisted by the Rev. Cecil H. Druitt, Rector of St. Bride's, Manchester, and the Rev. P. Leakey, Curate of St. Leonard's, Exeter, Claud Francis, M.R.C.S., L.R.C.P., son of the late Rev. William Druitt, formerly Rector of Stockbridge, Hants, to Eva Matilda, daughter of Walter J. Miller, Esq., of "Gierko," College Road, Exeter.

GEDDIE—BARDSLEY.—On August 29th, at Royds Street Baptist Chapel, Accrington, by the Rev. J. Moffat Logan, James Spence Geddie, M.B., Ch.B., eldest son of Dr. Wm. Geddie, Waterloo House, Accrington, to Isabel Alice, eldest daughter of Mr. Joshua Bardsley, Milnshaw House, Accrington. At home, Lowther Place, Accrington, October 1st and 2nd.

GREENWOOD—MORTIBOY.—At St. Swithin's, East Retford, on August 27th, Charles H. Greenwood, M.B., B.Ch.Vict. et Leeds, F.R.C.S.Eng., of Ripon, to Mabel Mortiboy, daughter of the late John Mortiboy of Herne Hill.

DEATHS.

LANE.—On July 15th, at Sarkerpore, Oude, India, accidentally killed, John George Agilby Hugh Lane, M.D., F.R.C.S.E., M.B., B.S., M.S., L.M., L.R.C.P., M.R.C.S.L., etc., aged 35 (late of Newcastle-on-Tyne), youngest son of J. W. Lane, M.D., "Stavordale House," Weymouth.

MORE.—On September 2nd, at Rothwell, James More, M.D., aged 73 years.

NICHOLSON.—At Lindula, Northwood, Middlesex, in his 80th year, suddenly, Emilius Rowley Nicholson, M.D.Edin., late of St. Leonard's-on-Sea.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eye.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics; X Rays. 2.30 p.m.: Operations. Monday and Thursday, 2 p m.: Diseases of the Eye. Tuesday and Friday, 10 a.m.: Gynaecological Operations. 2 30 p.m.: Diseases of the Skin. 2 p.m., Diseases of Throat, Nose, and Ear; also on Wednesday and Saturday, 10 a.m.; Tuesday and Friday, 2 30 p.m.: Diseases of the Skin. Wednesday, 10 a.m.: Diseases of Children. Wednesday and Saturday, 2 p.m., Diseases of Eye.

BOOKS, ETC., RECEIVED.

Stoffwechselpsychosen. Von Dr. med. W. Ewald. Würzburg: A. Stuber. 1907. M 1.50.

Trypanosomes and Trypanosomiasis. By A. Laveran and F. Mesnil. Translated and enlarged by D. Nabarro, M.D., B.Sc., D.P.H.Lond. London: Baillière, Tindall, and Cox, 1907. 21s.

Statische Mitteilungen veröffenklicht vom statistischen Amt der Stadt Amsterdam. No. 19. Kindersterblichkeit besonders in den Niederlanden. Bearbeitet von Dr. med. R. H Saltet and Dr. Jur. Ph Falkenburg. Amsterdam: J. Müller. 1907. F. 1

Dent's Mathematical and Scientific Textbooks for Schools. Edited by W. J. Greenstreet, M.A., F.R.A.S. School Hygiene. By H. Jones, D.P.H Camb. London: J. M. Dent and Co. 1907. 2s.

A System of Radiography with an Atlas of the Normal. By W. J. Bruce, M.D. London: H. K. Lewis. 1907. 15s.

***** In forwarding books the publishers are requested to state the selling price.**

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
SEPTEMBER.	
8 Sunday ...	
9 MONDAY ...	
10 TUESDAY ...	
11 WEDNESDAY	
12 THURSDAY...	
13 FRIDAY ...	
14 SATURDAY...	
15 Sunday ...	
16 MONDAY ...	
17 TUESDAY ...	
18 WEDNESDAY	
19 THURSDAY...	LEIGH DIVISION, *Lancashire and Cheshire Branch*, Co-operative Rooms, Ellesmere Street, 8.30 p.m.
20 FRIDAY ...	
21 SATURDAY...	
22 Sunday ...	
23 MONDAY ...	
24 TUESDAY ...	
25 WEDNESDAY	
26 THURSDAY...	EAST ANGLIAN BRANCH, Autumn Meeting, Cromer. SOUTH-EASTERN COUNTIES DIVISION, *Edinburgh Branch*, King's Arms Hotel, Melrose, 3 p.m.
27 FRIDAY ...	
28 SATURDAY...	
29 Sunday ...	
30 MONDAY ...	
OCTOBER.	
1 TUESDAY ...	
2 WEDNESDAY	
3 THURSDAY...	
4 FRIDAY ...	
5 SATURDAY...	
6 Sunday ...	
7 MONDAY ...	
8 TUESDAY ...	
9 WEDNESDAY	
10 THURSDAY...	
11 FRIDAY ...	
12 SATURDAY...	
13 Sunday ...	
14 MONDAY ...	
15 TUESDAY ...	
16 WEDNESDAY	
17 THURSDAY...	
18 FRIDAY ...	
19 SATURDAY...	
20 Sunday ...	
21 MONDAY ...	
22 TUESDAY ...	
23 WEDNESDAY	
24 THURSDAY...	
25 FRIDAY ...	
26 SATURDAY...	
27 Sunday ...	
28 MONDAY ...	
29 TUESDAY ...	
30 WEDNESDAY	CENTRAL COUNCIL.
31 THURSDAY...	
NOVEMBER.	
1 FRIDAY ...	
2 SATURDAY...	
3 Sunday ...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 14TH, 1907.

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Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

NATAL BRANCH.

ANNUAL LICENCE AND TAX ON PRESCRIBING PRACTITIONERS.

ON August 2nd a deputation from the Natal Branch of the British Medical Association waited upon the Prime Minister to protest against the proposal of the Government to double the amount of the fee for the annual licences and to impose a tax upon all medical men who dispensed their own prescriptions. In the unavoidable absence of the Prime Minister, the deputation was received by the Colonial Secretary (Dr. O'Grady Gubbins). The deputation consisted of the following members: Dr. W. Watkins-Pitchford, President of the Branch; Dr. Booth Clarkson, Pinetown; Dr. Bray, Durban; Dr. Copley, Durban; Dr. Campbell Watt, Pietermaritzburg; Dr. Dumat, Durban; Dr. Oddin Taylor, Pietermaritzburg; Dr. Pearson, Durban; Dr. Ward, Pietermaritzburg.

The following points were urged by the deputation as reasons why the contemplated increase in taxation should not be carried out:

1. When an annual licence was first imposed upon the profession it was for many years vigorously protested against by leading practitioners as being an injustice, in view of the amount of unrequited service which the profession rendered to the State. Other professions and callings which are taxed by an annual licence do not, and are not expected to, afford gratuitous services to either the community or to individuals. To double a tax unjust and ungrateful in its inception would be to double the ingratitude and injustice of those who impose it.

2. The profession claims special consideration from the State, from the fact that it renders both to it and to the individual citizens numerous unrequited services. The following are examples: The services of the honorary medical officers to Grey's and the Addington Hospitals, the benevolent societies, rescue homes, almshouses, children's homes, and crêches. There being no Poor Law in the Colony, gratuitous attendance upon all indigent persons falls upon the profession. The Medical Corps of the Militia is officered by about twenty professional men, who not only train the men of the corps in their special duties, but hold themselves in readiness at all times to quit their practices and render assistance to the Colonial forces when on active service. Bodies of public servants, such as the Natal Government railway men, are instructed gratuitously in ambulance knowledge and practice for the benefit of the community. It is suggested that if the Government and Parliament of the Colony persistently ignore these gratuitous benefits the profession will be compelled to withdraw them.

3. The profession has not received in the past that protection from the State to which the payment of a registration fee and an annual tax entitles them. Quacks are rarely prosecuted; if prosecuted they are usually acquitted, and if convicted they are fined a merely nominal sum and are permitted to carry on their unqualified practice as before.

4. The Government licenses native medicine men to practise the healing art. This proceeding tends to perpetuate a barbarous and superstitious system of medicine among the natives, is an obstacle to their appreciating the benefits to be derived from modern medical science, and entails a loss to the European practitioner.

5. At present the registration fee is 21s, and the fee for the annual licence £5. The proposal to raise the latter to £10 and to make a further tax of £2 10s. upon all medical men who dispense their own prescriptions cannot be justified by reference to what pertains in other colonies. Practitioners do not pay any annual licence in the Transvaal or Cape Colonies, neither do they, we believe, in Canada and Australia. The plea which was brought forward by one of our legislators when referring to the proposed Bill—that its provisions would level Natal up to other colonies—therefore falls to the ground.

6. The medical service of the Colony has recently been heavily taxed in an indirect manner by the retrenchments of the Government. District surgeons' travelling allowances have been reduced, and railway concessions and horse insurance withdrawn. The salaries of the district health officers have been reduced in almost every instance by 50 per cent., and during the last few days Parliament has decided to still further reduce these salaries. The further resolve of Parliament to cut down the vaccination vote, and hand over the work of public vaccination to a layman, will reduce the emoluments of most country practitioners to an alarming extent; in fact, these Government appointments will be hardly worth holding. It has been stated in the Legiislative Assembly that the Medical Council had approved of the employment of a lay vaccinator in the past; the Council has, on the contrary, protested against his employment.

7. The Government has consulted with the Law Society and the Chambers of Commerce whilst framing the proposed Bill, but has not asked for the assistance or the opinion of the representatives of the medical profession of the Colony.

In replying to the deputation, the COLONIAL SECRETARY expressed himself as very pleased to meet it both in his

capacity as a Minister and as a medical man. He assured the members that he would do his utmost to advance the interests of the profession. The shorthand notes of the interview would be duly laid before the Prime Minister. He advised that the profession should appoint a representative to give evidence before the Select Committee appointed by Parliament to consider the Bill. After all, it was not to him that the profession should speak, so much as to the individual members of Parliament, and he suggested that the various members should be interviewed upon the subject by their medical constituents.

The President of the Branch thanked the Colonial Secretary for the courteous and sympathetic manner in which he had met the deputation.

The Council of the Natal Branch of the British Medical Association has issued a circular urging upon all members of the profession the necessity for making immediate and strong protests to the members of the Assembly for their various Districts against the proposed increase of the annual licence.

Club Rates.

The following resolution, passed at a meeting of the Natal Branch held at Durban on May 17th, has also been circulated to all members of the profession in the Colony:

> That all the members of the profession in the Colony be informed that, in the opinion of the Branch, 12s. per annum should be the minimum fee charged in respect to each medical club member.

NOTIFICATION OF BIRTHS ACT, 1907.

CHAPTER 40.

An Act to Provide for the Early Notification of Births.
[*28th August, 1907.*]

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same as follows:

1. *Provisions for the Earlier Notification of Births.*—The provisions of this section shall have effect in the area of any local authority in which this Act is adopted by that authority in accordance with the provisions of this Act—

(1) In the case of every child born in an area in which this Act is adopted it shall be the duty of the father of the child, if he is actually residing in the house where the birth takes place at the time of its occurrence, and of any person in attendance upon the mother at the time of, or within six hours after, the birth, to give notice in writing of the birth to the medical officer of health of the district in which the child is born, in manner provided by this section.

(2) Notice under this section shall be given by posting a prepaid letter or postcard addressed to the medical officer of health at his office or residence, giving the necessary information of the birth within thirty-six hours after the birth, or by delivering a written notice of the birth at the office or residence of the medical officer within the same time; and the local authority shall supply without charge addressed and stamped postcards containing the form of notice to any medical practitioner or midwife residing or practising in their area, who applies for the same.

(3) Any person who fails to give notice of a birth in accordance with this section shall be liable on summary conviction to a penalty not exceeding twenty shillings: Provided that a person shall not be liable to a penalty under this provision if he satisfies the court that he had reasonable grounds to believe that notice had been duly given by some other person.

(4) The notification required to be made under this Act shall be in addition to and not in substitution for the requirements of any Act relating to the registration of births; and any registrar of births and deaths whose sub-district or any part thereof is situate within any area in which this Act is adopted shall at all reasonable times have access to notices of births received by the medical officer of health under this Act, or to any book in which those notices may be recorded, for the purpose of obtaining information concerning births which may have occurred in his sub-district.

(5) This section shall apply to any child which has issued forth from its mother after the expiration of the twenty-eighth week of pregnancy, whether alive or dead.

(6) Any expenses incurred by a local authority in the execution of this Act shall be paid as part of the expenses of that authority in the execution of the Acts relating to public health, and in the case of a rural district council shall be paid as general expenses.

2. *Adoption of Act, and Definition of Local Authority.*—(1) A local authority may by resolution adopt this Act in their area, and the provisions set out in the schedule to this Act shall have effect with respect to the resolution of adoption.

(2) A resolution of adoption shall not take effect until the consent of the Local Government Board has been obtained thereto.

(3) It shall be the duty of any local authority by whom this Act is adopted, as soon as the consent of the Local Government Board is given to the resolution of adoption, to bring the provisions of this Act to the attention of all medical practitioners and midwives practising in their area.

(4) In this Act, the expression "local authority" means the council of a borough (including the council of a metropolitan borough and the mayor, aldermen, and commons of the City of London in common council assembled), and the council of an urban or a rural district, and the council of a county (other than the county of London) who may adopt the Act either for their whole county or for any county district therein:

Provided that—

(*a*) Where the Act is adopted by the council of a county the county medical officer of health shall be substituted for the medical officer of health of the district, and the expenses of the execution of the Act shall be paid as general county expenses or special county expenses, as the case requires; and

(*b*) If, where the Act has been adopted by the council of a county for any county district, the council of the district, or, where the Act has been adopted by the council of a county district for their district, the council of the county, subsequently apply to the Local Government Board to be made the authority for the purposes of this Act, the Board may, if they think fit, make an order declaring that the Act shall take effect as if it had been adopted by the council of the county district instead of the council of the county, or by the council of the county instead of the council of the county district, as the case may be, and on any such order being made the Act shall take effect in accordance with the order.

(5) In London, the medical officer of health of every metropolitan borough (including the city of London) in which this Act is in force for the time being shall send weekly to the London County Council, in a form prescribed by the Local Government Board, a list of all notices of birth received by him under this Act during the past week.

3. *Power of Local Government Board to put Act in force in the Area of any Local Authority.*—The Local Government Board may by order declare that this Act shall be in force in the area of any local authority who have power to adopt the Act, although it has not been so adopted, if they think it expedient, having regard to the circumstances of the area, and in that case the order of the Local Government Board shall have the same effect for the purpose as a resolution of adoption duly passed by the local authority of the area and assented to by the Local Government Board.

4. *Application to Scotland.*—In the application of this Act to Scotland:

(1) The expression "Local Government Board" means the Local Government Board for Scotland.
(2) The expression "sub-district" means parish or district.
(3) The expression "local authority" and the expression "council" mean the local authority under the Public Health (Scotland) Act, 1897, and subsection four of section two shall not apply.
(4) An offence may be tried before the sheriff or before any magistrate of a royal, parliamentary, or police burgh officiating under the provisions of any local or general Police Act; and an offender failing to make payment of a penalty shall be liable to imprisonment in terms of the Summary Jurisdiction Acts.

5. *Application to Ireland.*—In the application of this Act to Ireland, the Local Government Board for Ireland shall be substituted for the Local Government Board, and the expression "sub-district" means a registrar's district under the Acts relating to the registration of births.

6. *Short Title.*—This Act may be cited as the Notification of Births Act, 1907.

SCHEDULE.

RESOLUTION OF ADOPTION.

1. A resolution of adoption must be passed at a meeting of the council.

2. One calendar month at least before the meeting of the council special notice of the meeting and of the intention to propose the resolution shall be given to every member of the council.

3. A resolution of adoption after being passed shall be published by advertisement in some one or more newspapers circulating within the area of the council by whom the resolution is passed, and otherwise in such manner as the council thinks sufficient for giving notice thereof to all persons interested.

4. A copy of the resolution of adoption shall be sent to the Local Government Board.

5. The resolution of adoption shall come into operation at such time, not less than one month after the first publication of the advertisement, as may be fixed by the Local Government Board.

THE PAYMENT OF INQUEST FEES TO MEDICAL OFFICERS OF WORKHOUSES AND POOR-LAW INFIRMARIES.

IT not infrequently happens that medical officers attached to workhouses and infirmaries conducted by the Poor-law authorities inquire whether they are entitled to receive fees for *post-mortem* examinations performed by order of a coroner on the bodies of persons dying in the institution under their medical care, as also for giving evidence at the inquiries held. In one such recent case the coroner, whose letters show a desire to take, if it seems compatible with his duty, a view favourable to the claimant for fees, has referred the medical man in question to Subsection 2 of the 22nd Section of the Coroners Act of 1887. This clause reads as follows:

> Where an inquest is held on the body of a person who has died in a county or other lunatic asylum, or in a public hospital, infirmary, or other medical institution, or in a building or place belonging thereto or used for the reception of the patients thereof, whether the same be supported by endowments or by voluntary subscriptions, the medical officer whose duty it may have been to attend the deceased person as a medical officer of such institution as aforesaid shall not be entitled to such fee or remuneration.

The precise meaning of this clause (or rather the precise institutions which are covered by its terms) is, as the coroner in question seems to agree, open to some doubt, but that it is fatal to the claim of a medical officer to payment is a view which it is by no means necessary to take. Indeed, from the interpretation which has been put upon it and connected matters by certain authorities it seems more reasonable to believe that the clause leaves the claims of such officers unaffected—that it places them, in short, in the same position as regards fees for inquests as that of medical men unattached to a public institution of any character.

A recent investigation as to the prevailing practice in this respect led to the circulation among members of the Coroners' Society of a series of questions, the answers to which may be analysed as follows. Altogether 187 coroners replied, and of these 17 were coroners who had no workhouses in their districts, and 27 were coroners who had no Poor-law infirmaries in their districts. The balance of the replies were to the following effect: At 123 workhouses fees were payable, and at 47 they were not; at 108 workhouse infirmaries fees were paid, and in 57 they were not. From these figures it is obvious that a majority of about two to one of the coroners who have to settle this particular question read the Act as not applying to workhouses and workhouse infirmaries, and as, therefore, leaving the officers of such institutions entitled to receive fees. The opinion of coroners on this point does not, of course, entirely settle the question; the local authorities who hold the purse-strings have also something to say. It is they who now pay the salaries of the coroners and the expenses incurred by the holding of inquests, some of the latter being fixed by law and some being allowances made and fixed by the authorities in question, and varying somewhat in different districts according to circumstances. The action in the matter, therefore, of a representative local authority, the London County Council, becomes of particular interest. Soon after this body came into existence, a question arose as to its legal position in the matter of fees to medical officers of workhouses and workhouse infirmaries; finally its Public Control Committee resolved to refer the matter for settlement to the opinion of counsel. The result of this action is set forth at full length in the annual report of the Coroners' Society for 1893, a document from which we quote the following at full length:

Payment of Fees by Coroners to Medical Officers of Poor-law Infirmaries and Workhouses.

In the London County Council, a question having arisen as to the legality of payment to medical witnesses of institutions that are not supported by endowment or by voluntary subscriptions,

The Solicitor was authorized to take counsel's opinion, and the opinion of Mr. Poland, Q.C., was accordingly obtained, and given as under:

Counsel to advise the Council:

1. Whether a medical officer of a Poor-law union infirmary comes within the exemption provided by Subsection 2 of Section 22 of the Coroners Act, 1887,

(*a*) When the *infirmary* is separated from the *workhouse* itself.
(*b*) When the *sick wards* are not actually *separated* from the workhouse.

2. Generally upon any point which may occur to counsel.

Opinion.—The consolidated orders of the Poor-law Board regulate the duties of medical officer for a workhouse. He has to attend to the sick paupers in the workhouse and in the infirmary, which is part of the workhouse, or in such infirmary although a building separate and apart from the workhouse. The duties, as defined, of such medical officer do not include his attendance on the coroner as a witness, nor do they include the making of a *post-mortem* examination. I am of opinion that such medical officer does not come within the exemption provided by Subsection 2 of Section 22 of the Coroners Act, 1887; whether the infirmary of the workhouse is separated from the workhouse itself, or whether it is part of the workhouse itself, or whether it is part of the actual workhouse building, I do not think such infirmary or sick wards can be said to be a public "hospital" or "infirmary," or OTHER "medical institution."

The poor who are chargeable to a union or parish are entitled to be maintained by such union or parish, and if they are sick when in a workhouse, they must be treated by the medical officer thereof.

The words "whether the same be supported by endowments or voluntary subscriptions," point to "institutions" which are properly termed medical institutions established solely for the purpose of treating patients therein.

The proviso in Subsection 2 refers in "the first instance to the body of a person who has died in a 'county' or other 'lunatic' asylum," and it would be strange that the Legislature, when referring to a "county" lunatic asylum, which is maintained out of the rates, omitted to mention a workhouse infirmary, which is also maintained out of the rates, if it was intended that both were to stand on the same footing. The 6 and 7 William IV. cap. 98, sec. 5, is repealed, and a fresh provision made in the Coroners Act, 1887, upon this subject, and yet no reference was made to a workhouse infirmary, although it is stated—and must be considered as being known to the Legislature—that the "general practice" had been for years for a coroner to pay the medical officer of a workhouse for attending the inquests and for making *post-mortem* examinations.

I have not yet been able to find a report of His Honour Judge Lushington's decision, to which my attention has been called, but if I am able to find it hereafter I will send a note

of it to the Solicitor of the London County Council. I may further add that I found the following in the Poor-law Orders, 10th edition, G. Glen, 213: "Whether the medical officer is entitled to claim the usual remuneration for his services irrespective of his office of medical officer, where he is required by the coroner to perform the *post-mortem* examination appears doubtful, having regard to the provisions of 6 and 7, Wm. IV, c. 89, s. 5, which enacts," etc.

(Signed) Harry Bodkin Poland,
5, Paper Buildings, Temple.

Memorandum.—I stated in my opinion in this matter that I would endeavour for the information of the London County Council to try and get particulars of the case to which my attention was called—Don Bavand *v.* Morrison. I am now able to give full particulars of this case.

The case appears to have been tried on March 31st, 1885. Mr. Fraser, solicitor, of 2, Soho Square, appeared for the plaintiff, and Mr. Hicks was counsel for the defendant. The plaintiff appears to have been required by the coroner to make a *post-mortem* examination, and to attend to give evidence at the inquest on a destitute pauper sent to the infirmary on November 5th, and who died there on the 6th. The inquest was held on November 11th. The plaintiff claimed a fee of one guinea for his attendance, and two guineas for the *post-mortem* examination, under 6 and 7 William IV, cap. 89, sec. 3 and 5, and 1 Vict., cap 98, sec. 2. The point raised was whether the workhouse infirmary was a public infirmary. The plaintiff contended that it was not, but that it was only provided for the reception of paupers, and that no one was admitted except destitute persons within the union. It was also pointed out that the infirmary was not supported by endowments, or by voluntary contributions.

The circular of the Poor-law Board of April 1st, 1846, appears to have been referred to It was also pointed out that, although county lunatic asylums which are supported out of the rates, are mentioned, workhouses are not mentioned. The learned judge gave judgement for the defendant, with leave to appeal. It can be ascertained from Mr. Fraser whether there was any appeal, but I presume there was not. Although the circular of April 1st, 1846, was referred to, I do not know whether the part relating to this matter was read to the learned judge.

The Poor-law Commissioners had directed the circular to be printed and circulated "for the use of the members and permanent officers of Boards.

"If inquiries are made at the Local Government Board it can be ascertained whether the Board have changed their views with regard to the payment of medical officers in these cases."

(Signed) Harry Bodkin Poland,
5, Paper Buildings, Temple.

Counsel's opinion, as thus quoted, having been considered, the Public Control Committee of the London County Council decided to allow the payment of fees to medical officers of Poor-law union infirmaries for giving evidence at inquests or making *post-mortem* examinations, when such payments were made by any of the coroners of the county of London. This decision was reached on November 14th, 1892, and there has never been a departure from it. Moreover, the decision of the London County Council has been formally adopted by its neighbour the County Council of Kent, and judging from the result of the inquiries made amongst coroners, to which attention has already been drawn, the same custom must prevail largely throughout the country. Obviously, therefore, the persons who are the final paymasters do not, as a body, read the clause of the Coroners Act as negativing the claims of the medical officers under consideration to payment. This is a somewhat notable fact, for none of the bodies to which reference has been made bear the reputation of being liberal in their dealings with the medical profession. Apart from the precedent thus established, the opinion upon which it is based is not one lightly to be set aside. The Queen's Counsel who gave it, now Sir Harry Poland, was employed in the interest, not of medical men, but of a public body, which was anxious, as has been indicated, to discover its legal responsibilities. A further point of interest is the fact that a general meeting of the Coroners' Society in the year following the decision of the London County Council resolved to act generally in conformity with the practice indicated. It must be admitted, of course, that none of the facts stated, or of the opinions quoted, are necessarily binding upon individual coroners, but nevertheless there are strong grounds for believing that claims made by medical officers of workhouses and workhouse infirmaries for fees in connexion with inquests are just and should be granted. Upon the whole, we are disposed to recommend that any medical officer who is unable to obtain such fees, when he has acted throughout upon the instruction of the coroner, should send a statement to the Medical Secretary for submission to the Medico-Political Committee of the British Medical Association.

OPENING OF THE MEDICAL SCHOOLS.

The following are the arrangements which have been made at the various medical schools for the commencement at each of them of the work of the winter session.

LONDON.

St. Bartholomew's Hospital.—The winter session will begin on October 1st, the occasion being marked by the usual dinner of old students in the Great Hall. Before and after dinner the new out-patient block will be thrown open for inspection.

Charing Cross Hospital.—The session will be opened on October 1st by a distribution of prizes and an address to students by the Right Hon. the Earl of Kilmory. The event will take place in the out-patients' hall at 4 p.m. In the evening, past and present students of the school will meet at dinner at the Criterion Restaurant.

St. George's Hospital.—The winter session will commence on October 1st at 4 p.m., when Dr. William Ewart will deliver an address entitled, "Res Medica, Res Publica," dealing with the profession of medicine, its future work and wage. A little earlier in the afternoon a tablet to the memory of the late Robert Barnes, M.D., will be unveiled in the Robert Barnes Laboratory. In the evening the annual dinner will be held at the Whitehall Rooms, Hotel Métropole, the chair being taken by Sir Herbert Mackay Ellis, Director-General of the Medical Department, Royal Navy.

Guy's Hospital.—Work will commence on October 1st without ceremony, but on the following Friday there will be a meeting of the Physical Society at which Sir Samuel Wilks will occupy the chair, and Dr. G. A. Gibson of Edinburgh read a paper entitled "Past and Present."

King's College.—The winter session in the Medical Faculty will open on October 1st, the event of the day being a distribution of prizes and an introductory address by Dr. W. H. Allchin. On the following afternoon a special introductory lecture will be delivered in the large theatre by Professor Peter Thompson on the study of embryology during the nineteenth century.

London Hospital.—The winter's work will be initiated by a reception given by the staff in the library of the College from 3 to 5 p.m. In the evening the annual dinner will be held at the Savoy Hotel, the Chairman being Mr. S. F. Eve.

London School of Tropical Medicine.—The winter session commences on October 1st, but the inaugural ceremony will not take place until October 21st, when Sir Lauder Brunton will deliver an address, the chair being taken by Mr. R. L. Antrobus, of the Colonial Office.

St. Mary's Hospital.—The winter session will commence on Wednesday, October 2nd, when the prizes and awards for the past year will be distributed, and an introductory address delivered by Professor Osler. The annual dinner of past and present students will take place the same evening in the Whitehall Rooms.

Middlesex Hospital.—The winter session will be inaugurated on Tuesday, October 1st, by a distribution of prizes by Mr. Henry Morris, President of the Royal College of Surgeons, this ceremony being commenced by an introductory address from Mr. A. G. R. Foulerton. In the evening past and present students of the school will dine together at the Trocadero Restaurant under the chairmanship of Mr. Andrew Clark.

National Dental Hospital.—The winter session commences on Tuesday, October 1st, without formal ceremony of any kind.

Royal Dental Hospital.—Work for the winter session commences on Tuesday, October 1st, a *conversazione* and prize distribution taking place on October 18th.

Royal Free Hospital.—At the London Medical School for Women the proceedings of the winter session will be inaugurated on Tuesday, October 1st, by an address, at 4 p.m., by Miss Gray, F.R.C.S.I.

St. Thomas's Hospital.—The winter's work at this school will formally commence on Tuesday, October 1st, the occasion being marked by a dinner of old students in the evening, at 7.30, at the Hotel Cecil. At the latter the chair will be taken by Dr. Theodore Acland.

University College.—Work for the winter commences on Tuesday, October 1st, details of any opening ceremony being as yet unsettled.

Westminster Hospital.—Work will commence at this school on Tuesday, October 1st, without formality, but on the following Thursday evening a dinner of past and present students will be held at the Trocadero Restaurant, Mr. A. H. Tubby taking the chair.

THE PROVINCES.

Birmingham.—The work of the winter session will be inaugurated on October 1st by a *conversazione*, given by the Dean and the Faculty of Medicine of the University.

Bristol.—The winter session at the University College in this city will commence on October 1st with a distribution of prizes by Professor Francis Gotch of Oxford.

Cardiff.—Work will commence on Tuesday, October 8th, without formality, each professor at the University College introducing into his opening lecture some preliminary remarks bearing on the relations of the subject with which he deals.

Durham.—Work at the medical school of this University will commence on October 1st without any formal ceremony.

Leeds.—The commencement of the winter session will not be marked by any formal address, but the buildings of the medical school of the University will be thrown open for inspection, various apparatus displayed, and tea provided for visitors. In the evening there will be a dinner to the medical profession in Leeds and its neighbourhood.

Liverpool.—Work in the Medical Faculty of the University will commence on Tuesday, October 8th.

Liverpool School of Tropical Medicine.—The winter session commences on Tuesday, October 1st, without any initial ceremonial.

Manchester.—The winter session in the Medical Faculty of the Victoria University, commencing on October 1st, will be inaugurated by an address from Mr. C. S. Tomes, F.R.S., entitled, "Medicine and its Specialities and the State: a Retrospect and a Prospect."

Sheffield.—Work for the winter session begins in the Medical Faculty on Wednesday, October 2nd, without any opening ceremony.

SCOTLAND

Aberdeen.—Work in the Medical Faculty of the University commences on Wednesday, October 16th.

St Andrews.—Work in the Medical Faculty of the University will commence for the winter session on Friday, October 11th, the students being addressed by Principal Sir James Donaldson, LL.D.

Dundee.—The winter session at University College will commence on Monday, October 14th, the students being addressed by Professor William Peddie, D.Sc.

Edinburgh.—(1) Work in the Medical Faculty of the University will formally commence on Tuesday, October 15th, the anatomy department being open from the beginning of the month.

(2) The winter course of lectures at the School of Medicine of the Royal Colleges commences on Tuesday, October 15th, the anatomy rooms and chemical laboratories being open from October 1st.

Glasgow.—(1) Work for the winter begins in the Faculty of Medicine of the University on Thursday, October 17th, both for men and women students.

(2) Anderson's College.—The winter session commences at this school on Thursday, October 17th.

(3) St. Mungo's College.—Work at this medical school begins on Thursday, October 17th, and, as has been the practice of late years, without any formal ceremony.

IRELAND.

Belfast.—The winter session at Queen's College opens on Tuesday, October 15th.

Cork.—The winter's work at Queen's College commences on Monday, October 21st.

Dublin, the School of Physic.—Work in the Medical Faculty of Trinity College and in this school will begin on Tuesday, October 1st, without any ceremonial.

Dublin, Schools of Surgery.—Work at anatomy begins on October 1st, but the majority of winter lectures begin on Tuesday, October 15th, on which date the prizes awarded during the previous year will be distributed by Sir H. B. Swanzy, President of the Royal College of Surgeons of Ireland.

Galway.—Work for the winter session at Queen's College commences in the third week of October; scholarship examinations commencing on October 21st.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

Owing to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Dorset and West Hants Branch.—The autumn meeting of this Branch will be held in Blandford on Wednesday, October 23rd. Members wishing to read papers, exhibit specimens, or show cases should communicate with the Honorary Secretary, James Davison, Streateplace, Bath Road, Bournemouth, on or before Friday, October 11th. This Journal notice is the only intimation of the meeting.

East Anglian Branch.—The autumn meeting of this Branch will be held at Cromer on Thursday, September 26th. Members wishing to read papers or show cases or specimens should communicate at once with Mr. H. A. Ballance, M.S., Norwich.—B. H. Nicholson, Honorary Secretary, East Lodge, Colchester.

Edinburgh Branch: South-Eastern Counties Division.—The autumn meeting will be held in the King's Arms Hotel, Melrose, on the afternoon of Thursday, the 26th inst., at 3 o'clock, Dr. Bannerman, Chairman, presiding. Agenda: (1) Reading of minutes. (2) Report by Dr. Blair of the Annual Representative Meeting at Exeter. (3) Matters referred for consideration of Divisions: (*a*) Finance Inquiry Report; (*b*) Referendum on certain clauses of the Charter. (4) Clinical papers by members. (5) Other matters, such as the Annual Dinner. Note.—The Honorary Secretary begs to remind members that, as Local Secretary of the Benevolent Fund, he will be glad to receive subscriptions of members.—W. Hall Calvert, Honorary Secretary.

Lancashire and Cheshire Branch: Altrincham Division.—A meeting of this Division will be held at Knutsford on Thursday, September 26th, at 4.30 p.m. Further details will be published next week.—T. W. H. Garstang, Honorary Secretary.

Lancashire and Cheshire Branch: Leigh Division.—A meeting of the members of this Division will be held at the Co-operative Rooms, Ellesmere Street, on September 19th, at 8.30 p.m.

South Wales and Monmouthshire Branch: South-West Wales Division.—The autumn meeting will be held at the Waterloo Hotel, Aberystwith, on Friday, September 27th. Will those having papers to read or cases to show kindly communicate with the Honorary Secretary, J. Edgar P. Davies, Llanelly?

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 7,980 births and 3,785 deaths were registered during the week ending Saturday last, September 7th. The annual rate of mortality in these towns, which had been 11.5 and 11.8 per 1,000 in the two preceding weeks, further rose last week to 12.3 per 1,000. The rates in the several towns ranged from 3.1 in Wallasey, 5.4 in Walthamstow, 5.7 in East Ham, 7.0 in Hornsey, and 7.2 in Tottenham and in Wolverhampton, to 16.3 in Hanley, 16.7 in Sunderland, 17.0 in Nottingham and in Liverpool, 17.2 in Tynemouth, 17.6 in Newcastle-on-Tyne, and 19.7 in Stockton-on-Tees. In London the rate of mortality was 11.8 per 1,000, while it averaged 12.5 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in the seventy-six towns; in London also this death-rate was equal to 1.5 per 1,000, while among the seventy-five other large towns the death-rate from the principal infectious diseases ranged upwards to 3.0 in Great Yarmouth, 3.1 in Norwich, 3.6 in Cardiff, 3.8 in Aston Manor and in Sheffield, 3.9 in Bootle, and 4.9 in Walsall. Measles caused a death-rate of 1.2 in Blackburn, 1.4 in Merthyr Tydfil, 2.2 in Walsall, and 3.3 in Cardiff; whooping-cough of 1.3 in Aston Manor and 1.4 in West Hartlepool; and diarrhoea of 2.2 in Walsall, 2.5 in Rotherham, 2.9 in Sheffield, and 3.1 in Bootle. The mortality from scarlet fever, from diphtheria, and from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,669, 3,687, and 3,738 at the end of the three preceding weeks, had further risen to 3,816 at the end of last week; 587 new cases were admitted during the week, against 430, 440, and 557 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, September 7th, 881 births and 471 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 12.6, 12.8, and 13.7 per 1,000 in the three preceding weeks, was 13.6 per 1,000 last week, and was 1.3 per 1,000 above the mean rate during the same period in the seventy-six large English towns. The rates in the eight Scottish towns ranged from 10.5 in Perth and 10.6 in Leith to 14.2 in Dundee and 14.8 in Glasgow. The death-rate from the principal infectious diseases was equal to 1.7 per 1,000, the highest rates being recorded in Glasgow and Aberdeen. The 240 deaths registered in Glasgow included 10 which were referred to whooping-cough, 2 to "fever," 15 to diarrhoea, and 8 to cerebro-spinal meningitis. Five fatal cases of whooping-cough and 1 of cerebro-spinal meningitis were recorded in Edinburgh. Two deaths from diarrhoea occurred in Dundee; and 5 from whooping-cough and 5 from diarrhoea in Aberdeen.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, August 31st, 499 births and 284 deaths were registered in six of the principal Irish towns, as against 591 births and 282 deaths in the preceding period. The annual death-rate in these towns, which had been 16.2, 17.4, and 15.9 per 1,000 in the three preceding weeks, fell to 13.8 per 1,000 in the week under notice, this figure being 2.0 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 18.6 in Dublin and 19.2 in Cork, to 8.2 in Limerick and 12.7 in Belfast. The zymotic death-rate in the same six Irish towns averaged 1.0 per 1,000, or 0.1 per 1,000 higher than during the preceding period, the highest figure—2.5—being recorded in Londonderry, while Limerick and Waterford registered no deaths under this heading at all. The deaths in Belfast included 5 ascribed to cerebro-spinal fever, and 2 to cerebro-spinal meningitis.

During the week ending Saturday, September 7th, 546 births and 268 deaths were registered in six of the principal Irish towns, as against 499 births and 284 deaths in the preceding period. The annual death-rate in these towns, which had been 17.4, 15.9, and 13.8 per 1,000 in the three preceding weeks, fell to 12.6 per 1,000 in the week under notice, this figure being 0.3 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 3.9 in Waterford and 7.4 in Londonderry to 16.4 in Cork and 20.7 in Dublin. The zymotic death-rate in the same six Irish towns averaged 1.5 per 1,000, or 0.5 per 1 000 higher than during the preceding period, the highest figure—2.1—being recorded in Cork, while Londonderry registered no deaths under this heading at all. From cerebro-spinal fever 1 death occurred in Dublin and 3 in Belfast.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Octavius W. Andrews, M.B., Fleet Surgeon, to the *President*, additional, for the International Congress of Hygiene and Demography at Berlin, September 20th; Stanley S. H. Shannon, Surgeon, to the *Arrogant*, on recommissioning, September 10th; James E. Johnston, M.B., Surgeon, to the *Pembroke*, for the Royal Naval Barracks, September 10th; Frank E. Bolton, Surgeon, to the *Kinsha*, September 4th; Robert Kennedy, M.B., Surgeon, to the *Glory*, September 4th; Edmund Cox, M.B., to Chatham Hospital, September 4th; John A. Keogh, M.B., Fleet Surgeon, to the *President*, for three months' course at West London Hospital, September 9th; Edward Sutton, Fleet Surgeon, to the *Kent*, on recommissioning, undated; Arthur H. S. Richardson, Surgeon, to the *Amphitrite*, September 7th, and to the *Kent*, on recommissioning, undated; Reginald Thompson, Surgeon, to the *Cambridge*, September 7th.

ROYAL ARMY MEDICAL CORPS.

Lieutenant G. Carlisle resigns his commission, September 4th. His appointment as Lieutenant was dated January 28th last.

Major A. L. Borradaile, M.B., retires on retired pay, September 7th. He entered the service as Surgeon-Captain, July 27th, 1887, and became Major, July 27th, 1899. He served with the Nile Expedition in 1898, receiving the British and Egyptian medals.

The date of the retirement with a gratuity of Captain W. P. G. Graham, M.B, is November 24th, 1897, and not as stated in the *Gazette* of September 13th, 1898.

IMPERIAL YEOMANRY.

Surgeon-Captain J. F. Gordon Dill, M.D., the King's Own Royal Regiment, Norfolk, to be Surgeon-Major, July 14th.

Surgeon-Lieutenant J. A. Taylor, M.B., Scottish Horse, to be Surgeon-Captain, August 1st.

VOLUNTEER RIFLES.

Surgeon-Major (Honorary Captain in the Army) R. Pollok, M.B., is borne as supernumerary whilst holding the appointment of Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Highland Light Infantry Volunteer Infantry Brigade, July 12th.

Supernumerary Surgeon-Major E. Lee, 1st Volunteer Battalion the King's Own (Yorkshire Light Infantry), Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Humber Volunteer Infantry Brigade, to be Surgeon-Lieutenant-Colonel, remaining seconded, July 18th, 1903.

Surgeon-Lieutenant H. W. Spaight, 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment), resigns his commission, August 1st.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

George L. L. Lawson to be Lieutenant in the London Companies, London District, June 1st.

Lieutenant H. Wade, M.B., Edinburgh Company, Scottish Command, to be Captain, August 6th.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House-Surgeon (male). Salary, £80 per annum.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—(1) Resident Medical Officer. (2) Resident Surgical Officer. Salary, £60 per annum, rising to £80.

BIRMINGHAM: GENERAL HOSPITAL.—(1) Assistant House-Surgeon; salary at the rate of £40 per annum. (2) Two Receiving-room Officers; salary, £150 per annum.

BIRMINGHAM: QUEEN'S HOSPITAL.—House-Surgeon. Salary at the rate of £50 per annum.

BOMBAY MUNICIPALITY.—Two Assistants to the Health Officer.

BRENTFORD UNION.—Second Assistant Medical Superintendent of the Infirmary, and Second Assistant Medical Officer of the Workhouse and Schools. Salary, £125 per annum.

BRIGHTON: ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House-Surgeon. Salary at the rate of £80 per annum.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer. Salary at the rate of £50 per annum.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—House-Surgeon. Salary at the rate of £50 per annum.

CHORLTON UNION.—Senior Resident Medical Officer. Salary, £100 per annum.

CITY OF LONDON HOSPITAL, Victoria Park, N.E.—(1) Pathologist. Salary, £105 per annum. (2) Two House-Physicians (Males). Salary, £50 per annum. (3) Clinical Assistant. (4) Locum Tenens to House-Physician.

EDINBURGH HOSPITAL AND DISPENSARY FOR WOMEN AND CHILDREN.—(1) Honorary Surgeon Gynaecologist; (2) Honorary Junior Surgeon Gynaecologist. Medical women only.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—Eight Clinical Assistants in the Out-patient Department.

GLASGOW UNIVERSITY.—(1) Three Examiners for degrees in Arts, Science, and Medicine. (2) Five Examiners for degrees in Medicine.

GRAVESEND HOSPITAL.—House-Surgeon. Salary, £100 per annum.

GREAT NORTHERN HOSPITAL, Holloway.—(1) Anaesthetist; (2) Senior House-Surgeon; (3) Senior House-Physician; (4) Two Junior House-Surgeons; (5) Junior House-Physician. Salary (1), 10 guineas per annum; (2) (3), £60 per annum; (4) (5), £30 per annum.

JERSEY DISPENSARY AND INFIRMARY.—Resident Medical Officer.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House-Surgeon. Salary, £30 for six months.

LONDON TEMPERANCE HOSPITAL.—Resident Medical Officer. Salary, £120 per annum.

MANCHESTER: CHORLTON-UPON-MEDLOCK DISPENSARY.—Honorary Medical Officer.

MANCHESTER: NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—House-Surgeon. Salary, £80 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION, Hampstead.—Junior Resident Medical Officer. Honorarium £50 per annum.

NEWCASTLE-ON-TYNE: CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary, £104 per annum.

NEWCASTLE-ON-TYNE: UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Demonstrator of Physiology. Salary, £200 per annum.

NORWICH CITY ASYLUM.—Resident Medical Superintendent. Salary, £400 per annum, rising to £600.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary, £50 per annum.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Morning House Anaesthetist. Honorarium, £50 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—House-Physician. Salary at the rate of £50 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields.—(1) Senior House-Surgeon; salary at the rate of £100 per annum. (2) Clinical Assistants.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—(1) Honorary Dental Surgeon. (2) Honorary Assistant Anaesthetist.

SALFORD UNION.—Male Resident Medical Officer at the Infirmary. Salary, £130 per annum.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Clinical Assistants.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

SHEFFIELD UNION HOSPITAL.—Resident Assistant Medical Officer. Salary, £80 per annum, and £20 per annum for services in connexion with workhouse.

STAFFORD: GENERAL INFIRMARY.—Assistant House-Surgeon. Salary, £82 per annum.

STOCKPORT INFIRMARY.—Junior Assistant House-Surgeon. Salary, £40 per annum.

THROAT HOSPITAL, Golden Square, W.—Senior Clinical Assistants.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

UNIVERSITY OF GLASGOW.—Junior Assistant in the Physiological Department.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories notifies a vacancy at Newcastleton, co. Roxburgh.

APPOINTMENTS.

Beaman, E. H., L.R.C.P.and S.I., District Medical Officer of the Wakefield Union.

Berry, Joseph Foreman, M.B., Ch.B.St. And., L.R.C.P., L.R.C.S.Ed., Assistant Medical Officer of Health, County Borough of Wigan.

Bowman, G. F., M.B., Ch.B.Vict., Medical Officer of Health, Limehurst Rural District.

Corbett, Miss C. L., M.B., B.S.Vict., Assistant Medical Officer of the West Ham Union Infirmary.

Dayus, F. H., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the West Ham Union.

Esmonde, J., L.R.C.S.I., L.A.H.Dub., Medical Officer of Health of Penistone Rural District.

Foley, C., L.R.C.P. and S.I., District Medical Officer of the Ross Union.

Hartigan, T. J. P., F.R.C.S., Surgeon to the Hospital for Diseases of the Skin, Stamford Street, Blackfriars.

Harvey, F., M.R.C.S., District Medical Officer of the St. Columb Major Union.

Irvine, Robert, L.R.C.P. and S.Edin., L.F.P.S.Glasg., District Medical Officer of the Mansfield Union.

MacKirdy, Wm., L.R.C.P. and S.Edin., Medical Referee under the Workmen's Compensation Act for Circuit No. 35.

Palmer, F. W. Morton, M.B., B.C.Cantab., Ophthalmic Surgeon to the Teignmouth Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

Dickson.—At Hillcrest, Lochgelly, Fife, on the 9th inst., the wife of D. Elliot Dickson, M.B., F.R.C.S.E., of a daughter.

Lett.—On September 4th, at 48, Queen Anne Street, W., the wife of Hugh Lett, M.B., F.R.C.S., of a daughter.

Mackie.—On September 3rd, at Ravenhurst, Washwood Heath Road, Birmingham, the wife of Alex. H. Mackie, M.A., M.D., of a son.

MARRIAGES.

Burman—Caldicott.—On 4th inst., at St. James's, Hill, Sutton Coldfield, by Rev. Robert Pemberton, M.A., Vicar, Hugh Westley Burman, M.R.C.S., L.R.C.P., of Colwall, Herefordshire, to Phyllis, second daughter of O. H. Caldicott, Four Oaks, Warwickshire.

Christie—Nesbit.—At the Caledonian Hotel, Edinburgh, on the 7th inst., by the Rev. William Paterson, B.D., and the Rev. Alex. Wishart, Forgue (uncle of the bridegroom), John Farquhar Christie, M.A., M.B., C.M.Aberd., to Margaret Alice Louisa, daughter of John Nesbit, 32, Wellington Street, Portobello. At home, 7, Alford Place, Aberdeen, October 9th, 10th, 11th. No cards.

Crichton—Mackridge.—At the Priory Church, Bridlington, on September 10th, by the Rev. Allan Pride, D.D., Rector, Harry Crichton, M.D., B.S., of South Shields, to Hannah Lamb, third daughter of the late T. J. Mackridge, Esq., Collector of Inland Revenue, Nottingham, and Mrs. Mackridge, Bridlington. At home, Ogle Terrace, South Shields, October 29th, 30th, and 31st.

Daniel—Bapty.—On September 5th, at Epsom Parish Church, Alfred Wilson Daniel, M.D., son of the late Dr. W. C. Daniel, of The Silver Birches, Epsom, to Lena Gertrude Lucie Lee Bapty, daughter of Samuel Lee Bapty, of Birmingham.

Douse—Cackett.—On Wednesday, September 4th, at Christ Church, Beckenham, by the Rev. John Rooker, M.A., Vicar, John Freeman Douse, M.R.C.S., L.R.C.P., of Lydhurst Avenue and Hill-Side, Streatham Hill, younger son of T. Le Marchant Douse, Esq., B.A. (formerly for many years on the managing staff of the University of London), to Ethel Mary, younger daughter of Benjamin Cackett, Esq., and Mrs. Cackett, of "The Briars," Beckenham.

Gardner—Warren.—On September 10th, at the Parish Church, Caterham, by the Rev. F. T. Gardner, M.A. (brother of the bridegroom), Rector of Goldhanger, Essex, William Gardner, of Nunnery, near Frome, son of the late Thomas Gardner, of Woodcote Manor, Chaddesley Corbett, and Mary Letitia, daughter of the late James Warren, of Capel House, Waltham Cross, and granddaughter of the late John Shepard, of Sylva House, Caterham.

DEATHS.

Hamilton.—On August 4th, at Melbourne, Victoria, Caroline Ring, beloved wife of Henry Talbot Hamilton, M.B., B.S., and youngest daughter of the late Francis Workman, M.R.C.S., formerly of Reading.

Hirst.—August 31st, at Westfield Terrace, Chapel Allerton, Leeds, aged 29, Walter C. Hirst, M.B.Lond.

Johnston.—On the 6th inst., at Gale House, Ambleside, after a short illness, Augustus Johnston, M.B., aged 79.

Logan.—At Ravenswood, South Drive, Harrogate, on the 4th inst., Thomas Logan, M.D., late of Wibsey, Bradford. Friends will please accept this intimation.

Westcott.—On September 6th, at Whitmead, near Farnham, Edmund William Martyn Westcott, M.R.C.S. and L.R.C.P., late Surgeon to the River Nile Steamship *Amasis*.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Ear.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics. 2.30 p.m.: Operations; *X* Rays. Monday and Thursday, 2.30 p.m.: Diseases of the Eye. Tuesday and Friday, 2 p.m.: Diseases of Throat, Nose, and Ear; also on Wednesday and Saturday, 10 a.m. Tuesday and Friday, 2.30 p.m.: Diseases of the Skin. Wednesday, 10 a.m.: Diseases of Children. Wednesday and Saturday, 2.30 p.m.: Diseases of Eye and Diseases of Women.

BOOKS, Etc., RECEIVED.

Southsea and Portsmouth at a glance. Designed and edited by W. P. Watkins. Southsea and Portsmouth: Entertainment Committee. July, 1907. Free.

London: J. Murray. 1907:

The Life of Robert, first Lord Clive. By the Rev. G. R. Gleig, M.A. 2s. 6d.

The Wild Sports and Natural History of the Highlands. By C. St. John. 2s. 6d.

Microscopy. The Construction, Theory, and Use of the Microscope. By E. J. Spitta, L.R.C.P.Lond., M.R.C.S.Eng., etc. 12s. 6d.

London: (Taylor and Francis) Royal College of Surgeons of England. 1907:

Catalogue of Specimens illustrating the Osteology and Dentition of Vertebrated Animals, recent and extinct, contained in the Museum of the Royal College of Surgeons of England. By W. H. Flower. Part I. Man. *Homo Sapiens*. Linn. Second edition.

Descriptive and Illustrated Catalogue of the Physiological Series of Comparative Anatomy contained in the Museum. Vol. iii. Second edition.

Reminiscences. By G. Saunders, C.B., M.D. London: J. Nisbet and Co., Limited. 1907. 1s.

The Birds of the British Islands. By C. Stonham, C.M.G., F.R.C.S., F.Z.S. Part VII. London: E. Grant Richards. September, 1907. 7s. 6d.

London: Blackie and Son, Limited. 1907:

Health in the School, or Hygiene for Teachers. By J. C. S. Elkington, M.D., D.P.H. 2s.

The Laws of Health: A Handbook on School Hygiene. By C. C. Douglas, M.D., D.Sc.(Pub.Health), F.R.S.E. 3s.

London: Oxford University Press (H. Frowde). The World's Classics:

xc. Travels through France and Italy. By T. Smollett. 1s.

cxxx and cxxxi. Don Quixote. By M. de Cervantes Saavedra. Translated by C. Jervas. Edited by J. Fitzmaurice-Kelly. Vols. i and ii. 1s. each.

The Journal of a Voyage to Lisbon. By H. Fielding. Edited by A. Dobson, Hon. LL.D.Edin. 1s.

Nature's Hygiene and Sanitary Chemistry. By C. T. Kingzett, F.I.C., F.C.S. Fifth edition. London: Bailliere, Tindall and Cox. 1907. 7s. 6d.

The Russian Peasant. By H. P. Kennard, M.D. London: T. Werner Laurie. 1907. 6s.

Modern Methods for Securing Surgical Asepsis. By E. Harrison, M.A., M.D., F.R.C.S. London: A. Brown and Sons, Limited. 3s. 6d.

Philadelphia and London: W. B. Saunders and Co. 1907:

Practical Fever Nursing. By E. C. Register, M.D. 12s.

A Laboratory Manual of Invertebrate Zoology. By G. A. Drew, Ph.D. 5s.

A Manual of Diseases of the Nose, Throat, and Ear. By E. B. Gleason, M.D., LL.D. 12s.

A Manual of the Diagnosis and Treatment of the Diseases of the Eye. By E. Jackson, A.M., M.D. Second edition. 10s. 6d.

Treatment of the Diseases of Children. By C. G. Kerley, M.D. 21s.

A Textbook upon the Pathogenic Bacteria. By J. McFarland, M.D. Fifth edition. 15s.

Surgical Diagnosis. By D. N. Eisendrath, A.B., M.D. 28s.

A Textbook of Histology, including Microscopic Technic. By A. A. Böhm, M.D., and M. von Davidoff, M.D. Edited by G. C. Huber, M.D. Second edition. 15s.

Nothnagel's Practice. Diseases of the Intestines and Peritoneum. By Professor Dr. H. Nothnagel. Edited by H. D. Rolleston, M.A., M.D., F.R.C.P. Second edition. Translated and edited by A. Stengel, M.D. 21s.

Nervous and Mental Diseases. By A. Church, M.D., and F. Peterson, M.D. Fifth edition. 21s.

The New Religion. By Maarten Maartens. London: Methuen and Co. 1907. 6s.

Jahresbericht über die leistungen und fortschritte auf dem Gebiete der Neurologie und Psychiatrie. Herausgegeben von Dr. Ed. Flatau u. Dr. S. Bendix. Redigiert von Prof. Dr. E. Mendel u. Privatdozent Dr. L. Jacobsohn. X Jahrgang. 1906. Berlin: S. Karger. 1907. M.37.

Formulario Ragionato di Oculistica. Por Dott. E. Trombetta. Torino: S. Lattes et C. 1907.

Five Hundred Surgical Suggestions, Practical Brevities in Diagnosis and Treatment. By W. M. Brickner, B.S., M.D., and E. Moschcowitz, A.B., M.D. Second series. New York: Surgery Publishing Co. 1907. 1.00 dol.

On Stammering, Cleft Palate Speech, Lisping. By Mrs. E. Behnke. London: Sampson, Low, Marston and Co. 1907. 1s.

London: C. Griffin and Co., Limited. 1907:

A Surgical Handbook. By F. M. Caird, M.B., F.R.C.S.Edin., and C. W. Cathcart, M.B., F.R.C.S.Eng. and Edin. Fourteenth edition. 8s. 6d.

Medical Ethics: A Guide to Professional Conduct. By R. Saundby, M.D.Edin. Second edition. 7s. 6d.

Jena: G. Fischer. 1907:

Handbuch der Technik und Methodik der Immunitätsforschung. Herausgegeben von Prof. Dr. R. Kraus and Dr. C. Levaditi. Erster Band. Erste Lieferung. M.15.

Plasma und Zella. Erste Abteilung Allgemeine Anatomie der Lebendigen Masse. Bearbeitet von Prof. Dr. M. Heidenhain. Erste Lieferung: Die Grundlagen der mikroskopischen Anatomie, die Kerne, die Centren u. die Granulalehre. M.20.

Die Tetanie der Erwachsenen. Von Prof. Dr. L. v. Frankl-Hochwart. Zweite Auflage. Wien und Liepzig: A. Hölder. 1907. M.3.80.

Die kindliche Psyche und der Genussgeistiger Getränke. Von L. Lang. Wien: J. Safar. 1907. M.1.40.

Sociedad de Beneficencia de la Capital. Memoria del Año 1906. Buenos Aires: Imprenta de Obras de Emilio Spinelli. 1907.

The Care of the Body. By F. Cavanagh, M.D.Edin. London: Methuen and Co. 1907. 7s. 6d.

***** In forwarding books the publishers are requested to state the selling price.**

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
SEPTEMBER.	
16 MONDAY ...	
17 TUESDAY ...	
18 WEDNESDAY	
19 THURSDAY...	Leigh Division, *Lancashire and Cheshire Branch*, Co-operative Rooms, Ellesmere Street, 8.30 p.m.
20 FRIDAY ...	
21 SATURDAY...	
22 Sunday ...	
23 MONDAY ...	
24 TUESDAY ...	
25 WEDNESDAY	
26 THURSDAY...	Altrincham Division, *Lancashire and Cheshire Branch*, Knutsford, 4.30 p.m. East Anglian Branch, Autumn Meeting, Cromer. South-Eastern Counties Division, *Edinburgh Branch*, King's Arms Hotel, Melrose, 3 p.m.
27 FRIDAY ...	South-West Wales Division. *South Wales and Monmouthshire Branch*, Waterloo Hotel, Aberystwith.
28 SATURDAY ...	
29 Sunday ...	
30 MONDAY ...	
OCTOBER.	
1 TUESDAY ...	
2 WEDNESDAY	
3 THURSDAY...	
4 FRIDAY ...	
5 SATURDAY...	
6 Sunday ...	
7 MONDAY ...	
8 TUESDAY ...	
9 WEDNESDAY	
10 THURSDAY...	

Date.	Meetings to be Held.
OCTOBER *(Continued).*	
11 FRIDAY ...	
12 SATURDAY...	
13 Sunday ...	
14 MONDAY ...	
15 TUESDAY ...	
16 WEDNESDAY	
17 THURSDAY...	
18 FRIDAY ...	
19 SATURDAY...	
20 Sunday ...	
21 MONDAY ...	
22 TUESDAY ...	
23 WEDNESDAY	Dorset and West Hants Branch Blandford.
24 THURSDAY...	
25 FRIDAY ...	
26 SATURDAY...	
27 Sunday ...	
28 MONDAY ...	
29 TUESDAY ...	
30 WEDNESDAY	Central Council.
31 THURSDAY...	
NOVEMBER.	
1 FRIDAY ...	
2 SATURDAY...	
3 Sunday ...	
4 MONDAY ...	
5 TUESDAY ...	
6 WEDNESDAY	
7 THURSDAY...	
8 FRIDAY ...	
9 SATURDAY...	
10 Sunday ...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

The British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the British Medical Journal is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the British Medical Journal for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 21ST, 1907.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains reports having reference to the Referendum on the Draft Charter, until the subject has been considered by the Division to which he belongs.

BY ORDER.

REFERENDUM ON RESOLUTIONS OF REPRESENTATIVE MEETING.

REPORT BY REPRESENTATIVE MEETING.

INTRODUCTORY.

THE Annual Representative Meeting at Exeter, on July 30th, 1907, decided that a statement should be issued to the Divisions on behalf of the Representative Meeting, in order to make clear to them certain points in connexion with the present Referendum. A Committee was appointed (*see* Minutes, 301-2-3, Appendix A, p. 187) to prepare the Statement, and has prepared this Report accordingly.

PRESENT REFERENDUM UNCONSTITUTIONAL.

1. The Representative Meeting considers that the present Referendum has not been taken upon constitutional grounds.

2. The Articles of Association (Articles XXII and XXXV) provide that the Council may refer a Resolution of the Representative Meeting to the Divisions only on the ground that the Resolution in question does not properly represent the wishes of the Association. (Article XXII (2), *see* * *below.*)

3. The Council has no power to take a Referendum merely on the ground that the Council, or the majority of the Council for the time being, disapproves of the Resolution in question, so long as there is no reason to doubt that it represents the wishes of the Association.

4. In the present case there is not only no reason to doubt, but every reason to believe, that the Resolutions of the Representative Meeting, on which a Referendum is being taken, properly represent the wishes of the Association as repeatedly expressed during the past three years through the constitutional machinery of the Divisions and the Representative Meeting.

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* ARTICLE XXII (2).

(2) As regards each resolution to be considered at such meeting of the Council it shall rest with the Council at such meeting to approve of such resolution *or, on the ground that it does not properly represent the wishes of the Association, to determine on a Referendum.*

5. In the Report which has been issued by the Council, no attempt is made to show that the Resolutions in question do not properly represent the wishes of the Association. The Report merely purports to explain why the Resolutions are not regarded with favour by the majority of the Council. Certain fundamental constitutional questions are also raised concerning the position of the Representative Meeting and the Council, which appear to have nothing to do with the application of the Referendum.

SUBJECTS OF THE REFERENDUM.

6. The Resolutions upon which the Referendum has been taken are stated at the end of this Report, and the subjects of them are Ordinance 17 (*b*) under the draft Charter, concerning the powers of the Council in taking a Referendum; certain By-laws under the draft Charter affecting the composition and mode of election of the Central Council; and the By-law affecting the Committee or Committees which have under the Council to supervise the Finances and the JOURNAL of the Association.

PREVIOUS CONSIDERATION.

7. Each of these subjects, as shown in Appendix B on page 188, has been repeatedly before the Divisions since the spring of 1905, when the obtaining of a Royal Charter was first proposed by the Council; the history of the discussion of each is stated in that Appendix and shows clearly that the Resolutions of the Special Representative Meeting of May, 1907, on which a Referendum has been taken, were in fact in accordance with the instructions which the Representatives had repeatedly received from their constituents.

REFERENDUM AS AFFECTING STATUS OF REPRESENTATIVE MEETING.

8. To take a Referendum in such a case is to question the authority of the Representatives in Representative Meeting for expressing in any circumstances the wishes of their constituents; in effect, the Divisions are being asked to pass votes of want of confidence in their Representatives. Further, in the Report of the Council it has not been thought sufficient simply to put the Resolutions of the Representative Meeting before the Divisions for affirmation or otherwise; the Divisions are appealed to to repudiate the acts of their Representatives.

REASONS ASSIGNED FOR TAKING REFERENDUM.

9. While no attempt is made in the Report of the Council to show any ground for supposing that the Resolutions of the Representative Meeting of May, 1907, do not properly represent the wishes of the Association, certain general reasons are assigned for taking a Referendum, namely, that the matters in question involve "radical changes" which are regarded by some as "likely to be harmful to the well-being of the Association," and which "should receive the serious attention of all the Members."

COUNCIL APPROVES CHARTER GENERALLY.

10. At the same time it is stated that the Council is still in favour of obtaining a Royal Charter provided the changes introduced are approved by the Members. It is also stated that "the majority of the Resolutions of the Representative Meeting," relating to the Charter, "are approved by the Council."

11. This is satisfactory as reducing the matters remaining to be discussed before the general question of applying for a Charter is definitely settled.

12. It is submitted, however, on behalf of the Representative Meeting that the reasons assigned in the Council Report for taking a Referendum at all, and so delaying the application for a Charter for many months, are inadequate. All the matters in question have already received the serious consideration of the Association; the question whether any changes proposed would be harmful to the well-being of the Association is a matter on which the opinion of the Association has already been ascertained; and the changes proposed are not "radical," as suggested in the Report of the Council.

ORDINANCE 17 (*b*).—REFERENDUM.

13. As regards the first matter referred, Ordinance 17 (*b*), the actual position is that the Council proposes

a "radical change" which would be dilatory and expensive in working, and which is inconsistent with the general constitutional relation of the Representative Body and Council contemplated in Clauses of the Charter which the Council has accepted.

Present System of Referendum.

14. The present system is that a Referendum can only be taken on the ground that a Resolution does not properly represent the wishes of the Association, and if a Referendum is taken the matter must be referred to the Divisions as soon as possible.

New System proposed by Council.

15. It is proposed on behalf of the Council that in future the Council should have power to take a Referendum on any Resolution of the Representative Meeting, even though there may be no reason to doubt that it properly represents the wishes of the Association, and it is proposed that such a Resolution should be referred by the Council back to the Representative Meeting before being referred to the Divisions.

Unconstitutional in Principle.

16. The Representative Meeting submits to the Divisions that if there is *no reason* to doubt that a Resolution represents the wishes of the Association, the Council ought not to be given power to delay the operation of the Resolution and thus interpose obstacles to carrying into effect the declared will of the Association. If there *is* reason to doubt that the Resolution expresses the opinion of the Association, then it ought not to go back to the Representative Meeting, but should be put before the Divisions at the earliest opportunity in order that the true will of the Association may be obtained as rapidly as possible.

Dilatory and Expensive.

17. The proposal of the Council would involve either spending £150 to £200 in convening a Special Representative Meeting or delaying the operation of the Resolution in question for at least 12 months pending the next Annual Representative Meeting. Even then there would be scope for further delay by a Referendum to the Divisions. The business of the Association cannot afford such delays.

Never previously Suggested.

18. Attention is particularly called to the fact that nothing has been heard of the proposal now put forward by the Council until the issue of the present Report of the Council.

19. A Referendum is generally understood to be a request for a direct "yes" or "no" on certain specific questions. It is submitted that it is *ultra vires* to make it an opportunity for the submission of alternative proposals, there being no provision for such a course of action in the Regulations of the Association. Confusing the issues in this way destroys the effect of a Referendum.

20. It is further submitted that such a radical change should either have been submitted to the Divisions during the two years that the Charter has been under discussion or should have been postponed until after the Charter has been obtained. Special machinery exists in the constitution, and has in the past been repeatedly utilized by the Council, for the Council so to submit matters for consideration by the Divisions.

By-law 36. Composition and Mode of Election of Council.

21. Concerning the composition and mode of election of the Council the criticisms in the Report of the Council have so little relation to the Resolutions of the Representative Meeting to which they are supposed to refer that it is necessary to state exactly what is proposed in those Resolutions.

Changes Involved.

22. The draft By-law 36 as approved by the Representative Meeting would involve three changes from the existing system:—That the Council should be reduced in number to 52 (the number under the existing constitution not being definitely fixed, but being usually between 70 and 75); that 12 Members of the Council should be elected by the Representative Body; and that, apart from the election of the Service Members there should be no co-option by the Council.

Reduction in size of Council.

23. Of these proposals, no objection is taken by the Council to the reduction of the total number of Members of Council, which appears to be generally recognized as desirable in the interests both of efficiency and economy. A smaller body would carry out the work of the Council more easily, and would cost less in travelling expenses.

Election of part of Council by Representatives.

24. Concerning the proposal that a part of the Council should be elected by the Representatives, the comments put forward on behalf of the Council are out of proportion to what is proposed.

25. It is suggested that the powers of the Council are to be transferred to the Representative Body, that the influence of the Council in the Association is to be diminished, and in fact that the present system of administration is to be entirely altered. It is difficult to see how such changes can be supposed to be involved in the mere election of 12 Members of the Council out of 52 by the Representatives.

26. The Council has ignored the arguments put forward by those who favour the election of at least a portion of the Council by the Representatives, namely, that this would bring the Representative Body and Council into closer touch with one another, and would promote the harmony and co-operation between the two bodies which is essential in the interests of the Association.

27. As explained in Appendix B, paragraph 5, page 188, this proposal has been approved not only repeatedly by the Divisions, but also by the Council itself in 1905, when the Council drafted a By-law for the purpose of carrying it into effect.

By-law 37. Grouping of Branches for Electoral Purposes only.

28. Concerning the grouping of Branches for electing Members of Council, it is necessary to point out that this proposal touches the election of Members of Council only, and would not affect the work of the Branches in any other way.

29. It is not a "radical" change, for 19 of the Branches in the United Kingdom and many of the Colonial Branches are grouped already, and some of those so grouped have quite as little in common as any Branches could have.

30. To give independent representation to every Branch and a fair proportional representation to the larger Branches would mean a Council of 150, which is out of the question.

31. Members must make up their minds that if the Council is to be reduced in size, as desired, the Branches must be further grouped, for electoral purposes only. Size of electoral districts and number of Members elected are obviously interdependent.

32. Further, the present system is full of anomalies and unjust to the larger Branches. The proposal approved by the Representative Meeting would provide electoral districts more equal than those at present existing.

BY-LAW 38.

33. By-law 38 is recognized by the Council to be consequential as arising from previous By-laws, and therefore, does not need discussion, except to point out that for an election conducted by voting papers, sent to each Member, and in which, therefore, the duties of the Branch Secretary are purely secretarial, it would appear to be more economical and in every way more convenient for the election to be conducted from the Central Office.

BY-LAW 29.

34. By-law 29 is recognized also to be consequential upon By-laws previously considered, and is stated to be referred to chiefly on this ground.

The majority of the Council in preparing the Report of the Council have, however, introduced a comment on the fact that the By-law includes in the business of the Representative Meetings matters which under the existing constitution are dealt with by General Meetings.

It has apparently not been noticed that the framing of this By-law is purely consequential upon Clauses of the Charter and Ordinances which the Council has accepted. The By-laws are dependent upon the Ordinances and the Ordinances upon the Charter. There is no provision in the Charter for the convening of General Meetings, other than scientific meetings.

It is not clear whether the majority of the Council do or do not desire to suggest that the principle of holding General Business Meetings should be retained, but if this were contemplated the provision should have been inserted in the Charter itself, and such an important point should have been raised by the Council at an earlier stage in the discussion of the Charter.

The principle was settled by a Resolution of the Representative Meeting at Leicester to which the Council at that time took no objection, and all the drafts prepared in the last two years have been prepared on this basis without objection by the Council.

SCHEDULE TO BY-LAWS: COMMITTEES.

Separate Finance and Journal Committees.

35. The Representative Meeting has approved that in future there should be one Committee, to act under the Council, to deal with the Finances of the Association, and another Committee, also acting under the Council, to deal with the JOURNAL, instead of having one Committee as at present, the Journal and Finance Committee, to deal with both these matters.

36. The arguments of the Council against these proposals appear to be essentially three, that the present system has worked well, that the Finances of the Association are intimately connected with the JOURNAL, and that the Journal Committee would be a revival of the old Reference Committee, at one time created by the Council, which is stated in the Report of the Council to have worked unsatisfactorily.

37. On behalf of the Representative Meeting, it is submitted that the nature of the work of the Association has greatly changed in recent years, and arrangements which might be suitable in former times are no longer applicable. The supervision of the finances of the Association is sufficient work for one Committee. The Finance Committee should not be specially concerned with the business of any one department of the Association, but should help the Council to co-ordinate all departments. The Finance Committee should include representatives of the principal Committees whose work affects finances. The Journal Committee should be a special Committee of those specially qualified to deal with this subject. The important bearing of the JOURNAL upon the finances is sufficiently recognized in the proposal put forward by the Special Finance Inquiry Committee, that, in addition to the Chairman, two other Members of the Journal Committee should be Members of the Finance Committee.

38. The proposal approved by the Representative Meeting does not mean that the Journal Committee should act like the old Reference Committee. It would act under the direction of the Council, and presumably would deal with such matters affecting the JOURNAL as are now dealt with by the Journal and Finance Committee. At all events, it would rest entirely with the Council to say how it should act, and therefore the fears suggested appear to be unfounded.

General Constitutional Questions.

39. In the Report of the Council, which it is important to note has only been issued by the decision of a Majority, a Minority strongly protesting, certain important constitutional questions as to the relation of the Representative Body to the Council are raised. They appear to have very little to do with the subject matter of the Referendum, but, having been raised, reference must be made to them on behalf of the Representative Meeting. It is stated that the Council is "the most representative body in the Association," and that it is necessary that it shall act as a "second chamber" to "revise" the acts of the Representative Body.

40. In dealing with these matters it must be observed that the position of the Representative Body and of the Council under the Charter is fundamentally defined, not by any of the Resolutions on which the Referendum has been taken, but by Clauses 7 and 8 of the Charter, of which the Council has approved.

41. Under these Clauses the Representative Body is made the governing body of the Association, and the Council is entrusted with general executive and administrative duties as well as with the power of Referendum to act as a check in case the Representatives in Representative Meetings should pass any Resolution as to which there might be reason to doubt whether it truly represents the wishes of the Association. Such reasons might be any tending to show that the Representatives on the occasion of passing the Resolution in question were not acting in a truly representative capacity. Such a check is entirely different from the position of a legislative "chamber" having the constitutional duty of "revision," and the institution of two legislative "chambers" is an unnecessary complication in the government of such a body as the British Medical Association.

42. In advancing such claims, and indeed in taking a Referendum as at present in the absence of the proper constitutional grounds for so doing, the majority of the Council is disputing the constitutional position and powers of the Representative Body and reviving those claims to supreme authority in the Association which were considered and rejected in 1900 and 1902.

43. Prior to 1900 the Council claimed the right to ignore Resolutions of General Meetings, and, when this was shown to be illegal, prepared, and submitted to the Association, Articles of Association which would have given the Council supreme authority over the Association. It was apparently not considered by the Council at that time that there was any necessity for a "second chamber" so long as the Council was the first chamber. The Association by rejecting those Articles in July, 1900, showed that it was not prepared to place the entire power, both legislative and executive, in the hands of one body. In the Report of the Constitution Committee, appointed shortly afterwards, the fundamental principle was laid down that there should be one Body for the purpose of defining the policy of the Association, namely, the Representative Meeting composed of Representatives of Divisions, and a different Body, the Council, as the Central Executive, and this principle was approved by the Association in 1901. In the Articles of Association subsequently prepared and approved by the Association in July, 1902, provision was made that the Representative Meeting, composed of Representatives of Divisions, should define the policy of the Association (subject to a Referendum when their resolutions did not properly represent the wishes of the Association), and that it should be the duty of the Council to carry into effect the Resolutions of the Representative Meeting subject of course to the Articles and By-laws and to the power of Referendum.

44. This is the constitutional position which it has been proposed to continue under the Charter.

45. On these grounds it is hoped that the Divisions will uphold the acts of their Representatives in May, 1907, which those Representatives believed were in accordance with the instructions they had received, and will reaffirm the Resolutions of the Representative Meeting on which the Referendum has been taken.

On behalf of the Representative Meeting,

(Signed) J. A. MACDONALD,

Chairman of Representative Meetings.

APPENDIX A.

MINUTES OF REPRESENTATIVE MEETING AS TO ISSUE OF STATEMENT CONCERNING REFERENDUM

301 **Resolved** *nem con.:* That in view of the fact, recorded in the Minutes of the Meeting of the Central Council of June 5th, as published in the Supplement of the JOURNAL of June 22nd, that the Council has decided to take a Referendum upon certain Resolutions carried at the Special Representative Meeting held in May, relating to the proposed Royal Charter, this Meeting decides to appoint a Committee to consider the terms of such Referendum, and to prepare a Report upon the same, the Report to be sent to each Representative, and to the Honorary Secretaries of Divisions and Branches, and to be published in the JOURNAL.

302 **Resolved**: That the Report be sent to the Chairmen of the Divisions and Presidents of Branches, as well as to the Honorary Secretaries.

303 **Resolved**: That the Committee to draw up the Report be as follows:

The Chairman of Representative Meetings (Dr. J. A. Macdonald).

Mr. Armit.
Dr. Alfred Cox.
Dr. Langdon-Down.
Dr. Maclean.
Dr. Walter Smith.

Under the Articles of Association, the President (Dr. H. Davy), the Chairman of Council (Mr. Edmund Owen, F.R.C.S.), and the Treasurer (Dr. E. Rayner) are also Members of the Committee *ex-officio*.

APPENDIX B.

HISTORY OF PREVIOUS CONSIDERATION OF THE SUBJECTS OF THE REFERENDUM.

(*a*) ORDINANCE 17 (*b*): SUBSTANTIALLY IDENTICAL WITH THE PRESENT REGULATIONS.

1. Concerning Sub-clause (*b*) of Ordinance 17, it is first to be noted that this Sub-clause is identical in substance with Sub-clause (2) of the present Article XXII. The proposal, therefore, to which exception is now taken on behalf of the Council is one which was approved by the Association in adopting the present constitution in July, 1902, and has been in force, as part of the present Regulations, since that date.

ORDINANCE 17 (*b*): REPEATEDLY APPROVED BY DIVISIONS AS PART OF CHARTER.

2. The proposal to continue this provision of the present constitution without substantial alteration under the Charter was embodied in each draft of the Regulations under the Charter which has been before the Association, namely, in the draft issued in March, 1906, and considered by the Annual Representative Meeting at the Caxton Hall, London, in July of that year, and in the draft issued on April 6th, 1907, and considered by the Special Representative Meeting on May 31st. On each occasion the draft was discussed by the Divisions without any objection being raised to this Sub-clause. The Representatives in the Special Representative Meeting were, therefore, justified by their instructions from their constituents in believing that the Resolution adopted on this subject was in accordance with the wishes of the Association

HISTORY OF PREVIOUS CONSIDERATION.—(*b*) COMPOSITION AND MODE OF ELECTION OF COUNCIL.

3. Concerning the composition and mode of election of the Council, the Resolutions to which exception is taken by the Council involve essentially three substantial changes, namely—the first, that a portion of the Council should be elected by the Representative Meeting; the second, that the total membership of the Council should be less than heretofore; and the third, which is a necessary consequence of the former, that the Branches should be grouped into electoral districts, wider in area than at present, for the purpose of electing those members of Council who are to be elected by the Branches.

PREVIOUS CONSIDERATION OF MODE OF ELECTION OF COUNCIL.

4. The proposal that a portion of the Council should be elected by the Representative Meeting has already be three times before the Divisions, and on each occasion the Representatives, acting upon the instructions received by them as a result of deliberations upon the matter in their constituencies, have by large majorities approved the proposal.

1905-6—PRESENT BY-LAWS.

5. The first occasion was in 1905, when a motion by the North Manchester Division was placed upon the Agenda of the Representative Meeting, and circulated to the Divisions more than three months before the Meeting. The Representative Meeting adopted the proposal *nem. con.*, and the Council, upon consideration of the Resolution of the Meeting in July, 1905, approved the proposal by not taking a Referendum thereon, accepted the Resolution as an instruction to prepare a By-law to give effect thereto, for the consideration of the next Annual Representative Meeting, prepared such a By-law, and submitted the same to the Annual Representative Meeting of 1906.

Annual Meeting, 1906.

6. The Annual Representative Meeting, 1906, had also before it, in connection with the draft Charter, a motion by the Stratford Division to the effect that the *whole* Council should be elected by the Representative Body. The Representative Meeting adopted an amendment to the Stratford motion, namely, that a *portion* (one-third) of the Council should under the Charter be elected by the Representative Body, and in the meantime took no further action with regard to the alteration of the present By-laws of the Association.

1906–7—Consideration of Revised draft Charter.

7. Acting in accordance with the instructions of the Annual Representative Meeting, the Organization Committee, in revising the draft Charter, included a provision that one-third of the Council should be elected by the Representative Meeting. This was placed before the Divisions in April, 1907, and was a portion of the draft Charter which received very general attention as shown by the reports of the Division Meetings.

May, 1907.—Voting in Special Representative Meeting on Principle.

8. Various alternative proposals as to the composition of the Council were at the same time placed by the Organization Committee before the Divisions, and in the ensuing Special Representative Meeting, a vote was taken on three proposals, namely: first, that the *whole* Council should be elected by the Representative Meeting, which was rejected by 52 to 35; second, that *none* of the Council should be elected by the Representative Meeting, which was rejected by 57 to 31; and third, the intermediate course indicated in the draft Charter as submitted to the Meeting, that a *portion* of the Council should be elected by the Representative Meeting, which was approved, *nem. con.*

Special Representative Meeting: Decision as to Proportions to be Elected.

9. The Representative Meeting subsequently proceeded to consider the proportions in which the Members of the Council should be elected by the various bodies entitled to elect, and finally approved the proposal that the Members of Council elected by the Representative Meeting, should be 12 out of a total Council of 52, that is to say, rather less than one-fourth.

Conclusion from History as to Wishes of the Association.

10. In view of this history, to suggest that the decision of the Representative Meeting of May, 1907, that a portion of the Council should be elected by the Representative Meeting, did not properly express the wishes of the Association, is to strike at the root of the Representative character and constitutional position of the Representative Meeting.

Attention is further called to the fact that the proposal which the Council suggests as an alternative, namely, that none of the Council should be elected by the Representative Meeting, is that one of all the possible courses which received the smallest support after full consideration of the matter by the Divisions.

Consideration of proposed reduction of size of Council.

11. The proposal that the Council should be reduced in size appears from the Report which has been issued on behalf of the Council not to be opposed by the Council. Nevertheless, as this is, in effect, an integral part of the By-laws upon which the Referundum has been taken, it is desirable that the facts as to the previous consideration of this subject should be stated.

The Annual Representative Meeting of 1906 adopted an instruction to the Organization Committee in re-drafting the Charter for submission to the Divisions to provide for a much smaller Council than previously, and the draft Charter submitted to the Divisions in 1907 was accordingly so drafted.

The deliberations in the Divisions showed a large preponderance of opinion in favour of such reduction as tending to efficiency and economy, and in the special Representative Meeting the opinion in favour of some reduction was such that no motion in favour of maintaining the present Members was even proposed though a larger Council than contemplated in the By-law submitted to the Meeting was approved in order to afford sufficient scope for topographical representation of various districts on the Council.

GROUPING OF BRANCHES.

12. The more extensive grouping of Branches for the election of Members of Council to which exception is taken on behalf of the Council is a necessary consequence of the election of part of the Council by the Representative Body, and of the contemplated reduction in the aggregate membership of the Council.

CONSIDERATION OF QUESTION OF FINANCE AND JOURNAL COMMITTEES: LEICESTER, 1905.

13. The previous history of the consideration of the question whether there should be separate Finance and Journal Committees begins with the Representative Meeting at Leicester, when a Resolution was carried *nem. con.* directing that in the drafting of the regulations under the proposed Charter provision should be made for the constitution of a Finance Committee separate from the Committee which deals with the JOURNAL.

NO REFERENDUM TAKEN BY COUNCIL.

14. The Council did not take a Referendum upon this Resolution but accepted the instruction that the Charter should be so drafted, and it was so drafted accordingly.

DRAFT CHARTER: 1906.

15. The proposal was before the Divisions in the draft issued in March, 1906, and no objection was taken to it in the Annual Representative Meeting of that year.

BY-LAWS: 1906.

16. A proposal from the Dundee Branch to alter the present By-laws in the same way was submitted to the Divisions in March, 1906, and was approved by the ensuing Annual Representative Meeting by a bare majority, which, however, was insufficient to effect an alteration of the existing By-laws. This vote on the present By-laws, though not affecting the decision arrived at by the previous Annual Meeting as to the provision to be made under the Charter, is noted as a matter of history.

DRAFT CHARTER: 1907.

17. The matter was again submitted to the Divisions in the draft Charter issued in April, 1907, and was approved in the Special Representative Meeting, after full discussion, by a majority of 68 to 5.

CONCLUSION FROM THE FOREGOING NARRATIVE.

18. Upon each of the subjects, therefore, upon which the Referendum has been taken it is submitted, on behalf of the Representative Meeting, for the consideration of the Divisions, that the Representatives in the Special Representative Meeting of May, 1907, had ample grounds, in instructions repeatedly received from the Constituencies, for believing that in adopting the Resolutions now questioned they were giving effect to the wishes of the Association as constitutionally expressed.

REFERENDUM.

MINUTES OF THE SPECIAL REPRESENTATIVE MEETING OF THE ASSOCIATION HELD ON MAY 30TH TO 31ST, 1907, ON THE SUBJECTS TO WHICH THE REFERENDUM RELATES.

(All the Minutes of the Special Representative Meeting with regard to each Subject are shown for convenience of reference, those which are actually the subject of Referendum being printed in larger type and an * prefixed to each.)

A.—MINUTES CONCERNING ORDINANCE 17 (*b*).

Proposed by the Chairman of the Organisation Committee:

That Ordinance 17 (*b*) be approved.

121. The following amendment, of which the St. Pancras and Islington, and Liverpool Northern constituencies had given notice, namely:

That in Ordinance 17 (*b*), 1st line, the word "shall" be inserted for the word "may"—

was, with the consent of the Meeting, withdrawn.

122 Whereupon an amendment by Dr. C. Buttar (Kensington):

That the words "or if they shall receive a petition from not less than 100 members of the Association, desiring the said referendum" be added at the end.

The amendment was lost.

*123 **Resolved:** That Ordinance 17 (*b*) be approved.

B.—MINUTES CONCERNING COMPOSITION AND MODE OF ELECTION OF COUNCIL.

By-law 36.

260 Proposed by the Chairman of the Organisation Committee:

That By-law 36 be approved.

261 Whereupon an amendment by Mr. H. A. Ballance (Norwich, West Norfolk):

That By-law 36 be so modified as to provide for the election of the whole of the Central Council, with the exception of the *ex officio* and Colonial Members, by the Representatives of Divisions at the Annual Representative Meeting, and in such a manner as to secure due topographical representation of the various districts of the United Kingdom.

By-law 36 (*resumed consideration*).

281 The Chairman announced the result of the **vote** by **card** on the amendment proposed by the Norwich Division to By-law 36, as follows:

For the amendment **3,683 votes** (35 constituencies).

Against the amendment **5,707 votes** (52 constituencies),

the **amendment** being **lost** by **2,024 votes** (17 constituencies).

282 Whereupon an amendment to By-law 36, proposed by Mr. H. W. Armit (Hampstead):

That the present method of election be retained.

The amendment was lost by 31 votes for, to 57 against.

*283 **Resolved,** *nem. con.*: That the principle of the election of the Council be that the Council be elected partly by the Branches and partly by the Representative Body.

284 Proposed by Mr. Ballance, on behalf of the Organisation Committee:

That the ratio of Members elected by the Branches to the Members elected by the Representative Body be 2 to 1, for the United Kingdom only.

285 Whereupon an amendment by Dr. T. Laffan (Carlow, Kilkenny, Waterford), seconded by Dr. R. L. Langdon-Down (Richmond):

That the ratio of Members elected by the Branches to Members elected by the Representative Body be 3 to 1.

The amendment was lost by 25 votes for, to 60 against.

286 Whereupon an amendment by Dr. E. D. Kirby (Birmingham, Central):

That the ratio be 22 to 9.

The amendment was lost by 14 votes for, to 59 against.

*287 **Resolved,** with 1 dissentient: That the ratio be 2 to 1.

288 Proposed by Mr. H. A. Ballance (Norwich, West Norfolk):

That the Council include 20 Members elected by the Branches in the United Kingdom, 10 elected by the Branches not in the United Kingdom, and 10 elected by the Representative Body.

289 Whereupon an amendment by Dr. E. R. Fothergill (Wandsworth), seconded by Dr. D. G. Thomson (Mid-Norfolk):

That the number of Colonial members of the Council be not exceeding 7.

Dr. Stawell, Representative of the Victorian Branch, having stated that this would, he believed, meet the requirements of the Colonial Branches, Mr. Ballance, with the leave of the Meeting, **accepted** the **amendment.**

290 Whereupon an amendment by Dr. R. H. Wolstenholme (Salford), seconded by Dr. J. Brown (Rochdale, Bury):

That the number be not exceeding 5.

The amendment was lost.

291 Whereupon an amendment by Dr. J. S. Darling (Portadown and West Down), seconded by Dr. T. Laffan (Carlow, Kilkenny, Waterford):

That there be 32 members elected by the Home Branches and 16 by the Representative Body, and that the Council consist of 64.

The amendment was lost by 37 votes for, to 52 against.

292 Whereupon an amendment by Dr. J. J. Macan (Croydon):

That the Council consist of 52 members—24 elected by the Home Branches, 12 by the Representative Body, not more than 7 by the Colonies, 6 *ex-officio* members, and 3 Service members.

Mr. Ballance, with the leave of the Meeting, accepted the amendment.

*293 **Resolved,** with 5 dissentients: That the Council include 24 members elected by the Branches in the United Kingdom; members, not exceeding 7 in number, elected by the Branches not in the United Kingdom; 12 members elected by the Representative Body; 6 *ex-officio* members; and 3 members representing the Navy, Army, and Indian Medical Services.

294 Upon the motion, as amended, being put as a substantive motion,

An amendment was proposed by Col. Joubert de la Ferté (Council) seconded by Col. E. M. Wilson (Council):

That in By-law 36, last line, there be substituted for the word "three" the word "five."

The **amendment** was **carried.**

295 Whereupon an amendment by Dr. William Ewart (Westminster):

That the principle of co-opting members for the Central Council, and the present number of such co-opted members, be retained.

The amendment was lost.

296 Whereupon an amendment by Dr. A. Drury (Halifax, Huddersfield), seconded by Mr. E. R. Fothergill (Wandsworth):

That, in By-law 36, line 7, after the word Council, there be added the words "from lists of nominations made by Branch Councils, by Divisions, or by at least 10 members of the district."

The **amendment** was **carried.**

297 Whereupon an amendment by Dr. A. Cox (Gateshead, Consett), seconded by Dr. J. S. Darling (Portadown and West Down):

That the Scotch and Irish Committees be allowed to nominate.

The **amendment** was **carried.**

*298 **Resolved** *nem con:* That By-law 36, as amended, be approved, as follows:—

The Council shall be composed of the *ex-officio* Members mentioned in the Ordinances, and of Members duly elected by the following

bodies, namely :—(*a*) By the Branches of the Association in the United Kingdom which shall be grouped for the purpose of electing 24 members of the Council in the manner prescribed by By-law 37 ; (*b*) by the Branches of the Association not in the United Kingdom which shall be grouped for the purpose of electing members of the Council not exceeding 7 in number ; (*c*) by the Representative Body, which shall elect annually 12 members of the Council from lists of candidates nominated by (i) Branch Councils, (ii) by Divisions, (iii) by the Scottish Committee, (iv) by the Irish Committee, or (v) by at least 10 members resident in the district of the United Kingdom to which the candidate nominated belongs ; and (*d*) by the Council itself which shall have power to add to its numbers at any of its meetings all or any one or more of the following, namely :—One Medical Officer on the active or retired list of each of the following Services :—The Royal Navy Medical Service, the Army Medical Service, and the Indian Medical Service, provided that in each case such medical officer shall not have retired from the active list more than five years previously.

By-law 37.

*299 Proposed by Mr. Ballance, seconded by Dr. H. Manley—

That By-law 37 be re-drafted to provide that the grouping of the Branches in the United Kingdom for the election of the Council be generally as shown in Appendix E to the Committee's Report ; that each such group elect four members of Council ; that the members elected by the Representative Body be topographically distributed among the same districts, and in the same proportion ; and that for this purpose By-law 37 be referred back to the Organisation Committee, with the instruction that they re-consider also the details of the grouping, and circulate the re-drafted By-law to the Divisions.

The **motion** was **carried.**

By-law 38.

300 Proposed by Mr. Ballance, for the Organisation Committee,

That By-law 38 be approved.

301 Whereupon an amendment by Dr. E. R. Fothergill (Wandsworth).

That the election in the United Kingdom be conducted by the Head Office and out of central funds, and the By-law be amended accordingly.

The **amendment** was **carried**.

302 Whereupon an amendment by Mr. H. W. Armit (Hampstead):

That in the election of the Central Council the principle of proportional representation be adopted.

With the leave of the Meeting the amendment was withdrawn.

*303 **Resolved:** That By-law 38, subject to amendment as directed, be approved.

By-law 29.

327 Resumed: Consideration of By-law 29, postponed by Minute 245.

Proposed by the Chairman, and

*328 **Resolved:** That By-law 29 be amended by substituting for the word "ten," in the fourth line, the word "twelve."

329 Proposed by the Chairman, in the absence of the Representative of the Liverpool Northern Division:

That in the last line of By-law 29, the word "two" be substituted for the word "three."

The amendment was lost.

*330 **Resolved:** That By-law 29, as amended, be approved, as follows:—

29. The business of the Annual Representative Meeting shall be to elect a Representative of a Division as the Chairman of Representative Meetings, and also a Representative of a Division as Deputy-Chairman; to elect a President of the Association; to elect twelve Members of the Council, and such other Officers and such Members of Committees as by the Ordinances or By-laws be required to be so elected; to consider the election of Honorary Members when recommended by the Council; to appoint a place at which the next Annual Representative Meeting shall be held; to consider the Annual Financial Statement and Balance Sheet presented by the Council; to appoint an Auditor or Auditors (who shall be a professional

Accountant or professional Accountants) and fix his or their remuneration; to consider Reports of the Council, Reports of Committees instructed to Report to such Meeting and Reports of Branches and motions relating to the adoption of such reports in whole or in part; to make new Ordinances or By-laws and alter and repeal existing Ordinances or By-laws and to consider any resolution relating to the honour and interests of the Medical Profession or of the Association which shall have been adopted by any Division or Branch, provided that any such Resolution proposing material alteration of the Constitution or policy of the Association shall have been submitted through the JOURNAL for the consideration of all the the Divisions not less than three months previously.

C.—MINUTES CONCERNING JOURNAL AND FINANCE COMMITTEE.

*342 Proposed by the Chairman:

That the composition, duties and powers of the Finance Committee, as stated in the Schedule to the By-laws, be approved.

343 Whereupon an amendment by Dr. McKenzie Johnston (North-West Edinburgh), seconded by Dr. Bruce Goff (Lanarkshire):

That the Journal Committee and Finance Committee be one Committee and not two as proposed.

Read: The following statement by the Treasurer of the Association, who was unable to be present:

The affairs and policy of the JOURNAL are so closely mixed up with those of Finance that the separation into two Committees is inexpedient. The great majority of matters which would come before the Journal Committee would probably involve expenditure, and whenever that is the case, the matter would be hung up until the Finance Committee had decided the question. Thus the same subject would be considered twice over, and much time and money would be wasted, and the delay would in some instances prevent the affair being taken up at all.

The amendment was lost, 5 voting for, and 68 against.

344 The **motion** by the Chairman was put and **carried** *nem. con.*

*346 Proposed by the Chairman, and

Resolved: That the composition, duties and powers of the Journal Committee, as stated in the Schedule to the By-laws, be approved.

REFERENDUM REPORT OF COUNCIL.

Minority Report.

The following Memorandum sets forth the reasons for which the Signatories, as Members of the Central Council of the Association, have felt obliged to dissociate themselves from the act of the Majority in issuing to the Divisions, in connexion with the Referendum relative to the proposed Royal Charter, the Report published in the Supplement to the British Medical Journal of August 17th.

To make the position quite clear, it is necessary to revert to the history of the matter:—

On June 5th, 1907, the Central Council (see Supplement for June 22nd) considered the resolutions of the Special Representative Meeting of May 29th and 30th, respecting the revised draft Royal Charter, and, with regard to certain of these resolutions, determined on a Referendum to the Divisions.

The powers of the Central Council as regards taking a Referendum are defined by Articles XXII and XXXV. These provide that the Council, upon consideration of a resolution passed at a Representative Meeting, may either approve such resolution or, on the ground that it does not properly represent the wishes of the Association, may determine on a Referendum, and in accordance with Article XXII (4) such referred resolution, when issued to the Divisions, may be accompanied by such observations as the Council may think desirable.

Accordingly, on June 5th, the Council appointed a Committee to draft for the consideration of the Council the "Observations" to accompany the Referendum.

The draft prepared by the Committee was submitted to the Central Council on July 30th, at Exeter, and was adopted by the Majority practically unaltered, a Minority protesting; the voting was 27 to 9. The document in question is the Referendum Report, already alluded to, published in the Supplement for August 17th.

Those members of the Central Council who have signed the present Memorandum, which is of the nature of a Minority Report, wish to protest against the action of the Majority of the Council of July 30th, in issuing the Report in question as appropriate "Observations" of the Council to accompany the Referendum.

The Minority conceive that the object of the "Observations" accompanying a Referendum is to put in the clearest possible light the considerations which have influenced the Council in coming to the conclusion that the resolutions on which the Referendum is taken did not properly represent the wishes of the Association. The Minority consider that the Referendum Report does not set out these considerations, but merely declares that radical changes are involved. The Minority submit that the changes are less radical than alleged, and that in any case they have been before the Association through the Divisions.

The Minority note with satisfaction that "the majority of the resolutions relating to the Charter are approved," and that, therefore, the area of the field of discussion is reduced to those clauses on which the Referendum has been definitely taken.

The two main questions included in the resolutions which are subjects of the Referendum are:—

(1) The proposal to elect the Central Council in the future partly by the Branches and partly by the Representative Meeting.

(2) The proposal to divide the Journal and Finance Committee into two separate Committees—a Journal Committee and a Finance Committee.

It was especially necessary that the reasons, which led the Council on June 5th to the conclusion that these proposed changes were not properly representative of the wishes of the Association, should be clearly stated in view of the following facts:—

At the Annual Representative Meeting in 1905, at Leicester, these two proposals were discussed and the changes approved. After the meeting, the Central Council proceeded to act upon the opinion expressed by the Representative Meeting, and by the Council's instructions a By-law was drafted by the Organization Committee to provide, under the existing Constitution of the Association, for the election by the Representative Meeting of a certain number of Members of Council. This was submitted to the Representative Meeting in London the next year, 1906, but by leave of the Meeting was withdrawn, on the ground that the Meeting had already approved the insertion of a By-law embodying the same principle in the draft Royal Charter.

Again, at the Special Representative Meeting in May last, these two questions were exhaustively discussed, and the Representative Meeting, after rejecting by a large majority a proposal that the Council should be elected wholly by the Representative Meeting, and also one that the Council should be elected by the Branches as at present, resolved *nem. con.* that in its opinion the middle course would be the preferable one, namely, that the Central Council should be elected partly by the Branches and partly by the Representative Meeting, thus reaffirming its opinion of the previous year. At the same Representative Meeting the proposal to divide the Journal and Finance Committee into two Committees was again considered, and an amendment to the effect that the Committee should remain one Committee as at present was lost by 68 votes to 5.

Having regard to these facts, it is in the opinion of the Minority imperative that the reasons which the Central Council had on June 5th for thinking that the resolutions embodying these two proposals did not properly represent the wishes of the Association should be very clearly set out. But the Minority can find in the Report adopted by the Majority of the Central Council on July 30th, no trace of any attempt to state such reasons.

The Report is confined to a discussion on the merits of the various proposals of the Representative Meeting to which the Majority of the Council take exception.

The Minority not only regard this as a departure from the constitutional position of the Council as regards the Referendum, but must also record their dissent from many of the arguments advanced.

It must however be noted that in the Referendum Report the Majority of the Council, before proceeding to discuss these two main points, take objection to Ordinance 17 (*b*).

Proviso as to Referendum. Ordinance 17 (*b*).

Minute 123.

The Minority would point out that the powers of the Council, in the matter of a Referendum, provided by this Ordinance, are practically identical with those at present possessed by the Council.

It is surely outside the province of the Council to suggest (under cover of a Referendum upon this Ordinance) a very important alteration in one of the existing Articles of the Association (Article XXII).

The essential purpose of a Referendum is the submission of certain resolutions of a Representative Meeting for the approval of the Divisions or the reverse.

COMPOSITION OF COUNCIL. BY-LAW 36.

Minutes 283, 287, 293, and 298.

The Minority do not understand the meaning of the words in the first line—"The four succeeding resolutions adopted by the Council," and fear that the Divisions will have equal difficulty in comprehending them. The Minority are therefore unable to offer further comment on this passage.

In the "Observations" immediately following in this section of the Referendum Report, it is stated that if By-law 36 of the Charter be adopted the management of the business and affairs of the Association must pass from the Council to the Representative Body. The Minority can see no foundation for this statement.

Under the By-law in question the Representative Body is given power to elect about one-fourth of the elected Members of Council (not one-third, as stated by the Majority), and it seems to the Minority that there is no ground whatever for expecting that this should result in transferring all the powers of the Central Council to the Representative Body.

The Minority must also dissociate themselves absolutely from the misleading statement that the proposed By-law 36 does away with the revisory powers of the Council, "acting as a Second Chamber."

In the first place, neither under the present Constitution, nor under the Charter itself, are there functions assigned to the Council such as are ordinarily understood to belong to a "Second Chamber." Its duties are clearly those of an Executive Body possessing a power of Referendum to prevent the possibility of decisions being arrived at by the Representative Meeting which do not properly represent the wishes of the Association.

In the second place, all existing powers of the kind in the present Constitution are fully retained under the Charter, and are not touched by By-law 36.

GROUPING OF BRANCHES. BY-LAW 37.

Minute 299.

The Resolution of the Representative Meeting (Minute 299) was to the effect that By-law 37, which has reference to the grouping of Branches for the purpose of electing Members of Council should be referred back to the Organization Committee to be redrafted. In the Referendum Report the Divisions are asked to express disapproval of this Resolution, that is to say, that By-law 37 should not be redrafted. The effect of this would be that the By-law as originally drafted would stand, which actually provided for a still greater reduction in the total number of Members of Council, and in the number elected by the Branches, and consequently for a greater degree of grouping of Branches for electoral purposes than was contemplated in the redrafted By-law.

If, however, as is possible, the intention of the Majority is to question the desirability of more extensive grouping of Branches, the Minority desire to point out that a reduction of the Council has been approved and reaffirmed by the Representative Meeting after prolonged discussion in the Divisions, and that it is solely for the purpose of electing Members of the Council that the Branches would be grouped in the manner stated in the By-law. This grouping for this purpose only is essential if the Council is to be reduced, but in all their other activities the Branches will be just as free to act as individual Branches as heretofore.

The Minority find no evidence given to support the statement in the Referendum Report that this grouping will cause "disunion and loss of strength."

MODE OF ELECTION BY GROUPS. BY-LAW 38.

Minute 303.

The question of the conduct by the Head Office of the election in the United Kingdom of Members of Council by Groups of Branches does not affect the principles involved in By-law 38, and is therefore one upon which it is not necessary for the Minority to express an opinion.

Business of Annual Representative Meeting. By-law 29.

Minutes 328 *and* 330.

The Minority note with astonishment the following passage at the end of this section of the Report:—"It will be noticed that By-law 29 gives the whole of the work of the General Meetings to the Representatives, and deprives individual Members in General Meeting of all opportunity of criticizing the Annual Financial Statement and Balance Sheet, prepared and presented by the Council."

There is, perhaps, no need to advert further to this statement than by pointing out that this provision in the By-law is a necessary consequence of provisions in the Ordinances and in the Charter itself, which the Council has already accepted.

If the question of retaining the General Meeting as part of the governing machinery of the Association is to be raised at all, it should be by taking exception to the Clauses of the Charter itself, which govern the whole position. It may also be pointed out that the principle of transferring all the business of the General Meeting to the Representative Meeting was laid down in a resolution of the Representative Meeting at Leicester, which the Central Council then accepted.

Journal and Finance Committee.

Minutes 342 *and* 346.

The Minority have already pointed out that the proposal to separate the Journal and Finance Committee has received the repeated consideration of the Divisions and Representative Meeting.

It is suggested in the Majority Report that the Journal Committee would act like the former Editorial Reference Committee. The Journal Committee proposed by the By-law would act under instructions of the Central Council, and would only act on the lines of the former Reference Committee if so directed by the Council. The Representative Meeting has put forward no proposal of the kind, and the Minority are not aware of any grounds for supposing that the Council would desire the Journal Committee so to act.

Schedule of Resolutions.

The Minority of Council most strongly deprecate the way in which this part of the Report commences—"Your Council appeals to the Divisions to disapprove of the following Resolutions of the Special Representative Meeting."

The Members of Council who signed this Memorandum hold that it is not for the Council as a Body to take sides and to urge the Divisions to disapprove any Resolution passed by the Representative Meeting.

The object of the Referendum is to ascertain through the Divisions the wishes of the Association where these are deemed to be in doubt, and the duty of the Council is discharged in asking for the most careful consideration by the Divisions of the several points at issue. This appeal at the commencement of the Schedule of Resolutions suggests that the Referendum Report is a party document, that the Majority of Council adopted this Report not from any well grounded doubt as to the resolutions representing the wishes of the Association, but because the Majority themselves object to certain passages in the Draft Charter and took this method of opposing them, and the Minority of the Council desire to express their

very great regret that, on an occasion of such supreme importance in the affairs of the Association, the Majority should have deemed it fitting to issue, in the name of the Central Council of the Association, this Report.

(Signed) H. A. BALLANCE, East Anglian Branch.
C. F. CUTHBERT, Gloucestershire Branch, and Worcestershire and Herefordshire Branch (United).
C. E. S. FLEMMING, Bath and Bristol Branch.
G. F. HASLIP, Metropolitan Counties Branch.
HUGH R. KER, Metropolitan Counties Branch.
R. H. KINSEY, South Midland Branch.
J. A. MACDONALD, Chairman of Representative Meetings.
LAURISTON E. SHAW, Metropolitan Counties Branch.
T. JENNER VERRALL, South Eastern Branch.

September 5th, 1907.

The following Members of Council, who through absence or for other reasons did not take part in the voting at the Council Meeting, desire to express their concurrence in this Minority Report:—

J FORD ANDERSON, Metropolitan Counties Branch.
E J BIDEN, Representative of the Royal Navy Medical Service.
R COCHRANE BUIST, Dundee, Perth, and Stirling Branches (United).
C. J. JOUBERT DE LA FERTÉ, Representative of the Indian Medical Service.
JOHN H. GALTON, South Eastern Branch.
EDWIN RAYNER, Treasurer of the Association.
R R. STAWELL, Melbourne and Victoria Branch.
J. LYNN THOMAS, South Wales and Monmouthshire Branch.
F. E. APTHORPE WEBB, Cambridge and Huntingdon Branch, and East York and North Lincoln Branch (United).
D J. WILLIAMS, South Wales and Monmouthshire Branch.

Meetings of Branches & Divisions.

NORTH OF ENGLAND BRANCH:
NORTH NORTHUMBERLAND DIVISION.

New Vaccination Order.—As already reported,[1] at a special meeting of this Division on August 6th the new Vaccination Order and the circular of the guardians of the Alnwick Union—offering under Article 3, i (*a*), 1s., (*b*) 3s. 6d., (*d*) 3s. 6d., if not over three miles from residence of public vaccinator, and 1s. additional for each mile or part of a mile over that distance—were fully discussed, and it was resolved that, considering the onerous and responsible character of the duties required of a public vaccinator, the fees offered were quite inadequate. The public vaccinators, all of whom are members of the British Medical Association, accordingly informed the Board of Guardians that they could not accept the reduced fees, but offered to meet a Committee of the Board; this offer was accepted, and as a consequence the guardians have resolved to make no change. Mr. Douglas, member of the Board, in moving the adoption of the report embodying this decision, said that the medical officers had shown clearly to his mind that they were not overpaid. The Chairman said that the facts laid before the guardians at the conference had convinced him that the fees paid to public vaccinators were not at all excessive, and he almost wondered that medical men could be found to undertake the duties for so small a sum, inasmuch as on an average each vaccination necessitated three or four visits. The distances that had to be travelled in the rural districts were great, and the Committee had been compelled to form the conclusion that there was no justification for a reduction in the fees. The Committee's report was adopted by the guardians, and the incident is thus now happily at an end.

SOUTH-EASTERN OF IRELAND BRANCH.

AN ordinary meeting of this Branch was held at the Adelphi Hotel, Waterford, on September 4th, at 3.30 p.m.

Apologies for Non-Attendance.—Apologies were received from Drs. Oakshott, Laffan, and Stephenson.

Medical M.P.'s.—It was proposed by Dr. CAREY and seconded by Dr. MACKESY:

> That we express our emphatic approval of the proposition contained in subclause 2 (2) (VI) Draft Charter, namely, "That the Association may acquire power to promote the candidature of any member of the Association for Parliament or for any British Legislative Assembly who is pledged to act in the interests of the profession."

It was proposed by Dr. RYAN and seconded by Dr. MORRIS:

> That powers be further acquired to subsidize such members of Parliament and that a certain portion of the surplus funds of the Association be annually appropriated to that purpose.

It was resolved that both these resolutions be brought up again at the next meeting of the Branch, to be held in Kilkenny on October 2nd, for further discussion and approval.

Locum Tenents.—It was proposed by Dr. CAREY and seconded by Dr. MORRIS:

> That the resolution *re* locum tenents passed at the last meeting, held at Clonmel on June 19th, be typed and a copy sent to the clerk of each union within area of the Branch.

Luncheon.—This concluded the business of the meeting, the members having previously lunched together at the Adelphi Hotel.

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, August 4th, 1907, p. 150.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

OWING to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—The autumn meeting of this Branch will be held in Blandford on Wednesday, October 23rd. Members wishing to read papers, exhibit specimens, or show cases should communicate with the Honorary Secretary, JAMES DAVISON, Streateplace, Bath Road, Bournemouth, on or before Friday, October 11th. This JOURNAL notice is the only intimation of the meeting.

EAST ANGLIAN BRANCH.—The autumn meeting of this Branch will be held at Cromer on Thursday, September 26th. Members wishing to read papers or show cases or specimens should communicate at once with Mr. H. A. Ballance, M.S., Norwich.—B. H. NICHOLSON, Honorary Secretary, East Lodge, Colchester.

EDINBURGH BRANCH SOUTH-EASTERN COUNTIES DIVISION.—The autumn meeting will be held in the King's Arms Hotel, Melrose, on the afternoon of Thursday, the 26th inst., at 3 o'clock, Dr. Bannerman, Chairman, presiding. Agenda: (1) Reading of minutes. (2) Report by Dr. Blair of the Annual Representative Meeting at Exeter. (3) Matters referred for consideration of Divisions: (*a*) Finance Inquiry Report; (*b*) Referendum on certain clauses of the Charter. (4) Clinical papers by members. (5) Other matters, such as the Annual Dinner. NOTE.—The Honorary Secretary begs to remind members that, as Local Secretary of the Benevolent Fund, he will be glad to receive subscriptions of members.—W. HALL CALVERT, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—The next general meeting will be held at Knutsford on Thursday, September 26th. 4.30 p.m., afternoon tea provided by Dr. Smith at the Hospital (Workhouse); 5 p.m., visit Hospital; 5 30 p.m., business (in the Committee Room in Master's House); 7 p m., dinner at the George Hotel. Those intending to stay to dinner should inform the Honorary Secretary not later than the 24th. All members should send word if unable to attend the meeting at all. (This does not apply to associate members.) The Committee draws attention to the great importance of the Referendum, which will have to be voted on under eleven heads, and trusts that every member who can possibly do so will make a point of being present. There is also an important resolution of the Committee on financial arrangements to be discussed. If time permits, Dr. Renshaw will report on the Exeter Meeting; attention will be drawn to the Notification of Births Act; and there will be a discussion on Ulcers of the Stomach.—T. W. H. GARSTANG, Honorary Secretary, Altrincham.

PERTHSHIRE BRANCH.—A special meeting of the Branch will be held in the Perth Infirmary on Friday, September 27th, at 3.15 p m., to consider the Referendum from the Council published in the JOURNAL of August 17th, p. 134.—WILLIAM A. TAYLOR and ALEXANDER TROTTER, Joint Honorary Secretaries, Perth.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.—The next meeting of this Division will be held at the Carlton Hotel (overlooking the parade opposite the bandstand), Broadstairs, on Tuesday, September 24th, at 3.45 p.m., Dr. E G. Moon in the chair. Agenda: W. H. Willcox, M.D., B.Sc., M.R.C.P. (St. Mary's Hospital): The medico-legal importance of wounds produced by firearms. C. H. Tamplin, Esq., will propose: That it is to the fair interests of the friendly societies and the medical profession, that all candidates be examined previous to admission to friendly societies, and that a fee should be charged for each such examination. Any other business. Tea will be served during the meeting. All other members of the South-Eastern Branch are invited to attend these meetings and to introduce professional friends, but will not be entitled to vote on Divisional questions.—HUGH M. RAVEN, Honorary Divisional Secretary, Broadstairs.

SOUTH-EASTERN OF IRELAND BRANCH.—The last meeting for the session of this Branch will be held at the Victoria Hotel, Kilkenny, on October 2nd, at 5 p.m. Agenda: (1) Minutes. (2) Apologies. (3) Correspondence. (4) Referenda. (5) To receive report of the Representative, Dr. Laffan. (6) Any other business.—J. QUIRKE, Honorary Secretary, Piltown, co. Kilkenny.

SOUTH MIDLAND BRANCH.—The autumnal meeting of this Branch will be held at the Railway Hotel, Bletchley, at 2 p.m., on Thursday, October 10th, under the presidency of Dr. Chillingworth, of Bedford. Lunch will be served at the hotel at 1.15 p.m., price 2s. 6d. per head. The Secretary will be glad to hear as soon as possible from members wishing to read papers or show cases.—E. HARRIES-JONES, Honorary Secretary, Northampton.

South Wales and Monmouthshire Branch: South-West Wales Division.—The autumn meeting will be held at the Waterloo Hotel, Aberystwith, on Friday, September 27th. Will those having papers to read or cases to show kindly communicate with the Honorary Secretary, J. Edgar P. Davies, Llanelly?

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,072 births and 3,793 deaths were registered during the week ending Saturday last, September 14th. The annual rate of mortality in these towns, which had been 11.5, 11.8, and 12.3 per 1,000 in the three preceding weeks, was again 12.3 per 1,000 last week. The rates in the several towns ranged from 4.7 in Handsworth (Staffs), 5.8 in Hornsey, 6.0 in West Bromwich, 6.8 in Burton-on-Trent, 6.9 in King's Norton, and 7.3 in Willesden to 17.1 in Wigan and in Swansea, 17.4 in Sunderland, 17.5 in Rotherham, 17.7 in Sheffield, 18.0 in St. Helens, and 20.0 in Tynemouth. In London the rate of mortality was 11.9 per 1,000, while it averaged 12.6 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.6 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.4 per 1,000, while among the seventy-five other large towns the death-rates from the principal infectious diseases ranged upwards to 3.0 in Great Yarmouth, 3.1 in Bootle, 3.3 in Rotherham and in Gateshead, 3.4 in Liverpool, 3.5 in Sheffield, 3.6 in West Ham, and 3.9 in Cardiff. Measles caused a death-rate of 1.1 in St. Helens and 2.8 in Cardiff; whooping-cough of 1.4 in West Hartlepool and in Merthyr Tydfil, 1.7 in Gateshead, and 2.0 in Great Yarmouth; and diarrhoea of 2.0 in Hull, 2.2 in Walsall, 2.5 in Sheffield, 2.6 in Liverpool, 2.7 in West Ham, 3.1 in Bootle, and 3.3 in Rotherham. The mortality from scarlet fever, from diphtheria, and from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,687, 3,738, and 3,816 at the end of the three preceding weeks, had further risen to 3,871 at the end of last week; 574 new cases were admitted during the week, against 440, 557, and 587 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, September 14th, 863 births and 532 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.7 and 13.6 per 1,000 in the two preceding weeks, rose last week to 15.3 per 1,000, and exceeded by 3.0 per 1,000 the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 10.5 in Perth and 14.6 in Edinburgh, in Aberdeen, and in Greenock to 15.7 in Glasgow and 16.7 in Dundee. The death-rate from the principal infectious diseases averaged 2.0 per 1,000 in these towns, the highest rates being recorded in Glasgow, Edinburgh, and Leith. The 255 deaths registered in Glasgow included 2 which were referred to measles, 5 to diphtheria, 8 to whooping-cough, 13 to diarrhoea, and 10 to cerebro-spinal meningitis. Six fatal cases of whooping-cough, 2 of "fever," and 6 of cerebro-spinal meningitis were recorded in Edinburgh. Two deaths from diarrhoea and 2 from cerebro-spinal meningitis occurred in Dundee; 3 from diarrhoea in Aberdeen; and 2 from whooping-cough in Leith.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, September 14th, 517 births and 349 deaths were registered in six of the principal Irish towns as against 546 births and 268 deaths in the preceding period. The annual death-rate in these towns, which had been 15.9, 13.8, and 12.6 per 1,000 in the three preceding weeks, rose to 16.8 per 1,000 in the week under notice, this figure being 4.5 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 8.2 in Limerick and 17.2 in Londonderry, to 17.6 in Dublin and Belfast. The zymotic death-rate in the same six Irish towns averaged 1.7 per 1,000, or 0.2 per 1,000 higher than during the preceding period, the highest figure—3.9—being recorded in Waterford, while Limerick registered no deaths under this heading at all. The deaths in Belfast included 5 ascribed to cerebro-spinal fever.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: John Andrews, M.D., Fleet Surgeon, to the *Vivid*, additional, for Pembroke Dockyard, September 28th; Jonathan Shand, M.B., Fleet Surgeon, to the *Vengeance*, September 28th; Anthony Kidd, Fleet Surgeon, to the *Defiance*, September 28th; Robert W. G. Stewart, M.B., Surgeon, to Plymouth Hospital, September 19th; Ernest F. Ellis, Surgeon, to the *Andromeda*, September 19th.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenant-Colonels, from the Royal Army Medical Corps, to be Colonels:—D. Wardrop, M.B., vice A. W. P. Inman, M.B., placed on half-pay, August 14th; G. T. Goggin, vice J. Magill, C.B., M.D., September 6th; J. M. Jones, vice W. A. May, C.B., September 18th. Their previous commissions, which were simultaneous, are thus dated:—Surgeon, March 6th, 1880; Surgeon-Major, March 6th, 1892; Lieutenant-Colonel, March 6th, 1900. Their war records are as follows:—Colonel Wardrop—South African war, 1878-9, as Civil Surgeon in the operations against Sekukuni and the Zulu campaign (medal with clasp); Nile expedition, 1898, including the battle of Khartoum (mentioned in dispatches, British medal, and Egyptian medal with clasp). Colonel Goggin—South African war, 1899-1902, as Senior Medical Officer and Principal Medical Officer of an Infantry Division, including the relief of Ladysmith, the actions at Colenso, Spion Kop, Vaal Kranz, on the Tugela Heights, and Pieter's Hill, and operations in the Transvaal and Natal (action at Laing's Nek); he had charge of a General Hospital in the Orange River Colony from November, 1900, to May, 1902; he was several times mentioned in dispatches, and has received the Queen's medal with six clasps and the King's medal with two clasps. Colonel Jones—Zulu campaign in 1879 as Civil Surgeon (medal with clasp).

Colonel J. Magill, C.B., M.D., is placed on retired pay, September 6th. He was appointed Surgeon, May 3rd, 1876; Surgeon-Major, December 22nd, 1885; Brigade-Surgeon, May 3rd, 1896; and Surgeon-Colonel, December 22nd, 1904. He served with the Soudan expedition in 1884-5, and was present at the action of Abu Klea with the Guards Camel Regiment, and was severely wounded (mentioned in dispatches, medal with two clasps, and Khedive's star); he was Principal Medical Officer of a Division from April 16th, 1900, and was in the advance on Kimberley, including the actions at Belmont, Enslin, Modder River, and Magersfontein, in operations in the Orange Free State (actions at Poplar Grove, Dreifontein, Vet River, and Zand River), in the Transvaal (actions near Johannesburg, at Pretoria, Diamond Hill, and Belfast), and in Cape Colony (mentioned in dispatches, Queen's medal with six clasps, King's medal with two clasps, and appointed C.B.).

Colonel W. A. May, C.B., is also placed on retired pay, September 18th. He entered the service as Surgeon, September 30th, 1874, became Surgeon-Major, September 30th, 1886; Brigade-Surgeon, December 15th, 1897; and Colonel, March 22nd, 1903. During the South African war in 1900-02 he was Principal Medical Officer of an Infantry Division, and was present in operations in the Orange Free State (in actions at Biddulphsberg and Wittebergen), Cape Colony, the Transvaal, and Orange River Colony (mentioned in dispatches, Queen's medal with three clasps, King's medal with two clasps, and appointed C.B.).

Captain H. B. Connell, from the Seconded List, to be Captain, August 28th. He was placed on the Seconded List for service with the King's African Rifles, December 31st, 1904.

Lieutenant-Colonel S. G. Allen, on return from Indian service, has been appointed to the Duke of York's School.

Erratum.—In the Supplement to the British Medical Journal of August 24th, p. 155, it was erroneously stated that Lieutenant-Colonel J. Tidbury, M.D., retired pay, had relinquished his medical charge at the Royal Military College. He is still Assistant Surgeon there.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House-Surgeon (male). Salary, £80 per annum.

BIRMINGHAM: GENERAL HOSPITAL.—Two Receiving-room Officers; salary, £150 per annum.

BRENTFORD UNION.—Second Assistant Medical Superintendent of the Infirmary, and Second Assistant Medical Officer of the Workhouse and Schools. Salary, £125 per annum.

BRIGHTON: ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House-Surgeon. Salary at the rate of £80 per annum.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—House-Surgeon. Salary at the rate of £50 per annum.

CITY OF LONDON HOSPITAL, Victoria Park, N.E.—(1) Pathologist. Salary, £105 per annum. (2) Two House-Physicians (Males). Salary, £50 per annum. (3) Clinical Assistant. (4) Locum Tenens to House-Physician.

DURHAM COUNTY HOSPITAL.—House-Surgeon. Salary, £120 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—Eight Clinical Assistants in the Out-patient Department.

FARRINGDON GENERAL DISPENSARY, Bartlett's Buildings, E.C.—(1) Resident Medical Officer. Salary, £120 per annum. (2) Honorary Dental Surgeon.

FIFE DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary, £120 per annum.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £30 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

HOSPITAL FOR WOMEN, Soho Square, W.—Resident Medical Officer. Salary, at the rate of £60 per annum.

INFANTS' HOSPITAL, Vincent Square, Westminster.—Honorary Medical Officer to the Nursing Staff.

JERSEY DISPENSARY AND INFIRMARY.—Resident Medical Officer.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, Queen Anne Street, W.—Assistant Pathologist. Salary to commence at the rate of £150 per annum, rising to £400.

LONDON HOSPITAL, Whitechapel, E.—Surgeon Dentist.

LONDON LOCK HOSPITAL.—(1) Honorary Dental Surgeon to the Female Hospital, Harrow Road. (2) Anaesthetist to the Male Hospital, Dean Street.

MAIDSTONE: KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer. Salary to commence, £175 per annum.

MANCHESTER: NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Surgeon for children.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer. Salary, £150 per annum.

MANCHESTER UNIVERSITY.—Senior Demonstrator in Physiology. Stipend, £150, rising to £200 per annum.

MEDICAL MISSION HOSPITAL, Canning Town.—Female Honorary Anaesthetist.

NEWCASTLE-ON-TYNE: UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Demonstrator of Physiology. Salary, £200 per annum.

NORWICH CITY ASYLUM.—Resident Medical Superintendent. Salary, £400 per annum, rising to £600.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL, —House-Physician. Salary, £50 per annum.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham.—(1) House-Surgeon. (2) House-Physician. (3) Junior House-Surgeon. (4) Junior House-Physician. Appointments for six months. Salaries for (1) and (2), £75 per annum, and for (3) and (4) £40 per annum.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Morning House Anaesthetist. Honorarium, £50 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields.—(1) Senior House Surgeon; salary at the rate of £100 per annum. (2) Clinical Assistants.

ST. MARYLEBONE BOROUGH.—Medical Officer of Health. Salary, £600 per annum.

SALFORD ROYAL HOSPITAL.—Junior House-Surgeon (male). Salary at the rate of £50 per annum.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Clinical Assistants.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

TAUNTON: TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon, Salary at the rate of £50 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Surgeon. Honorarium, £30 for six months.

WORCESTER COUNTY AND CITY ASYLUM.—Third Assistant Medical Officer. Salary, £140 per annum, rising to £160.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces a vacancy at Rothwell, co. Northampton.

APPOINTMENTS.

CAMERON, John, M.B., C.M.Aberd., Medical Officer for the Parish of Rosemarkie.

DAVIDSON, G. E., M.B., Certifying Factory Surgeon for the Shere District, co. Surrey.

DRAKE, L. A., M.B., C.M.Edin., District Medical Officer of the West Ham Union.

HOLLINGS, H. T., L.R.C.P. and S.Edin., District Medical Officer of the Scarborough Union.

HUGHES, E. T. C, M.R.C.S., L.R.C.P.Lond., Assistant Medical Superintendent of the Lewisham Union Infirmary.

LAVERS, Norman, M.D., Physician-Superintendent of Bailbrook House, Bath.

LONGDEN, E. W., L.R.C.P. and S.Edin., District Medical Officer of the Sturminster Union.

MARCH, G. C., M.R.C.S., L.R.C.P., District Medical Officer of the Dorchester Union.

RICHARDS, J. B., L.R.C.P. and S.Edin., Medical Officer of Health, Wadebridge Urban District.

RIGGALL, Robert Marmaduke, L.R.C.P., etc., Third Assistant Medical Officer to the Devon County Asylum, Exminster.

SCOTT, F. R., M.B., B.S.Durh., Medical Officer, Tynemouth Union Workhouse.

SMITH, Charles Mollison M.B., Ch.B.Aberd., Junior Assistant Medical Officer at the County Asylum, Prestwich, Manchester.

TEMPLETON, William, M.B., Ch.B.Glasg., Extra Anaesthetist to the Glasgow Samaritan Hospital for Women.

VEITCH, A., M.D.Edin., District Medical Officer of the Weardale Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

MACEVOY.—On September 11th, 1907, at 41, Buckley Road, Brondesbury, N.W., the wife of H. J. Macevoy, M.D., B.Sc., of a son.

ROBINSON.—On September 11th, at 105, Park Lane, Croydon, the wife of J. F. Robinson, F.R.C.S., of a son (stillborn).

MARRIAGE.

MORIARTY—ADAMS.—On Wednesday, September 11th, at the parish church, Lanark, by the Rev. R. M. Dickson, M.A., B.D., Parish Minister, assisted by Rev. R. M. Sharpe, of Carstairs, Gerald Irving Moriarty, M.B., Ch.B Edin., elder son of Colonel Moriarty, M.D., F.R.C.S.I., late I.M.S., of Woking, Surrey, to Cecilia Thomson, fifth daughter of Lieutenant-Colonel A. M. Adams, M.D., F.R.C.S.Edin, 3rd Scottish Rifles (retired), of Friarsfield, Lanark.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eye.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics. 2.30 p.m.: Operations; *X* Rays. Monday and Thursday, 2 p.m.: Diseases of the Eye. Tuesday and Friday, 2 p.m.: Diseases of Throat, Nose, and Ear; also on Wednesday and Saturday, 10 a.m. Tuesday and Friday, 2.30 p.m.: Diseases of the Skin. Wednesday, 10 a.m.: Diseases of Children. Wednesday and Saturday, 2 p.m.: Diseases of Eye. 2.30 p.m.: Diseases of Women.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
SEPTEMBER.	
22 Sunday ...	
23 MONDAY ...	
24 TUESDAY ...	
25 WEDNESDAY	ISLE OF THANET DIVISION, *South-Eastern Branch*, Carlton Hotel, Broadstairs, 3.45 p.m.
26 THURSDAY...	ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, General Meeting, Knutsford; Tea, 4.30 p.m., ; Visit to Union Hospital, 5 p.m., ; Business Meeting, 5.30 p.m. ; Dinner, Royal George Hotel, 7 p.m. EAST ANGLIAN BRANCH, Autumn Meeting, Cromer. SOUTH-EASTERN COUNTIES DIVISION, *Edinburgh Branch*, King's Arms Hotel, Melrose, 3 p.m.
27 FRIDAY ...	PERTHSHIRE BRANCH, Special Meeting, Perth Infirmary, 3.15 p.m. SOUTH-WEST WALES DIVISION. *South Wales and Monmouthshire Branch*, Waterloo Hotel, Aberystwith.
28 SATURDAY ...	
29 Sunday ...	
30 MONDAY ...	

Date.	Meetings to be Held.
OCTOBER.	
1 TUESDAY ...	
2 WEDNESDAY	SOUTH-EASTERN OF IRELAND BRANCH Victoria Hotel, Kilkenny, 5 p.m.
3 THURSDAY...	
4 FRIDAY ...	
5 SATURDAY...	
6 Sunday ...	
7 MONDAY ...	
8 TUESDAY ...	
9 WEDNESDAY	
10 THURSDAY...	LONDON: Metropolitan Branch Council, 4.30 p.m. SOUTH MIDLAND BRANCH, Autumnal Meeting, Railway Hotel, Bletchley, 2 p.m.; Luncheon, 1.15 p.m.
11 FRIDAY ...	
12 SATURDAY...	
13 Sunday ...	
14 MONDAY ...	
15 TUESDAY ...	
16 WEDNESDAY	
17 THURSDAY...	

Printed and Published by the British Medical Association at their Office, No. 6, Catherine Street, Strand, in the Parish of St. Paul, Covent Garden, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 28TH, 1907.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

SOUTH-EASTERN BRANCH:

REIGATE DIVISION.

A MEETING of the Division was held on May 3rd.

Medical Law Reform and Quackery.—Mr. SEWILL delivered an address on this subject. He said that more than thirty years ago, at the outset of his career, the dramatic ending of a cancer case under quack treatment first drew his attention forcibly to the subject. Since then his interest in the question had not slackened, and his connexion throughout with a medical paper had kept him informed upon it. As one of the Committee engaged for some years in promoting the Dentists Act of 1878, he gained at the outset some knowledge of medical legislation—a subject to which he had ever since given attention. For some years he investigated the extent and effects of quackery among patients at hospitals to which he was attached or had access. With the exception, perhaps, of the victims of venereal and sexual quacks, which have diminished in numbers in late years, all kinds of sufferers from quackery are to be discovered among hospital out-patients and in-patients. Among these are to be found numbers of wretched infants with constitutions ruined through drugging with "teething" medicines; great numbers of patients with simple maladies rendered chronic, and serious diseases hopeless through delay whilst relying upon fraudulent nostrums; the dupes of consumption and cancer curers, rupture doctors and bone-setters, besides a host of nervous sufferers having their attention fixed upon merely trivial morbid sensations or functional disturbances by quackery in one form or another. Mr. Sewill next entered more fully into the methods of quack practitioners and nostrum-mongers. The latter offering advice are taken for qualified "doctors." Simple readers misled by cunningly worded advertisements make wrong diagnoses of their diseases. Chronic constipation and haemorrhoids are the least harmful results of the habitual use of pills, which, whether offered as cures for indigestion or liver troubles, or as specifics for many distinct diseases, contain as their sole active constituent almost invariably a cheap drastic purgative. He then described the more serious results following self-medication, and to illustrate this spoke particularly of cases he had recently inquired into of gastric ulcer in hospital patients. Among these he had found a considerable percentage of the servant and seamstress class who had been dosing themselves with pills or potions—indigestion cures—until their malady had passed into a dangerous or mortal phase. He also spoke of the baneful effects of "nerve tonics" containing alcohol or narcotics. He pointed out that the poor will often sacrifice earnings, savings, and borrowings to satisfy the exactions of a quack before presenting themselves at a hospital, or, with a plea of poverty, at a practitioner's surgery. Ignorance of science and credulity being common among all but an intellectual minority of society, the victims of quackery are hardly less numerous among the well-to-do than the poor. Foolish wealthy women form the easy prey of obesity quacks, beauty doctors, and hair specialists, whom they take for qualified men. Quackery forms a potent factor in deterioration of the public health. Mr. Sewill next described the rapid growth of quackery in recent years, both as regards traffic in nostrums and bogus apparatus and practice by unqualified pretenders. This latter, as he had already pointed out, being carried out largely under the cloak of selling remedies and apparatus, legislation would not be effective against fraudulent practice unless at the same time it dealt with the trade in quack remedies; the two trades are inseparably bound up together. Quackery at the present day provides the safest field for the operations of cynical knavery. It is only the most stupid of quacks who can put himself within reach of the law—in danger of an action for damages or a charge of manslaughter—whereas a city shark or swindler stands in constant danger of a criminal charge. Quackery affords large incomes to great numbers of vulgar impostors, and vast wealth to many clever adventurers, and is therefore becoming more and more

attractive to these classes. Mr. Sewill next quoted the *Lancet's* recently published figures based upon the stamp duty returns, which showed that £2 764,557 was spent in quack medicines in one year. If the incomes of fraudulent practitioners be roughly guessed and added to this, an estimate may be made of the gigantic sum out of which the simple, suffering public are plundered. Not less than £1,500,000 is spent yearly in quack advertisements. This sum divided among newspaper and magazine proprietors, many of whom derive a great part of their incomes from this source, has sufficed to lead the great majority of papers into at least tacit support of quackery. As a rule an editor dare not attack quackery; he can never be certain that a puff in the form of editorial matter, in praise of an impostor, and in disparagement of the medical profession, may not be inserted by his manager in juxtaposition with his article. A great journal which up to late years had formed a standard of honour in journalism, which had never before forgotten the interests of the people in pursuit of selfish aims, had now in its advertising department lowered itself to the level of its less scrupulous contemporaries. This leading paper, which a few years ago published periodically articles exposing and denouncing quackery, now inserts quack puffs of a kind which its earlier managers would have rejected with scorn. Noble lords who own other great papers derive an important part of their incomes from abetting a traffic of the character of which they and their astute managers cannot be aware, although it is occasionally exposed in law reports in their own columns. This deplorable attitude of leading journals has done more than anything else towards the further demoralization of papers of an inferior class. These now supply their endorsement to the false statements of any quack prepared to pay for a sham editorial notice. It is impossible in the present state of the law to prevent fraudulent pretenders from assuming titles, and palming themselves off upon the public as legally-qualified practitioners. The profession is entitled to at least the same amount of protection as the law affords to solicitors. The State demands from medical practitioners a standard of qualification very much higher than that required in any other profession, but denies to the profession any privilege or protection. It is impossible for an unqualified person to practise with impunity as a solicitor, or to assume false titles, or use language in writings or advertisements implying even remotely that he is legally qualified. The statute is clear, and never leaves doubt in the magistrate's mind. The Law Society is ever vigilant and ready to prosecute. The General Medical Council has no such powers. The Council has very limited authority even over qualified practitioners. It can strike their names off the *Register* for infamous conduct; but cannot prevent them from assuming professional titles and practising afterwards. It has no power whatever to interfere with illegitimate practice or quackery. The Council needs reconstituting with widened functions and extended power. It can be proved that the protection of the medical profession, whilst improving the status of the practitioner, would confer incalculably greater advantages upon the public and especially upon the classes—the weak, the simple, the suffering—who have most claim upon the guardianship of the State. Very slight modification of existing laws would ensure the prosecution of most quack medicine proprietors for obtaining money under false pretences, and would render amenable newspapers that published their advertisements. This was recently shown in a case at the Sussex Assizes. Almost complete ignorance of the whole question prevails among the public and members of both Houses of Parliament, whilst great prejudice against the profession exists among sections of the public and certain loud-voiced parties in Parliament. The days having passed when private members could carry through a measure of such magnitude, it is impossible that any satisfactory project of medical law reform can obtain a hearing unless taken up by Government. It is extremely improbable that any Government would concern itself with medical reform unless Parliament and the public were first enlightened with regard to the extent of existing evils. Mr. Sewill then strove to show that the desired enlightenment can be brought about through the medium of a Royal Commission, and in no other way. The system of quackery as a whole and its practice by individuals could be laid bare before a Commission, whilst immunity against actions for libel which now effectually prevent exposure by private persons, would be granted to witnesses. Quacks who dared to put in an appearance and justify their conduct would be subject to cross-examination by counsel. The quack medicine vendor would be exposed by simple analyses of his wares. The story which could be disclosed before a Commission would astonish and horrify the educated public, and enlist many on the side of reform. It would bring shame to newspaper proprietors, and induce some of them to turn away from their present attitude and make amends. It would provide a body of conclusive evidence in favour of the legislation demanded. Mr. Sewill finally pointed out how deplorably small is the political influence of the profession, but urged that, if properly directed, it would suffice to achieve the preliminary step he advocated. Without this all effort in the desired direction must prove futile. The British Medical Association has the numbers, and the organization, and could raise the necessary funds. Mr. Sewill urged that the forces and resources of the Association ought to be directed towards the object he had explained; he proposed that the Reigate Division should adopt a resolution asking the Council to take this suggestion into consideration.

Resolution.—At an adjourned meeting of the Reigate Division, on July 11th, the following resolution, proposed by Dr. Walters and seconded by Dr. Bromet, was unanimously carried;

> The Reigate Division of the South-Eastern Branch of the British Medical Association would urge upon the Council the desirability of the promotion of a Royal Commission to inquire into the whole question of medical law, into the practice of the profession by unqualified pretenders, and into the traffic in quack medicines and apparatus. The Reigate Division believes that the exposure which a Commission would effect would prove that reform is called for much more for the protection of the public than the advantage of the profession; that it would force the attention of the Legislature to the question, and lead to the speedy construction of laws for the abatement of existing evils.

It was resolved to print a summary of Mr. Sewill's speech for circulation among the Divisions. In response to a request from the meeting, Mr. Sewill undertook to attend at any Divisions to which he might be invited where further explanations of his proposals might be desired.

LANCASHIRE AND CHESHIRE BRANCH:

Leigh Division.

Election to Central Council.—At a meeting of the Division, held on September 19th, it was unanimously resolved:

> That in the event of Dr. Garstang becoming a candidate for the Council of the British Medical Association in 1908, this Division pledges itself to support his candidature in every way possible.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

North Glamorgan and Brecknock Division.

Officers.—The following were elected officers of the Division for the ensuing year: *Chairman*, Dr. R W. Jones; *Vice Chairman*, Dr. C. Biddle; *Secretary*, Mr. C. J. Weichert; *Representatives on Branch Council*, Messrs. I. L. W. Ward, B. M. Lewis, and D. N. Morgan.

Meetings.—The meetings of the Division are held as follows: Ordinary on the second Thursday in October, December, March; annual on the last Thursday in May.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

Owing to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

The Annual Exhibition
OF
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[*Fifth Notice.*]

Drugs.

Evans, Gadd, and Co., Limited (Bristol and Exeter). This firm of chemical manufacturers showed a large number of pharmaceutical preparations, which for the most part had been carefully standardized by physical, chemical, or physiological tests. Amongst those in the latter class may be mentioned especially the firm's liquid extract of ergot, each batch of which, to ensure efficacy, is tested, we were informed, in the pharmacological laboratory of the University of Cambridge. The potency of the drug is measured by the rise in blood pressure which it produces on injection into a cat, and a copy of the certificate received is attached to each bottle as a guide to the dose which will be required in the human subject. The tincture of digitalis is standardized on the same lines, the measure of its activity being based upon the ascertained lethal dose for a frog of known weight. The result is printed on the label of each bottle issued. The firm's tinctures of squills and strophanthus are treated in the same fashion. The preparations manufactured by the firm, and standardized on their alkaloidal contents (adjusted to those of the corresponding preparations of the *British Pharmacopœia*), which were on view, included a tincture of belladonna, compound camphor, cinchona, nux vomica, and opium. The firm also exhibited a liquor violae glucosidi, which it states to be a standardized preparation of the fresh leaves of the *Viola odorata*, and to be valuable as an anodyne, and reducing the offensive discharges from broken-down malignant tumours. One of the partners of the firm takes a special interest in this drug, and has prepared a pamphlet containing abstracts of all matters dealing with its use which has appeared in English and foreign medical literature from time to time.

C. J. Hewlett and Son (35–42, Charlotte Street, London, E.C.). This firm of wholesale druggists and instrument makers showed a variety of convenient antiseptic preparations, a certain number of the mixtures which have become associated with its name, and a few new instruments. To be classed with the former, perhaps, is Antithermogen, which has been brought out for use either as an absorbent dressing for wounds or as a substitute for poultices, for which its hygroscopic properties seem to render it suitable. The principal antiseptic shown was "Creosalgen," which is, we were informed, an alkaline solution of the chief constituents of cresylic acid. It mixes with water, forming a milky-white solution. It is prepared also for surgical use, and in this form makes a bright, clear solution with water. In a third form it was gelatinous, and thus specially suited for the preparation of the hands before gynaecological and corresponding examinations. The special compounds included mist. pepsinae c. bismutho and liquor santal flav. c. buchu et cubeba, both of which have enjoyed wide popularity for many years past. Two new preparations which seem likely to gain corresponding favour are elixir aceto-salicylic, and mistura cimicifugae co. conc.

Fairchild Bros. and Foster (50-60, Holborn Viaduct, London, E.C). The special products of this firm have made steady progress in favour since they were first introduced some ten or twelve years ago, and are now sufficiently familiar to most medical men. Those displayed on the firm's stall included a series of digestive ferments for use in connexion with dietetics, and a new set of derivatives from the pancreas for therapeutic use. Among the former may be mentioned "Diazyme," a pancreatic essence of a palatable kind, and the better-known product "Zymine," likewise an extract from the pancreas, containing what is believed to be all its active principles in the form of a whitish powder. Its use is greatly facilitated by its being put up in small tubes, each of which is sufficient to peptonize 1 pint of milk. Belonging to the same class was an elegant form of preparation to which the firm has given the general name of "Pepules." These are various compounds of pepsine and zymine, and pepsine, zymine, and bismuth, pepules of ox gall being also obtainable. The product named "Panopepton," which was also shown, is stated to represent the entire nutritive value of lean beef *plus* wheat flour, the whole being in a very soluble, diffusible, and readily-absorbed form. It is by no means unpalatable, and deserves its place among the readily-absorbed nutritive liquid foods. Peptogenic milk powder is one which has been prepared by the firm to facilitate the home conversion of cow's milk into a solution corresponding in chemical constitution with that of human milk. As for the therapeutic pancreatic products which have been mentioned, these included injections of trypsin and amylopsin, prepared in each case from the fresh pancreas, and put up in ampoules each containing 20 minims. A corresponding preparation, which will doubtless be welcomed by those imbued with the possibilities of pancreatic extract in the treatment of malignant growths, is "Lotio Pancreatis," which is stated to be of great trypsin strength, and is intended for topical application.

Meister, Lucius and Bruning (51, St. Mary Axe, London, E.C.). This is an enterprising firm of chemical manufacturers which after a long and successful career in Germany has now established a large branch in England. Some of its products are very well known to medical men in this country, for among the many synthetic remedies which it has produced are several which came rapidly into favour and for a very long time now have been commonly employed by most practitioners. Antipyrin, which was brought out by this firm, now more than twenty years ago, is a case in point, its younger congener Pyramidon being likewise due to their skill in synthesis. It is considered by the firm to be in practice greatly the superior drug of the two, since though its antipyretic and analgesic effects are much more marked comparatively little risk attaches to its employment. Argonin, a silver preparation, was also shown and is claimed to be the most useful astringent for use in the treatment of urethral discharges of specific origin. Another product which would seem likely to be of decided value is Valyl-Hoechst, being the active principle of valerian. Great practical and scientific interest attaches likewise to the suprarenin produced by the firm; it differs from all adrenal preparations which have yet been commonly used in being built up, we were informed, by chemical synthesis. The firm believes that this confers a great advantage, inasmuch as it is more reliable in action than natural suprarenin products, and the solutions prepared from it are far more stable, while every individual dose can be sterilized if desired before use. Another very recent remedy shown was the meningococcus serum prepared by the firm for Professor Ruppel; during the prevalence of cerebro-spinal fever in Galicia last year it was considered to have proved of value both as a prophylactic and curative agent.

Foods.

J. S. Fry and Sons, Limited (Bristol). The exhibits of this firm included chocolate and cocoa in many forms, the former being shown both as pure chocolate and as that admixture of chocolate and milk products which has seized the popular fancy and of late years has come greatly into favour. It must be admitted that it is much more than a pleasant sweetmeat, and that there is certainly room for its use under many circumstances in the sick room. Having considerable dietetic value, and being quite soluble, there are times when it may be used when no other food containing so much nutriment in so small a compass could be permitted. Cocoa was shown in a concentrated form free from any admixture, and in combination with Allen and Hanburys' extract of malt. The latter is an excellent compound, which may be thoroughly commended in respect of its digestibility. As regards its palatability, this was sufficiently evidenced by the activity which the attendants at the stall were obliged to exhibit in supplying visitors who asked to taste it, and were not satisfied with only a small cup. In the preparation of this compound the concentrated cocoa already mentioned is used, so that the quantity required to make an ordinary breakfast cup of

the beverage is quite small. A heaped teaspoonful rubbed into a paste with cold milk appears to be quite sufficient. For ordinary purposes the firm recommends that the cup should be completed by the addition of hot water, cream and sugar being added to taste, but where a specially strong beverage is desired the cocoa, after being turned into a paste, may be added to hot milk. As malt extract seems materially to facilitate the assimilation of farinaceous foods, this compound of malt and cocoa appears to be indicated as a breakfast and supper drink in any cases in which bread and allied substances are ill-borne. It might be better if a beverage of this character were habitually given to children instead of tea.

Miscellaneous.

The Cellular Clothing Co. (72 and 74, Fore Street, London, E.C.) The principle underlying the construction of the material out of which Aertex cellular garments are made is certainly scientific, and the extent to which the tissue has been imitated shows sufficiently that it has been found practical and proved popular. The conception is that the small cells which form the meshwork allow evaporation from the surface of the body to proceed slowly and steadily but at the same time prevent the body heat escaping too rapidly, the general result being that the body is protected from chill by the layer of naturally-warmed and dry air in the interstices of the tissue. This seems to be the case, and prolonged personal experience goes to show that underclothing made of the material can be comfortably worn both in winter and in summer; that it washes well and does not shrink, and lasts considerably longer than merino or other fabric of ordinary make and of corresponding power of protection. It seems, in short, to combine most of the advantages of cotton and woollen underclothing. A new use to which the firm has turned its speciality is to the manufacture of sheeting, which seems to be an excellent idea, for the sheets are pleasant in feel and apart from use under ordinary circumstances should prove highly useful at sea and in hot climates when blankets cannot be used, but the sleeper runs the risk of catching a chill in the cool of the early morning if covered by nothing but an ordinary cotton or linen sheet. Similarly they should be useful in the sick room as a protection for patients who, whether from fancy or otherwise, are unable to sleep under a due amount of ordinary bedclothing.

C. Oppel and Co. (10 and 12, Milton Street, E.C.). The exhibit of this firm consisted of Friedrichshall Water, a natural aperient mineral water too well and popularly known to require much description. It is derived from a spring at Friedrichshall, near Saxe-Meiningen in Germany, and its chemical constituents, as shown by the analysis conducted annually in a municipal laboratory at Breslau, remain practically unchanged from year to year. The effective salts are present in such proportion that an ordinary tumberful, which may be taken as 8 oz., contains approximately 24 grains of magnesium sulphate, 19 grains of magnesium chloride, and 20 grains and 30 grains of the sulphate and chloride of sodium respectively. When taken regularly about half a tumbler is found to be a suitable dose for adults. In the treatment of children it is, perhaps, best to give it in milk, which largely conceals its taste. Sir Henry Thompson in this country had a particularly high opinion of the value of this water in the treatment of torpidity in intestinal action. He considered that it might be taken habitually without having a lowering effect, and that one of its special virtues was that it did not increase the tendency to constipation. This opinion was in accord with those of several foreign authorities, including Virchow, Frerichs, and Oscar Liebreich.

Keen, Robinson and Co. (Denmark Street, St. George's-in-the-East, E.). This firm, now incorporated with that of J. and J. Colman, Limited, exhibited the specialities which have long since gained for the names of the two firms respectively a position among household words. These are Robinson's Patent Barley, Robinson's Patent Groats and Colman's Mustard and preparations of mustard. The first of these is, we are informed, a pure farina prepared from the finest Scotch barley; and, as is well known, is a very suitable material for the preparation of the barley water which, whether flavoured with lemon juice or other agent, is so much used in the sick room, and as a substitute at meals for the plain water found by many persons distasteful, and as a diluent of milk for babies and young children. The "Patent Groats" are also popular; they are derived from Scotch-grown oats, and make most palatable gruel with the help of milk. Such gruel is a form of food which, in the case of children after weaning and of nursing mothers and of convalescents, might well be used with greater frequency than has been the case of late years. Colman's mustard plasters are of uniform quality, and are too popular to require more than mere mention. The firm's mustard bran fulfils the same general indications as the sinapisms, but is somewhat milder in action and therefore suitable for use over more extended surfaces, and in cases of rheumatism and lumbago and the like, in which prolonged and not too painful cutaneous stimulation is desired. The firm also prepares a mustard oil which as a liniment for household use in muscular rheumatism should be found useful.

Peek, Frean, and Co (Drummond Road, London, S.E.). In their exhibit at Exeter this well-known firm of biscuit manufacturers launched out in a somewhat new direction, the stall being taken up by an array of "Tilia" in various forms. This is a soluble milk proteid to which favourable attention was directed in these columns a few months ago. It is a pale yellow, finely-powdered substance, free from odour and practically tasteless; it dissolves readily and almost completely in warm water, and on analysis proves to contain some 72 per cent. of casein and other nitrogenous constituents of milk in a soluble form. The preparation thus lends itself easily to use in strengthening the nutritive value of soups and other beverages, neither their flavour nor their appearance being altered by its addition. "Tilia" cocoa was one of the preparations on view, this being, we were informed, a mixture of pure cocoa essence with a considerable proportion of "Tilia." On analysis this is found to contain a very much higher percentage of nitrogenous proteids than ordinary cocoa; so besides being a stimulant, it may be regarded as a concentrated and agreeable food. Various forms of "Tilia" biscuits were also shown. In their general appearance neither the plain, the wholemeal, the sweet, nor the diabetic biscuit differed from the ordinary biscuits for which the firm has become popular, but they differed in the essential detail that their proteid constituents were very much higher than that of any ordinary biscuits. In the diabetic biscuits, advantage has been taken of the properties of "Tilia" to form a biscuit practically free from carbohydrates yet of real nutritive value, and though some of them are sweet and others "plain," neither on a searching examination revealed more than traces of either starch or sugar. All the articles shown were well calculated to uphold the general reputation of the firm.

Liebig's Extract of Meat Company (4, Lloyd's Avenue, London, E.C.). The preparations of this firm of manufacturers of concentrated foods are for the most part too well known to need description. Lemco, Oxo, and Fray Bentos Ox Tongues and Ox Soup were all exhibited, together with tables of statistics, showing the extent of the firm's operations, and photographs of its farms and stock. To these reality was given by a life-size model of one of the animals which the firm breeds and whose meat it uses in the preparation of its extracts. The cattle farms of the firm, we are informed, exceed 1,000,000 acres, the standing stock of cattle being over 200,000 head; it is the cheapness of labour and land near the Plate River which explains, it would appear, the comparatively low cost at which the firm is able to put its preparations on the market. Of these Lemco is an extract of beef free from fat and without any added flavouring, which in early days was familiar as "Liebig's extract of meat," and as such made a great name for itself. Oxo, a younger claimant for popularity, is also now sufficiently well known. It is a compound of meat extract and meat fibre with the addition of flavouring matters, and long personal experience of it proves that with a sufficient amount of water it is a pleasant and stimulating kind of beef cup. Nursing Oxo is the same preparation in a somewhat more concentrated form; all flavouring agents are omitted from it, however, these being left to be added in the sick room according to the varying taste of invalids.

Ingram and Royle (East Paul's Wharf, Upper Thames Street, E.C.). This firm, which has branches at Liverpool and Bristol, is the official agent for a very large number

of Continental and other health resorts, and showed upon its stall samples of the majority of the better recognized and more highly-esteemed natural mineral waters It also showed in many cases the same waters concentrated into a form adaptable for transport, so that those who have become habituated to their use, or who have been advised to take them while travelling, may carry them about with them. The foreign waters included Carlsbad, Contrexéville, Evian, Perrier, Vittel, Wildungen, and the three waters derived from the State springs of Vichy—namely, Grande Grille, Hôpital, and Celestin; for these the firm are the sole agents.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—The autumn meeting of this Branch will be held in Blandford on Wednesday, October 23rd. Members wishing to read papers, exhibit specimens, or show cases should communicate with the Honorary Secretary, JAMES DAVISON, Streateplace, Bath Road, Bournemouth, on or before Friday, October 11th. This JOURNAL notice is the only intimation of the meeting.

LANCASHIRE AND CHESHIRE BRANCH.—A meeting of the Branch Council will be held at the Liverpool Medical Institution on Wednesday, October 9th, at 4.30 p.m.—F. CHARLES LARKIN, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: LEIGH DIVISION.—A special meeting of the members of the above Division will be held at Co-operative Rooms, Ellesmere Street, at 8 30 p.m., on October 17th. Agenda: Consideration of the Council's Referendum Report. The attention of members is directed to the SUPPLEMENT of the BRITISH MEDICAL JOURNAL for September 21st, containing the report of the Representative Meeting on the above.—J. SACKVILLE MARTIN, M.D., Honorary Secretary of the Division.

LANCASHIRE AND CHESHIRE BRANCH: LIVERPOOL AND BIRKENHEAD DIVISIONS.—A meeting of the Joint Committee of the Liverpool and Birkenhead Divisions will be held at the Liverpool Medical Institution on Tuesday. October 1st, at 4 30 p.m. Agenda: Election of officers and other business.—KARL GROSSMANN, M.D., Honorary Secretary, Liverpool.

SOUTH-EASTERN OF IRELAND BRANCH.—The last meeting of the session of this Branch will be held at the Victoria Hotel, Kilkenny, on Wednesday, October 2nd, at 5 p.m. A meeting of the Council of the Branch will be held on the same occasion, as also a meeting of the Carlow, Waterford, and Kilkenny Divisions of the Branch, to consider referenda from the Representative Meeting of the British Medical Association held at Exeter. Agenda: (1) Minutes of last meeting. (2) Letters of apology. (3) Correspondence. (4) Receive report of the Representative at Representative Meeting. (5) Referenda. (6) Resolution by Dr. Walshe *re* gratuitous increase of duties imposed on medical officers of health (7) Any other business. Branch Council Agenda: (1) Elect Drs. Hourigan and Hogan members of Branch. (2) Application from Dr. Hourigan to investigate loss of three police stations forfeited through illness.—J. QUIRKE, Honorary Secretary, Piltown, co. Kilkenny.

SOUTH MIDLAND BRANCH.—The autumnal meeting of this Branch will be held at the Railway Hotel, Bletchley, at 2 p.m, on Thursday, October 10th, under the presidency of Dr. Chillingworth, of Bedford. Lunch will be served at the hotel at 1.15 p.m., price 2s. 6d. per head. The Secretary will be glad to hear as soon as possible from members wishing to read papers or show cases.—E. HARRIES-JONES, Honorary Secretary, Northampton.

YORKSHIRE BRANCH.—The next meeting of the Yorkshire Branch will be held at the University, Sheffield, on Wednesday, October 30th, at 4 p.m. Members wishing to read papers, show specimens or cases, or propose new members, are requested to communicate at once with the Honorary Secretary, Dr. ADOLPH BRONNER, 33, Manor Row, Bradford.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: HERBERT L. PENNY, Staff Surgeon, to Chatham Hospital, September 25th; EDWIN S. MILLER, M.B., Staff Surgeon, to the *Cornwallis*, September 25th; EDWARD C. SAWDY, Staff Surgeon, to the *Forth*, September 13th; HERBERT R. H. DENNY, Surgeon, to the Cape of Good Hope Hospital, September 13th; THOMAS W. PHILIP, M.B., Staff Surgeon, to the *Russell*, September 19th; WILLIAM H. POPE, Staff Surgeon, to the *Topaze*, September 19th: ARTHUR R. THOMAS, Surgeon, to Plymouth Hospital, September 19th; ALEXANDER B. MARSH, Surgeon, to the *Ariadne*, September 19th; PAUL H. M. STAR, Staff Surgeon, to the *President*, additional, for three months' course at West London Hospital, September 19th.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT W. K. BEAMAN, from the Seconded List, to be Lieutenant, September 1st.

The Christian names of Lieutenant HERBERT WILLIAM CARSON, M.B., are as now described, and not as stated in the *Gazette* of August 9th.

Lieutenant-Colonel J. R. DODD has been appointed Administrative Medical Officer at Belfast, vice Colonel G T. Goggin.

Lieutenant-Colonel H. CHARLESWORTH, C.M.G., retired pay, Senior Medical Officer, London Recruiting Area, has been granted an extension in his appointment.

Lieutenant Colonel R. I. D. HACKETT, M.D., has been appointed Administrative Medical Officer, Tidworth, vice Colonel W. A. May, C.B., who has been placed on retired pay.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL W. COATES, M.D., Bengal, is permitted to retire from the service from July 4th. He was appointed Surgeon, March 31st, 1877. and became Surgeon-Lieutenant-Colonel. March 31st, 1897. He served in the Afghan war in 1878 80. and was present at the capture of Ali Musjid, at the battle of Charasiah, in the operations around Kabul in December 1879, in the march from Kabul to the relief of Kandahar, and at the battle on September 1st; he was mentioned in dispatches, and received a medal with four clasps and a bronze star. He was also in the Mahsood Wuzeeree expedition in 1881.

Lieutenant-Colonel C. L. SWAINE, M.D., Madras, is permitted to retire from the service from July 23rd. He joined the Madras Medical Department as Assistant Surgeon, March 31st, 1876, becoming Surgeon-Lieutenant-Colonel, March 31st, 1896. He served in the Burmese expedition in 1886-9, receiving a medal with two clasps.

Lieutenant-Colonel N CHATTERJIE, Madras, also retires from the service from June 18th He was appointed Assistant Surgeon, March 31st, 1877, and Surgeon-Lieutenant-Colonel twenty years thereafter He likewise served with the Burmese expedition in 1886-9, receiving a medal with two clasps.

Lieutenant-Colonel A. V. ANDERSON, M.B., Bombay, likewise retires from the service from July 19th. He entered the department as Assistant Surgeon, April 1st, 1882 and was made Lieutenant-Colonel, April 1st, 1902. He was with the 2nd Miranzai expedition in 1891, for which he has a medal with clasp.

Captain M. B PINCHARD, Madras, has been transferred to the temporary half-pay list, from August 12th He joined the Madras Establishment as Surgeon-Lieutenant, January 29th, 1896, and was made Captain, January 29th, 1899. He was in the Tirah campaign, North-West Frontier of India, in 1897-8, receiving a medal with two clasps, and in the China war in 1900, receiving a medal.

The undermentioned Principal Medical Officers are transferred as follows: Surgeon-General W. B. SLAUGHTER, from the Eastern Command to the 8th (Lucknow) Division, sub. *pro tem*; Surgeon-General F. W. TREVOR, C.B., M.B., from the Western Command to the 6th (Poona) Division, sub. *pro tem.*; Colonel G. D. N. LEAKE, from the 8th (Lucknow) Division to the Allahabad and Fyzabad Brigades, sub. *pro tem.*; Colonel H R. WHITEHEAD, from the 2nd (Rawal Pindi) Division to the Sirhind and Jullundur Brigades; Surgeon-General H. HAMILTON, C.B., M.D., from the Northern Command to the 2nd (Rawal Pindi) Division, sub. *pro tem*; Colonel P. H. BENSON, M.B., from the 6th (Poona) Division to the Secunderabad Brigade, sub. *pro tem.*; Colonel D. FFRENCH-MULLEN, M.D., from the Sirhind and Jullundur Brigades, to be Deputy Principal Medical Officer, His Majesty's Forces in India, sub *pro tem.*

The undermentioned officers of the Royal Army Medical Corps, serving in India, are appointed specialists in Dermatology, from the dates specified: Lieutenant H. T. WILSON, 2nd (Rawal Pindi) Division, August 1st; Major C. W. PROFEIT M B, 3rd (Lahore) Division, August 1st; Captain J. S. GALLIE, 6th (Poona) Division, August 1st; Captain R. SELBY, M B, 7th (Meerut) Division, June 8th; Captain M. M. RATTRAY, M.B, 9th (Secunderabad) Division, August 1st.

The following officers of the Royal Army Medical Corps, serving in India, are appointed specialists in Advanced Operative Surgery, from the dates specified:—Lieutenant C. W. O BRIEN. 1st (Peshawur) Division, July 1st; Lieutenant C. H. TURNER, 2nd (Rawal Pindi) Division, July 15th; Major K. M. CAMERON, M.B., 3rd (Lahore) Division, June 8th; Major T. H. J. C GOODWIN, D.S O, 4th (Quetta) Division, July 1st; Major F. W. BEGBIE, 5th (Mhow) Division, July 1st; Captain W. L. STEELE, 8th (Lucknow) Division, July 1st; Captain T. J. WRIGHT, Burmah Division, July 1st.

The undermentioned officers of the Indian Medical Service are appointed specialists in Advanced Operative Surgery, from the dates given: Captain J. H. BURGESS, M.B, 1st (Peshawur) Division, June 8th; Lieutenant A. F. HAYDEN, M B., 2nd (Rawal Pindi) Division, June 8th; Captain H. R. NUTT, M.B., 3rd (Lahore) Division, July 1st; Lieutenant C. H. BRODRIBB, M.B., 5th (Mhow) Division, June 8th; Lieutenant A. F. HAMILTON, 6th (Poona) Division, June 8th; Lieutenant H S MATSON, 7th (Meerut) Division, July 1st; Lieutenant A. D. WHITE, 8th (Lucknow) Division, June 8th.

Lieutenant A. S. M PEEBLES, Indian Medical Service, is appointed Specialist in Mental Science, Northern Army, from June 8th.

ARMY MEDICAL RESERVE OF OFFICERS.

SURGEON-CAPTAIN S. J. J. KIRBY to be Surgeon-Major, August 28th.

WALTER G. H. CABLE to be Lieutenant, on probation, September 2nd.

IMPERIAL YEOMANRY.

SURGEON-LIEUTENANT J. A. TAYLOR, M.B., Scottish Horse, to be Surgeon-Captain, August 1st.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-CAPTAIN G. HALLEY, M.B., 1st Forfarshire, to be Surgeon-Major, July 29th.

Surgeon-Captain G FARMER, 1st North Riding of Yorkshire, resigns his commission, August 31st

Surgeon-Captain A Y. PRINGLE, 1st Suffolk and Harwich, resigns his commission, September 1st.

VOLUNTEER RIFLES.

ARTHUR J. ARCH (late Lieutenant, Royal Army Medical Corps) to be Second Lieutenant in the 2nd Volunteer Battalion the Royal Warwickshire Regiment July 20th.

PROSPER J. LISTON to be Surgeon-Lieutenant in the 1st Volunteer Battalion the Duke of Cornwall's Light Infantry August 12th

Supernumerary Surgeon-Major E. LEE, 1st Volunteer Battalion the King's Own (Yorkshire Light Infantry), (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, Humber Volunteer Infantry Brigade), to be Surgeon-Lieutenant-Colonel, remaining seconded, July 18th, 1903.

Surgeon-Lieutenant H. W. SPAIGHT 1st Volunteer Battalion the Duke of Cambridge's Own (Middlesex Regiment), resigns his commission, August 1st.

Surgeon-Major G HOLLIES, M.D., 2nd Volunteer Battalion the King's (Shropshire Light Infantry) to be Surgeon-Lieutenant-Colonel, August 1st.

Surgeon-Lieutenant E. R. HUNT, 1st Volunteer Battalion the Royal Sussex Regiment, to be Surgeon-Captain, August 3rd.

Surgeon-Major D. H. KYLE, M B., 6th (Fifeshire) Volunteer Battalion the Black Watch (Royal Highlanders), resigns his commission, August 5th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

LIEUTENANT A. E JERMAN, Woolwich Companies, Eastern Command, to be Captain, August 6th.

ALLAN C. PARSONS to be Lieutenant in the London Companies, London District, September 1st

Captain J. A. BOYD, M.B., Argyll and Sutherland Bearer Company, resigns his commission, August 12th.

Captain (Surgeon-Major Army Medical Reserve of Officers, Honorary Captain in the Army) E. W. ST V RYAN, East Surrey Bearer Company, resigns his commission, July 17th.

CHANGES OF STATIONS.

THE following changes of stations amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during August, 1907:

		FROM	TO
Lieut.-Col.	J. R. Dodd, M B.	Agra	Dublin.
,,	M. O'D. Braddell, M.B.	Golden Hill	Bulford.
,,	J. H Daly	Queenstown	Malta.
Major	G. T. Rawnsley	—	Aldershot.
,,	G. A T. Bray	Chatham	Southampton.
,,	C. E. P. Fowler	R.A.M. Coll.	London Dist.
Captain	M. Swabey	Conway	Preston.
,,	C. F. Wanhill	Edinburgh	R.A M. Coll.
,,	M. P. Corkery	London Dist.	Woolwich.
,,	J McD. McCarthy, M.B.	—	Pembroke Dk.
,,	W. H. S. Nickerson, V.C., M.B.	Lusk Camp	Curragh.
,,	C. J. O'Gorman, D.S.O.	Shorncliffe	Dublin.
,,	E. P. Hewitt	E Command	Norwich.
,,	H. P. W Barrow	Irish Comnd.	Dublin.
,,	A. L. Scott	Portland	West Africa.
,,	M. H. G Fell	Liverpool	Fleetwood
,,	H. D. Packer	Golden Hill	Portsmouth.
,,	R A. Cunningham, M.B.	Woolwich Cp.	Portland.
,,	P. S. O'Reilly	S. Command	Fargo Camp.
,,	J. A. Hartigan, M.B.	E. Command	Chatham.
,,	F. W. Cotton	,,	Dover.
,,	B. R. Dennis, M B.	S. Command	Portsmouth.
,,	W. Bennett, M.B.	Dublin	Cork.
,,	G. Carroll	,,	,,
,,	A. D. Waring, M.B.	,,	Curragh.
,,	F. McLennan, M B.	Edinburgh	Perth.
,,	A. D. Jameson	London Dist.	Aldershot.
,,	R. L. Popham	Lusk Camp	Dublin.
,,	H. F. Shea, M.B.	Millbank	Pirbright.
,,	F. A. Stephens	Edinburgh	Irvine.
,,	J. T. Johnson, M.D.	Newcastle-on-Tyne	Bradford.
,,	W. R. P. Goodwin	Murree	Woolwich.
,,	A. C. Duffey, M D.	Dublin	Athlone.
,,	R. N. Hunt, M.B.	Finner Camp	Ballykinler.
,,	W. Riach, M D.	Sheffield	Lincoln.
,,	J. B. Cautley	Eastern Comd.	Woolwich.
,,	W. M. B. Sparkes	Bulford	Portsmouth.
,,	J. H. Barbour, M.B.	Dublin	Belfast.
,,	P. G. Hyde, M.B.	Glenbeigh Cp.	Queenstown.
,,	G. F. Rugg	Northampton.	Colchester.
,,	G. S. C Hayes	Bulford	Devonport.
Lieutenant	P. C. T. Davy, M.B.	Warley	Colchester.
,,	F. A. McCammon, M.B.	Mosney Camp	Belfast.
,,	A. S. Williams	Chichester	Dover.
,,	C. R. M. Morris, M.B.	Bere Island	Kilkenny.
,,	F. D. G. Howell	Weymouth	Wool Camp.
,,	J. W. L. Scott	Filleigh Camp	Bodmin.
,,	A. H Bond	Willsworthy	Gosport.
,,	W. Mitchell, M B.	York	Strensall.
,,	J. A. B. Sim, M.B.	Edinburgh	Lanark.
,,	E. J. Elliot, M.B.	Rolleston Cp.	Parkhouse Cp.
,,	C. Scaife, M.D.	Lusk Camp	Dublin.
,,	B. Johnson	Cork	Fermoy.
,,	W. E. C Lunn, M.B.	Scottish Comd.	Thankerton
,,	G. P. A. Bracken	Limerick	Bere Island
,,	J. A. Bennett, M.B.	Portsmouth	Bulford
,,	W. F. M. Loughnan	Copythorne Common Cp.	Portsmouth.
,,	W. T. Browne	Queenstown	Fethard.
,,	J. J. O'Keeffe, M.B.	Beaulieu Cp	Portsmouth.
,,	A. Fortescue, M.B.	Scottish Comd.	Edinburgh.
Lieutenant	G. Carlisle	S. Command	Devonport.
,,	H. M. J. Perry	Dublin	Cork.
,,	J. L. Wood	S Command	Piershill.
,,	M. P. Leahy, M.B.	Dublin	Curragh.
,,	W G. Aviss	N. Command	Lichfield.
,,	R. D. O'Connor	S. Command	Tidworth.
,,	M. O. Wilson, M.B.	Dublin	Curragh.
,,	J. du P Langrishe, M.B.	W. Command	Conway.
,,	T. H. Scott, M.B.	N. Command	Sheffield.
,,	G. F. Rudkin	W. Command	Pembroke Dk.
,,	L. A. A. Andrews	,,	Ashton.
,,	J. H. Gurley	E Command	Dover.
,,	H. C. Elliott, M.B.	Dublin	Limerick.
,,	E. M. Middleton	E. Command	Colchester.
,,	V. T. Carruthers, M.B.	York	Newcastle-on-Tyne.
,,	H. W. Farebrother	W. Command	Beaumaris.

Lieutenants A. H. Jacob and C. H. Denyer, appointed on probation July 30th, 1906, are stationed in the London District.

Lieutenant-Colonel C R. Woods, M D., retired pay, has been placed in medical charge of troops at the Detention Barracks, Dublin.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,075 births and 4,149 deaths were registered during the week ending Saturday last, September 21st The annual rate of mortality in these towns, which had been 12 3 per 1,000 in each of the two preceding weeks, rose to 13 5 per 1,000 last week The rates in the several towns ranged from 5 9 in Tottenham, 6.3 in Willesden, 6 6 in Halifax, 7.0 in Hornsey, and 7.6 in Barrow-in-Furness, to 18.7 in Huddersfield, 19.1 in Sheffield, 19 4 in Liverpool, 20.6 in Burnley, 22.3 in Warrington, and 23 3 in Bootle In London the rate of mortality was 13.0 per 1,000, while it averaged 13 7 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2 0 per 1.000 in the seventy-six towns; in London this death-rate was equal to 1 7 per 1,000, while among the seventy five large provincial towns the death-rates from the principal infectious diseases ranged upwards to 3 2 in Nottingham, 3 3 in Devonport, 3 4 in Liverpool and in Merthyr Tydfil, 3.7 in Gateshead, 3.8 in Aston Manor, 3 9 in Stockton-on-Tees, 4.4 in West Ham, 6 2 in Bootle, 6 3 in Sheffield, and 7 4 in Warrington. Measles caused a death-rate of 1.1 in Newcastle-on-Tyne, and 1.4 in Cardiff; diphtheria of 1.2 in Rochdale; whooping-cough of 1 2 in Wigan, 1.4 in Ipswich, in King's Norton, in West Hartlepool, and in Merthyr Tydfil, 1.7 in St Helens, and 2 0 in Great Yarmouth; "fever" of 1.6 in Bootle; and diarrhoea of 2 9 in Gateshead, 3.0 in West Ham and in Stockton-on-Tees, 3.1 in Aston Manor 3 3 in Devonport, 3.9 in Bootle, 5 2 in Warrington, and 5 4 in Sheffield. The mortality from scarlet fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,738, 3,816 and 3.871 at the end of the three preceding weeks, had further risen to 4,021 at the end of last week; 696 new cases were admitted during the week, against 557, 587, and 574 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, September 21st, 835 births and 462 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.6 and 15.3 per 1 000 in the two preceding weeks, declined again to 13.3 per 1 000 last week, and was 0 2 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 7.5 in Leith and 10.5 in Perth to 14 2 in Dundee and 15 2 in Glasgow. The death-rate from the principal infectious diseases averaged 1.5 per 1,000 in these towns, the highest rates being recorded in Glasgow, Dundee, and Paisley. The 247 deaths registered in Glasgow included 3 which were referred to measles, 3 to whooping-cough, 21 to diarrhoea, and 3 to cerebro-spinal meningitis. Three fatal cases of whooping-cough were recorded in Edinburgh; 2 of diphtheria, 4 of whooping-cough, 2 of diarrhoea, and 1 of cerebro-spinal meningitis in Dundee; 2 of diarrhoea and 1 of cerebro-spinal meningitis in Paisley; and 1 of cerebro-spinal meningitis in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 21st, 526 births and 302 deaths were registered in six of the principal Irish towns, as against 517 births and 349 deaths in the preceding period. The annual death-rate in these towns, which had been 13 8, 12 6, and 16 8 per 1,000 in the three preceding weeks, fell to 15 1 per 1,000 in the week under notice, this figure being 1 8 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 11.0 in Londonderry and 11 7 in Waterford to 17.1 in Cork and 18 6 in Dublin The zymotic death-rate in the same six Irish towns averaged 2 0 per 1 000, or 0 3 per 1,000 higher than during the preceding period, the highest figure—3 9—being recorded in Waterford. The deaths in Belfast included 1 ascribed to cerebro-spinal fever.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BRADFORD POOR-LAW UNION.—Resident Assistant Medical Officer (Male) for the Hospital and Workhouse. Salary, £100 per annum.

BROMPTON HOSPITAL SANATORIUM.—Assistant Medical Officer. Salary, £150 per annum.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—House-Physician. Salary at the rate of £65 per annum.

CITY OF LONDON HOSPITAL, Victoria Park, N.E.—(1) Pathologist. Salary, £105 per annum. (2) Two House-Physicians (Males). Salary, £50 per annum.

CROYDON GENERAL HOSPITAL.—Senior and Junior House-Surgeons. Salary, £105 and £60 per annum respectively.

DURHAM COUNTY HOSPITAL.—House-Surgeon. Salary, £120 per annum.

EDINBURGH: ROYAL EDINBURGH ASYLUM, Morningside.—Fourth Assistant Physician.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £30 per annum.

GORDON HOSPITAL, Vauxhall Bridge Road, S.W.—Surgeon to Out-patients.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House-Physicians. Honorarium, £25 for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon. (2) House-Physician. (3) Assistant Casualty Medical Officer. Salary in each case, £20 for six months and £2 10s. washing allowance.

HOSPITAL FOR WOMEN, Soho Square, W.—Resident Medical Officer. Salary, at the rate of £60 per annum.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer. Salary, £150 per annum.

JERSEY DISPENSARY AND INFIRMARY.—Resident Medical Officer.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, Queen Anne Street, W.—Assistant Pathologist. Salary to commence at the rate of £150 per annum, rising to £400.

LAMBETH INFIRMARY, Kennington Road, S.E.—Junior Assistant Medical Officer, male. Salary, £100 per annum

LEICESTER INFIRMARY.—House-Physician. Salary at the rate of £100 per annum

LEWES DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary, £120 per annum.

LIVERPOOL EYE AND EAR INFIRMARY.—Male House-Surgeon. Salary, £80 per annum.

LONDON HOSPITAL, Whitechapel, E.—Surgeon Dentist.

MAIDSTONE: KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer. Salary to commence, £175 per annum.

MANCHESTER ROYAL INFIRMARY.—Resident Surgical Officer. Salary, £150 per annum.

MANCHESTER UNIVERSITY.—Senior Demonstrator in Physiology. Stipend, £150, rising to £200 per annum.

MEDICAL MISSION HOSPITAL, Canning Town.—Female Honorary Anaesthetist.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—Assistant Surgeon for Diseases of Women.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer. Salary, £80 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary, £50 per annum.

PORT ELIZABETH: PROVINCIAL HOSPITAL.—Assistant House-Surgeon. Salary, £225, rising to £300 per annum.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—House-Physician (male). Salary at the rate of £50 per annum.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham.—(1) House-Surgeon. (2) House-Physician. (3) Junior House-Surgeon. (4) Junior House-Physician. Appointments for six months. Salaries for (1) and (2), £75 per annum, and for (3) and (4) £40 per annum.

SALFORD ROYAL HOSPITAL.—Junior House-Surgeon (male). Salary at the rate of £50 per annum.

SEAMEN'S HOSPITAL SOCIETY.—Two House-Physicians and two House-Surgeons at Dreadnought Hospital. Salary, £50 per annum. Senior House-Surgeon and House-Surgeon at Branch Hospital. Salary, £75 and £50 per annum respectively, the former to receive additional £25 for acting as Registrar.

THROAT HOSPITAL, Golden Square, W.—Senior Clinical Assistants.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Surgeon.—Honorarium, £30 for six months.

WAKEFIELD: CLAYTON HOSPITAL AND WAKEFIELD GENERAL HOSPITAL.—Two House-Surgeons, Senior and Junior. Salary, £120 and £80 per annum respectively.

WEST LONDON HOSPITAL, Hammersmith Road, W.—Assistant Physician.

WINSLEY: THREE COUNTIES SANATORIUM FOR CONSUMPTIVES.—Resident Medical Officer. Salary, £200, rising to £300 per annum.

WORCESTER COUNTY AND CITY ASYLUM.—Third Assistant Medical Officer. Salary, £140 per annum, rising to £160.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces a vacancy at Portrush, co. Antrim.

APPOINTMENTS.

ASPINALL, Jessie, M.B., Ch.M.Syd., Junior House Surgeon at Hobart Hospital, Tasmania.

BEAMAN, E. H., L.R.C.P. and S.I., Medical Officer of Health, Normanton Urban District.

BROWN, R. S., M.B., B.S.Durh., District and Workhouse Medical Officer of the Bootle Union.

DE SYLVA, E. M. J., L.R.C.P. and S.Edin., L.F.P.S.Glas., Certifying Factory Surgeon for the Scalloway District, co. Shetland.

HENDERSON, G., M.D.Edin., Certifying Factory Surgeon for the Coldstream District, co. Berwick.

IMBIE, G. J., M.B., C.M.Glas. Certifying Factory Surgeon for the Levenwick District, co. Shetland.

KING, D. Barty, M.A., M.D., M.R.C.P.Edin., Examiner in Medicine and Clinical Medicine at the University of St. Andrews.

MARTYN, A. L., L.R.C.P.Lond., District Medical Officer of the Bideford Union.

NIVEN, R., M.D.Glas., D.P.H.Camb., Medical Superintendent, West Ham Union Infirmary.

PARRY, T. W., M.B., Ch.B.Liverp., Resident Assistant Medical Officer, Toxteth Park Union Workhouse.

SAMMON, W. D., L.R.C.P. and S.I., Clinical Assistant to the Richmond District Asylum, Dublin.

SHARP, P. J., M.B., C.M.Edin., Certifying Factory Surgeon for the Ollaberry District, co. Shetland.

SKINNER, D., L.R.C.P. and S.Edin., Certifying Factory Surgeon for the Lander District, co. Berwick.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

CALEY.—On the 19th September, at 24, Upper Berkeley Street, W., the wife of H. A. Caley, M.D., F.R.C.P., of a son.

HAMILTON.—On September 23rd, at 184, Commercial Road, Newport, Mon., the wife of S. Hamilton, B.A., M.B., B.Ch., R.U.I., of a daughter.

MARRIAGE.

COLES—SMITH-CARINGTON.—On September 9th, at the Priory Church, Great Malvern, by the Rev. Canon C. Pepys, assisted by the Rev. Canon Pelly, Vicar of the parish, Charles St. Arnaud Coles, M.R.C.S., L.R.C.P., of West Ealing, younger son of the late Colonel C. H. Coles, of the Indian Army (9th Bombay Infantry), and Mrs. Eastes, of 1, Portland Place, Bath, to Enid Mary, only daughter of R. C. Smith-Carington, Esq., of Southbury House, Malvern.

DEATH.

MACKENZIE.—On the 19th inst., at Park House, Longsight, Manchester, James Brown Mackenzie, M.B.

DIARY FOR THE WEEK.

FRIDAY.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, 8.30 p.m.—Annual Presidential Address.

POST-GRADUATE COURSES AND LECTURES.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Clinics: Tuesday, Medicine 2.30 p.m.; Surgery, 3.15 p.m.; Diseases of the Skin, 4 p.m. Wednesday, Medicine, 2.30 p.m.; Ophthalmology, 3.30 p.m. Thursday, Medicine, 2.30 p.m.; Surgery, 3.15 p.m.; Radiography, 4 p.m. Friday, Medicine, 2.30 p.m.; Surgery, 3.15 p.m. Operations each day at 2.30. Out-patient Demonstrations: Medical and Surgical, 10 a.m. daily; Ears and Throats, noon, Monday and Thursday; Eyes, 11 a.m., Wednesday and Saturday; Skin, noon, Tuesday and Friday.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's Hospital, Tottenham, N.—The following are the arrangements for next week:—Thursday, 4 p.m., Opening Lecture of the winter session by Dr. W. Hale White: The Various Conditions causing Enlargement of the Liver (in conjunction with the North-East London Clinical Society). Friday, 10 a.m., Surgical Out-patient Clinic; 2.30 p.m., Surgical Operations, Eye Clinic; 3 p.m., Medical In-patient Clinic.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week:—Daily, 2 p.m., Medical and Surgical Clinics; *X* Rays. 2.30 p.m.: Operations. Monday and Thursday, 2 p.m.: Diseases of the Eye. Tuesday and Friday, 2 p.m.: Diseases of Throat, Nose, and Ear; also on Wednesday and Saturday, 10 a.m. Tuesday and Friday, 2.30 p.m.: Diseases of the Skin. Wednesday, 10 a.m.: Diseases of Children. Wednesday and Saturday, 2 p.m.: Diseases of Eye. 2.30 p.m.: Diseases of Women.

BOOKS, ETC., RECEIVED.

A Textbook of Mental and Sick Nursing. By R. Jones, M.D., B.S.Lond., F.R.C.S.Eng., F.R.C.P.Lond. London: The Scientific Press, Limited. 1907. 3s. 6d.

Archives of the Middlesex Hospital. Vol. xi. London: Macmillan and Co., Limited. 1907.

Verhandlungen des Vereins Süddeutscher Laryngologen. 1907. Herausgegeben von Dr. Med. F. Blumenfeld. Würzburg: A. Stuber. 1907. M.4.

The Physiology of Alimentation. By Dr. M. H. Fischer. New York: J. Wiley and Sons; and London: Chapman and Hall. 1907. 8s. 6d.

Osea Island. London: S. W. Partridge and Co. 6d.

Hossfeld's Polyglot Correspondent. New edition. London: Hirschfeld Bros., Limited; and Glasgow: A. Stenhouse.

Insanity and Allied Neuroses. By G. H. Savage, M.D., F.R.C.P., and E. Goodall, M.D.Lond., B.S., F.R.C.P. New edition. London: Cassell and Co., Limited. 1907. 12s. 6d.

Self-Synthesis: A Means to Perpetual Life. By C. Round. Third edition. London: Simpkin, Marshall, and Co., Limited. 1907. 1s.

*** In forwarding books the publishers are requested to state the selling price.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
SEPTEMBER.	
29 Sunday ...	
30 MONDAY ...	
OCTOBER.	
1 TUESDAY ...	LIVERPOOL AND BIRKENHEAD DIVISIONS, *Lancashire and Cheshire Branch*, Meeting of Joint Committee, Liverpool Medical Institution, 4.30 p.m.
2 WEDNESDAY	London: Arrangements Committee, 2.30 p.m. SOUTH-EASTERN OF IRELAND BRANCH, Victoria Hotel, Kilkenny, 5 p.m.
3 THURSDAY...	LONDON: Meeting of Metropolitan Representatives, *re* Referendum, at 6, Catherine Street, W.C., 4.30 p.m.
4 FRIDAY ...	
5 SATURDAY...	
6 Sunday ...	
7 MONDAY ...	
8 TUESDAY ...	LONDON: Organization Committee, 11 a.m. LONDON: Public Health Committee, 3.15 p.m.
9 WEDNESDAY	LONDON: Medico-Political Committee, 2.30 p.m. LANCASHIRE AND CHESHIRE BRANCH, Meeting of Branch Council, Liverpool Medical Institution, 4.30 p.m.
10 THURSDAY...	LONDON: Hospitals Committee, 2.30 p.m. LONDON: Metropolitan Branch Council, 4.30 p.m. SOUTH MIDLAND BRANCH, Autumnal Meeting, Railway Hotel, Bletchley, 2 p.m.; Luncheon, 1.15 p.m.
11 FRIDAY ...	LONDON: Central Ethical Committee, 2.30 p.m.
12 SATURDAY...	
13 Sunday ...	
14 MONDAY ...	
15 TUESDAY ...	
16 WEDNESDAY	London: Arrangements Committee, 2.30 p.m.
17 THURSDAY...	LEIGH DIVISION, *Lancashire and Cheshire Branch*, Special Meeting, Co-operative Rooms, Ellesmere Street, 8.30 p.m.
18 FRIDAY ...	
19 SATURDAY...	
20 Sunday ...	
21 MONDAY ...	
22 TUESDAY ...	
23 WEDNESDAY	LONDON: Journal and Finance Committee, 2.30 p.m. DORSET AND WEST HANTS BRANCH, Blandford.
24 THURSDAY...	
25 FRIDAY ...	
26 SATURDAY...	
27 Sunday ...	
28 MONDAY ...	
29 TUESDAY ...	
30 WEDNESDAY	CENTRAL COUNCIL, 2 p.m. YORKSHIRE BRANCH, The University, Sheffield, 4 p.m.
31 THURSDAY...	
NOVEMBER.	
1 FRIDAY ...	
2 SATURDAY...	
3 Sunday ...	
4 MONDAY ...	
5 TUESDAY ...	
6 WEDNESDAY	
7 THURSDAY...	
8 FRIDAY ...	
9 SATURDAY...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 5TH, 1907.

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British Medical Association.

ANNUAL REPORT OF THE CENTRAL ETHICAL COMMITTEE.

PRESENTED TO THE ANNUAL REPRESENTATIVE MEETING AT EXETER, JULY, 1907.

The work of the Central Ethical Committee during the Session 1906–7 has been at least equal, both as regards the number and the gravity of the questions which the Committee has been called upon to consider, with that of any previous year.

Cases of Expulsion of Members.

It has been the painful duty of the Committee to report to the Council during the year upon three cases in which Branches of the Association made representations under Article XLIV, advising the expulsion of Members of these Branches, on the ground that their conduct had been detrimental to the honour and interests of the profession, and in each case the Committee was obliged to recommend that the Members in question should be expelled, which recommendation was carried out by the Council.

One case was that of a Member who had taken action with regard to the formation of a local hospital in an unethical manner to his own advantage, and to the detriment of his fellow practitioners, and refused to make the reparation which he was afforded every opportunity of making. In the other two cases, the Members concerned had accepted appointments in open defiance of resolutions of the Division of which they were Members, duly passed in accordance with the Rules of the Division.

Presentation of Cases to the General Medical Council.

The Representative Meeting at the Caxton Hall, Westminster, in 1906, adopted the following resolution, namely :—

> That it is absolutely necessary, in the interests of the medical profession, that the Association should take up cases of a penal nature before the General Medical Council, as complainants.

The duties thus imposed upon the Committee have given occasion for much anxious consideration, and, in view of the questions which have been raised as affecting the carrying out of the instruction, the Committee deems it right to place before the Representative Meeting a statement of the position before proceeding any further.

The resolution in question was adopted by the Representative Meeting on the recommendation of the Central Ethical Committee who had found by experience the necessity in the interests of the profession of the Association investigating cases in which practitioners were accused of conduct which might be deemed infamous in a professional respect within the meaning of Section 29 of the Medical Act, 1858. The Committee had investigated such cases upon the assumption that it would be sufficient for a statement of the results of such investigations to be placed before the General Medical Council without the necessity of either the Association or any individual appearing as complainant, and that the General Medical Council, as part of its duties under the Medical Acts, would proceed to satisfy itself as to whether the facts reported did or did not constitute conduct infamous in a professional respect.

In a case, however, investigated by the Committee in the spring of 1906, the General Medical Council refused to consider the facts reported, unless either the Association or some individual appeared as complainant. The Committee at that time had no authority to act on behalf of the Association as complainant, and in order that the case might not fall through, it was found necessary for the individual practitioners, directly concerned, themselves to appear as complainants. It did not appear to the Committee to be right that the onus of appearing as complainants, in cases so profoundly affecting the honour and interests of the profession should be thus thrown upon individuals, giving the appearance that the matter was one of mere personal grievance. The Committee therefore recommended that it was absolutely necessary in the interests of the profession that the Association should act openly as complainant in suitable cases, and the Representative Meeting having adopted this recommendation, and the Council having decided not to take a referendum thereon, the Resolution became a decision of the Association under Articles XXII and XXXV, and was accepted by the Committee as an instruction at its first Meeting of the new Session in October, 1906. The fact was duly reported to the Council that the Committee had noted this Resolution of the Representative Meeting as an instruction, and had made arrangements whereby the Standing Emergency Sub-committee, in conference with the Solicitor, should be in a position to take any necessary action in cases of emergency without waiting to consult the Committee.

At its January Meeting the Committee was obliged regretfully to record on its Minutes the reception of an intimation from the Chairman of Council, Dr. Langley Browne, that in view of his election as a Member of the General Medical Council, he considered it to be his duty not to take further part in the proceedings of the Ethical Committee of which he was, *ex officio*, a Member.

The Committee was called upon, by the Stratford Division, to investigate a case of advertisements which appeared to the Division to be of a character to which the attention of the General Medical Council should be drawn. The facts were investigated by the Solicitor of the Association and a report presented to the Committee, who came to the conclusion that the facts were such that the attention of the General Medical Council might rightly be drawn thereto, but that, before

taking such action in an individual case, it was desirable to draw the attention of the General Medical Council to the difficulty created by the position of a large majority of Members of that Council who were Members of the British Medical Association, and might, therefore, conceivably be held to be disqualified from adjudicating upon any case which the British Medical Association appeared in as complainant or had taken any active part in preparing for the consideration of the Council.

The Committee thought it well to make the position clear before bringing any individual case before the Council, and, therefore, drew the attention of the General Medical Council to the differences of the position of different Members of the Association, some of whom, such as Members of the Central Ethical Committee and the Central Council, might be held to be directly responsible for the action of the Association, whereas such responsibility might conceivably not attach to the position of ordinary Members who had no cognisance of the action taken in an individual case.

A communication was accordingly addressed to the General Medical Council bringing these matters to their notice, and that Council, having obtained Counsel's opinion on the matter, was advised that no Member of the British Medical Association could sit as a Member of the General Medical Council in hearing any case in which the Association might appear as complainant, and that if it was the intention of the Association to take action in such cases, it would be the duty of all Members of the Association who were Members of the General Medical Council to resign their membership of the Association while they remained Members of such Council.

A letter to this effect from the General Medical Council to the Association, came before the Council of the Association on June 5th, 1907. The Council also had before it a legal opinion which had been obtained, by direction of the Chairman of Council, as to whether the Regulations provided for such action on the part of the Association, and whether it would not be "ultra vires" for the Association to act as complainant in penal cases before the General Medical Council. The Council of the Association, after a long discussion, decided to proceed to the next business, taking no action.

Your Committee, upon consideration on June 21st of the position of the whole matter, while recognising that the instruction of the Representative Meeting under which it had acted was still operative, came to the conclusion that, as there was no Meeting of the General Medical Council until November, and that, therefore, action in any case that might require attention would not be prejudiced by postponement until after the Annual Representative Meeting at Exeter, the Representative Meeting should be afforded an opportunity of further considering the subject before action was definitely taken.

The Central Ethical Committee is still of opinion that it is absolutely necessary in the interests of the profession that the Association should act as complainant in penal cases before the General Medical Council. The Committee is also of the opinion, as reported to the Representative Meeting twelve months ago, that such action by the Association should not be impeded by consideration of the position of Members of the Association who are Members of the General Medical Council, but that in any conflict between the desire of the Association to retain these few, though distinguished, Members and its desire to protect the honour and interests of the profession, the latter consideration must prevail.

The Committee recognises, however, that the legal question whether, having regard to the terms of the Memorandum and Articles of Association, action taken in prosecuting before the General Medical Council is within the present powers of the Association, raises issues of a character that were apparently not considered by the Representative Meeting or the Council when the subject was under consideration of these bodies in July and October last.

The question whether any given act is or is not "ultra vires" of the Association, is not one which falls within the province of the Central Ethical Committee to consider or advise upon. The responsibility in that matter must rest with the Representative Meeting and the Council, and the Committee therefore awaits further instructions.

Ethics of Medical Consultation.

The Committee is glad to note that many Divisions have given careful consideration to the Special Report on the Ethics of Medical Consultation, as shown by the number of amendments raising important issues which are proposed, and which will doubtless receive the careful consideration of the Representative Meeting.

Medical Practitioners as Local Correspondents to the N.S.P.C.C.

The Committee has been called upon to consider the question of the propriety of medical practitioners acting as local correspondents for the National Society for the Prevention of Cruelty to Children.

It appears that the duties of this Office may involve giving information to the Society which it would be a breach of professional confidence for a medical practitioner to give as regards his own patients, and derogatory to his professional character to give as regards persons not his patients.

The Committee, therefore, considers it undesirable for practitioners to hold this position.

Prevention of Corruption Act.

A communication from a Branch of the Association brought to the notice of the Committee the doubts which might exist in the minds of many medical practitioners as to not only the ethical propriety, but also the legality, under the new Prevention of Corruption Act, of certain acts on their part.

The Committee has, therefore, in conference with the Solicitor to the Association, prepared a Special Report on the subject, which may, it is hoped, be of assistance to Members of the Association and of the profession generally (*see Appendix to this Report*).

Ethics of Advertising.

Questions of general principle as to the ethics of advertising in medical periodicals have been brought to the notice of the Committee by a report submitted for the consideration of the Council and the Representative Meeting by the Southern Branch, which was referred by the Chairman of Representative Meetings and by the Council to the Ethical Committee for consideration and report.

The Committee is prepared to report upon the matter, but deems it advisable that the subject should receive further consideration from the Committee before being submitted to the Representative Meeting.

Definition of the term "Hospital."

In a case submitted for the consideration of the Committee, the most important question of principle involved was as to the propriety of the action of a medical practitioner who, in various public notices, used the term "Hospital" as the designation of an establishment for the treatment of disease of which he was the sole medical member of the staff, and which appeared to be under his sole control.

It appeared to the Committee that it would be advantageous to the profession that some definition of the term "Hospital," as applied to institutions for the treatment of disease, should be officially recognised by the British Medical Association. Having conferred with the Hospitals Committee on the subject, the Central Ethical Committee submits the following definition for the consideration of the Representative Meeting and for adoption, after reference to the Divisions if thought necessary.

DEFINITION OF THE TERM "HOSPITAL."

The term "Hospital" shall not be applied to any institution for the treatment of disease which does not possess the following characters:—

(*a*) That the institution in question receives necessitous patients, and is maintained wholly or partially by public funds or charitable contributions;

(*b*) That the control, including the appointment of the staff, is in the hands of medical or lay persons appointed by, and responsible to, those who provide the funds;

(*c*) That the institution is not established or conducted for the pecuniary profit, personal gain or benefit of any individual or individuals other than the patients.

Ethical Rules of Divisions and Branches.

The Committee is gratified to be able to report that several Divisions and Branches have taken the course, to the importance of which the Committee drew attention in its last Annual Report, of adopting Rules, both to regulate their procedure in ethical cases and to govern the professional conduct of their Members.

Extension of Rule "Z."

An inquiry by a Division led the Committee to consult the Solicitor as to the possibility, under the existing Rules, of Warning Notices under Rule Z being sent to others than Members of the Division by which a resolution under that Rule should have been adopted, and the Solicitor advised that without an addition to the Rule such a course would involve certain risks. The Committee has therefore drafted and the Council has approved an amendment of the Rule stated below, rendering possible such extended action in suitable cases (paragraph *b*).

The attention of Divisions which may adopt this modified form of the Rule is particularly drawn to the conditions laid down therein, as the Committee could not sanction any action which is not strictly in accordance with the terms of the Rule.

MODEL RULE FOR DIVISIONS, *RE* CIRCULATION OF NOTICES IN CERTAIN CASES.

Rule Z.—(*a*) In every case in which the Division shall, after due inquiry, in accordance with the Rules thereof, have passed a resolution declaring that, in the opinion of the Division, the conduct of any medical practitioner or practitioners, whether by contravention of the Rules of the Division or otherwise, is detrimental to the honour and interests of the medical profession, it shall be the duty of the Executive Committee of the Division to submit a report of the whole facts of each particular case to the Central Ethical Committee, and, subject to the approval of the said Committee, or, if the opinion of the said Committee be adverse, subject to the approval of a three-fourths majority of those present, and voting in a Special Meeting of the Division convened to consider the comments of the Central Ethical Committee, to cause such resolution to be brought directly to the knowledge of every Member of the Division, by means of a Notice in the form appended hereto, which Notice it shall be the duty of the Honorary Secretary of the Division to authenticate by his signature.

(*b*) In any case in which the Division shall at the time of, or subsequently to, the adoption of a resolution of the nature contemplated by Paragraph (*a*) of this Rule, have also resolved that, in the opinion of the Division, it is desirable that such resolution shall be brought officially to the notice of any specified Division or Branch of the Association, it shall be the duty of the Executive Committee of the Division to submit to the Central Ethical Committee a statement of this fact and of the reasons for which such notification is desired, and, subject to the approval of the said Central Ethical Committee, to cause a copy of the said resolution to be transmitted by the Honorary Secretary of the Division to the Honorary Secretary of the Division or Branch so specified.

Form of Notice referred to in paragraph (*a*):—

BRITISH MEDICAL ASSOCIATION.

_____ *Division.*

(Private and Confidential.)

NOTICE.

In pursuance of Rule Z of the Division, Notice is hereby given by the Executive Committee of the said Division that at a general meeting of the Division, held at on the day , a resolution in the following terms was duly passed:—

"*That in the opinion of this Division the conduct of Dr. of is (in contravention of the Rules of the Division)* detrimental to the honour and interests of the Medical Profession, within the meaning of the Rule(s).....*

Signed by order of the Executive Committee of the Division of the British Medical Association,

Honorary Secretary.

* Delete words in ( ) if not required.

(Note.—The Central Ethical Committee desires to draw the attention of Divisions to the necessity of Notices such as the above being circulated in sealed envelopes).

Procedure of the Committee.

The ethical work of the British Medical Association, carried out by the co-operation of its local bodies with the central organisation, is peculiar in character, and it is only by the accumulation of the results of experience that a procedure adapted to the requirements of the case can be arrived at. The experience of the last 12 months has directed attention to certain points which have been carefully noted for further consideration.

An important point of procedure relates to the reference of ethical questions to local medical societies prior to seeking the opinion of the Central Ethical Committee upon them. Difficulties have thus arisen which would have been obviated had such cases been referred in the first instance to the local Division of the Association. The Committee, therefore, desires to draw the attention of Members to the advisability of bringing before the local Division, rather than before an outside local medical society, any questions of medical ethics which may at a subsequent stage require reference to the central authorities of the British Medical Association.

The Committee was requested by the Finance Enquiry Committee to express an opinion as to the possibility of the answers to enquiries given in the Medico-Ethical column of the Journal being furnished in future by the Medical Secretary's office under direction of the Central Ethical Committee. The Committee recognises the advantages of such procedure, but considers that such questions could only be dealt with sufficiently promptly in this way when the index of ethical cases which is in preparation is available, and when the staff of the Medical Secretary's Department has been strengthened.

Secretarial Staff.

The attention of the Committee has been directed in other ways to the difficulties and delays unavoidably arising through over-pressure of work upon the Medical Secretary's Department as at present constituted, and recommends that more assistance should be afforded to him.

PREVENTION OF CORRUPTION ACT, 1906.

Memorandum on the "Prevention of Corruption Act, 1906," as Affecting Medical Practitioners.

The Central Ethical Committee has recently been requested by a Branch of the Association to consider and advise upon both the ethical and legal aspects of certain arrangements stated to prevail in one district of the Branch area, under which members of the profession have been accustomed to receive from chemists commissions in respect of patients recommended by them to have their prescriptions dispensed by such chemists.

The position of the matter is by this Memorandum dealt with only in its legal aspects, but with special reference to the "Prevention of Corruption Act, 1906," which came into operation at the commencement of the present year. The Committee having consulted the Solicitor of the Association upon the subject, deems it desirable that Members of the Association and of the profession generally should receive some guidance as to their legal position, not only as regards the particular incident mentioned by the Branch, but also as regards other matters to which the Act may be held to apply.

The effect of the Act in question may be stated shortly as making it an offence punishable by fine or imprisonment for any person who acts as the agent of another to receive corruptly any consideration from any third party in respect of any act which he may do or refrain from doing as such agent. The Committee is advised that in cases under the Act the principle questions arising for consideration will probably be:—

(*a*) As to the existence of the relationship of Principal and Agent, and

(*b*) As to the corruptness of any acts on the part of the Agent which may form the subject of legal enquiry.

The Solicitor is of opinion that the courts will in their interpretation of the Act give special consideration to the question of "secrecy," and that if it be shown that an agent receives a commission, gift, or other emolument unknown to his principal, for doing or refraining from doing any particular act, then the secrecy of the transaction may be held to afford *primâ facie* evidence that it was "corrupt."

Cases in which members of the medical profession may be concerned are especially those in which they undertake to procure drugs or instruments for patients, and a distinction has to be carefully drawn between those in which a medical practitioner acts as a principal in selling such things direct to his patient, and those in which he acts merely as the agent of his patient in procuring such articles for him from third parties. In cases of the latter kind he could not, without incurring legal risk, accept any commission or other valuable consideration from such third parties without the knowledge of the patient.

It appears to the Committee that attention to these distinctions may assist medical practitioners in avoiding infringement of the law, but, for their further guidance, it is thought well to state the following specific circumstances of common occurrence in which no commission, gift, or emolument should be accepted from third parties without the knowledge of the patient :—

1. Cases in which medical practitioners recommend their patients to deal with third parties, such as chemists, makers of instruments and appliances, &c. If any consideration is to be received from such third parties in respect of such recommendations, then the fact must be made known to the patient. For instance, there would probably be no legal objection to a medical practitioner recommending a patient to insure with a specified life insurance company and accepting from the company a commission in respect of the introduction, provided that he informed the patient that he acted as agent for the company concerned and would receive a commission from them.

2. Cases in which medical practioners undertake to procure articles such as drugs or instruments for patients. The medical practitioner is entitled to act as buyer of such articles from the makers or other dealers, and as seller of them to his own patients, but in such cases he must make it clear that he is acting in this capacity and not as agent.

The Committee would point out in conclusion that the legal position set forth in this Memorandum arises from the confidential relationship in which a medical practitioner stands towards his patient, which makes it his duty to forego profits to himself of which the patient is unaware, and which consequently might be open to be regarded as of an illicit nature.

Meetings of Branches & Divisions.

LANCASHIRE AND CHESHIRE BRANCH:

Blackburn Division.

A special meeting was held at the Old Bull Hotel, Blackburn, on Thursday, September 26th, Dr. Aitken (Chairman) presiding.

Address by Medical Secretary.—Mr. Smith Whitaker gave a most interesting address on the work of the British Medical Association. A discussion followed, in which the following gentlemen joined: Drs. Ballantyne, Macklin, Bannister, Gardner, Jones, Miller, and Ivatts. Mr. Whitaker replied.

SOUTHERN BRANCH:

Guernsey and Alderney Division.

A meeting of this Division was held in Guernsey on Thursday, September 26th, at 8.30 p.m., Colonel Robinson, R.A.M.C., in the chair.

Apologies for Non-attendance.—Apologies were received from Drs. Corbin and Benson.

Referendum.—The subject of the Referendum was introduced by Dr. Carruthers, who had been Deputy Representative at the Exeter Meeting. The matter was fully discussed and a vote taken on each of the minutes referred seriatim. In every case a unanimous vote was recorded in favour of the minutes of the Representative Meetings.

Grouping of Branches.—While generally agreeing with Minute No. 299, the following rider was carried. Proposed by Dr. Bulteel, seconded by Dr. Carruthers, and unanimously resolved:

That, in the opinion of this Division, it is desirable that, as far as possible, the Council should be elected by single-member constituencies, except where a single Branch is large enough to elect more than one member.

General Policy of the Council.

Proposed by Dr. Carruthers, seconded by Dr. Bishop, and unanimously resolved:

That this Division is of opinion that in the present Referendum the points which the Council has submitted to the Divisions have been already fully discussed and voted upon; that the Council has misinterpreted its position, both under the present Constitution and the draft Charter, and has mistaken the grounds on which alone it has the right to take a Referendum; and finally, that this Division considers it advisable to reaffirm its opinion that the Council is not a second chamber, but an executive to carry out the resolutions of the Representative Body, subject to the Articles and By-laws and Power of Referendum.

Proposed by Dr. Carruthers, seconded by Dr. Collings, and unanimously resolved:

That a report of this meeting be sent to the Journal.

The Annual Exhibition

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[*Sixth Notice.*]

Foods.

Horlick's Food Co. (34, Farringdon Road, E.C.). The interest of the exhibits of this firm lay in its malted milk, which visitors were given an opportunity of tasting. Though in title a milk it is really a powder, which, when added to soda or other aërated water, proved palatable and refreshing. A strong point in its favour is the facility and expedition with which it can be prepared for use, no cooking being required, the food, whether regarded merely as a drink or as a substitute for milk, being instantly ready on the addition of a sufficiency of either warm or cold water. An analysis of the dry powder which we were shown indicated the following constitution: Fats 8.78, proteids 16.35, dextrine 18.8, lactose and maltose 49.15, organic salts and moisture each about 3.8. The powder is prepared, we were informed, from malted barley and wheat combined with pasteurized cow's milk of rich quality. There are many indications in the sick room and nursery which a milk of this character may be expected to meet.

International Plasmon, Limited (66, Farringdon Street, London, E.C.). At this date there is nothing new that can usefully be said about Plasmon, the best testimonial to its utility being the fact that since it was first introduced, some ten or twelve years ago, a very large number of other preparations of a more or less closely corresponding character have been put upon the market, and that their number is still increasing. The firm states that the preparation contains all the caseinogen and salts of good milk in a dried form without any alteration or addition, and that it should be regarded in no sense as a medicine, but as a food. Its value lies in the fact that it can be used to supplement any form of food by its addition either as a powder or in solution. Its use requires no kind of skill on the part of the nurse or housewife, but for the benefit of those who prefer a food entirely ready-made the firm supplies many common articles of diet fortified by the addition of Plasmon. These include biscuits of all varieties, including plain, sweet, whole-meal, fancy biscuits, wafers, and cracker biscuits stated to be free from starch and sugar for diabetics; beef-teas, custard powders, and cocoa. As for the latter, as prepared by the firm, it contains, we were informed, 6.6 per cent. of soluble proteids, which is approximately ten times a greater amount than ordinary cocoa.

Miscellaneous.

Perrier (45 and 47, Wigmore Street, London). The table water known by this name, which had a stall to itself, is bottled in France and vended in receptacles of three sizes which appear to contain, respectively, a quart, a pint, and a glassful. It is undoubtedly a pleasant beverage, which in the comparatively short space of time that it has been upon the English market has justly obtained a good position among table waters.

Liverpool Lint Company (Mark Street Mills, Liverpool). To this firm of manufacturers many improvements in the preparation of dressings and dressing adjuncts are due. All kinds are prepared by it, those which are more particularly associated with its name being the compressed dressings of lint, wool, gauze, and bandages which during the last year or two have gained such a hold on the market, and which are so much easier to store and handier to carry about than were their predecessors. Sufficient lint, cotton-wool, and bandages to dress any ordinary case occupies, when compressed by the firm's process, so little space that it takes up hardly more than a corner of an ordinary jacket pocket. Another excellent preparation of the firm is "Impermiette," which considerable experience has shown to be an excellent substitute for jaconet, and to have certain marked good qualities of its own. It keeps well in the hottest weather, can be sterilized with soap and hot water, and is not affected by chloroform or carbolic acid in 5 per cent. strength. It also makes excellent bed sheeting.

Harrogate. The authorities of this health resort made an effort by means of photographic views and meteorological records and general statistics to bring home to visitors some conception of the points which have won the town its excellent position among the watering places of Europe. Thus it was shown that the town is in physical attributes generously endowed, lying as it does on a plateau some 400 or 500 feet above sea level, and surrounded on all sides by the open moorland, which rises gradually to considerably greater elevations. A town of some 32,000 inhabitants, it is excellently well laid out and most carefully kept from a sanitary point of view, its salubrity being greatly increased by the fact that a broad stretch of some 200 acres of moorland penetrates right through its centre. The meteorological notes supplied showed that the relative humidity is low and the sunshine records very good, while photographs of the various baths and pump rooms gave some idea of the elaborate nature of the arrangements made by the Corporation to facilitate the use by visitors of the more valuable mineral springs in the immediate vicinity. Effort was made likewise to bring out the fact that the town has many attractions as a place of permanent residence as well as a resort for those who are in search of health, and this is indeed the case.

Association Notices.

COUNCIL MEETING.

A meeting of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 30th, in the Board Room of the Metropolitan Asylums Board, by kind permission of the Board. The offices of the Metropolitan Asylums Board are situate on the Victoria Embankment at the corner of Carmelite Street and near Blackfriars Bridge.

Guy Elliston,
General Secretary.

Oct. 3rd, 1907.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Dorset and West Hants Branch.—The autumn meeting of this Branch will be held in Blandford on Wednesday, October 23rd. Members wishing to read papers, exhibit specimens, or show cases should communicate with the Honorary Secretary, James Davison, Streateplace, Bath Road, Bournemouth, on or before Friday, October 11th. This Journal notice is the only intimation of the meeting.

Glasgow and West of Scotland Branch: Glasgow North-Western Division.—There will be a special meeting of this Division in the Burgh Hall, Hillhead, on Tuesday, October 8th, at 8.30 p.m., to consider and vote upon certain matters referred to the Division for that purpose.—G. Burnside Buchanan, Honorary Secretary.

Lancashire and Cheshire Branch.—A meeting of the Branch Council will be held at the Liverpool Medical Institution on Wednesday, October 9th, at 4.30 p.m.—F. Charles Larkin, Honorary Secretary.

Lancashire and Cheshire Branch: Leigh Division.—A special meeting of the members of the above Division will be held at Co-operative Rooms, Ellesmere Street, at 8.30 p.m., on October 17th. Agenda: Consideration of the Council's Referendum Report. The attention of members is directed to the Supplement of the British Medical Journal for September 21st, containing the report of the Representative Meeting on the above.—J. Sackville Martin, M.D., Honorary Secretary of the Division.

Metropolitan Counties Branch: City Division.—A special general meeting of this Division will be held at 4 p.m., at the Great Eastern Hotel, Liverpool Street, E.C., on Tuesday, October 8th. Agenda: (1) To consider and give opinion of the Division on Referendum of the Central Council *re* certain clauses of the Charter (see Supplement to the British Medical Journal, September 21st, 1907). (2) To receive report of Finance Inquiry Committee of Representative Meeting. (3) To consider letter of Dr. E. R. Fothergill *re* Referendum (see Supplement, September 7th, 1907). Members are particularly requested to make an effort to be present, as a vote on each question has to be recorded, and the matters concerned are so important.—C. R. Salisbury, Honorary Secretary.

Metropolitan Counties Branch: Walthamstow Division.—The opening meeting of this Division will be held at the Woodford Hospital on Tuesday, October 8th, at 4 p.m. Agenda: (1) Minutes; (2) letters; (3) paper by James Oliver, M.D., M.R.C.P., on The Determinants of Abortion and How to Combat Them; (4) any other business. Members willing to read a paper or show cases at the next meeting, on November 12th, are asked to communicate with the Secretary as soon as possible.—A. Pottinger Eldred, Honorary Secretary, Bucklands, Grove Road, Walthamstow.

Metropolitan Counties Branch: Westminster Division.—The next meeting will be held on Thursday, October 17th, at 4.30 p.m., at the St. James's Vestry Hall, Piccadilly. Agenda: (1) Dr. Archer will open a discussion on the proposal of the Westminster City Council to provide *free medical attendance and medicines for their employés.* Dr. Archer will move a resolution calling upon the Association to protest against this scheme, and calling upon the profession to prevent its being carried into effect. (2) Dr. Haslip will move the following resolution: "That the Westminster Division protests against business being discussed and votes taken upon important questions by the Representative Meetings, unless such business and questions and the agenda of all the Representative Meetings shall have been submitted to the Divisions at least one month prior to the assembly of a Representative Meeting." (3) To receive Dr. Ewart's report of the Representative Meeting at Exeter.—Harvey Hilliard, Honorary Secretary, 30, Wilton Place, S.W.

Northern Counties of Scotland Branch.—A meeting of the Branch will be held on Saturday, October 26th, at 12.30 p.m., in the Palace Hotel, Inverness. Agenda: Consideration of the Council's Referendum Report.—J. Munro Moir, M.D., Honorary Secretary.

North of England Branch: North Northumberland Division.—A special meeting will be held at the Blue Bell Hotel, Belford, on Tuesday, October 8th, at 3 p.m., for the purpose of considering and voting upon the Referendum received from the Council of the Association. Previous to the meeting members are requested to carefully study the Supplement to the British Medical Journal of September 21st, and the accompanying reports of the Council and Representative Meeting, each of which contains information essential for a satisfactory discussion of the subject. This important question demands the serious attention of the Division, and it is expected that as large a number of members as possible will attend and record their votes. At the conclusion of the meeting Dr. Smurthwaite of Newcastle has kindly consented to read a paper on Adenoid Vegetations in General, with Special Reference to their Bearing on Ear Disease.—C. Clark Burman, Honorary Secretary, 12, Bondgate Without, Alnwick.

South-Eastern Branch: Folkestone Division.—A meeting of this Division will be held at the Queen's Hotel, Folkestone, on Thursday, October 10th. Agenda: Consideration of the Council's Referendum Report. An address will be given by Mr. H. Sewill on Medical Law Reform and Quackery.—P. Vernon Dodd, M.D., Honorary Secretary, 14, Manor Road, Folkestone.

South Midland Branch.—The autumnal meeting of this Branch will be held at the Railway Hotel, Bletchley, at 2 p.m., on Thursday, October 10th, under the presidency of Dr. Chillingworth, of Bedford. Lunch will be served at the hotel at 1.15 p.m., price 2s. 6d. per head. The Secretary will be glad

to hear as soon as possible from members wishing to read papers or show cases.—E. HARRIES-JONES, Honorary Secretary, Northampton.

YORKSHIRE BRANCH.—The next meeting of the Yorkshire Branch will be held at the University, Sheffield, on Wednesday, November 6th, at 4 p.m. Members wishing to read papers, show specimens or cases, or propose new members, are requested to communicate at once with the Honorary Secretary, Dr. ADOLPH BRONNER, 33, Manor Row, Bradford.

YORKSHIRE BRANCH: BRADFORD DIVISION.—The first meeting of the session will be held at the Eye and Ear Hospital, Bradford, on Tuesday, October 8th, at 8.30 p.m. A short address will be given by the Chairman, H. J. Campbell, M.D., F.R.C.P. This will be followed by a consideration of the Council's Referendum Report and the other reports connected with the same subject.—JAMES METCALFE and J. WHERRY WILLSON, Honorary Secretaries.

NEW VACCINATION ORDER.

THE Local Government Board for England and Wales has issued a new General Order, dated September 21st, 1907, amending the Vaccination Order, 1898, in accordance with the Vaccination Act, 1907. The operative part of the new Order is as follows:

NOW THEREFORE, in pursuance of the powers given to Us by the Statutes in that behalf, We hereby Order and Direct that, from and after the First day of October, One thousand nine hundred and seven, Article 30 of the Order, and the Fifth Schedule thereto, shall apply and have effect as if the Form of Notice, which is in that Article referred to as "Form A" and which is hereinafter referred to as "Form A, Part I," were further modified by the addition thereto of the following words and figures (hereinafter referred to as "Form A, Part II"); that is to say:

FORM A, PART II,

To be given by the Registrar of Births (together with Form A, Part I) to the Person to whom notice is required to be given under Section 15 of the Vaccination Act, 1867, in the case of all Children born after the 31st day of August, 1907.

On and after the First day of January, 1908, exemption from penalties under Section 29 or Section 31 of the Vaccination Act, 1867, will not be obtainable in the manner referred to in paragraph 6 of Form A, Part I, but on and after that date you will be exempt from any penalty under either of those sections for not having the child vaccinated if, within four months from the birth of the child, you make in the Form set out below, or in a Form to the like effect, a statutory declaration of your conscientious belief that vaccination would be prejudicial to the health of the child, and within seven days thereafter deliver the declaration, or send it by post, to the Vaccination Officer of the District whose name and address are given on the sheet containing Form A, Part I.

FORM OF DECLARATION.

I, , of in the parish of in the county of , being the parent [*or* person having the custody] of a child named , who was born on the day of , 19 , do hereby solemnly and sincerely declare that I conscientiously believe that vaccination would be prejudicial to the health of the child, and I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the Statutory Declarations Act, 1835.

Dated this day of , 19.

(Signed)

Declared before me, at , on the day of

a Commissioner for Oaths [*or* Justice of the Peace, *or* other officer authorized to receive a statutory declaration.]

In a Circular bearing date September 25th, 1907, issued to all Boards of Guardians, the Local Government Board makes the following observations on the Vaccination Act, 1907 (7 Edw. VII, c. 31):

The object of this Act is to effect an alteration in the legal method of obtaining exemption from penalties for neglecting to have a child vaccinated, but without otherwise interfering with the provisions of the Vaccination Acts, 1867 to 1898.

Section 2 of the Vaccination Act, 1898 (61 and 62 Vict., c. 49), provides that a parent or other person having the custody of a child shall not be liable to any penalty under Section 29 or Section 31 of the Vaccination Act, 1867 (30 and 31 Vict., c. 84), if, within four months from the birth of the child, he satisfies two justices, or a stipendiary or metropolitan police magistrate, in petty sessions, that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the Vaccination Officer for the district a certificate by such justices or magistrate of the conscientious objection.

The new Act, which comes into operation on the 1st day of January, 1908, repeals as from that date Section 2 of the Act of 1898, but not so as to effect the operation of any certificate obtained before the commencement of the new Act, and substitutes the following provisions for that enactment:

"(1) No parent or any person shall be liable to any penalty under Section 29 or Section 31 of the Vaccination Act, 1867, if within four months from the birth of the child he makes a statutory declaration that he conscientiously believes that vaccination would be prejudicial to the health of the child and within seven days thereafter delivers or sends by post the declaration to the vaccination officer of the district.

"(2) A statutory declaration made for the purposes of this section shall be exempt from stamp duty.

"(3) A statutory declaration for the purposes of this section shall be made in the form set out in the schedule to this Act or in a form to the like effect."

In the case of children born within four months before the end of the present year whose parents desire to obtain exemption from penalties, there will be alternative courses open, viz.: either to obtain a certificate under Section 2 of the Vaccination Act, 1898, before the 1st January, 1908, or, from and after that date and within four months of the birth, to make a statutory declaration under the new Act. With the view of apprising the parents or other persons responsible for the vaccination of these children of the situation, the Board have thought it well to issue an Order of a temporary character prescribing an addition to the Form given to parents by Registrars of Births. Copies of the Order are enclosed.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: JOHNSTON H. ACHESON, M.B., Fleet Surgeon to the *President*, additional, for three months' course at West London Hospital, September 30th; OCTAVIUS W. ANDREWS, M.B., Fleet Surgeon, and PERCY H. BOYDEN, M.B., Staff Surgeon, to the *President*, additional, for survey of medical stores at Deptford, October 2nd.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT R. G. ARCHIBALD, M.B., is seconded for service under the Colonial Office, September 12th.

ARMY MEDICAL RESERVE OF OFFICERS.

SURGEON-MAJOR E. W. ST. V. RYAN, having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers.

INDIAN MEDICAL SERVICE.

MAJOR T. A. GRANGER, M.B., Bengal, is appointed Staff Officer for Medical Mobilization Stores, 5th (Mhow) Division.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,076 births and 4,455 deaths were registered during the week ending Saturday last, September 28th. The annual rate of mortality in these towns, which had been 12.3, 12.3 and 13.5 per 1,000 in the three preceding weeks, further rose last week to 14.5 per 1,000. The rates in the several towns ranged from 6.0 in Northampton, 6.2 in Hastings, 7.0 in Hornsey, 7.1 in Smethwick, 8.1 in Leyton, and 8.8 in East Ham, to 19.5 in Barrow-in-Furness, 19.6 in Stockport, 20.0 in Ipswich, 20.4 in Swansea, 21.9 in Liverpool, 22.6 in Merthyr Tydfil, 23.0 in Wigan and 24.1 in Bootle. In London the rate of mortality was 13.7 per 1,000, while it averaged 14.8 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2.6 per 1,000 in the seventy-six towns; in London this death-rate was equal to 2.1 per 1,000, while among the other large towns the death-rates from the principal infectious diseases ranged upwards to 5.2 in Stockport, 5.5 in Newport (Mon.), 5.8 in Rotherham, 7.1 in Sheffield, 7.5 in Merthyr Tydfil, 7.7 in Wigan, and 7.8 in Bootle. Measles caused a death-rate of 1.0 in Newcastle-on-Tyne and 3.4 in Merthyr Tydfil; scarlet fever of 1.3 in Aston Manor and 1.5 in Warrington; diphtheria of 1.5 in Middlesbrough; whooping-cough of 1.1 in Walsall, 1.2 in York and in Gateshead, and 1.4 in King's Norton and in Newport (Mon.); and diarrhoea of 3.8 in Walsall, in Nottingham and in Swansea, 4.1 in Stockport and in Merthyr Tydfil, 5.8 in Rotherham, 6.0 in Sheffield, 7.0 in Bootle, and 7.1 in Wigan. The mortality from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,816, 3,872, and 4,021 at the end of the three preceding weeks, had further risen to 4,328 at the end of last week; 787 new cases were admitted during the week, against 587 574, and 695 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, September 28th, 885 births and 472 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 15.3 and 13.3 per 1,000 in the two preceding weeks, rose again to 13.6 per 1,000 last week, but was 0.9 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 8.7 in Aberdeen and 10.0 in Leith to 15.0 in Perth and 15.7 in Dundee. The death-rate from the principal infectious diseases averaged 1.9 per 1,000 in these towns, the highest rates being recorded in Glasgow and Leith. The 242 deaths registered in Glasgow included 4 which were referred to measles, 7 to whooping-cough, 18 to diarrhoea, and 5 to cerebro-spinal meningitis.

Five fatal cases of whooping-cough and 6 of diarrhoea were recorded in Edinburgh; 2 of diarrhoea and 1 of cerebro-spinal meningitis in Leith; and 2 of diarrhoea in Greenock.

HEALTH OF IRISH TOWNS

During the week ending Saturday, September 28th, 581 births and 329 deaths were registered in six of the principal Irish towns as against 526 births and 302 deaths in the preceding period. The annual death-rate in these towns, which had been 12.6, 16.8, and 15.1 per 1,000 in the three preceding weeks, rose to 19.8 per 1,000 in the week under notice, this figure being 5.3 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 16.5 in Belfast and 17.2 in Londonderry to 21.9 in Limerick and 23.4 in Waterford. The zymotic death-rate in the same six Irish towns averaged 2.9 per 1,000, or 0.9 per 1,000 higher than during the preceding period, the highest figure, 7.8, being recorded in Waterford, while Limerick registered no deaths under this heading at all. The deaths in Belfast included 3 ascribed to cerebro-spinal fever.

Vacancies and Appointments.

VACANCIES.

BOURNEMOUTH: ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House-Surgeon. Salary at the rate of £80 per annum.

BRADFORD POOR-LAW UNION.—Resident Assistant Medical Officer (Male) for the Hospital and Workhouse. Salary, £100 per annum.

BROMPTON HOSPITAL SANATORIUM.—Assistant Medical Officer. Salary, £160 per annum.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—House-Physician. Salary at the rate of £65 per annum.

CAPE TOWN: VALKENBERG ASYLUM.—Assistant Medical Officer. Salary, £250, rising to £300 per annum.

CHELSEA HOSPITAL FOR WOMEN, S.W.—Clinical Assistant.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £65 per annum.

CHICHESTER: WEST SUSSEX COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, commencing £150 per annum.

CROYDON GENERAL HOSPITAL.—Senior and Junior House-Surgeons. Salary, £105 and £60 per annum respectively.

DERBYSHIRE ROYAL INFIRMARY.—(1) Gynaecologist, (2) Pathologist.

EDINBURGH DISTRICT ASYLUM, Bangour Village.—Second Assistant Physician. Salary, £120 per annum.

EDINBURGH: ROYAL EDINBURGH ASYLUM, Morningside.—Fourth Assistant Physician.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—(1) House-Physician; salary, £80 per annum. (2) Assistant Surgeon.

GORDON HOSPITAL, Vauxhall Bridge Road, S.W.—Surgeon to Out-patients.

GRAHAMSTOWN: ALBANY GENERAL HOSPITAL.—House-Surgeon. Salary, £200, rising to £250 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon. (2) House-Physician. (3) Assistant Casualty Medical Officer. Salary in each case, £20 for six months and £2 10s. washing allowance.

HOSPITAL FOR WOMEN, Soho Square, W.—Pathologist and Curator of Museum. Honorarium, 50 guineas per annum.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer. Salary, £150 per annum.

KING'S COLLEGE HOSPITAL, W.C.—Senior Obstetric Registrar and Tutor.

LIVERPOOL INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer. Salary, £120 per annum.

LIVERPOOL: STANLEY HOSPITAL.—House-Surgeon.

MANCHESTER UNIVERSITY.—Senior Demonstrator in Physiology. Stipend, £150, rising to £200 per annum.

MARYLEBONE BOROUGH.—Medical Officer of Health. Salary, £600 per annum.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—Assistant Surgeon for Diseases of Women.

NATIONAL DENTAL HOSPITAL, Great Portland Street, W.—Anaesthetist.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary, £160, increasing to £180 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer. Salary, £80 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary, £50 per annum.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL.—House-Physician (male). Salary at the rate of £50 per annum.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham.—(1) House-Surgeon. (2) House-Physician. (3) Junior House-Surgeon. (4) Junior House-Physician. Appointments for six months. Salaries for (1) and (2), £75 per annum, and for (3) and (4) £40 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £60 per annum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) House-Physician, (2) Resident House-Physician, (3) Resident House-Surgeon.

ROYAL EAR HOSPITAL, Dean Street, Soho.—(1) Assistant Anaesthetist, (2) House-Surgeon. Honorarium for the latter, £10 per annum.

ROYAL EYE HOSPITAL, Southwark, S.E.—House-Surgeon. Salary at the rate of £52 10s. per annum.

TAUNTON AND SOMERSET HOSPITAL.—Resident Assistant House-Surgeon. Salary at the rate of £50 per annum.

WAKEFIELD: CLAYTON HOSPITAL AND WAKEFIELD GENERAL HOSPITAL.—Two House-Surgeons, Senior and Junior. Salary, £120 and £80 per annum respectively.

WEST LONDON HOSPITAL, Hammersmith Road, W.—Assistant Physician.

WINSLEY: THREE COUNTIES SANATORIUM FOR CONSUMPTIVES.—Resident Medical Officer. Salary, £200, rising to £300 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—(1) Senior House-Physician, (2) House-Physician, (3) Second House-Surgeon. Salary, £100, £80, and £30 per annum respectively.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

Shepherd.—On September 9th, at Glenhurst, Archer's Road, Southampton, Elizabeth Shepherd, M.B., Ch.B., wife of T. Scott Shepherd, M.B., F.R.C.S.Edin., of a son.

MARRIAGES.

Beddie—Burnett.—At the Grand Hotel, Aberdeen, on September 25th, by the Rev. John Robson, Fraserburgh, assisted by the Rev. George Burnett, Glasgow, uncle of the bride, Dr. Lewis B. Beddie, M.A., M.B., C.M., Fraserburgh, to Lizzie, second daughter of James Burnett, Esq., Grattan Place, Fraserburgh.

Wilson—Tyrer.—On October 2nd, at St. Mary's, Prestbury, Cheltenham, by the Rev. Cathrew Fisher, M.A., Curate of St. John the Divine, Kennington, assisted by the Rev. H. Urling-Smith, M.A., Vicar of St. Mary's, David Wilson, M.B., B.S., only son of David Wilson, Esq., M.D., of Paddock, Huddersfield, to Constance Beatrice, daughter of the late Richard Tyrer, Esq., B.A., of Cheltenham, and Mrs. Tyrer.

DIARY FOR THE WEEK.

THURSDAY.

Royal Society of Medicine:

Obstetrical and Gynaecological Section, 7.45 p.m.—Inaugural Meeting. Election of Officers. Paper, the Physiological Action of the Placenta, by Professor W. E. Dixon and Dr. F. E. Taylor.

FRIDAY.

Royal Society of Medicine:

Clinical Section, 20, Hanover Square, 8.30 p.m.—Inaugural address by the President, Sir Thomas Barlow, Bart. Exhibition of Cases. The patients will be in attendance at 8 p.m.

POST-GRADUATE COURSES AND LECTURES.

Central London Throat and Ear Hospital, Gray's Inn Road, W.C.—Tuesday and Friday, 3.45 p.m.—Methods of Examination.

Charing Cross Hospital, W.C.—Thursday, 4 p.m., Medical.

Hospital for Diseases of the Skin, Stamford Street, S.E.—Monday, Wednesday, and Saturday, 5 p.m., Lectures on Dermatology.

Hospital for Sick Children, Great Ormond Street, W.C.—Thursday, 4 p.m., Diabetes in Children.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Throat. Lectures at 5.15 p.m. each day as follows: Monday, Fractures and Dislocation of the Hip, especially Old and Unreduced Ones; Tuesday, Some Considerations regarding Cerebral Surgery; Wednesday, The Psychoses of the Aged; Thursday, Cysts and Cystic Conditions of the Neck.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead.—Thursday, 5 p.m., Demonstration of Cases in the Wards.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Tuesday, 3.30 p.m., Local Lesions of Spinal Cord; Friday, 3.30 p.m., Local Diseases of Spinal Cord.

North-East London Post-Graduate College, Prince of Wales's Hospital, Tottenham, N.—The following are the arrangements for next week:—Monday, 10 a.m., Surgical Out-patient Clinic; 2.30 p.m., Medical Out-patient, Throat, *X*-Ray; 4.30 p.m., Medical In-patient. Tuesday, 10.30 a.m., Medical Out-patient; 2.30 p.m., Operations, Gynaecological and Surgical Out-patient Clinics; 4.30 p.m., Lecture, Injuries about the Elbow. Wednesday, 2.30 p.m., Medical Out-patient, Skin, and Eye Clinics. Thursday, 2.30 p.m., Gynaecological Operations, Medical and Surgical Out-patient and *X*-ray Clinics; 3 p.m., Medical In-patient; 4.30 p.m., Throat Operations, Lecture, Goître; Friday, 10 a.m., Surgical Out-patient; 2.30 p.m., Operations, Medical Out-patient and Eye Clinics; 3 p.m., Medical In-patient Clinic.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—The following are the arrangements for next week: Daily, 2 p.m., Medical and Surgical Clinics, *X* Rays; 2.30 p.m., Operations; Monday and Thursday, 2 p.m., Diseases of the Eye; Tuesday and Friday, 2 p.m., and Wednesday and Saturday, 10 a.m., Diseases of Throat, Nose, and Ear; Tuesday and Friday, 2.30 p.m., Diseases of Skin; Wednesday, 10 a.m., Diseases of Children. Lectures. At 12, Monday, Pathological Demonstration; at 5 p.m., Tuesday, Clinical; Wednesday and Friday, Anaesthetics; Thursday, Practical Surgery.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
OCTOBER.	
6 Sunday ...	
7 MONDAY ...	
8 TUESDAY ...	LONDON: Organization Committee, 11 a.m. LONDON: Public Health Committee, 3.15 p.m. BRADFORD DIVISION, *Yorkshire Branch*, Eye and Ear Hospital, Bradford, 8.30 p.m. CITY DIVISION, *Metropolitan Counties Branch*, Special General Meeting, Great Eastern Hotel, Liverpool Street, E.C., 4 p.m. GLASGOW NORTH-WESTERN DIVISION, *Glasgow and West of Scotland Branch*, Special Meeting, Burgh Hall, Hillhead, 8.30 p.m. NORTH NORTHUMBERLAND DIVISION, *North of England Branch*, Special Meeting, Blue Bell Hotel, Belford, 3 p.m. WALTHAMSTOW DIVISION, *Metropolitan Counties Branch*, Woodford Hospital, 4 p.m.
9 WEDNESDAY	LONDON: Medico-Political Committee, 2.30 p.m. LANCASHIRE AND CHESHIRE BRANCH, Meeting of Branch Council, Liverpool Medical Institution, 4.30 p.m.
10 THURSDAY...	LONDON: Hospitals Committee, 2.30 p.m. LONDON: Metropolitan Branch Council, 4.30 p.m. FOLKESTONE DIVISION, *South-Eastern Branch*, Queen's Hotel, Folkestone. SOUTH MIDLAND BRANCH, Autumnal Meeting, Railway Hotel, Bletchley, 2 p.m.; Luncheon, 1.15 p.m.
11 FRIDAY ...	LONDON: Central Ethical Committee, 2.30 p.m.
12 SATURDAY...	
13 Sunday ...	
14 MONDAY ...	
15 TUESDAY ...	
16 WEDNESDAY	LONDON: Arrangements Committee, 2.30 p.m.
17 THURSDAY...	LEIGH DIVISION, *Lancashire and Cheshire Branch*, Special Meeting, Co-operative Rooms, Ellesmere Street, 8.30 p.m. WESTMINSTER DIVISION, *Metropolitan Counties Branch*, St. James's Vestry Hall, Piccadilly, 4.30 p.m.
18 FRIDAY ...	
19 SATURDAY...	
20 Sunday ...	
21 MONDAY ...	
22 TUESDAY ...	
23 WEDNESDAY	LONDON: Journal and Finance Committee, 2.30 p.m. DORSET AND WEST HANTS BRANCH, Blandford.
24 THURSDAY...	
25 FRIDAY ...	
26 SATURDAY...	NORTHERN COUNTIES OF SCOTLAND BRANCH, Palace Hotel, Inverness, 12.30 p.m.
27 Sunday ...	
28 MONDAY ...	
29 TUESDAY ...	
30 WEDNESDAY	CENTRAL COUNCIL, Metropolitan Asylums Board, Victoria Embankment, 2 p.m.
31 THURSDAY...	
NOVEMBER.	
1 FRIDAY ...	CITY DIVISION, *Metropolitan Counties Branch*, Clinical Meeting, St. Bartholomew's Hospital, E.C., 5 p.m.
2 SATURDAY...	
3 Sunday ...	
4 MONDAY ...	
5 TUESDAY ...	
6 WEDNESDAY	YORKSHIRE BRANCH, The University, Sheffield, 4 p.m.

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 12TH, 1907.

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TO DIVISION SECRETARIES.

THE REFERENDUM REPORT OF COUNCIL.

A CORRECTION.

IN reference to copies of the Referendum Report of the Council recently circulated to the Divisions, it is necessary to call attention to a clerical error in the last line of the paragraph headed "Minute 123." The words "the Resolution" should be "a Resolution," and the sentence should read:

> "The like procedure shall also apply to any Decision of the Representative Meeting, other than a Resolution."

Perhaps the Divisional Officers who have received copies of this Report will kindly note this correction.

EDMUND OWEN,
Chairman of Council.

October 8th, 1907.

NOTICE OF CHANGES OF BOUNDARIES OF DIVISIONS.

THE following change has been made in accordance with the regulations of the Association, and takes effect from the date of publication of this notice:

> That Boldon be transferred from the South Shields Division of the North of England Branch to the Sunderland Division of that Branch.

Meetings of Branches & Divisions.

LANCASHIRE AND CHESHIRE BRANCH:

WIGAN DIVISION.

AT a general meeting of this Division, held on Thursday, October 3rd, it was unanimously resolved to invite Dr. T. W. H. Garstang again to become a candidate for the Central Council, to nominate him, and afford him all possible support in his candidature.

MIDLAND BRANCH.

THE annual meeting of this Branch was held at Buxton on June 13th.

Confirmation of Minutes.—The minutes of the previous meeting were confirmed and signed.

Installation of New President.—Dr. E. Mansell Sympson vacated the chair, which was then taken by the incoming president, Dr. G. Lorimer of Buxton.

The Report of Council.—The report of the Council was read and signed.

Accounts.—The accounts and bank book were laid on the table.

Election of Officers.—The following officers were elected:—*President-elect:* F. H. Jacob, M.D., Nottingham. *Vice-Presidents:* C. Douglas, F.R.C.S.; R. B. Purves, M.B. *Honorary Secretary and Treasurer:* R. Sevestre, M.D., 119, London Road, Leicester. *Representatives on Council:* W. A. Carline, M.D.; F. M. Pope, M.D. *Branch Council:* Drs. T. Broadbent, G. H. Ferraby, W. T. Rowe, W. Tibbles, R. Ballard, A. V. Clarke, J. C. Burkitt, W. E. Gibbons, W. M. Williams, F. R. Cassidi, A. Chawner, W. Moxon, W. St. John, A. E. Wilson.

President's Address.—Dr. LORIMER, the President, read a greatly-appreciated paper, which has already appeared in the JOURNAL of July 27th, p. 196.

Papers.—Dr. TIBBLES (Nottingham) read a paper on the action of drugs in diabetes mellitus.

Cases.—Several interesting clinical cases were examined.

Entertainments.—Dr. LORIMER, the President, entertained members of the Branch present to lunch and tea, and arranged for parties of members to be conducted over the baths.

SOUTH-EASTERN BRANCH:

ISLE OF THANET DIVISION.

THE twentieth meeting of this Division was held at the Carlton Hotel, Broadstairs, on Tuesday, September 24th, E. G. MOON, M.R.C.S., in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Paper.—Dr. W. H. WILLCOX (St. Mary's Hospital) read a paper on the medico-legal importance of wounds produced by firearms. He illustrated the paper with specimens, diagrams, and objects, and dealt with the interesting points in several recent cases.

Friendly Societies and the Medical Profession.—Dr. TAMPLIN proposed:

> That it is to the fair interest of the friendly societies and of the medical profession that all candidates be examined previous to admission to friendly societies, and that a fee be charged for each such examination.

The proposition was seconded by Dr. SAWERS and carried unanimously. It was decided that the subject should be referred to the Executive Committee.

Referendum on the Charter.—It was also decided to refer the details of the Referendum about the Draft Charter to the Executive Committee.

Votes of Thanks.—Votes of thanks were passed to Dr. Willcox for his paper and to the Chairman for presiding.

The Annual Exhibition
OF
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[*Concluding Notice.*]

INSTRUMENTS.

Down Bros. Limited (St. Thomas's Street, Southwark, S.E.), showed a large assortment of surgical instruments including many of a novel and interesting character and a selection of aseptic hospital furniture. Among these was an operation table (patented) made for St. George's Hospital which could be raised and lowered to suit the height of different operators. It had, too, a convenient arrangement for securing the Trendelenburg position, and hot water tanks to maintain the body temperature, the whole being fitted with ball-bearing castors capable of being put in and out of action by means of a lever. Another good form was a swing table intended specially for gynaecological operations; its body could be fixed at any desired angle with the greatest ease. Both of these, together with a portable operation table designed for Mr. Paul of Liverpool, and of unusual stability in all positions, were most creditable productions. Very noticeable, too, was a new form of irrigator made for the Royal Newcastle Infirmary, in which the reservoir could be raised and lowered by means of a winch and automatically fixed at any point without the possibility of running down. There was also shown a most interesting glass operation screen designed for Mr. Lenthal Cheatle, the screen itself being composed of an oval sheet of plate glass to be placed at a convenient height and at a convenient angle over the seat of operation. The sheet of glass was grasped by a clamp at the end of a long arm provided with ball and socket joints and fixed on to a stand with a heavy base which could be wheeled up to the operation table, the idea of the whole being that the surgeon should operate under the glass screen, thus rendering the use of any form of mask unnecessary. Among the surgical instruments Down Brothers' patent surgical motor occupied a prominent place, and was fitted with various forms of saws for skull and general surgery, after the types originally suggested by Doyen, Van Arsdale, and Mr. J. H. Nicoll of Glasgow, also drills and burs, ovoid, spherical, etc., after Cryer, Doyen, and Sir William Macewen. Other excellent ideas were realized in a bladder speculum for use while operating, designed by Mr. Carwardine of Bristol; Mr. Hurry Fenwick's bladder forceps with removable handles; and a device suggested by Mr. Lucy, of Plymouth, for the retention of india-rubber catheters; Mr. Moynihan's instruments for stomach and intestinal surgery, including new models of towel-clip forceps for the sides and ends of wounds; Mr. Colt's new set of dressings to secure water tight treatment of every variety of suprapubic opening; a uterine vulsellum made at the suggestion of Dr. J. S. Ashe, of the Adelaide Hospital, Dublin, with twisted prongs to avoid the accident of pulling out when traction is applied. A syringe for intramuscular injection of mercury as used by Colonel Lambkin, R.A.M.C., was also shown, as also a new gag, light and easy of introduction, and at the same time powerful and not likely to slip, designed by Mr. Colt.

The Sanitas Electrical Company, Limited (61, New Cavendish Street, London, W.). This firm had upon view a very comprehensive array of electro therapeutic apparatus, which included various forms of mechanism for the application of light treatment, several machines for physical exercise, vibrators in many forms (including the firm's own Pulsator), and switchboards for all purposes. There were also shown the "Wodal" Patent Interrupter, which is a motor mercury multiple jet brake, with a device for varying the number of jets, and thereby the actual contact period, the "Multostat," the Schnee patent four-cell bath, a new bipolar high-frequency apparatus, and the Shenton-Sanitas couch. The "Multostat" was shown at Exeter by the firm for the first time, and is described by it as a universal apparatus which may be connected to any continuous current electric light circuit, and consumes practically no current. It can be used either for electric cautery work, for electrolysis, in the production of sinusoidal-faradic currents, and for bath purposes. It had a reverser and milliammeter, and it was shown that its motor could be utilized to drive vibrators, surgical drills, and ear-massage pumps. It seemed to be exceedingly well designed and well finished, and very compact in form. The Schnee four-cell bath consists of four porcelain cells to take the extremities of the body. The current, we were informed, can be exactly measured and varied according to the requirements of the case, and sent throughout the body in any desired direction. Its strong point seems to be that its use requires no undressing on the part of the patient, and saves discomfort in many ways and all superfluous expenditure of time. The bipolar apparatus had a divided secondary current, the advantage of the machine lying, it was pointed out, in the simplicity and accuracy of its regulation and in the exceedingly soft effleuve which it produces.

Maw, Son, and Sons (72, Aldersgate Street, London, E.C.). The large exhibit of this firm included a great number of new and improved instruments and appliances, among which we were particularly struck by a catheter made on the suggestion of Mr. H. T. Herring. Only a small portion of it is tubular, the external portion tapering down to a rod, the idea being to allow the urine in a case of prostatic retention to flush the lower part of the urethra when the instrument is introduced, and by thus conserving the natural use of the penile urethra lessen the risk of bladder infection. The maxillary antrum syringe used at St. Bartholomew's Hospital, and designed by Mr. Rose, was shown in two forms, the cheaper one being for use by patients themselves. Another good instrument shown, and used at St. Bartholomew's, was an aural snare, modified from that of Mr. Cumberbatch, and fitted with a quick-running screw. The apparatus designed by Mr. Herring for sterilizing gum-elastic bougies and catheters was also exhibited in the several forms alternatively adapted to the sterilization of single and numerous instruments. One of these is intended for the use of patients who have entered catheter life, and may be expected greatly to decrease the number of patients in whom ammoniacal urine occurs. Other sterilizers for the same purpose, working with formalin vapour as at St. Peter's Hospital and by immersion in antiseptic solution, were also shown. Specimens of the improved standard and table lamps for throat and ear work, which have been supplied to the new out-patient block at St. Bartholomew's Hospital, were on view, as well as a new form of Esmarch's tourniquet named "Securitas," which seemed a distinct advance on the older type.

Marconi's Wireless Telegraph Company (18, Finch Lane, London, E.C.). The special interest of the exhibits of this firm, which included induction coils suitable for all forms of electro-therapeutic work, lay in a new high-frequency apparatus. The advantages pointed out in this machine were the facility with which the high-frequency current could be varied in intensity from zero upwards, the relative strength of the current at any point being simultaneosly indicated on a scale. Apart from this, the current could be varied at will in regard to frequency, such variation being likewise shown on scale. It also had a spark silencer, which worked efficiently, and possessed an easily adjustable gap; the whole apparatus, which is compact and neat, being mounted on a well-constructed table, supplied with drawers, and easily moved from place to place. The firm believes that this apparatus is an advance on all others of the kind, inasmuch as it supplies the operator, automatically and without calculation and as the work progresses, with all the data necessary for the administration of currents with free knowledge of the dosage in use—a most desirable feature.

Croyden and Co. (55, Wigmore Street, W.). This firm, which for many years past has made a speciality of producing catheters, showed several new varieties. Many of these in silk and gum elastic were notable for their extreme flexibility and high polish, an excellent point being the extreme smoothness and even polish shown on section to be possessed by them internally. There were also shown the shadowgraph ureteric bougies of which the firm are manufacturers. Favourable attention to these was drawn recently in our columns by Mr. Hurry Fenwick, who pointed out that the shadow they throw and the picture they produce is well defined, and greatly superior in this respect to bougies made for the same

purpose by Continental manufacturers. Another useful article, was the Marshall scrotal suspender. This differs from those of ordinary make in several important respects. It is fastened round the waist and thighs in the ordinary fashion, but raises the testicles much as though lifted by the hands. It is a well-contrived suspender, which seems likely to fulfil the claims made for it, namely, that it will produce neither cutting nor chafing nor unsightly protrusion, and yet be thoroughly effective in use either by riders and athletes or when prescribed for ordinary surgical purposes. It can be obtained direct from the firm or through surgical instrument houses and chemists.

The Holborn Surgical Instrument Company (26, Thavies Inn, Holborn Circus). On one of its two stands this firm had a display of steam sterilizers, and an operation table made to the order of Sir C. Ball, and other ward furniture, including a cheap but well-made anaesthetist's stool. Among the sterilizers, those of the Schimmelbusch pattern figured largely, these being shown in a variety of sizes suitable to requirements ranging from those of the smallest hospitals and nursing homes to those of the largest institutions. A more elaborate instrument for the same purpose was the Holborn High Pressure Sterilizer, in which the work is done at a temperature of 250°. It has no vacuum chamber, as to the value of which authorities are considerably divided, and for this reason it is possible, we were informed, to put it upon the market at a much lower rate than is usual with sterilizers which work at as much as 15 lb. pressure. From the testimonials which the makers have received from the authorities of various hospitals in England and Scotland, it seems to have been found satisfactory by those who have used it. On its other stand the firm showed a large selection of instruments for all general operative purposes, as well as many made according to the specifications of various surgeons and on the patterns used by Continental authorities. This part of its exhibit included an inexpensive set of surgical instruments intended to meet the requirements of medical men commencing in general practice; it seemed to be comprehensive and satisfactory, the instruments being well turned out and well selected.

G. H. Zeal (82, Turnmill Street, London, E.C.). This is a firm of wholesale manufacturers of clinical thermometers, and, consciously or unconsciously, their products must be familiar to a very large number of medical practitioners. The clinical thermometers which it makes are of all forms and suited to the varying needs of practice and the different requirements of medical men and nurses as regards legibility of the scale, rapidity of registration, permanency of the figuring, and facility in resetting. They are all, we were informed, made of what is known as normal glass, which does not contract, so that the scales, once placed, remain permanently reliable. The thermometers shown varied in registration rapidity from thirty seconds to two minutes, a certain number of them having solid necks so as to increase their strength. One good pattern had a ruby back, which made it easy to read in dull light. A further useful idea was realized in the registered pattern, square section clinical thermometer, in which form the figures and divisions are in one plane, so that the records are easy to read, while the thermometer itself if placed incautiously on a smooth surface does not roll. It is for the "Repello" thermometer that the firm is best known. This requires no shaking down, the mercury being returned to the reservoir merely by pressing a small glass bulb at its extremity. In spite of its apparent fragility this thermometer is thoroughly practical, and seems to be no more easily breakable than are the majority of thermometers. Another form is the Aseptic thermometer; it fits into a container like a stoppered bottle, in which may rapidly be placed a liquid or other disinfectant. Another advantage is that its scale is marked on the exterior of the container, so that it is possible to take a temperature without the patient seeing the degree recorded.

Drugs.

The Charles H. Phillips Chemical Company (14, Henrietta Street, Covent Garden). The exhibit of this firm consisted of its "milk of magnesia" and its muriated quinine compound. The former, we were informed, is a hydrated oxide of magnesia, each fluid ounce representing magnesium hydrate 24 grains. Like other hydrates of its class, magnesium hydrate has a marked affinity for acids, and will neutralize nearly twice its volume of lemon juice. Under the microscope the fluid can be seen to be homogeneous, and physically it is odourless and practically tasteless; while the firm claims that as a solution of magnesia it is four times stronger than any heretofore produced, and that it is not, as are many preparations, merely a triturated magnesia suspended by mucilaginous or glycerine solutions. As a pharmaceutical preparation it appeared to be excellent and likely to fulfil efficiently all the indications commonly met by magnesia mixtures, and well suited for use as a vehicle for iodides, essential oils, and other drugs which are apt to produce gastric irritation. Its persistent alkalinity and tastelessness would also seem to indicate that it might prove a valuable teeth preserver if a little were taken into the mouth at bedtime. The strong point of the quinine compound is that the muriate instead of the sulphate of quinine is used in its preparation, and phosphates instead of hypophosphites. Hence, the preparation being acid, there is no risk of the contained strychnine being thrown down, as is sometimes the case with hypophosphite syrups.

The Saccharin Corporation (165, Queen Victoria Street). The exhibit of this firm consisted of "novocain," a white, crystalline readily soluble powder, which in solution may be sterilized by boiling without decomposition or change. In anaesthetic power it is believed not to fall short of cocaine, while at the same time being greatly less toxic. In the short time which has elapsed since it was first produced testimony as to its value has been forthcoming from many quarters. Diffusion of the more dilute solutions is assisted by preparing them with normal salt solution, a few drops of a suprarenin-borate solution being added. The firm issues the drug in the form and strength suitable for each of the purposes to which it has yet been applied.

The Miol Manufacturing Company (66, Southwark Bridge Road, S.E.). The exhibition of this firm consisted of Miol, a preparation of which an account was given in our columns in July this year. It is an oleo-maltose compound of palatable taste, and is intended to take the place of cod liver oil. It contains some 22 per cent. olive oil, 2.5 per cent. proteids, 47 per cent. maltose, together with free phosphorus and iodine in combination. It is believed to cause no gastric irritation or nausea, and appears to be readily taken both by children and adults. Its constitution seems to make it thoroughly worth a trial in cases in which a combination of cod-liver oil with iodine and phosphorus would be indicated but cannot be taken owing to its objectionable flavour.

Wyley's, Ltd. (Coventry). This firm of manufacturing chemists had upon view a large number of special preparations, including various heroin compounds, many syrups, and some tinctures in which alcohol was replaced by a glycerine basis. The majority of these were shown in a dispensing cabinet which has been designed by the firm specially for use in a branch surgery or hired consulting room. It forms a handsome piece of furniture, which can be closed when desired, and when open reveals at once all its contents, which are arranged on shelves easily reached and easily kept clean and tidy. It has sufficient capacity for the requirements of a large practice, plenty of space for dispensing bottles of various sizes, as also for dressings, bandages, and the general impedimenta necessary in the surgery, and is completely fitted with stock bottles, scales, and measures. It seemed altogether a well-thought-out piece of surgery furniture.

Les Etablissements Poulenc Frères (92, Rue Vieille-du-Temple, Paris). This French firm of manufacturing chemists, whose representative in England is Mr. J. Flach, 16, Water Lane, Great Tower Street, E.C., had upon view a number of chemical compounds, including ovolecithin, cacodylic acid, the cacodylates and methylarsenite of soda and of iron in scales. Its most interesting exhibits, perhaps, were atoxyl and stovaine, both being drugs which at the present moment are very much to the fore. The former, however it is to be classed chemically—and as to this there seems to be some dispute—is obtained by the firm from arseniate of aniline heated to melting point. Its value in the treatment of sleeping sickness and

of syphilis has too recently received notice in our columns to require further comment. Abroad it has been used in anaemia and in furunculosis, and there seems to be no reason why it should not be employed in the classes of skin diseases in which arsenic is considered to be indicated.

Knoll and Company (Great Harp Lane, London, E.C.). This firm of chemical manufacturers showed a large number of modern preparations which, besides diuretin—a drug already sufficiently well known—included "styptol," "santyl," and "bromural." The first of these, which is cotarnine phthalate, has recently been brought prominently into notice by several writers in England and America as a uterine haemostatic and sedative; in the form of tablolds it is easy to take and very inexpensive. "Santyl," judging by the number of favourable opinions which have been expressed on it by various authorities, seems to represent a successful endeavour to eliminate from sandal-wood oil its irritant properties and disagreeable taste and smell without interfering with its valuable action on the urethral tract. This is effected, we were informed, by eliminating the "santalen," and combining its principal constituent, "santalol," with salicylic-acid. To the third preparation, "bromural," favourable testimony was quoted by us last May.

Oppenheimer and Co. (179, Queen Victoria Street, E.C.). The large number of attractively-prepared pharmaceutical compounds shown by this firm naturally included palatinoids, with which its name has long been associated. They are undoubtedly of utility in the administration of many drugs, and in the bipalatinoid form solve the problem of giving drugs which, like Blaud's pill, depend for their efficacy on the formation within the stomach of nascent compounds. The universal vaporizer of the firm was also shown in use with various medicated solutions named neboline compounds. This atomizer is certainly a very practical and efficient contrivance, ensuring a spray so fine that it is invisible until condensed on some surface. Another preparation which attracted interest was the mercurial cream which has been prepared by the firm to meet the indications laid down by Colonel Lambkin, R.A.M.C., for the intramuscular treatment of syphilis. The amount of the active constituents is that prescribed by him, but the basis has been adjusted so that its general composition is identical with that of natural fat, the idea being that the drug will thus be more readily assimilated. A small quantity of creocamph has also been added, since it is found to prevent the pain which sometimes occurs at a considerable interval after injection of the cream as originally compounded. The cream is supplied in what the firm terms "aseptules," each of which contains a sufficient amount for one injection, but can be obtained for use in institutions in 1 oz. and 2 oz. stoppered bottles.

Foods.

J. Reynolds and Co. (Albert Flour Mills, Gloucester). The speciality of this firm is a whole-meal bread prepared from the firm's Gold Medal Digestive Wheatmeal. This is a flour long and favourably known to the public, which has been awarded a large number of gold medals—25 we were informed—and some 200 prizes at various bakery exhibitions during the last three or four decades. In this preparation the whole of the bran is retained but reduced to an exceedingly fine powder, and the firm believes that it represents the highest attainable level of flour production; we are informed by it that during the last two or three years there has been evidence of a tendency on the part of the public to revert to the use of whole-meal breads, and this must be regarded as altogether desirable.

G. Van Abbott and Sons (Baden Place, Crosby Row, Borough, S.E.). The preparations of this firm, which devotes itself to the manufacture of foods for diabetics and persons of obese habit, are already sufficiently well known. They include gluten bread and flour, almond bread, biscuits, and flour, and many other starch and sugar-free preparations, such as soups, jellies, glycerine jujubes, and what are called by the firm "biscottes." A new variety shown was what the firm has termed virogen bread and virogen biscuits. We were informed that they were entirely starch-free. The bread is soft and will therefore only keep good for three or four days, but the biscuits retain their quality and flavour for any length of time if kept in a moderately dry place. The biscuits shown included a cocoanut biscuit and a ginger biscuit, both of which were very palatable, and also what the firm terms Medolia biscuits, which are unusually cheap and intended for use more particularly by hospital patients.

Virol, Limited (152-166, Old Street, London, E.C.). This firm showed its special preparation, which is prepared from marrow, red-bone marrow, from ox ribs and calf bones, eggs, malt extract, and lemon juice. In the comparatively short space of time that has elapsed since it was first placed on the market it has gained considerable popularity among medical men, and from the testimonials shown appears to be now used in a large number of hospitals and sanatoriums with satisfaction. In appearance and consistence it is very much like honey, its taste resembling that of toffee. It has been found of utility in dealing with the summer diarrhoea of infants, and as an easily-digested tissue former is considered to be indicated in cases of marasmus, rickets, tuberculosis, anaemia, and gastric disorders; the conception being that it should replace cod-liver oil. The *Lancet*, in a note upon the subject, stated that from observation and experience it regarded it as a complete food of peculiar value, being rich in nitrogen and in heat-producing and bone-forming materials.

Nestlé, and Anglo-Swiss Condensed Milk Company (6 and 8, Eastcheap, London). Of products which are so exceedingly well known and popular as those of this firm little more need be said than that its Swiss milk obtained its reputation at least twenty-five years ago and has retained it unblemished up to the present date. Our experience goes to show that it is of unvarying quality, and in many circumstances a much more desirable substitute for human milk than the fresh cow's milk which is sold at dairies. The unsweetened condensed milk known as Viking was brought out by the firm at a considerably later date, but has also now obtained the position of a classic amongst milk foods. The firm also showed its own Swiss milk chocolate, Peters's milk chocolate, and Kohler's bonbons and chocolates. The former are entitled to a distinct place in dietetics, and the latter is an exceedingly pleasant sweetmeat and not devoid of use in the dietary of children and invalids.

Miscellaneous.

Alexander Riddell and Co. (36 and 38, Commercial Street, London). This firm showed Stower's Lime Juice Cordial and the Clarified Lemon Squash sold under the same name. Their special feature, we were informed, is that in both preparations the refined lump sugar used is converted by a simple process into pure glucose. As the firm has been engaged in the production of lime juice for drinking purposes for upwards of forty years, it is quite natural that it should have acquired great skill in dealing with this fruit, and certainly its Lime Juice Cordial is an exceedingly pleasant table beverage. It makes also an excellent drink for fever patients and general invalids under many circumstances, and the same may be said of the lemon squash prepared by the firm.

Ronuk, Limited (Portslade, Brighton). The preparation of this firm, which has dépôts in London and Manchester, is now familiar to all frequenters of hospitals. Its sanitary polish is indeed so popular that its use has spread from hospitals to public galleries, museums, and even private houses. The initial preparation of the floors is of rather a more elaborate nature than that required with common stains and varnishes, but the effect obtained is greatly superior. Once polished, the appearance of floors is easily preserved by the brushes which this firm supplies in various weights according to the special requirements of the case, heavy brushes for places with a wide extent of coloured floor, and others of a lighter kind for domestic use.

Kyl-Fyre (Elms Buildings, Eastbourne). The preparation of this firm is a dry powder in cylinders for fire extinguishing purposes. It is regarded as specially adapted for use in hospitals and asylums owing to its efficiency and the simplicity of the method of its employment. It is also inexpensive, so that numbers of canisters containing it can be distributed in different parts of the buildings instead of only a few being provided. We were

informed that it is quite as effective with burning petrol as with fire due to other causes, and for the use of motorists it is put up in a special tin.

The Sanitas Company (Locksley Street, Limehouse, E.). This firm, in addition to the special preparation with which its name is associated, and which was shown as prepared for use in the sick-room in the treatment of wounds, in the stable, in the household generally, showed Okol and Bactox. These are two new disinfectants which bacteriological tests conducted by Professor Klein and Dr. Kenwood and several other authorities show to have a high carbolic acid coefficiency. Sanitas Okol is a grey-brown emulsion, Bactox being a clear dark fluid which makes a milky solution with water, both of them having an odour not unlike that of izal and other well-known bactericides of the tar series. Of the two Okol appears to be the stronger, having a coefficient of 20 when standardized by the Rideal-Walker method, as against 10 in the case of Bactox. There was also shown Sanitas Special fluid, which is sold as a combined germicide and oxidant, and as having a carbolic coefficiency of 8. Other sanitary preparations shown were patent sulphur candles and appliances for disinfection by means of formalin. It may be noted that the firm still recommends its original Sanitas disinfecting fluid as the best for use under ordinary circumstances in the sick-room.

Rebman Limited (129, Shaftesbury Avenue). This firm of publishers showed a good selection of the textbooks, treatises and atlases dealing with medicine and surgery and public health in all their branches which it has produced. The atlases were particularly noticeable, including as they did that of Bardeleben and Haeckel on *Topographical Human Anatomy* as translated from the third German edition by Dr. Howell Evans. It contains upwards of 200 coloured plates. The *Atlas of Typical Operations in Surgery*, translated and adapted by the same author from Beckenheimer and Frohse, was also shown. It has some 60 coloured plates, each showing the important stages in the operation described, interspersed with sufficient text to bring out the technique required. Other attractive books were *The Diseases of Women* by Bland-Sutton and Giles, now in its fifth edition, and the translation made by Dr. C. F. Marshall of Sabouraud's original *Dermatology*.

The Royal Leamington Spa. The authorities of the borough of Leamington had upon view a number of photographs and statistical records relative to this well-known midland health resort. Its numerous attractions both to visitors in search of health and for ordinary residents have so recently been described in detail in these columns that little need now be said of them. At the stall a good endeavour was made to show how thoroughly the Royal Pump Room and bathing establishments have been organized and the facilities which are offered for all forms of hydrotherapeutic treatment now in repute. The views showed that the town is well laid out and excellently supplied with open spaces, while as regards climate the tables seemed to justify a claim for the town of a superior equability in meteorological conditions to that of the majority of inland watering places in this country.

Slack and Brownlow (Abbey Hey, Gorton, Manchester). This firm had upon view a series of the filters in connexion with which its name has been long well and favourably known. They are made entirely in England, the filtering medium being porous porcelain thrown into the form of hollow cylinders or candles. Their use constitutes a perfect protection against impure water, as that which passes through them is rendered absolutely sterile, whatever number the previously-contained microbes may have been. All the candles are detachable readily and easily so as to permit of their being occasionally cleaned and boiled, thus guarding against any theoretic possibility of micro-organism growing through the filtering material. The recent patterns show several improvements in the way of reduction of the number of joints. Filters suitable for all purposes can be obtained, the more important differences depending on whether it is desired that the water should be filtered under pressure or otherwise. One of the most useful all-round patterns for household use is perhaps the "rapid service filter," which allows water to be drawn direct from the main household delivery pipe. The water as it comes through is bright, sparkling, absolutely free from taste.

Association Notices.

COUNCIL MEETING.

A meeting of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 30th, in the Board Room of the Metropolitan Asylums Board, by kind permission of the Board. The offices of the Metropolitan Asylums Board are situate on the Victoria Embankment at the corner of Carmelite Street and near Blackfriars Bridge.

Guy Elliston,
Oct. 3rd, 1907. *General Secretary.*

BRANCH AND DIVISION MEETINGS TO BE HELD.

Aberdeen Branch.—The annual meeting of this Branch will be held in the Grand Hotel, Aberdeen, on Saturday, October 19th, at 1.15 p.m. Business: (1) Minutes. (2) Council's report. (3) Treasurer's report. (4) Election of office-bearers for the ensuing year. (5) Nomination of Representative to Council of the Association. (6) Election of place for next summer Meeting. (7) Referendum report. Luncheon will be served in the hotel after the meeting. Members intending to be present are requested to notify Dr. J. F. Christie, 7, Alford Place, Aberdeen.

Birmingham Branch: Central Division.—A special meeting will be held at the Medical Institute, on Wednesday, October 16th, at 4 p.m. Business: To consider the Referendum of the Council on certain clauses of the Draft Charter. The report of the Representative Meeting was published in the Supplement for September 21st. The Council report and minority report have been sent by post to each member.—E. D. Kirby, A. W. Nuthall, Honorary Secretaries.

Border Counties Branch: North Cumberland Division.—A special meeting of this Division will be held at the Crown and Mitre, Carlisle, on Wednesday, October 16th, at 3 30 p.m. The Committee will meet at 3 15 p.m. Business: (1) Consideration of the Referendum from the Council of the Association *re* the Draft Charter. Special attention is called to (*a*) the Referendum report from the Council of the Association; (*b*) minority report from the Council of the Association; (*c*) the Draft Charter printed in the Supplement of the British Medical Journal for April 6th, 1907; (*d*) report by the Representative Meeting printed in the Supplement, September 21st, 1907. (2) The consideration of Ethical Rules for the Division. The Division Committee recommends that the rules be adopted by the Division with the following omission: Rule Z.—(*a*) From the word *or*, in ninth line, to the word *Committee*, in the twelfth line, both words inclusive. It is hoped that every member of the Division will endeavour to attend this meeting, on account of the important nature of the business.—Norman Maclaren, Honorary Secretary, Carlisle.

Dorset and West Hants Branch.—The autumn meeting of this Branch will be held in Blandford on Wednesday, October 23rd. Members wishing to read papers, exhibit specimens, or show cases should communicate with the Honorary Secretary, James Davison, Streateplace, Bath Road, Bournemouth, on or before Friday, October 11th. This Journal notice is the only intimation of the meeting.

East Anglian Branch: South Essex Division.—The annual meeting will be held at the Queen's Hotel, Southend-on-Sea, on Friday, October 18th, at 7.45 p.m. Business: (1) Minutes. (2) Election of office-bearers for ensuing year. The annual dinner will take place at the Queen's Hotel on the above date at 8 p.m.; tickets, 10s. 6d. Members are requested to intimate to the Honorary Secretary, as early as possible, their intention of being present, and if they intend to invite guests.—W. Cardy Bluck, Honorary Secretary, Southend-on-Sea.

Lancashire and Cheshire Branch: Leigh Division.—A special meeting of the members of the above Division will be held at Co-operative Rooms, Ellesmere Street, at 8.30 p.m., on October 17th. Agenda: Consideration of the Council's Referendum Report. The attention of members is directed to the Supplement of the British Medical Journal for September 21st, containing the report of the Representative Meeting on the above.—J. Sackville Martin, M.D., Honorary Secretary of the Division.

Lancashire and Cheshire Branch: Rochdale Division.—A joint meeting of the Bury and Rochdale Divisions will be held in the Dispensary, Knowsley Street, Bury, on Thursday, October 17th, at 8.45 p.m. Business: (1) The Representative's report of last Annual Representative Meeting. (2) The Referendum. (3) Notification of Births Act. (4) Any other business.—James Melvin, Honorary Secretary.

Lancashire and Cheshire Branch: North Manchester Division.—A special meeting of this Division will be held on Thursday, October 17th, at the Palatine Hotel, Manchester, at 4.15 p.m. Agenda: (1) Referendum on certain Clauses of the Charter. Notes.—The Central Council has referred to the

Divisions certain resolutions concerning the Draft Charter which were passed by the Special Representative Meeting in May last. This fact shows that the Council doubts whether these resolutions correctly express the wishes of the Association as a whole. The points upon which opinions of members are expressly desired now are briefly as follows: (*a*) The Power of Referendum: The Council asks for power to refer resolutions back to the Representative Meeting, and after that to the Divisions, instead of directly to the Divisions. This will cause an extra delay of a year or the expense of a Special Representative Meeting. (*b*) Composition of Council: The Representative Meeting wishes to elect some members of Council, reducing its numbers. The Council objects. (*c*) Grouping of Branches: Rendered necessary by above. (*d*) Mode of Election: The Representative Meeting desires Council elections to be conducted by the head office, and not locally as at present. (*e*) Business of Annual Representative Meeting: Certain powers desired by the Annual Representative Meeting are objected to by the Council. (*f*) Journal and Finance Committee: At present there is one Committee; the Annual Representative Meeting wishes separate committees. Council objects. These points have all been considered by the Divisions and the resolutions of the Annual Representative Meeting approved, or in some cases suggested by them. (2) New Ethical Rules: The Joint Committee of the Manchester and Salford Divisions and the Executive Committee of the Branch recommend the adoption of the new ethical rules. Under these, or similar rules, the regulation of contract and other practice in the Division area becomes legally possible, which it is not at present. (3) The Early Notification of Births Act: It is desired to consider what steps may be taken to (*a*) oppose its local adoption; (*b*) safeguard the interests of the public and the profession under its enactments.—R. G. MCGOWAN, Honorary Secretary, Manchester.

METROPOLITAN COUNTIES BRANCH: LAMBETH DIVISION.—The opening meeting of the Lambeth Division will be held at Camberwell Infirmary on Thursday, October 24th, at 4 p.m. Agenda: (1) Minutes of the last meeting. (2) Final letter reporting satisfactory settlement of the Brixton Dispensary dispute. (3) Report from Dr. Esler, Representative of the Lambeth Division at the Representative Meeting at Exeter. (4) Cecil H. Léaf, F.R.C.S., will read a paper on the Diagnosis and Treatment of some Surgical Affections likely to be met with in General Practice. (5) Dr. Keats has kindly consented to conduct members and their medical friends over Camberwell Infirmary, and to show cases of interest.—HERBERT FRENCH, M.D., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WESTMINSTER DIVISION.—The next meeting will be held on Thursday, October 17th, at 4.30 p.m., at the St. James's Vestry Hall, Piccadilly. Agenda: (1) Dr. Archer will open a discussion on the proposal of the Westminster City Council to provide *free medical attendance and medicines for their employés*. Dr. Archer will move a resolution calling upon the Association to protest against this scheme, and calling upon the profession to prevent its being carried into effect. (2) Dr. Haslip will move the following resolution: "That the Westminster Division protests against business being discussed and votes taken upon important questions by the Representative Meetings, unless such business and questions and the agenda of all the Representative Meetings shall have been submitted to the Divisions at least one month prior to the assembly of a Representative Meeting." (3) To receive Dr. Evart's report of the Representative Meeting at Exeter.—HARVEY HILLIARD, Honorary Secretary, 30, Wilton Place, S.W.

MIDLAND BRANCH: LEICESTER AND RUTLAND DIVISION.—A special meeting of this Division will be held at the Leicester Infirmary on Wednesday, October 16th, at 4.15 p.m. Business: Consideration of the Referendum by the Council of the Association on certain resolutions passed by the Special Representative Meeting respecting the proposed Charter: (1) Referendum report of the Council; (2) Referendum report of a minority of the Council. A report by a Committee of the Representative Meeting was published in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL, September 21st, 1907.—WILFRID E. GIBBONS, Honorary Secretary.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—A meeting of the Branch will be held on Saturday, October 26th, at 12.30 p.m., in the Palace Hotel, Inverness. Agenda: Consideration of the Council's Referendum Report.—J. MUNRO MOIR, M.D., Honorary Secretary.

SOUTH-EASTERN BRANCH: CANTERBURY AND FAVERSHAM DIVISION.—A meeting of this Division will be held at the Cottage Hospital, Herne Bay, on Thursday, October 17th, at 3 p.m. Dr. T. Armstrong Bowes will preside. Dr. Bowes invites members to lunch with him at 7, Marine Terrace, at 1.45 p.m. This meeting is special, for the consideration of the Referendum from the Council of the Association. Agenda: (1) Minutes of last meeting. (2) Next meeting. (3) The Referendum on certain clauses of the Charter (voting upon). (4) The report of the Annual Representative Meeting at Exeter by our Representative (Dr. Gosse, Sittingbourne). (5) Paper by Dr. T. Armstrong Bowes: A Case of Henoch's Purpura. (6) Police Emergency Fees (discussion upon). (7) The resolution of the Reigate Division *re* Medical Law Reform and Quackery. (8) A resolution *re* the Training of School Teachers in Hygiene. (9) Any other business. All members of other Divisions are invited to attend the meeting and to introduce professional friends, but will not be entitled to vote on Divisional questions.—T. BARRETT HEGGS, Honorary Divisional Secretary, Sittingbourne.

SOUTH-EASTERN BRANCH: GUILDFORD DIVISION.—The next meeting of this Division will be held at the Royal Surrey County Hospital, on Wednesday, October 30th, at 4.30 p.m. Dr. Anderson Morshead, Vice-Chairman of the Division, will take the chair. Agenda: (1) Minutes. (2) Election of Chairman for the ensuing year. (3) To consider the Referendum from the Central Council. (4) Terms of appointment and rates for contract practice in the Division. (5) Dr. H. A. Powell will read a paper on the Regulation of an Out-patient Department (to be followed by a discussion). (6) Cases will be shown by members of the hospital staff if time permits. (7) Any other business. Tea will be provided at 4.15. Dinner at 6.30 p.m., at the Lion Hotel, Guildford; charge, 6s., exclusive of wine.—E. J. SMYTH, Honorary Secretary, Guildford.

SOUTH-EASTERN BRANCH: REIGATE DIVISION.—A special meeting of this Division will be held at Laker's Hotel, Redhill, on Thursday, October 17th, at 8.30 p.m., to consider the Referendum from the Council of the Association on certain resolutions of the Representative Meeting with which the Council disagrees. The views of the Representatives on the questions at issue will be found in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for September 21st (which members are requested to bring with them to the meeting, together with the reports of the Council and of the minority of the Council). The principles underlying the questions in dispute are of such importance to the future of the Association that the Committee earnestly hopes that members will make a point of being present at the meeting and recording their votes.—JOHN G. OGLE, Honorary Secretary, Reigate.

SOUTH MIDLAND BRANCH: NORTHAMPTONSHIRE DIVISION.—A meeting of this Division will be held on October 22nd, in the Board-room of the Northampton General Hospital, at 2.30, under the chairmanship of Mr. G. H. Percival. A luncheon will be provided before the meeting at Franklin's Restaurant, Guildhall Road, for those who wish for it. The Secretary will be obliged if the names of those wishing to have luncheon are sent to him at least two days before the meeting. Agenda: Minutes. Dr. Baxter's report of Representative Meeting. Referendum on Draft Charter. Finance inquiry report. Mrs Watt Smyth's motion on the Training of School Teachers in Hygiene. Any other business. If time permits the staff of the hospital will show a few clinical cases.—PEVERELL S. HICHENS, Honorary Secretary.

WEST SOMERSET BRANCH.—The next meeting of this Branch will be held at the Taunton and Somerset Hospital, on Friday, October 25th, at 4 p.m., when the chair will be taken by the President, Dr. G. W. Harvey Bird. Address and Cinematographic Demonstration: Dr. H. Campbell Thomson, Assistant Physician to the Middlesex Hospital, has kindly consented to attend and read Clinical Notes on some Cases of Nervous Diseases, illustrated by the cinematograph. Among the cases illustrated will be different phases of Disseminated Sclerosis, Pseudo-hypertrophic Paralysis, Spastic Paraplegia, Cerebral Diplegia with Athetosis, Friedreich's Ataxy, Paralysis Agitans, Cerebellar Ataxy. Some of the chief points in these diseases will be demonstrated, and discussion invited on their clinical aspects. Subcommittee on Medical Certificates: The report of this Subcommittee will be presented. Association Business: Referendum on resolutions of Representative Meeting. This very important matter will be brought before the meeting, and divisions taken thereon. The reports relating to the matter will be sent to the members in a few days.—W. B. WINCKWORTH, Honorary Secretary.

YORKSHIRE BRANCH.—The next meeting of the Yorkshire Branch will be held at the University, Sheffield, on Wednesday, November 6th, at 4 p.m. Members wishing to read papers, show specimens or cases, or propose new members, are requested to communicate at once with the Honorary Secretary, Dr. ADOLPH BRONNER, 33, Manor Row, Bradford.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

STAFF SURGEON J. H. JONES has been allowed to withdraw from the service with a gratuity, September 21st. Appointed Surgeon, May 15th, 1899, he was made Staff Surgeon, May 15th, 1907.

The following appointments have been made at the Admiralty: FREDERICK J. A. DALTON, Fleet Surgeon, to the *Egmont*, additional, for the *Maine*, undated: JOHN H. MCDOWELL, M.B., Surgeon, to the *Berwick*, October 3rd; CHARLES M. BEADNELL, Fleet Surgeon, to the *Renown*, on recommissioning, October 15th; JOHN M. GORDON, M.B., Surgeon to the *Renown*, on recommissioning, lent, October 15th;

JOHN C. ROWAN, M.B., Fleet Surgeon to the *President*, additional, for three months' study at West London Hospital, October 10th; WALTER BOWDEN, D.S.O., Fleet Surgeon, to the *Blenheim*, October 9th; JAMES J. WALSH, M.B., Fleet Surgeon to the *President*, additional, for three months course at West London Hospital, October 9th; HAROLD E. FRYER, Staff Surgeon, and FREDERICK C. ROBINSON, Surgeon, to the *Aquarius*, lent for duty with destroyers of the Channel Fleet, October 7th; ALEXANDER C. W. NEWPORT, Surgeon, to Cape Hospital, for Marines' Prison and other outside duties, October 7th; ROBERT W. B. HALL, Surgeon, to the *Gladiator*, October 7th; WILLIAM K. D. BRETON, Surgeon, to Haslar Hospital, October 7th; J. C. F. D. VAUGHAN, Surgeon, to the *Cornwall*, October 7th.

ROYAL ARMY MEDICAL CORPS.

THE order for Lieutenant-Colonel S. G. ALLEN, now serving in India, to join the London District Command to take up an appointment at the Duke of York's Royal Military School, has been cancelled.

Lieutenant-Colonel W. L. READE, now serving in Madras, has been appointed to the medical charge of the Royal Infirmary, Dublin.

IMPERIAL YEOMANRY.

WILLIAM S. HENDERSON, M.B., late Surgeon-Captain, 8th (Scottish) Volunteer Battalion the King's (Liverpool Regiment), to be Surgeon-Lieutenant (extra) in the King's Colonials, September 1st.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-LIEUTENANT T. A. WALKER, 1st Dorsetshire, to be Surgeon-Captain, September 9th.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 7,794 births and 4,545 deaths were registered during the week ending Saturday last, October 5th. The annual rate of mortality in these towns, which had been 12.3, 13.5, and 14.5 per 1,000 in the three preceding weeks, further rose to 14.8 per 1,000 last week. The rates in the several towns ranged from 7.3 in Leyton, 7.7 in Hastings, 7.8 in Walthamstow and in Burton-on-Trent, 9.1 in Reading, 9.2 in East Ham, and 9.3 in Barrow-in-Furness, to 20.7 in Aston Manor, 21.7 in Rotherham, 22.2 in Walsall, 23.1 in Middlesbrough, 23.5 in Wigan, 25.0 in Sheffield, and 32.2 in Merthyr Tydfil. In London the rate of mortality was 13.3 per 1,000, while it averaged 15.4 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2.9 per 1,000 in the seventy-six towns; in London this death-rate was equal to 2.2 per 1,000, while among the seventy-five other large towns the death-rates from the principal infectious diseases ranged upwards to 5.0 in Rotherham, 5.1 in West Ham and in Nottingham, 5.5 in Newport (Mon.), 5.6 in Rhondda, 5.9 in Warrington, 6.2 in Preston, 6.6 in Grimsby, and 8.7 in Sheffield. Measles caused a death-rate of 1.4 in Ipswich and 1.8 in South Shields; scarlet fever of 1.0 in Burnley; diphtheria of 1.2 in York and 1.6 in Smethwick; whooping-cough of 1.7 in Rotherham; and diarrhoea of 4.0 in Preston, 4.1 in West Ham, 4.3 in Nottingham, 4.5 in Warrington, 4.8 in Newport (Mon.), 5.2 in Rhondda, 6.6 in Grimsby, and 8.0 in Sheffield. The mortality from "fever" showed no marked excess in any of the large towns. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3,872, 4,020, and 4,328 at the end of the three preceding weeks, had further risen to 4,543 at the end of last week: 759 new cases were admitted during the week, against 574, 695, and 787 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, October 5th, 859 births and 457 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.3 and 13.6 per 1,000 in the two preceding weeks, declined again last week to 13.2 per 1,000, and was 1.6 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 8.5 in Dundee and 8.7 in Leith to 13.9 in Greenock and 15.0 in Glasgow and in Perth. The death-rate from the principal infectious diseases averaged 1.6 per 1,000 in these towns, the highest rates being recorded in Glasgow and Paisley. The 244 deaths registered in Glasgow included 2 which were referred to scarlet fever, 8 to whooping-cough, 15 to diarrhoea, and 7 to cerebro-spinal meningitis. Three fatal cases of whooping-cough were recorded in Edinburgh; 4 of diarrhoea in Aberdeen; 2 of diphtheria and 2 of diarrhoea in Paisley; and 2 of whooping-cough in Leith.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, October 5th, 517 births and 363 deaths were registered in six of the principal Irish towns, as against 581 births and 529 deaths in the preceding period. The annual death-rate in these towns, which had been 16.8, 15.1, and 19.8 per 1,000 in the three preceding weeks, rose to 22.5 per 1,000 in the week under notice, this figure being 7.7 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 9.8 in Londonderry and 15.0 in Limerick to 26.0 in Cork and 44.8 in Waterford. The zymotic death-rate in the same six Irish towns averaged 2.3 per 1,000, or 0.6 per 1,000 lower than during the preceding period, the highest figure—6.2—being recorded in Cork, while Londonderry and Limerick registered no deaths under this heading at all. The deaths in Belfast included 2 ascribed to cerebro-spinal fever.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRMINGHAM CITY.—Assistant Medical Officer of Health. Salary, £280 per annum.

BIRMINGHAM CITY ASYLUM, Rubery Hill.—Male Assistant Medical Officer. Salary, £110 per annum.

BIRMINGHAM EAR AND THROAT HOSPITAL.—Anaesthetist. Honorarium, 25 guineas per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon. Salary, £150 per annum.

BIRMINGHAM GENERAL HOSPITAL.—(1) House-Surgeon; (2) Resident Pathologist. Salary at the rate of £50 per annum each.

BOURNEMOUTH: ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House-Surgeon. Salary at the rate of £80 per annum.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—House-Surgeon. Salary, £160 per annum.

BRISTOL ROYAL INFIRMARY.—(1) House-Surgeon; (2) House-Physician. Salary, £100 per annum each.

BROMPTON HOSPITAL SANATORIUM.—Assistant Medical Officer. Salary, £150 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £150 per annum.

CHELTENHAM GENERAL HOSPITAL.—House-Physician. Salary, £65 per annum.

CHORLTON UNION.—Senior Resident Medical Officer at the Workhouse Hospital. Salary, £100 per annum.

DERBYSHIRE ROYAL INFIRMARY.—Gynaecologist.

EDINBURGH DISTRICT ASYLUM, Bangour Village.—Second Assistant Physician. Salary, £120 per annum.

EDINBURGH: ROYAL EDINBURGH ASYLUM, Morningside.—Fourth Assistant Physician.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House-Physician. Salary at the rate of £80 per annum.

FINSBURY BOROUGH COUNCIL.—Medical Officer of Health. Salary, £500 per annum.

GLASGOW ROYAL ASYLUM, Gartnavel.—(1) Senior House-Physician, (2) Junior House-Physician. Salary at the rate of £200 and £150 per annum respectively.

GLOUCESTER GENERAL INFIRMARY.—Assistant House Surgeon. Remuneration at the rate of £30 per annum.

HOSPITAL FOR WOMEN, Soho Square, W.—Pathologist and Curator of Museum. Honorarium, 50 guineas per annum.

HUDDERSFIELD INFIRMARY.—Junior Male Assistant House-Surgeon. Salary, £60 per annum.

KENT AND CANTERBURY HOSPITAL.—(1) House-Physician. (2) House-Surgeon. Salary, £90 per annum each.

KING'S COLLEGE HOSPITAL, W.C.—Senior Obstetric Registrar and Tutor.

LEEDS HOSPITAL FOR WOMEN.—House-Surgeon. Salary at the rate of £50 per annum.

LEEDS UNION.—Assistant Medical Officer. Salary, £120 per annum.

LENZIE: WOODILEE ASYLUM.—Second Assistant Medical Officer. Salary to commence, £150 per annum.

LEWES DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary, £120 per annum.

LIVERPOOL: STANLEY HOSPITAL.—House-Surgeon.

MARGATE: ROYAL SEA-BATHING INFIRMARY.—Resident Surgeon, to serve as Junior and subsequently as Senior. Salary at the rate of £80 and £120 per annum respectively.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary, £160, increasing to £180 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer. Salary, £80 per annum.

NORTH RIDING LUNATIC ASYLUM, Clifton, York.—Male Junior Assistant Medical Officer. Salary, £150, rising to £200 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—(1) House-Physician. (2) House-Surgeon. Salary at the rate of 50 guineas a year each.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—(1) House-Physician; salary, £50 per annum. (2) House-Surgeon; salary, £100 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130, rising to £150 per annum.

ROYAL EAR HOSPITAL, Dean Street, Soho.—(1) Assistant Surgeon. (2) Assistant Anaesthetist. (3) House-Surgeon. Honorarium £40 per annum for (3).

SHEFFIELD UNION HOSPITAL.—(1) Resident Medical Officer; salary, £300 per annum. (2) Two Assistant Resident Medical Officers; salary, £80 and £60 per annum respectively.

SUNDERLAND BOROUGH ASYLUM.—Assistant Medical Officer. Salary, £120, rising to £150 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—(1) Senior House-Physician, (2) House-Physician, (3) Second House-Surgeon. Salary, £100, £80, and £50 per annum respectively.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Northwich, co. Chester; Antrim, co. Antrim; and Topsham, co. Devon.

APPOINTMENTS.

EVANS, R. E., M.D.Edin., Certifying Factory Surgeon for the Newcastleton District, co. Roxburgh.

PELLOW, J. E., M.B., B.C.Camb., District Medical Officer of the Bodmin Union.

POWER, P. W., L.R.C.P. and S.I., Resident Assistant Medical Officer at the Oldham Union Workhouse.

REID, James Robertson, M.D., Medical Officer and Public Vaccinator to the Birkdale District of the Ormskirk Union, vice W. H. Iddon, resigned.

SANKEY, R. H., M.B., Public Vaccinator for the United Parishes comprised in the Oxford Incorporation.

THOMAS, F. P. S., M.B., Ch.B.Vict., District Medical Officer of the Wolstanton and Burslem Union.

TURNOR, P. W., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Penkridge District, co. Stafford.

VAN BUREN, A. Claude, M.D.Lond., Honorary Anaesthetist to the Torbay Hospital, Torquay.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BEATTIE.—At 386, Glossop Road, Sheffield, on September 29th, the wife of Professor J. M. Beattie, M.D.Edin., of a daughter.

SAMUEL.—On September 27th, at Grasmere, Skewen, near Neath, the wife of D. Samuel, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

DURHAM—HARMER.—On September 28th, at St. Mary's, Monmouth, by the Rev. C. F. Reeks, Vicar of Monmouth, assisted by the Rev. W. S. Feetham and the Rev. C. T. C. Jefferys, Herbert E. Durham, M.A., M B., F.R C.S., son of the late Arthur E. Durham, Consulting Surgeon, Guy's Hospital, to Maud Lowry, younger daughter of the late George William Moyse Harmer, late Captain, 81st Regiment, and Mrs. Harmer, Monk Street, Monmouth.

MARTIN—RABY.—On October 2nd, at St. John's Wesleyan Chapel, Manningham, Bradford, by the Rev. E Martin, father of the bridegroom, assisted by the Rev. S. Bingham Beattie and the Rev. E. O. Martin. Arthur Francis Martin, M.D Vict., to Margaret Dall, eldest daughter of the late Robert Cadwallader Raby, of Didsbury, Manchester, and Mrs. R. C. Raby, of Southport. At home, Park View Road, Manningham, October 30th, 31st, and November 1st.

DEATHS.

JOYNSON.—On October 4th, at his residence, Parkfield, Northwich, Dr. G. T. Joynson, aged 67 years.

MACLEOD.—At Glasgow, on October 1st, Norman Forbes MacLeod, M.B., Ch.B.Glasg., D.P.H.Lond., late Demonstrator in Hygiene, University College, London, son of the late Donald MacLeod, Lochview, Tarbert, Argyleshire.

MEAKIN.—On September 21st, at Nordrach-upon-Mendip, Captain Harold Budgett Meakin, M.D. (Indian Medical Service), aged 37. Indian papers, please copy.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—8 p.m., Annual Meeting; 8.30 p.m., Introductory Address by the incoming President, Dr. J. Kingston Fowler, and a paper by Dr. J. Rose Bradford, F.R.S., on Some Unusual Cases of Diabetes.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

PATHOLOGICAL SECTION, 20, Hanover Square, 8.30 p.m. —Presidential Address. Papers:—(1) Mr. Shattock and Mr. Dudgeon: Fatty Degeneration of the Blood. (2) Mr. W. G. Spencer and Mr. Shattock: Macroglossia Neuro-fibromatosa. (3) Mr Shattock and Dr. Seligmann: A Further Example of Hermaphroditism in the Fowl.

FRIDAY.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN, 11, Chandos Street, W.—5 p.m., Paper:—Dr. E. C. Williams (Bristol): The Simulation of Some of the Symptoms of Primary Amaurotic Idiocy by a Cerebral Tumour. Cases: Mr. Sydney Stephenson, Dr. Chisholm, Mr. George Pernet, Mr. Lockhart Mummery, Dr. Langmead, and others.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Tuesday and Friday, 3.45 p.m., Larynx.

CHARING CROSS HOSPITAL, W.C.—Thursday, 4 p.m., Surgical.

HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E.—Monday and Wednesday, 5 p.m., General Cutaneous Histopathology; Saturday, 5 p.m., Anatomy of the Morbid Skin, Method of Examination, Clinical Pathology.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Experiences of the Opsonic Method in Surgical Cases.

LONDON SCHOOL OF CLINICAL MEDICINE.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2.30 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m. Monday and noon Thursday; Skin, at noon and 4 p.m. Tuesday and at noon Friday; Eye, 11 a.m. Wednesday and Saturday; Radiography, 4 p.m. Thursday. Special Lectures, 2.15 p.m. Monday, Syphilitic Cachexia; 3.30 p.m. Wednesday, Conjunctivitis, its Varieties and Treatment.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eye. Lectures at 5.15 p.m. each day will be given as follows: Monday, Chronic Rheumatism: Its Pathology and Treatment; Tuesday, The Nervous System in Old Age; Wednesday, The Post-Influenzal Heart; Thursday, Cysts and Cystic Conditions of the Neck.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Out-patient Department, Fitzroy Square, W.—Thursday, 5 p.m., Lecture: Clothing in Health and Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday and Friday, 3.30 p.m., Cerebral Anatomy and Localization.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's Hospital, Tottenham, N.—The following are the Clinics and Demonstrations for next week:—Monday, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Throat, *X*-Ray; Tuesday, 10.30 a.m., Medical Out-patient; 2.30 p.m., Operations, Gynaecological and Surgical Out-patient; 4.30 p.m., Selected Skin Cases. Wednesday, 2.30 p.m., Medical Out-patient, Skin and Eye. Thursday, 2.30 p.m., Gynaecological Operations, Medical and Surgical Out-patient and *X*-ray; 3 p.m., Medical In-patient; 4.30 p.m., Lecture, Recent Discoveries in Tropical Diseases; Friday, 10 a.m., Surgical Out-patient; 2.30 p.m., Operations, Medical Out-patient and Eye; 3 p.m., Medical In-patient.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week: Daily, 2 p.m., Medical and Surgical Clinics, *X* Rays; 2.30 p.m., Operations; Monday and Thursday, 2 p.m., Diseases of the Eye (also Wednesday and Saturday, 2 p.m.); Tuesday and Friday, 10 a.m. Gynaecological Operations; 2 p.m., and Wednesday and Saturday, 10 a.m., Diseases of Throat, Nose, and Ear; Tuesday and Friday, 2.30 p.m., Diseases of Skin; Wednesday, 10 a.m., Diseases of Children. Lectures: At 12, Monday, Pathological Demonstration; at 5 p.m., Monday, Glaucoma and Uveitis; Tuesday, Insects as Carriers of Disease in Tropical Medicine; Wednesday, Practical Medicine; Thursday, Practical Surgery; Friday, The Rôle of Alcohol in Mental Diseases.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
OCTOBER.	
11 FRIDAY ...	LONDON: Central Ethical Committee, 2 p.m.
12 SATURDAY ...	
13 Sunday ...	
14 MONDAY ...	
15 TUESDAY ...	
16 WEDNESDAY	London: Arrangements Committee, 2.30 p.m. CENTRAL DIVISION, *Birmingham Branch*, Special Meeting, Medical Institute, 4 p.m. LEICESTER AND RUTLAND DIVISION, *Midland Branch*, Leicester Infirmary, 4.15 p.m. NORTH CUMBERLAND DIVISION, *Border Counties Branch*, Crown and Mitre, Carlisle, 3.30 p.m.; Committee, 3.15 p.m.
OCTOBER *(Continued).*	
17 THURSDAY...	CANTERBURY AND FAVERSHAM DIVISION, *South-Eastern Branch*, Cottage Hospital, Herne Bay, 3 p.m.; Lunch, 1.45 p.m. LEIGH DIVISION, *Lancashire and Cheshire Branch*, Special Meeting, Co-operative Rooms, Ellesmere Street, 8.30 p.m. NORTH MANCHESTER DIVISION, *Lancashire and Cheshire Branch*, Special Meeting, Palatine Hotel Manchester, 4.15 p.m. REIGATE DIVISION, *South-Eastern Branch*, Special Meeting, Laker's Hotel, Redhill, 8.30 p.m. WESTMINSTER DIVISION, *Metropolitan Counties Branch*, St. James's Vestry Hall, Piccadilly, 4.30 p.m.
18 FRIDAY ...	SOUTH ESSEX DIVISION, *East Anglian Branch*, Annual Meeting. Queen's Hotel, 7.45 p.m.; Dinner, 8 p.m.
19 SATURDAY...	ABERDEEN BRANCH, Annual Meeting, Grand Hotel, Aberdeen 1.15 p.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 19TH, 1907.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BATH AND BRISTOL BRANCH.

A MEETING of the Bath and Bristol Branch of the British Medical Association was held at the Medical Library of University College, Bristol, on October 7th, to which members of the profession in the surrounding district were invited.

New Rules of Bristol Royal Infirmary.—Dr. E. J. CAVE, the President of the Branch, stated that the meeting had been called to consider and discuss the rules passed on Tuesday, September 24th, by the Governors of the Bristol Royal Infirmary, and which were awaiting confirmation. Rule 36 was as follows:

> No member of the honorary staff shall hold any union or club appointment. No member of the full staff shall hold any other professional public appointment other than professorship or lectureship at any university, college, or school. No member of the assistant staff shall hold any other general hospital appointment, nor more than one special hospital appointment. That the full physicians shall limit their practice to medical work. That the full surgeons shall limit their practice to surgical work. That each of the specialists shall limit his practice to his speciality.

He reminded them that it was not the custom for individual members of the Association to make communications about meetings such as this to the lay press, but they should be communicated to the Honorary Secretary of the Division. He was sure the question would be treated as one affecting the profession as a whole. If they thought there were advantages to be gained by the rule, he hoped they would say so. If, on the other hand, they considered that there were elements of danger in the rule by preventing the best men from holding the highest posts in the profession, and if it was thought that the pressure of these rules tended to bar the younger men from applying for posts on the staff, it was against the interests of the surgeons and physicians of the infirmary and of the profession at large. Looking at it as an outsider, it seemed to him a very serious state of affairs and against the best interests of the science and art of medicine and surgery; and if the staff should feel it their duty to resort to extreme measures it would be a source of strength to know that they had the approval and united support of the profession in the district.

Mr. MUNRO SMITH said that the presence of so large a body of medical men showed that this question affected the profession at large and that their sympathy and approval could be counted on. He asked them not to think too much of the little discrepancies that had occurred amongst the staff, as all quarrels were by their nature misunderstandings. The staff wished to obtain the opinion of the meeting, which would be taken to the Medico-Political Committee and Hospitals Committee of the Association. A very important communication had been received from Mr. Smith Whitaker in answer to a letter sent by the late Dr. Markham Skerritt in reference to the dispute which occurred at Coventry. This letter, which was addressed to Dr. Rogers (who had very kindly assisted the infirmary staff in this matter), had an important bearing on the subject they were met to discuss. It expressed the opinion of the Medico-Political Committee:

> That a medical practitioner holding an appointment under a public body should not be debarred by that body from employing at his own discretion such portion of his time as is not devoted to the duties of that appointment, provided the proper discharge of those duties is not thereby interfered with.

Mr. Munro Smith went on to say that as long ago as April, the Faculty of the infirmary heard that the President intended to bring forward a rule that any one in future applying for a post on the honorary staff should give an undertaking not to apply for any outside appointment without obtaining the sanction of the Committee. A letter was sent to the President, signed by all the honorary and consulting staff, in which they strongly protested against any such legislation. He would quote one sentence which showed the general tenor of their protest:

> We think that, having given our services free to one hospital, and having spent much time in doing our work to the best of our ability at that institution, as a matter of principle it is only right and just that we should be free to use our other time in whatever way we may wish, provided that it is honourable, and in accordance with the rules.

This had no effect whatever, and on June 19th a communication was received from the Committee proposing to bring in the very rule to which the staff had unanimously objected. In answer to this a letter was sent to the Committee in which the opinion was expressed that it would be much better to leave things as they were. There was a Committee of Election which could prevent unsuitable men from joining the staff. That also apparently produced no effect, and on July 1st the staff were told by

their representatives that the Committee was resolved to go on with their intention. The Faculty then sent the following resolution to the Committee:

> The Faculty would like to consider any alteration of present rules by which the holding of external appointments might be curtailed or regulated, but consider the suggestion that the settlement of such questions should lie with the Committee in individual cases is unwise.

It was not, therefore, fair to say that the staff were unwilling to meet the Committee and discuss with them any reasonable rule; they were, in fact, most anxious to avoid anything like a conflict. They were quite willing to accept a great deal of curtailment, but they objected to the sweeping rule that no medical man should hold any other professional public appointment. After this certain members of the staff had interviews with the President, and then an event occurred which he could only describe as unfortunate; and in this matter it was not his intention to cast a slur on any member of the staff. A member sent to the President a list of rules which he thought would meet the case and would be accepted by the staff. He acted in perfect good faith and with an honest desire to do what was for the best; but these rules had previously been negatived by the Faculty. These rules were seized upon and sent back to them with a curt postscript to the effect that the President was anxious that there should be no further alteration. The staff could not accept these rules, but being willing to meet the President and Committee half-way, they sent back the following resolution, which was carried *nem. con.*

> With regard to future appointments to the Honorary Staff. Since it has been indicated to the Faculty in a letter from the Secretary of the Bristol Royal Infirmary that the President is willing to substitute certain alterations of rules in place of the additions proposed on June 11th—namely, "That before the appointment of any applicant to any post on the Honorary Staff, he shall consent not to apply for any other hospital or public appointment without the sanction of the Committee," the Faculty would rather accept and therefore acquiesce in the following modifications of the Rules as suggested in the letter referred to:
>
> 1. That no member of the Honorary Staff shall hold any union or club appointment.
> 2. That no member of the full Staff shall hold any other professional public appointment.
>
>   *As this rule stands it seems unfeasible.* We *assume* that certain exceptions are contemplated to this clause.
> 3. No member of the assistant staff shall hold any other general hospital appointment nor more than one special hospital appointment.
> 4. That the full physicians shall limit their practice to medical work.
> 5. That the full surgeons shall limit their practice to surgical work.
> 6. That each of the specialists shall limit his practice to his speciality.
>
> The Faculty notice the postscript: "Sir George particularly requests that no further alteration be suggested."
>
> But the Faculty, although acquiescing in the following do not in any way recede from the principle they have expressed to the Committee on the subject in their letter of April 17th, 1907, to Sir George White.

The staff acquiesced in these rules on the assumption that they would be modified. They expressly stated that they thought Clause No. 2 "unfeasible." The representative of the Faculty put before the Committee an outline of the alterations suggested by the staff; but they were treated with scant consideration, and he was told that the Committee would receive no further recommendations from the Faculty. Soon after this a notice appeared in the papers that these rules were to come before a Board meeting on September 24th. The day before the meeting—that is, September 23rd—the staff sent to the papers an outline of the whole case, concluding with a protest against these rules as they stood. This was signed by all members of the honorary staff who were in Clifton at the time the letter was sent to the press. If they were occasionally weak when they should have been strong in their opposition, they were influenced by a desire to avoid that worst of all calamities to a hospital—an open breach between the Committee and staff. They left their case with the meeting, and asked their opinion whether the large gathering of medical men present agreed with them in their opposition to this rule, and whether they further advised them to take any measures, however strong, which might be necessary to prevent its becoming law.

Dr. WATSON WILLIAMS stated that when representing the Faculty of the infirmary he pointed out to the Committee that the Faculty assumed that the rules would be subject to alteration, so as not to cover many appointments which the medical staff felt could never have been intended by the Committee to be referred to under the terms of the rules as proposed. Amongst these he cited professorships and lectureships, appointments under the Midwives Act, holding appointments, for instance, at an eye hospital, examinerships in lunacy, appointments as visitors to asylums, and so forth, all of which would naturally be filled by experts in their own departments; and that therefore, as it was hoped some of the greatest experts available would be at the Royal Infirmary, it was inconceivable to the Faculty that the Governors should desire to exclude members of their own staff from taking such offices. He further pointed out on behalf of the staff that in any case the rule restricting the practice of physicians, surgeons, and specialists to medicine, surgery, and specialities respectively (to which they entirely assented, and which they had even suggested), was already going further than any other hospital as far as the rules were concerned, and that the exclusion of other appointments, such as those he had mentioned, would place the staff at a grave disadvantage. He held that so long as any member of any hospital or charitable institution performed the duties imposed by his office, the Governors had no moral claim to interfere with or control his professional activity in any legitimate direction. He read a letter he had received from Professor Osler, giving his opinion on the matter. He wrote:

> I think the principle involved is most important. If we were paid officers there would be some warrant for interference. For example, at the Johns Hopkins Hospital, where I was paid £1,000 a year, I should not have felt it a hardship if the trustees had passed a rule that members of the staff should not belong to other institutions. I may say that the associate members of the staff, who correspond to the assistant surgeons and the assistant physicians, some of whom are very well-known men, are all members of the staff of another infirmary; and we did not find that it interfered with their good work at the Johns Hopkins. I think it is on the younger men particularly that such a restriction would fall very heavily.

Dr. T. M. CARTER then proposed the following resolution:

> That this meeting of the Bath and Bristol Branch of the British Medical Association, having considered the rule passed by the Governors of the Bristol Royal Infirmary on September 24th, 1907, regulating the holding of other public professional appointments by the members of the honorary staff, hereby expresses its conviction that this rule, if confirmed, would be inimical to the interests of the sick poor and derogatory to the honorary medical and surgical staff of that institution, and to the profession at large.

He pointed out that the present rule had been forced upon the staff by a lay committee, and he considered it to be derogatory to the profession at large. Those who had worked amongst the poorer classes of Bristol knew, to some extent, that there was a very serious and unequal contest between lay committees and medical men, the former dictating to the profession; and if these committees considered they had a right to force these considerations on paid officers, they would, in the future, be attempting to impose similar conditions on honorary medical officers. Not only must they not hold appointments in any other hospitals, but medical referees to assurance societies, examiners in universities, posts under the educational Boards, medical referees under the Factory Acts—none of these posts could be taken. Recently, for instance, the Bristol Board of Guardians decided to have consulting physicians and surgeons on the staff of their union infirmary, and these would come under the ban, as would also appointments in the volunteers and St. John Ambulance Brigade, and posts under the numerous charities with which Bristol abounded, and no member of the staff would be allowed to act as referee for the Winsley Sanatorium. It was hardly possible to show more clearly that this rule was a thoroughly bad one. There were certain paid posts which usually ranked as consultants' posts, and it was important that this status should be maintained. An increasing number of these paid posts, he thought, should be kept open to the

consultants on the hospital staffs. He thought they could not hesitate to support the staff in the present crisis.

Mr. J. Dacre, in seconding the resolution, said that if it was supported by the profession, the staff would be backed up in a way which would decide them how to act.

Dr. C. Elliott gathered that such a rule was in force at Manchester and Liverpool, and other large towns.

Mr. Munro Smith informed Dr. Elliott that there was no other hospital in the United Kingdom with such a rule, and

Dr. Walter Swayne said the rule gave no dispensing power whatever, but bound both staff and Committee.

Dr. B. Rogers pointed out that honorary medical officers gave their time and services for the sick, and not to the Committee for them to exploit the staff as they wished.

Dr. A. B. Prowse said that no compromise was now possible, as the door had been shut in their faces. The only response they had received to their offer for a consultation with the Committee was an offer from the President to meet the Faculty and not the Committee. Dr. Prowse thought that strengthened their position.

Dr. Michell Clarke, on behalf of the staff of the Bristol General Hospital, sympathized with the staff of the Royal Infirmary in the arbitrary treatment they had received, and he thought it was the unanimous wish of the Faculty to meet the most extraordinary position which the Committee had taken up. The hospitals in Bristol did not give the opportunities that hospitals in other large towns did. If a man went on the full staff of another institution that hospital benefited by his added experience, and he thought it only honourable of a man who found his work clashed at either institution to resign one of them. To say beforehand that he was not to hold other professional appointment was absurd. This action was not taken in their own interests, but in the interests of the patients. For their sake they should gain all the experience they could, and it was by accepting other appointments that experience was gained.

The resolution was put to the meeting and carried *nem. con.* After taking the vote of the Bath and Bristol Branch, the President asked all medical men present who were not members of the Branch to vote on the resolution, and this vote was also in favour *nem. con.*

Dr. J. J. S. Lucas then proposed the following resolution:

> This meeting advises the honorary medical staff to take the strongest possible measures in resisting this or any other rule which in effect embodies the substance of this rule.

This resolution, he considered, was the natural sequence of the first. There were two distinct parts of the rule—that which dealt with plural appointments; the other restricting members of the staff to a particular branch of medicine and surgery. The profession was mostly agreed as to the second part, and he thought it would be better if the staffs were composed solely of consultants and specialists. Regarding plural appointments, if a crisis must come, the general public would be the judge, and he was sure the Bristol public would judge rightly. The Committee had no right to restrict a medical man in what outside work he should do. Secondly, legislation, if necessary, and limitation of work should emanate from the medical men and not from a lay Committee. Thirdly, he thought the case of the staff had been unfairly represented in the President's speech. No real reason had been given why dual appointments should not be held. He advised the staff to stick to their guns. They had a very strong case and a strong medical principle to fight, and one which involved the interests of the general public.

Mr. G. T. Myles, in seconding the resolution, stated it was the logical sequel of the resolution previously passed. He doubted the judgement of the Committee in forcing this quarrel on the profession, and the firmest measures were necessary against such formidable opponents. A united staff was necessary, backed by an equally united profession. It would appear that this attack was aimed, through the staff, at the latest of the large hospitals in Bristol, whose Committee with sound judgement and foresight selected their staff from the staffs of other hospitals—thus making a bold attempt to co-ordinate hospital work, instead of setting up a rival. This rule, if not resisted with heart and soul, would suggest to other Committees to follow suit, and increase the stringency of their rules. If the meeting supported the staff, and the latter decided to tender their resignation, it would place them in an impregnable position, thereby establishing a court of appeal for the future.

The resolution was put to the meeting and carried *nem. con.* The President also took the vote of medical men who were not members of the Branch and it was also given *nem. con.*

Dr. E. W. Hey Groves suggested that as the support of the profession in the district could be counted on, each member should do his best to use any influence he might have on the members of the Committee of the infirmary.

Mr. Smith Whitaker stated that, as Medical Secretary of the Association, he had been authorized to attend the meeting on behalf of the Central Hospitals Committee in order that he might report to that Committee as to the feeling of the meeting, and also in order that he might give the meeting any advice that might be desired as to the procedure of the Association in dealing with such cases, but he was not authorized to express any opinion with regard to the new rule of the hospital, or as to whether it should or should not be resisted. The question of the support which the Central Council could be recommended to give to the Branch in that respect would be considered by the Hospitals Committee on Thursday. The resolutions that day, however, had indicated the disposition of the local profession to give all possible support to the infirmary staff, and it might be useful to them to know what action had been taken in cases in which it was desired to give support of an analogous kind in other districts. Reference had been made to a pronouncement which he had been directed to forward some six months ago to the late Dr. Markham Skerritt, and which was thought to have some bearing on their case. That pronouncement was made with regard to the Medical Officer of Health for Coventry. Another case in which action had been taken in support of a medical officer of health was at Southend, particulars of which case had recently appeared in the British Medical Journal. Reference was also made to the dispute between the local profession and the infirmary at Leigh, in Lancashire, in which the action of the Association was successful, and resulted in the establishment of harmonious relations between the infirmary Committee and the profession. In all such cases experience has shown the importance of Divisions and Branches having adopted suitable rules. Such rules had not been adopted up to the present by the Bath and Bristol Branch, but he was glad to learn that there was a proposal that the matter should be considered at an early date. Copies of the model rules approved by the Central Council would be supplied for their consideration.

Mr. Munro Smith proposed that a meeting of the Division should be called at the earliest possible date to consider the drafting of ethical rules, modelled on those approved by the Central Committee of the Association.

This was seconded by Dr. Prowse, and carried.

Vote of Thanks.—Dr. James Swain proposed a hearty vote of thanks to Mr. Smith Whitaker, and this was carried with acclamation.

EDINBURGH BRANCH:

South-Eastern Counties Division.

The autumn meeting of the Division was held in the King's Arms Hotel, Melrose, on the afternoon of Thursday, September 26th, at 3 o'clock; Dr. Bannerman, Chairman, presiding.

Confirmation of Minutes.—The minutes of the annual meeting were read, approved, and signed by the Chairman.

Annual Representative Meeting.—In the absence of Dr. Blair, the Representative, Dr. Calvert read a report of the Representative Meeting which Dr. Blair had forwarded. In regard to the Journal and Finance Committee, as instructed, he said he had voted for one Committee, and was one of the minority of five; but from later information he was persuaded that the majority was probably right, in view of the rapid evolution of work, and that a Finance Committee alone will conduce to a more efficient control of the purse—be more economical, and not hamper in any way the Journal Committee. He stated also that

the general trend of opinion in the Representative Meeting had been progressive, and the interests of the members of the profession were ever on the top. He recommended the Division strongly to approve of the resolutions of the Representative Meeting. He mentioned that he had voted against the appointment of a new Medical Assistant Secretary at a salary of £600 a year, as he thought the extra work might easily have been met by an adequate addition to the clerical staff at much less cost. Dr. BANNERMAN moved a hearty vote of thanks to Dr. Blair for the trouble he had taken in writing and forwarding such an exhaustive report. This was unanimously accorded.

The Charter Referendum.—The meeting next dealt with the Referendum on certain clauses of the Charter. Minute No. 123 was approved. Nos. 283, 287, 293, 298, 299, 303, 328, 330, 342, and 346 were disapproved.

Paper.—Dr. JEFFREY read a paper on two cases of appendicitis of a most interesting character. In the first, on which he operated, there was an extraordinary ectopia of the caecum; it was found after prolonged search lying in the front of the right kidney, and on the under surface of the liver was a firm mass in which was the appendix erect and hard. The other case was not operated on. A girl, aged 27, had pain and sickness, but no localized tenderness, temperature, or quickening of pulse. On the third day a lump was felt above Poupart's ligament which became tender and the pulse went up to 102. By the seventeenth day there was nothing in the loin and no pain or temperature; the bowels were regular and the appetite good. The patient was sitting up in bed when suddenly on the eighteenth day she complained of pain in the chest and numbness in the legs. In two or three minutes she was dead, due no doubt to a clot in the pulmonary artery.

Vote of Thanks.—Dr. SOMERVILLE proposed a vote of thanks to Dr. Jeffrey for bringing two such very interesting cases before the Division. This was unanimously agreed to.

Annual Dinner.—It was agreed to hold the annual dinner in the Douglas Hotel, Galashiels, on the evening of Friday, November 8th next, and the Secretary was instructed to ask Drs. Henderson and Tyrell, members of the Executive Committee, to carry out the necessary arrangements along with the other members of the Division residing in Galashiels.

Association Notices.

COUNCIL MEETING.

A MEETING of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 30th, in the Board Room of the Metropolitan Asylums Board, by kind permission of the Board. The offices of the Metropolitan Asylums Board are situate on the Victoria Embankment at the corner of Carmelite Street and near Blackfriars Bridge.

GUY ELLISTON,
Oct. 3rd, 1907. *General Secretary.*

BRANCH AND DIVISION MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH.—The autumn meeting of the Border Counties Branch will be held in the County Buildings, Dumfries, on Friday, November 1st, when Dr. Gibson (Edinburgh) will give an address.—F. R. HILL, Honorary Secretary, Carlisle.

DORSET AND WEST HANTS BRANCH.—The autumn meeting will be held in the Town Hall, Blandford, on Wednesday, October 23rd, at 3 p.m., the President, Dr. J. Macpherson Lawrie, D.L., J.P., in the chair. Agenda: (1) The minutes of the last meeting; (2) the election of officers for 1908—(*a*) president, (*b*) two vice-presidents, (*c*) honorary secretary and treasurer; (3) the date and place for the spring meeting of 1908; (4) a communication from the Reigate Division of the South-Eastern Branch; (5) Dr. W. Johnson Smyth will read a paper entitled "Psychic Treatment in Certain Functional Disorders"; (6) Dr. A. Humphrey Davy will read Notes on Two Cases of Epigastric Tumour; (7) Mr. W. J. Midelton will read a short paper entitled, Some Remarks on Counter-irritation in the Treatment of Disease; (8) Mr. W. Burrough Cosens will communicate Notes on Reflex Symptoms; (9) Mr. Bernard Scott will read Brief Notes on Three Unusual Abdominal Cases; (10) Mr. G. H. S. Daniell will make a few remarks on the Treatment of Fractures of the Femur by Hodgen's Splint. The apparatus will be exhibited and a patient recently treated by this method shown; (11) Dr. Francis O. Buckland will contribute concise notes on Metastatic Affections of the Eye; (12) Dr. W. G. Alexander, Vice-President, will open a discussion on Migraine. There will be an official luncheon at the Crown Hotel, Blandford, at 1.30 p.m.; price 2s. 6d., exclusive of wine, etc. Members arriving late can have luncheon up to 3 p.m. Mr. and Mrs. Williamson Daniell will be pleased to see members and their friends to tea, at Dale House, after the meeting. Will members who intend to be present be good enough to intimate the same to Mr. Daniell not later than Monday, October 21st?—JAMES DAVISON, Honorary Secretary, "Streateplace," Bournemouth.

METROPOLITAN COUNTIES BRANCH: LAMBETH DIVISION.—The opening meeting of the Lambeth Division will be held at Camberwell Infirmary on Thursday, October 24th, at 4 p.m. Agenda: (1) Minutes of the last meeting. (2) Final letter reporting satisfactory settlement of the Brixton Dispensary dispute. (3) Report from Dr. Esler, Representative of the Lambeth Division at the Representative Meeting at Exeter. (4) Cecil H. Leaf, F.R.C.S., will read a paper on the Diagnosis and Treatment of some Surgical Affections likely to be met with in General Practice. (5) Dr. Keats has kindly consented to conduct members and their medical friends over Camberwell Infirmary, and to show cases of interest.—HERBERT FRENCH, M.D., Honorary Secretary.

NORTHERN COUNTIES OF SCOTLAND BRANCH.—A meeting of the Branch will be held on Saturday, October 26th, at 12.30 p.m., in the Palace Hotel, Inverness. Agenda: Consideration of the Council's Referendum Report.—J. MUNRO MOIR, M.D., Honorary Secretary.

SOUTH-EASTERN BRANCH: CROYDON DIVISION.—A meeting will be held at the Cock Hotel, Sutton, on Wednesday, October 23rd, at 4 p.m. Chairman, Mr. A. C. Z. Cressy. Agenda: (1) Minutes of previous meeting; (2) to receive report of Representative at the Annual Meeting; (3) to arrange for the next meeting and to elect a chairman; (4) to consider the Referendum Report and Minority Report dealing with proposed Charter; (5) other business. The following papers will be read:—Mr. R. P. Rowlands, M.S.: The Place and Value of some Modern Methods of Examination for Diseases of the Urinary Organs. Dr. H. R. Andrew: The Treatment of Puerperal Eclampsia. Dinner at 6 p.m.; charge 5s., exclusive of wine. There will be an exhibition of instruments by Messrs. Down Bros. Members intending to stay to dinner are requested to communicate, if possible, with the Honorary Secretaries the day before the meeting.—E. H. WILLOCK, C. G. C. SCUDAMORE, Honorary Secretaries.

SOUTH-EASTERN BRANCH: GUILDFORD DIVISION.—The next meeting of this Division will be held at the Royal Surrey County Hospital, on Wednesday, October 30th, at 4.30 p.m. Dr. Anderson Morshead, Vice-Chairman of the Division, will take the chair. Agenda: (1) Minutes. (2) Election of Chairman for the ensuing year. (3) To consider the Referendum from the Central Council. (4) Terms of appointment and rates for contract practice in the Division. (5) Dr. H. A. Powell will read a paper on the Regulation of an Out-patient Department (to be followed by a discussion). (6) Cases will be shown by members of the hospital staff if time permits. (7) Any other business. Tea will be provided at 4.15. Dinner at 6.30 p.m., at the Lion Hotel, Guildford; charge, 6s., exclusive of wine.—E. J. SMYTH, Honorary Secretary, Guildford.

SOUTH MIDLAND BRANCH: NORTHAMPTONSHIRE DIVISION.—A meeting of this Division will be held on October 22nd, in the Board-room of the Northampton General Hospital, at 2.30, under the chairmanship of Mr. G. H. Percival. A luncheon will be provided before the meeting at Franklin's Restaurant, Guildhall Road, for those who wish for it. The Secretary will be obliged if the names of those wishing to have luncheon are sent to him at least two days before the meeting. Agenda: Minutes. Dr. Baxter's report of Representative Meeting. Referendum on Draft Charter. Finance inquiry report. Mrs. Watt Smyth's motion on the Training of School Teachers in Hygiene. Any other business. If time permits the staff of the hospital will show a few clinical cases.—PEVERELL S. HICHENS, Honorary Secretary.

WEST SOMERSET BRANCH.—The next meeting of this Branch will be held at the Taunton and Somerset Hospital, on Friday, October 25th, at 4 p.m., when the chair will be taken by the President, Dr. G. W. Harvey Bird. Address and Cinematographic Demonstration: Dr. H. Campbell Thomson, Assistant Physician to the Middlesex Hospital, has kindly consented to attend and read Clinical Notes on some Cases of Nervous Diseases, illustrated by the cinematograph. Among the cases illustrated will be different phases of Disseminated Sclerosis, Pseudo-hypertrophic Paralysis, Spastic Paraplegia, Cerebral Diplegia with Athetosis, Friedreich's Ataxy, Paralysis Agitans, Cerebellar Ataxy. Some of the chief points in these diseases will be demonstrated, and discussion invited on their clinical aspects. Subcommittee on Medical Certificates: The report of this Subcommittee will be presented. Association Business: Referendum on resolutions of Representative Meeting. This very important matter will be brought before the meeting, and divisions taken thereon. The reports relating to the matter will be sent to the members in a few days.—W. B. WINCKWORTH, Honorary Secretary.

Yorkshire Branch.—The next meeting of the Yorkshire Branch will be held at the University, Sheffield, on Wednesday, November 6th, at 4 p.m. Members wishing to read papers, show specimens or cases, or propose new members, are requested to communicate at once with the Honorary Secretary, Dr. Adolph Bronner, 33, Manor Row, Bradford.

CENTRAL MIDWIVES BOARD.

A meeting of the Central Midwives Board was held at Caxton House, Westminster, on October 10th, with Dr. F. H. Champneys in the chair.

Duties of Local Supervising Authorities.

A letter from the Under Secretary of State for the Home Department, as to the Board's request that the convictions of all certified midwives in police-courts should be reported directly to the Board, and inquiring whether, and in what manner, the existing system of report by the local supervising authority under Section 8 (4) of the Midwives Act had failed, was considered.

The Board decided that the Home Secretary be informed that there are local supervising authorities who fail to discharge their duties under the Midwives Act.

Power of Suspension by Local Supervising Authorities.

A letter from the Clerk to the Somerset County Council, inquiring as to the conditions under which the local supervising authority's power of suspension arises, was considered.

It was decided that the reply of the Board should be that there need not be a visible focus of infection before the power of the local supervising authority to suspend arises; that there must be reasonable grounds for apprehending infection in a particular area: that the question of what are reasonable grounds is a matter for the decision of the local supervising authority in each case; that a contravention of any of the rules laid down by the Board for the purpose of preventing the spread of infection (Rule F) would afford reasonable grounds for suspension; that the rules laid down for the purpose of preventing the spread of infection are Rules E, 1-5, 7-11, 14-16, 19; and notwithstanding that the local supervising authority alone has the power of suspension (and then only for the purpose of preventing "the spread of infection"), there are no means of enforcing an order of suspension except by a report to the Central Midwives Board, whose penal course would be to strike the offender off the Roll of Midwives.

Midwives' Name Plates.

Letters were considered from the Town Clerk of Bradford and from the Inspector of Midwives for Bradford, asking the Board to modify the terms of Rule E. 26, which is as follows: "The proper designation of a certified midwife is 'certified midwife'—thus, for example, Mary Smith, certified midwife. No abbreviation in the form of initial letters is permitted, nor any other description of the qualification."

The Board directed that the Town Clerk of Bradford and the Inspector of Midwives be informed that the Board cannot dispense with the enforcement of the rule.

Midwives and Operations.

A letter was considered from Dr. R. J. Paton, of the Newport and Monmouthshire Hospital, inquiring whether it is essential that candidates for the Board's examination should be taught the operations of applying the forceps, version, and stitching a ruptured perineum.

The Board directed that Dr. Paton be informed that the rules do not permit midwives to perform such operations.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Henry W. W. Townsend, Surgeon, to the *Patrol*, October 9th; Alfred B. Cox, M.B., Surgeon, lent to the *Black Prince*, temporary, October 11th; Edwin R. Grazebrook, Staff Surgeon, to the *Pembroke*, additional, to be lent to the *Wildfire* for the *Endymion*, October 26th.

ROYAL ARMY MEDICAL CORPS.

Colonel F. J. Lambkin, Lecturer on Syphilology at the Royal Army Medical College, has been selected for special duty in Uganda.

INDIAN MEDICAL SERVICE.

The undermentioned Captains are promoted to be Majors from July 29th: A. W. R. Cochrane, M.B., W. W. Clemesha, M.D., J. A. Black, M.B., J. C. Robertson, M.B., N. R. J. Rainier, E. L. Perry, W. J. Niblock, M.B. Their previous commissions are dated: Surgeon-Lieutenant, January 29th, 1896; Captain, January 29th, 1899. Major Robertson served with the Dongola Expedition in 1896, receiving a medal, and in the South African war in 1902, receiving the Queen's medal with two clasps. Major Perry was in the North-West Frontier of India campaign in 1891 with the Malakand Field Force in the expedition into the Mohmand country, including the attack of September 16th (mentioned in dispatches), and with the Waziristan Expedition in 1901-2 (medal and clasp). The other officers cited above have no war record in the Army Lists.

The promotion to be Majors of Captains A. Leventon, F. F. Chapman, M.B., A. Hooton, A. F. W. King, R. F. Standage, A. A. Gibbs, F. L. Blenkinsop, M.B., H. A. F. Knapton, and T. E. Watson, M.B., which has been announced in the British Medical Journal, has received the approval of the King.

The undermentioned are appointed to be Lieutenants, dated February 2nd: O. A. R. Berkeley-Hill, W. L. Harnett, J. T. Sands, W. P. G. Williams, S. B. Mehta, A. H. Napier, G. Holroyd, A. E. Grisewood, D. L. Graham, P. K. Tarapore, R. B. Nicholson, G. S. Husband, J. A. Cruickshank, J. A. S. Phillips, D. D. Kamat, S. C. Chuckerbutty, E. D. Simson, W. E. R. Williams, A. F. Babonan, P. M. Rennie, H. M. Inman, S. J. Bhathena, and F. O'D. Fawcett.

The King has sanctioned the retirement from the service of Lieutenant-Colonel W. Coates, M.D., which has been already announced in the British Medical Journal.

The following officers of the R.A.M.C., who are serving at the stations named, have been appointed specialists in the subjects specified:—Major M. Boyle, M.B. (Bareilly), Major J. Grech (Meerut), Captain A. H. Waring (Lahore), and Captain T. S. Coates, M.B. (Nasirabad), Electrical Science; Major G. St. C. Thom, M.B. (Ferozepore), Otology, Laryngology, and Rhinology; Captain H. G. Martin (Colaba) and Captain S. O. Hall (Secunderabad), Midwifery and Diseases of Women and Children.

The undermentioned officers of the I.M.S. have been appointed specialists as stated:—Captain V. B. Nesfield, in Advanced Operative Surgery; Captain A. E. J. Lister, M.B., in Ophthalmology; Captain P. G. Paston, in Electrical Science.

The following Lieutenants, appointed such September 1st, 1904, are promoted to be Captains, September 1st: H. S. Matson, D. Steel, F. H. Stewart, H. A. Dougan, A. Cameron, A. H. Proctor, M.D., R. T. Wells, I. M. Macrae, C. C. C. Shaw, M.B., R. D. MacGregor, J. W. H. Babington, A. S. M. Peebles, F. B. Shettle.

The following are the postings of Royal Army Medical Corps Officers to the command of station hospitals in India:—*Northern Army:* Lieutenant-Colonels M. W. O'Keeffe, M.D., to Peshawur; B. M. Skinner, M.V.O., to Sialkot; T. Daly to Ferozepore; F. H. Treherne to Ambala; R. E. R. Morse to Lucknow: H. A. Haines, M.D., to Fyzabad; E. H. L. Lynden-Bell, M.B., to Allahabad; W. B. Thomson to Calcutta; J. D. T. Reckitt to Murree; W. C. Beevor, M.B., C.M.G., to Dalhousie; W. T. Swan, M.B., to Chakrata; and W. W. Pike, D.S.O., from Burmah, to Darjeeling; Captain A. J. Hull to Jutogh. *Southern Army:* Lieutenant-Colonels R. L. R. Macleod, M.B., to Kurrachee; G. Cree to Madras; H. J. R. Moberly to Maymyo; and C. W. Thiele, M.B., to Wellington. *Aden Reliefs:* Captain J. M. H. Conway, to relieve Captain A. J. Williamson, M.B.: Lieutenant-Colonel J. Fallon to relieve Major F. G. Faichnie to command the Station Hospital at Aden; Captain B. H. V. Dunbar, M.D., to relieve Captain M. F. Foulds; Major F. R. Buswell to relieve Captain J. F. Whelan, M.B.; Captain C. H. Carr, M.D., to relieve Captain T. F. Ritchie, M.B. Owing to the evacuation of Dthala in the Hinterland, the establishment of Royal Army Medical Corps at Aden will, until further notice, consist of two field officers and three captains.

The undermentioned are to be transferred from Burmah (1907-8): Major H. W. K. Read to the 8th Division; Captain H. V. Bagshawe to the 7th Division, Ranikhet; Captain W. W. Browne to Landour; and Captain N. E. J. Harding, M.B., to Lebong.

Lieutenant Colonel J. Scott, M.B., Madras, is permitted to retire from the service, from October 23rd. He was appointed Assistant Surgeon, April 1st, 1882, and was made Lieutenant-Colonel, April 1st, 1902. He served with the Tochi Force in the North-West Frontier of India campaign in 1897-8, receiving a medal with clasp.

Lieutenant-Colonel A. R. P. Russell, M.B., Bengal, also retires from the service, October 11th. He joined the department as Surgeon, September 30th, 1886, and became Lieutenant-Colonel, September 30th, 1906. He was in the Burmese campaign in 1887-9 and has received a medal with clasp.

ROYAL MALTA ARTILLERY.

Surgeon-Lieutenant R. Randon, M.D., is promoted to be Surgeon-Captain, October 5th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Rev. G. F. C. de Carteret, M.A., formerly Acting Chaplain, 1st Gloucestershire Royal Engineers (Volunteers), is appointed Acting Chaplain to the Woolwich Companies, Eastern Command, July 23rd.

Captain J. A. Wolverson, Staffordshire Bearer Company, resigns his commission, August 10th.

ROYAL HOSPITAL, KILMAINHAM.

Lieutenant-Colonel R. J. Windle, M.B., R.A.M.C., to be Physician and Surgeon, vice Lieutenant-Colonel F. S. Heuston, C.M.G., R.A.M.C., October 1st.

Vital Statistics.

VITAL STATISTICS OF LONDON DURING THE THIRD QUARTER OF 1907.

In the accompanying table will be found summarized the vital statistics of the metropolitan boroughs and of the City of London, based upon the Registrar-General's returns for the third, or summer, quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the various boroughs, and are derived from a distribution of the deaths occurring in institutions among the several boroughs in which the deceased persons had previously resided. The 29,914 births registered in London during the three months under notice were equal to an annual rate of 25·2 per 1,000 of the population, estimated at 4,758,218 persons in the middle of the year; in the corresponding quarters of the three preceding years the rates were 27·6, 26·8, and 26·5 per 1,000, the average for the third quarters of the ten years 1897-1906 being 28·6 per 1,000. The birth-rates last quarter ranged from 13·8 in Hampstead, 14·2 in the City of London, 14·9 in the City of Westminster, and 17·6 in Kensington and in Chelsea, to 30·3 in St. Marylebone, 30·8 in Bethnal Green, 31·7 in Shoreditch, 32·1 in Stepney, and 33·7 in Finsbury.

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the Third Quarter of 1907.

BOROUGHS.	Estimated Population middle of 1907.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Principal Infectious Diseases.	Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Typhus.	Enteric Fever.	Ill-defined Pyrexia.	Diarrhoea.	Phthisis.	Deaths of Children Under 1 Year of Age to 1,000 Births.
COUNTY OF LONDON ...	4,758,218	29,914	13,677	25.2	11.5	1.42	1,678	—	404	168	162	364	—	39	1	540	1,330	98
Paddington	149,909	789	418	21.1	11.2	0.80	30	—	10	2	4	6	—	—	—	8	35	98
Kensington	181,842	799	492	17.6	10.9	0.92	42	—	10	—	6	8	—	2	—	16	45	125
Hammersmith ...	122,337	742	308	24.3	10.1	0 81	25	—	1	1	4	8	—	—	—	11	20	80
Fulham	166,749	1,102	475	26.5	11 4	1.86	78	—	18	6	6	16	—	3	—	29	34	117
Chelsea	74,857	329	228	17.6	12.2	1.88	35	—	15	—	2	8	—	—	—	10	25	134
City of Westminster	172,219	641	426	14.9	9.9	0.58	25	—	7	2	1	4	—	—	—	11	47	76
St. Marylebone ...	127,718	965	356	30.3	11.2	1.09	35	—	6	3	5	10	—	1	—	10	47	52
Hampstead	91,137	314	145	13.8	6.4	0.35	8	—	3	1	—	2	—	—	—	2	10	54
St. Pancras	236,753	1,339	658	22.7	11.1	1.30	77	—	25	7	5	23	—	2	—	15	71	103
Islington	347,017	2,034	940	23 5	10.9	1.32	115	—	44	10	14	16	—	3	—	28	81	83
Stoke Newington ...	53,613	260	107	19.5	8.0	0.81	11	—	3	1	2	3	—	—	—	2	4	81
Hackney	232,993	1,444	601	24.9	10.3	1.13	66	—	10	12	5	9	—	6	—	24	44	89
Holborn	55,134	403	197	29 3	14 3	1.30	18	—	5	1	1	5	—	—	—	6	36	82
Finsbury	96,732	813	335	33.7	13.9	1.37	33	—	14	3	4	5	—	—	—	7	44	66
City of London ...	20,310	72	63	14.2	12.4	0.20	1	—	1	—	—	—	—	—	—	—	8	14
Shoreditch	115,662	914	474	31.7	16.4	2 94	85	—	18	8	1	22	—	—	—	36	51	132
Bethnal Green ...	130,831	1,006	448	30.8	13.7	2.02	66	—	11	14	1	15	—	1	—	24	41	122
Stepney	308,923	2,469	1,012	32.1	13.1	2.04	157	—	13	22	24	29	—	5	1	63	102	110
Poplar	171,086	1,265	617	29.7	14.5	2.11	90	—	10	5	11	22	—	—	—	32	53	136
Southwark	209,781	1,463	768	28.0	14.7	2 18	114	—	45	10	9	6	—	1	—	43	71	126
Bermondsey	128,263	921	452	28.8	14.1	1.22	39	—	5	8	3	8	—	1	—	14	56	98
Lambeth	318,638	2,089	952	26.3	12 0	1.45	115	—	32	10	15	22	—	1	—	35	108	102
Battersea	181,736	1,110	503	24.5	11.2	1 83	83	—	32	8	5	21	—	3	—	14	49	96
Wandsworth	281,419	1,804	733	25.7	10.5	1.45	102	—	20	7	6	33	—	5	—	31	58	94
Camberwell	277,059	1,677	725	24.3	10.5	1.29	89	—	29	9	15	10	—	2	—	24	69	83
Deptford	116,510	835	324	28.7	11 2	1.41	41	—	9	5	4	10	—	2	—	11	34	92
Greenwich	107,222	615	275	23.0	10.3	1 57	42	—	2	7	2	12	—	1	—	18	20	106
Lewisham	152,532	893	323	23.5	8.5	0 68	26	—	4	4	6	6	—	—	—	6	29	73
Woolwich	129,336	807	312	25.0	9.7	0.93	30	—	2	2	1	15	—	—	—	10	33	88

The 13,677 deaths of persons belonging to London registered last quarter were equal to an annual rate of 11.5 per 1,000, against 15.8, 14.1, and 14 8 in the corresponding periods of the three preceding years; in the third quarters of the ten preceding years the rate averaged 16 6 per 1,000. The death-rates last quarter ranged from 6.4 in Hampstead, 8 0 in Stoke Newington, 8.5 in Lewisham, 9.7 in Woolwich, and 9.9 in the City of Westminster, to 14.1 in Bermondsey, 14.3 in Holborn, 14.5 in Poplar, 14.7 in Southwark, and 16.4 in Shoreditch.

During last quarter 1,678 deaths were referred to the principal infectious diseases; of these, 404 resulted from measles, 168 from scarlet fever, 162 from diphtheria, 364 from whooping cough, 39 from enteric fever, 1 from ill-defined pyrexia, 540 from diarrhoea, and not any from small-pox or from typhus. These 1,678 deaths were equal to an annual rate of 1.42 per 1,000, against an average rate of 3.68 per 1,000 in the corresponding periods of the ten preceding years. The lowest death-rates last quarter from these principal infectious diseases were 0.20 in the City of London, 0 35 in Hampstead, 0 58 in the City of Westminster, 0.68 in Lewisham, and 0 80 in Paddington; the highest rates were 2 02 in Bethnal Green, 2 04 in Stepney, 2.11 in Poplar, 2 18 in Southwark, and 2 94 in Shoreditch. Measles showed the greatest proportional fatality in Chelsea, Islington, Finsbury, Shoreditch, Southwark, and Battersea; scarlet fever in Hackney, Shoreditch, Bethnal Green, Stepney, Bermondsey, and Greenwich; diphtheria in Finsbury, Stepney, Poplar, Southwark, Lambeth, and Camberwell; whooping-cough in Chelsea, Shoreditch, Bethnal Green, Poplar, Battersea, Wandsworth, and Woolwich; "fever" in Fulham, Hackney, Stepney, Battersea, Wandsworth, and Deptford; and diarrhoea in Fulham, Shoreditch, Bethnal Green, Stepney, Poplar, and Southwark.

During the three months under notice 1,330 deaths from phthisis were registered, equal to an annual rate of 1.12 per 1,000, the rates in the corresponding quarters of the three preceding years having been 1.36, 1.22 and 1.23 per 1,000. The mortality from this disease last quarter was proportionally lowest in Hammersmith, Hampstead, Stoke Newington, Hackney, Greenwich, and Lewisham; and highest in St. Marylebone, Holborn, Finsbury, the City of London, Shoreditch, and Bermondsey.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 93 per 1,000, against 208, 171 and 187 in the corresponding periods of the three preceding years; in the third quarters of the ten years 1897-1906 the rate averaged 205 per 1,000. The lowest rates of infant mortality last quarter were recorded in the Cities of London and Westminster, and in St. Marylebone, Hampstead, Finsbury and Lewisham; and the highest rates in Kensington, Chelsea, Shoreditch, Poplar, and Southwark.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 7,719 births and 4,839 deaths were registered during the week ending Saturday last, October 12th. The annual rate of mortality in these towns, which had been 13.5, 14.5, and 14 8 per 1,000 in the three preceding weeks, further rose last week to 15.7 per 1,000. The rates in the several towns ranged from 6.6 in Willesden, 8.1 in Hornsey, 8.5 in Halifax, 9 8 in Bournemouth, 9 9 in Great Yarmouth, and 10.0 in Ipswich, to 21 4 in Liverpool and in Huddersfield, 21.7 in Sheffield, 22 8 in Rhondda, 23.1 in Bolton, 23.2 in Stockport, 23 4 in York, 24.1 in Wigan, and 25.4 in Merthyr Tydfil. In London the rate of mortality was 14.4 per 1,000, while it averaged 16 3 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2.9 per 1.000 in the seventy-six towns; in London this death-rate was equal to 2.0 per 1,000, while among the seventy-five other large towns the death-rates from the principal infectious diseases ranged upwards to 6.0 in Rhondda, 6.2 in Newport (Mon.), 6 9 in Sheffield, 7.1 in Wigan, 7.4 in York, 7.7 in Stockport, and 9.6 in Merthyr Tydfil. Measles caused a death-rate of 1.0 in Newcastle-on-Tyne, 1.7 in Barrow-in-Furness, 2.9 in Burton-on-Trent, and 4.1 in Merthyr Tydfil; scarlet fever of 1.0 in Wolverhampton; diphtheria of 1.0 in Middlesbrough, 1.3 in Leyton, 1.4 in Newport (Mon.), and 1.5 in East Ham; whooping-cough of 1.1 in Newcastle-on-Tyne, and 1.2 in Rochdale; "fever" of 1.2 in York; and diarrhoea of 5.0 in Burnley, 5.6 in Sheffield and in Rhondda, 5.8 in Rotherham, 5.9 in Wigan, 6.2 in York, and 6.7 in Stockport. No fatal case of small-pox was registered in any of the seventy-six towns during the week under notice. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 4,020, 4,328, and 4,542 at the end of the three preceding weeks, had further risen to 4,752 at the end of last week; 752 new cases were admitted during the week, against 695, 787, and 759 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, October 12th, 955 births and 479 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.6 and 13 2 per 1,000 in the two preceding weeks, rose again to 13.8 per 1,000 last week, but was 1 9 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 7.5 in Perth and 11.1 in Aberdeen, to 16.1 in Greenock and 18 8 in Paisley. The death-rate from the principal infectious diseases averaged 2 3 per 1,000 in these towns, the highest rates being recorded in Glasgow and Paisley. The 227 deaths registered in Glasgow included 5 which were referred to measles, 4 to diphtheria, 7 to whooping-cough, 2 to typhus, 3 to enteric fever, 4 to cerebro-spinal meningitis, and 24 to diarrhoea. Four fatal cases of whooping-cough and 2 of diarrhoea were recorded in Edinburgh; 3 of measles, 2 of whooping-cough, and 3 of diarrhoea in Dundee; 3 of diarrhoea in Aberdeen; 3 of diphtheria in Paisley; and 2 of diarrhoea in Leith and in Greenock.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, October 12th, 422 births and 386 deaths were registered in six of the principal Irish towns, as against 517 births and 363 deaths in the preceding period. The annual death-rate in these towns, which had been 15 1, 19 3, and 22.5 per 1,000 in the three preceding weeks, fell to 21.2 per 1,000 in the week under noticer this figure being 5 5 per 1,000 higher than the mean annual rate fo the seventy-six English towns for the corresponding period. The figures ranged from 13 5 in Londonderry and 20 5 in Limerick to 23.4 in Waterford and 27.4 in Cork. The zymotic death-rate in the same six Irish towns averaged 5 6 per 1,000, or 3.3 per 1 000 higher than during the preceding period, the highest figure, 11 7, being recorded in Waterford. The sudden jump seen in the rate was mainly due to cases of measles, whooping-cough, and diphtheria.

Vacancies and Appointments.

VACANCIES.

BETHNAL GREEN INFIRMARY.—Assistant Medical Officer. Salary at the rate of £100 per annum.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR CHILDREN.—Resident Surgical Officer. Salary, £60 per annum, rising to £80.

BIRMINGHAM: CITY OF.—Assistant Medical Officer of Health. Salary, £250 per annum.

BRISTOL ROYAL INFIRMARY.—(1) House-Surgeon; (2) House-Physician. Salary, £100 per annum each.

CHELTENHAM GENERAL HOSPITAL.—House-Physician. Salary, £65 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—(1) Assistant Surgeon; (2) House-Physician; salary at the rate of £80 per annum.

GLASGOW ROYAL ASYLUM, Gartnavel.—(1) Senior House-Physician, (2) Junior House-Physician. Salary at the rate of £200 and £150 per annum respectively.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £30 per annum.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Anaesthetist. Honorarium, 10 guineas per annum.

HOSPITAL FOR WOMEN, Soho, W.—Clinical Assistants.

KENT AND CANTERBURY HOSPITAL.—(1) House-Physician. (2) House-Surgeon. Salary, £90 per annum each.

LANCASTER: COUNTY LUNATIC ASYLUM.—Assistant Medical Officer. Salary, £150 per annum, increasing to £250.

LEEDS HOSPITAL FOR WOMEN.—House-Surgeon. Salary at the rate of £50 per annum.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary, £100 per annum, increasing to £110 on reappointment.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £100 per annum.

MANCHESTER CORPORATION.—Fourth Medical Assistant, at the Monsall Fever Hospital. Salary, £100 per annum.

MANCHESTER ROYAL INFIRMARY.—Assistant Medical Officer for Out-patients. Salary, £105 per annum.

MARGATE: ROYAL SEA-BATHING INFIRMARY.—Resident Surgeon, to serve as Junior and subsequently as Senior. Salary at the rate of £80 and £120 per annum respectively.

MILLER HOSPITAL, Greenwich, S.E.—House-Surgeon. Salary at the rate of £80 per annum.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary, £160, increasing to £180 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer. Salary, £80 per annum.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon, male. Salary, £180 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—(1) House-Physician. (2) House-Surgeon. Salary at the rate of 50 guineas a year each.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—(1) House-Physician; salary, £50 per annum. (2) House-Surgeon; salary, £100 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—Assistant House Surgeon. Salary, at the rate of £60 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130, rising to £150 per annum.

ROCHESTER: ST. BARTHOLOMEW'S HOSPITAL.—House-Physician. Salary, £110 per annum.

ROYAL EAR HOSPITAL, Dean Street, Soho.—(1) Assistant Surgeon, (2) Assistant Anaesthetist, (3) House-Surgeon. Honorarium £40 per annum for (3).

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Demonstrator of Biology. Salary, £70 per annum.

SHEFFIELD ROYAL HOSPITAL.—Assistant House-Physician. Salary, £50 per annum.

SHEFFIELD UNION HOSPITAL.—Resident Assistant Medical Officer. Salary, £80 per annum and £20 for emergency services at the Workhouse.

SOUTHAMPTON: FREE EYE HOSPITAL.—House-Surgeon. Salary £70 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon. Salary at the rate of £70 per annum.

SUNDERLAND BOROUGH ASYLUM.—Assistant Medical Officer. Salary, £120, rising to £150 per annum.

SUNDERLAND INFIRMARY.—House-Surgeon. Salary, £80 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—Honorary Anaesthetist.

WAKEFIELD: CLAYTON HOSPITAL.—Two House-Surgeons. Salary, £120 and £30 per annum respectively.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck Street, W.—Honorary Medical Officer in charge of Electrical Department.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—(1) Senior House-Physician, (2) House-Physician, (3) Second House-Surgeon. Salary, £100, £80, and £50 per annum respectively.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Leamington, co. Warwick.

APPOINTMENTS.

BARLOW, T. W. N., M.R.C.S., L.R.C.P.Lond., D.P.H.Camb., Medical Officer of Health for the Urban District Council of Wallasey.

BEAMAN, E. H., L.R.C.P. and S.I., District Medical Officer of the Wakefield Union.

BEVERIDGE, A. J., M.B., C.M.Edin., District Medical Officer of the Bethnal Green Parish.

BRAY, P. D., M.R.C.S., Clinical Assistant to the Chelsea Hospital for Women.

BROWN, A. Carnarvon, M.R.C.S.Eng., L.R.C.P.Lond., Resident Medical Officer at the Farringdon General Dispensary and Lying-in Charity, Bartlett's Buildings, E.C.

CAMPBELL, F. Stewart, M.D., C.M.Glasg., to be Medical Referee under the Workmen's Compensation Act (1906) for the Sheriffdom of Renfrew and Bute, and to be particularly attached to the county of Renfrew.

CHAPEL, K., M.B., Ch.B.Edin., Certifying Factory Surgeon for the Rothwell District, co. Northampton.

COX, E. T., M.D., District Medical Officer of the Steyning Union.

CRUICKSHANK, I., D., M.D.Aberd., Lecturer in School and Personal Hygiene to the Provincial Committee for Training of Teachers (Aberdeen Centre).

CUNLIFFE, E. N., M.D.Vict., M.B., B.S.Lond., M.R.C.P.Lond., Honorary Consulting Physician of the Colne Cottage Hospital, vice Julius Dreschfeld, M.D., F.R.C.P., deceased.

DAVIDSON, James A., M.B., Ch.B.Aberd., Junior House-Surgeon, Croydon General Hospital.

ELLIOTT, J. L., L.S.A., District Medical Officer of the Hemsworth Union.

FERGUSON, W. B. O., M.B., C.M.Glasg., District Medical Officer of the Whitby Union.

FISHER, H. W., M.R.C.S., L.R.C.P., District Medical Officer of the Downham Union.

HOLLINGS, H. T., L.R.C.P. and S.Edin., Medical Officer of Health, Sherburn Rural District.

RATCLIFFE, J. R., M.B., C.M., Resident Assistant Medical Officer, Birmingham Parish Infirmary.

ROSS, C. J., M.B., Clinical Assistant to the Chelsea Hospital for Women.

WRANGHAM, William, M.D.Lond., M.R.C.S., L.R.C.P., Chief Police Surgeon for the City of Bradford.

EDINBURGH ROYAL INFIRMARY.—The following appointments have been made for six months from October 1st:

Resident Physicians: W. H. Welsh, M.B., Ch.B., to Professor Sir T. R. Fraser; J. S. Edwards, M.B., Ch.B., to Professor Greenfield; J. Mathewson, M.A., M.B., Ch.B., to Professor Wyllie; J. E. Murray, M.B., Ch.B., to Dr. Bramwell; A. I. Shepheard-Walwyn, M.B., Ch.B., to Dr. Gibson; H. J. More, M.B., Ch.B., to Dr. Bruce; J. P. Lowson, M.B., Ch.B., to Dr. Philip; and G. M. Melville, M.B., Ch.B., to Dr. Russell.

Resident Surgeons: J. B. M'Morland, M.B., Ch.B., to Professor Annandale; M. S. Fraser, M.B., Ch.B., to Professor Chiene, C.B.; J. M. Christie, M.B., Ch.B., to Mr. Cotterill; A. MacD. Dick, M.B., Ch.B., to Mr. Caird; R. St. C. Steuart, M.B., Ch.B., to Mr. Hodsdon; A. E. Bennee, M.B., Ch.B., to Dr. A. H. F. Barbour; A. P. Wall, M.B., Ch.B., to Mr. Brewis; and R. Gibson, M.B., Ch.B., J. N. MacLaughlin, M.B., Ch.B., and A. C. B. M'Murtrie, M.B., Ch.B., to the surgical out-patient department.

Non-Resident House-Physician: J. L. Annan, M.B., Ch.B., to Dr. Norman Walker.

Non-Resident House-Surgeons: J. A. Jamieson, M.B., Ch.B., to Dr. George Mackay; J. D. Bowie, M.B., Ch.B., to Dr. W. G. Sym; and A. M'Kendrick, F.R.C.S., to Mr. Miles.

Clinical Assistants.—R. H. Jamieson, M.B., Ch.B., and C. I. Milne, M.B., Ch.B., to Professor Sir T. R. Fraser; C. A. Thelander, M.B., Ch.B., to Professor Greenfield; A. P. Mitchell, M.B., Ch.B., to Professor Wyllie; G. Henderson, M.B., Ch.B., to Dr. Gibson; W. K. Macdonald, M.B., Ch.B., to Dr. Bruce; F. L. Scott, L.R.C.P. and S.Edin., to Dr. Philip; D. M. Barcroft, M.B., Ch.B., to Dr. Russell; A. Fleming, M.B., Ch.B., to Dr. Lovell Gulland (medical waiting-room); W. D. Osler, M.B., Ch.M., to Dr. Fleming (medical waiting-room); S. T. Champtaloup, M.B., Ch.B., to Dr. Rainy (medical waiting-room); J. Fraser, M.B., Ch.B., to Professor Annandale; A. F. Hewat, M.B., Ch.B., to Professor Chiene, C.B.; G. Kaffan, M.B., Ch.B., to Mr. Brewis; and E. Drybrough-Smith, M.B., Ch.B., to Dr. George Mackay.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

GALLOWAY.—On October 10th, at 54, Harley Street, London, W., to Dr. and Mrs. James Galloway, a son.

JEANS.—On October 13th, at 43, Canning Street, Liverpool, the wife of Frank A. G. Jeans, M.A., M.B., B.C.Cantab., F.R.C.S.Eng., of a son.

MARRIAGES.

DICK—BUCKELL.—On October 9th, at the Church of St. Peter the Great, Chichester, by the Right Rev. Cecil T. Cook, D.D., Bishop Suffragan of Kingston-on-Thames, assisted by the Rev. F. J. Birkett, M.A., Rector of All Saints and St Andrew, Chichester, Walter Dick, M.R.C.S., L.R.C.P., Ringwood, Hants, to Mabel Ernestine, eldest daughter of Ernest Hook Buckell, M.R.C.S., L.R.C.P., West Pallant House, Chichester.

ROBINSON—WARD.—On October 8th, at the Parish Church, Swanage, by Chancellor Bernard and the Archdeacon of Suffolk (uncles of the bride), assisted by the Rector of the parish, Gerald C. F. Robinson, F.R.C.S., to Helen Margaret, daughter of Colonel A. C. Ward, late R.E., and Mrs. Ward, of Swanage.

VERLING-BROWN—HEIN.—On the 9th inst., at St. Peter's Church, Belsize Park, N.W., by the Rev. A. J. Rendle, M.A., Rector of St. Aldate, Gloucester, cousin of the bridegroom, assisted by the Rev. — Hockey, M.A., Charles Richard Verling-Brown, M.D.Lond., of Seymour House, Sutton, Surrey, elder son of the late Charles Brown, of "Carnarvon," Bournemouth, and Mrs. Brown, to Jane, younger daughter of J. Hein, Esq., of Upper Park Road, Hampstead, N.W.

DEATH.

GRAVES.—On the 13th inst., at 2, St. Leonard's Road, Ealing, Surgeon-Colonel William Graves, late Army Medical Staff, in his 70th year.

DIARY FOR THE WEEK.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

MEDICAL SECTION, 20, Hanover Square, W., 5.30 p.m.—Discussion on Complications and Sequelae of Pneumonia, to be opened by Dr. Hector W. G. Mackenzie.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION, Apothecaries' Hall, Blackfriars, E.C.—(1) Inaugural Address: The President, Dr. T. E. Burton Brown, C.E. (2) Discussion on Functional Dyspepsia, to be opened by Robert Hutchison.

WEDNESDAY.

ROYAL SOCIETY OF MEDICINE:
SURGICAL SECTION, in conjunction with the CLINICAL, LARYNGOLOGICAL, MEDICAL, AND OBSTETRICAL SECTIONS, 20, Hanover Square, W., 5.30 p.m.—Special Meeting. Professor Goldmann of Freiburg will give a Demonstration by means of the Epidiascope and Microscopes on (1) The Growth of Malignant Disease in Man and the Lower Animals, with special reference to the Vascular System; (2) the Diagnosis by help of the *X* Rays of Abdominal Malignant Disease, Subphrenic Abscess, Appendicitis, etc.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
ELECTRO-THERAPEUTICAL SECTION, 20, Hanover Square, W., 8.30 p.m.—First Ordinary Meeting: President's Address.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Tuesday and Friday, 3.45 p.m., Nose and Accessory Sinuses.

CHARING CROSS HOSPITAL, W.C.—Thursday, 4 p.m., Medical.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Friday, 3 p.m.: Haemorrhage at and after the Menopause.

HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E.—Monday, 5 p.m., Urticaria and Prurigo; Wednesday, 5 p.m., The Erythemata; Friday, 5 p.m., Herpes.

LONDON SCHOOL OF CLINICAL MEDICINE.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2.30 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m. Monday and noon Thursday; Skin, at noon and 4 p.m. Tuesday and at noon Friday; Eye, 11 a.m. Wednesday and Saturday; Radiography, 4 p.m. Thursday. Special Lectures: 4 p.m. Monday, Epistaxis; 2.15 p.m. Friday, Arterio-sclerosis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Ear. Lectures at 5.15 p.m. each day will be given as follows: Monday, Pancreatic Disease; Tuesday, Suggestion and its Value in Medical Practice; Wednesday, The Mental Origin of Neurasthenia and its Bearing on Treatment; Thursday, The Diagnosis of Thoracic Aneurysm.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Thursday, 5 p.m.—Demonstration; Cases in the Wards.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's Hospital, Tottenham, N.—The following are the Clinics and Demonstrations for next week:—Monday, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Throat, *X* Ray; Tuesday, 10.30 a.m., Medical Out-patient; 2.30 p.m., Operations, Gynaecological and Surgical Out-patient; 4.30 p.m., Lecture, Functional and Degenerative Heart Affections. Wednesday, 2.30 p.m., Medical Out-patient, Skin and Eye. Thursday, 2.30 p.m., Gynaecological Operations, Medical and Surgical Out-patient and *X* Ray; 3 p.m., Medical In-patient: 4.30 p.m., Lecture, Demonstration on Children's Diseases. Friday, 10 a.m., Surgical Out-patient; 2.30 p.m., Operations, Medical Out-patient and Eye; 3 p.m., Medical In-patient.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday and Friday, 3.30 p.m., Neuritis.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week: Daily, 2 p.m., Medical and Surgical Clinics, *X* Rays; 2.30 p.m., Operations; Monday and Thursday, 2 p.m., Diseases of the Eye (also Wednesday and Saturday, 2 p.m.); Tuesday and Friday, 10 a.m., Gynaecological Operations; 2 p.m., and Wednesday and Saturday, 10 a.m., Diseases of Throat, Nose, and Ear; Tuesday and Friday, 2.30 p.m., Diseases of Skin; Wednesday, 10 a.m., Diseases of Children. Lectures: At 12, Monday, Pathological Demonstration; at 5 p.m., Monday, Cases of Diseases of the Eye; Tuesday, Clinical; Wednesday, Practical Medicine; Thursday, Practical Surgery; Friday, Clinical.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Monday, 5.30 p.m.: The Retention of Dentures in Difficult Cases.

BOOKS, ETC., RECEIVED.

Marine Climates in the Treatment of Tuberculosis. By W. Ewart, M.D., F.R.C.P., M.R.C.S. London: Ballière, Tindall, and Cox. 1907. 1s.

The Transactions of the Hunterian Society, 1905-06. Eighty-seventh session. Edited by H. Lett, M.B., F.R.C.S. London: Headley Bros. 1906.

Nouveau Traité de Chirurgie. Publié sous la direction de MM. A. le Dentu et P. Delbet. III. Maladies Chirurgicales de la Peau et du Tissu cellulaire sous-cutané. Par J.-L. Faure. Paris: J. B. Ballière et Fils. 1908. Fr.4.

Populär-Psychiatrie des Sokrates redivivus. Gespräche über den kleinen Unverstand. Von. Dr. H. Schäfer. Würzburg: A. Stuber. 1908.

The Thirteenth, Greatest of Centuries. By J. J. Walsh, M.D., Ph.D., LL.D. New York: Catholic Summer School Press. 1907. Dols.2.50.

Tropical Diseases: A Manual of the Diseases of Warm Climates. By Sir P. Manson, K.C.M.G., M.D., LL.D.Aberd. Fourth edition. London: Cassell and Co. 1907. 12s. 6d.

How Does It Feel to be Old? By E. Marston, F.R.G.S. London: Sampson, Low, Marston, and Co., Limited. 1907. 1s.

Grapes, and How to Grow Them. By J. Lansdell, F.R.H.S. Edited by T. W. Sanders, F.L.S., F.R.H.S. London; W. H. and L. Collingridge. 1s.

The Bacteriological Examination of Disinfectants. By W. Partridge, F.I.C. London: The Sanitary Publishing Company. 1907. 2s. 6d.

International Clinics. A Quarterly. Edited by W. T. Longcope, M.D. Vol. iii, Seventeenth Series. 1907.

Transactions of the Southern Surgical and Gynaecological Association. Vol. xix. Nineteenth Session, Baltimore, 1906. Edited by W. D. Haggard, M.D. Nashville (Tenn.): The Association. 1907.

German-English Medical Dictionary. By J. B. Waller, M.D. Fourth edition improved by M. White, M.D. Leipzig and Vienna: F. Deuticke. 1907. M.6.

Transactions of the Medico-Legal Society for the Year 1906-7. Edited by R. H. Wellington and S. B. Atkinson, M.A., M.B. Vol. iv. London: Baillière, Tindall and Cox. 1907.

Minor Medicine. By W. E. Wynter, M.D., B.S., F.R.C.P., F.R.C.S. London: S. Appleton. 1907. 6s.

*** In forwarding books the publishers are requested to state the selling price.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
OCTOBER.	
19 SATURDAY ...	ABERDEEN BRANCH, Annual Meeting, Grand Hotel, Aberdeen, 1.15 p.m.
20 Sunday ...	
21 MONDAY ...	
22 TUESDAY ...	NORTHAMPTONSHIRE DIVISION, *South Midland Branch*, Board Room of the Northampton General Hospital, 2.30 p.m.
23 WEDNESDAY	LONDON: Journal and Finance Committee, 2.30 p.m. CROYDON DIVISION. *South-Eastern Branch*, Cock Hotel, Sutton, 4 p.m.; Dinner, 6 p.m. DORSET AND WEST HANTS BRANCH, Town Hall, Blandford, 3 p.m.; Luncheon, Crown Hotel, 3 p.m.
24 THURSDAY...	LAMBETH DIVISION, *Metropolitan Counties Branch*, Camberwell Infirmary, 4 p.m.
25 FRIDAY ...	WEST SOMERSET BRANCH, Taunton and Somerset Hospital, 4 p.m.
26 SATURDAY ...	NORTHERN COUNTIES OF SCOTLAND BRANCH, Palace Hotel, Inverness, 12.30 p.m.
27 Sunday ...	
28 MONDAY ...	
29 TUESDAY ...	
30 WEDNESDAY	CENTRAL COUNCIL, Metropolitan Asylums Board, Victoria Embankment, 2 p.m. GUILDFORD DIVISION, *South-Eastern Branch*, Royal Surrey County Hospital, 4.30 p.m.; Tea, 4.15; Dinner, Lion Hotel, Guildford, 6.30 p.m.
31 THURSDAY...	
NOVEMBER.	
1 FRIDAY ...	CITY DIVISION. *Metropolitan Counties Branch*, Clinical Meeting, St. Bartholomew's Hospital, E.C., 5 p.m.
2 SATURDAY...	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 26TH, 1907.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BATH AND BRISTOL BRANCH:

BRISTOL DIVISION.

A SPECIAL meeting was held at University College, Bristol, on October 16th, Dr. MICHELL CLARKE, Chairman of the Division, presiding.

Confirmation of Minutes.—The minutes of the last Divisional meeting were read and confirmed.

The Referendum.—The Referendum was discussed, and, with one exception, the whole of the minutes of the Representative Meeting were rejected, the meeting upholding the objections of the Central Council, the exception being Minute 330, which was upheld only on the understanding that the words referring to the election of members of Council by the Representatives be deleted. The thanks of the meeting were accorded to Dr. C. E. Fleming, the Branch Representative, for attending this Division and explaining the Minority Report.

Model Rules.—The draft model rules of a Division (not itself a Branch) "to regulate the procedure thereof in ethical matters" were adopted by the Division after Rule 3 had been amended by the deletion of the words "not falling within the provision of Rule 2," thereby making it compulsory that the secretary in all cases inform a member, whose conduct has been brought before the Ethical Committee, of the grounds of complaint. Rule Z was adopted. As hereunder amended, the "Bradford Rules" were adopted. Rule A, the words "or, after due notice from the Division as provided in Rule (D) herein, shall continue to hold" were deleted, thereby depriving the rule of any retrospective effect. Rule B, the words "whether" and "or otherwise" were deleted, thereby depriving the rule of any application to private practice. Rule D, after the alteration of Rule A, was therefore not adopted. Rule E, the words "to require him to obey the rules of the Division, and in case of non-compliance" were inserted between the words "Division" and "duly," thereby giving the member a further opportunity of mending his ways. Rule F, the words "or under the conditions of a public appointment" were inserted between the words "urgency" and "meets," thereby exempting a medical referee, the medical officer of health, and members holding certain other public posts from the action of the rule. The Rules G and H were adopted. The Secretary was requested to forward these amended rules for the consideration of the Central Council.

CAMBRIDGE AND HUNTINGDON BRANCH.

A MEETING of the Branch was held in Cambridge on Tuesday, October 15th.

The Referendum.—The subjects of the Referendum were considered. All the resolutions of the Representative Meeting which have been referred to members were unanimously rejected after a full discussion.

Hygiene and School Teachers.—The following resolution was passed:

> That practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades.

Proposed Royal Commission on Quackery.—The following resolution was passed:

> The Cambridge and Huntingdon Branch of the British Medical Association would urge upon the Council the desirability of the promotion of a Royal Commission to inquire into the whole question of medical law, into the practice of the profession by unqualified pretenders, and into the traffic in quack medicines and apparatus. The Cambridge and Huntingdon Branch believes that the exposure which a Commission would effect would prove that reform is called for much more for the protection of the public than the advantage of the profession; that it would force the attention of the Legislature to the question, and lead to the speedy construction of laws for the abatement of existing evils.

New Members.—Three new members were elected.

EAST ANGLIAN BRANCH:

NORTH-EAST ESSEX DIVISION.

A MEETING of this Division was held on October 1st, Dr. CHICHESTER, Chairman, presiding.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Ethical Rules.—Correspondence on an ethical matter was considered. Prolonged discussion on the question took place and it was finally resolved that the following ethical rules be adopted:

> That, in cases where it is desired that another practitioner should supersede, it be the duty of the patient or the patient's friends to notify the doctor in attendance that they wish for other advice.
>
> That no doctor shall supersede unless he has reason to believe that the above procedure has been carried out.

The Honorary Secretary was instructed to forward a copy of the above resolutions to the practitioner forwarding the correspondence.

Midwives Act.—The HONORARY SECRETARY reported that he had sent a copy of the letter previously approved to the Essex County Council and the Colchester Town Council. This letter asked these bodies to make payment to practitioners summoned to emergency calls under the Midwives Act, the power to do so being given them by

Section 133 of the Public Health Act. With regard to the Essex County Council, this body referred the Honorary Secretary to the Rural and Sanitary Authorities. These bodies, together with the Colchester Town Council, both placed the onus of payment on the guardians, and quoted a circular from the Local Government Board to this effect in support of their contention. It was therefore resolved that the Chairman and Honorary Secretary should draw up and send letters to the bodies concerned, pointing out that the Division had done its best to bring the matter to a satisfactory solution, but that unless the bodies in question could see their way to reconsider the matter, the Division would consider the advisability of publishing in the local papers the whole correspondence and of refusing to attend any such emergency calls under the Midwives Act, in which case the onus of any catastrophe that might happen would lie with the local sanitary authority. The Honorary Secretary was also instructed to send a circular letter to all members asking them if they would be willing to abstain from attending any such emergency orders until the matter is satisfactorily settled.

Contract Practice (Colchester).—The HONORARY SECRETARY reported that he had received replies to the circular letter previously sent out from three more members, and that only three medical men in Colchester had not replied. It was decided that a further effort should be made to obtain replies from these three members, and that a meeting should be held to consider what steps next to pursue.

Contract Practice (outside Colchester).—The HONORARY SECRETARY reported replies from numerous medical men approving of the sections suggested. It was decided that the Honorary Secretary should write to one member (of those who had replied) in each section, and ask him to take steps to organize that section. A letter was read from Dr. Ashworth stating that the Colne Valley practitioners had been compelled to drop the question of wage limit in dealing with their clubs, and asking for cogent reasons in furtherance of their object. The Honorary Secretary reported that he had replied.

School Certificates.—Correspondence from the Colchester Education Committee was read. The Honorary Secretary was instructed to reply that the Division still wished to know whether the Education Committee still proposed to send children to the offices of the medical officer of health for examination, and to state that the Division considered a fee of 1s. 6d. quite inadequate for certificates, and that, unless their original request for a fee of 2s. 6d. was agreed to, they should still continue to refuse certificates, even in cases where the parents themselves were prepared to pay 2s. 6d. for them.

Charter Referendum.—The Referendum (and the Minority Report on it) relative to the Charter was discussed, and it was decided to support the minutes of the Representative Meeting in all particulars.

GLASGOW AND WEST OF SCOTLAND BRANCH:

GLASGOW NORTH-WESTERN DIVISION.

A SPECIAL meeting of this Division was held in the Burgh Hall, Hillhead, on October 8th, at 8.30 p.m., to consider and vote upon the matters referred by the Council; Dr. D. J. MACINTOSH, M.V.O., in the chair.

The Referendum.—The SECRETARY having read the notice calling the meeting, the CHAIRMAN, after explaining in a few words the method of proceedings to be adopted, put the first question, that of the Referendum, from the chair. After a vigorous debate for the views of the Council and of the Representative Meeting, that of the Council prevailed with the Division, which voted accordingly. The composition of the Council was warmly discussed, and the position which this Division has previously taken up against the election of any of the Councillors by the Representative Meeting was again maintained. It was claimed that members should be allowed to vote directly without having to depute any of their powers to Representatives; and it was urged that, as the executive powers of the Annual General Meeting were to be abolished, a quite independently elected body was necessary as a safeguard against headlong legislation by a meeting the personnel of which altered so much from year to year. In spite of arguments in favour of the opposite view, this was the finding of the meeting.

Grouping of Branches.—The other questions dealing with the grouping of Branches and the business of the Annual Representative Meeting were accordingly decided in like manner.

Separation of Finance from Journal Committee.—The question of the separation of the Finance from the Journal Committee was also considered, the CHAIRMAN drawing attention to the fact that the financial report had not yet been circulated among the general members. It was urged that the new schemes of medical defence, insurance, etc., involved wider financial work, enough for one committee, but the meeting decided that this was not a suitable time to make such a radical change, which could be achieved at any time later by alteration of the by-laws.

LANCASHIRE AND CHESHIRE BRANCH:

SOUTHPORT DIVISION.

A SPECIAL meeting was held at the Temperance Institute, Southport, on October 11th to consider the Referendum, Dr. ANDERSON in the chair.

The Referendum.—The Referendum Report of Council, the Minority Report, and the Memorandum of the Annual Representative Meeting were carefully considered and discussed, and the voting on the resolutions submitted by the Council was as follows:—Minutes of Representative Meeting Nos. 123, 283, 287, 293, 298, 299, 303, 328, 330, 342, 346 were approved of.

METROPOLITAN COUNTIES BRANCH:

STRATFORD DIVISION.

THE first meeting of the winter session of the Stratford Division was held on Thursday evening, October 10th, at the Alexandra Hotel, High Street, Dr. SPURRELL in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

The Referendum.—The meeting considered the Referendum report on the draft Charter. The chief discussion centred round By-law 29, several of the members objecting to the whole of the work of the general meetings being giving to the Representatives. The resolutions as passed by the Representative Meeting were in each instance approved of.

Southend Medical Officership.—The position of the Southend medical officer of health was next discussed, and on the motion of Dr. ROSE, seconded by Dr. BIERNACKI, the following resolution was passed:

> Having regard to the many close associations existing between Southend and the eastern suburbs of London, the Stratford Division of the British Medical Association feels justified in expressing grave concern at the position in which Dr. Nash has recently been placed by the action of the Southend Town Council. The high reputation gained by Dr. Nash as an expert in public health has gone far towards increasing the value of Southend as a holiday and health resort, for which purpose it has been habitually recommended by medical men practising throughout East London. The Division, therefore, trusts that in the interest of Southend itself a full recognition of Dr. Nash's services will not be withheld.

WALTHAMSTOW DIVISION.

THE opening meeting of 1907-8 session was held at the Woodford Hospital on Tuesday, October 8th, at 4 p.m. Dr. FOWLER presided.

Confirmation of Minutes.—The minutes of the previous meeting were confirmed.

Communication from Dr. Fothergill.—A post-card received from Dr. Fothergill was considered.

Paper.—A paper on the Determinants of Abortion and how to Combat Them was read by Dr. JAMES OLIVER. The paper was instructive and original, and much appreciated by those present.

Vote of Thanks.—The usual vote of thanks was unanimously accorded to Dr. Oliver, and with this the meeting ended.

NORTH OF ENGLAND BRANCH:

DURHAM COMMITTEE.

THE thirteenth meeting of this Committee was held at the offices of the Secretaries, Messrs. Graham, Shepherd and Sons, on Thursday, October 3rd. Present: Drs. Jepson (Durham), Hubbersty (Sunderland), E. H. Davis (West Hartlepool), Stuart (Durham), Cameron (Stockton), Gibbon (South Shields), Arthur (Wingate), A. Smith

(Whickham), Armstrong (South Shields), A. Cox (Gateshead), W. H. Davis (Low Fell), and Henry Smurthwaite (Newcastle), and Messrs. A. T. and R. A. Shepherd (Secretaries).

Election of Officers.—Dr. E. Jepson (Durham) was unanimously re-elected Chairman of the Committee for the ensuing year, and Messrs. Graham, Shepherd and Sons (Solicitors) were again re-elected Secretaries.

Secretaries' Report.—The Secretaries' report of the work done by the Committee during the past year was read. The report dealt with matters relating to "covering," "contract practice," "new vaccination order," and other questions.

Ethical Procedure.—Special reference was made to the ethical procedure of the Branch.

Complaints against Non-Members of the Association.—Complaint was made that two cases affecting "blacklegs" referred by this Committee to the Branch Council for consideration could not be dealt with by the latter as under their rules the reference or complaint must come from a Division and not from a County Committee, and, therefore, if anything had to be done in these cases the proceedings would have to be begun *de novo*. It was stated to be doubtful whether the rules of the Branch (including a new rule recently approved) really applied to non-members, and that in any case the Branch Council could not at present be set in motion as very few of the Divisions had rules applying to non-members. Dr. Cox expressed the opinion that the rules of the Branch did now apply to non-members; he explained how the difficulty as to giving this Committee power to report direct to the Branch Council had arisen, and said he hoped the Central Council would approve a proposed new rule now being again put before them, expressly giving this Committee power to act in these cases when requested to do so by a Division. After an interesting discussion, in which the utility of the Committee's work was emphasized, the following resolutions were passed:

1. That the Secretaries of this Committee be directed to communicate with the Secretaries of Divisions and ascertain whether their rules enable them to deal with complaints against practitioners who are not members of the Association, and if not to advise them to take immediate steps to have the necessary alterations made and approved, as until this is done it will be impossible for either this Committee or the Branch Council to deal effectively with such cases.
2. That the Secretaries of this Committee draw the attention of Secretaries of Divisions to the fact that according to the existing rules of the Branch the initiative in all questions relating to practitioners offending must be taking by the Divisions, but that they be also informed that the Secretaries of this Committee will be glad to afford them all possible advice and assistance.

NORTH WALES BRANCH:

North Carnarvonshire and Anglesey Division.

A meeting of this Division was held at the British Hotel, Bangor, on October 8th, Dr. Grey Edwards (Bangor) in the chair.

Consultation with Bonesetters.—A letter was read from the North Wales Branch Council reporting that complaints had been made that certain medical men in the county of Anglesey were in the habit of meeting a "bonesetter" in consultation. The following resolution was unanimously carried:

It having been brought to the notice of this Division that certain practitioners in the county of Anglesey are in the habit of meeting a "bonesetter" in consultation, or of attending cases in conjunction with him, it is unanimously resolved that such a practice, being contrary to the established custom of the medical profession, is unworthy of a member of the profession and ought to be avoided. The Division further resolves that, if this conduct be persisted in, strong measures will be taken for its suppression.

Contract Practice.—A letter from the Honorary Secretary, Denbigh and Flint Division, was read and the following resolution unanimously passed:

That no medical practitioner within the area of this Division shall accept any contract practice within the area of the Denbigh and Flint Division except under the rules adopted by that Division.

The Referendum.—The Referendum of the Council of the resolutions of the Representative Meeting was then considered. Each resolution was carefully considered, and in each case unanimously disapproved of.

SHROPSHIRE AND MID-WALES BRANCH.

The thirty-second annual general meeting of this Branch was held at the Salop Infirmary on October 8th.

New Members.—The following new members were elected at the Council which was held previous to the meeting: Dr. Vickers, of Wellington; Dr. Thomas, of Welshpool; and Dr. Spriggs, of Shrewsbury.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Contract Practice.—A communication on club contract practice was read from the Denbigh and Flint Division and the following resolution was passed unanimously:

That no medical practitioner within the area of the Shropshire and Mid-Wales Branch shall accept any contract work within the area of the Denbigh and Flint Division, except under the rules adopted by that Division.

The Referendum.—With reference to the Referendum communication from the Central Council, the following resolution was proposed by Dr. Cureton, seconded by Dr. Packer and passed unanimously:

That this Branch, after having discussed the report of the Representative Meeting, decides to support the Central Council and disapproves of the resolution referred to in the Referendum, of the Special Representative Meeting held in May last.

President's Address.—The President then gave his inaugural address, entitled "Cremation." On the proposition of Dr. Rigden, seconded by Mr. MacLeod, a hearty vote of thanks was accorded the President for his address.

Discussion.—A discussion on the diagnosis and treatment, apart from operation, of appendicitis was then opened by Dr. Cureton from the point of view of the physician, and Mr. Spanton from the surgical aspect. The discussion was carried on by Messrs. Downes, Gardner, Hay Forbes, MacLeod, Stawell, and Ackerley.

Annual Dinner.—At the conclusion of the meeting the annual dinner was held in the music hall, when 81 members and their guests sat down, being the largest number that have ever attended any dinner in the history of the Branch. During the evening interludes were given by Mr. Percy French, of London.

SOUTH-EASTERN BRANCH:

Brighton Division.

A meeting of this Division was held at the Dispensary, Queen's Road, Brighton, on October 2nd; Dr. Gordon Dill, Chairman, presiding.

Confirmation of Minutes.—The minutes of the last meeting were duly read and approved.

Annual Representative Meeting.—Dr. Bushnell, the Representative of the Division at Exeter, gave an account of the meeting.

The Referendum.—The special business, which was the consideration of the Referendum Report, was then discussed. After Mr. T. Jenner Verrall had carefully described the situation, several other members spoke, and then the questions were put to the meeting by the Chairman. The result was that all the resolutions which were submitted to the Divisions were approved of, the vote in each case being unanimous.

This concluded the business of the meeting.

Eastbourne Division.

A special meeting was held at West House, Chiswick Place, Eastbourne, on Monday, October 7th, at 9 p.m., Dr. C. O'Brien Harding (Chairman) presiding.

The Referendum.—The Referendum Report was considered. The six resolutions of the Representative Meeting challenged by the Council were submitted seriatim, with the following results:

I. Proviso as to Referendum: Ordinance 17 (*b*).—Proposed by Dr. W. J. C. Merry, seconded by Mr. A. Roberts, and carried:

That Minute 123 be affirmed.

II. Composition of Council: By-law 36.—Proposed by Mr. Ewart, seconded by Dr. K. Frazer, and unanimously resolved:

That Minutes 280, 287, 290, and 298 be affirmed.

III. Grouping of Branches: By-law 37.—Proposed by Dr. J. Adams, seconded by Dr. W. J. C. Merry, and unanimously resolved:

That Minute 299 be affirmed.

IV.—Mode of Election by Groups: By-law 38.—Proposed by Dr. J. ADAMS, seconded by Dr. W. J. C. MERRY, and unanimously resolved:

That Minute 303 be affirmed.

V. Journal and Finance Committee.—Proposed by Dr. F. C. GOODWIN, seconded by Mr. J. H. EWART, and unanimously resolved:

That Minutes 342 and 346 be affirmed.

VI. Business of Annual Representative Meeting: By-law 29.—Proposed by Dr. W. J. C. MERRY, seconded by Dr. K. FRAZER, and unanimously resolved:

That Minutes 328 and 330 be affirmed.

FOLKESTONE DIVISION:

A MEETING of the Folkestone Division was held at the Burlington Hotel, Folkestone, on Thursday, October 10th, at 8.15 p.m. Mr. R. DAVIS occupied the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

The Referendum.—The CHAIRMAN introduced the subject of the Referendum Report. Dr. TYSON made some remarks on the report from the Council's point of view, and Dr. DODD did the same from the Representatives' point of view.

Representative Report.—The time being too limited to go fully into such an important question as the Referendum Report, the further discussion was postponed until the next meeting.

Medical Law Reform.—Mr. H. SEWILL gave an address on Medical Law Reform and Quackery. The following resolution, proposed by Mr. R. DAVIS, and seconded by Dr. DODD, was carried unanimously:

That the Folkestone Division of the South-Eastern Branch of the British Medical Association would urge upon the Council the desirability of taking up vigorously the question of medical law reform, both as regards the practice of the profession by unqualified pretenders and the traffic in quack medicines and apparatus. The Folkestone Division believes that if existing evils and abuses were authoritatively exposed through a Royal Commission or by other means the construction of the necessary legislation would be speedily undertaken by Parliament.

Vote of Thanks.—A cordial vote of thanks was accorded to Mr. Sewill for his excellent address.

SOUTH-EASTERN (IRELAND) BRANCH.

THE last meeting of this Branch for the session was held in the Victoria Hotel, Kilkenny, on October 2nd, at 5 p.m., Dr. CHARLES JAMES, M.B., in the chair.

Medical Members of Parliament.—Previous to signing the minutes two resolutions *re* medical M.P.'s (see SUPPLEMENT, September 21st), referred from the Waterford meeting, were again discussed. No. I was affirmed and No. II was also affirmed, the word "surplus" having been previously deleted. The resolution now reads:

That powers be further acquired to subsidize such members of Parliament, and that a certain portion of the funds of the Association be annually appropriated to that purpose.

It having been resolved that the attention of the General Secretary be directed to both these resolutions as they involved a very serious principle for consideration, the minutes were approved and signed.

Apologies for Non attendance.—Letters of apology from four members were read.

The Annual Representative Meeting.—Dr. LAFFAN gave his report of the Representative Meeting held at Exeter, making the Referendum by the Council on certain minutes of the Representative Meeting the subject of his remarks.

The Referendum.—It was then moved that the meeting resolve itself into Committees of the Divisions (Waterford, Kilkenny, and Carlow), of which the Branch is composed, to discuss seriatim the minutes so referred. A unanimous vote in favour of the minutes of the Representative Meeting was the result of their deliberations.

Draft Model Ethical Rules.—It was proposed by Dr. WM. SHEE and seconded by Dr. CAREY:

That the model rules, as revised and adopted by this Branch, be printed and circulated amongst the members.

Local Government Board; Sanitary Reports.—It was proposed by Dr. LAFFAN and seconded by Dr. D. WALSHE:

That for the half-yearly sanitary reports to the Local Government Board and for any and all other new duties the profession should be adequately remunerated.

Locum Tenents.—It was proposed by Dr. SHEE and seconded by Dr. JELLETT:

That copies of resolution *re* locum tenents passed at the Clonmel meeting be printed and circulated amongst members.

Dispensary Doctors' Salaries.—It was proposed by Dr. SHEE and seconded by Dr. LAFFAN:

That this Branch extends its warm sympathy to the medical officers of the Carrick-on-Suir Union in their fight for just treatment, and the Branch pledges itself to support them in every way in its power.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

CARDIFF DIVISION.

A SPECIAL meeting of this Division was held on Thursday, October 3rd, at 3.30 p.m., at the Cardiff Infirmary, Dr. W. B. CRAWFORD TREASURE, J.P., in the chair.

The Referendum.—The CHAIRMAN explained that the meeting was convened in order that the Division might consider and pass its opinion on the Referendum. After pointing out the important influence which the Referendum will have on the history and future development of the Association, he called upon Dr. E. J. MACLEAN, the Representative of the Division at Exeter, and Mr. J. LYNN THOMAS, C.B., one of the members of the Council for the Branch, to address the meeting. After full discussion a vote was taken on each of the minutes referred, and in every case a unanimous vote was recorded in favour of the minutes of the Representative Meeting. The following resolution was proposed by the CHAIRMAN, seconded by Dr. CHAS. VACHELL, and carried unanimously:

That this meeting, having considered the Referendum report of the Council, together with the Minority (Council) report and the memorandum issued on behalf of the Representative Meeting, emphatically reaffirms the resolutions of the Representative Meeting which are the subject of the Referendum. This meeting further is of opinion that the circumstances in which the Referendum has been taken do not accord with those within the meaning of Article XXII, and that further unnecessary delay in the application for the Charter will prove harmful to the interests of the Association as a whole, and particularly to the Colonial Branches.

MONMOUTHSHIRE DIVISION.

THE quarterly meeting of this Division was held at the Asylum, Abergavenny, on Thursday, September 5th, at 3 p.m.

Minutes of Annual Meeting.—The minutes of the annual meeting were read and confirmed.

Apologies for Non-Attendance.—Letters of apology for inability to attend were read from Drs. Mason, Nelis Harvey, Lloyd Smith and G. A. Brown.

Election of Chairman.—Dr. W. D. STEEL thanked the members for the honour of having been elected chairman of the Division.

Disputes in District.—A report was given as to the present position of the disputes in the district.

Notification of Births Bill.—The CHAIRMAN called attention to the unfair operation of this Bill on medical men, and gave notice of his intention to move a resolution on the subject at the next meeting of the Division.

Specimens and Cases.—The following specimens and clinical cases were shown:—Dr. MARSH: Uterus with four months fetus removed for fibroid tumour. Dr. SIEVWRIGHT: Case of early G.P.I. with marked grandiose delusions, but no physical signs. Dr. W. D. STEEL: A case of disease of the lateral columns of the cord and a case of myxoedema. Dr. SULLIVAN (Cwm): A case of malignant disease of the upper jaw. Mr. GREER: Specimen from a case of gastro-jejunostomy exhibiting a Jaboulay's button in position for three years; radiographs of dislocation of upper end of fibula; incipient tuberculous disease of acetabulum. Mr. COULTER: Photographs and radiographs of a case of oxycephaly.

Vote of Thanks.—A hearty vote of thanks was proposed by Dr. W. D. STEEL and seconded by Dr. MORRELL THOMAS for Dr. Glendinning's hospitality.

Dr. S. H. Steel.—Dr. MULLIGAN expressed the gratification of the meeting at the presence of Dr. S. H. Steel, the doyen of the profession in the district, and Dr. S. H. STEEL replied.

SPECIAL MEETING.

A special meeting was held at the Newport and Mon-

mouthshire Hospital on Friday, October 11th, Dr. W. D. Steel in the chair.

Reports re *Disputes in the District.*—The position of the Ebbw Vale dispute was discussed, and the following resolution was proposed by Dr. Mason, seconded by Dr. Hamilton, and carried unanimously:

> That the attention of the members of the Division be called by circular letter to the urgent necessity of subscribing to the Contract Practice Fund.

Referendum.—The referred minutes of the Representative Meeting were considered in detail, and all the proposals of the Representative Meeting were cordially supported and carried unanimously.

Notification of Births Act.—The following resolutions were unanimously passed:

1. That this meeting of the Monmouthshire Division of the British Medical Association hereby enters a unanimous protest against the arbitrary imposition of responsibilites devolving on medical practitioners under the Notification of Births Act.
2. That copies of the above resolution be sent to the medical officers of health in the county and to the medical members of the various Boards, and also be circulated on the agenda of the next meeting of the Division.
3. That each member present pledges himself as far as lies in his power to induce his local authority *not* to adopt the Act.
4. That the Medico-Political Committee of the British Medical Association be requested to try to obtain an amendment of the penalty clauses as applied to medical men.

Vote of Thanks.—It was proposed by Dr. W. D. Steel, and seconded by Dr. Glendinning, that a vote of thanks be passed to the Newport members for providing tea. This was carried.

STIRLING BRANCH.

The autumn general meeting was held in the Station Hotel, Larbert, on Friday, October 4th, at 4.30 p.m. The President (Dr. MacGowan) was in the chair, and signed the minutes of the previous meeting.

The Referendum.—The chief business of the meeting was the consideration of the Referendum Report. Dr. Buist (Dundee), the Representative on the Council, addressed the meeting, and replied to questions put by several of the members present concerning points which arose during the discussion. Dr. Buist was awarded the hearty thanks of the meeting for his address and explanations, which were much appreciated by those present. During the full discussion of the Referendum—in which Drs. Mitchell, MacGowan, Gardner, Moorhouse, Clarkson, and Robertson took part—it was clearly evident that the members present were, with one exception, strongly in favour of the minutes of the Representative Meeting, and the votes taken were cast accordingly.

Annual Representative Meeting.—Dr. Gardner (Falkirk), the Branch Representative, gave a very interesting account of the business of the Annual Representative Meeting at Exeter; and, in moving a vote of thanks to the Representative, Dr. Moorhouse dwelt on the great interest Dr. Gardner had taken in his duties.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

COUNCIL MEETING.

A meeting of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 30th, in the Board Room of the Metropolitan Asylums Board, by kind permission of the Board. The offices of the Metropolitan Asylums Board are situate on the Victoria Embankment at the corner of Carmelite Street and near Blackfriars Bridge.

Guy Elliston,
General Secretary.

Oct. 3rd, 1907.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

Owing to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Aberdeen Branch.—Nomination of Elective Member of Council: Notice is hereby given that the names of candidates for the representation of the Branch must be sent to me on or before November 11th. Each candidate must be nominated by at least three electors.—J. F. Christie, Honorary Secretary, 7, Alford Place, Aberdeen.

Border Counties Branch.—The next meeting of the Branch will be held in the County Buildings, Dumfries, on Friday, November 8th, and not as previously intimated. An address will be given by Dr. G. A. Gibson (Edinburgh) on the subject of Arrhythmia. Further details will be issued separately to each member.—F. R. Hill, Honorary Secretary, Carlisle.

Border Counties Branch: Scottish Division.—The autumn meeting of this Division will be held in the Douglas Arms Hotel, Castle Douglas, on Thursday, October 31st, at 3.45 p.m. The Executive Committee will meet at 3.30 p.m.—George R. Livingstone, 47, Castle Street, Dumfries, N.B.

Edinburgh Branch: Southern Division.—A meeting of the Division will be held in the Oddfellows' Hall (Room 6), Forrest Road, on Friday, November 1st, at 8.15 p.m. Agenda: (1) Minutes. (2) Reports of Representatives at May and July meetings. (3) Consideration of Council's Referendum. (4) Counsel's opinion on income-tax returns. (5) Report on Black List proposals. (6) Other competent business.—Michael Dewar, M.D., Honorary Secretary, Edinburgh.

Fife Branch.—A special meeting will be held in the Hotel, Thornton, on Thursday, October 31st, at 3 p.m., to consider Referendum business. — R. Balfour Graham, Honorary Secretary, Leven.

Lancashire and Cheshire Branch: Chester and Crewe Division.—A meeting of the Division will be held in the Chester General Infirmary Board Room, at 5 p.m., on Tuesday, October 29th. Tea will be served in the adjoining room at 4.30. Agenda: (1) Minutes of the last meeting. (2) Letters, etc., received. (3) To report the replies received with regard to the adoption of Ethical Rules for the Division. (4) A letter with enclosures from the Honorary Secretary of the Denbigh and Flint Division with regard to contract regulations within their area. (5) To consider and vote upon the Referendum—see Supplements, September 7th and 21st, and Journal, October 19th, p. 1101 (*et subs.*). (6) Any other business. As a vote must be taken upon the Referendum it is hoped that every member will endeavour to be present.—Henry W. King, Honorary Secretary, Chester.

South-Eastern Branch: Folkestone Division.—A meeting of this Division will be held at the Victoria Hospital, Folkestone, on Thursday, December 5th, at 8 30 p m. Agenda: (1) Minutes. (2) To further discuss the Referendum Report, the Minority Report, and the Representative Report dealing with the proposed Charter, adjourned from the last meeting, and to vote on certain resolutions. (3) Some clinical cases will be shown.—P. Vernon Dodd, M.D., Honorary Secretary, Folkestone.

South-Eastern Branch: Guildford Division.—The next meeting of this Division will be held at the Royal Surrey County Hospital, on Wednesday, October 30th, at 4.30 p.m. Dr. Anderson Morshead, Vice-Chairman of the Division, will take the chair. Agenda: (1) Minutes. (2) Election of Chairman for the ensuing year. (3) To consider the Referendum from the Central Council. (4) Terms of appointment and rates for contract practice in the Division. (5) Dr. H. A. Powell will read a paper on the Regulation of an Out-patient Department (to be followed by a discussion). (6) Cases will be shown by members of the hospital staff if time permits. (7) Any other business. Tea will be provided at 4.15. Dinner at 6.30 p.m., at the Lion Hotel, Guildford; charge, 6s., exclusive of wine.—E. J. Smyth, Honorary Secretary, Guildford.

Ulster Branch.—The autumn meeting of the Branch will be held in Belfast on Wednesday afternoon, November 13th. Members having papers to read or cases to show are requested to send particulars before November 3rd to Cecil Shaw, M.D., Honorary Secretary, Belfast.

Yorkshire Branch.—The next meeting of the Yorkshire Branch will be held at the University, Sheffield, on Wednesday, November 6th, at 4 p.m. Members wishing to read papers, show specimens or cases, or propose new members, are requested to communicate at once with the Honorary Secretary, Dr. Adolph Bronner, 33, Manor Row, Bradford.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Norman L. Richards, Fleet Surgeon, to Bermuda Hospital, November 1st; Augustus J. Laurie, Staff Surgeon, to the *Tenedos*, November 1st; Frederick Cock, Surgeon, to the *Mars*, November 1st; Edward C. Ward, M.D., Fleet Surgeon, to the *Pembroke*, additional, for Chatham Dockyard, October 18th; Edward R. D. Fasken, Fleet Surgeon, to the *Barfleur*, October 18th; Evan St. M. Nepean, Fleet Surgeon, and George C. C. Ross, M.D., Surgeon, to the *Niobe*, on recommissioning, October 29th; Percy H. Boyden, M.D., Staff Surgeon, and Elijah R. L. Thomas, Surgeon, to the *Devonshire*, on recommissioning, November 5th; Thomas W. Myles, M.B., Surgeon, to the *Victory*, November 5th; Hugh Clift, Fleet Surgeon, to the *Cyclops*, on commissioning, undated; Edwyn R. Grazebrook, Staff Surgeon, to the *Dido*, undated.

ARMY MEDICAL SERVICE.

Surgeon-General Sir T. J. Gallwey, K.C.M.G., C.B., M.D., has been granted a reward for distinguished and meritorious service.

ROYAL ARMY MEDICAL CORPS.

Lieutenant J. C. L. Hingston, from the Seconded List, to be Lieutenant, October 1st.

Lieutenant-Colonel R. J. Windle, M.B., is seconded whilst holding the appointment of Physician and Surgeon at the Royal Hospital, Kilmainham, October 1st.

Lieutenant-Colonel F. S. Heuston, C.M.G., from the Seconded List, to be Lieutenant-Colonel, October 1st.

Lieutenant-Colonel G. H. Sylvester retires on retired pay, October 19th. His commissions are dated: Surgeon, July 31st, 1880; Surgeon-Major, July 31st, 1892; Lieutenant-Colonel, July 31st, 1900. During the South African war in 1899–1902 he was Staff Officer to the Principal Medical Officer at Army Head Quarters, and afterwards Principal Medical Officer of a General Hospital; he was present in operations at Paardeberg (February 17th to 26th), and in various operations in the Transvaal, including the actions of Poplar Grove and Dreifontein; he has received the Queen's medal with four clasps and the King's medal with two clasps.

Captain T. Biggam, M.B., is placed on temporary half-pay on account of ill-health, October 18th. He joined the department as Lieutenant, April 25th, 1900, and was made Captain, April 25th, 1903. He served in operations in Cape Colony in 1900 during the South African war, and in the China war in 1900, for which he received a medal.

Lieutenant-Colonel J. M. Jones has been appointed Principal Medical Officer to the Force in Egypt, vice Colonel J. Magill, C.B., M.D.

Major M. P. C. Holt has been granted an extension of one year in his appointment as Assessor for the Junior Course of Examinations in Military Surgery at Woolwich.

INDIAN MEDICAL SERVICE.

Surgeon-General G. Bomford, C.I.E., M.D., Director-General, has been selected for a reward for distinguished and meritorious service.

The following postings and appointments of Royal Army Medical Corps officers are approved:—Lahore Cantonment: Lieutenant-Colonel H. D. Rowan, M.B., to command the Station Hospital; also Majors N. Tyacke and G. St. C. Thom, M.B., Captains A. H. Waring, W. F. Ellis, H. G. S. Webb, J. M. M. Crawford, and G. A. Kemp-thorne. Multan: Lieutenant-Colonel J. D. T. Reckitt, to command the Station Hospital; also Major E. A. Burnside, Captains C. G. Thomson and H. Rogers. Dalhousie: Lieutenant-Colonel W. C. Beevor, C.M.G., M.B., to command the Station Hospital. Ferozepore: Lieutenant-Colonel T. Daly, to command the Station Hospital; also Major T. M'Culloch, M.B., Captains F. S. Walker and M. D. Ahern. Umballa: Lieutenant-Colonel F. H. Treherne to command the Station Hospital; also Lieutenant-Colonels H. A. Haines, M.D., W. Turner, W. T. Swan, M.B., and J. Fallon, Majors W. G. Beyts, K. M. Cameron, and C. W. Profeit, M.B., Captains S. B. Smith, M.D., A. M'Munn, A. H. Hayes, B. G. Patch, and R. Storrs, Lieutenants N. O. M. Beadnell, G. H. Stevenson, M.B. (who will arrive with the 1st Dragoon Guards) and A. D. O'Carroll, M.B. (who will arrive with the Connaught Rangers). Jullundur: Lieutenant-Colonel J. Carmichael, to command the Station Hospital; also Major E. H. Condon, M.B., Captain H. W. Long, M.B., and Captain R. L. Argles. Lieutenant-Colonel T. O. Woodhouse will command the Station Hospital at Kasauli, Lieutenant-Colonel R. Holyoake at Dagshai, Captain A. J. Hull at Jutogh, and Major W. Hallahan, M.B., at Amritsar.

The undermentioned officers are admitted to the Indian Medical Service, dated February 2nd: W. L. Harnett, J. D. Sands, W. P. G. Williams, A. H. Napier, G. Holroyd, A. E. Grisewood, D. L. Graham, R. B. Nicholson, G. S. Husband, J. A. Cruickshank, J. A. S. Phillips, E. D. Simson, W. E. R. Williams, A. F. Babonau, P. M. Rennie, H. M. Inman, O'D. F. Fawcett.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 7,834 births and 4,829 deaths were registered during the week ending Saturday last, October 19th. The annual rate of mortality in these towns, which had been 14·5, 14·8, and 15·7 per 1,000 in the three preceding weeks, was again 15·7 per 1,000 last week. The rates in the several towns ranged from 5·2 in Hornsey, 8·3 in Walthamstow and in Bournemouth, 8·4 in Reading, 8·7 in Willesden and in Handsworth (Staffs.), 9·1 in Devonport, and 9·3 in Hastings and in Northampton, to 21·7 in Walsall, 21·8 in Wigan, 21·9 in Merthyr Tydfil, 22·6 in St. Helens, 23·1 in Southampton, 23·7 in Stockton-on-Tees, and 24·6 in Liverpool and in Burnley. In London the rate of mortality was 13·9 per 1,000, while it averaged 16·5 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 2·4 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1·8 per 1,000, while among the seventy-five other large towns the death-rate from the principal infectious diseases ranged upwards to 4·9 in Burton-on-Trent, in Sheffield, and in York, 5·3 in Wigan, 5·4 in Hanley, 5·7 in Stockport, 5·8 in Rotherham, 5·9 in Oldham, and 6·0 in Walsall and in West Bromwich. Measles caused a death-rate of 1·3 in Newcastle-on-Tyne, 1·9 in Cardiff, 2·0 in Stockton-on-Tees, 2·1 in Ipswich, 2·9 in Burton-on-Trent, and 3·8 in West Bromwich; scarlet fever of 1·1 in St. Helens, 1·5 in West Bromwich, and 2·0 in Burton-on-Trent; whooping-cough of 1·1 in Walsall, in Bolton, and in Oldham, and 1·8 in South Shields; "fever" of 1·5 in Grimsby; and diarrhoea of 4·0 in Oldham, 4·1 in West Ham, 4·2 in Sheffield, 4·6 in Stockport, 4·7 in Hanley, and 5·8 in Rotherham. The mortality from diphtheria showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals, which had been 4,328, 4,542, and 4,754 at the end of the three preceding weeks, had further risen to 4,995 at the end of last week: 820 new cases were admitted during the week, against 787, 759, and 752 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, October 19th, 915 births and 485 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13·2 and 13·8 per 1,000 in the two preceding weeks, further rose last week to 14·0 per 1,000, but was 1·7 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 11·7 in Aberdeen and 12·8 in Edinburgh to 19·8 in Dundee and 24·0 in Perth. The death-rate from the principal infectious diseases averaged 1·8 per 1,000 in these towns, the highest rates being recorded in Dundee and Paisley. The 213 deaths registered in Glasgow included 4 which were referred to measles, 3 to diphtheria, 3 to whooping-cough, 2 to "fever," 14 to diarrhoea, and 4 to cerebro-spinal meningitis. Three fatal cases of diarrhoea and 1 of cerebro-spinal meningitis were recorded in Edinburgh; 4 of measles and 4 of diarrhoea in Dundee; 2 of diphtheria and 2 of diarrhoea in Paisley; and 2 of cerebro-spinal meningitis in Leith.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BRISTOL GENERAL HOSPITAL.—(1) House-Surgeon. (2) House-Physician. (3) Casualty House-Surgeon. (4) Assistant House-Physician. Salary, £60 per annum.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN.—Assistant House-Surgeon. Salary, £50 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £150 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—(1) Senior House-Surgeon; (2) Junior House-Surgeon. Salary, £100 and £60 per annum respectively.

DORCHESTER: COUNTY ASYLUM.—Junior Assistant Medical Officer (Male). Salary, £140 per annum, rising to £180.

DUBLIN: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Resident Medical Officer. Salary, £300 per annum.

EDINBURGH HOSPITAL FOR WOMEN AND CHILDREN.—Female Junior Physician.

ESSEX COUNTY ASYLUM, Brentwood.—Fourth Assistant Medical Officer. Salary, £150 per annum.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £30 per annum.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Honorarium £20 for six months.

HOSPITAL FOR WOMEN, Soho, W.—Clinical Assistants.

KENT AND CANTERBURY HOSPITAL.—(1) House-Physician. (2) House-Surgeon. Salary, £90 per annum each.

KING EDWARD VII SANATORIUM, Midhurst.—Pathologist. Salary, £250 per annum.

LANCASTER: COUNTY LUNATIC ASYLUM.—Assistant Medical Officer. Salary, £150 per annum, increasing to £250.

LEEDS PUBLIC DISPENSARY.—Honorary Physician.

LENZIE: WOODILEE ASYLUM.—Second Assistant Medical Officer. Salary to commence, £150 per annum.

LIVERPOOL ROYAL INFIRMARY.—Honorary Surgeon.

LIVERPOOL STANLEY HOSPITAL.—Third House-Surgeon. Salary, £60 per annum.

LONDON COUNTY ASYLUM, Cane Hill, Coulsdon.—Junior Assistant Medical Officer. Salary, £150 per annum.

MILLER HOSPITAL, Greenwich.—House-Surgeon. Salary at the rate of £80 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead, N.W.—(1) Honorary Radiographer. (2) Honorary Dental Surgeon.

NORWICH CITY ASYLUM, Hellesdon.—Assistant Medical Officer. Salary, £130 per annum.

PARTICK, BURGH OF.—Resident Medical Officer of the Knightwick Hospital. Salary, £100 per annum.

PETERBOROUGH INFIRMARY.—House-Surgeon, Male. Salary, £100 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—(1) House-Physician. (2) House-Surgeon. Salary, £75 and £100 per annum respectively.

READING: ROYAL BERKSHIRE HOSPITAL.—Assistant House-Surgeon. Salary, at the rate of £60 per annum.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130, rising to £150 per annum.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—(1) Dental Surgeon. (2) Assistant Dental Surgeon.

ROYAL EAR HOSPITAL, Dean Street, Soho.—House-Surgeon. Honorarium, £40 per annum.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Assistant Anaesthetist. Honorarium 25 guineas per annum.

ST. MARK'S HOSPITAL FOR FISTULA, Etc., City Road, E.C.—Resident House-Surgeon. Salary at the rate of £80 per annum.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Demonstrator of Biology. Salary, £70 per annum.

SHOREDITCH: PARISH OF ST. LEONARD.—Second Assistant Medical Officer for the Infirmary. Salary, £100 per annum.

STAFFORDSHIRE COUNTY ASYLUM, Cheddleton. — Assistant Medical Officer for about six months. Honorarium 75 guineas.

SUNDERLAND INFIRMARY.—House-Surgeon. Salary, £80 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—Honorary Anaesthetist.

WAKEFIELD: CLAYTON HOSPITAL.—Two House-Surgeons. Salary, £120 and £30 per annum respectively.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck Street, W.—Honorary Medical Officer in charge of Electrical Department.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL. (1) Senior House-Physician. (2) House-Physician. (3) Second House-Surgeon. (4) Honorary Assistant Physician. Salaries, £100 for (1) and £80 each for (2) and (3).

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces vacancies at Avonbridge, co. Stirling, and Sherborne, co. Dorset.

APPOINTMENTS.

HILTON, A., L.S.A., Medical Officer of Health, Hurst Urban District.

HOLMES, Isaac, L.R.C.P.and S.Edin., District Medical Officer of the West Derby Union.

JONES, Ernest, M.D., B.S., M.R.C.P.Lond., D.P.H.Cantab., Registrar and Pathologist, West-End Hospital for Diseases of the Nervous System.

LATHAM, H., M.B., C.M.Edin., District and Workhouse Medical Officer of the Peterborough Union.

MCCOLLUM, J., M.B., Pathologist to the City of London Hospital for Diseases of the Chest, Victoria Park, E.

MOXON, Frank H., M.B., B.S.Dunelm., Junior Clinical Assistant at the Royal London Ophthalmic Hospital, Moorfields.

PIKE, R. Douglas, M.B., B.S.Oxon., Medical Officer of the Stalmine District of the Garstang Union.

PORTER, W., M.B., B.Ch.R.U.I., Certifying Factory Surgeon for the Portrush District, co. Antrim.

PRATT, J. H., M.R.C.S., L.R.C.P., House-Physician to the City of London Hospital for Diseases of the Chest, Victoria Park, E.

REES, E. D., M.R.C.S., L.R.C.P.Lond., Medical Officer of Health, Newtown and Llanidloes Rural District.

RICE, David, M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Norwich City Asylum.

SALL, Ernest F., M.R.C.S., L.R.C.P.Lond., Medical Superintendent of the Canterbury Borough Asylum.

STRANGE, E. W., M.B.Lond., District Medical Officer of the Martley Union.

THURSFIELD, T. W., M.D.Aberd., F.R.C.P., Certifying Factory Surgeon for Leamington, co. Warwick.

TURTON, Edward, M.D., Ch.B., B.Sc.Vict., M.D.Leeds, M.R.C.P.Lond., Honorary Physician to the Hull Royal Infirmary.

WARREN, A. C., M.R.C.S., L.R.C.P., Clinical Assistant to the Chelsea Hospital for Women.

WILSON, James J. P., M.B., Ch.B.Aberd., Senior House-Surgeon to the Croydon General Hospital, vice *Dr.* Lacey Bathurst, resigned.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

BRIGGS.—On October 14th, at 37, Noel Street, Forest Side, Nottingham, the wife of J. A. Oswald Briggs, M.D.Lond., F.R.C.S.Eng., of a son.

RICHMOND.—On October 20th, at 57, Drayton Gardens, S.W., the wife of W. Stephenson Richmond, M.R.C.S.Eng., of a son.

ROBERTSON.—At Hadley, Prestwick, Ayrshire, on the 21st inst., the wife of And. Robertson, M.B., of a daughter.

WOOD.—On the 16th inst., at Elliotts, Penshurst, Kent, the wife of W. Charrington Wood, M.D.Lond., F.R.C.S.Eng., of a daughter.

MARRIAGE.

COLLINS—BRANDT.—On October 16th, at All Saints' Church, Cheltenham, by the Rev. T. R. S. Collins, M.A., B.D., father of the bridegroom, assisted by the Rev. Canon Gardner, M.A., and the Rev. T. G. G. Collins, M.D., John Rupert Collins, M.A., B.D., to Agnes Mary, younger daughter of Francis Brandt, M.A., I.C.S. (ret.), of Kirkella, Cheltenham.

DEATHS.

STEPHENS.—On October 17th, at Preston, Brighton, Helen Wordsworth, the very dearly beloved wife of William J. Stephens, L.R.C.P. (late of Old Steine, Brighton), and daughter of the late F. W. Johnson, M.D., of Watlington, Norfolk.

WATSON.—On October 19th, at Greystones, Porchester Road, Newbury, Henry Watson, M.D., J.P., aged 73, for nearly thirty years Coroner of the Borough of Newbury.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—8 p.m., Council Meeting; 8.30 p.m., Papers—(1) Mr. John D. Malcolm: A Case of Injury and one of Exposure of the Bladder in Operating for Femoral Hernia; (2) Mr. Edmund Owen: Injury to the Bladder in Femoral Herniotomy.

ROYAL SOCIETY OF MEDICINE:

ODONTOLOGICAL SECTION, 20, Hanover Square, W., 7 p.m.—Council Meeting; 8 p.m.—Inaugural Presidential Address by Mr. J. Howard Mummery. Paper illustrated with lantern slides. The Structure of the Teeth of Fossil Fishes, by Mr. John Humphreys.

TUESDAY.

MEDICO LEGAL SOCIETY, 22, Albemarle Street, W.—8.15 p.m.: (1) Inaugural Presidential Address by Mr. Justice Walton; (2) Demonstration on the Medico-legal Importance of Wounds by Firearms, by Dr. W. H. Willcox.

WEDNESDAY.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY, 20, Hanover Square, W.—5.30 p.m.: Election of Candidates and delivery of the Presidential Address by Dr. W. H. Tyson.

THURSDAY.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne Street, Edgware Road.—Dr. B. H. Spilsbury: Lymphatism in Relation to Death under Anaesthetics. Dr. Sidney Phillips and Mr. Gay French: Cases of Lymphatism.

FRIDAY.

SOCIETY OF ANAESTHETISTS, 20, Hanover Square.—8.30 p.m., Communications from Mr. Harvey Hilliard and Mr. Kirkby Thomas.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith, W.—8 p.m., Cases and Specimens; 8.30 p.m., Annual Meeting.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Tuesday and Friday, 3.45 p.m., Middle Ear and Labyrinth.

CHARING CROSS HOSPITAL, W.C.—Thursday, 3 p.m., Dermatological.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Friday, 3 p.m.: Some Points in Connexion with Oral Sepsis (illustrated).

HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E.—Monday, 5 p.m., Pemphigus and Allied Conditions; Wednesday, 5 p.m., Pityriasis; Saturday, 5 p.m., Drug Eruptions; Traumatic Dermatitis.

LONDON SCHOOL OF CLINICAL MEDICINE.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2.30 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m. Monday and noon Thursday; Skin, at noon and 4 p.m. Tuesday and at noon Friday; Eye, 11 a.m. Wednesday and Saturday; Radiography, 4 p.m. Thursday. Special Lectures: 2.15 p.m., Wednesday, Malignant Endocarditis; 3.15 p.m. Friday, Surgical Complications of the Exanthemata.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, The Senile Cardio-vascular System; Tuesday, Medical Conditions of the Alimentary Tract; Wednesday, Myopia; Thursday, Sympathetic Ophthalmia.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Out-patient Department, Fitzroy Square, W.—Thursday, 5 p.m., Lecture Demonstration—Pulmonary Tuberculosis in Children.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Syringomyelia; Friday, 3.30 p.m., Surgery of the Nervous System.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's Hospital, Tottenham, N.—The following are the Clinics and Demonstrations for next week:—Monday, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Throat, *X* Ray; Tuesday, 10.30 a.m., Medical Out-patient; 2.30 p.m., Operations, Gynaecological and Surgical Out-patient; 4.30 p.m., The Theory and Practice of the Production of *X* Rays. Wednesday, 2.30 p.m., Medical Out-patient, Skin and Eye. Thursday, 2.30 p.m., Gynaecological Operations, Medical and Surgical Out-patient and *X* Ray; 3 p.m., Medical In-patient; 4.30 p.m., Lecture, Surgical Disorders of Digestion. Friday, 10 a.m., Surgical Out-patient; 2.30 p.m., Operations, Medical Out-patient and Eye; 3 p.m., Medical In-patient.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week: Daily, 2 p.m., Medical and Surgical Clinics, *X* Rays; 2.30 p.m., Operations; Monday and Thursday, 2 p.m., Diseases of the Eye; Tuesday and Friday, 10 a.m., Gynaecological Operations; 2 p.m. (also Wednesday and Saturday, 10 a.m.), Diseases of Throat, Nose, and Ear; Tuesday and Friday, 2.30 p.m., Diseases of Skin; Wednesday, 10 a.m., Diseases of Children; Wednesday and Saturday, 2 p.m., Diseases of Eye. Lectures: 12, Monday, Pathological Demonstration; 5 p.m., Monday, Clinical; Tuesday, Clinical; Wednesday, Extraction; Thursday, Clinical; Friday, Clinical.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Monday, 5.30 p.m.: The Retention of Dentures in Difficult Cases.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
OCTOBER.	
26 SATURDAY...	NORTHERN COUNTIES OF SCOTLAND BRANCH, Palace Hotel, Inverness, 12.30 p.m.
27 Sunday ...	
28 MONDAY ...	
29 TUESDAY ...	CHESTER AND CREWE DIVISION, *Lancashire and Cheshire Branch*, Chester General Infirmary Board Room, 5 p.m.; Tea, 4.30 p.m.
30 WEDNESDAY	CENTRAL COUNCIL, Metropolitan Asylums Board, Victoria Embankment, 2 p.m. GUILDFORD DIVISION, *South-Eastern Branch*, Royal Surrey County Hospital, 4.30 p.m ; Tea, 4.15 ; Dinner, Lion Hotel, Guildford, 6.30 p.m.
31 THURSDAY...	FIFE BRANCH, Special Meeting, Hotel, Thornton, 3 p.m. SCOTTISH DIVISION, *Border Counties Branch*, Douglas Arms Hotel, Castle Douglas, 3.45 p.m.; Executive Committee, 3.30 p.m.
NOVEMBER.	
1 FRIDAY ...	CITY DIVISION, *Metropolitan Counties Branch*, Clinical Meeting, St. Bartholomew's Hospital, E.C., 5 p.m. SOUTHERN DIVISION, *Edinburgh Branch*, Oddfellows' Hall (Room 6), Forrest Road, 8.15 p.m.
2 SATURDAY...	
3 Sunday ...	
4 MONDAY ...	
5 TUESDAY ...	
6 WEDNESDAY	YORKSHIRE BRANCH, The University, Sheffield, 4 p.m.
7 THURSDAY...	
8 FRIDAY ...	LONDON: Standing Ethical Subcommittee, 1.30 p.m. BORDER COUNTIES BRANCH, County Buildings, Dumfries.
9 SATURDAY...	

Date.	Meetings to be Held.
NOVEMBER *(Continued).*	
10 Sunday ...	
11 MONDAY ...	
12 TUESDAY ...	LONDON: Organization Committee, 11 a.m.
13 WEDNESDAY	ULSTER BRANCH, Belfast.
14 THURSDAY...	
15 FRIDAY ...	
16 SATURDAY...	
17 Sunday ...	
18 MONDAY	
19 TUESDAY ...	
20 WEDNESDAY	
21 THURSDAY...	
22 FRIDAY ...	
23 SATURDAY...	
24 Sunday ...	
25 MONDAY ...	
26 TUESDAY ...	
27 WEDNESDAY	
28 THURSDAY...	CITY DIVISION, *Metropolitan Counties Branch*, Special Meeting, Hackney Town Hall, 4 p.m.
29 FRIDAY ...	
30 SATURDAY...	
DECEMBER.	
1 Sunday ...	
2 MONDAY ...	
3 TUESDAY ...	
4 WEDNESDAY	
5 THURSDAY...	ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, General Meeting. FOLKESTONE DIVISION, *South-Eastern Branch*, Victoria Hospital, Folkestone, 8.30 p.m.

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 2ND, 1907.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

ABERDEEN BRANCH.

THE annual meeting of the Branch was held in the Grand Hotel, Aberdeen, on Saturday, October 19th, at 1.15 p.m., Dr. J. SCOTT RIDDELL, M.V.O., President of the Branch, occupied the chair.

Confirmation of Minutes.—The minutes of the last general meeting held at Stonehaven in June were read and approved.

Report of Council.—The Council's report and Treasurer's report were read and approved.

Balance Sheet.—The following balance sheet for 1906 was presented:

INCOME.

	£	s.	d.
Capitation grants received from General Secretary	34	18	0
Interest on Deposit Receipt in Union Bank	2	6	0
	37	4	0

EXPENDITURE.

	£	s.	d.
Expenses of summer meeting	7	5	6
Expenses of annual meeting	0	10	0
Avery and Co. for printing, etc.	4	0	3
Secretary's outlays	2	0	0
Treasurer's outlays	0	3	6
Gratuity to Medico-Chirurgical Soc.'s hallkeeper	0	5	0
Surplus for year	22	19	9
	37	4	0

BALANCE ACCOUNT.

	£	s.	d.
In hand, December, 1905	110	10	0½
Surplus for 1906	22	19	9
In hand, December 31st, 1906	133	9	9½

Examined, compared with the vouchers, and found correct,

DAVID W. FINLAY,
JOHN R. LEVACK.

February 6th, 1907.

GEORGE WILLIAMSON, Hon. Treasurer.

Election of Officers.—Dr. Cran (Banchory) was elected President for the ensuing year and Dr. George Williamson President-elect. The Vice-Presidents are Dr. J. Scott Riddell and Dr. Maver (Bucksburn). Dr. Rorie (Cults), Dr. Lister (Aberdeen), Dr. Bell (Kirkwall), and Dr. Yuie (Lerwick) were elected Members of Council. Dr. Levack (Aberdeen) was appointed Treasurer vice Dr. Williamson. A notice calling for nominations for the post of Representative of the Branch on the Central Council of the Association will appear in the JOURNAL. It was understood that Dr. George Edmond has consented to his being nominated.

Summer Meeting.—The selection of a suitable place at which to hold the next summer meeting was referred to the Council as was also the consideration of the Referendum Report.

Vote of Thanks to Professor Finlay.—The PRESIDENT moved that the thanks of the Branch be conveyed to Professor Finlay for his long and untiring service to the Branch, and this was unanimously agreed to and the Secretary instructed to write in fitting terms to Dr. Finlay.

Dinner.—Thereafter the members lunched together at the Grand Hotel.

BORDER COUNTIES BRANCH:
NORTH CUMBERLAND DIVISION.

A SPECIAL meeting of the Division was held at the "Crown and Mitre," Carlisle, on Wednesday, October 16th, at 3.30 p.m., Dr. GRAHAM (Carlisle) in the chair.

The Referendum.—The Referendum from the Council of the Association *re* the draft Charter was discussed and voted on.

Ethical Rules.—On the recommendation of the Division Committee the Ethical Rules, as adopted by the Bradford Division, with Rule Z, were unanimously adopted for the Division.

CAPE OF GOOD HOPE (EASTERN PROVINCE) BRANCH:
EAST LONDON DIVISION.

AN ordinary meeting was held in the East London Club on September 10th; Dr. TANNOCK, Chairman, presiding.

Police Calls.—Correspondence in reference to police calls was read. It is evident that a medical man goes to a police call at his own risk as regards fees, and must take precautions accordingly before attending emergency cases.

Grahamstown Branch.—It was stated that an intimation had been sent from London that this Branch had been constituted since July 18th, 1907. The Grahamstown Branch are anxious to retain Steynsburg and the Fiscal Division of Fort Beaufort—less the town—in order to keep their numbers up to fifty and more. The meeting decided to grant this condition provisionally, but will formally con-

sider and sanction the proposition at the next meeting. The Honorary Secretary was instructed to write to Dr. Dru Drury to this effect.

South African Medical Congress.—A letter was read from the Transvaal Branch asking that delegates from the Division should attend a British Medical Association meeting at the South African Medical Congress. No delegate was appointed, as no one present was going up to Pretoria.

Nomination of Officers.—The following nominations for 1908 were made: *Chairman*, Dr. Roulston; *Vice-Chairman*, Dr. Grey; *Honorary Secretary and Treasurer*, Dr. Hill Aitken; *Committee*, Drs. Lownds, Tannock, Anderson, Rubidge, MacGregor, Alexander. It will be noted all are living in East London and Cambridge. This is in view of the formation of an East London Division of smaller area than at present exists.

Contract Practice.—As it had come out that the local clubs were trying to upset the arrangements lately made with them, the Honorary Secretary was told to write to each club asking if it was prepared to abide loyally by the agreement entered into some months ago, and if notice of three months on either side would be the rule. Dr. RUBIDGE related how his fees for attendance on a Forester, who was also a Harbour Board employé, had been taken exception to by the Foresters' Society. He insisted on payment, and in consequence of the Society's attitude, he wrote refusing further attendance on members of the Society. From the discussion that followed it is evident that a united and firm front must be made here if the abuse of club work was not wanted.

Paper.—Dr. ALEXANDER read an interesting paper on "The Recent Epidemic of Influenza." He said the attacks for the most part were mild. Cough was troublesome and not benefited by cough mixtures, but by gastric sedatives. One case simulated typhoid fever. Death in one man occurred from pericarditis, influenza being taken as the cause. Dr. ROULSTON and Dr. LOWNDS had noticed, like Dr. Alexander, that the cough yielded only to gastric sedatives. Dr. WARD had had several cases of stomatitis. In one instance he suspected diphtheria and injected antitoxin. Dr. HILL AITKEN spoke of the "ambulatory treatment" of influenza and subsequent convalescent stage. Patients not able to lay up were advised to "go slow" and to retire to bed early in the evening after the day's work. The bedroom must be well ventilated. Dr. MACGREGOR told of his experience of two cases in which loss of taste was complained of. In time the sense returned. Dr. TANNOCK had had one similar case. He was struck with subnormal temperatures during convalescence. The patients displayed a want of vitality. Dr. GREY found sal. soda most comforting to his patients. Dr. ANDERSON wished to know if any one had noted the effect of altitude on the incidence of the disease.

Case.—Dr. Rubidge's case of high myopia again kindly came to show himself. He reported still further improvement in vision.

Milk Sterilizer.—Dr. HILL AITKEN showed a Hawksley's milk sterilizer for use in infant feeding.

Vote of Thanks.—A vote of thanks was passed to Dr. Alexander for his paper.

GRAHAMSTOWN DIVISION.

Cases and Specimens.—At a clinical meeting of the Grahamstown Division, held at the Albany Hospital on September 13th, the following cases and specimens were shown: (1) For Dr. MULLINS: A case of abdominal swelling for diagnosis; opinion, plastic peritonitis following appendicitis. (2) For Dr. JONES-PHILLIPSON: Three cases of trephining for cerebral injuries in natives—namely, a boy of 12, wounded by a nail-headed reed; a girl of 13 kicked by an ostrich; a youth, aged 16, who had suffered from Jacksonian epilepsy after a blow from a stick; also a case of aneurysm of the innominate artery in an old man. (3) By Dr. GREATHEAD: A uterus removed by hysterectomy from a woman six years after the menopause for sarcoma of the organ; and a fibrous polypus of the cervix uteri of unusual size. (4) By Dr. DRURY: A specimen illustrating the condition of aural secretions known as "keratosis obturans." Votes of thanks were passed in favour of the exhibitors.

Pretoria Congress.—Resolved that Drs. Bruce-Bays and Jones-Phillipson be appointed as accredited delegates to represent the Division at the Pretoria Congress.

Honorary Secretary and Treasurer.—Resolved that Dr. Bruce-Bays act as Honorary Secretary and Treasurer in Dr. Drury's absence or until a fresh election.

Amendment of Medical and Pharmacy Act.—Resolved that the Secretary address a letter to the Colonial Medical Council supporting the letter of the East London Division of August 10th in their wish to amend Clause 56 of the Medical and Pharmacy Act of 1891, so as to make production of the current edition of the *Register* sufficient proof of registration.

Division Library.—Resolved that Dr. Darley Hartley be thanked for his kind offer of periodicals and medical works for the library of the Division.

COMBINED MEETING.

New Rules.—A special meeting (combined) of the Eastern Province Branch and Grahamstown Division was then held to deal with the new rules necessitated by the fusion of these bodies. These being merely a blend of the older compilations do not call for a detailed report, but will be printed in the annual report of the Branch.

EAST ANGLIAN BRANCH:

NORWICH DIVISION.

A MEETING of this Division was held on Saturday, October 19th, in the Norfolk and Norwich Library, Mr. C. J. MURIEL, Chairman of the Division, presiding.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

The Referendum.—The main business of the meeting was to consider the Referendum Report of the Council. Each resolution of the Representative Meeting referred by the Council was considered in turn and discussed at length. In favour of each resolution a unanimous vote was given, with the exception of the four resolutions relating to the composition of the Council, which were carried, one member not voting.

LANCASHIRE AND CHESHIRE BRANCH:

LEIGH DIVISION.

Hygienic Education of Teachers.—At a meeting of the Leigh Division, held on October 17th, the following resolution was carried unanimously:

> That practical and theoretical instruction in school hygiene should form a regular part of the curriculum in all institutions in which students are trained to become teachers of schools in all grades.

NORTH MANCHESTER DIVISION.

A SPECIAL meeting of the Division was held on Thursday, October 17th, Dr. HARGREAVES in the chair.

Proposed New Ethical Rules.—The Bradford Ethical Rules were adopted with the following alterations: (*a*) Rule B. The words "of those present . . . Meeting," and "prior to such meeting" be deleted. (*b*) Rule C. After the second word "Division" insert "Such specified part to be approved by the Division as a whole." (*c*) Rule D. Delete all following the words "behalf of the Division," and substitute:

> Offer the services of the Division to such member to obtain the terms agreed upon under Rule B; and such member shall satisfy the Division that he has used every means in his power to obtain such terms; and he shall then not be considered to have broken Rule A.

The Draft Model Rules of a Division not itself a Branch were adopted unanimously. Model Rule Z was adopted with the following addition:

> That any member of the British Medical Association (or non-member) not resident in the Division area who may meet in consultation a practitioner whose conduct is, in the opinion of the Division, detrimental to the honour and interests of the profession, shall be notified, in the manner provided by this rule, of the opinion of the Division; and should he, after his attention has been drawn to the opinion of the Division, again hold such a consultation in circumstances not of great urgency, his conduct shall *ipso facto* be deemed detrimental to the honour and interests of the profession, and shall be brought to the notice of members of the Division in the manner prescribed by paragraph (*a*) of Rule Z.

The Referendum.—The members present all voted in favour of the minutes of the Representative Meeting.

Notification of Births Act.—The Notification of Births Act, 1907, was considered, and it was decided to send to

the Joint Committee of the Manchester and Salford Divisions the following resolution for use as desired:

This Division strongly objects to this Act, and sincerely hopes it will not be locally adopted.

METROPOLITAN COUNTIES BRANCH:

Hampstead Division.

A meeting of this Division was held on Thursday, October 24th, at 8.30 p.m., at the Hampstead Conservatoire, Swiss Cottage, N.W., Dr. Pidcock in the chair.

Minutes.—The minutes of the last annual meeting were taken as read.

Letters.—A letter was received from Dr. Macevoy resigning his post of Representative to the Branch Council owing to the date fixed for Branch Council Meetings making it impossible for him to attend. On the proposal of Mr. Parsons, seconded by Dr. Oppenheimer, Dr. Macevoy's resignation was accepted with regret. Dr. Macevoy then proposed, and Mr. Nelson Hardy seconded, that nomination of the new Representative to the Branch Council be left to the Committee.

Council of Social Welfare.—Dr. Pidcock and Dr. Yeld were appointed the two Divisional Delegates to the newly-formed Hampstead Council of Social Welfare.

Representative's Report.—Mr. H. W. Armit then gave a short report of the proceedings of the last Representative Meeting. The question of the ethics of medical consultation had been referred back to the Central Ethical Committee. With regard to finance, he could assure the meeting that the Association was in a financially sound condition. The new building would necessitate the borrowing of £40,000, but this debt would certainly be expunged in less than twenty-one years. The site was exceedingly valuable. The money borrowed would be paid back either by a mortgage or by issuing debentures to members of the Association on the security of the building as it stands. Mr. Armit added that he had had the honour to be re-elected on the Medico-Political Committee and Finance Committee.

Vote of Thanks.—Dr. Oppenheimer proposed and Mr. Parsons seconded a hearty vote of thanks to Mr. Armit for his valuable services as Representative. Carried unanimously.

The Referendum.—Dr. Ford Anderson opened the discussion on this subject. He reminded the meeting that the Hampstead Division had taken the view that the old method of election was best. The Representative Meeting had not agreed, but had decided that the Council should in future be elected partly by the Branches and partly by the Representative Meeting. As a result the feeling of the Council (the majority) was antagonistic to the Representative Body. As a member of the minority of the Council who disapproved of the Referendum, he pointed out that the Council had put itself in an untenable position at the start by passing the clauses of the Charter No. 7 and No. 8. As regards Ordinance 17 (*b*), he submitted that the adoption of the Council's suggestion would be either dilatory or expensive. As regards By-law 36, he pointed out that the Council, having passed Clauses 7 and 8 of the Charter, had given the Representative Body power to alter By-law 36 as they pleased. The Council could not be, and had never been, a Second Chamber; it was only an Executive Committee. As regards By-law 37, the alteration naturally followed the change in By-law 36, suggested by the Representative Meeting. As regards By-law 29, the Council had already given its case away by passing Clauses 7 and 13 in the Charter, Subclause 9 (1) *i*, Ordinances 17 and 24, and By-laws 8, 50, and 52. In conclusion, he regretted the pushing forward of the Charter in the absence of proof that the old system was unsuitable; but the matter had now gone too far for the Association to turn back. Personally he wished that it were possible even now to retain the old method of election and the right of general meeting. Furthermore, before important decisions of Divisions were made law, he thought that the number of those voting in Divisional meeting should be known.

Mr. Nelson Hardy criticized Dr. Anderson's views on By-law 36, on the ground that in the clauses of the Charter passed by the Council the question of election was not expressly mentioned.

Mr. H. W. Armit said that the business of the meeting was to state definitely whether they agreed with the Council or not. He regarded the Referendum as an extraordinary document, but it must be taken seriously as a matter of principle. In his view the Council had no power to make any suggestions to Divisions in a Referendum report. The Representative Body was truly representative of those who took a real interest in the work of the Association. As regards By-law 36, he had faithfully put forward the views of the Hampstead Division, although personally he disagreed with that view. When it was clear that the old method of election of the Council could not be retained, he had agreed to the compromise suggested by the Representative Meeting, a compromise which he had received the permission of the Division to agree to in the event of the old method of election being negatived. If the meeting approved of the Council's Referendum it amounted to saying in so many words that the Representative Meeting had not in fact represented the views of the Association for the last three years. He agreed with Dr. Anderson that the Council's suggestion on Ordinance 17 (*b*) would be dilatory or expensive. The Council ought to have taken a Referendum on the points in the Charter and not on the by-laws. As regards general meetings the Charter had done away with those already, and if the Representative Body was to be the managing body he could not see the *raison d'être* of a general meeting. Members could safeguard their own interests by attending their Divisional meetings. As a matter of fact, moreover, general meetings were almost identical in personnel with Representative Meetings. In the past, special general meetings had repeatedly failed to attract enough interest to produce a quorum. As regards the Journal and Finance Committee he strongly approved of having two separate committees. Finally he called upon the meeting to disapprove of the Referendum and approve of the views of the Representative Meeting.

Dr. Oppenheimer thought that the Council had a right to make the Referendum in the form before the meeting In future the Association would be in the hands of the Representative Meeting, which was not truly representative. He would support the majority of the Council over By-law 36 and Ordinance 17 (*b*). By-law 29 was not worth challenging, however, and as regards the various other points in the Referendum, he was prepared to take the view of the minority of the Council.

Mr. W. B. Parsons said he was glad to hear that Dr. Ford Anderson was to some extent an advocate of the Council, although he signed the Minority Report. There was no doubt that the position of the Council was illogical. The Representative Meeting was representative of the most active members of Divisions, but he agreed with Dr. Oppenheimer in wishing to retain the old method of election, under which the views of the less active members of the Association might be voiced. He agreed with the Council's suggestion on Ordinance 17 (*b*).

Dr. James Stewart was in favour of supporting the greater independence of the Council, as under the old system, and thought it should have the power to refer.

Dr. Ford Anderson said that the Council should be merely administrative, and should fulfil the wishes of the Representative Meeting. Antagonism between the two bodies was disagreeable, and he thought that the compromise suggested by the Representative Meeting might bring about a state of harmony. This compromise—namely, election of 12 members by the Representative Meeting—would do no harm, especially if the 12 members were elected topographically. He was prepared to accept the compromise in the hope of removing friction.

Mr. Nelson Hardy regretted that there was no member of the majority of the Council present, as their case might then have been put more strongly before the meeting. He agreed with the compromise, but thought it might be wise to make provision that *not more than one-quarter* of the Council should under any circumstances be elected by the Representative Body. He would vote against the Referendum.

Mr. H. W. Armit, in answer to a question from the Chairman, said that the Representative Meeting had met five times. The meeting need not be afraid of being rushed in this matter, as of necessity the Division must

have a further opportunity of considering the Charter. The majority of the Council was trying to keep too much power, and the Representative Meeting was very strongly of opinion that a small number of the Council should be elected by the Representative Body.

Voting.—The Resolutions of the Referendum were then considered in order.

On Ordinance 17 (*b*) Dr. OPPENHEIMER proposed and Mr. PARSONS seconded:

> That the suggestion of the majority of the Council be adopted.

This, on being put to the vote, was lost.

Proviso as to Referendum.—Minute 123 of the Representative Meeting was then carried.

Composition of Council.—Minutes 283, 287, 293, and 298 of the Representative meeting were carried *en bloc.*

Grouping of Branches.—Minute 299 of the Representative Meeting was carried.

Mode of Election.—Minute 303 of the Representative Meeting was carried *nem. con.*

Business of Representative Meeting.—Minutes 328 and 330 of the Representative Meeting were carried.

Journal and Finance Committee.—Minutes 342 and 346 of the Representative Meeting were carried *nem. con.*

The opinion of the meeting was therefore against the Referendum on all points.

Resolution on Hygiene in Schools.—The following resolution, proposed by Mr. ARMIT and seconded by Dr. OPPENHEIMER, was then carried:

> That this Division endorses the resolution passed at the International Congress of School Hygiene in London, 1907, to the effect that practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades.

Letter of Regret.—A letter was received from Mr. F. R. Humphreys regretting inability to be present.

WANDSWORTH DIVISION.

THE first meeting of the 1907-8 session was held on Thursday, October 24th, at the Head Quarters of the 4th Volunteer Battalion, East Surrey Regiment, 27, St. John's Hill, S.W., Dr. GILBERT RICHARDSON in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Mr. H. A. Ballance (East Anglian Branch) and Dr. G. E. Haslip (Metropolitan Counties Branch) attended at the invitation of the Division. A letter was read from Dr. Parkinson (Dorset and West Hants Branch) regretting his being unable to accept the Division's invitation.

The Weir Bequest.—Dr. KER asked if the Division proposed taking any steps with reference to the "Weir Bequest." The CHAIRMAN replied that since he understood there was a very strong feeling that the Division should take some action, a special meeting to consider the question would be held at an early date.

The Referendum.—Dr. FOTHERGILL then opened a discussion on the Referendum, which was continued by Mr. BALLANCE, DRS. HASLIP, MCMANUS, KER, and GAY. The meeting unanimously approved of the Minutes 123, 283, 287, 293, 298, 299, 303, 328, 330, 342, 346 of the Representative Meeting.

Vote of Thanks.—The CHAIRMAN moved a cordial vote of thanks to Mr. Ballance and Dr. Haslip for attending.

WESTMINSTER DIVISION.

A MEETING of this Division was held on Thursday, October 17th, at 4.30 p.m., at St. James's Vestry Hall, Piccadilly. Dr. KNOWSLEY SIBLEY was in the chair.

Paper.—Dr. L. ARCHER read a paper in reference to the proposal of the Westminster City Council to provide free medical attendance for their employees. He said it was his duty to bring to their notice a matter which might at first sight appear trivial to some, but which, if it passed unchallenged and unchecked, in its immediate and ultimate results might become of extreme importance to the medical profession. At a meeting of the Westminster City Council held in June last a report was made by a joint subcommittee of its Works and Highways Committee upon the Council's responsibility for its injured and sick workmen, especially with regard to the Workmen's Compensation Act. By the Council's present system a workman, in case of illness or accident, was required to obtain weekly medical certificates from a district medical officer appointed by the Council before being paid sick or accident pay. The cost of these certificates, 2s. 6d. each, was borne by the Council, but the workmen themselves defrayed the expense of any necessary medical treatment. The cost to the Council for medical certificates supplied to workmen during the year ending March 31st, 1906, was £303 17s. 6d.; and during the year ending March 31st, 1907, it was £220 7s. 6d. To this must be added the cost of printing, postage, and the time of the staff taken up in dealing with the certificates. Councillor J. P. Wallis had been at pains to discover the average sum paid by friendly societies to their medical officers, and this, for attendance, medicine, and medical certificates, he puts down as 4s. per man per annum. He suggested that this would be an adequate basis of payment to make for the Council's workmen who lived within a radius of three miles of the City Hall, whilst a further 2s. should secure these benefits for those living beyond that radius. It was reckoned that 750 men would come under the former class and 250 under the latter, making a total annual expenditure of £225. We are informed that the average number of sick men per week is 50. Dr. Archer proceeded: Now, we cannot reckon that these 50 men could be seen on the average less than three times a week each, that works out at twenty-five attendances per diem—a fair day's work for any doctor when the distances to be covered are considered, and the fee per attendance, medicine and certificate comes to about 7d. But from this 7d. you must deduct the cost of drugs, rent and travelling, etc., so in the final result the net profit to the doctor would be not more than 4d. per attendance, if that. See, then, the position of a medical man accepting this appointment, this highly-trained and educated expert, this member of a learned and honourable profession will receive for his labour little more than the road sweepers and dustmen whom it is his duty to attend. Again, how does this Councillor of the City of Westminster salve his conscience for such a preposterous proposal? By an aspersion on the bona fides of the medical men who have served under the old scheme. The report states "that the duty of the medical man being confined to the issuing of weekly certificates at 2s. 6d. each, there is no inducement to pronounce a man fit for work at the earliest opportunity, as there would be if the medical man were also answerable for the treatment of the patient, and were the remuneration an inclusive fee per annum. In the case of the men, whilst we are not aware that malingering has been practised to any extent, it is rendered easy, if not encouraged, by the present system." In plain English, you and I, the general practitioner, who may be called in to attend these men, are so dishonest that the Westminster City Council will not accept a certificate from us. The doctors appointed to give these certificates are not to be trusted because of the temptation to pile up half-crowns, so they will try to remove temptation from the profession by paying 7d. for attendance, medicine, and certificate, and buy a doctor body and soul for two pounds a week. Gentlemen, this report was agreed to by the Westminster City Council with only one dissentient voice, that of Dr. Dutch; all those gentlemen whom we as ratepayers have sent to represent us on the Westminster City Council, solicitors, merchants, clergymen, and others, sit silent and hear an insult like this formulated against the medical profession without a protest. And why? Because we have been so apathetic, because of our want of cohesion and co-operation, because in a mistaken spirit of philanthropy we have allowed ourselves to be undervalued by the public rather than assert our own value and stick together for its realization. In this matter let me urge you to stand firm and do all that in you lies to prevent any medical man from accepting such an appointment as this City Council has proposed, for this is but the beginning. If the Westminster City Council leads the way by providing their workmen with medical advice and medicine at the expense of the rates, other municipal bodies will follow suit all over the country, with the result that we shall have thousands of men removed from the list of private patients and being attended at a starvation wage by doctors mean enough to accept such terms as those proposed. Gentlemen, I will not detain you many more minutes, but

there is another aspect of this matter to which I must call your attention. We of this Division are, I believe, all ratepayers in Westminster; at any rate, collectively we represent a pretty strong body as ratepayers. Now I have as a ratepayer taken expert advice as to whether the Westminster City Council have a legal right to expend the ratepayers' money in this manner, and I am advised that they have no such right, and further, that if they represent that medical attendance is part of their workmen's wages, they are infringing the Truck Act. I have therefore given notice to the Clerk of the Westminster City Council that it is my intention to appear before the district auditor at the next audit of the City's accounts, and to call upon him to disallow any expenditure that may have been made for medical advice and medicine, and to surcharge the members of the Council with the amount, and I call upon you as ratepayers to support me in this matter when the time arrives. For, gentlemen, after more than twenty years of practice, I am more and more sure that unless we rouse ourselves and stand hand in hand to co-operate in our own defence, the general medical practitioner will before many years are past become extinct, and be replaced by underpaid and overworked Government officials. Gentlemen, I thank you for the patience with which you have heard me, and hope that you will see your way to take some definite action in the matter brought thus crudely before you. After the discussion, in which Drs. Haslip, Finucane, O'Connor, Ewart, Bruce Porter, Sidney Phillips, and Harvey Hilliard took part, the following resolutions were adopted:

That this meeting protests against the Westminster City Council's new scheme for the medical attendance of their employees.

And that this meeting considers the proposed rate of pay of 4s. per man per annum quite inadequate for the medical services required.

Dr. Haslip moved that the whole question be referred to a special subcommittee, consisting of three members of the executive and three other members present, with power to act. This was carried *nem. con.*, and the following were appointed on the Committee: Drs. Archer, Dutch, Ewart, Haslip, O'Connor, Sidney Phillips, and the Chairman and Honorary Secretary.

Representative Meetings.—Dr. Haslip then moved the following resolution, which was agreed to:

That the Westminster Division notes with satisfaction that the Representative Meeting has decided to revise its Standing Orders as to the reception and consideration of the Reports of Committees, and has referred to the Organization Committee the duty of preparing suitable Standing Orders for the purpose. The Westminster Division feels that no business should be discussed, nor votes taken upon important questions by the Representative Meetings, unless such business and questions, and the agenda of all Representative Meetings, shall have been submitted to the Divisions at least one month prior to the assembly of a Representative Meeting

And that the Honorary Secretary and the Representative of the Division in Representative Meetings be instructed to take the proper steps to secure the consideration of a motion in accordance with the foregoing resolution by the next Representative Meeting, and that a copy of the resolution be forwarded forthwith to the Chairman of Representative Meetings, with a request that he will consider the propriety of bringing the same to the notice of the Organization Committee when drafting the amended Standing Orders.

Report of Annual Representative Meeting.—Dr. Ewart presented his report of the Representative Meeting at Exeter, and was accorded a hearty vote of thanks.

The meeting then terminated.

NORTH OF ENGLAND BRANCH:

Gateshead Division.

The usual meeting was held on Tuesday, October 1st, Dr. Jaques (Chairman) presiding.

Annual Meeting of Branch at Gateshead.—Dr. Kimpster presented a statement of the expenses incurred by the Division, and a balance-sheet. On the motion of Dr. Kimpster, seconded by Dr. Blacklock, the President (Dr. Cox) was thanked for the way in which he helped the Division to make the meeting the success it was. Dr. Cox replied, saying that the gratitude was due from him to the active members of the Division who had backed him up in such a cordial way.

Circular from the Reigate Division re *Royal Commission on Quackery and Amendment of Medical Acts.*—This was read, and the meeting unanimously agreed to ask the Council of the Association to consider the advisability of applying for a Commission.

Teaching of Hygiene.—A letter was read from Mrs. Watt Smyth, asking the Division to urge the Board of Education to insist on the instruction of teachers in personal and school hygiene. Dr. Durant moved and Dr. Cox seconded that the Division agree with the letter and approach the Education Department. Some discussion took place, some members fearing that this would lead to the formation of another class of semi-educated persons, to become eventually another class of unqualified practitioners. The resolution was eventually carried *nem. con.*

Annual Dinner.—This was fixed for November 20th.

Early Notification of Births Act.—Dr. Stewart reported that at a recent meeting of the Gateshead Health and Sanitary Committee the Act had been considered, and that he and Dr. Todd had placed the position of the profession before their colleagues. He said that he had never seen a matter affecting the profession so sympathetically received, the members realizing not only the awkwardness of the positions liable to be created by the notification of a birth on a postcard in some cases, but also the unfairness of imposing the unpaid duty on the medical profession under a penalty. He had been asked to bring the matter before the Division and see if the profession would object to using its influence to try and bring about a voluntary early notification, if the Council did not adopt the Act. Personally, he saw that early notification might be very useful, and he had little doubt that the profession would rather adopt the suggestion of the Health and Sanitary Committee than have the Act imposed on them. Alderman Todd and Dr. Clayton (M.O.H.) further explained the position, the latter pointing out that as the town possessed no health visitors he could not see the use of adopting the Act. Dr. Gilbert moved that the honorary secretary write a letter expressing the pleasure of the Division in having the matter referred to it and its desire at any time to assist the Council or its committees in matters involving the profession; also pointing out the feeling of the profession on the matter and promising the support of the Division in obtaining as far as possible a voluntary notification of births within thirty-six hours, if so desired. This was carried unanimously, and the Secretary was asked to inform the other Divisions in the Branch of the action of the local council so that they might possibly get the same consideration. (Since the meeting, the letter of the Division has been considered by the Health and Sanitary Committee, and a reply has been received from the town clerk thanking the Division for the expression of its opinion and conveying the welcome intelligence that the Committee had resolved unanimously to advise the Council to take no action at all. As the Council *is* the Health and Sanitary Committee this disposes of the matter.)

The Referendum.—A special meeting was held at the close of the ordinary meeting to consider the Referendum. Considerable discussion took place, Drs. Durant, Green Gilbert, the Chairman, and the Honorary Secretary taking up various points in the case. It was unanimously resolved that the Chairman and Secretary be instructed to fill up the form expressing the approval of the Division of the action of the Representative Meeting in each case. Dr. Gilbert moved, and Dr. Green seconded, that a resolution be also sent to the Council expressing the view that the Referendum is unconstitutional in form—agreeing in this with the Committee of the Representative Meeting—and that if the Council had wished to seek the opinion of the Divisions on certain points in the Charter there had been ample opportunity before, and that their belated action was only delaying the obtaining of the Charter. This was also carried unanimously.

OXFORD AND READING BRANCH:

Oxford Division.

A special general meeting of the Division was held on October 4th, at the Radcliffe Infirmary, Oxford, at 3.15 p.m., to consider and vote upon the Referendum issued by the Central Council. Dr. R. Yelf took the chair, as Chairman of the Division.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

The Referendum.—The CHAIRMAN made some preliminary remarks concerning the history of the Council, and appealed to the members to support the resolutions of the Representative Body. Dr. COLLIER put the case from the majority of the Council's point of view, urging that the Representative Meeting was not truly representative, by reason of the small attendance at most Divisional meetings at which Representatives were elected. The good attendance at meetings of the Oxford Division was due to their being carried out on the lines of the old "Oxford Branch," at which business and medical politics were not allowed to exclude matters of medical and scientific interest. He drew attention to the democratic tendencies of certain Divisions, and for the need of a second chamber —namely, the Council. Such schemes as Parliamentary representation and medical defence, which were to some extent supported by the Representative Meeting, would, in his opinion, be very unwise for the Association to adopt. The individual resolutions of the Representative Meeting, as defined in the minutes, were then taken in order, and voted upon, the arguments for and against being first pointed out by Dr. YELF (Chairman), Dr. DUIGAN (Representative), and Dr. COLLIER (member of Council). The Representatives' proviso as to the Referendum was carried. The resolutions concerning the composition of Council, grouping of Branches, mode of election by groups, and business of Annual Representative Meeting, were lost. The Journal and Finance Committee resolution was carried. The proceedings then terminated.

SOUTH-EASTERN BRANCH:

CANTERBURY AND FAVERSHAM DIVISION.

A SPECIAL meeting of this Division was held at the Cottage Hospital, Herne Bay, on Thursday, October 17th; T. ARMSTRONG BOWES, M.D., presided.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Next Meeting.—It was decided to hold the December meeting at Faversham, and to invite Dr. Alexander (Faversham), the Chairman of the Division, to preside.

The Referendum.—The members voted upon the referred minutes of the Representative Meeting as follows: Unanimously in favour of Minutes Nos. 123, 283, 287, 293, 298, 303, 328, and 330. Unanimously against Nos. 299, 342, and 346. Previous to the voting the meeting was addressed by Dr. TYSON (member of the Council of the Association), Dr. DODD (Representative Folkestone, Ashford, and Dover Divisions), and Dr. GOSSE (Representative Canterbury and Faversham and Isle of Thanet Divisions).

Paper.—Dr. T. ARMSTRONG BOWES (Herne Bay) read a paper on a case of Henoch's purpura. The chief points in the case were the absence of haemorrhage from the bowels, kidneys, etc., and entire absence of eruption in the cuticle during the first two attacks, characteristic spots only appearing in the third attack, rise of temperature absent during first two attacks also, slow pulse during the attacks, the neuropathic family history, the prominence of abdominal symptoms. Dr. DUDLEY GARRETT (Faversham) described a case under his care, and several members discussed the paper.

Police Emergency Fees.—Dr. HENCHLEY (Canterbury) reported that this subject was brought before the South-Eastern Branch at their last meeting. The Honorary Divisional Secretary will be glad to hear from any member of any specific case or cases where, called in by the police, fees were earned but not paid.

Medical Law Reform and Quackery.—The following resolution, proposed by Dr. HENCHLEY and seconded by Dr. GOSSE, was carried unanimously:

> The Canterbury and Faversham Division of the South-Eastern Branch of the British Medical Association would urge upon the Council the desirability of the promotion of a Royal Commission to inquire into the whole question of medical law, into the practice of the profession by unqualified pretenders, and into the traffic in quack medicines and apparatus. This Division believes that the exposure which a Commission would effect would prove that reform is called for much more for the protection of the public than the advantage of the profession; that it would force the attention of the Legislature to the question, and lead to the speedy construction of laws for the abatement of existing evils.

Hygienic Training of School Teachers.—The following resolution, proposed by Dr. GOSSE and seconded by Dr. BOWES, was carried unanimously:

> That instruction in personal and school hygiene should form a regular part of the curriculum in all institutions in which students are trained to become teachers in schools of all grades, and that such instruction should be given by medical men.

Votes of Thanks.—Votes of thanks were passed to Dr. Bowes for presiding, and to the Herne Bay Cottage Hospital authorities for their hospitality, and also to Dr. Tyson for so kindly attending the meeting, and for his observations.

Luncheon.—Members were entertained to luncheon prior to the meeting by the Chairman.

MAIDSTONE DIVISION.

A MEETING of this Division was held on October 25th at the Kent Ophthalmic Hospital at 3.30 p.m., Mr. F. TRAVERS (Vice-Chairman) in the chair, in the absence of the Chairman, Mr. R. T. Caesar.

Confirmation of Minutes.—The minutes of the last meeting were confirmed.

Referendum.—After Dr. DOUGLAS had carefully explained the questions at issue, a vote was taken on each case, and in every instance the meeting was unanimously in favour of the resolutions passed at the Representative Meeting.

Medical Service in Territorial Army Scheme.—It was proposed that the Division should invite Sir Alfred Keogh, Director-General, Army Medical Service, to address the members on the proposed medical service of the territorial army scheme.

SOUTH MIDLAND BRANCH.

THE autumnal meeting of this Branch was held at the Railway Hotel, Bletchley, on Thursday, October 10th, at 2 p.m., under the presidency of Dr. CHILLINGWORTH, Bedford.

Confirmation of Minutes.—The minutes of the annual meeting were read and signed.

Election of Branch Council.—The election of Dr. G. W. Greene of Turvey by the Branch Council was announced.

Public Vaccinators' Fees.—A letter was read from Mr. O'Rafferty of Daventry in reference to public vaccinators' fees. It was resolved:

> That a printed letter be sent to all medical practitioners within this Branch area, expressing the opinion of the Branch that the acceptance of lower fees by public vaccinators in rural districts is derogatory to the best interests of the profession, and that no member of the Branch would be justified in accepting such reduced fees.

Specimens.—Mr. BLAKE ODGERS showed (1) sarcoma of humerus from a child, removed by a forequarter amputation followed by injection of Coley's fluid—no recurrence after two months; (2) embryoma of neck from a baby, the tumour being nearly as large as the child's head.

Papers.—The following were read: Dr. ROBSON, "The recognition of the contracted white kidney as a pathological entity." Dr. Robson pointed out that the disease, occurring usually between the ages of 20 and 35, was very insidious in its onset, did not give rise to oedema, and was especially characterized by attacks of acute uraemia of fatal issue. He described the eye changes which are of such frequent occurrence. He compared and contrasted the disease with chronic tubal nephritis and with the red granular kidney, both clinically and pathologically. The diagnosis is difficult, and the treatment unsatisfactory. The latter being due to the advanced state of the disease when first diagnosed. Dr. LARKING: The general practitioner and the British Medical Association. (A copy of this paper was sent to all members.)

BEDFORD AND HERTS DIVISION.

THE autumn meeting of this Division was held at the County Hospital, Bedford, on Tuesday, October 15th, at 3 p.m., Dr. A. C. HARTLEY, Chairman, presiding.

Confirmation of Minutes.—The minutes of the annual meeting held at Luton on June 4th were read by the SECRETARY, approved by the meeting, and signed by the CHAIRMAN.

Vote of Thanks to Retiring Chairman.—A vote of thanks to the retiring Chairman, Dr. H. Sworder of Luton, for his conduct of the chair during the past year, and for his

hospitality on the occasion of the annual meeting, was proposed, seconded, and carried.

Hygienic Education of Teachers.—A letter from Mrs. Watt Smyth on "the training of school teachers in hygiene" was read, the matter discussed, and the resolution of the recent International Congress of Hygiene, namely:

> That practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades

was supported unanimously by the meeting.

The Referendum.—The meeting then proceeded to consider the Referendum on certain clauses in the Charter. Dr. R. H. Coombs and Mr. R. H. Kinsey having spoken on the subject, votes were taken, the members voting unanimously for the Representative Meeting Minutes numbered 123, 283, 287, 293, 298, 299, 303, 330, 342, and 346. Minute 123 met with approval of the meeting, which passed the following resolution unanimously:

> That the Referendum of the Council has not been taken in accordance with Articles XXII and XXXV, and is therefore unconstitutional.

Vote of Thanks.—A vote of thanks to Dr. Coombs and to Mr. Kinsey for their remarks was proposed, seconded, and agreed to.

The meeting then terminated, and the members adjourned to another room, where tea and coffee were provided.

Northamptonshire Division.

On October 22nd a meeting of the Division was held in the Board Room of the General Hospital, Northampton. Mr. G. H. Percival (Chairman of the Division) occupied the chair.

Luncheon.—The meeting was preceded by a luncheon at Franklin's Restaurant.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Representative Meetings.—Dr. Baxter then read a long and very able report of the Representative Meetings which he had attended. He emphasized the following points: The constitution of the Council and the new mode of election to it proposed in the Charter; the question of a separate Journal and Finance Committee; the new Royal Charter itself; the Ethical Committee's report on the ethics of medical consultations; the question of the Ethical Committee prosecuting penal cases before the General Medical Council; the results of the Hospitals Committee's conference; the Medico-Political Committee's action in contract practice disputes, whereby better terms had been obtained for individual medical men. The importance of adequate subscriptions to the Central Emergency Fund was noted, the questions of the Notification of Births Bill and the medical inspection of school children were touched upon, and a full analysis of the report of the Special Finance Inquiry Committee was given.

The Referendum.—The Referendum on the Draft Charter was then taken. Mr. Kinsey ably explained the views of the minority of the Council, and pointed out that in his opinion the present Referendum was illegal and *ultra vires*. A discussion on more or less general principles then ensued in which Dr. Buszard, Dr. Linnell, Dr. Hichens, Dr. Burt, and Dr. Baxter took part, and in which the misfortune of having the Association entirely governed by only one body—the Representative Meeting—and not by both the Representative Meeting and the Council, was emphasized by some of the disputants and as strongly combated by others. The voting on the Referendum then took place, the majority being in favour of the proviso as to Referendum, the composition of the Council, the grouping of Branches, the mode of election by groups, the business of Annual Representative Meeting, and the Journal and Finance Committee. The discussion on the Finance Inquiry Report was postponed for the revised draft.

Hygienic Training of Teachers.—On the proposition of Dr. Linnell, seconded by Dr. Hichens, Mrs. Watt Smyth's resolution was carried, namely:

> That practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades.

Notification of Births Act.—Dr. Hichens mentioned the result of circularizing the seven members of Parliament in the Division on the Notification of Births Act. Four gave no answer; three answered—one to say he was ill and could not attend the debates, one to say that the matter should have his attention, and the other to say that he should vote against Dr. Cooper's amendment.

Tea.—The meeting then adjourned to tea at the Chairman's house.

Southern Branch:
Salisbury Division.

A meeting of the Division was held at the Infirmary, Salisbury, on Wednesday, October 16th, at 8.15 p.m., Dr. Farr of Andover in the chair.

Dinner.—The meeting was preceded by dinner at the County Hotel.

Confirmation of Minutes.—The minutes of the last meeting were read and approved.

Vote of Condolence with Mrs. Coates.—The Chairman proposed that a vote of sympathy on behalf of the Division be sent to Mrs. Harcourt Coates on the death of her husband, Mr. Harcourt Coates, for many years a member of this Division. Carried *nem. con.*

Hygienic Education of School Teachers.—Letter read from Mrs. Watt Smyth advocating "the training of school teachers in hygiene." Dr. Fison proposed and Mr. Wilks seconded:

> That this Division expresses sympathy with the resolution quoted by Mrs. Watt Smyth.

Carried *nem. con.*

The Referendum—The members present voted against the minutes of the Representative Meeting mentioned below, namely: Nos. 123, 283, 287, 293, 299, 303, 328, 330, 342, and 346.

Central Emergency Fund.—A letter was read from the Medical Secretary calling attention to the claims of the Central Emergency Fund. The matter received the cordial support of the members present, and the sum of £5 0s. 6d. was collected in the room from the members present. The Secretary was instructed to write to the members who have been unable to attend the meeting, in order that they might, should they wish to do so, contribute to the Fund.

Discussion.—A discussion on spasmodic asthma was opened by Dr. Blackmore. A most interesting discussion followed in which many members took part. Dr. Blackmore was thanked for his able and interesting opening address on the subject.

Photographs.—Dr. Fison showed photographs of an elbow joint which had been wired for fracture.

The meeting then terminated.

West Somerset Branch.

The autumn meeting of this Branch was held at the Taunton and Somerset Hospital on Friday, October 25th, at 4 p.m.; the President (Dr. G. W. Harvey Bird) was in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and signed.

Medical Certificates.—The report of the Subcommittee on Medical Certificates was read, in part approved, and ordered to be printed and circulated among the members of the Branch. The portion relating to insurance certificates was referred back to the Committee, with a view to securing the co-option of practitioners in neighbouring Branches in joint action.

Address and Cinematograph Exhibition.—An address with cinematograph exhibits was given by Dr. H. Campbell Thomson, Assistant Physician to Middlesex Hospital. The diseases illustrated were: Disseminated sclerosis, pseudo-hypertrophic paralysis, spastic paraplegia, cerebral diplegia with athetosis, Friedrich's ataxy, paralysis agitans, cerebellar ataxy. The chief clinical features of each disease were very clearly demonstrated by the pictures, including films showing the varieties of nystagmus which occur in some of these diseases. The occasion is noteworthy as being the first medical lecture ever illustrated by the cinematograph in this country.

Vote of Thanks.—A cordial vote of thanks was accorded Dr. Campbell Thomson for his highly interesting and instructive entertainment, which was much enjoyed by the large company present.

The Referendum.—This matter was next discussed and the necessary divisions taken.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

THE autumn meeting of the Branch was held on October 18th at the Herefordshire General Hospital. Mr. THOS. TURNER, F.R.C.S., was voted to the chair in the unavoidable absence of Dr. C. H. East, President.

Apologies for Non-attendance.—Letters of apology for non-attendance from several members were read.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Demonstrations.—Professor R. F. C. LEITH (Birmingham) gave a lantern demonstration on opsonins, the opsonic index and phagocytosis, followed by an actual demonstration on the method of taking the opsonic index.

Vote of Thanks.—A vote of thanks proposed from the Chair for Professor Leith's interesting and instructive demonstration was carried by acclamation.

Paper.—Mr. CLIFFORD TAYLOR read a paper on the general treatment of peritonitis. A discussion followed, in which Drs. PAUL CHAPMAN, BATES, G. CROWE, POLLARD, EDGAR MORRIS, TURNER, and MORRISON took part. Mr. TAYLOR replied on the general discussion.

Medical Acts Amendment and Quackery.—The resolution of the Reigate Division *re* medical law reform and quackery was referred for consideration to the Divisions on the motion of Dr. HERBERT JONES, seconded by Dr. G. CROWE.

THE GENERAL PRACTITIONER AND THE BRITISH MEDICAL ASSOCIATION.*

By ARTHUR E. LARKING, M.D.

THE medical profession ten years ago was composed of a number of different societies each working in its own way to further the interests of its members and the profession generally. There were numerous medical societies in various towns, also the Incorporated Medical Practitioners' Association, the Medical Guild of Manchester, and many others, including our Association.

There arose a strong feeling of dissatisfaction with the general condition of those who form the bulk of the profession, the general practitioners; questions about ethics, clubs, midwives, hospitals, and other matters with which medical men were concerned were becoming more acute, and it began to be realized that isolated action was useless and that combination was wanted. As a result, a few of those who took interest in the betterment of our lot conferred together, and a conference of the various societies was called together at Manchester.

The result of this conference was that various suggestions were made, and finally it was decided that the best way to effect a solution of the difficulty was to take advantage of the existing British Medical Association, get its constitution altered to suit our times, and make it an Association truly representative of the medical profession.

Let me remind you that this decision was a momentous one for our Association. Had it not been chosen as the means by which they should act, it would have been supplanted by a younger and more vigorous opponent, or would have remained as it was then—an Association purely for scientific purposes, combined with an annual social function attended by the more leisured and prosperous members of our profession. The societies existing at that time—and many still exist—were increasing in number year by year, and one of them, the General Practitioners' Association, was strong enough to secure the election of its three nominees to the General Medical Council. But it was determined that an effort be made to secure combination, and our Association was fortunately selected as the means by which to set to work.

This change of policy of the Association, in which it decided to give great prominence to the honour and interests of the profession, while still keeping up its scientific work, has never been accepted by a large number of those who formerly controlled it.

In the older days it was looked upon as a sort of mutual admiration society. It was considered quite the right thing to belong to it, and the members regarded themselves as rather superior to the general run of practitioners. They dined together at long intervals, about a dozen out of the membership of 200 or so would attend, and any thought or mention of such a thing as money or fees was deprecated as entirely subsidiary and quite unworthy of consideration by such a collection of medical aristocrats. The average general practitioner was conspicuous by his absence. He paid his guinea for his JOURNAL, and was quite content to let matters rest, although in his heart existed a yearning for better days. He did not like to make a move. But there arose a band of men like Sir Victor Horsley, Dr. Crawshaw, Smith Whitaker, Alfred Cox, Rutherford Morison, and others, and they led the van in the cry for medical reform and gave it voice.

The result is that our Association now has about 140 Divisions or units, and each has its governing committee, a chairman, secretary, its rules, its meetings, elects its own Representative, and sends him to the annual meeting to vote as the Division has decided he shall vote, after considering the various questions to be brought up for consideration. Thus the Representatives should represent the views of the medical practitioners all over the world who belong to our Association. This has only existed for four years, and it has been one continual struggle to make our Association a really useful and representative one.

It was found at once that the old Memorandum of Association prevented us from carrying out several projects calculated to benefit our members; we were prevented from dealing with matters that we knew it was absolutely necessary to deal with if we desire to make our Association of real use, and in consequence it has been decided to apply for what is termed a Charter. This allows us freedom of action in nearly every direction, and will allow us to deal with questions formally *ultra vires*.

But there are croakers in every body of men, and our Association is no exception. I remember going to a special meeting in London, where, by a majority of only one or two (how glad I was that I went!) the new constitution was carried. I heard some of these croakers. The Association was going to the dogs! No change was needed! Hundreds would resign! Yet, in spite of all these false prophets, our Association has kept on increasing, and the Council has such confidence that it is rebuilding its central offices and erecting a very imposing building. Do you think this would be done if they had no confidence in the future?

And now these same old croakers, the same men with the same lugubrious tale, are prophesying disaster from the Charter and from various other changes passed by the Representative Meeting. Don't you believe them or listen to them. Put your trust in Victor Horsley, Macdonald, Latimer, McManus, Alfred Cox, and the other 130 truly representative men sent from all parts to the Representative Meeting.

I had the honour of being Representative for Ashford, Folkestone, and Dover for three years, and judging by the men I saw there, and the debates and the business-like way the whole meeting was conducted, I have every confidence in the Representatives. The great majority are general practitioners like ourselves; they know our wants, our troubles and trials, our hopes and our aspirations.

But an anomaly exists in our Association, in that we have another representative body (the Central Council) elected by the same men as the Representatives, only by a larger constituency in which Divisions are grouped. These are elected by voting papers sent to each member. The Representative is, as you are aware, elected at a Division meeting, and not by ballot paper. I think it is a mistake to give a vote to a man who, by failing to attend meetings, has not heard the questions argued from both sides of view. There are about 130 Representatives and 70 Councillors.

They are quarrelling, as one might naturally expect! The members of the Central Council and the members of the Representative body are composed of different types of men. Three fourths of the Council are consultants, specialists, professors, or connected with teaching or examining bodies, whilst less than 20 are general practitioners. In the Representative Body nearly all are general practitioners.

As you are all aware, we general practitioners are so convinced of the hopelessness of expecting any consideration in connexion with our material and pecuniary interests from men of the same class as the General Medical Council, that we consider it is of the utmost

*A paper read before the South Midland Branch.

importance to insist that the governing body of our Association shall have a majority representing the general practitioners, who are the majority of the profession.

The dual representation is an anomaly, and yet it was the gentlest way of performing the happy despatch; for nobody can doubt for a moment that the Representative Meeting must naturally gain the day. The reason why the Council consists mainly of consultants and men who are not general practitioners in the usual sense of the term is that up to the present members have failed to see the importance of selecting the right men for the post. There has never been any competition, and year after year the same men have been proposed and elected without meeting their constituents or explaining their views. Now that we know their views by their voting on the referendum question, we shall take very great care they are opposed at the next election. I am delighted to see that your Councillor, Dr. Kinsey, is on the right side.

The Referendum will settle the matter, for is it likely that members are going to be such idiots as to vote one way in electing a Representative and another when the matter is referred to them by means of a Referendum? Let us hope this will be a final struggle of the old party, and we trust they will leave us alone and let us go to work properly.

The British Medical Association has got such a reputation in the past for doing nothing for the general practitioner that it has got to live that down first, and it can do nothing for him until it gets its machinery in working order and overcomes the opposition of those who are content to go on as in the past, and, as somebody remarked, "Take it all lying down." I have been a member of the British Medical Association for many years. When, in 1888, I was in practice in Mid Bucks, I was so convinced of the dormant utility of the Association that I went so far as to circularize all the medical men in that part with the view of establishing a new Branch. The favourable answers I received convinced me that among general practitioners there was a strong desire for combination and establishing better relations between themselves. Since that date all is altered. We now have the new Constitution, Divisions have been formed, and the machinery now exists by which every medical man has an opportunity of meeting his professional colleagues, reading papers before them, obtaining their support in disputes, their friendly offices in differences with other medical men, and, most important of all, securing their co-operation and even financial support when he feels that in the interests of the profession at large he can no longer submit to rules or conditions imposed upon him by public bodies, friendly societies, Boards of Guardians, and others.

Yet the disheartening fact remains that scarcely 50 per cent. of medical men in the area of this Branch belong to our Association? Why is it? I have very decided opinions as to why this unfortunate want of combination exists, and I propose to make a few suggestions as to the reasons for it. In East Kent the difference in the work of the Association during the last few years is most remarkable. I remember when I went there about ten years ago I attended a meeting of the East Kent District in which over 200 men resided, and only about a dozen were present. Sometimes the numbers rose to 20 or 30. At the present time there are five Divisions in existence, and the average attendance is over 75, an increase of at least 300 per cent. So that we may say that, as far as attendance at meetings goes, the new Constitution is a great success in that locality.

I am not aware of the condition of the Association in this Branch before the new Constitution. At present there is, I believe, a membership of a little over 200. Of these, about 100 are in the Northampton Division, 90 in the Bedford, and 20 odd in the Aylesbury. Yet there are over 400 medical men in the area of the Branch. Is this a satisfactory state of affairs, and is anything being done to remedy it? I believe the funds of the Branch are in a flourishing condition, and the difficulty is to know how to spend them. I have attended meetings of the Northampton Division; although the debates were good the social part was lacking, and the attendance small. I also attended a meeting of the Branch at Bedford, which was certainly not characterized by liveliness nor enthusiasm.

The fact is that we ought to know each other better; we should meet oftener, and we should put the social part in a more prominent position. The secretaries, chairmen, and other old members should make it their duty to introduce men to each other, and make them feel at home. The greatest care should be exercised in choosing the secretaries and chairmen. I know Divisions that have been ruined by their secretaries. Select popular men and good level-headed business men. Never mind whether they are M.D.'s Lond., or F.R.C.S.'s. Let them be conversant with the conduct of meetings, and see that they take a real interest in the progress of the Association, and know its Memorandum of Association and rules. Never put a modest man in the chair. Modesty is all very well at a bedside, but it is out of place in a chairman. He must control the meeting, keep it to the point and prevent waste of time. He must not let the meeting lead him, but must be prepared to assert his authority. I would never put a man in the chair unless he had been a regular attendant at the meetings previously.

Personally, I don't believe in those cut-and-dried meetings in the board-room of a hospital, with uncomfortable chairs, bare walls, and the general "not-at-home" air of the place. I prefer a comfortable room, with soft ottomans, cosy armchairs, pictures, and soft carpets, and then the meetings will go off well, and we shall recognize that we have come together to enjoy ourselves among our fellow-members, and that the British Medical Association is not only for the promotion of medical and allied sciences.

If we want to make our meetings attractive, we should provide a menu suitable to all tastes. Some men like to hear a good paper read, others like to join in the discussions, but many care for neither, and these must be catered for. They care more for a friendly chat, or discussing a point of ethics. Therefore I think lunch, tea and other refreshments, with smokes, should always be provided. I notice that neither in this Branch nor in the Divisions are any dates fixed for meetings. This is wrong. It should be decided how many meetings be held during the year, and the day fixed on the first Thursday, Friday, or any day in a certain month and at a certain time. The locality should be selected at the previous meeting and the chairman chosen. It should be his duty to arrange, in conjunction with the other medical men of the locality, the social part of the meeting. If possible, a visit to an interesting spot—whether a church, ruin, museum, factory, works, asylum, sanatorium or such like—should be arranged, especially in the summer months. Each Division should publish annually a full repert of its proceedings and discussions, and a copy sent to every member. I regard this as most important, as showing to those who absent themselves that it is possible to progress without them, and perhaps inducing them to take an interest in the work of the Division.

The funds of the Branch should be expended in furthering the influence of the Association, and we should never have such a statement at our annual meeting as that not a single new member has joined. Such a calamity should be the signal for the Secretary and President both to resign without any delay.

When our new President took the chair at Bedford he gave us a most suggestive address. I wish he had also made a vow that he would increase our numbers by at least fifty new members. With his personality he could easily do it if he would make up his mind.

But, after all is said and done, there will never be any chance of any but a certain percentage attending the meetings. In all societies, whatever they are, it is a few who run them, who do all the work, who fill all the offices, act on the committee, and keep the work going. The general body give their support, pay their subscriptions, and have the satisfaction of knowing they are supporting a good cause; they don't want the bother, or they have not the time, to take any active part in the Association. They have confidence in those who do the work, and, if any crisis arises or any dispute, they rally round and show that, although they do not attend the meetings, they are in sympathy with those who do. It is to these members, I think, we owe a printed report of all our proceedings, together with the financial statement and list of members every year.

I have been much struck by the general pessimistic spirit that prevails with regard to the Association in this part of the country. We hear men saying, "What is the good of the British Medical Association? They never do anything!" Such a statement shows such

a lamentable lack of knowledge of current events that it is evidence to my mind that our Branch is not doing what it should to advertise and increase the influence of the Association. Naturally the men who do not attend the meetings know nothing of what is being done; the reports of Division meetings I have seen in the JOURNAL are too meagre to be of use. If men won't come to the meetings, we must take the meetings to them, or we must send them a good report of our proceedings.

My experience is that if you have few meetings you have small attendance. More meetings means more attendances. It seems as if the more they have the more they want. I think Divisions should meet at different towns in their area and not always at one place. For instance, in the Northampton Division there should be meetings at Buckingham, Wellingborough, Kettering, Bletchley, Brackley, and other centres at intervals so as to give the resident medical men an opportunity of attending.

We want more "push" in our Association and a more active policy. New-comers should be canvassed at once and asked to join. We should endeavour to give them something for their money in the shape of friendship and comradeship.

We are too apt to forget that "divided we fall, united we stand." Every bad friendship between local medical men means a gain to the public and a loss to the profession. What a terrible state of professional disunion exists in some places. I know of places where medical men pass each other without any salutation whatever, where it is the rule to avoid associating with the other medical men in the place, where an air of general distrust and suspicion exists between medical men, and every opportunity is taken to pick a quarrel or create a grievance. When perchance they do speak, it is to say something that hurts the feelings, and makes it so unpleasant that interviews are avoided instead of being sought. It is at such places as these that our Association is wanted, and wanted badly. *Esprit de corps* must be cultivated. If one member of our Association has a complaint to make against another he should have the opportunity of bringing the matter before a Committee of the Division without any undue fuss or bother. After investigation both should have the views of the Committee clearly put before them by the Chairman. An apology should be given and the two should be obliged to shake hands.

If it were generally recognized that being on bad terms with one's neighbours was a professional crime for which a definite reason must be given, we should hear less of quarrels between medical men. I am quite aware that there is a certain type of man with whom it is impossible to associate or confer, but they are scarce. My experience—and I have been qualified now nearly twenty-five years—is that nearly all medical men, especially general practitioners, are thoroughly good fellows at heart, but that the keen competition and the prevailing distrust has somewhat embittered them towards their neighbours. It is only of comparative recent date that they are beginning to realize, and that very slowly, that it is absolutely necessary for the welfare of the profession that they unite and abolish this petty and shortsighted spirit of unfriendliness towards their medical neighbours. The spirit of professional union (I will not say trade unionism) is abroad among us. We are beginning to see that it is necessary to protect ourselves in order to live.

As I have said before, the British Medical Association is the instrument through which we must work—there is no other available. How can we prove to waverers that the Association is doing an immense amount of good? How can we answer when someone asks what is the good of belonging to the British Medical Association? Let me mention a few points that we can bring to their notice.

First, with regard to contract practice. The report issued by the Medico-Political Committee was a record of what contract practice is, and it gave statistics on such a scale that they must be approximately correct. It proves that contract practice is much abused, and suggested various means by which it could be lessened and made more remunerative. There had never previously been such an investigation, and with the facts it brings out it must help to convince friendly societies that they are not dealing fairly with us. It has led many medical men in various parts of the country to insist on a higher yearly sum, and the only thing that is needed is to get every medical man into our Association, and then we shall have the matter in our hands.

Take again the warning notices in the JOURNAL. What an immense amount of good they have done and are doing. In many instances it has been found quite impossible to obtain candidates for the posts that are advertised when they are among the black list. You are constantly seeing instances in the JOURNAL where victory has rested entirely with our members. The younger generation of medical men are getting more and more shy of clubs and contract appointments.

The fact is that, if we could only realize it, we could all of us increase our incomes and increase our leisure by combining and refusing to accept underpaid appointments. But we have not yet got to realize it, and unless the British Medical Association pursues a more active policy we shall never reap our harvest. In the North they have led the van, and colliery appointments are now remunerated 50 or 100 per cent. better than before the awakening of the North of England Branch.

Take, again, the work of the Hospitals Committee of our Association; they have succeeded in getting several conditions enforced in many hospitals to lessen the abuse that undoubtedly exists.

They have interested the lay members of hospital committees, and an immense amount of good has been done in putting before them the views of the general practitioners. In a few years there will be a total change in the administration of hospital relief, mainly due to the efforts of our Association.

The Association also sent a petition to the General Medical Council on the subject of advertising and canvassing, which led to a most important pronouncement by that body.

The Association has drafted the Medical Acts Amendment Bill, which is a most important matter, and which will, when passed, be a great blessing to our profession. It would be hopeless to attempt to pass a Bill of this kind unless it was supported by a great Association like ours.

You will see by these remarks that I am sanguine of success if the Association is worked in a spirit corresponding to its new constitution. Whilst never neglecting the scientific side, we must pay more attention to material interests, we must make our meetings attractive, welcome everyone and make them feel at home, give our assistance when needed in disputes, and do all we can to influence those men who treat their brother medicos in an unfriendly spirit for no cause whatever.

Let us repudiate once and for all the insinuation that the British Medical Association is doing nothing for the general practitioner, and let us remember that it is as true of ourselves as of any other body of men that "God helps those who help themselves."

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

OWING to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

ABERDEEN BRANCH.—Nomination of Elective Member of Council: Notice is hereby given that the names of candidates for the representation of the Branch must be sent to me on or before November 11th. Each candidate must be nominated by at least three electors.—J. F. CHRISTIE, Honorary Secretary, 7, Alford Place, Aberdeen.

BORDER COUNTIES BRANCH.—The next meeting of the Branch will be held in the County Buildings, Dumfries, on

Friday, November 8th, and not as previously intimated. An address will be given by Dr. G. A. Gibson (Edinburgh) on the subject of Arrhythmia. Further details will be issued separately to each member.—F. R. Hill, Honorary Secretary, Carlisle.

Edinburgh Branch: Southern Division.—A meeting of the Division will be held in the Oddfellows' Hall (Room 6), Forrest Road, on Friday, November 1st, at 8.15 p.m. Agenda: (1) Minutes. (2) Reports of Representatives at May and July meetings. (3) Consideration of Council's Referendum. (4) Counsel's opinion on income-tax returns. (5) Report on Black List proposals. (6) Other competent business.—Michael Dewar, M.D., Honorary Secretary, Edinburgh.

Lancashire and Cheshire Branch: Liverpool (Northern) Division.—A meeting of the members of this Division will be held at the Liverpool Medical Institution, on Wednesday, November 6th, 1907, at 4 p.m. Agenda: (1) To elect a Chairman of the Division, in place of the late Dr. R. S. Archer. (2) To consider and vote on the Referendum on the Draft Charter. [See (*a*) The Referendum (Majority) Report, issued by the Council of the Association (Supplement, August 17th, 1907); (*b*) The Minority Report, indicating the views of those members of the Council who dissociate themselves from the majority of the Council (Supplement, September 21st, 1907).] (3) Central Emergency Fund. (4) Any other business.—A. W. German, Honorary Secretary.

Lancashire and Cheshire Branch: Manchester South Division.—A special general meeting of this Division will held at Dr. Vipont Brown's, 2, Birch Lane, Longsight, at 3.45 p.m., on Wednesday, November 6th, when members are requested to attend to consider and vote on the special matters referred to below. Tea and coffee will be served. Agenda: (1) Consideration of and voting on the Central Council's Referendum *re* Draft Charter. Members are particularly requested to carefully read and bring with them the following reports in the Supplements to the British Medical Journal of the dates respectively mentioned below: (*a*) Referendum Report of Council, August 17th, 1907; (*b*) Minority Report of Council; (*c*) Report of Representative Meeting, September 21st, 1907; (*d*) Draft Charter, April 6th, 1907. The Central Combined Committee of the Manchester Divisions recommend the Divisions to vote in favour of the resolutions of the Representative Meeting—that is, to approve the action of the Representatives. (2) Adoption of Bradford Code of Ethical Rules, together with Rule Z.—M. Russen Rhodes, Honorary Secretary.

Midland Branch: Boston and Spalding Division.—An ordinary meeting of this Division will be held on Friday, November 8th, at 2.45 p.m., at the White Hart Hotel, Boston. Tea will be provided, at each member's expense, for those desiring it. Agenda: (1) Consideration of the Referendum Report of Council: (*a*) Majority Report; (*b*) Minority Report; (*c*) Report by Representative Meeting. (See Supplement, September 21st.) (2) School certificates—who should be responsible for fees? (3) Cases. (4) Specimens. Members are requested to inform the Honorary Secretary if they intend to bring cases or specimens.—A. E. Wilson, Honorary Secretary, Boston.

South-Eastern Branch: Chichester and Worthing Division.—A meeting will be held at the Infirmary, Chichester, on Friday, November 8th, at 4 p.m. Agenda: (1) Minutes of the last meeting. (2) To decide on the place of next meeting. (3) To receive the report of the Representative. (4) To adopt the proposed rules for the Medico-Political Committee. (5) The Referendum from the Central Council. (6) Papers: (*a*) Mr. John Pardoe (London) will read a paper on the Treatment of Acute and Chronic Retention of Urine due to Stricture of the Urethra; (*b*) Dr. Eustace Arundel will read the notes of a case of Hydramnios; (*c*) Dr. Barford will read the notes of two cases of Radical Mastoid Operation. A dinner will be held at the Dolphin Hotel after the meeting. Tickets, 6s., exclusive of wine.—H. C. L. Morris, Honorary Secretary.

South-Eastern Branch: Folkestone Division.—A meeting of this Division will be held at the Victoria Hospital, Folkestone, on Thursday, December 5th, at 8 30 p m. Agenda: (1) Minutes. (2) To further discuss the Referendum Report, the Minority Report, and the Representative Report dealing with the proposed Charter, adjourned from the last meeting, and to vote on certain resolutions. (3) Some clinical cases will be shown.—P. Vernon Dodd, M.D., Honorary Secretary, Folkestone.

South-Eastern Branch: Norwood Division.—The next meeting of this Division will take place at the Streatham Hall, close to Streatham Station, on Thursday, November 14th, at 3.30 p.m., Mr. C. Hodgson in the chair. Dinner at 6 p.m.; charge 7s., exclusive of wine. All members of the South-Eastern Branch are invited to attend, and to introduce professional friends, but will be unable to vote on Divisional questions. Agenda:—(1) Minutes of last meeting. (2) To decide where the next meeting shall be held, and to nominate a member of the Division to take the chair thereat. (3) Report as to non-election of Representative. (4) To consider the Referendum Report and Minority Report dealing with proposed Charter. The following papers will be read: Dr. Leonard Williams: The Practical Value of Blood Pressure Estimation; Mr. W. H. Battle: The Radical Cure of Hernia; Dr. P. N. Panton: The Diphtheria and Diphtheroid Bacilli. Exhibition of Surgical Instruments by Down Bros. Exhibition of Drugs and Pharmaceutical Products by Parke, Davis and Co. Members desirous of exhibiting specimens or reading notes of cases are invited to communicate at once with the Honorary Secretary. The Honorary Secretary would be much obliged if members would kindly inform him by postcard, to reach him by the first post on the Tuesday before the meeting, whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. By so doing they will very materially facilitate arrangements, and promote the success of the meeting.—Arthur W. Soper, Honorary Secretary.

Ulster Branch.—The autumn meeting of the Branch will be held in Belfast on Wednesday afternoon, November 13th. Members having papers to read or cases to show are requested to send particulars before November 3rd to Cecil Shaw, M.D., Honorary Secretary, Belfast.

Yorkshire Branch.—The next meeting of the Yorkshire Branch will be held at the University, Sheffield, on Wednesday, November 6th, at 4.15 p.m., when the following business will be transacted and papers read: Dr. Sinclair White (Sheffield) will move that the Branch vote a sum of money towards the expenses of the meeting of the Association, which is to be held at Sheffield next year. The following resolution will be proposed: "That this meeting of the Yorkshire Branch of the British Medical Association deprecates the recent attempts to disorganize the constitution of the Council, and strongly protests against the proposals of the Representative Body to deprive the Branches of their right of electing members of the Council. Further, this Branch considers that the Branches have done important and progressive work in the Association, and that no adequate reason has been given for making the radical changes proposed." Papers and cases: (1) Dr. Arthur Hall (Sheffield) will show specimens and make remarks on a case of Diabetes Insipidus, and will show a case of Parakeratosis Variegata. (2) Dr. Allan (Leeds) will read a paper on Scorbutus. (3) Dr. Sinclair White (Sheffield) will exhibit the following cases and specimens: (*a*) Two cases of Partial Gastrectomy for Cancer of the Stomach; (*b*) a series of cases of Abdominal Hysterectomy for Advanced Uterine Cancer; (*c*) Intractable Ulcer of the Back of the Hand treated by Wolf's Method of Skin Grafting; (*d*) a Renal Calculus composed of pure oxalate of lime; (*e*) Excision of the Knee for Monarticular Rheumatoid Arthritis. (4) Dr. Eurich (Bradford) will read a paper on the Bromide Substitution Method of Treating Epilepsy. Dr. Goyder (Bradford) will report on the work done by the Central Council. Members and friends will dine together at the Royal Victoria Hotel, Great Central Station, at 6.30 p.m. Members intending to stay for dinner are requested to communicate at once with Dr. Martin, 1, Claremont Place, Sheffield.—Dr. Adolph Bronner, Honorary Secretary, 33, Manor Row, Bradford.

Vital Statistics.

ENGLISH URBAN MORTALITY IN THE THIRD QUARTER OF 1907.

The vital statistics of the seventy-six large towns dealt with in the Registrar-General's weekly returns are summarized in the accompanying table. During the three months ending September last, 106,035 births were registered in these towns, equal to an annual rate of 26.5 per 1,000 of the population, estimated at 16,024,458 persons in the middle of the year; in the corresponding quarters of the three preceding years the rates were 29.0, 28.2, and 27.9 per 1,000 respectively. In London the birth-rate last quarter was 25.2 per 1,000, while it averaged 27 1 per 1,000 in the seventy-five other large towns, and ranged from 15.6 in Bournemouth, 16 9 in Halifax, 17.0 in Hastings, 17 5 in Hornsey, 19.9 in Bradford, and 20.6 in Northampton, to 33.0 in Tynemouth, 33.6 in Sunderland, 33 7 in Middlesbrough, 33.9 in Rotherham, 34.7 in Merthyr Tydfil, and 35 3 in Rhondda.

During the quarter under notice 48,832 deaths were registered in these towns, equal to an annual rate of 12.2 per 1,000, the rates having been 17.5, 15.2, and 16.2 per 1,000 respectively in the corresponding quarters of the three preceding years. In London the rate of mortality last quarter was equal to 11.5 per 1,000, while it averaged 12.5 in the seventy-five other large towns, among which the death-rates ranged from 6.5 in Hornsey, 7.5 in King's Norton, 8.0 in Willesden and in Leyton, 8 5 in Walthamstow, 8.6 in East Ham, and 8 8 in Handsworth (Staffs), to 15.0 in Hanley and in Stockton-on-Tees, 15 6 in Great Yarmouth and in St. Helens, 15.9 in Sunderland, and 16.4 in Liverpool

The 48,832 deaths from all causes in the seventy-six towns last quarter included 5.878 which were referred to the principal infectious diseases; of these 1,165 resulted from measles, 421 from scarlet fever, 508 from diphtheria, 1,235 from whooping-cough, 214 from "fever" (principally enteric), and 2,335 from diarrhoea, but not any from small-pox. The death-rate in the quarter under notice from these infectious diseases was equal to 1.47 per 1.000, the rates for the corresponding periods of the three preceding years being 5.02, 3.45, and 4.45 per 1,000. In London the rate last quarter from these diseases

Analysis of the Vital Statistics of Seventy-six of the Largest English Towns during the Third Quarter of 1907.

Towns.	Estimated Population middle of 1907.	Births.	Deaths.	Annual Rate per 1,000 Living.			Deaths from Principal Infectious Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping-Cough.	Fever.	Diarrhoea.	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
				Births.	Deaths.	Principal Infectious Diseases.										
76 Towns	16,024,458	106,035	48,832	26.5	12.2	1.47	5,878	—	1,165	421	508	1,235	214	2,335	109	1.0
75 Provincial Towns	11,266,240	76,121	35,155	27.1	12.5	1.49	4,200	—	761	253	346	871	174	1,795	113	1.3
London	4,758,218	29,914	13,677	25.2	11.5	1.42	1,678	—	404	168	162	364	40	510	98	0.1
Croydon	154,342	977	368	25.4	9.6	0 83	32	—	6	3	4	4	—	15	60	—
Willesden	149,192	1,044	297	28.1	8.0	0.58	22	—	3	2	2	2	1	12	80	—
Hornsey	89,816	393	145	17.5	6.5	0.17	4	—	—	—	1	2	—	1	56	—
Tottenham	122,793	936	297	30.6	9.7	0.55	17	—	5	2	1	4	1	4	73	—
West Ham	308,284	2,132	898	27.7	11.7	2.15	165	—	6	7	21	41	2	88	116	—
East Ham	136,421	844	292	24.8	8.6	0.95	32	—	2	2	7	7	—	14	76	0 3
Leyton	122,040	821	243	27.0	8 0	0.82	25	—	1	6	7	6	—	6	61	—
Walthamstow	126,397	830	269	26.3	8 5	1.52	48	—	10	3	5	8	2	20	67	—
Hastings	67,477	286	164	17.0	9.7	0.30	5	—	1	1	—	2	—	1	49	1 8
Brighton	129,023	701	359	21.8	11.2	0.86	28	—	2	—	3	9	1	13	87	—
Portsmouth	208,291	1,519	620	29.2	11.9	1.05	55	—	9	1	13	7	9	16	93	2 1
Bournemouth	69,246	287	165	16.6	9.6	0.18	3	—	—	—	1	—	—	2	91	0.6
Southampton	119,745	671	294	22.5	9.8	0.76	23	—	—	1	6	1	1	14	95	—
Reading	80,311	452	190	22.6	9.5	1.00	20	—	4	1	5	2	2	6	82	4.2
Northampton	95,070	489	217	20.6	9.2	0.84	20	—	3	2	—	2	—	13	90	2.3
Ipswich	72,825	454	204	25.0	11.2	0.79	14	—	5	—	—	5	1	3	75	—
Great Yarmouth	52,879	382	205	29.0	15.6	1.45	19	—	1	2	—	12	1	3	131	—
Norwich	119,191	668	338	22.5	11.4	1.46	44	—	1	1	12	4	3	23	112	0.9
Plymouth	120,063	683	345	22.8	11.5	0.67	20	—	2	1	4	3	2	8	86	—
Devonport	79,959	543	197	27.2	9.9	1.25	25	—	—	1	1	2	2	19	81	—
Bristol	367,979	2,190	921	23.9	10.0	0.71	66	—	4	3	12	8	1	38	79	0.4
Hanley	67,174	534	252	31.9	15.0	1.08	18	—	6	—	—	3	—	9	148	1.2
Burton-on-Trent	53,425	312	123	23.4	9.2	0.62	8	—	1	1	1	2	1	2	90	1 6
Wolverhampton	102,016	633	294	24.9	11.6	1.58	40	—	11	7	6	2	1	13	100	—
Walsall	96,171	712	356	29.7	14.8	3.88	93	—	50	2	3	7	2	29	156	0.6
Handsworth	65,929	342	145	20.8	8.8	0.84	14	—	3	2	2	2	3	2	73	1.4
West Bromwich	69,123	489	202	28.4	11.7	1.17	20	—	1	7	2	—	4	6	119	1.0
Birmingham	553,155	3,876	1,726	28.1	12.5	1.59	219	—	26	26	24	37	6	100	124	2.8
King's Norton	75,600	452	141	24.0	7.5	0.68	13	—	1	—	3	7	1	1	71	2.8
Smethwick	66,467	449	168	27.1	10.1	0.96	16	—	1	3	1	3	2	6	80	1 2
Aston Manor	83,266	542	231	26.1	11.1	1.64	34	—	2	4	1	3	1	23	105	0.9
Coventry	77,626	618	222	31.9	11.5	1.03	80	—	5	1	2	—	—	11	105	2.7
Leicester	236,124	1,278	605	21.7	10.3	0.84	50	—	7	6	2	3	2	30	104	0.7
Grimsby	70,574	538	199	30.6	11.3	1.53	27	—	—	3	1	9	2	12	128	2.0
Nottingham	257,489	1,671	885	26 0	13.8	1.54	98	—	12	1	7	19	3	56	136	0.6
Derby	125,774	753	383	24.0	12.2	2 18	68	—	46	—	9	7	3	3	102	—
Stockport	100,986	682	354	27.1	14.1	1.36	34	—	2	3	2	16	—	11	144	0.3
Birkenhead	118,553	885	352	29.9	11.9	1.02	30	—	2	—	3	3	4	18	103	—
Wallasey	66,707	442	192	26.6	11.5	1.02	17	—	—	1	1	4	1	10	109	2 6
Liverpool	746,144	5,872	3,043	31.6	16.4	2.40	445	—	71	27	24	89	26	208	143	2.6
Bootle	67,114	547	246	32.7	14.7	2.87	48	—	1	1	1	2	6	37	135	3.3
St. Helens	92,476	759	360	32.9	15.6	2.21	51	—	8	—	1	20	3	19	153	3 3
Wigan	88,606	645	322	29.2	14.6	3.40	75	—	18	1	5	19	4	28	152	—
Warrington	70,269	552	229	31.5	13.1	1.89	33	—	1	5	4	1	3	19	112	3.5
Bolton	182,917	1,125	612	24.7	13.4	1.78	81	—	19	7	6	20	9	20	131	0 5
Bury	58,901	311	189	21.2	12.9	0.75	11	—	—	—	—	7	1	3	125	0.5
Manchester	643,148	4,572	2,380	28.5	14.8	1.59	254	—	51	19	10	69	1	104	129	0.8
Salford	236,670	1,637	804	27.7	13.6	1.45	83	—	13	13	14	16	2	28	123	0 9
Oldham	141,730	962	528	27.2	14.9	1.08	38	—	—	2	2	18	—	16	105	0 4
Rochdale	87,999	516	295	23.5	13.4	0.68	15	—	1	—	4	4	—	6	99	3 1
Burnley	103,947	722	357	27.9	13.8	1.16	30	—	1	2	2	5	5	15	132	1 4
Blackburn	134,980	805	463	23 9	13.8	1.64	55	—	23	5	3	7	2	9	143	1.1
Preston	117,093	771	394	26.4	13.5	1.30	33	—	4	1	1	12	2	18	102	3 3
Barrow-in-Furness	61,635	481	174	31.3	11.3	0.74	11		1	—	1	5	1	3	77	4.0
Huddersfield	94,814	545	302	23.1	12.8	0.72	17	—	1	2	3	4	—	7	62	2.3
Halifax	110,138	463	288	16.9	10.5	0.58	16	—	1	1	2	5	2	5	76	2 1
Bradford	290,323	1,444	817	19.9	11.3	0.85	61	—	13	3	8	20	5	12	85	1.1
Leeds	470,268	2,776	1,469	23.7	12.5	1.47	173	—	5	11	12	68	1	76	125	0.1
Sheffield	455,553	3,447	1,665	30.3	14.7	2.81	319	—	28	9	6	47	8	221	165	2 5
Rotherham	62,412	528	192	33.9	12.3	1.91	70	—	1	1	3	3	—	22	121	4 7
York	84,730	547	223	25.9	10.6	0.71	16	—	—	1	2	5	—	7	88	—
Hull	266,762	1,881	926	28.3	13.9	1.62	107	—	13	—	7	25	7	50	125	0.2
Middlesbrough	101,783	854	357	33.7	14.1	1.62	41	—	6	4	9	4	2	16	111	0 6
Stockton-on-Tees	52,909	405	198	30.7	15.0	2.80	37	—	18	—	1	6	1	11	106	1.0
West Hartlepool	75,473	536	193	28.5	10.3	0.91	17	—	—	—	2	9	—	6	101	0 5
Sunderland	156,029	1,308	619	33.6	15.9	1.82	71	—	16	11	7	6	2	29	110	1.5
South Shields	113,460	790	351	27.9	12.4	0.96	27	—	10	3	1	10	—	3	116	4.8
Gateshead	125,783	965	427	30.8	13.6	2.41	76	—	13	2	8	23	2	28	132	4.
Newcastle-on-Tyne	272,969	1,996	871	29.3	12.8	1.30	87	—	24	2	8	37	3	15	101	0.1
Tynemouth	54,688	450	198	33.0	14.5	1.62	22	—	—	2	5	11	—	4	111	—
Newport (Mon.)	75,585	589	196	31.3	10.4	0.90	17	—	—	2	1	2	1	11	97	1.0
Cardiff	187,620	1,238	633	26.5	13.6	3.74	175	—	125	6	2	19	1	23	115	0.2
Rhondda	130,400	1,147	362	35.3	11.1	1.35	44	—	6	1	2	6	7	22	104	0 8
Merthyr Tydfil	76,085	658	283	34.7	14.9	2.28	43	—	16	2	2	7	2	14	111	2 1
Swansea	97,324	767	324	31.6	13.4	1.06	26	—	—	1	2	3	—	20	102	0.3

was 1.42 per 1,000, while it averaged 1.49 in the seventy-five other large towns, and ranged from 0.17 in Hornsey, 0.18 in Bournemouth, 0.30 in Hastings, 0 55 in Tottenham, and 0.58 in Willesden and in Halifax to 2.80 in Stockton-on-Tees, 2.81 in Sheffield, 2.87 in Bootle, 3.40 in Wigan, 3.74 in Cardiff, and 3.88 in Walsall.

The 1,165 deaths from measles were equal to an annual rate of 0.29 per 1,000; in London the death-rate from this disease was 0.34 per 1,000, while it averaged 0.27 in the seventy-five other large towns, and was highest in Walsall, Derby, Wigan, Blackburn, Stockton-on-Tees, Cardiff, and Merthyr Tydfil. The 421 fatal cases of scarlet fever corresponded to an annual rate of 0.11 per 1,000; in London the rate was 0.14 per 1,000, while among the seventy-five large provincial towns it averaged 0.09, the greatest proportional mortality being recorded in Leyton, Wolverhampton, West Bromwich, Salford, Warrington, and Sunderland. The 508 deaths from diphtheria were at the rate of 0.13 per 1,000 annually; in London this disease caused a death-rate of 0.14 per 1,000; the mean rate in the seventy-five other large towns was 0.12 per 1,000, the highest rates occurring in West Ham, Portsmouth, Reading, Norwich, Derby, Middlesbrough, Gateshead, and Tynemouth. The 1,235 fatal cases of whooping-cough were equal to an annual rate of 0.31 per 1,000; in London also the rate was 0.31 per 1,000, while among the seventy-five other large towns whooping-cough was proportionately most fatal in Great Yarmouth, Stockport, St. Helens, Wigan, Leeds, Gateshead, and Tynemouth. The 214 deaths referred to different forms of "fever" corresponded to a rate of 0.05 per 1,000; in London the "fever" death-rate was 0.03 per 1,000, or only half the average rate in the seventy-five other large towns; the highest death-rates from "fever" last quarter were recorded in Handsworth (Staffs), West Bromwich, Bootle, Wigan, Bolton, Burnley, and Rhondda. The 2,335 fatal cases of diarrhoea were equal to an annual rate of 0.58 per 1,000 last quarter, against 4 01, 2.70, and 3 63 in the corresponding periods of the three preceding years. In London the death-rate from this disease during the quarter under notice was 0.46 per 1,000; in the seventy-five other large towns this disease caused a mean rate of 0 64 per 1,000, the greatest proportional mortality being recorded in West Ham, Walsall, Bootle, Wigan, Sheffield, and Rotherham.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births was equal to 109 per 1,000 last quarter, against 229, 186, and 209 per 1,000 in the third quarters of the three preceding years. In London the rate of infant mortality last quarter was 98 per 1,000, while it averaged 113 in the seventy-five other large towns, and ranged from 49 in Hastings, 56 in Hornsey, 60 in Croydon, 61 in Leyton, 62 in Huddersfield, and 67 in Walthamstow, to 143 in Liverpool and in Blackburn, 144 in Stockport, 148 in Hanley, 152 in Wigan, 153 in St. Helens, 156 in Walsall, and 165 in Sheffield.

The causes of 466, or 1 0 per cent., of the deaths registered in the seventy-six towns last quarter were not certified, either by a registered medical practitioner or by a coroner. All the causes of deaths were certified in Croydon, Willesden, Tottenham, West Ham, Leyton, Walthamstow, Brighton, Plymouth, Derby, and in ten other smaller towns; the highest proportions of uncertified deaths were 3 3 per cent. in Bootle, in St. Helens, and in Preston, 3 5 in Warrington, 4 0 in Barrow-in-Furness and in Gateshead, 4.2 in Reading, 4.7 in Rotherham, and 4.8 in South Shields.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,469 births and 4,498 deaths were registered during the week ending Saturday last, October 26th. The annual rate of mortality in these towns, which had been 15.7 per 1,000 in each of the two preceding weeks, declined to 14.6 per 1,000 last week. The rates in the several towns ranged from 6.3 in Smethwick, 6.6 in Walthamstow, 7.0 in Hastings, 7.2 in Devonport, 7.3 in Leyton, 7.5 in Bournemouth, and 7.6 in King's Norton and in West Hartlepool, to 20.6 in Wigan, 21.2 in Liverpool, 22.1 in Burnley, 22.6 in Rotherham, 24.3 in Oldham, and 28 8 in Merthyr Tydfil. In London the rate of mortality was 13.9 per 1,000, while it averaged 15.0 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.8 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1.6 per 1,000, while it ranged upwards, among the seventy-five towns, to 3.6 in Preston and in Rhondda, 3.9 in Hanley, 5.0 in Burnley, 6.2 in Merthyr Tydfil, and 6.8 in Burton-on-Trent. Measles caused a death-rate of 1.1 in Newcastle-on-Tyne, 1.6 in Rhondda, 1.8 in South Shields, 2.5 in Barrow-in-Furness and in Cardiff, 4.1 in Merthyr Tydfil, and 4.9 in Burton-on-Trent; scarlet fever of 1.1 in Salford; whooping-cough of 1.1 in Oldham and 1 6 in Bootle; "fever" of 1.5 in Grimsby; and diarrhoea of 2.3 in East Ham and in Hanley, 2.4 in Handsworth (Staffs), 2.5 in Rotherham and in York, 2 6 in Southampton, and 2.7 in Preston. The mortality from diphtheria showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums hospitals, which had been 4,542, 4,752, and 4,995 at the end of the three preceding weeks, had further risen to 5,196 at the end of last week; 793 new cases were admitted during the week, against 759, 752, and 820 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, October 26th, 904 births and 499 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13.2, 13.8 and 14.0 per 1,000 in the three preceding weeks, further rose last week to 14 4 per 1,000, but was 0.2 per 1,000 below the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 9.4 in Leith and 10 2 in Aberdeen to 15.9 in Paisley and 16.9 in Glasgow. The death-rate from the principal infectious diseases averaged 1.7 per 1,000 in these towns, the highest rates being recorded in Glasgow, Dundee and Greenock. The 274 deaths registered in Glasgow included 6 which were referred to measles, 10 to whooping-cough, 4 to cerebro-spinal meningitis and 13 to diarrhoea. Two fatal cases of whooping-cough and 1 of cerebro-spinal meningitis were recorded in Edinburgh; 8 of measles, 2 of whooping-cough and 3 of diarrhoea in Dundee; and 2 of measles in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 19th, 474 births and 373 deaths were registered in six of the principal Irish towns as against 422 births and 386 deaths in the preceding period. The annual death-rate in these towns, which had been 19.3, 22 5, and 21.2 per 1,000 in the three preceding weeks, rose to 22 2 per 1,000 in the week under notice, this figure being 6 5 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 13.7 in Limerick and 19.4 in Belfast to 25.3 in Waterford, and 30.7 in Londonderry. The zymotic death-rate in the same six Irish towns averaged 2 8 per 1,000, or 2.8 per 1,000 lower than during the preceding period, the highest figure, 5.8, being recorded in Waterford. In Belfast 2 deaths were ascribed to cerebro-spinal fever.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

Staff Surgeon C. Shepherd has been allowed to withdraw from the service with a gratuity, October 18th. He was appointed Surgeon, November 8th, 1898, and Staff Surgeon, November 8th, 1906.

The following appointments have been made at the Admiralty:—Joseph Chambers, M.B., Fleet Surgeon, to the *King Alfred*, on recommissioning, undated; Edward C. Cridland, M.B., Fleet Surgeon, to the *Crescent*, November 16th; William P. Walker, M.B., to the *Crescent*, November 16th, and to the *King Alfred*, on recommissioning, undated; William W. D. Chilcott, Surgeon, to the *Hawke*, on recommissioning, November 16th, and to the *King Alfred*, on recommissioning, undated; J. L. Barford, Surgeon, to the *Snipe*, October 24th; Harry A. Kellond-Knight, Surgeon, to the *Racer*, additional, for the Royal Naval College, Osborne, October 24th; Arthur S. Bradley, M.B, Surgeon, to the *London*, October 24th; Alfred O. Hooper, M.B., Surgeon, to the *Blenheim*, October 24th; Arthur E. Kelsey, Staff Surgeon, to the *President*, additional, for three months' course at West London Hospital, November 25th; Alexander L. Christie, M.B., Fleet Surgeon to the *Hawke*, on recommissioning, November 16th.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant P. J. O'Sullivan to be Surgeon-Captain October 9th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Lieutenant R. Y. Anderson, Glasgow Companies, Scottish Command, to be Captain, October 15th.

Captain H. P. W. Barrow, R.A.M.C., to be Adjutant, Manchester Companies, Western Command, *vice* Captain R. W. Clements, M.B., R.A.M.C., whose tenure of that appointment has expired, October 12th.

George A. Edsell (formerly Surgeon-Captain, 2nd Volunteer Battalion, the Oxfordshire Light Infantry), to be Captain, East Surrey Bearer Company, September 25th.

CHANGES OF STATIONS.

The following changes of stations amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during September, 1907:

		FROM	TO
Colonel	G. D. N. Leake	Lucknow	Allahabad.
,,	W. L. Chester, M.B.	Peshawar	Cherat.
,,	J. G. Harwood	Calcutta	Darjeeling.
,,	J. M. Jones	Devonport	Egypt.
Lieut.-Col.	J. C. Culling	Pembroke Dk.	Bermuda.
,,	F. P. Nichols, M.B.	Poona	Secunderabad.
,,	M. Dundon, M.D.	Plymouth	Devonport.
,,	F. J. Jencken, M.B.	Deolalee	Meerut.
,,	S. F. Lougheed, C.M.G., M.D.	Woolwich	Warley.
,,	R. J. Geddes, D.S.O., M.B.	Longmoor	Woking.
,,	M. O'D. Braddell, M.B.	Bulford	Golden Hill.
,,	W. C. Beevor, C.M.G., M.B.	Quetta	Sialkot.
,,	H. N. Thompson, D.S.O., M.B.	Woking	Aldershot.
,,	S. F. Freyer, C.M.G.	Secunderabad	Bangalore.
,,	T. Daly	Warley	India.
,,	B. L. Mills, M.D.	Poona	Sheffield.
,,	H. Cocks, M.B.	St. Thomas'Mt.	Madras.
,,	H. P. G. Elkington	Jubbulpore	Mhow.
,,	D. M. O'Callaghan	Rawal Pindi	Kuldana.
,,	J. Donaldson	Agra	Naini Tal.
,,	H. B. Mathias, D.S.O.	Peshawar	Simla.
,,	G. H. Barefoot	Winchester	India.
,,	F. S. Le Quesne, V.C.	Lucknow	Allahabad.
Major	J. J. C. Watson, C.I.E., M.D.	Southampton	Portsmouth.
,,	O. R. A. Julian, C.M.G.	Peshawar	Cherat.
,,	T. McCulloch, M.B.	Ambala	Ferozepore.
,,	W. L. Gray, M.B	Malta	Plymouth.
,,	C. A. Young	Ballykinder	Mauritius.
,,	C. W. R. Healey	Fermoy	Ballyvorna.
,,	L. Way	Allahabad	Landour.
,,	R. J. W. Mawhinny	Dublin	Athlone.
,,	B. Forde, M.B.	Middelberg, Transvaal	Bloemfontein.
,,	T. W. Gibbard, M.B.	Rawal Pindi	Simla.
,,	H. N. Dunn, M.B.	Ambala	Gharial.
,,	S. H. Withers, M.B.	Strensall	York.
,,	T. McDermott, M.B.	Calcutta	Lucknow.
,,	L. P. More, M.B.	Murree	Sialkot.
,,	C. E. P. Fowler	London Dist.	Mauritius.
,,	J. B. Anderson	Meerut	Bareilly.
,,	J. E. Carter, M.B.	Middelberg, Cape Colony	Simonstown
,,	M. Boyle, M.B.	Bareilly	Ranikhet.
,,	G. St. C. Thom, M.B.	Ferozepore	Solon.
,,	St J. B. Killery	India	Mandalay.
,,	J. H. Campbell, D.S.O.	Colchester	Mauritius.
Captain	H. L. W. Norrington	Warrington	Chatham.
,,	C. J. O'Gorman, D.S.O.	Dublin	W. Africa.
,,	R. S. H. Fuhr, D.S.O.	Sialkot	Murree.
,,	D. E. Curme	Bellary	Secunderabad.
,,	H. S. Taylor	Dublin	Kildare.
,,	R. H. Lloyd	Piershill	Edinburgh.
,,	L. Humphry	Dover	India.
,,	A. O. B. Wroughton	Malapuram	Cannanore.
,,	F. Ashe	Shorncliffe	Colchester.
,,	H. M. Nicholls, M.B.	Kinsale	Ballyvorna.
,,	E. E. Ellery	Tregantle	Devonport.
,,	O. W. A. Elsner	Limerick	Kilworth Cmp.
,,	J. W. Langstaff	Chapel Bay	Pembroke Dk.
,,	C. C. Cumming, M.B.	Rawal Pindi	Nowshera.
,,	W. C. Croly	Cannanore	Wellington.

			FROM		TO
Captain	R. L. Argles	... ...	Multan...	...	Khyra-Gali.
,,	E. G. Ford, M.B.	... ...	Lichfield	...	Lancaster.
,,	W. Bennett, M.B.	... ...	Cork ...	...	Templemore.
,,	T. E. Fielding, M.B.	... ...	Dublin ...	...	Curragh.
,,	G. Carroll	... ...	Cork ...	...	Kilkenny.
,,	J. Dorgan, M.B.	... ...	Fermoy	...	Kilworth C'p.
,,	J. P. J. Murphy, M.B.	...	Fleetwood	...	Liverpool.
,,	H. F. Shea, M.B.	... ...	Pirbright	...	Millbank.
,,	P. S. Lelean	... ...	Bareilly	...	Meerut.
,,	F. A. Stephens	... ...	Irvine ...	...	Edinburgh.
,,	T. B. Unwin, M.B.	... ...	Cork ...	...	Kilworth C'p.
,,	H. E. J. A. Howley	... ...	Armagh	...	Belfast.
,,	J. C. Kennedy, M.B.	... ...	Millbank	...	R.A.M. Coll.
,,	M. W. Falkner	... ...	Fategarh	...	Lucknow.
,,	A. J. Hull...	... ...	Jhansi ...	...	Nowgong.
,,	D. J. F. O'Donoghue	...	Curragh	...	Naas.
,,	H. W. Long, M.B.	... ...	Ambala	...	Dalhousie.
,,	W. F. Ellis	... ...	Multan...	,,	,,
,,	A. H. Hayes	... ...	Ambala	...	Kasauli.
,,	R. B. Ainsworth	... ...	Wellington	...	Bellary.
,,	R. Storrs...	... ...	Ambala	...	Barian.
,,	J. M. H. Conway	... ...	Jullundur	...	Kalabagh.
,,	W. W. Browne	... ...	Maymyo	...	Meiktila.
,,	J. C. G. Carmichael, M.B.	...	Poonamallee	...	Bellary.
,,	G. H. J. Brown, M.B.	...	Mandalay	...	Delhi.
,,	D. G. Carmichael, M.B.	...	Rangoon	...	Wellington.
,,	T. E. Harty	... ...	Calcutta	...	Darjeeling.
,,	B. G. Patch	... ...	Ambala	...	Dagshai.
,,	G. A. Kempthorne	... ...	Lahore	...	Dalhousie.
,,	J. T. McEntire, M.B.	... ...	Bloemfontein		Potchefstroom
,,	W. F. H. Vaughan	... ...	Bellary...	...	Bangalore.
,,	G. E. Cathcart	... ...	Rawal Pindi	...	Sialkot.
,,	J. A. Turnbull	... ...	,, ,,	...	Bara-Gali.
Lieutenant	A. S. Arthur, M.B.	..	Nowshera	...	Cherat.
,,	J. F. C. Mackenzie, M.B.		Meerut	...	Landour.
,,	H. T. Wilson	... ...	Rawal Pindi	...	Sialkot.
,,	M. Sinclair, M.B.	... ...	Sialkot...	...	Khanapore.
,,	R. H. L. Cordner	... ...	Rawal Pindi	...	Campbellpore.
,,	H. O. M Beadnell...	...	Ambala	...	Subathu.
,,	A. W. Gater	... ...	Attock ...	...	Peshawar.
,,	J. P. Lynch	... ...	Lucknow	...	Raoikhet.
,,	W. G. Maydon	... ...	Calcutta	...	Dinapore.
,,	G. Ormrod, M.B.	... ...	Mandalay	...	Bhamo.
,,	C. G. Browne	... ...	Netley ...	...	India.
,,	W. Benson, M.B.	... ...	Rawal Pindi	...	Lower Topa.
,,	T. B. Moriarty	... ...	Agra ...	...	Cawnpore.
,,	M. B. H. Ritchie	... ...	Rawal Pindi		Ghora Dakka.
,,	M. J. Cromie	... ...	Poona ...	...	Mhow.
,,	M. Keane	... ...	Meerut	...	Shahjahanpore.
,,	F. C. Sampson, M.B.	...	Simonstown	...	Middelberg, C. Colony.
,,	R. S. Smyth, M.D.	... ...	Dublin ...	...	India.
,,	C. M. Drew, M.B.	... ...	Tidworth	...	Gibraltar.
,,	A. S. Littlejohns	... ...	Woolwich	...	S. Africa.
,,	R. G. Archibald, M.B.	...	R.A.M. College		Uganda.
,,	C. R. M. Morris, M.B.	...	Kilkenny	...	Fermoy.
,,	E. M. W Paine	... ...	Larkhill Camp		Bustard Camp.
,,	F. D. G. Howell	... ...	Wool Camp	...	Gosport.
,,	E. M. O'Neill, M.B.	...	Wedgnock Pk. Camp		Bulford.
,,	G. B. Edwards	... ...	Shiplake Camp		Gosport.
,,	J. W. L. Scott	... ...	Bodmin	...	Devonport.
,,	W. C. Smales	... ...	Tidworth	...	Larkhill Camp
,,	A. H. Bond	... ...	Gosport	...	India.
,,	W. H. Forsyth, M.B.	...	Portsmouth	...	Aldershot.
,,	E. J. Elliot, M.B.	... ...	Parkhouse Cp.		Bulford.
,,	E. B. Lathbury	... ...	Colchester	...	,,
,,	B. Johnson	... ...	Fermoy	...	Cahir.
,,	W. E. C. Lunn, M.B.	...	Thankerton	...	Edinburgh.
,,	D. Coutts, M.B.	... ...	Honiton Camp		Willsw'thy Cp.
,,	F. L. Bradish	... ...	Cork ...	...	Kinsale.
,,	W. J. E. Bell, M.B.	...	Lichfield	...	Scarborough.
,,	A. D. Fraser, M.B.	...	Netley ...	...	R. A. M. Coll.
,,	A. Fortescue, M.B.	...	Edinburgh	...	Stirling.
,,	O. R. McEwen	... ...	Chester	...	Brecon.
,,	J. du P. Langrishe, M.B.		Conway	...	Manchester.
,,	A. C. Elliott, M.B.	...	Limerick	...	Cork.
,,	H. W. Farebrother	...	Beaumaris	...	Seaforth.

Major A. Wright, retired pay, and Lieutenant-Colonel A. W. Browne, retired pay, have been placed in medical charge of troops at Falmouth and Armagh respectively.

Lieutenant-Colonel W. R. G. Hinds, M.B., retired pay, has relinquished the medical charge of troops at Naas.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham Road, S.W.—Senior and Junior Resident Medical Officer. Honorarium at the rate of £30 and £20 a year respectively.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Assistant House-Surgeon. Salary, £50 per annum.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £70 per annum.

COLCHESTER: ESSEX AND COLCHESTER HOSPITAL.—House-Surgeon, Salary, £80 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £60 per annum.

DORCHESTER: COUNTY ASYLUM.—Junior Assistant Medical Officer (Male). Salary, £140 per annum, rising to £180.

DOWNPATRICK: DOWN DISTRICT LUNATIC ASYLUM.—Junior Male Assistant Medical Officer. Salary, £130 per annum, rising to £150.

DUBLIN: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Resident Medical Officer. Salary, £300 per annum.

DUDLEY: GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, £100 per annum, rising to £120.

EDINBURGH HOSPITAL FOR WOMEN AND CHILDREN.—Female Junior Physician.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £30 per annum.

KING EDWARD VII SANATORIUM, Midhurst.—Pathologist. Salary, £250 per annum.

LANCASTER: COUNTY LUNATIC ASYLUM.—Assistant Medical Officer. Salary, £150 per annum, increasing to £250.

LEICESTERSHIRE AND RUTLAND ASYLUM.—Junior Medical Officer. Salary, £130 per annum, rising to £160.

LIVERPOOL DENTAL HOSPITAL.—Additional Anaesthetists.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, and £5 washing.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead, N.W.—Honorary Dental Surgeon.

NORTH-EASTERN HOSPITAL FOR SICK CHILDREN, Hackney Road, E.—(1) Physician in Charge of Skin Department; (2) Assistant Physician.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Junior House-Surgeon. Salary, £50 per annum

OLDHAM INFIRMARY.—Senior House-Surgeon. Salary, £100 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Resident Medical Officer for Out-patient Department. Salary at the rate of £60 per annum.

ROYAL EAR HOSPITAL, Dean Street, Soho.—House-Surgeon. Honorarium, £40 per annum.

ST. GEORGE'S HOSPITAL, S.W.—Senior Radiographer.

SHEFFIELD ROYAL INFIRMARY.—(1) Senior Assistant House-Surgeon: (2) Junior Assistant House-Surgeon. Salary £70 and £65 per annum respectively.

SOUTHAMPTON FREE EYE HOSPITAL.—House-Surgeon. Salary, £70 per annum.

SUNDERLAND INFIRMARY.—House-Surgeon. Salary, £80 per annum.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck Street, W.—(1) Resident Medical Officer. Salary at the rate of 50 guineas per annum. (2) Physician to In-patients.

APPOINTMENTS.

ADDISON, W. B, M.B., B.C.Cantab.. District Medical Officer of the Croydon Union.

ALLEN, Sydney S. M.D., F.R.C.S., Clinical Assistant to the Chelsea Hospital for Women.

BASHFORD, H. H., M.B., B S Lond., M.R.C.S., L.R.C.P., Assistant Medical Officer, General Post Office.

BOWMAN, G. F., M.B., Ch.B., Medical Officer of Health for Limehurst Rural District.

BURKE, Gerald T., M.B., B.S.Lond., Senior House-Physician at the Prince of Wales's General Hospital, Tottenham, N.

BUTCHER, Miss Flora, M.D., Assistant Medical Officer to the Fife and Kinross District Lunatic Asylum.

CHAPEL, K., M.B., Ch.B.Edin., Certifying Factory Surgeon for the Rothwell District, co. Northampton.

HARRIS, Henry E., L.D.S., Dental Surgeon to the Royal National Orthopaedic Hospital of London.

HATHERELL, R. R., M.R.C.S., L.S.A., Certifying Factory Surgeon for the Topsham District, co. Devon.

HOGARTH, R. G., F.R.C.S.Eng., Honorary Surgeon to the General Hospital, Nottingham.

LEWTHWAITE, Alfred, M B.Lond., Resident Medical Officer of the Winsley Sanatorium, near Bath, vice E. D. Townroe, M.R.C.S., L.R.C.P.

STIDSTON, C. A., M.B., B.S.Lond., M.R.C.S.Eng., L.R.C.P.Lond., Resident Medical Officer and Secretary to the General Infirmary, Hertford.

WOODWARD, C. S., M.R.C.S., L.R.C.P., District Medical Officer of the East Retford Union.

WRIGLEY, P. R., F.R.C S.Eng., Surgeon for Children to the Manchester Northern Hospital for Women and Children.

LEEDS GENERAL INFIRMARY.—The Faculty has made the following appointments:

Resident Medical Officer at the Ida and Robert Arthrington Homes, Mr. A. P. O'Connell.

House-Physician to Dr. Barrs: J. P. Bibbey, M.B., Ch.B.Leeds.

House-Surgeon to Mr. Littlewood: J. S. Crawford, M.B., Ch.B.Leeds.

House-Surgeon to Mr. Moynihan: A. Richardson, M.R.C.S., L.R.C.P.

Resident Obstetric Officer: V. C. Hackworth, M.B., Ch.B.Leeds.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Hayward's Heath, co. Sussex.

A CORRECTION.—We regret that by an error it was stated last week that Dr. T. W. Thursfield had been appointed Certifying Factory Surgeon at Leamington. Dr. Thursfield has resigned the appointment after holding it for forty years, his resignation being accepted with regret by the Chief Inspector of Factories on October 15th.

DIARY FOR THE WEEK.

TUESDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—The Bradshawe Lecture by Sir James Barr: The Pleurae, Pleural Effusion and its Treatment.

ROYAL SOCIETY OF MEDICINE:
MEDICAL SECTION, 20, Hanover Square, W, 5 p.m.—Adjourned discussion on the Complications of Pneumonia.

WEDNESDAY.

LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION, LONDON, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Paper by Dr. de Havilland Hall: An Investigation of the Mortality Experience of the Rock Life Assurance Company.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
CLINICAL SECTION, 20, Hanover Square, W., 8.30 p.m.—Exhibition of Cases. Short paper by Dr. J. Fawcett: Pneumothorax treated by Aspiration under the *X* Rays. Patients in attendance at 8 p.m.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Tuesday and Friday, 3.45 p.m., Pharynx.

CHARING CROSS HOSPITAL, W.C.—Thursday, 4 p.m., Medical.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Friday, 3 p.m., Fractures and Dislocations of the Elbow-joint.

HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E.—Monday and Wednesday, 5 p.m., Pyogenic Infections. Saturday, 5 p.m., Eczema.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Appendicitis.

LONDON SCHOOL OF CLINICAL MEDICINE.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2.30 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m. Monday, and noon Thursday; Skin, at noon and 4 p.m. Tuesday and at noon Friday; Eye, 11 a.m. Wednesday and Saturday; Radiography, 4 p.m. Thursday. Special Lectures: Monday, 4 p.m., Laryngeal Paralysis. Wednesday, 3.30 p.m., Some Important Points in Ophthalmic Diagnosis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Eye. Lectures at 5.15 p.m. each day will be given as follows: Monday, Heart Disease without Murmurs. Tuesday, Human and Bovine Tuberculosis, with special reference to Treatment. Wednesday, Bacterial Invasion of the Urinary Tract in Childhood. Thursday, The Diagnosis of Cerebellar Tumours.

MOUNT VERNON HOSPITAL FOR CONSUMPTION, Hampstead, N.W.—Thursday, 5 p.m., Demonstration: Cases in the Wards.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m. Ophthalmoplegia. Friday, 3.30 p.m., Paralysis in Children.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's Hospital, Tottenham, N.—The following are the Clinics and Demonstrations for next week:—Monday, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Throat, *X* Ray; Tuesday, 10.30 a.m., Medical Out-patient; 2.30 p.m., Operations, Gynaecological and Surgical Out-patient; 4.30 p.m., Demonstration: Injuries about the Elbow. Wednesday, 2.30 p.m., Medical Out-patient, Skin and Eye. Thursday, 2.30 p.m., Gynaecological Operations, Medical and Surgical Out-patient and *X* Ray: 3 p.m., Medical In-patient. Friday, 10 a.m., Surgical Out-patient; 2.30 p.m., Operations. Medical Out-patient and Eye; 3 p.m., Medical In-patient.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Monday, 5.30 p.m., Recent Views on Immunity in Relation to Dental Surgery.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week: Daily, 2 p.m., Medical and Surgical Clinics, *X* Rays; 2.30 p.m., Operations. Monday and Thursday, 2 p.m., Diseases of the Eye. Tuesday and Friday, 10 a.m., Gynaecological Operations; 2.30 p.m., Diseases of the Skin; 2 p.m., and Wednesday and Saturday, 10 a.m., Diseases of the Throat, Nose, and Ear. Wednesday, 10 a.m., Diseases of Children. Wednesday and Saturday, 2 p.m., Diseases of the Eye. Lectures: At 12 noon, Monday, Pathological Demonstration. At 5 p.m., Monday, Clinical; Tuesday, Sleeping Sickness; Wednesday, Practical Medicine; Thursday, Clinical; Friday, Cases of Skin Disease.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

SEDGWICK.—October 27th, Dr. and Mrs. Sedgwick, "Chandon Villa," Queen's Road, Peckham, of a son.

DEATHS.

CONRY.—On October 24th, at Thundersley, Essex, John Templer Crosbie Conry, M.D.

JOLL.—On October 28th, at 1, Elm Grove Road, Ealing Common, Boyd Burnett Joll, M.B.Lond., M.R.C.S., formerly of Woolton, Liverpool, and Bedford Square, W.C.

BOOKS, ETC., RECEIVED.

London: J. and A. Churchill. 1907:

A Short Manual for Monthly Nurses. By C. J. Cullingworth, M.D., F.R.C.P. Sixth edition. 1s. 6d.

Pathology. By R. T. Hewlett, M.D., F.R.C.P., D.P.H. Second edition. 10s. 6d.

A Manual for Hospital Nurses and others engaged in Attending on the Sick. By E. J. Domville, L.R.C.P.Lond., M.R.C.S.Eng. Ninth edition. 1s. 6d.

Collins's "Handy" Modern Fiction. London: W. Collins, Sons and Co., Ltd. 1907. 7d. each:

1. The Great Refusal. By M. Gray.
2. The Secret Woman. By E. Phillpotts.
3. The Brown Eyes of Mary. By E. M. Albanesi.
4. The Golden Butterfly. By W. Besant and J. Rice.

Oxford Medical Publications. London: Henry Frowde, and Hodder and Stoughton. 1907:

A Manual of Venereal Diseases. By Officers of the R.A.M.C.: Sir A. Keogh, K.C.B., Lieutenant-Colonel C. H. Melville, Colonel Leishman, and Major C. E. Pollock. 5s.

Diseases of the Nose. By E. B. Waggett, M.A., M.B., B.C. 5s.

Diseases of the Ear. By H. Tod, M.A., M.B., B.C., F.R.C.S. 5s.

Wetzlar, London, Berlin, New York, etc.: E. Leitz. 1907:

Catalogue No. 42: Microscopes and Accessory Apparatus. Microtomes.

Manual of Practical Anatomy. By D. J. Cunningham, M.D., D.Sc., LL.D., D.C.L., F.R.S. Vol. i: Upper Limb, Lower Limb, Abdomen; and vol. ii: Thorax, Head, and Neck. Fourth edition. Edinburgh and London: Young J. Pentland. 1907. 10s. 6d. each.

Tracheo-Bronchoscopy, Oesophagoscopy, and Gastroscopy. By C. Jackson, M.D. St. Louis, Mo.: The Laryngoscope Co. 1907. 17s.

The Prevention of Infectious Diseases. The Lane Lectures. 1906. By J. C. M'Vail, M.D., D.P.H., F.R.S.E. London: Macmillan and Co. 1907. 8s. 6d.

Everybody's Doctor. The People's Book of Medicine and of Health. By Leading Physicians. Part I. London: Cassell and Co., Limited. 7d.

Blood Stains: their Detection, and the Determination of their Source. By Major W. D. Sutherland, I.M.S. London: Baillière, Tindall, and Cox. 1907. 10s. 6d.

Youth: its Education, Regimen, and Hygiene. By G. S. Hall, Ph.D., LL.D. London: S. Appleton. 1907. 6s.

London: H. Kimpton, 1907:

The Teeth and their Care. By T. P. Hyatt, D.D.S. 1s.

The Practice of Obstetrics. By American Authors. Edited by C. Jewett, M.D. Third edition. 21s.

Some Successful Prescriptions. By A. H. Hart, M.D. London: J. Bale, Sons, and Danielsson, Limited. 1907. 1s.

London: E. Marlborough and Co. Marlborough's Self-Taught Series, 1907:

No. 15a. Hindustani Grammar. By Captain C. A. Thimm. Second edition. 2s. 6d.

No. 17. Japanese Self-Taught. Edited by W. J. S. Shand. 2s. 6d.

No. 20. Tamil Self-Taught. By Don M. de Zilva Wickremasinghe. 2s. 6d.

Copper under the Gold. By E. F. Almax. London: Chatto and Windus. 1907. 6s.

Wintering in Rome. By A. G. Welsford, M.D., B.C. Second edition. London: The Health Resorts Bureau. 1907. 2s. 6d.

Untersuchungen in der Puringruppe (1882-1906). Von E. Fischer. Berlin: J. Springer. 1907. M.15.

First Aid to the Injured. Six Ambulance Lectures by Dr. F. Esmarch. Translated from the German by H.R.H. Princess Christian. Seventh edition. London: Smith, Elder and Co. 1907. 2s.

The University Tutorial Series. Matriculation Directory. No. XLVII. September, 1907. Cambridge: University Tutorial Press. 1s.

Hygiene and Public Health. By L. C. Parkes, M.D., D.P.H., and H. R. Kenwood, M.B., D.P.H. Third edition. London: H. K. Lewis. 1907. 10s. 6d.

The Technique of Vagino-peritoneal Operations. By E. Wertheim and Th. Micholitsch. Translated by C. Lockyer, M.D., B.S. London: Macmillan and Co. 1907. 25s.

Malaria, a Neglected Factor in the History of Greece and Rome. By W. H. S. Jones, M.A. Cambridge: Macmillan and Bowes. 1907. 2s. 6d.

A Friendly Chat and Plain Talk about Mind Reading. Essex Junction, Vermont: A. Cochran. 50 cents.

Lessons in Practical Hygiene for Use in Schools. By A. Ravenhill, F.R. San. I. Leeds and Glasgow: E. J. Arnold and Son, Ltd. 5s.

Petite Chirurgie et Pratiques spéciales Courantes. Par P. Soubeyran et P. Ardin-Delteil. Montpellier: Coulet et Fils; and Paris: Masson et Cie. 1908. Fr.9.

The Eddy. By R. Stephens. Edinburgh and London: W. Blackwood and Sons. 1907. 6s.

The Re-education of Co-ordination by Movements: with special reference to Locomotor Ataxy. By A. G. Dampier-Bennett, M.R.C.S., L.R.C.P. Bristol: J. Wright and Co. 1907. Book and chart. 10s. 6d.

Manual of Bacteriology. By R. Muir, M.A., M.D., F.R.C.P.Edin., and J. Ritchie, M.A., M.D., B.Sc. Fourth edition. London: Young J. Pentland. 1907.

My Dog is Sick. By Canis. London: P. S. King and Son. 1907. 1s. 6d.

Nerve Diseases. For Students Commencing Hospital Practice. By L. A. Clutterbuck, M.D., B.S., M.R.C.P., etc. London: The Scientific Press. 1907. 3s.

Metabolism and Practical Medicine. By C. von Noorden. Vol. III. The Pathology of Metabolism, by C. von Noorden, H. Solomon, A. Schmidt, A. Czerny, H. Steinitz, C. Lapper, M. Matthes, C. Neuberg, O. Loewi, and L. Mohr. English issue edited by I. W. Hall. London: W. Heinemann. 1907. 3 vols. £2 12s. 6d.

Third Annual Report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis. February 1st, 1905, to February 1st, 1906. Edited by J. Walsh, A.M., M.D. Philadelphia: H. Phipps Institute. 1907.

Blood Examination and its Value in Tropical Disease. By C. F. Fothergill, M.R.C.S.Eng., L.R.C.P.Lond., B.A., M.B., B.C. London: H. Kingston. 1907. 2s. 6d.

*** In forwarding books the publishers are requested to state the selling price.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
NOVEMBER.	
3 Sunday ...	
4 MONDAY ...	
5 TUESDAY ...	
6 WEDNESDAY	LONDON: Medical Inspection of School Children Subcommittee, 2.30 p.m. LIVERPOOL (NORTHERN) DIVISION, *Lancashire and Cheshire Branch*, Liverpool Medical Institution, 4 p.m. MANCHESTER SOUTH DIVISION, *Lancashire and Cheshire Branch*, Special General Meeting, at Dr. Vipont Brown's, 2, Birch Lane, Longsight, 3.45 p.m. YORKSHIRE BRANCH, The University, Sheffield. 4 p.m.; Council, 3.30 p.m.; Dinner, Royal Victoria Hotel, Great Central Station, 6.30 p.m.
7 THURSDAY...	
8 FRIDAY ...	LONDON: Standing Ethical Subcommittee, 1.30 p.m. BORDER COUNTIES BRANCH, County Buildings, Dumfries. BOSTON AND SPALDING DIVISION, *Midland Branch*, White Hart Hotel, Boston, 2.45 p.m. CHICHESTER AND WORTHING DIVISION, *South-Eastern Branch*, Infirmary, Chichester; Dinner, Dolphin Hotel, after meeting.
9 SATURDAY ...	
10 Sunday ...	
11 MONDAY ...	
12 TUESDAY ...	LONDON: Organization Committee, 11 a.m. LONDON: Life Insurance Examinations Subcommittee, 3 p.m.
13 WEDNESDAY.	ULSTER BRANCH, Belfast.
14 THURSDAY...	NORWOOD DIVISION, *South-Eastern Branch*, Streatham Hall, 3.30 p.m.; Dinner, 6 p.m.
15 FRIDAY ...	
16 SATURDAY ...	
17 Sunday ...	
18 MONDAY	
19 TUESDAY ...	
20 WEDNESDAY	CARDIFF DIVISION, *South Wales and Monmouthshire Branch*, Cardiff.
21 THURSDAY...	
22 FRIDAY ...	
23 SATURDAY...	
24 Sunday ...	
25 MONDAY ...	
26 TUESDAY ...	
27 WEDNESDAY.	BATH AND BRISTOL BRANCH, Bath.
28 THURSDAY...	CITY DIVISION, *Metropolitan Counties Branch*. Special Meeting, Hackney Town Hall, 4 p.m.
29 FRIDAY ...	
30 SATURDAY...	
DECEMBER.	
1 Sunday ...	
2 MONDAY ...	
3 TUESDAY ...	
4 WEDNESDAY	
5 THURSDAY...	ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, General Meeting. FOLKESTONE DIVISION, *South-Eastern Branch*, Victoria Hospital, Folkestone, 8.30 p.m.
6 FRIDAY ...	
7 SATURDAY...	
8 Sunday ...	
9 MONDAY ...	
10 TUESDAY ...	
11 WEDNESDAY	
12 THURSDAY...	
13 FRIDAY ...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 9TH, 1907.

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ASSOCIATION INTELLIGENCE.

PROCEEDINGS OF COUNCIL.

AT a meeting of the Council, held, by kind permission of the Metropolitan Asylums Board, London, in their Board Room, on Wednesday, October 30th, 1907, at 2 o'clock in the afternoon,

Present:

Mr. EDMUND OWEN, LL.D., London, Chairman of Council, in the Chair.

Dr. HENRY DAVY, Exeter, President.

Professor SIMEON SNELL, Sheffield, President-Elect.

Dr. J. A. MACDONALD, Taunton, Chairman of Representative Meetings.

Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. JOHN FORD ANDERSON, London
Mr. H. A. BALLANCE, Norwich
Dr. EDGAR G. BARNES, Eye
Sir JAMES BARR, Liverpool
Fleet Surgeon E. J. BIDEN, R.N., Fareham
Dr. T. R. BRADSHAW, Liverpool
Dr. J. BRASSEY BRIERLEY, Manchester
Colonel DAVID BRUCE, C.B., F.R.S., London (Cape of Good Hope, Eastern Province and Western Province Branches)
Dr. R. C. BUIST, Dundee
Dr. W. A. CARLINE, Lincoln
Mr. ANDREW CLARK, London
Dr. W. COLLIER, Oxford
Mr. J. WARD COUSINS, Portsmouth
Dr. JAMES CRAIG, Dublin
Mr. C. F. CUTHBERT, Gloucester
Mr. E. J. DOMVILLE, Exeter
Mr. A. J. DREW, Oxford
Mr. G. YOUNG EALES, Torquay
Dr. GEORGE EASTES, London
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Dr H. A. FRANCIS, London (Brisbane and Queensland Branch)
Mr. GEORGE COOPER FRANKLIN, LL.D., Leicester
Dr. JOSEPH J. GIUSANI, Cork
Dr. ALFRED GODSON, Cheadle
Dr. BRUCE GOFF, Bothwell
Dr. DAVID GOYDER, Bradford
Dr. JAMES HAMILTON, Glasgow
Dr. G. E. HASLIP, London
Dr. ROBERT MCKENZIE JOHNSTON, Edinburgh
Colonel C. H. JOUBERT DE LA FERTÉ, I.M.S. ret., Weybridge
Dr. HUGH R. KER, London
Mr. R. H. KINSEY, Bedford
Mr. F. C. LARKIN, Liverpool
Dr. H. L. MCKISACK, Belfast
Mr. M. A. MESSITER, Dudley
Dr. C. G. D. MORIER, London (South Australian and West Australian Branches)
Dr. J. MUNRO MOIR, Inverness
Professor WM. OSLER, F.R.S., Oxford
Mr. C. H. WATTS PARKINSON, Wimborne
Dr. FRANK M. POPE, Leicester
Dr. H. JONES ROBERTS, Penygroes
Dr. LAURISTON E. SHAW, London
Lieut.-Col. R. J. S. SIMPSON, C.M.G., London (Natal, Griqualand West Branches)
Dr. HENRY SMURTHWAITE, Newcastle-on-Tyne
Mr. CHARLES R. STRATON, Salisbury
Mr. JOHN LYNN THOMAS, C.B., Cardiff
Dr. W. J. TYSON, Folkestone
Mr. T. JENNER VERRALL, Brighton
Dr. DENIS WALSHE, Graigue
Dr. ARTHUR T. WEAR, Newcastle-on-Tyne
Mr. F. E. A. WEBB, Cambridge
Dr. SINCLAIR WHITE, Sheffield
Mr. W. J. WILLIAMS, Llanelly
Lieutenant-Colonel E. M. WILSON, C.B., C.M.G., Farnborough

Minutes.

The minutes of the last meeting (August 1st, 1907) having been printed and circulated were taken as read and signed as correct.

Apologies.

Read letters of apology for non-attendance from Dr. J. H. Galton, Professor J. T. J. Morrison, Dr. Maxwell Ross, Dr. Cecil Shaw, and Mr. W. D. Spanton.

New Members.

The CHAIRMAN OF COUNCIL welcomed the following new Members of Council on attending for the first time: Sir James Barr, Mr. J. Ward Cousins, Mr. M. A. Messiter, and Lieutenant-Colonel R. J. S. Simpson, C.M.G.

Dr. Langley Browne's Acknowledgement.

Read acknowledgement from Dr. Langley Browne to the resolution of the Council passed upon his retiring from the Chairmanship of Council, which was ordered to be entered on the minutes.

Dates of Meetings.

The Chairman of Council reported that for 1908 he had fixed the following dates for the meetings of Council: January 29th, April 29th, and July 1st.

Irish Matters.

Read acknowledgements from the Irish Office, the Local Government Board for Ireland, and the Royal Commission on the Poor-Law and Relief of Distress, to certain Resolutions of Council, which were referred to the Irish Committee.

Votes of Thanks: Exeter.

Moved by the CHAIRMAN OF COUNCIL, seconded by the CHAIRMAN OF REPRESENTATIVE MEETINGS, and

Resolved: That the best thanks of the Association be given to:

The Right Worshipful the Mayor and Mayoress of Exeter, for their valuable help and great hospitality on the occasion of their garden party given on Northernhay.

The Right Reverend the Lord Bishop of Exeter and Mrs. Robertson, for the garden party in Palace Grounds.

The Right Reverend the Lord Bishop of Exeter, for his sermon on the occasion of the annual service of the Association.

The Venerable and Very Reverend the Dean and Chapter of Exeter, for the use of the Cathedral on the occasion of the annual service of the British Medical Association.

The Mayor, Aldermen, and citizens of Exeter, for permission to use the municipal buildings and grounds, and for their kind and liberal entertainment of the members of the Association.

His Grace the Duke of Bedford, K.G., for entertaining the members at luncheon on the occasion of their visit to Endsleigh.

Mrs. Hamlyn, of Clovelly Court, North Devon, for providing luncheon to members of the Association on their visit to Clovelly.

The Right Hon. Lord and Lady Clinton, for the garden party given to the members at Bicton.

The Right Hon. Lord and Lady Clifford, of Chudleigh, for so kindly providing tea to the members visiting Ugbrooke.

The Right Hon. the Earl of Mount Edgcumbe, for providing tea to the members of the Association visiting Mount Edgcumbe.

Sir Thomas Acland, Bart., and Lady Acland, for their enjoyable garden party given at Killerton.

Sir Dudley Duckworth-King, Bart., and Lady Duckworth-King, for their enjoyable garden party at Wear.

Mr. John Dadd, J.P. (Chairman) and the members of the Ilfracombe Town Council for providing luncheon on the occasion of the excursion to Ilfracombe.

Dr. Evans (Chairman), and members of the Budleigh-Salterton Urban District Council, for the reception given to the members visiting Budleigh-Salterton and Bicton.

Dr. Brushfield, for arranging for the members' visit to Hayes Barton.

Mr. A. F. Terrell, of Seaton, and the members of the Seaton Improvement Committee, for their garden party at Seaton.

His Worship the Mayor, Aldermen Grove and Bowles, the Town Clerk, and the Secretary of the Reception Committee at Falmouth, for providing luncheon on the occasion of the members' excursion to Falmouth.

His Worship the Mayor of Plymouth, for providing luncheon on the occasion of the members' excursion to Plymouth; and to Admiral Sir Lewis Beaumont, K.C.B., K.C.M.G., Vice-Admiral Barlow, D.S.O., Captain Stoddart, and the officers of H.M.S. *Caesar*, for permission to visit the Dockyard and vessels.

The Chairman and members of Urban District Council, Exmouth, for the garden party in the Manor Grounds, Exmouth.

Dr. Maury Deas and the Committee of Wonford House, for their garden party at Wonford House, Exeter.

Dr. and Mrs. Samways, for their garden party at Knowle, Topsham.

To the Chairman, Honorary Secretaries, and members of all the Committees, for their indefatigable labours in making the Exeter Meeting so pronounced a success.

The Mayoress of Exeter, Miss Davy, and other members of the Ladies' Committee, for the excellent entertainment arranged by them at the Rougemont Hotel.

The President (Dr. Maury Deas) and members of the South-Western Branch, and the medical profession of Exeter for their loyal assistance and co-operation during the meeting.

The President and Miss Davy for their uniform kindness and hospitality during the Exeter Meeting.

To Dr. Gordon, Mr. Miller, and the Publishing Committee, for their great labours in the producing the book entitled *A Book of the South-West.*

Mr. Louis H. Tosswill and Mr. James Somer, the Honorary Local Treasurers, for their valuable assistance in the financial arrangements.

And

Mr. Russell Coombe, Mr. G. T. Clapp, and Mr. Leonard R. Tosswill, the Honorary Local Secretaries, for their untiring efforts on behalf of the Association in the successful organization of the Exeter meeting.

New Premises.

Mr. ANDREW CLARK, as Chairman of the Premises Committee, reported that certain minor matters regarding the north boundary of the Harvey's Buildings property had been in dispute, but these had been satisfactorily settled. The rebuilding is well on to the second floor, but progress has been somewhat hampered on account of the difficulty of obtaining delivery of the granite. The builders state, however, that the work promises to be well within the scheduled time.

Journal and Finance Committee.

Moved by Dr. MCKENZIE JOHNSTON, seconded by Mr. FRANKLIN, and

Resolved: That the minutes of the Journal and Finance Committee of October 23rd, 1907, be received.

Moved by the TREASURER, seconded by Mr. FRANKLIN, and

Resolved: That having regard to the fact that this Council has not sufficient evidence before it as to the ability of the Association to undertake the large extra expenditure involved by the appointment of a highly-paid Permanent Assistant Medical Secretary, the whole question be postponed until the 1907 Balance Sheet is available.

Moved by the TREASURER, seconded by Mr. FRANKLIN, and

Resolved: That the accounts for the quarter ending September 30th last, amounting to £17,012 4s. 1d., be received and approved, and the Treasurer be empowered to pay those remaining unpaid, amounting to £3,524 14s. 9d.

Moved by the TREASURER, seconded by Mr. PARKINSON, and

Resolved: That Angus Duncan Macpherson, M.A., M.B., C.M., be reappointed for a further period of one year, dating from December 8th, 1907.

Allocation of Committees.

In reference to the following recommendations of the Finance Inquiry Committee:

219 (*c*) That to the Medical Department be assigned all the work pertaining to the professional side of the work of the Association and the Secretaryship of the Representative Meeting, and of the following Committees:

Organization;
Ethical;
Hospitals;
Medico-Political;
Public Health;
Science;
Colonial;
Naval and Military;

and any other Committee that may be appointed dealing with the professional work of the Association.

An amendment was moved by Dr. MCKENZIE JOHNSTON, seconded by Dr. HAMILTON,

That the Council disapprove of the Minute of the Journal and Finance Committee in so far as the foregoing recommendation is concerned, which proposes to transfer the Science Committee to the Medical Secretary's Department.

The amendment having been put from the Chair was

declared to be carried, 28—13. Also as a substantive resolution.

Moved by the Chairman of Representative Meetings, and

Resolved: That the Council approve the following Minutes of the Representative Meeting—namely, 56, 58, 193, 196, 201, 202, 207, 208, and 218:

Estimate of Income and Expenditure for 1907.

56 That with reference to Paragraph 12 of the Annual Report of the Council, "Estimate of Income and Expenditure for 1907," it be an instruction to the Council to take into consideration the desirability of giving members of the Association the opportunity to subscribe for the amount necessary in Debentures, in whole or in part, in order that the interest from the same should be paid to them instead of any outside body (*re* new buildings).

Apportionment of a Member's Annual Subscription.

58 That, in the Report on the appointment of a Member's annual subscription of 25s, fuller particulars as to the amount spent under the heading "Meetings of Council, Representatives, and Committees, Salaries, Library, etc.," are desirable.

Improvements in System of Financial Control.

193 4. That to enable the Representative Meeting duly to consider the financial aspects of questions of policy and administration:

(*a*) There be placed before it a Report from the Finance Committee on the financial aspects of any proposals involving considerable new expenditure.

(*b*) The form of the Balance Sheet be amended as shown in the appendix to the Recommendations.

196 That the "ordinary" expenditure which Committees are authorized to incur without special sanction of the Council, and the power of the Treasurer to provisionally authorize extra expenditure in cases of emergency, be defined by standing orders of the Council.

201 That the Chairman of each Committee be furnished quarterly with a statement of all expenses charged in the accounts of the Association as arising out of the work of that Committee during the previous quarter.

Economies.

202 That with a view to economy in administration:

(*a*) The attention of the Council and Committees be drawn to the importance of keeping down the number of Committee Meetings to the minimum consistent with efficient work, and that, to contribute to this end, the work of investigation and action in suitable matters be referred to small Subcommittees, and the opinions of Members of Committees, on matters of a simple character not requiring discussion, be ascertained when possible by correspondence.

207 That for all documents printed for Committees, Journal type and measure be used, in order to save cost in subsequent printing in the Journal.

208 That as much as possible of the printing be done by the Association

218 That to the Editorial Department be assigned the editorial work of the Journal.

With regard to Minute 217 of the Representative Meeting:

217 (*a*) That to the Financial Department be assigned the business work of the Association, and the Secretaryship of the Annual General Meeting, of the Central Council, and of the following Committees:

Journal and Finance;
Premises;
Arrangements;
Election Returns;

and any other Committee that may be appointed dealing with the Financial Department of the Association.

An amendment was moved by Dr. McKenzie Johnston, seconded by Dr. Hamilton, and adopted:

That the Science Committee be added to the foregoing list of Committees of the General Secretary's Department.

With regard to Minute 219 of the Representative Meeting, as to the proposed transference of the Science Committee from the department of the General Secretary to that of the Medical Secretary, the Chairman of Council reported that the minute had been amended by the Council, whereby the Science Committee remains in the General Secretary's department.

With regard to Minute 220 of the Representative Meeting. an amendment was moved by Mr. Eastes, seconded by Mr. Franklin:

That the words—

That at these Meetings the Secretaries be seated one on either side of the Chairman for convenience of reference,

be omitted.

The amendment having been put from the Chair was declared to be carried (26—23).

The Chairman then put Minute 220, as amended, and declared it to be carried as follows:

220 3. That both Secretaries be required to attend General Meetings, Representative Meetings, Central Council, and Meetings of the following Committees:—

Organization;
Journal and Finance;
Election Returns;

That the Minutes and Agenda of the above Meetings be submitted to both Secretaries before being finally printed.

Resolved: That Minutes 224, 225, 226, and 228 be approved:

224 That each Head of Department should, when it appears to him that the interests of the Association may be advanced by his presence, or at the request of the Chairman of Committee, attend meetings of Committees other than those of which he is Secretary.

225 That each Secretary be supplied with a copy of all official documents at the time of issue.

226 That the Head of each Department nominate the clerks for his Department: that the appointment be made by the Chairman of Council and Treasurer: that the Head of each Department have the power of suspension of the clerks in his Department: that the power of dismissal be in the hands of the Chairman of Council.

228 That the Medical Secretary be empowered to keep a card Register of Members of the Association and of the medical profession; and that information for this purpose should be sent to him as soon as received.

Arising out of the consideration of recommendations of the Special Finance Inquiry Report, approved by the Representative Meeting at Exeter, and forwarded to the Council, Dr. Haslip asked how long the Report of the Finance Inquiry Committee had been placed in the hands of the Representatives prior to the Representative Meeting. He also wished to know if it was in the character of individual members or as representatives of Divisions that the vote was taken in the Representative Meeting, having regard to the fact that the Finance Inquiry Report had never been before the Divisions.

The Medical Secretary, on being asked by the Chairman of Council to reply to these questions, stated that the Report was circulated to the Representatives and to the Honorary Secretaries of all Divisions about a fortnight before the Meeting.

Organization Committee.

Moved by Mr. Verrall, seconded by Mr. Kinsey, and

Resolved: That the minutes of the Organization Committee be received.

Resolved: That the Council approve the Rules submitted by the Victorian Branch subject to the amendments which have been made by the Organization Committee on the advice of the Solicitor in order to bring the said Rules into conformity with the Regulations of the Association.

Resolved: That the Council approve the new Rules submitted by the Natal Branch other than the Rule relating to proxy voting.

Resolved: That the Council approve the alteration of Rules submitted by the Liverpool (Western) Division.

Moved by Mr. Andrew Clark, seconded by Mr. Verrall:

That the minutes of the Organization Committee of October 8th, 1907, be received:

Resolved: That the Organization Committee be instructed to draft for the consideration of the Council an amendment of the By-laws to provide for an increase in the number of elected members of the Organization Committee, and, if thought desirable, of other Committees the number of whose elected members has been similarly reduced.

Resolved: That the membership number to be stated in the Annual Report of the Council be the number as shown by the Annual List made up to the end of April, pursuant to By-law 6.

Whereon a rider was moved by Dr. BUIST, seconded by Mr. BALLANCE, and carried, to the effect that the number of members elected during the year, the losses by death, default, resignation, and expulsion be also given.

Resolved: That the Rules submitted by the East York and North Lincoln Branch, and the East York and Tottenham Divisions respectively, be approved.

Also that the Council approve the Rules submitted by the Watford and Harrow Division, except the Rule dealing with the calling of Special Meetings.

Irish Committee.

Moved by Dr. WALSHE, seconded by Dr. GIUSANI, and

Resolved: That the minutes of the Irish Committee of September 28th, 1907, be received.

Arrangements Committee.

Resolved: That the minutes of the Arrangements Committee be received.

Resolved: That there be sixteen Sections: Anatomy; Dermatology; Diseases of Children; Electrical; Industrial Diseases; Laryngology, Otology, and Rhinology; Medicine; Navy, Army, and Ambulance; Obstetrics and Gynaecology; Ophthalmology; Pathology; Physiology; Psychological Medicine; Public Health and Forensic Medicine; Surgery; and Tropical Diseases.

Resolved: That there be a Church Service in the Parish Church, Sheffield.

Resolved: That there be two Addresses, one in Medicine and one in Surgery, and that Dr. James Kingston Fowler and Professor R. J. Pye-Smith be invited to deliver the Addresses respectively.

Resolved: That there be a Popular Lecture, and that Mr. Edmund Owen be invited to deliver the same.

Resolved: That in case of need the Annual General Meeting be summoned for Friday, July 24th, 1908, but that it be left to the President-elect, the Chairman of the Representative Meetings, and the Chairman of Council, to decide the actual day and hour.

Public Health Committee.

Moved by Mr. PARKINSON, seconded by Mr. LARKIN, and

Resolved: That the minutes of the Public Health Committee of October 8th, 1907, be received.

Resolved: That the following resolution submitted by the Section of State Medicine be approved and forwarded to the President of the Local Government Board, namely:

"That it is necessary for an efficient and proper inspection of rural milk supplies that such inspection should be made by officers not subject to periodical reappointment."

Medico-Political Committee.

Moved by the CHAIRMAN OF REPRESENTATIVE MEETINGS, seconded by Dr. TYSON, and

Resolved: That the minutes of the Medico-Political Committee of October 9th, 1907, be received.

Hospitals Committee.

Moved by Dr. POPE, seconded by Dr. LAURISTON SHAW, and

Resolved: That the Minutes of the Hospitals Committee of October 10th, 1907, be received.

Resolved: That a number of the JOURNAL next year be devoted largely, but not necessarily exclusively, to Hospitals questions.

Resolved: That the Council approve of circulating copies of this number of the JOURNAL to the Chairman and Secretaries of all Hospital Boards.

Resolved: That the Bath and Bristol Branch be supported in resisting a new Rule of the Bristol Royal Infirmary which is opposed to the opinion of the local profession.

Ethical Committee.

Moved by Mr. KINSEY, seconded by Mr. VERRALL, and

Resolved: That the minutes of the Ethical Committee of October 11th, 1907, be received.

The CHAIRMAN OF THE ETHICAL COMMITTEE reported to the Council that the Committee had noted Minutes 70 and 71 of the Annual Representative Meeting, 1907, namely:

Upon consideration of the paragraph in the Annual Report of the Central Ethical Committee as to the Association acting as prosecutors before the General Medical Council.

70 Resolved, by 91 votes to 2: That this Meeting approve the action of the Ethical Committee, and express the opinion that, so long as action by the Association as complainant before the General Medical Council is desirable on other grounds, it should not be discontinued only on the ground of the position of Members of the Association who are Members of the General Medical Council.

71 Proposed by Dr. James Hamilton (Council), seconded by Dr. A. Walker (South Edinburgh):

That in view of the letter of the President of the General Medical Council, and in view of Counsel's opinion, placed before the Central Council at the Meeting of June 5th last, this Representative Meeting do hereby rescind for the present the Resolution (Minute 312) passed at the Annual Representative Meeting of 1906, in the following terms, namely:

That it is absolutely necessary, in the interests of the Medical Profession, that the Association should take up cases of a penal nature before the General Medical Council as Complainants.

The motion was lost by 98 votes to 1.

The CHAIRMAN OF THE ETHICAL COMMITTEE also reported that the Resolution passed in 1906 was now confirmed as a decision of the Association, no Referendum having been taken thereon, and it therefore constituted an instruction to the Council to provide that such cases as are deemed suitable should be brought before the General Medical Council by the British Medical Association as Complainant. The Ethical Committee, therefore, recommended that the Council instruct the Central Ethical Committee to act on behalf of the Association in giving effect to the instruction of the Representative Meeting.

Moved by Mr. KINSEY, seconded by Mr. LYNN THOMAS, and

Resolved: That the Council authorizes the Ethical Committee to act as Complainants before the General Medical Council in suitable cases.

Dr. J. BRASSEY BRIERLEY and Dr. T. R. BRADSHAW desired their dissent recorded.

Mr. MESSITER inquired whether the Central Ethical Committee had power to act as complainants before the General Medical Council without receiving final instructions and authority from the Council, and he also asked for a definition of "suitable cases," and if the Committee were to be the final arbiters.

Mr. KINSEY replied that the Council had already given the Ethical Committee general instructions and left the individual cases for it to deal with. As regards "suitable cases," the standing instruction was that the Committee should be advised by the Solicitor.

Resolved: That the Central Ethical Committee be authorized to incur an expenditure not exceeding £25 in the presentation of any single case to the General Medical Council.

Resolved: That the Council instruct the Central Ethical Committee to act on behalf of the Association in giving effect to the instructions of the Representative Meeting.

Resolved: That with regard to the communication from the Edinburgh Branch, as to the presentation of cases to the General Medical Council referred by the Council to the Committee, it be pointed out to the Edinburgh Branch that since the adoption of the resolution of the Branch stated, the question has been considered and decided by the Annual Representative Meeting.

Resolved: That the adoption of the following Ethical Rules by the North-East Essex Division be approved by the Council (Minute 28):

1 That in the case of any complaint of one Member against another, a copy of such documents relating to the case as the Ethical Committee of the Division, or the Chairman and Honorary Secretary, acting on behalf of the Division, may deem expedient, shall be forwarded to the Members concerned at least three days before the Meeting at which such complaint is considered.

2 That in such cases it is necessary for the complainant, when required by the Ethical Committee of the Division, or by the Chairman and Honorary Secretary acting on behalf of the Committee, to appear in person at the Meeting at which such complaint is considered.

Resolved: That the following Ethical Rules of Divisions be approved: English Division of the Border Counties Branch—Bradford Rules and Rule Z; North Manchester Division—Model Rules of Procedure; Consett Division—Bradford Rules and Rule Z; and Bristol Division—Model Rules of Procedure (as

modified by the Division), Bradford Rules (A) (as modified by the Division), (B) (as modified by the Division), (C), (E) (as modified by the Division) and (H), and Rule Z.

Naval and Military Committee.

Moved by Colonel Joubert de la Ferté, seconded by Colonel Wilson, and

Resolved: That the minutes of the Naval and Military Committee of October 18th, 1907, be received.

Resolved: That the War Office be informed that the British Medical Association, while fully appreciating the action of the War Office to which the Secretary of State draws attention, still regrets that the truth that most military questions involving questions of hygiene or sanitation is not recognized by the presence of the Director-General of the Army Medical Service as a responsible member of the Army Council.

Numbers at Divisional Meetings.

Moved by Dr. Collier, seconded by Mr. Ward Cousins, That when questions dealing with the policy of management of the Association generally are discussed in Divisions the numbers present at such meetings and the numbers voting in favour of or against Resolutions be reported in the Journal.

The motion having been put from the Chair was declared to be carried.

The election of candidates was then considered, and it was resolved that the 19 candidates whose names appeared on the circular convening the meeting be elected members of the British Medical Association.

A resolution passed by the Plymouth Division on October 7th, 1907, was reported, and, on the motion of Mr. Domville, seconded by the President, it was referred to the Public Health Committee.

Read communication from the Reigate Division, which was referred to the Medico-Political Committee.

Read resolution passed by the Lancashire and Cheshire Branch Council, which was referred to the Hospitals Committee.

Read communications from the North of England Branch, when it was decided that that part which related to Medical Law Reform should be referred to the Medico-Political Committee.

International Medical Congress.

Read communication from the Sixteenth International Medical Congress, to be held at Buda-Pesth, August 29th to September 4th, 1909, asking for the appointment of Delegates: on which the Chairman invited any member proposing to attend the Congress and desiring to act as Delegate to notify his wish to the General Secretary.

Resolution from Section.

Read resolution passed in the Section of Obstetrics and Gynaecology at Exeter, which was referred to the Science Committee.

Reports of Standing Committees.

ORGANIZATION COMMITTEE.

A meeting of the Organization Committee was held at the Central Offices on October 8th, when there were present Dr. E. Rayner, Treasurer of the Association; Mr. Andrew Clark, Mr. H. A. Ballance, Dr. E. D. Kirby, Professor J. T. J. Morrison, and Professor A. H. White.

Election of Chairman and Co-option of Members.

Mr. Andrew Clark was elected Chairman of the Committee, and the following members of the Association were co-opted members of the Committee under By-law 41 (10): Dr. E. D. Gairdner, Honorary Secretary of the Ayrshire Division; Sir Victor Horsley; Mr. F. C. Larkin, Honorary Secretary of the Lancashire and Cheshire Branch; Mr. T. Jenner Verrall, and Mr. F. E. A. Webb.

Elected Members of Committee.

The Committee having considered the reduction in the number of its elected members, consequent upon the recent increase in the number of "*ex-officio*" members and upon the fact that the by-laws fix a maximum total membership of the Committee, recommended the Council to propose an alteration of by-laws to increase the number of elected members of the Organization Committee and of any other Committees similarly affected.

Number of Members of the Association.

The Committee, having considered the minutes of the Annual Representative Meeting directing that in future the exact number of members of the Association should be stated in the annual report of the Council, recommended to the Council that the number to be so stated should be that shown by the annual list of members made up to the end of April pursuant to By-law 6.

The Branches and Scientific Work.

The Committee reappointed, with the addition of the Chairman, the Subcommittee appointed last year to report on the complete reorganization of the Branches, and the definition of their duties, with a view to promoting the scientific work of the Association, and facilitating the amalgamation of other medical societies with the Association. The Subcommittee now consists of Mr. Andrew Clark, Dr. J. A. Macdonald, Sir Victor Horsley, and Mr. T. Jenner Verrall.

Capitation Grants to Branches.

On consideration of resolutions of the Annual Representative Meeting at Exeter, approving certain portions of the report of the Committee on "Capitation grants to Branches" and referring other portions back to the Committee for further consideration, the Committee instructed the Medical Secretary to prepare, in conference with the Solicitor, a revised draft of the report on the matters referred back, and suitable alterations of the by-laws to give effect to the recommendations which the Representative Meeting approved.

Standing Orders of Representative Meeting.

In accordance with the instructions of the Annual Representative Meeting, the Chairman, Mr. Andrew Clark, the Chairman of the Representative Meetings, and the Medical Secretary were appointed a Subcommittee to draft amendments of the Standing Orders of the Representative Meeting to facilitate the reception and consideration by that meeting of reports of the Council and Committees.

Medical Secretary's Reports.

The Medical Secretary reported upon the visits he had made since the last meeting of the Committee, to a meeting at Ebbw Vale in connexion with the local dispute; to Blackburn, to address a meeting of members of the Division and other local practitioners on the work of the Association; and to Bristol to assist in the consideration, by a general meeting of the Bath and Bristol Branch, of a dispute between the Board of Management and staff of a local hospital. The report was approved, and the Medical Secretary was authorized to attend two other meetings where his presence was desired.

Rules of Branches and Divisions.

The rules submitted by the East Yorks and North Lincoln Branch and the East Yorks Division were approved, as were also the rules submitted by the Tottenham Division subject to certain comments. A proposal submitted by the Natal Branch with reference to proxy voting was considered together with a copy of the opinion of the solicitor, which was to the general effect that proxy voting was not permissible; a copy of the opinion of the solicitor was directed to be forwarded to the Branch.

Presentation of Reports to Council.

The question of the mode in which reports of Committees should be presented to the Council, upon which the Committee had already made a report, was then considered, and the Medical Secretary was instructed to redraft the report in order to make as uniform as possible the instructions to be given to the several Committees on this head.

PUBLIC HEALTH COMMITTEE.

A meeting of the Public Health Committee was held at the temporary offices of the Association on October 8th, when there were present: Mr. Edmund Owen (Chairman of Council), Dr. Edwin Rayner (Treasurer), Mr. E. J.

Domville, Mr. Herbert Jones, Dr. F. C. Martley, Dr. T. G. Nasmyth, and Mr. C. H. Watts Parkinson. Apologies for absence were read from the President and Chairman of Representative Meetings. Pending the election of Chairman, the chair was taken by the CHAIRMAN OF COUNCIL.

Elected Members of Committee.

The Medical Secretary brought up a report from the Organization Committee (q.v.), and it was resolved to recommend the Council to take steps to amend the by-law so that the number of elected members of the Public Health Committee should be restored to seven, as before.

Re-election of Chairman.

Mr. C. H. Watts Parkinson was re-elected Chairman of the Committee for the year 1907-8.

Milk Supplies.

The Committee resolved to recommend the Council to express approval of the following resolution of the Section of State Medicine at the Annual Meeting at Exeter:

> That it is necessary for an efficient and proper inspection of rural milk supplies that such inspection should be made by officers not subject to periodical reappointment,

and to direct that the resolution should be forwarded to the President of the Local Government Board.

Vaccination.

A further resolution of the Section of State Medicine asking that the attention of the Local Government Board should be drawn to the inadequacy of the minimum fee laid down in the Vaccination Order of 1907 and expressing the opinion that all expenses connected with the carrying out of the Vaccination Acts should be borne by the Imperial Exchequer was deferred, and the Committee, after considering the first five paragraphs of its special report on vaccination by general practitioners, postponed the further consideration of the matter. The Chairman reported that he and the Chairman of the Medico-Political Committee had at the request of the Association of Public Vaccinators met representatives of that Association and had arranged that the Public Vaccinators' Association should refer to the British Medical Association instances in which disputes might arise through the operation of the recent Local Government Board Order reducing the minimum vaccination fees, with a view to requesting the Divisions to consider each case on its merits, as to whether the salary offered was adequate, having regard to the amount of work done, in order that the Association might support those cases in which it was considered that inadequate fees were being offered. Mr. Charles Greenwood, secretary of the Public Vaccinators' Association, attended and conferred with the committee.

Public Health Bill.

The CHAIRMAN submitted for the consideration of the Committee a memorandum of suggestions as to action that might with advantage be taken in the near future to promote security of tenure of medical officers of health.

The Committee approved the suggestions, including the following:

> That the Chairman and Secretary should be instructed to take up on behalf of the Committee all cases of attempted dismissal of a medical officer without just ground, or of refusal of a reasonable salary; that the Incorporated Society of Medical Officers of Health should be urged to co-operate with the British Medical Association in support of medical officers of health, and that the Council be recommended to approve of a request being made to the President of the Local Government Board to receive a deputation from the British Medical Association for the purpose of representing that the Public Health Bill of the Association should be taken up by the Government in the next Session of Parliament, unless a Bill of wider scope, having the same effect as regards this particular matter, is to be introduced by the Government.

It was further resolved that arrangements should be made for the reintroduction of the Public Health Bill in the next session of Parliament.

Reports.

The MEDICAL SECRETARY reported upon disputes as to appointments of public vaccinators, and as to public health and Poor-law appointments, as to which action had been taken since the last meeting. The reports were approved.

THE IRISH COMMITTEE.

A MEETING was held in the Royal College of Physicians, Dublin, on September 28th, when there were present: Dr. R. B. Carey, Dr. J. G. Cooke, Dr. James Craig, Dr. J. Singleton Darling, Dr. Joseph M. S. Kenny, Dr. R. B. Mahon, Dr. H. L. McKisack, Dr. John Mills, Dr. D. J. O'Connor, Dr. Cecil Shaw, and Dr. Denis Walshe. Apologies for non-attendance were received from Drs. Giusani, Lee, Quirke, and White.

Election of Officers.

Dr. Denis Walshe was unanimously elected chairman, and Professor White honorary secretary, for the ensuing twelve months.

Public Health Bill.

A memorandum of points to be included in a Public Health Bill was submitted and a subcommittee, consisting of the Chairman, Dr. Craig, and the Secretary, was appointed to draft a letter on the subject to the Branches.

Medical Inspection of School Children.

The following letter, drafted by Dr. Cecil Shaw, was approved, and ordered to be sent to the Irish Members of Parliament:

> DEAR SIR,—The Irish Committee of the British Medical Association, representing about 900 medical men in all parts of Ireland, wish to call your attention to the subject of the Medical Inspection of School Children, and ask your aid in obtaining help for Ireland in this matter.
>
> As you are no doubt aware, the subject was before Parliament last Session as regards England, and legislation has brought into existence the periodical medical inspection of all children attending primary schools in England. We ask you by your vote and influence to try to extend this legislation to Ireland.
>
> Every argument for such inspection in England applies with equal or greater force to Ireland, where the children are often underfed and delicate, and quite unfit to derive benefit from teaching till their health is attended to. It has been shown, for instance, that as regards eyesight 10 per cent. of the children are defective, and when this is pointed out to the parents of such children by the medical inspector, means are taken in most cases to have their eyes examined and glasses prescribed if necessary. The prevalence of tuberculous disease in Ireland is generally recognized, and there can be no doubt that one important way in which it might be combated is the systematic inspection of the children, and consequent recognition of the disease in its early stages.
>
> These are but two instances of many that might be given to show the advantages of regular inspection. Into the manner in which it should be carried out we need not enter now, but the Act passed for England could no doubt be extended to Ireland with few modifications.
>
> We hope that you will interest yourself in this question, and by so doing confer a very great boon on the children of the Irish people.
>
> Signed on behalf of the Irish Committee, B.M.A.,
> DENIS WALSHE, *Chairman.*
> ARTHUR H. WHITE, *Honorary Secretary.*

Matters Deferred.

The consideration of the list of medical and surgical appliances issued by the Local Government Board, and of a list of questions to Irish parliamentary candidates, was postponed until the next meeting, which was fixed to be held in Dublin on Saturday, January 4th, 1908, at 3 p.m.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

IMPORTANT NOTICE.

OWING to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

EDINBURGH BRANCH:
Southern Division.

A meeting of this Division was held in the Oddfellows' Hall, Forrest Road, Edinburgh, on Friday, November 1st, at 8.15 p.m., when there were present. Dr. Matheson (in the chair), and Drs. Cullen, Cumming, Dickson, Kennedy, Lundie, Mackenzie, M'Laren, Marshall, Mowat, E. Price, G. Price, Salt, Scott, A. Walker, and the Secretary. There were also present Drs. McKenzie Johnston and Nasmyth, members of the Central Council.

Confirmation of Minutes.—The minutes of last meeting were read, approved, and signed.

Report on Representative Meeting.—Dr. Dewar, the Deputy Representative at the special meeting held in May, read his report of that meeting, and Dr. A. Walker, the Representative, also reported, and gave a clear statement of the business and his action at the Exeter Meeting in July. The Chairman, in a few laudatory remarks, proposed a vote of thanks to the Representatives for the trouble and care they had devoted to their duties and their reports.

The Referendum.—The Chairman then introduced the subject of the Council's Referendum, and Drs. McKenzie Johnston, Nasmyth, Dewar, Cullen, Walker, and Kennedy joined in the discussion which followed previous to the voting on the referred minutes. The vote was as follows:

Minute 123	No 12 ...	Yes 3 ...	1	did not vote.
Minutes 283 to 298...	No 13 ...	Yes 0 ...	3	,,
Minute 299	No 13 ...	Yes 0 ...	3	,,
Minute 303	No 13 ...	Yes 0 ...	3	,,
Minutes 328 to 330...	No 13 ...	Yes 0 ...	3	,,
Minute 342	No 13 ...	Yes 0 ...	3	,,
Minute 346	No 13 ...	Yes 0 ...	3	,,

Income-tax Returns.—The Secretary submitted the expert's opinion of the items which should be properly deducted by medical men in making up their income-tax returns.[1] The members were impressed with the report, and instructed the Secretary to distribute printed copies among the members.

Black List.—The Secretary also submitted the report of the proposed black list scheme. After some remarks by the Secretary in explanation of the scheme, he was instructed to carry out the details of the proposed innovation as soon as possible, one member dissenting.

Votes of Thanks.—A vote of thanks to the members of Council for their presence and information and to the Chairman closed the meeting.

GLASGOW AND WEST OF SCOTLAND BRANCH:
Lanarkshire Division.

A special meeting of this Division was held in the Black Bull Hotel, Hamilton, on Thursday, October 24th, to consider certain clauses of the proposed Charter upon which a Referendum has been determined by the Council of the British Medical Association. Dr. Bruce Goff, Chairman of the Division, presided. The following minutes of the Representative Meeting were carefully gone over and considered, namely, Nos. 123, 283, 287, 293, 298, 299, 303, 328, 333, 342, 346. The vote of those present was taken on each of these and in each case the members voted unanimously against. This was all the business.

LANCASHIRE AND CHESHIRE BRANCH:
Chester and Crewe Division.

A meeting of this Division was held in the library of the Chester General Infirmary, at 5 p.m., on October 29th, Dr. Mann in the chair.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Ethical Rules.—The report of the replies with regard to the adoption of ethical rules was submitted: 78 letters with enclosed stamped postcards had been issued, and 34 returned—33 in favour and 1 against. A letter from Dr. Robinson of Runcorn was read. Dr. J. G. Taylor then proposed, after some discussion, that a small sub-committee, consisting of the Chairman and the Secretary with Drs. Parry and Duff, draft a code of ethical rules for the Division. This was seconded by Dr. Gray and agreed upon. It was also arranged that this code of rules be submitted to the next meeting.

Contract Practice.—At the request of the Chairman, Dr. Parry read letters with enclosure which he had received from the Honorary Secretary of the Denbigh and Flint Division, asking for the support of the Chester Division with regard to Contract Practice regulations, remuneration, etc., within or contiguous to the Denbigh and Flint area. The Chairman ruled that this matter could not be settled at the meeting, but that specific notice should be given for the next meeting.

The Referendum.—The Referendum was then explained by the Representative, Dr. Parry, and voted upon. The points or subjects were: The Proviso as to Referendum, Composition of Council, Grouping of Branches, Mode of Election by Groups, Business of Annual Representative Meeting, Journal and Finance Committee.

Next Meeting.—It was decided that the next meeting of the Division be held on Tuesday, December 3rd, at 5 p.m., at Crewe.

METROPOLITAN COUNTIES BRANCH:
Lambeth Division.

The opening general meeting was held at Camberwell Infirmary on Thursday, October 24th, at 4 p.m. Dr. Maurice Craig occupied the chair.

The Referendum.—Dr. Esler, the Representative of the Division at the Representative Meeting, read a report, which dealt with the matter of the Referendum from the Council. The question has been several times under consideration by the Executive Committee of the Division, and it will be brought before the general meeting of the Division in November for final voting.

Papers.—Mr. Cecil H. Leaf read a paper on the diagnosis and treatment of some surgical affections likely to be met with in general practice. He reviewed certain points in connexion with piles, fistula, fissure, cancer of the rectum, fibroids and ovarian tumours, and also demonstrated the sigmoidoscope, and the cystoscope which he showed in actual use in a model bladder. He briefly referred to points in connexion with Kraske's operation, vaginal hysterectomy, and Halsted's operation for removal of the breast, and laid stress upon the necessity of a much earlier recognition of cancer than is usual at present. A discussion followed, and all present agreed that they had seldom listened to a more practical and useful paper.

Brixton Dispensary.—The Brixton Dispensary dispute has been satisfactorily settled, thanks to the efforts of Dr. Atkinson, the late Secretary of the Division, and of the Medico-Political Committee of the Metropolitan Counties Branch. The following extracts from a letter addressed to the Honorary Secretary of the Division by the Medical Secretary will indicate the good work that can be done by Divisions of the British Medical Association in maintaining the prestige of the profession:

> You have probably been informed by your predecessor, Dr. Atkinson, of the circumstances of the difficulty with the Brixton Dispensary, and I have to report to you what will, I hope, prove to be a definite and satisfactory result. You will recollect that the point at issue was the lack of any provision in the rules of the dispensary giving the Resident Medical Officer definite control over the indoor servants of the institution, particularly the porter and his wife who act as caretakers, and the failure of the House Committee to uphold the position of the medical officer when trouble arose.
>
> At a meeting of the General Committee of the dispensary held on Tuesday last the following resolution was passed:
>
> > That the British Medical Association be informed that the General Committee, having to-night heard for the first time of the complaints of the retiring Resident Medical Officer, agree to the proposal that the internal servants of the dispensary be under the general control of the Resident Medical Officer for the future, subject of course to the ultimate control of the General Committee and the right of any officer to appeal to the House Committee.
>
> On being notified of this I inquired whether it was proposed to incorporate this in the rules of the Institution and I have this morning received an undertaking from the Chairman on behalf of the Committee that the resolution shall be so incorporated.

[1] British Medical Journal, August 24th, 1907, p. 481.

In these circumstances I am authorized by the Chairman of the Medico-Political Committee to remove the warning notice in the Journal, and as it was originally inserted with the concurrence of the Honorary Secretary of your Division, Dr. Atkinson, it is proper to inform you of the proposal to remove it, to which I suppose there will be no objection on the part of your Division. It seems right to bring to the notice of your Division the fact that this satisfactory result was due largely to the loyal co-operation of the honorary medical staff of the Institution with the Medico-Political Committee and with the Division to maintain the proper status of the members of the profession concerned.

The dispute though at first sight trivial in its origin involved, as I think your Committee recognized, an important question of principle.

Next Meeting.—The next meeting of the Division will be on Thursday, November 28th, at 4 p.m., in St. Thomas's Hospital, when voting upon the Referendum will take place; and Mr. J. S. Fairbairn, F.R.C.S., will read a paper on The Treatment of Uterine Haemorrhage in the Absence of Obvious Lesion.

St. Pancras and Islington Division.

A special meeting of this Division was held at the Athenaeum Hall, Camden Road, N., on Friday, November 1st; Dr. W. Wynn Westcott, J.P., Chairman of the Division, presided.

Annual Representative Meeting. — Dr. Walter Smith presented his report of the Annual Representative Meeting at Exeter, and was cordially thanked by the meeting for his lucid and interesting address, and for his services to the Division.

The Referendum.—The Referendum Report was discussed in detail, and all the resolutions of the Representative Meeting were approved. Minutes 123, 283 287, 293, 298, 299, 303, 328, and 330 were carried unanimously.

Annual Reports of Medico-Political and Ethical Committees.—It was proposed by Dr. Buckell and seconded by Dr. Ladell, and resolved:

> That the Honorary Secretary be instructed to send to the Central Council the following resolution:
>
> That this Division desires to call the attention of the Council to the fact that the reports of the Medico-Political and Ethical Committees for the last year were not distributed in time to enable the Divisions to consider them before the Annual Representative Meeting, and that this Division earnestly hopes that in future the Council will arrange to distribute the reports of all Standing Committees in time to enable the Divisions to instruct their Representatives concerning them before the Annual Representative Meeting.

OXFORD AND READING BRANCH:

Oxford Division.

A meeting of the Oxford Division was held on Friday, November 1st, at the Radcliffe Infirmary, at 3.15 p.m. Dr. R. E. Yelf was in the chair, and some forty members attended the meeting.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Cholecystectomy.—Mr. A. Parker read notes of a case of cholecystectomy, and exhibited the gall bladder, which contained several small gall stones. The patient made a good recovery. He considered the operation preferable to cholecystotomy in the majority of cases, and quoted figures from the large hospitals to show the comparatively low rate of mortality. In the discussion which followed Mr. E. C. Bevers drew attention to the paper by Mr. Mayo Robson, which had recently appeared in the British Medical Journal, and advocated caution in this operation, the advantages of which were largely a question of after-results. He thought the gall bladder not only acted as a reservoir, but had an important function in secreting mucus, and that its removal might also lead to backward pressure on the biliary duct system. In his reply, Mr. Parker laid stress on the precancerous stage of the gall bladder, which was often associated with gall stones, and thought that this would in many cases justify its removal; but he would not try to remove it when there was difficulty in getting sufficient peritoneum to cover the pedicle or stump.

Angio-neurotic Oedema.—Dr. Miller read notes of a case of angio-neurotic oedema, and discussed its causation and association with urticaria of gastro-intestinal origin.

Bronchiectasis.—Dr. Mallam showed a case of bronchiectasis, in a boy, who had suffered from broncho-pneumonia six months previously. Attention was called to the peculiar fetid odour of the breath, and in this case to a marked hypertrophy of both big toes. The cavity was at the right base of the lung, and great improvement had followed the use of creosote vapour baths.

Cow pox.—Dr. Mallam also showed a case of possible cow-pox in a cowman who suffered from eczema of the hands. Blisters and bullae broke out on the hands at the time when the cows he attended were said to have been suffering from some scab affection of the udders. He had been subsequently vaccinated, but had not taken. Some doubt was thrown upon the case, as a veterinary surgeon had recently stated that the cows were not suffering from cow-pox; the patient had been vaccinated seven or eight years ago, and possibly, too, the lymph lately used was inactive. Dr. Birt alluded to a similar case shown in London which had been diagnosed as psorospermosis.

Renal Tuberculosis.—Dr. Gibson exhibited a series of tuberculous kidneys, showing the two types of ascending and descending infection.

Pregnancy Complicated by Strangulated Ovarian Cyst.—Dr. R. Sankey described a case of pregnancy (eight months) complicated by a strangulated ovarian cyst. Mr. Counsell, who operated, described the condition found on opening the abdomen, the cyst being gangrenous and the pedicle twisted three times round its long axis. The wound was sutured carefully and stood the strain of labour, which came on twenty-four hours after the operation, the patient making an excellent recovery.

Discussion on the Contagiousness of Consumption.—A discussion was opened by Dr. Collier on the contagiousness of consumption; he pleaded for more moderate views in order to allay the unreasonable dread in the lay and medical mind. Fully admitting the value of sanatoriums, especially as a means of educating the patient, he protested against the system of complete isolation, which resulted often in social ostracism. The contagiousness of phthisis was conditional on (1) a susceptible soil and (2) a favourable environment for the bacillus outside the body. More attention should be paid to the latter. He would make the disease notifiable, to attack it in its early stages; but if the fears of the public were not allayed they would tend to keep the disease concealed. An animated discussion followed.

SOUTH-EASTERN BRANCH:

Guildford Division.

A meeting of this Division was held at the Royal Surrey County Hospital on Wednesday, October 30th, at 4.30 p.m., Dr. Anderson Morshead, Vice-Chairman, presided.

Confirmation of Minutes.—The minutes of the annual meeting were read and confirmed.

Election of Chairman.—Dr. Morshead was elected Chairman for the year in place of Dr. George Fisher, who had removed out of the Division.

The Referendum.—It was agreed to support the Representative Meeting in this matter, and a unanimous vote was recorded in each case affirming the various resolutions of that body passed at their meeting in May last.

Rates for Contract Practice.—It was agreed that a resolution prescribing minimum rates for contract practice in accordance with the ethical rules adopted by the Division, be submitted to the Division at the next meeting, all members to have at least fourteen days' notice of the terms of such resolution.

Joint Meetings.—It was agreed to approve the suggestion of the Winchester Division to hold joint meetings occasionally, such meetings to be arranged by the Executive Committees and Honorary Secretaries of the two Divisions, to be mainly clinical in character, and to be held preferably in December or January.

Medical Law Reform and Quackery.—It was agreed to support the resolution of the Reigate Division suggesting a Royal Commission to inquire into the subject of the reform of the Medical Acts and the suppression of quackery.

Training of Teachers in Hygiene.—The resolution of Mrs. Watt Smyth on this subject was read to the meeting and its terms approved.

Paper and Discussion.—Mr. H. A. Powell, M.A., M.D., J.P., Honorary Treasurer of the Royal Surrey County Hospital, introduced a discussion on the Regulation of an Out-patient Department, suggesting various reforms and

method for checking the abuse of such departments, and proposing alternative methods of dealing with the class of patient who usually attend such departments. An interesting discussion followed, in which the Chairman, Drs. Minchin, Kingsford, Smyth, Butler, Boyd, and Parker took part. Mr. Powell briefly replied.

Cases and Specimens.—(1) Dr. Parker showed a case of embryoma of neck. The case had been shown at the previous meeting of the Division, and considerable growth of the tumour had taken place since that time. (2) Dr. Harold Butler showed a case of actinomycosis of the jaw, with microscopical specimen.

Votes of Thanks.—The meeting closed with votes of thanks to Mr. Powell, and to the Committee of the hospital for the use of the Board-room and for kindly providing tea.

Reigate Division.

A special meeting of this Division was held at Laker's Hotel, Redhill, on Thursday, October 17th, at 8.30 p.m.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Reports.—Reports were read on the reception by other Divisions of the question of medical law reform and quackery, and on the Notification of Births Bill.

Referendum.—The meeting then considered the Referendum. After a lengthy discussion all the resolutions of the Representative Meeting were upheld by large majorities.

SOUTH-WESTERN BRANCH.

An intermediate meeting of the Branch was held at the Athenæum, Plymouth, on Wednesday, October 23rd, at 3 p.m.

Confirmation of Minutes.—The minutes of last intermediate meeting were read and confirmed.

Cases.—Dr. A. Bertram Soltau showed cases of Henoch's purpura; chronic lead poisoning; acute primary anaemia (? ankylostomiasis). Dr. Cheyne Wilson showed cases of lymphatic leukaemia; rodent ulcer, treated by *x* rays.

Papers.—Mr. C. Hamilton Whiteford read a paper on surgery *versus* operation. Mr. Griffith C. Wilkin read a paper entitled A Case for Diagnosis. Mr. J. E. Neale read notes on stricture of the urethra, with special reference to Wheelhouse's operation. Mr. C. E. Russel-Rendle read notes on a case of left inguinal hernia which contained caecum.

Specimens.—Mr. C. Hamilton Whiteford showed a specimen of cystic fibro myomatous polypus removed per vaginam. Dr. Alonzo G. Rider showed a specimen of fibro-myoma of the uterus.

Cornwall County Nursing Association.—The following resolution was unanimously passed:

> That grave irregularities in the conduct of one of the nurses of the Cornwall County Nursing Association having been brought to the notice of the South-Western Branch of the British Medical Association, the Branch hereby records its opinion that it is essential to the prevention of such irregularities in the future that the medical profession should be adequately represented both on the central and on the various local committees of the Cornwall County Nursing Association, and that this opinion be conveyed to the President thereof.

YORKSHIRE BRANCH:

Bradford Division.

The first meeting of the session 1907-8 was held at the Eye and Ear Hospital, Bradford, on Tuesday, October 8th. Dr. H. J. Campbell, Chairman, presided.

Confirmation of Minutes.—The honorary secretary, Dr. Metcalfe, read the minutes of the last two Divisional meetings, which were adopted.

Chairman's Address.—The Chairman gave a most interesting introductory address on the need for organization. He said, all social relationships are at the present time in a state of upheaval, and the action taken by each collective unit during this time of stress and strain must of necessity determine the position that that unit will occupy when once the turmoil is over and peace again reigns. It is not only that a certain amount of education has become general, so that those who formerly were dumb are now enabled to speak, but also that they are now collectively, if not individually, a power in the land. We see on all sides the formation of federations, unions, societies, and associations whose avowed object in their inception is no doubt the protection of their members against all and sundry who might attempt to oppress them, but whose actual practice when they have grown strong and wealthy frequently tends to develop into a tyranny over all and sundry who may be weaker than themselves, especially in those cases where the management is in the hands of not very well-educated people, who are insufficiently trained for the responsibility they have to undertake. Collectivism is at present in the ascendant, and in consequence the personal equation is becoming more and more a negligible quantity. Individual right is in danger of being swallowed up by collective might, and the State of being transformed into a number of warring organizations, each fighting for its own special profession or trade, and indifferent as to whether its own advantage is gained at the expense of the nation as a whole or not On all sides this tendency is manifest. Among the hand workers we have the trades-unions and their various amalgamations, the friendly societies and clubs; whilst amongst the employers individuals join to form companies, companies unite to form trusts, and trusts combine to form federations. The essence of successful collectivism is that the individual should sink his own opinions in unswerving obedience to the decision of the majority, that thus the organization should be enabled to act with an assured force which in the main is proportionate to the number of its component units. I do not propose to discuss the rights and wrongs of the situation, but am only trying to state what appears to me to be the actual conditions which are present and which will have to be dealt with by our profession in the near future. Already we see that the great parties in the State as well as the combinations of employers and the associations of the employed are beginning to neglect the rights of individuals, and even to compel isolated units, weak because unattached to powerful organizations, to do their bidding irrespective of whether their demands are just and equitable or wholly unjustifiable. The recently-passed Act with regard to the notification of births affords a striking illustration of the more or less contemptuous indifference to the rights of individuals manifested by the present Parliament. According to this Act, if it is adopted by the local authority, all doctors within the district will be compelled, under penalty if they fail, to notify all births coming under their observation irrespective of whether they are thereby violating the rules of professional secrecy or not. It might be argued that there is nothing new in this, that notification by doctors has already been enforced in accordance with the Notification of Infectious Disease Act, but surely the cases are not identical, for in the latter concealment involves danger to the community and, moreover, the doctor is the only person who can give the necessary information at first hand. That the doctor should be required to notify births, not only gratuitously but under danger of a penalty for non-compliance, adds insult to injury; and, further, the calm way in which the medical protest against the injustice of the clause was pushed on one side, despite the previous promises made on behalf of the Government by a responsible Minister, in itself shows how little the influence of the medical profession counts in matters of politics. A similar tendency is observable on the part of employers of labour towards doctors. More and more are they utilizing the voluntary medical charities for their workpeople, at a considerable pecuniary saving to themselves, whilst they do not scruple to complain loudly if the medical relief given in the name of charity is not as effective or as speedy as that which they used to obtain upon adequate payment. Moreover, the workpeople are constantly endeavouring so to extend their clubs and sick benefit societies as to include their families, and thus to gain an increasingly large share of attention from their doctors at a decreasing cost to themselves. Again, whilst, on the one hand, the workhouse infirmaries are more and more being worked as hospitals for acute diseases, both surgical and medical, at a steadily increasing cost to the ratepayer, the cry for the municipalization of the voluntary hospitals, with their consequent probable wide extension, is becoming increasingly insistent. At the same time, what one may describe as medical officialism is greatly on the increase, and this, though excellent in many ways, yet undoubtedly

lessens the work of those of us who are engaged in private practice. I might multiply almost indefinitely instances of the changes which are gradually, but none the less surely, coming over medical practice, and which threaten to revolutionize its character in the near future, but my only object is to emphasize how radical are these alterations, and how necessary it is for us to acquire some assured and stable position collectively from which we can help to direct the course of events, so that we should not run the risk of being—as isolated units—swept along or submerged at the will of the powerful bodies with which we are brought into contact. This seems to be necessary not only for the purposes of self-defence or self-interest, but for the good of the State, for the medical profession stands in a different relationship to the people as a whole than does that of any other calling, and this, to its honour be it said, it has always realized and maintained. No other profession demands so much altruism from its followers as medicine, and many practices, used quite justifiably in trade for the increase of connexion and income, are unthinkable, or at least, reprehensible, with us. Further, whereas, as a rule, an invention tends to increase the work and hence the income of the discoverer, each new departure in pure medicine or in sanitary science tends to decrease our work and to benefit the public at the expense of the profession. The cure and prevention of disease are the constant aim of medical men, both individually and collectively, and it is the medical profession only that is qualified to direct how these ends may best be attained. But how are we to keep these aims, so essential for the good of the public, steadily before us, if we are a series of isolated units, each individual being compelled to waste his energies in fighting for a bare existence, unaided by the State, and unsupported by his colleagues? If, on the other hand, we can form a powerful organization which can treat on equal terms with the other equally strong combinations with which we are surrounded, then, and then only, can we hope to obtain suitable conditions for carrying on the useful work peculiar to our profession. I contend, therefore, that, in aiming at the creation of a strong united body of medical men, our profession is actuated not only, nor, indeed, mainly, by selfish adhesion to its own interests, but also by a consideration of what makes for the highest good of the world at large. Such an organization, while in the formation, will have abundant mud cast upon it; it will be stigmatized as a trade-union, it will be traduced as a selfish combination for the purpose of keeping up fees, it will be vilified, on the one hand, by all those who are anxious to avoid the restrictions that the prevention of disease may necessitate, and, on the other, by those who wish to obtain the skill and time of medical men at a totally inadequate remuneration. But when once such a strong association has been formed, the public will soon see that our aims as a profession have undergone no change and that our chief desire is still, as it always has been, the greatest good of the greatest number, the diminution of suffering, and, wherever possible, the elimination of disease. The first essential of such a body is undoubtedly that it should include practically all the members of our profession, and the next, that each individual member should take sufficient interest in it to make him share in its development, take part in its deliberations, and abide loyally by its decisions. All small personal predilections must be sunk in the effort to obtain substantial unity of construction and certainty of effect, and the voice of the individual must in all matters of general policy also be the voice of the whole body. Further, such an association must in enforcing its claims, whilst maintaining the highest ideals and the loftiest aims, insist upon obtaining for its members conditions of environment such as shall make it possible for them to do their work well and thoroughly, with due regard to its importance and to the responsibility incurred both to themselves and to the community. As to whether the British Medical Association is, as at present constituted, the best form for the organization to take may be open to question, but it has at least many of the essential attributes of such a body, and, as it already has considerable power and influence, one cannot but feel that it is better to use the organization we have rather than to attempt to create a new one, which, though it might be more nearly perfect when formed, yet would during its construction cause the waste of much valuable time. It is very unfortunate that, just at the time when a united front to the world at large is so important, there should have arisen division and dissension between the Council and the Representatives; but if once the members as a whole would bestir themselves and take an active interest in the Association, the Constitution is so democratic that the points at issue could soon be definitely and permanently settled. If we imagine, then, a powerful organization, including within itself practically the whole of the profession, whose local branches could feel that they could rely upon the assistance of the main body when the affording of such assistance was justifiable, and, on the other hand, with a representative executive composed of influential men who could speak with the certainty of having the loyal support of the whole profession behind them, the results obtainable would inevitably be far-reaching and of the utmost importance, not only with regard to the interests of medical men, but to the progress and advancement of medicine itself. Such a body would require to be adequately represented in Parliament, so that expert advice might be given in the framing of laws; it might succeed in establishing a committee of defence against disease similar to that already in existence with regard to war. As the result of its influence, research work might be planned upon a wide and effective basis, and carried out on some co-ordinated system instead of in the haphazard and muddling way that at present prevails. It might prevail in the proposal that has been repeatedly brought forward that a Minister of Health with a seat in the Cabinet should be appointed, who would control a health department that would be supreme in all matters connected with public health, school hygiene, medical inspection of school children, sanitation, and generally all those matters connected with the science of preventive medicine so essential to the well-being of the community. Medical assessors might be deputed to advise the judges in connexion with legal cases involving medical matters; and, finally, with medicine placed, as it should be, in the forefront in all that affects the prosperity and happiness of the nation as a whole, its exponents would command that position to which their training and experience, their wide and varied knowledge, their altruism and unselfishness, so justly entitle them.

Mr. HORROCKS proposed and Mr. MOSSOP seconded a hearty vote of thanks to Dr. Campbell for his able and excellent address. Dr. GOYDER, in supporting, expressed a hope that the paper would be published in the JOURNAL. The proposition was carried unanimously. Dr. CAMPBELL, in replying, stated that the reason he had chosen a subject of such a general character was that questions of the kind considered were at present so much on the tapis. He felt much indebted to the members for their vote of thanks.

The Referendum.—The CHAIRMAN then drew the attention of the meeting to the importance of the questions to be discussed that evening. These were connected with an unfortunate difference of opinion between the Representative Meeting and the Council of the Association. In consequence the Council had determined on a Referendum so as to obtain the opinions of the members of the Divisions. He suggested that members should first discuss the general questions involved and then take up each point in detail. Mr. HORROCKS considered that if the resolutions of the Representative Meeting were adopted there would be a serious split in the Association. He thought the Representative Body should not have supreme and final power. There should be a power of revision by the Council. Dr. GOYDER strongly supported this view, and asked for a vote of confidence in the Council. Mr. BASIL HALL was in favour of supporting the Council. Dr. METCALFE considered the Representative Body the mouthpiece of an educated democratic electorate, and that it should receive the support of the Division. Mr. MOSSOP doubted whether the Divisions represented the members efficiently. He was in favour of supporting the Council. Drs. BAMPTON and CLOW were in favour of maintaining the supremacy of the Representative Body. The Council should merely act as an executive, and not for the purpose of revision. Dr. BRONNER considered that the Representatives represented no one but themselves, and that the Council was the true Representative Body of the Association. Dr. LITTLE supported this view. The specific resolutions referred by the Council to the Division were then voted on. There was a

large majority in favour of the views of the Council on all the questions considered.

The meeting then terminated.

A Correction.—The report of the proceedings of the English Division of the Border Counties Branch, published in the Supplement last week, p. 245, was headed "North Cumberland Division" in error. The North and West Cumberland Divisions have been joined to form the English Division of the Branch.

REPORT ON MEDICAL REGISTRATION IN GUERNSEY.

By M. H. Bulteel, L.R.C.P.Lond., M.R.C.S.,
Honorary Secretary, Guernsey and Alderney Division of the Southern Branch.

It will be remembered that at the meeting at Exeter mention was made by Mr. C. R. Straton, who represents the Southern Branch of the Association in the Council, of the advantage of the Branches retaining their balances, and thus being able to meet sudden demands for extraordinary expenditures which might arise in a quicker way than could be done if all such applications had to go through the Central Council of the Association.

The case which had occurred to bring up this opinion concerned medical registration in the island of Guernsey, which is governed by its own local legislature; and it has been thought that the story would be of interest to the Association generally, in showing how a real danger to the profession in that island was averted by the prompt action of the local Division, financially supported by the Branch to which it belonged.

Early in the autumn of 1906 a French medical man, exhibiting French diplomas only, appeared before the Royal Court of Guernsey and applied for registration and permission to practise, which was immediately granted.

During November a second of the same nationality appeared, and was duly registered in the same way and accorded permission to practise.

On November 29th a meeting of the Division was held, in which the matter of this immigration of alien practitioners from a country which refuses reciprocity of practice to Englishmen without French diplomas was discussed at some length, and it transpired that the existing ordinance relating to medical registration was 130 years old, bearing date October, 1777; that in it there was no restriction on aliens; and that in one clause it classed together "*Doctors Comedians and Charlatans*" as requiring the permission of the Royal Court before being allowed to practise in the island. The association was hardly complimentary to the medical profession, but so far as we can gather, these were the only one of the three affected by the provisions of the law in its operation, but, further, should any of these be born Guernsey men, no permission of the Court was required. The meeting consequently decided to petition the Royal Court to abate what was felt to be an injustice, and such a petition was at once drawn up, and in twenty-four hours had received the signature of every practitioner in the island, praying for a cessation of registration of aliens until a deputation of the profession had been heard.

Having ascertained from Sir H. A. Giffard, K.C., the Bailiff, that such a petition could only be presented by an advocate of the Royal Court, the Secretary took upon himself, in consultation with the President, to instruct counsel, by whom at the Bailiff's request a fresh petition was drafted in proper legal form, and the redrafted petition was actually ready for signature and approved by the Division on December 6th, when a vote of indemnity was passed to the Secretary for employing legal assistance.

Soon after the receipt of this petition the Bailiff kindly received a deputation consisting of the officers of the Division and other elected members, and patiently heard the arguments in favour of a change of the law. He put it down for hearing at the Court of Chief Pleas after Christmas; and then application was made to the Southern Branch for financial assistance for the necessary legal expenses, which promptly met with a favourable reply, and the Branch readily gave the assistance asked for, and gave a cheque for the amount required.

In the end the hearing was most successful, there was no opposition, and a new ordinance was forthwith drawn up, which enacted that in future every medical man applying for registration must be found in the current *Medical Register*, and this law makes no difference between the native-born and English practitioner.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Aberdeen Branch.—Nomination of Elective Member of Council: Notice is hereby given that the names of candidates for the representation of the Branch must be sent to me on or before November 11th. Each candidate must be nominated by at least three electors.—J. F. Christie, Honorary Secretary, 7 Alford Place, Aberdeen.

Lancashire and Cheshire Branch: Leigh Division.—A meeting of the members of this Division will be held at the Co operative Rooms, Ellesmere Street, at 8.30 p.m., on Thursday, November 21st. Agenda: Minutes.—J. Sackville Martin, Honorary Secretary.

Metropolitan Counties Branch: St. Pancras and Islington Division.—A meeting of this Division will be held at the Temperance Hospital, Hampstead Road, N.W., at 4 o'clock, on Tuesday, December 3rd. W. Wynn Westcott, Esq., J.P., will read a paper on Sudden Death and important matters concerning the Early Notification of Births Bill will be put before the Division.—William Griffith, Honorary Secretary.

North Lancashire and South Westmorland Branch.—A meeting will be held on Wednesday, November 20th, at 3.45 p.m., at the Friends' Hall, Lancaster. Dr. T. H. B. Dobson will read a paper on Migraine. Members having cases or specimens to show are required to communicate with A. S. Barling, Honorary Secretary.

South-Eastern Branch: Folkestone Division.—A meeting of this Division will be held at the Victoria Hospital, Folkestone, on Thursday, December 5th, at 8 30 p m. Agenda: (1) Minutes. (2) To further discuss the Referendum Report, the Minority Report, and the Representative Report dealing with the proposed Charter, adjourned from the last meeting, and to vote on certain resolutions. (3) Some clinical cases will be shown.—P. Vernon Dodd, M.D., Honorary Secretary, Folkestone.

South-Eastern Branch: Norwood Division.—The next meeting of this Division will take place at the Streatham Hall, close to Streatham Station, on Thursday, November 14th, at 3.30 p.m., Mr. C. Hodgson in the chair. Dinner at 6 p.m.; charge 7s., exclusive of wine. All members of the South-Eastern Branch are invited to attend, and to introduce professional friends, but will be unable to vote on Divisional questions. Agenda:—(1) Minutes of last meeting. (2) To decide where the next meeting shall be held, and to nominate a member of the Division to take the chair thereat. (3) Report as to non-election of Representative. (4) To consider the Referendum Report and Minority Report dealing with proposed Charter. The following papers will be read: Dr. Leonard Williams: The Practical Value of Blood Pressure Estimation; Mr. W. H. Battle: The Radical Cure of Hernia; Dr. P. N. Panton: The Diphtheria and Diphtheroid Bacilli. Exhibition of Surgical Instruments by Down Bros. Exhibition of Drugs and Pharmaceutical Products by Parke, Davis and Co. Members desirous of exhibiting specimens or reading notes of cases are invited to communicate at once with the Honorary Secretary. The Honorary Secretary would be much obliged if members would kindly inform him by postcard, to reach him by the first post on the Tuesday before the meeting, whether they intend, if possible, to be present at the meeting, and if likely to remain to dinner. By so doing they will very materially facilitate arrangements, and promote the success of the meeting.—Arthur W. Soper, Honorary Secretary.

Staffordshire Branch.—The first general meeting of the Session will be held at the North Stafford Hotel, Stoke-upon-Trent, on Thursday, November 28th. The President, J. T. Hartill, Esq., will take the chair at 3 45 p.m. Business: (1) Minutes of the last general meeting. (2) Correspondence. (3) Exhibition of living cases. (4) Paper: The Prevalence of Tuberculosis, W. T. Menzies, M.D. (5) Paper: Injuries of the Cornea, H. H. Folker, Esq. (6) Exhibition of pathological specimens etc. Dinner, 6.30 p.m., charge 5s.—G. Petgrave Johnson, Honorary General Secretary, Stoke-on-Trent.

Ulster Branch.—The autumn meeting of the Branch will be held in Belfast on Wednesday afternoon, November 13th.—Cecil Shaw, M.D., Honorary Secretary, Belfast.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held at Caxton House, Westminster, on October 31st, with Dr. F. H. CHAMPNEYS in the chair.

Payment to Medical Practitioners sent for in Emergency Cases.

Mr. WARD COUSINS said he had been requested by the President of the Royal College of Surgeons of England to ask the Chairman of the Central Midwives Board what was being done in regard to the payment of medical practitioners sent for by midwives in emergency cases. In reply, the CHAIRMAN said that the matter would be considered at the next meeting of the Board.

A letter was considered from Dr. Buchan, Medical Officer of Health for St. Helens, forwarding a copy of a scheme adopted by the Guardians of the Prescot Union for the payment of medical practitioners summoned to assist midwives in emergencies, and inviting the opinion of the Board thereon. The Board decided that Dr. Buchan be thanked for his letter, and that he be informed that the Board is unable to express an opinion on the matter submitted.

Govan Cottage Nurses' Training Home.

A letter was considered from the Duchess of Montrose urging the approval by the Board as a teacher of pupil midwives of Dr. W. Colquhoun, the Lecturer in Midwifery at the Govan Cottage Nurses' Training Home. The Board decided that the Duchess of Montrose be informed that the inquiries instituted on the subject are not yet completed.

Training Midwives.

A letter from Dr. Barwise, County Medical Officer for Derbyshire, as to a scheme for training midwives in that country, was considered, and it was decided to inform Dr. Barwise that the Board is unable to express an opinion on the scheme, except so far as to point out that the proposed lecturer would require the approval of the Board.

A Midwife Censured.

The Board, having considered the charges against Sarah Ann Butterworth, decided that she be censured on her own admission of having failed to explain that medical assistance was necessary in a case of inflammation of the eyes of a child.

Local Supervising Authorities.

Dr. STANLEY ATKINSON moved and Mr. FORDHAM seconded:

> That upon all applications for restoration of a name to the roll the local supervising authority be asked to report as to the desirability of granting the application.

Mr. PARKER YOUNG said that the unwisdom of the suggestion was pointed out the last time the matter was discussed by the Board. He repeated that to pass such a motion would be to tie the hands of the Board unnecessarily. In any case of doubt there was nothing to prevent application being made to the local supervising authorities. The CHAIRMAN observed that the Penal Cases Committee would naturally consult local supervising authorities *proprio motu* in all suitable cases. The motion on being put to the vote was lost by 4 to 2.

Vital Statistics.

EPIDEMIC MORTALITY IN LONDON.

THE accompanying diagram shows the prevalence of the principal epidemic diseases during the third, or summer, quarter of the year. The fluctuations of each disease and its relative fatality compared with that in the corresponding periods of recent years can thus be readily seen.

Small-pox.—No fatal case of small-pox has been registered in London since June, 1905, and no small-pox patients were under treatment in the Metropolitan Asylums Hospitals during last quarter.

Measles.—The deaths from measles, which had been 213, 465, and 661 in the three preceding quarters, declined again last quarter to 405, but were 103 above the corrected average number in the corresponding periods of the five preceding years. Among the various metropolitan boroughs this disease was proportionally most fatal in Chelsea, Islington, Finsbury, Shoreditch, Southwark, and Battersea.

Scarlet Fever.—The fatal cases of this disease, which had been 104 and 141 in the two previous quarters, further rose to 168 in the quarter under notice, and were 55 in excess of the corrected average number. The greatest proportional mortality last quarter from scarlet fever occurred in Hackney, Shoreditch, Bethnal Green, Stepney, Bermondsey, and Greenwich. The Metropolitan Asylums Hospitals contained 4,293 scarlet-fever patients at the end of last quarter, against 3,787, 2,614, and 2,975 at the end of the three preceding quarters; 6,989 new cases were admitted during the quarter, against 5,845, 4,033, and 4,726 in the three preceding quarters.

Diphtheria.—The deaths referred to diphtheria, which had been 213, 229, and 159 in the three preceding quarters, numbered 163 last quarter, and approximated very closely to the corrected average number. This disease was proportionally most fatal in Finsbury, Stepney, Poplar, Southwark, Lambeth, and Camberwell. There were 964 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of September last, against 995, 1,012, and 806 at the end of the three preceding quarters; 1,804 new cases were admitted during the quarter, against 1,995, 1,665, and 1,507 in the three preceding quarters.

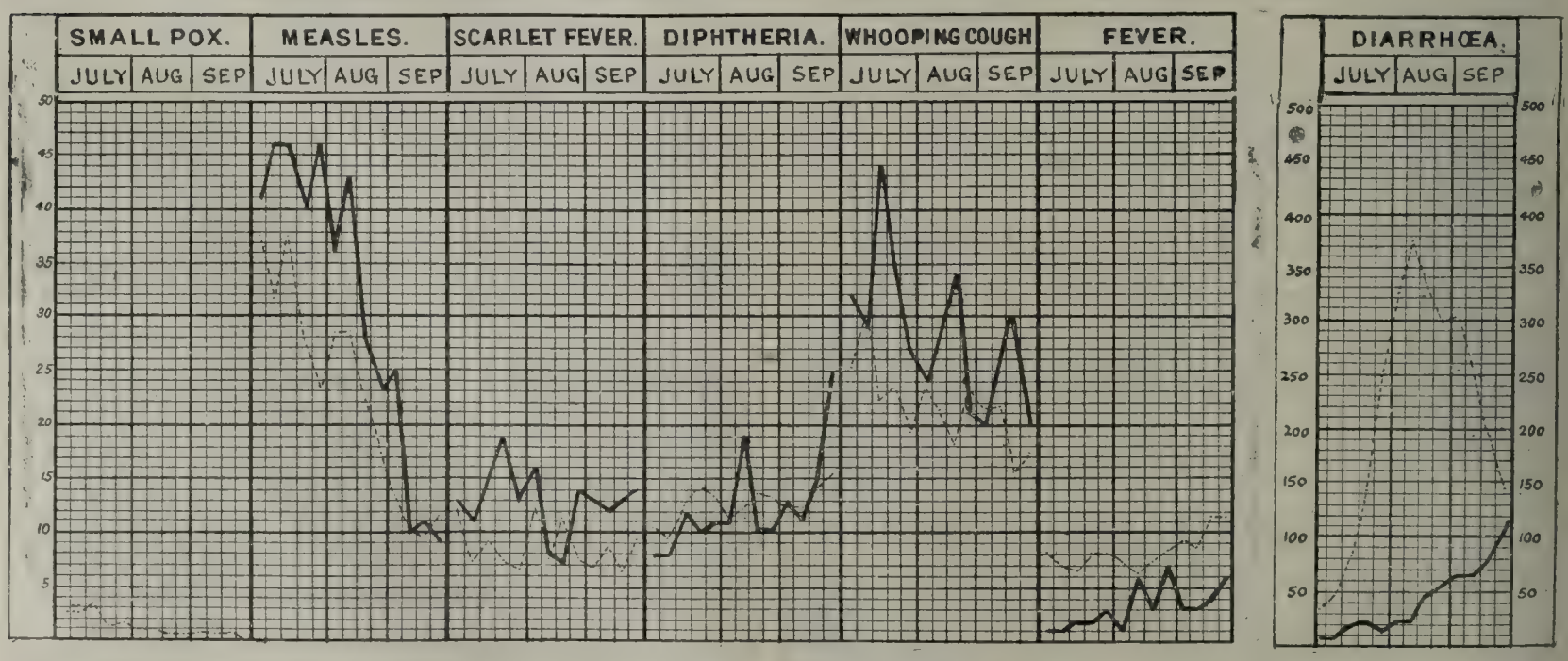
Whooping-cough.—The fatal cases of this disease, which had been 180, 536, and 677 in the three preceding quarters, declined again last quarter to 370, but were 87 in excess of the corrected average number in the corresponding periods of the five preceding years. Among the various metropolitan boroughs this disease was proportionally most fatal in Chelsea, Shoreditch, Bethnal Green, Poplar, Battersea, Wandsworth, and Woolwich.

"Fever."—Under this heading are included deaths from typhus, from enteric fever, and from ill-defined pyrexia. During last quarter one death was referred to ill-defined pyrexia, but not any to typhus. The deaths referred to these different forms of "fever," which had been 109, 60, and 36 in the three preceding quarters, rose again last quarter to 42, the corrected average number being 108. The highest "fever" death-rates last quarter were recorded in Fulham, Hackney, Stepney, Battersea, Wandsworth, and Deptford. The Metropolitan Asylums Hospitals contained 99 enteric fever patients at the end of last quarter, against 134, 93, and 57 at the end of three preceding quarters; 191 new cases were admitted during the quarter, against 333, 186, and 146 in the three preceding quarters.

Diarrhoea.—The 549 deaths from diarrhoea in London last quarter were less than one-fifth of the corrected average number. This disease was proportionally most fatal in Fulham, Shoreditch, Bethnal Green, Stepney, Poplar, and Southwark.

In conclusion, it may be stated that the 1,697 deaths in London attributed to these principal epidemic diseases during the quarter under notice were 55 per cent. below the corrected average number in the corresponding periods of the five preceding years. The lowest

DEATHS FROM EPIDEMIC DISEASES IN LONDON DURING THE THIRD QUARTER OF 1907.



NOTE.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the five preceding years, 1902-6.

death-rates from these diseases last quarter were recorded in Paddington, the City of Westminster, Hampstead, the City of London and Lewisham; and the highest rates in Shoreditch, Bethnal Green, Stepney, Poplar, and Southwark.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,123 births and 4,810 deaths were registered during the week ending Saturday last, November 2nd. The annual rate of mortality in these towns, which had been 15 7, 15,7, and 14.6 per 1,000 in the three preceding weeks, rose again to 15.7 last week. The rates in the several towns ranged from 8.0 in East Ham, 8 7 in Hornsey, 9.0 in West Hartlepool, 9 2 in Norwich, and 9.5 in Croydon, to 21 2 in Stockport, 21 4 in St. Helens, 21.7 in Walsall, 23.6 in Middlesbrough, 23.9 in Liverpool, 26.0 in Merthyr Tydfil, and 26.6 in Stockton-on-Tees. In London the rate of mortality was 15.2 per 1,000, while it averaged 15.8 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.6 per 1,000 in the seventy-six large towns; in London the rate was 1.4 per 1,000, while among the seventy-five other large towns the death-rate from these diseases ranged upwards to 3 6 in Cardiff, 3.8 in Tynemouth, 3.9 in Burton-on-Trent, 4 5 in West Bromwich and in Warrington, 5 0 in Burnley, 5.4 in Hanley, and 6.2 in Merthyr Tydfil. Measles caused a rate of 1.2 in York, 1 3 in Reading, 1 4 in Ipswich, 1.9 in Tynemouth, 2.5 in Cardiff, 2.7 in Merthyr Tydfil, and 2 9 in Burton-on-Trent: scarlet fever of 1.1 in Walsall, 1.2 in Walthamstow, and 1.5 in West Bromwich; diphtheria of 1.3 in Reading; whooping-cough of 1.1 in Newcastle-on-Tyne and 1 9 in Tynemouth; "fever" of 1.2 in Gateshead; and diarrhoea of 2 0 in Middlesbrough, 2 1 in Walthamstow, 2.6 in Burnley, 2.7 in Merthyr Tydfil, 3.7 in Warrington, and 4.7 in Hanley. No fatal case of small-pox was registered in any of the seventy-six towns during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 4,752, 4,995, and 5,197 at the end of the three preceding weeks, had further risen to 5,467 at the end of last week; 832 new cases were admitted during the week, against 752, 820, and 793 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, November 2nd, 844 births and 570 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 13 8, 14 0, and 14.4 per 1 000 in the three preceding weeks, further rose last week to 16 4 per 1,000, and was 0.7 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 13.5 in Perth and 14.6 in Aberdeen to 19.0 in Greenock and 20 8 in Dundee. The death-rate from the principal infectious diseases averaged 2 2 per 1,000 in these towns, the highest rates being recorded in Dundee and Paisley. The 264 deaths registered in Glasgow, included 12 which were referred to measles, 3 to diphtheria, 5 to whooping-cough, 2 to "fever," and 9 to diarrhoea, but not any to cerebro-spinal meningitis. Two fatal cases of whooping-cough and 2 of cerebro-spinal meningitis were recorded in Edinburgh; 16 of measles and 3 of diarrhoea in Dundee; 5 of diphtheria and 3 of diarrhoea in Paisley; 2 of whooping-cough and 1 of cerebro-spinal meningitis in Leith; and 4 of measles and 1 of cerebro-spinal meningitis in Greenock.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon G S. Smith has been placed on the retired list at his own request, with the rank of Deputy Inspector-General, November 1st. He entered the service as Surgeon, May 31st, 1876, became Staff Surgeon, March 31st, 1888, and Fleet Surgeon, April 27th, 1893. He served with the expedition up the Niger in 1877 against the river pirates; as Surgeon of the *Penelope* he was at the bombardment of the Alexandria forts in 1882 and during the subsequent war (medal with clasp and Khedive's bronze star). Whilst Staff Surgeon of the *Kingfisher* he landed with the Naval Brigade against the Sultan of Vitu, East Africa, in 1890, receiving a medal with clasp.

Surgeon F. Hernaman-Johnson, M.B., has been transferred to the Emergency List, September 29th.

The following appointments have been made at the Admiralty: Edward O. B. Cabbery, M.B., Staff Surgeon, to the *Sappho*, on recommissioning, November 5th; George D. Bateman, Surgeon, to the *Ganges*, for Shotley Barracks, October 31st; Henry R. Gardner, M.B., Staff Surgeon, to Malta Hospital, November 1st; Charles K. Bushe, M.D., Surgeon, to the *Caesar*, November 1st; William J. Stitt, Surgeon, to the *Vivid*, November 1st; William N. Blatchford and Reginald Thompson, Surgeons, to the *Vivid*, November 5th; and Shirley H. Birt, Staff Surgeon, to the *President*, additional, for three months' course at West London Hospital, November 15th.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel J. D. T. Reckitt retires on retired pay, November 2nd. He was appointed Surgeon, July 29th, 1882; Surgeon-Major, July 29th, 1894; and Lieutenant-Colonel, July 29th, 1902. He served in the South African war in 1899-1901, and was at the relief of Ladysmith and in the action at Colenso; he was also at Spion Kop, Vaal Kranz, on the Tugela Heights, at Pieter's Hill, and Laing's Nek; he was afterwards in the Transvaal, was twice mentioned in dispatches, and received the Queen's medal with five clasps.

Major J. S. Edge also retires on retired pay, November 2nd. He entered as Surgeon, July 28th, 1886, and was made Major, July 28th, 1898. During the South African war in 1900-1 he was in operations in the Transvaal, Orange River Colony, and Cape Colony, and has the Queen's medal with four clasps.

Lieutenant-Colonel J. S. Green, M.B., from temporary half-pay, to be Lieutenant-Colonel, October 22nd. Lieutenant-Colonel Green was placed on temporary half-pay on account of ill-health, May 22nd, 1907

INDIAN MEDICAL SERVICE.

Captain C. S. Parker, M.B, is transferred to the temporary half-pay list, from August 28th. He joined the department as Lieutenant, January 31st, 1903, and was made Captain, January 31st, 1906.

Major H. F. Cleveland has been appointed Secretary to the Principal Medical Officer to the Indian Army, vice Lieutenant-Colonel W. H. W. Elliot, D.S.O., M.B.

The undermentioned officers of the Royal Army Medical Corps, serving in India, are appointed specialists in the subjects named from the dates specified: Major M. Boyle, M.B. (August 16th), Major J. Grech (August 16th), Captain A. H. Waring (August 16th), and Captain T. S. Coates, M.B. (August 1st), in Electrical Science: Major G St. C. Thom, M.B (September 1st), in Otology, Laryngology, and Rhinology; Captain H. G. Martin (August 1st) and Captain S. O. Hall (August 1st), in Midwifery and the Diseases of Women and Children.

The following officers of the Indian Medical Service are appointed specialists as specified: Captain V. B. Nesfield, 4th (Quetta) Division, in Advanced Operative Surgery; Captain A. E. J. Lister, M.B., in Ophthalmology; Captain P. G. Easton, in Electrical Science.

The undermentioned Majors are promoted to be Lieutenant-Colonels, from October 1st: A. E. Roberts, M.B., D. M. Davidson, M.B., F. P. Maynard, M.B., J. C. Lamont, M.B, A. H. Nott, M.B., A. Coleman, W. W. White, M.D., D. T. Lane, M.D., R. C. Macwatt, M.B., W. H. E. Woodwright, J. L. T. Jones, M.B., W. J. Buchanan, M.B., J. K. Close, M.B., W. E. Jennings, M.B., F. J. Dewes, P. C. H. Strickland, and T. W. Stewart Their previous commissions bear date: Surgeon-Captain, October 1st, 1887; Major, October 1st, 1899 Their war records are as follows: Lieutenant-Colonel Roberts—Hazara campaign, 1888 (medal with clasp). Lieutenant-Colonel Maynard—Hazara Expedition, 1891 (medal with clasp). Lieutenant-Colonel Lamont—Chin-Lushai Expedition, 1889-90 (medal with clasp); Manipore Expedition, 1891 (clasp). Lieutenant-Colonel Nott—the two Miranzai Expeditions in 1891 (medal with clasp); Zhob Valley Expedition, 1891. Lieutenant-Colonel Coleman—Burmese campaign, 1888-9 (medal with clasp); Chin-Lushai Expedition, 1889-90 (clasp); Manipore Expedition, 1891 (clasp). Lieutenant-Colonel White—Hazara Expedition, 1891 (medal with clasp); Chitral Relief Force, 1895 (medal with clasp); North-West Frontier of India campaign, 1897-8 (medal with two clasps); Tirah Expedition, 1897-8 (clasp); China war, 1900, including the relief of Peking (mentioned in dispatches, medal with clasp). Lieutenant-Colonel Lane—the two Miranzai Expeditions in 1891 (medal with clasp); Hazara Expedition, 1891 (clasp); Chitral Relief Force, 1895 (medal with clasp) Lieutenant-Colonel Macwatt—Hazara Expeditions, 1888 and 1891 (medal with two clasps); the second Miranzai Expedition, 1891 (clasp). Lieutenant-Colonel Woodwright—Hazara Expedition, 1888 (medal with clasp); the first Miranzai Expedition, 1891. Lieutenant-Colonel Buchanan—Chin-Lushai Expedition, 1889-90 (medal with clasp). Lieutenant-Colonel Close—Sikkim Expedition, 1888 (medal with clasp); Manipore Expedition, 1891 (clasp). Lieutenant-Colonel Dewes—Burmese campaign, 1888-9 (medal with clasp); Chin-Lushai Expedition, 1889-90 (clasp); North-West Frontier of India campaign, 1897-8 (medal with clasp); Tirah Expedition, 1897-8 (clasp). Lieutenant-Colonel Strickland—Burmese campaign, 1889 90 (medal with clasp), and in 1891 with the Mogoung Column and the Wuntho Field Force. Lieutenant-Colonel Stewart—Burmese campaign, 1887-9 (medal with clasp); Tonhon Expedition, 1889-90 (clasp).

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

York T. G. Moore to be Surgeon-Lieutenant in the 2nd Kent Regiment, October 1st.

Surgeon-Captain R. Humphreys, M.B, 6th Lancashire, resigns his commission, October 3rd.

ROYAL ENGINEERS (VOLUNTEERS).

Surgeon-Major G. O. C. Mackness, M.D., Tay Division, Submarine Miners, has resigned his commission, November 2nd; he retains his rank and uniform.

Surgeon Lieutenant J. Y. Mackay, M.D., Tay Division, Submarine Miners, also resigns his commission, November 2nd.

VOLUNTEER RIFLES.

Surgeon-Lieutenant R. L. Fitzgerald, 2nd Volunteer Battalion the East Lancashire Regiment, to be Surgeon-Captain, September 18th.

Supernumerary Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel W. Gandy, 2nd Volunteer Battalion, the East Surrey Regiment (Brigade Surgeon-Lieutenant-Colonel, Senior Medical Officer, East Surrey Volunteer Infantry Brigade), resigns his commission, retaining his rank and uniform, September 1st.

Supernumerary Surgeon-Major (Honorary Captain in the Army) C. A. MacMunn, M.D., 3rd Volunteer Battalion, the South Staffordshire Regiment (Brigade Surgeon-Lieutenant-Colonel, Senior Medical Officer, Staffordshire Volunteer Infantry Brigade), to be Surgeon-Lieutenant Colonel, remaining supernumerary, May 28th.

Surgeon-Major P. P. Whitcombe, M.B., 13th Middlesex (Queen's Westminster) Volunteer Rifle Corps, is granted the honorary rank of Surgeon-Lieutenant-Colonel, August 6th.

Andrew E. Hodder, M.B., to be Surgeon-Lieutenant in the 1st Volunteer Battalion, the Manchester Regiment, September 24th.

Surgeon-Captain T. Benson, 4th Volunteer Battalion, the Durham Light Infantry, is retired, under the conditions of paragraph 103, Volunteer Regulation, September 26th.

Surgeon-Lieutenant A. J. de Spiganovicz, M.B., 6th Volunteer Battalion the Royal Scots (Lothian Regiment), resigns his commission, September 24th; he is appointed Second Lieutenant in the same regiment, September 24th.

Surgeon-Lieutenant R. T. Ferguson, M.B., 6th (Fifeshire) Volunteer Battalion the Black Watch (Royal Highlanders), to be Surgeon-Captain, August 6th.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

AYR DISTRICT ASYLUM.—Medical Superintendent. Remuneration, £500 per annum.

BARNSTAPLE: NORTH DEVON INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BIRMINGHAM: EAR AND THROAT HOSPITAL.—House-Surgeon. Salary, £70 per annum.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon. Salary, £150 per annum.

BIRMINGHAM GENERAL HOSPITAL.—(1) House-Surgeon, (2) House-Surgeon for Special Departments, (3) House-Physician, (4) Assistant House-Surgeon Salary at the rate of £50 per annum for (1), (2), and (3), and £40 per annum for (4).

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL.—Male House-Surgeon. Honorarium, £100.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £70 per annum.

COLCHESTER: ESSEX AND COLCHESTER HOSPITAL.—House-Surgeon, Salary, £80 per annum.

DUDLEY: GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, £100 per annum, rising to £120.

GLASGOW DISTRICT ASYLUM, Woodilee.—Junior Assistant Medical Officer. Salary, £125 per annum.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £30 per annum.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £80 per annum.

HAVERFORDWEST RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary, £150 per annum.

KING EDWARD VII SANATORIUM, Midhurst.—Pathologist. Salary, £250 per annum.

LANCASTER: COUNTY LUNATIC ASYLUM.—Assistant Medical Officer. Salary, £150 per annum, increasing to £250.

LIVERPOOL PARISH WORKHOUSE.—Assistant Medical Officer. Salary, £80 per annum, and £20 for examining applicants for out-relief.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £60 per annum, and £5 washing.

MIDDLESBROUGH UNION.—Resident Workhouse Medical Officer and Medical Officer of the Children's Homes. Salary, £175 and £75 per annum respectively.

MILLER HOSPITAL, Greenwich Road, S.E.—House-Surgeon. Salary at the rate of £80 per annum.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary, £160 for first year, £180 afterwards.

NORTH-EASTERN HOSPITAL FOR SICK CHILDREN, Hackney Road, E.—Assistant Physician.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Junior House-Surgeon. Salary, £50 per annum

NORWICH: JENNY LIND INFIRMARY FOR CHILDREN.—Lady Resident Medical Officer. Salary, £50 per annum.

OLDHAM INFIRMARY.—Senior House-Surgeon. Salary, £100 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Resident Medical Officer for Out-patient Department. Salary at the rate of £60 per annum.

ST. GEORGE'S HOSPITAL, S.W.—Senior Radiographer.

ST. MARY'S HOSPITAL, Paddington, W.—Resident Assistant Anaesthetist. Salary at the rate of £100 per annum.

SHEFFIELD ROYAL INFIRMARY.—(1) Senior Assistant House-Surgeon: (2) Junior Assistant House-Surgeon. Salary £70 and £65 per annum respectively.

SHEFFIELD UNION HOSPITAL.—Resident Assistant Medical Officer. Salary £80 per annum, and £20 for emergency services at Workhouse.

SOUTHAMPTON FREE EYE HOSPITAL.—House-Surgeon. Salary, £70 per annum, with board and residence.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Physician. Honorarium, £30 for six months.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House-Surgeon. Salary, £120 per annum.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck Street, W.—(1) Resident Medical Officer. Salary at the rate of 50 guineas per annum. (2) Physician to In-patients.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces a vacancy at Cleobury Mortimer, co. Salop.

APPOINTMENTS.

BUCHAN, George F., M.B.Glasg., D.P.H.Camb., Assistant Medical Officer of Health for the City of Birmingham.

CHAPEL, K., M.B., Ch.B.Edin., Medical Officer of Health, Rothwell Urban District.

COURTNEY, G. B., M.D., D.P.H.Camb., District Medical Officer of the Easthampstead Union.

EASTERBROOK, Charles Cromhall, M.A., M.D., F.R.C.P., Physician-Superintendent, Crichton Royal Institution, Dumfries, vice Dr. Rutherford (retired).

FAULKNER, Hugh, M.D.Edin., Honorary Medical Officer, Horton Infirmary, Banbury, Oxon.

FITZGERALD, C. C., L.R.C.P. and S.Edin., Resident Assistant Medical Officer of the Salford Union Infirmary.

HEYWOOD, W. B., M.B., B.C.Camb., Coroner for Newbury, Berks.

LEA, C. E., M.B., Second Resident Assistant Medical Officer at the Southwark Union Infirmary.

LUSK, J. P., M.B., Ch.B.Glasg., District Medical Officer of the Orsett Union.

MACNALTY, A. S., B.A., M.B., B.Ch.Oxon., Casualty Medical Officer, University College Hospital, London.

READ, A. W., M.D., M.R.C.S., L.R.C.P., Clinical Assistant to the Chelsea Hospital for Women.

RENTON, J. Mill, M.B., Ch.B.Glasg., Extra-Dispensary Surgeon, Western Infirmary, Glasgow.

ROY, J. Allan C., M.B., Ch.B., Assistant Medical Officer, Royal Asylum, Cheadle, vice P. G. Mould, M.R.C.S., L.R.C.P. (resigned).

SULLIVAN, M. T., M.D., C.M.McGill, Clinical Assistant to the Chelsea Hospital for Women.

SWEETEN, B., M.B., C.M.Edin., District Medical Officer of the Spalding Union.

WILTSHIRE, H. P., B.A.Cantab., M.R.C.S., L.R.C.P.Lond., Medical Officer of the Hamsworth Union Workhouse.

YEARSLEY, J. H., B.A.Oxon., M.R.C.P., F.R.C.S.Edin., Assistant Ophthalmic Surgeon to the Royal Boscombe and West Hants Hospital.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

MORTON.—At Aldershot, on October 26th, to Captain and Mrs. H. M. Morton, Royal Army Medical Corps, a son.

DEATH.

BENHAM.—On November 3rd, at 11, Earl's Court Square, S.W., after a long and painful illness, Robert Fitzroy Benham, M.R.C.S.Eng., Founder of and Honorary Consulting Surgeon to the Kensington General Hospital, aged 54. Very deeply mourned by his relatives, friends, and patients. Interment at Kensal Green Cemetery, on Saturday, 9th inst., at 1.45.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Clinical evening. Cases will be exhibited at 8 p.m. by Drs. Ormerod, Still, Savill, Dore, Poynton, Voelcker, Palmer, Mr. Gordon Watson, and others.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:
SURGICAL SECTION, 20, Hanover Square, W., 5.30 p.m.—Mr. James Berry: On the Analysis of 274 Additional Cases of Removal of Goitre by Operation.

THURSDAY.

ROYAL SANITARY INSTITUTE, Margaret Street, W., 8 p.m.—Discussion: The Smoke Problem in Large Towns, to be opened by Dr. Louis Parkes and Dr. H. A. Des Vœux.

ROYAL SOCIETY OF MEDICINE:
OBSTETRICAL AND GYNAECOLOGICAL SECTION, 20, Hanover Square, W.—7.45, p.m., Paper: Dr. T. Wilson, Pubiotomy, with Illustrative Cases. Specimens: Drs. Herbert Spencer, Dr. Fairbairn, Dr. Macnaughton-Jones, Dr. C. H. Roberts, and Mr. Alban Doran

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Millbank, S.W.—8.30 p.m., Major W. S. Harrison, R.A.M.C., Enteric Fever in War.

FRIDAY.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN, 11, Chandos Street, 4.30 p.m.—Paper by Dr. G. H. Lock: Rheumatic Hyperpyrexia in a Child aged 6. Cases will be shown by Drs. Clutterbuck, G. Carpenter, F. J. Poynton, and Messrs. J. Russell Howard, R. Warren, and others.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Tuesday, 3.45 p.m., External Ear; Friday, 3.45 p.m., Thyroid and Cervical Region.

CHARING CROSS HOSPITAL, W.C.—Thursday, 4 p.m., Surgical.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Friday, 3 p.m., Some Points in the Diagnosis and Treatment of Conjunctivitis.

HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E.—Monday, 5 p.m., Psoriasis, Lichen Planus; Wednesday, 5 p.m., Keratosis Follicularis, Lichen Pilaris, Ichthyosis; Friday, 5 p.m., Verruca Vulgaris, Cornu Cutaneum, Clavus Angiokeratoma, Condyloma Acuminatum.

HOSPITAL FOR NERVOUS DISEASES, Welbeck Street, W.—Thursday, 5 p.m., Some Forms of Nerve Deafness.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Splenic Enlargement.

LONDON SCHOOL OF CLINICAL MEDICINE.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2.30 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m. Monday, and noon Thursday; Skin, at noon and 4 p.m. Tuesday and at noon Friday; Eye, 11 a.m. Wednesday and Saturday; Radiography, 4 p.m. Thursday. Special Lectures: Tuesday, 3.15 p.m., Some Internal Derangements of the Knee-joint. Thursday, 2.15 p.m., Infantile Paralysis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, The Eyesight in Old Age. Tuesday, Human and Bovine Tuberculosis, with special reference to Treatment. Wednesday, Head Injuries. Thursday, Carcinoma of the Uterus: the Importance of Early Diagnosis. Symptoms and Treatment.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Out-patient Department, Fitzroy Square, W.—Thursday, 5 p.m., The Diagnosis and Treatment of Mitral Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Clinical Lecture; Friday, 3.30 p.m., Tumours of the Spinal Cord.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's Hospital, Tottenham, N.—The following are the Clinics and Demonstrations for next week:—Monday, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Throat, *X* Ray; Tuesday, 10.30 a.m., Medical Out-patient; 2.30 p.m., Operations, Gynaecological and Surgical Out-patient. Wednesday, 2.30 p.m.,

Medical Out-patient, Skin and Eye; 4.30 p.m., Demonstration of Selected Eye Cases. Thursday, 2.30 p.m., Gynaecological Operations, Medical and Surgical Out-patient and *X* Ray: 3 p.m., Medical In-patient; 4.30 p.m., Demonstration of Selected Chest Cases (at the Mount Vernon Hospital, Hampstead). Friday, 10 a.m., Surgical Out-patient; 2.30 p.m., Operations, Medical Out-patient and Eye; 3 p.m., Medical In-patient.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week: Daily, 2 p.m., Medical and Surgical Clinics, *X* Rays; 2.30 p.m., Operations. Monday and Thursday, 2 p.m., Diseases of the Eye (ditto Wednesday and Saturday). Tuesday and Friday, 10 a.m., Gynaecological Operations; 2 p.m. (also Wednesday and Saturday, 10 a.m.), Diseases of the Throat, Nose, and Ear; 2.30 p.m., Diseases of the Skin. Wednesday, 10 a.m., Diseases of Children Wednesday and Saturday, 2.30 p.m., Diseases of Women. Lectures: Monday, at 12 noon, Pathological Demonstration. At 5 p.m., Monday, Clinical; Tuesday, Treatment of Vesical Calculus; Wednesday, Practical Medicine; Thursday, Common Injuries and Diseases of the Foot; Friday, Recent Researches in the Pathology of General Paralysis.

Royal Dental Hospital, Leicester Square, W.C.—Monday, 5.30 p.m., Recent Views on Immunity in Relation to Dental Disease.

BOOKS, Etc., RECEIVED.

London: Cassell and Co., Ltd., 1907:

Surgical Applied Anatomy. By Sir F. Treves, Bart., G.C.V.O., C.B., LL.D., F.R.C.S. Fifth edition revised by A. Keith, M.D., F.R.C.S. 9s.

Light and *X*-ray Treatment of Skin Diseases. By M. Morris, F.R.C.S.Edin., and S. E. Dore, M.D. 5s.

Die Behandlung der Ischias und anderer Neuralgien durch Injektionen unter hohem Druck. Von Dr. med. J. Lange. Leipzig: S. Hirzel. 1907. M.1.

Syphilis oder Morbus Gallicus? Von Dr. jur. W. Pflug. Strassburg: K. J. Trübner. 1907. M.1.50.

Essays and Addresses. By the late J. H. Bridges, M.B., F.R.C.P. London: Chapman and Hall. 1907. 12s. 6d.

London: E. Arnold. 1907:

A History of Chemistry. By Dr. H. Bauer. Translated by R. V. Stanford, B.Sc. 3s. 6d.

An Introduction to Child Study. By W. B. Drummond, M.B., C.M., F.R.C.P.E. 6s.

The Child's Mind, its Growth and Training. By W. E. Urwick, M.A. 4s. 6d.

Symptomatologie und Diagnostik der Uro-genitalen Erkrankungen. Von Dr. V. Blum. Erster Teil. Leipzig and Wien: F. Deuticke. 1908. M.6.

A System of Medicine. By Many Writers. Edited by T. C. Allbutt, M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., etc., and H. D. Rolleston, M.A., M.D., F.R.C.P. Second edition. Volume III: Certain General Diseases: Diseases of the Stomach. London: Macmillan and Co., Limited. 1907. 25s.

Traité de l'Arthritisme. Par le Dr. F. de Grandmaison. Paris: A. Maloine. 1908. Fr.8.

The Flower Garden. By T. W. Sanders, F.L.S., F.R.H.S. London: W. H. and L. Collingridge. 7s. 6d.

Leipzig: F. C. W. Vogel. 1907:

Spezielle chirurgische Diagnostik. Bearbeitet von Professor Dr. F. de Quervain. M.15.

Die Arthritis deforms coxae und die Variationen der Hüftpfannenstellung. Von Dr. G. Preiser. M.2.

Paris: Vigot Frères:

Traité de l'Hypnotisme expérimental et thérapeutique, ses applications à la Médecine, à l'Education et à la Psychologie. Par le Dr. P. Joire. Fr.4.

Instruction pour le Traitment par l'Hypérémie. Du Privat Doc. Dr. Schmieden. Traduit par Mme. Fortoul. 1907. Fr.1.25.

Berlin: S. Karger:

Ueber das Tasten normaler Magenteile. Nebst Bemerkungen zur Höhenbestimmung der Bauchorgane. Von Dr. T. Hausmann. 1907. M.1.

Die Geschwülste des Nervensystems, Hirngeschwülste-Rückenmarks-und Wirbelgeschwülste. Geschwülste der peripheren Nerven. Von Dr. L. Bruns. Zweite Auflage. 1908. M.15.

Die Krankheiten des Verdauungskanals (Oesephagus, Magen, Darm.) Von Dr. P. Cohnheim. Zweite Auflage. 1908. M.6.

Cancer of the Stomach. By A. W. Mayo Robson, D.Sc., F.R.C.S. London: J. Nisbet and Co., Limited. 1907. 4s. 6d.

London: Macmillan and Co. 1907:

The Brushwood Boy. By R. Kipling. 6s.

The Little Guest. By Mrs. Molesworth. 4s. 6d.

Side-lights on Alcohol and its Action on the Human Organism. By "Medicus Abstinens." London: Church of England Temperance Society. 2s. 6d.

Physical Methods in the Treatment of Heart Disease. By A. G. Dampier-Bennett, M.R.C.S., L.R.C.P. Bristol: J. Wright and Co.; and London: Simpkin, Marshall, and Co. 1907. 3s. 6d.

Preventable Blindness. By N. B. Harman, M.A., M.B., F.R.C.S. London: Baillière, Tindall, and Cox. 1907. 2s. 6d.

"Farm and Garden" Handbooks. No. 11. Chicken Rearing and the Management of Incubators. By A. T. Johnson. Edited by T. W. Sanders, F.L.S. London: W. H. and L. Collingridge. 1s.

Calendar of the Royal College of Surgeons of England. August 1st, 1907. London: Taylor and Francis. 1s.

Human Anatomy. By T. Dwight, M.D., LL.D.; C. A. Hamann, M.D.; J. P. McMurrich, Ph.D.; G. A. Piersol, M.D., Sc.D.; and J. W. White, M.D., Ph.D., LL.D. Edited by G. A. Piersol. Philadelphia and London: J. B. Lippincott Co. 30s.

Alembic Club Reprints. No. 17. Medico-physical Works, being a translation of *Tractatus quinque Medico-physici*. By J. Mayow, LL.D., M.D. (1674). Edinburgh: J. Thin; and London: Simpkin, Marshall, and Co. 1907.

The Operations of Surgery. By W. H. A. Jacobson and R. P. Rowlands. Fifth edition. Vols. i and ii. London: J. and A. Churchill. 1907. Two vols. 42s.

London: Longmans, Green, and Co. 1907:

Textbook of Organic Chemistry for Medical Students. By Dr. G. v. Bunge. Translated by R. H. A. Plimmer, D.Sc. 6s.

The Reduction of Cancer. By the Hon. R. Russell. 1s. 6d.

La Couche Optique. Le Syndrome Thelamique. Par le Dr. G. Roussy. Paris: G. Steinheil. 1907.

Lippincott's New Medical Series. Edited by F. R. Packard, M.D. Roentgen Rays and Electro-therapeutics By M. K. Kassabian, M.D. Philadelphia and London: J. B. Lippincott Co. 15s.

Nierendiagnostik und Nierenchirurgie. Von Dr. G. Kapsammer. I and II Teil. Wien and Leipzig: W. Braumüller. 1907. M.20., Kr.24.

Die progressive Allgemeine Paralyse. Zweite Auflage. Von H. Obersteiner. Wien and Leipzig: A. Hölder. 1908. M.5.20.

Der Abstinentismus und seine Bedeutung für das Individuum und für die Gesellschaft Von Dr. G. Kabrhel. München und Berlin: R. Oldenbourg. 1907. M.1.50.

Cancer. By G. S. Bigg. London: Baillière, Tindall, and Cox. 1907. 3s. 6d.

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Lehrbuch der mikroskopischen Technik. Von Dr. B. Rawitz. Leipzig: W. Engelmann. 1907. M.12.

A Course of Practical Organic Chemistry. By T. Slater Price, D.Sc., Ph.D., F.I.C., and D. F. Swiss, M.Sc., A.I.C. London: Longmans, Green and Co. 1907. 3s. 6d.

Halle-a.-S.: C. Marhold. 1907:

Zur Psychologie und Therapie neurotischer Symptome. Von Dr. A. Muthmann. M.2.

Die Erkennung und Behandlung der Melancholie in der Praxis. Von Geb. Med. Rat. Prof. Dr. T. Ziehen. Zweite Auflage. M.2.

Pelvic Inflammations in the Female: being the Ingleby Lectures delivered at Birmingham University, May 9th and 16th, 1907, by T. Wilson, M.D., M.Ch., F.R.C.S. Bristol: J. Wright and Co.; and London: Simpkin, Marshall and Co., Ltd. 1907. 3s. 6d.

The Laws of Health. By D. Nabarro, M.D., B.Sc., D.P.H. Third impression. London: E. Arnold. 1s. 6d.

Würzburg: A. Stuber. 1908:

Taschenbuch der Therapie mit besonderer Berücksichtigung der Therapie an den Berliner, Wiener, u. a. deutschen Kliniken. Herausgegeben von Dr. M. T. Schnirer. Vierte Ausgabe. M.2.

Lehrbuch der spezifischen Diagnostik und Therapie der Tuberkulose. Von Dr. Bandelier und Dr. Roepke. M.4.

Essentials of Human Physiology. By D. N. Paton, M.D., B.Sc., F.R.C.P. Third Edition. Edinburgh and London: W. Green and Sons. 1907. 12s.

L'Alimentation à Bon Marché Saine et Rationelle. Par J. Lahor et le Dr. Lucien-Graux. Paris: F. Alcan. 1908. Fr.3.50.

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Physiologie des Meschen und der Säugethiere. Von Prof. Dr. R. du Bois-Reymond. M.14.

Die Salzsäuretherapie auf theoretischer und praktischer Grundlage. Von Prof. Dr. H. Leo. M.3.20.

Synonymik der Dermatologie. Von Dr. J. Fick. Wien: A. Hölder. 1908. M.1.40.

Clinical Therapeutics. By A. C. Croftan. Second edition. Chicago; Cleveland Press. 1907. $5.

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The Practical Medicine Series. 1907. Edited by G. P. Head, M.D.: Vol. VI—General Medicine. Edited by F. Billings, M.S., M.D., and J. H. Salisbury, M.D. 5s.

Vol. VII—Pediatrics. Edited by J. A. Abt, M.D. Orthopedic Surgery. Edited by J. Ridlon, A.M., M.D., and G. M. Bailey. 5s.

Oxford Medical Publications. Abel's Laboratory Handbook of Bacteriology. Translated from 10th German edition by N. H. Gordon, M.A., M.D., B.Sc. London: H. Frowde and Hodder and Stoughton. 1907. 5s.

The Child. By Dr. W. M. Feldman. (In Yiddish.) London: E. W. Rabbinowicz. 1907. 1s.

Manual of Surgery. By F. T. Stewart, M.D. London: Rebman Ltd., 1907. 15s.

Studies in the Medicine of Ancient India. Part I. Osteology of the Bones of the Human Body. By A. F. R. Hoernle, C.I.E. Oxford: The Clarendon Press. 1907. 10s. 6d.

The Diagnosis and Treatment of Diseases of Women. By H. S. Crossen, M.D. St. Louis: C. V. Mosby Medical Book and Publishing Co. 1907. 6 dols.

The Book of Prescriptions (Beasley). Rewritten by E. W. Lucas, F.I.C., F.C.S. Ninth edition. London: J. and A. Churchill. 1907. 6s.

The Prolongation of Life. Optimistic Studies. By E. Metchnikoff. English translation edited by P. C. Mitchell, M.A., D.Sc., Hon. LL.D., F.R.S. London: W. Heinemann; and New York: G. P. Putnam's Sons. 1907. 12s. 6d.

The Enthusiasm of Homoeopathy, with the Story of a Great Enthusiast. By J. H. Clarke, M.D. London: Homoeopathic Publishing Co. 1907.

Handbook of Meat Inspection. By Dr. R. Ostertag. Translated by E. V. Wilcox, M.A., Ph.D. Third edition. London: Baillière, Tindall and Cox. 1907. 31s. 6d.

Syphilis in the Army. By Major H. C. French, R.A.M.C. London: J. Bale, Sons, and Danielsson, Ltd. 6s.

*** In forwarding books the publishers are requested to state the selling price.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
NOVEMBER.	
8 FRIDAY ...	LONDON: Standing Ethical Subcommittee, 2 p.m.
9 SATURDAY ...	
10 Sunday ...	
11 MONDAY ...	
12 TUESDAY ...	LONDON: Organization Committee, 11 a.m. LONDON: Life Insurance Examinations Subcommittee 3 p.m. LONDON: Joint Hospitals Subcommittee, 4 p.m.
13 WEDNESDAY.	ULSTER BRANCH, Belfast.
14 THURSDAY..	NORWOOD DIVISION, *South-Eastern Branch*, Streatham Hall, 3.30 p.m.; Dinner, 6 p.m.
15 FRIDAY ...	
16 SATURDAY ...	
17 Sunday ...	
18 MONDAY	
19 TUESDAY ...	
20 WEDNESDAY	CARDIFF DIVISION, *South Wales and Monmouthshire Branch*, Cardiff. NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH, Friend's Hall, Lancaster, 3.45 p.m.
21 THURSDAY...	LEIGH DIVISION, *Lancashire and Cheshire Branch*, Co-operative Rooms, Ellesmere Street, 8.30 p.m.
22 FRIDAY ...	
23 SATURDAY...	
24 Sunday ...	
25 MONDAY ...	
26 TUESDAY ...	

Date	Meetings to be Held.
NOVEMBER *(Continued).*	
27 WEDNESDAY.	BATH AND BRISTOL BRANCH, Bath.
28 THURSDAY...	CITY DIVISION, *Metropolitan Counties Branch*, Special Meeting, Hackney Town Hall, 4 p.m. STAFFORDSHIRE BRANCH, North Stafford Hotel, Stoke-on-Trent, 3.45 p.m.; Dinner, 6.30 p.m.
29 FRIDAY ...	
30 SATURDAY...	
DECEMBER.	
1 Sunday ...	
2 MONDAY ...	
3 TUESDAY ...	ST. PANCRAS AND ISLINGTON DIVISION, *Metropolitan Counties Branch*. Temperance Hospital, Hampstead Road, N.W., 4 p.m.
4 WEDNESDAY	LANCASHIRE AND CHESHIRE BRANCH, Council Meeting, Royal Infirmary, Manchester, 4.30 p.m.
5 THURSDAY...	ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, General Meeting. FOLKESTONE DIVISION, *South-Eastern Branch*, Victoria Hospital, Folkestone, 8.30 p.m.
6 FRIDAY ...	
7 SATURDAY...	
8 Sunday ...	
9 MONDAY ...	
10 TUESDAY ...	
11 WEDNESDAY	
12 THURSDAY...	
13 FRIDAY ...	
14 SATURDAY...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 16TH, 1907.

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Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

DORSET AND WEST HANTS BRANCH.

THE autumn meeting of this Branch was held in the Town Hall, Blandford, on Wednesday, October 23rd, the President, Dr. J. MACPHERSON LAWRIE, D.L., J.P., in the chair. Among those present were Mr. Marriner (Vice-President), Dr. Snow, Dr. Davison (Honorary Secretary), Dr. Greves, Mr. Williamson Daniell, Mr. G. H. S. Daniell, Mr. Spooner, Mr. Humphrys, Dr. Batterbury, Mr. Carnie, Mr. Marsh, Dr. Eleanor Bond. Dr. Mary E. Jeremy, Dr. MacDonald, Dr. Morrice, Mr. Kingston, Mr. Hawkins, Mr. Simmons, Dr. Lys, Dr. Humphrey Davy, Mr. Vernon, Mr. Bernard Scott, Mr. Burrough Cosens, Dr. Johnson Smyth, Mr. Vincent Milner, Dr. Clift, and others.

Minutes.—The minutes of the last meeting having been read and confirmed, letters of apology for non-attendance were read from Dr. W. G. Alexander (Vice-President), Dr. Arthur Ransome, F.R.S., Dr. Le Fleming, Mr. Bovey, and Mr. Midelton.

Elections.—On the motion of Dr. SNOW, seconded by Dr. W. JOHNSON SMYTH, Mr. James Atkinson Hosker, M.R.C.S., J.P., Consulting Surgeon to the Royal Boscombe and West Hants Hospital, was elected President for 1908. On the motion of Mr. DECIMUS CURME, seconded by Mr. WILLIAMSON DANIELL, Mr. Bernard Scott (Bournemouth) and Mr. T. Howard (Portland) were elected Vice-Presidents. On the motion of the PRESIDENT, seconded by Mr. C. J. MARSH, Dr. James Davison of Bournemouth, was re-elected Honorary Secretary and Treasurer. It was decided on the motion of Dr. SNOW, seconded by Mr. FLOWER, that the next meeting of the Branch be held in Bournemouth. Henry Hemsted, Christchurch, Hants, M.D.Brux., M.R.C.S.Eng., L.R.C.P.Lond., and Robert William Morgan Gillingham, Dorset, M.D., B.S.Univ.Durh., were elected members of the Association. A communication from the Reigate Division of the South-Eastern Branch was referred to the Divisions of the Branch for consideration.

A Protest.—The meeting recorded a protest against the manner in which the Wimborne Rural District Council have treated Mr. C. H. Watts Parkinson by dismissing him from the office of medical officer of health without any fault having been found with his execution of the duties of the post. In forwarding this protest to the Wimborne Rural District Council the Honorary Secretary was requested to ask the Board to receive a deputation from the Branch to discuss the situation that has arisen with a view of bringing about an amicable and satisfactory solution.

Papers.—Dr. W. JOHNSON SMYTH read a paper entitled Psychic Treatment in Certain Functional Disorders. Dr. HUMPHREY DAVY read notes on two cases of epigastric tumour. Mr. W. BURROUGH COSENS communicated notes on reflex symptoms. Mr. G. H. S. DANIELL made a few remarks on the treatment of fractures of the femur by Hodgen's splint. The apparatus was shown and a patient recently treated by this method exhibited. Owing to want of time several papers were carried over to the next meeting.

Vote of Thanks.—A cordial vote of thanks was awarded to Mr. and Mrs. Williamson Daniell for their kindness in entertaining the members and their friends to afternoon tea after the meeting.

Luncheon.—Previous to the meeting the members and friends luncheoned together at the Crown Hotel, Blandford.

EDINBURGH BRANCH:
SOUTH-EASTERN COUNTIES DIVISION.

Annual Dinner.—The annual dinner was held in the Douglas Hotel, Galashiels, on the evening of Friday, November 8th, at 7 o'clock. There were present: Drs. Bannerman, Hamilton, and Murray (Hawick), Drs. Doig, Henderson, Somerville, Stevenson, and Tyrell (Galashiels), Muir (Selkirk), Young (Earlston), Carlyle Johnstone (Roxburgh District Asylum), Calvert (Melrose), and five guests, Messrs. Henderson, Bain, Diamond, M'Dougall, and Walker. Dr. BANNERMAN filled the chair in a most satisfactory manner, and gave the toasts of "The King" and "The Imperial Forces"; the latter toast was replied to by Lieutenant-Colonel MUIR in an eloquent speech. Dr. TYRELL (in the absence of Dr. Rutherford) filled the croupier's chair, and proposed the toast of "The Division," to which the CHAIRMAN replied. Dr. SOMERVILLE proposed "The British Medical Association," to which Dr. HAMILTON (in the absence of Dr. BLAIR) replied. Dr. CARLYLE JOHNSTONE, in a speech full of humorous sallies, proposed "The Town and Trade of Galashiels," and Mr. MCDOUGALL replied. "The Guests" was given by Dr.

HENDERSON, and Mr. CRAMOND responded. Drs. Muir and Doig and several of the guests contributed some excellent songs and recitations, which added much to the pleasure of a most enjoyable evening.

FIFE BRANCH.

The Referendum.—A special meeting was held at Thornton on October 31st to consider the Referendum business. Dr. H. W. LAING, President, was in the chair. Dr. NASMYTH (Member of Central Council for the Branch) and Dr. NORMAN WALKER (Edinburgh), who were present by request, and Dr. W. B. DREW (the Representative at Representative Meetings) gave their views of the situation, and the discussion was taken part in by several members. It was ultimately agreed, with one dissentient, to *disapprove* of all the minutes of the Representative Meeting.

GLASGOW AND WEST OF SCOTLAND BRANCH:

DUMBARTONSHIRE AND ARGYLLSHIRE DIVISION.

A GENERAL meeting of this Division was held at Dr. James Nicoll's house, 4, Woodside Place, Glasgow, on November 1st, convened for the purpose of discussing the Referendum Report and other competent business. Dr. SEWELL (Chairman) presided.

The Referendum—The Report of Council, the Minority Report, and the Memorandum of the Annual Representative Meeting were carefully discussed and voted upon. The Minutes of Representative Meeting Nos. 123, 283, 287, 293, 298, 299, 303, 328, 330 342, 346 were not approved of

Examination of Pupil Teachers.—It was thought that if the teacher had to pay the medical fee for examination 2s. 6d. should be charged.

Vote of Thanks.—Dr. Nicoll was thanked by vote for providing the members with tea.

HALIFAX, NOVA SCOTIA, BRANCH.

ANNUAL MEETING.

Election of Officers.—The following officers for the session 1907-8 were elected at the annual meeting of the Branch: *President*, A. McD. Morton, M D. Bedford, N.S.); *Vice-President*, J. J. Doyle, M.D. (North Park Street, Halifax); *Treasurer*, G. M. Campbell, M.D. (405, Brunswick Street, Halifax); *Secretary*, D. T. C. Watson, M D. (Charles and Agricola Streets, Halifax); *Branch Council*, J. J. Doyle, M.D., G. M Campbell, M.D., Jas. Ross. M.D., W. H. Eagar. M.D , J. R. Corston, M.D., R. Evatt Mathers, M.D., W. H. Hattie, M.D.

New Members.—At a meeting of the Branch Council, on October 17th, the following were regularly elected to membership: George H. Murphy, M.D. (Glace Bay, N.S.), Victor N. Mackay, M.D. (Halifax, N.S.).

LANCASHIRE AND CHESHIRE BRANCH:

BURY AND ROCHDALE DIVISIONS.

A MEETING of these Divisions was held at the Dispensary, Knowsley Street, Bury, on October 17th, Dr. COOK in the Chair. There were present: Drs. Nuttall, Turnbull, Kerr Holmes, and Jelly, of Bury; Hitchon, Melvin, Brown, and Walker, jun , of Rochdale.

Annual Representative Meeting.—Dr. BROWN, who is the Representative of the Division at the Representative Meetings, read his report of the Annual Meeting, for which a vote of thanks was proposed and seconded.

The Referendum.—Before commencing to discuss the Referendum, it was decided that the voting sheet should be filled up at a joint meeting of the two Divisions. The Referendum was then voted on.

Notification of Births Act.—The Notification of Births Act was then discussed and the following resolution was proposed and seconded:

> That the Bury and Rochdale Divisions consider the notification of births as a civic duty belonging to the parents, and they strongly disapprove of that portion in the Notification of Births Act which places on them this duty. They consider, moreover, that to some extent it is a breach of professional confidence.

MANCHESTER (SOUTH) DIVISION.

Social Evening.—A very enjoyable social evening was spent by the Division's members and their friends at the house of the Chairman, Dr. E. Vipont Brown, on Wednesday, October 9th. About fifty members, their ladies, and friends from other Divisions were present, and the Division is much indebted to Dr. and Mrs. E. Vipont Brown for the most social and friendly evening the Division has ever had.

Special General Meeting.—A special general meeting of the Division was held at Dr. Vipont Brown's, 2 Birch Lane, Longsight, at 3 45 p.m., on Wednesday, November 6th. Dr. VIPONT BROWN was in the Chair, and besides the Chairman, there were nine members present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

The Referendum.—Before voting on the questions raised by the Council's Referendum Report, the meeting asked their Representative (Dr. Russen Rhodes) to give a short summary in explanation of the Referendum and of the matters to be voted on and evolved out of the minutes of the Special Representative Meeting of May last. A letter with regard to the subject and *re* the Charter from the Edinburgh Representative (Dr. A. Walker) was read, and the meeting decided, with only one dissentient, to add a rider to their voting on the minutes of the Representative Meeting referred to in the Council's Referendum Report. This rider was as follows:

> That this meeting of the Manchester (South) Division, though unanimously voting for the resolutions of the May Representative Meeting, do not wish this action on their part to be taken as contraindicating their policy for the delay of the Charter at the present date in the history of the Association.[1]

The meeting then voted on the minutes of the Representative Meeting referred to in the Council's Referendum Report, considering the minutes in the order and arrangement occurring in that report. In every case the meeting was unanimous in voting for the resolutions of the Representative Meeting, and in showing thus their approval of the action of the Representatives, only on the condition, however, indicated in the above-mentioned rider, which latter thus was the basis of the unanimous vote for the Representative Meeting.

Ethical Rules.—The meeting then considered the adoption of the Bradford code of ethical rules together with Rule Z On the proposal by the CHAIRMAN, seconded by the EX-CHAIRMAN (Dr. Sawers Scott), these rules were carried unanimously.

METROPOLITAN COUNTIES BRANCH:

CITY DIVISION.

A SPECIAL general meeting of this Division was held at the Great Eastern Hotel, Liverpool Street, E.C., on October 8th, Dr. SOUTHCOMBE (Chairman) presiding. The business of the meeting was confined to the consideration of the Referendum of the Central Council *re* the minutes of the Representative Meeting, which the Council wished to be referred to the Divisions for consideration. The minutes were taken and voted on separately, and the whole of the minutes of the Representative Meeting were supported by the majority of those present.

THE first general meeting of the Division for the session 1907 8 was held at St. Bartholomew's Hospital, E.C., on November 1st, at 5 p.m.

Tea.—Tea was kindly provided in the library by the medical staff.

Cases and Specimens.—Cases were exhibited and described by the members of the hospital staff as follows:—Dr. NORMAN MOORE: A case of neuromimesis. Dr. ORMEROD: A case of lichen planus. Mr. BRUCE CLARKE: (1) Palsy of muscles of arm in a child following fracture of bones of forearm; (2) A case of generalized *Cysticercus cellulosae*. Mr. MCADAM ECCLES: (1) Resection of gangrenous intestine for case of interstitial hernia; (2) operation for perforating duodenal ulcer; (3) a Charcot's knee. Dr. HERRINGHAM'S cases (shown by Dr. DRYSDALE): (1) A case of splenic anaemia; (2) a case of progressive muscular atrophy. Mr. HARMER: Sarcoma of tonsil.

WANDSWORTH DIVISION.

A SPECIAL meeting was held in the Balham Hotel on Friday, November 1st, at 8.45 p.m., Dr. GILBERT RICHARDSON in the chair.

[1] Minute 317, Annual Representative Meeting, Exeter, *re* Charter, proposed by the Manchester (South) Division, and reported in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL, August 3rd, 1907.

The Weir Bequest.—The meeting was called to consider what steps shall be taken by the Division with reference to the inquiry of the Charity Commissioners into the terms of the Weir bequest, to be held in Balham on November 5th. It was resolved to call a meeting of the medical men residing in the parish of Streatham on November 4th, to ascertain their views and whether they would take action.

Vote of Thanks.—A vote of thanks to Mr. Huntley for lending the room free of charge closed the meeting.

YORKSHIRE BRANCH.

A meeting of the Branch was held at the University, Sheffield, on Wednesday, November 6th. Dr. Lee, President, occupied the chair; sixty-three members were present.

Confirmation of Minutes.—The minutes of the last meeting were read and approved.

Expenses of Annual Meeting.—On the proposition of Dr. Sinclair White, the sum of £150 was voted towards the expenses of the annual meeting of the Association, which is to be held in Sheffield next year.

The late Dr. Dolan.—The President drew attention to the great loss which the Yorkshire Branch, and the whole of the medical profession, had sustained by the death of Dr. Dolan, of Halifax, and the Secretary was requested to convey to the son of the late Dr. Dolan a message of sympathy from the meeting.

President-elect.—Dr. Turner (York) was elected President-elect.

The Council and the Representative Meeting.—The following resolution was proposed by Dr. Goyder (Bradford) seconded by Dr. Campbell (Bradford), and carried, with only three dissentients:

> That this meeting of the Yorkshire Branch of the British Medical Association deprecates the recent attempts to disorganize the constitution of the Council, and strongly protests against the proposals of the Representative Body to deprive the Branches of their right of electing members of the Council. Further, this Branch considers that the Branches have done important and progressive work in the Association, and that no adequate reason has been given for making the radical changes proposed.

Cards and Specimens.—Dr. Sinclair White (Sheffield) showed the following interesting cases and specimens: (1) Two cases of partial gastrectomy for cancer of the stomach: (2) a series of cases of abdominal hysterectomy for advanced uterine cancer; (3) intractable ulcer of the back of the hand treated by Wolf's method of skin-grafting; (4) a renal calculus composed of pure oxalate of lime; (5) excision of the knee for monarticular rheumatoid arthritis.

New Members.—The following were elected members of the Association by the Council: Harry Cole Alderman, L.R.C.P., Halifax; Alexander Anderson, M.B., D.P.H., Sheffield; Walter Asten, L.R.C.P., Horbury; Percival E. Barber M.R.C.S., Sheffield; Henry Brown, M.B., Sheffield; Mrs. Eva Maud Cavanagh, M.B., Sheffield; Archibald Wm. Cuff, F.R.C.S., Sheffield; Leonard Daft, M.R.C.S., Sheffield; Cecil G. Foggo, L.R.C.P., Sowerby Bridge; William J. Fordham, M.R.C.S., Middlesborough; Herbert H. Emmerson, M.R.C.S., Sheffield; John F. Gill, M.B., Halifax; Herbert Hirst, M.B., Aspley, Huddersfield; John F. Hodgson, M.D., Halifax; George Hoyle, M.D., Elland; Harold Leach, M.R.C.S., Ovenden; Frank Mason, M.D., Handsworth, near Sheffield; David R. Miller, M.B., Sheffield; George F. Rhodes, M.B., Huddersfield; James F. Robertson, M.R.C.S., Althorpe, near Doncaster; William Robertson, M.B., Huddersfield; Ralph D Smedley, M.B., D.P.H., Sheffield; Percy Kingsley Steele, F.R.C.S., Halifax; Percy Wm. N. Vincent, M.R.C.S., Sheffield; Newton Wade, M.R.C.S., Sheffield; Henry T. Wightman, M.R.C.S., Sheffield; W. B. Wishart, M.B., Halifax; Ralph Paul Williams, M.D., Sheffield; J. Crossley Wright, M.B., Halifax.

Luncheon and Dinner.—On the invitation of Drs. Simeon Snell and Sinclair White, the Council had lunch at the University. After the meeting, twenty-one members dined together at the Royal Victoria Hotel.

Sheffield Division.

The Referendum.—A special meeting was held on Friday, October 18th, to discuss the Referendum Report of the Central Council. Some of the resolutions passed by the Representative Meeting held in May last, and which were set forth in the above report, were discussed. The meeting then voted unanimously against the above-mentioned resolutions of the Special Representative Meeting and was unanimous in its support of the Central Council.

YORKSHIRE BRANCH.

A STATEMENT *RE* REFERENDUM.

Communicated to the Meeting of the Branch at Sheffield on November 6th.

By David Goyder, M.D.,
Representative of the Branch on the Central Council.

As it is unlikely that I shall again seek re-election on the Central Council of the Association as one of your representatives for the Yorkshire Branch, I desire to record my opinion on the proposed changes made by the Representative Body in the so-called amended Charter recently issued to the Divisions.

You are aware that the Central Council consists of some seventy members elected by the Branches, five of whom are co-opted by the Council itself. Every member is allotted to serve on a committee, of which, with subcommittees, there are about twenty. The Council meets four times yearly, and the committees between the meetings of Council. The proposed Charter revolutionizes the number and character of the Council, and the mode of its election.

Up to the passage of the new constitution four years ago the growth of the Association in numbers was effected solely under the influence of the Branch Councils, and by the scientific element which the success of the Association attracted into its fold, and which displayed itself in the Branches, the sections at its annual gatherings, and in the expert and research work paid for by the Council and initiated by them.

The growth in membership since the new constitution became law shows little charge from what previously obtained up to 1902, the numbers being then 18,758. At the end of 1906 they attained to 20,000, an increase of 1,242 in four years. Of this number nearly 1,000 were added in 1906, but this was primarily due to the great influx of Canadians, who joined solely for the Toronto meeting, and cannot be expected to be retained. We may rather anticipate a decrease than an increase in 1907.

It is advisable to remember that the new constitution arose out of the belief of some members of the Central Council, that there was a lack of interest in the rank and file of the Association in the work promoted by it; and a section of the Council was set to work to frame a new constitution which would develop this interest; hence the origin of the Divisions and the Representative Body as their meeting centre, as defined in the ordinances and by-laws of the new document.

The new constitution became law in due course; organization was well planned and carried out; the Divisions in many cases assumed shape, but showed miserable minorities in attendance at their meetings. Some prescribed Divisions failed to organize, and continue unorganized to this day. The representatives of the Divisions met in annual assembly, and under various suggestions emanating from the more active spirits of certain Divisions, and the leaders of the Representative Body, dealt with many disabilities, and framed resolutions which were, some salutary, others debatable, sent straight to the Council to be carried into execution. As time passed on, the various Council Committees and the Representative Body itself, have so multiplied points for decision by the Divisions, that it was found impossible to thresh them all out effectually; and thus, from want of mature consideration, the replies sent to the Council could scarcely be relied upon as truly judicial. But beside this, it is a fact that most of this work was done by a mere section of the divisional members, say seven-eighths of the whole constituency, the mass of the members keeping away altogether from the summoned meetings.

It is a notable feature of the new constitution that the Branches seem to have delegated to them *no part* in the discussion or decision of the questions submitted to the Divisions; everything seems to be sent to *the Divisions*, *the Divisions alone* are to be consulted, and the questions decided by them.

But now, gentlemen, scarcely had the new constitution been in existence three years when the proposal to secure a Royal Charter was sprung upon the Association, and, notwithstanding that the new constitution was still upon its trial, a Charter was ordered to be drawn up and submitted to the Divisions, adjudicated upon, and returned to the Council. The thing was done, but on consideration the Council by a large majority decided that not sufficient time had elapsed to test the provisions of the new constitution before embodying them either in substance or by modification into what would become fixed ordinances in a Royal Charter, therefore the Council deferred decision for the time being.

This delay was, however, not relished by certain members, and thereupon the Chairman of the Representative Body brought the Charter before that body at its subsequent meeting, asking the members to decide upon its terms at once. That meeting altered its ordinances and by-laws to the views of some five or six individuals, and at the close of the meeting the Charter so altered was handed over to the Organization Committee and the solicitor to be redrafted and sent to the Central Council and Divisions for approval. These alterations, I am bound to say, are revolutionary; they threaten to sweep away the Branches sooner or later, and to destroy, as a directing and guiding head, the present character and influence of the Council itself.

I may here premise that, being a member of the Council, I am privileged to sit but not to vote in the Representative Body. I have attended *all* their meetings, and from my observation the Representatives seemed to busy themselves mainly with questions of their status and emoluments—matters perfectly right and just in themselves, and which the Association is most anxious they should secure both by legal enactment and all other legitimate means. But I have also observed that they trouble themselves very little with the scientific branch of their profession, which, after all, is essential to their existence as a learned body of men, and by the exercise of which their status and the appreciation and confidence of the public can be alone secured.

In the framing of the new constitution (I do not mean the Charter) the Central Council seems to me to have made a fatal blunder in not stipulating for a power of veto over ill considered, premature, or revolutionary proposals emanating from the Representative Body. As matters stand, the decisions of the Representative Body must be obeyed or carried into effect by the Central Council, as the Executive, the mere acting instrument of the Representatives. The only power which the Council possesses is that of appeal to the general body of members by Referendum, which Referendum it is at liberty to exercise whenever it considers that such Representative resolutions are detrimental to the interest of the whole Association. And I regret to think that the Referendum just issued by the Council will not reach the mass of the members of the Association, because it is addressed, not to the individual members, but to the Divisions, and will be affirmed or negatived only by the usually small minority of Divisional members who attend these meetings. The mass of members, from absence, can have no real voice in the decision. I make bold to say that in this special case the appeal ought to have been by plebiscite, so that every member of every Division could have had the power, individually, to give a card vote, Yes or No, to the prayer of the appeal; this should have been done at whatever trouble or expense. I feel sure that no other method can determine the real wishes of the Association.

It needs only to state in so many words what the Representative Body aims to secure in this so-called amended Charter!

(*a*) It cuts down the number of members hitherto elected by the Branch Councils to 24. It claims for election by the Representative Body 12 members on the Council (it is not satisfied, therefore, with its own sphere of influence, but intends to intrude itself in the Council likewise) In addition to these 36 councillors, it delegates to the Naval, Military, and Indian Services, to Colonial Branches, etc, 16 seats, or 52 in all, as compared with the present 71 or 72 members of Council.

(*b*) To secure this contraction instead of expansion of representation, it compels a redistribution of the elective areas, it crushes two or more hitherto independent Branches into one, and takes away one or more of the members of the numerically largest Branches.

There are other points alluded to in the Referendum appeal, pointing to further limitations on the Council and Branches; to these you can yourselves refer.

Now, gentlemen, what do you think of these proposals?

Is it just that the Central Council should be deprived of the power of vetoing ill-advised and premature proposals, which might prove disastrous to the best interests of the Association?

Does the progress of the Association up to 1902 justify the diminution of its Central Council, and its loss of influence by the usurpation of twelve of its seats by members of a Representative Body, which is formed to confine itself to its own work?

Is it just to the Branch Councils (which, after all, have been instrumental in bonding together nearly 19,000 practitioners) to limit their power of election to the Central Council, and compel their amalgamation with other Branches, to the destruction of their autonomy and their right to individual independence?

You may see for yourselves that the Representative Body in one of its resolutions affirms that it is their *principle* to elect *all* the Members of Council. Is this assumed principle to be allowed to become their practice? They go further than this, however, and have declared the right to nominate the President of the Association also, and this in defiance of the recognized prerogative of the city which invites the Association for its annual gathering, *to name its own President.* Can cool assurance go further than this?

It is amazing to me with what nonchalance the Representative Body ignores the Branches, and passing over them, gives its mandates direct to the Council to be at once carried into effect. One would have seen some order and show of justice if it had been provided that the Divisions should have reported to the Branches, and the Branches to the Representative Body and the Council before action. What otherwise is the object of electing Divisional Representatives to the Branch Councils? Is it the intention of the Representative Body to usurp possession of every part of the Association? The whole action of the leading spirits of the Representative Body (whom the Divisional Representatives mostly follow without protest) is to pass beyond their legitimate function, and to grasp at a power which, if permitted, will dominate every department of the Association.

It is a pure assumption on the part of this body that it *represents* the mass of the Association. It legislates as if it had every member of every Division at its back; whereas it is *notorious* that three-fourths, if not seven-eighths, of the Divisional members will not, or do not, attend the Divisional meetings. Why is this? It is either indifference, or that their time is otherwise and remuneratively occupied. This is not the case with the medico-chirurgical societies! Doubtless the absentees have definite opinions, but they fail to express them, and this absenteeism points two morals: first, that a practitioner, if he were elected upon the Council, could not find time from his practice to attend the protracted meetings of Council. and its Committees, without injury to that practice. Is it not more in accordance with the efficiency of the work of the Association to have the older, the experienced, the more leisured practitioner to do such work? But, second, and most important at the present juncture, this absenteeism at the Divisions constitutes the great difficulty of obtaining a reliable and faithful reply to the questions of the Referendum, which will not be decisive as to the opinion of the mass of the members, but only the expression of the views of the section who attended the Divisional meetings.

Whatever the result of this method of referendum may be, if it affirms the Representative Body's position as proposed in the so called amended Charter, it will not be convincing to the Council, who have realized the actual interests at stake. I trust the Yorkshire Branch will go solid in favour of the Council, and express the necessity for more thorough consideration and time before fixing these points of the proposed Charter. The great danger of the Representative Body's success lies in the subordination of the scientific element of the Association to the material interests only of its members. Why cannot this body confine itself to the excellent work it has done through its Medical Secretary, and its resolutions for the material benefit of our members, and leave the other objects of the Association to other departments? Its

action with the Charter is like the body commanding and governing the head, instead of recognizing that every organ has its special function and labours to fulfil it for the common good. The dread in the minds of some members is that the British Medical Association may degenerate into a great trades-union, bereft of the noblest element of the profession—the alleviation and prevention of the diseases which afflict humanity.

"He who fulfils a great use with skill and efficiency, and with the single end of doing good, will surely command riches and honour."

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Gloucestershire Branch.—The first general meeting of the Branch for the session 1907-8 will be held at the Infirmary, Gloucester, on Thursday, November 21st, at 7 p.m. Agenda: Presidential address by Dr. Wayland Ancrum, on Some Minor Surgery of the General Practitioner. There will be a supper afterwards at the Wellington Hotel (tickets 3s. 6d. each, exclusive of wine). Members who intend to be present are requested to communicate with D. E. Finlay, Honorary Secretary, Gloucester.

Lancashire and Cheshire Branch.—A meeting of the Ethical Committee of the Branch will be held at the Royal Infirmary, Manchester, on Wednesday, November 20th, at 4.30 p.m.—F. Charles Larkin, 54, Rodney Street, Liverpool.

Lancashire and Cheshire Branch: Leigh Division.—A meeting of the members of this Division will be held at the Co-operative Hall, Ellesmere Street, at 8.30 p.m., on Thursday, November 21st. Agenda: Minutes. Dr. M. J. Halton will read notes of a case of Carcinoma with Treatment. —J. Sackville Martin, Honorary Secretary.

Metropolitan Counties Branch: Marylebone Division.—A general meeting of this Division will be held at the Rooms of the Medical Society, 11, Chandos Street, W., on Tuesday, November 19th, at 5 p.m. Agenda: Minutes; Letters; Report by Sir Victor Horsley on the Representative Meeting, 1907; Central Emergency Fund; other business. A Special General Meeting of the Division will be held at the conclusion of the general meeting to consider the Referendum. — Donald Armour, Honorary Secretary, 89, Harley Street, W.

Metropolitan Counties Branch: St. Pancras and Islington Division.—A meeting of this Division will be held at the Temperance Hospital, Hampstead Road, N.W., at 4 o'clock, on Tuesday, December 3rd. W. Wynn Westcott, Esq., J.P., will read a paper on Sudden Death and important matters concerning the Early Notification of Births Act will be put before the Division.—William Griffith, Honorary Secretary.

North Lancashire and South Westmorland Branch.—A meeting of this Branch will be held at the Friends' Hall, Lancaster, on December 4th, at 3.45 p.m. T. H. B. Dobson, M.D.Lond., will open a discussion on Migraine. Any member willing to show cases or specimens is requested to communicate with A. S. Barling, Honorary Secretary.

South-Eastern Branch: Folkestone Division.—A meeting of this Division will be held at the Victoria Hospital, Folkestone, on Thursday, December 5th, at 8 30 p m. Agenda: (1) Minutes. (2) To further discuss the Referendum Report, the Minority Report, and the Representative Report dealing with the proposed Charter, adjourned from the last meeting, and to vote on certain resolutions. (3) Some clinical cases will be shown.—P. Vernon Dodd, M.D., Honorary Secretary, Folkestone.

Staffordshire Branch.—The first general meeting of the Session 1907-8 will be held at the North Stafford Hotel, Stoke-upon-Trent, on Thursday, November 28th. The President, Mr. J. T. Hartill, will take the chair at 3 45 p.m. Business: (1) Minutes of the last general meeting. (2) Correspondence. (3) Exhibition of living cases. (4) Paper: The Prevalence of Tuberculosis, W. T. Menzies, M. D. (5) Paper: Injuries of the Cornea, H. H. Folker, Esq. (6) Exhibition of pathological specimens etc. Dinner, 6.30 p.m., charge 5s.—G. Petgrave Johnson, Honorary General Secretary, Stoke-on-Trent.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

Staff-Surgeons A. G. W. Bowen, M.B., E Cooper, C. S. Facey, M.B., G. Ley, W. E. Marshall, M. L. B Rodd, H. L. Penny, and A. E. Kelsey, M.B., have been promoted to be Fleet Surgeons, November 11th. Their previous commissions are dated: Surgeon, November 11th, 1891; Staff Surgeon, November 11th, 1899. Fleet Surgeon Facey, whilst Surgeon of the *Widgeon*, had medical charge of the Naval Brigade with the expedition against Mburuk, a rebellious Arab chief, in 1896; also served with the expedition against the King of Benin for the massacre of the political expedition in 1897, resulting in the capture of Benin city; he was mentioned in dispatches, and received a medal with clasp. Fleet Surgeon Penny, whilst Surgeon of the *Firebrand* in 1894, volunteered and was lent to the Colonial Government at Hong Kong during the epidemic of plague there, receiving the thanks of the Colonial Government and mention in the dispatches of the Governor. For services rendered to the Chinese wounded at Newchwang during the Chino-Japanese war in 1894-5 the Emperor of China conferred upon him the 3rd Class of the 3rd Division of the Imperial Order of the Double Dragon. He served at the Royal Naval Hospital at Simonstown during the Boer war, and received a medal with clasp. The other officers cited have no war record.

The following appointments have been made at the Admiralty: Joseph C. Wood, Fleet Surgeon, and Ernest F. Ellis, Surgeon, to the *Europa*, on recommissioning, undated; George G. Borrett, Fleet Surgeon, to the *Edgar*, undated; Edwyn R. Grazebrook, Staff Surgeon to the *Encounter* on recommissioning, undated; Herbert A. Browning, Surgeon, to the *Encounter*, additional, November 26th, and on recommissioning, undated; George E Macleod, Staff Surgeon, to the *Excellent*, November 11th; Frederick F. Mahon, Staff Surgeon, to the *President*, additional, for three months' course at West London Hospital, November 11th; T. Creaser, M.B., Surgeon, to the *Warrior* November 11th.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains are promoted to be Majors, dated October 29th: E. W. Bliss, P. J. Probyn, D.S.O., M.B., and A. W. Hooper, D.S.O. Major Bliss's previous commissions are dated—Surgeon-Lieutenant, January 28th, 1897; Captain, November 16th, 1898; those of Majors Probyn and Hooper Surgeon Lieutenant, January 29th, 1896; Captain, January 29th, 1899. Their war records are as follow: Major Bliss, Nile Expedition, 1898, including the battles of the Atbara and Khartoum (mentioned in dispatches, promoted to be Captain, British and Egyptian medals). Major Probyn—West Africa, 1897-8, employed in the Hinterland of Lagos (medal with clasp); Sierra Leone, 1898-9 (medal with clasp); South African war, 1899-1902 (mentioned in dispatches, appointed D.S.O., Queen's medal with four clasps, and King's medal with two clasps). Major Hooper—South African war, 1899-1902, including the advance on Kimberley, actions at Belmont, Enslin, Modder River, and Magersfontein, and operations in the Orange Free State, with actions at Poplar Grove, Dreifontein, Vet River, and Zand River; also in the actions near Johannesburg, Pretoria, Diamond Hill, and Belfast, and in subsequent operations in the Orange River and Cape Colonies (mentioned in dispatches, appointed D.S.O., Queen's medal with six clasps, and King's medal with two clasps).

ARMY MEDICAL RESERVE.

Lieutenant W. G. H. Cable is confirmed in that rank.

ROYAL ARMY MEDICAL CORPS (MILITIA).

Captain (Honorary Lieutenant in the Army) J. W. Hopkins is retired, under Paragraph 55, Militia Regulations, February 4th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

Surgeon-Lieutenant T. Telfordsmith, 1st Dorsetshire Regiment, to be Surgeon-Captain, September 9th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Lieutenant H. J. Robson, Leeds Companies, Northern Command, to be Captain, September 19th.

Vital Statistics.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

The Registrar-General has now issued his return relating to the births and deaths in the third quarter of the year, and to the marriages during the three months ending June last. The marriage-rate during that period was equal to 16 0 per 1,000 persons living, or 1.3 per 1,000 less than the average rate in the corresponding quarter of the ten years, 1897-1906.

The births registered in England and Wales during the quarter ending September last numbered 230,058, and were equal to an annual rate of 26.1 per 1,000 of the population, estimated at 34,945,600 persons in the middle of the year; this rate is 2 5 per 1,0.0 below the mean rate in the ten preceding third quarters, and is the lowest rate recorded in the corresponding period of any year since civil registration was established. The birth-rates in the several counties last quarter ranged from 20.3 in Sussex, 21 4 in Oxfordshire, 21.6 in Dorsetshire, and 22.0 in Cornwall and in Herefordshire, to 30 1 in Carmarthenshire, 30 2 in Northumberland, 33.2 in Durham, 33.3 in Glamorganshire, and 34.7 in Monmouthshire. In seventy-six of the largest English towns, including London, the birth-rate averaged 26.5 per 1,000; in London the rate was 25 2 per 1,000, while it averaged 27 1 per 1,000 in the seventy-five other large towns, and ranged from 16.6 in Bournemouth, 16.9 in Halifax, 17 0 in Hastings, 17.5 in Hornsey, 19.9 in Bradford, 20 6 in Northampton, and 20 8 in Handsworth (Staffs.), to 33.6 in Sunderland, 33 7 in Middlesbrough, 33 9 in Rotherham, 34.7 in Merthyr Tydfil, and 35 3 in Rhondda.

The births registered during the quarter under notice were 123,559 in excess of the deaths; this represents the natural increase of the population during the period. From returns issued by the Board o

Trade, it appears that the passenger movement between the United Kingdom and places out of Europe showed a net balance outward of 103 934. There was an outward balance of 48,t07 English passengers, 12,0 6 Scottish, 13,989 Irish, and 29.665 passengers of foreign nationality, while those whose nationality was not stated showed an inward balance of 343. The balance of English passengers was 14 per cent. greater than in the corresponding period of the preceding year, that of Scottish passengers 18 per cent, and that of Irish passengers as much as 46 per cent. in excess of the numbers in the third quarter of last year.

During the three months under notice the deaths of 106,499 persons were registered, equal to an annual rate of 12 1 per 1,000, or 3 9 per 1,000 less than the average rate in the ten preceding third quarters, and lower than the death-rate hitherto recorded in any quarter. The lowest county death-rates last quarter were 9.4 in Northamptonshire, 9 7 in Essex, 9 9 in Buckinghamshire, and 10 0 in Surrey, in Berkshire, and in Middlesex; the highest rates were 13 3 in Northumberland and in Cumberland, 13 7 in Durham, 14.2 in Lancashire, and 14 5 in the North Riding of Yorkshire In seventy-six of the largest towns, with an aggregate population estimated at upwards of sixteen millions, the mean rate was 12.2 per 1,000; in 142 smaller towns, containing in the aggregate nearly five million persons, the rate averaged 11.6 per 1,000, while in the remaining and chiefly rural parts of England and Wales the rate was 12 1 per 1,000. In London the rate of mortality was 11.5 per 1 000, while it averaged 12.5 in the seventy-five other large towns, and ranged from 6 5 in Hornsey, 7.5 in King's Norton, 8.0 in Willesden and in Leyton, 8 5 in Walthamstow, and 8.6 in East Ham, to 15.0 in Hanley and in Stockton-on-Tees, 15 6 in Great Yarmouth and in St. Helens, 15.9 in Sunderland, and 16.4 in Liverpool.

The 106,499 deaths from all causes in England and Wales included 10.620 which resulted from the principal infectious diseases; of these, 3,811 were referred to diarrhoea, 2,312 to measles, 2,283 to whooping-cough, 1,048 to diphtheria, 675 to scarlet fever, and 491 to "fever" (principally enteric). The mortality from these diseases was equal to 1.21 per 1,000, against an average rate of 3 25 per 1,000 in the corresponding periods of the ten preceding years; the rates of mortality from measles and from whooping-cough slightly exceeded the average, while those from each of the other diseases showed a decline.

The rate of infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 99 per 1,000, the average rate in the third quarters of the ten preceding years having been 187 per 1,000. Among the several counties the rates ranged from 49 in Wiltshire, 51 in Dorsetshire, 56 in Buckinghamshire, 60 in Hertfordshire, and 66 in Northamptonshire, to 111 in the East Riding of Yorkshire, 112 in Staffordshire, 113 in Durham, 118 in Nottinghamshire and in the West Riding of Yorkshire, and 128 in Lancashire. In seventy-six of the largest towns the mean rate was 109 per 1,000; in London it was 98, while among the seventy-five other large towns it averaged 113, and ranged from 49 in Hastings, 56 in Hornsey, 60 in Croydon, 61 in Leyton, 62 in Huddersfield, and 67 in Walthamstow, to 148 in Hanley, 152 in Wigan, 153 in St. Helens, 153 in Walsall, and 165 in Sheffield.

The mortality in England and Wales during the quarter under notice among persons aged between 1 and 10 years was equal to 6.3 per 1,000 of the population estimated to be living at this group of ages; the average rate in the ten preceding third quarters was 7.5 per 1,000. In the seventy-six large towns the death-rate at this age-group averaged 6 6, being 6.3 in London, and ranging from 2.8 in Hornsey, 3.7 in Willesden, 4 0 in King's Norton, and 4 3 in Bournemouth to 8 9 in St Helens, 9.1 in Liverpool, 9.3 in Sunderland, and 9.6 in Merthyr Tydfil.

Among persons aged 60 years and upwards the mortality was at the rate of 51 7 per 1,000 of the population at this age-period, the mean rate in the corresponding periods of the ten preceding years having been 53 3 per 1,000. In the seventy-six towns the rate was 53 0 per 1,000; in London it was equal to 49.4 per 1,000, while among the other large towns it ranged from 33.1 in Leyton, 35 3 in King's Norton, 35 8 in Coventry, and 36.2 in Walthamstow to 70.2 in Preston, 70 3 in Oldham, 71.1 in Stockton-on-Tees, 71.5 in Barrow-in-Furness, and 81.6 in Hanley.

The mean temperature of the air during the quarter was below the average. The rainfall was very considerably below the average, owing mainly to the prolonged drought in September; in London the amount measured did not exceed 69 per cent. The duration of bright sunshine in London amounted to 498 hours, or 32 hours less than the average.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,407 births and 4,499 deaths were registered during the week ending Saturday last, November 9th. The annual rate of mortality in these towns, which had been 15 7, 14 6, and 15.7 per 1 000 in the three preceding weeks, declined again to 14 6 per 1,000 last week The rates in the several towns ranged from 6.4 in Croydon, 7.0 in Walthamstow, 8 3 in King's Norton, 8 4 in East Ham, 8 8 in Aston Manor, and 9 3 in Hornsey and in Hastings, to 20 1 in Stockport, 20 2 in Bootle, 20.5 in Liverpool, 20.7 in Stockton-on-Tees, 21 8 in Halifax, 23 3 in Merthyr Tydfil, 23.5 in Wigan, and 25 6 in Hanley. In London the rate of mortality was 13 9 per 1,000 while it averaged 15 0 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1 3 per 1,000 in the seventy-six large towns, the rate in London from the same diseases being also 1.3 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 2 6 in Reading, in Stockport and in Oldham, 2 7 in Walsall and in Swansea, 3 0 in Warrington, 3.4 in Barrow-in-Furness, and 6 2 in Merthyr Tydfil. Measles caused a death-rate of 1 3 in Reading, 1.4 in Cardiff, 2 0 in Burton-on-Trent, 2 5 in Barrow-in-Furness, and 4.8 in Merthyr Tydfil; scarlet fever of 1 5 in West Bromwich; whooping-cough of 1 5 in Warrington and in Oldham; and diarrhoea of 1.5 in Portsmouth, 1.6 in Swansea, 1 8 in Preston and in York, and 2 2 in Walsall. The mortality from diphtheria and from enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which has been 4,993, 5,197 and 5,467 at the end of the three preceding weeks, has further risen to 5,604 at the end of last week; 867 new cases were admitted during the week, against 820, 793, and 832 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, November 9th, 883 births and 530 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been equal to 14 0, 14.4, and 16.4 per 1,000 in the three preceding weeks, declined again last week to 15 3 per 1,000, but was 0.7 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rate ranged from 11.7 in Aberdeen and 13 1 in Edinburgh to 17.5 in Leith and 19 0 in Greenock. The death-rate from the principal infectious diseases averaged 2 2 per 1,000 in these towns, the highest rates being recorded in Dundee, Paisley, and Greenock. The 270 deaths registered in Glasgow included 21 which were referred to measles, 3 to diphtheria, 7 to whooping-cough, 6 to diarrhoea, and 3 to cerebro-spinal meningitis. Six fatal cases of measles, 2 of whooping-cough, and 4 of diarrhoea were recorded in Dundee; 2 of diarrhoea in Paisley; 2 of whooping-cough in Leith; and 3 of diarrhoea in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 26th, 529 births and 371 deaths were registered in six of the principal Irish towns as against 474 births and 373 deaths in the preceding period. The annual death-rate in these towns, which had been 22 5, 21 2, and 22 2 per 1,000 in the three preceding weeks fell to 18.7 per 1,000 in the week under notice, this figure being 4 1 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 13 5 in Londonderry and 17.5 in Waterford to 19.9 in Cork and 23 2 in Belfast The zymotic death-rate in the same six Irish towns averaged 3.0 per 1,000 or 0.2 per 1,000 higher than during the preceding period, the highest figure—5.5—being recorded in Limerick. The principal cause of death under this heading was measles.

During the week ending Saturday, November 2nd, 503 births and 366 deaths were registered in six of the principal Irish towns, as against 529 births and 371 deaths in the preceding period. The annual death-rate in these towns, which had been 21.2, 22.2, and 18 7 per 1,000 in the three preceding weeks, rose to 18 8 per 1,000 in the week under notice, this figure being 3.1 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 14.7 in Londonderry and 15.6 in Waterford to 21.1 in Dublin and 23.3 in Limerick. The zymotic death-rate in the same six Irish towns averaged 2.8 per 1,000, or 0 2 per 1,000 lower than during the preceding period, the highest figure—6 8—being recorded in Limerick. The number of deaths ascribed to measles was smaller than in the preceding week.

Vacancies and Appointments.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

VACANCIES.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Surgical Officer. Salary, £80 per annum.

BIRMINGHAM: EAR AND THROAT HOSPITAL.—House-Surgeon. Salary at the rate of £70 per annum.

BODMIN: CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer. Salary, £140, rising to £160 per annum.

BRENTWOOD: ESSEX COUNTY ASYLUM.—Fourth Assistant Medical Officer. Salary, £150 per annum.

DUBLIN: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Resident Medical Officer. Salary, £300 per annum.

DUDLEY: GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, £100 per annum, rising to £120.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary at the rate of £80 and £70 per annum respectively.

GLOUCESTER GENERAL INFIRMARY.—Assistant House-Surgeon. Remuneration at the rate of £80 per annum.

HAVERFORDWEST RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary, £150 per annum.

LEICESTER POOR-LAW INFIRMARY.—Second Resident Assistant Medical Officer. Salary, £120 per annum.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Bridge Road, S.W.—Research Studentship. Value £150

MANCHESTER ROYAL INFIRMARY.—Medical Registrar. Salary, £70 per annum.

MELROSE: ROXBURGH DISTRICT ASYLUM.—Assistant Medical Officer. Salary, £150 per annum.

MIDDLESBROUGH UNION.—Resident Workhouse Medical Officer and Medical Officer of the Children's Homes. Salary, £175 and £75 per annum respectively.

MIDHURST: KING EDWARD VII SANATORIUM.—Pathologist. Salary, £250 per annum.

MONTROSE ROYAL ASYLUM.—Senior Assistant Medical Officer. Salary, £200 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Honorary Radiographer.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Honorary Dental Surgeon.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary, £160 for first year, £180 afterwards.

NORTH-EASTERN HOSPITAL FOR SICK CHILDREN, Hackney Road, E.—Assistant Physician.

NORWICH CITY ASYLUM. Hellesdon-next-Norwich.—Assistant Medical Officer. Salary, £130 per annum.

NORWICH: JENNY LIND INFIRMARY FOR CHILDREN.—Lady Resident Medical Officer. Salary, £50 per annum.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Clinical Assistants.

SHANGHAI MUNICIPAL COUNCIL.—Assistant Medical Officer of Health. Salary, about £580 per annum.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—House-Surgeon. Salary, £60 per annum.

ST. GEORGE'S HOSPITAL, S.W.—Senior Radiographer.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Physician. Honorarium, £30 for six months.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck Street, W.—Resident Medical Officer. Salary at the rate of 50 guineas per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—House-Physician for six months.

WINDSOR AND ETON ROYAL DISPENSARY AND INFIRMARY.—House-Surgeon. Salary, £110 per annum and £10 for lectures to nurses.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary, £80 per annum.

YORK COUNTY HOSPITAL.—House Physician. Salary, £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Axminster, Devonshire, and Sherburn, Yorkshire.

APPOINTMENTS.

DIGHTON, Chas. A. Adair, M.B.Ed., House-Surgeon, at the Infirmary, Peterborough.

DOONAN, J. A. C., M.B., C.M.Glas., Certifying Factory Surgeon for the Northwich District, co. Chester.

JEPHCOTT, C., M.B., B.C.Camb, Medical Officer of the Chester Union Workhouse.

JOSCELYNE, Arthur E, M.R.C.S., L.R.C.P., and L.S.A., Public Vaccinator for Taunton, vice A. D. Willcocks, M.R.C.S., L.S.A., resigned.

LUARD, H. B., M.B., B.S.Camb., Certifying Factory Surgeon for the Osmotherley District, co. York, and District Medical Officer of the Northallerton Union.

MCEWAN, Thos. Duncan, M.B., Ch.B.Glasg., Junior Assistant Physician to the Glasgow Royal Asylum.

SHAW, Charles John, M.D.Edin., Senior Assistant Physician to the Glasgow Royal Asylum.

WHITE, C. C. C K., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Settle Union.

WHITEHEAD, C. B, M.B.Lond., M.R.C.S., District and Workhouse Medical Officer of the Richmond (York) Union.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

CORNER.—On November 9th, at 37, Harley Street, the wife of Edwd. M. Corner, of a daughter.

SPEIRS.—On the 7th November at The Cedars, Diss, Norfolk, to Dr. and Mrs. H. Meredith Speirs—a daughter.

MARRIAGES.

FAIRLIE CLARKE—LYELL.—On October 31st, at S Stephens, Gloucester Road, S.W., by the Rev. Canon J. Erskine Clarke, Chaplain to the King, assisted by Canon Shearne, Allan Johnston Fairlie Clarke, M C., F.R.C S., of Horsham, Sussex, youngest son of the late W. Fairlie Clarke, M.D, F.R.C S, to Violet. elder daughter of Captain F. H. Lyell, of 2, Elvaston Place, S.W., and Ruckmans, Oakwood Hill, Surrey.

LEGAT—EDIS.—At Sheringham, Norfolk, on October 12th, Robert Eddowes Legat, M B., Ruthven, Cromer. eldest son of the late Robert Legat, W.S., Musselburgh Park, N.B., to Katharine, youngest daughter of the late Arthur W. Edis, M.D., F.R.C.P., London.

DEATH.

HOLDEN.—On October 27th, very suddenly, Francis John Holden, M.B., C.M., second son of the late Dr. Holden, J.P., and Mrs. Holden, Cromwell Terrace, Preston, Lancashire, in his 34th year.

DIARY FOR THE WEEK.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

PATHOLOGICAL SECTION, 20, Hanover Square, W., 8.30 p.m.—Papers: A Contribution to the Study of the Relationship between Avian and Human Tuberculosis, by Mr. Shattock and Drs. Seligmann, Dudgeon, and Panton. Some Experiences with the Tuberculin Ophthalmic Reaction, by Mr L T. Austin and Dr. O. Grünbaum. A Case of Periosteal Abscess due to a *Bacillus paratyphosus*, by Dr. F. G. Bushnell.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

EPIDEMIOLOGICAL SECTION, 20, Hanover Square, W., 5.30 p.m Dr. Myer Coplans: Medical Inspection in School—The Gloucestershire Scheme.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Tuesday and Friday, 3.45 p.m., Clinical Pathology.

CHARING CROSS HOSPITAL, W.C.—Thursday, 4 p.m., X-Ray Diagnosis.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Friday, 3 p.m., The Symptoms and Treatment of Locomotor Ataxia.

HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E.—Monday, 5 p.m., syphilis; Wednesday, 5 p.m. Tubercle; Saturday, 5 p m., Leprosy, Rhinoscleroma, Mycosis Fungoides.

HOSPITAL FOR NERVOUS DISEASES, Welbeck Street, W.—Thursday, 5 p m., The Indications of Arthrodesis of the Shoulder Joint.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m, Torticollis.

LONDON SCHOOL OF CLINICAL MEDICINE.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2 30 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m. Monday, and noon Thursday; Skin, at noon and 4 p.m. Tuesday and at noon Friday; Eye, 11 a.m. Wednesday and Saturday; Radiography, 4 p.m. Thursday. Special Lectures: Monday, 3.15 p.m., Hepatic Abscess. Wednesday, Disseminated Sclerosis.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Out-patient Department, Fitzroy Square, W.—Thursday, 5 p.m., Demonstration: Cases of Heart Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3 30 p m. Cases in the wards; Friday, 3.30 p.m., Muscular Atrophy.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's Hospital, Tottenham, N.—The following are the Clinics and Demonstrations for next week:—Monday, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Throat, *X* Ray; Tuesday, 10.30 a m., Medical Out-patient; 2 30 p m, Operations, Gynaecological and Surgical Out-patient; 4.30 p m., Lantern Demonstration: Cancer of the Face. Wednesday, 2 30 p.m., Medical Out-patient, Skin and Eye; Thursday, 2 30 p.m. Gynaecological Operations, Medical and Surgical Out-patient and *X* Ray: 3 p.m., Medical In-patient; 4 30 p m., Demonstration of Selected Chest Cases (at the Mount Vernon Hospital, Hampstead). Friday, 10 a.m., Surgical Out-patient; 2.30 p m., Operations, Medical Out-patient and Eye; 3 p.m., Medical In-patient.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W—The following arrangements have been made for next week: Daily, 2 p m., Medical and Surgical Clinics, *X* Rays: 2.30 p.m., Operations. Monday and Thursday, and Wednesday and Saturday, 2 p m., Diseases of the Eye. Tuesday and Friday, 10 a m., Gynaecological Operations; 2 p.m., and Wednesday and Saturday at 10 a.m., Diseases of the Throat, Nose, and Ear; Wednesday, 10 a m., Diseases of Children. Tuesday and Friday, 2.30 p.m., Diseases of the Skin. Wednesday and Saturday, 2.30 p m., Diseases of Women. Lectures: Monday, at 12 noon. Pathological Demonstration. At 5 p m., Practical Surgery; Tuesday, Neuralgiae and their Treatment; Wednesday, Fractures of the Jaw. Thursday, Cases of Diseases of the Eye; Friday, Cases of Skin Disease.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Monday, 5.30 p m, The Movement of the Mandible, their Relation to the Production and Treatment of Abnormal Articulation of the Teeth and to the Articulation of Artificial Dentures.

BOOKS, ETC., RECEIVED.

Squint and Ocular Paralysis. By E. L. Hughes, M.R.C.S., L.R.C.P. London: H. K. Lewis. 1907. 6s 6d.

London: W. B. Saunders Co., 1907:

Surgery, Its Principles and Practice. By Various Authors. Edited by W. W. Keen, M.D., LL.D. Vol. II. 30s.

A Textbook of Clinical Anatomy. By D. N. Eisendrath, A.B., M.D. Second edition. 21s.

A Textbook of Physiology. By W. H. Howell, Ph.D., M.D., LL.D. Second edition 18s.

The Operating Room and the Patient. By R. S. Fowler, M.D. Second edition. 10s

Chats about Wine. By C. E. Hawker. London: Daly and Co. 1907. 2s. 6d.

Index-Catalogue of the Library of the Surgeon-General's Office, U. S. Army. Authors and Subjects. Second Series Vol xii, O.—Periodicals. Washington: Government Printing Office. 1907.

The Laboratory and Other Poems. By W. A. Osborne. Melbourne: T. C Lothian. 1907.

The Chronicles of Berthold Darnley. Edited by W. Sherren. London: F. Griffiths. 1907. 6s.

Das enge Becken. Von Dr. H. Peham. Wien and Leipzig: A. Hölder. 1908. M. 5.40.

Pathologische Physiologie. Von Dr. L. Krehl. Fünfte Auflage. Leipzig: F. C. W. Vogel. 1907. M. 15.

Glasgow: F. Bauermeister; and Wiesbaden: J. F. Bergmann, 1907:

Urologisch-Kystoskopisches Vademecum. Von Dr. R. Wohlauer. (1) Ueber Bleibe-Klystiere. (2) Zur Palpation des Abdomens. Von Dr. A. Pollatschek. (Sonderabdruck aus der Berliner klin Wochenschrift, 1906, Nos. 19 and 21.)

Die therapeutischen Leistungen des Jahres. 1906. Bearbeitet vom Herausgeben Med. and Chir. Dr. A. Pollatschek and Med. u. Dr. H. Nádor. XVIII. Jahrgang.

Descriptive Biochemie mit besonderer Beruksichtigung der chemischen Arbeitsmethoden. Von Dr. S. Fränkel.

Handbuch der Geburtshülfe. In drei Banden Herausgegeben von F. von Winckel. Dritter Band, III. Teil.

Lehrbuch der Kystoskopie ihre Technik and klinische Bedeutung. Von Dr. M. Nitze. Zweite Auflage.

Employers' Liability to their Servants at Common Law, and under the Employers' Liability Act, 1880, and the Workmen's Compensation Act, 1906. By C. Y. C. Dawbarn, M.A. Third edition. Notes on the Canadian Law, by A. C. F. Boulton, M.P. London: Sweet and Maxwell, Ltd.; and Toronto: The Carswell Co., Ltd. 1907. £1 1s.

*** **In forwarding books the publishers are requested to state the selling price.**

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
NOVEMBER.	
17 Sunday ...	
18 MONDAY	
19 TUESDAY ...	MARYLEBONE DIVISION, *Metropolitan Counties Branch*, Rooms of the Medical Society, 11, Chandos Street, W., 5 p.m.
20 WEDNESDAY	CARDIFF DIVISION, *South Wales and Monmouthshire Branch*, Cardiff. LANCASHIRE AND CHESHIRE BRANCH, Ethical Committee of the Branch, Royal Infirmary, Manchester, 4.30 p.m.
21 THURSDAY...	GLOUCESTERSHIRE BRANCH, Infirmary, Gloucester, 7 p.m.; Supper, Wellington Hotel, after the meeting. LEIGH DIVISION, *Lancashire and Cheshire Branch*, Co-operative Hall, Ellesmere Street, 8.30 p.m.
22 FRIDAY ...	
23 SATURDAY...	
24 Sunday ...	
25 MONDAY ...	
26 TUESDAY ...	
27 WEDNESDAY.	BATH AND BRISTOL BRANCH, Bath.
28 THURSDAY...	CITY DIVISION, *Metropolitan Counties Branch*, Special Meeting, Hackney Town Hall, 4 p.m. STAFFORDSHIRE BRANCH, North Stafford Hotel, Stoke-on-Trent, 3.45 p.m.; Dinner, 6.30 p.m.
29 FRIDAY ...	
30 SATURDAY...	
DECEMBER.	
1 Sunday ...	
2 MONDAY ...	
3 TUESDAY ...	ST. PANCRAS AND ISLINGTON DIVISION, *Metropolitan Counties Branch*, Temperance Hospital, Hampstead Road, N.W., 4 p.m.
4 WEDNESDAY	LONDON: Medical Inspection of School Children Subcommittee, 2 p.m. LANCASHIRE AND CHESHIRE BRANCH, Council Meeting, Liverpool Medical Institution, 4.30 p.m. NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH, Friend's Hall, Lancaster, 3.45 p.m.
5 THURSDAY...	ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, General Meeting. FOLKESTONE DIVISION, *South-Eastern Branch*, Victoria Hospital, Folkestone, 8.30 p.m.
6 FRIDAY ...	LONDON: Standing Ethical Subcommittee, 2 p.m.
7 SATURDAY...	
8 Sunday ...	
9 MONDAY ...	
10 TUESDAY ...	LONDON: Organization Committee, 11 a.m. LONDON: Life Insurance Examinations Subcommittee, 3 p.m.
11 WEDNESDAY	
12 THURSDAY...	LONDON: Joint Hospitals Committee, 2.30 p.m.
13 FRIDAY ...	
14 SATURDAY...	
15 Sunday ...	
16 MONDAY ...	
17 TUESDAY ...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 23RD, 1907.

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Reports of Standing Committees.

MEDICO-POLITICAL COMMITTEE.

A MEETING of the Medico-Political Committee was held at the Central Offices on October 9th, when there were present: Mr. Edmund Owen, F.R.C.S. (Chairman of Council), Dr. Edwin Rayner (Treasurer), Mr. H. W. Armit, Dr. Alfred Cox, Mr. C. E. S. Flemming, Dr. G. E. Haslip, Sir Victor Horsley, F.R.S., Dr. F. C. Martley, Dr. J. A. Macdonald, Dr. W. L. Muir, Mr. E. H. T. Nash, Mr. C. H. Watts Parkinson, Dr. Cecil E. Shaw, Mr. C. R. Straton, and Mr. F. E. Apthorpe Webb.

Election of Chairman: Standing Orders.

Dr. J. A. Macdonald was re-elected Chairman of the Committee for the year 1907-8; and certain standing orders were adopted, among others one authorizing the Chairman to take such action as might be necessary in cases of unqualified practice in which the Solicitor advised that there is a *prima facie* case.

Notification of Births Bill.

The Committee received Sir Victor Horsley's report upon the result of the recent deputation to the President of the Local Government Board and Lord Robert Cecil on the Notification of Births Bill, and a report of correspondence with Dr. Cooper, M.P., and resolved that a circular should be issued to the Divisions pointing out that the Notification of Births Act is adoptive only, and that it rests with them to make such representations to local sanitary authorities as will prevent injustice to the profession.

Appointment and Reappointment of Subcommittees.

In pursuance of the instructions of the Annual Representative Meeting, subcommittees were appointed or reappointed as follows:

1. The Contract Practice Subcommittee was reappointed.

2. The Parliamentary Subcommittee was reappointed to carry out the instructions of the Representative Meeting with regard to communications to be addressed to Parliamentary candidates at elections and by-elections. The Bill to amend and consolidate the Medical and Dentists Acts was referred again to this Subcommittee, and the joint Subcommittee with the British Dental Association was reappointed.

3. A special Subcommittee was appointed to consider the mode in which the medical inspection of school children should be carried out, and was authorized to act in any emergency in accordance with the principles approved by the Representative Meeting.

4. The Lunacy and Inebriates Acts Subcommittee was reappointed to continue the action already approved by the Council and the Representative Meeting with regard to the provision which should be made for the care of lunatics and inebriates.

5. The Midwives Subcommittee was reappointed, with special instructions to draw attention to the existing power of local authorities under Section 133 of the Public Health Act to remunerate any medical man called in by a midwife under the Midwives Act.

6. The Coroners' Subcommittee and the Public Morality Subcommittee were reappointed.

7. A special Subcommittee was appointed to consider and report as to action to be taken with regard to patent and proprietary medicines.

8. To deal further with the question of the remuneration paid for medical examinations by life insurance companies.

9. To deal further with the matter of fees to medical witnesses and in police emergency cases, with special regard to the operation of the recent order issued after the report of the Departmental Committee.

10. The joint Subcommittee with the Ophthalmological Society was reappointed to watch the Sight Testing Opticians Bill, and to take such action as may be necessary in an emergency in accordance with the principles laid down.

Diploma to Nurses.

The scheme recently instituted by the Royal British Nurses' Association for a diploma to nurses was referred to a Subcommittee consisting of the *ex officio* members, together with Sir Victor Horsley, for consideration and report.

Irish Business.

The Chairman and Secretary were instructed to draft a communication to the Royal Commission on the Poor Laws with reference to the Irish Poor-law system, and the question of the methods of procedure of Inspectors under the Irish Local Government Board in conducting inquiries as to the conduct of Poor-law medical officers was referred to the Irish Committee.

NAVAL AND MILITARY COMMITTEE.

A meeting of this Committee was held at the Central Offices on October 18th, when there were present: Mr. Edmund Owen (Chairman of Council), Fleet Surgeon E. J. Biden, R.N., Surgeon-General Sir Charles Cuffe, C.B., Surgeon Lieutenant-Colonel D. Curme, Surgeon Colonel G. S. Elliston, Surgeon-General G. J. H. Evatt, C.B., and Colonel C. H. Joubert de la Ferté, I.M.S.

Election of Chairman.

Colonel Joubert de la Ferté was reappointed Chairman of the Committee for the year 1907-8.

Position of Director-General A.M.S.

As was stated in the annual report of the Central Council, representations were made some years ago to Mr. Arnold Forster pointing out that it was desirable that the Director-General of the Army Medical Service should be a member of the Army Council; similar representations were again made to the present Secretary of State for War, and calling attention to the fact that the question was not one of representation of a certain department of the army on the Army Council but of securing that medical and hygienic considerations received due weight in all administrative decisions. The receipt of the following letter, written by Mr. Haldane's direction, was reported to the Committee:

War Office,
May 31st, 1907.

Dear Sir,—I am desired by the Secretary of State to refer to your letter of the 20th March last, further regarding the position of the Director-General of the Army Medical Service, in which you urge on behalf of the British Medical Association that he should become a member of the Army Council.

Your letter has received Mr. Haldane's most careful consideration, and in order to avoid any possibility of misconception, I am to say, in the first place, that the Secretary of State fully identifies himself with the observation made in your previous communication of the 28th September regarding the acknowledged "recognition by students of military science of the fundamental importance of the health of troops, and the consequent importance of that service which is specially devoted to the protection of health." Mr. Haldane entirely concurs with your Council in their estimate of the importance of the efficiency of the Medical Service.

Looking at the matter, however, from the point of view of the departmental arrangements necessary in practice to attain this object, the Secretary of State cannot but think, from his knowledge of this part of the question, that the situation may have been somewhat misconceived. The business of army administration covers a field so extensive as to embrace many important departments of expert professional knowledge which are not, and could not, consistently with efficient administration, be represented on the Army Council, though, like the Medical Service, they must influence the larger questions of army policy.

In regard to all such great branches of army business the Council must rely on the assistance of their expert advisers. This assistance is freely sought at every stage of discussion and action, so that it would be incorrect to suppose, as is perhaps assumed in the third paragraph of your letter under reply, that the Council reach or execute decisions without prior reference to the representatives of the numerous interests concerned.

The Director-General, supported as he is by the extremely valuable assistance and authority of the Advisory Board, has already wide administrative powers, with access, on his own initiative, to the Secretary of State and the Army Council, and having regard to all the circumstances of the case, Mr. Haldane, whilst appreciating in the highest degree the motives which have prompted your Council to address him on the subject, does not see his way to carry out the change which you suggest.

I am, Sir,
Yours faithfully,
(Signed) A. E Widdows,
Private Secretary.

J. Smith Whitaker, Esq.,
Offices of the British Medical Association,
429, Strand, W.C.

After careful consideration the Committee made a recommendation to the Council on the subject (for resolutions of Council see "Proceedings," Supplement to the British Medical Journal, November 9th, p. 265).

Payment of Passages of Officers' Families.

It was reported that the following reply concerning the payment of the passage money of the families of medical officers had been received, and satisfaction was expressed at the success which had attended the efforts of the Association in this matter.

India Office,
Whitehall, London, S.W.,
July 30th, 1907.

Sir,—With reference to this office letter of the 18th June, 1907, No. M 7772, I am directed to inform you that officers of the Royal Army Medical Corps who, upon proceeding to or from India, are placed on duty with troops on board ship, have hitherto been granted free passages for their wives and families, and this concession has covered the cases of the large majority of officers.

From the beginning of September next officers who are proceeding "on duty" will receive passages for their wives and families, whether they do duty with troops on board ship or not, when embarked in transports. Officers who cannot embark in transports will not be entitled to passages by private steamers for their wives and families, but the family can proceed either in an earlier or a later transport. The same concession will be allowed when the officers proceed on long leave on medical certificate.

An officer who is seriously ill and is sent home "for preservation of life" by a private steamer is already allowed free passages for his wife as an attendant, and, in future, the children and a nurse, if any, will in these circumstances receive free passages by the same steamer.

I am, Sir,
Your obedient Servant,
(Signed) O. M. Creagh,
Lieut.-General,
Military Secretary.

The Medical Secretary,
British Medical Association,
6, Catherine Street,
Strand, W.C.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

BIRMINGHAM BRANCH:

Nuneaton and Tamworth Division.

A meeting of this Division was held at the Tamworth General Hospital on November 5th.

The Referendum.—Dr. Milner Moore, the Representative of the Division, attended and explained the minutes of the Representative Meeting referred to the Divisions by the Council. The minutes were considered and voted on seriatim. Minutes Nos. 123, 299, 303, 328, 330, 342, and 346 were approved unanimously. Minutes Nos. 283, 287, 293, 298 were approved with one dissentient.

BORDER COUNTIES BRANCH:

Scottish Division.

A meeting of this Division was held in the Douglas Arms Hotel at Castle Douglas on Thursday, October 31st, at 3 p.m. Dr. Murdoch of Annan in the chair.

The Referendum.—Dr. Murdoch introduced the subject. Dr. Maxwell Ross gave a lucid account of the present position of affairs. A discussion followed in which all the members present took part; the various points were then voted upon.

Paper.—Dr. W. S. Syme then read a paper, illustrated by specimens, on Simple Nasal Obstruction. He described the commoner causes of the condition, and the effects, both local and general, to which it gives rise. Special reference was made to the effects in the middle ear. The treatment was considered in a general way. The results of the re-establishment of sufficient nasal breathing is most pleasing as a rule, and this applies both to the neighbouring dependent affections and to the general health.

DORSET AND WEST HANTS BRANCH:

West Dorset Division.

The autumn meeting of this Division was held at the Yeatman Hospital, Sherborne, on Thursday, November 7th, at 3 p.m. Dr. Macdonald in the chair. Nine members were present.

The Referendum.—The Referendum Report of the Council was considered and voted upon. Minute 123 was approved by a majority. Minutes 283, 287, 293, 298, 299 and 303 were disapproved by a majority of 8 to 1. Minutes 328, 330, 342 and 346 were disapproved of unanimously.

The Hygienic Training of Teachers.—A letter from Mrs. A. Watt Smyth urging the importance of the training of school teachers in hygiene was considered, and all expressed themselves in favour thereof.

Visit to the Hospital Wards.—Afterwards the members were shown some cases of interest in the hospital wards by the medical staff.

LANCASHIRE AND CHESHIRE BRANCH:

Blackpool Division.

A special general meeting was held on Thursday, November 7th, Dr. Dunderdale in the chair, and ten members present.

The Referendum.—The Referendum report of the Council was considered. It was resolved unanimously to support the resolutions as passed by the meeting of Representatives. A separate vote was taken on each minute of the Representative Meeting referred to the Divisions, the voting in each case being 10 for and none against.

Notification of Births Act.—The meeting then considered the Notification of Births Act, 1907, and passed the following resolution:

> That this meeting of the Blackpool Division, whilst approving of the objects of the Notification of Births Act, 1907, and wishful to aid in every way in the reduction of infantile mortality, desires to protest against the imposition on the members of the medical profession of a duty to notify births, under penalty for non-compliance, without any arrangement for the payment of a fee to the medical man for a service rendered for the sake of the community.

It was further resolved:

> That copies of the above resolution be forwarded to each member of the Division, to the Honorary Secretary of the Lancashire and Cheshire Branch, and to the Chairman of the Health Committee of the Blackpool Council.

Liverpool (Northern) Division.

A meeting of the Division was held at the Medical Institution on November 6th, Dr. A. Ivor Thomas (Vice-Chairman) being in the chair, and four other members present; fifty members were absent.

Confirmation of Minutes.—The minutes of the annual meeting were read and confirmed.

Election of Chairman.—This office being vacant owing to the death of Dr. R. S. Archer in August last, it was proposed by Dr. Blackledge, seconded by Dr. Matthews, and resolved unanimously:

> That Dr. A. Ivor Thomas be elected Chairman for the remainder of the current year.

Election of Vice-Chairman.—It was proposed by Dr. Thomas, seconded by Dr. Blackledge, and resolved unanimously:

> That Dr. S. Matthews be elected Vice-Chairman for the remainder of the current year.

The late Dr. Archer.—It was proposed by Dr. Davies, seconded by Dr. Matthews, and resolved unanimously:

> That a vote of condolence be sent to Mrs. Archer and Mr. Robert Archer on the death of the late Dr. R S. Archer.

Referendum on Draft Charter.—The voting was as follows: Minutes of Representative Meeting, Nos. 123, 283, 287, 293, 298, 299, 328, and 330—5 voted for, none against; Nos. 303, 342, and 346—5 voted against, none for.

Central Emergency Fund.—A letter from the Medico-Political Committee, dated July 2nd, 1907, was read, inviting the support of Branches and Divisions to this Fund. Owing to the meagre attendance, however, no decision was come to.

METROPOLITAN COUNTIES BRANCH:

Kensington Division.

A meeting was held at the Cancer Hospital, Fulham Road, S.W., on Thursday, November 7th, at 4.45 p.m., Dr. A. J. Rice Oxley, Vice-Chairman, in the chair.

Resignation of Chairman.—A letter was read from Sir John Tyler resigning the chairmanship of the Division in consequence of ill-health. Sir John Tyler's resignation was accepted with regret, and with hope for his speedy recovery.

Cases and Specimens.—After welcoming the members to the hospital, Mr. F. B. Jessett showed five specimens of cancer of the uterus. He emphasized the possibility of fibroids being associated with carcinoma, and expressed the opinion that when fibroids lead to symptoms they should always be removed. After remarks by Mr. T. R. Atkinson and Dr. Rice Oxley, Mr. Jessett replied. Mr. Charles Ryall showed a case illustrating the avascularization method of treating advanced carcinoma of the mouth. He also showed an instrument for occluding deep-seated vessels with a metal ligature. Mr. Cecil Leaf showed (1) two cases of excision of the rectum for cancer, with specimens; (2) two patients operated on for cancer of the breast by Halsted's method; (3) a case of Paget's disease of the nipple, probably with carcinoma beneath it; (4) a patient with perforating ulcer of the great toe. Mr. W. E. Miles showed two cases of abdomino-perineal excision of the rectum. He also described a new operation for the radical cure of femoral hernia by means of a decalcified bone plate. Mr. Howell Evans showed (1) a woman with a syphiloma of the breast; and (2) a woman with an abdominal tumour. Mr. Jocelyn Swan showed three cases of cancer of the breast treated by extensive operation, which demonstrated the fact that removal of both pectoral muscles does not interfere with movements of the arm. Mr. Swan also gave a demonstration on the use of the cystoscope.

Lantern Demonstration.—Mr. Howell Evans gave a lantern demonstration illustrating the relation of certain embryonic cystic conditions to malignant disease.

Paper.—Mr. Cecil Leaf made some remarks upon the present position of the treatment of cases of inoperable cancer, especially alluding to Doyen's serum, the *x* rays, and trypsin.

Vote of Thanks.—On the proposal of Mr. T. R. Atkinson, seconded by Mr. Spencer Meerwald, a hearty vote of thanks to the staff of the hospital was carried by acclamation.

Stratford Division.

A meeting of the Stratford Division was held on Thursday evening, November 7th, at the Alexandra Hotel, High Street, Dr. Spurrell presiding. There was a large attendance of members.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

Address by Sir R. Douglas Powell.—Sir R. Douglas Powell gave a very interesting address on Some Cardio-vascular Degenerations. He dealt chiefly with the clinical aspects of the subject, and he pointed out in the course of his lecture that certain recent discoveries regarding the bands of His threw some light on many cases of arrhythmia. He was accorded a hearty vote of thanks for his address.

Compulsory Notification of Births Act.—Dr. Cursham Corner drew the attention of the meeting to the compulsory Notification of Births Act. He objected to medical men being required to notify births unless they received some remuneration. Several members took part in the discussion, and it was ultimately resolved on the proposition of Dr. Rose,

> That this Division expresses disapproval of the compulsory Notification of Births Act and requests the Executive Committee to place its views before the Borough and District Councils of the Division at the earliest possible date.

MIDLAND BRANCH:

Boston and Spalding Division.

A meeting of this Division was held on Friday, November 8th, at the White Hart Hotel, Boston, at 2.45 p.m. Dr. Miller was in the chair.

Confirmation of Minutes.—The minutes were first read and confirmed.

Payment of Cases.—It was agreed to pay to each patient attending a scientific meeting half a crown and any expenses incurred in coming to the place of meeting.

The Referendum Report.—This matter was discussed at some length, and it was finally agreed to unanimously support the resolutions of the Representative Meeting. Minutes 123, 283, 287, 293, 298, 299, 303, 328, 330, 342, 346 were carried *nem. con.*

School Certificates.—The question—who should be responsible for fees for certificates for inability to attend school through ill health? was considered. The Secretary was asked to inquire from other Divisions what is the usual practice.

Cases.—Dr. Mann showed: (1) Case of acromegaly, (2) brother and sister suffering from enormously swollen lower limbs, probably due to blocked lymphatics. Dr. South showed a case of "cuirass" carcinoma of the breast

in a woman. Dr. WILSON showed (1) Case of disseminated sclerosis, (2) case of exophthalmic goitre in a man.

Specimens.—Dr. WILSON showed: (1) Specimen of ovarian tumour (held 30 oz.) covered with numerous papillomatous growths which had been incarcerated in the pelvis causing acute intestinal obstruction; removal was followed by recovery. (2) Gastric ulcer showing large perforation removed four hours after perforation. (3) Ovary strangulated in left inguinal canal in child 12 weeks old: removal followed by recovery.

The members had tea in the hotel afterwards.

NORTHERN COUNTIES OF SCOTLAND BRANCH.

THE autumn meeting of the Branch was held at the Palace Hotel, Inverness, on Saturday, October 26th. In the absence of the President—Dr. Miller (Fort William)—Dr. BRUCE (Dingwall) occupied the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

The Referendum.—The Referendum Report of the Council along with the Minority Report was discussed, and it was unanimously resolved to record a vote against the resolutions of the Representative Meeting, the members present being of opinion that the composition and mode of election of members of Council should remain as at present, and they saw no reason for adopting the grouping of Branches as proposed by the Representative Meeting; the members deprecated any change in the Journal and Finance Committee, as they considered that the working of the JOURNAL was intimately connected with the finances of the Association.

The Teaching of Hygiene to School Children.—Dr. BRUCE (Dingwall) said that for a learned profession resting its claims on possessing a thorough knowledge of, and having had a complete training in, scientific medicine, the greatest foe in practice was that the credulous public put its trust and lavished its money on illegitimate pretenders to marvellous powers of cure Unfortunately, the Government reaped a revenue at the expense of the more foolish, and often the poorest, portion of the population from the system of so-called patent medicines. The real root of the success of quacks lay in the gross ignorance of the people at large of the laws of health. If young men and women were taught the fundamental principles which affect the working of the human body, the overpowering advantages of Nature's remedies—fresh air, wholesome food, and pure water—of regulated and systematic bodily exercise, and the evils, on the other hand, of overcrowding, ill cooked and deleterious dishes, polluted springs, and over-sedentary habits, and the abuse of stimulants, much would be done to save the rising generation from the rapacious harpies who set themselves out to live on the very vitals of the nation. So much might be said from the special point of view of the honest medical practitioner, but that was not all from the standpoint of the doctor as a good and zealous citizen of the empire. He understood better than most the reasons why the laws of health should be impressed upon the minds of the young, as he daily, nay hourly, witnessed and tried to remedy the consequences of neglect. It was, in fact, a large part of his duty to his patients to point out the serious results of such transgressions. Would not his lectures have much more effect if the ground were well prepared in the earlier and more susceptible days of youth? That hygiene should be specially taught in public elementary schools as an educational matter of primary importance, so well shown thirty years ago by Herbert Spencer in his charming book on education, no one would now attempt to deny. The difficulties were two: First, in obtaining properly qualified teachers for the purpose; and, secondly, in finding a place in the school time-table for yet another subject of study. The new bodies, the Scottish provincial committees, have already taken steps to meet the first difficulty by appointing medical lecturers in the different training colleges for public school teachers. Means should also be taken to train, by means of holiday classes, their older brethren. The curriculum might well be curtailed in several comparatively useless directions. It was of more importance for the child to know, so to speak, the geography of its own body than that of Japan or even Gloucestershire. But, as Dr. Kenwood suggested at the late International Conference, it was not absolutely necessary, at least in an ideal school with ideal teachers, to set apart a particular hour for such work. Better teach by example and let the subject continually inform all school work and the due regulation and sanitary management of the school premises. An interesting discussion followed, in which Dr. MACDONALD (M.O.H. for the County), Dr. GORDON LANG (M.O. to the Inverness School Board), Dr. LEACH (Beauly)] and Dr. MOIR took part. All were agreed that the laws of health, especially as regards pure air, cleanliness, food, water, etc., should be taught the young, and that it should form part of the school curriculum. The following resolution was unanimously approved of:

> That in the opinion of this Branch of the British Medical Association the time has come when the teaching of the laws of health should be an obligatory subject in all public schools, and that the school premises and arrangements should be such as to prove a thorough object lesson in sanitary science to the scholars in attendance.

Demonstration.—Before proceeding to the business of the meeting the members attended at the Northern Infirmary, when a demonstration was given by Dr. GORDON LANG of the new *x* ray outfit, the galvanic and faradic batteries, and other electrical appliances lately introduced into the Infirmary.

SOUTH-EASTERN BRANCH:

ISLE OF THANET DIVISION.

THE twenty-first (Clinical) meeting of this Division was held at the Seaman's Infirmary, Ramsgate, on October 31st, Dr. E. FISK in the chair. There were present at the meeting twenty members.

Cases.—Three cases were shown, examined and discussed. (*a*) Rodent ulcers. (*b*) Recurrent epithelioma of tongue. (*c*) Pathological specimen of an extrauterine fetation at six weeks.

Discussion on the Notification of Infectious Diseases and Isolation Hospitals.—Dr. STYAN read a paper on the notification of infectious diseases and the management of isolation hospitals in relation to medical practice. Dr. WHITE spoke at some length on the subject and Dr. THORNTON discussed the subject. Dr. HALSTEAD proposed and Dr. STREET seconded,

> That the discussion be postponed till the following Thursday.

This was carried unanimously.

THE adjourned meeting for further discussion of Dr. Styan's paper was held at the Seaman's Infirmary, Ramsgate, on November 7th, Dr. E. FISK in the chair. There were present nineteen members and two visitors.

Death of Dr. Tyrrell.—The CHAIRMAN mentioned with regret the death of Dr. F. Tyrrell, for many years a member of the British Medical Association, and a vote of condolence was unanimously passed to Mrs. Tyrrell in her bereavement. The HONORARY SECRETARY stated that he had ordered a wreath to be sent for the funeral.

Adjourned Discussion.—The CHAIRMAN made a few preliminary remarks in furtherance of the discussion and hoped that they would again hear the members who had spoken at the previous meeting. Dr. STYAN made a few remarks quoting figures of return cases of the district and comparing them with those of other localities. Dr. HALSTEAD, after a considerable address, and after a good deal of discussion, during which several proposals were put forward, finally proposed the following resolution:

> That the Medical Officer of the Fever Hospital be asked to arrange that, in future, a notice, signed by the Medical Officer of the Fever Hospital, be at once sent to any general practitioner who has sent in to the Fever Hospital a notified infectious case, as soon as the Medical Officer is of opinion that the notification is incorrect.

This was seconded by Dr. HICKS and carried unanimously. Dr. WHITE expressed warmly his approval of the resolution. Dr. BERTRAM THORNTON next proposed a resolution which he had foreshadowed at the previous meeting. Dr. SAWERS seconded it and it was carried unanimously. It ran as follows:

> The members of the Isle of Thanet Division of the South Eastern Branch of the British Medical Association, having devoted two meetings to the consideration of the existing facilities for dealing with infectious diseases in the Isle of Thanet, are of opinion that the arrangements for isolating doubtful cases are inadequate for the protection of the patients. They would venture to hope that the

joint Hospital Committee may favourably entertain their expression of opinion and consider the advisability of enlarging the quarantine block. They would further urge that a ward should be reserved for convalescent scarlet fever patients in order to limit as far as possible the number of "return" cases.

There was an active discussion before the resolution was passed, in which eight members joined, and the Honorary Secretary was instructed to forward the resolution to the Joint Hospital Board. Dr. Halstead next proposed and Dr. Watts seconded:

That a subcommittee be appointed to further discuss points in connexion with the notification of infectious diseases and the management of isolation hospitals in relation to medical practice.

It was decided that the medical officer of the Fever Hospital and the medical officers of health should be *ex-officio* members of the subcommittee, and that four other members of the Division be chosen by ballot. A ballot was then taken, with the result that the subcommittee was formed as follows:—*Ex officio:* Dr. Styan (M.O.H. Ramsgate), Dr. Bertram Thornton (M.O.H. Margate), Dr. Robinson (M.O.H. of East Kent District), Dr. White (M.O. of Fever Hospital). *Elected by Ballot:* Dr. Nichol (Margate), Dr. Halstead (Ramsgate), Dr. Raven (Broadstairs), Dr. Street (Westgate). Dr. Raven proposed and Dr. Brunton seconded the motion that Dr. Styan be asked to kindly allow his paper to be printed and circulated among the members of the Division. This Dr. Styan agreed to, and a hearty vote of thanks was passed to Dr. Styan for his paper. A letter was read from Dr. Hemming, who was unable to be present through illness, dealing with the subjects under discussion.

Vote of Thanks to Chairman.—A hearty vote of thanks was passed to the Chairman for presiding.

SOUTHERN BRANCH:

Guernsey and Alderney Division.

A meeting of this Division was held on Friday, November 8th, at 8 30 p m., at which there were present Dr. Corbin, in the chair, Drs. Aikman, E. L. Robinson, Benson, Bishop, Conrad Carey, Colonel Duke, Major Myles, and Drs. Wallace, Wild, and Bulteel, honorary secretary.

Original Letters of Edward Jenner.—Dr. Aikman exhibited two original letters written by Dr. Jenner, the discoverer of vaccination, which had recently come into his possession, and which he had decided to hand over to the Jenner Society in Gloucester, with the proviso that should that Society cease to exist the reversion of the letters should be, as to one of them, to the Royal College of Physicians, and as to the other, to the Lister Institute. They were written to a Mr Kelson, members of whose family afterwards settled in Guernsey. He offered a typewritten copy to the Division. Unfortunately, as shown in the appended copies, a portion of one of these had been frayed away with age:

[No. 1 Copy]

Bond Street,
29th January.

My dear Sir,—All I wish is, respecting your communication, that you would put it in the familiar form of a reply to a letter requesting you to inform me whether, from the numbers you have inoculated with vaccine matter, and from their subsequent exposure to variolous inoculation or contagion, if you are perfectly satisfied that vaccine inoculation, if properly conducted, is a safe and easy prevention of the small-pox. Then have the goodness to introduce some of your strong facts (and I am confident none can be more decisive or convincing than yours) that you gave the public in the *Journal* and any others you please.

Be so kind also to add the numbers you have inoculated.

You may conclude with a general opinion of the new practice.

Excuse the trouble I am giving you,
And believe me to be,
Your very faithful humble servant,
E. Jenner.

Bond Street,
Jan. 30, 1802.

[No. 2 Copy.]

Mr. Kelson, Bond Street,
Surgeon, 5th February, 1802.
Sevenoaks, Kent.

My dear Sir,—You must allow me to thank you for your very excellent communication. You have correctly stated everything essential in the natural history of cow-pox. If such testimonies as these will not do away with all scepticism from the House of Commons (should any remain) I know not what will.

There was a circumstance you mentioned in your first letter which I forgot to mention in mine. It does not strike me from the remark you made that the great Folk with whom you have conversed upon the subject have any conception what a sum it has cost me in establishing vaccine inoculation.

The two great points from which my fortune has suffered are these: the necessity of a residence in town for some years past (at least during the London season) to rectify the incessant blundering which the mistakes of some leading men had occasioned; these and other obvious reasons rendered my presence here necessary.

The other source of pecuniary loss arose from my country business having passed into other hands, two physicians having occupied my post since I quitted Bickley.

On the whole I may set myself
amount of £600
Parliament should not
it will be truly vexatious
myself on the generosity of my

Many suppose I am enriching myself by the practice (no such thing). I have inoculated but two children these two months.

It is not probable that children will be brought to me, when every surgeon or apothecary is, or ought to be, from the rules I have laid down, as well versed in the business as myself.

Excuse the trouble I give you,
And believe me,
Yours very faithfully,
E. Jenner

It was unanimously resolved that the typewritten copies be accepted with thanks, and kept for the Division.

Votes of Thanks.—The meeting terminated with the customary votes of thanks.

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

NOTICE.

Owing to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Bath and Bristol Branch.—The second ordinary meeting of the session will be held at the Museum, Bath, on Wednesday evening, November 27th, at 8 o'clock, Dr. E. J. Cave, President, in the chair. The following communications are expected:—(1) Newman Neild, M.B.: Some Additions to a Collection of Clinical Lantern Slides. (2) C. J. Whitby, M.D.: The Importance of Sphygmometry. (3) C. E. S. Flemming: (*a*) Notes on a Case of Poisoning by Veronal; (*b*) a Case of Acute Nephritis. (4) W. M. Beaumont: A Note on the Use of the Ophthalmo-reaction in General Practice. A Council meeting will be held at 7.55.—W. M. Beaumont and Newman Neild, Bath, Honorary Secretaries.

Border Counties Branch: English Division.—The first ordinary meeting of the Division will be held at the Cottage Hospital, Maryport, on Friday afternoon, December 13th. The Secretary will be pleased to hear from any member who will read a paper, show cases or pathological specimens.—Norman Maclaren, Carlisle, Honorary Secretary.

Lancashire and Cheshire Branch: Altrincham Division.—The next general meeting will be held in the Board Room of the Altrincham Hospital at 4.50 p.m., on Thursday, December 5th. Dr. James Niven, Medical Officer of Health for the City of Manchester, will deliver an address on Infantile Mortality. The meeting will be followed by a dinner at the Brooklands Hotel.—T. W. H. Garstang, Honorary Secretary.

Metropolitan Counties Branch: St. Pancras and Islington Division.—A meeting of this Division will be held at the Temperance Hospital, Hampstead Road, N.W., at 4 o'clock, on Tuesday, December 3rd. W. Wynn Westcott, Esq., J.P., will read a paper on Sudden Death and important matters concerning the Early Notification of Births Act will be put before the Division.—William Griffith, Honorary Secretary.

Metropolitan Counties Branch: Wandsworth Division.—A meeting of the Division will be held in the Battersea Town Hall on Thursday, November 28th, at 8 45 p.m. Drs. Latimer and McManus will give addresses on the Interests of the Profession and the Work of the General Medical Council. Non-members are invited.—C. J. Martin, 111, Northcote Road, S.W., Honorary Secretary.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH — A meeting of this Branch will be held at the Friends' Hall, Lancaster, on December 4th, at 3.45 p.m. T. H. B. Dobson, M.D.Lond., will open a discussion on Migraine. Any member willing to show cases or specimens is requested to communicate with A. S. BARLING, Honorary Secretary.

SOUTH-EASTERN BRANCH: FOLKESTONE DIVISION.—A meeting of this Division will be held at the Victoria Hospital, Folkestone, on Thursday, December 5th, at 8.30 p.m. Agenda: (1) Minutes. (2) To further discuss the Referendum Report, the Minority Report, and the Representative Report dealing with the proposed Charter, adjourned from the last meeting, and to vote on certain resolutions. (3) Some clinical cases will be shown.—P. VERNON DODD, M.D., Honorary Secretary, Folkestone.

SOUTH-EASTERN BRANCH: HASTINGS DIVISION —A meeting of this Division will be held on Thursday, November 28th, at the Eversfield Hotel. The chair will be taken by Mr. E. R. Mansell at 5 p.m. Dinner will be served at 6.45 p.m. at the Eversfield Hotel; charge 6s. 6d., exclusive of wine. Agenda: (1) Minutes of last meeting will be read. (2) Mr. C. M. H. Howell, M.B.Oxon., M.R.C.P., will read a paper entitled, Some Points about Epilepsy. (3) To receive the Report of the Representative. (4) The Referendum from the Central Council.—G. VICKERMAN HEWLAND, Honorary Secretary.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.—The next meeting of this Division will be held at the St. Mildred's Hotel, Westgate, en Thursday, November 28th, at 4 p.m., Dr. Arthur Flint in the chair. Agenda: Mr. F. Swinford Edwards, F.R.C.S.: The Importance of Sigmoidoscopy in General Practice. Report of the Executive Committee of the Division, which includes recommendations for dealing with the Referendum on the Charter (See SUPPLEMENT to the BRITISH MEDICAL JOURNAL, September 21st, 1907). It is required that a vote be taken on each resolution referred to in the Referendum. Any other business. Tea will be served during the meeting. All members of the South-Eastern Branch are invited to attend these meetings, and to introduce professional friends, but will not be entitled to vote on Divisional questions.—HUGH M. RAVEN, Broadstairs, Honorary Divisional Secretary.

SOUTH-EASTERN BRANCH: NORWOOD DIVISION.—A special meeting of the above Division will take place at the Queen's Hotel, Church Road, Upper Norwood, on Thursday, December 12th, at 4 p.m., Dr. Henry Hetley in the chair. Agenda: (1) Minutes of last meeting. (2) Election of Representative. (3) To consider the Referendum Report and Minority Report dealing with proposed Charter. (Copies of the Referendum Report and the Minority Report have been already forwarded to each member, and they are also recommended to refer to the SUPPLEMENT to the JOURNAL of September 21st, which contains a report from the Representative Meeting.) All members of the South Eastern Branch are invited to attend and to introduce professional friends, but will be unable to vote on Divisional questions.—ARTHUR W. SOPER, 2, Hamlet Road, Upper Norwood, Honorary Secretary.

SOUTHERN BRANCH: WINCHESTER DIVISION.—The autumn Clinical Meeting of this Division will be held in the Library of the Cambridge Hotel, Aldershot, on Thursday, November 28th, at 3 p.m. (by kind permission of Surgeon-General Sir T. Gallwey, K.C.M.G.). Agenda: (1) Dr. Jollye (Alresford): Notes on Two Cases of Actinomycosis, with remarks. (2) Dr. Bevan (Alton): Notes on Three Cases of Intestinal Obstruction. (3) Mr. H. Ahrens (Basingstoke): A Paper on Middle-ear Deafness. (4) Mr. J. F. Briscoe (Alton): A Paper on Recovery in the Insane. (5) Mr. H. J. Godwin (Winchester): Notes on some Acute Abdominal Cases. *N.B.*—Rule 14. The time allowed for reading papers is fifteen minutes and every subsequent speaker is limited to five minutes. Sir T. Gallwey and officers of the Royal Army Medical Corps kindly invite members of the Division to lunch at the Royal Army Medical Corps Mess, Stanhope Lines, from 1 to 2 o'clock, and also to tea on conclusion of the meeting. *N.B.*—It will be a convenience if members lunching will kindly intimate their intention to Lieutenant-Colonel Firth, R.A.M.C Mess, Aldershot, not later than November 27th. The Chairman and Executive Committee have invited the members of the Guildford Division to attend this meeting.—H. J. GODWIN, 35, Southgate Street, Winchester, Honorary Secretary and Treasurer.

STAFFORDSHIRE BRANCH.—The first general meeting of the Session 1907-8 will be held at the North Stafford Hotel, Stoke-upon-Trent, on Thursday, November 28th. The President, Mr. J. T. Hartill, will take the chair at 3.45 p.m. Business: (1) Minutes of the last general meeting. (2) Correspondence. (3) Exhibition of living cases. (4) Paper: The Prevalence of Tuberculosis, W. T. Menzies, M.D. (5) Paper: Injuries of the Cornea, H. H. Folker, Esq. (6) Exhibition of pathological specimens. etc. Dinner, 6.30 p.m., charge 5s.—G. PETGRAVE JOHNSON, Honorary General Secretary, Stoke-on-Trent.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty:—ALEXANDER J. J. JOHNSTON, Deputy Inspector-General, to Haslar Hospital, December 5th; JOHN J. DENNIS, M.D., Deputy Inspector-General, Plymouth Hospital, December 5th; MURRAY P. JONES, Staff Surgeon, to the *Wildfire*, in lieu of a Surgeon, temporary, November 16th.

ROYAL ARMY MEDICAL CORPS.

COLONEL H. MARTIN, M.B., has been appointed Principal Medical Officer on the Administrative Staff, South China.

LIEUTENANT-COLONEL C. A. LANE, M.B., has been appointed Senior Medical Officer, Administrative Staff, Ceylon, vice Lieutenant-Colonel G. H. Sylvester.

Lieutenant-Colonel W. B. LEISHMAN, M.B., has been granted an extension of one year in his appointment as Professor of Pathology at the Royal Army Medical College.

Captain H. P. W. BARRON has been appointed Adjutant of the Manchester Companies, Western Command, October 12th.

INDIAN MEDICAL SERVICE.

CAPTAIN E. B. KNOX, M.D., one of the Secretaries to the Principal Medical Officer in India, has been appointed Staff Officer for Medical Mobilization Stores, 7th (Meerut) Division.

ARMY MEDICAL RESERVE OF OFFICERS.

SURGEON-CAPTAIN A. P. NUTTALL, M.D., to be Surgeon-Major, November 13th.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN seventy-six of the largest English towns, including London, 8,177 births and 4,539 deaths were registered during the week ending Saturday last, November 16th. The annual rate of mortality in these towns, which had been 14.6, 15.7, and 14.6 per 1,000 in the three preceding weeks, rose again last week to 14.8 per 1,000. The rates in the several towns ranged from 7.7 in Northampton, 7.8 in Walthamstow, 8.5 in Tottenham and in Leyton, 9.1 in Willesden and 9.2 in East Ham, to 21.9 in Tynemouth, 22.0 in Rhondda, 22.1 in Oldham, 22.2 in York, 24.1 in Hanley and in Wigan, and 27.6 in Stockton-on-Tees. In London the rate of mortality was 14.5 per 1,000, while it averaged 15.0 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.3 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1.2 per 1,000, while among the seventy-five other large towns the death-rates from these diseases ranged upwards to 3.0 in Grimsby, 3.2 in Rhondda, 3.9 in Great Yarmouth, 4.1 in Merthyr Tydfil, 4.7 in Hanley, and 4.9 in Burton-on-Trent. Measles caused a death-rate of 1.1 in Cardiff, 1.2 in York and in Rhondda, 1.4 in Ipswich, 2.0 in Coventry, 2.7 in Merthyr Tydfil, and 2.9 in Burton-on-Trent; scarlet fever of 1.4 in Willesden; diphtheria of 1.1 in East Ham; whooping-cough of 1.4 in Ipswich and 1.6 in Bootle; "fever" of 1.5 in Grimsby and 3.1 in Hanley; and diarrhoea of 1.1 in Oldham, 1.2 in Rhondda, 1.5 in Grimsby, 1.6 in Walsall, and 3.0 in Great Yarmouth. No fatal case of small-pox was registered last week in any of the seventy-six towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 5,197, 5,467, and 5,604 at the end of the three preceding weeks, had further risen to 5,689 at the end of last week; 636 new cases were admitted during the week, against 793, 832, and 667 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

DURING the week ending Saturday last, November 16th, 829 births and 552 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been equal to 14.4, 16.4, and 15.3 per 1,000 in the three preceding weeks, rose again last week to 15.9 per 1,000, and was 1.1 per 1,000 above the mean rate last week in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 9.0 in Aberdeen and 12.1 in Edinburgh, to 18.3 in Greenock and 23.6 in Dundee. The death-rate from the principal infectious diseases averaged 2.3 per 1,000 in these towns, the highest rates being recorded in Dundee and Perth. The 283 deaths registered in Glasgow included 17 which were referred to measles, 3 to diphtheria, 5 to whooping-cough, 4 to fever, 3 to diarrhoea, and 3 to cerebro-spinal meningitis. Two fatal cases of whooping-cough were recorded in Edinburgh; 13 of measles, 2 of diphtheria, and 4 of diarrhoea in Dundee; 2 of diarrhoea in Aberdeen; 2 of diphtheria in Paisley; 2 of whooping-cough in Leith; and 2 of scarlet fever in Perth.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, November 9th, 501 births and 381 deaths were registered in six of the principal Irish towns as against 503 births and 366 deaths in the preceding period. The annual death-rate in these towns, which had been 22.2 and 18.7 per 1,000 in the three preceding weeks rose to 19.9 per 1,000 in the week under notice, this figure being 5.3 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 12.3 in Londonderry and in Limerick, to 22.8 in Belfast and 25.3 in Waterford. The zymotic death-rate in the same six Irish towns averaged 2.9 per 1,000, or 0.1 per 1,000 higher than during the preceding period, the highest figure—6.8—being recorded in Limerick, while Londonderry registered no deaths under this heading at all. The principal causes of death from this class of disease were measles and whooping-cough.

Vacancies and Appointments.

VACANCIES.

BODMIN: CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer. Salary, £140, rising to £160 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—(1) House-Surgeon; (2) Assistant House-Surgeon. Salary at the rate of £80 and £70 per annum respectively.

GORDON HOSPITAL, Vauxhall Bridge Road Road, S.W.—Resident House-Surgeon.

HÔPITAL FRANÇAIS, 172, Shaftesbury Avenue, W.C.—Junior Resident Medical Officer. Salary, £50 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Surgeon. Salary, £20 for six months, and £2 10s. washing allowance.

INVERNESS: NORTHERN INFIRMARY.—House-Surgeon. Salary, £100 per annum.

KENSINGTON GENERAL HOSPITAL, Earl's Court, S.W.—Junior Resident Medical Officer. Salary, £40 per annum.

LAMBETH PARISH INFIRMARY.—Fourth Assistant Medical Officer. Remuneration, £100 per annum.

LONDON COUNTY ASYLUM, Epsom.—Fifth Assistant Medical Officer. Salary, £150 per annum.

METROPOLITAN ASYLUMS BOARD.—Third Assistant Medical Officer, Darenth Asylum, Industrial Colony, and Training School. Salary, £150 per annum, rising to £170.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Honorary Dental Surgeon.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer. Salary, £80 per annum.

NORFOLK AND NORWICH HOSPITAL.—Male Assistant House-Surgeon.—Honorarium, £20 for six months.

REDHILL: EARLSWOOD ASYLUM.—Junior Assistant Medical Officer. Salary, £130 per annum, rising to £150.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Milroy Lecturer.

ROYAL WATERLOO HOSPITAL FOR SICK CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at the rate of £40 per annum.

SHANGHAI MUNICIPAL COUNCIL.—Assistant Medical Officer of Health. Salary, about £580 per annum.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—House-Surgeon. Salary, £60 per annum.

SOCIETY OF APOTHECARIES, Blackfriars, E.C.—Gillson Scholarship in Pathology. Value, £90.

WEST LONDON HOSPITAL, Hammersmith Road, W.—House-Physician for six months.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

WINDSOR AND ETON ROYAL DISPENSARY AND INFIRMARY.—House-Surgeon. Salary, £110 per annum and £10 for lectures to nurses.

YORK COUNTY HOSPITAL.—House Physician. Salary, £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Shrewsbury, co. Salop; and Hertford, co. Hertford.

APPOINTMENTS.

BARBER, Hugh, M.D.Lond., M.R.C.S., L.R.C.P., Honorary Pathologist to the Derbyshire Royal Infirmary.

BEATTY, R. M., M.B., B.S., R.U.I., District Medical Officer of the Dewsbury Union.

BOYD, G. S. J., M.R.C.S., L.R.C.P., Medical Officer of Health for the Borough of Stamford.

CRAMB, E. Hamilton, M.B., Ch.B Glasg, Medical Referee under the New Workmen's Compensation Act for Counties of Stirling, Dumbarton, and Clackmannan, with special reference to Dumbartonshire.

DONALD, Robert, M.B., Ch.B.Glasg., Assistant Resident Medical Officer of Riccartsbar Asylum.

DOONAN, J. A. C., M.B., C.M.Glasg., District Medical Officer of the Nantwich Union.

EVERSHED, A. R. F., M.R.C.S., L.R.C.P., Honorary Ophthalmic Surgeon to the Brixton Dispensary, S.W.

FRIEND, G. E., M.R.C.S., L.R.C.P., Clinical Assistant to the Chelsea Hospital for Women.

HEATH, P. Maynard, M.S., F.R.C.S., Assistant Surgeon to the Evelina Hospital for Sick Children.

HIBBERT, C., M.B., Ch.B.Manch., House-Surgeon to St. Mary's Hospital, Manchester.

HICKS, H. T., F.R.C.S.Eng., Honorary Gynaecologist to the Derbyshire Royal Infirmary.

LACEY, F. H., M.B., Ch.B.Manch., House-Surgeon to St. Mary's Hospital, Manchester.

MORTON, John, M.B., Clinical Assistant to the Chelsea Hospital for Women.

RICKETT, G. R., M.B., B.C.Cantab., Certifying Factory Surgeon for the Sherborne District, co. Dorset, and Medical Officer of the Workhouse of the Sherborne Union.

SALISBURY, C. R., M.R.C.S., L.R.C.P., D.P.H., Assistant Anaesthetist at the Royal National Orthopaedic Hospital.

SCOTT, T. B. H., M.B., Ch.B.Edin., Certifying Factory Surgeon for the Antrim District, co. Antrim.

SHAPLAND, John Dee, M.D., M.A., Honorary Medical Officer to the Brixton Dispensary.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester Square, W.C.—The following gentlemen have been appointed House-Surgeons: E. C. Fletcher, L.D.S.Eng.; W. Overy, L.D.S.Eng.; F. H. Salter, L.D.S.Eng.; A. J. Ward, L.D.S.Eng.; R. T. Wood, L.D.S.Eng.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

ATKINS.—On November 14th, at 13, Booth Street, Handsworth, Birmingham, the wife of J. F. Atkins, M.B., Ch.B., M.R.C.S., of a daughter.

CHIENE.—At 23, Alva Street, Edinburgh, on the 15th inst., the wife of George L. Chiene, M.B., F.R.C.S.Ed., of a son.

EVANS.—On November 18th, 1907, at Berth Ddu, Cottenham Park, Wimbledon, S.W., the wife of David Robert Powell Evans, M.R.C.S., L.R.C.P., L.S.A., of a son.

LAWRIE.—On the 8th Nov., at Ryde House, Woking, Surrey, the wife of John Lawrie, M.B.—a daughter.

MARRIAGE.

GIBBINS—DIX.—On 18th November, at St. James's, Paddington, by the Rev. W. H. Gibbins, brother of the bridegroom, Kenneth Mayoh Gibbins, M.B., B.S.Lond., M.R.C.S., L.R.C.P., of Holmdale, Parkstone, Dorset, eldest son of B. T. Gibbins, of Ilkley and Tunbridge Wells, to Anne Mary, daughter of the late Thomas Tucker Dix, of Wells, Somerset.

DEATHS.

DAVIES.—At Cambridge, on Oct. 26th, Ernest Reuter John Wyatt Davies, M.A., youngest son of the late Herbert Davies, M.D., F.R.C.P., Consulting Physician to the London Hospital. R.I.P.

MCGRATH.—On Nov. 10th, at Lisbane, Bangor, co. Down, Daniel McGrath, M.B., B.Ch., B.A.O., R.U.I.

OAKLEY.—On the 9th November, at Holly House, Halifax, Emilie Marie, the beloved wife of John Oakley, Surgeon.

PATON.—On November 16th, at Park House, Newport, Mon., from surgical septicaemia, Robert John Paton, M.D., C.M.(Ed.), Surgeon-Major, 2nd V.B., S.W.B., Surgeon, Newport and County Hospital, aged 45.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—8.30 p.m., Papers: (1) Dr. Ironside Bruce, Relation between Sciatica and Hip-joint Disease; Mr. Duncan Fitzwilliams, the Pathology and Etiology of Intussusception in Children.

ROYAL SOCIETY OF MEDICINE:

ODONTOLOGICAL SECTION, 20, Hanover Square, W.—Communication: Mr J. G. Turner, The Effects of Chronic Suppuration of the Pulp in the Molar of a Horse. Paper: Mr. J. Thornton Carter, Some Notes on the Growth of the Jaws.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

MEDICAL SECTION, 20, Hanover Square, W., 5.30 p.m.—Paper: The Nature of Epilepsy, by Dr. A. E. Russell.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION, Apothecaries' Hall, Blackfriars, E.C., 4.30 p.m.—Papers: James Cantlie, M.B., F.R.C.S., Some Tropical Diseases and the Remedies Required for their Treatment and Prophylaxis; Dr. William Murray, F.R.C.P., Therapeutics of Indigestion.

POST-GRADUATE COURSES AND LECTURES.

CHARING CROSS HOSPITAL, W.C.—Thursday, 4 p.m., Gynaecological.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Friday, 3 p.m., Rheumatoid Arthritis.

HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E.—Monday, 5 p.m., Blastomycosis, Actinomycosis, Madura Foot, Glanders; Wednesday, 5 p.m., Molluscum Contagiosum, Paget's Disease, Darier's Disease; Saturday, 5 p.m., Lupus Erythematosus, Sclerodermia, Vitiligo, Alopecia Areata, Akrodermatitis Atrophicans.

HOSPITAL FOR NERVOUS DISEASES, Welbeck Street, W.—Thursday, 5 p.m., The Differential Diagnosis of Some of the more Common Types of Paralysis.

HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Locomotor Ataxy; Friday, 3.30 p.m., Surgery of the Nervous System.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Jaundice in Children.

LONDON SCHOOL OF CLINICAL MEDICINE.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2.30 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m. Monday, and noon Thursday; Skin, at noon and 4 p.m. Tuesday and at noon Friday; Eye, 11 a.m. Wednesday and Saturday; Radiography, 4 p.m. Thursday. Special Lectures: Tuesday, 2.15 p.m., The Use of Serums and Vaccines in Medical Treatment; Thursday, 3.15, Some Points Relating to Dilatation of the Stomach.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Eye. Lectures at 5.15 p.m. each day will be given as follows: Monday, Corneal Ulcers. Tuesday, Swedish Medical Gymnastics, their Application in the Treatment of Spinal Curvature. Wednesday, Some Practical Points in the Treatment of Suppurative Disease of the Nasal Accessory Sinuses. Thursday, Profuse Menstruation (with illustrative cases).

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Thursday, 5 p.m., Demonstration: Cases of Laryngeal Disease.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's Hospital, Tottenham, N.—The following are the Clinics and Demonstrations for next week:—Monday, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Throat, *X* Ray; 4.30 p.m., Medical In-patient. Tuesday, 10.30 a.m., Medical Out-patient; 2.30 p.m., Operations, Gynaecological and Surgical Out-patient; 4.30 p.m., Demonstration: Medical Cases. Wednesday, 2.30 p.m., Medical Out-patient, Skin and Eye; Thursday, 2.30 p.m., Gynaecological Operations, Medical and Surgical Out-patient and *X* Ray; 3 p.m., Medical In-patient; 4.30 p.m., Lecture: The Ultimate Results of Inoperable Gynaecological Cases. Friday, 10 a.m., Surgical Out-patient; 2.30 p.m., Operations, Medical Out-patient and Eye; 3 p.m., Medical In-patient.

POST GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week: Daily, 2 p.m., Medical and Surgical Clinics, *X* Rays: 2.30 p.m., Operations. Monday and Thursday, and Wednesday and Saturday, 2 p.m., Diseases of the Eye. Tuesday and Friday, 10 a.m., Gynaecological Operations; 2 p.m., and Wednesday and Saturday at 10 a.m., Diseases of the Throat, Nose, and Ear; 2.30 p.m., Diseases of the Skin. Wednesday, 10 a.m., Diseases of Children. Wednesday and Saturday, 2.30 p.m., Diseases of Women. Lectures: Monday, at 12 noon, Pathological Demonstration. At 5 p.m., Monday and Tuesday, Some Forms of Nasal Suppuration. Wednesday, Practical Medicine. Thursday, Practical Surgery Friday, Gynaecology.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Monday, 5 p.m. The Treatment of Superior Protrusion.

BOOKS, ETC., RECEIVED.

Appendix XXI to the Second Edition of the Descriptive Catalogue of the Pathological Specimens in the Museum of the Royal College of Surgeons of England. By S. G. Shattock. London: Taylor and Francis. 1907.

London: Longmans, Green and Co., 1907:—
The King's College Hospital Book of Cooking Recipes. Published in Aid of the Fund for the Removal of the Hospital to South London. 1s.

Movable Kidney and other Displacements and Malformations. By D. Newman, M.D., F.F.P.S.G. 5s.

London: S. Appleton, 1907:—
The Diseases of Infancy and Childhood. By L. E. Holt, M.D., Sc.D., LL.D. Fourth edition. 25s.

Obstetrics. By J. W. Williams. Second edition. 1908. 25s.

The History of the Book War. Fair Book Prices *versus* Publishers' Trust Prizes. London: The *Times*. 1907.

The Preservation of Infant Life. A Guide for Health Visitors. By E. Kanthack. London: H. K. Lewis. 1907. 1s.

Precious Stones for Curative Wear and other Remedial Uses; likewise the Nobler Metals. By W. T. Fernie, M.D. Bristol: J. Wright and Co.; and London: Simpkin Marshall. 1907. 6s.

A Laboratory Outline of General Chemistry. By A. Smith, B.Sc.Edin., Ph.D. Third edition. London: G. Bell and Sons. 1907. 2s. 6d.

Clinical Treatises on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Professor E. von Neusser, M.D. Authorized Translation by A. MacFarlane, M.D. Part I. Dyspnoea and Cyanosis. New York: E. B. Treat and Co. 1907. 1.50 dols.

The Conquest of Cancer. By C. W. Saleeby, M.D., F.R.S.Edin. London: Chapman and Hall, Limited. 1907. 7s. 6d.

Immune Sera. By Dr. C. F. Bolduan. Second edition. New York: J. Wiley and Sons; and London: Chapman and Hall, Limited. 1907. 1.50 dols.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
NOVEMBER.	
24 Sunday ...	
25 MONDAY ...	
26 TUESDAY ...	
27 WEDNESDAY	BATH AND BRISTOL BRANCH, Museum, Bath, 8 p.m.; Council Meeting, 7.55 p.m.
28 THURSDAY...	CITY DIVISION, *Metropolitan Counties Branch*, Special Meeting, Hackney Town Hall, 4 p.m. HASTINGS DIVISION, *South-Eastern Branch*, Eversfield Hotel, 5 p.m.; Dinner, 6.45 p.m. ISLE OF THANET DIVISION, *South-Eastern Branch*, St. Mildred's Hotel, Westgate, 4 p.m. STAFFORDSHIRE BRANCH, North Stafford Hotel, Stoke-on-Trent, 3.45 p.m.; Dinner, 6.30 p.m. WANDSWORTH DIVISION, *Metropolitan Counties Branch*, Battersea Town Hall, 8.45 p.m. WINCHESTER DIVISION, *Southern Branch*, Autumn Clinical Meeting, Library of the Cambridge Hospital, Aldershot, 3 p.m.; Lunch, R.A.M.C. Mess, Stanhope Lines, 1 to 2 p.m.
29 FRIDAY ...	
30 SATURDAY...	
DECEMBER.	
1 Sunday ...	
2 MONDAY ...	
3 TUESDAY ...	ST. PANCRAS AND ISLINGTON DIVISION, *Metropolitan Counties Branch*, Temperance Hospital, Hampstead Road, N.W., 4 p.m.

Date.	Meetings to be Held.
DECEMBER *(Continued)*.	
4 WEDNESDAY	LONDON: Medical Inspection of School Children Subcommittee, 2 p.m. LANCASHIRE AND CHESHIRE BRANCH, Council Meeting, Liverpool Medical Institution, 4.30 p.m. NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH, Friend's Hall, Lancaster, 3.45 p.m.
5 THURSDAY...	ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, General Meeting, Board Room, Altrincham Hospital, 4.50 p.m.; Dinner, Brooklands Hotel, after the meeting. FOLKESTONE DIVISION, *South-Eastern Branch*, Victoria Hospital, Folkestone, 8.30 p.m.
6 FRIDAY ...	LONDON: Standing Ethical Subcommittee, 2 p.m.
7 SATURDAY...	
8 Sunday ...	
9 MONDAY ...	
10 TUESDAY ...	LONDON: Organization Committee, 11 a.m. LONDON: Life Insurance Examinations Subcommittee, 3 p.m.
11 WEDNESDAY	
12 THURSDAY...	LONDON: Joint Hospitals Committee, 2.30 p.m. HAMPSTEAD DIVISION, *Metropolitan Counties Branch*, Business Meeting. NORWOOD DIVISION, *South-Eastern Branch*, Queen's Hotel, Church Road, Upper Norwood, 4 p.m. WANDSWORTH DIVISION, *Metropolitan Counties Branch*, 27, St. John's Hill, S.W., 3.45 p.m.
13 FRIDAY ...	ENGLISH DIVISION, *Border Counties Branch*, Cottage Hospital, Maryport.
14 SATURDAY...	

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 30TH, 1907.

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MEDICAL INSPECTION OF CHILDREN.

The following Memorandum on Medical Inspection of Children in Public Elementary Schools was issued by the Board of Education on November 22nd, 1907:

ANALYSIS.

SCOPE AND PURPOSE OF THE ACT.

1. The aim of the new Act.
2. The terms and effects of Section 13.
3. Its scope.

ORGANIZATION.

4. Respective duties of the Board and of Education Authorities.
5. The public health basis of the new duties.
6. The reasons for this basis.
7. Medical administration.

SUBSIDIARY AGENCIES.

8. The teacher, school nurse, and parent.

CHARACTER AND DEGREE OF MEDICAL INSPECTION.

9. Principles of medical inspection.
10. Additional medical work.
11. Summary of points of inspection.

REGULATIONS.

12. Number and period of medical inspections.
13. Sundry regulations.

AMELIORATION AND PHYSICAL IMPROVEMENT.

14. Principles of ameliorative action.
18. Conclusion.

SCOPE AND PURPOSE OF THE ACT.

1. The Education (Administrative Provisions) Act, 1907, in so far as it concerns the medical inspection of school children, is the outcome of a steady movement of public opinion throughout the entire community. For some years past evidence has been accumulating that there exists in certain classes of the English people a somewhat high degree of physical unfitness which calls for amelioration, and, as far as possible, for prevention. The Legislature resolved that to grapple effectively with this problem, or at least part of it, it was necessary first to improve the health conditions, both personal and in regard to environment, of the children of the nation. A consideration of the gravity of the need led to the conclusion that medical inspection of school children is not only reasonable but necessary as a first practical step towards remedy. Without such inspection we not only lack data, but we fail to begin at the beginning in any measure of reform. The reasonableness of such inspection, if it is conducted on sensible lines leading to an improvement of the surroundings and physical life of the children, must become evident both to their parents and to the nation as a whole.

The Board desire, therefore, at the outset to emphasize that this new legislation aims not merely at a physical or anthropometric survey or at a record of defects disclosed by medical inspection, but at the phys cal improvement, and, as a natural corollary, the mental and moral improvement, of coming generations. The broad requirements of a healthy life are comparatively few and elementary, but they are essential, and should not be regarded as applicable only to the case of the rich. In point of fact, if rightly administered, the new enactment is economical in the best sense of the word. Its justification is not to be measured in terms of money but in the decrease of sickness and incapacity among children and in the ultimate decrease of inefficiency and poverty in after-life arising from physical disabilities.

2. The section of the Education (Administrative Provisions) Act, 1907, which concerns medical inspection of school children (section 13) is as follows:

> 13.—(1) The powers and duties of a local education authority under Part III of the Education Act, 1902, shall include:
> [(*a*) Power to provide for children attending public elementary schools, vacation schools, vacation classes, play centres, etc]
> (*b*) The duty to provide for the medical inspection of children immediately before or at the time of or as soon as possible after their admission to a public elementary school, and on such other occasions as the Board of Education direct, and the power to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools:
> Provided that in any exercise of powers under this section the local education authority may encourage and assist the establishment or continuance of voluntary agencies and associate with itself representatives of voluntary associations for the purpose.
> (2) This section shall come into operation on the first day of January nineteen hundred and eight.

From this it will be seen that the two main provisions are incorporated in the section, namely, first, the duty, laid upon all Local Education Authorities, of the medical inspection of children at a stated time and on such other occasions as the Board of Education may direct; and, secondly, the power given to all Local Education Authorities of making arrangements, to be sanctioned by the Board, for attending to the health and physical condition of the children in elementary schools.

3. Almost all Local Education Authorities have taken steps of some kind in the promotion of school hygiene, and many have conducted some form of medical inspection. Hitherto, however, such inspection has been concerned only or chiefly with children selected from the school or class as being in some way obviously defective

or diseased. The general routine, where such inspection has been practised, has been for a medical man to visit schools at intervals, make a sanitary survey of the buildings, and examine more or less thoroughly children presented to, or selected by, him. Such cases have, however, as a rule, been imperfectly followed up, and much of the advice given has been ignored or inappropriately applied. Much has also been left undone in the way of adapting the methods of teaching to the special physical needs of the children. Moreover, in many districts not only have serious defects of sanitation, such as bad lighting and lack of ventilation, injuriously affecting the children, been ignored, but even the means of preventing the extension of infectious diseases have been neglected in greater or less degree. The present Act is not intended to supersede the powers which have long been exercised by Sanitary Authorities under various Public Health Acts, but is meant to serve rather as an amplification and a natural development of previous legislation.

It is founded on a recognition of the close connexion which exists between the physical and mental condition of the children and the whole process of education. It recognizes the importance of a satisfactory environment, physical and educational, and, by bringing into greater prominence the effect of environment upon the personality of the individual child, seeks to secure ultimately for every child, normal or defective, conditions of life compatible with that full and effective development of its organic functions, its special senses and its mental powers which constitute a true education.

ORGANIZATION.

4. The respective functions of the Board of Education and the Local Education Authorities are clearly defined by the Act. The duties thrown upon the Board consist in advising Local Education Authorities as to the manner in which they should carry out the provisions of the Act, and in supervising the work they are called upon to undertake; in giving such directions as may be necessary regarding the frequency and method of inspection in particular areas; and in considering and sanctioning such arrangements for attending to the health and physical condition of the children as may be submitted to them by individual authorities. The Board will also collate the records and reports made by the Authorities and will present an annual report to Parliament.

The duty of carrying out the actual inspection has necessarily been entrusted by Parliament to the Local Education Authorities and not to the Board. Each Authority must therefore in due course appoint such Medical Officers or additional medical assistance as may be required for the purpose. Some time must inevitably elapse before all Authorities have their arrangements in working order, but it should be carefully borne in mind that, although the work is begun gradually, the initial organization established by each Authority should admit of such expansion as will secure the thorough and efficient administration of the Act. In subsequent paragraphs some general guidance is given as to the minimum amount of inspection required.

5. In view of the varied influences which affect, directly or indirectly, the health of the children of the nation, it is manifestly of the highest importance that the administration of this Act should rest upon a broad basis of public health, and should not only secure for Local Education Authorities as much freedom as is consistent with adequate uniformity in the presentation of results for comparative purposes, but should also use to the utmost extent the existing machinery of Medical and Sanitary Administration, developing and supplementing it as required, rather than supplanting it by bringing into existence new agencies, partially redundant and possibly competing.

The Board view the entire subject of school hygiene not as a speciality or as a group of specialities existing by and of themselves but as an integral factor in the health of the nation. The application of this principle requires that the work of medical inspection should be carried out in intimate conjunction with the Public Health Authorities and under the direct supervision of the Medical Officer of Health. The advantages of such unification of the Public Health services have already been recognized by the Inter-Departmental Committee on Medical Inspection and Feeding of School Children, and also by the Local Government Board, who specifically require every Medical Officer of Health to report officially upon matters relating to the sanitary condition of all schools, including the "action taken (by the Sanitary Authority) in relation to the health of the scholars and for preventing the spread of infectious disease."

6. It is unnecessary to emphasize the objection to a dual jurisdiction in such matters as the sanitary control of school premises and the notification and prevention of the spread of infectious diseases in which the duties of the Medical Officer of Health and the School Medical Officer necessarily and obviously overlap. If they are to be effectively carried out the interests and activities of the School Medical Officer must extend over the whole external environment of the child. School hygiene cannot be divorced from home hygiene, and this in turn is intimately bound up with the hygienic conditions of the community. Efficiency and economy require, therefore, an organic relationship between the daily work of the school authority and of the authority responsible for the administration of the wider branches of public health, including the supervision of water and milk supplies, food, housing and sanitation, inquiries into matters affecting infant mortality (including antenatal influences), home visiting by men and women inspectors, sanitary and bacteriological investigations, the provision of hospital accommodation, disinfection, the cleansing of verminous persons, the notification of the prevalence or otherwise of diseases, such as phthisis, affecting the adult population, and the consideration of social factors, such as the occupation of the parents, or the health, habits, and physical conditions of the family, all of which have a bearing, direct or indirect, upon the children's health.

Conversely this organic relationship will provide increased opportunity and facilities for the Medical Officer of Health to study all the conditions affecting the health of the community at all age-periods, and will bring him into closer touch with the personal hygiene of the population. While it is not expected that by establishing the necessary administration on the broad basis of public health all difficulties will be avoided, the Board are convinced that this is the only practicable method and that which is most likely to promote economy, harmony, and efficiency.

7. After careful consideration both of the present conditions of local sanitation, and of the developments most likely to serve the economical and efficient administration of this important branch of public work, the Board are of opinion that—

(*a*) In county areas the County Council, which is the Local Education Authority, should instruct their County Medical Officer, who will be responsible for smooth and effectual administration, to advise their Education Committee and to supervise the new work, its actual execution being deputed wholly or partly to suitable medical colleagues or assistants (men or women), who either will be appointed especially for the purpose under him or will be local Medical Officers of Health, and to whom groups of schools may be allocated. Where no County Medical Officer has yet been appointed under the Local Government Act, 1888, it would seem that the new duties in regard to medical inspection of children now imposed on the County Council will render it inadvisable any longer to postpone such an appointment, since in no other way will the council be able effectually to secure adequate control, economy, and efficiency in carrying out their new work, which must obviously be guided from the central county organization.

(*b*) In county boroughs the Town Council, which is at the same time both the Local Authority for Public Health, and also the Local Education Authority, should instruct their Medical Officer of Health to advise the Education Committee and should make him responsible for the new work or for the supervision of such medical assistance as is needed to carry it out. Where appointments of school medical officers already exist, the Board do not suggest that they should be disturbed, provided always that the officers are competent and sufficient for the new

duties and that the arrangements for supervision by the Medical Officer of Health are satisfactory.

(c) In non-county boroughs and urban districts which are Local Authorities for elementary education, the desirability of ultimately making similar arrangements, separately or in combination with contiguous districts, should be kept in view, though for the time being some variation may be requisite in accordance with local needs and circumstances.

That is to say, generally speaking, the work of inspection should be supervised by the Medical Officer of Health of the Authority which appoints the Education Committee; and when the work is obviously more than he can undertake unaided, it should be entrusted to one or more medical officers working under his supervision. In some districts it will be found convenient for such officers to be local Medical Officers of Health holding office within the county; in others, they may be registered medical practitioners specially appointed for this purpose. Provided that the principle of co-ordination of the medical services is secured in practice, and that the requisite personal and professional qualifications for the new work are present, it is clear that the functions of the school medical officer may be exercised by a medical officer of health, a Poor-law medical officer, a private practitioner, or, as occasion requires, a skilled specialist. When it is necessary to appoint officers for the purpose of the Act it is extremely important that persons of suitable qualifications and experience should be selected, even though they may not be called upon to give the whole of their time to these duties, and it should be noted that there are many cases in which women are likely to be specially suitable. In making such appointments preference should be given to medical men and women who (1) have had adequate training in State Medicine or hold a Diploma in Public Health, (2) have had some definite experience of school hygiene, and (3) have enjoyed special opportunities for the study of diseases in children. The particular needs and circumstances of the area or group of schools concerned should receive due consideration, and great care must be taken to see that school hygiene really forms an integral and fundamental part of the public health administration of the district, and is not subordinated to other less important sanitary questions.

All school medical officers, whether they are holding statutory office as Medical Officers of Health in the area in which they are carrying out the new Act or not, must obviously work in close co-operation with the Sanitary Authorities throughout the county and must be kept informed as to the occurrence of notifiable diseases within their educational areas. This applies in a special degree to the County Medical Officer. It is imperative that the close inter-relation between school hygiene and general hygiene, particularly that of the home of the child, should be secured and maintained.

Subsidiary Agencies.

8. The Board are convinced that the work of medical inspection cannot be properly accomplished by medical men without assistance. The teacher, the school nurse (where such exists) and the parents or guardians of the child must heartily co-operate with the school medical officer. In whatever way the system be organized, its success will depend, immediately and ultimately, upon the cordial sympathy and assistance of the teachers. Some Authorities will find that the teachers are able to undertake, without undue strain, a share of the work of furnishing data respecting each child, and even perhaps to carry out some portion of the inspection; and it is clear that the successful application of the principles of hygiene to school life will depend almost entirely upon their efforts. What the mother is in the home, the teacher is in the school. Experience shows that when the teachers understand the necessities and opportunities of the situation they are both willing and able to take their share. Their co-operation in the work already done in this direction has been beyond praise. The school nurse and health visitor are also important agents in school hygiene. They may serve as links between the school and the home, and can assist in recording the results of inspection, in securing and maintaining personal cleanliness, and in carrying out medical advice concerning simple complaints. They are also able to give counsel in the home, to visit the children at home or in the school, and in many other ways to advance the cause of school hygiene. The Board are satisfied that this work offers a great field of valuable service for the school nurse, and they recommend that, wherever practicable, Education Authorities should secure, especially in rural districts, the benefit and true economy which may be thus obtained. It is essential, however, that the teacher, school nurse, or health visitor assisting in the administration of this Act should act strictly under the instruction and supervision of medical authority. Nor must the influence which the parent can exercise by example and precept be neglected. One of the objects of the new legislation is to stimulate a sense of duty in matters affecting health in the homes of the people, to enlist the best services and interest of the parents, and to educate their sense of responsibility for the personal hygiene of their children. The increased work undertaken by the State for the individual will mean that the parents have not to do less for themselves and their children, but more. It is in the home, in fact, that both the seed and the fruit of public health are to be found. All-round co-operation between school medical officer, teacher, nurse, health visitor, and parent will prove both effective and economical, and the full utility of the Act will not be secured unless, in advising Local Education Authorities, the medical officer pays careful attention to considerations of expenditure and to the relative urgency of the reforms he proposes to undertake.

Character and Degree of Medical Inspection.

9. From what has been said it will be clear that the fundamental principle of Section 13 of the new Act is the medical examination and supervision not only of children known, or suspected, to be weakly or ailing, but of all children in the elementary schools, with a view to adapting and modifying the system of education to the needs and capacities of the child, securing the early detection of unsuspected defects, checking incipient maladies at their onset, and furnishing the facts which will guide Education Authorities in relation to physical and mental development during school life. It is evident that—although this work involves (*a*) medical inspection of school children at regular intervals, (*b*) the oversight of the sanitation of the school buildings, and (*c*) the prevention, as far as may be, of the spread of infectious and contagious diseases, including skin diseases—action in these three directions will be incomplete unless (*d*) the personal and home life of the child are also brought under systematic supervision. The home is the point at which health must be controlled ultimately.

The character and degree of medical inspection will depend on the standpoint from which the subject is viewed, the difficulty being of course to attain a due sense of proportion and uniformity, particularly as to fundamental points. Valuable to science though the findings of a more thorough and elaborate medical examination might be, it is the broad, simple necessities of a healthy life which must be kept in view. It cannot be doubted that a large proportion of the common diseases and physical unfitness in this country can be substantially diminished by effective public health administration, combined with the teaching of hygiene and a realization by teachers, parents, and children of its vital importance. The spread of communicable diseases must be checked; children's heads and bodies must be kept clean; the commoner and more obvious physical defects, at least, must be relieved, remedied, or prevented; schoolrooms must be maintained in cleanly condition, and they must be properly lighted, well ventilated, and not overcrowded; the training of the mental faculties must not be divorced from physical culture and personal hygiene. It is these primary requirements which must first receive attention.

10. The directions given in this circular as to the degree and frequency of inspection refer only to the minimum medical inspection, the effectiveness of which will in future be one of the elements to be considered in determining the efficiency of each school as a grant-aided school. They are not intended to exclude other medical work, which the Board trust will be undertaken by Local Education Authorities according to their abilities and opportunities. For example, the re-testing of the eyesight of every child periodically would be most valuable; an annual measurement of height and weight; the more frequent examination of particular children—especially

of those suspected to be suffering from deficient nutrition or found to be defective at former inspections; careful anthropometric surveys or special inspections at various ages of school life; and similar investigations of a special nature undertaken in particular districts, come within the cat gory of additional medical work wholly desirable where practicable, and calculated to advance school hygiene. Such work, however useful, should be looked upon as subsidiary to the main purpose of the Act.

11. A consideration of these matters has led the Board to the conclusion that as far as practicable the statutory medical inspection should, at entrance or at subsequent inspection, take account of the following matters:

(1) Previous disease, including infectious diseases.
(2) General condition and circumstances—
  (*a*) Height and weight.
  (*b*) Nutrition [good, medium, bad].
  (*c*) Cleanliness [including vermin of head and body].
  (*d*) Clothing [sufficiency, cleanliness, and footgear].
(3) Throat, nose and articulation [mouth-breathing, snoring, stammering, tonsillar and glandular conditions, adenoids].
(4) External eye disease and vision testing.
(5) Ear disease and deafness.
(6) Teeth and oral sepsis.
(7) Mental capacity [normal, backward, defective].
(8) Present disease or defect: [(*a*) Deformities or paralyses; (*b*) Rickets; (*c*) Tuberculosis (glandular, pulmonary, osseous, or other forms); (*d*) Diseases of skin and lymph glands; (*e*) Diseases of heart or lungs; (*f*) Anaemia; (*g*) Epilepsy; (*h*) Chorea; (*i*) Ruptures; (*j*) Spinal disease; (*k*) Any weakness or defect unfitting the child for ordinary school life or physical drill, or requiring either exemption from special branches of instruction or particular supervision.]

It is unnecessary to discuss here the advisability or otherwise of including in a minimum inspection the various points appearing in this summary, or to add that commonly the findings as to organic defects will be of a negative character, the positive facts of the inspection being relatively few, and in part obtainable by the trained teacher or school nurse. (*See* par. 15.) Moreover, some of the above conditions will not require investigation in children on admission, when this takes place at or under five years of age. On the other hand, some defective children will require a more thorough examination than this minimum. Reasonable latitude must be allowed, and the summary must be taken only to indicate the points upon which the Board desires as much uniformity as possible in the minimum medical inspection, and must be adapted to the age-period. The Board propose to issue at an early date an examination form suitable to this inspection.

REGULATIONS.

12. The Board have decided under Section 13 of the Act that *not less than* three inspections during the school life of the child will be necessary to secure the results desired.* The first inspection should take place at the time of, or as soon as possible after, admission to school; the second at or about the third year (say, the seventh year of age); and the third at or about the sixth year of school life (say, the tenth year of age). A further inspection immediately before the departure of the child into working life would be desirable where practicable, and in some areas it may be best for this to take the place of the third inspection. Certain adjustments will be necessary in working out any standard in practice, as it will at once be evident that without such adjustment the first year (1908) would be unduly burdened with the inspection of the children newly admitted and of all the children already in school.

Provision should be made by each Authority, when the Act has been sufficiently long in operation to be in normal working, for the inspection in each year of (*a*) the children newly admitted; (*b*) the children in the school who in that year had matured for their second inspection; (*c*) those who had matured for their third inspection; and where practicable (*d*) those about to leave school might also be inspected. But in the first year (1908) it may prove impracticable to attempt more than the inspection of the children newly admitted and those leaving school; and in the second year (1909) the Board will be satisfied with the inspection of those newly admitted and those leaving, with the addition of children who had matured for their second inspection (which is perhaps the occasion of all others requiring the most thorough examination). Some such adjustment would tend to equalize the burden over successive years. It will be understood that the precise way in which the children are grouped in the school for medical inspection will vary according to the internal organization and circumstances of each school. It may be most convenient, for instance, to carry out the inspection on an age basis rather than on a basis of period of school life. In subsequent years the Board may issue notice modifying the age-periods for inspection in order to obtain facts respecting child physique at ages other than those included above.

The Board recommend that each Local Education Authority should encourage one or both of the parents of the child to be present at the first inspection, and to this end a notification should be sent to the parents as to the time and place at which it will take place. Whilst some trouble may be involved in inviting the parents, the Board believe that substantial gains would thus be secured, for by this means misunderstandings will be avoided, and prejudice will be disarmed. Moreover, the parent is able to facilitate examination and provide information, and the medical inspector's opinion could be given clearly and directly to the persons most nearly concerned.

13. The following further regulations should be observed:

(*a*) The inspection should be conducted in school hours and on school premises, and in such a way as to interfere as little as may be with school work. The examination of each child need not, as a rule, occupy more than a few minutes.
(*b*) The convenience of the teaching staff and the circumstances of each school must receive consideration, and in these matters and in the actual examination the medical officer will no doubt exercise sympathy and tact, giving due thought to the personal susceptibilities of those concerned.
(*c*) The facts revealed by inspection must be entered in a register kept at the school, the confidential nature of many of the entries being carefully respected. A copy of the entries should be transmitted with the child to any other school to which he or she may go.
(*d*) Every School Medical Officer should make an annual report to the Local Education Authority on the schools and children under his superintendence, which should be printed for facility of reference and in order that a supply of copies may be available for distribution among the members of the Authority and other persons interested. The Authority should send two copies of the report to the Board of Education as soon as possible after the end of the year under review.
(*e*) In order to secure effective bases for comparison of the work done in different parts of the country, one uniform year must be taken, the year to be adopted being in all cases the calendar year, in order to correspond with the annual period fixed for the closely related report of the Medical Officer of Health.
(*f*) The report should be concerned chiefly with the conditions and circumstances affecting the health of the children in the Elementary Schools of the district.
(*g*) It should also contain statistical records of the number of children examined and of those re-examined or under medical supervision; the nature and results of the examination; the number of visits paid to classes; the number and character of the diseased conditions found at certain age periods; particulars as to blind, deaf, defective, and epileptic children; the medical advice given both as to the prevention of conditions inimical to health and the remedy of diseased conditions that may be discovered, action taken, and so forth.
(*h*) In addition to such records it will be well, as far as practicable, to make systematic comparisons of the

* There will be special areas where the Board may from time to require that the inspection should be at shorter intervals and of a more searching character, and also areas in which, owing to largeness of size or population, some exception may have to be made in the early years by way of reduction of the burden per annum.

individual and collective measurements and characteristics of the children in each school with standard and local records, both as a means of determining the condition of health of particular children or classes, for guidance in future action, and as part of the anthropometric survey to which this Act should contribute in due time. This part of the work, however, must be kept in a secondary position while so much remains to be done in the elementary essentials of school hygiene. It is to those essentials, and the manner and degree in which they have been dealt with in his district, that each school medical officer should devote the major portion of his report.

Amelioration and Physical Improvement.

14. The aim of the Act is practical and it is important that Local Education Authorities should keep in view the desirability of ultimately formulating and submitting to the Board, for their approval under section 13 (1) (b) of the Act, schemes for the amelioration of the evils revealed by medical inspection, including, in centres where it appears desirable, the establishment of school surgeries or clinics, such as exist in some cities of Europe, for further medical examination or the specialized treatment of ringworm, dental caries, or diseases of the eye, the ear, or the skin. It is clear that to point out the presence of uncleanliness, defect, or disease does not absolve an authority from the consequent duty of so applying its statutory powers as to secure their amelioration and to prevent, as far as possible, their future recurrence or development. The subject of specific medical treatment is, however, one which will require subsequent consideration in the light of the findings of medical inspection and the collateral issues raised thereby, and it is clear that, speaking generally, and subject to the observations in the following paragraphs, Local Education Authorities will be unable to formulate and submit for the Board's sanction any comprehensive scheme for the furtherance of this object until they have considered the results of their medical inspection in various directions.

15. In the meantime the Authorities should take measures without delay, for dealing, through such agencies as are conveniently available, with what are commonly, though in a sense erroneously, regarded as minor ailments. To such ailments measures of amelioration should immediately be applied. In a broad sense all such amelioration is "treatment." Indeed, properly administered, the Act must become something more than a mere record of disabilities and defects. It opens the way to new means of education and lays upon Education Committees duties involving "treatment" in a broad conception of the term. A few instances will make the matter clear. Thus, in controlling ringworm, it has been open to a Committee (*a*) to neglect the disease altogether; (*b*) to adopt a policy of exclusion from school of affected children; or (*c*) to supervise or carry out some method of amelioration. Up to the present many Authorities have followed the first course. It is intended that in future they should, according to their abilities, adopt the third. Verminous heads and bodies form another illustration of a common condition in which amelioration can be secured by school nurses. Further, a careful survey should be taken of all available facilities for the promotion of the bodily cleanliness of school children. Wherever such facilities exist they should be utilized to the utmost, and where they are absent, the desirability, particularly in the more congested areas, of providing them, either in the schools themselves or at convenient centres, should be clearly recognized. It is of the utmost importance to remember that baths with the necessary accompaniments of soap, sponges, towels, etc., should be utilized, not merely for the immediate and obvious purpose of cleansing the bodies of the children, but also as a humanizing influence and as the means of inducing habits and instincts of cleanliness and of inculcating practical lessons in the value of personal hygiene and in self-respect. The same is true of such other simple practical matters as the daily brushing and cleansing of the teeth, which is a subject well worth careful treatment in many of our elementary schools.

16. Practical amelioration is already undertaken by Local Education Authorities in checking the spread of infectious disease by exclusion of affected or susceptible children, supervision and medical examination of "contacts," disinfection of schoolrooms, and so on. Again, the modification of the teaching and work of the school and its adjustment to the physical capacity of the scholars is a form of "treatment" which in the end will bear much fruit. Thus the defective visual acuity of children, particularly young children, calls for early correction at the instance of the Education Authorities either alone or in conjunction with some voluntary society; but the rational treatment of some of these children will as a rule be an educational modification which avoids the necessity of spectacles, such modification, for example, as will diminish the prevalence of the bad habit of working the eyes at near distance, or ensure the adoption of suitable type of letterpress for the reader's eyes. Antecedent even to the discovery of such visual defects should come the removal, as the result of medical inspection, of unsatisfactory conditions of school life which are a common cause of fatigue and of injured eyesight. Obviously, such remedies are of greater importance to the eventual health of the community than the specific medical treatment of individuals.

17. Lastly, it must not be forgotten that Parliament itself has recognized the necessity of imposing some share of responsibility upon Education Authorities as to treatment in the broader sense in which the term is being used in this paragraph, by the special legislation provided in the Elementary Education (Blind and Deaf) Act, 1893, and the Elementary Education (Defective and Epileptic) Act, 1899. The powers conferred by these Acts are wide and furnish authorities with the means of placing needy cases under special treatment. The Board of Education have approved in various county boroughs arrangements under the last-named Act, and in other districts the subject is receiving attention. Nor must it be forgotten that in respect of defective nutrition considerable powers have been conferred on Local Education Authorities under the Education (Provision of Meals) Act, 1906. In all questions relating to the practicable means of amelioration and in some even affecting the arrangements for medical inspection, the Board are satisfied that the efficient local administration of the Act will depend in no small measure upon the good offices of School Managers, many of whom have already done so much in this sphere, and to whose interest and sympathy they cordially commend the new work.

18. This Circular is of a preliminary nature only, and concerns almost entirely the work of the new Act at its initiation. The Board recognize the importance of steady progress in these matters, and have at present under consideration the practicability of the further adaptation of educational methods to the physical and mental capacities of the normal and abnormal child, of special anthropometric and analogous investigations, and of improving the methods of dealing with infectious diseases in schools. Such questions as school ventilation, the curricula of infant departments, the training of crippled, feeble-minded, blind, deaf, or mentally deficient and epileptic children, special schools for other types of afflicted children, physical culture for pupil teachers, the standard of medical examination for pupil-teachers, for training college students, and for teachers, and other kindred subjects, are also receiving their careful attention. Further, the Board are urging the necessity of giving special instruction in the principles of hygiene to all students in every type of training college, so that they may be able to deal profitably with this subject in the schools. To deal rightly and effectually with these matters will take time. The Board are desirous that the administrative machinery necessary for the appropriate working out, in various localities, of these and allied questions shall be the outcome of real organic growth rather than of a hasty attempt to impose one mechanical system upon all districts, irrespective of their requirements or resources. And in all steps taken the progressive unification of the medical services and the needs and circumstances of each community must continually be borne in mind.

Robert L. Morant.

Board of Education,
Whitehall, London, S.W.,
22nd November, 1907.

Reports of Standing Committees.

CENTRAL ETHICAL COMMITTEE.

A MEETING of the Central Ethical Committee was held at the central offices on October 11th, when there were present: Mr. Edmund Owen (Chairman of Council), Dr. A. G. Bateman, Dr. Bruce Goff, Mr. R. H. Kinsey, Dr. R. L. Langdon-Down, Dr. Philip G. Lee, Dr. E. J. Maclean, Dr. Lauriston E. Shaw, Mr. W. D. Spanton, and Mr. C. R. Straton.

Election of Chairman.

Mr. R. H. Kinsey was reappointed Chairman of the Committee for the year 1907-8.

Standing Subcommittee.

The Standing Subcommittee was reappointed to deal, in the intervals between the Committee meetings, with business which in the opinion of the Chairman required attention before the next meeting of the Committee. The following were appointed members of this Subcommittee: The Chairman (Mr. R. H. Kinsey), the Chairman of Council (Mr. Edmund Owen), Dr. Bateman, Dr. Langdon-Down, and Dr. Lauriston Shaw.

Matters Referred by Annual Representative Meeting.

The reports on the ethics of medical consultation, on the definition of the term "hospital," and on the question of the revision of the ethical Rules of Divisions and Branches, matters as to which the Committee had received special instructions from the Representative Meeting, were referred to the Standing Subcommittee for consideration and report, as was also the question of appointments automatically vacant.

Presentation of Cases to the General Medical Council.

The Committee had before it the following matters, all relating to the question of the Association bringing cases before the General Medical Council: (*a*) An application from a Branch as to the possibility of the Branch or the Central Ethical Committee or the Council submitting a case of alleged unprofessional conduct, arising within the area of the Branch, to the General Medical Council; (*b*) a report by the Chairman of the Committee of a statement on the general subject made by him to the Council, on behalf of the Committee, on July 3rd; (*c*) an instruction from the Council to report upon a communication from the Edinburgh Branch; (*d*) minutes, dealing with the subject, of the Annual Representative Meeting at Exeter. After consideration it was decided to recommend the Council to instruct the Committee to act on behalf of the Association in appearing before the General Medical Council in suitable cases in accordance with the decisions of the Representative Meeting. Recommendations were also made as to arrangements for giving effect to this decision. (For the recommendations of the Committee, which were adopted as resolutions of the Council, see proceedings of Council at its meeting on October 30th, reported in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL of November 9th, page 264.)

Practice in Neighbouring Towns.

It was reported that, in answer to an inquiry as to the propriety of a practitioner attending various towns, other than that in which he resided, for the purpose of special practice, the inquirer had been advised that there was no objection to such practice, provided there was no underselling or improper advertisement. The Committee approved this advice.

Medical Practice and Chemist's Business in the Same House.

It was reported that an application had been received from the honorary secretary of a Division for advice as to the general question of the propriety of a medical man carrying on practice in the same house as one in which a druggist's business was conducted. The reply given, which was to the effect that the Committee could only advise either upon a definite case the facts of which were fully ascertained, or upon a question of principle submitted by the committee of a Division as arising out of a case under investigation by that Division, was approved. In reply to an inquiry from an individual member upon the same point the Committee advised that there was no objection to a medical practice and a chemist's business being carried on in entirely separate parts of the same house, provided that one was not used to advertise the other.

Procedure on Individual Complaints.

Correspondence was submitted asking whether professional recognition should be extended to a practitioner under certain circumstances detailed by the complainant. The Committee directed that the complainant should be informed that the Committee could express no opinion on the question of professional recognition until the facts had been investigated by some competent body before which the respondent should have had an opportunity of stating his case.

A Dispute Adjusted.

The Chairman reported that a complaint by a member against a former assistant of alleged unprofessional methods adopted by him had been referred to the Committee of the Division for investigation; the respondent, though not a member of the Association, had consented to the Division Committee investigating the matter and had signed an undertaking to abide by its decision. It was further reported that the case had been settled to the satisfaction of all parties, and the Committee resolved to congratulate the Division on the result.

International Association of the Medical Press.

A letter from the Editor of the BRITISH MEDICAL JOURNAL was read submitting resolutions adopted by the Committee of the International Association of the Medical Press at its meeting in London in August last, and inviting an expression of opinion from the Committee. The resolutions were as follows:

> The International Association of the Medical Press, taking into consideration the articles written by medical men in favour of medicinal products, urges the national associations to exchange with one another information on the character of these articles and of their authors
>
> The International Association of the Medical Press urges all the national associations of the medical press to come to an agreement in regard to the medical advertisements that should be refused.
>
> The Committee of the International Association of the Medical Press, taking into consideration the question of the rights of authors, is of opinion that the author of an article published in a medical journal has not the right to authorize commercial firms to reproduce his article without having previously obtained the sanction of the editor or publisher.

The Committee, recognizing from its own experience the necessity in the public interest of the observance of such rules by medical journals, expressed its cordial approval of the resolutions of the International Committee.

HOSPITALS COMMITTEE.

A MEETING of the Hospitals Committee was held at the central offices of the Association on October 10th, when there were present: Dr. J. Ford Anderson, Mr. C. F. Cuthbert, Dr. E. Lawrence Fox, Dr. Alfred Godson, Dr. James Hamilton, Dr. John R. Hamilton, Mr. T. Garrett Horder, Colonel C. H. Joubert de la Ferté, I.M.S., Dr. F. M. Pope, Dr. Lauriston E. Shaw, Mr. E. F. White.

Election of Chairman.

Dr. F. M. Pope was reappointed Chairman of the Committee for the year 1907–8.

Friendly Societies' Sanatoriums.

A report was received from Dr. Ford Anderson, as one of the representatives of the Committee appointed to act with the Contract Practice Subcommittee of the Medico-Political Committee in receiving a deputation from the National Association for the Establishment and Maintenance of Sanatoriums for Workers Suffering from Tuberculosis. The report stated that the matter would require further consideration by a joint subcommittee, and Dr. Ford Anderson and Dr. Lauriston Shaw were appointed as representatives of the Hospitals Committee for the purpose.

King Edward's Hospital Fund Bill.

With regard to the action taken in pursuance of the instruction of the Committee with reference to the King Edward's Hospital Fund Bill it was reported that the matter was freely discussed in the House of Commons, and that as the result of the intervention of the Prime Minister and the Leader of the Opposition the Bill was

eventually carried with slight modifications. No provision was made for the inclusion of any persons in the Council of the fund in a representative capacity; but though the Council will be nominated by the president for the time being, and all acts will be virtually subject to his approval or veto, amendments were introduced providing for consultation by the Sovereign with certain representative persons in deciding as to the filling of any vacancy in the office of president, and also for an annual audit of the accounts of the Fund by an auditor appointed by the Local Government Board.

Hospital Administration.

The minutes of the Representative Meeting with reference to the special report of the Committee on Hospital Administration were noted as governing the future policy of the Association, and as constituting standing instructions to the Committee.

Having considered the minute of the Representative Meeting as to requiring a certificate for the medical attendance of all persons attending out-patient departments, the Committee resolved not to press the further consideration of this matter.

The minutes of the Representative Meeting with regard to the model principles of hospital management suggested by the Joint Hospitals Committee were considered, and the Medical Secretary was instructed to prepare a summary of the replies of the Divisions and of the suggestions made in the Annual Representative Meeting.

Hospital Conference.

The arrangements for the next United Kingdom Hospitals Conference were discussed, and it was resolved to make certain suggestions to the Joint Committee appointed by the last conference.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BIRMINGHAM BRANCH:

CENTRAL DIVISION.

A SPECIAL meeting of the Division was held on October 16th to consider the Referendum on the Draft Charter. Mr. J. NEALE, Chairman, presided. Twenty members of the Division attended the meeting; 282 were absent.

The Referendum.—The CHAIRMAN introduced the business of the reports on the Referendum, and ruled that the voting should be "Aye" or "No" on each referred resolution, and that no amendments were admissible. The voting was as follows:

		For.	*Against.*
On Minute	123	2	13
,, ,,	283	1	16
,, ,,	287	1	16
,, ,	293	1	16
,, ,,	298	1	16
,, ,,	299	1	14
,, ,,	303	2	13
,, ,,	328	1	13
,, ,,	330	1	13
,, ,,	342	1	13
,, ,,	346	1	13

After considerable discussion the following resolution was passed by 7 votes to 3:

That the Representative should be instructed to support the whole of the Council's alternative scheme as follows:
The Council at their said meeting may either approve the resolution or refer it back to the Representative Meeting for reconsideration, indicating clearly their reasons for so doing. If the resolution be again sent back unaltered, or altered, in the opinion of the Council, in an unsatisfactory manner, the Council may then determine on a Referendum. The like procedure shall also apply to any decision of the Representative Meeting, other than a resolution.

Notice of Motion.—Mr. J. F. JORDAN gave notice that he would move the following resolution at a subsequent meeting of the Division after notice had been given on the circular:

That the Representative be instructed to support the principle that the Council should be elected by the Representative Body.

COVENTRY DIVISION.

THE second ordinary meeting of the Coventry Division was held at the Coventry and Warwickshire Hospital on November 19th, at 8 30 p m., Dr. W. J. PICKUP in the chair. There were present: Drs. Moore, Davidson, Bennett, Faulder White, Callaghan, Harley, Croft, Pendred, Harris, Fenton, Rollason, Snell, Ballantyne, Orton, Collington, Soden, Bradley, and Lieutenant-Colonel Ward.

Apology for Non-attendance.—An apology for non-attendance, owing to illness, was received from Dr. Harman Brown.

Specimens.—Specimens of infantile pyloric obstruction and carcinoma of caecum were shown by Drs. BALLANTYNE and ROLLASON respectively. Drs. MOORE, FENTON, PENDRED, the CHAIRMAN, and Mr. BENNETT joined in the discussion which followed.

Executive Committee's Report.—The Executive Committee and the HONORARY SECRETARY reported the action taken with regard to a complaint made by a member. The report was unanimously approved in each case.

The Referendum.—This matter was introduced by Dr. MILNER MOORE, representative for joint Coventry, Nuneaton, and Tamworth Divisions. The minutes were then discussed seriatim. No. 123 was carried by 18 votes to 0; not voting, 1. Nos. 283, 287, 293, 298, 299, 303, 328, 330, 342, and 346 were carried unanimously.

EAST ANGLIAN BRANCH:

SOUTH ESSEX DIVISION.

AT the annual meeting of the Division the following were elected office-bearers for the ensuing year: *Chairman*, A. G. Hinks, M.B., Southend-on-Sea; *Vice-Chairman*, S. G. Floyd, M D., Grays; *Honorary Secretary*, W. C. Bluck, M.B., Ludlow, York Road, Southend-on-Sea; *Representative on Branch Council*, W. C. Bluck, M B; *Executive Committee*, V. J. Hodgson, B. H. Leigh, C. J. Marsh, W. H. Morgan, J. R. Pooler, M.B., J. F. Walker, M.B., W. D. Watson.

GLOUCESTERSHIRE BRANCH AND DIVISION.

A SPECIAL meeting of the Branch was held at the General Hospital, Cheltenham, on November 7th, to consider the Referendum on the draft Charter. The PRESIDENT (Dr. Cox) was in the chair, and twenty members were present.

The Referendum.—The PRESIDENT, after introducing the discussion, was followed by Dr. HERBERT BRAMWELL (as Representative of the Branch), Mr. CUTHBERT (member of the Central Council), Drs. PRUEN, SOUTAR, and BATTEN. The meeting finally decided to support the Council of the Association, and endorsed the recommendations as made by the majority of that Council as set forth in the Referendum Report.

LANCASHIRE AND CHESHIRE BRANCH:

ASHTON-UNDER-LYNE DIVISION.

A MEETING was held on November 22nd, Dr. CLARKE, Chairman, presiding; sixteen members were present. An invitation was received from the Oldham Division inviting members to their next meeting.

Annual Representative Meeting.—Dr. CLARKE presented his report of the Representative Meeting at Exeter, and was accorded a hearty vote of thanks.

The Referendum.—The resolutions of the Representative Meeting referred by the Council to the Divisions were each considered, and approved *nem. con.* A separate vote was taken on each resolution.

Hospital Abuse.—Replies to questions submitted by the Hospitals Committee. (1) No. (2) Subscribers' letters should be discontinued. (3) Yes. (4) Yes, except in urgent cases and sudden illness. (5) It was suggested there should be a joint committee of members of the Division and of the District Infirmary Committee to deal with cases of abuse as they occur.

Notification of Births Act.—This matter was referred to a special meeting to be held.

Next Monthly Meeting.—It was decided that the next monthly meeting should be in the form of a social gathering.

METROPOLITAN COUNTIES BRANCH:

HAMPSTEAD DIVISION.

A MEETING of this Division was held on Thursday, November 14th, at 8.30 p.m., at the Hampstead Conservatoire, Swiss Cottage, N.W. The chair was taken by Dr. OPPENHEIMER, in the temporary absence of Dr. Pidcock.

Confirmation of Minutes.—The minutes of the meeting of October 24th were taken as read. Dr. PIDCOCK then took the chair.

Election of Branch Council Representative.—Dr. Macevoy having unavoidably resigned this post, Mr. Nelson Hardy was elected *nem. con.* A correspondence with Mr. F. R. Humphreys was read before the election of Mr. Nelson Hardy. The Honorary Secretary was directed to make a suitable reply. Mr. Humphreys's resignation from the Committee was accepted with regret. Dr. Macevoy was then re-elected as an ordinary member of Committee.

Paper.—An interesting paper was then read by Miss M. L. DOBBIE, M.D., on the scope of Swedish medical gymnastics. A discussion followed, in which Messrs. HUMPHREYS, HARDY, MACFADDEN, WELLINGTON, and ARMIT took part. A hearty vote of thanks was passed to Miss Dobbie. Dr. OPPENHEIMER then resumed the chair.

Notification of Births Act.—A prolonged discussion took place on this subject with regard to the action to be taken by the Division. Dr. MCCLEARY (M.O.H. Hampstead), Dr. BUTLER (M O.H. Willesden), and Dr. TAYLOR (M.O.H. Finchley) gave their views. Dr. MCCLEARY advised against opposition, and promised that notification in Hampstead should be by letter-card and not on an open post-card. He thought the adoption of the Act would be for the public good. Dr. BUTLER agreed that the medical profession had a grievance, but that on the whole public interest demanded that the Act should be adopted. He admitted that the breach of professional secrecy involved was a grave matter, in view of opinions expressed by legal authorities—for example, in the Kitson *v.* Playfair case—in the past. He mentioned that the Act was defective in many ways—for example, no mention of notifying the address, an essential point. Dr. TAYLOR hoped the meeting would not oppose the Act. Dr. FORD ANDERSON stated that he had had cases which he should absolutely refuse to notify. He urged that the question of fee was also of importance. Mr. ARMIT gave a full account of the action of the Association in the matter. Dr. MACEVOY thought that the primary duty of the medical profession was to save life, and that if the Act would be likely to have this effect it should not be opposed. Dr. WELLINGTON and Dr. OPPENHEIMER strongly objected to the line taken by the Association's Representatives in this matter. Opposition should have been made not on the question of fee, but on the ground of breach of professional secrecy. The matter having been thoroughly discussed from every point of view, Mr. ARMIT proposed and Mr. NELSON HARDY seconded:

> That this Division should use all means in its power to prevent the adoption of the Act by the local authorities.

This was carried. It was further resolved that notice should be sent to the local authorities to this effect.

Vote of Thanks.—A vote of thanks was then passed to the three medical officers of health present.

A letter was received from Dr. F. W. Andrew, M.O.H. Hendon, regretting his inability to be present owing to indisposition.

The Hampstead Mortuary.—Mr. CUNNINGTON pointed out the great inconvenience caused by having to convey bodies from remote parts of the borough to the present outlying mortuary. Mr. HENSLOWE WELLINGTON pointed out that until the recent accident at West Hampstead only one complaint had been made, three years ago. The great majority of the bodies came from the Heath and the hospital. The consideration of this subject was adjourned till the next meeting.

Central Emergency Fund.—Printed forms were handed round to members for subscriptions to this fund.

A letter of regret was received from Mr. W. B. Parsons for inability to be present.

MARYLEBONE DIVISION.

A GENERAL MEETING of the Marylebone Division of the Metropolitan Counties Branch of the British Medical Association was held at 11, Chandos Street, W., on Tuesday, November 19th, at 5 p.m. The chair was taken by Dr. F. J. SMITH, Vice-Chairman of the Division.

Sir VICTOR HORSLEY made his report upon the Representative Meeting, 1907. He said: The Representative Meeting at Exeter was an extremely useful one. It represented only a part of the work done by the Representatives of the Association during the year, as a report on the proposed Charter was made at a special meeting, and it is upon the draft drawn up on this occasion upon which the Council has based its Referendum. A large amount of work was done on these days. At the ordinary meeting at Exeter several matters of practical interest—but most important, so far as the Association was concerned—were discussed, and particularly the report of the Special Finance Inquiry Committee. The Representatives at the meeting held at Caxton Hall during the previous year had appointed a Special Committee to inquire into the finances of the Association, but the report could not be prepared in time to be submitted to the various Divisions. Further, so much of it consisted of narrative that it only remained for the Representative Meeting to pass resolutions in relation to the organization of the Association, and refer other matters to the Divisions and to the Council, according to the respective duties of those bodies. As a matter of fact, the whole question of the organization of the work of the Association thus came to the front, and for the first time the Association was officially divided for administrative purposes into three departments—the business department, the medical (or professional) department, and the editorial department—each with a separate head. For instance, Mr. Elliston was head of the business department, Dr. Whitaker of the medical, and Dr. Dawson Williams of the editorial department. The report of that Committee would be one of the most useful ever brought before the Association, because the organization was now logically arranged on a practical working basis. Hitherto there had been an idea that the General Secretary was capable of sympathizing with and directing the whole of the work of the Association, which, as a matter of fact, no one could do. Moreover, when there came the development of the Association under the Constitution of 1902 all the highly technical work of the Medical Committees really lay outside the ken of the General Secretary. So that this report on the general finances and work of the Association, which would come before the various Divisions for certain details, was one of the most important the Association had received. He concluded by reminding the Division of the very large amount of work done by the Chairman of Representative Meetings, Dr. Macdonald, of Taunton. Considering that he had had to manage these great meetings, and to know all the business of the Association, a wonderful quantity of work had been efficiently done by Dr. Macdonald, and he should not like to report upon that work without alluding to his services.

The CHAIRMAN proposed a vote of thanks to Sir Victor Horsley for the report, and for his services as Representative of the Division. This was carried with acclamation.

Dr. HAWTHORNE: I am sorry to appear to strike a somewhat discordant note in connexion with the vote of thanks to Sir Victor Horsley. I am behind no one in appreciation of Sir Victor Horsley's services and the enormous amount of work that he has done. He has placed this Association in the first rank, and has given to it of his very best, and on Sir Victor Horsley's best we do not desire any possible improvement. But there was one piece of business at the Representative Meeting which can hardly be passed by without comment. I refer to the resolution with regard to early notification of births. This is a matter which involves constitutional questions, because this question had not been brought before the Division, and therefore Sir Victor Horsley could not have been acting as our Representative on that occasion. The Representative Meeting on that occasion was simply composed of a number of gentlemen expressing individual opinions, and it had no right or title to express the opinion of the Division which sent them to that meeting. If this vote of thanks to Sir Victor Horsley is simply for

the report I am very glad to second it, but if we are going on to thank him for his services it does seem necessary that we should take note of this subject, because I cannot help feeling that the action of the Representative Meeting in connexion with that Bill was most unfortunate, and unfortunate in this respect, the absence in the Bill of any provision for payment to members of a notification fee. Personally I agree fully that members of the profession who render services to the State should be paid for them, and am, therefore, not in sympathy with the objections advanced by the Representative Meeting. That, however, is not the chief objection to the Bill. It compels members of the profession to violate the sanctity of confidences placed in them by patients, and one cannot imagine a more unfortunate position for a member of the profession than to have to proceed straight from a sick room to notify publicly what has taken place there. I cannot help feeling that considerable responsibility for the presentation of the profession to the public in a somewhat sordid attitude rests with the Representative Meeting; and although I yield to no one in appreciation of what Sir Victor Horsley has done for the Association and the time and labour which he has expended, I do wish emphatically to say that the attitude of the Representative Meeting was not a sound one. Personally I feel strongly that it was a most unfortunate circumstance, and I therefore wish to protest, with all due deference and respect to Sir Victor Horsley, against the attitude which our Representative Meeting took on that occasion.

Sir Victor Horsley: May I explain what happened at the meeting? It is a very important matter, because two questions are raised in regard to notification of births. The question came before the Representative Meeting on the following resolution:

> That, in reference to the Notification of Births Bill, steps should be taken to oppose imposition on the profession of breach of professional confidence.

This question was fully discussed, and it was at once shown that there was no breach of professional confidence. The moment the Bill was passed by the House of Commons it was precisely the same position as in notification of infectious diseases. It was therefore not surprising that that point was put to the meeting and lost. As regards the second point, the question was not a sordid question at all; but the Bill put the medical profession in the following position: It said to them, "You shall notify births as they come into your hands; you shall do it without fee or remuneration, and if you do not do it you shall be punished in the police court." Unfortunately, our profession at the present moment is only imperfectly represented in the House of Commons—Dr. Cooper is practically alone—and consequently the position of the profession was not fully put before the House of Commons. Moreover, the resolution of the Representative Meeting has not been quite correctly represented to this meeting. The resolution was:

> That this Representative Meeting of the British Medical Association, while cordially welcoming any legislation which will provide for the early and accurate notification of births, is of opinion that no public work can be justly demanded under penalty from the profession unless the services rendered to the State are fully recognized and paid for.

I am sure that the comments which have been made in the discussion of this matter have been made in ignorance of the fact that the breach of confidence point was disposed of by a former resolution, and that this second point was also discussed. I may add that in the debate I pointed out that several of us were sent as a deputation to Mr. John Burns. He ought to have expressed our views in the House of Commons, but he did not do so. I am bound to say that Lord Robert Cecil did something to represent us in the House of Commons. There is no question of sordidity, but it is merely a question as to what the State is justified in demanding from the medical profession.

Dr. Hawthorne: The question as to whether this is a breach of professional confidence is now being answered every day by reports of meetings of medical men protesting against being converted into Government spies. If Sir Victor Horsley is correct, there is no possible secret acquired by a medical man which must not be revealed if the House of Commons passes a Bill making it compulsory to do so. I maintain that it is being answered by the common sense of the profession that if you learn something in a sick room, and send out information of what has taken place in the sick room, your patients will regard it as a breach of confidence, and in any case surely the profession ought to protest in advance that they would regard it as interference with the best traditions of the profession. The Representative Meeting left that aspect of the matter absolutely on one side, and simply passed a resolution dealing with the questions of fee and penalty, that is to say, a resolution which has been announced to be the voice of the profession left entirely out of consideration the ethical part of the subject.

Central Emergency Fund.

A letter was read from the Medico-Political Committee, calling attention to the Central Emergency Fund and its claims for support.

Sir Victor Horsley moved, and Dr. Hawthorne seconded:

> That the Executive Committee be authorized to draw up a circular appealing for subscriptions to this Fund; this circular to be sent to all members of the medical profession residing in the area of the Marylebone Division.

After a discussion in which Sir Victor Horsley, Drs. Heron, F. J. Smith, Lauriston Shaw, Carr, and Mr. Drew took part, the motion was carried.

The meeting then adjourned.

The Referendum.

A special general meeting was held at the conclusion of the general meeting, to consider the Referendum, Dr. F. J. Smith in the chair.

Minute 123.

> The Council at their said meeting may either approve the resolution or determine on a Referendum, and they shall determine on a Referendum if in their opinion the resolution does not truly represent the wishes of the Association.

Sir Victor Horsley: I should like to move that this minute be approved. I do so because this question is the first question. The Council have to approve of a Referendum report, and the Council's first action is to disapprove of the resolutions of the Representative Meeting, but their disapproval is couched in a very peculiar form. The position is as follows: By the special constitution of the Association, which was come to in 1902 a Referendum was established, so that if the Council justly think that any question has not received proper consideration at the Representative Meeting, and does not represent the wishes of the Association, they will have power to send it down to the Divisions. That is the Referendum. No one could object to a Referendum of that kind. But what the Council is doing is this: For two years that Referendum has been inserted in the Charter, and now the Council comes before us with a bran-new proposition, which establishes the Referendum under a more complicated and difficult form than before. In other words they wish to go back on the Constitution of 1902, now in working order, and to have a new method of Referendum, namely, that if they come to the conclusion that the resolution of the Representative Meeting does not represent the wishes of the Association, they should have power to send it back to the Representative Meeting before it comes to the Divisions. This would mean that it would be hung up for six months or possibly a year. This proposal of Council therefore seems to me most disastrous and uncalled-for. If the Council come to the conclusion that it is advisable to so complicate the Referendum, they ought to have said so two years ago when the first draft Charter was under discussion. I shall vote that we go on *in statu quo* under the present Articles of the Association, under the Charter as already agreed to by the Council.

Dr. Lauriston Shaw: I should like to second this, and say that this method of taking the Referendum is quite impracticable, and it seems to me that we should use the Referendum, not to decide whether an Act of Parliament is to be passed or not, but in order to determine whether any particular clause in the Act should be confirmed or not. It would be democratic to say that you can make Acts of Parliament by means of a Referendum, but you can send every clause of that Act back to an individual member, in order that he may express his opinion on the wording of it. I think that if we once started on such a

method as that proposed by the Council, it would effectually block the Association from ever doing any work for the rest of its life.

The CHAIRMAN: My own personal feeling is that the present Articles have been only five years in existence, and I think they should be allowed to go on for ten or twelve years without alteration.

Dr. CARR: I am afraid my knowledge of the subject is not much as compared with that of Sir Victor Horsley and Dr. Shaw, but still I feel inclined to vote against the resolution. Although the Council had an opportunity of making opposition two years ago, possibly the knowledge gained in these two years may have given them an idea which they had not before that it may be desirable for important matters to be held up six months, or even twelve, and not passed so precipitately.

Dr. HAWTHORNE: Of course the issue lies in the smallest possible compass—whether we favour direct reference from the Council when they differ from the Representative Meeting, or if the Council should have the opportunity of sending the matter back to the Representative Meeting, thereby delaying decision for at least a year.

The CHAIRMAN: Not necessarily.

Dr. HAWTHORNE: Any one who has to do with these matters knows perfectly well that the dangerous thing is not going too fast, but going too slow. What more can you want than to appeal to members of the Association to ask what the policy of the Association should be?

The CHAIRMAN: Is it or is it not a fact that the Council does actually sit upon the same days as the Representative Meeting? If so, if the Representative Meeting passes resolutions on a Monday, is it not possible for the Council to consider the resolutions on Tuesday, send them back to the Representative Meeting sitting on Wednesday, and get them returned on Thursday?

Sir VICTOR HORSLEY: I do not think it will be so in future, because the members of the Representative Meeting are anxious to attend the meetings of the Sections, and they therefore propose to have the Representative Meeting first and the scientific meetings later. As a matter of fact the Council hold a meeting at the end of the Representative Meeting to consider the resolutions passed, and decide whether they will take up any of them or not.

The CHAIRMAN: I must confess that my sympathies are with the Council. I mean to say that there is such a thing as second thoughts, and to hold up the Representative Meeting as absolutely the only unerring body in this universe is a position not quite justified by facts.

Sir VICTOR HORSLEY: Of course it is not, and by the Constitution of 1902 this is provided for in the following way: That if the Council is of opinion that the Representative Meeting is in error, it is to send the questions back to the people who elected the Representative Meeting.

The CHAIRMAN: Yes, but that is a tedious and expensive process.

Sir VICTOR HORSLEY: I think it is an expense that cannot be avoided.

The resolution was then carried.

Minute 283.

Resolved *nem. con.*: That the principle of the election of the Council be that the Council be elected partly by the Branches and partly by the Representative Body.

Sir VICTOR HORSLEY said: I hope that the Division will support that strongly, for the reason that if they do not it will be entirely owing to the unfortunate feeling of difference between the Council and the Representative Meeting. There ought to be no question of two Houses of Parliament quarrelling between one another. They are composed of the same men elected by precisely similar bodies, and there should be no question of the Council being a kind of House of Lords and the Representative Meeting a House of Commons. The only way of putting an end to disputes of that sort is by fusing the composition of the two bodies, and therefore the East Anglian Branch, I believe, proposed this, and, as you see, the Representative Meeting agreed to it *nem. con.* The question of the proportion is the first point. I believe the proportion is about a quarter, and I believe it is the only way in which we shall combine heartily in the work of the Association, because the Council will be fully informed of what is in the mind of the Representative Meeting, and we shall not have the one body criticizing with imperfect knowledge what has passed in the other. I therefore move that we agree to the principle involved.

Dr. LAURISTON SHAW: I will be glad to second it.

Dr. CARR: You have made three statements of some importance. On what authority is the one-third statement made?

Sir VICTOR HORSLEY: I was on the Council of the Association when they decided to take the Referendum, but I was not allowed to comment on that report, because it was postponed from one meeting to another until I was no longer on the Council, and therefore I am entirely unable to say why the Council speak of it as a third.

Dr. HAWTHORNE: It arises in this way. Because in drawing up the Report those members of the Council who are elected by the Branches and those who are elected by the Representative Meeting only are included, leaving out those members representing the Navy, Army, and Indian Medical Services.

Dr. HERON: Apart from the twelve members of the Representative Body, would the Chairman of the Representative Body be *ex officio* a member of the Council?

Sir VICTOR HORSLEY: I expect so.

Dr. HERON: If the Chairman of the Representative Body is *ex officio* a member of the Council, at any rate he is there to explain the intentions of the Representative Body. One person at any rate, particularly the Chairman, can fully explain whatever passes at the meetings of the Representative Body with regard to the resolutions which have come before the Council. There is a vast difference between having one important representative and not having a representative at all.

Dr. CARR: Surely. In my time I should say that there were about a quarter of us who regularly attended the meetings of the Representative Body. There could not possibly be ignorance in the Council as to what occurred.

Dr. LAURISTON SHAW: This seems to me to be a compromise between two extreme views. A second chamber I think is quite impossible at any time; but this is a compromise, and it is a compromise to which I, at any rate, think we should give our assent. Many men hold the view that no one should be officially appointed from one body to the other, and ultimately this two-thirds was agreed upon as a reasonable compromise.

The CHAIRMAN: My view is that the present constitution of the Council has not been given a fair trial. We find out the difficulties gradually.

The resolution was then carried.

Minute 287.

Sir VICTOR HORSLEY: The next resolution is the one which apparently has given rise to the mistake about the one-third or one-quarter, namely, No. 287.

Resolved, with 1 dissentient, that the ratio be 2 to 1.

In this question of ratio is involved a subsequent question—namely, 293; 287 is purely formal. The real question will come on the constitution of the Council subsequently, because on the ratio must depend the proper proportion of the whole Council, and what the Representative Meeting tried to do was to economize by diminishing the number of the present Council.

Dr. LAURISTON SHAW seconded the resolution, which was then carried.

Minute 293.

Resolved, with 5 dissentients: That the Council include 24 members elected by the Branches in the United Kingdom; members, not exceeding 7 in number, elected by the Branches not in the United Kingdom; 12 members elected by the Representative Body; 6 *ex officio* members and 3 members representing the Navy, Army, and Indian Medical Services.

Sir VICTOR HORSLEY said: The total of that ought to be 52. The present average number of the Council is 72, so that the Association will be worked much more economically if we thus reduce the number of the Executive Body. I have no hesitation in saying that it certainly ought to be reduced in number. The only real hardship would be inflicted upon the Colonial members, but I think that 7 is a fair share for the Colonies out of a total of 72; and, numerically, I think that this resolution has everything to recommend it. It contains representation of the different parts of the Association and

representation of members in different parts of the Empire.

Dr. Lauriston Shaw seconded the resolution, which was then carried.

Minute 298.

Sir Victor Horsley: There are several other resolutions arising out of that one. No. 298 provides for the grouping of Branches. Resolved *nem. con.*:

The Council shall be composed of the *ex-officio* members mentioned in the Ordinances and of members duly elected by the following bodies, namely: (*a*) By the Branches of the Association in the United Kingdom, which shall be grouped for the purpose of electing 24 members of the Council in the manner prescribed by By-law 37; (*b*) by the Branches of the Association not in the United Kingdom, which shall be grouped for the purpose of electing members of the Council not exceeding 7 in number; (*c*) by the Representative Body, which shall elect annually 12 members of the Council from lists of candidates nominated by (1) Branch Councils, (2) Divisions, (3) by the Scottish Committee, (4) by the Irish Committee, or (5) by at least 10 members resident in the district of the United Kingdom to which the candidate nominated belongs; and (*d*) by the Council itself, which shall have power to add to its numbers at any of the meetings all or any one or more of the following, namely: One medical officer on the active or retired list of each of the following services: The Royal Navy Medical Service, the Army Medical Service, and the Indian Medical Service, provided that in each case such medical officer shall not have retired from the active list more than five years previously.

Dr. Lauriston Shaw seconded the resolution, which was then carried.

Minute 299.

Sir Victor Horsley: No. 299 is also consequential:

That By-law 37 be redrafted to provide that the grouping of the Branches in the United Kingdom for the election of the Council be generally as shown in Appendix E to the Committee's Report; that each such group elect 4 members of Council; that the members elected by the Representative Body be topographically distributed among the same districts and in the same proportion; and that for this purpose By-law 37 be referred back to the Organization Committee, with the instruction that they reconsider also the details of the grouping and circulate the redrafted By-law to the Divisions.

That was in order to secure absolute topographical representation. I move that we adopt it.

Dr. Lauriston Shaw seconded the resolution, which was then carried.

Minute 303.

Sir Victor Horsley: No. 303:

That By-law 38, subject to amendment as directed, be approved.

Amendment.

That the election in the United Kingdom be conducted by the head office and out of central funds, and the by-law be amended accordingly.

Carried unanimously.

Minute 328.

Sir Victor Horsley moved: That By-law 29 be amended by substituting for the word "ten" in the fourth line the word "twelve" (sixth line as herein shown).

Carried.

Minute 330.

That the business of the Annual Representative Meeting shall be to elect a Representative of a Division as the Chairman of Representative Meetings, and also a Representative of a Division as Deputy Chairman; to elect a President of the Association; to elect twelve members of the Council, and such other officers and members of Committees as by the Ordinances or By-laws be required to be so elected; to consider the election of honorary members when recommended by the Council; to appoint a place at which the next Annual Representative Meeting shall be held; to consider the annual financial statement and balance sheet presented by the Council; to appoint an auditor or auditors (who shall be a professional accountant or professional accountants), and fix his or her remuneration; to consider reports of the Council, reports of committees instructed to report to such meeting, and reports of Branches and motions relating to the adoption of such reports in whole or in part; to make new ordinances or by-laws and alter or repeal existing ordinances or by-laws, and to consider any resolution relating to the honour and interests of the medical profession or of the Association which shall have been adopted by any Division or Branch, provided that any such resolution proposing material alteration of the constitution or policy of the Association shall have been submitted through the Journal for the consideration of all the Divisions not less than three months previously.

Sir Victor Horsley: This is undoubtedly an important matter, and has been so profoundly neglected by the members for so many years that it ought to receive proper consideration. We must have the question threshed out and properly discussed, and propose to bring the work more under examination. The reason that we have never had a general business meeting is that we are under the Companies Act. The whole object of obtaining a Charter is to free ourselves from the Companies Act. What we propose is that the matter should go before the Representative Meeting, and if this is done annually we must have a meeting of the Association to consider the balance-sheet. I move that it be approved.

Dr. Lauriston Shaw: I second it. As a matter of fact that was agreed upon, and the Central Council fully considered it.

Carried.

Minute 342.

That the composition, duties, and powers of the Finance Committee, as stated in the Schedule to By-laws, be approved.

Sir Victor Horsley: This is most important. The position is that the finances of the Association have been managed by the Journal and Finance Committee. I have been serving on the Committee for years, and I say without hesitation that I am convinced that the Committee is a perfect farce. We have an expenditure of nearly £6,000 going on without examination into vouchers or into details. We have an annual turnover of £50,000, and if it was known outside that a business of such proportions was conducted without a genuine Finance Committee we should be a laughing stock. What the Representative Meeting proposed is that there should be a Finance Committee and a Journal Committee. The affairs and policy of the Journal are so closely mixed up with those of finance, and consequently the great majority of the matters coming before the Journal Committee would probably involve expenditure, and would have to be held up until the Finance Committee decided this part of the question. Much time would thus be wasted. The finances of the Association require very careful control and watching by a committee. The Journal at the present moment is run by Dr. Dawson Williams, whom we all trust absolutely. But there are members of the Association who take a great interest in the Journal, and who think it might be considerably improved, and what we ask is that a committee should be formed of these men, not in any way to detract from his responsibility, because undoubtedly Dr. Dawson Williams has made a great success of the Journal, but at the same time it would excite more interest in the Association if the members who are interested in the Journal would form a Committee who would assist in advising, proposing alterations and reformations. I might say that this question of splitting the Journal and Finance Committee was fully considered at an important Committee of Council composed of the Chairmen of all the Committees of the Association, and I believe they voted unanimously for its separation. However, the Council threw it out, and from that moment of course the question has not been discussed until now it comes up again, and the Representative Committee formulate this separation. I therefore move that this resolution be approved.

Dr. Heron: I am very glad to second it, and I may say that I do not think that any one who knows anything about the finances of the British Medical Association would be unwilling to hand over the charge of them to a Committee who has nothing else to do.

Dr. Carr: I have heard only one side of the question, and no arguments on the other side, and I always vote for the side which is not represented.

Carried.

Minute 346.

That the composition, duties, and powers of the Journal Committee, as stated in the Schedule to the By-laws, be approved.

Sir Victor Horsley: I wish to point out that it is provided that two members of the Journal Committee should be on the Finance Committee.

Carried unanimously.

The meeting then concluded.

WALTHAMSTOW DIVISION.

A MEETING of this Division was held at the Walthamstow Hospital on Tuesday, November 12th, 1907, at 4 p.m. Dr. FOWLER was in the chair, and seven members were present.

Confirmation of Minutes.—The minutes of the previous meeting were confirmed.

The Medical Practitioner and Public Health.—A paper entitled The Medical Practitioner and Public Health was then read by the CHAIRMAN, in which he dealt with the various obligations imposed upon medical practitioners by the State, optional powers conferred upon them, and the injustice of requiring unpaid work to be done by medical men for the public benefit. A discussion followed, in which Drs. WISE, SHALWELL, and HICKMAN took part. Dr. FOWLER replied.

The Referendum.—The meeting then turned its attention to the Referendum, with the following results:

		For.	Against.
Minute	123	7	0
,,	283, 287, 293, 298	1	6
,,	299, 303	7	0
,,	328	1	6
,,	330	0	7
,,	342, 346	0	7

Vote of Thanks to Chairman.—A vote of thanks was then heartily and unanimously accorded to Dr. FOWLER, for which he thanked the meeting, and the proceedings concluded.

WESTMINSTER DIVISION.

A SPECIAL meeting of the Westminster Division was held on November 21st at St. James's Vestry Hall, Piccadilly, to discuss and vote upon the Referendum. The PRESIDENT (Dr. Knowsley Sibley) occupied the chair. Eleven members were present of a total membership of 262.

The Referendum.—After the ordinary business had been gone through, Dr. GEORGE EASTES, who had been specially invited, read a carefully thought out paper stating the case for the Council. Dr. HASLIP replied, and explained the opinions of the signatories of the Minority report. Dr. EWART in a long speech supported the opener of the discussion, as he did not think the Representative Meeting should control the government of the Association, but that a second chamber was necessary to control and restrain them. He supported the suggestion put forward by Dr. Haslip that a round-table conference should be called to discuss and settle points of dispute and reconsider the drafting of the Charter itself. In the course of the subsequent discussion, in which Drs. FINUCANE, BAYNES, SINCLAIR, and others took part, a general opinion was expressed that a Referendum to be voted upon in meeting only was not a fair criterion of the feelings of the general body of the members, many of whom were unable to attend meetings, and that the Referendum should have been sent to the Divisions in the form of questions to be answered "Aye" or "No," and that it should have been a Referendum by postal card. Dr. KNOWSLEY SIBLEY in a brief speech proposed to put the various clauses of the Referendum to the vote, when Dr. MCCANN, seconded by Dr. EWART, moved as an amendment:

> That this meeting declines to vote upon the Referendum, as it is of opinion that a round-table conference of representatives of the different opinions held concerning the Referendum should be called, in order to facilitate the Charter being finally placed before the Divisions and Representative Meeting in such a form as to receive the approval of the whole of the Association.

This was carried, and was then put as a substantive motion, when it was carried unanimously.

Vote of Thanks.—A hearty vote of thanks to Dr. George Eastes for his kindness in attending the meeting and laying the question so clearly before it was passed with acclamation.

The meeting then terminated.

NORTH OF ENGLAND BRANCH.

THE autumn meeting of this Branch was held in the library of the Royal Victoria Infirmary, Newcastle-on-Tyne, on Thursday, November 7th, the PRESIDENT (Dr. Cox) in the chair. Some forty members were present, including Mr. Rutherford Morison, Mr. Martin, Dr. David Drummond, Mr. H. B. Angus, Mr. Richardson, Dr. Beattie, Dr. Wear, Dr. Wilkinson, Dr. W. S. Dickie, Dr. Howell, Dr. Todd, Dr. Charles, Dr. J. W. Smith, Dr. Duke, Dr. A. Smith, and Dr. Smurthwaite (Honorary Secretary).

Neurasthenia.—Dr. DAVID DRUMMOND read a paper entitled the Nature of Neurasthenia and its Rational Treatment. He advanced the view that neurasthenia was essentially a disorder of the mind, and arguments in favour of this opinion were stated. Stress was laid upon the absence of physical basis for the symptoms, and it was pointed out that cases of neurasthenia frequently developed into insanity, whilst the success of mental treatment was referred to. The diagnosis of neurasthenia was considered, and practitioners were urged to regard the condition as essentially a disease of mental origin, and to avoid giving neurasthenic symptoms any name based upon their locality, such as "gastric catarrh," "weak heart," etc. It was urged that with a correct diagnosis the rational and most successful line of treatment lay in an explanation to the patient of the bearing of his mental attitude towards his symptoms upon his disorder, an explanation that included the encouraging opinion that with a determined effort to combat them the symptoms would disappear. The Weir Mitchell treatment was discussed, and isolation with "persuasion" recommended in pronounced cases. The PRESIDENT asked if Dr. Drummond had had any experience in hypnotism in neurasthenic cases. Dr. Cox considered that the bringing of a fresh influence to bear on the cases was very important—for example, a consultant—the patient took more notice. Dr. WILKINSON thought that great harm was done by explanation to the patient. With regard to diagnosis there should be thorough investigations and the translation of symptoms by degrees. Dr. WEAR asked if the reader of the paper could state that a case of neurasthenia ever recovered. Dr. HOWELL wished to hear Dr. Drummond's experience on sedatives. Did he find it so easy in diagnosis. Typhoid spine was thought to be a neurosis, yet is now known to exist. Dr. BEATTIE said Dr. Howell had raised the point as to whether the diagnosis was easy. It was not always easy, and sometimes exceedingly difficult. The line of demarcation between organic or certifiable conditions of the brain and neurasthenia was very narrow. There might be some slight organic defect underlying those very exaggerated neurotic cases. With regard to the persistence of neurasthenia, he instanced the neurotic stomach case in the hospital which was operated on and a healthy stomach found. After the operation, four years ago, the symptoms still continued to this day. Dr. DRUMMOND said the speakers entirely missed the point in his paper; neurasthesia was always a mental disorder, and could only be cured by moral suasion. He had had no experience in hypnotism. Some of the worst cases were those in which hypnotism had been practised. The speaker who said he (Dr. Drummond) thought the diagnosis was easy had not heard what he said in his paper. With regard to the pathology, nobody knew anything about it.

Specimens.—Specimens were exhibited and described by the following gentlemen—Mr. RUTHERFORD MORISON: A series of ruptured gastric ulcers. Mr. A. M. MARTIN: (1) Congenital umbilical hernia, (2) ruptured semilunar cartilage. Mr H. B. ANGUS: (1) Liver abscesses, (2) uterus showing epithelioma resembling a polypus. Mr. RICHARDSON: (1) Cystic hygroma of the axilla, (2) carcinoma of the transverse colon. Dr. SMURTHWAITE: Specimens illustrating the extent to which operations on the nose can be performed under local anaesthesia.

Vote of Thanks.—A vote of thanks to Dr. Drummond for his valuable paper closed the meeting.

SOUTH EASTERN BRANCH:
NORWOOD DIVISION.

A MEETING of this Division was held at the Streatham Hall, Streatham, on Thursday, November 14th, at 3.30 p.m., C. HODGSON, of Streatham, in the chair.

Confirmation of Minutes.—The minutes of the last (Blackheath) meeting were read and confirmed.

Next Clinical Meeting.—Upon the proposition of Dr. Stewart, seconded by Dr. Hetley, it was resolved that the next clinical meeting should be held at the Home and Infirmary for Sick Children, Lower Sydenham, on Thursday, January 9th, 1908, at 4 p.m., and that Dr. Umney be invited to take the chair.

Annual Representative Meeting.—A letter was read from Mr. Parnell regretting his inability to accept nomination as Representative of the Division, and it was resolved that the election of a Representative be placed on the agenda for the next meeting.

Vote of Thanks to Dr. Ker.—A vote of thanks was unanimously passed to Dr. Ker, who acted as Representative at the last Representative Meeting, and Dr. Ker thanked the members for their vote of thanks.

The Referendum.—A discussion then took place upon the next item on the agenda—"To consider the Referendum Report and Minority Report dealing with proposed Charter"—and, after some remarks by Drs. Ker, Hetley, Stewart, Swayne, and Burgess, it was decided to call a special meeting of the Division at the Queen's Hotel, Upper Norwood, on Thursday, December 12th, at 4 p.m., or earlier if it was found necessary, with Dr. Henry Hetley in the chair.

Papers.—Dr. Leonard Williams read a paper on the practical value of blood pressure estimation; Mr. W. H. Battle, a paper on the radical cure of hernia; Dr. P. N. Panton, a paper on the diphtheria and diphtheroid bacilli. The following joined in the discussion which followed these papers: Drs. Hodgson, Steedman, Hugh Davies, Bigger Stewart, Burgess, Batten, Reade, Hetley, and Pocock.

Number Present.—The meeting was attended by twenty-seven members and fifteen visitors.

Dinner.—After the meeting seventeen of these dined together.

SOUTH WALES AND MONMOUTHSHIRE BRANCH

Cardiff Division.

An ordinary general meeting of this Division was held at the Infirmary on November 20th, at 3.30 p.m., Dr. Crawford Treasure, in the chair.

The late Dr. R. J. Paton.—The Chairman, before commencing the ordinary business of the meeting, drew the attention of the members to the sad death of Dr. Robert John Paton, Surgeon to the Newport and County Hospital. He said he felt sure he was only voicing the feelings of all present in proposing the following resolution:

> That this meeting of the Cardiff Division of the British Medical Association records its sense of the loss which the profession, and particularly the Monmouth Division, have sustained in the death of Dr. Robert John Paton under such distressing circumstances. This meeting further begs to be allowed to express its deep sympathy with the widow and relatives of their deceased colleague.

This was seconded by Dr. H. Vachell and carried unanimously.

Annual Representative Meeting.—The report of the Representative of the Division on the Representative Meeting was received, and a hearty vote of thanks was accorded to Dr. Ewen J. Maclean for his able services as Representative of the Division.

Notification of Births Act.—The Notification of Births Act was discussed, and the following resolution was unanimously carried by the meeting:

> That this meeting of the Cardiff Division of the British Medical Association is of opinion that while it is desirable that early notification of the birth of infants should be provided for, the provisions of the Notification of Births Act, 1907, as applied to medical men, are objectionable, inasmuch as they may interfere with the relationship of professional confidence between medical man and patient, and impose duties upon members of the profession under penalty without providing for payment for their services; it is further of opinion that this Act should not be adopted by the local authority.

Paper.—Mr. William Sheen read a paper on Some Recent Abdominal Sections for Unusual Conditions, and showed some interesting specimens. These cases comprised the following: (1) Partial gastrectomy for sarcoma in a male adult; patient alive and well two and a half years after the operation; the growth reached greater and lesser oments; a small portion of the lowest part of oesophagus was removed. (2) Two operations for ascites due to hepatic cirrhosis, the first five and a half and the second one year ago; frequent tappings previous to the first; the patient now in fair health and no return of the fluid. (3) Acute right perforative salpingitis in a young married woman; diffuse peritonitis, appendicitis simulated; operation was followed by recovery. (4) Perforation of a typhoid ulcer in an adult female in the third week; operation; relief; occurrence of a second perforation (?) which resulted in death. (5) Strangulated retroduodenal hernia operated on on the fifth day; recovery. (6) Acute intestinal obstruction by band, division of band, continuation of symptoms, intestinal anastomosis, recovery. (7) Torsion of the pedicle of an ovarian cyst in the sixth month of pregnancy, operation, no interruption of pregnancy. (8) Idiopathic dilatation of the colon in a baby, bowel enormously distended, evacuation of small and large intestines followed by their suture; death. (9) Large recto-sigmoid prolapse in a baby; abdominal section, after reduction of prolapse sigmoid fixed to internal surface of antero-lateral abdominal parietes (sigmoidopexy); cure. (10) Enterospasm simulating acute intestinal obstruction; exploratory operation; symptoms apparently relieved. (11) Severe constipation in a neurotic male; anterior transplantation of a back-tethered sigmoid and raising of the transverse colon; apparent cure. (12) Very movable liver in association with gall stones in a female; cholecystectomy, hepatopexy; great relief. The Chairman, Dr. Maclean, and Dr. Spencer Watkins commented on the paper, and Mr. Sheen replied.

SOUTH-WESTERN BRANCH:

Truro Division.

A meeting of this Division was held at the Royal Cornwall Infirmary on Thursday, November 14th, Mr. M. R. Taylor in the chair. The following members were present: Drs. E. C. Edwards, H. C. Sharp, F. Hichens, F. C. Hichens, Huntley Clarke, R. F. Stephens, J. W. Haughton, L. D. Gover, Charles Branwell, Hugh Montgomerie, and W. R. Miller.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

The Referendum.—The minutes of the Representative Meeting Nos. 123, 283, 287, 293, 298, 299, 303, 328, 330, 342, and 346, were passed unanimously, the questions involved having been explained by Dr. Ratcliff-Gaylard.

Communications.—Dr. H. C. Sharp read notes on a case of hydronephrosis (showing very large dilated kidney with stone impacted in ureter), the kidney having been successfully removed. Dr. Sharp also showed and read notes on several specimens from operation cases. Mr. M. R. Taylor read notes on a case of a *post-mortem* examination on a patient who had died suddenly from perforation of a gangrenous appendix, there never having been any marked symptoms during life. He also showed a case of a large bony tumour in the girl's neck, probably exostosis.

Visit to the Wards.—The honorary staff of the Hospital then showed the members round the wards and exhibited cases.

Tea.—The members were then entertained at tea by Dr. Sharp. Votes of thanks to him and the matron for their hospitality were passed.

Next Meeting.—It was decided to hold the next meeting at the New West Cornwall Infirmary at Penzance in the second week of January. Dr. Miller agreed to read then a paper on Medical Ethics.

ULSTER BRANCH.

The autumn meeting of this Branch was held in the Medical Institute, Belfast, on Wednesday, November 13th, the President (Dr. Warnock of Donegal) in the chair.

Confirmation of Minutes.—The minutes of the last ordinary meeting were read and confirmed.

New Members.—The Honorary Secretary (Dr. Cecil Shaw) read the report of Council, which stated that Drs. McKee (Craigs, co. Antrim) and Dr. Whyte (Loughbrickland, co. Down) had been elected members; that Dr. Leonard Kidd (Enniskillen) had resigned his membership of the Association on account of his election to the General Medical Council; and that the winter meeting of the Branch would be held in Belfast on January 22nd or 23rd, 1908.

Apologies for Non-Attendance.—Apologies were read from Professor Lindsay and Dr. John Campbell.

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

NOTICE.

OWING to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH: ENGLISH DIVISION.—The first ordinary meeting of the Division will be held at the Cottage Hospital, Maryport, on Friday afternoon, December 13th. The Secretary will be pleased to hear from any member who will read a paper, show cases or pathological specimens.—NORMAN MACLAREN, Carlisle, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—The next general meeting will be held in the Board Room of the Altrincham Hospital at 4.50 p.m., on Thursday, December 5th. Dr. James Niven, Medical Officer of Health for the City of Manchester, will deliver an address on Infantile Mortality. The meeting will be followed by a dinner at the Brooklands Hotel.—T. W. H. GARSTANG, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: ST. PANCRAS AND ISLINGTON DIVISION.—A meeting of this Division will be held at the Temperance Hospital, Hampstead Road, N.W., at 4 o'clock, on Tuesday, December 3rd. W. Wynn Westcott, Esq., J.P., will read a paper on Sudden Death and important matters concerning the Early Notification of Births Act will be put before the Division.—WILLIAM GRIFFITH, Honorary Secretary.

MIDLAND BRANCH: LEICESTER AND RUTLAND DIVISION.—A meeting of the Division will be held at the Leicester Infirmary on Wednesday, December 4th, at 4 p.m. Agenda: Paper by Dr F. M Pope: Some Modern Views on Anaemia. Paper by Dr. L. E Ellis: Some Clinical Aspects on the Choice of Anaesthetics. Any other business.—WILFRED E. GIBBONS, Honorary Secretary.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH.—A meeting of this Branch will be held at the Friends' Hall, Lancaster, on December 4th, at 3.45 p.m. T. H. B. Dobson, M.D.Lond., will open a discussion on Migraine. Any member willing to show cases or specimens is requested to communicate with A. S. BARLING, Honorary Secretary.

SOUTH-EASTERN BRANCH: CROYDON DIVISION.—A meeting of this Division will be held at the Greyhound Hotel, on Thursday, December 5th, at 8 30 p.m Chairman, Dr. A. B. Carpenter. Agenda: (1) Minutes of previous meeting; (2) To arrange for the next meeting and to elect a Chairman; (3) other business. Dr. W. Gripper will open a discussion on anaesthetics Mr. A. C. Z. Cressey will show some lantern slides out of the New Sydenham Society's Atlas; and a few others.—E. H. WILLOCK, C. G. C. SCUDAMORE, Honorary Secretaries.

SOUTH-EASTERN BRANCH: FOLKESTONE DIVISION.—A meeting of this Division will be held at the Victoria Hospital, Folkestone, on Thursday, December 5th, at 8 30 p m. Agenda: (1) Minutes. (2) To further discuss the Referendum Report, the Minority Report, and the Representative Report dealing with the proposed Charter, adjourned from the last meeting, and to vote on certain resolutions. (3) Some clinical cases will be shown.—P. VERNON DODD, M.D., Honorary Secretary, Folkestone.

SOUTH-EASTERN BRANCH: NORWOOD DIVISION.—A special meeting of the above Division will take place at the Queen's Hotel, Church Road, Upper Norwood, on Thursday, December 12th, at 4 p.m., Dr. Henry Hetley in the chair. Agenda: (1) Minutes of last meeting. (2) Election of Representative. (3) To consider the Referendum Report and Minority Report dealing with proposed Charter. (Copies of the Referendum Report and the Minority Report have been already forwarded to each member, and they are also recommended to refer to the SUPPLEMENT to the JOURNAL of September 21st, which contains a report from the Representative Meeting.) All members of the South Eastern Branch are invited to attend and to introduce professional friends, but will be unable to vote on Divisional questions.—ARTHUR W. SOPER, 2, Hamlet Road, Upper Norwood, Honorary Secretary.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION 1907.

Tuesday, November 26th, 1907.

Dr. DONALD MACALISTER, President, in the Chair.

THE eighty-sixth session of the General Council of Medical Education and Registration was commenced on Tuesday, November 26th, 1907, at 299, Oxford Street.

PRESIDENT'S ADDRESS.

GENTLEMEN,—Although in no less than eight cases the tenure of office of members of the Council has expired during the recess, in every instance the outgoing member has been re-elected; and I have thus the satisfaction of reporting that the composition of the Council is unchanged. But I may be pardoned for noting that, for the first time in our history, we are able to count a Lord Mayor among our colleagues. Dr. Caton, who has won our regard and confidence for his personal and professional qualities, has, by the suffrages of his fellow citizens, been raised to the chief magistracy of the City of Liverpool. It will doubtless be your wish to offer his lordship a special welcome, and to congratulate both him and the great community he governs upon the choice that has thus been made.

The University of Wales.

Liverpool has sometimes been described as the English metropolis of Wales. But signs are not wanting that, in the matter of medical education at least, Wales may soon be ready to establish a national centre on its own soil. The petition and draft Supplementary Charter for the erection of a Medical Faculty in the University of Wales were submitted to you last year, and it was agreed that no objection should be taken to the grant proposed. The Executive Committee have had before them the Statutes made by the University Court for the purpose of carrying into effect the provisions of the Supplementary Charter. These Statutes prescribe, as conditions for graduation in medicine or surgery, (1) a curriculum of six years, whereof three at least must be spent in one of the Colleges of the University; (2) previous graduation in Arts or Science, either at the University of Wales, or at some British or other approved University. A provisional committee of advice, to be called the Medical Board, is to be instituted, whose duty it will be to make to the Court recommendations and reports on all matters concerning the Faculty of Medicine. The Statutes provide that one member of this Board shall be appointed by the President of the General Medical Council.

It is clearly intended that the new degrees shall represent a high standard of general and professional attainment. The Executive Committee have, therefore, had little difficulty in deciding that the Statutes as submitted are worthy of approval. The ambition of the University of Wales to establish for its alumni professional degrees implying not only qualification but distinction in medicine deserves in my opinion, our official encouragement. It is of course understood that, without further legislation, these degrees will not admit their holders to the privileges of registration; nor will the University which confers them be entitled to representation on this Council. But it cannot be doubted that proposals for such legislation will ere long be made, and that you will in due course be required to express an opinion upon them.

Finance.

The prospect of a further increase in our membership makes it necessary to have regard to the financial position of the Council. By the exercise of economy of time and money we have succeeded in reducing our expenditure; but our income, derived for the most part from registration fees, is not increasing, and is not likely to increase. Ten years ago 895 medical students were registered here at the beginning of their professional course in London and the provinces. Various causes, including the raising of the standard of preliminary education, have been at work since then to reduce the number, which last year

fell to 521. Though the present year has, up to the present date, shown an improvement to the extent of some 50 additional registrations, the downward tendency during the last seven years is apparent. While it is to be hoped that the efforts of the Council to improve the educational attainments of our future practitioners have not been without effect on the efficiency of those we admit to the *Register*, we must not ignore their inevitable tendency to reduce the number of persons duly qualified for the public service, and incidentally to diminish the available resources of the Council itself.

Statistics of Students.

We may expect fresh light on these direct and indirect effects of our own action from the laborious analysis of statistics respecting the ages and courses of study of students recently qualified, which has been undertaken by the Education Committee under the direction of its Chairman, Dr. Mackay. In pursuance of your resolution of May 30th, much valuable information on these points has been furnished by the licensing bodies during the summer. Our thanks are due to the officers of these bodies and of the Council for the pains they have taken to procure and to tabulate the necessary particulars. But to extract the true lessons from the figures, and to avoid the fallacies that so easily beset inquiries of the kind, will require much care and patience on the part of the Committee and the Council. Meanwhile we shall do well to think twice before we make any further important change in our recommendations in respect of professional education or examination. The results of the recently-completed cycle of inspections have not yet been fully assimilated by the teaching and examining bodies; and, in my judgement at least, it will be wise to allow a little time to elapse before we undertake fresh advances. Consequences are not always easy to foresee, and they are not infrequently other than what, with the most enlightened intentions, we may think ourselves justified in expecting.

Training in Practical Midwifery.

One necessary advance, however, has lately been made by the Council. I refer to the new requirements in respect of training in practical midwifery. That such an advance was opportune, if it was not overdue, appears to be generally conceded by the profession. That the advance involves practical difficulties, which in certain medical centres are not easy to overcome, is also clear. But that the difficulties are local, not universal, and that with good will and enterprise they *can* be overcome, is obvious from the replies of the licensing bodies to our communications on the subject. A number of these have already given effect to our recommendations, and others are seriously engaged in the endeavour to do so. Here again we must be content to "hasten slowly." There is ample evidence that the desire to meet the needs of the case exist and is active; where the means are at present insufficient they will in course of time be provided.

Practice by Companies.

Since we last met, the Bills for the protection of the public by checking the abuses incidental to the practice of medicine and of dentistry by limited companies, which were introduced by Lord Hylton in the Upper House, have been considered by Parliament. As you will remember, the Bills were framed under skilled advice, and received your approval as embodying real improvements on the existing law. The Medical Bill prohibited under penalties the practice of medicine or surgery by companies. The Dental Bill sought to provide that every person, who under the name of a company treated or professed to treat patients, should himself be a legally-qualified dentist.

The Bills, having passed the second reading without objection, were referred to a Select Committee of the House of Lords. The Medical Bill seemed to find favour with the Committee, and being reported without amendment to the House, was duly passed, and sent down to the Commons. The exigencies of business, however, prevented its further progress in that House, and with many other measures it was dropped at the end of the session. The Dental Bill was strongly opposed in Committee. Witnesses representing companies of unregistered persons objected that it was unjust to restrict practices which the present Law of Companies had allowed to grow up. Others on behalf of the British Dental Association urged that the Bill did not go far enough in the direction of restriction. It allowed dental companies to exist as commercial entities, though they could only act by means of dental operators who were duly qualified. The evidence has been published and is worthy of careful study. It illustrates at once the abuses which the Bill sought to remedy, the objections entertained by the officers of the Dental Association to anything short of the total suppression of companies in connexion with dentistry, and the strength of the opposition to suppression which such companies are able to offer. In the end their lordships appeared to be influenced by the arguments of the companies rather than by those of the Association. Amendments were introduced with the object of saving for a period of years the interests which existing companies alleged; but nothing was done to make the Bill more drastic in its ultimate operation, as the officers of the Dental Association desired. Fortunately the amendments, as drafted, proved to be unworkable; and inasmuch as, apart from this defect, they seriously diminished the protection to the public which the Bill was intended to afford, it was intimated to Lord Hylton that the approval of the Council could not be held to extend to the measure in its amended form. His lordship thereupon obtained leave to withdraw the Bill, and it was not further proceeded with.

Being assured that it would be your wish, I conveyed to Lord Hylton an expression of the Council's grateful appreciation of his efforts to procure, in the public interest, a useful amendment of the law, and of his able conduct of the proceedings before the Select Committee.

The Companies Bills Committee will meet during the session to consider what steps should next be taken to give effect to the Council's instructions on the questions referred to them.

In the meantime certain cases have been decided in the courts which may have an important bearing on the subject. They indicate that the law as it stands is capable, if fully enforced, of putting down some of the abuses which were by many thought to acquire new legislation. In some respects the Dentists Act is more stringent than the Medical Acts; while, on the other hand, the Companies Acts are held to give less protection than was supposed to persons who seek to use their provisions for purposes misleading to the public and inimical to its interest. The Irish Branch of the British Dental Association has been both active and successful in the prosecution of test cases wherein these important issues have been raised, and have been settled so far as Ireland is concerned.

It is much to be desired that similar cases should be brought before the Courts on this side of St. George's Channel. Were they equally successful, the effect might be that the necessity for specific legislation in restriction of professional practice by dental companies would be obviated. In view of the difficulty which the Council has experienced in procuring the passage through Parliament even of Bills that are admittedly in the public interest, such a result would be particularly welcome.

Jurisdiction of the Council in Penal Cases.

Last May I referred in my address to certain decisions given in the Chancery Division of the High Court which touched upon the scope of your judgement of "infamous or disgraceful conduct in a professional respect," delivered in connexion with an inquiry into the methods adopted by certain members of a notorious dental company. The decisions in question were subsequently reversed in the Court of Appeal, and when the cases were brought last week before the House of Lords the reversal was sustained. The Lord Chancellor, in giving judgement, put aside as immaterial the question whether, in the circumstances of the particular action, the order made by the Council should have been admitted in evidence or excluded. But he pronounced in forcible terms, and the other Law Lords agreed with him, that the facts proved, which were those on which the Council based its judgement, did constitute "disgraceful conduct" and "professional misconduct." Thus, although the decision of the Council was not in form reviewed by the highest tribunal, the grounds of its decision were indirectly declared to be amply sufficient to justify its sentence.

Penal Cases.

The November session of the Council is in practice specially appropriated for penal business; and I regret to

say that on this occasion the greater part of our time will necessarily be occupied by inquiries into cases of alleged misconduct. It would not be right that I should now discuss the details of these cases; but I may say, in general terms, that the preparation of them for your consideration has called for much anxious thought on the part of the President, legal advisers, and Penal Cases Committee. The cases include charges of "covering," of unprofessional canvassing for patients, and of offences amounting to crime or misdemeanour. All of them involve the possibility of serious consequences both to the accused persons and to the public, and in all of them the Council may be trusted to exercise its judicial functions with its accustomed impartiality and independence.

Medical Regulations in Canada.

From information which has reached us from Canada, it appears that the provincial authorities in Quebec have agreed to a modification of the local law which assimilates it to the provisions of Part II of the Medical Act, 1886, and removes the difficulties in the way of medical reciprocity to which I referred in my last address. The formal notification of the change has not yet reached the Privy Council, and so we shall not be required to take any official action at this session. But we may expect that, before the Executive Committee meets in February next, a further step may have been taken in the direction of reciprocal recognition of the medical qualifications granted in this country and in this important province of the Dominion of Canada.

In the Province of Nova Scotia, which has already begun to furnish us with applicants for home registration, legislative changes have been made which fulfil the expectations of the Executive Committee respecting the assimilation of the provincial curriculum to that which is in force at home. In other words, the recognition of Colonial diplomas by the mother country has had once more the gratifying effect of improving the conditions of medical education beyond the borders of the United Kingdom.

On the motion of Dr. LITTLE the President was thanked for his address. It was ordered to be printed and entered on the minutes.

RESULTS OF PROFESSIONAL EXAMINATIONS.

On the motion of Dr. MCVAIL it was agreed that the following yearly tables for 1907 should be received and entered on the minutes:

(*a*) Table showing Results of Competition held on November 11th, 1907, for Commissions in the Medical Staff of the Royal Navy.
(*b*) Table showing Results of Competition held on July 25th, 1907, for Commissions in the Army Medical Service.
(*c*) Table showing Results of Competition held in July, 1907, for Commissions in the Indian Medical Service.

FEES OF MEMBERS OF THE COUNCIL.

Dr. PYE-SMITH moved and Dr. MCVAIL seconded:

That the following recommendation of the Executive Committee be *adopted*—namely, "That the *Standing Orders*' Cap XI, 8, be *amended* so as to read as follows:
'The fees for attendance at meetings of the Executive Committee and the Penal Cases Committee shall be five guineas a day, and at meetings of the Branch Council two guineas a day for each member attending, his travelling and hotel expenses being also paid.'"

The PRESIDENT, in reply to Mr. MORRIS, said the reason it was proposed that members of the Executive and Penal Cases Committees should receive five guineas a day, while the members of the Branch Council should receive only two guineas a day, was that the members of the former Committees met at various times of the year, when other Committees were not sitting, and the members could not attend without sacrificing two other days.

The motion was then agreed to.

DENTAL BUSINESS.

The Council then received a report from the Executive Committee with reference to an application for registration by a dentist, founded chiefly on the fact that he was registered as a dentist in Queensland. The application was refused on the ground that registration under the Dental Act of Queensland, 1902, is not recognized by the Medical Council as entitling a person to be registered on the *Dentists' Register* of the United Kingdom, and that there was no evidence to show that he had obtained registration in Queensland after an appointed course of study and examination. The applicant appealed to the Privy Council under the provisions of Section 10 of the Dentists Act, 1878, against the refusal to register him. The Privy Council, having been informed of the Council's reasons for refusing registration, rejected the appeal.

The PRESIDENT, in reply to Mr. TOMES, said the principle had thus been established by the Privy Council, and no doubt similar applications for registration without Colonial examination and licence would be dealt with in the same way.

UNQUALIFIED PRACTICE.

Dr. LANGLEY BROWNE moved:

That this Council, deeming it to be contrary to the public interest that any person other than duly qualified practitioners in medicine and surgery should practise medicine in Great Britain and Ireland, appoint a Committee to draft such amendments of the Medical Act as may be necessary to secure this prohibition, and to report to the Council at the session in May.

He was of opinion that, as almost every other country and also the Colonies had in recent legislation taken power to secure this prohibition, the General Medical Council, as the body appointed to administer the law in this country, should, if it could not draft such amendment of the Medical Acts as would receive the support of the Privy Council, take further powers to attain that end in the interests of the public. The mischief caused by unqualified practitioners throughout the country was very great; the amount of drugs taken on the prescription of chemists and other unqualified persons was seriously affecting the public health, and anything that could be done to stop such practices would be an advantage to the public.

Dr. MCMANUS seconded. He had a very keen sense of responsibility in the matter as an elected Representative, because a large number of medical men who fully recognized the splendid work that the Council had done to elevate the status of the profession, and to see that students were what they should be, yet felt very strongly that the general practitioners of England had been to a great extent ignored. It was felt that if the Council would only take the trouble to appoint a Committee to go into the grievances of the general practitioners it would find a most deplorable state of affairs. Speaking from his personal experience, he could bring before any committee cases with regard to prescribing chemists, herbalists, quack-pill vendors, and quacks of every description who practised and advertised with impunity.

Dr. LATIMER associated himself with the observations of Dr. McManus. He appealed to the Council to consider the question of the illegal practices of medicine and surgery carefully; and, if the Council were to make representation to the Privy Council in the matter, some amelioration would take place in the conditions under which medical men practised. It behoved the Council to study these things by a Committee in order to see whether it could not formulate some amendment of the Medical Acts by which practices of this sort might be prohibited.

Sir JOHN MOORE suggested that the resolution should be extended so as to include midwifery.

Dr. NORMAN MOORE said that it was not only among the poor and ignorant that the proceedings complained of went on; they obtained to an enormous extent amongst the most highly educated and wealthy classes, and he even feared that in those two exalted bodies which made the laws of the realm, the House of Commons and the House of Lords, there was a very large proportion of persons who sought this kind of relief occasionally, at any rate, when they were ill. Therefore, although they must all be absolutely in favour of the discouragement and suppression of this kind of practice, yet they must proceed with caution at present in asking the Legislature for a measure of this nature.

Sir CHRISTOPHER NIXON wished to emphasize what had been said, especially with regard to prescribing medicine by pharmaceutical chemists. Parliament having conferred on the Council powers with regard to the control of medical registration the Council ought to take steps, on the lines laid down in Continental countries, to afford some protection to men already on the list. He hoped the Committee

Results of Examinations.

The following tables represent an analysis of all examinations for the Services since last session—namely, one for the Indian Medical Service, one for the Royal Navy, and one for the Royal Army Medical Corps:

Table I.

Showing the Extent of the Competition for each Service.

Services.	No. of Candidates.	No. of Vacancies.	Proportion of Candidates to Vacancies.
Royal Navy Medical Service.	13	11	5 to 4.2
Royal Army Medical Corps...	44	30	5 to 3.4
Indian Medical Service ...	33	14	5 to 2.1
Total or average ...	90	55	—

Table II.

Showing whence the Candidates received their Qualifications.

Licensing Body.	Number of Candidates.	Proportion of Entire Number.
English Colleges and Universities ...	33	33.6 per cent.
Scottish ,, ,, ...	23	25.5 ,,
Irish ,, ,, ...	31	34.4 ,,
Colonial ,, ,, ...	0	—
Mixed	3	—
Total or average	90	—

Table III.

Showing the Proportion of Commissions Gained by the Candidates of each Country.

Country.	Number of Commissions Won.	Proportion of all Commissions Offered.
England	25	45.4 per cent.
Scotland	13	23.6 ,,
Ireland	17	30.9 ,,
Colonies	0	—
Mixed	0	—
	55	—

Table IV.

Showing the Relative Success of the Candidates of each Country in Proportion to their Respective Numbers.

Country.	Number of Candidates.	Number who Gained Commissions.	Proportion of Success to Candidates.
England	33	25	75.7 per cent.
Scotland	23	13	56.5 ,,
Ireland	31	17	54.8 ,,
Colonies	0	0	—
Mixed	3	0	—
Total or average...	90	55	61.1 per cent.

Table V.

Showing the Percentage of Candidates who Passed the Qualifying Standard, including those who Gained Commissions.

Countries.	Number who Entered.	Number who Passed the Standard.	Proportion to the Total.
English candidates ...	33	31	93.9 per cent.
Scottish ,, ...	23	17	73.9 ,,
Irish ,, ...	31	23	74.1 ,,
Colonial ,, ...	0	0	—
Mixed ,, ...	3	2	—
Total or average ...	90	73	81.1 per cent.

Table VI.

Showing the Proportion of those who Failed Totally among the Candidates of each Country.

Country.	Number of Candidates.	Number Rejected.	Proportion of Total Failures.
English candidates...	33	2	6.1 per cent.
Scottish ,, ...	23	6	26.1 ,,
Irish ,, ...	31	8	25.8 ,,
Colonial ,, ...	0	0	—
Mixed ,, ...	3	1	—
Total or average ...	90	17	18.8 per cent.

Table VII.

Showing Details of the Performance of each Class of Candidate.

Qualifications.	Number of Candidates.	Commissions Gained.	Qualified but Unsuccessful.	Rejected.	Percentage Rejected.
English Conjoint Board alone	24	19	4	1	4.1
,, ,, and Oxford degree	0	0	0	0	—
,, ,, and Cambridge ,,	3	3	0	0	00 0
,, ,, and London ,,	1	1	0	0	—
,, ,, and Durham ,,	0	0	0	0	—
,, ,, and Manchester ,,	0	0	0	0	—
,, ,, and L.S.A. ,,	0	0	0	0	—
English Apothecaries' Society alone ...	0	0	0	0	—
London degree alone	0	0	0	0	—
Liverpool	1	0	1	0	—
Cambridge degree alone	2	1	1	0	—
Durham ,, ...	1	0	0	1	—
Birmingham ,, ...	0	0	0	0	—
Manchester ,, ...	1	1	0	0	—
Scottish Conjoint Board alone	4	2	1	1	25.0
Scottish Conjoint Board and Edinburgh..	1	0	0	1	—
St Andrews Degree alone	1	1	0	0	—
Aberdeen degree alone	7	5	1	1	14.3
Edinburgh ,, ...	10	5	2	3	30 0
Glasgow ,, ...	0	0	0	0	—
Irish Conjoint Board alone	12	7	1	4	33 3
,, ,, and Irish degree ..	0	0	0	0	—
Dublin University alone	15	7	4	4	26 6
Royal University of Ireland	4	3	1	0	00.0
Mixed	3	0	2	1	—
Total or average	90	55	18	17	—

Table VIII.

Percentage Comparison of the Work of certain Classes of Candidates.

Qualifications.	Number of Candidates.	Gained Commissions.	Qualified but unsuccessful.	Total Qualified.	Number rejected.	Percentage of Winners.	Percentage qualified.	Percentage rejected.	Order.
English Conjoint diploma alone	24	19	4	23	1	79.1	95.9	4 1	
English diplomas and English degree	4	4	0	4	0	100.0	100.0	0.0	
English degrees alone	5	2	2	4	1	40.0	80.0	20.0	
Irish degrees alone	19	10	5	15	4	52.6	78.9	21.8	
Scottish degrees alone	18	11	3	14	4	61.1	77.7	22.0	
Irish Conjoint diploma alone	12	7	1	8	4	58.3	66.6	33.3	
Scottish Conjoint diploma alone	4	2	1	3	1	50.0	75.0	25.0	
Other classes together	4	0	2	2	2	—	—	—	
Total or average	90	55	18	73	17				

would be appointed, not for the reasons suggested by Dr. Langley Browne, but because, although it might be difficult to get the Legislature to pass a comprehensive measure, still they might get in the thin edge of protection for some of the men who were already on the *Register*.

Dr. LINDSAY STEVEN would support the motion if, instead of the word "qualified," the word "registered" were substituted, as registered men were the only men the Council had power over; and after the words "Great Britain and Ireland" were inserted the words "for gain," which he thought was an important part of any legislation which might be obtainable upon this matter. He did not think the Council would be doing any harm in adopting the motion for the purpose of obtaining information; and while it might be difficult to persuade the Legislature to pass an Act as suggested, it would be well to bring the matter before it.

Dr. MACKAY did not think it possible that any legislation could be carried through which would prevent any person, qualified or unqualified, from giving medical advice if he chose to do so; but if any one falsely pretended to be a person qualified to give such advice, that was another matter. So, while not opposing the motion at this stage, since it merely sought for information, he reserved any action until the Council was in possession of the result of the committee's inquiries.

Professor SAUNDBY would support the motion if some such words were inserted as "to report on any existing legislation in other countries with regard to such irregular practices," which would put the Council in the position of better understanding what it was doing.

Sir T. MCCALL ANDERSON thought the motion went a little too far in prejudging the case by directing the committee to draft amendments of the Medical Act; the committee should consider the whole question.

Dr. LITTLE supported this view, as he did not think any legislation such as suggested in the motion would be passed in the lifetime of those present, as it was entirely opposed to the spirit of the present Act, which said: "Whereas it is expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified." It was all the law professed to do, and so long as they found out whether an individual was qualified or unqualified, the public could go to any one it liked.

The PRESIDENT, having had a good deal of experience in endeavouring on the behalf of the Council to obtain the passage through both Houses of Parliament of legislation, was by no means sanguine that such an Act could be passed. He quite admitted that the collection and collation of the powers of legal restriction for the prevention of unqualified practice in this and other countries would be extremely valuable, but it would be premature to appoint a committee to draft a new Medical Act before next May.

Dr. LANGLEY BROWNE in reply said he would be satisfied with such an inquiry, and for the committee to report what amendments would be necessary of the Medical Act in order to obtain what was desired, whereupon

Dr. NORMAN MOORE suggested that the following would meet Dr. Langley Browne's wishes:

> That a committee be appointed to ascertain what legal provisions exists in Colonies and Dependencies of the Empire and in foreign countries for the prevention of medical practice by other than legally qualified persons, and to consider what steps should be taken to procure effective legislation for the same purpose in this country.

Dr. LANGLEY BROWNE, with the consent of his seconder and the Council, agreed that this should be substituted, and it was agreed to. The following members were subsequently appointed the committee:

Dr. M'Manus,	Dr. Saundby,
Dr. Latimer,	Sir John Moore,
Dr. Norman Walker,	Mr. Morris, and
Dr. Kidd,	Dr. Langley Browne.

RESTORATION OF NAME.

The Council then went into *camerâ* to consider a report from the Executive Committee with regard to applications for the restoration of names after erasure under Section 29 of the Medical Act (1858).

[Strangers were directed to withdraw; on readmission.]

The PRESIDENT announced that the Council had directed the Registrar to restore the name of John Bate Bawden to the *Medical Register*.

TREASURERSHIP.

Dr. NORMAN MOORE moved:

> That the resignation of Dr. Pye-Smith from the office of Senior Treasurer be received with regret, and that the Council express to him its thanks for his valuable services during the past six years.

He was sure they would all feel regret at the loss as Treasurer of Dr. Pye-Smith, and expressed the hope that he might long continue a member of the Council.

Dr. LITTLE seconded the resolution, which was carried unanimously.

Dr. PYE-SMITH thanked the members for the kind way in which they had expressed their approval of his services during his term of office.

The Council then adjourned.

Wednesday, November 27th, 1907.

DR. DONALD MACALISTER, President, in the Chair.

THE minutes of the previous day's proceedings were read over and confirmed.

DISCIPLINARY CASES.

The Council proceeded to the consideration of the case of John Sandilands, registered as M.B, Mast. Surg. 1888, M.D. 1894, Univ. Glasg., of the United Free Church of Scotland Mission, Bhandara, Central Provinces, India, who has been summoned to appear before the Council to answer the following charges, as formulated by the Council's Solicitor:

> That you unlawfully caused miscarriage to an orphan girl under your charge, of which offence you were, on the 25th day of March, 1905, and subsequently on appeal on the 10th day of July, 1905, convicted at Bhandara, Central Provinces, India, and that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. Lushington appeared as Legal Assessor and Mr. Winterbotham as Solicitor to the Council in the following *Penal Cases:*

Dr. Sandilands did not attend in answer to the summons.

Mr. WINTERBOTHAM read the notice which had been duly served. He stated that if this conviction had been in the United Kingdom it would only have been necessary to prove the conviction under the 29th Section, and no further question could have arisen; but as the conviction was in India it had to be dealt with under that portion of the Section which referred to infamous conduct in a professional respect. The Council had before it the complete judgement of the court, which went into considerable detail, and the findings and the sentence were that Dr. Sandilands had been guilty of the offence.

[Strangers were directed to withdraw; on their readmission.]

The PRESIDENT announced that the Council adjudged John Sandilands guilty of infamous conduct in a professional respect, and directed the Registrar to erase his name from the *Medical Register*.

The Council proceeded to consider the case, adjourned from the May session, of Edward John Havens, registered as of East Donyland, Colchester, M.R.C.S.Eng. 1879, L.S.A.Lond. 1879, who had been summoned to appear before the Council on the following charges:

> That you were on November 5th, 1906, convicted of the following misdemeanour at Thorpe Petty Session, Thorpe-le-Soken, Essex, namely, of obstructing the highway; also that you were on December 17th, 1906 convicted at the like Session of disorderly behaviour whilst drunk; and also that you were on April 8th, 1907, convicted of the following misdemeanour at Mistley Petty Session, namely, of common assault.

At the conclusion of the proceedings on May 29th, 1907, the PRESIDENT, addressing Mr. Havens, said:

> Mr. Edward John Havens,—The Council have deliberated carefully on the convictions which have been proved against you, but they have adjourned the further consideration of your case till the November session, when you should be present to hear the result of their final deliberations.

Mr. HAVENS appeared in person.

Mr. WINTERBOTHAM read the notice which had been served on Mr. Havens.

Mr. HAVENS, in answer to the PRESIDENT, stated that he was not now in practice, and had not been for about fifteen years.

[Strangers and parties were directed to withdraw. On their readmission,]

The PRESIDENT said: "Mr. Edward John Havens, the

Council, having further considered the convictions proved against you, does not direct the Registrar to remove your name from the *Medical Register*."

The Council then considered the case of William Shaw, registered as of Larne, co. Antrim, L.R.C.P.Edin., 1886, L.R.C.S.Edin., 1886, who has been summoned to appear before the Council to answer the following charges, as formulated by the Council's Solicitor:

That you were on the 27th day of November, 1906, convicted of the following misdemeanour at Larne Town Court, namely, of being guilty while drunk of riotous and disorderly behaviour; and on the 25th day of June, 1907, of the following misdemeanour at Larne Petty Sessions, namely, of being found on licensed premises on Sunday, in contravention of the provisions of the Licensing Acts; and on the 13th day of August, 1907, at Larne Town Court aforesaid, of the following misdemeanour, namely, of being guilty while drunk of riotous and disorderly behaviour.

Mr. W. M Woodhouse, Solicitor, represented Mr. Shaw.

Mr. Winterbotham read the notice, which had been duly served. He also put in the three convictions.

Mr. Woodhouse, addressing the Council on behalf of Mr. Shaw, did not dispute the convictions, but said that Mr. Shaw contended that the cases had been very much exaggerated, and when the Council was aware of the real facts he thought the Council would consider the cases of a very trivial nature. Mr. Shaw, of course, realized that for any man in his position to be guilty of such offences was a serious matter, and he had come from Larne to explain his conduct. With regard to the first case in November, 1906, the affair occurred outside a public-house. Mr. Shaw had had an altercation with a man on the premises on the question of an account. The man was a former patient of Mr. Shaw's, and accused him of overcharging. They got to high words, and although he was not arrested at the time, he was summoned afterwards for being drunk and incapable. Mr. Shaw was a very ardent politician, and the result was that there was a good deal of strong feeling against him on the part of those who held opposite opinions. Mr. Shaw was a strict Protestant, and the Roman Catholics were not well disposed towards him. The arrest was made by a constable who was a Roman Catholic. With regard to the second case, the publican was a patient of Mr. Shaw's, and Mr. Shaw was attending him in his professional capacity. Mr. Shaw would produce his diary showing that he did attend this publican from February till August. Mr. Shaw was seen by a constable standing at the inner door of the house, and the constable asked him what he was doing there, and he told him he was attending the man professionally. Mr Shaw told the same story before the magistrates, and the Court adjourned for a short time that the landlord might be called as a witness. He, however, could not be found, and Mr. Shaw elected to have the case dealt with in his absence. As to the third case, that was the occasion of a political discussion. Mr. Shaw had a slight altercation with a gentleman in the street, and he heard no more about it until a fortnight after the event, when he was summoned for obstructing the highway. Unfortunately he treated the summons with contempt, and did not appear, with the result that he was fined. Mr. Shaw recognized that at times he had taken more than was good for him, but he signed the pledge in August last, and intended to keep it in the future. Mr. Woodhouse read to the Council testimonials from various people of every shade of political opinion, in different positions of society, testifying to the extreme worth and solid virtues of Mr. Shaw. Under all the circumstances he asked the Council to deal leniently with Mr. Shaw. He then read various testimonials.

Mr. Shaw was then called as a witness, and bore out the statement of his solicitor. He added that no other charge of misconduct had ever been brought against him. In answer to the President, Mr. Shaw stated that no one gave evidence against him except the police.

[Strangers and parties then withdrew. On their readmission,]

The President said: "Mr. William Shaw, the Council, having considered carefully the convictions proved against you, have not seen fit to direct the Registrar to remove your name from the *Register*."

The case next dealt with was that of Duncan Shaw Morrison, registered as of Invergowrie, Perthshire, M.B., M.S. 1891, Edin., who had been summoned to appear before the Council to answer the following charges, as formulated by the Council's Solicitor:

That you were on the 24th day of September, 1906, convicted of the following crime or offence at Lochgilphead Police Court, namely, of breach of the peace and on the 11th day of February, 1907, at the same Court, of the same crime or offence, and on the 18th day of September, 1907, at the same Court, of the following crime or offence, namely, of a contravention of Section 70 of the Licensing (Scotland) Act, 1903.

Mr. Morrison did not appear.

Mr. Winterbotham read the notice, which had been duly served, and put in the three convictions. He stated that he had that morning received a letter from Mr. Morrison saying he was sorry for having committed a breach of the peace, which he did not look upon in the nature of a crime, and had nothing to do with his conduct in a professional respect. He wished to apologize to the Council if they considered it a professional offence.

[Strangers were directed to withdraw; on their readmission,]

The President announced that the Council had adjourned the further consideration of the convictions reported against Mr. Duncan Shaw Morrison until the May session, 1908, when he would be required to appear before the Council and satisfy them as to his conduct in the interval.

The Council then proceeded to the consideration of the cases of John P. Rafter, registered as of 338, Stanley Road, Bootle, Liverpool, L.A.H.Dubl., 1882; L.K.Q.C.P.Irel., 1886; L.L.M., 1892, R.C.S.Irel.; and John Spencer Daniell, registered as of the Metropolitan Hospital, Kingsland Road, London, N.E., M.B., B.S., 1906, Univ. Edin., who have been summoned to appear before the Council on the following charge:

That you have systematically sought to attract patients in Great Crosby and Waterloo, Lancashire, by the distribution of cards from house to house and in the street, and that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. Rafter was represented by Mr. Smith, of the firm of James Shakespeare and Smith, Solicitors, of Liverpool. Mr. Spencer-Daniell was not represented.

Mr. Winterbotham said the notice had been duly served.

Dr. Bateman stated that he appeared for the Medical Defence Union in support of the complaint. In October last he (Dr. Bateman) received a considerable number of letters of complaint from various medical men living in the district of Great Crosby. The first was that a "sixpenny dispensary" had been started in the district by two men who had not previously practised there, and the second was that a large number of cards had been distributed from house to house, to individuals in the streets, that in one instance a card was handed to one of the medical men who made a complaint, and that cards had also been left in letter boxes and put under the doormats of houses. To the first complaint he answered that there was no authority which prevented any man in the profession from assessing the value of his medical service at his own price, and with regard to the second complaint he answered that the proper course was to get statutory declarations made and forward them to the Council. This had been done. The cards complained of bore the words, "Drs. Rafter and Daniell, surgeons, Crosby Village." In reply to a letter which he addressed to these gentlemen he received a letter from Mr. Rafter to the effect that the cards were intended to be given to each patient instead of putting a printed label on the bottle; he further stated that he had given orders to stop the distribution of these cards if such a thing had taken place. Dr. Bateman said that he had replied that there was ample evidence to prove distribution.

Dr. Bateman then read a correspondence which had taken place between himself and the two gentlemen in question, in which Dr. Daniell stated that the leaving of the cards had been done without his knowledge. He then read the sworn testimony in support of the charge, and submitted there were three distinct explanations, two by Dr. Rafter first imputing the distribution of the cards to his dispenser, and, secondly, alleging that they were sent out in mistake for polling cards; and, thirdly, one for Dr. Daniell who alleged that he had a right to send the cards round. It was for the Council to say which of those explanations it would

accept. He made the charge against Dr. Daniell with very great regret, as he was a young man just entering practice, and he could only hope, if the facts were proved to the Council's satisfaction, it would deal with him as it always dealt with young first offenders. With regard to Dr. Rafter the position was different. He had been in practice a great many years and should have known better. He (Dr. Bateman) could not agree with him when he said it was the first time complaint had been made with regard to him, as complaint had been made of his conduct by one of his colleagues, and he had promised that the conduct complained of should not occur again.

Mr. SMITH said that Dr. Rafter had been for upwards of twenty-one years well known and popular in the district, and for some years had held the appointment of medical officer to the Board of Guardians for the Bootle District, consequently there was no necessity for him to advertise himself. He entered into relations with Dr. Daniell with a view to a partnership in Crosby, and, in order to introduce Dr. Daniell to the patients, and for that purpose alone, it was suggested that the cards in question should be printed, About this time Dr. Rafter was a candidate for municipal honours on the Bootle Council, and he had a large number of cards printed in connexion with the election, and also some visiting cards. He told Mr. Jackson, his dispenser, to take the visiting cards to Crosby, and heard nothing more of the matter until he heard from the Medical Defence Union saying that the cards were being distributed from house to house and in the street. Dr. Rafter immediately made inquiries, and Jackson stated that he had left the cards at the surgery at Crosby; and as it was found that the cards were being distributed, means were taken to stop it at once, as it was entirely against Dr. Rafter's desire. He never employed any one to distribute them or authorized any one to do so, and the only explanation was that the canvasser who was distributing the election cards must have got hold of the visiting cards and distributed them in the same manner as the election cards.

Dr. JOHN PATRICK RAFTER, examined by Mr. SMITH, said that he had been a member of the Bootle Town Council for nine years, and in October last he was preparing for an election. The cards in question were printed for the purpose of being given to old patients to inform them that Dr. Spencer-Daniell had joined him in partnership. He told Jackson, his dispenser, to take some of the visiting cards and election cards to the Crosby surgery to be distributed to people who lived there, to be given by Dr. Daniell to patients as they came to the surgery. He, Dr. Rafter, never distributed the cards in any way or authorized it, and was very much annoyed when he became aware of the fact. Until it was brought to his knowledge by the Medical Defence Union he was not aware in any way that the cards were being distributed. Complaint had been made by the Irish College of Physicians some years ago in relation to another card which he had distributed.

Cross-examined by Dr. BATEMAN, DR. RAFTER said that his dispenser, Mr. Jackson, practically acted as his election agent. He intended Dr. Daniell to hand the cards to the patients as they came to the surgery. Neither Dr. Daniell nor he were resident at Crosby or practising at the surgery, which had only just been opened; it was not true that he had more than one. He did not pay for the distribution of the cards, and gave no orders for the payment of the distributor. It was not true that he paid a man named Burgess through his agent a cheque for £1 9s. 7d.; that cheque was signed by Dr. Daniell. The complaint against him by the College of Physicians was in relation to a circular which he had received in connexion with a surgery which he had opened at Waterloo.

FREDERICK JACKSON, examined by Mr. SMITH, said that he was an army pensioner, and had been in the Army Medical Corps for nineteen years. He left with an exemplary character; he was now in the service of Dr. Rafter as a dispenser. In October Dr. Rafter was engaged in the election for the Bootle Town Council, and directed him to take the visiting cards to Dr. Daniell. He left the cards with a workman, and asked him to call Dr. Daniell's attention to them. He subsequently inquired of Dr. Daniell if he had seen the cards, and he replied he had not. Some time after, Dr. Rafter accused him of distributing the visiting cards, and said they were all over Crosby, and it was his fault. Dr. Rafter never told him to distribute them or to employ any one to distribute them.

Cross-examined by Dr. BATEMAN, he said he had no idea who distributed the cards.

Dr. SPENCER-DANIELL said that with regard to the distribution of the visiting cards, he could not remember exactly, but some mention was made of the fact that visiting cards should be printed, which he understood were to be given to old patients. With regard to the payment of £1 9s. 7d, he had employed the man to move his furniture and work for him for a couple of days, and when he came to pay him the man said, "By the way, Dr. Rafter owes me some money for distributing cards." He knew Dr. Rafter was employing men for that purpose, and, as he wanted to stand well with the people in the neighbourhood, he paid it with his own private cheque. He never saw the cards from beginning to end until he saw one produced in evidence in the Council.

Cross-examined by Dr. BATEMAN, he said he never saw the parcel of cards suggested to have been left at the Crosby surgery by Jackson.

In reply to Dr. ADYE-CURRAN (through the President), the witness said that the first he heard of the cards with the two names on them was from the Medical Defence Union.

By the PRESIDENT: He had no recollection of having seen the parcel referred to by Mr. Jackson, or of having had any conversation with him with regard to the parcel of cards.

Dr. DANIELL said he had intended calling Mr. Peter Daniell, Senior Surgeon at the Metropolitan Hospital, and Assistant Surgeon at Charing Cross Hospital, but that gentleman was unable to remain. He had, however, written a letter as to his, Dr. Daniell's, character, which was put in and read.

Mr. SMITH also put in some testimonials to Dr. Rafter which he had received in connexion with an appointment in 1906.

[Strangers and the parties were directed to withdraw; on readmission,]

The PRESIDENT said: "Mr. John Rafter, I have to announce to you that the Council have found the facts alleged against you in the notice of inquiry have been proved to their satisfaction, and that they have adjourned the further consideration of your case to the May session of the Council, when you will be expected to be present, and to produce evidence as to your conduct in the interval.

"Mr. Spencer-Daniell: The Council have deliberated on your case, and have passed the following resolution:

> That the facts alleged against you in the notice of inquiry have not been proved to the satisfaction of the Council. The case against you is therefore at an end."

The Council then proceeded to the consideration of the case of Joseph Fitzgerald, formerly registered as of 59, Red Rock Street, Liverpool, but now as of Beach Buildings, Queenstown, co. Cork, L.R.C.S.I., 1871, L.R.C.P.I., 1873, who had been summoned to appear before the Council on the following charge:

1. That you have acted as cover to an unqualified person, namely, Mr. Hamilton Williams Jolly, and knowingly enabled him to attend and treat patients and otherwise to engage in medical practice as if the said Hamilton Williams Jolly were a duly qualified and registered medical practitioner.
2. That you knowingly allowed the said Hamilton Williams Jolly to fill up and sign in your name certificates of death and vaccination, and in particular the following certificates of death, namely, of Richard Valentine Patton, Elizabeth Smith, Catherine O'Neill, James Davies, Thomas Charles Cannell, and Frederick Cannell, all in November or December, 1905, and that you signed a certificate of the death of Jessie Gogarty in June, 1907, whereas in fact you had not attended or seen the patients in any one of these cases, but the said Hamilton Williams Jolly had alone attended and seen them;

And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. Lushington appeared as Legal Assessor, and Mr. Winterbotham as Solicitor to the Council.

The PRESIDENT said Mr. Fitzgerald had been summoned to appear more than once and had not replied, and as he did not now appear he called on the Solicitor to prove the facts.

Mr. WINTERBOTHAM stated that Mr. Fitzgerald had resided some years in Liverpool, and apparently had not been in practice, but a Mr. Hamilton Jolly, a brother in-

law of his, was in practice at the registered address of Mr. Fitzgerald. It appeared that Mr. Jolly had carried on the profession of a medical man, although himself unqualified, for a whole year at this address, and that during the whole of the time not only had he practised in the name of Fitzgerald, but he had signed death certificates and vaccination certificates, and had identified himself in every way with Mr. Fitzgerald. Mr. Jolly was prosecuted in February, 1906, for forging certificates of death relating to six persons whose names appeared in the charge; the facts before-mentioned were proved in evidence, and he was convicted. The matter was brought to the attention of the Penal Cases Committee by the police authorities at Liverpool, but the evidence showing that Mr. Fitzgerald was party to and knew what was being done seemed to be imperfect; it had since been made clear by the proceedings at the inquest on the body of the child, Jessie Gogarty, in June, 1907. This child was attended nominally by Mr. Fitzgerald, but really by his brother-in-law practising in his name, and the evidence showed that Mr. Fitzgerald went with his brother-in-law to view the body. Mr. Fitzgerald and Mr. Jolly gave evidence at the inquest, and it appeared that Mr. Fitzgerald there admitted that he had given Jolly permission to use his name. On that evidence he submitted that no one could possibly doubt that Mr. Fitzgerald not only knew what was going on, but had deliberately authorized his brother-in law, Mr. Jolly, to use his name, and consequently it was a distinct case of covering. He then put in reports of the proceedings against Mr. Jolly, and also of the inquest and some letters, and submitted that the documents proved clearly what he had stated; and, further, that the practice was the practice of Mr. Fitzgerald.

[Strangers were directed to withdraw; on readmission,]

The President said: "I have to announce that the Council have judged Joseph Fitzgerald to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase from the *Medical Register* the name of Joseph Fitzgerald."

The Council then adjourned.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been made at the Admiralty: Alfred Woollcombe, Staff Surgeon, to the *Argonaut*, November 22nd; C. V. Griffiths, R. Connell, M.B., and H. D. Drennan, M.B., Surgeons, to the *Victory*, additional, December 7th; C. Ross, M.B., and G. Price, Surgeons, to the *Vivid*, additional, December 7th; C. R. M. Baker, M.B., H. M. Langdale, and W. Hutchison, M.B., Surgeons, to the *Pembroke*, additional, December 7th; G. G. Vickery, M.B., Surgeon, to the *Wildfire*, additional, December 7th; Percy H. Boyden, M.D., Staff Surgeon, to the *Devonshire*, as Acting Interpreter in French, November 5th.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Sir A. A. Brooke-Pechell, Bart., M.B., retires on retired pay, November 23rd. He was appointed Surgeon, July 29th, 1882; Surgeon-Major, July 29th, 1894; and Lieutenant-Colonel, July 29th, 1902. He was a Medical Officer for the London Recruiting Area, but has no war record in the Army Lists.

Captain W. W. Scarlett is placed on temporary half-pay on account of ill-health, November 14th. He joined the department as Lieutenant, January 28th. 1899, and was made Captain, January 28th 1902. During the South African war of 1899-1902 he was present in operations in Cape Colony and the Orange River Colony, and has the Queen's medal with two clasps and the King's medal with two clasps.

VOLUNTEER OFFICERS' DECORATION.

The Volunteer Officers' Decoration has been conferred upon the following officers: Surgeon-Major R. J. Bryden, 1st Kent Regiment, Royal Garrison Artillery (Volunteers); Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel P. P. Whitcombe, M.B., 13th Middlesex (Queen's Westminster) Volunteer Rifle Corps; Surgeon-Major H. D. Brook, 20th Middlesex (Artists') Volunteer Rifle Corps; Surgeon-Captain (Surgeon-Lieutenant-Colonel, Army Medical Reserve of Officers) C. G. Grant, 24th Middlesex Volunteer Rifle Corps; Surgeon-Major T. McC. Foley, 1st East Riding of Yorkshire Regiment, Royal Garrison Artillery (Volunteers).

CHANGES OF STATIONS.

The following changes of stations amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during October, 1907:

		FROM	TO
Colonel	H. Martin, M.B.	W. Command	Hong Kong.
,,	G. T. Goggin	Belfast	W. Command.
Lieut.-Col.	J. R. Dodd, M.B.	Dublin	Belfast.
,,	W. L. Reade	Madras	Dublin.
,,	F. S. Heuston, C.M.G.	Kilmainham Hospital	,,
,,	R. J. Windle, M.B.	Dublin	Kilmainham Hospital.
Major	C. W. R. Healey	Ballyvorna	Fermoy.
,,	G. W. Tate, M.B.	Finner Camp	Dundalk.
,,	N. Faichnie, M.B.	York	India.
,,	H. P. Johnson	Okehampton	Devonport.
,,	A. E. C. Keble	Chatham	Gibraltar.
,,	S. F. St. D. Green, M.B.	Bermuda	Aldershot.
Captain	A. W. N. Bowen	Altcar	Warrington.
,,	W. H. S. Nickerson, V.C., M.B.	Curragh	York.
,,	S. de C. O'Grady, M.B.	Dublin	Aldershot.
,,	A. R. O'Flaherty	Woolwich	Chatham.
,,	H. P. W. Barrow	Dublin	Manchester.
,,	V. J. Crawford	Edinburgh	Portsmouth.
,,	H. M. Nicholls, M.B.	Ballyvorna	Kinsale.
,,	O. W. A. Elsner	Kilworth Camp	Limerick.
,,	H. H. Norman	Queenstown	India
,,	P. S. O'Reilly	Fargo Camp	Bulford.
,,	B. R. Dennis, M.B.	Dorchester	Portsmouth.
,,	G. Carroll	Kilkenny	Limerick.
,,	J. G. Churton	Edinburgh	Aldershot.
,,	J. Dorgan, M.B.	Kilworth Camp	Fermoy.
,,	T. B. Unwin, M.B.	,, ,,	Cork.
,,	A. C. Duffey, M.D.	Athlone	Dublin.
,,	R. N. Hunt, M.B.	Ballykinler	Holywood.
,,	J. H. Barbour, M.B.	Belfast	Mullingar.
,,	A. H. McN. Mitchell	Trawsfynydd	Newport.
,,	R. C. Wilson, M.B.	Dundalk	Dublin.
,,	H. B. Connell	East Africa	Netley.
Lieutenant	W. Egan, M.B.	Hilsea	India.
,,	C. R. M. Morris, M.B.	Fermoy	Queenstown.
,,	E. M. W. Paine	Bustard Camp	Bulford.
,,	J. B. G. Mulligan	Dublin	Woolwich.
,,	J. W. L. Scott	Devonport	India.
,,	W. C Smales	Larkhill Camp	,,
,,	G. H. Stevenson, M.B.	Dublin	Hounslow.
,,	J. H. Spencer, M.B.	Woolwich	Colchester.
,,	J. A. B. Sim, M.B.	Lanark	Berwick.
,,	E. J. Elliot, M.B.	Bulford	Netheravon.
,,	E. B. Lathbury	,,	Woolwich.
,,	E. D. Caddell, M.B.	Holywood	Dublin.
,,	O. C. P. Cooke	Bulford	Devonport.
,,	D. Coutts, M.B.	Willsworthy Camp	,,
,,	J. A. Bennett, M.B.	Bulford	Winchester.
,,	W. F. M. Loughnan	Portsmouth	Sandown.
,,	J. J. O'Keeffe, M.B.	,,	Hilsea.
,,	A. Fortescue, M.B.	Stirling	Maryhill.
,,	H. M. J. Perry	Cork	Kilworth Cp.
,,	H. W. Farebrother	Seaforth	Wrexham.

Lieutenant T. P. Thomas, R.A.M.C. (Militia), retired pay, has been placed in medical charge of troops at Brecon.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 7,677 births and 4,699 deaths were registered during the week ending Saturday last, November 23rd. The annual rate of mortality in these towns, which had been 15 7, 14 6, and 14 8 per 1,000 in the three preceding weeks, rose again to 15.3 per 1,000 last week. The rates in the several towns ranged from 4 6 in Hornsey, 7.3 in Leyton, 7.5 in Bournemouth, 7 8 in Reading, 7 9 in Birkenhead, 8 4 in Willesden, and 9 2 in East Ham, to 19.1 in Stockport, 19 2 in St. Helens and in Hull, 19 6 in Liverpool and in Preston, 21.1 in South Shields, 22.5 in Rochdale, 24 0 in York, and 25 1 in Sunderland. In London the rate of mortality was 15 0 per 1,000, while it averaged 15.4 per 1,000 in the seventy-five other large towns. The principal infectious diseases caused a death-rate of 1.3 per 1,000 both in London and in the seventy-six large towns as a whole; the highest death-rates from these diseases were 2 9 in Ipswich, 3.7 in York, 3 9 in Burton-on-Trent, 4.2 in Barrow-in-Furness, and 6 2 in Merthyr Tydfil. Measles caused a death-rate of 1.3 in Coventry, 1 4 in Willesden, 1 6 in Rhondda, 1.7 in Barrow-in-Furness, 2.9 in Burton-on-Trent, and 3.4 in Merthyr Tydfil; diphtheria of 1.2 in Rochdale and 2.0 in Devonport; whooping-cough of 1.2 in Wigan and in Gateshead, 1.3 in Aston Manor, 1.6 in Handsworth (Staffs), and 2.1 in Ipswich; and diarrhoea of 1.7 in Rotherham, 1 8 in Oldham, 2.1 in Merthyr Tydfil, and 2.5 in York. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital at the end of last week was 5,686, against numbers which in the preceding twenty-eight weeks had risen uninterruptedly from 2,658 to 5,689; 597 new cases were admitted during the week against 832, 667, and 636 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, November 23rd, 890 births and 579 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 16.4, 15 3, and 15.9 per 1,000 in the three preceding weeks, further rose to 16 7 per 1,000 last week, and was 1.4 per 1 000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 10.0 in Paisley and 10 2 in Aberdeen, to 21 7 in Dundee and 29.3 in Greenock. The death-rate from the principal infectious diseases averaged 2 2 per 1,000 in these towns, the highest rates being recorded in Dundee and Greenock. The 298 deaths registered in Glasgow included 16 from measles, 4 from diphtheria, 5 from whooping-cough, 3 from cerebro-spinal meningitis, and 11 from diarrhoea. Two fatal cases of whooping-cough and 2 of diarrhoea were recorded in Edinburgh; 11 of measles in Dundee, 2 of whooping-cough in Aberdeen; 2 of measles in Paisley; 1 of cerebro-spinal meningitis in Leith; and 4 of measles in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, November 16th, 449 births and 412 deaths were registered in six of the principal Irish towns, as against 501 births and 381 deaths in the preceding period. The annual death-rate in these towns, which had been 22.2, 18,7, and 18.8 per 1,000 in the

three preceding weeks, rose to 21 7 per 1,000 in the week under notice, this figure being 6.9 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 11.7 in Waterford and 17.2 in Londonderry to 24.8 in Belfast and 34.2 in Limerick. The zymotic death-rate in the same six Irish towns averaged 3.5 per 1,000 or 0 6 per 1 000 higher than during the preceding period, the highest figure—10.9—being recorded in Limerick. The principal causes of death under this heading were measles and enteric fever, 20 deaths being ascribed to the former and 7 to the latter.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary, £100 per annum.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Junior House-Surgeon. Salary, £75 per annum.

DUNDEE ROYAL INFIRMARY.—Investigator to work in the Caird Cancer Pavilion of the Hospital.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Pathologist and Registrar. Honorarium, £100.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Male Assistant House-Physician. Salary, £60 per annum.

HÔPITAL FRANÇAIS, Shaftesbury Avenue, W.C.—Junior Resident Medical Officer. Salary, £50 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Surgeon. Salary, £20 for six months, and £2 10s. washing allowance.

HULL: VICTORIA CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary, £50 per annum.

LIVERPOOL: STANLEY HOSPITAL.—Senior House-Surgeon. Salary, £90 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION, ETC.—(1) Resident Medical Officer for In-patient Department at Bowdon. (2) Assistant Medical Officer for the New Crossley Sanatorium, Delamere Forest. Salary, £100 per annum each.

MEDICAL MISSION HOSPITAL, Canning Town.—Female Assistant Doctor for Dispensary.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer. Salary, £80 per annum.

NORFOLK AND NORWICH HOSPITAL.—Male Assistant House-Surgeon.—Honorarium, £20 for six months.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Clinical Assistants.

ROYAL WATERLOO HOSPITAL FOR SICK CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at the rate of £40 per annum.

SEAMEN'S HOSPITAL SOCIETY, Dreadnought Hospital, Greenwich.—(1) Medical Superintendent; (2) Surgical Registrar. Salary, £200 and £50 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—Junior Resident Medical Officer. Salary, £50 per annum.

STANNINGTON: POOR CHILDREN'S CONSUMPTIVE SANATORIUM.—Female Honorary Medical Officer.

THROAT HOSPITAL, Golden Square, W.—Resident House-Surgeon. Salary, £75 per annum.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

WINCHESTER: ROYAL HANTS COUNTY HOSPITAL.—House-Physician. Salary, £65 per annum rising to £75.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces a vacancy on January 1st at Conisborough, co. York.

APPOINTMENTS.

BENNETT, Norman G., M.A., M.B., B.C.Cantab., L.R.C.P., M.R.C.S., L.D.S., Dental Surgeon to the Royal Dental Hospital of London, Leicester Square, W.C.

BENSON, A. H., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Cleobury Mortimer District, co. Salop.

BICKERSTETH, R. A., M.B., B.C.Camb., F.R.C.S.Eng., Surgeon to the Royal Infirmary, Liverpool.

BINNS, J. B., M.R.C.S., L.R.C.P.Lond., Resident Assistant Medical Officer, Bethnal Green Infirmary.

BRODRIBB, Arthur W., M.B.Oxon., L.R.C.P., Assistant Physician to the Hastings and East Sussex Hospital.

BUNCH, J. L., M.D., B.S., D.Sc., Physician in charge of the Skin Department at the North-Eastern Hospital for Children.

CAMPBELL, A. Sydney, M.B., Ch.B., L.R.C.S.E., Honorary Assistant Surgeon to Dundee Royal Infirmary.

CROWE, J. T., L.S.A., Resident Assistant Medical Officer at the Eastby Sanatorium of the Bradford Union.

GARRAND, A. F., L.R.C.P.and S.Edin., L.F.P.S.Glas., Certifying Factory Surgeon for the Avonbridge District, co. Stirling.

GRIFFITH, T. Wardrop, M.D.Aberd., M.R.C.P.Lond., Honorary Consulting Physician, Leeds Public Dispensary.

HENRY, F., M.B., Ch.B.Glas., Medical Superintendent of the Highfield Infirmary, Liverpool.

ILES, M., M.D., B.S., Medical Superintendent, Lady Lansdowne Hospital, Bhopal, C.I.

JAMES, W. W., F.R.C.S., L.R.C.P., L.D.S., Assistant Dental Surgeon to the Royal Dental Hospital of London, Leicester Square, W.C.

HOLLICK, J. O., M.B.Durh., District Medical Officer of the Solihull Union.

KERR, Charles, M.B., C.M.Edin., Honorary Assistant Physician to Dundee Royal Infirmary.

KNIGHT, H. S., M.B., B.S.Lond., M.R.C.S., L.R.C.P., Out-patient Resident Medical Officer to the Queen Charlotte's Lying-in Hospital, Marylebone Road, N.W.

MILLER, George W., B.Sc., M.B., Ch.B., Honorary Assistant Physician to Dundee Royal Infirmary.

MILLER, John, M.B., Ch.B.Glas., Assistant Medical Officer, Roxburgh District Asylum, Melrose.

RICKETT, G. R., M.B., B.C.Camb., Medical Officer of Health, Sherborne Rural District.

ROBSON, F., M.D.Durh., B.S., Certifying Factory Surgeon for the Hayward's Heath District, co. Sussex.

SANSOM, B. E., M.R.C.S., L.R.C.P.Lond., Resident Assistant Medical Superintendent of the Camberwell Parish Infirmary.

SHAW, William, L.R.C.P.and S.Edin., L.F.P.S.Glas., Medical Officer to the Halifax Union Workhouse, vice T. M. Dolan, M.D.Durh., deceased.

SHEPPARD, A. Lewin, M.B., B.S.Durh., House-Surgeon and Senior Resident Officer, Royal Infirmary, Bristol.

TAYLOR, Reginald Thane, M.R.C.S.Eng., Assistant Medical Officer, Holborn Infirmary, Highgate.

WATSON, Geo. W., M.D.Lond., Honorary Physician, Leeds Public Dispensary.

WHITWORTH, Arthur W. T., M.B., Ch.B., Senior Resident Medical Officer at the Guest Hospital, Dudley.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGE.

DENT—LEWIS.—On November 15th, at St. Peter's Collegiate Church, Wolverhampton (by the Rev. Arthur Congreve-Pridgeon, uncle of the bridegroom, assisted by the Rev. Prebendary Penny, Rector of Wolverhampton), Howard Henry Congreve Dent, F.R.C.S., M.B., eldest son of the late Joseph Henry Dent and Mrs. Dent, of Merivale, Edgbaston, to Olive Mary, daughter of Rowland W. Lewis, J.P. of Penn Croft, near Wolverhampton.

DIARY FOR THE WEEK.

MONDAY.

ROYAL SOCIETY OF MEDICINE:

EPIDEMIOLOGICAL SECTION, 20, Hanover Square, W., 8.30 p.m.—Papers on Plague by Dr. Ashburton Thompson and Dr. Haffkine.

TUESDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—Fitz-Patrick Lecture by Dr. Leonard Guthrie: Contributions from History and Literature to the Study of Precocity in Children.

ROYAL SOCIETY OF MEDICINE:

FIRST GENERAL MEETING of the Fellows of the Royal Society of Medicine, 20, Hanover Square, W., 5 30 p.m.—Address by the President and election of Fellows.

WEDNESDAY.

ROYAL SOCIETY OF MEDICINE:

NEUROLOGICAL SECTION, 20, Hanover Square, W., 8.30 p.m.—Papers:—Dr. J. S. Collin: Certain Peculiarities of Intracranial Gummata. Drs. F. E. Batten and Gordon Holmes: The Nervous System of a Dog with Ataxia. Dr. T. Granger Stewart: Four Cases of Tumour of the Fourth Ventricle. Dr. E. Farquhar Buzzard: Case of Tubercle of the Sixth Nucleus.

THURSDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—Fitz-Patrick Lecture (continued).

NORTH-EAST LONDON CLINICAL SOCIETY. Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Exhibition of Cases.

FRIDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5 p.m.—The Bradshaw Lecture, The Prognosis and Treatment of Tuberculous Disease of the Genito-Urinary Organs, by Rickman J. Godlee, M.S., F.R.C.S.

ROYAL SOCIETY OF MEDICINE:

LARYNGOLOGICAL SECTION, 20, Hanover Square, W., 5 p.m.—Exhibition of Cases and Specimens by Drs. Wm. Coubro Potter, Jobson Horne, and Messrs. Arthur Evans, H. Tilley, and H. Barwell.

WEST KENT MEDICO-CHIRURGICAL SOCIETY. Miller Hospital, Greenwich, 8.45 p.m.—The Purvis Oration, by Dr. Risien Russell, on the Diagnosis of Organic from Functional Affections of the Nervous System.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith, W., 8.30 p.m.—Dr. Mansell Moullin: Treatment of Uterine Fibroids. Mr. Sampson Handley: Chronic Appendicitis in Women.

SATURDAY.

Royal Society of Medicine:

Otological Section, 20, Hanover Square, W.—The following cases, etc., will be shown:—Mr. Sydney Scott: Two Cases of Extirpation of the Labyrinth. Mr. A. H. Cheatle: Nine Specimens of Fracture of the Base of the Skull involving the Temporal Bone. Mr. Hunter Tod: Malignant Disease of the Ear (two cases). Mr. Richard Lake: Notes on the Effects of Treatment in a Case of Sudden Deafness occurring whilst the Patient was under treatment for Tertiary Syphilis. Mr. Macleod Yearsley: Microscope Specimen and Drawing of a Foreign Body. Dr. W. Milligan: Photographs, Specimens, an Instrument, and Lantern Slides. Mr. L. A. Lawrence: A Deaf-Mute showing Improvement in Hearing. Dr. W. H. Kelson: A Case of Stenosis of External Auditory Meatus.

POST-GRADUATE COURSES AND LECTURES.

Charing Cross Hospital, W.C.—Thursday, 4 p.m., Surgical.

Great Northern Central Hospital, Holloway Road, N.—Friday, 3 p.m., Psoriasis (illustrated).

Hospital for Diseases of the Skin, Blackfriars, S.E.—Monday, 5 p.m., Senile Degeneration, Ephelis, Chloasma, Xeroderma Pigmentosa, Hydroa Vacciniforme; Wednesday, 5 p.m., Acanthosis Nigricans; Saturday, 5 p.m., Hypomycetic Infections, Animal Parasites.

Hospital for Nervous Diseases, Welbeck Street, W.—Thursday, 5 p.m., Epilepsy.

Hospital for Sick Children, Great Ormond Street, W.C.—Thursday, 4 p.m., Treatment of Infantile Paralysis.

London School of Clinical Medicine.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2.30 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m. Monday, and noon Thursday; Skin, at noon and 4 p.m. Tuesday and at noon Friday; Eye, 11 a.m. Wednesday and Saturday; Radiography, 4 p.m. Thursday. Special Lectures: Monday, 3.15 p.m., The Treatment of Urethral Stricture; Thursday, 2.15 p.m., Progressive Muscular Atrophy.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Ear. Lectures at 5.15 p.m. each day will be given as follows: Monday, The Surgical Treatment of Infantile Paralysis; Tuesday, Swedish Medical Gymnastics, their Application in the Treatment of Muscle and Joint Affections, Fractures, and Deformities; Thursday, the Treatment of Hip Disease in its Later Stages.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Tuesday, 3.30 p.m., Muscular Atrophy; Friday, 3.30 p.m., Spinal Caries.

North-East London Post-Graduate College, Prince of Wales's Hospital, Tottenham, N.—The following are the Clinics and Demonstrations for next week:—Monday, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Throat, *X* Ray; 4.30 p.m., Medical In-patient. Tuesday, 10.30 a.m., Medical Out-patient; 2.30 p.m., Operations, Gynaecological and Surgical Out-patient; 4.30 p.m., Demonstration: Immunization in Practice. Wednesday, 2.30 p.m., Medical Out-patient Skin and Eye; Thursday, 2.30 p.m., Gynaecological Operations, Medical and Surgical Out-patient and *X* Ray; 3 p.m., Medical In-patient; Friday, 10 a.m., Surgical Out-patient; 2.30 p.m., Operations. Medical Out-patient and Eye; 3 p.m., Medical In-patient.

Post-Graduate College, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week: Daily, 2 p.m., Medical and Surgical Clinics, *X* Rays; 2.30 p.m., Operations. Monday and Thursday, and Wednesday and Saturday, 2 p.m., Diseases of the Eye. Tuesday and Friday, 10 a.m., Gynaecological Operations; 2 p.m., and Wednesday and Saturday at 10 a.m., Diseases of the Throat, Nose, and Ear; 2.30 p.m., Diseases of the Skin. Wednesday, 10 a.m., Diseases of Children; 2.30 p.m., Diseases of Women. Lectures: Monday, at 12 noon, Pathological Demonstration. At 5 p.m., Monday, Surgical Cases. Tuesday, Beri-beri. Wednesday, Practical Medicine. Thursday, Plastic Surgery. Friday, Treatment of Common Maladies.

Royal Dental Hospital, Leicester Square, W.C.—Monday, 5.30 p.m., The Etiology of Palatal Deformities.

BOOKS, Etc., RECEIVED.

Studies in Laboratory Work. By C. W. Daniels, M.B.Camb., M.R.C.S. Eng., and A. T. Stanton, M.D., M.R.C.S., D.T.M. and H. Second edition. London: J. Bale, Sons and Danielsson, Limited. 1907. 16s.

Behind the Scenes in Slaughter-Houses. By H. F. Lester, J. Verschoyle, and E. Bell. New Edition. London: Humanitarian League; and A. C. Fifield. 1907. 3d.

Halle-a.-S.: C. Marhold. 1907:

Arzliches über Sprechen und Denken. Von Prof. G. Anton. M. 0.60.

Sammlung Zwangloser Abhandlungen aus dem Gebiete der Nerven- und Geisteskrankheiten. Begründet von Dir. Prof. Dr. K. Alt. VII Band, Heft 8. Notwendige Reformen der Unfallversicherungsgesetze. Von Prof. Dr. A. Hoche. M. 0.75.

Technischer Fortschrift und sulische Gesundheit. Von W. Hellpach. M. 0.75.

Berlin: A. Hirschwald. 1908:

Beitrag zum Artikulationsproblem. Von A. Gysi, D.D.S. M. 6.

Die Extraktion der Zähne ihre Technik und Indikations-Stellung mit Einschluss der Betäubung und der örtlichen Gefühllosigkeit. Von Prof. e. o. D. F. Busch. Dritte Auflage. M. 2.

The Popular Foreign Novels Series. The Man with the Broken Ear. By E. About. London: The Cable Printing and Publishing Company. 4d.

Pathogénie du Glaucome. Par le Dr. A. Terson. Bruxelles: L. Severeyns. 1907.

Der Schlaf des Andern. Von Dr. P. Kronthal. Halle-a.-S.: C. Marhold. 1907. M. 0.80.

Labyrintheiterung und Gehör. Von Dr. H. Herzog. München: J. F. Lehmann. 1907. M. 5.

Aids to Pathology. By H. Campbell, M.D.Lond. London: Baillière, Tindall and Cox. 1908. 3s. 6d.

Le Ventre. II. L'Estomac et l'Intestin. Par Dr. F. Cautru et Dr. M. Bourcart. Genève: Libraire Kündig; et Paris: F. Alcan. 1908.

The Borderland of Epilepsy. By Sir W. Gowers, M.D.Lond., F.R.S. London: J. and A. Churchill. 1907. 4s. 6d.

Toxicologie oder die Lehre von den Giften. Von F. A. Rossmässler. Wien and Leipzig: A. Hartleben. 1908. M. 3.

A Plea for Establishing Municipal Maternity Homes for Cases of Abnormal Labour and Puerperal Fever. A paper read by Sir W. J. Sinclair, M.D. London and Manchester: Sherratt and Hughes. 1907. 3d.

Mental Pathology in its Relation to Normal Psychology. By G. Störring. Translated by T. Loveday, M.A. London: Swan Sonnenschein and Co., Ltd. 1907. 10s. 6d.

Wit and Humour of the Physician. A Collection from Various Sources Classified under Appropriate Subject Headings. London: A. Moring, Ltd. (De la More Press). 1s. 6d.

Silas Marner. By G. Eliot. London: Macmillan and Co., Ltd. 1907. 6s.

London: H. Kimpton; and Glasgow: A. Stenhouse, 1907:

A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods. By C. E. Simon, B.A., M.D. Sixth edition. 21s.

Practical Diagnosis. By H. A. Hare, M.D., B.Sc. Sixth edition. 21s.

Publications du *Progrès Médical*. Bibliothèque d'éducation spéciale. XIV. De l'absolue nécessité de l'assistance des enfants anormaux et de ses résultats au point de vue social. Par M. Boyer. Paris: Bureaux de *Progrès Médical;* et G. Jacques. 1907. Fr.8.

University College Hospital Medical School. University of London. Calendar. Session MDCCCCVII-MDCCCCVIII. London: Taylor and Francis. 1907. 2s. 6d.

Clinique Hydrothérapique: Silhouettes de Névropathes. Première Série La Neurasthénie. Les vrais et les faux neurasthéniques. Par le Dr. Béni-Barde. Paris: Masson et Cie. 1908. Fr.8.

A Guide to the Administration of Ethyl Chloride. By G. A. H. Barton, M.D. Second edition. London: H. K. Lewis. 1907. 2s.

Green's Encyclopædia and Dictionary of Medicine and Surgery. Vol. VI. Lumbar Region—Nephrectomy. Edinburgh and London: W. Green and Sons. 15s.

Les Actualités Médicales. Calculs des Voies Biliares et Pancréatites. Par le Dr. R. Gaultier. Paris: J. B. Baillière et Fils. 1908. Fr.1.50.

Nice, Carabacel, and Cimiez as Winter Health Resorts. By Dr. M. de Trevis, M.D., B.Sc. Nice: The Eclaireur Printing Offices; and London: The Health Resorts Bureau. 1907. 1s.

Reminiscences in the Life of Surgeon-Major George A. Hutton. Introduction by R. L. Roberts, M.D., J.P. London: H. K. Lewis. 1907. 5s.

Arbeiten aus dem königlischen Institut für experimentelle Therapie zu Frankfurt A.M. Herausgegeben von Geh. Med.-Rat Prof. Dr. P. Ehrlich. Heft 3. Aus der experimentell-biologischen Abteilung. Dr. H. Sachs. Jena: G. Fischer. 1907. M.3.

On Some of the Characteristics of George Meredith's Prose Writing. By T. S. Short. Birmingham: Cornish Bros., Limited. 1907. 1s.

Grundzüge der Hygiene. Bearbeitet von Dr. W. Prausnitz. Achte Auflage. München: J. F. Lehmann. 1908. M.8.

The Hygiology of Rome and Rome as a Health Resort. By John J. Eyre, M.R.C.P., L.R.C.S.I., D.P.H. Reprinted from *The Seven Hills Magazine*. March, 1907. Fifth Thousand. Rome: Unione Cooperativa Editrice. 1907.

Philadelphia and London: W. B. Saunders and Co. 1907:

A Manual of the Practice of Medicine. By A. A. Stevens, A.M., M.D. Eighth Edition. 12s. 6d.

The Pancreas, its Surgery and Pathology. By A. W. Mayo Robson, D.Sc., F.R.C.S., and P. J. Cammidge, M.B., D.P.H. 21s.

Diseases of the Genito-Urinary Organs and the Kidney. By R. H. Greene, A.M., M.D, and H. Brooks, M.D. 21s.

An Index of Treatment by Various Writers. Edited by R. Hutchison, M.D., F.R.C.P., and H. S. Collier, F.R.C.S. Bristol: J. Wright and Co.; and London: Simpkin, Marshall, and Co. 1907. 21s.

The Power of Concentration, How to Acquire It. By E. Miles, M.A. London: Methuen and Co. 3s. 6d.

Cranford. By Mrs. Gaskell. London: Macmillan and Co., Limited. 1907. 5s.

***** In forwarding books the publishers are requested to state the selling price.**

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
DECEMBER.	
1 Sunday ...	
2 MONDAY ...	
3 TUESDAY ...	LONDON: Metropolitan Counties Branch, Medical Charities Committee, 4.30 p.m. ST. PANCRAS AND ISLINGTON DIVISION, *Metropolitan Counties Branch*, Temperance Hospital, Hampstead Road, N.W., 4 p.m.
4 WEDNESDAY	LONDON: Medical Inspection of School Children Subcommittee, 3 p.m. LANCASHIRE AND CHESHIRE BRANCH, Council Meeting, Liverpool Medical Institution, 4.30 p.m. LEICESTER AND RUTLAND DIVISION, *Midland Branch*, Leicester Infirmary, 4 p.m. NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH, Friend's Hall, Lancaster, 3.45 p.m.
5 THURSDAY...	ALTRINCHAM DIVISION, *Lancashire and Cheshire Branch*, General Meeting, Board Room, Altrincham Hospital, 4.50 p.m.; Dinner, Brooklands Hotel, after the meeting. CANTERBURY AND FAVERSHAM DIVISION, *South-Eastern Branch*, Cottage Hospital, Faversham, 3 p.m.; Lunch, Gatefield House, 1.30 p.m. CROYDON DIVISION, *South-Eastern Branch*, Greyhound Hotel, 8.30 p.m. FOLKESTONE DIVISION, *South-Eastern Branch*, Victoria Hospital, Folkestone, 8.30 p.m.
6 FRIDAY ...	LONDON: Standing Ethical Subcommittee, 2 p.m.
7 SATURDAY...	
8 Sunday ...	
9 MONDAY ...	
10 TUESDAY ...	LONDON: Organization Committee, 11 a.m. LONDON: Life Insurance Examinations Subcommittee, 3 p.m.
11 WEDNESDAY	
12 THURSDAY...	LONDON Joint Hospitals Committee, 2.30 p.m. LONDON: Metropolitan Counties Branch Council, 5 p.m. HAMPSTEAD DIVISION, *Metropolitan Counties Branch*. Business Meeting. NORWOOD DIVISION, *South-Eastern Branch*, Queen's Hotel, Church Road, Upper Norwood, 4 p.m. WANDSWORTH DIVISION, *Metropolitan Counties Branch*, 27, St. John's Hill, S.W., 3.45 p.m.
13 FRIDAY ...	ENGLISH DIVISION, *Border Counties Branch*, Cottage Hospital, Maryport.
14 SATURDAY...	
15 Sunday ...	
16 MONDAY ...	
17 TUESDAY ...	
18 WEDNESDAY	LONDON: South-Eastern Branch Council, 3.15 p.m.
19 THURSDAY...	WANDSWORTH DIVISION, *Metropolitan Counties Branch*, Balham Hotel, Balham, 8.45 p.m.
20 FRIDAY ...	
21 SATURDAY...	
22 Sunday ...	
23 MONDAY ...	
24 TUESDAY ...	
25 WEDNESDAY.	*Christmas Day.*
26 THURSDAY...	*Bank Holiday.*
27 FRIDAY ...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if no disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 7TH, 1907.

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ANNUAL MEETING, SHEFFIELD, 1908.

THE seventy-sixth Annual Meeting of the British Medical Association will be held at Sheffield in July, 1908. The President's address will be delivered on Tuesday, July 28th, in the Firth Hall of the University, and the Sections will meet on the three following days. The Annual Representative Meeting will begin at the close of the previous week, probably on Friday, July 24th.

Sheffield University, from Weston Park.

The following are the general arrangements for the meeting, so far as they are as yet complete

President: HENRY DAVY, M.D., F.R.C.P.Lond., Physician, Devon and Exeter Hospital, Exeter.

President-elect: SIMEON SNELL, F.R.C.S.Edin., Ophthalmic Surgeon, Royal Infirmary, Sheffield.

Past-President: RICHARD ANDREWS REEVE, B.A., M.D., LL.D., Dean of the Medical Faculty of the University of Toronto.

Chairman of Representative Meetings: JAMES ALEXANDER MACDONALD, M.D., M.Ch., R.U.I., Physician, Taunton and Somerset Hospital.

Chairman of Council: EDMUND OWEN, LL.D., F.R.C.S.Eng., Consulting Surgeon to St. Mary's Hospital, London.

Treasurer: EDWIN RAYNER, M.D.Lond., F.R.C.S.Eng., Surgeon, Stockport Infirmary, Stockport.

The Address in Medicine will be delivered by James Kingston Fowler, M.D., F.R.C.P.

The Address in Surgery will be delivered by Rutherfoord John Pye-Smith, F.R.C.S.

The Popular Lecture will be delivered by Edmund Owen, LL.D., F.R.C.S.

THE SECTIONS.

The scientific business of the meeting will be conducted in sixteen Sections, which will meet on Wednesday, July 29th, Thursday, July 30th, and Friday, July 31st.

The President, Vice-Presidents, and Honorary Secretaries of each Section constitute a Committee of Reference for that Section, and exercise the power of inviting, accepting, or declining any paper, and of arranging the order in which accepted papers shall be read. Communications with respect to papers should be addressed to one of the Honorary Secretaries.

A paper read in the Section must not exceed fifteen minutes, and no subsequent speech must exceed ten minutes. Papers read are the property of the British Medical Association, and cannot be published elsewhere than in the British Medical Journal without special permission.

The following is a list of the Sections, with the names of the officers. The subjects selected for discussion in the various Sections will be published as soon as the arrangements of the committee of reference are completed.

Anatomy.

President: Christopher Addison, M.D., Anatomy Department, St. Bartholomew's Hospital, London.

Vice-Presidents: Edward Skinner, M.R.C.S., 124, Devonshire Street, Sheffield; Thomas Hastie Bryce, M.D., 2, Granby Terrace, Glasgow; Arthur Keith, M.D., London Hospital Medical College, London.

Honorary Secretaries: Professor Charles Joseph Patten, M.D., University, Sheffield; Henry Mulrea Johnston, M.B., Anatomical Department, Trinity College, Dublin.

Pathology.

President: Charles James Martin, M.B., F.R.S., Lister Institute of Preventive Medicine, London.

Vice-Presidents: Charles Workman, M.D., 5, Woodside Terrace, Glasgow; Alexander Grant Russell Foulerton, F.R.C.S., Middlesex Hospital, London; Professor James Martin Beattie, M.D., Pathological Department, University, Sheffield.

Honorary Secretaries: James Douglas Stanley, M.D., 21, Broad Street, Birmingham; Ralph Davies Smedley, M.B., School of Medicine, University, Sheffield.

Physiology.

President: Professor Ernest Henry Starling, M.D., F.R.S., 40, West End Lane, London.

Vice-President: Gustav Mann, M.D., 25, Beechcroft Road, Oxford.

Honorary Secretaries: Professor John Smyth Macdonald, L.R.C.P., University, Sheffield; Charles Frederick Myers-Ward, M.R.C.S., Kelvin House, Green Lane, Northwood.

Medicine.

President: William Dyson, M.D., Brooke House, Gell Street, Sheffield.

Vice-Presidents: Duncan Burgess, M.B., 442, Glossop Road, Sheffield; William Smith Porter, M.D., 283, Glossop Road, Sheffield; James Craig, M.D., 18, Merrion Square, Dublin; Frederick John Smith, M.D., 138, Harley Street, London.

Honorary Secretaries: Arthur John Hall, M.D., 342, Glossop Road, Sheffield; Sir John Francis Harpin Broadbent, Bart., M.D., 35, Seymour Street, Portman Square, London; Alexander Dingwall Fordyce, M.D., 19, Coates Crescent, Edinburgh.

Diseases of Children.

President: Charles Henry Willey, M.D., Wostenholm Road, Sheffield.

Vice-Presidents: John Burdsall Lyth, M.R.C.S., Fern Bank, Doncaster Road, Rotherham; John McCaw, M.D., 74, Dublin Road, Belfast; Robert Gordon, M.D., 26, Wostenholm Road, Sheffield.

Honorary Secretaries: Joseph Henry Wilks, M.B., 43, Montgomery Road, Sheffield; Sidney Maynard Smith, M.B., 1, Spanish Place, Manchester Square, London; Harold Leader, M.B., 279, Glossop Road, Sheffield.

Psychological Medicine.

President: Walter Smith Kay, M.D., S. Yorks. Co. Lunatic Asylum, Wadsley, Sheffield.

Vice-Presidents: Henry Talbot Sidney Aveline, M.R.C.S., Somerset and Bath Asylum, Cotford, Norton Fitzwarren, near Taunton; Maurice Craig, M.D., Bethlem Royal Hospital, London; Gilbert Edward Mould, M.R.C.S., Thundercliffe Grange, near Rotherham, Sheffield.

Honorary Secretaries: William James Nathaniel Vincent, M.B., South Yorks Asylum, Wadsley, Sheffield; George Arthur Rorie, M.D., County Asylum, Dorchester.

Industrial Diseases.

President: Thomas Oliver, M.D., 7, Ellison Place, Newcastle-on-Tyne.

Vice-Presidents: William Francis Dearden, M.R.C.S., Normanhurst, Urmston Lane, Stretford, Manchester; Alexander Forbes, M.B., Hillsboro' Lodge, Sheffield; Samuel King Alcock, M.B., Portland House, Burslem, Staffs.

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Honorary Secretaries: William Jones Greer, F.R.C.S.I., 19, Gold Tops, Newport, Mon.; Arthur Rupert Hallam, M.D., 325, Fulwood Road, Sheffield.

Tropical Diseases.

President: Lieutenant-Colonel Sir R. Havelock Charles, K.C.V.O., M.D., I.M.S., 9, Manchester Square, London.

Vice-Presidents: Louis Westenra Sambon, M.D. Naples, 1, Palace Gardens Mansions, London; Charles Wilberforce Daniels, M.B., London School of Tropical Medicine, Royal Albert Docks, London.

Honorary Secretaries: Frederick Augustus Hadley, F.R.C.S., Highfield House, Sheffield; Robert Thomson Leiper, M.B., London School of Tropical Medicine, Royal Albert Docks, London.

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PROVISIONAL TIME TABLE.

FRIDAY, JULY 24TH.*
2 p.m.—Annual General Meeting, to be followed immediately by Representative Meeting.

SATURDAY, JULY 25TH.*
9.30 a.m.—Representative Meeting.

MONDAY, JULY 27TH.
9.30 a.m.—Representative Meeting.

TUESDAY, JULY 28TH.
9.30 a.m.—Representative Meeting, if necessary.
9.30 a.m.—Council Meeting.
12 noon.—Service at the Parish Church.
2.30 p.m.—Adjourned General Meeting.
Induction of President.
Representative Meeting, if necessary.
8.30 p.m.—President's Address.

WEDNESDAY, JULY 29TH.
10 a.m. to 1 p.m.—Sectional Meetings.
2.30 p.m.—Address in Medicine.
3.15 p.m.—Representative Meeting, if necessary.
8.30 p.m.—Reception.

THURSDAY, JULY 30TH.
10 a.m. to 1 p.m.—Sectional Meetings.
2.30 p.m.—Address in Surgery.
7.30 p.m.—Annual Dinner.

FRIDAY, JULY 31ST.
10 a.m. to 1 p.m.—Sectional Meetings.
8 p.m.—Popular Lecture.

SATURDAY, AUGUST 1ST.
Excursions.

* It is left to the President-elect, the Chairman of the Representative Meetings, and the Chairman of Council to decide if the business to come before the Representatives will necessitate a meeting on the Friday.

Honorary Local Secretary—
SINCLAIR WHITE, M.Ch., F.R.C.S., Ranmoor, Sheffield.

Honorary Assistant Secretaries—
W. T. D. MART, M.R.C.S., L.R.C.P., Rock Rise, Rock Street, Pitsmoor, Sheffield.
R. W. I. SMITH, M.D., C.M., Don House, Brightside, Sheffield.
A. C. TURNER, M.R.C.S., L.R.C.P., 287, Glossop Road, Sheffield.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

GIBRALTAR BRANCH.

AN ordinary meeting of this Branch was held on Monday, November 18th, at 5 p.m., in the Board Room, Colonial Hospital, sixteen members and one visitor being present.

Confirmation of Minutes.—The minutes of the last meeting were confirmed.

Communications.—The paper by Dr. A. E. LARKING on The General Practitioner and the British Medical Association, was read by the SECRETARY from the SUPPLEMENT of November 2nd. Staff Surgeon J. L. DE VERTEUIL, R.N., read notes on *Spirochaeta pallida;* Staff Surgeon C. B. FAIRBANK, R.N., showed *x* ray photographs of a case of beri-beri, a case of radical cure of hydrocele, and a case of scrotal abscess. Dr. L. D. PARSONS, M.B., showed specimens of urinary calculi.

GLOUCESTERSHIRE BRANCH.

THE first general meeting of the Branch for the session 1907-8 was held at the Infirmary, Gloucester, on November 21st, 1907. The retiring PRESIDENT (Dr. Cox) was in the chair, and thirty members were present.

Confirmation of Minutes.—The minutes of the last general meeting and special meeting of November 7th were read and confirmed.

President's Valedictory Address.—Dr. Cox, in vacating the chair, thanked the Branch for the kindness and consideration shown to him during his year of office, and drew attention to the good attendance at the meetings.

Vote of Thanks to Retiring Secretary.—The PRESIDENT then proposed a very hearty vote of thanks to Mr. Howell, the retiring secretary, for the excellent work he had done during the past five years. This was seconded by Dr. SOUTAR, and carried with acclamation, Dr. H. BRAMWELL, Dr. PRUEN, and Mr. CUTHBERT also testifying to Mr. Howell's able work; Mr. HOWELL replied.

Installation of New President.—Dr. WAYLAND ANCRUM, on taking the chair, thanked the Branch for the honour of electing him President, and then proceeded to give his address on The Minor Surgery of the General Practitioner. Commencing with the subject of anaesthetics, he said he considered gas and ether the best anaesthetics for the general practitioner, and drew attention to the use of fresh paper bags for each case in place of the india-rubber bag. Ethyl chloride was a fairly safe anaesthetic in 3 c.cm. doses for cases requiring a longer anaesthesia than produced by gas. The fatalities might be attributed to: (1) Too large an initial and concentrated dose; (2) prolonged dose, this being due to lack of knowledge as to when the patient was under, as often no stertor was heard, as in gas, but only a stertor felt over the larynx. Chloroform he regarded as the least safe

and not to be used for short operations. For local anaesthesia a combination of eucaine and adrenalin was invaluable, and could be used for operations on herniae, thyroids, colotomies, while spinal injections appeared to have a future. After mentioning the various antiseptics in use, ligatures, the preparation of hands and skin of patients, wearing of rubber gloves, dressings—of which he advocated sterilized gauze and wool—the thorough examination of the patient before operation, the speaker went on to advise the examination for foreign bodies in all cases of inflammation of the eye, or of purulent discharge from the nose, and the necessity of a general anaesthetic in cases of a body in the external auditory meatus not removable by syringing. Often the symptoms of a foreign body in throat or oesophagus remained after its removal. He laid great stress on examination of the rectum, and then proceeded to describe the suturing of wounds of the face with metal sutures, horsehair, or fine catgut, to be removed on the fourth day, and replaced by plaster or strapping. For haematoma of eyelid leeches were useful. In fractures it was diplomatic to have a consultation, and early passive movement and massage were essential. A spray of adrenalin was excellent for stings in the throat and in cases of epistaxis. He maintained that in children under 2 years of age who were well looked after most inguinal herniae were cured by truss, after that age operation should be performed. The main feature about the operation for a varicocele was the holding of the veins in the left hand during most of the operation to prevent bleeding into the wound. He advocated 10 or 15 minims of liquefied carbolic acid for injection into hydroceles, and after describing the operation for ingrowing toe-nail, tapping in left flank for ascites, resection of rib for empyema, explained how after aspirating a bladder for retention of urine, a Southey's tube could be passed through a trocar and left to drain the bladder for some days. Abscesses of breast should always be opened under a general anaesthetic, and all tumours of breast removed. Buboes, if seen early enough, should be dissected out. He believed all children should be circumcised, but care must be taken to prevent surgical phimosis with those with a short penis. Haemorrhoids were best operated on by ligature.—Mr. BUCKELL, Dr. BATTEN, Dr. H. BRAMWELL, Mr. CUTHBERT, Dr. PRUEN, and Mr. HOWELL thanked the President for his address, and Dr. ANCRUM replied.

Dinner.—Twenty-six members sat down to dinner at the Wellington Hotel, during which it was proposed by Dr. ANCRUM, seconded by Dr. OSCAR CLARK, and carried, that a very hearty vote of thanks should be sent to Dr. Cox, in recognition of the splendid way in which he had occupied the chair during the past session.

LANCASHIRE AND CHESHIRE BRANCH: NORTH MANCHESTER DIVISION.

AN ordinary meeting of this Division was held at the Palatine Hotel on November 21st, Dr. HARGREAVES in the chair.

Minutes.—Dr. G. H. BROADBENT objected to the statement (and report) that "all the members present, nine in number, voted in favour of each minute of the Representative Meeting." Dr. Broadbent stated that he had not voted at all, and the minute was therefore amended to read as follows: "The minutes of the Representative Meeting were passed *nem. con.*"

New Rules.—The Secretary was instructed to ask for information from the central office concerning the new rules lately passed by this Division.

Sixpenny Doctors.—The following resolution, communicated by the North Manchester Medical Union, was unanimously adopted:

> That "sixpenny doctors" should not be recognized professionally, nor be met with in consultation by other members of the profession.

Central Emergency Fund.—The following resolution was unanimously adopted:

> This Division cordially approves of the Central Emergency Fund, and urges on its members the advisability of giving it their financial support.

It was also decided that copies of the letter from the Medical Secretary should be obtained and issued to the profession in the district, with an appeal for subscriptions, with a suggested minimum of 2s. 6d.

Division Supper.—Those present formed themselves into a committee, with power to add to their number, and invite members and their friends to a supper at the Queen's Hotel on Thursday, December 19th.

Plans of the New Buildings of the Association in London.—Dr. BROADBENT introduced this subject, and the following resolution was carried:

> That the Secretary be instructed to write to the General Secretary and ask why the promise made by the Chairman of the Annual Representative Meeting at the Exeter Meeting concerning the publication in the BRITISH MEDICAL JOURNAL of the plans of the new buildings in the Strand has not yet been fulfilled.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

NOTICE.

OWING to the rebuilding of the Association premises in the Strand the Library is closed, but at the Temporary Offices of the Association, 6, Catherine Street, Strand (adjoining Drury Lane Theatre), a Reading and Writing Room is provided. The Room will be open from 10 a.m. to 5 p.m., except on Saturdays, when it will be closed at 2 p.m.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH: ENGLISH DIVISION.—The first ordinary meeting of the Division will be held at the Cottage Hospital, Maryport, on Friday afternoon, December 13th. The Secretary will be pleased to hear from any member who will read a paper, show cases or pathological specimens.—NORMAN MACLAREN, Carlisle, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: LEIGH DIVISION.—A meeting of the Members of this Division will be held at the Co-operative Rooms in Ellesmere Street, at 8.30 p.m. on Thursday, December 19th. Agenda: Terms of acceptance of a new Sick Club.—J. SACKVILLE MARTIN, M.D., Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WALTHAMSTOW DIVISION.—The next meeting of this Division will be held at the Fillebrooke Hall, Fairlop Road, Leytonstone, on Tuesday, December 10th, at 4 p.m. Agenda: (1) Minutes. (2) Letters. (3) Paper, "Heart Symptoms and Signs in General Practice," by Dr. F. J. Smith. Visitors are invited.—A. POTTINGER ELDRED, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION.—A Medico-Political Meeting of this Division will be held on Thursday, December 12th, at 8.45 p.m., at 27, St. John's Hill, S.W.—C. J. MARTIN, 111, Northcote Road, Clapham Junction, S.W., Honorary Secretary.

SOUTH-EASTERN BRANCH: HASTINGS DIVISION.—A special meeting of this Division will take place at the Eversfield Hotel, St. Leonards-on-Sea, on Thursday, December 12th, at 8.30 p.m., Mr. H. R. Mansell in the chair. Agenda: (1) Minutes of last meeting. (2) To further discuss the Referendum Report, the Minority Report, the Representative Report, dealing with the proposed Charter. (Copies of the Referendum Report and Minority Report have already been forwarded to each member, and they are recommended to refer to the SUPPLEMENT to the JOURNAL of September 21st, which contains a report from the Representative Meeting).—G. VICKERMAN HEWLAND, Honorary Secretary and Honorary Treasurer.

SOUTH-EASTERN BRANCH: NORWOOD DIVISION.—A special meeting of the above Division will take place at the Queen's Hotel, Church Road, Upper Norwood, on Thursday, December 12th, at 4 p.m., Dr. Henry Hetley in the chair. Agenda: (1) Minutes of last meeting. (2) Election of Representative. (3) To consider the Referendum Report and Minority Report dealing with proposed Charter. (Copies of the Referendum Report and the Minority Report have been already forwarded to each member, and they are also recommended to refer to the SUPPLEMENT to the JOURNAL of September 21st, which contains a report from the Representative Meeting.) All members of the South-Eastern Branch are invited to attend and to introduce professional friends, but will be unable to vote on Divisional questions.—ARTHUR W. SOPER, 2, Hamlet Road, Upper Norwood, Honorary Secretary.

MEMBERS ELECTED DURING THE SEPTEMBER QUARTER.

UNDER BY-LAWS 2 AND 3.

BY THE COUNCIL.

Atkins, Robert Humphries, Surg. R.N., M.B., B.A.O.
Bourdas, John, Surg. R.N., L.R.C.P., M.R.C.S., L.D.S.Eng.
Browne, Cuthbert Gerrard, Lieut. R.A.M.C., M.R.C.S., L.R.C.P.Lond.
Coltart, Henry Neville, M.R.C.S.Eng., L.R.C.P. Lond., Samastipur, Tirhoot, India
Davy, Philip Claude Tresilian, Lieut. R.A.M.C., M.B.Lond., M.R.C.S., L.R.C.P.
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Stone, George, Esq., 14, Blackhorse Road, Walthamstow
Sutton, H. M., Esq., 3, Manor Road, Stamford Hill, N.
Traylen, C. L, Esq., 125, High Road, Willesden Green, N.W.
Ware, E. E., M.D., Frognal Park, Frognal Lane, N.W.
White, G. B. M., M.B., 112, Harley Street, W.
Williams, Hugh L., Esq, 2, Upper Wimpole Street, W.
Wynter, W. E., M.D., 27, Wimpole Street, W.

Natal Branch.

Croudace, W. H. H., M.B., Grey's Hospital, Maritzburg
Francois, C. A., Esq., Durban
Gray, A. Murray, Esq, Durban
Livingstone, F. J., M.D., Bulwer
Niemeyer, E., Esq., Utrecht
Proksch, L. L., Esq., Krautz Kop
Roycroft, R., M.B., Greytown
Telfer, Chas., M.B., Ingwavuma, Zululand

New Zealand Branch.

Closs, J. R, Esq., Auckland
Crawford, S. E., Esq., Marton
Deck, E. J., Esq., Waihi
Giesen, E. W., Esq., Wellington
Gilroy, T., Esq., Wellington
Hall, A. J., M.B., Dunedin
Harty, G. W., Esq., Wellington
Holmes, M., Esq., Wellington
McDougall, N., M.B., Auckland
Mandl, C. L., Esq, Foxton
Marks, J. D., Esq., Christchurch
Meinhold, M., Esq, Helensville
Mill, T., Esq., Christchurch
Miranis, C. H., Esq, Hutt
Pearless, W. R., Esq., Nelson
Pigeon, H. W., Esq., Wellington
Pitts, A. G., Esq, Christchurch
Pitts, Ethel, Christchurch
Purchas, A. C., M.B., Auckland
Reece, C., M.B., Hamilton
Robertson, C. H., Esq., Johnsonville
Washbourn, H. E. A., Esq., Collingwood
Weeks, H., M.B., Tolago Bay

North Lancashire and South Westmorland Branch.

Fothergill, R. H., M.B., Dalton-in-Furness

North of England Branch.

Adamson, J. R., M.B., 152, Coatsworth Road, Gateshead
Armstrong, William, Esq., Hawthorn Lodge, East Boldon
Blandy, F. D., M.D., Belvedere, Whitley Bay
Boleyn, J. G. W., M.B., 106, High Street, Willington, Durham
Burn, F. W., Esq., 34, North Bridge Street, Sunderland
Cunliffe, Samuel, Esq., Witton Park, co. Durham
Dodgson, G. Stanley, M.B., Sherburn Hospital, Durham
Fleming, Wm., Esq., Spennymoor
Fowler, W., Esq., Chester Road, Sunderland
Grant, J. C., Esq., West Boldon
Gray, Alex., M.B., South Hylton, Sunderland
Horseman, Frederick, Esq., Park View, Whitley Bay
Keay, A. C., M.B., Beamish
Murray, John, M.B., Blackhill, co. Durham
Neill, Thomas, M.B., Winton House, Wooler
Patterson, James, Esq., Holly Villa, Felling
Pollock, Dr., Monkwearmouth Hospital, Sunderland
Relton, C. D., M.B., Low Fell
Robinson, Amy, M.B., Ingleside, South Shields
Sinclair, J. D., Esq., Wellington Cottage, Darlington
Willan, R. J., M.B., 25, Ellison Place, Newcastle-on-Tyne

North Wales Branch.

Hughes, J. B., Esq., Menai Bridge

Oxford and Reading Branch.

Cheyney, G. H., Esq., The Priory, Caversham
Hope, W. B, Esq, Church Street, Caversham
Macfie, J. W. Scott, M.B., Radcliffe Infirmary, Oxford

Perth Branch.

Stuart, Charles, M.B., Perth

Shropshire and Mid-Wales Branch.

Spriggs, N. J., M.D., 26, St. John's Hill, Shrewsbury
Thomas, R. D., Esq., Severn St., Welshpool
Vickers, K. B. J., M.B., Wellington, Salop

South Australian Branch.

Griffiths, E. W., M.B., Adelaide Hospital, Adelaide
Lewis, Eric, M.B., Adelaide Hospital, Adelaide
Mcaree, Francis, M.B., Adelaide Hospital, Adelaide
Rugg, Harold, Esq., Barnard St., N. Adelaide

South-Eastern Branch.

Archibald, R. J., Esq., 7, Chapel Place, Ramsgate
Brodribb, A. W., M.B., 14, White Rock, Hastings
Burfitt, H. R., M.D., Darenth Asylum, Dartford
French, R. E., M.B., Burgh Heath
Sheaf, E. W., M.B., Alpha College, Epsom Road, Guildford
Watson, C. E. S., Esq., Southolme, South Road, Forest Hill, S.E.
Wight, Edward, Esq., 9, Regency Square, Brighton

South-Eastern of Ireland Branch.

Hogan, John J., Esq., County and City Infirmary, Waterford
Hourigan, W. P., Esq, Freshford, co. Kilkenny

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Holmes, Thomas, M.S., 22, Nightingale Road, Southsea
Lindsay, D. L., Esq., Melbourne House, Victoria Road, Aldershot
Routley, E. W., M.D., Winton, Church Lane, Aldershot

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Lloyd, James, M.B., Llanbradach
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Rhys, O. L., M.B., Cardiff
Roberts, R. W., Esq., Port Talbot
Terry, R. H., Esq., Abercanaid

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Brushfield, T. N., M.D., The Cliff, Budleigh Salterton
Budd, Arthur, M.B., Southgate, Launceston
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Corbett, Edward, Esq., Fairfield House, St. Thomas, Exeter
Dodds, T. G. B., M.D., Starcross
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Gordon, J. Hurd, Esq, Dalwood, Axminster
Marshall, A. T., M.B., 14, The Quay, Bideford
Mathew, P. W., Esq, 1, Manston Terrace, Heavitree
Osborne, Albert, Esq., Northfield House, Ilfracombe
Trumper, W. A., Esq., Carclew, Torquay
Walker, Robert, M.D., Budleigh Salterton
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Young, Thomas, Esq, Woolacombe, R.S.O.

Staffordshire Branch.

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Aspinall, Jessie S., M.B., Scot's College, Rose Bay, near Sydney
Barling, J. E. V., Esq., Dulwich Hill
Bell, George, M.B., Sydney Hospital
Cahill, J. H., M.B., Johnstone St., Annandale
Campbell, John S., M.B, Stanmore
Campbell, T. G., Esq., Haberfield, Sydney
Challands, F., M.B, Mudgee
Chauncey, J. H., Esq., Delegate, N.S.W.
Cowlishaw, Leslie, M.B., 310, Miller Street, North Sydney
Delshery, H. C. M., M.B., Forbes
Edwards, E. D., Esq., Glebe
Edwards, James G., M.B, Sydney Hospital
Elworthy, W. H., M.B, Penrith
Fiaschi, P., Esq., Macquarie Street, Sydney
Fox, Hedley E., M.B., Kiama
Francheschi, Carlo, M.D., Lismore
Gibson, D. D, M.B., Dubbo
Graham, C. H., Esq., Wellington
Herring, E. Ken, Esq, West Maitland
Jones, G. M., Esq., Wahroonga
Kendall, H. W., M.B., Albert St., Woolahra
Linton, Edward, Esq., Wellington
Leslie, James R., M.B., Bouble Bay
McKell, T. P., M.D., Barraba
Morau, H. M, M.B., Newcastle
Parkinson, T. C., M.B., R. P. A. Hospital, Camperdown
Paul, George A., M.B., Sydney Hospital
Phillips, A. B., M.B., Grafton
Rygate, A. M., M.B, Wellington
Schuett, Edward, M.D., 82, Hunter St., Sydney
Sheldon, Wm., M.B., Johnstone Street, Annandale
Shellshear, Joseph L., M.B., Sydney Hospital, Newtown
Stiles, Bernard T., M.B., 6, Erskinville Road Newtown
Sturges, Frank, Esq., Wellington
Vernon, G. H., M.B., R. A. Hospital for Children, Camperdown
Woolnough, Robert, Esq., Kempsey

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Foster, E. J., M.B., Fordwich, Ontario

West Somerset Branch.

Rutherford, J. W., Esq., Cotford Asylum, near Taunton
Turner, G. J. K., M.B., Wiveliscombe

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GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION 1907.

REPORT OF PROCEEDINGS.

Thursday, November 28th, 1907.

Dr. Donald MacAlister, President, in the Chair.

The minutes of the previous day's proceedings were read and confirmed.

The Council proceeded to the consideration of the case of John Papa Nicolas, registered as of 87, Dowanhill Road, Catford, S.E., M.R.C.S.Eng., L.R.C.P.Lond., 1904, who had been summoned to appear before the Council on the following charge:

That you have systematically canvassed in Catford for patients, by personal visits to patients of Mr. Thomas William Atkinson and to others, both while you were in the employment of the said Thomas William Atkinson and subsequently, and that in the course of such canvass you disparaged the qualifications and skill of the said Thomas William Atkinson and extolled your own.

Mr. Papa Nicolas attended in answer to his notice, accompanied by Mr. H. J. Randolph Hemming, his solicitor, and witnesses.

Dr. Hugh Woods attended on behalf of the London and Counties Medical Protection Society, the complainants, also with witnesses.

On question from the Chair, Dr. Hugh Woods stated that he had no objection to the presence of witnesses during the hearing; but on Mr. Hemming being asked the same question, he took exception to their presence. Witnesses therefore, by direction from the Chair, withdrew.

The Solicitor having read the notice, Dr. Hugh Woods proceeded to open the case for the complainants. Dr. Woods called Mr. Thomas William Atkinson, M.B., B.S., R.U.I., of Berrymead, 78, Bromley Road, Catford, as a witness. Dr. Woods read from Mr. Atkinson's statutory declaration, and questioned him as to its accuracy, which he confirmed.

He was then cross-examined by Mr. Hemming. In the course of the cross-examination the Legal Assessor intervened, and on behalf of the President requested Mr. Hemming to confine his questions to the occasions when Mr. Papa Nicolas had, as alleged, used his opportunities to disparage Mr. Atkinson. The Legal Assessor at a later stage again objected to Mr. Hemming's cross-examination of Mr. Atkinson in regard to a conversation which had not taken place in his presence. Mr. Hemming cross-examined Mr. Atkinson in regard to the statutory declarations which had been prepared in support of the charge, and read statutory declarations made by several of the witnesses contradicting those previously made by them in support of the charge, and put in a declaration by Mrs. Lavallin.

Mr. Hemming asked to see the original letter of complaint. The Council's Solicitor explained that the documents to which parties were entitled were those which were sent to the Council in support of the charge or in answer thereto. Mr. Hemming pressed his application for the production of the document, and asked for an adjournment to enable him to apply to the Court for a mandamus. Dr. Woods having expressed his willingness that his letter of complaint should be produced, the Council allowed the letter to be read by their Solicitor, and Dr. Woods undertook to supply Mr. Hemming with a copy. The Legal Assessor explained the procedure of the Council in regard to the matter.

Mr. Atkinson was then re-examined by Dr. Woods.

Mr. Atkinson answered a question put to him, through the Chair, by a Member of the Council.

The Council then adjourned.

On Friday morning, November 29th, in the Divisional Court, before Justices Darling and Lawrence, Mr. F. E. Smith applied for a rule nisi for a mandamus addressed to the President of the General Medical Council, to supply Dr. Nicolas with all documents, including the application made in writing to the Registrar, which stated the ground on which the application was made for a penal hearing, and also for a rule nisi directing them to hold a new inquiry.

Their Lordships granted the application.

Friday, November 29th, 1907.

Dr. Donald MacAlister, President, in the Chair.

The minutes of the previous day's proceedings were read and as amended confirmed.

The Registrar announced that the first business was to proceed with the adjourned consideration of the case of Mr. Nicolas.

Mr. Hemming thereupon stated that the application above mentioned had been made and granted. All the documents were in the Crown Office, and he therefore asked that the case might be adjourned *sine die*.

In reply to the President, Mr. Hemming said the documents would not be ready before Monday.

[Strangers and parties were directed to withdraw; on their readmission,]

The President stated that the Council had decided to adjourn the inquiry until the May session, and that due notice would be given to Mr. Nicolas when it was to be resumed.

Administration of Anaesthetics for Unregistered Dentists.

The case next dealt with by the Council was that of William Henry Roberts, registered as of 63, Lower Mount Street, Dublin, L.R.C.P.E. 1885, L.R.C.S.E. 1885, who had been summoned to appear before the Council on the following charge:

That you have knowingly assisted certain persons who are not registered as dentists, namely, Mr. Keogh, of No. 4, Lower Mount Street, Dublin, and Mr. John Blake Dillon, Messrs. William-Steyn and Mr. M. William-Steyn, all of 23, Rathmines Road, Dublin, in performing operations in dental surgery by administering and offering to administer anaesthetics, and have so enabled these persons to treat patients and to engage in dental practice as if they were duly qualified in dentistry and dental surgery, and that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. Lushington was present as Legal Assessor, and Mr. Winterbotham as Solicitor to the Council. Mr. R. W. Turner, instructed by Messrs. Bowman and Curtis Hayward, appeared for the Irish Branch of the British Dental Association. Mr. Warburton, instructed by Messrs. Vallance and Vallance, represented Mr. Roberts.

Mr. Turner said he had had an opportunity of seeing Mr. Warburton, and he hoped the Council would be able to adopt a certain course. The facts were practically not in dispute. Mr. Roberts had acted contrary to the resolution which was passed by the General Medical Council, and sent to all registered practitioners with reference to the administration of anaesthetics in order to assist unqualified dentists. In 1906 the Irish Branch of the British Dental Association sent a copy of this resolution of the General Medical Council to every registered practitioner in Ireland, together with a list containing all the registered dentists in Ireland. Mr. Roberts, in the answer which he had filed to the charge in this case, admitted having administered anaesthetics with regard to which he made certain explanations. He (Mr. Turner) did not propose at that stage to go into those explanations, but he must not be taken to accept them. Mr. Warburton had intimated to him that Mr. Roberts through him desired to express his regret to the Council for the infringement of this rule, and to say that he would take good care not to infringe it in the future. He therefore hoped the Council would adjourn the case for six months in order that it then might be satisfied that Mr. Roberts intended to obey the resolution the infraction of which he admitted would make him liable to be struck off the *Medical Register* for having been guilty of infamous conduct in a professional respect.

Mr. Warburton stated that he had very little to add to the extremely fair remarks of Mr. Turner. Mr. Roberts had been twenty-two years on the *Medical Register*, and he had a large number of testimonials as to the high professional character he had borne during that time. Mr. Roberts desired to express his regret for what he had done, to apologize for his inadvertence, and to throw himself on the merciful consideration of the Council.

[Strangers and parties then withdrew. On their readmission]

The President said: "Mr. Roberts, I have to inform you that the Council has found the facts alleged against you proved to its satisfaction, and that the further consideration

of the facts proved has been adjourned till the session that will be held in May next on a day of which you will receive due notice, and when you will be expected to be present."

The Coventry Dispensary.

The Council then dealt with the cases of Arthur James Arch, of Leicester House, Coventry, registered as M.R.C.S Eng. 1904, L.R.C.P.Lond. 1904; William Walter Fenton, of Avonmore, Warwick Road, Coventry, registered as M.B.. B.S. 1893, M.D. 1894 Univ. Dubl., L.M K.Q. Coll. Phys. Irel. 1884; Thomas Alfred Hird, Norton House, Coventry, registered as M.B. M S. 1882, M.D. 1900 Univ. Edin.; and William James Pickup, Swanswell, Coventry, registered as M.R.C.S.Eng. 1876, L.S.A. Lond. 1877, M.B. 1880, M.D. 1893 Univ. Lond., who had been summoned to appear before the Council at 2 o'clock, November 29th, on the following charge:

That you have joined with other registered medical practitioners in forming and are one of the medical staff of a dispensary, namely, the Coventry New Dispensary Service, which systematically canvasses for patients, and that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainants were Andrew St. Lawrance Burke, Gosford House, Coventry, registered as L., L.M. 1895, R.C.P.Irel.; L., L.M. 1895, R.C.S.Irel.; Alfred Pytches Blanchard Ellis, of Earlesdon House, Earlesdon, Coventry, registered as L.S.A.Lond. 1896; and John Inman Langley, formerly registered as of Parkside, Arcadian Gardens, Bowes Park, N., but now of 14, Warwick Road, Coventry, M.R.C.S.Eng. 1898, L.R.C.P.Lond. 1898.

Mr. McCardie, instructed by Messrs. Woodcock and Co., Coventry, appeared for the complainants; Mr. Bodkin, instructed by Messrs. Le Brasseur and Oakley, appeared for the respondents Dr. Fenton and Dr. Arch; Mr. Hempson appeared on behalf of Dr. Pickup.

The President regretted to have to inform the Council that Dr. Hird (one of the respondents) had died the previous night. He asked both parties whether in the circumstances they desired an adjournment of the case.

Both Mr. McCardie and Mr. Bodkin replied in the negative.

The President remarked that before the case was opened he desired to ask the members of the General Medical Council whether any of them were members of the British Medical Association, because he thought it inexpedient that any of them should take part in the inquiry.

[Several members stood up.]

The President wished to express his opinion from the chair that it was inexpedient that those members should take part in the inquiry. The reason would appear in the course of the inquiry.

Mr. Bodkin stated that he knew the facts of the case, and, so far as he knew, the British Medical Association had nothing to do with his part of the case.

The President replied that he was glad to hear that.

Mr. McCardie, on behalf of the complainants, said he had no objection whatever to those gentlemen remaining.

The President said it was necessary, from the documents which came before him, to give an opportunity to members of the British Medical Association to abstain from taking part in the case, but, if neither side objected, no objection arose.

Dr. Lindsay Steven inquired whether it was legal for members of the British Medical Association to take part in the case, even if both parties were willing that they should, in view of what the President had said.

The President replied that as neither side took any objection on that ground, it rested entirely with the Council.

Mr. McCardie, in opening the case for the complainants, said that the Coventry Dispensary had carried on its work for a large number of years, and, prior to June of the present year, amongst the medical officers attached to the dispensary were the three gentlemen who were mentioned in the notice. Dr. Hird was another officer, and he regretted on behalf of the complainants to hear of the tragic death of that gentleman. He was a man of high ability, and had long done professional work amongst the poor of Coventry. In March the three medical men concerned in this case resigned their position as medical officers of the dispensary. They remained in office after the notice of resignation till June. In June Dr. Burke and the other complainants were appointed to take the place of the officers who had resigned. Those who had resigned formed another dispensary which they called the New Coventry Dispensary Service, and it started work in competition with the old dispensary some time in January of this year. Shortly after the new dispensary started Dr. Burke was informed by different people that canvassing was taking place. The new dispensary had a collector named O'Shea and the complaint was that in effect O'Shea was acting as canvasser and making house to house visitations in order to induce the patients of the old dispensary to follow the doctors who had established the new dispensary. Dr. Burke had made a statutory declaration setting out the facts stated. There was also a declaration by several individuals. He did not know whether it was the practice to read those declarations before the Council.

Mr. Lushington suggested that Mr. McCardie should put Dr. Burke in the box.

Mr. McCardie replied that statutory declarations had been filed which showed *prima facie* that canvassing had taken place.

Mr. Bodkin said he was anxious that his friend should not state anything to the Council which he could not prove *viva voce*, because he did not accept the statements in the statutory declarations other than that of Dr. Burke, and so far as Dr. Burke's declaration was concerned, he asked his friend to refer to no part of it which was merely founded on hearsay statements, as to which there would be no opportunity to cross-examine upon. So far as the facts were spoken to of Dr. Burke's own knowledge, his friend was at liberty to make any reference to them he pleased, but he asked the Council to protect his clients from hearsay statements in a deposition, unless the persons who made those statements were called before the Council.

Mr. Hempson wished to associate himself with the remarks which had been made by Mr. Bodkin.

Mr. McCardie said that the witnesses were not present, for the reason he was about to state. After the complaint had been made to the Council, the respondents had written a letter to the Council, of which a copy had been supplied to his clients. In their letter they stated that no canvassing to their knowledge had occurred, and they repudiated the statement that they had authorized any canvassing to take place. A statutory declaration had been filed on behalf of the respondents by Mr. O'Shea, to which he was entitled to refer, it having been filed in support of the case of the respondents. In that he referred to an interview between the doctors and Mr. O'Shea as to the duties which he (O'Shea) was to perform as collector. At that interview it was impressed on Mr. O'Shea by the doctors that he was to call only on their patients and not on any other persons, whether they were members of the Coventry Provident Dispensary or not. Therefore he assumed that the respondents, in giving those instructions, did not intend that the collector should canvass in any way. In the letter they had written they emphatically repudiated any authority on the part of the collector to canvass for them. Under those circumstances Dr. Burke and those associated with him in making the complaint were quite willing to accept to the full the respondent's repudiation, and to leave the matter without further evidence in the hands of the tribunal.

In answer to the President, Mr. McCardie said he did not propose to bring forward any further evidence; he accepted the respondent's repudiation of the action of Mr. O'Shea.

Mr. Bodkin desired to ask Mr. McCardie on what date the letter of November 2nd from the four respondents reached his client's hands.

Mr. McCardie replied it was somewhere about November 13th or 14th.

Mr. Bodkin remarked that the declaration of Mr. O'Shea would have reached his friend's clients some two or three days ago. His learned friend had opened and closed his case, and had admitted that he had not put before the Council any evidence, probably for the excellent reason that he had no evidence to put before them. He thought it was somewhat late in the day for his friend to have adopted that course. Mr. Fenton, Dr. Hird, and Dr. Pickup had been connected with the old dispensary for a long time. There were grave grounds for dissatisfaction with the old provident

dispensary, and therefore a meeting of the whole local medical faculty was called—not on one, but on two or three occasions—of the whole district—that was, from Coventry to Nuneaton—and not one single thing was done by those gentlemen for whom he appeared which was not done with the previous knowledge, sanction, authority, and support of the whole of their professional brethren in that locality to the number of between forty and fifty. Not one person took any objection to anything that the respondents did until after the new medical officers came to be appointed to the old dispensary in lieu of those gentlemen for whom he (Mr. Bodkin) appeared, who were obliged to resign owing to the condition of things in the old dispensary. It was admitted that his clients had a right, as it was their duty to maintain the very best traditions of their great profession, to start another dispensary for the benefit of the poor in the neighbourhood of Coventry, who were obliged to get medical attendance on co-operative principles. With regard to Mr. O'Shea, they appointed him as their collector at a fixed salary independently of any results they might attain, and they gave him the most precise instructions as to what he was to do. They gave him a list of their patients who had been attended for years at the old dispensary, with instructions to see them and ascertain whether they desired to continue on the list, or go forward, with the same medical gentlemen to attend them as had attended them for years, in the new service which those gentlemen had instituted. Not a single name save those of patients of those gentlemen was given to Mr. O'Shea, nor was it hinted that he should call on any other people than the actual patients of the gentlemen themselves. The complainants were represented by one gentleman who had recently come into the neighbourhood and had taken up the duties of the old dispensary, and that gentleman was the solitary person to complain. That complaint was now absolutely withdrawn, or, what perhaps was nearer the mark, was not attempted to be proved in any shape or way. In no one of the statutory declarations filed in support of the declaration of Dr. Burke had it been thought necessary to answer the fact that at the time of Mr. O'Shea's calling upon the people they were actually the patients of the doctors themselves. He concluded by suggesting that his learned friend might have made his apology for coming before the Council, and for the position he had taken up, just a little more ample if he had admitted rather earlier than that afternoon that he did not propose to proceed with the case, and so have avoided the expense of the attendance of the various gentlemen who had come.

Mr. Hempson said that Mr. Bodkin had put the case for the respondent for whom he appeared so clearly before the Council that it was not necessary for him to go over the ground again. His client, Dr. Pickup, was there to answer the charge and to invite the very fullest inquiry at the hands of the Council. There was one fact, however, which he would like to bring to notice, and that was that the new dispensary service was formed at the urgent request of the patients themselves, and the allegation against the respondent was that of canvassing through Mr. O'Shea. He had verified one fact for himself through his client, Dr. Pickup, and that was that over 2,000 of the patients came to him spontaneously. If the Council would allow him to adopt, on behalf of his client, the remarks which Mr. Bodkin had made on behalf of his clients, it was not necessary for him to trouble the Council any further.

Mr. McCardie, in reply, stated that it was always a matter of regret that the time of a large body such as the one he was addressing should be taken up by the mere withdrawal of a charge which could not be proceeded with, but that did not preclude him from saying that he hoped the withdrawal of the charge would tend to create a better feeling among the practitioners of Coventry.

[Strangers and parties were directed to withdraw, and on their readmission,]

The President announced the decision of the Council as follows:—"Dr. Fenton and Dr. Pickup: I have to inform you, and no doubt you will inform Mr. Arch, that the Council has deliberated on your case, and that the facts alleged against you have not been proved to its satisfaction."

Companies Bills Committee.

The President stated that he had to propose that Sir Charles Ball, Dr. Langley Browne, Mr. Morris, and Dr. Kidd, should be appointed additional members of the Companies Bills Committee.

This was agreed to.

Pharmacopoeia Committee Report.

Dr. Norman Moore, in bringing up the report of the Pharmacopoeia Committee, said that it consisted merely of a record of events. The Committee recommended that the President should be authorized to give directions for the printing a further impression of the *Pharmacopoeia*, the reason being that the stock remaining on hand consisted of 850 copies with 1,900 odd copies of the Addendum. Sir John Moore had presented to the Council, on behalf of the Royal College of Physicians of Ireland, two interesting copies of the *Pharmacopoeia* of the King's and Queen's College of Physicians. One was the Latin edition of 1826, and the other the English edition prepared under the presidency of Dr. William Stokes in 1850. This was a valuable addition to the library of the General Medical Council, which was constantly in use, and the Committee suggested that the thanks of the Council should be conveyed to the College for the gift.

The report was received and entered on the minutes.

Education Committee.

Dr. Mackay in bringing up the report of this Committee, which dealt mainly with entrance examinations, said that it would be seen that following up certain researches into the medical curriculum which was before the Council in May, the various licensing bodies were applied to for particulars as to the length of the course of the curriculum actually carried out by their students. In answer to the request they had received by the courtesy of the bodies a very full statement of the facts. The statements had been very carefully considered, but the work was both difficult and delicate, and the Committee wished to have full time to bring an abstract of those statements before the Council. It hoped to be able to do that by next May, and to show the percentage of the graduates of each licensing body who completed the course in seven years or less. It would be possible also to ascertain what might be called the ideal course of each body as pursued by the best men, and, by comparing the ideal with the average course, to see the amount of declination which had actually taken place. Following on that, it would be possible to compare the different licensing bodies with one another, and it would be a valuable thing to be able to show not only what each licensing body was doing, but to show them what the other licensing bodies were doing. Finally, it would be possible to disentangle from the statistics the full effect of any special regulations which any licensing body might have of its own, and see how such special regulations actually affected men. In order to do this the Committee must be thoroughly acquainted with the regulations of the different licensing bodies. It therefore was not a matter hurriedly to bring before the Council. The statistics had been in hand only a little more than a month, but he trusted at the next session of the Council that the whole matter would be laid before it in detail. The statements contained in the present report were more or less intimations of what the Education Committee, in the exercise of its power, had done up to this session. The examinations of the Educational Institute of Scotland had been from time to time inspected for the Committee, and had been very materially improved in consequence of the recommendations of their Inspectors. Some other recommendations had been made and the examination would be recognized on the understanding that those further recommendations were carried out. The Scottish Education Department had instituted a new certificate called the intermediate certificate to take the place of the four separate certificates of that department which had been granted in the past, and which had carried with them a right of entry to the medical curriculum. This certificate had been accepted by the Joint Examining Board of the Scottish Universities. He had attended, on behalf of the Council, a conference between representatives of the Scottish Education Department and the Joint Board, and he thought the new examination was a very great improvement upon the older arrangement of separate certificates. Further, for the first time in Scotland they had a definite recognition that the certificate brought with it a statement as to the fact that a definite course of

study had been pursued and not simply an examination passed. His Committee desired to express their satisfaction that this had been done. The Oxford and Cambridge Schools Examinations Board held two examinations. With the senior school certificate examination for pupils of 17 and upwards, which was accepted by Oxford and Cambridge Universities, the Committee was thoroughly satisfied, and advised that the restriction that all the subjects must be passed at the same time should be removed, provided that the certificate included all the required subjects. With regard to the Lower Examination, certain changes had been made which had in a way taken the examination out of the direct supervision of the University itself; and the Committee proposed to inquire whether the examinations will be accepted by the Universities as qualifying for matriculation.

The report having been received and entered on the minutes, Dr. MACKAY said that the only recommendation contained in the report was that a sum of money be placed at the disposal of the Education Committee for the purposes of the expenses in connexion with the supervision of preliminary examinations.

Sir JOHN MOORE seconded.

Dr. LINDSAY STEVEN said it appeared to him that there was another recommendation contained in the sentence—"The Committee recommend that, in view of the fact that the certificate is at present recognized by the universities, it is not necessary to take advantage of the invitation of the Scottish Education Department to inspect the examination, but that inspection should be resorted to should the recognition by the universities be withdrawn or suspended." In his opinion it was not good policy for the Council to set aside any power that it might have to inspect an examination. The registration of a medical student was a most important item in medical education. No doubt it was a voluntary registration, but if the Council were ever to make the registration of medical students more than a voluntary matter, then it must keep a close inspection on all examinations on which the registration depended. It was true that the report said "but that inspection should be resorted to should the recognition by the universities be withdrawn or suspended," but he was not satisfied to leave that entirely in the hands of the Scottish universities. The examination would not apply to Scotland only. Though he was not prepared to move an amendment, he thought that every examination recognized by the Council should be inspected by it.

Dr. MACKAY explained that the report was in the nature of a six monthly recommendation. If at any time the Council desired that an inspection should take place the Committee would be ready to do it.

Mr. TOMES remarked that, from a business point of view, he did not think the course proposed by the recommendation as to placing a sum of money at the disposal of the Committee was correct; the sum should be mentioned.

The PRESIDENT suggested that it should be a sum not exceeding £20.

Dr. MACKAY assented to this proposal, and Mr. TOMES agreed.

The PRESIDENT expressed his pleasure that Dr. Lindsay Steven had called attention to the point as to inspection, because it was very desirable that the Council should not drop any powers of inspection to which effect could be given. The word "recommend" he thought was the wrong word. It should read "The Committee were of opinion," and so on.

Dr. MACKAY was quite willing to alter the report in the way suggested.

The report was then altered in the way suggested.

REPORTS.

The report from the Examination Committee on the returns as to examinations for entrance to the Navy, Army, and Indian Medical Services, and the report from the Students' Registration Committee, were received and entered on the minutes.

DISCIPLINARY CASE.

The Council then proceeded to the consideration of the case of John Bernard Gabe, registered as of Pentrepoth House, Morriston, Swansea, L.S.A.Lond 1881, L.F.P.S.G. 1881, summoned to appear before the Council on the following charge:

That you have employed as your assistant in connexion with your professional practice a person not duly qualified or registered under the Medical Acts, and have knowingly allowed him to attend and treat patients in respect of matters requiring professional discretion or skill, and that in relation thereto you have been guilty of infamous conduct in a professional respect.

and the case of Morgan Watkin Williams, registered as of Trewernen, Llantwitfardre, Pontypridd, South Wales, M.B., B.S.Glas. 1900, summoned to appear before the Council on the following charge:

(1) That you, being a duly qualified and registered medical practitioner, while acting as assistant to Mr. John Bernard Gabe, also a duly qualified and registered medical practitioner, by your countenance, assistance, and co-operation knowingly enabled an unqualified and unregistered person, who was also acting as assistant to the said J. B. Gabe, to attend and treat patients and engage in medical practice as if the said person were duly qualified and registered;

(2) That you signed a certificate of death, namely, of Alice Mary Jenkins, which stated that you had attended the said Alice Mary Jenkins in her last illness, and that you last saw her alive on May 4th, 1907, whereas in fact you had not so attended her or seen her, but the said unregistered person had alone attended and seen her.

Mr. Lushington appeared as Legal Assessor; Mr. Winterbotham appeared as Solicitor to the Council; and Mr. S. Evans, K.C., M.P., appeared for the accused practitioners.

Mr. WINTERBOTHAM stated that the complainant, Mr. Jenkins, had, since laying the charge, attempted to commit suicide, and was now in a lunatic asylum. From inquiries made at Swansea, the facts of the case, which he understood would practically not be disputed, were as follows: Dr. Gabe, who practised at Morriston, on March 18th, 1907, opened a surgery at Treboath, near Swansea, about two miles from his residence, and sent a qualified man there, whom he subsequently had to dismiss for being drunk and under the influence of drugs. He had engaged a dispenser and surgery attendant, who was not registered, but had had some experience. A notice was also put up in a neighbouring colliery that a qualified practitioner was in attendance at the surgery, but for a time, at any rate, there was not. Dr. Gabe was not the regular medical attendant of Mr. Jenkins. On May 4th Mr. Jenkins's child was taken seriously ill, and, having seen the notice at the colliery, and being under the impression that he was sending for a qualified man, he sent to the surgery. The unqualified person attended the child, which died on May 5th, and Mr. Williams signed the certificate of death. He did not think it would be contended that Mr. Williams saw the child at all. Therefore the certificate given by Mr. Williams contained definite statements which were absolutely untrue. Inquiries had been made, but it had not been found that Mr. Williams had given certificates in other cases attended by the unqualified person, and, as far as he had been able to test the statements made by the accused practitioners, he had no reason to believe they were otherwise than correct. It was a serious thing that a medical man should leave a place in charge of an unqualified man, and that his delinquencies should be covered by his qualified assistant giving a certificate of death when otherwise there would have been a difficulty, and possibly an inquest. He then formally put in a statutory declaration by Mr. Jenkins, sworn on July 4th, 1907, a copy of the certificate of death, signed by Mr. Williams, and the letters of explanation from Mr. Williams and Dr. Gabe.

Mr. EVANS said the circumstances in the two cases were so connected that it was convenient they should be dealt with together. Dr. Gabe had practised in the district of Morriston for nearly thirty years, and had always engaged in his profession to the satisfaction, not only of his patients, but also of his brother practitioners in and around Swansea. Mr. Williams was a young man who had been in the profession about six years and was acting as assistant to Dr. Gabe. Dr. Gabe undoubtedly did employ the unqualified person, but only as his dispenser and surgery attendant at his own house until March, 1907. Dr. Gabe had had a very severe attack of typhoid fever, and he was not able to attend to his practice until the happening of the events now under discussion. On March 18th a qualified assistant was sent to the surgery, but he was a very unsatisfactory person and had to be dismissed on April 22nd, and the notice which had been referred to was issued at about that time, and there was no discontinuance of it after his dismissal. The unquali-

fied person was not sent up there to attend patients at all; he was there to take the instructions of Mr. Williams, which were conveyed by telephone. The unqualified person attended Mr. Jenkins's child without the knowledge of Dr. Gabe or Mr. Williams, and, taking into consideration the circumstances of Dr. Gabe's illness and that he was away from home at the time this occurred, he hoped the Council would be able to say that the fact of his being called there to answer the charge was sufficient punishment under the circumstances. With regard to Mr. Williams, no doubt he committed an error, and he (Mr. Evans) was not there to excuse him for that. The whole of the circumstances with regard to the incident were that Jenkins was probably got by somebody to make a complaint with regard to the child. The facts were communicated to Mr. Goodwin Price, the coroner for Swansea for many years, and a man of very large experience, and he, having investigated them, was of opinion that there was no necessity for an inquest, and no inquest was held. The fact was that at this particular time, Dr. Gabe being away, Mr. Williams, who was very hard worked and very hard pressed in the business of his principal, did sign a certificate which he ought not to have done. He regretted that he put on the certificate something from information and not from personal knowledge, but it was to be observed he had stated "I am informed and believe" on the certificate, which statement would appear to qualify the cause of death. He apologized on behalf of Mr. Williams for the error which he had committed, and hoped on his behalf that the Council would deal leniently with him under the circumstances, and suggested that the fact that he had been summoned to make an explanation might be sufficient to meet the justice of the case. He then put in testimonials from Dr. T. D. Griffiths, past-President of the British Medical Association, and others as to Dr. Gabe's character.

Dr. John Bernard Gabe, examined by Mr. Evans, stated that the facts mentioned by Mr. Winterbotham and Mr. Evans were true.

By the President: He sent the unqualified person to the surgery after the dismissal of the qualified assistant with distinct instructions that he was to send for Mr. Williams if he was required. He went to Llandrindod after his illness to recuperate, and when he returned found that the unqualified person had been attending patients, and at once dismissed him.

By Dr. Little: The unqualified person's duties before going to the surgery at Treboath were to act as a dispenser, dress wounds, and extract teeth.

By Mr. Tomes: He had advertised for a qualified assistant four or five times before he sent the unqualified person, who had passed every examination except surgery at the University of Edinburgh.

Dr. Morgan Watkin Williams, examined by Mr. Winterbotham, said he thought the words, "I am informed and believe" on the certificate covered the whole of the particulars, and did not refer to the words "I last saw her alive." He had nothing to add to the facts stated by Mr. Evans or to his letters to the Council, which contained his explanation for giving the certificate in question.

[Strangers were directed to withdraw; on readmission,]

The President said: "Dr. Gabe, the Council has carefully considered the facts alleged against you in your notice, and has come to the decision that they have not been proved to its satisfaction.

"Mr. Williams, in your case the Council has come to the decision that the facts alleged against you have been proved to its satisfaction, but has adjourned the further consideration of the facts proved until the May session, when you will be required to be present and to furnish evidence as to your conduct in the interval, especially in relation to the giving of certificates and association with unqualified assistants."

Apothecaries' Hall, Dublin.

Dr. McVail moved, Sir Christopher Nixon seconded, and it was resolved:

> That the report of the Examination Committee on the final examinations (July, 1907) of the Apothecaries' Hall, Dublin, be received and entered on the minutes.

Dr. Adye-Curran reminded the Council that the examiners were appointed under the Medical Act of 1886, Section 2, Subsection 5. Since those examiners had been appointed, they had continued not only to examine but to inspect and subsequently to report to the Council. It was not by any means clear under the Act that the Council had power to create a hybrid office, and ask those who were primarily examiners to become also inspectors and reporters. They were not to decide the conduct of the examination. Nowhere in the Act was it laid down that they should inspect and subsequently report, and he held it was quite foreign to the spirit of the Act that they should be asked to perform those hybrid duties. The Legislature evidently intended that those two offices should be kept separate and distinct. This, he contended, was borne out by a reference to Section 3, where it was distinctly laid down that inspectors of examinations should not interfere with the conduct of examinations, and therefore the Council, in giving instructions to such examiners to report, was acting *ultra vires*. For the last ten years the Apothecaries' Hall, Dublin, had been subject to these stringent reports, which had invariably been satisfactory, and it had endeavoured by every possible means in its power to fall into line and to carry out and satisfy the requirements of the General Medical Council. During that time the Apothecaries' Hall had been continually harassed by this inspection, which was a perpetual censure, and he asked the Council as an act of grace, in the spirit of fair play, to order that such inspections should cease. So far as the Apothecaries' Hall was concerned, he could promise that every examination should be kept up to the standard the Council wished. He moved:

> That the reports of the assistant examiners of the Apothecaries' Hall be discontinued until further notice.

Dr. Saundby seconded. Any objects which the Council desired to attain by allowing the examiners to report must have been attained by this time, and it could quite well remove from this body what was complained of as a perpetual slur, and allow the reports to be discontinued.

Mr. Morris saw no reason why the Apothecaries' Hall, Dublin, should be made an exception differing from other examining bodies.

Sir Christopher Nixon was quite in sympathy with Dr. Adye-Curran in doing the best he could for his institution, and was not sure that something could not be said in favour of the Apothecaries' Hall in attempting to raise the standard of its examination. The Council had appointed excellent examiners, men who would try to keep up the standard to a reasonably high pitch, but he thought the change, whether desirable or not—a point which it was for the Council to decide—would have to be effected by entirely different machinery to that suggested by Dr. Adye-Curran.

Sir Thomas Myles also sympathized with the efforts of the Apothecaries' Hall to get rid of the enormous expense involved in sending examiners from Scotland or London to Dublin.

Mr. Lushington, on the legal aspect of the question, was of opinion that the General Medical Council might require from the assistant examiners a report. It seemed to him that the inspectors were not to interfere with the conduct of the examinations, whereas the assistant examiners were to perform duties in the examination. Those two things pointed to the fact that they were to be two different persons holding separate appointments; but to say that the assistant examiners were to have a duty prescribed for them by the General Medical Council and were not to report on its performance, was a view he could not take.

Mr. Morris thought the point raised by Dr. Adye-Curran was that, though these examiners had the duty of inspecting and reporting, they were not required to report every time.

Mr. Lushington said the statute was absolutely express to the effect that the assistant examiners were to have such powers and to perform such duty in the conduct of those examinations as the General Medical Council might from time to time prescribe.

The President believed it to be desirous that the assistant examiners for the present should have the advantage of reporting their opinions to the Council from time to time.

Dr. McVail, as Chairman of the Examination Committee, was of opinion that the discussion had gone far beyond what was contained in the report, and that the Council ought to consider the whole question of the appointment of Assistant Examiners to the Apothecaries' Hall, not only in Dublin but in London also. Owing largely to the fact that Licentiates of the Apothecaries' Society, London, were also, in a sense, Licentiates of the General Medical Council, the London Apothecaries' Society —quite rightly, in his opinion—took steps to get the title amended. The Licentiates were now called Licentiates in Medicine and Surgery of the Society of Apothecaries in London. That was obtained because of the union of the Society with this Council. The matter ought to be remitted to the Executive Committee to consider the conditions which should prevail in regard to the appointment of assistant examiners to the Apothecaries' Societies.

Sir Hugh Beevor gathered that the term "inspection" was something rather different to what was intended, and the Council had no guidance from the Chairman of the Executive Committee on the subject.

Dr. McVail was prepared to move as an amendment:

That the question of the duties of the assistant examiners be referred to the Executive Committee for further consideration and report.

Mr. Young seconded.

Dr. Adye-Curran inquired if the present report of the Committee would remain in abeyance in the meantime.

The Chairman thought if it was referred to the Executive Committee, it would be wise for the Council not to pass any resolution until it had had time to go into the whole question.

On the suggestion of Mr. Morris, Dr. Adye-Curran, with the consent of his seconder and the Council, withdrew his motion in order to allow Dr. McVail's amendment to become the substantive resolution; and Dr. McVail's resolution was agreed to.

The Clifford Cases.

It was moved from the Chair, and resolved:

That the report by the Solicitor on the Clifford cases in their several stages be received and entered as an appendix to the minutes, in order that it may be available for future reference.

Election of Treasurer.

Sir Thomas Myles moved, Dr. Norman Moore seconded, and it was resolved:

That Mr. Henry Morris be elected Treasurer in the place of Dr. Pye-Smith resigned.

Vote of Thanks.

On the motion of Dr. Norman Moore, seconded by Sir John Moore, a hearty vote of thanks was accorded to the President for his conduct in the chair.

The President, in returning thanks, said the support he received on all hands made his duty not only pleasant but easy.

Disciplinary Cases.

Dr. A. G. Bateman, General Secretary, Medical Defence Union (4, Trafalgar Square, W.C.), writes: In your otherwise accurate short report of the inquiry before the General Medical Council *re* Drs. Rafter and Daniell, you make me say, on page 311, last line but three, speaking of the different explanations put in by the respondents: "And, thirdly, one for Dr. Daniell, who alleged that he had a right to send the cards round." This is incorrect. It should read: "One by Dr. Daniell, whose partner Dr. Rafter considered that he (Dr. Rafter) had a right to send the cards round." Kindly make this correction in justice to Dr. Daniell, who made it quite clear that the issue of the cards in question was entirely without his knowledge and consent.

CENTRAL MIDWIVES BOARD.

A meeting of the Central Midwives Board was held at Caxton House, Westminster, on November 28th, with Dr. F. H. Champneys in the chair.

Fees in Emergency Cases.

A letter was considered from Dr. E. Rowland Fothergill, Honorary Secretary to the Wandsworth Division of the Metropolitan Counties Branch of the British Medical Association, with reference to a circular issued by the Wandsworth Board of Guardians as to the remuneration of medical practitioners when called in to assist midwives in emergencies.

The Board decided that Dr. Fothergill be thanked for his letter, and that he be informed that the Board is unable to take action in the matter, having no authority over the guardians.

A letter was considered from Dr. W. P. T. Daniel, of 273, Cable Street, London, E, forwarding a copy of a resolution adopted at a meeting of medical men residing in the parish of St. George-in-the-East and neighbourhood, declaring their intention, after November 30th, not to proceed to any case of parturition, etc., occurring in the parish, on the requisition of a midwife, unless a minimum fee of one guinea is guaranteed either by the guardians or by the Central Midwives Board.

The Board decided that a copy of the correspondence be sent to the Privy Council, pointing out the difficulties and dangers of the situation and suggesting that a copy of the Local Government Board's circular on the subject should be forwarded to every medical practitioner in England and Wales. It was further decided that the Board's action in the matter be communicated to Dr. Daniel, and that he be informed that the Board has no power to pay fees in such cases. The circular of the Local Government Board, dated July 29th, 1907, referred to in the resolution contains the following:

The Local Government Board desire to bring under the notice of the guardians their views on a question which, as their correspondence shows, has been a source of considerable difficulty to Boards of Guardians and other local authorities. The Board refer to the question of the payment for medical assistance in those cases where, under No. 18 of the enclosed rules, a midwife has advised that such assistance should be obtained.

With regard to this matter, the Board may refer to the provisions in Articles 182 and 183 of the General Consolidated Order, where these or similar Articles in other Orders are in force, and also to the enactment in Section 2 of the Poor Law Amendment Act, 1848 (11 and 12 Vict., c. 110).

If, where the Articles referred to are in force, the District Medical Officer attends in cases of the kind above mentioned he will be entitled to the payments for which the Articles provide, should the woman be actually in receipt of relief, or should the guardians subsequently decide that she was in a destitute condition, although no order for his attendance was given by a person legally qualified to make such order. Moreover, the section alluded to empowers the guardians, "if they think proper, to pay for any medical or other assistance which shall be rendered to any poor person on the happening of any accident, bodily casualty, or sudden illness, although no order shall have been given for the same by them or any of their officers, or by the overseers," and the Board are advised that, under this enactment, it is competent to the guardians to pay the fee of any medical man called in on the advice of a midwife to attend upon a poor person in case of difficulty.

The Board would suggest that medical men and certified midwives practising in the Poor-law Union should be informed that, in cases arising under Rule 18, the guardians will, on being satisfied that the woman is too poor to pay the medical fee, be prepared to exercise their powers under the section, and to pay a reasonable remuneration to the medical man called in. Any such payments should be on a definite scale, which should be suitable to the local circumstances and to the services rendered, and which should be duly notified to the local medical practitioners.

It appears to the Board that the exercise by Boards of Guardians in a careful but liberal spirit of their powers under the enactment quoted will furnish a satisfactory solution of the problem to which they have referred, and that no reasonable ground of complaint should remain either to the public or to the medical profession. Moreover, general action on the part of Boards of Guardians in the direction indicated would tend to the preservation of two most important principles which are in danger of being overlooked—first, the responsibility of the husband or natural guardian of the patient to provide for her necessities; and, secondly, the right of the guardians to determine who, by reason of poverty, is entitled to medical assistance at the expense of the rates.

A letter was considered from Dr. J. W. Hembrough, County Medical Officer for Northumberland, as to the payment of fees for medical men summoned in emergencies to cases attended by midwives. The Board decided that Dr. Hembrough be referred to the Local Government Board as the authority on the matter, and that a copy of Dr. Hembrough's letter be sent to the Privy Council.

New Examination Centre.

A letter was considered from the Clerk of the Worcestershire County Council forwarding a copy of a resolution

adopted by the Local Supervising Authority urging the Board to hold periodical examinations in Birmingham. The Board decided that Birmingham be constituted one of the Provincial Examination Centres during the pleasure of the Board.

Conviction of Midwives in Police-Courts.

Letters from the Under Secretary of State for the Home Department, as to the Board's request that the convictions of all certified midwives in police courts should be reported to the Board, were considered, and it was decided that the Home Secretary's proposal to extend the system adopted for reporting convictions of midwives within the area of the London County Council to the whole of the Metropolitan Police District, if desired by the other county and county borough councils therein, be accepted with thanks; that it be suggested to the Home Secretary that this system might with advantage be extended to the whole of England and Wales; and that the Home Secretary be furnished with particulars as to those local supervising authorities which had not complied with Section 8 (5) of the Midwives Act, 1902.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

Surgeon C. J. Boucher, M.B., has been allowed to withdraw from the service, with a gratuity, November 23rd. He was appointed Surgeon, November 23rd, 1903.

Fleet Surgeon G. Hewlett, M.B., has been placed on the retired list, at his own request, November 29th. His commissions bear date: Surgeon, August 17th, 1887; Fleet Surgeon, August 17th, 1903. He was Secretary's Clerk (supernumerary) of the *Euryalus* during the Egyptian war in 1882 (medal and Khedive's bronze star). He was Secretary to the Second in Command, China, during the operations in North China in 1900 (medal). In 1902 he received the expression of their Lordships' appreciation with reference to a proposed revision of an Admiralty telegraph code.

The following qualified candidates for the Naval Medical Service have been appointed Surgeons in His Majesty's Fleet, dated November 19th: Geoffrey Carlisle, Guy T. Verry, Gilbert B. Scott, Francis H. Holl, Geoffrey P. Adshead, M.B., John McCutcheon, M.B., Harold H. Babington, William C. Carson, James H. Wright, M.B., Charles H. L. Petch, and George A. S. Hamilton. They are appointed to the *Victory*, additional, from the same date, for course of instruction at Haslar Hospital.

The following appointments have been made at the Admiralty: Daniel J. P. McNabb, Fleet Surgeon, to the *Prince George*, November 29th; Percival T. Nicholls, Surgeon, to the *Aboukir*, December 2nd; William P. Hingston, Surgeon, to Haulbowline Hospital, December 2nd.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel A. O. Geoghegan, M.D., retires on retired pay, December 4th. He was appointed Surgeon, March 6th, 1880; Surgeon-Major, March 6th, 1892; and Lieutenant-Colonel, February 5th, 1901. He was in the Nile Expedition in 1898, receiving the British medal and the Egyptian medal.

Major J. I. P. Doyle, from temporary half pay, is retired, receiving a gratuity, December 1st. His commissions are dated: Surgeon, August 2nd, 1884; Surgeon-Major, August 2nd, 1896. He was placed on half pay, December 1st, 1902.

INDIAN MEDICAL SERVICE.

Surgeon-General W. R. Browne, C.I.E., M.D., Madras, has been granted a good service pension dated May 22nd.

Major E. H. Sharman, Madras, is appointed Staff Officer for Medical Mobilization Stores, 4th (Quetta) Division, from the date he takes up the duties.

Brigade-Surgeon-Lieutenant-Colonel D. D. Cunningham, C.I.E., M.B., retired pay, Indian Medical Service, is appointed an Honorary Physician to the King, vice Surgeon-General Sir J. Fayrer, Bart., K.C.S.I., deceased, dated December 4th.

VOLUNTEER RIFLES.

Charles J. I. Krumbholz, M.B., to be Surgeon-Lieutenant, October 13th.

Surgeon-Captain A. L. Jones, 3rd Glamorgan Volunteer Rifle Corps, to be Surgeon-Major, October 16th.

Surgeon-Lieutenant J. Woods, 2nd Volunteer Battalion the Loyal North Lancashire Regiment, to be Surgeon-Captain, October 23rd.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Lieutenant-Colonel C. H. Hartt, Woolwich Companies, Eastern Command, is granted the honorary rank of Colonel, October 16th.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 7,653 births and 5,085 deaths were registered during the week ending Saturday last, November 30th. The annual rate of mortality in these towns, which had been 14 6, 14.8, and 15.3 per 1,000 in the three preceding weeks, further rose last week to 16.5 per 1,000. The rates in the several towns ranged from 8.3 in Newport (Mon.), 9.9 in Hornsey, 10.1 in Birkenhead, 10.3 in Handsworth (Staffs), 10 8 in Croydon, and 11.1 in Leyton, to 22.0 in Swansea, 22 8 in Blackburn, 23.4 in West Bromwich, 23.9 in South Shields, 24.7 in Merthyr Tydfil, 25.9 in Smethwick, and 27.2 in Bootle. In London the rate of mortality was 16 8 per 1,000, while it averaged 16 4 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.4 per 1,000 in the seventy-six towns; in London this death-rate was equal to 1 3 per 1,000, while among the seventy-five other large towns the rates ranged upwards to 2.8 in South Shields, 3 0 in West Bromwich, 3.3 in Rotherham, 3.7 in York, 4 8 in Merthyr Tydfil, 4 9 in Burton-on-Trent, and 5 0 in Ipswich. Measles caused a death-rate of 1.1 in Leeds and in Newcastle-on-Tyne, 1.2 in York, 1.4 in Ipswich, and 3.9 in Burton-on-Trent; scarlet fever of 1.5 in West Bromwich; diphtheria of 1.1 in East Ham and 1 9 in Reading; whooping-cough of 1.4 in Ipswich and 1.5 in Warrington; "fever" of 1.2 in York; and diarrhoea of 1 4 in Ipswich and in Merthyr Tydfil, 1.5 in West Bromwich, 1.7 in Rotherham, and 1.8 in Bury. No fatal case of small-pox was registered last week in any of the seventy-six towns. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 5,604, 5,689, and 5,686 at the end of the three preceding weeks, had further declined to 5,676 at the end of last week; 623 new cases were admitted during the week, against 667, 636, and 597 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, November 30th, 865 births and 671 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 15.3, 15.9 and 16.7 per 1,000 in the three preceding weeks, further rose last week to 19.3 per 1,000, and was 2 8 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 12.9 in Paisley and 13.7 in Aberdeen to 24.0 in Perth and 26.1 in Dundee. The death-rate from the principal infectious diseases averaged 3 2 per 1,000, the highest rates being recorded in Dundee, Greenock, and Perth. The 348 deaths registered in Glasgow included 23 which were referred to measles, 10 to whooping-cough, 4 to cerebro-spinal meningitis and 17 to diarrhoea. Three fatal cases of whooping-cough were recorded in Edinburgh; 17 of measles, 3 of whooping-cough, and 11 of diarrhoea in Dundee; 2 of diarrhoea in Aberdeen; 3 of whooping-cough in Leith; and 2 of measles, 2 of whooping-cough and 2 of diarrhoea in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, November 23rd, 454 births and 371 deaths were registered in six of the principal Irish towns, as against 449 births and 412 deaths in the preceding period. The annual death-rate in these towns, which had been 18 7, 18.8, and 21 7 per 1,000 in the three preceding weeks, fell to 20 4 per 1,000 in the week under notice, this figure being 5.1 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 17.1 in Cork and 18 4 in Dublin to 23.1 in Belfast and 23 2 in Limerick. The zymotic death-rate in the same six Irish towns averaged 2.5 per 1,000, or 1.0 per 1,000 lower than during the preceding period, the highest figure—82—being recorded in Limerick, while Cork registered no deaths under this heading at all. Measles was again the principal cause of death in this class of disease.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BANBURY: HORTON INFIRMARY.—House-Surgeon. Salary, £80 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary, £100 per annum.

BIRMINGHAM CITY ASYLUM.—Junior Assistant Medical Officer. Salary, £150 per annum.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Junior House-Surgeon. Salary, £75 per annum.

BRISTOL GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £50 per annum.

DUNDEE ROYAL INFIRMARY.—Investigator to work in the Caird Cancer Pavilion of the Hospital.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Male Assistant House-Physician. Salary, £60 per annum.

LEAMINGTON: WARNEFORD, LEAMINGTON AND SOUTH WARWICKSHIRE HOSPITAL.—House-Physician. Salary, £60 per annum.

LIVERPOOL: STANLEY HOSPITAL.—Senior House-Surgeon. Salary, £90 per annum.

MANCHESTER UNIVERSITY.—Senior Demonstrator in Physiology. Stipend £150, rising to £200.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

OLDHAM INFIRMARY.—Public Vaccinator for the Oldham Township.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Medical Registrar, (2) Surgical Registrar, (3) Clinical Assistants, (4) Junior Obstetric Assistant, (5) Assistant Physician.

SEAMEN'S HOSPITAL SOCIETY, Dreadnought Hospital, Greenwich.—(1) Medical Superintendent; (2) Surgical Registrar. Salary, £200 and £50 per annum respectively.

SHEFFIELD ROYAL HOSPITAL.—Junior Resident Medical Officer. Salary, £50 per annum.

SHOREDITCH, Parish of St. Leonard.—Senior Assistant Medical Officer for the Infirmary and Workhouse. Salary, £150 per annum.

STOCKPORT COUNTY BOROUGH.—Medical Officer of Health. Salary, £450, rising to £550 per annum.

SUFFOLK DISTRICT ASYLUM, MELTON.—Second Assistant Medical Officer. Salary, £160, rising to £180 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House-Surgeon. Salary, £75 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—Physician to the Out-patients.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith Road, W.—Clinical Assistants.

APPOINTMENTS.

BERRY, Cecil, L.R.C.P., L.R.C.S.Edin., L.F.P. and S.Glasg., House-Surgeon to the Birkenhead and Wirral Children's Hospital, Birkenhead.

BINNS, J. B., M.R.C.S., L.R.C.P., Assistant Medical Officer of the Bethnal Green Parish Infirmary.

ERIDE, J. W., M.B., Ch.B (Vict.), Assistant Medical Officer to the Manchester Children's Dispensary, Cartside Street, Manchester.

CROSSFIELD, H. V., M.B., C.M., Clinical Assistant to the Chelsea Hospital for Women.

DAVUS, F. H., M.R.C.S., L.R.C.P., District Medical Officer of the West Ham Union.

GREEN, Philip, M.D., M.R.C.S., L.R.C.P., Clinical Assistant to the Chelsea Hospital for Women.

HOLLINGS, H. T., L.R.C.P. and S.Edin., Certifying Factory Surgeon for the Sherburn District, co. York.

LAING, A. W., M.B., Ch.B (Aberd.), House-Surgeon to St. Mary's Hospital for Women and Children, Manchester.

LEGGETT, William, M.B., Ch.B., and B.A.O.(Dublin), Senior Assistant Physician at Montrose Royal Asylum.

MCRAE, G. Douglas, M.D., F.R.C.P.E., Medical Superintendent to the Ayr District Asylum.

MURRAY, John, F.R.C.S., Surgeon to the Middlesex Hospital.

RUSSELL, James, M.B., Ch.B., Dispensing Surgeon for Victoria Infirmary Dispensary, Bellahouston, Glasgow.

SANSOM, B. E., M.R.C.S., L.R.C.P., Assistant Medical Superintendent of the Camberwell Parish Infirmary.

TAYLOR, W. Gordon, M.B., M.S., F.R.C.S., Assistant Surgeon to the Middlesex Hospital.

THOMAS, L. Kirkby, M.R.C.S., L.R.C.P.Lond., Anaesthetist to the Dental Hospital, Birmingham.

ST. THOMAS'S HOSPITAL.—The following appointments have been made:—

Surgeons to Out-patients: C. A. R. Nitch, M.S.Lond., F.R.C.S. Eng.
Casualty Officers: (Senior) C. M. Page, M.B., B.S.Lond., M.R.C.S., L.R.C.P. (Junior) C. E. Whitehead, B.A.Cantab., M.R.C.S., L.R.C.P.
Resident House-Physicians: W. H. R. Sutton, B.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., S. Churchill, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P.
House-Physicians to Out-patients: B. T. Parsons-Smith, M.B., B.S.Lond., M.R.C.S., L.R.C.P., A. J. S. Pinchin, M.B., B.S. Lond., M.R.C.S., L.R.C.P., H. B. Weir, B.A.Cantab., M.R.C.S., L.R.C.P., R. G. Bingham, M.R.C.S., L.R.C.P.
Obstetric House-Physicians: (Senior) H. B. Whitehouse, M.B., B.S.Lond., M.R.C.S., L.R.C.P. (Junior) T. G. Starkey-Smith, M.R.C.S., L.R.C.P.
Special Departments: (Throat) H. N. Little, B.A.Cantab., M.R.C.S., L.R.C.P. (Skin) A. L. Sachs, M.A.Cantab., M.R.C.S., L.R.C.P.
Children's Surgical: E. C. Sparrow, M.R.C.S., L.R.C.P.
Electrical Department, *X*-Ray Department: A. L. Sachs, M.A. Cantab., M.R.C.S., L.R.C.P.

Several other gentlemen have received an extension of their appointment.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

JOHNSON.—On 27th ult., to Dr. and Mrs. W. Crosby Johnson, Fairleigh, Eccles Old Road, Pendleton, Manchester, a daughter.

MARSHALL.—On the 1st December, at St. John's House, Lechlade, Gloucestershire, the wife of Thomas Bingham Marshall, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

CALLAM—CHRISTIE.—At the Palace Hotel, Inverness, on the 20th November, by the Rev. A. J. Macdonald, M.A., Killearnan, Alex. Callam, M.D., Burnley, to Annie, eldest daughter of David Christie, Esq., of Rivulet, Redcastle, Ross-shire.

HUTCHINSON—HORBURY.—On the 5th November, at the C.M.S. Church, Girgaum, Bombay, by the Rev. Canon Heywood, Captain Leslie Thomason Rose Hutchinson, M.A., M.D., B.C.(Cantab.), son of the late Colonel H. S. Hutchinson, Bengal Staff Corps, and of Mrs. Hutchinson, Boscombe, Hants, to Dorothy Frances, younger daughter of Mr. and Mrs. G. F. Horbury, of Breach Candy, Bombay.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, 8.30 p.m.—Discussion on Pneumococcus Infections, to be introduced by Dr. Wm. Osler, Regius Professor of Medicine, University of Oxford.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

SURGICAL SECTION, 5.30 p.m.—Papers: (1) Mr. B. G. A. Moynihan: A Case of Complete Gastrectomy. (2) Mr. J. D. Malcolm: Cases of Complete Removal of the Gall Bladder.

WEDNESDAY.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY, 20, Hanover Square, W., 5.30 p.m.—Paper: Dr. Edgecombe (Harrogate): Blood Pressure in Spa Practice.

THURSDAY.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—Papers: (1) Mr. Leslie Paton: The Diagnosis and Treatment of some Forms of Simple Conjunctivitis. (2) Mr. W. F. Fedder: Congenital Talipes.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, Chandos Street, Cavendish Square. Card cases 8 p.m.—Papers: Mr. Simeon Snell; (1) Carcinoma of the Orbit. (2) Coloboma of Iris in Each Eye in Five Generations. Mr. E. Nettleship: Some Cases possibly allied to Tay-Sach's Infantile Retinitis.

ROYAL SOCIETY OF MEDICINE:

OBSTETRICAL AND GYNAECOLOGICAL SECTION, 7.45 p.m.—Paper: Dr. W. E. Fothergill: The Supports of the Pelvic Viscera, a Review of Some Recent Contributions to Pelvic Anatomy, with a Clinical Introduction. A number of specimens will also be shown by various members.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

CLINICAL SECTION, 20, Hanover Square, W., 8.30 p.m.—Exhibition of cases by Professor W. Osler, Mr. T. H. Openshaw, and Drs. Edgar Reid, F. Parkes Weber, W. Essex Wynter, W. Pasteur, and Mr. F. J. Poynton. The patients will be in attendance at 8 p.m.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN, 11, Chandos Street, W., 5 p.m.—Discussion on Inherited Syphilis, to be opened by Mr. Clement Lucas, followed by Drs. Adamson, L. Guthrie, G. Carpenter; Messrs. G. Pernet, Sydney Stephenson, A. H. Tubby, and others.

POST-GRADUATE COURSES AND LECTURES.

CHARING CROSS HOSPITAL, W.C.—Thursday, 4 p.m., Medical.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Friday, 3 p.m., On Sleep and Sleeplessness.

HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E.—Monday and Wednesday, 5 p.m., Tumours Innocent; Saturday, 5 p.m., Tumours Malignant.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Congenital Dislocation of the Hip and its Treatment.

LONDON SCHOOL OF CLINICAL MEDICINE.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2.30 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m. Monday, and noon Thursday; Skin, at noon and 4 p.m. Tuesday and at noon Friday; Eye, 11 a.m. Wednesday and Saturday; Radiography, 4 p.m. Thursday. Special Lecture: Monday, 2.15 p.m., Aortic Aneurysm.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Ear. Lectures at 5.15 p.m. each day will be given as follows: Monday, The Principles of Treatment in Heart Disease; Tuesday, Swedish Medical Gymnastics, their Application in the Treatment of Disorders of the Digestive System; Wednesday, Precocious Development.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Anterior Poliomyelitis; Friday, 3.30 p.m., Paraplegia.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's Hospital, Tottenham, N.—The following are the Clinics and Demonstrations for next week:—Monday, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Throat, *X* Ray; 4.30 p.m., Medical In-patient. Tuesday, 10.30 a.m., Medical Out-patient; 2.30 p.m., Operations, Gynaecological and Surgical Out-patient; 4.30 p.m., Lecture: Clinical Value of Sputum Examination. Wednesday, 2.30 p.m., Medical Out-patient, Skin and Eye; Thursday, 2.30 p.m., Gynaecological Operations, Medical and Surgical Out-patient and *X* Ray; 3 p.m., Medical In-patient; 4.30 p.m., Lecture: Varieties of Bronchitis, their Diagnosis and Treatment; Friday, 10 a.m., Surgical Out-patient; 2.30 p.m., Operations, Medical Out-patient and Eye; 3 p.m., Medical In-patient.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith Road, W.—The following arrangements have been made for next week: Daily, Medical and Surgical Clinics, 2 p.m.; Operations and *X* Rays 2.30 p.m. Monday and Thursday, 2 p.m., Diseases of the Eye; Tuesday and Friday, 10 a.m., Gynaecological Operations; 2 p.m. (Wednesday and Saturday at 10 a.m.), Diseases of the Throat, Nose, and Ear; 2.30 p.m., Diseases of the Skin. Wednesday, 10 a.m., Diseases of Children; Wednesday and Saturday, 2 p.m., Diseases of Eye. Lectures: Monday, at 12 noon, Pathological Demonstration. At 5 p.m., Monday, Gynaecology; Tuesday and Friday, Clinical; Wednesday, Incontinence of Urine; Thursday, Surgical Cases.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Monday, 5.30 p.m., The Etiology of Palatal Deformities.

BOOKS, ETC., RECEIVED.

The World's Classics. London, New York, and Toronto: H. Frowde. 1s.:

CLI. The Adventures of Gil Blas de Santillana. By A. R. Lesage. Translated by T. Smollett. In two volumes.

XCIX. The Poems of Samuel Taylor Coleridge.

Thomas Skinner, M.D. A Biographical Sketch. By J. H. Clarke. London: Homoeopathic Publishing Company. 1907.

Transactions of the Twenty-ninth Annual Meeting of the American Laryngological Association held at Washington, D.C., May 7th to 9th, 1907. New York: American Laryngological Association. 1907.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
DECEMBER.	
6 FRIDAY ...	LONDON: Standing Ethical Subcommittee, 2 p.m.
7 SATURDAY...	
8 Sunday ...	
9 MONDAY ...	
10 TUESDAY ...	LONDON: Organization Committee, 11 a.m. LONDON: Life Insurance Examinations Subcommittee, 3 p.m. WALTHAMSTOW DIVISION, *Metropolitan Counties Branch*, Fillebrooke Hall, Fairlop Road, Leytonstone, 4 p.m.
11 WEDNESDAY	
12 THURSDAY...	LONDON Joint Hospitals Committee, 2.30 p.m. LONDON: Metropolitan Counties Branch Council, 5 p.m. HAMPSTEAD DIVISION, *Metropolitan Counties Branch*, Business Meeting. HASTINGS DIVISION, *South-Eastern Branch*, Special Meeting, Eversfield Hotel, St. Leonards-on-Sea, 8.30 p.m. NORWOOD DIVISION, *South-Eastern Branch*, Queen's Hotel, Church Road, Upper Norwood, 4 p.m. WANDSWORTH DIVISION, *Metropolitan Counties Branch*, Medico-Political Meeting, 27, St. John's Hill, S.W., 8.45 p.m.
13 FRIDAY ...	LONDON: Contract Practice Subcommittee, 2.30 p.m. ENGLISH DIVISION. *Border Counties Branch*, Cottage Hospital, Maryport.
14 SATURDAY...	
15 Sunday ...	
16 MONDAY ...	
17 TUESDAY ...	
18 WEDNESDAY	LONDON: South-Eastern Branch Council, 3.15 p.m.
19 THURSDAY...	LEIGH DIVISION, *Lancashire and Cheshire Branch*, Co-operative Rooms, Ellesmere Street, 8.30 p.m. WANDSWORTH DIVISION, *Metropolitan Counties Branch*, Balham Hotel, Balham, 8.45 p.m.
20 FRIDAY ...	
21 SATURDAY...	
22 Sunday ...	
23 MONDAY ...	
24 TUESDAY ...	
25 WEDNESDAY.	*Christmas Day.*
26 THURSDAY...	*Bank Holiday.*
27 FRIDAY ...	
28 SATURDAY...	
29 Sunday ...	
30 MONDAY ...	
31 TUESDAY ...	
JANUARY, 1908.	
1 WEDNESDAY	SUBSCRIPTIONS to the British Medical Association for 1908 become due.
2 THURSDAY...	
3 FRIDAY ...	LONDON: Standing Ethical Subcommittee, 2 p.m.
4 SATURDAY...	
5 Sunday ...	
6 MONDAY ...	
7 TUESDAY ...	LONDON: Public Health Committee, 3.15 p.m.
8 WEDNESDAY	LONDON: Medico-Political Committee, 2.30 p.m.
9 THURSDAY...	LONDON: Metropolitan Counties Branch Council, 5 p.m. HAMPSTEAD DIVISION, *Metropolitan Counties Branch.*
10 FRIDAY ...	LONDON: Central Ethical Committee, 1.30 p.m.

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

British Medical Journal in 1908.

THE BRITISH MEDICAL JOURNAL is carried on under the auspices of the Association for the dissemination of knowledge with regard to the advance of medicine and surgery and the ancillary sciences, for the discussion of political and social questions affecting the medical profession, and for the reporting of all the proceedings of the Association—scientific, clinical, and medico-political. It is supplied weekly by post to all members of the British Medical Association, has a considerable circulation among medical men resident abroad, and others not members of the Association, and has long held a leading place among the medical journals of the world.

With the object of meeting the requirements of doctors engaged in active practice, special care is taken to record, with the least possible delay, all improvements and developments in clinical medicine and surgery and the various specialities that have either been proved to be of real value or show reasonable promise of becoming so; and in continuance of a policy which has met with much appreciation from readers, arrangements have been made for the publication, during 1908, of numerous Clinical Lectures and Addresses, among which the following may here be enumerated:

Leucocythaemia. By Sir JAMES BARR, M.D., F.R.C.P., Lecturer on Clinical Medicine, University College, Liverpool; Physician, Royal Infirmary, Liverpool.

On High Tension. By J. R. BRADFORD, M.D., F.R.S., Physician to University College Hospital.

The Automatic Rhythm of the Heart. By A. M GOSSAGE, M.D., F.R.C.P., Physician to Out-patients, Westminster Hospital and East London Hospital for Children.

On Rheumatic Fever. By NORMAN MOORE, M.D., F.R.C.P., Physician to St. Bartholomew's Hospital.

Subphrenic Abscess, Especially in Relation to its Diagnosis from Intrathoracic Disease. By T. D. ACLAND, M.D., F.R.C.P., Physician, St. Thomas's Hospital.

The Treatment of Acute Pneumonia. By H. W. G. MACKENZIE, F.R.C.P., M.R.C.S., Physician to St. Thomas's Hospital and Brompton Consumption Hospital.

Multiple Serosities. By W. HALE WHITE, M.D., F.R.C.P., Physician and Lecturer on Medicine, Guy's Hospital; Physician to King Edward VII Hospital.

The Uses of the Calcium Salts in Various Morbid Conditions. By A. P. LUFF., M.D., F.R.C.P., Physician and Lecturer in Medical Jurisprudence and Toxicology, St. Mary's Hospital.

Lead Poisoning in Some of its Physiological and Pathological Aspects. By THOMAS OLIVER, M.D., F.R.C.P., Professor of Physiology, University of Durham; Physician, Royal Victoria Infirmary, Newcastle.

The Economics of Dermatology. By NORMAN WALKER, M.D., F.R.C.P.Edin., Physician for Diseases of the Skin to the Royal Infirmary of Edinburgh.

On the Diagnosis between Organic and Functional Affections of the Nervous System. By J. S. RISIEN RUSSELL, M.D., F.R.C.P., Physician, University College Hospital.

On Headache. By WILFRED HARRIS, M.D., F.R.C.P., Physician to Out-patients, St. Mary's Hospital, and Physician to Hospital for Epilepsy and Paralysis, Maida Vale.

Some Clinical Aspects of the Disappearance of Pain. By Sir WM. BENNETT, K.C.V.O., F.R.C.S., Surgeon, King Edward VII Hospital; Consulting Surgeon, St. George's Hospital.

Adolescent Insanity. By T. S. CLOUSTON, M.D., F.R.C.P., Lecturer on Mental Diseases, University of Edinburgh; Physician-Superintendent, Royal Asylum, Edinburgh.

Acute Mental Disorders of Childhood. By G. H. SAVAGE, M.D., F.R.C.P., Consulting Physician for and Lecturer on Mental Diseases, Guy's Hospital.

On Tumour of the Brain. By H. CAMPBELL THOMSON, M.D., F.R.C.P., Assistant Physician, Middlesex Hospital.

Hemiplegia with Unilateral Optic Atrophy. By R. T. WILLIAMSON, M.D., F.R.C.P., Lecturer on Medicine and School Hygiene, Victoria University, Manchester; and Assistant Physician, Royal Infirmary, Manchester.

Some Forms of Spinal Paralysis. By J. MICHELL CLARKE, M.D., F.R.C.P., Professor of Medicine, University College, Bristol; Physician, Bristol General Hospital.

On Rheumatoid Arthritis so-called. By GEORGE ARTHUR WRIGHT, M.B.Oxon., F.R.C.S., Professor of Systematic Surgery, Owens College; Surgeon, Manchester Royal Infirmary.

Some Points in Indigestion. By Sir WILLIAM H ALLCHIN, M.D., F.R.C.P., Consulting Physician, Westminster Hospital.

On a Special Form of Dilatation and Displacement of the Stomach. By T. SIDNEY SHORT, M.D., Physician to the General Hospital, and Consulting Physician to the General Dispensary, Birmingham.

The Results of the Operative Treatment of Chronic Constipation. By W. ARBUTHNOT LANE, M.S., Surgeon to Guy's Hospital and to the Hospital for Sick Children, Great Ormond Street.

Surgery of Colitis. By F. C. WALLIS, F.R.C.S., Surgeon to Charing Cross, St. Mark's, and Grosvenor Hospitals.

Early Indications of Visceral Disease. By J. GALLOWAY, M.D., F.R.C.S, Physician, Charing Cross Hospital.

On Abdominal Emergencies. By SINCLAIR WHITE, M.D., F.R.C.S, Senior Surgeon to the Royal Infirmary, and Lecturer on Operative Surgery in the University, Sheffield.

Massive Injections in the After-treatment of Abdominal Operations. By H. L. BARNARD, F.R.C.S., Assistant Surgeon to London Hospital.

Some Suggestions and Cases in Practical Surgery. By THOMAS ANNANDALE, D.C.L., F.R.C.S., Regius Professor Clinical Surgery, University of Edinburgh; Surgeon, Edinburgh Royal Infirmary.

The Use of Chemicals in Aseptic Surgery. By C. B. LOCKWOOD, F.R.C.S, Surgeon, St. Bartholomew's Hospital.

On the Value of the Old Tuberculin. By Sir T. MCCALL ANDERSON. Regius Professor of Medicine, University of Glasgow; Physician, Glasgow Western Infirmary.

Some Points in Connexion with Surgical Tubercle. By ANTHONY BOWLBY, C.M.G., F.R.C.S., Surgeon, Household of H.M. the King; Surgeon, St Bartholomew's Hospital.

On Tumours of the Long Bones. By F. S. EVE, F.R.C.S., Surgeon, London Hospital.

Clinical Aspects of Imperfectly Descended Testis and its Surgical Treatment. By J. HUTCHINSON, jun., F.R.C.S., Surgeon, London Hospital.

On Some Unusual Forms of Hernia. By H. BETHAM ROBINSON, M.D, F.R.C.S, Lecturer on Practical Surgery, St Thomas's Hospital; Surgeon, East London Hospital for Children.

A Series of Cases of Excision of the Rectum for Carcinoma. By C. A. MORTON, F.R.C.S., Professor of Surgery, University College, Bristol; Surgeon, Bristol General Hospital.

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On the Use and Abuse of the Curette. By G. E. HERMAN, F.R.C.P., F.R.C.S., Consulting Obstetric Physician, London Hospital.

On Primary Carcinoma of the Ovary. By J. BLAND-SUTTON, F.R.C.S., Surgeon to Middlesex Hospital and Chelsea Hospital for Women.

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JOHN CHIENE, C.B., M.D., F.R.C.S.Edin., Professor of Surgery, University of Edinburgh; Surgeon, Royal Infirmary, Edinburgh.

JAMES CRAIG, M.D., B.Ch.Dubl., F.R.C.P.Ire., Physician, Meath Hospital, Dublin.

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ADDRESSES AT THE ANNUAL MEETING.

THE addresses to be delivered at the Annual Meeting will be published in the BRITISH MEDICAL JOURNAL.

THE PRESIDENTIAL ADDRESS,
By SIMEON SNELL, F.R.C.S.Edin., Professor of Ophthalmology, University of Sheffield; Ophthalmic Surgeon, Sheffield Royal Infirmary.

THE ADDRESS IN MEDICINE,
By JAS. KINGSTON FOWLER, M.D.Cantab., F.R.C.P., Senior Physician, Middlesex Hospital; Consulting Physician, King Edward VII Sanatorium.

THE ADDRESS IN SURGERY,
By R. J. PYE-SMITH, F.R.C.S.Eng., Professor of Surgery, University of Sheffield; Senior Honorary Surgeon, Sheffield Royal Hospital.

THE POPULAR LECTURE,
By EDMUND OWEN, LL.D., F.R.C.S.Eng., Consulting Surgeon, St. Mary's Hospital and Hospital for Children, Great Ormond Street; Surgeon, French Hospital.

These lectures and addresses and other original articles will be fully illustrated by reproductions of photographs, drawings, and microscopical preparations as occasion may require.

AN EPITOME

of current medical literature, mainly devoted to the analysis of foreign publications, is published weekly.

A SUPPLEMENT

is issued weekly, containing reports of the proceedings of the Representative Meetings, of the meetings of the Council and Central Committees of the Association, of its Branches and Divisions, and information as to political matters affecting the honour and interests of the profession.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 14TH, 1907.

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Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

BATH AND BRISTOL BRANCH.

THE second ordinary meeting of the session was held at Bath on November 27th. There were present Dr. E. J. CAVE, President, in the chair, and forty-six members and visitors.

Lantern Slides.—Dr. NEWMAN NEILD showed an interesting series from his collection of clinical lantern slides.

Papers.—Dr. C. J. WHITBY read a paper entitled the Importance of Sphygmometry, which was discussed by Dr. PARKER, Dr. MICHELL CLARKE, Dr. NEWMAN NEILD, Dr. SYMONS, and the PRESIDENT.—Mr. W. M. BEAUMONT read a note on the ophthalmo-reaction in general practice.

BRISTOL DIVISION.

A MEETING was held at University College, Bristol, on Friday, November 22nd. Dr. J. MICHELL CLARKE, Chairman of the Division, was in the chair, and thirty-six members were present.

Notification of Births Act.—The Notification of Births Act, 1907, was considered and discussed. The Medical Officer of Health and the Chairman of the Health Committee of the Bristol Town Council were present. The Act was discussed and its relationship to the medical profession. The matter was referred to the Executive Committee for further consideration, and in order that definite resolutions might be laid before the Division at an early date.

Bristol Royal Infirmary.—The compromise arranged between the staff of the Bristol Royal Infirmary and the Committee of that institution was placed before the meeting by Mr. MUNRO SMITH. The following is the amended form of Rule 36:

> No member of the Honorary Staff shall hold any Union or Club appointment. No member of the Full Staff or of the Assistant Staff shall hold any other general hospital appointment or more than one special hospital appointment.
>
> That the Full Physicians shall limit their practice to medical work. That the Full Surgeons shall limit their practice to surgical work. That each of the specialists shall limit his practice to his speciality.
>
> These rules shall not preclude members of the Infirmary Honorary Staff accepting purely consulting and not active appointments at another hospital.

Dr. HERAPATH moved, and Dr. BRASHER seconded, the following resolution, which was carried unanimously:

> That, in order to end the unfortunate dispute between the staff and Committee of the Bristol Royal Infirmary, and for the welfare of that institution, our Medical School, and the University College, this meeting of the profession agrees to support the staff on the lines explained by Mr. Munro Smith on behalf of the Faculty.

The following resolution was proposed by Dr. CAREY COOMBS, and seconded by Mr. GROVES, and carried unanimously:

> That this meeting of the Bristol Division congratulates the staff of the Bristol Royal Infirmary on a settlement which, under special circumstances—namely, the increased scope and altered conditions of the work of the assistant staff in future—must be considered satisfactory.
>
> They hold strongly, however, that no rule or by-law of any of the existing Bristol hospitals should prevent or tend to prevent a member of the clinical staff of that hospital from holding an appointment at any one other of the Bristol hospitals; with this reservation, that no medical man should hold appointments on the clinical staffs of both the General Hospital and the Royal Infirmary.

Votes of Thanks.—On the motion of Dr. HERAPATH, seconded by Dr. BRASHER, it was unanimously carried:

> That the hearty thanks of the Bristol Division be conveyed to the Central Council and the Hospitals Committee of the British Medical Association for their most valuable support in this dispute.

The thanks of the meeting were also accorded to the BRITISH MEDICAL JOURNAL and the *Lancet* for the support which they gave to the local medical profession.

Resolutions thanking the Association for its support in the dispute and also the BRITISH MEDICAL JOURNAL were received from a large meeting of the general practitioners of Bristol and District which was held a few days previously, and before whom the terms of settlement were explained.

BORDER BRANCH (CAPE COLONY).

THE inaugural meeting was held in East London on November 12th. Present: Drs. Tannock, Roulston, Anderson, Alexander, Ward, Ganteaume, MacGregor, Rubidge, Grey, Brookes, Hill Aitken.

Election of Officers.—Nominations for officials for 1908 were called for. *President*, J. P. Tannock, M.B., C.M., D.P.H.; *President-elect*, R. J. Roulston, M.D., C.M., F.R.C.S.I.; *Honorary Secretary and Treasurer*, Chas. J. Hill Aitken, M.D., C.M.Edin. No other nominations being forthcoming these three gentlemen were declared elected. Dr. TANNOCK then took the chair.

Nominations for Branch Council.—Drs. Conry, Wall, Robertson, Querney, Shanks, Chute, Randell, Batchelor, Alexander, MacGregor, Grey, Rubidge, Ganteaume, Nangle, Lownds, and Ward. Twelve to be elected by ballot in January.

Reciprocity.—A resolution was unanimously passed by the Branch giving support to the Colonial Medical Council in their fight for reciprocity. The Secretary was instructed to forward the resolution to the Council, and at the same time to ask Dr. Darley-Hartley to impress on the medical profession through the columns of his paper the advisability of their bringing before candidates for Parliament this question. The resolution is as follows:

> This Branch respectfully protests against the undignified action of the Government in attempting to coerce the representatives of an honourable profession by withholding the grant to the Medical Council. It submits that the Council has done its best to carry out the wishes of Parliament, as expressed in the adoption of the report of the Select Committee of 1905, and that the responsibility, if any, rests upon the Government which has declined to embody in legislation the provisions of that report, especially as, on other grounds, an amended Medical Act is greatly needed. Whilst agreeing to go so far as to permit the registration of any good diploma held by bona fide Colonial-born applicants, it most strongly protests against an indiscriminate admission of practitioners from all parts of the world, as destructive of medical *morale*, and fatal to that harmony amongst practitioners which is so necessary in the interests of the public.

The attacks on the Medical Council in the *South African Review* were considered by the meeting as scurrilous and too contemptible for notice.

South African Medical Congress.—Drs. Tannock, Rubidge, Ganteaume, Roulston, and Hill Aitken were requested as a small committee to approach various bodies and persons with a view to holding the Congress here in 1908.

Name of Branch.—Dr. TANNOCK, who has been mainly instrumental in forming a Branch here, suggested that the *Border* Branch be the name of the new Branch. This was agreed to.

DORSET AND WEST HANTS BRANCH:
BOURNEMOUTH DIVISION.

A MEETING of the Division was held in the Bournemouth Medical Society's rooms on November 20th. Dr. C. H. W. PARKINSON in the chair.

Confirmation of Minutes.—The minutes of the last meeting were confirmed.

Notification of Births Act.—It was decided to take no action at present with regard to the Act.

Wimborne Medical Poor-law Appointments.—The Wimborne medical Poor-law appointments were reported and discussed.

Annual Representative Meeting.—Dr. JOHNSON SMYTH gave a brief report of the Annual Representative Meeting at Exeter.

The Referendum.—The Referendum was discussed at length, and Minutes 123, 283, 287, 293, 298, 299, 303, 328, 330, 342, 346 of the Representative Meeting were rejected.

Executive Committee.—A meeting of the Executive Committee of the Division was held prior to the Divisional meeting.

EDINBURGH BRANCH:
NORTH-WEST EDINBURGH DIVISION.

A MEETING of this Division was held on Thursday, November 21st, at 8.30 p.m., the CHAIRMAN (Dr. Norman Walker) presiding. There were thirty-one members of the Division present, the largest number ever present at a meeting.

Confirmation of Minutes.—The minutes of the last meeting were read and approved.

Annual Representative Meeting.—Dr. A. WALKER, the Representative of the Division at the Exeter meeting, gave a brief review of the proceedings at Exeter. Dr. Walker drew special attention to the fact that the Representative Meeting was called upon to vote on matters which had not previously been before the Divisions. On the motion of the CHAIRMAN, Dr. A. Walker received a very hearty vote of thanks.

The Referendum.—Before voting on the Referendum questions the members of Council, Mr. MCKENZIE JOHNSTON and Mr. NASMYTH, Mr. RUSSELL (a former member of Council), the CHAIRMAN, and several of the other members who take an active interest in the work of the Division, expressed their views on the present state of the affairs of the Association. Minutes 123, 283, 287, 293, 298 were disapproved by 28 votes to 1. Minutes 299 to 303, 328 to 330 were disapproved *nem. con.* Minutes 342 to 346 were disapproved unanimously.

GLASGOW AND WEST OF SCOTLAND BRANCH:
GLASGOW NORTH-WESTERN DIVISION.

AN ordinary meeting of the Division was held in the Burgh Hall, Hillhead, on Wednesday, November 27th, at 8.45 p.m., Dr. D. J. MACKINTOSH, M.V.O., in the chair.

Confirmation of Minutes.—The minutes of the last general meeting, and of the special meeting called to consider matters referred to the Division (Referendum Report) were read and approved.

Annual Representative Meeting.—The REPRESENTATIVE gave a report of the annual meeting at Exeter, and explained that, owing to the lateness of the issue of the agenda papers, he was given no instructions by his Division, and that he was compelled to act on his own initiative in several matters. The meeting fully approved of his action, and accorded him its hearty thanks.

Notification of Births Act.—The SECRETARY then reported the action taken about the Notification of Births Act, and the measures being taken in conjunction with other societies to protest against the adoption of the Act in Glasgow.

Central Emergency Fund.—A communication from the General Secretary about the Central Emergency Fund and appeal for financial support was read.

Expenses of Representatives.—Dr. CASKIE moved:

> That this Division makes an application to the Branch Council for a grant to defray the out-of-pocket expenses of the Representative to the Representative Meeting in supplement to what he receives from the Association.

Dr. A. T. CAMPBELL seconded the motion. The present REPRESENTATIVE urged that this should apply to future appointments only, but the meeting adhered to the motion as it stood, and carried it unanimously.

Medical Examination of Seamen.—A communication was read from the Medical Secretary, inquiring, on behalf of the Medico-Political Committee, for information as to the working of the system of examination of seamen by medical men recently adopted by the Shipping Federation, which was represented as being unsatisfactory.

Future Meetings.—A short discussion took place about the arrangements for future meetings, after which the meeting adjourned.

LANCASHIRE AND CHESHIRE BRANCH:
COMBINED LIVERPOOL AND BIRKENHEAD DIVISIONS.

A MEETING of the combined local Divisions was held at the Liverpool Medical Institution on December 3rd at 4 p.m. Sir JAMES BARR was in the chair, and forty members were present.

Notification of Births Act.—The SECRETARY explained the reason for calling the meeting, viz., the consideration of the Notification of Births Act, 1907. The minutes of the previous meeting having been read and confirmed, Sir JAMES BARR introduced the discussion and recommended the adoption of the Notification of Births Act, 1907. A general discussion followed, and the following resolution was passed (proposed by Sir JAMES BARR, seconded by Dr. G. STOPFORD TAYLOR):

> That this meeting of the combined local Divisions of the British Medical Association approves of the adoption by the local authorities of the Notification of Births Act, 1907.

A discussion followed on the fairness of compelling medical men and others not members of the household to notify births under penalty, and, on the motion of Mr. LARKIN, seconded by Dr. STANSFIELD, it was unanimously resolved:

That, in the opinion of this meeting, such services should not be demanded under penalty without adequate remuneration.

The Secretary was instructed to forward these resolutions, with an explanatory letter, to the Lord Mayor of Liverpool and to the Mayor of Bootle.

Southport Division.

Notification of Births Act.—A special meeting of this Division was held on December 3rd, at the Temperance Institute, to consider the proposed adoption by the Southport Town Council of the Notification of Births Act. The meeting was held in consequence of a letter from the Medical Secretary containing a suggestion from the Medico-Political Committee that the Division should organize representations to the various local authorities. There were present: Dr. Anderson (in the chair), Drs. Ashworth, Baildon, Brown, Hare, Harris, Holt, Lewis, Mackay, Pinkerton, Popert, Russel, Sykes and Walker. The local position was explained, namely, that the Southport Town Council had approved the adoption of the Act and that a proposal to confirm the adoption would be moved at the Council meeting on December 10th. The following resolution was proposed by Dr. Harris and seconded by Dr. Baildon:

That this Division, whilst resenting the imposition on the medical profession of a duty without fee and under penalty, appreciates the utility of the Notification of Births Act; further, it fails to see that simple notification within thirty-six hours of a birth which must be registered with full particulars within six weeks constitutes any breach of professional confidence; it therefore decides to offer no opposition to the adoption of the Act by the Southport Town Council, but requests the Honorary Secretary, in communicating this decision to the Town Clerk through the Medical Officer of Health, to point out the impropriety in instances of illegitimate birth of notification being (as has been suggested) by postcards supplied by the health authority, and recommends that it shall in all instances be by closed letter on forms in envelopes similarly supplied.

To this an amendment was proposed by Dr. Mackay and seconded by Dr. Holt:

That the meeting protests against the adoption of the Notification of Births Act as compelling a breach of professional confidence and appoints a deputation to approach the Town Council with a view to opposing the same.

The amendment found only two supporters, the proposer and seconder, and the original resolution was then carried with only two dissentients.

METROPOLITAN COUNTIES BRANCH:

City Division.

A meeting of this Division took place at the Hackney Town Hall on Thursday, November 28th, at 4 p.m., Dr. Southcombe being in the chair.

Incipient Insanity.—A paper was read by Dr. H. Rayner on incipient insanity, and was followed by some discussion. A unanimous vote of thanks was given to the reader for his excellent paper.

Notification of Births Act.—The meeting then proceeded to discuss the following resolutions proposed by Dr. Major Greenwood:

That this Division, including among its members the larger number of medical practitioners of the Boroughs of Bethnal Green, Hackney, Shoreditch, and the City of London, earnestly appeals to the Councils of the above-mentioned boroughs, and to the Corporation of the City of London, not to adopt the Early Notification of Births Act, for the following reasons:

(*a*) That it imposes a serious violation of professional confidence on medical practitioners, and especially in those cases where from a public point of view it is most unnecessary, as in cases where a medical man is in charge of a lying-in woman, he is far more competent to advise as to the upbringing of the child than any ordinary visitor sent by the municipal authority.

(*b*) That early interference during the lying-in period by official visitors with inquisitorial methods would be seriously detrimental to the health of the mother.

(*c*) That all breaches of professional confidence are greatly opposed to the public good, whether imposed by Act of Parliament or otherwise.

The proposer said that he felt justified in saying that the medical profession was almost unanimously against the compulsory notification of births by medical practitioners, that this was obvious to the readers of the medical press, and that every week the Journal published lists of Divisional meetings throughout the country, where resolutions similar to these had been carried and sent to the local authorities protesting against the adoption of the Act. The first object of these resolutions was to put this Division in line with other Divisions of the Association. With regard to the public utility of the measure, he did not propose to take up the time of the meeting, but he thought it only right to say that personally he regarded it as "quack" legislation, the application of an utterly inadequate remedy to a great social disease; but he put this forward only as a personal opinion, as he was aware there was great difference of opinion in the profession on this point. In arguing the case for these resolutions he was ready to admit that this was a useful measure, and might be properly enforced by the Legislature. Then if it were made the law that all births must be registered within thirty-six hours of the event, medical men would have to register the births occurring in their own household like other people. By what right was the duty put on the profession to notify births in other households? The only justifiable reason would be that the measure was of the utmost importance for the public good, and would be valueless without the compulsory notification by the medical practitioner of all the births in his practice. This reason could not be given, for the truth was otherwise. It was well known that at the passing of this Act, when that dishonourable trick was perpetrated by the Government, whereby the representatives of the profession were induced to allow the measure to pass, it was stated by the promoters of the Bill, that it would be a good Bill without the compulsory notification of medical practitioners, but they preferred to include this in it, if possible. Again, it was constantly being said that medical practitioners would rarely, if ever, be required to notify births. Did all this tend to show that compulsory notification by medical men was necessary for the working of this measure? It was almost a wanton violation of professional rights. Then, as to the reasons given for these resolutions, he would like to point out that they were not drafted by himself, but were taken nearly verbatim from those published in the Journal a short time before, as being presented to the Manchester Corporation by the profession of that great city, and with success, for the Act had not been adopted there. Was it not a gross violation of professional confidence to notify—it might be—an illegitimate birth when called in by an unmarried patient, or her parents in their distress? What could be more degrading? And, in his opinion, an Act of Parliament did not make it less degrading. It had been said there was more laxity with regard to professional confidences in this country than abroad; he hoped that it was not so, but it must be confessed that the Legislature did all it could to encourage this laxity. First, the common law allowed no privilege to the medical witness with regard to professional confidences as in the case of lawyers and clergymen. Next, there was the Notification of Infectious Disease Act. He did not for a moment contend that infectious diseases ought not to be notified, but the notification of them ought never to have been forced on to the medical profession; it should have been made compulsory on those in charge of the patient alone. Lastly, they had the present Act, and who knew what would be the next compulsory service the profession would be called upon to perform? Some years ago at the York Assizes a member of the profession refused to answer certain questions which violated the professional confidence he owed to his patient. He was told by the judge that he was breaking the law, but he stood firm, preferring rather to be a law breaker than offend against his conscience, and the speaker believed he had the respect of the whole profession. This enactment, in his opinion, would make many law-breakers. This also must not be overlooked: the chief object of this violation of their rights was to send a visitor to the house of their patient to teach her what they were presumably far more capable of doing, for in every case attended by a medical practitioner he was visiting her for at least ten days, sometimes for a month. This was a distinct slight on the medical practitioner, and a palpable suggestion that he was either incompetent or neglectful of his duty. With regard to the second reason it might be thought a little far-fetched by some.

But this measure was especially for the ignorant, and it was in the experience of most how well meaning sanitary inspectors sometimes caused not a little trouble in small households, and lying in women were easily upset by any mental shock. As to the third reason, it was surely unnecessary to say much with regard to the public harm likely to arise from breaches of professional confidence. This had never been questioned up to the present; he had always been taught that a breach of professional confidence was a *malum in se*, and could not be justified. Now, however, a new doctrine was being inculcated, that Acts of Parliament did away with the evil. This doctrine, if it rested on anything, must be on the principle that evil was justifiable when good was derived therefrom, a process of reasoning he had always considered unsound. The resolutions were seconded by Dr. Brewer. He thought there was no necessity for this compulsory notification, and that it was distinctly a breach of professional confidence. Dr. King Warry, M.O.H. for Hackney, said he disagreed entirely with Dr. Greenwood, and thought he had in no way proved his case. He thought his action very selfish; if he did not think well of the Act, he had no right to try to make others oppose such salutary legislation The infantile mortality was very great in Hackney, Shoreditch, and other boroughs, and he thought this Act would be of great assistance in checking it, and the Borough Council was determined to adopt it. He did not believe that medical practitioners did instruct mothers as to the bringing up of their infants, and, any way, they had had the opportunity of doing so for many years, and the result was this great mortality. There was no breach of professional confidence in notifying a birth. The event was known in every house when it occurred, and often to the neighbours. It might be different in the case of an unmarried woman, but even then it was very necessary for the safety of the infant. Not more than 50 per cent. of the mothers of the community were attended by doctors, so that the burden would not very frequently be on the medical practitioner. What did Dr. Greenwood mean by his criticism of the visitors who were to be employed? He could not know what visitors would be sent. Did he know that at Huddersfield and other places medical women were frequently sent? Had he any objection to them? How about the notification of infectious diseases? This was not considered a violation of professional confidence; why, then, should the notification of births be so considered? Other important results bearing on sanitary science were expected from this Act, and he earnestly hoped that these resolutions would not be carried, as they would not have the least effect. Dr. Wallace said that he could not support the resolutions. He did not think it would be often necessary for the medical practitioner to notify, as there were others mentioned in the Act besides him. He read Section 1 of the Act, and asked Dr. Warry whether it would not be possible to give the postcard issued by the local authority, after filling it in, to the father, and get him to send it. Dr. Warry said that if the postcard were so given to the father, and he promised to send it in, he thought the medical practitioner would be protected from the penalty. Dr. Goodall altogether objected to the resolutions. He thought the Act was a very good one, and necessary for the public good. He could not understand why Dr. Greenwood described the Act as "quack" legislation. It had been considered and approved by the most eminent sanitarians. Dr. Greenwood objected to discussion on this point, as he had argued his case on the assumption that the Act was all its supporters contended. Dr. Goodall admitted the objection, and, continuing, denied that there was any breach of professional confidence in this notification; that the notification of infectious diseases was being carried out by the whole profession, and this in itself put an end to any suggestion that the proposed notification would be a violation of confidence. He admitted that the medical profession had just cause to complain of the way they had been treated in the House of Commons. He knew that many Divisions had protested against this Act, and he must point out that the reason given by some was that no fee was to be paid for the notification. Dr. Greenwood said that the question of a fee was not alluded to in his resolutions. Dr. Goodall was glad this was the case. Dr. Sequeira said he was probably the oldest practitioner there present. He considered the notification of births without the patient's consent a gross breach of professional confidence, and agreed with every word Dr. Greenwood had said. Dr. Hunt thought it was not quite clear how it was proposed to work the Act. He would like to ask Dr. Warry if any understanding could be arrived at with the Borough Council. For instance, if the Division were not to oppose the adoption of the Act, would the Borough Council agree not to prosecute medical practitioners who conscientiously objected to notify? Dr. Warry said this was a legal question, which he did not feel competent to answer. He did not think there need be much fear on this subject, as his Council would not wish to prosecute medical practitioners. No undue severity had been shown in carrying out the Infectious Disease Notification Act. The Chairman said that perhaps Dr. Greenwood might be able to throw light on the legal aspect of the question. Dr. Bynoe altogether supported Dr. Greenwood. He strongly opposed this compulsory notification, and considered it quite unnecessary. Dr. Warry admitted that not 50 per cent. of the births were attended by medical men, and many of these, owing to the social position of the parents, there would be no necessity to notify for the purposes of this Act. Dr. Greenwood, in reply, said he would first deal with Dr. Warry. What the supporters of this measure had to show was, that for its success it was of vital importance that medical practitioners should be compelled under a penalty to notify births. Not a word had been said by any one who had spoken against these resolutions to prove this, so that if all were true that was alleged in favour of the Act, his position would not be affected. Much that Dr. Warry said really supported his case. If but a small number of births were attended by medical men their notification became to that extent of less importance. He could not understand Dr. Warry's ethical distinction between the notification of legitimate and illegitimate births. If one were wrong surely the other could not be considered right, nor did he see that the fact that information a practitioner had obtained in his professional capactity had become generally known authorized him to betray his patient's confidence. Then Dr. Warry objected to his criticism of the visitors that would be sent by the local authorities; it was true he could not know as yet what they would be, but did any one think they were likely to be in most cases lady doctors? Dr. Warry had instanced Huddersfield; that was the pet borough of the supporters of this Act, where a remarkable diminution of infantile mortality had already been attained without the help of this Act, but no mention had been made of the Mayor's sovereign remedy to stimulate parental duties. It was on account of what was being done in that borough that he had thought more seriously of the mischief that might be done by official visitors. He then read an extract from a recent copy of the *Tribune* in which Alderman Benjamin Broadbent was reported to have said, when the lady visitors were declined:

> They do not question the decision, but take care that the Inspector of the National Society for the Prevention of Cruelty to Children, as well as the police, is informed of such instances.

When citizens who under this very Act had a legal right to decline the interference of these visitors, were told when they exercised this option that they would be put under the surveillance of the police and the inspectors of this society, it was not surprising that they did not often do so. With regard to Dr. Wallace's view that medical practitioners would not often be prosecuted under the Act on account of the alternative duties of other persons, he would only instance the Notification of Infectious Disease Act, where there were similar alternatives. He would ask how often any but medical practitioners had been prosecuted under that Act? With regard to Dr. Hunt's question, he had no hesitation in saying that the Borough Council could not give legally any such undertaking. The Chairman then put the resolutions to the meeting, which were duly carried. The total number present during the discussion was 18, of whom 7 voted for the resolutions and 4 against. The rest either did not vote or had left when the vote was taken. Dr. Goodall asked what was to be done with them. Dr. Greenwood thought it was settled by the resolutions. The Chairman said this was not the case. Dr. Greenwood said he should then move that the resolutions be sent to all the

bodies mentioned therein. As owing to the lateness of the hour nearly all the members had left, Dr. Greenwood withdrew his motion, intimating he should bring it forward at the next meeting.

Lambeth Division.

A general meeting was held in St. Thomas's Hospital on Thursday, November 28th, at 4 p.m. Dr. Maurice Craig was in the chair, and twenty-two members with five guests were present.

The Referendum.—The final voting upon the questions in the Referendum was taken. On the motion of Dr. Sangster, seconded by Dr. Atkinson, it was unanimously agreed to take the matter *en bloc*. On the motion of Dr. Capes, seconded by Dr. Denning, it was unanimously agreed that all the questions should be answered in the affirmative.

Paper and Cases.—Mr. J. S. Fairbairn then read a paper upon the treatment of uterine haemorrhage in the absence of obvious lesion, illustrating it with specimens and drawings. A general discussion followed. Dr. H. R. Dean and Mr. J. E. Adams showed several cases, including splenic enlargements in children, and the passive hyperaemia method of treating ulcerated legs.

Votes of Thanks.—The meeting concluded at 5.45 p.m., with votes of thanks to Mr. Fairbairn, Dr. Dean, and Mr. Adams, and to the authorities of St. Thomas's Hospital for so kindly allowing the meeting to be held there.

St. Pancras and Islington Division.

An ordinary meeting of this Division was held at the London Temperance Hospital on Tuesday, December 3rd. Dr. Wynn Westcott, Chairman of the Division, presided, and there was a fair muster of members and visitors, the latter including Dr. Southcombe, Chairman of the City Division.

Notification of Births Act.—The Notification of Births Act, 1907, was discussed. Letters from the Medical Secretary and from the Town Clerk of St. Pancras were read, the latter stating "that the St Pancras Borough Council had given instructions for the necessary procedure for the adoption of the Act to be taken forthwith" Dr. Buckell, who had had an interview with the Medical Officer of Health of Islington, explained the position of matters in that borough, and said that it was also proposed to adopt the Act there. Dr. Sykes, the Medical Officer of Health for St. Pancras, and a member of the Division, opened the discussion. He pointed out that the Act put no new burden on medical practitioners, that as matters were now, any person in attendance at a birth, was liable, in default of the parents, to be called upon to register the birth, and that the new Act did no more. It was probable that in practice it would be an exceedingly rare event for a doctor to have to notify a birth. He thought the final effect of the Act would be to make the present system of registration obsolete, and that in the future parents would be just as eager to notify births under this Act as they now were to register them, for everyone knew that in every walk of life a birth certificate was, sooner or later, certain to be required. It was absolutely essential, if the Act was to be a success, for the health authorities to work harmoniously with the doctors, and that was the desire of the St. Pancras authority. Dr. Sykes also pointed out the benefits which the new Act would confer upon the community in the way of diminishing the appalling infantile mortality, of the rearing of healthy children, and of the compilation of more accurate vital statistics. He hoped the members would watch the effect of the adoption of the Act in St. Pancras, and he invited them to come to him at any time to confer with him and to give him their views, and he assured the Division that in St. Pancras the Act would be administered with the utmost consideration for the feelings of the profession, and he asked those present for their sympathetic co operation. Numerous questions put by members were answered by Dr. Sykes. Dr. Major Greenwood (City Division) spoke against the adoption of the Act, and read to the meeting the resolutions adopted by the City Division on November 28th. An animated discussion took place in which the Chairman and other members and visitors took part, Dr. Eder strongly supporting the adoption of the Act. The Secretary proposed, and Dr. Hearn seconded, that resolutions similar to those passed by the City Division, condemning the adoption of the Act should be passed by the meeting. Dr. Buckell and others objected to the form of these resolutions, and as, on being put to the vote, the "Ayes" and the "Noes" were equal, the Chairman voted against the resolutions and declared them lost. A resolution proposed by the Chairman approving the adoption of the Act was negatived, after which it was unanimously resolved to instruct the Secretary to keep in touch with the medical officers of health of the two boroughs and to report to the Division the details for the administration of the Act that would be proposed by the two health authorities. Dr. Dora Bunting, of the School for Mothers, Somers Town, N.W., was present, and supported the adoption of the Act.

Branch Council.—Dr. Buckell, Vice-President of the Metropolitan Counties Branch, presented to the meeting a report of the proceedings of the November meeting of the Branch Council.

The other items on the agenda were postponed.

Wandsworth Division.

A meeting of this Division was held in the Battersea Town Hall on Thursday evening, November 28th, Dr. Gilbert Richardson in the chair.

Confirmation of Minutes.—The minutes of the meeting on October 24th were confirmed.

Correspondence.—Letters were read from Dr. Langley Browne regretting his inability to attend, and from the Medical Secretary *re* Notification of Births Act, 1907.

General Medical Council.—Drs. Latimer and McManus were present at the invitation of the Division, and gave interesting addresses on the work of the General Medical Council and on various subjects of professional interest.

Votes of Thanks.—The meeting closed with a cordial vote of thanks to them.

South-Eastern Branch:

Folkestone Division.

A meeting of the Folkestone Division took place at the Victoria Hospital, Folkestone, on Thursday, December 5th, at 8.30 p.m., Dr. Randall Davis being in the chair. Twenty seven attended the meeting—namely 20 members of the Association and 7 unattached. The Honorary Secretary believes this to be a record meeting on the Referendum in the United Kingdom in proportion to the size of the Division—namely, 20 members attended the meeting out of a possible 28, the total membership of the Division.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Cases.—Some clinical cases were shown, namely: (1) Cancer of the tongue; (2) exostosis of the femur; (3) ulcers specific (?).

The Referendum.—Dr. Tyson, member of the Council, read a paper on the Referendum, and Dr. P. Vernon Dodd, Representative for Representative Meeting, replied. Some discussion followed. The minutes of the Representative Meeting were then voted upon with the following result:

		For.	*Against.*
On Minute	123	2	10
,, ,,	283	2	13
,, ,,	287	2	13
,, ,	293	2	13
,, ,,	298	2	13
,, ,,	299	4	13
,, ,,	303	2	13
,, ,,	328	3	12
,, ,,	330	2	13
,, ,,	342	2	13
,, ,,	346	2	14

Isle of Thanet Division.

The twenty-third meeting of the Division was held at St. Mildred's Hotel, Westgate, on Thursday, November 28th, Dr. Arthur Flint in the chair. Fourteen members were present at the meeting, and one visitor, Mr. Swinford Edwards.

Confirmation of Minutes.—The minutes of the last meeting were read, confirmed, and signed.

Notification of Births Act.—A letter was read from the Medical Secretary on the Notification of Births Act, 1907. It was resolved that the subject be referred to the Executive Committee for consideration.

Police Emergency Fees.—A letter was read from the Secretary of the South-Eastern Branch on the question of police emergency fees. The letter was discussed by Drs. Watts and Heaton. No specific cases had come to their notice of any members being in difficulties in this question. It seemed to be generally understood that the police were not responsible for the fees.

Demonstration and Paper.—Mr. F. Swinford Edwards, having given a practical demonstration of the sigmoidoscope and examined a subject therewith, read a paper entitled the Importance of the Sigmoidoscope in General Practice. He first briefly discussed the history of the instrument and the various forms in use, then cited the method of use, and quoted numerous cases of his in which he had used the instrument. He discussed also the anatomy of the sigmoid colon and rectum, and mentioned several points which had been lately described by various authors and himself. The paper was discussed, and a hearty vote of thanks was passed to Mr. Edwards for his paper and demonstration.

The Referendum.—The report of the Executive Committee was read, and its recommendations to the Division on each resolution of the Referendum on the draft Charter. A special vote was taken on each particular minute, and in each case the recommendation of the Executive Committee was endorsed unanimously. Two members having left, 12 members voted for and none against in each resolution.

Votes of Thanks.—A hearty vote of thanks was passed to the Chairman for presiding, and to Dr. Powell for arranging a subject's attendance for demonstration.

Tunbridge Wells Division.

A special general meeting of this Division was held at the General Hospital (by the kind permission of the House Committee) on Wednesday, November 20th. Dr. Purdington was in the chair, and twelve other members were present.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed.

Appointment of Inspector and Medical Officer under the Midwives Act of 1902.—The following resolution was carried unanimously:

> That this meeting, without in any way reflecting on the person appointed as inspector and medical officer under the Act of 1902, which is a public appointment maintained out of public funds, hereby protests against such an appointment being made without the vacancy having been duly advertised in the local press in the usual manner, and that this resolution be forwarded to the Town Clerk and to the Chairman of the Health Committee.

Fees in Police Emergency Cases.—In answer to a query from the Secretary of the Branch, the Secretary was directed to reply that none of the members had experienced any difficulty in obtaining such fees.

Medical Law Reform and Quackery.—The members unanimously supported the resolution put forward by the Reigate Division.

Teaching of Hygiene to School Teachers.—A letter from Mrs. Aimée Watt Smyth was read, and it was decided, after discussion, that no action should be taken, seeing that the Central Council had the matter in hand.

The Referendum.—The minutes were discussed and a vote taken on them. After the vote had been taken the following resolution was carried unanimously:

> That Minute 299 in its present form is very unsatisfactory, and we are strongly in favour of the grouping being of such a kind that each group returns a single member.

Voting of Members Unavoidably Absent from a Meeting.—A member ventilated this subject, and spoke of the need of some method by which members unavoidably absent might be able to record their votes on matters affecting the business or policy of the Association. No resolution was proposed.

Votes of Thanks.—Hearty votes of thanks were passed to the Chairman, and also to the House Committee of the hospital for the use of the room.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Gloucester Branch.—A general meeting of this Branch will be held at the General Hospital, Cheltenham, on Thursday, December 19th, at 7 p.m. Agenda: Papers—(1) Some cases of intestinal obstruction (Mr. Buckell, F.R.C.S.); (2) Remarks on sources, symptoms, and diagnosis in cases of purulent nasal discharge (Dr Wilfred Glegg). The Secretary will be pleased to hear from any member who will show cases or pathological specimens at future meetings during this session. There will be a supper afterwards at the Cosy Corner, Promenade (tickets 3s. 6d. each, exclusive of wine).—D. E. Finlay, Honorary Secretary, Gloucester.

Lancashire and Cheshire Branch: Leigh Division.—A meeting of the members of this Division will be held at the Co-operative Rooms in Ellesmere Street, at 8.30 p.m. on Thursday, December 19th. Agenda: Terms of acceptance of a new Sick Club.—J. Sackville Martin, M.D., Honorary Secretary.

South Midland Branch: Northamptonshire Division.—A meeting of this Division will be held in the Board Room of the General Hospital, Northampton, on Tuesday, December 17th, at 2.30. Luncheon will be provided beforehand at Franklin's Restaurant, Guildhall Road, Northampton. The Secretary will be obliged if those who wish to attend the luncheon will be good enough to notify him at least two days beforehand. Agenda: (1) The Notification of Births Act, 1907—What steps the Division should take about it. (2) A report of the South Northamptonshire Nursing Club from Dr. Jacobs and Dr. O'Rafferty. (3) Dr. Greenfield will give a paper and demonstration on the treatment of fracture by massage and movement. (4) Dr. Hichens will show a case of pulmonary actinomycosis and a peculiar case of heart disease. (5) Any other business.—Peverell S. Hichens, Honorary Secretary.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 8,074 births and 4,921 deaths were registered during the week ending Saturday last, December 7th. The annual rate of mortality in these towns, which had been 14·8, 15·3 and 16.5 per 1,000 in the three preceding weeks, declined again last week to 16·0 per 1,000. The rates in the several towns ranged from 6·0 in Bournemouth, 6.9 in East Ham, 8·1 in Hornsey, 9·2 in Walsall and in Birkenhead, 9.5 in Handsworth (Staffs), and 10·0 in Southampton to 23·2 in Oldham, 23·3 in Merthyr Tydfil 23·4 in South Shields, 24·0 in Rhondda, 21·8 in Bury, and 25.6 in West Bromwich and in Stockton-on Tees. In London the rate of mortality was 16.2 per 1,000, while it averaged 15.9 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1·3 per 1,000 in the seventy-six large towns; in London this death-rate was equal to 1·2 per 1,000, while among the seventy-five other large towns the death-rates from these diseases ranged upwards to 4.3 in Ipswich, 4·7 in Bootle, 4.9 in Burton-on-Trent, 5·7 in Tynemouth, and 9·3 in Barrow-in-Furness. Measles caused a death-rate of 1.1 in Salford and in Leeds, 1.3 in Newcastle-on-Tyne, 2·0 in Rhondda, 2·1 in Merthyr Tydfil, 2.3 in Burton-on-Trent, 3·8 in Tynemouth, 4·3 in Ipswich, and 7.6 in Barrow-in-Furness; diphtheria of 1·2 in Rochdale, 1·3 in Reading, and 2·0 in Burton-on-Trent and in Stockton-on-Tees; and whooping-cough of 1·5 in Hastings and in Oldham, 1.7 in Barrow-in-Furness, in Gateshead, and in Newcastle-on-Tyne, 1.9 in Aston Manor, and 3.9 in Bootle. The mortality from scarlet fever, from "fever," or from diarrhœa was not excessive in any of the large towns; and no fatal cases of small-pox were registered during the week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 5,689 and 5,686 at the end of the two preceding weeks, had further declined to 5,580 at the end of last week; 554 new cases were admitted during the week, against 657, 636, and 597 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, December 7th, 922 births and 716 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had risen from 15·3 to 19·3 per 1,000 in the four preceding weeks, further rose last week to 20.6 per 1,000, and was 4.6 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 14·6 in Aberdeen and 18.0 in Edinburgh to 22.5 in Perth and 32·4 in Dundee. The death-rate from the principal infectious diseases averaged 3.8 per 1,000, the highest rates being recorded in Dundee and Leith. The 333 deaths registered in Glasgow included 48 from measles, 2 from scarlet fever, 3 from diphtheria, 3 from whooping-cough, 3 from "fever," and 12 from diarrhœa. Twenty-two deaths from measles, 2 from whooping-cough, and 6 from diarrhœa were recorded in Dundee; 3 from diphtheria, 2 from measles, and 1 from cerebro-spinal meningitis in Paisley; 5 from whooping-cough, 2 from cerebro-spinal meningitis and 2 from diarrhœa in Leith; and 5 from measles in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, November 30th, 538 births and 408 deaths were registered in six of the principal Irish towns, as against 449 births and 412 deaths in the preceding period. The annual death-rate in these towns, which had been 18·7, 18·8, and 21·7 per 1,000 in the three preceding weeks, fell to 20.5 per 1,000 in the week under notice, this figure being 4·0 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. The figures ranged from 13·7 in Cork and 17·5 in Waterford to 24·6 in Limerick and 25.8 in Belfast. The zymotic death-rate in the same six Irish towns averaged 1·5 per 1,000, or 2·0 per 1,000 lower than during the preceding period, the highest figure—2.7—being recorded in Limerick.

Naval and Military Appointments.

ROYAL ARMY MEDICAL CORPS.

CAPTAIN F. H. MERRY, M.B., is placed on temporary half-pay on account of ill-health, December 7th. He joined the department as Lieutenant, December 4th, 1899, and was made Captain, December 4th, 1902. During the South African war of 1899-1902 he was in operations in the Orange Free State, including the operations at Paardeberg and the actions at Poplar Grove and Karee Siding; he was also in operations in the Orange River and Cape Colonies, and has the Queen's medal with two clasps and the King's medal with two clasps.

Lieutenant-Colonel M. DUNDON, M.D, retires on retired pay, December 11th. He was appointed Surgeon, July 30th, 1881; Surgeon-Major, July 30th, 1893; and Lieutenant-Colonel, July 30th, 1901. He served in the South African war in 1899-1901, being present in operations in the Orange Free State, including actions at Houtnek (Thoba Mountains) and Zand River; in the Transvaal, including actions near Johannesberg and Pretoria; and in Cape Colony. He has received the Queen's medal with four clasps.

Vacancies and Appointments.

VACANCIES.

BANBURY: HORTON INFIRMARY.—House-Surgeon. Salary, £80 per annum.

BANGOR: CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House-Surgeon. Salary, £80 per annum, rising to £100.

BIRMINGHAM GENERAL HOSPITAL.—House-Physician. Salary at the rate of £50 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—(1) Honorary Dermatologist. (2) Honorary Dental Surgeon.

BRISTOL DISPENSARY.—Two Medical Officers.

BRISTOL GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum.

BRISTOL: UNIVERSITY COLLEGE.—Director of the Public Health Laboratory.

CARDIFF UNION—Assistant Medical Officer for the Workhouse. Salary £130 per annum

DERBYSHIRE ROYAL INFIRMARY.—(1) Second House-Surgeon. (2) House Physician. (3) Assistant House-Surgeon. Salary for (1) and (2) £100 per annum, and (3) £60 per annum.

DUNDEE ROYAL INFIRMARY.—Investigator to work in the Caird Cancer Pavilion of the Hospital.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—House-Physician. Honorarium, £25 for six months.

EDINBURGH UNIVERSITY.—Additional Examiners in Materia Medica and Clinical Surgery.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Pathologist and Curator. Salary, £100 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

HALIFAX ROYAL INFIRMARY.—Third House-Surgeon. Salary, £80 per annum.

HOLLOWAY AND NORTH ISLINGTON PROVIDENT DISPENSARY.—Medical Officer at the Branch Dispensary.

HULL: ROYAL INFIRMARY.—Casualty House-Surgeon. Salary at the rate of £60 per annum for six months' appointment, or £80 per annum for twelve months

LEAMINGTON: WARNEFORD, LEAMINGTON AND SOUTH WARWICKSHIRE HOSPITAL.—House-Physician. Salary, £60 per annum.

LEEDS CITY.—Assistant Medical Officer of Health and Chief Inspector of Nuisances. Salary, commencing £300 per annum.

LEICESTER INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £50 per annum.

LIVERPOOL HOSPITAL FOR CONSUMPTION.—Resident Medical Officer for the Sanatorium at Kingswood, Delamere Forest. Salary, £400 per annum.

LONDON LOCK HOSPITAL.—House-Surgeon for the Male Hospital, Soho. Salary, £80 per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer. Salary, £175 per annum.

MANCHESTER CORPORATION.—Assistant to the Medical Officer of Health. Salary, £200 per annum.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Honorary Radiographer.

NORTHAMPTON GENERAL HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £90 per annum and £50 per annum respectively.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House Surgeon. Salary at the rate of £80 per annum.

PRESTON ROYAL INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary, £80 per annum.

SHEFFIELD: CHILDREN'S HOSPITAL.—House-Surgeon for the East-End Branch. Salary, £70 per annum.

SHEFFIELD ROYAL HOSPITAL.—Junior Resident Medical Officer. Salary, £50 per annum.

STOCKPORT COUNTY BOROUGH.—Medical Officer of Health. Salary, £450, rising to £550 per annum

SUFFOLK DISTRICT ASYLUM, MELTON.—Second Assistant Medical Officer. Salary, £160, rising to £180 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary, £75 per annum.

WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—Junior House-Surgeon, appointment for six months, eligible for election as Senior. Salary at the rate of £75 and £100 per annum respectively.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith Road, W.—Clinical Assistants.

WREXHAM INFIRMARY.—Resident Medical Officer. Salary, £80 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Winchester, co. Hants, and Harwich, co. Essex.

APPOINTMENTS.

BALY, A. L., M.R.C.S., L.R.C.P., Fourth Resident Assistant Medical Officer, Lambeth Parish Infirmary.

BATTEN, H. E., M.R.C.S., L.R.C.P., First Resident Assistant Medical Officer at Cleveland Street Asylum of the Central London Sick Asylum District.

BAYFIELD, J. B., M.R.C.S., L.R.C.P., District Medical Officer of the Tonbridge Union.

BEATTIE, Thomas, M.D., M.R.C.P., Honorary Physician to the Royal Victoria Infirmary, Newcastle-upon-Tyne.

CODD, J. Alfred, M.D., B.Sc.Lond., Physician to Wolverhampton and Staffordshire General Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTHS.

AGNEW.—On December 2nd, at Ibstock, Leicestershire, the wife of Colville S. Agnew, M.R.C.S., L.R.C.P., of a son.

CUTCLIFFE.—On December 6th, at Court Green, North Tawton, North Devon, the wife of Montagu Cutcliffe, L.R.C.P.Lond., M.R.C.S. Eng., of a daughter.

LAIRD.—On December 2nd, the wife of J. N. Laird, M.D., of Macclesfield, Cheshire, of a daughter.

LOVE.—At 244, Westmorland Road, Newcastle-on-Tyne, on December 10th, the wife of J. Duncan Love, M.B., C.M., of a daughter.

MARRIAGES.

DRUMMOND-WILSON.—At Toronto, on December 9th, by the Rev. Alexander Langford, D.D., James Drummond, M.D., Wyvestow Lodge, South Shields, to Frances Olive, only daughter of the late William Wilson and of Mrs. Wilson. By cable.

HILL—BARKER.—On December 5th, at the parish church of Llanfor, Merioneth, by the Rev. E. Roberts, B.A., Rector, Dr. Charles Alexander Hill, M.A., M.B., of 13, Rodney Street, Liverpool, to Ethel Constance, third daughter of the late Richard Barker, of Huyton.

DEATH.

CLARKE.—On November 27th, suddenly of syncope, at Epsom College, Surrey, Alexander William Cameron, aged 14 years, only child of John L. Clarke, M.B., of Holly House, Woolwich.

DIARY FOR THE WEEK.

TUESDAY.

CHELSEA CLINICAL SOCIETY, Chelsea Dispensary, Manor Street, Chelsea, S.W., 8.30 p.m.—Dr. Campbell-Thomson: A Clinical Demonstration on Some Diseases of the Nervous System Illustrated by the Kinematograph.

MEDICO-LEGAL SOCIETY, 22, Albemarle Street, W., 8.15 p.m.—Narration of Cases and Exhibits of Medico-Legal Interest. Paper: Dr. T. Claye Shaw: The Radical Cure—Certification of Inebriates.

ROYAL SOCIETY OF MEDICINE:

THERAPEUTICAL AND PHARMACOLOGICAL SECTION, Apothecaries' Hall, Blackfriars, E.C., 4.30 p.m.—Dr. James Mackenzie: The Action of Digitalis on the Human Heart. Dr. William Soper: Reminiscences of an Apprentice Fifty Years Ago.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S.E.—Monday, 5 p.m., Tumours Malignant.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Some Diseases of the Newly Born.

LONDON SCHOOL OF CLINICAL MEDICINE.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, 2.15 p.m. and 3.15 p.m. respectively; Operations, 2.30 p.m. Special Clinics: Ear and Throat, at noon and 4 p.m. Monday, and noon Thursday; Skin, at noon and 4 p.m. Tuesday and at noon Friday; Eye, 11 a.m. Wednesday and Saturday; Radiography, 4 p.m. Thursday.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, College closes.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Nerve Anastomosis Friday, 3.30 p.m., Optic Neuritis.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's Hospital, Tottenham, N.—The following are the Clinics and Demonstrations for next week:—Monday, 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Throat, *X* Ray; 4.30 p.m., Medical In-patient. Tuesday, 10.30 a.m., Medical Out-patient; 2.30 p.m., Operations, Gynaecological and Surgical Out-patient; 4.30 p.m., Lecture—Demonstration: The Administration of Anaesthetics. Wednesday, 2.30 p.m., Medical Out-patient Skin and Eye; Thursday, 2.30 p.m., Gynaecological Operations, Medical and Surgical Out-patient and *X* Ray: 3 p.m., Medical In-patient, 4.30 p.m., Throat Operations; Friday, 10 a.m., Surgical Out-patient; 2.30 p.m., Operations, Medical Out-patient and Eye; 3 p.m., Medical In-patient.

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
DECEMBER.	
13 FRIDAY ...	LONDON: Contract Practice Subcommittee, 2.30 p.m.
14 SATURDAY...	
15 Sunday ...	
16 MONDAY ...	
17 TUESDAY ...	NORTHAMPTONSHIRE DIVISION, *South Midland Branch*, Board Room of the General Hospital, Northampton, 2.30 p.m.; Luncheon, Franklin's Restaurant, Guildhall Road, Northampton, before the meeting.
18 WEDNESDAY	LONDON: South-Eastern Branch Council, 3.15 p.m. LANCASHIRE AND CHESHIRE BRANCH, Council Meeting, Royal Infirmary, Manchester, 4.30 p.m.
19 THURSDAY...	GLOUCESTERSHIRE BRANCH, General Meeting, General Hospital, Cheltenham, 7 p.m.; Supper, Cosy Corner, Promenade, after the meeting. LEIGH DIVISION, *Lancashire and Cheshire Branch*, Co-operative Rooms, Ellesmere Street, 8.30 p.m. WANDSWORTH DIVISION, *Metropolitan Counties Branch*, Balham Hotel, Balham, 8.45 p.m.
20 FRIDAY ...	
21 SATURDAY...	
22 Sunday ...	
23 MONDAY ...	
24 TUESDAY ...	
25 WEDNESDAY.	*Christmas Day.*
26 THURSDAY...	*Bank Holiday.*
27 FRIDAY ...	
28 SATURDAY ...	LONDON: Opsonic Subcommittee, 11 a.m. LONDON: Science Committee, 12.45 p.m.

Date.	Meetings to be Held.
DECEMBER *(Continued).*	
29 Sunday ...	
30 MONDAY ...	
31 TUESDAY ...	
JANUARY, 1908.	
1 WEDNESDAY	Subscriptions to the British Medical Association for 1908 become due.
2 THURSDAY...	
3 FRIDAY ...	LONDON: Standing Ethical Subcommittee, 2 p.m.
4 SATURDAY...	
5 Sunday ...	
6 MONDAY ...	
7 TUESDAY ...	LONDON: Public Health Committee, 3.15 p.m.
8 WEDNESDAY	LONDON: Medico-Political Committee, 2.30 p.m.
9 THURSDAY...	LONDON: Hospitals Committee, 2 p.m. LONDON: Metropolitan Counties Branch Council, 5 p.m. HAMPSTEAD DIVISION, *Metropolitan Counties Branch.*
10 FRIDAY ...	LONDON: Central Ethical Committee, 1.30 p.m.
11 SATURDAY...	
12 Sunday ...	
13 MONDAY ...	
14 TUESDAY ...	LONDON: Organization Committee, 11 a.m.
15 WEDNESDAY	CARDIFF DIVISION, *South Wales and Monmouthshire Branch*, Cardiff.
16 THURSDAY...	
17 FRIDAY ...	
18 SATURDAY...	
19 Sunday ...	
20 MONDAY ...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 21ST, 1907.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs. BY ORDER.

MATTERS REFERRED TO DIVISIONS.

British Medical Association.

MEDICO-POLITICAL COMMITTEE.

REPORT ON THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

The Annual Representative Meeting at Exeter, upon consideration of the Report of the Medico-Political Committee concerning the Medical Inspection of School Children, noted with satisfaction, in view of the resolutions of the Meeting of 1906, that the President of the Board of Education had fully accepted the principle of the compulsory medical examination of school children, and of the provision for its adequate administration by the establishment of a medical bureau in the Education Department.

The Meeting, further, referred the Report on the matter, with certain resolutions by Divisions which were before the Meeting, to the Medico-Political Committee for the continuation of action upon the lines of the Report until the next Representative Meeting.

The Medico-Political Committee having duly considered the instructions of the Annual Representative Meeting, transmitted to the President of the Board of Education a copy of the first resolution of the Meeting, and appointed a special Sub-committee, including members of the Association specially qualified to advise upon this matter, to consider the general subject and report.

In view of the fact that the Education (Administrative Provisions) Act comes into operation on January 1st, 1908, the Committee authorised the Sub-committee to take in emergency such action as might be deemed necessary in accordance with the instructions of the Representative Meeting.

The Sub-committee has carefully investigated the whole matter, and in view of the issue by the Board of Education, on November 23rd, of a Memorandum to Local Education Authorities (*see* Supplement to the BRITISH MEDICAL JOURNAL, November 30th, 1907), has considered it necessary to act at once upon the authority conferred upon it, and to forward to the Board of Education the Memorandum, of which a copy is appended.

The Sub-committee has also deemed it necessary to circulate this Memorandum at once to the Divisions for their information and consideration with a view to action, and to transmit therewith the following additional recommendation as to the remuneration which each Division should seek to obtain for those members of the profession who may be appointed to undertake the duties of School Medical Officers, namely :—

> "That the School Medical Officer be paid at the rate of £50 per annum for an attendance of one half-a-school-day per week, half-a-school-day being defined to be two hours.

MEMORANDUM.

The British Medical Association, having for a long time given attention to the subject of the statutory medical inspection of School Children, referred the matter, on the passing of the Education (Administrative Provisions) Act, to a Special Committee for consideration and necessary action.

This Committee accordingly respectfully submits for the consideration of the Board of Education certain conclusions arrived at, on behalf of the Association, as to the duties of

the Medical Officers engaged in the actual detailed work of examining children as part of such inspection.

Other important questions bearing upon the medical inspection service have also been considered, particularly that as to whether the supervision of this work should be carried out by Medical Officers of Health, or by Medical Officers specially appointed for the purpose. Upon this point as affecting the Principal School Medical Officers of large districts the Association has at present come to no final conclusion. But, as regards the officers who are to be engaged in the actual work of inspection, the Committee finds it to be the general opinion in the Association that these duties could not, having regard to the nature and extent of the duties already required of the Medical Officers of Health, be efficiently discharged by them personally.

School Medical Officers, carrying out the actual inspection, may, the Association considers, be "part-time" officers, whose remuneration should be fixed with definite relation to the amount of time devoted to the work.

Concerning the duties of such Officers the Committee has considered the suggestions to Local Authorities contained in the Memorandum of the Board of Education of November 22nd, 1907, especially paragraph 11, defining the matters which shall receive attention in the examination of each child, and paragraph 13, containing proposed regulations governing the general duties. These must receive separate discussion.

A.—General Regulations.

In the first place, as regards the General Regulations for School Medical Officers, the Association would submit the following as a convenient general definition of their duties, namely :—

> To concern himself with all matters affecting, or tending to affect, the health of those who work in the schools, except so far as any such matters be specifically excluded from the scope of his duties as Medical Inspector, among matters so excluded being (*a*) the treatment of disease; (*b*) the visitation of the homes of the children.

Concerning more detailed Regulations, the Association would submit the following modifications of those proposed by the Board of Education in paragraph 13 of the Board's Memorandum, namely :—

(a) The inspection should be conducted in school hours and on school premises, or at such special centres as may be provided or approved of by the Education Authority, and in such a way as to interfere as little as may be with school work.

(b) The convenience of the teaching staff and the circumstances of each school must receive consideration, and in these matters, and in the actual examination, the medical officer will no doubt exercise sympathy and tact, giving due thought to the personal susceptibilities of those concerned.

(c) The facts revealed at inspection must be entered in a register, preferably in card form, kept at the school, the confidential nature of the entries being carefully respected. The card containing entries shall be transmitted under cover to the Medical Inspector of any school to which a child may be transferred.

(d) Every School Medical Officer shall make an annual report to the local Education Authority on the schools and children under his superintendence, which shall be printed for facility of reference and in order that a supply of copies may be available for distribution among the members of the Authority and other persons interested. The Authority shall send two copies of the report to the Board of Education, and two copies to the local Medical Officer of Health, as soon as possible after the end of the year under review.

(e) In order to secure effective bases for comparison of the work done in different parts of the country, one uniform year must be taken, the year to be adopted being in all cases the calendar year, in order to correspond with the annual period fixed for the closely related report of the Medical Officer of Health.

(f) The Report should contain the following information, namely :—

> (i.) Statistical records of the number of children examined and of those re-examined or under medical supervision; the nature and results of the examination; the number of visits paid to classes; the number and character of the diseased conditions found at certain age periods; particulars as to blind, deaf, defective and epileptic children; advice given both as to the prevention of conditions inimical to health and the remedy of diseased conditions that may be discovered, action taken, and so forth.
>
> (ii.) Particulars of conditions and circumstances affecting the health of the children in the Elementary Schools of the district.
>
> (iii.) Systematic comparisons, so far as practicable, of the individual and collective measurements and characteristics of the children in each school with standard and local records, both as a means of determining the condition of health of particular children or classes, for guidance in future action, and as part of the anthropometric survey to which the Act should contribute in due time. This part of the work to be subordinate to that described in paragraphs (i) and (ii).

B. Detailed Plan of Examination (Proposed Schedule).

As regards the actual examination of each child, the Association submits the following schedule, which when filled up by the inspecting School Medical Officer would constitute the registration record, namely :—

SCHEDULE OF EXAMINATION BY MEDICAL INSPECTOR.

Date of Examination

I. Name of Child

Address.

II. General Physical Conditions and Circumstances :—

1. Age — Height — Weight

2. Chest Measurement { inspiration / expiration

3. General Nutrition ... { excellent. / good. / average. / poor. / bad.

	Body.	*Head.*
4. Cleanliness ...	good.	clean.
	medium.	vermin.
	bad	nits.
	vermin.	sores.

	General.	*Footgear.*
5. Clothing ...	sufficient.	sufficient.
	insufficient.	insufficient.

III. Special Physical Conditions :—

1. Teeth ... { Decayed: No. / As regards oral sepsis: { good. / medium. / bad.

2. Throat ... { mouth breathing. / tonsils. / adenoids. / cervical glands.

3. Nose.

	Right.	*Left.*
4. Ears ...	Deafness.	
	Suppuration.	

		Right.	Left.
5. Eyes...	...	...External Diseases— Lids and Conjunctivæ. Cornea.. Visual acuity— normal. abnormal* Muscular defects— Nystagmus. Squints.	

6. Mental capacity—

General: excellent. good. average. fair. bad ... backward. mentally defective. imbecile.

Special: Visual attention... good. medium. bad. Speech defects ... stammering. defective articulation.

IV. SPECIAL DISEASES AND DEFORMITIES :—

1. Developmental defects and deformities: head. limbs. trunk.

2. Diseases ...: infectious or contagious diseases. diseases of nutrition. diseases of the skin. diseases of circulation and respiration. diseases of nervous system.

V. MEDICAL HISTORY :—

1. Personal, including (*a*) Vaccination Marks. (*b*) History as regards Infectious Disease.

2. Family.

FUTURE EXAMINATION.

* Cases of abnormality—*i.e.*, visual acuity below $\frac{6}{6}$ths—to be specially examined as regards refraction.

Meetings of Branches & Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

EDINBURGH BRANCH:

NORTH-EAST EDINBURGH DIVISION.

A MEETING of this Division was held on Thursday, December 5th, at 8.30 p.m., at 5, St. Andrew Square. Dr. JAMES CARMICHAEL, Chairman of the Division, presided, and other nine members were present. In all ten members were present and sixty-two absent.

Confirmation of Minutes.—The minutes of the meeting held on November 18th were read, approved, and signed.

An Ethical Question.—A request from the Central Ethical Committee to investigate the case of a member of the Division writing a signed article in the lay press was first considered. All the correspondence between the Ethical Committee and the member was read by the SECRETARY, and the member affected, with the permission of the Chairman, read a statement on his case. The meeting unanimously was of opinion that he was not in actual practice, and it desired to record its deep sympathy with him in his position.

Representative Meetings.—The Representatives to the May and July meetings gave reports on the proceedings there.

The Referendum.—The Council's Referendum was carefully considered, when all the members present voted against all the minutes—namely, 0 for and 10 against.

Notification of Births Act.—The SECRETARY gave some information on the proposed working of the Notification of Births Act, 1907, which has been adopted by the Edinburgh Corporation.

LANCASHIRE AND CHESHIRE BRANCH:

ALTRINCHAM DIVISION.

A GENERAL MEETING was held at the Board room of the Altrincham Hospital on Thursday, December 5th, at 5 p.m., under the presidency of Dr. G. H. SMITH (Knutsford). Twenty-nine members were present, forming the largest meeting yet held.

Infantile Mortality.—The usual routine business was transacted, and a very interesting paper on infantile mortality was contributed by Dr. JAMES NIVEN, M.O.H. City of Manchester. Many members took part in the subsequent discussion, and a very hearty vote of thanks was unanimously accorded to the reader of the paper.

Dinner.—Eight members afterwards dined together, entertaining the Branch Secretary as the guest of the Division.

SALFORD DIVISION.

A MEETING of the Salford Division was held at the Palatine Hotel, Manchester, on December 13th, Dr. HAMILL presiding.

Confirmation of Minutes.—The minutes of the last meeting were read and confirmed. The minutes of the special meeting called to consider the Referendum were also confirmed, the Division having voted in favour of the resolutions of the Representative Meeting in every case.

Teaching of Hygiene.—It was resolved, on the motion of Dr. TAYLOR, seconded by Dr. OWEN:

> That practical and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades.

Medical Inspection of School Children.—It was resolved, on the motion of Dr. OWEN, seconded by Dr. WOLSTENHOLME:

> That, where practicable, the medical officers for the inspection of school children should be whole-time officers, and where that is not practicable the aim should be to appoint general practitioners who do not reside or practise in the vicinity of the schools which they may have to inspect, as it is of vital importance for the smooth working of the Act that friction between medical practitioners should not be caused.

It was also resolved that the above resolutions be sent to the Director of Education and the Medical Officer of Health for Salford.

The Midwives Act.—In view of the fact that the Salford Town Council had resolved not to pay fees to medical men summoned to the assistance of midwives, it was resolved, on the motion of Dr. TAYLOR, seconded by Dr. WOLSTENHOLME:

> That the attention of the Salford Board of Guardians be drawn to the recent circular of the Local Government Board, which suggests that medical men and midwives should be informed that the guardians would be prepared to pay a reasonable remuneration to medical men summoned to the assistance of midwives, in cases where the patients are too poor to pay a fee.

Notification of Births Act.—The following resolutions were carried, on the motion of Dr. PRICE WILLIAMS seconded by Dr. OWEN:

> That the Salford Division most strongly disapproves of the action of the Liverpool Medical Institution in advising the Liverpool City Council to adopt the Notification of Births Act in its present form, for the following reasons:
>
> (*a*) The Act would compel medical men in certain cases to ignore one of their most honourable traditions and moral obligations—an obligation from which no Act of Parliament can absolve them.
>
> (*b*) The Act places medical men in a position of inferiority to their fellow citizens in the eye of the law, in that it would compel them under penalty of fine or imprisonment to do work or perform services over and above the common duties of citizenship without remuneration. Only convicts have hitherto been compelled by law to work without pay.
>
> (*c*) It has not been proved, nor can it be reasonably argued, that provisions so unfavourable to the honour and interests of the medical profession are necessary for the attainment of the objects of the Act or for the public welfare.

It was also resolved that a copy of the above resolution be sent to the Secretary of the Liverpool Medical Institution and to the BRITISH MEDICAL JOURNAL.

METROPOLITAN COUNTIES BRANCH:

TOTTENHAM DIVISION.

AN ordinary general meeting of the Tottenham Division was held at the Prince of Wales Hospital on Friday, December 13th, at 4.30 p.m.

Confirmation of Minutes—The minutes of the last meeting were read and confirmed.

Notification of Births Act.—A letter from the Medical Secretary, advising the Divisions to take action regarding the Notification of Births Act, 1907, was read. After discussion it was unanimously resolved to adopt the resolution of the City Division, namely:

> That this Division, including among its members the larger number of general practitioners of the borough of Hornsey and of the districts of Tottenham, Wood Green, Southgate, Edmonton, and Enfield, earnestly appeals to the councils of the above-mentioned districts, and to the borough of Hornsey, not to adopt the Early Notification of Births Act for the following reasons:
>
> (*a*) That it imposes a serious violation of professional confidence on medical practitioners, and especially in those cases where from a public point of view it is most unnecessary, as in cases where a medical man is in charge of a lying-in woman, he is far more competent to advise as to the upbringing of the child than any ordinary visitor sent by the municipal authority.
>
> (*b*) That early interference during the lying-in period by official visitors with inquisitorial methods would be seriously detrimental to the health of the mother.
>
> (*c*) That all breaches of professional confidence are greatly opposed to the public good, whether imposed by Act of Parliament or otherwise.

WALTHAMSTOW DIVISION.

AN ordinary meeting of the Division was held on Tuesday, December 10th, at 4 p.m., in the Fillebrook Hall, Fairlop Road, Leytonstone. Dr. FOWLER presided. Eight members and four visitors were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Notification of Births Act—A letter from the Medical Secretary relating to the Notification of Births Act was read, and it was determined that no action be taken in the matter at present.

Paper.—A paper on the subject of heart signs and symptoms in general practice was read by Dr. F. J. SMITH, whose interesting treatment of his subject absorbed the attention of the meeting from beginning to end. Questions, which led to animated discussion, were asked by Drs. MCGREGOR, HICKMAN, TOMPKINS, SHADWELL, and FOWLER. Dr. SMITH replied, and this terminated the meeting.

SOUTHERN BRANCH.

THE autumn general meeting of the Branch was held at the Royal Portsmouth Hospital, Portsmouth, on November 22nd. The chair was taken by Dr. G. FULLER ENGLAND of Winchester, President of the Branch, and forty-nine other members were present. The meeting took place in a handsome room built and generously presented to the hospital for use as a pathological museum by Mr. H. Rundle, Surgeon to the Hospital, who was prevented by illness from attending. A vote of sympathy was accorded to Mr. Rundle, with the expression of an earnest hope for his recovery.

Communications.—Mr. W. H. CLAYTON-GREENE gave a demonstration on the cystoscope. The following clinical cases were shown:—Dr. C. C. CLAREMONT: Locomotor ataxy in a woman with marked hypotonia. Mr. C. P. CHILDE: Hour-glass stomach—double gastro-jejunostomy. Patient three years after excision of spleen. Dr. LYSTER COLE-BAKER: Removal of orbital tumour—Kronlein's operation. Dr. E. J. DAVIS TAYLOR: Two cases of pseudo-hypertrophic paralysis. The following papers were read:—Mr. J. WARD COUSINS: Observations on urinary calculi. Mr. G. GORDON SPARROW and Dr. LYSANDER MAYBURY: Wound of aorta. Mr. MONTAGUE WAY: Case of veronal poisoning. Dr. J. T. LEON: Note on a case of typhoid fever with unusual onset. The following pathological specimens were shown:—Dr. LYSTER COLE-BAKER: Sarcoma of ciliary region; glioma of eyeball. Messrs. MONTAGUE WAY, C. P. CHILDE, and SCOTT RIDOUT: Malignant tumour of kidney. Interesting discussions followed each of these communications, several patients having presented themselves for examination.

Vote of Thanks.—A vote of thanks was carried to Mr. Clayton-Greene for his kindness in attending to give a demonstration and address upon the use of the cystoscope.

Dinner.—The members dined together after the meeting at the Pier Hotel, Southsea.

WINCHESTER DIVISION.

THE autumnal clinical meeting of this Division was held at the Cambridge Hospital, Aldershot (by kind permission of Surgeon-General Sir T. Gallwey, K.C.M.G.), on Thursday, November 28th, at 3 p.m. The meeting was well attended, there being fifty members and visitors present. Lieutenant-Colonel FIRTH, Chairman, presided. Dr. JOLLYE (Alresford) read notes on two cases of actinomycosis, with remarks and microscopic specimens. Dr. BEVAN (Alton) read notes on three cases of intestinal obstruction. Mr. H. AHRENS (Basingstoke) read notes on a case of tinnitus aurium. Mr. J. F. BRISCOE (Alton) read a paper on recovery in the insane. Mr. H. J. GODWIN (Winchester) read notes on some acute abdominal cases. Captain POTTER, R.A.M.C., read notes on a case of volvulus successfully treated by operation. Surgeon-Major GUISE-MOORES read notes on a case of varicose aneurysm caused by a bullet wound; the patient was shown at the meeting. Also a case of ruptured urethra successfully treated by operation. Captain JAMESON, R.A.M.C., showed six cases of syphilides. Colonel ANDERSON, R.A.M.C., showed a number of interesting skiagrams of fractures.

Vote of Thanks.—A hearty vote of thanks was given to Surgeon-General Sir T. Gallwey and the officers of the Royal Army Medical Corps for so kindly entertaining the members, and for the excellent arrangements they had made for the meeting. Colonel FIRTH replied.

THE BENEVOLENT FUND OF THE NATIONAL UNION OF TEACHERS.

Arrangements with Specialists.

Resolutions of the South Wales and Monmouthshire Branch.

The National Union of Teachers, the general secretary of which is Mr. J.H. Yoxall, M.P., is a body which, as is well known, has accomplished good work for teachers in public elementary schools. The Union has a Benevolent and Orphan Fund, and we learn that some three or four years ago the Council of this Fund initiated a scheme for affording to the members the advantage of being able to consult with medical specialists of high standing at reduced fees, this advantage being extended to the wives of members and their children, being minors or invalids entirely dependent upon their parents. It is claimed that the arrangement does not interfere with the ordinary relations between specialists and general medical practitioners, and it is stated that in a large number of cases consultation is arranged on the advice or suggestion of the ordinary medical attendant. Consultations are arranged as follows:

(*a*) When a member applies to us for a consultation, we first of all satisfy ourselves that he or she is a member of our organization, and therefore entitled as such to the benefits of our scheme.

(*b*) This being ascertained we supply such member with the private card of Mr. J. H. Yoxall, the General Secretary of our Fund, and we ask that this card shall be presented to the specialist at the time of consultation. We ask the specialist to insist in each case on the production of the card in question, except in cases of extreme urgency.

(*c*) We next write to the specialist whom the applicant desires to consult, and ask the specialist to write direct to the applicant and fix day and hour of appointment.

(*d*) The applicant is informed that the specialist's fee is to be paid in all cases at the time of consultation.

(*e*) In cases where the Council of our Fund themselves desire to have a specialist's report on an applicant for assistance from our Fund the Council undertake to pay the specialist's fee, but in each case an intimation to this effect is given to the specialist beforehand.

The list of places in which the special terms have been arranged with specialists is printed, the names of the specialists are not published, and the Council of the Fund does not sanction advertising in connexion with the scheme in any shape or form. It is stated further that the members of the Council of the Fund do not themselves know the names and addresses of the various specialists, the list being kept in the central office, from which all arrangements for consultations are made.

Recently representatives of the Fund sought to extend its operations to Cardiff, and one of the consultants applied to bring the matter before the Executive Committee of the Cardiff Division, by which it was referred to a Subcommittee consisting of all the consultants practising in the Division. At a meeting of this Subcommittee, held on November 27th, the following resolutions were adopted:

(*a*) That this meeting of consultants of the Cardiff district is of opinion that it is inadvisable to enter into a specific undertaking of the kind contemplated in the letter of the Assistant Secretary of the Benevolent Fund of the National Union of Teachers, and that the question of abatement of fees should be determined by the consideration of the circumstances of particular cases. This meeting is further of opinion that such abatement should be arranged through the general practitioner in attendance on a given case.

(*b*) That this meeting of the consultants of the Cardiff district recommends the Executive Committee of the Cardiff Division of the British Medical Association to take steps to bring the foregoing resolution before the general body of the profession.

The Executive Committee of the Cardiff Division unanimously approved these resolutions, and referred them to the Council of the South Wales and Monmouthshire Branch; on December 5th they were unanimously approved by the Branch Council at its meeting at Merthyr, and were brought before the general meeting of the Branch on the same day. The Branch adopted a resolution endorsing the action taken by the Cardiff Division in relation to the proposed scheme, and recommending that concerted action by the profession generally should be arranged.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

NOTICE.

Owing to the Christmas Holidays, the Library will be closed on December 25th to 28th inclusive.

Guy Elliston, *General Secretary.*

BRANCH AND DIVISION MEETINGS TO BE HELD.

Metropolitan Counties Branch: Tottenham Division.—The next general meeting of the Tottenham Division will be held at the rooms of the Hornsey Conservative Association (opposite Finsbury Park Station) on Friday, January 10th, 1908, at 9.15 p.m. Agenda:—(1) Address by Dr. Wilfrid Harris on headaches; (2) revision of the divisional rules; (3) adoption of rules in regard to ethical cases; (4) annual report of Divisional Honorary Secretary and Treasurer.—H. F. Staunton, M.D., Honorary Secretary and Treasurer, 88, High Road, Wood Green, N.

CENTRAL MIDWIVES BOARD.

Special meetings of the Central Midwives Board were held on December 12th and 13th at Caxton House, Westminster, with Dr. F. H. Champneys in the chair.

Midwives Struck off the Roll.

The Board considered charges alleged as stated after their names against the following midwives, whose names were ordered to be struck off the Roll.

Emily Armitage, that being in attendance at a confinement she was guilty of negligence and misconduct, in that the placenta and membranes not having been completely expelled two hours after the birth of the child, she did not explain that the attendance of a registered medical practitioner was required.

Ellen Watson, that while in attendance at a confinement she was guilty of negligence, in that the placenta and membranes not having been completely expelled two hours after the birth of the child, she did not explain that the attendance of a registered medical practitioner was required.

Ann Wallwork, that being in attendance at a confinement she was guilty of negligence and misconduct, in that the patient being ill and feverish she failed to take her temperature on that or subsequent days, nor did she explain that the attendance of a registered medical practitioner was required.

Harriet Jane Bigney, that being in attendance at a confinement she was guilty of negligence and misconduct. The patient being ill, she failed to take her pulse or temperature, or to explain that the case was one in which the attendance of a registered medical practitioner was required, but administered medicine on her own responsibility. The patient suffering from puerperal fever as she well knew, she left her and attended as midwife at another confinement without having disinfected herself, her clothing, or her appliances to the satisfaction of the local supervising authority, as required by Rule E. 5

Martha Bullamore, that being in attendance at a confinement she was guilty of negligence and misconduct. The patient being ill, suffering from sickness and diarrhoea, she did not explain that the attendance of a registered medical practitioner was required. The patient suffering from puerperal fever, as she well knew, she attended as a midwife at another confinement without having disinfected herself.

Sarah Elizabeth Carford, that she had been convicted of unlawfully supplying lead made up in the form of pills, knowing that the same were intended to be used with intent to procure abortion.

Ada Charlotte Chowne, that she had been convicted of wilfully neglecting two infants entrusted to her to nurse.

Helen Concannon, that having been duly suspended by lawful authority from practice as a midwife in order to prevent the spread of infection she nevertheless, while still under suspension, attended confinements as a midwife.

Annie Dewhirst, that being in attendance at a confinement she was guilty of negligence and misconduct. She did not wash the patient's external parts or swab them with an antiseptic solution before making the first internal examination, or after the termination of labour, as required by Rule E. 7, or at any time during her attendance. The perineum being seriously ruptured she did not explain that the attendance of a medical practitioner was required.

Elizabeth Willis, that being in attendance at a confinement, medical assistance having been sent for, she failed to

notify the fact to the local supervising authority; that still-births having occurred in her practice, she failed to notify these facts to the local supervising authority.

Helena Zwirn, *Barbara Watson*, *Mary West*, *Mary Sims*, *Mary Jane Waggott*, *Mary Sheppard*, and *Mary Jane Goulbourne*, that they did not use nor possess the appliances and antiseptics required by the Rules.

Sarah Hartley, that being in attendance at a confinement, and having been informed by the Inspector of Midwives that the patient's temperature was 103° F., and that immediate medical help was necessary, she did not until the next day explain that the attendance of a registered medical practitioner was required.

Mary Catherine Colbert and *Barbara Morgan*, that they were intemperate.

Midwives Censured.

The following midwives were censured after the Board had considered charges alleged against them:

Eleanor Bamford, Sarah Carr, Mary Ann Bradford, Martha Agnes Russell, Mary Ann Scadden, and Mary Ann Simpson.

Midwives Cautioned.

The following midwives were cautioned after the Board had considered charges alleged against them:

Caroline Ansell, Susan Davis, Louisa Doe, Eliza Jacobs, Harriet Legget, and Martha Main.

Naval and Military Appointments.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

Surgeon-Major J. W. Moir, M.D., 1st Fifeshire Regiment, to be Surgeon-Lieutenant-Colonel. He is retired, under Paragraph 103, Volunteer Regulations, retaining his rank and uniform, October 22nd.

Surgeon-Captain L. L. Hanham, 2nd Devonshire Regiment, is removed from the Volunteer Force for failing to fulfil the prescribed conditions for efficiency, November 14th.

Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel A. R Hopper, late 8th Lancashire Royal Garrison Artillery (Volunteers), from the retired list, to be Surgeon-Lieutenant-Colonel, 8th Lancashire Regiment, with the honorary rank of Surgeon-Colonel, September 26th.

Surgeon-Major T. M'C. Foley, 1st East Riding of Yorkshire Regiment, to be Surgeon-Lieutenant-Colonel, July 20th.

VOLUNTEER RIFLES.

Robert J. W. Oswald is appointed Surgeon-Lieutenant in the 1st Surrey (South London) Volunteer Rifle Corps, October 1st.

Surgeon-Major (Honorary Captain in the Army) C. E. Douglas, M.B., 6th (Fifeshire) Volunteer Battalion the Black Watch (Royal Highlanders), to be Surgeon-Lieutenant-Colonel, October 18th.

William S. Paterson, M.B., and George Jubb, M.D., are appointed Surgeon-Lieutenants in the 2nd Volunteer Battalion the Highland Light Infantry.

Surgeon-Lieutenant C. W. Scott, M.B., 1st Cadet Battalion the Buffs (East Kent Regiment), is removed from the Volunteer Force on the disbandment of the battalion, June 14th.

Surgeon-Lieutenant C. H. Howkins, 1st Volunteer Battalion the Royal Warwickshire Regiment, to be Surgeon-Captain, October 29th.

Surgeon-Lieutenant J. C. Baker, 1st Bucks Volunteer Rifle Corps, to be Surgeon-Captain, October 23rd.

Surgeon-Captain C. E. Goddard, 5th Middlesex (West Middlesex) Volunteer Rifle Corps, resigns his commission, November 6th.

Surgeon-Lieutenant E. H. Brunt, 1st Volunteer Battalion the Prince of Wales's (North Staffordshire) Regiment, to be Surgeon-Captain, October 29th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Lieutenant A. F. Thompson, M.B., Manchester Companies, Western Command, to be Captain, September 5th.

Surgeon-Lieutenant H. G. Smeeth, M.B., from the 4th Volunteer Battalion the Cheshire Regiment, to be Lieutenant in the Manchester Companies, Western Command, November 1st.

Lieutenant Howard H. C. Dent, M.B., F.R.C.S.Eng. (late 3rd Volunteer Battalion the South Staffordshire Regiment), to be Captain Staffordshire Bearer Company, October 13th.

CHANGES OF STATION.

The following changes of stations amongst the officers of the Royal Army Medical Corps have been officially reported to have taken place during November, 1907:

		FROM	TO
Colonel	H. R. Whitehead, F.R.C.S.Eng.	Rawal Pindi ...	Kasauli.
Lieut.-Col.	F. J. Lambkin	London Dist ..	Uganda.
,,	D. V. O'Connell, M.D. ...	Gibraltar ...	Woolwich.
,,	F. S. Heuston, C.M.G., F.R.C.S.I.	Dublin	Curragh.
,,	J. R. Forrest...	Delhi	Lahore.
,,	C. C. Reilly	Ambala ...	R. Mil. Coll., Sandhurst.
,,	H. H. Brown, M.B. ...	Preston ...	India.
,,	G. H. Barefoot	Winchester ...	Dinapore.
,,	F. R. Newland, M.B. ...	Ahmednagar...	Mhow.
,,	A. L. F. Bate	Neemuch ...	Nowgong.
Major	S. Macdonald, M.B.	Woolwich ...	Hong Kong.
,,	J. C. Morgan	Naini Tal ...	Lucknow.
,,	B. J. Inniss...	Fyzabad ...	Cawnpore.
,,	C. A. Stone, M.D....	Dover	Bangalore.
,,	J. W. Jennings, D.S.O.	Simla	Lucknow.
,,	C. E. G. Stalkartt, M.D. ...	Gosport ...	Winchester.
,,	C. J. Healy, M.B.	Glen Imaal Camp	Queenstown.
,,	H. A. Bray	Bulford ...	Tidworth.
,,	E. W. Slayter, M.B.	Lucknow ...	Glasgow.
Major	L. P. More, M.B.	Sialkot ...	Murree.
,,	E. B. Steel, M.B.	"C" Co. Dépôt	India.
Captain	S. A. Archer	Dublin	Devonport.
,,	R. W. Clements, M.B. ...	Manchester ...	India.
,,	T. H. M. Clarke, C.M.G., D.S.O., M.B.	Naini Tal ...	Lucknow.
,,	H. G. Martin	Colaba	Agra.
,,	G. B. Crisp	Netley	India.
,,	J. Cowan, M.B.	—	Woolwich.
,,	J. W. Leake	Sheffield ...	Devonport.
,,	R. H. Lloyd	Edinburgh ...	Piershill.
,,	J. M. Sloan, D.S.O., M.B. ...	Maryhill ...	Fort George.
,,	H. D. Packer	Portsmouth ...	West Africa.
,,	W. A. Woodside	York	Halifax.
,,	J. J. W. Prescott, D.S.O. ...	Devonport ...	Dublin.
,,	E. P. Connolly	Dunree Camp	Belfast.
,,	J. A. Hartigau, M.B.	Chatham ...	Dover.
,,	J. G. Foster, M.B.	Magilligan Cp.	Londonderry.
,,	E. G. Ford, M.B.	Lancaster ...	York.
,,	F. McLennan, M.B.	Perth	Berwick.
,,	E. Bennett, F.R.C.S.Edin. ...	Portsmouth ...	Gosport.
,,	G. Baillie, M.B.	Curragh ...	Galway.
,,	J. F. Whelan, M.B.	Peshawar ...	Aden.
,,	W. M. Power	Kamptee ...	Aldershot.
,,	H. A. Davidson, M.B. ...	Secunderabad	Peshawar.
,,	E. Ryan	Malta	Edinburgh.
,,	T. F. Ritchie, M.B.	Ferozepore ...	Aden.
,,	J. W. S. Seccombe	Ambala ...	Bar galore.
,,	R. C. Wilmot	Poona	Kirkee
,,	C. W. Holden	Tidworth ...	Tientsin.
,,	J. M. M. Crawford	Lahore... ...	Dalhousie.
,,	F. M. M. Ommanney... ...	Rawal Pindi ...	Upper Topa.
,,	F. J. Turner	Karachi ...	Kamptee.
,,	G. F. Rugg	Colchester ...	Mill Hill.
,,	J. H. Douglass, M.D.	Bangalore ...	Wellington.
,,	T. C. Lucas, M.B.	Kirkee ...	Poona.
,,	F. J. Garland, M.B.	Ahmednagar...	Poona.
,,	A. A. Meaden	Mhow	Neemuch.
Lieutenant	P. Dwyer, M.B.	Mhow	Jubbulpore.
,,	W. G. Maydon	Dinapore ...	Calcutta.
,,	W. Benson, M.B.	Lower Topa ...	Murree.
,,	R. S. Smyth, M.D.	Dublin	Lucknow.
,,	A. A. Sutcliff, M.B. ...	Winchester ...	Singapore.
,,	A. G. Cummins, M.B. ...	Curragh ...	Ceylon.
,,	H. E. Gotelee	Aldershot ...	Ceylon.
,,	F. Forrest	Norwich ...	India
,,	V. G. Johnson	Woolwich ...	Guildford.
,,	F. D. G. Howell	Gosport ...	India.
,,	P. Sampson	Longmoor ...	,,
,,	J. B. G. Mulligan	Woolwich ...	Malta.
,,	E. M. O'Neill, M.B. ...	Bulford ...	India.
,,	D. De C. O'Grady	Kilbride ...	Dublin.
,,	G. H. Stevenson, M.B. ...	Hounslow ...	India.
,,	E. J. Elliot, M.B.	Netheravon ...	Tidworth.
,,	B. Johnson	Cahir	Buttevant.
,,	D. Coutts, M.B.	Devonport ...	Bulford.
,,	A. M. Benett	Bulford ...	India.
,,	F. L. Bradish	Kinsale ...	Cork.
,,	W. J. E. Bell, M.B. ...	Scarborough...	Strensall.
,,	R. C. Galgey...	Tidworth ...	Jamaica.
,,	A. Fortescue, M.B. ...	Maryhill ...	R.A.M. Coll.
,,	S. Field	Aldershot ...	Bordon.
,,	J. L. Wood	Piershill ...	Edinburgh.
,,	O. R. McEwen	Brecon... ...	Warrington.
,,	J. du P. Langrishe, M.B..	Manchester ...	Bury.
,,	H. W. Farebrother ...	Wrexham ...	Fleetwood.

Major V. H. W. Davoren, retired pay, has been placed in medical charge of troops at Bury St. Edmunds.

Lieutenant-Colonels A. H. Stokes, M.B., and P. B. Tuthill, M.D., retired pay, have relinquished the medical charge of troops at Sandown and Chichester respectively.

Erratum.—In the Supplement of December 7th the war services of Fleet Surgeon G. Hewlett were erroneously given. They should read as follows: Whilst Surgeon of the *Sandfly* he was engaged in the operations at Tokar, in the Eastern Soudan, in 1891, for which he received the Khedive's bronze star.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In seventy-six of the largest English towns, including London, 7,503 births and 4,954 deaths were registered during the week ending Saturday last, December 14th. The annual rate of mortality in these towns, which had been 15.3, 16.6, and 16.0 per 1,000 in the three preceding weeks, rose again to 16.1 per 1,000 last week. The rates in the several towns ranged from 7.4 in Grimsby, 7.8 in Devonport, 8.3 in King's Norton, 9.3 in Hornsey, 9.5 in Walthamstow, and 10.0 in Aston Manor, to 21.3 in Oldham, 22.2 in York, 23.3 in Newcastle-on-Tyne, 24.0 in Merthyr Tydfil, 24.1 in West Bromwich, 26.6 in Stockton-on-Tees, 27.6 in Rhondda, and 28.9 in Preston. In London the rate of mortality was equal to 15.8 per 1,000, while it averaged 16.2 per 1,000 in the seventy-five other large towns. The death-rate from the principal infectious diseases averaged 1.2 per 1,000 in the seventy-six towns; in London this death-rate was equal to 0.9 per 1,000, while among the seventy-five other large towns, the death-rates from the principal infectious diseases ranged upwards to 3.1 in Hastings and in Salford, 3.6 in Newcastle-on-Tyne, 3.8 in Tynemouth, 4.5 in West Bromwich, 4.7 in Bootle, 4.9 in York, 5.5 in Merthyr Tydfil, and 5.9 in Barrow-in-Furness. Measles caused a death-rate of 2.0 in Stockton-on-Tees, 2.3 in Bootle, 2.7 in Merthyr Tydfil, 2.9 in Tynemouth, 4.3 in York, and 5.9 in Barrow-in-Furness; scarlet fever of 1.1 in Walsall; diphtheria of 1.1 in East Ham, 1.4 in Newport (Mon.) and 1.9 in Halifax; whooping-cough of 1.1 in Northampton, 1.2 in Gateshead, 1.5 in Hastings, 1.6 in Bootle, and 1.9 in Newcastle-on-Tyne; and diarrhoea of 2.3 in West Bromwich. The mortality from "fever" showed no marked excess in any of the large towns; and no fatal cases of small-pox were registered during the week. The number of scarlet fever cases under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 5,689, 5,686, 5,676, and 5,580 at the end of the four preceding weeks, had further declined to 5,352 at the end of last week; 500 new cases were admitted during the week, against 597, 623, and 554 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

During the week ending Saturday last, December 14th, 836 births and 696 deaths were registered in eight of the principal Scottish towns. The annual rate of mortality in these towns, which had been 16.7, 19 3, and 20 6 per 1,000 in the three preceding weeks, fell again to 20.0 per 1,000 in the week under notice, but was 3.9 per 1,000 above the mean rate during the same period in the seventy-six large English towns. Among these Scottish towns the death-rates ranged from 14.3 in Aberdeen and 16.9 in Edinburgh to 25.2 in Dundee and 25.6 in Leith. The death-rate from the principal infectious diseases averaged 3.7 per 1,000 in these eight towns, the highest rates being recorded in Dundee and Greenock. The 337 deaths registered in Glasgow included 43 which were referred to measles, 4 to diphtheria, 10 to whooping-cough, and 11 to diarrhoea Two fatal cases of diarrhoea and one of cerebro-spinal meningitis were recorded in Edinburgh; 19 of measles, 2 of diphtheria, 3 of whooping-cough, and 3 of diarrhoea in Dundee; 2 of diphtheria in Aberdeen; 2 of measles in Paisley; 5 of whooping-cough in Leith; 6 of measles in Greenock; and 3 of whooping-cough in Perth.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, December 7th, 491 births and 461 deaths were registered in six of the principal Irish towns as against 5?8 births and 408 deaths in the preceding period. The annual death-rate in these towns, which had been 18 8, 21.7, and 20.5 per 1.000 in the three preceding weeks rose to ?2.8 per 1,000 in the week under notice, this figure being 6 8 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. These figures ranged from 15.8 in Cork and 20 5 in Limerick, to 26.7 in Dublin and 26 9 in Belfast. The zymotic death-rate in the same six Irish towns averaged 2.7 per 1000, or 1.2 per 1,000 higher than during the preceding period, the highest figure - 6.8—being recorded in Limerick, while Waterford registered no deaths under this head at all. The principal cause of death in this division was measles.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BANGOR: CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House-Surgeon. Salary, £80 per annum, rising to £100.

BARBADOS: GENERAL HOSPITAL.—Junior Resident Surgeon. Salary, £200 per annum.

BERMONDSEY PARISH INFIRMARY.—First Assistant Medical Officer (male). Salary, £179 per annum.

BIRMINGHAM CITY ASYLUM.—Junior Assistant Medical Officer (male). Salary, £150 per annum.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Third House-Surgeon. Salary, £50 per annum.

CARDIFF UNION.—Assistant Medical Officer for the Workhouse. Salary, £130 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham Road, S.W.—House-Surgeon. Salary, £80 per annum.

DERBYSHIRE ROYAL INFIRMARY.—(1) Second House-Surgeon. (2) House Physician. (3) Assistant House-Surgeon. Salary for (1) and (2) £100 per annum, and (3) £60 per annum.

DUNDEE ROYAL INFIRMARY.—Investigator to work in the Caird Cancer Pavilion of the Hospital.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Clinical Assistants for Out-patient Department.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—Assistant House-Surgeon. Salary, £50 per annum.

HALIFAX ROYAL INFIRMARY.—Third House-Surgeon. Salary, £80 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Casualty Medical Officer. Salary, £200 per annum.

HUDDERSFIELD INFIRMARY.—Male House-Surgeon. Salary, £100 per annum.

LEICESTER INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £50 per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer. Salary, £175 per annum.

MIDDLESEX HOSPITAL, W.—Resident Medical Officer. Salary, £200 per annum.

NORTHAMPTON GENERAL HOSPITAL.—(1) House-Surgeon. (2) Assistant House-Surgeon. Salary, £90 per annum and £50 per annum respectively.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary at the rate of £80 per annum.

PRESTON ROYAL INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum.

ST. PANCRAS AND NORTHERN DISPENSARY, Euston Road, N.W.—Resident Medical Officer. Salary, £105 per annum.

SAMARITAN HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Clinical Assistants.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary, £80 per annum.

SHEFFIELD: CHILDREN'S HOSPITAL.—House-Surgeon for the East-End Branch. Salary, £70 per annum.

SUDAN UNITED MISSION.—Medical Missionaries for Northern Nigeria.

WEST RIDING ASYLUM, Wadsley.—Fifth Assistant Medical Officer. Salary, £140 per annum, rising to £160.

APPOINTMENTS.

Bolam, Robert A., M.D., B.S.Dunelm., M.R.C.P.Lond., Honorary Physician to the Skin Department, Royal Victoria Infirmary, Newcastle-on-Tyne.

Bonnefin, F. H., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the West Ham Union.

Crowe, J. T., L.S.A., Resident Assistant Medical Officer of the Eastby Sanatorium of the Bradford Union.

Douglas, A. C., M.B., Ch.B., Outdoor House-Surgeon to the Glasgow Maternity Hospital.

Friend, J., L.S.A., District Medical Officer of the Leeds Union.

Garrett, H. E., M.D.Durh., M.R.C.S., District Medical Officer of the Parish of Shoreditch.

Gowring, B. W. N., M.R.C.S., Honorary Surgeon to the Dorset County Hospital.

Greene, Helen, M.D Brux., L.S.A., Obstetric Physician to the Nightingale Maternity House, Derby.

Greig, J. I., M.B., Ch.B., Outdoor House-Surgeon to the Glasgow Maternity Hospital.

Kilpatrick, D. R., M.B., Ch.B., Indoor House Surgeon to the Glasgow Maternity Hospital.

McCane, G. Barton, M.D, B.Ch.Dubl., Assistant Master, Rotunda Hospital, Dublin.

Poliard, Arthur Haig, M.R.C.P., L.R.C.S., House-Physician to the Cheltenham General Hospital.

Porter, J. H., M.R.C.S., L.R.C.P., District Medical Officer of the Parish of Shoreditch.

Rankin, T. T., M.B., B.S.Glas., Assistant Medical Officer, Leeds Union Infirmary.

Robinson, F. C., M.R.C.S., L.R.C.P., District Medical Officer of the Epsom Union.

Seacome, A. F., L.R.C.P.and S.Edin., Resident Assistant Medical Officer at the Brownlow Hill Workhouse of Liverpool.

Timms, A. B., L.R.C P.and S.Edin., L.F.P.S.Glas., Non-Resident Medical Officer to the Cardiff Workhouse.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

BIRTH.

Clark.—On October 30th, the wife of Alfred Clark, F.R.C.S.E., of Ellerslie, Auckland, New Zealand, late of Ashburton, New Zealand, of a son.

DEATHS.

Másiná.—On November 24th, at Warden Road, Malabar Hill, Bombay, Alamai (Avabai), the infant daughter of H. M. Másiná, F.R.C.S., aged 11 months and 9 days.

Trotter.—At Tay View House, Perth, on December 3rd, Dr. Robert de Bruce Trotter, in his 75th year.

BOOKS, Etc., RECEIVED.

Comparative Electro-Physiology. A Physico-Physiological Study. By J. C Bose, M.A., D Sc. London, New York, Bombay, and Calcutta: Longmans, Green, and Co. 1907. 15s.

The Opsonic Method of Treatment. By R. W. Allen, M.B., B.S.Lond. London: H. K. Lewis. 1907. 5s.

Antisemitism: Its Causes and its Cure. By S. H. Wilkinson and Sir A. Wingate, K.C.I.E. London: J. Bale, Sons, and Danielsson, Limited. 3d.

Berlin: S. Karger. 1908:

Die Entwicklung und Form des fötalen Beckens. Von Dr. E. Falk. M.6.

Die Röntgentechnik. Von Dr. med. F. Davidsohn. M.6.

Immunochemistry. By S. Arrhenius. New York and London: Macmillan Co. 1907. 7s.

Transactions of the Ophthalmological Society of the United Kingdom. Vol. xxvii. Session 1906-7. London: J. and A. Churchill. 1907. 12s. 6d.

The Matron: Her Duties and Responsibilities. Including Principles of Economy in Institutions. London: The Scientific Press, Limited. 2s. 6d.

Housing Up-to-Date. By Alderman W. Thompson. London: National Housing Reform Council. 1907. 3s. 6d.

The Law of Master and Servant (including Apprenticeship) and the Employers and Workmen Act, 1875, the Employers' Liability Act, 1880, the Workmen's Compensation Act, 1906. By T. C. Jackson, B.A., LL.B. London: Macdonald and Martin. 2s. 6d.

Nouveau Traité de Chirurgie. Publié sous la direction de A. Le Dentu et P. Delbet. IX. Muscles, aponévroses, tendons, tissus péritendineux, bourses séreuses. Par L. Ombrédanne. Paris: J. B. Baillière et Fils. 1907. Fr.4.

The Prevention of Sudden Death from Internal Causes. By C. G. Gümpel. London: Watts and Co. 1907. 6d.

Paris: Vigot Frères:

Analytique de l'Esprit Humain et de la Vie (Bio-Animisme). Par Dr. J. A. Molinié. 1907. Fr.2.

Comment épurer son Eau. Par F. Malméjac. 1907. Fr.3.50.

Le Criminel aux points de vue anthropologique, psychologique, et social. Par le Dr. E. Laurent. 1908. Fr.3.50.

Technique Chirurgicale Journalière au Lit du Malade. Par le Dr. A. Besson. Deuxième édition. (Lille: R. Giard). 1903. Fr.3.

Traité pratique d'analyse des Denrées Alimentaires. Par E. Gérard et A. Bonn. 1908. Fr.15.

Traité Clinique et Thérapeutique des Maladies de l'appareil respiratoire. 2me édition. Par G. Carrière. 1908. Fr.15.

Remarks on the Uses of Some of the Bazaar Medicines and Common Medical Plants of India. By E. J. Waring, C.I.E., M.D. Edited by C. P. Lukis, M.D., F.R.C.S. Sixth edition. London: J. and A. Churchill. 1907. 6d.

***** In forwarding books the publishers are requested to state the selling price.**

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
DECEMBER.	
22 Sunday ...	
23 MONDAY ...	
24 TUESDAY ...	
25 WEDNESDAY.	*Christmas Day.*
26 THURSDAY...	*Bank Holiday.*
27 FRIDAY ...	
28 SATURDAY ...	LONDON: Opsonic Subcommittee, 11 a.m. LONDON: Science Committee, 12 noon.
29 Sunday ...	
30 MONDAY ...	
31 TUESDAY ...	
JANUARY, 1908.	
1 WEDNESDAY	Subscriptions to the British Medical Association for 1908 become due.
2 THURSDAY...	
3 FRIDAY ...	LONDON: Standing Ethical Subcommittee, 2 p.m.
4 SATURDAY...	
5 Sunday ...	
6 MONDAY ...	
7 TUESDAY ...	LONDON: Public Health Committee, 3.15 p.m.
8 WEDNESDAY	LONDON: Medico-Political Committee, 2.30 p.m.
9 THURSDAY...	LONDON: Hospitals Committee, 2 p.m. LONDON: Metropolitan Counties Branch Council, 5 p.m. HAMPSTEAD DIVISION, *Metropolitan Counties Branch.*
10 FRIDAY ...	LONDON: Central Ethical Committee, 1.30 p.m. TOTTENHAM DIVISION, *Metropolitan Counties Branch*, Rooms of the Hornsey Conservative Association (opposite Finsbury Park Station), 9.15 p.m.
11 SATURDAY...	
12 Sunday ...	
13 MONDAY ...	
14 TUESDAY ...	LONDON: Organization Committee, 11 a.m.
15 WEDNESDAY	CARDIFF DIVISION, *South Wales and Monmouthshire Branch*, Cardiff.
16 THURSDAY...	
17 FRIDAY ...	
18 SATURDAY...	
19 Sunday ...	
20 MONDAY ...	
21 TUESDAY ...	
22 WEDNESDAY	LONDON: Journal and Finance Committee, 2.30 p.m.
23 THURSDAY...	WANDSWORTH DIVISION, *Metropolitan Counties Branch*, Bolingbroke Hospital, 4 p.m.
24 FRIDAY ...	
25 SATURDAY...	
26 Sunday ...	
27 MONDAY ...	
28 TUESDAY ...	CITY DIVISION, *Metropolitan Counties Branch*, Business Meeting, Great Eastern Hotel, 4 p.m.
29 WEDNESDAY	CENTRAL COUNCIL, 2 p.m. BATH AND BRISTOL BRANCH, Bristol.
30 THURSDAY...	
31 FRIDAY ...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the BRITISH MEDICAL JOURNAL is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the BRITISH MEDICAL JOURNAL for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 28TH, 1907.

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CENTRAL EMERGENCY FUND.

UNDER the present constitution of the British Medical Association as a limited liability company, registered under the Companies Acts as formed not for profit, no part of its funds can be applied centrally or by any Branch or Division for the benefit of any individual member, except by way of remuneration for services rendered to the Association.

This has been found to prevent the Association, its Branches and Divisions, from giving the financial support which it is deemed desirable or even necessary in the interests of the profession to give to members of the profession engaged in contract practice and similar disputes. The Council of the Association, therefore, with the approval of the Annual Representative Meeting of 1906, has instituted a fund called the Central Emergency Fund, to be maintained by voluntary subscriptions, and to be under the management of the Medico-Political Committee, for purposes of action in disputes of the kind referred to.

The following are the

REGULATIONS OF THE FUND.

1. The Fund is created by voluntary subscription, to assist members of the profession in various parts of the country in maintaining the interests of the profession against organized bodies of the community.

2. All members of the profession are invited to contribute. Any contribution may be earmarked for use in specified disputes, or for application to special methods of carrying out the objects of the Fund, and when not so earmarked shall be deemed to be given for disposal at the discretion of the Medico-Political Committee in carrying out the general objects defined in Clause 1. At the termination of any special dispute for which funds may have been earmarked, the balance (if any) shall be merged in the General Fund.

3. Subject to the conditions defined in this Scheme, the Fund shall be under the entire control of the Medico-Political Committee of the British Medical Association, and shall be vested in the names of the Chairman of the Committee and the Treasurer of the Association, as representing the Committee. Payments shall only be made on the authority of a resolution of the Medico-Political Committee, or of a Subcommittee of the Medico-Political Committee acting under powers specifically delegated by the Committee.

4. The Fund may be applied for the promotion of the general objects stated in Paragraph 1 in any of the following ways:

(*a*) By a grant or grants to any individual practitioner to assist him in maintaining any position in which the Association shall have decided to support him, or to compensate him for losses which he shall have incurred through taking action approved by the Association;

(*b*) By a grant or grants to any Division or Branch of the British Medical Association, for its assistance in defraying expenses incidental to the conduct of local disputes falling within the scope of the objects of the Fund;

(*c*) By expenditure under direct supervision of the Medico-Political Committee, or of a Subcommittee of that Committee, for the purpose of any action which the Medico-Political Committee may deem necessary or advisable for the promotion of the general objects of the Fund.

The Medico-Political Committee, through its Contract Practice Subcommittee, has had recently brought under its notice disputes in several parts of the country in which it may be necessary to take, for the maintenance of the interests of the profession, action requiring such financial support as the Central Emergency Fund has been instituted to provide, and members of the Association and other members of the profession are strongly urged, so far as their circumstances permit, to assist the Committee in this important work.

N.B.—Contributions—whether of periodical subscriptions at such periods, yearly, quarterly, or monthly, as may be convenient to the subscribers, or of special donations—are received on behalf of the Medico-Political Committee by the Medical Secretary, 6, Catherine Street, Strand, London, W.C., to whom Cheques and Postal Orders should be made payable, crossed "London and Westminster Bank, Bloomsbury Branch."

Forms of Banker's Orders will be supplied on application for those regular subscribers who may prefer to pay in this way.

Meetings of Branches & Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

LANCASHIRE AND CHESHIRE BRANCH:

Warrington Division.

A meeting of the Warrington Division was held on Tuesday, December 10th, in the Warrington Infirmary. Dr. J. B. Naden in the chair.

Notification of Births Act.—The Notification of Births Act, 1907, was discussed and the following resolution was adopted and passed:

That this meeting of the Warrington Division of the British Medical Association is of opinion that while it is desirable that early notification of the birth of infants should be provided for, the provisions of the Notification of Births Act, 1907, as applied to medical men, are objectionable, inasmuch as they may interfere with the relationship of professional confidence between medical man and patient, and impose duties upon members of the profession under penalty without providing for payment for their services. It is further of the opinion that this Act should not be adopted by the local authority.

Medical Inspection of School Children.—The memorandum on medical inspection of children was discussed and the following resolution was passed:

That this meeting of the Warrington Division of the British Medical Association, while recognizing the great utility of the Act for the medical inspection of children, is of opinion that the actual inspection would be better carried out by the general practitioners of the town, specially appointed for the purpose, under the supervision of the medical officer of the education authority.

Resolutions were also passed to the effect that copies be sent to the two local authorities, Warrington and Widnes

METROPOLITAN COUNTIES BRANCH:

Stratford Division.

A meeting of the Stratford Division was held at the Alexandra Hotel, High Street, on December 12th, Dr. Spurrell presiding.

Confirmation of Minutes.—The minutes of the previous meeting were read and approved.

Address.—A most instructive lecture on treatment by serums and vaccines was given by Dr. R. H. Young. He outlined this intricate subject in a very interesting and lucid manner, and at the close of his address was accorded a very hearty vote of thanks.

Notification of Births Act.—The Notification of Births Act which had been referred to the Executive Committee from last meeting was again brought forward. It was explained that the Executive had carefully considered the subject and was of the opinion that no effective action could be taken. After considerable discussion Dr. Hay moved:

That this meeting of the Stratford Division protests against the compulsory Notification of Births Act, but is of the opinion that it is impracticable to take any further action in the matter.

This was seconded by Dr. Rose and carried.

Annual Dinner.—The Secretary intimated that the annual dinner of the Division was to be held at Liverpool Street Hotel on January 23rd, and the hour was fixed at 7.30 p.m.

Wandsworth Division.

An ordinary meeting was held on Thursday, December 12th, at the head quarters, 4th V. B. East Surrey Regiment, 27, St. John's Hill, S.W., Dr. Gilbert Richardson in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Report of Representative to Representative Meetings.—Dr. McManus being unavoidably absent this was postponed.

Proposed Conference of Provident Dispensaries.—It was decided to hold a conference of the staffs of all the Provident dispensaries situated within the area of the Division, to which the Medical Secretary should be invited to attend.

Scheme for Election of Central Council.—A scheme for the election of the Central Council, which had been referred to a Subcommittee, was considered and approved, and ordered to be submitted to the Representative Meeting.

Training of School Teachers in Hygiene.—The following resolution was passed:

That elementary, practical, and theoretical instruction in personal and school hygiene should form a regular part of the curriculum of all institutions in which students are trained to become teachers in schools of all grades, provided that in all cases this instruction is given by a registered medical practitioner.

Report from Ethical Committee.—The Committee reported that the ethical rules, as adopted by the Division on May 23rd, had been approved by the Central Ethical Committee, with the exception of Nos. 1 and 5. These were amended, and referred to that Committee for its consideration.

SOUTH-EASTERN BRANCH:

Canterbury and Faversham Division.

A meeting of this Division was held at the Cottage Hospital, Faversham, on Thursday, December 5th. Dr. Sidney Robert Alexander presided.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Next Meeting.—It was decided to hold the March meeting at Sittingbourne, and to invite Dr. Boodle (Sittingbourne) to preside.

Notification of Births Act, 1907.—The circular letter from the Association (Medico-Political Committee) *re* the Notification of Births Act, 1907, was read and discussed. It was resolved to authorize the Secretary to organize a deputation from the Division to oppose the adoption of the Act, should this be contemplated by any authority in the area of the Division.

Demonstration.—A demonstration on the *x*-ray apparatus belonging to the Faversham Cottage Hospital was then given by the Chairman and other members of the staff of the hospital. Most interesting bone and joint cases were thus demonstrated, and photographs shown.

Votes of Thanks.—Hearty votes of thanks were passed to Dr. Alexander for presiding, to the staff of the hospital for their most instructive and interesting demonstration, and to the Faversham Cottage Hospital authorities for their hospitality.

Luncheon.—Members were entertained to luncheon prior to the meeting by the Chairman.

Norwood Division.

A special meeting of this Division was held at the Queen's Hotel, Upper Norwood, on December 12th, at 4 p.m., Henry Hetley, M.D. (Norwood), in the chair.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Next Meeting.—It was proposed by Dr. Gandy, and seconded by Dr. Swayne, that the next meeting take place in January on the second Thursday, and that Dr. Batten be invited to take the chair thereat. Carried unanimously.

Representative of Division.—Dr. Swayne (Norwood) was proposed and seconded as Representative for the Division for the remainder of this year until the election of Representative next year.

The Constitution of the Association.—The Chairman then gave an account of the present constitution of the Association, with a short history of the events which led up to the present state of affairs.

The Referendum.

Dr. Ker explained the nature of the Referendum.

Minute 123.—After a good deal of discussion, Dr. Swayne proposed that the Council's resolutions be supported in opposition to the Representatives'. Dr. Stewart proposed and Dr. Cox seconded that the amendment be adopted. This was carried by 9 votes to 2.

Minute 283.—This was fully discussed by many of the members. Dr. Stewart proposed that the principle of election of Council be that the Council be elected partly by the Branches and partly by the Representatives. Dr. Cox seconded. Carried unanimously.

Minute 287.—Dr. Adams Clark proposed the adoption of this minute. Dr. Batten seconded. Carried *nem. con.*

The CHAIRMAN then explained Minute 293. Dr. CLARK proposed that Minute 293 be adopted. Dr. LEWIS LEWIS seconded. Carried *nem. con.*

Minute 298.—Dr. BATTEN proposed that this minute be carried. Dr. GANDY seconded him. Carried *nem. con.*

Minute 299.—Dr. STEWART read Council's objection to this. Dr. CLARK proposed that the resolution be carried. Dr. STEWART seconded. Carried *nem. con.*

Minute 303.—Dr. KER explained this. It was proposed and seconded that the head office should look after the elections. Carried *nem. con.*

Minuts 328.—Dr. LEWIS LEWIS proposed the adoption. Dr. CLARK seconded. Carried *nem. con.*

Minute 330.—Dr. BATTEN proposed that the minute be approved. Dr. ECCLES seconded. Carried *nem. con.*

Minute 342.—Dr. STEWART proposed that the minute be approved. Dr. SWAYNE seconded. Carried *nem. con.*

Minute 346.—Dr. COX proposed the adoption. Dr. LEWIS seconded. Carried *nem. con.*

Vote of Thanks to Chairman.

Dr. HOLGSON then proposed a vote of thanks to the Chairman for the able way he had filled the chair and had explained the points at issue. This was carried unanimously. There were fifteen members present.

☞ *To ensure the insertion of notices in this column, they must be received at the Central Offices of the Association not later than the first post on Tuesday.*

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD

METROPOLITAN COUNTIES BRANCH: TOTTENHAM DIVISION.—The next general meeting of the Tottenham Division will be held at the rooms of the Hornsey Conservative Association (opposite Finsbury Park Station) on Friday, January 10th, 1908, at 9.15 p.m. Agenda:—(1) Address by Dr. Wilfrid Harris on headaches; (2) revision of the divisional rules; (3) adoption of rules in regard to ethical cases; (4) annual report of Divisional Honorary Secretary and Treasurer.—H. F. STAUNTON, M.D., Honorary Secretary and Treasurer, 88, High Road, Wood Green, N.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: ELYSTAN E. G. O'LEARY, Staff Surgeon, to the *Victory*, additional, for four months' study in France, December 12th; OCTAVIUS W. ANDREWS, M.B., Fleet Surgeon, to the *Acheron*, January 1st, 1908; FRANK H. NIMMO, Staff Surgeon, to the *Osborne*, January 1st, 1908; GEORGE M. LEVICK, Surgeon, to the *Essex*, December 18th; THOMAS W. MYLES, M.B., Surgeon, to Chatham Hospital, December 18th; JAMES M'CUTCHEON, M.B., Surgeon, to the *Victory*, additional, December 18th, and vice Myles, January 1st, 1908; HENRY S. TURNER, Surgeon, to the *Excellent*, December 12th; CHARLES G. MATHEW, M.B., Fleet Surgeon, and RICHARD WILLAN, Surgeon, to the *Amphitrite*, undated; CHARLES M. BEADNELL, Fleet Surgeon, and G. — PRICE, Surgeon, to the *Donegal*, on recommissioning, January 14th, 1908; JOHN P. H. GREENHALGH, M.B., Staff Surgeon, to the *Royal Arthur*, undated; CHARLES H. J. ROBINSON, Staff Surgeon, to the *Amphitrite*, January 14th, 1908, and to the *Monmouth*, on recommissioning, undated; NORMAN H. MUMMERY, Surgeon, to the *Vivid*, additional, for Devonport Dockyard, December 17th; EWEN CAMERON, M.B., Surgeon, to the *Carnarvon*, December 17th; C. ROSS, Surgeon, to the *Skipjack*, December 17th; H. M. LANGDALE, Surgeon, to the *Leviathan*, December 17th; WILLIAM L. HAWKINS, Surgeon, to the *Dwarf*, on recommissioning, undated; ALFRED J. HEWITT, Surgeon, to the *Royal Arthur*, January 14th, 1908, and to the *Algerine*, on commissioning, undated; WALTER P. DYER, Surgeon to the *Bramble*, January 14th, 1908, and on recommissioning, undated; CHAS. H. DAWE, Surgeon, to the *Britomart*, January 14th, and on recommissioning, undated; WALTER P. YETTS, Surgeon, to the *Thistle*, January 14th, 1908, and on recommissioning, undated; JOHN M. GORDON, M.B., Surgeon, to the *Moorhen*, January 14th, 1908, and on recommissioning, undated; ALFRED O. HOOPER, M.B., Surgeon, to the *Waterwitch*, January 14th, 1908, and on recommissioning, undated; GORDON MOIR, Surgeon, to the *Nightingale*, on recommissioning, undated; ALFRED B. COX, M.B., Surgeon, to the *Widgeon*, January 14th, 1908; NORMAN V. B. JACOB, Surgeon, to the *Woodcock*, January 14th, 1908; G. G. VICKERY, Surgeon, to the *Blenheim*, January 14th, 1908; H. D. DRENNAN, M.B., Surgeon, to the *Mercury*, additional, for the *Hazard*, January 14th, 1908; CYRIL V. GRIFFITHS, Surgeon, to the *Prince George*, January 14th, 1908; LEONARD WARREN, M.B., Surgeon, to the *Robin*, January 14th, 1908; ALFRED A. CHANCELLOR, M.B., Surgeon, to the *Pembroke*, additional, January 10th, 1908, and vice Dyer, January 14th, 1908; HENRY C. ADAMS, Surgeon, to the *Victory*, additional, December 17th, and to the *Vernon*, January 14th, 1908; ROBLEY H. J. BROWNE, Fleet Surgeon, and EDWARD D. J. O'MALLEY, Staff Surgeon, to the *Venerable*, on recommissioning, January 7th, 1908; JOHNSTON H. ACHESON, M.B., and C. R. M. BAKER, Surgeons, to the *Majestic*, on recommissioning, January 7th, 1908; JOHN A. KEOGH, M.B., Fleet Surgeon, to the *Japiter*, on recommissioning, undated; JOHN BOYAN, Surgeon, to the *Defiance*, undated; R. CONNELL, M.B., Surgeon, to the *Jupiter*, on recommissioning, undated.

P. N. GRANT, M.B., civil practitioner, has been appointed Surgeon and Agent in Glasgow, December 14th; and G. P. CALDER, civil practitioner, is appointed from the same date Surgeon and Agent at St. Abb's Head.

An examination for the rank of Staff Surgeon will be held at the Royal Naval Hospital, Haslar, on Tuesday, January 14th, 1908, and the following days.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL I. B. EMERSON is placed on retired pay, December 17th. He was appointed Surgeon, February 4th, 1877; Surgeon-Major, February 4th, 1889; granted the rank of Lieutenant-Colonel, February 4th, 1897; and selected for increased pay, February 28th, 1899. During the Afghan war in 1878-9 he served with the 85rd Foot, receiving a medal.

Lieutenant-Colonel R. D. HODSON has been appointed to the London Recruiting Area. He is succeeded at Chatham by Lieutenant-Colonel R. P. BOND, from Aldershot.

Major O. R. A. JULIAN, C.M.G., who is serving in India, is appointed Staff Surgeon, 1st (Peshawur) Division, from November 19th.

INDIAN MEDICAL SERVICE.

EDMUND B. MUNRO has been appointed Lieutenant, February 2nd, 1907.

The undermentioned promotions, which have been already announced in the BRITISH MEDICAL JOURNAL, have received the approval of the King:—Majors to be Lieutenant-Colonels, dated October 1st: A. E. ROBERTS, M.B., D. MACD. DAVIDSON, M.B., F. P. MAYNARD, M.B., F.R.C.S., J. C. LAMONT, M.B., A. H. NOTT, M.B., A. COLEMAN, W. W. WHITE, M.D., D. T. LANE, M.D., R. C. MACWATT, M.B., W. H. E. WOODWRIGHT, F.R.C.S.I., J. L. T. JONES, M.B., W. J. BUCHANAN, M.D., J. K. CLOSE, M.D., W. E. JENNINGS, M.D., F. J. DEWES, P. C. H. STRICKLAND, T. W. STEWART. Lieutenants to be Captains, dated September 1st: H. S. MATSON, D. STEEL, F. H. STEWART, H. A. DOUGAN, A. CAMERON, A. H. PROCTOR, M.D., R. T. WELLS, I. M. MACRAE, C. C. C. SHAW, M.B., R. D. MACGREGOR, J. W. H. BABINGTON, A. S. M. PEEBLES, F. B. SHEITLE.

ROYAL ARMY MEDICAL CORPS (MILITIA).

LIEUTENANT F. E. BISSELL, M.D., is seconded, under the conditions of Paragraph 41, Militia Regulations, for service under the Colonial Office, November 16th.

ROYAL GARRISON ARTILLERY (VOLUNTEERS).

SURGEON-LIEUTENANT-COLONEL W. MASON, 1st Cornwall (Duke of Cornwall's), is granted the honorary rank of Surgeon-Colonel, October 30th; he resigns his commission, retaining his rank and uniform, October 31st.

Surgeon-Captain J. L. THOMAS, C.B., 2nd Glamorganshire, to be Surgeon-Major, November 5th.

Surgeon-Captain (Honorary Captain in the Army) A. BUTLER, M.B., 1st Renfrew and Dumbarton, to be Surgeon-Major, November 5th.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

LIEUTENANT W T. LOMAX, Transport Officer, Woolwich Companies, Eastern Command, resigns his commission, November 9th.

HENRY BENTLEY, to be Lieutenant in the Manchester Companies, Western Command, November 4th.

Captain C. J. JACOMB-HOOD, Sussex and Kent Bearer Company, to be Major, and Lieutenant J. A. ROOTH, of the same Company, to be Captain, both dated November 12th.

VOLUNTEER RIFLES.

SURGEON-CAPTAIN T. L. K. DAVIES, M.B., 3rd Volunteer Battalion the Royal Welsh Fusiliers, to be Surgeon-Major, November 8th.

JOHN L. RANKINE to be Surgeon-Lieutenant in the 3rd (Dumfries) Volunteer Battalion the King's Own Scottish Borderers, September 1st.

Surgeon-Captain J. ROBINSON, 1st Volunteer Battalion the Worcestershire Regiment, to be Surgeon-Major, November 16th.

Supernumerary Surgeon-Major (Honorary Major in the Army) A. A. WATSON, 2nd Volunteer Battalion the East Lancashire Regiment, to be Surgeon-Lieutenant-Colonel, November 1st.

JOHN H. P. PATON, M.B., to be Surgeon-Lieutenant in the 6th (Fifeshire) Volunteer Battalion the Black Watch (Royal Highlanders), November 18th.

Surgeon-Lieutenant G. C. STEELE-PERKINS, M.D., 1st Middlesex (Victoria and St. George's) Volunteer Rifle Corps, resigns his commission, November 18th.

Surgeon-Captain J. TAYLOR, M.D., 6th Volunteer Battalion the Gordon Highlanders, to be Surgeon-Major, November 13th.

Surgeon-Major J. STRANG, M.B., 3rd (Renfrewshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders), resigns his commission, November 1st; he retains his rank and uniform.

Vital Statistics.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, December 14th, 463 births and 425 deaths were registered in six of the principal Irish towns, as against 491 births and 461 deaths in the preceding period. The annual death-rate in these towns, which had been 21.7, 20 5, and 22.8 per 1.000 in the three preceding weeks, fell to 22 2 per 1,000 in the week under notice, this figure being 6 1 per 1,000 higher than the mean annual rate for the seventy-six English towns for the corresponding period. These figures ranged from 13 5 in Londonderry and 18.5 in Cork to 26.3 in Belfast and 27.3 in Limerick. The zymotic death-rate in the same six Irish towns averaged 2.5 per 1,000, or 0.2 per 1,000 lower than during the preceding period, the highest figure—8 2—being recorded in Limerick, while Londonderry registered no deaths under this head at all. The principal cause of death in this class of disease was measles.

Vacancies and Appointments.

VACANCIES.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column, advertisements must be received not later than the first post on Wednesday morning.

BRIGHTON: SUSSEX COUNTY HOSPITAL.—Third House-Surgeon. Salary, £50 per annum.

BURSLEM EDUCATION COMMITTEE.—Lady doctor. Salary at the rate of £150 per annum, rising to £200.

CARDIFF INFIRMARY.—Medical Officer in charge of Electrical Department. Salary, £150 per annum.

CHARING CROSS HOSPITAL.—Assistant Physician.

DUNDEE ROYAL INFIRMARY.—Investigator to work in the Caird Cancer Pavilion of the Hospital.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—(1) House-Physician. Honorarium, £25 for six months. (2) Second Medical Officer to the Casualty Department. Salary at the rate of £40 per annum. (3) Medical Officer for Electrical Department.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Casualty Medical Officer. Salary, £200 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION.—Assistant Medical Officer for the New Crossley Sanatorium. Salary, £100 per annum.

MANCHESTER UNIVERSITY.—External Examiner in Obstetrics and Diseases of Women.

MIDDLESEX HOSPITAL, W.—Resident Medical Officer. Salary, £200 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Assistant Physician to Out-patients.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) House-Physician. (2) Two House-Surgeons. Salary at the rate of £60 per annum each.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary at the rate of £80 per annum.

PADDINGTON INFIRMARY.—Second Assistant to the Medical Superintendent of the Infirmary and Medical Officer of the Workhouse. Salary at the rate of £72 per annum.

PRESTON ROYAL INFIRMARY.—Junior House-Surgeon. Salary, £60 per annum.

SUDAN UNITED MISSION.—Medical Missionaries for Northern Nigeria.

WEST RIDING ASYLUM, Wadsley.—Fifth Assistant Medical Officer. Salary, £140 per annum, rising to £160.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces vacancies at Maybole, co. Ayr; Falmouth, co. Cornwall; and Cinderford, co. Gloucester.

APPOINTMENTS.

AUBREY, R., L.R.C.P. and S. Edin., District Medical Officer of the Bath Union.

BARTLETT, Lionel J., M.R.C.S., L.R.C.P., Medical Officer and Public Vaccinator to the Middleton Cheney District of the Banbury Union, vice R. Rygate, L.R.C.P., resigned.

CASSIDY, M. A., M.A., M.B., B.C.Cantab., M.R.C.P.Lond., M.R.C.S.Eng., Resident Assistant Physician at St. Thomas's Hospital.

COTTON, R. H., M.R.C.S., L.R.C.P.Lond., Second Resident Assistant Medical Officer at the Infirmary for Medical Relief Districts 1 to 4 of the Parish of Lambeth.

DEVANE, J. F., M.B., B.Ch., D.P.H., House-Surgeon, County Infirmary, Limerick.

HAWTHORNE, C. O., M.D., M.R.C.P., Examiner in Medicine and Clinical Medicine in the University of Glasgow.

HUTT, C. W., M.R.C.S., L.R.C.P.Lond., Senior Resident Assistant Medical Officer, Chorlton Union Workhouse.

PEACE, P. C., M.R.C.S., L.R.C.P.Lond., Resident Medical Officer at North Evington Workhouse of Leicester.

TITTERTON, J. T., M.B., C.M.Edin., District Medical Officer of the St. Germans Union.

VISE, J. N. B., L.R.C.P.Lond., M.R.C.S., Certifying Factory Surgeon for the Axminster District, co. Devon.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting advertisements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in post-office orders or stamps with the notice not later than Wednesday morning, in order to ensure insertion in the current issue.

MARRIAGES.

MARSDEN—HANNAH.—On December 18th, at St. Thomas's Church, Ashton-in-Makerfield, by the Rev. W. Williams, Rector of Ashton, assisted by the Rev. F. Kennen of Derby, Prosper Henry Marsden, Lecturer in Pharmacy in the University of Liverpool, to Jessie, third daughter of Dr. Hannah, M.O.H., Ashton-in-Makerfield.

VERLEY—NORFOLK.—On Saturday, November 16th, 1907, at the Parish Church, Halfway Tree, Jamaica, by His Grace the Archbishop of the West Indies, assisted by the Ven. Archdeacon W. G. Downer and the Rev. Canon E. J. Wortley, Reginald Charles Verley, M.B., Ch.B., M.R.C.S., L.R.C.P., B.Sc.Edin., son of the late James Louis Verley, J.P., of Abbey Court, Jamaica, to Helen, eighth daughter of the late Robert Norfolk, J.P., and Mrs. Norfolk, of Grimsby, Lincolnshire.

BOOKS, ETC., RECEIVED.

The Burlington Art Miniatures (in twenty parts). No. 3. The National Gallery (Series I). London: The Fine Arts Publishing Company. 1s. 6d. per part.

Handbuch der Arbeiterkrankheiten. Herausgegeben von Dr. T. Weyl. Jena: G. Fischer. 1908. M.22.

Medical Musings, Grave and Gay: or, A-musing Recollections of an Old Doctor. By L.R.C.P.Edin., 1850-1907. London: W. Stevens, Limited. 2s. 6d.

Amateur Gardening. Christmas Number, 1907. London: W. H. and L. Collingridge. 1907. 6d.

Röntgenkalender. Begründet und herausgegeben von Professor Dr. E. Sommer. Leipzig: O. Nemnich. 1908. M.3.

The Essentials of Cytology. By C. E. Walker. Preface by Professor C. S. Sherrington, F.R.S. London: A. Constable and Co., Limited. 1907. 7s. 6d.

The Crown. Christmas Number. 1s.

Primary Nursing Technique for First-Year Pupil Nurses. By I. Melsaac. New York and London: Macmillan Company, Limited. 1907. 3s.

New York: J. Wiley; and London: Chapman and Hall, Limited. 1907:—

Organic Chemistry including Certain Portions of Physical Chemistry. By H. D. Hoskins, A.B., M.D., and J. J. R. Macleod, M.B., D.P.H. 8s. 6d.

A Textbook of Organic Chemistry. By A. F. Holleman, Ph.D., F.R.A.Amst. Translated from 3rd Dutch edition by A. J. Walker, Ph.D., B.A., and O. E. Mott, Ph.D. Second Edition. 10s. 6d.

Paris: J. Rousset. 1908. Les Actualitiés Chimiques et Biologiques, Publiées sous la direction de M. le Professor Pozzi-Escot:—

No. 8. Théories Modernes sur la Matière, and No. 9. La Radioactivité de la Matière. Par M. Emm. Pozzi-Escot. Fr. 1.50 each.

La Gastrectomie. Histoire et Méthodes Opératoires. Par A. Monprofit. Fr. 6.

Diagnostik der Bewegunsstorungen der Augen. Von Dr. Med. E. Landolt. Leipzig: W. Engelmann. 1907. M.3 60.

Les Ferments, Métalliques et leur Emploi en Thérapeutique. Par A. Robin. Paris: J. Rueff. 1907. Fr. 4.

Abdominal Hernia, its Diagnosis and Treatment. By W. B. de Garmo, M.D. Philadelphia and London: J. B. Lippincott Company. 21s.

Diagnóstico y Tratamiento de las Enfermedades de las Vias Urinarias. Lecciones elementales por A. Suarez de Mendoza. Madrid: Perlado, Páez y Ca. 1908. Pesetas 15.

Cape Colony To-day. By A. R. E. Burton, F.R.G.S. Capetown: Townshend, Taylor and Snashall; and London: W. H. Smith and Sons. 1907. 2s.

Index of Archaeological Papers 1665-1890. Edited by G. L. Gomme. London: A. Constable and Company, Limited. 1907. 25s.

The Master Beast: Being a True Account of the Ruthless Tyranny Inflicted on the British People by Socialism A.D. 1888-2020. By H. W. C. Newte. London: Rebman Limited. 1907. 3s. 6d.

Transactions of the Clinical Society of London. Volume xl. London: Longmans, Green, and Co. 1907.

The Birds of the British Islands. By C. Stonham, C.M.G., F.R.C.S., F.Z.S. Part viii. London: E. Grant Richards. December, 1907. 7s. 6d.

The Explorer. By W. S. Maugham. London: W. Heinemann. 1908. 6s.

Les Actualités Médicales. Les Médications Nouvelles en Obstétrique. Par G. Keim. Paris: J. B. Baillière et Fils. 1908. Fr. 1.50.

Pathologisch-anatomische Untersuchungen über akute Poliomyelitis und verwandte Krankheiten von der Epidemien in Norwegen 1903-1906. Von F. Harbitz and O. Scheel. (Videnskabs-Selskabets Skrifter. I. Math.-naturv. Klasse. 1907. No. 5.) Christiania: J. Dybwad (A. W. Broggers Buchdruckerei). 1907.

The "Gloucester" Diary and Director's Calendar for 1908. Gloucester: (for the Gloucester Railway Carriage and Wagon Co., Ltd.) F. J. Brooke.

A School for Mothers. By E. M. Bunting, D. E. L. Bunting, M.B., B.S., A. E. Barnes, and B. Gardiner, B.A. London: H. Marshall and Son. 1s.

The Licensed Trade: An Independent Survey. By E. A. Pratt. Second edition. London: J. Murray. 1907. 1s.

Gymnastique Respiratoire pendant les Mouvements. Par Fr. Guermonprez. Paris: J. Rousset. 1907.

Die Tierischen Parasiten des Menschen. Von Dr. M. Braun. Vierte Auflage. Wurzburg: C. Kabitzsch (A. Stuber). 1908. M.15.

An Introduction to Vegetable Physiology. By J. R. Green, Sc.D., F.L.S., F.R.S. Second edition. London: J. and A. Churchill. 1907. 10s. 6d.

Arterial Hypertonus, Sclerosis, and Blood Pressure. By W. Russell, M.D., F.R.C.P.Edin. Edinburgh and London: W. Green and Sons. 1907. 7s. 6d.

Medical Laboratory Methods and Tests. By H. French, M.A., M.D.Oxon., F.R.C.P.Lond. Second edition. London: Baillière, Tindall, and Cox. 1908. 5s.

A Woman's Pleasure Trip in Somaliland. By F. Swayne. Bristol: J. Wright and Co. London: Simpkin, Marshall. 1907. 4s.

Atlas der pathologisch-anatomischen Sektionstechnik. Von Professor Dr. M. Westenhoeffer. Berlin: A. Hirschwald. 1908. 2 marks.

The Yearbook of the Scientific and Learned Societies of Great Britain and Ireland. Compiled from official sources. Twenty-fourth Annual Issue. London: C. Griffin and Co., Limited. 1907.

Berlin and Wien: Urban and Schwarzenberg:

Die Praxis der Hautkrankheiten. Unna's Lehren. Von Dr. I. Bloch. 1908. 18 marks.

Handbuch der speziellen Pathologie und Therapie innerer Krankheiten. Von Dr. H. Eichhorst. Sechste Auflage. Dritter Band: Krankheiten der Nerven, Muskeln and Haut. 1907. 18 marks.

Die Augenärztlichen Operationen. Von Professor Dr. W. Czermak. Zweite Auflage. Herausgegeben von Dr. A. Elschnig. 1 Band, 2 Hälfte. 1907. 10 marks.

The Writers' and Artists' Yearbook, 1908. A Directory for Writers, Artists, and Photographers. London: A. and C. Black. 1s.

The Nurse's Day and Night Report Book. London and Edinburgh: Sands and Co. 6d.

***** In forwarding books the publishers are requested to state the selling price.**

CALENDAR OF THE ASSOCIATION.

Date.	Meetings to be Held.
DECEMBER.	
28 SATURDAY ...	London: Opsonic Subcommittee, 11 a.m. London: Science Committee, 12 noon.
29 Sunday ...	
30 MONDAY ...	
31 TUESDAY ...	
JANUARY, 1908.	
1 WEDNESDAY	Subscriptions to the British Medical Association for 1908 become due.
2 THURSDAY...	
3 FRIDAY ...	London: Standing Ethical Subcommittee, 2 p.m.
4 SATURDAY...	
5 Sunday ...	
6 MONDAY ...	
7 TUESDAY ...	London: Public Health Committee, 3.15 p.m.
8 WEDNESDAY	London: Medico-Political Committee, 2.30 p.m.
9 THURSDAY...	London: Hospitals Committee, 2 p.m. London: Metropolitan Counties Branch Council, 5 p.m. Hampstead Division, *Metropolitan Counties Branch.*
10 FRIDAY ...	London: Central Ethical Committee, 1.30 p.m. Tottenham Division, *Metropolitan Counties Branch*, Rooms of the Hornsey Conservative Association (opposite Finsbury Park Station), 9.15 p.m.
11 SATURDAY...	

Date.	Meetings to be Held.
JANUARY *(Continued).*	
12 Sunday ...	
13 MONDAY ...	
14 TUESDAY ...	London: Organization Committee, 11 a.m.
15 WEDNESDAY	Cardiff Division, *South Wales and Monmouthshire Branch*, Cardiff.
16 THURSDAY...	
17 FRIDAY ...	
18 SATURDAY...	
19 Sunday ...	
20 MONDAY ...	
21 TUESDAY ...	
22 WEDNESDAY	London: Journal and Finance Committee, 2.30 p.m.
23 THURSDAY...	Wandsworth Division, *Metropolitan Counties Branch*, Bolingbroke Hospital, 4 p.m.
24 FRIDAY ...	
25 SATURDAY...	
26 Sunday ...	
27 MONDAY ...	
28 TUESDAY ...	City Division, *Metropolitan Counties Branch*, Business Meeting, Great Eastern Hotel, 4 p.m.
29 WEDNESDAY	Central Council, 2 p.m. Bath and Bristol Branch, Bristol.
30 THURSDAY...	
31 FRIDAY ...	

MEMBERSHIP OF THE BRITISH MEDICAL ASSOCIATION.

The British Medical Association exists for the promotion of medical and the allied sciences, and the maintenance of the honour and the interests of the medical profession.

The Annual Subscription to the British Medical Association is £1 5s. 0d., and the British Medical Journal is supplied weekly, post free, to every member of the British Medical Association wherever he may reside.

Forms of application for membership can be obtained from the General Secretary, 6, Catherine Street, Strand, W.C.

The principal rules governing the election of a medical practitioner to be a member of the British Medical Association are as follow:

Article III.—Any Medical Practitioner registered in the United Kingdom under the Medical Acts and any Medical Practitioner residing within the area of any Branch of the Association situate in any part of the British Empire other than the United Kingdom, who is so registered or possesses such medical qualifications as shall, subject to the regulations, be prescribed by the Rules of the said Branch, shall be eligible as a Member of the Association. The mode and conditions of election to Membership shall from time to time be determined by or in accordance with the By-laws. Every Member, whether one of the existing Members or a subsequently-elected Member, shall remain a Member until he ceases to be a Member in accordance with the provisions hereof.

By-law 1.—Every candidate for Membership of the Association shall apply for election in writing, addressed to the Association, and stating his agreement, if elected, to abide by the Regulations and By-laws of the Association, and the Rules of such Division and Branch to which he may at any time belong, and to pay his subscription for the current year.

By-law 2.—Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the General Secretary of the Association, and to every Member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said Notice. A Branch may by special Resolution require that each candidate for election to the Association shall furnish a certificate from two Members of the Association to whom he is personally known. Officers of the Navy, Army, and Indian Medical Services on the Active List are eligible for election through the Council or a Branch without approving signatures as laid down in By-law 3.

By-law 3.—Every candidate whose place of residence is not included in the area of any Branch shall forward his Application to the General Secretary of the Association, together with a statement, signed by three Members of the Association, that from personal knowledge they consider him a suitable person for election. Notice of the proposed election shall be sent by the General Secretary to every Member of the Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a Member of the Association by the Council at any meeting thereof held not less than one month after the date of the said notice.

The annual subscription to the British Medical Journal for non-members is £1 8s. 0d. for the United Kingdom, and £1 15s. 0d. for abroad.

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